OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

JANUARY–JUNE, 1882.

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Subscriptions for 1882.

The OFFICIAL GAZETTE is published every Tuesday, two volumes a year, commencing in January and July. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound volumes, $3.50 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Issue of January 3, 1882.

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Designs	9	No. 12,647 to No. 12,655, inclusive.
Trade-Marks	26	No. 8,973 to No. 8,998, inclusive.
Labels	4	No. 2,581 to No. 2,584, inclusive.
Reissues of patents	13	No. 9,994 to No. 10,005, inclusive.
Total issue	368	

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Colorado	1	....	New Mexico Territ'y	....	....
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Iowa	9	1	Vermont	1	....
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Kentucky	6	....	Washington Territ'y	....	....
Louisiana	3	....	West Virginia	3	....
Maine	3	....	Wisconsin	2	....
Maryland	3	1	Wyoming Territory	....	....
Massachusetts	40	4	United States Army	....	....
Michigan	6	1	United States Navy	....	....
Minnesota	....	1			
Mississippi	1	....	Total to citizens of the United States	308	23
Missouri	9	1			
Montana Territory	....	....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
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Barbadoes	....	....	Italy	....	....
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Bermuda	....	....	New Zealand	....	....
Brazil	....	....	Russia	....	....
Canada	6	....	Spain	....	....
Chili	....	....	Sweden	....	....
Colombia, U. S. of	....	....	Switzerland	1	....
Cuba	....	....			
Denmark	....	....	Total to citizens of foreign countries	23	3
Ecuador	....	....			
England	4	1			

DESIGNS.

12,647.—GLASSWARE.—*James Dalzell*, Pittsburg, Pa. Application filed September 2, 1881. Term of patent 7 years.

12,648.—FRINGE.—*George E. Goucher*, Philadelphia, Pa., assignor to *John C. Graham*, same place. Application filed November 28, 1881. Term of patent 14 years.

12,649.—FRINGE.—*John C. Graham*, Philadelphia, Pa. Application filed November 3, 1881. Term of patent 14 years.

12,650.—FRINGE.—*John C. Graham*, Philadelphia, Pa. Application filed November 28, 1881. Term of patent 14 years.

12,651.—CASTER-BOTTLE.—*John Hoare*, Corning, N. Y. Application filed December 3, 1881. Term of patent 3½ years.

12,652.—FINGER-RING.—*Henry P. Richmond* and *Thomas E. Carpenter*, Providence, R. I. Application filed November 10, 1881. Term of patent 14 years.

12,653 and 12,654.—ORNAMENTAL CHAIN-LINK.—*Edward F. Seary*, Providence, R. I. Applications filed November 11, 1881. Term of patents 7 years.

12,655.—INTERIOR FORM OF CUFF-BOX.—*Isaac P. Turner*, Troy, N. Y., assignor of one-half to *John H. Colby*, same place. Application filed November 18, 1881. Term of patent 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

8,973.—LINIMENT.—*John W. Aitken*, Carbondale, Pa. Application filed November 17, 1881.
"The arbitrarily-selected words 'PAIN STOP.'"

8,974.—PHOTOGRAPHIC PRINTS.—*E. & H. T. Anthony & Co.*, New York, N. Y. Application filed December 6, 1881.
"The word-symbol 'INDOTINT.'"

8,973.—MILK-CHOCOLATE.—*Bazley & McAlvanah*, New York, N. Y. Application filed April 4, 1881.
"The word 'MACKS' and the monogram '[redacted]'"

8,976.—NEEDLES AND PINS.—*George A. Clark & Brother*, New York, N. Y. Application filed December 6, 1881.
"The letters 'O. N. T.'"

8,977.—SOAP.—*Albert B. Gillett*, Hartford, Conn. Application filed November 2, 1881.
"The word 'LAVINE.'"

8,978.—PREPARATION FOR ERADICATING CORNS.—*Gray & Hoftin*, Minneapolis, Minn. Application filed December 17, 1881.
"The figure described and the word 'LIEBIG.'"

8,979.—PAINTS AND PIGMENTS.—*Hove, Barnett & Co.*, New York, N. Y. Application filed November 29, 1881.
"The word 'FULTON' and the design of the steamboat.'"

8,980.—METAL WARE.—*The Plume & Atwood Manufacturing Company*, Waterbury, Conn. Application filed November 14, 1881.
"The letters 'P. & A.'"

8,981.—SUMMER FURNACES.—*Christopher Riessner*, New York, N. Y. Application filed March 28, 1881.
"The arbitrarily-selected words 'SUMMER QUEEN.'"

8,982.—ACCORDIONS.—*Wilhelm Spaetke*, Gera, Germany. Application filed December 5, 1881.
"The arbitrarily-selected words 'NE PLUS ULTRA.'"

8,983.—HATS AND CAPS.—*Steinfeld, Korngood & Co.*, Baltimore, Md. Application filed December 6, 1881.
"The word 'EXCELSIOR.'"

8,984.—GALVANIZED SHEET-IRON.—*St. Louis Stamping Company*, St. Louis, Mo. Application filed November 28, 1881.
"The two words 'DIAMOND' and 'JUNIATA' in conjunction.'"

8,985.—FLAX-LINT.—*William G. Taylor*, Bromsgrove, county of Worcester, England. Application filed June 18, 1881.
"The signature."

8,986.—SOLES, TAPS, AND HEELS.—*George A. White*, Boston, Mass. Application filed November 30, 1881.
"The word-symbol 'ANCHOR' and the representation of an anchor."

8,987.—CERTAIN DECORATIVE FABRICS.—*John R. Whitley*, New York, N. Y. Application filed November 23, 1881.
"The words 'LINCRUSTA-WALTON.'"

8,988.—COMPOSITION FOR COATING WALLS AND CEILINGS.—*Alabastine Company*, Grand Rapids, Mich., assignor to *The Alabastine Company*, New York, N. Y. Application filed April 7, 1881.
"The arbitrarily-selected word 'ALABASTINE.'"

8,989.—THREAD.—*Clark Thread Company*, Newark, N. J. Application filed December 10, 1881.
"The letters 'B. M. T.'"

8,990.—THREAD.—*Clark Thread Company*, Newark, N. J. Application filed December 10, 1881.
"The letters 'O. U. T.'"

8,991.—THREAD.—*Clark Thread Company*, Newark, N. J. Application filed December 10, 1881.
"The letters 'O. M. T.'"

8,992.—WINES.—*Christian F. Eccardt*, Kreutznach, Germany. Application filed December 10, 1881.
"The representation of a horseshoe."

8,993.—COTTON YARNS AND CLOTH.—*Globe Yarn Mills*, Fall River, Mass. Application filed December 10, 1881.
"The picture of a globe or sphere.'

8,994.—CERTAIN MEDICINAL PREPARATION.—*Theodore E. King*, Boston, Mass. Application filed November 20, 1880.
"The pictorial representation of a man."

LABELS.

2,581.—Title: "PAIN STOP," (FOR A MEDICINE.)—*John W. Aitken*, Carbondale, Pa. Application filed November 5, 1881.

2,582.—Title: "KIDNEY COFFEE."—*E. Waldo Cutler*, Boston, Mass. Application filed November 30, 1881.

2,583.—Title: "MADAM SMITH'S HEALING SALVE."—*Eliza Smith*, Newark, N. J. Application filed December 5, 1881.

2,584.—Title: "DR. NATHAN'S COUGH ELIXIR."—*A. S. Udell & Co.*, Ottumwa, Iowa. Application filed December 8, 1881.

PATENTS

GRANTED JAN. 3, 1882.

251,685. STOCKING AND THE METHOD OF MANUFACTURING THE SAME. JOHN ADAMS, Philadelphia, Pa. Filed Nov. 1, 1881. (No model.)



Claim.—1. A stocking in which a partly-covered tube of knitted fabric, or a partly-covered flat fabric adapted to be formed into a tube, is combined with a T-shaped heel-piece, B, having a central portion C and two equal and like shaped side portions, D E, said central portion being folded, seamed, or united at its end *h g* to the edge of the partly-covered tube or fabric, and the side portions D E being folded and seamed or united to the covered fabric and to the folded central portion C in such manner that their side edges, *a d* and *b e*, are joined to the edge of the covered fabric, and their end edges, *c d* and *f c*, are joined to the side edges, *h f* and *e g*, of the central portion C of said projection.

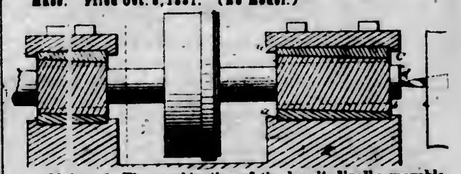
2. A stocking in which the toe is formed by a T-shaped projection, having a central portion T and two equal and like shaped side portions, X Y, on a tube of knitted fabric, or upon a flat fabric adapted to be formed into a tube, said central portion of said T-shaped projection being folded, seamed, or united to said fabric or tube in such manner that its end edge *p q* is joined to the covered edge of said fabric, and said side portions X Y of said projection being folded, seamed, and united to said tube or fabric in such manner that their side edges are joined to the edge of the covered fabric and their end edges, *o m* and *l n*, are joined to the side edges, *o p* and *n q*, of the central portion of said projection.

3. The mode herein described of forming the heel of a sock or stocking, which consists in providing a partly-covered tube, A, of a knitted fabric, or a partly-covered flat fabric adapted to be formed into a tube, with a projecting T-shaped heel-piece having a central portion C and two equal and like shaped side portions, D E, and in folding, seaming, or uniting said heel-piece to the tube or fabric in such manner that the end edge *h g* of the central portion C is joined to the edge of the tube or fabric, and the side edges, *a d* and *b e*, of the side portions D E are joined to the edge of the tube or fabric, and the end edges *f c* and *c d*, of the side portions D E are joined to the respective side edges, *f h* and *e g*, of the central portion.

4. The mode herein described of forming the toe of the sock or stocking, which consists in providing the end of a tube of knitted fabric or the end of a piece of knitted fabric adapted to form a tube with a T-shaped projection having a central portion T and two equal and like shaped side portions, X Y, and in folding, seaming, or uniting said T-shaped projection to the tube or fabric in such manner that the end edge *p q* of the central portion T is joined to the edge of the tube or fabric and the side edges, *m k* and *l j*, of the side portions X Y are joined to the edge of the tube or fabric, and the end edges, *o m* and *l n*, of the side portions are joined to the respective side edges, *o p* and *n q*, of the central portion.

5. The method of forming a pocket or pouch shaped portion of a knitted fabric, which consists in providing the edge of the fabric which forms the outline of the plain side of said pocket or pouch with a T-shaped projection, having a central portion and two equal and like shaped side portions, and in folding and securing said T-shaped projection to said first-named fabric, which forms the plain side of said pocket, in such manner that the end edge of the central portion of said projection is joined to the edge of the fabric, and the side edges of the side portions of said projection are joined to the edge of the fabric, and the end edges of the side portion of said projection are joined to the respective side edges of the central portion of said projection.

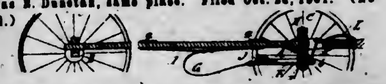
251,686. BORING-MACHINE. BENJAMIN F. ALLEN, Boston, Mass. Filed Oct. 6, 1881. (No model.)



Claim.—1. The combination of the longitudinally-movable auger-shaft bearing a cone-shaped boring-tool with mechanism, substantially such as described, for automatically moving it in a lateral direction simultaneously with its longitudinal movement, substantially as and for the purpose described.

2. The boring-arbor D, provided with inclined splines *b*, in combination with the sleeve-journal C, having inclined grooves *c*, arranged and operating in the manner and for the purpose specified.

251,687. RUNNING-GEAR FOR WAGONS. AMOS BARNES, Pontiac, Mich., assignor to himself, Janine Ten Eyck, and Thomas B. Dunstan, same place. Filed Oct. 26, 1881. (No model.)

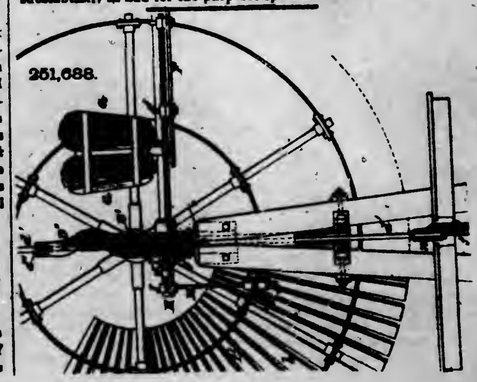


Claim.—1. A wagon, and, in combination with the forward axle and reach thereof, the fifth-wheel E, secured to the spring G, for relieving the strain upon the reach, when constructed substantially in the manner set forth.

2. In combination with the axle A of a wagon, the fifth-wheel E, spring G, truss plate or bar F, guide-stop J, and the bar I, substantially as and for the purposes herein set forth.

3. In combination with the axle A and fifth-wheel E of a wagon, when constructed substantially as described, the T-headed plate K and spring L, when constructed, arranged, and operating substantially as and for the purposes specified.

251,688.

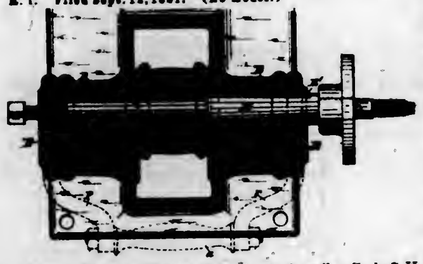


251,688. WINDMILL. WILLIAM S. BACON, Farmers' Institute, Ind. Filed Aug. 30, 1881. (No model.)

Claim.—1. The combination of the wind-wheel B, horizontal shaft E, placed at a right angle to the face of the wind-wheel, vane F, attached to said shaft, vane G, placed at a right angle to vane F, weighted arm H, and a cord or chain for changing the position of the vanes F and G, the parts being arranged substantially as and for the purpose set forth.

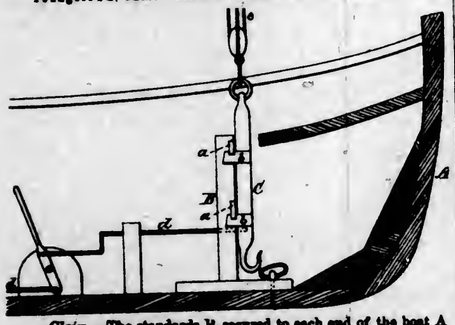
2. The combination of the rock-shaft E, having vanes F and G, arm J, cord *f*, pipe-rod *f'*, and guides *f''* and *f'''*, with the wind-wheel B, as and for the purpose described.

251,689. POLISHING-HEAD. HENRY BLUNDELL, Providence, R. I. Filed Sept. 12, 1881. (No model.)



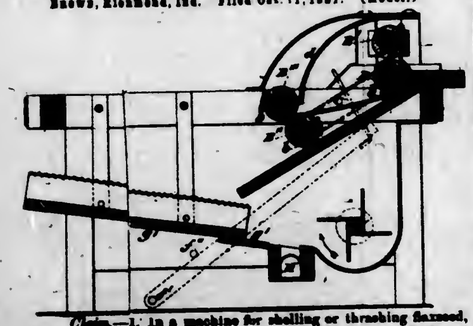
Claim.—The combination of the frame A, pulley C, shaft H, eccentric journal-bearings E E, and connecting-handle G, substantially as described.

251,690. BOAT-DETACHING APPARATUS. MARTIN BOURKE, Youngstown, Ohio. Filed July 15, 1881. (No model.)



Claim.—The standards B, secured to each end of the boat A and extending up inside thereof, and provided with suitable holding devices, *a*, in combination with the clutches C, having shoulders *b*, for engaging with the holding devices on the standards, and the sliding bolts *d*, passing through the standards and entering the clutches, substantially as and for the purpose set forth.

251,691. MACHINE FOR CRUSHING FLAX-BOLLS. SETH BROWN, Richmond, Ind. Filed Oct. 11, 1881. (Model.)



Claim.—1. In a machine for shelling or thrashing flaxseed, the combination of two pairs of yielding-surfaced rollers, B B' and B'' B''', the yielding apron *a*, and the curved deflector *d*, for conducting the material from the first pair of rollers to the second pair, said rollers B and B' being arranged in a higher plane than that of B'' and B''', substantially as and for the purpose set forth.

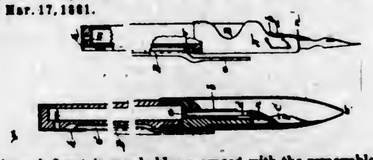
2. In a machine for shelling or thrashing flaxseed, the combination of two pairs of rollers arranged in different planes, the yokes E, connecting the upper roller of each pair, the spring F, and the connecting-rod *f*, substantially as and for the purpose described.

251,692. ORNAMENTAL GLASS TO IMITATE WOOD. JAMES HUDD, Boston, Mass., assignor, by direct and mesne assignments, to the Glass Veneer Company, of Maine. Filed May 24, 1881. (Specimens.)

Claim.—1. The herein-described process for ornamenting glass, which consists in applying to the same a liquid dye to represent any desired wood, then applying photographer's varnish, and afterward heating the glass before applying various shades of dyes in representation of the shades of the respective woods imitated, shellac combined with dry plaster-of-paris and suitable dry colors being then applied to form a background to bring out the proper effect, and at the same time serve as a backing, as and for the purpose specified.

2. As a new article of manufacture, sheets of glass ornamented to represent highly-polished woods by applying to the same liquid dyes of the proper color to represent any desired wood and covering the same with photographer's varnish, to which, after heating, is applied a backing of shellac, into which is rubbed powdered plaster-of-paris with various dry colors, substantially as specified.

251,693. FOUNTAIN-PEN. HUGO BURCHAS, I, Leipsic, Germany. Filed Apr. 6, 1881. (No model.) Patented in Germany Mar. 17, 1881.



Claim.—A fountain-pen holder provided with the removable guiding-tube *b*, ink-distributing tube *d*, and air-hole *m*, closed by a suitable valve or spring, *h*, in combination with the operating device D upon the upper side of the pen-holder, arranged to move the valve by lateral pressure upon said device, substantially in the manner herein described.

251,694. MAGAZINE FIRE-ARM. ANDREW BENNETT, Owego, N. Y. Filed Nov. 26, 1881. (No model.)

Claim.—1. In the frame of a breech-loading fire-arm, a lever, L, a latch, *i*, and a hammer, H, all in combination with a projection, *f*, arranged in the frame to uncouple the lever from the hammer, substantially as described.

2. In the frame of a breech-loading fire-arm, the lever, latch, and hammer described, when said latch is provided with an extension to the outside of the frame to operate the latch, substantially as and for the purpose set forth.

3. In a breech-loading fire-arm, a reciprocating bolt, a hammer, a guard-lever, and coupling mechanism, in combination substantially as described, whereby the turning or wrenching movement of the hand withdraws the bolt by the combined force of the hammer and guard-lever.

4. The rocking lever or trigger *t'*, in combination with the rear *i*, pivoted to the trigger and in the frame, and the guard-lever, which furnishes a bearing for the said trigger, substantially as and for the purpose described.

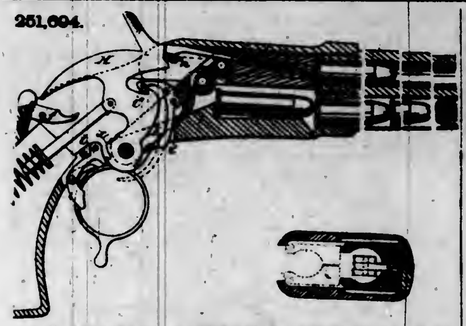
5. In a magazine-gun, a reciprocating breech-bolt provided at its forward end with a hook, A, in combination with a shoulder, A', whereby the cartridge is grasped and withdrawn from the magazine in the act of opening the breech, substantially as specified.

6. A carrier constructed, substantially as described, with two sides vertically open in front, said sides springing together, in combination with an extension on the bolt to open the carrier in the closing movement of the breech, substantially as described.

7. A carrier provided with spring sides, reduced at *e* and extending upward above the center of the cartridge, and a bolt having recesses *d' d'* to receive said upward extensions of the carrier, whereby the carrier is permitted to remain in its upward position until the cartridge is entered well into the barrel, substantially as set forth.

8. The stud S, having the recess S', in combination with a lip on the barrel to enter said recess and a screw to enter the magazine, recess, and lip to secure the parts together, all in combination substantially as specified.

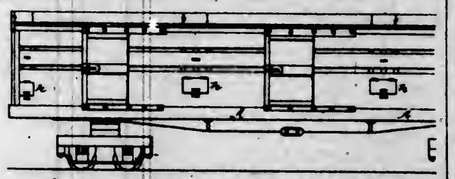
251,694.



9. A guard-strap provided with the projections *p''* or *p'''*, in combination with a frame having grooves to receive said projections, and a pin or screw to bind the parts together in a fire-arm, substantially as set forth.

10. In a fire-arm, a spring, S''', located in a recess at the breech, and a stud, S'', located near the muzzle and extending back parallel with the barrel, and a rod with a concavity in its face, all in combination, so that the said spring and stud hold the rod between them, substantially as specified.

251,695. STOCK-CAR. GEORGE D. BURTON, New Ipswich, N. H., assignor of one-half to Joel H. Holden, Boston, Mass. Filed Aug. 30, 1880. (No model.)



Claim.—1. In a cattle-car, the combination, with the car-body A, of the transverse partitions B, dividing the car into compartments, the cattle-stanchions arranged parallel to the partitions, on each side thereof, the transverse feed-troughs extending across the car below the partitions, and the doors A on each side of the car, opposite the feed-troughs, all constructed and arranged substantially as described.

2. In a cattle-car, a ridge-pole provided with a groove or trough on its upper side, and with suitable pipe-connections, whereby it is adapted to serve as a water-conductor for supplying the feeding-troughs, substantially as described.

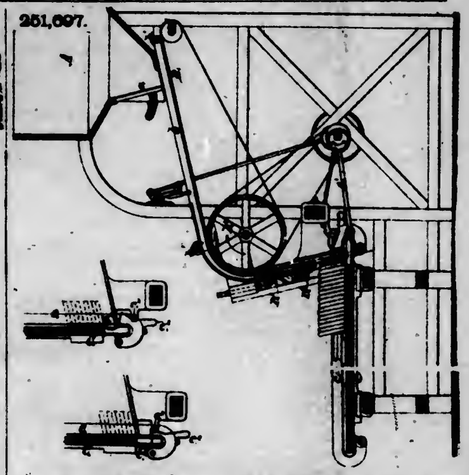
251,696. COFFEE-POT. EDWARD B. CHAMBERS, Alexandria, Ind. Filed Aug. 31, 1881. (No model.)



Claim.—1. A coffee-pot having a spout provided with an opening or slot, *s'*, adapted to be opened and closed by a cap, K, provided with a slot, *s*, substantially as set forth.

2. The combination of the pot B, removable condenser A, having a hinged lid, A', the slotted spout H, and adjustable slotted cap K, substantially as and for the purpose set forth.

251,697. MACHINE FOR PACKING CRACKERS. HENRY C. CHESEMAN, Providence, R. I. Filed Mar. 6, 1881. (No model.)



Claim.—1. The combination, with the hopper A, of the endless apron B, the partitions *b*, the channels, the partitions *c*, devices for adjusting the partitions to adapt them for guiding crackers of different diameter, and the reciprocating table C, all combined to deliver the crackers on the table edgewise, as described.

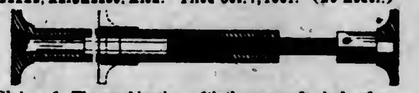
2. The combination, with the hopper A, the endless apron B, and the reciprocating table C, of the brushes D, D', and D'', constructed as described, whereby the delivery of the crackers is regulated, as set forth.

3. The combination, with the hopper A, the endless apron B, reciprocating table C, and the adjustable partitions *b* and *c* for dividing it into channels, of the adjustable stop C', constructed to rise and hold the crackers at the outward reciprocation of the table and to be depressed on the inward reciprocation, as described.

4. In a cracker-packing machine, the combination, with an endless apron on which the crackers are deposited, of the oscillating brush D, constructed to allow only one thickness of cracker to pass, and to sweep the same, as described.

5. In a machine constructed to deliver crackers edgewise, the combination, with vertical or inclined channels through which the crackers may fall by gravity, of two or more oscillating brushes, constructed to alternately hold and release the crackers, so to allow them to fall any desired distance without injury, as described.

251,698. JACK-SCREW. WILLIAM R. OGATE and WILLIAM H. VIBBARD, Kalamazoo, Mich. Filed Oct. 7, 1881. (No model.)



Claim.—1. The combination, with the screw of a jack, of an extensible stock, whereby the length of the jack can be altered independently of the screw, substantially as described.

2. The combination, with the screw of a jack, of a stock made in two or more sections, whereby its length may be varied independently of the screw, substantially as specified.

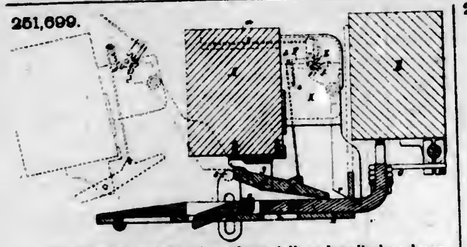
3. The combination, with the screw of a jack, of a stock provided with a removable base, whereby the stock may be lengthened independently of the screw, substantially as described.

4. A jack provided with an inclined base and cap, substantially as described, and for the purpose set forth.

251,699. WEFT STOP-MOTION FOR LOOMS. ELWOOD H. COLE, Lewiston, Me. Filed July 28, 1881. (No model.)

Brief.—A sector on the shaft of the weft-fork engages one on a lever, which is turned to throw up the fork as the lay goes back by coming in contact with a projection on a bracket secured to the breast-beam. An arm on the weft-fork shaft is connected by a slotted rod with a pawl hung to the under side of the lay-beam, which, when the weft is absent from under the fork, is permitted to descend far enough to engage with a catch-lever pivoted in a slide mounted on the bracket upon the breast-beam. As the lay next moves forward the slide is also carried forward, and through the spring-lever operates the shipping mechanism.

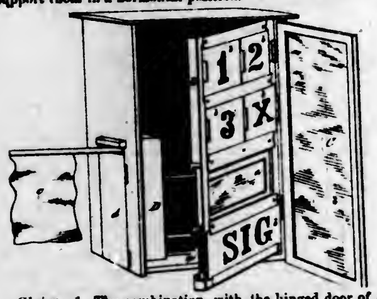
251,699.



Claim.—The combination substantially as described, such consisting of the lever-spring O and the stop-motion fork C, lever I, arm F, sectoral gears E and *f*, slotted connection-rod G, pawl H, projection *s*, slotted and grooved bracket L, slider M, and catch-lever N, all arranged and adapted to operate essentially as set forth.

251,700. SIGNAL. TIMOTHY J. COSTELLO, Cleveland, Ohio. Filed May 24, 1881. (No model.)

Brief.—A hinged inner door having removable glass and perforated slides and a transparent outer door. Flag-signals are pivoted in recesses in the main signal-box, the doors thereof serving to support them in a horizontal position.



Claim.—1. The combination, with the hinged door of a box or cabinet, of removable glass slides and perforated slides and a transparent outer door, substantially as set forth.

2. In a railway-signal, the combination of the recess D, flags *c*, and door *d*, said door serving to support said flags in a horizontal position, substantially as shown and described.

251,701. EXTRACTING JUICES FROM BAGASSE, PLANTS, &c. PETER COLLINS, Washington, D. C. Filed Oct. 14, 1880. (No model.)

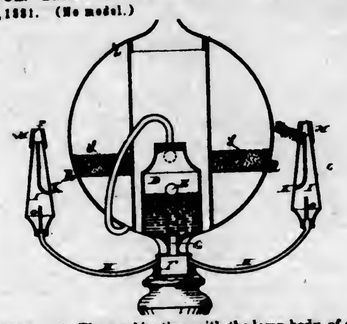


Claim.—1. A leach consisting of a series of movable tanks connected by suitable tubing arranged on a series of fixed steps greater in number than the tanks, thereby permitting the addition of tanks filled with fresh material at the bottom of the series and the removal of the spent tanks at the top, substantially as described.

2. In a leaching apparatus, the combination of two or more movable tanks with three or more fixed steps, substantially as described.

3. In a leaching apparatus, the combination of the above-described series of tanks and steps and a central derrick for moving said tanks.

251,702. LAMP. MATTHIAS CRIEGER, New York, N. Y. Filed Apr. 25, 1881. (No model.)



Claim.—1. The combination, with the lamp-body, of an interior closed chamber connected with the body by a siphon having its inner end closed or opened by a ball-valve, substantially as described.

2. The combination of the external chamber or reservoir, the interior or supply chamber, and a siphon connecting with substantially the lowest part of the reservoir and the top of the closed supply-chamber, whereby feeding of the oil will be uninterrupted at its highest and lowest level and undue accumulation of oil at the burner is prevented, substantially as described.

3. The combination of the lamp-body having the shaft B with the supply-chamber and the siphon.

4. The burner I, containing the air-pipe K, surrounded by a mineral cone serving as a wick, substantially as set forth.

5. The combination, with the burner, of the conic frustum M, having an internal perforated flange to catch the solid impurities of the flame and capable of sliding vertically upon the burner, substantially as and for the purpose specified.

6. The combination, in a lamp-body, of the chamber for the unfiltered oil above, the filtering device E S, and a chamber for refined and filtered oil below, substantially as described.

7. The combination of the burner having the mineral cone described, the tube H, the supply-chamber D, the siphon, and the reservoir, all as set forth.

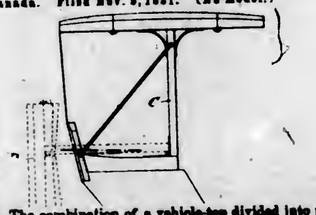
251,703. CAR-COUPLING. HUGH P. DALY, Wheeling, W. Va., assignor of two-thirds to Randolph Stalnaker, Jr., same place. Filed Nov. 14, 1881. (No model.)



Claim.—1. In a car-coupler, the combination, with a draw-head having holes *a* and *b b'*, of a coupling-pin, C, arranged horizontally within the draw-head, and a coupling-link, E, having hooks G G and an elongated slot, F, substantially as set forth.

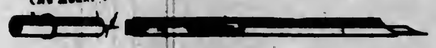
2. In a car-coupler, the combination, with a draw-head having holes, as described, of a coupling-link having an elongated slot, F, and hooks G, a coupling-pin, C, passing transversely through the draw-head, and a retaining device, D, substantially as set forth.

251,704. CARRIAGE-TOP. PIERRE DARSERSAU, Montreal, Quebec, Canada. Filed Nov. 5, 1881. (No model.)



Claim.—The combination of a vehicle-top divided into rigid parts, all of which said parts are hinged together, and one of said parts being attached fixedly to the single pair of posts C, with the said posts C hinged to the body of the vehicle, and arranged to carry the whole of the top and turn back therewith, substantially as described.

251,705. COMBINED INK-FOUNTAIN AND PEN-HOLDER. ALFRED DOUBLEDAY, Cincinnati, Ohio. Filed Feb. 21, 1881. (No model.)

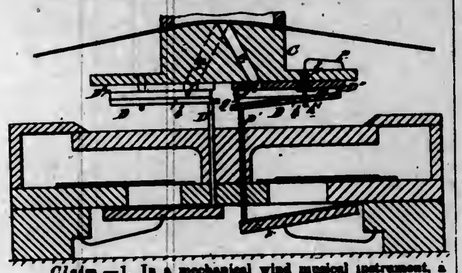


Claim.—1. A removable ink-fountain in pen-holders, having a pin projecting from its lower end, as herein specified.

2. A removable ink-fountain for pen-holders, provided at its lower end with a projecting pin and having its upper end closed with a rubber cork or head, as herein set forth.

3. A tubular pen holder or staff, in combination with a removable ink cell or fountain having a pin projecting from its lower end and its upper end closed with a rubber cork or head, as and for the purpose herein set forth.

251,706. PNEUMATIC LEVER FOR MECHANICAL MUSICAL INSTRUMENTS. ALONZO DEBERG, New York, N. Y., assignor to Messrs Harris, same place. Filed Apr. 21, 1881. (No model.)



Claim.—1. In a mechanical wind musical instrument, a pneumatic diaphragm-lever, D, constructed substantially as herein shown and described, consisting of the recessed block D', provided with orifices *b* and *l*, and having a raised rim, *f*, flexible diaphragm *g*, hinged tapering lever A, provided with valve-closing screw A^2, and exhaust-valve *m*, arranged as set forth.

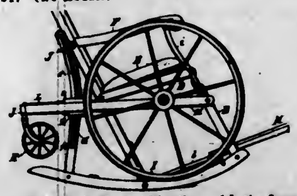
2. In a pneumatic diaphragm-lever provided with an exhaust-valve, a screw arranged upon said lever substantially as described, and adapted to be operated by the valvular action of the diaphragm to close and hold the exhaust-valve, as set forth.

251,707. STATION-INDICATOR. JOHN P. EDWARDS, New York, N. Y. Filed Mar. 26, 1881. (No model.)



Claim.—In a station-indicator having an apron, E, mounted on independently-operated rollers C D, the bracket G, bearing against each roller, and adjusting-screws H, operating upon each wing of the bracket, in combination with said rollers and with means, *c d*, for operating them, substantially as set forth.

251,708. CHAIR. CARROLL GALLUP, Norwalk, Ohio. Filed Aug. 3, 1881. (No model.)



Claim.—1. In a chair, the combination, with the forward leg, of an adjustable bar pivoted to the leg and carrying the wheels I and K, and provided with levers *h h'*, and the rear brace having a lug, *f*, with which said levers are adapted to engage, substantially as set forth.

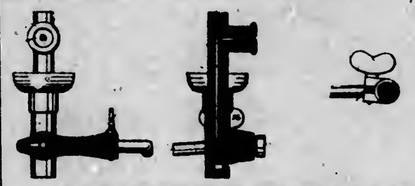
2. In a chair, the combination, with the back pivoted to the rockers, of a brace pivoted near the rear end of the rocker and longitudinally slotted, as described, and a thumb-screw, by means of which the back is secured at any desired adjustment, substantially as set forth.

3. The combination, with the chair-back, of the cleat *l*, secured to a rung thereof, the foot-rest M, and support O, the latter having its ends bent and pivoted to the rockers, so that it may be turned up or down, substantially as set forth.

4. In a chair, the combination, with the rockers and back, of the adjustable bar H, carrying the large wheels, the bar J, and the slotted brace supporting the back, and provided with a device for locking the back at any adjustment and the bar H in either upper or lower position, substantially as set forth.

251,709. VAPOR-BURNER. ESEK O. GARLAND, New Bedford, Mass. Filed Sept. 26, 1881. (No model.)

Brief.—A clamping-screw serves to hold the reciprocating valve-operating mechanism in any desired position.



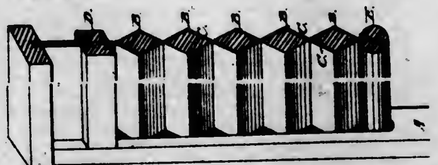
Claim.—1. The guide-tube, lateral projection therefrom, and handle-socket extending laterally from the said projection, all made of a single piece, combined with the needle-valve and its carrying-block fitted in the said guide-tube, and the valve-operating handle mounted in the said socket, and connected with the said block, to operate it and the connected valve, substantially as described.

2. The guide-tube, tubular projection therefrom, and handle-socket, combined with the valve and its slotted or notched carrying-block and the handled spindle, and pin mounted therein and entering the slot of the valve-carrying block, substantially as described.

3. The reciprocating needle-valve and its carrying-block, and the valve-operating handle connected with the said block, combined with the handle-socket slotted and pivoted with a clamping-screw to fix the said handle and valve in any desired position, substantially as described.

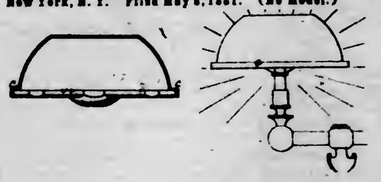
4. The valve and guide-tube and lateral tubular projection therefrom and the handle-socket, combined with the valve-operating handled spindle and pin to connect it with the said valve, and the screw-plug to close the end of the said tubular projection and retain the said pin in proper position, substantially as described.

251,710. WASH-BOARD. PHILEMON T. GAYNS, New York, assignor of one-half to Jacob H. Nellis, Canajoharie, N. Y. Filed Jan. 18, 1880.



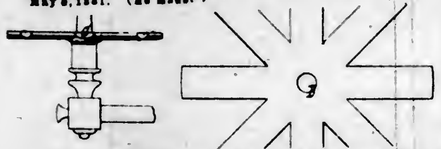
Claim.—As an improved article of manufacture, the herein-described reversible wash-board, consisting of the frame provided with a series of wooden bars, B, arranged transversely therein, and with a stiff corrugated sheet of metal, C, interposed between the bars and exposed alternately upon opposite sides of the board, substantially as and for the purpose specified.

251,711. COMBINED SHADE AND CONCENTRATOR FOR ARTIFICIAL LIGHT. J. SIDNEY GOLDSMITH and HIRAM H. SMITH, New York, N. Y. Filed May 6, 1881. (No model.)



Claim.—In combination with a glass light-concentrator consisting of a center portion having a convex lower surface and a series of radial arms having convex lower surfaces, a reflecting-shade placed above said concentrator so as to surround the light, substantially as specified.

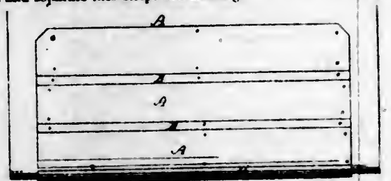
251,712. CONCENTRATOR FOR ARTIFICIAL LIGHT. J. SIDNEY GOLDSMITH and HIRAM H. SMITH, New York, N. Y. Filed May 5, 1881. (No model.)



Claim.—A glass concentrator for artificial light, consisting of a convex central portion provided with a hole, as described, and a series of solid arms radiating from said central portion, each of the radial arms having a flat upper surface and a convex lower surface, substantially as specified.

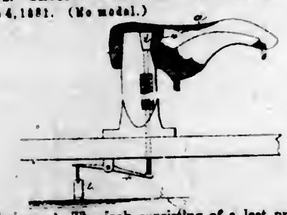
251,713. STEP OR STAIR. CHARLES H. GOULD, New York, N. Y. Filed May 5, 1879.

Brief.—A rubber plate backed by canvas and secured to the tread of the step with a metallic shield applied over the nosing and protecting the front edge of the rubber. Wood strips may divide and separate into strips the matting.



Claim.—The combination of a step or stair, D, mat or soft covering A, and nosing-shield C, arranged to project above the stair-nosing to protect the mat, substantially as and for the purpose herein specified.

251,714. LASTING-JACK. ISAAC HALL, Boston, Mass. Filed June 4, 1881. (No model.)



Claim.—1. The jack consisting of a last provided with a socket, and a standard therefor provided with a movable last-locking device or block to enable it to enter the said socket and block the last rigidly thereon, substantially as described.

2. The standard and wedge-shaped locking-block fitted in a recess in the end thereof, and its spring-pressed actuating-rod to move the said block, combined with the last provided with a socket shaped to fit the end of the standard and block when the latter is in position in the said recess, substantially as described.

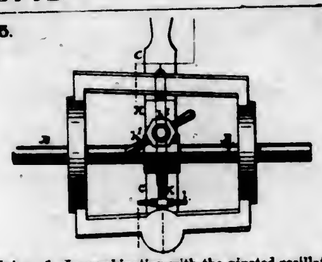
3. The socketed last, combined with the standard and block *b*, and means, substantially as described, to move it longitudinally from the said standard, to thereby elevate and release the last or throw it from the standard, as hereinbefore set forth.

4. The combination, with the last *a* and its block *b*, of the spring-actuated toothed or notched pin and the key to withdraw the said pin, substantially as described.

5. The last *a* and its block *b*, combined with the block-adjusting device provided with a shank, which is inserted into the last between it and the block, substantially as described.

6. The last, its block, and adjusting device, combined with the locking device to engage the said adjusting device, substantially as described.

251,715. HAND-LEVER ATTACHMENT FOR STEAM-PUMPS. WILLIAM D. HOCKEN, Oakland, Cal. Filed May 13, 1881. (No model.)



Claim.—1. In combination with the pivoted oscillating lever C and the reciprocating rod B, the right-angle oscillating reciprocating pin adapted to slide in one part and to oscillate in the other part, substantially as described.

2. In combination with the oscillating lever C, having the bearings *e e*, and the clamping-block H, having the socket A, the right-angle oscillating reciprocating wrist-pin F G, arranged and applied substantially as described, to operate as set forth.

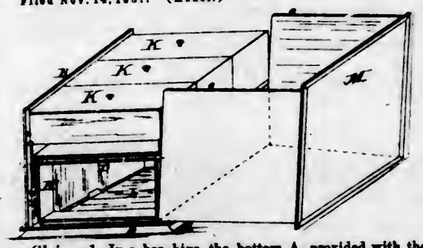
3. In combination with the oscillating reciprocating wrist-pin F G, held in bearings on the oscillating lever C, the clamp formed of the part or sections H and the hollow sleeve A, screw-threaded on its end, which holds the parts H together, and also forms the socket for the pin, substantially as herein described.

4. The combination, with the oscillating lever, of the two-part clamp H, the screw-threaded sleeve A, the piston-rod B, with its groove *q*, and the projection on the inner surface of the clamp, substantially as and for the purpose described.

5. The combination of the oscillating lever with the two-part clamp H, the screw-threaded sleeve A, the oscillating reciprocating wrist-pin F G, and the screw pin or wedge, substantially as and for the purpose described.

6. The combination of the oscillating and reciprocating wrist-pin F G with the oscillating lever C and its guides *e e*, the piston-rod, clamp H, and the screw pin or wedge, substantially as and for the purpose described.

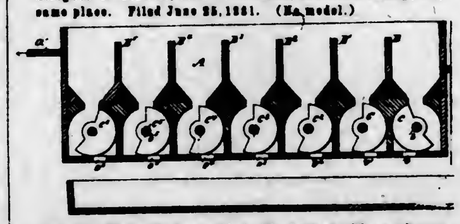
251,716. BEE-HIVE. CHARLES HOWARD, Schroleville, Ind. Filed Nov. 14, 1881. (Model.)



Claim.—1. In a bee-hive, the bottom A, provided with the stationary wall B and posts C D, and removable glass slides E F, in combination with the casing M, of the form shown, substantially as and for the purpose set forth.

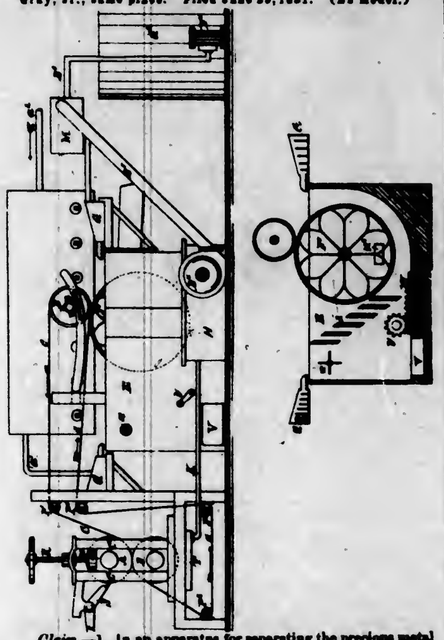
2. A bee-hive consisting of the bottom A, wall B, posts C D, glass slides E F, false bottom L, sections H, skeleton-partition I, comb-frames K, and the casing M, all constructed and arranged to operate as shown and described.

251,717. SETTLING-TANK. ALFRED E. JONES, Newark, N. J., assignor to himself, John T. Rowland, and Robert Gray, Jr., same place. Filed June 25, 1881. (No model.)



Claim.—The tank A, provided at its bottom with openings *c*, and having partitions B, said partitions having inclined and curved portions, as shown, in combination with the segmental disks C, substantially as described, and for the purpose specified.

251,718. APPARATUS FOR SEPARATING GOLD FROM QUARTZ AND ROCK-TAILINGS. ALFRED E. JONES, Newark, N. J., assignor to himself and John T. Rowland and Robert Gray, Jr., same place. Filed June 25, 1881. (No model.)



Claim.—1. In an apparatus for separating the precious metal from sand-tailings with fibrous material, &c., the combination of the tank G^4, mixing-box G, cylinder F, vat E, endless belt C, rollers A and B, and scraper S, substantially as described, and for the purpose specified.

2. In an apparatus for separating the precious metal from sand-tailings, the combination of the tank G^4, mixing-box G, cylinder F, vat E, endless belt C, with its pulleys, rollers A and B, and save-all T and its pipe K, scraper S, pump B^3, box M and its connecting-pipes, and box H, substantially as described, and for the purpose specified.

3. In an apparatus for separating precious metal from sand-tailings, &c., the combination of the tank G^4, pump D^3, box N and its pipes, box Q, vat E, cylinder F, belt C and its pulleys, and rollers A and B, substantially as described, and for the purpose specified.

4. In an apparatus for separating the precious metal from sand-tailings, &c., the combination of the tanks G^4 and G^5, mixing-boxes G and Q, vat E, cylinder F, pumps B^4 and B^3, with their pipes, belt C, with its pulleys, tank-boxes H and H', boxes M and N and their pipes, rollers A and B, save-all T and its pipe K, scraper S, agitator X, sliding bottom W and wheel Y, and pan V, substantially as described, and for the purpose specified.

251,719. CRUCIBLE. MILTON H. KNAPP, Adrian, Mich. Filed Sept. 28, 1881. (No model.)



Claim.—1. A crucible composed of asbestus fiber and paper-stock mixed and molded into shape, substantially as described.

2. A crucible made in two parts, the inner one composed of asbestus fiber and paper-stock mixed and pressed into shape and the outer part made of metal for supporting the inner part, substantially as described.

251,720. ATOMIZER. RUSSEL LOCKWOOD, Charlestown, Mass. Filed July 9, 1881. (Model.)

Claim.—1. The air-tube and its tip free to be rotated thereon, the said tip being provided with an air-orifice and central opening,

251,720



combined with the liquid-tube, and its jet-piece passing through the said central opening, substantially as and for the purpose described.

2. The air-tube and its tip free to be rotated thereon, the said tip being provided with an air-orifice and central opening and seat, combined with the liquid-tube and its jet-piece passing through the said central opening, and provided with a shoulder to engage the said seat, substantially as and for the purpose described.

3. In an atomizer, the air and liquid tubes, combined with a removable tip for the air-tube and an independent loosely-connected removable jet-piece for the liquid-tube, of smaller bore than the said tube and inserted therein, and an air-forcing apparatus to force air through the said air-tube and its tip, substantially as and for the purpose described.

251,721. TRICHINOSCOPE. CARL P. LOMB and EDWARD BAUSCH, Rochester, N. Y. Filed June 6, 1881. (No model.)



Claim.—1. The herein-described trichinoscope, consisting of a suitable microscope arranged to be moved in a plane parallel with the compression-plates *a a'*, and attached thereto by a suitable support adapted to permit the said motion, substantially as and for the purposes set forth.

2. The combination of the compression-plates *a a'*, frames *b b'*, clamping-screw *c*, hinge *d*, microscope *e*, and movable support *f*, substantially as described.

3. The combination, with the compression-plates *a a'*, of the frames *b b'*, clamping-screw *c*, and microscope *e*, arranged to be adjusted parallel to the plates by means of slide *h* and suitable support, *f*, substantially as described.

4. The combination, with the compression-plates *a a'*, of the frames *b b'*, clamp *c*, adjusting-screw *g*, and microscope *e*, arranged to be adjusted in planes parallel to the plates, substantially as described.

5. The combination, with the clamped compression-plates *a a'*, of the microscope *e*, connected to the plates so as to be moved in a plane parallel therewith, and having a focusing adjustment at right angles thereto, substantially as described.

251,722. CAR-BRAKE. ADELARD F. HARTEL, Montreal, Quebec, Canada, assignor of one-fourth to Charles A. Hartel, same place. Filed Nov. 1, 1881. (No model.)

Claim.—1. The coupling K, consisting of the parts *i j*, provided respectively with spring *l* and stud *m*, and adapted to move lengthwise upon the shaft-sections to which they are applied.

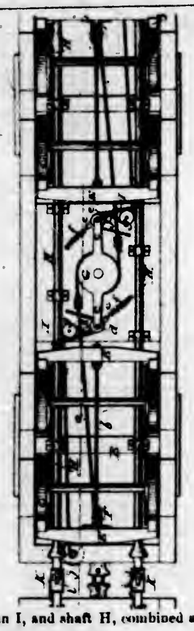
2. In combination with the operating-shaft H, having prismatic ends, the coupling K, applied thereto, and the chain *k*, having its ends attached respectively to the coupling and the shaft, whereby the end movement of the coupling is limited.

3. In combination with the brakes and the drum G, a spring connected with said drum, as and for the purposes explained.

4. In combination with the drum or lever connected with the brakes and provided with an arm, the chain I, made fast to the car at one end and passing around a pulley on the arm to a winding-shaft, substantially as shown.

5. The herein-described brake mechanism for cars, consisting of the ordinary brakes, their operating connecting-rods, the drum

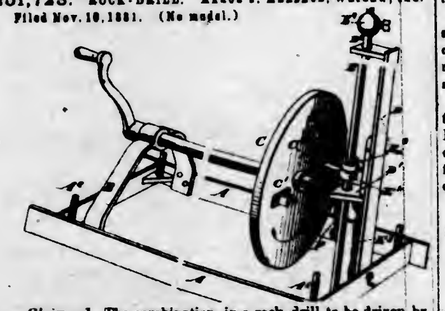
251,721.



G, spring *f*, chain I, and shaft H, combined and operating as set forth.

6. The combination, substantially as shown and described, with the ordinary brakes of a car, of the drum G, spring *f*, chain I, shaft H, chain J, pulley *g*, and windlasses, all arranged to operate in the manner explained.

251,723. ROCK-DRILL. AARON J. HUBBELL, Warsaw, Ind. Filed Nov. 10, 1881. (No model.)



Claim.—1. The combination, in a rock-drill to be driven by hand or other power, of a balance-wheel, C, having upon its face segmentally-formed lifting-projections, a lifting-arm for raising the drill, a drill-stock, said arm being placed loosely upon the drill-stock so as to turn thereon, an arm for giving impetus to the downward movement of the drill, and a spring for aiding such movement, all substantially as described.

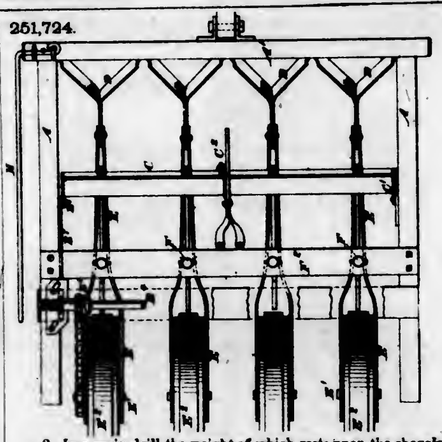
2. The combination of the adjustable frame A, the column D, drill-stock E, and spring E^2, substantially as shown and described.

3. The combination of the pivoted lever F and the arm E', substantially as and for the purpose set forth.

251,724. GRAIN-DRILL. ROBERT C. MORRIS, Olney, Ill. Filed Apr. 18, 1881. (Model.)

Claim.—1. A grain-drill combining in its construction a frame for supporting the operating parts, a series of hoes or furrow-openers carried upon jointed rods and having a vertically-adjustable movement, a series of rotating seed-coverers arranged in the rear of the furrow-openers, a seed-box, and a series of feeding-wheels and suitable mechanism for driving them, the construction and arrangement of the parts being substantially such as are herein described, whereby the carrying-wheels usually employed for carrying grain-drills are dispensed with and the weight of the machine is made to rest mainly upon the furrow-openers, as described.

251,724.



2. In a grain-drill the weight of which rests upon the shovels or furrow-openers, a series of jointed vertically-moving drag-bars and a series of compacting-rollers having their journals placed in bearings formed in the drag-bars, they being arranged substantially as set forth, whereby they are made to follow in the path of the hoes or furrow-openers and to leave a channel in the earth below its general level, as set forth, and for the purpose specified.

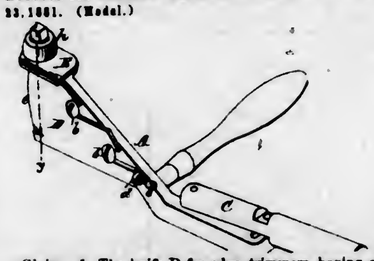
3. In a grain-drill the weight of which rests mainly upon the shovels which form the furrows for the reception of the grain, a series of curved cutters the lower ends of which are secured to the points of the shovels, or to the standards which carry them, and their upper ends to swinging beams, substantially as and for the purpose set forth.

4. In a grain-drill the weight of which rests mainly upon the shovels which form the furrows for the reception of the grain, a series of springs arranged substantially as shown and described, whereby they are made to communicate or transfer the weight of the frame of the machine, substantially as set forth.

5. In a grain-drill the weight of which rests mainly upon the shovels which form the furrows for the reception of the grain, the combination of the frame A A and A', the bars D, beams E, and rollers E^2, the parts being constructed and arranged for joint operation substantially as set forth.

6. The combination of the frame A A A', the bars D, attached to the frame, the beams E, rollers E^2, shovels E^3, cutters E^4, rods F, springs F', slotted beam F^2, lever C^2, tumbling-beam C, and chain G, the parts being arranged for regulating the depth of the furrows and for throwing the weight of the machine upon the rollers, substantially as set forth.

251,725. EDGE-TRIMMING-MACHINE KNIFE. FRANKLIN HOULTON and CHARLES H. ADAMS, Ashland, Mass. Filed May 23, 1881. (Model.)

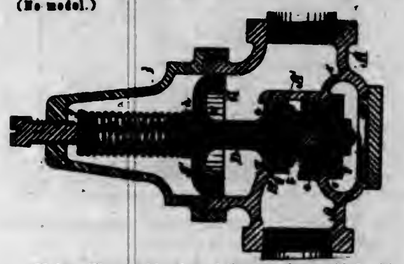


Claim.—1. The knife D for edge-trimmers, having cutting-edge *e* and the cutting-edge *f*, arranged with relation to each other, as shown and described, said knife being provided with slots *a a*, by means of which it may be adjustably and removably connected to the holder A, substantially as and for the purpose set forth.

2. The holder A, having plate E, with groove *g*, in combination with the knife D, having cutting-edges *e f*, substantially as and for the purpose specified.

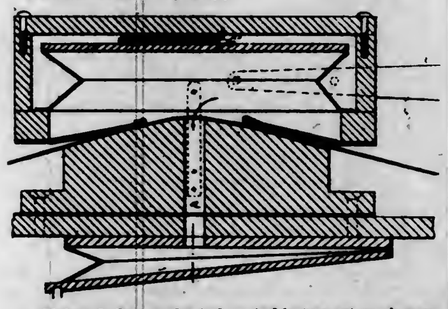
3. The holder A, pivoted to the stationary arm C, and having plate E, with groove *g*, in combination with the knife D, having cutting-edges *e f*, said knife being detachably and adjustably connected to the holder, substantially as and for the purpose described.

251,726. WATER-PRESSURE REGULATOR. HIERONYMUS MUELLER and JOHN GROSS, Decatur, Ill. Filed July 6, 1881. (No model.)



Claim.—The combination of the case A, provided with a removable bottom plug, K, the cup-shaped diaphragm G, adapted to slide within said case, valve-stem D, and conical valve H, with sleeve *b*, disked valve *c*, and the rubber disk *e*, adapted to rest against the bottom edge of the valve-chamber A', substantially as and for the purposes described.

251,727. MECHANICAL MUSICAL INSTRUMENT. ROBERT W. PAIR, New York, N. Y., assignor to Moses Harris, same place. Filed Aug. 31, 1881. (Model.)



Claim.—1. In a mechanical musical instrument, an air reservoir or chest provided with interior flexible strips arranged, as described, to bear upon the perforated music-sheet and prevent the escape of air from said chest excepting through the perforations of said sheet, substantially as herein shown and set forth.

2. In a mechanical musical instrument, an air-reservoir or chest provided with interior flexible strips arranged, substantially as described, to prevent the escape of air from its sides, and having its ends deeper than its sides to permit the free passage of a music-sheet beneath the said sides and over the action-board of the instrument, substantially as herein shown and described.

3. In a mechanical musical instrument, an air reservoir or chest adapted to be set over the perforated music-sheet upon the action-board, and provided with interior flexible air-tight strips, and with a weighted or spring-actuated bellows-like platform, to increase the pressure of air from said reservoir, substantially as herein shown and described.

4. In a mechanical musical instrument, the combination, with movable air reservoir or chest adapted to be set over the perforated music-sheet upon the action-board, of attached arms whereby said chest may be held to and lifted from its position, substantially as herein shown and described.

5. In a mechanical musical instrument, the combination, with a movable air reservoir or chest adapted to be set over the perforated music-sheet, of latches or springs, whereby said chest is held to the instrument, substantially as herein shown and described.

251,728. GATE. LEMUEL PATTERSON and IRENAS J. PALMER, Olean, N. Y. Filed Oct. 29, 1881. (Model.)

Claim.—1. The herein-described gate, embodying in its construction the longitudinal wire barriers G, the single horizontal swing-bar E, and the end bar, F, pivoted at its center to the free end of bar E, as described, for the purpose set forth.

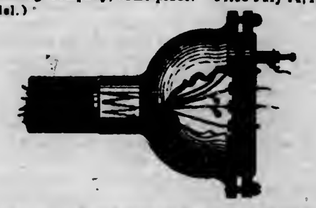
2. The combination of the gate-post A, the hinge-bolt C, the horizontal bar E, pivoted to said hinge-bolt, and having pivoted bar F, and the barrier-wires G, as described, for the purpose set forth.

251,728.



3. The combination of the post A, the bar E, pivoted to the hinge-bolt C, and having centrally-pivoted bar F, the upper barrier-wire having its ends connected to the bar F and to the gate-post in rear of the axis upon which the gate turns, and the lower barrier-wire secured to the bar F and to the hinge-bolt C, so that said wire shall become slackened when the gate is tilted, as set forth.

251,729. TELEGRAPH-CABLE TERMINAL. WILLIAM E. PATTERSON, Chicago, Ill., assignor to the Western Electric Manufacturing Company, same place. Filed July 14, 1881. (No model.)

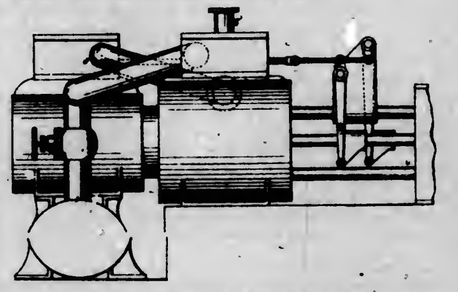


Claim.—1. The combination of the cap of insulating material with the pipe of the telegraph-cable, hollow pins, one for each conductor, and means whereby the cap is closely fitted to the pipe, substantially as shown and described.

2. The combination of the cap of insulating material, provided with hollow pins, one for each conductor, the cap attached to the pipe of the cable, and the ring and binding-posts, whereby connection may be maintained with the several conductors, substantially as shown and set forth.

3. A binding-post provided with a hollow attaching-screw, whereby the post may be attached to an underground conduit and a wire from the interior made fast thereto, and having a binding-screw, by which connection can be made to an exterior conductor, substantially as shown and described.

251,730. PUMPING-ENGINE. WILLIAM A. PERRY, Bay Ridge, N. Y. Filed June 27, 1881. (No model.)



Claim.—1. The improvement in compounded duplex steam pumping-engines, consisting in the combination of a high-pressure and an expanding cylinder, co-operating upon one side of the engine, with an expanding-cylinder operating alone upon the opposite side, the whole being arranged and operated to produce an equal development of power upon both sides of the engine, substantially as and for the purpose set forth.

2. The combination, with the high-pressure and expanding cylinders arranged and operated, as herein described, upon one side of a duplex pumping-engine, of the intermediate tank and single expanding-cylinder operating alone upon the opposite side of the engine, substantially as and for the purpose set forth.

251,731. ARTIFICIAL WHALEBONE. GEORGE H. PHELPS, Newton, Mass. Filed Oct. 25, 1881. (No model.)



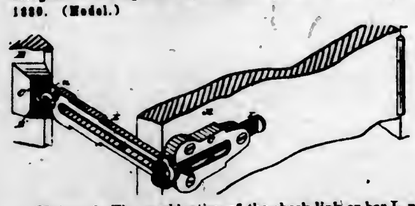
Claim.—1. As an improved article of manufacture, whalebone or substitute for whalebone, it being composed of long fibers, such as described, arranged in mass, with individual strands parallel, the said strands being united together to form strips or ribs, substantially as described.

2. A sheet of whalebone composed of fibrous material, gelatine, and chromic acid, or equivalents, united under pressure, substantially as described.

3. That improvement in the art or method of forming whalebone or substitute for whalebone which consists in arranging the fibers of tampico, istle, or equivalent fiber side by side, coating or treating the same with a solution of gelatine, and then with chromic acid, and then subjecting the same to the action of light, heat, and pressure to form the said fiber into a homogeneous substance adapted to be cut into strips or ribs, substantially as described.

4. That improvement in the art or method of manufacturing whalebone or artificial whalebone which consists in uniting the fibers of tampico, istle, or equivalent substance with a cementitious or glutinous material, substantially as described.

251,732. DOOR-CHECK. FRANCIS V. PHILLIPS, Chicago, Ill., assignor to George H. Dayton, same place. Filed Aug. 23, 1880. (Model.)



Claim.—1. The combination of the check link or bar L, pivoted to the door-frame, the case or plate C, secured to the door, and the turn-pin or catch T, held movably to the door by means of the case C, said turn-pin T being adapted to engage the link or bar L, and to be moved, while thus engaged, inwardly from and outwardly to the edge of the door, so as to co-operate with the bar L to check the door when ajar, and to form therewith a fastening to the closed door, substantially as described.

2. In combination with a rigid check link or bar, L, having a notch or shoulder, N, and a suitable catch, T, on the door, arranged to engage with said link or bar to check the door ajar, the gliding latch I, adapted to be engaged at will with the shoulder N of the link L, so as to hold the door from closing, substantially as described.

3. In combination with the slotted link or bar L, the turn-pin T, secured movably to the door by means which permit the turn-pin to slide inward from and outward to the edge of the door, and to rotate to receive or release the link only when receded, substantially as described.

4. In a door-check, the slotted link L, pivoted to the boss C on the door-frame, the case C, having the slot D, the turn-pin T, having projections *t* and *t'* and the groove *g*, and the bottom plate, I, provided with the rib *r*, combined and operating substantially as described.

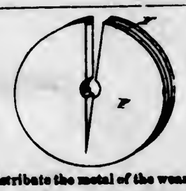
5. In combination, the slotted link L, pivoted to the door-frame, the retaining-case C on the door, the rotating turn-pin T, held by the case C, and slide I, having the lugs *b b*, whereby the turn-pin may be secured from rotation when operating with the link L as a fastening for the closed door, substantially as described.

6. The link L, pivoted to the door-frame by the hook E' and eye *e*, and constructed with the corner-projections *a*, which bear against the hook E' to prevent the link from swinging in the way of the door, substantially as described.

251,733. ROTARY ENGINE. WILLIAM C. PEGLEY, Louisville, Ky. Filed May 13, 1881. (No model.)

Claim.—1. In a rotary engine, the wheel D, having the depressions F on the sides, for the purpose of forming oil-chambers

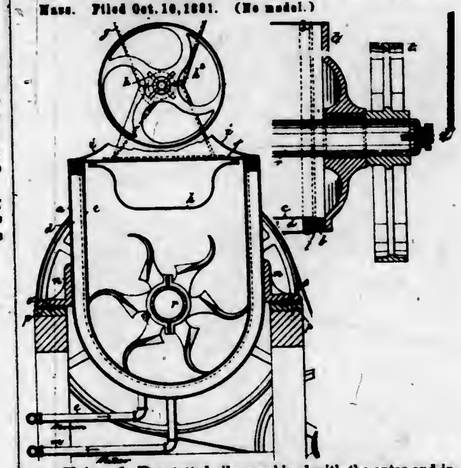
251,733.



and to equally distribute the metal of the wearing-surface, as herein set forth.

2. In a rotary engine, the adjustable plate F', having the groove F², for packing material, in combination with the set-screws H' in the rear cap, and with the wheel D, as herein set forth.

251,734. DRYING APPARATUS. GEORGE W. RAWSON, Boston, Mass. Filed Oct. 10, 1881. (No model.)



Claim.—1. The slotted ribs, combined with the outer and inner metal plates of the casing secured thereto, to compensate for unequal expansion of the said plates, substantially as described.

2. The metal casings *a c*, having the steam-space *d* between them, combined with the hollow shaft *r*, and the series of broad-faced arms *s*, curved as shown and described, to lift the material, the broad faces of the arms being inclined in the direction of their width with relation to the axis of the said shaft, as set forth, to operate all substantially as and for the purpose described.

3. The metal casings *a c*, steam-space *d* between them, and the upper plate, *f*, hollow shaft *r*, and its series of curved broad-faced arms to lift the material, combined with the long trough *h*, connected with the said upper plate only at intervals, to thus leave passages nearly the entire length of the edges of the said trough for the passage of vapor and gases to the uptake *i*, substantially as described.

4. The metal casings *a c*, having steam-space *d* between them, combined with the hollow shaft and its curved and inclined arms *s*, to operate all as shown and described.

251,735. CORSET. JOHN K. REES, Newark, N. J. Filed Aug. 9, 1881. (No model.)



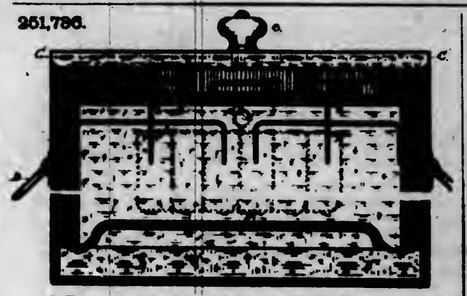
Claim.—1. A corset-stiffener constructed, as herein shown and described, of strips of woven grass cloth and cording stitched together between layers of fabric, substantially as set forth.

2. In combination with a corset consisting of strips of grass cloth and cording stitched together between layers of fabric, the stays formed of metal, bone, or hard rubber, substantially as set forth, and for the purpose described.

251,736. COOKING UTENSIL. LIBERTY H. S. RUPERT and REBECCA WYSONG, Williamsport, Pa. Filed Oct. 30, 1881. (No model.)

Claim.—1. The oven A, in combination with the removable pan B, having partition P and removable rods M, and provided with means of suspension within the oven A, as shown and described, and for the purposes set forth.

251,736.



2. The oven A, in combination with the rod E, provided with notches *e*, and so arranged as to be removed from the loops L L', as shown and described, and for the purposes set forth.

3. The box A, provided with a hinged cover, C, handles D, and loops L L', in combination with the rod E and hooks H H' H'', as shown and described, and for the purposes set forth.

251,737. COMBINED PARLOR AND SLEEPING CAR. J. ADOLPH SCHMITZ, Lake Forest, Ill. Filed Sept. 17, 1881. (No model.)



Claim.—1. In a combined parlor and sleeping car, two adjacent chairs having their backs and sides shaped and contrived, substantially as described, to form, with the seats of said chairs, a rectangular berth wider than the chair-seats, when arranged in a horizontal plane therewith, substantially as and for the purposes set forth.

2. In a car, two adjacent chairs having the back and arms both extensible into a horizontal position to form a berth, combined with mechanism whereby the extended parts are supported, substantially as described.

3. In a car, two adjacent rotating chairs having downwardly-folding backs, arranged and constructed to form a continuous horizontal surface by having the back of one chair fall into proximity with the seat of the next, substantially as and for the purposes set forth.

4. In a car, the chair described, having side extensions for the seat and back, and also having the back constructed to lie in the same plane with the seat, whereby said chair may form a berth or part of a berth, substantially as set forth.

5. In a combined parlor and sleeping car, two adjacent chairs laterally and rearwardly extensible, whereby said chairs are converted into a berth, substantially as described.

6. In a car, a chair provided with the retreating projections *a a*, combined with an adjacent chair having its back extensible into the same plane with the seat, substantially as described, and for the purposes set forth.

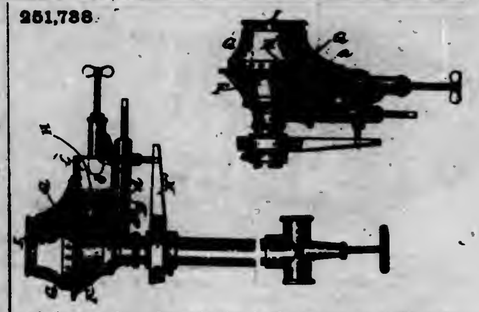
7. In combination with a series of chairs having their backs and arms extensible into the plane of the seats, the partitions F, extended to the level of the seats, substantially as described.

8. In a car-chair wherein the back is provided with lateral extensions and wherein the back and arms are constructed to fall into the plane of the seats, the arms having an inclined rear edge and the back wings similarly inclined on their lower edges, whereby the parts closely proximate when in horizontal position, substantially as described.

251,738. VAPOR-BURNER. PAUL SCHNEIDER and HENRY TRENKAMP, Cleveland, Ohio. Filed July 23, 1881. (Model.)

Claim.—1. In vapor-burners, the cover I, and depending therefrom a cylinder with open ends, the lower end of which terminates near the bottom of the base F of the combustion-chamber

251,738.



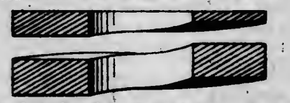
and the opposite end terminating in the upper part of the said chamber, and perforated ring G, in combination with the said base and horizontal induction-pipe, substantially as described, and for the purpose set forth.

2. In vapor-burners for gasoline-stoves, the base of the combustion-chamber provided with an orifice for the emission of oil to the heating-cup flange *a'* and point for conducting the oil into the heating-cup, substantially as described, and for the purpose set forth.

3. The induction-pipe H, inserted in the side of the combustion-chamber and terminating in a cylinder therein, and arranged in relation to and in combination with a needle-valve mechanism, substantially as set forth, and for the purpose specified.

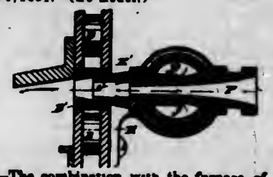
4. The combination of the perforated ring G, the cup and depending cylinder, the base F, having the orifice *d*, the horizontal induction-pipe, and the conduit provided with a collar and point, substantially as and for the purpose set forth.

251,739. CAR-SPRING. CHAS. SCOTT and CHAS. T. SCHOBY, Philadelphia, Pa. Filed Mar. 17, 1881. (No model.)



Claim.—A single-coil bearing or bolster spring consisting of a bar coiled on its edge, the width of said bar being substantially twice its thickness and about three-fourths the diameter of the mandrel-hole, the diameter of the spiral being equal to or greater than its height, substantially as shown and described.

251,740. APPARATUS FOR INJECTING AIR AND STEAM INTO FURNACES. ALONZO J. SIMMONS, Indianapolis, Ind. Filed June 3, 1881. (No model.)

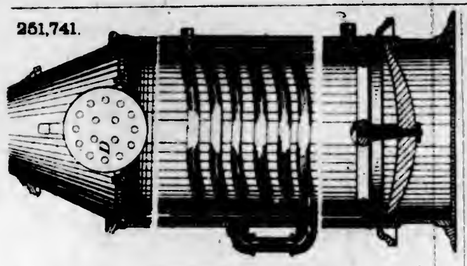


Claim.—The combination, with the furnace, of the steam-drum D, the steam-nozzle E', one of whose extremities extends within the hollow stay-bolt B', the other having a conical mouth extending half-way through the drum, stay-bolt B, air-pipe F, extending a short distance inside the mouth of said steam-nozzle, and the nut F', having outside threads corresponding with other threads in the side of the steam-drum and inside threads corresponding with other threads upon the outside of the air-pipe, substantially as and for the purposes described.

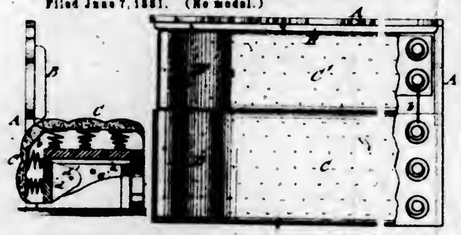
251,741. WATER HEATER AND CIRCULATOR. PETER SMITH, Detroit, Mich., assignor to himself, THOMAS A. BISSELL, and JOHN C. MCLAUGHLIN, same place. Filed Sept. 16, 1881. (No model.)

Claim.—A water heater and circulator consisting of an upright furnace with an inclosing water-jacket, a conduit leading into the jacket from the outside of the furnace, and a pipe-coil arranged within the furnace, and having one terminal connected with the water-jacket and the other leading directly to the outside of the furnace, and adapted for connecting with a water-conveying pipe, substantially as described.

251,741.



251,742. SOFA-BED. JAMES K. STOCKTON, Brooklyn, N. Y. Filed June 7, 1881. (No model.)



Claim.—1. The combination, in a sofa or lounge bed, of a main frame, A, having a back, B, which is open or recessed below the upper upholstered section, with a movable main section, C, having a rear section, C', jointed to the main section and adapted to be thrown into the open back of the main frame or raised to a level with the drawn-out main section of the seat, substantially as set forth.

2. The combination, with the main frame A, of the sliding and guided seat-section C, made in one piece with its head-piece D, and provided with a swinging rear section, C', jointed thereto, substantially as specified.

3. The combination of the main frame A and back B, having an open lower part, with a sliding seat-section, C, having a head-piece, D, made in one piece therewith, hinged rear section, C', jointed to the main section and pivoted to the main frame A, and with an adjustable rear head-piece, D', which is adapted to be raised or lowered as required, substantially as set forth.

4. The combination, in a sofa or lounge bed, of the main frame A and back B, having a lower open part, with a sliding main seat, C, pivoted and jointed rear section, C', connected by bracket-arms to pivots of the main frame and adapted to be stopped by pins of the same, substantially as and for the purpose set forth.

5. The combination, in a sofa or lounge bed, with the main frame A, of a rear piece, D', composed of two parts, *f f'*, which are hinged together, the upper part being pivoted to the main frame and the lower adapted to be retained on a rail or seat, *f''*, of the rear seat-section, or a rail, *f''*, of the frame A, substantially as described.

251,743. DEVICE FOR PROTECTING THE EYES. JNO. STORY, Castle Shannon, Pa. Filed May 17, 1881. (No model.)



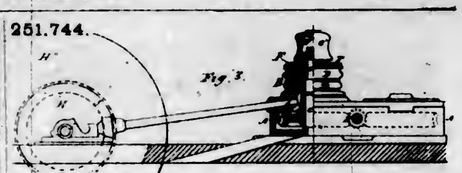
Claim.—1. The combination, with a lamp or other light, of a prism and mechanism for adjusting the prism vertically, substantially as shown.

2. The combination of the lamp, the arm *d*, sleeve *e*, the screw *g*, support *i*, and prism *b*, substantially as described.

251,744. APPARATUS FOR TAKING IN, STOPPING, AND STOWING WIRE AND OTHER ROPE CABLES. JAMES TAYLOR, Birkenhead, County of Chester, England. Filed Aug. 20, 1881. (No model.) Patented in England Oct. 3, 1880.

Claim.—1. The combination of mounting sheaves or pulleys B, friction-clutches F, and friction-gear K, coacting in relation to each other, substantially as described, for the purpose specified.

251,744.



2. The arrangement of the pulleys B shown at Figs. 1 and 2 of the drawings hereto annexed.

3. The arrangement of the pulleys B, in combination with the friction stowing-drums H, as shown at Figs. 3 and 4 of the drawings hereto annexed.

4. The arrangement and combination of pulleys, friction-clutches, gearing, and frictional stowing-drums, as herein described, and shown at Figs. 5, 5ª and 6, 6ª of the drawings hereto annexed.

5. The arrangement of pulleys, friction-clutches, brakes and operating-gear herein described, and shown at Figs. 7 and 8 of the drawings hereto annexed.

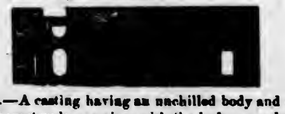
6. The arrangement of pulleys, friction-clutches, and operating-gear herein described, and shown at Figs. 9, 10, 9ª and 10ª of the drawings hereto annexed.

7. The various arrangements of friction-drums for taking in and stowing wire-rope or other like cable, as herein described, and shown at Figs. 3, 4, 5ª, 6ª, 11, 12, 13, 14, and 15 of the drawings hereto annexed.

8. The combination of corrugated sides or plates H'' with the friction stowing-drum H, substantially as described, for the purpose specified.

251,745. NUMBERING SEWING-MACHINE CASTINGS. EDDY T. THOMAS, New York, N. Y. Filed Apr. 1, 1881. (No model.)

Brief.—The letters may either be cut in the chill or a thin layer of sand may be placed over the chill-plate and the letters cut in the sand through to the chill.



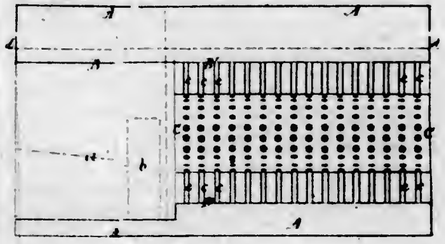
Claim.—A casting having an unchilled body and chilled designating-characters in one piece with the body, as and for the purpose set forth.

251,746. PROCESS OF REPRODUCING DRAWINGS AND DESIGNS. MAURICE TILNEY, Paris, France. Filed Jan. 8, 1881. (No specimens.) Patented in France Aug. 31, 1879, in England Nov. 26, 1880, in Belgium Nov. 27, 1880, and in Germany Nov. 29, 1880.

Claim.—1. In the process of preparing negative paper for reproducing drawings and designs, the two baths consisting, first, of white soap, alum, Flanders glue, whites of eggs beaten up, glacial acetic acid, alcohol, and water, and, second, of burnt amber ground in alcohol, black pigment, Flanders glue, bichromate of potash, and water, all in about the relative proportions described.

2. In the process of preparing positive paper for reproducing drawings and designs from negatives upon paper prepared in the manner described and claimed, a bath consisting of black or colored pigments, Flanders glue, bichromate of potash, and water, all in about the relative proportions described.

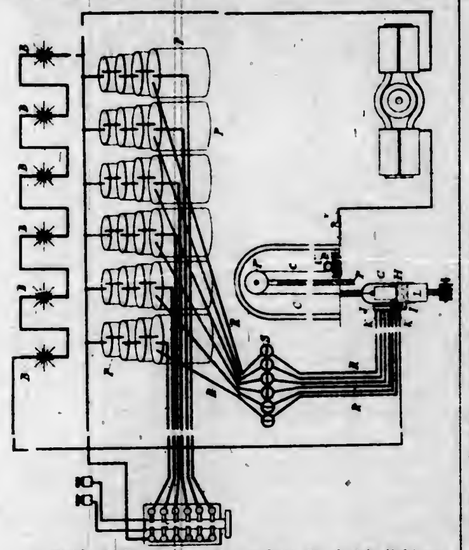
251,747. MARINE BOILER. GEORGE B. N. TOWER, Boston, Mass., assignor, by direct and mesne assignments, to David Renshaw, Cohasset, and Harvey T. Litchfield, Hull, Mass. Filed Aug. 27, 1879.



Claim.—A marine boiler consisting of the outer shell, A, inner shell, B B', fire-box, and ash-pit, to which is connected the water-flue C, communicating with the water-space of the boiler by a number of radiating water-tubes, *a*, all arranged substantially as shown, and for the purpose specified.

251,748. AUTOMATIC REGULATOR FOR ELECTRIC-LIGHT SYSTEMS. WILLIAM L. VOELKER, Morton, Pa. Filed Aug. 5, 1881. (No model.)

Brief.—Secondary batteries are placed in shunt-circuits connected with a vessel containing mercury, the connections being at different levels. A weight is suspended in the mercury-vessel by a thin metallic band, which forms part of the circuit. Excess of current heats the band, and by its expansion the weight is lowered into the mercury, raising its level and closing the shunt-circuits to the secondary batteries.



Claim.—1. In an automatic regulator for electric-light systems, the combination, with a strip of metal and a liquid-displacing body, of a cistern containing mercury, or an equivalent conducting-fluid, and a series of shunts having communication with said cistern, substantially as and for the uses and purposes shown and described.

2. The combination of the strip of metal C, weight G, conducting-fluid I, shunt-connections K, conductors R, and secondary battery P, the whole arranged to operate substantially as shown and described.

3. The combination, with the strip of metal C, carrying shunting device, as described, of the double case or shade, the space between the two portions of the shade being filled with a solution of alum or its equivalent, substantially as and for the uses and purposes shown and described.

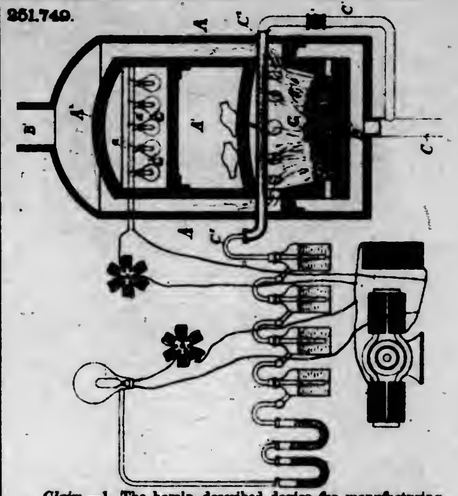
4. In an automatic regulator for electric-light systems, the combination, with the strip of metal C and its displacing-body, of the cistern containing a conducting-fluid having electrical connection with the cups of a removable secondary battery, substantially as shown and described.

5. The herein-described method of equalizing the current upon the main circuit of an electric generator and preventing waste of electric energy, consisting in automatically shunting the main current through a secondary battery or batteries in proportions to correspond with the increase of current strength in the main circuit.

6. The combination, substantially as described, of a main electric circuit containing lights or other apparatus, an electric generator for supplying a current thereto, a series of shunt-circuits containing secondary batteries, and an automatic circuit-closer for said shunt-circuits, the whole operating in the manner set forth.

251,749. APPARATUS FOR MANUFACTURING INCANDESCENT LAMPS AND CARBONS. WILLIAM L. VOELKER, Morton, Pa. Filed Aug. 5, 1881. (No model.)

251,749.



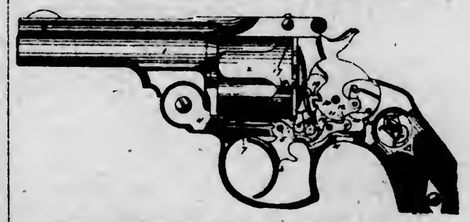
Claim.—1. The herein-described device for manufacturing and testing incandescent electric lamps, consisting of a furnace or fire-pot supplied with an air-blast, the annealing-oven and the drying-oven located above said fire-pot, and the nitrogen-generator in said fire-pot, the whole combined and arranged to operate substantially as set forth.

2. The herein-described method of expelling the moisture from the glass bulbs of incandescent electric lamps and their inclosed carbon by subjecting said lamps before sealing to heat of the requisite temperature and at the same time passing an electric current therethrough, substantially as shown and described.

3. In a device for manufacturing and testing incandescent lamps and carbons, the fire-pot B, blast-pipe C, pipes C' and C', annealing-oven A', and drying-oven A², the whole combined and arranged to operate substantially as shown and described.

4. In a device for manufacturing and testing incandescent electric lamps and carbons, the combination, with the oven A', heated by fire-pot B, of the conductors *a a*, having connection with a dynamo-machine, substantially as shown and described.

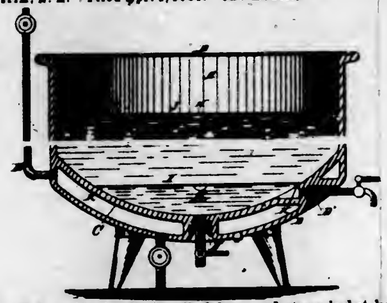
251,750. REVOLVING FIRE-ARM. JOS. H. WESSON, Springfield, Mass. Filed Sept. 23, 1881. (No model.)



Claim.—1. The combination, in a revolving fire-arm, of a cylinder-stop secured in the frame and adapted to engage in stop-recesses made in the cylinder and extending rearward past the trigger, a sear pivoted in the frame, and whose forward end engages with said cylinder-stop, a sear-spring to hold the sear into contact with the hammer-tumbler, and a hammer-tumbler adapted to engage with the rear end of said sear, and thereby actuate the cylinder-stop in disengaging it from the cylinder independently from the trigger, substantially as described.

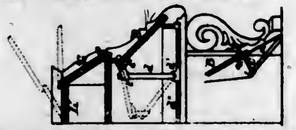
2. The combination, in a revolving fire-arm, of a hammer-tumbler provided with a safety-notch and an incline or shoulder just in rear of said safety-notch, a sear pivoted in the frame and whose catch is held in contact with the hammer-tumbler by a spring, and a cylinder-stop pivoted in the frame and adapted to engage in stop-recesses in the cylinder, and whose rear portion extends rearward past the trigger and into engagement with the sear, whereby the said cylinder may be locked when the catch of the sear is in the safety-notch of the tumbler, and is released by the further backward movement of the hammer, substantially as described.

251,751. STEAM-JACKET KETTLE. EDWARD WHITELEY, Antrim, N. H. Filed Apr. 4, 1881. (No model.)



Claim.—The herein-described improved steam-jacket kettle, consisting of the kettle A, having the inner and outer skins, C D, the outer skin being provided with the recess D', constructed substantially as shown, for the purpose of allowing the insertion of a pipe in the inner skin or bottom, C, without piercing the outer skin or entering the steam-chamber, as above set forth.

251,752. CABINET-ORGAN CASE. ORISON C. WHITNEY, Cleveland, Ohio. Filed Sept. 6, 1880. (No model.)

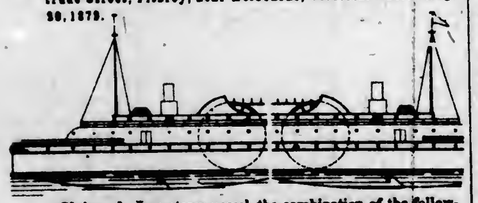


Claim.—1. The lid B, provided with the ears *b b*, arranged and adapted to slide in the grooves *a a*, having notches *a'* in the frame-work of the case, to afford a covering for the pedal-opening, as set forth.

2. The tilting frame consisting of the two uprights *d d*, connected by bar *f*, and pivoted to blocks *d' d'* on the board *d''*, and provided with the short arms *e e*, to which the fall-board D is attached by the ears *d' d'*, having buttons *d''*, all arranged to operate as and for the purpose specified.

3. The music-rest G, hinged to the front edge of the lid H, the said rest G forming a covering to the front opening, and the lid H a cover on the top of the music-receptacle, as shown and described.

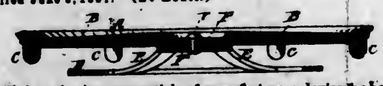
251,753. CONSTRUCTION OF SHIPS. ROBT. WILCOX, 55 Gertrude Street, Fitzroy, near Melbourne, Victoria. Filed Aug. 20, 1879.



Claim.—1. In a steam-vessel, the combination of the following elements: first, a hull having a central space extending the entire length of the vessel; second, central propelling mechanism located in the central space; and, third, the steering mechanism, substantially as described, located on the quarter, the construction being such that the vessel may run with equal facility in either direction.

2. A hull having on each side two sections of semi-cigar shape placed end to end and a continuous central space extending the entire length of the hull.

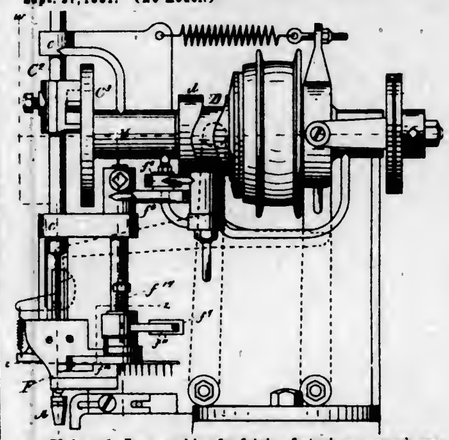
251,754. DISH-HOLDER. EDWIN O. WILSS, Boston, Mass. Filed June 9, 1881. (No model.)



Claim.—1. As a new article of manufacture, a device for holding dishes which is made of two parts, so constructed and arranged that one part serves as a base upon which the other part revolves, all substantially as set forth.

2. The combination of the frame A B, made with a raised rim, G, upon the upper surface and the projections C C upon the lower surface, with the frame D E, made with a raised center, F, and the rivet *r*, all constructed and arranged substantially as set forth.

251,755. TACKING-MACHINE. ERASTUS WOODWARD, Somerville, assignor to George W. Copeland, Malden, Mass. Filed Sept. 27, 1881. (No model.)



Claim.—1. In a machine for driving fastenings, a nozzle provided with a vertical movement, in combination with mechanism, substantially as described, connecting it with the actuating-pulley, whereby the movement of the nozzle both starts and stops the machine, all substantially as and for the purposes set forth.

2. The combination of a nozzle provided with a vertical movement and the means for centering it in relation to the driveway of the machine during its upward movement, substantially as specified.

3. The combination of a nozzle provided with a vertical movement and the means, substantially as set forth, for maintaining it firmly in position while at its highest position and while the fastening is being driven, all substantially as described.

4. In a machine for driving fastenings, the combination, substantially as shown, of a movable member of the clutch mechanism, adapted to be operated as described, and a frictional device for stopping the machine, operated by said member, whereby, upon its disengagement from the other member, the friction mechanism is caused to act and the machine is stopped, and whereby, upon its engagement with said member, the friction is released, all substantially as specified.

5. In a machine for driving fastenings, the combination of devices, substantially as specified, for engaging and disengaging the members of the clutch mechanism and frictional mechanism, substantially as specified, adapted to be automatically operated, as described, all substantially as set forth.

6. In a machine for driving tacks from a tack-strip, as a means for centering a tack in the throat of the machine, a yielding or movable block, E, having the centering-projections *d' d'*, forming a recess, *e*, and adapted to close or be closed into the feedway, all substantially as specified.

7. In a machine for driving tacks from a tack-strip, a feed-pawl arranged to feed the tack-strip having three or more teeth, as and for the purposes indicated.

8. In a machine for driving tacks from a tack-strip, the feed-pawl and means, substantially as set forth, for imparting to it closing, advancing, withdrawing, and backward movements, all substantially as specified.

9. The combination of the cam D, the pawl F, and the intermediate mechanism described for providing the pawl with the movement specified, all as set forth.

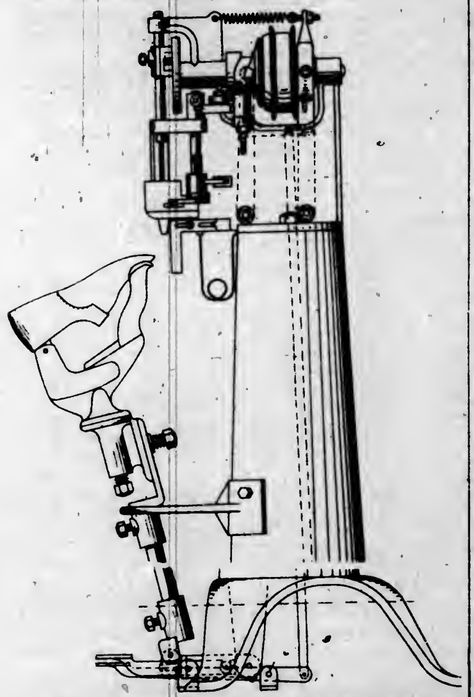
10. As a means for providing the feed-pawl with a four-motion feed, the lever f^3, having reciprocating movements imparted to it, the arms f^{10} f^{11}, pivoted and clamped to said lever, substantially as specified, and stops for changing the direction of the movement of said arms, all substantially as described.

11. In a tacking-machine for driving tacks from a tack-supporting strip, the knife G, means, substantially as specified, for imparting to it a reciprocating movement, the tack-driving and tack-feeding mechanism, all arranged in relation to each other as set forth, whereby the knife is operated to sever from the tack-supporting strip the portions from which tacks have been removed, all substantially as described.

12. In an organized power-machine for driving tacks from a tack-supporting strip, the combination of the main shaft, a cam, and starting and stopping mechanism with said feed-pawl and start and stop mechanism, all substantially as specified.

13. In an organized power tacking-machine for driving tacks from a tack-supporting strip, the combination of the following instrumentalities: a driver and feed-pawl, a main shaft having a cam for operating the pawl, and a crank for operating the driver, and the means for revolving it, all substantially as specified.

251,756. FASTENING-DRIVING MACHINE. ERASTUS WOODWARD, Somerville, assignor to George W. Copeland, Malden, Mass. Filed Nov. 10, 1881. (No model.)



Claim.—The combination of the nozzle of a fastening-driving machine, a jack and last adapted to be raised to and held against the said nozzle by a treadle while the fastening is driven, and a second treadle adapted to actuate the start and stop motions of the fastening-driving machine while the jack-treadle is kept down to hold the last and jack to the nozzle, substantially as specified.

251,757. COMBINED TOY AND BOTTLE-STOPPER. PORFIRIO C. SABETTI, Bryan, Tex. Filed Nov. 10, 1881. (No model.)



Claim.—1. A bottle-stopper consisting of a tube, A, closed at the upper end, and having flange B, packing-ring C, and diagonally-upward-projecting gutter D, substantially as and for the purpose set forth.

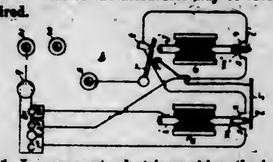
2. A bottle-stopper consisting of a tube, A, closed at the upper end, and having flange B, packing-ring C, diagonally-upward-projecting gutter D, and self-closing valve F, substantially as and for the purpose set forth.

3. The combination, with a bottle-stopper having a gutter for the escape of fluid, of an automaton or jointed figure actuated by a paddle-wheel which is operated by the escaping fluid, substantially as set forth.

4. The bottle-stopper A, having gutter D for the escape of fluid, in combination with the removable U-shaped bracket G, having legs H, shaft I, paddle-wheel J, and automaton K, substantially as set forth.

251,758. MAGNETO-ELECTRIC MACHINE FOR TELEPHONE-SIGNALING. ORDRON LEE ANDREW, Boston, Mass., assignor to American Bell Telephone Company, same place. Filed Apr. 13, 1880. (No model.)

Brief.—The machine has two armatures, so arranged that while one is producing its maximum current the other is producing its minimum current. Switches and contacts are provided whereby alternate, intermittent, or straight currents may be sent to line, as desired. One of the armatures may be thrown out of gear when desired.



Claim.—1. In a magneto-electric machine, the inductive armatures relatively arranged as described, so that the current generated in one armature is strongest when it is weakest in the other, and combined with commutators for carrying off the currents in the same direction, and conductors for carrying the current from each armature directly to line without passing through the other, substantially as described.

2. The combination, with the same magnet, of inductive armatures mounted on separate shafts and arranged so that their poles alternate in approaching the poles of the magnet, and combined with gearing for revolving them, and commutators and conductors for carrying off the currents generated in both armatures into one circuit, substantially as described.

3. In a magneto-electric machine, an armature and coil therefor in which alternately positive and negative currents may be induced, in combination with conductors and contact devices connected, as explained, with said coil and with the exterior circuit, so that only the immediate currents of one polarity are sent to the exterior circuit, substantially as described.

4. The combination, with a permanent magnet and an inductive armature therefor having its coil in continual connection with one end of an exterior circuit, of a commutator-piece connected with the other end of the coil, and a spring or contact-piece connected with the other end of the exterior circuit, said spring being arranged, as explained, so as intermittently to make contact with said commutator-piece, substantially as described.

5. The combination, with the induction-coil of a magneto-electric machine in which alternating currents of opposite polarity are generated, of a commutating device having contact-pieces which are in connection with one end of the coil while the current therein is of one, and with the other end thereof when it is of the other polarity, and contact-pieces which are continuously in connection one with one and the other with the other end of said coil, and means, as described, to connect any of said contact-pieces in circuit independently of the others, whereby currents of alternating polarity, or separated or consecutive currents of the same polarity, may be transmitted to an exterior circuit, as desired, by making the proper connection, substantially as and for the purpose specified.

6. A magneto-electric machine with inductive armatures arranged, as described, so that the maximum and minimum currents are generated in the coils of said armatures not simultaneously but successively, and means, as set forth, to connect the ends of said coils continuously or alternately with an exterior circuit, whereby currents of various character—as steady or fluctuating or separated—may be transmitted to the exterior circuit, as desired, substantially as described.

7. In a magneto-electric machine, a magnet and two armatures and a driving mechanism to rotate them near the poles of the said magnet to generate electric currents, combined with means, as set forth, to disengage one of the said armatures from the driving mechanism and hold it with its poles remote from those of the magnet, as and for the purpose described.

8. In a magneto-machine, two armatures and a driving mechanism to rotate them in fixed relation to one another, combined with means, as described, to disengage one of the said armatures

from the driving mechanism, and then cause it to be re-engaged in the required positive relation to the other, as and for the purpose set forth.

9. In a magneto-electric machine, the combination, with the spindle of the rotary armature bored and lined with insulating material, as described, of a metal pin split longitudinally, and having its two parts thus divided separated by a layer of insulating material and fitted within the said bored spindle, substantially as described.

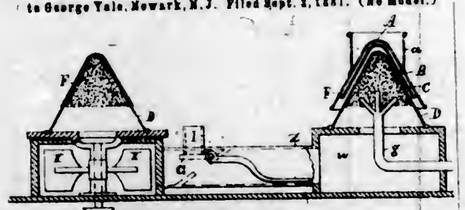
10. In combination with an inductive armature wrapped with insulated wire, a rotary commutator consisting of two metal pieces insulated from one another and adapted to come alternately in contact with suitable contact-springs in their rotation, one of the said metal pieces being in contact with an independent contact-piece during its entire rotation, and both of them being connected with the ends of the armature-coils, as and for the purpose specified.

11. The combination, with the armature of a magneto-electric machine and the coils of said armature, of contact-pieces for taking off the currents of alternately-opposite polarities as generated in the said coils, contact-pieces for taking off currents of one polarity only, and means, as indicated, for connecting in with an electric circuit either set of contact-pieces, substantially as described.

12. A magneto-electric machine provided with contact-pieces connected with its induction-coils, and a series of independent open keys connected with the said contact-pieces, and a reversing-key connected with the anvils of said keys to enable the character of the current to be controlled by properly operating the independent keys, and the said currents of proper character to be sent to line in either direction, as desired, by the reversing-key, substantially as described.

251,759. MAKING AND UNITING BATS TO HAT-BODIES.

WILLIAM A. BAGLIN, Brooklyn, N.Y., assignor of one-fourth to George Yale, Newark, N.J. Filed Sept. 2, 1881. (No model.)



Claim.—1. The process herein described for making bats, consisting in forming the bat upon a cone at several successive operations, the material of the bat being deposited upon different parts of the cone at different times, in figures of predetermined shape, substantially as and for the purpose set forth.

2. The process herein described for removing a bat from the forming-cone, consisting in the application of steam or air pressure to the interior of the forming-cone, substantially as herein set forth.

3. The method herein described for securing or uniting a nap-bat to a body-felt, consisting, first, in forming the nap-bat upon an exhausted cone of suitable shape to fit the body-felt; second, in applying the body-felt to the nap-bat while upon the forming-cone and pressing them both together; third, in removing the body-felt and nap-bat from the cone together; and, fourth, in sticking and scalding the same together in the usual manner.

4. The process herein described for preparing hat-body felts for union with nap-bats formed in one piece, consisting in shrinking the felts to an approximately-uniform size and blocking them to secure an approximately-uniform shape, substantially as and for the purpose set forth.

5. As a new article of manufacture, a nap-bat formed in one piece of suitable shape to fit the body-felt to which it is to be applied, and adapted to be stuck thereto and scalded without any clipping or fitting, substantially as herein set forth.

6. As a new article of manufacture, the annular conical nap-bat herein described, formed in one piece and adapted to be stuck to the brim of a hat without clipping or tearing, substantially as herein set forth.

7. As a new article of manufacture, a nap-bat consisting of material of different colors deposited in different parts of the bat in distinct locations, patterns, or figures, substantially as herein set forth.

8. As a new article of manufacture, a nap-bat consisting of material of different colors disposed to form distinct figures appearing through a ground of uniform color, said ground being formed by the body of the bat, substantially as herein set forth.

9. The carrier for hat-bodies, consisting of a hollow cone, A, provided with means for carrying it, as flange *a*, a finger-ring at the apex, or equivalent device, as and for the purpose set forth.

10. In combination with the conical carrier A, the presser B, constructed and operated to press the hat-body to the shape of the carrier, as and for the purpose set forth.

11. In combination with the fan X, the blast-pipe Z, valve in the blast-pipe arranged and operated to admit air to the forming-cone D, and wind-chest *w*, or other suitable support for the forming-cone, substantially as herein set forth.

12. In combination with the steam-pipe *g*, a valve arranged and operated to admit steam to the forming-cone D, and a table or suitable support for such cone, substantially as herein set forth.

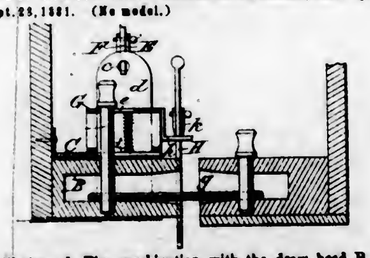
13. In combination with the forming-cone D, the guard-cone E, for covering the tip of cone D when forming an annular conical nap-bat, substantially as herein set forth.

14. In combination with the forming-cone D, the guard-cone *k*, shaped with a serrated, scalloped, or indented border, substantially as and for the purpose set forth.

15. The guard-cone L, perforated only at certain points in figures of ornamental shape, and operated in combination with the forming-cone D by placing the guard-cone inside the latter, substantially as herein set forth.

16. In combination with the guard-cone M, formed with holes arranged in ornamental patterns, as *m*, and provided with a gage mark or pin, as *e*, the forming-cone D, provided with gage or mark, as *d*, substantially as herein set forth.

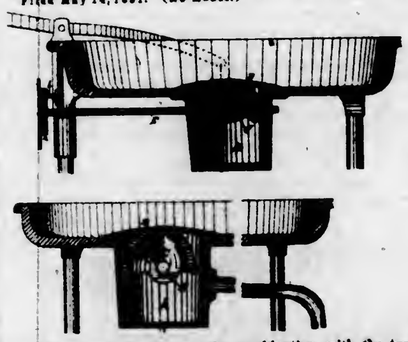
251,760. CAR-COUPLING. DANIEL BEVIS, Marion, Ohio. Filed Sept. 23, 1881. (No model.)



Claim.—1. The combination, with the draw-head B and frames D D′, having standards E E, of the levers F F, pivoted in said standards, and the slotted and spring-seated box or frame G, adapted to move vertically in the frame D D′, and having lugs *d d* for engagement with the inner ends of the operating-levers, substantially as set forth.

2. The combination, with the frame D, having brackets *h h*, of the swivels *h k* and levers H H, pivoted therein, whereby said levers may be moved in any desired direction for supporting and guiding the coupling-links, substantially as shown and described.

251,761. TUYERE. THOMAS H. BULLOCK, Cleveland, Ohio. Filed May 14, 1881. (No model.)

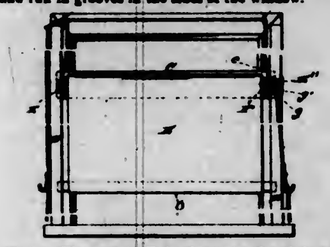


Claim.—1. In a tuyere, the combination, with the tuyere-grate formed concave on its under side, of the tuyere-valve constructed with a cam-shaped periphery in cross-section and cut away on one side of its shaft, said valve being arranged to be forced snugly against the concave seat on the under side of the grate, substantially as set forth.

2. A tuyere-valve, the same being made cam-shaped in cross-section, in combination with the shaft E and its ratchets *a* and pawl *b*, all operating substantially as and for the purpose shown and described.

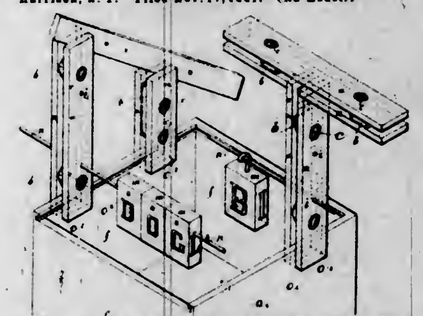
251,762. CURTAIN-FIXTURE. THOS. H. BURGESS, Big Rapids, Mich. Filed Aug. 6, 1881. (No model.)

Brief.—The strip upon which the journal-brackets are fastened and the slat in the bottom of the curtain are extended at each end and run in grooves in the sides of the window.



Claim.—The curtain E, having strips C and C, in combination with strips B, having grooves *b*, the ends of the strips traveling in the grooves, roller F, having drum *g*, and cords for winding up and for lifting the curtain, whereby the curtain can be raised or lowered and is kept steady at any position, as set forth.

251,763. TOY BUILDING-BLOCKS. FRANCIS W. CARPENTER, Harrison, N. Y. Filed Nov. 17, 1881. (No model.)



Claim.—1. In a toy-block, the combination, with the slats *a a* and intermediate pieces, *b*, of the rivets *c*, passing through the parts and securing them together, as set forth.

2. In a toy block, the combination, with the slats *a a* and intermediate pieces, *b*, of the rivets *c*, passing through the parts, and the elastic washers *d*, substantially as set forth.

3. In combination with the toy block composed of double slats riveted together, the box having sides *f*, that are adapted to receive the double slats, substantially as set forth.

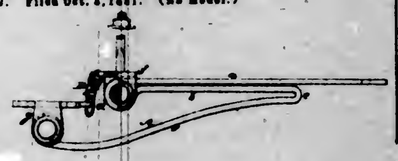
4. The toy slats *a a* and *c*, having holes through them, in combination with the toy blocks *m*, having holes through them, and the rod or similar device for connecting the parts, as set forth.

5. The combination, with the separate toy blocks *m*, having holes through them and letters or characters on their surfaces, of the box *f*, with holes through the sides of the box, and the removable supporting device *a* for the blocks *m*, substantially as set forth.

6. In combination with the toy block formed of the double slats *a a* and intermediate pieces, *b*, riveted together, the angle-piece *c*, having square ends adapted to pass into the spaces between the slats, substantially as set forth.

7. The toy block having letters or characters upon one or more of its surfaces, and a hole in the block, in combination with the metallic suspending-hook connected with each block, substantially as set forth.

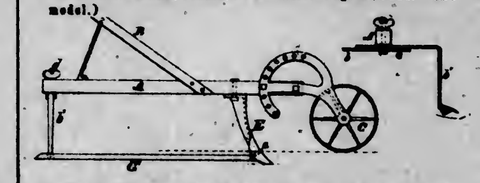
251,764. SPRING FOR VEHICLES. JOSEPH K. CREW, Salem, N. J. Filed Oct. 3, 1881. (No model.)



Claim.—1. The spring A, formed of three continuous leaves one above the other, in combination with the bearing *f* and the connection *g*, the end of the spring opposite to said connection being adapted to be secured to the body of the vehicle, whereby there are produced two springs, *a d b* and *b e c*, operating in reversed order, substantially as and for the purpose set forth.

2. The spring provided with the clip or bearing *f* and clip *g*, in combination with the guarding-strap B, connected to said clips, substantially as and for the purpose set forth.

251,765. IMPLEMENT FOR CUTTING WEEDS AND BEANS. WILLIAM H. CLARK, Groton, N. Y. Filed Aug. 23, 1881. (No model.)

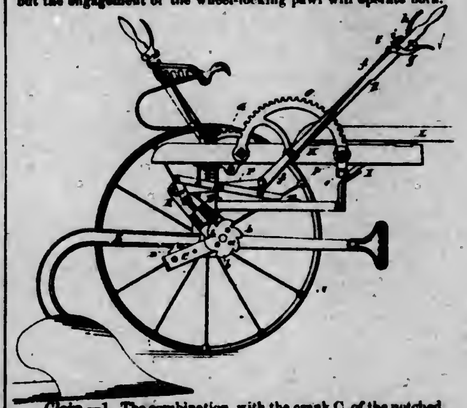


Claim.—1. In combination with the body A and furrow-tooth E, the diverging blades G G′, pivoted to the tooth E and held to the body A by adjustable standards or parts *b b′*.

2. The combination of the body A, tooth E, diverging blades G G′, bent adjustable notched standards *b b′*, and fastening device, as and for the purpose set forth.

251,766. SULKY-PLOW. THOMAS A. CORLISS and JOHN H. KENNETH, Dixon, Ill., assignors to the Grand Detour Plow Company, same place. Filed Mar. 21, 1881. (No model.)

Brief.—Hand lifting and team lifting devices for raising the plow. Either may be used independent of the other, and in either case the plow may be locked either in the ground or when raised. When raised by the team the wheel is automatically unlocked when the plow is up, and at the same moment the rack-pawl engages. The rack-pawl may be released separately to use the hand-lever, but the engagement of the wheel-locking pawl will operate both.



Claim.—1. The combination, with the crank C, of the notched plate *a*, located on the furrow-wheel hub, the sliding arm or catch *e*, located on the lifting-arm E, the strap or bar *d*, the link *c*, provided with an extension, *a*, the connecting-rod *f*, the bell-crank levers *g h* upon the arm N, and the strap *o*, for automatically raising the arm or catch when the plow is raised, substantially as described.

2. The combination, with the lifting-lever N, of the segmental rack O, the connecting-link P, arranged between the lifting-lever and lifting-arm, and the lifting-arm E, the bail or crank connected with said lifting-arm, the notched plate *a*, located on the furrow-wheel hub, the sliding arm or catch *e*, the strap *d*, link *c*, connecting-rod *f*, and bell-crank levers upon the lifting-lever N, said members being organized for operation substantially as described.

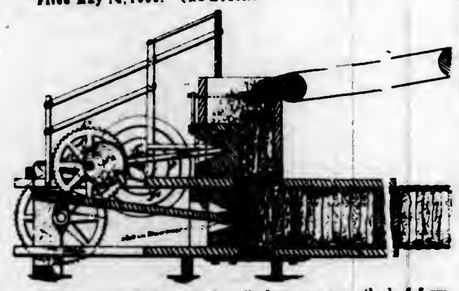
251,767. WATER-CLOSET. WILLIAM H. DASHELL, Pottsville, Pa. Filed May 21, 1881. (No model.)

Claim.—The combination of the sleeve *a*, having vertical walls or sides, pivoted pan *d*, and hinged valve *l*, having weight *n*, and adapted to rest, when closed, against the beveled edges *o* of the valve-seat, substantially as shown and described.

251,767.



251,768. BALING-PRESS. PETER K. DEDERICK, Albany, N. Y. Filed May 14, 1880. (No model.)



Claim.—1. The herein-described process or method of forming cotton-bales, consisting in condensing separate successive flakes of cotton into a charge or section and then compressing the several charges into a bale.

2. In a baling-press, the combination of a movable die, a condensing-traverser for depositing successive flakes of material into the die to form a sectional charge, a bale-chamber, and a pressing-traverser for forcing the charges out of the die and into the bale-chamber, substantially as described.

3. In a baling-press, the combination of a condensing-traverser, a pressing-traverser, a movable die having openings adapted to be alternately presented to the condensing and pressing traversers, and a bale-chamber into which the sections or charges are forced by the pressing-traverser and formed thereby into bales, substantially as described.

4. In a baling-press, the combination of a die-wheel having two or more compartments or openings with a condensing-traverser, a pressing-traverser, and a bale-chamber, substantially as described.

5. In a baling-press, the combination of a die having two or more compartments or openings with a condensing-traverser, a pressing-traverser, and mechanism for imparting two or more strokes to the condensing-traverser while the pressing-traverser is making but one stroke, substantially as described.

6. The combination of the hopper, the reciprocating condenser arranged in the upper part thereof, the condensing-traverser, the die-wheel, the pressing-traverser, and bale-chamber.

7. The combination of the hopper, the reciprocating condenser arranged in the upper part thereof, the automatic feeder, the condensing-traverser, the die-wheel, the pressing-traverser, and bale-chamber, substantially as described.

8. The combination of the long crank, the pitman, and the pressing-traverser, slotted to permit the play of the pitman-head, substantially as described.

9. The slotted pitman, in combination with the crank and the hinged hook, substantially as described.

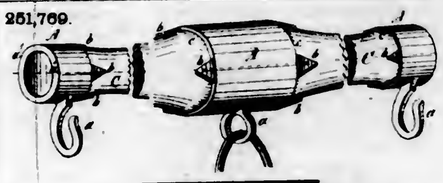
10. The combination, with the press-box, bale-chamber, and reciprocating traverser of a continuously-operating baling-press, of a condensing-traverser for depositing successive flakes of material into a chamber to form a sectional charge, and means for carrying each sectional charge into the bale-chamber of the press in position for it to be forced forward into the bale-chamber by the operation of the reciprocating traverser of the press, substantially as described.

251,769. WHIFFLETREE-HOOK. THOMAS W. DE TRAY, Canton, assignor of one-half to William Harman, Malta, Ohio. Filed Sept. 9, 1881. (No model.)

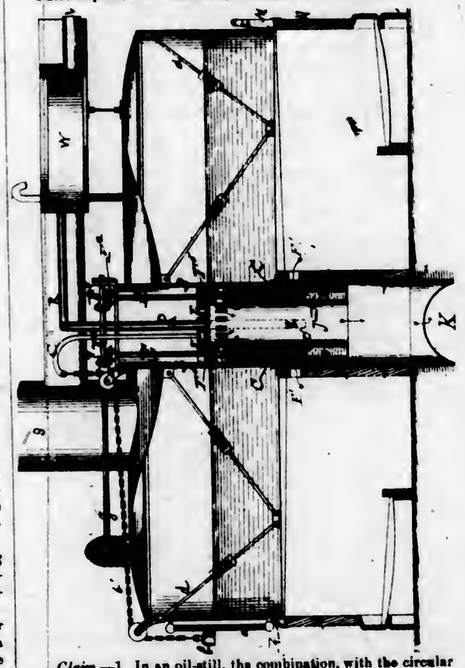
Claim.—1. The combination, with the sleeve of a single-tree hook, of a series of spurs, *b*, upon one end and an inwardly-projecting flange, *a'*, upon the other end, as and for the purpose specified.

2. In combination with a single or double tree having the shoulders *a*, the sleeves A, having the spurs *b* and flanges *a'*, applied and operating as and for the purpose specified.

251,769.



251,770. OIL-STILL AND ATTACHMENT. JOHN E. DUBLER, Philadelphia, Pa. Filed May 11, 1881. (No model.)



Claim.—1. In an oil-still, the combination, with the circular wall F, having the ports F', of the double tube D, having the ports H near its upper end, the tube J, and the draft-chamber K, substantially as and for the purpose set forth.

2. In an oil-still, the combination, with the double tube D, having an inner chamber, J, and tube B, of the water-chamber W and branch pipes R, substantially as and for the purpose set forth.

3. In a still for refining crude oil or petroleum, the combination, with the central tube, B, double-walled tube D, and pipe R, of the spring heat-checks E and bar *c*, having connected to it a weighted chain, *V*.

251,771. LOCK AND DAM. JOHN DU BOIS, Du Bois, Pa. Filed Nov. 11, 1881. (No model.)

Brief.—The height of the water beneath the dam-sections is regulated by a vertically-adjustable overflow or outlet gate located in advance of the dam. Each leaf of the dam is formed of sections arranged in "break-joint" order and having packing-strips between their edges.



Claim.—1. In combination with a flexible dam or gate having means for conducting and maintaining water thereunder, an overflow or discharge to limit the head of the water located at a point in advance of the gate, whereby the surplus water is permitted to escape before reaching the gate.

2. The combination of a jointed or flexible gate elevated by the admission of water thereunder and a vertically-adjustable outlet to limit the head of the water acting beneath the gate or dam, whereby the gate may be caused to stop automatically at any desired height.

3. In combination with the flexible dam, the flume B and wickets *f*, a discharge or overflow chamber, h, arranged in connection with the flume, substantially as shown.

4. In combination with the dam A, flume B, and means for retaining a head of water in the flume and beneath the dam, the overflow-chamber h, provided with removable boards i.

5. The flexible dam or gate consisting of hinged overlapping leaves, each leaf composed of a series of sections arranged side by side and provided with packing seated in grooves in their adjacent edges, substantially as shown.

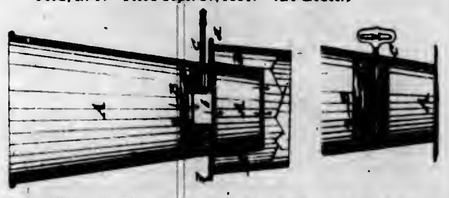
6. A flexible dam or gate consisting of co-operating leaves, each leaf composed of a series of sections, the sections of one leaf arranged to overlap or break joint with the sections of the other leaf, substantially as described.

251,772. COMPOUND FOR PRESERVING MEATS AND FISH. JNO. SCHARF, Munich, Bavaria, Germany. Filed Nov. 18, 1880. (Specimens.)

Claim.—1. The preserving-salt composed of chloride of sodium and boracic acid with the smaller quantities of tartaric and salicylic acid, substantially as herein specified.

2. The message described, having a filling of meat saturated with the preserving-solution, as herein specified.

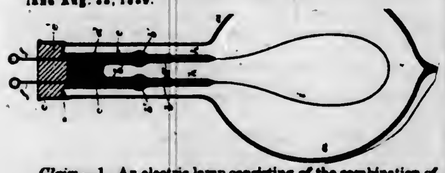
251,773. MIXING AND STRAINING CUP. ARTHUR ROGERS, New York, N. Y. Filed Sept. 27, 1881. (No model.)



Claim.—1. The combination of a mixing-cup, A, having a slotted bottom, B, and a valve or stop-cock, C, below the bottom, with a detachable straining-cup, D, having a flange, *d*, at its upper edge, said straining-cup being fitted to the lower part of the mixing-cup, substantially as set forth.

2. The combination of a mixing-cup, A, having a slotted bottom, B, and a valve or stop-cock, C, below the same, of a detachable straining-cup, D, having a flange, *d*, at the upper edge, and of a detachable auxiliary cup, E, having a central bottom perforation, *f*, the cup E being fitted over the straining-cup D, substantially as set forth.

251,774. ELECTRIC LAMP. ST. GEORGE LANE FOX, London, England. Filed June 15, 1881. (No model.) Patented in England Aug. 22, 1880.

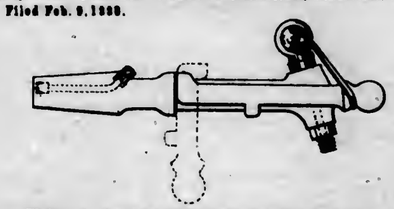


Claim.—1. An electric lamp consisting of the combination of a vacuum-flask, *a*, incandescent bridge or filament *i* therein, two tubes, *b b*, projecting into said flask, leading-in wires *g g*, fused into said tubes, their inner ends connected to the end of the filament *i* and their outer ends projecting up into the tubes *b' b'*, a portion of mercury in each tube *b* covering the point of emergence of the wires *g g*, and terminal wires *f f*, passing through the neck of the flask, and each extending into one of the tubes *b b* and dipping into the mercury therein, whereby the mercury serves both to prevent leakage of air into the flask and to make connection between the wires *f* and *g*, substantially as set forth.

2. An electric lamp consisting of the combination of vacuum-flask *a*, incandescent bridge or filament *i* therein, tubes *b b*, projecting into said flask, leading-in wires *g g*, fused into said tubes and connected with the ends of said filament, a portion of mercury in each of said tubes around said wires, and a layer of hardened plastic substance over said mercury, whereby the latter is retained in place whatever be the position of the lamp, substantially as set forth.

3. An electric lamp consisting of the combination of a vacuum-flask, *a*, an incandescent bridge or filament, *i*, therein, leading-in wires *g g*, fused into said flask, carbon or plumbago blocks or cylinders *h h*, each receiving in its socket the end of one of said wires and one end of the filament, and genuine Indian or Chinese ink *k*, applied substantially as described, and for the purposes set forth.

251,775. FAUCET. JOSIAH B. GATHRIGHT, Louisville, Ky. Filed Feb. 9, 1880.



Claim.—1. As an article of manufacture, a faucet having its driving-head constructed separately, as shown and described.

2. In a faucet, the driving-head constructed separately and adapted to deliver the blow behind the plug, as shown and described.

251,776. FASTENER FOR STRAPS. JOSIAH B. GATHRIGHT, Louisville, Ky. Filed Mar. 21, 1881. (No model.)



Claim.—1. A cast-metal strap-fastener constructed with two jaws, A and B, one of which is in skeleton form and one or both toothed, as and for the purpose specified.

2. A metal strap-fastener composed of jaws A and B, one of which is provided with a loop, E, as and for the purpose specified.

251,777. ELECTRIC GAS-LIGHTER. CHARLES D. HASKINS, New York, N. Y., assignor to the Union Electric Manufacturing Company, same place. Filed May 31, 1881. (No model.)

Brief.—The weight of the pull-chain holds the pawl against the ratchet.



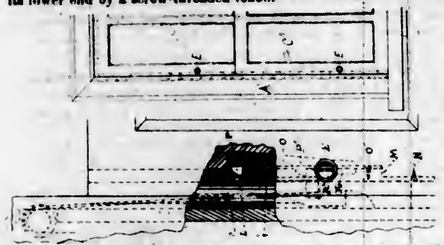
Claim.—1. In an electric gas-lighter, the combination of the pawl *c*, pivoted to the contact-lever *d*, with pendant *f*, attached to the outer portion of said pawl, whereby the weight of said pawl and pendant hold the pawl in engagement with the ratchet, substantially as shown and described.

2. The combination, in an electric gas-lighter, of pillar *a*, ratchet and valve *b*, provided with opening *c*, contact-arm *d*, provided with three lugs, pawl *e*, pivoted to one of the lugs, pendant *f*, attached to the outer portion of the pawl and below the pivotal point, contact-points *i h*, spring *l*, and the stop attached to the pillar, substantially as and for the purpose specified.

251,778. WINDOW FRAME AND SASH. FRANCIS W. HUTTINSON, Reading, Pa. Filed Sept. 13, 1881. (No model.)

Brief.—The outer upright casing of the window-frame overlaps the upper sash and the inner casing is flush with the inner face of the jamb. The inner side face of the window-frame has a semicircular groove and the side of the sash is correspondingly grooved for the insertion of a sliding slotted guide-tube having a notch and shoulder for the sash-cord. The guide-tube is provided with a perforated projection having a shoulder, with which the hook-heads of a suspension-spring on the sash engage. The suspension-spring, secured in a slot in the sash, consists of a spring-piece having two hook-heads connected to a needle-guide, which enters the perforated projection on the guide-tube. The hook-heads are released from the guide-tube by a key inserted in the sash and wedging between a block on the needle-guide and the spring suspension-piece. The lintel of the window-frame has a perforation for the entrance of the guide-tube when partly released from the

sash, and the guide-tube has a wooden extension secured to it at its lower end by a screw-threaded tenon.



Claim.—1. A window-frame, B, having its inner jambs, B', grooved longitudinally on the inner face, one groove for each independent sash to slide in the frame, the lintel bored with a concentric hole, as specified, over each groove, and sash-cord attachments adapted to play in said grooves, the outer facing-piece, A, projecting beyond the inner face of lintel and jambs, and the interior facing-piece, A', having its inner edge flush with the face of the lintel and jambs, substantially as shown, and for the purpose described.

2. The glazed sash C or screen-sash D, having its vertical stiles grooved at C^2 to correspond with B^2 in the frame and provided with a square groove, C^2, spring suspension-hooks, and needle-guides O K L, escutcheon-holes E, and sash-cord attachments adapted to play in said groove, substantially as shown, and for the purpose specified.

3. The independent movable tubular sash-guide and cord-fastener F, cut away on the jamb side for about two-thirds of its length to permit the entrance of the cord, having an abutment, H, with a reduced slot to catch the knot of the cord T, a whistle-mouth, I, a supplemental guide, G, provided with a hooked head, G', and a bell-mouthed passage, G^2, through the same, the lower end of the tube being threaded, substantially as shown, and for the purpose set forth.

4. The double-hooked spring-suspenders O, having heads I^2 I^2, secured to pad M of the needle-guide block K, and in combination therewith, substantially as shown, and for the purpose described.

5. The needle-block K and guide-needle L, provided with pad M and screw-hole N, in combination with the double-headed spring-suspenders O, connected by the rivet or screw O', substantially as shown, and for the purpose specified.

6. The combination of the frame B with semicircular grooved jambs B', sash-cord guides R, facing-pieces A A', and guide-holes in lintel, as described, with the tubular suspension-guide F and extension J, and the sash-cord T, substantially as described, and for the purpose set forth.

7. The combination of a window-frame constructed and arranged as described with the glazed sash C or screen-sash D, the spring-suspenders and needle-guides O K L, and the suspension tubular guide F, the hook G', cord T, weight S, and guide-sheaves R, substantially as shown, and for the purpose specified.

8. The combination of the hard-wood guide J, having a threaded tenon, with the tubular suspension-guide F, substantially as shown, and for the purpose set forth.

9. The combination of the sash C or screen D with the grooved jambs B' and suspension-guides F, constructed as described, whereby they are adapted to be removed or replaced, substantially as specified, and for the purpose set forth.

251,779. BOTTLE-STOPPER. GEORGE F. HOPPER, Chicago, Ill. Filed Nov. 21, 1881. (No model.)



Claim.—1. The elastic stopper-bulb with an interiorly-grooved flange fastened between two circular centrally-perforated concaved metal plates by a screw passing through the perforations of said plates into a wooden concaved button resting in the cone-shaped cavity of said bulb, substantially as shown and described.

2. The combination of two circular centrally-perforated concaved metal plates, with the cone-shaped hollow elastic bulb having an interiorly-grooved flange, by the upper portion of said flange being fastened between said plates, substantially as set forth.

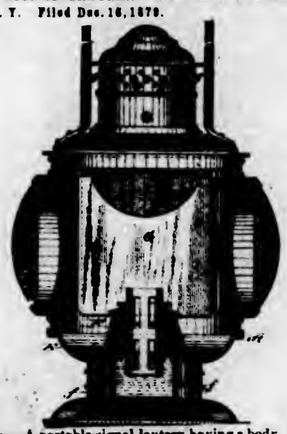
251,780. CORK-PROTECTOR. FREDERICK HOLLENDER, New York, N. Y. Filed Oct. 26, 1881. (No model.)

251,780.



Claim.—A cork-protector for bottles containing fermented beverages to be exposed to steaming, consisting of a circular plate having downwardly-projecting prongs at diametrically-opposite points of the plate and one or more ribs or corrugations transversely to the line of the prongs at both sides thereof, substantially as specified.

251,781. SIGNAL-LANTERN. LAWSON G. HUNTINGTON, New York, N. Y. Filed Dec. 16, 1879.



Claim.—A portable signal-lantern having a body, A, provided with base E and hinged top C, removable lamp F, secured in place by means of springs *f f*, and pockets G, arranged within the body of the lamp for the reception of spare glasses, substantially as shown and described.

251,782. RUBBER SHOE. ALEXANDRE HUTCHINSON, Paris, France. Filed Aug. 20, 1881. (No model.) Patented in France July 23, 1881.



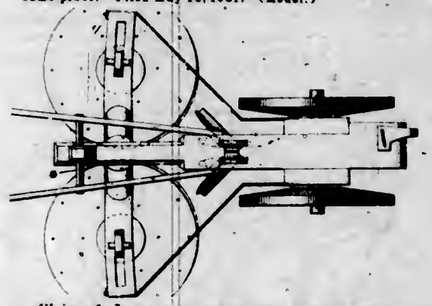
Claim.—A rubber shoe composed of an upper, *f*, and an outer sole, *g*, both of rubber, a fibrous-rubber insole, *a*, a lining, *b*, of knit fabric, a thick sole, *c*, of felt or other analogous light material, a retaining-strip, *d*, and the fastening strip or lining *e*, all combined and arranged substantially as shown and described.

251,783. FOLDING AND RECLINING ROCKING-CHAIR. WILLIAM W. JOHNSON and JULIUS Y. JOHNSON, Nicholson, Pa. Filed Jan. 10, 1881. (Model.)



Claim.—The combination of the back-frame, pivoted cross-legs, the rear legs being provided with ratchet-teeth on their upper surface, the rockers, pivoted to the lower ends of the front legs, and having the slots H, the rear legs being provided with pins to work in said slots, and the jointed arms, pivoted to the back-frame and rear legs at *e f* and together at *d*, and engaging with the ratchet-teeth on the rear legs, as and for the purpose set forth.

251,784. CORN AND COTTON CULTIVATOR. MOSES LINDSEY, Asheville, N. C., assignor of one-half to Enos H. Merriman, same place. Filed May 16, 1881. (Model.)



Claim.—1. In a corn or cotton cultivator, the central plows or cultivators, constructed substantially as described, in combination with two reversible and laterally-adjustable rotating harrows in the rear of the plows, substantially as set forth.

2. In a corn or cotton cultivator, the adjustable plows and scrapers, in combination with two laterally-adjustable rotating harrows in the rear of the plows, substantially as described.

251,785. BURNING HYDROCARBONS. HARVEY T. LITCHFIELD, Hull, and DAVID RENSHAW, Cohasset, Mass. Filed Mar. 7, 1881. (No model.)



Claim.—1. In a hydrocarbon-furnace, the perforated rotating pipe extending across or lengthwise of the furnace, the mixture in said pipe being forced through and disseminated by steam-pressure, substantially as set forth.

2. In a hydrocarbon-furnace, the rotating pipe provided on its inner side with nipples or projections, the projections being provided with communications through them, said projections being adapted to retain within the pipe any liquid fuel until it is converted into gas, substantially as shown and described.

3. The combination, in a hydrocarbon-furnace provided with a rotating perforated pipe, of the motive-power attachments and the swivel-joint with the fuel-supply conduits, whereby fuel is fed to the rotary pipe while in operation, in the manner shown and described.

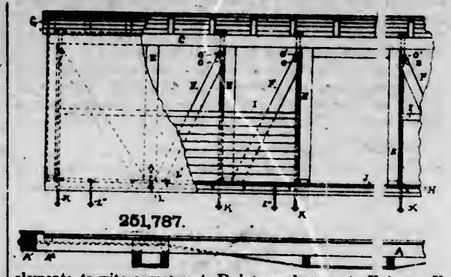
251,786. BASIN-PLUG. JOHN C. LUDWIG, San Francisco, Cal., assignor to Charles W. Banks, same place. Filed Aug. 29, 1881. (No model.)



Claim.—In a wastewey-plug, the combination, with a stationary plate having radial arms and slots and provided with a central interiorly-threaded pipe or tube, of a movable plate having corresponding arms and spaces, and provided with a threaded spindle which passes through the stationary plate and its central tube, substantially as and for the purpose specified.

251,787. RAILWAY-CAR. JOHN P. MAUBS, Reading, Pa. Filed Oct. 27, 1881. (No model.)

Claim.—1. An independent car-body composed of the usual



251,787.

elements, to wit: corner-posts D, intermediate posts, E, braces F, caps C C', roof G, railing I, and the usual lining and siding, when provided with sill-plates M, N, and P, brace-caps O, and supplemental sills H, and joint-bolts L, whereby the frame is adapted to carry the floor J, and the body, as a whole, may be removed from or connected with the independent sill-frame A, as shown and described, and substantially for the purpose set forth.

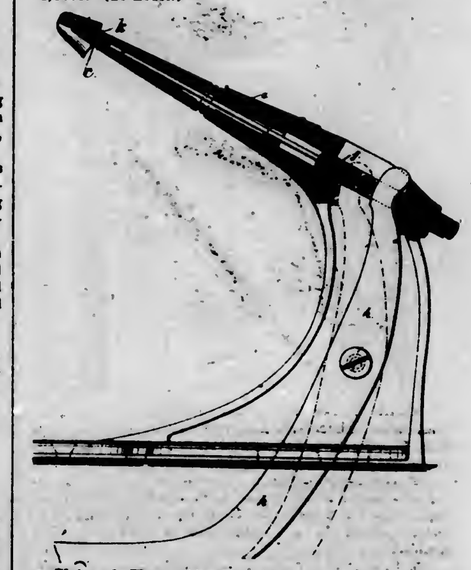
2. The loose braces F, seated upon the sill-plates P, capped with the cap O, (which is provided with a tension-bolt guide-hole on its back,) secured in place and adjustable thereon by the nut O' on the enlargement K' of the tension-bolt K, for the purpose described, and substantially as shown.

251,788. RIVET FOR BELTS, &c. STEPHEN A. HARNER, Hartford, assignor to Holmes, Booth & Haydens, Waterbury, Conn. Filed Oct. 3, 1881. (No model.)



Claim.—The conical-headed rivet or washer having a flat outer end surface having a rib or projections on the conical surface for the purposes and as set forth.

251,789. APPARATUS FOR TURNING THE EDGES OF SHOE-UPPERS. JAS. MCGUIGAN, East New York, N. Y. Filed Nov. 4, 1881. (No model.)



Claim.—1. The combination, with the standard, of a removable finger, *c*, a pusher, *k*, within the split ends of the finger, and a lever for actuating such pusher, substantially as set forth.

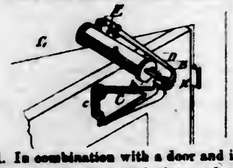
2. The combination, in an apparatus for turning the edges of shoe-uppers, of a stationary finger, *c*, a pusher, *k*, within the finger, and means for moving the pusher, substantially as set forth.

3. The combination, in an apparatus for turning the edges of

shoe uppers, of a finger, *c*, a standard for supporting the same, a pusher, *k*, sliding within the finger, a stock, *f*, to which the shank of the pusher is connected, a lever, *h*, for moving the same, and stops *e* upon the standard, substantially as set forth.

4. The combination, in an apparatus for turning the edges of shoe-uppers, of a standard having a fixed base and an inclined projecting upper end, and a finger that is removably connected with such standard and rounded at the end, substantially as specified.

251,790. DOOR-CHECK. LEWIS C. NORTON, Boston, Mass., assignor to the Norton Door Check and Spring Company, Portland, Me. Filed June 25, 1881. (No model.)

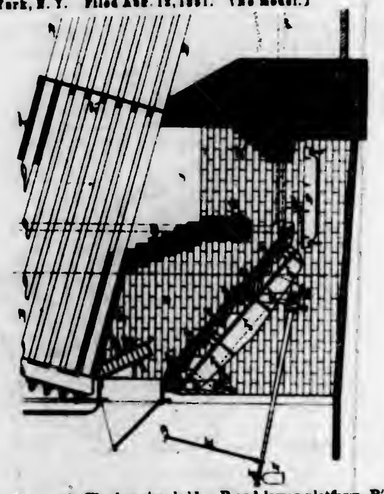


Claim.—1. In combination with a door and its jamb, a compressed-air door-check of the kind above referred to, provided with an arm whereby its piston-rod may be operated, a guide-rod whereby the stroke or its piston will be controlled, and suitable devices for attachment of said arm, guide-rod, and door-check to the said door or its jamb, all connected and operating together substantially as, and adapted for the purposes set forth.

2. The combination of the door-check A B, hinge-plate E, guide-rod D, and the arm C, provided with a suitable device for attaching it to the door or its jamb, all arranged and connected together substantially as above described, and adapted for the purpose set forth.

3. In a door-check, the combination of the piston-rod B, guide-rod D, and arm C with its adjusting-disk H, all substantially as shown and described.

251,791. STEAM-BOILER FURNACE. GEORGE H. PALMER, Chicago, Ill., assignor to the Babcock & Wilcox Company, New York, N. Y. Filed Aug. 12, 1881. (No model.)



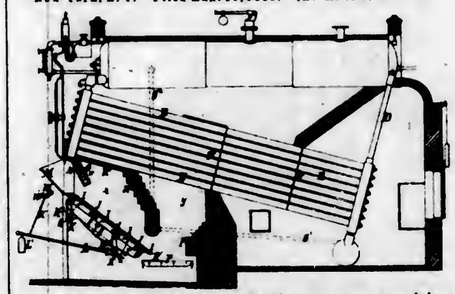
Claim.—1. The hanging bridge R and lower platform, R', in combination with the back masonry, F, partition T, and upper platform, T', and with the boiler A, inclined tubes B, and connections C and D, as herein specified.

2. The case O, having provisions for receiving and distributing air arranged at the front of the furnace and receiving air in adjustable quantities from the side or sides, in combination with a hopper and with a hanging bridge and an inclined grate, as herein specified.

3. In a furnace formed in two partially-separated chambers, the first lined with non-conducting material on all sides and above, and the second similarly lined on all sides, an inclined grate with provisions for feeding fuel slowly down thereon, a hanging bridge, and a transverse tube, G, having connections *g' g'* to a steam-boiler, A, combined and arranged to serve as herein specified.

4. The method herein set forth of obtaining the complete combustion of partly-solid and partly-volatile fuel by first distilling off the volatile matter and partially burning the solid matter in a chamber inclosed within non-conducting walls, then discharging both the gaseous and the remaining solid matter at an extraordinary temperature into a second chamber, also inclosed, or nearly so, within non-conducting walls, in which second chamber the solid matter is completely burned with an excess of air and the gases therefrom mingled with the gaseous matter from the first chamber, all substantially as herein specified.

251,792. GRATE FOR FURNACES. GEORGE H. PALMER and AMASA WORTHINGTON, Chicago, Ill., and GEORGE A. ROWELL, Brooklyn, N. Y., assignors to the Babcock & Wilcox Company, New York, N. Y. Filed Aug. 13, 1881. (No model.)



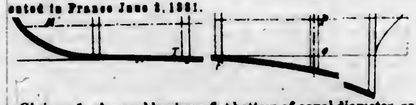
Claim.—1. An inclined grate having transverse bars lying nearly or quite flatwise, a portion being mounted stationary and another set mounted in the spaces between, being movable horizontally, as herein specified.

2. The bottom grate, P, with its front dead-plate, P', in combination with a separate inclined grate, with means for moving a portion of the latter forward and backward, as herein specified.

3. The flexible connection X, leading from a constantly-moving part, W, in combination with the hand-lever L, and with an inclined grate connected thereto, arranged to serve at will to shake the grate by power, and also to allow the grate to be shaken by hand, substantially as herein specified.

4. The combination of an inclined grate, I J, with provisions for shaking a part, a feeding-hopper, M, for supplying fuel thereto, a horizontal grate, P, for burning the residue, and a hanging bridge, R, arranged to induce a mixture and complete combustion of the gases, as herein specified.

251,793. CONSTRUCTION OF SHIPS. RAOUL PICTET PICTET, Geneva, Switzerland. Filed Oct. 12, 1881. (No model.) Patented in France June 3, 1881.



Claim.—1. A vessel having a flat bottom of equal diameter, or practically so, throughout its length, said bottom being constructed to form a parabolic curve trending downward from stem to stern, substantially as and for the purpose specified.

2. A vessel having its greatest diameter amidships and a bottom of practically equal diameter throughout its length, constructed to form a parabolic curve trending downward from stem to stern, and having its greatest concavity at or near the stern, substantially as and for the purpose specified.

251,794. VEHICLE-HUB. JOHN R. FOSTER, Pleasant Creek, assignor of one-half to Emory L. Hoster and William A. Hoster, both of Grafton, W. Va. Filed Nov. 21, 1881. (No model.)



Claim.—1. A hub consisting of the plates A' A', the plate A' having an annular shoulder, *a*, formed around the hub-box, and

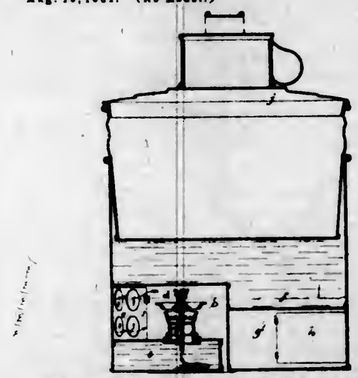
adapted to receive the pivot-pin *d* of the screws D, substantially as shown and described.

2. In a hub, the screws D, pivoted in the annular shoulder *a* by the pivot-pins *d*, and provided with heads *d'* and lock-nuts *d''*, operating in combination with the expansion-blocks C and shoulder *a*, substantially as and for the purposes set forth.

3. The expansion-blocks C, curved to conform with the curvature of the groove, operating in combination with the screws D and the spokes, and adapted to keep the spokes pressed firmly outward, substantially as and for the purposes specified.

4. In a hub, the combination of the plates A' A', expansion-blocks C, screws D, and shoulder *a* with the spokes, substantially as shown and described.

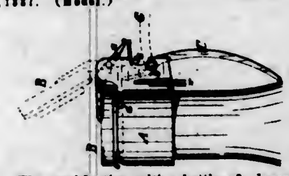
251,795. DINNER-PAIL. FRANCIS J. FOWER, Boston, assignor of one-half to Royal B. Wadleigh, Newtonville, Mass. Filed Aug. 19, 1881. (No model.)



Claim.—1. The pail having the liquid-receptacle *a*, provided with the recess *b* at one side thereof, the door *c*, hinged to said pail portion *a*, so as to cover the recess therein, and the lamp *e*, secured to and moving with said door, all combined and arranged as shown.

2. In a dinner-pail having a liquid-receptacle and a heating-compartment, the chamber *g*, arranged in the liquid-receptacle, and separated therefrom by the partition *f* and the wall of the heating-compartment, and having a door, *h*, whereby access may be had thereinto, substantially as described.

251,796. BOTTLE-STOPPER. OWEN RUSSELL, Rochester, N. Y., assignor of one-half to George P. Goulding, same place. Filed Nov. 22, 1881. (Model.)



Claim.—The combination, with a bottle, of a lever-valve bottle-stopper, which consists of the thimble A, lugs *b*, washer *c*, disk-lever B, and hand or actuating lever C, constructed and operating as and for the purpose described.

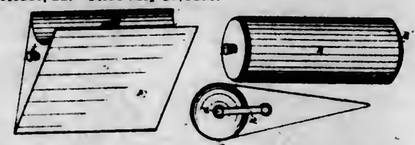
251,797. MECHANISM FOR FEEDING AIR AND STEAM TO FURNACES. DAVID RENSHAW, Cohasset, assignor of one-half to Harvey T. Litchfield, Hull, Mass. Filed Nov. 1, 1880. (No model.)

Brief.—The perforated pipe is made to rapidly revolve, dashing the jets in all directions.



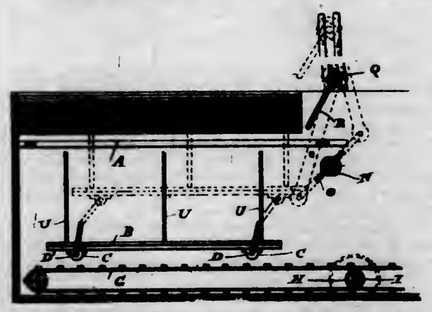
Claim.—The combination, with a furnace, of a perforated pipe extending transversely or longitudinally through the furnace-chamber, above the fuel, and arranged to receive a forced blast of air or of air and steam, and also adapted for rapid rotation, by means of which the fluid or gaseous contents are evenly distributed over the incandescent fuel, in the manner shown and set forth.

251,798. PASSENGER HEAD-REST. ERNEST SCHARPS, New Orleans, La. Filed July 28, 1876.



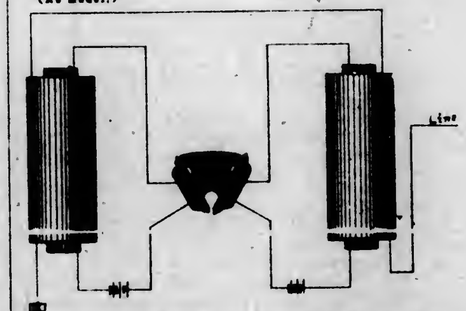
Claim.—A passenger head-rest composed of the cylindrical pillow-section A, wedge-shaped section E, and the links *k*, uniting the two sections together, whereby the section A may be rotated, substantially as described.

251,799. SELF-FEEDER FOR THRASHING-MACHINES. JOHN SCHELL, Elk Grove, Cal. Filed July 30, 1881. (No model.)



Claim.—In a self-feeding attachment for thrashing-machines, the combination, with the fixed grating A and movable grating-B, having journal-boxes C C and teeth U, the latter adapted to enter the spaces in the upper grating, of the crank-shafts D D', pulleys E E', grain-carrier G, drum H, having a shaft, I, carrying pulleys J K, the roller N, provided with teeth O, cross-bar Q, having teeth R, and suitable connecting and operating mechanism, substantially as and for the purpose shown and described.

251,800. BATTERY TELEPHONE-TRANSMITTER. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Manufacturing Company, same place. Filed May 14, 1881. (No model.)

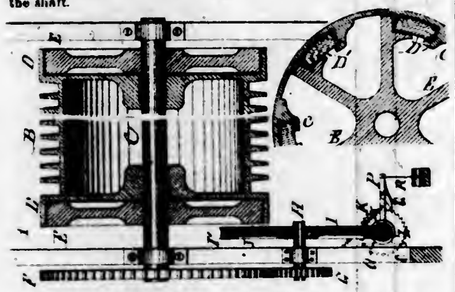


Claim.—The combination of two or more battery-transmitters so placed as to be acted upon simultaneously by the same sounds, and each being in an independent local circuit, a part of which forms the primary of an induction-coil, while the several secondaries are in line in the main line.

251,801. LOOM. CHARLES SMITH, Belleville, N. J. Filed Apr. 4, 1881. (No model.)

Brief.—To permit the warp-beam to yield, particularly in weaving wire, and thus lessen the strain upon the warp when the filling is struck up and prevent stretching, the warp-beam is placed loosely upon its shaft and provided with flanged rims having stops,

between which and arms secured to the shaft are placed blocks of rubber. These springs allow the beam to yield when strain is applied to the warps. The warp-beam shaft is driven by means of a worm through a train of gears, the first wheel of which is secured to its shaft in a similar manner to the warp-beam, and the worm-sleeve is connected to the shaft, carrying it by a spline and a spring placed between the end of the worm-sleeve and a nut upon the shaft.



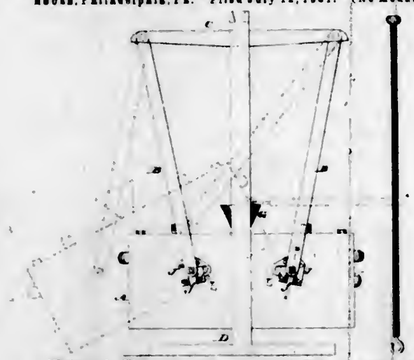
Claim.—1. The combination of the warp-beam B with the shaft C, having the projecting arms E, and a series of springs, D', bearing against projections on the beam and said arms E, and adapted to permit the beam to yield to loosen the strain on the warp when the lay is struck up, substantially as specified.

2. The warp-beam B, having the heads provided with the flanged rims D and stops or lugs *c*, in combination with the springs D', arms E, shaft C, and means for operating the shaft, substantially as and for the purpose set forth.

3. The combination, with the shaft C, beam B, spur-wheel F, shaft H, gear G, and the spider J, of springs J', worm-wheel I, worm K, shaft L, and means for operating said shaft, substantially as and for the purpose named.

4. The shaft H, wheel I, spider J, and springs J', in combination with the worm K and means for operating it, substantially as and for the purpose specified.

251,802. CHURN. CHARLES W. BOGGS and ALVAN RITTER, Boggs, Philadelphia, Pa. Filed July 12, 1881. (No model.)



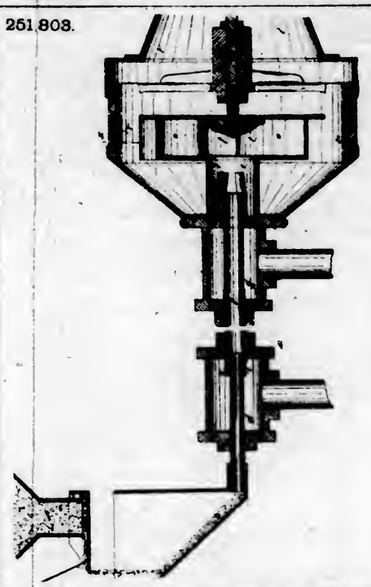
Claim.—1. The concavo-convex guard H, bent upward in the middle, as shown, and provided with perforations *c* and peripheral notches *d*, in combination with churn-lid F, having inlet *b*, and hooks *e*, operating substantially as shown.

2. The hooks L, in combination with slotted brackets J, churn-body A, arms B, and headed pins or studs on said arms entering the slots of said brackets.

251,803. APPARATUS FOR PULVERIZING MINERAL AND OTHER SUBSTANCES. DAVID G. STARKEY, New York, N. Y. Filed July 22, 1881. (No model.)

Claim.—1. The combination, in an apparatus for pulverizing mineral and other substances, of a supply-pipe for such material, a nozzle for an issuing jet of air under pressure to impart an initial velocity, a straight tube leading from the first nozzle to the second nozzle, a second nozzle for fluid under pressure to issue in the same direction and augment the velocity of the material, and a concussion-plate for the material to strike against, the second nozzle being employed between the first nozzle and the concussion-plate, substantially as set forth.

251,803.



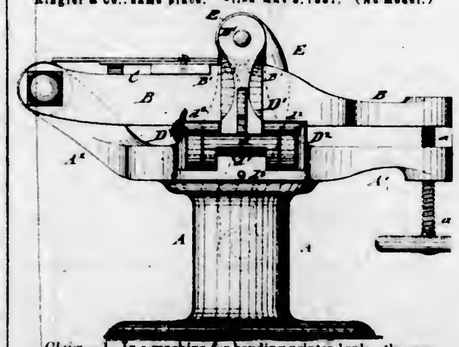
2. The method herein specified of shattering mineral and other substances, consisting in imparting an initial velocity to the material by an issuing jet of fluid, then augmenting that velocity by one or more jets of fluid, and then causing the material to strike upon a concussion-plate, substantially as set forth.

3. In a pulverizing-machine, in combination with apparatus for imparting to material to be pulverized a rapid movement by an issuing current of air or fluid, a revolving centrifugal concussion-plate, substantially as set forth.

4. In a pulverizing-machine, the centrifugal concussion-plate and cycloidal trunks, in combination with the stationary percussion-ring, substantially as set forth.

5. The method herein specified of shattering mineral or other substances by imparting to the same an initial velocity by air under pressure, and then bringing steam at a high temperature and velocity into contact with such material and the air to increase the velocity and heat the air, and then arresting such material against a target for its disintegration, substantially as specified.

251,804. MACHINE FOR BENDING PRINTERS' RULES. CHARLES V. STEINBACH, New York, N. Y., assignor to F. A. Ringler & Co., same place. Filed May 9, 1881. (No model.)



Claim.—1. In a machine for bending printers' rules, the combination of smooth bending-rolls supported in a vertically-adjustable frame with a ribbed curving-cylinder above the same, and with a platform and side gage secured to the adjustable frame at one side of the bending-rolls, substantially as set forth.

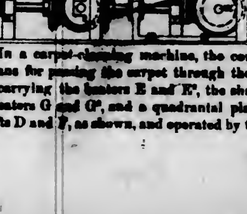
2. In a machine for bending printers' rules, the combination of the supporting main standard A and a hinged and adjustable supporting-frame, B, carrying the lower bending-rolls, B', platform C, and side gage, C', with a ribbed carving-cylinder, E, above the rolls B', substantially as described.

3. In a machine for bending printers' rules, the combination of the main standard A, having arms A' A^2 extending therefrom in opposite direction, with a roll-supporting frame, B, which is hinged to one standard, A', and adjusted by a set-screw, *a*, at the end of the opposite standard, substantially as set forth.

4. In a machine for bending printers' rules, the combination of the supporting main standard A, having side standards, D D', and guide-brackets D^2, extending to one side thereof, with an upper carving-cylinder, E, hinged and adjustable frame B, and lower bending-rolls, B', the side standard D being stationary, while the side standards D' is laterally movable in the guide-brackets D^2, and adapted to be retained thereby or to be thrown down for removing circularly-bent rules from the bending-rolls, substantially as specified.

5. In a machine for carving printers' rules, the main frame A, having sidewise-extending lugs or brackets D^2, provided with a fixed transverse guide-pin, *d'*, and projections d^2, in combination with a laterally-movable side standard, D', having a slotted base, *d*, and with a fixed projecting stop-pin, d^2, on the main standard A, substantially as specified.

251,805. SHOULDER-BRACE AND SUSPENDERS. CHARLES W. STEVENS, New York, N. Y. Filed Nov. 15, 1881. (No model.)



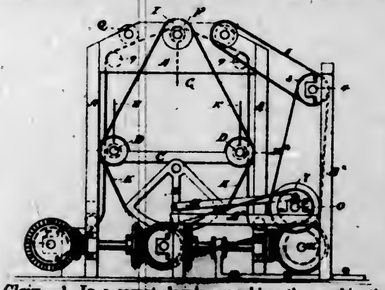
Claim.—1. A shoulder-brace constructed of independent shoulder straps or loops A A, drawn together at the back by interlaced adjustable suspender-cords D D, led over the shoulders and adapted to be secured to a waistband, substantially in the manner and for the purpose herein set forth.

2. The combination, with the independent shoulder-straps A A, constituting a shoulder-brace, and interlacing cords D D, adjusted to draw them together, of stiffening-plates B B, serving to equalize the tension upon the brace-straps, substantially as and for the purpose herein set forth.

3. The combination, with the shoulder-straps A A, stiffening-plates B B, and tension suspender-cords D D, of a series of pulleys, C C, through which the cords are led to interlace and draw together the shoulder-straps, substantially as and for the purpose herein set forth.

4. In combination with the end of the suspender and tension cords D D of the shoulder-braces A A, the tubular retaining device K, provided with a pivoted catch-plate, L, actuated by a swinging outer plate, M, through which the cord is led, substantially in the manner and for the purpose herein set forth.

251,806. CARPET-CLEANING MACHINE. AUGUSTUS P. STEVENS, Brooklyn, N. Y. Filed Nov. 14, 1881. (No model.)

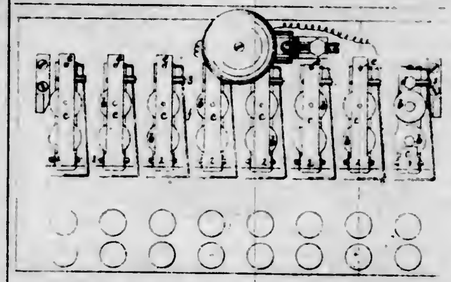


Claim.—1. In a carpet-cleaning machine, the combination, with suitable means for passing the carpet through the machine, of the shafts D, carrying the beaters E and E^2, the shaft F, provided with the beaters G and G^2, and a quadrantal plate, L, connected to the shafts D and F, as shown, and operated by the pitman M, crank N, and driving-shaft O, when the same shall be constructed and operate substantially as and for the purposes set forth.

2. In a carpet-cleaning machine, the combination, with suitable means for passing the carpet through the machine, of the spiral brushes Q and the shafts D, carrying the beaters E and E^2, and the shaft F, provided with the beaters G and G^2, and a quadrantal plate, L, connected to the shafts D and F, as shown, and operated by a pitman, M, crank N, and driving-shaft O, when the same shall be constructed and operate substantially as and for the purposes set forth.

251,807. SIGNALING AND CIRCUIT-CONNECTING APPARATUS. THOMAS A. WATSON, Everett, assignor to the American Bell Telephone Company, Boston, Mass. Filed July 6, 1880. (No model.)

Brief.—Clearly explained by the claims in connection with the drawings. Designed especially for a telephone system having but few stations.



Claim.—1. A series of three or more signaling-instruments, comprising each a set of signal-keys and signaling devices connected with one another, as indicated—that is to say, the signal-keys in one instrument being connected with signal devices in the other instruments, a separate key with each signal device, whereby a signal can be given from any of said instruments at any other by means of the appropriate signal-key, which signal will indicate whence it is sent, and a return signal can in like manner be given, substantially as described.

2. A series of three or more telephone signaling-instruments, comprising signal-keys, telephone-keys, and signal devices and electrically connected, as indicated—that is to say, the signal keys and devices in each instrument being connected with corresponding devices and keys in others, a separate key to each signal device, and the telephone-key in each instrument being similarly connected with the telephone-keys in other instruments, substantially as described.

3. Sets of telephone-keys having a common anvil for each set, in combination with telephones, conductors connecting the telephones with said anvils and with the ground or a return wire or wires, and conductors connecting the keys with one another and the keys in each set with keys in all the other sets, substantially as described.

4. The combination, with a series of spring-keys, of a common anvil and means, as indicated, for retaining the keys in contact with said anvil, whereby, when a key or keys are depressed, they are automatically engaged, and when a key or keys are subsequently depressed they are engaged and the keys formerly depressed are automatically disengaged, substantially as described.

5. A series of signaling and circuit-connecting instruments at different stations, each provided with a series of signal-keys and a corresponding series of signaling devices, to give and to receive characteristic signals at and from the other instruments of the series, and also provided with a series of telephone-keys corresponding to the said signaling keys and devices, each telephone-key of the instrument at one station having electrical connections, as explained, so as to close a circuit through telephonic instruments at the said station to a corresponding telephone-key in the instrument at another station, each of the two connected telephone-keys corresponding in position with the signaling key and device of the said instrument devoted to signaling between the said two connected stations, whereby the operators, after signaling one another by operating the proper signaling-keys, may be placed in telephonic communication by operating the telephone-keys corresponding to the said signaling-keys, substantially as described.

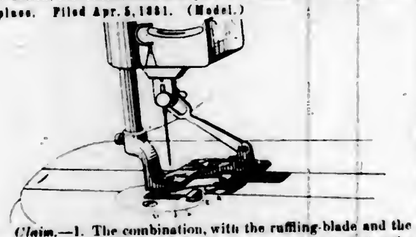
6. In an electrical system having a series of three or more stations connected with one another, the herein-described arrangement of wires leading from the several stations to a central point

or station, where they are permanently connected with the wires leading to other stations, substantially as described.

7. In a signaling and circuit-connecting instrument, the combination of the following elements: a series of annunciator-drops or indicating-signals to indicate from what point a communication is desired, a series of signaling-keys corresponding thereto, and a series of telephone-keys corresponding to the indicating signals and keys, substantially as and for the purpose set forth.

8. A series of circuit-controlling keys connected with a series of independent telephonic circuits and a common anvil constructed, as explained, so as to engage and hold any one of the said keys when depressed, and to be disengaged therefrom when operated by the depression of a second key, the said anvil being connected with one electrode of a telephonic instrument having its other electrode connected with the ground or a return-circuit common to all the said independent telephonic circuits, substantially as and for the purpose described.

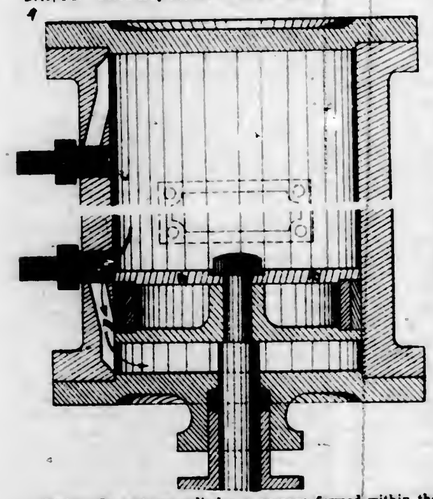
251,808. RUFFLER FOR SEWING MACHINES. MICHAEL WHINNA, Cleveland, Ohio, assignor to Bailey & Whitmore, same place. Filed Apr. 5, 1881. (Model.)



Claim.—1. The combination, with the ruffling-blade and the needle-plate, of a guard-spring secured below said blade so that the latter may bear thereon, and provided at its outer end with strips or arms bent parallel with the end of the spring, one above and one below the same, to form guides, the under strip being secured to the needle-plate, substantially as set forth.

2. The combination, with a presser-foot provided with an inclined slot, of an adjustable spring-guide, *e*, one end of which is secured to the ruffler, while the other end extends into the slot of the presser-foot, as and for the purpose set forth.

251,809. STEAM-ENGINE CYLINDER. WALTER J. ALLEN, Erie, Pa. Filed May 12, 1881. (No model.)



Claim.—In a steam-cylinder, a passage formed within the walls of said cylinder for admitting steam from the body of the cylinder to the clearance-spaces immediately before the exhaust takes place, said passage having at one end a cage provided with a port registering with the passage, and a valve inserted from the outside of the cylinder and retained in said cage by a plug closing the outer end of said cage, which valve opens by pressure from the body of the cylinder-cavity and closes by pressure from the clearance-space, substantially in the manner described.

251,810. TELEPHONE-SIGNAL. GEORGE LEE ANDERS, Boston, Mass., assignor to American Bell Telephone Company, same place. Filed Nov. 20, 1880. (No model.)

Brief.—The bell-hammer is vibrated by clock-work, and has a longitudinal movement of its axis, caused by the pressure on the end of said axis of the arm *k*, attached to the armature *a*. In its first position the hammer cannot strike the bell, and the clock-work is held stopped. (See Fig. 2.) The closure of the circuit throws the hammer and its axis into the second position and releases the clock-work. Further motion of the axis is prevented by the disk *i*, (see Fig. 3;) but the disk is revolved by the clock-work until at a predetermined time for each station. A notch in the disk comes opposite the end of the axis, and allows it to be thrown into its third position (see Fig. 4) by a second movement of the armature, when the hammer reaches the bell and rings it until automatically thrown back into first position.

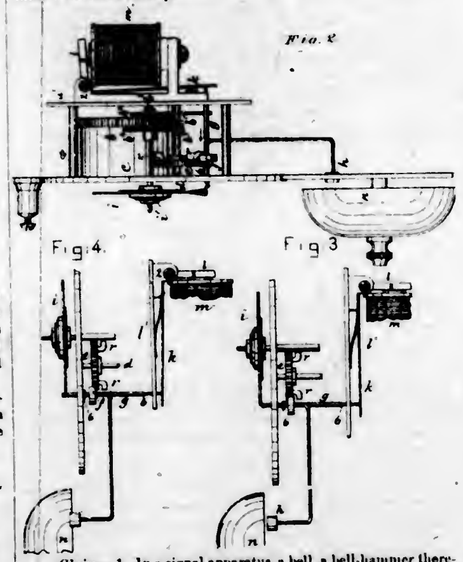


Fig. 2.

Fig. 4. Fig. 3

Claim.—1. In a signal apparatus, a bell, a bell-hammer therefor, and a mechanical motor to set the said hammer in motion, combined with controlling mechanism, substantially as described, whereby the said bell-hammer, in its movement caused by the motor, is either prevented from striking the said bell or caused to strike it to give a signal, as desired, without interruption to the said movement.

2. In a telephone-signal instrument, the following elements in combination, viz: a mechanical motor having a uniform movement, a bell-hammer operated thereby, a bell, and a controlling device, as explained, to control the position of the bell-hammer relative to the bell, whereby, in a series of such instruments, all may have their bell-hammers kept in motion, by the motor and any desired one of the said bell-hammers may be brought into operation upon its bell independently of the others, substantially as and for the purpose described.

3. The combination, with a mechanical motor, automatic stopping mechanism, a controlling-disk revolved by said motor, and an electro-magnet and devices controlled thereby for starting said motor, of a mechanical alarm and devices, as indicated, for causing the alarm to sound when required, said devices being movable under the attraction of the electro-magnet when it is excited by an electric current and the controlling-disk is in the proper predetermined position, but being prevented from moving under said attraction by the disk except when in said position, substantially as described.

4. In a signal apparatus, a mechanical motor and a bell-hammer vibrated thereby and connected with a rock-shaft longitudinally movable in its bearings to change the plane of vibration of the said hammer, combined with an electro-magnet to move the said shaft, and a moving controlling device, as indicated, to control its movement, allowing the said shaft to be moved by the magnet into position to cause the hammer to operate on the bell only when the controlling device is in a certain position in its movement, substantially as described.

5. In a signal apparatus, a mechanical motor and a bell-hammer mounted on a rock-shaft and adapted to be set in vibratory movement by the said motor, the said rock-shaft being movable in its bearings longitudinally, combined with stopping mechanism operated by the longitudinal movement of the said rock-shaft to stop the motor, and an electro-magnet to move the said rock-shaft, and a controlling device to govern its movement, the said magnet and controlling device co-operating, as described, to cause an impulse of the magnet in acting on the said rock-shaft when at rest, to disengage the stopping mechanism and allow the motor to set the hammer in vibration, but not in position to strike its bell, and a second impulse to either throw the said hammer in position to strike the bell or not, according to the position of the controlling device, without interrupting its vibratory movement in either case, substantially as described.

6. The combination, with the longitudinally-movable rock-shaft and bell-hammer mechanically vibrated thereon, of an electro-magnet to bring a armature upon the said shaft, and the notched controlling-disk to afford an obstacle to the said rock-shaft, except when the notched portion is opposite thereto, substantially as described.

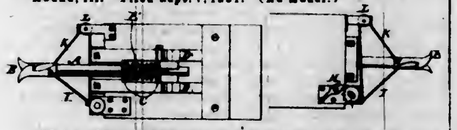
7. The longitudinally-movable rock-shaft and bell-hammer connected therewith and pallets thereon, and an escape-wheel to operate them, combined with the stop-wings and a stop-cam to move the said rock-shaft and bring the pallets into position to engage the said stop-wings, substantially as and for the purpose described.

8. The controlling-disk, notched and provided with an inclined or cam portion, combined with a shaft or pin movable in a direction transverse to the plane of the said disk, and an electro-magnet to move it, the disk being arranged, as described, to afford an obstacle to the movement of the said shaft, except when in the rotation of the said disk its notched position is opposite to the said shaft, when the end of the latter may be moved through the said notch and retained there during the further rotation of the disk until engaged by the cam thereof and moved back by the said cam, substantially as and for the purpose set forth.

9. In a telephone-signal apparatus, a series of mechanical motors or clock-works to control the operation of the signals and automatic stop mechanism to stop the said motors, combined with an electro-magnet to operate upon the said stop mechanism to start the motor, the said magnet or its armature being polarized, whereby a current of one polarity causes it to attract its armature to start the motor, while a current of the other polarity causes no movement in the armature, substantially as described, and for the purpose set forth.

10. The combination of the shaft *g*, controlling-disk *i*, and the electro-magnet *m* and its armature and arm *k l*, substantially as described, and for the purpose set forth.

251,811. CAR-COUPLING. ANDREW H. ARMSTRONG, Blue Mound, Ill. Filed Sept. 7, 1881. (No model.)



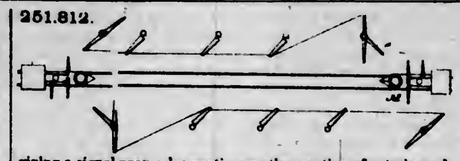
Claim.—The combination, with the sliding and revolving rod A, provided with the hooks or clutches B B and spring E, of the windlass F, having ratchet G and dog H, and the cords I and K, connecting said windlass with the hooks or clutches B B, the cord K passing over pulley L, the several parts constructed and relatively arranged to operate in the manner herein shown and described.

251,812. RAILROAD DANGER-SIGNAL APPARATUS. GIUSEPPE A. ANSARITA, New York, N. Y. Filed Oct. 25, 1881. (No model.)

Brief.—One of the terminal levers of each series of swinging signal-operating arms is operated by a passing locomotive to set the series, so that a train approaching in an opposite direction on same line will be warned through an arm thereon coming in contact with one of said signal-arms, and a train following the first named will also be similarly signaled if the first has not left the section. Upon the first train leaving the section it restores the signals to their normal position.

Claim.—1. The combination, substantially as described, of a series of connected arms, levers, or equivalent devices placed beside a railroad-track, an arm or projection upon one side of a locomotive or train, adapted to engage with the terminal arms of the series, so as to turn all of the arms into and out of position for

251,812.

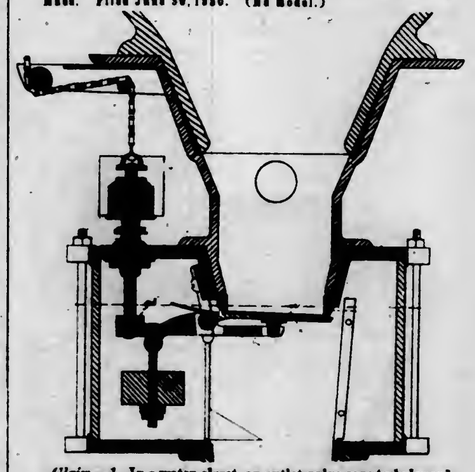


giving a signal upon a locomotive or other portion of a train, and signaling mechanism upon the other side of the locomotive or other portion of the train, adapted to engage with the intermediate arms or levers of the series.

2. The combination, substantially as described, of a series of connected arms or levers ranged beside a railroad-track, a setting-projection upon a moving train, adapted to engage and turn the terminal levers of the series, signaling mechanism upon the same side of a following train as the setting-projection, and an arm or projection upon the terminal lever at the entrance end of the series, adapted to be thrown into and out of the path of the said signaling mechanism, as set forth.

3. The combination, substantially as described, of a series of arms or levers placed beside a railroad-track, a second series ranged upon the opposite side of the track and overlapping the first series, a setting-projection upon a locomotive or other portion of a train, adapted to engage with the terminal levers of the series upon one side of the track, bell-ringing devices upon the same side of a following locomotive with the setting-projection thereof, adapted to engage with a projection upon a terminal lever, and upon the other side of a locomotive or train approaching in the opposite direction bell-ringing devices adapted to engage with the intermediate levers of a series or section.

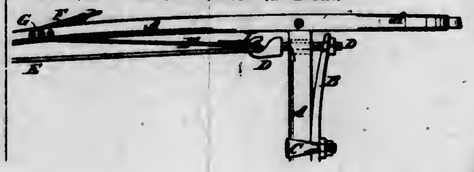
251,813. WATER-CLOSET. H. WILLIAM ATWATER, Boston, Mass. Filed June 30, 1880. (No model.)



Claim.—1. In a water-closet, an outlet-valve counterbalanced to close the outlet when the bowl is empty and to open it when the bowl is filled to a designated depth, in combination with a weighted stop, *g*, which, when raised, leaves the outlet-valve free to act and when lowered prevents the outlet-valve from opening, substantially as described.

2. In a water-closet, the combination of a bowl having an outlet-valve which is self-acting when its retaining-stop is withdrawn with an overflow-pipe and its outwardly-opening valve, substantially as and for the purposes set forth.

251,814. HOLDBACK FOR VEHICLES. ANSON J. HAGON, Hallowell, Me. Filed Nov. 5, 1881. (No model.)



Claim.—1. The combination, with the thills A, provided with the holdback-irons G and the holdback-tugs F, of the spring B, secured to the rear of the cross-bar of the thills, and the hooks D, substantially as and for the purpose set forth.

2. The combination, with the draft-spring B, holdback-irons G, and harness-breeching H, of the holdback-tugs F, substantially as herein shown and described, whereby the strain on the holdback-tugs will be of an elastic nature and will be resisted by the draft-spring, as set forth.

251,815. SPINDLE FOR TWISTER-FRAMES. JOSEPH B. BANCROFT, Hopedale, Mass. Filed July 29, 1878.

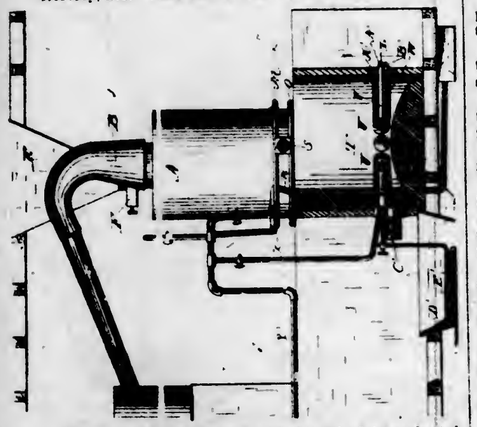
Brief.—The spindle is provided with a permanently-attached metallic sleeve provided at its base with bobbin-driving pins, and is supported in a long bolster extended upward between the spindle and sleeve. The whirl is removably connected to the spindle between the bolster and step-rails, so as to reduce the strain by its position and permit the spindle, when released from the whirl, to be drawn up through the whirl, bolster, and usual ring-rail. The whirl surrounds a tube projecting upward from the step, and is provided with a sleeve extending up into the bolster.



Claim.—1. The spindle and its permanently-attached metallic sleeve provided with bobbin-driving pins, combined with a bolster extended upward between the sleeve and spindle and a whirl removably attached to the spindle between the step and bolster rails, substantially as described.

2. The spindle and the whirl *i j*, connected therewith by a screw, combined with the bolster and the step provided with a tubular portion, substantially as described.

251,816. TURPENTINE-STILL. LEONARD BELLINGRATH, Castleberry, Ala. Filed Oct. 10, 1881. (No model.)



Claim.—1. The combination, with the still, of the perforated steam-pipes and the radial heating-tubes and connecting-pipes, and the annular pipes communicating respectively with the radial tubes and pipes, and with a steam-generator and trap, substantially as specified.

2. In combination with the still and the steam supply and eduction pipes, the evaporating-vessel, the radial steam-heating tubes located in the still and in the evaporating-vessel, and the induction and eduction pipes, substantially as specified.

251,817. GANG-PLOW. BENJAMIN S. BENSON, Baltimore, Md. Filed Mar. 24, 1881. (No model.)

Brief.—A truck-frame carrying by means of sprocket-wheels an endless track is attached to each side of the frame of a gang of plows. The plows may be drawn by any kind of power, and the draft is upon the plow-frame, which carries forward the trucks and lays down the endless track. A hand-wheel, screw-rods, and cross-bars permit the plow-beams to be deflected, a pulley in the front end of each beam running upon cross-braces. A supplemental short beam and springs allow the plows to yield to obstructions separately. A hand-wheel and screw-rod with a pivoted lever and gage-wheel regulate the depth.

251,817.



Claim.—1. In combination with the gang-plow frame, the supporting-trucks 62 on each side thereof, having endless tracks 66, tie-rods 67, and feet 68, as set forth.

2. In combination with the gang-plow frame, the supporting-trucks running upon endless tracks pivoted to either side of the same, and connected therewith by arms 72, as set forth.

3. In combination with the gang-plow frame and pull-bar 82, the adjustably-pivoted lateral pull-bars 73 85 and screw-rod, as set forth.

4. In combination with the gang-plow frame and pull-bars 73, 82, and 85, the pivoted cross-bar 86 and screw-rod 83, as set forth.

5. In combination with the plow-gang and frame 78, the cross-bar 96, nut 99, rod 97, and hand-wheel 98, as set forth.

6. In combination with the wheel, rod, nut, and bar, 98, 97, 99, and 96, the series of plows connected to the bar by bell-crank levers, as set forth.

7. In combination with the frame having segmental braces 92, the series of plows having the front ends of their beams adapted to run upon said braces, and mechanism for actuating the said beams laterally, as set forth.

8. In combination with the plow-beam 94, having slot 102, the beam 91, having lug 103, and a spring for holding the lug against ordinary strain in engagement with the slot, as set forth.

9. In combination with the beams 91 94, having slot and lug, the lever 104 and spring 105, as set forth.

10. In combination with the long beam 94, having wheels 93, arcs 101, and slots, the short beams 91, having lugs, and the rods 90, as set forth.

11. In combination with the beam 61 and the gang-plow, the trucks 62, levers 75, and beams 74, as set forth.

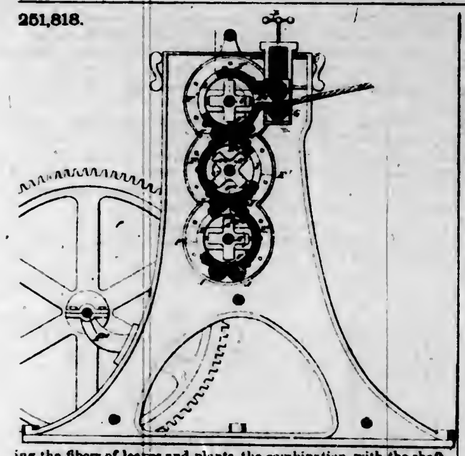
12. In combination with the plow-gang, the supporting-trucks, having feet 68 and endless tracks, and connected with the pull-bars by rods 72, as set forth.

251,818. MACHINE FOR CLEANING AND SEPARATING THE FIBERS OF LEAVES. EUGENIO BRETON, Mineral de Catorce, Mexico. Filed Aug. 31, 1881. (No model.)

Claim.—1. In a machine for cleaning the fibers of leaves and plants, the combination, with the roller A, provided with the longitudinally-grooved wings A', the springs B, and the means for securing them in the said grooved wings, of the rasping or scraping blades B', having beveled outer edge, and the pressing or feeding blades B², provided with heads B³, triangular in cross-section, substantially as and for the purpose set forth.

2. In a rasping or scraping roller, A, for machines for cleaning the fibers of leaves and plants, the combination, with the shaft A' and the longitudinally-grooved radial wings A², provided with recesses A³, of the blades B' B², provided with recesses *e*, the springs B, and the caps B³, substantially as herein shown and described, and for the purpose set forth.

251,818.



3. In a machine for cleaning the fibers of leaves and plants, the combination, with the rotating cylinder, provided with spring-supported rasping or scraping blades B', formed with projections C, of the end casing, C', formed with apertures into which the said projections extend, substantially as and for the purpose set forth.

4. In a machine for cleaning the fibers of leaves and plants, the combination, with the frames D' D², provided with apertures E, and the casings F, having the same diameter as the apertures E, the rasping or scraping rollers A, contained in the casings F, of the feed-rollers J J, located between the casings F, and of gearing for operating the rasping or scraping rollers and the feed-rollers, substantially as herein shown and described, and for the purpose set forth.

5. In a machine for cleaning the fibers of leaves and plants, the cylindrical casings F, constructed, substantially as herein shown and described, with a bottom longitudinal opening, F', extending throughout the entire length of the casing, with a top longitudinal opening, F², extending to within a short distance from the ends of the casing, and with a longitudinal side opening, F³, extending to within a short distance of the ends of the casing and forming segmental ribs I on the inner sides of the frames D' D², substantially as herein shown and described, and for the purpose set forth.

6. In a machine for cleaning the fibers of leaves and plants, the combination, with the casings F, of the feed-rollers J, located between two casings in such a manner that the periphery of the rollers J will touch the inner periphery of the casing F above the feed-rollers and will be a short distance above or from the inner periphery of the casing F below the feed-rollers, substantially as herein shown and described, and for the purpose set forth.

7. In a machine for cleaning the fibers of leaves and plants, the combination, with the frames D' D², of the rasping and scraping rollers A, the feed-rollers J and O, the casings F, the cog-wheels M, the pinion O, the cog-wheel P, the shaft P', the cog-wheels P² Q, the pinion Q⁴, the cog-wheels R R' R² R³, the pinions S' T' S² T² S³ T³, the cog-wheels U and V, and the pinions W and X, substantially as herein shown and described, and for the purpose set forth.

8. In a machine for cleaning the fibers of leaves and plants, the combination, with the rasping or scraping rollers A, the feed-rollers J, and the casings F, of devices for rotating the rasping or scraping rollers with a much greater rapidity than that of the feed-rollers, substantially as herein shown and described, and for the purpose set forth.

251,819. SELF-CLOSING STOPPER FOR BOTTLES. DAVID BEARY, Bolinas, Cal. Filed Oct. 31, 1881. (No model.)

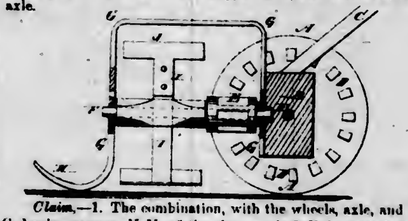


Claim.—1. The open-sided screw-threaded sleeve B, fitted to clasp the neck of a bottle below the projecting head D, in combination with the screw-cap C, having the transversely-sliding plates E, stems F, and operating-levers H, substantially as and for the purpose herein described.

2. The screw-threaded detachable sleeve B and the cap C, fitted thereto, in combination with the transversely-sliding plates E, with their stems F and levers H, and the returning-springs G, all combined to operate substantially as herein described.

251,820. COTTON-CHOPPER. JOHN H. BETHUNE, Fayetteville, N. C. Filed July 23, 1881. (No model.)

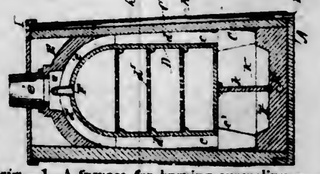
Brief.—Runners are formed on the arched bar, which forms bearings for both ends of the chopper shaft, and is secured to the axle.



Claim.—1. The combination, with the wheels, axle, and bar G, having runners H H, of the chopper-shaft F, journaled at the front in said bar and at the rear in said axle, as shown and described.

2. The combination, with the wheels, axle, and handles A B C, of the gear-wheels D E, the shaft F, carrying the hoe-arms I, and the arched bar G, carrying in front the runners H H, as and for the purpose specified.

251,821. PORTABLE FURNACE FOR BURNING THE ENAMELING ON PORCELAIN, &c. SAMUEL BEVINGTON, Philadelphia, Pa. Filed Nov. 17, 1881. (No model.)



Claim.—1. A furnace for burning enameling on porcelain, &c., consisting of a fire-box, a conical wall the exterior surface of which is fluted or corrugated, a surrounding metallic sheath, an interior oven, between which and the fluted wall are tapering flues terminating in a contracted or conical exit-opening, substantially as shown and described.

2. A furnace for burning enameling on porcelain, &c., consisting of a fire-box, exterior fluted wall, and metallic covering, and an interior oven provided with a tapering exit-pipe and peep-holes, and having between said oven and fluted wall a series of tapering heat-flues, substantially as described.

3. A furnace for burning enamel on porcelain, &c., consisting of a fire-box, a heat-chamber back of the same and below the oven, and provided with a division wall or partition, from said chamber arising a series of tapering flues surrounding the oven, and of an outer wall the exterior surface of which is corrugated or fluted and surrounded by a metallic covering or sheath, substantially as shown and described.

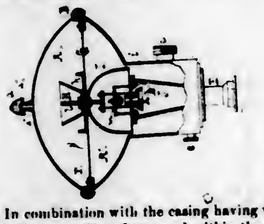
4. The combination of fire-box A, heat-chamber K, wall C, corrugated exteriorly, the sheath H, oven D, having tapering pipe F surrounded with tapering flues *d*, substantially as shown and described.

5. The combination, with furnace B, having walls C, of oven D, provided with perforated shelves *d*², tapering flue F, having stopple *f'*, and peep-hole pipes G, substantially as shown and described.

6. The combination, with furnace B, provided with doors *a'* and attached chains *o* and *a'*, and counterpoise *a*², of walls C C, having surrounding sheath H, provided with folding doors I I, substantially as shown and described.

7. In combination with furnace B, walls C C, and oven D, said parts being arranged in relation to each other to provide tapering flues *d d* between said oven and walls, a heating-chamber, K, having partition *k*, the forward edge of which is beveled or made prow shape, substantially as shown and described.

251,822. GAS-REGULATOR. LLEWELLYS P. BLAIR, Baltimore, Md. Filed Nov. 1, 1881. (No model.)

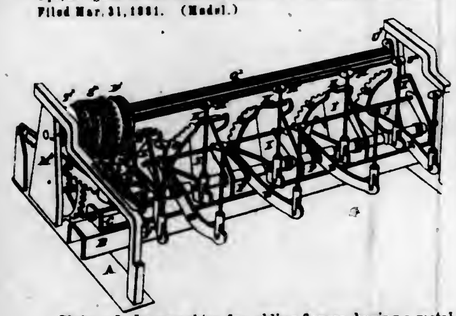


Claim.—1. In combination with the casing having valve and diaphragm, the bell I, extending downward within the part i, as and for the purpose set forth.

2. In combination with the diaphragm and valve, the casing A A', sealed as described, and having sheltered orifice a', as and for the purpose set forth.

3. In combination with the valve and diaphragm, the bell I and casing A A', having peripheral flanges, and the inclosing-ring B and lock C, as set forth.

251,823. ADDING-MACHINE. MICHAEL BOUCHEY, Louisville, Ky., assignor of one-half to Bennett D. Mattingly, same place. Filed Mar. 31, 1881. (Model.)

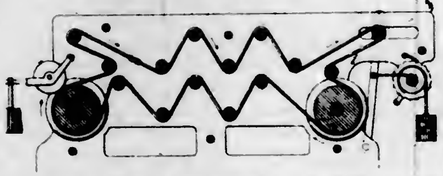


Claim.—1. In a machine for adding figures, having a metal frame, the fluted cog-roller O' and indicator-pulleys P', S', and T', in combination with the roller-pinion L', wheel K', pinion J', and rack G'; for setting the machine, substantially as herein described, and for the purpose set forth.

2. In a machine for adding figures, having a cog-roller, O', and pulleys P', S', and T', the double lever O, with its extended point N', in combination with the stand B', shaft Z, rods Y, and spring A', also the pinions U and three-pointed devices V and W, when arranged, constructed, and operated substantially as and for the purpose set forth.

3. In an adding-machine having a cog-roller, O', pulleys P', S', and T', the combination of the levers K, springs F, lever H, cog-segments G, and plates I with the flanges K, substantially as herein described, and for the purpose set forth.

251,824. MACHINE FOR STRETCHING BELTING. JAMES BRADY, Brooklyn, N.Y. Filed Oct. 28, 1881. (No model.)



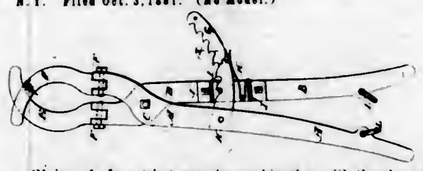
Claim.—1. The specified mode of stretching belting, consisting in submitting the belting to a repeated or continued motion over rollers or supports while under a continuous regulated tension, whereby the belt is kept uniformly taut, substantially as herein shown and described.

2. The specified mode of stretching belting, consisting in joining the belt in the form of an endless band and keeping this band in motion over rollers or supports while under a continuous regulated tension, substantially as herein shown and described.

3. A machine for stretching belting while in the form of an endless band, consisting of a driving drum or pulley over which one loop of the belt is passed, in combination with a movable tension or take-up roller or bar over which another loop of the belt is passed, and means for advancing said roller to render the belt tant and take up the slack or stretch therein, and a suitable supporting-frame for said parts, substantially as herein shown and described.

4. In a machine for stretching belting, the combination, with a driving drum or pulley to keep the belt in motion, of a series of flexion and reflexion bars or rollers over which the belt passes in bends from the driving-drum, and one or more movable take-up or tension rollers over which a loop of the belt passes in its course, substantially as and for the purpose set forth.

251,825. CATTLE-TONGS. CHRISTOPHER DAUBL, Green Point, N.Y. Filed Oct. 3, 1881. (No model.)

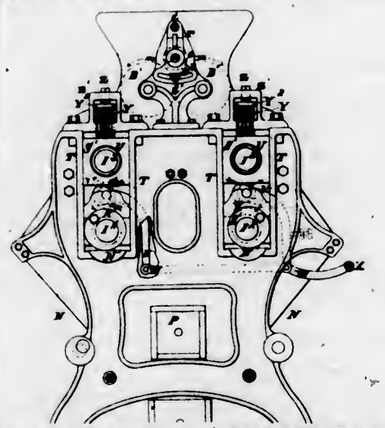


Claim.—1. In cattle-tongs, the combination, with the pivoted handles A B, of the jaws D E, hinged to the said handles, substantially as and for the purpose set forth.

2. In cattle-tongs, the combination, with the pivoted handles A B, provided with the hinged jaws D E, of the hinged serrated arm G, the locking-pin I, the spring K, and the keeper J, substantially as and for the purpose set forth.

3. In cattle-tongs, the serrated locking-arm G, made with a hinge-joint, substantially as herein shown and described, whereby the free end of the said arm can swing down out of the way, as set forth.

251,826. ROLLER-MILL FOR GRINDING GRAIN. CHARLES G. BURKHARDT, Buffalo, N.Y. Filed Jan. 17, 1881. (Model.)



Claim.—1. The combination, with the feed-slides D, having yokes D' on their under sides, of eccentrics E, engaging in said yokes and mounted each on a separate shaft, F, arranged underneath each feed-slide, arms F', secured to the shafts F, and a rod, G, whereby the arms F' are connected, substantially as set forth.

2. The combination, with the pillow-block S and guideways T, of a journal-box, R, capable of turning in the block S, and provided with an eccentric flange, R', bearing against a support, N', substantially as set forth.

3. The combination, with the rolls I I', of the pillow-blocks S S', rectilinear guideways T, and the eccentrics V, interposed between the blocks S S' for adjusting the distance between the rolls, substantially as set forth.

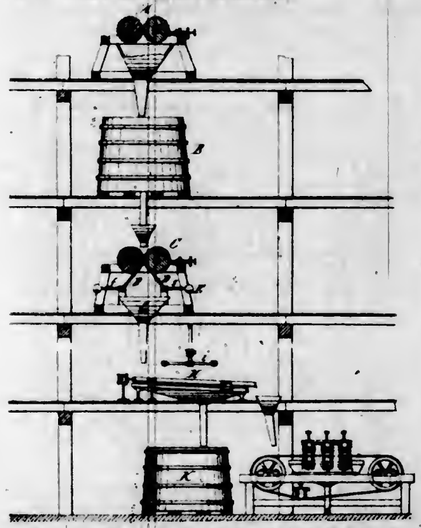
4. The combination, with the rolls I I', of the pillow-block S S', having lugs *s*, guideways T, and eccentrics V, pivoted between the lugs *s*, substantially as set forth.

5. The combination, with the rolls I I', of the blocks S S', guideways T, eccentrics V, provided with arms *e*, rods W, connecting arms e, and cross-bar X, substantially as set forth.

6. The combination, with the rolls I I', of the pillow-blocks S S', guideways T, eccentrics V, interposed between the blocks S S', and adjustable spring Z, bearing upon the upper block, S', substantially as set forth.

7. The combination, with the journal-box R, of the pillow-block S, composed of two side portions, S', and connecting-piece S', to which the side portions are secured, substantially as set forth.

251,827. METHOD OF AND APPARATUS FOR OBTAINING STARCH FROM GRAIN. GOTTFRIED BURKHARDT, Buffalo, N.Y. Filed Aug. 6, 1881. (No model.)



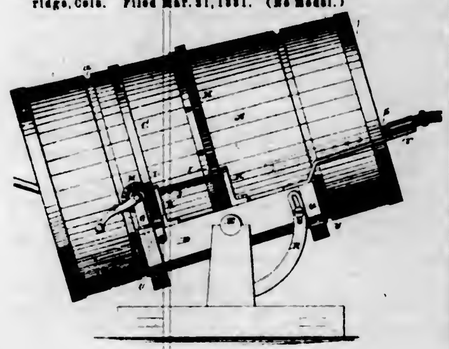
Claim.—1. The herein-described method of obtaining starch from grain, which consists in first coarsely grinding or cracking the grain, then steeping the broken grain, then crushing the steeped grain between rolls, whereby the starch is reduced to powder and the bran flattened out to flakes, and then separating the starch from the bran by sifting, substantially as set forth.

2. In an apparatus for manufacturing starch from grain, the combination of a preliminary reducing apparatus, A, whereby the grain is coarsely broken, a steep, B, in which the broken grain is softened, a pair of crushing-rolls, C, which operate upon the steeped grain, and whereby the starch is reduced to powder and the bran to flakes, and a sieve, H, whereby the bran is separated from the starch, substantially as set forth.

3. In an apparatus for manufacturing starch from grain, the combination of corrugated preliminary reducing-rollers A, a steep, B, smooth crushing-rolls C, and a sieve, H, in the manner and for the purpose set forth.

4. The combination, with the crushing-rolls C, of self-adjusting scraper-plates D, substantially as set forth.

251,828. ORE-CONCENTRATOR. GEORGE S. RUBB, Breckinridge, Colo. Filed Mar. 31, 1881. (No model.)



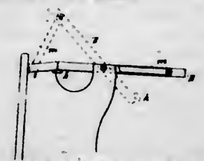
Claim.—1. An ore-concentrator consisting of a revolving cylinder having a spiral blade connected to its inner circumference and extending from end to end of the cylinder, in combination with means for tilting the cylinder and holding it to its adjusted position, substantially as set forth.

2. An ore-concentrator consisting of a revolving and tilting cylinder having a spiral blade extending along its inner circumference from one end to the other of the cylinder, in combination with means for locking the cylinder to its adjusted position, and a water-supply adjustable with the cylinder, so as to maintain its relative position thereto no matter what the pitch of the cylinder be, substantially as set forth.

3. An ore-concentrator consisting of a revolving cylinder having a spiral blade connected to its inner circumference and extending from end to end of the cylinder, in combination with the supporting and tilting frame D, segment R, and a set-screw for locking the parts, substantially as set forth.

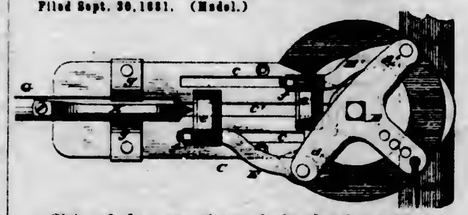
4. The revolving cylinder provided with a spiral blade within its circumference, in combination with the supporting and tilting frame D and arm T, connected to the frame and extending to a point in front of the cylinder, and supporting the supply-pipe S, whereby the several parts are adapted to operate as set forth.

251,829. SCHOOL-DESK. CHARLES HUSCALL, New York, N.Y. Filed Nov. 26, 1881. (No model.)



Claim.—A school-desk having a top, B, pivoted at each side to an arm, *d*, of the frame, the said top being provided with a slat, A, secured along one of its edges, and with a pair of arms, *m*, pivoted to its sides, as herein shown and described, and for the purposes specified.

251,830. CORN-PLANTER CHECK-ROWER. WILLIAM R. CAMPBELL and WILLIAM J. CHAMBERS, Warren County, Ill. Filed Sept. 30, 1881. (Model.)



Claim.—1. In a corn-planter check-rower, in combination with the head D, with arms E E', hinged thereto, lugs *e e'*, hinged to the arms E E', whereby they may swing in vertical planes transversely to the arms E E' to pass each other, substantially as and for the purpose specified.

2. In combination with the head D, arms E E', and swinging lugs *e e'*, the lugs *f'*, which slide in the slots *e* and guide the movements of the lugs *e e'* in straight paths, substantially as and for the purpose specified.

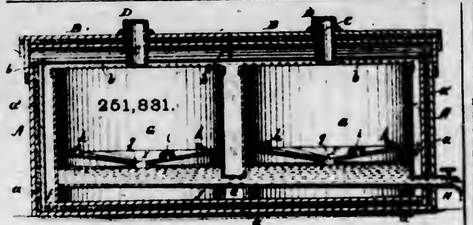
3. In combination with the head D, arms E E', and swinging lugs *e e'*, the sliding tappet-arm G, adapted to impart movement alternately to the lugs *e e'*, substantially as and for the purpose specified.

4. In combination with the sliding tappet-arm G, swinging lugs *e e'*, and sliding arms E E', the guard H, adapted to limit the movement of the swinging lugs *e e'*, substantially as and for the purpose described.

5. In combination with the head D, arms E E', swinging lugs *e e'*, and tappet-arm G, the rock-shaft B and rod I, adapted to receive motion from the tappet-wire, substantially as and for the purpose specified.

251,831. PORTABLE CASE FOR TRANSPORTING CREAM. JOHN G. CURRAY, Cedar Rapids, Iowa. Filed Oct. 10, 1881. (No model.)

Claim.—1. A portable case for transporting cream, consisting of the outer case, A, having double walls and filling, and provided with a double-walled and filled cover adapted to close practically

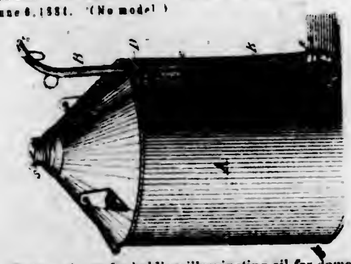


air-tight, provided with ports, and devices for closing said ports, for filling through said covers into the receivers G G without removing said covers, in combination with the receiver or receivers secured inside said case, and connected to a faucet on the outside, and provided with floats adapted to float upon the surface of the cream, said float having an opening practically in line with the port to allow the cream to pass underneath, all substantially as described.

2. A portable case for transporting cream, consisting of the outer case, A, having double walls, between which is a filling, *a'*, and containing in its upper edge a yielding cushion or packing, *b*, one or more double-walled and filled sliding covers, B B, having therein the screw-capped filling-ports C C, one or more receivers, G G, having inclined bottoms, and floats I I, provided with central openings, and the faucet H, entering the case and receiver G, all constructed and arranged substantially as shown and described, and for the purposes specified.

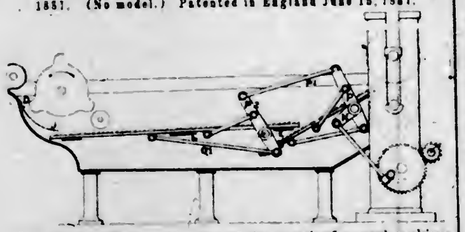
3. The combination of the outer case, A, having along its upper edge a yielding cushion, *b*, one or more covers, B B, the pins or studs *c c*, clamps F F, and the pivoted and slotted straps E E, all substantially as and for the purposes specified.

251,832. OIL-CAN. FRANCIS L. CLARK, Sawtelley, Pa. Filed June 6, 1881. (No model.)



Claim.—A can for holding illuminating-oil for domestic use, having in combination a body, A, with a short discharge-pipe, *a'*, near its bottom, a discharge-tube, B, flexible rubber tube *b*, connecting the pipe and discharge-tube, and a spring, C, secured to the cam-body and discharge-tube, and adapted to raise the free end of the tube when released and to cause it to move in a given plane, substantially as set forth.

251,833. WOOL-WASHING MACHINE. JOHN CLOUGH, Halecliffe, near Keighley, County of York, England. Filed Aug. 4, 1881. (No model.) Patented in England June 15, 1881.



Claim.—The combination of the trough of a wool-washing machine with a series of reciprocating toothed bars forming the bottom of the washing-space, and adapted to feed the fibery forward under the liquor in place of the ordinary overhead rakes, all substantially as and for the purpose set forth.

251,834. PILE FOR RAIL-PLATES. OLIVER P. COBB, Aurora, Ind. Filed Apr 26, 1880. (No model.)

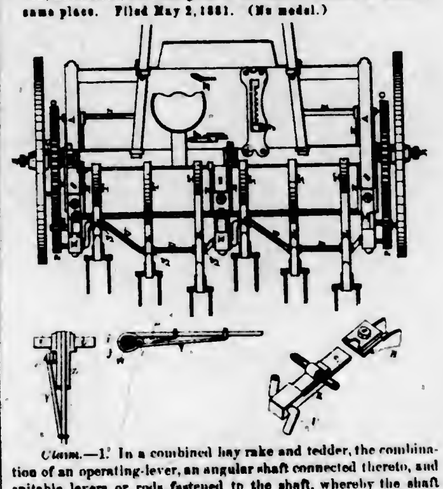
Claim.—The pile or fagot constructed substantially as before

251,834.



set forth—namely, of horizontal rows of rails lying on their side in reverse order in the respective rows, confined between top and bottom plates, the foot or flange of each rail being cut off on one side of the rail to terminate on a line with the head of the rail on that side, and the interstices being filled with scrap.

251,835. COMBINED RAKE AND TEDDER. ROBERT J. COLVIN, Lancaster, Pa., assignor of one-half to Israel L. Landis, same place. Filed May 2, 1881. (No model.)



Claim.—1. In a combined hay rake and tedder, the combination of an operating-lever, an angular shaft connected thereto, and suitable levers or rods fastened to the shaft, whereby the shaft may be made to operate either a tedder or a rake, substantially as shown.

2. The combination of the axle B, the levers H, secured at their front ends to the rod I and provided with sockets on their rear ends, with removable boxes, in which the tedder-shaft is journaled, substantially as described.

3. In a hay-tedder, the removable boxes K, having a short shaft secured to their outer sides, the intermediate wheels, N, for meshing with driving-wheels O, the tedder-shaft U, provided with the pinions P, levers H, rod I, and lever J, substantially as set forth.

4. The combination of the cranked shaft, the fork-handles, the collars connected to the shaft, and the boxes or bearings for securing the collars and shaft to the fork-handles, substantially as set forth.

5. In a tedder-fork, the combination of the two separate tines, a bolt which passes through the end of the fork-handle, a spring which bears upon the top of the bolt, and suitable guides for the upper end of the tines, whereby the fork or tines can be relieved when striking an obstruction, substantially as shown.

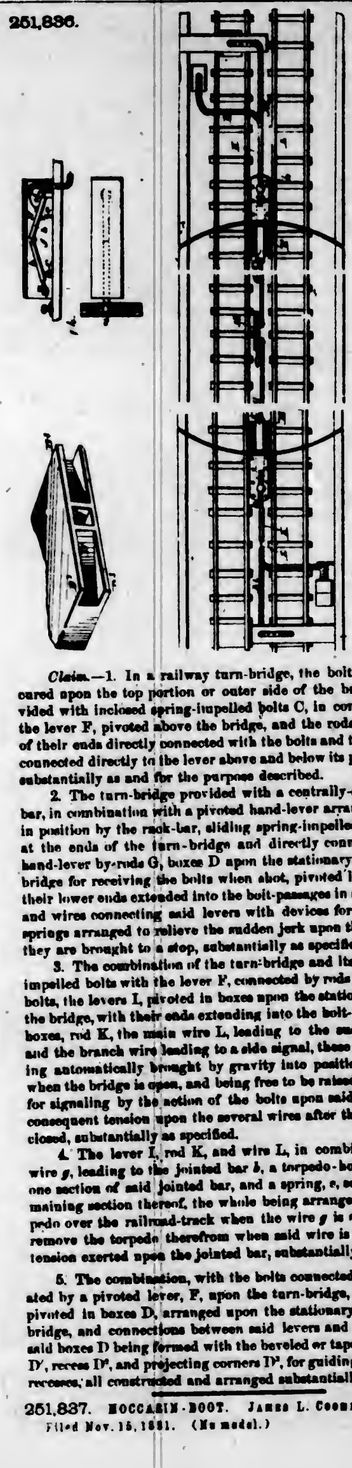
6. In a hay-tedder, the combination of a series of box-plates united together by connecting-rods, a driving-pinion, and the cranked shaft, the box-plates being adapted to be removed from the frame, substantially as described.

7. The combination of the angular rod W, the stationary ferrules *i*, placed thereon, and provided with the grooves *j*, supports Z, and projections 1, with the springs Y and rake-teeth, substantially as specified.

251,836. LOCK AND SIGNAL FOR TURN-BRIDGES. FRANK W. COOLBAUGH, Hoboken, N. J. Filed July 21, 1880. Renewed May 14, 1881. (No model.)

Brief.—Spring-impelled bolts in casings on the top of the swinging bridge are withdrawn from the bolt-boxes on the abutments by rods and a lever adjustable on a rack-bar above the center of the bridge. The lower end of a pivoted lever projects into the bolt-boxes on the abutments, and a rod at its upper end connects by a main wire and branch wire with gravity-signals. Another branch wire connects with a spring-actuated buckling-bar at the side of the railroad-track carrying a torpedo. The bolt-boxes are constructed with a center recess and tapering guide-grooves.

251,836.



Claim.—1. In a railway turn-bridge, the bolt-casings C', secured upon the top portion or outer side of the bridge, and provided with inclosed spring-impelled bolts C, in combination with the lever F, pivoted above the bridge, and the rods G, having one of their ends directly connected with the bolts and their other ends connected directly to the lever above and below its pivotal support, substantially as and for the purpose described.

2. The turn-bridge provided with a centrally-arranged rack-bar, in combination with a pivoted hand-lever arranged to be held in position by the rack-bar, sliding spring-impelled bolts located at the ends of the turn-bridge and directly connected with the hand-lever by rods G, boxes D upon the stationary sections of the bridge for receiving the bolts when shot, pivoted levers I, having their lower ends extended into the bolt-passages in said boxes, rods and wires connecting said levers with devices for signaling, and springs arranged to relieve the sudden jerk upon the signals when they are brought to a stop, substantially as specified.

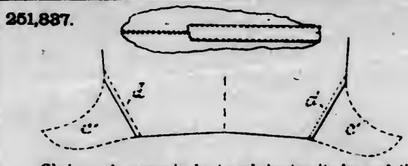
3. The combination of the turn-bridge and its sliding spring-impelled bolts with the lever F, connected by rods G with the said bolts, the levers I, pivoted in boxes upon the stationary sections of the bridge, with their ends extending into the bolt-passages in said boxes, rod K, the main wire L, leading to the suspended ball O, and the branch wire leading to a side signal, these said signals being automatically brought by gravity into position for signaling when the bridge is open, and being free to be raised out of position for signaling by the action of the bolts upon said levers and the consequent tension upon the several wires after the turn-bridge is closed, substantially as specified.

4. The lever I, rod K, and wire L, in combination with the wire *g*, leading to the jointed bar *b*, a torpedo-holder secured to one section of said jointed bar, and a spring, *e*, secured to the remaining section thereof, the whole being arranged to place a torpedo over the railroad-track when the wire *g* is slackened and to remove the torpedo therefrom when said wire is tightened and a tension exerted upon the jointed bar, substantially as specified.

5. The combination, with the bolts connected with and operated by a pivoted lever, F, upon the turn-bridge, of the levers I, pivoted in boxes D, arranged upon the stationary sections of the bridge, and connections between said levers and the signals, the said boxes D being formed with the beveled or tapering front ends, D', recess D², and projecting corners D³, for guiding the bolts to the recesses, all constructed and arranged substantially as described.

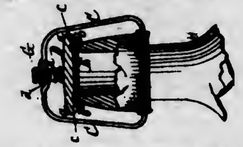
251,837. MOCCASIN-BOOT. JAMES L. COOMBS, Bangor, Me. Filed Nov. 15, 1881. (No model.)

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Claim.—A moccasin-boot pack having its leg and tip or tongue cut substantially from the pattern shown and described, and united by the seams *d d*, said seams being of any known character.

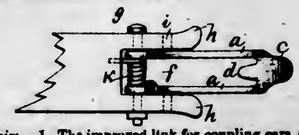
251,838. BOTTLE-STOPPER. JETHRO B. CRAWFORD, Rochester, N. Y. Filed June 27, 1881. (No model.)



Claim.—1. In a bottle-stopper, the combination of a neck-wire encircling the neck of the bottle, a bail or yoke pivoted to the neck-wire and extending above the bottle, a metallic stopper-cap provided with a packing-disk on its under side, a vertical screw made fast to the top of the stopper-cap, and coils made in the bail or yoke embracing the screw, engaging with the threads thereof, and forming the nut through which the screw moves, as herein shown and described.

2. In a bottle-stopper, the combination of the stopper-cap D, provided with a fixed screw, G, projecting from its top, and a bail or yoke, C, provided with coils *d d*, which fit the threads of the screw and form the nut through which the screw runs, as herein shown and described.

251,839. CAR-COUPLING. CHARLES L. DAHLBERG, Des Moines, assignor of one-half to Robert M. Dahlberg, Keosauqua, Iowa. Filed Nov. 12, 1881. (No model.)



Claim.—1. The improved link for coupling cars, composed of the parallel and perforated bars *a b* and the cross-head or inclined-plane lever and hook *c d*, substantially as shown and described, for the purpose specified.

2. The link *a b c d*, in combination with a draw-head and a spring, substantially as shown and described, to operate in the manner set forth, for the purpose specified.

3. The link *a b c d*, hinged to a draw-head, the compound lever *m a r*, and the rope or chain *s*, substantially as shown and described, to operate in the manner set forth, for the purpose of uncoupling cars.

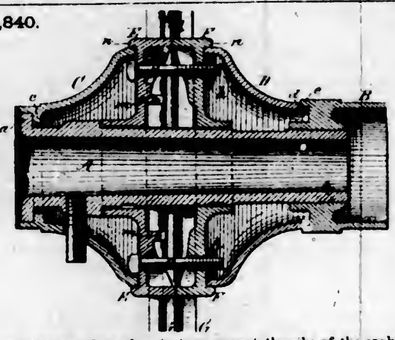
4. An improved car-coupling, composed of a link having an inclined cross-head, adapted to perform the functions of a direct-jag-plane and a coupling-hook at its front end and perforations at its rear end, a draw-bar having a cavity, *f*, at its front end, a pin or screw-bolt, *g*, a spring, and an operating-lever connected with the cross-head of the link by means of a flexible rope or chain, substantially as shown and described, to operate in the manner set forth, for the purpose specified.

251,840. WHEEL-HUB. ROBERT W. DAVIS and DANIEL DAVIS, Elmira, N. Y., assignors to the Davis Improved Wrought Iron Wagon Wheel Company, same place. Filed Nov. 15, 1881. (No model.)

Claim.—1. In a metal hub having the usual shells or hollow metal sections, the combination, with the spoke formed with ribbed sides and a notch near its inner end, of two independent clamping-plates located between said shells or hollow sections, one of said clamping-plates having on its inner face radiating grooves, provided with transverse bars forming a counter to and fitting the notched spoke, substantially as and for the purpose specified.

2. In a metal wheel-hub, the combination, with a ribbed and notched spoke, of clamping-plates having on their inner faces radial grooves corresponding with and fitting the ribbed spokes, said

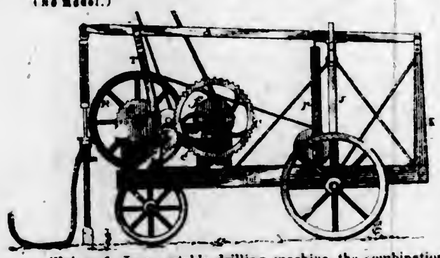
251,840.



grooves being so formed as to bear against the ribs of the spoke and relieve the edges thereof from contact with said clamping-plates, substantially as and for the purpose set forth.

3. In a metal wheel-hub, the combination of the ribbed spoke G, having notch *k*, clamping-plates E F, with their radial grooves *l* and transverse bars *m*, hub shells or sections C D, axle-box A, cap or nut B, and clamping-bolts *g*, substantially as described.

251,841. PORTABLE DRILLING-MACHINE FOR OIL-WELLS, &c. ROBERT M. DOWNIE, Allegheny, Pa. Filed Nov. 25, 1881. (No model.)

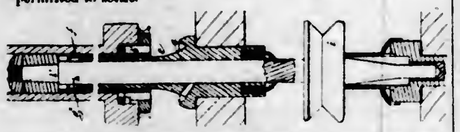


Claim.—1. In a portable drilling-machine, the combination of the reel *f* and cog-wheels S, C, and *m* with the driving-wheel R, as shown and described.

2. In a portable drilling-machine, the combination of the driving-wheel R, wheel S, rod T, beam *a*, and tube *p*, arranged as set forth.

251,842. SPINDLE-BOLSTER. GEORGE DRAPER, Hopedale, Mass. Filed June 24, 1875.

Brief.—The long bolster extending up between the spindle and its sleeve is provided with an oil-receiving opening and a spiral groove leading from the bottom of the bolster to its top, up which the oil is carried during the rotation of the spindle. At the top of the bolster a cup-like collar with its upper end bent in toward the spindle forms an oil-receiving chamber, into which oil enters through an outlet in the bolster, and in which gritty particles are permitted to settle.



Claim.—1. The spindle and its attached surrounding sleeve, in combination with the spirally-grooved bolster intermediate of the said spindle and sleeve, the cup-like collar at the top of the bolster forming the oil-chamber *g*, having an outlet, *h*, at its top, substantially as shown and described.

2. The spirally-grooved bolster having an oil-inlet and a cup-like collar, *f*, at its top, provided with an oil-chamber, *g*, and outlet *h*, combined with an internal spindle and an external sleeve, all substantially as shown and described.

251,843. WALKING-STICK. JOHN DRAPER, Whitby, Ontario, Canada. Filed Nov. 8, 1881. (No model.)

Claim.—1. In a walking-stick having a metallic lamp-case inserted in it, as described, an outer casing, J, encircling the tube I, containing the lamp, and forming an air-space through which the

251,843.

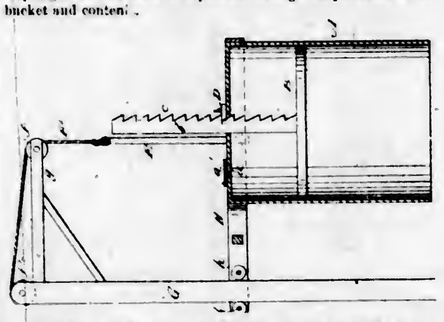


air passes into the lamp, in combination with the vertical wings M and circular flange L, arranged around the casing J, for the purpose of protecting the air-openings, substantially as and for the purpose specified.

2. In combination with a walking-stick having a metallic lamp-case inserted in it, as described, the cone-shaped top F, situated within the case immediately below the top G, forming an air-space, substantially as and for the purpose specified.

251,844. SUCTION-ELEVATOR. HENRY R. DULANY, Alexandria, La. Filed Aug. 24, 1881. (No model.)

Brief.—A suction-excavator consisting of an inverted cylindrical bucket having a self-acting piston within and an outwardly-opening valve in its head, the piston-rod being notched to engage a spring-catch to sustain it in position during transportation of the bucket and content.

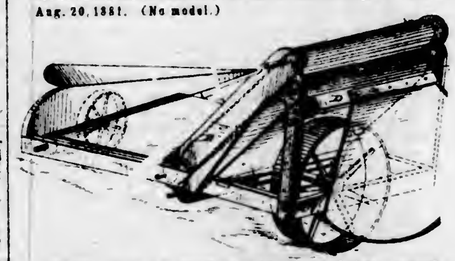


Claim.—1. The device herein shown and described for elevating substances, consisting of the inverted bucket or cup A, containing the self-acting piston B, the top of the bucket or cup being provided with the valved opening *a*, substantially as and for the purposes set forth.

2. The inverted bucket or cup A, provided with the valved opening *a*, and with the spring-actuated catch D, in combination with the self-acting piston B, provided with the notched piston-rod *b*, substantially as and for the purposes set forth.

3. The inverted bucket or cup provided with the self-acting piston B, in combination with the yoke H, post G, arm *g*, pulleys *f* and *f'*, rope F, and bail E, substantially as and for the purposes set forth.

251,845. SWATHING ATTACHMENT FOR HARVESTERS. CHARLES C. DUNKEL and ALBERT TECHOP, Harrisburg, assignors of one-third to Charles N. Owen, Manheimburg, Pa. Filed Aug. 20, 1881. (No model.)



Claim.—1. In a harvesting-machine, a spiral chute or swathing device located on the stubble side of the main frame and outside of the drive-wheel.

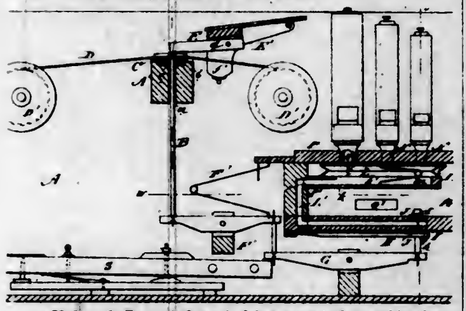
2. The combination, in a harvesting-machine, of mechanism for elevating the grain over the main drive-wheel and a swathing device for receiving the grain from said elevating mechanism and depositing it upon the ground in a continuous swath, with the stalks at right angles, or thereabout, to the line of said swath.

3. The combination, in a harvesting-machine, of a carrying-platform, a swathing device for depositing the grain in a continuous swath upon the ground, a driving-wheel interposed between said platform and swathing device, and mechanism for elevating

the grain over the driving-wheel and delivering it to said swathing device.

4. In a harvesting-machine, the combination of mechanism for elevating the grain and a swathing device adapted to receive the grain from said elevating mechanism, and to deposit the same upon the ground, with the straw at right angles, or nearly so, to the position in which it was received from the elevating mechanism.

251,846. MECHANICAL MUSICAL INSTRUMENT. ALONZO DUNBAR, New York, N. Y., assignor to Moses Harris, same place. Filed May 12, 1881. (No model.)



Claim.—1. In a wind musical instrument, the combination, with a perforated music-sheet and jacks, levers, or key-moving fingers arranged on one side of it and push-pins arranged on the other side thereof, of a perforated block embracing said sheet and movable laterally, substantially as herein shown and described, whereby a lateral movement of the said music-sheet is imparted to the said push-pins, as set forth.

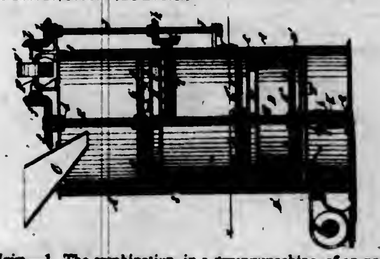
2. In a wind musical instrument, the combination, with a perforated music sheet or strip arranged between jacks, levers, or key-moving rods on one side and push-pins on the other side, of a laterally-movable box or frame holding said levers, jacks, or rods and embracing the edges of said sheet or strip, substantially as herein shown and described, whereby the relative lateral positions of said jacks or rods and music-sheet are preserved, as set forth.

3. In a musical instrument adapted to be played by means of a moving perforated music-sheet, which controls the operation of valves to its reeds, pipes, or other sounding devices, the combination, with the jacks or levers E, pivoted in pivoted frame E', of the movable perforated block C, push-pins B, and connected levers and wind-regulating valve F, G, H, and I, respectively, substantially as herein shown and described.

4. In a wind musical instrument, the combination, with the air-pressure chamber M, escape-tubes J, air-passages L', and pipe-connecting-tubes N, of the bellows valve or pallet L, having a spring, *m*, and arranged within said pressure-chamber against the mouth of the tubes N, substantially as herein shown, and for the purpose described.

5. In a wind musical instrument constructed and adapted to be operated mechanically or manually, the combination, with the air-pressure chamber K and escape-tube J, of the bellows valve or pallet L, provided with communicating supply and exhaust passage L', substantially as herein shown and described.

251,847. MACHINE FOR DRYING STARCH REFUSE AND OTHER SUBSTANCES. WRIGHT DUNTON, Glen Cove, N. Y. Filed Dec. 20, 1880. (No model.)



Claim.—1. The combination, in a drying-machine, of an upright trunk or cylinder divided at different heights by hollow floors, pipes for supplying a heating agent to said hollow floors, an upright hollow rotary shaft, blades or scrapers rotating with said shaft above said floors for distributing material upon said floors and for discharging it through openings in said floors, perforated pipes projecting radially from said shaft above said floors, and means for forcing air through said shaft and pipes, substantially as and for the purpose specified.

2. The combination, in a drying-machine, of an upright trunk or cylinder, divided at different heights by hollow floors having in them discharge-openings, an upright hollow shaft, perforated pipes projecting radially from said shaft above each floor, and means for forcing air through said shaft and perforated pipes, whereby the chambers between said floors may be filled with hot air, substantially as and for the purpose specified.

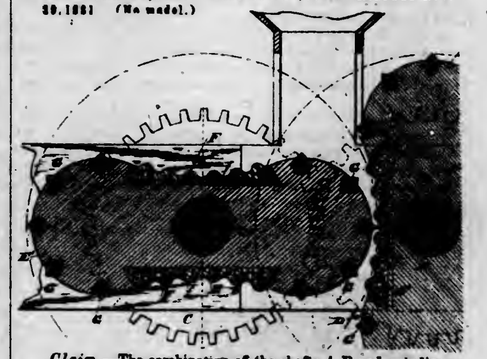
3. The combination, in a drying-machine, of an upright trunk or cylinder divided at different heights by floors having in them discharge-openings, an upright hollow rotary shaft, hopper-boys above each floor composed of perforated pipes projecting from said shaft, and blades or scrapers attached to said pipes, and means for forcing air through said shaft and pipes, substantially as and for the purpose specified.

4. The combination, in a drying-machine, of an upright trunk or cylinder divided at different heights by hollow floors having in them discharge-openings, pipes for supplying a heating agent to said hollow floors, an upright hollow rotary shaft, and pipes projecting therefrom for supplying air between said floors, blades or scrapers rotating with said shaft above said floors, and rotary screw-conveyers arranged below said floors for delivering material discharged from one floor to the center of the floor below, substantially as and for the purpose specified.

5. The combination of an upright trunk or cylinder, A, hollow floors B B', having discharge-openings *c*, the hollow rotary shaft E, the steam-jacketed compartment D, below the floor B', and having discharge-chutes K, the hopper-boys G G'G², comprising perforated pipes *g*, projecting from said shaft, and blades or scrapers A, and the blower H, all substantially as specified.

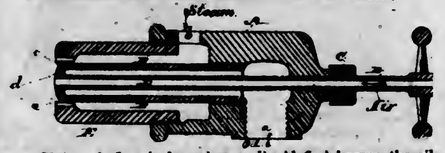
6. The combination of the hollow rotary shaft E and hopper-boys, each comprising perforated pipes *g* and blades or scrapers A, cut or slit transversely, and having the outer ends of the portions between the slits bent or deflected, as described, so that said portions stand at an angle to said pipes, substantially as specified.

251,848. CRUSHING AND GRINDING MACHINE. GEORGE DURYEA, Rahway, N. J. Filed Nov. 30, 1880. Renewed Nov. 30, 1881. (No model.)



Claim.—The combination of the shafts A B and grinding-heads E F, the latter being constructed and arranged as herein described, and provided on their salient extremities with removable angular teeth G and on their concave surfaces with removable corrugated plates F, said teeth G being carried over the surfaces of the corrugated grinding-plates F with a crushing and grinding action, as herein described and shown.

251,849. HYDROCARBON-BURNER. EVAN A. EDWARDS, San Buenaventura, Cal. Filed Aug. 31, 1881. (No model.)



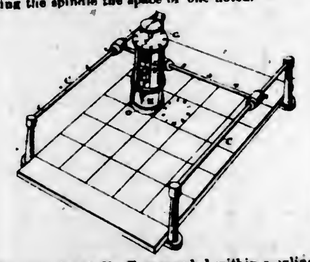
Claim.—1. In a hydrocarbon or liquid-fuel burner, the oil-passage B, in connection with the oil-supply, and having a regu-

lating-valve, *d*, at its exit end, in combination with the steam-passage E, in connection with the steam-source, said steam-passage having its exit end provided with spiral or inclined grooves or passages *e*, opening out of the end of the burner separately from the said oil-passage, substantially as and for the purpose herein described.

2. The hydrocarbon-burner consisting of the casting A, with its apertures *a* and *b*, pipe B, with its valve-seat *c*, open-ended hollow stem D, with its valve *d*, and bushing C, and the pipe E, with its spiral or inclined grooves or channels *e*, when arranged substantially as and for the purpose herein described.

251,850. TALLY-MACHINE. JOHN W. ELLIOT, Toronto, Ontario, Canada. Filed June 21, 1881. (No model.)

Brief.—To record by canceling the proper figures on a card, so as to record separately the numbers of various articles or classes of merchandise. At each pressure on the button the notched plate or disk I is carried down. The following pawl, taking an angular position, drops into the adjoining notch. When the pressure is removed the plate rises, carrying the pawl to a horizontal position and turning the spindle the space of one notch.



Claim.—1. A spindle, F, suspended within a cylindrical casing, and having at one of its ends a pointed crank, H, in combination with a pivoted spring-pawl, M, acting against the notched block I, so that at each vertical movement of the spindle the pointed crank is caused to move a given distance in a circle, substantially as and for the purpose specified.

2. In a tally consisting of a spindle with a pointed crank so arranged within a casing that at each vertical movement of the spindle the pointed crank is caused to revolve a given distance in a circle, the combination of a vertical spring, L, acting against the flattened edge of the block I, in order to prevent the spindle revolving when it is being forced down, as and for the purpose specified.

3. In a tally consisting of a spindle with a pointed crank so arranged within a casing that at each vertical movement of the spindle the pointed crank is caused to revolve a given distance in a circle, the combination of a card divided into spaces, and held on the base-plate of an adjustable frame arranged to support the casing E, substantially as and for the purpose specified.

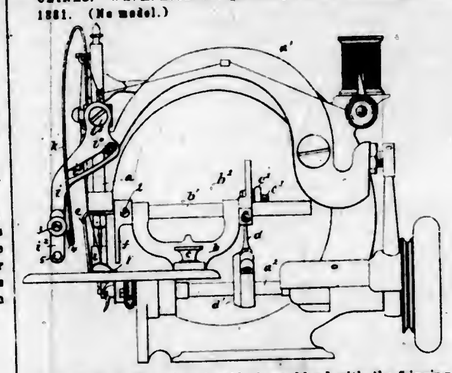
251,851. COMBINATION-TOOL. FRANK EHRENBERG, Jr., St. Louis, Mo. Filed Nov. 8, 1881. (No model.)



Claim.—1. The bow-shaped handle A, with sleak-tenderer C, consisting of cross-bars *c* and dividing-ribs *c'*, as set forth.

2. The combination of handle A, tenderer C, made as set forth, can-opener D, cross-bar B, corkscrew E, hook F, projection G, tack-extractor H, and tack-hammer I, all substantially as set forth.

251,852. FRINGING ATTACHMENT FOR SEWING-MACHINES. WM. A. ESTAVER, Cambridge, Mass. Filed Nov. 19, 1881. (No model.)

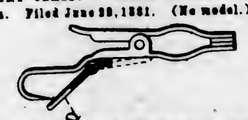


Claim.—1. The thread-guide *i*, combined with the fringing-hook *f* and heading-finger, to carry the fringing-thread backward under the presser-foot to be stitched in place, substantially as described.

2. The rocker-shaft, its arm, and link *d*, adjustably attached to it, and the fringing-hook and heading-finger carried by the said rock-shaft, combined with the thread-guide, the needle, needle-bar, and presser-foot, under which the fringing-thread is drawn, substantially as described.

3. The rock-shaft *b'*, bearings for it, and means to rock it, combined with the heading-finger and fringing-hook carried by the said rock-shaft, and made adjustable thereon relatively each to the other, substantially as described.

251,853. HAT-CLASP. WILLIAM EWING, Frankford, Philadelphia, Pa. Filed June 29, 1881. (No model.)



Claim.—As a new article of manufacture, a hat-clasp one end of the main jaw of which is made in hook shape and has also swiveled to it a ring, D, for the purposes set forth.

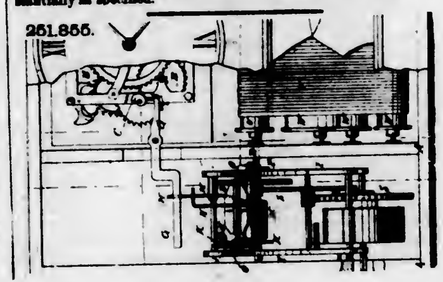
251,854. SHUTTER-FASTENER. HENRY J. FISHER, Jr., Point Pleasant, W. Va. Filed Nov. 12, 1881. (No model.)



Claim.—1. The long bar-fastening D, having the perforations *e* at one end and the journal-head *d* at the other, in combination with the pivot-bearing C and the spring-catch E, substantially as specified.

2. The combination, with the pivot-bearing C and the long vibratory fastening-bar D, journaled thereto and having the perforations *e*, of the eye-bar G, secured to the opposite blind, the channel or passage A in the framing, and the spring-catch E, substantially as specified.

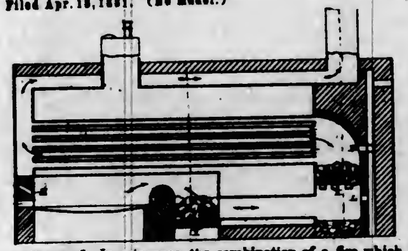
251,855.



251,855. ADVERTISING APPARATUS. EDWIN H. PITCHER-ALD, New York, N. Y. Filed May 27, 1881. (No model.)

Claim.—An advertising apparatus constructed substantially as herein shown and described, consisting of the clock-work B, the series of rollers U W, carrying an endless band, V, the spring-driven chain of gear-wheels S, the cam C, the lever G, the weighted catch-lever H, the arm N, the trip-arms O P and their shaft M, the gear-wheel K, having pin J, and the single-toothed ratchet-wheel Q, as set forth.

251,856. FURNACE. JOSEPH FLAUSNER, Philadelphia, Pa. Filed Apr. 18, 1881. (No model.)



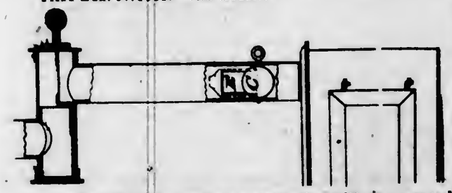
Claim.—1. In a furnace, the combination of a fire which is made in the front end of the furnace with a bed of carbon through which the whole products of combustion of the fire in the front of the furnace pass, and a suitable flue, K L, for admission of air to the secondary fire, substantially as shown.

2. In a furnace, the combination of the fire made in the front end of the furnace, a bed of carbonate of lime through which the products of combustion pass, a suitable air-flue, K L, for the admission of air to support combustion, and a bed of carbon which forms an incandescent fire, and through which also the products of combustion and the gas disengaged from the carbonate of lime pass, substantially as described.

3. In a furnace, the combination of a fire in the front of the furnace, a vaporing-pan, a suitable flue for the admission of air to the secondary fire, and a secondary fire-chamber, substantially as set forth.

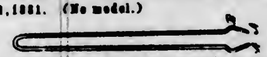
4. In a furnace, the process described of liberating carbonic-acid gas by passing the products of combustion through a bed of carbonate of lime, and then passing the gas thus liberated through a secondary fire, where it is made to mingle with atmospheric air above and below the grate, and thus converted into a combustible gas, substantially as specified.

251,857. STOVE-PIPE. ANDREW FLOHR, Sacramento, Cal. Filed Aug. 27, 1881. (No model.)



Claim.—In a stove-pipe, the combination, with an upper and lower vertical section of pipe, of a horizontal section provided with removable end caps and a cylindrical sliding damper having a discharge-opening, a draw-rod, and a knob having a slotted disk engaging a pin in the removable cap, substantially as specified.

251,858. HAIR-PIN. MARY T. FOOTE, Boston, Mass. Filed Apr. 11, 1881. (No model.)

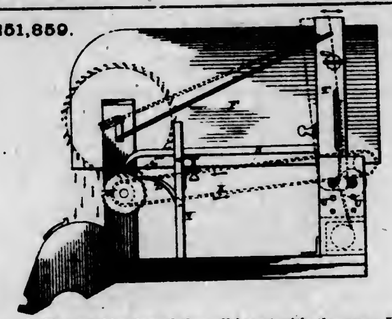


Claim.—A hair-pin having its ends A A bent inwardly toward each other from the outwardly-bent portions B B, substantially as and for the purpose described.

251,859. GOVERNOR FOR COTTON-GINS. LYCURGUS G. FERRIS, Stranger, Tex. Filed Oct. 24, 1881. (No model.)

Claim.—1. The combination of a roll-breast, an automatic regulating mechanism connected thereto, and means for suspending the roll-breast from above so that it can move in and out in relation to the frame according to the pressure in the roll-box, substantially as shown.

251,859.

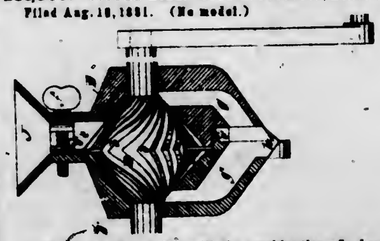


2. The combination of the roll-breast with the ropes I and shaft K, substantially as described.

3. The combination of the movable roll-breast, the connecting-ropes I, the shaft K, provided with the pulleys J M, the scale and slide, and ropes which run from the pulleys M to the scale and slide, substantially as set forth.

4. The combination of the movable frame U with the rocking frame T, which is pivoted therein, the frame U being made adjustable upon the top of the gin-frame, substantially as specified.

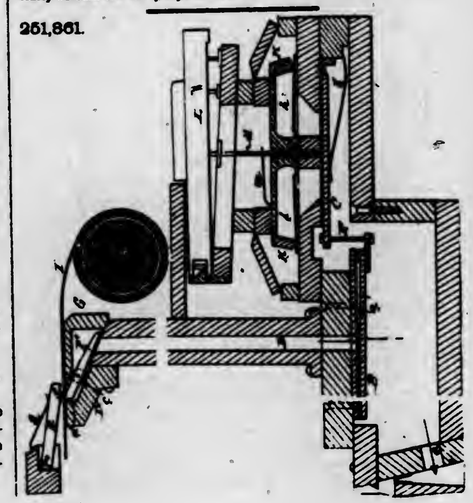
251,860. COFFEE-MILL. SETH H. FOUNTAIN, Amite City, La. Filed Aug. 18, 1881. (No model.)



Claim.—1. In a coffee-mill, the combination of a burr having a prolate-spheroidal form and spiral ridges, gradually decreasing in size as they reach the smallest peripheries at the ends of said burr, with a correspondingly-ribbed grinding-casing having a throat over the largest periphery of the burr and an outlet at each end where the ridges are smallest, whereby the grain will first be broken and afterward be mainly ground at the small ends of the burr, as described.

2. The parts D D' of the casing, formed with the discharge-openings *g* and *g'*, leading from the smallest ends of the chambers, in combination with the burr B and the hopper-throat J, substantially as and for the purposes set forth.

251,861.



251,861. MECHANICAL MUSICAL INSTRUMENT. ASHLEY POWELL, New York, N. Y., assignor to Moses Harris, same place. Filed May 13, 1881. (No model.)

Claim.—1. In a wind musical instrument adapted to be operated mechanically and manually, and containing sound-producing devices, such as reeds, the tracker-pins of the manual mechanism, provided with means for holding them in their normal position and holding them from contact with the reed-valves while said valves are being depressed or operated upon by the music-sheet or mechanically-operating mechanism, substantially as herein shown and described.

2. In a wind musical instrument provided with exhaust-bellows, the combination, with the pneumatic keys B, of the air-ducts D, valves F, spring-actuated levers H, and perforated music-sheet I, all arranged to operate substantially as herein shown and described, whereby the valves F are acted upon by the levers through perforations in the music-sheet to permit air to pass through the air-ducts to the pneumatic keys, as set forth.

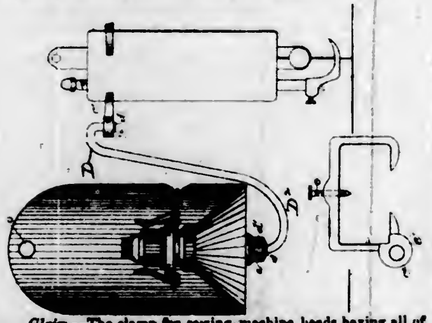
3. In a wind musical instrument adapted to be operated mechanically and manually, and containing sound-producing devices, such as reeds, and provided with exhaust-bellows, the combination, with the reed-valves C, the manual-keys L, and spring-supported tracker-pins M for manually operating the valves of the pneumatic keys B, arranged within the wind-chest, air-ducts D, valves F, levers H, and perforated music-sheet I, mechanically operating the valves, substantially as herein shown and described.

251,862. SNAP-HOOK. FRED FRAZER, Syracuse, N. Y. Filed Dec. 7, 1881. (No model.)



Claim.—A snap-hook having its hook, loop, and shank cast in one piece, with a cavity, *a*, having eccentric side flanges and inwardly-projecting lugs, a tongue, D, with downwardly-projecting curved hooks, and the coiled spring *c*, all constructed and adapted to operate substantially as set forth.

251,863. LAMP ATTACHMENT FOR SEWING-MACHINES. FRANCIS E. FARY, Springfield, Ohio, assignor of one-half to Luke Carles, same place. Filed Sept. 3, 1881. (No model.)

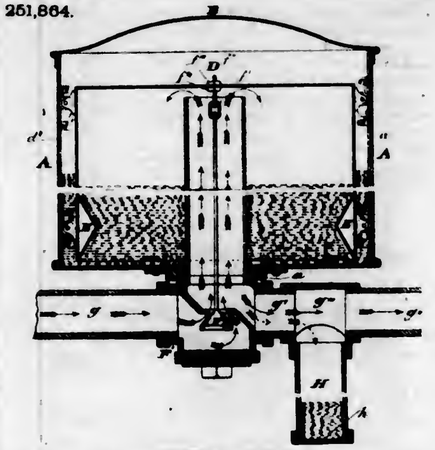


Claim.—The clamp for sewing-machine heads having all of its sides rigid, and provided with a set-screw for tightening it upon the head, and with the leg *c'*, having the socket *c²* projecting outside of the lines of the clamp, in combination with the bracket-arm D, having the spindles *d' d²*, and with the lamp A *a a'*, substantially as set forth.

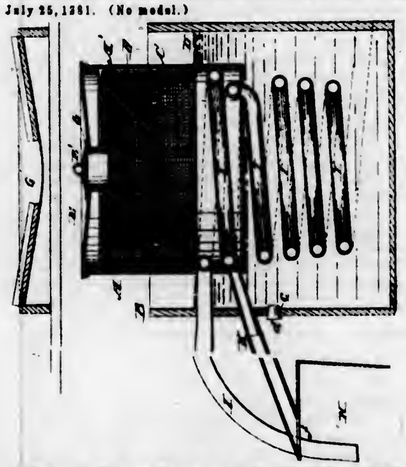
251,864. GAS-GOVERNOR. NATHAN H. GARLAND, St. Louis, Mo., assignor of one-half to James S. Garland, same place. Filed Oct. 22, 1881. (No model.)

Claim.—A gas-regulator consisting of closed casing A B, having tracks *d' d²*, bell or receiver D, having brackets *d d* and rollers *d' d²* on its vertical sides, and provided with annular V-shaped air-chamber on its inside, near its bottom edge, collar *a*, two-way shell F' at bottom, having valve F, vertical tube C, supported in valve-shell, inlet and outlet pipes *g g'*, coupling *g''*, and cap H, for receiving condensation from the regulator, and the attached or connected system of gas-pipes through the outlet-pipe, as set forth.

251,864.



251,865. APPARATUS FOR THE MANUFACTURE OF TURPENTINE AND ROSIN. ALLEN GARDNER, Americus, Miss. Filed July 25, 1881. (No model.)



Claim.—1. The combination of the vessel A', the cylindrical wire screens C D, the concave cover E, having central opening, E', the superposed concave screen G, and the worm I, to strain the turpentine, as described.

2. The combination, with the condensing-tank B and still H, of the rectifier A, provided with screens C D and pipe K, and set within the said tank, and worm I, passed through said rectifier and tank, substantially as herein shown, and for the purpose described.

251,866. COATING METALLIC ARTICLES WITH VULCANIZED RUBBER. WILLIAM GARRITY, Malden, and NICHOLAS AVERY, Cambridge, Mass. Filed Nov. 23, 1881. (No specimens.)

Claim.—1. The herein-described process of coating metallic articles with vulcanized rubber, the same consisting in first coating the metallic article with muriate of tin, then applying thereto a layer of a composition formed of litharge, sulphur, and rubber cement, which will unite with the muriate of tin at the vulcanizing-heat, and finally applying the vulcanizable-rubber compound and vulcanizing the same, substantially as set forth.

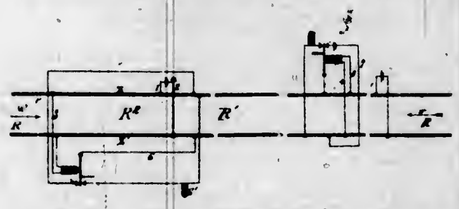
2. As a new article of manufacture, a wringer-roll or other metallic article coated with rubber, formed by first coating the metallic surface with muriate of tin, over which is placed a layer of a composition formed of litharge, sulphur, and rubber cement, and then applying thereto the desired quantity of vulcanizable-rubber compound and vulcanizing the same, substantially as and for the purpose described.

3. In a wringer-roll or other metallic article coated with vulcanized rubber, the combination, with a metallic surface coated with muriate of tin, substantially as described, of a composition formed of litharge, sulphur, and rubber cement, united therewith by the action of the heat to which the article is subjected in the vulcanizing process, and a covering or coating of rubber compound vulcanized thereon, substantially as and for the purpose set forth.

4. In the process of coating metallic articles with vulcanized rubber, the employment of a composition formed of litharge, sulphur, and rubber cement for firmly uniting the vulcanizable-rubber compound to a metallic surface previously coated with muriate of tin, when the article is subjected to heat in the vulcanizing process, substantially as described.

251,867. ELECTRIC BLOCK SIGNALING APPARATUS. OSCAR GASSETT, Boston, Mass., assignor to the Union Switch and Signal Company, Pittsburg, Pa. Filed Oct. 22, 1881. (No model.)

Brief.—The signal-magnets *s s'* are only operated so as to cause the signals to indicate "safety" by the batteries at the opposite end of the section, respectively, from them, so that an approaching train from either direction cannot throw the signal to "safety" as long as the distant battery is short-circuited by a train on the section.



Claim.—1. A signal-magnet and a battery at one end of an insulated electrically-connected block-section and connected with one line of rails thereof, a like magnet and battery at the other end of the block and connected with the other line of rails thereof, in combination with a circuit-shifting apparatus substantially as described, whereby, on the approach of a train from either direction, a circuit will be formed embracing the signaling-magnet of the near station, the battery of the remote station, and the intermediate electrically-connected track-rails.

2. A section of railway-track electrically insulated at its ends and having each line of rails electrically connected between the ends, in combination with a signal connected with one line of rails at or near one end, and movable circuit-changer connected to the other line of rails at or near the same end, and a movable circuit-changer and a battery connected the one to one end and the other to the other of said lines of rails at or near the other end of the section, substantially as set forth.

3. A system of electrically-operated railway block signaling apparatus consisting of an electric circuit and make-and-break mechanism at one end of a section, adapted to actuate a moving circuit-changer by an approaching or passing train, and a rail-circuit embracing a signal at the near and a battery at the remote station, such second circuit being brought into operation by the make-and-break mechanism at the end of the block, substantially as set forth.

4. An electrical block signaling apparatus having in combination electrical rail-circuits through the whole or the greater part of the length of the block-section, a signal-magnet at each end of the block-section electrically connected the one with one line of rails and the other with the other line of rails, a battery at each end of the section electrically connected with the same lines of rails and in the same order, an armature at each end of the section electrically connected to the same lines of rails, but in a reverse order, two contact points or studs to each armature, one connected with the signal-magnet and the other with the battery, and an electrical circuit and break-and-make mechanism at each end of the block-section, adapted to be actuated by a passing train, substantially as set forth.

5. A rail-circuit block-section, B', electrically connected at each end by one wire with a battery, by another wire with a signaling-magnet, and by a third wire with an electrically-actuated circuit-changer, in combination with a make-and-break mechanism at each end of the section, adapted to be actuated by the passing train, substantially as set forth, with reference to the formation of a closed circuit extending through the track-rails from one station to the next, and with reference to the short-circuiting of each section while the train is passing from one to the other stations.

251,868. RAILWAY-TORPEDO AND DETONATING SIGNAL. FRANK GERNARD, Scranton, Pa., assignor of one-half to Edwin B. Sherwood, same place. Filed Nov. 17, 1881. (No model.)

Brief.—A metal-strap secured to the under side of the torpedo rests longitudinally upon the rail, and the shell or case is serrated or covered with a gritty substance.



Claim.—1. A railway-torpedo having its shell serrated or covered with gritty substance, substantially as set forth.

2. A railway-torpedo having its shell serrated or covered with gritty substance, and having holding-strap B and auxiliary strap C, secured permanently or detachably transversely to said holding-strap, as set forth.

251,869. CAR-AXLE BOX. GEORGE P. GOBLET, Philadelphia, Pa. Filed Nov. 17, 1881. (No model.)



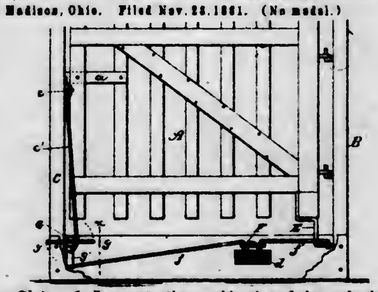
Claim.—1. In an oiling device for car-axle boxes, a ring adapted to surround the axle-journal, and provided with nicks or buckets, substantially as set forth.

2. A lubricating ring or chain for car-axle boxes, having a series of buckets or rings on its inner diameter, and so formed or shaped that a portion of said buckets will convey oil to said journal when rotating in one direction, and the other or remaining portion of the buckets conveying oil thereto when said axle revolves in a contrary direction, substantially as shown and described.

3. In a car-axle box, the combination of axle-journal B, the bearing C, having curved surface *c'*, the key or box top curved at *d*, and ring or chain E, said bearing being grooved at *c* to receive said ring or chain, substantially as shown and described.

4. The nicked or bucketed ring or chain substantially as shown, and for the purpose set forth.

251,870. AUTOMATIC GATE. RANDOLPH F. HAGEMAN, New Madison, Ohio. Filed Nov. 28, 1881. (No model.)



Claim.—1. In a gate, the combination of the rock-shaft G and its downwardly-extending arm *g'*, journaled horizontally between the base-boards D, with the vertically-acting connecting-rod *c'*, having its lower end pivoted to the arm *g'* and its upper to the rear end of the pivoted latch *c*, all arranged to operate as shown and described.

2. The combination of the horizontal rock-shaft G, its pedals *g*, and downwardly-extending arm *g'*, journaled between the base-boards D, with the connecting-rod *f*, reciprocating lever F, rod *f'*, and crank E, secured to the lower end of the pivot-post of the gate, all arranged and operating as set forth.

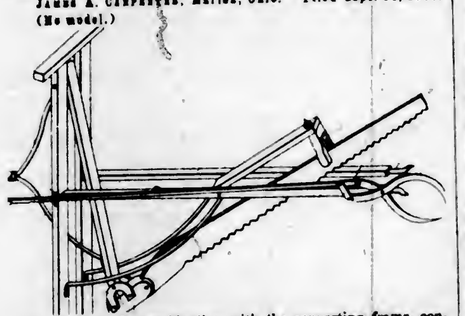
3. In a gate, the rock-shaft G, provided with operating-pedals *g*, and a downwardly-projecting arm *g'*, to which is pivoted the vertical connecting-rod *c'* and horizontal rod *f*, said rock-shaft being adapted to open and close the gate and to release the latch by means of the connecting mechanism, as hereinbefore described.

251,871. CLASP-REEL FOR RIBBONS, &c. SPENCER A. HALN, Harrison, assignor of one-half to Constantine Kelley, Harrisonville, Mo. Filed Aug. 10, 1881. (Model.)



Claim.—A ribbon or tape holder consisting of a roll, A, provided with slotted clasp D, buttons E, and spring G, the several parts being constructed and arranged to operate as set forth.

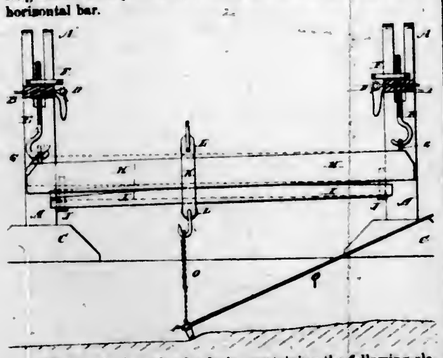
251,872. LOG-SAWING MACHINE. CLARK B. HALSTEAD and JAMES A. CARPENTER, Marion, Ohio. Filed Sept. 26, 1881. (No model.)



Claim.—In combination with the supporting-frame, constructed as described, and provided with prongs to enter the log, the oscillating sweep, carrying a saw working through a suitable slot in a hanger secured to a bar loosely connected to the supporting-frame and against a friction-roller mounted in an opening in said hanger, and the tongs and their operating mechanism adapted to work in connection with the prongs on the frame to hold the log, substantially as specified.

251,873. GRADER FOR DRAINS. GEORGE F. W. HARRIS, Woodburn, Ill. Filed May 11, 1881. (No model.)

Brief.—A straight horizontal bar is suspended by eyes at its ends to adjustable screw-hooks in trestles. A grading-tool with long handle is suspended by a chain to a carrier traveling on the horizontal bar.



Claim.—1. A grader for drains containing the following elements, namely: a rigid bar mounted upon suitable supports, with means for adjusting the bar to correspond with the intended grade of the bottom of the drain, and a grading-tool arranged to travel upon said bar and work the drain to the grade, substantially as set forth.

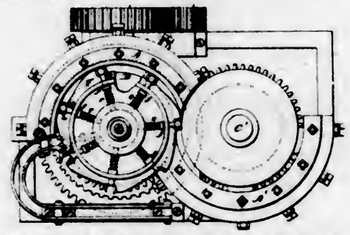
2. In a grader for drains, the combination, with the rigid gage-bar H, of the carrier K L and the grading-tool P, substantially as herein shown and described, whereby the bottom of the drain can be worked to a uniform grade, as set forth.

3. A grader for drains constructed substantially as herein shown and described, consisting of the trestles A B, the bar H, the adjustable screw-hooks E, carrier K L, and the chain and grading-tool O P Q, as set forth.

4. In a grader for drains, the combination, with the trestles A B and the straight bar H, of the screw-hooks E, substantially as herein shown and described, whereby the said bar H can be adjusted parallel with the grade of the drain, as set forth.

5. In a grader for drains, the combination, with the trestles A B, the screw-hooks E, and the bar H, of the carrier K L, the chain O, and the grading-tool P Q, substantially as herein shown and described, whereby the bottom of the drain can be opened to a uniform grade, as set forth.

251,874. MACHINE FOR ROLLING THREADS OF SCREWS OR BOLTS. HAYWARD A. HARVEY, Orange, N. J. Filed Aug. 23, 1881. (No model.)



Claim.—1. In machines for rolling the threads of screws or bolts, a pair of dies consisting of a rotating die and a stationary curved die, said dies having ribs on their working-faces for forming the thread of a screw or bolt upon a blank passing between them, combined with a feed-channel for delivering blanks and a disk arranged above and revolving in a plane parallel with and concentric to said revolving dies, the periphery of said disk running close to the mouth of said channel, and constructed with recesses to successively receive blanks from said channel and present them to the passage between said revolving and stationary die, substantially as described.

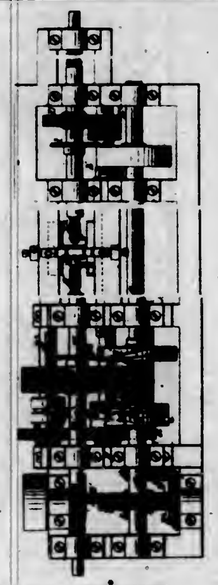
2. In a machine for forming screw-threads, two or more pairs of dies, each pair consisting of a revolving die and a stationary curved die, the respective pairs having ribs on their working-faces, the ribs on the one pair varying in depth or width from those on the other pair, for the purpose of forming the thread of a screw or bolt by a series of two or more progressive operations, combined with a feed-channel to present a column of blanks to the first pair of dies, and spring-forks arranged to travel in a plane parallel with the revolving die of the first pair and to pass the mouth of said channel, and also arranged to move radially toward and from their center of motion, and mechanism, substantially such as described, to force said forks inward as they successively approach the mouth of the feed-channel and embrace the blank presented at the mouth of the channel and travel with the blank in its passage between the dies until the blank which they hold, passing from the first pair of dies, will be forced from the periphery of the first revolving die into contact with the ribbed surface of the second revolving die, substantially as described.

3. In a machine for forming screw-threads, two or more pairs of dies, each pair consisting of a revolving die and a stationary curved die, the respective pairs of dies having ribs on their working-faces, the ribs on the one pair varying in depth or width from those on the other pair, for the purpose of forming the thread of a screw or bolt by a series of two or more progressive operations, combined with spring-forks arranged to travel in a plane parallel with the revolving die of one pair, and also to move radially toward and from their center of motion, so that, receiving the blanks, they travel with the same in their passage between the dies until, the blanks which they hold passing from the pair of dies which work in connection with said forks, they will be forced from the periphery of the revolving die of that pair into contact with the revolving die of the next pair, substantially as described.

251,875. MACHINE FOR TAPPING NUTS. HAYWARD A. HARVEY, Orange, N. J. Filed May 27, 1881. (No model.)

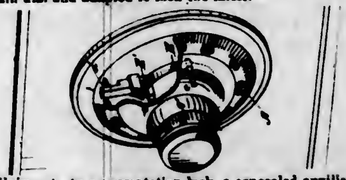
Claim.—In a machine for tapping nuts, two taps arranged in longitudinal alignment, for acting successively on the nut-blank from opposite sides thereof, and having the capacity of reciprocating endwise movement, and means for rotating and reversing the direction of rotation of the two taps, in combination with a feeding-tube or conveyer for a nut-blank, and means for holding the nut-blank in the path traversed by the tap successively, and means for discharging the finished nut after the two taps have operated upon it from opposite sides, substantially as set forth.

251,875.



251,876. PERMUTATION-LOCK. GEORGE H. HATHAWAY, Jersey City, N. J. Filed July 1, 1881. (Model.)

Brief.—An auxiliary permutation-lock is arranged within the main dial and adapted to lock the latter.

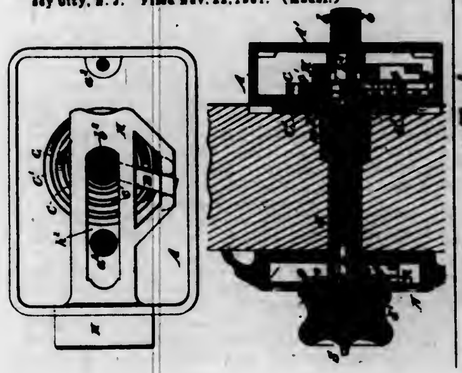


Claim.—1. In a permutation-lock, a concealed auxiliary permutation-lock within the main dial, and adapted to lock said main dial against manipulation, as and for the purposes set forth.

2. In a safe-lock, the combination of duplex dials, spindles, disks, and knobs, one concealed within the other and one adapted to lock the dial of the other when the combination is off, as specified.

3. The combination of the main dial A and knob A' and a main locking mechanism with the auxiliary locking mechanism, the bolt F, spindle G, and auxiliary knob and dial concealed within the knob A', and the duplex spring E, as specified.

251,877. PERMUTATION-LOCK. GEORGE H. HATHAWAY, Jersey City, N. J. Filed Nov. 23, 1881. (Model.)



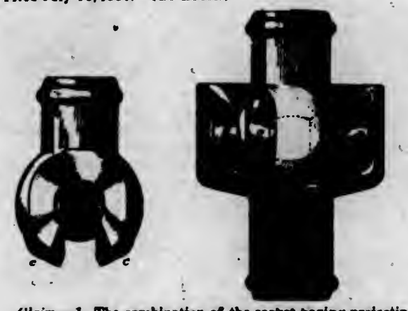
Claim.—1. In a permutation-lock, a pawl-arm for moving and locking the bolt, combined with a socket-spring, whereby said arm is made to engage the operating-shaft, the recessed concentric rings, and the operating-ring adapted to permit said arm to manipulate said bolt, and the bolt provided with recesses and slot, as described, all arranged to operate as specified.

2. In combination with the lock-frame A, having a series of concentric recesses, C', the concentric rings C e e', the operating-ring F f, the pawl-arm B, and bolt H, provided with recesses and a slot, h', whereby the throw of said bolt is limited by the shank of the pawl-arm and socket-ing e', substantially as specified.

3. The combination, with the primary and secondary locks having concentric recesses and concentric rings, as described, of the connecting stem or shaft, the operating spring-arms, the operating-ring, and the slotted and recessed bolt in the secondary lock, all arranged to operate substantially as specified.

4. The main shaft E, having serration e, and the operating-ring F f, combined with the serrated screw, with the arm B, having serrations b', and with a spring, as set forth.

251,878. SHAFT-COUPLING. CALVIN G. HAYES, Sedalia, Mo. Filed July 16, 1881. (No model.)



Claim.—1. The combination of the socket having projecting bearings or bearings in the projections with the roller provided with or having inclined bearing-faces g g and e e and the arms, substantially as described.

2. The combination, with a socket and arms, of the wooden pins adapted to prevent undue crowding of the parts, substantially as described.

3. The combination of the arms, the roller, and the wooden pin projecting inwardly, whereby the roller is retained in place when set up, substantially as described.

4. The combination, with the socket part of the coupling, of the sleeve a, provided with central perforation, and projections or stops b b, arranged in opposite corners, substantially as described.

251,879. CORN-PLANTER. WILLIAM A. HAZELRIGG, Napoleon, Ind. Filed Oct. 1, 1881. (Model.)

Brief.—The frame carrying the planting devices is hinged to the rear of the main riding and lever frame. The lifting-rods have a spring-connection. There is a sliding rack, a lever, and seat for hill-dropping, which are all removable to convert the machine into a drill, and belts or chains for this purpose are placed upon the drums on each section. Divided hoppers for corn and fertilizer.



Claim.—1. In a corn-planter, the hinged frame or section A, carrying the double rack, adjusting-lever, rock-shaft, and connecting-rod, in combination with the frame C, carrying the double hoppers, the dropping-lever, sliding rack, feed-shaft, and the dropping-cups, and the hinge consisting of the shaft H' and the spring-arms K' K', substantially as specified.

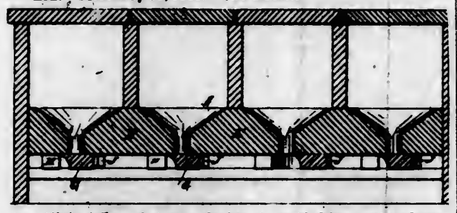
2. In a corn-planter, the hinged frame A, carrying the double rack and adjusting-lever, in combination with the frame C, carry-

ing the double hoppers, the dropping-lever P, sliding rack O', the shaft M, having pinion O and dropping-cups N N, and the agitators Q Q', rods Q^2, rucking levers Q^3, and rods R, connected to the wheels H, substantially as specified.

3. In a corn-planter, the section A, provided with the gear T' upon its axle T, the hinge consisting of the shaft H', supported in bearings, as shown, and having spring-arms K' K^2, and the gears U U^2, in combination with the section C, carrying the double hoppers, the shaft M, having gear V and dropping-cups N N, and the chains W and Y, substantially as specified.

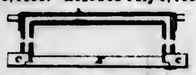
4. In a corn-planter, the section C, having the hoppers L, shaft M, double dropping-cups N N, and pinion V, and provided with the removable rack, lever, and seat, whereby it is adapted to be converted into a seed-drill, substantially as specified.

251,880. SHOT-CASE. CHARLES C. HENDERSON, Arkadelphia, Ark. Filed May 28, 1881. (No model.)



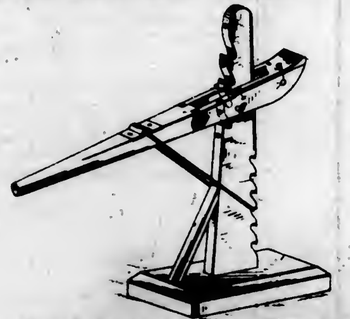
Claim.—In a shot-case, the box A, divided by a series of partitions into a number of compartments, each compartment being provided with a sample-recess upon its opposite sides and having glass fronts L, and the bottoms of the compartments perforated and constructed as shown, in combination with the stops H, pivoted valves G, springs J, and supporting-rail K, substantially as set forth.

251,881. REFRIGERATOR. GEORGE C. HOGGSON, Allegheny, Pa. Filed Nov. 15, 1880. Renewed July 6, 1881. (Model.)



Claim.—In a refrigerator, the combination of the frame A, the support D, having the ribs i, the ice-box F, having perforated sides m, and provided with the door E, the box being made removable from the frame, and a space left all around the box for the free circulation of air, substantially as shown.

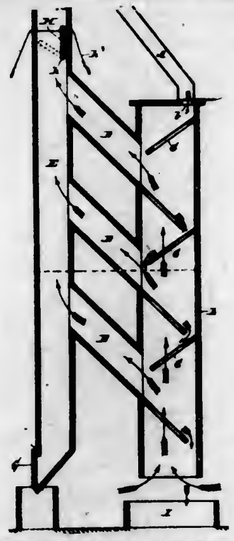
251,882. WAGON OR LIFTING JACK. LORA B. HOIT, Worcester, Mass. Filed Nov. 21, 1881. (No model.)



Claim.—In a wagon or lifting jack, a standard provided at its front edge with a re-enforcing strap and with notches opening downward, and at its rear edge with notches opening upward, the material about the latter being strengthened by rivets passed through the standard and strap, as described, combined with a slotted lever having a fulcrum adapted to rest in one of the notches at the rear edge of the standard, and with a loosely-hung shackle or link fitted to enter any of the notches at the front edge of the standard, substantially as specified.

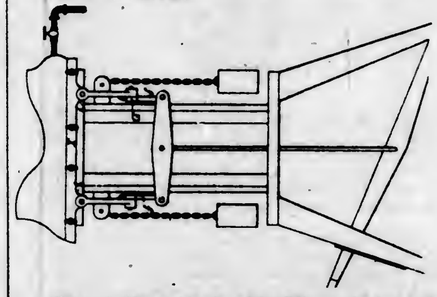
251,883. GRAIN-CLEANER. WILLIAM C. HOLMES, Indianapolis, Ind. Filed Aug. 3, 1881. (No model.)

Claim.—1. The combination of the cleaning-spout B, containing perforated inclines C and located above the hopper I, the suction-tube E, constructed as shown, and the tubes D, connecting said spout and said tube, all substantially as shown and described, and for the purposes specified.



2. The combination of the grain-spout A, cleaning-spout B, wire-netting inclines C, connecting-tubes D, and suction-tube E, having trap-door G and regulating-door H, all substantially as shown and specified.

251,884. APPARATUS FOR FORMING AND SHAPING CORSETS. JAMES ALFRED HOUSE, Bridgeport, Conn. Filed Nov. 23, 1881. (No model.)



Claim.—1. The combination of the sliding carrier-frames, the overarms pivoted to said frames, the holder-arms, the corset-clamps, and the form, substantially as and for the purpose hereinbefore set forth.

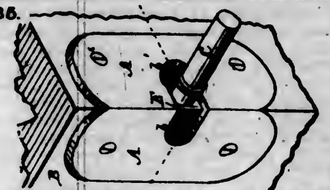
2. The combination of the vertically-sliding carrier-frames, the overarms independently pivoted thereto, the pivoted corset-holders, the corset-clamps, the form, and means for depressing the overarms, substantially as and for the purpose hereinbefore set forth.

3. The combination of the corset-holders, the vertically-sliding independently-adjustable carrier-frames to which said holders are pivoted, the overarms, the treadle, and the link connecting the overarms and treadle, these members being and operating substantially as hereinbefore set forth, to form the corsets of varying sizes at the hips and busts, as described.

251,885. GATE-HINGE. MILLER B. HUDSON, Canandaigua, N. Y., assignor of one-half to Oscar H. Crane, same place. Filed Oct. 24, 1881. (No model.)

Claim.—1. The combination, in a gate-hinge, of the case consisting of the V-shaped plates A A, fitting the corner of a post, provided with the cross-slot *b b'*, extending into both plates, and with the cross-bearings *d d* on the back side above and below the cross-slot, and the horizontal shaft C, supporting the roller, provided with the vertical pintle E, the shaft projecting out through

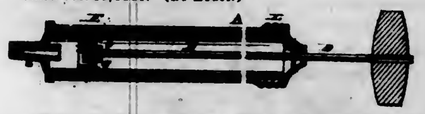
251,886.



the cross-slot and the pintle resting between the cross-bearings, as herein shown and described.

2. In a gate-hinge, the V-shaped case A A, provided with the cross-slot *b b'*, extending into both plates, and the cross-bearings *d d* on the back side above and below the cross-slot, as and for the purpose specified.

251,886. AIR-PUMP. HENRY HUMPHERVILLE, Mountville, Pa. Filed Oct. 25, 1881. (No model.)



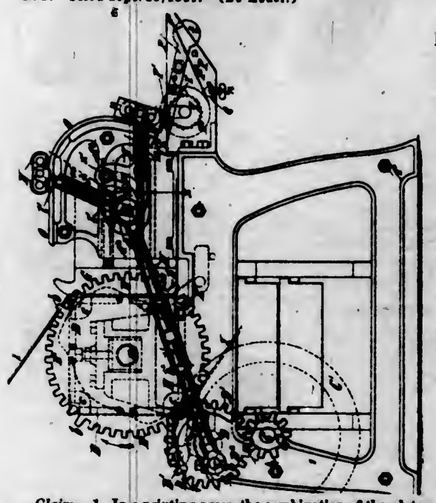
Claim.—1. An air-pump provided with a convexo-concave bottom, in combination with a nozzle which extends into the pump-cylinder for a sufficient distance, as and for the purpose described.

2. The combination, in an air-pump designed to be used with atomizers, of cylinder A, elongated screw-cap L, bottom b, piston E, and nozzle C, extending into the pump-cylinder, substantially as described.

251,887. METHOD OF TREATING MAIZE OR OTHER GRAIN IN THE MANUFACTURE OF BEER, SPIRITS, GLUCOSE, GRAPE-SUGAR, AND OTHER PRODUCTS. HENRY C. HUMPHREY, New York, assignor to FRANZ C. MATTHIESSEN, Irvington, and WILLIAM A. WIECHERS, New York, N. Y. Filed July 9, 1881. (No specimens.)

Claim.—The mode of freeing the germs from corn herein described, which consists in treating crushed corn with hot acidulated water for a sufficient period to render the starch soluble, and to thereby form a suitably dense starch solution, in which the hulls and other undissolved portions of the corn will sink, while the germs float upon the surface, and in then skimming or otherwise removing the germs from the surface of the starch solution.

251,888. PRINTING-PRESS. JAMES HUMPHREY, Brooklyn, N. Y. Filed Sept. 28, 1881. (No model.)



Claim.—1. In a printing-press, the combination of the platen B, of square or polygonal form, the continuously-rotated crank-shaft D on one side thereof, the bed G, having an upright face arranged on the opposite side of said platen, the gear-wheel B' and the mutilated pinion D^1 on the shaft D, for rotating the platen intermittently, and connecting-rods H on opposite sides of the press, forming a direct connection between the shaft D and the bed, substantially as specified.

2. The combination of the platen B, having notched projections e, the pivoted stops E F, and the shaft D and cam s, for shifting the stop F, all substantially as specified.

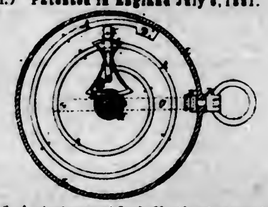
3. In a printing-press, the combination of an intermittently-rotating platen, of square or polygonal form, a reciprocating bed movable toward and from the platen and having an upright face, a frame in which said bed is movable, an ink-distributing table supported on said frame, and a roller-carriage operated by the movement of the bed, and carrying inking-rollers which are caused to travel over said table and down over the form, substantially as specified.

4. The combination of the bed G, provided with wrist-pin *g'*, the crank-shaft D, and the connecting-rod H, fitting said wrist-pins, the distributing-table O above the bed, a roller-carriage fulcrumed on said wrist-pins, and having an arc-shaped slot or slots, a, and the fixed stud or studs *a'*, fitting therein, substantially as specified.

5. The combination of the bed G, provided with wrist-pins *g'*, the roller-carriage composed of the frames L, having arms *j j'*, and arc-shaped slots a, rollers M N, carried by said arms, and the fixed studs *a'*, all substantially as specified.

6. The combination of the ink-fountain P, the fountain-roller P', the movable fountain-bottom P^3, and the eccentric-roller Q, extending along said bottom, for adjusting the same and supporting it at all points in its length, substantially as specified.

251,889. VOLUTE-TUBE THERMOMETER. HORITZ IMMISCH, London, County of Middlesex, England. Filed Aug. 1, 1881. (No model.) Patented in England July 6, 1881.



Claim.—1. An instrument for indicating temperatures, consisting of a volute tube hermetically sealed at both ends, fixed at one end and free at the other, combined with a dial, a pointer to move over said dial, and suitable means for connecting said pointer with the free end of said tube, whereby changes of temperature causing corresponding changes of tension of said tube and resultant movements of its free end will be indicated by said pointer.

2. The volute tube fixed at one end, exhausted of air, and hermetically sealed at both ends, combined with a surrounding space filled with highly-expansive heat-absorbing vapor, and suitable mechanism to move a hand or pointer over a suitably-divided dial when said tube expands or contracts.

3. The tube A, fixed at one end and at its free end attached to the pivoted segment-trunk T, combined with the pivoted segment B and the segment K, fixed thereto and in engagement with the segment I, and the indicator-bearing pinion C, as set forth.

4. The volute tube and the revolving indicator-hand, with suitable connecting mechanism, combined with a stop bearing-spring, wherein the spindle of said indicator is supported, and means whereby said spring may at will be depressed or released, and when said spring is released said spindle will be raised up and arrested in position.

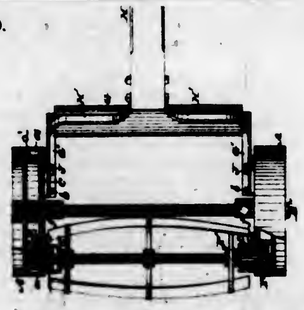
5. A volute tube and a revolving indicator-hand carried by a spindle controlled by the expansion or contraction of said tube, combined with the stop bearing-spring O, eccentric N, and means whereby said spindle and indicator may be arrested when raised up.

251,890. LAWN-MOWER. GEORGE F. JOHNSON, Philadelphia, Pa. Filed July 18, 1881. (No model.)

Claim.—1. In a lawn-mower, the rotary cutter and its shaft and the driving-wheel, in combination with the ratchet or clutch mechanism, consisting of a fixed ratchet and a loose pinion located side by side, both on said shaft, the pinion being on the outside and adapted to slide on the shaft, the driving-wheel limiting the sliding movement, substantially as set forth.

2. The driving-wheel with its toothed rim and the engaging-pinion, in combination with the box C, having a laterally-project-

251,890.

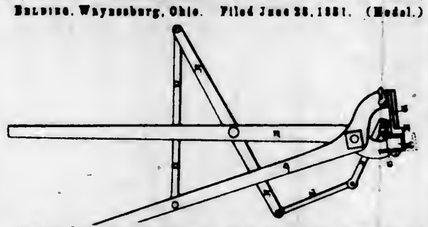


ing rim, *a'*, the portion *a''* whereof is segmental, substantially as set forth.

3. The driving-wheel A, box C, rotary cutter E and its shaft D, and the ratchet mechanism, in combination with the box *a'''*, secured to box C and inclosing the fixed part of said mechanism, and acting as bearings for said shaft, substantially as set forth.

4. The roller G, provided with arms G', the upper widened parts of which have segmental slots *c*, in combination with the bolts *b* J, the handle-braces H', and the boxes C, having curvilinear series of holes *d*, substantially as set forth.

251,891. ROOFING-SEAMER. ROBERT JONES and THOMAS C. BALDING, Waynesburg, Ohio. Filed June 28, 1881. (Model.)



Claim.—1. The combination of the two jaws A E, pivoted together by means of suitable operating-levers, with a third folding-jaw, which closes downward against the inner side of the jaw A when the two levers are opened and rises upward as the levers are closed together, and which jaw I is operated by a series of rods or levers which are fastened to the levers B D, substantially as shown.

2. In a roof-seamer, an adjustable slide connected to one of the jaws, whereby the jaw can be extended in the direction in which the tool is being moved, substantially as set forth.

3. In a roof-seamer, the combination of the two jaws A E, pivoted together by means of suitable operating-levers, and provided with an extension and an extensible slide, substantially as specified.

4. In a roof-seamer, the combination of the two jaws A E, pivoted together by suitable operating-levers, in combination with a hinged jaw, which is fastened to the jaw A, and its connecting-rods and levers, for uniting it to the two operating-levers, substantially as shown and described.

251,892. BELT-STRETCHER. PETER H. KEIM, Dixon, Ill. Filed Nov. 21, 1881. (No model.)



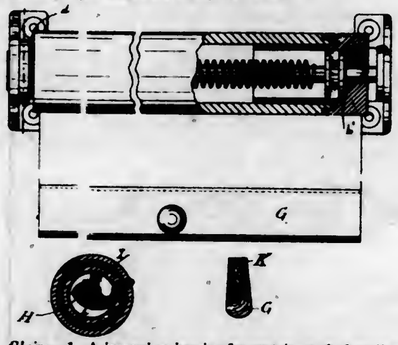
Claim.—1. The belt-keepers A A, upon both ends of which are downwardly-projecting blocks or lugs *a*, which have upon their inner sides wedge-shaped grooves, in which slide the belt-wedges *a'*, adapted to hold the keepers firmly to the belt without slipping, said keepers being further provided upon the outer sides of the lugs *a* with pulley-blocks a^2, in which are journaled pulleys a^3, all arranged to operate substantially as and for the purposes specified.

2. The keepers A and their pulleys a^3, in combination with the ropes B and windlass C, all arranged to operate as described.

3. The windlass C, provided with a ratchet, *c'*, pawl c^2, lever c^3, and ropes B, operating in combination with the keepers A A and their attachments substantially as and for the purposes specified.

251,893. SPRING-BALANCE SHADE-ROLLER. DANIEL E. KEMPTON, Boston, Mass. Filed Sept. 5, 1881. (No model.)

Brief.—The spindle, cam, and locking-cylinder are corrugated, and when the roller is taken from the brackets the action of the spring throws them in contact, locking the spindle. One of the journal-bearings of the roller is provided with a bushing of a material composed of cotton and rubber, and the friction created thereby, with the weighted shade-stick balancing the force of the spring, forms the curtain-stop. The stick is grooved on both sides, and the weight placed therein clamps the stick.



Claim.—1. A journal or bearing for curtain or shade rollers, having a bearing-surface of cotton and rubber, substantially as and for the purpose herein specified.

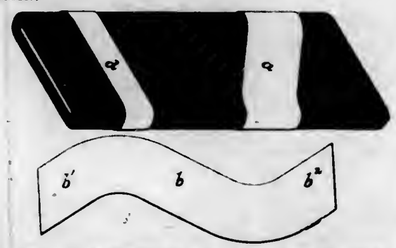
2. [illegible] spindle-cam H, having sides *h h'* and corrugations 1 2 3 *d*, [illegible], and pocket *a*, for the purpose set forth.

3. The locking-cylinder I, corrugated on its periphery, adapted to secure frictional contact, as represented and set forth.

4. The shade-stick G, grooved on its edge and both of its sides to receive and hold the weight K, substantially as shown in Figs. 7, 8, and 9.

5. A metal weight for loading window-shade sticks, constructed as described, so as to clasp or clamp a portion of said stick and attach itself thereto without the necessity of any other fastening, substantially as shown in Figs. 7, 8, and 9.

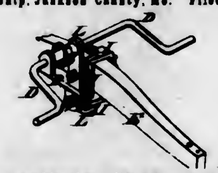
251,894. LABEL-BAND FOR DRY-GOODS PACKAGES. BARTON E. KINSMAN, New York, N. Y. Filed Oct. 13, 1881. (No model.)



Claim.—1. In combination with a package of dry-goods, a label-band, *a*, crossing the package diagonally, as set forth.

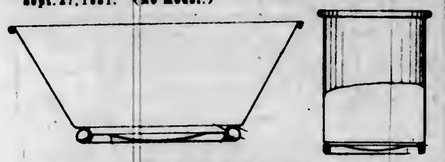
2. A label-band, *a*, for dry-goods packages, said band having the three inclined portions *b*, *b'*, and b^2, as shown, and adapted to cross the package diagonally, substantially as set forth.

251,895. COUPLING FOR SULKY-PLOWS. MICHAEL KITE, Prairie Township, Jackson County, Mo. Filed Oct. 24, 1881. (Model.)



Claim.—The combination, with a draw-bail, D, of a plow-beam clamp, I, bolt J, and bracket L O P, the clamp turning horizontally on the bolt and the bracket vertically on the bail, as and for the purpose specified.

251,896. ATTACHING BOTTOMS AND TOPS TO SHEET-METAL VESSELS. GEORGE W. KNAPP, Baltimore, Md. Filed Sept. 27, 1881. (No model.)



Claim.—1. A sheet-metal vessel with its head or end joined to the body by a coiled seam, the center of which is placed at or near the angle formed by the intersecting lines of the head and of the body, substantially as shown and described.

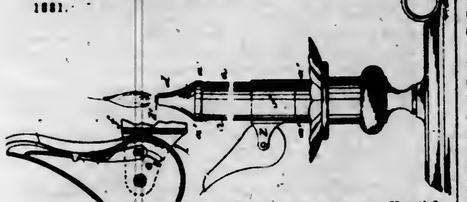
2. A sheet-metal vessel with its head or end joined to the body by a coiled seam, this seam being so located and placed that a portion of it shall be embraced within the lines of the head and the body and occupy a space in the interior of the vessel, substantially as shown and described.

251,897. RELIEF-VALVE. SYLVANUS R. KNEELAND, Boston, Mass. Filed Sept. 17, 1881. (No model.)



Claim.—The improved relief-valve described, consisting of the tube *m*, diaphragm D, annulus E, washer K, nut *z*, and screw-bolt F, in combination with the body A B, provided with the seat H and outlet I, substantially as and for the purpose specified.

251,898. LAMP. EDUARD KÖHLER, Cameen, Prussia, Germany. Filed Nov. 2, 1880. (No model.) Patented in Germany Sept. 22, 1880, in Belgium Oct. 15, 1880, in England Oct. 15, 1880, in France Oct. 15, 1880, in Italy Oct. 15, 1880, in Sweden Dec. 1, 1880, in Austria-Hungary Dec. 11, 1880, and in Spain Jan. 6, 1881.

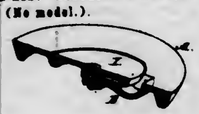


Claim.—1. A safety-lamp similar in form to a candle-stick, composed of an elongated tubular body or reservoir adapted to receive a vertically-sliding lighting attachment, a conical burner detachably fastened to the upper end of said tubular body and provided with a central wick-tube, and a supporting-plate at the lower end of the body, said body being divided below the burner by a perforated plate or screen into two parts, the lower part being filled with sponge or other porous material, while the part above the screen is filled with wadding or other material, by which the oil is transmitted from the lower part to the wick, substantially as described.

2. The combination, with a tubular reservoir, *a*, having a burner, *d*, and an upper shoulder or stop, *a'*, of a sliding sleeve, *f*, and a percussion lighting device pivoted to the brackets of the sleeve, substantially as described.

3. As an improvement in lighting devices for lamps, the combination, with a reservoir and burner, of an oscillating percussion lighting device provided with means for automatically striking the fulminate upon approach of the lighting device to the burner of the lamp, substantially as described.

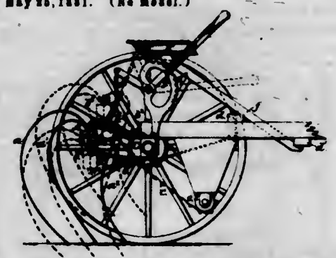
251,899. STOVE-LID. BENJAMIN S. KOLL, Salem, Ohio. Filed June 23, 1881. (No model.)



Claim.—1. In a two-part stove-lid, the combination, with the rim A, provided with the arm B, of the center plate, I, perforated centrally and secured to the arm B by a bolt and nut, substantially as specified.

2. In a two-part stove-lid, the combination, with the rim A, having the arm B, concave for a portion of its length, cut away at its edges, and perforated near its inner end, of the center plate, I, secured to the arm B by bolt and nut to form the ventilated lifter-socket, substantially as specified.

251,900. SULKY-HARROW. CHARLES LA DOW, Albany, N. Y. Filed May 25, 1881. (No model.)



Claim.—1. In a harrow, the combination, with an axle, B, supported by carrying-wheels, of a tooth-bar, A, vibratory spring-teeth thereon, and duplex hinged arms *b K*, for operation substantially as set forth.

2. In a harrow, the combination, with a supporting-axle, carrying-wheels, and a tooth-head hinged to said axle so that it will not cant or turn when being elevated or depressed, of two or more series of vibratory spring-teeth, which will be raised or depressed simultaneously, with the points of the teeth of one series on uniform horizontal planes, with the points of the teeth of the other series in every degree of elevation and depression, substantially as set forth, for the purpose specified.

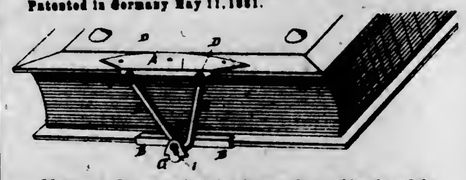
3. In a harrow, the combination, with a supporting-axle, vibratory spring-teeth mounted on a tooth-head, and duplex arms hinging said tooth-head with said axle, of a lever provided with a dog operating with a segmental rack attached to the axle or frame and a rod connecting said tooth-head to said lever, whereby the said tooth-head can be adjusted vertically and held set in position, substantially as and for the purpose set forth.

4. In a harrow, the combination, substantially as described, with a supporting-axle, carrying-wheels, and tongue or pole, of a sectional tooth-head hinged by duplex arms to said axle and provided with two or more series of vibratory spring-teeth, and mechanism by which said tooth-head will be elevated or depressed and held in any set position, substantially as set forth.

5. In a harrow, the combination, with axle B and sectional tooth-head A, carrying vibratory spring-teeth, of duplex yoked arms and eyes, as described, attaching said yoke-arms to the axle and tooth-head, respectively, whereby the sections of said tooth-bar will be held from swaying endwise in their hinged connection with said axle, substantially as set forth.

6. In a harrow, the combination, with a tooth-head, A, which is hinged rearward to an axle by duplex arms, which will hold said tooth-head from canting or turning when moved vertically, of two or more series or classes of spring-teeth, as described, each of different degrees of stiffness, and having the points of each series on the same horizontal plane during all stages of the oscillation of the tooth-head, substantially as and for the purpose set forth.

251,901. CLASP FOR ALBUMS. HERMAN LEDERERR, Offenbach-on-the-Main, Germany. Filed Sept. 23, 1881. (Model.) Patented in Germany May 11, 1881.

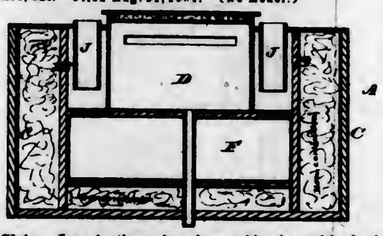


Claim.—1. In a clasp-lock for albums, the combination of the tube F and plate E with the plate G and inner tube, H, whereby the tube F and plate G operate as a knob to hold the hinged loop E when unlocked, substantially as shown and described.

2. A clasp-lock for albums and other purposes, constructed substantially as herein shown and described, and consisting of the stationary slotted tube F, the plate G, carrying the slotted inner tube, H, the pivot I, the ring J, having the lug L, and the spiral spring K, as set forth.

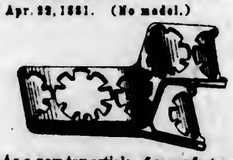
3. In a clasp-lock for albums and other purposes, the combination, with the looped plate B and the hinged loop E, of the stationary slotted tube F, the plate G, having slotted tube H, the pivot I, the ring J, having lug L, and the spiral spring K, substantially as herein shown and described, whereby the hinged loop and the looped plate can be readily fastened together and released, as set forth.

251,902. BOTTLE-COOLER. CHARLES H. LANPHOTTER, Sacramento, Cal. Filed Aug. 31, 1881. (No model.)



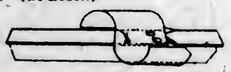
Claim.—In a bottle-cooler, the combination, with the ice-chamber D, water-chamber H, and cooling-chamber F, of the bottle-tubes J, secured in the top of the case A, and having their lower ends terminating above the top of the cooling-chamber, substantially as specified.

251,903. TOY FURNITURE. GEORGE W. LEWIS, Frankford, Pa. Filed Apr. 22, 1881. (No model.)



Claim.—As a new toy article of manufacture, the blank having a series of continuous apertures which indicate the points at which it is to be bent into the intended shape, and bent and folded upon itself continuously in the formation of the seat, legs, and back of the article, as shown and described.

251,904. FENCE-POST. MORTIMER G. LEWIS, Lewville, assignor of one-half to John E. Holford, New York, N. Y. Filed May 16, 1881. (No model.)



Claim.—1. In a fence-post of the character herein set forth, the anchor provided with projecting tongues adapted to enter corresponding openings cut in the flat side of the post, substantially as shown and described.

2. The herein-described fence-post, composed of the angular wrought-iron post and the angular anchor secured upon one side thereof by projecting tongues entering corresponding openings in the side of the post, (or by the described equivalent means,) the anchor being adapted to receive and transmit the force of the driving-blows, the whole constructed and arranged substantially as herein shown and described.

251,905. TIRE-TIGHTENER AND SPOKE-EXTRACTOR. GEO. W. LISCK, Kansas City, Mo. Filed June 27, 1881. (No model.)

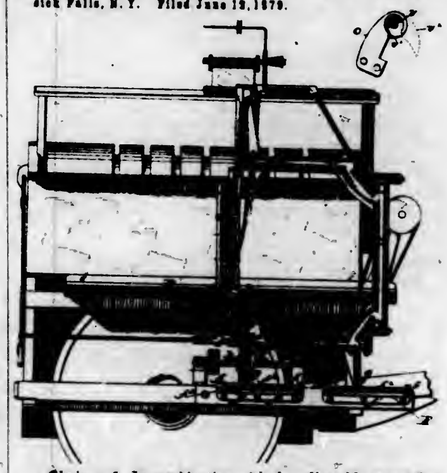


Claim.—1. In a tire-tightener, the combination of a lever and a standard having a bearing for said lever, and connected by a link with a clamping-wedge, substantially as shown and described.

2. The standard A, provided with a backwardly-projecting seat, G, substantially as shown and described.

3. The lever E, provided with a plate, F, having prongs *f* and *g*, ribs *h* and *i*, and a rounded fulcrum-rib, *l*, for resting upon the standard-seat G, substantially as shown and described.

251,906. HARVESTER-BINDER. SYLVANUS D. LOCKE, Rockford Falls, N. Y. Filed June 13, 1879.



Claim.—1. In combination with the adjustable supporting-frame of the binding mechanism, the casting or castings F, having ears or lugs which serve as stops to limit the movement of said frame, and the removable traveler-rods *f'*, passing through and having their bearings in said lugs.

2. The casting F, formed with lugs for the reception or support of the traveler-rod, and a guard or flange for the initial reception and retention of the legs of the binding-frame.

3. The combination of the frame G, the continuously-rotating wheel C beneath the frame, the band-securing mechanism immediately driven by said wheel, the binding-arm, and the shafts and gears forming a direct train between said binding-arm and wheel, whereby the parts are driven by the latter and timed in unison.

4. In combination with a gaveling-arm, the oppositely-acting vertical spring compressor and separator supported from an overhanging portion of the frame.

5. In combination with a rotary twister, the elastically-yielding snubbing and clamping plate *e*, underlying the arm or arms of said twister, substantially as described.

6. In combination with a rotary twister, the elastically-yielding snubbing and clamping plate, formed with annular depression *e*, gain or notch *e'*, and guide-grooves *e*³, substantially as described.

7. The combination of the twisting-hook, the spring snubbing and clamping plate *e*, the plate *r*, and the cutter *c*, substantially as described.

8. The continuously-rotating driving-wheel, an intermittingly-operating band-carrying arm driven by said wheel through a direct train-connection therewith, and intermittingly-operating band-securing devices immediately driven by said wheel, combined substantially as described.

9. The combination of the continuously-rotating driving-wheel, the supporting-frame having top and bottom horizontal arms joined by a vertical side arm or post, the three shafts contained in said arms and connected at the angles by beveled-gear wheels with a stop-motion in the train, and the needle or binding arm driven intermittingly thereby, substantially as described.

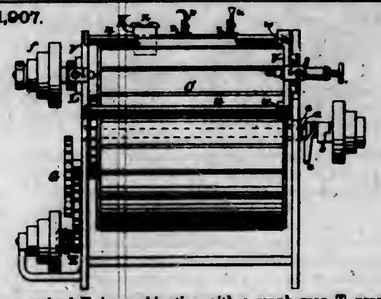
251,907. WOOD-TURNING MACHINE. GEORGE P. LOOMIS, Utica, N. Y. Filed Jan. 27, 1881. (No model.)

Brief.—A revolving knife-head carries a reciprocating slide with cutting-tools and adjustable gouging-tools. The head and tail stocks are adjustable toward and from this head.

Claim.—1. In a wood-turning machine, a slotted revolving cylinder or head for cutting-tools having one or more horizontal guides, H, adjustably secured thereto, and traveling heads bearing cutting-tools and operated by suitable mechanism, substantially as set forth and described.

2. In a wood-turning machine, the revolving head having tubular bearings, through which passes an independent shaft, *a*, having gear-wheel F, in combination with a crank-gear, T, properly supported within the revolving head and connecting with case P, and the rocking lever N, connected with head K, substantially as set forth and described.

251,907.

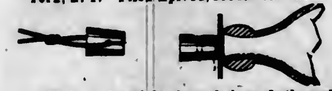


3. In combination with the revolving head, the guide H, adjustably fixed thereto, the sliding head K, carrying cutting-tools, and connecting with a rocking lever held by an adjustable arm, O, said lever connecting with case P on shaft *a*, having gear-wheel F, and the crank-gear T, connected by rod S with case P, substantially as set forth.

4. In combination with the slotted revolving head, the knife-bearing standard *s*, having slots in its base, said slots extending in different directions, as and for the purpose set forth.

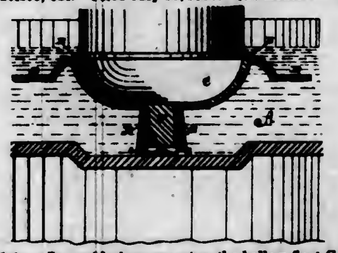
5. In a wood-turning machine, a lathe having a head or tail stock provided with a plate, *l*, and adjustable on a slotted plate, V, by means of screws *i* and *i'*, the said plate V being mounted on horizontal guides *u* and adjustable thereon, as herein set forth.

251,908. CORK FOR BOTTLES. THOMAS E. LOWDEN, New York, N. Y. Filed Apr. 18, 1881. (No model.)



Claim.—A cork having a hole made through it across its axis and a slit which is parallel with the said hole and reaches across the entire width of the cork and the entire depth from its bottom to the said hole for the reception of an extracting-cord, substantially as set forth.

251,909. SOLDERING APPARATUS. ALBERT LUSK, San Francisco, Cal. Filed July 16, 1881. (No model.)



Claim.—In a soldering apparatus, the hollow float C, having its upper surface or rim fitted to receive the ends of cans, and provided with the rigid stem F, projecting from the bottom, in combination with a pot or bath, A, provided with the hollow vertical central guide-sleeve, E, to receive the stem, said sleeve having perforations at the bottom, through which the solder may flow in and act upon the bottom of the piston or stem F to assist in raising the float, and be ejected when the float is depressed, substantially as herein described.

251,910. BED-SPRING. CHARLES H. MCCREERY, Bradford, Ohio. Filed Oct. 8, 1881. (Model.)



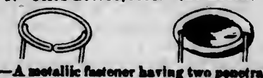
Claim.—The springs A A, having their lower coils provided with interlaced hooks E, the ends of which are doubled in a horizontal plane, and turned slightly downward to form the points I, and smooth beveled ends, substantially as and for the purpose set forth.

251,911. METALLIC FASTENER. GEORGE W. MCGILL, New York, N. Y. Filed Nov. 25, 1881. (No model.)



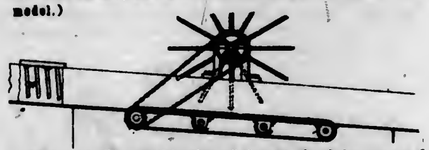
Claim.—A metallic fastener consisting of a staple made of round wire having its head flattened and its shanks pin-pointed and bent down at right angles from its flat head and passed for their entire length through two separate holes, *a a*, in the bottom of a metal cap, A, and secured thereto by means of a crown-piece, B, and the turned-over flange of the cap, substantially as and for the purposes herein shown and described.

251,912. METALLIC FASTENING. GEORGE W. MCGILL, New York, N. Y. Filed Nov. 26, 1881. (No model.)



Claim.—A metallic fastener having two penetrating-shanks of round wire of suitable length, pin-pointed at their outer ends, and their other end or head provided with a projecting clamping surface or surfaces integral with the shanks and at right angles thereto, in combination with a metal cap closed upon such projecting surface or surfaces, confining the shanks securely in separated parallel position and at right angles from the cap, substantially as and for the purposes herein set forth and described.

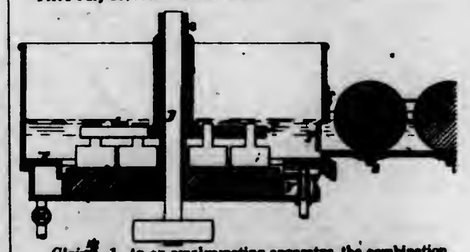
251,913. APPARATUS FOR CONCENTRATING ORES. HARRISON B. MUNGER, Chatham, N. Y. Filed Oct. 13, 1881. (No model.)



Claim.—1. The combination of the vat, the sluice arranged upon its top, a wheel arranged in the sluice, a connecting band or chain, and an endless apron which is moved by the wheel so as to drop its load in the tank, substantially as described.

2. In a concentrating-machine, the combination of a vat, a sluice arranged thereon and having its lower edge or bottom submerged in the water of the vat, an operating-wheel placed in the sluice and operated by the flow through the sluice, and moving device placed in the bottom of the sluice and operated by the wheel, the said moving device being submerged in the water of the vat, substantially as specified.

251,914. AMALGAMATOR. WILLIAM MOLLER, New York, N. Y. Filed July 16, 1881. (No model.)

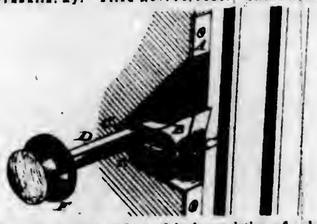


Claim.—1. In an amalgamating apparatus, the combination, with the pan, the vertical shaft B, the bed surrounding the shaft, and the revolving gravitating mullers, of the annular trough E, elevated above the plane of the bed on which the mullers travel, and arranged adjacent to the sides or vertical walls of the pan below the lateral outlet-orifice in the latter, all substantially as and for the purpose described.

2. The combination, substantially as hereinbefore set forth, of the amalgamating-pan constructed with the outlet-orifice in its side

and with the lateral branch or wing opposite to such orifice, having traps (one or more) in the bottom thereof, and the revolving cloth-covered rollers (one or more) arranged in said branch of the pan to dip into the traps, for the purpose specified.

251,915. SASH FASTENER AND HOLDER. JOHN B. MONTAGUE, Franklin, Ky. Filed Nov. 18, 1881. (No model.)



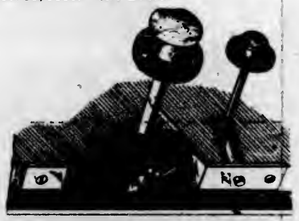
Claim.—1. A sash holder and lock consisting of a slotted case or sheath, a slotted gravitating dog or eccentric seated therein, a locking-bolt sliding through the dog or eccentric, and a prismatic shank extending through said parts, substantially as described.

2. In a sash-holder, a case or sheath, A, provided with a curved seat, *a*, to receive the end of the dog or eccentric, as explained.

3. In combination with the case or sheath provided with arms *b*, having the circular-ended slots *c' c'*, a slotted dog or eccentric, a perforated locking-bolt sliding within the dog or eccentric, and an operating-shank passed through the slots and perforation and completely filling the latter, but free to turn in the enlarged end of the slots, as set forth.

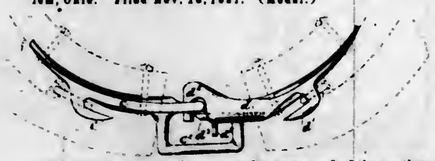
4. The herein-described sash holder and lock, consisting of the case or sheath A, constructed as explained, slotted dog B, bolt C, shank D, and slotted plate F, all combined and operating as set forth.

251,916. SASH FASTENER AND HOLDER. JOHN B. MONTAGUE, JAMES T. BOOKER, and ENOCH C. DINNING, Franklin, Ky. Filed Nov. 18, 1881. (No model.)



Claim.—The herein-described sash holder and lock, consisting of case A, dog B, provided with arms *b*, serrated block or eccentric D, pivoted in said arms, and spindle C, all combined and operating substantially as set forth.

251,917. HAME AND COLLAR COUPLER. JAMES MOSSMAN, Westerville, assignor of one-half to Harnell L. Bennett, Harlem, Ohio. Filed Nov. 10, 1881. (Model.)



Claim.—A collar or hame coupler composed of the section *c*, provided with hook *c'* and martingale-loop, and having formed in its lower end the eye or loop to receive the hook on section *d*, and section *d*, provided with hame-hook and formed at its lower end with hook *d'*, and having formed in it nearly opposite the end of the hook *d'* a longitudinal socket, in which is placed the bolt *d'*, beveled at its outer end and provided with thumb-piece *d'*, and a spring arranged in the socket to bear between base of socket and rear end of bolt and hold the same out against the end of hook, the said bolt being arranged to bear against the end of hook and secure the eye on section *c* in the loop thereby formed on section *d*, substantially as set forth.

251,918. COMPOUND FOR PRESERVING WOOD AND METAL. LORENZO D. MOTT, Marshalltown, Iowa. Filed Oct. 17, 1881. (No specimens.)

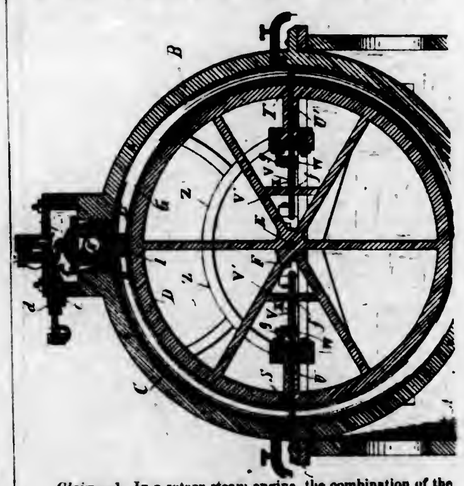
Claim.—The above-described composition of matter to be used for rendering wood and metal fire and water proof, consisting of gas-tar, sulphur, salt, yellow ocher, and brown mineral paint in about the proportions specified.

251,919. PROCESS OF REDUCING AND SEPARATING MAIZE. MARTIN L. HOWARD, Dayton, Ohio. Filed Oct. 3, 1881. (No specimens.)

Claim.—1. The process herein described of reducing Indian corn into grits, the same consisting in first reducing the corn to hominy, then separating the hull and flour, and then subjecting the broken kernels to continuous gradual and successive reductions and separations of the flour after each reduction until the harder or flinty portions of the kernels are reduced to grits deprived entirely of the softer portions of flour, substantially in the manner and for the purpose described.

2. The process herein described of treating maize, which consists in steaming the grain, hulling it, separating the flinty or harder portions from the flour, and then subjecting the flinty or harder portions of the kernel to gradual and successive reductions and separations of the flour after each reduction until the flinty or harder portions are reduced to grits deprived entirely of the softer portions of flour, all substantially in the manner and for the purpose described.

251,920. STEAM-ENGINE. ENOS W. HYDE and CARLOS D. BRADLEY, Macedonia, Iowa. Filed Oct. 6, 1881. (No model.)



Claim.—1. In a rotary steam-engine, the combination of the grooved stationary casing B C, the grooved wheel D G, and the packing-rings H H, forming portions of the casing, whereby, when said parts are united, the bore of the cylinder is formed, substantially as specified.

2. In a rotary steam-engine having the grooved casing and the rings H, the wheel D, carrying the stem-valves S T, having half-round points and stems passed through the boxes U U' and perforations *f* in arms V' between the spokes of the wheel D, the cross-heads W, and spiral springs X, to hold the valves to their normal positions when not actuated by the guides Z Z, substantially as specified.

251,921. MANUFACTURE OF PREPARED ROOFING. THOMAS NEW, New York, N. Y. Filed Nov. 21, 1881. (No model.)

Claim.—1. An improvement in the manufacture of prepared or ready roofing, the same consisting in inserting and rolling up with the roofing a layer of dry felt or paper, substantially as and for the purpose set forth.

2. As an improved article of manufacture, prepared or ready roofing provided with an extra layer of dry felt or paper, substantially as and for the purpose herein described.

251,922. BOTTLE-STOPPER. STEPHEN S. NEWTON, Binghamton, N. Y. Filed June 23, 1881. (Model.)

Claim.—1. In a bottle-stopper, the combination of a screw-

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threaded tube-section attached to the flange B, and provided with a valve-seat, a screw-threaded tube-section engaging therewith and provided with a valve and with a horizontally-projecting spur, and a stop supported above the flange B and in the lateral path of the spur, substantially as set forth.

2. In a bottle-stopper, the combination of a screw-threaded tube-section attached to the flange B, and projecting both above and below said flange, and provided with a valve-seat, a screw-threaded tube-section engaging therewith and provided with a valve and with a horizontally-projecting spur, and a stop formed on the upwardly-projecting flange which is attached to said flange B, and in the lateral path of the spur, substantially as set forth.

3. In a bottle-stopper, the combination of a screw-threaded tube-section attached to the flange B, that portion which projects above the flange being screw-threaded internally and provided with a valve-seat, an externally screw-threaded tube-section engaging therewith and provided with a valve and with a horizontally-projecting spur, and a stop formed on the upper end of the cork-tube and in the lateral path of the spur, substantially as set forth.

4. The combination, in a bottle-stopper, of the internally screw-threaded tube-section projecting above the flange B, and having a central opening, *a*, with the externally screw-threaded tube-section E, closed at its lower end, and having one or more eccentric ports *c*, substantially as set forth.

251,923. BOTTLE-STOPPER. STEPHEN S. NEWTON, Binghamton, N. Y. Filed June 23, 1881. (Model.)



Claim.—1. In a bottle-stopper, a discharge-tube having at its upper end a flat circular plate provided with an eccentric port, in combination with a cap-plate having an eccentric port, and a downwardly-projecting flange mounted upon and secured to the upper face of the tube-plate by means of a groove and a projection which engages with the groove, and a stop which limits the rotation of the cap-plate, substantially as set forth.

2. In a bottle-stopper, a discharge-tube having at its upper end a flat circular plate, an eccentric port, and an eccentric vent-tube, in combination with a cap-plate having two eccentric ports, and a downwardly-projecting flange mounted upon and secured to the upper face of the tube-plate by means of a groove and a projection which engages with the groove, and a stop which limits the rotation of the cap-plate, substantially as set forth.

251,924. METHOD OF INLAYING HORN, &c., WITH PIGMENT COLORS. FRED. A. NICKERSON, Springfield, Mass., assignor to the Dickinson Hard Rubber Company, same place. Filed May 31, 1881. (No specimens.)

Claim.—The within-described improvement in the method of inlaying with colors the surfaces of horn, celluloid, and other rigid substances which are softened by heat, which consists in forming upon the surface thereof, while cold and rigid ornamental figures composed of colors adhesive to said cold surface, which, when dried, retain their form under heat and pressure, and in forcibly inlaying said colors into the surface of said materials by heating and pressing them after said colors shall have become dry and hard thereupon, substantially as set forth.

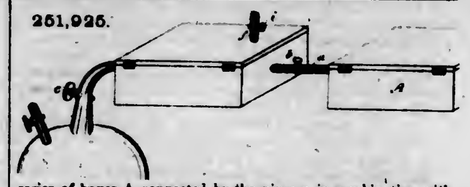
251,925. METHOD OF AND APPARATUS FOR DISINFECTING DEAD BODIES. JNO. D. NIETSCKE, Somerset, Ohio. Filed Sept. 7, 1881. (No model.)

Brief.—Carbonic-acid gas is generated in the retort and passed into the chambers for disinfecting bodies placed therein, where, by means of pipes and bellows, it may be forced from chamber to chamber, as desired.

Claim.—1. In the process of disinfecting corpses by means of gas, vapor, or fumes, the process of saving the gas, vapor, or fumes and using the same over again, consisting in forcing the gas, vapor, or fumes from one box or receptacle to another by means of bellows or other air-forcing device, substantially as described.

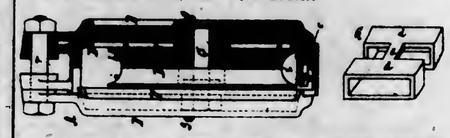
2. The apparatus herein shown and described for disinfecting by means of disinfecting vapors, gases, or fumes, consisting of the

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series of boxes A, connected by the pipes *a*, in combination with the generator or retort B, the pipes being provided with the cocks *b* and the boxes being provided with the tubes *f*, having the cocks *i*, substantially as and for the purposes set forth.

251,926. TACKLE-BLOCK. JOSEPH W. HOUGHTON, Lockport, N. Y. Filed Nov. 15, 1881. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, of the inner metallic straps, the outer metallic frames or straps, the tubular projections extending from the outer frames or straps through openings in the ends of the inner straps, and the keys which extend through the tubular projections.

2. The combination, substantially as hereinbefore described, of the inner metallic straps, the outer metallic frames or straps, the tubular projections extending from the outer metallic frames or straps through openings in the ends of the inner straps, the H-shaped distance-piece, and the keys which extend through the tubular projections and through the H-shaped distance-piece.

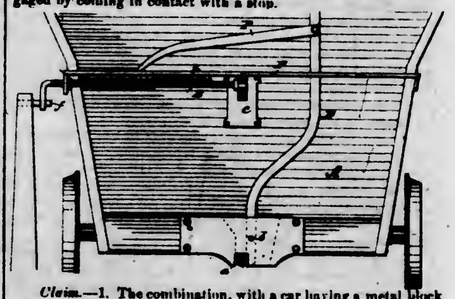
3. The combination, with the inner and outer straps, of the lubricating-cup cast or otherwise attached to the inner surface of the inner strap, and covered at its open end by the fixed outer strap, the latter having a perforation communicating with the cup, which is closed by a removable plug, all substantially as and for the purpose described.

4. The cap *f*, connected with the inner surface of the inner strap, E, and projecting through the wooden cheek-piece F, in combination with the fixed outer strap, D, forming a cover to the cup and confining the wooden cheek-piece in place, substantially as and for the purpose described.

5. The combination, substantially as hereinbefore described, of the metallic rim A, the wooden disks fitting the interior of said rim, the pins *m m*, projecting from the rim, the straps *k*, extending diametrically across the disks, and provided with holes to engage with the pins *m m*, the hub *n*, extending from the first strap through the wooden disks and provided with a shoulder which bears the second strap, the pins *o o*, projecting from the hub, and the holes in the second strap to engage with said pins.

251,927. MEANS FOR CONNECTING AND DISCONNECTING CARS FROM THEIR TRACTION-ROPE. WILLIAM NORRIS, Cambridge, Ohio. Filed Oct. 28, 1881. (No model.)

Brief.—The car has a metal block having a notch formed in its lower side to receive the cable. A lever provided with a pawl which engages with an axially-moving tooth-bar is pivoted in said block to clamp the cable, is guided in a slotted bar, and is disengaged by coming in contact with a stop.



Claim.—1. The combination, with a car having a metal block with a notch, *a*, formed in its lower side to receive the cable, of

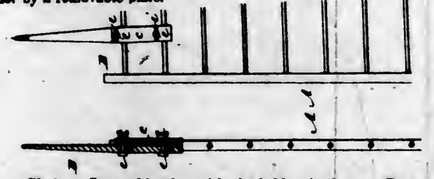
a lever having its end extended below the level of the notch to bear directly against and bite the cable in said notch, and means for holding the lever to its place, substantially as described.

2. The combination, with a coal-car and its traction-cable, of a clutch for connecting the two, and means, substantially as described, for disconnecting them automatically without stopping the rope, substantially as described.

3. The combination, with a coal-car and its traction-cable, of a clutch held to its place by a pawl, an axially-moving toothed bar for holding said pawl, and a stop or resistance for turning the said bar to throw its teeth from the pawl, substantially as described.

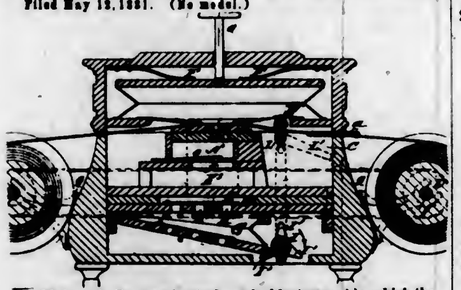
251,928. ATTACHMENT FOR LADDERS. JOSEPH D. HORTON and LEONARD H. HORTON, Leadville, Mass. Filed Oct. 5, 1881. (No model.)

Brief.—The arm is clamped to the upper rounds of the ladder by a removable plate.



Claim.—In combination with the ladder A, the arm B, secured to the two upper rounds of the ladder by the removable plate *c*, substantially as and for the purposes set forth.

251,929. MECHANICAL MUSICAL INSTRUMENT. ROBERT W. PAIN, New York, N. Y., assignor to Moses Harris, same place. Filed May 12, 1881. (No model.)



Claim.—1. In a mechanical musical instrument in which the operation of the sound-producing devices is controlled by one or more traveling perforated strips or sheets, and in which air under pressure is used to produce the necessary notes or sounds, the bellows which forces the wind to the reeds or other sounding devices of the instrument arranged within a box-cover over the tubes, said cover being hinged on the top of the action-board, substantially as herein shown and described.

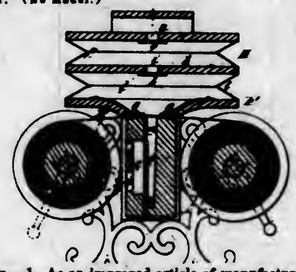
2. In a mechanical musical instrument in which the operation of the sound-producing devices is controlled by one or more traveling perforated strips or sheets, the combination, with the bellows or air-reservoir, of an attached key or push-pin, substantially as herein shown and described, whereby the tones of the reeds or other sounding devices may be changed in expression and crescendo, diminuendo, and tremolo effects produced, as set forth.

3. In a mechanical musical instrument in which the operation of the sound-producing devices is controlled by one or more traveling perforated strips or sheets, the combination, with the feeders or pumps G, of the rotating toggle-shaft I, provided with toggles I', substantially as herein shown and described, whereby said pumps are alternately moved to give a continuous supply of air to the bellows or air-reservoir, as set forth.

4. In a mechanical musical instrument in which the operation of the sound-producing devices is controlled by one or more traveling perforated strips or sheets, the combination, with a removable box-cover placed on top of the tube or action-board, of bellows or air-reservoir contained therein, for forcing the wind to the reeds or other sounding devices, substantially as herein shown and described.

5. In a mechanical musical instrument, a hinged cover inclosing the air-reservoir or bellows, which fits over the tubes D, and is adapted to be removed or opened for inserting the sheet of music, substantially as herein shown and described.

251,930. AUTOMATIC HARMONICA. ROBERT W. PAIN, New York, N. Y., assignor to Moses Harris, same place. Filed June 23, 1881. (No model.)

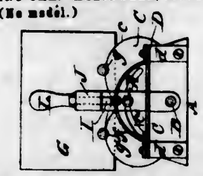


Claim.—1. As an improved article of manufacture, an automatic harmonica constructed substantially as herein shown and described, consisting of air pump or bellows secured over the air-ducts of an ordinary harmonica, which is supported in a suitable frame carrying a perforated music-sheet.

2. The combination, with a reed-plate fixed in a suitable air-chamber and carrying reeds riveted thereto, said chamber and plate being permanently fixed in supporting-standards, which latter also support drums carrying a perforated music-sheet, of a removable bellows and pump set on or over said reed-plate, substantially as shown and described.

3. The combination, with the harmonica A, of the open frame F, secured thereto by dowels *f f*, and having strips *g*, and the double bellows or pump H, firmly secured to the top of said frame, substantially as shown and described.

251,931. DUMPING-CAR. AARON PARE, Ottumwa, Iowa. Filed Aug. 2, 1881. (No model.)



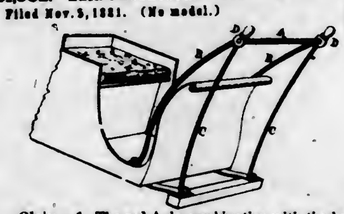
Claim.—1. The truck-frame provided with the vertical plates C C, the upper edges of which are made heart-shaped, in combination with the car-box adapted to move upon said plates, as and for the purposes set forth.

2. The plates C C, formed with the curved edges and with the curved slots, in combination with the car-box G and the central rod, H, substantially as and for the purposes set forth.

3. The truck-frame provided with the rod B, the plates C C, formed with the curved slots *c' c'*, and the double-curved edges *e e*, in combination with the car-box resting upon the edges of the said plates and the rod H, and the link E, the rod H being placed in the said slots *c' c'*, as and for the purposes set forth.

4. The heart-shaped or double-curved plates C C, formed with the slots *c' c'*, in combination with the car-box G, rod H, levers L L, catches I I, and the plates *f f*, substantially as and for the purposes set forth.

251,932. REIN-PROTECTOR. CHARLES PARKER, Juneau, Ill. Filed Nov. 5, 1881. (No model.)



Claim.—1. The rod A, in combination with the knobs D and rods B and C, substantially as and for the purpose specified.

2. The rod A, having a screw-thread at each end, by which to attach it to the knobs D D, in combination with the rods B B and C C, having eyes at their lower ends, and the said knobs D D fastened to the upper extremities of said rods B B and C C, as and for the purpose specified.

251,933. CIGAR-LIGHTER. ERNEST A. PARKER, Meriden, Conn. Filed Oct. 18, 1881. (No model.)



Claim.—1. The combination, in a cigar-lighter, with one or more torch-receivers and torches and a lamp, of a body portion occupying a position between the torch receiver or receivers and the lamp-burner, and comprising a reservoir for supplying the torch-receivers with fluid and a separate fount for the lamp, substantially as specified.

2. The combination of the stand A, the torch-receivers C, the torches D, the fountain-reservoir B, and the lamp E, supported on said reservoir, having its oil-fount independent of said reservoir and adapted to be removed to permit the removal of the reservoir, substantially as specified.

3. The combination, in a cigar-lighter, of one or more torch-receivers and torches and a fountain-reservoir having at its lower end a contracted outlet-neck or tube and a vent-hole above the lower end or mouth of said tube, a single valve for closing both said outlet neck or tube and said vent-hole, and a petticoat or nozzle to surround said vent-hole and adapted to be sealed with liquid, substantially as and for the purpose specified.

251,934. SULKY. MARTIN PAYEN, Troy, N. Y. Filed Sept. 16, 1881. (No model.)



Claim.—In a sulky-vehicle, the front and back braces, E E', clipped to the under side of the middle part of the axle, and the bifurcated side braces, G G', clipped to the top of the axle, in combination with the lateral seat-supports D, for connecting the seat C, and axle A, substantially as and for the purpose herein shown and specified.

251,935. THILL-COUPLING. HENRY T. PERHAM, Stamford, Ontario, Canada. Filed Aug. 29, 1881. (No model.)



Claim.—In a thill-coupling in which the end of the thill B is inserted in the usual way into the ordinary socket A, a coupling-pin, C, provided with a head, D, having a slotted groove, *a*, in combination with a detachable hook-bracket, F, and a ring E, one end of the latter fitting into a hole, *b*, in the detachable bracket F, and its other end slipped into the slotted passage-way *a* in the head D, the center of the spring being sprung over an elastic block, G, substantially as and for the purpose specified.

251,936. CLOTH-MEASURING REEL. JAMES H. PETERS, Meshesville, Tex. Filed Aug. 18, 1881. (No model.)

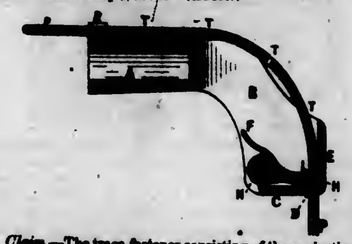


Claim.—1. The combination of a base-frame having two vertical standards, B B, a stock-roll, C, located in bearings in the bottom of the said standards, a reel-shaft, D, located in bearings in the top of said standards, the combined cutting-board and brace E, arranged in the standards between the roll C and reel D, and the measuring-roller G' and tension-rod F', located upon opposite sides of the said cutting-board, as described.

2. In a cloth-measuring machine, the combination, with the measuring-roller, its registering devices, and the stock-roller, of an adjustable cutting-board located to bear upon the cloth between the measuring-roll and stock-roll, as and for the purpose described.

3. The combination of the measuring-roller having tappet *h*, the toothed registering-wheel, and the detent I, adapted to be operated by the same tappet, *h*, that actuates the wheel, substantially as and for the purpose described.

251,937. TRACE-FASTENER. EUGENE A. POLLARD, Newport, N. H. Filed July 1, 1881. (Model.)

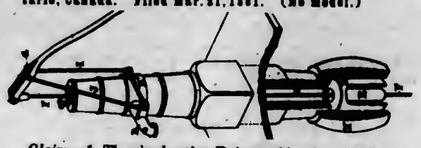


Claim.—The trace-fastener consisting of the projecting curved open frame B B, having the plate E, and end C, provided with the vertical slot or opening D, the pivoted tongue H, having the flanges L L and thumb-piece F, said fastener being provided with the socket A, having the lugs or loop R, all being constructed and arranged for securing and adjusting the trace P, having the holes T, substantially as shown and described.

251,938. PROCESS OF REMOVING FLOCCULENT MATTER FROM SPENT ACIDS. FRANK V. POST, Newark, N. J., assignor to the Celluloid Manufacturing Company, New York, N. Y. Filed Mar. 26, 1880. (No specimens.)

Claim.—The within-described process of removing flocculent matter from spent acids which have been used in the treatment of soluble fiber, which consists in introducing into the acid solution barium sulphate in powdered form and permitting the whole to stand until precipitation has taken place, substantially as set forth.

251,939. WOODEN PUMP. CHARLES POWELL, Toronto, Ontario, Canada. Filed Mar. 21, 1881. (No model.)

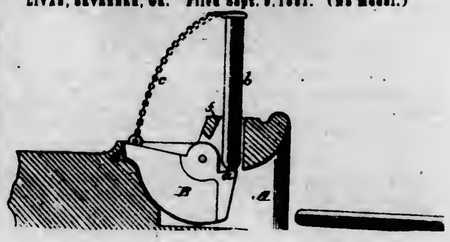


Claim.—1. The air-chamber D, in combination with the coupling X, having openings to receive the ends of the main pump-tubes, substantially as and for the purpose described.

2. In a pump in which the piston-rod reciprocates within its tubing, the air vessel or chamber D, placed within said tubing and provided with a central pipe inclosing the piston-rod, said pipe being of substantially the same internal diameter as the bore of the tubing, substantially as and for the purpose set forth.

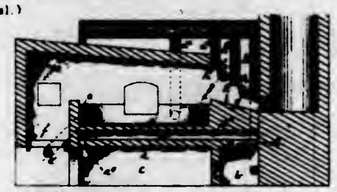
3. In combination with the coupling X, having a central opening to receive the air-chamber D and the ends of the pump-tubes, the air-chamber D, closely fitting in said coupling, and provided with a central pipe, E, of substantially the same internal diameter as the bore of the pump-tubing, substantially as and for the purpose described.

251,940. CAR-COUPLING. CHARLES PRATT and JOHN A. SULLIVAN, Savannah, Ga. Filed Sept. 9, 1881. (No model.)



Claim.—In a car-coupler, the combination, with the draw-head, A, having the hole for the coupling-pin cut away, as shown at *f*, of the pivoted weighted latch B, provided with shoulder *a*, and connected to pin *b* by chain or cord *c*, substantially as and for the purpose set forth.

251,941. PUDDLING-FURNACE. BENJAMIN PROBERT and MICHAEL DAVIS, Allegheny, Pa. Filed Oct. 3, 1881. (No model.)



Claim.—1. In a puddling or boiling furnace, the combination, with the hearth and fire-box, of a false bottom or horizontal partition which divides the space below the hearth into two horizontal chambers that communicate with each other and with the ash-pit of the fire-box, a blast-pipe which delivers into one of said horizontal chambers, and a valve arranged to direct the blast into either of said chambers at the will of the operator, substantially as and for the purpose specified.

2. The combination, with the throat or cramps of a puddling or boiling furnace, of two blast-pipes arranged to deliver the blast in reverse directions, substantially as and for the purpose specified.

3. In a puddling or like furnace, the combination, with the throat thereof, of an axially-rotatable perforated blast-pipe and the recessed roof or cover, the elements relatively arranged substantially as described, whereby the pipe may be made to deliver a blast into the throat or over the hearth and away from the cover of the flue, substantially as and for the purpose specified.

4. In a puddling or boiling furnace, the combination, with the hearth *a'* and fire-box *f*, of the horizontal chambers a^3 *b c*, which communicate by ports a^2, a^4, and *b'*, the valve b^2, adapted to close either port a^2 or *b'*, and a blast-pipe which delivers into chamber *b*, substantially as and for the purpose specified.

5. In a puddling or boiling furnace, the combination, with the fire-box *f*, hearth *a'*, and cramps *g*, of the series of air-chambers a^3 *b c*, having ports a^2 a^4 *b'*, and valve b^2, and the blast-pipe *d*, having the branch pipes *d'* d^2 d^3 d^4, which deliver into the cramps, hearth-chill, and air-chamber *b*, respectively, the elements being relatively arranged substantially as and for the purpose specified.

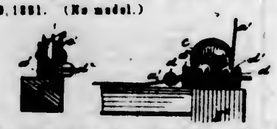
251,942. SHEET-MUSIC HOLDER. FRANK E. PUTNAM, Lowell, Mass. Filed Sept. 22, 1881. (No model.)



Claim.—1. The combination of the clamp A, bearing the post B, with the jaws C C, provided with ears *c*, through which the post passes, and the spring *m*, substantially as described.

2. The combination of the clamp A with the post B, and clasp D, which has jaws substantially parallel with the bearing-faces of the clamp, substantially as and for the purpose described.

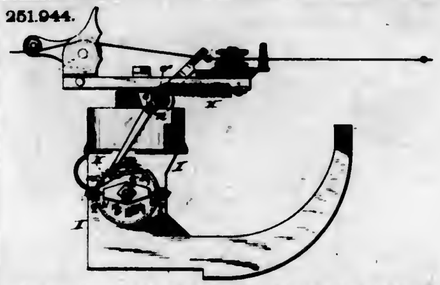
251,943. SASH-BALANCE. JOHN A. QUICK, Palestine, Tex. Filed May 20, 1881. (No model.)



Claim.—In a sash-balance, the combination, with pulleys *a a* and cords *a' a'*, of the pulleys *c c'*, which are arranged on the top of the lower sash and provided with horizontally-adjustable attachments *c'*, having hooks *d* and springs *d'*, substantially as shown and described, and for the purpose set forth.

251,944. CHECK-ROW CORN-PLANTER. EDWARD W. QUINCY, Decatur, Ill., assignor to Chambers, Baring & Quinlan, same place. Filed Dec. 11, 1880. (Model.)

Claim.—1. In a corn-planter, in combination with a seed-cup



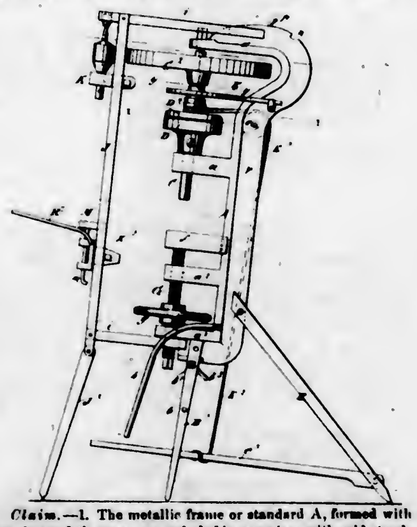
wheel having a ratchet-wheel formed in one of its ends and periphery, and with a knotted check-row chain or wire, a rock-shaft with a pawl adapted to impart an intermittent rotary motion in one direction to the seed-cup wheel, substantially as and for the purpose specified.

2. In combination with the standard I, connecting the seed-box and runner, and with the seed-wheel located in the standard I, the cap P, adapted for removal for access to and removal of the seed-wheel, substantially as and for the purpose specified.

3. In combination with a rock-shaft adapted to receive an oscillating motion on its longitudinal axis from a knotted check-row cord or wire, a pawl, N, hinged to said rock-shaft, and adapted to act on a seed-wheel having radial seed-cups in its periphery, and ratchet-teeth on its end and periphery, substantially as and for the purpose specified.

4. In combination with the runners and seed-boxes and seed-wheels having radial peripheral seed-cups and peripheral ratchet-teeth, the rock-shaft having a pawl at each end for imparting movement to the seed-wheels, and forked levers for receiving movement from a knotted check-row chain or wire, substantially as and for the purpose specified.

251,945. COMBINED LATHE AND DRILLING-MACHINE. JOHN F. RAKES, Greenup, Ky. Filed Mar. 21, 1881. (Model.)



Claim.—1. The metallic frame or standard A, formed with the web *c* and the arms *a a* and a^1 a^1 in one piece with said standard, as shown and described, for the purposes specified.

2. The combination, with the frame or standard A and arms *a a*, of the vertical shaft and drill-holder C and the fly-wheel C^2, provided with removable counterbalance-weights c^1, arranged as herein shown and described.

3. The combination, with the frame A and the shaft C, of the clutch D D^1, dogs *d d*, spring E, and rope or cord E^1, as shown and described, for the purpose specified.

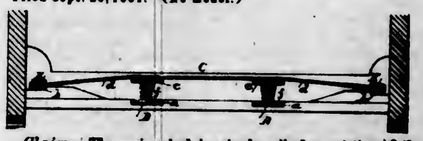
4. The combination, with the frame A, shaft C, and clutch D D^1, of the rope or cord E^1, pulley *e*, treadle e^2, and diagonally-inclined rear leg, B, when arranged and operating as herein shown and described.

5. The removable and adjustable leg-frame consisting of the legs B^2 B^3, brace *b*, screw-rod or bolt b^2, and hand-nut b^3, in combination with the frame or standard A, provided with the web *c*, notch *n*, and hook or projection *p*, as shown and described, for the purpose specified.

6. The combination, with the frame A and arms *a' a'*, of the feeding device consisting of the table *f*, screw G, hand-wheel *g*, and curved lever *h*, arranged and operating as shown and described, for the purpose specified.

7. The combination, with the frame or standard A, of the lathe attachment consisting of the bar J, provided with the notched or forked arms *i i*, and carrying the lathe-heads K K^1, as herein shown and described.

251,946. SPRING-BED. ANDREW B. RAMEY, Centril, Iowa. Filed Sept. 23, 1881. (No model.)



Claim.—The spring-bed herein described, consisting of the head and foot boards connected by the sides C, having recesses *a b*, the latter being at the extreme ends of the bed and elevated above the former, the slats D, set in the recesses *a*, the ends E, placed in the recesses *b* and connected by the wires *d*, and the slats *e*, carrying the springs *f*, substantially as set forth.

251,947. PAINT, WHITEWASH, AND OTHER BRUSHES. JAMES A. READ and CALVIN D. READ, Ayer, Mass. Filed Apr. 4, 1881. (No model.)



Claim.—1. A process of making brushes, consisting in cementing bristles to thin strips of rubber or its equivalent, in winding the strips so prepared onto the brush-handle, and in subjecting the whole to pressure, substantially as set forth.

2. A brush having its bristles secured in place by thin strips of rubber or its equivalent, substantially as set forth.

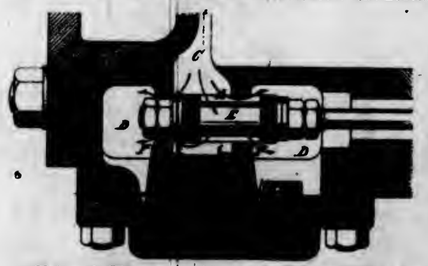
3. A brush having its bristles secured to a thin strip or strips of rubber or its equivalent wound around the base of the handle, substantially as set forth.

4. A brush having its bristles secured to a thin strip or strips of rubber or its equivalent wound around the base of the handle, the several layers of rubber being tightly compressed, substantially as set forth.

5. In a brush, the combination, with a handle having a notched base, of strips of rubber having bristles secured thereto and wound upon the notched base of a handle, substantially as set forth.

6. In a brush, the combination, with the bristles, of an outwardly-projecting flange formed of several layers of a thin rubber band tightly wound around the butts of the bristles, substantially as set forth.

251,948. EXHAUST-VALVE FOR STEAM-ENGINES. CHAS. B. RICHARDS, Philadelphia, Pa. Filed Nov. 7, 1881. (No model.)



Claim.—1. The combination of the exhaust-port C and exhaust-chest D of the cylinder of a steam-engine with the reciprocating slide-valve E, the pressure-frame F, interposed between a chamber, *f*, and the interior of the chest, and passages whereby a communication is opened at one time between the said chamber and the interior of the cylinder and at another time between the cylinder, chamber, and exhaust-chest, in obedience to the movement of the valve, all substantially as set forth.

2. The combination of the valve-chest D, valve E, and pressure-frame F with a block, A, extending into the opening of the said frame, substantially as specified.

251,949. STOVE-LEG. JAMES A. BISBEE, Genoa, Ill., assignor of one-half to Sidney A. Bisbee, Waltham, Mass. Filed Aug. 29, 1881. (Model.)

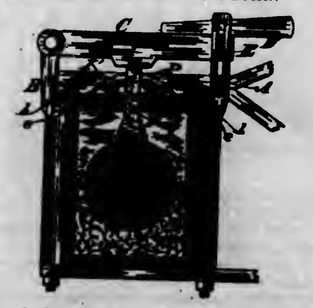


Claim.—1. The combination, with the spindle of a caster, of a leg provided with a guide-plate for the lower portion of the spindle and a combined socket and guide for the upper portion of the spindle, said parts being constructed to allow the spindle to be inserted in the socket and cause the weight to be supported by the caster, or to allow the spindle to be disengaged from the socket and inserted in the guide and cause the weight to be supported by the leg, substantially as set forth.

2. The combination, with a stove-leg having a guide or bearing near its lower end and a combined guide and socket near its upper end, of a caster-spindle supported in the lower guide of the leg and adapted to have its upper end placed either in the socket or in the guide, and a spring for upholding the caster when it is not desired for use, substantially as set forth.

3. The combination, with a stove-leg having a bearing or guide plate, E, and socket and guide F, the latter being provided with an opening, *i*, and a recess, *n*, and strengthened by a rib, *l*, of a caster-spindle adapted to enter either the opening *i* or the recess *n* and allow the weight of the stove to rest either on the foot H or on the wheel I, and a spring encircling the spindle and having its lower end resting on the plate E and its upper end bearing against a collar or projection on the spindle, substantially as set forth.

251,950. JACK FOR CAR-AXLE BOXES. EDGAR ROBINSON, Cincinnati, assignor of one-half to Henry B. Boymer, Cambridge, Ohio. Filed Nov. 10, 1881. (No model.)



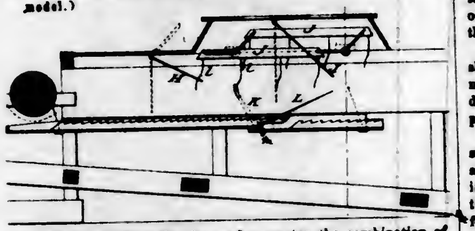
Claim.—1. A boxing for a car-axle, provided with lugs *b b*, the stud F, projecting through the boxing and adapted to receive the weight of the car by means of a lifting-tool applied to said lugs and pedestal, substantially as herein set forth.

2. In combination with a car-axle box, the stud F, passing through a slot in the boxing and adapted to be pressed down upon the axle, so as to transfer the weight of the car from the boxing to said stud, substantially as described.

3. In combination with a car-axle boxing and the supporting pedestal or stud F, loosely connected to said box, a lifting-tool composed essentially of pressure-bar C and hooked arms A B, adapted to clasp the said box and rest upon the stud, so as to transfer the weight of the car from the box to the axle, substantially as herein set forth.

4. In combination with the boxing of a car-axle, the stud F, passing loosely through the shell of box and suspended by spring F', to prevent the contact of said stud and axle when the lifting-tool is not in use, substantially as herein set forth.

251,951. COMBINED THRASHER AND SEPARATOR. FRANCIS W. ROBINSON, Richmond, Ind. Filed Feb. 14, 1881. (No model.)

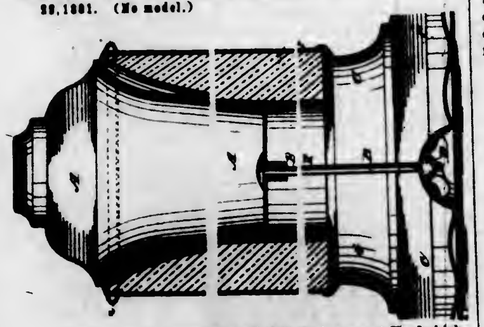


Claim.—1. In a thrasher and separator, the combination of the thrashing-cylinder, the picker-bars having curved front teeth, *l l*, and a sectional or slotted hinged apron or shield, H, arranged between thrashing-cylinder and concave and the forward ends of said picker-bars, substantially in the manner and for the purpose herein shown and described.

2. In a thrasher and separator, the combination of the thrashing-cylinder, the picker-bars, the sectional or slotted hinged apron or shield H, arranged between the thrashing-cylinder and concave and the forward ends of said picker-bars, and the sectional apron or shield I, extending across the machine about midway of the crank arms or shafts of the picker-bars, substantially as and for the purposes herein shown and described.

3. In a thrasher and separator, the combination of a series of picker-bars, a vibrating carrier arranged under said picker-bars, having a rake-head provided with lifting-fingers L, journaled thereto, and crank-arms K K, fulcrumed at their upper ends to the sides of the machine and adjustably connected at their lower ends to said rake-head, substantially as and for the purpose herein shown and described.

251,952. LAMP. CHARLES ROYLE, New York, N. Y. Filed Oct. 29, 1881. (No model.)



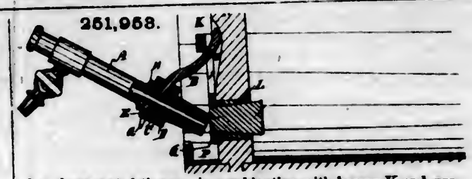
Claim.—1. In a lamp, the body E F, the inner part, E, of which is formed of cement molded into cylindrical form and inclosed in an ornamental shell of sheet metal or paper, F, in combination with the oil-chamber A, supported within the said body by its upper flange, and secured thereto by the bolt B and nut D, substantially as shown and described.

2. In a lamp, the combination, with the oil-chamber A, the base C, and the tie-rod B, of the body formed of a cement inner part, E, molded into shape, and a covering-shell, F, of ornamented sheet metal or paper, substantially as herein shown and described.

251,953. FAUCET. ALBERT REESE, New York, N. Y. Filed June 10, 1881. (Model.)

Claim.—1. A faucet constructed, substantially as herein shown and described, with an arm, B, and with a cam-ring, E,

251,953.



loosely mounted thereon, in combination with keeper K and projection Q on the head of the barrel, as set forth.

2. The combination, with the faucet A, provided with the arm B, and the cam-ring E, having a handle, F, of the plate J, attached to the barrel, and provided with a beveled projection, Q, at the end of its bottom flange, P, and with a catch, K, at the upper end of the plate.

3. The combination, with the faucet A, of the arm B, the shoulders C and H, the packing-ring D, and of the ring E, loosely mounted thereon, and provided with a beveled cam, G, and a handle, F, substantially as herein shown and described, and for the purpose set forth.

4. The plate J, attached to the head of a barrel, and constructed with a catch, K, at its upper end, a bushing, L, and with a bottom flange, P, with a beveled projection, Q, at its outer edge, in combination with the faucet A, provided with the arm B, and the cam-ring E, substantially as herein shown and described, and for the purpose set forth.

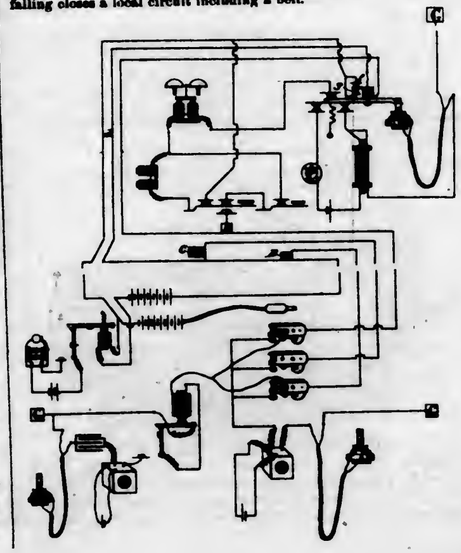
251,954. FLOUR-BOLT. CHARLES SCHACHT, Marine, Ill. Filed July 30, 1881. (No model.)



Claim.—The combination, with a reel-bolt, of one or more rods suspended within the bolting-chest and a series of flexible loops suspended from said rod or rods, to adapt them on the rotation of the reel-bolt to drag upon or against the bolting-cloth, substantially as and for the purpose described.

251,955. AUTOMATIC SIGNALING-CIRCUIT FOR TELEPHONE-EXCHANGES. CHARLES E. SCRIBNER, Chicago, Ill. assignor to the Western Electric Manufacturing Company same place. Filed Mar. 22, 1881. (No model.)

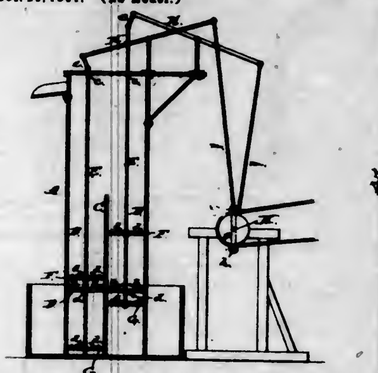
Brief.—Upon taking a subscriber's telephone from its support the automatic switch breaks the circuit for an instant if a closed circuit is employed or closes it if it be normally open, thereby dropping an annunciator at central office. The annunciator in falling closes a local circuit including a bell.



Claim.—1. The circuit breaking or closing arm c, in combination with the automatic switch and a normally open or closed return-circuit, and an annunciator and battery included in said circuit, whereby listening operator is notified when a subscriber takes down or hangs up a telephone.

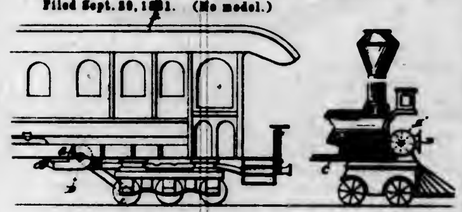
2. The insulated arm attached to the switch-lever, in combination with a circuit including a battery and annunciator, whereby a signal is given automatically when the switch-lever is passing from either position to the other, as and for the purpose set forth.

251,956. PUMP. WALTER C. B. SHAFFER, Ayersville, N. C. Filed Oct. 20, 1881. (No model.)



Claim.—The combination, with the double pump-stock, its horizontal valved partition D, and vertical partition C, dividing the working-barrels, of the vertical reciprocating valve-rods E, the pistons F G, links e, levers H, and the double-crank shaft K, its connections and band-wheel, substantially as shown and described.

251,957. CAR-VENTILATOR. JOHN SHEPHERD, Macon, Mo. Filed Sept. 30, 1881. (No model.)



Claim.—The combination, with the fan A, of pipe C, and supplemental fan D, having the pipes *d'*, leading into the car, substantially as and for the purpose set forth.

251,958. OPEN LINK. SOLOMON SHETTER, New Cumberland, W. Va., assignor of one-half to Thomas J. Gerlick, Elmer J. Shetter, and Andrew H. Shetter, all of same place. Filed Nov. 4, 1881. (No model.)



Claim.—In a connecting-link, the combination, with the part B, provided with the hook *b* and the upturned end *c*, of the part A, provided with the hook *a* and the eye *e*, the said hooks being fastened diagonally, substantially as and for the purpose set forth.

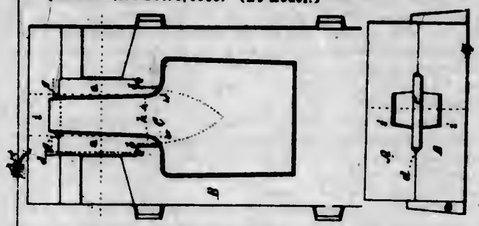
251,959. MACHINE FOR FILING SAWS. WILLIAM H. SHUTTS, Emporia, Kans. Filed Apr. 6, 1881. (Model.)



Claim.—1. The combination, with the clamp A and sliding carriage C, of the bent arm D, the block E, the block M', pivoted at e and provided with holes *e'*, the rod M', and the pawl M', substantially as described, whereby the feed is operated and graduated, as set forth.

2. In a saw-filer, the combination, with the pivoted arm D, of the file-frame-clamping block E, having vertical mortise A, provided with pivoting-point *i*, grooves *h'*, and set-screws *h*, substantially as herein shown, and for the purposes set forth.

251,960. MOLD FOR CASTING SHOVEL-BLANKS. EPHRAIM SMITH, Pittsburg, Pa., assignor to Hussey, Binns & Co., same place. Filed Dec. 1, 1880. (No model.)



Claim.—1. A mold for casting shovel-blanks, constructed in two parts, A B, having the wide or blade portion toward the bottom thereof and openings *f f* in the sides opposite to the narrow or strap portion, and provided with a core, C, supported in the narrow portion, the said core being composed of sand and a solid combustible material, in substantially the proportions set forth, all substantially as and for the purpose herein specified.

2. The combination of a combustible core such as herein described and a mold, A B, having its wide blade-forming part toward the bottom thereof, and the said core supported in its narrow strap-forming part, substantially as and for the purpose herein specified.

3. The mold A B, having vent-openings *f f* in its sides opposite to the narrow strap-forming interior thereof, in combination with the combustible core C, having its side edges resting opposite to the said vent-openings, substantially as and for the purpose herein specified.

4. The mold parts A B, having their upper ends or faces, *i i*, inclined from their outside downward to their inner walls, substantially as and for the purpose herein specified.

251,961. CULTIVATOR. JOHN SMITH and FERDINAND STEINER, Horicon, Wis. Filed Oct. 24, 1881. (No model.)



Claim.—1. The combination, in a cultivator, of a beam or drag-bar, a shovel-standard, a hub or boss, and an encircling annulus or band adapted to be contracted upon the beam, the boss and annulus being attached, one to the beam and the other to the standard, substantially as and for the purposes set forth.

2. In a friction device for cultivator-standards, the combination of a hub or boss and an encircling annulus or band provided with a clamping device, substantially as shown, one of said parts being stationary relatively to the other.

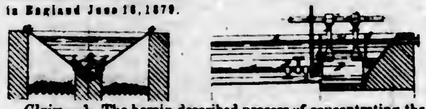
3. The standard A, having at its upper end the annulus or band D, open at one side, and provided with a bolt, whereby it may be contracted, substantially as set forth.

4. The shovel-standard A, provided with lips *q* and openings or holes *p*, substantially as and for the purpose set forth.

5. In a cultivator, the combination of a shovel-standard, A, provided with slots or openings *p* and lips *q*, a shovel point or tooth, F, a strap or band, G, passing around the shank of the tooth and through the slots, and means, substantially as described, for tightening the strap or band.

6. In combination with the standard A, provided with openings *p*, a shovel point or tooth, and a strap or band, G, adapted to straddle the tooth-shank and to pass through said openings, and notched as described, a pin or bolt, *t*, and wedge *u*, all combined and operating as set forth.

251,962. MANUFACTURE OF SODA. ERNEST SOLVAY, Brussels, Belgium. Filed Mar. 31, 1881. (No model.) Patented in England June 16, 1879.

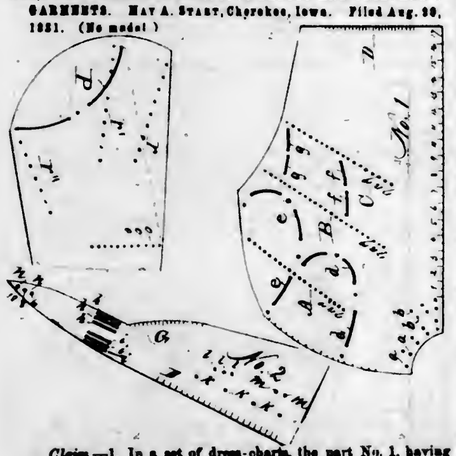


Claim.—1. The herein-described process of concentrating the waters obtained from the distillation of ammonia in the manufacture of ammonia soda, so as to collect therefrom the sea-salt and chloride of calcium they contain, the same consisting in the treatment of such waters in a vessel heated to a higher temperature in its upper than in its lower portion, and precipitating the salt in the cooler portion thereof, then driving the salt into a non-heated portion of the apparatus and separating the salt from the water, and then decanting the concentrated solution of chloride of calcium from the remaining water in the apparatus and from the salt, in the manner specified.

2. The combination, with the boiler, of the furnace arranged to heat directly the upper portion of said boiler, the concentrating and decanting apparatus at one end of the boiler, and devices for driving the salt to said end of the apparatus and for removing it therefrom, substantially as described.

3. The boiler A, comprising two parts, one being V-shaped in cross-section, with a semi-cylindrical bottom, and the other being made semi-cylindrical in shape, in combination with the devices for driving the precipitated salt from the first-named part of the boiler into the said second or semi-cylindrical part, and the rotary scraper P, arranged to throw out the salt from the semi-cylindrical part of the boiler, said apparatus being connected with a furnace so that the inclined walls only of its V-shaped part will be exposed to the direct action of heat, substantially as described.

251,963. CHART FOR DRAFTING LADIES' AND CHILDREN'S GARMENTS. MAY A. START, Cherokee, Iowa. Filed Aug. 30, 1881. (No model.)



Claim.—1. In a set of dress-charts, the part No. 1, having lines of perforations *a b d e*, scales A, B, C, and D, and arm-size *f* and *g*, substantially as shown and described, for the purposes specified.

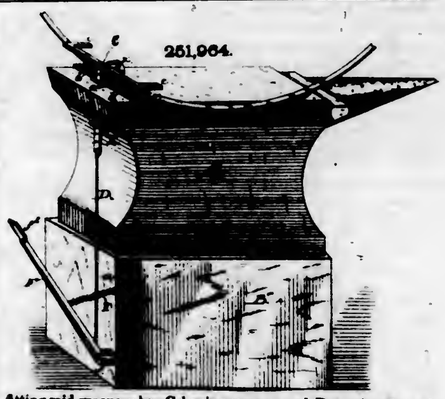
2. In a set of dress-charts, the part No. 2, having scales E and G, parallel slots *h* and *i*, and lines of perforations *h l m n*, substantially as shown and described, for the purposes specified.

3. In a set of dress-charts, the part No. 3, having arm-size P and lines of perforations *o r s*, substantially as shown and described, for the purposes specified.

4. The set of charts consisting of the form No. 1, having lines of perforations *a b d e*, scales A, B, C, and D, and arm-size *f* and *g*, the form No. 2, having scales E and G, parallel slots *h* and *i*, and lines of perforations *h l m n*, and the form No. 3, having an arm-size P, and lines of perforations *o r s*, substantially as shown and described, to be unitarily used for drafting garments, in the manner set forth.

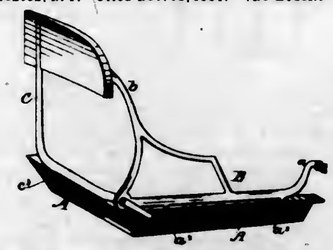
251,964. TIRE-UPSETTER. CHARLES STEVENS, Randolph, Vt. Filed Dec. 9, 1880. (No model.)

Claim.—The combination, with an anvil having a transverse dovetail groove in its upper face adjacent to the channel E, and an anvil-block having at its rear end the brackets *f*, of a swage, *b*,



fitting said groove, a bar, C, having arms *e*, a rod, D, passing through the channel E and supporting the bar C, a lever, F, to which said rod is pivoted, and a spring connecting the lever with the anvil-block, substantially as described.

251,965. SHIFTING-RAIL FOR CARRIAGES. JOHN W. SUPPES, Trenton, N. J. Filed Nov. 16, 1881. (No model.)



Claim.—1. The method of making shifting-rails of carriages herein set forth and described, which consists in casting them in a flattened condition and afterward finishing the attaching and connecting portions thereof, and then bending, shaping, and fitting the same, substantially as shown and described.

2. As an article of manufacture, the cast malleable-iron rail B, provided with the attaching-studs *a*, shoulder and stud *a'*, aperture a^3, brace b^2, and extension *b*, and arm *b'*, all of the curvatures therein being in a common plane, substantially as shown and described.

3. In a carriage shifting-rail, the combination of the rail B, provided with the screw-threaded aperture a^3, and the rail C, provided with the screw-thread c^2, substantially as shown and described.

4. The combination of the seat A, rail B, and rail C, the latter passing through the former and secured therein by a screw-thread, and both secured to the seat, substantially as shown and described.

251,966. TICKET-HOLDER. JAMES G. TAIT, Stockton, Cal., assignor to himself and Archimedes B. Wynkoop, same place. Filed Oct. 14, 1881. (No model.)

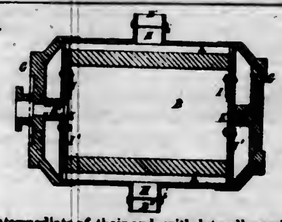


Claim.—As a new article of manufacture, the within-described ticket-holder, consisting of a piece of sheet metal formed tabular at one end, and having its opposite end bent backward or doubled upon the main body of the holder and adapted to receive and clasp a ticket, substantially as set forth.

251,967. PUMP. NICOLAS TALABE, Paris, France. Filed May 7, 1881. (No model.) Patented in France Dec. 30, 1878, and in England Dec. 7, 1880.

Claim.—1. In a pump for the purpose described, the cylinder B, formed integral with the longitudinal passages A A, which are

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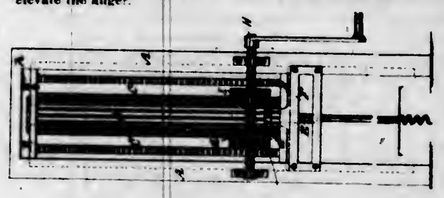
provided intermediate of their ends with laterally-projecting inlet and outlet branches H H, in combination with the hollow covers forming closed ends to the pump, and valve-plates applied to the ends of the cylinder, and provided with suction and discharge valves, substantially as described.

2. In a pump for the purpose described, the cylinder B, formed integral with the longitudinal passages *h h*, which are provided intermediate of their ends with the laterally-projecting inlet and outlet branches H H, in combination with the hollow covers forming closed ends to the pump, and each divided into two chambers, and the plates K, attached to the ends of the cylinder and provided with valves I I', pivoted in position and acted on by springs, all substantially as shown and described.

3. In a pump for the purposes set forth, the cylinder B, having within it the longitudinal passages *h h*, provided with laterally-projecting inlet and outlet branches H H, in combination with the two hollow covers G G, having ribs G', the valve-plates K, provided with horizontal hinge-pins, the valves I I', loosely pivoted on said hinge-pins, and springs acting on said valves, substantially as shown and described.

251,968. POST-HOLE DIGGER. THEOPHILUS TABNER and HERMANN H. FISCHER, Osage, Nebr. Filed June 24, 1881. (No model.)

Brief.—The auger-shaft is rotated through a bevel-gear on a horizontal shaft, meshing with a crown-wheel, which engages a cogged cylinder in a traveling frame, said horizontal shaft having sliding pinions, which engage rack-bars on the traveling frame to elevate the anger.



Claim.—The combination of the cross-heads B, tied together by vertical rack-bars C C, the cogged cylinder D, the vertical shaft E, carrying crown-wheel *d*, and the crank-shaft H, carrying the cog-wheel G, and movable pinions I I, all arranged as described, and adapted to be used as set forth.

251,969. ROCK AND ORE CRUSHER. JOSIAH TAYLOR, New York, N. Y. Filed Apr. 8, 1881. (No model.)

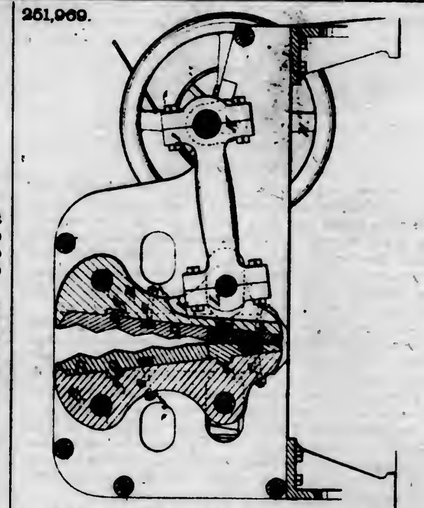
Claim.—1. In a rock and ore crushing machine, a pair of serrated or corrugated oscillating jaws separated at the top, each suspended on an independent bearing and provided with one or more rounds, with corresponding hollows forming equal arcs of circles drawn on equal radii running laterally across the face of the jaws, as shown and described.

2. In a rock and ore crushing machine, oscillating jaws provided with face-plates in two sections, one of which sections on each jaw is serrated or corrugated and the other made with hollows and rounds of equal extent, and consisting of equal arcs of circles drawn on equal radii, as shown and described.

3. In a rock and ore crushing machine, jaws with serrated or corrugated faces, with each serration or corrugation running laterally across the jaws, equal in extent to the throw of the crank which oscillates the jaws, the two lower projections and depressions consisting of equal arcs of circles drawn on equal radii, as herein shown and described.

4. In a rock and ore crushing machine, a pair of jaws the faces of which are provided at the lower extremities with one or more hollows and rounds formed of equal arcs of circles drawn on equal radii extending laterally across the jaws, and serrated or corrugated longitudinally, with the projections on one face opposed to the depressions on the other, as herein shown and described.

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5. In a rock and ore crushing machine, the combination of two oscillating jaws suspended apart at the top on independent bearings, and a link provided with boxes, sliding wedges, and set-screws, for the purpose of adjusting and maintaining in position the lower ends of the jaws, as herein shown and described.

6. In a rock and ore crushing machine, the combination of a metallic frame with a pair of oscillating jaws suspended therein apart at the top on independent bearings, having face-plates attached by flanges, bolts, and screws, serrated or corrugated laterally across the upper portion, and provided on the lower portion with hollows and rounds running across them, composed of equal arcs of circles drawn on equal radii and equal in extent to the throw of the crank, and links provided with boxes, wedges, and set-screws, with rods connecting the lower ends of the jaws, and pitman, crank, shaft, pulley, and balance-wheels, as herein shown and described.

7. In a rock and ore crushing machine, a pair of serrated or corrugated jaws diverging from a given point upward in a hopper-like form and from the same point downward, having faces consisting of a series of hollows and rounds composed of equal arcs of circles drawn on equal radii and equal in extent to the throw of the crank, having the projections of the rounds on the two faces parallel with each other, as herein shown and described.

251,970. COATING AND INSULATING WIRE FOR ELECTRICAL PURPOSES. JAMES TAYLOR, Ansonia, Conn., assignor to the Electrical Supply Company, same place. Filed Nov. 9, 1881. (No specimens.)

Claim.—1. Wire or copper strips for electrical purposes, having the surface coated with benzoin, substantially as described.

2. Copper wire or strips for electrical purposes first coated with benzoin, then with a fibrous covering applied to the benzoin-coated surface while the benzoin is in an adhesive state, substantially as described.

3. Copper wire or strips for electrical purposes first coated with a fibrous material, then a fibrous covering coated with benzoin, substantially as described.

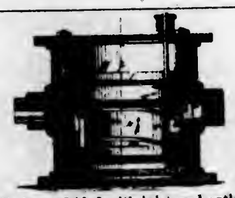
4. Copper wire or strips for electrical purposes first coated with a fibrous material, the fibrous material filled with paraffine, or a composition of which paraffine forms the base, then finally coated with benzoin, substantially as and for the purpose described.

251,971. PISTON WATER-METER. JAMES A. TILDEN, Hyde Park, assignor of one-half to Francis C. Hersey, South Boston, Mass. Filed July 20, 1881. (Model.)

Brief.—Inside the piston is a secondary piston, which acts as a valve to control the admission of water to the opposite ends of the first piston.

Claim.—1. The main cylinder provided with an inlet-passage and with internal depressions in the side thereof, combined with the main piston provided with secondary inlet-ports and a depression in its surface in connection with the said inlet-passage throughout its stroke, and acting in co-operation with the said depressions of the cylinder to connect the secondary inlet-ports with the said inlet-passage of the cylinder at definite points in the stroke of the main piston, substantially as described.

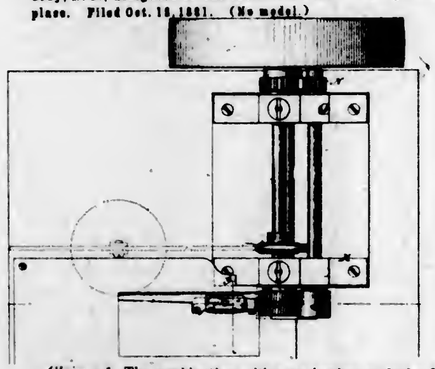
251,971.



2. The cylinder provided with inlet and outlet passages and with the internal depressions all in its sides, combined with the main piston provided with the secondary inlet-ports, and the secondary piston therein, the said ports and depressions being arranged, as described, to connect the interior of the main piston at each end with the corresponding end of the cylinder during a portion of the stroke of the main piston, substantially as and for the purpose set forth.

3. The main cylinder provided with an outlet-passage, and the main piston therein provided with a main outlet-port in connection with the said passage throughout its stroke, and with ports leading to the main cylinder at either end of the said piston, combined with the secondary piston provided with an external channel always in connection with the said main outlet-port and with main inlet-ports, arranged as described, whereby one of the said main inlet-ports is in communication with the port of the main piston leading to one end of the cylinder, while the corresponding port leading to the other end of the cylinder is in communication with the said external channel, substantially as described.

251,972. MACHINE FOR TURNING AND PRESSING WOVEN FABRICS. WILLIAM H. H. TRACY and GEORGE E. STILLMAN, Troy, N. Y.; assignors of one-third to Josiah L. Young, same place. Filed Oct. 18, 1881. (No model.)



Claim.—1. The combination, with a mechanism or device for turning over the edge of the fabric drawn through it, of means for drawing the turned-over fabric and at the same time flattening down the fold and breaking the edge thereof, substantially as set forth.

2. In combination with means for turning over the edge of the blank, a set of drawing and flattening rolls adapted to also exert a drawing tendency in the direction of the edge of the folded-over flap, so as to keep the said edge parallel with the hinge-line of the flap.

3. In combination with a set of rolls for flattening and crimping, means for smoothing out the folded and crimped portion of the blank, as set forth.

4. In a turning mechanism or device, a former adapted to contract in the direction of its thickness, substantially as and for the purpose set forth.

5. In a turning mechanism or device, a former adapted to yield bodily to permit the passage between its working-edge and the adjacent surface of its incasement of different thickness of material, as set forth

6. In combination with the former and the partially-surrounding case of a turning mechanism, a transparent top portion, in the manner and for the purpose specified.

251,973. LOOM-SHUTTLE. CHARLES M. TUCKER, Great Falls, assignor to himself and Frederick Demars, Somersworth, N. H. Filed May 31, 1881. (No model.)

Brief.—The expander, placed within the split-spindle, is connected to a link pivoted in a metallic carrier-frame secured to the body of the shuttle. As the spindle is depressed the expander is retracted, and spreads the portions of the spindle apart to hold the cop placed upon it.

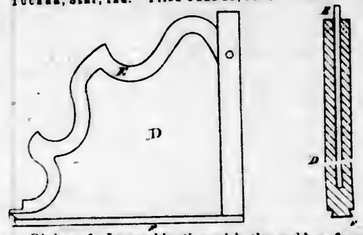


Claim.—1. The link or double crank E, arranged and combined substantially as set forth, with the shuttle-body, the expander, and the split or expansive spindle, all being essentially and to operate as specified.

2. The link or double crank and its pivotal carrier inserted in the shuttle-body, in combination therewith and with the expansive spindle and its expander, all being adapted substantially as set forth.

3. The link or double crank, in combination and arranged with the shuttle-body, the expansive spindle, and its expander and operative spring, substantially in manner as shown and described.

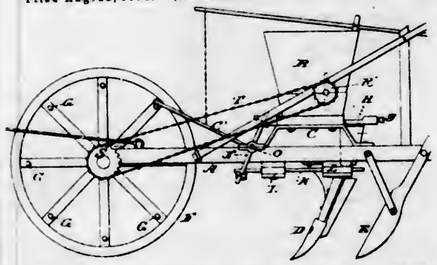
251,974. FORMER FOR PLASTER-MOLDING. THOMAS B. TUCKER, Star, Ind. Filed June 29, 1881. (No model.)



Claim.—1. In combination with the mold or former E, the support D, extending to near the outer edge of said former and supporting it on both sides, substantially as set forth.

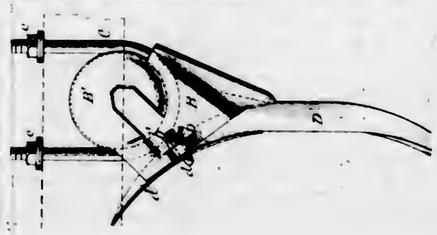
2. The support D, cast with a central recess for the former E, and provided with the dovetail F, for the purpose of attaching the whole to the base A, substantially as set forth.

251,975. CORN-PLANTER. JAMES TURNER, Culpeper, Va. Filed Aug. 23, 1881. (No model.)



Claim.—In a corn-planter, the hopper B, having the partition, in combination with the slide H, having the openings *a b*, blocks *c d*, and set-screws *f g*, connected to the slide K, having opening M, by the lever N on the shaft O, the lever C', chain R, lever Q, and the supporting and operating wheel F, having the pins G, constructed, arranged, and operating substantially as specified.

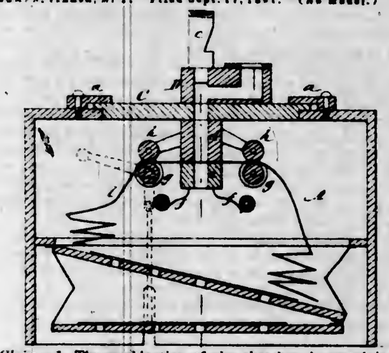
251,976. CULTIVATOR. DANIEL C. VAN BRUNT, Horicon, Wis. Filed Sept. 27, 1881. (No model.)



Claim.—1. A clamp for cultivator-teeth having hub B' and ears *b*, in combination with a tooth, D, staple *d*, and securing-nuts.

2. A cultivator-beam having concavity *a*, in combination with clamp having hub B', the staple C, and nuts, as set forth.

251,977. MECHANICAL MUSICAL INSTRUMENT. HENRY WREN, Ithaca, N. Y. Filed Sept. 17, 1881. (No model.)

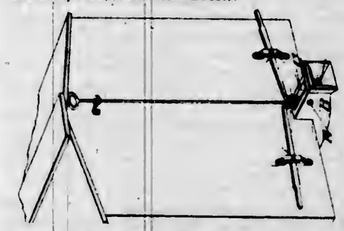


Claim.—1. The combination of air-chamber A, containing feed-rollers *g* and apertured block *e*, with cover C, apertured block D, carrying reeds and pipes, apertured block *d*, and the feed-rollers A, secured to the under side of cover C, substantially as shown and described.

2. The removable cover C, carrying reed-block D, apertured block *d*, and rollers A, combined with the air-chamber A, block *e*, and rollers *g* in the chamber, substantially as shown and described.

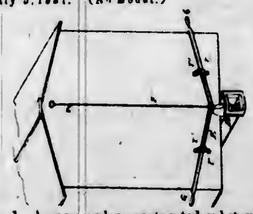
3. The springs *f* and apertured block *e*, supported upon said springs, combined with the stationary paper-rollers *g* and removable rollers *h*, and apertured block *d*, all arranged to operate substantially as shown and described.

251,978. CAR-COUPLING. HENRY WELLS, Glenwood, Iowa. Filed Sept. 28, 1880. (No model.)



Claim.—The combination, with the slotted draw-head B, of the coupling-hook C, having a forwardly-inclined front face, a concaved back face, a lengthened top, and a slot whose sides are parallel with the front face, said slot being provided with a pivotal pin, substantially as described, whereby the strain is borne by the upper shoulder of the draw-head and the coupling-hook is locked in place when the pin is broken, as set forth.

251,979. CAR-COUPLING. HENRY WELLS, Glenwood, Iowa. Filed July 5, 1881. (No model.)



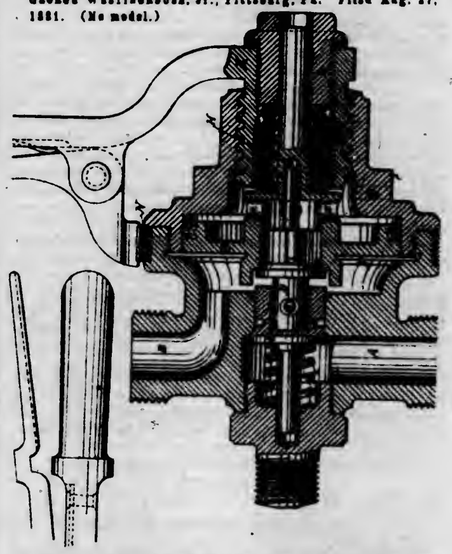
Claim.—1. A car-coupler constructed substantially as herein shown and described, consisting of draw-bar B, having slots *b c*, provided with internal slotted triangular catch, C, and internal springs, D, and coupling-pin E, having shoulders *h i*, hooked finger *o*, and link-opening *p*, arranged and operated as set forth.

2. In a car-coupler, the draw-bar B, provided with T-shaped slot *b* and slot *c*, for admission of coupling-pin, and with triangular slotted block or catch C and springs D, for guiding and holding the coupling-link, substantially as herein shown and described.

3. In a car-coupler, the combination, with the draw-bar, of the coupling-pin E, having shoulders *h i*, flanged sides *k*, grooved edge *l*, bolt and nut *n' n²*, and hooked finger *o*, having nose *f* and opening *p*, substantially as herein shown and described.

4. In a car-coupler, the combination, with the coupling-pin E, provided with groove *l* and a bolt-hole, *n*, of the bolt and nut *n' n²*, substantially as herein shown and described, whereby said coupling-pin is held in place, as set forth.

251,980. REGULATING-VALVE FOR RAILWAY-BRAKES. GEORGE WESTINGHOUSE, Jr., Pittsburg, Pa. Filed Aug. 27, 1881. (No model.)



Claim.—A regulating-valve for railway-brakes, having in combination the nozzles A B, valves C D, hollow piston E, having lateral ports *e*, escape-port G, springs *c* and H, handle K, and screw-plug *k*, substantially as set forth.

251,981. CYLINDER AND CONCAVE TOOTH FOR THRASHING-MACHINES. HENRY P. WHITE, Paw Paw, Mich. Filed Oct. 16, 1881. (No model.)



Claim.—The combination, with a thrashing-machine cylinder or concave-tooth, of a cutting-blade secured thereto, substantially for the purpose herein set forth.

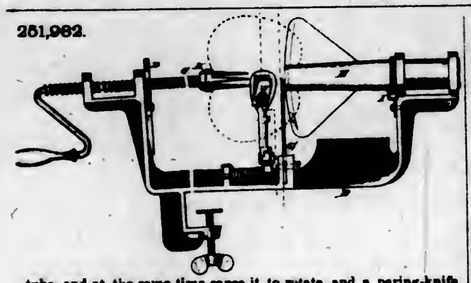
251,982. APPLE PARER, CORER, SLICER, AND QUARTERER. DAVID H. WHITTEMORE, Worcester, Mass. Filed Oct. 26, 1881. (Model.)

Brief.—The novelty consists principally in the rotating corer with or without radial quartering-blades.

Claim.—1. In an apple paring, coring, and slicing machine, the coring-tube E, having a tubular opening, in combination with frame B, provided with bearings for said coring-tube, in which it is adapted to rotate freely, and means to feed an apple positively against the cutting-edge of said corer, and at the same time give it a rotating movement, substantially as and for the purpose specified.

2. In an apple paring, coring, and slicing machine, the coring-tube E, having an open tubular passage-way for the core through the same, in combination with a frame provided on one end with bearings in which the coring-tube is adapted to rotate, and on the other with means to feed an apple positively against the coring-

251,982.



tube, and at the same time cause it to rotate, and a paring-knife located between said coring-tube and feed mechanism and hinged to the frame, substantially as and for the purpose specified.

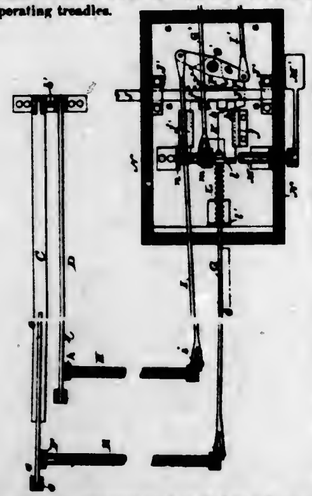
3. A coring-tube for paring, coring, and slicing machines, which consists of a tube having an open tubular passage-way for the core through it, said tube being provided at the end farthest from the cutting-edge with a bearing portion and a flange at the end of said bearing portion next to the cutting-edge, and one or more edged cutters radiating from said tube upon its cutting-end, said tube and cutters being adapted to rotate as the rotating apple is brought into contact with the same, substantially as shown and described.

4. In a paring, coring, and slicing machine, the combination of the coring-tube E, supported in bearings at one end of the frame, and means to feed the apple upon the coring-tube and rotate the same secured to the other end of the frame, with a paring-knife, J, located between said coring-tube and feed mechanism, and a slicing-cutter, G, rigidly secured to the frame and located between the paring-knife and coring-tube, substantially as shown and described.

5. In an apple coring and paring machine, the frame B, with its bearings, in combination with the coring-tube E, adapted to rotate freely in said bearings, said coring-tube being provided with a flange and a holding-catch, I, to hold the flange of the coring-tube between itself and the bearings to prevent longitudinal movement of said tube, substantially as shown and described.

251,983. MECHANISM FOR OPERATING RAILWAY-SWITCHES. CHARLES C. WILLIAMS, Columbus, Ohio. Filed Aug. 30, 1881. (No model.)

Brief.—The releasing or unlocking treadles and the operating-treadles are arranged side by side, with the former in advance of the latter, and through rod, crank, and rock-shaft connections the switch is set from a passing train, having a wide roller, which acts upon said treadles. The switch is capable of hand operation through an unlocking foot-treadle and a vertical rotating shaft having connection with the throw-bar and lever-connection with the switch-operating treadles.



Claim.—1. The combination of the main-line rails, the switch, the releasing-lever pivoted at its end next the switch, the setting-lever close to the releasing-lever and correspondingly pivoted, the inclines of said levers arranged with the incline of the releasing-lever extending at its outer end farther from the switch than does the corresponding end of the incline of the setting-lever, and with the inner end of the setting-lever incline extending nearer to the switch than does the corresponding end of the releasing-lever incline, the rock-shaft, to which the said levers are connected, and the switch locking, releasing, and setting mechanism, with which mechanism said rock-shafts are connected, substantially as and for the purpose hereinbefore set forth.

2. The combination of the rails, the switch, the tread-bars on opposite sides of the switch, and the mechanism connecting the tread-bars with the switch, the said bars being provided with inclines and arranged in two sets or pairs pivoted at their ends next the switch, each pair consisting of a switch-releasing and a switch-setting bar, with the incline of the releasing-bar extending partly beyond and partly by the side of and close to the incline of the setting-bar, and with the setting-bar incline extending nearer the switch than does the releasing-bar incline, substantially as and for the purpose hereinbefore set forth.

3. The combination of the switch-releasing tread-bars C C′, the switch-setting tread-bars D D′, their pivots b′ f, the inclines c d d d′, arranged relatively to each other and to the switch as described, the rock-shafts E H, and the rods connecting said rock-shafts with the locking, releasing, and setting devices by the side of the switch, substantially as and for the purpose hereinbefore set forth.

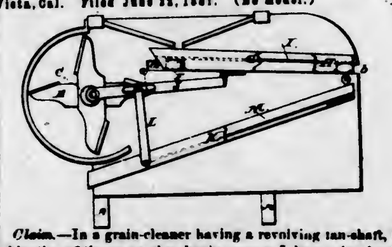
4. The combination of the switch throw-bar, the turning shaft O′, the rack thereon, the rack-bar on the throw-bar, the rock-shaft M, the detent engaging with the throw-bar and actuated by the rock-shaft, and the spring acting on the detent, substantially as and for the purpose hereinbefore set forth.

5. The combination, substantially as hereinbefore set forth, of the switch, the throw-bar, the upright shaft, the gearing connecting said shaft and the throw-bar, the hand-lever secured to said shaft, the spring-detent engaging with the throw-bar, the rock-shaft operating the detent, and the treadle or foot-lever secured to the rock-shaft, for the purpose described.

6. The combination of the switch-releasing tread-bars, the rock-shafts E, connected with said tread-bars, the switch-setting tread-bars, the rock-shafts H, with which they are connected, the switch throw-bar, the upright shaft geared therewith, the rods connecting said upright shaft with the rock-shafts H, actuated by the switch-setting bars, the spring-detent engaging with the throw-bar, the rock-shaft M, connected with the detent, and the rods connecting said rock-shaft and detent with the rock-shafts E, actuated by the switch-releasing tread-bars, substantially as and for the purpose hereinbefore set forth.

7. The combination of the single broad tread-roller Q, mounted upon the engine, and the tread-bars arranged in two sets or pairs and located between the main rails, each of said pairs consisting of a switch-releasing and a switch-setting tread-bar, pivoted at their ends next the switch and provided with inclines, the inner end of the releasing tread-bar incline and the outer end of the setting tread-bar incline being arranged side by side and close together, and the opposite ends of said inclines projecting respectively away from and toward the switch, substantially as and for the purpose hereinbefore set forth.

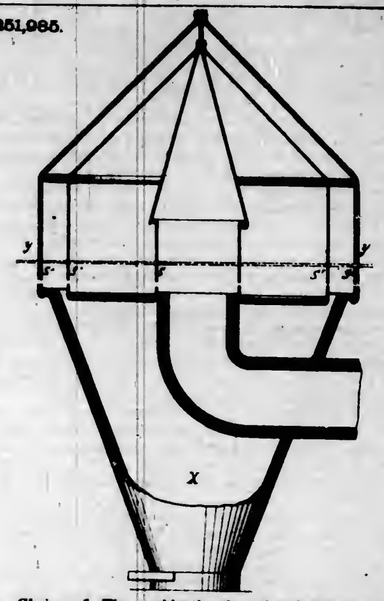
251,984. GRAIN-CLEANER. WILLIAM WILLIAMSON, Rio Vista, Cal. Filed June 13, 1881. (No model.)



Claim.—In a grain-cleaner having a revolving fan-shaft, the combination of the upper shoe having screen I, lower shoe having screen M, eccentrically-journaled rods J, having slots c, and hinged adjustable connecting-strips L, arranged substantially as and for the purpose herein described.

251,985. DUST-COLLECTOR FOR MIDDLINGS-PURIFIERS, &c. AUGUSTUS WOLF, Allentown, assignor of one-half to D. L. Hunsicker, East Hempfield, Pa. Filed Sept. 13, 1881. (No model.)

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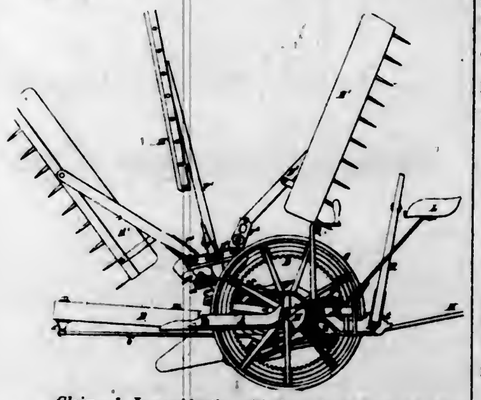
Claim.—1. The combination, in a dust-collector for middlings-purifiers, of one or more suspended bags, a dust-supplying spout communicating with the interior of the same, and mechanism for imparting a vertical shaking or jerking motion to the said bag or bags, as set forth.

2. The combination of the dust-supplying spout, the inner bag, S, connected to the said spout at one end and open at the opposite end, the discharge-spout X, the outer bag, S′, closed at one end and connected at the opposite end to said discharge-spout X, and mechanism for shaking the bags, as specified.

3. The combination of the pivoted arm W, the bag or bags suspended therefrom, the crank-pin x, and the spring w, whereby a sudden movement is imparted to the arm W on its release from the control of the crank-pin, as set forth.

4. The combination of the suspended bag or bags forming the dust-collector and mechanism for imparting a vertical shaking or jerking movement to said bag or bags with whipping-cords y, as set forth.

251,986. HARVESTER. WILLIAM A. WOOD, Youngstown, Ohio, assignor to Frank Wood, Albany, N. Y. Filed Jan. 2, 1880. Renewed Oct. 6, 1881. (Model.) Patented in England Dec. 6, 1879.



Claim.—1. In combination with the main frame A and with the tilting frame which carries the platform and rakes, the eccentric J, adapted to operate directly upon the said tilting frame, said eccentric being fixed on the shaft a, on one side of the main supporting-wheel, and having a lever fixed to the opposite end of said shaft a, in described relation to the driver's seat, as set forth.

2. In a harvester, the combination, with the main frame A and tilting frame I, carrying platform H, and capable of being variously elevated or lowered in relation to said main frame, of the tilting shaft K, operating with the rearward end of said tilting frame, whereby said tilting frame may be variously inclined, substantially as and for the purpose set forth.

3. In a harvester, the combination of a main frame supporting the platform, rakes, and mechanism for revolving said rakes, a tilting frame, and devices for elevating and lowering said tilting frame, both in front and rear, from the driver's-seat side, said devices also supporting the tilting frame.

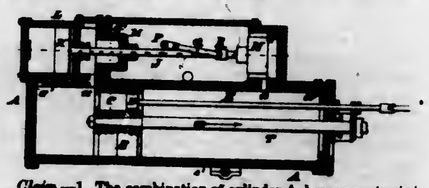
4. The combination of the main frame, supporting platform and rakes, and mechanism for revolving said rakes, with eccentric J on shaft a, and operating mechanism within reach of the driver, and with the shaft K and connections, whereby the frame may be tilted from front or rear by the driver, as set forth.

5. The combination, with the main frame A and tilting frame I, of the tilting shaft K, provided with crank q, operating with the rear end of said tilting frame, segmental toothed rack t, and lever R, carrying dog t′, substantially as and for the purpose set forth.

6. The depressing-way T, secured to the main frame, and shaft u, supported from platform H, and provided with the lever-arm u′, acting against said depressing-way, and with crank v′, operating with the pivoted lever V, carrying grain-wheel U, whereby the grain-wheel side of said platform will be made to assume a position uniformly the same with the opposite side, in the manner and for the purpose set forth.

7. In combination with the supporting-wheel C, the sleeve h, shaft l, provided at one end with cam n and at the other end with handle-lever m, projecting from the driver's side of said drive-wheel, dog o, and internal ratchet-wheel, p, made with the sprocket-wheel driving the revolving rakes, substantially as and for the purpose set forth.

251,987. MINING-ENGINE. BERNARD YOUS, West Belleville, Ill. Filed Sept. 24, 1881. (No model.)



Claim.—1. The combination of cylinder A, having ports a′ a′ at its extreme ends, and spring check-valves S, parallel with the cylinder and transverse of the ports, as set forth.

2. In a mining-engine, the combination of cylinder A, formed with induction-ports a′ a′, having spring check-valves S S, eduction-ports a a, valve-chest G, and piston B, as set forth.

3. The combination, with the drill-picks, of a scraper in contact with the drill in the forward movement and swung outward before the backward movement, for the purpose set forth.

4. The piston B, containing a cylinder, C, and piston D, operating the scraper W, substantially as set forth.

5. The piston B, containing a cylindrical bore, C, and piston D, with rod E, working through the head of cylinder A.

251,988. KNOB-ATTACHMENT. JOHN W. YOUNG, Stamford, Conn., assignor to the Yale Lock Manufacturing Company, same place. Filed Oct. 10, 1881. (No model.)

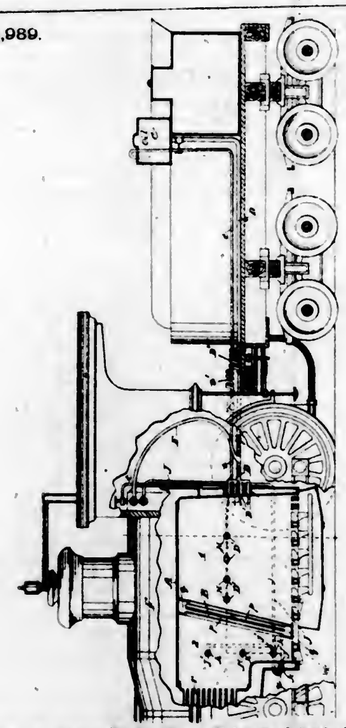


Claim.—The combination of the knob-shank having the recess e with the straddling saddle, the clamping-screw, and the spindle, substantially as hereinbefore set forth.

251,989. HYDROCARBON-FURNACE. MICHAEL ENOS, Pittsburg, Pa. Filed Sept. 16, 1881. (No model.)

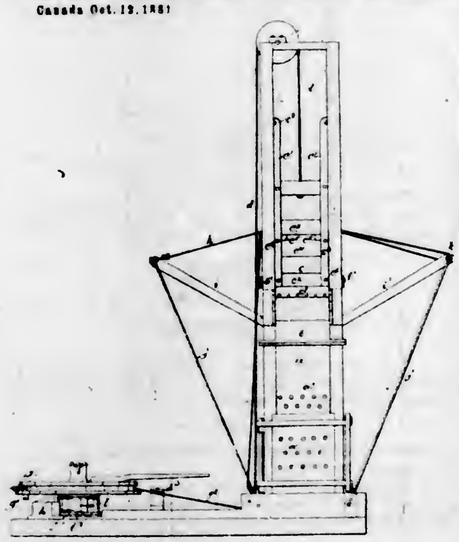
Claim.—In the herein-described furnace, the combination of a primary combustion-chamber, 1, a secondary combustion-chamber, 2, the perforated wall or partition B, separating said cham-

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bers, with the pipes D, D', E, and H for supplying hydrocarbon, steam, and air to the primary combustion-chamber to effect a violent combustion in said chamber, and the pipes J, J', and *k* for supplying steam and air to the secondary chamber and effecting the consumption of the unconsumed products passing from the primary chamber, the whole being constructed and arranged substantially as described.

251,990. BALING-PRESS. GREENLEAF W. BATCHELDER, Boston, Mass. Filed Nov. 23, 1881. (No model.) Patented in Canada Oct. 19, 1881.



Claim.—1. The drum *l*, provided with the grade or incline *l'*, having the shoulder *l''*, and combined with the rope *k*, secured to the drum at the rear of the shoulder *l''*, whereby, as the drum rotates, said grade will so guide the second turn of the rope as to lay it above the first, as shown and described.

2. The capstan-shaft *m* and capstan-drum *f*, mounted loose thereon, combined with a second winding-drum, *l*, also loose on the said shaft, and arranged below the drum *f*, the drums being provided with clutch-projections *l' f'*, to enable them to be engaged with or disengage from one another, substantially as described.

3. In a beating-press for baling purposes, the combination, with the beater, of the tower having its walls perforated or provided with openings for the escape of air, dust, &c., to prevent the undue retardation or cushioning of the said beater thereby, and to cleanse the material of the bale, substantially as described.

4. The combination, with the tower, of the pressure-arms *i i'* and their actuating rope and pulleys therefor, the beater having recesses to receive the said arms, and the four arms or posts extending upwardly from said beater in the corners of the tower, whereby they are braced, and provided with pulleys to receive the portions of the said actuating-rope that extend across between the pressure-arms, substantially as and for the purpose set forth.

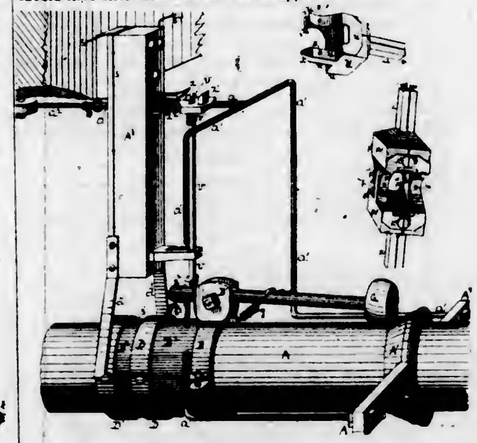
5. The combination, with the tower and the beater and its operating levers and ropes, of the drum *l*, having the projections *l'*, the drum *f*, arranged above the drum *l* and on the same shaft, and having the lugs *f'*, and means, substantially as described, to engage and disengage the projections *l' f'* of the drums, as and for the purpose specified.

6. In a baling-press, the herein-described beater, consisting of the four corner-posts *c'*, the top and bottom blocks, *c² c³*, recessed to receive the said corner-posts, and the front and rear blocks, *c⁴*, all united by bolts through the said corner-posts, and the detachable acting face *c⁵*, all substantially as described.

7. The feeding-door *b* and its fastening-hooks *b' b'* at each end, combined with the unfastening device *b² b³ b⁴* for simultaneously disengaging both the said hooks, substantially as described.

251,991. ELECTRIC GOVERNOR AND INDICATOR FOR FLUID-PRESSURE BRAKES. EDWIN S. BATCHELOR, Pittsburg, Pa., assignor to himself and Charles W. Batchelor, same place. Filed Sept. 14, 1881. (No model.)

Brief.—An alarm is given on the locomotive if the wheels should slide after the brakes have been applied.



Claim.—1. The combination of a centrifugal governor, a car-axle, an electrical make-and-break mechanism operated by the governor, an electrical circuit extending thence to the engine, and an audible or visual signal in such circuit in convenient position for signaling the engineer, substantially as set forth.

2. The combination of an electrical wire-circuit extending along any desired part of the train, an axle-governor, a make-and-break mechanism actuated by such governor, a valve-operating mechanism, and a make-and-break mechanism operated by the valve motion, substantially as set forth.

3. The combination, in a railway-train, of an electric-wire circuit, a centrifugal governor taking its motion from an axle, an electric make-and-break mechanism actuated by such governor, a spring tending to hold said governor to the axle, and a signal or alarm, substantially as set forth.

4. The combination, on a railway-train, of an electric-wire circuit, a centrifugal governor taking its motion from the axle, a make-and-break mechanism actuated by the governor, a valve-operating mechanism, a make-and-break mechanism operated by the valve-motion, and a bell-ringing and signaling circuit brought into operation by the breaking of the previously-closed train or main circuit, substantially as set forth.

5. The insulated collars D D' B and strips *d d'*, in combination with circuit-wires and with a centrifugal governor actuated from the car-axle, and a make-and-break mechanism actuated from such governor, substantially as set forth.

6. In combination with a centrifugal governor and axle, the draw-frame *a a'*, collar A', hook *s*, catch *s'*, and trip-bar *v*, as a means for testing apparatus of the class described, substantially as set forth.

7. The combination of a railway-train signal, a signaling electric circuit, a valve mechanism for applying fluid-pressure brake-power, and an electrical make-and-break mechanism operated in making and breaking the circuit by the valve motion, substantially as set forth.

8. An electrical coupling having in combination in each half a block, R, and pin *r'*, of non-conducting material, a metallic plate, *n*, on each side of the block, a leg, *n'*, having a projection, *e*, of each plate *n* lying along each opposite side of the pin *r'*, and a perforated leg, *n²*, of each plate *n* bent to a bow shape, so as to make contact with the opposite leg *n'* of the same half-coupling when the couplings are disconnected, but such legs *n²* being arranged to be separated by the pin *r'* of the other half-coupling when two half-couplings are united, and at the same time make electrical contact with the legs *n'* of such other half, substantially as set forth.

251,992. PROCESS OF MANUFACTURING GLYCERINE FROM SOAP-LIQUOR. JESSE P. BATTERSHALL, New York, N. Y. Filed Nov. 8, 1881. (No specimens.)

Claim.—1. In the manufacture of glycerine from waste soap-liquor, the processes of neutralization, evaporation, addition of carbonate of lime, means for removing rosin and fat, use of the centrifugal machine, and distillation, substantially as described.

2. The application of the centrifugal machine for the separation of glycerine from waste soap-liquor, substantially as hereinabove described.

3. In the manufacture of glycerine from waste soap-liquor, the use of the centrifugal machine in combination with the process of evaporation, substantially as hereinabove described.

4. In the manufacture of glycerine from waste soap-liquor, the combination of the use of the centrifugal machine with the process of evaporation and distillation, substantially as herein set forth.

5. In the manufacture of glycerine from waste soap-liquor, the combination of the use of the centrifugal machine with the process of neutralization, evaporation, and distillation, substantially as hereinabove described.

6. In the manufacture of glycerine from waste soap-liquor, the combination of the use of the centrifugal machine with the use of methylic or ethylic alcohol, substantially as hereinabove described.

7. In the manufacture of glycerine from waste soap-liquor, the use of the centrifugal machine with means for clarifying the products thereof, substantially as herein described.

8. In the manufacture of glycerine from waste soap-liquor, the use of carbonate of lime, substantially as hereinabove described.

9. In the manufacture of glycerine from waste soap-liquor, the combination of the use of the centrifugal machine with the process of separating rosin and fat by straining through cloth filter-bags, substantially as hereinabove described.

251,993. BLOW-LAMP. RICHARD T. BISHOP, St. Louis, Mo., assignor of one-half to Theodore Hunt, same place. Filed Sept. 16, 1881. (No model.)

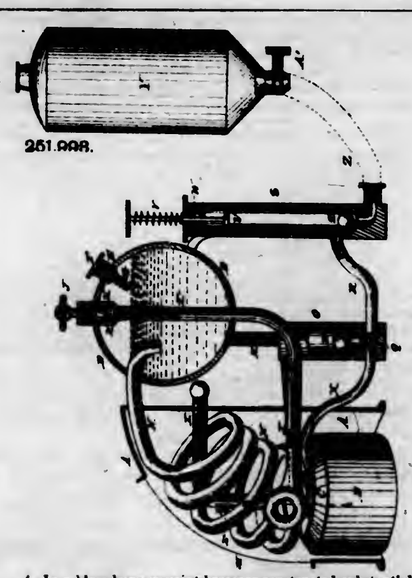
Brief.—The burner-pipe may be swiveled so as to permit the direction of the flame to be regulated at pleasure.

Claim.—1. The combination of the casing A, lamp B, reservoir D, coiled pipe H, and burner-pipe I, all arranged and operating substantially as herein described, for the purpose set forth.

2. The combination of the reservoir, the lamp B, the heating-coil, and the burner-pipe I, having gage-cock J and perforations K, substantially as described, for the purpose set forth.

3. The combination of the casing, lamp, coiled pipe H, and the plunger-pump O S, the body of which, S, forms a handle to the device, the cylinder O, having a three-way cock, Q, and feed-pipe X, and a suitable tank, Y, and flexible tube Z, all arranged and operating substantially as described, for the purpose set forth.

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4. In a blow-lamp or paint-burner constructed substantially as described, the jointed or swiveled burner-pipe, as and for the purpose shown and specified.

251,994. WAGON-SPRING. NATHAN BEVERAGE, Lockport, N. Y. Filed May 31, 1881. (No model.)



Claim.—1. A spring for vehicles, consisting of the long spring *c*, secured to a bar, *a*, by a sleeve, *b*, and a strap, d^3, in combination with a shorter spring, *c'*, arranged a short distance from it and secured in a similar manner to a bar, *a'*, for the purposes specified.

2. The bolster *f*, provided with the stakes *g*, the bar *a*, and spring *c*, secured thereto, substantially as specified, in combination with the spring *c'*, arranged a short distance from it and secured to the bar *a'*, substantially as and for the purposes described.

251,995. PAPER CAP. FRANK E. BUCK, Philadelphia, Pa. Filed June 17, 1881. (No model.)



Claim.—1. The sheet or strip A, having transverse cutting-lines *a*, substantially as shown and described.

2. The sheet or strip A, having lateral incisions on one side, producing flaps a^2, designed and adapted to form, by folding over one another, a crown for a cap, substantially as shown and described.

3. A cap of paper or equivalent material composed of a band or body and a crown, the latter consisting of overlapping flaps folded radially toward a common center and secured thereto, substantially as shown and described.

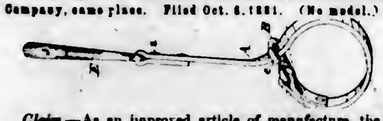
4. The combination, with the body or band A and flaps a^2 integral therewith, of the securing-disks C D, substantially as shown and described.

5. A cap of paper or equivalent material having a crown and a band forming the body, the ends whereof are secured by a pin, E, substantially as shown and described.

6. A cap of paper or equivalent material having a crown and a band folded longitudinally to produce a double thickness, substantially as shown and described.

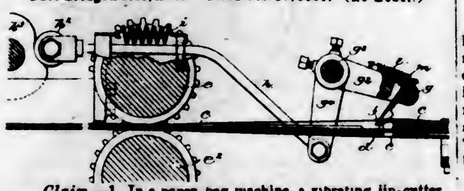
7. A cap of paper or equivalent material having a folded band or double body and a crown composed of overlapping radial flaps secured to a common center, substantially as shown and described.

251,996. HOSE-CARRIER. CORNELIUS CALLAHAN, Chelsea, Mass., assignor to the American Fire Hose Manufacturing Company, same place. Filed Oct. 6, 1881. (No model.)



Claim.—As an improved article of manufacture, the hose-carrier composed of the strap A, the ladder-hook, and the loop B, opened at its rear side and opposite the direction of the opening of the ladder-hook, and provided with a projection, *a*, to extend across the edge of the strap A and hold it in the loop, all substantially as shown and described.

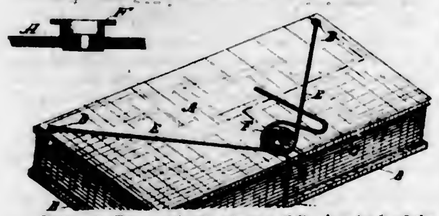
251,997. PAPER-BAG MACHINE. CLARENCE A. CHANDLER, East Bridgewater, Mass. Filed Oct. 17, 1881. (No model.)



Claim.—1. In a paper-bag machine, a vibrating lip-cutter adapted to strike and cut through the upper ply of and move forward with the moving tube until lifted therefrom, substantially as described.

2. The rock-shaft g^2, its arm, and lip-cutter *f*, pivoted thereon, and spring to control it, combined with the former and lip-support located within the tube, to operate substantially as described.

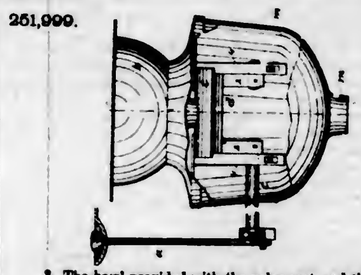
251,998. PORTFOLIO SCRAP-BOOK. ARTHUR L. COLTON, Hammond, N. Y. Filed June 13, 1881. (No model.)



Claim.—1. The combination, in a portfolio scrap-book, of the covers A and B and envelopes C, all provided with holes or eyelets D, and one of said covers being further provided with a belaying-pin, F, a string, E, passing through said eyelets, both ends of which are attached to the belaying-pin and are adapted to be wound around or unwound from the shank thereof, thus shortening or lengthening the available portion of the string, and a string, E', attached at one end to the string E and free at the other, and adapted to be wound around the belaying-pin, and thus secure the book together, all substantially as set forth.

2. The combination, with the cover B, of the belaying-pin F, secured thereto, and provided with lateral holes in its shank, adapted to receive and hold the ends of the string E, and having a head or flange under which the string E' may be wound, and thereby secured, substantially as described, and for the purposes specified.

251,999. WATER-CLOSET. JOHN C. DAGGETT, Hopkinton, Mass., assignor of one-half to John B. Farrar and Albert L. Kimball, both of Bradford, Mass. Filed Aug. 25, 1881. (No model.)



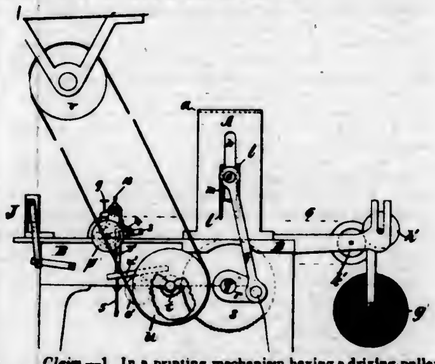
Claim.—1. The receiver *m* and its continually-open outlet *m'*, combined with the bowl *b*, provided with a valve-seat, and the slide-valve co-operating therewith, substantially as and for the purpose described.

2. The bowl and its valve-seat, combined with the slide-valve co-operating therewith, and the adjusting devices, whereby close contact is maintained between the valve and seat, substantially as described.

3. The bowl provided with the valve-seat, and the valve having lugs mounted on a rocker-shaft, combined with the slotted hangers and bearing-blocks for the said shaft, and the adjusting devices and their operating screw-rod, as and for the purpose described.

252,000. CHROMATIC-PRINTING PRESS. CHARLES W. DICKERSON, Belleville, and GEORGE HOWARD, South Orange, N. J. Filed Feb. 8, 1881. (No model.)

Brief.—A reciprocating plunger carries two chase-plates, one hinged to each side. As the plunger rises these chase-plates, carrying the forms, are oscillated upward to a vertical position, one on each side of the plunger. In this position the forms are inked in different colors. The plunger carrying the forms descends and makes the impression, that of one form being upon clean paper, and that of the other being upon a part already printed in one color. The paper is advanced by intermittently-moved rolls. A spring-blade strips the web of paper from the forms.



Claim.—1. In a printing mechanism having a driving-pulley therewith connected—as, for example, *a*—the combination, with a plunger and chase-plates, of mechanism, substantially such as described, adapted to change said plates from a horizontal to a vertical position, and mechanism, substantially such as described, connecting said plunger and said pulley, substantially as and for the purposes set forth and shown.

2. In a printing-machine, the combination, with a plunger connected with driving mechanism, of arms *f* and guides arranged to rock the chase-plates, and said chase-plates, substantially as and for the purposes set forth and shown.

3. In a printing-machine, the combination, with cheek-pieces and a plunger working therein, of rocking shafts *g*, arranged upon each side of said plunger and carrying chase-plates and guides, all arranged and operating substantially as and for the purposes set forth and shown.

4. The combination, with cheek-pieces having the curved grooves *d* and grooves or sockets *j* therein, of the plunger and rocking chase-plates, sliding plates *h* and springs connected therewith, the arms *f*, and guides *e*, all arranged and operating substantially as and for the purpose set forth and shown.

5. In a printing-machine, cheek-pieces A, having therein a curved groove, *d*, adapted to receive guides *e* and to cause the chase-plates to change from a horizontal to a vertical position, tracks or ways A, adapted to engage with a vertically-moving plunger, and slots *b*, adapted to receive sliding plates, substantially as and for the purpose set forth and shown.

6. The combination, in a printing-press, with the plunger and chase-plates swinging thereon, of a plate lying between said chase-plates and adapted to strip the paper from the type, substantially as and for the purposes set forth and shown.

7. The combination, in a printing-machine, with a plunger carrying swinging chase-plates, of a plate secured between said chase-plates and working in a slot in the plunger, and a spring or springs connected with said plate and operating to hold the same against the paper after the return movement of the chase-plates has commenced, all the parts being arranged and operating substantially as and for the purposes set forth and shown.

252,001. PIPE-JOINT. JASON K. DIMMICK, Newport, Ky. Filed Apr. 8, 1881. (No model.)



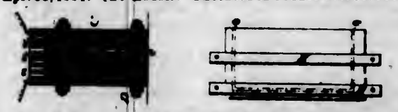
Claim.—1. The combination of two pipe-sections, one provided with a mouth having a chamber for the reception of packing, and beyond that of regular internal taper or bevel, and the other with an end adapted to enter said mouth and to bear against the internally-tapering walls thereof on all sides.

2. As an improved article of manufacture, a pipe having one end formed or provided with a shoulder or bead and the opposite end formed with a mouth of regular internal taper.

3. A cast pipe formed at one end with a mouth chambered for the reception of packing, and beyond that of regular internal taper or bevel, and at the other end having a shoulder or bead adapted to enter a corresponding mouth in the next pipe and bear against the tapering walls thereof, to center and align the two pipes for the process of tamping or packing.

4. In combination with a pipe-section having a regularly-tapering as distinguished from a annular mouth, the entrance of which mouth is enlarged for the reception of packing, a second section having its end shouldered and correspondingly tapered and seated in said mouth against the tapering walls thereof.

252,002. POLARIZATION OR SECONDARY ELECTRIC BATTERY. CAMILLE A. FAURE, Paris, France, assignor to Societé Anonyme la Force et la Lumière, Brussels, Belgium. Filed Apr. 30, 1881. (No model.) Patented in France Oct. 30, 1880.



Claim.—1. As an improvement in secondary batteries, an electrode consisting of a support coated on one or more faces with an active layer of absorptive substance—such as metal or metallic compound applied thereto in the described condition—so as to be at once spongy, and thus capable of receiving and discharging electricity, as stated, in contradistinction to a metallic plate itself rendered spongy by the disintegrating action of electricity, substantially as and for the purpose set forth.

2. In a secondary battery, an electrode having a plate or support coated with an active porous layer of metal or metallic compound, with inert material—such as crushed coke—mixed or incorporated therewith, substantially as described.

3. In combination with the plate or support of an electrode and active spongy layer thereon, an open-work perforate or porous medium for holding said layer on the plate or support of the electrode, substantially as described.

4. In a secondary battery, a series of cells comprising each a pair of electrodes with an active spongy layer thereon, combined with non-porous partitions between adjacent cells, substantially as and for the purpose set forth.

5. An electrode for secondary batteries, comprising a support, an active spongy layer of metallic substance, and a holding medium through which the battery-fluids may pass, adapted to hold said layer on said support, said support, layer, and holding medium being all fastened together, so as to be capable of transportation, substantially as described.

6. A battery comprising a series of plates clamped together with strips of rubber or like material placed between every two plates near the edges, so as to form the bottom and ends of narrow troughs or cells with open tops, the sides of the troughs or cells being formed by the plates, and the latter being clamped firmly, so that liquid-tight joints are formed, substantially as described, the projecting edges of the plates, when metallic, being protected by insulation, substantially as described.

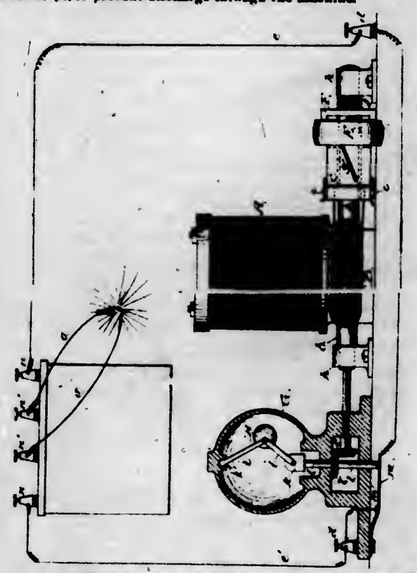
252,003. NUT-LOCK. WILLIAM HOUSE and JOSEPH R. DAVIS, Bellaire, Ohio; said Davis assignor of one-half his right to O. T. Blackburn. Filed May 31, 1881. (No model.)



Claim.—The band E, provided with the spring F and the keeper D, in combination with the bolts *b'* and *b''*, provided with the nuts C and *c*, all constructed to operate substantially as and for the purpose set forth.

252,004. AUTOMATIC CIRCUIT-BREAKER FOR SECONDARY BATTERIES. JAMES A. HALSEY and PEARL HUSSEY, Washington, D. C., assignors to the American Electrophore Company, same place. Filed Sept. 19, 1881. (No model.)

Brief.—Breaks charging-circuit when dynamo-electric machine stops, to prevent discharge through the machine.



Claim.—1. An automatic circuit-breaker consisting of the ball H, with its arms *i i*, and the shaft *l*, provided with the bevel-gear *l'*, in combination with the shaft of the armature B of the electric generator, and spring *m* and electric circuit, all constructed and operated substantially as and for the purpose set forth.

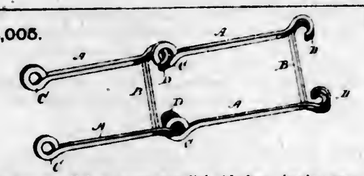
2. In combination with an electrophore or secondary battery and dynamo-electric generator, with their circuits, a governor or regulator operated by the direct motion of said generator, in combination with the spring *m*, substantially as and for the purpose set forth.

3. In combination with a dynamo-electric generator and electrophore or secondary battery, a governor or regulator consisting of the ball H, within a frame, G, and its connections with shaft *l*, spring *m*, and contact-point *m'*, substantially as described, and for the purpose set forth.

252,005. DRIVE-CHAIN. LEWIS H. RUMERY, St. Louis, Mo. Filed Dec. 7, 1881. (No model.)

Claim.—1. A link for drive-chains formed of spring metal,

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with two parallel or nearly parallel side bars, having eyes at one end and hooks at the other, said hooks and eyes being at right angles to each other, and the side bars being connected by a cross-bar at one end only, substantially as specified.

2. A link for drive-chains formed of spring metal, with two parallel or nearly parallel side bars, having at one end eyes or loops formed thereon and at right angles thereto, and at the opposite end a cross-bar, and inwardly-bent projecting hooks in the same horizontal plane as the side and cross bars, and adapted to be coupled to similar links to form a chain, substantially as set forth.

3. A link for drive-chains formed of spring metal, square or rectangular in cross-section, having two side bars with eyes formed on the free ends thereof, and connected at the opposite end by a cross-bar, and provided with doubled projecting hooks, said hooks being in the same horizontal plane as the side and end bars, and the eyes at right angles thereto, substantially as set forth.

REISSUES.

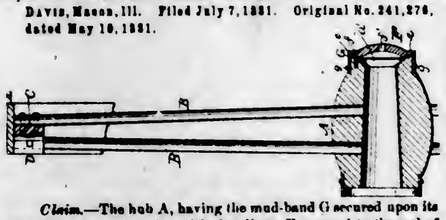
9,994. VEHICLE-WHEEL. CHARLES W. BALL and THOMAS DAVIS, Macon, Ill. Filed July 8, 1881. Original No. 241,276, dated May 10, 1881.



Claim.—1. In a vehicle-wheel, the combination, with the spokes B, of the tire and felly, each made in separate parts and forming a T-bar, and sockets secured on each side of said felly, substantially as shown and described.

2. In a vehicle-wheel, the combination, with spokes B, screwed at one end into hub A, of the tire E and felly C, constructed as described, with supporting-pieces D, secured on alternate sides of said felly, substantially as shown and described.

9,995. VEHICLE-WHEEL. CHARLES W. BALL and THOMAS DAVIS, Macon, Ill. Filed July 7, 1881. Original No. 241,276, dated May 10, 1881.



Claim.—The hub A, having the mud-band G secured upon its outer end, in combination with the oil-cap F, secured to the end of said hub within but independently of said band, and forming a tight joint with the latter, and having the lubricating-hole *f*, all constructed and arranged as and for the purpose set forth.

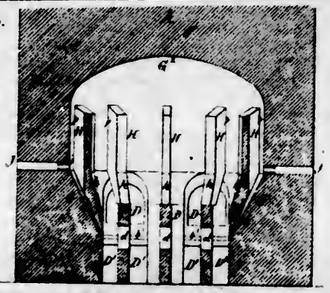
9,996. BAGASSE-FURNACE. WM. LITTLEJOHN, New Orleans, La. Filed Dec. 3, 1881. Original No. 208,476, dated Oct. 1, 1878.

Claim.—1. In combination with the combustion-chamber wall of a bagasse-furnace, the inwardly-projecting columns H, with broad spaces between them, and having broad inner faces and broad sides, whereby the bagasse is prevented from packing in the corners or angles *p*, formed between the wall and columns, and passages for the flame and air to ascend from below are maintained, substantially as and for the purpose described.

2. The combination of the pinnacle I, columns H, and longitudinal walls D, substantially as described.

3. In a bagasse-furnace, the central pinnacle, I, provided with

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columns or wings, having a space all around it between its columns and the outer wall, and said pinnacle having a grated or other suitable support, whereby the bagasse which is introduced into the furnace is radially divided and distributed and prevented from packing centrally in the angles or corners of said pinnacle, and whereby a central draft through the bagasse is secured, substantially as described.

4. In a bagasse-furnace, the combination of the doors D', the walls D, having openings *d*, and the bridge E, having passages *e*, substantially as and for the purpose set forth.

5. The combination of the grate or grates *b'* in a chamber or chambers provided with a draft door or doors, B', the ash-pit or ash-pits *b*, provided with a draft door or doors, F F', and the chamber of the furnace, provided with the pinnacle, the columns, the longitudinal walls, and draft door or doors D', substantially as set forth.

6. The walls D, provided with perforations *d*, in combination with the bagasse combustion-chamber provided with inwardly-extending columns H, having broad inner faces and also broad spaces between them, substantially as and for the purpose set forth.

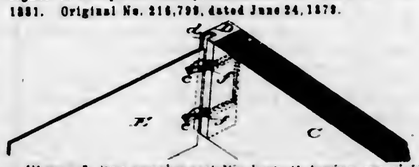
7. The combination, with the bagasse combustion-chamber provided with the columns H, which have broad inner faces and also broad spaces between them, of a wall, D, and a grate, *b'*, the wall occupying a position about central of the grate, and the flame or fire from the grate caused to circulate on both sides thereof, substantially as set forth.

8. The ash-pit of a bagasse-furnace provided with longitudinal sustaining-walls D and bridge-wall E, whereby circulati -chambers *b* and passages *e e'* are formed and a firm support for the pinnacle I afforded, substantially as set forth.

9. The bagasse-furnace having inwardly-extending columns H on the inner surface of its bagasse combustion-chamber, and provided with walls D and M in its ash-pit section, which, in conjunction with the bridge-wall E, serve as a grating and for forming circulation-chambers *b* and spaces *e e'*, substantially as and for the purpose set forth.

10. The grate or fire-bed of the bagasse combustion-chamber, together with the air and flame circulation chambers *b*, of the ash-pit section of the furnace, formed by longitudinal walls D, which rise from the ground, extend up above grates *b'*, and terminate on the plane of the fire-bed surface of the bagasse combustion-chambers, said walls of themselves or together with a tie at E forming the grated support for the burning bagasse, thereby avoiding the use of transverse arched grated surfaces between the walls from end to end, as heretofore, substantially as described.

9,997. BLANK-BOOK. ALLAN J. MAXWELL, Boston, Mass., assignor to Joseph A. Yancey, Richmond, Va. Filed Nov. 22, 1881. Original No. 216,799, dated June 24, 1879.



Claim.—1. The angular metallic back B, having one rigid side *b*, and hooks or aprns *b'*, arranged opposite to and facing said rigid side, substantially as described.

2. The angular metallic back B, having one rigid side *b*, and the retaining-hooks *b'*, arranged opposite to and facing said rigid side, in combination with the grooved rigid back D, to which the tablet is secured, substantially as described.

3. The rigid backing D, to which the tablet is secured, provided with th -otches *c' c'*, in combination with the removable

blotter, secured thereto by the elastic band *f* and the removable clips *e e*, substantially as described.

4. As a new article of manufacture, a renewable blotter-tablet consisting of a book or pad of paper provided with covers, and a blotter-sheet held by one or more spring-clips, *e*, flexibly attached by an elastic cord to the back of the binding, all in the manner described and shown.

9,998. SPRING-BOARD FOR VEHICLES. GEORGE E. NORRIS, Troy, assignor, by mesne assignments, to Wm. F. Bidwell, Glens Falls, N. Y.; said Bidwell assignor of two-thirds to said Norris and James K. P. Pine, same place. Filed Dec. 3, 1881. Original No. 154,392, dated Sept. 8, 1874.



Claim.—1. As an improvement in wagon spring-boards, the combination, with the board, of a central supporting spring or springs and longitudinal adjustable brace-rods, substantially as specified.

2. In combination with the wagon spring-board A, the crescent-shaped spring B, attached to the board about midway between its ends and adjustably connected with the board near the ends of the latter, substantially as herein shown and described.

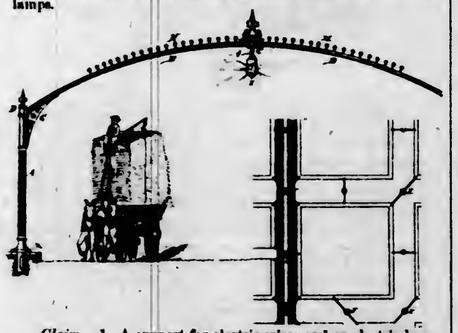
3. In combination, the wagon spring-board A, the crescent-shaped spring B, firmly attached to the spring-board about midway between the ends of the latter, and the connecting brace-rods C C, connecting the arms of the spring with the board adjustingly at or near the ends of the board, substantially as shown and described.

4. In a wagon spring-board, the combination of the board A, the crescent-shaped spring B, the connecting-rods C C, the lugs *a a* upon the board, and the nuts *b b* upon the outer ends of the rods, as and for the purposes described and set forth.

5. The combination of the board A, the crescent-shaped spring B, attached to the board, the spiral spring D, and the adjustable brace-rods C C, arranged to operate as herein shown and described.

9,999. SUPPORT FOR ELECTRIC WIRES AND LAMPS IN CITIES. WILLIAM C. ALLISON, Philadelphia, Pa. Filed Sept. 8, 1881. Original No. 241,179, dated May 10, 1881.

Brief.—Upon posts diagonally arranged at street-corners an arch or arches are sprung bearing insulated supports for wires and lamps.



Claim.—1. A support for electric wires and an electric lamp at a crossing of two streets, which consists of two simple arches or girders sprung diagonally from corner to corner and crossing in the middle, from which the electric lamp is hung, said arches being provided with insulated supports for the electric wires, substantially as and for the purpose specified.

2. In a support for electric wires and an electric lamp, the posts A, provided with caps D, furnished with lugs E, sections of tubular arches B, center casting, C, provided with lugs F, and insulated supports H on the sections B for the electric wires, substantially as shown and described.

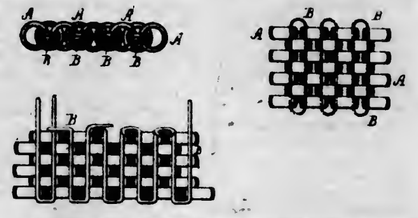
3. In a support for electric wires, the tubular posts A, provided with caps D, or their equivalent, to support the tubular arch or girder B, in combination with one or more insulated wire-supports on the arch, substantially as and for the purpose specified.

4. A support for electric lamps and wires in cities, which consists of an arch or structure, substantially as described, supported from the diagonally-opposite corners of two crossing streets, in combination with an electric lamp hung from the middle of said arch and insulated therefrom, as and for the purpose specified.

5. In a system for lighting cities by electric lights, the combination of the two diagonally-opposite street-corners with an arch supported upon said corners and spanning the roadway diagonally, and an electric lamp suspended and insulated from the middle of said arch for the purpose of lighting up two streets from one point, substantially as and for the purpose specified.

10,000. CHAIN FOR WATCHES. GEORGE W. CLAMPITT, Attleborough, assignor to Henry F. Barrows, North Attleborough, Mass. Filed Nov. 29, 1881. Original No. 120,623, dated Nov. 7, 1871.

Brief.—The ends of the locking wires are clinched over adjacent links.



Claim.—1. In the manufacture of chains composed of a series of alternating interlocking wires or links united by wires passing through the links, the manner herein described of fastening the ends of these locking wires or devices, which consists in bending or clinching the same over adjacent links, substantially as explained.

2. In a chain, the combination of a series of interlocking rows of links or rings with the connecting devices concealed within such links or rings and secured therein by their points being clinched or bent, substantially as explained.

3. As a new article of manufacture, an ornamental chain composed of a series of rows of rings or links secured together by suitable fastening devices, the ends or points of which are secured by bending or clinching in lieu of being soldered, substantially as explained.

10,001. MACHINE FOR SOWING FERTILIZERS. EDWIN D. MEAD, Shorteville, N. Y., assignor of one-half to the Farmers Friend Manufacturing Company, Dayton, Ohio. Filed Aug. 8, 1881. Original No. 218,759, dated Aug. 19, 1879

Claim.—1. A fertilizer-distributer having a horizontally-rotating feed-wheel arranged in the bottom of the hopper and a discharge-orifice arranged near the periphery, in combination with a hinged or pivoted gate adapted to work over the mouth of the orifice to regulate the quantity to be discharged, substantially as set forth.

2. A fertilizing-distributer having a series of horizontally-rotating disks or feed-wheels arranged in the bottom of the hopper and a series of discharge-orifices arranged near the peripheries of

the feed-wheels, in combination with a series of hinged or pivoted gates adapted to work over the mouths of the orifices and pivoted to a common connecting-rod, substantially as set forth.

3. The combination, with a horizontally-rotating fertilizer-distributer and the bed-plate forming a bearing for the same, of a revolving scraper or cleaner mounted on an independent axis, substantially as described.

4. In a fertilizer-distributer, the sectional hopper-bottom B, having an annular bearing for the feed-wheel, and the bridge-tree B^1, substantially as herein set forth.

5. In a fertilizing-distributing device, the sectional bottom B, having the annular supports for the rotatory feed-wheel, and the bridge-tree B^1, or center for supporting the vertical axial journal on which the feed-wheel revolves, substantially as herein set forth.

6. In a fertilizing-distributing device, a series of sectional hopper-bottoms, B, having annular supports for the feed-wheels, and a bridge-tree for supporting the axial shaft of the feed-wheel, and sleeve-bearings for the horizontal transmitting-shaft, on which are a series of pinions respectively meshing with the cogs on the periphery of the feed-wheel, whereby rotatory motion is imparted to the feed-wheels, substantially as herein set forth.

7. In a fertilizer-distributer, the sectional hopper-bottom B having an annular support for the horizontally-rotating feed-wheel, and a bridge-tree attached to said sectional bottom, on which is supported the axial shaft-journal upon which said feed-wheel revolves, substantially as herein set forth.

8. A horizontal rotating fertilizing-distributer mounted on an axis, in combination with a revolving scraper or cleaner mounted on an independent axis, substantially as herein set forth.

9. A fertilizer-distributer composed substantially of a horizontal rotating feed-wheel and a series of projections, C, arranged upon the upper space of the feed-wheel, in combination with the revolving scraper or clearer G, as set forth.

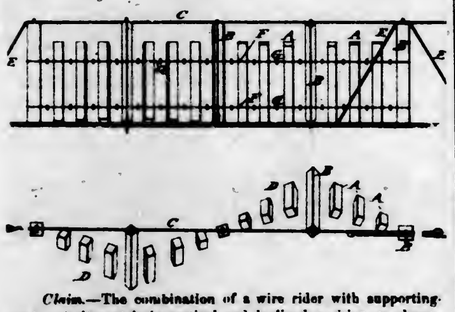
10. In combination with the horizontally-rotating wheel having a circular series of teeth-projections, C, the horizontally-revolving clearer-wheel G, provided with scraper-teeth *g*, which revolve eccentrically through the spaces between the teeth C of feed-wheel and the scraper-teeth *g* of the clearer-wheel, meshing with and being driven by the teeth of the feed-wheel D, substantially as herein set forth.

11. A fertilizer-distributer having the feed-wheel D, revolving clearer, and stir-pins O, arranged to serve in combination as herein specified.

12. In a fertilizer-distributer, the combination of a horizontally-rotating disk or feed-wheel arranged in the bottom of the hopper and a horizontally-revolving wheel having a beveled rim or edge revolving eccentrically over the surface of the disk or feed-wheel, and adapted to scrape and discharge the fertilizing material from the disk or feed-wheel into a discharge-chute, substantially as and for the purpose described.

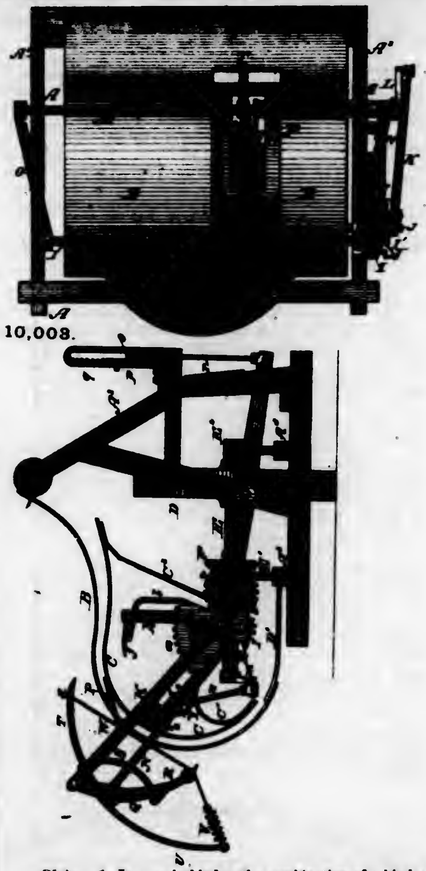
13. In a fertilizer-distributer, the bottom of the feed-hopper composed of a series of sectional bottoms, B, and the series of horizontally-rotating feed-wheels supported upon the sections B, substantially as herein set forth.

10,002. PICKET-FENCE. ROBERT H. MCGINTY, Moulton, Tex. Filed Aug. 19, 1881. Original No. 144,630, dated Oct. 14, 1873; Reissue No. 9,570, dated Feb. 15, 1881.



Claim.—The combination of a wire rider with supporting-posts set alternately in vertical and inclined position, as shown and having their tops in alignment, substantially as described.

10,003. GRAIN-BINDER. DANIEL MCBRAYER, Caledonia N. Y., assignor to the McCormick Harvesting Machine Company, Chicago, Ill. Filed May 28, 1881. Original No. 183,813, dated Oct. 31, 1876.



Claim.—1. In a grain-binder, the combination of a bind ag-table which receives the grain, a binding-arm supported upon a vertically-rocking frame, and means whereby the binding-arm is positively depressed to pierce through the stream of grain and divide off and encircle the gavel as the rocking frame reaches the termination of its inward traverse and held in its depressed position during the outward traverse.

2. In a grain-binder, the combination of a binding-table which receives the grain, a pivoted frame rocking toward and from the delivery-point of the harvester, a binding-arm fast to a cranked rock-shaft carried by said frame, and mechanism positively actuating said rock-shaft to depress the binding-arm at the termination of the inward traverse of the rocking frame and lock it during the outward traverse.

3. In a grain-binder, the combination of a binding-table which receives the grain, a pivoted frame rocking toward and from the delivery-point of the harvester, a binding-arm carried by said frame, and means positively actuating said binding-arm to depress it at the termination of the inward traverse of the rocking frame and raise it at the termination of the outward traverse, and to lock it in its depressed or raised position during the intermediate movements of said frame.

4. In a grain-binder, the combination of a binding-table which receives the grain, a frame rocking on a horizontal pivot, a binding-arm carried by said frame, band-securing mechanism, also carried by said frame, and means whereby the binding-arm is brought down alongside the band-securing mechanism at the termination of the inward traverse of the frame to deliver the band material to said mechanism.

5. In a grain-binder, the combination of a binding-table which receives the grain, a frame rocking on a horizontal pivot, a binding-arm carried by said frame, band-securing mechanism, also carried by said frame, and means whereby the binding-arm is caused to descend to the band-securing mechanism at the termination of the inward traverse of the frame and held alongside thereof during the outward traverse.

6. In a grain-binder, the combination of a binding-table which receives the grain, a frame rocking on a horizontal pivot, a binding-arm carried by said frame, band-securing mechanism, also carried by said frame, means whereby the binding-arm is caused to descend to the band-securing mechanism at the termination of the inward traverse of the frame and locked alongside thereof during the outward traverse, and means whereby the band-securing mechanism is actuated during said outward traverse.

7. In a grain-binder, the combination of a binding-table which receives the grain, a frame rocking on a horizontal pivot, a rising and falling binding-arm carried by said frame, band-securing mechanism, also carried by said frame, and a series of gear-teeth concentric with the axis of movement of said frame, whereby the band-securing devices are actuated as the frame rocks.

8. In a grain-binder, a frame rocking on a horizontal pivot, a rising and falling binding-arm carried by said frame, band-securing mechanism, also carried by said frame, and a shield located immediately above said band-securing mechanism.

9. In a grain-binder, the combination, with the grain table or receiver, of a frame rocking on a horizontal pivot, a cranked rock-shaft carried by said frame, a binding-arm mounted upon said rock-shaft, and a pitman connecting the wrist-pin of the rock-shaft with a rotating crank so arranged and timed as to depress the binding-arm at the termination of the inward traverse of the frame and elevate it at the termination of the outward traverse while holding it substantially rigid with said frame between the two extremes.

10. The combination of the vertically-rocking frame, the cranked rock-shaft mounted thereon, the binding-arm carried by said rock-shaft, the pitman attached to its wrist-pin, and the stop-motion by which said pitman is driven.

11. The combination of the vertically-rocking frame, the binding-arm carried thereon, and the cranks and pitman for actuating said arm, the band-securing device, also carried by the rocking frame, and the stationary segment for actuating it.

12. In a grain-binder, the combination, with the binding-arm and band-uniting devices, of a gate-actuating mechanism closing said gate to shut off the access of the band material to the band-uniting device during the rise and inward movement of the binding arm, and means for opening it to admit said material as the arm descends and brings it around the gavel.

13. In a grain-binder, the combination, with a traversing binding-arm and concurrently-traversing band uniting mechanism, of a gate traversing therewith, means to close said gate during the rise of the binding-arm and inward traverse, to shut off the access of the band material to the band-uniting mechanism, and means to open it as the binding-arm descends and encircles the gavel, to admit said material.

14. The combination, with the band-uniting devices, of the bar or gate *g*, to admit or cut off access of the band material thereto, the trip by which said gate is opened, and the spring by which it is closed, substantially as described.

15. The tilting bar Z, supporting the binding mechanism, and means for operating it for changing the position of the binder relative to the delivery-point of the grain without changing the position of the binding parts relative to each other, substantially as specified.

16. The combination of the rocking receiver C with the main receiver B, substantially as and for the purpose specified.

17. The combination of the needle T with the twisting devices supported upon a tilting base adapted to tilt them in either direction, so as to bring the bands or ties in a proper position around the bundles, substantially as set forth.

18. The combination of the needle T, provided with an extension, U, with the cord W, spring V, pivoted arm R, and mechanism for controlling the latter, substantially as set forth.

19. The combination of the arm Q and pivoted bar R with the link or rod S, needle T, and cord W, for compressing the bundle, substantially as specified.

20. The combination of the needle T and frame M, N, O, and I' with the crank *m*, pitman *n*, and post Y', for advancing and receding the needle, substantially as specified.

21. The concave opening *i* in the twister-head Y, in combination with the close-fitting twisting-hook *e*, substantially as and for the purpose specified.

22. The combination of the wheel *d* and sliding-bar *g* with the twisting-hook *e* and cutter *f*, for holding, twisting, and severing the wire, substantially as described.

23. The wheels H and I, in combination with the plate J, pitman K, crank L, and shaft M, for tilting the needle and forcing it through the grain, substantially as set forth.

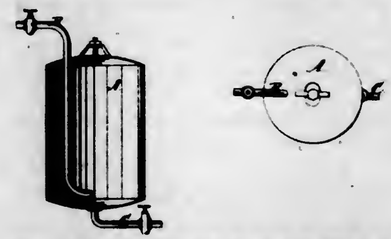
24. The combination of the wheel H, provided with the cogged and blank sections, with the wheel I, similarly provided, pins *w w*, and plate J, for giving intermittent movements to the pitman K, substantially as specified.

25. The combination of the lever *s* with shaft J' and pivoted binder-supporting bar Z, for tilting the binding apparatus in either direction, substantially as specified.

26. The combination of the lever *s* with the guide-post *q*, link *r*, tilting bar Z, upon which the binder is mounted, and lever *s*, for bringing the tilting within the control of the driver, substantially as specified.

27. The spring or yielding arm P, in combination with platforms B C, for preventing the return of the bundles, substantially as specified.

10,004. MANUFACTURE OF CREAM OF TARTAR. GUIDO SCHNITZER, Schwäbisch Hall, Wurtemberg, Germany, assignor, by mesne assignments, to the Royal Baking Powder Company, New York, N. Y. Filed Dec. 1, 1880. Original No. 163,507, dated Oct. 24, 1876.



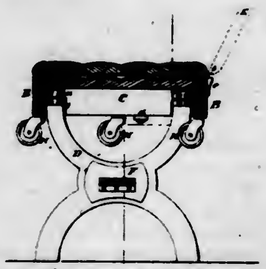
Claim.—1. The improvement in the art of treating argols to obtain a solution of the same, which consists in subjecting the argols while being dissolved to the pressure of steam, substantially as described.

2. The improvement in the art of treating argols to obtain a solution of the same, which consists in subjecting the argols while being dissolved to the pressure of steam admitted near the bottom of the vessel containing the argols, substantially as described.

3. The improvement in the art of obtaining cream of tartar from argols, which consists substantially of dissolving the argols in water under steam-pressure, converting the tartrate of lime into bitartrate of potash by the aid of hydrochloric acid and chloride of potassium, and separating the cream of tartar after it has crystallized from the residual solution, substantially as described.

4. The process herein described of manufacturing cream of tartar by subjecting ground argols, together with hydrochloric acid and chloride of potassium, in a steam-tight vessel, to the direct action of compressed steam for the necessary length of time, and then allowing the solution to stand till the crystallization of the bitartrate of potash is complete, substantially in the manner specified.

10,005. COMBINED STOOL AND CHAIR. EMIL WOLFF, Washington, D. C., assignor to Herman L. Wattenberg, New York City; said Wattenberg assignor to Lemuel A. Chichester, Phoenicia, N. Y. Filed Nov. 16, 1881. Original No. 185,110, dated Mar. 26, 1878.



Claim.—1. A convertible high and low chair provided with legs hinged to the seat-frame, upon which legs the chair is immediately supported in its highest position, and with permanently-secured rollers which support the chair in its lowest position as a trundle.

2. In a convertible high and low chair, the combination of



rollers permanently fixed thereto and legs hinged to the seat-frame and adapted to move toward and from each other, whereby the chair may be raised to rest upon said legs and lowered to trundle upon said rollers.

3. In a convertible high and low chair, the combination of permanently-attached rollers, legs hinged to the seat-frame to approach and diverge from each other as the seat is raised and lowered, and a device to retain the legs rigidly in their upright position when the chair is elevated.

4. In a convertible high and low chair, the combination of permanently-attached rollers, legs hinged to the seat-frame and adapted to move toward and from each other as the seat is raised and lowered, and a device to firmly secure the legs in their folded position when the chair is in its lowest position and resting on the rollers.

THE HELIOTYPE PRINTING CO BOSTON

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

PICKERING *et al. v.* MCCULLOUGH, DALZELL & CO.

Decided December 12, 1881.

1. PATENTABLE COMBINATION—MECHANICAL JUXTAPOSITION.

In a patentable combination of old elements all the constituents must so enter into it as that each qualifies every other, and together form either a new machine of a distinct character and function or produce a result due to the joint and co-operating action of all the elements, and which is not the mere adding together of separate contributions. Otherwise it is only a mechanical juxtaposition and not a vital union.

2. IMPROVEMENT IN MOLDING CRUCIBLES—AGGREGATION OF OLD DEVICES—PATENTABLE NOVELTY.

The alleged invention covered by the Nimmo patent of an improvement in molding crucibles, which consists of combining an old mode of presenting the "ball" to and supporting it under the action of the forming-tool and an old mode of shaping the inside of the crucible, *Held* to be a mere aggregation of old agencies and devoid of patentable novelty.

3. SAME—ANTICIPATED BY PATENTS OF WISE AND SMITH—CHANGE OF MATERIAL—MECHANICAL SKILL.

The alleged invention of Nimmo is also anticipated by prior patents to Wise and to Smith, embodying the principle of a former used in combination with a mold connected so that the former can be withdrawn in cases of vessels having a bilge without injury, although the machines described in said patents are mere paper-machines, it appearing that the machines could be made practically successful by mere mechanical skill without the exercise of the faculty of invention.

APPEAL from the Circuit Court of the United States for the Western District of Pennsylvania.

Mr. J. E. Maynadier for the appellants.
Mr. W. Bakewell for the appellees.

Mr. Justice MATTHEWS delivered the opinion of the Court.

This is a bill in equity, filed by the appellants, to restrain the appellees from infringing Reissued Letters Patent No. 6,166, dated December 8, 1874, to George Nimmo, for an improvement in molding crucibles, and for an account, the patent having been reissued to the complainants as assignees of Nimmo, the inventor and original patentee. The original patent, No. 49,140, was granted to Nimmo June 20, 1865.

The subject of the alleged invention is an improvement in the manufacture of molding crucibles and pots made of a plastic material composed of plumbago, or so-called "black-lead" and "fire-clay," used principally in the manufacture of steel. They were formerly made by hand on a common potter's wheel, the hand and eye of the skilled workman building them up, as the material revolved upon the wheel, in the desired shape. It is recited in the original patent to Nimmo that they had also been made in a mold by a pressing-instrument, for which reference is made to letters patent granted October 26, 1852, to John Akrill. It is stated also by Nimmo in the specification to his original patent that—

Difficulty has heretofore been experienced in removing the crucibles from the mold, in consequence of the adhesive nature of the black-lead compound or mixture employed for such crucibles. The amount of water also that is required to make the mixture sufficiently plastic causes the material frequently to crack and break in shrinking as it dries.

The following is the description of the invention as contained in the specification, referring to the drawings accompanying it:

The nature of my said invention consists in the manufacture of crucibles in a plaster mold, which gives shape to the pot externally and absorbs the moisture from the pot, causing it to dry uniformly and at the same time shrink away from the mold, preventing the air acting on the outside of the pot until after the moisture has been mostly absorbed, and prevents the pot from splitting or cracking from unequal contraction in drying. I mount my plaster mold in a revolving chuck, and employ a rib attached to a lever for spreading the plastic crucible material on the inside of the mold, and at the same time hardening, consolidating, and polishing the crucible on the inside by means of said rib.

In the drawings is a bed carrying the vertical spindle, on the upper end of which is the hollow chuck, into which the plaster mold fits, and these parts are revolved by a belt to a wheel and crank or by any other competent means. Near the chuck is an upright frame with rollers, over which the chain or rope passes, on one end of which is the counter-weight and on the other the lever having a handle at one end and carrying the rib. This lever is guided by the upright frame, and when not in use is drawn up by the weight. The crucible material is placed in the plaster mold and partially spread by hand or by a conical muller. The back end of the lever is then brought beneath the stop or fulcrum and pressed down until the lever takes a step. The rib on the lever smooths, compresses, hardens, and polishes the interior of the mold, forming a perfect crucible, possessing great strength and beauty. At the same time there is great uniformity in the crucibles made in this manner. The crucible and mold are to be lifted off the chuck and another mold introduced in the chuck and the operation repeated. The crucible and mold are set aside. When the plaster of the mold has absorbed the moisture from the crucible and the crucible has contracted away from the mold and become sufficiently dry to be exposed to the air without risk of cracking, the crucible is to be removed and dried in any usual manner, and may be baked or burned.

The claims are as follows:

What I claim, and desire to secure by Letters Patent, is—

1. Manufacturing crucibles in a plaster mold in the manner and for the purposes specified.

2. Lever *l* and rib *n*, applied in the manner specified to form the interior of a crucible contained within a revolving mold, as set forth.

3. The combination of the revolving chuck *c*, plaster mold *d*, lever *l*, and rib *n*, as and for the purposes specified.

4. Mounting the lever *l* and rib *n* in the frame *g* in the manner specified, in combination with the counterpoise *k*, fulcrum *o*, and stop *p*, for determining the size of the interior of the crucible, as specified.

It is conceded by counsel for the appellants that the claims in this patent were invalid, as being too broad, and that it was for this reason and for a more definite and limited description of the real invention intended to be claimed that it was surrendered and reissued.

The state of the art at the date of his original patent is described by Nimmo in the reissue as follows:

Long prior to said Nimmo's invention the mode of manufacturing certain articles of pottery by means of a rib or former to give the desired shape to the inside of the article and a revolving plaster vessel to properly present the "ball" (as the lump of tempered clay is called) to and support it under the action of the rib was well known; but this mode of manufacture was not applicable in the manufacture of crucibles, because the apparatus was such that the crucible would be injured or destroyed in removing the rib by the end of the rib striking the upper part of the crucible,

as will be plain to all skilled in the art of crucible-making and acquainted with the mode of manufacture above referred to.

Another mode of manufacturing certain articles of pottery-ware by means of a rib or former for the inside of the article and a revolving table, (a common potter's wheel,) which partially presented the ball to and supported it under the action of the rib, the workman using his hands to aid in presenting the ball to and supporting it under the action of the rib, is described in a French work published in 1857, entitled "Leçons de Ceramique," par M. A. Salvetat, volume 2, pages 121 and 122.

This last-named mode of manufacture was applicable to the manufacture of crucibles, the apparatus being such that the rib was guided so as to cause it to approach the axis of the pot where it was necessary that it should do so in order to prevent injury to the pot; but even if useful at all in that manufacture, it is without doubt very much inferior to the mode of manufacture invented by Nimmo and hereinafter described, the distinguishing difference between them being that the ball is presented to the rib and supported under its action not by a flat revolving metal disk, but by a vessel made of plaster, which takes the place of both the flat revolving disk and the workman's hands, performing all the functions performed by this disk and the hands of the workman, but in a much more perfect manner and in less time.

The invention of said Nimmo is in fact an improvement on the mode of manufacture, as well as on the apparatus, described in Salvetat's work, the improvement consisting in the different mode of presenting and supporting the ball; but we do not wish to be understood as claiming this mode of presenting and supporting the ball as the invention of said Nimmo, as his improved mode of manufacture is new solely because it is, as a whole, substantially different from the mode described by Salvetat and from the mode first above referred to. Indeed, as a short general description of Nimmo's improved mode, it may be said to be substantially the same as that described by Salvetat, so far as shaping the inside of the crucible is concerned, and substantially the same as the mode first above referred to, so far as presenting the ball to and supporting it under the action of the rib is concerned.

By Nimmo's improved mode of manufacture much labor and expense are saved, and, what is still more important, crucibles are produced which are superior to those made by any practical mode known prior to said Nimmo's invention in many very important respects.

The drawings are the same in both the original and reissued patent; but in the description of the machine, with reference to the drawing contained in the reissue, prominence is given to the mode of operating the rib after the crucible is formed, by which it can be withdrawn without striking and injuring the crucible, as to which no allusion was made in the original patent. It is admitted, however, that this mechanism is substantially the same as that described by Salvetat in the publication referred to.

The reissue expressly disclaims as the invention of Nimmo both the modes and both the apparatus above mentioned—that is, the use of a rib or former to give the desired shape to the inside of the article and the revolving plaster vessel or mold—and the mode and apparatus described by Salvetat—that is, the use of a rib or former, the apparatus being such that the rib is guided so as to cause it to approach the axis of the crucible when it was necessary that it should do so in order to prevent injury to it.

The importance of this feature in any apparatus of the kind becomes manifest from the fact that crucibles of the character of those intended to be made by this process usually have what is termed a "bilge"—that is, are smaller in circumference at the mouth or top than at some other point—so that, if the rib or former were lifted out perpendicularly from the position it occupies while in operation, it would necessarily strike against the interior surface of the crucible as it rose. To avoid this it has to be withdrawn from the position it occupies while in the act of forming the internal surface of the crucible to one nearer to the axis of rotation, so that, being lifted, it may pass upward through the mouth of the crucible without striking against the sides. And considering how characteristic is this feature of the apparatus and how essential it is to its profitable use, it is worthy of note that Nimmo in his original patent does not allude to it, although his claim for managing his rib includes it; and, equally so, that it does not seem to have suggested to him at that time its utility in connection with the manufacture of crucibles with a bilge, for his description does not distinguish between those which have and those which have not a bilge, and his drawing is that of a mold with a flaring mouth, for the making of which such a motion of the former in withdrawing it is not necessary. In addition, the mold itself, made of plaster, for vessels having a bilge, is required to be in two parts, in order that it may be removed from the crucible after the operation is complete—an adaptation which does not appear either in Nimmo's specifications or drawings.

Nimmo's actual claim as made in the reissue is as follows:

> The improved apparatus above described having the specific character, objects, and functions above explained, and consisting of the rib, the revolving mold, and the mechanism by which the rib is guided toward the axis of revolution of the mold as it is withdrawn, as set forth, these elements being claimed only in combination each with all the others, and no claim is made to any combination of any of them less than the whole.

It is admitted in argument by counsel for the appellants that the mold is old and the rib is old; but it is claimed that prior to Nimmo's invention the mechanism for combining the rib and mold into one machine was such that the rib could not be moved bodily toward the axis of the mold or away from that axis.

Besides a denial of the alleged infringement, the appellees maintained several defenses. They claimed that the reissued patent is void because the claim is too broad; because there is no coactive combination between the elements of the claim; because the state of the art, as set forth in the specification, shows that there is no novelty in the alleged combination; because the reissue is for a different invention from that described in the original patent, and because the alleged invention of Nimmo had been fully anticipated.

The anticipations set out in the answer and relied on were, first, by the Salvetat publication; second, by the Wise patent, being a patent granted to Jacob Wise and Freeman Wise, dated November 30, 1852, No. 9,437, for an improvement in the manufacture of stone and earthen ware; third, by the Smith patent, being a patent granted to William Smith, dated November 3, 1863, No. 40,506, for apparatus for making plumbago crucibles; fourth, by prior knowledge and use of the alleged invention at Kier's works in Pittsburg.

The decree below dismissed the bill, to reverse which this appeal is prosecuted.

The account given in the specifications of the reissued patent, of the state of the art at the date of the alleged invention, and the reference to Salvetat's publication, describing the method and apparatus referred to, and a comparison of that with the claims and disclaimers of the appellants, require a more particular examination of Salvetat's description of the device and its mode of operation as contained in his publication.

It will be observed that the reissue represents Salvetat as having fully described the rib or former and the mechanism which guides it so that it can be withdrawn from the crucible when completed without injury, even when it has a bilge, but as omitting in connection with it any use of a mold. The statement of the reissue is that while Salvetat described the use of the rib for forming the interior of the vessel, its external form was molded by the unassisted hand of the workman manipulating the ball while revolving on the flat disk of the common potter's wheel; and the alleged

invention of Nimmo consists merely in adding a mold to the apparatus described by Salvetat to form the combination which he claims as his invention.

An examination of the extract from Salvetat's publication descriptive of this apparatus and method, which is contained in the record, makes it doubtful whether the account of it given in the specification of the reissued patent is not a misconception. The drawings illustrating it, it is true, do not show a mold, and the text in referring to them says the vessel is supported by the wheel. But this, perhaps, is explained by the statement that it is intended to show merely how Messrs. Bourgon and Chalot, the originators of it, have arranged the rib in a very ingenious manner for hollowing out hollow ware with the rib itself. The whole article or chapter is entitled "Hollow-ware pressing in plaster molds," and its very purpose seems to be to explain the use and utility of molds in shaping the forms of pottery by pressing, and all the other processes and devices mentioned certainly refer to molds as used. If the rule "*noscitur a sociis*" applies, there would be little room to doubt that the one in question also contemplated their use, and it seems difficult to understand how the vessel can be shaped externally unless the mold is implied. But we assume for the purposes of this case that the account as contained in the reissued patent of this method and apparatus is correct, and that Salvetat does not describe the use of a mold in combination with the rib. There is, however, no doubt whatever that Salvetat describes the operation of a rib by means of a mechanism which directs it in the formation of the interior of a vessel while in motion on a revolving wheel, and guides it when the vessel is formed, even when it has a bilge, so that by bringing it into a proper relation with the axis of revolution it can be withdrawn from the side of the vessel which it has shaped and lifted through its mouth or top without touching and injuring its sides. This is conceded by the appellants and is admitted in the patent itself. It is also confessed that the use of the mold for supporting the ball while the rib or former presses it on the inside, and thus shapes its corresponding outside, is old, and is not of itself claimed as the invention of Nimmo. The alleged invention, then, consists merely in supplying to the apparatus described by Salvetat a mold for supporting the ball and giving shape externally to the crucible. We are clearly of opinion that this is not patentable. It comes plainly within the rule as stated by Mr. Justice Strong in *Hailes* v. *Van Wormer*, (20 Wall., 368,) where he said:

> All the devices of which the alleged combination is made are confessedly old. No claim is made for any one of them singly as an independent invention. It must be conceded that a new combination, if it produces new and useful results, is patentable, though all the constituents of the combination were well known and in common use before the combination was made. But the results must be a product of the combination, and not a mere aggregate of several results each the complete product of one of the combined elements. Combined results are not necessarily a novel result, nor are they an old result obtained in a new and improved manner. Merely bringing old devices into juxtaposition, and then allowing each to work out its own effect without the production of something novel is not invention.

"The combination to be patentable," said Mr. Justice Hunt in *Rickendorfer* v. *Faber*, (92 U. S., 357,) "must produce a different force or effect or result in the combined forces or processes from that given by their separate parts. There must be a new result produced by their union; if not so, it is only an aggregation of separate elements."

In Nimmo's apparatus it is perfectly clear that all the elements of the combination are old, and that each operates only in the old way. Beyond the separate and well-known results produced by them severally no one of them contributes to the combined result any new feature; no one of them adds to the combination anything more than its separate independent effect; no one of them gives any additional efficiency to the others or changes in any way the mode or result of its action. In a patentable combination of old elements all the constituents must so enter into it as that each qualifies every other. To draw an illustration from another branch of the law, they must be joint tenants of the domain of the invention, seized each of every part, *per my et per tout*, and not mere tenants in common with separate interests and estates. It must form either a new machine of a distinct character and function or produce a result due to the joint and co-operating action of all the elements, and which is not the mere adding together of separate contributions. Otherwise it is only a mechanical juxtaposition and not a vital union. In the case of this apparatus the mold was known, and a rib or former was known, and their use in combination was known. Salvetat described a rib so arranged that after it had performed its function in shaping the interior of the vessel it could be withdrawn through the top of the vessel, so as not to produce injury by striking against its side. This rib Nimmo substituted for the old one in the same combination. And this is the whole of the invention. Upon the principle stated there is no invention in it.

We are also of opinion that the invention claimed for Nimmo as described in the reissued patent is covered by the prior patents to Wise and to Smith. Undoubtedly they both embody the principle of a former used in combination with a mold, for the purpose of manufacturing crucibles, connected so that the former can be withdrawn in the case of vessels having a bilge without injury. It is objected, however, that the machines described in these patents are mere paper machines, not capable of successful practical working; but on examination it sufficiently appears, we think, that the objections can be sustained only as to minor matters of detail in construction, not affecting the substance of the invention claimed, and could be removed by mere mechanical skill without the exercise of the faculty of invention. In this view the Wise and Smith patents are not rendered inefficient as defenses in this suit by reason of the alleged imperfections of the machines described in them.

The bill of the appellants was dismissed by the court below on the ground of the prior knowledge and use of the alleged invention at Kier's works in Pittsburg. We are of opinion that the testimony sustains that finding.

We find no error in the decree, and it is accordingly affirmed.

Supreme Court of the United States.

EGBERT, APPELLANT, *v.* LIPPMANN *et al.*

Decided December 12, 1881.

1. PUBLIC USE—A SINGLE USE SUFFICIENT.

To constitute the public use of a patent it is not necessary that more than one of the patented articles should be publicly used. The use of a great number may tend to strengthen the proof of public use, but one well-defined case of public use is just as effectual to annul the patent as many.

2. SAME—SAME.

Whether the use of an invention is public or private does not necessarily depend upon the number of persons to whom its use is known.

3. SAME—SAME—USE WITHOUT RESTRICTION.

If an inventor, having made his device, gives or sells it to another, to be used by the donee or vendee without limitation or restriction or injunction of secrecy, and it is so used, such use is public within the meaning of the statute, even though the use and knowledge of the use may be confined to one person.

4. SAME—CHARACTER OF THE INVENTION.

A use of an invention is a public use within the meaning of the law if the inventor sells a machine of which his invention forms a part and allows it to be used without restriction of any kind, although, owing to the character of the invention, it can only be used when it cannot be seen or observed by the public eye.

5. SAME—CONSENT—PATENT INVALIDATED.

When the inventor made and gave to a person for use two pairs of corsets, imposing no obligation of secrecy or any condition or restriction whatever, and it appeared that the invention was at that time complete, and the donee used them for a series of years before the filing of the application for a patent in the manner and for the purpose designed by the inventor, *Held* that the patent was invalidated by virtue of the public use with the consent and allowance of the inventor for more than two years prior to the filing of the application.

APPEAL from the Circuit Court of the United States for the Southern District of New York.

Mr. James C. Clayton and *Mr. A. Q. Keasbey* for the appellant.

Mr. J. B. Staples for the appellees.

Mr. Justice WOODS delivered the opinion of the Court.

This suit was brought for an alleged infringement of the complainant's Reissued Letters Patent No. 5,216, dated January 7, 1873, for an infringement in corset-springs. The original patent bore date July 17, 1866, and was issued to Samuel H. Barnes. The reissue was made to the appellant, Frances Lee Egbert, executrix of the original patentee. The specifications for the reissue declared—

This invention consists in forming the springs of corsets of two or more metallic plates placed one upon another, and so connected as to prevent them from sliding off each other laterally or edgewise, and at the same time admit of their playing or sliding upon each other in the direction of their length or longitudinally, whereby their flexibility and elasticity are greatly increased, while at the same time much strength is obtained.

The second claim was as folows:

A pair of corset-springs, each member of the pair being composed of two or more metallic plates placed one on another and fastened together at their centers, and so connected at or near each end that they can move or play on each other in the direction of their length.

The bill of complaint alleged that Barnes was the original and first inventor of the improvement covered by the reissued letters patent, and that it had not at the time of his application for the original patent been for more than two years in public use or on sale with his consent or allowance. The answer took issue on this averment and also denied infringement. The circuit court dismissed the bill, and the complainant appealed to this court. As to the second defense above mentioned, it is sufficient to say that the evidence establishes beyond controversy the infringement by defendants of the second claim of the reissued letters patent above set forth. We have therefore to consider whether the defense of the public use of the patented invention with the consent of the inventor for more than two years prior to his application for the original patent is sustained by the testimony in the record.

The sixth, seventh, and fifteenth sections of the act of July 4, 1836, (5 Stats., 117,) as qualified by the seventh section of the act of March 3, 1839, (5 Stats., 353,) were in force in 1866 when Barnes applied for his patent. The effect of these sections is to render letters patent invalid if the invention which they cover was in public use with the consent and allowance of the inventor for more than two years prior to his application for a patent. Since the passage of the act of 1839 it has been strenuously contended that a public use of an invention for more than two years before the application for a patent, even without the consent and allowance of the inventor, rendered the patent therefor void. It is unnecessary in this case to decide this question, for the alleged use of the invention covered by the patent to Barnes is conceded to have been with his express consent.

The evidence on which the defendants rely to establish a prior public use of the invention consists mainly of the testimony of the complainant herself, who is the executrix of the original patentee. She testifies that Barnes invented the improvement covered by his patent between January and May, 1855; that between the dates named the witness and her friend, Miss Cugier, were complaining of the breaking of their corset-steels. Barnes, who was present and was an intimate friend of the witness, said he thought he could make her a pair that would not break. At their next interview he presented her with a pair of corset-steels which he himself had made. The witness wore these steels a long time. In 1858 Barnes made and presented to her another pair, which she also wore a long time. When the corsets in which these steels were used wore out the witness ripped them open and took out the steels and put them in new corsets. This was done several times. It is admitted, and in fact is asserted, by complainant that these steels embodied the invention afterward patented by Barnes and covered by the reissued patent on which this suit is brought.

Joseph H. Sturgis, another witness for complainant, testifies that in 1863 Barnes spoke to him about two inventions made by himself, one of which was a corset-steel, and that he went to the house of Barnes to see them. Before this time, and after the transactions testified to by the complainant, Barnes and she had intermarried. Barnes said his wife had a pair of steels made according to his invention in the corsets which she was then wearing, and if she would take them off he would show them to witness. Mrs. Barnes went out and returned with a pair of corsets and a pair of scissors, and ripped the corsets open and took out the steels. Barnes then explained to witness how they were made and used.

This is the evidence presented by the record on which defendants rely to establish the public use of the invention by the patentee's consent and allowance.

The question for our decision is whether this testimony shows a public use within the meaning of the statute. We observe, in the first place, that to constitute the public use of a patent it is not necessary that more than one of the patented articles should be publicly used. The use of a great number may tend to strengthen the proof of public use, but one well-defined case of public use is just as effectual to annul the patent as many. For instance, if the inventor of a mower, a printing-press, or a railway-car makes and sells only one of the articles invented by him, and allows the vendee to use it for two years without restriction or limitation, the use is just as public as if he had sold and allowed the use of a great number. We remark, secondly, that whether the use of an invention is public or private does not necessarily depend upon the number of persons to whom its use is known. If an inventor, having made his device, gives or sells it to another, to be used by the donee or vendee without limitation or restriction or injunction of secrecy, and it is so used, such use is public within the meaning of the statute, even though the use and knowledge of the use may be confined to one person. We say, thirdly, that some inventions are by their very character only capable of being used where they cannot be seen or observed by the public eye. An invention may consist of a lever or spring hidden in the running-gear of a watch, or of a ratchet, shaft, or cog-wheel covered from view in the recesses of a machine for spinning or weaving. Nevertheless, if its inventor sells a machine of which his invention forms a part and allows it to be used without restriction of any kind, the use is a public one within the meaning of the law. So, on the other hand, a use necessarily open to public view, if made in good faith, solely to test the qualities of the invention and for the purpose of experiment, is not a public use within the meaning of the patent law. (*Elizabeth* v. *Pavement Company*, 97 U. S., 126; *Shaw* v. *Cooper*, 7 Pet., 292.)

Tested by these principles we think the evidence of the complainant herself shows that there was a public use of the invention, covered by the original patent to Barnes, for more than two years before the application for the patent, and by his consent and allowance. He made and gave to the complainant two pairs of corset-steels, constructed according to his device, one in 1855 and one in 1858. They were presented to her for use. He imposed no obligation of secrecy or any condition or restriction whatever. They were not presented for the purpose of experiment or to test their qualities. No such claim is set up in the testimony of complainant. The invention was at the time complete, and there is no evidence that it was afterward changed or improved. The donee of the steels used them for years for the purpose and in the manner designed by the inventor. They were not capable of any other use. She might have exhibited them to any person she pleased, or might have made other steels of the same kind and used or sold them without violation of any condition or restriction imposed on her by the inventor. According to the testimony of complainant the invention was completed and put to use in 1855. The inventor slept on his rights for eleven years. The patent was not applied for till March, 1866. In the meantime the invention had found its way into general and almost universal use. A great part of the record is taken up with the testimony of the manufacturers and venders of corset-steels, showing that before Barnes applied for his patent the principle of his device was almost universally used in the manufacture of corset-steels. It is fair to presume that having learned from this general use that there was some value in his invention, Barnes attempted to resume, by an application for a patent, what by his acts he had clearly dedicated to the public.

An abandonment to the public may be evinced by the conduct of the inventor at any time, even within the two years named in the law. The effect of the law is that no such consequence will necessarily follow from the invention being in public use or on sale with the inventor's consent and allowance at any time within two years before his application, but that if the invention is in public use or on sale prior to that time it will be conclusive evidence of abandonment, and the patent will be void. (*Elizabeth* v. *Pavement Company*, 97 U. S., *supra*.)

We are of opinion that the defense of two years' public use by the consent and allowance of the inventor before he made application for his patent is satisfactorily established by the evidence.

The decree of the circuit court is therefore affirmed.

THE OFFICIAL GAZETTE

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Subscriptions for 1882.

The OFFICIAL GAZETTE is published every Tuesday, two volumes a year, commencing in January and July. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound volumes, $3.50 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Issue of January 10, 1882.

Patents	295	No. 252,006 to No. 252,301, inclusive.
Designs	38	No. 12,656 to No. 12,693, inclusive.
Trade-Marks	23	No. 8,995 to No. 9,023, inclusive.
Labels	10	No. 2,585 to No. 2,594, inclusive.
Reissues of patents	3	No. 10,006 to No. 10,008, inclusive.
Total issue	376	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama			Nebraska	1	
Arizona Territory			Nevada		
Arkansas	1	1	New Hampshire	4	1
California	7		New Jersey	11	
Colorado	1		New Mexico Territ'y		
Connecticut	20	1	New York	64	17
Dakota Territory			North Carolina		
Delaware	1		Ohio	25	4
District of Columbia	6		Oregon	1	
Florida	1		Pennsylvania	27	1
Georgia	4		Rhode Island	7	
Idaho Territory			South Carolina		
Illinois	22		Tennessee	2	
Indiana	8		Texas	4	1
Indian Territory			Utah Territory		
Iowa	5	1	Vermont	2	
Kansas	1		Virginia	2	1
Kentucky	1	1	Washington Territ'y		
Louisiana	3		West Virginia	1	
Maine	2		Wisconsin	6	1
Maryland	5	1	Wyoming Territory		
Massachusetts	49	2	United States Army		
Michigan	7	3	United States Navy		
Minnesota	4		Total to citizens of the United States	314	36
Mississippi	1				
Missouri	8				
Montana Territory					

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia			England	9	2
Austria			France	2	
Barbadoes			Germany	5	1
Belgium			Italy		
Bermuda			New Zealand		
Brasil			Russia		
Canada	3		Spain		
Chili			Sweden		
Colombia, U. S. of			Switzerland		
Cuba	1		Total to citizens of foreign countries	20	3
Denmark					
Ecuador					

DESIGNS.

12,656.—LEGGING.—*John Collins*, Highlandville, Mass. Application filed November 16, 1881. Term of patent 3½ years.

12,657.—CARPET.—*Eugene A. Crowe*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Application filed December 12, 1881. Term of patent 3½ years.

12,658.—ORNAMENTAL CHAIN-LINK.—*Salomon Davidson*, New York, N. Y. Application filed November 26, 1881. Term of patent 7 years.

12,659 to 12,670, inclusive.—CARPET.—*Edwin Fisher*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed December 12, 1881. Term of patents 3½ years.

12,671 to 12,675, inclusive.—OIL-CLOTH, &c.—*Charles T. Meyer* and *Victor E. Meyer*, Bergen, N. J., assignors to *Edward C. Sampson*, New York, N. Y. Applications filed December 15, 1881. Term of patents 3½ years.

12,676.—COMBINED BED-PLATE AND HEATER FOR PORTABLE STEAM-ENGINES.—*Reinhard Scheidler*, Newark, Ohio. Application filed October 10, 1881. Term of patent 7 years.

12,677.—STAIR-ROD.—*John Emory Scott*, Baltimore, Md. Application filed December 9, 1881. Term of patent 7 years.

12,678 to 12,685, inclusive.—CARPET.—*Charles W. Swapp*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed December 12, 1881. Term of patents 3½ years.

12,686 to 12,693, inclusive.—CORSET.—*Isaac Strouse*, New Haven, Conn. Applications filed December 15, 1881. Term of patents 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

8,995.—COIN-SILVER WATCH CASES.—*The Dueber Watch Case Manufacturing Company*, Newport, Ky., Cincinnati, Ohio, New York, N. Y., and Chicago, Ill. Application filed July 28, 1881.

"The elongated hexagonal panel, the reniform upwardly-curved figure, and the shield bearing the inclined anchor."

8,996.—WHISKY.—*Freiberg & Workum*, Cincinnati, Ohio. Application filed August 22, 1881.

"The word 'CABINET,' the letters 'O. K.,' and the inner and outer triangular borders forming a frame-work."

8,997.—BUTTONS.—*H. Williston Knight*, New York, N. Y. Application filed June 23, 1881.

"The arbitrary letters and character 'O. & A.'"

8,998.—BUTTONS.—*H. Williston Knight*, New York, N. Y. Application filed June 22, 1881.
"The representation of a lion surmounting a crown."

8,999.—BUTTONS.—*Williston Knight & Co.*, New York, N. Y. Application filed June 22, 1881.
"The letters and character 'W. K. & Co.'"

9,000.—BUTTONS.—*Williston Knight & Co.*, New York, N. Y. Application filed June 22, 1881.
"The letter 'F.'"

9,001.—BUTTONS.—*Williston Knight & Co.*, New York, N. Y. Application filed June 22, 1881.
"The letters 'A A.'"

9,002.—BUTTONS.—*Williston Knight & Co.*, New York, N. Y. Application filed June 22, 1881.
"The representation of a vignette surmounted by a crown."

9,003.—BRANDY.—*Cazada, Crooks & Reynaud*, New York, N. Y. Application filed August 19, 1881.
"The figure or device and the capital letters 'O D' inside of it."

9,004.—BAKING-POWDER.—*George V. Hecker & Co.*, New York, N. Y. Application filed June 14, 1881.
"The square divided into smaller squares."

9,005.—STOVES.—*Charles Portway*, Halstead, county of Essex, England. Application filed October 20, 1881.
"The symbolical representation of a tortoise."

9,006.—PORTLAND CEMENT.—*Brooks, Shoobridge & Co.*, London, county of Essex, England, and New York, N. Y. Application filed November 18, 1881.
"The shield with the letters 'B. S. & Co.'"

9,007.—TREES, SHRUBS, VINES, AND PLANTS.—*N. H. Albaugh & Co.*, Tadmor, Ohio, Carmi, Ill., and Burlington, Kans. Application filed December 5, 1881.
"The words 'CHAIN OF NURSERIES.'"

9,008.—WRITING-PAPER.—*Z. Crane, Jr., & Brother*, Dalton, Mass. Application filed December 20, 1881.
"The representation of a lady in the act of writing."

9,009.—WRITING-PAPER.—*Z. Crane, Jr., & Brother*, Dalton, Mass. Application filed December 20, 1881.
"The device or representation of a female statue holding a scroll in one hand."

9,010.—CERTAIN MEDICINAL PREPARATIONS.—*Eureka Springs Concentrating Company*, Eureka Springs, Ark. Application filed October 28, 1881.
"The figure of the angel in combination with the Eureka Indian Basin Spring."

9,011.—CORN-STARCH.—*Glen Cove Manufacturing Company*, Glen Cove, N. Y. Application filed December 7, 1881.
"The representation of a human hand holding an ear of Indian corn."

9,012.—UMBRELLAS.—*Aloah Hall & Co.*, New York, N. Y. Application filed December 17, 1881.
"The words 'PRAIRIE KING.'"

9,013.—HARNESS.—*J. R. Hill & Co.*, Concord, N. H. Application filed December 16, 1881.
"The representation of written music."

9,014.—KAINIT.—*Incorporated Company of Salzbergwerk, Neu-Staassfurt*, Löderburg, near Staassfurt, Germany. Application filed December 17, 1881.
"An eagle and scroll."

9,015.—WATER-CLOSET BOWLS, VALVES, AND OTHER APPLIANCES CONNECTED WITH THE CONSTRUCTION OF WATER-CLOSETS.—*Alfred B. Jennings*, New York, N. Y. Application filed April 18, 1881.
"The word-symbol 'ERA.'"

9,016.—CIGARETTE-PAPER.—*May Brothers*, New York, N. Y. Application filed December 14, 1881.
"The representation of a shield with an ornamental castellated top and divided into two parts, having in the upper division conventional lilies and in the lower division a monogram consisting of the letters 'M B.'"

9,017.—PLUG-TOBACCO.—*D. H. McAlpin & Co.*, New York, N. Y. Application filed December 15, 1881.
"The arbitrary symbol of a shield."

9,018.—FIRE-BRICKS.—*Newton & Co.*, Albany, N. Y. Application filed December 15, 1881.
"The word 'CLINKERLESS.'"

9,019.—BRANDING LIVE STOCK.—*Protective and Detective Association of Texas*, Dallas, Tex. Application filed December 17, 1881.
"The letter 'C' and the bar or shank on the upper arm of the letter."

9,020.—FURNISHING-GOODS FOR MEN'S WEAR.—*Steinfeld, Kornfood & Co.*, Baltimore, Md. Application filed December 20, 1881.
"The word 'EXCELSIOR.'"

9,021.—PRINTED PUBLICATION.—*Williams & Co.*, New York, N. Y. Application filed December 1, 1881.
"The letters and words 'THE ELECTRICIAN.'"

9,022.—OIL-PAINTS.—*James H. Worcester*, Detroit, Mich. Application filed July 15, 1881.
"The arbitrary word 'COTTAGE.'"

9,023.—CIGARS, CIGARETTES, CHEROOTS, PLUG, TWIST, AND FINE-CUT CHEWING-TOBACCO, SMOKING-TOBACCO, AND SNUFF.—*Leopold Wertheimer*, New York, N. Y. Application filed December 14, 1881.
"The arbitrarily-selected word-symbol 'PINOCLE.'"

LABELS.

2,585.—Title: "CHAMPAGNE-SODA" (FOR A BEVERAGE.)—*Edward A. Butts*, Alexandria, Va. Application filed December 12, 1881.

2,586.—Title: "DR. O. ARONSON & CO., EUROPEAN HOG AND CATTLE CURE."—*O. Aronson & Co.*, Davenport, Iowa. Application filed November 25, 1881.

2,587.—Title: "BARKER'S NERVE & BONE LINIMENT FOR MAN OR BEAST."—*Barker, Moore & Mein*, Philadelphia, Pa. Application filed December 8, 1881.

2,588.—Title: "LUSTER FINISH" (FOR A CLEANSING COMPOUND.)—*Alonzo Dow*, College Corner, Ohio. Application filed October 27, 1881.

2,589.—Title: "HINRICHS' UNIVERSAL LAUNDRY STARCH POLISH."—*Robinson & Hinrichs*, Manitowoc, Wis. Application filed December 12, 1881.

2,590.—Title: "DR. NIEMEYER'S ASTHMA TROCHES."—*Frederick Humburg*, Detroit, Mich. Application filed December 12, 1881.

2,591.—Title: "DR. WALTHER'S SWISS COUGH TROCHES."—*Frederick Humburg*, Detroit, Mich. Application filed December 12, 1881.

2,592.—Title: "RIZ EXTRA" (FOR CIGARETTE PAPERS.)—*May Brothers*, New York, N. Y. Application filed December 14, 1881.

2,593.—Title: "TIRE BOLTS."—*Russell & Erwin Manufacturing Co.*, New Britain, Conn. Application filed October 22, 1881.

2,594.—Title: "INNES PNEUMONIA CURE."—*Lucy J. H. Watson*, Cincinnati, Ohio. Application filed October 7, 1881.

DISCLAIMER.

3,798, (Reissue.)—*Alfred Nobel*, Hamburg, Germany, assignor, by mesne assignments, to *The Atlantic Giant Powder Company*, San Francisco, Cal., dated March 17, 1874. IMPROVEMENT IN METHODS OF EXPLODING NITRO-GLYCERINE. Disclaimer filed December 28, 1881, by *The Giant Powder Company*, assignee of part interest of *The Atlantic Giant Powder Company*.

Enters its disclaimer to the following matter of description and claim in said reissue specification, to wit: "In printed specification on page 1 all of lines 29, 30, 31, 32, and the words 'produces the explosion' in line 33, and the words 'for this' in line 41; all of lines 42, 43, 44, 45, 46, 47, 48, 49, and the words 'explosion without such combination' in line 50; the words 'heat, or' in line 51; the words 'or by creating an impulse of explosion' in line 54, and all of lines 55, 56, 57, 58, 59, 60, 61, 62, 63, and the words 'charge of nitro-glycerine' in line 64; the words 'by the term impulse of explosion' in line 73, all of line 74, and the words 'explosion by suddenly-communicated force' in line 75; the word 'gun-cotton' in line 81; the words 'or gun-cotton' in line 89; the words 'which may be' and 'for' in line 94. On page 2 all of lines 1 and 2; the words 'open or closed at the top as may be preferred' in lines 6 and 7; all of lines 38 to 54, inclusive; the words 'to produce an initial' in line 55; the words 'explosion and a spark or by' in line 56; the words 'fire, heat, electricity, or' in lines 97 and 98, and the words 'means of' in line 103."

PATENTS

GRANTED JAN. 10, 1882.

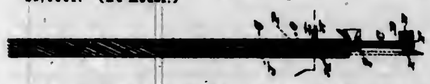
252,006. BOTTLE-STOPPER. EDWARD ALDEN, Brooklyn, N. Y. Filed June 1, 1881. (No model.)



Claim.—1. As an improvement in bottle-stoppers, the combination, with a cork stopper, of a loop-shaped handle the ends of which pass at or near the center of the top part in an oblique direction through the cork, and then anchor to the sides of the cork, above the bottom of the same, substantially as set forth.

2. As an improvement in bottle-stoppers, the combination, with a cork or other stopper, of a loop-shaped wire handle the ends of which pass at or near the center of the top part in an oblique direction through the cork and anchor to the sides of the same, above the bottom, the upper looped portion being tightly twisted, substantially as and for the purpose set forth.

252,007. NEEDLE-THREADER FOR SEWING-MACHINES. FRANK G. ALTHAUS and FRED POEHNER, Edina, Mo. Filed Oct. 28, 1881. (No model.)



Claim.—1. The combination, with the needle-bar having inclined dovetailed groove B and auxiliary groove or recess I, of the spring J, having tooth O and thumb-piece N, and the rigid sliding rod C, having notches P Q and threading-tube D, as herein described, for the purpose set forth.

2. The combination of the grooved needle-bar A, having slot M, the slide D, having notches P Q, and the spring J, having tooth O, shank L, and thumb-piece N, the latter bent so as to come in front of the slide D, as herein described, for the purpose set forth.

252,008. FISHING-ROD. GEORGE P. ANDREWS, Staffordville, Conn. Filed Oct. 4, 1881. (No model.)



Claim.—The combination, with a fishing-pole composed of lengths or sections hinged together, of the spring fastening device H, for the purpose specified.

252,009. APPARATUS FOR MIXING AERIFORM FLUIDS. JOHN P. BARNES, Springfield, Mass. Filed May 31, 1881. (No model.)



Claim.—1. The combination, in an apparatus for mixing aeriform fluids, of a movable diaphragm connected with and operating two slide-valves whose apertures communicate with a common mixing pipe or chamber, and a valve-seat having a portion thereof movable and adjustable, to enlarge or diminish the aperture of one of said valves, substantially as and for the purpose described.

2. The combination, in an apparatus for mixing aeriform fluids, of a valve-chamber, a valve within said chamber, a valve-rod secured to and adapted to operate said valve, and extending through one side of said valve-chamber, a cup made upon the outside of said valve-chamber and around said rod and adapted to contain a sealing fluid, and an inverted cup made upon said rod and extending down into the cup to contain the sealing fluid, substantially as and for the purpose set forth.

252,010. ACCORDION. RUDOLF BERGER, Gera, Reuss, Germany. Filed Oct. 15, 1880. (No model.) Patented in Germany Mar. 13, 1880.



Claim.—In an accordion provided with a second or additional row of reeds covered by a valve or damper adapted to be moved over the same, the controlling device for operating the damper, consisting of the combination of the springs *d d'*, levers *e e'*, crossbar *f*, and rod *h*, with knob *i*, with the damper-bar B, said rod *h* or knob *i* being arranged at or near the thumb-strap D, in the manner and for the purpose substantially as described.

252,011. BRICK AND OTHER KILNS. SAMUEL W. BICKLEY, Mexico, Mo. Filed Feb. 23, 1881. (No model.)



Claim.—1. The furnace B, provided with opening D, located at the base of the chamber C and in direct line with the fuel, in combination with the damper *a*, operated by means of a lever pivoted beneath the grate-bars of said furnace, as and for the purpose set forth.

2. In combination with the furnace B, provided with chamber C, the opening *d*, formed with a gradually-reducing size to the front and forming a flue for a hot draft above the fires, substantially as and for the purpose set forth.

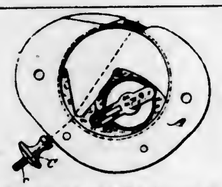
252,012. VALVE-SEAT FOR STEAM-ENGINES. ARNVAH BLOOD, Manchester, N. H. Filed Nov. 10, 1879.



Claim.—The combination, with the slide-valve, of the valve-seat and its ports, the said valve-seat being provided with transverse grooves undercut or dovetail-shaped in cross-section, as described, combined with independent strips or tenons fitted to slide longitudinally in the said grooves, substantially as and for the purpose set forth.

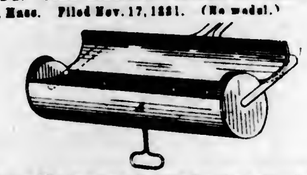
252,013. LUBRICATOR FOR SHUTTLE-RACES. JAS. BOLTON, Chicago, Ill. Filed June 28, 1881. (No model.)

252,013.



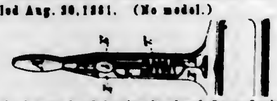
Claim.—In combination with shuttle-race A, provided with a threaded bore extending through from its outer to its inner periphery, a hollow screw-shaft, C, corresponding with it in size, length, and thread, adapted to extend the entire length of the bore and turn into and out of the same, and to hold a wick, *c*, longer than the bore, in order that its outer end may be fed with lubricating-oil by hand and that its inner end may feed the same to the shuttle and shuttle-race automatically, substantially as described.

252,014. FIRE-KINDLER. CHARLES K. BRADFORD, Lynnfield, Mass. Filed Nov. 17, 1881. (No model.)



Claim.—The improved fire-kindler above described, consisting of a receptacle provided with a number of air-tubes and having an absorbent material packed around these tubes, substantially as described, and for the purposes set forth.

252,015. SNAP-HOOK. ANDREW M. BRASS, Pine Meadow, Conn. Filed Aug. 30, 1881. (No model.)

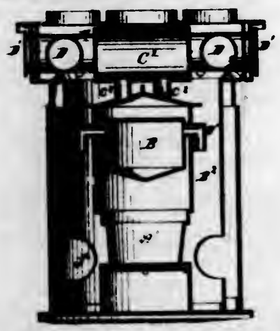


Claim.—1. A snap-hook having its shank formed with an open hollowed recess, with folding ears or lips E E at each end thereof, and carrying a spring-bolt, substantially as and for the purposes set forth.

2. The combination, in a snap-hook, with a recessed or hollow shank provided with lips or ears E E, as described, of an inclosed separate bolt-tube, T, and bolt B and spring S, substantially as and for the purposes described.

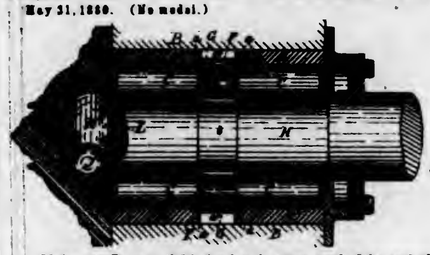
3. The combination, in a snap-hook, with a recessed or hollowed shank, of a bolt-tube, T, bolt B, and spring S, substantially as and for the purposes set forth.

252,016. HOT-AIR FURNACE. WILLIAM P. BREWIS, Camden, N. J. Filed Apr. 16, 1881. (No model.)



Claim.—In a hot-air furnace, the combination, with the hollow deflector B, of the inlet elbow-pipes B' B' and outlet-pipes *e e*, both opening into the cold-air chamber B², superposed drum C², communicating with said deflector by pipes *c' c'*, and the drums D D, communicating with drum C² by pipe *d*, the several parts arranged relatively to each other substantially in the manner herein shown and described.

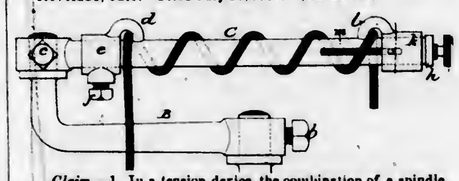
252,017. AXLE-BOX. ORRIL R. CHAPLIN, Boston, Mass. Filed May 31, 1880. (No model.)



Claim.—1. In an anti-friction bearing composed of the necked bearing-rolls C and separator-rolls D, the rings F and G, for holding them together, the outer ring, G, having an outer diameter no greater than the outer diameter of the circle of bearing-rolls, and the inner ring, F, having an inner diameter greater than the inner diameter of the circle of bearing-rolls, as and for the purposes set forth.

2. In an axle-box with anti-friction rolls C D, the ring G, of a diameter that will allow it to be inserted through the end of the box, in combination with the groove *a* in the box to prevent contact of ring G with the box when in use, as set forth.

252,018. TENSION FOR GRAIN-BINDERS. CHAS. COLAHAN, Cleveland, Ohio. Filed July 11, 1881. (No model.)



Claim.—1. In a tension device, the combination of a spindle about which the thread or cord is wound and means for adjusting the pitch of the coils of said cord prearranged thereupon to determine the friction with which it is pulled therefrom.

2. In a tension device, the combination of a rod or spindle about which the cord is wound, means whereby said spindle may be adjusted radially upon its support, and means independent of the first, whereby it may be adjusted bodily as to its distance from the source of cord-supply, substantially as and for the purpose described.

3. In a tension-device, a spindle about which the cord is wound, eyes at each end of the spindle, between which the coils are confined, and means for adjusting one of said eyes longitudinally of the spindle to increase or diminish the pitch of said coils.

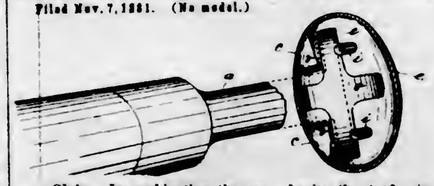
4. The combination of the spindle C, the eyes *d* and *l* thereon, the sleeve *h*, and the adjusting-screw *g*, whereby the latter eye may be moved longitudinally of the sleeve.

5. The combination of the tension-spindle C, its pivotal support B, and the clamping-screw *e*, substantially as described.

6. The combination of the tension-spindle C, its pivotal support B, and clamping-screw *e*, the standard A, to which the latter support is pivoted, and the clamping-screw *b*, whereby their connection is rendered fast.

7. The mode of preventing kinking or unraveling of the cord in its passage from the spool to the binder-arm, consisting in winding it about a tension-spindle in a direction having the described relation to the direction of its twist.

252,019. TRACE-LOCK. JAMES E. CORNELL, Portsmouth, N. H. Filed Nov. 7, 1881. (No model.)



Claim.—In combination, the case *e*, having the steady-pins *i* therein, the spring *o*, the slotted bottom plate, *c*, having the abutment *c* thereon, and the trace-bar *a*, provided with the cross-bar *a*, substantially as and for the purpose set forth.

252,020. COUPLING FOR TUBING. EDMUND C. CONVERSE, Pittsburg, Pa. Filed Oct. 22, 1881. (No model.)

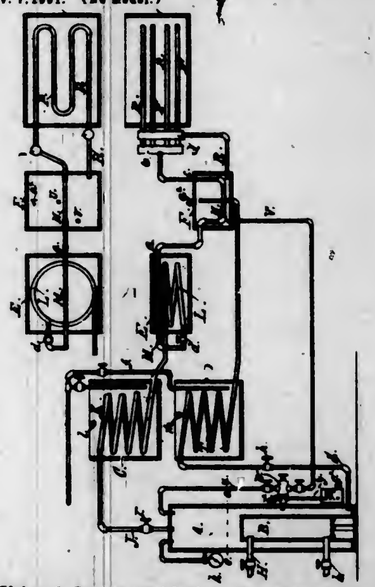


Claim.—1. In couplings for tubing, a coupling-collar having an inner central ring, against which the ends of the tubing bear, an annular recess at each end for the reception of calking material, and a series of wings extending across the mouth of each annular recess to support the tube-section, substantially as set forth.

2. In couplings for tubing, a coupling-collar, B, having a central ring, *c*, and an annular calking-recess, *d*, at each end, having inwardly-flaring sides *f*, substantially as and for the purposes set forth.

3. In couplings for tubing, a coupling-collar, B, provided with an annular calking recess, *d*, at each end, and a series of wings, *h*, extending across the mouth of each annular recess, substantially as and for the purposes set forth.

252,021. ICE-MACHINE AND REFRIGERATING APPARATUS. THOMAS DAVIS and CHARLES E. DAVIS, Indianapolis, Ind. Filed Nov. 7, 1881. (No model.)



Claim.—1. In an ammonial refrigerating apparatus, the combination of the coil L and pipe M, having their interiors separably connected by a valve, *d*, and the chamber E inclosing both, substantially as described, and for the purpose set forth.

2. In an ammonial refrigerating apparatus, the combination of the absorption-chamber F with the pipe N, conveying ammonia to the distributing-pipes P, and pipe R, conveying ammonia from the distributing-pipes P, substantially in the manner and for the purpose set forth.

3. In an ammonial refrigerating apparatus, the combination of the above-described chamber E, inclosing the coil L and pipe M, with the condensing-tank C, coil K, and system of distributing-pipes P, for the purpose set forth.

4. In an ammonial refrigerating apparatus, the combination of the absorption-chamber F, having pipes N and R, in the manner above described, with the supply-pipe U, coil T, and cooling-tank D, for the purpose set forth.

5. In an ammonial refrigerating apparatus, the combination of the absorption-chamber F, provided with pipes N and R, in the manner above described, with the connecting-pipe V, injector W, and boiler A, for the purpose set forth.

6. In combination with the injector W, the pipe Y and closed overflow-receiver X, substantially as described, for the purpose set forth.

252,022. PLOW. CHARLES DONCOSKER, Austin, Tex. Filed Oct. 8, 1881. (Model.)

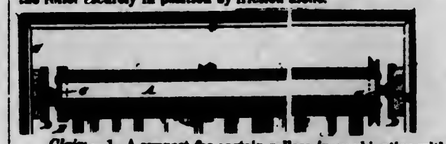


Claim.—1. The combination, in a plow, of the share A, concave in line from its point to its top or rear, and the high and narrow mold-board B, having its surface flat or without curve, as shown and described.

2. The combination, in a plow, of the share A, concave in line from its point to its top or rear, and the high and narrow mold-board, having its surface flat or without curve and forming the projecting corner *g*, substantially as specified.

252,023. CURTAIN-ROLLER SUPPORT. HUGH FARLEY, Philadelphia, Pa. Filed Oct. 24, 1881. (No model.)

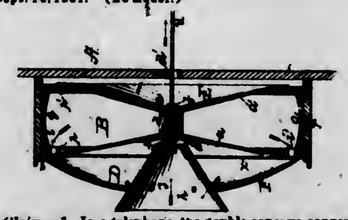
Brief.—A spring of rubber or metal is interposed between the roller-brackets and the window-casing in such manner as to hold the roller securely in position by friction alone.



Claim.—1. A support for curtain-rollers, in combination with means to create a friction between said support and the window-frame, substantially as and for the purpose specified.

2. The combination of the roller A and pivot-projections C with pivot-recessed caps D, or their equivalent, and a spring, F, substantially as and for the purpose specified.

252,024. MECHANICAL TELEPHONE. GEORGE K. FARRINGTON and HOMER C. FARRINGTON, Kirkville, Mo., assignors of one-third to Bradford S. Potter, Shippensburg, Pa. Filed Sept. 14, 1881. (No model.)



Claim.—1. In a telephone, the double concavo-convex-shaped diaphragm, of the same size, material, and texture and degree of tension, in combination with the conducting-wire, buttons, adjusting screw-cap, and insulating-cork, substantially as described.

2. In a telephone, the combination of the diaphragms *a a'* and framing *p*, with openings *i*, forming the front and rear walls of an air-chamber, substantially as set forth.

3. In a telephone, the combination, with the diaphragms *a a'* and framing *p*, with openings *i*, of a valve-plate for opening or closing the openings in the framing *p*, substantially as and for the purpose set forth.

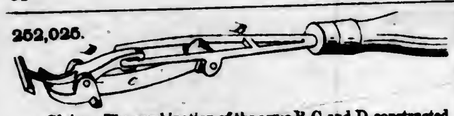
4. In a telephone, the combination of the chambers D, B, and E, formed by the casing A, diaphragms *a a'*, and curved cover F, substantially as shown and described.

5. In a telephone, the combination, with the curved cover F, diaphragm *a*, and transmitting-wire, of the mouth-piece A, with its inner open end registering over the button *c* of the transmitting-wire, and provided with a plurality of openings, *j*.

6. The combination, in a telephone, of the curved cover F, mouth-piece A, diaphragm *a*, perforated framing *p*, sliding valve *s*, diaphragm *a*, casing A, and transmitting-wire, substantially as described.

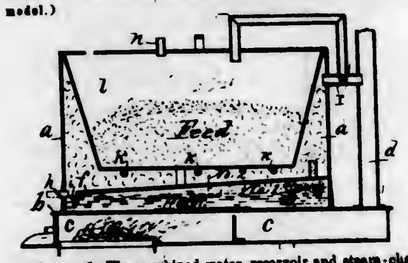
252,025. LIFTER. CHARLES F. FELLOWS, Chelmsford, Mass. Filed Oct. 14, 1881. (No model.)

252,025.



Claim.—The combination of the arms B, C, and D, constructed and operating substantially as described.

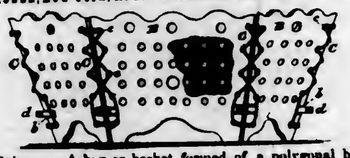
252,026. STEAM-GENERATOR AND AGRICULTURAL BOILER. JOHN FLEMING, HENRY J. FLEMING, and JAMES BROADBENT, Grand Junction, Iowa. Filed May 27, 1881. (No model.)



Claim.—1. The combined water-reservoir and steam-chamber composed of the walls *a*, the bottom *b*, the tank *l*, the bars *k*, and the inclined diaphragm *f*, having an opening, *i*, at its lower end and steam-tubes at its upper end, substantially as shown and described, for the purposes specified.

2. The improved steam-generator and agricultural boiler composed of the following elements, to wit: the walls *a*, the bottom plate, *b*, the furnace *c d*, the diaphragm *f i g*, the bars *k*, and the tank *l*, substantially as shown and described, to be operated in the manner set forth, for the purposes specified.

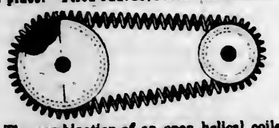
252,027. BOX OR BASKET. JOHN H. GARDNER and SAMUEL H. GARDNER, New York, N. Y. Filed June 25, 1881. (No model.)



Claim.—1. A box or basket formed of a polygonal bottom having projections at three or more of its corners, and a number of recessed and perforated sections corresponding to the number of sides upon the bottom, said sections receiving the said projections, and the whole being secured together by laces, substantially as specified.

2. The bottom A, having projections *d*, combined with the series of sections B, having perforations *c* and recesses *b*, and with the laces C, as and for the purposes set forth.

262,028. FLEXIBLE GEARING. ALONZO S. GEAR, New York, N. Y., assignor to the Perpetual Tension Propelling Belt Company, same place. Filed Jan. 28, 1881. (No model.)



Claim.—The combination of an open helical coiled wire or flexible worm with suitable concave toothed gear-wheels, for the purpose of transmitting motion, as set forth.

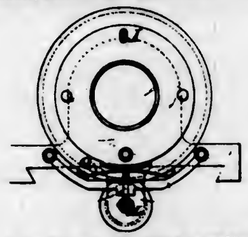
252,029. TREATING PHOSPHATES FOR FERTILIZERS. JOHN F. GIBBONS and GUSTAV A. LIEBIG, Baltimore, Md. Filed June 16, 1881. (No specimens.)

Claim.—1. The above-described process of treating ferruginous or aluminous phosphates by first mixing the crude phosphate with salts of soda, potash, or magnesia, then burning or calcining the same together, and then adding an acid to the calcined product, substantially as described.

2. The process of treating a ferruginous or aluminous phosphate by first mixing the crude phosphate with salts of soda, potash, or magnesia and carbonaceous matter, then burning or calcining the same together, and then mixing the product with an acid, substantially as described, and for the purposes set forth.

3. A phosphatic fertilizing compound consisting of superphosphates combined with acid salts of alkalies and lime, as set forth.

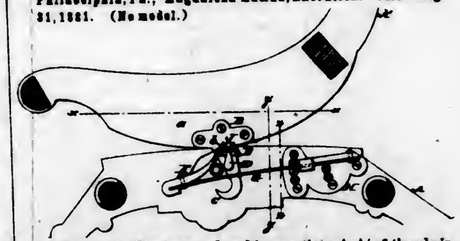
252,030. RAILROAD-CAR-AXLE LATHE. ALEXANDER GORDON, Cincinnati, Ohio. Filed July 18, 1881. (No model.)



Claim.—1. In double axle-lathes, the combination of a lathe-bed, two center stocks, one or both of which are adjustable upon the lathe-bed, two tool-carriages located between the said center stocks, and an open driving mechanism of the Clement type, as set forth, located between said tool-carriages, and provided with attaching-gibs for uniting it adjustably to the lathe-bed, substantially as and for the purpose set forth.

2. In lathe-drivers of the Clement or self-adjusting type specified, the combination of a circular self-adjusting driving-plate, and a yielding bearing located below said plate to prevent its periodical dropping, substantially as set forth.

252,031. ROCKING-CHAIR. WILLIAM E. HAMAN, (deceased,) Philadelphia, Pa.; Magdalena Haman, Executrix. Filed Aug. 31, 1881. (No model.)



Claim.—1. The base and rocking portions A A' of the chair, in combination with the springs G and rigid or inelastic arms F, the latter being connected to the ends of the springs and returned in the longitudinal direction thereof, and formed with sockets E, which are sustained on the studs D of one portion of the chair, substantially as and for the purpose set forth.

2. The base and rocking portions of the chair and the connected springs, in combination with the arms F, having cups J, and the supports D, said cups communicating with the sockets of the arms F and the supports D entering said sockets, substantially as and for the purpose set forth.

252,032. COMBINED SHOULDER AND NECK PAD FOR HORSE COLLARS. JAMES R. HAMILTON, Hilo, Iowa. Filed July 19, 1881. (No model.)

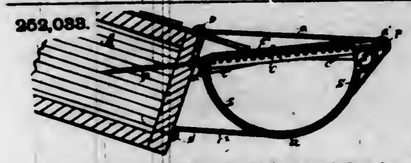


Claim.—The improved horse-collar pad consisting of the sections *a* and *a b*, constructed substantially as shown and described, to apply and operate in the manner set forth, for the purpose specified.

252,033. EAVES-TROUGH HANGER. WARREN HATCH, Plainfield, Ill. Filed Aug. 4, 1881. (No model.)

Brief.—The cross-bar is flanged, and is provided with a central longitudinal elevation for the passage through it of the pin. The pin has an eye in its head, through which the wire passes.

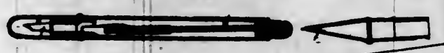
252,033.



Claim.—1. The cross-bar *c*, with its central elevation and its flanges *c'*, in combination with the eaves-trough S, substantially as and for the purpose set forth.

2. The combination of the cross-bar *c*, having its flanges *c'*, and a central longitudinal elevation, with the pin or spike F, having an eye or groove, *e'*, the eaves-trough S, and the wire *a*, all constructed and applied as and for the purpose set forth.

252,034. RESERVOIR PEN-HOLDER. THOMAS A. HEADEEN, Greenwich, County of Kent, England. Filed Sept. 23, 1881. (No model.) Patented in England Mar. 31, 1881.



Claim.—1. The combination, with an ink-holder provided with an air-tube, of the pen and the thin flexible nozzle inclosing the pen except at the points of its nibs, substantially as and for the purpose hereinbefore set forth.

2. The combination of a barrel-pen with a flexible sheath or nozzle, substantially as described, so that the barrel of the pen, with the sheath or nozzle surrounding it, may be inserted fluid-tight into the end of an ink-holder.

3. The combination, with the inner end of the air-tube of a reservoir-pen, of a chamber into which the inner end of the air-tube enters, such chamber having a small hole at the bottom to allow air to pass from it into the interior of the ink-holder.

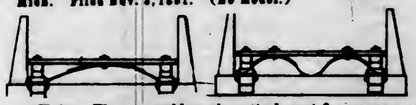
252,035. WAGON-SPRING. SAMUEL G. HILL, Muscatine, Iowa. Filed Mar. 22, 1880. (Model.)



Claim.—1. In means for hanging the bodies of vehicles, the combination of the bolsters having their ends projecting beyond the sides of the vehicle-body, and having fitted thereon vertical standards or posts surrounded by spiral springs, and the transverse straps with shouldering extensions A, bolted to the bottom of the vehicle, with its projecting ends fitting over the standards or posts of the bolster, substantially as described.

2. In means for hanging the bodies of vehicles, the combination of the bolsters D D' with vertical standards *e* and coil-springs *g*, the transverse straps *f f'*, with shouldering extensions A, and the cross-pieces A', fitted on the bolsters, substantially as and for the purposes set forth.

252,036. BOLSTER-SPRING. CHARLES A. HOWARD, Pontiac, Mich. Filed Nov. 3, 1881. (No model.)



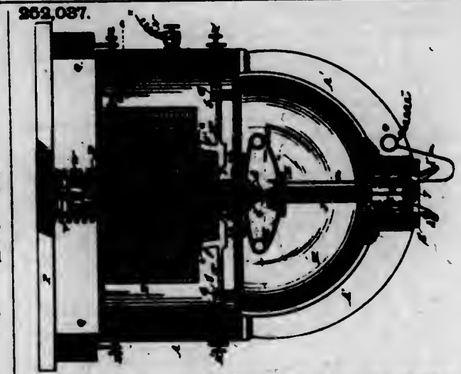
Claim.—The removable spring attachment for a wagon, consisting of notched side pieces, a longitudinal semi-elliptic spring upon each side piece, a cross-bar parallel to the bolster uniting the tops of the springs, and a semi-elliptic cross-spring beneath the bar, and adapted to be thrown into or out of gear by rotating it about its point of attachment to the said bar, substantially as and for the purposes described.

252,037. ELECTRIC LAMP. RUDOLPH M. HUNTER, Philadelphia, Pa., assignor to the Atlantic and Pacific Electric Manufacturing Company, Camden, N. J. Filed June 17, 1881. (No model.)

Claim.—1. In an electric lamp, a carbon in combination with a tube through which it is fed, and means to feed both the carbon and tube in the same direction at the same time, all substantially as and for the purpose specified.

2. In an electric lamp, a carbon in combination with a tube, through which it is fed, and mechanism to feed both the carbon and tube, said mechanism being constructed substantially as described, whereby the tube and carbon are fed in the same direction, the carbon moving at a greater velocity than the tube, so that as it is burned the end of the tube is always at or about the same distance from the point of the carbon, substantially as and for the purpose specified.

252,037.



3. In an electric lamp, a carbon arranged to fall by gravity, in combination with a tube or its equivalent, also arranged to fall by gravity, and means to regulate both the descent of the carbon and tube, the movement of said tube controlling the movement of the carbon, all substantially for the purpose set forth.

4. In an electric lamp, a carbon in combination with a tube, through which it is fed, means to feed both the carbon and tube in the same direction, and operating as described, whereby the carbon moves at a greater velocity than the tube, so that as it is burned the end of the tube is always at or about the same distance from the point of the carbon, a lower carbon, a presser adapted to descend as the carbon is burned, and a conductor from the presser to the binding-post, substantially as and for the purpose specified.

5. In an electric lamp, an upper carbon arranged to descend, and a follower electrically connected with one binding-post and arranged to follow the point of the carbon, in combination with a lower stationary carbon and its presser, electrically connected with the other binding-post, said presser being arranged to descend, always keeping at or about the same distance from the point of the carbon, all substantially as and for the purpose specified.

6. In an electric lamp, a stationary lower carbon and an upper carbon adapted to descend, in combination with devices, substantially as described, whereby the current is conducted to and from the carbons near the arc, and mechanism to feed said devices forward, substantially as set forth, and for the purpose specified.

7. In an electric lamp, an electro-magnet provided with a core having two attracting-faces, in combination with a carbon, a pivoted armature arranged to oscillate vertically and be reciprocated horizontally, and means for counteracting the horizontal attraction of said armature by the electro-magnet, and for withdrawing said armature from said carbon upon the power of said electro-magnet decreasing below a given point, substantially as and for the purpose specified.

8. In an electric lamp, the upper carbon, adapted to be fed by gravity, in combination with an electro-magnet and its armature, said armature being arranged to move both horizontally and vertically by the attraction of the electro-magnet, adapted to clamp or unclamp the carbon or its holder by a direct withdrawal of said armature from said carbon, breaking contact directly, in contradistinction to tangential freeing of the carbon by the armature, and a spring to draw said armature away from the electro-magnet, as and for the purpose specified.

9. The lower stationary carbon, J, and frame A', provided with an opening through its lowest part, in combination with a holder to support said carbon, adapted to be operated from the outside of the globe, said holder consisting of jaws K K, pivoted at *h*, provided with arms *h'* and clamping-springs *h''*, substantially as and for the purpose specified.

10. The lower stationary carbon, J, in combination with a holder adapted, to be operated from the outside of the globe, consisting of jaws K K, pivoted at *h*, provided with arms *h'*, and clamped against the carbon by springs *h''*, said clamping device being arranged within a piece, S, screwed or otherwise detachably secured to frame A', as and for the purpose specified.

11. In an electric lamp, the combination of tube D, carrying wheels I I', carbon E, cord *i*, attached to the small wheel I and carbon E, cord *i'*, attached to the frame A' at the bottom, passed

around the large wheel I', and secured to a tension-screw or its equivalent, as and for the purpose specified.

12. In an electric lamp, the lower stationary carbon, J, in combination with a preceding conductor, L, adapted to descend as the carbon burns, always remaining at or about the same distance from the point of said carbon, a conducting-cord, *m*, springs *l*, or their equivalent, and means for lowering said preceding conductor, substantially as and for the purpose specified.

13. In an electric lamp, an electro-magnet having its core provided with a horizontal face and a vertical curved face, in combination with an armature provided with a corresponding horizontal face and vertical curved face, and a spring or equivalent means to draw said armature away from the electro-magnet to separate the vertical faces, substantially as and for the purpose specified.

14. In an electric lamp, the combination of the electro-magnet B, having a core, C, provided with a lateral attracting-face, *c*, a holder for the carbon E, armature F, provided with edge *f* and arm *f'*, slot *g*, or its equivalent, pin G, spring H, and means to regulate the power of the spring, substantially as and for the purpose specified.

15. In an electric lamp, the combination of the electro-magnet B, having a core, C, provided with a lateral attracting-face, *c*, tube D, carbon E, means to feed said carbon down through said tube, armature F, provided with edge *f* and arm *f'*, slot *g*, or its equivalent, pin G, spring H, and means to regulate the power of the spring, substantially as and for the purpose specified.

16. In an electric lamp, the combination of the electro-magnet B, having a core, C, provided with a lateral attracting-face, *c*, tube D, carbon E, means to feed said carbon down through said tube, armature F, provided with edge *f* and arm *f'*, and slot *g*, or its equivalent, pin G, spring H, with lower stationary carbon, J, preceder L, and conducting-cord *m*, or its equivalent, substantially as and for the purpose specified.

17. In an electric lamp, the carbon E, arranged to be fed downward, tube D, the end of which is always at or about the same distance from the point of said carbon, in combination with lower stationary carbon, J, preceder L, connected with and operated by the tube D, from which it is insulated, said tube D conducting electricity to one point of the carbons, and the preceder receiving it from the other, and means for feeding the upper carbon and its tube, substantially as and for the purpose specified.

18. The combination of board P, springs Q and W, and an electric lamp, substantially as shown and described.

252,038. APPARATUS FOR UNLOADING COAL. WILLIAM ILETT, Chicago, Ill. Filed Nov. 8, 1881. (No model.)



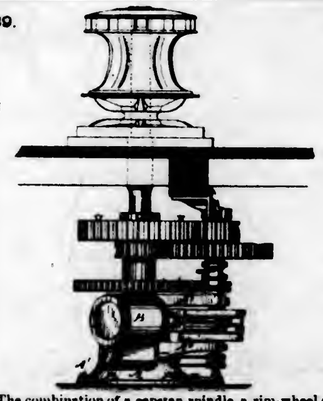
Claim.—1. A pendant, F, made in two parts, the lower part being hinged to the upper part, in combination with a traveling bucket provided with a holding device arranged to come in contact with and be tripped by such pendant, substantially as and for the purpose specified.

2. A bucket, G, having its lower end weighted, and provided with a bail hinged at one side of and above the center of gravity, in combination with a holding device hinged to the bail, and having an extension or arm, *e*, adapted to come in contact with the lower end of a pendant, substantially as and for the purpose specified.

3. A carriage, h, provided with a hook, p, and tightening-nut q, for the purpose of securing the carriage to the cable I, substantially as and for the purpose specified.

252,039. COMBINED STEAM AND HAND POWER CAPSTAN. HENRY J. JOHNSON, Providence, R. I., assignor to Henry W. Gardner, same place. Filed Dec. 1, 1881. (No model.)

Claim.—1. A capstan and wild-cat carrying spindle, having its lower end supported upon a frame carrying suspended therefrom steam-cylinders, for driving said spindle around through gearings, substantially as shown and described.

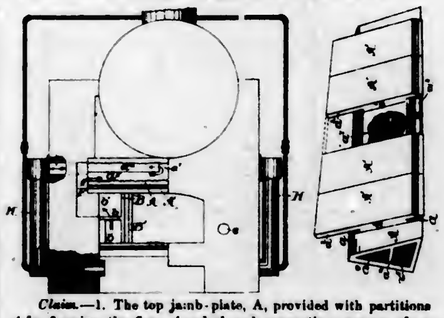


2. The combination of a capstan-spindle, a rim-wheel secured thereto, with a hub and keys, as described, and transmitting-gears mounted loosely upon said spindle, with gears mounted upon an independent shaft and meshing with the rim-wheel, and with the gear mounted loosely upon the capstan-spindle, substantially as and for the purposes described.

3. The combination of a spindle carrying a capstan and wild-cat, a hollow bed-piece provided with brackets A^1, to carry a vertical crank-shaft, and brackets A^3, with steam-cylinders suspended therefrom, substantially as described.

4. The combination of a capstan-spindle, a hollow bed-piece, steam-cylinders secured thereto, and a vertical crank-shaft connected therewith, with an independent shaft in the axis of the crank-shaft, gear-wheels mounted loosely upon the capstan-spindle, and transmitting-gears, substantially as and for the purpose set forth.

252,040. STEAM-BOILER FURNACE. MILTON C. JONES, Green Island, N. Y. Filed Sept. 16, 1881. (No model.)



Claim.—1. The top jamb-plate, A, provided with partitions a' for forming the flues a' and a^2, and connecting-passage a^3, as herein described, in combination with protecting-plates A', of fire-brick or other suitable heat-repelling material, detachably connected to said jamb-plate, as herein specified.

2. The combination, with the side jamb-plates, B, revertible flues *b'*, and inlet air-openings *c*, of the top jamb-plate, A, provided with flues a^2 and a^4, connected to the flues *b'* by means of the flues F, and to the hot-air-escape pipes H, as and for the purpose herein specified.

3. In a steam-boiler furnace, the combination, with top and side jamb-plates for the furnace-door, made separately and connected, as herein described, to form continuous air-circulating flues extending from the air-inlet openings to the hot-air-escape pipes, of the hot-air-escape pipes H, provided with steam-pipes K, arranged in relation to said escape-pipes as herein described, for the purpose of forcibly injecting currents of mingled hot air and steam into the furnace, as herein specified.

252,041. ROTARY BLOTTER. WILLIAM H. KELLY, New York N. Y. Filed Nov. 2, 1881. (No model.)

Claim.—1. In a rotary blotter, the combination of a rolled web of blotting-paper and pasted strips, substantially as described.

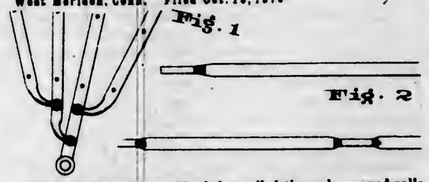
2. The combination, with a rolled web of blotting-paper, of

252,041.



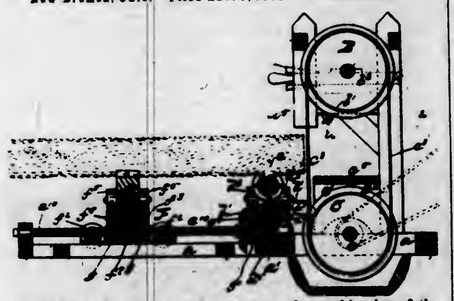
pasted tearing-strips, as described, each interposed between two layers of a web of blotting-paper, the edge of each strip overlapping the edge of the next succeeding tearing-strip, substantially as set forth.

252,042. BAR OF SLAT-IRON BLANKS. SILAS W. KENT, Meriden, assignor to the Beecher Manufacturing Company, West Meriden, Conn. Filed Oct. 13, 1879.



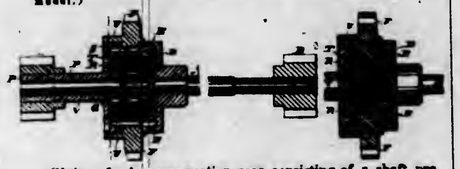
Claim.—The slat-iron-blank bar rolled through grooved rolls to give it the shape shown in Figs. II and III, from which the several sections of a slat-iron frame are cut, ready to be finished and put together to form the completed slat-iron shown in Fig. I.

252,043. BAND-SAWING MACHINE. LEWIS F. KEUTLER, New Bremen, Ohio. Filed Nov. 5, 1881. (No model.)



Claim.—In a band-sawing machine, the combination of the truck d^3, mounted on the blocks D, operated by the pinion d^5, engaging with the rack-bar d^4 of the truck f^3, traversing the carriage F, and the pinion f^5, engaging with the rack-bar f^6 of the bevel-gear wheel d^6, meshing with gear-wheel d^7, crank d^8, and hand-lever d^9, roller E, and shaft d^{10}, the whole operating as herein shown, and for the purpose set forth.

252,044. COMPENSATING-GEAR FOR ROAD-ENGINES. F. P. LANDIS, Waynesborough, Pa. Filed May 10, 1881. (No model.)



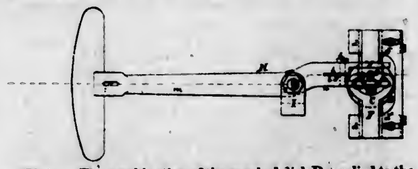
Claim.—1. A compensation-gear consisting of a shaft provided with a stationary pinion, a wheel carrying intermeshing pinions meshing with two cogged disks, one disk rigidly and the other loosely mounted on said shaft, the loose disk carrying a pinion upon its sleeve, substantially as shown and described.

2. In a compensation-gear, a wheel, F, provided with intermeshing pinions, substantially as shown and described.

3. The shaft A and cogged disk D, in combination with the wheel F, provided with intermeshing pinions, and sleeve P, provided with cogged disk E, substantially as shown and described.

4. In a compensation-gear, intermeshing pinions revolving within chambers within a body loosely mounted upon a shaft, said pinions meshing at their outer ends with gearing, substantially as shown and described.

252,045. SHUTTLE-DRIVER FOR SEWING-MACHINES. GEO. W. LORD, Boston, Mass. Filed Oct. 21, 1881. (No model.)



Claim.—The combination of the cranked disk D, applied to the shaft C, as described, with the slide-plate F, having the curved slot *e*, and with the slide G and the forked lever H, all being arranged and to operate substantially as and for the purpose set forth.

252,046. FAUCET. THOMAS HACKEL, Pawtucket, R. I. Filed Sept. 8, 1881. (No model.)



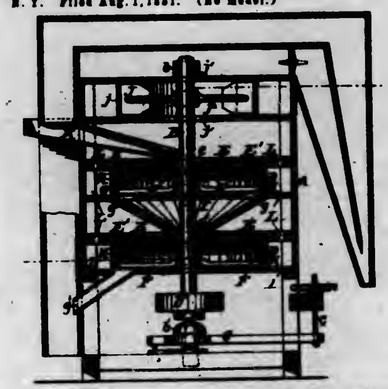
Claim.—In a faucet for tapping barrels and other receptacles of fermented liquors, and for drawing the contents thereof, the combination of the cylinder *a a*, made of one piece of metal, the fluted plunger *d*, having an attached guard at its end *e*, the nut and packing *f f'*, and collar and shoulder *h k*, all in the manner and for the purposes substantially as described and shown.

252,047. HOG-NOSE RING. REUBEN MAUK, Macon County, Ill. Filed Nov. 12, 1881. (No model.)



Claim.—The herein-described ring for hogs' noses, consisting of a single uniform-sized piece of rounded metal, having the projection *c* formed of the same piece, bent at right angles to the body of the ring, substantially as set forth.

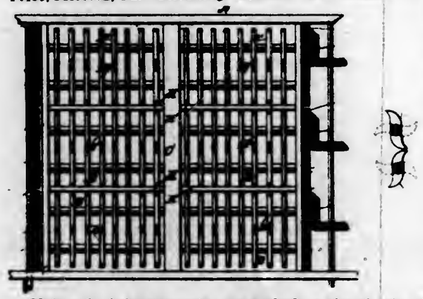
252,048. GRAIN-SCOURER. DANIEL MAUS, West Winfield, N. Y. Filed Aug. 1, 1881. (No model.)



Claim.—1. In a grain-scouring machine, the combination, with two revolving disks, D, provided with the furrows *d*, *d'*, and d^3, as herein described, and secured one above the other, and the shaft B, of the stationary brushes E, arranged in tangential lines whose obliquity is reversed to the tangential lines of the furrows in the disks D, and the radial sweeps F, all constructed and arranged to operate as herein specified.

2. The combination, with the revolving disks D, provided with tangentially-arranged furrows, as herein set forth, of the stationary brushes E, arranged in tangential lines having an opposite angularity to the lines of the disk-furrows, the said disks and brushes being arranged in relation to each other and to operate as herein specified.

252,049. FURNACE-GRATE. WILLIAM MCCLAVE and JOHN A. PAGE, Scranton, Pa.; said McClave assignor to Samuel Price, Pittston, Pa. Filed Aug. 31, 1881. (No model.)



Claim.—1. A furnace-grate composed of a series of pairs of revolving ⟋⟍-shaped grate-sections connected together by continuous gearing, so as to operate simultaneously, each pair operating at each half-revolution to cut out positively the lower portion of the mass which they support and discharge it into the ash-pit below and present a new upper supporting-surface similar to the one turned down, substantially as described.

2. A furnace-grate composed of a series of pairs of revolving ⟋⟍-shaped grate-sections connected together by continuous gearing, so as to operate simultaneously, each pair operating to cut out the lower part of the mass which they support at each half-revolution and present a new supporting-surface similar to the one turned down, and having a separating-bar or short partition between each pair, substantially as described, for the purpose specified.

3. In a furnace-grate, a double series of revolving ⟋⟍-shaped grate-sections geared together in pairs and journaled at their inner ends in a central supporting-bar and at their outer ends in a suitable supporting-frame, and having the operating-gearing applied to their outer ends, and a separating-bar or short partition between each pair of sections, substantially as described.

4. In a furnace-grate, the combination of a series of revolving sections connected together by continuous gearing and acting to cut away ashes and refuse in pairs, and having an additional gear-wheel applied to the journal of one of the sections of each pair, with a longitudinally-moving rack-bar for operating upon said additional gear-wheel, whereby to turn all the sections simultaneously, substantially as described.

5. In a furnace-grate, the combination of a series of revolving sections geared together in pairs, and having an additional gear-wheel applied to the journal of one of the sections of each pair, with a longitudinally-moving rack-bar adapted to engage with said additional gear-wheel, and means for throwing said rack-bar into or out of engagement, substantially as described.

6. In a furnace-grate, the combination of a series of revolving grate-sections geared together and having an additional bevel-gear wheel applied to the journal of each alternate grate-section, with a longitudinal bar having bevel-gear wheels for operating upon said bevel-gear wheels on grate-sections, whereby all the sections may be turned simultaneously, substantially as described.

252,050. DANDY-ROLL FOR PAPER-MACHINES. DAVID MCKAY, Holyoke, Mass. Filed Sept. 10, 1881. (No model.)

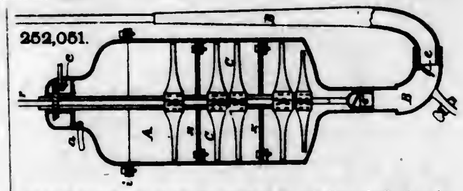


Claim.—The catch-pan A, Fig. 5, to be hung in the inside of and upon the center shaft of the dandy-roll in paper-machines, to be kept in position by its own weight, for the purpose of cleaning dandy-rolls, substantially as set forth in the above specification.

252,051. AMALGAMATOR. LINCOLN A. HERRIAM, New York, N. Y. Filed Oct. 8, 1881. (No model.)

Claim.—1. In apparatus for extracting the precious metals from their ores, the amalgamator A, having the cross-plates *x*, the expanding induction-pipe B, the check-valve *c*, and the mixer C, constructed, arranged, and operating in the manner and for the uses specified and shown.

2. In apparatus for extracting the precious metals from their ores, the amalgamator A, having the perforated plates *x*, the induction-pipe B, the check-valve *c*, the mixer C, rotating on a hollow shaft, the piston-valve *c'*, the connecting reciprocating rod *r*, constructed and operating in the manner and for the purposes shown and described.



252,051.

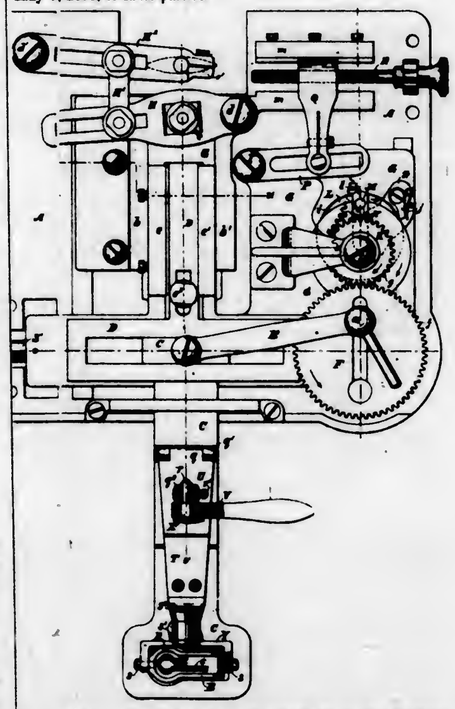
3. In apparatus for extracting gold and silver from their ores, the amalgamator A, having the induction-pipe B, the check-valve *c*, the piston-valve *c'*, the connecting reciprocating rod *r*, and mixer C, rotating on a hollow shaft, arranged and operating in the manner and for the uses specified and described.

4. In apparatus for amalgamating the precious metals, the amalgamator A, separable at *i*, and having the perforated plates or flanges *x*, the mixer C, rotating on a hollow shaft, the expanding induction-pipe B, with the check-valve *c*, and the piston-valve *c'*, constructed and operating in the manner set forth and shown.

5. In apparatus for amalgamating the precious metals from their ores, the amalgamator A, separable at *i*, having the perforated plates *x*, the induction-pipe B, the check-valve *c*, the mixer C, rotating on a hollow shaft, the piston-valve *c'*, the connecting reciprocating rod *r*, the overflow *a*, and pipe *b*, constructed and operating in the manner and for the uses substantially as set forth, specified, and shown.

252,052. BUTTON-HOLE ATTACHMENT FOR SEWING-MACHINES. GUSTUS M. MORRIS, Cohoes, and JOSEPH P. HALLENBECK, New York, assignors, by mesne assignments, to the National Machine Company, Troy, N. Y. Filed July 30, 1878.

Brief.—Improvement on Letters Patent No. 203,287, dated May 7, 1878, to same parties.



Claim.—1. In a button-hole attachment for sewing-machines, the combination, with the crank-wheel F, of a second wheel, K, proportioned and geared with the crank-wheel to revolve just twice to the crank-wheel's once, a rotary driver, L, having its axis eccentric to the axis of said second wheel, the self-adjusting crank-connection engaging said second wheel with said driver, and means for revolving said driver, all substantially as set forth.

2. The combination, with the crank-wheel F, second wheel, K, proportioned and geared with the crank-wheel to revolve twice to the crank-wheel's once, rotary driver L, eccentric to said second wheel, and self-adjusting crank-connection engaging said second wheel with the driver, substantially as described, of the ratchet *i*, driving-pawl *j*, and means for operating said driving-pawl, substantially as set forth.

3. The combination, with the feed-bar C, crank-wheel F, and means for imparting to-and-fro movements to the feed-bar from the crank-wheel, substantially as set forth, of the second wheel proportioned and geared with the crank-wheel to revolve twice to the crank-wheel's once, rotary driver eccentric to said second wheel, self-adjusting crank-connection engaging said second wheel with said driver, and means for rotating the latter, substantially as described.

4. The combination, with the feed-bar C, crank-wheel F, and means for imparting to-and-fro movements to the feed-bar from the crank-wheel, substantially as set forth, of the second wheel, K, proportioned and geared with the crank-wheel to revolve twice to the crank-wheel's once, rotary driver eccentric to said second wheel, self-adjusting crank-connection engaging said driver with said second-wheel, ratchet *i*, pawl *j*, and means for actuating the latter, substantially as described.

5. The combination, with the feed-bar C, crank-wheel F, and means for imparting to-and-fro movements to the feed-bar from the crank-wheel, substantially as described, of the second wheel, K, proportioned and geared with the crank-wheel to revolve twice to the crank-wheel's once, rotary driver eccentric to said second wheel, self-adjusting crank-connection engaging said driver with said second wheel, and mechanisms for imparting step-by-step rotary motion to said driver and reciprocating movements to the feed-bar to form over-edge stitches, all substantially as set forth.

6. The combination, with the feed-bar C, crank-wheel F, and means for imparting to-and-fro movements to the feed-bar from the crank-wheel, substantially as specified, of the second wheel, K, proportioned and geared with the crank-wheel to revolve twice to the latter's once, rotary driver L, eccentric to said second wheel, self-adjusting crank-connection engaging said second wheel with said driver, plate G, means for operating the latter, and means for imparting step-by-step rotary motion to the driver L from the plate G, all substantially as set forth.

7. The combination, with the bed-plate A, plate G, means for operating the latter, and rotary driver L, of the ratchet *i*, lever O, having the pawl *j* and toothed arc *k*, lever P, having the toothed arc *l*, and the fulcrum-arm Q, mounted on said bed-plate, all substantially as set forth.

8. The combination, with the feed-bar C, crank-wheel F, and devices for imparting from said crank-wheel to the feed-bar to-and-fro movements to feed a button-hole lengthwise and movements transverse thereto to change the stitching from one side of the button-hole to the other, substantially as described, of the wheel K, proportioned and geared with said crank-wheel to revolve twice to the latter's once, rotary driver eccentric to the wheel K, self-adjusting crank-connection engaging said driver with the latter wheel, and means for rotating said driver, substantially as set forth.

9. The combination, with the feed-bar C, having standards q' q^2, and arm U, hinged to the standard q' and carrying the feed-foot, of the depressing-cam V, cam-supporting pivot X, stem *r*, fast on and eccentric to said pivot, and fitting and adapted to be turned in a socket in the standard q^2, and a screw, *r'*, by which the stem *r* can be fastened with the pivot X at various heights in respect to said socket, all substantially as set forth.

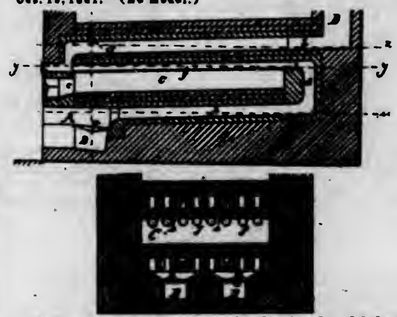
10. The combination, with the feed-bar C, having a standard, q', arm U, hinged to that standard, and means for depressing said arm various degrees, substantially as described, of the part s^2, spring T, fast at one end to said arm and at the other end to the part s^2, forked piece Y, united to the part s^2 by pivot-joint *s'*, and foot B, secured at its ends by pivots *s s* to the arms of said forked piece, all substantially as set forth.

252,053. BOOK-RACK. RICHARD W. HYDE, New York, N. Y. Filed June 9, 1879. Renewed Nov. 19, 1881. (Model.)



Claim.—A rack or book-case consisting of two or more perforated shelves, hollow standards or columns, threaded tie-rods D, the heads of which form legs for the rack or case and support the lower shelf and turn into head-pieces E, substantially as shown and described.

252,054. BAKER'S OVEN. EDUARD A. C. PFEIFFER, Chicago, Ill., assignor of one-half to Henry Piper, same place. Filed Oct. 19, 1881. (No model.)

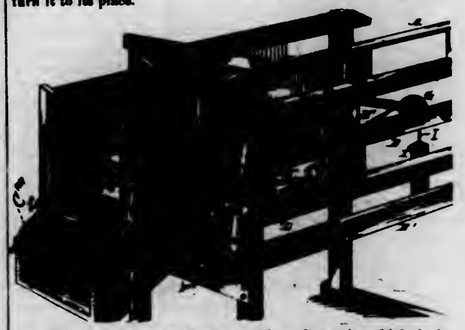


Claim.—1. A baker's oven having heating-flues *b* below the hearth and iron return-flues *f* placed underneath the ceiling of and within the baking-chamber, both flues *b* and *f* communicating through vertical flues *d*, all substantially as described and shown.

2. A baker's oven consisting of baking-chamber C, fire-chambers A, flues *b d g*, iron return-flues *f*, extending longitudinally through said baking-chamber, and chimney D, all constructed and arranged substantially in the manner and for the purpose set forth.

252,055. COAL-CHUTE. JAMES D. PETTIT, Burlington, Iowa. Filed Aug. 3, 1881. (No model.)

Brief.—The gravitating chute runs upon inclined ways, and is held in place while being loaded by a latch-bar pivoted to a standard on the frame. When in position to unload the chute projects from the frame. When emptied counterpoise-weights return it to its place.



Claim.—1. In combination with a frame in which it is mounted, a coal-chute adapted to be carried forward and project from the frame over a locomotive tender or receiver by means of the force of gravity of the loaded chute.

2. The combination, with the gravitating chute or box and supporting-frame, of a latch, K, and catch *j*, for holding the chute in a position projected from the supporting-frame, substantially as and for the purpose specified.

3. In combination with the supporting-frame and gravitating chute, having counterpoise-weight I', and guide-bar J, having notches *j j*, the gravitating latch K, adapted to engage the notches *j j* and to slide upon the bar J, substantially as and for the purpose specified.

4. In combination with the gravitating chute having a bar, J, fixed thereto, with notches *j j* in its ends, a latch, K, adapted to engage said notches, substantially as and for the purpose specified.

5. In combination with the chute C and hinged door C'', the latches D D', adapted to engage the side boards, C''', to hold the door C'' closed and their adjacent ends overlapped, so that raising the outer end of one will release it and also act upon the other to release it, substantially as and for the purpose specified.

6. In combination with the chute, hinged door, and latches D D', the gravitating latch E, hinged to one of the latches, D or D', and adapted to engage a catch on the side of the chute, substantially as and for the purpose specified.

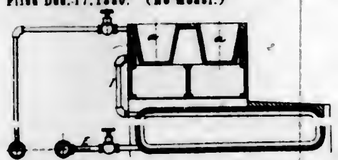
252,056. COMBINED MATCH-BOX AND CIGAR-CUTTER. CHARLES F. PIERCE, Providence, R. I. Filed July 22, 1881. (No model.)



Claim.—1. In a match-box, the box B, provided with an orifice, *e*, and combined with a cover, C, a spring, *s*, having a start, *s'*, and catch *s'*, and a cutting-blade, *b*, as shown.

2. The spring *s* and cutting-blade *b*, combined with a box, B, provided with an orifice, *e*, and operating as shown and described.

252,057. COOKING-RANGE. WILLIAM E. PRALL, New York, N. Y. Filed Dec. 17, 1880. (No model.)



Claim.—1. A cooking-oven constructed with a continuous channel-way or pipe, arranged to receive superheated water from the generator under pressure, so as to conduct it in a continuous stream around the oven, and provided with a valve to control the discharge of the water from the oven, and also the pressure, constructed and operating substantially as and for the purpose set forth.

2. A cooking-oven constructed with a continuous channel-way or pipe surrounding it, arranged to receive superheated water from the generator, and provided with a cock for controlling the discharge of water therefrom, in combination with a hot-water tank arranged to receive the water therefrom, as shown and described.

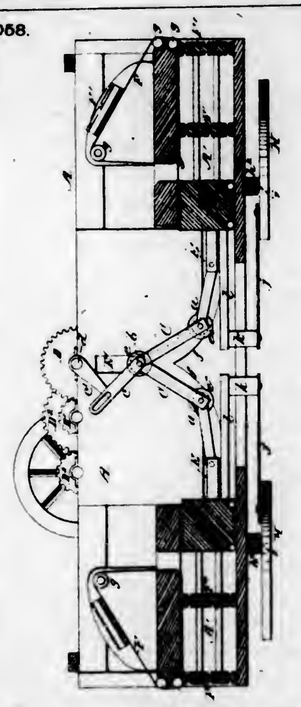
3. In a system for supplying superheated water as a heating medium for culinary purposes, the combination of a series of cooking apparatus, each constructed as described and independently controllable as to its heat-supply, an apparatus for superheating water, and pipes leading therefrom to the cooking apparatus and from the cooking apparatus to other vessels to be warmed, and thereby adapted to supply heat thereto and conduct it therefrom, substantially as described.

4. In an apparatus for cooking by means of superheated water, the combination of a local heater, a street pipe or pipes connected thereto to convey the superheated water therefrom, a pump for circulating the water therein, service-pipes for conveying the water therefrom, and arranged to radiate the heat into cooking ovens or chambers, and provided with cocks or valves for controlling the flow of water thereto or therefrom, substantially as shown and described.

5. A cooking apparatus provided with a connected water-heating vessel, combined with an apparatus for supplying superheated water, pipes for distributing such water to the cooking apparatus, and pipes by which, after its heat is utilized in the cooking apparatus, it is conducted into or through the said water-heating vessel to impart heat to its contents, substantially as described.

6. In an apparatus for cooking with superheated water, the water-heating apparatus, the circulating-tubing connected thereto, a force-pump or its equivalent for circulating the water therein, branch pipes for conveying the water to the ovens, cocks or valves for controlling the discharge of water therefrom, and the meter, combined to operate substantially as set forth.

252,058. BALING-PRESS. GORDON E. RICH, Brookfield, Mo. Filed Nov. 10, 1881. (No model.)



Claim.—1. In a baling-press, the combination, with plungers adapted to work in chambers, of toggle-joints and levers connected to the driving-power and adapted to work in a vertical slot having diverging horizontal slots, substantially as and for the purpose set forth.

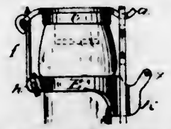
2. In a baling-press, the combination, with two plungers and endless belts and gates arranged as described, of operating mechanism, substantially as shown and described, whereby the simultaneous baling and delivery of two bales at one operation are accomplished.

3. In a baling-press, the combination, with the plungers B, working in chambers A' and adapted for joint operation, they having a toggle-joint and lever connection with a common driving-point, and their adjuncts adapted to travel in a vertical slot, E', having horizontal branched slots E upon flanged rolls *e e'*, to effect the simultaneous baling of the hay or straw in two bales at one operation and the delivery thereof from the press, substantially as set forth.

4. In a baling-press, the plungers B and chambers A, in combination with the feeding-plunger G and its trough or chamber A', the cam-slotted lever H, connected by a link to plunger B, and the slide A^2, connected to the plunger G, and having a stud or pin, *i*, working in the slot on lever H, substantially as and for the purpose specified.

5. In a baling-press, the combination, with the frame A, having the chambers A' and the plunger B, of the endless belt F, having the gates F', of any desired number, adapted to successively enter the aforesaid chamber by the action of the incoming mass of hay or straw, substantially as and for the purpose set forth.

252,059. BOTTLE STOPPER AND FASTENER. AUGUSTUS E. RICH, Fall River, Mass. Filed Aug. 19, 1881. (Model.)



Claim.—1. A bottle-stopper-fastening device consisting of a neck-band with an outwardly and upwardly projecting latch, in combination with a slotted lever arranged to engage detachably with the ear of a stopper-cap, said cap being linked to the neck-band, and the lever operating with a downward and inward motion, sliding upon said latch, but not detachable therefrom, all arranged substantially as and for the purposes set forth.

2. The metal cap-piece with ears *a* and *b*, one ear being linked to the neck-band of a bottle, in combination with a flexible valve-stopper having an elastic teat, substantially as and for the purposes set forth.

3. In combination, a flexible stopper with upwardly-projecting and self-supporting teat formed in one piece with cap-piece, having indent through its center, a means for connecting the cap-piece to the bottle-neck, and a neck-band having an outwardly and upwardly projecting latch or horn, with slotted lever arranged to detachably connect with cap-piece and said latch or horn, all substantially as and for the purposes set forth.

4. In combination with the flexible stopper and cap-piece, the link *f*, neck-band *e*, latch or horn *h*, and slotted lever D, having means for detachably engaging the cap-piece, substantially as and for the purposes set forth.

5. A stopper linked to a neck-band of a bottle, in combination with a detachable slotted lever operating on an upwardly and outwardly projecting latch or horn, the horn being attached to the neck-band, all arranged substantially as and for the purposes set forth.

6. A neck-band having an upwardly and outwardly projecting latch or horn, in combination with a slotted lever arranged to detachably engage or hook to the stopper and slide upon the horn, substantially as and for the purposes set forth.

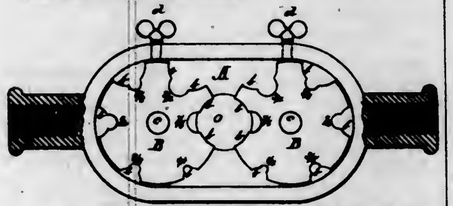
7. The metal cap-piece B, in combination with the flexible valve-stopper having an elastic teat supported by cross-bars, arranged as and for the purposes set forth.

8. A flexible stopper consisting of a rim to fit the mouth of a bottle and an upwardly-projecting teat supported by bars across the bottom, all molded or formed in one piece, substantially as described.

9. In a flexible stopper, a valve consisting of an upwardly-projecting elastic teat supported by cross-bars, said teat made to fit the hole in the downwardly-projecting metal top, all arranged substantially as described.

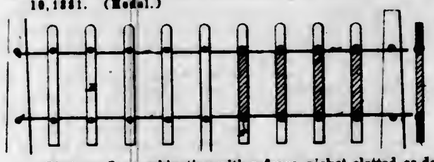
10. The combination of a flexible stopper having an elastic valve and a supported elastic teat with a metal cap-piece having an aperture, substantially as and for the purposes set forth.

252,060. SCREW-CUTTING DIE. JOHN SHERMAN, Cleveland, Ohio, assignor of one-half to Leonard H. Burt, same place. Filed Jan. 17, 1881. (No model.)



Claim.—The revolvingly-adjustable disks B B, having the several different-sized cutting-recesses provided with cutting-teeth *b b* in their periphery, in combination with the plate A, having set-screws *d d* and sockets for handles, substantially as described.

252,061. FENCE. NOAH SMITH, Kirkeville, Mo. Filed Aug. 10, 1881. (Model.)



Claim.—In combination with a fence-picket slotted as described, a supporting wire or wires bent or looped to receive the securing nail or pin and the securing-nail, substantially as described.

252,062. STAFF AND JEWEL PROTECTOR FOR WATCHES. SAMUEL P. STOVER, Parksale, Pa. Filed Oct. 7, 1881. (No model.)

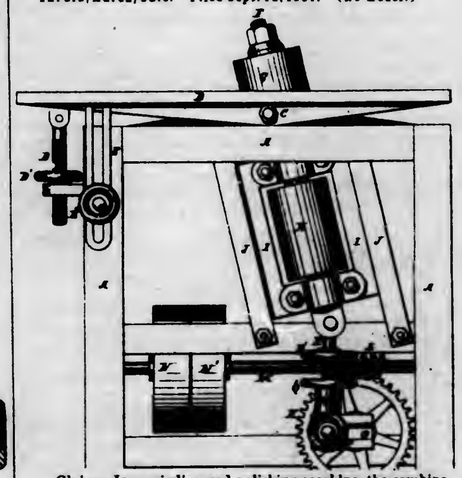


Claim.—1. A staff and jewel protector for watches, which consists of a strong open frame supported upon the watch-frame and extending above the staff and jewels to prevent the case being pressed in upon them, substantially as and for the purpose specified.

2. A staff and jewel protector for watches, which consists of a ring provided with means to support and secure it to the watch-frame, said ring being adapted to encircle the staff and prevent any pressure upon the staff and jewels due to the crushing in of the case, substantially as and for the purpose specified.

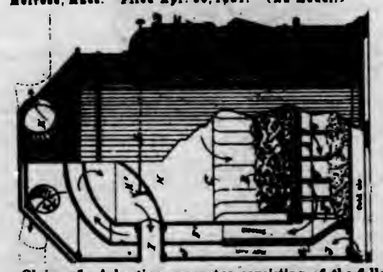
3. In a staff and jewel protector for watches, the disk J, supporting the ring E and having aperture B, in combination with a flange, K, or its equivalent, part of said flange being cut away at C to allow the adjustment of the regulating-lever, and the disk and flange being cut away at D for the admission of the bridge of the watch, substantially as and for the purpose specified.

252,063. GRINDING AND POLISHING MACHINE. JOHN L. TAPLIN, Akron, Ohio. Filed Sept. 12, 1881. (No model.)



Claim.—In a grinding and polishing machine, the combination of the following elements, to wit: a frame, A, a tilting table, B, pivoted near or at its center thereon, devices for tilting and clamping the table in position, an inclined shaft, F, carrying the pulley H, and an inclined grinding-cylinder G, a sash or frame, I, carrying the cylinder-shaft, the inclined guides J, between which the sash or frame moves in an inclined plane, and an adjustable pitman also adjustably connected with a crank-shaft on the axis of a driving-wheel, K, said members being constructed and arranged to operate substantially as and for the purposes described.

252,064. HEATING APPARATUS. LYELL T. TURWILLIGER, Melrose, Mass. Filed Apr. 30, 1881. (No model.)

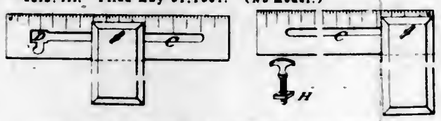


Claim.—1. A heating apparatus consisting of the following elements arranged in the order shown and described, viz: a central fire-pot through which a downward draft is maintained, a smoke chamber or passage for the heated products of combustion at each side of said fire-pot and opening from the base thereof, and a hot-air chamber outside of said smoke-chamber and separated therefrom by the radiator G, which receives at its base the direct caloric-current, whereby the air for respiration is warmed in passing upwardly, substantially as set forth.

2. A heating apparatus constructed, as described and shown, with oblique openings extending upwardly and outwardly from the base of the fire-pot, smoke-flues ascending therefrom, and an air-chamber outside said flues, adapted to be heated by the radiator which separates the flue from the air-chamber, substantially as set forth.

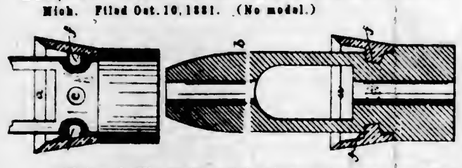
3. An open grate or fire-place having a central open fire-pot, a flue at each side thereof adapted to receive the products of combustion at or below the fire-pot level and communicating with the chimney, and a hollow column adjoining each flue and provided with a cold-air inlet at its bottom and one or more hot-air pipes at top, substantially as and for the purpose set forth.

252,065. BEVEL AND TRY SQUARE. CARROLL THOMAS, Lincoln, Ill. Filed May 31, 1881. (No model.)



Claim.—The blade of a try-square or bevel constructed in manner and form as herein described, in combination with thumb-screw and adjustable nut H, as described and set forth.

252,066. PUMP-PISTON. JOHN A. TUNER, Three Rivers, Mich. Filed Oct. 10, 1881. (No model.)



Claim.—1. The packing of the plunger of a pump, consisting of an encircling sleeve or band of india-rubber or its compounds, constructed with a series of lugs or teats on its inner side, the said lugs adapted to fit into a corresponding series of openings in the outer surface of the plunger for the purpose of retaining the packing in place, substantially as described.

2. The combination, in a common well-pump, of the plunger *b*, and the encircling rubber band or sleeve *a*, the latter provided with a series of teats or lugs, *f*, arranged to fit into a corresponding series of openings, *e*, in the plunger and retain the band or sleeve in place while the pump is being operated.

252,067. CLOTHES-BOILER. CORNELIUS B. VERDERY, Athens, Ga. Filed Nov. 24, 1880. (No model.)



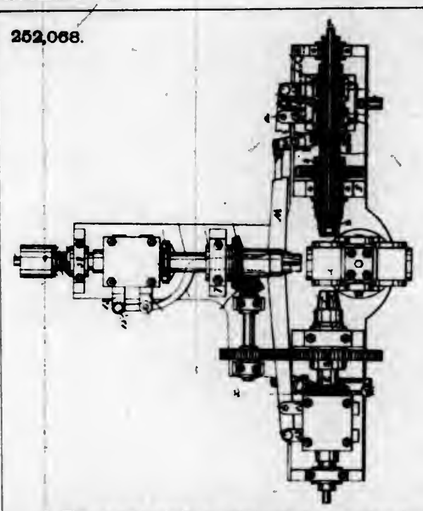
Claim.—In a clothes-boiler attachment, the combination, with an inverted-cup-shaped plate provided with a perforated depending flange and a hollow telescopic standard, of a flat perforated plate attached to the hollow standard above the cup-shaped plate, said flat plate provided with an upright annular flange and braces *a'*, connecting the outer edges of the flat and cup-shaped plates, substantially as set forth.

252,068. MACHINE FOR TAPPING AND REAMING. CALEB C. WALWORTH, Boston, Mass. Filed Apr. 19, 1880. (Model.)

Claim.—1. In a machine for tapping, substantially such as described, two or more rotating spindles and taps, combined with rods and heads adapted to positively move the cutters or dies outward and retract them independently of the movement of the spindles, substantially as described.

2. The rotating spindle, cutting devices, head, and rod r^2, a catch-box attached to the rod, a releasing device, and a spring to act upon the catch-box and withdraw the said rod to retract the cutters, combined with a series of levers and links operatively connected with one or more rods, *r*, of other spindles, to automatically retract the cutting devices of the other spindles, substantially as set forth.

252,068.



3. The rotating spindle provided with the screw-threads and the half-nut, combined with the wedge having the two shoulders and flat surfaces to lift the half-nut and obviate retrograde motion of the wedge by reason of pressure upon the half-nut, substantially as described.

4. The rotating spindle having screw-threads of different pitch, combined with half-nuts having screw-threads of like pitch, and means to move the half-nuts to engage either of them with its co-operating screw-thread of the spindle, according to the pitch of the thread desired for the fitting.

5. In a tapping-machine, a series of tapping-spindles having screw-threads, a series of half-nuts, and wedges to move them, and a lever to simultaneously operate the wedge for each spindle and its operative half-nut, substantially as described.

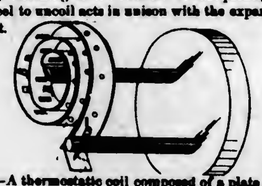
6. The continuously-rotating shaft B, its clutch splined thereon, and means to move it at the proper time, combined with the hollow shaft and its attached gears, two or more rotating spindles, and means to connect and rotate them in unison, substantially as described.

7. The lever M, to operate the wedges that lift the half-nuts, combined with the bar a^3, connected with the said lever, a tripping device to engage and hold the bar and lever in one of its extreme positions against the action of a spring, and means to disengage the tripping device from the said bar before the cutters are retracted and prior to moving the spindles, substantially as and for the purpose described.

8. In a tapping-machine, two or more tapping-spindles having radially-movable cutters, combined with mechanism to rotate the said spindles continuously in one direction both when the spindles are being moved forward to cut a thread and when being retracted, substantially as described.

252,069. THERMOSTATIC COIL. HARRIS W. AXFORD, Chicago, Ill. Filed Jan. 20, 1881. (Model.)

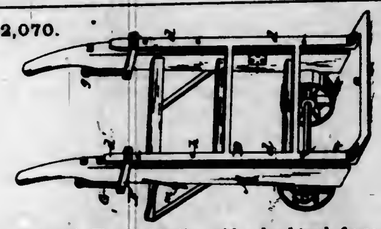
Brief—The steel and rubber are riveted together and afterward coiled by softening of the rubber. Consequently, the tendency of the steel to uncoil acts in unison with the expansion of the rubber by heat.



Claim.—A thermostatic coil composed of a plate of hard rubber and a plate of spring-steel, the hard rubber being bent so as to hold the spring-steel in a coiled form, that it may constantly tend to enlarge the coil and give increased sensitiveness to the thermostat, as and for the purpose specified.

252,070. WEIGHING ATTACHMENT FOR HAND-TRUCKS. THADDEUS W. BOYLE, Augusta, Ga. Filed May 20, 1881. (No model.)

252,070.



Claim.—1. The combination, with a hand-truck frame, of a weighing-frame resting upon the upper surfaces of the side pieces of said truck, and provided at its lower end with a suitable lifting-piece, one or more weighing-springs connected with the truck and also with said weighing-frame, and a suitable index, substantially as and for the purpose described.

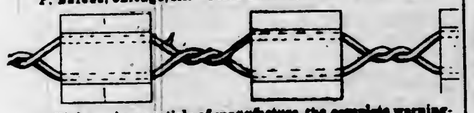
2. The combination, with the side pieces of the truck, of the weighing-frame having the side bars, *d*, and lifting-piece *e*, loops F, and the springs G, connected at one end with said loops and at the other end with the side pieces of the truck, substantially as described.

3. The combination, with the side pieces of the truck and the weighing-frame having the side bars, *d*, of suitable anti-friction devices arranged between said side bars and the side pieces of the truck, substantially as and for the purpose set forth.

4. The combination, with the side pieces of the truck, having the recesses B and plates C, partially overhanging said recesses, of the weighing-frame, having its side bars, *d*, provided with friction-rollers *i*, playing in said recesses under said plates, substantially as described.

5. The combination, with the side pieces of the truck and the weighing-frame having its side bars, *d*, arranged above said side pieces, of the friction-rollers *h'*, arranged under said side bars, substantially as and for the purpose set forth.

252,071. WARNING-STRIP FOR BARBED FENCES. ORLANDO F. BRIGGS, Chicago, Ill. Filed Nov. 14, 1881. (No model.)



Claim.—As an article of manufacture, the complete warning-strip for barb-wire fences, consisting of thin flat metal tablets rigidly secured to two stringer-wires, substantially as specified, constituting a continuous strip capable of being readily spooled and handled.

252,072. BAG OR SACK FOR STORING OR TRANSPORTING FERTILIZERS. C. ELTON BUCK, Wilmington, Del., assignor to Walton Wharn & Co., same place. Filed Oct. 6, 1881. (No specimens.)

Claim.—As a new article of manufacture, a textile or fibrous sack or inclosing integument for inclosing phosphates, guanos, and fertilizers, the threads, fibers, or substance of which is coated, saturated, or impregnated with a soluble silicate.

252,073. CHECK-HOOK FOR HARNESS. HENRY C. BUELL, Rome, N. Y. Filed June 18, 1881. (No model.)



Claim.—1. A harness check-hook consisting of the main hook *a*, base *b*, and auxiliary hook *c*, rising centrally from said base, its end extending backward and terminating nearly on a line with the main hook *a*, and provided with the shoulder *r*, all substantially as specified and described.

2. A harness check-hook consisting of the main hook *a*, base *b*, and auxiliary hook *c*, rising centrally from said base, its end extending backward and terminating nearly on a line with the main hook *a*, adapted to receive and retain a strap, *c*, and provided with the shoulder *r*, substantially as specified and set forth.

252,074. STATIONARY WASH-STAND AND FIXTURES. PETER H. BURNS, Brooklyn, N. Y. Filed May 24, 1881. (No model.)

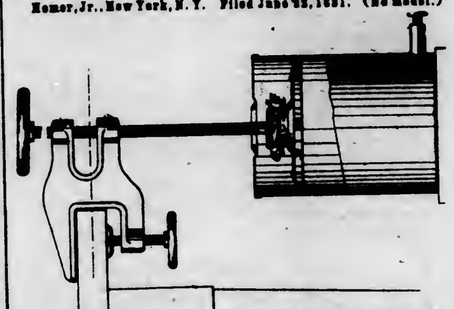


Claim.—1. A stationary wash-stand composed of a supporting-slab, a basin provided with outlet and overflow openings, and an inlet-opening in the wall of the basin, and a valve constructed, as described, to allow the flow of hot or of cold water, or of hot and cold water mixed, said valve being supported by the slab and below the same, and provided with a stem or key projecting through the slab but flush with the upper surface thereof, all arranged as set forth, so as to leave the top of the stand free from obstructions of any kind.

2. A stationary wash-basin constructed, as described, with outlet and overflow openings, and with an inlet-opening in its wall, inclined as shown, to prevent the water from sparting across the basin, all arranged as shown, so as to leave the inner surface of the basin free from projections or obstructions.

3. A valve for a wash-basin constructed of a hollow spud and inclosing-barrel, two inlet-openings in the barrel for hot and cold water, corresponding inlet openings or opening in the spud, and discharge-openings in the side and bottom of the spud and barrel, all as set forth, so that independent streams of hot and cold water may be admitted into the hollow chamber of the spud, and may be discharged separately or mixed through either or both discharge-openings.

252,075. SCREW-PRESS. WILLIAM D. CARTER, Brooklyn, assignor to Lawson Valentine, Henry C. Valentine, and Charles S. Homer, Jr., New York, N. Y. Filed June 22, 1881. (No model.)



Claim.—1. A screw-press for a paint-can, constructed with a loosely-fitted screw-cap at one end of the screw-shaft thereof, and also with a jaw and clamping-screw, as a new article of manufacture.

2. In a screw-press for a paint-can, a screw-rod provided at one end with a loosely-fitting screw-cap, as and for the purpose described.

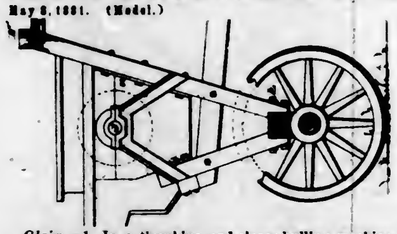
252,076. CAN FOR IVORY-BLACK, &c. WILLIAM D. CARTER, Brooklyn, assignor to Lawson Valentine, Henry C. Valentine, and Charles S. Homer, Jr., New York, N. Y. Filed May 9, 1881. (No model.)



Claim.—1. A can for ivory-black and other substances, provided with an internal and vertically-adjustable diaphragm, with an aperture through its center surrounded by a projecting nozzle, with screw-threads on its exterior, through which the can may be filled, and by which the diaphragm may be vertically adjusted by means of a screw-press, substantially as and for the purpose described.

2. In a can for containing ivory-black, &c., an interior and vertically-adjustable diaphragm provided with a threaded nozzle projecting through the head of the can, in combination with a screw-cap, G, substantially as and for the purpose described.

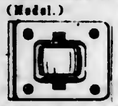
252,077. THRASHING AND CLOVER-HULLING MACHINE FRAME. CONSTANTINE G. CASE, Battle Creek, Mich. Filed May 6, 1881. (Model.)



Claim.—1. In a thrashing and clover-hulling machine, the combination, with a bolster, of beams secured thereto in an upwardly-inclined direction, said beams being held in place by sills and a transverse brace and adapted to support the cylinder, substantially as set forth.

2. In a thrashing and clover-hulling machine, the combination, with a bolster and upwardly-inclined beams secured thereto, said beams being held in position by sills and a transverse brace, of metallic end pieces having flanges by which they are secured to the said beams, and a yoke, the said end pieces and yoke adapted to support the shaft carrying the cylinder, substantially as set forth.

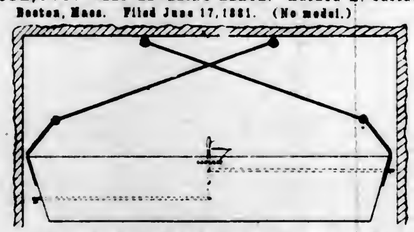
252,078. TRUNK-CASTER. JOHN J. CAWELL, Newark, N. J. Filed Feb. 12, 1881. (Model.)



Claim.—1. In a caster having two plates rigidly secured together and an aperture therethrough for the reception of a roller, the combination, with one of said plates, of ears projecting outwardly therefrom, said ears and plate being perforated to receive the axle of the roller, which axle is held in position by joining the said two plates, substantially as and for the purposes set forth.

2. In a caster having two plates rigidly secured together in close contact, except over the axle, and provided with an opening therethrough for the reception of a roller, a roller having an axle which is held in position by the joining of the said plates, substantially as and for the purposes set forth.

252,079. SELF-LEVELING BERTH. ARTHUR H. CROSBY, Boston, Mass. Filed June 17, 1881. (No model.)



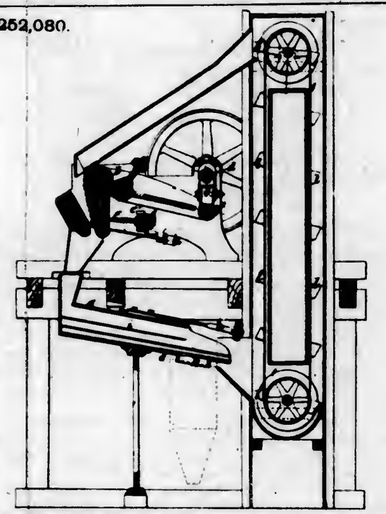
Claim.—A self-leveling berth or other structure for ships, suspended by four oblique rods or rigid hangers arranged in pairs, the rods of each pair extending diagonally from a single point in the center of one end of the berth, and pivoted independently to points of support beyond the transverse axis and on opposite sides of the longitudinal axis of the berth, as set forth.

252,080. MACHINERY FOR CRUSHING ORES, &c. GEORGE DALTON, Leeds, County of York, England. Filed Oct. 24, 1881. (No model.) Patented in England Jan. 27, 1880.

Claim.—1. The combination, with the fixed and movable jaws and operating-shaft of a crusher or reducing apparatus, of a rigid lever fulcrumed in the machine-frame, means for connecting it with the movable jaw and shaft, as explained, for imparting an up-and-down movement from the latter to the former, toggle-blocks, and one or more toggles arranged between stationary toggle-blocks and said movable jaw, so as to cause the latter to approach the fixed jaw by the downward movement thereof, substantially as described.

2. The combination, with the movable jaw and operating-shaft of a crusher or reducing apparatus, of a lever fulcrumed between the said jaw and shaft and pivoted at one end to said jaw,

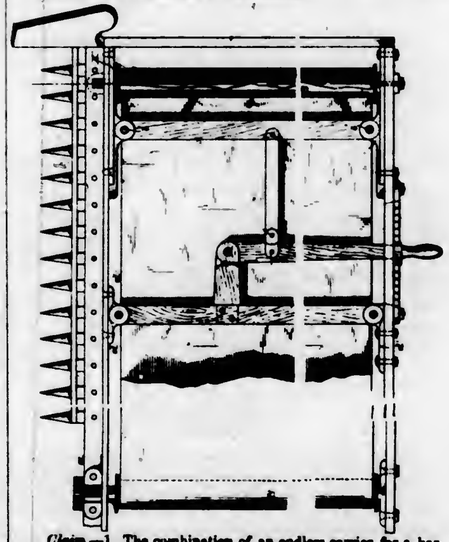
252,080.



connecting-rod, crank on said shaft, one or more toggles, and stationary toggle-blocks, substantially as described.

3. The combination, with a crusher or reducing apparatus comprising fixed and movable jaws, and mechanism, as explained, for imparting to the movable jaw a movement up and down, and of approach to and recession from the fixed jaw, of a sieving apparatus located with reference to said crusher or reducing apparatus as shown, and an elevator arranged to lift and deliver between the jaws of the crusher the material too large to pass through the sieving apparatus, substantially as described.

252,081. GRAIN-CARRIER. JOHN S. DAVIS, Toledo, Ohio, assignor to the Toledo Mower and Reaper Company, same place. Filed Oct. 15, 1881. (No model.)



Claim.—1. The combination of an endless carrier for a harvester, the supporting-rollers for the carrier, located at the ends of the carrier-frame, the adjustable supporting mechanism between said rollers, and between the upper and lower portions or opposite surfaces of the carrier, and means for positively adjusting and securing said mechanism, substantially as and for the purpose herein before set forth.

2. The combination of the cross-heads provided with bearings the carrier-supporting roller mounted in said bearings, the guide

ways for the cross-heads, and the adjustable bar connecting the cross-heads, substantially as and for the purpose hereinbefore set forth.

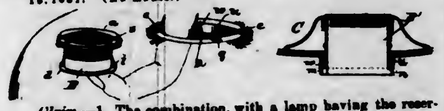
3. The combination of the carrier, its supporting-rollers, the sliding boxes or cross-heads provided with bearings for one of said rollers, the cross-bar between the upper and lower portions of the carrier, with which bar the cross-heads are jointed, and the adjusting-lever linked to said bar, substantially as and for the purpose hereinbefore set forth.

4. The combination, substantially as hereinbefore set forth, of the adjustable carrier-supporting roller, the sliding boxes, the guideways, the resilient bar having jointed connection at its ends with said sliding boxes, the adjusting-lever, the link or connecting-bar, and means for securing the lever in its adjusted position.

5. The combination of the platform, the carrier, the roller mounted in fixed bearings, the adjustable roller, the cross-heads provided with bearings for said adjustable roller, the bar connecting said cross-heads, the link-rod, the lever, and the cross-bar with which said lever has pivotal connection, these members being and operating substantially as hereinbefore set forth.

6. The combination of the platform, the adjustable carrier-supporting roller, the adjusting and supporting mechanism therefor, the slotted back board, and the rack with which the detent of the adjusting-lever engages, substantially as and for the purpose hereinbefore set forth.

252,082. LAMP. JOHN M. DEXTER, Elmira, N. Y. Filed May 16, 1881. (No model.)

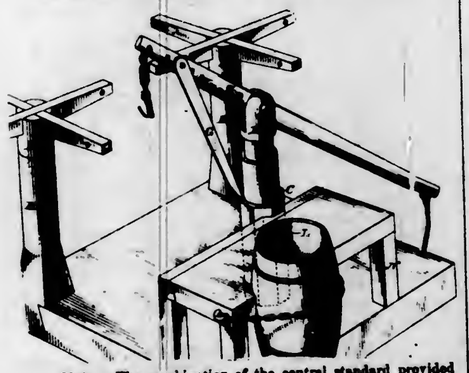


Claim.—1. The combination, with a lamp having the reservoir-opening *a*, grooves *c*, threaded tube with lower flange, *d*, and lugs *i*, and ring C, of a packing, *c'*, arranged substantially as set forth.

2. The combination of the threaded tube B', its lugs *a m*, the reservoir with its flange, grooves *c* and *q*, and notch *w*, and threaded ring C, substantially as set forth.

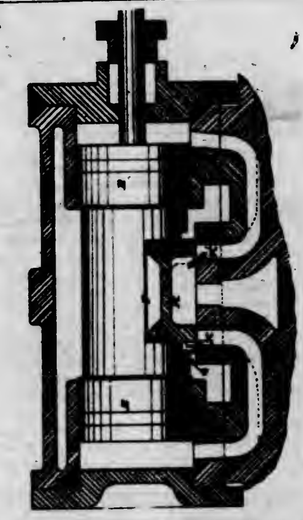
3. The ring C, formed with a sunken shoulder, *s*, and notch *t*, in combination with a cap-plate flush with said ring when down, a spring for holding down said cap-plate, and means for attaching said ring to the lamp-reservoir, substantially as set forth.

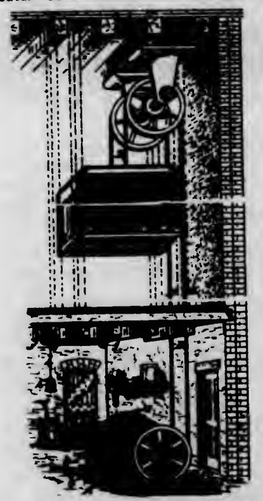
252,083. BUTCHERING APPARATUS. GEORGE F. DICKINSON, Orland, Ind. Filed Nov. 17, 1881. (No model.)



Claim.—The combination of the central standard provided with the swivel-cap and notch C, the lifting-lever and its brace, the recess L, and the table supported therein, the scalding-barrel connected with the table, and posts provided with the pivoted caps and cross-arms, constituting an improved portable butchering apparatus, substantially as and for the purpose described.

252,084. DEVICE FOR STOPPING THE REVOLUTIONS OF THE DRUM IN ELEVATING MACHINERY. GEORGE DAYDEN, Boston, Mass. Filed Oct. 17, 1881. (No model.)





Claim.—1. In an elevating-machine, the mode of stopping the revolving of the drum upon the elevator-car being hung up and the cable holding said car becoming loose by means of a loose worm-gear upon the drum-shaft, with pawls attached to said worm-gear, said pawls operating in connection with a ratchet-gear, said ratchet-gear being attached to an auxiliary drum, said auxiliary drum being made fast to the main drum and operating a brake, substantially as described.

2. In combination with an elevator-car, the drum A, the cable B, the drum-shaft *d*, the loose worm-gear *g*, with pawls *e* attached thereto, the ratchet-gear *b*, the auxiliary drum *a*, with brake-cord *h*, pulleys *j*, and weight *h'*, and the worm-shaft shown at the point *f*, constructed and arranged substantially as described and shown, and for the purpose set forth.

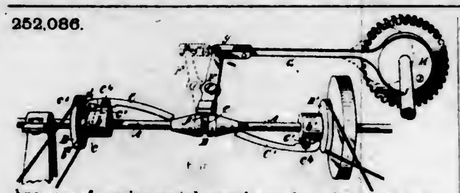
252,085. DEVICE FOR RENDERING A PULLEY TIGHT OR LOOSE UPON A SHAFT. GEORGE DUDLEY, Boston, Mass. Filed Oct. 17, 1881. (No model.)

Claim.—1. In an elevating-machine, the mode of rendering a pulley practically tight upon a shaft and in turn loosening the same

252,086. AUXILIARY PISTON VALVE FOR STEAM-ENGINE. GEORGE E. DOW, San Francisco, Cal. Filed Aug. 6, 1881. (No model.)

Claim.—The auxiliary piston E, recessed at F, in combination with the main and auxiliary valves G H, fitting said recess and moving coincidently, the main valve being made shorter than the auxiliary valve, substantially as and for the purpose herein described.

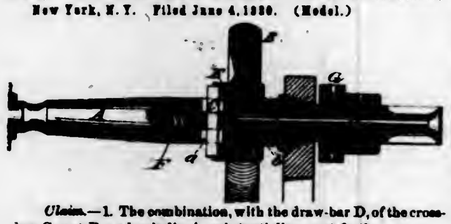
252,086.



by means of a spring carried around over the periphery of the pulley-hub and inside of a sleeve, which sleeve is keyed fast upon said shaft, the two ends of said spring holding it firmly in and to said sleeve, said spring to be operated by a slotted lever-bar, the end of said lever-bar being raised and lowered by a loose tapering slotted sleeve, said latter sleeve to be moved back and forth by means of an eccentric, and an oscillating lever forming the connection between the eccentric-rod of said eccentric and said loose annular slotted sleeve, substantially as described and shown.

2. In combination, the pulleys B and B', with hubs b^2, the two corresponding springs e, with ends or lips e^2 and e^3, the corresponding sleeves b and b', with lips c', the corresponding levers C and C', with tapering slots d, the worm-shaft A, the tapering loose sleeve D, with annular slot e, the oscillating lever F, provided with the stud f, the cross-head g, the eccentric H, with eccentric-rod G, and the shipping-shaft J, operated by the shipping-cord, all constructed and arranged substantially as described, and for the purpose set forth.

252,087. WATCH-MAKER'S LATHE. FREDERIC ECAUBERT, New York, N. Y. Filed June 4, 1880. (Model.)



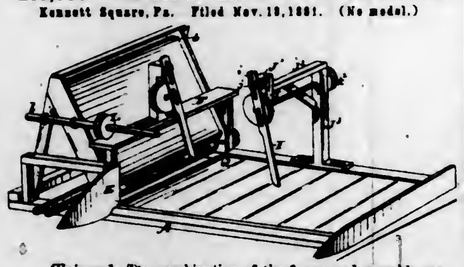
Claim.—1. The combination, with the draw-bar D, of the cross-key C, nut B, and spindle A, substantially as set forth.

2. The combination, with the spindle A, of the draw-bar D, key C, spring F, washer E, having a flange or rim to retain the key, and the nut B upon the screw-threaded spindle, substantially as set forth.

3. The combination, in a lathe, of the spindle A, chuck-base G, chuck, draw-bar D, key C, spring F, flanged washer E, and nut B, substantially as set forth.

4. The chuck-base G, having peripheral holes for the hold-fast H, in combination with the chuck and the spindle A, into which spindle the chuck-base is screwed, substantially as set forth.

252,088. HARVESTING-MACHINE. DAVID W. ESTERLY, Kennett Square, Pa. Filed Nov. 18, 1881. (No model.)



Claim.—1. The combination of the frame and movable conveyer of a harvester with a movable arm or slotted lever suspended over said conveyer, and operating mechanism to cause it to advance or press the grain upon said conveyer in the direction of the path of the latter, substantially as and for the purpose described.

2. The combination of the conveyer, the elevator, the foot-board of a harvester, and the horizontal arm J', with a standard upon the end of said arm, a pulley provided with a crank-pin, and a slotted lever adapted to sweep over the conveyer in the direction of the path of the latter, substantially as and for the purpose described.

3. The combination of the frame and conveyer of a harvester with a slotted lever provided with a yielding bearing, p, a crank, and operating mechanism, substantially as and for the purpose described.

4. The combination of the frame and conveyer of a harvester with a crank, a slotted lever adapted to swing over said conveyer, and a shoe, I', pivoted to the lower end of said lever, substantially as and for the purpose described.

252,089. EXPANSION COMB OR REED FOR WARPING OR BEAMING MACHINES, &c. THOMAS C. ESTWICKLE, Lowell, Mass. Filed Sept. 27, 1881. (No model.)

Brief.—The comb or reed, which is composed of sections hinged together, is set upright on the base-plate of the comb-box. The comb-box is provided with two rails, one of which is fixed to the base-plate, while the other is movable thereon. When the movable rail is caused to move toward the fixed rail the comb, which is placed between the two, is made to expand; but when the said rail is moved in an opposite direction the comb is caused to contract by means of the spiral springs, which are connected to the adjoining sections.



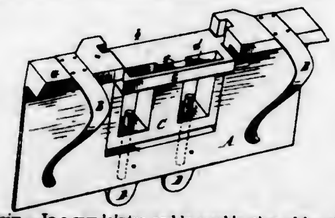
Claim.—1. An expansion comb or reed for warping-machines and other purposes, consisting of a series of dent-carrying sections hinged together, substantially as and for the purposes hereinbefore set forth.

2. The comb-sections hinged together and provided with dents or teeth, in combination with springs connected to adjoining sections, substantially as and for the purposes hereinbefore set forth.

3. An expansion-comb composed of sections hinged together and armed with dents or teeth, in combination with a comb box or holder, and means, substantially as described, for setting the comb-sections at varying angles with respect to one another, substantially as and for the purposes hereinbefore set forth.

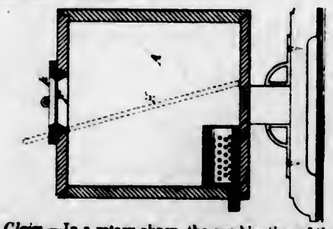
4. The comb-sections provided with dents and hinged together, in combination with a comb-box having one side or rail movable to and from the other, so as to narrow and widen the box, means for adjusting the same, and springs which move the comb-sections in a direction opposite to that in which they are moved by the movable box side or rail.

252,090. SAW-JOINTING DEVICE. HARVEY FERGUSON, Lestaville, Mich. Filed May 25, 1881. (No model.)



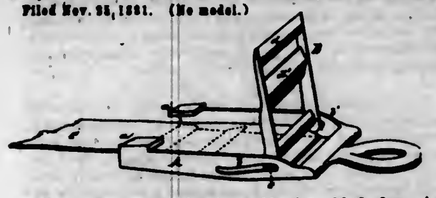
Claim.—In a saw-jointer, and in combination with a plate, A, thereof, provided with a flange, a, and springs B, the adjustable slide provided with a slotted flange, b, and a thumb-screw, D, substantially as and for the purposes specified.

252,091. CHURN. JAMES F. FERGUSON, Burlington, Vt. Filed Jan. 14, 1881. (Model.)



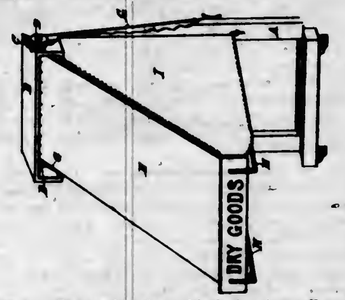
Claim.—In a rotary churn, the combination of the revolving body A with the platform H, notched to fit the opening F in the top of the body, substantially as shown and described.

252,092. STRAP-HOLDER. PETER PAGEN, Cleveland, Ohio. Filed Nov. 28, 1881. (No model.)



Claim.—In a strap-holder, the combination, with the frame A, provided with the cross-pieces a d', inclined legs a a', and slots b, of a sliding piece, B, having legs c, adapted to the slots b, and constructed, substantially as described, so that its free end will be secured upon a strap under the legs a a', substantially as set forth.

252,093. AWNING. LEWIS FOX and SPENCER WERRINK, Cleveland, Ohio. Filed Aug. 26, 1881. (No model.)



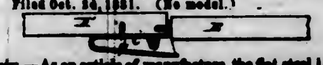
Claim.—The combination, with the housing, roller, and pulleys, of the awning E, end board, F, cord G, and braces H, hinged at one end to the window-frame and at the other end to the end board, substantially as and for the purpose set forth.

252,094. VALVE. WILLIAM GARDNER, Troy, N. Y., assignor of one-half to Hilton G. Jones, same place. Filed Aug. 1, 1881. (No model.)



Claim.—The combination, with a valve, B, provided with a slot, b', or other similar device for receiving a detachable grinding-tool, of the stem b, jointed to the valve B and provided at its axial center with an opening, C, for the admission of a detachable grinding-tool, as herein described, the opening C being adapted to receive a stopper, D, as and for the purpose herein specified.

252,095. BURGLAR-ALARM. JEROME GILES, South Bend, Ind. Filed Oct. 24, 1881. (No model.)



Claim.—As an article of manufacture, the flat steel U-shaped spring A, the short leg of which is provided with the nipple B and screw-hole c, and the long leg of which is provided with the aperture d, and arranged, when not under strain, to rest upon the nipple B, substantially as shown and described.

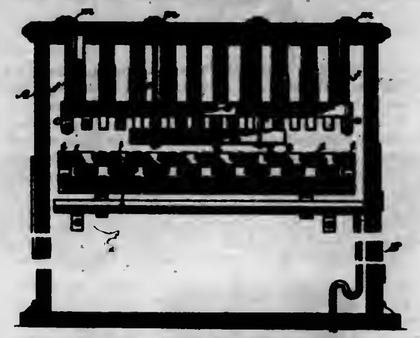
252,096. MANUFACTURE OF SHEARS AND SCISSORS. ROBERT A. GOODFELLOW, New York, N. Y. Filed Sept. 29, 1881. (No model.)

Claim.—The steel blade having a plate or tang, 2, with a hole in it, in combination with the metal handle having a pin, 4, upon the outside of the shank, substantially as set forth, so that the steel of the blade comes outside of the shank of the handle in welding the parts together, substantially as set forth.

252,096.



252,097. REFRIGERATOR. HENRY C. GOODELL, Atchison, Kans. Filed May 7, 1881. (No model.)



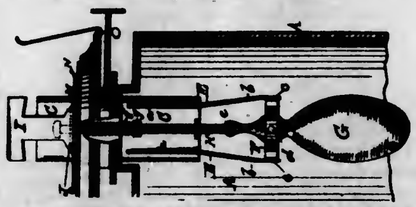
Claim.—1. The described cage, consisting of the beams c d e, bars a b, and suspending-rods, substantially as described.

2. The combination, with the ice-cage and the refrigerating-chamber, of the sliding frame E and door C, substantially as described.

3. The draining apparatus consisting of the side bars, n and o, notched as described, and the drain-boards arranged on said bars, as set forth.

4. The combination of the bars n and o, notched and provided with the dowel-pins, as described, with the three series of drain-boards arranged on said bars, as set forth.

252,098. SAFETY CAR-LAMP. CHARLES E. GRANNISS, New Haven, Conn. Filed July 28, 1881. (No model.)



Claim.—1. The combination of the pendulum or weight G, having recess e in its top, ring F, trunnions or pivots c d, rods or plates E, rod H, and encircling spring f, and the hooded extinguisher I, pivotally connected to the top of the rod H, substantially as and for the purpose set forth.

2. The combination of weight G, ring F, pivots c d, spring-rod H, hooded extinguisher I, and hinged lever M.

3. The combination of the weight or pendulum G, having recessed upper end, the spring-rod H, adapted to rest within the recessed portion of said weight, the rods or plates E, flaring at their lower ends, the ring F, pivoted at c to said rods, and having pivots d, upon which the weight or pendulum G is supported, the hooded extinguisher I, secured to the top of the rod H, and the hinged lever M, substantially as and for the purpose set forth.

252,099. CUFF-HOLDER. JOSEPH P. GUIGNON, St. Louis, Mo. Filed Apr. 16, 1881. (No model.)



Claim.—The band A, having button *a* on inner side of one end, stud *b* on outer surface of same end and inclined therefrom, loop *a'*, inclosing both ends, slot *b'*, and ornamental button *b²* on overlapping end, in combination with cuff B, substantially as shown and described.

252,100. ADJUSTABLE CLASP FOR BOOKS. ALFRED C. HAPGOOD, New York, assignor to William C. Horn, Brooklyn, N.Y. Filed May 31, 1881. (No model.)



Claim.—1. In a clasp adapted to be secured to a book, the combination, with the two-part extensible clasp A *l*, of a right and left hand screw and thumb-wheel, substantially as set forth.

2. In a clasp adapted to be secured to a book, the combination, with the two-part extensible clasp A *l*, of the right and left hand screw and thumb-wheel and the cap-plate *t*, through a slot in which cap-plate the thumb-wheel projects, substantially as specified.

252,101. POCKET TAPE-MEASURE. EDWARD P. HAPP, Brooklyn, N.Y. Filed Aug. 16, 1881. (No model.)

Brief.—Combines a tape-measure, a mirror, and a pin-cushion.



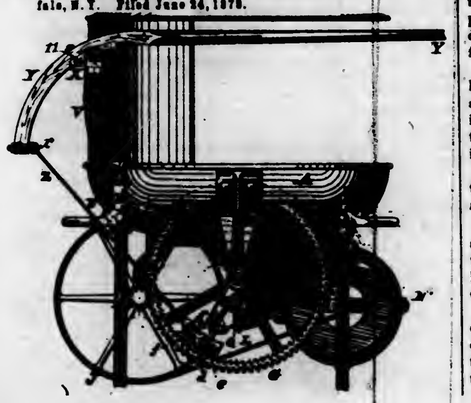
Claim.—The combination, in pocket tape-measure, of the spun sheet-metal case A, provided with the interior shoulder, *a*, the looking-glass B, forming the cover of the case and secured by the inturned edge *a'* of the metal part A, the moving parts contained below the shoulder *a*, and the disk E, interposed between the looking-glass and the moving parts, said disk resting upon the shoulder *a* and supporting and protecting the looking-glass, substantially as described.

252,102. CUFF ADJUSTER AND SUPPORT. ANDREW J. HALSEY, Newark, N.J. Filed July 14, 1881. (No model.)



Claim.—The combination, with the cuff, of the elastic band, arranged and secured within the said cuff, and the button or stud *a*, passed through perforations in said cuff and band and holding said parts intact, the whole being arranged and adapted to operate substantially as and for the purposes set forth and shown.

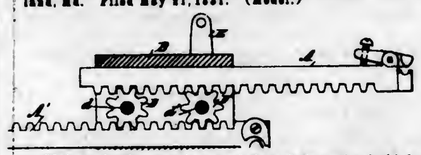
252,103. PORTABLE FORGE. CHARLES HAMMELMANN, Buffalo, N.Y. Filed June 24, 1879.



Claim.—1. In forges, the combination, with the handle Y, pivoted within the fork X on the standard V, and provided with an eyebolt, *z*, of the rod Z, hung to said eyebolt at one end and provided with a double eye, *g*, engaging the flange *f* on the socket *e* at the other end, the stud *d*, arm D', pawl, ratchet-wheel, and forge-operating mechanism, substantially as described, for the object stated.

2. The combination, with the arm D', having the stud *d* and the pawl engaging the serrated or ratchet wheel, of the socket *e*, having a flange, *f*, formed integral therewith and provided with an aperture at right angles with the aperture in said socket *e*, pin or bolt *f'*, double eye *g*, rod Z, handle Y, bearing-piece 11, fixed to said handle Y, swivel-fork X, and support *y*, as and for the object specified.

252,104. WIRE-STRETCHER. SIMON P. HARBAUGH, Cumberland, Md. Filed May 21, 1881. (Model.)



Claim.—A wire-stretcher consisting of the racks A A', having a wire-clamp at one end, the sleeve-frame B, having extensions *a a* with studs *c*, the shafts *d d'*, of which one carries a hand-crank, E, and the pinions D D', the whole adapted to be used in putting up a wire fence, as described.

252,105. BOOT AND SHOE HEELING MACHINE. WILLIAM J. HAPPERMAN, Lynn, Mass., assignor of fifty-seven one-hundredths to Horace R. Burdick, Nicholas J. Mooney, Edward L. Morris, William D. Robertson, and Walter M. Tomlinson, all of Boston, Mass.; said Morris assignor to said Burdick, Mooney, Robertson, and Tomlinson. Filed Aug. 16, 1881. (No model.)



Claim.—1. In a heeling-machine, the combination of a gang of nail-holders supported by a rotary frame or head, a gang of drivers adapted to move vertically in guides above said nail-holders, and normally elevated above the nail-holders by a spring or its equivalent, a cam to depress the driver-bar and force the drivers into the nail-holders, and a fixed inclined surface adapted to partially depress the driver-bar before it is acted on by the cam, as and for the purpose specified.

2. In a heeling-machine, the combination of a series of gangs of nail-holders supported by a rotary frame or head, a last to support the boot or shoe, a series of gangs of drivers corresponding with the gangs of nail-holders and elevated above the same by springs, so that normally the nail-holders will be unobstructed by the drivers, a fixed inclined surface adapted to partially depress the driver-bar of each series before said bar comes into operative position over the last, and a cam adapted to further depress the driver-bar when the same comes to its operative position, as set forth.

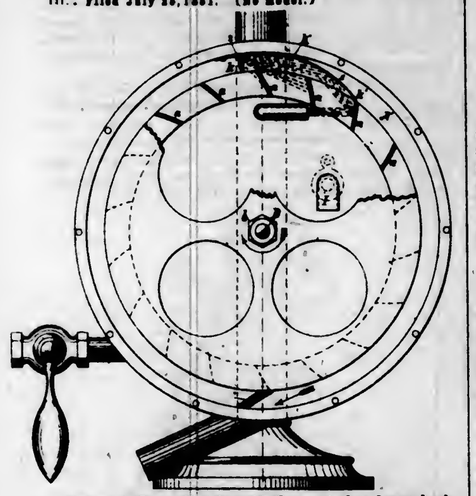
3. In a heeling-machine, the combination of a gang of nail-holders with a frame for said holders, constructed to permit of the adjustment of each of said holders radially in and out, and clamping devices for securing the holders in adjusted position, whereby the holders are adapted to be set for placing the nails uniformly in heels of different sizes, substantially as described.

4. The combination of the gang-holding frame composed of the connected top and bottom plates, A A, having radial slots B, and the nail-holders adjustable in said slots, as set forth.

5. The nail-holders, each composed of a block, *a*, reduced in size where it enters the slots in the holding-plates and screw-threaded at its upper end for the accommodation of a nut, and having a longitudinal nail-receiving aperture, *c*, and spring-jaws *c a*, substantially as described.

6. The combination, with a nail-holder, of the spring-jaw D, extending down under the said holder and arranged to bear against one side of the point of the nails, so as to give the nail an inclination corresponding somewhat to the inclination of the outside of the heel, substantially as described.

252,106. WATER-MOTOR. GEORGE A. HARRINGTON, Decatur, Ill. Filed July 28, 1881. (No model.)



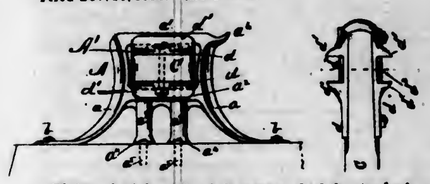
Claim.—1. In combination with the penstock and open-bucketed wheel, the inside jet-tube, J, placed within the inner circle of the wheel in the manner shown, so that the jet, after operating upon each bucket in succession, as the wheel revolves around it, will pass out through that portion of the wheel containing the buckets and against the scroll K, as and for the purpose set forth.

2. The combination, with the penstock, case, and inside jet-tube, of the wheel having buckets open at each end, with parallel sides by which they are secured to the wheel, each forming an evolute curve, by means of which the angle presented to the jet is constant for all positions, substantially as and for the purpose specified.

3. In combination with the penstock, case, transverse shaft, and wheel, the covered air-duct having an adjustable outer cover, *i*, substantially as set forth.

4. The combination, with the open-bucketed wheel and penstock, of the irregular scroll K, having lower projections, *h*, and forward projection, *h'*, for the purpose of further utilizing the otherwise dead water, as herein shown and described.

252,107. SLED. CHARLES M. HINMAN, Sauk Centre, Minn. Filed Nov. 23, 1881. (No model.)



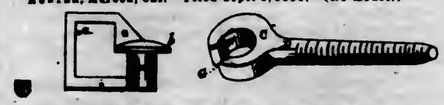
Claim.—1. A knee for sleds, composed of the standards *a a*, having their lower ends flared outward on the top of the runner, and having the cross-bars *a' a²* arranged to provide an eye or opening, A', to receive the end of the beam, and having one or more supports, *a³*, under the cross-bar *a²* and resting on the runner, substantially as set forth.

2. The combination, with the knee A, provided with an eye or opening, A', and the beam C, of the beam-plates *d d*, provided with jaws *d' d'*, arranged to embrace the upper and under cross-bars of the knee and hold the end of the beam, substantially as set forth.

3. The beam-plates *d d*, constructed with the jaws *d' d'*, and with the transverse convex bearing-surface d^3 in the space or channel between the jaws, in combination with the beam C and knee A, provided with an eye or opening, A', the said knee being held so that it has a rocking or swinging motion on the end of the beam, substantially as set forth.

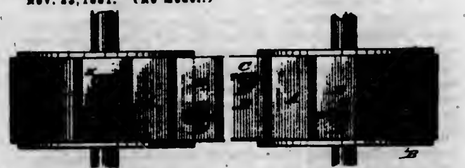
4. A sled-knee constructed to hold the end of the cross-beam, and provided with a horn or curved projection, a^3, arranged about on a level with the upper side of the cross-beam, substantially as set forth.

252,108. HARNESS AND TRACE COUPLING. GEORGE W. HUNTER, Merced, Cal. Filed Sept. 6, 1881. (No model.)



Claim.—The link A, with its bolt *a*, having the head *b*, as shown, in combination with head C, provided with the shank D, said head having the hole F, made eccentric to its circumference, and the slot G, so that the bolt may be introduced and tightened by turning within the hole, substantially as and for the purpose herein described.

252,109. DRIVING-BELT. THOMAS JACK, Auburn, N.Y. Filed Nov. 25, 1881. (No model.)

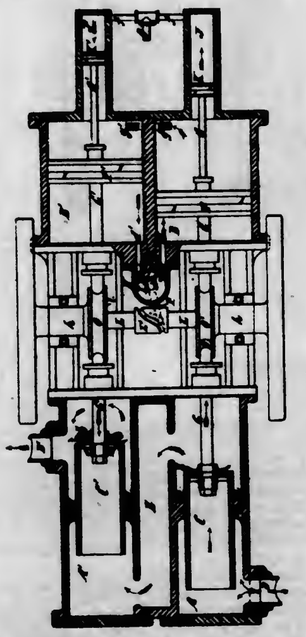


Claim.—1. A drive-belt consisting of alternate imperforate or solid and perforated plates, the perforations being arranged alternately on opposite sides of a longitudinal central line, substantially as set forth.

2. The combination, with the driving-pulleys having radially-projecting lugs or studs arranged alternately on opposite sides, of a driving-belt consisting of alternate solid and perforated plates, the perforations being arranged alternately on opposite sides of a central longitudinal line, so as to engage the studs of the driving-pulleys, substantially as set forth.

3. In a drive-belt, the plates B, having perforations surrounded by upward-projecting flanges, substantially as and for the purpose set forth.

252,110. PUMPING-ENGINE. HENRY A. JAMIESON, Brooklyn, N.Y. Filed May 4, 1881. (No model.)



Claim.—1. In a pumping-engine, the combination, with two single-acting pump cylinders and pistons arranged side by side, and having water-passages and valves arranged to provide for the

discharge of water from one cylinder into and through the other, of two single-acting actuating-cylinders and pistons connected by separate piston-rods one with each of said pump-pistons, and a valve for admitting steam or other motive agent to said actuating-cylinders alternately for making the working-stroke of the pump-pistons, substantially as and for the purpose specified.

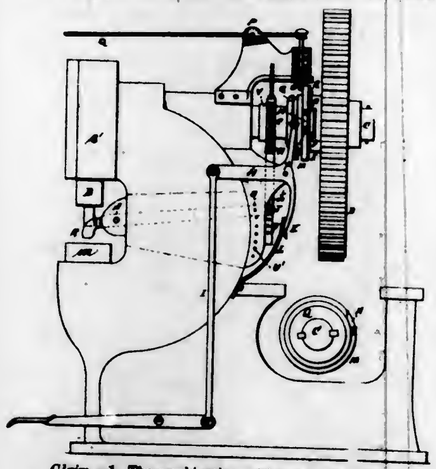
2. In a pumping-engine, the combination, with two single-acting pump cylinders and pistons arranged side by side, and having water-passages and valves arranged to provide for the discharge of water from one cylinder into the other, of two single-acting actuating cylinders and pistons connected by separate piston-rods one with each of said pump-piston, a valve for admitting a motive agent alternately to said actuating-cylinders for making the working-stroke of the pump-pistons, and other actuating cylinders and pistons connected with the pump-pistons for effecting their return-stroke, substantially as and for the purpose specified.

3. In a pumping-engine, the combination, with two single-acting pump cylinders and pistons having water-passages and valves arranged to provide for the discharge of water from one cylinder into the other, of two single-acting actuating-cylinders and actuating-pistons connected with said pump-pistons, a valve for admitting a motive agent to said actuating-cylinders alternately, a fly-wheel shaft, and two pairs of wheels in engagement or gear with the piston-rods, and having portions of reduced radius, which permits each rod to make its return-stroke free, but transmit motion to the fly-wheel shaft during its working-stroke, substantially as and for the purpose specified.

4. The combination of the pump-cylinders A A′ and pistons C C′ with their valves, the actuating-cylinders B B′ and pistons F F′, the piston-rods G G′, the smaller actuating-cylinders J J′, the pistons K K′ upon said rods G G′, the fly-wheel shaft L, and the pairs of wheels O in engagement or gear with said piston-rods, and having portions O′ of reduced radius, substantially as specified.

5. The combination of the two single-acting actuating-cylinders B B′, the pistons F F′, the valve I, the shaft L, carrying a grooved cam, L′, and the lever I′, engaging with said cam and fixed to said valve, substantially as specified.

252,111. PUNCHING-MACHINE. JOHN M. LONG and CHARLES E. MCILVAIN Hamilton, Ohio. Filed July 11, 1881. (No model.)



Claim.—1. The combination, with a punching-machine having a stripper-lever pivoted to the body of the machine, of the abutment-pin U′ and series of abutment-cuts U, for supporting the idle end of the stripper-lever, substantially as set forth.

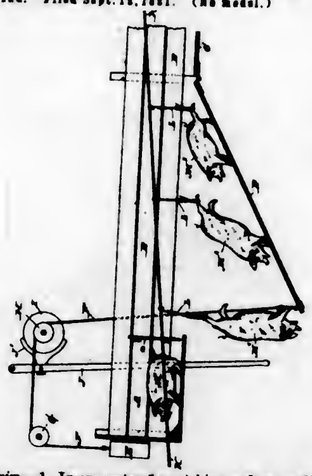
2. The combination, with a punching-machine having a rotary actuating-shaft, of the clutch-gear D, sliding clutch G, with levers to close it and spring L to open it, of the spring-pin O and the collar M, having the notch N, substantially as and for the purpose specified.

3. The combination, with a punching-machine having a rotary actuating-shaft, of the clutch-gear D, sliding clutch G, with levers to close it and spring L to open it, and spring-pin O, of the notched collar N M, fixed on the sliding clutch G, and the device for adjusting said collar around said clutch, substantially as and for the purpose specified.

4. The combination, in a punching-machine, of a driving-shaft, a clutch-wheel loose on said shaft, a sliding clutch splined on said shaft, a spring to hold the clutch out of engagement, a treadle or lever to throw the clutch into engagement, a pin arranged to drop behind the clutch and maintain its engagement, and a hand-lever for removing said pin and permitting the clutch to disengage, substantially as set forth.

5. The combination, with spring-pin O, of clutch-collar M, having notch N, with beveled side C, substantially as and for the purpose specified.

252,112. APPARATUS FOR CATCHING AND SUSPENDING HOGS. GEORGE A. LOWRY and MOSES CRAWFORD, Indianapolis, Ind. Filed Sept. 12, 1881. (No model.)



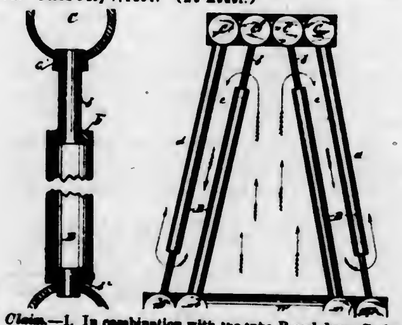
Claim.—1. In apparatus for catching and suspending hogs, a passage-way or chute a portion of the bottom of which consists of a movable hinged door, and a pen, A, for containing a decoy-hog, located at or near the front or free end of said hinged door, and the bottom of which is substantially a continuation of said door when in level position, substantially as set forth.

2. The combination, with the trap-like floor-section and its counterbalancing-weight and the rope and pulleys therefor, of a brake, J′, and brake-lever J, by which the same may be held in position or allowed to ascend and descend more or less gradually, substantially as set forth.

3. The combination, with the chain L, having hooks F and F′, of the spring P, slide P′, and catch P″, substantially as shown and described, and for the purpose specified.

4. The combination of the chute B, floor C, trap D, suspending mechanism E, F, G, H, I, and J, bar K, and suspending-chain L, forming an apparatus for catching and suspending hogs, substantially as set forth.

252,113. STEAM-BOILER. SHERON F. MASON, Brandy Station, Va. Filed July 7, 1881. (No model.)

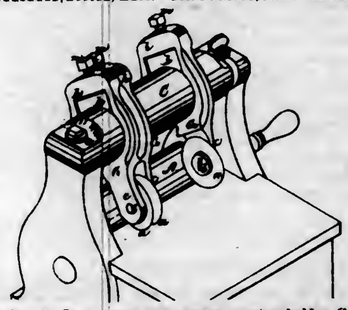


Claim.—1. In combination with the tube B and drum C, the tapering thimble d′, having the longitudinal slit d″ and the copper strip d‴, substantially as shown and described, and for the purpose set forth.

2. In combination with the drums C and D, the series of inclined tubes B, having reduced portions, as described, and so arranged as to form draft-passages at the upper and lower ends of said series alternately, which shall communicate with flues between the series, as and for the purpose specified.

3. The combination of the tubes B, having double-threaded plug b′, reduced section b, having threaded collar b″, and the thimble d′, having slit d″ and copper slit d‴, substantially as shown and described, the said tubes being arranged in alternately-reversed series and combined with drums so as to form flues between the said series, as set forth.

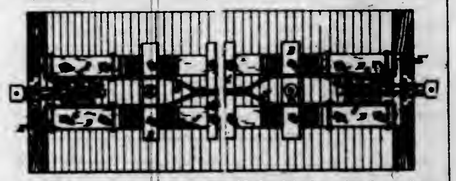
252,114. MACHINE FOR SCORING AND CUTTING PAPER. JAS. C. MARSHALL, Boston, Mass. Filed Feb. 14, 1881. (Model.)



Claim.—1. In a rotary paper-cutter, a cutter-holder, G, provided with a slot, 6, cut from the circular bearing-opening, and a set-screw, m, as shown, in combination with an inserted sliding block, k, having its lower face curved, the bar C, and the rotary cutter c, all constructed, arranged, and operated substantially as described.

2. In a machine for scoring and cutting paper, the combination, with a cutter holder or holders, of a cutter-bar or carrier-shaft, C, pivoted at one end at d, in order to allow of its being swung to one side to enable the cutter holder or holders to be placed thereon or removed therefrom, and provided at its opposite end with a clamping or fastening device for holding .. firmly in place when returned to its proper working position, substantially as described.

252,115. DRAFT AND BUFFING APPARATUS FOR RAILWAY-CARS. FRANK W. MARSTON, Boston, Mass. Filed Aug. 4, 1880. (Model.)



Claim.—1. A car-frame provided with draw-heads, springs, and follower-plates, in combination with two continuous metallic resistance-pieces for said follower-plates to bear upon, said resistance-pieces being secured to the inner face of the draft-timbers, substantially as set forth.

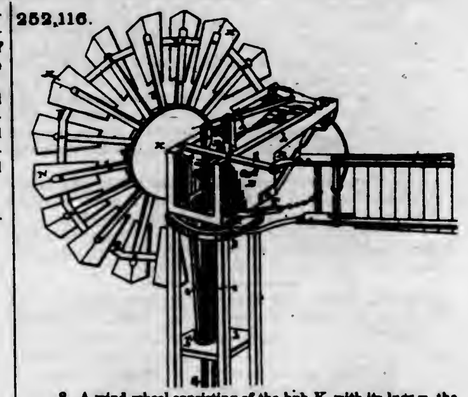
2. A car-frame provided with independent draft and buffing apparatus at each end, in combination with metallic resistance-pieces rigidly connected or extending continuously from end to end of the sills, and applied directly to the sides and ends of the draft-timbers, substantially as set forth, and for the purposes stated.

3. The continuous or rigidly-connected metallic resistance-pieces E E′ e, located in the horizontal plane of the draw-heads and secured to the sides and ends of the draft-timbers, so as to transmit to them the tractional strains incident to the movement of a single car, while the traction of the train is borne by said continuous resistance-pieces and the draft apparatus which they connect, substantially as and for the purpose set forth.

252,116. WINDMILL. THOMAS E. MARTIN, San José, Cal. Filed Oct. 3, 1881. (No model.)

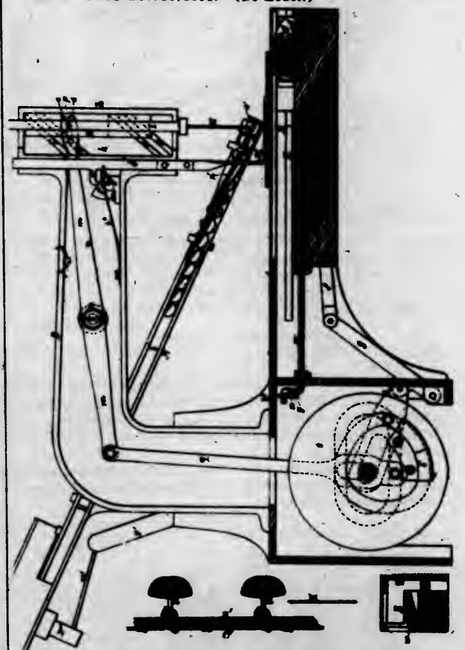
Claim.—1. The improved blade for windmills, consisting of two halves of a parallelogram of timber divided on a diagonal line, p, and secured together with their narrow ends coincident, as described.

252,116.



2. A wind-wheel consisting of the hub K, with its lugs m, the face-plate M, arms L, blades or fans N, constructed as described, and the sinuous or interwoven strap P, when arranged and combined as herein described.

252,117. MACHINE FOR AND METHOD OF SEWING BUTTONS TO CLOTH, &c. JOSEPH MATHESON, Lynn, assignor to himself, Charles B. Lancaster, Boston, and William D. Allen, Lynn, Mass. Filed Nov. 18, 1881. (No model.)



Claim.—1. The method of securing buttons to cloth or other material, which consists essentially in automatically feeding the buttons from a receptacle to the material, then drawing a loop of thread up through the material and the eye of the button, next forcing the loop down through the material outside of the eye of the button, and then passing the thread through said loop and tightening the stitch by drawing upon the thread passed through said loop, and finally withdrawing the button from the feeding device simultaneously with the operation of tightening the stitch, all substantially as set forth.

2. The mechanism for operating the shuttle-driver, the same consisting of the combination, with the driver F, of the arm f, lever g, slotted arm h, provided with a stud, the cam i, and driving-shaft G, all constructed, arranged, and operating as set forth.

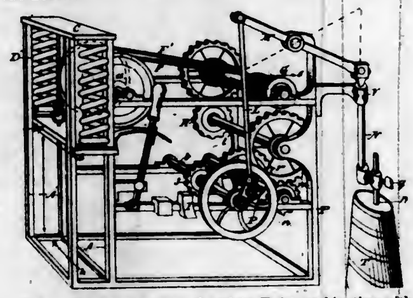
3. The work-feeding device consisting of the combination of the vibrating lever m, the needle H, needle-bar I, feeder K, having tongues k', head k, having tongues i', and the side plate, r, having friction-pads u u, all constructed, arranged, and operating substantially as described.

4. In combination with the stitch-forming mechanism of a sewing-machine, the chute N, provided with a slotted race turned at its lower end, as described and shown, into a position to present the eye of the button directly under and in the path of the needle, in the manner specified.

5. The combination of the button-feeder N, standard x', tongue a', guides b' b', lever v', link u', arm t', spindle r', and bristles s', all constructed and operating as and for the purpose set forth.

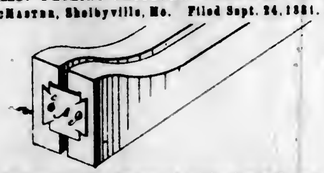
6. The combination of the springs p' q' with the button-feeding chute, provided with the discharge-port o' and the button-eye-guide slot n', all being arranged as explained.

252,118. MOTOR FOR CHURNS. WILLIAM MCLACHLAN and ALLAN MCFARLAND, Wilkinsburg, Pa. Filed Jan. 20, 1881. (No model.)



Claim.—In churn-motors, the plate E, in combination with the standards A A and A' A', springs D D', flexible cords F F', cylinder G, wheel H, gearing k w r s, shaft t, crank K, shaft L, beam M, and bar N, substantially as specified.

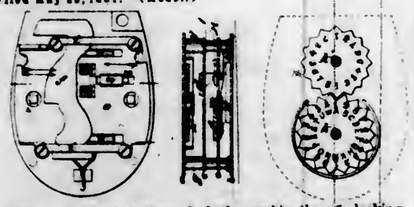
252,119. PACKING-FASTENER FOR FURNITURE. MARION E. MCMASTER, Shelbyville, Mo. Filed Sept. 24, 1881. (Model.)



Claim.—1. As an improved article of manufacture, a packing-fastener for tying two or more articles of furniture together for transportation, consisting of a plate, A, formed with two or more points or barbs, a a, and two or more holes, b b, substantially as described.

2. A packing-fastener formed with the central fold, d, and with the barbs or points a a and the holes b b, substantially as and for the purposes set forth.

252,120. INDICATOR-LOCK. JOHN MCMURRER, New York, N. Y. Filed May 28, 1881. (Model.)



Claim.—1. In an indicator-lock, the combination of a locking-bolt, d, a second principal locking-bolt, f, check-springs for each of said bolts, and the wedge-shaped sleeve n, to depress the check-springs m m, substantially as described.

2. In an indicator-lock, the combination of the locking and unlocking wedge n with the check-springs m m and the lever p, substantially as described.

3. In an indicator-lock, the combination of the registering-wheels h h', the bolt d, and the principal locking-bolt f, substantially as described.

4. In an indicator-lock, the combination of the registering-wheels h h', the bolt d, the principal locking-bolt f, and the respective check-springs to said bolts, substantially as described.

252,121. FLOOR-COVERING. CHARLES T. MEYER and VICTOR E. MEYER, Jersey City, N. J. Filed June 21, 1881. (No model.)



Claim.—1. As an improved article of manufacture, a floor-covering made substantially as herein shown and described, and consisting of a layer of canvas or another base, on which a layer or layers of a mixture of ground leather or skins, mineral fiber, pigment, and a binding material, such as copal or other varnish, are spread, as set forth.

2. A compound for spreading on canvas for floor-coverings consisting of a mixture or paste of copal or other varnish and ground leather or skins, substantially as herein shown and described, and for the purpose set forth.

3. A compound for spreading on canvas for floor-coverings consisting of a mixture or paste of copal or other varnish, ground leather or skins, and a mineral fiber, substantially as herein shown and described, and for the purpose set forth.

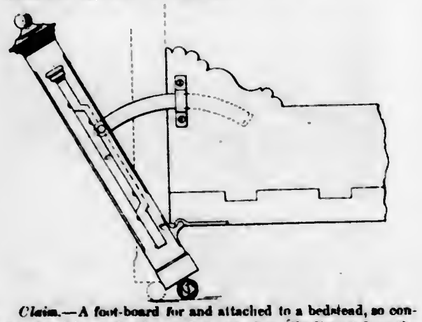
252,122. FLOOR-COVERING. CHARLES T. MEYER and VICTOR E. MEYER, Jersey City, N. J. Filed June 21, 1881. (No model.)



Claim.—1. As an improved article of manufacture, a floor-covering made substantially as herein shown and described, and consisting of a layer of canvas or another base, on which a layer or layers of a mixture of ground wood or other vegetable fiber, either plain or dyed or colored mineral fiber, and a binding material, such as copal or other varnish, are spread, as set forth.

2. A compound for spreading on canvas for floor-coverings, consisting of a mixture of ground wood, either plain or dyed or colored, with copal or other varnish, substantially as herein shown and described, and for the purpose set forth.

252,123. BEDSTEAD. WARREN P. MILLER, Brooklyn, N. Y. Filed Nov. 15, 1881. (No model.)



Claim.—A foot-board for and attached to a bedstead, so constructed and hung that it may be swung laterally distant from the mattress, substantially as shown, and for the purpose specified.

252,124. CAR-BRAKE. WILLARD F. MILLS and THOMAS IRWINE, Cleveland, Ohio. Filed July 5, 1881. (No model.)

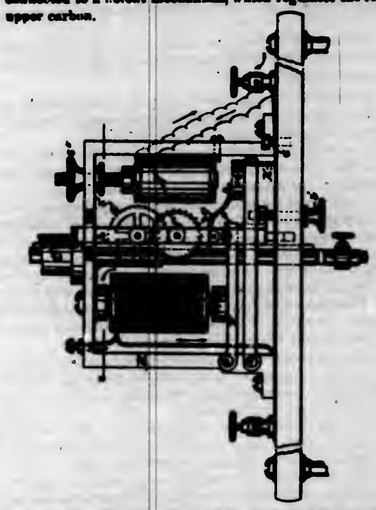


Claim.—1. In a car-brake, the combination, with the casing M, of the frames I and J and disk N, substantially as set forth.

2. In a car-brake, the combination, with the casing M, of the frames I and J, disk N, and bearing H, substantially as set forth.

252,125. ELECTRIC LAMP. RICHARD B. MOFFATT and SYLVESTER CHICHESTER, Brooklyn, N. Y. Filed July 21, 1881. (No model.)

Brief.—An electro-magnet of low resistance in the arc-circuit establishes the arc, and another of high resistance in a shunt-circuit automatically makes and breaks said shunt, its armature being connected to a detent mechanism, which regulates the feed of the upper carbon.



Claim.—1. In an electric lamp, in combination with the carbon-holder, the electro-magnet M, its armature m, the escapement-wheel f', and escapement g, the latter arranged so that it will be forced into and out of gear by the movement of the said armature, the magnet N, located in a by-pass or derived circuit, its armature n, and the contact-point k, for making and breaking said circuit, substantially as herein specified.

2. In an electric lamp, the combination of the electro-magnet N, located in a by-pass or derived circuit, its armature n, the escapement g, and device for breaking said circuit when the armature is attracted by the electro-magnet N, and allowing the armature to return and close the circuit again, said movement causing the operation of the escapement and the arc to be regulated as the carbons are consumed, substantially as herein specified.

3. In an electric lamp, the combination of the armature n, the contact-point k, the spring o, or its equivalent, the escapement g, the escapement-wheel f', a by-pass or derived circuit around the arc, and mechanism for regulating the movement of the carbon-holder by the breaking and closing of said by-pass or derived circuit extending around the arc, substantially as herein specified.

252,126. TRACE-CARRIER. DAVID S. HOGAN, Omaha, Nebr. Filed Apr. 9, 1881. (No model.)



Claim.—A back-strap loop or buckle, A, having rigid loops or eyes B, and provided with a flexible holder, C, carrying a T-shaped fastener, D, adapted to receive and hold the eyeboye, substantially as and for the purpose described.

252,127. TONGUE-DEPRESSOR. EDWIN G. MERRILL, Norwalk, Ohio. Filed June 23, 1881. (No model.)



Claim.—1. A tongue-depressor provided with a holder for a removable protecting-envelope, substantially as set forth.

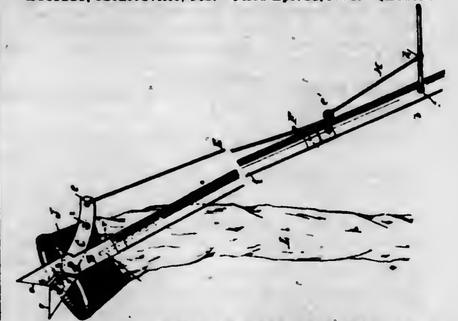
2. The combination, with a tongue-depressor, of an envelope-retaining device pivoted thereto, substantially as set forth.

252,128. VEGETABLE-CUTTING MACHINE. MARION C. MORSE, Mohawk, N. Y. Filed Apr. 18, 1881. (Model.)



Claim.—As an improvement in cutting-machines, the combination of the detachable teeth J, having triangular shanks, with the transverse bar H, having correspondingly-shaped recesses, in which the teeth are secured by top and bottom plates, K K', substantially as and for the purpose shown and specified.

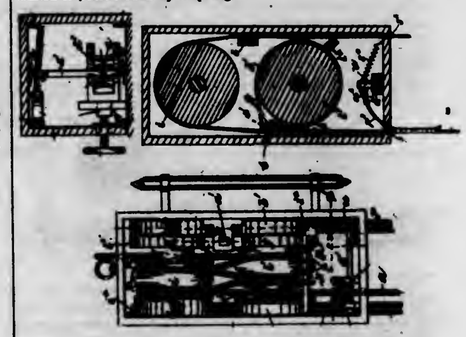
252,129. FRUIT-PICKER AND TREE-TRIMMER. WILLIAM MUSTARD, Jacksonville, Fla. Filed Apr. 23, 1881. (Model.)



Claim.—A fruit-picker constructed substantially as herein shown and described, and consisting of a pole or rod, A, carrying a fixed jaw, B, movable jaw C, pivoted to the fixed jaw, said jaws B and C having two angular cutting-edges, b b and c c, to sever the stem, and inclined edges c c to open the jaws, a fruit-receptacle, J, and conduit L, the whole combined and arranged for joint operation as set forth.

252,130. FIRE-ESCAPE. JOHN F. NEWTON, Jr., Boston, Mass. Filed June 24, 1881. (No model.)

Brief.—The pulleys have alternating grooves and coinciding bearing-surfaces, upon which a brake presses, which is operated by an adjusting-screw. A pair of clamping-rollers are located at the lower end of the frame, which are regulated by an adjusting-screw. The straps by which the seat is suspended pass up over the pulleys and act as brakes upon them. Attached to one of these straps is a short strap, which is fastened to a pivoted bar that, when the seat is weighted, is pushed against the rope, and when the weight is released is pulled back by a spring.



Claim.—1. In a fire-escape, the combination of a box or frame having the pulleys *i i'*, provided with alternating grooves and coinciding bearing-surfaces, a brake adapted to press simultaneously upon said bearing-surfaces to retard the movement of said pulleys, and an adjusting-screw to regulate the pressure of the brake.

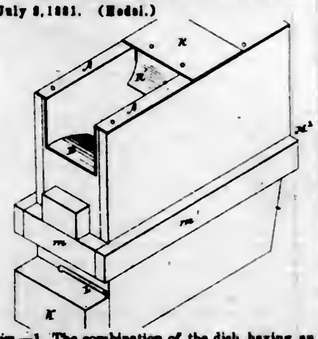
2. In a fire-escape, the combination of a box or frame having openings in its opposite ends for the passage of a rope, a pair of pulleys, *i i'*, journaled in said box, a brake provided with an adjusting-screw to retard the movement of said pulleys, and the pair of clamping-rollers located at the lower end of the box and having an adjusting-screw, as set forth.

3. In a fire-escape, the combination of the box or frame having the pulleys *i i'*, the seat *g*, and the supporting-straps adapted to act as band-brakes on the pulleys *i i'*, substantially as and for the purpose set forth.

4. In a fire-escape, the combination of the box or frame having the pulleys *i i'*, adapted to receive upon their peripheries a rope, *a*, passing through said box, the seat-supporting straps adapted to act as band-brakes on said pulleys, and the pivoted lever or bar *d'*, connected with the seat-supporting straps, and adapted to press the rope *a* against a roller journaled in fixed bearings, substantially as and for the purpose set forth.

5. In a fire-escape, the combination of the box or frame having the pulleys *i i'*, adapted to receive upon their peripheries a rope, *a*, passing through said box, a screw-adjusted brake adapted to bear upon portions of the peripheries of said pulleys, the seat-supporting band-brakes adapted to bear upon other portions of the pulleys, and the pivoted lever or bar *d'*, connected with the band-brakes and adapted to press the rope *a* against a roller journaled in fixed bearings, as set forth.

252,181. **MOUSE-TRAP.** HENRY L. NORTON, Middletown, Conn. Filed July 8, 1881. (Model.)



Claim.—1. The combination of the dish having an inclined side and three vertical sides and the ears D, supporting a tipping-plate bottom having the block G and curved piece I, an inclosing-box provided with the resting-shoulders *m*, partition N, removable bottom P and wire L, and a baiting device, substantially as described.

2. The combination, with the dish having an inclined side and three vertical sides, and provided with the ears D, of the tipping false bottom F, hinged to D, and provided with the block G and weight H, the partition N, and an inclosing-box provided with the resting-shoulders *m*, substantially as described.

3. In combination with a hollow dish constructed as described and provided with a tipping-bottom plate, the baiting-hooks T, suspended from the plate R, the protecting-bars S, and plate R', substantially as described.

252,182. **TELEPHONE-TRANSMITTER.** JOS. OLMSTED, New York, N. Y. Filed Oct. 14, 1881. (No model.)



Claim.—1. The combination, in a telephone-transmitter, of a contact-electrode carried by the diaphragm, and a series of independently-pivoted simple electrodes resting independently and by their own weight against the electrode carried by the diaphragm.

2. A compound electrode for a telephone-transmitter, consisting of a series of independently-yielding variable contact-electrodes, in combination with a common adjustable support for said electrodes.

3. A compound electrode for a telephone-transmitter, consisting of a number of simple freely-pivoted electrodes resting by the action of gravity upon the opposite electrode, in combination with a common adjustable support upon which said electrodes are pivoted.

4. A compound electrode for a telephone-transmitter, consisting of a series of parallel independently-pivoted carbon plates fixed upon a common support.

5. The combination of a series or parallel independently-pivoted carbon plates and an adjustable common support upon which said plates are pivoted.

6. A compound electrode for telephones, consisting of a number of parallel plates independently pivoted and resting with their edges upon the opposite electrode.

7. A compound electrode for a telephone-transmitter, consisting of a number of parallel pivoted plates formed of carbonized card-board, paper, or equivalent material.

8. An electrode for a telephone-transmitter, consisting of parallel plates strung upon a conducting-rod.

9. The combination, with an electrode connected with the diaphragm of a transmitter, and having a curved contact-surface, of an electrode consisting of a thin sheet of conducting material resting with its edge against the diaphragm-electrode.

10. A contact-electrode for a telephone-transmitter, consisting of a thin sheet of carbonized paper or thin card-board, said electrode being mounted so as to rest with its edge against the electrode with which it makes contact.

11. A contact-electrode for a telephone-transmitter, consisting of a carbonized plate of paper or card-board, in combination with a supporting-rod of metal passing through said plate.

12. The combination, substantially as described, of a pivoted-plate electrode resting with its inclined edge against its opposite electrode, and an adjustable support for the first electrode, all combined as described, so that by adjusting the support of the pivoted electrode the angle of impingement of the second electrode may be varied.

13. The combination of a compound electrode consisting o a series of pivoted parallel plates, an electrode connected to a diaphragm, against which electrode the parallel plates bear with inclined edges, and an adjustable support for said pivoted electrodes, adjustable to and from the electrode connected with the diaphragm.

14. The combination of a series of parallel pivoted plates, a cross-bar connected to a diaphragm, against which bar the edges of the pivoted plates rest, a conducting-bar upon which the pivoted plates are strung, and supporting-rods for said conducting-bar, connected at right angles thereto, and adjustable longitudinally.

15. The combination of rod E, attached to the diaphragm cross-bar G, pivoted plates H, resting upon the bar, with their lower edge inclined thereto, rod I, and adjustable rods L, substantially as described.

16. The combination of a pivoted electrode, and an adjustable support for the same, adapted to be moved to and from the electrode against which said pivoted electrode bears, so as to vary the initial pressure in the manner described by shifting the point upon the pivoted electrode at which it makes contact and is partially supported.

252,183. **AUTOMATIC RELIEF DEVICE FOR PUMPS.** GILBERT J. ORR, New York, N. Y. Filed Oct. 11, 1881. (No model.)

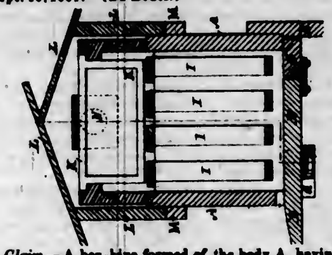


Cla —1. The combination, with the air-vessel and pump, of telescopic tubes at the junction of the pipe and air-vessel, and a yielding resistance—such as a spring—to hold the air-vessel in place, but allow it to move under the unequal pressure and discharge of water from the pump, substantially as set forth.

2. The combination, with the air-vessel and the tubes *a b*, of the cylinder *f*, sleeve *i*, spring *s*, and packing *i*, substantially as set forth.

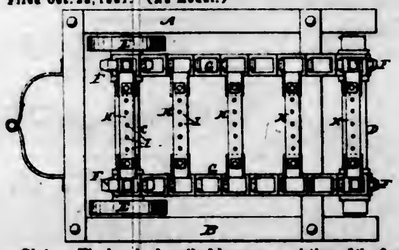
3. The combination, with the air-vessel, the pipe *a*, and cylinder *f*, of the pipes leading to the suction-ways of the pump, the packing *i*, and the tube *b*, entering into the tube *a*, and provided with holes, substantially as set forth.

252,184. **BEE-HIVE.** EVAN L. T. OWENBY, Subligna, Ga., assignor to himself and James C. Nix, same place. Filed Sept. 10, 1881. (No model.)



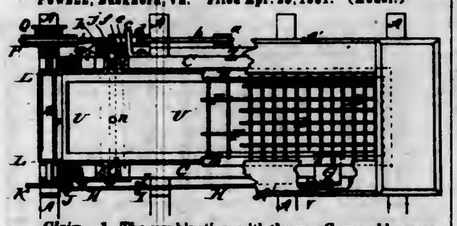
Claim.—A bee-hive formed of the body A, having cleats M near the upper edge and on the outside, the cap L, resting at its lower edge on the said outside cleats, the main frame I and chamber J, supported on the upper edge of said body, and the surplus-honey frames K, supported on inward projections of chamber J, as shown and described.

252,185. **HARROW.** G. ADOLPHUS PADDOCK, Trenton, Wis. Filed Oct. 25, 1881. (No model.)



Claim.—The herein-described harrow, consisting of the frame A B, having mounted therein two axles, C D, the front axle, C, having supporting-wheels E, and sprocket-wheels F mounted thereon, and the rear axle also provided with sprocket-wheels, and endless chains passing over said sprocket-wheels, and carrying a series of drag-bars having teeth adapted to engage the ground, the several parts arranged relatively to each other, substantially as shown and described, whereby the endless chains are operated directly through the medium of the supporting-wheels, which also regulate their rotation, as specified.

252,186. **PEANUT PICKER AND CLEANER.** EVERETT E. POWELL, Buckhorn, Va. Filed Apr. 26, 1881. (Model.)

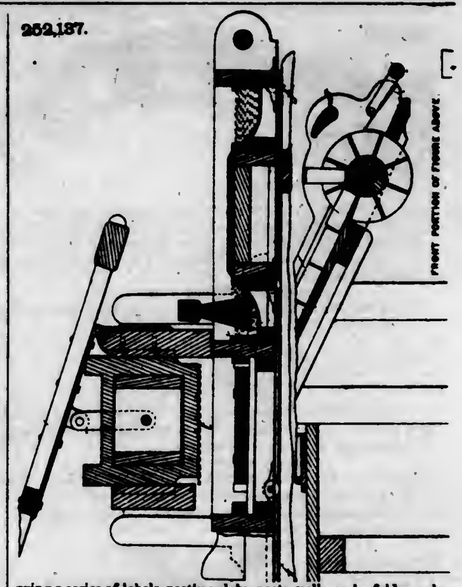


Claim.—1. The combination, with the case C, movable screen E F, bar *b*, shoe U, fan Y, traveling apron M, and rollers L N, all arranged within the case, as specified, of the following parts, which are arranged on the side of the latter, to wit: the rotating gear R, pinion Q, pulleys P *d e*, band *h*, vertical rock-shaft A, connected with said pulley *d* and bar *b*, the rod H, and wheel K, as shown and described, for the purpose specified.

2. The combination, with case C, the vibrating shoe U, its attached bar *b*, and rollers supporting the same, of the rock-shaft A, having cranks *g* and *j*, the pulley *d*, crank *e*, connecting-rod *f*, and the mechanism for imparting rotation to said pulley, as shown and described, for the purpose specified.

252,187. **PACKET-LABELING MACHINE.** GEO. PRITCHARD, Seaforth, near Liverpool, County of Lancaster, assignor to Robt. Spear Hudson, Liverpool, England. Filed Sept. 17, 1881. (No model.) Patented in England Mar. 29, 1881.

Claim.—1. In a labeling-machine, the traveling platform carrying a series of labels, pasting-slabs, paste-wells, and a folder, substantially as described.



2. The combination, with the traveling platform and pasting-slabs thereon, of the vertically-sliding taking-off blocks or plungers, substantially as described.

3. The combination, with the traveling platform and taking-off blocks or plungers, of the folder and lever-grips, substantially as and for the purpose described.

4. In a labeling-machine, the combination, with the traveling platform, of the pocketed drum operated by the movement of said platform, substantially as described.

5. The combination, with the traveling platform and parts connected therewith, of the folder supported on a sliding bed-plate, substantially as described.

6. A labeling-machine comprising a traveling platform, pasting-slabs, paste-wells, and folder carried by said platform, a pocketed drum, and taking-off blocks or plungers, all combined and operating substantially as described.

252,188. **SASH-FASTENER.** ALFRED GILBEY, Dow, N. H. Filed Mar. 28, 1881. (Model.)

Brief.—The bolts are provided on their upper sides with inclined projections engaging corresponding projections on the face-plate, they being held in engagement by means of a spring and washer under said bolts. The object of these devices is to keep the bolts in close contact with the window-frame, and thus prevent rattling.



Claim.—In a sash-lock, the casing A and face-plate H, having upon its under side the inclined lug *a*, in combination with a suitable spring, *c*, and racks C D, formed with bolts E F and inclined lugs *g*, the racks provided with means for operating them, substantially as and for the purpose set forth.

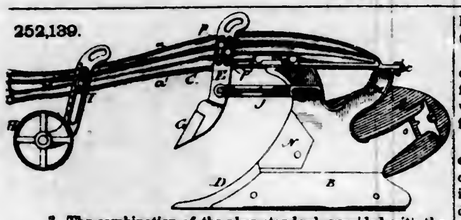
252,189. **PLOW.** JOHN S. ROBINSON and EDSON C. ROBINSON, Canandaigua, N. Y. Filed Jan. 27, 1881. (No model.)

Brief.—Jointer-standard with sides double beveled. Either side may be brought down to the beam and turn the point to or from land. A rubber cushion in the jointer-brace. Wheel-standard adjustable to or from land by shouldered recesses and furnished with a registered scale.

Claim.—1. The combination of the double-faced jointer-standard and the brace J, substantially as described.

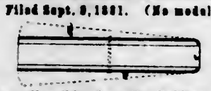
2. The angular or double-faced and double-slotted jointer-standard E, in combination with the bolt *g*, passing through the plow-beam, substantially as described.

252,139.



3. The combination of the plow-standard, provided with the diamond-shaped rib *g*, and the point D, having on its under side the corresponding diamond-shaped groove *h*, substantially as and for the purposes set forth.

252,140. CIGARETTE-HOLDER. GABRIEL RODRIGUES, Matanzas, Cuba. Filed Sept. 9, 1881. (No model.)



Claim.—The collapsible cigarette-holder consisting of stiff side portions, *a*, and folded covering *c*, provided with elastic band *b*, substantially as shown and described.

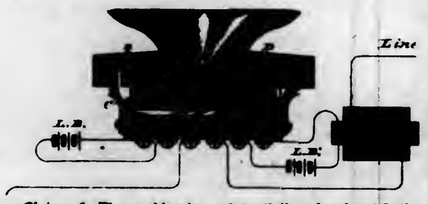
252,141. ELECTRIC TELEPHONY. ALLEN W. ROSE, New York, N. Y., assignor to Charles A. Cheever, same place; said Cheever assignor to himself as Trustee. Filed Oct. 26, 1880. (No model.)



Claim.—1. The combination, substantially as herein set forth, of a case, a magnet secured therein, a diaphragm, a conductor of electricity vibrating with the diaphragm, and magnetic filings in a loose state interposed in a magnetic field between the magnet and conductor.

2. The combination, substantially as herein set forth, of a telephone-case, a guideway therein, a magnet and diaphragm connected with the case, a conductor of electricity movable in the guideway and vibrating with the diaphragm, magnetic filings interposed in a magnetic field between the magnet and conductor, yielding connections supporting the conductor, and a spring or yielding connection interposed between the conductor and the diaphragm.

252,142. ELECTRIC SPEAKING-TELEPHONE. ALLEN W. ROSE and CHARLES A. CHEEVER, New York, N. Y.; said Rose assignor to said Cheever; said Cheever assignor to himself as Trustee. Filed Nov. 13, 1880. (No model.)



Claim.—1. The combination, substantially as herein set forth, of an electric circuit, a battery, an inducing-helix, a non-magnetic conducting-surface, a diaphragm, and magnetic filings interposed in the magnetic field between said conducting-surface and diaphragm.

2. The combination, substantially as herein set forth, of an inducing-helix, a conducting-surface, a diaphragm, magnetic filings interposed between the helix and diaphragm, and a high resistance between the diaphragm and conducting-surface to maintain the continuity of the magnetic circuit.

3. The combination, substantially as herein set forth, of the local circuit, its battery, the inducing-coil without a core in the local circuit, and the magnetic filings, whereby the filings are maintained in a constant magnetic field.

4. The combination, substantially as herein set forth, of an electric circuit, a conducting-surface, a diaphragm, and magnetic filings interposed between the conducting-surface and diaphragm, with an inducing-coil and an independent battery and local circuit for keeping the coil charged.

5. The combination, substantially as herein set forth, of an electric circuit, a battery, an inducing-helix without a core in said circuit, a diaphragm, and magnetic filings interposed between the inducing-helix and diaphragm, the filings being acted upon inductively by the helix and the diaphragm being vibrated by the movement of the filings.

6. The combination, substantially as herein set forth, of two independent but adjacent inducing-coils without cores, a diaphragm, and magnetic filings interposed between said diaphragm and coils.

7. The combination, substantially as herein set forth, of a local circuit, its battery, an inducing-coil without a core for maintaining a constant magnetic field, a conducting-surface, a diaphragm, magnetic filings interposed between the helix and diaphragm, a local battery in the primary circuit of an induction-coil, in which primary circuit the magnetic filings are included, the secondary helix of said induction-coil constituting a portion of the line-wire, and an independent inducing-coil, also included in the line-wire, in proximity to the local inducing-coil.

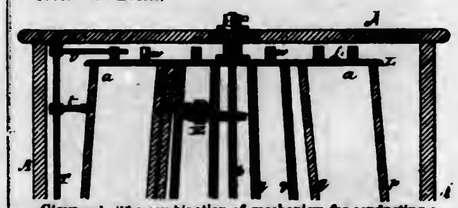
252,143. DEVICE FOR HANDLING COOKING-PANS. JOHN W. ROSE, Santa Clara, Cal. Filed May 26, 1881. (No model.)



Claim.—1. A holding device, A, adapted to be attached immediately on the side of a cooking or baking pan, and constructed with an opening, *c*, and a bearing, *e*, depressed below the opening, arranged to receive laterally and hold any ordinary stove-lid lifter so that the pan may be readily handled by such lifter, substantially as and for the purposes described.

2. A pan for cooking or baking purposes, provided immediately on the side with the holding device A, having the opening *c* and the bearing *e* depressed below the opening, arranged to receive laterally an ordinary stove-lid lifter, so that the pan may be readily placed in and removed from the oven of a stove, substantially as and for the purposes described.

252,144. DUST-COLLECTOR FOR MIDDLINGS-PURIFIERS &c. WILLIAM S. RUSSELL, Northfield, Minn. Filed Aug. 5 1881. (No model.)



Claim.—1. The combination of mechanism for conducting a blast against and through a screen, mechanism for rotating said screen, mechanism for isolating a portion of said screen, mechanism for jarring said isolated portion, and mechanism for isolating the substances thus separated from the blast and conducting them away from the influence of said blast, all substantially as shown and described.

2. The combination of an induction-pipe, a hopper, and a gate-case having an upper receiving part or aperture and a lower oppositely-disposed discharging part or aperture, and an inclosed rotating gate adapted to register alternately with said parts or apertures, all substantially as shown and described.

3. The combination of an induction-pipe, a hopper, a gate for closing the outlet of the hopper, a rotating reel having an upper closed head and a lower open head and sides arranged in compartments, and cushions or guards which isolate successive compartments with mechanism for jarring such isolated compartments, all substantially as shown and described.

4. The combination of a rotating reel or screen formed in compartments, a stationary inner guard or cushion and a stationary lower guard or cushion, and a strap attached to the reel-head, substantially as shown and described.

5. The combination of the shaft T, adjustable arm *v*, adjustable knockers *t t*, and adjustable coiled spring *s*, substantially as shown and described.

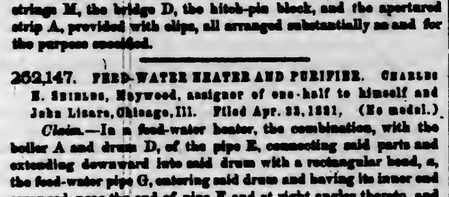
6. The combination of frame A, non-rotative shaft *b*, adjustable arms E, and cushion or guard R with the reel L and rotative shaft *c*, substantially as shown and described.

7. The combination of the reel L, knockers *t*, and guards R *r* with means, substantially as shown and described, for their operation, substantially as and for the purpose set forth.

8. The combination of the reel or screen L, hopper *g*, connected therewith, the shaft *c*, and the gate-case K and gates *j j*, substantially as shown and described.

9. The combination of the reel or screen L, provided with pins *w*, and rotated about the fixed bar *b*, supported in frame A, with said frame and the knocker-shaft T, supported in said frame and provided with the arm *v*, substantially as shown and described.

252,145. MAGAZINE FIRE-ARM. ALOIS SCHNEIDER, San Francisco, Cal. Filed June 27, 1881. (No model.)



Claim.—1. In a magazine-gun, a vertically-moving breech-block provided with a downwardly-projecting leg, in combination with an operating-lever provided with a head, D, pivoted between the downwardly-projecting leg and the forward wall of the frame, and provided with a leg, F, adapted to bind against the forward wall of the frame and steady the breech-block when the breech is closed, substantially as and in the manner described.

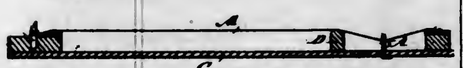
2. The rear wall of the frame, provided with a vertical slot and vertical inserted spring I, in combination with the pivoted guide-bar J and vertically-moving breech-block C, all constructed as set forth.

3. The vertically-moving breech-block C, having the shell-extractor moving in a chamber on one side of the breech-block opening and the cocking-arm upon the opposite side, in combination with the actuating-head D of the lever, having a single supplemental pin, K, extending through from side to side, so as to operate both the cocking-arm and to start the extractor, substantially as herein described.

4. In combination with the frame provided with a groove in which moves the head of the extractor, the slide L, connected with and moved by the hammer in its fall, so as to close the end of said groove in the frame into which the head of the extractor moves to clear cartridge, substantially as herein described.

5. The rotating cartridge-locking rod P, having a projection at the end, by which it may be turned, in combination with the lug B, pivoted at 3 to the forward part of head D, so that the travel of its projecting spur 5 is past the projection on the end of rod P, and adapted to be thrown down and kept from operating the rod, substantially as herein described.

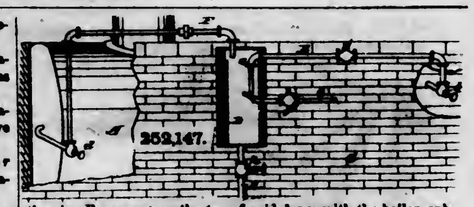
252,146. PIANO SOUNDING-BOARD ATTACHMENT. JOHN O. SEIBELS, Montreal, Quebec, Canada. Filed Apr. 26, 1881. (Model.)



Claim.—The combination, with a sounding-board, C, of the strings M, the bridge D, the hitch-pin block, and the apertured strip A, provided with clips, all arranged substantially as and for the purpose specified.

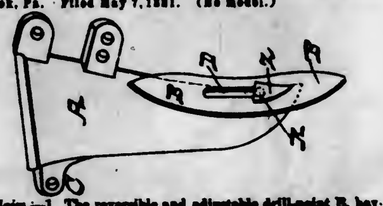
252,147. FEED-WATER HEATER AND PURIFIER. CHARLES H. SHIBLES, Holywood, assignor of one-half to himself and John Lisare, Chicago, Ill. Filed Apr. 23, 1881. (No model.)

Claim.—In a feed-water heater, the combination, with the boiler A and drum D, of the pipe E, connecting said parts and extending downward into said drum with a rectangular head, *a*, the feed-water pipe G, entering said drum and having its inner end arranged near the end of pipe E and at right angles thereto, and



the pipe F, connecting the top of said drum with the boiler, substantially as shown and described, the said drum being provided with a suitable blow-off pipe, as set forth.

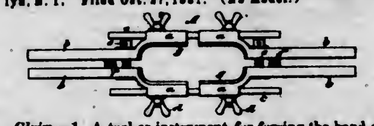
242,148. GRAIN-DRILL POINT. DANIEL J. SHULTS, Spruce Creek, Pa. Filed May 7, 1881. (No model.)



Claim.—1. The reversible and adjustable drill-point B, having the extra long slotted eye D in its middle, and secured detachably to a drill-boot, A, by a screw-bolt, E, in the manner as and for the purposes substantially set forth.

2. The slot-shielding washer N P, in combination with the drill-point B D and bolt E, all applied to a drill-boot, A, substantially as and for the purposes set forth.

252,149. BRUSH-MAKING TOOL. ALBERT P. SMITH, Brooklyn, N. Y. Filed Oct. 27, 1881. (No model.)

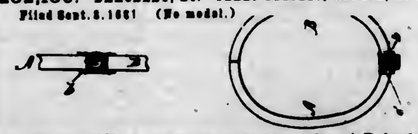


Claim.—1. A tool or instrument for forcing the band or ferrule on a brush, made extensible longitudinally and expansible laterally, and provided with an internal flange to engage the ferrule while it is being forced, constructed and arranged to operate substantially as set forth.

2. A tool for forcing the band or ferrule on a flat brush, made from four like parts or sections, *a b*, arranged to slide on rods *c*, whereby the tool is made capable of extension and adjustment longitudinally, and provided with expanding-screws, whereby the tool is made capable of expansion and adjustment laterally, substantially as and for the purposes set forth.

3. The combination, to form a tool for forcing a band or ferrule on a brush, of the curved parts *a a*, provided with flange *g*, the handles *b b*, the extension-rods *c c*, and screws *e*, all constructed and arranged substantially as set forth.

252,150. BRACELET, &c. JAMES STARLEY, Newark, N. J. Filed Sept. 8, 1881. (No model.)



Claim.—1. The combination, with the sections A B, having cogged extremities, of a screw engaging with said extremities and adapted to cause said sections to open and close, substantially as and for the purpose herein set forth and shown.

2. The combination, in a bracelet, with sections A B, one or both of which have a cogged extremity, of means, substantially as described, having teeth engaging with said cogged extremity, adapted when operated upon to cause the opposite extremities of said sections to come together or separate, substantially as and for the purpose set forth and shown.

3. As a new article of manufacture, a bracelet composed of the pivoted sections A B, having cogged extremities which engage with the screw *c*, the whole being arranged and combined with the box *b* and operating substantially as and for the purposes set forth and shown.

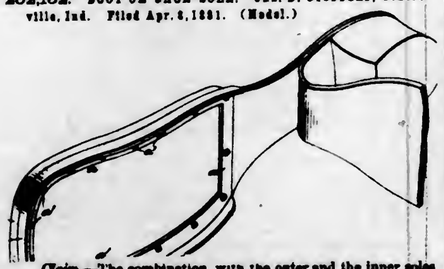
252,151. MANUFACTURING AND DECORATING ARTISTIC ARTICLES. HARALD F. L. STARCKE, Paris, France. Filed Nov. 1, 1881. (No model.) Patented in France Sept. 23, 1881.



Claim.—1. The slab *a*, combined with the projecting metallic ribs or plates *b*, forming cells, and with the filling of cement contained in said cells, substantially as specified.

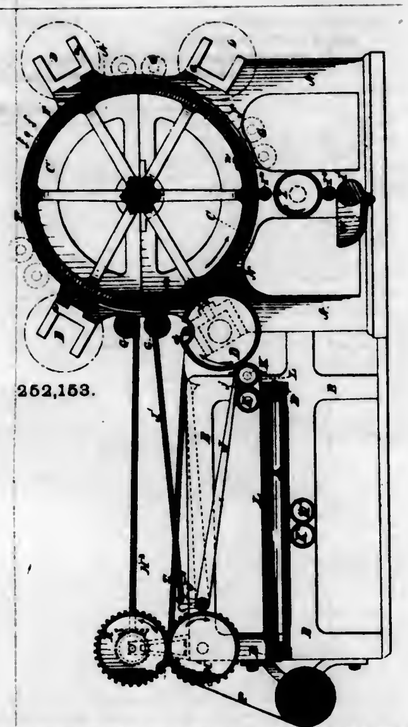
2. The method herein described of ornamenting the surfaces of slabs or the like, which method consists in first attaching metallic ribs by adhesive cement to said slabs, and in then filling the spaces between said ribs flush with the outer edges thereof with colored cements, substantially as herein specified.

252,152. BOOT OR SHOE SOLE. JNO. D. STODDARD, Centreville, Ind. Filed Apr. 8, 1881. (Model.)



Claim.—The combination, with the outer and the inner soles of a boot or shoe, of the metallic sole-protector composed of a bed-plate, *a*, with upward and downward flanges, the pins for securing the sole-protector and the soles together, and the water-proof filling arranged between the inner sole and the metallic sole-protector, substantially as described.

252,153. PERFECTING PRINTING-MACHINE. JOHN H. STERNBERG, Erie, Pa. Filed Apr. 16, 1881. (No model.)



Claim.—1. In a perfecting printing-press, the combination, with the impression-cylinder thereof, of a sheet receiving and re-delivering apparatus consisting of a rack or table which receives the sheet head foremost as it leaves the impression-cylinder after the first impression and while holding said sheet changes its position, substantially as described, and re-presents the said sheet tail foremost directly to the gripers for a second impression, substantially as set forth.

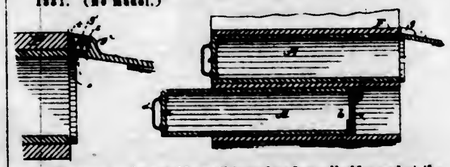
2. In a perfecting printing-press, the combination, with the impression-cylinder thereof, of a sheet receiving and redelivering apparatus consisting of a vibrating rack or table which receives the sheet as it leaves the impression-cylinder after the first impression head foremost and while holding said sheet by vibrating lifts it from the lower to the upper side of said cylinder and presents it tail foremost directly to the gripers for a second impression in a manner substantially as described.

3. In a perfecting printing-press, the combination of an impression-cylinder, a pair of folding-rollers, and a vibrating sheet receiving and redelivering rack or table which is provided with a starter-projection on its lower side, said parts being constructed and arranged to operate in the manner and relation and for the purposes substantially as set forth.

4. In a printing-press, the type-cylinder C, in combination with the ink-plate N and bar *c*, with inwardly-beveled edges, and turtles *f*, with outwardly-beveled edges, substantially as and for the purposes mentioned.

5. In a perfecting printing-press, the combination, substantially as shown, of the following elements: the type-cylinder C, with turtles *f f*, and ink-plate N, impression-cylinder D, feeding-rollers H H', with cut-off knife A, sheetway T, tilting rack or table J, with starting and deflecting projection *j*, and folding-rollers K K' K''.

252,154. POST-OFFICE BOX. PERCIVAL R. TEMPLE, Everett, and GEORGE W. PIERCE, Boston, Mass., assignors to the Yale Lock Manufacturing Company, Stamford, Conn. Filed Apr. 30, 1881. (No model.)



Claim.—1. A portable mail-box closed on all sides and at the outer end, and provided with a suitable fastening for securing the box in a pigeon-hole, and having a door at the inner end for the admission of mail-matter, substantially as described.

2. A portable mail-box closed at the outer end, and provided with a handle for withdrawing and carrying it, and having a door and a lock for fastening the door at the inner end, substantially as described.

3. In combination with a pigeon-hole or a series of pigeon-holes open at both ends, a portable supplemental mail-box or series of boxes, (each with a metallic front and with a door at its inner end,) secured removably within the same, forming a complete metallic facing or frontage while open for the reception of mail-matter from within, substantially as described.

4. In combination with a pigeon-hole open at both ends, a portable mail-box provided with a door at its inner end hinged to the box and projecting so as to be struck by one of the partition-walls of the pigeon-hole, and closed by the act of withdrawing the box from the pigeon-hole, substantially as described.

5. The combination of the box *g*, the bell-crank lever *t*, the door, the rod *p*, and the spring *s*, substantially as described.

6. The combination of an inclined shelf, an apertured partition, and a strip or stop, whereby a portable mail-box may be supported in an inclined position for securely depositing its contents within a post-office, substantially as described.

252,155. RECOVERY OF GLYCERINE FROM SOAP-LYES. CHARLES THOMAS, WILLIAM J. FULLER, and STERRY A. KING, Bristol, England. Filed Nov. 4, 1879. Patented in England Mar. 31, 1879.

Claim.—The process above described for recovering glycerine from soap-lyes, which consists in throwing down from the lyes by applying heat thereto the greater proportion of the salts suspended therein, then boiling the liquor with an excess of fatty acid to effect the combination with the acid of the remaining salts, and, lastly, filtering the glycerine-liquor to remove therefrom the gelatinous and other impurities, all substantially as specified.

252,156. CARRIAGE-BUTTON. WILLIAM H. TUPTS, Washington, D. C. Filed June 17, 1881. (No model.)

Brief.—The head is provided with a stem which has a slot in it for a pin. This stem is set down into the body and a sleeve slipped over the body, which is then screwed into the carriage-frame.



Claim.—1. The combination, in a carriage-button, of the movable head B', provided with stem *f* and slot *e*, with the hollow body *c* and the pin *d*, as and for the purpose herein set forth.

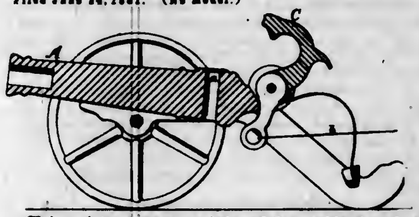
2. The combination, in a carriage-button, of the movable head B', provided with stem *f* and slot *e*, with the hollow body *c*, the pin *d*, and the screw *a*, as and for the purpose specified.

3. The combination, in a carriage-button, of a body, *c*, a head, B', movable therein, a screw-stem, and a sleeve, *b*, as and for the purpose set forth herein.

4. The combination, in a carriage-button, of the movable head B', provided with stem *f* and slot *e*, with the hollow body *c*, the pin *d*, and the sleeve *b*, substantially as set forth.

5. The combination, in a carriage-button, of the movable head B', provided with stem *f* and slot *e*, with the hollow body *c*, the pin *d*, and screw *a*, and the sleeve *b*, as and for the purpose herein set forth.

252,157. TOY CANNON. ANDREW TURNBULL, New Britain, Conn., assignor of one-half to James A. Swanston, same place. Filed June 24, 1881. (No model.)



Claim.—A toy cannon consisting of the combination of an imitative cannon-barrel, A, having the barrel proper, *a*, extending transversely through its breech end, the hammer C, and a suitable frame upon which the barrel is mounted and sustained in position with the muzzle of the barrel *a* pointing downward, so as to prevent it from being fired in any other direction, substantially as described, and for the purpose specified.

252,158. GRINDING-MILL. STEPHEN P. WALLING, South Edmeston, N. Y. Filed July 28, 1881. (No model.)

Claim.—1. In combination with a mill-spindle, a bridge-tree, a yoke supported thereon, a step suspended from said yoke, and a cage supported above the step, encircling the spindle, and provided with adjustable bearing-blocks, substantially as shown and described.

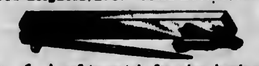
2. In combination with a mill-spindle, a stationary box or chamber provided with radial set-screws, a bridge-tree extending on opposite sides of the same, a yoke supported upon the bridge-tree, a step suspended from the yoke, and a cage encircling the spindle and supported above the step, and provided with radially-moving bearing-blocks adapted to be adjusted by the set-screws, as set forth.

3. The herein-described support for mill-spindles, consisting of a yoke, a step-plate suspended therefrom by headed rods seated in sockets in the yoke and plate, and a rocking bearing-plate seated in the step-plate, substantially as shown.

4. In combination with the step having a cavity provided with recessed sides, the rocking bearing-plate provided with ribs or feathers to enter said recesses, and thereby prevent the plate from turning.

5. In combination with the curb *c*, the rods Q, seated in the columns *c*, the elastic cushions *p*, the washers *o*, resting upon said cushions, the top or cover M, provided with ears *n*, resting upon the washers, and nuts *q*, applied to the rods above said ears, substantially as shown.

252,159. SAFETY-CATCH FOR PINS. GEORGE W. WASHBURN, West New Brighton, N. Y. Filed Nov. 22, 1881. (No model.)



Claim.—1. A safety-catch for pins, having a guard-tube adapted to slide longitudinally within an outer tube to inclose the point of the pin and to release the same, and adapted to expand within said outer tube to hold itself in its different positions, substantially as herein specified.

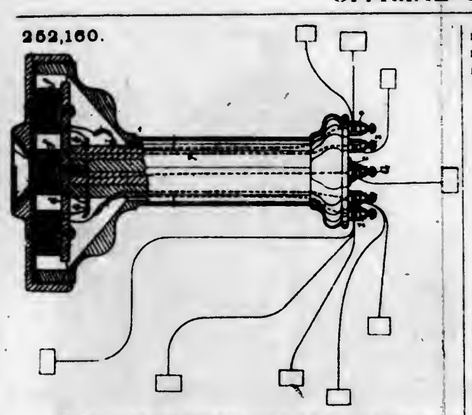
2. The combination, in a safety-catch for pins, of a fixed scroll-catch adapted to sustain the pressure of the pin, an outer tube fixedly attached to said scroll-catch, and having an opening in its back corresponding with the opening of said scroll-catch to receive the point of the pin, and a guard-tube adapted to slide longitudinally within said outer tube to inclose the point of the pin and to release the same, and adapted to expand within said outer tube to hold itself in its different positions, substantially as herein specified.

3. In a safety-catch for pins, a self-holding guard-tube composed of two half-tubes with an embracing-ring and a terminal "shot" at one end united therewith, said half-tubes being sprung apart at their free ends, as herein described, for the purpose set forth.

252,160. COMPOUND TELEPHONE. THOMAS A. WATSON, Everett, assignor to the American Bell Telephone Company, Boston, Mass. Filed Apr. 29, 1880. (No model.)

Claim.—1. The combination, with a telephone having two or more independent helices, of a series of independent circuits greater in number than said helices and divided into groups, each group being connected with one of said helices or coils, substantially as described.

252,160.

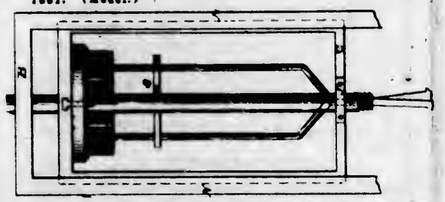


2. In a compound telephone, two or more separate helices and cores attached to a base-plate and energized by a common permanent magnet, in combination with means, such as binding-posts, for connecting said helices in separate circuits, substantially as described.

3. The combination, in a compound telephone with two or more separate helices and cores, of a vibratory plate or diaphragm having portions adapted to vibrate independently, substantially as described.

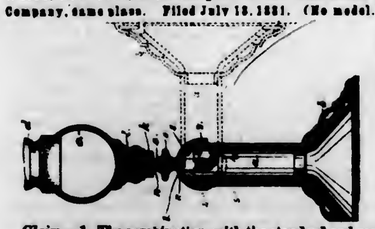
4. The vibratory plate or diaphragm for a compound telephone, formed of a divided plate held in place, substantially as described, so that the portions are adapted to vibrate independently, as set forth.

252,161. DRILL. J. WESLEY WARREN, New York, N. Y. Filed Jan. 8, 1876. Renewed Oct. 25, 1880. Again renewed June 14, 1881. (Model.)



Claim.—The combination, with the drill-shaft and the pattern-cam, of the cutters and cutter-levers, connected to one another and to the drill-shaft by a single pivot, and the slotted arms S, substantially as described.

252,162. BRACKET AND STANDARD LAMP. JAMES H. WHITE, New York, N. Y., assignor to the Manhattan Brass Company, same place. Filed July 13, 1881. (No model.)

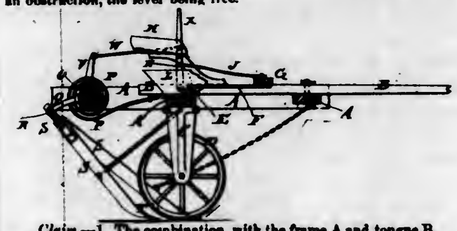


Claim.—1. The combination, with the standard and reservoir, of the yoke *c*, pivot-bar *f*, nut *h*, screw *n*, and cap *s*, having the recesses 2 and 3, substantially as and for the purposes set forth.

2. The yoke *c*, pivot-bar *f*, and arm *u*, in combination with the standard *a*, reservoir *b*, and screw *n*, substantially as set forth.

252,163. CULTIVATOR. FRANCIS O. WILLIAMS, North Cohocton, N. Y. Filed Aug. 26, 1881. (No model.)

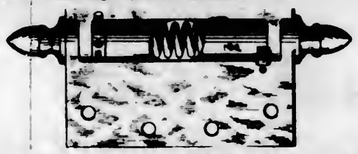
Brief.—Wheels upon swiveled standards with cranks and connecting-rods, so as to be turned in either direction by foot or hand lever. The standards are raised by turning an armed rock-shaft, and are held down to work by a spring coiled around the shaft, which also forces the shovel-standards back when raised by an obstruction, the lever being free.



Claim.—1. The combination, with the frame A and tongue B, of the wheel-standards swiveled to said frame, and provided with rigid arms E, the connecting-rods F, the foot-lever G, the rod J, and the hand-lever X, as and for the purpose described.

2. The combination, with the shaft O, having arms Q V, the lever X, and the connecting-rod W, of the coil-spring P on said shaft, the standards S, connected with the frame by adjustable chains V, and the rods R, as and for the purpose specified.

252,164. SPRING-HINGE. WILLIAM H. WILLIAMS, Brooklyn, N. Y. Filed Aug. 18, 1881. (Model.)



Claim.—1. In a spring-hinge, the combination, with a hinge-pintle or its equivalent and suitable tension devices, of a detachable spring-sleeve and a lower spring-lug, which bears on one leaf of the hinge, and to which the sleeve is locked against independent rotation, substantially as described.

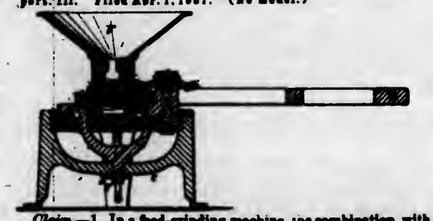
2. In a spring-hinge, the combination of a hinge-pintle or its equivalent, suitable tension devices, a detachable sleeve for inclosing the spring, provided with a hole or recess near one end, and a spring-lug housed within the sleeve and provided with a pin or stud, which projects through said sleeve and engages with the adjacent leaf of the hinge, substantially as described.

3. In a spring-hinge, the combination of a hinge-pintle or its equivalent, a spring-inclosing sleeve, a pintle-socket tension device located between one end of the sleeve and an ear of the hinge, and a spring-lug at the opposite end of the spring, which is locked to said sleeve for preventing independent rotation thereof and bears upon one leaf of the hinge.

4. In a spring-hinge, the combination of a hinge-pintle or its equivalent, a spring-inclosing sleeve, a pintle-socket tension device located between one end of the sleeve and an ear of the hinge, and a spring-lug bearing on one leaf of the hinge, housed within and locked to said sleeve, and provided with a pin or stud projecting through the sleeve, substantially as described.

5. In an adjustable spring-hinge, the combination of a hinge-pintle or its equivalent, a spiral spring, a pintle-socket tension device located between one end of the spring and an ear of the hinge, and a spring-lug at the opposite end of the spring, bearing upon an ear of the hinge and provided with a fixed pin or stud for engaging with one of the leaves of the hinge, substantially as described.

252,165. FEED-GRINDING MILL. OSWALD H. WITTER, Freeport, Ill. Filed Apr. 1, 1881. (No model.)



Claim.—1. In a feed-grinding machine, the combination, with a middle double-faced non-rotating burr having a slight lateral play in its supports, of two revolving burrs co-operating with said middle burr, whereby the space between the burrs is automatically regulated, substantially as described.

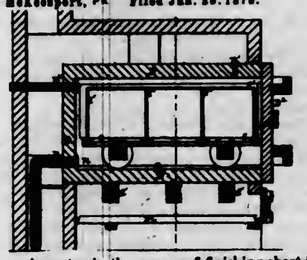
2. In a feed-grinding machine, the adjustable revolving burrs, in combination with the automatically-adjustable stationary center burr, substantially as and for the purposes set forth.

3. In a feed-grinding machine, the combination, with the revolving burrs, of the stationary but laterally-adjustable double-faced grinding-burr having an opening at the top through which the material to be ground may pass directly to the bosom of the burrs, substantially as and for the purpose specified.

4. The stationary double-faced burr, thinner where the grain is introduced and gradually thickened to a point at or near the completion of the circuit, in combination with the co-operating revolving burrs, substantially as described.

5. The stationary double-faced burr, the furrows of which are deeper at the point where the grain first comes in contact with it and grow gradually shallower to a point at or near the completion of the circuit, in combination with the co-operating revolving burrs, substantially as described, for the purpose specified.

252,166. MANUFACTURE OF SHEET-IRON. W. DOWNS WOOD, McKeesport, Pa. Filed Jan. 25, 1878.



Claim.—As a step in the process of finishing sheet-iron, subjecting the sheets in a close exteriorly-heated chamber to the action of a hydrocarbon vapor or gas and superheated steam, substantially as set forth.

252,167. HANDLE FOR MANURE-FORKS AND ANALOGOUS TOOLS. JOHN M. YOUNG, Baltimoreville, N. Y. Filed Aug. 4, 1881. (No model.)



Claim.—The handle H, composed of metal tubing, and having its upper end split longitudinally and distended, as shown, for the purpose of receiving between its extremities the spool *s* or other cross-piece, substantially as shown and set forth.

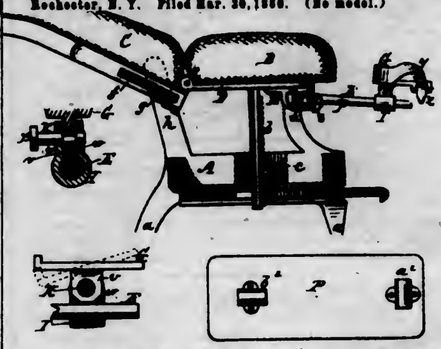
252,168. HAY AND GRAIN CAP. JAS. W. ACKUS, Macon, Mo., assignor of one-half to John Shepherd, same place. Filed Nov. 26, 1881. (No model.)



Claim.—1. In a stack-covering, the side rods or wires, *a*, having the top connection, *c*, and the adjustable hooks *d*, having the under bends or catches, *h*, and the eyes *g*, arranged on said rods or wires, substantially as specified.

2. The stack-covering consisting of the hook rods or wires *a*, connected in pairs at their upper ends, the adjustable hooks *d*, having the under bends or catches, *h*, and the lapped boards, held in place by said hook-rods and the adjustable hooks, substantially as specified.

252,169. GYNECOLOGICAL CHAIR. SIDNEY W. ARCHER, Rochester, N. Y. Filed Mar. 30, 1880. (No model.)



Claim.—1. In an operating-chair, the combination of the chair A, having standards h h, provided with inwardly-projecting studs *g g*, and the seat B and back C, hinged together, the back provided with side slots, *f f*, which receive the studs and allow the back to slide forward and back, the seat being raised and lowered by the rack *b* and pinion *c*, as herein shown and described.

2. In an operating-chair, the combination of the vertically-moving seat B, the back C, hinged thereto and having a free sliding motion, the rack *b*, to which the seat is attached, the pinion *c*, engaging with the rack and operating the same, and the chair-frame A, having standards provided with studs *g g*, which enter slots *f f* of the back, as shown and described, and for the purpose specified.

3. In an operating-chair, the combination of the arm E, the foot-rest G, the socket-piece I, to which it is pivoted to allow vertical adjustment, said socket-piece resting on the arm, the vertical tongue *e* of the foot-rest resting between lugs of the socket-piece and having a polygonal end resting upon the arm, and the tightening cam or eccentric K, as shown and described.

4. In an operating-chair, the combination, with the chair A and the arms E, attached thereto, of the separate cushion P, provided on its under side with the two socket-pieces *d' d'*, one standing transversely and the other longitudinally to the cushion and sliding upon the arms, whereby said cushion can be made an extension to the seat in different positions, as specified.

252,170. BURIAL-CASE. JOSEPH ASKINS, Westfield, Mass. Filed June 15, 1881. (Model.)



Claim.—The combination of the sheet-metal recessed cover A, the wooden cross-pieces C' C', the cross-piece C², covers D D, and glass plates C C, whereby a tight joint is secured at the points where plates are placed, substantially as set forth.

252,171. PAINT FOR ROOFS. JAMES B. BARNARD, Carrettsville, Ohio. Filed Sept. 15, 1881. (No specimens.)

Claim.—The above-described composition or roof-paint, consisting of residuum, resin, naphtha, and oxides of iron, substantially in the manner and for the purposes above set forth.

252,172. STONE-CUTTING MACHINE. WILLIAM BIRGS, Long Cove, Tenant's Harbor, Me. Filed July 23, 1881. (No model.)



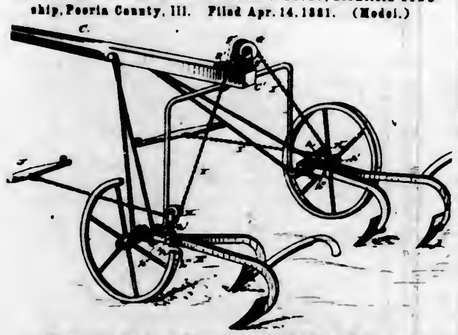
Claim.—In a machine for cutting or dressing stone, the combination of the sliding carriage B, having central dovetailed button, *p*, and guide-studs *f f* on opposite sides of said button, pintle *n*, and circular top part, B', having segmental slots *f f*, and central circular dovetailed recess, *o*, as shown and described, for the purpose set forth.

252,173. VEHICLE-SPRING. CHARLES C. BISHOP and JOSEPH A. BISHOP, Nashville, Tenn., assignors to Caswell C. Bishop, same place. Filed Oct. 13, 1881. (No model.)



Claim.—The springs F, composed of an upper section, a, adapted to be bolted at one end to the vehicle-body, and a lower section, b, upwardly curved at both ends, one of which ends is secured to the outer end of the upper section, while the opposite end is curved backward and attached to the under side of the upper section, substantially as and for the purpose shown and described.

252,174. CULTIVATOR. OSSIAS O. BOOTH, Brimfield Township, Peoria County, Ill. Filed Apr. 14, 1881. (Model.)



Claim.—1. In a cultivator, in combination with an axle or frame, and plow-gangs hinged thereto, a cord or wire, with its median portion passed over a pulley journaled to the upper part of the axle or frame, and its ends passed beneath pulleys secured to the plow beams or gangs in rear of the axis on which they swing vertically, whereby the force of the draft-animals, which are connected to the ends of the cord or wire, may be partly utilized in exerting an upward force on the plow beams or gangs, for the purpose specified.

2. In a cultivator, in combination with the axle and plow beams or gangs, and a projection, C', in rear of the axle, a cord or wire, I, passed over a pulley, G, journaled on the part C', and under pulleys H, journaled to the plow beams or gangs in rear of the axis on which they are oscillated vertically, and its ends extending thence forward for the attachment of the draft-animals, substantially as and for the purpose specified.

3. In combination with the axle, plow beams or gangs, wheels, and tongue having its rear end extended in rear of the axle, pulley G, journaled on the rear-extended end of the tongue, and pulleys H, journaled to the plow beams or gangs, in rear of the axis on which they turn to oscillate vertically, the cord I, passed over the pulley G and under the pulleys H, substantially as and for the purpose specified.

4. In combination with the axle, wheels, plow gangs or beams, projections C' in rear of the axle, pulleys H, and cord I, the pulley G, adjustably secured to the extension C', substantially as and for the purpose specified.

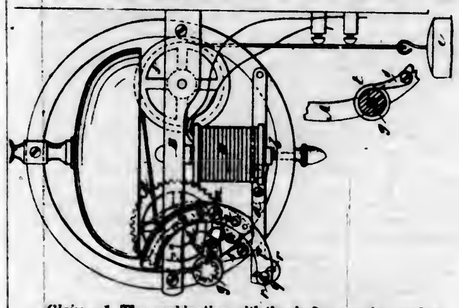
5. In combination with the axle, wheels, plow gangs or beams, projection C' in rear of the axle, pulley G, and cord I, the pulleys H, adjustably secured to the plow beams or gangs, substantially as and for the purpose specified.

6. In combination with the axle, wheels, plow gangs or beams, pulley G, and cord I, the pulleys H, adjustably secured to the plow beams or gangs, substantially as and for the purpose specified.

7. In combination with the axle, wheels, plow gangs or beams, pulley G, and cord I, the pulleys H, hinged to the plow beams or gangs, so that they may align themselves to the cord I when the plow-beams are oscillated vertically or laterally, or adjusted at different distances from each other, substantially as and for the purpose specified.

252,175. STRIKING MECHANISM FOR ELECTRIC BELLS. GEORGE H. BOWERS, Pittsburg, Mass. Filed Sept. 3, 1881. (Model.)

Brief.—A semicircular hammer, E, is revolved by a motor controlled by an electro-magnet. Said hammer is in two pieces, pivoted at m, so that the striking end is thrown outward by centrifugal force and strikes the bell; but its motion being thus arrested the end drops out of line with the edge of the bell and is free to make its revolution.

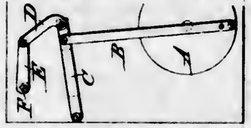


Claim.—1. The combination, with the shaft g, carrying ratchet-wheel k, of the hammer E, hung loosely on arm i, projecting from shaft g, the stop-pin n, passing through a cross slot or hole in the hammer-tail p, the spring o, and the pawl l, pivoted on said arm i, whereby the hammer is adapted to be operated with respect to the bell, as described.

2. The combination of segment-hammer E, propelling-shaft g, arm i, tail-piece p, provided with pin g, and the armature-lever a, provided with legs r, substantially as shown and described.

3. The combination of the impelling-shaft g, ratchet k, pawl l, arm i, pivoted hammer E, and stop-lever a, substantially as shown and described, for operation as set forth.

252,176. MECHANICAL MOVEMENT. RICHARD H. BRIDD, Pittsburg, Pa. Filed Sept. 5, 1881. (No model.)

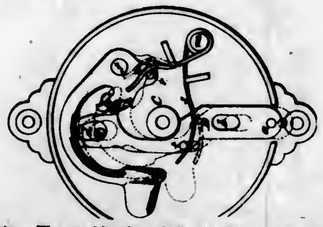


Claim.—1. In a mechanical movement, the combination of the following elements: a rock-shaft having a suitable arm, a connecting-link, an oscillating lever, a pitman, and a driving-wheel, the link being arranged to connect the arm of the rock-shaft with the oscillating lever, which is in turn connected with the driving-wheel by means of the pitman, whereby the rotary movement of said wheel imparts a semi-rotation to the rock-shaft, substantially as specified.

2. The combination, with the rock-shaft F, having arm E, and the wheel A, having pitman B, of the oscillating lever C and link D, substantially as and for the purpose shown and described.

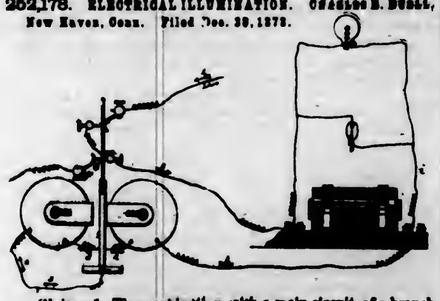
252,177. GONG-BELL. FREDERICK W. HAECKSIEPER, New Haven, Conn., assignor to Sargent & Co., same place. Filed Oct. 31, 1881. (Model.)

Brief.—The novelty consists in the cam on the hammer-lever, which produces lateral motion of the slide, whereby said hammer-lever is released.



Claim.—The combination of the slide D, arranged for longitudinal movement in a plane parallel with the plate, and also for lateral movement in the same plane with the hammer-lever, the said slide constructed with a projection, i, to engage the corresponding projection, h, on the hammer-lever, the said hammer-lever constructed with a finger, n, to operate as a cam to impart a lateral movement to the slide, and a spring operating to force the parts into their place of rest, substantially as described.

252,178. ELECTRICAL ILLUMINATION. CHARLES S. BUSH, New Haven, Conn. Filed Dec. 30, 1878.



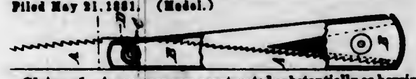
Claim.—1. The combination, with a main circuit, of a branch or loop light circuit, an automatic circuit-changer arranged to operate an induction apparatus, said induction apparatus being included in said branch or loop circuit, whereby an induced current is produced without breaking, appreciably varying the tension or changing the general direction of the current on the main line, essentially as set forth.

2. The combination, with one normally-closed electric circuit, of a series of stations, each provided with an induction apparatus having its primary coil forming part of said electric circuit, and its secondary coil arranged to maintain electric illumination, and devices adapted to automatically affect the current in the primary coil of the induction apparatus for producing induced currents in the secondary circuit thereof without changing the direction of the currents charging the main circuit in its entire length, or interrupting the continuity of said main circuit, or appreciably disturbing the tension thereof, substantially as described.

3. The combination, with one normally-closed main electric circuit, of a series of stations, each provided with an induction apparatus having its secondary circuit arranged to maintain electric illumination, and with devices adapted to alternately shunt and interpose the primary helix of the induction apparatus in said main circuit without interrupting the continuity thereof, as set forth.

4. The combination, with one main electric circuit, of a series of stations, each provided with an induction apparatus having two primary helices, and devices adapted to separately and alternately interpose and withdraw the primary helices without interrupting the continuity of the main circuit or appreciably disturbing its tension.

252,179. COMPASS-SAW. CHARLES BUSH, New York, N. Y., assignor to himself and Alexander L. Whitelaw, same place. Filed May 21, 1881. (Model.)



Claim.—1. A compass-saw constructed substantially as herein shown and described, consisting of the blade A, tapered from the center toward each end and curved transversely with a curve gradually decreasing in size from the center toward each end, the handle B, and the clamping-screw C D, as set forth.

2. In a compass-saw, the saw-blade A, tapered from the center toward each end and curved transversely with a curve gradually decreasing in size from the center toward each end, substantially as herein shown and described, whereby larger and smaller curves can be cut with the same saw, as set forth.

3. In a compass-saw, the combination, with the saw-blade A, tapered from the center toward each end and curved transversely with a curve gradually decreasing in size from the center toward each end, of the handle B, grooved upon its opposite edges, and the clamping-belt C D, substantially as herein shown and described, whereby the saw-blade can be reversed to continue a kerf in a curve in the opposite direction, as set forth.

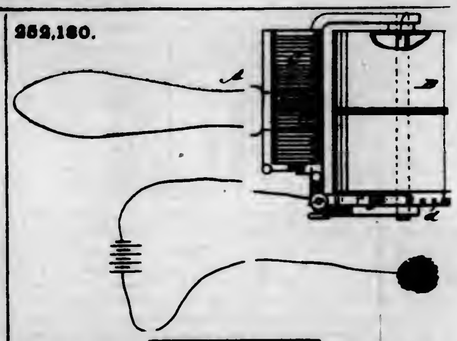
252,180. ELECTRICAL APPARATUS FOR MEDICAL USE. JOHN BUTLER, New York, N. Y. Filed May 20, 1881. (No model.)

Claim.—1. The combination of roller B, provided with contact-breaker d, wire coil or helix C, and handle A, substantially as shown and described.

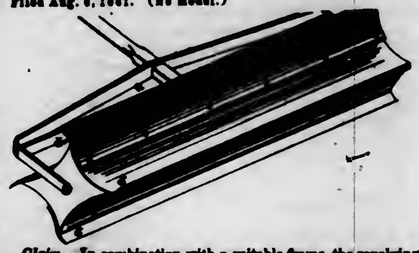
2. In electrical apparatus for medical use, the combination of a wire coil or helix with a roller-electrode and connections to a battery, substantially as shown and described.

3. In electrical apparatus, the double electrode consisting of roller B, made of two insulated portions, substantially as shown and described.

252,180.

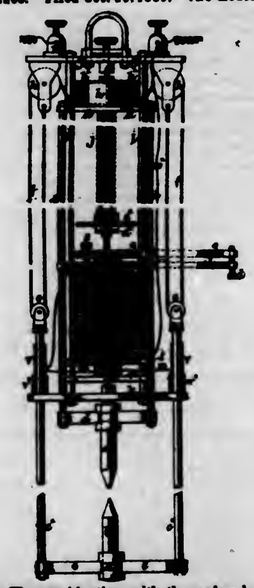


252,181. STALK-CUTTER. HENRY S. CADY, Pine Bluff, Ark. Filed Aug. 6, 1881. (No model.)



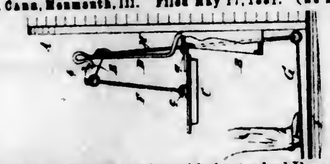
Claim.—In combination with a suitable frame, the revolving cutter A, composed of a block of wood recessed between its edges to form radial wings, to which are bolted cutters, all as and for the purpose set forth.

252,182. ELECTRIC LAMP. ALEXIS JEAN BAPTISTE GAUGE, Paris, France. Filed Oct. 26, 1881. (No model.)



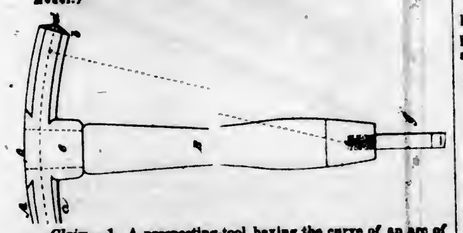
Claim.—The combination, with the carbon-holders, the motor-weight A and its contained nut, of the screw j, having a prolongation, p, and an attached toothed wheel, d', the coil m and its hollow core n, the rods r and lever d' b', the frame d', fitted loosely to the screw j, the pinion f', escapement-wheel f', and stop-spring k', substantially as and for the purpose herein described.

252,183. DEVICE FOR OPENING FURNACE-DOORS. JUDSON A. CASS, Monmouth, Ill. Filed May 17, 1881. (No model.)



Claim.—The combination, with the standard D, secured at its lower end to the door-frame B and provided at its upper end with the hook *b*, of the lever E, suspended from said hook, rod H, secured at its upper end to one end of the lever E and attached at its lower end to the free end of the treadle, treadle G, pivoted to the floor, and rod F, secured at its upper end to the opposite end of the lever E and at its lower end to the eye *c* of the door C, opening upwardly and overbalancing the weight of the treadle and rod H, whereby the furnace-door can readily be opened by the operator by placing his foot on the treadle and automatically closed by removing his foot therefrom, substantially as described.

252,184. PROSPECTING-TOOL FOR MINERS, &c. JAMES B. THORNTON CHASE, Pueblo, Colo. Filed June 18, 1881. (No model.)



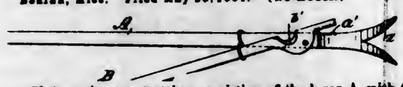
Claim.—1. A prospecting-tool having the curve of an arc of a circle and constructed with its pick portion tapering on all sides to a sharp point, and its heel made with a central projecting point, substantially as shown and described, and for the purpose set forth.

2. In prospecting-tools, the tool A, so curved that its longitudinal center shall form the arc of a circle having the pick *a*, tapering on all sides to a sharp point, and its hammer *b*, terminating in a pyramidal point, *d*, in combination with handle B, having hook *g* removably secured in its outer end, substantially as shown and described, and for the purpose set forth.

3. In prospecting-tools, the hammer end *b*, formed with a pyramidal or pointed end, as and for the purpose set forth.

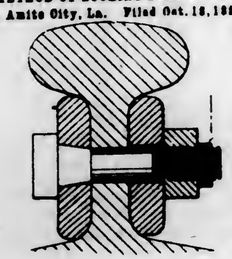
4. The combination, with a prospecting-tool and its handle, of the climbing-hook *g*, substantially as shown, and for the purposes set forth.

252,185. WIRE-STRETCHER. CHARLES T. CHRISTMAN, Lake Beulah, Miss. Filed May 23, 1881. (No model.)



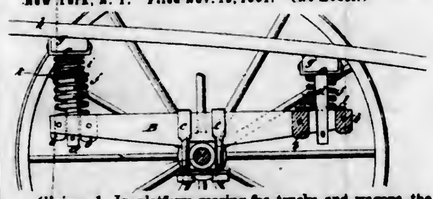
Claim.—A wire-stretcher consisting of the lever A, with the laterally curved and forked end *a*, the cutting-edge *c*, and the serrated face *a'*, and the lever B, hinged to the upper face of lever A and formed with the serrated head *b* and cutting-edge *b'*, as shown and described.

252,186. METHOD OF LOCKING NUTS UPON BOLTS. ALBERT R. CLARK, Amite City, La. Filed Oct. 18, 1881. (No model.)



Claim.—The method herein described of locking nuts upon screw-bolts, consisting in first flattening one side of the bolt near the face of the nut and then casting a metal ring around the bolt, so that a portion of the ring will rest in the flattened portion of the bolt, substantially as described.

252,187. PLATFORM-GEAR FOR WAGONS. EDWARD CLARK, New York, N. Y. Filed Nov. 19, 1881. (No model.)

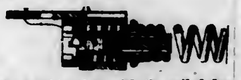


Claim.—1. In platform-gearing for trucks and wagons, the apertured side bars, B, posts *d*, provided with head-plates *e*, spiral springs *f*, and cross-bars *g*, substantially as shown and described, combined for operation as set forth.

2. In platform-gearing, the light spiral springs *i*, in combination with the posts *d*, head-plates *e*, and main springs *f*, substantially as and for the purposes set forth.

3. The combination of the arched truck-floor A, cross-bars *g*, head-plates *e*, supporting-posts *d*, springs *f*, and connected side plates, *a a*, separated by pieces *b*, substantially as shown and described.

252,188. DOOR-SPRING. CHARLES B. CLARK, Detroit, Mich. Filed Aug. 8, 1881. (Model.)



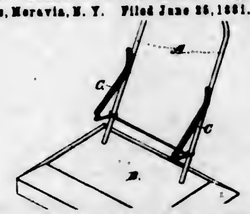
Claim.—The combination, with the coiled door-spring, of the upper bracket, formed with a cam-projection and having an annular chamber containing a coiled spring, the pin having longitudinal ribs and channels, and also having notches formed in the under side of its head, and the collar fitted upon the ribbed and channeled portion of the pin, substantially as described.

252,189. LABEL-HOLDER. HENRY E. CLIFTON, Augusta, Ga. Filed Nov. 5, 1881. (No model.)



Claim.—The label-holder consisting of a wire fastening-frame herein described, having the marginal fastening-loops *d e*, the transverse branch *c*, having the loop *h* at the bend and the terminal eye *g*, and the spring terminal arm *l*, having the hook *k*, bent downward to engage the loop *h* and adapted to pass through and hold the label, substantially as specified.

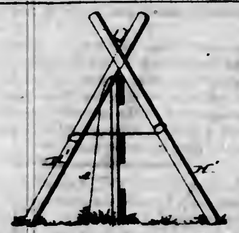
252,190. STAND FOR DISPLAYING SCARFS. FRANK W. COLLINS, Moravia, N. Y. Filed June 25, 1881. (No model.)



Claim.—The hereinbefore-described stands for displaying scarfs, consisting of the frame A, secured within the base B, and provided with the sliding clamp C, substantially as and for the purpose specified.

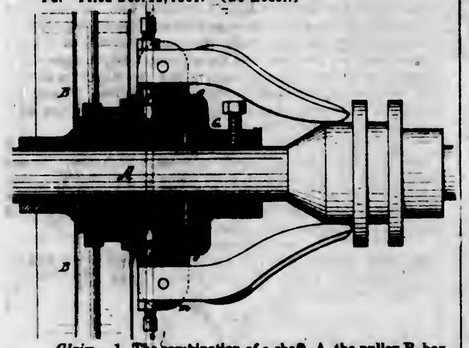
252,191. FENCE. ISAAC COLVIN, Hillsborough, Ohio. Filed Oct. 10, 1881. (No model.)

252,191.



Claim.—In a portable fence, the panels D, consisting of the uprights H, rails G, and posts A, secured together by bolts, the said posts and rails projecting beyond the uprights, forming rabbets *b*, in combination with the panels B, consisting of uprights H and rails G, projecting beyond said uprights, substantially as specified.

252,192. FRICTION-CLUTCH. STEPHEN S. COOK, Philadelphia, Pa. Filed Dec. 12, 1881. (No model.)



Claim.—1. The combination of a shaft, A, the pulley B, having two friction-surfaces, *s s*, the longitudinally-sliding friction ring or rings E, a frame, G, secured to and turning with the shaft A, and mechanism, substantially as described, carried by said frame G and adapted to operate the ring or rings E, as set forth.

2. The combination of the shaft A, the pulley B, having two friction-surfaces, *s s*, the longitudinally-sliding ring or rings E, a frame, G, secured to the shaft A, wedge-bolts *g*, carried by the frame, and arms or levers, also carried by the frame and serving to actuate said wedge-bolts, as set forth.

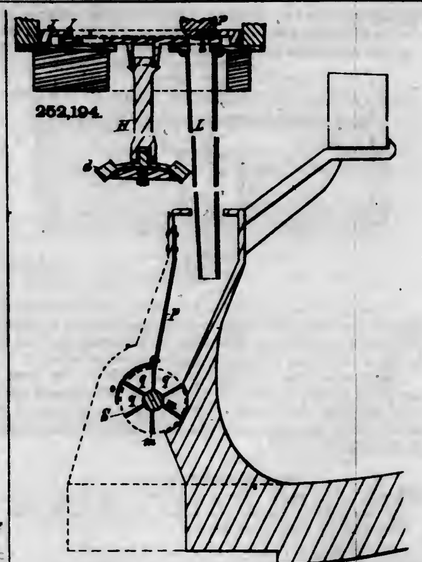
252,193. ELECTRICAL RAILWAY. EUGENE H. COWLES, Cleveland, Ohio. Filed June 27, 1881. (No model.)



Claim.—In an electric railway, the combination, with the track and car, the latter provided with an electromotor, of an electric generator, an insulated wire connected with the generator, means, substantially as described, for suspending the insulated wire over the track and above the car, and a sheave arranged to travel on said suspended wire, and a wire connecting said sheave and the electromotor on the car, the wire serving to transmit the current to the car, and one of the track-rails forming the return-conductor, substantially as set forth.

252,194. CORN-PLANTER. CYPRIAN U. CHAPDALL, Sterling, Ill. Filed May 18, 1881. (Model.)

Claim.—1. The combination of the rear frame, A, having the first seed-dropping devices located on the front part thereof and provided with the seed-tubes I, and the front frame, A', carrying the runners C, provided with the second dropping devices arranged to receive the seed from said seed-tubes and deposit the same in the furrows, substantially as described.



2. The combination, with a seed-box, of a horizontal rotary seed-dropping plate provided with seed-apertures, and devices for giving said plate an irregular lateral to-and-fro motion simultaneous with its movement about its center, substantially as described, and for the purpose set forth.

3. The combination, with the seed-box having the bottom plate, E, provided with the seed-passage and a central opening, of the chambered seed-dropping wheel or plate I, having lateral projections, the plate J, arranged above said seed-dropping plate, and provided with the lugs *f*, arranged to strike said lateral projections, and devices for giving to said seed-dropping plate an irregular rotary movement, substantially as described.

4. The combination, with the seed-plate I, loosely supported, of the shaft H, loosely connected with said plate at one end to communicate rotary motion to said plate, the gear-wheel *d*, loosely connected with the lower end of said shaft, and means for giving to said seed-plate an irregular lateral to-and-fro movement simultaneous with its rotation, substantially as described, and for the purpose set forth.

5. The combination, with the transverse shaft G, provided with bevel-gears *c*, the bevel-gears *d*, the vibratory and rotary shafts H, connected with said gears at their lower ends, the suitably-supported seed-plates I, and the plates J, provided with the lugs *f*, arranged to strike the rounded corners of the said seed-plates and communicate an irregular to-and-fro motion to the same, substantially as and for the purpose set forth.

6. The combination, in a seed-box, with the rotary loosely-supported seed-plate having the rounded corners, of the lugs *f*, arranged to strike said corners as the plate rotates and communicate an irregular to-and-fro motion to said plate, substantially as described.

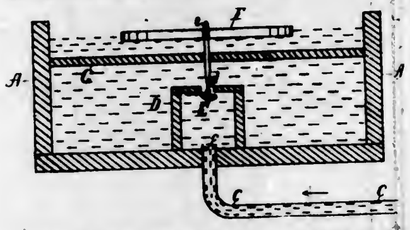
7. In a seeding-machine, the combination, with the seed-dropping plate provided with seed-apertures, of the elastic preliminary cut-off *l l*, substantially as described.

8. The combination, with the rotary seed-plate provided with seed-apertures, substantially as described, and the final or permanent cut-off bars *i*, of the elastic cut-offs *l*, arranged to bear upon the upper side of said seed-plate, over the apertures thereon, essentially as and for the purpose set forth.

9. The combination, in a seeding-machine, with the first seed-dropping devices mounted upon the rear frame, A, and means for operating the same, of the second dropping-wheel, S, arranged upon the front frame, A', and having the compartments *g*, to receive seed from said first dropping devices, and operated by intermittent moving devices, substantially as described.

10. The combination, with the second dropping-wheel, provided with compartments substantially as described, of the elastic screen arranged to cover one of said compartments, for the purpose set forth.

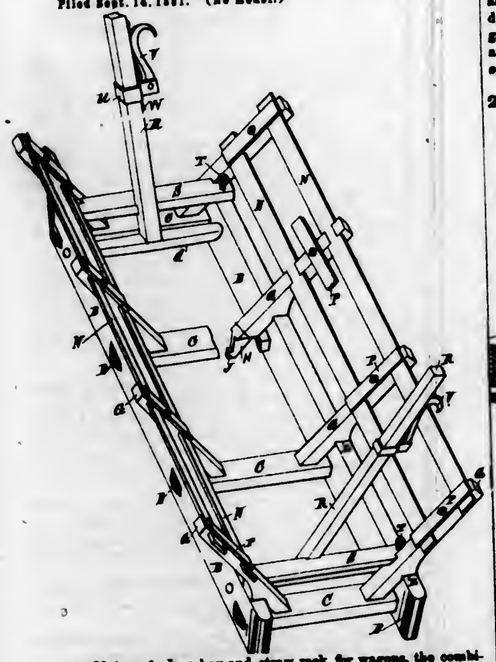
252,195. VALVE. WILLIAM DECKER, Colfax, assignor of three-fourths to John H. Hudgin, Edward Annable, and David Trovio, all of Fairbury, Ill. Filed Oct. 11, 1880. (No model.)



Claim.—1. The combination, with the chamber D, having an induction-port and a valve hinged to close upwardly and cover said port, of a float and a stem secured at one end to the float and at the other end hinged to said valve, substantially as set forth.

2. A supply-pipe, C, receptacle A, chamber D, with ports *c* and *d*, and floating weight F, in combination with a hinged valve attached to the inner surface of chamber D near the egress-port *d*, and suitable connections between the valve and floating weight, as set forth.

252,196. HAY-RACK. JAMES M. DIFFENBAUGH, Green Centre, Ind., assignor to himself and Daniel A. Leitch, same place. Filed Sept. 14, 1881. (No model.)



Claim.—1. In a hay and straw rack for wagons, the combination, with the longitudinal bars B and the cross-bars C, of the posts G, the longitudinal rails M, and the latch-strips P, pivoted to the posts G, substantially as herein shown and described, and for the purpose set forth.

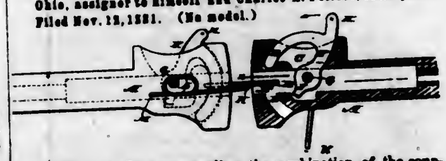
2. In a hay and straw rack for wagons, the combination, with the longitudinal bars B and the cross-bars C, provided with slots F, of the posts G, provided with tenons H, having projection J and offsets L at the ends, and of the longitudinal rails M, substantially as shown and described, and for the purpose set forth.

3. In a hay and straw rack for wagons, the combination, with the longitudinal bars B and the cross-bars C, provided with slots F, of the posts G, each provided with a tenon, H, an offset, L, and an aperture, M, of the pins E and the longitudinal rails M, substantially as herein shown and described, and for the purpose set forth.

4. The combination, with a boom-pole, B, of the collar or sleeve U, the hinged hook V, and the spring W, substantially as herein shown and described, and for the purpose set forth.

5. The combination, with the boom-pole B, provided with apertures or recesses Y, of the collar or sleeve U, and the hook V, provided with a stud, X, substantially as herein shown and described, and for the purpose set forth.

252,197. CAR-COUPLING. ROBERT H. DOWLING, Newark, Ohio, assignor to himself and Charles H. Pollett, same place. Filed Nov. 12, 1881. (No model.)



Claim.—1. In a car-coupling, the combination, of the coupling-link B and the draw-head A, provided with the central end recess, B, the slot C, and the segmental aperture D, extending entirely through the draw-head, the arm F, pivoted in the said draw-head and provided with the segmental coupling-pin E, the projection H above the coupling-pin, and the projection J below its pivot-pin, substantially as shown and described, whereby the coupling-pin is adapted to be tripped by the end of the link striking the projection J of the said arm, as set forth.

2. In a car-coupling, the combination, with the draw-head A and the plate G, having its ends extended on each side of the said draw-head, of the swinging guide-frame K, provided with elongated side loops, L, and crank-handles M, substantially as shown and described, whereby the guide is adapted to be moved forward or backward, as may be necessary, as set forth.

252,198. APPARATUS FOR RAISING AND LOWERING BOATS. REGINALD H. BARLE, St. Johns, Newfoundland. Filed Oct. 12, 1881. (No model.)



Claim.—1. The combination of the swinging frame D, connected by cross-bars *e* and attached by knuckle-joints *d* to the side of boat, the cradle E, having hooks *f f*, hung to the outer ends of arms *e* by joint-pins *g* and connected at the outer ends by the cross-bar A, and the davits C C, having blocks *m*, connected by ropes *l* and block *i* with eyes *h* on the hooks *f*, as and for the purpose specified.

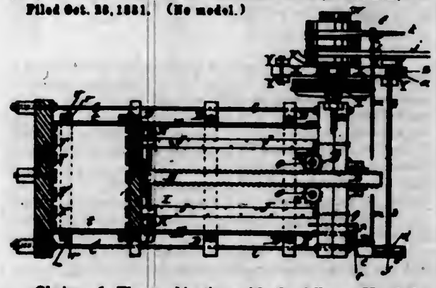
2. The combination of the outwardly-movable levers *n*, having pins *n'* and hooks *r*, the inwardly-movable slides *o*, having pins, and the ropes *g*, with the apertured stands B, the frame D, having apertured arms *e e*, and the cradle E, having apertured lugs *p* on hooks *f*, as and for the purpose specified.

252,199. RAZOR-STROP. HOWARD B. EMERSON, Charlestown, Mass. Filed Oct. 3, 1881. (No model.)



Claim.—In a razor-strop, the combination of the body A, having mortise F and recess I, the block B, inserted in said mortise, the right-angled plate G, adapted to slide in the recess I, and provided with opening *i*, slot *g*, and screw H, the flexible band F, secured to the block E and sliding plate G, and the handle K, having screw I, adapted to engage with the threaded opening *i* and tighten the band F by moving the sliding plate, all substantially as shown and described.

252,200. BALING-PRESS. LOUIS ERCKMANN, Little Elm, Tex. Filed Oct. 28, 1881. (No model.)



Claim.—1. The combination, with the follower H, of the double rack-bar I, the two pinions N N on shafts O, the worm-wheels P, and the reversely-threaded screws Q Q on the rotary shaft R, whereby the follower is reciprocated, as described.

2. The combination, with the shaft R and gear-wheels S T U, of the shaft V, the hinged bar X, the hinged bar Z, the rod *b*, having arm *a*, the lever *d*, and the ratchet and pawl *e f*, whereby the gear-wheel U can be thrown into gear with either of the wheels S T, as described.

3. The combination, with the fingers *l m*, of the rod *o*, having arms *n p*, placed at right angles to each other the rod *q*, pivoted to the end of arm *p* and passing through a bearing in frame B, and the follower H, arranged to strike said rod *q*, as and for the purpose specified.

4. The combination, with the top and bottom doors, *t*, of the tie-rods C and bars X, the latter pivoted to said doors and adapted to swing out under the tie-rods, as and for the purpose specified.

5. The four short posts *y*, connected in pairs by inclined cross-boards *z*, in combination with the two doors 1, hinged to the boards *z*, the bars 2, pivoted to said doors, and the boards 3, arranged as shown and described.

252,201. UNDER-GARMENT. THOMAS B. FARRINGTON, Minneapolis, Minn. Filed Jan. 31, 1881. (No model.)



Claim.—1. A pair of drawers composed of an upper cloth part, A, and close-fitting lower knit part, B, joined above the calf, substantially as described, and for the purposes set forth.

2. In a pair of drawers having knit extremities extending from the ankle to a point above the calf, said extremities having two more contractile parts, one about the ankle and the other about the leg at a point above the calf and below the knee, substantially as described, and for the purposes set forth.

3. In a garment composed of the cloth part A and the knit extremities B, the upper margin of said knit portions enlarged by increase of stitches to practically equal the cloth part in size, substantially as described, and for the purposes specified.

4. In a garment composed of a cloth body and knit end, as described, said knit ends produced in a flat web and widened at the top by additional stitches upon the selvage edges to equal the width of the cloth part at the point of juncture and vertically seamed in line with the inclined seam of the cloth part, substantially as and for the purposes set forth.

252,202. ROSANILINE-RED COLORING-MATTER. OTTO FISCHER, Munich, Germany. Filed May 23, 1881. (Specimens.)

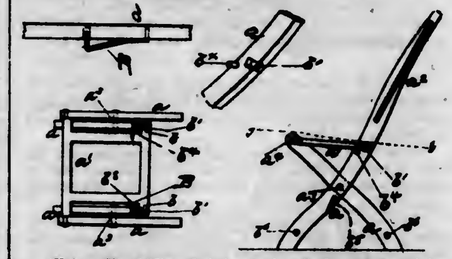
Claim.—As a new article of manufacture, the herein-described red coloring-matter, consisting of rosaniline prepared from para-nitrobenzaldehyde and a salt of commercial aniline-oil, and having the qualities as hereinbefore set forth.

252,203. PREPARATION OF ROSANILINE-BLUE COLORING-MATTER. OTTO FISCHER, Munich, Germany. Filed Jan. 26, 1881. (Specimens.)

Brief.—This form of rosaniline blue is made by the reaction of paranitrobenzaldehyde upon diphenylamine and oxidating the resulting mixture.

Claim.—As a new article of manufacture, the herein-described blue coloring-matter, consisting of rosaniline prepared from para-nitrobenzaldehyde and diphenylamine, as hereinbefore set forth.

252,204. FOLDING CHAIR. NEHE C. FRINK, Saginaw, Mich. Filed Sept. 19, 1881. (No model.)



Claim.—The folding chair herein described, consisting of the front and rear legs, *a a*, pivoted together at *a'*, and the seat *a''*, the seat having projections *b* and notch *b'*, and pivoted to the upper ends of the rear legs, the front legs being provided with notches *b'* and spring-fastening B, all combined and arranged as set forth.

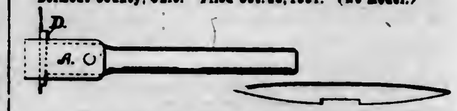
252,205. PACKING SNUFF. SAMUEL T. FORSYTH, Sr., Baltimore, Md. Filed Dec. 8, 1881. (No model.)



Claim.—1. A new article which consists of a piece of ox-gullet containing snuff, with its ends contracted to a small aperture, and the said aperture closed by paper seals pasted over the ends of the package, substantially as specified.

2. An improved process of packing snuff, which consists in placing a piece of moist ox-gullet having its outer end closed over the discharge-nozzle of a snuff-packing machine, then filling the said piece of gullet, then dividing the filled package into a number of sections by constriction, then drying the connected packages, then separating them, and then closing the end apertures by means of seals, substantially as specified.

252,206. MINING IMPLEMENT. THOMAS H. GALLAHER, Belmont County, Ohio. Filed Oct. 28, 1881. (No model.)

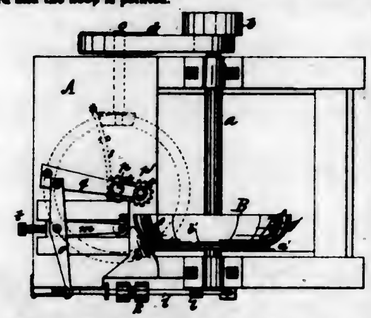


Claim.—The combination, with the head A, having a handle-socket, *a'* a pick-blade having a recess, *a*, the ends of which bear on the ends of the head and prevent displacement in the direction of the length of the blade, and a wedge-key, D.

252,207. MACHINE FOR DRESSING HOOPS. SAMUEL E. SARGENT, Janesville, Wis., assignor to himself, Joseph Beck, Augustus Huntemer, and Otto Reinke, same place. Filed Oct. 4, 1881. (Model.)

Brief.—The hoop is fed to a cutter-head with a weight-pressed rubber roller opposite and with a curved guide-plate near its edge. The weight is attached to a pivoted arm, which bears against a lever attached to the slide carrying the roller. This pivoted arm carries a grooved roller, which bears upon the edge of the hoop,

and thus limits the movement of the rubber roll. When the end of the hoop passes the grooved roller the rubber roller moves forward and the hoop is pointed.



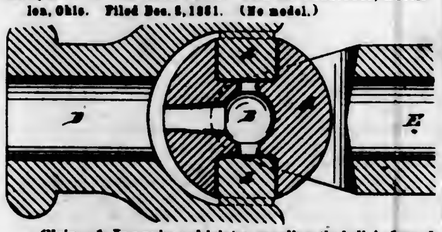
Claim.—1. In a hoop-dressing machine, the combination, with the grooved frame A and the cutter-head B, of the slide *m*, the gage-roller *n*, the lever *o*, and the weighted lever *i*, substantially as and for the purpose set forth.

2. In a hoop-dressing machine, the combination, with the frame A and the cutter-head B, of the slide *m*, the gage-roller *n*, the lever *o*, the weighted lever *i*, and the set-screw *k*, substantially as and for the purpose set forth.

3. In a hoop-dressing machine, the combination, with the frame A and the cutter-head B, of the slide *m*, the roller *n*, the lever *o*, the weighted lever *i*, and the grooved pressure-roller *h*, mounted loosely on said weighted lever, substantially as and for the purpose set forth.

4. In a hoop-dressing machine, the combination, with the frame A, provided with the guide-plate *h*, and the cutter-head B, of the grooved pressure-roller *h*, the adjustable gage-roller *n*, and the adjustable fluted feed-rollers *p p'*, substantially as and for the purpose set forth.

262,208. UNIVERSAL JOINT. EDMUND GARRIGUES, Hacoillen, Ohio. Filed Dec. 8, 1881. (No model.)



Claim.—1. In a universal joint or coupling, the ball A, formed with the oil-chamber B, communicating with the bearings of the joint, substantially as shown and described.

2. The universal joint or coupling formed by casting the yokes D and E upon the ball A, substantially as described.

3. The method herein described of forming the universal coupling, consisting in first casting the ball, using chills for the journals, and then casting the yokes upon the ball in such manner that the journals act as chills for forming the bearings of the yokes, substantially as set forth.

4. The chilled ball A, in combination with the yokes D and E, having the chilled bearings *d* and *e*, substantially as described.

262,209. HERNIAL TRUSS. WILLIAM H. GARSON, Philadelphia, Pa., assignor to Hastings & Garson, same place. Filed Oct. 20, 1881. (No model.)



Claim.—In a hernial truss, the combination of a stem fitting freely in a bearing, a bevel-gear secured upon said stem, an adjusting-screw engaging a nut connected rigidly with the bearing of the stem, and a bevel-gear mounted loosely on said adjusting-screw and meshing with the gear of the stem, these members being combined for joint operation, so that the stem may be either held fast in or allowed axial movement within its bearing, substantially as set forth.

262,210. HORSESHOE. ROLLIN A. GOODNOUGH, New York N. Y., assignor of one-half to Charles W. Russell, same place. Filed Sept. 24, 1881. (Model.)



Claim.—1. A horseshoe having its hoof-face constructed with two distinct bevels, E and F, both inclined upwardly, essentially as shown and described, the outer bevel, E, extending in a downward direction from the outer edge of the hoof-face for about half the width of the shoe to form a seat corresponding in breadth to the shell or crust of the animal's hoof, and the inner bevel, F, being formed at a greater inclination than the outer one and extending in a downward direction toward the inner edge of the shoe to clear the sole of the hoof, substantially as and for the purpose set forth.

2. A horseshoe having its heels chamfered upon both their top and bottom faces, as shown, to prevent the concussion of the hoof upon the ground being transmitted to the heel or quarter of the hoof, and thereby preventing the tender part being bruised or becoming sore.

262,211. FEED-REGULATOR FOR GRINDING-MILLS. OLIVER S. GRAVES, Buffalo, N. Y., and JACOB HEBEL, Peoria, Ill. Filed Nov. 4, 1881. (No model.)



Claim.—1. The combination, with the running-stone F, provided with a revolving distributing-spout, H, having one or more discharge-nozzles, H', arranged in the eye of the runner, of the bed-stone B, provided with a guard-ring, I, substantially as set forth.

2. The combination, with the running-stone F, provided with a revolving distributing-spout, H, having one or more discharge-nozzles, H', arranged in the eye of the runner, of the bed-stone B, provided with a guard-ring, I, having perforations *m*, substantially as set forth.

262,212. DRAFT-EQUALISER. DAVID M. HARKRADER, Pittsfield, Ill. Filed Nov. 12, 1881. (Model.)



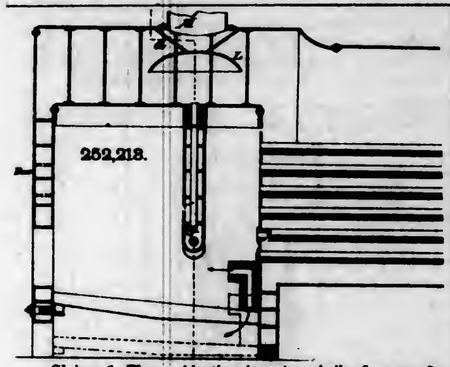
Claim.—1. An equalizing-bar, B, having the twist *b* and the inclined end E beyond the twist, provided with the hook *l*, substantially as specified.

2. An equalizing-bar, B, having at its outer portion the inclined end E, perforated for the hook-connection, and at its inner end the raised eye *c* above the plane of the bar, substantially as specified.

3. The combination, with the double-tree having the bolt-holes *a a* in each end, of the equalizing-bars B B, having raised eyes *c* at their inner ends, outer inclined ends, E, hooks *l*, and pivot-holes *b b*, corresponding in position to said bolt-holes, and the adjustable pivot-bolts C, substantially as specified.

262,213. STEAM-BOILER FOR LOCOMOTIVES. WILLIAM H. HARRIS, Brooklyn, and GEORGE FARR, New York, N. Y. Filed Dec. 7, 1881. (No model.

Brief.—A pendent water-heater is located near the rear tube-sheet. Against the tube-sheet is placed a hooded bridge-wall forming a narrow throat, through which pass the products of combustion, and which is met with blasts of heated air. Circulation is maintained through the heater and boiler. The bottom of the heater is arched, and the sediment is blown off through a perforated pipe which conforms to the arch of the heater.



Claim.—1. The combination, in a steam-boiler furnace, of a hollow independent water-partition arched at its bottom, as described, and perforated air heating and supply apparatus located at and against the rear water-leg, by means of which a narrow throat is formed, whereby the combustible gases and air are forced to mingle and unite for their more complete combustion, as described.

2. In a steam-boiler furnace, the independent hollow water-partition arched at its bottom, as described, the feed-pipes, the circulating-pipe which connects the partition with the water-leg of the boiler, and the sediment blow-off pipe, the whole combined and arranged to feed, heat, circulate, and purify the water before its introduction into the boiler, in the manner shown and set forth.

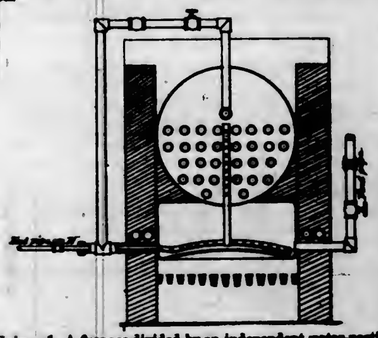
3. The combination, in a steam-boiler consisting of the pendent independent partition having an arched bottom, as described, the feed-water and circulating pipes, the blow-off pipe, and the central communicating pipe, with the steam and water separating devices, all arranged to operate in the manner shown.

4. The combination, in a steam-boiler furnace, of the pendent partition having a flat top for the reception of brick lining and arched bottom for the collection of sediment, and its blow-off, with an air heating and supplying device, the said partition dividing the furnace-chamber into a front and rear combustion-chamber, whereby smoke and gases are consumed in the manner set forth.

5. The combination, in a boiler, of the hollow pendent partition, connecting-pipe *c*, inverted-dish-shaped vessel L, separating-plates in steam-dome M, and dry-steam pipe O, all arranged as set forth.

262,214. FURNACE FOR STATIONARY BOILERS. WILLIAM H. HARRIS, Brooklyn, and GEORGE FARR, New York, N. Y. Filed Dec. 7, 1881. (No model.)

Brief.—Heated air passes through the sides of the furnace and a hooded-bridge wall and meets the flame and gases evolved from the fuel. Under the hood and against the wall a mass of incandescent fuel is placed. Through this mass, and between the heater and hood, the smoke and gases from the front combustion-chamber are forced and consumed. An arched pipe conforms to the arched bottom of the heater, through which the sediment is blown off.

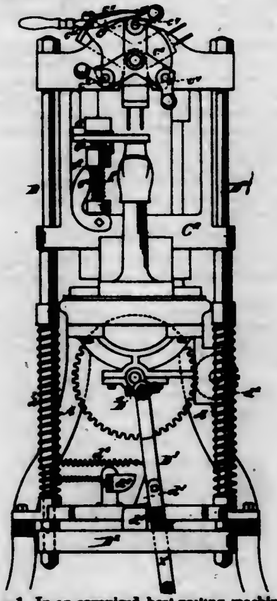


Claim.—1. A furnace divided by an independent water-partition into front and rear combustion-chambers, said combustion-chambers being surrounded by air-heating flues arranged to twice encircle said furnace, said flues terminating in side apertures in the front chamber and in a series of perforations in the bridge-wall in an upper forward projection, whereby the gases are made to mix with the heated air and become ignited and thereby consumed in the manner described.

2. The combination, in a heating-furnace consisting in a divided furnace-chamber, of a hollow arched pendent partition, a hollow bridge-wall having a forward-projecting head or cap forming a hooded chamber beneath it, as described, and a series of air-heating flues encircling the furnace and within the walls, adapted to supply heated air to the side apertures in the front combustion-chambers and to the perforations in the head or projections in the bridge-wall in the manner set forth and described.

3. The combination, in a steam-boiler furnace, of the arched pendent partition arranged and located as described, the feed-water pipe, the central perforated pipe, the outside circulating-pipe, terminating in a perforated pipe at right angles thereto, and the blow-off pipe, all arranged for joint operation in the manner set forth and shown.

262,215. HEEL-NAILING MACHINE. HENRY A. HENDERSON, Lynn, assignor to F. F. Raymond, Sd, Trustee, Newton, Mass. Filed Oct. 15, 1881. (No model.)



Claim.—1. In an organized heel-nailing machine, the combination of a jack for holding the boot or shoe, adapted to be moved horizontally, a group or gang of awls and a group or gang of drivers carried by a crown-head adapted to be vertically reciprocated, and means, substantially as specified, for interchanging the position of the groups on the head, all substantially as and for the purposes described.

2. In an organized heel-nailing machine, the combination of a jack for holding the work, adapted to have a horizontal movement imparted to it, a templet adapted to be moved horizontally into a position over the heel, and a gang or group of awls adapted to be reciprocated by the same mechanism that reciprocates the drivers, all substantially as and for the purposes described.

3. In an organized heel-nailing machine, the combination of a jack for the boot or shoe, means for imparting to it a horizontal movement, a templet adapted to be moved horizontally into position, a nail-holder adapted to be moved horizontally into position independently of the templet, a gang or group of awls and a gang or group of drivers interchangeably secured to a crown-head, and means for reciprocating said crown-head, all substantially as and for the purposes described.

4. In an organized heel-nailing machine, the combination of a jack for the boot or shoe, the means for imparting to it a horizontal movement, a templet and nail-holder adapted to be brought into position by a horizontal movement, and also adapted to have a vertical movement imparted to them, a gang or group of awls and a gang or group of drivers fastened to the head and adapted

to be moved in relation to the templet and nail-holder as specified, and means for imparting to them and the head vertical reciprocating movements, all substantially as specified.

5. In an organized heel-nailing machine, the combination of a jack for the work, means for moving it horizontally, a templet and nail-holder adapted to have horizontal movements, as specified, a group of awls, a group of drivers, and a lift-holder adapted to be successively brought into position over the heel of the boot or shoe and to be reciprocated by the same operative mechanism, all substantially as described, and for the purposes specified.

6. In an organized heel-nailing machine, a templet-plate adapted to have a horizontal movement imparted to it and a nail-holder having a horizontal movement independent of the templet-plate, all substantially as and for the purposes described.

7. In a heel-nailing machine, the head C, provided with the awl-supporting arm c' and driver-supporting arm c^2, the awls and the drivers, and means for revolving the same upon a horizontal axis, whereby the awls and drivers may be successively brought into position, all substantially as described.

8. The combination of the cross-head C', supporting the revolving awl and driver-head C, and means for reciprocating them, consisting of the rods D D', the crank D^1, the connecting-rod D^2, the cross-bar D^3, and the springs d' d^3, all substantially as and for the purposes described.

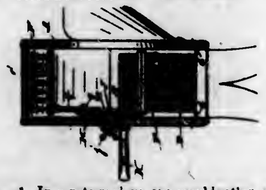
9. The combination, in an organized heel-nailing machine, of the head C', the head C, supporting the awls and drivers and top-lift holder, means for revolving the head to successively bring in position the awls, drivers, and holder, and for reciprocating the same, and an automatic stop-motion adapted to automatically stop the machine at the end of each revolution, substantially as and for the purposes described.

10. The form or support b^3, consisting of the fixed part b^4, and the toe part b^5, adapted to be revolved in relation to the fixed part, whereby the support may be used both for right and left shoes, all substantially as set forth.

252,216. ELASTIC COMPOUND FOR TRUSS-PADS. HIRAM W. HENDRICKS, Portland, Oreg. Filed Feb. 28, 1881. (Specimens.)

Claim.—The herein-described plastic material, composed of glue, honey, sugar, gutta-percha, glycerine, borax, alum, black lead, sulphur, and saltpeter, substantially as described, and for the purpose set forth.

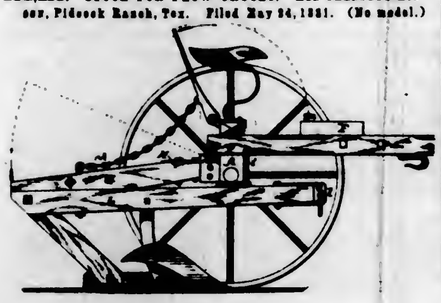
252,217. ROTARY SIEVE. WILLIAM L. HENDRIX, Indianapolis, Ind. Filed Nov. 14, 1881. (No model.)



Claim.—1. In a rotary sieve, the combination of the brushes F, shanks G, disk H, short shaft I, adjusting-bolt J, and crank K, substantially as specified.

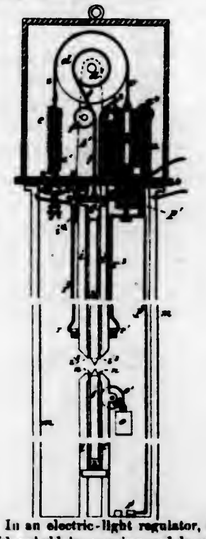
2. The combination, in a rotary sieve, of the shanks G, carrying the brushes, said shanks having slots therein, screws g, pins h, and the disk H, all substantially as shown and described, and for the purposes specified.

252,218. STOCK FOR PLOW-TRUCKS. ASA CHANDLER HINSON, Pidcock Ranch, Tex. Filed May 24, 1881. (No model.)



Claim.—The combination, with the stock G G', plow-beam L, and axle A, of the plates having eyes k, the ear-plates I, having a series of perforations, the clips I', connected at their ends by bolts i, and the bolt k, as and for the purpose specified.

252,219. ELECTRIC LAMP. ALFRED S. HOLCOMBE, Granby, Conn. Filed Apr. 2, 1880. (Model.)



Claim.—1. In an electric-light regulator, in combination, a movable solenoid upheld by a spring and located within a fixed solenoid, and a drum from which the upper carbon is suspended, provided with a pulley and a flexible brake-band passing over the pulley, one end of which is connected to the upper end of the movable solenoid and the other end to an adjustable spring, substantially as and for the purpose hereinbefore set forth.

2. In an electric-light apparatus, the combination of the resistance p', the insulated blocks r and r', and the insulated bar s, carried by the carbon-holder g, substantially as and for the purpose hereinbefore set forth.

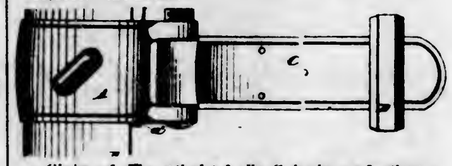
3. In an electric-light apparatus, the lower carbon counterweight, o, or its equivalent, in combination with the stud on the frame-bar l^3, insulated block p, and resistance p', substantially as and for the purpose set forth.

4. The refractory-metal carbon-retention fingers n n for electric-light apparatus, having the continuous bearing-surfaces n^2 n^2, corresponding to the form of the carbon rod at its straight sides and over a portion of its taper end, substantially as and for the purpose hereinbefore set forth.

5. The carbon-holder g, in combination with the fixed guide i', provided with the contact-pieces i^2, and the pivoted guide-bar i, also provided with a contact-piece, i^2, and operated by the adjustable spring i^3 to press the carbon in the holder g between the two contact-pieces i^2 i^2, substantially as and for the purpose hereinbefore set forth.

6. In combination, the coils or solenoids a a', the resistance p', insulated blocks r r', and bar s, counter-weight o, or its equivalent, insulated block p, frame-bar l^3, and their connecting-wires, substantially as and for the purpose hereinbefore set forth.

252,220. HAME. JNO. W. HUDSON, Wellington, Ill. Filed Nov. 16, 1881. (No model.)

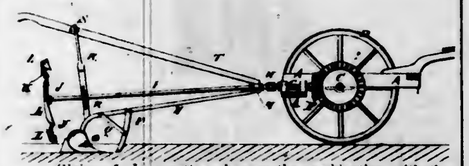


Claim.—1. The articulated clip C, having perforations e, adapting it to be riveted to a tug, and loop D, arranged at right angles to the clip C, all cast in one piece, in combination with a hame-bracket, as and for the purpose set forth.

2. The combination of the hame B with the bracket A, cast in one unbroken piece and having a V-shaped tapering groove, a', V-shaped key a, and perforated clip C, cast in one piece with loop D, substantially as and for the purpose set forth.

252,221. COTTON CHOPPER. JOSIAH L. HUGHES, Cleveland, Tenn. Filed Sept. 3, 1881. (No model.)

Brief.—A hollow bearing on the chopper-shaft attaches the front ends of the plow-beams and handles and permits the shaft to revolve therein. The whole is attached by a universal joint to the gear-shaft.



Claim.—1. In a cotton-chopper, the combination, with the shaft I, the knives L, and the operating mechanism, of the bearing M, the beams N, secured to the lower side of the bearing, the uprights R, the round S, and the handles T, secured to the upper side of the said bearing, substantially as and for the purpose set forth.

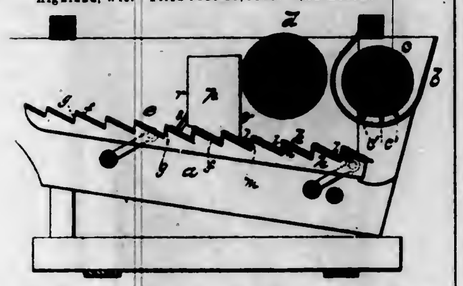
2. In a cotton-chopper, the combination, with the frame and the gear-shaft G, of the chopper-shaft I, the swivel H, the bearing M, the beam N, the handles T, and the upright frame R S, substantially as and for the purpose set forth.

252,222. WATCH-MAKER'S TOOL. GEORGE W. JOHNSON, Newton, Ill. Filed Dec. 3, 1881. (No model.)



Claim.—The tool herein shown and described, consisting of the jaws a and b, the jaw a being flattened and divided to form the fingers or tines c c, the jaw b being formed with the recess i, substantially as and for the purposes set forth.

252,223. CLOVER-HULLER. THOMAS JOYCE and JACOB KIEFER, Highland, Wis. Filed June 11, 1881. (No model.)



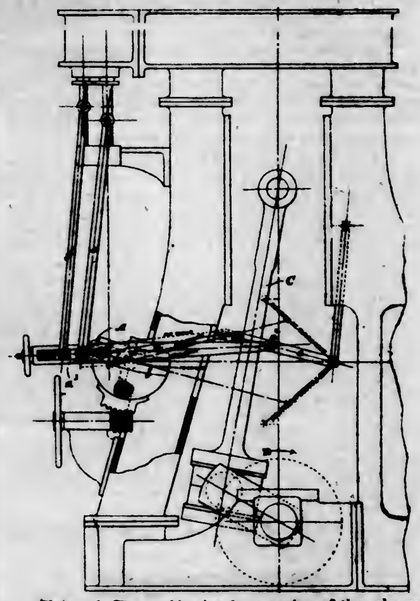
Claim.—1. In a clover-huller, the combination, with the hulling-cylinder c and concave b, the shaking-carrier, and the deflector or guide-board p, of the intermediate pressure-roller, d, substantially as and for the purposes specified.

2. In a clover-huller, the combination of the hulling-cylinder c and concave b, adapted to discharge at one side of the shaker e, of the shaker e, the guide-board or deflector p, and the pressure-roller d, substantially as and for the purposes specified.

3. In a clover-huller, the combination, with the shaker e, having the open slotted surface, of the corrugated riddle or screen adapted to fit upon said shaker and formed with perforations in the bottoms of the corrugations, substantially as and for the purposes specified.

4. In a clover-huller, the combination, with the slotted shaker and the corrugated screen applied to the upper surface thereof, of the guide-board p, secured to the said shaker at one side thereof and extending toward the middle of the screen, substantially as and for the purposes specified.

252,224. STEAM-ENGINE VALVE-GEAR. DAVID JOY, Barrow-in-Furness, County of Lancaster, England. Filed June 10, 1880. (No model.) Patented in England Mar. 8, 1879.



Claim.—1. The combination, in an engine, of the valve-rod, the vibrating operating-lever pivotally connected to the connecting-rod and to the valve-rod, the pivoted link in which said lever is fulcrumed, and mechanism for controlling the position of the link, substantially as and for the purpose set forth.

2. The combination, in an engine, of the connecting-rod, the valve-rod, a lever-connection between said rods, and a pivoted slot-link which carries the fulcrum of the lever-connection, substantially as and for the purpose set forth.

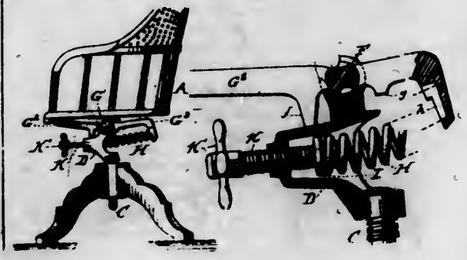
3. The combination, in an engine, of the connecting-rod, the valve-rod, the lever-connection *a* between said rods, the sliding fulcrum of the lever-connection, and the pivoted slot-link in which it moves, substantially as set forth.

4. The combination of the valve-rod, the connecting-rod, the lever *c*, pivoted thereto, the lever-connection *a*, its sliding fulcrum, and the pivoted slot-link in which the fulcrum slides, substantially as set forth.

5. The combination of the connecting-rod C, the valve-rod *e*, the cut-off valve-rod *f*, the lever-connection *a*, its sliding fulcrum, and the pivoted slot-link, substantially as and for the purpose set forth.

6. The improved valve-gear consisting of the vibrating operating-lever pivotally connected to the reciprocating cross-head or connecting-rod of the engine at one end, and also to the valve-rod, and having a moving fulcrum, substantially as set forth, whereby the requisite movement of the valves is obtained by the combined motions of the parts, as described.

252,225. TILTING CHAIR. JOSEPH W. KNUPP, Chicago, Ill. Filed Feb. 28, 1881. (No model.)



Claim.—1. In a tilting chair, the combination, with the base B, the elevating-screw C, and the upright support connected with such screw and having standards E E', provided with bearings F F', open on their front sides, of the spider-arms G G', provided with round journals having bottom and top grooves or depressions *d e*, substantially as described and shown.

2. In a tilting chair, the combination, with the elevating-screw, the upright support connected with such screw, and the spider pivoted on the upright support, of the adjusting-screw K, turning through such upright support, and the spiral spring H, held between the rear arm, G^2, of the spider and the point of the said adjusting-screw, substantially as described and shown.

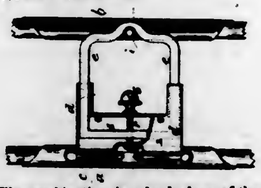
3. In a tilting chair, the combination, with the elevating-screw, of the socket D, connected with such screw, and having standards in which the spider is pivoted, the adjusting-screw K, turning through such socket, and the spiral spring H, held between the rear arm, G^2, of the spider and the point of said adjusting-screw, one end of such spring entering said socket, substantially as described and shown.

4. In a tilting chair, the combination, with the upright support, of the spider pivoted on the same, the adjusting-screw K, turning through such upright support, the guide-washer I, carried by the end of the adjusting-screw, and the spiral spring H, held between such guide-washer and a downward projection on the spider, substantially as described and shown.

5. In a tilting chair, the combination, with the socket D, having standards E E', provided with open bearings F F', of the spider removably pivoted in such bearings, the removable spring H, and adjusting-screw K, substantially as described and shown.

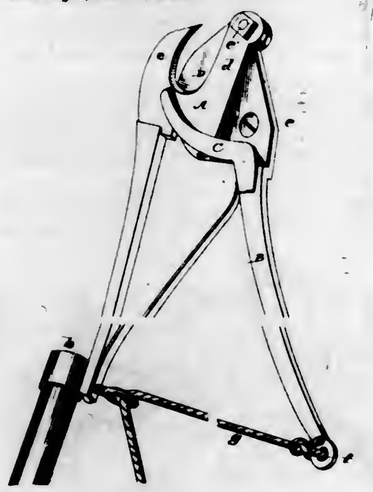
6. In a tilting chair, the combination, with the socket D, of the spider removably pivoted thereto and having front and rear stops, *f g*, the spring H, and adjusting-screw K, substantially as described and shown.

252,226. ALBUM-CLASP. JOHN C. KOCH, Berlin, Prussia. Filed July 5, 1881. (No model.)



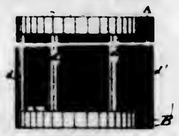
Claim.—The combination, in a book-clasp, of the clips a and *b*, the box *d*, hinge *c*, connecting the same to the clip *a*, the frame *e*, having a cross-bar within the box, the screw *r*, also within the box and passing through the cross-bar, and having a head, *s*, outside the box, by which it can be revolved, substantially as set forth.

252,227. PRUNING-SHEARS. PAUL KOHRUS, Harlem, La. Filed Aug. 3, 1881. (Model.)



Claim.—The combination, with the stationary blade A, having the cutting-arm e and the long arm *d*, of a movable arm, B, carrying a removable cutter, D, and guide C, and pivoted to the extreme end of the arm *d*, and provided with a spring and an operating-cord, substantially as set forth.

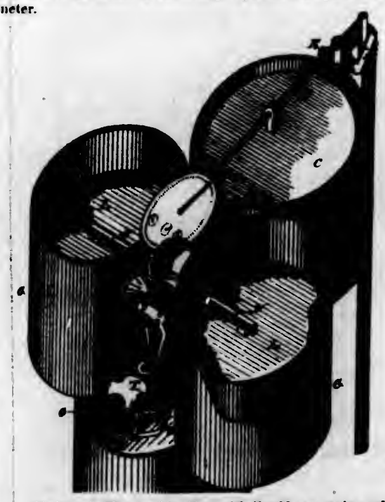
252,228. COIN-HOLDER. PETER O. KOHRBECK, New Orleans, La. Filed July 25, 1881. (No model.)



Claim.—As a new article of manufacture, the coin-holder consisting of the two removable heads A B, recessed on their inner faces, the central tube, C, rods *d*, and the central bolt, E, substantially as described.

252,229. WATER-METER WITH AUTOMATIC GOVERNOR. JULIUS LUDDE, Washington, D. C. Filed June 21, 1881. (No model.)

Brief.—A cylinder connected with the supply-pipe contains a float so connected with the cock that by the rise of water in the cylinder the supply is cut off. This cylinder discharges alternately into two measuring-cylinders, floats in which are joined together by an oscillating arm, by the movement of which the registering mechanism is actuated and the cock which determines the flow into one or the other is shifted. These cylinders discharge into a fourth cylinder, which is connected with the discharge-pipes, and contains a float attached to cocks, so that when no water is drawn the float rises and cuts off the flow between the supply-cylinder and the measuring-cylinder and also between the latter and the discharge-cylinder; hence the opening and closing of the several faucets in the house automatically regulates the operation of the meter.



Claim.—1. The combination, with liquid-measuring cylinders and registering mechanism connected therewith, of a governor which automatically regulates the discharge from said cylinders—that is to say, a governor which operates automatically to allow discharge from the measuring-cylinder when liquid is drawn off from the distributing-pipe and cuts off said discharge when the flow from the distributing-pipe is arrested, substantially as hereinbefore set forth.

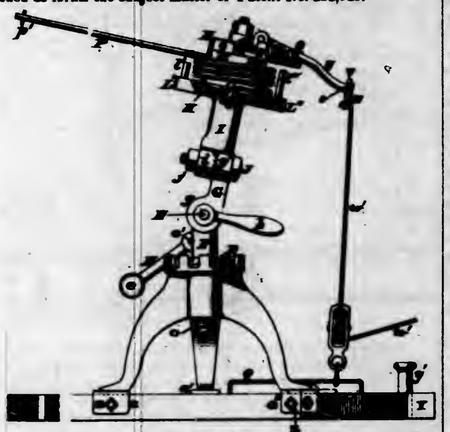
2. The combination, with meter-cylinders and pipes leading to and from the same, and registering mechanism, of a governor which operates automatically to simultaneously shut off or allow the supply and discharge of the meter, substantially as specified.

3. The combination of the eduction-governor consisting of a water-receptacle and contained float, the lever, and cocks T and T', the meter-cylinders, and pipe for discharging their contents into said governor-receptacle, substantially as shown and described.

4. The combination, with the induction-governor C D E, the meter-cylinders G G, and pipes F F' F', connecting them, and arranged as specified, of the eduction-governor P E S and cocks T T', connected therewith and arranged to regulate supply and discharge of said meter-cylinders, as shown and described.

252,230. TARGET-TRAP. GEORGE LIGOWSKY, Cincinnati, Ohio, assignor to the Ligowsky Clay Pigeon Company, same place. Filed May 16, 1881. (No model.)

Brief.—The trap is designed to throw a dish-shaped target such as forms the subject-matter of Patent No. 231,919.



Claim.—1. The combination, in a target-trap, of a spring-lever, a rack, and an adjustable tension-arm carrying the trigger, with which latter is engaged said lever, as herein described.

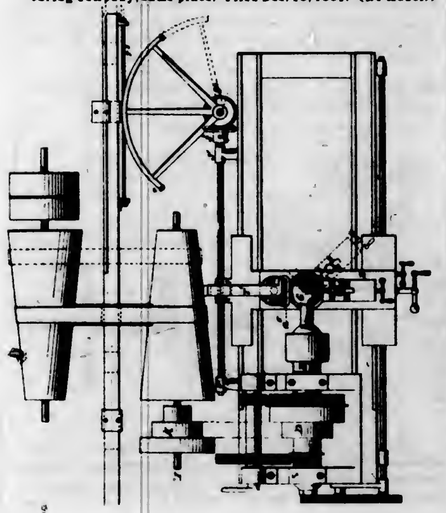
2. The combination of spring-lever P *p*, head M, segmental rack O, adjustable tension-arm U, and trigger V W, as herein described.

3. In combination with the target-trap, head M, having the spring portion *p* of lever P coiled around it, for the purpose described, the jointed standards F G I, notched knuckles *f g i f'*, bolts H J, and nuts *h j*, as herein set forth, and for the object stated.

4. The combination, in a target-trap, of a clamp consisting of the bar R *r'*, pivoted lever S *s'*, spring T, screw-threaded rod *t*, and adjustable nut *t'*, as described.

5. The trigger consisting of the slotted plate V *v*, pivoted catch *v'* W, and spring *w*, as described.

252,231. MECHANICAL MOVEMENT. HORACE LUND, Hartford, Conn., assignor to the Colts Patent Fire-Arms Manufacturing Company, same place. Filed Dec. 15, 1881. (No model.)

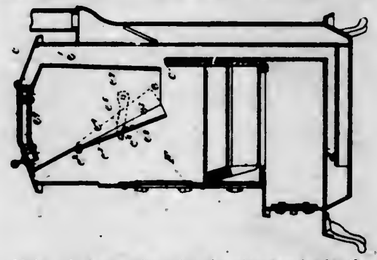


Claim.—1. The combination of the following elements: mechanism to support and impart revolution to the thing to be operated upon, a tool-holder carrying the tool to work upon the surface of the thing so held and revolving, mechanism, substantially such as described, to vary the velocity with which said thing is revolved, and mechanism, substantially such as described, communicating from said tool-holder to said velocity-varying mechanism, whereby the surface velocity of the thing being worked upon is automatically varied according to the position of the tool upon said surface, from its smaller to its larger diameter, or vice versa, substantially as described.

2. The combination of the following elements: mechanism to support and impart revolution to the thing to be operated upon, a tool-holder carrying the tool to work upon the surface of the thing so held and revolving, mechanism, substantially such as described, to vary the velocity with which said thing is revolved, said tool-holder arranged upon a carriage for transverse movement at substantially right angles to the axis of revolution of the thing to be operated upon, a rack attached to and movable with said carriage, a longitudinal shaft provided with a pinion, with which the said rack engages to impart a rotation to said shaft corresponding to the transverse movement of the tool-carrying carriage, and mechanism, substantially such as described, between said shaft and the said velocity-varying mechanism, whereby the surface velocity of the thing being worked upon is automatically varied according to the position which the tool occupies upon the surface to be worked upon from its smaller to its larger diameter, or vice versa, substantially as described.

3. The combination of the following elements: mechanism to support and impart revolution to the thing to be operated upon, a tool-holder carrying the tool to work upon the surface of the thing so held and revolving, mechanism, substantially such as described, to vary the velocity with which the said thing is revolved, said tool-holder hung upon a pivot to swing in a plane parallel with the axis of revolution of the thing being worked upon, a rack in connection with said tool-holder by mechanism substantially such as described, whereby the rotation of the tool-holder imparts a movement to said rack in a plane at right angles to the axis of revolution of the thing being worked upon, a longitudinal shaft provided with a pinion, with which said rack engages to impart to said shaft a rotation corresponding to the movement of said rack, and mechanism, substantially such as described, between said shaft and the velocity-varying mechanism, whereby the surface velocity of the thing being worked upon is automatically varied from its smaller to its larger diameter, according to the position which the tool occupies upon the surface to be worked upon, from its smaller to its larger diameter, or vice versa, substantially as described.

252,232. MAGAZINE-STOVE. JOHN MAGEE and FRANK A. MAGEE, Chelsea, assignors to the Magee Furnace Company, Boston, Mass. Filed July 25, 1881. (No model.)



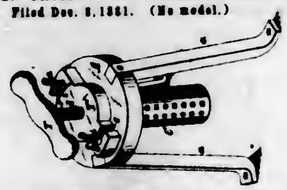
Claim.—1. A magazine or base-burning stove having the plate or section supporting the doors of the combustion-chamber removable, whereby the stove is adapted to be converted from a close to an open grate, all substantially as described.

2. In a magazine or base-burning stove, a removable door-supporting front plate, F, all substantially as and for the purposes described.

3. The combination of the plate *d'*, forming a portion of one of the walls of the magazine, hinged at *d'* to the magazine, substantially as shown and specified, and means for moving the same to and from the remaining walls of the magazine to diminish or increase the size of its opening, all substantially as described.

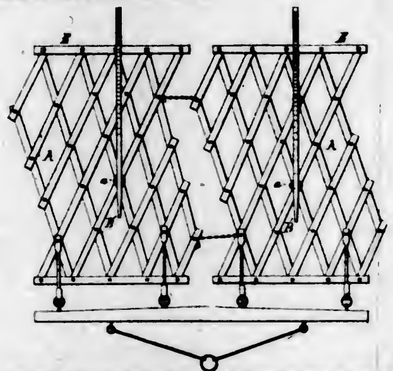
4. A magazine or base-burning stove having interchangeable front plates or sections, each of which contains the opening to the combustion-chamber, one of which is provided with doors, and the other is adapted to receive a blower, whereby the stove may be used as a close or open grate, all substantially as described.

252,233. FRUIT-PRESS. FÉLICIEN F. H. HARAIS, New York, N. Y. Filed Dec. 8, 1881. (No model.)



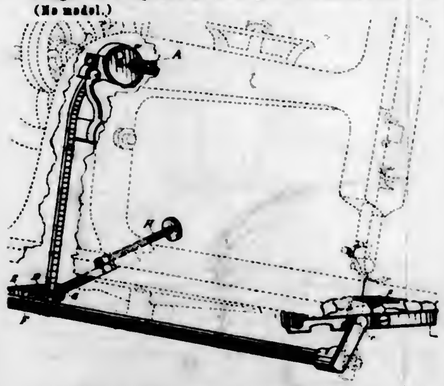
Claim.—As an improvement on my aforesaid patented press, the combination, in a fruit-press, of the stationary platform A, supported by legs *a* and supporting the suspended perforated cylinder C, in combination with the plunger B, its T-shaped screw-handle, and the cross-bar T, adapted to be connected detachably to the platform, substantially as set forth

252,234. HARROW. THOMAS MATTHEWS, Almaden, Cal. Filed Nov. 15, 1881. (No model.)



Claim.—The combination, with the harrow A, of the sustaining-lever B, with its forward end capable of resting on the ground and its other end extended to or beyond the rear end of the harrow, and having the depending cord *b* or equivalent medium, substantially as and for the purpose described.

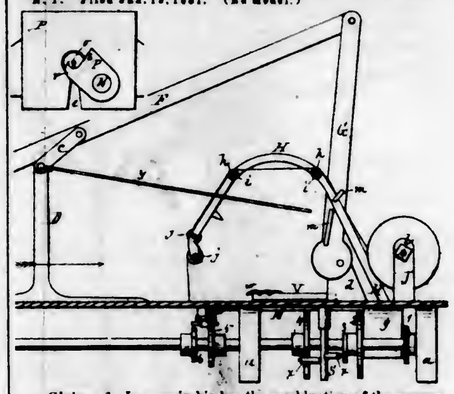
252,235. SEWING-MACHINE. GEORGE A. MAYO, Erie, Pa., assignor to George H. Noble, same place. Filed Apr. 21, 1881. (No model.)



Claim.—1. In a sewing-machine, the combination, with the oscillating shaft provided with a crank-arm, E, secured to said shaft and having an elongated slot formed therein, and a pitman, C, provided at its lower end with a pin that engages in the elongated slot of the arm E, of the inclined link G, attached at one end to the lower end of the pitman and at its opposite end to an adjusting-screw, H, substantially as described.

2. The combination, with the oscillating feed-shaft, the slotted arm connected therewith, a pitman having a roller-bearing in the slot of said arm and adapted to actuate the feed-shaft, of a link pivoted to the lower end of the pitman and an adjusting-screw pivoted to one end of the link and arranged to extend above the table of the machine, substantially as set forth.

252,236. GRAIN-BINDER. JOSEPH H. MCMASTER, Rochester, N. Y. Filed Jan. 19, 1881. (No model.)



Claim.—1. In a grain-binder, the combination of the reverse cams 5 and 6, set on the main shaft, the short upright shaft N, provided with pins *n n*, upon which the cams act and the plates P R, attached to the shaft and provided with hooks for carrying the wires into the slot of the twisting-pinion, as herein shown and described.

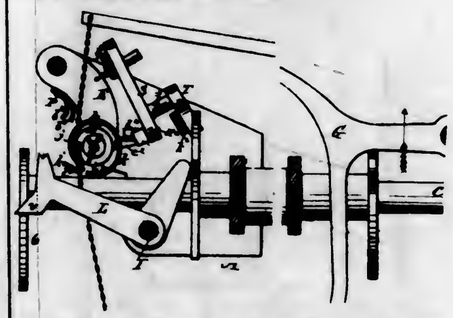
2. In a grain-binder, the combination of the reverse cams 1 2, the roller *f*, armed with pins *a a*, upon which the cams act, the curved binder-arm H, attached to the roller, and the compressor consisting of the standards D D, running in ways and connected by the crank *e* and arms F G with the binder-arm, so as to be operated by the latter, as herein shown and described.

3. In a grain-binder, the combination of the short vertical shaft S, provided with pins *s s*, the cams 3 and 4, set on the main shaft, and the arm V, attached to the shaft S on top the body-plate and provided with the prongs *w w*, as shown and described, and for the purpose specified.

4. In a grain-binder, the combination of the curved binder-arm H, the rock-arm G, provided with stops *m m*, located at some distance apart, between which the binder-arm plays, the connecting-arm F, the crank-arm *e*, rock-shaft E, and standards D D, as shown and described, and for the purpose specified.

5. In a grain-binder, the combination, with the short vertical shaft N, provided with a plate, P, at its top, having a hook, *r*, for drawing the wire into the slot of the twisting-pinion, of an auxiliary plate, R, at its bottom, provided with a hook, *r'*, which strikes a stop *z*, and pinches the wire, thereby limiting the downward twist of the wires, as herein shown and described.

252,237. GRAIN-BINDER. JOSEPH H. MCMASTER, Rochester, N. Y. Filed Mar. 23, 1881. (Model.)



Claim.—1. In a grain-binder, the combination of the fixed screw-shaft D, the hollow collar D', engaging with the screw-shaft and provided at its top with the spring-wire *h* and prong *j*, and the spindle F, passing through the shaft D, provided at its top

with the hook *d* and on its side with the pivoted latch *f*, as shown and described, and for the purpose specified.

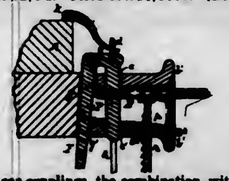
2. The combination, with the rock-shaft I, of the two arms K K, attached fast to the bottom of the shaft, and the single arm L, turning on the upper end, said arms having at their outer ends notches for catching the binding-cord and carrying it foward in position to be acted upon by the cutter-head and looping device, as herein shown and described.

3. The combination, with the arm L, having a hub which turns freely on the upper end of shaft I, of an arm, *u*, engaging with the cam 5, and the projecting head *v*, engaging with the cam 6, as shown and described, and for the purpose specified.

4. In combination with the arms K K, the cutter M, having a shank, *x*, which rests between pins *w w*, attached to the lower arm, and plates N N, between which the cutter is pivoted, said cutter having a sharp cutting-edge at its top which engages with a corresponding sharp edge of the upper plate and a rounded edge at its bottom which engages with a rounded edge of the lower plate, as and for the purpose specified.

5. The combination, with the swinging arms K K L and looping apparatus D D', of the spring-clamps b^2 b^2, arranged in the same concentric line with the notches or fingers at the outer ends of the swinging arms, for the purpose of catching and clamping the cord as it is carried forward by the arms, and holding it with sufficient tension while the cord is being looped, as herein shown and described.

252,238. CAR-COUPLING. HENRY B. MCMURRAY and LEVI SCOTT, Hargettstown, Pa. Filed Oct. 24, 1881. (No model.)



Claim.—1. In car-couplings, the combination, with a buffer-head, of a coupling-pin and a rod pivoted to the head of the coupling-pin and extending through the buffer-head, said pivoted rod being so connected that when raised it will automatically catch upon the base of the buffer-head cavity in position to be caused to drop by the incoming link of the opposite buffer-head, substantially as and for the purposes set forth.

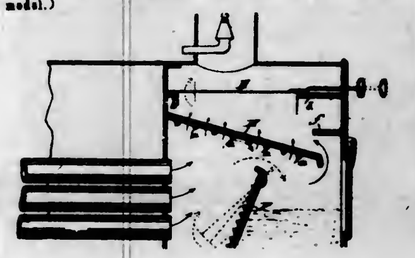
2. In car-couplings, the combination, with the buffer-head B, of the coupling-pin D and rod F, pivoted to the head of the coupling-pin and extending at an incline through slots *g g'* in the buffer-head back of the coupling-pin, and adapted, when raised, to swing forward and automatically catch upon the base of the buffer-head cavity, substantially as and for the purposes set forth.

3. The combination, with the buffer-head B, of the coupling-pin D, vertically-moving guide A, secured to the coupling-pin, and rod F, pivoted to the coupling-pin and extending at an incline through slots *g g'* in the buffer-head back of the pin, and adapted, when raised, to swing forward and automatically catch upon the base of the buffer-head cavity, substantially as and for the purposes set forth.

4. In combination with a buffer-head, B, the lifting-bar *p* for supporting the link, and ratchet-and-pawl apparatus for holding the bar at the desired height, substantially as and for the purposes set forth.

5. In combination with a buffer-head, B, the lifting-bar *p*, having the ratchet-arm *r*, pawl-rod *s*, and disconnecting apparatus *t*, substantially as and for the purposes set forth.

252,239. SPARK-ARRESTER. GEORGE W. HOOBS and ABRAHAM O. FRICK, Waynesborough, Pa. Filed Nov. 7, 1881. (No model.)



Claim.—1. The combination, with the smoke-box in a steam-boiler, of a deflecting-plate extending from the tube-sheet to nearly the back end of the smoke-box and slightly dipping downward, and one or more deflecting-plates rising from the bottom of the smoke-box, and adapted to form both a deflecting-plate and a receptacle for sparks in the back end of the smoke-box, as described.

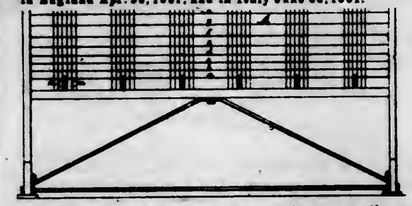
2. The combination, with the smoke-box, of the deflecting-plate E, perforated and provided with ribs *a*, and the subjacent plate or plates F, rising from the bottom of the smoke-box, substantially as described.

3. The combination, with the smoke-box, of a deflecting-plate extending from the tube-sheet to nearly the back of the smoke-box, and subjacent deflecting plate or plates F, made adjustable, substantially as and for the purpose described.

4. The combination, with the smoke-box of a steam-boiler having guides for rectilinear movement, of a rectilinearly-sliding and open-meshed screen or damper, H, arranged between the fire-tubes and the smoke-stack, substantially as and for the purpose described.

5. The combination, with the smoke-box, of the plate E, plate F, and the lip *f*, substantially as shown and described.

252,240. TARGET. RICHARD MORRIS, Lowtcham, County of Kent, England. Filed Oct. 5, 1881. (No model.) Patented in England Apr. 26, 1881, and in Italy June 30, 1881.



Claim.—1. The herein-described target for rifle practice, provided upon its front face with a bull's-eye, and having upon its rear side a graduated scale formed by a series of horizontal lines, substantially as described.

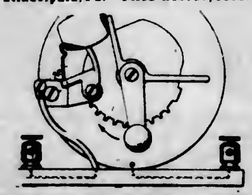
2. The herein-described target for rifle practice, having a bull's-eye upon its front face, and upon its rear side the series of horizontal and vertical lines, substantially as and for the purpose described.

252,241. AUXILIARY RIFLE-BARREL. RICHARD MORRIS, Lowtcham, County of Kent, England. Filed Oct. 5, 1881. (No model.) Patented in England Apr. 26, 1881, and in Italy June 30, 1881.



Claim.—An inner barrel for rifles or small-arms, consisting of a removable tube, E, inserted from the muzzle end and screwed into a breech-block, B, inserted from the breech end and secured by a screw-nut, G, substantially as and for the purposes described.

252,242. ELECTRICAL-SIGNAL TRANSMITTER. GARRET S. HOYT, Philadelphia, Pa. Filed Nov. 17, 1881. (No model.)

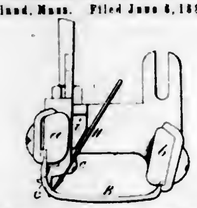


Claim.—1. The combination of a movable shaft carrying a break-plate and arms with a pivoted contact-lever adapted to be tilted by the said arms into and out of the path of the teeth of the break-plate.

2. The combination of the frame, rotary shaft carrying a break-plate, arms, and crank-handle, and a spring with a pivoted contact-lever adapted to be thrown by said arms into and out of the path of the break-plate teeth, substantially as set forth.

3. The combination of a movable shaft carrying a break-plate and arms with a pivoted lever adapted to be operated by said arms, and carrying a weight and a contact-finger, as and for the purpose described.

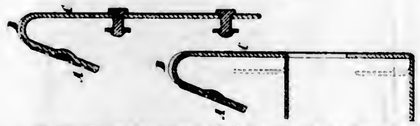
252,243. HEEL-TRIMMER. FRANKLIN MOULTON and CHARLES M. ADAMS, Ashland, Mass. Filed June 6, 1881. (Model.)



Claim.—1. In a heel-trimming machine, the combination, with the knife B, of the guard C, having the concave face *c*, said guard being adjustably connected to its support and carrying the adjustable knife D, substantially as and for the purpose set forth.

2. The guard C, having concave face *c* and wedge-shaped shank *f*, with elongated slot *g*, for attaching it to the arm *a*, the dovetail recess *d*, for connecting thereto the guard-knife D, substantially as and for the purpose specified.

252,244. BUTTON ATTACHMENT. CHARLES NEWBURGH, Beloit, Wis. Filed Aug. 10, 1881. (No model.)



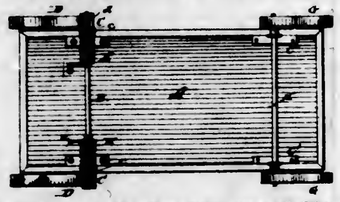
Claim.—In combination with the button A and bent shank B, forming a hook, the strap C, provided with means for fastening it to the fabric at several points in its length, substantially as and for the purpose described.

252,245. ORNAMENTAL COMPOSITE VENEER. NELSON C. NEWELL, Springfield, Mass. Filed Dec. 3, 1881. (No model.)



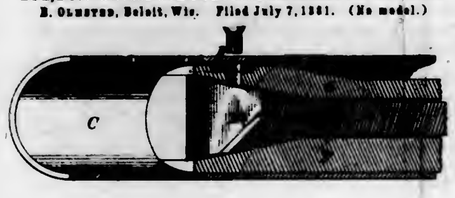
Claim.—The within-described composite veneer, consisting of the metallic plate *a* and the mat or coating of pearl particles *d*, united together by a suitable interposed adhesive substance, substantially as described.

252,246. VEHICLE-SPRING. NILS NILSON, Maple Plain, Minn. Filed Sept. 12, 1881. (No model.)



Claim.—The compound vehicle-spring composed of the curved leaf-spring D D′ and coiled spring E, in combination with the spring-bearings C and bar B, provided with the washer *c*, bushing *d*, and tubular elastic packing *f*, as set forth.

252,247. DEVICE FOR PUNCHING METALLIC TUBES. OSCAR B. OLMSTED, Beloit, Wis. Filed July 7, 1881. (No model.)



Claim.—The combination, in pipe-punching machines, of the die D with the expanding mandrel G B F, substantially as described, for the purposes specified.

252,248. ADJUSTABLE TOOL. ALBERT A. PEASE, Springfield, Mass. Filed Aug. 10, 1881. (Model.)



Claim.—1. The combination of the jaw C, having a handle and hole or aperture, *r*, the jaw B, having a handle and recesses, *r′* and *r″*, with slot *e*, and the recessed pivot D, with inclined bearing *a*, bolt *t*, spring, and nut, substantially as described, and for the purpose set forth.

2. In a tool, the pivot D, consisting of the pivotal part having the portions *h f*, inclined bearing *a*, and recess, the headed bolt having the nut *b*, and a spiral spring to draw the pivotal part and bolt together, substantially as described.

252,249. ELECTRIC CABLE. WILLIAM J. PHILIPS, Philadelphia, Pa. Filed Apr. 21, 1879. Patented in England, No. 1,475 of 1880.



Claim.—1. A telegraphic cable composed of two or more conducting-wires proper, and an independent wire arranged between or centrally with respect to the said conducting-wires and out of contact therewith, said independent wire being provided with means for connection with ground at points intermediate of the length of the cable, as described.

2. The method substantially as described of forming a lead joint for pipe-sections and intermediate mass of insulating material, the same consisting in wrapping the ends of the pipe-sections and intermediate insulating material in foil and then casting molten lead around said foil, substantially as described

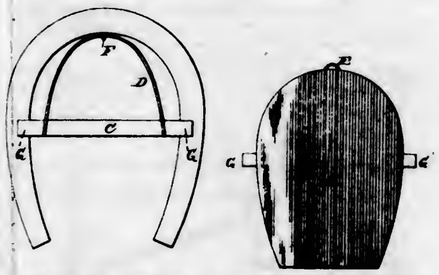
252,250. BLASTING-POWDER. WILLIAM R. QUINAN, San Francisco, Cal. Filed Apr. 8, 1881. (No specimens.)

Brief.—Uses the three ingredients in substantially the following proportions: fifteen parts of nitro-cellulose, seven to twelve parts of the nitrate or chlorate of potash, and from two to fifty-five parts of nitro-glycerine.

Claim.—1. A high explosive powder composed of nitro-glycerine, nitro-cellulose, and chlorate (or nitrate) of potash.

2. A high explosive powder composed of nitro-glycerine, nitro-cellulose, and chlorate (or nitrate) of potash, in the proportions substantially as set forth.

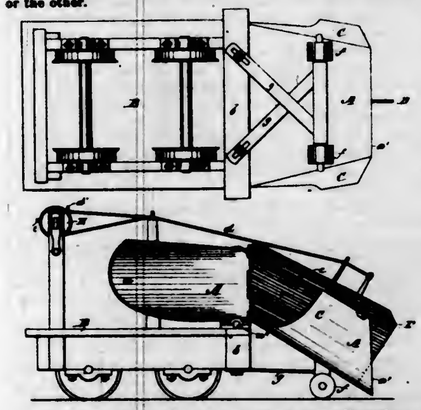
252,251. PAD FOR HORSES' HOOFS. WILLIAM F. RAYMOND, Sandusky, Ohio. Filed Oct. 3, 1881. (No model.)



Claim.—The elastic pad A, having transverse flat spring C, from which a wire ball, D, projects forward to form a loop, E, said flat spring having projecting ends G, in combination with the shoe B, having hook F, substantially as set forth.

252,252. SNOW-PLOW. HORACE RESLEY, Cumberland, Md. Filed Sept. 8, 1881. (No model.)

Brief.—The scoop is mounted on a truck, and is adapted to rock and rest on a bar upon the end of said truck. Its sides are connected to the forward part of its wings by braces. The rear portions are deflected downward from the plane of the forward portion, and a deflector is provided to throw the snow to one side or the other.

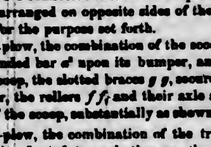


Claim.—1. The combination, with the deflector D, of the scoop A, having its sides C C connected to the forward part of its wings *a a* by the braces *c c*, arranged on opposite sides of the deflector, substantially as and for the purpose set forth.

2. In a snow-plow, the combination of the scoop A, the truck B, having the rounded bar *a*′ upon its bumper, and which serves as a rest for the scoop, the slotted braces *g g*, secured to the under side of the bumper, the rollers *f f*, and their axle arranged under the forward end of the scoop, substantially as shown and described.

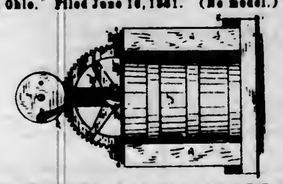
3. In a snow-plow, the combination of the truck B, having bar *a*′, the scoop A, adapted to rock thereon, the cords *d d*, the windlass E, having pin *e*, and the loop *d*′, placed upon one of the cords and adapted to be engaged with the said pin, substantially as shown and described, and for the purpose set forth.

252,253. GATE-ROLLER. CHARLES B. RICE, Evanston, Ill. Filed Apr. 4, 1881. (No model.)



Claim.—A farm-gate roller consisting of the disks *g g*, provided with rims *l*, and central openings adapted to fit on a hub and united together by pins, in combination with the hub *b*, provided with a horizontally-longitudinal slot, *e*, and shoulders *i*, mounted and pivoted upon a bolt, *a*, by a pin, *d*, passing vertically through the center of said slot, all constructed and arranged to operate substantially as herein shown and described.

252,254. ICE-CREAM FREEZER. MICHAEL RICHIMER, Macedon, Ohio. Filed June 16, 1881. (No model.)



Claim.—The combination of the uprights L L, the cross-bar M, supported independently of the ice-tub and of the gearing-frame, the mechanism for rotating the freezer and reciprocating the dasher, the ice-tub *J*, and the frame B *b*, which supports the gearing entirely independently of the ice-tub, substantially as set forth.

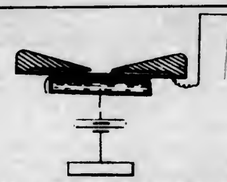
252,255. TELEPHONE. JAMES H. REGNER, Washington, D. C., assignor of one-half to Frank Hume and L. G. Hine, both of same place. Filed Dec. 9, 1881. (No model.)

Claim.—1. The combination of the diaphragm, the mercury-cup in close proximity to the diaphragm, the mercury, and the free floating carbon in contact with the diaphragm, substantially as set forth.

2. The combination of the diaphragm, the mercury-cup in close proximity thereto, mercury, and the carbon balls or fragments floating on the mercury and in contact with the diaphragm, substantially as set forth.

3. The combination of the carbon diaphragm, the mercury-cup in close proximity thereto, the mercury, and the free floating carbon balls or fragments, substantially as set forth.

252,256.



252,256. TELEPHONE. JAMES H. REGNER, Washington, D. C., assignor of one-half to Frank Hume and L. G. Hine, both of same place. Filed Nov. 9, 1881. (No model.)

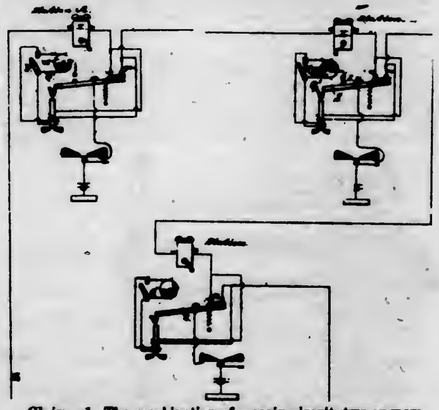


Claim.—1. The telephone herein described, consisting of a sheet of metal sufficiently thin to be more or less resonant and susceptible of magnetic induction, bent as set forth, and having a helix wound parallel with its adjacent edges, said telephone being adapted for the transmission and reception of articulate speech without the use of a diaphragm or armature.

2. A telephonic transmitter and receiver consisting of a comparatively thin sheet of metal susceptible of magnetic induction, bent so as to bring two of its edges in close proximity to each other, and having two or more helices wound parallel with its adjacent edges, substantially as set forth.

3. A telephone consisting of a comparatively thin resonant sheet of metal bent into a conical or funnel shape, with two of its edges in close proximity, and having a helix wound parallel with its adjacent edges, said telephone being adapted for the transmission and reception of articulate speech without the use of a diaphragm or armature.

252,257. TELEPHONIC APPARATUS AND CIRCUIT. JAMES HARRIS REGNER, Washington, D. C., assignor of one-half to Frank Hume and L. G. Hine, both of same place. Filed Dec. 5, 1881. (No model.)



Claim.—1. The combination of a main circuit, two or more stations thereon, the main lines extending from each station to the adjoining station, on each side thereof, receiving and transmitting apparatus at each station, and a continuously-revolving circuit-breaker at each station, which divides or breaks up the message be-

ing transmitted into fragments and throws portions upon the main line in one direction and other portions in the opposite direction, substantially as set forth.

2. The combination of a normally-continuous main circuit, two or more stations thereon, transmitting and receiving instruments at each station, and at each station a continuously-revolving circuit-breaker and two branch circuits, both of which encircle the core of the receiver, and which extend respectively from the continuously-revolving circuit-breaker to the sections of the main line, which leave the station in opposite directions, substantially as set forth.

3. The combination of a continuous main line, two or more stations thereon, and at each station transmitting and receiving apparatus, a continuously-revolving circuit-breaker, branch circuits, both of which surround the core of the receiver and connect with their respective sections of the main line, a call-box, and a switch which may connect the branch circuits and cut the continuously-revolving circuit-breaker, substantially as set forth.

4. The combination of a continuous main line, two or more stations thereon, and at each station transmitting and receiving apparatus, a continuously-revolving circuit-breaker, branch circuits, both of which surround the core of the receiver and connect with their respective sections of the main line, a call-box, a switch which may be operated to connect the branch circuits and cut out the continuously-revolving circuit-breaker, and a switch-lever, which throws the receiver into circuit and grounds the sections of the main line, forming two electric circuits when it is lifted from the switch, substantially as set forth.

5. The combination of the continuous main line which leaves the stations in opposite directions, as set forth, a transmitter and battery, a continuously-revolving circuit-breaker, and induction-coils, the secondaries of which go to line, and in the primaries of which the continuously-revolving circuit-breaker is placed, substantially as described.

252,258. GAS-TRAP. JAMES W. ROGERS, Washington, D. C. Filed June 24, 1881. (No model.)



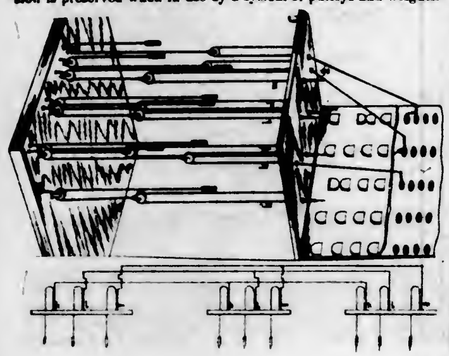
Claim.—1. A sack of flexible material provided with an annular chamber containing a suitable liquid surrounding a central passage, so as to act as a gas-check, substantially as set forth.

2. The combination of the sack C, containing an annular chamber, and the guard G, as and for the purpose set forth.

3. The combination of the sack containing an annular chamber and elastic bands or springs F, substantially as and for the purpose set forth.

252,259. TELEPHONE-EXCHANGE CIRCUIT. CHARLES W. ROSS, Columbus, Ohio, assignor to the Western Electric Manufacturing Company, Chicago, Ill. Filed Sept. 24, 1881. (No model.)

Brief.—The lines connecting the different boards of a duplicate system terminate in flexible conducting-cords provided with plugs for insertion into the subscriber's spring-jacks. The cords are automatically retracted when not in use, and a uniform tension is preserved when in use by a system of pulleys and weights.



Claim.—1. The combination of one or more sets of conducting-cords and plugs with the different switch-boards and connecting-wires permanently connecting each set to all the boards, whereby any given switch of one board may be connected directly with any given switch of any other board.

2. The combination of a fixed pulley, a movable pulley, and a supporting-cord and weight with a flexible conducting-cord and a switching device, as described, whereby telephone-lines may be connected and disconnected, while the slack of the conducting-cord is taken up from above and a uniform tension maintained, as and for the purpose specified.

3. The combination of sets of cords and plugs with three or more switch-boards, a cord with a terminal plug of each set being at each board, and connecting-wires, one for each set, permanently connecting the different sets, respectively, to all the switch-boards, whereby the circuit of any line of one board may be united directly with the circuit of any given line of any other board through a portion of the connecting-wire of any given set, substantially as and for the purpose specified.

4. Two or more telephone switch-boards provided with automatic cut-outs or switches, in combination with a conducting-wire passing to the several boards, and flexible conducting-cords, with pegs, connected to the conducting-wire, one at each board, whereby, by making one connection at each of the two boards, any two lines, one connected at one board and the other at the other board, may be disconnected from the ground and connected together.

5. Two or more telephone switch-boards provided with line terminals or switches, in combination with a conducting-wire passing to the several boards, and flexible conducting-cords, with pegs, connected to the conducting-wire, one at each board, whereby, by making one connection at each of two boards, any line of one board may be connected to any line of the other boards.

252,260. CUT-OUT FOR BURGLAR-ALARMS. WILLIAM H. SAWYER, Providence, R. I. Filed Sept. 24, 1881. (No model.)

Brief.—A person provided with a suitable key and cognizant of the number of ratchet-teeth required to be passed over in order to break the circuit may from the outside cut out the alarm before opening the door, and after entering may by the same device restore the circuit to the alarm.



Claim.—1. In a cut-out for burglar-alarm circuits, the combination of the rod K, forced in one direction by a spring, and provided with finger N, the plate M, and the insulated plate Q, substantially as described.

2. In a cut-out for burglar-alarm circuits, the combination of the casing H, the rod K, arranged to rotate and move longitudinally in said casing, the finger projecting from said rod, the centrally-perforated and suitably-supported plate M, having slot *m*, and the insulated plate Q, carried by said plate M, substantially as described.

3. The combination of the casing H, the rod K, provided with the ratchet-wheel, and means for operation by a key, a pawl to engage said ratchet-wheel, a spring to move said rod in one direction, the finger projecting from said rod, the suitably-supported plate M, having a central aperture, and a radial slot opening into said aperture, and the insulated plate Q, all arranged to operate substantially as described.

4. A burglar-alarm circuit provided with a circuit-breaker and a cut-out arranged to short-circuit said circuit-breaker, and provided with means of operation from both sides of a wall or door, substantially as described.

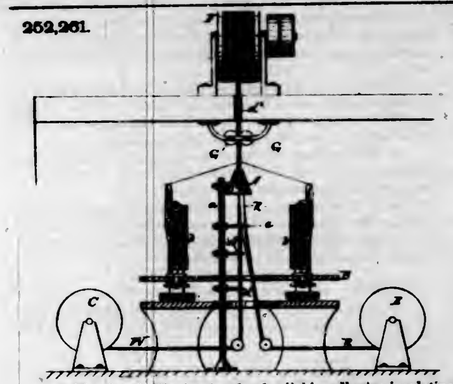
5. The combination, with the rod K, constructed and arranged in a cut-out, as described, of the rod K', connected therewith by a universal joint, substantially as and for the purpose set forth.

252,261. INSULATED ELECTRICAL CONDUCTOR. WILLIAM H. SAWYER, Providence, R. I., assignor to Eugene F. Phillips, same place. Filed Aug. 17, 1881. (No model.)

Brief.—The insulation is perfected by a continuous operation.

Claim.—1. The herein-described continuous method of providing wire with an insulating-covering and an outer protecting-covering of fibrous material, the same consisting in covering the wire with a longitudinal strip of soft, pliable, adhesive insulating material, with its edges in contact with each other, superimposing a fibrous covering upon said insulating material and subjecting the wire thus covered to pressure, whereby the edges of the insulating material are caused to become firmly united and the fibrous outer covering is partially embedded in said soft adhesive insulating material.

252,261.



2. The herein-described continuous method of preparing rubber-covered wire and providing the same with an outer protecting-covering of fibrous material, the same consisting in passing a suitable wire and an unvulcanized strip of rubber through a funnel-shaped guide, whereby the rubber is caused to surround the wire, applying, by means of a braiding-machine, a braided fibrous covering upon the rubber as the wire emerges from the said funnel-shaped guide, and passing the wire thus covered from said guide to compression-rollers, between which it is pressed to cause the adherence together of the edges of the rubber and the partial embedding of the braided covering in the rubber surface, essentially as set forth.

252,262. INSULATED ELECTRICAL CONDUCTOR. WILLIAM H. SAWYER, Providence, R. I., assignor to Eugene F. Phillips, same place. Filed Aug. 17, 1881. (No model.)



Claim.—The method of covering wires with rubber and an outer metallic covering, as herein described, the same consisting in arranging between two strips of unvulcanized sheet-rubber a series of suitably-spaced wires, placing upon the outer surfaces of said rubber strips, respectively, strips of metal foil, and simultaneously pressing the strips together and severing them between the wires, essentially as set forth.

252,263. MANUFACTURE OF BUILDING-BLOCKS. JOHN J. SCHILLINGS, New York, N. Y. Filed Oct. 11, 1881. (No model.)

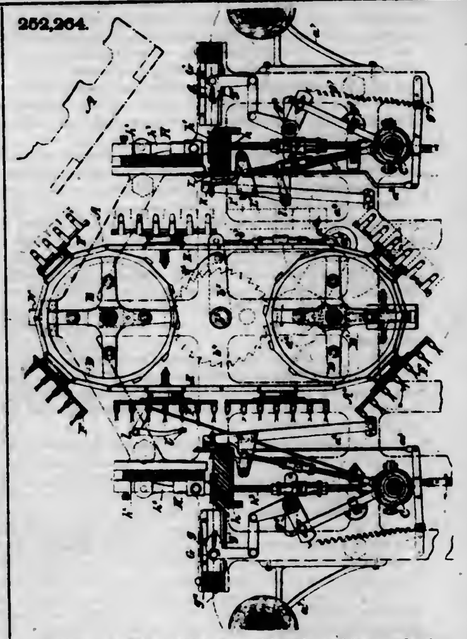


Claim.—1. A building-block two opposite faces of which are provided with cavities, the cavities in each of said faces extending to within a short distance from the opposite face, while the remaining faces present solid or unbroken surfaces, substantially as shown and described.

2. The within-described process for producing building-blocks by placing clay or other suitable plastic material into a mold the top and bottom of which are provided with perforations, and then forcing from opposite sides, through these perforations, suitable pins for pressing the clay and producing cavities in two opposite sides of the block, as set forth.

252,264. SOD-TRAY MACHINE. NICHOLAS SCHNORR, Brooklyn, and JULIUS DUBEAUVAIS, New York, N. Y.; said DuBeauvais assignor to said Schnorr; said Schnorr assignor to Gustav L. Jaeger, New York, N. Y. Filed Feb. 16, 1881. (No model.)

252,264.



Claim.—1. The combination, with strip-making mechanism and a carrier and forms, of one or more placers, comprising clamps or holding-fingers for seizing the strips made by aforesaid mechanism and inserting them in said forms, substantially as described.

2. The combination of the carrier with a series of forms movable with and upon said carrier, and quarter-turns for acting successively on said forms, substantially as described.

3. The combination, with a form having clamps or spring-fingers, of a placer having clamps or holding-fingers and operating in connection with said form, substantially as described.

4. The combination, with a carrier and form supported thereby on a swivel or by a pivoted connection, of a quarter-turn for revolving said form, substantially as described.

5. The combination of a placer, form, and bottomer, substantially as described.

6. The carrier consisting of an endless belt or chain, supporting a series of swiveled forms, substantially as described.

7. The combination, with the endless belt and swiveled forms supported thereby, of the upper and lower quarter-turns, substantially as described.

8. The combination, in a form, with the boss supporting the clamps, of devices, substantially as described, for revolving said forms by engagement with other devices, as set forth.

9. The combination, with a carrier, one or more forms, and mechanism for advancing said carrier and forms, of one or more dischargers supported upon the machine-frame and a revolving cam for operating said dischargers, substantially as described.

10. The combination, with an endless belt or chain and one or more forms carried by said belt or chain and projecting beyond it at the sides, of one or more dischargers arranged to act upon the projecting portion, substantially as described.

11. The combination, with one or more forms comprising clamps or spring-fingers and releasing devices, as indicated, of one or more dischargers for acting upon said devices to relieve the pressure of the clamps or spring-fingers, substantially as described.

12. A form comprising, in combination with the base-plate and a number of clamps or spring-fingers, releasing devices, as explained, carried by the base-plate, for simultaneously releasing the pressure of said clamps or fingers, substantially as described.

13. The combination, with one or more pairs of holding-fingers hinged together and carried by pivoted uprights, of a cam and connections for closing and advancing and opening and returning said holding-fingers, substantially as described.

14. The combination, with one or more pairs of jaws or clamps hinged together and carried by a reciprocating support or supports to which one jaw or set of jaws is attached, of one or more operat-

ing rods or links connected with the other jaw or set of jaws, and a brake or friction devices for delaying the advance of said jaws, and thus securing the forcible biting or clamping of the same upon the material between them, substantially as described.

15. The combination, with a strip-making mechanism, of a placer comprising two clamping devices or sets of holding-fingers for receiving the strips when made, and operating means, substantially as described.

16. The combination, with an intermittently-operated carrier and forms, of a placer having clamping-plates or holding-fingers and also operated intermittently, and strip-making mechanism, substantially as described.

17. The combination of the strip mechanism for making the longitudinal cross-strips, the forms with spring-fingers, and carriers for receiving and conveying the strips, the placers with holding-fingers for receiving the strips as made and placing them in position, and the upper quarter-turn for revolving the forms after the longitudinal strips have been placed in the forms so as to bring them into position for receiving the cross-strips, substantially as described.

18. A machine for making egg-trays, comprising, in combination, duplicate feeders, punchers, clippers, and placers, a chain or endless belt, swiveled forms carried thereby, upper and lower quarter-turns or stationary prongs, and discharging apparatus, substantially as described.

19. In a machine of the character described, the combination, with an intermittently-rotating carrier, of an independent form pivotally connected with the carrier and intermittently carried around by the same, and having on its face a series of projecting receivers or clamps, substantially as described.

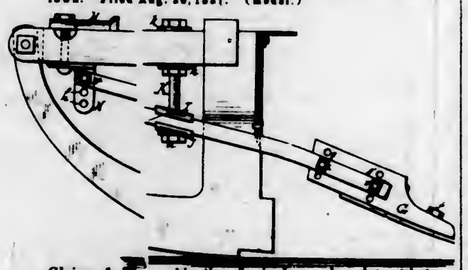
20. The combination, with an intermittently-rotating carrier, of a series of independent forms pivotally connected with and intermittently carried around by the carrier, and provided on their faces with projecting receivers or clamps, substantially as described.

21. The combination, with the series of independent forms pivotally connected with the intermittently-rotating carrier, and provided on their faces with projecting receivers or clamps, of the discharger arranged beneath the carrier, and mechanism, substantially such as described, connected with said discharger, for intermittently reciprocating the same as the forms are brought around in the part of the discharger, substantially as described.

22. The combination of an intermittently-rotating carrier and a series of independent forms pivotally connected with and intermittently carried around by the carrier, and having on their front faces the projecting receivers or clamps, with the placer and the cutting and slotting dies, substantially as described.

23. The combination, with the form and its clamps or receivers, and with the placer, of the clamps or placer, substantially as described.

252,265. CORN-PLANTER. LEVI SCOFIELD, Cedar Rapids, Iowa. Filed Aug. 30, 1881. (Model.)



Claim.—1. The combination of a single covering-plate with the runner and with a divided drag-bar pivoted to the frame near the upper front end of the runner, and supported between said pivot and the standard, whereby the inclination of said drag-bar can be adjusted and fixed in adjusted positions, and whereby the drag-bar is laterally supported by the standard from deflection in either direction, substantially as described.

2. The combination of a single covering-plate with the runner, with a long divided drag-bar pivoted to the frame near the upper front end of the runner, with a support between the pivot and the standard, and with an intermediate adjustable connection, G, arranged between the divided portion of the drag-bar and the covering-plate, substantially as described.

3. The combination of the drag-bar arranged above and independently of the runner with the covering-plate and with the intermediate block, G, adjustable on the drag-bar by means of a series of holes and a bolt, substantially as described.

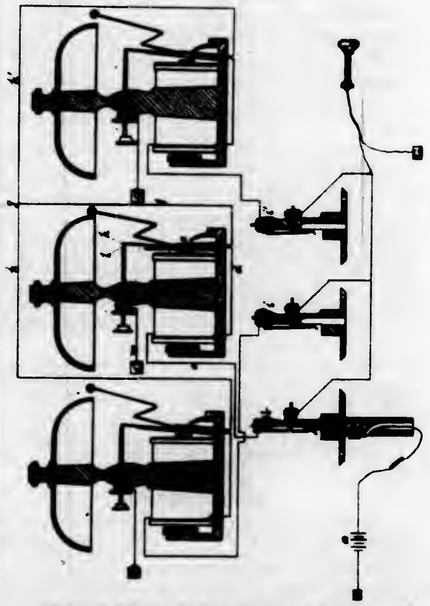
4. The combination of the covering-plate with a divided drag-bar pivoted in front of the standard, and with the adjusting-bolt K, operating between the pivot and the standard, substantially as described.

5. The combination of the covering-plate with the divided adjustable drag-bar suspended about midway of its length immediately in front of the standard, and with an adjustable pivot at the front end of the drag-bar, substantially as described.

6. The combination of the covering-plate, the pivoted divided drag-bar, the plates I J, or their equivalent, the screw-nuts *m n*, and the bolt K, substantially as described.

7. The combination of the covering-plate, the pivoted divided drag-bar, the adjustable connection between the plate and the drag-bar, and the adjustable suspending device immediately in front of the standard, substantially as described.

252,266. SELF-SWITCHING SIGNAL-BELL. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Manufacturing Company, same place. Filed Apr. 12, 1881. (No model.)



Claim.—1. The circuit of a battery through three or more electric bells, in combination with said bells and a ground-contact near the armature of the first bell, the succeeding two or more bells being placed one in each of the branches of the derived circuit, which extends from the armature of the first bell through the said two or more bells to a common line, whereby the current is directed automatically to ground, and thus momentarily cut off from the branches of the derived circuit, substantially as and for the purpose specified.

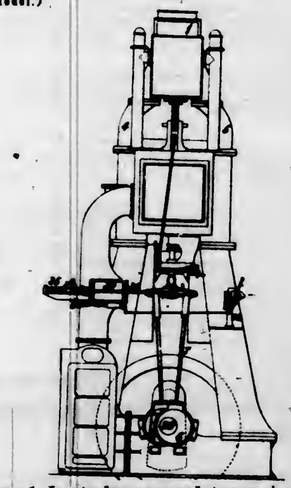
2. The combination of a battery, with three or more electric bells placed in the circuit of said battery, said circuit being connected with the armature of the first bell by line *d*, and extending thence in derived circuit through the two or more succeeding bells, one bell being in each branch of the derived circuit, the branches uniting in a common ground-line in which is placed the operator's telephone, and contact-points *h i*, whereby the current from the battery is momentarily diverted from the said branches and directed to ground at the first bell, substantially as and for the purpose specified.

3. The circuit of battery *a* through switches *b* and *i* to ground, in combination with two electric bells in circuit between said switches, a branch circuit from the armature of the first bell to ground, and means, as described, whereby the current is directed automatically to ground through said branch at each stroke of the first bell, thus preventing the second bell from ringing, as and for the purpose set forth.

4. The combination of three or more electric bells, with their armatures severally placed in distinct branch lines, an outer common line, a common ground-line at the central office, the coils of the electro-magnets of the bells respectively in the circuit of the branch lines which connect with said armatures, switching apparatus in each line or branch, and a ground-contact, and an automatic shunting device near the armature of each bell, whereby any given line may be separated from said common ground-line and closed to battery, and the current shunted to ground through the ground-contact of the armature of the bell in the line thus closed to battery, substantially as and for the purpose specified.

5. The combination of three or more electric bells, each placed in a different branch of a group of telephone-lines, with switching apparatus in each branch, between the ground and bells, and automatic switching devices, one device for each bell, whereby any line may be connected to battery, and the current thus directed through said given line may be shunted from the bells of the other lines of said group, substantially as and for the purpose specified.

252,267. STEAM-ENGINE. HOSACK SIM, Philadelphia, Pa., assignor of one-half to the William Cramp & Sons Ship and Engine Building Company, same place. Filed Oct. 29, 1881. (No model.)



Claim.—1. In a tandem compound steam-engine, the combination, substantially as set forth, of a high-pressure piston-rod having a conical or tapered end and a collar adjacent thereto, a low-pressure piston-rod having a conical central recess to receive the end of the high-pressure piston-rod, and an external thread, a nut fitting the thread of the low-pressure piston-rod and serving to clamp the piston thereof in position, and a threaded sleeve engaging said nut and securing the high and low pressure piston-rods together through the nut of the latter.

2. In a direct acting steam-engine, the combination, substantially as set forth, of a valve-link, a steam-reversing cylinder located substantially in line with said link when in the position corresponding to the termination of the strokes of the engine-piston, and a pair of connecting links or bars by which the valve-link and the cross-head of the reversing-cylinder are coupled directly together.

3. In a direct-acting steam-engine, the combination, substantially as set forth, of a valve-link, a steam reversing-cylinder located substantially in line with said link when in the position corresponding to the termination of the stroke of the engine-piston, and an exhaust-pipe which forms the standard or support of said reversing-cylinder.

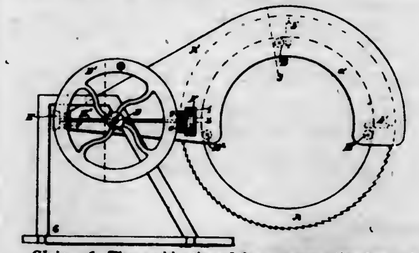
4. In a direct-acting steam-engine, the combination, substantially as set forth, of a steam reversing-cylinder and an exhaust-pipe which is recessed transversely adjacent to said cylinder and increased in width throughout said recessed portion, said cylinder and exhaust-pipe being connected by flanges on each side of said recessed portion.

5. The combination, substantially as set forth, of a crank-shaft, a balance-wheel secured thereto and having series of ratchet-teeth formed in reversed directions upon its periphery, a direct-acting steam-cylinder having a piston-rod and cross-head traversing tangentially to said balance-wheel, pawls pivoted to said cross-head and adapted to engage either of the series of ratchet-teeth of the balance-wheel, and a hand-lever connected to a rock-shaft by which either of the pawls may be engaged with or both disengaged from the teeth of the balance-wheel.

6. The combination, substantially as set forth, of a crank-shaft, a balance-wheel secured thereto and having series of ratchet-teeth formed in reverse directions upon its periphery, a steam-cylinder adapted to operate pawls engaging one or the other of the series of ratchet-teeth of the balance-wheel, and a pair of hand-levers mounted adjacent one to the other in a stand or bearing upon the working-platform of the engine, said hand-levers operating respectively, the one to engage and disengage the pawls and ratchet-teeth and the other to move the valve of the steam-cylinder.

7. The combination, with the cross-head of a turning-engine, of pivoted pawls, a rock-shaft having arms projecting in opposite directions and connected by links with said pawls, a shaft moving with said cross-head and connected by a link with one of the arms of the rock-shaft, and a hand-lever coupled to an arm on said longitudinally-moving shaft, the shaft and arm being connected through a feather and spline, so that the shaft shall partake of the vibrations of the arm and be allowed free longitudinal movement within it, substantially as set forth.

252,268. RIM-SAW MACHINE. OSCAR F. SILCOTT, Pellatty, Ohio. Filed Apr. 18, 1881. (No model.)

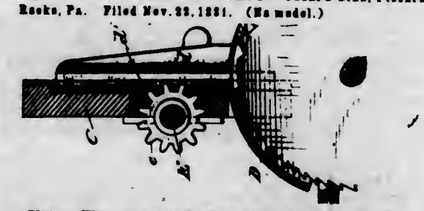


Claim.—1. The combination of the saw-supporting frame A', consisting of the segments *a a'*, suitably connected and containing rollers, as B B' B² and *b b'*, and the saw arranged to rotate between said segments, and the shaft D, connecting the supporting-frame A' to the main supporting-frame and permitting said frame A' to turn on said shaft D, substantially as and for the purposes specified.

2. The combination of saw-supporting frame A', consisting of the segments *a a'*, suitably connected, and containing rollers, as B B' B², and as *b b'*, and the saw arranged to rotate between said segments and carrying the boxes *e e'*, and the shaft E', journaled in said boxes, and provided with friction-wheel F, and the geared wheel and its shaft D, whereby the saw-supporting frame A' is hinged to the main supporting-frame, substantially as and for the purposes specified.

3. In a sawing-machine, the combination of the saw-frame A', hinged to the supporting-frame C by shaft D, carrying the operating hand or power wheel D', shaft E', supported in bearings *e e'*, carrying friction-wheel F, and pinion E, engaging a gear on wheel D', and saw A and anti-friction rollers, as *b b'*, preventing its lateral displacement, and anti-friction rollers, as B B' B², preventing displacement in the direction of its operating plane, substantially as and for the purposes specified.

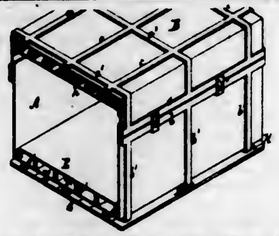
252,269. CIRCULAR-SAW GUARD. JOSEPH SILL, Picture Rocks, Pa. Filed Nov. 22, 1881. (No model.)



Claim.—The saw guard or shield D, having the rack *d'* on its stem *d*, combined with beam C, shaft E, cog-wheels *e* and *e'*, and pawl F, substantially in the manner and for the purposes set forth.

252,270. APPARATUS FOR SWEATING TOBACCO. FREDERICK W. SMALLEY and ROBERT G. J. KERBAUGH, Jr., Brooklyn, N. Y. Filed Aug. 1, 1881. (No model.)

252,270.



Claim.—1. An apparatus for sweating tobacco, in which is combined a body for containing the tobacco, a movable cover provided with a stationary horizontal foraminous partition, and a filling of charcoal or other absorbent material interposed between the partition and the cover, for absorbing and retaining the gases arising from the tobacco during the sweating operation, substantially as described.

2. The combination, substantially as hereinbefore described, of the body A, the cover B, the compartment D in the cover, the false bottom E, and the space F beneath said false bottom and communicating with the interior of the body A.

3. The combination, substantially as hereinbefore described, of the body A, the cover B, the guard-rails *b' c d'*, the shield G, and cleats H.

252,271. BREECH-LOADING FIRE-ARM. WILLIAM SOPER, Reading, England. Filed Sept. 27, 1880. (No model.) Patented in England Aug. 30, 1879.

Brief.—The side lever operates the breech-block by means of tumblers on its shaft and cocks the hammer by a link-connection. A stop operated by a supplemental trigger locks the breech-block in its closed position.



Claim.—1. The combination, in a fire-arm having the vertically-slidable breech-block *d*, of the lever *l*, arranged at the side of the gun, the tumbler *h*, fitted upon the spindle of the said lever and engaging the slidable breech-block, the movable rod connecting the tumbler with the cock, and the extractor *j*, acted upon by the said tumbler, whereby the opening of the breech, the cocking of the gun, and the extraction of the cartridge-shell will all be effected simultaneously by one downward movement of the lever, substantially as described.

2. The combination of the lever *l*, located at one side of the gun and provided with the transverse spindle *l'*, the tumbler *h*, secured to said spindle, the cock *f*, having the front projection, f^a, a link-connection between the tumbler and cock, and a vertically-sliding breech-block, *d*, constructed with the recess d^3, said members being constructed and arranged for operation substantially as described.

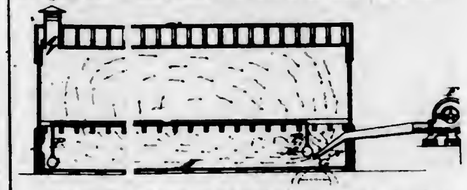
3. The combination of the tumbler *h*, mounted on the axis or spindle *l'*, and having the horns or projections h^2, the vertically-sliding breech-block *d*, having the grooves d^3 in its sides, which engage the horns or projections of the tumbler for depressing the breech-block by the direct downward pressure of said horns or projections, and a cock or hammer connected by a rod with the said tumbler, said members being arranged to operate substantially as described.

4. The combination, with the cock, the extractor, and the vertically-slidable breech-block, of the breech-tumbler *h*, fitted upon the spindle of the operating-lever, and formed with the studs *h' h'* or projections upon the arms h^2 h^2, the tubular transverse part h^3, the arm h^4, and a rod connecting the cock with the said breech-tumbler, for the purpose described.

5. The combination, with the vertically-sliding breech-block, of the upright lever or latch *p*, pivoted at its lower end, and provided with a rearward-projecting toe, q^2, and the pivoted breech-trigger *q*, having a toe, q^3, and acted on by a spring, substantially as and for the purpose described.

252,272. DRYING-KILN. GARRETT P. SPEER, Philadelphia, Pa. Filed Nov. 5, 1881. (No model.)

Brief.—The warm and moist air from the drying-chamber is brought in contact with the cold-air inlet to condense the moisture.



Claim.—The combination, in a drying apparatus, of a close chamber controlled by a relief-valve, steam-heating pipes, a condensing-fan or air-pump, and an air-cooled condenser formed by the flattened nozzle or tuyere of the fan, all constructed and arranged for conjoint operation substantially in the manner described.

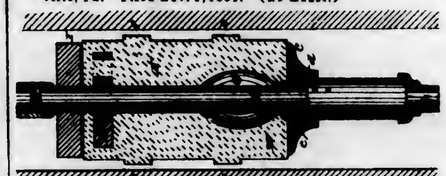
252,273. PURPLE DYE-STUFF OR COLORING-MATTER. JAS. H. STEBBINS, Jr., New York, N. Y. Filed Nov. 26, 1881. (No specimens.)

Claim.—A dark-violet coloring-matter produced by the action of an acid solution of the soda salt of betanaphtholmonosulpho-acid upon nitrosodimethylaniline hydrochlorate, substantially as described.

252,274. MANUFACTURE OF BLUE COLORING-MATTER. JAMES H. STEBBINS, Jr., New York, N. Y. Filed Nov. 28, 1881. (Specimens.)

Claim.—A coloring-matter or dye-stuff produced by the action of the soda salt of monosulpho-acid of alpha naphthol on paramido dimethylaniline hydrochlorate, substantially as set forth.

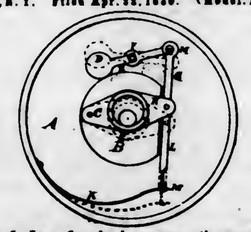
252,275. DEEP-WELL PACKING. LYMAN STEWART, Titusville, Pa. Filed Nov. 1, 1881. (No model.)



Claim.—1. In a deep-well packing, the combination, with the anchor and the upper sliding tubing-section, of the rubber annulus, concaved, as at G, near its lower end, substantially as set forth.

2. In a deep-well packing, a rubber annulus having an external rib, *e*, and an internal recess, G, opposite thereto, substantially as set forth.

252,276. GOVERNOR FOR STEAM-ENGINES. JOHN E. SWEET, Syracuse, N. Y. Filed Apr. 22, 1880. (Model.)



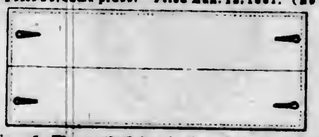
Claim.—1. In a fly-wheel governor, the combination of the eccentric with a single-acting governing weight or ball by suitable intermediate devices, whereby the gravitating action of the said governing weight is counterbalanced by the eccentric, as and for the purposes set forth.

2. The combination of the eccentric B, actuating and counterbalancing weight or ball D, centrally-pivoted lever E, and link G with the fly-wheel A, as and for the purposes set forth.

3. The combination of the fly-wheel A, eccentric B, counterbalancing weight or ball D, centrally-pivoted lever E, link G, and spring K, as and for the purpose set forth.

4. In a governor of the form described and moving pivotal joints formed of a circular pin or bearing resting on a plain surface, combined with the arms F and G of the governor and the arms C and H of the eccentric, so related that a parallel motion is produced and a rolling action is given to the pins on their bearing-surfaces, as hereinbefore set forth.

252,277. CUFF. ISAAC P. TURNER, Troy, N. Y., assignor to A. Clark Fellows, same place. Filed Aug. 12, 1881. (No model.)



Claim.—1. The method herein described of taking up the slack or fullness in a false or detachable cuff, the same consisting in forming a crease and a seam in the facing between its side edges after the thicknesses composing the cuff have been run together and before turning the same, substantially as described.

2. The method of taking up the slack or fullness in the back facing of a detachable cuff, the same consisting in cutting the parts of equal widths, running or stitching them together at the edges of the said parts after they are laid together wrong side out, then forming a crease along the facing-piece between its edges and running a seam along the said crease, and finally turning the cuff right side out through an opening at either of its ends, substantially as described.

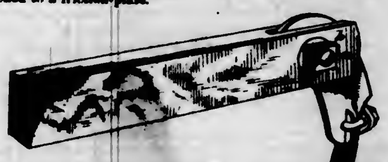
3. As a new article of manufacture, a detachable cuff formed with a crease or creases and a seam or seams along its facing between the side edges of the latter, whereby the fullness or slack of the facing is taken up, and when turned the seam alone will be visible, substantially as described.

252,278. FIRE-BRICK AND FIRE-PROOF LINING FOR FURNACES. BERNARD ULLMANN, Königshütte, Prussia, Germany, assignor to Edward Cooper, New York, N. Y. Filed Nov. 15, 1881. (No specimens.) Patented in Germany July 25, 4288, Sept. 29, 1880, and Oct. 6, 1880, and in Belgium Oct. 15, 1880.

Claim.—As a new article of manufacture, basic fire-brick or fire-proof lining free from carbonic acid and water, produced by mixing limestone, dolomite, or magnesia with a binding material—such as chlorides or alkalies—then burning the mixture, then comminuting the same, then mixing it with tar, and finally reburning the mixture, substantially as herein described, or by any other means adapted to produce a like result.

252,279. CULTIVATOR-TOOTH. WILLARD A. VAN BERNT, Horicon, Wis. Filed Sept. 3, 1881. (Model.)

Brief.—A reversible spring-tooth with a longitudinal rib attached to a friction-plate.



Claim.—1. The combination, with the slotted bar, of a slipping plate pivoted thereto and having the perforated shank, spring-tooth secured to the latter, a clip-plate adapted to brace the tooth, and a clip for holding the tooth and clip-plate in position, substantially as set forth.

2. The combination, with the bar having an open slot [illegible] end, and a slipping plate consisting of a body and shank, [illegible] of the said plate adapted to be secured in the slot, while the [illegible] extends outward in a rearwardly-inclined direction, and a [illegible] hole for retaining the plate in any desired adjustment, of a [illegible] pointed reversible spring-tooth secured to the said shank, substantially as set forth.

3. The combination, with the bar, of the slipping plate pivoted thereto, a double-pointed reversible spring-tooth having a longitudinal rib, a clip-plate having a longitudinal groove corresponding to said rib, and devices for securing the slipping plate, clip-plate, and tooth together, substantially as set forth.

4. The combination, with the [illegible] ping plate having a perforated seat or bearing on its [illegible] of a spring-tooth provided with a strengthening-[illegible] ting through the perforated seat or bearing, and [illegible] vided with a longitudinal groove, substantially as [illegible]

252,280. SEAT FOR BICYCLES. CURTIS H. VENDER, Plattsburg, N. Y. Filed Mar. 18, 1881. (No model.)



Claim.—1. A suspension-saddle constructed with a flexible portion, C, and having an under spring in two or more parts, B D, to which the flexible portion is attached at either end, and which metallic parts are extensible, substantially as and for the purposes set forth.

2. In a velocipede-seat, the combination of plates B and D, clamp F, stop b^3, and adjusting-bolt F', substantially as shown and described.

3. An adjustable supporting device for a velocipede-seat, consisting of a clamp, by which it is held to the perch or supporting-bar, depending links, and arms connected therewith and adapted to be connected with and to support the spring-plate of the saddle, substantially as set forth.

4. A supporting and adjusting device for a velocipede-saddle, consisting of slotted plates M' M', links M^3 M^3, and suitable connecting and clamping mechanism adapted to hold the same to a perch or supporting-bar and the spring-plate of a saddle, and constructed to operate substantially in the manner and for the purposes set forth.

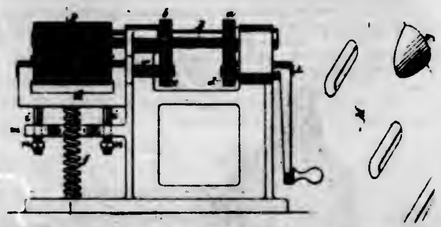
5. In combination with the supporting-plate M and links M^3 M^3 and plates M' M', the spring m^2, constructed and attached substantially as and for the purposes set forth.

6. A spring-plate for a suspension-saddle, having its rear portion divided into two or more curved arms or branches, constructed and adapted to support the rear end of a flexible seat, substantially as shown and described.

7. In the supporting mechanism of a seat to a bicycle, the spring-plate D, with two or more curved arms, in combination with the plate B, substantially as and for the purposes set forth.

8. In combination, a supporting and adjusting device for a velocipede-saddle, consisting of the parts K K' K^3 K^3, suitably connected and attached by clamping mechanism to a perch or supporting-bar with the spring-plate of a saddle, all substantially as and for the purposes set forth.

252,281. MACHINE FOR CUTTING SHANK-STIFFENERS FOR BOOTS AND SHOES. CHAS. B. WEBB, Philadelphia, Pa. Filed Nov. 23, 1881. (No model.)



Claim.—1. The within-described knife for cutting shank-stiffeners, said knife having a beveled front edge, *a*, the continuity of which is interrupted by the gauge *y*, beveled in the opposite direction, as set forth.

2. A knife for cutting shank-stiffeners, said knife having [illegible] edge, part of which is beveled on one side and the [illegible] made in the shape of a gauge and beveled on the [illegible] whole being made in one piece, as set forth.

3. The combination of the knife M, having the beveled [illegible] gauge *y*, with the feed-rolls D and J, as set forth.

4. The combination of the feed-rolls D and J, the [illegible] having a beveled edge, *a*, and gauge *y*, and the knife-carrier [illegible] adjustable on the frame of the machine, as set forth.

252,282. ROLLER FOR MOVING HOUSES. JONATHAN C. WILSON, Rogersville, [illegible]. Filed June 11, 1881. (No model.)

Claim.—1. A roller for use in moving large structures, having a central bearing, D, outer bearing-wheels, B, and inner wheels, C, of smaller diameter, whereon the outer walls are full or equal toward said central bearing, substantially as specified.

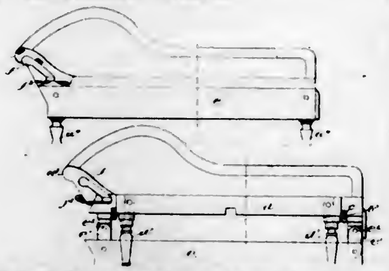
2. The combination, with a roller having circular bearings B

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and C, of different diameters, and a central bearing, D, of smaller diameter, having convex side walls, H, of the cap or bearing-block E, having the concavity F, and saddle-plate G, substantially as specified.

252,283. BED-LOUNGE. JOSEPH D. WESTGATE, Manchester, N. H. Filed Nov. 7, 1881. (No model.)



Claim.—1. In a bed-lounge, the main frame and the auxiliary frame, having journals c mounted upon slide-bars, as described, the auxiliary frame being adapted to be inverted, substantially as set forth, to bring it into a higher plane to coincide with the position occupied by the main frame.

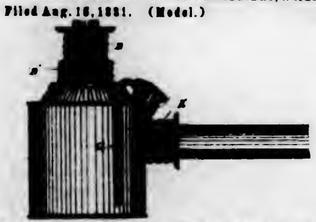
2. The main framing and its slide-bars b^2, combined with the auxiliary sliding and reversible frame d, and with pivoted legs d', to operate substantially as described.

3. The main framing a, combined with the front board and its supporting-links c', to operate substantially as described.

4. The main framing and main head-piece, combined with the auxiliary head-piece and its carrying-arm f^3, shaped to permit the auxiliary head-piece to be placed under the main head-piece, or end to end with it as a continuation thereof, substantially as described.

5. The main frame-work and its head-piece and sliding bars b^2, combined with the sliding reversible auxiliary frame d, having trunnions supported in bearings in the said slide-bars, and with the auxiliary head-piece and its pivoted carrying-arm f^3, to operate substantially as described.

252,284. MINER'S LAMP. DAVID D. WILLIAMS, Wilkes-Barré, Pa. Filed Aug. 16, 1881. (Model.)



Claim.—1. In combination with the lamp-body and its removable screw-threaded handle, the cap secured thereto, and provided with a screw-threaded extension surrounding the wick, into which the handle is adapted to be screwed to serve as a cap for the wick-tube, substantially as specified.

2. In combination with the body of the lamp, having the tube B and cap B' and its extension D, the detachable screw-threaded handle, adapted to be attached to the lamp-body or secured to the wick-tube, as desired, substantially as and for the purposes specified.

252,285. SPEED-INDICATOR FOR SHAFTING. LOUIS J. WOEHLER, Detroit, Mich. Filed June 8, 1881. (No model.)

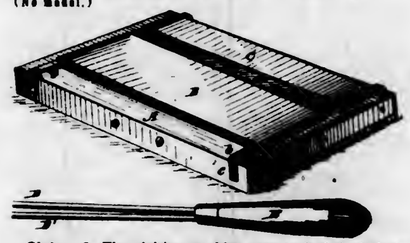
Brief.—Two cog-wheels mesh into a worm-shaft carried by the revolving shaft or wheel. One wheel has one hundred teeth and the other a hundred and one. Each revolution will be indicated by the pointer moving one degree on the dial.

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Claim.—The combination of the plate D, having a spring, E, and pintle p, with the wheel b, having hub o, wheel B, index-finger c, and worm-shaft H, substantially as described.

252,286. PLAITING-MACHINE. JOHN I. D. WOODRUFF and LAURICY Y. WOODRUFF, St. Charles, Ky. Filed Aug. 8, 1881. (No model.)



Claim.—1. The plaiting-machine composed of the bed-piece A, parallel guides b b, and flexible apron B, substantially as described, for the purpose set forth.

2. The plaiting-machine composed of the bed-piece A, parallel guides b b, flexible apron B, and sheet-metal clamping-apron C, substantially as described, for the purpose set forth.

3. The plaiting device or knife consisting of the parallel blades D D', of unequal length, with or without a handle.

252,287. PROCESS OF TREATING MINERAL PYRITES AND SULPHIDES FOR THE MANUFACTURE OF SULPHUROUS AND SULPHURIC ACIDS. HENRY WURTS, New York, N. Y. Filed Apr. 11, 1881. (Specimens.) Patented in Canada Oct. 1, 1881.

Claim.—1. The consolidation of granular sulphurets before burning in kilns to make sulphurous or sulphuric acids into cakes, lumps, or blocks by mixing therewith metallic iron in comminuted or divided form, and causing this iron to rust and form hydrated oxide or a basic salt in the interstices of the mass by mixture with a saline solution.

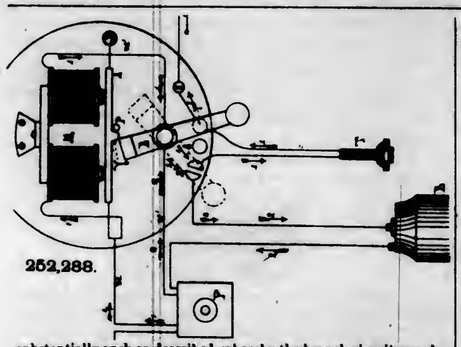
2. Accelerating and intensifying the rusting and cementing action of metallic iron when mingled with granular sulphurets to be burned in kilns for making sulphurous and sulphuric acids by the process of alternately moistening the mixture with water and drying, either spontaneously or by a gentle heat, as herein specified.

3. As a new product or composition of matter to be used in making sulphurous and sulphuric acids by burning the same in kilns, a consolidated product made by mingling together granulated metallic sulphurets with granulated metallic iron, asbestus, or mica, and in which composition oxidation or rusting has been produced by the action of a saline solution, as herein described.

252,288. ELECTRICAL SIGNALING APPARATUS. CHARLES E. BUELL, New Haven, Conn., and J. FREDERICK BUELL, Woburn, Mass.; said Charles E. Buell assignor, by mesne assignments, to the United States Telephone Manufacturing Company, New York, N. Y. Filed Jan. 31, 1880.

Brief.—The bell-magnet at a subscriber's station is included in the main line, and its armature is provided with a projection which locks the telephone-switch when the armature is not attracted. The main battery being kept on the line except during conversation, the switches are free to move in the normal condition of the line, but locked when conversation is being carried on. By this means interruption is prevented.

Claim.—1. In a telephone-station apparatus, the combination of the following elements, to wit: a main electric circuit, an independent branch circuit including a telephone, and switch devices,



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substantially such as described, whereby the branch circuit may be interposed in and withdrawn from the main circuit, essentially as herein set forth.

2. The combination, with a charged main telephone-line and a station telephone-circuit, of a switch and an attracted armature of the electro-magnet included in the said circuit, the switch and the armature being arranged to be interlocked with each other when the attraction of the armature has ceased by the removal of the charging-batteries from the main circuit, substantially as described, whereby the telephone-circuit is prevented from being interposed in the main circuit after the charging-batteries are removed from the main circuit, as set forth.

3. The combination, with a main electric circuit, of a telephone apparatus, substantially as described, provided with a switch and connections arranged to interpose a telephone and transmitter in the said main line, and to simultaneously close a local battery through said transmitter and produce a call or signal upon said main line, as set forth.

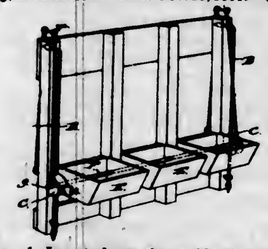
4. The combination, in a telephone-station apparatus, of a call-bell electro-magnet included in a main circuit, a telephone, and a transmitter in a branch circuit with a switch and connections, substantially such as described, whereby the telephone branch circuit may be interposed in the main circuit with the said call-bell electro-magnet, as set forth.

5. The combination, with a charged main electric circuit, including a telephone-station, of a telephone apparatus provided with a switch, an electro-magnet, and an attracted armature, said armature being arranged to lock the switch when the attraction ceases to prevent it being turned to interpose the telephone in the main electric circuit, as set forth, whereby the central office can look out stations not already interposed by removing the charging-batteries from the main line.

6. The combination, with a single-coil electro-magnet, of a bell attached to and supported by the rod or core which retains the helix of the magnet, substantially as described.

7. The combination, with a call-bell electro-magnet, of a stationary bell arranged to cover the electro-magnet and armature, and having a projecting piece rigidly attached to its inner surface to receive the blows of the armature or hammer, substantially as described.

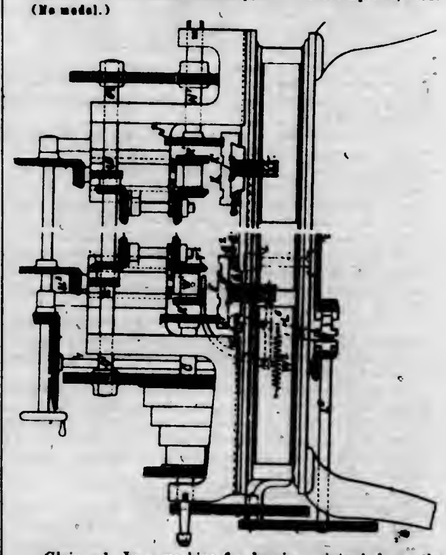
252,289. STOCK-CAR. GEORGE J. CLINE, Goshen, Ind., assignor of two-thirds to Stanley Harding, same place, and Hugo B. Busing, Rockford, Ill. Filed Nov. 19, 1881. (Model.)



Claim.—1. In a stock-car, the combination, with the vertical slide-rods B and the slide-heads C thereon, of the vertically-adjustable horizontal rod F, pivoted in the slide-heads, the set-screws s, and the troughs E, secured to said horizontal rod, substantially as specified.

2. In a stock-car, the revolvable horizontal rod carrying the troughs, and pivoted in vertically-adjustable bearings having set-screws for the rotary adjustment of said horizontal rod and ropes for raising and lowering the bearings, substantially as specified.

252,290. MACHINE FOR DRESSING PRINTERS' CHASES. CALVERT B. CORNELL, Westerly, R. I. Filed Apr. 14, 1881. (No model.)



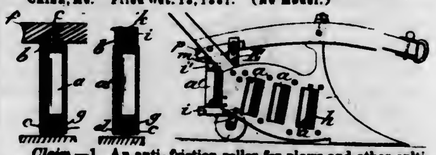
Claim.—1. In a machine for dressing printers' chases, the combination of a pair of cutters or milling-tools, one of which is arranged to move up and down, with a supporting and reciprocating bed and suitably-operating mechanism, whereby the outer and inner edges of a chase-frame and the adjacent inner corners may be completely finished, as hereinbefore set forth.

2. In a machine for dressing printers' chases, the combination of two pairs of cutters, one of each pair of which is arranged to move up and down, and their supporting mechanisms, whereby two opposite sides of a chase-frame and their adjacent inner corners may be completely dressed or finished, as hereinbefore set forth.

3. The combination of two supporting and moving beds, arranged transversely to the main frame and adapted to be adjusted relatively to each other for receiving the various sizes of work, as hereinbefore set forth.

4. The combination of the double clutch and its lever with the shifting devices on the supporting-bed and on the guide of the supplementary cutter, to trip said clutch to and fro for varying the movements of the bed and the supplementary cutter or cutters, as hereinbefore set forth.

252,291. PLOW. WILLIAM A. BOYNS, Vassalborough, assignor of three-eighths to Andrew Webber and Hartwell B. Haskell, China, Me. Filed Oct. 13, 1881. (No model.)

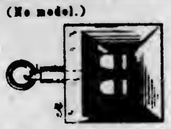


Claim.—1. An anti-friction roller for plows and other cultivators, having the ends of its journal, shaft, or pivot loosely inclosed in a movable nipple, which is adapted to revolve in its bearing for the purpose of diminishing wear, all the parts being constructed and arranged substantially as specified.

2. The combination, with the mold-board and landside of a plow having bearings e f and slots h, of the rollers a, arranged toward the rear sides of said slots, and provided with recesses or journal-boxes c, and the movable nipples g, placed loosely within said journal-boxes and surrounding the journals of the rollers, substantially as and for the purpose set forth.

3. The combination, with a plow-frame, of the adjustable roller a', having its journals inclined in nipples g, and provided with a rod or bar, k, substantially as described.

252,292. CAR-COUPLING. JOSEPH C. FOWLER, Houston, Tex., assignor of one-half to Sinclair Taliaferro, same place. Filed Nov. 25, 1881. (No model.)



Claim.—1. In a car-coupling, the vertically-movable coupling-pin provided with a horizontal cross-bar adapted to rest upon the link when the latter is engaged by the coupling-pin, substantially as described.

2. The combination, with the draw-head having grooves in its inner vertical walls, of the coupling-pin provided with a horizontal cross-bar having its ends received into the said grooves, substantially as and for the purpose described.

3. The combination, with the draw-head having grooves in its inner side walls, with notches at the lower ends of said grooves, of the coupling-pin provided with a horizontal cross-bar having its ends received in the said grooves, whereby lateral strain on the coupling-pin in a forward direction when the pin is down will draw the ends of the cross-bar into said notches and thereby lock down the coupling-pin, substantially as described.

4. The combination, with the draw-head having grooves in its inner side walls, of the coupling-pin provided with a cross-bar having its ends received into said grooves, and the spring arranged to depress the coupling-pin, substantially as described.

5. The combination, with the draw-head, of the coupling-pin provided with a cross-bar having its ends received in grooves in the draw-head, said coupling-pin being formed with the shoulder or offset E on its rear edge, whereby the shock and strain upon the cross-bar when the coupling-pin is raised will be partly relieved, substantially as described.

252,293. ELECTRO-MAGNETIC BRAKE. LEONARD W. GOSS and HUGO WALTER, Cincinnati, Ohio, assignors, by mesne assignments, to the Waldamar Electro Magnetic Brake Company, of Ohio. Filed Mar. 28, 1881. Renewed Dec. 3, 1881. (No model.)

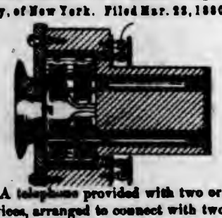


Claim.—1. In an electro-magnetic brake, the pole-piece *a*, in combination with a friction-shoe insulated therefrom, as set forth.

2. In an electro-magnetic brake, the core A, pole-piece *a*, shoe *b*, and backing *b'*, in combination substantially as and for the purpose specified.

3. In a double electro-magnetic brake for railway-cars, a hollow brake-bar, A, constituting the core of an electro-magnet, connecting the brake-shoes, substantially as set forth.

252,294. TELEPHONE. ERWIN T. GREENFIELD, Brooklyn, N. Y., assignor of one-half to the Holmes Burglar Alarm Telegraph Company, of New York. Filed Mar. 28, 1880. (No model.)



Claim.—1. A telephone provided with two or more magnets or equivalent devices, arranged to connect with two or more independent line-wires, substantially as described.

2. The combination, in a telephone, of two or more independent helices, arranged upon the same magnet or bar and connecting with separate line-wires, substantially as and for the purpose set forth.

3. The combination of two or more independent line-wires with one receiving-telephone, for the purposes set forth.

4. The combination of two or more telephonic conductors with one telephone by means of a plurality of magnets or equivalent devices, substantially as described.

5. The combination of two or more magnets or equivalent devices, arranged in a single telephone, and provided with independent helices connecting with separate line-wires, and a yoke connecting the poles of the magnets, substantially as described.

6. The combination, in a telephone, of two or more independent helices connecting with independent line-wires, substantially as and for the purposes set forth.

252,295. NUT-LOCK. DANIEL P. PRESCOTT, Vernon, Vt., assignor of one-half to Marcus M. Beeman, Syracuse, N. Y. Filed Sept. 8, 1881. (No model.)



Claim.—The within-described improved nut-lock, consisting of the nut A and the pawl *e*, said nut being provided on its under face with a single vertical socket to receive the short arm of said pawl, and with a groove to receive the downwardly-inclined long arm thereof, reaching from said socket beyond the sides of said nut, the combination and arrangement of said nut and pawl being substantially as and for the purpose set forth.

252,296. CARBON OF TELEPHONE-TRANSMITTERS. CHAS. E. SCRIBNER and GEORGE D. CLARKE, Chicago, Ill., assignors to the Western Electric Manufacturing Company, same place. Filed Oct. 16, 1880. (No model.) Patented in England Nov. 20, 1879.



Claim.—1. In a carbon-telephone, the combination of a piece of hard carbon with the button of soft carbon, the hard carbon being provided with a true surface, which is in contact with the soft carbon, the hard-carbon and soft-carbon buttons thus combined forming the contact-electrodes or medium of variable resistance, as and for the purpose set forth.

2. In a telephone-transmitter, the combination of a piece of hard carbon with its upper surface coated with metal, and the button of soft carbon, and the diaphragm, the piece of hard carbon and the button of soft carbon having surfaces in contact and forming the contact-electrodes, substantially as and for the purpose specified.

252,297. DEVICE FOR CONVERTING RECIPROCATING INTO ROTARY MOTION. ABSALOM G. SMYTH, Hamilton, Ontario, assignor of one-half to John Smith, Brantford, Canada. Filed Aug. 11, 1879.



Claim.—1. An opening or recess, B, placed in a shaft so constructed and arranged that a pawl may be used upon either side of said shaft and engage the central portion of rack-wheel E, substantially as and for the purposes set forth.

2. A lock or clutching device composed of a recess and pawl, contained in a shaft upon which a loose wheel may be placed, in combination with a rack-pitman, for the purpose of converting reciprocating into rotary motion, as set forth.

3. A rack-pitman having the side pieces, J I, made long, so that a piece, J, may be securely fastened between them, for the purpose set forth.

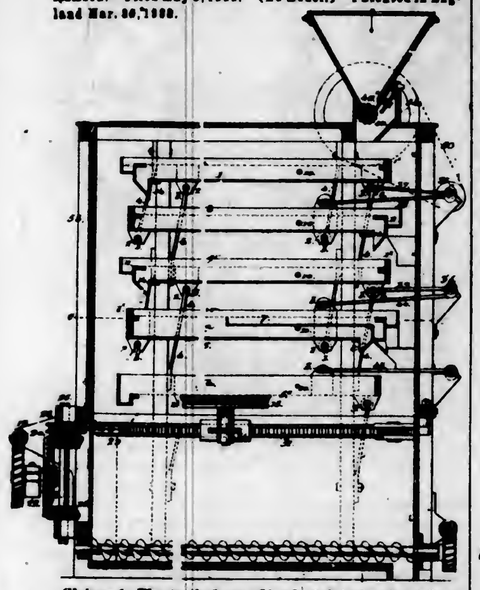
4. In a rack-pitman, one or more cogs, *d*, left wider than the others, for retaining the rack in gear, as and for the purposes set forth.

5. In combination with a locking device and gear-wheels E E, for converting reciprocating into rotary motion, an adjustable rack-pitman, as and for the purpose set forth.

6. A guard-frame provided with the opening L or its equivalent, constructed and arranged substantially as and for the purpose set forth.

7. A nib, N, or projection, formed on block K, in combination with pin *i* or its equivalent, for the purpose of retaining the guard-frame in position, as shown and described.

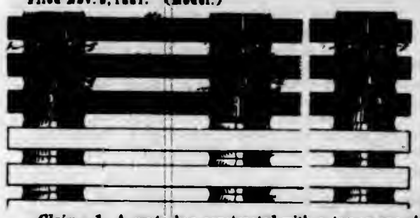
252,298. MACHINERY FOR DRESSING AND SIFTING FLOUR, &c. PENDR. THOMPSON and WM. H. WILLIAMSON, Wakefield, County of York, England; George Marsh and Samuel Bruce, Executors of said Frederick Thompson, assignors to said Williamson. Filed May 3, 1880. (No model.) Patented in England Mar. 30, 1880.



Claim.—1. The toothed way 31, adapted to be elevated or lowered, as set forth, in combination with a horizontally-revolving brush and operating mechanism, as shown and specified.

2. The combination of a brush, 18, with the pinion 24, carriage 32, toothed way 31, endless chain 29, pulleys upon which the chain is worked, and suitable operating mechanism to produce an alternate motion, as set forth.

252,299. GRATE-BAR. THOMAS P. VAN KLEECK, Sangerties, N. Y., assignor to himself and Howard Finger, same place. Filed Nov. 9, 1881. (Model.)



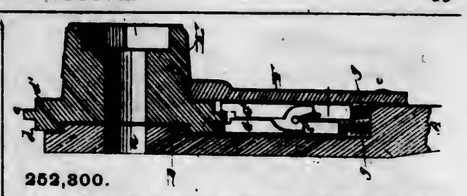
Claim.—1. A grate-bar constructed with a lug on one side having a ventilating-passage and with a socket on the opposite side adapted to receive a corresponding lug of another grate-bar, the sides of the socket having ventilating-grooves which communicate with the ventilating-passage of the lug, substantially as described.

2. A grate-bar provided with tubular ventilating-lugs and with sockets having ventilating-passages, the lugs and sockets being tapered and adapted to interlock respectively with the ventilating-lugs and sockets of a corresponding grate-bar, substantially as described.

3. A grate-bar constructed with lugs *a*, having shoulders *c* and ventilating-passages *e*, and with sockets *b*, pins *d*, and ventilating-grooves *f*, substantially as described.

252,300. RATCHET-WRENCH. JAMES W. WOOLDRIDGE, Guyandotte, W. Va., assignor to himself and A. H. Simms, same place, and Robert T. Guey, Huntington, W. Va. Filed Nov. 19, 1881. (No model.)

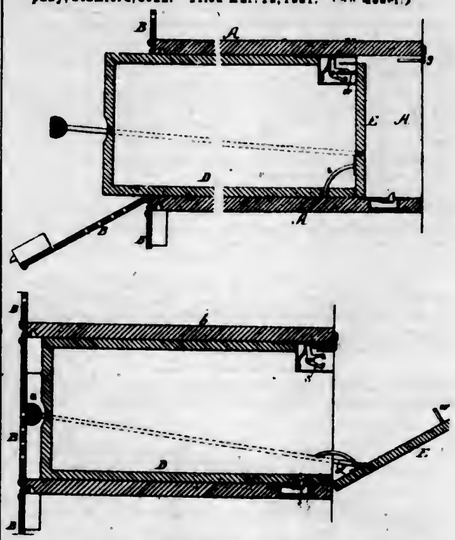
Claim.—1. The combination of the perforated circular bearing D on one side of the enlarged end of the handle A, the perforated right-and-left ratchet-hub E, fitted on said bearing, the division *e* thereof, the nut-socket in one end of the hub, the removable retaining-plate F, and the spring-actuated pawls inclosed in the handle, substantially as described.



252,300.

2. The combination of the right-and-left ratchet-hub E, the bearing D, and retaining-plate for the hub, the spring-actuated pawls G G', for the right and left teeth of the said hub, the shoulders *i i* on these pawls, the key, and the channeled stock, substantially as described.

252,301. POST-OFFICE BOX. CHARLES S. THOMPSON, Philadelphia, Pa., assignor to the Yale Lock Manufacturing Company, Stamford, Conn. Filed Mar. 12, 1881. (No model.)



Claim.—1. The combination of the post-office compartment A and its hinged door B, having locking attachment, the box D, adapted to the said compartment, and the door E, hinged to the open end of the said box at the lower edge of the same, in combination with mechanism, substantially as described, whereby the door E of the box is retained in an open condition by the door B of the compartment, as set forth.

2. The post-office compartment A, its hinged door B, and spring-catch *a*, the box D, its hinged door E, and the handle *c*, connected to the said door and rendered inoperative by the door B of the compartment as long as the latter is closed, in combination with a self-locking device on the box and its door, and with a device on the same for operating the said spring-catch, all substantially as set forth.

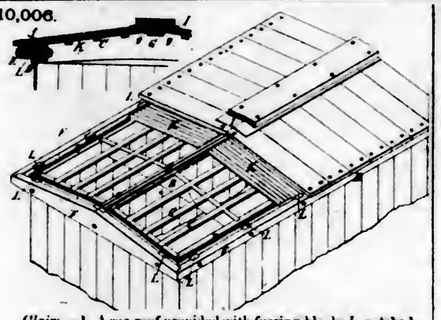
3. The combination of the box D and its door E with the handle *c* at the closed end of the box and with rods *d d* outside the said box for connecting the door to the handle, as specified.

REISSUES.

10,006. CAR-ROOF. HIRAM ALDRIDGE, Chicago, Ill., assignor, by mesne assignments, to Chicago Car Roofing Company, same place. Filed Nov. 18, 1881. Original No. 221,142, dated Nov. 4, 1879.

Brief.—The metal sheets extend beyond the edge of the car-body and rest on notched furring-blocks in the drip-passages formed between the walls of the car and the eave-plates.

10,006.



Claim.—1. A car-roof provided with furring-blocks I, notched, as at *f*, and applied within drip-passages formed between the eave or outer plates, E, and the car-body, said passages being extended down to the bottom edges of said plates, whereby the metal sheets are allowed to extend beyond the outer surface of the car-body, and are prevented from slipping so as to entirely close the drip-passages, while the drip-water is allowed to directly descend to the ground without coming in contact with the car-body, substantially as described.

2. A car-roof having its metal sheets used for prevention of leakage extended beyond the range of the car-body, and having drip-passages F, which are formed between the walls of the car-body and the eave or outer plates, E, and extended down to the bottom edges of said plates E, partly over which said metal sheets extend, substantially as described.

3. The combination, in a car-roof, of the metal sheets or plates, furring-blocks, notched, as at *f*, purlins and carlings, and the ridge-pole rabbeted flush with the bases of the notches of the furring-blocks and with the bearing-surfaces of the purlins and carlings, substantially as and for the purpose described.

4. The combination of the running-board, faced on its under side with water-shedding material, the covering or deck boards, rabbeted ridge-pole, notched furring-blocks, metal sheets, and the frame-work of the car-roof having eave or outside plates, substantially as and for the purpose described.

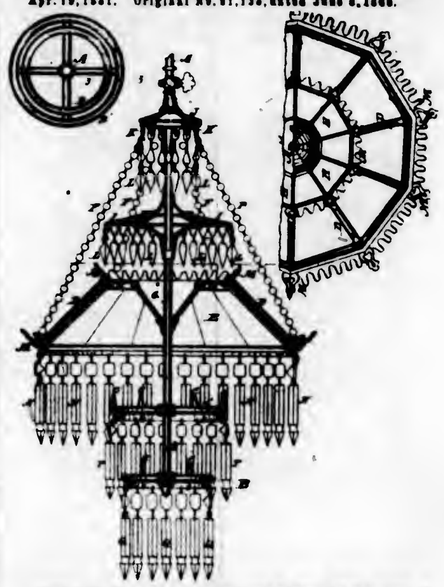
10,007. PLOW. MARK COOPER, Spartanburg, S. C. Filed Dec. 23, 1881. Original No. 247,999, dated Oct. 4, 1881.



Claim.—1. The plow-standard constructed of the pieces *a a'*, the piece *a* being bent at right angles above the beam and passing through the perforation in the upper end of piece *a'*, in combination with and clasping the beam A and the bolt k, all constructed and operated as and for the purpose set forth.

2. The double rear brace, C, adapted to receive a movable grass-cutter or other attachment, N, secured by bolt and nut *p*, and its lower portion bent to form the land-slide, in combination with and pivoted to the lower end of the front double standard, B, at hole k, all constructed, arranged, and operated substantially as set forth.

10,008. CHANDELIER. CHARLES F. JACOBERG, New York, N. Y., assignor of one-half to Isaac P. Frisk, Newark, N. J. Filed Apr. 19, 1881. Original No. 91,135, dated June 8, 1869.



Claim.—1. The combination of two or more burner-rings B B', placed the one above the other, with the pipe or rod A and reflector D E G, substantially as herein shown and described, and for the purpose set forth.

2. The rings B B', provided with the flanges O O, to receive and support the glass pendants, as herein shown and described, for the purpose set forth.

3. In combination with the reflector D E, having struck-up edges or beading and flanges for holding the glass, the borders or bands M, said bands being designed for stiffening and ornamenting the reflector, substantially as and for the purpose described.

4. The panels in the outer part of the reflector D E, surrounded by beads or ribs, substantially as and for the purpose described.

5. A silver-coated glass reflector, made water, air, and heat proof by cement, substantially of the nature described.

6. As a means of protecting the silver-covered surface of glass for reflectors against air, heat, and moisture, the shellac or varnish coating covered with a cement composed of plaster-of-paris, oxide of zinc, and varnish, substantially as set forth.

7. A silver-coated glass reflector provided on its back with an air, moisture, and heat proof covering, consisting of a cement composed of dry pigments and varnish, substantially as and for the purpose specified.

8. The combination of the two canopies I and J, provided with borders or bands K and pendants L, with the rod or pipe A and polygonal and pyramidal reflectors D E G, substantially as herein shown and described, and for the purpose set forth.

9. The combination and arrangement of the rod or pipe A, rings B B', provided with burners, polygonal and pyramidal reflectors D E G, chains F, canopies I J, provided with raised borders K and pendants L, and pendants N P Q, with each other, substantially in the manner herein shown and described, and for the purpose set forth.

ELIOTYPE PRINTING CO. BOSTON

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Southern District of New York.

MCKESSON *et al. v.* CARNDICK.

Decided April 8, 1881.

1. IMPROVEMENT IN PILL-MACHINES—CONSTRUCTION OF PATENT.

An improvement described as consisting in the employment, either in a combination with a molding device for shaping pills or other holder for them, of a comb-bar with pins or needles adapted for inserting a pin in each mold-cavity for taking the pills and dipping them in a coating solution, and a clamp and stripper for taking them from the needles and redipping them for filling and covering the cavities formed by the pins, claimed as "the combination of the molds A with the comb-bar B, substantially as and for the purpose specified," *Held* to cover any suitable holder of pills co-operating with a comb-bar, whether the pills are formed in it or in another mold.

2. SAME—COMBINATION—AGGREGATION.

There is a combination between two or more elements if there is a concert of action between them for a definite time to accomplish a result due to their conjoint action, even though the device may then be separated and perform other functions.

3. SAME—STATEMENT OF INVENTION DISTINGUISHED FROM CLAIMS.

Where in the specification an invention was stated to consist of four (4) elements in combination, and in the claims there are two combinations of less number of elements and no claim for the combination of all four elements, *Held* that the claims, if clear and distinct, must control.

Mr. Frederick H. Betts for the plaintiffs.

Mr. James A. Whitney for the defendant.

BLATCHFORD, *J.*:

This suit is brought on letters patent granted to Pierre Cauhapé January 3, 1871, for an improvement in pill-machines. The specification states the invention to be an "improvement in the manufacture of pills." It says:

This invention relates to improvements in the manufacture of pills; and it consists in the employment, either in a combination with a molding device for shaping pills or other holder for them, of a comb-bar with pins or needles adapted for inserting a pin in each mold-cavity for taking the pills and dipping them in the coating solution, and a clamp and stripper for taking them from the needles and redipping them for filling and covering the cavities formed by the pins, all as hereinafter described.

Figure 1 is a transverse section of the mold and the device for taking them therefrom. Fig. 2 is a side view of the device for taking the pills from the mold and dipping them; also, a sectional view of the bath, showing the manner of dipping them. Fig. 3 is a perspective view of the clamp, stripper, and the device for taking them from the mold, showing the manner of stripping them. Fig. 4 is a side elevation of the clamp, and Fig. 5 is a face view of the same.

Similar letters of reference indicate corresponding parts.

The pills are to be formed in a mold or flask, A, composed of two parts, either hinged together or not, each having a part of the cavities, of which there may be any convenient number, and from each cavity a groove extends to one side, so that where the two parts of the mold are closed together a pin may be thrust into the pill for removing and holding it; and in connection with this mold a comb-bar, B, is used having as many pins or needles, C, as there are cavities projecting from it the same distance apart as the cavities for inserting into said cavities and taking the pills therefrom. The mold is then opened, the pills removed on the pins and inserted in the bath of glycerine or other substance with which they are to be coated. Then, for holding and redipping the pills to fill and cover the cavities left by the withdrawal of the pins, I use a clamp composed of the two bars E, hinged together as shown in Fig. 3, and the elastic frictional strips F, of india-rubber or other like substance, the latter being placed on the faces of the said bars, which come together when closed over cavities G, made considerably longer than the pills and opening out through the front edges of said hinged bars, as clearly shown in Figs. 3 and 5, in which the pills are inserted by opening the clamp, presenting them thereto coincident with the cavities while on the pins, and drawing the latter back over the stripping-bar H, placed in front of the clamp, and having the small grooves I in the upper surface placed in front of the cavities for guiding the pins of the comb-bar in placing the pills in the clamp. The pills are held by the soft, flexible, and elastic strips F, so that the ends having the holes project, as shown in Fig. 4, and may be dipped to cover and fill the holes and then be discharged by opening the clamps.

In practice the molds, comb-bar, clamp, and stripper may be made in any convenient length and with any preferred number of holes best calculated to effect a rapid operation; and any number of sets of apparatuses may be used in case it may be required to retain the pills on the pins or in the clamp for drying the substance with which they are coated.

The pills may be taken on the comb-bar while in any suitable holder after having been formed in other molds; and I propose to use it in this way if found advisable.

There are two claims, as follows:

1. The combination of the comb-bar B, clamp E, and strippers H, substantially in the manner described, and for the purpose specified.

2. The combination of the molds A with the comb-bar B, substantially as and for the purpose specified.

The only claim in question in this suit is the second claim. That claim relates to the combination of the comb-bar carrying the needles with the pill-holder, substantially as and for the purpose described. The pill-holder is to have a number of cavities, so as to secure rapid work. There are to be as many needles as there are cavities. The manner of the combination is to have a groove extending from each cavity when the two parts forming the holder are closed, so that the needle may pass through the groove into the pill and the pill be retained on and removed with the needle when the two parts of the holder are separated, so that the pills on all the needles may be removed at once and be dipped on the needles all at once into the coating solution. That is the purpose specified. The result of this rapid work is a greater number of pills coated in a given time, and thus a reduction of cost.

It is objected that the specification states that the pills are to be formed in "a mold A," and that the needle is to be thrust into the pill while the pill is in the mold in which it is formed, and that the defendant does not form his pills in his pill-holder; also, that "the molds A," mentioned in the second claim, are limited to molds in which the pills are formed, and cannot include as holders receptacles in which the pills are not formed or made or molded from the raw material. But this view is contrary to the tenor of the text of the specification, which states that the invention consists in combining the comb-bar carrying the needles with "a holding device for shaping pills or other holder for them," and that "the pills may be taken on the comb-bar while in any suitable holder after having been formed in other molds." That being so, the expression "the molds A," in the second claim, must be held to mean

any suitable holder of the pills, whether the pills are formed in it or in another mold.

It is also objected that a pill cannot be molded with practical success in the mold shown in the drawings of the patent, and that the specification is misleading in saying so. But no such defense is set up in the answer, nor does the answer allege any fraudulent or deceptive intention, nor is any such proved, nor is it shown that Cauhapé did not believe that he could mold pills in the mold, nor that he had not done so. Moreover, the second claim is good, even if the mold will not form the pill, provided it will act as a holder for the pill.

It is also objected that there is no combination between the comb-bar and needles and the pill-holders, but only an aggregation of parts. This is an erroneous view. The pill-holder holds the pill while the needle carried by the comb-bar is being thrust into the pill. The concert of action takes place when the needle enters the pill, and although such concert of action continues only from the time the needle enters the pill until the pill is removed by the needle from the holder, yet the combination made by such concert of action continues as long as it needs to continue, and the concert of action could not exist at all so as to impale the pill on the needle if the pill were not carried by the holder and the needle were not carried by the comb-bar. So, when the needle enters the pill, there is a combination or concert of action between the comb-bar and needle and the holder carrying the pill.

It is also objected that the specification names glycerine as a substance to be used for coating, and that glycerine is not used as a coating, and will not act as such. This is immaterial and aside from the invention. No such defense is set up in the answer. The specification refers to any coating solution which will coat. The word "glycerine" may be rejected as surplusage. Neither one of the claims has any reference to any particular coating solution, nor has any specific coating solution any connection with the subject-matter of either of the claims.

It is also objected that the specification sets out with stating the invention to be a combination of the holder, the comb-bar, the clamp, and the stripper, and that in the claims there are two combinations, (1) the comb-bar, the clamp, and the stripper, and (2) the molds and the comb-bar, and that there is no claim for a combination of all four elements. A combination of all four is an impossible combination. The holder never acts when the other three are acting. The clamps take the place of "the molds A" when the stripper and the comb-bar are brought into action. The claims must control, they being clear and distinct. Moreover, it is not a fair construction of the language of the statement of the invention in the description that it requires there should be a combination of the four elements. It speaks of the employment of a comb-bar and needles in combination with a molding device or other holder, and then it speaks of the employment of a clamp and stripper with the needles. The language might admit of a combination of the four, if such a combination could exist, but it equally admits of the two separate combinations which are claimed.

The mold shown in the drawings of the plaintiffs' patent does, as a receptacle for or a holder of the pill, act perfectly with its groove and the needle and the comb-bar to produce the result specified in the patent, if the pill be suitable for the holder in size and shape, although the pill be made in another mold. The holder has certain characteristic features. It is made of two parts fitted together, which inclose a series of cavities for pills, in which the pills are so held as to receive all at the same time the needles carried by the comb-bar, and to be removed altogether by the needles. A groove extends from each cavity through the body of the holder and acts as a channel-way and a guide for the needle while it is being thrust into the pill. One part of the holder is removable from the other part in such way that the removal of it lays bare all the pills in the cavities and frees all the needles at once, so as to enable all the needles and all the pills to be carried away at the same time by the comb-bar. The comb-bar has as many needles as there are grooves or cavities or pills, and the needles are the same distance from each other as are the grooves. Thus the needle is accurately guided through and by the groove into the pill. The needle is sharp pointed, and can enter and remove the pill without injuring it, and is so small that nearly all the surface of the pill can be coated while the pill is on the needle, and the needle can afterward be removed from the pill without injuring it.

The apparatus is shown to be a very valuable one in the business of supplying the market with gelatine-coated pills.

The structure used by the defendant, Exhibit No. 3, has a holder provided with a large number of holes in its surface to hold pills, the holes being shaped to conform to the shape of the pills and to support the pills properly for the action of the needles. There is also a frame carrying needles which pass through and are guided by holes or grooves in and through another frame, the points of the needles projecting beyond the latter frame. There is one hole for each needle.

In use the receptacles in the pill-holder are filled with pills. The points of the needles are at distances apart from each other corresponding with the distances between the pills, and are thrust into the pills until the face of the grooved frame comes against the face of the holder. The needle-frame and the grooved frame are removed together, with the pills impaled on the needle-points, and the pills are then dipped in this condition into the coating solution. There is the same combination as in the second claim of the plaintiffs' patent of comb-bar, needles, guiding-groove, and pill-receptacle. There is a merely formal change. The guiding-groove, instead of being in the frame which contains the pill-receptacles, is in a frame which is attached to the needle-frame; but the grooves in the defendant's apparatus act to support the needles laterally against diverting forces, and thus to guide them and insure their penetrating the pills properly.

It must be held that the defendant's apparatus infringes the second claim of the plaintiffs' patent. The guiding-grooves in it, by allowing the frame in which they are made to be drawn toward the pills while impaled, and after they are dipped, permit such frame to be used as a stripper to free the pills from the needles; but this is an additional function added to the use of the Cauhapé invention.

The defendant's apparatus has all the essential features of the combination covered by the second claim of the plaintiffs' patent, as before defined.

There is nothing in the provisional specification of

Newton which shows the Cauhapé invention or the apparatus of the defendant. There are no drawings with it. The description is ambiguous, and it is far from clear how the apparatus was made. It is not a machine for making pills, but one for making capsules. There is no idea in it of a plurality of pills all impaled and freed together. There are no guiding-grooves and no sharp-pointed needles or pins.

As to the Goward patent, Cauhapé's application was filed before Goward's specification was sworn to.

As to the Murdoch and Haynes patent, the defendant has introduced no evidence to show its bearing. On the contrary, the plaintiffs' expert shows that what is described in it has no relevancy to either the plaintiffs' apparatus or the defendant's.

The Cardey apparatus amounts to no anticipation of the plaintiffs' or the defendant's. No original apparatus is produced. The matter is one of recollection after the lapse of many years. The witnesses do not agree, and there is great doubt and obscurity. Whatever there was, there were no guiding-grooves and no sharp needles, nothing adapted to pick up pills which were to be coated and then stripped so as to leave no material trace of the puncture. Even if Cauhapé knew of all that was there at the time there was invention in what he patented.

The assignment from Cauhapé to the plaintiffs is satisfactorily proved as a valid assignment. The testimony of Wickham fully explains the interlineations.

All the views urged on the part of the defendant have been carefully considered, although only the material ones have been commented on.

There must be a decree for the plaintiffs as to the second claim of the patents in this suit, and also in the suit against Neynaber.

U. S. Circuit Court—District of Rhode Island.

CROSS v. LIVERMORE.

Decided December 13, 1881.

1. MOTION FOR PRELIMINARY INJUNCTION—REASONABLE DOUBT.

Whenever upon a motion for preliminary injunction a fair and reasonable doubt exists upon the facts presented as to whether defendant has actually been guilty of an infringement, or when it does not satisfactorily appear that the complainant is the first and sole inventor of the improvements claimed, a preliminary injunction will be refused.

2. SAME—CHANGES IN THE COMBINATION.

Motion for preliminary injunction will also be refused if it appears that the alleged infringer uses less than all the elements of the combination and substitutes something for the part which he omits, unless the substitute is a mere mechanical equivalent.

3. SAME—PATENT—LONG POSSESSION—INFRINGEMENT.

While it is unquestionably true that, three things being proved—namely, a patent, long possession, and infringement—the party is entitled *prima facie* to an injunction, yet even where this is shown the question will be, in cases of opposing evidence, whether this right has been displaced by the respondent.

Mr. Samuel J. Elder for the complainant.
Mr. Oscar Lapham and *Mr. Benjamin F. Thurston* for the respondent.

MOTION for a preliminary injunction.

COLT, *D. J.*:

This is a motion for a preliminary injunction. It is claimed by the complainant that the defendant has been guilty of an infringement of certain patents issued to him for improvements in stylographic or fountain pens. The inventions of the complainant as set out in his several letters patent are for certain improved combinations of several parts or elements, whereby a more perfect pen is secured.

In entering upon the consideration of a proceeding of this character we are to bear in mind: First, that whenever, upon the facts presented, a fair and reasonable doubt exists as to whether the defendant has actually been guilty of an infringement, or when it does not satisfactorily appear that the complainant is the first and sole inventor of the improvements claimed, a preliminary injunction will be refused. (High on Inj., sec. 606; *Dodge* v. *Card*, 2 Fish., 116; *Parker* v. *Sears*, 1 Fish., 93; *Thomas* v. *Weeks*, 2 Paine, 99.) Second, that if an alleged infringer uses less than all of the elements of a combination and substitutes something for the part which he omits, there is no infringement unless the substitute is a mere mechanical equivalent. (*Dismore* v. *Schofield*, 4 Fish., 148; *Prouty* v. *Ruggles*, 16 Peters, 341; *Eames* v. *Godfrey*, 1 Wall., 78.)

The complainant maintains, in the first place, that the defendant's pen is an infringement of claims 1, 2, and 4 of Reissued Letters Patent No. 9,716, which are as follows:

1. In a fountain-pen, the combination of a tubular point, a spindle adapted thereto and connected to an independently-moving spindle-carrier, said spindle-carrier being adjustable in relation to a fixed part of the pen, whereby the movement of the spindle may be changed and the wear thereof compensated, as set forth.
2. The combination of the spindle-carrier C, loosely-attached spindle B, and ink-delivery tube A, substantially as described.
4. The combination of the spindle-carrier C, spindle B, and adjusting-screw E, substantially as described.

It is not contended that Cross was the inventor of the principal elements of the fountain-pen—such as the air-tube, gravitating valve, spindle or needle, &c.—but the improvements worked out by Cross in this patent are, in brief, putting a screw in the upper end of the valve or carrier to regulate the rise of the valve from its seat, putting a screw in the lower end of the valve or carrier to regulate the length of the needle, and attaching the needle to the valve by a swivel-joint to give a free play to the needle. A glance at the defendant's pen shows that it is different in form and construction. The valve, which regulates the supply of ink in the complainant's pen, being raised by pressing the point of the spindle or writing-pin upon the paper, thus letting in the ink, and which falls by the action of gravity upon its seat when no such pressure is exerted, thus cutting off the flow, and which was deemed indispensable in all the earlier fountain-pens, is done away with in the pen of the defendant. A spiral spring, to which the needle is attached, is substituted, and this spring is inserted in a small tube, which is securely held by a supporting-post. No screw is attached to the lower end of the spring to regulate the length of the needle, and it is questionable, to say the least, whether the screw at the upper end of the spring, which serves to plug up at that end the small tube which holds the spring, performs the same function as in the complainant's.

A combination which includes as one of its principal elements a valve or spindle-carrier of the kind described in the above claims in the complainant's invention can hardly be said to be the same as a combination which dispenses with this and substitutes another element of nearly different character, not to mention other less important changes in the construction of defendant's pen. Grave doubt therefore exists whether the defendant has been guilty of an infringement of this patent.

The complainant further contends that the defendant's pen is an infringement of the first claim in another patent granted to him, No. 199,621, dated January 29, 1878, which is in the following language:

I claim as my invention—
1. The vibrating pin D and spring F, combined with an air-tube, B, case A, and tube H, substantially as described.

Just before this the specification states:

The attachment of the pin D to the lower end of the air-tube B, so as to be operated by means of a spring, substantially as shown and described, being the gist of my improvement.

The improvements here made are the substitution of the spring for the valve and the attachment of the pin to the air-tube in the manner described in the patent. It cannot be denied that the defendant's pen much more nearly approaches this construction than that of the complainant's first patent, and the question of infringement is therefore a closer one. The defendant's pen has a vibrating pin or needle, which is operated by means of a spiral spring; but the pin, instead of being attached to the air-tube in the manner set out in complainant's patent, is entirely separated from it, a supporting-post below the air-tube holding firmly a small tube containing the spring and the upper end of the pin or needle. Can a combination which dispenses with the attach-

ment of the pin to the air-tube and the device by which such attachment is made, and which substitutes for this a supporting-post, whereby the pin and spring are cut off entirely from the air-tube and the upper section of the pen, be considered an infringement of the complainant's claim? The defendant Livermore derived this supporting-post by assignment to him of the patent of G. F. Hawkes, for improvements in fountain-pens, No. 236,222, dated January 4, 1881. It is claimed that this construction is superior to the complainant's because, by being able to entirely disconnect the upper from the lower section of the pen, and by this means to confine the delicate machinery of the spring and pin within the lower section, there is much less liability to injury from exposure when filling, and that it is also more easily cleaned. If the attachment of the pin to the air-tube is a substantive part of the complainant's invention, and if for this part the defendant substitutes something else which is not a mere mechanical equivalent—viz., the supporting-post—there has been no infringement. To say that this attachment is not a material part of the patented combination, considering its importance in the arrangement and the language of the specification, would, we think, be going most too far. At least, the point is sufficiently doubtful to dispose of this motion, whatever may be the final conclusion after a full hearing.

Again, it is charged that the defendant has infringed another patent granted to the complainant, dated May 11, 1880, and numbered 227,416, wherein the claim is—

In a stylographic fountain-pen, a spindle having a tip of iridium or like hard substance, in combination with a tubular point of comparatively soft metal, the spindle being arranged in the point to project slightly and bear upon the paper, substantially as set forth.

The defendant, in answer to this charge, introduces affidavits seeking to show a prior use or knowledge by others before the invention of the complainant. Cross states in his affidavit that he is "unable to give the exact date of this invention, but it was probably in the spring or summer of 1878." On the other hand, the defendant produces the affidavits of James M. Clark, a manufacturer of fountain-pens, and Charles H. Court, an employé, who swear to a similar use of iridium upon other fountain-pens prior to the middle of 1877.

James M. Clark says:

The pens in which the iridium-tipped needle was used all had a tubular point, from which the needle projected, composed of metal much softer than the iridium, and the needle had an endwise movement, and was arranged in the point to project slightly from or beyond the end of the tubular point and bear upon the paper.

In the affidavit of Charles H. Court we have also a similar description of the use of iridium, both statements detailing the same use in substance as that specified in complainant's patent.

Judging from the evidence before the court, we cannot but say that some doubt is thrown upon the validity of this patent. A fuller investigation may, of course, dispel this. While it is unquestionably true that, three things being proved—namely, a patent, long possession, and infringement—the party is entitled *prima facie* to an injunction, yet even where this shown the question will be, in cases of opposing evidence, whether this right has been displaced by the respondent. (Curtis' Law of Patents, sec. 414.) Long possession, however, can hardly be set up here, nor are former recoveries claimed.

Upon the whole, we are of the opinion that the complainant has not made out a case under the evidence submitted that would warrant the granting of a preliminary injunction, and the motion is therefore denied.

U. S. Circuit Court—Southern District of New York.

BERNARD *et al. v.* HEIMANN *et al.*

Decided October 7, 1881.

IMPROVEMENT IN HAT-COVERINGS—PATENTABILITY—ANTICIPATION.

This patent for improvement in hat-coverings held to cover (1) a layer of flock on a support of buckram or the like; (2) a support of buckram or the like next the flock, with a coating of adhesive substance on the buckram, on which the flock is strewn; (3) a canton-flannel or other similar lining on the face of the buckram, to which the flock is not applied, with the napped face of the canton-flannel exposed and not next to the buckram; and held not to be anticipated by prior hats lacking any one of these elements.

Mr. S. J. Gordon for the plaintiffs.

Mr. J. H. Goodman for the defendants.

BLATCHFORD, *J.*:

This suit is brought on letters patent granted to Robert Gray, September 9, 1879, for an improvement in head-coverings. The specification, which is accompanied by and refers to a drawing which represents a sectional side view of a hat embodying the invention, says:

This invention relates to the manufacture of hats, bonnets, or other head-coverings with a top layer of flock. Hats of this description have been made by applying the flock to a buckram support, but have invariably been stiff, owing to the fact that, in order to give the article the required body or strength, it was necessary to use a heavy or thick piece of buckram. One objection to this hat is the stiffness referred to, it being desirable in some cases to furnish a soft hat, and another the visibility of the buckram tending to defeat the object of the flock layer, which is to produce a felt-like article.

My invention is a head-covering consisting of a support of buckram or the like, a top layer of flock, and a canton-flannel or other similar lining, whereby the article is rendered capable of taking a soft finish, while both surfaces thereof have the appearance or semblance of felt—one of plain felt and the other of napped felt.

In the drawing, the letter A designates the support; B, the flock layer, and C the canton-flannel or other similar lining.

In carrying out my invention I first cement the lining C to a piece of buckram or other like fabric by a suitable adhesive substance, with the nap of the lining exposed, and then press the two together in any usual or suitable manner to the desired shape. In lieu of canton-flannel, the fabric known as "glove-lining" may be used. I now apply to the buckram a layer of cotton, woolen, or other flock, this process consisting in coating the buckram with an adhesive substance and strewing the flock thereon in finely-powdered form. The article is then in a state for trimming.

The buckram A supports both the flock layer B and the lining C, and, being re-enforced by the lining, a light or thin piece of such material may be used, rendering the article pliable or soft, substantially like soft felt. The appearance of the article, moreover, is felt-like, inasmuch as the lining has the semblance of napped felt and the flock layer that of plain felt.

The claim is as follows:

A head-covering consisting of a support of buckram or the like, a top layer of flock, and a canton-flannel or other similar lining, substantially as and for the purpose described.

The only defense is want of novelty. It is plain that the hat of the patent must be a hat made by pressing the materials into the shape of a hat, and not made the top in one piece, the side crown in another, and the brim in another, and then these joined. There must also be (1) a layer of flock on a support of buckram or the like; (2) a support of buckram or the like next the flock, with a coating of adhesive substance on the buckram, on which the flock is strewn; (3) a canton-flannel or other similar lining on the face of the buckram, to which the flock is not applied, with the napped face of the canton-flannel exposed and not next to the buckram.

The Kendall turban, defendants' Exhibit No. 3, has no side crown or brim. Irrespective of this, it is not satisfactorily established that that article had in it any stockinet support, or anything but canton-flannel with flock applied directly to the unnapped face of the canton-flannel.

Bracher's frame, No. 6, if made with the unnapped face of the canton-flannel exposed, had only flock enough put on the buckram to take an impression of straw braid, and was made not for use in that condition as a hat, but solely to be stamped as an imitation of a straw hat. The flock was put on only as a pulp on which to emboss, and the flock, by the embossing, lost its identity and parted with all resemblance to felt.

The Morse hat, No. 13, is a flocked buckram hat, with a strip of canton-flannel put on separately as a brim.

Hats such as the Novelty Company hats of 1876, made of canton-flannel, muslin, and flock, with the napped face of the canton-flannel not exposed, were not the Gray hat. It is plain that cementing the nap to the buckram tended to destroy the pliability or softness aimed at by Gray, by reason of the absorption of the nap by the cement, and that there could be no appearance of napped felt.

The case is one where there was sufficient invention to support the patent, and there must be a decree for the plaintiffs, with costs.

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The OFFICIAL GAZETTE is published every Tuesday, two volumes a year, commencing in January and July. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound volumes, $3.50 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Amendment of Rule 46.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., December 8, 1881.

Rule 46 (Rules of Practice, revised September 1, 1880) is hereby amended by the addition of the following provision, viz:

When the person before whom the oath or affirmation is made is not provided with a seal his official character shall be established by competent evidence, as by a certificate from a clerk of a court of record or other proper officer having a seal.

This amendment will take effect January 15, 1882.

V. D. STOCKBRIDGE,
Acting Commissioner.

Approved:
S. J. KIRKWOOD,
Secretary.

A certificate of the official character of a magistrate, stating date of appointment and term of office, may be filed in the Patent Office, which will obviate the necessity of separate certificates in individual cases.

Issue of January 17, 1882.

Patents	292—No. 253,302 to No. 253,593,	inclusive.
Designs	7—No. 12,694 to No. 12,700,	inclusive.
Trade-Marks	12—No. 2,024 to No. 2,035,	inclusive.
Labels	6—No. 2,595 to No. 2,600,	inclusive.
Reissues of patents	4—No. 10,009 to No. 10,012,	inclusive.
Total issue	321	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	1	.....	Nebraska	2	.....
Arizona Territory	.....	.....	Nevada	.....	.....
Arkansas	1	.....	New Hampshire	1	.....
California	4	1	New Jersey	11	4
Colorado	3	.....	New Mexico Territ'y	2	.....
Connecticut	15	.....	New York	57	3
Dakota Territory	.....	.....	North Carolina	3	.....
Delaware	.....	.....	Ohio	21	.....
District of Columbia	4	.....	Oregon	1	.....
Florida	.....	.....	Pennsylvania	28	1
Georgia	.....	.....	Rhode Island	6	.....
Idaho Territory	.....	.....	South Carolina	2	.....
Illinois	22	3	Tennessee	.....	.....
Indiana	11	.....	Texas	6	.....
Indian Territory	.....	.....	Utah Territory	1	.....
Iowa	11	.....	Vermont	2	.....
Kansas	3	.....	Virginia	1	2
Kentucky	3	.....	Washington Territ'y	.....	.....
Louisiana	3	.....	West Virginia	1	.....
Maine	1	.....	Wisconsin	6	.....
Maryland	6	.....	Wyoming Territory	.....	.....
Massachusetts	25	2	United States Army	1	.....
Michigan	6	.....	United States Navy	.....	.....
Minnesota	1	.....			
Mississippi	1	.....	Total to citizens of the United States	278	16
Missouri	6	.....			
Montana Territory	.....	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia	1	.....	France	2	1
Austria	1	.....	Germany	3	.....
Barbadoes	.....	.....	Guatemala	1	.....
Belgium	.....	.....	Italy	.....	.....
Bermuda	.....	.....	New Zealand	.....	.....
Brazil	1	.....	Russia	.....	.....
Canada	2	.....	Spain	.....	.....
Chili	.....	.....	Sweden	.....	.....
Colombia, U. S. of	.....	.....	Switzerland	1	.....
Cuba	1	.....			
Denmark	.....	.....	Total to citizens of foreign countries	21	2
Ecuador	.....	.....			
England	8	1			

DESIGNS.

12,694.—FONT OF PRINTING-TYPE.—*Charles H. Beeler, Jr.*, Philadelphia, Pa., assignor to *David Wolfe Bruce*, New York, N. Y. Application filed November 17, 1881. Term of patent 14 years.

12,695 and 12,696.—COOKING-RANGE.—*Oliver B. Keeley*, Spring City, Pa. Applications filed December 19, 1881. Term of patents 7 years.

12,697.—WARDROBE.—*Wilhelm Klingner*, New York, N. Y. Application filed December 6, 1881. Term of patent 14 years.

12,698.—FRINGE.—*Frederick Reuter*, Brooklyn, N. Y., assignor to *John C. Graham*, Philadelphia, Pa. Application filed August 27, 1881. Term of patent 14 years.

12,699.—PENCIL-CASE.—*Le Roy W. Fairchild*, New York, N. Y. Application filed April 5, 1881. Term of patent 7 years.

12,700.—SEWING-MACHINE CASE.—*William Whitworth*, Cleveland, Ohio. Application filed August 2, 1880. Term of patent 3½ years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

9,024.—REAPING AND MOWING MACHINES.—*Adriance, Platt & Co.*, Poughkeepsie, N. Y. Application filed April 13, 1881.
"A figure of the upper half of a vertical cog-wheel resting upon a base horizontal line."

9,025.—TOBACCO-PIPES OF BRIAR-ROOT AND MEERSCHAUM AND CIGAR AND CIGARETTE HOLDERS.—*Bondier, Ulbrich & Co.*, Paris, France. Application filed July 12, 1881.
"The arbitrary letters 'G B D.'"

9,026.—CHEWING-TOBACCO AND SMOKING-TOBACCO, FINE-CUT TOBACCO, CIGARS AND CIGARETTES, AND SNUFF.—*Robert L. Carroll*, Lynchburg, Va. Application filed December 20, 1881.
"The words 'THE LONE HAND,' accompanied by the picture of the four persons engaged in playing euchre, as represented substantially in the fac-simile."

9,027.—THREAD.—*Clark Thread Company*, Newark, N. J. Application filed December 21, 1881.
"The letters 'O. N. T.'"

9,028.—STARCH.—*Chas. Morningstar & Co.*, New York, N. Y. Application filed November 5, 1881.
"The symbol of a star encircled by a ring."

9,029.—CIGARS, CIGARETTES, CHEROOTS, SMOKING AND CHEWING TOBACCO, AND SNUFF.—*L. & E. Wertheimer*, New York, N. Y., and San Francisco, Cal. Application filed December 14, 1881.
"The word 'CREOLE' in connection with the figure of a female resting in a reclining or other position."

9,030.—COTTON, WORSTED, AND WOOLEN DRESS-GOODS, SHIRTINGS, AND OTHER SIMILAR GOODS.—*David & John Anderson*, Glasgow, Scotland. Application filed October 12, 1881.
"The arbitrary letters 'D J A.'"

9,031.—ANTISPORADIC COMPOUND.—*John N. Knoblaugh*, Geneseo, Ill. Application filed December 23, 1881.
"The cube, bovine, and hog."

9,032.—RAZORS.—*Pribyl Bros.*, Chicago, Ill. Application filed September 19, 1881.
"The word 'MAGNETIC.'"

9,033.—LADIES' AND GENTLEMEN'S CORSETS.—*George A. Scott*, New York, N. Y. Application filed December 23, 1881.
"The word-symbol 'ELECTRIC.'"

9,034.—CHEWING AND SMOKING TOBACCO, SNUFF, CIGARS, AND CIGARETTES.—*Robert L. Carroll*, Lynchburg, Va. Application filed December 13, 1881.
"The portrait of General Garfield, with the words 'PEOPLE'S CHOICE' and 'GENERAL GARFIELD.'"

9,035.—METALS IN INGOTS, CASTINGS, AND SHEETS.—*The Elkins Manufacturing and Gas Company*, Philadelphia, Pa. Application filed December 24, 1881.
"The title 'AJAX.'"

LABELS.

2,595.—Title: "A SYRUP OF TAR, WILD CHERRY, &c FOR THE SPEEDY CURE OF THROAT AND LUNG DISEASES AND ALL PULMONARY COMPLAINTS."—*Henry M. Guild*, Woodbury, N. J. Application filed December 22, 1881.

2,596.—Title: "BEEBE'S COUGH AND LUNG HEALER."—*James A. Beebe*, Woodbury, N. J. Application filed December 17, 1881.

2,597.—Title: "HOLDSTEIN'S GREAT DYSPEPSIA CURE."—*Gustav Holdstein*, Woodbury, N. J. Application filed December 22, 1881.

2,598.—Title: "MELLIN'S FOOD FOR INFANTS AND INVALIDS."—*Theodore Metcalf & Co.*, Boston, Mass. Application filed December 27, 1881.

2,599.—Title: "MELLIN'S FOOD FOR INFANTS AND INVALIDS."—*Theodore Metcalf & Co.*, Boston, Mass. Application filed December 27, 1881.

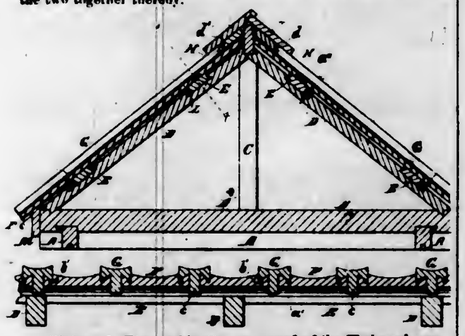
2,600.—Title: "PALMER'S PLANT AND VINE PROTECTOR."—*Palmer Plant & Vine Protector Company*, Rockford, Ill. Application filed December 27, 1881.

PATENTS

GRANTED JAN. 17, 1882.

252,302. FRAME HOUSE. JOHN BOYD, Galveston, Tex. Filed June 16, 1881. (No model.)

Brief.—The rafters and battens have dovetailed grooves in them, which receive the purlins, the grooves in the rafters receiving one half the thickness of the purlins and the grooves in the battens receiving the other half. The battens are T-shaped, and depend between and below the roof-boards, which are dished in the center and kept from slipping down by a groove therein fitting upon a rib in the upper purlin. The tie-beams are grooved and the ceiling-boards slipped into the grooves. A beveled groove in the tie-beams receives a beveled key on the wall-plates, fastening the two together thereby.



Claim.—1. The combination, in a roof, of the T-shaped caps or battens G G, having in their depending tongues the transverse dovetail grooves *c' c'*, the roof-boards F F, arranged above the grooves *c' c'* and below the horizontal or lateral arms of the said battens, and the purlins E E, adapted to enter the grooves *c' c'* and grooved longitudinally to engage the said tongues, substantially as and for the purposes specified.

2. The combination, in a roof, of the purlins E E, having thereon the ribs *a'' a''*, and having on one longitudinal edge thereof the V-shaped groove *a'*, the rafters D D, having therein the dovetail gains *a a*, and the roof-boards, having therein the gains or grooves *b b*, substantially as and for the purposes specified.

3. The combination, in a roof, of the T-shaped caps or battens G G, the roof-boards F F, the purlins E E, and the rafters D D, when the said battens overlap and depend between and below the said boards, and when the said battens and rafters have therein dovetailed grooves, and the purlins have V-shaped grooves to admit of their being connected to each other, substantially as and for the purposes specified.

4. The combination, in a roof, of the roof-boards F F, having therein the grooves or channels *b' b'*, and the T-shaped caps or battens G G, covering the said grooves or channels and depending between and below the said boards, and having in their lower edges transverse grooves *c' c'*, for adapting them to be locked to the frame by means of correspondingly-formed purlins, substantially as and for the purposes specified.

5. The combination, in a roof, of the dishing roof-boards F F, having therein the grooves or channels *b' b'*, and the T-shaped and dishing caps or battens G G, extending between the said boards and covering the said grooves or channels, substantially as and for the purposes specified.

6. The combination of the T-shaped caps or battens G G, having therein the dovetail gains *c' c'*, the roof-boards F F, and the purlins E E, having therein the grooves *a' a'*, substantially as and for the purposes specified.

7. The combination, in a frame house, of the wall-plates A A, the tie-beams B B, arranged upon the wall-plates, and having therein the beveled gains *f f*, and the beveled keys *f' f'*, applied to the said plates, substantially as and for the purposes specified.

252,308. HAY ELEVATOR AND STACKER. JOSEPH DAIL, Jr., Meadville, Mo. Filed Oct. 27, 1881. (No model.)

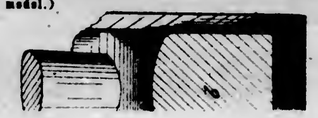


Claim.—1. The combination, in a hay-stacking device, of the diagonal upper track-beams, F F, the lower track-beams, H H, diverging from beams F, and the guide-beams I I, parallel to the lower track-beams, with the carrier having two sets of rollers traveling the one upon the upper and the other upon the lower track-beams, as described, for the purpose set forth.

2. In a hay-stacker, the combination of the tracks, as described, with the herein-described carrier, having teeth O, provided with rearward-projecting arms P, having slots Q, forming bearings for the ends of a shaft mounted in pivoted arms and having rollers or casters, as described, for the purpose shown and specified.

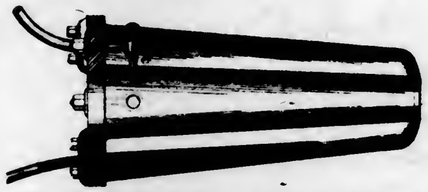
3. The combination of the track having studs A' B' with the herein-described carrier having pivoted latches V and suitable operating mechanism, as described, for the purpose set forth.

252,304. TIRE FOR VEHICLE-WHEELS. ABRAM DICKINSON and JOSEPH WARNER, Pittsburg, Pa. Filed Sept. 15, 1881. (No model.)



Claim.—The combination of the plain ungrooved felly *b* and the flanged tire A, having its inner faces meeting at a right angle and the outer face of its flange beveled, substantially as and for the purposes described.

252,305. TUYERE. NICOLAS DIDIER, Pittsburg, Pa. Filed Aug. 10, 1881. (No model.)

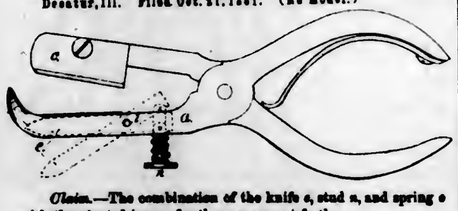


Claim.—1. The tuyere formed of two conical concentric thin sheet-copper shells with an annular water-space between them, in combination with a removable ring-shaped cap, E, held thereto by means of two or more eyebolts that enter each water-space and connect each with an appropriate radially-arranged short bar or rivet, substantially in the manner shown and set forth.

2. A tuyere formed of two conical concentric thin sheet-copper shells, the outer one of which is curved inwardly at its smaller end and made to join the inner shell at that point, by which a convex nose is given the tuyere, as set forth.

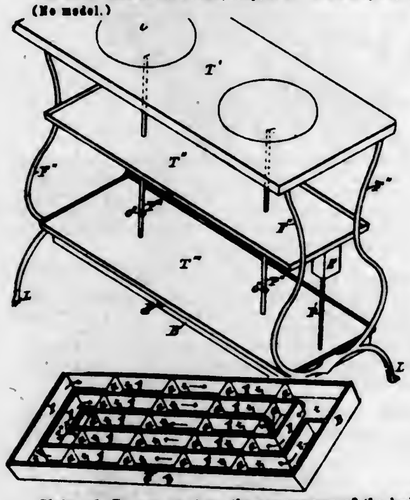
3. A tuyere formed of two conical concentric thin sheet-copper shells provided with a convex nose integral with the outer shell and made thicker at the convex portion.

252,306. TENDON-CUTTING IMPLEMENT. ORVILLE EWING, Decatur, Ill. Filed Oct. 21, 1881. (No model.)



Claim.—The combination of the knife *c*, stud *a*, and spring *e* with the pivoted jaw *a*, for the purpose set forth.

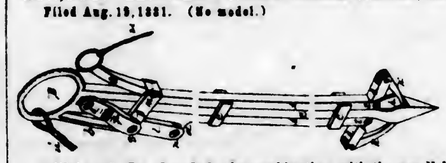
252,307. DEVICE FOR BURNING AIR AND HYDROCARBON VAPORS. MICHAEL C. FAGAN, Troy, N. Y. Filed May 13, 1881. (No model.)



Claim.—1. In a vapor-stove, the combination of the hydrocarbon-receptacle B, formed with the flues *f* by means of the vertical strips F, and provided with the pendent wicks *a*, the pipes P', and supporting-platform T, with openings O, substantially as and for the purpose set forth.

2. In a device for cooking by the combustion of a mixture of air and hydrocarbon vapor, the combination of tables T' T'' T''', supported on the standards F' F'' and on the legs L L L L, the hydrocarbon-receptacle B, having the flues *f*, wicks *a*, the air-inlet pipe P', and the outlet-pipes P'' P''', as shown and as described.

252,308. HAY-FORK. CHARLES FRIEBE, Rockford, Ill. Filed Aug. 19, 1881. (No model.)



Claim.—1. In a hay-fork, the combination, with the parallel bars and central sliding bar, of a two-armed lever arranged to span the bars and pivoted to a projection on the side thereof, and links *p p*, pivoted to the central bar and said two-armed lever, substantially as set forth.

2. The combination, with the parallel bars, one of which is provided with a flange, *b*, and the sliding bar, of the two-armed lever spanning said bars and pivoted to a projection of one of the parallel bars, and links *p p*, pivoted to the sliding bar and two-armed lever, as and for the purpose set forth.

252,309. CHAIN-BOLT. CHRISTIAN H. GOEBEL, Philadelphia, Pa. Filed Apr. 22, 1881. (No model.)

Brief.—A combination of old devices with a spring-actuated pusher.



Claim.—The locking chain-bolt consisting of a slotted plate with serrations on its inner face, and a button having a cross-head with a connected spring-actuated pusher, substantially as and for the purpose set forth.

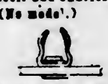
252,310. BOLT. CHRISTIAN H. GOEBEL, Philadelphia, Pa. Filed Apr. 22, 1881. (No model.)

Brief.—The bolt is operated by a rotary knob having a projection that works in a transverse groove in the bolt, and it is locked in its retracted or thrown position by the engagement of a spring-actuated dog with notches in the casing.



Claim.—A bolt and its casing, in combination with a rotary knob which shoots and withdraws said bolt and a fastening device attached to said knob for locking said knob and bolt in either position.

252,311. SPRING-BUTTON. LEWIS GOULDING, South Abington, Mass., assignor to himself and Charles E. Phillips, same place. Filed Oct. 20, 1881. (No model.)

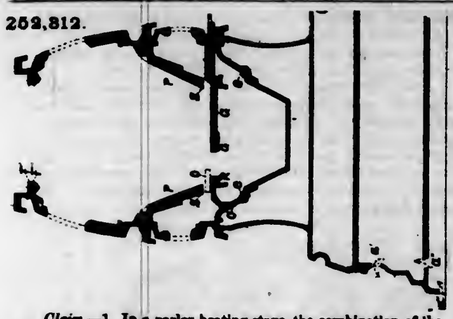


Claim.—1. A button consisting of a perforated base and two spring-metal ears, in combination with an eyelet which is adapted to pass through a fabric and through said perforated base, for the purpose of fastening the button to the fabric, substantially as set forth.

2. A button consisting of a perforated base and two spring-metal ears, in combination with an eyelet which is adapted to pass through said perforated base, an eyelet, *i*, adapted to engage with said button, and a washer, *k*, having one or more corrugations, and inserted between one of the flanges of said eyelet and the fabric to which it is attached.

252,312. PARLOR HEATING-STOVE. GEORGE W. CHAVES, Troy, N. Y., assignor of one-half to Charles E. Potter, same place. Filed Feb. 1, 1881. (No model.)

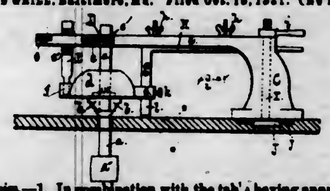
252,312.



Claim.—1. In a parlor heating-stove, the combination of the fire-pot P, the grate G, the ring R, surrounding the latter, and the projections O O, constructed on the top and at the outer edge of the grate, so as to divide up the clinker-cleaning space between the top of the grate and the bottom of the fire-pot, substantially as set forth.

2. In combination with the draw-center of a grate, the upwardly-projected teeth S'' S'' S'', arranged at the front, as and for the purposes described and set forth.

252,313. GUARD FOR VARIETY MOLDING-MACHINES. GOTTFRIED GRILL, Baltimore, Md. Filed Oct. 10, 1881. (No model.)



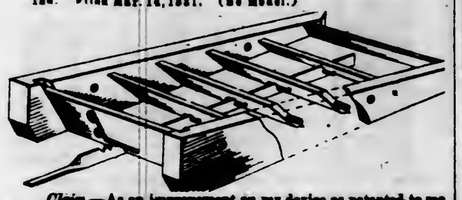
Claim.—1. In combination with the table having annular undercut groove, the bracket pivoted upon the center-shaft and provided with a clamp for securing it at any point in the groove, and with an adjustable bell wholly or partially inclosing the knives, as set forth.

2. In combination with the table having annular undercut groove, and the bracket having adjustable bushing for the center shaft, and the clamp *i J*, the bell-shaped guard *d*, as set forth.

3. In combination with the guard *d* and bar F, secured to the guard and vertically adjustable upon the bar *e*, the bracket C, mounted upon the shaft, and the guide *l*, as set forth.

4. In combination with the bracket C *e*, adjustable about the shaft and pivoted thereon, the guard *d*, arms H, *h'*, G, and E, having clamping-screws for securing and admitting of the adjustment of the parts, as set forth.

252,314. GRAIN-SEPARATOR. JEFFERSON GRUEN, Auburn, Ind. Filed Mar. 14, 1881. (No model.)



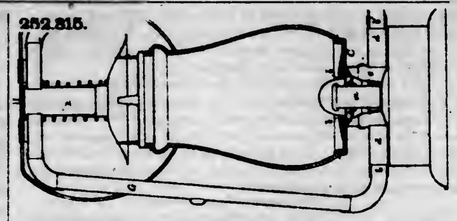
Claim.—As an improvement on my device as patented to me December 7, 1880, No. 235,232, the graduated partitions, in combination with means for adjusting the same, substantially as and for the purposes hereinbefore set forth.

252,315. TUBULAR LANTERN. ELIAS J. HALE, Foxcroft, Me. Filed Nov. 25, 1881. (No model.)

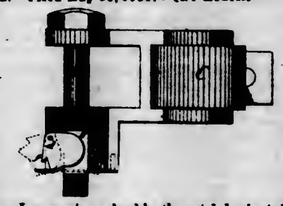
Brief.—The lower portion of the air-tubes are swiveled, so as to allow the upper portion of the lantern to be tilted or swung back and to permit access to the burner.

Claim.—In the tubular lantern, the air-duct G, having its lower tubular portions, *b' b'*, supported by and adapted to revolve or turn in bearings in or projecting from the air-chamber of the lamp and opening into such chamber, all being substantially as set forth.

252,315.



252,316. THILL-COUPLING. WILBUR A. HERBERT, Big Rapids, Mich. Filed May 31, 1881. (No model.)

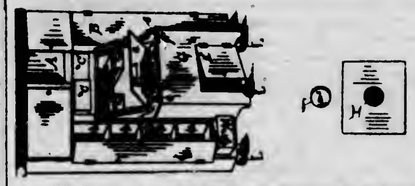


Claim.—In a carriage-shackle, the catch *b*, pivoted in a slot in one ear, combined with the bolt, constructed with a corresponding slot, into which the said catch will enter when the bolt is in place, or from which the catch may be turned to permit the removal of the bolt, and a spring-latch to engage the said catch when in the closed or locking position, substantially as described.

252,317. PRODUCING AND COLORS UPON VEGETABLE FIBER. THOS. HOLLIDAY, Huddersfield, County of York, England. Filed Apr. 21, 1881. (No specimens.) Patented in England Apr. 14, 1881.

Claim.—The process of producing a fast azo color upon vegetable fiber, which consists in subjecting the fiber to the action of oil followed by an alkali, so as to oxidize the oil on the fiber, subsequently subjecting the oiled fiber to the action of a naphthol or phenolic body, and then of producing the azo color upon the fiber by treating the same with a diazo compound, thereby fastening the color upon the fiber in conjunction with the oil, as distinguished from the process of presenting the fiber to a color already formed, substantially as described.

252,318. COMBINED PORTABLE PANTRY-DRESSER, AND SIDEBOARD. LYMAN O. HUDSON, Stockton, Cal. Filed May 11, 1881. (No model.)



Claim.—1. In a portable pantry-dresser and sideboard, the center portion composed of a cabinet having a sliding leaf, *d*, held to its place by segments F F, and having a kneading-board, *c*, hinged thereto at its rear edge, sliding beneath the dresser D and over the flour-bin G, drawers C C and *a a*, and closet K, the flour-bin G, having openings in its bottom communicating with closet K, for the purpose of cleansing the former of refuse contents, substantially as and for the purposes herein set forth.

2. The detachable segments F F, provided with bumpers *e e*, in combination with the dresser D, and arranged with relation to sliding leaf *d*, having hinged thereto at its rear edge the kneading-board *c*, substantially as and for the purposes set forth.

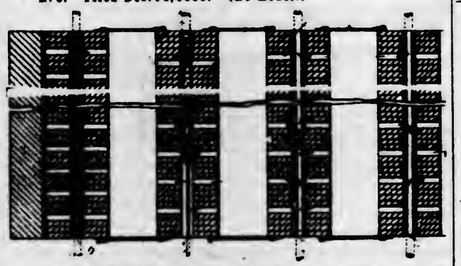
3. In combination with the board E, bin G, and the segments F F, provided with the bumpers *e e*, so that the latter may afford a rest for the kneading-board *c* when in use, while the segments F F prevent the sliding leaf *d* from slipping from its place except when desired by their removal, all operating substantially as and in the manner herein described and set forth.

4. The combination of the sliding leaf *d* and kneading-board *c*, hinged to the rear of the leaf to form the sideboard E, with the bin G, having segments F F, attached to each corner of front edge

and dresser D, whereby, when in service, said sideboard forms a cover for flour-bin G and when the said board *e* is in a perpendicular position as a tight cover for said bin and for dresser D, substantially as herein shown and described.

5. A kitchen-safe having the pantry-sections A B B, drawers C C, dresser D, with spice-drawers *a a*, kneading-board *c*, attached to sliding leaf *d*, forming sideboard E, segments F F with bumpers *e e*, flour-bin G, with circular hole H in its bottom opening into closet K, and drawer M, for table-linen, in combination with supports L L L L, all constructed, arranged, and operated substantially as herein described and shown.

252,819. BRICK-KILN. EBENEZER NYE HUTCHISON, Charlotte, N. C. Filed Dec. 14, 1881. (No model.)

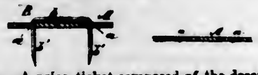


Claim.—1. In a kiln for burning brick, the perforated pipes herein described, located within the side walls or in the bottoms of the fire-arches, for supplying air to the fuel, as set forth.

2. In a kiln for burning brick and other analogous purposes, the perforated air-supply pipes herein described, arranged one within the other, for directing and supplying air to any desired portion of the kiln, substantially in the manner and for the purpose set forth.

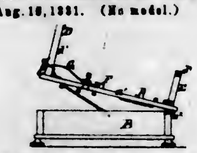
3. The method herein described of burning brick uniformly, the same consisting in the application of air to the fuel to promote combustion at any desired point by means of perforated pipes of varying lengths, arranged one within the other, as set forth.

252,820. PRICE-TICKET. JOHN KELLER, New York, N. Y. Filed Aug. 6, 1881. (No model.)



Claim.—A price-ticket composed of the described ticket A, having upon its index-face the deep depressions *a*, and adapted to be secured to fabrics by means of the fastener B, having the body *b*, and the parallel long sharp arms *b'* at substantially right angles to said body, and made to register with the depression on the ticket, all substantially as and for the purpose specified.

252,821. FOLDING-GRAPHOSCOPE. JAS. LEE, New Brighton, N. Y. Filed Aug. 16, 1881. (No model.)



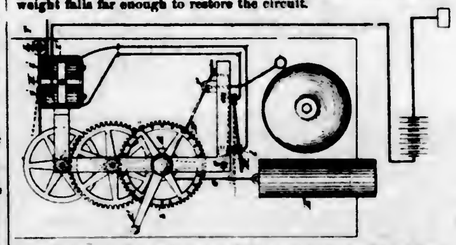
Claim.—1. In a graphoscope apparatus, the base A, composed of the central portion, *a*, and the side pieces, *a'*, the central portion being hinged to the standard B, and having fixed thereto the picture-holder, and the said side pieces being arranged to slide longitudinally on said central portion and carrying the lens-holder, and the entire base-plate thus constructed being adapted, when closed, to act as a cover for a box-like standard, as and for the purpose specified.

2. In a graphoscope apparatus, the combination, with the slides *a'*, working on the central portion, *a*, of the base-plate, of the supporting-bar C, extending from one to the other of and hinged to the said slides and carrying the lens-holder D, together with the leaf-springs G, acting upon the extended ends of said bar, all substantially as and for the purpose specified.

3. In a graphoscope apparatus having the hinged supporting-bar C, carried by the slides *a*, the lens-holder D, detachably seated on said supporting-bar by means of the pins *d'* and sockets *c'*, as and for the purpose specified.

252,822. ELECTRIC CALL FOR TELEPHONES AND OTHER PURPOSES. WILLIAM C. LOCKWOOD, Brooklyn, N. Y., assignor, by mesne assignments, to the Long Distance Electric Call Company, same place. Filed Mar. 10, 1881. (No model.)

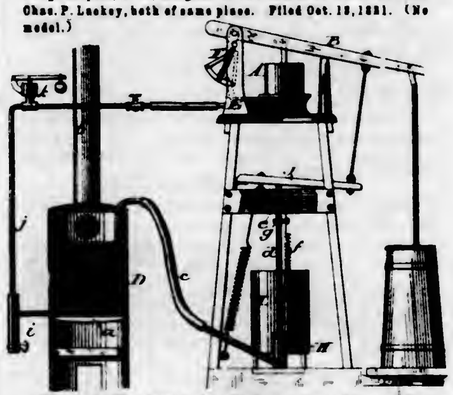
Brief.—The object is to utilize the movement made in giving a signal for winding up a clock mechanism. The bell is mechanically operated, the operating mechanism being controlled by a magnet in the circuit and operated by a weight. To give a signal the clock-work is wound up a short distance, and as the weight rises it makes or breaks the circuit through the controlling-magnet, and allows the bell to be wrung by the clock-work till the weight falls far enough to restore the circuit.



Claim.—1. In an electric call, the combination, with an electro-magnet and suitable electrical connections, the spring or controlling lever M and stop *l*, arranged, as shown, relatively to the weight or motor E, operated by winding means A, so that the winding of the apparatus, by changing the circuit from one condition to another, makes the call, and the running down of the apparatus, by changing the circuit, again to its previous condition, discontinues the call, as herein specified.

2. The combination of an electro-magnet, an armature also serving as a brake, a train of mechanism controlled by said brake, a weight or equivalent motor changing its position as the machine runs down, and a spring or contact piece, M, stop *l*, and suitable electrical connections arranged to be separated by the adjustment of the machine for work and to come in contact and close the circuit by the working of the machine, as herein specified.

252,823. STEAM CHURN-POWER. THEOPHILUS MAYBEW, Poughkeepsie, N. Y., assignor of two-thirds to Robt. Rice and Chas. P. Luckey, both of same place. Filed Oct. 18, 1881. (No model.)



Claim.—1. The herein-described apparatus for operating churns, &c., consisting of generator D, motor A, lever B, operated by the motor and having one end free, pump H, having its rod *d* provided with nut or collar *g*, and spring *f*, all combined and operating as set forth.

2. In combination with a motor provided with a vibratory lever, B, the pump H, provided with rod *d*, and the lever J, adapted and arranged to depress the pump-rod as the lever descends, substantially as set forth.

252,824. LIFE-PRESERVER. ALEXANDER MCDONALD, Boston, Mass. Filed Oct. 11, 1880. (No model.)

Claim.—In a life-saving propeller, the combination of the breast-frame A and the inner fastening-band, K, with the external band, H, and its floats I I I I and lacing-straps *f f f*, all operating together substantially as described, and for the purpose set forth.

252,824.



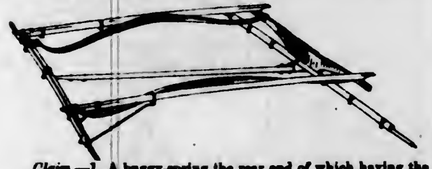
252,825. BREAD-CUTTER. ABEL HOOPER, Lawrence, Mass. Filed Nov. 10, 1881. (No model.)



Claim.—1. An implement for slicing bread or other analogous articles of food, consisting of a flat tablet to receive the loaf and a bearing-plate erected adjustably upon the rear part of such tablet, and against which the loaf is held, such bearing-plate being slotted vertically to receive and guide the motions of the knife and provide a bearing for the loaf upon each side of such knife, substantially as and for purposes stated.

2. An implement for slicing bread, &c., consisting of a flat tablet to receive the loaf, a bearing-plate or rest erected adjustably upon the rear side of such tablet and slotted vertically to receive and guide the motions of the knife and provide a bearing upon each side of such knife, and a vertical gage applied adjustably to the front of the bearing-plate to one side of the said slot, and serving as a stop against which the end of the loaf being cut from is placed, substantially as set forth.

252,826. CARRIAGE-SPRING. GEORGE PENNOYER, Chicago, Ill. Filed Oct. 31, 1881. (No model.)



Claim.—1. A buggy-spring the rear end of which having the sweep below the line of suspension and the sweep at the center above the line of suspension substantially equal, and the sweep at the front end of spring substantially one-half the sweep at rear end and center, substantially as shown and described.

2. The combination of the above-described spring with a side-bar buggy.

252,827. APPARATUS FOR DARKENING TOBACCO. ALEXANDER P. POLADURA, New Orleans, La. Filed Oct. 13, 1880. (No model.)

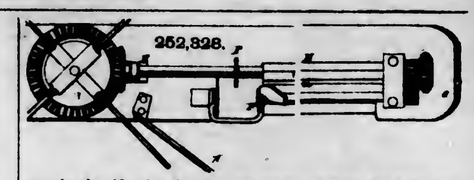


Claim.—1. The vessel A, made in two sections, as described, and provided with a wire basket, E, tube G, and cap *x*, as described, and for the purpose set forth.

2. An apparatus for removing nicotine from tobacco-leaves and giving the same a uniform color by darkening the veins thereof, composed of a lower section for containing water and an upper section with an interior suspended wire basket and a vent-tube, whereby the generated steam in the lower vessel has access to all parts of the suspended wire basket to penetrate the leaves and escape through the vent-tube, substantially as described.

252,828. CORN-HARVESTER. EDWARD W QUINCY, Peoria, Ill. Filed July 23, 1881. (No model.)

Claim.—1. In a corn-harvester, the picking-rollers G H, arranged parallel, or nearly parallel, with the rows of corn and to



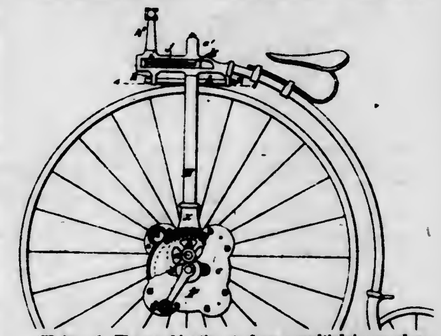
pass by the side of such rows, and means whereby the stalks are brought first to the rear end of the picking-rollers, substantially as described.

2. In a corn-harvester, the combination of the picking-rollers, arranged as described, the saw P, or other suitable mechanism, for severing the stalks, located at the rear of said picking-rollers, and means by which the stalks are presented to the rear ends of such rollers, substantially as specified.

3. The combination, in a corn-harvester, of the picking-rollers, arranged as described, and the gathering-arm N, for the purpose of bending the stalks inward and downward and bringing them to the rear ends of the picking-rollers, substantially as specified.

4. In a corn-harvester, the combination of the picking-rollers G H with a gathering device and suitable cutting mechanism, arranged substantially as set forth, for the purpose of bringing the stalks to the rear ends of the rollers and severing the stalks below the ears, substantially as specified.

252,829. VELOCIPEDE. EDMUND C. RICHARD and JUAN E. RICHARD, New York, N. Y. Filed Oct. 22, 1880. (No model.)



Claim.—1. The combination, to form a multiplying mechanism for a bicycle or velocipede, of a casing for the gearing secured to the lower extremity of the fork, the axle of the driving-wheel, provided with a bearing in said casing, a pinion mounted on the end of said axle within said casing, an internal-gear wheel mounted in said casing and arranged to mesh with the pinion on the driving-wheel axle, said gear-wheel having an external bearing only, whereby the cavity occupied by the pinion is left unobstructed, and a crank on the projecting axle of the said internal-gear wheel, all arranged substantially as and for the purposes set forth.

2. The combination, to form a multiplying mechanism for a bicycle or velocipede, of the fork E, casing F, driving-axle *a*, pinion *b* on the said axle, the gear-wheel *c*, having an external side bearing in the case *e* of the casing, the bearing-rolls *f*, shaft or axis *d*, and crank G, all arranged to operate substantially as and for the purposes set forth.

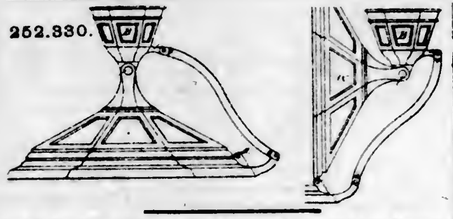
3. In a bicycle or velocipede, the combination, with the frame, the steering or driving wheel, and the fork swiveled in said frame, of the leaf-spring *h*, confined in a slot in the fork and its end or ends engaged by lugs *g*, projecting from the frame, substantially as set forth.

4. The combination, in a bicycle or similar vehicle, of the driving-wheel and fork, the cross-handle provided with a vertical spindle, the lug or lugs *i* on said spindle, a link or links, *j*, and a lug or lugs *k*, on the fork-spindle or fork, all arranged to operate substantially as set forth.

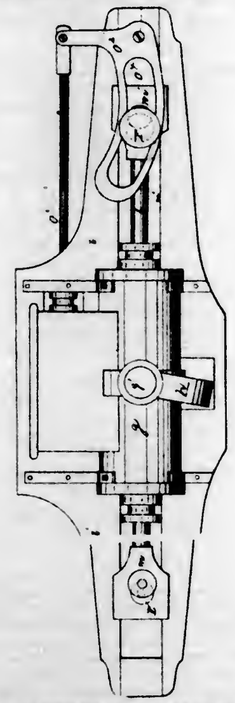
252,830. URN FOR STOVES. HENRY H. RYDER, Taunton, Mass., assignor of one-half to John F. Montgomery, same place. Filed Nov. 14, 1881. (No model.)

Claim.—The combination, with the urn, the hinged cover, and the stove, of a link hinged to the urn and the stove, substantially as described.

252,330.



252,331. LOCOMOTIVE-ENGINE. HENRY F. SHAW, Boston, Mass. Filed Sept. 15, 1881. (No model.)



Claim.—1. In combination, the balanced vibratory trunnes *i i* and oscillating steam-cylinders *g g*, with their pistons, piston-rods, and cross-heads, connected respectively to the driver-wheels *e e* and *f f* on the outside of the latter, as described, the axles *d* and *f'*, connected together by means of the bevel-gears *c''*, *i*, *i'*, and *f''*, as and for the purpose set forth.

2. The eccentric F upon the crank-pin F, in combination with the slotted lever O'', hinged to the end of the balanced vibratory beam *i*, and having valve-rod O', attached to the valve O, to give proper motion to the latter, in a manner as described.

252,332. NECK-YOKE. CHARLES SHUMAN, Rockford, Ill. Filed Aug. 10, 1881. (No model.)

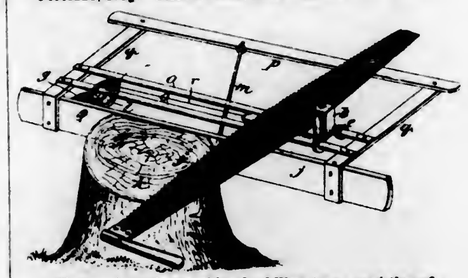


Claim.—1. The ring C, formed wider at the top than at its under side, and provided with a leather or other equivalent lining, *b*, fitting the upper side of said ring, but projecting below the under side thereof to form the flange *c*, substantially as set forth.

2. The combination, with the socket B and the flange *c*, of the ring C, having its rear side beveled and provided with a leather or other equivalent lining, the latter having a flange, *c*, which bears against the flange *c*, substantially as set forth.

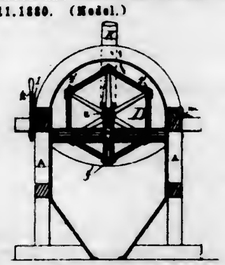
3. The combination, with the ring C, having studs *d* and *e*, of a leather or other equivalent lining, *b*, having the flange *c*, the clasp-ring D, adapted to fit over the ring C, and provided with an opening, *h*, to receive the stud *d*, a semi-bearing, *k*, for the stud *e*, and a clasp-arm, E, passing under the neck-yoke and arranged to bear on the pole, and a clasp-arm, F, secured to the front of the neck-yoke and provided with a stud, *l*, to complete the bearing for the stud *e*, substantially as set forth.

252,333. CROSSCUT-SAWING MACHINE. WILLIAM H. SMITH, Portland, Oreg. Filed Nov. 11, 1880. (Model.)



Claim.—A sawing-machine for felling trees, consisting of a cross cut-saw, a frame, *j q q p*, having guide-rods *e e* and feed-carrier *c*, operated by a spring, *g*, and cord *r*, said feed-carrier having rollers *b* and *c*, and a hinged bearing-board, *d*, when made substantially as described, and for the purpose set forth.

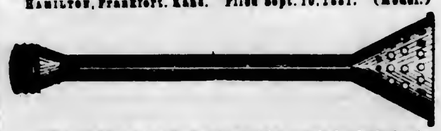
252,334. MACHINE FOR REMOVING SEED FROM GRAIN. DAVID TALMAGE and MARTIN L. FLOWERS, New Orleans, La. Filed Oct. 11, 1880. (Model.)



Claim.—1. A revolving screen having its shell constructed of tubing, arranged at right angles to the supporting-shaft and forming a continuous fluted surface throughout the screen, and having their points of intersection strengthened by exterior angle-strips running the whole length of the screen, as described, and for the purpose set forth.

2. The combination, with a revolving screen, of the oscillating journal-box *f*, supporting one end of the screen-shaft, and the grooved cam *i*, mounted on a transverse shaft, with the lever *h* and segment I, for supporting and adjusting the other end of the screen-shaft, substantially as described.

252,335. CHURN-DASHER. ANDREW J. TAYLOR and MILO A. HAMILTON, Frankfort, Kans. Filed Sept. 10, 1881. (Model.)



Claim.—The churn-dasher comprising a tubular body having a perforated conical lower end, and an enlarged upper end provided with a perforated screw-cap, in combination with the valve and the wire-gauze disk inclosed within the cap at the said upper enlarged end, substantially as described.

252,336. REMOVABLE PERMUTATION-LOCK. ROBERT W. TRUEMAN, Lynchburg, Va. Filed Nov. 17, 1881. (Model.)

Claim.—1. The combination, with the lock O, having a slotted case, spindle B, and dial D, of the toothed cylinder E, spindle *b*, notched tumbler A, and dial C, substantially as shown and described.

252,336.

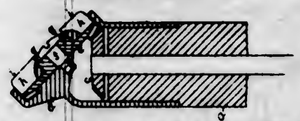


2. A removable lock having an independent set of tumblers adapted to register with teeth secured to the door, whereby the whole may be removed without operating the combination of the main lock, substantially as shown and described.

3. In combination with the lock O, the cylinder E, provided with teeth *g*, adapted to register with the tumblers of an independent lock, whereby the locks are detachably secured in the door, substantially as shown and described.

4. In combination with the lock N, having a cylindrical slotted case, spindle *b*, and dial C, the toothed cylinder E, substantially as shown and described.

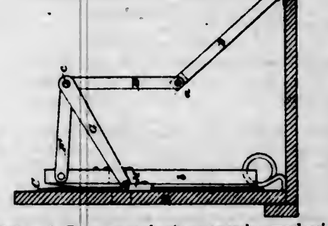
252,337. ROTARY PEG-CUTTER. HERMON C. TOWER and JOHN H. TOWER, Hudson, Mass. Filed July 6, 1881. (No model.)



Claim.—1. The combination of gear *e*, having the externally threaded wall or rim *g*, and the cutter A, having a corresponding interior-threaded passage, and to be seated upon said gear, substantially as specified.

2. The combination of gear *e*, having the externally-threaded wall or rim *g*, the cutter A, having a corresponding interior-threaded passage, and the self-locking screw *f*, to serve as the journal of said gear, substantially as specified.

252,338. ORGAN-BELLOWS. JOHN W. TRAIBER, Fort Wayne, Ind. Filed Oct. 25, 1881. (No model.)



Claim.—1. In an organ having a pumping mechanism of the character described, the vertical link E, the part F, pivoted to the link E and to the pumper, and a supporting arm or lever, G, pivoted between the pumpers to the vertical board which supports the pumpers, substantially as set forth.

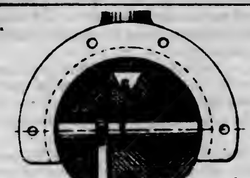
2. The combination, with the treadle, the pumper, and the vertical board which supports the pumpers, of the link E, pivoted to the treadle, the link F, pivoted to the pumper, and the lever G, pivotally connected to the link F and to the board B at a point below the inner end of the link F, substantially as set forth.

3. The combination, with the treadle, the pumper, the vertical board B, which supports the pumper, and the series of levers pivotally connected to the treadle, to the pumper, and to the board B, of devices, substantially such as described, for supporting the levers upon the board B between the pumpers, substantially as set forth.

252,339. MECHANICAL MOVEMENT. CHARLES H. TRACK, Lynn, Mass. Filed June 30, 1881. (No model.)

Claim.—1. A ball-and-socket joint having a belt-pulley journaled within the ball, at or near the axial line thereof, substantially as described, as and for the purposes set forth.

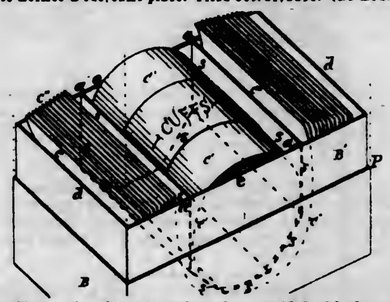
252,339.



2. A ball-and-socket joint having a belt-pulley and eccentric journaled at or near the axial line thereof, substantially as described, as and for the purposes set forth.

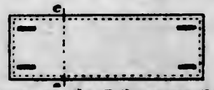
3. A ball-and-socket joint having a belt-pulley journaled at or near the axial line thereof, and provided with a driving-belt adapted to pass through opening in said socket, substantially as described, and for the purposes set forth.

252,340. CUFF-BOX. ISAAC P. TURNER, Troy, N. Y., assignor to Holmes & Ide, same place. Filed Oct. 31, 1881. (No model.)



Claim.—A cuff-box body formed or provided with the semicircular, or nearly so, partition S, for dividing the box into two compartments for displaying inclosed cuffs both curled and loose, substantially as shown and described.

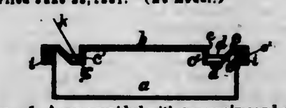
252,341. CUFF. ISAAC P. TURNER, Troy, N. Y., assignor to Marshall & Briggs, same place. Filed Nov. 8, 1881. (No model.)



Claim.—1. In an apparel-cuff, the connection of the double blank B, made of a continuous piece of fabric adapted to be folded longitudinally so as to produce the unequal folds A' and A², and the linen blank C, placed between the folds of the double blank when folded down for stitching their side edges, to form with the blank C and the wider fold A' the exterior of the cuff, and with the narrower fold A² the intermediate ply, or a thickness of the ply, when the parts are placed with reference to each other, stitched at their side edges and turned through either of their unsewed ends, in the manner herein shown and described.

2. An apparel-cuff made with the double blank B folded longitudinally to produce the unequal folds A' and A², the linen blank C, placed between the said folds of the double blank when laid, the blank D, placed next to the fold A', with the parts sewed together near the edges of their sides, their side edges coinciding, and then turned through either of their unsewed ends, so that the blank C will form the linen exterior of the cuff, the fold A' its facing, the blank D and the fold A² its intermediate ply, with the ends of the cuff turned in and the whole border stitched, as herein shown and described.

252,342. SHEET-METAL CAN. FRANCIS A. WALSH, Chicago, Ill. Filed June 28, 1881. (No model.)



Claim.—1. A can provided with an opening and collar, *c'*, over which is fitted a cover, *b*, having a rim, *c*, and flange *d*, of thin and soft metal, overlying an annular channel, *g*, said flange being

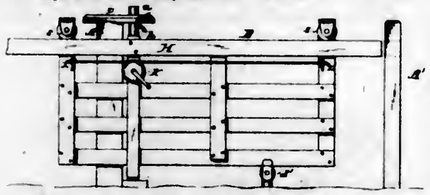
soldered beyond said channel and cut to open the can by passing a knife through the flange into the channel, substantially as and for the purpose specified.

2. A can, *a*, provided with a collar, *c'*, and flanged slip-cover *b*, adapted to be cut away with a knife and united beyond the flange *d* to the annular ring supporting said collar, and so formed as to leave an annular chamber, *g*, substantially as and for the purpose specified.

3. The channeled rim *i*, provided with flat part A and collar *c'*, and provided with a flanged slip-cover united to the top of the can and adapted to be opened by cutting the flange above the chamber *g*, so as to leave an uncut portion, *h*, of the flat part, substantially as and for the purpose specified.

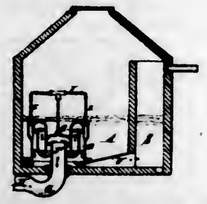
4. A can, *a*, provided with a collar and slip-cover, *b*, having a flange, *d*, soldered at its outer edge and adapted to be cut inside of the soldered part through said flange for opening the can, substantially as and for the purpose specified.

252,343. SLIDING AND SWINGING GATE. WM. R. WHITE, Meoga, Ill. Filed May 11, 1881. (Model.)



Claim.—The combination of the divided turn-post A, supported adjacent to a post, A, with a gate, B, sliding between the sides of the post A, and provided with rollers *s s*, resting on a rail, H, secured to the turn-post, and a roller, K, on a crank-shaft, and cord *p*, all as set forth.

252,344. FLUSHING-BASIN. BURRIDGE WILLIAMS, Chicago, Ill. Filed Mar. 30, 1881. (No model.)



Claim.—1. The partial trap G, in combination with the reservoir A and drain H, and with two siphons, B C and E F, and with a complete trap, D, arranged to operate as herein specified.

2. The lip or projection J, arranged as shown, in combination with the first siphon, B C, the second siphon, E F, and with a complete trap, D, partial trap G, reservoir A, and drain H, as herein specified.

3. The air pipe or passage I, connecting the top of one siphon, E F, with the ascending leg B of the other siphon, and carried higher than either, so as to serve for arresting the flow of the water, but admitting air past the trap D into the leg B, and thereby stopping the discharge of the siphon, substantially as herein specified.

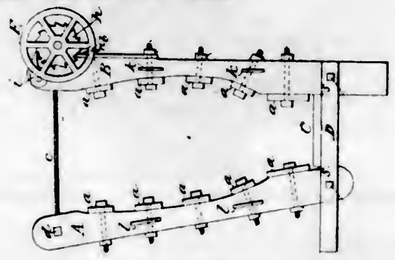
4. The chamber M, float N, valve O, ports *g*, and air-passage P, in combination with the siphon B C and the reservoir A, arranged to serve as herein specified.

5. The pipe K, reservoir A, compound siphons formed of B C and E F, trap D, partial trap G, drain H, air-passage I, chamber M, float N, valve O, ports *g*, and the air-passage P, combined and arranged as herein specified.

6. In a house-drainage system, the channel U, having the inclined upper surface, as shown, in combination with the grease-chamber S, the house-basin A, and low connecting-opening, T, arranged to serve as herein specified.

7. In a house-drainage system, the pipe K, the reservoir A, the chamber S, the opening T, the chamber U, the compound siphons formed of B C and E F, the trap D, the partial trap G, the sewer H, the lip J, and the air-passage I, combined to form a house-basin and sewer-flushing apparatus, in which the grease of the sewage is held until it is cold, and is carried off with a strong flow of the sewage, as herein specified.

252,345. BRANDING-CHUTE. RILEY YORK, North Platte, Nebr. Filed Mar. 1, 1881. (Model.)

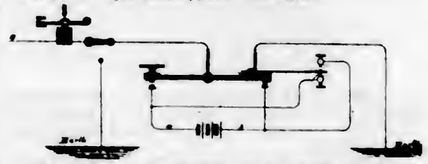


Claim.—1. In a branding-chute, the bars *a*, fixed posts B, and adjustable posts A, in combination with means for adjusting the sides of the chute toward each other.

2. In a branding-chute, the combination of fixed posts B with the adjustable posts A, floor C, sills D, having mortise *s*, gate I, shaft E, cable *c*, wheel F, pawl *i*, and ratchet h, substantially as shown and described.

3. In a branding-chute, the combination of the gate I, having projecting bars *m*, of different lengths, with fixed posts B, adjustable posts A, and bars *a*, substantially as shown.

252,346. POLE-CHANGING KEY. WILLIAM E. ATHEARN, New York, N. Y. Filed Oct. 26, 1881. (No model.)

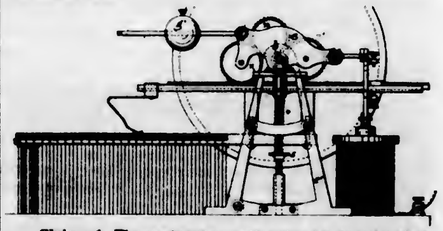


Claim.—1. In a pole-changing key or transmitter, the combination, substantially as hereinbefore set forth, of a pivoted lever vibrating between and alternately making contact with two independent stationary contact-points, and a flexible arm secured to but insulated from said lever, vibrating between two stationary adjustable contact-points.

2. The combination, substantially as hereinbefore set forth, of the key-lever and its metallic base, the insulated flexible arm, and the spring A', insulated from the lever and base, but in electrical connection with the flexible arm.

252,347. CIRCUIT-REGULATING DEVICE FOR ELECTRIC LIGHTS. CLINTON H. BALL, Troy, N. Y., assignor to himself and JOHN B. TIBBITS, same place. Filed Mar. 16, 1881. (No model.)

Brief.—A rheostat governing the current passing through the field of a dynamo-electric machine has its contact-point moved in one direction or the other, according to the strength of current passing through its controlling-magnet, which is located in the light-circuit. A continually-running clock-work driven by spring or a suitable motor is caused to engage with a sliding rack-bar, which carries the contact-point of the rheostat, the direction of motion being governed by the position of the armature of the controlling magnet.

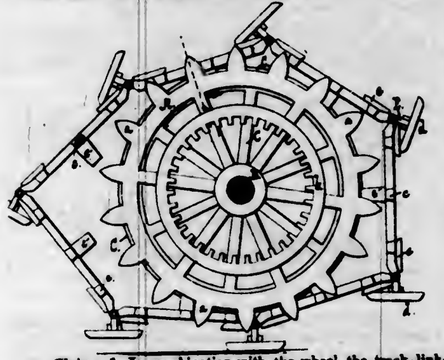


Claim.—1. The combination, with a rheostat or series of resistance-coils and a movable contact, of an electro-magnet, a shaft revolved continuously by power, and mechanism between the movable contact and the revolving shaft, brought into action by the electro-magnet, to vary automatically the resistance of the rheostat

in proportion to the variation of the electric current in the magnet, substantially as set forth.

2. The combination, with the rheostat-coils and the movable contact, of a rack, a swinging frame, an electro-magnet acting upon such swinging frame, and revolving gearing moved by that swinging frame, and acting to give motion to the rack either in one direction or the other to vary the resistance in the circuit automatically, substantially as set forth.

252,348. TRACTION-WHEEL. BENJAMIN S. BENSON, Baltimore, Md. Filed July 7, 1881. (No model.)



Claim.—1. In combination with the wheel, the track-link provided with lateral downwardly-projecting ears, the foot *d*, having ears *l*, and the pivot-pins passing through the ears of the track-links and foot and below the links, as set forth.

2. In combination with the wheel, the track-links having overlapping ends *i*, and the foot having ears *l*, of a thickness above the pins equal to that of the parts *i*, whereby an even tread for the wheel is afforded, as set forth.

3. In combination with the track-links and foot, the pivot-pins connecting the same and the central supports, A, sustaining the pins, as set forth.

4. In combination with the wheel, the track-links having side guides, *c'*, therefor, and the feet pivoted to the links, as set forth.

5. In combination with the track-links having cogged edge and the feet pivoted thereto, as set forth, the wheels A and C.

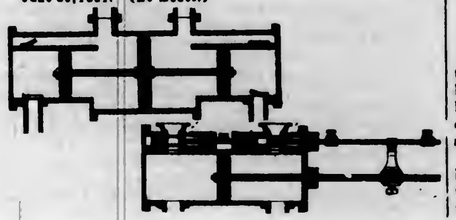
6. In combination with the track-links and feet pivoted together, as set forth, the wheels A and C and the gear-wheel *b*.

252,349. ICE-CREEPER, &c. HENRY BLAND, Luton, County of Bedford, assignor to William Brown Lascelles, London, England. Filed Nov. 23, 1881. (No model.) Patented in England Aug. 26, 1881.



Claim.—A device to be applied to a boot or shoe to prevent slipping, comprising two long spiked links jointed at their front ends to a toe-clamp and at their rear ends to side clamps, two shorter strips jointed to said side clamps and to a metal loop, and a fastening strap or device connected with said metal loop, all combined and operating substantially as described.

252,350. PUMP. CARL BLANKENBURG, Berlin, Germany. Filed June 16, 1881. (No model.)

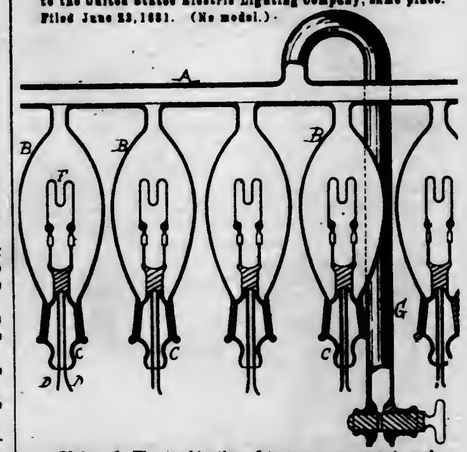


Claim.—1. The combination of a double-acting main pump, an auxiliary differential twin pump having two suction and force valves and three pistons, and two pipes connecting the main and auxiliary pumps, substantially as described.

2. The combination of a double-acting main pump having double sliding cut-off valves, an auxiliary twin pump having two suction and force valves and three pistons, and two pipes connecting the main and auxiliary pumps, so arranged that the water in each pipe is caused to serve alternately as a regulating-weight to the pistons, substantially as described.

3. The combination of a double-acting main pump having double sliding cut-off valves, a reciprocating rod for operating the valves connected to the main piston-rod, and provided with adjustable gages for regulating the valves, an auxiliary twin pump having two suction and force valves and three pistons, and two pipes connecting the main and auxiliary pumps, so arranged that the water in each pipe is caused to serve alternately as a regulating-weight to the pistons, substantially as described.

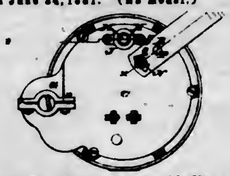
252,351. APPARATUS FOR THE PREPARATION OF CARBON CONDUCTORS. LUDWIG K. BOHM, New York, N. Y., assignor to the United States Electric Lighting Company, same place. Filed June 23, 1881. (No model.)



Claim.—1. The combination of two or more separate carbon depositing or testing receivers, each closed by a plug or stopper containing the metallic conductors to which the carbons are attached, the several receivers being connected by a pipe or tube common to them all, and adapted to be combined with devices for exhausting the air and for introducing a gas into the said receivers, as and for the purpose set forth.

2. In an apparatus for electrically heating and testing carbon conductors for incandescent lamps, the combination, with main tube G and horizontal tube A, of the several bulbs, B B, closed by plugs or stoppers containing the conducting-wires D D, carrying clamps for retaining the ends of carbon conductors, as and for the purposes described.

252,352. LAWN-MOWER. MATHIAS BRAUN, Philadelphia, Pa. Filed June 24, 1881. (No model.)

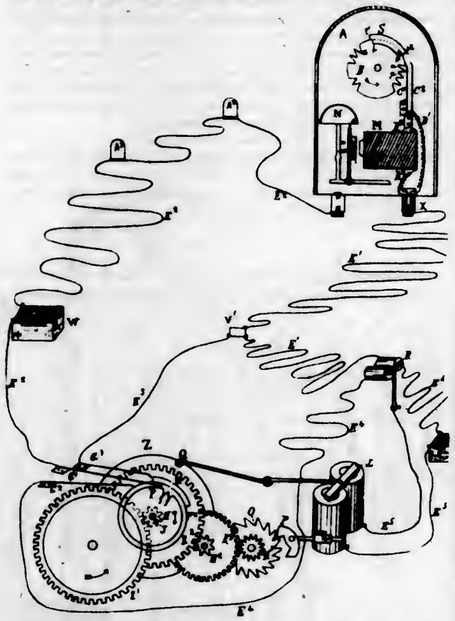


Claim.—1. In a lawn-mower, a binding rod or shaft with tubular externally right and left hand screw-threaded ends, in combination with annular internally right and left hand screw-threaded hollow brackets which receive said ends and lugs which enter said ends, said lugs and brackets being fast to the frame of the mower, substantially as set forth.

2. The side plates, C, each having cast with it the cylindrical lug R and segmental lug Q, the handle-braces each provided with the circular opening P and segmental slot N, the screw S, and the washer T, all combined and operating substantially as set forth.

252,353. AUTOMATIC ELECTRIC SIGNALING APPARATUS. HENRY J. BROWER, Brooklyn, and FRANK B. WOOD, New York, N. Y., assignors of one-fourth to Benjamin E. Valentine, Brooklyn, N. Y. Filed Apr. 27, 1881. (No model.)

Brief.—The first break at the signal-box sets register mechanism at central station in motion, one of the wheels of which revolves in unison with the signal-wheel at the signaling-station. Contact-plates and circuit-breakers are provided for automatically repeating or announcing that the register has performed its functions after the signal has been transmitted.

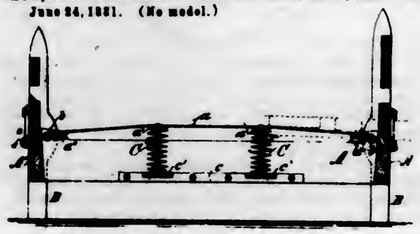


Claim.—1. The combination of the revolving wheel and contact-surfaces F and F', a register for recording electric signals, an electric circuit, of which the signal-box A, for automatically breaking the circuit, forms a part, and with the simultaneously-revolving wheel and contact-surfaces B and S, located in said signal-box, and mechanism for switching the circuit through the magnet M, and with the contact-springs and circuit-breakers, forming part of the above-named electric circuit, substantially as described, for the purpose of automatically announcing a return signal.

2. The combination, with a revolving contact-surface, F, for sending a return signal, of the electric circuit of which the signal-box A forms a part, the relay-magnet R, revolving contact-segment S^2, and intervening connections for automatically cutting the magnet R out of circuit temporarily and restoring it to circuit, substantially as and for the purpose specified.

3. The within-described means for automatically cutting out and restoring the relay-magnet R from and to an electric circuit, consisting of the combination of the revolving contact-surfaces F' and S^2 with the contact-spring G^2, and circuit-breaker G^3, battery W, lines E^2 and E' of the circuit, and line E^3 for short-circuiting, substantially as set forth.

252,354. BEDSTEAD. ALVA P. BROWN, Texas, Ohio. Filed June 24, 1881. (No model.)



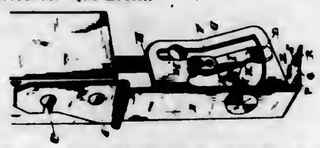
Claim.—1. The bed-bottom formed of the strips *a a*, cross-strips *a' a'*, and the coiled springs C C, the strips *a a* being attached to the tie-rods *b b*, which are adapted to pass through the side boards of the bedstead, substantially as and for the purposes specified.

2. In combination with the bed-bottom formed of the strips *a a* and cross-strips *a' a'* and the coiled springs C C, and the tie-rods *b b*, the legs B B, hinged to the tie-rods outside the bedstead, substantially as and for the purposes specified.

3. The side boards, A A, of the bedstead, in combination with the legs B B, hinged to the bedstead by the rods *b b*, substantially as and for the purposes specified.

4. The end cross-strips, *a'' a''*, formed with the extended ends, as shown, whereby the bottom is kept in place, in combination with the rods *b b* and strips *a a* and cross-strips *a' a'*, substantially as specified.

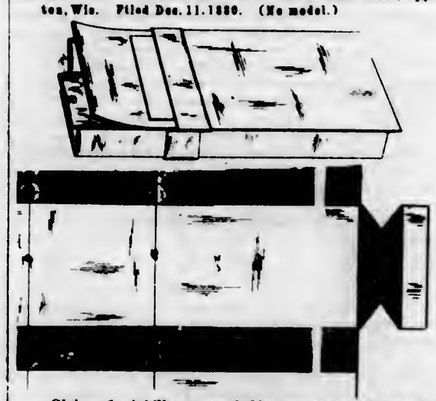
252,355. RUFFLER FOR SEWING-MACHINES. FREDERICK P. CHENEY, Clover, Vt., assignor to the Dauntless Manufacturing Company, Norwalk, Ohio, and Fred M. Cheney. Filed Aug. 30, 1881. (No model.)



Claim.—1. In a ruffler for sewing-machines, the combination, with an arm adapted to be secured to the face-plate of a sewing-machine, of a plate, E, having the depending arm J and guideway F, an arm, I, pivoted to the arm J, and adjustable by means of a thumb-screw, N, substantially as set forth.

2. In a ruffler for sewing-machines, the combination, with the needle-bar and screw or stud attached thereto, of an arm adapted to be secured to the face-plate of a sewing-machine, said arm being provided with a plate located at right angles to the arm, the plate being formed with a bar, G, depending arm J, pivoted arm I, having a lateral extension, M, and a set-screw, N, substantially as set forth.

252,356. FILE FOR BILLS, &c. JOHN T. CHYDENWYTH, Appleton, Wis. Filed Dec. 11, 1880. (No model.)



Claim.—1. A bill or paper holder provided with an outside pocket formed of an integral portion of the holder by folding and adapted to receive a card or slip, whereby the contents may be made known without opening said holder.

2. A bill or paper holder having the material of which it is formed folded downward to produce a folded edge at the top of the holder, and thence folded upward to form a pocket or receptacle for a card or slip, substantially as shown.

3. A bill or paper holder provided with a lip or leaf adapted to be turned down to expose the contents of the holder, and with a pocket adapted to receive a card, both formed of an integral portion of the holder by folding, substantially as shown and described.

4. The herein-described bill or paper holder, consisting of the body having collapsible sides and bottom, and provided with a lip which may be turned down to expose the contents, and with a pocket to receive a card or slip.

252,357. CAR-AXLE BOX. JESSIE R. COOPER, Union City, Pa. Filed Sept. 12, 1881. (No model.)



Claim.—1. In a car-axle-lubricating device, the oil-conveying roller provided on its surface with fibrous and absorbent material, and a traction-surface, E', in direct contact with the axles, substantially as and for the purposes set forth.

2. In a car-axle-lubricating device, the combination, with the journal of the oil-conveying roller, of the vertical guides *g g*, supporting-spring *f*, having its feet resting upon the reservoir floor or bottom, and the guides *d*, located, as shown, to prevent the feet of spring *f* from slipping laterally, all combined and arranged substantially as described.

3. An oil-reservoir for car-axle-lubricating devices, having a hopper-shaped top for catching the drippings, vertical guides for the journals of a roller, and lateral guides upon the floor, for the purpose set forth, in combination with a roller having springs attached to the journal and resting upon the floor between the side walls and lateral guides, substantially as set forth.

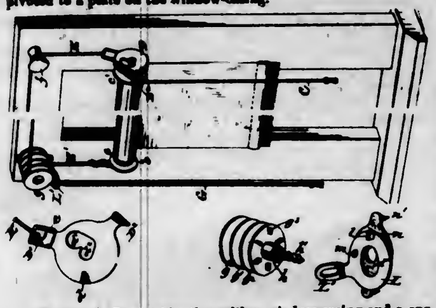
252,358. CIGARETTE. HENRY A. CUPPIA, New York, N. Y., assignor to the Kinney Tobacco Company, same place. Filed Oct. 21, 1881. (No model.)



Claim.—A cigarette having a mouth-piece attachment abutting against its end and secured in place by a binding-strip that envelopes both the cigarette end and the end of the mouth-piece, all substantially as described.

252,359. CURTAIN-FIXTURE. JOSEPH DARLING, Peachville, and ANDREW J. NICHOLSON, Fairview, Pa. Filed May 19, 1881. (No model.)

Brief.—The spool on one end of the roller is provided with projections which come in contact with a pawl on the hanger to hold the curtain. One arm of this hanger is inclosed in a rubber sleeve. A series of pulleys joined together and upon the same axis receive and hold the cords by which the curtain-roller is suspended by means of projections thereon in connection with a slotted pawl pivoted to a plate on the window-casing.



Claim.—1. In combination with a window-casing and a curtain-roller suspended from the ends of a single cord, the three pulleys *g g' g''*, united and adapted to turn together upon a single shaft or sleeve, with the cords B, B', and G, substantially as and for the purpose described.

2. The combination of perforated plate a and pawl L, slotted at *l'*, and pivoted on a pin, *m*, having its axis at right angle with the axis of the curtain-roller, and provided with a tooth, *l*, at the upper edge thereof, and a slotted arm, L', with pulleys *g g' g''*, carrying pallets *g'*, substantially as and for the purpose described.

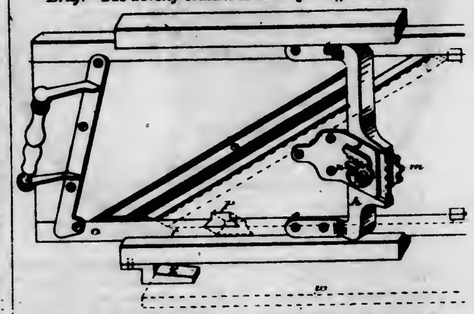
3. The combination of a curtain-roller, a spool at the end thereof having projecting pallets *c'* and spindle *c''*, with movable bracket D, having pawl *d* projecting therefrom, arm D' above, and arm D^2 in front thereof, substantially as and for the purpose described.

4. In combination with the movable bracket D, having a pawl projecting therefrom, a beat arm, D^2, and an arm, D', from which it is suspended by a cord, the yielding sleeve *e*, inclosing the upper arm, D', substantially as and for the purpose described.

5. The combination of a curtain-roller, a cord connected at both ends to said roller and between said ends to the septum of a pulley, a series of pulleys upon the same axle, the inner pulley having pallets projecting from its septum, and a slotted pawl pivoted to a plate clamped to the side of a window-casing, substantially as and for the purpose described.

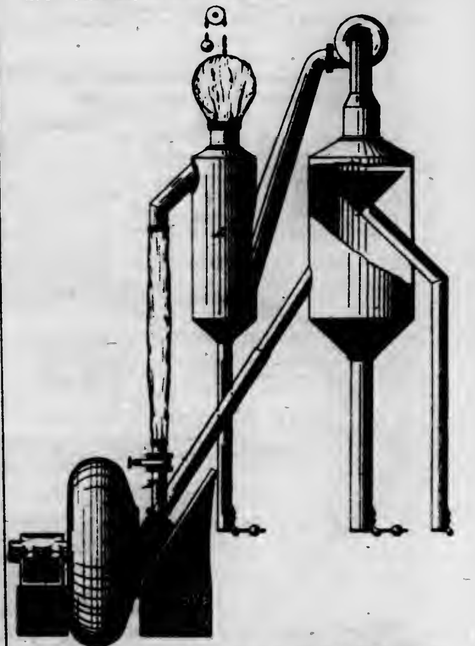
252,360. BREAD AND MEAT SLICER. SAMUEL L. DENNEY, Cap, assignor to Israel L. Landis, Lancaster, Pa. Filed May 11, 1880. Renewed Jan. 26, 1881. Again renewed Dec. 7, 1881. (No model.)

Brief.—The novelty consists in the adjusting mechanism.



Claim.—The combination, in a slicing-machine, of the bridge A, angular plate *s*, thumb-piece *n*, with its pinion, and tightening-nut *m*, all substantially as set forth.

252,361. ATTRITION-MILL. HENRY A. DUC, Jr., Charleston, S. C., assignor of one-half to Thomas F. Rowland, Brooklyn, N. Y. Filed May 31, 1881. (No model.)

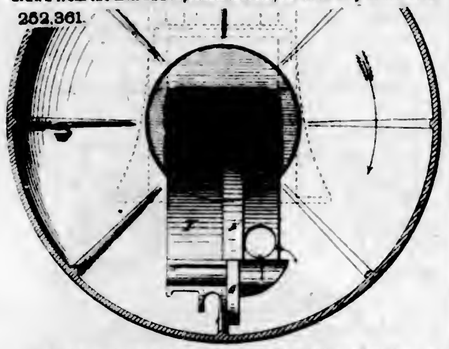


Claim.—1. The combination, in an attrition-mill, of a transverse plow or bar extending to the outside of the mill, a support for said plow outside of said mill, and appliances whereby the plow may be moved upon said support to the interior of the mill to compensate for wear at the end of the plow-bar, for the purpose specified.

2. The combination of a rotating shell open at one side and guides, and a curved plow-bar secured in said guides, in which it may be moved in a curved line to carry its end to and from the inner face of the shell, substantially as set forth.

3. The combination, in an attrition-mill, of a rotating shell, a slide, a plow-bar, a feed-tube for delivering the material within the mill, and a frame adapted to permit the slide to be readily withdrawn from the mill and replaced therein, substantially as set forth.

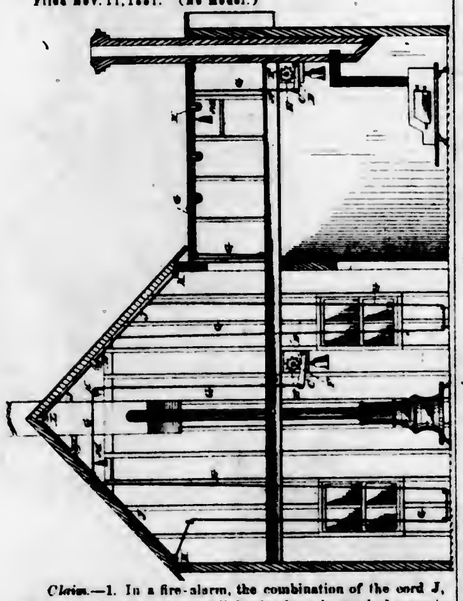
252,861.



4. An attrition-mill provided with three independent passages delivering into the mill from the outside of the chamber, one for the exhaust of the air from the mill, one for the return of the air so exhausted to the mill, and the other for feeding the material to be reduced to the mill, substantially as set forth.

5. The combination, in an attrition-mill, of a shoe constructed to direct the body of material beneath it, and adapted to compress the said material against the periphery of the mill, and a plow-bar arranged radially across the shell at the rear of and close to the shoe, and adapted to act against said material, substantially as set forth.

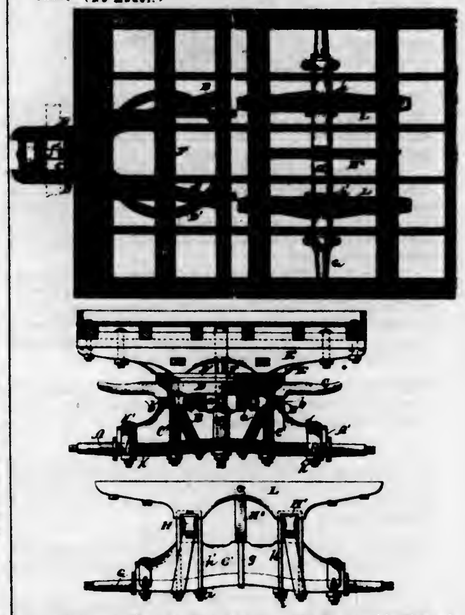
252,862. FIRE-ALARM. EDWARD EARLEY, Newton, Iowa. Filed Nov. 11, 1881. (No model.)



Claim.—1. In a fire-alarm, the combination of the cord J, arranged as described, the cord G, having its ends attached respectively to said cord J and to the free end of a weighted lever, C, having tooth D, and a suitable alarm mechanism having toothed wheel E, held inactive by said lever C when cord G is taut, substantially as set forth.

2. In a fire-alarm, the combination of the cord J, arranged as described, the cord G, having its ends attached respectively to said cord J and to the free end of a weighted lever, C, having tooth D, a suitable alarm mechanism having toothed wheel E, capable of being held inactive by the said cord G, and a weight, M, suspended upon the latter, substantially as set forth.

252,863. TRUCK. JOS. ESCH, Milwaukee, Wis. Filed Nov. 3, 1881. (No model.)



Claim.—1. In a truck or heavy wagon, the combination of the hounds, sand-bar, bolster, and axle with straps C C and F, and the lower circle grooved to fit over the hounds and sand-bar, as set forth.

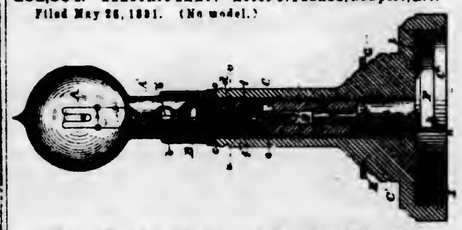
2. The bolster A' and sand-bar C, in combination with supporting-pillars *b*, as set forth.

3. The combination of the axle, bolster, hounds, and circles of trusses E E, and king-bolt F, as set forth.

4. The combination, with rear axle and bolster, of trusses H H', securing-straps *h h'*, bracing-straps K, and the trusses L, upon which the body rests, as set forth.

5. The combination of trusses L, strap H', and the bolster, as set forth.

252,864. ELECTRIC LAMP. MOSES G. FARMER, Newport, R. I. Filed May 26, 1881. (No model.)

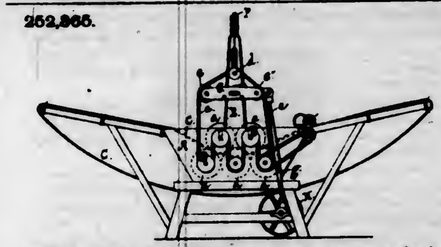


Claim.—The globe A, mounted in the socket B, in combination with the carbon *a*, contained in said globe, the wires *b* and *b'*, connected at one end to said carbon, the metallic ring *d*, connected to the other end of the wire *b*, the pin *e*, connected to the wire *b'*, the stand C, provided with one or more springs, *f f'*, and one or more springs, *g g'*, and the wires *i i'* and *j j'*, all arranged and adapted to operate substantially as and for the purposes described.

252,865. HEMP-WASHER. THOMAS J. PEGGSON, Pikesville, Md. Filed Nov. 23, 1881. (No model.)

Claim.—1. In a hemp-washer, a tank having a series of washing-rollers and mechanism, substantially as described, for imparting to the same a reciprocating rotary movement, the motion being greater in one direction than the other, as and for the purpose set forth.

252,865.



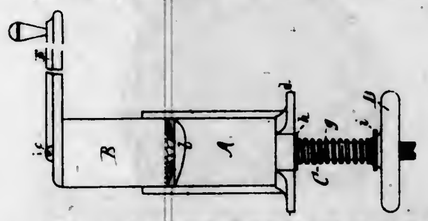
2. In combination with the tank having rollers *a* and mechanism for imparting to the same a reciprocating rotary movement, the endless apron C, as and for the purpose set forth.

3. In combination with the tank having rollers and apron, the driving chain or belt *e* and rocking shaft or lever G, provided with ratchets *e e'* and their pawls, as set forth.

4. In combination with the tank having rollers and apron, the driving-chain *e*, rocking lever G, having unequal arms and ratchets *e e'* and pawls, and the tension-rollers *d*, as set forth.

5. In combination with the tank and rollers, the driving-chain *e* and lever G, laterally adjustable with reference to the pivot, whereby the feed may be regulated, as set forth.

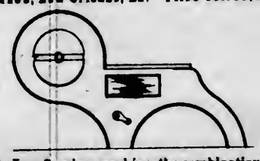
252,866. BAND AND WELT CRIMPING MACHINE. MOSES G. FLINT, Haverhill, Mass., assignor to Lucius E. Goldsmith, same place. Filed Sept. 11, 1879. Renewed Sept. 12, 1881. (Model.)



Claim.—1. In a crimping-machine, the combination of the fixed smooth-faced bottom cylinder, A, having the throat or depression *l* formed in its face, the hollow cylinder B, having the radial teeth *m* formed in its face, and with crank E or other means of rotation, axial rod C, with compressing-nut D and spring *g*, and the stationary guide F, all substantially as specified.

2. In a crimping-machine, the hollow non-rotative smooth-faced cylinder A, the hollow rotative tooth-faced cylinder B, the coiled spring *g*, and the compressing-nut D, all arranged axially coincident and upon the central rod, C, substantially as specified.

252,867. FANNING-MACHINE. MARTIN L. FLOWERS and DAVID TALMAGE, New Orleans, La. Filed Oct. 11, 1880. (No model.)



Claim.—1. In a fanning-machine, the combination of the tail-board and the adjusting means, consisting of the leg *h*, ball-joint *h*, and adjusting-screw, for the purpose stated.

2. In a fanning-machine, the combination of the tail-board F, cam *g*, leg *h*, ball-joint *h*, rod *l*, and handle M, substantially as described, and for the purposes set forth.

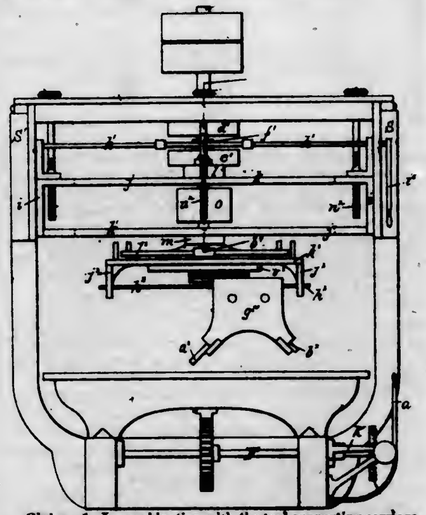
252,868. SAFETY DEVICE FOR RAILWAYS. JOHN GODBOUT, Decatur, Ill., assignor of one-half to George B. Peake, same place. Filed Apr. 23, 1881. (No model.)

Brief.—A guard consisting of springs having their upper ends loosely attached to a plate, and the whole resting upon the ties.

Claim.—The improved guard or safety device herein described, adapted for use between the guard and track rails of a railroad, or at the point of a frog, and capable of application before or after the laying of the rails, the same consisting of a plate, A, of spring or sheet metal, formed to fit in the desired positions, and springs *a*, having their upper ends suitably attached to the plate in such wise as to hold the plate in place and not prevent so much of the sliding of one part upon another as to allow the plate freely to yield, said springs being sloped back from this point of attachment and fastened directly to the ties at their lower ends, forming the sole support of the guard, the whole lying above and finding a rest upon the ties or road-bed, substantially as set forth.



252,869. LEATHER-DRESSING MACHINE. WILLIAM GOODMAN, Boston, Mass. Filed July 18, 1881. (No model.)



Claim.—1. In combination with the tool-supporting carriage, the screws a^3, journaled with the machine, and engaging the carriage, and adapted to be rotated by gears fixed to their upper ends, and the shafts q^2 r^2, with their gears p^2, said devices operating as mechanism for raising and lowering the tool-supporting carriage, substantially as set forth.

2. The combination of toothed racks j^2 k^2, pinions l^2 m^2, and shaft c' with the traversing tool-carriage and the table, substantially as set forth.

3. The means described for effecting traverses of the tool-carriage and tools bodily in opposite directions, consisting of the toothed racks j^2 k^2, pinions l^2 m^2, carried by the shaft c', pulleys d' e', rotating in opposite directions and mounted loosely upon such shaft h', and the clutch f', sliding upon such shaft and adapted to engage either of the pulleys.

4. The combination of a table, a supporting-frame, and a carriage adapted to travel horizontally on said frame with a vertical shaft, c', journaled in said carriage, a pair of loose pulleys on said shaft, an intermediate sliding clutch splined to said shaft, a forked plate, g', which engages with the clutch to ship and unship the same, and a rock-shaft which operates said shipping-plate, whereby the rocking motion of said rock-shaft causes one or the other of said pulleys to turn with shaft c', substantially as set forth.

5. In combination, the head g', supported upon the rods h^2 i^2, sliding plate or stock f^2, with its notched ears j^2, and the dressing-tools sliding within the head and changed in position therein by the ears, substantially as stated.

6. In combination with the head g', sliding stock or plate f^2, and tools a^3 b^3, the rock-shaft w^2 x^2, with their wings y^2 z^2, substantially as herein set forth and described.

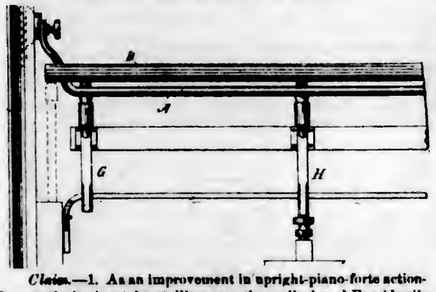
7. In combination with the head g' and stock f^2, the disk n^3 and its link o^3, connected with the stock and operating to effect the movement of both head and stock, substantially as stated.

8. In combination with the head g', sliding stock or plate f^2, the rock-shafts w^2 x^2, with their wings y^2 z^2, and the tools a^3 b^3, each

consisting of two portions, a^4 b^4, with an intervening spring, c^4, all as and for the purposes described.

9. The combination, with the head g^4, supported upon the rods h^3 i^3, sliding plate i^3, with its notched ears j^3, of the dressing-tools formed in two parts with the slotted strap f^3, bolt k^4, and the intervening spring, c^4, whereby an elastic or yielding movement is imparted to said tools, substantially as herein described.

252,870. UPRIGHT-PIANO ACTION-FRAME. PAUL GMEHLIN, New York, N. Y. Filed Aug. 16, 1881. (No model.)

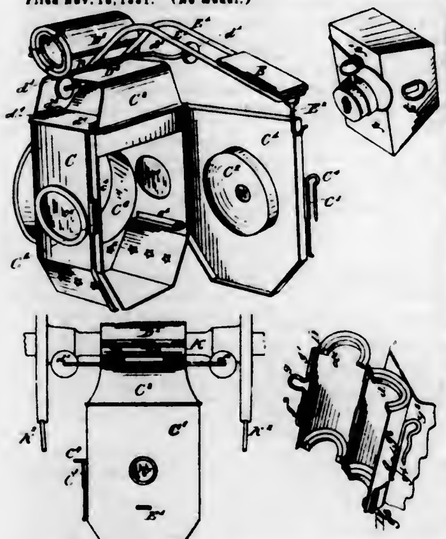


Claim.—1. As an improvement in upright-piano-forte action-frames, the horizontal metallic supporting-rails A and E, said rails being independent of the wooden rails to which the small parts of the action are directly attached, and not screwed or bolted to them, but to serve as a part of the frame to which said wooden rails are secured by the standards, said metallic rails having their ends extended, bent, and curved into a position to fasten to the case or string-frame, thereby securing the action into the piano by the aforesaid metallic rails directly, in combination with the standards G and H, screwed or riveted thereon, as shown and described.

2. The horizontal metallic supporting-rail A under the hammer-rest rail D, constructed as shown, with its widest part in a horizontal or flat position, in combination with the said standards G and H, and being screwed or riveted on the top ends of said standards, substantially as shown and set forth.

3. In upright-piano-forte action-frames, the hook I on the lower end of the standard H, the block J, provided with a notch or recess, the screw K, having a groove in the under side of the head, thereby forming an outer rim or flange, all in combination, arranged to operate substantially as shown and described.

252,871. LANTERN FOR BICYCLES. PETER GRAY, Cambridge, assignor to the Pope Manufacturing Company, Boston, Mass. Filed Nov. 16, 1881. (No model.)



Claim.—1. The described bicycle-lantern, consisting of a case, C, with lights c^4 c^5 c^6 and opening at the back, reflectors C^3 and C^4, glass front c^7, removable lamp A, open top parts C^7 and C^8, and a hinged clamp, D D', for suspending the whole upon the axle of a bicycle, said clamp having a safety-fastening, and being connected by rivets to the top C^8 at its forward part, all constructed and adapted essentially as set forth.

2. In a bicycle-lantern having a hinged clamp, a fastening device consisting in fixed loops g' g^2 g^3 g^4 and sliding loops g g^5, the latter having a curved tongue to form a spring-fid, constructed and adapted to operate substantially as set forth.

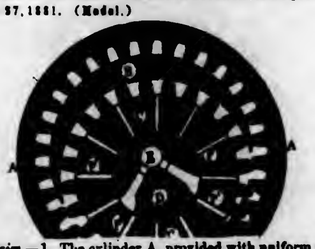
3. Combined in a bicycle-lantern having a case, C, and a lamp, A, the open top part C^7, a hinged clamp, D D', and a hinged holder having a loop, E, said parts being constructed and adapted to operate substantially as set forth.

4. A velocipede constructed with a case, C, containing a lamp, a door, C', a top, C^4, a front glass, c^7, and a hinged brace, E' E', bearing a loop, E, and connected with the top and rear of the case, substantially as and for the purposes herein set forth.

5. A removable holder for a velocipede-lantern, consisting in a loop adapted to fit a clip on the frame of the velocipede, a spring-brace, E', for hinged attachment to the case of the lantern, and a catch, E^5, for attachment to the rear and lower part of the lantern, when constructed and adapted to operate substantially as herein set forth.

6. The removable detent shown in Fig. 8, constructed with a buffer, d^7, and short parallel fingers d^8 d^9, for insertion in loops d^5 d^6 in the top of the lantern, substantially as and for the purposes set forth.

252,872. ROTARY ENGINE. DEXTER D. HARDY, Havana, Ill., assignor of one-half to Charles G. Krehbiel, same place. Filed June 27, 1881. (Model.)

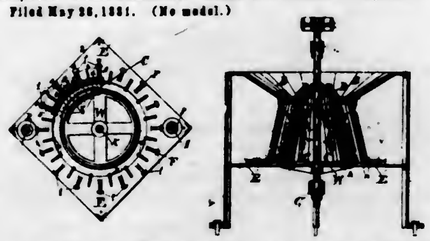


Claim.—1. The cylinder A, provided with uniform and regular inside teeth, and the crescent B, in combination with the spur cog-wheel C, with holes or ports P, the eccentric D, with two ports, P P, and the tubular axle E, with bridge L, substantially as and for the purpose set forth.

2. The cylinder A, provided with regular and uniform inside teeth, and the spur-gear wheel C, with holes or ports P', in combination with the eccentric D, with ports P P, the crescent B, disk R, attached to said crescent and eccentric D, and the tubular axle E E, fastened to supports G G, substantially as and for the purpose specified.

3. The cylinder A, provided with regular and uniform inside teeth, and with cylinder-heads F F', and the wheel C, with holes or ports P', and with regular and uniform teeth to gear in with the inside teeth of said cylinder A, for the purpose set forth.

252,873. CORN-SHELLER. HIRAM A. HAWKINS, Chicago, Ill. Filed May 26, 1881. (No model.)



Claim.—1. The combination, in a corn-sheller, of the plate E, having projections F and s, with the case A and rods N, substantially as described and shown.

2. The combination, in a corn-sheller, of the hopper B, cylinder C, case A, grooved spider W, and plate E, having projections F and s, the said case and cylinder being formed in sections and provided with devices for rendering them automatically adjustable, substantially as shown and described.

252,874. OSTRICH-FEATHER TRIMMING. JOHN HAWLOWETZ, New York, N. Y. Filed Nov. 8, 1881. (Model.)

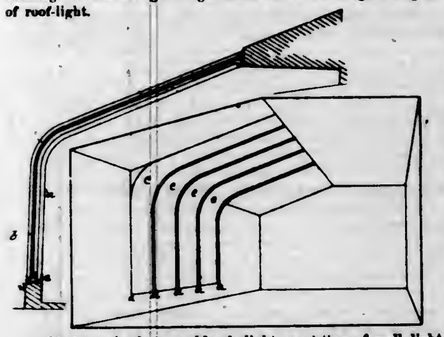


Claim.—1. An ostrich-feather trimming composed of a textile base or backing and a series of ostrich-feathers interwoven therewith, the base or backing being shrunk upon the quills of the feathers, firmly holding the same, and the vanes of the feathers being trimmed to an even length, substantially as described.

2. The process of making ostrich-feather trimmings, consisting in first cutting the ostrich-feathers into suitable lengths, then interweaving them with a textile backing, then subjecting the fabric so formed to the action of a dye-liquor, whereby the feathers are colored and the webbing shrunk upon the quills of the feathers, and finally trimming the ends of the vanes, substantially as set forth.

252,875. PHOTOGRAPHIC SKYLIGHT. GEORGE HAYNS, New York, N. Y. Filed Apr. 6, 1881. (No model.)

Brief.—The wall-light and roof-light are connected at the point usually occupied by the transom by a curved portion or light forming a continuous glass light from base of wall-light to apex of roof-light.



Claim.—A photographic skylight consisting of wall-light with plane-surface glass, roof-light, also with plane-surface glass, and angle-light of curved or bent glass, all sustained by lengthwise bars or rafters, and combined so as to constitute a continuous glass surface, without transom or cross-bar, from base of wall-light to highest point or apex of roof-light, substantially as shown and described.

252,876. GRAIN-ELEVATOR. EDWARD C. HINCKLEY, Delmar, Iowa, assignor of one-half to Le Roy Webster Parker, same place. Filed Oct. 24, 1881. (No model.)

Claim.—1. In combination with an elevator having a movable spout arranged to deliver into a series of concentric hoppers or bins, one or more additional elevators located beside the first, and provided with spouts extending beyond the end of the spout of the first elevator to other series of hoppers or bins, whereby each spout is permitted to deliver into any one of its series of hoppers without interfering with the delivery of the other.

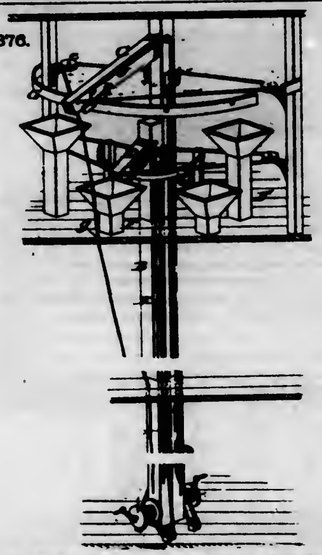
2. In combination with a movable grain-delivery spout, operating ropes or bands attached to the same, extending outward from opposite sides thereof and around pulleys or guides, and a rigid section or drum connected with the ends of said bands and arranged to simultaneously pay out one cord and take up the other, substantially as explained.

3. In combination with a movable spout and operating ropes or bands extending from opposite sides of the same, a starting-cord attached to the spout and passing through a guide at a point between the extremes of movement of said spout, as and for the purpose explained.

4. In combination with a movable spout, a latch or bolt applied directly thereto and arranged to engage with a fixed catch, whereby the spout is held firmly and accurately in position.

5. In combination with a movable delivery-spout and operating cords or bands arranged substantially as described, a rigid section provided with an indicator and arranged to move with the operating cord or band past the graduations of a fixed scale, substantially as shown.

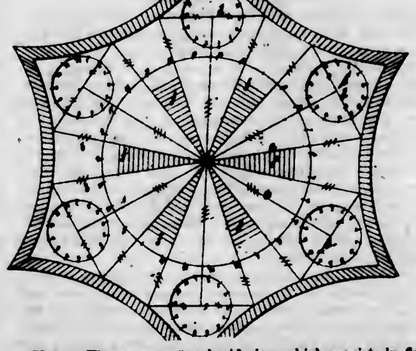
252,876.



6. In combination with the notched track G, the movable spout traveling over or under the same and provided with a latch to engage with the said track.

7. The herein-described apparatus for elevating grain and delivering it to different spouts, consisting of an elevator provided with a movable spout, a track provided with a series of notches or openings, a latch or bolt attached to the spout and arranged to engage in said openings, operating-bands attached to the spout and connected with a rigid section or a winding-drum in the manner explained, a scale, and an indicator to show the position of the spout.

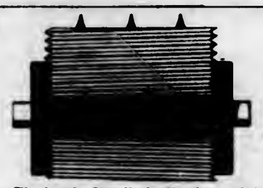
252,877. PROCESS OF EMBROIDERING. MAX HOFFMANN, St. Gallo, Switzerland, assignor to Ulr. De Gaep. Vonwiller, same place. Filed Sept. 17, 1881. (Model.)



Claim.—The process of embroidering, which consists in first boring holes in the fabric to be embroidered, then stitching threads across the same, then twining re-enforcing threads through the said holes around the threads stitched as aforesaid and drawing the re-enforcing threads along over the fabric, then connecting the threads as stitched and re-enforced in any suitable manner to form a desired piece of open-work, then stitching the portions of solid embroidery desired, and subsequently cutting away the portions of the fabric remaining between the portions of solid embroidery and behind portions of the open-work, substantially as set forth.

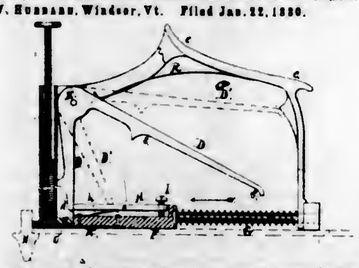
252,878. BILLIARD-TABLE ADJUSTER AND LEVELER. OLIVER P. HOOVER, Dayton, Ohio, assignor of one-half to John D. Arras, same place. Filed May 19, 1881. (No model.)

252,378.



Claim.—The herein-described adjusting and leveling device for billiard and other tables, consisting of the exterior rotating adjusting-nut and contained upper and lower bearing-plugs, which do not rotate, and the one of which is attached to the floor and the other to the table-leg, substantially as described.

252,379. MACHINE FOR SETTING GLAZIERS' POINTS. GEO. W. HUBBARD, Windsor, Vt. Filed Jan. 22, 1880.



Claim.—1. In a glazier's-point setter, the combination of the spring G, the striker F, and driving-plate K, substantially as and for the purposes set forth.

2. In a glazier's-point setter, the combination of the lever D, striker F, and driving-plate K, substantially as and for the purposes set forth.

3. The combination, with a receptacle for glaziers' points, of a driving-plate, which also forms an opening and closing bottom for the said receptacle, substantially as set forth.

4. The vibrating latch or key H, in combination with the striker F and lever D, substantially as and for the purposes set forth.

5. The adjusting-screw I, in combination with the latch or key H, striker F, and lever D, substantially as and for the purposes set forth.

252,380. DYNAMO-ELECTRIC MACHINE. CHAS. A. HUSSEY, New York, N. Y., assignor to the Hussey Electric Company, same place. Filed Sept. 7, 1881. (No model.)

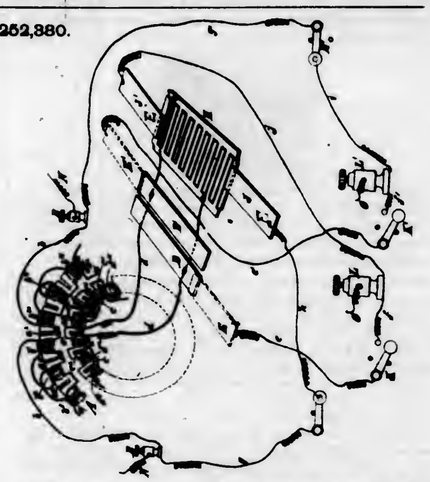
Brief.—The field and armature magnets are formed of arc-shaped portions alternately of greater and lesser radius. The field-magnet is made of a single piece and the armature of many thin pieces. The winding of the field-magnet is upon the portions of greater radius and that of the armature upon those of lesser radius, and is sufficient to fill the spaces nearly flush, thus forming two concentric multipolar magnets with poles facing each other. By means of a double commutator and shifting brushes the machine can be employed for direct or alternating currents. Switches are provided whereby it may be used either as a generator or motor. In the latter case the field-magnets are charged by a current from an external source of electricity.

Claim.—1. The combination, in a dynamo-electric machine, of a field-magnet and an armature severally having cores composed of arc-shaped portions wound with wire, intervening arc-shaped portions, and radial portions connecting the said arc-shaped portions which are wound with wire to the intervening portions, the radial portions of both the field-magnet and armature forming poles, polar extensions, or consequent points, and extending toward each other, substantially as specified.

2. A field-magnet for a dynamo-electric machine, having a core composed of arc-shaped portions wound with coils of wire, intervening arc-shaped portions of shorter radii, and radial portions which connect the two series of arc-shaped portions, substantially as specified.

3. The combination, in a dynamo-electric machine, of a field-magnet having a core made of one integral piece of metal, and an armature having a core composed of a number of pieces or plates of metal, both cores having a corresponding number of arc-shaped portions wound with wire, from which extend radial portions forming poles, polar extensions, or consequent points, substantially as specified.

252,380.



4. The combination, with a field-magnet and armature in a dynamo-electric machine, of means, substantially such as described, whereby a current of electricity may be made to traverse the coils of the field-magnet from a source outside the machine, and the circuit between the coils of wire of the field-magnet and the coils of the armature may be severed to cause the machine to produce an alternate current or currents, or the supply of electricity to the coils of the field-magnet from an outside source may be cut off and the circuit established between the coils of wire of the field-magnet and the coils of the armature to cause the machine to produce a direct current of electricity, substantially as specified.

5. The combination, with a field-magnet and armature in a dynamo-electric machine, of switches and suitable connecting-wires, whereby a current of electricity from a source outside of the machine may be made to traverse the coils of the field-magnet and the circuit between the coils of wire of the field-magnet and the coils of the armature may be severed, or the supply of electricity to the coils of the field-magnet from an outside source may be cut off and the circuit established between the coils of the field-magnet and the coils of the armature, substantially as and for the purposes set forth.

6. The combination, with a dynamo-electric machine and an outside circuit, of wires N, communicating with the wires *b* of the field-magnet, the wires *d* of the armature, the rings D D', the brushes E E', the wires *e e'*, the switches K K', controlling communication between the wires *e e'* and the outside circuit, the commutator H, to which the wires *d* of the armature also lead, the wires *g h*, the switch M, the wire *j*, the wire *g'*, the switch M', and the wire *i*, substantially as and for the purpose specified.

252,381. CORN-HUSKING PLATFORM FOR WAGONS. WESLEY HYDE, Thorn Creek Township, Whitley County, Ind. Filed Aug. 8, 1881. (No model.)



Claim.—1. The hanger B, provided with the hook I, in combination with the pivoted support O, substantially as described.

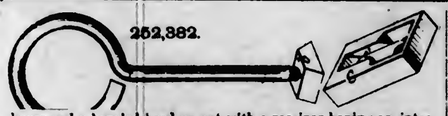
2. In a corn-husking attachment for wagons, the combination of the detachable hooked supports B B with the pivoted supports O O, substantially as described.

252,382. PATTERN-LIFTER. WILLIAM J. INNIS and PATRICK H. KANE, Oil City, Pa. Filed July 14, 1881. (No model.)

Claim.—1. A pattern-lifter composed of a handle formed of a screw-threaded single stem, in combination with a beveled nut having its lower face wider than its top, substantially as and for the purpose described.

2. The combination of a pattern-lifter handle having at its

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lower end a beveled head or nut with a receiver having an internal recess formed with rectangular sides a portion of its length and beveled sides or a dovetailed opening the balance of its length, substantially as and for the purposes set forth.

3. Ribs upon a pattern with an interior dovetail, in combination with a beveled nut upon a screw-threaded stem or handle, for the purpose of lifting the pattern from the sand, substantially as described.

252,383. TREATING TEXTILE FABRICS. PETER A. G. JUEL, Wurzen, Saxony, Germany, assignor to Schatz & Juel, same place. Filed Aug. 16, 1881. (Specimens.)

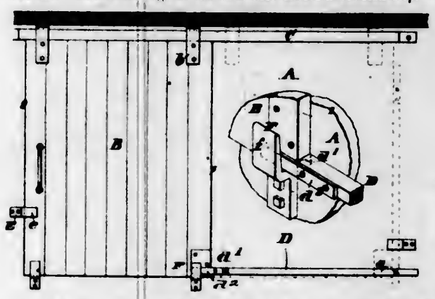
Claim.—1. A burnished metallic textile fabric consisting of a textile base and a burnished coating composed of a prepared mixture of ground metal and caoutchouc, substantially as described.

2. A burnished metallic textile fabric consisting of a textile base and a burnished coating composed of a prepared mixture of ground metal and caoutchouc, said fabric being printed in ornamental figures, substantially as described.

3. The process of producing a burnished metallic textile fabric, consisting in first coating the textile base with a prepared composition of ground metal and liquid caoutchouc, then drying the same, and subsequently burnishing the composition-coating, substantially as described.

252,384. CAR-DOOR FASTENING. CHRISTOPHER C. KILTS, Hannibal, Mo. Filed Oct. 28, 1881. (No model.)

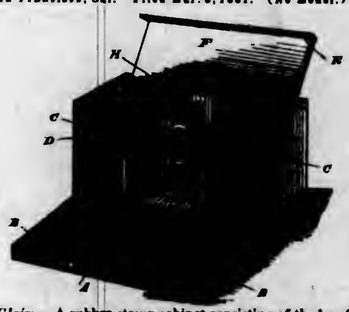
Brief.—The end of a bar pivoted to the side of the car abuts against the rear of the door when closed. A lateral projection on the end of the bar wedges between the door and a beveled clip on the car. The front edge of the door also enters a beveled clip.



Claim.—1. The combination of the side A, the door B, the bar D, having the projection d^2, and the clip F, substantially as described.

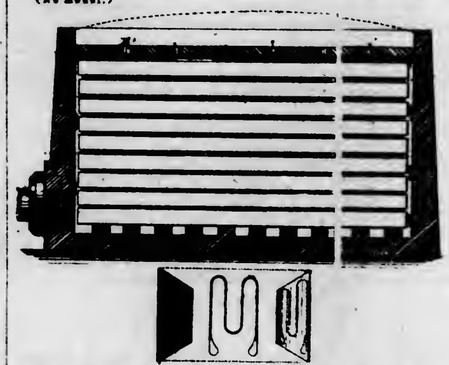
2. The combination of the side A, the door B, the bar D, having the projection d^2, and the clips E and F, substantially as described.

252,385. RUBBER-STAMP CABINET. CHARLES A. KLIENER, San Francisco, Cal. Filed Mar. 8, 1881. (No model.)



Claim.—A rubber-stamp cabinet consisting of the box C, having partitions G H, hinged side A, provided with pads B B, flanged lid F, adapted to engage with said hinged side, and springs or buffers D D, arranged between the side A and partition G, substantially as and for the purpose shown and described.

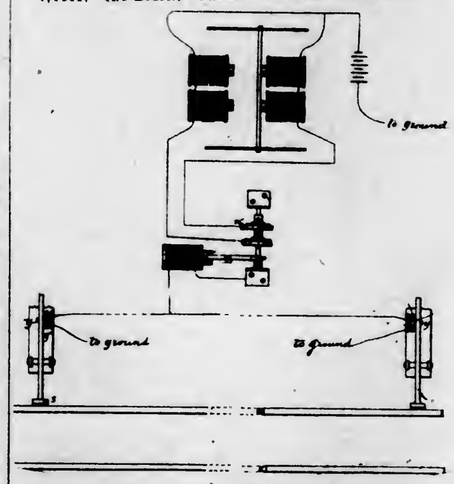
252,386. PROCESS OF MANUFACTURING CARBONS. LEWIS M. LATIMER, New York, N. Y., assignor to the United States Electric Lighting Company, same place. Filed Feb. 19, 1881. (No model.)



Claim.—1. The process of carbonizing shapes or blanks of carbonizable material, substantially as described, which consists in subjecting the same to a high temperature while inclosed in envelopes or between sheets of card-board or equivalent material whose rate of expansion and contraction is the same, or approximately the same, as their own.

2. The process of carbonizing shapes or blanks of fibrous or textile material under pressure and between sheets or envelopes of card-board or equivalent material whose rate of expansion and contraction when exposed to heat is the same, or approximately the same, as their own.

252,387. ELECTRIC SIGNAL FOR RAILWAYS. HIPPOLYTE LEBLANC and EUGENE V. A. LOISEAU, Paris, France. Filed July 7, 1881. (No model.) Patented in France Jan. 10, 1881.



Claim.—1. The combination, with the magnets of the signal apparatus, of a commutator and pedal apparatus, the commutator being connected in circuit with the pedal apparatus and arranged to connect said magnets alternately in circuit, substantially as described.

2. The combination, with a signal apparatus comprising two electro-magnets, an armature moving between said magnets and a signal-disk connected with said armature, of a commutator comprising an electro-magnet and armature, and circuit-changing de-

vices, operated by said magnet to bring into circuit one or the other of the signal-magnets, substantially as described.

3. The commutator described, comprising the shaft, with the contact-disks and insulating ratchet-disks mounted on said shaft, the two contact-springs, the electro-magnet, armature, and retractile spring, and the pawl and ratchet-wheel, arranged to turn said shaft when the armature is retracted, substantially as described.

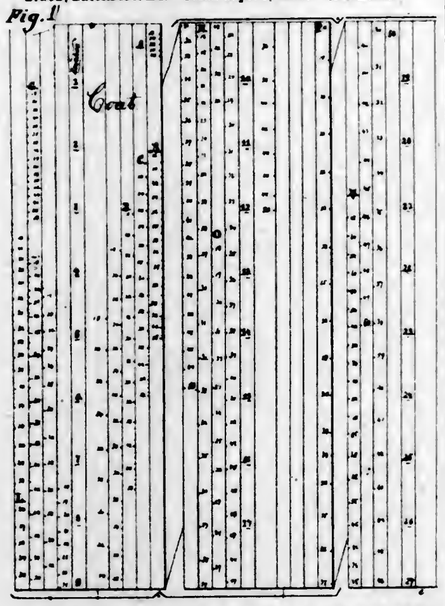
4. The pedal apparatus comprising the bellows, weight, and spring, in combination with the pedal and contact devices for making and breaking an electric circuit, said pedal and weight being disconnected from said bellows, so as to be moved by the train independently thereof, and said spring being adapted to expand the bellows when the pressure of the weight is removed, substantially as described.

5. The combination of a pedal, its weighted lever, a bellows, a fixed and a movable electrical contact, one of said contacts being carried by a spring, substantially as described.

6. The combination of a signal apparatus comprising two electro-magnets, with armatures moving between them, pedal apparatus comprising a pedal, bellows, and electrical contacts, and a commutator comprising circuit-changing devices, pawl, ratchet, retractile spring, electro-magnet, and armature arranged so that circuit-changing devices are moved step by step and are shifted when the armature is retracted, substantially as described.

252,888. CHART FOR DRAFTING GARMENTS. EMIL J. LINCK, Baltimore, Md. Filed Sept. 6, 1881. (No model.)

Fig. 1.

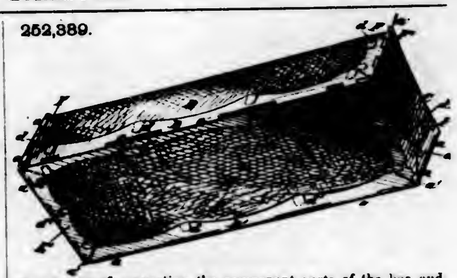


Claim.—The chart herein described for drafting coats, pantaloons, and vests, consisting of a strip of suitable material having imprinted thereon the marks and scales as shown in Fig. 1 of the drawings, adapted for use in laying off the appropriate measures for cutting, substantially as and for the purpose set forth.

252,889. BOX. WILLIAM LIVINGSTON, New York, N. Y., assignor to himself and Lewis W. Haines, same place. Filed Sept. 1, 1881. (No model.)

Claim.—1. A box comprising a bottom, sides, and ends, made of card-board, binder's board, paper, or like material, metal corner-pieces affixed thereto and provided with eyes or bearers, which are adapted to intermatch with the eyes or bearers of adjacent corner-pieces, pins extending parallel with the bottom and passing through the intermatched eyes or bearers which are located at the junction of the bottom and the ends or sides, and other pins extending at an angle to the bottom and passing through the eyes or bearers of the corner-pieces which are located at the junction of the ends and sides, the whole being so combined and organized that the said pins exact to secure the box in form, and the corner-pieces serve

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as a means of connecting the component parts of the box and strengthen and protect them at the corners, substantially as specified.

2. The combination, with the bottom, sides, and ends A B C of the box, made of card-board, binder's board, paper, or like material, of corner-pieces D D' E E' F F', secured thereto by means of claws or prongs *d d'*, and provided with intermatched eyes or bearers *a* and pins *a'*, arranged parallel with and at an angle to the bottom, and adapted to be inserted through the intermatched eyes or bearers, substantially as specified.

252,890. CAR-VENTILATOR AND DUST-ARRESTER. CHAS. C. MACCONNELL, U. S. Army. Filed Oct. 15, 1881. (No model.)

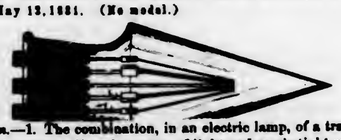


Claim.—1. A ventilator for use in car-windows, consisting of a box, A, having in combination a screen-protected air-inlet, B, in its side face, an air-outlet, a^2, in its inner edge, a partition, *a*, extending from the top of the box downward below the outlet a^2, and a dust-outlet, *c*, in the bottom of the box, substantially as and for the purposes described.

2. In an inclosed ventilator adapted for use in a car-window, the combination of a screen-protected air-inlet, an air-passage leading therefrom downward within the ventilator, a dust-escape opening in the line of downward flow of air, and an air-passage leading from the inflow-passage upward to the air outlet or discharge, substantially as and for the purposes set forth.

3. In a ventilating-box, A, the combination of screen-covered inlet B, dust-outlet *c*, an inflow air-passage leading downward from inlet B to outlet *c*, an air-passage, *e*, leading upward from the inflow-passage to a main air-outlet, and means for opening and closing the air-passage between the inlet and outlet, substantially as set forth.

252,891. ELECTRIC LAMP. HIRAM S. MAXIM, Brooklyn, N. Y. Filed May 13, 1881. (No model.)



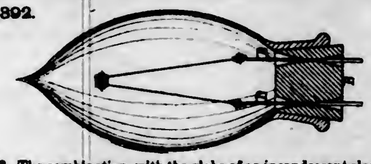
Claim.—1. The combination, in an electric lamp, of a transparent globe surrounding the source of light and an air-tight non-conducting plug or stopper closing the same and containing two or more conical steel wires or plugs ground into perforations through the material of which said stopper is composed, and in electrical connection with the carbon conductors, as described.

2. The combination, with the transparent globe of an incandescent electric lamp, of a glass stopper fitting the same by a ground joint and containing two or more conical steel wires or plugs ground into and passing through correspondingly-shaped perforations in the said stopper and suitably connected to the supporting-conductors of the carbon strip, as described.

252,892. ELECTRIC LAMP. HIRAM S. MAXIM, Brooklyn, assignor to the United States Electric Lighting Company, New York, N. Y. Filed Mar. 25, 1881. (No model.)

Claim.—1. A carbon conductor for electric incandescent lamps, composed of independent straight strips or filaments of carbon, the ends of which are connected respectively to a small mass of conducting material and to the supporting-conductors, as set forth.

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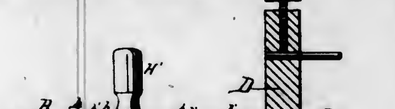


2. The combination, with the globe of an incandescent electric lamp, of an air-tight stopper of glass having partly conical perforations and conducting-wires of ductile metal contained therein, as set forth.

3. The method herein described of sealing the metallic conductors of an incandescent lamp, which consists in drawing under a high temperature the tapering ends of the same through perforations in a glass stopper, either with or without the addition of a fusible gum, as set forth.

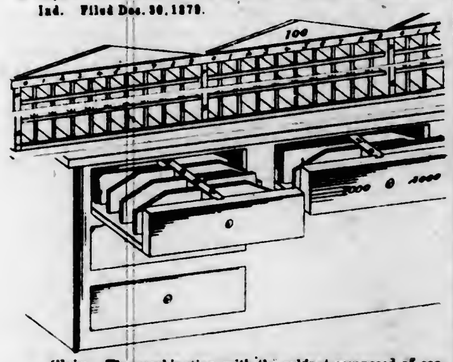
4. The ground-glass stopper B, having metallic wires D D embedded therein, and the conical indentations C C, for retaining a suitable cement or gum.

252,893. HORSESHOE. PATRICK MCCABE, Ithaca, N. Y., assignor of one-half to Howell H. Girard, Philadelphia, Pa. Filed July 18, 1881. (No model.)



Claim.—A horseshoe having the ordinary smooth upper surface and an under surface without calks, but covered with ridges, except at the heel portions, with a nail-crease extending entirely around the shoe, and with heel portions presenting flat plain surfaces sunken below the tops of the ridges, substantially as shown and described.

252,894. INDEX FILE-CASE. HIRAM E. HESS, Richmond, Ind. Filed Dec. 30, 1879.



Claim.—The combination, with the cabinet composed of sections, each subdivided into one hundred pigeon-holes, compartments, or boxes, under horizontal and vertical digital numbering, of the drawer or drawers subdivided into indexed compartments and containing sub-indexed books, cards, or other devices to facilitate search or use of the cabinet, as set forth.

252,895. ELECTRICAL SWITCH-BOARD. JOHN B. ODELL, Chicago, Ill. Filed July 29, 1881. (No model.)

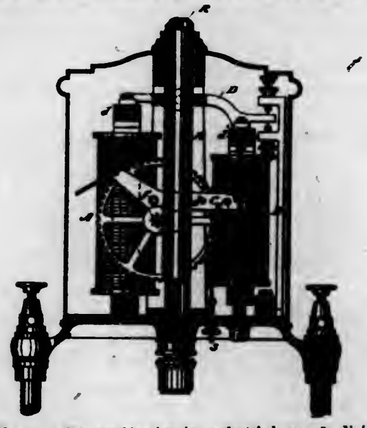
Brief.—The plugs are screw-threaded to fit both the vertical and horizontal strips of a cross-bar switch-board, whereby the plugs are prevented from being loosened by jarring the board.



Claim.—In a switch-board, the combination of strips B, provided with threaded holes *b*, and cross-strips C, provided with smaller threaded holes *c*, and plug H, provided with screw-threads b^1 and b^2, adapted to fit in the corresponding holes in said strips and cross-strips, substantially as specified.

252,896. ELECTRIC LAMP. JOSEPH OLMSTED, New York, N. Y., assignor to the United States Electric Lighting Company, same place. Filed July 26, 1881. (No model.)

Brief.—Combines a clamp and a rack-and-pinion lamp. The pinion, which is on a frame vertically movable by the main actuating-magnet, is provided with flanges, which clamp the carbon-carrier and prevent both the rotation of the wheel-work and the descent of the carrier whenever the frame is raised by the magnet



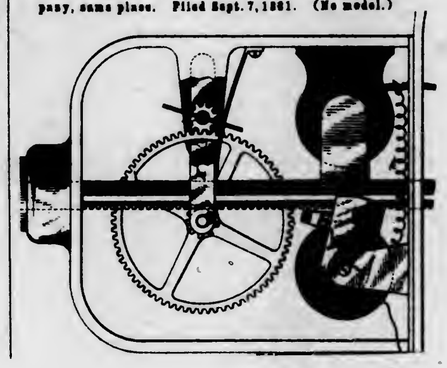
Claim.—1. The combination, in an electric lamp, of a divided or branched plate or frame controlled by one or more electro-magnets, a pinion, and one or more gear-wheels carried thereby, and a rack-bar in gear with said pinion and passing between it and the frame, so as to be locked or released by the tilting of the said frame, substantially as hereinbefore set forth.

2. The combination, in an electric lamp, of frame C, pinion E, having teeth *e* and projections or flanges *f*, rack-bar R, engaging with the pinion, a train of gears for limiting the rotation of the pinion, and one or more electro-magnets operating to move the frame for the purpose of locking or releasing the said rack-bar, substantially as hereinbefore set forth.

3. The pinion E, having teeth *e* and flanges *f f*, in combination with a rack-bar and electro-magnetic detent mechanism, as and for the purpose set forth.

4. The combination of one or more electro-magnets, A B, lever D, and armatures attached thereto with frame C, adjustably connected thereto, pinion E, having flanges *f*, rack-bar R, and a train of gears carried by frame C and operating to limit the rotation of the pinion, as and for the purpose set forth.

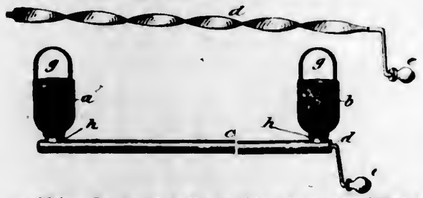
252,897. ELECTRIC LAMP. JOSEPH OLMSTED, New York, N. Y., assignor to the United States Electric Lighting Company, same place. Filed Sept. 7, 1881. (No model.)



Claim.—1. The combination, in an electric lamp, with the gravitating carbon-carrier, of a swinging frame, one or more gear-wheels carried thereby and meshing with the said carrier, a stationary detent for intercepting the tilting of the frame at a predetermined point, and an electro-magnet and movable armature in conjunction with one of said wheels, by the action of which the feed and adjustment of the carbons are effected, substantially in the manner hereinbefore set forth.

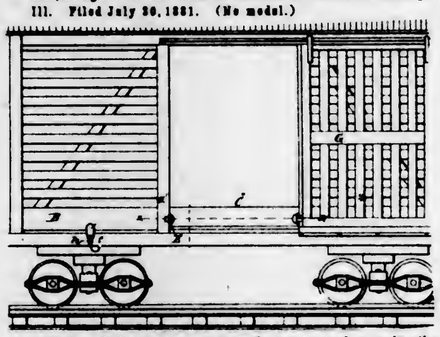
2. The combination, in an electric lamp, with the gravitating carbon-carrier, of a swinging frame, one or more gear-wheels carried thereby and meshing with the said carrier, a stationary detent for intercepting the tilting of the frame at a predetermined point, a magnet in the main circuit, and a pivoted or swinging armature therefor, wound with fine wire, forming a part of a shunt or derived circuit in conjunction with one of said wheels, and by the movement of which, caused by the varying attraction of the magnet, the feed and adjustment of the carbons are effected, substantially in the manner hereinbefore set forth.

252,398. SEED-SOWER. THEODORE PARKS, Freedom, Pa. Filed May 11, 1881. (Model.)



Claim.—In a hand seeding-machine, the combination of the long perforated tube *c*, the spiral shaft *d*, the crank *e*, and the two sacks *a b*, attached to the ends of the tube, and supporting-straps *g g*, substantially as described.

252,399. STOCK-CAR. GEORGE F. PATTERSON, Baltimore, Md., assignor of one-half to Charles C. Fairlamb, Chicago, Ill. Filed July 30, 1881. (No model.)

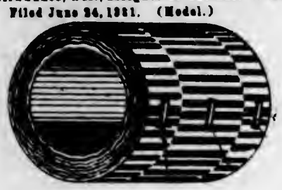


Claim.—1. In a stock-car, a shallow water-tank covering the floor of the car, whereby a body of water may be permanently retained at the bottom of the car, substantially as and for the purpose set forth.

2. In a stock-car, the car-body provided with a substantially water-tight flooring, in combination with base-boards B and doorway-strips C, both water-tight at their joints with the flooring and each other, substantially as and for the purposes set forth.

3. In a stock-car, the car-body, in combination with the base-boards B, the removable doorway-strips C, and the clamping-bolts or hooks E, substantially as described.

252,400. COVERING FOR STEAM-PIPES, &c. JAMES D. PINCH, Milwaukee, Wis., assignor of one-half to Henry Clay Bradley. Filed June 24, 1881. (Model.)

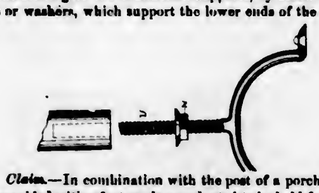


Claim.—1. A covering for pipes, boilers, &c., consisting of layers of paper so secured together at intervals as to form air-spaces, substantially as set forth.

2. The method of preparing paper coverings herein described—that is, placing layers of paper one upon the other and securing them together at intervals, as by pasting, so as to form intermediate air-spaces, and cutting through the pasted portions to divide the covering into blocks or sheets of the size required.

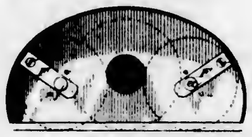
252,401. PORCH-IRON. HENRY S. STAUFFER, Mount Joy, Pa. Filed Nov. 3, 1881. (No model.)

Brief.—Porch-posts are rendered adjustable, to compensate for the settling of the foundation-supports, by screw-rods having nuts or washers, which support the lower ends of the posts.



Claim.—In combination with the post of a porch, the upright U, provided with a foot or sleeve adapted to be held fast, the screw-thread cut therein, and a nut, N, with or without a washer, substantially as and for the purpose specified.

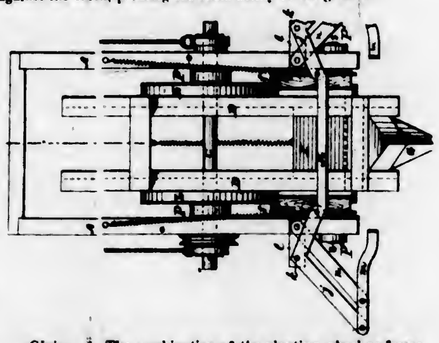
252,402. CARPET-SWEEPER. MYRON G. STOLP, Aurora, Ill., assignor to the Aurora Manufacturing Company, same place. Filed Dec. 1, 1881. (No model.)



Claim.—In a carpet-sweeper, in combination with the brush-shaft, a friction-wheel, E, pivoted on a swinging arm, F, with the center of the wheel below the horizontal plane in which the brush-shaft is pivoted, and having the outer end of such arm E pivoted to the case in such a position that this arm will form an obtuse angle with a line drawn from the center of the wheel E to the center of the brush-shaft, substantially as and for the purpose specified.

252,403. TRANSPLANTER. JOHN C. THERRY, Glyndon, Md. Filed Sept. 14, 1881. (Model.)

Brief.—The interior revolving frame carries a hollow triangular point at one or both ends. While horizontal the plant is placed in the receptacle. As it descends a pointed cover actuated by cams slides over it till, on reaching a vertical position in the trench, the cover is released and thrown back by a spring. At the same time tamping-bars are released and by springs thrown from each side against the earth, pressing the roots firmly in the ground.



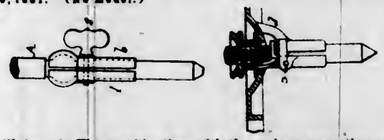
Claim.—1. The combination of the planting wheel or frame D, provided with the rigid hollow point or points G and movable face or faces I, with the cross-bar J and cam-plates K, whereby the planting-point is closed to retain the plant therein during the downward movement of said point.

2. The combination of the planting wheel or frame D, provided with the rigid hollow point or points G and movable face or faces I, with the cross-bar J and spring *b*, whereby, when the ends of the cross-bar J have passed at the lower ends of the cam-plates, the movable face will be raised to allow the plant to be deposited in the soil.

3. The combination of the disks L, secured to the shaft C, and frame or wheel D, with the pins *f*, pivoted levers *d*, links A, bell-crank levers *g* and *j*, parallel bars *n*, and presser-bars *m*, whereby the presser-bars are held back from contact with the earth during a part of a revolution of the planting wheel or frame, as set forth.

4. The combination of the disks L, provided with the notch *e*, with the pins *f*, pivoted levers *d*, links A, bell-crank levers *g* and *j*, parallel bars *n*, pressers *m*, and springs *o*, whereby the presser-arms are thrust forward in a line parallel with the surface of the ground and the soil is pressed around the root of the plant, as set forth.

252,404. CARBON-HOLDER FOR ELECTRIC LAMPS. ADDISON G. WATERHOUSE, New York, N. Y., assignor to the United States Electric Lighting Company, same place. Filed Apr. 30, 1881. (No model.)



Claim.—1. The combination, with the carbon-supporting rod A, of a carbon holder or socket consisting of the two clamping-sections *d* and *b* and screw S, the said sections being formed with a socket at one end adapted to fit the spherical end of the rod A and grooves at the other for clamping the end of the carbon, as described.

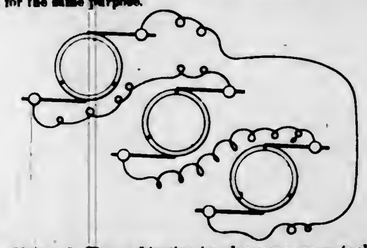
2. The combination, in a carbon-holder, of the semi-cylindrical socket *e* and clamping-section *f*, hinged together by the arms *g* and pins *c*, and clamped to the cross-bar B by means of nut *a* and screw A, passing through the bar, as described.

3. The combination, in an electric lamp, of a carbon-holder, with a cross-bar having a convex or concave seat on which the holder is clamped by means of a nut and screw, whereby the holder is capable of both lateral and angular adjustment, as described.

4. The combination of the semi-cylindrical socket *f*, having legs *l l'*, with clamping-piece *e*, having a leg, *l'*, and notched projecting arms *g*, for engaging with pins on the socket *e*, these parts being clamped together and secured to the cross-bar of an electric lamp by means of a nut, *n*, and screw *h*, attached to or forming a part of the socket *f*, substantially as shown and described

252,405. COMMUTATOR FOR DYNAMO-ELECTRIC MACHINES. ADDISON G. WATERHOUSE, New York, N. Y., assignor to the United States Electric Lighting Company, same place. Filed Apr. 3, 1881. (No model.)

Brief.—The rings are formed of two sections or plates, to which the ends of the armature-coils are connected, one of the plates extending more than half-way around the commutator, whereby the armature-coil connected with each ring, is short-circuited while passing the neutral point. As a modification, the plates are made of equal length and the brushes so arranged as to be in contact with a single plate during a portion of the revolution for the same purpose.



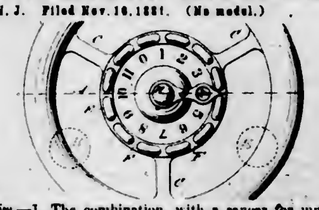
Claim.—1. The combination, in a dynamo or magneto electric machine, with the revolving armature and two or more coils wound thereon, of brushes adapted to connect the same in series, and plates forming the rings of a commutator, constructed or placed, as described, to form through any given ring a metallic connection between the brushes of the coil belonging thereto at times when the said coil is passing the neutral points, as described.

2. A commutator-ring composed of two segments to which the two ends of an armature-coil are connected, one or both of said segments being so formed as to extend more than one-half way around the said ring, substantially as and for the purpose set forth.

3. A commutator composed of a ring or a series of rings, each of which is divided into two segments, to which segments or pair of segments the opposite ends of armature-coils are connected, in combination with commutator-brushes, the relative arrangement of the said segments and brushes being such that both brushes belonging to each ring will be in contact with a single segment while the armature-coil belonging to such ring is passing the neutral points of its revolution, substantially as and for the purpose set forth.

4. In a dynamo-electric machine, two or more pairs of collecting-brushes, in combination with commutator-rings, each composed of two insulated metallic segments connecting with separate coils on the armature, and one or both of the segments of each pair being formed to extend to more than one-half way around the circumference of the ring, substantially as and for the purpose set forth.

252,406. SAUCER FOR MUGS. FREDERICK L. WEBER, Hoboken, N. J. Filed Nov. 10, 1881. (No model.)



Claim.—1. The combination, with a saucer for mugs, &c., having three projections, B B B, on its bottom for legs, and three ribs, C C C, on its upper part, for the purpose specified.

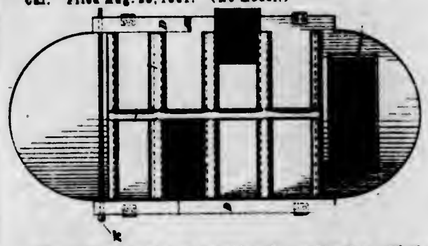
2. In a saucer for mugs, &c., the arrangement of a dead face, in combination with a movable hand, G, its center pin, H, and notches F F in circular projection E, for the purpose set forth.

252,407. BEVEL-JAW FOR VISES. HORATIO D. WEST, Stafford Springs, Conn. Filed Apr. 26, 1881. (No model.)



Claim.—The extra bevel-jaw *f*, rotarily hung on the base-block A, provided with springs *i* and bedded upon the screw-case *e*, all substantially as described.

252,408. SIGN-BOARD. GEORGE B. WILBUR, San Francisco, Cal. Filed Aug. 25, 1881. (No model.)

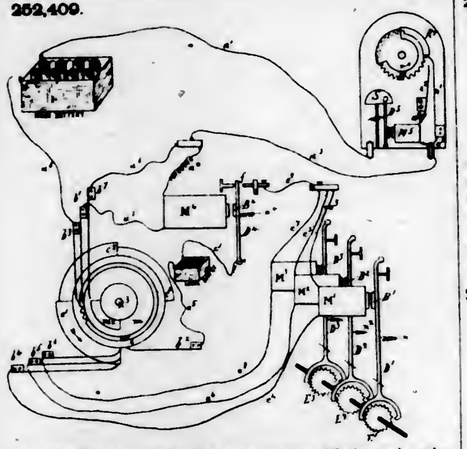


Claim.—In a sign board or holder, the combination, with the hinged stops D D, of a binding-rod, E, passed through the ends of said stops and adapted to be securely locked, substantially as and for the purpose set forth.

252,409. AUTOMATIC ELECTRIC-SIGNAL-PRINTING REGISTER. FRANK B. WOOD, New York, and HENRY J. BREWER, Brooklyn, assignors of one-fourth to Benjamin E. Valentine, Brooklyn, N. Y. Filed June 13, 1881. (Model.)

Claim.—1. In a register constructed substantially as described

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for recording electric signals, the combination of the intermittently-moving type-wheel Q′, the spring Y′, the escapement-lever D′, and its intervening mechanism for permitting an intermittent movement of Q′, the electro-magnet M′, with its armature for governing the intermittent movements of the escapement-lever, and the engaging-wheels L′ and K′, with their trains, substantially as described, for winding up the spring Y′ and returning the type-wheels to unison.

2. In a register for recording electric signals, the combination of two or more intermittently-moving type-wheels, Q′ Q², &c., with their governing and actuating attachments Y′, &c., E′, &c., D′, &c., substantially as described, with the cam-wheels c′ c², &c., and contact-springs or circuit-breakers b² b³ b⁴, &c., and electro-magnets M′ M², &c., for changing the local circuits successively through said magnets, substantially as and for the purposes specified.

3. The combination of a signal-printing register substantially as described whose intermittently-moving type-wheels are controlled by the electro-magnets M′, &c., of a local electric circuit, and a time printing-register, substantially as described, whose type-wheels are controlled by a chronometer or time-piece, with the printing-lever N, automatically operating, substantially as described, to imprint by the same impress both the electric signal and the time when it is received, substantially as specified.

4. The combination of one or more signal-boxes, A, the main line of an electric circuit, a relay, and an automatic printing-register, (forming part of a local circuit,) constructed with a series of spring register-wheels having escapements operated by the electric current for moving them, and with a counter-moving mechanism which is impelled by a force superior to that of the register-wheels, and which engages with them during a part of its revolution to throw them back to unison after the printing is done, so that the electric signal and number of the station from which it is sent will be automatically recorded and printed, and then a return signal automatically sent to the signal-box, and the parts restored automatically to their original position by the mechanism herein described or its equivalent.

5. In a signal-register having a type-wheel or series thereof, mechanism to operate the same, as described, to present the desired number or mark at a given point, and provided with a spring or springs which impel the wheel or wheels in one direction, in combination with means for reversing said register wheel or wheels and bringing them back to unison, consisting of a trip mechanism and unison-wheels impelled by a greater force than the register-wheels, having engagement with the register-wheels during only a part of their revolution, substantially as set forth.

252,410. CALIPERS. LUDLIN B. WOODRUFF, Chicago, assignor to himself and James Shaw and Albert J. Hopkins, Aurora, Ill. Filed May 18, 1881. (No model.)

Brief.—The shorter arms being set to the diameter of a circle, the circumference is shown by the distance between the longer arms.

Claim.—1. Compasses, calipers, or other similar instruments freely adjustable on a fixed pivot, on each leg of which instrument are indicated, in any suitable manner, (including offsets,) distances from the point B, the ratio between which distances on a given leg is equal to the ratio between a diameter and its circumference, substantially as and for the purpose described.

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2. Compasses, calipers, or other similar instruments freely adjustable on a fixed pivot, and provided with two sets of points, a a′ and a² a³, arranged and operating substantially as and for the purposes set forth.

3. Compasses, calipers, or other similar instruments freely adjustable on a fixed pivot, and provided with two sets of points, c c′ and c² c³, located on the same side of the pivot and arranged and operating substantially as and for the purposes set forth.

252,411. ADJUSTABLE BUGGY. WILLIAM T. ARGUS, Sydney, New South Wales, Australia. Filed Dec. 5, 1881. (No model.) Patented in Australia Sept. 29, 1879.

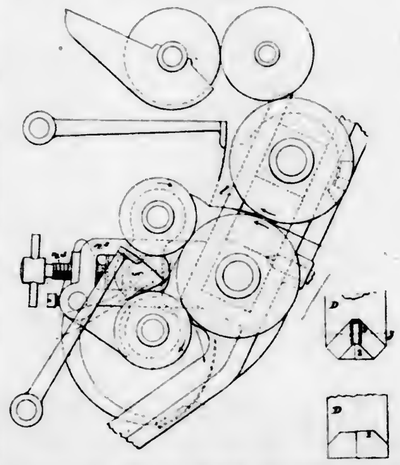


Claim.—1. In a buggy, the combination, with the seat E and its hinged back F, of the curved rods G and the brackets H, substantially as herein shown and described, whereby the said back will be supported when turned down into a horizontal position, as set forth.

2. In a buggy, the combination, with the seat E, having a hinged back, F, and the brackets H, having arms N, of the second hinged back, K, having spring-latches O, substantially as herein shown and described, whereby the said second back will be supported when raised into a vertical position, as set forth.

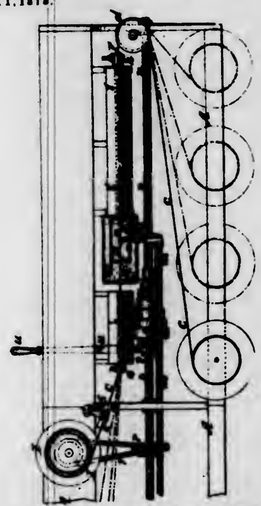
3. In a buggy, the combination, with the body D and the hinged end-board P, of the hinged extension-board Q, the curved bars R, and the standards S, substantially as herein shown and described, whereby the said hinged boards will be supported when turned down to serve as a foot-board, as set forth.

252,412. FOLDING MECHANISM FOR PAPER-BAG MACHINES. DANIEL APPEL, Cleveland, Ohio, assignor to Newton W. Taylor, same place. Filed May 11, 1881. (No model.)



Claim.—In a paper-bag machine, three rollers arranged in contact, or nearly so, and two folding or tucking blades co-operating therewith to fold or tuck the paper-bag blank twice in succession between parts of the periphery of that one of the said rollers which forms a support for the main part of the bag, and the two rollers arranged about it, which support the free or leading end of the blank in advance of the portion engaged by the blade, substantially as described.

252,413. APPARATUS FOR HARDENING AND TEMPERING WIRE FOR CARDS. GEORGE ASHWORTH and ELIJAH ASHWORTH, Manchester, County of Lancaster, England. Filed Dec. 22, 1879. Patented in England Sept. 5, 1878, and in Germany Dec. 1, 1878.

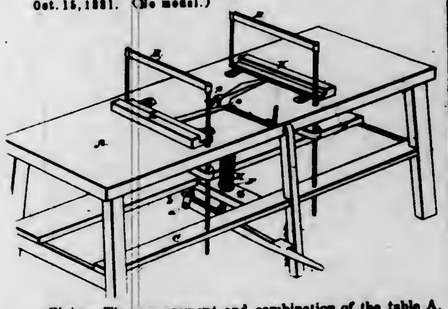


Claim.—1. A wire hardening and tempering apparatus having the following elements: a gas-burner, F, for heating the wire, a gas-burner, G, for annealing the wire, an intermediate tank containing hardening liquid, and drums for drawing the wire through the two gas-flames and the intermediate tank, all substantially as described.

2. The combination of the burner F and guides *h* with shield *i*, as set forth.

3. The within-described wire hardening and tempering apparatus, consisting of the burners F and G, cistern H, perforated at both ends, guides *h*, plate *i*, and drums I, all substantially as set forth.

252,414. BOX-COVER PRESS. EDWIN AUSTIN, Winters, assignor of one-half to William Cantelow, Vacaville, Cal. Filed Oct. 15, 1881. (No model.)



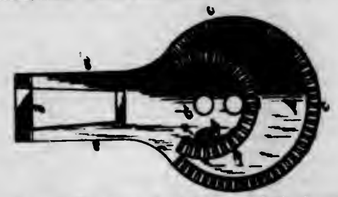
Claim.—The arrangement and combination of the table A, vertically-moving clamps or straps B B, and bed-pieces K K, said bed-pieces having different levels and adapted to slide together or apart by means of the rocking shaft L, with its cranks O and the connecting-rods m, substantially as and for the purpose herein set forth.

252,415. END-GATE FOR WAGONS. DAVID B. BAUDER, Mosomisco, Mich. Filed July 2, 1881. (No model.)



Claim.—The end-gate B, having cleats *b*, provided with the steps E, or their equivalent, and pivoted lock-levers C C D, constructed as described, in combination with the wagon-box A, having cleats *a a′*, slotted or recessed at *c*, and provided with the staples *d*, substantially as and for the purpose herein shown and set forth.

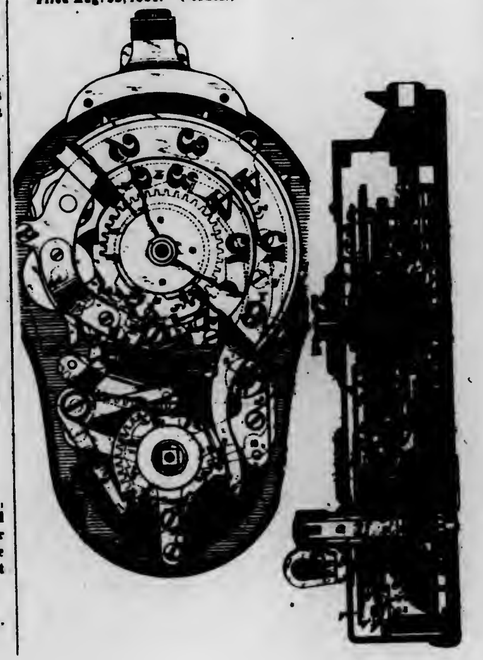
252,416. WASHING-MACHINE GEAR. OREN W. HARBAUGH, Harlan, Iowa. Filed Oct. 31, 1881. (No model.)



Claim.—1. The drive-wheel A, cast with the inwardly-projecting cogs c and handle *a a b*, and having a central bearing, B, and auxiliary bearing C, and auxiliary set of cogs D, cast with ears E E for their attachment to the face of disk A, concentric with the upper or auxiliary bearing, C, substantially as and for the purpose herein shown and described.

2. The combination, with the pinion F of a washing-machine agitator, of the vertically and horizontally adjustable drive-wheel A, provided with double bearings B and C, and with a set of detachable auxiliary cogs, D, adapted to be fastened upon the face of the disk or wheel A, concentric with its bearing C, substantially in the manner and for the purpose herein shown and specified.

252,417. FARE-REGISTER. JOHN B. BENTON, New York, N. Y. Filed Aug. 23, 1881. (Model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of the arbor or shaft, the hub provided with a connection to rotate the general register-wheels, mounted so as to turn around said arbor, the hub to rotate the trip-register wheels or disks, also mounted so as to turn around said arbor, and the ratchet-and-pawl connection between said hubs, whereby the turning movements of the hub of the trip-register in the counting direction may be communicated to the hub of the general register, while its turning movements in the opposite direction are independent and free of said general register.

2. The combination, substantially as hereinbefore set forth, of the arbor or shaft, the hub to drive the general register, mounted so as to turn upon said arbor, the actuating or sector arm fitted to turn or vibrate upon the front end of said hub, and a ratchet-wheel connected with said hub in front of said arm to drive the hub when said arm is vibrated.

3. The combination, substantially as hereinbefore set forth, of the arbor or shaft, the hub provided with a connection to rotate the general register-wheels, mounted so as to turn around said arbor, the hub to rotate the trip register wheels or disks, also mounted so as to turn around said arbor, the ratchet-and-pawl connection between said general-register and trip-register hubs, the actuating ratchet-wheel of said trip-register hub, and the actuating or sector arm having a single driving or actuating pawl to engage the teeth of said actuating ratchet-wheel, whereby the vibration or movement of said actuating-arm suffices by its single driving-pawl to actuate the trip and general registers simultaneously, or nearly so, while said trip-register may be set independently of said general register.

4. The combination, substantially as hereinbefore set forth, of the arbor or shaft, the trip-register hub, mounted so as to turn around said arbor, the actuating ratchet teeth or wheel of said hub, the sector-arm, carrying a pawl to engage said teeth or wheel to turn said hub, the units-disk, connected with the front end of said hub by a cap-plate so as to turn with it, the tens-disk, mounted so as to turn upon said hub below or in rear of the units-disk, the gearing by which said tens-disk is turned one point for each complete revolution of the units-disk, and the set-back knob upon the outside of the casing, connected with said cap-plate by a pawl-and-ratchet connection.

5. The combination, substantially as hereinbefore set forth, of the arbor or shaft, the actuating-wheel of the trip-register, turning about said arbor, the actuating or sector arm also turning about said arbor as a center, and the double-armed actuating or driving pawl of said sector-arm, one end of which engages said actuating-wheel of the register on the forward stroke of the arm to move the register in the counting process, while the opposite end of said pawl engages or strikes a stationary pin or abutment on the back stroke of the sector-arm to throw the pawl out of engagement with the ratchet-wheel, so as to afford no obstruction to the backward movement of the trip-register when reset.

6. The combination, substantially as hereinbefore set forth, of the arbor or shaft, the trip-register hub turning upon said arbor, the actuating ratchet-wheel of said hub, the driving-pawl engaging said ratchet-wheel to turn it in the process of counting, the units-disk connected with the front end of said hub, the tens-disk fitted to turn around said hub, the gear-wheel forming part of said tens-disk, the toothed wheel with which said gear-wheel meshes, the notched wheel connected with said toothed wheel to turn it, and overlapping the front face of the actuating ratchet-wheel of the hub, so as to engage a curved surface of said hub to lock the notched wheel, and the lug or pin on the front face of said actuating ratchet-wheel to engage said notched wheel to positively turn it the distance between two of its notches once for each complete rotation of said actuating ratchet-wheel.

7. The combination, substantially as hereinbefore set forth, of the trip-register disks, the actuating or sector arm to actuate said disks, and the signal-plate Q, fitted at one end to turn about a support in front of said disks and jointed at the other end to said actuating-arm, so as to move therewith.

8. The combination, substantially as hereinbefore set forth, with a trip-register and its actuator, of a pivoted lever which in one position prevents a backward resetting movement of the trip-register while freeing the actuator of the machine, while in another position it permits the register to be reset in a backward direction while locking the actuator against its counting movement or actuation.

9. The combination, substantially as hereinbefore set forth, of the trip-register, the actuating ratchet-wheel of said register, the pivoted detent-lever, the upper end of which normally engages said ratchet-wheel through the influence of a spring, and a cam controlled by a knob upon the outside of the register-casing to rock said lever to disengage it from said actuating ratchet-wheel.

10. The combination, substantially as hereinbefore set forth, of the trip-register, the actuating ratchet wheel or teeth of said register, the actuator of said register, and the pivoted lever, one end of which in one position of the lever engages said ratchet wheel or teeth to prevent back movement of the register, while the opposite end in another position of the lever engages the actuator to lock it while permitting of a resetting movement of said trip-register.

11. The combination, substantially as hereinbefore set forth, of the trip-register, the actuating or sector-arm carrying a driving-pawl to actuate said register in the counting process, the turning shaft-actuator vibrating said sector-arm by means of a gear-wheel meshing with the teeth of said sector-arm, a tongue or projection on said gear-wheel, and a locking device to engage said projection to lock the actuator from turning when the trip-register is free to be turned to zero or the starting-point.

12. The combination, substantially as hereinbefore set forth, of a register, the actuator of said register, a direction-indicator, the shifting or setting mechanism of said indicator, and a locking mechanism which permits said shifting or setting mechanism to be operated to shift or set said indicator when the actuator is in its normal position in readiness to actuate the register, while it automatically locks said shifting mechanism when the actuator is moved forward in its counting direction.

13. The combination, substantially as hereinbefore set forth, of the trip-register, the actuator of said register, the detent-lever to prevent back movement of said register, the knob or device to rock said detent-lever to permit the register to be moved backward or reset, and a locking device which in one position permits said knob or device to be moved to rock the detent-lever, while in another position it engages said knob or device and positively locks it from movement.

14. The combination, substantially as hereinbefore set forth, of the direction-indicator plate with the wheel or portion connected therewith provided with projections or surfaces to positively limit the shifting or turning movement of said indicator.

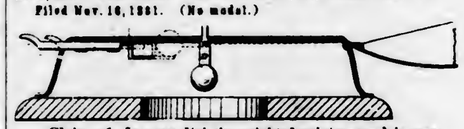
15. The combination, substantially as hereinbefore set forth, of the direction-indicator plate, the gear-wheel of said plate, the pinion-wheel meshing with said gear-wheel and turned by a knob outside the case to shift the indicator, the ratchet-wheel of said indicator, and the detent-pawl engaging said ratchet-wheel to prevent back movement of said indicator.

16. The combination, substantially as hereinbefore set forth, of the direction-indicator plate, the gear-wheel to shift said indicator, the wheel or portion provided with projections or stops to limit the shifting movement of said indicator, and the ratchet-wheel or teeth to prevent back movement of said indicator.

17. The combination, substantially as hereinbefore set forth, of the trip-register, the direction-indicator, the three-armed lever, two arms of which engage said trip-register and one of which engages the direction-indicator, the notches in said trip-register, into which the two arms which engage the trip-register are automatically forced when said register stands at zero, and the projection or stop on said direction-indicator, with which the arm which engages the said indicator connects to stop the indicator at the proper point when being reset or shifted.

18. The combination, substantially as hereinbefore set forth, of the trip-register, its actuator, the detent-lever to prevent backward movement of said register, the direction-indicator plate locked from back movement, the knob to shift said indicator and rock said detent-lever to permit the register to be reset, the wheel or portion of said indicator provided with projections or stops to limit its shifting movement, and the three-armed lever, two arms of which engage the trip-register and are forced into notches therein when the trip-register is at zero, while the third arm engages the one of the projections of the indicator to limit its movement, whereby a movement of the knob to shift the indicator releases the detent-lever from the trip-register, carries a stop of the direction-indicator against one of the arms of said three-armed lever, and necessitates resetting the trip-register to zero before the shifting of the indicator can be completed.

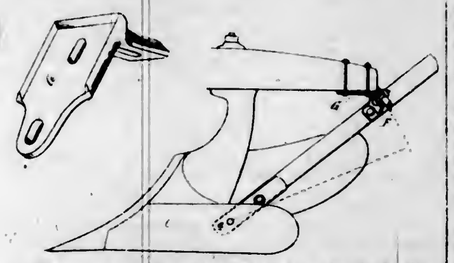
252,418. SUN-DIAL. HENRY A. BURR, Jr., Washawken, N. J. Filed Nov. 16, 1881. (No model.)



Claim.—1. In a sun-dial, the weighted pointer or rod, in combination with a slide which supports the rod in a horizontal position, substantially as shown.

2. In a sun-dial, the combination of a pivoted weighted rod or pointer, a slide for supporting the pointer in a horizontal position, a slotted dial-plate, and the compass, the parts being arranged to operate substantially as described.

252,419. PLOW. DENNIS P. BIGELOW, Albion, Mich., assignor to the Gale Manufacturing Company, same place. Filed July 8, 1881. (No model.)



Claim.—In a plow, and in combination with the handles thereof, pivoted at their lower ends, as described, the tail-iron G, adjustably secured to the rear end of the beam, and provided with a vertical slot, and curved on its outer surface on the arc of a circle drawn from the handle-pivots, and the index F, fastened between the handles and provided with a lateral slot, and having its outer surface curved to correspond with the adjoining surface of the tail-iron, substantially as and for the purpose specified.

252,420. FIRE-KINDLER. JOSEPH W. BLAISDELL, Brooklyn, N. Y. Filed Dec. 9, 1881. (No model.)



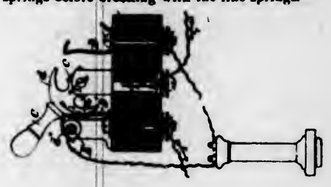
Claim.—1. As an improved article of manufacture, a fire-kindler made substantially as herein shown and described, and consisting of a bag containing combustible material, one end of the bag being twisted, sealed, and covered with an inflammable coating to form a wick, as set forth.

2. The combination, with the bag A, of the lighting-wick C, made in one with the bag material, and coated and sealed with resin or other suitable inflammable material, substantially as set forth.

3. The method herein described of sealing fire-kindler bags and providing the same with lighting-wicks, which consists in twisting the mouth part of the bag and then sealing the twisted portion by dipping the same in molten resin or other suitable material, as set forth.

252,421. SWITCH FOR TELEPHONE-EXCHANGES. HENRY W. BUCKINGHAM, Providence, R. I. Filed July 23, 1881. (No model.)

Brief.—The object of this device is to enable the operator to put his telephone in circuit with subscribers without breaking the line. It consists of a series of swinging jacks, one for each line, and connected therewith, a series of contact-springs through which the lines are continued, a bar forming one terminal of the telephone-circuit and forming a common anvil for the line-springs, and a series of springs connected with the other terminal of the telephone-circuit. The jacks are normally in contact with the line-springs, forcing them from their anvil. Upon swinging the jacks to connect in the telephone contact is made with the telephone-springs before breaking with the line-springs.



Claim.—1. As an improved article of manufacture, a fire-kindler made substantially as herein shown and described, and consisting of a bag containing combustible material, one end of the bag being twisted, sealed, and covered with an inflammable coating to form a wick, as set forth.

2. The combination, with the bag A, of the lighting-wick C, made in one with the bag material, and coated and sealed with resin or other suitable inflammable material, substantially as set forth.

3. The method herein described of sealing fire-kindler bags and providing the same with lighting-wicks, which consists in twisting the mouth part of the bag and then sealing the twisted portion by dipping the same in molten resin or other suitable material, as set forth.

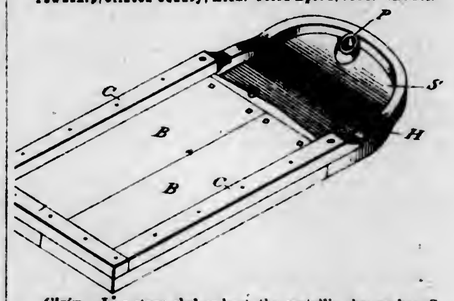
Claim.—1. A supplementary telephone-switch comprising a series of swinging jacks or levers of conducting material adapted for connection with separate subscribers' circuits, a metallic spring-contact on each of two opposite sides of each of said jacks, a common conductor with which all the spring-contacts on one side of the series of jacks make electrical connection when their respective jacks are in connection with the opposite contacts, but from which conductor they are separated when they are themselves in electrical connection with the jacks, the construction of the jacks being such that they make connection with the contacts toward which they are moved before breaking connection with those from which they are moved, substantially as described.

2. The telephone-switch herein described, consisting of the swinging jack C, arranged for connection to the subscriber's line, and provided with the arms *d* and *d'*, the springs D and D', arranged for connection respectively with a telephone and a switch-board, and the rod E, arranged to be put in or out of connection with spring D' by the action of the jack, and to be connected also with the telephone, substantially as described.

3. The combination of the jack C, provided with the arms *d* and *d'*, the springs D and D', and rod E, the said spring D' being arranged to be driven out of and brought into connection with the rod by the action of the jack, but to be in connection with said rod and jack during a portion of the movement of the jack in contact with the other spring, substantially as and for the purpose set forth.

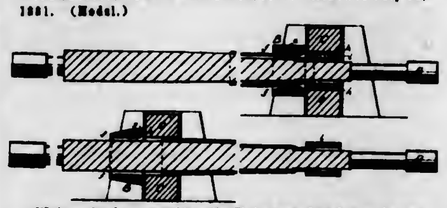
4. The supplementary telephone switch-board provided with a series of jacks, the two series of springs arranged for alternate connection with said jacks, and the rod E, substantially as described, one series of springs being electrically connected with each other and the others arranged for individual or separate connection with and disconnection from the rod by the action of the jacks, substantially as and for the purpose set forth.

252,422. STONE-SLED. VAN RENSSELAER T. BRIGGS, De Witt Township, Clinton County, Mich. Filed Apr. 4, 1881. (Model.)



Claim.—In a stone sled or boat, the metallic shoe or bow S, having outer rim, H, hitching-hole P, and cross-bar O, to form the bow part of a stone-sled, in combination, with straight planks B B and side rails, C C, substantially as specified.

252,423. DEVICE FOR DRAWING METAL TUBES. EDWIN B. BUCKINGHAM, Brookline, assignor to the American Tube Works, Boston, Mass. Filed Jan. 26, 1877. Renewed July 14, 1881. (Model.)

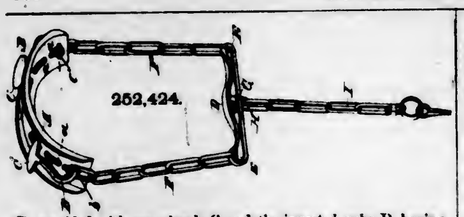


Claim.—1. An expanding die, B, in parts *b* and *c*, each made of metal capable of expanding and to abut or interlock, as at *d*, substantially as and for the purpose described.

2. The combination, with a mandrel, a die, and a head-block for drawing tubes, of a loose collar, *l*, which is on the mandrel and outwardly is adapted to fit the head-block, substantially as and for the purposes described.

252,424. CATTLE-TIE. AUGUST BUSSLL, Grantsburg, Wis. Filed June 28, 1881. (No model.)

Claim.—1. A cattle-tie comprising the yoke A, having hooks

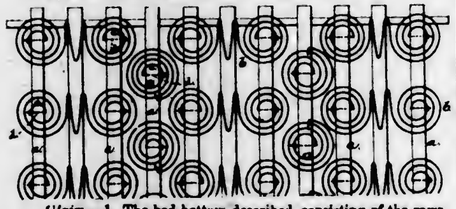


B, provided with cross-heads C, and the inverted yoke D, having eyes E E, chains F F, and swiveled bolt G, provided with the chain I, constructed and combined substantially as and for the purpose herein shown and described.

2. A cattle-tie composed of the yoke A, U-shaped in cross-section, and having a series of slots, *a a*, detachable and adjustable hooks B, having cross-heads C C', and inverted yoke or cross-bar D, provided with the end chains, F F, and swiveled middle chain, I, substantially as and for the purpose herein shown and set forth.

3. The combination, in a cattle-tie, of a yoke, U-shaped in cross-section, and having T-shaped end hooks, with a bottom yoke or cross-bar, having end chains adapted to be adjusted upon said hooks, substantially as and for the purpose herein shown and specified.

252,425. SPRING BED-BOTTOM. DUDLEY L. CAMPBELL, Denver, Colo. Filed Dec. 10, 1881. (No model.)



Claim.—1. The bed-bottom described, consisting of the rows of single springs *a* and of twin springs *b*, arranged lengthwise of the frame, and alternately with said single springs, thereby massing the supporting-spirals under the heaviest portions of the body, substantially as specified.

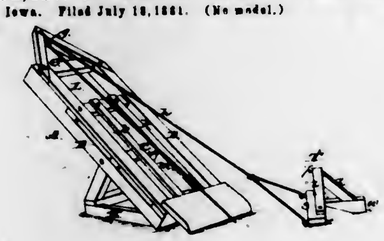
2. The combination, with the slat *a* and the base-coil *c* of the spiral spring thereon, of the clamping-arm *d*, extending under the slat and having a downwardly-projecting end, *g*, and the looped-wire fastening *e*, connecting said end to the base-coil, substantially as specified.

252,426. THRASHING-MACHINE TOOTH. LUCIUS CARRIER, Providence, R. I. Filed June 13, 1881. (No model.)



Claim.—The thrashing-machine tooth A, made of tough iron and having its forward upper portion provided with the re-enforce B, consisting of a plate of steel folded to fit over the upper portion of the front edge and along both sides of the upper front portion of the tooth, said re-enforce being secured in place by a rivet passing through both its side portions and the portion of the tooth between them, substantially as described.

252,427. HAY-STACKER. LEONIDAS W. CARSON, Madison, Iowa. Filed July 18, 1881. (No model.)



Claim.—The inclined frame A, having the guide-tracks *k k*, forming the way *m*, and having its upper portion extending beyond the base, with the opening L in such overhanging portion, in combination with pulley *g*, rope A, and drag T, having body *s* and guide or rudder *w*, all arranged to operate as and for the purpose set forth.

252,428. CAKE-PAN FRAME. WILLIAM J. CASSIDY, Portland, Conn. Filed Oct. 14, 1881. (No model.)



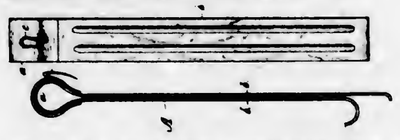
Claim.—1. The pan B, formed with the indentations *c*, in combination with the frame A, formed with the lips *b*, substantially as described.

2. The pan B, formed with the rim *d* and indentations *c*, in combination with the frame A, formed with the lips *b*, and the annular depression *e*, substantially as described.

252,429. SUBSTITUTE FOR COFFEE. LUIGI CHIOSSA, Cervignano, Austria, assignor to Arno Behr, Jersey City, N. J. Filed Aug. 8, 1881. (No specimens.)

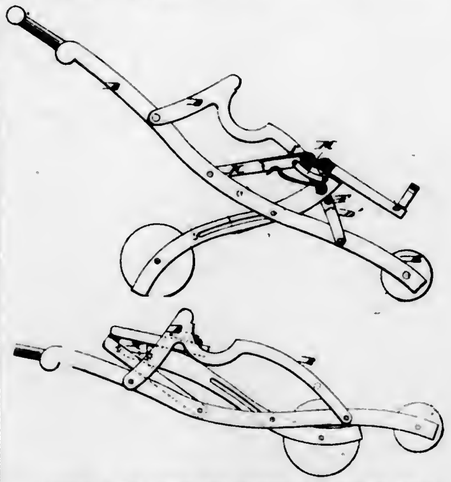
Claim.—As an improved article of diet, the germs and hulls of maize isolated from the grain and from each other, and respectively roasted to a full brown color for use, either separately or mixed together in any desired proportions, as the base of a decoction or infusion, substantially as herein set forth.

252,430. BARBER'S PAPER-CLIP. MOSES COHEN, Hallettsville, Tex. Filed Nov. 10, 1881. (No model.)



Claim.—The barber's paper-clip A, bent to form a spring at *a*, and having its straight portions *b b* corrugated longitudinally, whereby the corrugations of said portions shall fit into each other, and provided with a suitable hook, substantially as and for the purpose specified.

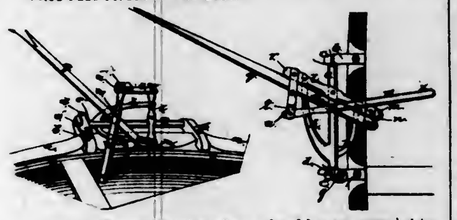
252,431. WHEEL OR NURSERY CHAIR. CLAUDIUS O. COLLIGNON, Harrington Township, Bergen County, N. J. Filed June 8, 1881. (No model.)



Claim.—1. The folding chair adapted to be converted into a child's carriage or rolling chair, and consisting essentially of two parts, one embracing the front legs, back, arms, hinged seat, and front and foot boards, and the other consisting of the hind legs, formed with grooves receiving pins on the front legs, and connected with the seat by pivoted braces, substantially as described.

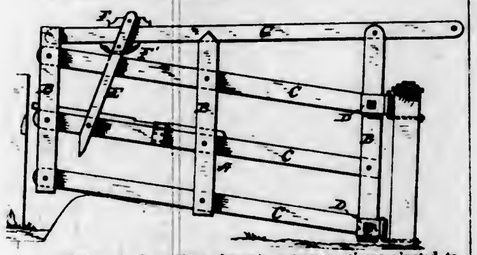
2. The combination, in a folding chair convertible into a child's carriage or rolling chair, of the front legs extended to form the sides of the back, with the arms D, extended down to constitute braces D', secured to the front legs, the round F, connecting the said braces, the hind legs formed with grooves receiving pins on the front legs, and the metal braces M, pivoted to the hinged seat and to the hind legs, substantially as described.

252,432. ROWING-GEAR. LEWIS A. COOK, Hanover, Mich. Filed June 11, 1881. (No model.)



Claim.—The combination of oar *g*, hand-lever *e*, swiveled together, rock-shaft *c*, rest *h*, and brace connected to the shaft and extending forwardly, connecting-rod *e*, and coupling-strap *n*, as set forth.

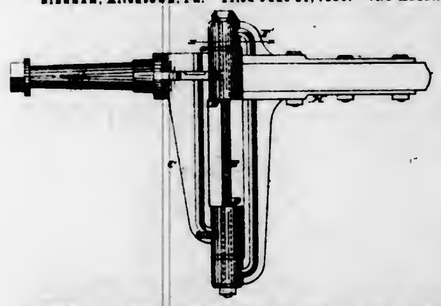
252,433. GATE. NEWTON O. COOLEY, Corning, Iowa. Filed Sept. 27, 1881. (No model.)



Claim.—1. In a pivot slat-gate, a loop or stirrup pivoted to one of the central slats, and provided with templets pivoted in its upper end capable of receiving between them and engaging with a lifting-bar pivoted in the hinge-post of the gate, substantially as described.

2. The improved pivot slat-gate consisting of the vertical bars B, the pivoted slats C, the loop E, with the templets F F', and the pivoted lifting-bar G, all arranged and operating in the manner as described.

252,434. TURNING-GEAR FOR VEHICLES. PETER B. CUNNINGHAM, Allentown, Pa. Filed June 21, 1881. (No model.)



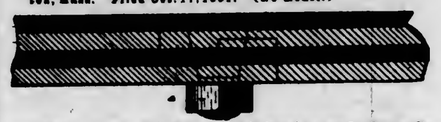
Claim.—1. The turning portion of the axle, consisting of the journal and bosses, and a perpendicular web, C, which connects the journal and bosses and projects outwardly from the bosses, substantially as and for the purpose set forth.

2. The stationary portion of the axle, consisting of two separate parts, each formed of a boss, an inwardly-projecting web, and an inwardly-projecting iron, one part being above and the other below the stationary axle, and both irons bolted or otherwise secured thereto, substantially as and for the purpose set forth.

3. The stationary portion of the axle, provided with gear which is reversibly connected to the gear of the turning portion, whereby the gear is adapted both for high and low-down springs and bodies of vehicles, as stated.

4. The turning portion consisting of the journal, perpendicular web, and bosses, in combination with the two-part stationary portion consisting of the bosses, perpendicular web, and horizontal irons or flanges, the two webs projecting from the respective bosses on opposite sides of the axial bolt C, substantially as and for the purpose set forth.

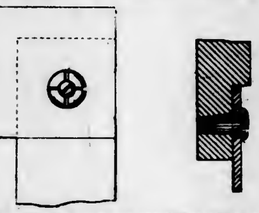
252,435. BURGLAR-PROOF SAFE. GEORGE L. DAMON, Boston, Mass. Filed Oct. 17, 1881. (No model.)



Claim.—1. As an improvement in burglar-proof safes, vaults, doors, and like work, the combination of rabbet or tongue-and-groove joints, with conical bolts or rivets passed through both members of said joints for fastening the same, substantially as described.

2. In burglar-proof safes, vaults, or like work, the combination of plates put together with an undercut scarf or double rabbet and conical bolts or rivets passing through both members of the respective joints, substantially as described.

252,436. METALLIC TRY-SQUARE. SAMUEL DARLING, Providence, R. I. Filed Sept. 14, 1881. (No model.)



Claim.—1. A try-square consisting of the metal stock gained at one end to receive the metal blade, and having the blade secured thereto, substantially as described.

2. A try-square having its metal stock gained at one end, a steel blade, and the double bolt by which the two are secured together, substantially as described.

3. In combination with the steel stock of a try-square gained at one end and having a portion of its screw-hole enlarged on the side toward the shoulder, the blade adapted to fit the gain, and having the hole for the fastening-screw enlarged on the side away from the shoulder, and an expansive bolt, all substantially as described, and for the purpose set forth.

4. The double bolt consisting of a hollow bolt split at the head end and having an exterior and interior screw at the other end, and a center piece provided with a screw at one end, fitting the internal screw of the hollow bolt for the purpose of expanding it, substantially as described.

252,437. CIGARETTE-PAPER. AUGUSTUS V. D'COSTA, Matanzas, Cuba. Filed June 20, 1881. (No model.)

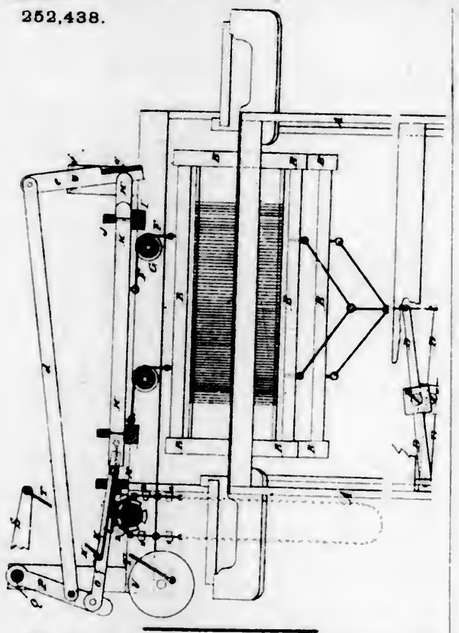


Claim.—As an improved article of manufacture, a cigarette-paper having applied to one of its edges a composition capable of igniting by friction, substantially as and for the purpose set forth.

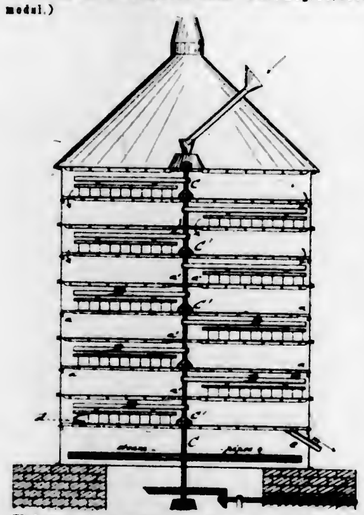
252,438. SHEDDING MECHANISM FOR LOOMS. JOSEPH DENTON, Paterson, N. J. Filed June 11, 1881. (No model.)

Claim.—In a loom, the combination, with the heddle-slides H and the crank-wheel U, the connecting-rod T, the rock-shaft Q, and the rigid arms S P, of the connecting-rods *d*, the levers *e*, and the step-board *g*, substantially as herein shown and described, whereby the inward movement of the heddle-slides is controlled, as set forth.

252,438.



252,439. APPARATUS FOR DRYING COFFEE-BEANS. WM. A. DIESELDORFF, Coban, Guatemala. Filed Aug. 16, 1881. (No model.)

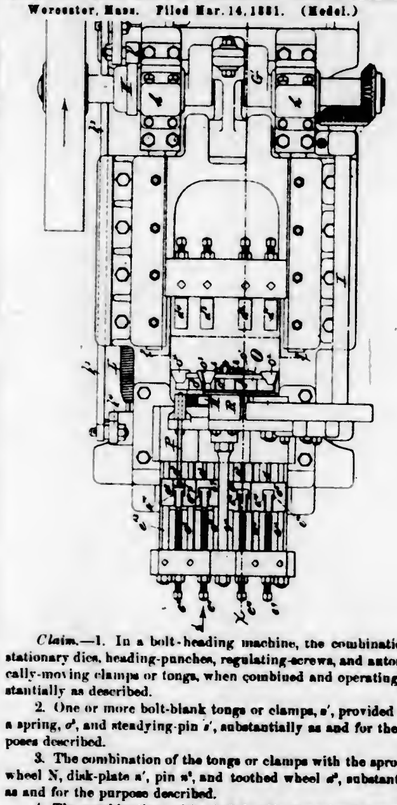


Claim.—1. In a coffee-drying apparatus, a closed cylinder provided with a series of interior shelves having alternate central and circumferential passages, the stirring mechanism composed of a main radial arm, an auxiliary arm, connecting screw-bolts and spacings, flanged stirrer-blades, and main shaft, in combination with the rake and means for heating, substantially as described.

2. In a coffee-drying apparatus, a closed cylinder provided with a series of interior shelves having alternate central and circumferential passages, in combination with the stirring mechanism D D' D² *b b'* and shaft C, substantially as described.

3. In a coffee-drier, the combination, with the cylinder and shelves, of the stirring mechanism, the conical stop-disks, means for heating, rake-hook *d*, and discharge-pipe, substantially as described.

252,440. BOLT-HEADING MACHINE. JOHN S. DUCKWORTH, Worcester, Mass. Filed Mar. 14, 1881. (Model.)



Claim.—1. In a bolt-heading machine, the combination of stationary dies, heading-punches, regulating-screws, and automatically-moving clamps or tongs, when combined and operating substantially as described.

2. One or more bolt-blank tongs or clamps, *s'*, provided with a spring, s^3, and steadying-pin *s'*, substantially as and for the purposes described.

3. The combination of the tongs or clamps with the sprocket-wheel N, disk-plate n', pin n^3, and toothed wheel n^2, substantially as and for the purpose described.

4. The combination, with a bolt-heading punch, of the cup or conical shaped mouthed tongs or clamps *o'*, substantially as described.

5. The combination, with plunger *e'*, plunger-slide e^2, plunger-lever k^{14}, and operating-connections, of regulating-screw e^3, substantially as and for the purposes set forth.

6. The combination, with rotating sprocket-wheel N, wheel O, and clamp *o'*, of discharger I', substantially as described.

7. The combination, with a series of plunger-levers, k^{14} k^{15} k^{16} k^{17}, provided with slots k^{18}, of a series of slides, e^1, e^2, e^3, and e^4, and a series of operating-arms, k^7, substantially as and for the purposes set forth.

252,441. BRACELET AND CLASP. WILLIAM C. EDEN, Newark, N. J. Filed Nov. 19, 1881. (No model.)

Brief.—The parts of the bracelet are swiveled. A stop at the joint limits the movement. A spring holds the bracelet in a closed position.

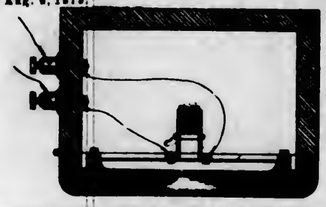


Claim.—1. In a bracelet, the combination of its rigid portions A B with the spring *i*, and with the stops *e* and *h*, all arranged so that the parts A B are swiveled together and have an opening movement that is arrested by said stops, substantially as specified.

2. In a bracelet, the combination of the swiveled parts A B with the spring *i* and stops *e h* and *f g*, for operation substantially as herein shown and described.

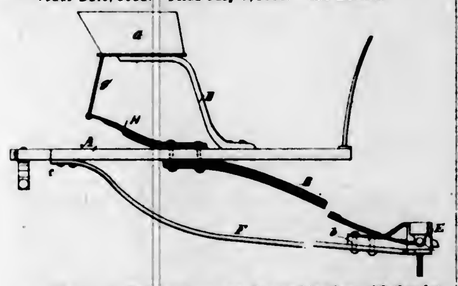
3. In a bracelet, the combination of the swiveled parts A B with the shoulder *b*, having stops *g* and *h*, with the tube C, carrying stops *f* and *e*, and with the spring *i*, substantially as specified.

252,442. TELEPHONE. THOMAS A. EDISON, Menlo Park, N. J. Filed Aug. 6, 1879.



Claim.—The combination, in a telephone, of a diaphragm, two spring-arms attached to the same, one of which is insulated, a carbon button between the said arms, a contractile spring applied to the arms, and the circuit-connections, substantially as set forth.

252,443. SPRING-WAGON. GEORGE A. ELLIOTT, North Grosvenor Dale, Conn. Filed July 9, 1881. (No model.)

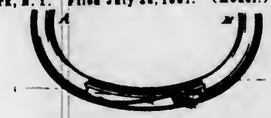


Claim.—1. In a spring-wagon, the combination, with the platform A and the middle spring, F, extending from the rear of platform to the bolster, of the side springs, B B, fastened to platform just behind the seat-risers D and at the other end shackled to the under side of the front bolster, as shown and described.

2. The combination, with the bolster E, of the short reach *b* and the spring F, fastened under it and to the platform, as described, to support said bolster in place without connecting it by a reach with the rear axle.

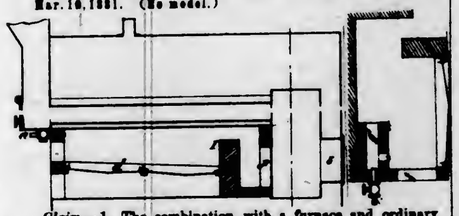
3. The combination of the seat G, supported in front by risers D, with the braces *g* and springs H, arranged as shown and described.

252,444. SPRING-HINGED BRACELET. ABRAHAM H. ENGEL, New York, N. Y. Filed July 28, 1881. (Model.)



Claim.—In a spring-hinged bracelet, the combination, with the parts A B and spring G, of the beveled lug F, substantially as herein shown and described, whereby the parts of the bracelet will be held in position both when opened and when closed by the tension of the said spring, as set forth.

252,445. BOILER-FURNACE. WILLIAM ENNIS, Glen Cove, N. Y.; Phebe L. Ennis, Administratrix of said William Ennis, deceased, assignor of one-third to Wright Duryea, same place, and one-third to William B. Taylor, Brooklyn, N. Y. Filed Mar. 10, 1881. (No model.)

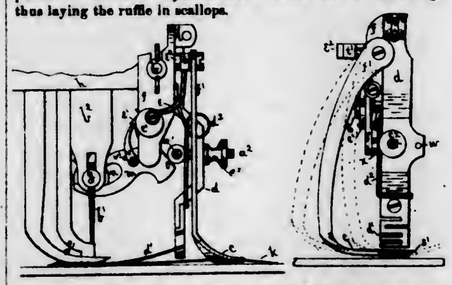


Claim.—1. The combination, with a furnace and ordinary bridge-wall, of a hanging bridge projecting downward from the top of the furnace, behind the ordinary bridge-wall, a bridge extending across the upper front part of the furnace, forming communicating upward and rearward passages, said rearward passages being above the lower edge of said hanging bridge, and a pipe or pipes for injecting steam into said rearward passages, substantially as and for the purpose specified.

2. The combination, with a steam-boiler having one or more cylindric flues, in which are furnaces and the ordinary bridge-walls, of an annular bridge fitting in each flue in rear of the ordinary bridge-wall, and having an opening which is nearer the bottom than the top thereof, and a pipe for injecting steam entering the furnace and terminating above the top of the opening in said annular bridge, substantially as and for the purpose specified.

252,446. RUFFLING OR PLAITING ATTACHMENT FOR SEWING-MACHINES. EDGAR D. FELLOWS, Watertown, N. Y., assignor to the Davis Sewing Machine Company. Filed June 27, 1881. (Model.)

Brief.—The guide which carries the strip to be ruffled or plaited is vibrated slowly from side to side of the line of sewing, thus laying the ruffle in scallops.



Claim.—1. The combination of the ruffler with a reciprocating strip-guide, both in one frame or attachment to a sewing-machine, substantially as and for the purpose described.

2. A strip-guide having a pendulous motion across the line of sewing, in combination with the ruffler of a sewing-machine, substantially as and for the purpose described.

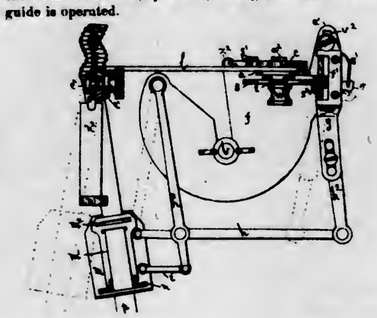
3. The guide *c* and arm *d*, in combination with cam-lever *m*, adapted to be connected with and operated by sewing-machine mechanism, substantially as and for the purpose described.

4. The guide *c*, rock-shaft *i*, having arms *f'* and e^2, connecting-rod *e*, wheel *e'*, ratchet-wheel *e'*, and pawl *e*, in combination with lever *m*, adapted to be connected with and operated by sewing-machine mechanism, substantially as and for the purpose described.

5. In combination with an attachment-frame, *f*, the guide *c*, rock-shaft *i*, having arms *f'* and e^2, rod *e*, ratchet-wheel *e'*, pawl *e*, lever *m*, and arm *d*, substantially as and for the purpose described.

252,447. RUFFLING OR PLAITING ATTACHMENT FOR SEWING-MACHINES. EDGAR D. FELLOWS, Watertown, N. Y., assignor to the Davis Sewing Machine Company. Filed July 2, 1881. (Model.)

Brief.—The guide which carries the strip to be plaited is moved slowly from side to side of the line of sewing in an arc of a circle whose center is at or near the needle, thus forming the plaited or ruffled strip into scallops, which may be varied by changing the form of the cam, by which, through suitable connections, the guide is operated.



Claim.—1. A cloth-guide having reciprocating motion across the line of sewing in an arc of a circle whose radius is in line, or approximately in line, with the needle, in combination with the ruffler, said guide being adapted to be connected with and operated by sewing-machine mechanism, for the purpose of forming scalloped plaiting, substantially as described.

2. A cloth-guide having reciprocating motion across the line of sewing and adapted to be connected with and operated by sewing-machine mechanism, in combination with the ruffler and with a cam to determine the shape of the scallops, for the purpose of forming scalloped plaiting, substantially as described.

3. The ratchet-wheel *c* and its pawl and cam *s*, or their equivalent, in combination with guide *m* and levers and bars arranged intermediate the guide and ratchet, to transmit to the guide a reciprocating motion in an arc of a circle whose center is at the needle of the sewing-machine, substantially as described.

4. The spring s^3, having one end attached to pawl *c'* and the other and lower end to frame *f*, in combination with pawl *c'*, ratchet *c*, lever *l*, and hook *c'*, said hook being adapted to engage the needle-nut *b'*, substantially as described.

5. The parallel arms h' h^3, pivoted to frame *f* in line with needle e^3, in combination with guide *m* and the bar *h*, pivoted to said arms and parallel with said line, substantially as described.

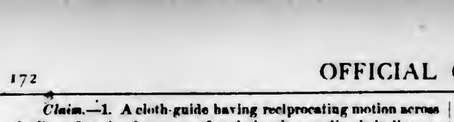
6. The parallel arms h' h^3, pivoted to frame *f* in line with needle e^3, in combination with guide *m* and bars *h* and *i*, the bars *h* and *i* being parallel with each other and with said line and pivoted to the guide and to arm h', and bar *h* being also pivoted to arm h^3, substantially as described.

7. The slotted adjustable lever *g* and frame *f*, slotted at v^3, in combination with cam *s* and the pivoted arm h^3, substantially as described.

8. The adjustable lever *g*, provided with sliding roller *s'* and its shaft s^3, in combination with cam *s* and pivoted arm h^3 and frame *f*, substantially as described.

9. The lever *l*, provided with hook *c'*, pawl *c'*, ratchet *c*, cam *s*, roller *s'*, lever *g*, spring s^3, arms h' h^3, bars *h* and *i*, and guide *m*, all attached to frame *f*, in combination with the ruffler, and adapted to be connected with and operated by sewing-machine mechanism, substantially as described.

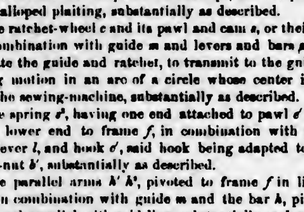
252,448. PISTOL AND CARBINE-HOLDER. LOUIS S. PLATAG, Pittsburg, Tex. Filed Nov. 16, 1881. (Model.)



Claim.—1. The combination of the belt A, the plate B, secured thereto, the spring C, having prongs *c c*, made fast to plate B and adapted to hold the arm D, with its button *g*, as shown and described.

2. The combination of the prongs *c c*, upturned at the ends, and the plate B, cut away to allow the passage of the button, as shown and described.

252,449. PISTON-VALVE. WILLIAM FOLEY, Keokuk, Iowa. Filed Oct. 15, 1880. (Model.)



Claim.—1. The combination of the round or cylindrical piston-head C, formed of two pistons *c c'*, with a connecting-neck, c^3, having steam-passage c^4, extending through the neck and pistons, and the steam-chest B, formed with induction-port and openings *a e* at bottom, extending up the sides of the steam-chest, as set forth.

2. The combination of the round or cylindrical piston-head C and the steam-chest B, formed with openings *i i a e* at bottom, and extending up the sides of the steam-chest, as set forth.

3. The combination of the valve-stem F, having T-head *f*, and piston *c*, having lugs *g g*, the said stem and head adapted to fit in a suitable recess formed between lugs or shoulders *g g*, to permit the free descent of the piston-head as the valve wears and to prevent its turning in the steam-chest.

252,450. PISTON-VALVE. WILLIAM FOLEY, Keokuk, Iowa. Filed May 31, 1881. (Model.)

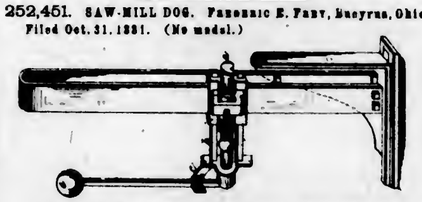


Claim.—1. Cylinder-valve working in a valve-chest provided with suitable induction and eduction ports, and composed of two heads, each containing a live-steam chamber and an exhaust-steam chamber separated from each other and closed upon the outer sides by packing-rings encircling the head.

2. The combination, in a cylinder slide-valve, of the duplicate steam-ports *f f'* and induction-ports *h h'* at each end of the cylinder, the two heads G G, each having three packing-rings, a live-steam chamber, *g*, and an exhaust-chamber, *g'*, connected by a duct, g^3, with the central exhaust-chamber, I, substantially as and for the purpose set forth.

3. The combination, in a valve-chest, of the induction-port L, passages M, extending over the steam-chest, and induction-ports *h h'* on both sides of the steam-chest, substantially as set forth.

252,451. SAW-MILL DOG. FREDERIC E. FARY, Smyrna, Ohio. Filed Oct. 31, 1881. (No model.)



Claim.—1. In a saw-mill dog, a rotary shaft constructed at one end with the engaging-dog eccentrically arranged to the shaft and at the other end with a weighted lever, a follower with extending bars, and a block formed with passages for the reception and passage of the bars of the follower, substantially as described.

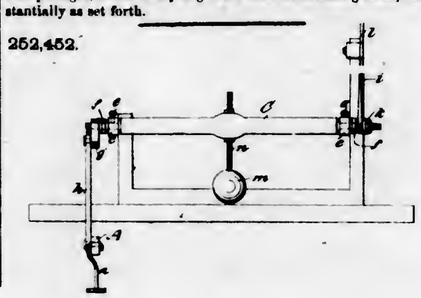
2. A shaft formed at one end with a dog-head and at the other provided with a weighted lever, in combination with a follower set in a shoulder of the shaft, said follower provided with extending bars and a sliding block, substantially as described, and for the purpose set forth.

3. In a saw-mill dog, a horizontal shaft with a dog-head at one end and a weighted lever at the other, and provided with a follower with extending bars fixed in the annular groove formed between the shoulder on the shaft and the end of the lever-cap, in combination with spring fixed to the follower and capable of receiving and retaining the handle of the weighted lever, substantially as described.

4. In a saw-mill dog, the combination, with a horizontal rotary dog-shaft provided with a lever for actuating the same, of a vertical sliding block with horizontal passages, a follower with extending arms passing through said block, and a double-ended eccentric-lever bearing on said arms, substantially as and for the purpose set forth.

5. The combination, with a saw-carriage knee, of an upright standard, a vertical adjustable block formed with horizontal passages, the eccentric-lever, the follower with arms extending through said passages, and a rotary dog-shaft with an actuating-lever, substantially as set forth.

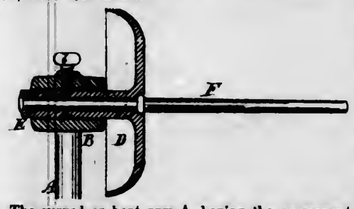
252,452.



252,452. INDICATOR FOR SCALES. VALENTINE M. PULCHER, Hughes Springs, Tex. Filed Aug. 24, 1881. (No model.)

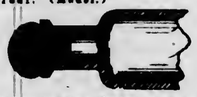
Claim.—In scales, the combination, with the scale-beam A and the notated arc-arm *l*, of the rocker C, carrying the weight *m* on an adjustable arm, *n*, and having the threaded-end spindles *d*, passing through slots of the arms *e*, the set-screws *e*, the nuts *f*, the crank-arm *g*, connected by rod *h* with the scale-beam A, the pointer *i*, and the set-nut *k*, as shown and described.

252,453. BELT-LIFTER. ADOLF GAIRING, Cleveland, Ohio. Filed Dec. 7, 1881. (No model.)



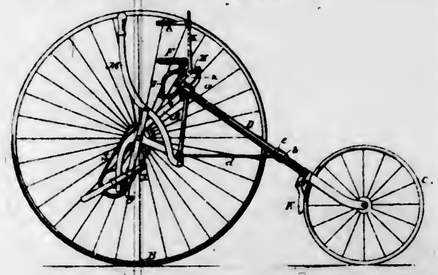
Claim.—The curved or bent arm A, having the permanent sleeve or socket B and set-screw *b*, the disk D, having the permanent sleeve E, provided with the annular groove *c*, and the spindle F, all constructed and operating as shown and described.

252,454. DROP-BOTTLE. CHARLES GEBERT, Trenton, N. J. Filed Dec. 12, 1881. (Model.)



Claim.—The herein-described dropping-bottle, constructed with longitudinal grooves diametrically opposite each other on the interior of the neck, in combination with a stopper having shoulders, as described, adapted to cover and uncover the outer ends of the grooves, substantially as and for the purposes specified.

252,455. VELOCIPEDE. WILLIAM W. GILES, Washington, D. C. Filed Oct. 31, 1881. (No model.)



Claim.—1. In a tricycle, an arm projecting from the frame and capable of partial revolution around an oblique axis, and a steering-wheel mounted on said arm at its extremity, combined with means whereby movements of the rider's body in a vertical plane transverse to the line of progression will cause a rotation of said arm and control of the steering-wheel, as set forth.

2. In a tricycle, an arm projecting from the frame and capable of partial rotation around an oblique axis, and a steering-wheel mounted on said arm at its extremity, combined with a side lever independent of the seat and moving on a horizontal axis, against which the rider leans in a vertical plane transverse to the line of progression, whereby said arm may be rotated and the steering-wheel controlled, as set forth.

3. In a tricycle, a steering-wheel mounted at the outer end of an oblique arm which is capable of partial revolution on its axis, whereby the plane of said wheel can be parallel with the planes of the main bearing-wheels or be deflected in either direction therefrom, combined with a side lever against which the rider leans in a plane transverse to the line of progression, and a multiplying device interposed between said side lever and said oblique arm to increase the relative motion of the latter and control the steering-wheel, as set forth.

4. In a tricycle, a steering-wheel, C, mounted at the extremity of an oblique arm, D, which is capable of partial revolution upon its axis, and provided with the arm I, combined with the rock-shaft having one end turned downward and engaged with said arm I, and the side braces, G, mounted upon said rock-shaft, whereby the rider may control the steering-wheel by swaying his body in a plane transverse to the line of progression.

5. In a tricycle-frame, A, provided with a box, *a*, attached to said frame, an oblique arm, D, which turns in said box at its forward end and bears the steering-wheel C at its rear end, combined with a box, *b*, fitted to said arm nearer its wheel end, and side brace-rods, *d*, whereby said box *b* is restrained from motion toward the box *a*, as set forth.

6. In a tricycle, a brake-lever, E, and its actuating cord or rod, combined with a vibrating lever placed so that said brake will be pressed against the wheel by a backward motion of the rider's body in contact with said vibrating lever.

7. In a tricycle, a steering-wheel and a brake, combined with a rock-shaft, H, a lever, K, pivoted thereon and extending up near the rider, and provided with side arms or braces, G, and means for connecting said rock-shaft and lever with the steering-gear and brake, respectively, whereby the same lever, K, may be caused to actuate the steering-gear or the brake at will.

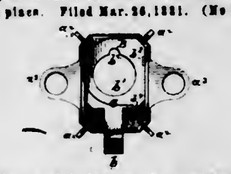
8. In a tricycle, a frame, A, having its ends bent forward to receive and hold the axles for the wheels and treadle-shaft in advance of the seat, combined with a rearward-projecting arm oblique to the horizon, and capable of partial rotation on its axis to control a steering-wheel mounted on the rear end of said arm.

9. In a tricycle, the wheel B, provided with ratchet-teeth *t*, combined with a ratchet-hub, R, in engagement therewith, and the driving-chain S on said hub R, and motor crank-shaft below the level of said hub, whereby the wheel B may be liberated from the driving power by withdrawing said hub R from engagement, as set forth.

10. In a tricycle, a steering-gear operated by movements of the rider's body in a plane transverse to the line of progression, combined with the side arms, G, adjustable vertically and horizontally, so as to be fitted to the rider, as set forth.

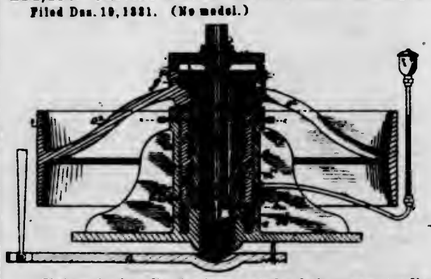
11. In a tricycle, the steering-gearing, with its controlling-shaft H, combined with the lever K, pivoted to said shaft and provided with the joint at *u*, for the purpose set forth.

252,456. NECKTIE-FASTENER. JACOB GOLDBERG, New York, N. Y., assignor of three-fourths to Louis Silverman and Isaac Noar, same place. Filed Mar. 26, 1881. (No model.)



Claim.—In a necktie-fastener, the combination of the apertured and flanged shell A, having opening *a'* in one end, the apertured plate B, having shank *b*, studs b^2 and b^4, and slot b^3, leading to its aperture, spring C, notched and apertured plate D, soldered strips a^2, and perforated shield E, substantially as shown and described.

252,457. DRIVING-WHEEL. JNO. A. HAPGOOD, Pittsburg, Pa. Filed Dec. 19, 1881. (No model.)



Claim.—1. A pulley having a tubular hub, arms extending laterally from one end of the hub, and a periphery the middle of which is on, or nearly on, a level with the middle of the hub, substantially as and for the purposes described.

2. The combination of a pulley having a tubular hub, arms extending laterally at the upper edge, and a hollow bearing in which the hub may turn, substantially as and for the purposes described.

3. The combination of a pulley having a hollow hub, a spindle

of less diameter than and operating inside of the hub, and a clutch device connecting the hub and spindle, which permits a slight lateral movement of the pulley and a vertical movement of the spindle, substantially as and for the purposes described.

4. The combination of the hub, the tubular bearing, and adjustable followers placed in the sides of the tubular bearing, substantially as and for the purposes described.

5. The combination of the tubular hub, the deflecting-plate placed on the hub-step, and an oil or grit channel leading away from the step to a suitable receptacle, substantially as and for the purposes described.

6. The combination of a vertical toothed clutch and a loose sector-plate placed between the two parts of the clutch, having wings slightly less in width than the distance between the clutch-teeth, substantially as and for the purposes described.

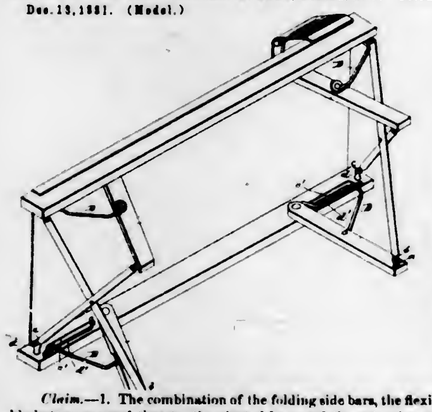
7. A gear-clutch having straight-sided teeth with friction-balls placed in axially-extending slots in the same, substantially as and for the purposes described.

252,458. END-GATE. JNO. W. HANDAYSYDE, Floral, assignor of five-eighths to John D. Pryor, Winfield, Kans. Filed Nov. 7, 1881. (No model.)



Claim.—In an end-gate, the combination, with the sides of the wagon-body having perforations *b*, of the separable sections B' and C, provided with hooks *c*, and the latter being provided with a beveled projection, upon which is eccentrically pivoted a correspondingly-beveled button, and an overlapping section, B², secured to the section B' and having an elongated beveled slot, through which said button is adapted to pass and be turned to securely hold the sections in place, substantially as set forth.

252,459. COT-BED. CHARLES H. HARD, Oneida, N. Y. Filed Dec. 13, 1881. (Model.)



Claim.—1. The combination of the folding side bars, the flexible bottom secured thereto, the pivoted legs, and the extension or crossed braces pivoted together and connected by linked eyes to said legs and side bars, substantially as described.

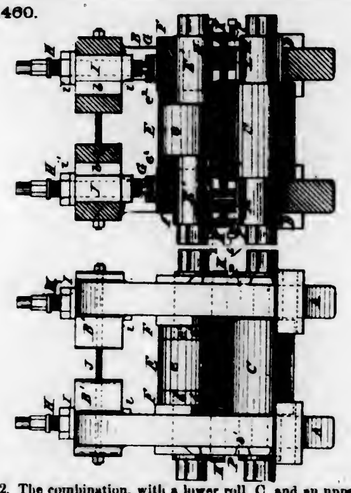
2. The combination of the side bars having a flexible bottom secured to them, the folding legs pivoted to the side bars, the extension-braces pivoted to the side bars and legs, the angular pivoted braces D, the grooves *c' c''*, and the guard-rails *d'*, substantially as described.

3. The combination of the flexible head-rest J, the folding and supporting bars G therefor, the angularly-bent arms A A', and the recesses *f* therefor, substantially as described.

252,460. ROLLING-MILL. WILLIAM E. HARRIS, St. Louis, Mo. Filed July 28, 1881. (No model.)

Claim.—1. The combination of extensible upper rolls, E, lower rolls, C, and vertical rollers K, the latter working over the lower roll and at the ends of upper roll, as set forth.

252,460.

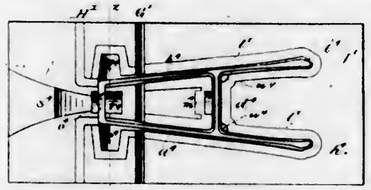


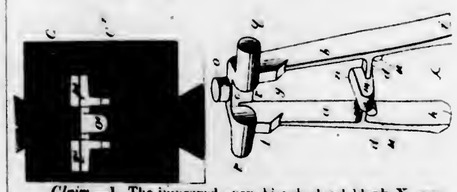
2. The combination, with a lower roll, C, and an upper roll, E, of edging-rolls K, varying in diameter.

3. The combination, with a roller, E, of supplemental rings *e'*, for the purpose set forth.

4. The combination, with a roller, E, having an extensible working-face, of the adjustable bearing device F G H I, substantially as set forth.

252,461. DIE FOR FORGING BICYCLE-HEAD BLANKS. HORACE B. HICKS, Hartford, Conn., assignor to the Pope Manufacturing Company, Boston, Mass. Filed Mar. 11, 1881. (Model.)





Claim.—1. The improved open-bicycle-head blank X, constructed with sides *a* and *b*, bridges *c* and *d*, arms *h* and *i*, centerlugs *o r*, braces *f* and *g*, handle-bar lugs *p* and *q*, brake-lug *m*, and trouser-guard lugs *u u*, essentially as set forth.

2. The primary break-down dies A A', constructed and adapted to operate substantially as and for the purposes shown and described.

3. The secondary break-down dies B B', constructed and adapted to operate substantially as and for the purposes shown and described.

4. The primary forming-dies C C', having the described cameo and intaglio parts, and constructed and adapted to operate substantially as and for the purposes herein set forth.

5. The secondary forming-dies I I', having the described cameo and intaglio parts, and constructed and adapted to operate substantially as and for the purposes herein set forth.

6. Dies constructed in a corresponding pair and with recesses for approximately forming an open-bicycle-head blank, said recesses being substantially as herein set forth and designated by the reference-letters a^2 b^2 c^2 d^2 h^2 i^2 p^2 q^2 m^2 o^2 r^2, essentially as herein shown and described.

7. Dies constructed in a corresponding pair and with recesses adapted to form and substantially finish an open-bicycle-head blank, said recesses being substantially as herein set forth and designated by the reference-letters a^4 b^4 c^4 d^4 h^4 i^4 p^4 q^4 m^4 o^4 r^4 m^4, and the slight surrounding recesses *l*, to receive the flash, essentially as herein shown and described.

8. Constructed and adapted to operate substantially as herein set forth, the trimmer Q, having an opening bounded by cutting-edges *c' c' c'*, corresponding to the outer contour of an open-bicycle-head blank, and the punch K, having the cameos *w' w' w'*, substantially conformed to the plan of an open-bicycle-head blank.

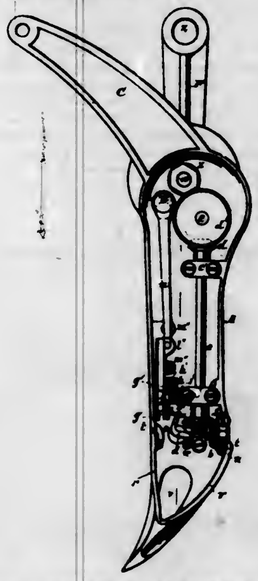
9. The trimmer S, constructed with the opening V, recesses *y' y'*, and lips *x' x'*, and the punch U, with cutting-edges *t t*, constructed and adapted to operate substantially as herein set forth.

252,462. NUT-LOCK. GEORGE B. HILL, Detroit, Mich. Filed Dec. 5, 1881. (No model.)



Claim.—The pressed nut herein described, having a punch-recess, *c*, in its face between its threaded interior and its wrench-seat, said recess being formed with an inner thin wall, *b'*, near the threaded interior, and an outer beveled or guide wall, *b*, substantially as specified.

252,463. AUTOMATIC GRAIN-BINDER. PLINY F. HODGES, Chicago, Ill., assignor to himself and William Deering, same place. Filed Nov. 10, 1880. (Model.)



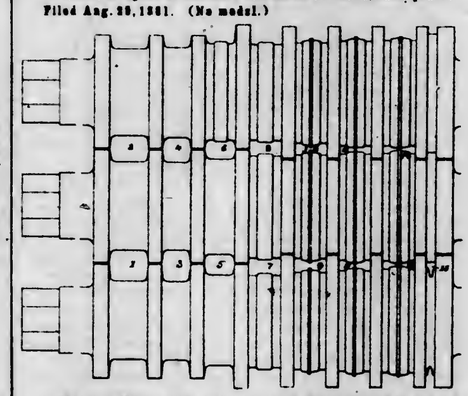
Claim.—1. In combination with the binding-arm of an automatic grain-binder, a twisting-hook, *a*, having a shank, *a'*, and operated by the gear-wheels *b b'*, shaft *c*, and gear-wheels *d d'* from a driving-pinion, *f*, and a cutting device consisting of shear-blades pivoted to a sliding head and operated by a pitman and eccentric from a driving-pinion, *p*, the pinions *f p* both being driven intermittently by the rotation of a single crank, substantially as and for the purposes specified.

2. A wire-cutting device for an automatic grain-binder, consisting of the blades *g h*, having the handles *g' h'*, links *j j'*, pivoted as described, slide or head *l*, carrying the shears and located in a support or frame, and a mechanism for reciprocating the head or slide and advancing and receding the shear-blades to open and close them, substantially as and for the purpose specified.

3. The twisting-hook *a*, having a shank, *a'*, beveled gear *b b'*, shaft *c*, beveled gear *d d'*, stop-pinion *f*, shear-blades *g h*, having handles *g' h'*, links *j j'*, slide or head *l*, frame *m*, pitman or rod *n*, eccentric *n'*, and stop-pinion *p*, located and arranged as described, in combination with the head E, located on the end of the crank F, and having a flange provided with a cogged segment, *q*, and stop-flange *q'*, for operating the twisting and cutting mechanisms, substantially as specified.

4. A binding-arm consisting of the body A, extension C, and cover B, the body and cover having side flanges to form an interior chamber to receive the twisting mechanism, consisting of the hook *a*, having the shank *a'*, beveled gear *b b'*, shaft *c*, and beveled gear *d d'*, and to receive the cutting mechanism consisting of the blades *g h*, having handles *g' h'*, links *j j'*, slide or head *l*, frame *m*, pitman or rod *n*, and eccentric *n'*, and locate the two mechanisms side by side, and have them operative entirely within the binding-arm, substantially as specified.

252,464. ROLLS FOR ROLLING METAL. FRANK HOLUB, Joliet, Ill., assignor of one-half to Charles S. Looke, same place. Filed Aug. 29, 1881. (No model.)



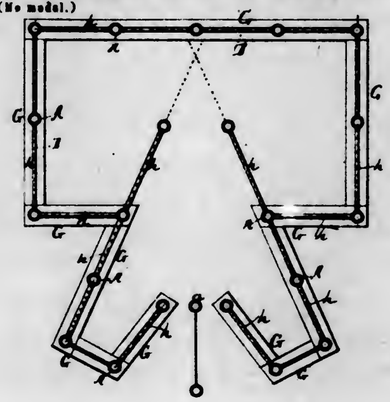
Claim.—The combination, in a set of three-high rolls, of the reducing, grooving, creasing, and finishing dies from 1 to 15, inclusive, substantially as and for the purpose specified.

252,465. CLOCK-MOVEMENT. ARTHUR E. HOTCHKISS, Cheshire, Conn. Filed Jan. 22, 1881. (Model.)



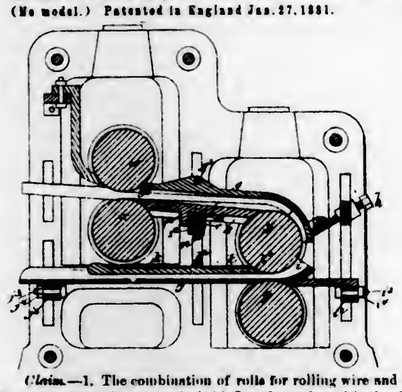
Claim.—In combination with a supporting-plate for a clock-movement, a stud projecting from said plate, a hollow arbor sleeved thereon, and a mainspring and main wheel mounted on said arbor and arranged on the same side of the said plate.

252,466. FISH-TRAP. ALBERT H. HOXIE, Foxborough, Mass., and EDWARD COLLINS, New York, N. Y. Filed Sept. 1, 1881. (No model.)



Claim.—In a fish-trap, the posts A A, made hollow and of metal, the said posts being arranged as shown, the rods A, the frame G, and the net B, all arranged and combined in the manner shown, and for the purpose set forth.

252,467. ROLLING-MILL FOR ROLLING WIRE AND RODS. ALFRED HUGHES, Glasgow, Scotland. Filed Mar. 17, 1881. (No model.) Patented in England Jan. 27, 1881.

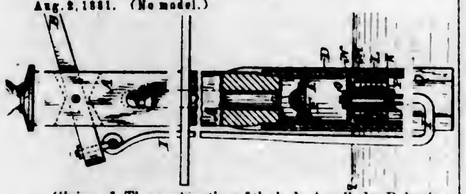


Claim.—1. The combination of rolls for rolling wire and the like in double pairs, one pair behind and at a less altitude than the other pair, and suitable guides for guiding the material from the pass in the front or upper pair to and so as to return it through the pass in the rear or lowermost pair, substantially as described.

2. In combination with the rolls arranged as described, a fixed bed or table, *f*, and pivoted guide-piece *g*, the bed or table extending from the upper surface of the lower roll of the first and upper pair of rolls to the upper surface of the upper roll of the second or lower pair of rolls, the end *g'* bearing against the upper roll of the first pair of rolls and the other end, *g*², curved over and partly around the upper surface of the upper roll of the second pair of rolls, substantially as and for the purpose set forth.

3. In combination with the rolls arranged as described, a curved guide-piece, *i*, table *j*, and counterweighted pivoted lever *k*, the guide-piece being level with the upper surface of the lower roll of the second and lower pair of rolls, the table extending from the upper side of said lower roll to the front of the machine, and the lever *k*, having one end, *k'*, bearing against the under side of the upper roll of the second pair of rolls and the other end extending toward the front of the machine substantially parallel with the table, as set forth.

252,468. PUMP. GEO. R. HUNTER, Hawleyville, Iowa. Filed Aug. 2, 1881. (No model.)



Claim.—1. The combination of the body A, cylinder D, having the diaphragm E and valve G, with the handle B, bent rod I, piston K L M, and valve N, substantially as shown and described.

2. The combination, with the body A and cylinder D, provided with diaphragm E and valve G, of the supports Q, substantially as shown and described.

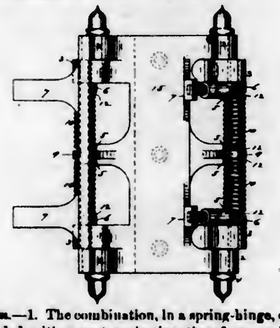
3. The bent rod I, adapted to operate on the outside of the pump-body and to enter the cylinder D, and provided with the base-nut J, perforated base-plate K, packing L, perforated cap-plate M, valve N, and cap-nut O, said base-plate, packing, and cap-plate having passages P therethrough, substantially as shown and described.

252,469. BED-BOTTOM SPRING. JOSHUA V. JARRETT, Valley Mills, Tex. Filed Dec. 8, 1881. (No model.)



Claim.—As a new article of manufacture, a twin bed-spring formed in one piece, of the spirals A A' and platform B, made of a series of parallels, *b*, constructed substantially as and for the purpose set forth.

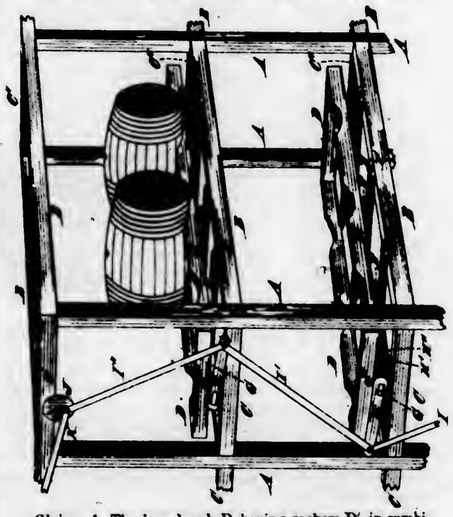
252,470. SPRING-HINGE. GEORGE H. JEWETT, Unionville, Conn. Filed May 31, 1881. (Model.)



Claim.—1. The combination, in a spring-hinge, of two leaves, one provided with a post projecting therefrom, and both leaves provided at each end with a hinge-projection, which two projections are pivoted together, an actuating-spring located between and secured to the upper and lower projection of one of said leaves and outside the line of the hinge-pivots, a cam secured to said spring, and an operating or knuckle bar having a loose socket-connection with said cam at one end and connected with said post at the other end, substantially as described.

2. The combination, in an improved spring-hinge, of two leaves, one provided with a post, 7, and both leaves provided at each end with a projection, which two projections are pivoted together, a spring located between the upper and lower projections on said leaves, a cam connected with and secured to said spring, with a knuckle-bar having a loose socket-connection with said cam, and made in two parts, and adjustable as to its length, and connected with said post at the other end, substantially as described.

252,471. RACK FOR STORING AND AGING WHISKY. CLAUDE M. JOHNSON, Lexington, Ky. Filed Oct. 20, 1881. (No model.)



Claim.—1. The barrel-rack D, having rockers D', in combination with the rack-frame A B C C', provided with rocker-beds E, substantially as and for the purpose herein set forth.

2. The barrel-rack D, having rockers D', in combination with the rack-frame A B C C', provided with rocker-beds E and rocker-guides F, substantially as and for the purpose herein set forth.

3. In combination with the series of rockers D', the transverse rocker-shaft G, supported in bearings at each end of the rack-frame, substantially as herein set forth.

4. The combination, with two or more rocker-frames, D, of shafts G, cranks H, connected with the latter and extending in opposite directions, pitmans I, and crank-wheel J, substantially as described, whereby each alternate rocker-frame will rock in a direction opposite to the other, as set forth.

5. The combination, with a stationary supporting-frame, of two or more rocker-frames, D, constructed to hold two or more tiers of barrels and arranged one above the other, and crank and pitman connections, substantially as described, whereby each alternate frame will rock in a direction opposite to the other, substantially as set forth.

252,472. SASH HOLDER AND TIGHTENER. CHAS. A. JUDD, Milwaukee, Wis. Filed Nov. 11, 1881. (No model.)



Claim.—1. A sash-frame broad at the bottom and provided with a cell, C, and seat *b*, and a sash, A, adapted to move therein, combined with an elastic device attached to said sash at or near its top, projecting from said sash on opposite sides at different points of elevation, and adapted to press the bottom of the sash outward toward its seat *b*, but out of contact with the frame except along the bottom edge, substantially as set forth.

2. The elastic rollers E F, having their pivots in different planes vertically and horizontally, attached to and combined with a sash, so as to project from opposite sides at different elevations, as and for the purpose set forth.

252,473. MANUFACTURE OF DINITRO-BENZOLE FROM GAS OBTAINED BY DISTILLATION OF COAL. JAMES ALFRED KENDALL, London, England. Filed July 6, 1881. (No specimens.) Patented in England Feb. 9, 1881.

Brief.—In the manufacture of illuminating-gas produced by distillation of coal and similar carbonaceous substances a certain amount of benzole is formed and passes over with the purified gas into the gasometer. From such gas nitro-benzole has been obtained; and in this improvement the nitro-benzole is further converted into dinitro-benzole by the ordinary method used for nitro substitution.

Claim.—A process whereby dinitro-benzole may be obtained from benzole or nitro-benzole existing in gas produced from carbonaceous substances, which consists in passing the latter through a mixture of nitric and sulphuric acids, the latter being in excess.

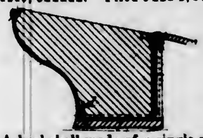
252,474. HEEL FOR BOOTS AND SHOES. JOSEPH KIRPPAN, Montreal, Quebec, Canada. Filed July 26, 1881. (No model.)



Claim.—1. A combined leather and metal lift in which the metal plate is adapted to be fastened to the top lift by means of circumferential edge projections, and is also provided with upward projections adapted to secure the plate to the heel proper, all as herein set forth.

2. The metal plate B, having edge projections or serrations *b*, adapted to be forced laterally into and thereby to hold itself to place to a heel-piece.

252,475. HEEL FOR BOOTS AND SHOES. JOSEPH KIRPPAN, Montreal, Quebec, Canada. Filed June 6, 1881. (No model.)



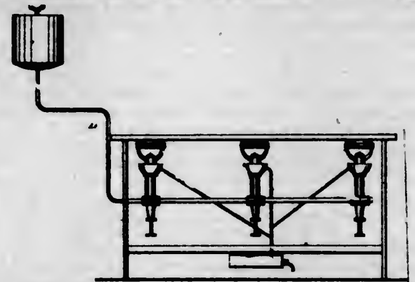
Claim.—1. A heel-shell made of a single piece of leather or like substance, and having its upper edges turned down so as to form a channel for the stitching securing it to the upper, substantially as herein set forth.

2. In combination with the shell of a boot-heel, the sole secured thereto by stitching on the turned-down edge of the front, substantially as described.

3. In combination with a boot-heel shell provided with a turned-up rim and the covering-piece, the metal plate provided with projections secured to the one and holding the other in place, substantially as described.

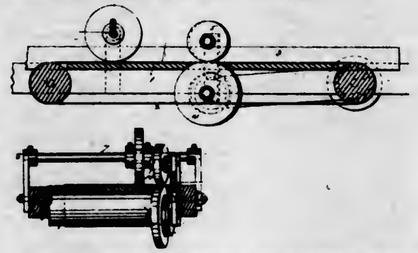
4. In combination with the turned-up rim of the outer shell of a boot-heel, a metal plate forming the bottom of the heel, secured to said rim by serrated projections, and provided with suitable projections underneath, as and for the purposes set forth.

252,476. VAPOR-STOVE. CHARLES F. KLIEN and WILLIAM H. WOODARD, Cleveland, Ohio. Filed Oct. 29, 1881. (No model.)



Claim.—In vapor-stoves, the combination of the supply-pipe, the drip-cups beneath the burners, and the overflow-pipes attached to the drip-cups near the top edge and leading to a lower reservoir, whereby the oil in the cup is prevented from overflowing when ignited for use, substantially as and for the purpose described.

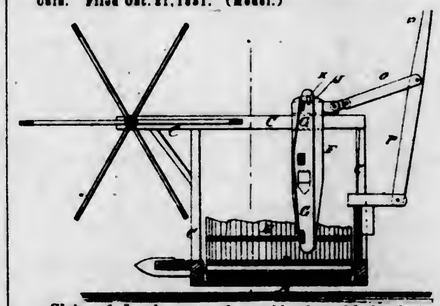
252,477. PAPER-FEEDING MACHINE. JOSEPH C. KENDLAND, Northampton, Mass., assignor to Mark H. Spaulding, Trustee, same place. Filed May 31, 1881. (No model.)



Claim.—1. The combination, in a paper-feeding machine, of a feeding apron or tapes for carrying the sheets of paper when placed thereon, two rolls placed one above the other, and with their peripheries in contact in approximately the plane of movement of said apron or tapes, and adapted to revolve vertically at an inclination to the line of movement of said apron or tapes, and a guide extending lengthwise the machine for the purpose of adjusting the sheets of paper into the same line of movement, substantially as described.

2. The combination, in a paper-feeding machine, of a feeding apron or tapes for carrying the sheets of paper when placed thereon, two rolls placed one above the other, with their peripheries in contact in approximately the plane of movement of said apron or tapes and adapted to revolve vertically at an inclination to the line of movement of said apron or tapes, a guide extending lengthwise the machine, and a roll adapted to be revolved above and by said apron or tapes or by the sheets moving thereon, substantially as and for the purpose set forth.

252,478. HARVESTER. STEPHEN McB. KATENDAUM, Golden, Colo. Filed Oct. 21, 1881. (Model.)



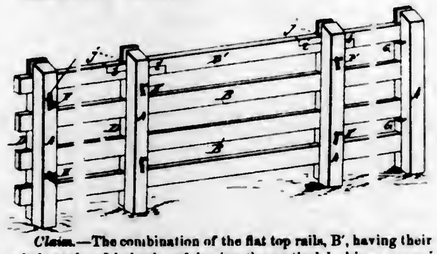
Claim.—1. In a harvester, the combination, with the platform A and the frame C, of the fender G, the roller H, and the sliding head-block F, substantially as herein shown and described, where-

by cut grain is made to fall evenly upon the platform, as set forth.

2. In a harvester, the combination, with the head-block F and fender G, of the connecting-bar O and lever P, substantially as herein shown and described, whereby the said fender can be adjusted as the height of the grain may require, as set forth.

3. In a harvester, the combination, with the head-block F, having notch K and socket M, and the fender G, of the pin J and hook L, substantially as herein shown and described, whereby the said head-block and fender can be readily connected and disconnected, as set forth.

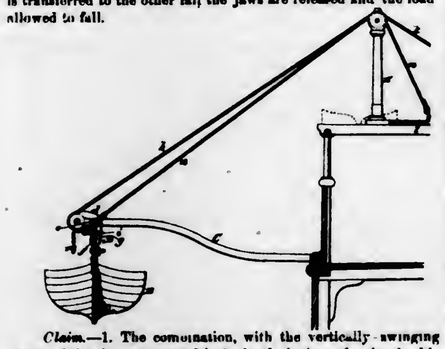
252,479. FENCE. ISRAEL L. LANDIS, Lancaster, Pa. Filed Jan. 18, 1881. (No model.)



Claim.—The combination of the flat top rails, B', having their ends lapped and halved, and having the vertical locking-groove *j* crossing said joint at right angles to the length of the rails, the batten D, inserted into said groove, the fence-post A, the holding-down pin above the said joint, the embracing-wire, and the tightening-wedge, all substantially as described.

252,480. APPARATUS FOR RAISING, LOWERING, AND DETACHING BOATS. GODFREY G. LAURENCE, London, England, assignor to Philip Thomas Blyth, same place. Filed Aug. 10, 1881. (No model.) Patented in England June 24, 1876, in France Aug. 3, 1878, and in Belgium Mar. 11, 1879.

Brief.—The holding-jaws are kept closed by the strain upon the fall employed to raise and lower the load. When the strain is transferred to the other fall the jaws are released and the load allowed to fall.



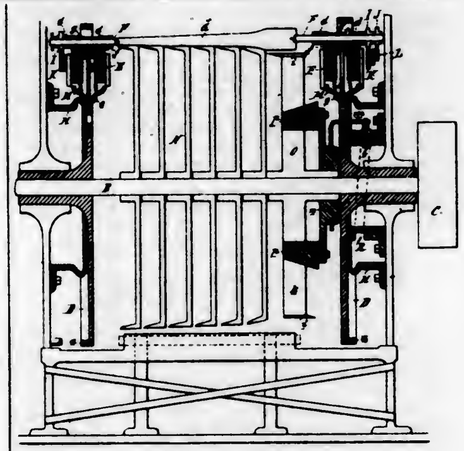
Claim.—1. The combination, with the vertically-swinging davit, of the sheave arranged in its head, the jaws *f g*, the shackle arranged to be slipped over the said jaws, and the fall connected with the said shackle and passing over the sheave in the head of the davit, substantially as described.

2. In an apparatus for raising and lowering ships' boats, the combination, with the vertically-swinging davits C and the standards E, of the falls *h* and *n*, the heads *d*, provided with the jaws *f g*, the shackle *i*, with a wedge, *r*, arranged between it and the jaw *f*, and the link *p*, all substantially as above set forth, and for the purposes specified.

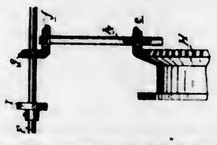
252,481. LATHE FOR TURNING ECCENTRIC OR POLYGONAL FORMS. WILLIAM H. LEHMANT, Defiance, Ohio. Filed July 27, 1881. (No model.)

Brief.—The lathe-spindles are mounted in rotating disks, and revolve around the cutters, which rotate in the opposite direction. The spindles rotate, and may have a radial movement with reference to the disks in which they are mounted. Eccentric or polygonal collars may be placed on the spindles, so as to ride on stationary bearings on the frame, thus compelling the spindle to move with the collar and reproduce its form in the blank.

Claim.—1. In a lathe for turning irregular forms, the rotating disks D and spindles *b b*, revolving in bearings movable radially in said disks, in combination with stationary guideways secured to the lathe-frame and cams secured on the spindles and traveling upon said stationary guideways, substantially as and for the purpose specified.



252,481.



2. The revolving disks D, provided with radial recesses, and the blocks E E, reciprocating in said recesses and carrying the revolving spindles F, in combination with cams secured on said spindles and guideways rigidly secured to the stationary lathe-frame, whereby the cams moving on the guideways will govern the radial movement of the spindles, substantially as and for the purpose specified.

3. The combination of spindle F, squaring-cam J, guideway L, and cutter-head O, containing expanding and contracting knife-stocks K, and mechanism, substantially as described, for operating said knife-stocks, as and for the purposes described.

4. In combination with a series of revolving cutter-heads, rotary disks carrying independent radially-movable spindles around said cutter-heads, stationary guideways upon the main frame, and cams secured to the spindles traveling on the stationary guideways, whereby the spindles can be moved radially to or from the cutter-heads to govern the shape of the object being turned, substantially as described.

5. The cutter-head O, provided with radial recesses, the knife-stocks *k*, sliding in said recesses and carrying knives at their outer ends, in combination with the disk n and the wedges *p*, said wedges being constructed to slide one in the rear of each knife-stock, and each having tongues to slide in undercut recesses in its knife-stock, whereby they will advance or retract the knife-stocks with a positive movement, substantially as described.

6. As a means for giving motion to the adjustable spindles F, the combination of spur-gear H, rotary disk D, feathered shaft A, miter-pinions *e f g*, and radially-adjustable blocks E, when arranged and operated as described.

7. In a lathe for turning irregular forms, the combination of a series of cutter-heads which simultaneously work upon the stick, in combination with two revolving spindles, stationary guideways secured to the lathe-frame, and exchangeable cams secured upon the spindles, whereby the movement of said cams upon the guideways will automatically and independently adjust the spindles, substantially as and for the purpose specified.

8. In a lathe for cutting spokes, the combination of a series of revolving cutter-heads, N and O, the radially self-adjusting spindles F F, the oval and squaring cams I and J, and involute guideways K, and circular guideway L, when operating and combined substantially as described.

9. The cutter-head O, knife-stocks *k*, wedges *p*, and the grooved disk n, carrying said wedges, in combination with the stationary grooved cam R, the roller *l*, and the arm m, substantially as and for the purpose specified.

252,482. GRAIN-BINDER. SYLVANUS D. LOCKE, Mechanic Falls, N. Y. Filed Mar. 21, 1881. (No model.)



Claim.—1. In a cord-knotter, an elastically-yielding plate or leaf spring beneath one of the jaws of said knotter and opposing the other, to press upon the cord between the two.

2. In a cord-knotter, the combination of a jaw having a shoulder at or near its point, an opposing jaw, and an elastically-yielding plate or leaf spring between the two and pressing on the cord toward the face of the shouldered jaw.

3. In a cord-knotter, the combination of a rigid jaw having a shoulder at or near its point, an opposing rigid jaw overlying the first and slightly clearing its shoulder, so as to leave a space between, and an elastically-yielding plate or leaf spring between the two jaws bent or beveled upward at its end to pass by the shoulder into a recess in the point of the second jaw.

4. In a tying-bill, the combination of a jaw having curved or cord-deflecting surfaces, an opposing jaw, and an elastically-yielding plate or leaf spring acting between the two from the face of one toward the face of the other, and substantially parallel along its length with the face toward which it presses.

5. In a tying-bill, the combination of the rigid lower jaw having curved or cord-deflecting surfaces, the opposing upper jaw, and an elastically-yielding plate or leaf spring beneath the face of the upper jaw and acting against the cord toward the face of the lower jaw.

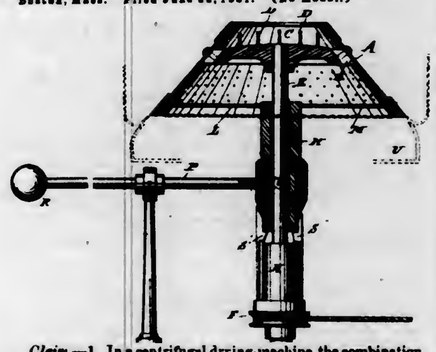
6. In a tying-bill, the combination of the rigid lower jaw having curved or cord-deflecting surfaces and shouldered at its point, the opposing upper jaw, and an elastically-yielding plate or leaf spring beneath the face of the upper jaw and inclined or beveled at its outer end upward past the shoulder on the lower jaw.

7. In a tying-bill, the combination of the rigid lower jaw having curved or cord-deflecting surfaces and shouldered at its point, the opposing upper jaw recessed or perforated near its point, and an elastically-yielding plate or leaf spring beneath the face of the upper jaw, bent upward at its outer end past said shoulder and taking into said recess.

8. In a tying-bill, the combination of the rigid lower jaw having curved or cord-deflecting surfaces and shouldered at its point, the opposing upper jaw rigidly secured to the heel of the bill and overlying said shoulder, with a space between, and an elastically-yielding plate or spring underlying the face of the upper jaw and pressing toward the face of the lower jaw.

9. In a tying-bill, the combination of the rigid lower jaw having curved or cord-deflecting surfaces and shouldered at its point, the opposing upper jaw rigidly secured to the heel of the bill and overlying said shoulder, with a space between, and an elastically-yielding plate or leaf spring between the two jaws and bent upward at its end to pass by the rib or shoulder into a recess in the upper jaw near its point.

252,483. CENTRIFUGAL DRYING-MACHINE. THOMAS LONG, Boston, Mass. Filed June 23, 1881. (No model.)



Claim.—1. In a centrifugal drying-machine, the combination, with a conical perforated hood, of a movable bottom, substantially as herein shown and described.

2. In a centrifugal drying-machine, the combination, with the conical perforated hood A, of the top plate, C, and the movable bottom M, substantially as herein shown and described, and for the purpose set forth.

3. In a centrifugal drying-machine, the combination, with the conical perforated hood A, of the top plate, C, provided with short radial arms B', and of the movable bottom M, substantially as herein shown and described, and for the purpose set forth.

4. In a centrifugal drying-machine, the combination, with the perforated conical hood A, of the top plate, C, the shaft E, the bottom M, the sleeve H, and the springs S, substantially as herein shown and described, and for the purpose set forth.

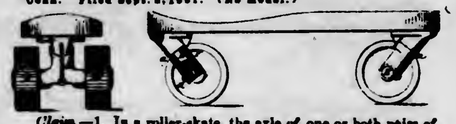
5. In a centrifugal drying-machine, the combination, with the perforated conical hood A, of the top plate, C, the bottom plate, M, the shaft E, the sleeves H and U, the springs S, and the pivoted and forked lever P, substantially as herein shown and described, and for the purpose set forth.

6. In a centrifugal drying-machine, the combination, with the perforated conical hood A, of the top plate, C, and the studs D D, substantially as herein shown and described, and for the purpose set forth.

7. A centrifugal drying-machine made substantially as herein shown and described, and containing the following elements, to wit: a rotary perforated hood and a vertically-adjustable bottom, whereby the machine can be charged and discharged without stoppage, as set forth.

8. The method herein described of discharging the contents of a centrifugal drying-machine, consisting in separating the bottom of the perforated hood from this hood, so that the contents will be discharged at the lower edges of this hood by the centrifugal force, as set forth.

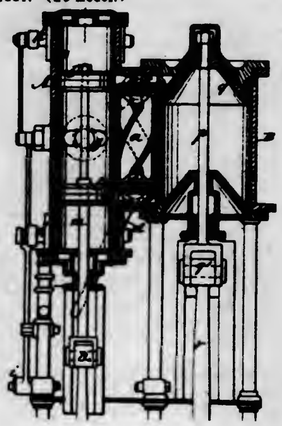
252,484. ROLLER-SKATE. ORNEL B. LUTHER, Torrington, Conn. Filed Sept. 8, 1881. (No model.)



Claim.—1. In a roller-skate, the axle of one or both pairs of wheels arranged upon a pivot on the foot-piece in the plane of the vertical central line of the foot-piece, but inclined to the horizontal plane of the foot at an angle of about forty-five degrees, combined with a spring-rod, *a*, parallel with the pivot, one end rigidly attached to the foot-piece, the other engaged with the axle, substantially as and for the purpose described.

2. In a roller-skate, the axle of one or both pairs of wheels arranged upon a pivot on the foot-piece in the plane of the vertical central line of the foot-piece, but inclined to the horizontal plane of the foot at an angle of about forty-five degrees, combined with a spring-rod, *a*, parallel with the pivot, one end rigidly attached to the foot-piece, the other engaged with the axle, and stops to limit the extent of turning of the axle or strain upon said spring, substantially as described.

252,485. COMPOUND ENGINE. GIDEON B. HARVEY, New York, N. Y., assignor to Jacob Lorillard, Trustee, same place. Filed Dec. 2, 1881. (No model.)



Claim.—1. In compound engines, the combination of a high and a low pressure cylinder, each having a single chamber and connected to the other by short direct ports, the high-pressure cylinder having steam-ports at its ends and exhaust-ports both at its mid-length and its ends, substantially as shown and described.

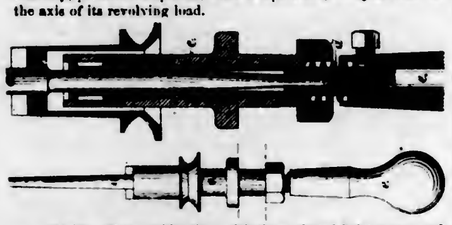
2. In compound engines, the combination of the high-pressure cylinder A, having two pistons upon the same rod, and provided with steam-ports *e'* at its ends and exhaust-ports *e* at its ends and *g* at its mid-length, and the low-pressure cylinder B, having a single piston and communicating with cylinder A by short direct ports *b b'*, the said cylinders having each a single chamber, substantially as shown and described.

3. The combination and arrangement of the stationary reversing-valves *c c* with the ports *b b'* and their connecting-cores between the high and low pressure cylinders of a compound engine, substantially as shown and described.

4. The combination of direct exhaust-ports *b b'*, connected by cores and reversing-valves *c* with the cylinders A B, substantially as shown, to allow reversal of the engine, and maintaining the proper lead of the high-pressure pistons.

252,486. SPINDLE FOR SPINNING AND TWISTING MACHINES. THOS. MATON, Providence, R. I. Filed May 9, 1881. (No model.)

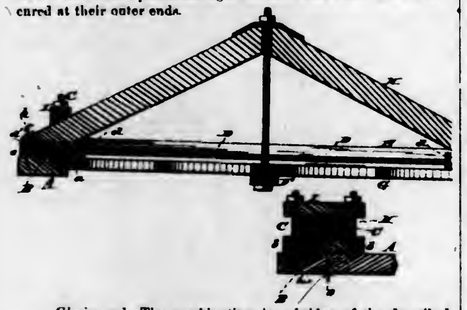
Brief.—A weight is secured to the lower end of the bolster, between which and the bolster-case a coiled spring is placed, which exerts a downward force on the bolster and forms a lateral resistance for and limits the oscillation of the same. The bolster being supported in the case by a ball and socket and allowed to yield laterally, permits the spindle, when in operation, to adjust itself to the axis of its revolving load.



Claim.—The combination, with the socketed bolster-case and the bolster provided with the ball intermediately of its length and fitting in the socket of said case, of the weight *c*, secured to the lower end of the bolster, and the spring *d*, secured between said weight and the bolster-case, substantially as and for the purpose set forth.

252,487. BRIDGE. JOHN B. MCPHERSON, Bunker Hill, Ill. Filed June 28, 1881. (No model.)

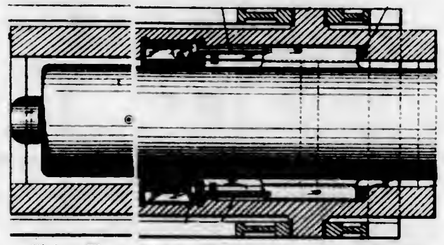
Brief.—To secure the ends of the inclined struts in their shoes said shoes have lateral ears, and bolts extend upward through them; also through transverse bars crossing the upper face of the struts. The tension-chord passes through sockets in said shoes and are secured at their outer ends.



Claim.—1. The combination, in a bridge of the described class, of the end or bed timbers, A A, shouldered bolsters B, having perforated ears *b b* and longitudinal countersunk bore *d d'*, beaded chords D, made of wire rope, struts or braces H, beveled clamping-plates I, and nutted tie-bolts C C, all constructed and combined substantially as and for the purpose herein shown and set forth.

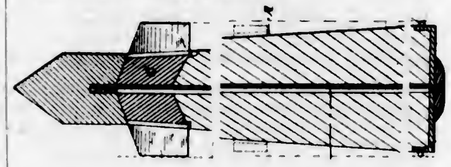
2. The bolster B, composed of a longitudinally-perforated base-plate, *a*, having shoulder *c* and laterally-projecting perforated ears *b b*, as and for the purpose herein shown and specified.

252,488. GUN AND GUN-CARRIAGE. DAVID M. MEFFORD, Toledo, Ohio. Filed Dec. 14, 1881. (No model.)



Claim.—The combination of the gun formed with the longitudinal flanges D, which are rigid with the gun and on opposite sides thereof, with the adjustable tilting frame having in the inner side of its longitudinal timbers the channels receiving said flanges, and also pneumatic buffers behind and elastic buffers in front of said flanges, whereby the gun will be guided and steadied while sliding in a line coincident with the line of its caliber, and at the same time be prevented from tilting independently of the frame, substantially as described.

252,489. PROJECTILE. DAVID M. MEFFORD, Toledo, Ohio. Filed Nov. 23, 1881. (No model.)



Claim.—1. An elongated projectile for ordnance, composed of a tapering wooden stock or body provided with a metal head of smaller diameter than the said body, and a metal shaft passing through the axis of the body and secured to the metal head, substantially as described, the metal shaft being adapted to give additional momentum and penetrative force to the projectile, and the wooden stock being constructed to strip off from the shaft at the point of impact while the head and the shaft pass on through the object fired at.

2. The combination, in an elongated projectile, of the body composed of wood or other light material having a metal head of smaller diameter than the body, with the metal re-enforcing plate at the rear end of the wooden body, and the central metal shaft passing through said body and connecting the plate with the head, substantially as described.

3. An elongated projectile for ordnance, composed of a wooden stock made cylindrical at its rear end, and having a taper from said cylindrical portion to its forward end, a metal head secured to its forward end, and having a diameter less than the diameter of the said wooden body, and the central supporting-shaft passing through the body and secured to the head, substantially as described.

4. An elongated projectile for ordnance, having a metallic head smaller in diameter than the caliber of the gun for which the projectile is made, with a tapering wooden stock or body, a central metal supporting-shaft, and laterally-projecting wings connected with the tapering stock of the projectile, substantially as described.

5. The combination, in an elongated projectile for ordnance, of the tapering wooden stock or body A, with the metal head, the metal supporting-shaft passing through the axis of the stock, and the metal ring L, fitted upon the tapering stock, and provided with laterally-projecting beads, said members being constructed and organized substantially as and for the purpose described.

252,490. BEDSTEAD. NATHAN T. MELVIN, Lodi, Ohio. Filed Nov. 26, 1881. (No model.)



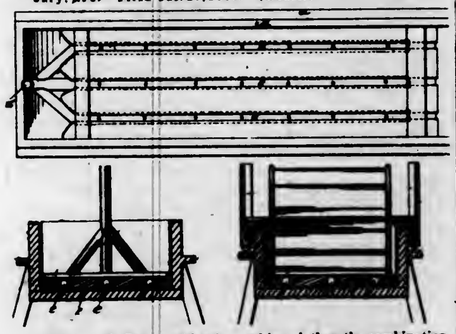
Claim.—1. In bedsteads, the posts thereof having lugs connected therewith in an angular or oblique relation to said parts, in

combination with the bars or rails of the side and end sections substantially as described, and for the purpose set forth.

2. In bedsteads, the rails or bars of the sides and sections of the ends provided with grooves *d*, in combination with the lugs connected with the posts, arranged to clamp the said bars between the lugs and posts, substantially as described.

3. A bedstead constructed entirely of rounded turned posts and made up in sections, consisting of the sides, ends, and posts connected together by clamping the sides and ends between the lugs and posts, substantially as described, and for the purpose specified.

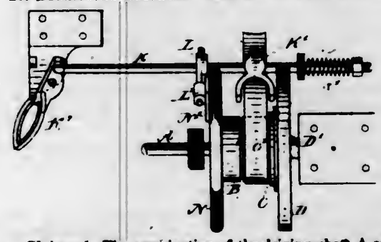
252,491. WASHING-MACHINE. THOMAS J. MURDOCH, Salisbury, N. C. Filed Oct. 27, 1881. (Model.)



Claim.—1. In a machine for washing clothes, the combination of a tank provided at its bottom with a series of longitudinal perforated pipes connected at one end of the tank with a pipe common to all for supplying them with steam, and a series of slats located longitudinally in and filling the space between the said pipes, and a movable frame supported on the tank to be operated by the attendant, and provided with a device, substantially as described, for acting on the clothes while they are subjected to the action of the steam, in the manner and for the purpose described.

2. In a machine for washing clothes, the combination of a tank having in its bottom a series of pipes connected with a steam-supply, and a series of slats arranged in and filling the space between said pipes, with a traveling frame provided with a corrugated roller for acting on the clothes while they are subjected to the action of steam, substantially in the manner and for the purpose described.

252,492. STARTING AND STOPPING MECHANISM. BENJAMIN MUDGETT, Hawley, Mass. Filed Nov. 14, 1881. (No model.)



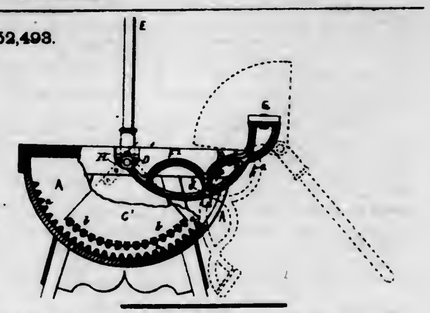
Claim.—1. The combination of the driving-shaft A and the driving-pulley B with the detached fixed shaft D' and the detached loose pulley C, whereby the machine is free to be moved independently of the loose pulley, substantially as described, and for the purpose set forth.

2. The combination of the belt-shipper K', the shipping-rod K, and the lever K² with the friction-arm L L' and the friction-pad N' on the friction-disk N, substantially as described, and for the purpose set forth.

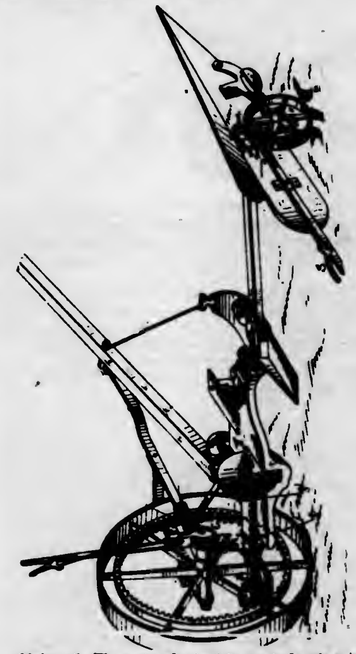
252,493. WASHING-MACHINE. WILLIAM MEYER, Afton, Minn. Filed Apr. 21, 1881. (No model.)

Claim.—The combination, with tub A and levers F' F², hinged thereto, and connected together by bar G, of the shaft D, provided with handle E, and journaled in arms F' F², and the segmental rubber secured adjustably to shaft D by set-screws I, passed through hubs H, whereby the rubber can be not only detached from its shaft, but the angle of the handle with reference to the rubber can be altered by the same means, as set forth.

252,493.



252,494. REAPING-MACHINE. WILLIAM K. MILLER, Canton, Ohio. Filed Aug. 5, 1881. (Model.)



Claim.—1. The seat and wheel-frame, in bearings in the rear open end of which the main drive-wheel axle is mounted, provided on its inner arm with a ratchet wheel or disk surrounding the axle-bearing, and having a sliding connection at its forward end with the pivoted tongue or tongue-frame, substantially as and for the purpose described.

2. The combination of the seat and wheel-frame, supported at its rear end upon the drive-wheel axle, the axle-frame secured at its forward end to and vibrating with the axle, the gear and cutter frame connected at its rear end with the rear end of the axle-frame, and at its forward end, through the hinged tongue or tongue-frame, with the forward end of the seat and wheel-frame, substantially as described.

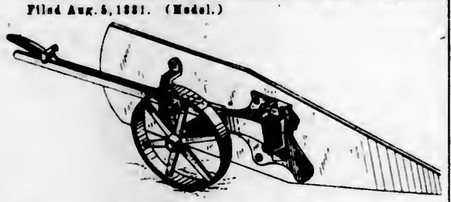
3. The combination of the axle-frame, secured at its forward end to and made adjustable with or upon the drive-wheel axle as a center, the forwardly-projecting cutter-frame hinged to said axle-frame in line with and made adjustable around the pinion-shaft, the wheel-frame provided with the fixed ratchet-disk surrounding the drive-wheel axle and connected at its forward end with the tongue, and the adjusting-lever pivoted and turning on said axle as a center, all arranged and operating substantially as and for the purpose described.

4. The combination of the wheel-frame having the fixed ratchet-disk surrounding the main drive-wheel axle, and connected at its forward end with the hinged tongue or tongue-frame, the axle-frame bar secured to and made adjustable with or upon the

axle as a center, and provided at its rear swinging end with a sleeve-bearing for the pinion-shaft, the cutter-frame hinged at its rear end upon said sleeve and at its forward end to the tongue or tongue-frame, and adjusting devices connecting said cutter-frame with the ratchet-disk on the wheel-frame for adjusting and holding the cutter-frame, substantially as described.

5. The combination of the wheel-frame with its ratchet-disk surrounding the axle, the axle-frame secured to and turning with the axle, and provided with means, operating in connection with said ratchet-disk, for holding it at any desired angle of relation to the wheel-frame, the cutter-frame hinged at its rear end to the rear end of the adjustable axle-frame, and connected at its forward end, through the hinged tongue or tongue-frame, with the forward end of the wheel-frame, and means, operating in connection with the ratchet-disk on the wheel-frame, for adjusting and holding said cutter-frame at any desired height, substantially as described.

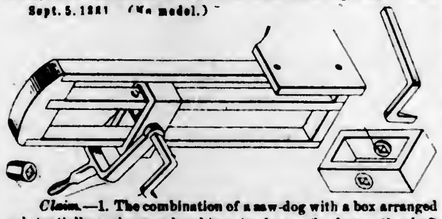
252,495. MEANS FOR ADJUSTING THE GRAIN-WHEEL OF HARVESTING-MACHINES. WILLIAM K. MILLER, Canton, Ohio. Filed Aug. 8, 1881. (Model.)



Claim.—1. In a harvesting-machine, a grain-wheel connected by a swiveling arm with a sliding block adjustable in the arc of a circle on a curved way or track adapted to hold said block against displacement both laterally and in line with the path of the machine.

2. The grain-wheel mounted in a swiveling arm pivoted to an adjustable block moving on a curved way or track and provided with a rack-segment, in combination with the lever and its rack-segment for adjusting the same, substantially as described.

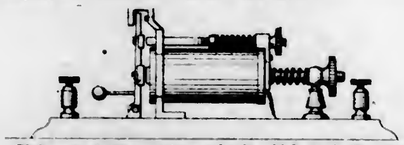
252,496. SAW-MILL DOG. JNO. HORN, Antwerp, Ohio. Filed Sept. 5, 1881. (No model.)



Claim.—1. The combination of a saw-dog with a box arranged substantially as shown, a breaking attachment fixed upon the shaft of the dog and in contact with a bearing-bar, and a spring located between the box and rear of the bearing-bar, for the purpose set forth.

2. A saw-dog located upon the lower side of a frame for grasping the under side of a log, in combination with a second saw-dog having a breaking attachment upon its shaft and mounted upon a box sliding upon said frame, and provided with a spring for holding the breaking attachment against a bearing-bar, substantially as described.

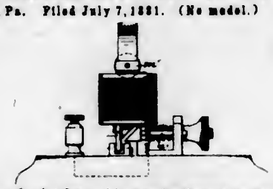
252,497. TELEGRAPHIC SOUNDER. GARRET S. MOTT, Philadelphia, Pa. Filed Nov. 17, 1881. (No model.)



Claim.—1. A telegraphic sounder in which an electro-magnet is combined with an armature-lever and stops, and an adjustable permanent magnet adapted to act on and attract the armature-lever with and in the same direction as the electro-magnet.

2. The combination of the electro-magnet with an armature-lever having two armatures, a non-adjustable retractor, and an adjustable permanent magnet on the same side of the armature as the electro-magnet, all substantially as set forth.

252,498. TELEGRAPHIC SOUNDER. GARRET S. MOTT, Philadelphia, Pa. Filed July 7, 1881. (No model.)

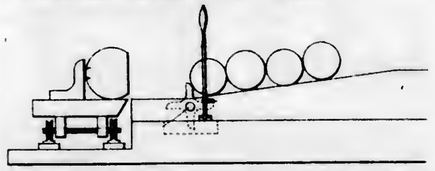


Claim.—1. A telegraphic sounder having a vibrating electro-magnet, a stationary adjustable armature, and fixed stops for the electro-magnet, substantially as described.

2. In a telegraphic sounder, the combination of a frame and a stationary armature with fixed stops and a pendent electro-magnet pivoted with its center of gravity out of a vertical line drawn through its pivoting-points, substantially as shown and described.

3. The combination of the frame and pendent pivoted electro-magnet having beveled poles m with the stationary adjustable armature at right angles thereto, and having a correspondingly-beveled face, substantially as set forth.

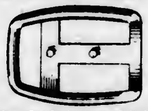
252,499. LOG-DECK OF SAW-MILLS. PETER HUSSER, Muscatine, Iowa. Filed May 17, 1881. (Model.)



Claim.—1. In an inclined plane or log-deck of saw-mills, the combination, with rotary arms, of a suitable stop mechanism, substantially as shown, to hold said arms, but permit of their partial rotation by the weight of the log when the stop is tripped or released, substantially as and for the purpose set forth.

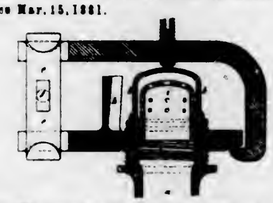
2. In an inclined plane or log-deck of a saw-mill, the combination, with rotating arms, of a stop mechanism consisting of a sliding bar operated by a suitable lever, substantially in the manner and for the purpose specified.

252,500. TRIMMING FOR HALTERS AND BRIDLES. JAMES S. HALSON, Springfield, Ohio, assignor to I. M. Hatcher, same place. Filed May 6, 1881. (No model.)



Claim.—A fastening for halters and bridles, consisting of an approximately rectangular frame having a longitudinal piece running from one end thereof to and connecting with a cross-bar near the other end, the parts being provided, respectively, with a stud or pin and lying in a different plane from the frame proper, as shown and described.

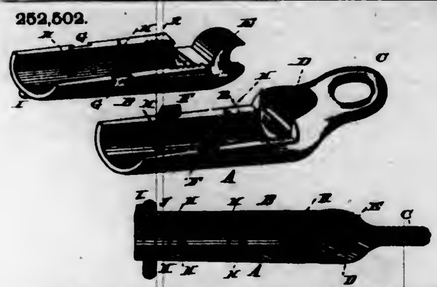
252,501. AUTOMATIC FIRE-EXTINGUISHER. PAUL ORIOLLE, Nantes, France. Filed Oct. 5, 1881. (No model.) Patented in France Mar. 15, 1881.



Claim.—The combination, with the lid *b* and pipe *a*, of the piece *g*, screwed on the end of pipe, the nut-rod *c*, carrying the screw *d*, and the fusible rod *e*, carrying therein a heat-conductor, *f*, as and for the purpose specified.

252,502. ROPE-CLAMP. NICHOLAS C. ORRICK, Canton, Miss. Filed Nov. 25, 1881. (No model.)

252,502.



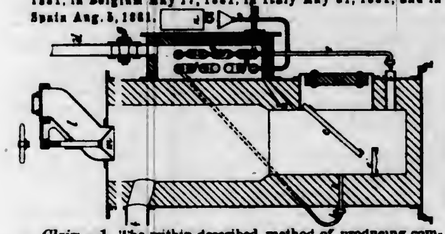
Claim.—1. As an improvement in rope-clamps, the combination of the shell A, having eye C, recess D, and prongs H, with the shell B, having tongue E and prongs H, substantially as and for the purpose set forth.

2. As an improvement in rope-clamps, the semi-cylindrical shells A B, having prongs H, and provided respectively with a recess, D, and tongue E and with guides F and recesses G, substantially as set forth.

3. In a rope-clamp, the combination, with the shells A B, constructed substantially as described and having stud or studs I, of the ring J, having notch or notches K, corresponding with said studs, as set forth.

4. The combination of the shells A B, having respectively recess D and guides F, and tongue E and recesses G, both of said shells being provided with prongs H and screw-threads R, substantially as set forth.

252,503. METHOD OF AND APPARATUS FOR THE MANUFACTURE OF COMBUSTIBLE GAS. NICOLAUS AUGUST OTTO, Mülheim-on-the-Rhine, Germany. Filed May 24, 1881. (No model.) Patented in England May 4, 1881, in France May 10, 1881, in Belgium May 17, 1881, in Italy May 31, 1881, and in Spain Aug. 5, 1881.



Claim.—1. The within-described method of producing combustible gases in gas-producers, the same consisting in developing carbonic-acid gas and nitrogen by the combustion of carbonaceous fuel, then drawing off a part only of the carbonic acid and nitrogen at a point directly above the grate of the producer and below the main body of fuel, then converting the remaining portion of carbonic-acid gas and nitrogen into producer-gas, and finally introducing steam directly into the body of the incandescent fuel at a point above the grate of the producer, for converting the steam into carbonic oxide and hydrogen, which combine with the producer-gas, all substantially in the manner and for the purposes described.

2. The gas-producer provided with passages *b b*, in combination with the chamber *a*, fine-pipe *d*, cock *g*, and steam-pipes *f*, *e*, and *h*, substantially as and for the purpose described.

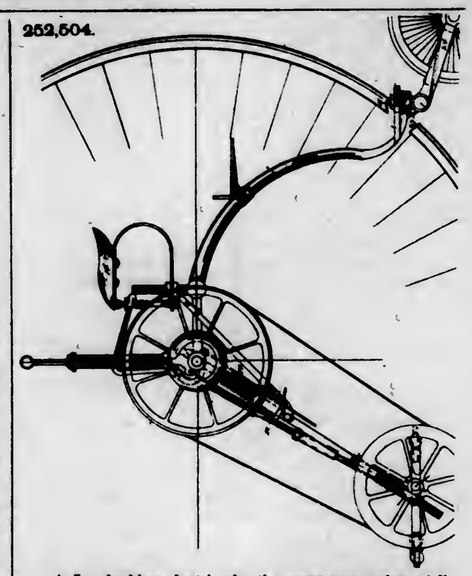
252,504. TRICYCLE. EDOUARD C. F. OTTO, Peckham, County of Surrey, England. Filed Aug. 26, 1881. (No model.) Patented in England May 31, 1879.

Claim.—1. In a tricycle, the combination, substantially as before set forth, of the main axle, the backbone secured thereto, the fork of the following wheel hinged to the backbone, and another joint interposed between said fork and the main axle, operating at right angles to the hinge.

2. In a tricycle, the combination, substantially as before set forth, of the drive-wheels mounted on a common axle, the backbone connected to the axle and provided with fixed steering-handles, and the driving following wheel the fork of which is pivoted to the backbone and provided with a saddle.

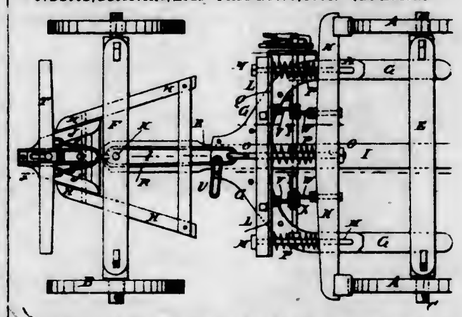
3. In a tricycle of the character described, the combination, substantially as before set forth, of the front seat mounted on the axle of and between the main or driving wheels, and the rear seat mounted above the following wheel.

252,504.



4. In a backbone for tricycles, the combination, substantially as before set forth, of the vertically-operating hinge-joint and the spring.

252,505. WAGON-BRAKE. WILLIAM B. PARCUTT and WILLIS J. BROCK, Batesville, Ark. Filed Nov. 8, 1881. (No model.)



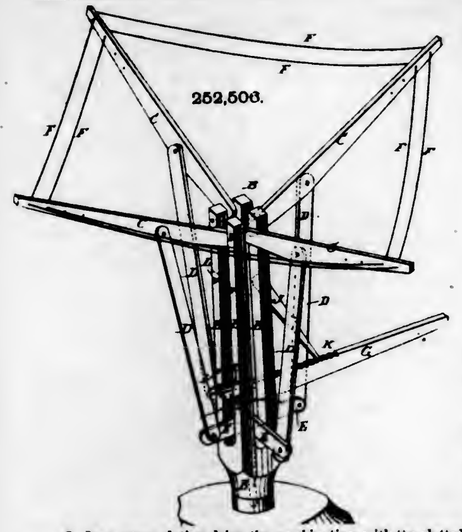
Claim.—1. In a wagon-brake, the combination, with the hounds G and the brake-bar N, of the stationary bar L, the rods M O M, and the springs P, substantially as herein shown and described, whereby the brake will be applied by the tension of the said springs, as set forth.

2. In a wagon-brake, the combination, with the hounds G, the double-tree T, and brake-bar N, of the stationary cross-bar L, the guide-rods M, the draw-rod O, the springs P, and the jointed connection rod or chain R S, substantially as herein shown and described, whereby the brake will be applied automatically when the draft is stopped and will be withdrawn by the draft-strain, as set forth.

3. In a wagon-brake, the combination, with the brake-bar N, the stationary cross-bar L, the rods M O M, and the springs P, of the pairs of links V W and the rock-shaft Y, having arms X and lever Z, substantially as herein shown and described, whereby the power of the brake can be regulated and the brake withdrawn from the wheels, as set forth.

252,506. ROTARY CLOTHES-DRIER. HORACE PALMER, Lebanon, Conn. Filed Oct. 24, 1881. (Model.)

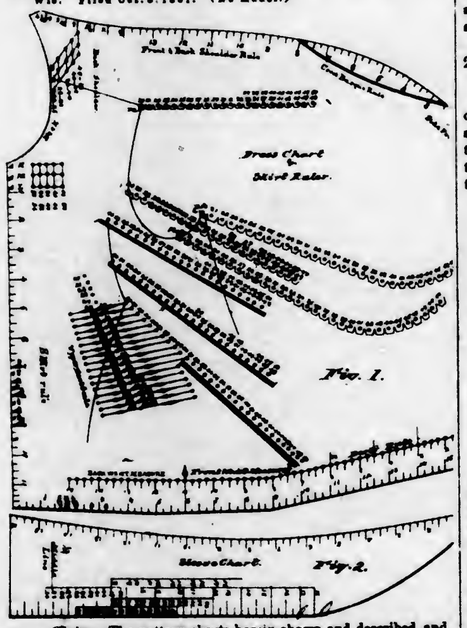
Claim.—1. A rotary clothes-drier constructed substantially as herein shown and described, and consisting of the slotted pivoted post B, the hinged bars C, carrying the clothes-lines F, the connecting-bars D, the crossed bars E, the lever G, and detaining device, as set forth.



2. In a rotary clothes-drier, the combination, with the slotted post B, the lever G, and detaining devices, of the hinged bars C, the connecting-bars D, and the crossed bars E, the upper one of which has a rounded projection or rise in the middle of its length, substantially as and for the purpose set forth.

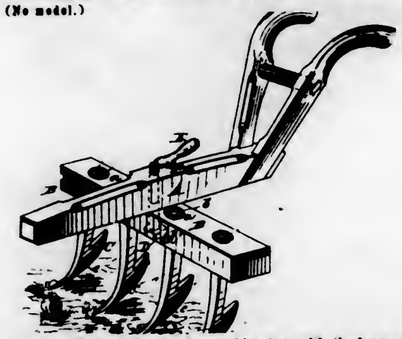
3. In a rotary clothes-drier, the combination, with the slotted post B, provided with pins I, the hinged bars C, the connecting-bars D, and the crossed bars E, of the lever G, provided with the ratchet-teeth K, and the pawl J, substantially as and for the purpose set forth.

252,507. DRESS-CHART. E. ELLSWORTH PALMER, Baraboo, Wis. Filed Oct. 3, 1881. (No model.)



Claim.—The pattern-charts herein shown and described, and denoted, respectively, Fig. 1 and Fig. 2, of the configuration shown and provided with the series of measures, scales, and rules, arranged on the respective charts in the manner shown and described.

252,508. CULTIVATOR. MCDONALD PATE, SAMUEL O. MASON, and WILLIAM H. DAIL, Snow Hill, N. C. Filed Aug. 19, 1881. (No model.)



Claim.—In a cultivator, the combination, with the beam A, of the cross-beam B, carrying a series of cultivator plows or shovels, a clamping bolt and nut, and a locking-arm, E s, connected to said bolt and adapted to engage the beam A, for adjustably securing said beams together, substantially in the manner herein shown and described.

252,509. SWIVEL-BUTTON. SILAS O. PARKER, Littleton, N. H., assignor to the Littleton Patent Button Company, same place. Filed Oct. 29, 1881. (No model.)

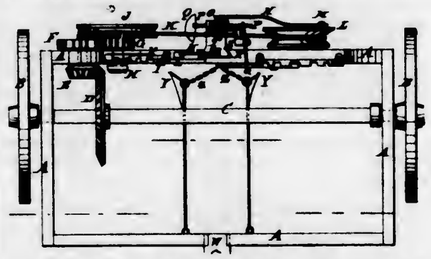


Claim.—1. In a swivel-button, the combination, with the tubular shank D, of the bar A and the spring C, contained in the tubular shank D, substantially as herein shown and described, and for the purpose set forth.

2. In a swivel-button, the combination, with the tubular shank D, having internal indentations or studs, E, of the bar A and the spring C, contained in the tubular shank D, substantially as herein shown and described, and for the purpose set forth.

252,510. COTTON CHOPPER AND CULTIVATOR. JAS. D. PATTERSON, Competition, Mo. Filed June 14, 1881. (No model.)

Brief.—The rod carrying the hoe is supported by a lever pivoted to a bracket formed upon a vibrating socket, through which said rod passes, whereby the hoe may be elevated or depressed while the machine is in motion. A lever and its connections, by which the hoe may be raised or lowered and the machine simultaneously thrown in or out of gear.



Claim.—1. The combination, with the hoe Q, of the rod P, supported by lever R, the socket O, the rod N, the pulley L, having crank-pin M, the band K, the pulley J, and gear-wheels G F E D, whereby said hoe is operated from the drive-shaft, as described.

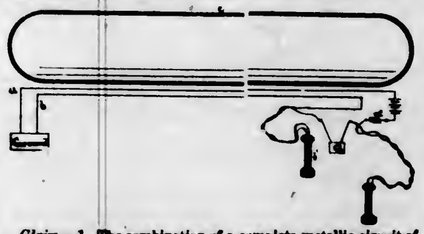
2. The combination of the socket O, hoe P Q, lever R, bracket S, sliding block T, lever I, and connecting-rod U with the vertically-grooved cross-bar A, and mechanism for vibrating said socket, substantially as and for the purpose set forth.

3. The combination, with the bar P, carrying the hoe Q, of the vibrating socket O, provided with the bracket S, and the lever R, pivoted to the said bracket, substantially as and for the purpose set forth.

4. The combination, with the slotted and grooved cross-bar A, the gear-wheels D E F, and the socket O, of the gear-wheel G, the block H, the lever I, the rod U, and the block T, substantially as and for the purpose set forth.

5. The combination, with the bar P, carrying the hoe Q, of the socket O, provided with the lever R, pivoted to the bracket S on the said socket, and mechanism for vibrating said socket, substantially as and for the purpose set forth.

252,511. ANTI-INDUCTION CABLE. WILLIAM R. PATTERSON, Chicago, Ill., assignor to the Western Electric Manufacturing Company, same place. Filed July 14, 1881. (No model.)



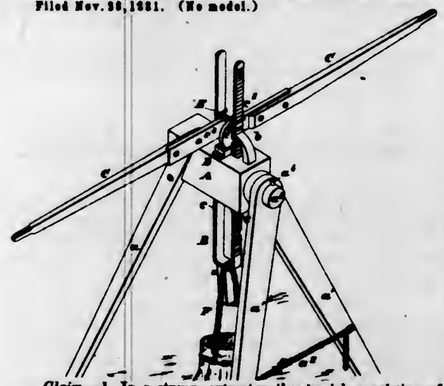
Claim.—1. The combination of a complete metallic circuit of low resistance placed in the interior of the cable among the other conductors, with one of said conductors used as a primary circuit and several of said conductors used as secondary circuits, whereby the effects of induction are overcome, substantially as and for the purpose specified.

2. In a telegraph-cable, the combination of separately-insulated conducting-wires with a complete metallic circuit of low resistance, which is placed centrally among the said conducting-wires, as and for the purpose set forth.

3. A telegraph-cable containing several primary wires, in combination with a complete metallic circuit of low resistance placed centrally among the other conductors, whereby tertiary currents are induced, as and for the purpose set forth.

4. The combination of primary line *a*, key *a'*, or its equivalent, one or several secondary lines, *b*, and the low-resistance wire *c*, whereby tertiary currents are induced in said line or lines *b*, as and for the purpose set forth.

252,512. STUMP-EXTRACTOR. JOHN G. PEACH, Salem, Mo. Filed Nov. 26, 1881. (No model.)



Claim.—1. In a stump-extractor, the derrick consisting of block A, with stationary legs *a* and adjustable legs *a'*, as and for the purpose set forth.

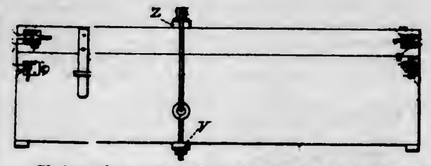
2. In a stump-extractor, the levers C, having eccentric heads *c'*, eccentrically connected together by the strap-bolt *c''*, as and for the purpose set forth.

3. In a stump-extractor, the cap D, secured to or resting upon the derrick, and forming the bearing-surface of the levers, substantially as set forth.

4. In a stump-extractor, the distance bolt or bar E, having heads *e*, as and for the purpose set forth.

5. The combination of derrick A *a a'*, yoke B, levers C, with eccentric heads *c'*, pawls *b*, resting upon the top of the derrick and engaging with the notches on the yoke, as and for the purpose set forth, connecting-bolt *c''*, straps or links *c'*, and clevises *e*, all substantially as set forth.

252,513. WAGON-BODY. ISAAC E. PHELPS, Wahoo, and WILLIAM F. SIMPSON, Scribner, Nebr. Filed June 29, 1881. (No model.)



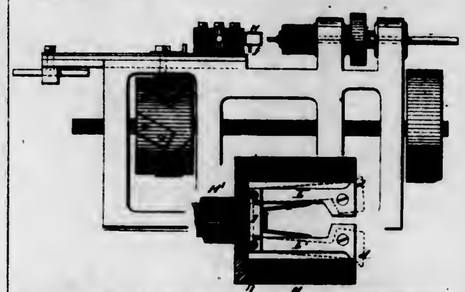
Claim.—As a means of securing supplemental sides to a wagon, the bars V and E, the latter having notches at its ends, in combination with rods which are attached at one end to the bar V and carry at the other end cams or other securing devices adapted to the notched ends of bar E, as set forth.

252,514. SAP-SPOUT. GEORGE J. RECORD, Conneaut, Ohio. Filed Nov. 22, 1881. (No model.)



Claim.—In a sap-spout, the combination, with the tapering tube A, of the eccentrically-perforated ring-flange B, substantially as herein shown and described, whereby additional security is obtained against the accidental detachment of the sap-bucket, as set forth.

252,515. METAL-SCREW MACHINE. MOSES W. RUDDUCK, Bridgeport, Conn., assignor to the Wheeler & Wilson Manufacturing Company, same place. Filed May 31, 1881. (No model.)



Claim.—1. In a screw-threading machine, the combination of the dies arranged in a holder, and in connection with a cross-head in said holder, said cross-head and dies free for longitudinal movement within said holder, a stop to arrest the advance of the die-holder at a predetermined point, whereby the continuous revolution of the screw being cut itself operates to draw the dies from the holder, such withdrawal of the dies permitting them to release the screw, and thereby cease their cutting, and mechanism, substantially such as described, to draw the dies back into the holder, whereby they are closed for a new cut, substantially as described.

2. In a screw-cutting machine provided with a device to hold the blank to be cut, the combination of a tool-holder arranged to present the several tools successively to perform their work upon the blank, the die-holder H, arranged in said tool-holder, combined with the levers L L', arranged therein, free for longitudinal movement, each carrying a part of the die, mechanism, substantially such as described, to arrest the cutting operation of the die, thus permitting the screw being threaded to withdraw said levers from the holder and open the dies, a stud or extension, *f*, from said levers outside said holder, and a cam arranged in the path of said stud as the die-holder passes from its position for one operation to its position for the next operation, whereby the dies as drawn out and opened by the screw itself will be returned and closed, substantially as described.

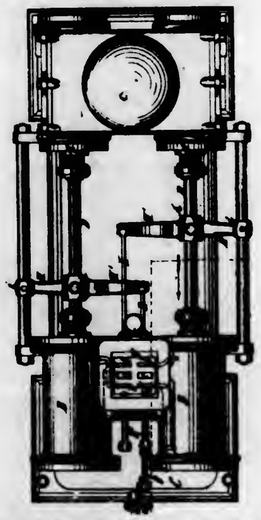
3. In a screw-cutting machine provided with a device to hold the blank to be cut, the combination of a tool-holder arranged to present the several tools successively to perform their work upon the blank, the die-holder H, arranged in said tool-holder, combined with the levers L L', arranged therein, free for longitudinal movement, each carrying a part of the die, mechanism, substantially such as described, to arrest the cutting operation of the die, per-

mitting the screw being threaded to withdraw said levers from the holder and open the dies, a stud or extension, *f*, from said levers outside said holder, and a cam arranged in the path of said stud as the die-holder passes from its position for one operation to its position for the next operation, whereby the dies so drawn out and opened by the screw itself will be returned and closed, with mechanism, substantially such as described, for adjusting said levers relatively to each other, substantially as described.

252,516. TREATMENT OF RESIN-OIL FOR MIXING PAINTS. FRANKLIN H. RUBB, Lawrenceburg, Ind., assignor of one-half to W. C. Smith, Washington Court-House, Ohio. Filed Dec. 3, 1881. (No specimens.)

Claim.—The method described of treating resin-oil, consisting in adding thereto tungstate of soda, carbolic acid, benzine, gum-shellac, and japan, in or about the proportions specified.

252,517. DUPLEX PUMPING-ENGINE. GEORGE H. RUTHOLDS and THOMAS J. RIBBS, New York, N. Y., assignors of one-half to Cornelius H. Delamater and George H. Robinson, both of same place. Filed July 23, 1881. (No model.)



Claim.—1. In a duplex engine, the combination, with the two piston-rods and steam-cylinders, two slide-valves, levers to which said valves are connected and through which they are operated, of arms or cross-heads secured to said piston-rods, and rods whereby said arms or cross-heads are connected each with the valve-operating lever of the other engine, substantially as and for the purpose specified.

2. In a duplex engine, the combination of the steam-cylinders B, the piston-rods D, the valves *d*, the levers *g*, the arms or cross-heads H, bowed or curved in opposite directions at their inner ends, and the rods I, each connecting with the lever *g* of the other engine, substantially as and for the purpose specified.

3. In a duplex engine, the combination of two steam-cylinders arranged side by side, a single horizontal valve-seat formed above and between said cylinders, two valves working side by side upon said seat and controlling the admission of steam to and its exhaust from said cylinders, mechanism for working said valves, and a single steam-chest common to both cylinders, covering said valve-seat and containing both valves, substantially as specified.

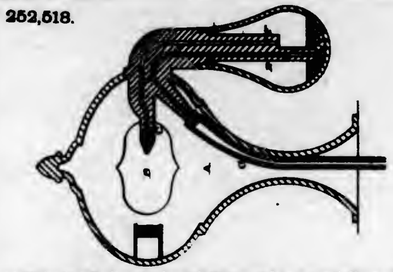
252,518. HYDROGEN LAMP OR CIGAR-LIGHTER. FRANK RUHN, Brooklyn, N. Y. Filed Nov. 16, 1881. (No model.)

Brief.—When the handle is swung from its vertical position the mercury or other liquid seal is displaced and the gas-pipe opened, allowing the passage of the hydrogen to the burner.

Claim.—1. The combination of the standard A, made hollow at its top and provided with the openings B, the gas-tip C, and mass of platinum sponge placed inside of the standard, and a handle containing a sealing medium, substantially as shown.

2. In a cigar-lighter, the combination of a standard with a swinging handle which is applied thereto, and in which handle is placed a liquid sealing medium to prevent the escape of the gas

252,518.

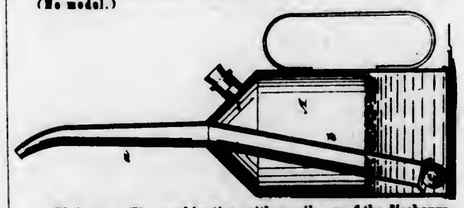


until the handle is turned partially around, substantially as shown.

3. The combination of a standard and gas-generator with a connecting-pipe, G, the swinging handle containing the two pipes E F and a liquid sealing medium, and a gas-tip and a mass of platinum sponge, substantially as set forth.

4. In a cigar-lighter, a gas-burner tip made of iridium, substantially as shown.

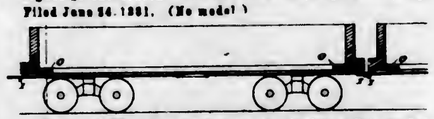
252,519. OIL-CAN. THOMAS M. RIGHTER, Sandy Run, and THOMAS E. GRIFFITH, Wilkes-Barré, Pa. Filed Nov. 16, 1881. (No model.)



Claim.—1. The combination, with an oil-can, of the discharge tube or nozzle extended down into the can, nearly to the bottom of the same, and provided with a bell-shaped mouth at its lower end and a ball-valve for closing the said lower end when the can is turned from an upright position, substantially as herein shown and described.

2. The discharge-tube *b*, tube *d*, valve *d'*, and valve *f*, combined with oil-can A, substantially as and for the purpose set forth.

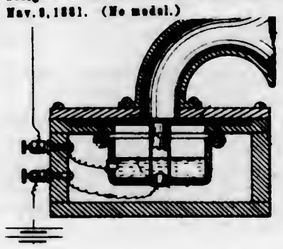
252,520. CAR-COUPLING. EDWARD J. ROBERTS, Ashland, assignor of one-fourth to W. W. Culbertson, Boyd County, Ky. Filed June 24, 1881. (No model.)



Claim.—1. The car-coupling composed of two flat overlapping heads, G, of which each has a lug, I, to occupy a circular orifice, H, in the opposing head, in combination with cam J, operating in a yoke, O, to enable the temporary depression of which-over head is to receive the lug of the other, substantially as set forth.

2. In combination with the overlapping and interlocking heads G H I and operating-cams J upon rotating and sliding shafts K, the slotted hangers M, and springs N, for automatic locking of the head to its elevated position, substantially as described.

252,521. ELECTRIC TELEPHONE. JAMES H. ROGERS, Washington, D. C., assignor to Frank Hume and L. G. Hine, same place. Filed Nov. 9, 1881. (No model.)



Claim.—1. The combination of the diaphragm, the downwardly-projecting non-conducting tube, the cup, the fluid-conductor, and its binding-screws.

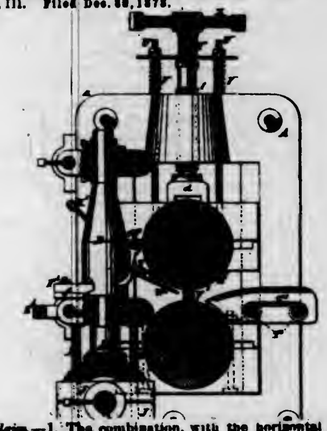
2. The combination of a battery, the line-wires, a diaphragm, a fluid-conductor forming part of the circuit, the non-conducting containing-cup, and a non-conducting tube projecting from the diaphragm, which projects into the fluid and serves to increase and decrease its cross-section at a given point between the end of the projection and the cup, substantially as set forth.

252,522. HAY-TEDDER. JOHN W. KUHL, Hifflinsburg, Pa. Filed Sept. 14, 1881. (Model.)



Claim.—The tedder-arms Q, having studs T and bails or brackets E', in combination with the slotted extensions E, having shoulders S' and stems S² moving or sliding vertically upon studs T, and in brackets E', and having teeth or prongs V, and the springs U, coiled upon the stems S² between shoulders S' and brackets E', substantially as set forth.

252,523. ROLLING-MILL. JOSEPH F. SANDBERG, New York, N. Y., assignor of one-third to Carl Israel Qvarnström, Donovan, Ill. Filed Dec. 30, 1878.



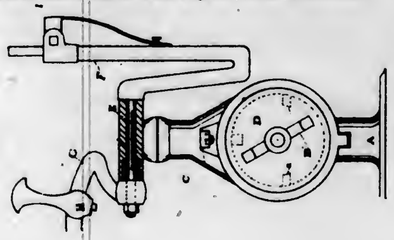
Claim.—1. The combination, with the horizontal rolls B C and vertical rolls D E, of the rock-shaft V'', plate W', lever X', and adjustable curved bar Z', substantially as described, and for the purpose set forth.

2. The combination, with the rolls B C, of the rock-shaft V'', plate W', lever X', adjustable curved bar Z', rolls D E, side cleats, F', and surfaces *f* between the side cleats, substantially as described, and for the purpose set forth.

252,524. ROOFING MATERIAL. L. LEWIS SACHSENMAIER, Cincinnati, Ohio. Filed Nov. 24, 1881. (No specimens.)

Claim.—The improved roofing material hereinbefore described, consisting of a fibrous or textile fabric having its interstices filled under pressure with a liquid compound of metallic and oily substances, substantially such as described, and its adhesive surface coated with dry pulverulent hydraulic cement.

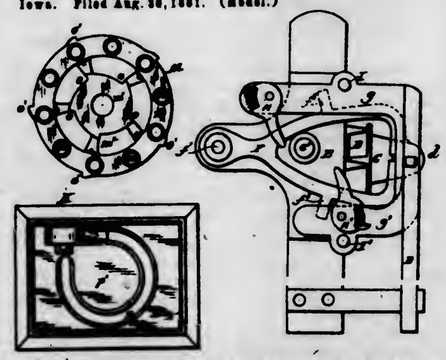
252,525. SHOE-MAKER'S JACK. FRANK SCHIPPER and LUKE DOBBS, Aurora, Ind. Filed Sept. 24, 1881. (No model.)



Claim.—1. In a shoe-maker's jack, the combination, substantially as specified, of a hinged supporting-stand and a jack-supporting head, as E, adapted to receive the last-supporting parts and swiveled to turn in the supporting-stand, with the last-supporting parts fitted to turn in piece E, as set forth.

2. In a shoe-maker's jack, the combination, substantially as hereinbefore set forth, of stationary parts A A' B D and the movable parts C, E, F, G, and H, arranged to operate as specified.

252,526. CORN-PLANTER. LEVI SCOFIELD, Cedar Rapids, Iowa. Filed Aug. 26, 1881. (Model.)



Claim.—1. The seed-plate M, having a large annular top, m, provided with seed-pockets and with lateral notches or projections *o'*, and a smaller dependent hub, m', connected to the top by arms and provided with lateral ratchet-teeth, substantially as described.

2. A seed-plate having a concave center formed by a depressed hub, through which the seed-plate is centered upon a bolt below the horizontal line of its surface, substantially as described.

3. The combination of the seed-plate M and bolt *o'* with the bridge-plate having the central opening, whereby the seed-plate can be inserted and removed simply by dropping its hub through the opening in the bridge-plate or lifting it out of said opening, substantially as described.

4. The swinging lever F, substantially as represented in Fig. 8, having the open center, the front extension, *f*, and the lateral extensions *f'' f'*, or their equivalents, as herein set forth.

5. The plate E, substantially as represented in Fig. 7, having the front extension, *e*, and the vertical pin *e'*, and adapted for application to the cross-bar A, as herein set forth.

6. The combination of a revolving seed-plate having a reduced hub with the bar D, and with a plate, G, rigidly attached to and moving with the bar, and having two arms, *g g'*, two spring-pawls operating in opposite directions against the reduced hub, and two stops to limit the movement of the seed-plate, substantially as described.

7. The combination of the actuating-bar, the swinging lever, the seed-plate with downwardly-projecting hub, and the spring-pawls attached to the actuating-bar and operating on opposite sides of the hub, substantially as described.

8. The combination of the bar D, the plate G, the lever F, and the seed-plate M, substantially as described.

9. The combination of the bar D, the plate G, the lever F, the seed-plate M, and the bridge-plate J, substantially as described.

10. The combination of the bar D, the plate G, the lever F, the seed-plate M, and the supporting-plate E, having the central stud, *o'*, substantially as described.

11. The combination of the bar D, the plate G, the bridge-plate J, the lever F, the seed-plate, and the supporting-plate E, having the central stud, *o'*, substantially as described.

12. A seed-plate having a concave center formed by a depressed hub, through which the seed-plate is centered on a bolt or stud, and having openings through the sides of the concavity for the release of dirt, substantially as described.

13. The combination of the hopper-bottom having a nearly-annular unbridged slot, *p*, terminating at one end over the discharge-opening, as described, with an intermittingly-rotating seed-plate having pockets that move in line with said slot, whereby the grain is fed easily and regularly, and is never interrupted by clogging at any obstructing bridge, substantially as described.

14. In a corn-planter, the combination of an actuating-bar, to which the pawls are attached for rotating the seed-plate, and a swinging lever to guide the bar, substantially as described.

15. The combination of an upper hopper-supporting plate and

a lower lever-supporting plate with the pawl-plate and guide-lever arranged between them, substantially as described.

16. The combination of a reciprocating pawl-plate and its guide-lever with the reduced hub of the seed-plate, all said parts operating below the plate which forms the bottom of the seed-pockets, substantially as described.

252,527. DOOR-HANGER. ELIJAH U. SCOVILLE, Menlius, N. Y. Filed Nov. 10, 1881. (No model.)

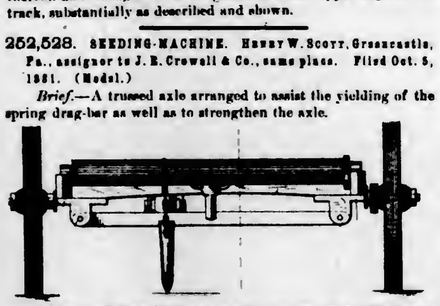


Claim.—1. The combination, with the hanger A B, cap C, inclosed sheave S, and bolt *a*, of the supplemental plate D, secured to the cap by the bolt *a*, and having journaled on its lower end the roller R, arranged to engage the upper rear edge of the track, substantially as shown.

2. In combination with the hanger-strap A, provided with the head B, the sheave S, and bolt *a*, the cap C, provided with the recess *h*, and the supplemental plate D, fitted to said recess, and having the downward-extended shank E, with the roller R, journaled thereon and brought to bear against the rear upper edge of the track, substantially as described and shown.

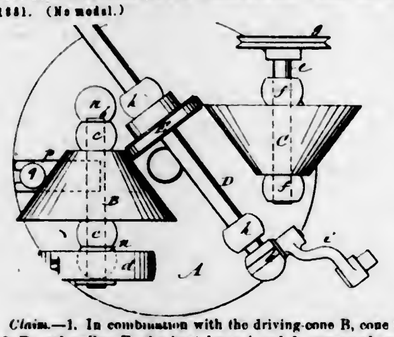
252,528. SEEDING-MACHINE. HENRY W. SCOTT, Greencastle, Pa., assignor to J. R. Crowell & Co., same place. Filed Oct. 5, 1881. (Model.)

Brief.—A trussed axle arranged to assist the yielding of the spring drag-bar as well as to strengthen the axle.



Claim.—The main frame or axle-bar provided with the suspended truss rod or bar, in combination with the draw-bars and the yielding hoes hinged thereto, arranged and operating substantially as described, whereby the truss-rod is made not only to stiffen said frame or axle-bar, but also to facilitate the passage of the hoes over obstructions, as explained.

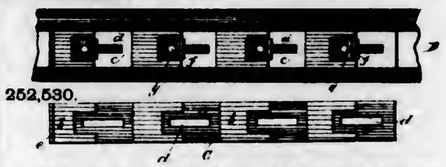
252,529. APPARATUS FOR THE TRANSMISSION OF POWER. JOSE DA SILVA SERTORI, Rio de Janeiro, Brazil. Filed June 23, 1881. (No model.)



Claim.—1. In combination with the driving-cone B, cone C, shaft D, and pulley E, the bent lever *i*, rod *k*, connected to a grooved boss on shaft D, spring *m*, connected to plate A, and treadle-rod *l*, substantially as shown and described, for operation as set forth.

2. In apparatus for transmitting power, the posts *c*, shaft *e*, gudgeons *n*, arm *p*, and screw *q*, combined with the shaft of driving-cone B and intermediate pulley, E, substantially as and for the purposes set forth.

252,530. NUT-LOCK. JOHN A. SIMPSON, Saddler's Creek, assignor to William D. Simpson, Anderson Court-House, S. C. Filed June 17, 1881. (No model.)

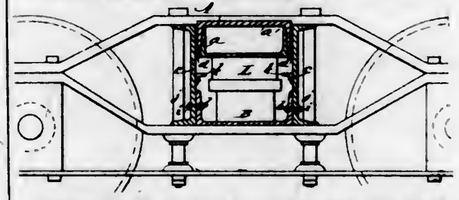


Claim.—1. In a combined fish-bar and nut-locking plate having recesses, nut-embracers, or nut-locking ears, head *c*, and rectangular slot *d*, running lengthwise of the plate, with its sides parallel, straight, and perpendicular to the face of the plate, and adapted to embrace and hold from turning the square shank of a bolt, constructed substantially as shown and described.

2. In a combined fish-bar and nut-locking device, in combination with the rails A and plate B, bolt and nut locking plate C, having head *c*, nut-embracers *b*, recesses *c*, and rectangular slot *d*, running lengthwise the plate, with its sides parallel, straight, and perpendicular to the face of the plate, with bolt *f*, having its shank square from its head to its threads, passing horizontally through plate B and rails A, with its square shank passing half the thickness of plate C into said rectangular slot *d*, and its threaded end extending beyond the face of the said plate to receive nut *g*, and nut *g*, adapted to fit on the threads of said bolt and between nut-embracers *b*, the whole combined, constructed, and arranged to operate substantially as described, and for the purposes set forth.

3. In a nut-locking device, the combination of bolt and nut locking plate C, having head *c*, nut-embracers *b*, recesses *c*, and rectangular slot *d*, running lengthwise the plate, with its sides parallel, cut straight, and perpendicular to the face of the plate, with bolt *f*, having its shank square from its head to its threads, and adapted to pass through the parts it is designed to bind into rectangular slot *d* half the thickness of plate C, and its threaded end extending beyond the face of said plate, and nut *g*, fitting on the threads of said bolt and between nut-embracers *b*, the whole constructed, combined, and arranged to operate substantially as shown and described, and for the purposes set forth.

252,531. CAR-TRUCK. GUSTAVUS B. SIMONDS, Albuquerque, N. Mex. Filed Oct. 31, 1881. (No model.)



Claim.—1. The transoms *c c*, provided with the stops *k k*, in combination with the truck-bolster A, substantially as and for the purposes set forth.

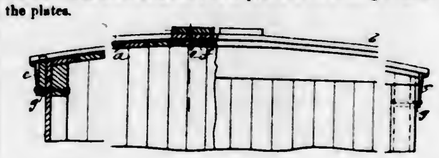
2. The truck-bolster A, formed of the flanged channel-plates *a a'*, the flange of the plate *a* fitting in the flange of the plate *a'*, substantially as shown and described.

3. The combination, with the channel bar or plate B, transverse plates *c*, and the springs L, of the channel-plate *a'*, provided with flanges *d*, substantially as and for the purpose set forth.

4. The transom-plates *c c*, bolted to the bottom channel bar or plate, B, and tied together by the tie-plates E, and provided with the stops *k k*, in combination with the bolster A, formed of the channel-plates *a a'*, substantially as and for the purposes set forth.

252,532. CAR-ROOF. GUSTAVUS B. SIMONDS, Albuquerque, N. Mex. Filed Oct. 21, 1881. (No model.)

Brief.—The lower ends of the corrugated roof-plates are fastened to a spring-plate running along the side of and fastened to the car. The eaves-boards are scalloped to fit the corrugations in the plates.



Claim.—1. The corrugated plates *b b*, secured to the car at the eaves by the spring plates or flanges *c c*, substantially as and for the purposes set forth.

2. The corrugated plates *b b*, overlapping each other at the side edges, and secured at the ends to the car by means of the spring plates or flanges *c c*, substantially as and for the purposes set forth.

3. The scalloped eaves-boards *g g*, in combination with the corrugated plates *b b* and the spring plates or flanges *c c*, substantially as and for the purposes described.

252,533. OPERA-CHAIR. ELDRIDGE J. SMITH, Washington, D. C. Filed June 5, 1880. (No model.)

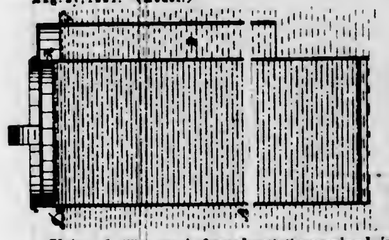


Claim.—1. The combination, with the back of a chair which is constructed of spring-wire and slats, as described, of the metal bracket U, rigidly attached to the sides, as shown, and holding a wire of the back, whereby the lower portion of back is provided with a spring action, substantially as specified.

2. The combination, with the chair-seat which is constructed of spring-wire and slat fabric, of the support S, concave on its upper surface and adapted to sustain the seat at front and rear only, said seat being bolted to said support only at its front end, as shown, whereby a spring action is secured for the center of the seat, substantially as shown and described.

3. In a chair or settee, the end piece, A, having abutment B and forming the front leg, the wide flat stretcher E, and rear leg, C, secured together by bolts, which pass through both legs and the upper and lower portions of the stretcher, as shown, whereby a multiplicity of rounds and stretchers is obviated, substantially as described.

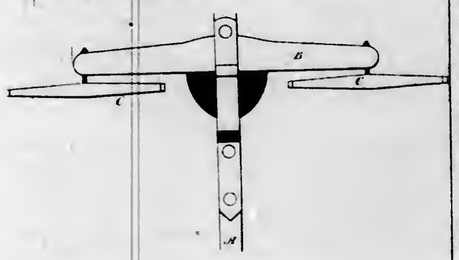
252,534. MILK-COOLER. ELLIS F. SMITH, Polo, Ill. Filed Aug. 27, 1881. (Model.)



Claim.—1. The can A, formed with the opening *h*, in combination with the chamber D, formed with opening *f*, the opening *h* being on a higher level than the opening *f*, substantially as and for the purposes set forth.

2. The can A, formed with the water-line mark *g*, and with the opening *h*, in combination with chamber D, formed with the opening *f*, the opening *h* being above and the opening *f* below the water-line, as and for the purposes specified.

252,535. DOUBLE-TREE. EMANUEL SPEARS, La Fayette, Ind., assignor to Harding, Barbee & Co., same place. Filed Oct. 4, 1881. (No model.)

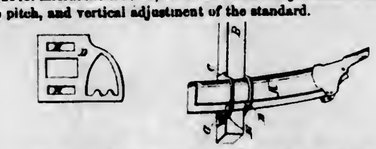


Claim.—1. The tongue A and double-tree B, pivoted to said tongue, combined with the elastic brace or buffer mounted upon said tongue, and supported in engagement with the double-tree to hold the same in position, as set forth.

2. A double-tree pivoted to the tongue, combined with an elastic brace or buffer in engagement with said double-tree at each side of said pivot, whereby any motion of said double-tree upon said pivot will compress and be resisted by said buffer, for the purpose set forth.

252,536. CULTIVATOR-STANDARD CLAMP. HARLOW C. STAHL, Ballville Township, Sandusky County, Ohio, assignor to the Fremont Cultivator Company, Fremont, Ohio. Filed May 11, 1881. (No model.)

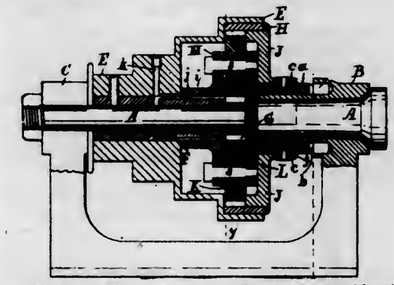
Brief.—A standard-clamp composed of an upper and a lower slotted plate, each having an aperture for the standard and the upper one a set-screw to secure the standard in place. The slots in the plates cross each other at right angles, whereby provision is made for lateral inclination, forward and back adjustment to change the pitch, and vertical adjustment of the standard.



Claim.—1. The cultivator-standard clamp or coupling composed of the sliding plate C, encircling the standard A and provided with the longitudinal slots F F and the set-screw E, the plate D, also having aperture to fit the standard A and having cross-slots H H, the bolts G G, and the beam B, as shown and described.

2. The combination of the plates C and D, slotted and perforated as described, the hollow standard A, the set-screw E, the beam B, and the bolts G G, as and for the purposes set forth.

252,537. SPEED-GEARING. JOHN STEWART, Newark, N. J. Filed Dec. 3, 1881. (No model.)



Claim.—1. The combination, with a shaft, A, fixed bearing B, and gear G, rotated upon the shaft by cone E or its equivalent, of a flange, L, secured to the shaft, and carrying gears K, in connection with gear G, a ring-gear, H, connected with gears K, and suitably mounted to revolve freely upon the shaft, and means for securing the ring-gear to the flange L or bearing B at pleasure, substantially as herein set forth.

2. The construction for the locking device, consisting of the bolts *a* and collar *c*, combined with the hub of the disk J and operating to lock the disk to the fixed bearing B or flange L at pleasure, substantially as set forth.

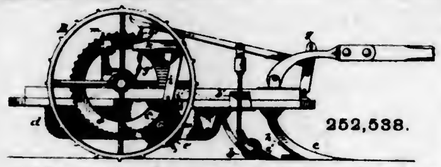
3. The combination, with the bolts *a*, hub *b*, and collar *c*, of the spring *f* and grooves *s s*, arranged and operated substantially as described.

4. The combination, with the flange L and studs *s s*, carrying the intermediate gears, K, of the brace M, arranged to revolve on the sleeve F, substantially as and for the purpose set forth.

5. In combination with the shaft A, cone E, and sleeve F, the speed-gearing, constructed substantially as described, and provided with the brace M and oil-channels *j k*, for distributing oil to the internal gearing, substantially in the manner set forth.

252,538. POTATO-DIGGER. HIRAM STRAIT, Troy, N. Y. Filed June 9, 1881. (Model.)

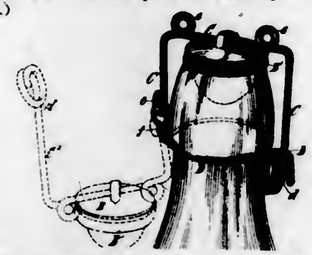
Claim.—1. In a potato-digger, the combination, with frame A, supported upon wheels B and casters *b*, of the forward share, *c*, having a central standard and T-shaped extension, *h*, arranged



with its points above the extremities of said share, and rear share, c', made scoop-shaped for elevating the broken soil, and provided with rearwardly-inclined teeth c^2, substantially as shown and described.

2. In a potato-digger, the combination of frame A, fingered cylinder c, having disks c', rearwardly-diverging side boards, d, wheels B, cog-wheels c^3, pinions c^4, uprights i i, perforated plates i' i', toggle-jointed levers k k, cross-bar l, having loops l', and tapering uprights m m, substantially as shown and described.

252,539. BOTTLE-STOPPER AND FASTENING THEREFOR. GEORGE B. STUART, Philadelphia, Pa. Filed May 5, 1881. (No model.)



Claim.—1. The combination of the stopper B B', the yoke C, having the eye e and coiled end forming the shoulder d, and the neck-wire D, having the twist f, and a catch, with which said shoulder d may be engaged, substantially as and for the purpose specified.

2. The combination of the stopper B B', the yoke C, having the eye e and coiled end forming the shoulder d, and also having one or more coils, e, in its upper part, and the neck-wire D, having the twist f, and a catch, with which said shoulder d may be engaged, substantially as and for the purpose specified.

252,540. PUTTING UP BLANKETS. DAVID A. SWARNY, Pittsburg, Pa., assignor to himself and North West, same place. Filed Nov. 30, 1881. (No model.)



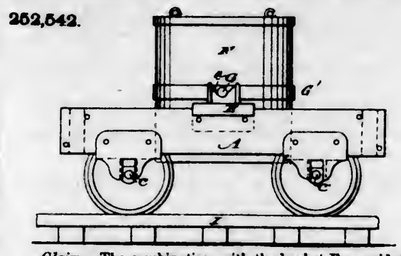
Claim.—The herein-described method of putting up blankets and similar articles, consisting of enveloping them in a casing of paper of strong texture, closely sealed or pasted, substantially as and for the purposes specified.

252,541. DOOR-SPRING. ALFRED E. TANNER, New Haven, Conn., assignor to Sargent & Co., same place. Filed Oct. 31, 1881. (Model.)



Claim.—The combination of the spiral spring, made fast at one end, with the spindle D, fixed at its opposite end and supported by a bracket, the said spindle constructed with the polygonal and cylindrical portions e f, and the locking-plate A, arranged to take its bearings upon the bracket and over the said polygonal or cylindrical parts of the spindle, substantially as and for the purpose described.

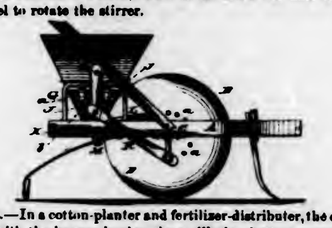
252,542. COMBINED HOISTING-BUCKET AND DUMP-CAR. JOHN F. TAYLOR, Sharon Springs, N. Y. Filed June 4, 1881. (No model.)



Claim.—The combination, with the bucket F, provided with the trunnions G, of the trunnion-beds E, having V-shaped tracks a, and secured upon the upper edge of the car-frame A, substantially as and for the purpose set forth.

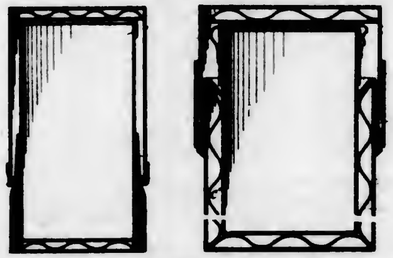
252,543. COTTON-PLANTER. HERBERT C. TILLERY, Fort Deposit, Ala. Filed Sept. 29, 1881. (Model.)

Brief.—A vibrating bottom in two sections; adjustable device to regulate the vibration, and a crank from the axle of the main wheel to rotate the stirrer.



Claim.—In a cotton-planter and fertilizer-distributer, the combination, with the hopper having the oscillating bottom composed of the sections a and b, placed one above the other, and suspended from the hopper by the curved straps J J, of the perforated plate M, suspended from the bottom of the hopper, the lever L, slotted vertically at d, and perforated laterally at e and pivoted on the rod K, the spring N and the toothed wheel B, substantially as specified.

252,544. PACKING-BOX FOR FRUIT-JARS, &c. NELSON F TIPTON, Colony, Kans. Filed Nov. 28, 1881. (No model.)



Claim.—1. The combination of a box having a strengthening-jacket provided with a sloping upper portion, with a cover whose head is of a diameter approximately that of the exterior of the jacket, and whose rim at its lower edge fits tightly the sloping portion of the jacket, the box and cover forming a chamber between them, above the slope of the jacket, substantially as and for the purpose described.

2. The combination of a box formed with a sloping jacket solidly formed thereon, and having its upper edge provided with a rubber band encircling and projecting above it, with a cover approximately of the diameter of the jacket, and having a rubber band encircling and projecting under the edge, and within the interior of its rim, the cover and the jacketed box being united at two packed joints, substantially as and for the purpose described.

252,545. ELECTRIC RAILWAY-SIGNAL. CHARLES D. TIBBALS, Boston, Mass., assignor to the American Railway Signal Company, Portland, Me. Filed Aug. 29, 1881. (No model.)

Brief.—Two electro-magnets, one for operating the signal and the other for retaining it when set.

Claim.—1. The signal and main electro-magnet and its armature to control it, and a normally-closed main circuit, the armature



of the said magnet being arranged, as described, to be retained in either position up to the poles of the said magnet, or retracted therefrom while the said magnet is magnetized, in combination with a circuit-breaker in the said main circuit, whereby the main magnet may be demagnetized and its armature retracted, and an auxiliary magnet and circuit therefor, to govern the return movement of the armature from its retracted position up to the poles of the main magnet, substantially as described.

2. The signal and its controlling main electro-magnet and armature, arranged, as described, to remain in either position assumed while acted upon by the said magnet alone, and a normally-closed main circuit for said magnet, and an auxiliary electro-magnet in a normally-open branch of the said main circuit, adapted, when magnetized, to attract the said armature up to the poles of the main magnet, combined with a momentarily-operated circuit-breaker and closer in the said main and branch circuits, respectively, adapted to be operated by a train while passing them, and located at proper points, the former to break the main circuit and permit the retraction of the armature and the latter to close the auxiliary or branch circuit and cause the movement of the armature to the poles of its main magnet, substantially as and for the purpose described.

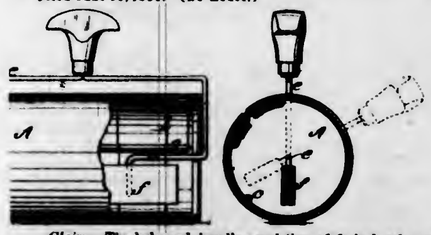
3. The signal and main magnet and its armature and retractor to control it, as described, the said magnet being in a normally-closed circuit, provided with a breaker adapted to remain closed except while positively opened by a train in passing, combined with an auxiliary magnet and circuit therefor, provided with a circuit-controller adapted for momentary action, the said auxiliary magnet being adapted to govern the movement of the armature from its retracted position up to the poles of the main magnet, substantially as set forth.

4. The signal and main magnet, its armature, and normally-closed circuit to control it, as described, combined with the auxiliary magnet in a normally-open branch of the main circuit and an auxiliary battery in the said branch, the effect of which is thus confined wholly to the said auxiliary magnet, and the circuit-controllers in the said main and branch circuits, substantially as described.

5. The signal and its controlling main and auxiliary magnets and circuits therefor, combined with an electric switch to open the said main circuit, it being adapted in its return movement, by which it closes the said circuit, to also operate the auxiliary circuit and magnet, substantially as and for the purpose described.

6. The herein-described circuit-breaker, consisting of a lever and anvil therefor, and spring by which the said lever is normally held in contact with its anvil, the said circuit-closer being mounted upon a sleeper or foundation chambered to permit an independent downward movement of the rail, and the end of the lever extended under the rail and operated thereby, substantially as described.

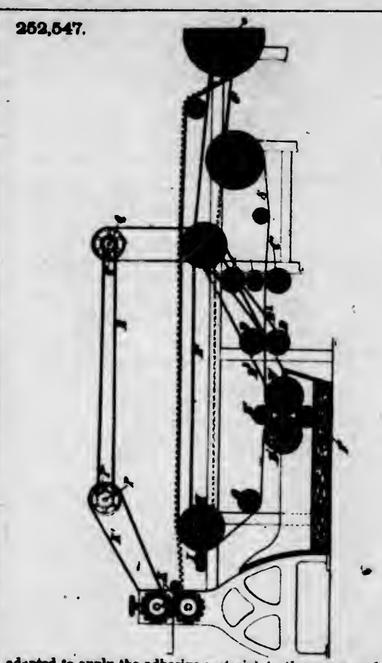
252,546. BLOTTER. THOMAS G. TOWNSEND, New York, N. Y. Filed June 16, 1881. (No model.)



Claim.—The balanced handle consisting of forked rod e and weight f, combined with the hollow blotting-roller A, substantially as and for the purposes set forth.

252,547. MACHINERY FOR MANUFACTURING PACKING AND LINING FABRICS. ROBT. H. THOMPSON, Brooklyn, N. Y. Filed Oct. 24, 1881. (No model.) Patented in England Mar. 10, 1881.

Claim.—1. The combination, with rollers between which a sheet or strip of paper forming the base of a packing or lining fabric is passed, of a tank containing adhesive material, rollers therein



adapted to apply the adhesive material to the paper, and a brush rotating in contact with the last said rollers for supplying the adhesive material to them, substantially as specified.

2. The combination, with a strip of paper for forming the base of a packing or lining fabric, rollers for passing it along, and means for applying adhesive material to it, of rollers for corrugating another sheet of paper or like material, means for moving this corrugated sheet along and into contact with the sheet of paper for forming the base of the fabric, so as to cause it to be secured thereto, and mechanism for driving the rollers, whereby the sheet of paper for forming the base of the fabric is moved along, and for driving the means whereby the corrugated sheet is moved along, capable of operating so as to vary the relative speeds of the two sheets, substantially as specified.

3. The combination, with the rollers D' G H and the corrugating-rolls K, of the cone-pulleys P' Q', and the frame B', screws B^2, and hanger B^3, substantially as specified.

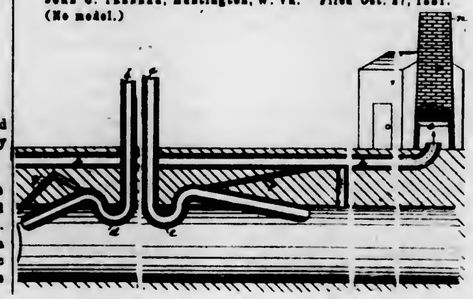
4. The combination, with the corrugating-rolls K, of the stationary pipes L L', substantially as specified.

5. The combination, with the corrugating-rolls K, of the stationary pipes L L' and sleeve L^2, substantially as specified.

6. The combination, with the corrugating-rolls K, the roller H, and the roller O, of the rollers D, substantially as specified.

7. The combination, with the corrugating-rolls K, the roller H, and the roller O, of the rollers D and the slipping belt O', substantially as specified.

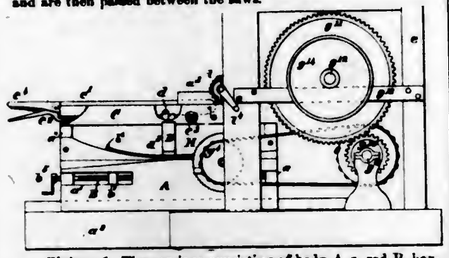
252,548. MODE OF VENTILATING SEWERS AND TRAPS. JOHN G. TRENHAM, Huntington, W. Va. Filed Oct. 27, 1881. (No model.)



Claim.—The combination, with a sewer provided with the waste-pipe *c*, opening into the sewer, and having a trap, *e*, of the air-pipe *h*, opening into a chimney, *n*, below its furnace *o*, and pipes *h p*, connecting the air-pipe *h* and sewer, whereby the sewer-gas is consumed, substantially as described.

252,549. STAVE-JOINTING MACHINE. CONSTANTINE T. TUBBS, Dauphine, Mo. Filed Nov. 8, 1881. (No model.)

Brief.—The staves are clamped in a frame, which bends them, and are then passed between the saws.



Claim.—1. The carriage consisting of body A *a*, rod B, having right and left screw-threads, blocks *b b'*, beam C, lever *c'*, and reciprocating bar D, as set forth.

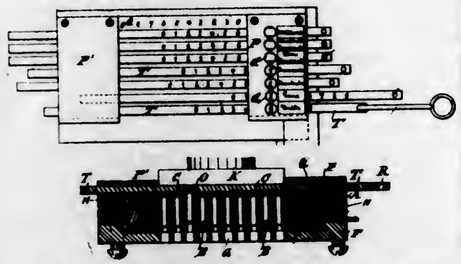
2. The lever *c'* and reciprocating bar D, secured to the lever by links *d d*, and provided with block d^3, in combination with a carriage, substantially as described.

3. The combination of saw-tables G G, hangers K K, sliding in the said tables, hinged arms J J, and adjustable sash-beam I, as set forth.

4. The combination, with the hangers K K and hinged tables G G, of the shaft M, having right and left screw-threads, bevel-gear wheels m' n, vertical shaft N, bevel-gear wheel n^2, shiftable bevel-gear wheel n^3, shaft f^3, and lever O, as set forth.

5. The combination of sash-beam having downwardly-extending racks and adjustable in the grooved front guide-posts, shaft mounted on said posts and provided with spur-wheels engaging with said racks and ratchet-wheels, pawls engaging with the ratchet-wheels to lock the shaft and the sash-beam to its adjustment, hinged tables carrying saws, and hangers depending from the sash-beam and sliding in the tables, as set forth.

252,550. MACHINE FOR PERFORATING CHECKS AND DRAFTS. SIGMUND ULLMAN, New York, N. Y. Filed June 17, 1881. (No model.)



Claim.—1. In a machine for perforating checks and drafts, the combination, with the perforated die-plate F, of the punch-plate A, the punch-pins B, and the sliding bars T, with a notch, O, in the under side, substantially as herein shown and described, and for the purpose set forth.

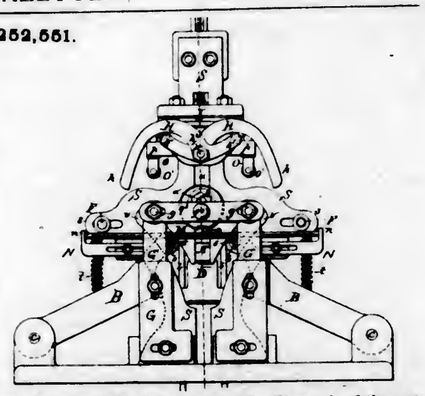
2. In a machine for perforating checks and drafts, the combination, with the perforated die-plate F, of the punch-plate A, the punch-pins B, the slide-bars T, with a notch, O, in the under side, and of the plate P, provided with apertures Q, substantially as herein shown and described, and for the purpose set forth.

252,551. MACHINE FOR BENDING RAILS. SAMUEL VANSTON, Providence, R. I. Filed Oct. 17, 1881. (No model.)

Claim.—1. The combination, with the pivoted levers B B and the levers H H, of a reciprocating follower provided with the former A, the bolts *g g*, and bearings F F, constructed to operate as and for the purpose set forth.

2. The combination, with the pivoted levers B B, provided

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with the rollers *b b* and the reciprocating former A, of the rests C C, constructed to be removed when the former has descended part of its stroke, and thus allow the free ends of the levers to bend the bail over the former, as described.

3. The combination, with the levers B B and H H and the reciprocating former, of the spring-pressed bolts *g g*, as described.

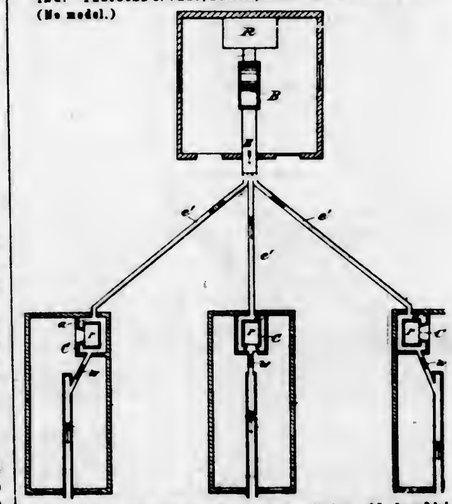
4. The combination, with the reciprocating former A, secured to a sliding head, and means for forcing the former on the blank, of the hinged lever B B, the supports C C, and means for detaching the same, the rests F F, bolts *g g*, and levers H H, the whole constructed to bend a bail at one operation, as described.

252,552. STOCKING. EUGENE VERMILYEA and CHARLES E. MORRIS, Millbury, assignors of one-half to Jonathan Luther, Worcester, Mass. Filed Oct. 26, 1878.



Claim.—As an improved article of manufacture, a stocking re-enforced at the heel by the straight inlaid layers of thread B', arranged between the loops which form the ribs of the stocking, substantially as described.

252,553. METHOD OF AND APPARATUS FOR REFRIGERATING. THEODORE S. VERY, Boston, Mass. Filed Jan. 19, 1881. (No model.)



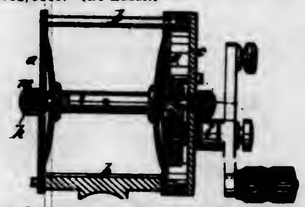
Claim.—1. The improved method of utilizing cold air, which consists in forcing it first around or into a refrigerating-chamber

to preserve articles of food, and then into a drain or sewer to purify the same and prevent back action of gas.

2. The combination of a refrigerating apparatus, E, an air-forcing apparatus, B, a trunk, E, branch pipes *d'*, refrigerators C, and escape-pipes, all constructed and arranged to operate substantially as specified.

3. The combination of a refrigerating machine or apparatus, a series of refrigerating-chambers connected with said machine by pipes or conduits, and pipes leading from said refrigerating-chambers to drains or sewers, and air-forcing apparatus to force cold air from the refrigerating machine or apparatus first to the refrigerating-chambers and then into the drains or sewers, substantially as and for the purpose set forth.

252,554. FISHING-REEL. JULIUS VON HOPF, Brooklyn, E. D., assignor to himself and Charles F. Imbrie, New York, N. Y. Filed Nov. 12, 1881. (No model.)



Claim.—1. In a fishing-reel, the combination, with the frame *a b*, the cap *c*, and the axis *i*, having conical recesses in its ends, of the pivot-screws *h*, having conical ends, and the caps *m*, screwed upon the said pivot-screws, substantially as and for the purpose set forth.

2. In a fishing-reel, the combination, with the plates *a a*, and the arbor *c*, having beveled portion *k'*, of the sleeve *k*, having its outer end beveled, and the outer sleeve, *l*, substantially as and for the purpose set forth.

252,555. DISINFECTING COMPOUND. DWIGHT WARREN, Winsted, Conn., assignor to himself and William H. Taylor, same place. Filed July 23, 1881. (No specimens.)

Brief.—Takes sulphate of alumina, two and one-half parts, by weight; permanganate of potash, one part, and of bichromate of potash, one-fourth part. The first two, in the form of crystals, are mixed with the latter, finely powdered. In using the mixture is dissolved and mixed with the material to be disinfected.

Claim.—The herein-described disinfecting compound, consisting of sulphate of alumina, permanganate of potash, and bichromate of potash, in the proportions specified.

252,556. WATER-CLOSET DISINFECTING DEVICE. DWIGHT WARREN, Winsted, Conn., assignor to himself and William H. Taylor, same place. Filed July 23, 1881. (No model.)



Claim.—1. A disinfector for water-closets, urinals, &c., consisting of a tube having one or more apertures in its closed lower end, and containing a dissolvable disinfectant, and a cup containing a vaporizable disinfectant in the upper end of the said tube, substantially as shown and described.

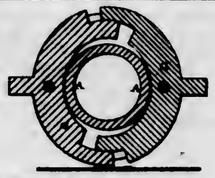
2. In a device for containing a disinfectant for water-closets, urinals, &c., the combination, with the tube A, of the cup-shaped vessel D and the perforated cap F, substantially as herein shown and described, and for the purpose set forth.

3. In a device for containing a disinfectant for water-closets, urinals, &c., the combination, with the tube A, of the shoulder or collar C, the wire loop J, and the double hook L K, substantially as herein shown and described, and for the purpose set forth.

252,557. MILLSTONE-DRIVER. LEWIS P. WEAVER, Jr., New Harmony, Ind. Filed July 2, 1881. (No model.)

Claim.—The combination of the L-shaped ring or band A, provided with the dowel-pins B, the top plate, C, the pivotal bolts D, and the driver G, made in two parts and having their ends bear against each other, so that the slightest movement of one part will react upon the other, substantially as described.

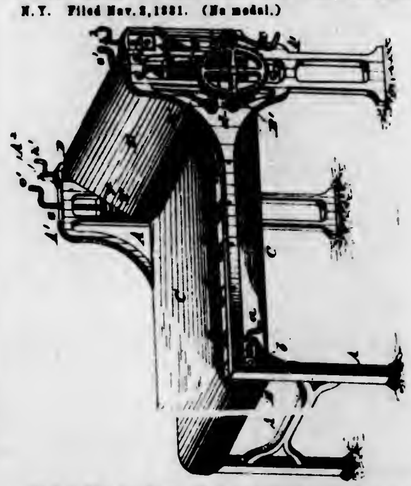
252,557.



252,558. DISTEMPER-PAINT. WILLIAM S. WELCH and LITTLETON F. WELCH, Westfield, N. J. Filed Jan. 5, 1881. (No specimens.)

Claim.—The composition of matter to be used as a calcimine, consisting of a watery mixture of paris-white or other pigment, a size, and a solution in water of nitrate of soda, chlorate of potash, and boric acid, substantially as described.

252,559. MACHINE FOR EXTRACTING GREASE FROM SKINS. EDWIN V. WHITAKER and JAMES HULL, Gloversville, N. Y. Filed Nov. 3, 1881. (No model.)



Claim.—The herein-described machine for removing grease and animal oils from skins while in the process of dressing, composed of the frame A, having slotted standards A' and A^2, and a series of rollers, *c c*, rollers B B', mounted in said frame and carrying the endless apron C, rollers D' and D, mounted respectively in the standards A' and A^2, and carrying the oblique endless apron E, pressure-springs F, and screws *b*, *c*, and *h*, for adjusting rollers B, D', and D, respectively, all constructed and combined to operate substantially in the manner and for the purpose herein shown and set forth.

252,560. TOY PISTOL. HENRY H. WHITCOMB, Bridgeport, Conn. Filed Nov. 10, 1881. (No model.)

Brief.—When the hammer falls the figure is tripped, and is drawn into the barrel by the spring to which is connected.



Claim.—1. In a toy pistol, the combination, with the barrel E, provided with the projection *k*, of the figure G, the spring *g*, and the pin *f*, substantially as and for the purpose set forth.

2. In a toy pistol, the combination, with the barrel E, provided with the slot *h* and the projection *k*, of the figure G, provided with the appendage *n*, the spring *g*, and the pin *f*, substantially as and for the purpose set forth.

3. In a toy pistol, the combination, with the hammer A, the sleeve *d*, and the spring-pressed pin *f*, of the slotted barrel E, provided with the projection *k*, the figure G, provided with the appendage *a*, and the spring *g*, substantially as and for the purpose set forth.

4. In a toy pistol, the combination, with the barrel E, provided with the slot *k*, the figure G, provided with the appendage *a*, and the spring *g*, of the trigger C, provided with the projection *c* on its forward part, substantially as and for the purpose set forth.

252,561. HARVESTER. WILLIAM H. WHITELEY, Springfield, Ohio. Filed Sept. 16, 1880. (No model.)

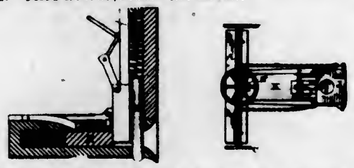


Claim.—1. The frame composed of the parts D E, the former rigidly and the latter movably attached to the harvester-frame B C, combined with a cross-bar, N, and interposed spring, as set forth, and for the purpose specified.

2. An endless apron for a harvester, and supporting-rollers for the same located at the ends of the apron-frame, combined with an automatic yielding mechanism to vary the distance between said rollers, all placed between said rollers and covered and concealed by the said apron, as set forth.

3. The frame composed of parts D and E, the former rigidly and the latter movably fixed in the harvester-frame B C, combined with the cross-bar L on the movable frame, and the rigid cross-bar N, and the interposed spring, substantially as set forth.

252,562. CAR-COUPLING. LAFAYETTE WILKINSON, Selpio, Ind. Filed Nov. 26, 1881. (No model.)

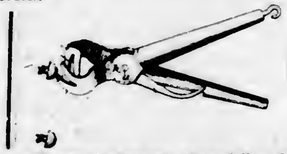


Claim.—1. The combination of one or more operating-shafts which are connected to the end of the car, suitable connecting-chains, a cranked rod, and a spring-actuated coupling-pin, the chains being wound upon the operating-shaft in opposite directions and connected to opposite ends of the cranked rod, substantially as shown.

2. The guide which is secured upon the top of the draw-head, and which is slotted on its rear side so as to allow the pin to project through, a spring placed inside of the guide and bearing upon the top of the pin, and a coupling-pin having a shoulder formed on its rear edge, in combination with a spring-supporting block and a sliding spring-block which actuates the supporting-block, substantially as described.

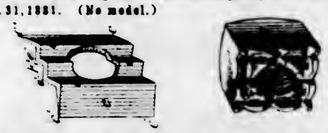
3. The combination of one or more shafts secured to the end of the car, with the two connecting-chains which are made to wind in opposite directions upon the horizontal shaft, and which have their outer ends connected to a cranked rod which operates the spring-actuated coupling-pin, substantially as set forth.

252,563. IMPLEMENT FOR PUTTING BUTTONS ON SHOES. ALEXANDER G. WILKINS, Cooperstown, Pa. Filed July 23, 1881. (No model.)



Claim.—The combination-tool, substantially as described, consisting of the pivoted jaws having bifurcated griping-openings *d e*, arranged at right angle to each other, the pivoted awl provided with a stop, *a*, and the telescopic button-hook adapted to slide in and out of the hollow handle portion, for the purpose set forth.

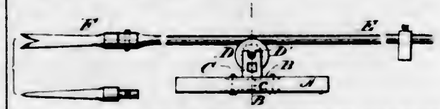
252,564. NUT-LOCK. JOHN H. WILLIAMS, Pittsburg, assignor to himself and Hugh McDonald, Allegheny City, Pa. Filed Oct. 31, 1881. (No model.)



Claim.—1. The combination of bolt C, nut D, having parallel grooves *a* in and extending across its face, and the corrugated spring-washer E, having its ridges or corrugations extending parallel across the washer in one direction, and adapted in form and relationship to register with the grooves in the nut, substantially as set forth.

2. As a device for locking nuts on bolts, the corrugated spring-washer E, having sharp beveled edges *e e*, such edges extending beyond the plane of the ridges of the intermediate corrugations on the same side, as described, in combination with nut D, having parallel grooves *a* in its face adapted to receive the ridges of the washer, substantially as set forth.

252,565. COAL-EXCAVATOR. HENRY WILHELM, St. Charles, Ky. Filed June 23, 1881. (No model.)



Claim.—1. In a coal-excavator, the combination, with the rod and pick E F, of the swiveled block C and the supported grooved wheel D, substantially as herein shown and described, whereby said rod and pick are supported and easily operated to excavate long and deep trenches in any direction, as set forth.

2. In a coal-excavator, the combination, with the pick-rod E and pick F, supported on the fulcrum-wheel D, of the counter-balance H, substantially as and for the purposes described.

3. In a coal-excavator, the combination, with the bed-plate A, provided with face-plates B, of the trunnion-bed or pillow-block C, provided with a spindle, *c*, substantially as herein shown, and for the purpose described.

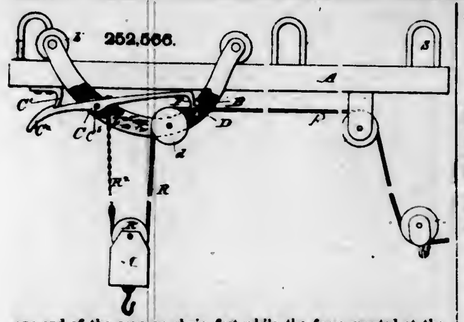
4. In a coal-excavator, the combination, with the swiveled pillow-block C, of the grooved wheel D, substantially as herein shown and described.

5. In a coal-excavator, the combination, with the rod and pick, of a vertically and horizontally revolving support, substantially as herein shown and described, whereby any desired direction may be given to the pick, as set forth.

252,566. HAY ELEVATOR AND CONVEYER. SIDNEY E. WILSON, Perry, Ill. Filed Oct. 31, 1881. (No model.)

Claim.—1. The frame B, consisting of the two equal curved bars provided with rollers *b* and *b'*, adapted to travel on beam A, and also provided with sheave *d* and rest D, adapted to assist in elevating a load of hay and holding it up after being elevated, substantially as described.

2. The combination of lever C, fulcrumed on axle C^3 in the frame B, and having its outer end, C^4, notched on the upper side for catch C', and having the other end bent downward and formed into fork F, with the chain or rope R, attached to the said lever C at the proper point between its fulcrum and fork, adapted to hold

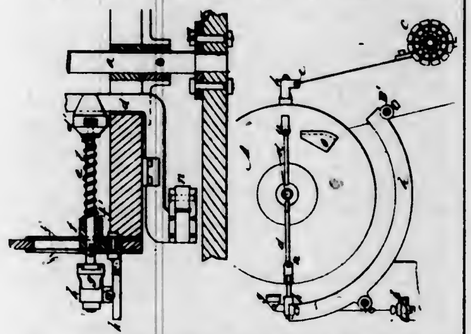


252,566.

one end of the rope or chain fast while the force exerted at the other end raises the load, and then to hold the load, with the aid of rest D, to its elevation until it is conveyed away horizontally, substantially as described.

3. The combination of lever C, working on fulcrum C^3 in frame B, and having notched end C^4 and fork F, with sheave *d* and rest D, arranged and co-operating substantially as and for the purpose described.

252,567. CLOTH-MEASURING MACHINE. ALBERT WINTER, Plainfield, N. J. Filed Oct. 13, 1881. (No model.)



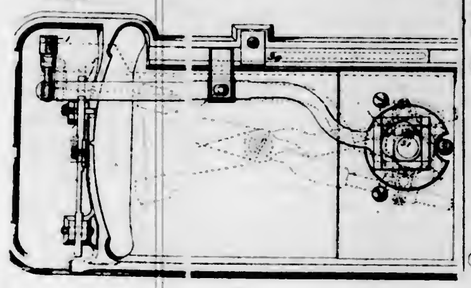
Claim.—1. In a cloth-measuring machine, the combination, with a drum, of radially-sliding clamps, and means, substantially as shown and described, for operating the said clamps, as set forth.

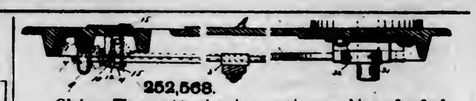
2. The combination, with measuring-drum A, of the rods *e*, carrying clamps *g*, and fitted for radial movement to clamp the cloth, substantially as shown and described.

3. The combination, with measuring-drum A, of the slide-rods *e*, clamps *g*, springs *l*, bent bars *d*, and cams *o*, substantially as shown and described, for operation as set forth.

4. The combination, with measuring-drum A, of the swiveling slide-rods *e*, torsion-springs *l*, clamps *g*, plates *k*, bent bars *d*, and cams *o*, substantially as shown and described, for operation as set forth.

252,568. FEEDING MECHANISM FOR SEWING-MACHINES. CHAS. H. WOOD, Springfield, Mass. Filed Nov. 14, 1881. (No model.)

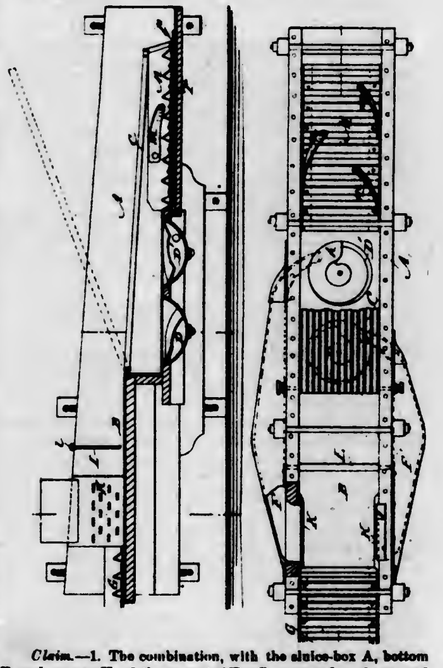




252,568.

Claim.—The combination, in a sewing-machine, of a feed-lever actuated by a cam and adapted to have a longitudinal and a lateral movement, a link pivoted at one end to the bed of the machine and at the other to said feed-lever, and a feed-bar carrying the feed and movably jointed to said lever, whereby, by the combined longitudinal and lateral movements of the feed-lever and the movement of the said link pivoted thereto, the feed is forced to make all its movements both vertically and horizontally, substantially as described.

252,569. ORE-WASHER. WILLIAM E. WOOD, Denver, Colo., assignor to the Colorado Gold Having Sluice Box Company, same place. Filed Apr. 23, 1881. (Model.)

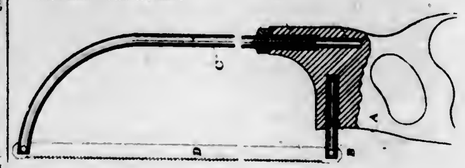


Claim.—1. The combination, with the sluice-box A, bottom B, and screens K, of the nugget-riffles G, arranged as shown and described, for the purpose specified.

2. The combination, with the sluice-box A, of the flood-gate I, having bearings *l* in the upper edge of the sides of the said sluice-box, and of sufficient weight to impede the flow of water in the flume, substantially as and for the purpose set forth.

3. The combination, with the sluice-box A and the amalgamated plate P, of the riffles M, arranged in the discharge end of the said sluice-box over the amalgamated plate, so that the top edges will be on a level with the top of the pans, and provided with the mold-board-shaped plates or wings *m*, secured to its sides, substantially as and for the purpose set forth.

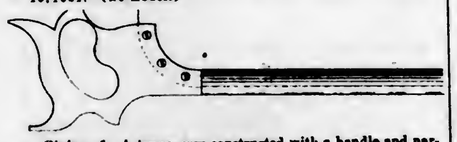
252,570. HANDSAW. JAC. R. WOODBURGH, Cincinnati, Ohio, assignor to Woodrough & McFarlin, same place. Filed Oct. 18, 1881. (No model.)



Claim.—1. In a handsaw, the combination, substantially as before set forth, of the handle, the heel-clip secured thereto, the adjustable back provided with a tightening-nut, and the blade secured with its respective ends to the heel-clip and the end of the adjustable back.

2. The combination, substantially as before set forth, of the handle A, the clip B, the barbed shank of which is driven into the handle, the saw-blade D, and the back C.

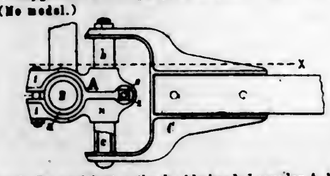
252,571. BACK-SAW. JAS. R. WOODSOMEN, Cincinnati, Ohio, assignor to Woodrough & McParlin, same place. Filed Oct. 18, 1881. (No model.)



Claim.—1. A tenon-saw constructed with a handle and narrow stiffening-back made of a single piece, the grooved edge of the stiffening-back meeting the grooved edge of the handle in a curve, substantially as before set forth.

2. The combination, substantially as before set forth, of the integral handle and narrow stiffening-back, the blade-retaining edges of which meet in a curve and have a continuous groove of uniform depth, and the saw-blade, the back and handle end of which meet in a corresponding curve to fit said groove.

252,572. CULTIVATOR. WILLIAM B. YOUNG, Alton, Ill., assignor to Hapgood Plow Company, same place. Filed Nov. 7, 1881. (No model.)

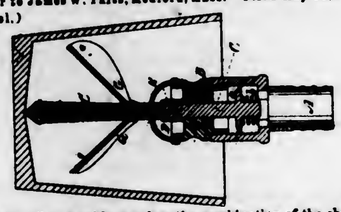


Claim.—1. In a cultivator, the double-headed coupler A, having two open-ring clasps in a cross direction to each other, made solid one piece, with mouthed ends and perforated lips, substantially as and for the purpose set forth.

2. In a cultivator, the double-headed coupler A, having two open-ring clasps in a cross direction to each other, made solid in one piece, with mouthed ends and perforated lips, and held in place by clamping-bolts with nuts, in combination with the thimble *a* and thimble *b*, substantially as and for the purpose set forth.

3. In a cultivator, the combination of the double-headed coupler A, having two open-ring clasps in a cross direction to each other, made solid in one piece, with mouthed ends and perforated lips, with compression-bolts and with thimble *a*, thimble *b*, axle-arm B, yoke C, having the arms *g g*, and with bolt *c*, substantially as and for the purpose set forth.

252,573. TUMBLER-WASHER. WALLACE H. BATE, Boston, assignor to James W. Tufts, Medford, Mass. Filed May 11, 1881. (Model.)

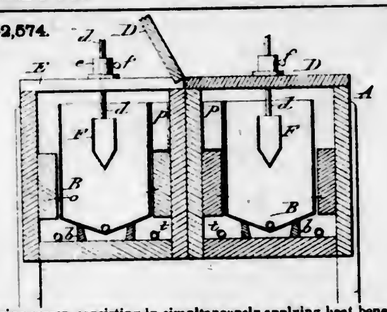


Claim.—In a tumbler-washer, the combination of the shell or body B, having a discharge orifice or orifices, a valve-spindle, C, working vertically through the shell of the valve and serving as a support upon which the tumbler revolves, and a revolving distributer, G, adapted to intercept the water issuing from the discharge orifice or orifices and deflect it against the interior surface of the tumbler, substantially as and for the purpose described.

252,574. DAIRY-VAT. DAVID H. BURRELL, Little Falls, N. Y. Filed Aug. 29, 1881. (No model.)

Claim.—1. The herein-described method of treating milk for

252,574.



raising cream, consisting in simultaneously applying heat beneath the milk-vessel and cold at the top of the contents of said vessel, whereby the cream or butter globules brought to the bottom of the vessel by the currents thus created therein are caused to expand and rapidly rise to the surface, substantially as specified.

2. In a milk-cooling apparatus, the combination, with a milk-vessel, of an open-top trough or conduit, suspended in substantially the upper half of the volume of milk contained in the vat, substantially as and for the purpose set forth.

3. In a milk-cooling apparatus, the combination, with a milk-vessel, of an open vertically-elongated trough or conduit extending longitudinally from end to end of the milk-vessel, and suspended therein with the top of the trough below the top of the milk-vat, substantially as shown and described.

4. In a milk-setting apparatus, the combination of an outer vat, a milk-vessel arranged therein, an open-top trough suspended in said vessel, and a cover placed over the outer vat, substantially as and for the purpose described.

5. In a milk-setting apparatus, the combination, with the outer vat, A, having covers D, and perforated cross-pieces E, provided with caps *e*, of the milk-pans B, and the troughs or conduits F, provided with rods or tubes *d d*, said troughs being suspended within the milk-vessels and vertically adjustable therein by means of the engagement of the rods or tubes *d* with the caps *e* and thumb-screws *f*, substantially as shown and described.

6. In a milk-setting apparatus, the combination, with the covered vat A and open milk-pan B, placed therein, of the open-top trough or conduit F, suspended longitudinally within the milk-vessel, and the open-top troughs or ice-receptacle *p p*, arranged longitudinally on each side of said vessel at its upper part, substantially as and for the purpose described.

7. In a creamery or milk-cooling apparatus, the combination, with the outer vat, A, and milk-vessel B, of the suspended trough or conduit F, arranged within the milk-vessel, open-top troughs or ice-receptacles *p p*, resting in contact with the upper part of the milk-vessel, steam-pipes *t t*, arranged in the open space beneath the milk-vessel, and cover D, adapted to close the outer vat, substantially as shown and described.

252,575. CUTTING APPARATUS FOR HARVESTERS. EDWIN P. CURTIS, Worcester, Mass., assignor to the Richardson Manufacturing Company, same place. Filed Aug. 29, 1881. (No model.)



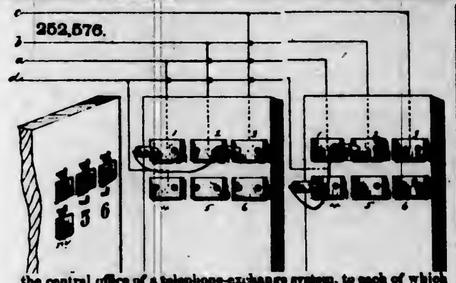
Claim.—1. A chafe-piece for harvester-cutters, consisting of a perforated or slotted plate having an upward-turned lip, flange, or wearing end, said piece being fitted or attached to the forward part of the finger-bar between adjacent fingers, substantially as shown, and for the purpose set forth.

2. The combination of independently-detachable chafe-pieces F, provided each with a bearing end or lip, F', formed of hardened steel, with the finger-bar A, the fingers B, and the scythe C in a harvesting-machine, said chafe-pieces being arranged on the finger-bar between fingers with their ends F' in position to form bearings for the scythe in rear of the rod and beneath the overhanging cutter-sections, substantially as herein shown and described.

252,576. MULTIPLE SWITCH-BOARD FOR TELEPHONE-EXCHANGES. LEROY B. FIRMAN, Chicago, Ill., assignor to the Western Electric Manufacturing Company, same place. Filed Jan. 7, 1881. (No model.)

Claim.—1. The combination of two or more switch-boards at

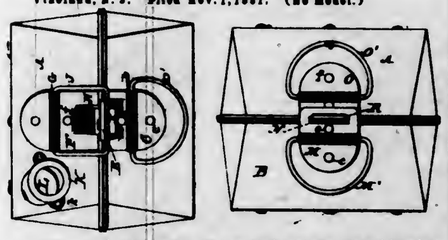
252,576.



the central office of a telephone-exchange system, to each of which the same telephone-lines are connected, whereby any two of these lines may be connected together upon either of the multiple switch-boards.

2. The combination of two or more multiple boards to which the lines of the terminal stations are connected, and means, as described, whereby the switchman may readily ascertain what lines are in use.

252,577. HEAT-ROASTER. THEODORE A. SANDERS, South Vineland, N. J. Filed Nov. 1, 1881. (No model.)

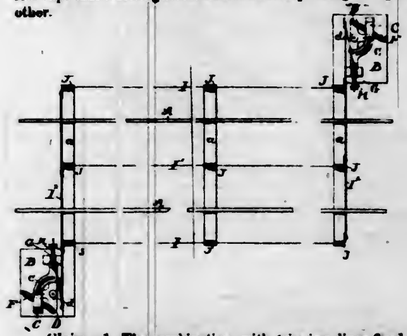


Claim.—1. The casting C, provided with the slotted bracket E, in combination with the casting F, provided with the lug I and clasp J, substantially as shown and described.

2. The combination of the pan A, provided with the castings O and F, the former having the hook R and the latter the lug I, and the pan B, having the castings M and C, the former provided with the slot N and the latter provided with the slotted bracket I, with means, substantially as shown and described, for locking the lug in the bracket, as and for the purpose described.

252,578. RAILWAY ALARM-SIGNAL. THOMAS H. GIBBON, Adamsville, N. Y., assignor of one-fourth to Archibald F. Law, Trustee, Marshall, Tex. Filed Oct. 6, 1881. (No model.)

Brief.—Falling rock or the like in tunnels or cuts is signaled to an approaching train through wires along the line connected with catches of spring signal-levers, which are rotated to display danger-signals at each end of a tunnel or cut when any of the wires are disturbed. The signal-shafts are so connected by an endless rope that resetting either causes a corresponding change in the other.



Claim.—1. The combination, with tripping-lines fixed adjacent to and running in line with a railway-track, arranged, substantially as described, for receiving the shock or pressure produced by the deposition of débris on said track, of spring-actuated signal-targets consisting essentially of a lever, D, carrying the target E, the spring F, and a spring-latch, G, the latter being connected to the tripping-lines, as described, and all adapted to operate as herein specified.

2. The combination, in a spring-actuated signal-target, with the lever D, provided with a target, E, and actuated by a spring, F, substantially as described, of a spring-latch, G, adapted to engage with the lever D to retain the signal-target in its closed position, as herein specified.

3. The combination, with the target-levers D of two spring-actuated signal-targets distantly located from each other, of the endless line K, attached to both levers D, as herein described, for the purpose of producing a simultaneous movement of both of said levers by the movement of either of them, as herein specified.

252,579. RECIPROCATING ENGINE. LAUCHLIN B. GRUBB, Washington, D. C., assignor to O. F. Keys, Marcus Greer, and Chauncey F. Greer, all of same place. Filed June 3, 1881. (No model.)



Claim.—1. In an engine, the combination, with a cylinder provided with ports for the induction and eduction of steam, of an oscillating piston having a shaft at one end provided with an exhaust-port across its top, both shaft and piston being provided with ports for the inlet of steam through the shaft and its exit on the face of the piston at or near its lower end, whereby, as the piston oscillates, the several parts are adapted to operate as set forth.

2. The cylinder A, provided with induction and eduction ports, in combination with an oscillating piston having induction-ports and an exhaust-port, and a disk, *m*, having an opening through it and an adjustable connection with the rod by which it is operated, by means whereof the size of the steam-induction port in the cylinder is regulated, substantially as and for the purpose set forth.

3. A piston for an oscillating engine, composed of a shaft and a piston-head with induction-ports through the shaft and head and an exhaust-port across the top of the shaft, substantially as set forth.

252,580. STEAM-RADIATOR. THOMAS P. HARDY, New York, N. Y. Filed Nov. 26, 1881. (No model.)



Claim.—A metallic radiating-tube formed in one piece and provided with three longitudinal depressions, *a b b*, which commence near the open foot and terminate within a short distance from the closed top thereof, leaving two channels, *g g*, a steam-chamber, *c*, at the top, and three chambers, *d e f*, extending from the upper steam-chamber down to the open foot, the chambers *e* and *f* communicating with the chamber *d* by the channels *g g*, substantially in the manner and for the purpose set forth.

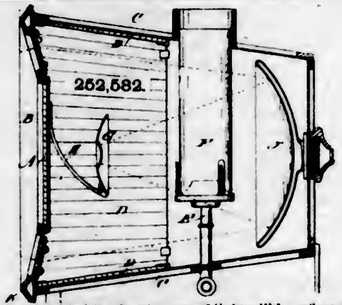
252,581. ESCAPEMENT FOR MOTORS. HOSMER H. HOSMER, Atlantic, assignor, by direct and mesne assignments, of one-half to John T. Hanna, Cass County, Iowa. Filed July 23, 1881. (No model.)



Claim.—In combination with a train of gear-wheels, the wheels F G, provided with the pins *p p*, and the pendulum-bar I, having its upper end recessed, substantially in the manner set forth, whereby an escapement is provided, for the purpose specified.

252,582. ILLUMINATED MIRROR. PETER LOTH and JULES STUDIO, New York, N. Y.; said Studio assignor to Thomas Miller, same place. Filed July 5, 1881. (No model.)

Claim.—1. An illuminated mirror constructed substantially as herein shown and described, and consisting of a mirror surrounded by a frame of ground glass, and having a lamp or burner



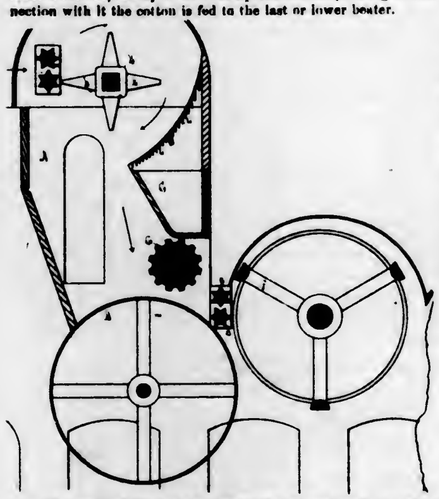
and reflector behind it, whereby rays of light will be reflected upon the face of the person looking into the mirror, as set forth.

2. In an illuminated mirror, the combination, with the mirror A, surrounded by a frame, B, of ground glass, of the lamp or burner E, the reflectors I and J, and a supporting-frame, substantially as herein shown and described, and for the purpose set forth.

3. In an illuminated mirror, the combination, with the box C, provided with flat reflectors D, of the mirror A, surrounded by a ground-glass frame, B, the reflector G, fastened to the inner surface of the mirror A, the reflector J, fastened to the rear of the box C, and a lamp or burner, substantially as herein shown and described, and for the purpose set forth.

252,583. COTTON-OPENER. RICHARD KITSON, Lowell, Mass. Filed May 21, 1880. (No model.)

Brief.—A dead-air chamber having a grated inclined top is provided in the gage-box just underneath the beater first operating upon the cotton. The sand, leaf, and other foreign matter which may be loosened by the action of the fingers of the before-mentioned beater fall through the top of and into the dead-air chamber. The cotton then falls upon the rotating screen in the bottom of the gage-box, through which the lighter particles of leaf and dirt, loosened therefrom, is drawn by an exhaust. The wire cylinder is rotated, and by it and a compression-roll operating in connection with it the cotton is fed to the last or lower beater.



Claim.—1. The combination of the gage-box A, grasping-rolls *a*, breaker-shaft B, provided with the fingers *b b*, and the dead-air-chamber C, having a grated inclined top, substantially as described.

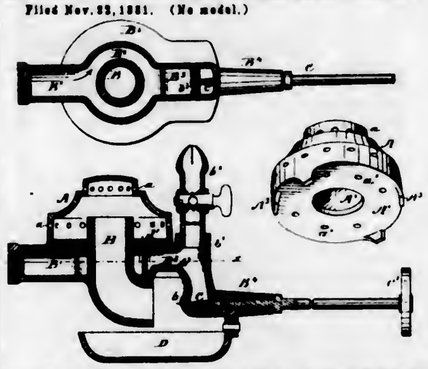
2. The combination, with mechanism for opening the cotton, of gage-box A, provided with the dead-air chamber C, having the grated top upon which the cotton acted upon by said opening mechanism falls, the rolls *e e*, and beater *f*, substantially as described.

3. The combination of gage-box A, gauze cylinder D, feed-rolls *e e*, and beater *f*, substantially as described.

4. The combination of the grasping-rolls *a a*, breaker-shaft B, provided with the fingers *b*, gage-box A, with the rolls *e e*, and gauze cylinder D, substantially as described.

5. The combination of the grasping-rolls *a*, breaker-shaft B, provided with the fingers *b*, gage-box A, provided with the dead-air-chamber C, cylinder D, feed-rolls *e e*, and beater *f*, substantially as described.

252,584. VAPOR-BURNER. MICHAEL MAHONY, Troy, N. Y. Filed Nov. 23, 1881. (No model.)



Claim.—1. The combination of a burner constructed in one piece, and consisting of the cap A and the flat bottom A', provided with openings *a'*, with a vaporizing-chamber provided with a central tube having its lower end carved to one side, an annular horizontal passage, B^2, having its whole top in contact with the flat bottom of the burner, and a flange or shelf, B^3, surrounding said chamber, substantially as and for the purpose described.

2. The combination of the cap A, having the bottom A' cast therewith, and provided with openings *a'*, with a vaporizing-chamber provided with a central tube, B, having its lower end carved to one side, an annular horizontal passage, B^2, a bridge, b^2, elevated above the floor of the passage B^2, and a shelf, B^3, surrounding said chamber, substantially as and for the purpose described.

3. The combination of a burner provided with a bottom, A', made with openings *a'*, with a vaporizing-chamber having a horizontal annular passage, a shelf, B^3, surrounding said chamber, a controllable vapor-escape opening, *b*, under said chamber, and a controllable opening, *b'*, above the same, substantially as and for the purpose described.

4. The combination of a vaporizing-chamber having a central vertical pipe made with its lower end carved to one side, and a horizontal induction and eduction pipe, with a vapor-burner formed of a cap and bottom cast in one piece, said bottom having perforations *a'* and pendent lugs, substantially as and for the purpose described.

252,585. PLOW. FRANZ NITSCHMANN, Platonia, Tex., assignor to Franklin P. Walters and Charles A. Arnim, same place. Filed June 18, 1881. (No model.)



Claim.—The combination, with the adjustable standard-iron A and the handles, of the transverse bar G, clamp or hook bolt H, and the pivoted adjustable brace I, connected to the farrow-bar of said iron, substantially as specified.

252,586. HAY-RAKE. MARLOVE BUTLER, Vernon, assignor to Pleasant C. McShannon, North Vernon, Ind. Filed Nov. 30, 1881. (Model.)

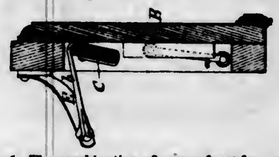


Claim.—1. In a controlling-lever for hay-rakes, the combination, with the end sections and their slide-joint connection, of the brace-section and the automatic catch, substantially as specified.

2. In a controlling-lever for hay-rakes, the combination, with the shouldered clamp-section F and its clamp-band C, of the handle G, its slide-joint cheek-plates *m*, the pivoted brace-section H, and the catch K, substantially as specified.

3. A controlling-lever for hay-rakes, having its handle and clamp sections connected by slide-joint plates, to which a brace-section having an oblique end and carrying one end of the clamping-band is pivoted, substantially as specified.

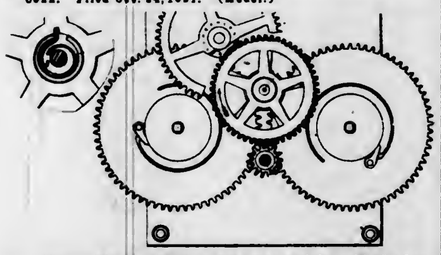
252,587. MUSIC-RACK FOR MUSICAL INSTRUMENTS. WILLIAM H. IVERS, Dedham, Mass., assignor to the Ivers & Pond Piano Company, of Massachusetts. Filed Oct. 20, 1881. (No model.)



Claim.—1. The combination of a case-front for a musical instrument with the rack B and links and a rocking bar connecting said rack to the case-front, said bar being pivoted to the rack at a point between the links and the upper edge of said rack, and serving to retain the rack immovable when the latter is in position for use, substantially as set forth.

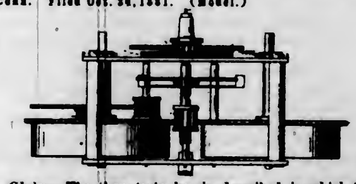
2. The combination, with the music-rack, of the case-front, links *a*, and rocking bar C, a spring secured to the back of the case-front, and cord or chain *b*, all operating substantially as set forth.

252,588. CLOCK-MOVEMENT. BENJAMIN B. LEWIS, Bristol, Conn. Filed Oct. 24, 1881. (Model.)



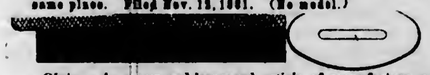
Claim.—The combination of the center pinion with the double wheel and spring for acting upon one part of said wheel, substantially as described, and for the purpose specified.

252,589. CLOCK-MOVEMENT. BENJAMIN B. LEWIS, Bristol, Conn. Filed Oct. 24, 1881. (Model.)



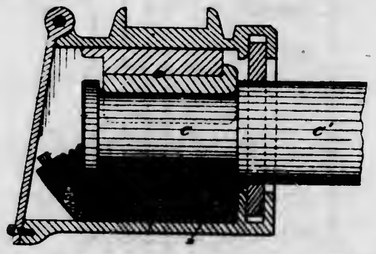
Claim.—The time-train herein described, in which the two driving-wheels mesh into and are connected by the intermediate pinion mounted on the shaft which drives the dial-wheels, while one of said driving-wheels meshes into the next pinion in and drives the remainder of the train, substantially as described, and for the purpose specified.

252,590. ILLUMINATING-CANDLE. RICHARD F. W. LOPER, Philadelphia, Pa., assignor to himself and Charles McKeone, same place. Filed Nov. 12, 1881. (No model.)



Claim.—As a new and improved article of manufacture, an illuminating-candle composed of a flat wick or core and a flattened or elliptical body molded or cast about the said flat wick, substantially as and for the purpose described.

252,591. CAR-AXLE BOX. JOHN C. RICHARDSON, Union City, Pa., assignor to Jennie R. Cooper, same place. Filed Oct. 26, 1881. (No model.)



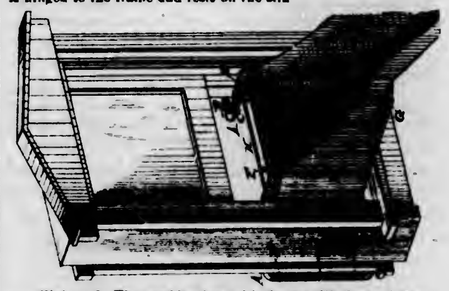
Claim.—1. In a car-axle-lubricating device, a portable feed-box having a top provided with an oblong opening, for the purpose set forth, a packing or absorbent material held in place by the over-hanging ledges of the top, and a supply-spout located outside the sides of the box, for the purpose described.

2. A lubricator for railway or other car journals, provided with a sponge or other porous material, in combination with a portable box, E, having hinged barbed points *i* and *i'*, and a spout or tube, G, for the purposes as herein described and shown.

3. In a lubricator, a portable box or reservoir having barbed points attached at suitable places upon the inner surface for holding its feeding device in place, substantially as described.

252,592. FIRE-ESCAPE. BENJAMIN TAYLOR, Terre Haute, Ind., assignor of one-half to George A. Hartung, same place. Filed Aug. 10, 1881. (No model.)

Brief.—A flexible chute or tube is secured to a metal frame, which is fastened to the inside of the window-casing. A platform is hinged to the frame and rests on the sill.



Claim.—1. The combination, with the metallic frame A, having knees C C and spikes F, of the flexible tube E, substantially as herein described, for the purpose set forth.

2. As an improvement in fire-escapes, the combination, with the metallic frame A, having hinged platform G and guide-ropes H, of the flexible tube E, substantially as and for the purpose set forth.

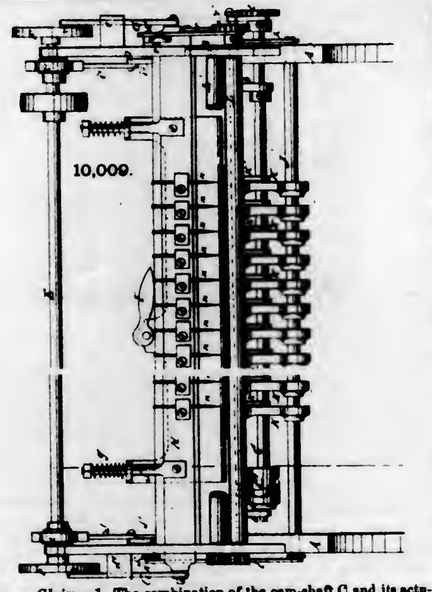
252,593. PROCESS OF EXTRACTING COPPER AND SILVER FROM THEIR ORES. JULIUS DERY, London, County of Middlesex, England. Filed Oct. 5, 1881. (No model.)

Claim.—1. The process of extracting copper and silver from their ores, which consists in lixiviating the ore with a solution of ferric sulphate and regenerating the resulting waste ferrous liquors by means of the concerted and combined action of chlorine and sulphurous-acid gases, for reuse, all in the manner and for the purposes substantially as described.

2. The process of converting ferrous sulphate to ferric sulphate, which consists in subjecting the solution of ferrous sulphate to the combined action of chlorine and sulphurous-acid gases, substantially as described.

REISSUES.

10,009. QUILTING-MACHINE. JOHN HAPPE and WILHELMINE NEWMAN, New York, N. Y.; said Newman assignor to said Happe. Filed Feb. 5, 1881. Original No. 138,716, dated Aug. 20, 1873.

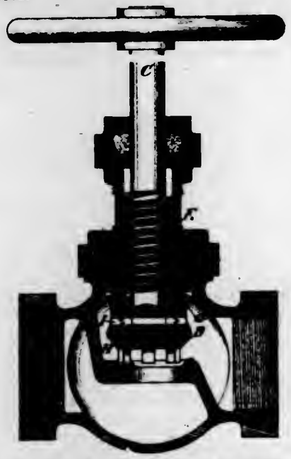


Claim.—1. The combination of the cam-shaft C and its actuating mechanism, the rock-shaft J and its actuating mechanism, and the shuttle-carriers K on said rock-shaft, provided with slots, whereby they are adapted to straddle the cam-shaft, substantially as described.

2. The presser-foot having a series of holes, and its actuating mechanism, consisting of springs *g*, rod *f*, and cam-lever I, in combination with shuttle-carriers K, shuttle-races K', eccentric *i*, oscillating shaft J, rock-shaft *k*, rod *l*, crank *m*, and with the carriage-reciprocating mechanism, and with geared feed-rolls and the mechanism actuating them, substantially as described.

3. The cam *c* upon the shaft C, operating the needle-carriage through the pin *d*, in combination with the shuttle-carriers K, needles *a*, presser-foot H, rock-shaft J, and the gear mechanism for actuating the feed, all arranged substantially as described.

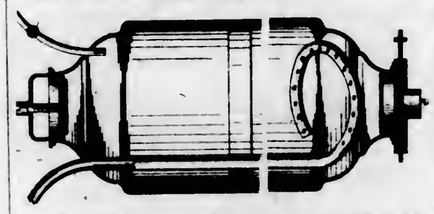
10,010. GLOBE-VALVE. FREDERICK LUKENHEIMER, Cincinnati, Ohio. Filed Oct. 6, 1881. Original No. 166,893, dated Aug. 3, 1875.



Claim.—1. In a regrinding globe-valve, a valve having a swiveled connection with the end of a valve-stem, both the valve and the stem being provided with a transverse smooth passage or hole for the insertion of a smooth frangible pin to temporarily lock the valve and stem immovably together, said pin being capable of fracture by the forcible closing of the valve after the latter has been reground, all substantially as and for the purpose described.

2. The combination of the collared stem C H, nut G, and valve D, all perforated, as described, for the insertion of the pin J through each one of said elements, substantially as described.

10,011. MANUFACTURE OF CREAM OF TARTAR. EDWARD MULLER, New York, N. Y., assignor, by mesne assignments, to the New York Tartar Company. Filed Dec. 24, 1881. Original No. 223,593, dated Dec. 16, 1879.



Claim.—1. The process of manufacturing cream of tartar from argols, which consists in exposing the argols in the presence of water alone, in about the proportions specified, to the action of steam under pressure of about sixty pounds to the inch, the steam being injected into the water, causing it to boil, and being permitted to escape from the converting-vessel, and finally separating the cream of tartar after crystallization, substantially as described.

2. The improvement in the art of treating argols to obtain a solution of the same, which consists in subjecting the argols while being dissolved to the pressure of steam admitted into a closed vessel near the bottom and allowing the escape of the same, substantially as described.

10,012. LOCK. WARNER H. TAYLOR, Stamford, Conn., assignor to the Yale Lock Manufacturing Company, same place. Filed Aug. 23, 1881. Original No. 179,899, dated Feb. 1, 1876; Reissue No. 8,379, dated Aug. 30, 1878.



Claim.—1. In a lock, a series of two or more pivoted vibrating tumblers, no two of which are opposite, and which are arranged to be operated successfully by a flat or plate key bitted alike on both edges and inserted either edge up through the series, substantially as herein described.

2. A flat or plate key bitted alike on both edges and provided with indentations or notches opposite each other, one on either edge, in combination with a series of pivoted oscillating tumblers, and a slotted retaining flange or ring to interlock with the indentations or notches and prevent the withdrawal of the key from the lock except when said key is vertical, and to assist in holding said key longitudinally while it is moving the tumblers to lock or unlock the lock, substantially as herein described.

3. In a lock constructed for a flat or plate key, a vibrating talon-lever, its inner curved edge being the intermediate talon for the key-bit and its outer or free end fitted into the bolt-talon and actuating the bolt, substantially as described.

4. The combination of a bolt carrying a stump or fence with a series of two or more tumblers which are pivoted upon a common center, but no two of which are opposite, the free end of said tumblers being broader than the greatest distance through which the tumblers are moved by the key, so that gatings may be made in said tumblers, into which the stump or fence of the lock may pass when the lock is unlocked.

5. In a lock, a passage or key way through which a flat or plate key may be inserted, and in entering which the key is first passed through a rotating key-guide, next through a slotted retaining-flange, and lastly through a series of vibrating tumblers, the longitudinal movement of the key being finally arrested by a stop placed in the rear of the vibrating and superimposed series of tumblers, substantially as herein described.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

EDWARD MILLER & COMPANY *v.* THE BRIDGEPORT BRASS COMPANY.

Decided January 9, 1882.

1. AMBROSE'S REISSUE—LAMPS—NEW MATTER.

The invention specified in the second claim of the reissued patent (which is the one in question here) is not the same invention which was described and claimed in the original patent. The latter was for a double dome without a chimney, the peculiarity of the supposed invention being the use of the double dome as a means of dispensing with the chimney. It is not only obviously a different thing, but it is the very thing which the patentee professed to avoid and dispense with.

2. BROADENING THE CLAIM—ACTUAL MISTAKE—LACHES.

Dictum, also, that where the only mistake suggested is that the claim of the original patent is not so broad as it might have been, the mistake, if it was a mistake, was apparent upon the first inspection of the patent, and if any correction was desired it should have been applied for immediately, and the right to have it corrected was abandoned and lost by unreasonable delay.

3. SAME—SAME—MAY ENLARGE CLAIM—DEDICATION TO PUBLIC.

Dictum, also, that if a patentee who has no corrections to suggest in his specification, except to make his claim broader and more comprehensive, uses due diligence in returning to the Patent Office and shows how such mistake occurred, his application may be entertained; but it must be remembered that the claim of a specific device or combination and an omission to claim other devices and combinations apparent upon the face of the patent are in law a dedication to the public of that which is not claimed, and the legal effect of the patent cannot be revoked unless the patentee surrenders it and proves that the specification was so framed by real inadvertence, accident, or mistake, without any fraudulent or deceptive intention, and this should be done with all due diligence and speed.

4. PURPOSE OF REISSUE LAW—NOT FOR ENLARGING CLAIMS SPECIALLY.

Dictum, also, that it was not the special purpose of the legislation upon reissues to authorize the surrender of patents for the purpose of reissuing them with broader and more comprehensive claims, although under the general terms of the law such a reissue may be made when it clearly appears that an actual mistake has inadvertently been made, not from a mere error of judgment, but a real *bona fide* mistake, such as a court of chancery in cases within its ordinary jurisdiction would correct.

5. COMPARISON OF THE INSTRUMENTS—COURTS HAVE JURISDICTION OF QUESTION OF MISTAKE.

Dictum, also, that when the matter is apparent on the face of the instrument upon a mere comparison of the original patent with the reissue, it is competent for the courts to decide whether the delay was unreasonable and whether the reissue was therefore contrary to law and void.

APPEAL from the Circuit Court of the United States for the District of Connecticut.

Mr. J. S. Beach for the appellant.

Mr. C. R. Ingersoll for the appellee.

Mr. Justice BRADLEY delivered the opinion of the Court.

This is a suit brought to restrain the infringement of a patent and for an account of profits, &c. The patent was for an alleged improvement in lamps, and was originally granted to Joshua E. Ambrose, October 16, 1860, for fourteen years, and was extended for seven years longer. It was twice surrendered and reissued, once in May, 1873, and again in January, 1876. The court below dismissed the bill on the ground that the second reissue, on which the suit was brought, was not for the same invention which was described and claimed in the original patent.

We agree with the circuit court in the conclusion to which it came. The original patent described a combination of devices; among other things, two domes or reflectors, one above the other, elevated above a perforated cap, through which a wick-tube and a vapor-tube ascended. It was claimed that this combination of devices, especially including the two domes, which admitted the external air between them for producing a more perfect combustion, would make a lamp which, without a chimney and without danger of explosion, would burn those hydrocarbons which are volatile and contain an excess of carbon. The invention proved a failure, but it was found that the use of one of the domes, (and the other parts,) with the restoration of the chimney, would be a real improvement, and both plaintiff and defendant made such lamps in large quantities. Fifteen years after the original patent was granted the patentee, or rather his assignee, discovers that the improved lamp was really a part of his original invention, and that by inadvertence and mistake he had omitted to claim it. We think, however, that the court below was clearly right in holding that the invention specified in the second claim of the reissued patent, which is the one in question here, is not the same invention which was described and claimed in the original patent. The latter was for a double dome without a chimney, the peculiarity of the supposed invention being the use of the double dome as a means of dispensing with the chimney. The reissue is for a single dome with a chimney. It is not only obviously a different thing, but it is the very thing which the patentee professed to avoid and dispense with.

But there is another grave objection to the validity of the reissued patent in this case. It is manifest on the face of the patent when compared with the original that the suggestion of inadvertence and mistake in the specification was a mere pretense, or, if not a pretense, the mistake was so obvious as to be instantly discerni-

ble on opening the letters patent, and the right to have it corrected was abandoned and lost by unreasonable delay. The only mistake suggested is that the claim was not as broad as it might have been. This mistake, if it were a mistake, was apparent upon the first inspection of the patent, and if any correction were desired it should have been applied for immediately.

These afterthonghts, developed by the subsequent course of improvement and intended by an expansion of claims to sweep into one net all the appliances necessary to monopolize a profitable manufacture, are obnoxious to grave animadversion. The pretense in this case that there was an inadvertence and oversight which had escaped the notice of the patentee for fifteen years is too bald for human credence. He simply appealed from the judgment of the Office in 1860 to its judgment in 1876; from the Commissioner and Examiners of that date to the Commissioner and Examiners of this, and upon a matter that was obvious on the first inspection of the patent. If a patentee who has no corrections to suggest in his specification except to make his claim broader and more comprehensive uses due diligence in returning to the Patent Office and says "I omitted this," or "my solicitor did not understand that," his application may be entertained, and on a proper showing correction may be made; but it must be remembered that the claim of a specific device or combination and an omission to claim other devices or combinations apparent on the face of the patent are in law a dedication to the public of that which is not claimed. It is a declaration that that which is not claimed is either not the patentee's invention, or if his, he dedicates it to the public. This legal effect of the patent cannot be revoked unless the patentee surrenders it and proves that the specification was framed by real inadvertence, accident, or mistake, without any fraudulent or deceptive intention on his part, and this should be done with all due diligence and speed. Any unnecessary laches or delay in a matter thus apparent on the record affects the right to alter or reissue the patent for such cause. If two years public enjoyment of an invention with the consent and allowance of the inventor is evidence of abandonment and a bar to an application for a patent, a public disclaimer in the patent itself should be construed equally favorable to the public. Nothing but a clear mistake or inadvertence and a speedy application for its correction is admissible when it is sought merely to enlarge the claim.

The power given by the law to issue a new patent upon the surrender of the original for the correction of errors and mistakes has been greatly misunderstood and abused. It was first contained in the act of July 3, 1832, and the law was adopted in view of suggestions made in several judgments of this Court; but it was carefully confined to cases where the patent was invalid or inoperative by reason of a failure to comply with any of the terms and conditions prescribed by the law for giving a clear and exact description of the invention, and where such failure was due to inadvertence, accident, or mistake, without any fraudulent or deceptive intention. This being shown, a new patent with a correct specification was authorized to be issued for the same invention. The act of 1836 enlarged the power to grant reissues by adding an additional ground for reissue—namely, that the patentee had inadvertently claimed in his specification as his own invention more than he had a right to claim as new—and with that addition the law has continued substantially the same to the present time. The fifty-third section of the act of 1870, which was the law on this subject when the reissue in the present case was granted, was in the following words:

> Whenever any patent is inoper tive or invalid by reason of a defective or insufficient specification, or by reason of the patentee claiming as his own invention or discovery more than he had a right to claim as new, if the error has arisen by inadvertence, accident, or mistake, and without any fraudulent or deceptive intention, the Commissioner shall, on the surrender of such patent and the payment of the duty required by law, cause a new patent for the same invention and in accordance with the corrected specification to be issued to the patentee.

It will be observed that while the law authorizes a reissue when the patentee has claimed too much, so as to enable him to contract his claim, it does not, in terms, authorize a reissue to enable him to expand his claim. The great object of the law of reissues seems to have been to enable a patentee to make the description of his invention more clear, plain, and specific, so as to comply with the requirements of the law in that behalf, which were very comprehensive and exacting. The act of 1793, section 3, required an applicant for a patent—

> To deliver a written description of his invention and of the manner of using or process of compounding the same in such full, clear, and exact terms as to distinguish the same from all other things before known, and to enable any person skilled in the art or science of which it is a branch or with which it is most nearly connected to make, compound, and use the same. And in the case of any machine, he shall fully explain the principle and the several modes in which he has contemplated the application of that principle or character by which it may be distinguished from other inventions; and he shall accompany the whole with drawings and written references, where the nature of the case admits of drawings.

This careful and elaborate requirement was substantially repeated in the patent act of July 4, 1836, (section 6,) with this addition:

> And shall particularly specify and point out the part, improvement, or combination which he claims as his own invention or discovery.

Although it had been customary to append a claim to most specifications, this was the first statutory requirement on the subject. It was introduced into the law several years subsequent to the creation of reissues; and it was in the thirteenth section of this act of 1836 that provision was made for a reissue to correct a claim which was too broad in the original. Now, in view of the fact that a reissue was authorized for the correction of mistakes in the specification before a formal claim was required to be made, and of the further fact that when such formal claim was required, express power was given to grant a reissue for the purpose of making a claim more narrow than it was in the original, without any mention of a reissue for the purpose of making a claim broader than it was in the original, it is natural to conclude that the reissue of a patent for the latter purpose was not in the mind of Congress when it passed the laws in question. It was probably supposed that the patentee would never err in claiming too little. Those who have any experience in business at the Patent Office know the fact that the constant struggle between the Office and applicants for patents has reference to the claim. The patentee seeks the broadest claim he can get. The Office, in behalf of the public, is obliged to resist this constant pressure. At all events, we think it clear that it was not the special purpose of the legislation on this subject to authorize the surrender of patents for the purpose of reissuing them with broader and more comprehensive claims, although, under the general terms of the law, such a reissue may be made

where it clearly appears that an actual mistake has inadvertently been made. But by a curious misapplication of the law it has come to be principally resorted to for the purpose of enlarging and expanding patent claims; and the evils which have grown from the practice have assumed large proportions. Patents have been so expanded and idealized years after their first issue that hundreds and thousands of mechanics and manufacturers, who had just reason to suppose that the field of action was open, have been obliged to discontinue their employments or to pay an enormous tax for continuing them.

Now, while, as before stated, we do not deny that a claim may be enlarged in a reissued patent, we are of opinion that this can only be done when an actual mistake has occured, not from a mere error of judgment, (for that may be rectified by appeal,) but a real *bona fide* mistake, inadvertently committed, such as a court of chancery, in cases within its ordinary jurisdiction, would correct. Reissues for the enlargement of claims should be the exception and not the rule; and when, if a claim is too narrow—that is, if it does not contain all that the patentee is entitled to—the defect is apparent on the face of the patent and can be discovered as soon as that document is taken out of its envelope and opened, there can be no valid excuse for delay in asking to have it corrected. Every independent inventor, every mechanic, every citizen, is affected by such delay, and by the issue of a new patent with a broader and more comprehensive claim. The granting of a reissue for such a purpose after an unreasonable delay is clearly an abuse of the power to grant reissues, and may justly be declared illegal and void. It will not do for the patentee to wait until other inventors have produced new forms of improvement, and then, with the new light thus acquired, under pretense of inadvertence and mistake, apply for such an enlargement of his claim as to make it embrace these new forms. Such a process of expansion, carried on indefinitely, without regard to lapse of time, would operate most unjustly against the public, and is totally unauthorized by the law. In such a case, even he who has rights and sleeps upon them justly loses them.

The correction of a patent by means of a reissue where it is invalid or inoperative for want of a full and clear description of the invention cannot be attended with such injurious results as follow from the enlargement of the claim; and hence a reissue may be proper in such cases, though a longer period has elapsed since the issue of the original patent. But in reference to reissues made for the purpose of enlarging the scope of the patent, the rule of laches should be strictly applied, and no one should be relieved who has slept upon his rights, and has thus led the public to rely on the implied disclaimer involved in the terms of the original patent; and when this is a matter apparent on the face of the instrument upon a mere comparison of the original patent with the reissue, it is competent for the courts to decide whether the delay was unreasonable and whether the reissue was therefore contrary to law and void.

We think that the delay in this case was altogether unreasonable, and that the patent could not lawfully be reissued for the purpose of enlarging the claim and extending the scope of the patent.

The decree of the circuit court is affirmed.

U. S. Circuit Court—Eastern District of Missouri.

HERRING *v.* GAS CONSUMERS' ASSOCIATION.

Decided March 28, 1878.

1. INFRINGEMENT OF PATENT BY JOINT OWNER.
   A part owner of a patent has no right to use an infringing device. If he does, he is liable to his co-owner for the wrong done.
2. SAME—AMOUNT OF RECOVERY.
   When a part owner of a patent sues a co-owner for using an infringing device, the recovery, if any, will be in proportion to their respective interests.

Mr. J. H. Blair for the plaintiff.

Mr. H. B. Wilson and *Mr. John McGuffy* for the defendant.

TREAT, *D. J.:*

The plaintiff avers substantially that he is owner of an undivided two-thirds interest in the patent described, and that the defendant is owner of the other undivided one-third interest; that the defendant is using a device which is an infringement upon their common patent, and that he is so doing under cover of their common patent. Hence the claim for damages for said infringement—not for the entire amount thereof, but for plaintiff's proportion—to wit, two-thirds.

The direct question presented is whether an infringer of a patent can escape liability for his infringement because he is a joint owner of the original patent upon which the infringement occurs.

The cases cited do not reach the precise point raised by the bill. It is evident that if a stranger was guilty of the infringement he would be compelled to respond in damages. Can a part owner infringe the common patent and escape all liability? If he can, it is obvious that, however small his aliquot part, he can make the enjoyment of the patent valueless to his joint owner. He has, by virtue of the joint ownership, a right to use the patent, but he has no right, more than a stranger, to infringe the same. If there is an infringement the right of recovery is in the party wronged. All the joint owners should ordinarily be parties plaintiff; but if the wrong-doer is one who is guilty to the damage of the other joint owner, the latter should not be left remediless. As to such infringement they are strangers. All the joint owners are on the record, and the amount of the recovery determines their respective interests. The infringer cannot escape the consequences of his wrong to his joint owner by averring that he was by his infringement injuring not his joint owner alone, but himself also. In other words, he cannot, under cover of his interest in the common patent, shield every wrong-doer who may infringe that patent. He can, as to the other part owners, by infringing, become liable to them for the wrong done. The amount of recovery will be in proportion to their respective interests. Were this not so, the door would be open to the grossest frauds by one joint owner against all other joint owners.

The case of *Pitts* v. *Hall*, (3 Blatchf., 204,) and the comments thereon in Curtis on Patents, sec. 108 *et seq.*, do not cover this case. The question there discussed pertains to the use by one joint owner of the common property. The difficulties in maintaining an action for an infringement against a joint owner who merely uses the common patent may be insurmountable. As to that no opinion is expressed. In this case an entirely new and distinct proposition is presented—viz., one of the sev-

eral joint owners is not using the common patent, but an infringing patent. His defense is that inasmuch as he had a right to use the original patent without question from his joint owners, despite the decision in *Pitts* v. *Hall*, *supra*, he has a right also to use any infringing patents, on the ground that his right to use the original being vested in him, his use of other and infringing patents did not cause any wrong or injury to himself as joint owner. In other words, the defendant contends that as one joint owner he could use the common patent without being liable to account to the other joint owners; that he could not be sued as an infringer for using what he had a right to use by virtue of his proprietary interest; and therefore if he used an infringing device he was only injuring himself in what he had a proprietary right to forbid. This would be correct if no interest except his own were involved, for a man may do what he pleases with his own, and *volenti non fit injuria* would be, *a fortiori*, applicable in such a case. If a stranger were using the infringing patent this action would unquestionably lie against him; and the question before us is whether it will lie against a joint owner, or, in the language of the bill, whether he, under cover of his joint ownership, can infringe and escape liability. So far as he acts outside of his interests or rights or powers as a joint owner there is no adequate reason for treating him *quoad hoc* otherwise than as a stranger. If this be not so, then one joint owner may destroy, without remedy, the rights of the other joint owners.

Demurrer overruled.

U. S. Circuit Court—Southern District of New York.

GARDNER v. CROSSMAN *et al.*

Decided August 4, 1881.

PLEADINGS—NEW BILL.

Where parties acquiesce in going on in a circuit court under complaint and answer filed in the State court, it will not be necessary to file a new bill in equity in the circuit court.

Messrs. Richards & Heald for the plaintiff.
Messrs. Scudder & Carter for the defendants.

BLATCHFORD, *J.*:

On more careful consideration I am of opinion that my ruling on the objection to cross-question 395 was wrong, and that the objection ought to be overruled.

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As both parties acquiesced in going on in this court under the complaint and answer in the State court, without the filing of a new bill in equity in this court, and as the plaintiff treated the answer of the defendants as a general denial of the agreement set up in the complaint, by proceeding to prove such agreement as set up, it is proper that it should be so treated by this court. In addition to this, I think it is a fair construction of the answer that it denies the existence of the agreement set up in the complaint. The putting in of a general replication to it so treats it. But I think the defendants must be held to such answer, and that while they are entitled to all that legitimately flows from it, they are not entitled now to amend it. No sufficient reason is shown for allowing it to be amended, and the motion to amend it must be denied and an order be entered to carry into effect the foregoing decision.

U. S. Circuit Court—Southern District of New York.

MACAULEY v. THE WHITE SEWING MACHINE COMPANY *et al.*

Decided September 20, 1881.

SUSPENSION OF INJUNCTION—AFFIDAVIT.

Motion for a further suspension of the issuance of an injunction denied for the insufficiency of the affidavit.

Mr. C. W. Betts for the plaintiff.
Mr. S. A. Duncan for the defendants.

BLATCHFORD, *J.*:

The issuing of the injunction was suspended for two months, "with a view to enable the defendants either to change their machinery or to obtain a license from the complainant under said letters patent." The affidavit for this motion sets forth only that the officers of the company have been endeavoring to change the machine of the company so as to avoid infringement, and to that end have tried several different forms of mechanism; that no one of such forms has proved so reliable as to warrant its adoption, and that they are in good faith making further experiments to accomplish said result. There is no suggestion by affidavit that there is any probability of success. As to the license-fee offered to be deposited in respect of future machines, I am not satisfied that it is a proper and adequate fee, even if, on other grounds, the relief asked were proper.

The motion as made is denied.

THE
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OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 21—NO. 4 TUESDAY, JANUARY 24, 1882. PRICE—$5 per year

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Erratum.

OFFICIAL GAZETTE, January 24, 1882, Volume 21, page 235, Patent No. 252,835, in title, name of assignee, for "John H. Wilson" read *Joseph H. Wilson*.

Subscriptions for 1882.

The OFFICIAL GAZETTE is published every Tuesday, two volumes a year, commencing in January and July. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound volumes, $3.50 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Amendment of Rule 46.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., December 8, 1881.

Rule 46 (Rules of Practice, revised September 1, 1880) is hereby amended by the addition of the following provision, viz:

When the person before whom the oath or affirmation is made is not provided with a seal his official character shall be established by competent evidence, as by a certificate from a clerk of a court of record or other proper officer having a seal.

This amendment will take effect January 15, 1882.

V. D. STOCKBRIDGE,
Acting Commissioner.

Approved:
S. J. KIRKWOOD,
Secretary.

A certificate of the official character of a magistrate, stating date of appointment and term of office, may be filed in the Patent Office, which will obviate the necessity of separate certificates in individual cases.

Issue of January 24, 1882.

Patents	264	No. 252,594 to No. 252,857,	inclusive.
Designs	10	No. 12,701 to No. 12,710,	inclusive.
Trade-Marks	12	No. 9,036 to No. 9,047,	inclusive.
Labels	2	No. 2,601 to No. 2,602,	inclusive.
Reissues of patents	4	No. 10,013 to No. 10,016,	inclusive.
Total issue	292		

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama			Nebraska	2	
Arizona Territory			Nevada		
Arkansas			New Hampshire	2	
California	5		New Jersey	12	1
Colorado	1		New Mexico Territ'y		1
Connecticut	12		New York	56	4
Dakota Territory			North Carolina		
Delaware	1		Ohio	23	
District of Columbia	1		Oregon	2	
Florida			Pennsylvania	32	1
Georgia	1		Rhode Island	4	
Idaho Territory			South Carolina		
Illinois	30	1	Tennessee	1	
Indiana	1		Texas	3	
Indian Territory			Utah Territory		
Iowa	4		Vermont	3	
Kansas	2		Virginia	1	
Kentucky	7		Washington Territ'y		
Louisiana	1		West Virginia		
Maine	1		Wisconsin	5	
Maryland	4		Wyoming Territory		
Massachusetts	23	2	United States Army		
Michigan	11		United States Navy		
Minnesota	2				
Mississippi	2		Total to citizens of the United States	249	10
Missouri	3				
Montana Territory	1				

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia			England	9	
Austria			France	2	4
Barbadoes			Germany	3	
Belgium			Italy		
Bermuda			New Zealand		
Brazil			Russia		
Canada	9		Spain		
Chili			Sweden		
Colombia, U. S. of			Switzerland	2	
Cuba					
Denmark			Total to citizens of foreign countries	25	4
Ecuador					

DESIGNS.

12,701 to 12,705, inclusive.—TEA-TRAY.—*Walter M. Conger*, Newark, N. J. Applications filed June 18, 1881. Term of patents 14 years.

12,706.—COOKING-STOVE.—*Oliver B. Keeley*, Spring City, Pa. Application filed December 19, 1881. Term of patent 7 years.

12,707 to 12,710, inclusive.—ORNAMENTING CLOTH.—*Dwight C. Sumner*, New York, N. Y. Applications filed December 27, 1881. Term of patents 3½ years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

9,036.—THREAD.—*Clark Thread Company*, Newark, N. J. Application filed December 27, 1881.
"A bar."

9,037.—CLARET-WINE.—*Eschenauer & Co.*, Bordeaux, France. Application filed December 27, 1881.
"The word-symbol 'RED SEAL.'"

9,038.—CLARET-WINE.—*Eschenauer & Co.*, Bordeaux, France. Application filed December 27, 1881.
"A representation of the letter 'E.'"

9,039.—CLARET-WINE.—*Eschenauer & Co.*, Bordeaux, France. Application filed December 27, 1881.
"The word-symbol 'WHITE SEAL.'"

9,040.—CLARET-WINE.—*Eschenauer & Co.*, Bordeaux, France. Application filed December 27, 1881.
"The word-symbol 'GOLD SEAL.'"

9,041.—OVERALLS.—*Henry Bernheim*, New York, N. Y. Application filed December 14, 1881.
"The picture of a man sewing."

9,042.—TACKLE-BLOCKS.—*Penfield Block Company*, Lockport, N. Y. Application filed December 10, 1881.
"A foul anchor."

9,043.—BRANDY.—*Cazade, Crooks & Reynaud*, New York, N. Y. Application filed August 19, 1881.
"The fanciful border and the representation of the stars."

9,044.—STOVE-ENAMEL.—*Benjamin D. Milliken*, Boston, Mass. Application filed January 4, 1882.
"The word 'PRIDE.'"

9,045.—MUSTARD AND ALL KINDS OF SPICES.—*H. F. A. Pinckney & Co.*, Philadelphia, Pa. Application filed December 15, 1881.
"The symbol consisting of the shield, belt, and scrolls."

9,046.—CERTAIN TOILET PREPARATION.—*H. K. & F. B. Thurber & Co.*, New York, N. Y. Application filed December 22, 1881.
"The representation of the fabled fountain of youth in the foreground of a tropical scene, the figures of an aged man and a youth, and the words 'FOUNTAIN OF YOUTH' and 'FUENTE DE REJUVENECIMIENTO.'"

9,047.—AUGERS AND AUGER-BITS.—*F. F. Tennis*, New York, *W. K. Wilson* and *L. K. Kumbel*, Brooklyn, N. Y., and *Emory L. Bates* and *R. E. Bond*, Fiskdale, Mass. Application filed May 23, 1881.
"The word 'SNELL.'"

LABELS.

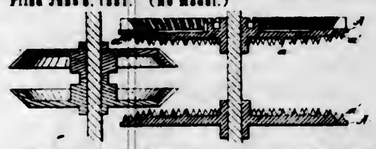
2,601.—Title: "BOND'S NON CORROSIVE CYLINDER OIL."—*James C. Bond*, Chicago, Ill. Application filed December 29, 1881.

2,602.—Title: "THE GREAT MOUNTAIN SAGE REMEDY FOR FEVERS." *R. C. Schroeder & Co.*, Raton, N. Mex. Ter. Application filed December 28, 1881.

PATENTS

GRANTED JAN. 24, 1882.

252,594. CORN-SHELLER. HENRY A. ADAMS, Sandwich, Ill. Filed June 6, 1881. (No model.)



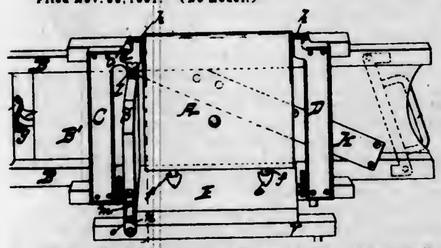
Claim.—1. In a corn-sheller, a straight runner having the points of its outer teeth gradually receding, substantially as described.

2. In a corn-sheller, a straight runner provided with gradually-receding teeth on the outer portion of its face or faces, in combination with bevel runners, substantially as and for the purpose set forth.

3. A straight runner, A, provided with a bevel in the outer portion of its face, on which are arranged gradually-receding teeth *a'*, substantially as described.

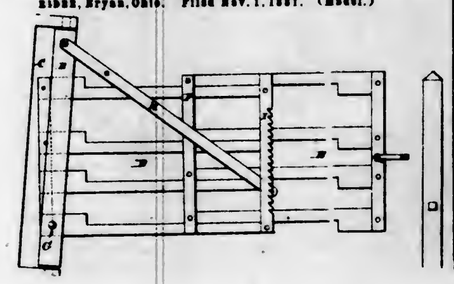
4. A straight runner, A, provided with a bevel on the outer portion of its face, composed of a series of steps or offsets, *a'*, and having teeth *a'* arranged on these offsets, substantially as described.

252,595. VEGETABLE-SLICING MACHINE. JOHN W. ANDERSON, Lancaster, Pa., assignor to Adam B. Groff, same place. Filed Nov. 25, 1881. (No model.)

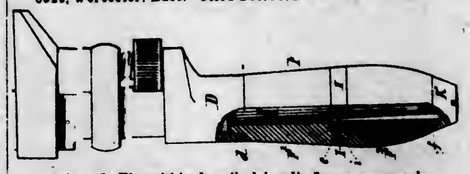


Claim.—The folding presser and guard A, hinged horizontally to extensions *h h*, or their equivalents, on the frame C, provided with projections *p p* on its face, and stops *f f* on its lower margin, registering with the notches *e e* in the top of table E, and operating both to press an article, Z, between it and the gage B' before the knife K and adapted to be laid back out of the way on the top of frame C in the manner and for the purpose set forth.

252,596. SWINGING AND SLIDING GATE. MYRON F. CALTRIDER, Bryan, Ohio. Filed Nov. 1, 1881. (Model.)



252,597. SCREW-WRENCH. JOHN H. CORE and FREDERICK L. CORE, Worcester, Mass. Filed Dec. 19, 1881. (No model.)

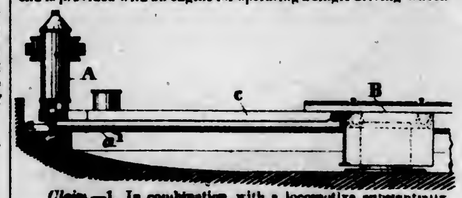


Claim.—1. The within-described handle for screw-wrenches, composed of the wood portions F F', respectively provided with end shoulders, *d e i f*, and the re-enforce or ring I, surrounding the junction of said wood parts, with its exterior surface finished off flush with the surface of the wood, as hereinbefore set forth.

2. The combination, with the wrench-bar shank A' and ferrule D, of the wood thimbles or parts F F', having end shoulders, *d e* and *i f*, and matching surfaces *m m'*, the metal re-enforce ring I, surrounding the center or junction of the wood thimbles and finished flush with the exterior thereof, and the cupped tip-nut K, as hereinbefore shown and described.

252,598. STEAM-LEVER. JNO. B. COLLIS, Altoona, Pa. Filed Nov. 15, 1881. (No model.)

Brief.—A lever-arm is hinged to a turn-table, and at the outer end is provided with an engine for operating a single driving-wheel.



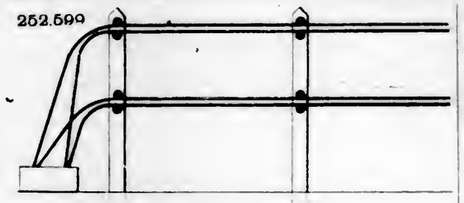
Claim.—1. In combination, with a locomotive substantially such as described, the hinged lever-arm and the turn-table, as and for the purpose set forth.

2. The locomotive A, having the single driving-wheel *a*, in combination with the arm *c*, having the hinge-connections, and the turn-table B, as described.

252,599. ELECTRIC-WIRE FENCE. JOSEPH H. CONNELLY, Pittsburg, Pa. Filed Mar. 8, 1881. (No model.)

Claim.—A wire fence having one or more of its wires insulated, and with its or their ends connected respectively with the opposite poles of an electric battery to form the circuit of the current or currents generated by the battery, substantially as herein described, and for the purpose set forth.

252,599

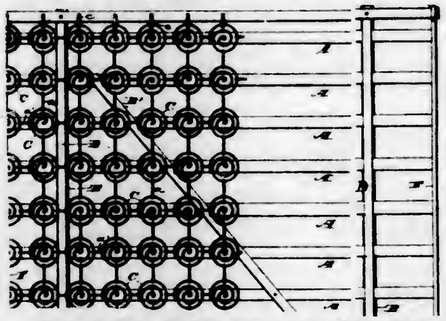


252,600. EXPLOSIVE COMPOUND. CARL DITTMAR, New York, N. Y. Filed Nov. 7, 1881. (No specimens.)

Claim.—1. The process for forming a new explosive compound, which consists in the formation of a chlornitrosaccharose or nitro-sugar by dissolving cane-sugar or sucrose in chlorhydrin and then converting the same into a nitro compound, substantially as described.

2. The compound hereinbefore described, provisionally termed "chlornitrosaccharose."

252,601. SPRING BED-BOTTOM. OSCAR S. FOSTER and WILLIAM S. FOSTER, Utica, N. Y. Filed Oct. 22, 1881. (No model.)



Claim.—1. In a spring bed-bottom, the combination, with the longitudinal slats having springs secured thereto, the said springs being secured together by suitable links, and side rails secured to the outside rows of springs by suitable metallic loops, of semi-elliptic springs rigidly secured to the side rails, substantially as set forth.

2. In a spring bed-bottom, the combination, with the longitudinal slats having springs secured thereto, the said springs being secured together by suitable links, side rails secured to the outside rows of springs by suitable metallic loops, and metallic straps passing through the top coil of the end springs and secured to the side rails in any suitable manner, of semi-elliptic springs the ends of which are rigidly secured to the side rails, substantially as set forth.

3. The combination, with the longitudinal slats A, braces B, springs C, and metallic straps F, of the semi-elliptic springs D, secured to the braces B, and connected at their opposite ends to the side rails, substantially as set forth.

252,602. CAR-COUPLING. EDWARD P. GOODRICH, Ypsilanti, Mich. Filed Aug. 17, 1881. (No model.)



Claim.—1. The combination, with the draw-head A, having flaring mouth C, recess E, and chamber F, of the gravity coupling-hook I, having hooks K M and beveled nose or point L, as described, for the purpose set forth.

2. The combination, with the draw-head A, having flaring mouth C, recesses E F, abutment G, and shoulder H, of the herein-described removable gravity coupling-hook I, as and for the purpose shown and specified.

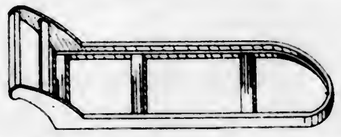
3. In a car-coupling, the combination, with the draw-head, of a longitudinally-sliding detachable coupling-hook, as herein described, for the purpose set forth.

252,603. MUCILAGE-RECEPTACLE. WILLIAM KNEELAND, New York, N. Y., assignor to Sidney C. Thompson, same place. Filed Sept. 12, 1881. (No model.)



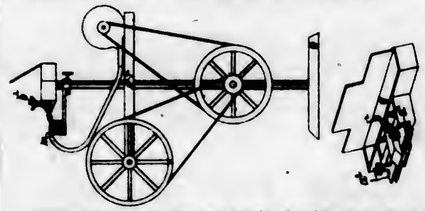
Claim.—In a mucilage-receptacle, comb *d'*, in combination with spring *d*, attached to the cover of a vessel, as shown and described.

252,604. LOUNGE-FRAME. JNO. F. KOMP, Chicago, Ill. Filed Nov. 14, 1881. (No model.)



Claim.—In a lounge-frame, the bent piece of wood *b*, forming the two sides and the foot of the frame, for the purpose specified, substantially as set forth.

252,605. MACHINE FOR BRAZING BAND-SAWS. JOHN F. KOMP, Chicago, Ill. Filed Jan. 11, 1881. (No model.)

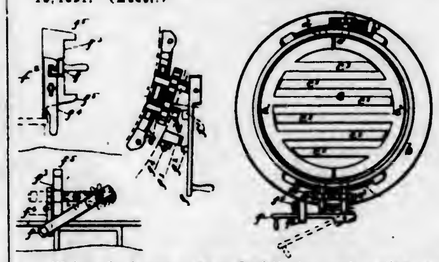


Claim.—1. In a machine for brazing band-saws, the box a, with slot a', containing charcoal or other similar substance, for the purpose of confining the heat, in combination with a blow-pipe apparatus, for the purpose specified, substantially as set forth.

2. In a machine for brazing band-saws, the box K, with the clamps a^1 a^2, in combination with the box a, with the slot a', containing charcoal or other similar substance, substantially as set forth, for the purpose specified.

3. In a machine or apparatus for brazing or soldering, the combination of a bed-plate, K, and means for maintaining the articles to be brazed in proper relative position upon the bed-plate of a charcoal-receptacle, a, whereby the articles to be brazed may be embedded in charcoal to co-operate with a flame in heating the soldering material.

252,606. GRATE. JOSEPH KNAUPA, St. Louis, Mo. Filed Oct. 12, 1881. (Model.)



Claim.—1. A grate composed of the two grate-sections, provided with front and rear pivot-bars bearing in sliding carriers placed in suitable ways, both front bars and one of the rear bars being provided with gear-wheels, the gear-wheels on front bars being arranged to mesh together, and the gear-wheel on rear pivot-bar being arranged to engage a rack-bar placed alongside the way, supporting the carrier on which said bar rests, substantially as set forth.

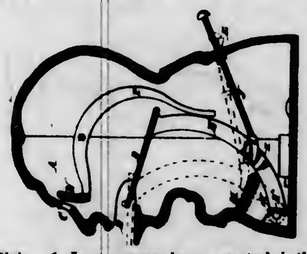
2. The combination of the fire-pot having formed through it horizontal openings with carriers made shorter than and placed in said openings, and provided with bearings to receive the pivot-bars of the grate-sections, whereby a lateral motion may be given the grate-sections, substantially as set forth.

3. In a stove, the combination of a fire-pot formed with openings through it, carriers made shorter than and placed and supported in said openings, and ways placed alongside and provided with bearing for the grate-sections, the tilting grate-sections, and means for operating, substantially as set forth.

4. The combination of the grate-sections, the front pivot-bars of which are extended through the casing of the stove, the one having the operating-lever hinged to it, the said lever having a lug placed thereon and arranged to enter a slot formed in the end of the other front pivot-bar when the grates are in a horizontal position and firmly lock the grates in such position, substantially as set forth.

5. The combination of the hinged lever having hook *f'* on its side next the stove, the bar *f*, fixed to the stove and having a slot formed in its front to receive the hinged lever, and the latch arranged to catch over the hook on the hinged lever and hold the said lever from an outward movement, substantially as set forth.

252,607. TOY MONEY-BOX. LOUIS KYNER and ALFRED C. REX, Philadelphia, Pa. Filed June 27, 1881. (No model.)

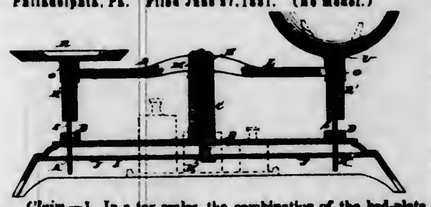


Claim.—1. In a toy money-box, a receptacle in the form of the human head provided with an open mouth, in combination with a pivoted tongue adapted to be retained within the mouth by a spring or its equivalent, and forced out by pressure applied at the instant, said tongue upon its withdrawal discharging the money into the box, as in the act of swallowing, substantially as and for the purpose specified.

2. In a toy money-box, a receptacle in the form of the human head provided with an open mouth, in combination with a tongue adapted to be pressed out by pressure applied at the instant, and withdrawn by a spring, and movable eye-balls adapted to operate upon the withdrawal of the tongue, as in the act of swallowing money, substantially as and for the purpose specified.

3. In a toy money-box, a receptacle, A, in the form of a head provided with a mouth, B, and eye-holes C, in combination with a tongue, D, secured to a lever, E, pivoted at F, spring M, rod J, or its equivalent, and pivoted eye-balls N, substantially as and for the purpose specified.

252,608. TOY SCALES. LOUIS KYNER and ALFRED C. REX, Philadelphia, Pa. Filed June 27, 1881. (No model.)



Claim.—1. In a toy scales, the combination of the bed-plate B, with its standard C, lever L, working in said standard upon knife-edge M and kept in place by cap F, said lever being provided on its ends with knife-edges N, pan R, and basket U, both provided with recessed blocks O, having the bottoms closed with plates P, which are riveted thereto, and hubs E', to which are secured rods S, plate I, provided with lugs J and holes K and H', and held in place by wire H, passed through hole H' and bent over, substantially as shown and described.

2. In a toy scales, the combination of the bed-plate B, standard C, provided with slot E, plate I, provided with holes K K and H', wire H, lever L, pans R and U T, and their rods S, as and for the purpose specified.

3. In a toy scales, the pan R, cast solid with the recessed blocks O, the bottom of said blocks being covered with plates P, riveted thereto, as shown and described.

252,609. DRIVE-CHAIN. CHARLES H. LOW, Sandwich, Ill., assignor of one-half to J. Phelps Adams, same place. Filed Aug. 29, 1881. (No model.)



Claim.—1. In a drive-chain, a rectangular link provided with a coupling end bar of oval form lengthwise, substantially as and for the purpose set forth.

2. In a drive-chain, a coupling end bar on one link of oval form lengthwise, in combination with a coupling-hook on the adjacent link cut away to provide flaring openings at the ends of the hooks, substantially as and for the purposes set forth.

252,610. EAR-RING. HERBERT O. MACKINNEY, Providence, R. I. Filed Oct. 17, 1881. (No model.)

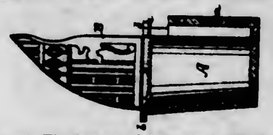


Claim.—1. The bow of an ear-ring provided with the hook A, hinged to one arm of the bow, and arranged to turn in a segment of a circle between stops located as described, said hook being adapted to engage the opposite arm of the bow, substantially as described, and for the purposes specified.

2. In combination with the hook A of an ear-ring, the disk *d*, with the lips *l l*, or equivalent flange *f*, all substantially as described, and for the purpose specified.

3. The hook A of an ear-ring, provided with the lips *l l*, in combination with the disk *d*, substantially as specified.

252,611. FEED-CUP FOR BIRD-CAGES. JOHN HAENSSLER, Brooklyn, N. Y. Filed Nov. 15, 1881. (No model.)



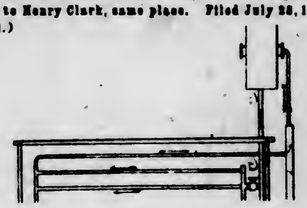
Claim.—1. The feed-cup A, combined with the shield B and flexible wires or bands *c*, and with a projection or projections, which, together with said wires or bands, will insure the connection of the parts A and B, substantially as described.

2. The feed-cup A, constructed with inner recess, *d*, and outwardly-projecting flange *b*, in combination with the detachable shield B and flexible wires or bands *c*, substantially as described.

3. In a bird-cage, a feed-cup provided with a separable partly or wholly transparent shield, B, and with bands *c*, for uniting the two into one portable structure, substantially as described.

4. The feed-cup A, provided with recess *d*, and combined with the partly or wholly transparent shield B, which is set into said recess and firmly united to said cup into one structure, substantially as herein shown and described.

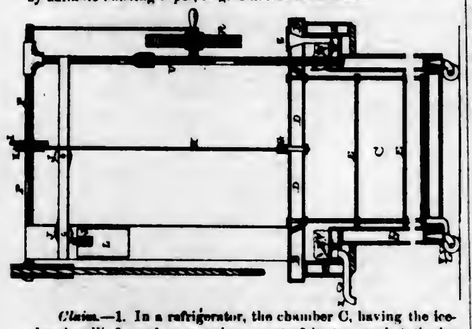
252,612. EVAPORATING SALT-BRINE. ALEXANDER MCBEAN and JAMES H. WATSON, Tawas City, Mich., assignors of one-third to Henry Clark, same place. Filed July 28, 1881. (No model.)



Claim.—The method of manufacturing salt, the same consisting of maintaining a constant and rapid circulation of hot water from the boiler to the blocks and return, as contradistinguished from a similar circulation of steam, as set forth.

252,613. REFRIGERATOR. JNO. MCMURRAY, Lexington, Ky. Filed Oct. 28, 1881. (No model.)

Brief.—Keeps both ice and provisions in partial vacuum produced in both the chamber and its hollow walls by a peculiar air-pump consisting of wheel with a hollow rim, which serves as a pump-barrel, being pivoted at one side of periphery to an air-pipe leading from the chambers to be exhausted. The lower half of the hollow rim is filled with mercury which, as the wheel is turned a half-revolution, flows by its gravity through the rim, keeping in the lower half, and thereby acting as a piston, driving the air out of that half through a valve and filling the space before occupied by mercury with air from refrigerator. A reverse motion of the wheel performs similar operation in other half of wheel, and so on, each oscillation of wheel exhausting air. The door of refrigerator is in its top, which, with the shelves attached, is lifted vertically by suitable hoisting-ropes, to give access to contents.



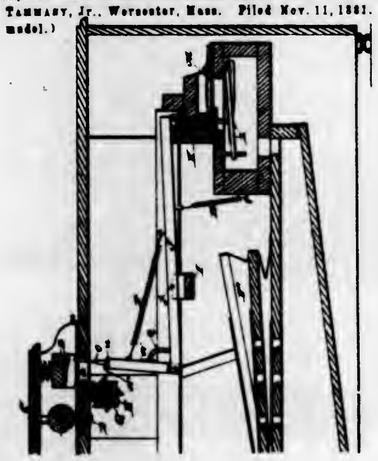
Claim.—1. In a refrigerator, the chamber C, having the ice-chamber E', formed as an enlargement of its top, so that the ice can be placed out of the way of the vertically-moving shelves E, substantially as set forth.

2. In a refrigerator, the chamber C, having both the ice-chamber E' and the water-chamber W formed around its top, substantially as specified.

3. The combination of the wheel R, containing a dense liquid, and provided with suitable valves, with a weighted lever, 3, quadrant 2, pinion 1, and the pipe which connects with the refrigerating-chamber, substantially as shown.

4. The wheel R, attached to the end of a pipe which is connected with one or both of the chambers B C, and provided with suitable valves, so that when rocked or moved from side to side the dense liquid contained in the wheel will exhaust the air from the chamber or chambers, substantially as described.

252,614. AUTOMATIC MUSICAL INSTRUMENT. JOHN MCTAMMANY, Jr., Worcester, Mass. Filed Nov. 11, 1881. (No model.)



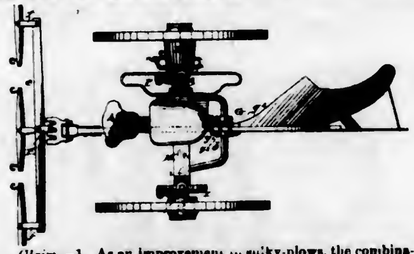
Claim.—1. In an automatic musical instrument, the combination of a valve-rod, a lever operating the same, and a music-sheet with a vertical arm hinged to said lever, and a spring which retracts said arm, substantially as set forth.

2. The finger O, in combination with shouldered arm N, fluted roll H, springs P and R, stop Q, the lever J and its valve, valve-rod, driving-shaft, and actuating mechanism, substantially as set forth.

3. In a mechanical musical instrument, the combination of a case having slots *a* in its top with a series of levers for opening the reed-valves, a series of upright arms hinged to said levers and provided with fingers O, and the fluted roll, adapted and arranged to engage with and depress any one of said arms as it is drawn into its rearmost position by the action of the music-sheet, substantially as set forth.

252,615. SULKY-PLOW. HERMAN MILLER, New Ulm, Minn., assignor of one-half to M. Mallon, same place. Filed Oct. 15, 1881. (No model.)

Brief.—A sliding notched hub moved by a spring-lever engages a similar fixed hub on the wheel, when the crooked axle turns with the wheel and raises the plow. The lever has this sidewise rocking capacity to engage the clutch in addition to the ordinary forward and back movement against its rack to raise the plow by hand and to lock it in any position. A sand-cap covers all the parts at the inner end of the wheel-hub.



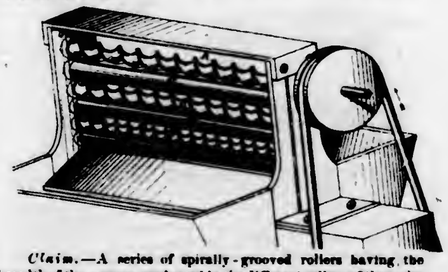
Claim.—1. As an improvement in sulky-plows, the combination, with the axle and plow-beam, of the device for securing them together, consisting substantially of the two-part hub G, encircling the axle, the upper half of which is formed with laterally-projecting lugs *g g*, and is grooved transversely to receive the plow-beam, and the lower half with similar lugs, *g'*, all being held securely together by clips *g²*, which embrace the lugs, substantially as and for the purpose herein shown and specified.

2. The combination of the lever *l* with the sliding toothed hub N upon the axle, the bent rod O, pivoted and engaging said hub, the axle-skein P, flanged at its inner end, and the wheel with the toothed hub-rim, said members being constructed and organized substantially as and for the purpose described.

3. The combination, with the toothed hub N, axle-skein P, toothed hub-rim, and rod O, of the sand-cap R, provided with openings for the lower arm of said rod, and arranged to cover the said parts, substantially as described.

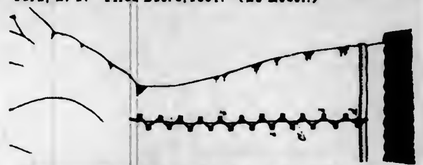
252,616. MACHINE FOR SHELLING PEASE. FELICE MOLINI, San Francisco, Cal. Filed Aug. 2, 1881. (No model.)

Brief.—The invention consists in mounting in a single machine, in conjunction with plain rollers, a series of spirally-grooved rollers having the breadth of the grooves graduated in the different rollers of the series.



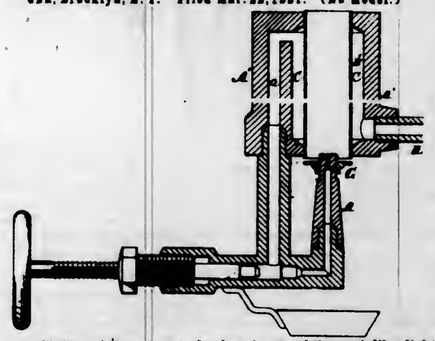
Claim.—A series of spirally-grooved rollers having the breadth of the grooves graduated in the different rollers of the series mounted in a framing, in conjunction with plain rollers, in combination with said plain rollers and framing, substantially as set forth.

252,617. GLOVE-FASTENING. SAMUEL MONTGOMERY, New York, N. Y. Filed Dec. 8, 1881. (No model.)



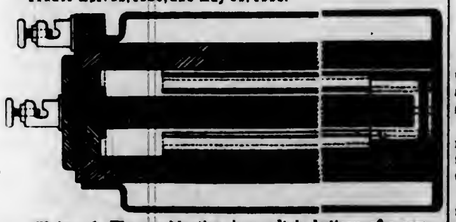
Claim.—As an improved article of manufacture, the glove with the wrist-opening provided with spring closing-studs on each side of the same, and a lacing-cord secured at one end to the glove and having a ring or ball on the other end, the studs permitting the cord to be laced or unlaced, and automatically closing after the passage of the cord in either direction, thus preventing catching into materials or fabrics with which the said studs may come in contact, substantially as shown and described.

252,618. LIQUID-HYDROCARBON BURNER. ALFRED S. HEDGES, Brooklyn, N. Y. Filed Mar. 22, 1881. (No model.)



Claim.—An apparatus for burning naphtha and like light hydrocarbon oils, composed of the externally-threaded burner A, the annular chamber C, having thick outer walls of cast metal and thin inner walls of wrought metal, the passage *a*, connecting with the said chamber at its top, the inlet E, connecting with the said chamber at its bottom, and the internally-threaded disk G, the burner and the disk being placed coincident with the passage through the thin internal walls of the chamber C, and the whole being constructed, combined, and arranged substantially as and for the purpose herein set forth.

252,619. VOLTAIC BATTERY. AUGUST F. W. PARTS, Philadelphia, Pa. Filed Nov. 14, 1881. (No model.) Patented in France Apr. 22, 1880, and May 28, 1880.



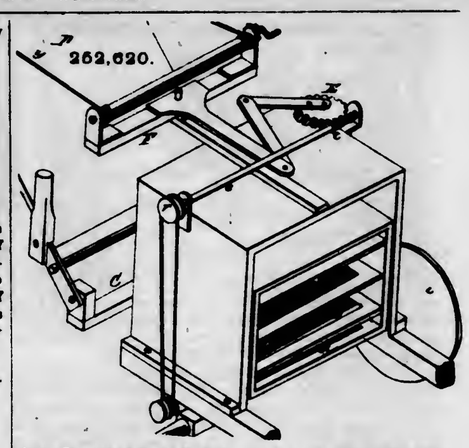
Claim.—1. The combination, in a voltaic battery, of a compound solution of chloride of zinc and bichromate of ammonia with an anode of zinc and a cathode of carbon.

2. A cathode of carbon slotted so as to form a row or cluster of connected bars, substantially as and for the purpose set forth.

252,620. STRAW-CARRIER OF THRASHING-MACHINES. POMPEIUS PHILIPPI, Boardstown, Ill. Filed Sept. 28, 1881. (No model.)

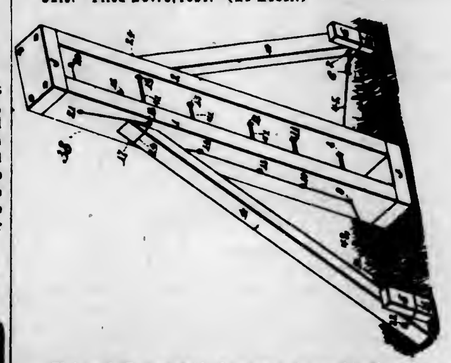
Claim.—1. The combination, with a thrashing-machine and the carrier attachment thereof, of mechanism, substantially as shown and described, for automatically imparting to the carrier a continuous lateral swinging motion, substantially as and for the purpose set forth.

2. In a thrashing-machine, the combination of the carrier-frame D, pivoted frame F, shaft *s*, worm *t*, worm-wheel E, crank-arm *u*, connected thereto, and the pivoted arm *v*, said arm being suitably connected to the frame F, substantially as and for the purpose set forth.



3. In a thrashing-machine, the combination of the pivoted carrier-frame D, the pivoted support C, the frame-work B, and mechanism, substantially as described, for imparting to the carrier a continuous lateral swinging motion, substantially as and for the purpose specified.

252,621. PORTABLE FENCE. SAMUEL K. RAEE, West Elkton, Ohio. Filed Nov. 3, 1881. (No model.)



Claim.—1. In a portable fence-post, the combination of two united uprights having a rail-receiving space between them, and a continuous wire stitched through said uprights to form rail-rests, substantially as and for the purpose set forth.

2. The combination, with braces and a fence-post having rail-rests formed by vertical stitches of a continuous wire, of horizontal stitches of said wire near the top of the post to form loops for the tops of the braces, substantially as and for the purpose set forth.

3. The combination, with braces and a fence-post having rail-rests formed by stitches of a continuous wire, of bottom ties formed by outward prolongation of such wire from the bottom of the post to attaching-points near the feet of the braces, substantially as and for the purpose set forth.

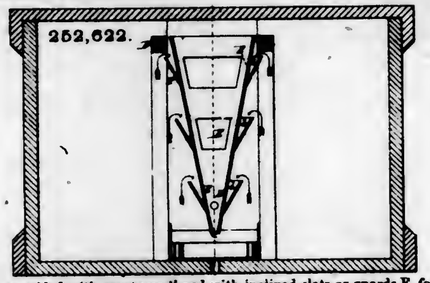
4. The combination of united uprights 1 and 2, braces 4, stakes 5, and the continuous wire forming rail-rests 41, brace-loops 24, brace-ties 42, and stake-loops 25, substantially as and for the purpose set forth.

5. The combination, with main posts 38 and rails 40, supported by said posts, of the perforated middle post, 36, consisting of a single upright, to which the rails are stitched by a continuous wire, substantially as and for the purpose set forth.

252,622. REFRIGERATING APPARATUS. J. THORNTON REED, Boston, Mass. Filed July 26, 1881. (No model.)

Claim.—1. A tank or receptacle for containing refrigerants,

252,622.

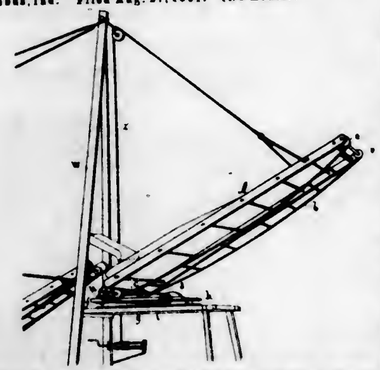


provided with apertures E and with inclined slats or guards F, for the purpose of admitting the ascending air and the gases at different levels and allowing them to pass over the refrigerants employed, substantially as and for the purpose set forth.

2. The within-described process or method of refrigerating, the same consisting in withdrawing the heavier air and gases from the compartment which contains the meats or other perishable articles at varying distances from its bottom and causing them to pass over the refrigerant, by which they are absorbed, substantially in the manner and for the purpose described.

3. In a refrigerator, a receptacle for refrigerants having its sides formed with apertures at different levels, substantially as and for the purpose described.

252,623. STRAW-STACKING MACHINE. MARSHAL T. REEVES, Columbus, Ind. Filed Aug. 27, 1881. (No model.)



Claim.—1. In combination with fixed frame *i*, having circular track *h* formed thereon, pivoted frame *f*, trucks *g*, horizontal shaft *e*, and straw-carrier A, attached to said shaft and movable thereon, all constructed and operating substantially as set forth.

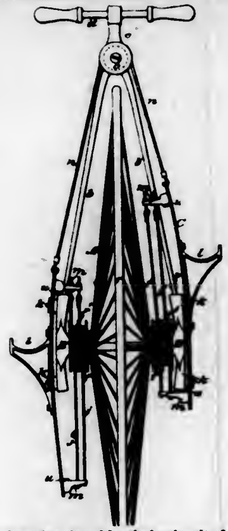
2. In combination with frame *i*, frame *f*, centrally pivoted thereto, straw-carrier A, supported at its lower end by shaft *e*, chain or cord *x*, and a windlass for raising and lowering said straw-carrier, and pulley *v*, over which said chain passes, said pulley being arranged vertically above the pivotal point of frame *f*, substantially as and for the purpose set forth.

3. Vertical pin *l*, serving both as a shaft for double-bevel wheel *m* and as a pivot for frame *f*, in combination with frames *f* and *i*, gear-wheels *p m t*, shafts *s* and *e*, and straw-carrier A, substantially as set forth.

252,624. BICYCLE. JEAN E. RICHARD, New York, N. Y. Filed May 28, 1881. (No model.)

Claim.—1. The combination, in a bicycle, of the following-named coacting elements—that is to say: the main driving-wheel fixed on an axle between the branches *b b* of the fork, the said fork having its branches socketed in elongated bearing-boxes B B, the said boxes arranged to form bearings for the ends of the axle, the drums *f f f f'*, arranged in pairs on the axle between the driving-wheel and the boxes B B, and provided with internally-arranged clutches, as shown, the cords *j j'*, arranged on the drums and secured thereto, and secured also to the reciprocating bars C C, and the said reciprocating bars provided with brackets for the feet, all arranged as set forth, whereby the clutches act upon both ends of the driving-wheel shaft simultaneously to rotate the driving-wheel, as specified.

252,624.



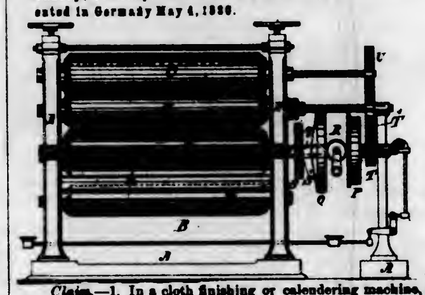
2. The combination, in a bicycle having its driving-wheel arranged to be rotated by means of clutches and drums on its axle through the medium of cords and reciprocating bars, of the said driving-wheel and the clutches, drums, and operative cords, with the bearing-boxes B B, sheaves *k k*, covered bars C C, provided with provisions *m m*, having arms of unequal length, cord or rope *n*, sheave *o*, and adjustable brackets *l l*, all arranged to operate substantially as and for the purposes set forth.

3. The combination, in a bicycle wherein the main or driving wheel is rotated by means of reciprocating bars, of the bearing-boxes B, keeper-sheaves *k*, curved bar C, provided with brackets for the feet and provisions *m* for attachment of the cords, and the rubber pads *u u*, all arranged to operate as and for the purposes set forth.

4. The combination, with the concave rim of a bicycle-wheel, of the tubular rubber tire *r*, the wire or rod *s*, and the securing-bolts *t*, provided with heads having eyes through which the said wire passes, and with nuts to draw the tire closely into the concavity of the rim, all arranged to operate substantially as set forth.

5. As a means of attaching a tubular tire to a bicycle or similar vehicle, bolts with eyes or holes in their heads arranged in the concave rim of the wheel, and a wire or rod arranged to pass through said eyes in the bolt-heads inside of the tire, substantially as set forth.

252,625. CALENDER FOR CLOTH AND OTHER FABRICS. ALEXANDER T. SAMPERT and LUDWIG H. VOLLERT, Meerane, Saxony, Germany. Filed Nov. 3, 1881. (No model.) Patented in Germany May 4, 1880.

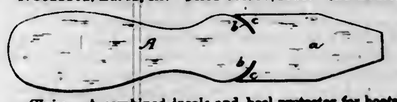


Claim.—1. In a cloth finishing or calendering machine, the combination of the endless apron H with the rolls D E F, the roll D having a greater diameter than the other rolls, all arranged and operating substantially as described, for the purpose specified.

2. In a cloth finishing or calendering machine, the combination of an endless apron with the rolls D E F G, the roll D having a greater diameter than either of the other rolls, all arranged and operating substantially as and for the purpose shown and described.

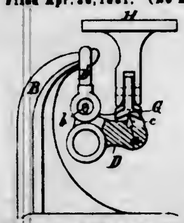
3. In a cloth finishing or calendering machine, the combination, with the guide-roll D and calendering or finishing roll E, of the differential gear P, Q, R, S S', and T T, all arranged and operating substantially as and for the purposes specified.

252,626. COMBINED INSOLE AND HEEL-PROTECTOR. WM. T. SCHENCK, Huron, Ill. Filed Oct. 17, 1881. (No model.)



Claim.—A combined insole and heel-protector for boots and shoes, formed of a single piece of leather having one end cut in the form of a sole, A, and the other end in the form of a counter or extension, *a*, with curved slits *b* between them, and flaps *c*, adapted to be secured to the insole, substantially as and for the purpose described.

252,627. SCALE-PLATFORM SUPPORT. WM. E. SELLECK, Chicago, Ill. Filed Apr. 26, 1881. (No model.)



Claim.—1. The scale-platform, the T-bracket, the T-bearings, and swinging lever provided with knife-edges *a* and *b*, in combination with the swinging rod, substantially as and for the purpose described.

2. In platform-scales, the combination of a goose-neck and yoke provided with eyes, and a swinging lever provided with knife-edges *a* and *b*, said knife-edges resting in the eyes of said yoke, substantially as and for the purpose hereinbefore described and set forth.

3. The combination, with a scale-platform, of a swing-lever provided with side flanges, and of a T-bracket pivoted to said platform and adapted to operate between these flanges, substantially as and for the purpose described.

4. The combination, with the bracket H, supporting the platform, and with the knife-edge *a*, of a T-bracket resting upon the knife-edge and provided with a convex bearing-surface supporting the bracket H, and operating substantially as described.

5. The bracket G, in combination with the swinging L-shaped lever provided with the knife-edge *a* and side flanges, *c c*, rising above the bearing-face of the bracket G upon the knife-edges, substantially as described.

6. The combination, with a scale-platform and with the bracket H, pivoted to the T-bracket and provided with a rounded end, of a T-bracket operating upon a knife-edge and provided with a convex face engaging with the bracket H, substantially as and for the purpose described.

252,628. COMBINED SINKER AND FISH-HOOK HOLDER. SYLVESTER E. SMITH, St. Louis, Mo. Filed Apr. 15, 1881. (No model.)



Claim.—1. A sinker for fishing-lines, formed in imitation of a fish and provided with a holding device for the fish-hook, as described, and for the purpose set forth.

2. A fish-hook holder formed with a tubular recess, *b*, in combination with the cam B, all arranged as herein described, and for the purpose set forth.

3. A sinker for fishing-lines, provided with a device for holding the fish-hook and an eye, *a'*, located as described, for the attachment of the line, as described, and for the purpose set forth.

252,629. GATE. WILLIAM O STICKLER, Hillsdale, Mich. Filed Nov. 2, 1881. (Model.)

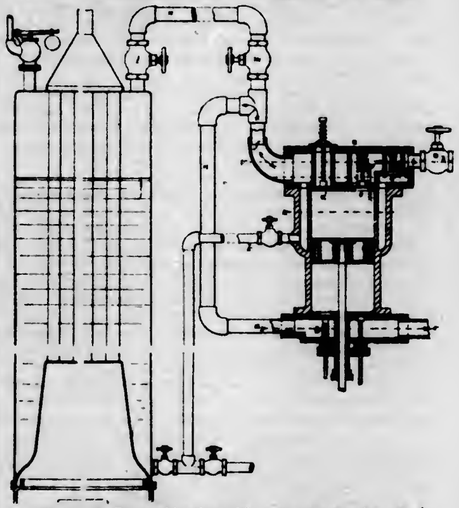
Claim.—In a gate, the combination, with the hinged scantling B, having recesses or notches C C, of the crane G, one of the vertical posts of which, I, is provided with a notch, P, and connected

252,629.



to said scantling by sleeves or bands O and the pin or key Q, substantially as and for the purpose set forth.

252,630. COMBINED STEAM AND AIR ENGINE. EDWARD H. STRAHAN, Baltimore, Md. Filed Jan. 21, 1881. (No model.)

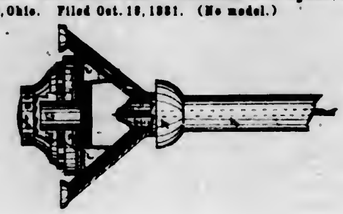


Claim.—1. In combination with a steam-generator, an air-compressing cylinder surrounded, or partially surrounded, by a water-jacket, the water of which has means of communication with the water in the boiler or with other source of water-supply, and also with the steam-space of the boiler and with the air from the compressor at boiler or cylinder pressure, substantially as herein specified.

2. In combination with a steam-generator, an air-compressing cylinder surrounded, or partially surrounded, by a water-jacket, the water of which is in communication with the steam from said boiler and with air from the compressor, substantially as herein specified.

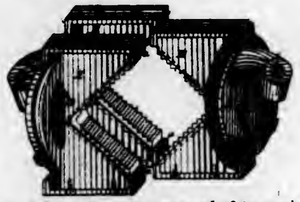
3. In combination with an engine-cylinder, an air-compressing cylinder surrounded by a water-jacket, and appropriate pipes for combining and conducting the compressed air and the steam generated in said water-jacket by the heat from the compressed air to the said engine-cylinder, substantially as herein specified.

252,631. VAPOR-BURNER. FREDERICK W. SWEETMAN, Cleveland, Ohio. Filed Oct. 19, 1881. (No model.)



Claim.—In a vapor-burner, the combination of the tubular supports, gas-generator, and combustion-chamber, shield and needle-valve mechanism, jet-openings, and guide-pipe in alignment with the needle-valve and leading into the said combustion-chamber, substantially as set forth, and for the purpose specified.

252,632. PIPE-GRIPE. WILLIAM B. TAPPO, Hartford, Conn. Filed Oct. 31, 1881. (No model.)



Claim.—1. In a pipe-gripe composed of two main parts for attachment to the separate jaws of a vise, the combination of the back plate and the recessed jaw provided with the removable tooth-plate, said jaw being loosely secured to the back plate by coupling-strips extending over the margin of the back plate, substantially as and for the purposes set forth.

2. In a pipe-gripe composed of two main parts for attachment to the separate jaws of a vise, the combination of the back plate, the front or jaw plate, the jaw formed thereon, the separable tooth-plate, and the coupling-strips, serving to hold the several parts substantially in the manner shown and described.

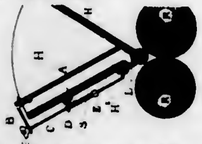
3. The recessed jaw formed upon the face plate and grooved in its front edge and the separate steel tooth-plate bent to correspond with the recessed jaw and fitting the groove therein, said jaw being mounted and arranged upon a back plate, the several parts being held in place by coupling-strips which extend over the margin of the back plate, substantially as shown and described.

4. In a pipe-gripe of the character herein set forth, the face and back plates correspondingly inclined on their bearing-surfaces, substantially as and for the purposes set forth.

5. In a pipe-gripe, the combination of the back plate and the face plate bearing the jaw or jaws, the two plates being coupled at their margins, substantially as set forth.

6. In a pipe-gripe, the two plates, made movable one upon the other, coupled at their margins and provided with a centrally-disposed stud, substantially as shown, and for the purposes set forth.

252,633. FEED-HOPPER. JAS. E. WALSH, Peoria, Ill. Filed Aug. 17, 1881. (No model.)



Claim.—1. In combination with the feed-hopper H, the board A, pivoted at its upper corners to the ends of said hopper, the angle-irons B B, rods C C, springs S S, braces D D, set-nuts E E and K K, slide L, and roll F, as and for the purpose set forth.

2. In automatic feeders for grain-hoppers, the board A, pivoted at its upper corners to said hopper, in combination with the angle-irons B B, rods C C, springs S S, set-nuts E E K K, and braces D D, substantially as and for the purpose specified.

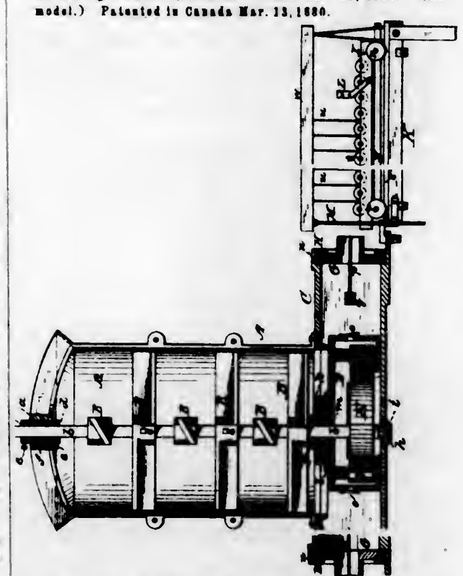
252,634. ELECTRIC CABLE. RICHARD S. WARING, Pittsburg, Pa. Filed Oct. 3, 1881. (No model.)

Claim.—The method of manufacturing electrical cables, consisting in first taking a strip of flexible metal having longitudinal grooves successively on opposite faces of the strip, placing insulated wires in said grooves, then inclosing the whole between two wider strips of lead, and uniting the edges of same, substantially as described.

252,635. PROCESS OF PREPARING STEEL FOR WATCH-SPRINGS. ERWIN J. WATSON and HORACE W. WILLSON, Worcester, Mass. Filed July 27, 1881. (No specimens.)

Claim.—The process of preparing partially hardened and tempered steel for watch, eyeglass, and other springs by first polishing the same when of a size several degrees larger in cross-section than it is required to be when finished, then reducing it to the proper finish size by rolling, hammering, or otherwise, and polishing it, and afterward tempering and coloring the same by first exposing it to sufficient heat to obtain the required color, and immersing it in a cooling or tempering bath of ether or ammonia, substantially as described.

252,636. BRICK AND TILE MACHINE. AUGUSTUS WHELAN, Aldborough, Ontario, Canada. Filed Nov. 19, 1881. (No model.) Patented in Canada Mar. 13, 1880.



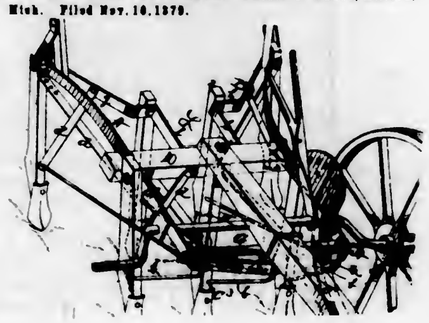
Claim.—1. In a brick or tile machine, the square shaft *b*, passing through correspondingly-formed openings in journals *f g*, at the upper and lower ends thereof, and having removably and adjustably connected to it the knives or cutters B, the same having square openings, through which the shaft passes, and held thereon by set-screws *s*, substantially as and for the purpose set forth.

2. In a brick or tile machine, the combination, with the shaft *b*, carrying knives or cutters B, and eccentric E, of the plunger D, provided with friction-rollers F, and valves *o*, substantially as and for the purpose specified.

3. In a brick or tile machine, the plunger D, having air-valves *o*, elongated opening *m*, and friction-rollers F, in combination with the shaft *b*, carrying eccentric E, and the cap or plate *l*, substantially as and for the purpose set forth.

4. In a brick or tile machine, the cylinder A, shaft *b*, knives or cutters B, eccentric E, in combination with the hollow base C, provided with hinged doors H and molds G, and the plunger D, constructed as described, and having the friction-rollers F, substantially as and for the purpose specified.

252,637. WHEEL-CULTIVATOR. PHILIP F. WELLS, Milford, Mich. Filed Nov. 10, 1879.



Claim.—1. In a wheel-cultivator, the combination, with the handle or lever J, of the cultivator-frame consisting of the front and side bars, A' A A, the separate rear bar, B, the latter provided with inclined portions *g g*, and connected to the cross-bar D by a rectangular portion formed with the sides *l l*, thereby constituting the deep recess L between the side bars, A A, and the central standards, substantially as set forth.

2. The wheel-cultivator frame composed of the two pieces A and B and cross-bars D and G, the said pieces A B bent substantially as shown and described, and for the purposes set forth.

3. The combination of the frame A B, constructed as described, the front bar, G, the plow-standards, the draw-rods *b*, and lateral braces *d*, substantially as and for the purposes herein set forth.

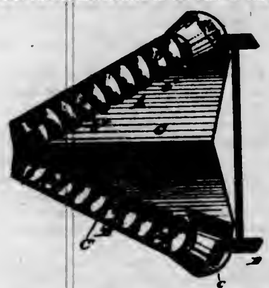
252,638. LEADING-STAFF FOR BULLS. STEPHEN M. WELLS Wethersfield, Conn. Filed Sept. 27, 1881. (No model.)



Claim.—The hook B', provided with the spring-tongue C, forming on its inner side part of the circle with B', and the projecting point B², extending to the rear of C, said point being longer from the circle of the hook than the inner diameter of the ring placed in the animal's nose, substantially as and for the purpose described.

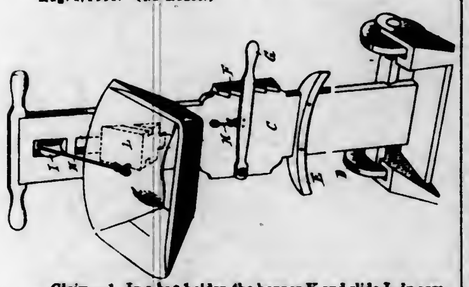
252,639. SNOW-PLOW. NELSON WITTS, Alma City, Minn. Filed Dec. 5, 1881. (No model.)

Brief.—The plow has the general form of an ordinary pilot, the lower margins of the metal being curved outward and upward to form channels, in which are situated rotary augers. Boxes having horizontal cutters are formed in the rear of said channels.



Claim.—As an improvement in snow-plows, the combination, with the wedge-shaped projection C, having curved edges C', and boxes C², having horizontal cutters C', of the rotary augers A B, situated in channels formed by the curved edges C', all arranged and operating substantially as herein shown and specified.

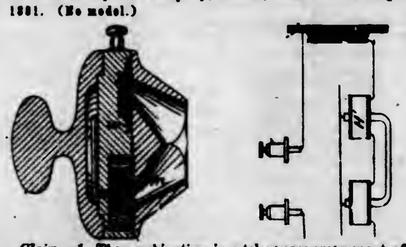
252,640. BAG-HOLDER. PERRY ALLEN, Flint, Mich. Filed Aug. 6, 1881. (No model.)



Claim.—1. In a bag-holder, the hopper K and slide L, in combination with the cord H, pulley I, lever G, ratchet F, and the shaft C, having a slot to receive the slide L, substantially as specified.

2. In a combined bag-holder and truck, and in combination with the shaft C thereof, the slide L, having an inclined front face and provided with grooves in its sides, the hopper K, having tongues to fit in the grooves in the slide, and the pin J for securing the hopper and slide together, substantially as and for the purpose specified.

252,641. COMPOUND TELEPHONE. GEORGE LEE ANDREW, London, County of Middlesex, England, assignor to the American Bell Telephone Company, Boston, Mass. Filed Aug. 8, 1881. (No model.)



Claim.—1. The combination, in a telephonic instrument, of a transmitter provided with a variable resistance consisting of a layer of finely divided or granulated carbon or similar conducting material confined in a loose state between two metallic surfaces, one of which is a vibrating diaphragm, and a receiving-telephone consisting of a magnet of horseshoe or equivalent form, having a coil or helix on each pole and a vibrating diaphragm common to both poles and separate from the vibratory diaphragm of the transmitter.

2. In a telephonic instrument, the combination, substantially as hereinbefore described, of a transmitter provided with a variable resistance consisting of a layer of granulated conducting material confined in a disintegrated state between two metallic plates, one of which is a vibrating diaphragm, and a receiving-telephone consisting of soft-iron cores carrying helices, the said cores mounted upon and connected together by a soft-iron yoke or keel piece, the whole forming a neutral or electro magnet operating only when connected in a battery-circuit, and a vibrating diaphragm or resonant plate common to and actuated by both poles.

3. In a telephonic instrument, the combination of a transmitter provided with a variable resistance and a vibrating diaphragm to operate the same, a receiving-telephone consisting of a bipolar magnet carrying a helix on each pole, said helices being arranged successively in electrical series with the variable resistance, a vibrating plate or diaphragm common to both poles, and a triune mouth-piece, whereby the impact of the sound-waves is evenly distributed to the transmitter and receiving diaphragms simultaneously, and directed immediately upon said diaphragms at the respective centers of electric and magnetic force.

4. In a direct-acting telephonic transmitter, the combination, substantially as hereinbefore set forth, of a variable resistance consisting of granulated carbon or similar conductor, a case for the same consisting of a fixed metallic plate and an extremely thin vibrating diaphragm of any suitable metal, separated from one another by means of an annular shoulder of non-conducting material, and a metallic perforated plate placed over and in contact with the thin-metal vibrating diaphragm, and acting to protect the same and maintain it in position.

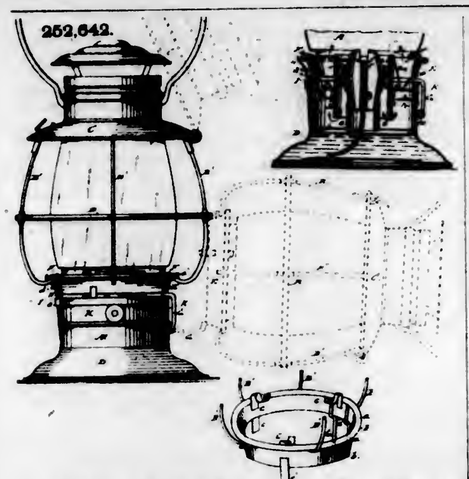
5. The combination, in a telephonic instrument, of a battery transmitting-telephone constructed substantially as hereinbefore described and a magneto receiving-telephone having a neutral electro-magnet the helices or coils of which are in direct electrical circuit with the variable resistance of the transmitter and connected in series therewith, as and for the purpose set forth.

6. The combination of a magneto-telephone, a segmental diaphragm therefor, a variable resistance in circuit with the helices of said telephone, means, as indicated, for varying the same, and a case for the whole provided with a cap perforated with a trifurcate speaking or listening tube, all substantially as described.

7. A compound telephone comprising a battery or variable-resistance transmitter, a magneto-electric receiver, and an inclosing-case, said transmitter and receiver being provided with separate diaphragms, and the mouth-piece of the inclosing-case communicating with the space in front of both diaphragms, substantially as described.

252,642. LANTERN. ALFRED L. BAKER, WILLIAM T. RUPPS, and BENJAMIN F. OSGRATHER, Bellaire, Ohio. Filed Aug. 23, 1881. (No model.)

252,642.



Claim.—1. In a lantern, the dividing-band E, located between the globe and upper base-band, outside the former, substantially as described, and for the purpose set forth.

2. In a lantern, the dividing-band E, in combination with the air-passages F and I, substantially as described and shown.

3. In a lantern, the combination of the globe, the air-passages F and I, and the dividing-band E, substantially as described and shown.

4. In a lantern, the combination of the globe, the air-passages F and I, the dividing-band E, and the air-chamber R, substantially as described and shown.

5. In a lantern, the combination of the air-chamber R, the dividing-band E, and the air-passages F and I, O and S, constructed and arranged substantially as described and shown.

6. In a lantern, the dividing-band E, provided with globe-supports *c c c*, substantially as described and shown.

7. In a lantern, the dividing-band E, combined with the globe-guard, substantially as described and shown.

8. In a lantern, the dividing-band E, combined with the globe-guard and the hinge G, substantially as described and shown.

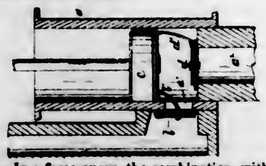
9. In a lantern, the upper base-band, K, with its ear *e*, combined with the locking-spring H, substantially as described.

10. In a lantern, the upper base-band, K, with its hooks *g g g*, and the burner guard-cylinder L, substantially as described.

11. In a lantern, the guard B, without a top wire in whole or part, and with vertical rods B', the upper ends of which are adapted to hinge and lock the reflector, the several parts constructed and arranged substantially as described and shown.

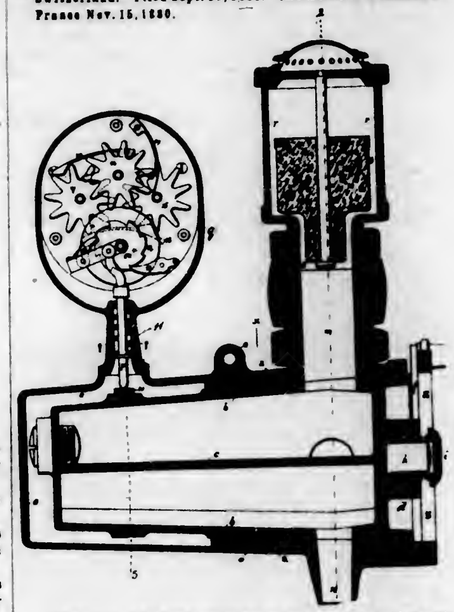
12. In a lantern, the combination of the following elements, viz: a single globe supported only upon detached supports, a dividing-band, an air-passage below such band, an air-chamber below such globe, unobstructed openings into such air-chamber from the interior of the globe and from the external air, and obstructed passages from such air-chamber into the interior of the burner, the several elements constructed and arranged substantially as described and shown.

252,643. PUMP. GEORGE S. BARTLETT, Leon, Iowa. Filed July 16, 1881. (No model.)



Claim.—In a force-pump, the combination, with the valves *b* and *d* and piston *c*, of the tripping-rod *b'*, having one end made fast to the valve *b* and its other end carried through the valve-opening *a'* and bent upward into the cylinder, and the tripping-rod *d'*, having one end made fast to the hinged end of the valve *d* and its other end carried upward into the cylinder to a position about level with the upper end of the tripping-lever *b'*, substantially as set forth.

252,644. MEASURING-FAUCET. J. HEINRICH BLUM, Zurich, Switzerland. Filed Sept. 18, 1881. (No model.) Patented in France Nov. 15, 1880.



Claim.—1. The liquid-measure made as a cock provided with a hollow plug which is divided into two chambers by a partition running in the plane of the long axis of the plug, substantially as specified.

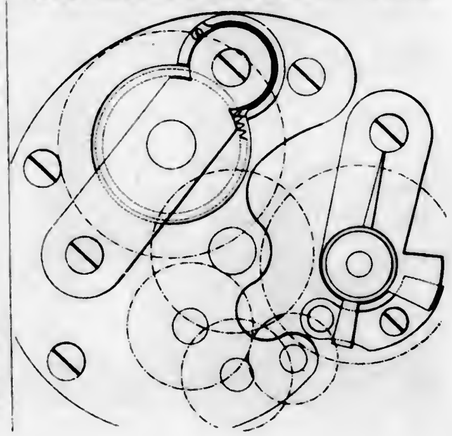
2. The barrel *a*, having openings 1 2, in combination with the plug *b*, partition *c*, openings 3, 4, 5, and 6, and supply and delivery pipes, substantially as set forth.

3. The combination of the barrel *a*, with openings for water and for air, with the plug *b*, with openings for water and for air, and the partition *c*, substantially as and for the purposes set forth.

4. In combination with the barrel *a*, plug *b*, having openings therein, as set forth, for the passage of the liquid to be measured, the float *s*, and valve *u*, case *r*, and tongue *y*, for preventing the entrance of air to the holder when filling the chamber of the cock, as set forth.

5. The chambered plug *b* and eccentric 10, in combination with the spring-rod *p* and registering mechanism, substantially as set forth.

252,645. CLICK-SPRING FOR WATCHES. ANTOINE L. G. BURE, Geneva, Switzerland. Filed Sept. 12, 1881. (No model.)



Claim.—The click and curved spring made in one piece, in combination with the segmental bearing around which the curved spring passes, substantially as specified.

252,646. MANIFOLD COPYING-BOOK. JOHN R. CARTER, Toronto, Ontario, Canada. Filed Nov. 8, 1881. (No model.)



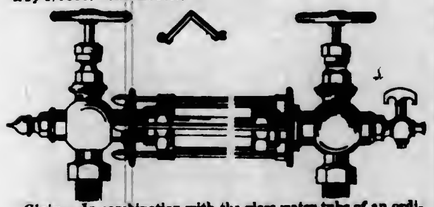
Claim.—A blank-leaf check-book composed of double leaves, one half of which are bound together, while the other half fold in as fly-leaves, both being perforated across, so that they can readily be torn out, and the black leaf bound into the book next to the cover, and provided with the tape secured across its end, the said black leaf having the transferring composition on one of its sides only.

252,647. NUT-LOCK. BENJAMIN F. GLICK, Grenola, Kans. Filed Nov. 8, 1881. (No model.)



Claim.—The combination, with the screw-bolt A, having a suitable shoulder or groove, *e*, of the screw-nut B, having connected thereto a suitable spring-pawl, *b*, said nut having a dovetailed recess, *f*, for the reception of the dovetailed guard-plate C, having opening *g* for the insertion of a key, substantially as and for the purpose specified.

252,648. WATER-GAGE. JOHN COOK, Chicago, Ill. Filed May 4, 1881. (No model.)



Claim.—In combination with the glass water-tube of an ordinary steam-gage, the within-described reflector, consisting of two upright reflecting-surfaces arranged at or about right angles to each other, with their inner vertical edges abutting and their outer edges standing apart, to reflect the light in diagonal lines and increase the sight without increasing the diameter of the gage-glass, substantially as described.

252,649. JUG. JOSEPH COOK, Akron, Ohio, assignor of one-half to the Akron Stoneware Company, same place. Filed Oct. 13, 1881. (No model.)



Claim.—1. A jug having on its top a mouth or nozzle and two or more lugs, the tops of the mouth and lugs being in a plane parallel to the bottom, substantially as and for the purpose hereinbefore set forth.

2. A jug having at its top a mouth, a vent, and two lugs, the tops of said mouth, vent, and lugs being in the same plane and parallel to the bottom of the jug, substantially as shown, and for the purpose specified.

3. A jug provided upon its top with projecting lugs or bosses the tops of which are in a plane parallel to the bottom, substantially as shown, for the purpose specified.

252,650. COUNTERSINK ATTACHMENT FOR AUGERS. CHAS. W. CUTTER, Erie, Pa., assignor of one-half to URIAH E. LOMAS, same place. Filed Aug. 26, 1881. (No model.)

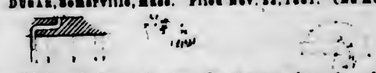


Claim.—1. A countersink-cutter made of two flat pieces having their cutting-edges located as shown, and for the purpose set forth, in combination with clamping-screws, substantially as described.

2. A countersink-cutter having a gage provided with a solid body, and held in place by the heads of two clamping-screws, which admit of the vertical adjustment and removal of the gage without removing the screws, all substantially as and for the purposes set forth.

3. A countersink-cutter consisting of two plates having their cutting-faces located as shown, a gage provided with an imperforate body, and all held in place by clamping-screws placed on each side of the auger, substantially in the manner described, and for the purpose set forth.

252,651. VALVE-GEAR FOR STEAM-ENGINES. EBENEZER DUNBAR, Somerville, Mass. Filed Nov. 23, 1881. (No model.)



Claim.—1. In a valve-gear for steam-engines, the valve and its stem and actuating-eccentric, combined with multiplying connecting mechanism between the said eccentric and valve-stem, arranged as described, whereby the effective movement of the valve across its seat is more rapid than that derived directly from the eccentric, and the valve has no effective movement during a portion of the movement of the said eccentric, substantially as and for the purpose set forth.

2. The combination of the eccentric and rod and gear connected therewith, to be oscillated thereby, with the pinion and wrist-pin and valve-stem connected therewith, the said pinion and gear being properly proportioned to cause the wrist-pin to oscillate in an arc greater than half a circle, whereby the movement of the valve from one to the other extreme position occupies less time than the stroke of the piston, substantially as and for the purpose described.

252,652. ALTERATIVE AND TONIC BITTERS. DANIEL W. EDWARDS, Beloit, Wis. Filed Nov. 18, 1881. (Specimens.)

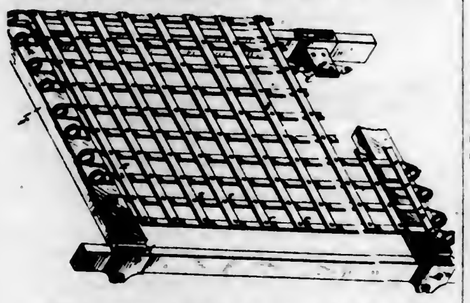
Claim.—The herein-described composition of matter, constituting a new medicinal compound to be used for the purpose of the treatment and cure of the diseases or ailments mentioned in the foregoing specification, and to be administered in doses substantially as hereinbefore specified, consisting of the ingredients stated in the foregoing formula and substantially in the proportions set forth, to wit: fluid extract of hops, one pound; fluid extract of red cinchona, eight ounces; fluid extract of sarsaparilla, six ounces; fluid extract of dandelion, six ounces; fluid extract of burdock, six ounces; fluid extract of yellow dock, six ounces; fluid extract of golden seal, six ounces; fluid extract of mandrake, four ounces; oil of winter-green, three-fourths of an ounce; oil of sassafras, three-eighths of an ounce; oil of lemons, three-eighths of an ounce; oil of horse-mint, one-fourth of an ounce; granulated, loaf, or other fine clarified sugar, six pounds; alcohol, (about ninety-four per cent.,) two gallons, with pure water sufficient to make in all twelve gallons.

252,653. MANUFACTURE OF CARBONATE OF POTASSIUM. CHARLES R. ENGEL, Montpellier, (Hérault,) France, assignor to the Society of Carbonate of Potash, same place. Filed Nov. 21, 1881. (No specimens.) Patented in France Dec. 30, 1880.

Claim.—1. The method of producing carbonate of potassium from other salt of potassium by forming a double carbonate of potassium and magnesium in the manner explained and separating the carbonate of potassium from said double carbonate by boiling or by heating in a dry state, substantially as described.

2. The method of obtaining a double carbonate of magnesium and potassium by treating by carbonic-acid gas a mixture of carbonate of magnesium, or free magnesia, with an aqueous solution of a salt of potassium, substantially as hereinbefore described.

252,654. BED-BOTTOM. CALVIN H. FITCH, Middletown Springs, Vt. Filed Nov. 26, 1881. (No model.)



Claim.—1. The bed-bottom A, composed solely of crossed strips of sheet metal united at their intersections by suitable fastenings, so as to be securely held together, and adapted to be hooked to springs to support the same at its ends only, substantially as described.

2. In a bed-bottom, the combination of a bottom proper, spring-hooks to engage and support such bottom at its ends only, end cross-bars to which such spring-hooks are secured, sockets at the ends of such cross-bars, and a framing to which such sockets are bolted to sustain the whole, substantially as described.

3. The cross-bars of a bed-bottom, provided with sockets, combined with the side rails, abutments thereupon against which the sockets rest, and bolts to lock said sockets and cross-bars upon the rails, substantially as described.

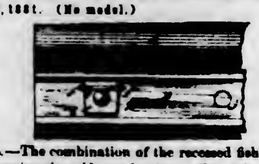
4. The cross-bars of a bed-bottom, adapted to receive the bottom proper, combined with sockets on said cross-bars, the side rails, a plurality of headed pins or their described equivalents arranged upon said rails, and bolts to secure the said sockets in place upon the rails, said pins serving as fulcra for the sockets, which, in applying the bottom to the rails, are used as tension devices to take up the sag of the bottom, substantially as described.

5. The cross-bars of a bed-bottom, provided with sockets to secure them to the side rails, said sockets having side plates to clasp the rails, and slotted connecting-plates, combined with a plurality of abutments on the rails, whereby the adjustment of the cross-bars necessary to take up the sag of the bottom is secured, substantially as described.

6. The cross-bars and a bed-bottom secured thereto, combined with side rails, sockets on said cross-bars to connect the bars and rails, abutments on said rails to effect the adjustment and holding of the cross-bars longitudinally of the rails, and bolts to lock said sockets to the rails and prevent vertical displacement, substantially as described.

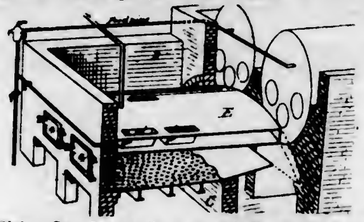
7. The cross-bars to support the bottom of a bed, provided with sockets adapted to straddle the rails, and adjustably secured to said rails by means of superficial abutments on the upper faces of such rails, and bolts engaging such sockets and bearing against the bottoms of such rails, substantially as described.

252,655. NUT-LOCK. JOHN FREDERICK, Pittsburg, Pa., assignor of one-fourth to Charles Frederick, same place. Filed July 27, 1881. (No model.)



Claim.—The combination of the recessed fish-bars B, washer C, having converging sides and recess *e*, the spring-yoke *g*, bolt *h*, and nut *i*, constructed, arranged, and operating substantially as herein described, and for the purpose set forth.

252,656. BOILER-FURNACE. JOSEPH GRUBER, Fremont Centre, Mich. Filed Sept. 7, 1881. (No model.)



Claim.—In a furnace, the water-arch E, supported midway between the grate and top of the furnace, and provided with openings *b*, leading to the fire-box and connected to the boiler by suitable pipes, whereby it is adapted to support and dry refuse fuel without burning the same before it passes the feed-openings, and at the same time to heat the feed-water, substantially as shown and described.

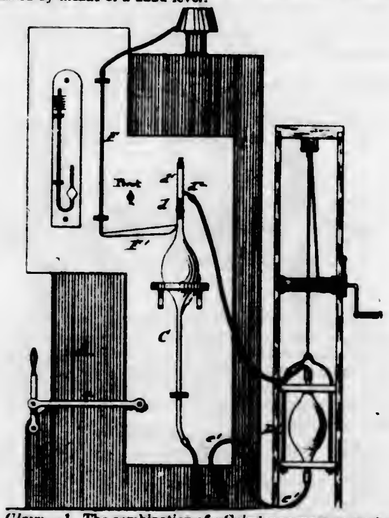
252,657. PIPE-COUPLING. JOSEPH C. GITTENS, New York, N. Y. Filed June 17, 1881. (No model.)



Claim.—In a pipe-coupling, a male member consisting of a tube having formed in its shell, at its inner end, a curved recess, and a female member consisting of a socket provided with an inwardly-projecting pin for engaging the said recess, in combination with a perforated screw-plug inserted into the enlarged part of the socket and a packing-ring surrounding the male member of the coupling and interposed between the end of the screw-plug and the shoulder at the bottom of the enlarged part of the socket, substantially as described.

252,658. VACUUM-PUMP. HENRY GOEBEL, New York, N. Y. Filed Aug. 5, 1881. (No model.)

Brief.—The pump is supported on a pivoted frame, which is oscillated by means of a hand-lever.



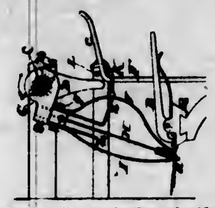
Claim.—1. The combination of a Geissler vacuum-pump having a discharge-valve at the upper part and an evacuating-tube connected thereto below the valve with an oscillating supporting-frame and a vertically-movable mercury-reservoir, substantially as set forth.

2. The combination of a Geissler vacuum-pump applied to an oscillating supporting-frame and having a discharge-valve at the upper end, with a mercury-supply reservoir, with pipes for connecting the upper and lower ends of the Geissler pump with the supply-reservoir, and with means for hoisting the latter, substantially as set forth.

3. In a Geissler vacuum-pump, the combination of a Geissler pump, C, having a discharge-valve, *d*, at the upper end, with an evacuating-tube, F, connected thereto below the discharge-valve by a trough-shaped portion, F′, which increases in depth toward the pump and extends at right angles, or nearly so, from the main part of the evacuating-tube F, substantially as and for the purpose set forth.

252,659. EMBROIDERING-MACHINE. CHARLES A. V. GOEBEL-BACH, New York, N. Y. Filed June 18, 1881. (No model.)

Brief.—For feeding of beads or pearls to the embroidering-needles, so that they may be attached to the fabric by the embroidering-threads.



Claim.—1. A bead-feeding device for embroidering-machines, having as its essential elements a stem, H, having a thin curved lower extremity, *f*, opposing springs I J, for controlling the movements of the beads upon the said stem, and means, substantially as described, for giving simultaneous movement to the stem H and springs I J in unison with the movements of the stitch-forming mechanism of the embroidering-machine, all substantially as and for the purpose herein set forth.

2. The combination, in a bead-feeding apparatus for embroidering-machines, of the rock-shaft C, stem H, having a thin curved lower extremity, opposing springs I J, arm K, and a bar or stop, L, the whole combined to provide for the feeding of the beads to the curved lower end of the stem H in unison with the reciprocating movement of the needle of an embroidering-machine, all substantially as and for the purpose herein set forth.

3. The combination, with the double-pointed needle, and of the griping device of an embroidering-machine, of the posts F, having an incline, *e*, the rock-shaft C, having arms D, the stem H, having the thin curved lower extremity, *f*, the opposing springs I J, and a boss, G, or equivalent means for connecting the stem and springs to the rock-shaft, the whole arranged for joint use and operation, substantially as and for the purpose herein set forth.

252,660. PIN-JEWEL HOLDER. FERDINAND GUEBARD, Portland, Oreg. Filed Nov. 23, 1881. (Model.)

Brief.—The balance-disk is laid on *h*, its shaft passing down into slot *f*, and the hole in the disk is placed loosely over the ruby-pin, which is clamped between *b* and *c c*. Shellac is placed on the pin and heat applied to the whole until the proper degree is indicated by the spring-thermometer *g*.



Claim.—A pin-jewel holder consisting of the parts *a b c d e f g h i j* as a whole and in combination, as described, and for the purpose set forth.

252,661. MANUFACTURE OF BOLTS. CHARLES HALL, New York, N. Y. Filed Dec. 2, 1881. (No model.)



Claim.—1. In a machine for forging bolt-heads, a die having a hole of the size and shape of the head, in combination with a plunger that is designedly made sufficiently smaller than the die for a fin to be thrown out around the head for the discharge of the surplus metal from the die, substantially as set forth.

2. The method herein specified of making bolt-heads, consisting in feeding into the machine more of the rod or bar than is required for forming the head, pressing up the bolt-head in the die by means of a plunger, forming a fin around the bolt-head of the surplus metal, and removing such fin and finishing the top of the bolt-head by cutting or grinding after the bolt is delivered from the machine, substantially as set forth.

252,662. CAR-BRAKE. CHARLES HICHAM, Watertown, N. Y. Filed Nov. 26, 1881. (No model.)

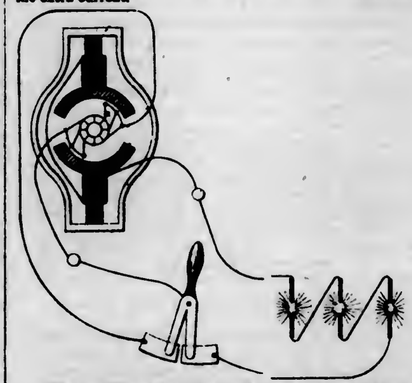


Claim.—1. The brake-shoes and their operating-levers, and a link pivoted at one end to one of the said levers, combined with a movable bearing-block for the other lever mounted in the other end of the said link, and means to adjust its position in said link, substantially as described.

2. The lever and link forked to embrace it and slotted at its end, as described, combined with the bearing-block guided in the said slots, and its adjusting set-screw and threaded socket therefor, held in the end of the said slots, substantially as set forth.

252,663. SHORT-CIRCUITING SWITCH FOR DYNAMO-ELECTRIC MACHINES. WM. HOCHHAUSEN, New York, N. Y. Filed Nov. 7, 1881. (No model.)

Brief.—A switch is arranged to close a short circuit around the field-magnets before breaking the main circuit, thereby weakening the field-magnets and preventing excessive sparking from the extra current.



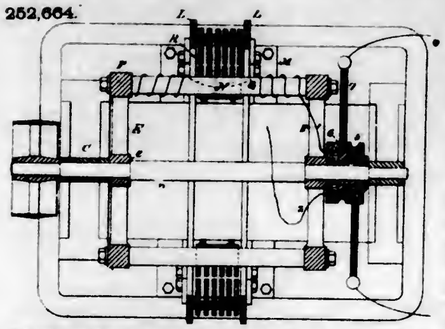
Claim.—The combination, with a dynamo-electric machine, of a switch for making and breaking the main-line connection with the machine and circuit-connections to said switch, as described, whereby a short circuit around the field-of-force magnets is formed before the main-line connection is broken.

252,664. MAGNETO-ELECTRIC MACHINE. WILLIAM HOCHHAUSEN, New York, N. Y. Filed Sept. 3, 1881. (No model.)

Brief.—The field-magnets are formed of straight bars carrying central pole-pieces and supported at the ends by spider-frames. Coils are wound to produce consequent poles. The magnets so formed rotate within the armature, being excited through the brushes. The armature is formed of several magnetically-insulated annular plates having internal radial projections, about which the generating-coils are wound. These coils may be connected for quantity or tension in any desired order or number. The machine generates alternate currents.

Claim.—1. The combination, substantially as described, of two parallel disks or spider-frames and longitudinal cross bars or rods connecting said frames and wound with sets of magnetizing-helices, connected to one another and to a source of electric energy in the manner described, so as to produce at the middle portion of

252,664.



the rods consequent poles, alternately north and south, in the successive rods or bars.

2. The combination, substantially as described, of the spider frames or wheels E, the longitudinal cross bars or rods uniting said frames, and two coils or helices wound at right angles to the axis of said bars and separated from one another at the center of the bar, the coils or helices being wound as described, so as to produce a consequent pole at the portion of the bar between them.

3. The combination of the longitudinal rods or bars adapted to receive coils or helices wound at right angles to their longitudinal axis, and pole pieces or projections consisting of a sleeve or casing adapted to embrace the bars and to be secured thereto in any suitable manner, and provided with a number of projecting teeth or polar extensions projecting at right angles from the bars.

4. The combination of the annular embracing rings or plates seated in an opening in the base-plate, and two or more plates secured between said embracing rings or plates, insulated from one another and from the embracing-rings, and provided each with a number of radial projections extending inwardly toward the axis of the machine.

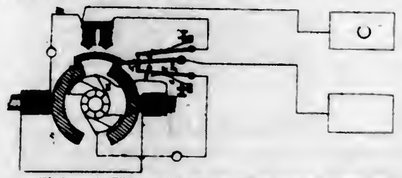
5. The combination of the annular holding-plates L, annular plates P, secured together between the plates L and magnetically insulated from one another, said plates being provided with inwardly-extending radial projections, as shown, and coils or helices embracing said radial projections, as and for the purpose described.

6. The combination, substantially as described, of a number of annular plates secured together, non-magnetic insulating material interposed between the plates, so as to separate them magnetically and at the same time allow the circulation of air-currents, inwardly-extending radial projections upon said plates, and coils or helices embracing said projections, in the manner described.

7. The combination of the plates L, seated in the base-plate of the machine, annular plates P, and angular plates M, substantially as described.

252,665. POLARITY-PROTECTOR FOR DYNAMO-ELECTRIC MACHINES. WILLIAM HOCHHAUSER, New York, N. Y. Filed Nov. 7, 1881. (No model.)

Brief.—The device is designed to protect the field-magnets from reversal by counter-currents, as those from an electrolytic bath. A switch-lever connected with the main line is provided with an armature placed within the magnetic influence of the field-magnet poles, whereby, when the machine is running, contact is made on one side of the lever, closing the main line. Upon the other side of the switch is a contact connected with a safety-branch, in which is an electro-magnet, which, when charged, attracts the switch-armature away from the field-magnets, thereby closing the safety-branch and breaking the main line. The safety-magnet comes into action whenever, by reason of reverse currents, the field-magnets are so much weakened as to allow the switch-armature to fall back. In its normal condition a short circuit for the field-magnets is closed through the safety-branch.



Claim.—1. The combination, with a dynamo-electric machine, of an electro-magnetic switch the armature of which is placed within the attractive influence of the field-of-force magnets of the machine, contact stops or points with which said switch is adapted to make contact in its two opposite positions, said stops being connected, one with the machine and the other with a safety or branch circuit, and an electro-magnet in said branch circuit, all combined as described, so that in one position of the switch the safety-circuit is broken and in the other position the safety-circuit is closed and held closed by the magnet in said circuit, the main or principal circuit from the machine being simultaneously broken.

2. The combination, with a dynamo-electric machine, of an electro-magnetic switch actuated in opposite directions in the manner described, contact-stops with which said switch makes connection in its two extreme positions and in its intermediate positions, and circuit-connections to the machine, to the main circuit, and to a safety or branch circuit, all combined as set forth, so that when the switch is in one extreme position the main circuit is closed and the branch circuit broken, when in the other extreme position the branch circuit is closed and the main circuit from the machine broken, and when in an intermediate position a short circuit for the machine is provided.

3. The combination, with a dynamo-electric machine, of a polarity-preserving switch provided with yielding contact devices adapted to close the main or principal circuit to the machine when the switch-lever is in an extreme position under the influence of the field-magnet pole, and to preserve the contact and connection to the machine when the switch-lever is in an intermediate or central position, as described.

4. The combination, with a dynamo-electric machine, of an electro-magnetic switch, centering devices for restoring said switch to an intermediate or central position after having been thrown to one extreme position or the other, and circuit-connections, as described, adapted to furnish a short circuit for the currents generated by the machine when the switch is in such central or intermediate position.

5. The combination, with a dynamo-electric machine, of an electro-magnetic switch adapted to hold the circuit from the machine to the main or principal circuit closed when the machine is running, mechanical retracting devices for said switch, and a contact stop and connections to a safety or branch circuit containing an electro-magnet, said stop being adapted to close the circuit to the branch when the switch is retracted by the mechanical devices.

6. The combination, with a polarity-preserving switch adapted to assume two extreme positions and an intermediate or central position, of yielding contact devices for said switch, both of which are closed when the switch is in an intermediate position, and stops, as described, to prevent the yielding contacts from preserving contact when the switch is thrown to one side or the other of its central position.

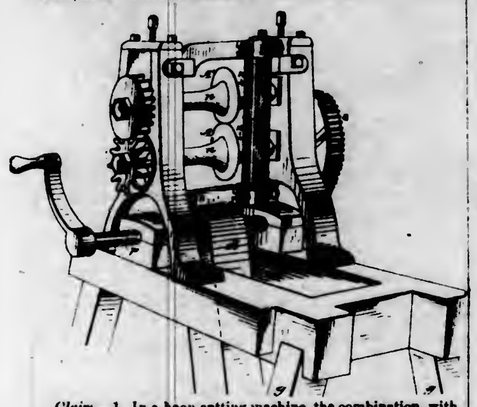
7. The combination, with a dynamo-electric machine, of a polarity-preserving switch, an electro-magnet in a branch or safety circuit for holding the branch or safety circuit closed, and following contacts for the branch circuit adapted to preserve the connection for the branch when the magnet releases its hold upon the switch, substantially as and for the purpose described.

8. The combination, with a dynamo-electric machine, of a safety switch-lever, centering devices for holding said switch-lever in a central or intermediate position, yielding and following contact devices closed when the switch is in its central position and adapted to preserve contact when the lever is drawn to one side, an electro-magnet constantly in the circuit of the machine for carrying the switch in one direction, circuit-connections, as described, to the machine, the line, and a branch circuit, and an electro-magnet in said branch circuit for carrying the switch in the other direction.

9. The combination, with a dynamo-electric machine, of an electro-magnetic switch, an electro-magnet constantly in the main-circuit connection from the machine for holding the switch in one extreme position, an electro-magnet in a branch or safety circuit for holding the switch in another extreme position, centering and retracting devices for holding the switch in an intermediate position or restoring it to such position when released from the influence of its actuating-magnets, and circuit-closing devices operated by the switch for closing the safety-circuit and machine-circuit when the switch is in its extreme positions, and for closing a short circuit for the machine when the switch is in an intermediate position.

10. The combination, with a dynamo-electric machine, of an electro-magnetic switch, an electro-magnet constantly in the machine-circuit for actuating the switch in one direction, an electro-magnet in a branch or safety circuit for holding the switch retracted, and circuit-connections, as described, to the machine, the line, and the safety-circuit, whereby the circuit from the machine to the line is closed in one position of the switch, while in the other position of the switch the latter connection is broken and a connection between the line and the safety or short circuit around the machine is substituted.

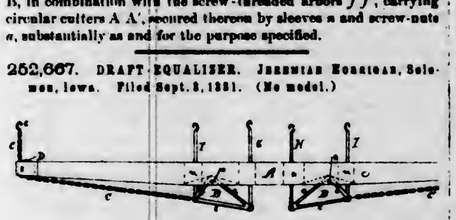
252,666. HOOP-CUTTING MACHINE. LEONARD HOLT, Concord, N. H. Filed Nov. 23, 1881. (No model.)



Claim.—1. In a hoop-cutting machine, the combination, with the upright adjustable roller B, of the circular cutters A A', having their edges beveled or inclined, substantially as and for the purpose set forth.

2. In a hoop-cutting machine, the upright adjustable roller B, in combination with the screw-threaded arbors *f f'*, carrying circular cutters A A', secured thereon by sleeves *s* and screw-nuts *a*, substantially as and for the purpose specified.

252,667. DRAFT-EQUALISER. JEREMIAH HOGGATAR, Solomon, Iowa. Filed Sept. 3, 1881. (No model.)



Claim.—In a three-horse equaliser, the combination of the triple-tree A, provided with the sheaves D D, the angle-levers B B, consisting of the long arms *a* and the short arms *b*, and the rods or chains C C F G H I, all constructed and combined to operate substantially as shown, and for the purposes described.

252,668. CLOCK-MOVEMENT. ARTHUR B. HOTCHKISS, Cheshire, Conn. Filed May 27, 1881. (No model.)



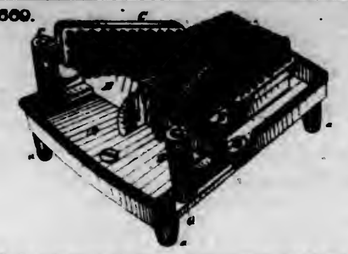
Claim.—1. A clock-movement having a front plate, back plate, and intermediate half-plate, and a wheel arranged substantially in the same vertical transverse plane with said half-plate, the latter aiding to support the mainspring and main wheel, substantially as set forth.

2. A clock-movement having three plates, the actuating mechanism being supported by the intermediate and back plates, and the portion of the train between the center wheel and escapement being supported by bearings in the front and rear plates, as described.

252,669. FOOT-SCRAPER. ROBT. B. HOVEN, Erie, Pa. Filed May 21, 1881. (No model.)

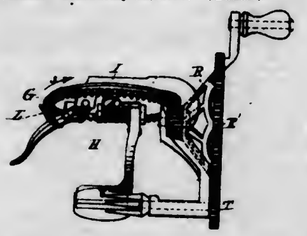
Claim.—1. In a boot cleaning and scraping apparatus, the combination, with the bottom and side brushes, of the frame-work B B' B'', standards E E, with springs G G, and pivoted frames F F, the part B of said frame serving as a scraper, and being provided with a deflector, *b*, and said frame B B' B'' being adapted, substantially as shown, to be attached to a pan or to a floor or door-step.

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2. In a foot-cleaning apparatus, a sole-scraper having a deflector, *b*, substantially as and for the purposes set forth.

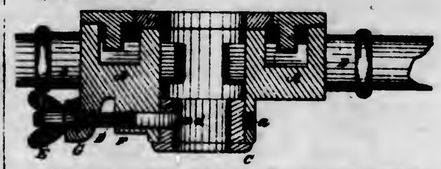
252,670. APPLE-PARER. FREDERICK W. HUDSON, Leominster, Mass. Filed May 12, 1881. (Model.)



Claim.—1. The combination, with the cone-frame R, of gears Q and R', for operating geared table G and gear T, substantially as and for the purposes set forth.

2. The combination of the geared table G, provided with an enlarged socket, and the elevated head of the pivot H of said table, with the cam X and frame I, whereby the knife pivoted to the geared table is actuated, substantially as and for the purpose described.

252,671. PIPE-CUTTING ATTACHMENT FOR SCREW-CUTTING-DIE STOCKS. ALBERT H. JARECKI, Erie, Pa. Filed Apr. 8, 1881. (No model.)



Claim.—1. A die-stock body having on one side of its neck lugs F and G, with openings and sockets, as described, and an opening, *a*, on the opposite side of the neck, in combination with the die D and nut E, substantially as shown.

2. The combination, with a die-stock body having an opening, *a*, on one side of its neck and lugs F and G on the opposite side of said neck, in which lugs are openings and socket, as shown, of a thimble, C, with openings *c* on one side thereof.

3. A die-stock body having lugs or enlargements upon its lower face, in which are openings or recesses for holding a pipe-cutting die and its operating-nut, into which the said die enters by passing through an opening or passage across the neck or central opening of said stock.

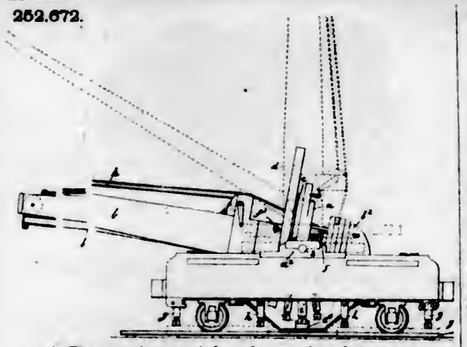
252,672. WRECKING AND CONSTRUCTION CAR FOR RAILROADS. LUTHER K. JEWETT, Fitchburg, Mass. Filed Oct. 31, 1881. (No model.)

Claim.—1. The combination, with the car, of a pivoted mast provided with a boom, counterbalanced mast *b b'*, provided with a pivoted boom, *b'*, the mast being adapted to be turned down nearly horizontally when the car is to be run on the track, substantially as described.

2. The car and the weighted or counterbalanced mast and its turn-table, combined with the pivoted ring *a*, substantially as described.

3. The car and the pivoted ring *a* to support the mast, combined with the ring-timbers to lock the ring *a*, substantially as described, when the mast is to be retained in upright position.

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4. The car and counterbalanced mast, pivoted ring to support the mast, and the step-sill, combined with a locking device to engage the lower end of the mast with the step-sill, substantially as described.

5. The car and its attached rack a^4 and the pivoted ring a, combined with the ring-timbers, their worm-gears, and the cords or chains connected with the shaft of the worm-gears to operate them and the ring-timbers, substantially as described.

6. The combination, with the car, of the jack-screws g, pivoted to the corners of the car, substantially as described.

7. The combination, with the car, of the jack-screws g h, pivoted thereto, substantially as described.

8. The combination, with the car and its pivoted jack-screws, of the leveling-blocks g^3, adapted to be sustained by the ties, substantially as described.

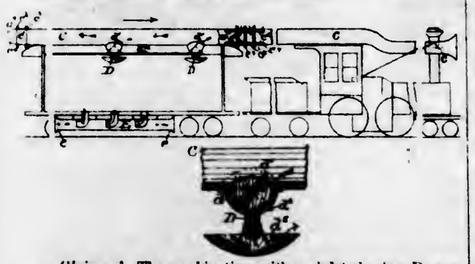
9. The car and turn-table and tipping mast, combined with the step-sill, step thereon, and means, substantially as described, to adjust the step on the step-sill.

10. The car, turn-table, and tipping mast, combined with the step, step-sill, and jack-screws, connected with the car and with the step-sill, to operate substantially as described.

11. The car, its tipping mast, and boom, combined with the track-timbers m^3, post n^2, and jack-screw n, to operate substantially as described.

12. The car, its tipping mast, boom, and turn-table, combined with the track-timbers m^3, braces F, and suitable screws to hold the said braces and car in proper position, substantially as described.

252,673. VENTILATING CARS. HILTON C. JONES, Green Island, N. Y. Filed Oct. 3, 1881. (No model.)



Claim.—1. The combination, with an inlet air-pipe, D, provided with the head d, as herein described, of the reversible valve d', fixed in the head d and adapted to deflect and govern the entering air-currents, as herein set forth.

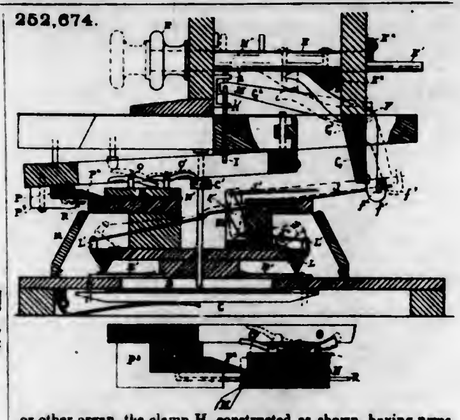
2. The combination, with an inlet air-pipe, D, provided with a reversible valve or deflector, d', of the air-distributer d^3, arranged in relation to the pipe D, as and for the purpose herein specified.

3. In an organized system of ventilation for railway-cars, the combination, with a fresh-air-supply pipe, C, constructed and arranged as herein described, and provided with branch pipes D, furnished with reversible valves or deflectors d', of the exhausting air-pipe E, provided with the reversible elbow branch pipes F, and arranged in relation to the supply-pipe C, as and for the purpose herein specified.

252,674. REED-ORGAN STOP-ACTION. WASHINGTON C. KAUFFMAN, Reading, Pa. Filed Oct. 25, 1881. (No model.)

Claim.—1. In combination with the pull-stop frame of a reed

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or other organ, the clamp H, constructed as shown, having arms h h' and a set-screw, H', in combination with the rocker-bar arm or lever G^3, rocker-bar G, and organ-action bell-cranks F, F', or F^2, rods J J' J^2, lever K, and mutes L, as and for the purpose specified.

2. In combination with the pull-stops E and modulator-blocks E^2, as described and claimed, the bell-crank F, constructed, as shown, with bifurcated arm and single prong, whereby a single opening of the stop-mute L may be obtained through the operation of the rods J J' J^2, lever K, and mutes L, substantially as shown, and for the purpose described.

3. In combination with the pull-stops E and the modulator-blocks E^2, the bell-cranks F', constructed, as described, with two prongs, whereby, through the operation of two pull-stops upon the same, a full and half or medium opening of the stop-mute L will be produced by a single connection to the mute L, as described, substantially as and for the purpose set forth.

4. In combination with the pull-stops E and the modulator-blocks E', or their equivalent, the bell-cranks F^2, constructed, as shown, with three prongs, whereby, through the operation of three pull-stops upon the same, a very small, medium, and full opening of the stop-mute L will be produced by a single connection to said mute L from the bifurcated end f' through the rods J, J', and J^2, washers f^2, and lever K, to posts L', and mutes L, substantially as described, and for the purpose specified.

5. The combination of the stop-pulls E, provided with the modulator-blocks E^2, with the series of bell-cranks F F' F^2, constructed and arranged, as described, so that a single pull-stop shall have one half of its modulator-blocks seated on a prong of one bell-crank and the other half on a prong of another bell-crank placed alongside of the first, whereby, on drawing the pull-stop, the modulator-block, operating two different bell-cranks, will cause two different stop-mutes to be opened in two different degrees by combination with two different mutes through the rods J J' J^2, lever K, posts L', and mute L, as described, and substantially as and for the purpose set forth.

6. In combination with a reed or other organ, a rocker-bar, G, constructed as shown and described, provided with the usual arm or lever, G^3, and having trunnions or bearings G', fulcrum-pin groove G^2, notches G^4, arrester-bar or equivalent G^5, when combined with the bell-cranks F, F', or F^2, rods J J' J^2, lever K, posts L', and mutes L, clamp H, and set-screw H', together with pull-stops E and modulator blocks E^2, substantially as and for the purpose described.

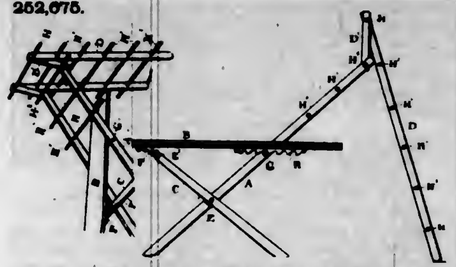
7. In a reed-organ, the combination of the mutes L with the posts L', rods J J' J^2, lever K, and washer f^2, bell-cranks F F' F^2, rocker-bar G, and pull-stops E, substantially as shown, and for the purpose specified.

8. The sole-leather washer or nuts f^2, or their equivalent, in combination with the gripe-pocket f^3 of the bell-cranks F F' F^2, rods J J' J^2, lever K, and mutes L, as shown, and for the purpose specified.

9. The positively-operating radial lever P, with its wedges P^2, fulcrum-pin P', supporting slide P^3, and manipulating-rod R, in combination with the coupler-action of a reed-organ, whereby the octave-coupler is put in and out of connection and retained in either position in a solid state of rest, substantially as shown, and for the purpose described.

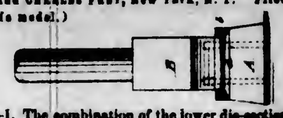
252,675. COMBINED IRONING-TABLE AND CLOTHES-BARS. HENRY KUHLER, Eureka, Ill. Filed Apr. 30, 1881. (No model.)

252,675.



Claim.—The ironing-board B, having set-offs F F and ratchet R, in combination with the legs C C, cross-bar E, extended legs A A, having cross-bars G, H', H', and H^3, short strips D' D', and strips D D, having cross-bars H H', substantially as and for the purpose specified.

252,676. DIE FOR STRIKING UP BRACELET-STOCK. FRANK KELLER and CHARLES FEDY, New York, N. Y. Filed June 25, 1881. (No model.)



Claim.—1. The combination of the lower die-section, A, having a central raised and corrugated portion, a, a vertical guide-shoulder, b, back of the same, and guide-pins d, with an upper die-section, B, having a corrugated portion, a', a recess, b', of less depth than the guide-shoulder b, back of the corrugated portion a', and socket-holes d', vertically above the guide-pins d, all arranged substantially as and for the purpose set forth.

2. As an improvement in dies for striking up corrugated strips, a lower die-section, A, having a raised corrugated portion, a, and an upper die-section, B, having corrugated portion a', the corrugations of the parts a a' diminishing gradually in width while increasing in height from one end to the other of the dies, in combination with guide and stop devices, by which the motion of the upper die is controlled, substantially as set forth.

252,677. AUTOMATIC FIRE-ALARM. ISIDOR KITSEE, Cincinnati, Ohio. Filed Oct. 25, 1881. (No model.)



Claim.—1. In an automatic fire-alarm, the bed-plate A, provided with swinging arm C, having suitable alarm devices attached thereto, in combination with fusible brace D, as and for the purpose intended, substantially as described.

2. The combination, in an automatic fire-alarm, of an armature and electro-magnet connected to current-wires, with the fusible brace D, and bed-plate A, provided with sounding-alarm, said bed-plate further provided with swinging arm C, carrying a spring-borne clapper and suitable for operating both electric and other alarm devices, substantially as described.

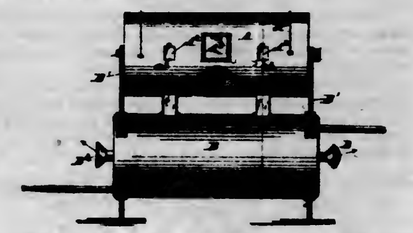
3. In an automatic fire-alarm, the bed-plate A, carrying spring-supported gong A', and swinging arm C, provided with spring-borne clapper c', in combination with fusible brace D, substantially as described.

4. In an automatic fire-alarm operated by melting of fusible connections, the combination of the gong A', provided with inverted sliding cup A^2, and mounted on a vertical post, a^3, provided with helical spring a^4, with tube C', having interior flanges, c^2, and clapper c', controlled by helical spring c^3, substantially as described.

5. In an automatic fire-alarm operated by melting of fusible connections, the combinations of the bed-plate A, having gong A', provided with inverted sliding cup A^2, and mounted on a vertical post, a^3, provided with helical spring a^4, with fusible retaining-key E, and swinging arm C, depending tube C', having interior flanges, c^2, and further provided with gong-clapper c', controlled by helical spring c^3, substantially as described.

6. In an automatic fire-alarm operated by melting of fusible connections, the bed-plate A, provided with spring-supported gong A', and electro-magnet E, connected with current-wires, in combination with fusible brace D, and swinging arm C, provided with armature r, and gong-clapper c', adapted, when operated, to simultaneously sound the gong and make and break electric communications, substantially as described.

252,678. FIRE-ANNIHILATOR. ISIDOR KITSEE, Cincinnati, Ohio. Filed Nov. 7, 1881. (No model.)



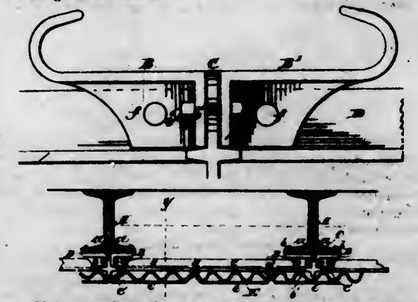
Claim.—1. In a gas or vapor fire-annihilator, a magazine adapted to contain chemical ingredients in separation, held in position by fusible connections the rupture of which brings said chemicals into contact, in combination with a receiving-generator, substantially as described.

2. In a fire-annihilator, the combination of a receiving-generator having suitable induction and eduction openings with a vessel divided into compartments for storage of chemical ingredients, which, when combined, generate a required gas or vapor, substantially as described.

3. In a gas or vapor fire-annihilator, the chamber A, divided into compartments, and provided with a gravity-weight, A^2, and weighted eduction-traps A^3, the whole sustained in position by easily-fusible connections, in combination with a receiving-generator, B, provided with suitable receiving-conduits and eduction-openings, substantially as described.

252,679. METALLIC LATHING. ABRAHAM KNISELY, Chicago, Ill. Filed Oct. 13, 1881. (No model.)

Brief.—The divided clamp is bolted to a plate that is slipped onto the furring, and the lathing is fastened to the furring by wires woven under and over the lathing and passing through holes in the flange of the furring.



Claim.—1. A divided clamp consisting of two sections, B B', adapted to receive and support the furring or angle iron, and to be attached to the girder or beams to furnish a support for metallic lathing, substantially as specified.

2. A divided clamp consisting of two sections, B B', adapted to be attached to the girders or beams, in combination with a plate or support, C, for the furring or angle iron, for securing the furring or angle iron in position, substantially as and for the purposes specified.

3. The binding-wire e, in combination with the furring or angle iron D, having openings for the passage of the wire e, and metallic lathing E, for attaching the lathing to the furring or angle iron by winding the wires under the lathing and over the furring, substantially as specified.

4. A divided clamp consisting of two sections, B B', and a plate or support, C, in combination with the furring or angle iron D, having openings for the passage of wire, metallic lathing E, and binding-wires e, for securing metallic lathing to girders or beams, substantially as specified.

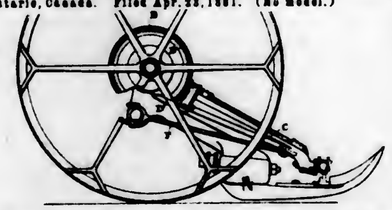
252,680. STAIR-CARPET FASTENER. MAURICE KRIGEL, New York, assignor to himself and William Lang, Brooklyn, N. Y. Filed Dec. 9, 1881. (No model.)



Claim.—1. The combination, with an angular corner-plate, of sliding and pointed pins and mechanism whereby the same are forced in line with the axis of the fastener to the outside of the same, substantially as and for the purpose set forth.

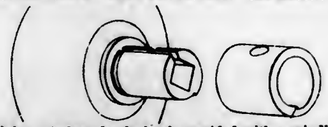
2. The combination of an angular corner-plate, A, having inclined triangular corner portions, *b*, with sliding and pointed pins *d*, guided at the under side of the corner-plate, and actuated by a center pinion intermeshing with rack-shaped shanks of the pins, substantially as set forth.

252,681. HARVESTING-MACHINE. LEWIS H. LEE, Toronto, Ontario, Canada. Filed Apr. 23, 1881. (No model.)



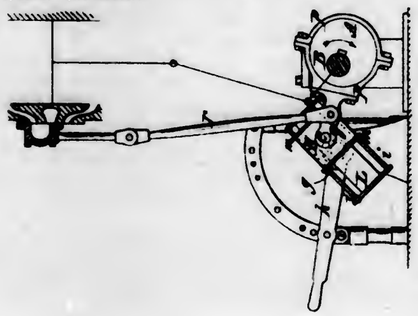
Claim.—In a harvesting-machine, the combination, with the differential gearing B B' and vibrating arm C for operating the cutter-bar, of the oblique brace F, arranged underneath said arm, one end of said brace being connected by a ball-and-socket joint to the outer end of said arm and the other end connected by a similar joint to the main frame of the machine at a point below the main axle, whereby the vibrating arm is braced and supported while it is permitted to vibrate, substantially as described.

252,682. KNOB ATTACHMENT. BYRON H. LOCKWOOD, Stamford, Conn., assignor to the Yale Lock Manufacturing Company, same place. Filed Oct. 11, 1881. (No model.)



Claim.—A door-knob shank provided with a spindle-socket and with a longitudinal radial slot, and a transverse slot intersecting the longitudinal slot, substantially as set forth, the two slots communicating with the spindle-socket, whereby the shank may be clamped and held firmly upon a door-knob spindle by any suitable means, substantially as set forth.

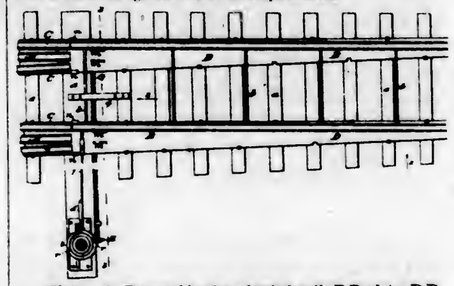
252,683. VALVE-OPERATING MECHANISM. LOUIS C. LUCMAN, Water Valley, Miss., assignor of two-thirds to Julius A. Crowell and Isaac S. Crowell, both of same place. Filed June 6, 1881. (No model.)



Claim.—The combination, with the shaft B, provided with the crank-arm *d*, connected to the piston-slide *f*, and the eccentric A, provided with the strap *p*, having arm *q*, connected by the rod *r* to the valve-stem *v*, of the lever *h*, the rock-shaft *g*, carrying the guide L, provided with the guide-rods *i*, and the slide-block R, provided with the lugs *m*, substantially as and for the purpose set forth.

252,684. RAILWAY-SWITCH. ALEXANDER E. MCDONALD, New York, N. Y. Filed Mar. 1, 1881. (No model.) Patented in Canada Sept. 30, 1879.

Brief.—The fixed portions of the spring switch-rails are secured to the base-plates and ties beyond the same. A locking-handle, which controls lugs for securing the movable rails, enters a notched disk operated by the switch-lever, whereby the movable rails are secured against accidental displacement.



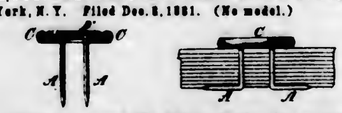
Claim.—1. The combination of switch-rails B B, plates D D, tie-bar *b*, cross-bar *q*, and lugs *m m*, substantially as set forth.

2. The combination of switch-rails B B, pitman *f*, crank *e*, shaft E, disk *s*, notches *r r* therein, lever H, shaft G, ears *m m* thereon, and means for locking the lever H in place when it enters notch *r*, substantially as set forth.

3. The combination, with ears *m m*, plates D D, slotted for the passage of said ears, and switch-rails B B, fastened rigidly to the remote ends of said plates and to the ties beyond, free or unattached for the remainder of their length, and their free ends adapted to be engaged by the lugs *m m*, substantially as set forth.

4. A stub-switch consisting of the combination of main track A A, divergent track or tracks C C, base-plates D D, fixed thereto at one end, switch-rails B B, fixed rigidly to the opposite ends of the plates and to the ties beyond the plates, and their portions toward the rails C C being free or unattached to the plates, whereby, when they are sprung to either side to coincide with the divergent rails, the strain thereby caused is resisted by the plates D D, substantially as set forth.

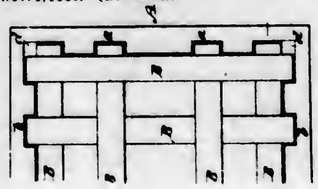
252,685. METALLIC FASTENER. GEORGE W. MCGILL, New York, N. Y. Filed Dec. 8, 1881. (No model.)



Claim.—1. A metallic fastener having its separate shanks formed of round wire with their penetrating ends pin-pointed and their opposite ends pin-headed, as shown, and inserted in the countersunk holes *b b* of the washer or cap, and secured therein by the washer and cap being connected together, as shown, substantially as and for the purposes described.

2. In combination with the separate pin-shanks A, washer B, and cap C, the packing-disk D, inserted between the washer and cap above the pin-heads, substantially as and for the purposes described.

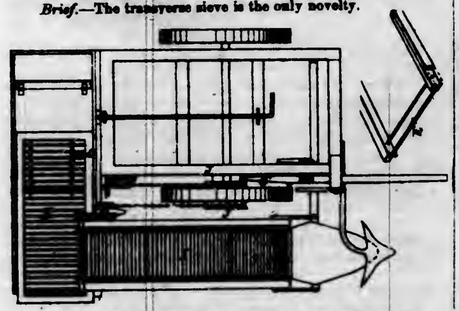
252,686. SPRING. EUGENE A. MCLEAN, West Bay City, Mich. Filed Nov. 4, 1881. (No model.)



Claim.—The combination, with the strips B, of a uniform size, arranged in pairs alternately at right angles to each other, and having the parallel pairs resting alternately upon the ends and near the center of the pairs, of the box A, provided with the channels or grooves *a b* in its inner walls to receive the ends of the inner plates, and the corner enlargements or channels *d* to receive the ends of both sets of outer plates, substantially as and for the purpose set forth.

252,687. POTATO-DIGGER. JOSEPH J. HEIERDINGER, Cincinnati, Ohio. Filed Mar. 7, 1881. (Model.)

Brief.—The transverse sieve is the only novelty.



Claim.—The transverse sieve E, constructed of side pieces having wires E'', which pass entirely through one side piece and half the distance through the opposite side piece, a cap, E', being adapted to fit over the one side piece covering the ends of the wires, as herein set forth.

252,688. PROCESS OF TREATING HIDE IN THE MANUFACTURE OF COUNTER-STIFFENERS. WILLIAM H. METCALF, Brooklyn, N. Y. Filed May 26, 1881. (No specimens.)

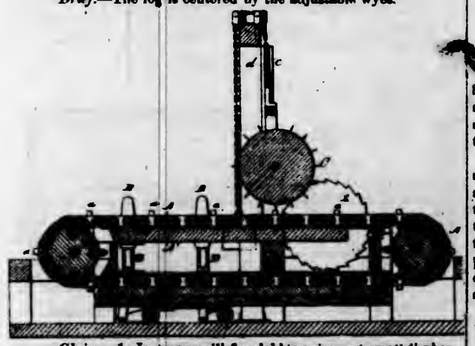


Claim.—1. The hereinbefore-described process for treating or waterproofing hide counter-stiffeners, which consists in saturating with a solution of benzine, paraffine, and drying-oil, as set forth.

2. The composition for waterproofing hide counter-stiffeners, consisting of paraffine, benzine, and linseed-oil, in the proportions substantially as specified.

252,689. CIRCULAR-SAW MILL. CHAS. J. L. MEYER, Fond du Lac, Wis. Filed Sept. 6, 1881. (No model.)

Brief.—The log is centered by the adjustable wyes.



Claim.—1. In a saw-mill for slabbing ties and small timber, the adjustable bed or wyes B' B', in combination with the log-carriage and saws, substantially as and for the purposes shown and described.

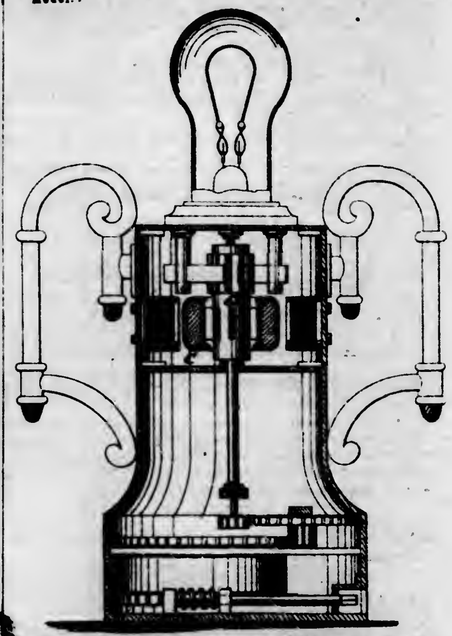
2. The combination, in a mill for cutting ties or small cants, of parallel saws *s s*, chain-carriage A A', the adjustable and reciprocating bed or wyes B' B', and the wheel-dog C, substantially as shown.

252,690. PORTABLE DISTRIBUTING-RESERVOIR. DAVID E. HILLER, Harrisburg, Pa., assignor of one-half to George Winters, same place. Filed Feb. 7, 1881. (Model.)



Claim.—An attachment for trunk-hose of steam fire-engines, consisting of a receptacle provided with a nipple for the attachment of the trunk-hose and with smaller nipples for the attachment of branch hose, whereby the volume of water thrown by the engine may be broken up or its force diminished, substantially as and for the purpose set forth.

252,691. COMBINED ELECTRIC LAMP AND GENERATOR. ELIZABETH MORRY, New York, N. Y. Filed Jan. 10, 1881. (No model.)



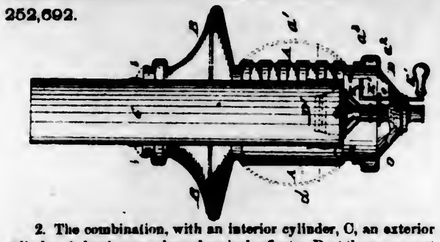
Claim.—1. In a portable electric lamp, the combination of a Siemens or other like electric generator, a spring-actuated motor, and an intermediate spindle common to said motor and generator, all inclosed within the stand of the lamp, and a burner on top of the stand, substantially as described.

2. In a dynamo-electric lamp, the combination of a portable stand, an electric burner located at the top of the same, a spring-actuated motor at the base of the stand, a centrally-arranged vertical spindle actuated by said spring-motor, an armature connected to said spindle, a commutator also connected to said spindle, the field-magnets secured to the sides of the stand, the brushes, the posts of which are rigidly fixed to the inside of the stand, and the circuit-wires leading to the carbon-arch in the vacuum-globe, substantially as described.

252,692. GAS-LAMP. CHAS. W. MUCHALL, Wiesbaden, Germany, assignor to Wm. E. Brashie, New York, N. Y. Filed Dec. 6, 1881. (No model.) Patented in Germany Apr. 20, 1880.

Claim.—1. In a gas-lamp, the combination, with an interior cylinder supported on the gallery of the burner, of an exterior cylinder provided with an enlarged conical reflector at the upper part, of a fixed supporting-cup, and of devices whereby the outer cylinder is retained concentrically to the inner cylinder both at its upper and lower ends, substantially as set forth.

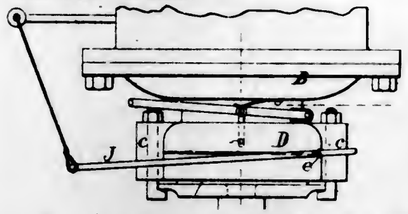
252,692.



2. The combination, with an interior cylinder, C, an exterior cylinder, A, having an enlarged conical reflector, B, at the upper part and a cylindrical contracted portion, *a'*, at the lower part thereof, of a fixed supporting-cup, D, having an annular shoulder, *a²*, and guide-rim *a³*, of centering-springs *a a*, binding upon the lower contracted portion, *a'*, of the outer cylinder, and of a detachable gallery, *b*, retaining the upper end of the same, substantially as set forth.

3. The combination, in a gas-lamp, with the switch of the burner, of a crank-lever, E', applied to the switch and extended below the closed cup D, so as to operate the switch from the outside, substantially as described.

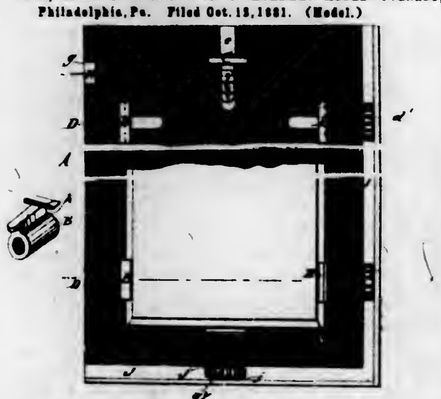
252,693. DRAIN-PIPE DIE. WILLIAM L. OGDEN, Newark, N. J., assignor of one-half to Isaac Ogden, same place. Filed June 7, 1881. (No model.)



Claim.—1. In combination with the vent-passage of a clay-pipe mold or die, a rod closing the passage by a movement at right angles thereto, and mechanism for opening and closing the same by hand, substantially as herein set forth.

2. The combination of the mold D, formed with the slit *a*, and provided with lugs *c c*, for uniting the parts above and below the slit, and the frame J, provided with the wire *e*, arranged to pass through the slit and operated by hand to cut off the finished pipe, as herein shown and described.

252,694. STEREOTYPE-PLATE HOLDER. ANDREW CYBERD, Philadelphia, Pa. Filed Oct. 15, 1881. (Model.)

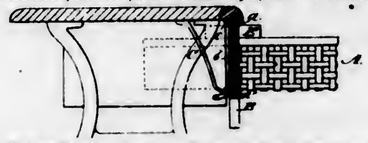


Claim.—1. The combination, with the block A, having slots *f g*, and the gage-block C, having holes *i*, of the headed pin H, pressed by a coiled spring, *k*, and having a reduced end to enter one of the holes *i*, as and for the purpose specified.

2. In combination with the stereotype-block, the right and left hand screw-rods D D and the clamps B B, substantially as and for the purposes set forth.

3. The stereotype-block A, formed with the slots *a*, *b*, *c*, *d*, *e*, *f*, and *g*, in combination with the simultaneously-moving clamps B, clamp F, and gage-block C, substantially as and for the purposes set forth.

252,695. SEWING-MACHINE WORK-BASKET. JOS. LE ROY PARKINSON, Cambria, Wis. Filed May 5, 1881. (Model.)

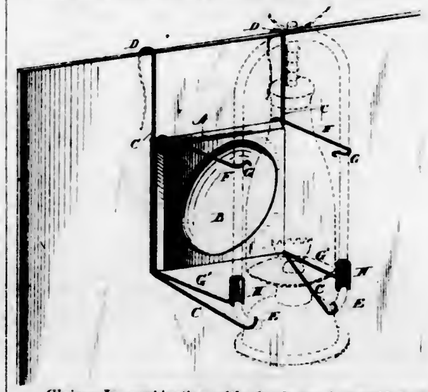


Claim.—The board or wing B, provided with the receptacles A and E, and provided with the perforated corner-plates *a a'*, in combination with the bracket C, screw-plate *c*, and screw bolt or rod *b*, substantially as and for the purposes specified.

252,696. LUBRICANT. WILLIAM PARKINSON, Boston, Mass., assignor to Wm. Sewall Whitney, same place. Filed Dec. 16, 1880. (Specimens.)

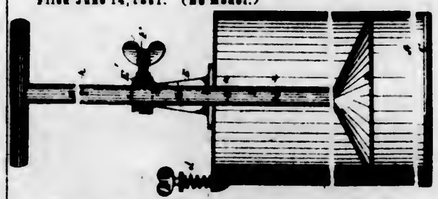
Claim.—A lubricating composition composed of gum-resins, animal or vegetable oils, and pulverized black lead, compounded in the manner and substantially in the proportions described.

252,697. LANTERN-BRACKET. WILLIAM H. PHELPS, Marshall, Mich. Filed June 21, 1881. (Model.)



Claim.—In combination with the frame A, provided with wires C, having hooked ends D and E, the wires F and G', the first mentioned provided with hooks G and the last mentioned with bearings H, the whole adapted to hold a lantern and support the same upon the dash-board of a vehicle or other fixture, substantially as specified.

252,698. BUTTER-CUTTER. JOHN PENSCH, Jr., Erie, Pa. Filed June 14, 1881. (No model.)

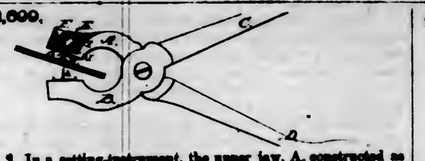


Claim.—In a butter-cutting apparatus, the combination of the cylinder A with yoke E, plunger B with stem B', working through said yoke, and the set-screw F within said yoke, for clamping said stem, substantially as and for the purposes set forth.

252,699. BUTTON-SETTING INSTRUMENT. GEO. W. PERRYCK, Providence, R. I. Filed Nov. 17, 1881. (No model.)

Claim.—1. In a setting-instrument, the upper jaw, A, provided with the recess E, spring I, groove G, and die H, constituting the folding mechanism for the button, substantially as and for the purpose specified.

252,699.



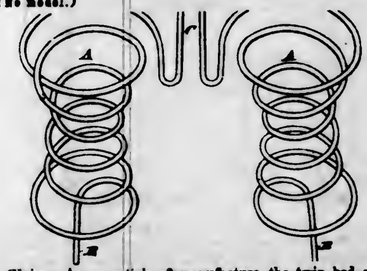
2. In a setting-instrument, the upper jaw, A, constructed as described, in combination with the lower jaw, B, having serrated recess *a*, whereby the button and fastening device are connected together, substantially as specified.

252,700. SHAFT-COUPLING. JOHN H. RIDDLE, Akron, Ohio, assignor to Conrad C. Auble, same place. Filed Nov. 26, 1881. (No model.)



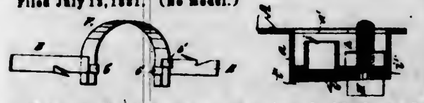
Claim.—A shaft-coupling consisting essentially of wedge-shaped key-seats at or near the ends of the shafts, the least depth being near said ends, a sleeve constructed in one piece to receive said shaft ends, and provided with a keyway, an independent key adapted to enter said keyway and fit the key-seats, and a case surrounding said sleeve and key, the whole constructed and arranged substantially as shown.

252,701. SPRING FOR BED-BOTTOMS. THOMAS A. RHODES and WILLIAM H. RHODES, Paynesville, Ky. Filed Oct. 15, 1881. (No model.)



Claim.—As an article of manufacture, the twin bed-spring herein shown and described, consisting of the two oppositely-coiled springs A A, provided with the straight depending terminals B B, and with the connecting portion C, disposed in straight lines terminating in semi-circular curves lying within the lateral extent of the upper coils of each spring, as shown and described.

252,702. WIRE FENCE. HOWARD RUARK, Centre Rutland, Vt. Filed July 13, 1881. (No model.)



Claim.—1. The hollow iron post A, formed with the quadrangular T-slotted chamber *a*, in combination with the bolt H and nut A, washers *i i'*, and the barbed plate B, whereby the barbed plate B or wire is secured to the post, substantially as shown and described.

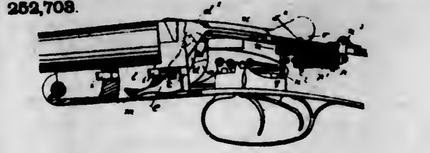
2. The post A, cast with the T-slotted chambers open one side, in combination with the washers *i* and *i'* and the bolt H and nut A, substantially as and for the purposes set forth.

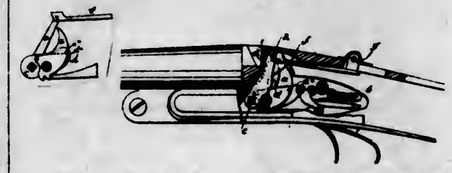
3. The washer *i'*, formed with the flange *i²*, and the step *j*, in combination with the bolt H, nut A, washer *i*, and the T-slotted chamber of the post, substantially as and for the purposes set forth.

4. In a wire fence, the combination, with the barbed wires or plates B, having split or divided ends, of the spring-cross E, having its ends split or divided, as shown and described.

252,703. BREECH-LOADING FIRE-ARM. HENRY SCOTT, Birmingham, England, assignor to John P. Clabrough, same place. Filed July 28, 1881. (No model.) Patented in England July 10, 1879.

252,703.



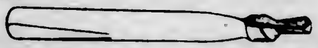


Claim.—1. In drop-down guns, the combination of the internal hammers having side shoulders, *a² a²*, the cross-axis *c*, having at each end a side-shouldered cocking-arm, *d*, and a vertical arm, *e*, and the slide *f*, jointed to the upper part of the arm *e*, as and for the purpose specified.

2. The spring-actuated safety-slide *n*, having peg *n²*, and the spring-catch *s*, in combination with the triggers having shoulders *g*, substantially as shown and described.

3. The spring-actuated catch *s*, provided with stud *s²*, the hand-lever *u*, having recess *v*, and the safety-slide *n*, substantially as shown and described, combined for operation as set forth.

252,704. COMBINED DRILL AND COUNTERSINK. WILLIAM H. SOUTHWICK, New Bedford, Mass. Filed Aug. 26, 1881. (No model.)



Claim.—A metal-boring tool consisting of a cylindrical drill having beveled enlargements on opposite sides of its upper end, provided with a clearance-space between the said enlargements and the drill-shank, and having flutes extending from the point of the drill into the clearance-space, substantially as set forth.

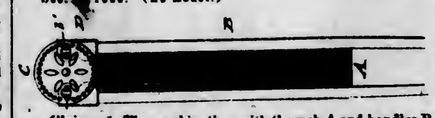
252,705. MILL FOR GRINDING AND REDUCING GRAIN, &c. JOHN STEVENS, Neenah, Wis. Filed Dec. 16, 1879.



Claim.—1. A dress for the rolls of roller-mills, composed of a series of parallel ribs having blunt non-cutting crests and trending lengthwise of the roll.

2. In a grinding-mill, the combination of two rolls driven at different peripheral speeds, and having a dress composed of a series of parallel ribs trending lengthwise of the roll and formed with blunt non-cutting crests.

252,706. FAN. CHARLES STRICKROOT, New York, N.Y. Filed Dec. [illegible], 1880. (No model.)



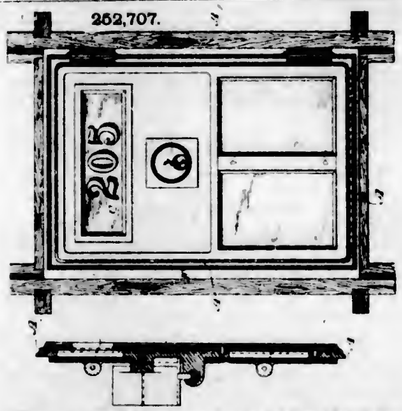
Claim.—1. The combination, with the web A and handles B B of a fan, the latter being provided with end caps or mountings, D, having inwardly-bent and pronged lugs, of center disks, C, having holes equidistantly from the center, through which the prong or prongs are sprung, substantially as and for the purpose set forth.

2. An end cap or mounting for fans, having lower fastening side lugs, *a a*, upper side lugs, *b b*, with one or more bent-up prongs, and an end lug, *d*, substantially as shown and described.

252,707. WINDOW-GLASS FASTENER. THEOPHILUS TANNER, Osage, Nebr. Filed June 23, 1881. (No model.)

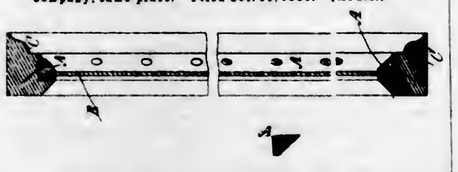
Brief.—The glass is set in a groove in a rubber strip, the groove being narrower at the top than at the bottom.

252,707.



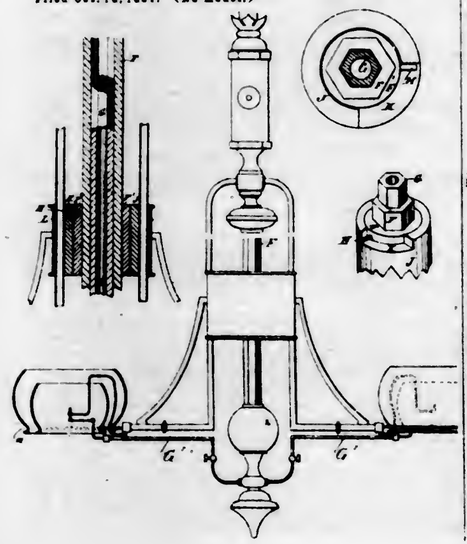
Claim.—As an article of manufacture, a fastener for window-glass, consisting of the rubber strip A, triangular in cross-section, and provided with the groove *a*, narrower at the top than the bottom, to receive and hold the edge of the glass, substantially as and for the purpose set forth.

252,708. POST-OFFICE LOCK-BOX. WARREN H. TAYLOR, Stamford, Conn., assignor to the Yale Lock Manufacturing Company, same place. Filed Oct. 10, 1881. (Model.)



Claim.—An improved door for a pigeon-hole, composed of a rim or frame, A, of metal, having in front of it a plate or panel, B, of other material—such as hard rubber, wood, paper, or other like suitable hard substance—substantially as and for the purposes specified.

252,709. DROP-LIGHT CHANDELIER. JOHN TRIGGS, New York, N. Y., assignor to Hester Caroline Triggs, same place. Filed Oct. 18, 1881. (No model.)



Claim.—1. The combination, with a drop-light chandelier provided with arms carrying burners and globes at their ends, of a sliding drop-light tube provided with arms carrying burners and globes at their ends and fitting into the globes on the fixed arms, substantially as herein shown and described, and for the purpose set forth.

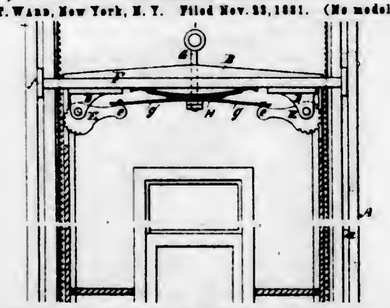
2. The combination, with a drop-light chandelier provided with arms carrying burners and globes at their ends, of a drop-light tube provided with arms carrying burners and globes fitting into the globes of the fixed arms, and of U-shaped bent gas-burner tubes attached to the end of the fixed arms, substantially as herein shown and described, and for the purpose set forth.

3. In a drop-light chandelier, the combination, with the fixed arms and the drop-light arms, of globes on the fixed arms, of globes on the drop-light arms and fitting in the globes on the fixed arms, of U-shaped bent gas-burner tubes at the ends of the fixed arms, and of forked gas-burner tube at the ends of the drop-light arms, substantially as herein shown and described, and for the purpose set forth.

4. In a drop-light chandelier, the combination, with the tube F of the sliding drop-light tube G, of the ring F', the stud H, and the sleeve J, provided with a recess, K, in its upper edge, substantially as herein shown and described, and for the purpose set forth.

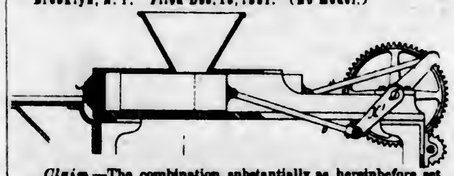
5. The combination, with a sliding drop-light chandelier, of a swinging arm attached to the lower end of the sliding drop-light tube, and carrying a burner and globe fitting within the globe of one of the fixed burners of the chandelier, as described.

252,710. SAFETY ATTACHMENT FOR ELEVATORS. FRANK T. WARD, New York, N. Y. Filed Nov. 23, 1881. (No model.)



Claim.—The combination, with the bars A, having gutters in their side edges and racks on their inner faces, of the cross-head B, having brackets D, and guide-plates with the heads *f*, the cams E, pivoted in said brackets and having arms *e*, the springs *g*, attached to said arms and overlapping each other, the semi-elliptical spring H, and the hoisting-rope eyebolt G, passing through cross-head and springs, substantially as shown and described.

252,711. MACHINE FOR SLOTTING SOAP. JAMES ATKINS, Brooklyn, N. Y. Filed Dec. 16, 1881. (No model.)



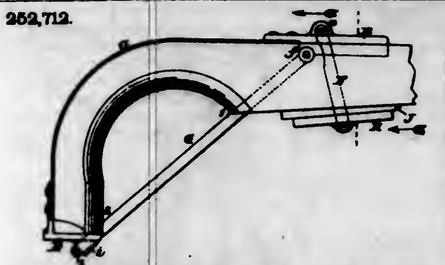
Claim.—The combination, substantially as hereinbefore set forth, of the soap-receptacle constructed with a longitudinal partition dividing it into two compartments, the feed-hopper and delivery-spout common to both compartments of the soap-receptacle, the swinging knife pivoted to the delivery-spout, the plungers working in the compartments of the soap-receptacle, and the crank-shaft imparting to the plunger alternate movements, for the purpose specified.

252,712. BENDING PLOW-HANDLES. GEO. C. AVERY, Louisville, Ky. Filed June 28, 1881. (No model.)

Claim.—1. As an improvement in the art, holding in place the bent portion of the stick or bar by tying together the ends of the curve or curved portion of the stock in substantially the manner described.

2. As a novel contrivance for tying up the bent stock during the usual setting and curing process, the spring-plate C, provided

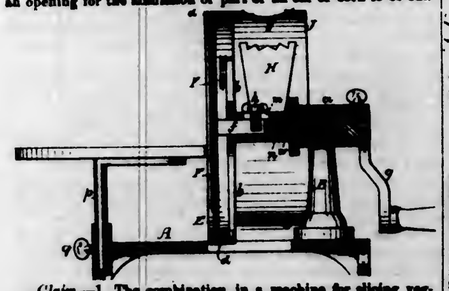
252,712.



at one end with a device for the end of the stick to bear against and at the other end with a slotted bearing-plate, B, in combination with a tie-rod, C, pivoted centrally to said plate and adapted to engage with the device against which the stick end bears, and a clamping-plate, H, and centrally-arranged link-bar F, pivoted at its ends to said plates E and H, all substantially in the manner specified, for the purposes set forth.

252,713. VEGETABLE-CUTTER. GEORGE H. BACKMIER, Philadelphia, Pa., assignor of one-half to Henry R. Shoch, same place. Filed Nov. 26, 1881. (No model.)

Brief.—The knives are attached to a square spindle, which is adjustable in an opening in the driving-shaft to and from the slotted face-plate by means of a set-screw and spring. The driving-shaft has attached to it a serrated knife operating within a hinged segmental guard, which guard is provided at its top with an opening for the admission of part of an ear of corn to be cut.



Claim.—1. The combination, in a machine for slicing vegetables, &c., of a slotted face-plate, means for rotating the same, and knives *f*, adapted to the slots and secured to a spindle of square or other angular cross-section, adapted to a recess of corresponding shape in the shaft of the face-plate, as set forth.

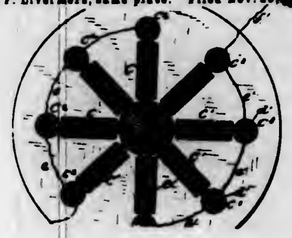
2. The combination of the slotted face-plate and its shaft D, having a recess, *w*, and slot *m*, with the knives F, the knife-spindle *f*, and the thumb-screw A, as set forth.

3. The combination of the slotted face-plate E, the shaft D, having a recess, *w*, and slot *m*, the knives F and their spindle *f*, the thumb-screw A, and the spring *u*, as set forth.

4. The combination of the segmental guard J, having an opening, *y*, with the shaft D, having a radial blade, H, as set forth.

5. The combination of the base A, the face-plate E, the shaft D, having a blade, H, and the segmental guard J, having an opening, *y*, and hinged to the base as described, whereby it can be thrown back in order to expose the shaft and the parts carried thereby, as set forth.

252,714. TRANSMITTER FOR TELEPHONES. SAMUEL H. BARTLETT and HENRY E. WAITE, New York, N. Y., assignors to Charles F. Livermore, same place. Filed Nov. 23, 1881. (No model.)



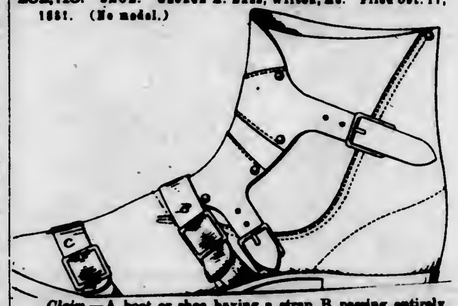
252,714.



Claim.—1. In a transmitter for telephones, a cork floor-supported loosely in its supporting-stand, substantially as described, whereby it is left unhammered and free to vibrate therein, in combination with a microphone suspended from its lower face and receiving its disturbances through molecular action in the cork resulting from the action of the sound-waves impinging upon its surface.

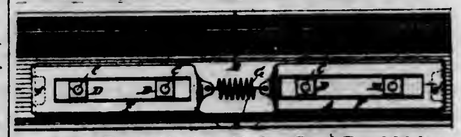
2. The microphone consisting of a central hub, bars or rods radiating therefrom, hollow rings or cylinders mounted thereon, and outer supports for said spokes or rods, connected with each other and with the line-wires, substantially as described.

252,715. SHOE. GEORGE H. BASS, Wilton, Me. Filed Oct. 17, 1881. (No model.)



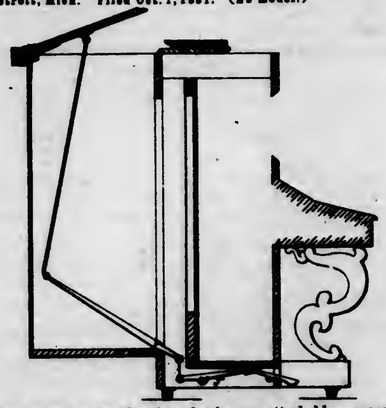
Claim.—A boot or shoe having a strap, B, passing entirely over the instep portion of the upper, and a strap, C, over the toe portion, all substantially as shown and described.

252,716. NUT-LOCK. JAMES C. BRAMER and JOHN M. RICHARDSON, Carthage, Mo. Filed Aug. 15, 1881. (Model.)



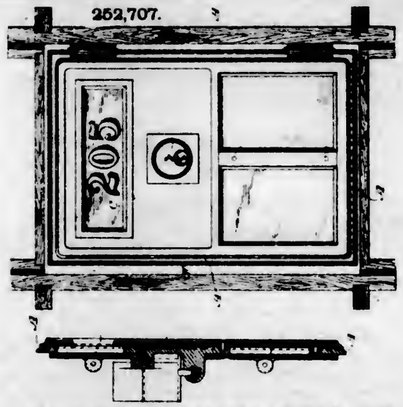
Claim.—The combination, with plates F, nuts D, and fish-bars B, of the spiral spring G, substantially as herein shown and described, whereby the plates F are severally kept in position, as set forth.

252,717. PIANO-CASE. JAMES BROOKS and JOHN P. BROOKS, Detroit, Mich. Filed Oct. 1, 1881. (No model.)



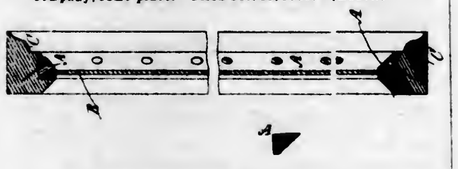
Claim.—An upright piano having an attachable resonant chamber, provided with a swell-lid secured to the apertured rear wall of the instrument, as and for the purpose set forth,

252,707.



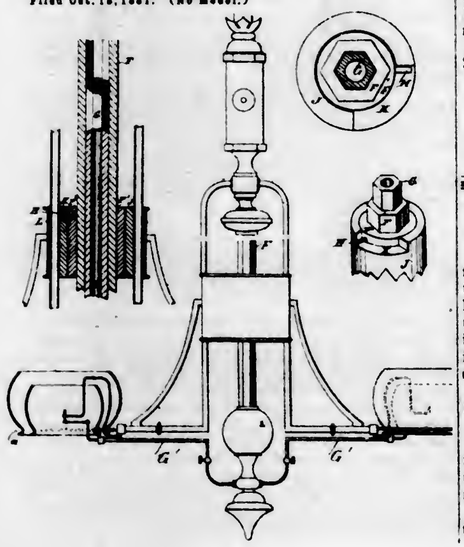
Claim.—As an article of manufacture, a fastener for window-glass, consisting of the rubber strip A, triangular in cross-section, and provided with the groove *a*, narrower at the top than the bottom, to receive and hold the edge of the glass, substantially as and for the purpose set forth.

252,708. POST-OFFICE LOCK-BOX. WARREN H. TAYLOR, Stamford, Conn., assignor to the Yale Lock Manufacturing Company, same place. Filed Oct. 10, 1881. (Model.)



Claim.—An improved door for a pigeon-hole, composed of a rim or frame, A, of metal, having in front of it a plate or panel, B, of other material—such as hard rubber, wood, paper, or other like suitable hard substance—substantially as and for the purposes specified.

252,709. DROP-LIGHT CHANDELIER. JOHN TRIGGS, New York, N. Y., assignor to Hester Caroline Triggs, same place. Filed Oct. 18, 1881. (No model.)



Claim.—1. The combination, with a drop-light chandelier provided with arms carrying burners and globes at their ends, of a sliding drop-light tube provided with arms carrying burners and globes at their ends and fitting into the globes on the fixed arms, substantially as herein shown and described, and for the purpose set forth.

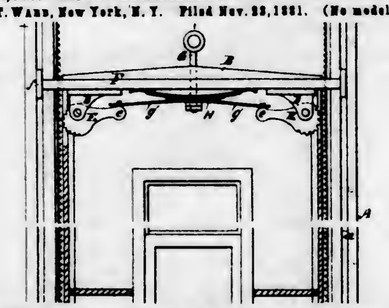
2. The combination, with a drop-light chandelier provided with arms carrying burners and globes at their ends, of a drop-light tube provided with arms carrying burners and globes fitting into the globes of the fixed arms, and of U-shaped bent gas-burner tubes attached to the end of the fixed arms, substantially as herein shown and described, and for the purpose set forth.

3. In a drop-light chandelier, the combination, with the fixed arms and the drop-light arms, of globes on the fixed arms, of globes on the drop-light arms and fitting in the globes on the fixed arms, of U-shaped bent gas-burner tubes at the ends of the fixed arms, and of forked gas-burner tube at the ends of the drop-light arms, substantially as herein shown and described, and for the purpose set forth.

4. In a drop-light chandelier, the combination, with the tube F of the sliding drop-light tube G, of the ring F', the stud H, and the sleeve J, provided with a recess, K, in its upper edge, substantially as herein shown and described, and for the purpose set forth.

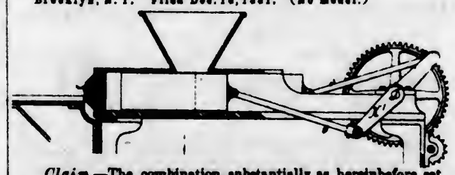
5. The combination, with a sliding drop-light chandelier, of a swinging arm attached to the lower end of the sliding drop-light tube, and carrying a burner and globe fitting within the globe of one of the fixed burners of the chandelier, as described.

252,710. SAFETY ATTACHMENT FOR ELEVATORS. FRANK T. WARD, New York, N. Y. Filed Nov. 23, 1881. (No model.)



Claim.—The combination, with the bars A, having gutters in their side edges and racks on their inner faces, of the cross-head B, having brackets D, and guide-plates with the heads *f*, the cams E, pivoted in said brackets and having arms *e*, the springs *g*, attached to said arms and overlapping each other, the semi-elliptical spring H, and the hoisting-rope eyebolt G, passing through cross-head and springs, substantially as shown and described.

252,711. MACHINE FOR SLOTTING SOAP. JAMES ATKINS, Brooklyn, N. Y. Filed Dec. 16, 1881. (No model.)



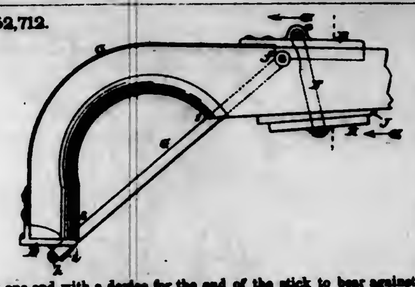
Claim.—The combination, substantially as hereinbefore set forth, of the soap-receptacle constructed with a longitudinal partition dividing it into two compartments, the feed-hopper and delivery-spout common to both compartments of the soap-receptacle, the swinging knife pivoted to the delivery-spout, the plungers working in the compartments of the soap-receptacle, and the crank-shaft imparting to the plunger alternate movements, for the purpose specified.

252,712. BENDING PLOW-HANDLES. GEO. C. AVERY, Louisville, Ky. Filed June 24, 1881. (No model.)

Claim.—1. As an improvement in the art, holding in place the bent portion of the stick or bar by tying together the ends of the curve or curved portion of the stock in substantially the manner described.

2. As a novel contrivance for tying up the bent stock during the usual setting and curing process, the spring-plate C, provided

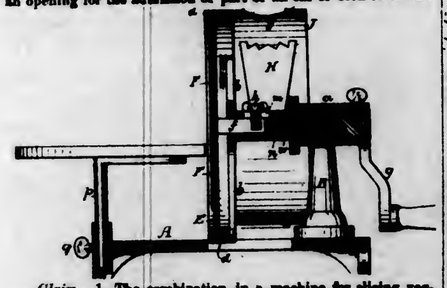
252,712.



at one end with a device for the end of the stick to bear against and at the other end with a slotted bearing-plate, E, in combination with a tie-rod, G, pivoted centrally to said plate and adapted to engage with the device against which the stick end bears, and a clamping-plate, H, and centrally-arranged link-bar F, pivoted at its ends to said plates E and H, all substantially in the manner specified, for the purpose set forth.

252,713. VEGETABLE-CUTTER. GEORGE H. BACKMIER, Philadelphia, Pa., assignor of one-half to Henry R. Shoch, same place. Filed Nov. 23, 1881. (No model.)

Brief.—The knives are attached to a square spindle, which is adjustable in an opening in the driving-shaft to and from the slotted face-plate by means of a set-screw and spring. The driving-shaft has attached to it a serrated knife operating within a hinged segmental guard, which guard is provided at its top with an opening for the admission of part of an ear of corn to be cut.



Claim.—1. The combination, in a machine for slicing vegetables, &c., of a slotted face-plate, means for rotating the same, and knives *f*, adapted to the slots and secured to a spindle of square or other angular cross-section, adapted to a recess of corresponding shape in the shaft of the face-plate, as set forth.

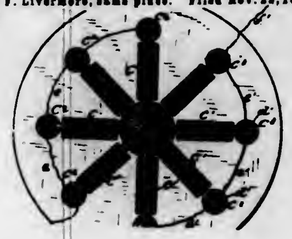
2. The combination of the slotted face-plate and its shaft D, having a recess, *w*, and slot *m*, with the knives F, the knife-spindle *f*, and the thumb-screw A, as set forth.

3. The combination of the slotted face-plate E, the shaft D, having a recess, *w*, and slot *m*, the knives F and their spindle *f*, the thumb-screw A, and the spring *a*, as set forth.

4. The combination of the segmental guard J, having an opening, *y*, with the shaft D, having a radial blade, H, as set forth.

5. The combination of the base A, the face-plate E, the shaft D, having a blade, H, and the segmental guard J, having an opening, *y*, and hinged to the base as described, whereby it can be thrown back in order to expose the shaft and the parts carried thereby, as set forth.

252,714. TRANSMITTER FOR TELEPHONES. SAMUEL H. BARTLETT and HENRY B. WAITE, New York, N. Y., assignors to Charles F. Livermore, same place. Filed Nov. 23, 1881. (No model.)



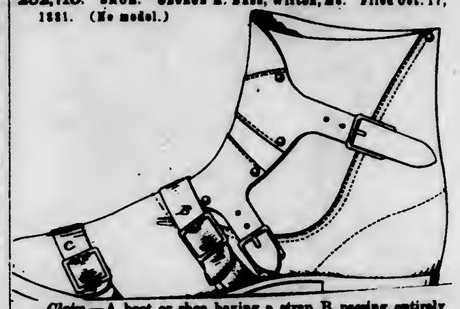
252,714.



Claim.—1. In a transmitter for telephones, a cork floor upheld loosely in its supporting-stand, substantially as described, whereby it is left untrammeled and free to vibrate thereon, in combination with a microphone suspended from its lower face and receiving its disturbances through molecular action in the cork resulting from the action of the sound-waves impinging upon its surface.

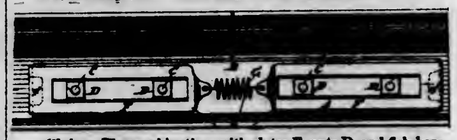
2. The microphone consisting of a central hub, bars or rods radiating therefrom, hollow rings or cylinders mounted thereon, and outer supports for said spokes or rods, connected with each other and with the line-wires, substantially as described.

252,715. SHOE. GEORGE H. BASS, Wilton, Me. Filed Oct. 17, 1881. (No model.)



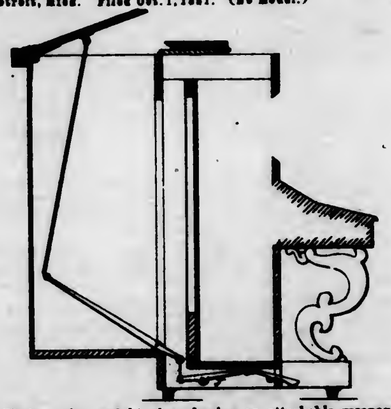
Claim.—A boot or shoe having a strap, B, passing entirely over the instep portion of the upper, and a strap, C, over the toe portion, all substantially as shown and described.

252,716. NUT-LOCK. JAMES C. BRAMER and JOHN H. RICHARDSON, Carthage, Mo. Filed Aug. 15, 1881. (Model.)



Claim.—The combination, with plates F, nuts D, and fish-bars B, of the spiral spring G, substantially as herein shown and described, whereby the plates F are severally kept in position, as set forth.

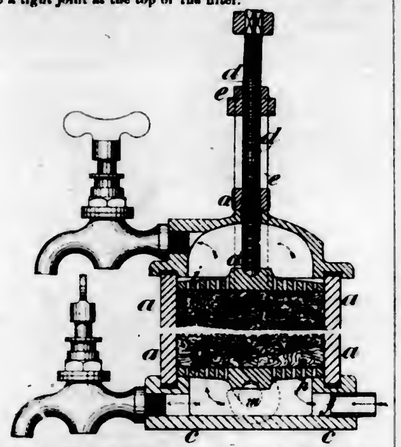
252,717. PIANO-CASE. JACOB BECKER and JOHN P. BECKER, Detroit, Mich. Filed Oct. 1, 1881. (No model.)



Claim.—An upright piano having an attachable resonant chamber, provided with a swell-lid secured to the apertured rear wall of the instrument, as and for the purpose set forth.

252,718. WATER-FILTER. ANDREW BELL, Manchester, County of Lancaster, England. Filed July 5, 1881. (Model.)

Brief.—The filter is provided with a screw which compresses the filtering media, when desired, by means of a movable grid. The screw also operates a bridle, acting to hold the parts together, which hinges on the lugs *m* at the base. The wing-nut *o* assists to make a tight joint at the top of the filter.

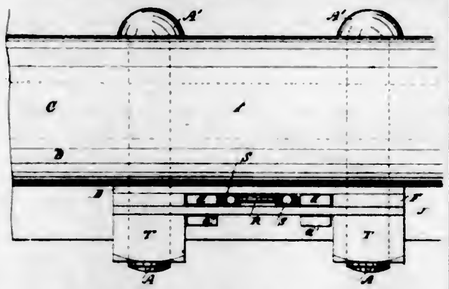


Claim.—1. The combination of the cylinder *a*, adapted to receive filtering media, and the cover and base with a bridle, *e*, hinged to the base, a screw, *d*, and nut *o*, all substantially as described.

2. The combination of the filtering-cylinder, cover, base, and movable grids, between which the filtering media are contained, with a bridle connected to the base, a screw bearing on one of the grids, and a nut on the screw adapted to bear on the cover, all substantially as set forth.

3. The combination of the cover and the recessed base, one having an inlet and the other an outlet, with a reversible cylinder containing filtering media and loose grids, the lower one adapted to rest on the base, substantially as specified.

252,719. NUT-LOCK. ALBERT BERRYHILL, Pittsburg, Pa. Filed Sept. 13, 1881. (No model.)



Claim.—1. In a nut-lock, the combination, with the bolts A and nuts T, of the recessed plate F, the slotted plate J, the blocks O, and the wedge or filling piece R, substantially as herein shown and described, and for the purpose set forth.

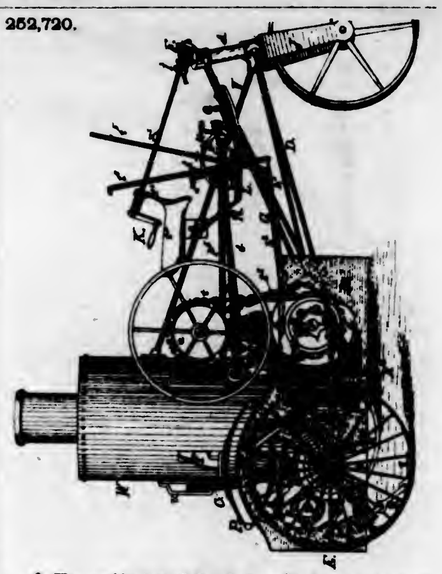
2. In a nut-lock, the combination, with the bolts A and nuts T, of the recessed plate F, the slotted plate J, the plate D, the blocks O, and the wedge or filling piece R, substantially as herein shown and described, and for the purpose set forth.

252,720. ROAD-ENGINE. HARRY H. BAIRSTOW, Latrobe, Pa. Filed June 28, 1881. (No model.)

Claim.—1. The combination of the curved axle *a*, pedestals C' C', arch-piece C, sleeve Y, slotted brackets *c' c'*, keeper U, springs P P, and the boiler W, substantially as and for the purposes herein specified.

2. The combination of the axle *a*, gear-wheel *m*, sleeve *w'*, arms S', links S, and the traction-wheel E, substantially as and for the purposes herein specified.

252,720.



3. The combination of the platform P², slotted wheel-cover M, sliding disk *s'*, and the sleeve-hub *w'*, all arranged substantially as and for the purposes herein specified.

4. The combination of the arms S', links S, eyebolts *r'*, sleeves T, springs *i*, and the traction-wheel E, substantially as and for the purposes herein specified.

5. The combination of the shaft *v*, sprocket-cone *a k*, smooth cone *c d*, gear *s*, chains *t t'*, tightening *c c'*, and the treadles N O, substantially as and for the purposes shown and described.

6. The combination of the boiler W, brackets *w*, threaded rods D D' G, brace V, sleeve A, and the caster J, substantially as and for the purposes herein specified.

7. The combination of the caster J, worm-gear F, worm I, shaft *x'*, crank K, and the seat *f'*, substantially as and for the purposes herein specified.

8. The combination of the equatorial gear-wheels $m' m^2$, friction-faces $b' b^2$ formed thereon, independent brakes $h^1 h^2$, and the treadles $b^2 b^1$, substantially as and for the purposes herein specified.

9. The steering caster-wheel yoke-sleeve A, having a rearward inclination from vertical at the top with relation to the engine, in combination with the caster-wheel B, provided with a circumferentially-concaved face, substantially in the manner and for the purposes shown and described.

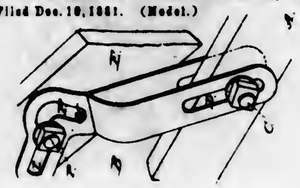
252,721. FRUIT-JAR COVER. GEORGE H. BROWN, New Windsor, Md. Filed Dec. 16, 1881. (No model.)



Claim.—1. In combination with the jar having the inclined ribs *a*, the cover provided with the bails B B and rollers *c*, substantially as set forth.

2. In combination with the jar having the inclined ribs *a*, the cover C, having a central knob and annular track, the bails B B, and rubber-tired rollers *c c*, as set forth.

252,722. PLOW-HANDLE. WILLIAM P. BROWN, Zanesville, Ohio. Filed Dec. 10, 1881. (Model.)



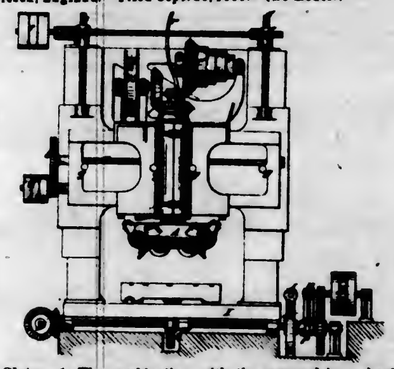
Claim.—1. The combination, with the handle E, beam A, and bolts C and P', of the handle-brace B, having a curved slot in its upper end, formed with an intermediate shouldered head or bearing, substantially as specified.

2. The handle-brace B, having at its upper end the curved slot F, formed with an intermediate shouldered head, G, a rear extension, L, and a forward and downward extension, N, substantially as specified.

252,723. COMPOUND FOR FLAVORING COFFEE. FRANK BACH, San Francisco, Cal. Filed Nov. 29, 1881. (No specimens.)

Claim.—A compound consisting of roasted figs, vanilla, and honey, united in about the proportion and for the purpose herein described.

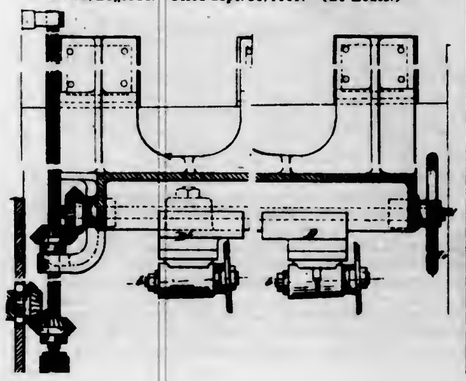
252,724. MACHINERY FOR DRESSING STONE. JOHN D. BRUNTON and FRANK H. J. TRIER, Westminster, County of Middlesex, England. Filed Sept. 26, 1881. (No model.)



Claim.—1. The combination, with the power-driven chuck and positively-driven rotating cutting-disks carried by the same, of means, substantially as hereinbefore described, whereby the lubricant may be introduced into the interior of the chuck through the central shaft which imparts movement to the cutting-disks.

2. The herein-described machinery for dressing stone, comprising the rotating power-driven chuck and positively-driven rotating cutting-disks carried by the same, means, substantially as described, for introducing lubricating fluid to the interior of the chuck, the chuck-carrying slide or slides, and the guides for said slides, arranged and operated as herein set forth, to enable the chuck and cutting-disks to be adjusted in various directions in relation to the stone to be operated on, the stone-carrying table, with means for traversing the same, and rail-tracks for the circulation of the table, with or without devices for varying the tilt or inclination of the chuck, the whole arranged and combined together, to operate in the manner and for the purpose hereinbefore set forth.

252,725. MACHINERY FOR DRESSING STONE. JOHN D. BRUNTON and FRANK H. J. TRIER, Westminster, County of Middlesex, England. Filed Sept. 26, 1881. (No model.)

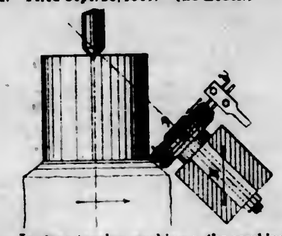


Claim.—1. The combination, with a top-dressing machine, of arris-tools mounted in pivoted adjustable sockets adapted to be set so as to produce arrises either lengthwise or crosswise of the bed or table, and arranged and operated substantially as hereinbefore set forth.

2. The combination, substantially as hereinbefore set forth, of the tool-holder, the arris-cutter, the pivoted adjustable socket for the same, adapted to be set so as to cause the tool to cut lengthwise or crosswise of the stone, and mechanism for reciprocating the tool-holder crosswise of the stone.

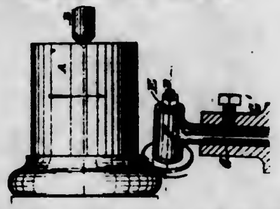
3. The combination of the tool-holders D D', the arris-tools mounted and arranged in the tool-holders in the manner substantially as herein described, the cross-shafts H H', the means for actuating the same, and the bracket on which said tool-holders are supported and move, substantially as hereinbefore set forth.

252,726. TURNING OR SHAPING STONE. JOHN D. BRUNTON and FRANK H. J. TRIER, Westminster, County of Middlesex, England. Filed Sept. 26, 1881. (No model.)



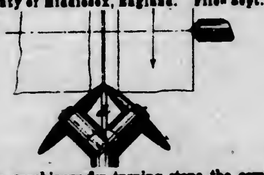
Claim.—In stone-turning machinery, the combination, with a slide-rest, of two or more circular cutters mounted on one and the same axis or spindle and arranged at an angle, so as to take off successive layers or strata of stone, substantially as and for the purpose hereinbefore set forth.

252,727. TURNING OR SHAPING STONE. JOHN D. BRUNTON and FRANK H. J. TRIER, Westminster, County of Middlesex, England. Filed Sept. 26, 1881. (No model.)



Claim.—In machinery for turning stone, the combination, with a holder or a slide-rest, of a circular cutter free to revolve, and arranged with its cutting-edge at such an angle to the revolving stone as to cut or produce concave surfaces, substantially as hereinbefore described and illustrated.

252,728. APPARATUS OR MEANS FOR TURNING OR SHAPING STONE. JOHN D. BRUNTON and FRANK H. J. TRIER, Westminster, County of Middlesex, England. Filed Sept. 26, 1881. (No model.)

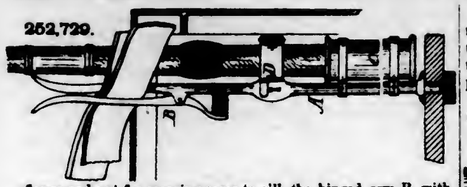


Claim.—In machinery for turning stone, the combination, with a rest or holder, of two circular cutters free to revolve by contact with the revolving stone, and arranged opposite to and at an angle to each other and to the surface of the stone, substantially as and for the purpose hereinbefore described.

252,729. COMBINED WHIP AND REIN HOLDER. HENRY RUSCH, Sprottsville, Ohio. Filed Nov. 11, 1881. (No model.)

Claim.—The herein-described lock-socket whip-holder and rein-holder combined, and consisting of the rod A, having the

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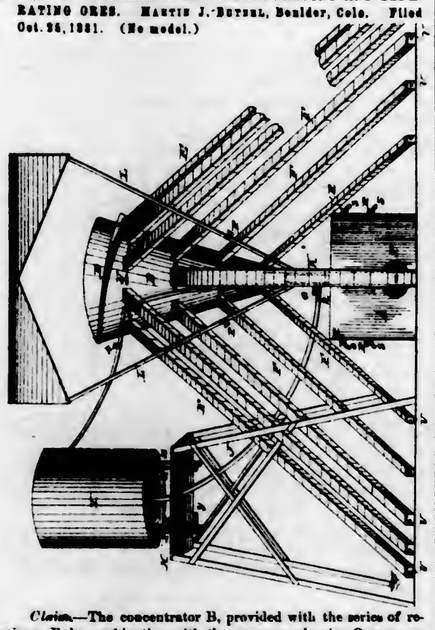
flange and nut for securing same to sill, the hinged arm B, with its spring, forming the rein-holder clamp, the socket C, and the hinged band and lock D, as shown and described.

252,730. INTERCONVERTIBLE CRIB AND TABLE. SANFORD S. BURR, Winnetka, Ill. Filed Nov. 18, 1881. (No model.)



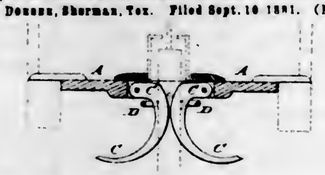
Claim.—An interconvertible crib and table, comprising the crib ends A and the crib sides B and top and shelf D E, adapted to be connected to and interchangeably used with said crib ends in the manner and for the purposes herein specified.

252,731. APPARATUS FOR CONCENTRATING AND SEPARATING ORES. MARTIN J. BUTSEL, Boulder, Colo. Filed Oct. 25, 1881. (No model.)



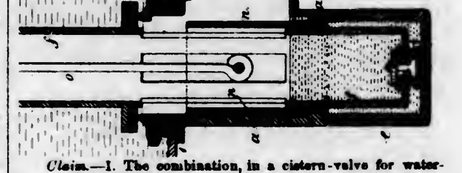
Claim.—The concentrator B, provided with the series of receivers F, in combination with the water-supply pipe O, ore-conveying pipes L, the water-pipe J, and tank I, the several parts being arranged with relation to each other substantially in the manner as and for the purpose herein shown and described.

252,732. COTTON-PLANTER. ANTHONY W. BYERS and JAMES C. DOBBS, Sherman, Tex. Filed Sept. 10 1881. (No model.)



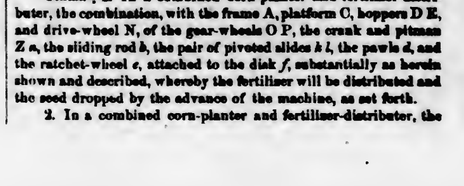
Claim.—In a cotton-planter, the combination, with the slotted hopper-bottom A, of the hinged and curved cut-off C and the spring D, substantially as herein shown and described, whereby the escape of seed will be prevented except as forced out by the prongs of the feed-wheel, as set forth.

252,733. CARRIAGE-AXLE BOX. FRANK A. GARNER, Brookline, Mass. Filed Dec. 8, 1881. (No model.)



Claim.—The axle-box A, formed with the reduced externally-threaded portion *c*, the enlarged internally-threaded portion *b*, and the oil-groove *a*, in combination with the screw-cap C, secured to the hub B, and the nut or sleeve E, formed with the flange *h'*, the axle being provided with the collars or rings *f*, *g*, and *h* and made shorter than the axle-box, substantially as described.

252,734. VALVE FOR WATER-CLOSET CISTERNS. CLARA E. CARR and GEORGE D. SCOTT, New York, N. Y., Executrix and Executor of William S. Carr, deceased. Filed Oct. 22, 1881. (No model.)



Claim.—The slotted tube *c*, passing through the service-box and forming a valve-seat at its upper end, in combination with the tube *l*, valve *m*, and stopper *n*, the tube *l* being slotted below the valve and above the stopper, substantially as and for the purposes set forth.

252,735. VALVE FOR WATER-CLOSET CISTERNS. CLARA E. CARR and GEORGE D. SCOTT, New York, N. Y., Executrix and Executor of William S. Carr, deceased. Filed Oct. 22, 1881. (No model.)

Claim.—1. The combination, in a cistern-valve for water-closets, of the cylinder *a*, pipe to the water-closet, water-cylinder *c*, tube *f*, valve *h*, around the same, and small valve *i* at the lower end, substantially as and for the purposes set forth.

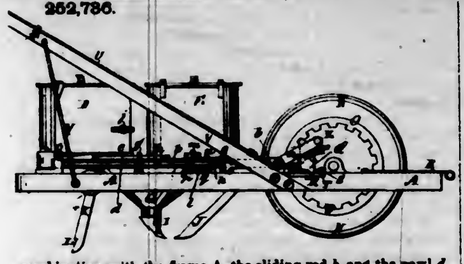
2. The sleeve *n*, sliding upon the slotted portion of the tube *f*, and to which sleeve the wire or connection to the water-closet is attached, in combination with the valve *h*, cylinder *a*, water-cylinder *c*, and seat for the valve *h*, substantially as set forth.

252,736. CORN-PLANTER AND FERTILIZER-DISTRIBUTER. WILLIAM CASSILL, Hamden Junction, assignor to himself and John T. Ogier, Hamden, Ohio. Filed Sept. 5, 1881. (No model.)

Claim.—1. In a combined corn-planter and fertilizer-distributer, the combination, with the frame A, platform C, hoppers D E, and drive-wheel N, of the gear-wheels O P, the crank and pitman Z *a*, the sliding rod *b*, the pair of pivoted slides *k l*, the pawls *d*, and the ratchet-wheel *e*, attached to the disk *f*, substantially as herein shown and described, whereby the fertilizer will be distributed and the seed dropped by the advance of the machine, as set forth.

2. In a combined corn-planter and fertilizer-distributer, the

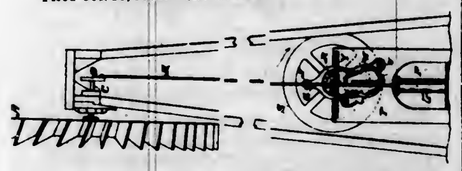
252,736.



combination, with the frame A, the sliding rod *b*, and the pawl *d*, having a slot in its extended outer end, of the stationary stud *g*, substantially as herein shown and described, whereby the movements of the said pawl are controlled, as set forth.

3. In a combined corn-planter and fertilizer-distributer, the combination, with the pair of pivoted slides *k l* and the sliding rod *b*, of the pins *n o* and *p g*, substantially as herein shown and described, whereby the said slides will be operated to cut off and drop the fertilizer, as set forth.

252,737. WINDMILL-MOTOR. BLANCHARD CHAMBERLAIN, Bellefontaine, Ohio, assignor to Joseph E. Wilson, same place. Filed Oct. 15, 1881. (No model.)



Claim.—1. In combination with the vertical reciprocating rod, the vibrating rack-yoke G, pivoted thereto, and the pivoted guide-arms T T', pressed inward by springs U U', the guide-arms being intermediate of the springs and rack-yoke, substantially as and for the purposes set forth.

2. The combination, with the vertically-reciprocating rod and the vibrating rack-yoke, of the detachable clip L, for pivoting the vibrating rack-yoke to the vertical reciprocating rod, substantially as and for the purposes set forth.

3. The rack-yoke G, formed with cogs *g g'* and studs *h i j*, as set forth.

4. The combination of the vibrating rack-yoke, bearing-plate P, pivoted guide-arms T T', springs U U', central guiding-rib, W, and studs *e*, *e'*, and *h*, substantially as and for the purposes set forth.

252,738. DEVICE FOR CRUSHING SUGAR, SALT, &c. ERNEST F. CHESEBRO, Willimantic, Conn. Filed Dec. 14, 1881. (No model.)

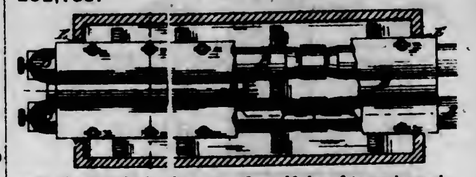


Claim.—A device for breaking up or crushing crystals, consisting of the spikes or blades C, formed with or connected to the arms B, in combination with the shank *a* and a suitable handle, A, substantially as and for the purpose set forth.

252,739. VULCANIZING INDIA-RUBBER AND GUTTA-PERCHA COVERINGS AND COATINGS OF TELEGRAPHIC CABLES. HENRY A. CLARK, Boston, Mass. Filed Dec. 10, 1881. (No model.)

Claim.—1. The vulcanization of a cable composed of telegraphic or telephonic or electric wires embedded in india-rubber or gutta-percha or other vulcanizable gum, which surrounds and sep-

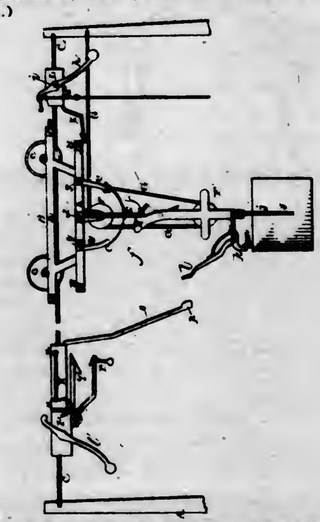
252,739.



arates the several wires by means of a mold shaped to receive such cable and hold it in a straight position while the india-rubber, &c., is being vulcanized, all substantially as described, for the purpose specified.

2. In the vulcanization of cables for telegraphic or telephonic or electric wires in molds adapted to receive them and confine them in a straight position while being so vulcanized, the projection of such molds at and from each end of the vulcanizing oven or chamber, substantially as and for the purpose described.

252,740. HOISTING AND CONVEYING APPARATUS. FRANCIS A. CLARKSON, Black Rock, Vt. Filed July 16, 1881. (No model.)



Claim.—1. The combination of the carriage B, provided with grooved rollers *c*, the pivoted loop-latches D, and the suspended pivoted bail E, the sheaved hook H, provided with double sheaves F and its pivoted arm, and the ropes G with each other, with the cable C, and with the stopping-blocks L and P, provided with the dumping-block N, substantially as shown and described.

2. The combination of the hook H, provided with the pulley F', bail E, rope G, pulleys F, braces *e*, united by the clevis *f*, with the carriage B, substantially as described.

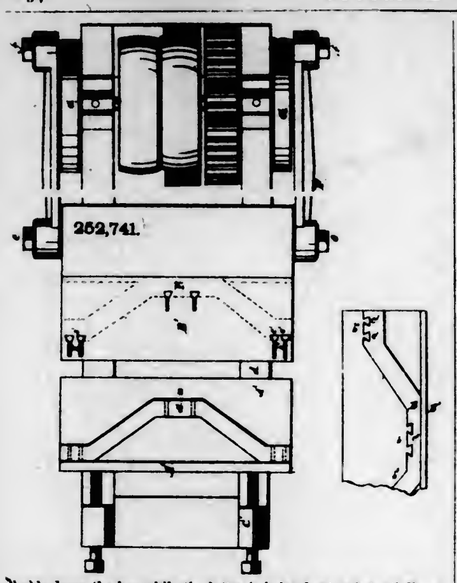
3. The combination of the catch *q* and the pivoted lever-catch *r* with the block P, provided with a clamp that is operated by the levers *l'* to retain the carriage at any desired point on the cable C, for the purpose of manipulating the bucket by means of the ropes G, as herein shown and described.

4. The stopping-block L, provided with a hook-catch, K, clamps *h i*, and loop M, in combination with the cable C, substantially as shown.

5. The combination of the movable dumping-block N, provided with arm *o* and plate *p*, with the block P, clamp *l'*, catch *q*, and pivoted lever-catch *r*, substantially as described.

252,741. MACHINE FOR BENDING AND PUNCHING ARCH-BARS. CHRISTOPHER G. CROSS, Chicago, assignor to Williams, White & Co., Moline, Ill. Filed Aug. 15, 1881. (No model.)

Claim.—1. The dies or formers for making arch or truck bars, consisting of a male and female die or former, each having a straight center, diagonal or oblique sides, and straight ends, the male die having the supporting-plate A', upon which the bar to be bent rests, and the female die having the supporting-plate B', which



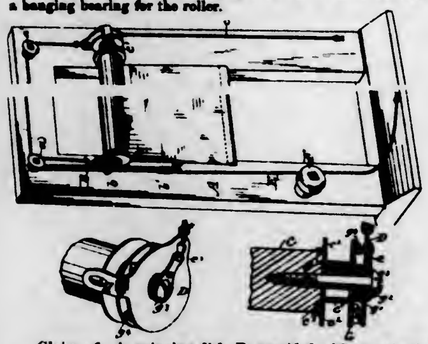
holds down the bar while the latter is being bent, substantially as described.

2. The dies or formers for making arch or truck bars, consisting of the male die A and the female die B, each having a straight center, diagonal or oblique sides, and straight ends, the male die being provided with base or supporting plate A′ and strengthening-plate A″, and the female die being provided with supporting-plate B′ and strengthening-plate B″, substantially as described.

3. The dies or formers for making arch or truck bars, consisting of a male and female die, each having a straight center, diagonal or oblique sides, straight ends, and a supporting-plate, and a back or strengthening plate, as described, the female die having dovetailed grooves to receive and hold punches, and the male die having openings for the punches to enter, between which dies the bar is bent and punched, substantially as described.

252,742. CURTAIN-FIXTURE. JOSEPH DARLING and BRADFORD M. GRISWOLD, Fairview, Pa. Filed Sept. 7, 1881. (No model.)

Brief.—A collar on the cord-spool of the roller passes through a slot in the swinging disk and is journaled in a hanger attached thereto. A projection on the inner face of the swinging disk is moved against projections on the end of the cord-spool to hold the roller in position. The curtain-roller is suspended by a cord fastened at one end to the swinging disk and at the other end to a hanging bearing for the roller.



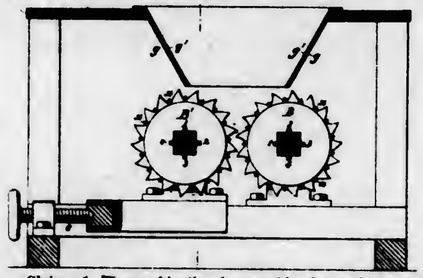
Claim.—1. A swinging disk, D, provided with a projection on its inner face, and having a slotted arm, through which passes the curtain-cord, in combination with a second disk secured to the end of the curtain-roller, and provided with a spool, d', a series of lugs or projections, g', and a collar, g^2, substantially as and for the purpose described.

2. The combination of a swinging disk having a projection, d'', a hanging piece or bearing, e, supported by said disk, a second disk secured to the curtain-roller, and provided also with a collar which passes through a slot in said swinging disk, and a cord passing through a slotted arm in said swinging disk, substantially as described.

3. In a curtain-fixture, the combination of the main cord for supporting the same, a swinging disk to which one end of said cord is attached, a hanging piece or bearing supported by said swinging disk, devices, as specified, for rolling and unrolling the curtain and holding the same in position, and a double knob for securing said main cord, substantially as described.

4. The combination of swinging disk D, main cord B, attached thereto, disk G, provided with fastening devices, as specified, guide-piece b, to which the other end of said cord is attached, link b', cord E, and knob F, substantially as described.

252,743. COKE-CRUSHER. JOSIAH E. DAVIS, Greensburg, Pa. Filed May 3, 1881. (No model.)

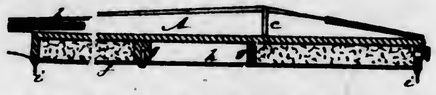


Claim.—1. The combination, in a machine for crushing coke, of a pair of rolls, each consisting of rings having large teeth with contiguous bases and smaller teeth between said large teeth, as set forth.

2. The combination of the crushing-rollers, each consisting of a series of toothed rings, with a hopper made in two parts, $g\,g'$, each comprising an end plate and side plates, the side plates of one overlapping and being guided by the side plates of the other, whereby lateral expansion and contraction of the hopper are permitted, as set forth.

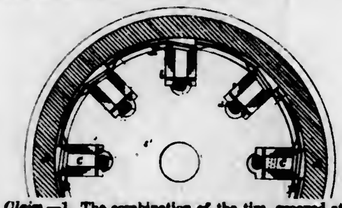
3. The combination of the angular shaft having a key-seat with toothed rings having corresponding angular openings and key-seats, as set forth.

252,744. VIOLIN. NICHOLAS B. DENNYS, Singapore, Straits Settlements. Filed Nov. 30, 1881. (No model.)



Claim.—A violin in which the board A, the sides $e\,e$, the back board, f, the partitions $g\,g$, and the door h are constructed, arranged, and combined as shown, and for the purpose specified.

252,745. CAR-WHEEL. JOHN V. DIPEMORE, Norwood, Mass. Filed Dec. 15, 1881. (No model.)



Claim.—1. The combination of the tire, grooved at its inner periphery as described, with the wheel-body and the series of spiral springs, arranged in sockets therein and in the tire, as set forth.

2. The combination of the tire, grooved at its inner periphery as described, with the body, the series of spiral springs arranged therein and in the tire, as set forth, and with the series of cams arranged in such body and to operate with the springs, substantially as specified.

3. The combination of the tire, grooved at its inner periphery as described, with the body, the series of spiral springs arranged therein and in the tire, as set forth, and with the cams, screw-bolts, and nuts applied to such body and arranged with the springs, substantially in manner and to operate as shown and explained.

4. The wheel-body, made in sections $a\,a'$ and socketed as described, in combination with the grooved tire and with the springs arranged in the sockets and tire, substantially in manner as set forth.

252,746. PROCESS OF MANUFACTURING BARBED WIRE. THOMAS H. DOBEN and CHARLES G. WASHBURN, Worcester, Mass. Filed Nov. 21, 1881. (No model.)



Claim.—1. The improved process of manufacturing four-pointed barbed wire, consisting in, first, running the ends of two barb-wires diagonally across the wire to be barbed, one on each side thereof; second, coiling said ends into a double coil, F, with the ends D′ and E′ left projecting in opposite directions; and, third, setting back the last-cut ends D and E of the barb-wires against the coils a and b by a sudden and quick blow and straightening out the ends at right angles, or nearly so, to the main wire, for the purposes set forth.

2. In the process of manufacturing four-pointed barbed wires, straightening the barb ends, and setting them back to lock their respective coils by a quick and sudden blow, substantially as described.

3. A four-point barb for wire-fencing, consisting of two wires spirally coiled with the coils approximately parallel throughout, but having a portion of the last coils at one or both ends slightly bent, as explained, so as to lock the two barb-wires together, substantially as described.

252,747. ANGLE-BRICK AND MOLD. JAMES F. EDWARDS, Washington, D.C. Filed Nov. 22, 1881. (Model.)



Claim.—1. An angle-brick having one of its longitudinal faces equal in length to that of a normal brick, and having a bevel face inclining at an obtuse angle from the plane of said longitudinal face and equal in extent to the width of a normal brick, substantially as and for the purpose described.

2. An obtuse-angled-wall structure composed of rectangular bricks of a normal or definite length and angle-bricks, each of the latter having one of its longitudinal faces equal in length to that of a normal brick, and having a bevel face inclining at an obtuse angle from the plane of said longitudinal face, which bevel face is equal in extent to the width of a full brick, substantially as and for the purpose described.

3. An angle-brick mold constructed substantially as described, and having the inner wall of its side a' equal to the length of a full brick and its side b' equal to the width of a full brick, and having also these two sides jointed together for forming a variable angle, as described.

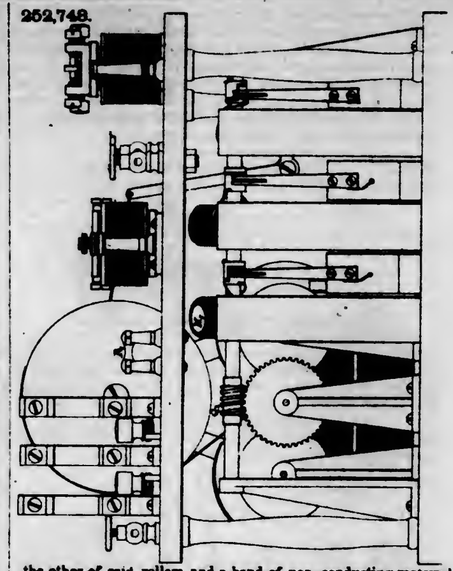
4. An angle-brick mold having its two sides which form the exposed faces of the brick connected together by an adjustable joint for varying said angle, as described.

5. An angle-brick mold having its two sides which form the exposed faces of the brick connected by a rule-joint with concave and convex edges, as described.

6. An angle-brick mold having its two sides which form the exposed faces of the brick connected by an adjustable joint, and a set-screw for fixing the position of the adjustable section, as described.

252,748. ELECTRIC LIGHTING APPARATUS. HOSEA W. FARNUM, Newport, R. I., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Jan. 19, 1880.

Claim.—1. The combination, substantially as hereinbefore set forth, of a generator of electricity, a circuit of conductors uniting the poles of said generator, one or more electric lamps included in said circuit, a rheostat consisting of flat metallic ribbon which is included in said circuit, two rollers, one composed of conducting and the other of non-conducting material, arranged substantially as described, for winding said ribbon back and forth from one to the other of said rollers, and a band of non-conducting material interposed between the several convolutions of the ribbon upon the non-conducting roller.



2. The combination, substantially as hereinbefore set forth, of a generator of electricity, a circuit of conductors uniting the poles of said generator, one or more electric lamps included in said circuit, a rheostat consisting of a ribbon of conducting material, which is capable of adjustment by being wound from a conducting to a non-conducting roller, and the reverse, and an additional actuating-roller for winding said ribbon in one direction or the other.

3. The combination, substantially as hereinbefore set forth, of a generator of electricity, a circuit of conductors uniting the poles of said generator, one or more electric lamps included in said circuit, a rheostat consisting of a ribbon of conducting material included in said circuit, which is capable of adjustment by being wound from a conducting to a non-conducting roller, and the reverse, and mechanism for winding said ribbon in one direction or the other, consisting of a roller, a driving-shaft, a shifting-pinion, and two toothed wheels which are driven in opposite directions by the same motor.

4. The combination, substantially as hereinbefore set forth, of a generator of electricity, a circuit of conductors uniting the poles of said generator, one or more electric lamps included in said circuit, a rheostat included in said circuit, consisting of a ribbon of conducting material, the resistance of which is capable of adjustment by winding the ribbon from a conducting to a non-conducting roller, and the reverse, a motor which effects such adjustment by moving in one direction, and a shifting or reversing device controlled by one or more independent electro-magnets, the respective action of which is determined by a regulator actuated by the current which passes through the rheostat.

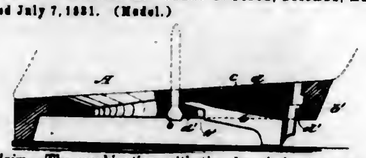
5. The combination, substantially as hereinbefore set forth, of a generator of electricity, a circuit of conductors uniting the poles of said generator, one or more electric lamps included in said circuit, and a rheostat or artificial resistance (included in said circuit) consisting of a thin flat metallic ribbon having a large radiating-surface.

252,749. PIPE-CUTTER. CHARLES PERTON, New York, N. Y. Filed Oct. 18, 1881. (No model.)



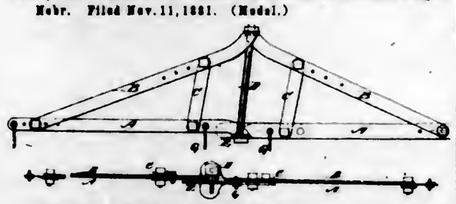
Claim.—The combination of the casing provided with an overhanging stationary jaw, the nut having a threaded bore and a shank arranged within the lower end of the casing, the transverse removable pins extending through the casing and shank of the nut, the movable block arranged within the casing and provided at its upper end with a pipe-cutting device, and a threaded rod extending through the opening in the nut and swiveled to the movable block, all substantially as and for the purpose described.

252,750. HORSESHOE. JAMES B. FINCH, Bozeman, Mont. Filed July 7, 1881. (Model.)



Claim.—The combination, with the shoe A, having recesses *a'*, elastic cushion *c*, and nail *c*, of the removable calk *b*, provided with flanges *b'*, substantially as shown and described, whereby said calk may be removed on withdrawing nail *c* without removing shoe A from the foot.

252,751. HARROW-EVENER. HERMANN H. FISCHER, Osage, Nebr. Filed Nov. 11, 1881. (Model.)

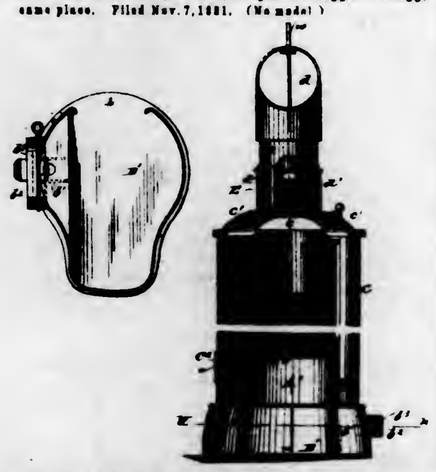


Claim.—1. The herein-described harrow-evener, consisting of two triangular frames hinged together at their bases, as set forth.

2. In a harrow-evener, the combination, with the harrow-frame F and the double-tree H, of the two triangular frames A B C and the hinging rod D, substantially as herein shown and described, as set forth.

3. An improved harrow-evener, consisting of the triangular frames A B C, hinged together at their bases and provided with the plate E, secured to the under side of one of the bars A, with its end projecting beyond said bar under the end of the other bar, substantially as and for the purpose set forth.

252,752. HEATING AND VENTILATING CARS. MICHAEL D. FITZGERALD, Bloomington, Ill., assignor to Maggie R. Flagg, same place. Filed Nov. 7, 1881. (No model.)



Claim.—1. In a heater and ventilator for cars, the combination of the base-chamber B', having opening *b*, its rear extended portion having ventilating-shaft D, communicating therewith, heater or furnace A, having smoke-pipe a^2, extending through upper portion of ventilating-shaft, casing C, surrounding top and sides of heater or furnace and having openings *c* through the top thereof, and register *c'* and air-chamber *b'*, located in base B, and communicating with space between casing and heater or furnace, and provided with opening b^2 and damper b^3, substantially in the manner, as and for the purpose herein shown and described.

2. In a heater and ventilator for cars, the combination of base-chamber B', having opening *b* and ventilating-shaft D, communicating therewith, heater or furnace A, having smoke-pipe extending through upper portion of ventilating-shaft, surrounding casing C, having registers c' c^2, connecting-pipe E, provided with valve or damper *e*, and air-chamber *b'*, having opening b^2 and damper b^3, said pipe E and air-chamber *b'* communicating with the space between casing C and heater or furnace, substantially in the manner as and for the purpose herein shown and described.

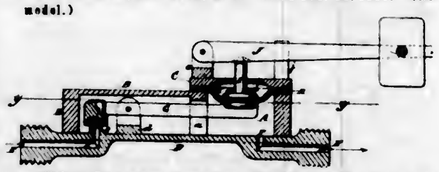
3. In a heater and ventilator for cars, the combination of base-chamber B', having opening *b*, ventilating-shaft D communicating therewith, and having damper or dampers *d'* near its upper end, and movable cowl or hood *d*, heater or furnace A, having smoke-pipe extending through upper portion of shaft D, outside casing, C, having registers c' c^2, pipe E, having valve or damper *e*, and air-chamber *b'*, having opening b^2 and damper b^3, said pipe E and air-chamber *b'* communicating with space between casing and heater or furnace, the several parts constructed and arranged relatively to each other substantially as herein shown and described.

252,753. CIGAR-HOLDER. WM. J. FITZGERALD, New Haven, Conn., assignor to Hobart B. Ives, same place. Filed July 22, 1881. (No model.)



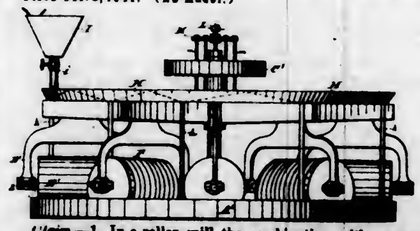
Claim.—The cigar or cigarette holder consisting of the parallel spring-plates A, having each a curved meeting jaw, B, and provided with a compressible spring, C C, between their uniting rivets or points *a*, substantially as and for the purpose set forth.

252,754. PNEUMATIC-PRESSURE REGULATOR. HUGH F. FITZPATRICK, New York, N. Y. Filed Feb. 13, 1881. (No model.)



Claim.—In a pressure-regulator, the separately-made bottom plate, D, provided with the valve-channels E F, the inlet-valve seat or nipple *e*, raised above the surface of said plate, and pivoting-lug *d*, in combination with the valve-lever G, fulcrumed to the said lug *d* and provided with valve *g* and diaphragm H, secured directly to the ends of said lever, and with the covers B C, stud I, and weighted lever J, all constructed and operating as shown and described.

252,755. ROLLER-MILL. CHARLES GATES, Brooklyn, Ohio. Filed Oct. 8, 1881. (No model.)



Claim.—1. In a roller-mill, the combination, with a central shaft and a stationary crown-gear, of a series of rolls and pinions and a series of spiral conveyers, said rolls and conveyers being constructed, substantially as described, to receive both a rotary motion on their own axes and a circular motion around the central shaft.

2. In a roller-mill, the combination, with the trough, of a spiral conveyer and a protecting disk or wheel secured to the outer end of the conveyer and of slightly greater circumference than the latter, substantially as set forth.

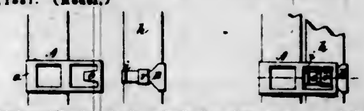
3. In a roller-mill, the combination, with the conveyer and its supporting-arm, of a scraper secured to said arm, substantially as and for the purpose set forth.

4. In a roller-mill, the combination, with a series of spiral conveyers and rolls, of a series of revolving hoppers, H, and a stationary hopper, I, substantially as set forth.

5. In a roller-mill, the combination, with the central shaft, the rolls, and their operating mechanism, of a plate, M, supported by bolts *m* and vertically adjustable, substantially as described.

6. The combination, with the central shaft, of the sleeve C and arms C^2, the supports D, and the rolls adapted to turn on their own axles, and gearing, substantially as described, for revolving said rolls around the central shaft, substantially as set forth.

252,756. CORSET-CLASP. WILLIAM F. GILBERT, Birmingham, Conn., assignor to Alvin E. Hewitt, same place. Filed Nov. 14, 1881. (Model.)



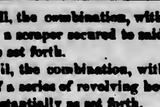
Claim.—The herein-described clasp for corsets, consisting of the one part, A, constructed with tongues or projections *a d*, bent down over the respective edges of the steel, and with a tongue, *c*, in an opening in the portion which extends beyond the edge of the steel, the said tongue projecting toward the steel, combined with the other part, B, constructed with an eye, *r*, to receive the said tongue *c*, and with an upwardly and outwardly projecting shoulder, *i*, to enter the opening in the other part, and with projections to clasp the said part B to its steel, substantially as described.

252,757. FIRE-KINDLER. ERWIN H. GLASKIN, Lower Cape, New Brunswick, Canada. Filed June 10, 1881. (No specimens.)

Claim.—1. The process of producing fire-kindling blocks, which consists in mixing dry sawdust with resin and oil, in the proportions, respectively, of five parts, one part, and one-sixteenth of one part, and then placing the mass in suitable molds and compressing it to the degree of one thousand pounds, or thereabout, to the square inch, for the purpose of compacting it into hard non-friable blocks, as set forth.

2. As an improved article of manufacture, a fire-kindling block composed of five parts sawdust, one part resin, and one-sixteenth part oil mixed together and densely compacted, so that the block is hard and non-friable, as specified.

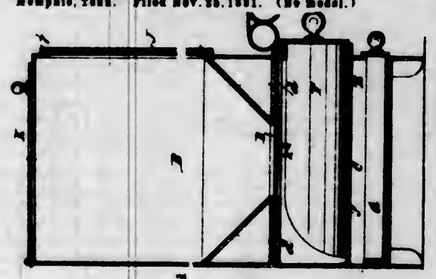
252,758. HOOF-PROTECTOR. JOHN M. GOODMAN, Mill Creek, Pa. Filed Oct. 5, 1881. (No model.)



Claim.—1. The hoof-protector herein shown and described, formed of the oppositely-curved parts A and B, formed of the bottom plates, *a* and *b*, and the side flanges, *c* and *d*, the parts being adapted to be secured to the feet of the animal, substantially as and for the purposes set forth.

2. The parts A and B, formed of the bottom plates, *a* and *b*, and the side flanges, *c* and *d*, and provided with the hook *e* and eye *f*, in combination with the hooked connecting-rod K and the strap H, substantially as and for the purposes set forth.

252,759. CANISTER OR STORE-CAN. DAVID F. GOODYEAR, Memphis, Tenn. Filed Nov. 25, 1881. (No model.)



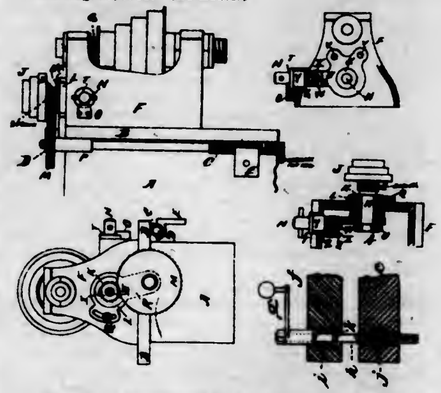
Claim.—1. The can A, divided into the compartments B and C, in combination with the slide D and removable scoop F, substantially as and for the purpose set forth.

2. The compartment B, having a hopper-shaped bottom, in combination with the slide D and compartment C, having the scoop F, substantially as and for the purpose set forth.

3. The slotted semi-cylindrical sleeve E, secured to the bottom of the compartment B, in combination with the scoop F and the tray G, substantially as and for the purpose set forth.

4. The slotted semi-cylindrical sleeve E, secured under the compartment B, in combination with scoop F, substantially as and for the purpose set forth.

252,760. ENGINE-LATHE. GEORGE A. GRAY, JR., Covington, Ky., assignor to George A. Gray, Jr., & Co., Cincinnati, Ohio. Filed Aug. 26, 1881. (No model.)



Claim.—1. The combination of bed A, having flange B, projecting outward therefrom, carriage-nut E, fitted to engage with the under side of the lead-screw, and the lead-screw C, journaled under the flange B and contacting against the under side thereof, substantially as and for the purpose set forth.

2. The combination of lead-screw C, having gear fitting end D, series of change-gears S, having a constant difference in number of teeth, as specified, stud-bearing K, arm R L, fitted to be adjusted on and around said stud-bearing, idle-gear M, journaled in a fixed position to said arm, stud H, arranged to be revolved by the lathe, as usual, and pinion I, fixed on said stud, and having its number of teeth equal to the constant difference between the gears S multiplied by the number of threads per inch on the lead-screw C, all constructed and arranged to operate substantially as and for the purpose set forth.

3. The combination, with reverse tumbler U and hand-cam N Y Z, of the sliding plug X, fitted to slide in the tumbler U, and having a transverse hole to serve as a bearing for the cam-pin Z, constructed and arranged to operate substantially as and for the purpose set forth.

4. The combination, with the reverse tumbler U and hand-cam N Y Z, of the plug X, fitted to slide in the tumbler and to furnish a bearing for the cam-pin Z, and having collar *a*, or equivalent projection, arranged to contact with the tumbler and serve as a stop to the sliding motion of the plug, all constructed and arranged to operate substantially as set forth.

5. The combination, with the reversing-tumbler, of the cam-body Y, having handle N and collar T, of the bearing which supports the cam-body, and the clamp O, bolted to said bearing and fitted to clamp the collar T against said bearing, all constructed and arranged to operate substantially as and for the purpose set forth.

6. The combination, with the lathe-carriage *c*, tilting rest *f*, pivoted above the carriage *c*, and crank-screw *h g*, for adjusting the tilting rest *f*, of the cylinders *i* and *j*, fitted in said carriage and rest, and bored and tapped to serve as bearing and nut for the screw *h*, substantially as and for the purpose set forth.

252,761. STEM-WINDING WATCH. CHAS. W. GROSCHE, New York, N. Y. Filed Aug. 23, 1881. (No model.)

Claim.—1. The combination, with the minute-wheel, the barrel-arbor wheel, the first winding-wheel, the second winding-wheel, and its carrying-lever, of the locking-lever adapted to engage with a stationary catch for holding the wheel-carrying lever in either

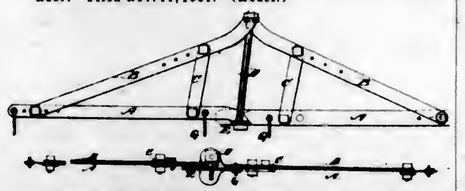
Claim.—The combination of the casing provided with an overhanging stationary jaw, the nut having a threaded bore and a shank arranged within the lower end of the casing, the transverse removable pins extending through the casing and shank of the nut, the movable block arranged within the casing and provided at its upper end with a pipe-cutting device, and a threaded rod extending through the opening in the nut and swiveled to the movable block, all substantially as and for the purpose described.

252,750. HORSESHOE. JAMES B. FINCH, Bozeman, Mont. Filed July 7, 1881. (Model.)



Claim.—The combination, with the shoe A, having recesses *a'*, elastic cushion *c*, and nail *e*, of the removable calk *b*, provided with flanges *b'*, substantially as shown and described, whereby said calk may be removed on withdrawing nail *e* without removing shoe A from the foot.

252,751. HARROW-EVENER. HERMANN H. FISCHER, Osage, Nebr. Filed Nov. 11, 1881. (Model.)

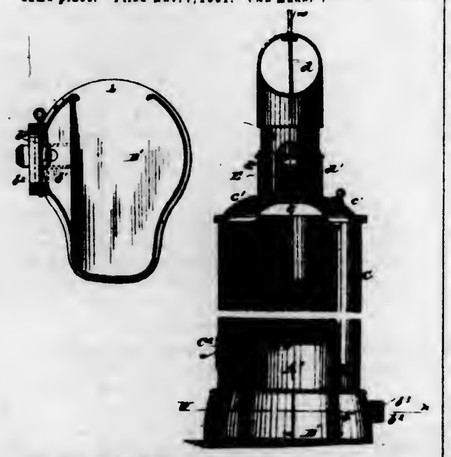


Claim.—1. The herein-described harrow-evener, consisting of two triangular frames hinged together at their bases, as set forth.

2. In a harrow-evener, the combination, with the harrow-frame F and the double-tree H, of the two triangular frames A B C and the hinging rod D, substantially as herein shown and described, as set forth.

3. An improved harrow-evener, consisting of the triangular frames A B C, hinged together at their bases and provided with the plate E, secured to the under side of one of the bars A, with its end projecting beyond said bar under the end of the other bar, substantially as and for the purpose set forth.

252,752. HEATING AND VENTILATING CARS. MICHAEL D. FITZGERALD, Bloomington, Ill., assignor to Maggie E. Flagg, same place. Filed Nov. 7, 1881. (No model.)



Claim.—1. In a heater and ventilator for cars, the combination of the base-chamber B', having opening *b*, its rear extended portion having ventilating-shaft D, communicating therewith, heater or furnace A, having smoke-pipe a^2, extending through upper portion of ventilating-shaft, casing C, surrounding top and sides of heater or furnace and having openings *c* through the top thereof, and register *c'* and air-chamber *b'*, located in base B, and communicating with space between casing and heater or furnace, and provided with opening b^2 and damper b^3, substantially in the manner, as and for the purpose herein shown and described.

2. In a heater and ventilator for cars, the combination of base-chamber B', having opening *b* and ventilating-shaft D, communicating therewith, heater or furnace A, having smoke-pipe extending through upper portion of ventilating-shaft, surrounding casing C, having registers *c' c²*, connecting-pipe E, provided with valve or damper *e*, and air-chamber *b'*, having opening b^2 and damper b^3, said pipe E and air-chamber *b'* communicating with the space between casing C and heater or furnace, substantially in the manner as and for the purpose herein shown and described.

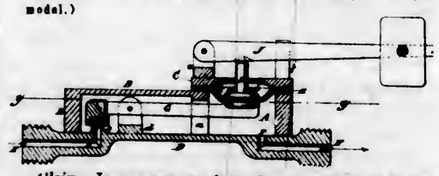
3. In a heater and ventilator for cars, the combination of base-chamber B', having opening *b*, ventilating-shaft D communicating therewith, and having damper or dampers *d'* near its upper end, and movable cowl or hood *d*, heater or furnace A, having smoke-pipe extending through upper portion of shaft D, outside casing, C, having registers *c' c²*, pipe E, having valve or damper *e*, and air-chamber *b'*, having opening b^2 and damper b^3, said pipe E and air-chamber *b'* communicating with space between casing and heater or furnace, the several parts constructed and arranged relatively to each other substantially as herein shown and described.

252,753. CIGAR-HOLDER. WM. J. FITZGERALD, New Haven, Conn., assignor to Hobart B. Ives, same place. Filed July 22, 1881. (No model.)



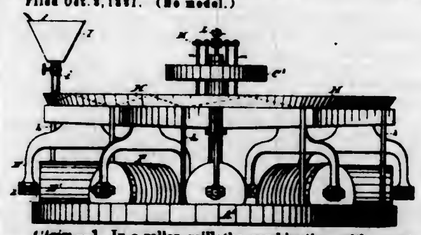
Claim.—The cigar or cigarette holder consisting of the parallel spring-plates A, having each a curved meeting jaw, B, and provided with a compressible spring, C C, between their uniting rivets or points *a*, substantially as and for the purpose set forth.

252,754. PNEUMATIC-PRESSURE REGULATOR. HUGH F. FITZPATRICK, New York, N. Y. Filed Feb. 12, 1881. (No model.)



Claim.—In a pressure-regulator, the separately-made bottom plate, D, provided with the valve-channels E F, the inlet-valve seat or nipple *e*, raised above the surface of said plate, and pivoting-lug *d*, in combination with the valve-lever G, fulcrumed to the said lug *d* and provided with valve *g* and diaphragm H, secured directly to the ends of said lever, and with the covers B C, stud I, and weighted lever J, all constructed and operating as shown and described.

252,755. ROLLER-MILL. CHARLES GATES, Brooklyn, Ohio. Filed Oct. 8, 1881. (No model.)



Claim.—1. In a roller-mill, the combination, with a central shaft and a stationary crown-gear, of a series of rolls and pinions and a series of spiral conveyors, said rolls and conveyors being constructed, substantially as described, to receive both a rotary motion on their own axes and a circular motion around the central shaft.

2. In a roller-mill, the combination, with the trough, of a spiral conveyor and a protecting disk or wheel secured to the outer end of the conveyor and of slightly greater circumference than the latter, substantially as set forth.

3. In a roller-mill, the combination, with the conveyor and its supporting-arm, of a scraper secured to said arm, substantially as and for the purpose set forth.

4. In a roller-mill, the combination, with a series of spiral conveyors and rolls, of a series of revolving hoppers, H, and a stationary hopper, I, substantially as set forth.

5. In a roller-mill, the combination, with the central shaft, the rolls, and their operating mechanism, of a plate, M, supported by bolts *m* and vertically adjustable, substantially as described.

6. The combination, with the central shaft, of the sleeve C and arms C', the supports D, and the rolls adapted to turn on their own axles, and gearing, substantially as described, for revolving said rolls around the central shaft, substantially as set forth.

252,756. CORSET-CLASP. WILLIAM F. GILBERT, Birmingham, Conn., assignor to Alvin B. Hewitt, same place. Filed Nov. 14, 1881. (Model.)



Claim.—The herein-described clasp for corsets, consisting of the one part, A, constructed with tongues or projections *a d*, bent down over the respective edges of the steel, and with a tongue, *c*, in an opening in the portion which extends beyond the edge of the steel, the said tongue projecting toward the steel, combined with the other part, B, constructed with an eye, *r*, to receive the said tongue *c*, and with an upwardly and outwardly projecting shoulder, *i*, to enter the opening in the other part, and with projections to clasp the said part B to its steel, substantially as described.

252,757. FIRE-KINDLER. EDWIN E. GLASKIN, Lower Cape, New Brunswick, Canada. Filed June 10, 1881. (No specimens.)

Claim.—1. The process of producing fire-kindling blocks, which consists in mixing dry sawdust with resin and oil, in the proportions, respectively, of five parts, one part, and one-sixteenth of one part, and then placing the mass in suitable molds and compressing it to the degree of one thousand pounds, or thereabout, to the square inch, for the purpose of compacting it into hard non-friable blocks, as set forth.

2. As an improved article of manufacture, a fire-kindling block composed of five parts sawdust, one part resin, and one-sixteenth part oil mixed together and densely compacted, so that the block is hard and non-friable, as specified.

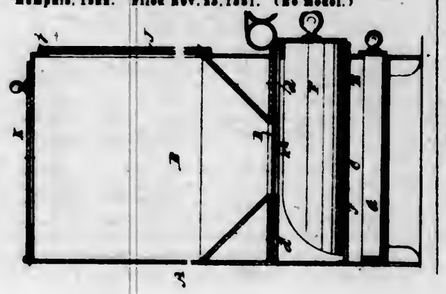
252,758. HOOF-PROTECTOR. JOHN M. GOODMAN, Mill Creek, Pa. Filed Oct. 6, 1881. (No model.)



Claim.—1. The hoof-protector herein shown and described, formed of the oppositely-curved parts A and B, formed of the bottom plates, *a* and *b*, and the side flanges, *c* and *d*, the parts being adapted to be secured to the feet of the animal, substantially as and for the purpose set forth.

2. The parts A and B, formed of the bottom plates, *a* and *b*, and the side flanges, *c* and *d*, and provided with the hook *e* and eye *f*, in combination with the hooked connecting-rod K and the strap H, substantially as and for the purpose set forth.

252,759. CANISTER OR STORE-CAN. DAVID F. GOODYEAR, Memphis, Tenn. Filed Nov. 23, 1881. (No model.)



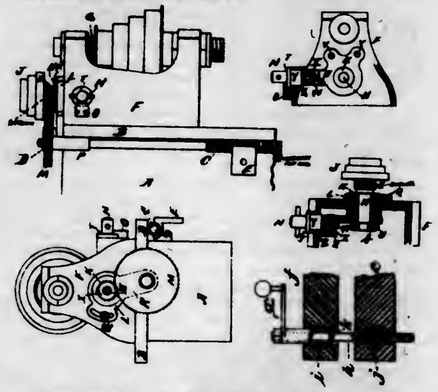
Claim.—1. The can A, divided into the compartments B and C, in combination with the slide D and removable scoop F, substantially as and for the purpose set forth.

2. The compartment B, having a hopper-shaped bottom, in combination with the slide D and compartment C, having the scoop F, substantially as and for the purpose set forth.

3. The slotted semi-cylindrical sleeve E, secured to the bottom of the compartment B, in combination with the scoop F and the tray G, substantially as and for the purpose set forth.

4. The slotted semi-cylindrical sleeve E, secured under the compartment B, in combination with scoop F, substantially as and for the purpose set forth.

252,760. ENGINE-LATHE. GEORGE A. GRAY, Jr., Covington, Ky., assignor to George A. Gray, Jr., & Co., Cincinnati, Ohio. Filed Aug. 30, 1881. (No model.)



Claim.—1. The combination of bed A, having flange B, projecting outward therefrom, carriage-nut E, fitted to engage with the under side of the lead-screw, and the lead-screw C, journaled under the flange B and contacting against the under side thereof, substantially as and for the purpose set forth.

2. The combination of lead-screw C, having gear fitting end D, series of change-gears S, having a constant difference in number of teeth, as specified, stud-bearing K, arm R L, fitted to be adjusted on and around said stud-bearing, idle-gear M, journaled in a fixed position to said arm, stud H, arranged to be revolved by the lathe, as usual, and pinion I, fixed on said stud, and having its number of teeth equal to the constant difference between the gears S multiplied by the number of threads per inch on the lead-screw C, all constructed and arranged to operate substantially as and for the purpose set forth.

3. The combination, with reverse tumbler U and head-cam N Y Z, of the sliding plug X, fitted to slide in the tumbler U, and having a transverse hole to serve as a bearing for the cam-pin Z, constructed and arranged to operate substantially as and for the purpose set forth.

4. The combination, with the reverse tumbler U and head-cam N Y Z, of the plug X, fitted to slide in the tumbler and to furnish a bearing for the cam-pin Z, and having collar *a*, or equivalent projection, arranged to contact with the tumbler and serve as a stop to the sliding motion of the plug, all constructed and arranged to operate substantially as set forth.

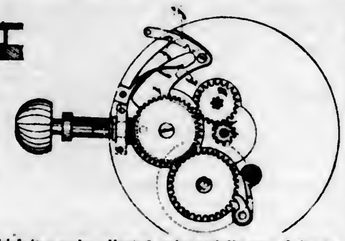
5. The combination, with the reversing-tumbler, of the cam-body Y, having handle N and collar T, of the bearing which supports the cam-body, and the clamp O, bolted to said bearing and fitted to clamp the collar T against said bearing, all constructed and arranged to operate substantially as and for the purpose set forth.

6. The combination, with the lathe-carriage *e*, tilting rest *f*, pivoted above the carriage *e*, and crank-screw *h g*, for adjusting the tilting rest *f*, of the cylinders *i* and *j*, fitted in said carriage and rest, and bored and tapped to serve as bearing and nut for the screw *h*, substantially as and for the purpose set forth.

252,761. STEM-WINDING WATCH. CHAS. W. GREGORY, New York, N. Y. Filed Aug. 23, 1881. (No model.)

Claim.—1. The combination, with the minute-wheel, the barrel-arbor wheel, the first winding-wheel, the second winding-wheel, and its carrying-lever, of the locking-lever adapted to engage with a stationary catch for holding the wheel-carrying lever in either

252,761



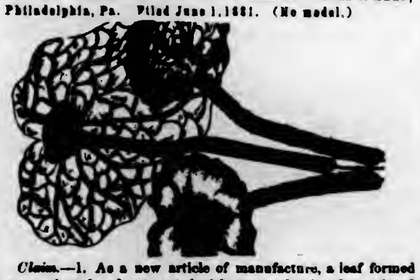
position to which it may be adjusted, substantially as and for the purpose specified.

2. The combination, with the wheel-carrying lever and its second wheel, the barrel-arbor wheel, and the minute-wheel, of the notched locking-lever and a spring adapted to move said locking-lever into engagement with its catch and to move said wheel-carrying lever to bring its wheel into engagement with the wheel on the barrel-arbor, substantially as specified.

3. The combination, with lever I, of the locking-lever J, pivoted to said lever, adapted to engage with a stationary catch, and having an arm, *k*, and the spring *l*, bearing on said arm, substantially as and for the purpose specified.

4. The combination, in a watch, with the dial-plate, the back plate, and the first winding-wheel or stem-wheel, of a block fitting and clamped between said plates, steady-pins for holding it against lateral movement, and a bearing for said wheel, formed partly in said dial-plate and partly in said block, substantially as and for the purpose specified.

252,762. ARTIFICIAL LEAF AND PLANT. CARL I. HANS, Philadelphia, Pa. Filed June 1, 1881. (No model.)



Claim.—1. As a new article of manufacture, a leaf formed of paper, shaped and cut, coated with wax, and painted or printed with oil color, the latter being on the surface of the wax coating, substantially as and for the purpose set forth.

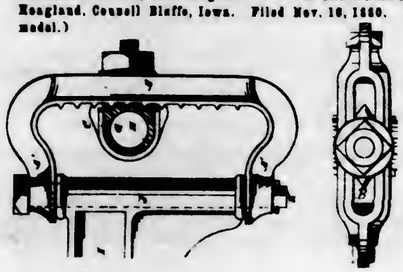
2. In artificial leaves and flowers, stems formed of fibrous material having the ends of the threads thereof spread out, making sockets, flaring beds, or places of attachment, as at *a*, substantially as and for the purpose set forth.

3. Stems formed of fibrous material with a core of wire and saturated or coated with wax, substantially as and for the purpose set forth.

4. Stems formed of fibrous material saturated or coated with wax, rubbed or teased, substantially as and for the purpose set forth.

5. Paper leaves coated with wax and colored in oil, in combination with stems of fibrous material having stiffening-cores and wax coatings, substantially as and for the purpose set forth.

252,763. COUPLING FOR CULTIVATOR-BEAMS. JAMES T. HAMILTON, Hallue, Ill., assignor to himself and WILLIAM E. ROAGLAND, Council Bluffs, Iowa. Filed Nov. 10, 1880. (No model.)



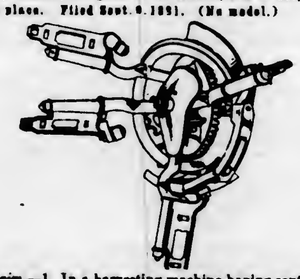
Claim.—1. In a cultivator, a coupling for the plow-beams, having a section, A A′, provided with the slot B and adapted to receive the forward end of the plow-beam, in combination with an eyebolt or connection with the sleeve or axle, for allowing vertical play of the section to raise and lower the forward end of the plow-beam, substantially as and for the purpose specified.

2. In a cultivator, a coupling for the plow-beams, having a section, A A′, provided with the slot B and adapted to receive the forward end of the plow-beam, in combination with an eyebolt having a body, C, to receive the axle-sleeve, a screw-threaded stem, E, to receive a nut, and shoulder or flange D, to enter the slot B and sustain the section in a vertical position when the parts are together, substantially as and for the purposes specified.

3. In a cultivator, a coupling for the forward end of the plow-beams, having a section, A A′, provided with a slot, B, with the edges or faces adjacent to the slot serrated or grooved, and adapted to receive the forward end of the plow-beam, in combination with an eyebolt, C D E, and sleeve G, having a serrated or grooved face to engage the corresponding face of the part A for maintaining the coupling in a vertical position and adding steadiness to the parts, substantially as specified.

4. In a cultivator, a coupling for attaching the plow-beams, consisting of the section A A′, having a slot, B, the eyebolt C D E, the sleeve G, having the longitudinal opening H, the plate I J, and the bolt K, all constructed and arranged substantially as and for the purposes specified.

252,764. REAPING-MACHINE. JOHN HANAIS, Brantford, Ontario, Canada, assignor to A. Harris, Son & Co., (Limited,) same place. Filed Sept. 9, 1881. (No model.)



Claim.—1. In a harvesting-machine having continuously-revolving reeling and raking mechanism, a rake-arm having a spindle upon which the rake-holder rotates, said arm made so that the axis of its spindle, if prolonged, would strike the axis of the joint-bolt connecting it to the crown-wheel, in combination with a friction-roller attached to the rake-holder and working upon a stud, the axis of which, if prolonged, would strike the axis of the joint-bolt and also the axis of the crown-wheel, for the purpose of allowing the friction-rollers to track smoothly on its guide at all points in the revolution of the crown-wheel and in the rotation of the rake upon the spindle of the rake-arm, substantially as described.

2. A rake-arm hinged to the crown-wheel and carrying a rake-holder hinged thereon, the axis of the hinge, if prolonged, intersecting the axis of the joint-bolt connecting the rake-arm to the crown-wheel, and the friction-roller supported on the rake-holder, its axis, if prolonged, also intersecting the pivot of the rake-arm, in combination with a gate hinged to the guiding-track at an opening in said track on the grain side of the machine, for the purpose of raising the rake-arm, rake-holder, and rake, after passing the cutters, to pass over the grain on the platform.

3. In combination with a rake-arm hinged to the crown-wheel, a rake-holder hinged thereon, said rake-holder having a downward and inward inclined projecting arm provided with a friction-roller centered on the axis of the joint-bolt, as described, and a projection adapted to engage with a notch in said arm to permit a slight movement of the rake-holder, so that when the teeth of the rake have passed the cutters and come in contact with the grain the rake-head is thrown into a slanting position, for the purpose of preventing the rakes, when reeling, from disturbing the grain on the platform when the rakes are raised to pass over the platform.

4. A rake-arm hinged to the crown-wheel and carrying a rake-holder hinged thereon, said rake-holder having a downward and inward inclined projecting arm provided with a friction-roller centered on the axis of the joint-bolt, as described, in combination with a projecting flange secured to or cast upon the guiding-track at a point just in front of the cutter-bar, for the purpose of keeping the rakes in a vertical position when reeling the grain to the cutters.

5. A rake-arm hinged to the crown-wheel and carrying a rake-holder hinged thereon, said rake-holder having a downward and inward inclined projecting arm provided with a friction-roller centered on the axis of the joint-bolt, as described, in combination with a gate hinged to the guiding-track at an opening on the grain side of the machine, which, when closed, causes the rakes to keep a vertical position and sweep the grain from the platform.

6. A rake-arm hinged to the crown-wheel and carrying a rake-holder hinged thereon, said rake-holder having a downward and inward inclined projecting arm provided with a friction-roller centered on the axis of the joint-bolt, as described, in combination with a movable track or throat at the delivery side of the platform, for the purpose of controlling the delivery of the sheaf in different conditions of crop.

7. A rake-arm hinged to the crown-wheel and carrying a rake-holder hinged thereon, said rake-holder having a downward and inward inclined projecting arm provided with a friction-roller centered on the axis of the joint-bolt, as described, in combination with eccentric washers and step in the rake-holder, for the purpose of adjusting the rakes at either end to the platform.

8. A rake-arm hinged to the crown-wheel and carrying a rake-holder hinged thereon, having a downward and inward inclined projecting arm provided with a friction-roller centered on the axis of the joint-bolt, as described, in combination with the cam-stud on which said roller revolves, for the purpose of adjusting the roller to the guiding-track.

9. The lever N, consisting of two parts, N′ N″, and the spring O between said parts, in combination with a crown-wheel having suitable projections for operating said lever and connections, substantially as described, between the lever and the gate in the guiding-track, as set forth.

10. In a harvesting-machine having continuously-revolving reeling and raking mechanism, a rake-arm the axis of its spindle, if prolonged, intersecting the axis of the joint-bolt connecting it to the crown-wheel, and a rake-holder hinged on said arm, in combination with a friction-roller attached to the rake-holder and working upon a stud the center line of which, if prolonged, would intersect the axis of the joint-bolt and also the axis of the crown-wheel, for the purpose of allowing the friction-roller to track smoothly on its guide at all points in the revolution of the crown-wheel.

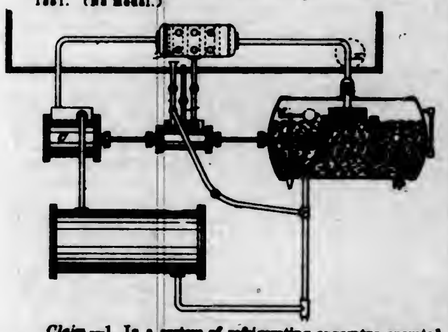
252,765. GALVANIC PAD. LUDWIG HECHINGER, Rochester, N.Y. Filed May 10, 1881. (No model.)



Claim.—1. In a galvanic pad, the combination of the slotted disks provided with the square notches *d d d* in the outer edges and the holes *f f f* coincident therewith, and the thin metallic clasps *g g*, fitting flush in the notches and clasped through the holes, as shown and described, and for the purpose specified.

2. In a galvanic pad, the combination of the interior disks provided with slots crossing at right angles, and the exterior disks imperforate and provided with corrugations or grooves crossing the adjoining slots at right angles, as herein shown and described.

252,766. DYNAMIC DRY-AIR REFRIGERATING APPARATUS. HERRMANN HILL, South Norwalk, Conn. Filed Sept. 14, 1881. (No model.)



Claim.—1. In a system of refrigerating apparatus operated dynamically, the means of utilizing the heat of compression by transferring it to the cylinder of the expanding-engine to expand the air in it and thereby increase its power in operating a compressor, as hereinbefore set forth.

2. An air or gas expanding engine in a chamber or jacket containing a liquid, as water or other suitable element, whereby the heat of compression is transferred to the air performing work in the expanding-engine, as hereinbefore set forth.

3. The combination of an air or gas expanding engine, located in a liquid medium for absorbing and transferring heat, with a prime or first compressor for giving the initial power, and by which a second compressor may be operated, as hereinbefore set forth.

4. The combination of a prime air-compressor with an expanding-engine located in a liquid for transferring the heat of compression and a tank or reservoir for distributing the cold in a chill-room or preserving-chamber, as hereinbefore set forth.

5. The combination of an expanding-engine in a tank or reservoir for holding a transferring-liquid, as hereinbefore described, with an exchange-chamber having circulating-pipes connecting with the cooling-room, whereby the temperature of the air in its passage between the expanding-engine and the chill-room is equalized, as hereinbefore set forth.

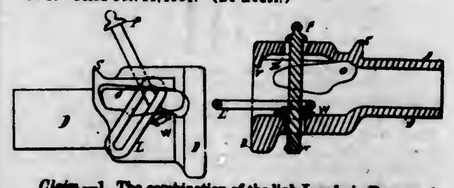
6. The combination of an expanding-engine with the air-reservoir in a chill-room and an intermediate chamber for exchanging and equalizing the temperature of the air while under pressure, as hereinbefore set forth.

7. The exchange-chamber L, formed with a water-receptacle, through which tubes extend to receive the cold air from the expanding-engine and transfer its cold to the air passing toward the chill-room and again absorb the heat from the air as it passes to the expanding-engine, as hereinbefore set forth.

8. The combination of the supplemental engine with the air-chamber in the chill-room and the chill-room itself, and so connected to the other portions of the apparatus that the overplus of pressure and cold air may be utilized from time to time, as hereinbefore set forth.

9. The combination of the perforated inlet-pipe with the valve-chest of the air-expanding engine, located in a chamber or jacket, as hereinbefore set forth.

252,767. CAR-COUPLING. CHARLES L. HORACK, Brooklyn, N.Y. Filed Oct. 14, 1881. (No model.)



Claim.—1. The combination of the link L and pin P, secured to the draw-head D, said draw-head being constructed with the recess Y on its face and with the side opening, O, for the purpose of passing through the same the stationary link L, substantially as described.

2. The combination of a link, L, and pin P, secured to the draw-head D, said draw-head being provided with the side opening, O, for the purpose of passing through the same the end of the stationary link L, substantially as described.

3. The combination of the link L and pin P, secured to the draw-head D, said draw-head being constructed with the side opening, O, for receiving the stationary link L, and the lip X, for preventing it from sliding out of the draw-head after another link has been introduced, substantially as described.

4. The combination of the stationary link L, pin P, and washer W with the draw-head D, said draw-head being constructed with the side opening, O, for the purpose of passing through it the rear end of the stationary link, and with the lip V, for protecting the washer and the forward end of the stationary link when in an elevated position.

5. The combination of a link, L, and pin P, secured to the draw-head D by means of the washer W, said draw-head being provided with the side opening, O, for the purpose of passing through the same the end of the stationary link L, substantially as described.

6. The combination of the link L and pin P, secured to the draw-head D by means of the washer W, said draw-head being constructed with the recess Y on its face, and with the side opening, O, for the purpose of passing through the same the stationary link L, substantially as described.

7. The combination of the link L and pin P, secured to the draw-head D by means of the washer W, said draw-head being

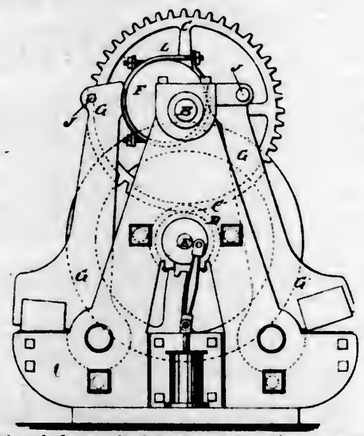
constructed with the side opening, O, for receiving the stationary link, and the lip Z, for preventing it from sliding out of the draw-head after another link has been introduced, substantially as described.

8. The combination of the link L and pin P, secured to the draw-head D by means of the washer W, said draw-head being constructed with the side opening, O, the lips V and Z, and the recess Y, all substantially as specified.

9. The combination of the link L, pin P, and washer W with the draw-head D, the upper part of the lower pin-hole in said draw-head being made to conform with the lower side of the washer W, substantially as described.

10. The combination of a stationary link, pin, and washer with a draw-head, the latter being provided with a side opening for receiving the stationary link when not required for coupling purposes, and constructed with a shoulder or projection back of said opening, for the purpose of protecting the stationary link.

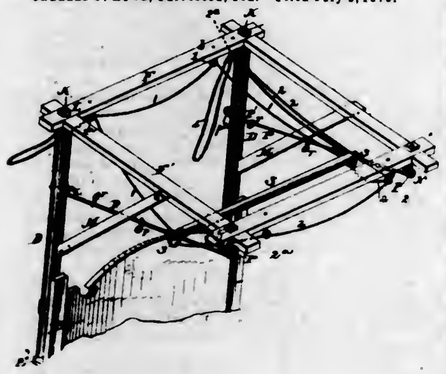
252,768. MECHANISM FOR CONVERTING ROTARY INTO OSCILLATING MOTION. JULIUS HORNIG, Jersey City, N. J. Filed Aug. 6, 1881. (No model.)



Claim.—1. In a mechanism for converting rotary into oscillating motion, the combination, with the rotating eccentric F and the oscillating lever G, of the roller I or segment I' and the break-pin J, substantially as herein shown and described, whereby the breaking of the said lever will be prevented should its movement be obstructed, as set forth.

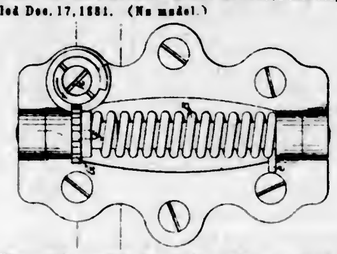
2. In a mechanism for converting rotary into oscillating motion, the combination, with the eccentric-strap L and the break-pin J, of the arm M N, having a slot or clearance-space, O, substantially as herein shown and described, whereby the said arm will be kept from being broken should the oscillating lever be obstructed, as set forth.

252,769. COMBINED MOSQUITO-BAR FRAME AND CANOPY. CHARLES P. HOWE, Galveston, Tex. Filed July 8, 1879.



Claim.—The combination, with the rectangular detachable canopy-frame, of bolts K, rigidly securing it to the posts D D, the folding brace-arms M, the inclined guide-rods P, connected to posts D and also to eyebolts at the outer ends of the canopy-frame, the bar S, adapted to slide on the said inclined rods P, and cords 1 and 2, arranged in the manner and for the purposes described.

252,770. SPRING-HINGE. HENRY HOWSON, Philadelphia, Pa. Filed Dec. 17, 1881. (No model.)

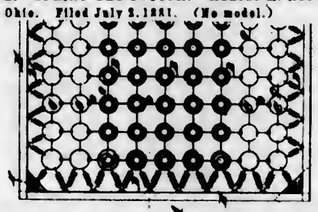


Claim.—The combination of the pintle, spring, and leaves of a spring-hinge with a worm and worm-wheel, substantially as described.

252,771. MANUFACTURE OF GELATINE AND GLUE FROM ANIMAL REFUSE OR OFFAL. ALFRED JEAN HUET, Paris, France. Filed Dec. 29, 1881. (No specimens.)

Claim.—The improvement in the manufacture of glue and gelatine, consisting in treating the gelatine-yielding materials with chloride of aluminum, as and for the purpose described.

252,772. SPRING BED-BOTTOM. MARCUS A. HUNT, Cincinnati, Ohio. Filed July 5, 1881. (No model.)



Claim.—1. A suspended spring-bed consisting of a series of vertically-arranged hour-glass springs connected to each other at the top and bottom by hooks or links, in combination with a surrounding quadrilateral frame and links connecting both the upper and lower portions of the vertical springs with the upper and lower edges of the surrounding frame, substantially as and for the purposes described.

2. The combination, with a series of vertically-arranged springs, B, and a surrounding frame, A, of the adjustable link-springs D, consisting of two sections, each provided with a hooked end, *d*, and a spiral coil, *d'*, the said coils intertwining with each other and the hooks of the two sections being connected respectively with the vertical springs and the surrounding frame, substantially as described.

3. In combination with the vertically-arranged spiral springs and surrounding supporting-frame, the adjustable intertwining spiral coils *d'*, each provided at its outer end with a hook, *d*, which are connected respectively to the vertical springs, and the spool arranged entirely within the coils *d' d'*, substantially as and for the purposes described.

4. A quadrilateral suspending-frame of a spring bed-bottom, composed of slats E E, attached to corner supporting-blocks, F and separated by blocks *f*, substantially as herein set forth.

5. A spring bed-bottom composed substantially of the frame A, a series of vertically-arranged spiral springs attached transversely to each other by two series of transverse hooks or links, e and all connected to the said frame by the adjustable spring connecting-links D, as herein set forth.

252,773. ROTARY STEAM-ENGINE. PETER T. HYDEN and ADOLPH LARSON, Chicago, Ill. Filed May 16, 1881. (No model.)

Claim.—1. In a rotary steam-engine, the cylinder-plate C, provided with pins *b b*, slit K, steam passage or chamber W, bearing *c*, outlets M M, and cover N, in combination with cylinder-plate B, substantially as described and shown, and for the purpose set forth.

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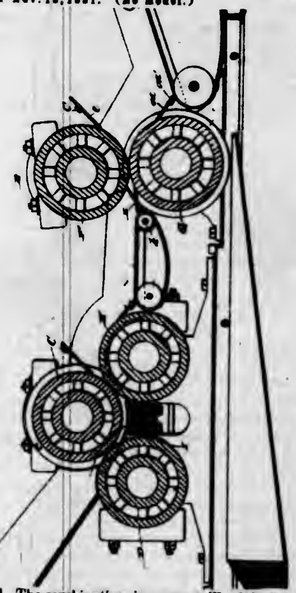
2. In a rotary steam-engine, the cylinder-plate B, provided with holes *a a*, steam passage or chamber W, bearing *c*, slit K, steam-passages *g g*, chamber H, ledges *h h*, and cap F, having inlets G G, in connection with cylinder-plate C, and in combination with valve L, substantially as described and specified, and for the purpose set forth.

3. The sliding valve L, composed of pieces *l* and *k*, at right angles to each other, in combination with chamber H and slit K, whereby the steam is let in and shut off, substantially as described and shown.

4. The combination, in a rotary steam-engine, of the rod P, arm R, spring T, shoulders *s s*, rod J, and valve L, substantially as described and shown.

5. The combination, in a rotary steam-engine, of the cylinder-plate C, provided with pins *b b*, slit K, steam-passage W, outlets M M, cover N, and bearing *c*, the cylinder-plate B, provided with holes *a a*, bearing *c*, steam-passage W, slit K, steam-passages *g g*, chamber H, cover N, the cap F, having inlets G G, pipe *r*, with regulating-cock *t*, valve L, having ports *l* and *k*, rod J, spring V, arm R, rod P, spring T, shoulders *s s*, wheel O, shaft E, and piston D, having ends *d d* and packing-rings Q Q, all substantially as described and shown, and for the purpose set forth.

252,774. SUGAR-MILL. CHARLES S. JOHNSON, New Orleans, La. Filed Nov. 18, 1881. (No model.)



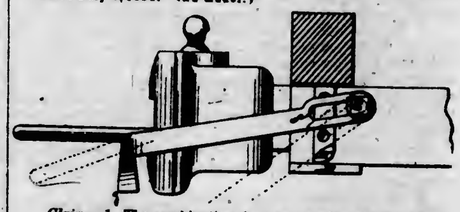
Claim.—1. The combination, in a cane-mill, of the herein-described two separate sets of rolls, the rolls of the second set having their axes arranged on an inclined plane which inclines backwardly or rearwardly toward the rolls of the first set of rolls, substantially as described.

2. The combination, in a cane-mill, of the herein-described first set of rolls with a second separate set of rolls of greater diameter than the rolls of the first set, substantially as shown and described, said sets of rolls being driven at the same rate of speed, whereby the speed at which the bagasse is drawn between the larger rolls of the second set will be greater than that at which the bagasse has been drawn between rolls of the first set, as and for the purpose set forth.

3. The combination, in a cane-mill, of the first set of grooved rolls with the second set of grooved rolls of larger diameter, the axes of which are arranged in an inclined plane which inclines backwardly and rearwardly toward the first set of rolls, substantially as described.

4. The combination, in a cane-mill, of the rolls C D E with the guide I, the scraper-plate J, rock-shaft J', and the weighted arm connected with said rock-shaft, substantially as described.

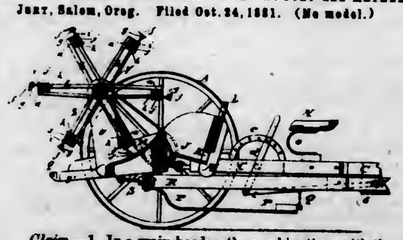
252,775. CAR-COUPLING. FERDINAND JOHNSON, Toledo, Ohio. Filed July 2, 1881. (No model.)



Claim.—1. The combination, in a car-coupling, of the draw-head with the swinging bail, formed with an abutment, *g*, at the front and with rear slotted ends, said bail being pivoted by pins passing through its slots, and being arranged to elevate the link to a horizontal position, ready for coupling, substantially as described.

2. The combination, in a car-coupling, of the draw-head with the pivoted bail formed at its front portion with the curved recess *f*, for receiving the link, and with the wedge-shaped abutment *g*, projecting downwardly at right angles to the bail and having an upward taper, substantially as described.

252,776. GRAIN-HEADER. JOHN W. JOBY and ARTHUR B. JOBY, Salem, Oreg. Filed Oct. 24, 1881. (No model.)

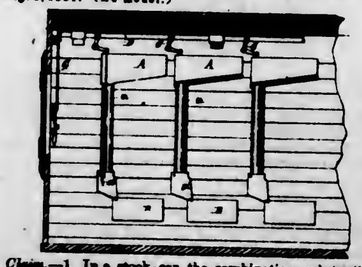


Claim.—1. In a grain-header, the combination, with the reel-bars a, the curved platform H, and the receiving-box I, of the lugged plates *i*, the rods *h* and their springs *j*, the knife-holding plates *g*, and the knives *f*, substantially as herein shown and described, whereby the grain-heads will be cut from the stalks and deposited in the box, as set forth.

2. In a grain-header, the combination, with the wheels and axle A B, the tongue C, the curved platform H, and the frame R, of the receiving-box J, having opening K and gate L, and the swinging platform P, substantially as herein shown and described, whereby the heads are received and can be readily marked, as set forth.

3. In a grain-header, the combination, with the axle B, the curved platform H, and the hinged tongue C, provided with the keeper *b*, of the hinged frame R and means for sliding the same forward and backward in the said keeper, substantially as herein shown and described, whereby the front edge of the platform can be adjusted at any desired distance from the ground, as set forth.

252,777. STOCK-CAR. ISIDOR KITSEE, Cincinnati, Ohio. Filed Aug. 9, 1881. (No model.)



Claim.—1. In a stock-car, the combination, substantially as specified, of feed-box A, a measuring-spout, *a*, closed at its lower end by a valve, *a'*, with a valve-rod, a crank, C, and crank-actuating bar D.

2. The combination, substantially as herein before set forth, of feed-boxes A, their measuring-spouts *a*, valves *a'*, and valve-rods with cranks C, sliding rod D, lever E, sliding bar F, its connecting-links, and lever G, said parts being arranged to simultaneously supply the troughs B with feed, as set forth.

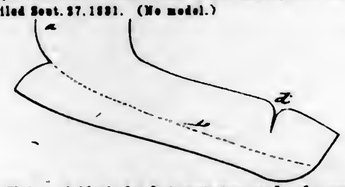
3. In a stock-car, the combination of reservoir H, divided measuring-vessel I, and pipes J with lever K, sliding bar L, and lever M, arranged to operate substantially as specified.

4. The combination, substantially as before set forth, of the car-body, the stalls arranged in longitudinal series therein, the water-troughs for said stalls, a water-supply vessel at one end of the car having pipes leading therefrom to supply the troughs, and the nipples for discharging into said troughs, the opening in each nipple being larger than those intervening between it and the supply-vessel.

5. The combination, substantially as specified, of the car-body and staples O with stall-sides composed of side pieces, N, eye-straps *n*, and pins *o*.

6. The combination, as specified, of the car-body having vertical staple-bars *q'*, secured thereto, with a chain and sliding ring, *q*, and a securing device consisting of two pivoted members, Q, and a locking-member, *q*, for the purpose set forth.

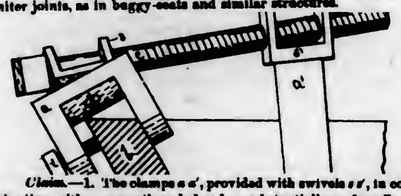
252,778. FOOT-PROTECTOR. WM. KLEIN, New York N. Y. Filed Sept. 27, 1881. (No model.)



Claim.—A blank for foot-protectors, made of a continuous U-shaped piece with a rounded-off toe part, *a*, side extension-flaps, *b*, and inner slits, *d*, near the rear ends of the blank, substantially as set forth.

252,779. CLAMP. ANDREW KRAISS, New Milford, Ohio. Filed Dec. 14, 1881. (No model.)

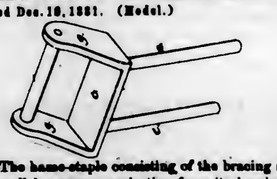
Brief.—The device is designed for holding the parts together in forming glue joints, and is especially adapted to putting together miter joints, as in buggy-seats and similar structures.



Claim.—1. The clamps *a a'*, provided with swivels *c c'*, in combination with a screw-threaded rod, *c*, substantially as described.

2. The screw-threaded rod *c*, in combination with and diagonal to swivels *c c'* and clamps *a a'*, substantially as described.

252,780. HAME-STAPLE. CHRISTIAN LARSEN, Black Earth, Wis. Filed Dec. 16, 1881. (Model.)

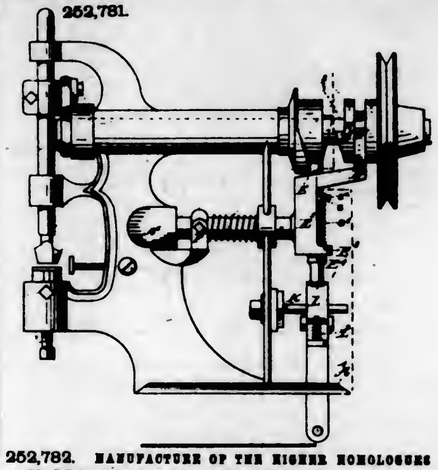


Claim.—The hame-staple consisting of the bracing shoulder-piece *a*, the parallel prongs *c*, projecting from its bearing-face *d*, the oblique perforated lugs *g*, extending from its outer face, and the roller-bearing, substantially as specified.

252,781. BUTTON-HOLE-CUTTING MACHINE. CHARLES H. LAMBARD, Middleborough, Mass., assignor of one-half to Horatio Barrows, same place. Filed Oct. 31, 1881. (No model.)

Claim.—In a button-hole-cutting machine, the combination of the clutch device and the lock-pin E with the lock-pin-withdrawing device, consisting of the arms L L, springs L^1 L^2, bar L^3 L^4, and stationary throw-off pins K K, all operating together substantially as described, and for the purpose set forth.

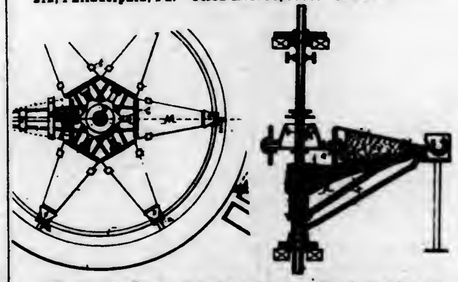
252,781.



252,782. MANUFACTURE OF THE HIGHER HOMOLOGUES OF PHENOL, NAPHTHOL, AND RESORCIN. ADOLF LIEBMANN, Berlin, Prussia, Germany. Filed Aug. 16, 1881. (Specimens.)

Claim.—The process above described for the transformation of phenol, naphthol, and resorcin into their higher homologues, the same consisting in subjecting them while in a suitable still to the action of the corresponding fatty alcohols in the presence of chloride of zinc or similar metallic salts producing condensation, all substantially as specified.

252,783. SUGAR CENTRIFUGAL MACHINE. S. MORRIS LILLIS, Philadelphia, Pa. Filed Mar. 18, 1880. (Model.)



Claim.—1. The combination, in a centrifugal machine, of molds formed radially in the basket of the machine by radial partitions with a central hopper mounted on the axle of the machine and revolving with it and communicating with the various molds, substantially as specified.

2. The combination, in a sugar centrifugal machine, of molds supported horizontally and radially around the axis of the machine, bearings located around the circumference of the machine, in which the outer extremities of the molds rest, the said bearings supporting the thrust of the molds due to the centrifugal force, and having passages through them through which the strups may flow into an encircling receptacle, and a central hopper mounted on the axle of the machine and revolving with it and communicating with the various molds, substantially as specified.

3. In a centrifugal machine, an annular basket consisting of an annular hollow shell supported on the axle by suitable radial supports, and whose outer wall consists of a sieve or straining medium, in combination with a central hopper having radial tubes or passages leading into the annular basket and making liquor and air tight junctures with the shell of the same, the hopper and the radial passages affording means of introducing a liquid or semi-fluid fill mass into the basket while the machine is in motion, substantially as specified.

4. In a centrifugal machine having its basket divided into molds by suitable vertical partitions, the construction of the top or bottom plates of the molds so that they may be opened or removed to allow of the emptying of the molds, substantially as specified.

5. The combination, in a sugar centrifugal machine containing a series of fixed or removable radial molds, of a central hopper mounted on the axle and revolving with it, receptacles for receiving the washing-liquor, formed one in front of the sugar in each mold, and spouts leading from the central hopper to the receptacles, substantially as specified.

6. The combination, in a sugar centrifugal machine, of a basket to hold the material to be drained or filtered, a chamber or chambers surrounding the basket and revolving with it, into which the liquid flows from the basket, and discharging-pipes through which the liquid flows from the chamber or chambers into an encircling trough while the machine is in motion, substantially as specified.

7. The combination, in a sugar centrifugal machine, of molds arranged radially in the machine or formed radially in the basket of the same, strap-receptacles arranged around the periphery of the machine and revolving with it, into which the strups may flow from the molds, and tubes leading from the receptacles and communicating through a tube in the axle of the machine with a pipe or conduit leading from a vacuum-inducing apparatus, substantially as specified.

8. In a centrifugal machine, the combination, with the chamber or chambers surrounding and revolving with the basket of the machine and communicating with a suitable vacuum-inducing apparatus, of discharge-pipes curved so that the liquid in the curves will, while the machine is revolving, form air-traps and prevent the flow of any air through the said pipes into the chambers to destroy the vacuum or partial vacuum induced therein, substantially as specified.

9. The combination, in a centrifugal machine, of a basket arranged to be tightly closed toward the axis, and an axial tube communicating with the basket, and through the bearing of the axle with means for affording a supply of hot or dry air, substantially as specified.

10. In a centrifugal machine, the combination of an annular basket or body, axial tubes communicating through the bearings of the axle with means for affording supplies of liquid or gaseous substances, and radiating tubes connecting the axial tubes with the annular basket or body of the machine, the axial and radiating tubes serving to conduct the liquid or gaseous substances into the annular basket or body while the machine is in motion, substantially as specified.

11. In a centrifugal machine having its basket or radial molds arranged to be tightly closed toward the center or axle of the machine, and having a central hopper or reservoir mounted on the axle of the machine and revolving with it, and communicating with the interior of the basket or of the radial molds by means of radiating tubes, in combination with the tubes, cones, or spray-plates closing the mouths of the tubes projecting into the interior of the basket or molds, by which any liquid poured into the central hopper or reservoir while the machine is in motion will be sprayed over the face of the sugar in the basket or molds, substantially as specified.

12. In a sugar centrifugal machine having its basket divided into molds by radial partitions, and having the bottom plate of each mold arranged as a door which may be opened for the removal of the contents of the mold, the parallel vertical partitions *d* in each mold, attached alternately to the top plate of the mold and to the under plate or door of the same, the partitions operating to form the sugar run into the machine and drained therein into slabs, and to thoroughly loosen the said slabs on the opening of the door, substantially as specified.

13. In a sugar centrifugal machine in which liquoring is to be practiced, a series of radial molds having their top and bottom plates inclined toward each other proceeding from the center of the machine, so that the thickness of the molds will be less the greater the distance from the center, and thoroughness in liquoring thereby be facilitated, substantially as specified.

14. In molds formed or arranged in the basket of a centrifugal machine in which liquoring is to be practiced, and having the plates forming the top and bottom of the same inclined toward each other proceeding from the axis to facilitate thoroughness in liquoring, vertical and parallel plates, substantially as described, for forming the sugar run into the molds and drained in the same into slabs, the vertical arrangement of the plates, instead of a horizontal arrangement, being for the purpose of avoiding the formation of the thin wedge-shaped pieces of sugar which would be formed were the plates horizontal in consequence of the inclination of the top and bottom plates of the molds toward each other.

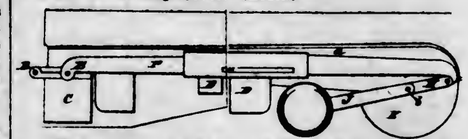
15. The combination, in a centrifugal machine, of horizontal and radial molds having their mouths toward the axis provided with means whereby they may be tightly closed, and an axial tube communicating with the various molds, and also through the bearings of the axle with means for affording supplies of liquid or gaseous substances, substantially as specified.

16. The combination, in a centrifugal machine, of annular or radial receptacles for holding the matter to be subjected to the centrifugal force, and arranged to be tightly closed toward the axis, a central hopper communicating with the receptacles by suitable passages, a sleeve-cap on the axle of the machine, by which the mouth of the central hopper may be closed, and an axial tube communicating with the receptacles, and through the bearings of the axle with means of affording a supply of a gaseous reagent, substantially as specified.

17. In a centrifugal machine, the combination of annular or radial receptacles for holding the matter to be subjected to the action of the centrifugal force, and having axial communications with means for affording supplies of liquid or gaseous reagents, and chambers surrounding the receptacles, into which flow the liquids separated from the contents of the latter by the centrifugal force, the said chambers having axial communications with an exhausting or vacuum-inducing apparatus, substantially as specified.

18. In a centrifugal machine, the combination, with annular or radial receptacles for holding the matter to be subjected to the action of the centrifugal force, and arranged to be tightly closed toward the axis of the machine, of a central hopper having radial pipes leading to the receptacles and arranged so that its mouth may be closed air-tight, an axial tube communicating with the receptacles, and through the bearings of the axle with means for affording supplies of gaseous reagents, air-tight chambers surrounding the receptacles, and into which flow the liquids separated from the contents of the latter by the centrifugal force, and an axial tube communicating with the said chambers, and through the bearings of the axle with pipes leading from a vacuum-inducing apparatus, the combination operating to effect the flow of a gaseous reagent through the contents of the receptacles, substantially as specified.

252,784. SHUTTER-WORKER. THOMAS H. LUPTON, Winchester, Va. Filed Aug. 1, 1881. (Model.)



Claim.—1. The combination, with the shutter C and hinge B, having a pin, E, on the section which is secured to the shutter, of the bar F, pivoted to the said hinge and provided with a central pin, G, the longitudinally-slotted plate H in engagement with pin G, the arm H, pivoted to the inner end of bar F, and the crank-lever J, connected to said arm and adapted to engage with lug *e* on the upper face of the casing K, substantially as shown and described.

2. In combination with the bar F and shutter C, the casing K, adapted for being secured over the recess *a* inside the sash, and supporting the crank-lever J and arm H by means of a plate secured to its bottom, and covered by a segmental cap having lugs *e*, with which the lever is adapted to engage, substantially as shown and described.

252,785. DENTAL ARTICULATOR. LOUIS HANKER and JOHN W. HANKER, Villisca, Iowa. Filed Oct. 18, 1881. (No model.)



Claim.—1. The combination of adjustable jaw-plates *c c*, slotted saddles, adjustable arm *f*, and pivoted wire *m*, substantially as shown and described, for gaging the lines of opposites and occlusion.

2. The pivoted arms *h h'*, arm *f*, slides *i i'*, and screws *l l'*, combined with the biting-gage A, substantially as shown and described, for indicating variations of the jaws from their correct position, as specified.

3. The biting-gage A, having saddles *d*, adjustable on plates *c*, for the purpose of preventing the patient's jaw from extending out too far, as described.

4. The combination, with the arm *f*, of the clamping-collar *g* and arms *h h'*, to indicate any deviation of the lower jaw, as described.

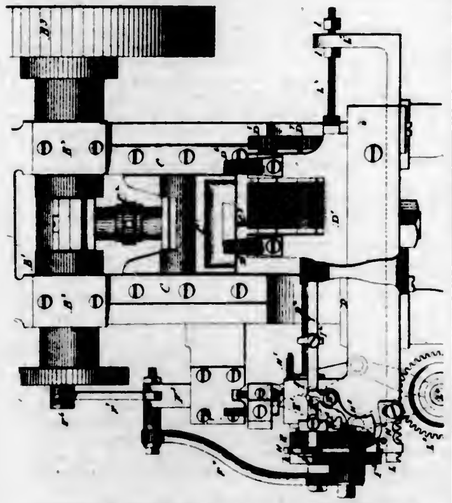
5. The combination, with the arms *h h'* on rod *f*, of the slides *i i'* and the adjustable screws *l l'*, to ascertain and correct any deviation of the lower jaw, as described.

6. The combination, with the rod *f*, of the cross-bar *m*, the collar *s*, carrying pointer *n'*, and the collar *g*, having scale to indicate any variation caused by the turning of the biting-gage in the mouth, as described.

7. The wire *m* and the gage A, combined with an arm, *f*, made adjustable in the gage to bring the wire in line with the parting of the lips, as and for the purpose specified.

8. The duplicating-gage consisting of bar *o*, rod *p*, and pivoted wire *q*, for use with the original gage, substantially as shown and described.

252,786. FEEDING DEVICE FOR PUNCHING-MACHINES. FREDRICK MARGGRAFF, Waterbury, Conn. Filed July 30, 1881. (Model.)



Claim.—1. In a feeding mechanism, the combination of the rolls D^2 D^4, the ratchet F^6 in connection with said rolls, the pawl *f*, the saddle H, having a vertical movement with relation to said pawl and by such movement to engage or disengage said pawl from said ratchet, the cam-lever H', arranged upon a rock-shaft, a horizontal sliding bar with trips I' I^1 thereon, one of which, at each extreme horizontal movement of said bar, turns the said rock-shaft to present an arm, H^5, extending from said rock-shaft or the stud thereon in the path of the reciprocating dog H', whereby said dog imparts to said rock-shaft a rotative movement to depress the saddle on which the pawl rides and permit the pawl to engage the said ratchet until said dog, on its return, escapes from said arm H^5 and permits the return of the rock-shaft, substantially as described.

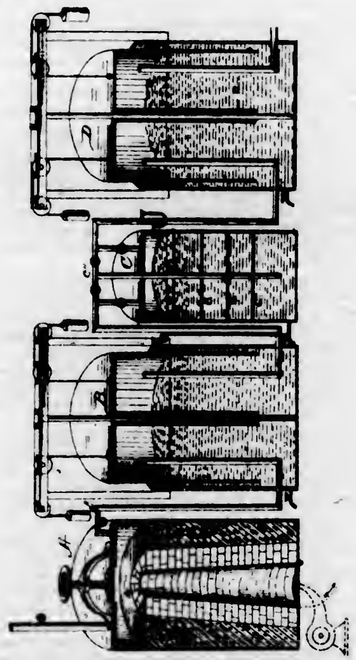
2. In a feeding mechanism, the combination of the rolls D^2 D^4, the ratchet F^6, in connection with said rolls, the pawl *f*, the saddle H, having a vertical movement with relation to said pawl and by such movement to engage or disengage said pawl from said ratchet, the cam-lever H', arranged upon a rock-shaft, a horizontal sliding bar with trips I' I^1 thereon, one of which, at each extreme horizontal movement of said bar, turns the said rock-shaft to present an arm, H^5, extending from said rock-shaft or the stud thereon in the path of the reciprocating dog H', whereby said dog imparts to said rock-shaft a rotative movement to depress the saddle on which the pawl rides and permit the pawl to engage the said ratchet until said dog, on its return, escapes from said arm H^5 and permits the return of the rock-shaft, and mechanism, substantially such as described, to impart a transverse movement to said rolls, substantially as described.

3. In a feeding mechanism, the combination of the longitudinal sliding bar I and a shaft for imparting longitudinal movement thereto, reverse ratchets L^4 L' on the said shaft, their respective pawls *n n'*, hung upon vibrating levers P P', and mechanism, substantially such as described, to impart vibratory movement to said levers, the rock-shaft R^3 having a rotative movement imparted to it, first in one direction and then in the opposite, by trips on said bar I, the said rock-shaft being provided with a lever, R^4, one arm of which engages a tripping device between said arm and said pawls to throw them alternately out or into engagement with their respective ratchets, the other arm being inclined upon its two sides, and a vertically-reciprocating dog, R^5, operating upon said inclined sides of the said lever to give to said lever the rocking motion required to so operate the said pawls, substantially as described.

4. In a feeding mechanism, the combination of the longitudinal sliding bar I, and a shaft for imparting longitudinal movement thereto, reverse ratchets L^4 L' on the said shaft, their respective pawls *n n'*, hung upon vibrating levers P P', and mechanism, substantially such as described, to impart vibratory movement to said levers, the rock-shaft R^3 having a rotative movement imparted to it, first in one direction and then in the opposite, by trips on said bar I, the said rock-shaft being provided with a lever, R^4, one arm of which engages a tripping device between said arm and said pawls to throw them alternately out of or into engagement with their respective ratchets, the other arm being inclined upon its two sides, and a vertically-reciprocating dog, R^5, operating upon said inclined sides of the said lever to give to said lever the rocking motion required to so operate the said pawls, with mechanism for imparting a longitudinal or forward feed, substantially as described.

252,787. PREPARING GAS FOR PRESERVING FOOD. EDWIN R. MCCALL, Lockport, N. Y. Filed Dec. 24, 1881. (No model.)

Brief.—The products of combustion are drawn into the first reservoir by suction, and then are repeatedly passed through a purifier containing milk of lime or like liquid by alternately causing pressure and exhaust on the storage and receiving tanks. By this method but one washer is necessary to clear the product to the desired extent.



Claim.—1. The furnace A, in combination with receiving and exhaust gasometer B and purifier C, provided with perforated diaphragms *c* and central inlet-pipe, as specified.

2. The combination consisting of gasometers B D with purifier C, located between the two, the latter serving for repeated passage of the gas and its efficient purification, as set forth.

3. The combination of furnace A, gasometer B, and purifier C, having the central dip-pipe and diaphragms stated, with gasometer D, in the order and for the purposes hereinbefore set forth.

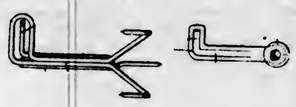
252,788. STEAM-BOILER. THOMAS MCDONOUGH, Montclair, N. J. Filed Oct. 10, 1881. (No model.)



Claim.—1. The herein-described method of absorbing furnace-heat, consisting in injecting water against the roof of a boiler and conducting the portions that do not fall directly to the bottom of the same by sloping gutters at the sides thereof, as set forth.

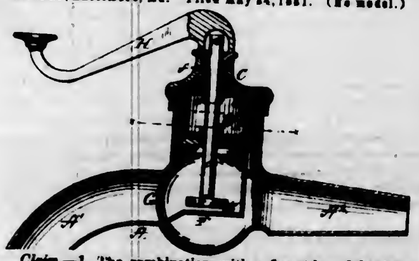
2. In a steam-boiler, the boiler A, provided with the interior sloping gutters, B, and the external spiral flanges, C, combined and operating substantially as and for the purposes specified.

252,789. FALSE-CUFF HOLDER. GEO. A. HOLMTIER, Stamford, Conn. Filed May 7, 1881. (No model.)



Claim.—As an improved contrivance for holding in place a false shirt-cuff or wristband, a cuff-holder composed of a main or body portion adapted to be either permanently or temporarily secured to the inner portion of the coat-sleeve, and a clamping device arranged transversely to said main portion of the contrivance and adapted to grasp with a yielding pressure the outer overlapping edge of the cuff, all substantially as set forth.

252,790. SELF-CLOSING VALVE FOR FAUCETS. JOSEPH E. MOONEY, Baltimore, Md. Filed May 24, 1881. (No model.)



Claim.—1. The combination, with a faucet-barrel having a formed chamber above the valve-seat and an induction-passage partially surrounding the said chamber, of a valve-rod with a piston-head closed by the liquid-pressure applied above the piston-head, substantially as described.

2. The combination, with the faucet-barrel having a valve-seat, cylinder, and induction-passage leading into the cylinder, of the self-closing valve consisting of the piston-rod, valve, piston-head, and pivoted lever, substantially as described.

252,791. BED-LOUNGE. JOS. L. NEWTON, Weymouth, Mass., assignor to Samuel Graves, same place. Filed Oct. 26, 1881. (No model.)

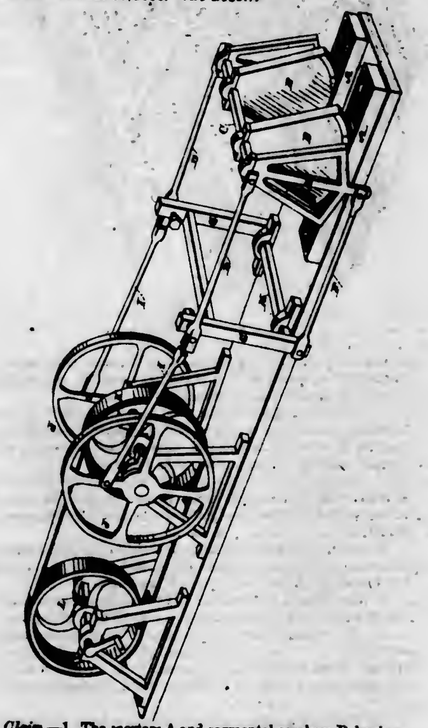


Claim.—1. In the extension of a bed-lounge or sofa-bed, the combination, with a leg adapted to be swung from a horizontal to a vertical position in said extension, of a cross-piece or beam next the leg, provided with an opening, H, of shape to fit and hold the same in a vertical position, said leg being adapted to be slipped horizontally into said opening, all substantially as and for the purpose set forth.

2. In the extension of a bed-lounge or sofa-bed, the swinging legs F F, provided with the connecting-bar I, adapted by the motion of one leg to impart corresponding motion to the other, substantially as and for the purpose described.

3. In combination with the leg F and pin E, secured to or bearing in the cross-pieces D'' D', the cross-piece D'', provided with the opening H, of shape to fit and hold said leg in a vertical position, and means for retaining the leg in said opening, substantially as and for the purpose specified.

252,792. QUARTZ-CRUSHER. ALLEN OLIVER, Forest Hill, Cal. Filed June 28, 1881. (No model.)



Claim.—1. The mortars A and segmental crushers B, having the curved peripheries reciprocating in said mortars, in combination with the rocker-arms E and G and the parallel rods D and F, substantially as and for the purpose herein described.

2. The mortars A, reciprocating crushers B, having the curved faces moving upon the mortars, the rocker-arms G E, and the parallel driving and check-rods D F, as shown, in combination with the case inclosing the mortars and the slides K, perforated to allow the rods to pass, substantially as herein described.

252,793. AMALGAMATOR AND CONCENTRATOR. ALLEN OLIVER, Forest Hill, Cal. Filed June 27, 1881. (No model.)

Claim.—1. The sluices B B, connected with the main or supply sluice A, in combination with gates C, rope E, and pulley G, substantially as described.

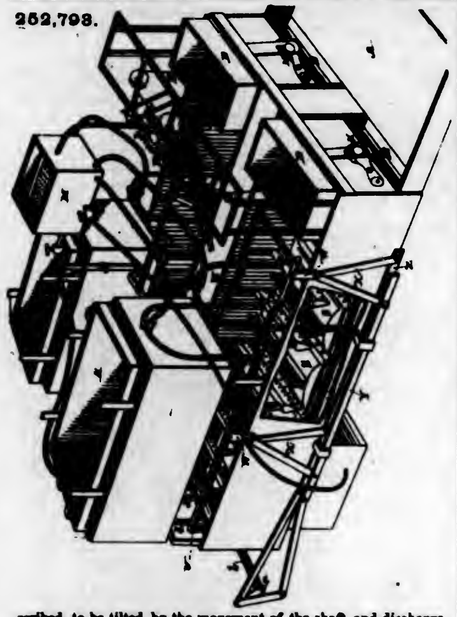
2. The boxes D, provided with the gates C, in combination with the rope E, the pulley G, and guides, substantially as set forth.

3. The sluices B, in combination with the suspended water-boxes D and automatic gates N, substantially as and for the purpose specified.

4. The boxes D, provided with the gates C, and suspended as shown, in combination with the detent or ratchet wheel H, the lever I, carrying the pawl, the floats K, and tripping-arms J, all constructed, arranged, and operated as set forth.

5. The oscillating shaft carrying the pulley G and the ratchet-wheel H, in combination with the double nozzle L, secured as de-

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scribed, to be tilted by the movement of the shaft and discharge alternately into spouts leading to the two sluices B, and the supply-tank M, substantially as described.

6. The sluices B, having the amalgamated plates P, in combination with the supplemental bottoms Q, and the water-discharging pipes R, arranged beneath the supplemental bottoms Q, substantially as and for the purpose herein described.

7. The sluices B, provided with the amalgamated plates and the water-pipes R, in combination with the supplemental bottoms having transverse depressions, perforated as shown, for the purpose set forth.

8. The curved transverse plates S, extending across the sluices and having their edges turned at right angles to clamp the brushes T, substantially as and for the purpose described.

9. The sluice B, in combination with the upwardly-projecting soap-root brushes T, arranged transverse the sluice, as set forth.

10. The sluices B, the water-pipes U, and the wedge-shaped perforated tubes V, arranged transverse the sluice, in combination with the series of reciprocating levers W, X, X', and Z, to give the water-pipes a rising and falling motion, substantially as described.

11. The flexible rifle h, rolling upon the cylinder c within the case c, and extending across and fastened to the bottom of the sluice, in combination with the sluice B, for the purpose set forth.

12. The tanks m, having floats K, and tank M, in combination with the arms d and cases c, said arms connecting the floats to the cases, and sluices B, all constructed, arranged, and operated as described.

13. The case c, contained cylinder c, provided with pinions f, and flexible rifle h, in combination with the vertical racks g, the whole constructed, arranged, and operated as set forth.

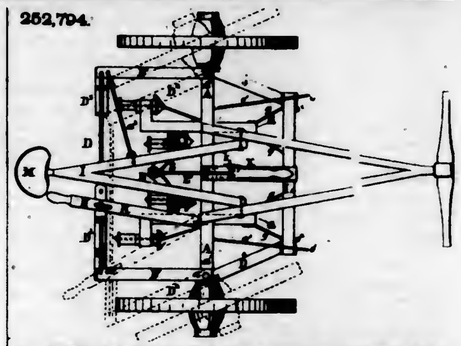
252,794. WHEEL-CULTIVATOR. THEODORE A. PALM, White House, Pa. Filed Aug. 28, 1881. (Model.)

Brief.—A hinged shovel and yielding spring. Wheel-spindles having vertical parts swiveled and braced from the upper and lower portions and adapted to be operated either by hand or foot, slotted beam-hangers allowing either beam to rise over obstructions when the lever is locked.

Claim.—1. In a wheel-cultivator, the combination, with the cross-beam A, having hinges or ears, of the swiveled wheel parts a, the upper and lower brace-bars, D' D², the cross-bar D, having foot-rests D², and the lever H, substantially as and for the purpose described.

2. The combination of the drag-bars G, with bifurcated straps g, and adjustable brackets F l, with the slotted yoke-bars E, elbow-lever E', and hook K, substantially as and for the purpose described.

252,794.

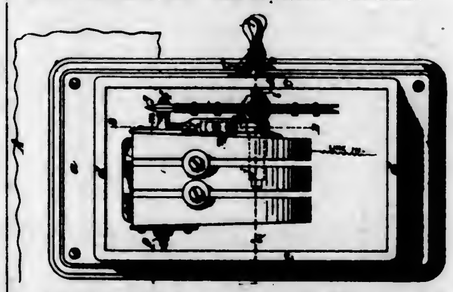


3. The shovel-blades B, having central ears, b, hinged to the standard-brackets, in combination with standards C, tension-rods c, and springs c', substantially as and for the purpose described.

252,795. METHOD OF CLOSING THE SEAMS OF SHEET-METAL CANS. GEORGE H. PERKINS, Philadelphia, Pa. Filed Nov. 10, 1880. (No specimens.)

Claim.—The method of closing the head-seams of sheet-metal cans herein before set forth, which consists in first subjecting the heads in place upon the body to the action of sliding or squeezing dies, and in then subjecting the squeezed heads to the action of seaming-rolls, substantially as and for the purposes specified.

252,796. LAWNING AND CLEANING CLAY. SIMON S. PHILLIPS, Perth Amboy, N. J. Filed Nov. 8, 1881. (No model.)



Claim.—1. The strainer D, mounted on a suitable open-ended framing capable of being revolved, in combination with means E for introducing the fluid to be strained, provisions I for receiving the strained fluid, and an internal receptacle or spout, G, arranged to receive the material which cannot pass through the strainer, substantially as herein specified.

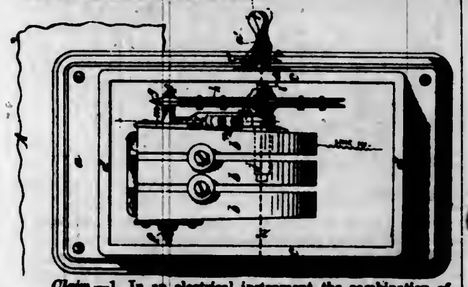
2. The driving-shaft K and wheel K', in combination with the tilting frame A a, and with the revolving strainer D, mounted on a suitable frame, C' C² C², with provisions for supplying and taking away the fluid and provisions G for receiving the material which cannot pass the strainer, all arranged for joint operation substantially as herein specified.

3. The means H for supplying water to the upper side of the strainer D, so as to move through the same in the opposite direction to that of the straining, in combination with provisions for straining in another part of the revolution, and with a spout, G, for taking away the retained material, as herein specified.

4. The method herein described of heaving and cleaning clay, consisting in projecting the slip in a stream against a strainer in an inclined position, so that the action of the stream urges the coarser particles along on the surface of strainer and keeps the acting part of the latter clear, substantially as herein specified.

252,797. ELECTRIC SIGNALING APPARATUS. HENRY PICKFORD and HARRY T. GREGORY, Chelsea, Mass. Filed July 27, 1881. (Model.)

Brief.—A contact-finger consisting of a coiled spring is attached to the crank-arm of the machine, and normally rests in contact with a disk surrounding the shaft to which the crank is attached. Turning the crank raises the contact-finger and breaks the short circuit around the machine.



Claim.—1. In an electrical instrument, the combination of the support a of arbor f, formed with the enclosed extension l, and the sleeve-like bearing j of arbor i, formed with the cylindrical extension k, to be seated, adjusted, and locked in socket l, whereby the driving-disk h on arbor i can be adjusted both linearly and in plane relatively to disk g on arbor f, substantially as specified.

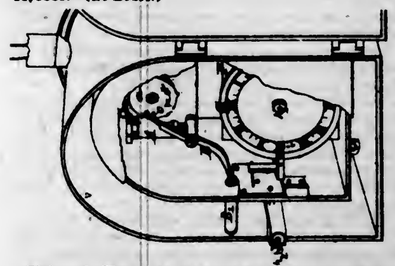
2. In an electrical instrument, the combination of hollow crank-arm y, with its handle x, the internal arm, t, the coiled spring v, the short arm s', and the contact-finger projecting therefrom, all substantially as specified.

3. In an electrical instrument, and in combination with its electric circuits, a crank-arm constructed and arranged to be rocked, rotated, or vibrated by the force exerted upon its wrist-pin or handle, and a contact-finger projecting from such crank-arm and arranged to be thereby vibrated to make and break contact, substantially as specified.

4. In an electrical instrument, and in combination with its electric circuits, and actuating-crank constructed and arranged to rock, rotate, or vibrate, and an elastic yielding contact-finger arranged to make and break contact by the action of such crank, substantially as specified.

5. In an electrical instrument, a contact finger or point composed of the securing-screw b', suitably secured and supported, and the coiled wire spring s', mounted upon and held in position by the engagement of its coils with the threads of said screw, substantially as specified.

252,798. AUTOMATIC TIME-RECORDER FOR TELEGRAPHIC SIGNAL-BOXES. HENRY W. PEPE, Elizabeth, N. J. Filed July 21, 1881. (No model.)

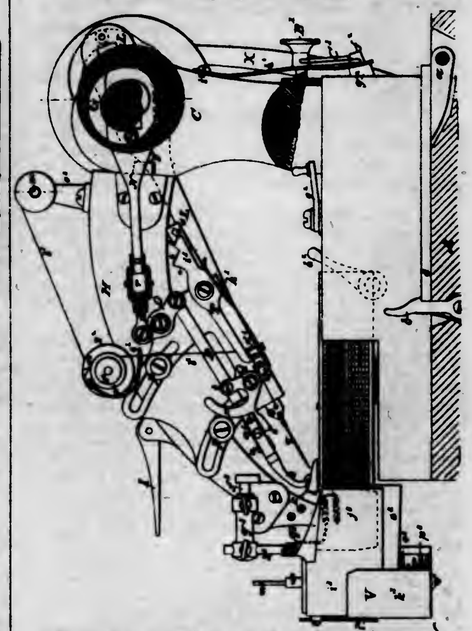


Claim.—1. The combination, substantially as herein before set forth, of a mechanism for transmitting electric signals, a movable cover or guard inclosing or protecting said mechanism, a register-ing device or mechanism, and devices, substantially as described, connected to the cover or guard and to the registering mechanism, whereby said registering mechanism is controlled.

2. The combination, substantially as herein before set forth, of a mechanism for transmitting electric signals, a movable cover or guard inclosing the same, a tablet, a time-train for imparting a uniform progressive movement to said tablet, a marking device, and devices, substantially as described, for automatically producing a record upon said tablet when said cover or guard is removed from the signaling mechanism.

3. The combination, substantially as herein before set forth, of a mechanism for transmitting electric signals, a movable cover or guard inclosing or protecting said mechanism, a yielding slide a spring which is compressed by said slide when said cover or guard is in its normal position, a lever provided at one end with a marking device, and a hook or detent which engages with the opposite end of said lever during the advance movement of said slide when the latter is actuated by the recoil of the spring.

252,799. OVERSTITCHING-MACHINE. JEAN E. RICHARD, New York, N. Y. Filed Apr. 6, 1881. (Model.)



Claim.—1. An overstitching-machine having its presser-foot rigidly fixed with reference to the path of the needle, and a feed-wheel arranged to be adjusted to and from the presser-foot, substantially as and for the purposes set forth.

2. An overstitching-machine having an arm which bears the stitch-forming mechanism and the presser-foot, arranged to swing or turn radially in a vertical plane on the main or cam shaft independently of the feeding mechanism, and having the feeding mechanism arranged in the non-moving bed upon which the said swinging arm is mounted, substantially as and for the purposes set forth.

3. The combination, with the arm of the machine bearing the presser-foot, of the adjustable plate bearing the stitch-forming mechanism, arranged to be adjusted on the arm, substantially corresponding to a circle described from a point coincident with the junction of the vertical and horizontal portions of the right-angular presser-foot, whereby the angle of the path in which the needle plays may be varied with respect to the bed of the machine, substantially as and for the purposes set forth.

4. The combination, with the arm bearing the stitch-forming mechanism and the presser-foot fixed rigidly thereto, of the feed-wheel having both a vertical and horizontal adjustment, substantially as set forth.

5. In an overstitching-machine adapted for stitching in hat-sweats, a sweat-holder, V, having a central guide-stem, m', a sleeve which slips over said stem and has a disk secured to its lower end, a spring under said disk to elastically support it, and an inclosing

case or cup with an outlet for the end of the strip, all arranged substantially as shown, whereby the sweat-strip which is wound on the sleeve may be properly fed to the needle, substantially as set forth.

6. The combination, to form a looper mechanism for an over-stitching-machine, of a cam, G, rod N, lever O, bar l^1, lever Q, bearing cam-arms s and s, the looper pivoted to the bar l^1 and having a shank, v, the projection s' on the said shank, and the spring w, all arranged to operate substantially as set forth.

7. The combination of the reciprocating needle-bar provided with a projection or pin, j', the take-up lever T, provided with a cam, f', and a retaining-spring, arranged to press against the take-up lever and bring it back to its normal position, the pin on the needle-bar being arranged to engage the cam on one side in making its back-stroke, and thus move the take-up in one direction, and to engage the cam on the opposite side in making its forward stroke and move the take-up in the opposite direction, all substantially as and for the purposes set forth.

8. The combination, to form a mechanism for giving the feed-wheel an intermittent rotary motion, of the said wheel, the expanding ring, the toggle or link q', the lever n', having an arm, p', the rod Y, the lever X, and the eccentric W, all constructed and arranged to operate substantially as set forth.

9. The combination, with the feed-wheel, the expanding ring, and the mechanism for expanding it, of the rod Y, lever X, eccentric W, stem s', lug t', spring u', and nut v', forming a mechanism whereby the length of the stitch is regulated, all arranged substantially as set forth.

10. The combination of the feed-wheel mounted rotatively on the lever-arm A', the said arm mounted on movable bearings y' and provided with a stop for a cam, d^3, to impinge against, the said cam arranged to move the arm A' longitudinally, and the spring j^3, all constructed and arranged to operate substantially as set forth.

11. The combination of the feed-wheel mounted rotatively on a lever-arm, A', the said arm mounted in grooves in the faces of revolving disks y', a cam arranged to move the lever-arm A' endwise, the spring j^3 on the stem f^3, the tubular collar g^3, the abutting spring-plate h^3, provided with an adjusting-screw to increase the pressure on the plate h^3, and the spring C', all arranged to operate substantially as set forth.

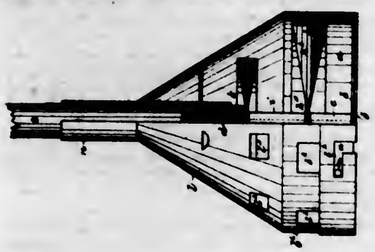
12 The combination, with the radially-swinging arm H and the bearing-post C, of the bolt g, arranged to shoot into a recess in the post when the arm is down, the lever I, to draw the bolt when the arm is lifted, a suitable connecting-rod to connect the lever and bolt, and a suitable spring to keep the bolt pressed normally up to the post, substantially as and for the purposes set forth.

13. The spool-holder comprising a stem with a button at its free extremity, a split tubular sleeve or collar on the stem to receive the spool, a spring to keep the sleeve pressed up to the button on the stem, and a disk on the stem interposed between the spring and a disk on the split sleeve, and a soft washer interposed between said disks, all combined and arranged to operate substantially as set forth.

14. The tension device comprising a stem, a^3, fixed disks b^3 and g^3, tied together by a bar and having notches c^3, a sleeve, e^3, coned as described, its one end turning in a recess in the disk b^3 and the other bearing a flange, x^3, the hook or projection on the sleeve to engage the bight of the thread, the nut n^3, and the spring l^3, all combined and arranged to operate substantially as set forth.

15. The holder V for the sweat-strip c', provided with an outlet-passage, f^3, having an elastic tension device to impinge upon the strip as it passes out, the tip of the said tension device being arranged to incline upward, so as to prevent the strip from working down, substantially as set forth.

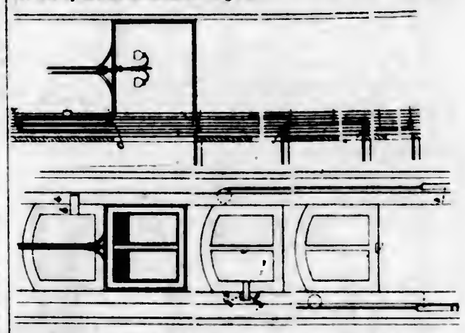
252,800. AGITATOR OR EGG-BEATER. OTIS W. RICHARDSON, Mill Grove, Ky. Filed Dec. 26, 1881. (No model.)



Claim.—The combination, with the perforated cone l, provided with the perforated base-flange l', having angular recesses l' and tube n at its apex for the reception of the handle e, of the annulus a, provided with the pins m, and cross-bars b, supporting the step c, and agitators h k, adapted to revolve in opposite directions, substantially as described, and for the purpose set forth.

252,801. ELEVATOR. HENRY ROBERTS, Hartford, Conn. Filed Nov. 15, 1881. (No model.)

Brief.—The elevator has projections, which raise an upper set and push down a lower set of doors sliding in vertical grooves. The upper set of doors descend by their own weight and the lower set rise by means of counter-weights.



Claim.—1. In elevators, the combination, with the elevator shaft or well having vertical doorways and the elevator-cage, of two sets of vertical doors, one above and one below the cage, the doors above the cage being raised thereby and dropping by their own weight, while those below the cage are pushed down thereby and raised by counter-weights, and stops for arresting the doors of each set in succession, substantially as set forth.

2. In elevators, the elevator-cage having projections, in combination with the two sets of doors sliding in vertical ways and raised and pushed down respectively by the projections on the cage, substantially as set forth.

252,802. SEED-PLANTER. JAMES W. ROBERTSON, Hardin, assignor of one-half to George Alexander Marshall, Sidney, Ohio. Filed June 23, 1881. (No model.)



Claim.—The combination, in a check-row planter, of the main frame a and the supplementary frame c, hinged directly to the axle of the main frame by curved bars k, and having a number of rollers adapted to support the main frame above the ground, substantially as shown and described

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252,803. GRAIN SEPARATOR AND CLEANER. DEXTER SALISBURY, Williams, Cal. Filed July 5, 1881. (No model.)

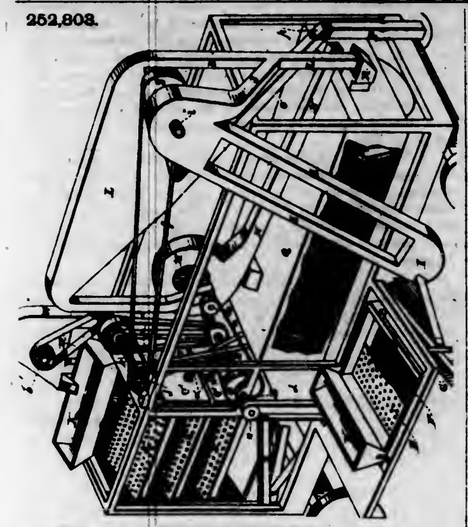
Claim.—1. In a grain cleaner and separator, the combination of the vibrating screens E and F, carriers G and H, elevator I, suction-spout L, said spout having a deep chamber above and an exit-spout, O, suction and blast-fan M, and spout N, arranged substantially as and for the purpose herein described.

2. The combination of the elevator I, suction-spout L, fan M, and rotating inclined screen S, and an exit-spout, U, arranged substantially as and for the purpose herein described.

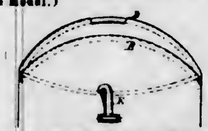
3. The combination of the elevator I, suction-spout L, fan M, inclined rotating screen S, the exterior radial blades, T, the box or casing Q, and the exit-spout V, substantially as and for the purpose herein described.

4. The combination of the rotating inclined screen S, having exit-spout V, the elevator W, hopper X, and series of vibrating oppositely-inclined or zigzag screens Y, having bottom plates, v, and carriers E and A', arranged and used substantially as and for the purpose herein set forth.

252,803.

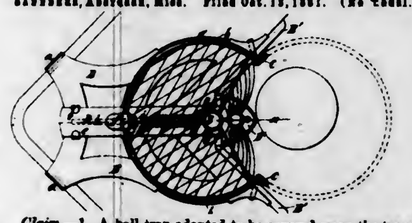


252,804. BAG-FASTENER. TIMBROOK SANFORD, Brooklyn, assignor to Bradley, Kurtz & Co., New York, N. Y. Filed Nov. 7, 1881. (No model.)



Claim.—In combination with a bag, the fastener herein described, consisting of the bails B D, connected together at their ends so as to be capable of a hinge-like movement, one bail having a less pitch than the other, and the hook or catch adapted to secure the larger bail when the bails are closed, substantially as set forth.

252,805. BALL-TRAP FOR BILLIARD-TABLES. FRANK SAUNDERS, Aberdeen, Miss. Filed Oct. 18, 1881. (No model.)



Claim.—1. A ball-trap adapted to be secured upon the top of the rail of a billiard-table and to descend upon or cover and catch or entrap the balls when they come within its range, substantially as specified.

2. A swinging or pivoted ball-trap adapted to be secured upon the rail of a billiard-table, and composed of a rim and an elastic or yielding web within said rim, and a catch for holding the trap set, substantially as specified.

3. A swinging or pivoted ball-trap adapted to be secured upon the rail of a billiard-table, and a catch for holding it set, adapted to be released by the impact of the balls, substantially as specified.

4. The combination of a swinging or pivoted ball-trap, a base-plate therefor, adapted to be secured to the rail of a billiard-table, a sliding tongue having a projecting head, against which the balls may strike, and a catch upon said tongue for holding the trap set, substantially as specified.

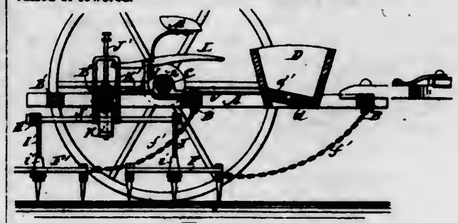
5. The combination of the base-plate B, the trap C, pivoted thereto, the springs d, the tongue D, having a head, D', and the catch f upon said tongue, substantially as specified.

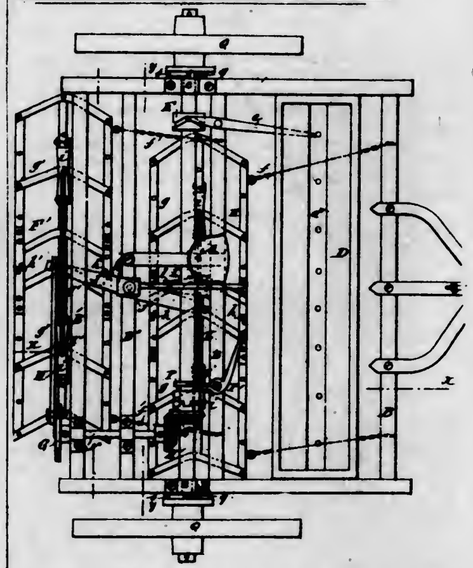
6. The combination of a swinging or pivoted ball-trap, a base-plate therefor, adapted to be secured upon the rail of a billiard-table a sliding tongue carrying a catch for holding the trap set and adapted to be moved inward by the impact of the balls, and a catch for holding said tongue against forward movement after the trap is released, substantially as specified.

7. The combination of the base-plate B, the pivoted trap C, the tongue D, with its head D', the catch f upon said tongue, and the spring h, with its projection or lug i and shoulder k, substantially as specified.

252,806. SULKY-HARROW AND SEED-SOWER COMBINED. ABRAHAM C. SCARR, Marybarough Township, Ontario, Canada. Filed Sept. 28, 1881. (No model.)

Brief.—The harrows are each formed in two centrally-hinged sections, connected by bows and yokes, and an oscillating bar connecting the yokes is adapted, by suitable operating mechanism, to give to the harrows an oscillating or reciprocating motion. By means of a vertical guide-rod, lever, and loop the harrows may be raised or lowered.





Claim.—1. The combination, with the frame and the harrows F F', of the yokes I I', the oscillating bar J, the vertical rod J', the loop or yoke K', and means for oscillating said bar, substantially as and for the purpose set forth.

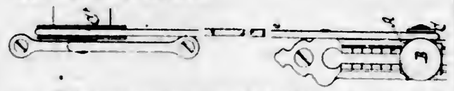
2. The harrows F F', formed of the sections g g and g' g', provided with the bows i i and i' i', in combination with the yokes I I', pivoted bar J, and means for oscillating said bar upon its pivot, substantially as and for the purpose set forth.

3. The combination, with the frame and the harrows F F', formed of the sections g g g' g', and provided with the bows i i', of the yokes I I', the pivoted bar J, the connecting-rod H, crank-wheel G, shaft N, and the pinions H' G', substantially as and for the purpose set forth.

4. The combination, with the frame, the harrows F F', and the yokes I I', of the pivoted bar J, the vertical rod J', the loop or yoke K', and the lever L, substantially as and for the purpose set forth.

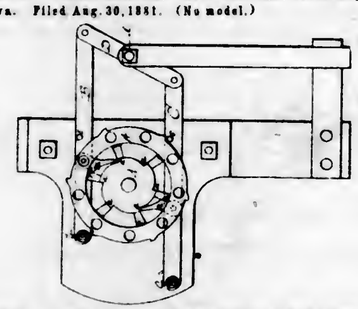
252,807. CURTAIN-CORD TIGHTENER. CHARLES SCHWARZOLD, Brooklyn, N. Y. Filed July 23, 1881. (No model.)

Brief.—The axes of the thumb-button and cord-pulley are at right angles with each other.



Claim.—The combination, substantially as hereinbefore set forth, of the locking-slide, constructed with the thumb-button and the pulley, having their axes substantially at right angles to each other, and the slotted guide-bracket, for the purpose specified.

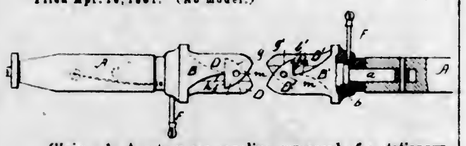
252,808. CORN-PLANTER. LEVI SCOFIELD, Cedar Rapids, Iowa. Filed Aug. 30, 1881. (No model.)



Claim.—1. The combination of the rotary seed-plate with the two pivoted bars B C and their pawls, said pawls and the points of applying the motive power being arranged substantially as described, whereby the movements of the pawls are equalized, in the manner herein set forth.

2. The combination of the rotary seed-plate with the two pivoted bars B C, their pawls, and the two stops, the movements of the pawls and stops being equalized, substantially in the manner described.

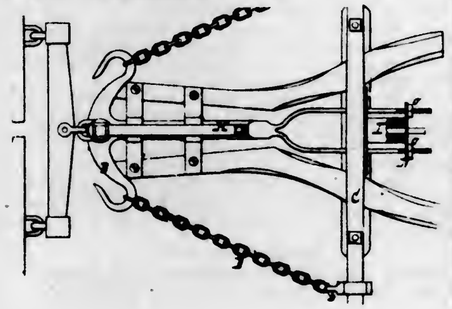
252,809. CAR-COUPLING. WILLIAM SCOTT, Malden, Mass. Filed Apr. 10, 1881. (No model.)



Claim.—1. A rotary car-coupling composed of a stationary draw-bar, A, and of a head, B, which is swiveled to the draw-bar and is provided with one or more cam-shaped hooks, D, in combination with a spring or weight, constructed and arranged together, to operate substantially as described.

2. A rotary car-coupling composed of a stationary draw-bar, A, and of a draw-head, B, which is swiveled to the draw-bar and is provided with one or more cam-shaped hooks, D, in combination with a bent spring, C, attached to the draw-head and draw-bar and protected on each side by flanges *a a'* of the draw-bar, all substantially as described.

252,810. DRAFT-EQUALIZER. JACOB SEBASTIAN, New York, N. Y. Filed Nov. 28, 1881. (No model.)

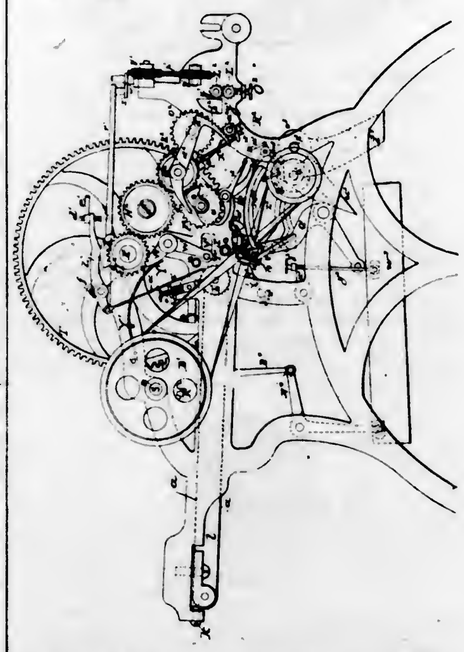


Claim.—1. In a draft-equalizer for vehicles, the combination, with the front axle having a spring supported at its rear side, of a horizontally-sliding draft-bar connected at its forward portion with the front axle and having its rear end extended directly through the said front axle and acting on the rear end portion of the spring, substantially as described, whereby the forward thrusts of the draft-bar are relieved by the spring and sustained by the front axle, as set forth.

2. In a draft-equalizer, the horizontally-sliding draft-bar having its rear end extended directly through the front axle of the vehicle, and provided at its forward end with lateral arms connected with the axle, in combination with a spring arranged directly in rear of the front axle and supported thereby and acting on the rearward extension of the draft-bar, substantially as and for the purpose described.

3. The combination, substantially as hereinbefore set forth, of the axle, the sliding draft-bar having its forward end connected to the axle by means of chains, and having its rear end bifurcated and arranged to extend through the axle, the tubular india-rubber spring fitted on a core projecting from the axle, and the cross-head, whereby the draft-bar acts on the spring in the manner specified.

252,811. CIGARETTE-MACHINE. EDGAR SIBA, Brooklyn, assignor to the Cowman Manufacturing Company, New York, N. Y. Filed July 18, 1881. (No model.) Patented in England Aug. 31, 1880.



Claim.—1. The trough a^3, consisting of the parts H I, pivoted together adjacent to their upper edge, the part H being secured between the arms L, and the part I being provided with a cord or chain, J, whereby, when the arms L are forced downward, carrying the part H, the cord J causes the lower portion of the part I to separate from the part H, substantially as set forth.

2. The mechanism for rolling the cigarette, consisting of the flexible apron, the two rollers, the oscillating bars supporting the carrier, toothed bar, and pinion-bearing for said rollers, the carrier and toothed bar being supplied with sheaves which travel over cam-surfaces on the ends of the table, substantially as specified.

3. In combination with the bars Q^3, carrying the carriers 16 and bar 17', wheels 17 and 22, and rollers 23 and 24, the bars 25, 26, 26', and 28, which are adapted to operate the bar 17', and roller 24 to form the pocket in the apron for the tobacco, substantially as specified.

4. In a cigarette-machine, the table M^3 and apron V^3, one or both ends of the latter being secured upon rods which are adjustable and have a spring-tension, whereby the apron is always kept taut, substantially as specified.

5. The rollers 23 and 24, mounted in a bearing having a pinion, 18, in combination with the bars Q^3, supporting the carrier 16 and toothed bar 17', the sheaves 17 and 22, and cams F N^3, substantially as set forth.

252,812. ORE-WASHER. SOLOMON P. SPRUNG, Baltimore, Md. Filed Nov. 15, 1881. (No model.)



Claim.—1. In an ore-washer, an inclined trough having a water-supply at its head, a screw-conveyer mounted in the trough and arranged to carry the ore upward against the current, and one or more pipes opening upward near the bottom of the trough and communicating with the water-supply, as and for the purpose set forth.

2. In combination with the trough A and dam B, the conveyer *b*, spout *a*, and pipe *c*, as set forth.

3. In combination with the trough A, dam B, and conveyer, the pipe *c*, having a series of openings, *e e*, in the base of the trough, and the settling-tank C, as set forth.

4. In combination with the conveyer, troughs, and channels *d*, amalgamated as described, the conveyer B, spout *a*, pipes *c* and *a'*, and settling-tank C, all arranged and operating as set forth.

252,813. DRAFT-EQUALIZER. CHARLES L. SPENCER, Pittsfield, Ill. Filed Nov. 25, 1881. (No model.)

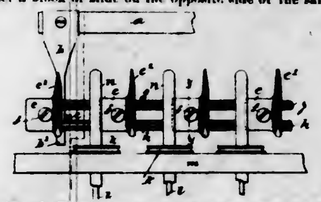


Claim.—1. A single-tree provided with the metallic straps secured to the back and face of the tree, and extending around the ends thereof, with formed eyes, as an improved article of manufacture.

2. The improved draft-equalizer consisting of the tongue, with the tongue-plate constructed as described, the double-tree, and the single-trees, provided with the end straps and the connections, substantially as described.

252,814. THREAD-GUARD FOR SPINNING-MACHINES. EDWARD S. STIMPSON, Hopedale, Mass., assignor to George Draper & Sons, same place. Filed Aug. 25, 1881. (No model.)

Brief.—Two parallel rods extend longitudinally along the frame of the machine and serve to support the thread-guards, which can be adjusted horizontally on said rods by means of suitable screws, which pass through a hole in the foot of the thread-guards and enter a block or slide on the opposite side of the said rods.



Claim.—1. The hangers adapted to be secured to the frame of the machine, and the two parallel rods or bars *g h*, combined with a series of guards having feet, and with blocks and screws to clamp and hold the said feet in adjusted position on the said rods or bars, substantially as described.

2. The guard *c'* and its laterally-projecting foot *e*, provided with a hole, and the block *d*, provided with a threaded hole, and the two rods *g h*, placed between them, combined with the screw *f*, inserted loosely through the foot and screwed into the block, substantially as described.

3. The hanger *b*, provided with the finger b^3, combined with the rods *g h*, block *d*, and its pin *e*, and with the guard and its foot and screw, all substantially as described.

252,815. DOMESTIC FRUIT-DRIER. JEROME B. SWEETLAND, Pontiac, Mich. Filed Oct. 26, 1880. Renewed Aug. 27, 1881. (No model.)



Claim.—1. In a fruit-drier, the base-section A, provided with the diaphragm C, having the deflecting-wings D, made larger than the openings C', substantially as and for the purpose set forth.

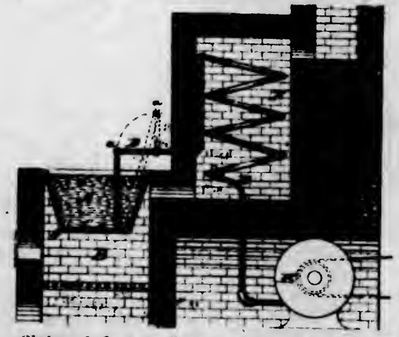
2. In a fruit-drier, the base-section A, having perforations B, and diaphragm C, having openings C' and wings D, in combination with the trays E H *a* and the cap F G, constructed and operating substantially as and for the purposes set forth.

3. In a fruit-drier, the tray E, having internal flange, *a*, in combination with the wire-gauze bottom H, and the securing-ring *b*, constructed and operating substantially as and for the purposes set forth.

252,816. ART OF DRAWING WIRE. CHARLES O. THOMPSON, Worcester, Mass., assignor to the Washburn & Moen Manufacturing Company, same place. Filed Sept. 2, 1881. (No specimens.)

Claim.—In the process of wire-drawing, preparing the wire to be drawn by coating or covering it with a solution of acetate of calcium, substantially as and for the purposes set forth.

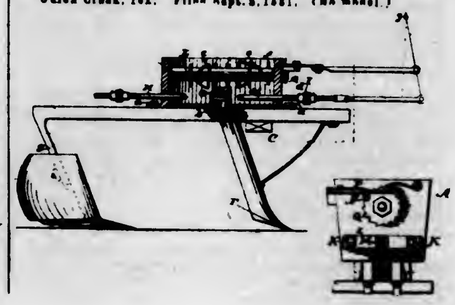
252,817. APPARATUS FOR AND PROCESS OF OXIDIZING LEAD BULLION CONTAINING PRECIOUS METALS. JOHN TUNNICLIFF, Newark, N. J. Filed Apr. 13, 1881. (No model.)



Claim.—1. In a cupellating apparatus, the combination of the pan A and furnace B with the pipe D, having joint *a*, and with the propelling apparatus E, all arranged to permit oxygen to be heated and forced into the lower part of said pan when the latter is filled with molten metal, substantially as described.

2. The process herein described of oxidizing all the lead contained in the mixtures of lead and precious metals by forcing into such mixtures, while they are in a molten condition, a current of superheated oxygen, and causing the same to ascend through the molten mixture, thereby producing oxide of lead that will float on top of the precious metal, substantially as described.

252,818. COTTON AND CORN PLANTER. JAMES M. TURLEY, Onion Creek, Tex. Filed Sept. 5, 1881. (No model.)



Claim.—1. The combination, with a seed-hopper, A, having a central discharge-opening, *b*, in its bottom, of the plungers H H, arranged in alignment with each other, and with a space between their inner ends, and reciprocating from one end to the center and from the center to the opposite end of the hopper alternately, substantially as described.

2. The combination, with a seed-hopper provided with a central discharge-opening, *b*, in its bottom, and a bridge, *c*, of the plungers H H, in alignment with each other, and provided with forked ends, with a space between them, and adapted to reciprocate from one end to the center and from the center to the opposite end of the hopper alternately, substantially as described.

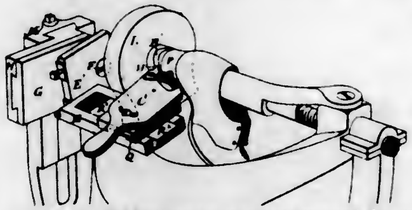
3. The combination of horizontally-reciprocating plungers H, having forked ends, and arranged in alignment as specified, the rigid frame I K, whose side bars work in guides, a seed box or hopper placed horizontal, and mechanism for connecting the plunger-frame with a transporting-wheel for reciprocating the plungers, substantially as shown and described.

4. In combination with the parallel side bars, K, and straps I for connecting them, the plungers H and nuts applied thereto, in the manner described, for adjustment of the plungers, as specified.

5. The combination of the two reciprocating and aligned plungers H, the hopper A, having discharge-opening *b* and bridge *c*, and the shaft L, having two sets of arms, *e*, which are arranged on opposite sides of said opening and inclined in opposite directions, as shown and described, so that the seed is pushed toward the opening when the plungers advance in that direction.

6. The shaft L, having inclined arms *e*, and means for imparting intermittent rotation to it, in combination with the hopper having a bottom discharge-opening and seed-ejecting devices, substantially as shown and described.

252,819. HEEL-TRIMMING MACHINE. MERRILL A. TYLER, Rockland, and HERMAN D. STONE, Boston, Mass., assignors to the Tyler Manufacturing Company, Portland, Me. Filed Nov. 18, 1881. (No model.)



Claim.—1. In a heel-trimmer, the combination, with the rotary jack and the pivoted knife-stock-supporting table E, provided with rollers J, of the cam-groove K on the jack, receiving the rollers J, and the block G, adapted to slide in guides toward and from the axis of the jack, and supporting the pivot of the table, said grooved cam and sliding block moving the table positively, as set forth.

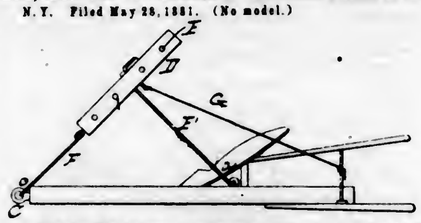
2. In a heel-trimmer, the combination of the rotary jack having the guide-groove R, curved laterally at R', the pivoted table or support E, guided by means, substantially as described, to give the trimming-knife its proper inclinations, and the knife-carrying stock C, supported by said table and adapted to be moved laterally thereon by the curve R' of the guide-groove, whereby the fullness or inclination of the heel at its rear portion is automatically increased, as set forth.

3. The combination of the jack having the curved guide-groove R, the pivoted table, guided by means, substantially as described, to give the trimming-knife its proper inclinations, the knife-carrying stock C, secured rigidly to a slide, Q, which is guided so as to move toward and from the axis of the jack, and a guide, R^3, supporting the slide Q, and guided to move in a line substantially parallel with the axis of the jack, the stock being thus allowed to move only in two directions, as set forth.

4. The combination of the jack, the pivoted table guided by means, substantially as described, to give the trimming-knife its proper inclinations, the guide R^2, guided on said table so as to move in a line substantially parallel with the axis of the jack, the slide Q, guided on the guide R^2 so as to move toward and from the axis of the jack, and the knife-carrying stock, pivoted to the slide Q, so that it can be turned thereon to vary its position, and provided with means for positively holding the stock upon the slide in any position to which it may be adjusted, as set forth.

5. The combination of the jack, the fixed standard M, having vertical guides, the slide H, movable vertically in said guides, the slide G, movable toward and from the axis of the jack, and the knife-supporting table pivoted to the slide G, as set forth.

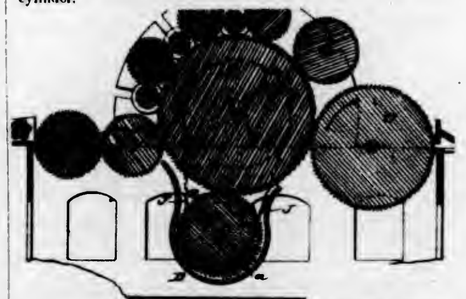
252,820. PLOW ATTACHMENT. REUBLAND UPDIKE, Hector, N. Y. Filed May 28, 1881. (No model.)



Claim.—The harrow attachment to a plow, consisting of the bar D, placed in V form with the beam, the forward connecting-rod F, the rigid arm E, hinged to the beam and having the shoulder or bearing *b*, and the cord G, whereby the harrow can be turned up and rest upon the plow-beam, substantially as specified.

252,821. CARDING-MACHINE. JNO. WALL, Amsterdam, N. Y. Filed Aug. 1, 1881. (No model.)

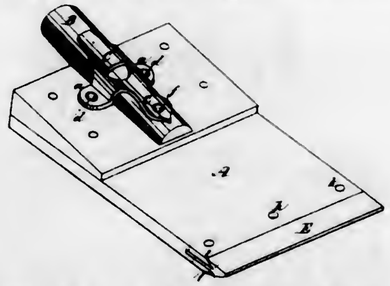
Brief.—A toothed cylinder located under the main cylinder of the carding-engine and revolving in a line parallel with the axis thereof is caused to perform the functions of a stripper by being driven at a higher rate of speed by means of a band passing from a band-wheel on the main cylinder to a smaller band-wheel on said stripper. The stripper is inclosed in a case or jacket, which receives or holds the extraneous matter removed from the main cylinder.



Claim.—1. As an improvement in carding-machines, the combination of the main cylinder A, cylinder or stripper B, arranged under the main cylinder and provided with metallic teeth *a*, and the case or jacket D, inclosing said cylinder B and forming a receptacle for the refuse matter, substantially as and for the purpose set forth.

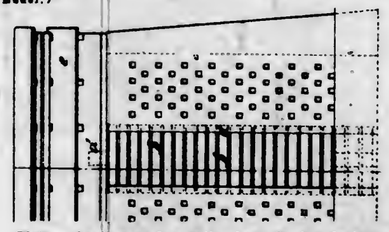
2. As an improvement in carding-machines, the combination, with the main cylinder A, of the toothed cylinder B, arranged underneath the main cylinder, and suitable mechanism by which the latter is driven at a greater speed than the former, for the purpose set forth.

252,822. SNOW-SHOVEL. CHARLES A. WAY, North Charlestown, N. H. Filed Oct. 31, 1881. (Model.)



Claim.—In a snow-shovel, the combination, with the blade A and handle B, of the metallic clasp C, provided on its sides with flanges or ears *a*, secured in place by bolts *d d*, passing through said ears and the blade, and riveted upon the plate D, and the bolt *f*, passing through the end of the clasp, the thin portion of the chamfered end of the handle, and the blade A, and riveted on the triangular plate D, all constructed and arranged substantially in the manner and for the purpose set forth.

252,823. CORRODING-HOUSE FOR THE MANUFACTURE OF WHITE LEAD BY THE OLD DUTCH PROCESS. WILLIAM H. WURTENBILL, Philadelphia, Pa. Filed Sept. 20, 1881. (No model.)



Claim.—An improved corroding-house having sloping walls of masonry, provided with numerous perforations, and with vertical openings *a* in two opposite sides, extending from the floor to the roof, and having their inner sides rabbeted to receive the ends of the boards *b*, and provided with a central perforated ventilating-flue, *d*, substantially as herein shown and described.

252,824. WAGON BOLSTER-SPRING. JEROME W. WETMORE, Erie, Pa. Filed May 14, 1881. (No model.)

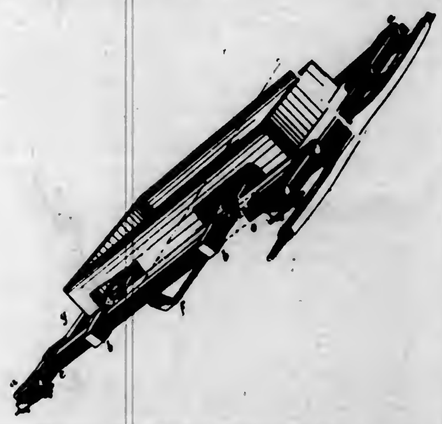


Claim.—1. The spring-bar *a*, when placed by the side of the bolster and supported in the middle and at each end without pivot-bearings, and connected by the arms F between the bearings with the bolster-board B, substantially as described.

2. The spring-supports *c c*, with connecting-plate G, in combination with the spring *a*, substantially as described.

3. The spring-bar *a*, bearings *c c*, and arms F, in combination with the arms D and bolster-board B, substantially as described.

252,825. VEHICLE-SPRING. JEROME W. WETMORE, Erie, Pa. Filed May 14, 1881. (No model.)



Claim.—1. The vertical or oblique spring side bar, *c c*, when sustained in the middle and at each end without pivot-bearings, in combination with the arms *b b*, connecting it with the body of the vehicle, substantially as described.

2. The oblique or vertical spring side bar, *c c*, sustained in the middle and at each end without pivot-bearings, in combination with the horizontal spring-bar *g* and arms *b b*, constructed and arranged substantially as described.

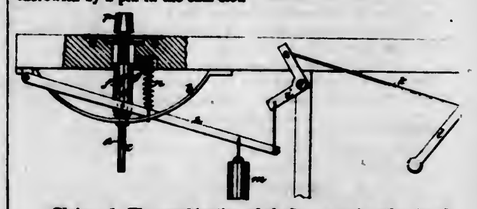
252,826. HARVESTER. WILLIAM H. WHITELEY, Springfield, Ohio. Filed Sept. 10, 1881. (No model.)



Claim.—In an inclined elevator for harvesters, the rollers O O', provided with yielding journals, in combination with the customary aprons, *a a'*, and mechanism whereby said rollers are forced against the outer or returning portions of said aprons, substantially as and for the purpose specified.

252,827. SIGNAL FOR RAILWAY AND OTHER PURPOSES. OSCAR F. WILBUR and DAVID SAFFORD, Ashton, Ill., assignors to themselves and Nathan A. Petrie, same place. Filed Sept. 24, 1881. (No model.)

Brief.—The lantern rests on a detachable head upon the rotating shaft, said shaft being operated through weighted vibrating lever pivoted to a cam-slotted sleeve sliding thereon and connected therewith by a pin in the cam-slot.



Claim.—1. The combination of shaft *a*, carrying the signal devices, the operating-lever A, connected with the shaft, and devices, substantially as described, to turn the shaft without moving it endwise, substantially as shown and described.

2. The combination of shaft *a*, carrying signaling device, the sleeve *c*, and the operating-lever A, substantially as shown and described.

3. The combination of shaft *a*, carrying signal devices, operating-lever A, crank-lever *i*, link *h*, and hand-lever *l*, substantially as shown and described, for operation as set forth.

4. The removable head *p*, formed to carry a lantern, in combination with the shaft *a* and head *c*, substantially as shown and described.

5. The sleeve *c*, provided with a slot, *f*, and fitted for movement by lever A, combined with shaft *a*, having pin *g*, substantially as shown and described, for the purpose of turning and locking the shaft, as specified.

252,828. LIFE-PRESERVING GARMENT. CHESTER WILLIAMS, Capac, Mich. Filed July 19, 1880. (No model.)



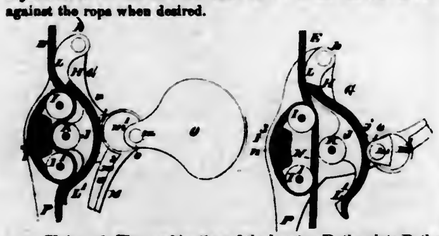
Claim.—1. A life-preserver composed of a jacket or garment having a permanently-attached air-tube commencing and terminating at the opening of the garment and continuing upward over the shoulders in enlarged caliber and down the sleeves and encircling the wrists, and provided with means for inflating the same, substantially as shown and described.

2. In a life-preserver, the combination of the jacket A and the continuous air-pipe B, terminating and commencing at the opening of the jacket at *a a*, and provided with or being of enlarged caliber at the shoulders, and having the pipe *c* and valve *f* located in one of its branches, as shown and described.

252,829. FIRE-ESCAPE. GEORGE L. WILLIAMS and HENRY RUDDLE, Edwardsville, Ill., assignors of one-third to James T. Cooper, same place. Filed May 21, 1881. (No model.)

Brief.—In the frame are journaled two sheaves, around which the rope passes. A brake pivoted to the upper end of the frame

is also provided with a roller-bearing. When closed a cam-lever pivoted to the outer side of the frame bears against the brake. An adjustable brake-shoe at the back of the frame can be set out against the rope when desired.



Claim.—1. The combination of the bearing D, the plate B, the screw C, having the shoulder *c*, the hook A, jointed to the plate B, the rope E, and the traveler G, substantially as described.

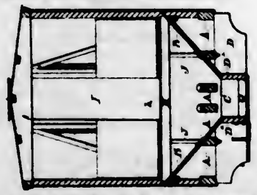
2. The traveler G, combining in its construction the frame H, the sheaves I I', the brake J, having the roller K, and the cam-lever M, substantially as described.

3. The combination of the frame H, the sheaves I I', the part P, the plate P', the shoe N, the screw *n*, the brake J, bearing K and lever M, substantially as described.

4. The combination of the frame H, sheaves I I', brake J, roller K, bearing L, and lever M, substantially as described.

5. The traveler G, having fixed or movable bearings at I I', the brake J, pivoted at A, and having a fixed or movable bearing at K, the cam-lever M, and the plate O, substantially as described

252,830. CAR. THOMAS L. WILSON, Port Hope, Ontario, Canada, assignor of one-half to Eugene Harmon Davis, Toronto, Canada. Filed Nov. 15, 1881. (No model.)



Claim.—1. In a car having hoppers constructed in its bottom, a series of transverse joists, H, permanently secured over the top of the hoppers, in combination with the longitudinally-arranged bars A, fixed to the joists H, so as to form a permanent flooring capable of carrying ordinary merchandise without presenting any serious obstruction to the free passage of grain into the hoppers.

2. In a car having hoppers constructed in its bottom and a skeleton-frame permanently fixed over the top of the hoppers, a series of ferrules or sleeves, J, arranged between the transverse joists H and longitudinal timbers A, in combination with bolts K, passing through the said ferrule and through the joists H and timbers A, the said bolts being screwed and provided with nuts for drawing the timbers together, substantially as and for the purpose specified.

3. In a car having hoppers constructed in its bottom, the cross-timbers D, securely bolted to the longitudinal timbers A and braced together by the bolts E, in combination with the timbers D', the whole being arranged substantially as described, for the purpose of forming a suspension-frame for supporting the hoppers.

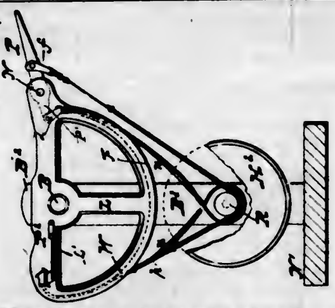
4. In a car, the sleeves J, provided with angular flanges at their lower ends, in combination with the joists H, timbers A, hopper-bottom B, and the bolts K, substantially as and for the purpose specified.

5. In a car provided with a hopper constructed substantially as described, the sliding door L and the guides M, bolted to the bottom of the timbers supporting the hopper, in combination with the lever N, rod O, and the apron Q, secured to the inner surface of the hopper-mouth, as and for the purpose specified.

6. In a car provided with a hopper and a sliding door moving in guideways, as described, the combination of an apron, Q, secured to the inner surface of the hopper-mouth, as and for the purpose specified.

252,831. DEVICE FOR CONVERTING MOTION. JAMES W. ANDERSON, Lancaster, Pa. Filed Aug. 17, 1881. (No model.)

Claim.—1. The appliance for converting reciprocatory rotary motion into rotary motion, consisting of a double-acting actuating-



lever, a vibrating frame or arc having on its peripheral extension the fulcrum for said lever, and tackle-belts connected and arranged to communicate the motion of said arc or frame to the driven pulley of a machine by alternate engagement of said belts, substantially as and for the purposes set forth.

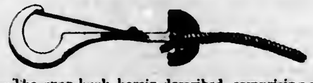
2. The oscillatory arc or frame L W, provided with belts *m n*, attached thereto at E' S', and to bits *d f* on lever P, which latter is pivoted at N to said frame, and operating substantially as and for the purpose set forth.

3. The sections L W L W' of the divided oscillatory arc or frame, pivoted upon each other at B on the upright B', and provided with the peripheral extensions O Q O' Q', in combination with belts *m n* and lever P D applied thereto, all arranged and operating substantially as set forth.

4. A tackle-belt, *m*, in combination with sheet-metal lining or re-enforcement *p* riveted or wired thereto, substantially as and for the purpose set forth.

5. The oscillatory-motion device composed of the vibratory arc L W, vibratory lever P, belts *m n*, in combination with a rotary machine having a fixed pulley, R, and a fly-wheel, H', or its equivalent, all operating conjointly, substantially as set forth.

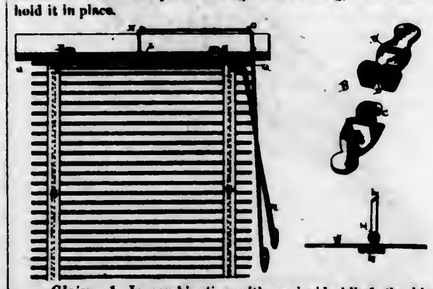
252,832. SNAP-HOOK. ADOLPH BURRD, Macon, Ga., assignor to Burrd Brothers, same place. Filed Nov. 7, 1881. (No model.)



Claim.—The snap-hook herein described, comprising a body or hook portion having branching arms and a head or base portion provided with a hemispherical cavity, and an opening at the bottom of said cavity adapted to receive a knotted rope and allow it to turn freely thereon, all substantially as herein set forth.

252,833. INSIDE WINDOW-BLIND. EDWARD W. BOWSLAUGH, Grimsby, Ontario, Canada. Filed Nov. 11, 1881. (No model.)

Brief.—The hinges by which the blind is secured to the window-casing are made in two parts, each part being provided with a slot, by which it can be adjusted while in position. The slats are fastened to the webbing by hooks, one end of which passes through the slat and the other passes through the webbing, and is bent to hold it in place.



Claim.—1. In combination with an inside blind, the hinge B, made in two parts, one of which is provided with the hook C and the other with the portion D, over which the hook catches, whereby the blind can be removed from the window without having to remove the screws from the hinges, substantially as shown.

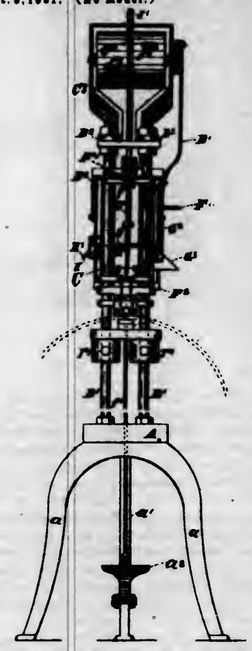
2. In combination with an inside blind, the hinges B, provided with the hooks C and parts D, the parts of the hinges being

provided with slots for the screws to pass through, whereby the parts of the hinges can be adjusted into line with each other without having to remove the screws, substantially as described.

3. In an inside window-blind, the combination of a series of slats, F, provided with holes I near their ends, the webbing G, and the hooks H, which have an eye at one end for catching in the slat and a bend at the other end for catching against the outer side of the webbing, substantially as set forth.

4. The combination of the blind with hinges which are made in separable parts, and which can be detached without removing one of the screws, one of the parts being provided with a slot, so that it can be adjusted in position, substantially as specified.

252,834. NAIL-DRIVING MACHINE. JOHN J. BUNN, Buffalo, N. Y., assignor of one-half to Edward M. Jewett, same place. Filed Oct. 3, 1881. (No model.)



Claim.—1. In a nail-driving machine, a separating nail-bar, G, having both a longitudinal and an oscillating movement, in combination with the arm G^3, pin F^4, inclined projecting piece G^3, spring H, and their operating mechanism, substantially as and for the purposes described.

2. The oscillating nail-box F^5 and inclined guideway C, in combination with the longitudinally movable and oscillating nail-separating bar G and the separating-bar G', with their operating mechanism, substantially as specified.

3. The inclined guideway C, in combination with the vertical rods B', end piece, B^2, nail-receiving jaws J J, and spring *g*, for the purposes described.

4. The parts $K' K^2$, provided with the opening K, in combination with the nail-guiding jaws L L and springs *r r*, for the purposes described.

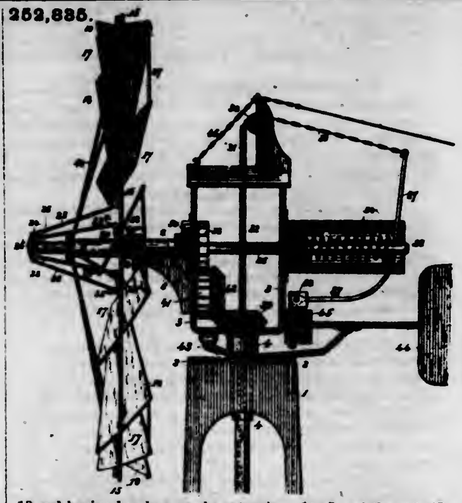
5. The combination of the nail-driving bar F and its operating connections D^2, F^3, *f*, and a^3 with the vertically-adjustable anvil N, for the purposes specified.

6. The inclined guideway C, provided with the end piece, B^2, adapted to move up and down on the rods B', in combination with the part K' and the bolts T, for limiting the vertical movement of the guideway C, as set forth.

252,835. WINDMILL. BLANCHARD CHAMBERLAIN, Bellefontaine, Ohio, assignor to John H. Wilson, same place. Filed Oct. 18, 1881. (No model.)

Claim.—1. The combination of hub 8, having the flange 9, the radial arms 11, extending therefrom, concentric rings 13 14 15, radial shafts 16, carrying sails 17 and having bearings on the inner ring, 13, and outer ring, 15, intermediate shafts, 19, carrying sails

252,835.



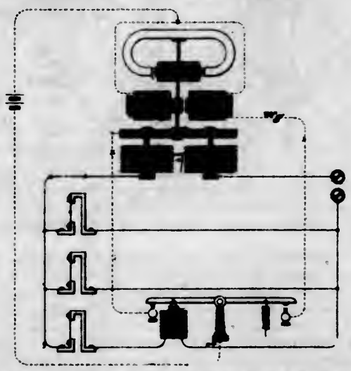
18 and having bearings on the outer rings, 14 15, and the rods 37, connecting the sails 17 and 18, as set forth.

2. The combination of the hub 8, having flange 9, the radial arms 11, extending therefrom, three concentric rings, 13 14 15, radial shafts 16, formed with crank-arms 20 and wrists 21, rotary collar 24, rods 23, connecting the wrists with the collar, presser-rod 26, having fixed collars 25, short shafts 19, sails 17 and 18, and the rods 37, connecting said sails, as set forth.

3. In combination with the feathering sails, connecting-rods, and rotary collar, the horizontal presser-rod 26, having slots 26* and collars 25 25 and 36, lever 27, having fulcrum 28 and passing through said slot, the spring 34, located on the presser-rod between the lever and collar 37, governor-rod 31, and chain 29, working over pulley 30 and connecting the lever to the governor-rod, as set forth.

4. The combination of the revolving mill-head 3 4, pawl 43, secured to the housing, the rack 2, hinged vane 44, and tripping device 47, operating substantially as and for the purpose set forth.

252,836. ELECTRIC LIGHTING SYSTEM. MOSES G. FARMER, Newport, R. I. Filed June 7, 1881. (No model.)



Claim.—1. In an incandescent electric lighting system, the method hereinbefore described of uninterruptedly controlling the strength of current of a main line of continuous conductors by and correlatively with incidental variations of strength in the same current traversing a continuous branch circuit.

2. In an incandescent electric lighting system, the method hereinbefore described of varying the strength of current of a main line of continuous conductors by dynamic effects produced by variations of strength in the same current traversing a continuous branch circuit.

3. In an incandescent electric lighting system, the method hereinbefore described of automatically controlling the strength of

current traversing a main line of continuous conductors by and correlatively with incidental variations of strength in the same current traversing continuous branch circuits in which the lights are included.

4. The combination, substantially as set forth, of a generator of electricity, separate branches or derived circuits uniting the poles or main conductors thereof, mechanism for varying the strength of the current flowing through said conductors, means for controlling the current-varying mechanism included in one of the branches and actuated by the current flowing therein, and an electric lamp or lamps included in each of the other branches.

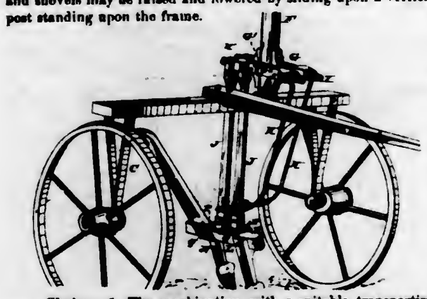
5. The combination, substantially as hereinbefore set forth, of a generator of electricity, two or more separate branches or derived circuits connecting the poles or main conductors of said generator, mechanism for regulating the strength of the electric current in the main and branch circuits included in one of said branch circuits and actuated by variations in the current traversing the same, and one or more electric lamps included in the remaining branch or branches.

6. The combination, substantially as hereinbefore set forth, of a generator of electricity, two or more separate branches or derived circuits connecting the poles or main conductors of said generator, mechanism for regulating the strength of the electric current in the main and branch circuits, an electro-magnetic helix included in one of said branch circuits for controlling said regulator, and one or more electric lamps included in the remaining branch or branches.

7. The combination, substantially as hereinbefore set forth, of a generator of electricity, two or more separate branches or derived circuits connecting the poles or main conductors of said generator, one or more electric lamps included in each of said branches, an adjustable rheostat included in that portion of the circuit of the generator common to all the lamps, and mechanism, substantially such as described, whereby the resistance of said rheostat is diminished as the joint resistance of the whole number of lamps is increased, and the reverse.

252,837. CULTIVATOR. ALEXANDER GUMP, Fletcher, Ohio, assignor of one-half to Jacob Gump, same place. Filed Oct. 20, 1881. (No model.)

Brief.—The cultivator-beams are hinged upon suspending-bars, so as to swing laterally. The frame that suspends the beams and shovels may be raised and lowered by sliding upon a vertical post standing upon the frame.



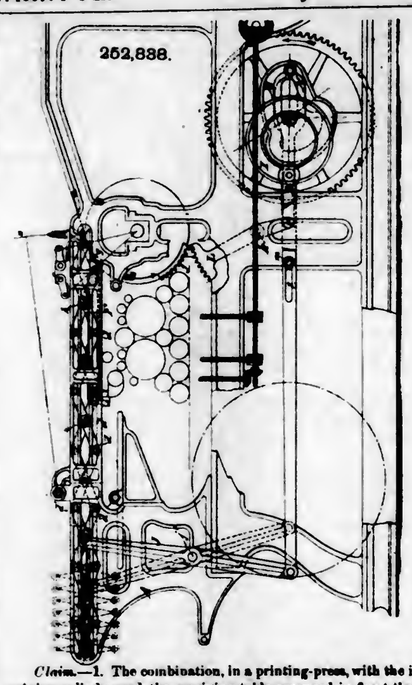
Claim.—1. The combination, with a suitable transporting-frame, of the vertically-adjustable frame G, having brackets H, the rods J, hinged upon said brackets, and the cultivator-beam hinged between the lower ends of said rods, substantially as set forth.

2. The combination of the frame G, having brackets H J, the arms J, hinged upon brackets H, the rods or braces K, hinged upon brackets I and connected to arms J, and the cultivator-beam hinged between the lower ends of arms J, substantially as set forth.

3. The combination of the frame-beam B, having upright F, the sliding frame G, having brackets H I, the arms J, the braces K, and the cultivator hinged between the lower ends of the arms J, substantially as herein described, for the purpose shown and specified.

252,838. PRINTING-PRESS. JOHN HENRY, Jersey City, N. J., assignor to Calvert E. Cottrell, New York, N. Y. Filed July 30, 1881. (No model.)

Brief.—The delivery gripper-bar and gripers are supported on ways above the bed, and are caused to reciprocate on said ways by lazy-tongs mechanism operated from the main shaft, so as to take the sheet from the front of the impression-cylinder and deliver it face upward on the receiving-table. The guideways are hinged to frame, so that they may be turned up.



Claim.—1. The combination, in a printing-press, with the impression-cylinder and the receiving-table arranged in front thereof, of stationary ways between said cylinder and table and delivery-gripers arranged in front of the cylinder, supported and guided by said ways, and operating in their movements both toward and from the cylinder entirely independent of the bed, substantially as herein described.

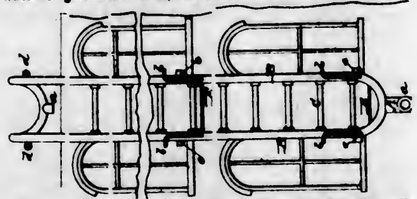
2. The delivery-griper guiding-ways hinged to the press-frame, substantially as herein described, whereby they are capable of being turned up or over, as and for the purpose herein set forth.

3. The combination, substantially as herein described, with the delivery-gripers, of carriers composed of lazy-tongs attached to fixed studs or pins on the press-frame, and means, substantially as herein described, of operating the said lazy-tongs.

4. The combination, with the frame of the press, provided with sliding bearings and with vertical guiding-faces *s s*, of the bed Q and the guide-rollers S S and their screw-threaded yokes and nuts, providing for their adjustment, substantially as and for the purpose herein described.

252,839. FIRE-ESCAPE. GEO. W. LEVI, Louisville, Ky., assignor of one-half to M. J. Duffy and Louis Kostal, same place. Filed Oct. 24, 1881. (No model.)

Brief.—A ladder of tubing provided with foot and hand rails, by which to gain access to it, and hose and tackle attachments.



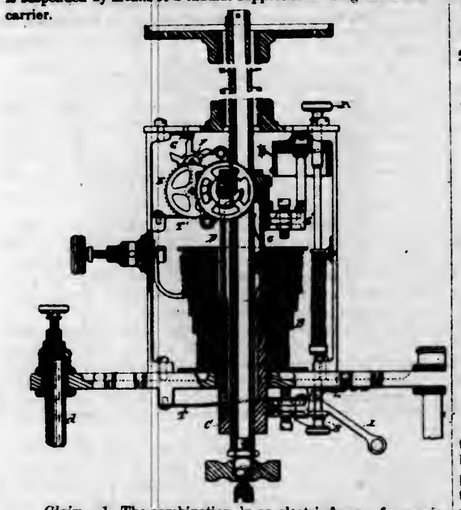
Claim.—1. In a fire-escape ladder, the combination of branch pipes B B, cross-pipes C C, hose-connections *a a*, platform E E, and stand-pipe A, all in the manner and for the purpose set forth.

2. The combination, in a fire-escape ladder, of the branch pipes B B, having tackle attachments *d d*, and platforms E E, with railings *b b*, substantially as and for the purpose set forth.

3. The within-described fire-escape ladder, consisting of the branch pipes B B, cross-pipes C C, stand-pipe A, platforms E E, and tackle attachments *d d*, all substantially as and for the purpose set forth.

252,840. ELECTRIC LAMP. HIRAM S. MAXIM, Brooklyn, assignor, by mesne assignments, to the United States Electric Lighting Company, New York, N. Y. Filed Nov. 27, 1879. Patented in England Apr. 21, 1880.

Brief.—The carbon-carrier is controlled by a train of gears mounted upon a hollow core, through which the carrier passes. A fixed detent is employed in connection with the train. The lamp is suspended by means of a tubular support containing the carbon-carrier.



Claim.—1. The combination, in an electric lamp, of a gravitating carbon-carrier, with an axial magnet having a hollow core surrounding the carbon-carrier, a train of gearing mounted upon said core and controlling the descent of the carbon-carrier and a fixed detent into engagement with which the gearing is brought by the movement of the magnet-core, substantially as described.

2. The combination, in an electric lamp, of a movable magnet-core surrounding a gravitating carbon-carrier and bearing-gearing for controlling its descent, with flat springs supporting said core and holding it in place laterally, substantially as described.

3. The combination, in an electric lamp, of the magnet B with the movable core C and the springs T T', suspending said core free from frictional contact with the stationary part of the lamp, substantially as described.

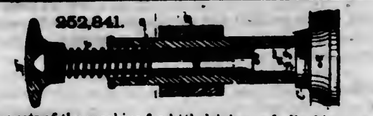
4. The combination, in an electric lamp, of a spindle and rack carrying one of the carbons, with a train of gearing, and a stationary detent, the said train of gearing being suspended on springs, substantially as described, and for the purposes set forth.

5. The combination, in an electric lamp, of a movable magnet-core hung on springs and carrying the carbon feeding and regulating devices, with the hook L for locking the same, substantially as described, and for the purposes set forth.

6. In an electric lamp, the combination, with the upper and lower carbons, of a sectional frame, one portion carrying the upper carbon, the other portion carrying the lower carbon, and the globe, the two sections being adjustable in the direction of the length of the carbons, so as to lengthen or shorten the lamp-frame, substantially as set forth.

7. The combination, with the upper-carbon carrier, its feeding mechanism and supporting-frame, of a tubular support attached to and adapted to sustain the lamp from above, extending above the case or frame in line with the carbon-carrier, so as to receive and inclose the latter.

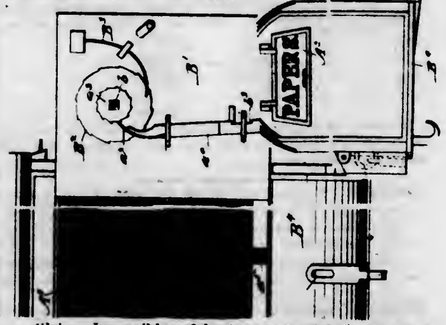
252,841. MACHINE FOR INSERTING AND CLINCHING STAPLES. GEO. W. MCGILL, New York, N. Y. Filed Dec. 10, 1881. (No model.) Patented in England Feb. 25, 1879, in Germany Mar. 15, 1879, in France Sept. 13, 1879, in Belgium Jan. 30, 1880, and in Austria-Hungary May 5, 1880.



Claim.—1. The combination of the anvil C, the guiding-collar B', and the removable and replaceable case D, containing the driving-plunger E, all constructed and arranged substantially as described.

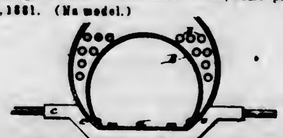
2. The base-plate A, anvil C, guiding-collar B', and the removable and replaceable case containing the driving-plunger, all so constructed that said case may be used in combination with the other parts of the machine for both driving and clinching a staple, or may be withdrawn from the collar B' and used as a separate tool for driving a staple without clinching it, substantially as described.

252,842. STREET LETTER-BOX. TERRY MCLAUGHLIN, Chicago, Ill., assignor of one-half to Josiah J. Myers, same place. Filed Mar. 18, 1881. (No model.)



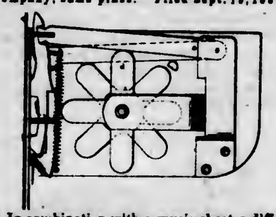
Claim.—In a mail-box of the character hereinbefore described, the combination, with the door B' and the bottom flap, B⁴, both being secured to box proper by one and the same lock, of the dial-plate B³, the ratchet-wheel a^3, the spring-lock B⁵, the pawl a^5, and the vertical lever a^4, all constructed, arranged, and operating substantially as and for the purpose set forth.

252,843. STEAM-BOILER. WILLIAM R. NICHOLS, Oswego, N. Y., assignor to the Ames Iron Works, same place. Filed Oct. 18, 1881. (No model.)



Claim.—The main boiler-shell A, having the straight bottom *a*, formed of a continuation of said shell, and the fire-shell B, of segmental form in cross-section, joined at its longitudinal edges to the interior of the main shell at or near the edges of the straight bottom portion thereof, all constructed and combined substantially in the manner specified and shown.

252,844. MECHANICAL MUSICAL INSTRUMENT. HENRY B. NORRIS and LUCIEN A. HART, Ithaca, N. Y., assignors to the Autophone Company, same place. Filed Sept. 19, 1881. (No model.)



Claim.—1. In combination with a music-sheet, a differential-feeding mechanism for mechanical musical instruments, the same consisting of a series of feeding hooks or arms arranged in different planes, and constructed to operate directly upon said music-sheet, substantially as before set forth.

2. A differential feeding mechanism for mechanical musical instruments, mounted at the transverse center of such instrument, substantially as before set forth.

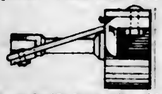
3. The combination, substantially as before set forth, of the cams mounted side by side on a single shaft, the rock-levers, one opposite each cam, and operated thereby, the pawls secured one to each rock-lever and the springs.

4. The combination, substantially as before set forth, of the feeding-pawls provided with springs, the cams (one for each pawl) for moving the pawls one at a time in one direction, and the music-sheet provided at its center with feed-holes.

5. The combination, substantially as before set forth, of the feeding-pawls provided with springs, the cams (one for each pawl) for moving the pawls one at a time in one direction, and the music-sheet provided at its center with two or more rows of feed-holes.

6. A perforated music-sheet having a series of longitudinal rows of feed-holes along the center of the sheet, arranged as described, and having note-holes on each side thereof, substantially as before set forth.

252,845. FLAT-SEAM KNIFE FOR USE IN SOLDERING CANS. ROBERT NEIL, Wilmington, Del., assignor of one-half to J. Muir Clark, London, England. Filed Sept. 12, 1881. (No model.)



Claim.—A flat-seam knife for use in soldering cans, consisting of the sole-plate, the lever, the blade, and adjustable guide, substantially as set forth.

252,846. PREPARATION OF CHINOLINE. WILHELM PICKHARDT, New York, and HERMANN EBERMANN, Brooklyn, assignors to said Pickhardt and Adolf Kuttroff, New York, N. Y. Filed Dec. 8, 1881. (Specimens.)

Claim.—As a new article of manufacture, the citrate of chinoline herein described and having the characteristics above set forth.

252,847. PREPARATION OF CHINOLINE. WILHELM PICKHARDT, New York, and HERMANN EBERMANN, Brooklyn, assignors to said Pickhardt and Adolf Kuttroff, New York, N. Y. Filed Dec. 8, 1881. (Specimens.)

Claim.—As a new article of manufacture, the sulphate of chinoline herein described and having the characteristics above stated.

252,848. ELECTRICAL GAS-BURNER. JEROME REDDING, Malden, assignor to himself and Harvey Redding, Everett, Mass. Filed Aug. 13, 1881. (Model.)

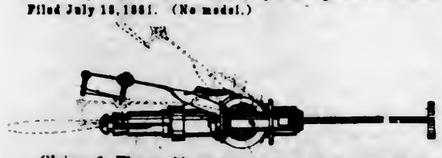


Claim.—1. As an article of manufacture, an insulating section for gas-burners, having a yielding socket, substantially such as herein described, adapted to receive and permit the removal of a common lava tip, and electrodes secured to said section outside of the socket, as set forth.

2. The combination of the insulating section having a yielding socket adapted to receive and permit the removal of a common lava tip, and electrodes secured to said section outside of the socket by a water-proof cement, substantially such as described, in which said electrodes are embedded, substantially as and for the purpose described.

3. The improved molded insulating section or tube for a gas-burner, having slots or grooves made on its inner surface at its upper end for the reception of the electrodes and the cement or material whereby said electrodes are secured, as set forth.

252,849. ELECTRIC GAS-LIGHTING. JEROME REDDING, Malden, assignor to himself and Harvey Redding, Everett, Mass. Filed July 18, 1881. (No model.)



Claim.—1. The combination of a gas-burner, a contact-arm supported by and insulated from the burner and connected with one pole of a battery, a movable metallic arm connected with the opposite pole of the battery and provided with a piece of platinum one end of which is in metallic connection with said arm and the other supported by an insulated contact-arm thereon, and means for moving the pivoted arm to close the circuit through the platinum and cause the latter to ignite the gas by catalytic action, as set forth.

2. The combination of a gas-burner, a contact-arm supported by and insulated from the burner and connected with one pole of a battery, a pivoted metallic arm connected with the opposite pole of the battery and provided with a piece of platinum one end of which is in metallic connection with said arm and the other supported by an insulated contact-arm thereon, and means for simultaneously turning on the gas and vibrating the pivoted arm to bring its insulated contact-arm into contact with the fixed arm of the burner and thereby close the circuit through the platinum, the latter being at the same time moved into the gas issuing from the burner and caused to ignite the same by catalytic action, as set forth.

3. The combination of a gas-burner, a gas-cock therefor arrested in its open and closed positions by stops, the platinum-carrying arm pivoted to turn independently of the cock, and a spring connecting the arm and cock, said spring causing the arm and cock to move together until the latter is arrested in its open position, then permitting the arm to be additionally moved until the circuit is closed through the platinum and the gas is ignited thereby, and finally withdrawing the platinum automatically from the flame without moving the cock, as set forth.

4. The combination of the burner having the fixed contact-arm, the vibrating arm moving with the gas-cock and provided with a pinion, M, a vertical shaft, N, journaled in an arm projecting from the burner and provided with a pinion, N, meshing with the pinion M, and a downwardly-extending rod or handle adapted to be grasped by the operator, as set forth.

5. The combination of the burner having the fixed contact-arm, the vibrating platinum-carrying arm moving with the gas-cock and provided with a pinion, M, a vertical shaft, N, journaled in an arm projecting from the burner and provided with a pinion, N, meshing with the pinion M, and a pendent rod or handle connected to said shaft, so as to swing freely in all directions, as set forth.

6. In an electric gas-lighting apparatus, an elongated strip of platinum standing substantially parallel with and projecting slightly into the flat side of the flame, whereby the platinum is presented to the best advantage to the gas and catalytic action is promoted, as set forth.

7. In an electric gas-lighting apparatus, a slip of platinum adapted to be heated by electricity, made wider at one end than at the other, and located so that its wider end only will project into the space occupied by the flame, as set forth.

252,850. COMBINED STAIR-CARPET FASTENER AND STAIR-ROD SECURER. CHARLES D. STONE, Brooklyn, N. Y. Filed Nov. 25, 1881. (No model.)

Brief.—The device may be provided with an eye to secure the stair-rod or may be constructed without an eye. In the latter case it serves only to fasten the carpet in place; in the former to hold the stair-rod as well as to fasten the carpet in place.



Claim.—1. The stair-carpet fastener consisting of bracket A, formed of a wire doubled together and having screw-holes *a a*, thence turned over and brought back to overhang the shank, substantially as set forth.

2. In a stair-carpet fastener and stair-rod fixture, an arm which extends inwardly to overhang the carpet, and thence outwardly, forming a socket or eye to receive a stair-rod, as and for the purpose set forth.

3. The stair-carpet fastener and stair-rod fixture consisting of bracket A, formed of a wire doubled together and having screw-holes *a a*, thence turned over and brought back to overhang the shank, and terminating in an eye, A', substantially as set forth.

252,851. CURTAIN-FIXTURE. HENRY S. WING, Ashtabula, Ohio, assignor to Jennie A. Wing, same place. Filed Oct. 11, 1881. (No model.)

Brief.—The friction-disk, which bears against the bracket, is secured to a screw-threaded shank, which passes into the roller. A spiral spring surrounds the shank within a socket in the end of the roller.



Claim.—1. In a curtain-fixture, the combination, with the roller and the screw-threaded shank, of the bracket through which the shank extends, a spring, D, and disk E, the latter being secured to the end of the shank and adapted to bear against the outer side of the bracket, substantially as set forth.

2. In a curtain-fixture, the combination, with the roller having the socket *c*, of the screw-threaded shank F, disk E, secured thereto, the bracket A, and spring D, surrounding said shank within its socket, said disk E being adapted to have frictional engagement with the disk B of the bracket, substantially as set forth.

252,852. ANIMAL-TRAP. FRANK WINSLOW, Hiawatha, Kans. Filed Nov. 18, 1881. (No model.)



Claim.—1. In an animal-trap, the combination, with a box, of a transverse shaft supporting a series of weighted platforms, and suitable stop devices for engaging said platforms, substantially as described.

2. In an animal-trap, the combination, with a box, of a transverse shaft supporting a series of tilting platforms, and swinging leaves provided with catches or stops adapted to engage with said platforms, substantially as described.

3. In an animal-trap, the combination, with the box having its rear side projecting above the other side and ends of the box, and provided with a transverse cleat, leaves hinged to said cleat, and each having two stops, one of which is beveled, of a series of tilting platforms pivoted upon a transverse shaft, and recessed and provided with rollers and weights, substantially as described.

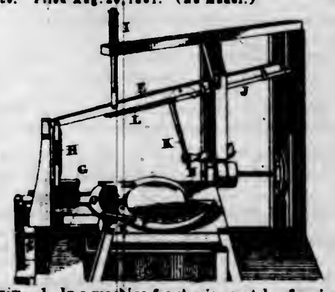
4. In an animal-trap, the combination, with the box having the partition and transverse shaft, of a series of tilting platforms pivoted on said shaft and provided with weights, substantially as described.

5. In an animal-trap, the combination, with the box, transverse shaft, and swinging leaf having the catches, as described, of a pair of tilting platforms, recessed as described, and provided with rollers and supported upon said shaft, as set forth.

6. In an animal-trap, the combination, with the box and tilting platforms, of the removable trough or passage H, having its lower side open and secured to the box by end cleats, *h*, as set forth.

7. In an animal-trap, the combination, with the box, of the removable top section, G, and removable passage H, having the end cleats, *h*, and interior transverse strip, I, substantially as described.

252,853. MACHINE FOR BENDING AND SHAPING METAL ARTICLES. AUGUSTUS E. WOODYATT, Guelph, Ontario, Canada, assignor to the Guelph Carriage Goods Company, same place. Filed Aug. 20, 1881. (No model.)



Claim.—1. In a machine for shaping metal, a forming-block made in the form it is desired to produce the article and supported on a table having a slot through its top around and corresponding with the shape of the block, in combination with a compressing bar or bars arranged to compress against the forming-block the metal to be shaped, and a tank containing tempering-fluid placed below the table to receive the plates falling through the slot the instant they have been compressed into the required shape.

2. In a machine for forming metal, having a forming-block supported on a table with a slotted passage-way cut through its top, so as to permit the article compressed against the block to fall through the table, the compressing-bars P, pivoted on the table N, and connected to the cross-head Q by the links R, in combination with the wedge-shaped block G, arranged to operate the cross-head, as described, and having an indentation on its edge at a point which will permit the cross-head to spring back when the article has been compressed against the forming-block, thereby releasing from the pressure of the compressing-bars the article, which will then fall through the slotted passage-way in the table into the oil-tank below.

3. In a machine for shaping metal, having a compressing arm or arms operated in connection with a forming-block, a wedge-shaped block arranged to operate the compressing-bars and connected to the pivoted lever E by the rod H, in combination with the sliding plate J, connected to the lever and provided with a spring, L, and hand-lever K, for moving the plate J, so as to come in contact with the moving cross-head C, by which the lever E is tilted, so as to impart a downward movement to the block G, substantially as and for the purpose specified.

252,854. HARVESTING-MACHINE. CHAS. H. YOUNG, Derry, Pa. Filed Sept. 24, 1881. (No model.)



Claim.—1. In a harvesting-machine in which the main frame is raised or lowered by means of pinions on the axle working in curved rack-standards on the frame, the combination, with the axle, of the worm-wheel fast thereon, and the worm or screw on the tumbling shaft for actuating the same, and the shaft and pinions, substantially as described.

2. In a harvesting-machine in which the main frame is raised and lowered by means of pinions on the axle working in curved rack-standards on the frame, the jointed or tumbling worm-shaft for actuating said pinions through a worm-wheel on the axle, in combination with the sheave on the fixed portion of the shaft, and the cord or chain connecting it with the grain-wheel lever for operating the same, and raising or lowering the outer end of the platform simultaneously with the raising or lowering of the main frame, substantially as described.

252,855. RAILWAY-CAR. WILLIAM P. PREWITT, Hilton, Ky., assignor to himself and Caleb W. Bell, same place. Filed Dec. 7, 1881. (No model.)



Claim.—1. The combination, with a railroad-car, of two sliding or retracting supports surrounded by spiral springs, to which are secured cross-supports, thus adapting said supports to close up or open out, substantially as and for the purpose described.

2. The combination, with a railroad-car, of the rods B B, surrounded by spiral springs *b b*, and rods or connections *a a*, all substantially as and for the purpose set forth.

3. The combination, with a railroad-car, of rods B B, springs *b b*, connections *a a*, and chain *c*, all arranged to operate substantially as and for the purpose set forth.

252,856. COMB. VINCENT W. WILDER, Leominster, Mass., assignor to Wilder, Paton & Metcalf, same place. Filed Oct. 22, 1881. (No model.)



Claim.—1. The combination, with the frame-piece A, having upwardly-inclined extremities *a*, of an arched wire springing from said extremities, and united with said frame-piece only at its two extremities *a*, and having beads or other ornaments strung thereon in close contact with each other, substantially as and for the purpose described.

2. The combination, with the frame-piece, of a wire connected only at each extremity to an end of said frame-piece, and curved above it, and having beads or other ornaments strung thereon in close contact with each other, so as to form an arch, substantially as described.

3. A comb for ladies' head-wear, comprising a frame-piece or base, a beaded wire covered over said frame-piece or base and attached to it, and one or more beaded wires filling the space between said curved wire and said frame-piece or base, substantially as described.

252,857. INSULATOR FOR TELEGRAPH-WIRES. CHARLES L. GOSS, New York, N. Y., assignor of one-fourth to John D. Townsend, same place. Filed May 10, 1881. (No model.)



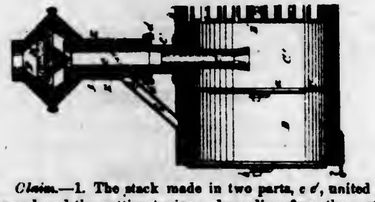
Claim.—1. The telegraph-wire A, having series of insulating-rings B B strung directly upon it, the said rings being separated from and not in contact with each other on the wire, and made of non-conducting material, substantially as herein shown and described.

2. The nested or massed telegraph-wires A A, each having insulating-rings B B strung upon it, said rings being arranged on the several wires so as to break joints, thereby allowing less than the length of the radius of one ring to intervene between the wires with which said rings are respectively in contact, substantially as specified.

3. The nested or massed telegraph-wires, each having insulating rings or beads strung directly upon it, said rings being arranged upon the several wires so as to break joints, thereby allowing less than the radius of one ring to intervene between the wires with which said rings are respectively in contact, and an insulating substance which fills the remaining spaces between the wires when placed in a pipe or box, whereby the wires are insulated and protected from moisture, substantially as herein shown and described.

REISSUES.

10,013. SMOKE-STACK AND SPARK-ARRESTER. WILLIAM F. COSGROVE, Jersey City, N. J., assignor to himself and ERNEST F. JENNINGS, same place; said Cosgrove and Jennings assignors, by mesne assignments, to the J. K. Taylor Company, Concord, N. H. Filed Dec. 5, 1881. Original No. 218,937, dated Aug. 26, 1879.



Claim.—1. The stack made in two parts, *c c'*, united at the flange *d*, and the petticoat-pipe *e*, depending from the part *c'*, in combination with the jacket E, mounted on the flange *d*, and supporting in its head the arresting and deflecting devices, for the purpose set forth.

2. The chamber D, formed as an integral extension of the boiler-shell A, but distinct from the smoke-arch C', and arranged to receive the sparks, dust, and cinders deflected downward in the stack, substantially as set forth.

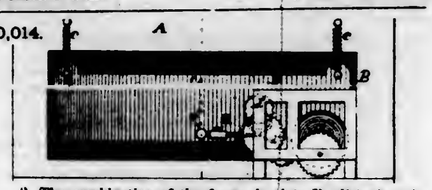
3. The chambers C' D of the boiler A, separated by the solid or impervious partition C, and arranged with relation to the smoke-stack, deflectors, and conveying-tube, substantially as set forth.

4. The boiler A, having forward of the smoke-arch C' a chamber, D, the cylindrical walls of which are coincident or integral with the boiler-shell, in combination with suitable means of arresting the cinders and sparks carried upward by the draft, and an oblique pipe to convey them to said chamber, substantially as set forth.

10,014. SIGN. EMIL GRAE, Toledo, Ohio, assignor, by mesne assignments, to John Tremlett and Alexander S. Hann, St. Louis, Mo. Filed Dec. 22, 1881. Original No. 230,268, dated July 20, 1880.

Claim.—1. In a sign, a plate having open letters supported by a suitable frame, in combination with a moving or vibrating brilliant disk or plate, substantially as and for the purpose set forth.

10,014.



2. The combination of the frame A, plate B, glistening vibrating plate or disk C, springs *e*, and clock-work mechanism D, all made substantially as and for the purpose set forth.

10,015. WINDOW-SHADE. HANNAH B. S. NORMAN, St. Louis, Mo. Filed Dec. 9, 1881. Original No. 247,394, dated Sept. 20, 1881.

Brief.—Ornamented paper or other thin material is applied to one or both sides of translucent portions of the web, the designs on both sides registering.

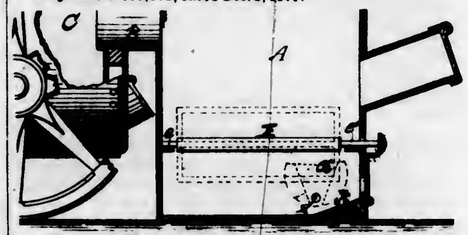


Claim.—1. A window-shade the body of which is a continuous web, A, and having mounted thereupon and upon one or both sides of the web, as desired, the translucent ornamented paper C, said web at the point or points where the ornamented paper is attached being translucent, substantially as described.

2. A window-shade any part of which having mounted thereupon and upon one or both sides of said part, as desired, ornamented paper or other thin, flexible, translucent material, said web at the point or points where the paper is attached being translucent.

3. A window-shade having ornamented paper or other thin, flexible, translucent material upon both sides thereof, the designs on said papers registering.

10,016. FIRE-BOX ATTACHMENT FOR FARM-ENGINE BOILERS. HARRISON GILLETT, Lake City, Minn., assignor of one-half to James H. Gillett, same place. Filed Oct. 8, 1881. Original No. 232,270, dated Dec. 2, 1879.



Claim.—1. The inclosed box provided with a flue leading from its upper portion and adapted for connection with a boiler-furnace, and having at a suitable level a horizontal series of wide rotatable grate-bars provided with projecting handle or handles, and outwardly-projecting feed-chute leading into the box above the grate-bars and a water-chamber below said grate-bars, substantially as described.

2. The fire-box A, having flue B, rotatable grate-bars E, water-chamber F, and a suitable fuel-feed opening, substantially as described.

3. In a fire-box, the combination, with the water-chamber below the grate-bars, of the water-pocket G, having near its bottom an opening leading into said water-chamber, substantially as described.

4. In a fire-box, the water-chamber below the grate-bars, having arranged within it an incline, *h*, leading from the bottom thereof to the doorway, substantially as and for the purpose set forth.

5. A portable straw-burning detachable fire-box having a grate and provided with an opening or door through which the straw may be fed, and having an opening or flue for applying the same to a farm-engine boiler for the purpose of generating steam, substantially as described.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Northern District of Illinois.

EDGARTON *et al.* v. THE FURST & BRADLEY MANUFACTURING COMPANY *et al.*

Decided July 19, 1881.

1. RULE OF COMITY.

When the record is substantially the same as that in a prior case the rule of comity prevails and the findings of the court will be followed; but when the defenses and proofs are not the same the rule does not apply.

2. DISCLAIMER—ADMISSION OF COMMON USE AMOUNTS TO.

The statement in an original specification that certain described parts or combinations of parts "are in quite common use" amounts to a disclaimer, and is a statement of fact which prevents the reclaiming of such parts by a reissue.

3. MECHANICAL TERMS—CERTAIN NOT SYNONYMOUS.

In a limited state of the art "mounted on" is not the same as "suspended from."

4. COMBINATIONS—PARTS DISCONNECTED AND INOPERATIVE DO NOT CONSTITUTE VALID.

Parts wholly disconnected from each other and from the machine, and which are inoperative for any purpose as enumerated in the combination claimed, do not constitute a valid combination.

5. SAME—CERTAIN COMBINATIONS VOID FOR UNCERTAINTY.

A combination claim naming two independent sets of devices used for producing different operations or results, and containing the words "or either, in relation to each other" and to another part not affected by either of them, is void for uncertainty.

6. REISSUE PATENT NO. 2,994 DECLARED VOID.

Whitcomb's Reissue Patent No. 2,994, for an improvement in horse hay-rakes, is void, because the improvement claimed had been in public use for more than two years prior to the original application for a patent.

Mr. Thomas H. Dodge for the complainants.

Messrs. West & Bond for the defendants.

BLODGETT, *D. J.*:

These two suits are for infringement of letters patent issued on the 5th day of October, 1858, to George Whitcomb, for an improvement in horse hay-rakes. The patent was reissued June 16, 1868, in two parts, as Reissues Nos. 2,994 and 2,995, and on the 5th of October, 1872, was extended for a further term of seven years.

The first suit is brought by the owners of the original term and the second by the owners of the extended term.

The defenses set up are, first, the invalidity of the reissued claims involved in this suit; second, that the devices covered by the reissued patent were in public use, with the knowledge or consent of the patentee, for more than two years prior to his application for this patent, and also that they were publicly known and used by others for more than that time; third, that the improvements in question are anticipated by the older art; and, fourth, that the defendants do not infringe.

The patent in question has reference to what are known as wire-tooth horse hay-rakes, and the claims of the patent alleged to be infringed by the defendants are the second and fourth of Reissue No. 2,994, which are as follows:

2. The combination and relative arrangement of the hinged rake-head with the supporting-axle and carrying-wheels, substantially as shown and described, whereby the head is supported above the rear upper edge of the axle, as shown, and the lower ends of the teeth, when gathering the hay, occupy positions in rear of the tread of the wheels and forward of a vertical plane on a line with the rear edge of the wheels, substantially as shown in the accompanying drawings.

4. The arrangement of the rake-head E and foot-treadles H J and G K, or either, in relation to each other and the axle B, substantially as and for the purposes set forth.

In his specifications, forming part of the original patent, the patentee inserted a disclaimer, as follows:

I do not claim the wire teeth F, attached to the head E, as shown for such device mounted on wheels is in quite common use.

This disclaimer is wholly omitted from the reissued patent, and the only claim in the original patent was—

The arrangement of the treadle J K, lever I, rake-head E, arms G K, bar F, joint C, and adjustable rope L, substantially as and for the purposes set forth.

This patent was before the United States Circuit Court of Massachusetts in June, 1872, in the case of *Brown* v. *Whittemore et al.*, (5 Fish., 524,) Mr. Justice Clifford and Judge Lowell presiding, and the two claims now in question were sustained under the facts in that case, and it was again before the same court, Judge Lowell presiding, in December, 1879, in the case of *Edgarton et al.* v. *Beck et al.*, and the fourth claim sustained under the facts in that case.

In the first of these cases the court said:

The record does not contain a copy of the original patent, and there is no evidence of what changes, if any, are found in the reissue. In the absence of such evidence we must, of course, assume that the action of the Patent Office was well warranted by the facts, and that the reissued patent is open to only such objections as might have been raised to the original patent.

In *Brown* v. *Whittemore* the second point made in this case seems to have been urged, and the court said:

Upon a very careful examination of the evidence we are of opinion that the combinations of the second and fourth claims were not only invented by Whitcomb, but that they had not been publicly used or sold with his consent before the time in question. * * * And though the evidence is not all on one side, yet the preponderance of it is that the combination of the treadle for raising the rake-head with the other devices was not fully discovered and used before June, 1856.

In *Edgarton et al.* v. *Beck* the contest seems to have been mainly over the questions of novelty and infringement; but the proofs in *Brown* v. *Whittemore* on the question of prior use and sale with the consent of the patentee and in *Edgarton* v. *Beck* on the question of novelty do not seem to have been the same as in the cases now before the court, and the original patent is before this court, which was not before the court in the Whittemore case. Of course, if the testimony in these cases was substantially the same as that in the cases heretofore decided by the learned judges in the Massachusetts circuit court, I should feel wholly bound by

their decisions and the construction of the patent given by them; but as it is evident from the inspection of this record that I have a different combination of facts to deal with from what has been heretofore presented, I must consider these cases in the light of their own evidence.

The first objection to the second claim is that it comes within the disclaimer of the original patent:

I do not claim the wire teeth F, attached to the head E as shown, for such a device mounted on wheels is in quite common use.

What is it that Whitcomb here disclaims? My own construction is that it is the rake-head E, mounted on wheels, as described in his specification and shown in his drawing, and this rake-head and mode of mounting it is described in his original specifications in the following language:

The back end of the shafts or thills C C extend a trifle back of the axle B, and to the back end of the thills, beyond the back part of the axle, a rake-head, E, is connected by joints or hinges C, the hinges being at the under side of the rake-head, as shown clearly in Fig. 1, so that the head may work thereon as a fulcrum.

Figure 1 in the drawing of the original patent and in the reissued patent shows the rake-head made of a square stick of timber with an eyebolt passing through from corner to corner, which, with an eyebolt or staple passing through the end of the thill, makes the joint or hinge by which the rake-head is attached to the carriage. By this arrangement the teeth hang nearly in a line with the periphery of the wheel, the points coming to the ground just back of the tread of the wheel. Naturally enough the curved rake-teeth will hang or move somewhat in the line of the periphery of the wheel, and they will hang just back of the tread of the wheel.

If I am right in my construction of this disclaimer, there can be no doubt that the second claim of the reissue is for the very thing which Whitcomb disclaimed and said was in common use in his original specification. He brings this case clearly within the principle laid down by the Supreme Court of the United States in *Leggett* v. *Avery*, (101 U. S., 259; 17 O. G., 445:)

We think it was a manifest error of the Commissioner in the reissue to allow to the patentee a claim for an invention different from that which was described in the surrendered letters, and which he had thus expressly disclaimed. The pretense that "an error had arisen by inadvertence, accident, or mistake" within the meaning of the patent law was too bald for consideration. The very question of the validity of these claims had just been considered and decided with the acquiescence and the express disclaimer of the patentee. If in any case where an applicant for letters patent, in order to obtain the issue thereof, disclaims a particular invention or acquiesces in the rejection of a claim thereto, a reissue containing such claim is valid, (which we greatly doubt,) it certainly cannot be sustained in this case.

Then, again, they say on the same page:

As before remarked, we consider it extremely doubtful whether reissued letters can be sustained in any case where they contain claims that have once been formally disclaimed by the patentee or rejected with his acquiescence, and he has consented to such rejection in order to obtain his letters patent. Under such circumstances the rejection of the claim can in no just sense be regarded as a matter of inadvertance or mistake. Even though it was such, the applicant should seem to be estopped from setting it up as an application for a reissue.

So, too, in the bottle-stopper case lately before Judge Shipman, *Putnam* v. *Tinkham*, (4 Federal R., 411,) the learned judge says:

The claim is as follows:

"The internally-located bottle-stopper B, provided with a hinged or jointed handle or bail, C, composed of two elastic legs or branches, and an eye or finger loop, as and for the purposes set forth."

He virtually disclaims rigid handles, and says that his invention is designed to avoid such a method of construction. It is useless to say that by a rigid handle he merely meant a bail without spring action, for the entire paragraph shows that he also meant a handle so jointed or hinged to the stopper that it could be turned away from the mouth of the bottle. He intended to point out that his handle or bail was both hinged to the stopper and had elastic legs. The reissue covers a device in which the bail is attached to the stopper in any manner.

The hinged construction is briefly alluded to as one which accomplishes a certain result.

In the original patent the patentee informed the public, with precision and after deliberation, that his invention was an improvement upon a rigid handle, and limited himself to a hinged or jointed handle.

It has now become important for the plaintiff to possess himself of the territory which his assignor attempted to occupy but abandoned, and the ownership of which he virtually disclaimed.

A comparison of the two patents shows that the case is clearly within the principles which have been recently and frequently announced by the Supreme Court as applicable to reissues. The reissue is void because it is on its face for a different invention from that which was embraced in the original patent. (*Russell* v. *Dodge*, 93 U. S., 460; *Railway Company* v. *Sayles*, 97 U. S., 554; *Powder Company* v. *Powder Works*, 98 U. S., 126; *Leggett* v. *Avery*, 17 O. G., 445.)

These authorities seem to fully meet this case, and I can put no other construction upon them than that this claim is void by reason of the original disclaimer. This patentee had no right, after having stated positively to the world and to the Patent Office that he did not claim the idea of mounting the rake-head upon the top of the carriage, by a reissue to claim this as an element of invention by himself. But if there is room for doubt as to the soundness of this position, I am also clear that the defendants do not infringe this claim. The claim is for the combination, &c., whereby the head is supported above the rear upper edge of the axle, as shown. The defendants' rake-head is suspended behind or in the rear of the axle by brackets hung, so to speak, behind the axle, instead of being supported above the axle.

In *Edgarton* v. *Beck*, Judge Lowell says:

The difficulty with the second claim of the reissue as applied to this case is that the patentee has seen fit for some reason to describe his rake-head as supported above the upper edge of the axle, and the defendant's rake-head is on a line with the axle. It may be that this limitation was unnecessary, but it is found in the second claim, and I do not feel at liberty to disregard it.

The inspection of the two models before me shows that the distinction taken by Judge Lowell was mechanically and technically correct. The specification and drawing described the particular manner and place where and how the patentee Whitcomb supported his rake-head upon the carriage. Judge Lowell sees fit to confine him to that special method of so supporting his rake-head. The defendants do not literally support their rake-head upon the axle at all, but by means of the brackets they suspend or hang it in the rear of the axle, so that a different function or mode of operation is accomplished by defendants' rake-head from what is accomplished by the Whitcomb rake-head. The Whitcomb rake-head having for its point of motion the place of attachment to the thills by its hinge, necessarily made it more difficult to keep the teeth upon or near the ground while gathering the load, while by the peculiar manner in which defendants' rake-head is suspended its whole weight aids in holding it down in working position. Probably the testimony before Judge Lowell in this case showed that Whitcomb must from the state of the art be confined to the specific device—that is, the special place where and mode by which he supported his rake-head on the carrying-wheels, because the proof in this case shows that Randal Pratt had mounted his rake-head over or on the axle long before Whitcomb entered the field, and that Whitcomb himself and Banks and Craft had, as early as 1853, 1854, and 1855, made rake-heads with the heads mounted on or over the axle and behind the axle.

Randal Pratt, in his patent granted in 1855, says:

Over the main axle and secured to it by studs or posts is a rod or axle, marked *c c*, extending the whole length between the wheels, to which the teeth of the rake are attached by any form of movable joint, so that each may move up and down independent of the rest. This rod also forms the center of motion of the apparatus for raising and depressing the teeth, to be hereinafter described.

An inspection of Pratt's patent shows his rake-head supported over the axle in substantially the same way—not, of course, attached by just the same kind of joint or hinge, but mounted over the axle so that the teeth fall outward and backward almost in the line of the wheels, and come to the ground just back of the tread of the wheels—that is, there may be in the practical full-sized rakes a few inches difference, but not enough to make a distinction or difference in the principle or mode of operation of the two devices in that regard. The same principle and mode of operation, but differently worked out, are found in Delano's patent of 1849, Martz's patent of February, 1856, and in Grant's English patent of 1847.

As to the fourth claim, it is urged by the defendants that this claim is void for uncertainty, because it does not describe an operative mechanism. It is for the—

Arrangement of the rake-head E and foot-treadles H J and G K, or either in relation to each other, and the axle B, substantially as and for the purposes set forth.

This claim does not connect the treadles with the rake-head nor the axle, nor show how these treadles are operative parts of the machine.

The description of these in the reissued patent is as follows:

To the upper end of bar or arm F are hinged or pivoted the rear ends of the arms G and H. The front end of arm G is pivoted or hinged to the hand-lever I, which in this instance is slotted out to receive the lever G, as shown at *d*, while its lower end is hinged or pivoted to the front ends of the braces *a' a'*, as shown at *e*. The lower end of arm H is hinged or pivoted to the rear and lower end of the foot-treadle J, the front end of which treadle J being hinged or pivoted to the angle-braces *a' a'*, as shown at *f*.

Another foot-treadle, K, is hinged or pivoted to the angle-braces *a' a'*, as shown at *g*, and the rear inner part of the foot-treadle K is connected to the front part or end of arm G by a link or rod, A.

Here is a description of two separate treadles operating independently of each other. Their functions are different, and no part of one forms any part of another. The words "or either" would seem to indicate that it was the purpose of this patentee to claim that if any person used both or one of these treadles he thereby infringed upon this claim—that is, if a rake is made with the treadle H J for the purpose of unloading the rake, and an entirely different device from the treadle G K for holding the rake-teeth down while gathering the hay, this claim is thereby infringed—that is to say, the true construction of this claim contended for by complainants is that the words "or either" covers the use of either of these treadles for the purpose of performing the function they respectively fulfill in complainants' rake. If this is the construction of this claim, then the words "in relation to each other" must be disregarded, as these are words which show combination or a joint or common function in the parts described. I think that you must reject the words "in relation to each other," as applicable to these treadles, or else the two treadles are to be treated as independent organisms, each one of which is covered by this claim. It seems to me that as a combination of parts this claim must be held void for uncertainty, as I have already said, because it does not show whether the patentee intended to cover by this claim the two treadles working in combination with each other for their different purposes, or whether he intended to cover each one as a separate device, so as to be able to punish any infringer who used both or only one. In other words, it seems to me he attempts here to cover not only the combination of these treadles with the axle, but each separate element of his combination, and this, I think, cannot

be allowed; but even if I am wrong in this construction, still it seems to me that this claim must be held inoperative, because it shows no useful result which can be produced by this mechanism alone. He does not show that these treadles are to operate in combination with the bar or standard F' so as to work the rake-head either to unload or hold it down while gathering the hay. As claimed, these treadles are simply two sticks, as was said upon the argument, which are not connected with any part of the mechanism. It is true that the words "as shown" refer us to the specifications and drawings of the patent; but when we examine these specifications and drawings we find that these treadles do not reach any operative combination or connection with the axle except through the rake-head, and it is so obvious that it needs no argument that the treadles and axle alone would not rake hay or perform any other effective work, so that a claim of the treadles and axle gives us no operative mechanism. But without being hypercritical as to the language of this or either of these claims, I find from the proof that both these treadles were used and sold with Whitcomb's consent more than two years before the patent was applied for. These treadles are both shown in the three full-sized rakes in evidence in this case. These rakes were, I am satisfied, made and sold as early as 1855. The only substantial difference between these rakes and the patent is the mode of hinging the rake-head to the axle or carriage.

In the full-sized rakes shown in evidence the rake-head is fastened to the carriage by clasps, which allow the rake-head to revolve within the clasps upon its own axis. This rake-head is attached to the carriage-frame by the joint C, so that the lower corner of the rake-head is made the center of motion, a difference which may have some mechanical value, but is only a specific difference.

These treadles which I am now considering were in use in the old rakes in 1854 and 1855. This evidence shows that Whitcomb began to make rakes as early or earlier than 1851. In 1852 he applied for a patent on the form of rake which he then claimed to have invented, which application was rejected. In this application he shows a horse-rake with wire teeth, and the teeth attached directly to the axle of the carriage and operated by a mechanism something like a "reach," as it was called, or the bar H and the lever I. In 1853 he adopted a separate rake-head, which, of course, he or some one mounted on or attached to the carriage. This separate rake-head, in order to be operative or of any use to the mechanism, must be in some way attached to the carriage. Some mode of unloading was also necessary to the operation of this machine. As all these rakes were intended to allow the driver to ride, some kind of treadle or lever operated by the feet as well as the hands was almost a necessity, and was indispensable to the practical operation of this rake by one man. The whole organism shows that it was intended that the driver should ride upon the carriage and that he should operate the rake from his position on the driver's seat. There must therefore be embodied in the mechanism in some form levers and treadles which would enable the driver to operate the rake to hold the teeth down while gathering the hay and raise the rake-head when loaded. I therefore come to the conclusion that treadles and levers were early adopted

in the progress of the development of this rake, and that substantially the treadles which are shown in the Whitcomb patent were in use for much more than two years prior to the application for this patent.

The testimony on the part of the defendants shows clearly, as evidenced by the recollection of witnesses, that such treadles were used; but from the very nature of the invention and its progress step by step it seems to me that one of the most natural devices that the mind of the constructor would be directed to in making a practical riding hay-rake would be the method of operating the rake from the driver's seat, and they could hardly have attempted to make a device for that purpose without the adoption of treadles. This view seems also to be so fully in harmony with the recollections of the witnesses who have testified as to the development of the finally perfected rake that I consider it confirmatory of the testimony of those witnesses.

Whitcomb first began to make rakes at Glenville, Connecticut. He moved to Brundage's Corners, which were only a couple of miles from Glenville, in 1853, and there had his factory until the fall of 1855, when he moved to Port Chester, these places being all within a very few miles of each other. This locality seems to have been one in which the manufacture of this class of horse-rakes had its first inception. A number of persons besides Whitcomb were engaged in the same line of manufacture. It is true that they may have followed Whitcomb. He may have been the inventor of the rake-head E, as shown in his patent, and he may have been the first person to support it upon a carriage. He may have been the inventor of the treadles in question. The only question is, did he apply for a patent before these parts of his rake became common property, and my conclusion from the proof is that Whitcomb did not make his application for a patent until more than two years after this rake-head and these treadles had come into public use with his consent. The full-sized rakes that are put in evidence in this case show satisfactorily that these devices, these treadles and levers, were adopted and in use and were part of these original rakes at the time they were made and put upon the market, and that they were actually made and sold as early as the haying season of 1854. This certainly fully sustains the conclusion to which I have arrived as to the use of these treadles in those rakes. It is claimed on the part of the complainant that the old rakes have been altered over; that new treadles have been put into them, but there is nothing in the appearance of the mechanisms or of the treadles as they stand now before the court to show that there has been any change. All the parts seem to be of an age—they all bear the same marks of exposure. There is no evidence of any cutting or change by substituting the treadles they now have for other devices. Indeed, the whole appearance of these old rakes satisfies me that they now show their parts as they were originally constructed. I have therefore come finally and firmly to the conclusion that these treadles were old and common property at the time this patent was issued. Perhaps, as I have already said, they were Mr. Whitcomb's invention. He seems to have been the leading genius in that locality in reference to this class of farming implements, and it is likely and probable that these improvements were his, but he abandoned them to the public. He allowed his neighbors to use them. They were public property and sold on the market long before the expiration of two years prior to the application for this patent, and they were not mere experimental uses. These rakes were made and sold in the market for use in the fields, not merely for the purpose of seeing whether they would work or not.

So that from all these considerations I come to the conclusion that the claims of this patent involved in this suit must be held to be void, and this bill must be dismissed for want of equity.

U.S. Circuit Court—Southern District of New York.

ADAMS *et al.* v. HOWARD *et al.*

Decided October 24, 1881.

1. PLEADINGS—CANNOT DEMUR AND ANSWER TO WHOLE BILL.
   By Rule 32 in equity a defendant may demur to the whole bill, and may demur to a part of the bill and answer as to the residue; but there is nothing that allows him to demur to the whole bill and at the same time to answer the whole bill, especially where the answer sets up everything that is in the demurrer. Putting in such an answer is a waiver of such demurrer.
2. CIRCUMSTANCES EXCUSE FAILURE TO GO AHEAD.
   Failure on part of complainant to set down demurrer for argument or to take testimony within three months after filing replication not ground for dismissing bill if sufficiently explained.

Mr. F. H. Betts for the plaintiffs.
Mr. J. A. Whitney for the defendants.

BLATCHFORD, *J.*:

The defendant Morse has demurred to the whole bill, and has put in an answer to the whole bill. The suit is one for the infringement of a patent. The grounds of demurrer set forth in the demurrer are all of them also set forth in the answer. They relate solely to the title set forth in the bill to the patent and to the allegations in the bill respecting infringement. A replication to the answer has been filed. The plaintiffs now move for an order either that the defendant elect between his demurrer and his answer or that the demurrer be set down for argument. By Rule 32 in equity a defendant may demur to the whole bill, and may demur to a part of the bill and answer as to the residue; but there is nothing that allows him to demur to the whole bill and at the same time to answer the whole bill, especially where the answer sets up everything that is in the demurrer. Putting in such an answer is a waiver of such a demurrer. The defendant must elect between his demurrer and his answer; and to guard against misunderstanding, if he should elect his demurrer and it should be overruled on argument, he would be held probably to have waived what ordinarily and otherwise would be, under Rule 34, his right to answer. The defendant moves to dismiss the bill. The ground of the motion is not specified in the notice of motion. From the affidavit made in support of the motion one ground would seem to be that the plaintiffs did not, under Rule 38, set down the demurrer for argument within the time required, and that they did not take any testimony within three months after the replication was filed. I think the plaintiffs sufficiently excuse the omissions. The demurrer ought to be disposed of before any testimony is taken.

The motion is denied.

WOOSTER v. CLARK *et al.*

Decided August 29, 1881.

TESTIMONY TAKEN AFTER TIME.
Rule 69 is imperative that no testimony taken after time shall be allowed to be read at the hearing.

BLATCHFORD, *J.*:

The motion to strike out the testimony taken on the part of the defendants must be granted. Rule 69 is imperative that no testimony taken after time shall be allowed to be read at the hearing. The plaintiff duly objected on the record to the taking of what was taken, on the ground that it was taken after time and such objection has never been waived. Moreover, the defendants after that specially moved for time to take proofs, and the motion was denied.

The proof of the sale of the binder is sufficient. It is plain that it infringes claims 2, 4, and 5. The granting of the reissue to the plaintiff is sufficient proof of his title to sue.

There must be a decree for the plaintiff.

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Subscriptions for 1882.

The OFFICIAL GAZETTE is published every Tuesday, two volumes a year, commencing in January and July. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound volumes, $3.50 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Issue of January 31, 1882.

Patents	314—No. 252,858 to No. 253,171,	inclusive.
Designs	22—No. 12,711 to No. 12,732,	inclusive.
Trade-Marks	31—No. 9,048 to No. 9,078,	inclusive.
Labels	7—No. 2,603 to No. 2,609,	inclusive.
Reissues of patents	9—No. 10,017 to No. 10,025,	inclusive.
Total issue	383	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama			Nebraska	1	
Arizona Territory			Nevada		
Arkansas	2		New Hampshire		
California	12	1	New Jersey	9	
Colorado	1		New Mexico Territ'y		2
Connecticut	11	1	New York	73	18
Dakota Territory			North Carolina		
Delaware			Ohio	20	3
District of Columbia	2		Oregon	1	1
Florida			Pennsylvania	31	
Georgia	3		Rhode Island	4	
Idaho Territory			South Carolina		
Illinois	18		Tennessee	1	
Indiana	9		Texas	2	
Indian Territory			Utah Territory	1	
Iowa	5		Vermont		
Kansas	3		Virginia		
Kentucky	4		Washington Territ'y		
Louisiana	3		West Virginia	1	
Maine	2	1	Wisconsin	8	
Maryland	6		Wyoming Territory	1	
Massachusetts	40	5	United States Army		
Michigan	13		United States Navy		
Minnesota	4				
Mississippi			Total to citizens of the United States	302	32
Missouri	9				
Montana Territory					

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia			England	18	1
Austria			France	5	2
Barbadoes			Germany	9	1
Belgium			Italy		
Bermuda			New Zealand		
Brasil			Russia		
Canada	2	1	Spain		
Chili			Sweden		
Colombia, U. S. of			Switzerland		1
Cuba					
Denmark			Total to citizens of foreign countries	34	6
Ecuador					

DESIGNS.

12,711 and 12,712.—CARPET.—*Hugh Christie*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed January 3, 1882. Term of patents 3½ years.

12,713.—CARPET.—*Hermann Erbs*, Philadelphia, Pa. Application filed November 26, 1881. Term of patent 7 years.

12,714.—NEWSCARF.—*Jacob H. Fleisch*, New York, N. Y. Application filed December 14, 1881. Term of patent 3½ years.

12,715.—CARPET.—*Walter J. Gadsby*, Boston, Mass., assignor to *The Roxbury Carpet Company*, same place. Application filed December 29, 1881. Term of patent 3½ years.

12,716 and 12,717.—CARPET.—*Richard Paul Hemming*, New York, N. Y., assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed January 3, 1882. Term of patents 3½ years.

12,718.—CLOCK.—*Frank H. Hotchkiss*, Birmingham, Conn. Application filed November 7, 1881. Term of patent 7 years.

12,719 and 12,720.—HEATING-STOVE.—*Oliver B. Keeley*, Spring City, Pa. Applications filed December 19, 1881. Term of patents 7 years.

12,721 to 12,726, inclusive.—CARPET.—*Edward Poole*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed January 3, 1882. Term of patents 3½ years.

12,727.—CORSET.—*Isaac Rosenberg*, New Haven, Conn. Application filed January 3, 1882. Term of patent 7 years.

12,728.—PLATE.—*Oscar S. Straus*, New York, N. Y. Application filed December 27, 1881. Term of patent 7 years.

12,729.—JELLY-GLASS.—*Charles G. Summers*, Baltimore, Md. Application filed January 3, 1882. Term of patent 3½ years.

12,730 to 12,733, inclusive.—CARPET.—*Charles W. Swapp*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed January 3, 1882. Term of patents 3½ years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

9,048.—CIGARS.—*Allen & Fisher*, Boston, Mass. Application filed January 5, 1882.
"Two crossed cigars and the letters 'J A.'"

9,049.—COLOGNE-WATER.—*William J. Austen*, Oswego, N. Y. Application filed December 27, 1881.
"The representation of a child carrying flowers."

9,050.—COLOGNE-WATER.—*William J. Austen*, Oswego, N. Y. Application filed December 27, 1881.
"The word-symbol 'FOREST FLOWER.'"

9,051.—CORSETS.—*Moritz Cohn*, New York, N. Y. Application filed December 17, 1881.
"The arbitrarily-selected letters 'P. F.'"

9,052.—DYEING MATERIALS.—*W. Cushing & Co.*, Foxcroft, Me. Application filed December 6, 1881.
"The word 'PERFECTION.'"

9,053.—BITTERS.—*August F. Dennler*, Interlaken, Switzerland. Application filed December 27, 1881.
"The representation of a triangle and letters 'A. D. F.'"

9,054.—CIGARETTES.—*Pedro Antonio Estanillo*, New York, N. Y. Application filed December 31, 1881.
"The portrait of the registrant."

9,055.—CIGARS.—*Miguel Jané*, New York, N. Y. Application filed December 31, 1881.
"The arbitrary term 'LA MAJAGUA.'"

9,056.—CIGARETTES.—*Pedro Antonio Estanillo*, New York, N. Y. Application filed December 31, 1881.
"The words 'ESPECIAL' 'PECTORAL DE BERRO.'"

9,057.—WHISKY.—*D. A. Jennings*, San Francisco, Cal. Application filed December 27, 1881.
"A pictorial representation of a ship under full sail and the word 'WILDWOOD.'"

9,058.—BRANDY.—*Martell & Co.*, Cognac, France. Application filed December 27, 1881.
"A coat of arms composed of a shield surmounted by a swift perched upon a scroll."

9,059.—BRANDY.—*Martell & Co.*, Cognac, France. Application filed December 27, 1881.
"Three scrolls of blue bearing characters in white."

9,060.—CIGARS.—*Josefa Valdés*, (widow of José Morales,) New York, N. Y. Application filed January 5, 1882.
"The words 'LA MATILDE.'"

9,061.—CIGARS.—*Josefa Valdés*, (widow of José Morales,) New York, N. Y. Application filed January 5, 1882.
"The words 'LA FLOR DE MORALES.'"

9,062.—SOAP.—*Jas. B. Williams & Co.*, Glastonbury, Conn. Application filed January 3, 1882.
"The symbol of a brush."

9,063.—SEWING COTTON AND THREAD.—*Jonas Brook & Brothers*, Meltham Mills, near Huddersfield, county of York, England. Application filed October 5, 1881.
"The word 'LONDON,' when arranged between the numbers '1851' and '1862,' and the word 'PARIS' between the numbers '1855' and '1867.'"

9,064.—MILK COOLERS.—*Albert R. Brown*, Guilford, N. Y. Application filed December 28, 1881.
"The word 'ARCTIC.'"

9,065.—REFINED CARBON OILS, LUBRICATING-OILS, AND ALL OTHER GOODS REFINED, DISTILLED, MADE, OR COMPOUNDED FROM CRUDE PETROLEUM.—*The Cleveland Refining Company*, Cleveland, Ohio. Application filed December 5, 1881.
"A picture-diamond with facets cut, with words in or around it, or both."

9,066.—CIGARS AND CIGARETTES, CHEROOTS, SMOKING AND CHEWING TOBACCO, AND SNUFF.—*Louis C. Frey*, Cincinnati, Ohio. Application filed December 27, 1881.
"The word 'ROXY.'"

9,067.—CIGARS, CIGARETTES, CHEROOTS, SMOKING AND CHEWING TOBACCO, AND SNUFF.—*Louis C. Frey*, Cincinnati, Ohio. Application filed December 27, 1881.
"The word 'GATH.'"

9,068.—CIGARETTES.—*Kinney Tobacco Company*, New York, N. Y. Application filed January 7, 1882.
"The representations of the tobacco-leaves and the cigarettes and the word 'NATIVE.'"

9,069.—CIGARS, CIGARETTES, CHEROOTS, AND PLUG, SMOKING, AND CHEWING TOBACCO.—*Kinney Tobacco Company*, New York, N. Y. Application filed January 7, 1882.
"The word 'MIDDY.'"

9,070.—CIGARS, CHEROOTS, CIGARETTES, AND SMOKING-TOBACCO.—*Kinney Tobacco Company*, New York, N. Y. Application filed January 7, 1882.
"The figures and character '½ & ½.'"

9,071.—CIGARS, CHEROOTS, AND CIGARETTES.—*Kinney Tobacco Company*, New York, N. Y. Application filed January 7, 1882.
"The word 'CAPORAL.'"

9,072.—CIGARS, CIGARETTES, CHEROOTS, AND PLUG, SMOKING, AND CHEWING TOBACCO.—*Kinney Tobacco Company*, New York, N. Y. Application filed January 7, 1882.
"The word 'VETERAN.'"

9,073.—CIGARS, CHEROOTS, CIGARETTES, AND SMOKING-TOBACCO.—*Kinney Tobacco Company*, New York, N. Y. Application filed January 7, 1882.
"The figures expressing the number ½."

9,074.—CIGARS, CIGARETTES, CHEROOTS, AND SMOKING-TOBACCO.—*Kinney Tobacco Company*, New York, N. Y. Application filed January 7, 1882.
"The word 'DRAGOON.'"

9,075.—CIGARS, CIGARETTES, CHEROOTS, AND PLUG, SMOKING, AND CHEWING TOBACCO.—*Kinney Tobacco Company*, New York, N. Y. Application filed January 7, 1882.
"The symbol of an equipped soldier."

9,076.—CIGARS, CHEROOTS, CIGARETTES, AND SMOKING-TOBACCO.—*Kinney Tobacco Company*, New York, N. Y. Application filed January 7, 1882.
"The words 'TRIPLE ALLIANCE.'"

9,077.—MACHINE-OILS.—*William McBain*, Toronto, Ontario, Canada. Application filed December 12, 1881.
"The word 'CASTORINE.'"

9,078.—PERFUMERY AND FLORIDA-WATER.—*Teodoro Münch*, Hamburg, Germany. Application filed November 10, 1881.
"The monogram of the letters 'T M.'"

LABELS.

2,603.—Title: "CRANE'S LADIES NOTE PAPER AND ENVELOPES."—*Z. Crane, Jr., & Brother*, Dalton, Mass. Application filed January 5, 1882.

2,604.—Title: "CRANE'S LADIES NOTE PAPER AND ENVELOPES, GRECIAN ANTIQUE."—*Z. Crane, Jr., & Brother*, Dalton, Mass. Application filed January 5, 1882.

2,605.—Title: "DOCTOR HENLEY'S OREGON KIDNEY TEA."—*Hodge, Davis & Co.*, Portland, Oreg. Application filed December 15, 1881.

2,606.—Title: "DR. WARE'S ENGLISH HEARTBURN LOZENGERS."—*F. W. K. Nye & Co.*, Milton, Mass. Application filed January 10, 1882.

2,607.—Title: "DR. GRAY'S LOTION."—*Horatio Smith* and *Henry T. Goold*, Boston, Mass. Application filed December 30, 1881.

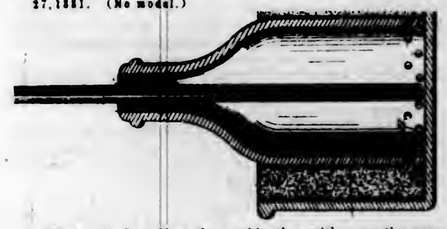
2,608.—Title: "THE GREAT MOUNTAIN SAGE REMEDY, COUGH SYRUP."—*R. C. Schroeder & Co.*, Raton, N. Mex. Ter. Application filed January 3, 1882.

2,609.—Title: "THE GREAT MOUNTAIN SAGE REMEDY, ANTI-BILIOUS PILLS."—*R. C. Schroeder & Co.*, Raton, N. Mex. Ter. Application filed January 3, 1882.

PATENTS

GRANTED JAN. 31, 1882.

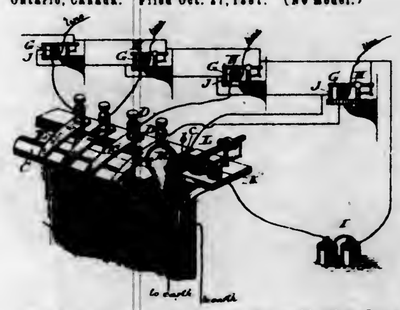
252,858. FILTER. JOHN C. ADSIT, Olean, N. Y. Filed Aug. 27, 1881. (No model.)



Claim.—1. In a filter, the combination, with an earthenware vessel having an open top, of a bottomless jug of less diameter than the open vessel, and adapted to be placed within the latter to form an annular space to receive filtering material, and a pump-pipe extending through said jug, substantially as set forth.

2. In a filter, the combination, with an open-top earthenware vessel, of a bottomless jug provided with perforations surrounding the lower end, filtering material packed between the jug and outer vessel, and a pump-pipe extending through the jug and held therein in a water-tight manner, substantially as set forth.

252,859. LIGHTNING-ARRESTER. THOMAS ANDARS, Ottawa, Ontario, Canada. Filed Oct. 27, 1881. (No model.)



Claim.—1. In a lightning-arrester, the combination of a series of electric conducting-lines, a body in electric connection with the earth, an intermediate body adapted to make and break connection between the line or lines and the earth-connected body, and an electro-magnet adapted and arranged to control the intermediate connection, and thereby to automatically ground all the lines of the series upon the overcharging of one of said lines.

2. In a lightning-arrester, the combination of an electric conducting line or lines, a body in electric connection with the earth, an intermediate movable body adapted to make or break connection between the line or lines and the earth-connected body, and provided with a weight or spring to effect its movement, and a detent controlled by an electro-magnet and arranged to hold the movable body in position to interrupt connection with the earth until the magnet is caused by an excessive charge of electricity in the line to withdraw the detent and permit the release of the weight or spring.

3. The combination, substantially as described, of one or more electric conducting-lines, each having an electro-magnet in its circuit, an earth-connected body, a detent arranged to hold said body normally out of electric connection with the line or lines, an electro-magnet placed in an open local circuit and arranged to withdraw the detent when in action, and one or more circuit-closers arranged to be actuated by the armatures of the line electro-magnets when the lines are overcharged, whereby the local circuit is closed and the detent caused to be withdrawn.

4. In combination with a grounding-switch, a series of electric conducting-lines, and an electro-magnet and armature controlling said switch and adapted and arranged to be thrown into action by each or any of said lines when they become overcharged with electricity.

5. The combination, substantially as shown and described, of the cylinder C, provided with the gravitating-arm M, insulated on a portion of its surface and in electric connection with the earth, fingers E, bearing upon said cylinder and connected with electric conducting-lines, electro-magnets G, introduced into said lines, armatures I and contact-points J, arranged in an open local circuit containing an electro-magnet, K, and armature L, arranged to engage the gravitating-arm M until withdrawn by the electro-magnet K, as and for the purpose set forth.

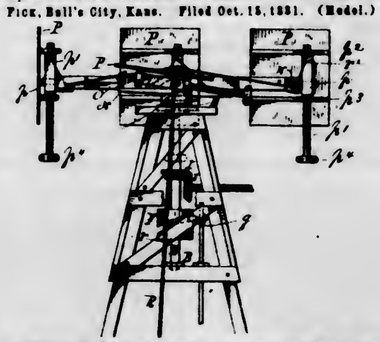
6. In a lightning-arrester, the combination of an earth-connected cylinder insulated throughout its entire length on one side, and a series of fingers connected with the respective lines to be protected and bearing upon said cylinder, substantially as shown, whereby all the lines may be simultaneously insulated or grounded by partially rotating the cylinder.

7. In a lightning-arrester, the combination of an earth-connected rotary cylinder provided with a thin insulating layer on one side, and a series of fingers connected with the lines to be protected and arranged to bear upon the cylinder, whereby the lines may be automatically or manually grounded, as set forth.

8. In a lightning-arrester, an earth-connected cylinder insulated on one side and provided with a threaded shaft, said shaft passing through a correspondingly-threaded bracket, whereby the rotation of the shaft is caused to move the cylinder endwise under the finger or fingers bearing thereon, and thus to bring an unused portion of the insulated surface under the finger or fingers.

9. In a lightning-arrester, the combination of two or more electric conductors in independent electric circuits and an earth-connected body adapted and arranged to be moved into or out of contact with all of the conductors simultaneously, substantially as shown and described.

252,860. WIND-ENGINE. JOSIAH W. ARTHURS and JOHN C. FICK, Bull's City, Kans. Filed Oct. 15, 1881. (Model.)



Claim.—1. In a wind-engine, the combination of arms and counterbalanced vane-shafts supported and operating upon horizontal pivots at the outer ends of said arms, with vanes pivotally

attached to said vane-shafts, substantially as shown and described.

2. The combination of the main shaft, the arms, swinging counterbalanced vanes, projecting rods, pivotally attached vane-shafts, and knife-edge bearing-plates, substantially as shown and described.

3. The combination of the vanes P, provided with the bearings p' p'', and the vane-shafts p', pivotally attached to their arms and carrying the counter-balances p^4, substantially as shown and described.

4. The combination of the vanes P and shafts p' with the arms L, provided with the knife-edge bearing-plates O and rods N, substantially as shown and described.

5. The combination of the arms L, pivotally attached swinging counterbalanced vane-shafts p', vanes P, pivotally attached to said vane-shafts, and cords S, substantially as shown and described.

252,861. BED AND FOOT WARMER. ERASTUS P. BRIGHAM, St. Paul, Minn. Filed Nov. 23, 1881. (No model.)

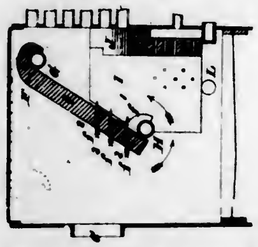


Claim.—1. A bed and foot warmer provided with neck B, in combination with screw-cap stopper F and handle D, substantially as described.

2. In a bed and foot warmer, a neck adapted to receive a screw-cap stopper, in combination with said stopper, and with a handle adapted to slide over both the stopper and the neck, substantially as described.

252,862. LOCOMOTIVE-FURNACE. THOMAS A. BUCKLAND, St. Louis, Mo. Filed May 25, 1881. (No model.)

Brief.—The diaphragm is hinged, by which means it can be raised up and down when desired to have access to the flues.



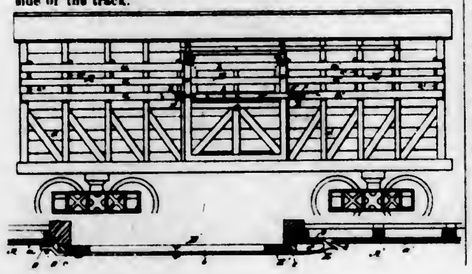
Claim.—1. The combination of the furnace A, hooked and adjustable diaphragm F, support G, and support H, substantially as described.

2. The combination of the furnace A, the sections *f f f*, spaced apart, as described, and forming a removable diaphragm, having a shoulder, *f'*, and the water-tubes G H, substantially as described.

3. The combination of the diaphragm F, constructed, arranged, and extended as described, and the tiling I I and J, substantially as described.

252,863. STOCK-CAR. JOHN S. BUTTERFIELD, Chicago, Ill. Filed June 1, 1881. (No model.)

Brief.—The upper portion of the sliding door has a swinging portion carrying a rod which engages at one end a staple on a swinging set of slats and at the other end has a hook which engages a swinging set of slats. The upper swinging portion of the door may form a top to a trough, with inclosed sides and back, located at one side of the track.



Claim.—1. In combination with the stationary lifting doors A and A' and the similarly-lifting door B of the slide C, the bolts D and e and the staples D' and e', applied to the several parts, as shown and described, and for the purposes set forth.

2. As a means of engaging the lifting door B of the slide C with the lifting door A', over which the slide runs, the hooked head or catch E *e* and the staple *e'*, applied to the respective parts, and operating substantially as set forth.

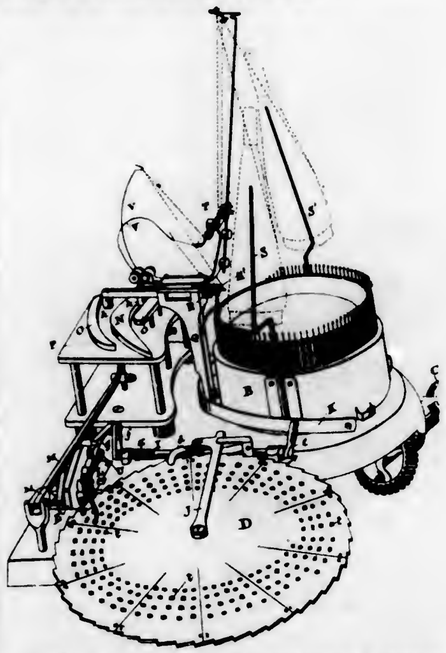
3. The outwardly and inwardly movable catch E *e*, applied to the lifting door B of the slide C, combined with the lifting door A', having the slot *s* and staple *e*, substantially as described, and for the purposes specified.

4. The combination, with the door A', having a slot, *s*, and staple *e'*, the door B of the slide C, provided with a movable part, E, provided with the bolt *e*, and with a spring whereby the bolt is borne inward, so as to pass beneath the staple, substantially as set forth.

5. In combination with the outwardly and inwardly swinging door of the car, the external trough, T, having the rack or guard G, whereby the trough, rack, and door may together constitute an inclosure over the door-opening, substantially as described.

252,864. KNITTING-MACHINE. JNO. BUCHILD, Georgetown, Ontario, assignor to Edward Roper Carson Clarkson, Toronto, Canada. Filed Jan. 8, 1881. (No model.)

Brief.—The machine is provided with a rotating pattern-plate which is connected by mechanism to a series of cams arranged to operate sliding yarn-carriers, by which the invention is adapted to produce automatically various patterns of work.



Claim.—1. The combination of the cam-cylinder B, standard Q, and sliding yarn-carriers R with the vertically-moving cams N O for operating said carriers, cam K on the cylinder B, and connecting mechanism, substantially as described, between the cam K and cams N O, as and for the purpose specified.

2. The standard Q, cam-cylinder B, cam K on said cylinder, sliding yarn-carriers R, vertically-moving cams N O, and connecting mechanism, substantially as described, between the cam K and the cams N O, in combination with the bobbin-carriers S, attached to and revolving with the cylinder B, and the guides T, secured to the standard Q, as and for the purpose specified.

3. The cam-cylinder B, cam K on said cylinder, standard Q, sliding yarn-carriers R, and cams N O, in combination with the rods M, cams L', and connecting mechanism, substantially as described, between the cam K and the cams L', as and for the purpose specified.

4. The cam-cylinder B, cam K on said cylinder, rock-shaft I, spring *x*, cranks *e f* on said rock-shaft, and pawl *g*, in combination with the cams L' and the ratchet-wheel L for operating said cams L', substantially as described.

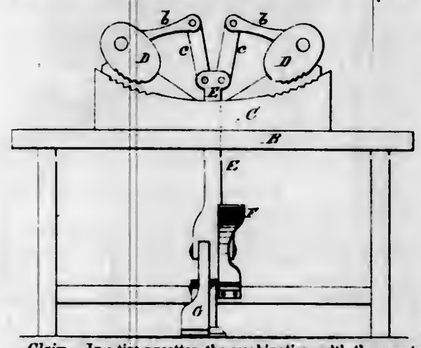
5. The combination of the cam-cylinder B, cam K on said cylinder, rock-shaft I, spring *x*, crank *e f*, and cam-block *b* on said rock-shaft, lever J, pawls *d g*, ratchet-wheel L, and pattern-plate D, substantially as and for the purpose specified.

6. The cam-cylinder B, cam K on said cylinder, rock-shaft I, and crank *e* and cam-block *b* on said rock-shaft, in combination with the lever J, pawl *d*, and the pattern-plate D, substantially as and for the purpose specified.

7. The pattern-plate D and slide G, in combination with positive mechanism, substantially as described, for intermittently operating said pattern-plate, substantially as specified.

8. The perforated pattern-plate D, provided with a spiral series of perforations for receiving removable pins, and with a scroll, E, on its under side, and with a peripheral series of ratchet-teeth, in combination with the slide G and mechanism, substantially as described, for giving the pattern-plate an intermittent rotary and lateral movement, substantially as specified.

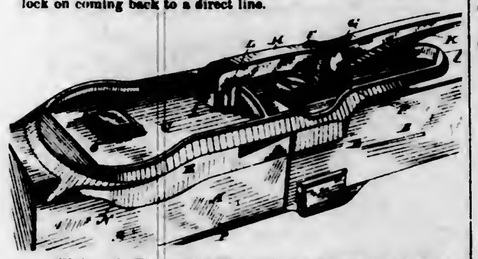
252,865. MACHINE FOR UPSETTING TIRES. FRED SUMNER CARR, West Newbury, Mass. Filed July 9, 1881. (No model.)



Claim.—In a tire-upsetter, the combination, with the serrated bed C and cams D, of the arms *b*, link *c*, bar E, and treadles F G, constructed and arranged to operate substantially as and for the purpose set forth.

252,866. JOINTED PLOW-TONGUE. WILLIAM L. CASADAY, South Bend, Ind. Filed Nov. 15, 1881. (No model.)

Brief.—The sulky-tongue, when unlocked, may swing around in turning, the joint-plates being so constructed as to automatically lock on coming back to a direct line.

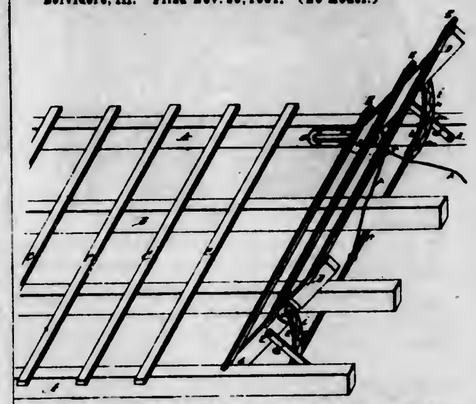


Claim.—1. The combination, with the two sections A B of a plow-tongue, of the metal plates C P, for securing said sections together, the plate E, provided with the beveled portions Q and slot J, and spring-dog H, substantially as set forth.

2. The combination, with the plow-tongue sections A B, placed end to end, and metal plates C P, for connecting said sections, of the plate E, provided with the arc-shaped slot T and pin or stud T', for limiting the movement of the pivoted tongue-section, substantially as set forth.

3. The combination, with the plow-tongue sections A B, placed end to end, and plates C P, for securing said sections together, of the plate E, provided with slot J, the dog H, and the guide-flanges L L, formed on plate C, and adapted to relieve the dog of lateral strain, substantially as set forth.

252,867. SPRING BED-BOTTOM. ELIAS A. CLEAVELAND, Belvidere, Ill. Filed Nov. 28, 1881. (No model.)

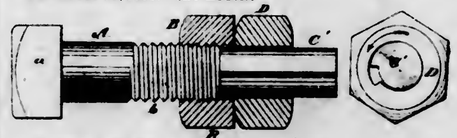


Claim.—1. In an invalid-bed, the combination, with the horizontal rails, of a head portion, the side bars of which are provided with studs, the slotted plates secured to the inner sides of the horizontal rails, adapted to receive said studs, and braces and adjusting devices, substantially as set forth.

2. In an invalid-bed, the combination, with the base A, of the head-bars D, slotted supporting-pieces *a*, braces *d*, having studs *m*, and the pivoted slotted ratchet-bars *i*, substantially as set forth.

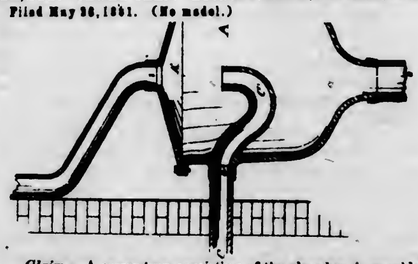
3. The combination, with the spiral springs, connected by rings and diagonal spiral springs, of a border or selvage wire surrounding and connecting the upper outer portion of the springs by means of a loop-connection of the end portion of wire from which the spring is formed, substantially as set forth.

252,868. NUT-LOCK. CHARLES H. DENISON, New York, N. Y. Filed June 13, 1881. (No model.)



Claim.—The bolt A, having the screw-threads *b* and cam-shaped or eccentric shank C', in combination with the nut B and the jam-nut D, having the cam-like or eccentric bore or interior corresponding in shape to the cross-section of the shank C' of the bolt, the said parts being combined and arranged for joint use and operation substantially as and for the purpose herein set forth.

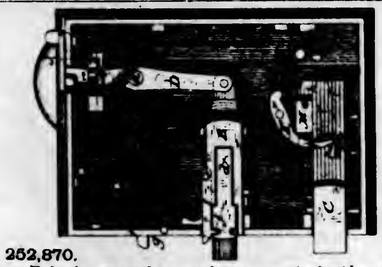
252,869. SEWER-TRAP. ARTHUR J. EDWIN, Cleveland, Ohio. Filed May 16, 1881. (No model.)



Claim.—A sewer-trap consisting of the chamber A, provided with the trap C', having an inlet at the side of the chamber, an outlet at the bottom of the chamber, and short pipe-sections at the side and bottom to connect with the inlet and discharge pipes, the several parts being cast in a single piece, in combination with the cover A', provided with a gas-outlet, *b*, substantially as set forth.

252,870. LATCH AND LOCK. ORLANDO EWERS, De Soto, Wis. Filed May 12, 1881. (Model.)

Claim.—1. In combination with the latch-operating devices, the fixed arm F, provided with a knob-like head, and the pivoted



252,870.

arm E, having one end arranged to operate the latch mechanism and the opposite end seated in a recess in one side of the before-mentioned head.

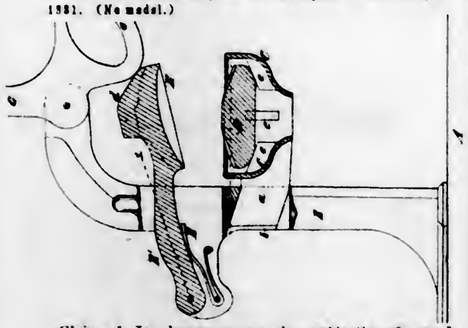
2. In combination with the reversible latch end *d*, the bolt B, the dog *c*, having one end provided with journals seated in the hook-shaped notches of the latch-bolt, and the spring I, applied as shown, whereby it is caused to serve the threefold purpose of throwing the latch, maintaining the connection between the dog and latch, and keeping the dog normally in a locked position.

3. In combination with the recessed latch-bolt B, the reversible nose *d*, the dog *c*, and the pivoted locking device *g*, arranged to engage over the nose of the dog, as shown.

4. The lock-bolt provided with the lateral stud *m*, the upright shoulders *h* and *i*, adapted to be acted upon by the key for throwing the bolt, and the pivoted dog K, having its lower end arranged to engage behind the stud *m*, to prevent the retraction of the bolt, substantially as described.

5. In combination with the key-body, the sliding bar *r*, mounted thereon, and the two obliquely-slotted transversely-sliding bits *p p'*, as described and shown.

252,871. LEMON-SQUEEZER. JOHN FANNING, Brooklyn, N.Y., assignor, by direct and mesne assignments, to James Hanford and Josephine P. Fanning, both of same place. Filed May 11, 1881. (No model.)



Claim.—1. In a lemon-squeezer, the combination of a standard, a bed, a presser and means for operating it, a concentrator supporting said bed, and a tongue and recess with which the concentrator and standard are provided, and which have their tops inclined upward toward the back of the standard, whereby said concentrator is detachably connected to the standard, substantially as specified.

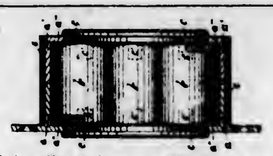
2. In a lemon-squeezer, the combination of a base-piece, the standard B, erected thereon and overhanging the latter at the upper end, the concentrator C, supported by said standard, the bed D, the presser E, provided with the arm E', extending through the standard and pivoted between lugs extending rearwardly from the latter, and provided with the cam *d*, the lever G, pivoted to the upper end of the standard and provided with the cam *e*, and the spring H, arranged between said rearwardly-extending lugs and acting on the under side of the arm E', substantially as specified.

252,872. ANTI-FRICTIONAL BEARING. THOS. R. FERRALL, Boston, Mass. Filed Dec. 3, 1881. (No model.)

Claim.—1. In anti-frictional bearings, the shells *a a'' a' a'''* and the rollers *b b*, in combination with the regulators *c c* and their radial intermediate projections, *c'' c'' c''*, adapted to serve as stops for the said regulators against the inside of the flanges *a'' a'''*, as herein shown and described.

2. In anti-frictional bearings, the shells *a a'' a' a'''*, the rollers

252,872.

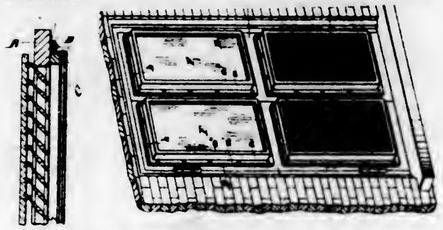


b b, with their cylindrical recesses *b' b'*, the regulators *c c*, with cylindrical projections *c' c'*, and radial intermediate projections, *c'' c''*, as and for the purpose set forth.

3. The herein-described method of making anti-frictional bearings, consisting in casting the shells *a a'* with solid ends *a'' a'''*, inserting therein the rollers and regulators, then casting around the abutting shells *a a'* the metal ring *e*, and finally boring out or removing the central parts of the ends *a'' a'''* for the insertion and reception of the shaft *d*, as and for the purpose set forth.

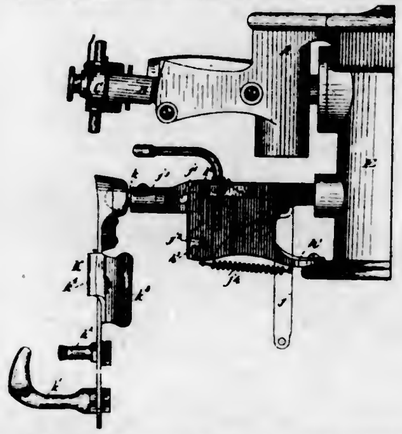
252,873. WINDOW-BLIND. JOHN D. FERRIS, Chicago, Ill. Filed Oct. 17, 1881. (No model.)

Brief.—Applies to the outside of an ordinary blind a sheet of glass or netting clamped between two removable frames secured to the blind.



Claim.—The combination, with a window-blind, of the removable frames B and C and a screen of glass or other material, the removable frames and screen being arranged on the outside of the blind, the frame C being within the frame B, and the screen being between the said frames, substantially as and for the purposes specified.

252,874. SOLE-EDGE-BURNISHING MACHINE. GEORGE A. FULLERTON, Boston, Mass. Filed Nov. 21, 1881. (No model.)

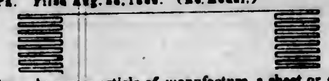


Claim.—1. The improved jack above described, consisting of the sole-plate K, swiveling stem *k*, edge-rest *k'*, and handle *k''*, as set forth.

2. In a sole-edge-burnishing machine, the jack-carrier above described, consisting of the lever J, adapted to support the jack-swivel *k*, in combination with standard H, substantially as and for the purposes set forth.

3. The combination of the jack K, jack-carrier J, and standard H with a burnishing-machine, the carrier J being operated, as described, to hold the jack, with the edge of the sole, against the burnishing-tool in burnishing around the toe, and to be got out of the way in burnishing the side edges, as set forth.

252,875. FRINGED FABRIC. SYLVESTER GARRETT, Philadelphia, Pa. Filed Aug. 26, 1880. (No model.)



Claim.—As a new article of manufacture, a sheet or section of paper, leather, or textile fabric having upon one or more of its edges a fringe consisting of a series of parallel-sided strips or shreds, separated one from the other by similarly-shaped notches or slots formed by the complete removal of the intervening material of the fabric, substantially as set forth.

252,876. TOBACCO-PIPE. ISAAC W. GILES, South Abington, Mass. Filed Mar. 11, 1881. (No model.)

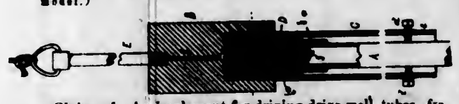


Claim.—As an improved article of manufacture, a bowl for tobacco-pipes, made of two or more thicknesses of hard-calendered paper, and having one end closed by an inserted wooden plug, the end of which within the bowl and the interior of the bowl are coated with fire-proof material, the bowl and said plug being perforated to receive the pipe-stem, substantially as described.

252,877. PAPER MATRIX FOR STEREOTYPING. BENJAMIN B. HOUTSON, Louisville, Ky. Filed Apr. 16, 1881. (No specimens.)

Claim.—Matrices for stereotyping, made of charred or carbonized paper, substantially as described, and for the purpose set forth.

252,878. IMPLEMENT FOR DRIVING DRIVE-WELL TUBES. MATTHIAS ITIN, St. Paul, Minn. Filed Oct. 3, 1881. (No model.)

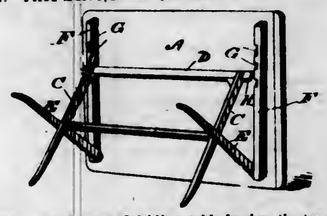


Claim.—1. An implement for driving drive-well tubes, &c., consisting of a hammer, B, guide-tube C, and cushion D, substantially as set forth.

2. The combination and arrangement of the head B, cushion D, tube C, and set-screws *d' d*, and tube A, substantially as set forth.

3. The combination and arrangement of the head B, cushion D, and cap *b*, all provided with the perforations *g* and the tubes C, A, and E, substantially as set forth.

252,879. FOLDING TABLE. NICHOLAS JENGLAMAS, Grand Rapids, Mich., assignor to himself and John F. Holman, same place. Filed Mar. 8, 1881. (No model.)



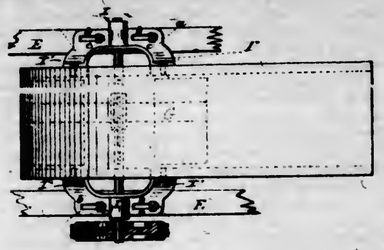
Claim.—An improved folding table having the top A, with the rails F F, having grooves G and legs E E pivoted to them, and the legs C C, cross-pivoted to said legs E E, and connected together by cross-rails D engaging with said grooves G, substantially as set forth and described.

252,880. METHOD OF ATTACHING BUTTONS. SCOTT D. JORDAN, Cape Elizabeth, Me. Filed June 11, 1881. (Model.)



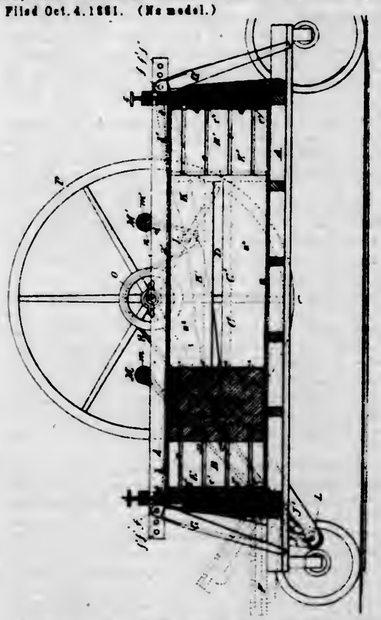
Claim.—That improvement in the art of setting buttons on shoes or other articles consisting in interlocking the shank of each successive button, after it has been inserted in the stock, with the shank of the preceding one until the last one, which is further secured by stitching or other suitable fastening, substantially as and for the purpose set forth.

252,881. CORN-SHELLER. LEONARD KISSNER and JESSE P. OUTCALT, Lancaster, Ohio; said Kissner assignor to said Outcalt. Filed July 6, 1881. (No model.)



Claim.—The combination, with the fan-casing and supporting rails E, of the brackets I', detachably secured to said casing, having slot-and-bolt connection to said rails, and provided with journal boxes I, the fan-shaft, the rubber-faced pulley on said shaft, and the wheel B, having its periphery arranged to impart motion to said pulley, the whole constructed and operated as specified.

252,882. BALING-PRESS. JOHN LA DOW, Albany, N. Y. Filed Oct. 4, 1881. (No model.)



Claim.—1. In a baling-press, the combination, with a case having a pressing-chamber in its middle section and baling-chambers in its end portions, and a platen adapted to be moved through the entire length of said middle section, of mechanism for operating said platen alternately in opposite directions toward and from said end baling-chambers, as and for the purposes set forth.

2. In a baling-press, the combination, with a case having a pressing-chamber in its middle section and baling-chambers in its end portions, and a platen adapted to be moved through the entire length of said middle section, of toggle-levers and mechanism operating with the same, whereby said platen will be moved alternately toward each baling-chamber and from the same, in the manner set forth.

3. In a baling-press, the combination, with a case having a pressing-chamber in its middle section and baling-chambers in its end sections, and a platen adapted to be moved alternately toward said baling-chambers, of duplicate toggle-levers arranged at each side of said press-case and having a pivotal connection with said platen, whereby one pair of said toggle-levers will be adapted to move the platen in one direction toward one of said end baling-chambers and the other pair of said toggle-levers will move said

platen in an opposite direction toward the opposite end baling-chamber, as and for the purpose set forth.

4. The combination, with a horizontal pressing-case and a platen adapted to be moved in a horizontal plane in the same, of toggle-levers J J', (or K K',) having one of their limbs pivoted to said platen and the other limb to a fulcrum situated at an end of said pressing-case, whereby the said toggle-levers when straightened in line will crowd said platen to the full distance of its length of movement, and when broken from a straight line will draw said platen to a distance back, substantially as set forth.

5. In a horizontal baling-press having a pressing-case in which a baling-chamber is situated at each end, and a pressing-chamber provided with a platen is situated between said baling-chambers, duplex toggle-levers which have their neighboring ends pivoted to said platen and their outer ends pivoted to, or near to, the ends of said pressing-case, whereby each of said toggle-levers is made to counterbalance the other and each alternately operate said platen, substantially as set forth.

6. In a baling-press, the combination, with the press-case, platen moving in said case, and toggle-levers J J', (or K K',) having one end pivoted to said platen and the opposite end pivoted to the end of said press, of windlass-pulley O, rope R, coiled about said pulley, and cleat m, (or m',) whereby said cleat will be made to sustain one-half of the resistance and said rope operate the said toggle-levers to progressively move said platen, as set forth.

7. In a baling-press, the combination, with the pressing-case and platen adapted to be moved within the same, toggle-levers J J', (or K K',) having one end pivoted to said platen and the opposite end pivoted to pivot-pin *f*, of the series of holes *f' f'*, adapted to receive said pivot-pin, whereby larger or smaller bales may be made, at the will of the operator, by a simple adjustment of said pivot-pin, in the manner set forth.

8. In a horizontal baling-press, the combination, with a press-case having a pressing-chamber and a platen adapted to be moved by mechanism, as described, in said chamber, and baling-chambers situated at each end of the press-case and communicating with said pressing-chamber, of door F, (or F',) pivoted to the lower sill, so as to be adapted to be folded from a vertical and closing position to a horizontal one, whereby said doors, when held vertical, will operate to form opposing walls to the thrust of the platen, and when folded down will form a platform from which hay will be fed into said press-case, substantially as set forth.

9. In a horizontal baling-press, the combination, with the parallel side walls of the press-chamber, of the expansible side walls of the baling-chamber and door F, (or F',) provided at its marginal side edges with tongues *v v* and grooves *x x*, whereby the inner surfaces of said expansible side walls will be held in planes coincident with the planes of the inner parallel surfaces of the said press-chamber walls when said door is in a closed position, and adapted to be expanded outward at their outer ends when the said door is opened from said baling-chamber, substantially as and for the purpose set forth.

10. In a horizontal baling-press, the combination, with the parallel top and bottom walls of the press-chamber, of the expansible top wall of the baling-chamber, door F, (or F',) having its upper end supporting said baling-chamber top wall in a horizontal plane coincident with the horizontal plane of the press-chamber top wall, and mechanism *s*, reacting against the support of the outer end of said expansible top wall, whereby the plane of the surface of said adjustable top wall will be held coincident with the plane of the surface of the top wall of the press-chamber while a bale is being pressed and its outer end be inclined upward when the bale is being removed, substantially as and for the purpose set forth.

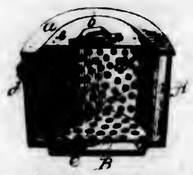
11. In a baling-press, the combination, with the press-case, platen adapted to be moved in said case, windlass-pulleys O, having ropes R coiled about the same as a contributing power to move said platen, of the windlass-wheel P, fixed to revolve with pulleys O, and draft-rope coiled about the same, all for operation as set forth.

12. The combination, with a windlass-pulley having a coiled rope about its periphery, with its ends running from the same for attachment with reacting devices or mechanism m, (or m',) of wheel P and pin *l*, adapted to hold said wheel with said windlass-pulley, substantially as and for the purpose set forth.

13. Mechanism for moving a platen, consisting of the combination of the following devices, viz: duplicate toggle-levers, windlass-pulley, and windlass-rope coiled about said pulley, with its end portions connected with said duplicate toggle-levers at the hinge of their respective arms and its extremities attached to cleats m m', or fixed pieces, all for operation substantially as set forth.

14. Mechanism for moving a platen, consisting of the combination of the following-described elements, viz: duplicate toggle-levers, windlass-pulleys, windlass-ropes coiled about said pulleys, with their end portions connected with said duplicate toggle-levers at the hinge-connections of their respective arms and their extremities secured to fixed pieces, a windlass-wheel loosely mounted on the windlass-pulley shaft and provided with mechanism by which it will be locked with or unlocked from the windlass-pulley, and draft-rope coiled about said wheel, all for operation substantially as set forth.

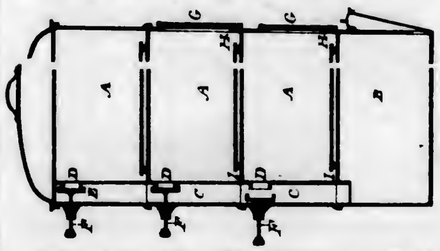
252,883. FOOD-STRAINER. GEORGE LINDNER, Canandaigua, N. Y., and JOHN DORSCH, Milwaukee, Wis. Filed Oct. 15, 1881. (No model.)



Claim.—1. The combination of the receptacle B, having perforations *e* and loops *d d*, with cover *a*, provided with hooks *c c*, substantially as set forth.

2. The combination of the strainer B, loops *d d*, hooks *c c*, cover *a*, and kettle A, all substantially as and for the purpose specified.

252,884. STEAM COOKING APPARATUS. JOHN H. LINNEY, San Francisco, Cal. Filed Oct. 18, 1881. (No model.)

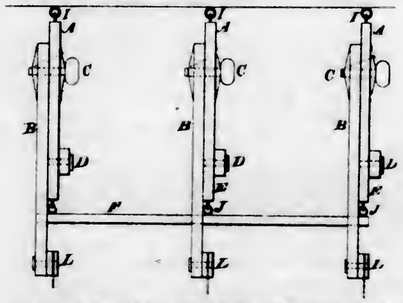


Claim.—1. In a steam cooking apparatus composed of the sections A, fitted one above another, and supported above a boiler, B, and having one or more pipes, C, extending to the upper section, with openings D, valves E, and stems F, as shown, the small holes I at the floor-level to carry off the water of condensation, substantially as herein described.

2. In a steam cooking apparatus, the independent chambers or sections A, supported upon the boiler B, and having the steam-pipes, valves, and the side doors, G, as shown, said doors having the guards H, to prevent the escape of the moisture, substantially as herein described.

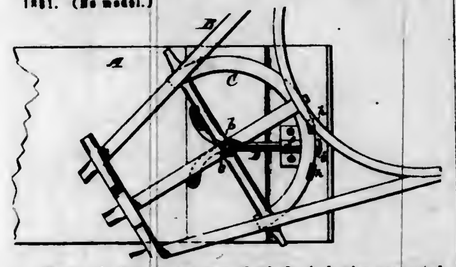
3. In a steam cooking apparatus, the independent chambers or sections A, supported upon the boiler B, and having the steam-pipes and valves, as shown, in combination with the doors G, whereby the intermediate sections may be opened without disturbing those above, substantially as herein described.

252,885. FLY-FAN. ALVIN LLOYD, Allerton, Iowa. Filed July 18, 1881. (No model.)



Claim.—In fly-brushes, the single frames composed of the hanger-supports A A and the supports B B, arranged to be longitudinally adjusted thereon and be held obliquely to them by means of screw-bolts O C, in combination with the two-part clamping-bar L and one or more rods, F, for connecting two or more of the single frames, to have a uniform oscillating movement, as and for the purpose specified and shown.

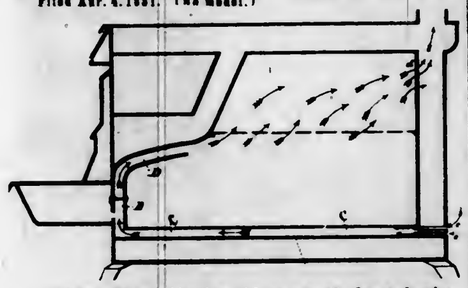
252,886. RUNNING-GEAR FOR VEHICLES. MORGAN A. LOGAN and FRANCIS M. WRIGHT, Lathrop, Mo. Filed Nov. 26, 1881. (No model.)



Claim.—1. In a wagon-gear, the body A, having connected thereto the horizontal rod D and lug *c*, in combination with the king-bolt *b*, fifth-wheel D, and segmental bearing-plate E, substantially as and for the purpose set forth.

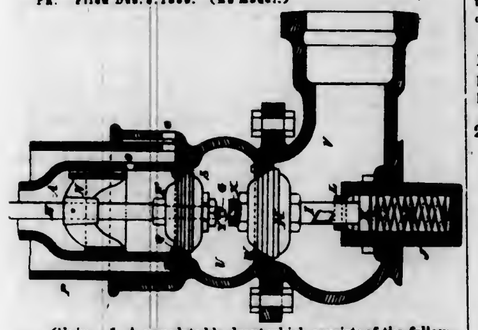
2. In a wagon-gear, the body A, having connected thereto the rod D, yoke *f*, and lug *c*, and the bearing-plate E, having eye *g*, through which the rod passes, in combination with the frame B, fifth-wheel C, and king-bolt *b*, having head *d*, all constructed and arranged to operate substantially as and for the purpose specified.

252,887. DOMESTIC OVEN. JAS. A. MARSH, Cleveland, Ohio. Filed Apr. 4, 1881. (No model.)



Claim.—The combination, with an oven, of a flue or chamber, C, located beneath the oven and communicating with the outer air, and flue D, communicating at its lower end with the forward portion of the flue or chamber C, said flue being constructed and arranged to discharge heated air into the oven at a point above its base, substantially as set forth.

252,888. HYDRANT. SAMUEL R. C. MATHEWS, Philadelphia, Pa. Filed Dec. 6, 1880. (No model.)



Claim.—1 A completed hydrant which consists of the following parts in combination: the chambers V and U, supplemental valve H, piston-rod I, cap L, spring-chamber J, spring M, valve-rod E, provided on the top with a screw-thread, ring-valve N, stock A, provided with waste-orifice O and stuffing-box T, cap B, sleeve C, and retaining-cap D, all constructed substantially as and for the purpose specified.

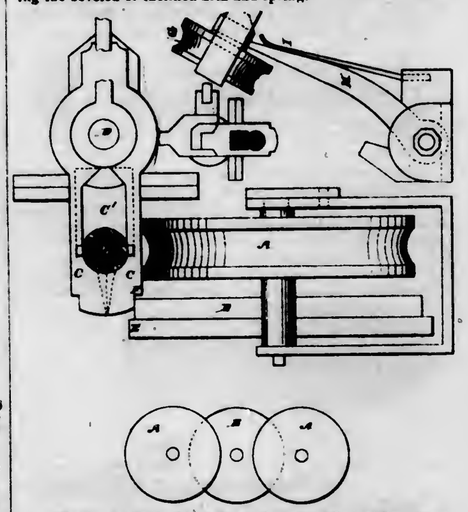
2. In a hydrant, the combination of the chambers V and U, valve H, rod I, and spring M with seat W, valve F, seat Q, stock A, and brass ring R, substantially as and for the purpose specified.

3. In a hydrant, the combination of chambers V and U, valves H and F, and their seats with rod I, spring M, nut X, with its recess or centering-hole Y, pin G on valve F, a waste-valve, stock A, with waste-orifice O and stuffing-box T, cap B, sleeve C, and frost-jacket P.

4. The supplemental valve H, in combination with rod I, working in a cylinder, J, entirely closed at the top and inclosing the spring M, for the purpose of closing the supplemental valve against its seat and protecting the spring and point of contact with the rod, substantially as shown and described.

252,889. CABLE-RAILWAY. WILLIAM MCCALL, San Francisco, Cal. Filed June 16, 1881. (No model.)

Brief.—Consists of a double series of overlapping sheaves placed one above the other and alternating. The gripe has vertically-moving jaws having shoulders to guide the downward movement, and a vertical guide-sheave journaled in a swinging arm having the beveled or inclined arm and spring.

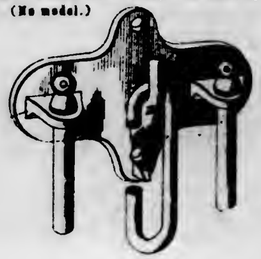


Claim.—1. In a cable-railway, the means for guiding the cable and the gripe around curves, consisting of the double series of sheaves A B, placed one above the other and alternating and overlapping, substantially as herein described.

2. The superposed overlapping sheaves A B, the lower ones projecting beyond the upper, as shown, in combination with the gripe having vertically-moving jaws and the shoulders F to guide the downward movement of the lower jaw when the gripe is opened, substantially as herein described.

3. The vertical guide-sheave G, journaled in the swinging arm H, and having the beveled or inclined arm K, by which the approaching gripe may move it back, substantially as and for the purpose herein described.

252,890. PIN AND LINK CARRYING DEVICE FOR RAILWAY-CARS. PATRICK MCGUIRE, Louisville, Ky. Filed Nov. 22, 1881. (No model.)



Claim.—A plate of metal the outer surface of which is provided with projections adapted to receive and carry coupling links and pins for coupling together railroad-cars, it being used in connection with such cars in any convenient locality, as and for the purpose set forth.

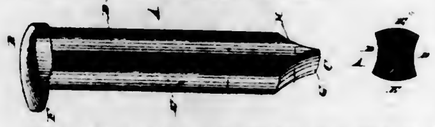
252,891. MANUFACTURE AND COMPOSITION OF FLOOR OIL-CLOTHS. DAVID N. HELVIN, New Springville, N.Y. Filed Sept. 24, 1881. (No specimens.)

Claim.—1. The production of a floor oil-cloth by rolling onto canvas or spreading into sheets a composition composed of cork or other analogous organic substance and a gummy substance or cement, produced in the manner above specified.

2. The mixture of gum-copal or other analogous gums with boiled linseed-oil and an ocherous pigment, and spreading of the same on sheets, either by flooding, dipping, or with a trowel, after thickening the mixture to the consistency of mortar and drying the same by heat, for the purpose above specified.

3. Mixing the composition of gums, boiled linseed-oil, and pigment, after being dried, as described, with common rosin and pulverized cork, for the purpose of producing a floor oil-cloth, substantially as described.

252,892. RAILROAD-SPIKE. JAMES HENRY MORGAN, Brookwick, Mo. Filed Sept. 24, 1881. (No model.)



Claim.—The herein-described improved spike, consisting of the head B and body A, having parallel fluted sides D H D H and convex sides E E, the lower ends of which are chamfered to form the sharp-edged point C, as herein described, for the purpose set forth.

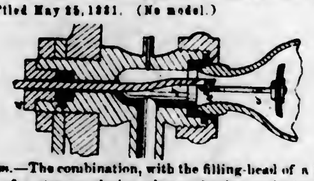
252,893. MITTEN AND THE ART OF KNITTING THE SAME. JOHN NELSON, Rockford, Ill. Filed Oct. 6, 1880. (No model.)



Claim.—1. The improved method of knitting mittens, consisting in commencing the knitten at or near the point at which the narrowing of the end portion is commenced, and by a back-and-forth knitting process and narrowing to produce one side and widening to produce the other side, then knitting the straight portion, then dropping a number of the needles, retaining only a sufficient number to produce the thumb, and by a back-and-forth knitting process produce the straight part of one side of the thumb, then narrowing and then widening to produce the opposite side of the rounded or tapered end of the thumb, and then knitting the straight portion of the other side of the thumb, then narrowing to contract that part of the mitten adjacent to the wristlet, and then knitting the wristlet, substantially as set forth.

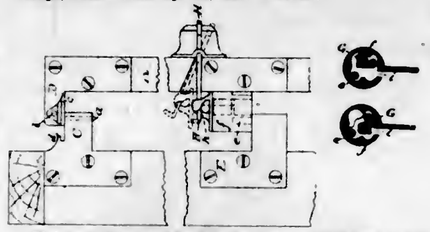
2. As a new article of manufacture, the herein-described mitten, formed of a knit fabric, and made complete, except at the sides of the thumb, which are closed by seams, substantially as set forth.

252,894. BOTTLING-MACHINE. RICHARD OTTO, Chicago Ill. Filed May 25, 1881. (No model.)



Claim.—The combination, with the filling-head of a bottling-machine, of a stopper-closing plunger having on its lower end a pivoted dog, adapted to operate substantially as and for the purposes specified.

252,895. AWNING-BLIND HINGE. KENDRIL P. PIRACH, Cambridge, Mass. Filed Apr. 30, 1881. (Model.)

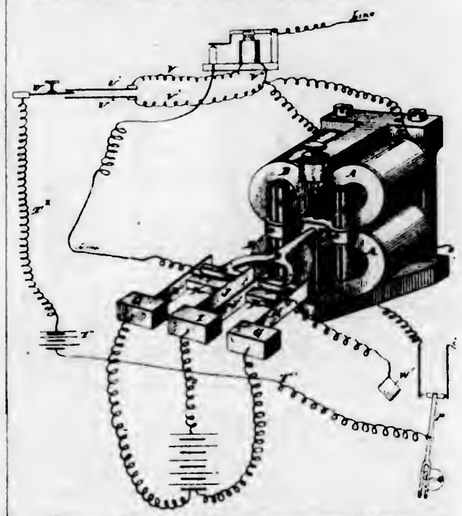


Claim.—1. The tumbler A *g* G, in combination with socket portion *f*, having slot *i* and pintle *e*, substantially as described.

2. The lever H, in combination with the cam-loop *h*, tumbler G, and the parts *e f*, substantially as described.

3. The pivoted and rotating journal *a*, constructed with the latch *c*, in combination with the part C, constructed with the projection *d* and part D, substantially as described.

252,896. SELF-ADJUSTING RELAY FOR PRINTING-TELEGRAPHS. SAMUEL M. PLUSH and WILLIAM P. PHELPS, Philadelphia, Pa. Filed Feb. 14, 1881. (No model.)



Claim.—1. In a transmitting telegraphic mechanism, a self-adjusting relay, in combination with the main circuit, the latter being controlled by said relay, which is composed of two pairs of magnets, with a suitable armature attachment, in combination with an initial mechanism for alternating the electric current from one pair of magnets to the other, connected substantially as and for the purposes described.

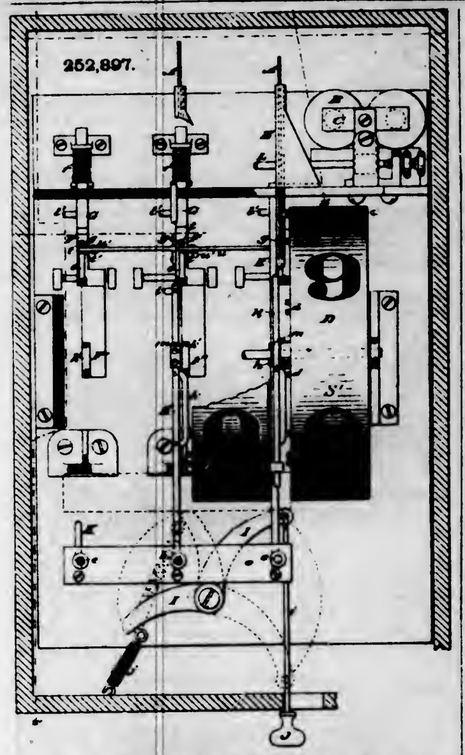
2. A simple spring-relay, S, in combination with the self-adjusting relay, so connected that it can be operated at will without opening or disturbing the self-adjusting relay, and operated by the same local battery, T, as the self-adjusting relay, substantially as described.

3. The combination of the self-adjusting relay and a pole-changing mechanism, connected as described, whereby any number of relays can be added and any number of circuits operated by an initial mechanism, P, with a single local battery, T, substantially as described.

252,897. ELECTRICAL VISUAL INDICATOR. CHESTER H. POND, New York, N. Y., assignor to the Pond Electric Signal Company, same place. Filed Nov. 19, 1880. Renewed Dec. 19, 1881. (No model.)

Brief.—Improvement on Letters Patent No 232,415 so that only one electro-magnet is required to operate all the systems. Each indicating-wheel automatically locks itself and throws the succeeding wheel under the influence of the electro-magnet when the required number is reached in the series to be transmitted

252,897.



Claim.—1. In a visual indicator, the combination of intermittently-moving stop *b*, electro-magnetic mechanism for controlling its intermittent movements, wheel D, pins *d d* thereon, pinion *h*, connected therewith, and toothed weight H, meshing with said pinion, and thereby imparting to the wheel D a normal tendency to rotate, substantially as set forth.

2. In a visual indicator, the combination of stop *b*, an electro-magnetic escapement for controlling its movement, wheel D, pins *d d*, pinion *h*, and toothed weight H, meshing therewith, with a restoring device consisting of an upwardly-moving part, K, provided with a shoulder or arm, *e*, adapted to engage said weight and lift it to its normal position, substantially as set forth.

3. In a visual indicator comprising a rack, A, wheel D, weight H, and connection between said wheel and weight, whereby the dropping of the latter causes the rotation of said wheel, the combination, with said parts, of a restoring mechanism consisting of a sliding rod, K, bearing shoulder *m*, adapted to take under and lift rack A, lever I, adapted when pulled to take under and lift said rod, and means actuated by said movement of said lever for lifting said weight and effecting thereby the return revolution of the wheel, substantially as set forth.

4. In a visual indicator employing a non-intermittently-rotating wheel, D, and mechanism for releasing and stopping it, the combination of said wheel with a friction-brake, F, adapted to press against the surface thereof, of mechanism adapted, when released, to press said brake forcibly against said wheel, and of means for releasing said mechanism by the stoppage of the wheel, substantially as set forth.

5. In a visual indicator, the combination of the wheel D, means for releasing it, means for rotating it, and means for stopping it, leaver F, bearing the friction-brake F, drop G, inclined or wedging surface *f*, and means for releasing said drop by the stoppage of the wheel, substantially as set forth.

6. In a visual indicator, the combination of an intermittently-moving rack, A, the wheel D, the rod *g*, the lever F, bearing the friction-brake F, and the drop G, substantially as set forth.

7. The combination, with the wheel D, of the lever F, bearing the friction-brake F, the drop G, having cam-surface *q* and toe *p*, which normally rests on lever F, and thereby upholds the drop, and means for releasing said drop by pressing back the lever F until it no longer upholds said toe, substantially as set forth.

8. In a visual indicator, one indicating system consisting of a non-intermittently-moving part, so arranged relatively to a series of characters that the extent of its movement from its normal position determines which of said characters is displayed, an intermittently-moving part the number of whose advances determines the extent of movement of the first-named part, and an escapement whose operation controls the movement of said intermittently-moving part, in combination with a second like indicating system, with one electro-magnet adapted to operate the escapement of either system and normally in operative connection with that of the first system only, and with means, actuated automatically by the stoppage of the movement of the non-intermittently-moving part of the first system, for bringing said magnet into operative connection with the escapement of the second system, substantially as and for the purposes set forth.

9. In a visual indicator, an indicating system consisting of a non-intermittently-moving part, D, tending to move in one direction, but normally restrained from moving, mechanism for releasing it and for stopping it after it has traveled a greater or less distance, and an escapement, E, for controlling said stopping mechanism and determining the point in its travel at which the moving part is stopped, in combination with a second like system, with one electro-magnet, B, whose armature is normally in operative connection with the escapement of the first system only, whereby its vibrations operate said escapement, and with mechanical means, in connection with said stopping mechanism of the first system, whereby the stoppage of the part D thereof establishes an operative connection between the armature of said magnet and the escapement of the second system, that the subsequent vibrations of said armature shall effect the operation of the second system, substantially as set forth.

10. In a visual indicator, an indicating system consisting of an escapement, E, an intermittent stop, *b*, and a non-intermittently-moving part, D, bearing a series of pins, *d d*, in combination with a second like system, with one electro-magnet for operating the escapement of either system, the same being normally in operative connection with the first system only, and with means for automatically bringing said magnet into operative connection with the second system upon the completion of the operation of the first, substantially as set forth.

11. In a visual indicator, an indicating system consisting of a pallet, *c*, rack A, having teeth *a a*, intermittent stop *b*, and non-intermittently-moving part D, having a series of pins, *d d*, in combination with a second like system, with means for vibrating the pallets of both systems simultaneously, with means for holding the rack of the second system up out of engagement with its pallet during the operation of the first system, and with means for automatically dropping it onto said pallet upon the completion of the operation of the first system, substantially as set forth.

12. In a visual indicator, an indicating system consisting of a pallet, *c*, rack A, having teeth *a a*, intermittent stop *b*, and non-intermittently-moving part D, having a series of pins, *d d*, in combination with a second like system, with means for simultaneously vibrating the pallets of the two systems, with a detent, *t*, arranged to normally uphold the rack of the second system out of connection with its pallet, and with means for withdrawing said detent and dropping the said rack onto its pallet upon the completion of the operation of the first system, substantially as set forth.

13. In a visual indicator, an indicating system consisting of a pallet, *c*, rack A, having teeth *a a*, intermittent stop *b*, and non-intermittently-moving part D, with a second like system whose rack A has a shoulder, *s*, with means for simultaneously vibrating the pallets of both systems, with a detent, *t*, for engaging said shoulder *s*, with an arm, *u*, for withdrawing said detent, and with means for moving said arm by the stoppage of the part D of the first system, substantially as set forth.

14. In a visual indicator, the combination of an indicating system consisting of a pallet, *c*, rack A, having teeth *a a*, stop *b*, and wheel D, bearing pins *d d*, with a second like system, with means for vibrating both pallets simultaneously, with a rod, *g*, in connection with the rack A of the first system, with an arm, *v*, moved by said rod, and with a detent, *t*, moved by said arm, and normally engaging a shoulder, *s*, on the rack A of the second system, substantially as set forth.

15. The combination of two electrically-actuated indicator systems, each adapted to advance one character for each break or closure of their actuating-circuit, the first system only being in operative connection with said circuit, with means for bringing the second system into connection therewith upon the completion of the operation of the first system, and with mechanical means for preventing the act of effecting this connection from prematurely

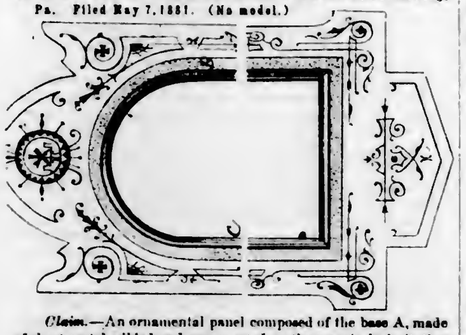
starting the second system in case the circuit at the time said connection is made is in the condition (either open or closed) prearranged to effect the starting thereof, without withholding the circuit from the magnet which actuates said second system, substantially as set forth.

16. The combination of two indicator systems, both operated by the same electro-magnet, and each adapted to advance one character for each closure and break of the actuating-circuit, and the first system only normally in operative connection with the magnet, with means for automatically establishing an operative connection between the second system and said magnet upon the completion of the operation of the first system, and with mechanical means for preventing the act of establishing such connection from prematurely starting the second system, substantially as set forth.

17. In a visual indicator, an indicating system consisting of a character-displaying mechanism whose movement is controlled by a pallet, *e*, and rack A, having teeth *a a*, in combination with a second like system whose rack A is formed with an additional tooth, *a'*, and is normally sustained with said tooth above its pallet, with means for vibrating said pallets, and with means for dropping the said rack into connection with its pallet upon the completion of the operation of the first system, substantially as set forth.

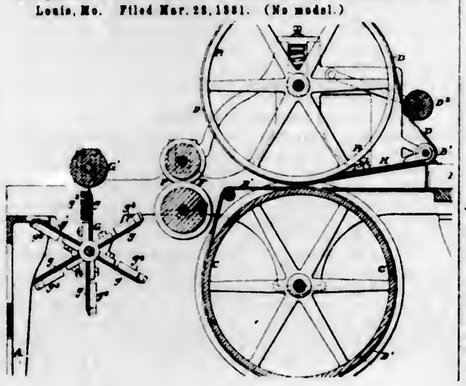
18. In a visual indicator, a non-intermittently-moving part, D, having pins *d d*, in combination with an intermittently-moving part, A, bearing a stop, *b*, and having a projection, *r*, which normally bears against a fixed shoulder and confines the part A laterally, but which, when said part has passed out of its normal position, passes beyond said shoulder and leaves the part A free to be moved laterally by the contact of either of the pins *d* with its stop *b*, substantially as set forth.

252,898. PICTURE-FRAME. SILAS W. POULTON, Harrisburg, Pa. Filed May 7, 1881. (No model.)



Claim.—An ornamental panel composed of the base A, made of sheet metal, gilded and ornamented on the margin in imitation of a picture-frame, with the mat B, having a rough-gilt raised margin within the ornamental margin of the base A and a tapering and grooved edge panel, C, extending over the entire surface of the mat B, within the rough margin of the same, constructed, arranged, and combined as herein described, and for the purpose set forth.

252,899. PLUG-TOBACCO MACHINE. JOHN RAMMING, St. Louis, Mo. Filed Mar. 28, 1881. (No model.)



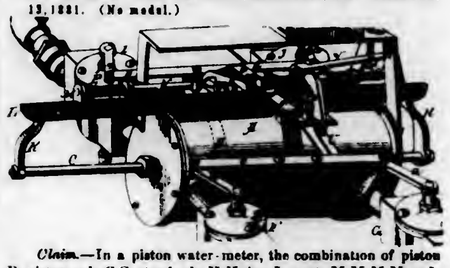
Claim.—1. In a plug-tobacco machine, the upper pressing-roll, B, made vertically adjustable, in combination with the non-adjustable driving-pulley B', tightener-pulley D^2, and carrying and driving belt D, all arranged substantially as described, and for the purpose set forth.

2. The combination, in a plug-tobacco machine, of the pivoted inclined bearing-plate H, arranged forward of the rolls B C, and operating, as described, with the belt D, pulley B', and rolls B C, all substantially as described, and for the purpose set forth.

3. The combination, in a plug-tobacco machine, of the inclined plate H, having friction-roller *h*, with the drum B, pulley B', and endless belt or carrier D, as described, and for the purpose set forth.

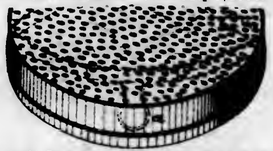
4. In a plug-tobacco machine, the combination of the rotary head G and radial cutters *g*, provided with spring-followers g^1, all arranged as herein described, and for the purpose set forth.

252,900. DEVICE FOR OPERATING THE VALVES OF PISTON-METERS. PETER RUSSELL, Milwaukee, Wis. Filed June 13, 1881. (No model.)



Claim.—In a piston water-meter, the combination of piston B, piston-rods C C, standards K K, bar L, posts M M M M, rods N N', springs P P, angular bars R, oscillating catches O O, springs U U, cross-bars *e e*, bars *b* and *d*, levers *a a* and *c c*, and cut-off valves F, G, I, and J, all substantially as and for the purpose set forth.

252,901. APPARATUS FOR FORMING HAT-MAP BATS. JAS R. RUSSELL, Boston, Mass. Filed July 1, 1881. (No model.)



Claim.—1. The combination of the flanged plates *b d* with the foraminous former, substantially as described.

2. The combination of the flanged plates *b d* and foraminous plate *f*, substantially as and for the purpose described.

3. The combination of the flanged plates *b d*, plate *f*, and handle *g*, substantially as described.

4. A jigger having a foraminous face-plate and a back plate provided with openings, whereby the air may escape from below the face-plate, substantially as described.

252,902. DEVICE FOR ATTACHING ROLLER-COLTERS TO PLOWS. HANS H. SATER, Dubuque, Iowa. Filed Sept. 19, 1881. (No model.)



Claim.—1. The arm or bracket A, provided with serrations *f f*, recess I, and slot G, in combination with the colter-stem B, eyebolt D, and seat C, having serrations *g g'* and shoulder *i*, whereby said seat C is prevented from dropping down when the bolt D is loosened, substantially as shown and described.

2. The plow-beam F, combined with an arm or bracket, A, provided with the extended bearing-face C', projection C^2, with rib C^3, and the flanges *a* and *a'*, substantially as shown and described.

3. The plow-beam F, combined with an arm or bracket, A, having the bearing-face C', projection C^2, and lugs *a* and *a'*, in combination with the strap-bolt B, substantially as shown and described.

252,903. REAMER. ANDREW SAUERBREI, Yonkers, N.Y. Filed May 9, 1881. (Model.)



Claim.—1. In a reaming-implement, the combination of the cylindrical body A, constructed with the cavity *g* and the seat *b*, the adjustable key B, having a cutting-edge, *f*, and an actuating-screw, C, arranged to adjust the key B, all substantially as and for the purpose herein set forth.

2. In a reaming-implement, the combination of the hardened steel body A, of cylindrical form, and constructed with a cavity, *g*, a seat, *b*, and key B, having a cutting-edge, *f*, and an actuating-screw, C, working through a solid nut or bearing, *m*, to adjust the key B, all substantially as and for the purpose herein set forth.

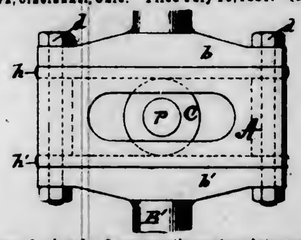
3. In a reaming-implement, the cylindrical body A, constructed with the parts $a' b' c'$ of diminished diameter, and the tapered portions $a' b' c'$, and having the inclined dovetailed seat *b*, the adjustable key B, having a cutting-edge, *f*, the aforesaid body being cut away at one side of the said key B, and the parts being constructed and combined substantially as and for the purpose herein set forth

252,904. HEATING-STOVE. ALBERT L. SAVAGE, Ashtabula, Ohio. Filed Sept. 5, 1881. (Model.)



Claim.—The stove-base A, cast with the air-chamber or tube B, with its upper end covered by a plate, *a*, arranged in an inwardly-inclined position in the ash-pit under the overhanging flange of the grate-support C', and having perforations *a'*, in combination with the removable tube B', having perforations or apertures near its lower end, substantially as and for the purpose set forth.

252,905. YOKE FOR CONVERTING MOTION. MICHAEL SCHULTZ, Cincinnati, Ohio. Filed July 16, 1881. (No model.)



Claim.—1. A yoke for converting rotary into reciprocatory motion in steam-pumps and other machinery, in which a box or open block, A, extending the full length of the yoke, is interposed between the parallel faces of the cross-heads and held by the connecting-bolts securing the cross-heads, substantially as set forth.

2. In combination with the members *b b'* of a yoke, the box A, constructed as described, having thickened end walls, through which pass the retaining-bolts, and side walls, longitudinally perforated for the play of the crank-pin, substantially as set forth.

3. The members *b b'* of the yoke, in combination with the box A, bolts *d d*, and facing-plates *h h'*, as and for the purpose set forth.

4. The members *b b'* of the yoke, in combination with the open box A and the roller C, substantially as specified.

252,906. TRACING-TABLE. MATHAS BOLT, Weisport, Pa. Filed Dec. 14, 1881. (No model.)

Claim.—1. The combination, with the box or case A, having glass top D, opening I, and door F, of the lamp G, substantially as and for the purpose set forth.



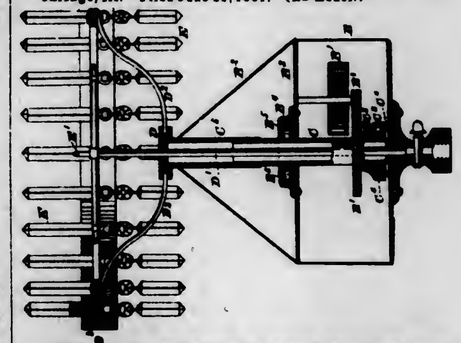
2. The combination of the box or case A, having a removable glass top, D, opening I, studs O, and door F, with the lamp G and the shade L, having notched flange M, substantially as and for the purpose set forth.

3. The combination of the box or case A, having a glass top, D, and slanting or diagonal sides J, with the lamp G and the mirrors or reflectors K, substantially as and for the purpose set forth.

4. The box or table A, having a glass top, D, and graduated sides, in combination with the lamp G, substantially as set forth.

5. The herein-described tracing-table, consisting of the box or case A, having a glass top, D, opening I, studs O, door F, and graduated sides, in combination with the lamp G, mirrors or reflectors K, and shade L, having notched flange M, substantially as and for the purpose shown and specified.

252,907. REVOLVING PRISMATIC SHADE. WM. H. STAATS, Chicago, Ill. Filed June 20, 1881. (No model.)



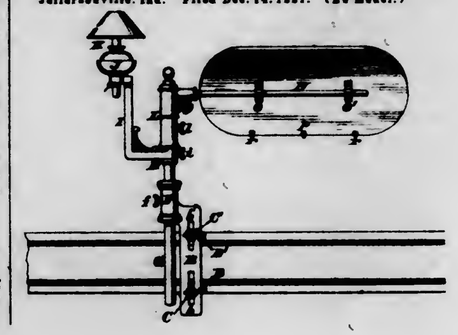
Claim.—1. A revolving shade composed of party and various colored prisms or prisms and pendants E, revolved by any suitable mechanism and combined with a gas-burner or other light-giving device, substantially as described.

2. The combination, in a party-colored revolving shade, of the ring D^2, for carrying the prisms or pendants, arms for connecting it to the driving-shaft, a sectional driving-shaft, C C^2, its supporting wheels or rollers B^2 and C^2, and the driving mechanism, the parts being arranged for joint operation substantially as set forth, and for the purpose described.

3. The combination of the drum or case B, having upon its upper surface a conical reflecting-surface, B^2, the sectional driving-shaft C C^2, and mechanism for driving the same, substantially in the manner and for the purpose set forth.

4. The combination of the ring D^2 and the party-colored glass prisms E, the parts being constructed as described and arranged to be operated by mechanism substantially as described.

252,908. TABLE ATTACHMENT FOR BEDS. ROBT. L. STOKES, Jeffersonville, Ind. Filed Dec. 14, 1881. (No model.)



Claim.—1. The combination, in a table attachment for beds, of slotted plate B *b b'*, screws D D', and keepers E E', said plate being provided with a socket, F, that supports the standard of said attachment, as herein described.

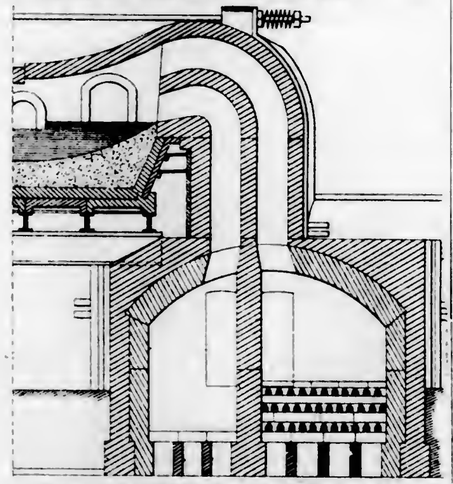
2. The combination, in a table attachment for beds, of the round rod or bracket N, bearings O O', thumb-screw o, and table P, which latter is attached to said bearings, as herein described.

3. The combination, in a table attachment for beds, of a swivel-arm, I, provided at its free end with a lamp-holder, said arm being applied to the same standard that supports the table-bracket, as herein described.

4. The combination, in a table attachment for beds, of standard G, support H, swivel-arm I, socket L, bracket N, and table P, the free end of said arm being provided with a lamp-holder, as herein described.

5. The combination, in a table attachment for beds, of slotted plate B *b b'*, washers C *c C' c'*, thumb-screws D D', and keepers E E', as herein described.

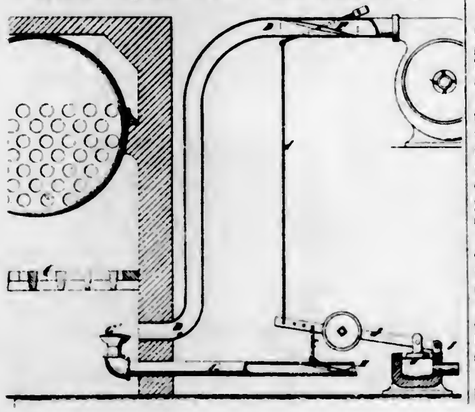
252,909. REGENERATIVE FURNACE. WILLIAM SWINDELL, Allegheny, Pa. Filed Nov. 26, 1880. (No model.)



Claim.—1. A regenerator having its checker-work formed of bricks, having an inclined wedge-shaped or pointed upper surface, substantially as and for the purpose specified.

2. A regenerator-brick having a sharp ridge-comb on its upper edge and notches for receiving the transverse courses, substantially as and for the purpose described.

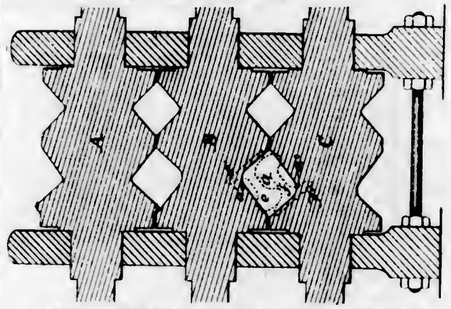
252,910. APPARATUS FOR BURNING COAL-SLACK. CHAS. TAYLOR, New York, assignor to Henry L. Van Syckel and Chas. G. Till, Brooklyn, N. Y. Filed June 2, 1880. (No model.)



Claim.—1. The combination, with a steam-boiler furnace, of pipes for introducing air and spraying water below the grate, valves in said pipes for controlling the passage of air and water through them, and a pressure-regulator for simultaneously opening and closing said valves, whereby the supply of air and water is automatically and uniformly regulated, substantially as specified.

2. The combination, with steam-boiler furnace, of the pipes D and G, for supplying air and water thereto, valves F and H, contained in said pipes, and the pressure-regulator I and connections between said regulator and valves for simultaneously opening and closing the latter, substantially as specified.

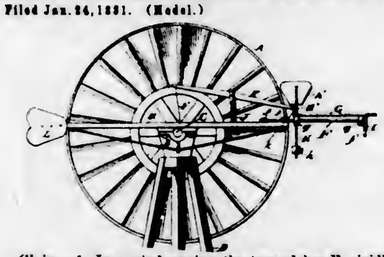
252,911. ROLLING-MILL. JAMES THOMAS, Laramie City, Wyo. Filed Sept. 12, 1881. (No model.)



Claim.—1. The improvement in the art of utilizing old rails, which consists in placing side by side, without any inner or outer filling-pieces, two railroad-rails, the flange of one overlapping the head of the other, with the interstices open, as described, and operating upon them together at one heat, substantially as set forth.

2. A three-high rolling-mill having the first groove, *a*, formed between the bottom and middle roll approximately square, with its angles *a'* and *a*[2] filled and rounded, as described, and the second groove, *b*, formed between the top and middle roll, its sides being made equal, or approximately so, by the projecting rib *b*[2] of the top roll, A, substantially as and for the purposes specified.

252,912. WIND-ENGINE. ALEXANDER THOMSON, Ames, Iowa. Filed Jan. 24, 1881. (Model.)



Claim.—1. In a wind-engine, the trussed bar E, rigidly attached to the revolving head B, and provided with the main or governor vane G, pivoted to one end thereof, and small counter-balance-vane L, rigidly attached to the other end, substantially as described.

2. In a wind-engine, a main or governor vane, G, pivoted to the outwardly-extending arm F, and provided upon its under side with a projecting arm, H, and adjustable weight h, whereby it retains normally a horizontal position, in combination with an upwardly-projecting arm, H', having a vane, h', attached thereto, and operating to present the face of the vane G to the wind when the pressure upon the vane overbalances the adjustable weight, substantially as described.

3. In a wind-engine, the limiting-stop *f'* of the arm F, in combination with the stop I upon the under side of the vane G, whereby the latter is limited to a quarter-turn upon its axis, substantially as described.

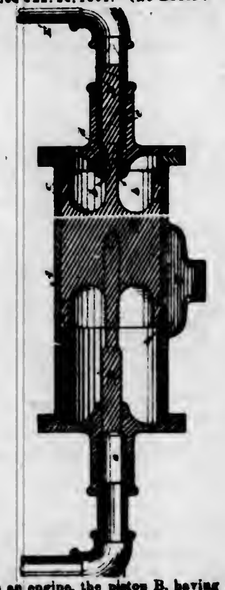
4. In a wind-engine, the bar E, provided with the standard J, lever K, and cords or chains *k* and *k'*, whereby the vane G may be kept from the horizontal plane, and whereby it may be revolved, substantially as described.

5. In a wind-engine, the pivoted main vane G, provided with projecting arm H, having weight h, and arm H', having vane h',

in combination with the bar E and revolving head B, substantially as and for the purpose set forth.

6. The combination of the vane G, provided with projecting arms H and H', weight h, small vane h', and stops I *f'*, and pivoted to the projecting arm F of the bar E, with the standard J, lever K, and cords *k k'*, substantially as described.

252,913. DIRECT-ACTING ENGINE. ALEXANDER THOMSON, Ames, Iowa. Filed Jan. 28, 1881. (No model.)



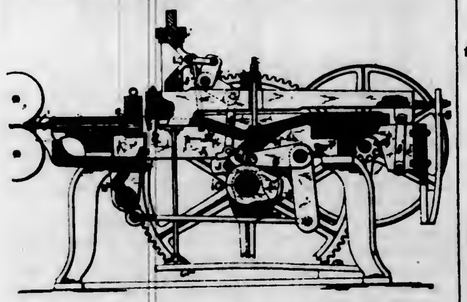
Claim.—1. In an engine, the piston B, having steam-chambers *b*, in combination with valves D D', working in the recesses *c*, arranged in the cylinder-heads, substantially as shown and described.

2. In an engine, the piston B, having steam-chambers *b*, in combination with the cylinder A, provided with slots G for the passage of the pins F, substantially as shown and specified.

3. In an engine constructed substantially as shown, the forked connecting-rod provided with stub ends having removable lining-pieces *h* inserted in them, substantially as and for the purpose specified.

4. An engine consisting of a cylinder, A, piston B, provided with steam-chambers *b*, and elongated valves D D', moving in recessed heads, and the forked connecting-rod H, all constructed and arranged as shown and described.

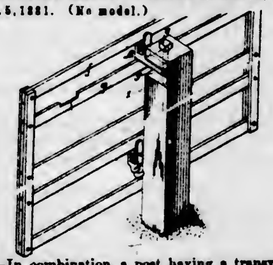
252,914. MACHINE FOR FORMING BOLT-BLANKS FROM COLD RODS OF METAL. WM. E. WARD, Port Chester, N. Y. Filed Apr. 4, 1881. (No model.)



Claim.—1. The combination, substantially as before set forth, of the rod-guide, the stationary griping-jaws which gripe the end of a rod and hold the same during the heading operation, a die-block containing two or more matrices for progressively forming and finishing a bolt-head, and the mechanism, substantially as described, for changing the planes of elevation of said matrices to enable them to act successively in upsetting, shaping, and finishing the end of a metal rod to form a bolt-head prior to cutting the headed portion from the rod.

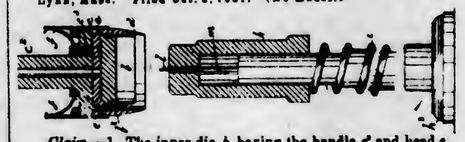
2. The combination, substantially as before set forth, of the stationary griping-jaws, the ram or header provided with a series of head-forming dies, the mechanism, substantially as described, for changing the header to different planes of elevation for bringing such head-forming dies successively into alignment with the griping-jaws, suitable feeding devices for advancing the header-rod intermittingly, and movable shears for cutting off the headed bolt-blank, the whole combined by suitable connecting mechanisms.

252,915. HANGING GATES. WILLIAM R. WHITE, Meeds, Ill. Filed Feb. 5, 1881. (No model.)



Claim.—In combination, a post having a transverse corner slot, a bracket, A, having an arm, *a*, fitting in and guided by the said slot, a pivot-pin fitting sockets in the post, a roller turning between fingers of the bracket, and a gate supported on the roller, all as set forth.

252,916. HEEL-FORMING APPARATUS. FRANK A. WIGGIN, Lynn, Mass. Filed Oct. 6, 1881. (No model.)



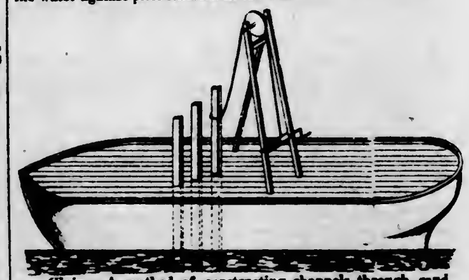
Claim.—1. The inner die, *b*, having the handle *c'* and head *c*, combined with the outer and larger die, *d*, detachably connected therewith, whereby both dies are made movable with the handle to place the dies on the leather to cut heel-lifts of different sizes, substantially as described.

2. The inner die, *b*, and external die, *d*, combined with catches to hold the two dies together, substantially as described.

3. The nail-holder composed of the post, the driver *m*, and the surrounding spring-supported sleeve, provided with a hole to receive and steady the nail, the end of which is supported by or made to rest on the driver, combined with the inner die, *b*, and the outer die, *d*, and means to hold the two dies together, and a handle common to both dies to jam the lifts held within the dies by friction down upon the nail set up in the sleeve, substantially as described.

252,917. CONSTRUCTING CHANNELS THROUGH SAND BARS IN HARBORS. DANIEL W. WILLIAMS, New Orleans, La. Filed Oct. 18, 1881. (No model.)

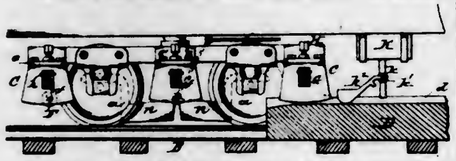
Brief.—Channels formed through sand bars by the action of the water against piles inserted in the bar.



Claim.—A method of constructing channels through sand bars in harbors, rivers, bays, &c., by the insertion of planks or piles into such bars along and across the place through which it is de-

sired to construct a channel in such a manner that the action of the water upon and around such planks or piles will remove and wash away the sand of which such bars are composed, and thus form a channel through the same.

252,918. RUNNING-GEAR FOR RAILWAY-CARS. BERRET C. WILSON, Philadelphia, Pa. Filed June 20, 1881. (No model.)



Claim.—1. A railroad-car provided with double running-gear consisting of wheels and glides, the latter being provided with mechanism, substantially as shown and described, whereby the friction between the glides and their rails may be varied, substantially as set forth.

2. A railroad-car provided with wheels and glides, in combination with a wheel or wheels arranged upon the axle for relieving the friction between the glides and the rails, substantially as shown and described.

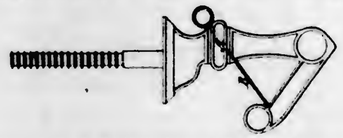
3. A glide for railroad-cars, provided with a friction-roller and means for protruding the periphery of said roller beyond the lower or riding surface of the glide, substantially as shown and described.

4. In combination with a car, the cross-bars E, pivoted thereto or to its trucks, and the glides C C, pivotally secured to said cross-bar, whereby said glides are capable of a lateral oscillating movement, substantially as set forth.

5. In combination with a car provided with wheels and glides, the oil-tank K and mechanism between said tank and glide-rail, whereby the glide-rails are automatically lubricated, substantially as shown and described.

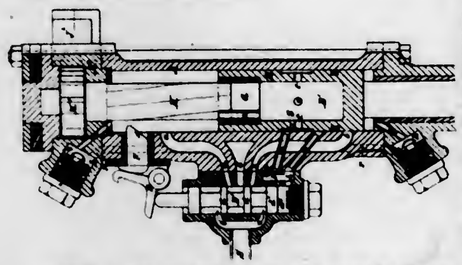
6. The glides C C, formed with recess c^2, and opening c', in combination with roller F, pivoted to bar f, spring G, and screw H, substantially as shown and described.

252,919. HANGER FOR CHANDELIERS. GEORGE W. WOODWARD, New York, N. Y. Filed Mar. 16, 1881. (No model.)



Claim.—As an improved article of manufacture, a chandelier suspension-hook having a hole, A, through its stem and a removable pin, B, fitted therein acting as a positive stop to prevent the chandelier from being lifted off the hook, substantially as shown and described

252,920. ROCK-DRILL. JOHN F. ALLEN, New York, N. Y. Filed June 11, 1881. (No model.)

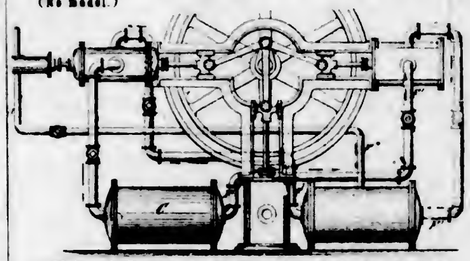


Claim.—1. In a rock-drill provided with a ribbed or feathered rod, H, working in a corresponding nut, G, firmly attached to the piston B, the holes or passages p through the solid part of said nut or piston, in combination with the cavity B', substantially in the manner and for the purpose specified.

2. In a rock-drill provided with a piston or balance slide-valve, the combination of the passages p and t and recess g in the piston B and the passages m and n, connected with the lower part of the valve-chamber, arranged to operate substantially in the manner and for the purpose described.

3. In combination with the cylinder of a rock-drill, the chambers L L, with plugs N N, provided with annular recesses r, and with passages o, closed by a self-acting valve, g, and passages r r and w, communicating with the regular port-passages a and b and with the upper and lower end of the cylinder, respectively, the whole being arranged to operate substantially in the manner and for the purpose herein set forth and described.

252,921. PROCESS OF AND APPARATUS FOR DYNAMIC COOLING. LEICESTER ALLEN, New York, N. Y., assignor to Henry T. Brown, Trustee, same place. Filed May 25, 1881. (No model.)

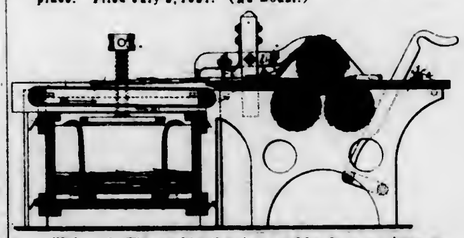


Claim.—1. In a process for dynamic cooling, wherein air or other gas is first compressed, then cooled, then expanding to perform outer work, the mode of increasing the cooling effect of a stated bulk or volume of air or other gas, which consists in condensing the gas to and maintaining it above a stated limit materially higher than the normal atmospheric pressure, substantially as and for the purpose set forth.

2. In a process for dynamic cooling, wherein air or other gas is first compressed, then cooled, and then expanded in the performance of outer work, the mode of beginning and ending the cycle at a stated pressure materially above the normal atmospheric pressure, substantially as herein described.

3. In a dynamic cooling apparatus in which air or other gas is first compressed, then cooled, then expanded in the performance of outer work in a closed cycle to compress air above and expand it again to a minimum limit of pressure materially higher than the normal atmospheric pressure, substantially as herein described, the combination, with a steam-engine or other prime motor, air-engine, air-compressor, and intermediate coolers, of an auxiliary pump for taking air from the exterior atmosphere and injecting it into the system in sufficient quantities to compensate for leakages, substantially as herein described and specified

252,922. FODDER-PRESS. FRANK H. BACON, Plainfield, N. J., assignor to himself, Joseph Fowler, and Carman Perse, same place. Filed July 8, 1881. (No model.)



Claim.—1. The combination, in a machine for preparing cornstalks or similar material, of a table for receiving the stalks, three rollers for crushing the stalks, a cutter and mechanism for actuating the same automatically, and a press-box and means for pressing and baling the stalks, substantially as set forth.

2. The combination, in a machine for preparing cornstalks or similar material, of a feed-table, crushing-rollers, a cutter actuated automatically for separating the stalks into lengths, endless belts and cross-bars for supporting the advancing ends of the stalks, a press-box for receiving the stalks, and pressing mechanism, substantially as set forth.

252,923. SHOULDER-REST FOR VIOLINS. FRANCIS L. BACKER, New York, N. Y. Filed May 27, 1881. (No model.)

Claim.—1. A shoulder-rest for violins, composed of a stay having a cushion at the lower end, a U-shaped upper part, and a spring cushioning device connected to the latter, whereby the shoulder-rest may be attached to the body of the violin, substantially as and for the purpose set forth.



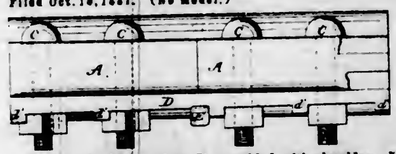
2. In a shoulder-rest for violins, a spring-stay, A, having a U-shaped upper portion and a curved lower part, substantially as described.

3. A shoulder-rest for violins, composed of a metallic spring-stay having a cushion at the lower end, of an upper U-shaped portion provided with means for attaching it to the violin, and of a chin plate or rest secured to the upper end of the stay, substantially as set forth.

4. In a shoulder-rest for violins, the combination, with a metallic spring-stay having an upper U-shaped portion and a curved lower portion, of a chin-plate secured to the upper end, and of an outer face plate or extension, by which the stay is protected against perspiration, substantially as specified.

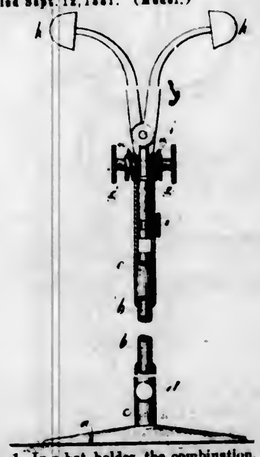
5. In a shoulder-rest for violins, the combination, with a spring-stay, A, having a U-shaped upper portion, of an elastic cushion, a, attached to the inside of one of the shoulders thereof, to secure the same tightly to the body of the violin, substantially as set forth.

252,924. NUT-LOCK. LOUIS D. BEST, Canal Dover, Ohio. Filed Oct. 18, 1881. (No model.)



Claim.—A sliding plate, D, provided with shoulders d' and V-shaped notches d^2, and wedge-shaped bearing between the shoulders d', substantially as and for the purposes set forth.

252,925. HAT-HOLDER. SARAH E. BROWNING, Worcester, Mass. Filed Sept. 12, 1881. (Model.)

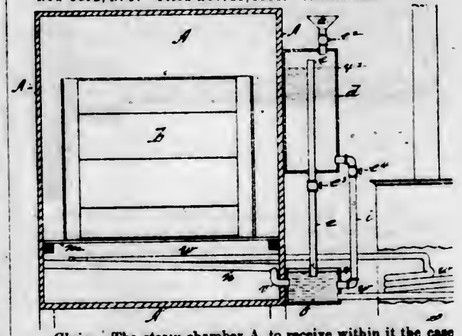


Claim.—1. In a hat-holder, the combination, with the supporting-column, of two arms extending upwardly and terminating with pads, a stock to which the lower ends of the arms are connected, and mechanism, substantially as specified, for spreading or contracting such arms and holding them, as set forth.

2. In a hat-holder, the arms e f, provided with pads at their outer ends, and the stock g', to which the arms are pivoted, in combination with the screws n, having right and left hand threads, substantially as specified.

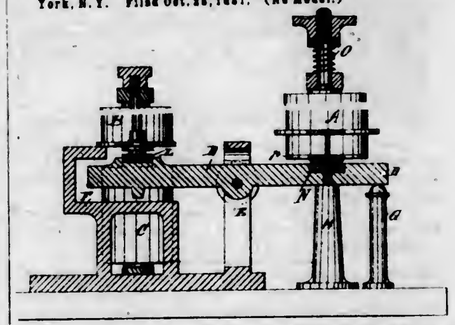
3. The combination, with the base a and rod b, of the tubular standard c, clamping-screw d, pivoted arms e f, adjusting-screws n, stock g', and shank g, the latter entering the upper end of the tube c, as and for the purposes set forth.

252,926. APPARATUS FOR CURING TOBACCO. EDWIN A. BURDICK, Springfield, Mass., assignor to Charles S. Phillips, New York, N. Y. Filed Nov. 21, 1881. (No model.)



Claim.—The steam-chamber A, to receive within it the case b of tobacco, and having the inclined floor n and the drain-pipe v, leading from the latter through the side of said chamber, the water-receptacle o, located outside of said chamber, the pipe-coil w, passing from said receptacle through a suitable stove and thence into chamber A over said inclined floor n, and having perforations therein for the escape of steam therefrom into said chamber, and the reservoir d, connected with the water-supply of said receptacle by pipes, whereby the lowering of the water in the latter admits air into said reservoir and allows water to flow therefrom, all combined and operating substantially as set forth.

252,927. RELAY AND SOUNDER. CHARLES G. BURKE, New York, N. Y. Filed Oct. 26, 1881. (No model.)



Claim.—1. In a relay or sounder, the combination of electro-magnet A, with its coils d and e, electro-magnet B, electro-magnet C, armature-lever D, armatures L and N, trunnion E, stops F and G, supporting-frames H and I, adjustment O, binding-posts a a' a^1 a^2 a^3 a^4 a^5 a^6, switch b and b', battery S, with its closed circuit R, and battery W, with its closed circuit T, substantially as described, and for the purposes set forth.

2. In a relay or sounder, the combination of electro-magnets A, B, and C, double-armed lever D with armatures L and N, support E, stops F and G, magnet-supports H and I, battery S, and closed circuit R, substantially as described, and for the purpose set forth.

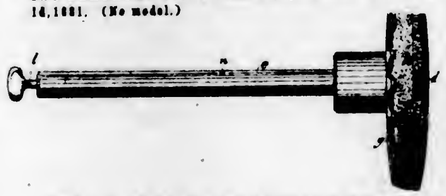
3. In a relay or sounder, the combination of coil d in electro-magnet A, electro-magnet B, armatures L and N, lever D, and its support E, stops F and G, magnet-supports H and I, adjustment O, battery W, and closed circuit T, substantially as described, and for the purpose set forth.

4. In a relay or sounder, the combination of electro-magnet C, coil d in electro-magnet A, electro-magnet B, armatures L and N, lever D, stops F and G, magnet-supports H and I, battery S, and its closed circuit R, substantially as described, and for the purpose set forth.

5. In a relay or sounder, the combination of electro-magnet A with its coils d and e, and electro-magnet C, both attracting

armature-lever D from opposite sides of such lever, for the purpose of moving such lever in one direction only, the other or reverse motion of such lever resulting from the force of retractor B, in further combination with such magnets and lever, substantially as described, and for the purpose set forth.

252,928. MACHINE FOR SHAVING AND WHITENING LEATHER. JOHN G. BUSSELL, Lynn, Mass. Filed Dec. 14, 1881. (No model.)



Claim.—1. The abrading-disk *d*, molded and set to form, with a depressed center, and the swelled line from such center to the retiring or backward-turned periphery, substantially as specified.

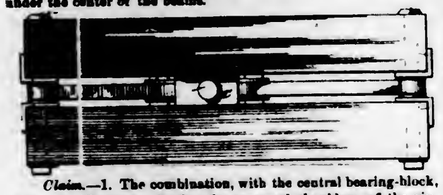
2. The combination of the elastic or cushioning disk *h*, the molded abrading-disk *d*, and a device to secure said abrading-disk in position by engagement with the depressed center thereof, substantially as specified.

3. The combination of disks *d* and *h*, the flanged sleeve *f*, secured in shaft *e*, and the broad-headed pin *j*, secured in said sleeve, substantially as specified.

4. The combination of the flanged sleeve *f*, the pins *i i*, the broad-headed pin *j*, and disks *d h*, substantially as specified.

252,929. BEAM-TRUSS. THOS. W. CARTER, New Orleans, La. Filed Nov. 5, 1881. (No model.)

Brief.—Sprung or warped beams are trued through brace or truss rods secured to said beams and links, upon which rests a screw-bolt carrying an adjusting-nut and an upper bearing-block under the center of the beams.



Claim.—1. The combination, with the central bearing-block, nut, and pillar-screw, having the concaved shoulders, of the pivoted semicircularly-shouldered plates or levers and the articulated braces, substantially as and for the purpose set forth.

2. The combination, with the central bearing-block, nut, and pillar-screw, of the pivoted plates or levers and the articulated braces, substantially as and for the purpose set forth.

252,930. ENVELOPE-OPENER. WILLIAM A. DE CAINDRY, Washington, D. C., assignor of one-half to William H. Pearce, same place. Filed Nov. 4, 1881. (No model.)



Claim.—An envelope-opener provided with an elastic blade having a recessed cutting-edge and a dull point, substantially as shown and described.

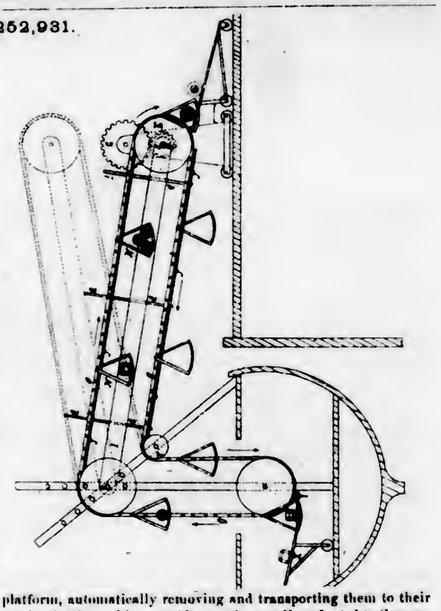
252,931. ENDLESS PACKAGE CARRIER OR ELEVATOR. OLIVER H. EATON, New York, N. Y. Filed Oct. 31, 1881. (No model.)

Claim.—1. An endless traveling carrier or elevator, preferably portable and adjustable, composed of parallel endless chains or ropes, traveling upon properly-located pulleys and bearing suspended between such chains or ropes, one or more carriers or cradles adapted to take up, carry, and deposit loads.

2. A movable carrying-cradle self-adjusting to the perpendicular and having two sides, with means of suspension at their tops, and at and between their bottoms a connecting-bar, from which project laterally teeth or fingers suited to support a load and to permit the passage between of corresponding stationary sets of teeth or fingers in the taking up and depositing of the loads.

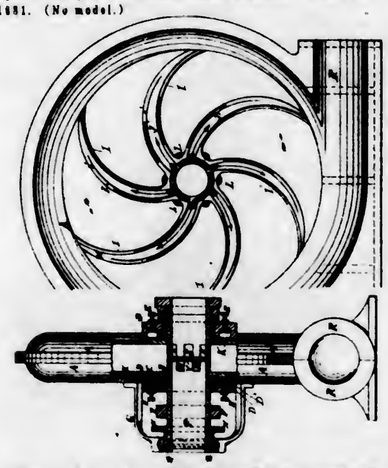
3. A method of removing and transporting loads, substantially as hereinbefore set forth, by placing the loads on a suitable

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platform, automatically removing and transporting them to their destination by and in movable carrying-cradles adapted to the purpose, and moved by and between parallel endless chains or ropes traveling on properly-located pulleys, and automatically delivering such loads at their destination without dumping or otherwise disturbing or injuring them, all continuously.

252,932. CONDENSER. THOMAS ELCOATE, Newcastle-upon-Tyne, County of Northumberland, England. Filed Oct. 11, 1881. (No model.)



Claim.—1. As a new article of manufacture, a condensing apparatus in which the steam is let into the hollow vanes of a centrifugal pump rotating at a high velocity.

2. The process of condensing steam, consisting in delivering the same into a centrifugal machine through which water is passed at the same time, substantially as described and shown.

3. A condenser consisting of revolving arms or conductors provided at the center with separate steam and water admissions.

4. A condenser consisting of a series of revolving arms or conductors provided with a central inlet, and passages within said arms provided with a separate inlet, whereby the steam and the condensing medium may be introduced and passed separately through the apparatus.

5. In a rotary condenser, the combination of two series of radiating arms or conductors, one within the other, with a space between, and inlets whereby the steam and the condensing medium may be admitted separately to the respective passages.

6. The combination of the tubular transversely-divided shaft having the two series of ports or openings, the side plates, K, and the intermediate plates, I and J.

7. In a rotary condenser, the steam-chambers J, with openings at their ends farthest from the center for the escape of air and water, exposed to a current of condensing-water flowing past them, and thus causing an induced current outward on the principle of a Sprengel pump.

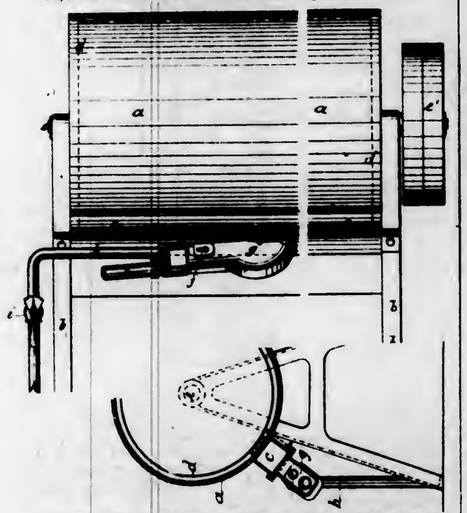
8. In a rotary condenser, the combination of a tubular shaft, tubular arms, and independent passages for the passage of the steam and the condensing medium into the arms.

9. In a rotary condenser, the combination of radiating steam-conducting arms and passages lying contiguous to said arms and extending outward beyond the same, whereby the escaping steam is subjected to the frictional action of the outward-flowing condensing medium.

10. In a rotary condenser, the combination of the casing, the rotary side plates, I, and the packing-rings C, as shown.

11. In a rotary condenser, the combination of radiating steam and water passages, lying contiguous to each other, a tubular shaft divided transversely, ports leading from one end of the shaft into the steam-passage, and ports leading from the opposite end of the shaft into the water-passage, or both water and steam passages.

252,933. COFFEE-ROASTING APPARATUS. HENRY FAULDS, Stockport, County of Lancaster, England. Filed June 13, 1881. (No model.) Patented in England Sept. 3, 1879.



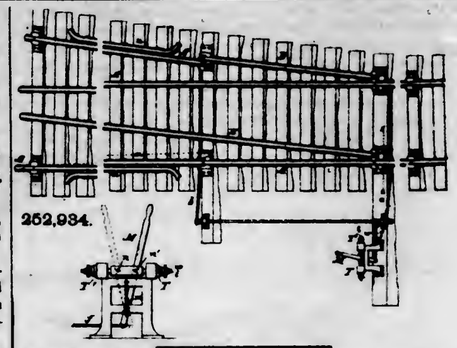
Claim.—The combination of the revolving cylinder *b*, outer casing, *a*, burner-chamber *c*, valved mixing-chamber *g*, valved pipe *h*, and air-pump, for the purpose specified.

252,934. RAILROAD-SWITCH. TIMOTHY H. FERRELL, Syracuse, N. Y. Filed Apr. 18, 1881. (No model.)

Brief.—Movable sections of main and side track are operated to shift the switch, through passing wheel-flanges of trains traveling from the direction of the siding, on either main or siding line. The operating hand-lever moves in a slotted rod having a spring at each end, whereby the switch-rails are returned to normal position after having been operated by a passing train.

Claim.—1. In an automatic switch, the combination of the main switch-rails, arranged to move opposite stationary sections of the main track, siding-rails, movable rail-sections arranged in the main and siding tracks, and appliances, substantially as described, whereby the main rails are set by the movement of the said movable sections by the cars, as specified.

2. The combination, with the switch-stand and rails, of the lever M, bar extending through helical springs T T', and provided with a slotted block having openings *n n'* and detachable pin *m*, substantially as set forth.



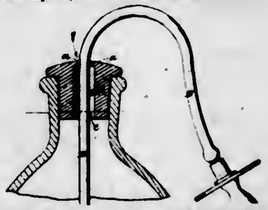
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252,935. CORSET. MARY E. FIELD, New Haven, Conn. Filed Sept. 3, 1881. (Model.)



Claim.—In a corset, the combination of the body A B, the yoke C, of the form shown, having laced shoulder-straps, and the bosom-pieces G, each consisting of two pieces of thin porous material united by a central vertical seam gathered at the sides and evenly secured at the top and bottom, all constructed and arranged substantially as herein described, for the purpose set forth.

252,936. NURSING-BOTTLE. SIMON W. FRANCE, Brooklyn, N. Y. Filed Apr. 1, 1880. (No model.)

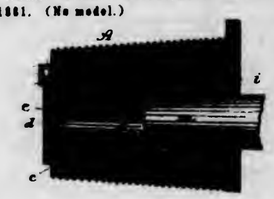


Claim.—1. A stopple, A, for nursing-bottles, in which the hole *b* is enlarged nearly throughout its entire length, and has a short contracted portion, forming a seat, *a*, in which a flexible tube may fit tightly, and acts as a valve by expansion to prevent spilling and by contraction to admit air directly to and through the central hole, *b*, without separate lateral vents, substantially as hereinbefore set forth.

2. The combination, with a flexible tube, of a stopple having but a single hole for its passage and without additional vent-openings, which hole is contracted for a portion of its length to fit the tube and enlarged throughout the rest of its length to admit the air on both sides of the contraction, substantially as described.

3. The bridge C, in combination with the nursing-pipe B and with the stopple A, having the enlarged central hole, *b*, and the contraction *a*, substantially as and for the purpose set forth.

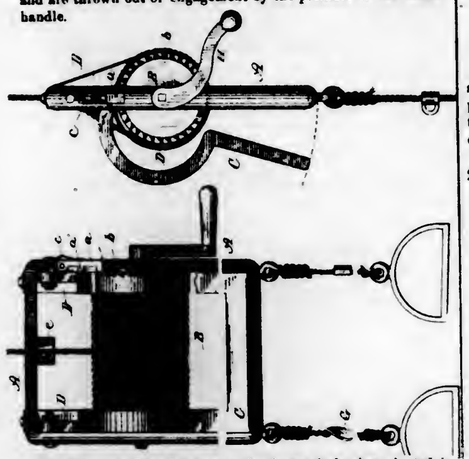
252,937. BUNG. HIRAM F. GAIBBS, Rouse's Point, N. Y. Filed Aug. 26, 1881. (No model.)



Claim.—The bung A, provided with a faucet-hole, *b*, in combination with the hinged valve *d*, bushing *c*, and valve-operating screw *i*, substantially as shown.

252,938. FIRE-ESCAPE. HIRAM F. GAIDER, Rouse's Point, N. Y. Filed Aug. 23, 1881. (No model.)

Brief.—The brake-handle curves around the cylinder and has attached to it one end of the brake-spring, the other end being attached to the frame. Pawls with beveled lugs are pivoted in slots in the frame and engage with ratchets on the end of the cylinder and are thrown out of engagement by the pressure of the brake-handle.

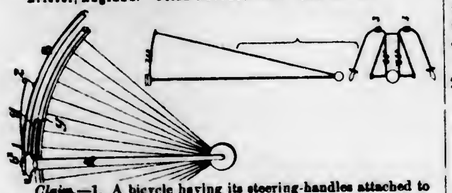


Claim.—1. In a fire-escape, the frame A, having pivoted in elongated slots in its sides the pawls *a*, provided with lugs *a'* and retained in position by the spring *c*, in combination with the cylinder B, having formed around its ends the ratchets *b*, and with the brake-handle C, substantially as set forth.

2. The brake-handle C, curved around the cylinder, as shown, and pivoted to the upper and inner sides of the frame A, operating in combination with the spring D, one end of which is secured to the brake-handle at a point between its pivotal attachment to the frame and the top of the cylinder, and having its other end carried around the cylinder and secured to the top of the frame, as shown.

3. In a fire-escape, the safety stopping device herein described, consisting of the pawls *a*, pivoted in slots in the sides of the frame A, and provided with beveled lugs *a'*, against which operates the brake-handle, as described, said pawls being retained in position by the spring *c* and engaging with suitable ratchets, *b*, formed in the ends of the cylinder B, substantially as set forth.

252,939. BICYCLE. THOMAS T. HARRISON, Bristol, County of Bristol, England. Filed Nov. 25, 1881. (No model.)



Claim.—1. A bicycle having its steering-handles attached to the front fork and curved so as to pass beneath the legs of the rider, as set forth.

2. In combination with the front fork of a bicycle, a pair of steering-handles curved to the rear, so as to pass behind and beneath the legs of the rider, and attached to the fork by braces *h*, as described.

3. In combination with the front fork having casing *a'* and a half-seat for the balls *c*, the backbone provided with a pivot, *b'*, having corresponding half-seat, as set forth.

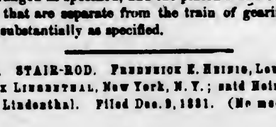
4. In combination with a bicycle, a slotted saddle-plate, P', having depression *a*, containing an inflatable bag or cushion, as set forth.

5. In combination with a bicycle, a saddle-plate extended backward, as at P', to constitute a valise-cover and cantle, as set forth.

6. In combination with the front fork having casing *a'*, the cone *a*², cap-piece *b*², balls *c*, and pivot *b'*, attached to the backbone, as set forth.

7. In combination with the pivot *b'* and its bearing in the top of the front fork, the inclosing convex bell and cover *d*, as set forth.

252,940. WARDROBE-HOOK. RANDOLPH HAYDEN, Haddam, Conn. Filed Dec. 14, 1881. (No model.)



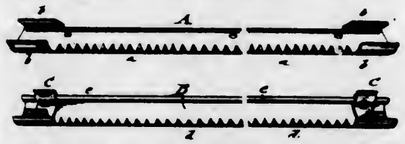
Claim.—A wardrobe-hook composed of the upwardly-inclined socket A, provided with the conical opening D E, and the wooden pin B, provided with the straight tenon larger than the socket on the shoulder F, the tenon being forced or driven into the conical opening of the socket, substantially as specified.

252,941. WATCH. ALBERT HERBERLE, Ueberlingen, Baden, Germany. Filed June 23, 1881. (No model.) Patented in Germany July 27, 1880.



Claim.—In a watch-movement, the combination, with the barrel *a*, of the wheels *c e*, of the same size, and the pinions *b d f*, and the escapement-wheel *g*, receiving motion from such train of wheels, arranged as specified, and the pinion *x* and connections to the hands, that are separate from the train of gearing to the escapement, substantially as specified.

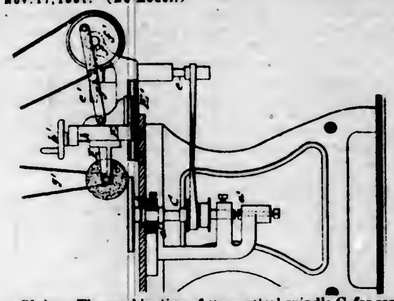
252,942. STAIR-ROD. FRIEDRICH E. HEINIG, Louisville, Ky., and MAX LINDENTHAL, New York, N. Y.; said Heinig assignor to said Lindenthal. Filed Dec. 9, 1881. (No model.)



Claim.—1. The combination of a stair-rod or top plate and of a fixed base-plate with retaining devices connecting them at the ends, one or both of said plates being provided with retaining-teeth along the edges for holding the carpet, substantially as set forth.

2. The combination of a base-plate, A, having upwardly-projecting teeth *a* and retaining end flanges, *b b*, with a top plate, B, having downwardly-extending teeth *d* and spring-clasps C at the ends, by which the top plate may be sprung into the flanges of the base-plate, substantially as set forth.

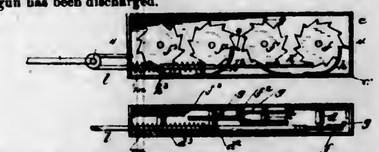
252,943. MACHINE FOR GRINDING THE LAPS OF POLISHING-MACHINES. ANTHONY HERBERLE, New York, N. Y. Filed Nov. 17, 1881. (No model.)



Claim.—The combination of the vertical spindle C, for carrying the lap to be ground off, the vertical shaft *e*, means for connecting said shafts, gear *e'*, worm *e*², shaft *f*, having crank-disk *f'*, carriage E, crank-rod *f*², vertically-adjustable bracket-supports F, a shaft supported thereby, and the emery-wheel on said shaft, all substantially as described.

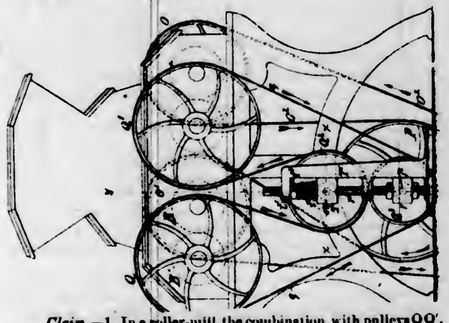
252,944. REGISTER FOR GUNS. JAMES HOLAHAN, Ansonia, Conn. Filed July 15, 1881. (No model.)

Brief.—Registering device to record the number of times a gun has been discharged.



Claim.—The attachment herein described, consisting of casing *c*, vertical shafts *d d' d*² *d*³, ratchet-wheels *f f' f*² *f*³, lugs *g*, for engaging the teeth of said wheels, springs *h h' h*² *h*³, to prevent the backward rotation of said wheels, rods *i* and *l*, and spiral spring *m*, in combination with a gun-lock, substantially as and for the purpose set forth.

252,945. ROLLER-MILL. NOAH W. HOLT, Buffalo, N. Y. Filed Nov. 21, 1881. (No model.)



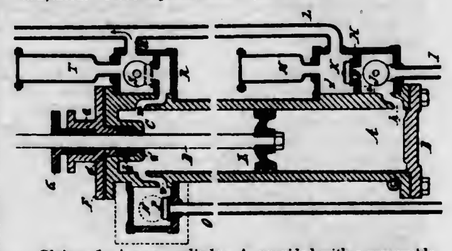
Claim.—1. In a roller-mill, the combination, with pulleys Q Q', a driving-pulley, Q², and an endless driving-belt, *g*, of a friction-pulley, Q³, which is partially surrounded by the driving-belt *g*, whereby the latter is pressed against the driving-pulley Q², substantially as set forth.

2. The combination, with two fast rollers provided with pulleys O O' and two slow rollers provided with pulleys Q Q', of the main driving-belt O², pulleys J' and Q², mounted on a counter-shaft, *p*, secondary driving-belt *q*, friction-pulley Q³, and mechanism whereby the pulley Q³ and the belt *g* surrounding it are pressed against the pulley Q², substantially as set forth.

3. The combination, with the pulleys Q Q', driving-pulley Q², and endless driving-belt *g*, of the friction-pulley Q³, movable bearing T S, suitable support therefor, and spring *t*², whereby the friction-pulley Q³ is pressed against the driving-pulley Q², substantially as set forth.

4. The combination, with the pulleys Q Q', driving-pulley Q², and endless driving-belt *g*, of the friction-pulley Q³, which is partially surrounded by the belt *g*, and whereby the latter is pressed against the pulley Q³, adjustable bearing *r*, adjustable carrier T, provided with bearing S, spring *t*², screw-bolt *r'*, suitable support therefor, and adjusting-nut *t*³, substantially as set forth.

252,946. PUMP. THOMAS H. JOHNS and ROBERT GAGE, Jackson, Mich. Filed Sept. 14, 1881. (No model.)

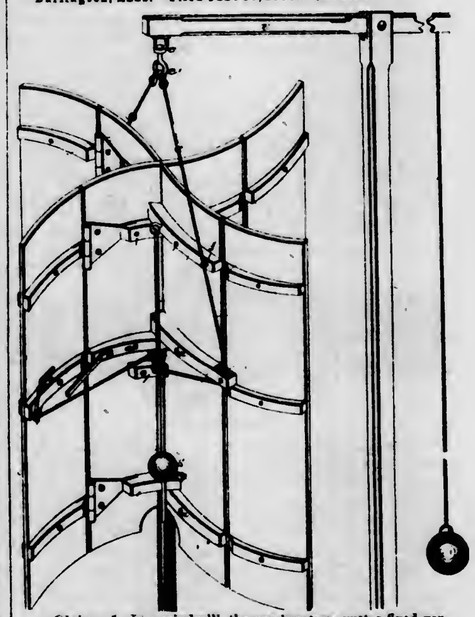


Claim.—1. A pump-cylinder, A, provided with a removable head, B, upon one end, the opposite head being cast with and forming an integral part of said cylinder, and provided with the inwardly-projecting stuffing-box C, and ports *k m n*, in combination with the valve-chambers H R N, secured to the outside of said cylinder, substantially as set forth.

2. A stuffing-box for pump-rods, consisting of the box C, bushing *a'*, and packing *b*, in combination with the follower F, provided with the bushing *d* and packing *e*, and the outer follower, *i*, substantially as and for the purpose specified.

3. In a double-acting pump, and in combination with the cylinder A thereof, the valve-chambers H, N, and R, provided with the valves J, K, P, and S, air-chambers M and T, and pipes I, O, L, and U, constructed, arranged, and operating substantially in the manner and for the purposes described.

252,947. WINDMILL. ALFRED W. JOHNS and ALLEN R. SMITH, Burlington, Kans. Filed June 30, 1881. (Model.)



Claim.—1. In a windmill, the combination, with a fixed vertical shaft having a socket in its upper end and a collar secured to its body, of a wheel having a pivot-bolt adapted to rest in the socket and a disk adapted to bear against the collar, substantially as set forth.

2. In a windmill, the combination, with a fixed vertical shaft having a socket or bearing in its upper end and a rigid collar se-

cured to its body, of a wheel having rigid and pivotal vanes or fans secured to suitable arms, a pivot-bolt adapted to bear in the socket, and a disk to encircle the rigid collar, substantially as set forth.

3. In a windmill, the combination, with a shaft rigidly secured to a tower or derrick, the said shaft having a socket in its upper end and a collar rigidly secured to its body portion, of a wheel having curved rigid and hinged vanes or fans secured to suitable arms, a pivot-bolt on which the weight of the wheel rests, a disk adapted to encircle the collar and steady the machine, and means for automatically regulating the speed of the wheel, substantially as set forth.

4. In a horizontal windmill, the combination, with three sets of radial arms adapted to receive and retain four or more rigid vanes, the upper set having the governor-rods pivotally secured thereto, the middle set being provided with two rollers on the convex surface of the vanes, through which chains adapted to close the wheel pass, four springs on the concave surface, against which the hinged vanes abut, and a pivot-bolt on which the weight of the wheel rests, and the lower set having a central perforation through which the supporting-shaft passes, and a disk surrounding the said perforation to take up the wear, of hinged vanes pivoted to the said rigid vanes and connected to the governor-rods in pairs by suitable chains, substantially as set forth.

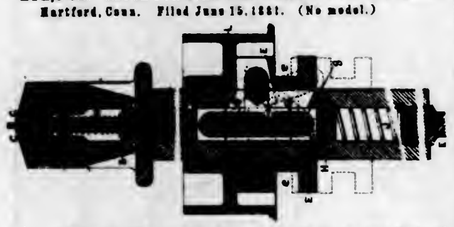
5. The combination, with rigid and pivoted vanes, the rigid vanes being secured in radial arms and the hinged vanes being secured to the said rigid vanes, of governor-rods having adjustable weights secured thereto, each governor-rod being connected to and adapted to operate two hinged vanes, and springs secured to said arms, against which the said hinged vanes are adapted to abut, substantially as set forth.

6. The combination, with rigid and hinged vanes, the said rigid vanes being secured in three sets of radial arms, and the hinged vanes being provided with braces on their concave and convex surfaces, and an arm running below and parallel to the lower arm of the middle set, between which two pulleys are secured, of governor-rods provided with adjustable weights, each rod having two chains secured thereto, one chain adapted to pass around one pulley and through one vane to the vane preceding and the other chain adapted to pass around the pulley and return to the hinged vane nearest to the governor-rod, substantially as set forth.

7. The combination, with rigid and hinged vanes secured together by suitable hinges, of governor-rods having chains secured thereto, which latter are connected to the said hinged vanes through the intervention of suitable springs, substantially as set forth.

8. The combination, with a standard having a lever pivoted thereto, one end of the said lever resting over the wind-wheel and provided with a bail and swiveled ring and the opposite end provided with a hand-rope, of a wind-wheel having rigid and hinged vanes, governor-rods and suitable chains for controlling the speed of the machine, and chains and rods for connecting the said governor-rods to the said swiveled ring, substantially as set forth.

252,948. CHUCK FOR SCREW-MACHINES. HORACE K. JONES, Hartford, Conn. Filed June 15, 1881. (No model.)



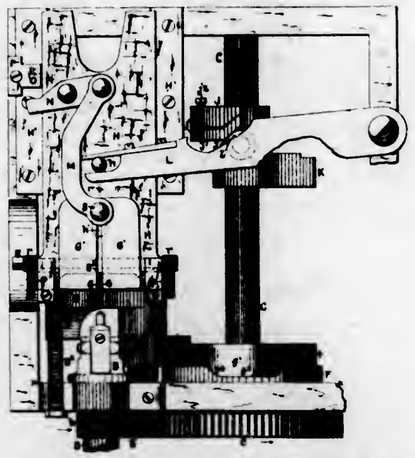
Claim.—1. The combination, substantially as described, of lever-acting jaws adapted to hold a screw-blank, a sliding wedge-block or equivalent means for causing the jaws to close upon the blank, a toggle-jointed lever for giving a to-and-fro movement to said block, and a link pivoted at one end to the knuckle of the toggle-lever and at the other end to a sliding sleeve on the jaw-spindle, whereby a powerful gripe can be given to the blanks by a small movement of the sliding sleeve, as specified.

2. The combination, substantially as described, of clamping-jaws, a sliding wedge-block or equivalent means for causing the jaws to close upon and gripe the blank, and a supplemental sliding block carried upon the wedge-block and operated by the movement thereof to clamp against the head of the blank after the closing of the jaws, whereby a positive pressure is applied to the head of the screw-blank to clamp it in the jaws.

3. The combination, substantially as described, of clamping-jaws, a sliding wedge-block or equivalent means for causing the jaws to close upon the blank, suitable mechanism for working the said wedge-block, a yielding seat, H J, for the same, and a supplemental sliding block, M, operated by the movement of the wedge-block, whereby a direct but yielding pressure can be exerted on the head of the blank to clamp it in the jaws.

4. The combination, substantially as specified, of the lever-acting clamping-jaws, the sliding wedge-block for closing said jaws, and the spring-acting supplemental sliding block mounted in and moving with said wedge-block, whereby said supplemental block serves, with the jaws as a clamping device, as an ejector of the finished screw, and also to open the jaws for the reception of a blank.

252,949. METAL-SCREW MACHINE. HORACE K. JONES, Hartford, assignor to the Russell & Erwin Manufacturing Company, New Britain, Conn. Filed June 20, 1881. (Model.)



Claim.—1. The combination, substantially as hereinbefore described, with a revolving jaw-spindle for holding screw-blanks and threading-dies which move to and from said jaws in alignment with the spindle-axis, of the vibrating centering and pointing tool, and the mechanism, substantially as described, for placing said tool into and away from the plane of the axis of the jaw-spindle and for advancing and retiring said tool in said plane, as set forth.

2. The combination of a revolving jaw-spindle adapted to hold a blank, a pointing-tool, as described, a cam for depressing said tool and moving it rearwardly, and a spring or equivalent for lifting said tool into alignment with the axis of the jaw-spindle and bringing said tool into engagement with the blank and causing the tool to point the blank under a yielding pressure, substantially as set forth.

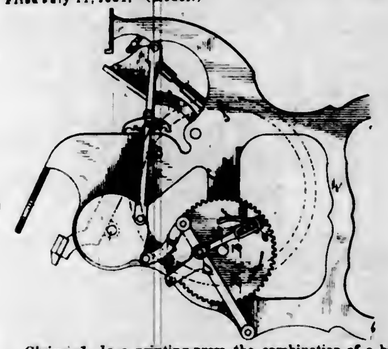
3. The combination, substantially as described, of a sliding carriage having a pair of threading-dies pivoted thereto, but capable of a longitudinal movement independently of the movement of the carriage, and mechanism, substantially as described, for giving a rearward movement to the carriage just before the threading of the blank is completed, so as to enable the threading-dies to open and be clear of the threaded blank.

4. The combination, substantially as described, of a sliding carriage having a pair of threading-dies pivoted thereto, but capable of a longitudinal movement independently of the movement of the carriage, suitable mechanism for giving a rearward movement to both the carriage and the threading-dies, and means, as described, for causing the threading-dies to be moved independently of the carriage, so that they may be closed and locked preparatory to the ensuing advancing movement of the carriage to thread the succeeding blank.

5. The combination of a sliding carriage, H, a pair of die-holders, G G', pivoted thereto, but capable of an independent longitudinal movement thereon, the said holders having a portion, g', of their sides flat, and a portion, g^2, recessed and inclined, and adjustable locking-screws P P', substantially as described.

6. In an open-die screw-threading machine, the combination, with the longitudinally-reciprocating die-holders having wedge-shaped or inclined sides, of right and left hand adjusting-screws, which are advanced and retired for contact with the sides of the die-holders, thereby gaging the approach of said dies toward each other, and a toothed pinion-shaft engaging with toothed heads upon said adjusting-screws for rotating them simultaneously, substantially as set forth.

252,950. PRINTING-PRESS. JOHN M. JONES, Palmyra, N. Y. Filed July 11, 1881. (Model.)



Claim.—1. In a printing-press, the combination of a bed, a vibrating platen, a pivoted arm connected with said platen, a rotating wheel provided with a crank-pin, and a pitman connected with the pivoted arm and slotted to receive the crank-pin and to permit a limited movement of the pin longitudinally of said slot, substantially as and for the purpose set forth.

2. In combination with a continuously-rotating wheel provided with a crank-pin, and with a cam having a part of its bearing-face concentric with the wheel, a pivoted arm provided with a roller to rest upon said cam, and having attached to it a pitman, the lower end of which is slotted to receive and to permit a limited play of the pin.

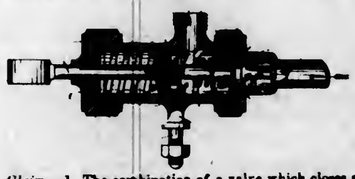
3. In combination with the vibrating arm J, connected with the platen, the cam e, constructed as described, whereby it is caused to effect a gradual fall and rise of the arm, and to hold the same at rest for a period between the fall and rise.

4. In a printing-press, the combination of a continuously-rotating wheel provided with a crank-pin, and with a cam the middle portion of which is concentric with the wheel, while the end portions curve outward therefrom, a pivoted arm connected with the platen and provided with a roller to travel upon the cam, and a pitman connected with the pivoted arm and slotted to receive and to permit a limited play of the crank-pin.

5. In a printing-press, the combination of a pivoted arm connected with the platen, a continuously-rotating wheel provided with a crank-pin, a pitman connected with the vibrating arm and slotted to receive the crank-pin and to permit a limited play thereof, and a cam, *f*, formed upon or secured to the wheel and adapted to start the pitman forward, substantially as described.

6. The herein-described press, consisting of a bed, a vibrating platen, links or bars connecting the platen with disks secured upon a rock-shaft, a vibrating arm connected with one of said disks and provided with a roller, a continuously-rotating wheel provided with a cam, e, and pin M, and a pitman connected with the vibrating arm and slotted to receive and to permit a limited play of the pin, substantially as set forth.

252,951. VALVE FOR WATER-PIPES. WILLIAM KAISER, Wilkes-Barré, Pa. Filed July 13, 1881. (No model.)



Claim.—1. The combination of a valve which closes against the flow of the liquid, means to hold the valve normally to its seat, except when the pressure of liquid is on, and an independently-movable stem, which abuts against the valve and is adapted to hold it rigidly to its seat, as set forth.

2. The combination of a valve which closes against the flow of the liquid, means to hold the valve normally to its seat, except when the pressure of liquid is on, an independently-movable stem, which abuts against the valve, and means to exert sufficient pressure to close the valve to its seat against the flow of water, as set forth.

3. In a water-closet or urinal, the combination of a water-supply valve and a check-valve detached therefrom, which closes to its seat against the flow of water and is opened solely by the current when the supply-valve is opened, whereby, if there is no current in the main supply-pipe, the check-valve will remain closed upon opening the supply-valve and prevent back-flow into the main pipe of soiled water or filth, as set forth.

252,952. PILLOW-SHAM HOLDER. JOSEPH J. KELSEY, Detroit, Mich. Filed Oct. 12, 1881. (No model.)



Claim.—1. In a pillow-sham holder, the adjustable spring-bows applied upon the two-part holding-rod, and provided with the flexible adjusting-cord, substantially as and for the purposes set forth.

2. The herein-described holding-rod of a pillow-sham holder, the same being made in two parts, each part slotted, as explained, and each part provided with a set-screw passing through the slot in the other part, the whole combined and arranged substantially as shown and described.

3. In combination with the turning-rod of a pillow-sham holder, the flexible tapes or strips secured thereon, to which strips the pillow-shams may be pinned, substantially in the manner and for the purposes set forth.

4. The rod A, hinged upon brackets B, which latter are provided with holding-springs, substantially as explained, so that when the rod is turned up the shams will be held in elevated position, substantially as shown and described.

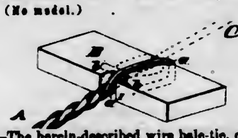
5. The combination of the brackets, the holding-rod hinged thereon, and the adjustable spring-bows, substantially as shown and described.

6. The combination of the brackets, the two-part adjustable holding-rod hinged thereto and turning thereon, the adjustable spring-bows, and the flexible strips or tapes for holding the shams, substantially as shown and described.

7. In combination with the turning-rod of a pillow-sham holder, the spring-bows applied thereon, said bows being joined at the ends by an adjusting-cord, and provided with a central supporting-piece, substantially as shown and described.

8. The herein-described improved pillow-sham holder, composed of the adjustable rod hinged upon the side brackets, the spring-bows connected with said rod and provided with adjusting cords, the flexible strips upon the rod for attachment of the shams, and the brackets provided with springs to operate against suitable stops on the rod, the whole arranged and combined to operate substantially as and for the purposes herein set forth.

252,953. BALE-TIE. WILLIAM H. KING, St. Louis, Mo., assignor of one-half to Thos. W. Pitch, same place. Filed Aug. 26, 1881. (No model.)



Claim.—The herein-described wire bale-tie, consisting of the looped end A, the cross-piece B, and the end C, said cross-piece having the shoulders *b b*, and being held rigidly in the loop *a*, and said end being, when the tie is formed, carried around the neck of the loop, the cross-piece, and main portion of the wire, substantially as described.

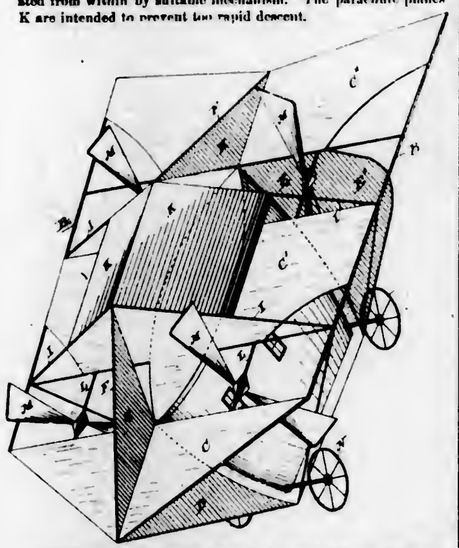
252,954. FURNITURE-CASTER. WLADYSLAW T. KOSINSKI, Brooklyn, N. Y. Filed Aug. 7, 1880. (No model.)



Claim.—In combination with the supports of an article of furniture, the cap D' and hood C', secured to the cylinders D and C, the said cylinders being slotted or split at their extremities and adapted to spring and bind upon the supports, substantially as specified.

252,955. AIR-SHIP. WILLIAM G. KRUDER, St. Louis, Mo. Filed Jan. 5, 1882. (No model.)

Brief.—The vessel A, having light flexible planes extending horizontally and vertically on all sides, governed from within by means of ropes, is propelled by flexible wheels or propellers operated from within by suitable mechanism. The parachute planes K are intended to prevent too rapid descent.



Claim.—1. An air-ship having an extended frame, B, having sectional horizontal planes C C' C'', in combination with vertical adjustable planes at bow and stern, and a central brace, F, provided with flexible inclined planes to act as a parachute, all substantially as shown and specified.

2. An air-ship having an extended frame, B, provided with horizontal planes C C' C'', vertical planes D E, a longitudinal brace extending over the entire vessel, to which the parachute planes K are attached, and two or more propellers, arranged substantially as and for the purpose set forth.

3. An air-ship having an extended frame, B, provided with horizontal planes C C' C'', in combination with vertical planes D E, brace F, vertical adjustable planes G H, and propellers M, all arranged substantially as specified.

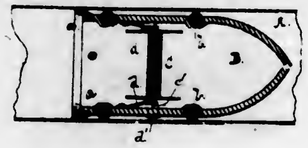
4. An air-ship having an extended frame, B, horizontal planes C C' C'', vertical planes D E, longitudinal brace F, parachute planes K, made extensible, and four (more or less) propellers, all arranged for operation substantially as described.

5. An air-ship having an extended frame, B, horizontal planes C C' C'', vertical planes D E, brace F, vertical planes G H, parachute planes K, propellers M, and suitable driving mechanism, all substantially as shown and specified.

6. An air-ship having an extended frame, B, horizontal adjustable planes C C' C'', vertical planes D E, brace F, vertical planes G H, parachute planes K, propellers M, and the wheels N, as and for the purpose herein set forth.

252,956. LAYING SUBTERRANEAN CONDUCTORS. HENRY E. LEARN, Baltimore, Md. Filed Nov. 10, 1881. (No model.)

Brief.—A projectile having rollers is adapted to fit air-tight in a tube, and is provided with an expanding-flange and a reel for a pilot-wire.

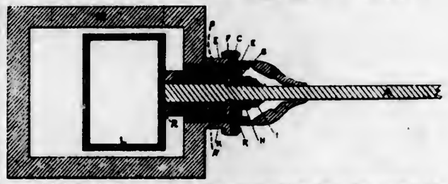


Claim.—1. In a device for laying conductors under ground, a projectile adapted to fit substantially air-tight in the tube, and provided with a reel for the pilot-wire, as set forth.

2. The projectile B, having rollers *b* and expanding-flange *g*, in combination with the reel C and wire *c*.

3. In combination with the pipe A and receiver E, connected therewith, the projectile B and wire *c*, as set forth.

252,957. PACKING VALVE-STEMS FOR STEAM AND OTHER ENGINES. ABRAM N. MATTHEWS, Norwood, Mass., assignor to the Matthews Steam Spring Packing Company, Nashua, N. H., and Boston, Mass. Filed July 20, 1881. (No model.)



Claim.—1. The combination, in packing for valve-stems, of the stem A, a detachable thimble, D, nearly filling the cylinder and abutting against the yoke at end B and against the riding-ring at end P, the latter serving the purpose of the usual follower, and the packing rings K E, all constructed and arranged to operate in the cylindrical projection of the steam-chest N in the manner shown and described.

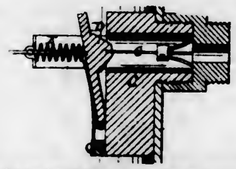
2. The combination, with the steam-chest provided with the cylindrical projection N, of the guide-thimble D, one end of which forms the follower, the other end projecting into and beyond the walls of said chest, thereby lessening the resistance of the steam-pressure, a riding-ring, F, provided with the usual follower, by which a double recess is formed between said follower and thimble for the reception of the packing-rings, and the valve-stem and gland, all arranged to operate as shown and described.

3. The combination, with the steam-chest and the cylindrical projection N, of a detachable cylindrical cover or dust-cap, B, one end fitting with steam-tight joint on the cylindrical projection N at C and the other end split in several places and provided with a thread and nut, enabling the stem to be firmly held from operating as necessity may require, an oil-cup on the upper side passing through the cylindrical cover B, and a waste or water pipe on the under side of the cylindrical cover, all arranged to operate as shown and described.

4. The combination, in valve-stem or piston-rod packing, of the working-cylinder C, thimble D, and the metallic packing, constructed and arranged to operate in the manner shown and described.

5. The combination, in valve-stem or piston-rod packing, of the cylinder C, thimble D, and the metallic packing, said cylinder having on its outer end a screw for the reception of the dust cap, and its inner edge adapted to fit the gland of a stuffing-box in the manner shown and described.

252,958. ATTACHMENT TO STEAM-BOILERS. PATRICK F. MCDONNELL, Clarksburg, W. Va. Filed Sept. 30, 1881. (No model.)

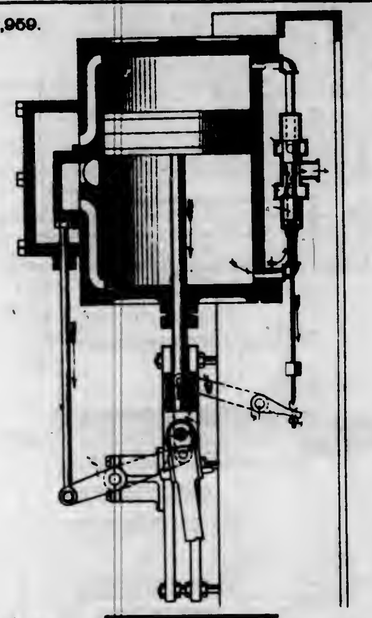


Claim.—As an improvement in steam-boilers the valve D, provided with one or more springs for closing the same, and being held permanently open by means of rod G, which is liable to be released in case of accident, substantially as set forth.

252,959. CYLINDER DRAIN-COCK. JOHN B. MOONEY, Cincinnati, Ohio, assignor to Edward P. Bradford and Thornhill E. Mooney, both of same place. Filed Aug. 15, 1881. (No model.)

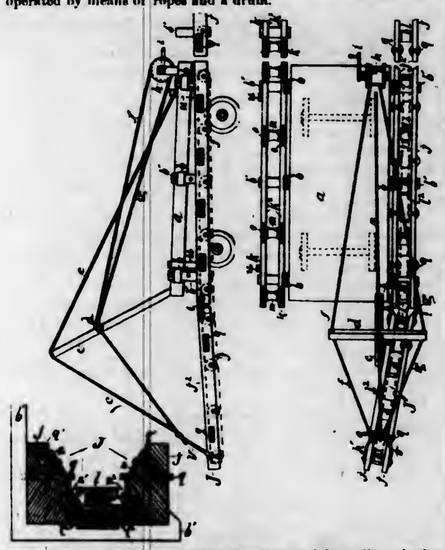
Claim.—The combination of the moving parts of the cylinder drain-cocks with a moving part of the engine, substantially as described, whereby the opening and closing movements of the said cocks are coincident with the opening and closing of the exhaust of the engine, as set forth.

252,959.



252,960. MACHINERY FOR LAYING RAILWAY-TRACKS. DAILY S. MOORE, Chicago, Ill., assignor of two-thirds to Francis T. Sherman and Rhea J. Marsh, both of same place. Filed Nov. 22, 1881. (No model.)

Brief.—Cars are provided with ways having rollers and parallel endless chains connected by bars and a roller provided with spurs. At the forward end is a vertically-adjustable and laterally-swinging frame supported by struts provided with a cross-bar and operated by means of ropes and a drum.



Claim.—1. The vertically-adjustable and laterally-swinging frame or ways J and strut e, provided with cross-bar *d*, in combination with the drum *h* and ropes *f* and *g*, arranged to operate substantially as described.

2. The rails *j*, provided with rollers *g*, in combination with the plates *s*, provided with rollers F, roller *l*, and stops *s'* and *s''*, substantially as specified.

3. The adjustable frame k^2, provided with box *n*, carrying rollers r, and concave roller *m*, in combination with the adjustable hanger *b'*, substantially as specified.

4. The adjustable hanger *b'*, frame k^2, provided with box *n*, carrying rollers *r*, and concave roller *m*, in combination with the strap *o*, substantially as and for the purpose specified.

5. The adjustable hanger *b'*, frame k^2, provided with stakes *n*, box *n*, carrying rollers *r*, and concave roller *m*, in combination with the straps *o*, substantially as specified.

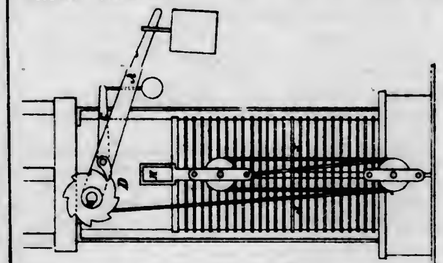
6. The beveled rails *j*, provided with rollers *g*, in combination with the plates *s*, provided with rollers F and *l*, and stops *s'* and s^2, substantially as and for the purpose specified.

7. In combination with a series of cars, *a*, provided with ways k^2 and j^2, having rollers *m* and *l*, the parallel endless chains F^2, provided with bars f^2, roller *l*, provided with spurs F^2, and pulleys a^2 a^4, shaft B, drum d^2, clutch d^3, rope d^4, and claw d^5, all constructed and arranged to operate substantially as specified.

8. In combination with a series of cars, *a*, provided with frames or ways k^2 and j^2, having rollers *m* and *l*, parallel endless chains F^2, provided with bars f^2, roller *l*, provided with spurs F^2, pulleys a^2 a^4, and shaft B, the horizontally and vertically adjustable swinging-frame J, provided with rollers *l*, constructed and arranged to operate substantially as specified.

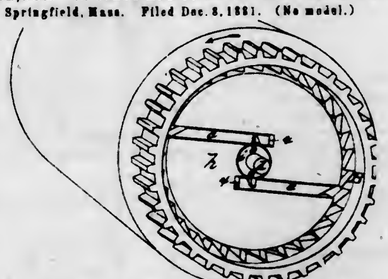
9. A flat car provided on its sides with vertically-adjustable ways provided with rollers, in combination with ways extending beyond the front of the car, said ways together provided with an endless carrier and the car with apparatus for operating said carrier and projecting ways, substantially as specified.

252,961. PRESS. ROBERT NEILL, Chicago, Ill. Filed Apr. 1, 1881. (No model.)



Claim.—The combination of the adjustable weighted lever A, pawl C, ratchet-wheel D, drums E, pulley-blocks F, and ropes, substantially as herein shown and described, and for the purpose specified.

252,962. RATCHET-AND-PAWL DEVICE. JOS. S. O'BRIEN, Springfield, Mass. Filed Dec. 8, 1881. (No model.)



Claim.—The within-described improved ratchet-and-pawl device, consisting of the shaft *d*, having the pins *o o* therein, the pawls *c c*, notched to receive said pins, the disk *h*, grooved to receive said pawls in the face thereof, and the ratchet-ring B, all combined and operating substantially as set forth.

252,963. TEA-KETTLE. HENRY L. PALMER, Brooklyn, N. Y. Filed Nov. 2, 1881. (No model.)

Claim.—1. In a tea-kettle, the ear A, extending from the breast down upon the shell of the kettle, the same being arranged to be riveted or otherwise secured to the breast and shell, and to sustain the hinged handle, substantially as shown and described.

2. In a tea-kettle, the shell made flaring toward its top, and

252,963.



provided with a projecting seat for the spout formed of the material of the shell, said shell being constructed, substantially as described, so that another shell of similar construction may be nested with it and fitted for the attachment of a breast, substantially as and for the purposes set forth.

3. In combination with a shell of a tea-kettle, a sleeve for attachment of the spout formed of the material of the shell and the surrounding gutter for the reception of the solder, substantially as shown and described.

4. The tea-kettle shell, the projecting sleeve for holding the spout, made continuous with the material of the shell and the spout, combined and arranged substantially as shown and described.

5. The tea-kettle shell having the bottom secured thereon, and having a seat for the spout formed of the material of the shell and a seat for the breast, the shell being constructed to be united with spout, breast, and handle, substantially as shown and described.

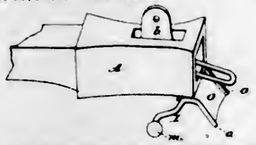
6. The herein-described partly-finished tea-kettle, composed of a shell having inclined walls and an attached bottom, a separate breast-piece, handle, and spout, all constructed to be subsequently united, substantially as shown and described.

7. The herein-described tea-kettle, in which the shell is provided with an extra coating of metal at the region of the joint with the copper bottom for the purpose of preventing corrosion, substantially as and for the purposes set forth.

252,964. ART OF PRODUCING PHOTOGRAPHIC NEGATIVES. ABEL PECK, Newburg, N. Y. Filed Feb. 17, 1881. (No specimens.)

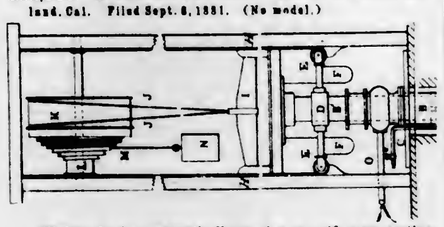
Claim.—In the art of producing film negatives, the herein-described process of submerging a properly-prepared glass negative, coated side uppermost, in a shallow dish or pan of water and floating upon the water a sheet of gelatine or its equivalent until it becomes saturated, sinks, and adheres to the glass plate, after which it is dried under pressure and finally removed from the glass plate, substantially as set forth.

252,965. CAR-COUPLING. SOLON A. PERRY, Beloit, Kans. Filed June 10, 1881. (No model.)



Claim.—In a car-coupling, the draw-head A, having the upper recess, *a*, inclined, as shown, the rear groove, *c*, and lower concave, *g*, in combination with the pivoted guide-plate O, having flanged *o*, and weighted lever I *m*, and the coupling-pin *b*, having cam-projection *d* and beveled or rounded point *g'*, substantially as specified.

252,966. HYDRAULIC ELEVATOR. GEORGE L. PIERCE, Oakland, Cal. Filed Sept. 6, 1881. (No model.)



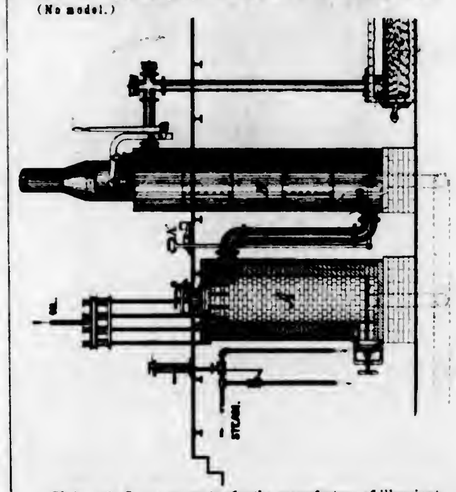
Claim.—1. An automatically-varying or self-compensating counterpoise, in combination with a hydraulic elevator having a platform or cage resting upon, secured to, and operated by a vertical ram.

2. A hydraulic elevator having a platform or cage resting upon, secured to, and operated by a vertical ram, in combination with the ropes T J, drum K, fusee L, ropes M, and weight N, substantially as and for the purpose described.

3. A hydraulic elevator having a platform or cage resting on, secured to, and operated by a vertical ram, in combination with a device for blowing out sediment from the cylinder containing the ram.

4. The ram B, operated by hydraulic pressure, in combination with the guide D and lines F F, substantially as and for the purpose specified.

252,967. APPARATUS FOR THE MANUFACTURE OF GAS. JAMES S. PIERSON, Plainfield, N. J., assignor to American Gas Fuel and Light Company, New York, N. Y. Filed Mar. 5, 1881. (No model.)



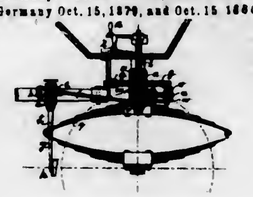
Claim.—1. In an apparatus for the manufacture of illuminating or heating gas, the combination, with the superheater, of a valve-seat that is slightly bell-mouthed, a flat valve to rest upon such seat and close the superheater, a lever for lifting and moving the valve, a swiveled pivot for the lever, and the brackets for supporting the valve when the superheater is uncovered, substantially as set forth.

2. In an apparatus for manufacturing illuminating or heating gas, the combination, with the generator, of the frame *i*, permanently connected to the same, the removable frame *l*, lugs in the corners of the respective parts, and bolts *m*, the door *n*, secured by hinges *o* to the frame *l*, and having a projection, *p*, and the swinging yoke *q*, pivoted to the back frame, *i*, and the clamping-screw *r*, as set forth.

3. In an apparatus for the manufacture of illuminating and heating gas, the combination, with the generator or superheater and the air and steam valves, of a rod and handle for operating the valves and the clamping device for the rod, constructed and operating substantially as and for the purposes set forth.

4. In an apparatus for the manufacture of illuminating and heating gas, an oil or naphtha valve supply vessel composed of the case *a'*, base *b'*, bolted together, and provided with the glass cylinders *c'*, and cocks or valves *g'*, and inlet and outlet pipes, the whole constructed and operating substantially in the manner and for the purposes set forth.

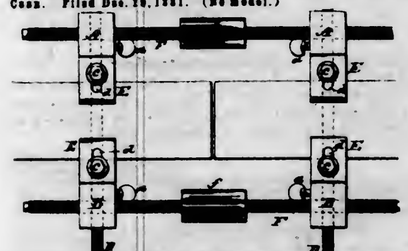
252,968. HORSE-DETACHER. AUGUST PLÖNZAY, Lippehne, Prussia, Germany. Filed Oct. 11, 1881. (No model.) Patented in Germany Oct. 15, 1879, and Oct. 15 1880.



Claim.—1. For detaching runaway horses from the carriage the described hooks *b*, set free by drawing back the slide *c* by means of a combination of devices comprising the crank *h*, or its equivalent, shaft *l*, bevel-gearing *r s*, screw *u*, cross-head *v*, bell-crank lever *w*, and connecting-rods *f*, arranged and working as shown and described.

2. The brake-shoes *h*, attached to the forked lever *y i*, and connected by the bar *g* to the bell-crank lever *w*, and actuated by the movement of the crank *h*, or its equivalent, in combination with trace-detaching mechanism connected to said crank *h*, substantially as shown and described.

252,969. BELT-TIGHTENER. JOSEPH PEARCE, New Haven, Conn. Filed Dec. 20, 1881. (No model.)



Claim.—1. In a belt-tightener, the combination, with the blocks A B, carrying stationary and movable jaws *b* K, of the rods D and right-and-left-handed screw-rods F, said rods passing through the blocks at right angles to each other, and constructed to operate substantially as and for the purpose set forth.

2. In a belt-tightener, the combination, with the right-and-left-screw-threaded rods F and rods D, of the blocks A B, formed with jaws *b*, and carrying the adjustable and reversible jaws E, having offset *g*, substantially as and for the purpose specified.

3. In a belt-tightener, the combination, with the lower jaw, *b*, of the upper jaw, E, constructed substantially as shown and described, and for the purpose set forth.

252,970. ROLLER-SKATE. GEORGE H. PRICE and GEORGE W SMITH, Philadelphia, Pa. Filed Nov. 10, 1881. (No model.)



Claim.—1. In a roller-skate, the combination of the frame A, carrying the parallel plates or projections C', provided with parallel oblique slots C', open on the bottom, spring G, perpendicularly arranged above the axle, hub D, axle E, loose sleeves F, and wheels or rollers B, substantially as and for the purpose specified.

2. In a roller-skate, the plate C, having projections C', arranged parallel to each other, and provided with parallel slots C', arranged obliquely thereon and open on the bottom, said plate being further provided with an aperture, C', to support the rubber-spring cushion, substantially as shown.

3. In a roller-skate, the combination of the frame A, plates C, having projections C', furnished with oblique parallel slots C', open on the bottom, spring G, hub D, axle E, rollers B, and band H, substantially as and for the purpose specified.

4. In a roller-skate, the combination of the frame A, plates C, having projections C', furnished with oblique parallel slots C', open on the bottom, springs G, hub D, axle E, loose sleeves F, rollers B, and band H, substantially as and for the purpose specified.

252,971. BICYCLE-SADDLE. AUGUST RIETZELMAN, Milwaukee, Wis. Filed Oct. 25, 1881. (No model.)

Claim.—1. A bicycle-saddle having a frame of cast metal, to the rear end of which the rear portion of the seat is secured, and over the front end of which the tongue of the seat is drawn by a turn-buckle anchored in the lower portion of the frame, as set forth.

2. The seat having a tongue or strap, in combination with the frame having a groove, B', and a turn-buckle anchored in the frame, as set forth.

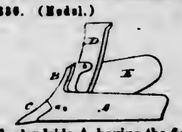
3. The combination of seat B, having strap *a*, frame having groove B', and anchor-plate F with a turn-buckle, *b c c'*, as set forth.

252,971.



4. The combination of frame A, having flange A', and the seat having plate *a* secured thereto, with a device for drawing the seat tight over the front of the frame, as set forth.

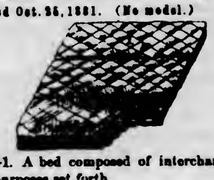
252,972. PLOW. NEWELL SANDERS, Chattanooga, Tenn. Filed Oct. 8, 1880. (Model.)



Claim.—1. The landside A, having the forward notch, *a*, and the upward extension, B, the latter having a sharp cutting-edge, and curved to be flush with the mold-board and share, and provided with the ear *b*, substantially as shown and described.

2. The landside A and colter-extension B, as described, formed in one piece, in combination with the mold-board E, share C, and standard D, substantially as shown and described.

252,973. SPRING-MATTRESS. ADAM SCHERR, Milwaukee, Wis. Filed Oct. 26, 1881. (No model.)

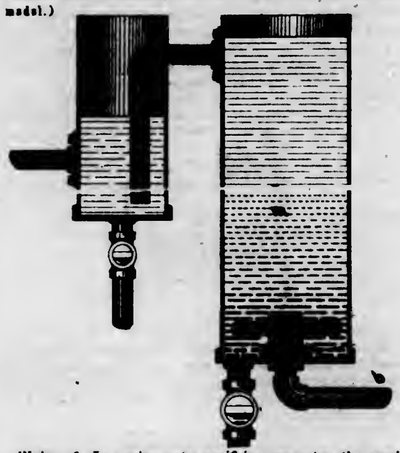


Claim.—1. A bed composed of interchangeable sections, as and for the purposes set forth.

2. A bed composed of interchangeable sections of equal dimensions, as set forth.

3. The combination, in a spring-bed, of sections 1, 2, and 3, arranged as shown, and adapted to be interchanged in position at will, whereby the wear will be distributed equally upon all portions of the mattress.

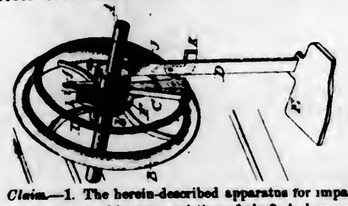
252,974. APPARATUS FOR PURIFYING MINE-WATER. THOMAS SHAW, Philadelphia, Pa. Filed Nov. 15, 1881. (No model.)



Claim.—1. In a mine-water-purifying apparatus, the combination of a vertical tank, an inlet-pipe communicating with the lower end, and an agitator arranged near the lower end, substantially as and for the purpose set forth.

2. In a mine-water-purifying apparatus, upright subsiding-tank, in combination with injecting-pipe *b*, entering the bottom of said tank, and provided with a device for admitting and circulating the water, substantially as set forth.

252,975. FRICTION-CLUTCH. JNO. SMITH, Horicon, Wis., assignor of one-half to John Little, same place. Filed Dec. 26, 1881. (No model.)



Claim.—1. The herein-described apparatus for imparting rotary motion to machinery, consisting of shaft A, loose wheel B, provided with hub or boss *b*, collar F, band G, lever H, slotted arm C, provided with hub *a*, strap D, and treadle or lever E

2. In combination with a loose wheel having a projecting hub or boss, a collar mounted upon said hub and provided with a flexible band, a lever pivoted to said collar and connected with one end of said band, and a swinging arm or block mounted upon the shaft and adapted to move said lever, substantially in the manner set forth.

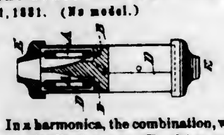
3. In combination with the wheel A, band G, lever H, and arm C, a flexible band or strap, D, treadle or lever E, and spring F, substantially as set forth.

4. In combination with the friction-band G and lever H, spring I, coiled about a circular core, J, as shown, whereby the use of a long elastic spring is permitted.

5. In combination with the friction-band and its lever H, the arm or block C, the circular core or rod J, guide K, and spring I, coiled about core J, as shown and described.

6. In combination with the wheel A and friction-band G, the lever H and eccentric pinions *h i*, the former mounted in slotted bearings and the latter provided with an arm, H', substantially as shown.

252,976. HARMONICA. OTTO SPARTEN, Gera, Germany. Filed June 21, 1881. (No model.)



Claim.—1. In a harmonica, the combination, with the wooden frame C, having longitudinal grooves B, of tongue-plates A, case D, and retaining mouth-piece E, constructed and arranged substantially as and for the purpose set forth.

2. As an improvement in harmonicas, the combination of a wooden frame or body, C, having longitudinal grooves B, tongue-plates A A, case D, made of one continuous piece of metal, and a mouth-piece, E, having a base-rim, *e*, substantially as described.

252,977. MECHANICAL MUSICAL INSTRUMENT. OTTO SPARTEN, Gera, Germany. Filed June 21, 1881. (No model.)

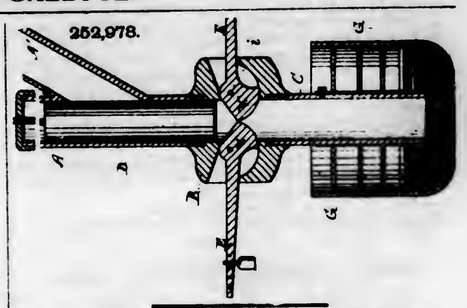


Claim.—In a mechanical musical instrument or melophone, the combination, with the wind-chest *m*, having openings *o* and intermediate narrower slots, *p*, of a supporting-rail C, spring-actuated levers D, having noses *d*, and bells F, substantially as and for the purpose set forth.

252,978. APPARATUS FOR AMALGAMATING ORES. CHAS. H. SWAIN, New York, N. Y. Filed Dec. 8, 1881. (No model.)

Claim.—In combination with vessel containing molten lead the cylinder A, feeding-hopper A', extension-cylinder C, piston-head D, valve-arms E, controlling-valves V, pivot-pin I, and annulus G, having radial distributing-arms H, substantially as described, and for the purposes set forth.

252,978.



252,979. ART OF SHARPENING FILES AND OTHER SIMILARLY-TOOTHED TOOLS. BENJAMIN C. TILGHMAN and JEREMIAH E. MATHEWSON, Philadelphia, Pa.; said Mathewson assignor to said Tilghman. Filed May 18, 1879.



Claim.—1. In the method of sharpening files described, the employment of one or more interior steam-jets, combined with an exterior supply of fluid mud or fine sand mixed with water, applied to the sharpening of files, substantially as described.

2. In an apparatus for producing a wide and thin sand-blast, one or more thin apertures in the same plane, or preferably a row of small holes having intervals between them for introducing the steam.

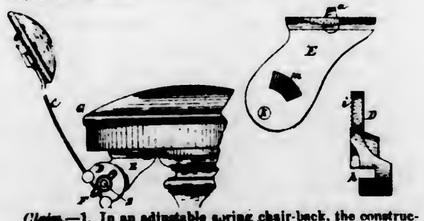
3. The improved method of sharpening the teeth of files, wherein the formation of grooves is avoided, by presenting the sand-blast at an acute angle sidewise to the longitudinal axis of the file, and at the same time at an acute angle to the horizontal plane of the teeth thereof, substantially as specified.

4. In sharpening files by the sand-blast, the method of sharpening two adjacent sides simultaneously, which consists in presenting the file to a thin sand-blast of a width greater than that of the file and at the angle, substantially as described.

5. A feeler to test the progress of the sharpening during the operation.

6. The combination of a conical mud-vessel with the suction-pipe of a sand-blast apparatus.

252,980. CHAIR-BACK. MAX TOCH and GEORGE H. HOWE, Chicago, Ill.; said Howe assignor to said Toch. Filed Apr. 11, 1881. (Model.)

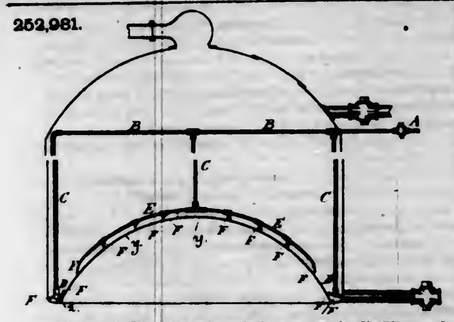


Claim.—1. In an adjustable spring chair-back, the construction hereinbefore shown, consisting of the arrangement, in combination, of the standard E, the bolt S, the clamping-plates D D, and the flat spring C, whereby the spring C is held by its edges and its flat side presented toward the direction of angular adjustment, substantially as shown, and for the purposes described.

2. In an adjustable chair-back, the combination of the spring C, the standard E, provided with the serrated sector *m*, the clamping-plates D D, provided with the grooves *h* and serrated sector *i*, the bolt S, and thumb-nut F, substantially as shown, and for the purposes described.

252,981. DISTILLATION OF COAL-TAR. GEO. C. TREWBY and HENRY W. FRESHA, Beckton, County of Essex, England. Filed Apr. 6, 1881. (No model.) Patented in England Sept. 9, 1879.

252,981.



Claim.—1. The within-described apparatus for distilling coal-tar, consisting of the main steam-pipe B, with its controlling-cock A, small branch pipes C, ring D, lesser branches E, and outlets or jets F, in conjunction with a suitable form of still-bottom, substantially as shown and described.

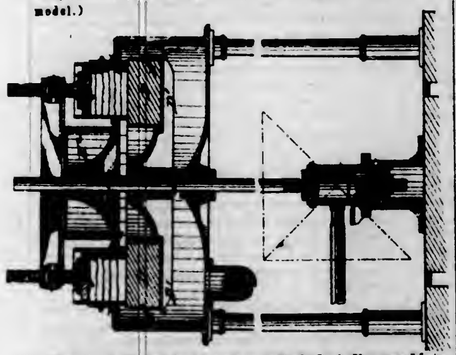
2. The still for distilling coal-tar, constructed with the outer surface of its bottom concave, and provided with a steam-pipe having the ring D and central pipe with branches E, this ring and the branches having numerous small outlet-pipes inclined respectively to the gutter and to the convex inner surface of the bottom of the still, for minutely subdividing the steam and causing it to strike the crown of the still-bottom and its gutter, as and for the purposes set forth.

252,982. MANUFACTURE OF SOLUBLE ALUMINA. JAMES WEBSTER, Saltbull, County of Warwick, England. Filed July 25, 1881. (No specimens.) Patented in England June 14, 1881.

Claim.—1. The process of making soluble alumina, consisting in the following steps: first, roasting a mixture of aluminous material with carbonaceous matter; second, treating the compound with dilute acid and allowing it to give off sulphureted hydrogen; third, passing through the compound while heated a jet of steam and air to carry off sulphur and other substances; finally, boiling the residuum and drawing the liquid off after cooling, thus leaving the soluble alumina behind as a precipitate, substantially as set forth.

2. In a process for producing soluble alumina from the alum of commerce and carbonaceous matter, the following steps for reclaiming a by-product: first, treating the above compound with dilute hydrochloric acid; second, subjecting it under heat in a closed vessel to the action of a jet of steam and air, which will carry off the hydrochloric acid slightly tainted by sulphur and ferric sulphide; and, finally, condensing this vapor into liquid form for use in the manufacture of colors and for other purposes.

252,983. MANUFACTURE OF WOOD PULP. GUSTAV WERNER, Taisnach, Bavaria, Germany. Filed Sept. 19, 1881. (No model.)



Claim.—1. The method herein described of grinding wood into pulp, which consists in feeding the pieces of wood vertically downward upon the top surface of a horizontally-revolving grindstone and holding them in such a manner thereon that the fibers form an acute angle of inclination to the direction of motion of the grindstone, substantially as set forth.

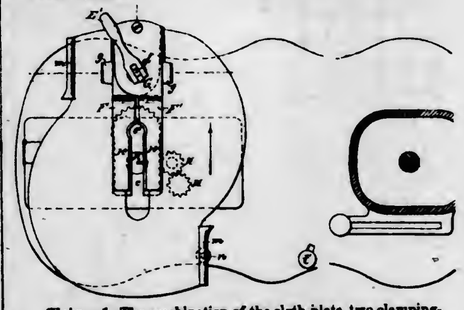
2. The combination, with a horizontally-revolving grindstone, of an inclosing casing having circular top openings, of vertical receiving-boxes having disk-shaped flanges guided in seats of the openings, and of mechanism whereby the wood in the receiving-boxes is pressed down upon the stone, said boxes and the feed mechanism being adapted to be axially set at any angle toward the direction of motion of the grindstone, substantially as specified.

3. In an apparatus for grinding wood into pulp, a grindstone composed of a number of jointed sections, in combination with a ring-shaped supporting-frame having an exterior retaining-flange substantially as set forth.

4. In an apparatus for grinding wood into pulp, the combination of the fixed exterior casing having circular top openings, vertical receiving-boxes having exterior disk-shaped flanges guided in seats of the top openings, a horizontally-revolving grindstone below the boxes, and means for adjusting the same vertically toward the lower end of the receiving-boxes, substantially as specified.

5. In an apparatus for making wood pulp, the combination of the fixed receiving-boxes with a revolving grindstone and with means for adjusting the same vertically toward the lower end of the revolving boxes, substantially as specified.

252,984. BUTTON-HOLE SEWING-MACHINE. WILLIAM W. ABBOTT, Philadelphia, Pa., assignor to the National Sewing Machine Company, (Limited,) same place. Filed Sept. 27, 1881. (Model.)



Claim.—1. The combination of the cloth-plate, two clamping-arms, F F', pivoted to the said plate, the pin *d*, a sleeve, G, adapted to the pin and having projections for acting on the arms, with the cam-lever E', pivoted to the said pin and constructed for operating on the arms, substantially as set forth.

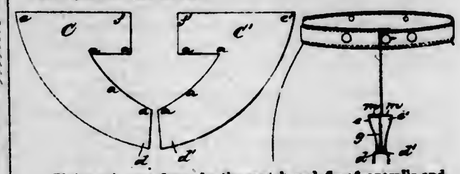
2. The combination of the cloth-plate having at its opposite edges straight parallel grooves *m m'*, open at both ends, the rack-plate, operating-gearing adapted to said plate, and a guide-pin, *n*, on the upper surface of the bed-plate or frame of the machine, all substantially as set forth.

3. The combination of the cloth-plate, its rack-plate, and a wheel gearing into the same, with a ratchet-wheel, mechanism for operating the same, and a spring-lever under the control of the operator for imparting friction to the ratchet-wheel, substantially as and for the purpose set forth.

4. The combination of the spindle J', carrying the wheel M, the ratchet-wheel K, the vibrating plate J and its pawl, with the spring-lever P, adapted for acting on the pawl, all substantially as specified.

5. The combination of the slotted cloth-holding plate having a rack-plate with opposite straight sides and segmental end, the operating-pinion therefor, ratchet mechanism connected with said pinion, and a ratchet-operating lever having a shifting fulcrum, whereby the gage of the stitches can be altered in forming the eye of the button-hole, as set forth.

252,985. OVERALLS. CHARLES ABLER, Alameda, Cal. Filed Oct. 3, 1881. (No model.)

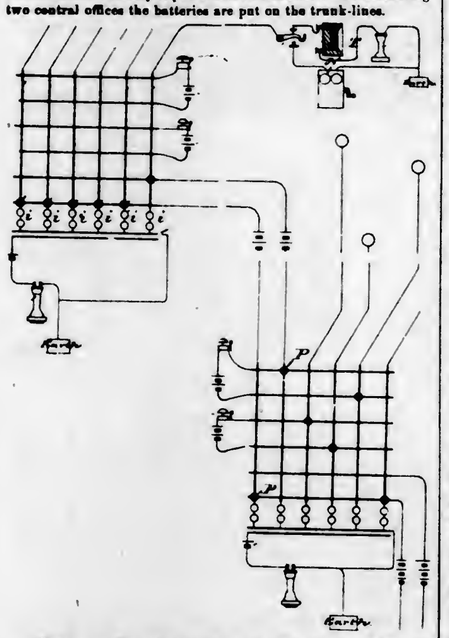


Claim.—A re-enforce for the crotch and fly of overalls and pants, consisting of the two counterpart pieces C C', formed with the coincident edges *a a*, the end portions, *d d'* and *e e'*, and the horizontal projecting ends *f f'*, said counterpart pieces being united

along the edges *a a* and attached to the garment with the horizontal end portions, *f f'*, lapping or extended over the opposite and adjacent inside faces, B B', of the fly in the manner described, and the parts *d d'* and *e e'*, respectively, overlapping the junction of the back seam, *b*, and leg-seams *c* and the crotch, as herein shown.

252,986. TELEPHONE-EXCHANGE APPARATUS. GEORGE LEE ANDREW, London, County of Middlesex, England, assignor to the American Bell Telephone Company, Boston, Mass. Filed Aug. 8, 1881. (No model.)

Brief.—The transmitters and receivers at subscribers' stations are placed in the main line. All the battery can by this expedient be located at the central office. To render the transmitters operative a battery is placed in a loop connecting each pair of cross-bars on the central-office switch-board, so that when any two lines are connected a battery is put in circuit therewith. In connecting two central offices the batteries are put on the trunk-lines.



Claim.—1. The combination, with a series of lines emanating from a central office, and variable-resistance telephones in said lines at the subscribers' stations, of switch devices for connecting said lines with each other, and batteries connected with the said devices, substantially as described, whereby, when any two lines are connected, they are so charged with a battery-current that the variations of the resistance of one line produce variations of the current in both lines, and conversations can be carried on between subscribers on said lines with the aid of receiving-instruments, as set forth.

2. In a telephone-exchange system, the combination, substantially as hereinbefore described, of a central station or stations, a series of main lines radiating therefrom and connecting with sub-stations, switching devices, as indicated, whereby any two lines may be connected together through one or more central stations, a main battery placed at the central office in a loop connected with the switching devices, so as to be interposed in the circuit of any two lines so connected, and a transmitting-telephone at each sub-station, having its variable resistance or tension regulator directly in the circuit of said main battery, when so interposed for the purpose of varying the strength of current on the main line.

3. In a telephone-exchange system, the combination of a central station, two or more subscribers' lines radiating therefrom and connected with sub-stations, switching devices whereby any two lines may be connected together, transmitting-telephones in the main line at sub-stations, and a main battery located at the central station and brought into action only when included in the compound circuit composed of two lines connected for conversation, for the purpose of furnishing battery-power for the transmitting-telephone at each sub-station.

4. In a telephone-exchange system, the combination of a main-line circuit extending between a central station and a sub-station, a main battery located at the central station and normally on open circuit, but adapted for inclusion in the main-line circuit, and a transmitting-telephone at a sub-station, provided with a variable-resistance piece or tension-changer connected directly in the main-line circuit, the said telephone arranged to become operative only when the battery is included in the main circuit, substantially as hereinbefore described.

5. In a telephone-exchange system, the combination of a series of main lines, a series of sub-stations located thereon, a vibrating call-bell connected normally in the main-line circuit at each sub-station, switching devices whereby any two lines may be connected together, a battery permanently connected to said switching devices and normally on open circuit, but interposed in the circuit of any two lines when connected one with another, and an electro-magnetic testing-instrument in the circuit of said battery, and adapted to give a signal, when connected in the main-line circuit, under the influence of the vibratory bell at the sub-station, substantially as and for the purpose specified.

6. The combination, in a telephone-exchange system, of a main battery located at the central station and placed in the circuit of any two lines when connected together, and a direct-acting transmitter having its variable resistance included in the compound battery-circuit so constituted, as and for the purpose specified.

7. In a system of electrical communication, a series of trunk-lines extending between any two central stations, the said trunk-lines being connected at one terminal through an annunciator to earth and at the other terminal to one pole of a main battery, the other pole of said battery being attached to an insulated switch-bar constituting a normally-open circuit, adapted to be closed by the connection of a subscriber's line to said insulated switch-bar, substantially as described, and for the purpose specified.

8. The combination, in a telephonic circuit, of two main lines, switching devices arranged as indicated to connect the said lines together at a central point common to both, a main battery interposed in the compound circuit constituted by the said two lines, at the junction thereof, by means of said switching devices, and a battery-telephone having its variable resistance connected directly in said circuit, at the outer terminal of each line, as and for the purpose specified.

9. In a telephone-exchange system, the combination of a switch-board the vertical strips whereof are connected to the respective main lines and the horizontal strips in pairs to the poles of a main battery, and a series of main lines terminating in said switch-board through annunciators at an earth-plate common to the series, with a normally-open branch circuit, including a battery, *l*, and a telephone or telephones, and an electric switch attached to and actuated by each annunciator-magnet, and acting to transfer the main circuit from its normal direct connection with the ground-plate to the normally-open telephone branch, as described.

10. The combination, substantially as hereinbefore described, of two or more central stations, a series of subscribers' lines radiating therefrom and extending to sub-stations, connecting and switching devices whereby any two lines may be connected together, and a main-line battery to be included at the junction thereof and in the circuit so constituted, with a series of trunk-lines extending from one central station to another, and an auxiliary battery for each trunk-line, normally on open circuit, but in electrical communication with the trunk-line, and adapted to be brought into action by the connection of a subscriber's line to its connecting trunk-line.

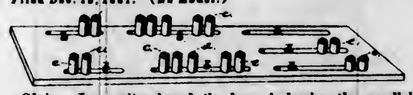
11. In a telephone-exchange system, an electric switch-board having its vertical connecting-strips connected to incoming trunk-lines and subscribers' lines and a portion of its horizontal connecting-strips connected in pairs to the opposite poles of a main battery, the remaining portion of said horizontal strips being each one connected singly to one pole of an auxiliary battery, the other pole of which is permanently connected to an outgoing trunk-line, substantially as described.

12. In a telephone-exchange system, the combination, at a central station, of a subscriber's line-wire, a switch-strip serving as the open terminal of an auxiliary main battery, connecting devices for connecting the subscriber's line to the said switch-strip, a trunk-line permanently attached to the opposite pole of the said battery and extending to a distant central station, there terminating, after passing through an annunciator, in the earth, and at the said distant central station a normally-open branch circuit, including a battery and a telephone, and an automatic electric switch or circuit-changer, whereby, when the subscriber's line is connected to the switch-strip at the first central station and the circuit of the auxiliary battery is closed, the main-line circuit at the distant station is transferred to the normally-open branch, and the signal

is given and the oral communication is established independently of any positive action thereto by the connecting operator, substantially as described.

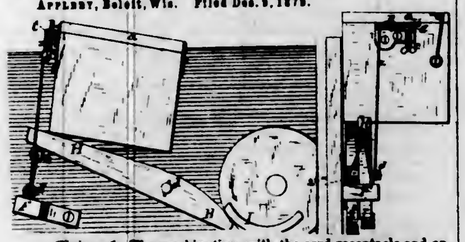
13. In a telephone-exchange system, the combination, with vibrating circuit-breaking bells at sub-stations, of a main battery at the central office in the circuit of the strips for connecting any two subscribers' lines, and in circuit with said battery an electro-magnetic testing-instrument adapted to vibrate when any two lines are connected by means of said connecting-strips under the influence of and in correspondence with the circuit-breaking bell at the sub-station, whereby the signal given at such sub-station by the inclusion of the battery in the circuit is automatically repeated at the central station, substantially as and for the purpose specified.

252,987. MITER-BOX. JAMES W. ANDUS, Mason City, Ills. Filed Dec. 15, 1881. (No model.)



Claim.—In a miter-board, the base A, having the parallel slots *b b* extending longitudinally thereof, in combination with the bolts *c*, having the nuts *d*, and the adjustable cylindrical posts *e*, substantially as specified.

252,988. TENSION DEVICE FOR GRAIN-BINDERS. JOHN F. APPLEBY, Beloit, Wis. Filed Dec. 9, 1879.

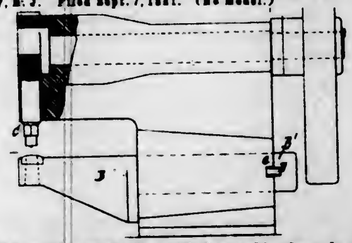


Claim.—1. The combination, with the cord-receptacle and an adjustable tension device composed of a stationary plate, B, and a yielding plate, C, of an eye or guide for giving direction to the draft of the cord designed to pass through said tension device, such that the draft of the cord will, in the event of the presence of a knot or bunch thereon, operate to instantly pull the plate C away from B, substantially as described.

2. In combination with the means for exerting a uniform tension on the cord as it is drawn from the source of supply, the auxiliary tension device or mechanism to create an increased tension at certain times, and regulated in its times of action automatically by the binder or harvester mechanism.

3. In a self-binder harvester, the automatic auxiliary tension mechanism, as described, to alternately create a tension on the cord and a slack therein, made in the process of applying the tension, substantially as and for the purpose set forth.

252,989. PUNCHING-MACHINE. WILLIAM C. BAAR, Jersey City, N. J. Filed Sept. 7, 1881. (No model.)



Claim.—The combination, with the machine-frame having a transverse opening or eye and side notches, *c c*, at the rear, of the nose or die-holder B, having its shank passed through said opening or eye, and the wedge D, extending through the shank and resting in the said notches, all substantially as and for the purpose described.

252,990. RETENTION-SPRING FOR UMBRELLAS. WILLIE H. BELKNAP, New York, N. Y. Filed Oct. 7, 1881. (No model.)

Brief.—A light metal case incloses the spring-acting catch.

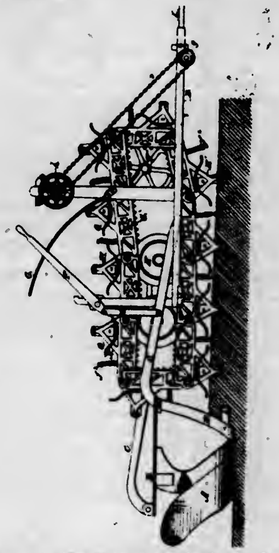


Claim.—1. In a retention device for umbrellas and parasols, in combination, a narrow case having a slotted top, a catch projecting through the slot and adapted to turn at its rear end in the case, and a spring located under the catch, substantially as and for the purpose hereinbefore set forth.

2. In combination with a spring-acting catch, *b*, an inclosing case *a a' a² a³ a⁴* therefor made of a single piece of sheet metal cut and formed into a narrow box and provided with holding-spurs *a² a³*, substantially as hereinbefore set forth.

252,991. PLOW. BENJAMIN S. BENSON, Baltimore, Md. Filed Jan. 8, 1881. (No model.)

Brief.—An endless track with trucks on it takes the place of a sulky-frame and wheels, and is laid by the advance of the machine. The system of track, sprocket-wheels, and trucks are connected together and longitudinally pivoted to the frame, so that they may be tilted or inclined to bear against the land and counteract the side thrust of plows without landsides. The presser-foot are angular to conform to the land and side of furrow. The plow-share runs forward, contrary to the usual form, cutting the slice next the furrow first.



Claim.—1. A mold-board plow having its share or front cutting-edge inclined, as described, reversely to the general inclination of the mold-board, and extending forwardly from the plow-standard to the previous furrow, as and for the purpose set forth.

2. The combination, with a mold-board plow, of a detachable share, D, inclined reversely to the general inclination of the mold-board, as described, and attached to the front edge of the same, and extending forwardly to the landside of the previous furrow, and then up to a support, as described.

3. The combination, with one or more plows, of a passively-moving railway having presser-feet with an inwardly-projecting angle adapted to fit over the edge of the unplowed ground, and a flanged-wheel truck located within the traveling railway and attached to and supporting the plows, so as to cause the weight and lateral strain of the plows to be constantly sustained upon the railway, as described.

4. The combination of the plow-beam B, mold-board A, share D, and the two beams C C', connected to the beam B and jointed to a frame in front, as described.

5. The combination, with a mold-board plow having a share, D, slanted forward from the mold-board to the previous furrow, of a landside or gage, *l*, fixed to said share and adapted to bear against the wall of the previous furrow, as described.

6. The combination, with one or more plows, of a traveling railway and a flanged-wheel truck running within the same, con-

nected to the plow-frame by a pivotal joint, which permits the railway to rock sidewise, substantially as described.

7. The combination, with the tongue L, pivoted upon a vertical bolt, of a screw-shaft, *f*, extending through said tongue and bearing chain-wheel *g*, the chain *i*, and the chain-wheel *h*, located near the driver's seat, as described.

8. The truck H, having running wheels, with gear-wheels B', and flanged guides a^2 a^2, in combination with the endless chain A' A' and the jointed racks C^2, substantially as and for the purpose described.

9. A traveling railway having feet with an angle in the same adapted to straddle or lap over the projecting edge of the previous furrow, substantially as described.

10. The cleat on the bottom of the foot, arranged longitudinally or in line with the draft, so constructed as to take hold in the ground to prevent the truck from slewing when the truck is not tilted over the wall left by the furrow, in combination with the railroad-track on the foot and the flanged truck-wheels.

252,992. SEWING-MACHINE NEEDLE. HELEN A. BLANCHARD, Philadelphia, Pa. Filed Nov. 5, 1880. (No model.)

Brief.—A hollow needle, which is adapted to carry a coil of thread, is filled with the same by winding it upon a flexible wire, inserting the wire and thread within the needle, and then withdrawing the wire.



Claim.—1. The combination of the coiled slotted tube A with the point at the front end and screw plug or cap at the rear end, substantially as described.

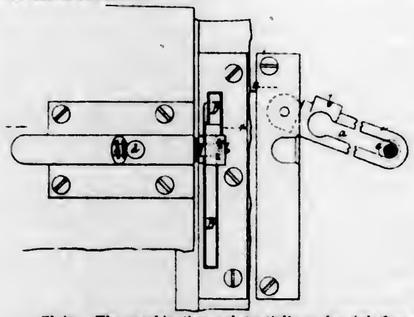
2. A bobbin for filling a hollow needle, consisting of a small flexible wire wound with thread, substantially as and for the purpose described.

3. The needle pointed at one end and provided with an eye for the delivery of the thread from the coil of thread within it, and with an abutment to retain the coil in position within the needle, substantially as described.

4. That improvement in the method of filling a hollow needle with a coil of thread which consists in winding the thread on a flexible core to form a bobbin, inserting the said bobbin in the hollow needle, and then withdrawing the flexible core, leaving the coil of thread therein, substantially as described.

252,993. DOOR-CHECK. FRIEDRICH W. BOLDT and PETER C. A. VOGEL, Hamburg, Germany. Filed Sept. 14, 1881. (Model.) Patented in Germany Nov. 24, 1880, and June 3, 1881.

Brief.—The device consists of the combination of a locking-plate having a pear-shaped slotted check-bar, with a bevel-catch hinged therein, with a spring-bolt having a flanged head, said construction permitting the bolt to be withdrawn when the door is closed, but allowing the device to operate as a door-check when the bolt is undisturbed.

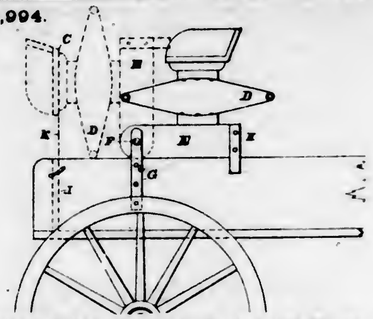


Claim.—The combination, substantially as hereinbefore described, of the locking-plate, the check-bar hinged therein, the pear-shaped slot in said check-bar, the incline formed on one edge of the check-bar, and the spring-bolt having a conical or beveled head.

252,994. WAGON-SEAT. SAMUEL BOWERS, Braddock, Pa. Filed Nov. 4, 1881. (No model.)

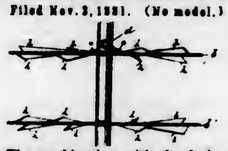
Claim.—In a movable seat for wagons or other vehicles, the

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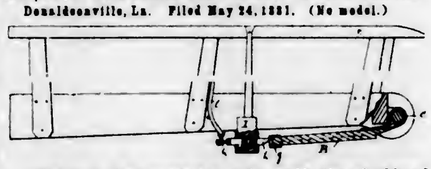
hinge-pieces E E, in combination with the springs D D and the pivots F F, attached to the wagon or box by the straps G G, substantially as described.

252,995. CHURN-DASHER. ROBERT S. BRIDGMAN, Charleston, Ark. Filed Nov. 3, 1881. (No model.)



Claim.—The combination, with the dasher-shaft *a*, provided with the pawl *d*, pivoted thereto, of the dasher *b*, journaled on the shaft and constructed as set forth, and provided with the ratchet-plate *c*, whereby, when the pawl is raised, the dasher will be revolved in the reciprocatione of its shaft, and when the pawl is lowered the dasher will be locked in its upward movement to gather the batter, substantially as described.

252,996. TAIL-BOARD FOR WAGONS. LOUIS A. BRIGGIRR, Donaldsonville, La. Filed May 24, 1881. (No model.)

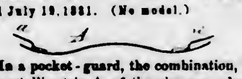


Claim.—1. In a wagon or cart, the combination of a hinged or pivoted tail-board and a spring-catch, for the purpose of retaining the tail-board in an open position under the said wagon or cart, substantially as described, and for the purpose stated.

2. In a wagon or cart, the combination of a pivoted tail-board, a spring bolt-catch, and actuating-lever, arranged substantially as described, and for the purpose set forth.

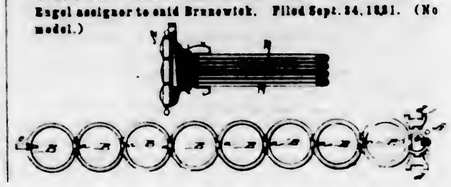
3. In combination with the pivoted or hinged tail-board B, provided with socket *g* at its outer end and the spring-catch A to engage with the same, the axle I, formed with a recess or mortise, within which is located and operates the spring-catch, substantially as described.

252,997. POCKET-GUARD. FREDERICK W. BROOKS, Sandusky, Ohio. Filed July 19, 1881. (No model.)



Claim.—In a pocket-guard, the combination, with the reversely-curved metallic strip A, of the pins *a a*, adapted to hold said strip in place, substantially as shown and described.

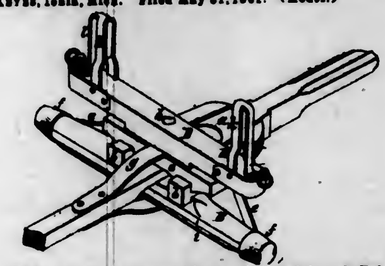
252,998. COMBINED FINGER-RING AND BRACELET. SIGMUND BRUNSWICK and JOHANNS ENGEL, New York, N. Y.; said Engel assignor to said Brunswick. Filed Sept. 24, 1881. (No model.)



Claim.—1. In a combined finger-ring and bracelet, the combination, with the ornamented hollow head A, of the series of hinged rings B, hinged to the said head, and the outer rings of the series provided with a spring-catch adapted to enter the hollow head, substantially as and for the purpose set forth.

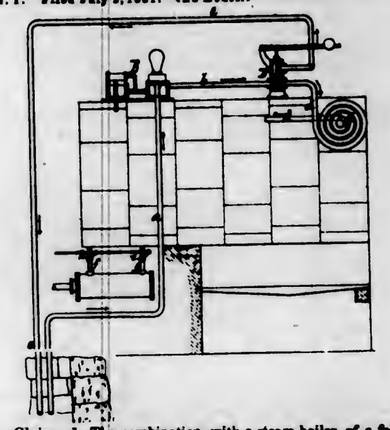
2. In a combined finger-ring and bracelet, the combination, with the head A and the series of hinged rings B, of the recessed wings *d*, hinged to the opposite sides of the said head, substantially as and for the purpose set forth.

252,999. RUNNING-GEAR. DAVID BUCKLEW and WILLIAM KNUDS, Ionia, Mich. Filed May 31, 1881. (Model.)



Claim.—A gearing for vehicles, consisting of the axle B, having embedded in its sides steel plates *i*, extending the entire length of the axle, the ends thereof passing under the chains *j*, said axle having connected thereto the usual reach, tongue, and bolster, substantially as shown, and for the purpose set forth.

253,000. STEAM-GENERATOR. OSCAR F. BURTON, Brooklyn, N. Y. Filed July 9, 1881. (No model.)



Claim.—1. The combination, with a steam-boiler, of a feed-pipe connected thereto at or near its top, an overflow or waste pipe emanating from its top, and one or more discharge-pipes extending from its bottom part and connected to a steam-cylinder, substantially as shown and described.

2. The combination, substantially as hereinbefore described, of the steam-boiler, the feed-pump, the feed-pipe extending from the pump to the top of the boiler, the safety-valve inclosed in a chamber which connects below the valve with the feed-pipe and with the boiler, and the waste-pipe emanating from the valve-chamber above the valve.

3. The combination, substantially as hereinbefore described, of the steam-boiler, the feed-pump, the feed-pipe extending from the pump to the top of the boiler, the coil G, the safety-valve inclosed in a chamber which connects below the valve with the feed-pipe and with the boiler, and the waste-pipe emanating from the valve-chamber above the valve.

253,001. MACHINE FOR CREASING, BENDING, AND SHAPING CELLULOID COLLARS. EDGAR GARY, New York, N. Y. Filed July 14, 1880. (Model.)

Claim.—1. The combination, in a machine for creasing, bending, or otherwise shaping celluloid collars or analogous articles, of the vertically-movable blade F, grooved along its lower edge to form the female die, with the stationary male die G, having a sharp

253,001.



upper edge coinciding with the groove in the upper die, and the gages L M, for adjusting and supporting the blank in position, one of said dies being made hollow to receive steam for heating it, substantially as described.

2. The combination, with the bed or base plate, of the crosshead operated by a treadle and arranged to slide between standards mounted upon the bed-plate, the upper male die, F, having a grooved lower edge and secured to the cross-head, the lower hollow male die, G, and the gages L M, respectively, provided with arms *l m*, for holding the blank horizontally between the dies, substantially as described.

253,002. KNOT-TYING DEVICE FOR GRAIN-BINDERS. REUBEN CHAMBERLAIN and JOSIAH AUSTIN, East Liberty, Ohio. Filed May 3, 1881. (No model.)

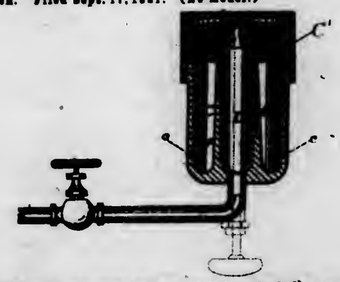


Claim.—1. A knot-tying device consisting of a chambered rotary head having two oscillating segmental arms, which are crooked outwardly from each other, and an oscillating guide-lever, substantially as shown and described.

2. A knot-tying device consisting in a chambered rotary head, A, having segments B B, provided with curved arms *b b*, having intermeshing teeth, bars *c c*, rod *d*, spring *e*, and friction-roller *f*, in combination with the curved oscillating guide-lever *h*, substantially as shown and described.

3. A knot-tying device consisting in rotary head A, having oscillating lever *h*, and toothed segmental arms *b b*, in combination with suitable mechanism for operating the same, substantially as shown and described.

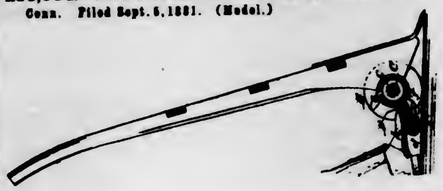
253,003. VAPOR-BURNER. JOHN FRANK CRUNCH, Albion, Mich. Filed Sept. 17, 1881. (No model.)



Claim.—1. A vapor-burner consisting of a hollow crown perforated with burning-jets, an inner central tube, one end of which is connected with the liquid-conduit, the other provided with a diminished orifice leading into the hollow crown, and a distributing-plate provided with a central aperture and fixed upon the top of said central tube, substantially as described.

2. The combination, with the outer chamber, C, inner chamber, D, and the distributing-plate E, having the central orifice *e* of the removable cap C', substantially as described.

253,004. HAND-TRUCK. GRENEN P. CLARK, Windsor Locks, Conn. Filed Sept. 5, 1881. (Model.)



Claim.—1. The spring-actuated clamp or holder D, placed upon the shaft or axle C of the truck, and adapted to be pressed down to engage with the floor, as and for the purposes set forth.

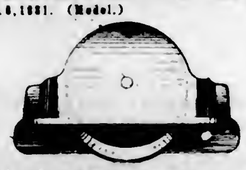
2. The clamp or holder D, placed loosely upon the shaft or axle C, in combination with the spring *a*, substantially as and for the purposes set forth.

3. The collar *c*, formed with the stop *e*, in combination with the clamp D and the spring *a*, substantially as described.

4. The clamp D, provided with the rubber *d*, in combination with the collar *c* and spring *a*, substantially as described.

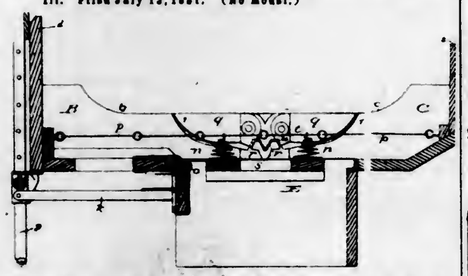
5. The clamp D, formed with the sleeves *d' d'* and provided with the rubber *d*, in combination with the collar *c* and the spring *a*, substantially as and for the purposes set forth.

253,005. SASH-CORD PULLEY. JNO. K. CLARK, Buffalo, N. Y. Filed Dec. 6, 1881. (Model.)



Claim.—A sash-cord guide composed of a casing cast in a single piece, with end projections or ears, and rearwardly-extending webs or flanges supporting said projections or ears, in combination with an axle or journal-pin supported by the side walls of the casing, and a pulley or sheave arranged on said axle or journal-pin, substantially as and for the purposes set forth.

253,006. WARDROBE-BEDSTEAD. MARK COLLINSON, Quincy, Ill. Filed July 13, 1881. (No model.)



Claim.—1. The combination of the central part, A, hinged parts B C, flexible bed-support, attached as described, and supplemental supporting-frame E, suspended within the walls of the part A, as set forth.

2. The combination of a central part, A, hinged parts B C, having their sides cut away at 1 1, and the pieces *q*, pivoted to swing in the places of the sides and to fill the spaces, whether the parts B C are raised or lowered, substantially as described.

3. In combination with the hinged part B, the piece *f*, bars *g g*, pivoted guides *h h*, and stop-pin H, substantially as described.

4. The combination of the piece *f*, bars *g*, hinged guides *h*, and hinged bars *k k*, substantially as described.

5. In combination with the extended ends *a* and the prolongations *s*, the pivoted pieces *q*, and interlocking catches, as described.

6. In combination with the ends *a* and prolongations *s*, the castings F, pivoted pieces *q*, provided with catches, as described, and the stop-flanges *r*, substantially as described.

7. In combination, a central part, A, hinged part B, connecting-bars *k k*, hinged guides *h h*, and stop adapted to arrest and support the part B in inclined position by insertion of said stop-bolt in any of the series of holes, substantially as described.

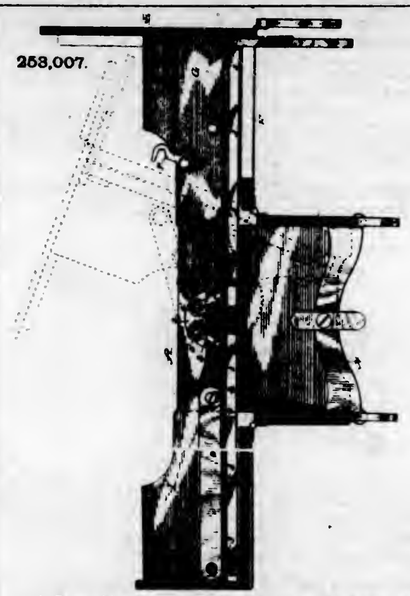
253,007. CRADLE-BED. MARK COLLINSON, Quincy, Ill. Filed Nov. 9, 1881. (No model.)

Claim.—1. The combination, in a folding bed, of the central or base section, the hinged head and foot sections, the fixed stop-block, and the fastening latch or hook and pins.

2. In a folding bed or cradle, the combination of the central, head, and foot sections, hinged together as described, and the folding rockers attached to the base-section.

3. In combination with the base-section A, the hinged rocker and the strip or brace M.

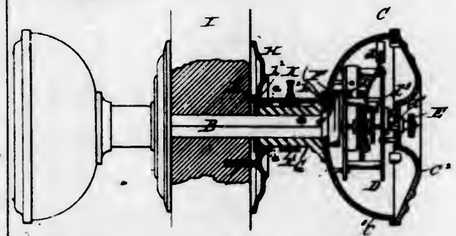
253,007.



4. In combination with the base-section A, the hinged rockers, the strip or brace S, and the pivoted button 12.

5. In combination, the central section, A, and pivoted head and foot sections with the stay rod and pin on the head-section, whereby said head-section is held in an inclined position.

253,008. DOOR-KNOB ALARM. WILLIAM F. CORE, Ivy Mills, Pa. Filed Oct. 28, 1881. (Model.)



Claim.—1. The combination, with a door-knob, of a clock-work mechanism for producing an alarm, such mechanism being located within the knob and adapted and designed to be started when the knob-spindle is turned and to continue ringing after such spindle has come to a state of rest, substantially as shown and described.

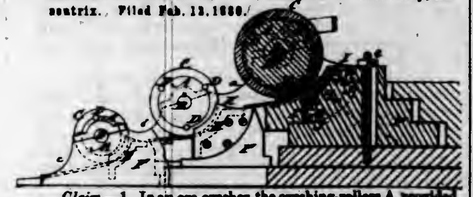
2. The combination, with a door-knob and clock-work located within the same and designed and adapted to produce an alarm, of means, substantially as described, whereby the actuating devices can be set and be started when the knob-spindle is turned and locked to be inactive when such spindle is turned, the alarm mechanism comprising spring-gearing, which will continue in operation after said knob-spindle has been turned and come to a state of rest, substantially as shown and described.

3. The combination, with the escutcheon H, knob C, internal clock-work gearing, D, and spindle B, of sleeve G, slide K, stop *d*', and detent F, said parts being constructed and arranged for operation substantially as shown and described, whereby in one position of said slide the parts will be set to start an alarm when the knob-spindle is turned and in the other position such spindle may be turned and the alarm remain inactive.

4. In combination with knob C, made in two sections, C' C", the slide K, extended through said knob and forming a support for the movable section C", substantially as shown and described.

5. In combination with slide K, the pivoted locking-lever K', substantially as shown and described.

253,009. ORE-CRUSHER. JOHN H. COURTENAY, (deceased,) Cornwall-on-the-Hudson, N. Y.; Margaret J. Courtenay, Executrix. Filed Feb. 13, 1880.



Claim.—1. In an ore-crusher, the crushing-rollers A, provided with the detachable tires C and the central annular space, *d*, between the said tires, substantially as and for the purpose set forth.

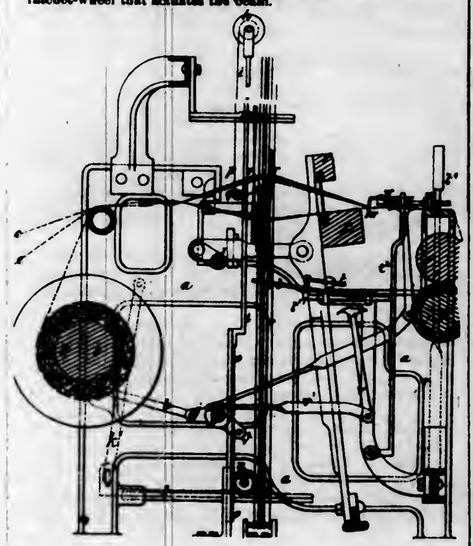
2. In an ore-crusher, the combination, with the crushing-rollers A, provided with the steel tires C, and the annular space *d* between the said tires, of the adjustable abutment F, provided with the central web, E, and the removable dies H, substantially as and for the purpose set forth.

3. In an ore-crusher, the combination, with crushing-rollers A, provided with annular space *d*, of the adjustable abutment F, provided with the web E, the side plates, K, and the removable dies H, substantially as and for the purpose set forth.

4. In an ore-crusher, the combination, with the crushing-wheels and the abutments, of the dies H, formed curved at the middle and straight at the ends, and provided with means for detachably securing said dies to the abutments, substantially as described, whereby the dies, when worn, may be reversed, as set forth.

253,010. LOOM. CHRISTOPHER CROSS, Manchester, County of Lancaster, England. Filed May 17, 1880. (No model.) Patented in England Mar. 9, 1880.

Brief.—Ornamental borders are woven upon fabrics by causing the regular weft to lap around an additional or lap-weft, placed at each selvage, and draw the same into the shed. The rod supporting the lap-weft bobbin is reciprocated at each pick to draw off the maximum quantity of lap-weft used, which is kept at the proper tension by a counterpoise resting on a weighted lever and pressing upward against the thread. On the breakage of the thread the hooked end of the lever descends, and is engaged by a vibrating hammer, which moves forward the slide carrying the lever, and through intermediate levers releases the shipper-handle and stops the loom. When beginning to weave an ornamental heading across the fabric the weighting of the warp-beam is increased and the speed of taking up decreased. A slotted handle, moved by hand, operates a lever connected with a sliding bar, having a wedge acting upon the weight-lever, and a cam having elevations and depressions that control the action of the take-up pawl is at the same time thrown into operation, and through connections throws the pawl alternately into and out of engagement with the ratchet-wheel that actuates the beam.



Claim.—1. The combination of a bobbin carrying a lap-weft thread, and mechanism for imparting a reciprocating motion to said bobbin, with a balanced counterpoise adapted to press on said lap-weft to insure its positive delivery, substantially as described.

2. The combination of a bobbin for the lap-weft, a rod carrying said bobbin, and mechanism for imparting a reciprocating motion to the said rod, with the frame, a counterpoise, *s*, and balanced or weighted lever *t*, adapted to act on said counterpoise, substantially as set forth.

3. The combination of a frame, counterpoise *s*, adapted to bear on the lap-weft thread, a sliding carriage, and a weighted lever, *t*, pivoted thereto and having a hooked end, with a vibrating lever, *v*, belt-shifting mechanism, and devices, substantially as described, whereby, on the breakage of a thread, said lever *v* will cause the operation of the belt-shifting mechanism, as specified.

4. The combination of the take-up beam, gear-wheels, ratchet, and catch 2, and devices for reciprocating the catch, cam *y*, levers connecting it with the catch, and mechanism for rotating the cam, with let-off beam, friction device therefor, a hand-lever and levers connecting the latter with the friction device, and the mechanism for operating the cam, substantially as described, whereby the friction may be applied to the let-off beam by the same movement which throws the cam-operating devices into gear, as set forth.

253,011. COMBINED CANE, CIGAR-CASE, PIPE-BOWL, &c. DANIEL CROWLEY, Boston, Mass. Filed Dec. 24, 1880. (No model.)



Claim.—1. A series of reversible and interchangeable tubular boxes, *e f g*, screwed or otherwise held together, and then held within a hollow cane to the head B or to the tip I, substantially as set forth.

2. The pipe-stem opening *n* in the cane-head B, substantially as described and shown.

3. The combination, in a cane-head, of a pipe-bowl and stem, constructed and arranged substantially as described, whereby the cane, with its head, can be used as a pipe without removing the head, as set forth.

4. The removable tip I, in combination with one or more tubular boxes, *e f g*, and cane A, all so arranged as to hold the said boxes securely in place and admit of the insertion and removal of the boxes at the lower end of the cane, substantially as specified.

5. In combination with cane-head B, the removable cover C, made to serve as a cap to the same, or bottom piece to the cane-head, when the same is detached for use as a pipe, substantially as described.

6. In combination with a cane provided with partitions and compartments, as described, one or more pieces of sponge for the purpose of protecting the contents of the compartments, substantially as set forth.

7. One or more adjustable and removable partitions, I, in combination with a hollow cane, substantially as and for the purpose set forth.

8. A coiled tube, T, adapted to be fitted within a cane, and for use as a stem in connection with the pipe S or a cigar, substantially as specified.

9. A cane-head having a hole through it, in combination with a cap secured to the bottom of the cane-head to form a pipe-bowl, substantially as specified.

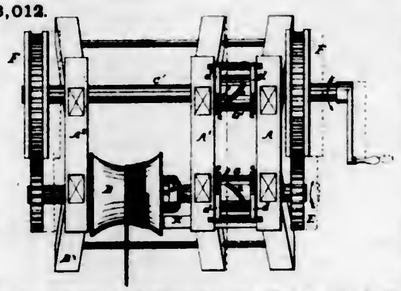
10. A cane-handle having combined compartments *f f'* S', for tobacco, matches, and pipe, substantially as set forth.

11. In combination with a cane provided with partitions and compartments, as described, one or more paper-cases, for the purpose of protecting the contents of the compartments, substantially as set forth.

253,012. DREDGE-WINDER. SUMNER W. DANA, Crisfield, Md. Filed June 29, 1881. (No model.)

Claim.—1. The sleeve G, having diagonal slots *e* in the same, and ratchet-teeth *c c* at each end of said sleeve, in combination with the two pawls *d d*, the frames A A', holding the sleeve against longitudinal movement, and the sliding shaft bearing a clutch and passing through the sleeve, and having a pin, *f*, passing through the slots *e*, substantially as shown and described.

253,012.



2. The combination of the two longitudinally-adjustable shafts connected at their opposite ends by gear-wheels E F, one of which has projecting and the other indented teeth, the two sleeves G G', having slots *f* and ratchet-teeth *e e* at each end, the pawls *d d*, the frames A A' A², the clutch *b*, and the winding-drum D, as shown and described.

253,013. ORNAMENTAL CHAIN. SALOMON DAVIDSON, New York, N. Y. Filed Nov. 28, 1881. (No model.)

Brief.—A cap is applied to the end of the link and retained in place by a shoulder on the cap.



Claim.—1. In ornamental chains, the caps or bands *d*, formed with internal shoulders, combined with the end rings, *a a'*, and connecting loop or rings *b* of the links, substantially as shown and described.

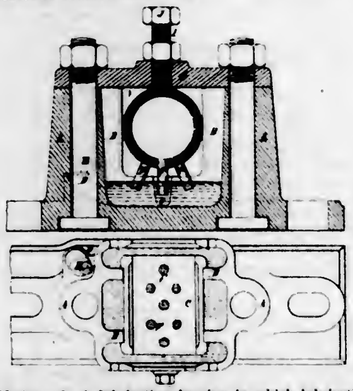
2. The combination of the shouldered cap or band *d* with the link *a a' b* and sleeve *c*, substantially as shown and described.

253,014. NURSING-BOTTLE. EDMUND O. DAY, London, England. Filed Dec. 7, 1881. (No model.) Patented in England Oct. 28, 1880.



Claim.—As an improved article of manufacture, the herein-described stopper for feeding-bottles, formed in a single piece with the flexible feeding-tube *c*, to the outer end of which the nipple is attached, as and for the purpose described.

253,015. SELF-LUBRICATING BEARING FOR AXLES. PAUL DECAUVILLE, Paris, France. Filed Dec. 16, 1881. (No model.) Patented in France Feb. 15, 1880.



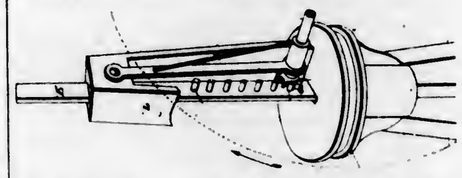
Claim.—1. A lubricating-bearing in which lubrication is effected by capillary attraction and by suction caused by a vacuum through pieces of cane or reed dipping in oil placed below the axle to be lubricated, as and for the purposes set forth.

2. In a lubricating-bearing, the combination of the axle-box A, serving as an oil-reservoir, the brasses C C', the ribs B, and the apertures O with the cup D, receiving the oil, and the pieces of cane or reed F, the lower ends of which dip in the oil, while their upper ends are flush with the lower surface of the axle to be lubricated, substantially as described with reference to Figs. 1, 2, 3, and for the purposes set forth.

3. In a lubricating-bearing chiefly designed for vehicles, the upper part, A, of the axle-box, bolted on the frame of the vehicle and receiving the lower part, B, serving as an oil-reservoir, in combination with the upper brass, C, and the pieces of cane or reed F in contact with the journal at the points *x y*, the whole arranged and working as described in reference to Figs. 4 and 5, and for the purpose set forth.

4. In a lubricating-bearing for vertical shafts, the combination, with the brasses B, the pieces of cane C, and the oil-cup D, of a collar or ring, E, having the form of a truncated cone, and fixed on the shaft A, as described in reference to Fig. 6, and for the purposes set forth.

253,016. WINDMILL FOR PUMPING. LEMI B. DENTON, Grand Rapids, Mich., assignor of one-half to Arthur J. Holt, same place. Filed May 19, 1881. (No model.)

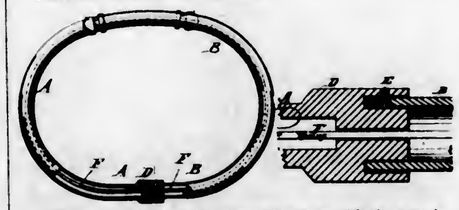


Claim.—1. In a windmill, the combination, with the wind-wheel shaft having a pinion attached thereto, of a rod having a series of pins secured thereto, the parts being arranged so that the pinion will engage with the opposite sides of the pins, and thereby convert the rotary motion of the wheel-shaft into a reciprocating motion of the rod, substantially as set forth.

2. In a windmill, the combination, with the wind-wheel shaft having a pinion secured thereto, of a rod provided with a series of removable pins arranged in a vertical line, the parts being arranged so that when the pinion engages with one side of the series of pins the rod will be raised, and when it engages with the opposite side the rod will be depressed, substantially as set forth.

3. In a windmill, the combination, with the windmill-shaft provided with a pinion and supported at one end by a vibrating link, of a pump-rod provided with a series of pins, with which said pinion engages and operates to impart a reciprocatory movement to the rod, substantially as set forth.

253,017. BRACELET. JOHN V. DIEFENTHALER, Newark, N. J. Filed Nov. 18, 1881. (No model.)



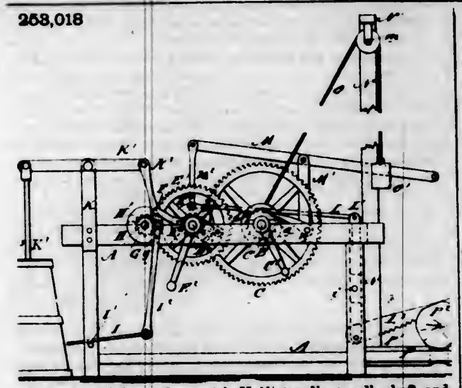
Claim.—1. In a bracelet, the combination, with the part A, provided with the coupling D, of the part B, provided with the semi-annular groove *a*, and the pin E, substantially as and for the purpose set forth.

2. In a bracelet, the combination, with the tubular part A, provided with the coupling D, the tubular part B, provided with the semi-annular groove *a*, and the pin E, of the spring F, having its ends resting against the outer ends of the bracelet, substantially as and for the purpose set forth.

253,018. MOTIVE POWER. EDGAR H. DRAKE, Newfield, N. Y. Filed July 25, 1881. (No model.)

Claim.—1. A motive-power mechanism constructed substantially as herein shown and described, consisting of shaft B, carrying cog-wheel, ratchet-wheel, and crank C C' C², sliding shaft D, carrying pinion, cog-wheel, crank, and eccentric F E' F' F², shaft

253,018



G, carrying pinion and eccentric H H', treadle, treadle-shaft, and pitman I I' I², standard, walking-beam, and pitman K K' K², connecting-rod and lever L L', and standard, walking-beam, and pitman M' M M², all in combination, supported on frame A, and operated as set forth, whereby the machine may be simultaneously used for churning and sawing, and may be driven either by treadle or hand-cranks at fast or slow speed, as desired.

2. In a motive-power mechanism, the combination, with the frame A and shaft B and cog-wheel C, of the standard N, provided with pulleys *m m*, rope O, and weights O', substantially as herein shown and described, whereby the mechanism may be operated by said weights, as set forth.

3. In a motive-power mechanism, the combination, with the shaft D, carrying cog-wheel, crank, and eccentric E' F' E², of the shaft G, carrying pinion and eccentric H H', and treadle, treadle-shaft, and pitman I I' I², substantially as herein shown and described, whereby the power may be applied through either crank or treadle, as set forth.

253,019. SPINDLE-BEARING. GEORGE DRAPER, Hopedale, Mass. Filed July 29, 1881. (No model.)



Claim.—1. The tubular support *d* and the sectional lateral or side spindle-bearing and spindle, combined with the elastic or yielding packing for the said lateral sectional bearing, the packing being interposed between the tubular support and sectional lateral bearing, substantially as described.

2. The spindle and tubular support, combined with the sectional bearing therefor, movable step, and elastic or yielding packing between the said sectional lateral bearing and tubular support, substantially as described.

253,020. PACKING FOR SPINDLE-BEARINGS. WILLIAM F. DRAPER, Hopedale, Mass. Filed Aug. 5, 1881. (No model.)

Brief.—The sectional bearing is surrounded by an elastic packing having an enlarged strand extending spirally through the same.

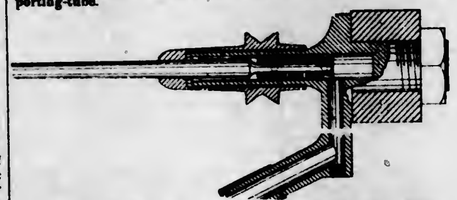


Claim.—1. The improved elastic packing composed of a braided fabric having an enlarged strand, *g*, extended helically through it, substantially as described.

2. The tube or support *a* and the lateral or side bearing, composed of sections *c*, combined with and connected together by means of the elastic packing, having an enlarged forcing-strand, *d*, extended helically therethrough, to operate substantially as and for the purpose described.

253,021. SPINDLE AND BOLSTER FOR SPINNING-MACHINES. WILLIAM F. DRAPER, Hopedale, Mass. Filed June 21, 1881. (No model.)

Brief.—The reduced pintle of the spindle is inclosed by a yielding bolster placed within a fixed supporting-tube. The sleeve-whirl has an annular extension below the whirl, which, by coming in contact with the exterior of the supporting-tube, prevents the spindle from being unduly deflected from a vertical position. The top of the pintle, groove of the whirl, and top of the bolster, which may be rounded and enlarged to fit the interior of the supporting-tube, are all located in substantially the same plane, whereby the strain of the band on the spindle is resisted by the enlarged head of the bolster, which is supported laterally by the fixed supporting-tube.

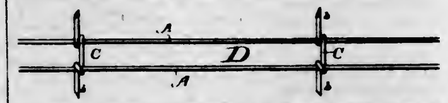


Claim.—1. The sleeve-whirl spindle provided with a sleeve-like extension, *b'*, below the band-groove of the whirl, combined with the yielding bolster and its support, the top of the bolster being located substantially in the line of the band-groove of the whirl, whereby the sleeve-like extension below the grooved whirl guards the pintle of the spindle against the effect of strain, tending to deflect the spindle from the vertical, as set forth.

2. The sleeve-whirl spindle having a pintle of smaller diameter than the butt of the spindle-blade, combined with a yielding bolster and supporting-tube, substantially as described, the band-receiving groove of the whirl, the top of the reduced part of the spindle or pintle, and the top of the bolster being all located in substantially the same plane, as set forth.

3. The sleeve-whirl spindle, the upwardly-extended tube *a*, and the oil-supply reservoir extended above the plane of the top of the bolster, combined with the bolster shorter than the said supporting-tube, leaving above the bolster a chamber for the reception of oil, substantially as described.

253,022. BARBED FENCE-WIRE STRAND. ABRAM ELLWOOD, Sycamore, Ill. Filed Aug. 30, 1881. (No model.)



Claim.—1. The parallel wires A A, being about three-fourths of an inch apart, projecting points or barbs *b b*, and bar C, forming the strand D, substantially as and for the purposes described.

2. As a new article of manufacture, two parallel wires substantially three-fourths of an inch apart, held together and apart, and formed into a strand by interlocking staples or barbs, substantially as and for the purposes described.

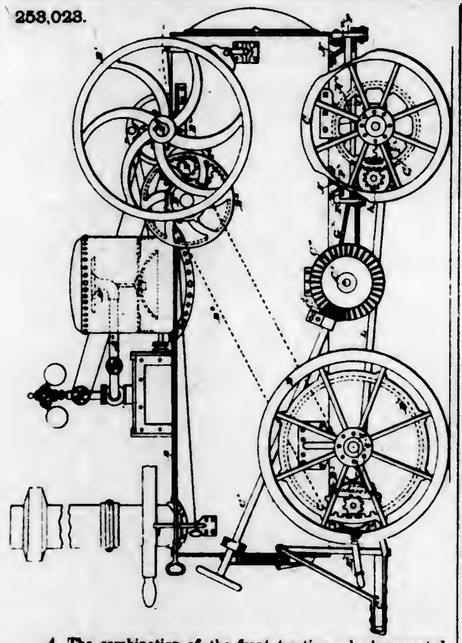
253,023. TRACTION-ENGINE. JOHN H. ELWARD, Stillwater, Minn. Filed Sept. 19, 1881. (No model.)

Claim.—1. The combination of the following elements, namely: a boiler, an engine thereon, a rear truck, a driving mechanism mounted on said truck for moving the rear wheels, a front truck movable relatively to the boiler and engine, a driving mechanism on said front truck for moving the front wheels, and an automatically-extensible power-transmitting mechanism connecting the driving mechanism on the rear truck with the driving mechanism on the front truck, substantially as set forth.

2. The combination of the following elements, namely: the rear truck, a driving mechanism on said truck for moving the rear wheels, a front truck, a driving mechanism mounted thereon for moving the front wheels, the sprocket-wheels L² and L³, arranged to approach and recede from each other, the sprocket-chain L, and devices, substantially as set forth, for expanding the chain.

3. The combination of the rear truck, the counter-shaft D' on said truck, the wheels on said shaft engaging directly with the rear traction-wheels, the compensating-gear on said shaft, the front truck, the counter-shaft H on the front truck, the wheels on said shaft H, which engage directly with the front traction-wheels, the compensating-gear on said shaft H, the short counter-shaft I, the bevel-gearing on the rear truck, the bevel-gearing on the front truck, and the flexible power-transmitting devices between the trucks, substantially as set forth.

253,023.



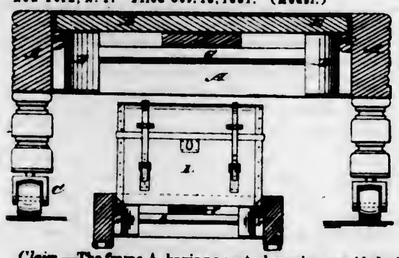
4. The combination of the front traction-wheels mounted loosely, the front counter-shaft, H, engaging directly with said wheels, the compensating-gear on said shaft, the rear traction-wheels mounted loosely, the counter-shaft D', engaging directly therewith, the compensating-gear on said shaft D', and the extensible power-transmitting mechanism between said shafts H and D', substantially as set forth.

5. The combination, with the driving mechanism which moves the rear traction-wheels and the chain L, of the counter-shaft H, engaging with the front traction-wheels, the compensating-gear on said counter-shaft H, and the shaft I, mounted upon the front truck, and arranged, as set forth, to receive the power from the chain L and impart it to the compensating-gear on the shaft H, substantially as set forth.

6. In a traction-engine, the combination of a driving mechanism for the rear wheels, a driving mechanism for the front wheels, a power-transmitting mechanism, a frame-work for supporting upon the front wheels the mechanism which drives them, the pivotal bearing of the boiler resting upon said frame-work, and the arms P P', arranged to loosely connect said frame-work to the boiler, substantially as set forth.

7. The combination of the frames N n, attached to the boiler, the frame O O', supported upon the front wheels, the mechanism for driving said wheels, and the angle-arms P P', arranged to rest upon flange n, substantially as described.

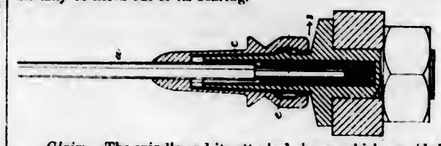
253,024. PORTABLE TRUNK-RACK. WILLIAM H. ERTELL, New York, N. Y. Filed Oct. 15, 1881. (Model.)



Claim.—The frame A, having a central opening provided with corner brackets, D, longitudinal strips E, and transverse piece F, and adapted to receive a trunk or center piece, substantially as shown and described, whereby the said frame is adapted to be used either as a trunk-rack or table, as set forth.

253,025. SPINDLE FOR SPINNING-FRAMES. RIMMON C. FAY, Milford, assignor to George Draper & Sons, Hopedale, Mass. Filed July 29, 1881. (No model.)

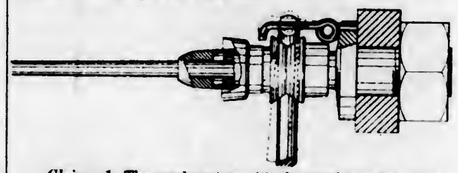
Brief.—The bolster-bearing for the spindle is surrounded by an elastic packing, and the supporting-tube is provided with a catch that engages a shoulder within the whirl-sleeve to prevent the spindle from rising when the bobbin is doffed. When the spindle is tipped backward in doffing the shoulder is carried under the catch and cannot rise; but by tipping the spindle in the opposite direction the shoulder will be carried out beyond the catch and the spindle may be lifted out of its bearing.



Claim.—The spindle and its attached sleeve-whirl, provided with the shoulder 2, combined with the bolster, the elastic packing external to the said bolster, and the bolster-supporting tube e, provided with the catch 3, to co-operate with the shoulder 2 of the sleeve-whirl, as described, and for the purposes set forth.

253,026. DEVICE FOR RETAINING SPINNING-SPINDLES IN AND ASSISTING IN REMOVING THEM FROM THEIR SOCKETS. RIMMON C. FAY, Milford, assignor to the Hopedale Machine Company, Hopedale, Mass. Filed July 25, 1881. (No model.)

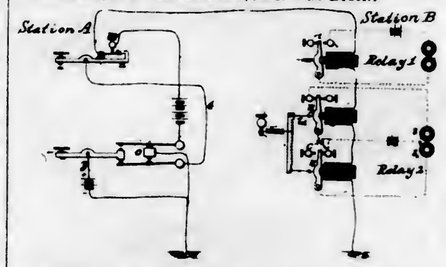
Brief.—The spindle is held in position by means of a spring, which, when said spindle is to be raised, is pushed back out of engagement with the whirl by a handled bar or rod bent at its end and slotted to fit the said spring, the band at the same time being removed from the groove of the whirl.



Claim.—1. The combination, with the whirl-spindle, of the retaining-spring, which may be sprung back away from above the whirl when it is desired to raise the whirl, as and for the purpose set forth.

2. The spindle, its whirl, and the tubular support and retaining-spring attached to the tubular support, combined with the slotted key to engage and operate the retaining-spring and throw off the band, substantially as described.

253,027. QUADRUPLEX TELEGRAPH. STEPHEN D. FIELD, New York, N. Y. Filed Nov. 25, 1881. (No model.)



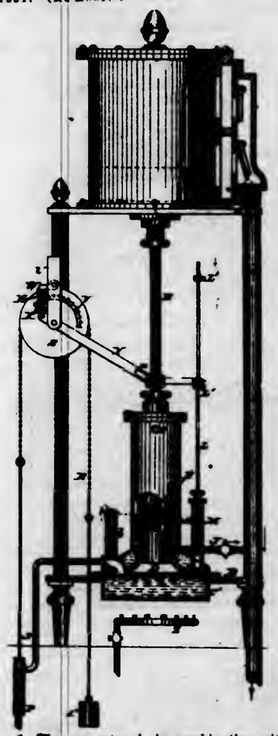
Claim.—1. The combination, substantially as hereinbefore set forth, of two independent electro-magnets included in the same circuit, two armatures and armature-levers actuated by the respective electro-magnets, an equalizing-bar having its extremities attached one to each of said armature-levers, and an adjustable retractor acting upon said equalizing-bar.

2. The combination, substantially as hereinbefore set forth, of two independent electro-magnets included in the same circuit, two armatures and armature-levers actuated by the respective electro-magnets, an equalizing-bar having its extremities attached one to each of said armature-levers, an adjustable retractor acting upon said equalizing-bar, a receiving-instrument actuated by a differential magnet, a local battery, two branch circuits from said battery, each including one coil of said differential magnet, and means, substantially such as described, for closing a circuit through one or through both of said branches, according to the position of said armatures.

3. The combination, substantially as hereinbefore set forth, of two independent electro-magnets, each provided with an armature and armature-lever, one of said levers constituting a yielding contact-stop for the other, an equalizing-bar having its ends connected one with each of said levers, and an adjustable retractor acting upon said equalizing-bar.

4. The combination, substantially as hereinbefore set forth, of two electro-magnets, two armatures mounted upon pivoted levers, an equalizing-bar having its respective ends mechanically connected with said levers, a retractor attached to said equalizing-bar, a device for regulating the tension of said retractor, and means, substantially as described, for varying the point of attachment of the retractor to the equalizing-bar.

253,028. GAS-MACHINE. REUEN W. FLOWER, Jr., and EDWARD C. BURGESS, Philadelphia, Pa., assignors to the United States Automatic Gas Machine Company, of New Jersey. Filed Apr. 14, 1881. (No model.)



Claim.—1. The generator A, in combination with the valve M and pipe J, and the connected piston-rod E and valve-stem L, substantially as and for the purpose set forth.

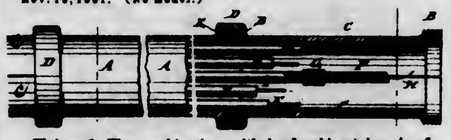
2. The generator with its piston-rod and a connected arm, in combination with the pump mechanism consisting of the pump-rod, chain, pulley, pawl and ratchet, and weight, said weight operating reversely to said piston-rod of the generator in turning said pulley, substantially as and for the purpose set forth.

3. The pulley, pump-rod, and weight in combination with the ratchet V, pawl W, rising-and-falling pin X, and mechanism for operating said pin, substantially as and for the purpose set forth.

4. The generator and air-pump, in combination with a communicating hollow piston-rod, substantially as and for the purpose set forth.

5. The gas-generator and an air-pump, in combination with a pipe communicating with the air-chest of said pump and the exhaust or discharge pipe of the generator, substantially as and for the purpose set forth.

253,029. INSULATOR AND PROTECTOR FOR UNDERGROUND LINES. WILLIAM A. FRENCH, Camden, N. J. Filed Nov. 19, 1881. (No model.)



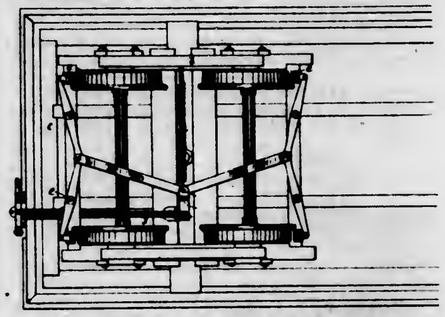
Claim.—1. The combination, with hard-rubber tubes A, of the interior soft-rubber tubes, F, connected by short hard-rubber couplings G, as and for the purpose specified.

2. In a telegraph-wire insulator and protector, the combination of the series of exterior hard-rubber tubes, A, having collars E, and connected by hard-rubber tubes C, made in halves, and provided with collars B, and the coupling-bands D, substantially as herein shown and described, whereby the wires will be securely insulated and effectually protected, as set forth.

253,030. BOARD OR TABLET FOR ARTISTS' USE. SAMUEL J. PERKINS, New York, N. Y. Filed July 28, 1881. (Specimens.)

Claim.—As an improved article of manufacture, a stiff or rigid tablet or board for artists' use, provided with a prepared surface of oil-paint applied directly to the face of the tablet or board, and impressed with a woven fabric to produce an imitation grain resembling canvas or similar textile fabric, substantially as described.

253,031. CAR-BRAKE. GEORGE W. FRIEL, Rockland, Mass. Filed June 25, 1881. (No model.)



Claim.—1. The pivoted brake-levers provided with brake-shoes at one end and the toggle-jointed thrust-bars, connected with the other ends thereof, combined with the actuating spring or weight to draw the said thrust-bars into line and apply the brakes, substantially as described.

2. The pivoted brake-levers provided with brake-shoes at one end thereof, and the toggle-jointed thrust-bars connected with the other ends of the said levers, combined with the actuating-lever and connecting mechanism between it and the said thrust-bars, substantially as and for the purpose set forth.

3. The toggle-jointed thrust-bars and actuating-spring, combined with the cranked rock-shaft connected with the joint of the said bars, and the link and handled lever to operate the said shaft, substantially as described.

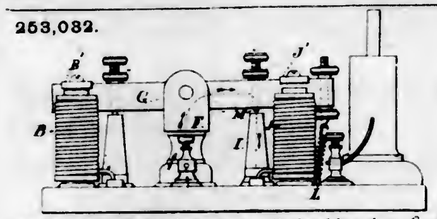
4. The brake-levers and toggle-jointed thrust-bars and their actuating-spring, combined with the actuating-lever and connecting mechanism between it and the said bars, and the locking device therefor, substantially as described.

5. The brake-shoes and their operating mechanism and actuator therefor, combined with the actuating-lever, arranged, as described, to act in opposition to the said actuator, and the locking device with its tripping-projection located, as set forth, to be tripped by the operator in passing, whereby the actuator is permitted to automatically apply the brakes, substantially as described.

253,032. ELECTRIC LIGHTING APPARATUS. SARAH L. FULLER, New York, N. Y., Administratrix of JIM BILLINGS Fuller, deceased, assignor to the Fuller Electrical Company, same place. Filed Jan. 5, 1880.

Claim.—1. In an electric lighting apparatus wherein two or more electric lamps or light-regulators are placed in a single electric circuit, the combination of the electro-magnet B, placed in the

253,082.

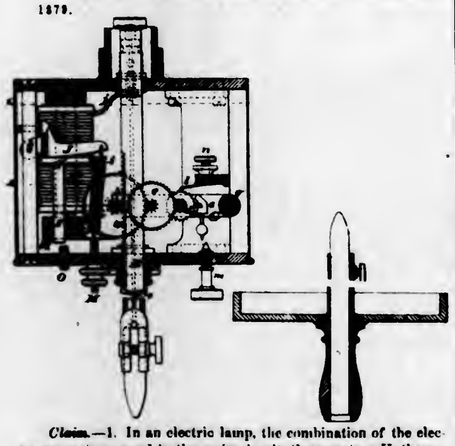


main circuit, with the electro-magnet J, placed in a short circuit around the lamp, the two magnets having a common armature-lever, G, in connection with the fine-wire resistance-coil O, substantially as specified, and arranged to partially shunt the electric current from the lamp to which it is attached and hold the shunt-circuit closed.

2. In combination with an electric lamp or light-regulator which forms one of several in the same electric circuit, each of which is provided with a short-circuiting device, an electro-magnet in the main circuit, and electro-magnet in the short circuit, with a resistance-coil or conductor of comparatively high resistance, dividing the current at the part of the circuit where the lamp is located, all so connected electrically that any too great resistance at the lamp or light-regulator will cause the electric current to operate the magnets without entirely breaking the circuit, thereby shunting the current from the lamp in time to prevent the other lamps in the circuit from being extinguished, substantially as described and shown.

3. In an electric lighting apparatus or shunting device, the combination of the movable armature J' of the shunt-magnet J and the movable armature B with the contact M, the attraction of the magnet J upon the armature operating to close said contact and the release of the armature of the magnet B also operating by the spring L to close said contact.

253,083. ELECTRIC LAMP. SARAH L. FULLER, New York, N.Y., Administratrix of Jim Billings Fuller, deceased, assignor to the Fuller Electrical Company, same place. Filed Dec. 18, 1879.



Claim.—1. In an electric lamp, the combination of the electro-magnet arranged in the main circuit, the armature H, the upright and table I I', the curved compensating-lever J, the adjustable tension-spring *i*, and the adjusting-screw O, all arranged substantially as shown, for the purpose of regulating the movement of the armature.

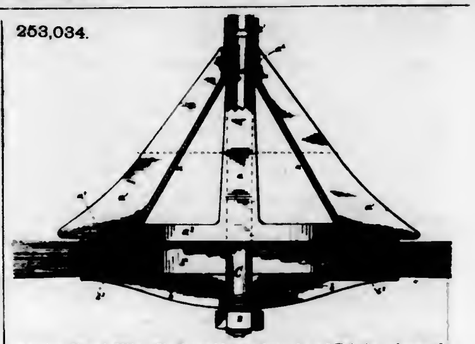
2. The combination of the electro-magnet, arranged in the main circuit and provided with the compensating-lever and spring as shown, with the swinging lever or frame bearing the train, the toothed carrier E, and the fixed detent *l*, all arranged to operate substantially as and for the purpose set forth.

253,084. FLUE-BRUSH. JOHN M. GIBSON, Cincinnati, Ohio. Filed May 27, 1881. (No model.)

Claim.—1. The combination of member B and filling D with member A, consisting of a single casting with T-formed legs *a*, having extended ribs *a'* and hub *a²*, substantially as set forth.

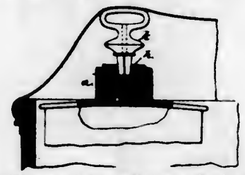
2. The combination of member A, consisting of a single casting, with T-formed legs *a*, having extended ribs *a'* and hub *a²*, with

253,084.



member B and filling D, the said members A and B being clamped together by nut *c* on bolt C and provided respectively with flange *a'* and collar *b'*, which serve as abutments for the inner ends of the filling, substantially as and for the purpose set forth.

253,085. FRUIT-CAN. FREDERICK B. GIBB, Oakland, Cal. Filed Nov. 1, 1881. (No model.)



Claim.—The combination of the can having its top provided with the perforated thimble, the screw-threaded stopper having the socket *h*, the ratchet-key *k*, and the rubber covering *o*, substantially as specified.

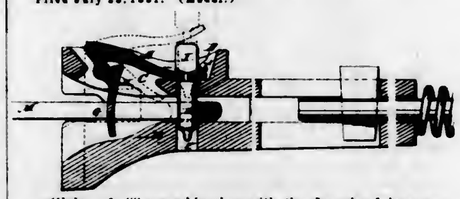
253,086. MEANS FOR SEALING CANS. FREDERICK B. GIBB, Oakland, Cal. Filed Aug. 3, 1881. (No model.)



Claim.—1. The cover *a*, having an opening, *c*, in combination with a jar having a notch or hole at its neck and a hole in its top, and a yielding air-tight covering for the cover *a*, as set forth.

2. The cover *a*, having an opening, *c*, in combination with a yielding air-tight covering, as set forth.

253,087. CAR-COUPLING. JAMES L. GRIFFIN, Cuneata, Tex. Filed July 25, 1881. (Model.)



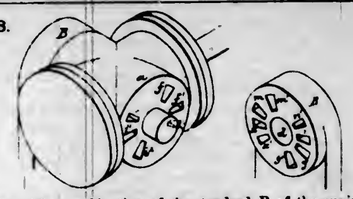
Claim.—1. The combination, with the draw-head in a car-coupling, of the lever A, pivoted in the front of draw-head, the pin E, suspended in a slot, D, of said lever, and the lever G, having the projection H, the whole adapted to operate in connection with the link, as described.

2. The coupling-pin E, constructed, substantially as herein shown and described, with a flat head, J, and an annular recess J', directly under this head, as set forth.

3. The combination, with the draw-head B, of the side projections, L, provided with apertures K, substantially as herein shown and described, and for the purpose set forth.

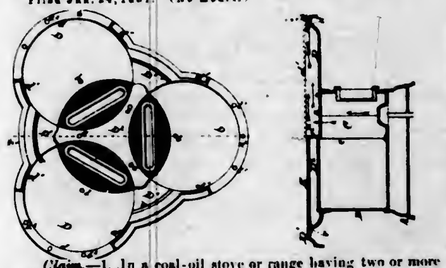
253,088. OSCILLATING ENGINE. LEWIS GRIscom, Pottsville, Pa. Filed Nov. 21, 1881. (No model.)

253,088.



Claim.—The combination of the standard B of the engine, having two sets of steam and exhaust ports spaced as described with the cylinder having two sets of ports spaced in respect to those of the standard as set forth, whereby the ports above and below the center port serve alternately as blind ports and acting ports, as set forth.

253,039. COAL-OIL STOVE. WILLIAM HAILES, Albany, N.Y. Filed Jan. 24, 1881. (No model.)



Claim.—1. In a coal-oil stove or range having two or more burners, each situated in a combustion-chamber, the combination, with said combustion-chamber and a top plate provided with openings *a a*, of a division-plate arranged on the top plate and adapted to keep each volume of the hot products escaping from each burner through said openings separate from the others, so that each volume will operate independent of the other without commingling, substantially as set forth.

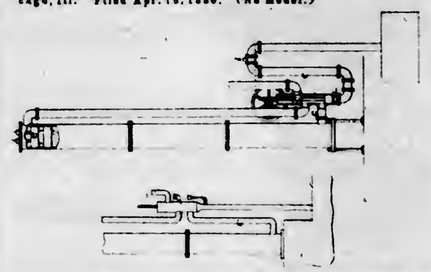
2. In a coal-oil stove or range, the combination, with an opening, *a*, serving as a discharge-opening from a combustion-chamber provided with a burner, of a top plate having an extension, D, arranged horizontally and laterally off from one side of said opening, flange-strips *d' d'*, and a plate, E, operating to extend the opposite side of said opening *a* vertically to a line on a plane with said flange-strips, whereby the hot products from the combustion-chamber will be compelled to pass in a horizontal direction from said opening to the outer extremity of said extension, for the purpose set forth.

3. In a coal-oil stove or range having two or more burners, situated each in an independent combustion-chamber, the combination, with a top plate provided with openings *a a*, and lateral extensions D, leading from the same, of flange-strips *d' d'*, made with the sides of said extensions, and division-plate E, having its upper surface on a plane with the upper edge surface of said flange-strips, whereby each volume of the hot products of combustion from the several burners will be preserved, separated, and made to pass horizontally over an individual lateral extension to the extremity of the same, in the manner and for the purpose set forth.

4. In a coal-oil stove or range having two or more burners, each situated in an individual combustion-chamber, the combination, with a top plate provided with openings *a a* and laterally-extended portions D D, of flange-strips *d' d'*, made with opposite sides of said extensions, upwardly-curved marginal rims *d*, extended outward past said flange-strips and terminating on a plane below the upper edge surface of the same, and the division-plate E, situated between openings *a a* and having its upper surface on a plane with said flange-strips, whereby the volume of hot products of combustion from each burner will be made to move horizontally in a flue formed between each of said extensions and the bottom of a vessel placed over the same and in close contact therewith, as set forth.

5. In a coal-oil stove or range having groups of burners in which each burner of a group is provided with an individual combustion-chamber, the combination, with the same and a top plate provided with openings *a a*, for discharging the hot products of combustion, and lateral extensions D D, leading horizontally from said openings and having their opposite sides provided with flange-strips *d' d'*, of removable division-plates E, separating the discharge-openings of the combustion-chambers of each burner of a group, and plate F, separating the discharge-openings of one group of combustion-chambers from the other, whereby a variety of operations may be had with vessels of different sizes, substantially as set forth.

253,040. HYDRAULIC ELEVATOR. WILLIAM E. HALE, Chicago, Ill. Filed Apr. 16, 1880. (No model.)



Claim.—1. The lifting-cylinder of a hydraulic elevator, in combination with pipes extending downward and upward from each end of the same to a point about thirty-three feet below the limit of the upper travel of the piston, whereby the column of water in a lifting-cylinder of over thirty-three feet in length is counterbalanced, substantially as and for the purpose described.

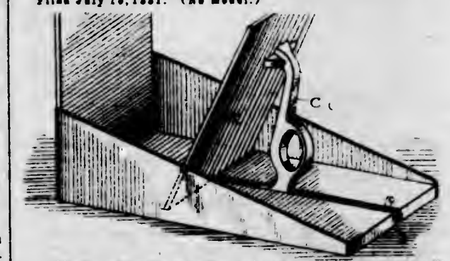
2. The lifting-cylinder of a hydraulic elevator exceeding thirty-three feet in length, in combination with a pipe communicating with one end thereof and serving as a discharge-pipe, and also to hold a counterbalancing-column for the water on one side of the piston and a pipe communicating with the other end of said cylinder, and adapted to hold water to counterbalance the water on the opposite side of the piston, and suitable valve appliances for controlling the water and regulating its admission and discharge, substantially as set forth.

3. The lifting-cylinder of a hydraulic elevator exceeding thirty-three feet in length, in combination with a discharge-pipe connecting with the upper end of said cylinder, a counterbalancing-pipe connecting with the lower end of the same, and suitable valve appliances, said pipes being arranged so that the column of water in said lifting-cylinder below the piston is counterbalanced, substantially in the manner set forth.

4. The lifting-cylinder of a hydraulic elevator exceeding thirty-three feet in length, in combination with a combined supply and discharge pipe connecting with the upper end of said cylinder, and suitable valve appliances controlling the supply and discharge, and a counterbalancing-pipe connecting with the lower end of the lifting-cylinder, whereby the column of water in the said cylinder below the thirty-three-foot level is counterbalanced, substantially as set forth.

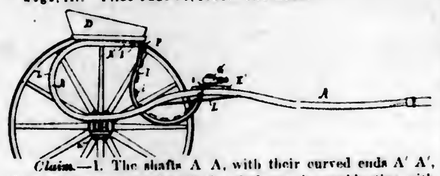
5. The combination, with the working-cylinder of a hydraulic elevator closed at both ends, provided with piston and piston-rod, inlet and discharge openings, pipe containing an upper counterbalancing water column, and valve appliances, of a discharge-pipe extending upward from the end of the cylinder to a point above the bottom to discharge the water at a level above the bottom, substantially as set forth.

253,041. BILL-FILE. CHARLES W. HAYNS, Washington, D. C. Filed July 18, 1881. (No model.)



Claim.—As an improved article of manufacture, a paper-file provided in its bottom with the longitudinal opening *b* and slot *c*, and having the lever C, provided with the longitudinal bar D, fitting and conforming throughout its length to the opening *b*, and file-board E, all constructed to operate substantially as and for the purpose set forth.

253,042. TWO-WHEELED VEHICLE. OLIVER HERBST, Oswego, Ill. Filed June 11, 1881. (No model.)



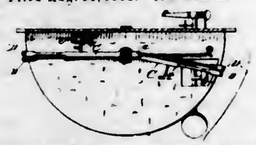
Claim.—1. The shafts A A, with their curved ends A' A', bent in the manner as described and shown, in combination with seat D and axle C.

2. The combination of a bent wooden shaft A with the tightening-wire I, provided with nuts at each end, for the purpose set forth in specification.

3. The combination and arrangement of the foot-rest with the ends of the shafts A A, and plate *e*, affixed to cross-bars E and E', substantially as shown and described.

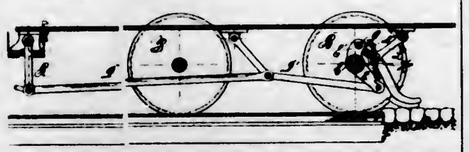
4. The foot-rest string-pieces I I, with slats *i i*, and rod M, in combination with the spring-wires N and O, suspended from plate *e* on top of the cross-bars, as shown and described.

253,043. MUSIC-LEAF TURNER. ADOLFO HEILPRIN, New York, N. Y. Filed Aug. 16, 1881. (No model.)



Claim.—The arms C C, carrying turning-fingers D D and projecting studs *n n*, in combination with a cushion, U, against which said studs are received, as described.

253,044. CAR-STARTER. LUDWIG HELM, Berlin, Germany. Filed Nov. 21, 1881. (No model.) Patented in Germany Sept. 3, 1880.



Claim.—1. The combination and arrangement of the presser-foot H with the spiral spring for assuring a firm gripe of the foot H, and with the lever combination E E' and slotted arm L, substantially as described in the foregoing specification and shown in the accompanying drawings.

2. The combination of the lug M and the pivot or pin for the spiral spring with the lever E E', connecting-rods D D', and the arm R, substantially as described in the foregoing specification and shown in the accompanying drawings.

3. The construction and arrangement of the clutch or catch and releasing mechanism, consisting of the catch or hook S, bearing U, spindle T, pivot W, foot or treadle piece X, and volute spring Y, substantially as described in the foregoing specification and shown in the accompanying drawings.

4. In a car-starter, the combination of a presser-foot, H, a slotted arm pivoted to the bottom of the car, and a lever pivoted upon the axle, and connected to the draw-bar and to the presser-foot, said presser-foot being adapted to drop into contact with the roadway when the pull on the draw-bar is relaxed.

5. In combination with the draw-bar D and connecting mechanism, substantially as described, the presser-foot H, having a shoe of elastic, or partially elastic, material.

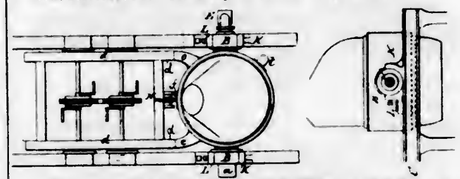
253,045. PROCESS OF TREATING AMMONIACAL SALTS. HENRI J. E. HENNEBUTH, Anglet, Department of Basses-Pyrénées, France. Filed Dec. 1, 1881. (No specimens.) Patented in France June 16, 1881.

Claim.—1. The herein-described process of treating ammoniacal salts, which consists in heating the liquids containing the same, acidulating the same, and then adding lime thereto in order to decompose the fixed ammoniacal salts, substantially as set forth.

2. The herein-described process of preventing the formation of froths and foams in ammoniacal liquors by adding thereto, after the same have been heated, a slight quantity of acid, in order to eliminate the carbonates which may give rise to the formation of carbonate of lime, substantially as set forth.

3. The herein-described process of eliminating by means of acid the carbonates which tend to cause the formation of carbonate of lime in the treatment of liquids containing fixed salts of ammonia, which it is desired to decompose by lime, substantially as and for the purpose set forth.

253,046. BESSEMER-STEEL PLANT. WILLIAM M. HENDERSON, Steelton, Pa. Filed Sept. 27, 1881. (No model.)



Claim.—1. The combination, substantially as described, of flanged wheels B with the trunnions *a*, of a converter.

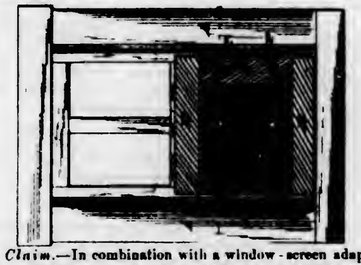
2. The combination of a converter and flanged wheels adapted to the trunnions thereof, with girders constituting a track for the said wheels, and with fixed and removable stops K and L on the said track, adapted to the wheels, all substantially as specified.

3. The combination of the converter having projections *e e*, having the truck beams adapted to bear upon said projections *e e*, and a coupling device for attaching the truck to the converter, as set forth.

4. The combination of the converter having projections *e e*, the truck having beams adapted thereto, the coupling-link, means for attaching said link to the converter and truck, and the lever N, as specified.

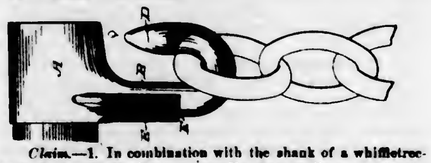
253,047. WINDOW-SCREEN. DAVID W. HERSEY, Pembroke, Me. Filed July 30, 1881. (No model.)

Brief.—A sliding screen is provided with bifurcated nibs on one side, and on the other with notched spring-bolts in cylindrical casings to rest on the rails. The inner ends of the bolts have knobs or handles.



Claim.—In combination with a window-screen adapted to slide vertically on a track and provided at one end with the small notched or bifurcated nibs P P, the cylindrical casings H H, set in the opposite end of the screen, one above the other, and inclosing the locking bars or bolts I, having projecting notched ends adapted to embrace the track by reason of spring mechanism N inside the casings, the inner ends of the bars being provided with knobs or heads J, by which the bolts may be conveniently operated to adjust the screen, substantially as set forth.

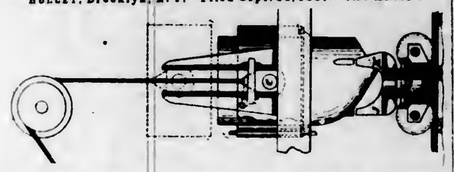
253,048. WHIFFLETREE-HOOK. MATHAN HILL, Clyde, assignor of three-fourths to John K. Divers, Bangor, Mich. Filed Nov. 9, 1881. (No model.)



Claim.—1. In combination with the shank of a whiffletree-hook, the longitudinal ribs or bars E, substantially as and for the purposes set forth.

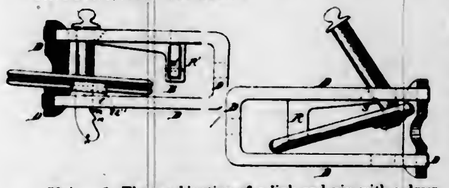
2. The described whiffletree-hook, consisting of the ferrule A, rigid hook B, catch or barb D, and the ribs or bars E, all constructed of a single piece of metal.

253,049. BESSEMER-CONVERTER PLANT. ALEXANDER L. HOLLEY, Brooklyn, N. Y. Filed Sept. 24, 1881. (No model.)



Claim.—The combination of the trunnion-ring of a Bessemer converter with suitable hoisting mechanism for lifting the trunnion-ring, and with a converter-shell detachable from the trunnion-ring, and with a car and lift under the converter, the combination being for the purpose of lifting the trunnion-ring off the shell, so that the shell may be removed laterally and a repaired shell may be placed in the trunnion-ring in the manner described.

253,050. CAR-COUPLING. CHAS. L. HORACK, Brooklyn, N. Y. Filed Dec. 1, 1881. (No model.)



Claim.—1. The combination of a link and pin with a draw-bar, D, the latter containing a standard, R, for the purpose of confining one end of said link within the draw-bar, the other being held there by means of the coupling-pin.

2. The combination of a stationary link, pin, and washer with a draw-bar, the latter being provided with a seat, S, below the upper pin-hole for supporting the pin, substantially as specified.

3. The combination of a link and pin and washer attached to the draw-bar D, the latter containing a standard, R, constructed as the vertical arm of an angular piece, the horizontal arm forming a seat for the coupling-pin, substantially as specified.

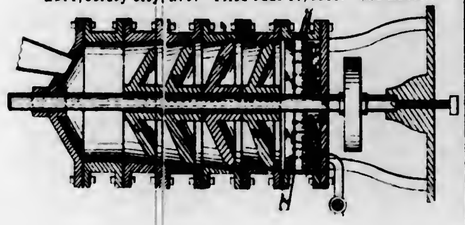
4. The combination of a stationary link, pin, and washer with a draw-bar, the latter containing a vertical standard back of the pin-holes and attached to the upper part of the draw-bar, for the purpose of confining the rear end of the stationary link when not required for coupling purposes.

5. The combination of a stationary link, pin, and washer with a draw-bar, said link being constructed with longitudinal grooves on its sides, and the washer with lips corresponding with said grooves, substantially as specified.

6. The combination of a stationary link and pin with the draw-bar D, said draw-bar being provided with the rear standard, R', constructed with lugs swinging outward, so as to hold the rear end of said stationary link in an elevated position when not required for coupling purposes.

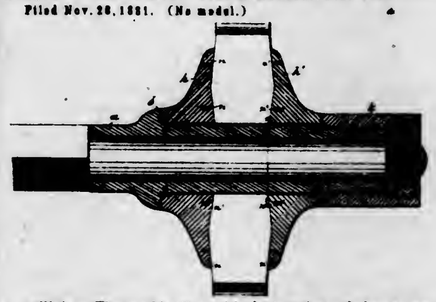
7. The combination of a stationary link and pin with the draw-bar D, said draw-bar D being provided with the standard R', constructed with lugs forced outward by means of a spring, for the purpose of confining one end of the stationary link when not required for coupling purposes.

253,051. ORE PULVERIZER AND AMALGAMATOR COMBINED. FREDERICK J. HOYT, New York, N. Y., and WILLIAM H. HOYT, Jersey City, N. J. Filed June 17, 1881. (No model.)



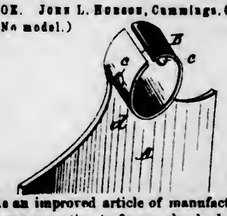
Claim.—The combination, substantially as hereinbefore set forth, with the vertical shaft and grinding-disks, of the shell constructed with the grinding-surfaces to co-operate with the disks, and with the amalgamating-pan in the lower part, the annular water-supply pipe, the water-overflow pipe, and the amalgam-discharge spout of the pan, for the purpose specified.

253,052. WAGON-HUB. JOHN A. HUDGENS, Pine Bluff, Ark. Filed Nov. 28, 1881. (No model.)



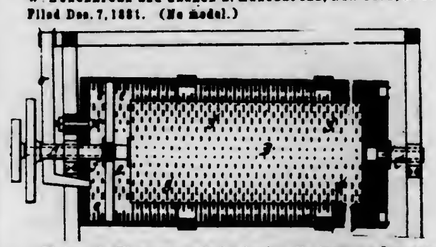
Claim.—The combination, with the tapering axle-box *a*, provided with the circular shoulder *b*, polygonal part *c d*, and cylindrical outer end, *f*, screw-threaded on its periphery, of the hub-collars *h h'*, provided with double-beveled surfaces *m m'* on their inner faces, and polygonal central orifices, nut *k*, and spokes *l*, having their squared ends resting against the polygonal faces of the axle-box, their front faces beveled inwardly and abutting against each other, and their side faces provided with the inclined planes *n n'*, fitting against the surfaces *m m'* of the collars, substantially as described, and for the purpose set forth.

253,053. HOE. JOHN L. HUDSON, Cummings, Ga. Filed July 14, 1881. (No model.)



Claim.—As an improved article of manufacture, the hoe A, cut away at its upper portion to form a shank, *d*, and having the split eye B, with holes *c* in opposite sides thereof to receive a transverse tightening-bolt through the handle, substantially as and for the purpose set forth.

253,054. MACHINE FOR SCOURING COPPER, &c. GEORGE W. HUNGERFORD and GEORGE E. HUNGERFORD, New York, N. Y. Filed Dec. 7, 1881. (No model.)

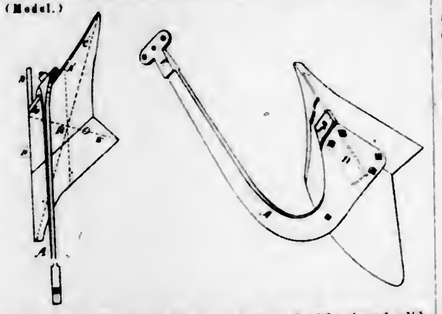


Claim.—1. The outer cylinder having its inner surface provided with teeth which are arranged in sets extending longitudinally and alternating with blank spaces, in combination with the inner cylinder having teeth on its outer surface, substantially as shown and described, for the purpose set forth.

2. The outer cylinder constructed with side staves which are alternately provided with teeth on the inner surface of each cylinder, in combination with the inner cylinder having teeth on its outer surface, substantially as described, for the purpose set forth.

3. The outer toothed cylinder having a screen located at one end thereof and staves alternately terminating at the inner end of the screen and extending the entire length of the cylinder, in combination with the inner toothed cylinder, substantially as shown and described, for the purpose set forth.

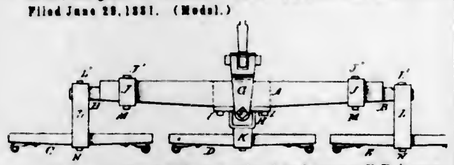
253,055. PLOW. FRANKLIN B. HUNT, Richmond, assignor of one-half to D. S. Robbins, Economy, Ind. Filed July 5, 1881. (Model.)



Claim.—1. In a plow, the beam A, formed with a broad solid rear end, and bent downwardly and laterally and closely fitting the mold-board, and extending down beneath the wing of the plowshare, and bolted to the wing of the share and mold-board, respectively, and independently of each other, and having a downwardly-turned portion, F, to which the landside of the share is bolted, substantially in the manner as and for the purpose herein shown and described.

2. In a plow, the beam A, formed with a broad and solid rear end, and bent downwardly and laterally to closely fit the mold-board and share, and arranged parallel with and between the landside D and the line A', and bolted to the mold-board and wing of the share independently of each other, substantially in the manner as and for the purpose herein shown and described.

253,056. DRAFT-EQUALIZER. FRANKLIN B. HUNT, Richmond, assignor of one-half to D. B. Robbins, Economy, Ind. Filed June 29, 1881. (Model.)



Claim.—1. The double-tree strips A and eveners B B, in combination with the plate H and clips J J, the clips and plate being held in place by means of lateral wood-screws, substantially as set forth.

2. The double-tree strips and single-trees placed arch side foremost, in combination with the eveners and clips J J and L L, said clips being held in position by means of lateral screws, substantially as shown and described.

3. In combination with the double-tree strips and eveners, the clips K K' and single-tree D, substantially as shown and described.

4. The plate H, provided with the hole S, recesses P P, and tongue V, substantially as set forth.

5. The single-trees C E and eveners B B, connected by means of the clips L L, and held in position by means of lateral screws, substantially as set forth.

6. The double-tree strips A A and single-trees placed arch side foremost, in combination with the eveners and clips L L K and J J, the clips being held in place by means of lateral screws, substantially as set forth.

7. In combination with the double-tree strips, eveners, and single-trees, the clips J J L L, plate H, and clip G, substantially as set forth.

8. In combination with the double-tree strips, eveners, and single-trees, the clips J J L L K, held in position by means of lateral screws, substantially as set forth.

9. In combination with the double-tree strips A, eveners B B, and single-trees C D E, the clips J J L L K, plate H, and clip G, substantially as shown and described.

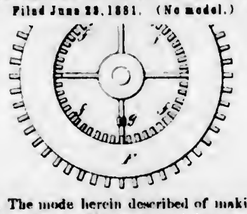
10. The ends of the eveners, rounded, as shown at O, Fig. 6, for the purpose of making a rear bearing for the clips L L, in combination with lateral screws, substantially as shown and described.

11. The combination and arrangement of the plate H, provided with the tongue V, and the clip G, whereby the double-tree strips are held and prevented from springing inward or outward, substantially as set forth.

12. The clip K K', held onto the single-tree by means of a lateral screw, and having rearwardly-projecting arms, to which the eveners are attached, substantially as shown and described.

13. In combination with the double-tree strips A A, the movable or adjustable clips J J, held in place when adjusted by means of lateral screws J', whereby the double-tree may be converted into a triple-tree, substantially as set forth.

253,057. PREPARING TYPE-FORMS. JOHN P. HUNT, Philadelphia, Pa. Filed June 29, 1881. (No model.)



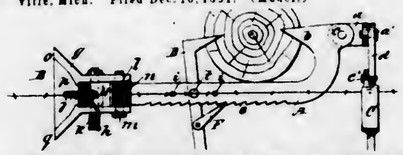
Claim.—1. The mode herein described of making type-bars for printing, said mode consisting in maintaining a mass of molten or semi-molten metal in a trough or channel, impressing characters upon the face of the same by suitable matrices, and feeding the bar from the trough or channel as it solidifies, as set forth.

2. The combination of the trough, the reservoir for supplying molten metal thereto, a disk, F, carrying matrix-bars *f*, and means, substantially as described, for depressing said bars, as set forth.

3. The combination of the trough, the metal-reservoir, the matrices, and the movable bottom B of the trough, as set forth.

4. The combination of the trough, the metal-reservoir, the matrices, and the feed-rolls E, as set forth.

253,058. WIRE-STRETCHER. HENRY H. HUTCHINS, Fondville, Mich. Filed Dec. 10, 1881. (Model.)



Claim.—1. The hooked plate or bar A, in combination with the levers or jaws C C', guide B, hooked lever D, and eccentric H, substantially as and for the purposes set forth.

2. The hooked plate or bar A, formed with the lugs *e e*, in combination with the pivoted link *a* and the levers C C', pivoted thereto, substantially as described.

3. The hooked bar or plate A, formed with the slot *f*, in combination with the hooked lever D, provided with pawl F, the plate being formed with the notches *e*, substantially as and for the purposes set forth.

4. In combination with the plate or bar A, the eccentric H and the hopper-shaped guide B, substantially as and for the purposes set forth.

5. The guide B, formed of the diagonal plates *o*, *p*, and *q*, and the bed-plate *n*, the plate *o* being extended above the plate *q* and carrying the eccentric H, in combination with the main bar or plate A, substantially as described.

6. The combination, with the eccentric H, of the diagonal plates *o q*, reaching past the edges of the said eccentric, substantially as shown and described, whereby a narrow throat or passage is formed and the danger of the barbs catching over the edges of the eccentric avoided, as set forth.

7. The guide B, secured to the bar or plate A by means of the bolt or pin *m*, substantially as and for the purposes set forth.

253,059. REFRIGERATING-BEDSTEAD. CHARLES P. JACKSON, Chicago, Ill. Filed Sept. 12, 1881. (No model.)

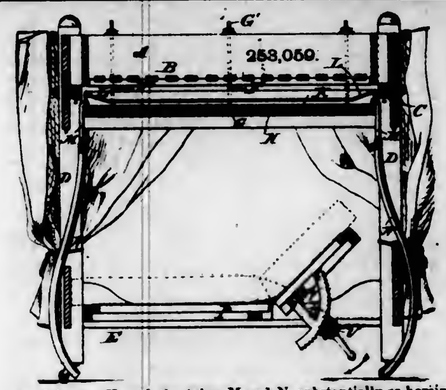
Claim.—1. A bedstead constructed, substantially as herein shown and described, with an ice-box supported above it, and with an adjustable head-rest, as set forth.

2. The combination, with a bedstead, of an ice-box supported above it, substantially as shown and described.

3. The combination, with a bedstead, of an ice-box supported above it, and of a drip-water pan below this ice-box, substantially as herein shown and described, and for the purpose set forth.

4. The combination, with the bedstead-posts D, of the cross-pieces C, the ice-box A, the drip-pan K, the hollow ceiling H, and the rods F, substantially as herein shown and described, and for the purpose set forth.

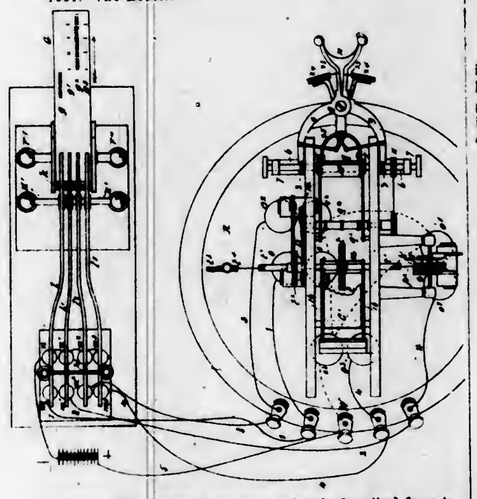
5. The combination, with the bedstead E, of the ice-box A,



the drip-pan K, and the tubes M and N, substantially as herein shown and described, and for the purpose set forth.

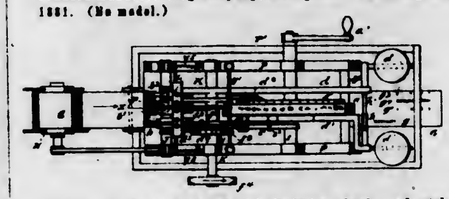
6. The combination, with the bedstead E, of the ice-box A and the drip-pan K, provided with inwardly and downwardly projecting flanges I, substantially as herein shown and described, and for the purpose set forth.

253,060. SECRET-MESSAGE TELEGRAPH. ALBERT F. JOHNSON and FRANK B. JOHNSON, Brooklyn, N. Y., assignors to the Johnson Manufacturing Company, same place. Filed Aug. 16, 1881. (No model.)



Claim.—The system of mechanism herein described for automatically transmitting secret telegraphic dispatches, consisting of, first, a preparing-machine for impressing the message in unintelligible characters upon a strip of paper, G, said machine consisting of a series of impressing-rods, $b\ b'\ b^2\ b^3$, operated by levers $d\ d'\ d^2\ d^3\ d^4$, in connection with a letter-wheel, *a*, to produce three or more separate series of indentations, $g\ g'\ g^2\ g^3$, upon said strip G, and a feeding device, constructed as described, to feed forward said strip while the indentations are being made; secondly, a transmitting-machine consisting of a drum, E, over which said strip is passed, and a series of levers or circuit-closers, $l\ l'\ l^2\ l^3$, operated automatically by said indentations $g\ g'\ g^2\ g^3$, respectively, for the purpose of opening and closing electric circuits with the receiving-machine through the medium of line-wires and batteries forming properly-arranged electric circuits, as described; and, thirdly, a receiving-machine on which the message is printed in alphabetical characters, having a series of magnets, $o\ o'\ o^2\ o^3$, which are brought into circuit by means of the indentations $g\ g'\ g^2\ g^3$, respectively, and which operate the printing-wheel *t* and message-strip G' through the medium of the mechanism connected with each of them, as shown and described, the said receiving-machine being also provided with devices for concealing the message while it is being printed and devices for sealing the same, as described, the whole being constructed to operate as set forth.

253,061. APPARATUS FOR PREPARING AND TRANSMITTING SECRET TELEGRAPHIC MESSAGES. ALBERT F. JOHNSON and FRANK B. JOHNSON, Brooklyn, N. Y., assignors to the Johnson Manufacturing Company, same place. Filed Aug. 16, 1881. (No model.)

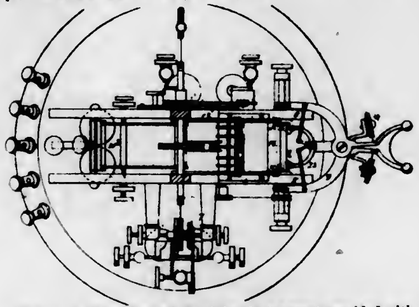


Claim.—1. In combination with the letter-wheel *a* and ratchet-wheel *f*, the levers $d\ d'\ d^2\ d^3\ d^4$, pivoted arms $e\ e'\ e^2\ e^3$, punching-rods $b\ b'\ b^2\ b^3$, and toothed wheels f' and f^2, constructed and operated as described, the whole being constructed and arranged to operate substantially as described, for the purpose of making indentations or bosses on the strip G, which indicate the subject and import of the message, as set forth.

2. In combination with the pivoted arms $e\ e'\ e^2\ e^3$, operated as described, the frame I, provided with the set-screws *j j j j j*, and arms a^2, carrying the dogs *w*, roller *a'*, dog *w'*, and springs y' and y^2, as shown and described, for the purpose of feeding forward the strip G.

253,062. SECRET-PRINTING TELEGRAPH. ALBERT F. JOHNSON and FRANK B. JOHNSON, Brooklyn, N. Y., assignors to the Johnson Manufacturing Company, same place. Filed Aug. 16, 1881. (No model.)

Brief.—The message is printed upon a strip of paper, which is concealed from view as fast as printed and rolled up on a quill held between a pair of spring-pressed arms, a rotary motion being given to the quill by mechanism connected to the type mechanism. After the message is completed it is sealed and the strip cut off by a knife, the address being left exposed.



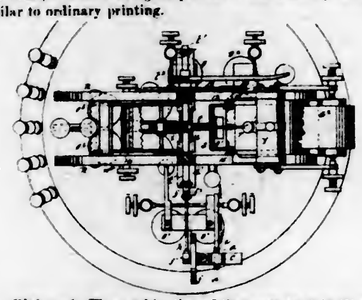
Claim.—1. In a telegraph receiving-instrument provided with mechanism, as described, for feeding a strip of paper through the same, the combination of a shield or plate arranged in such manner as to conceal the said strip from view while it is being passed through the machine, a quill or cylinder upon which the said strip is received and wound as the message is printed thereupon, and mechanism, as described, for rotating said quill and winding the message thereon, substantially as herein set forth.

2. In a telegraph receiving-instrument, the following elements in combination, viz: mechanism, as described, for feeding a strip of paper longitudinally through the instrument, a type or printing wheel arranged and operated to print a message upon said strip in transverse lines, a shield or plate for concealing the printed portion of the strip from view, a quill or cylinder upon which the said strip is received, wound, and sealed, and mechanism, as described, for rotating said quill and winding the message thereon, substantially as herein set forth and described.

258,063. SECRET-PRINTING TELEGRAPH. ALBERT F. JOHNSON and FRANK B. JOHNSON, Brooklyn, N. Y., assignors to the Johnson Manufacturing Company, same place. Filed Nov. 3, 1881. (No model.)

Brief.—The message is printed on a strip of paper, and a second strip is reeled over it in such a manner as to conceal it from

view. A traveling type-wheel oscillates from right to left and vice versa, and the message is printed in horizontal parallel lines similar to ordinary printing.

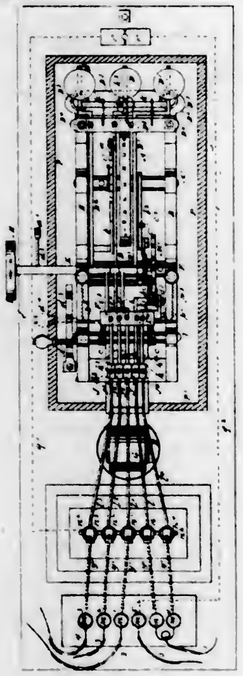


Claim.—1. The combination of the message-strip G' and second strip of paper, G², the feed-rollers q' q^2, operated, as described, by the armature of the magnet *o*, the impressing-roller *u* and printing-wheel *t*, both constructed to operate, as described, through the medium of electric impulses, and the fountain Y and sponge *z*, as and for the purpose set forth.

2. In combination with the message-strip G', fed longitudinally through the instrument by means of the mechanism described, operated by the armature of the magnet *o*, the printing-wheel *t*, having both a rotary and a transverse movement, and operated by the mechanism connected with the armatures of the magnets o' and o^2, as described, the strip G², the feed-rollers q' and q^2, and the plate *i*, all constructed to operate as described, for the purpose set forth.

3. In a telegraphic receiving-instrument, the combination, with the magnet o' and its armature, of the pawl or click *e*, ratchet-wheel *a*, crank-wheel *f*, rod *h*, and shaft *t'*, carrying the printing-wheel *t*, all arranged and operated substantially as described, for the purpose set forth.

253,064. INSTRUMENT FOR PREPARING AND TRANSMITTING SECRET TELEGRAPH MESSAGES. ALBERT F. JOHNSON and FRANK B. JOHNSON, Brooklyn, N. Y., assignors to the Johnson Manufacturing Company, same place. Filed Nov. 8, 1881. (No model.)



Brief.—A letter-wheel carrying on its face the characters or letters actuates when rotated a punch, which perforates a single row of perforations for operating the step-by-step mechanism at the receiving-station. Three levers and punches are operated at proper intervals to perforate individual sets of perforations in rows parallel to the first row, the functions of said perforations being to operate through proper circuits, first, the printing-lever; second, the paper-feed; and, third, the side feed of the paper by devices which form parts of the receiving apparatus, but being no part of this application.

Claim.—1. The levers D D' D², levers h h' h^2 h^3 h^4, provided respectively with the rods l l' l^2 l^3, toothed wheels M' and b', arm b^2, provided with the pawl *c*, bar p^3, provided with the detent p', pin c^2, and pawl b^3, in combination with the posts n n' n^2 n^3 n^4 and m m' m^2 m^3 m^4 m^5 and connecting-wires y', line-wires 1 2 3 4, and battery-wire 5, switch *r*, and wires q' and q^2, all constructed and arranged substantially as described, to operate in the manner set forth.

2. The punching-rods n n' n^2 n^3, strip G, plate w, and feed-rollers f f', operated, as described, in combination with the levers D D' D², levers h h' h^2 h^3 h^4, toothed wheels M' and b', arm b^2, provided with the pawl c', bar p^3, provided with detent p', pin c^2, and pawl b^3, all constructed and arranged to operate substantially as described, for the purpose of indenting the message.

3. The feeding device composed of the frame F, provided with the set-screws i i' i^2 i^3 i^4, and with the arms *c* *c*, ratchet-wheels *c* feed-rollers f f', and plates w w^2, as shown and described.

4. In combination with the mechanism herein shown and described for operating the levers h h' h^2 h^3 h^4, as set forth, the letter-wheel A, rotated by the ratchet-wheel C and pawl *a*, the pointer a^3, secured to the shaft E, and the index *x*, operated by the rod x^2 on the hub of the wheel b', all as shown and described, for the purposes set forth.

5. In combination with the mechanism herein shown and described for operating the levers h h' h^2 h^3 h^4 in the manner set forth, the rods *d*, eccentrics d^2, and pawls *d*, as and for the purpose set forth.

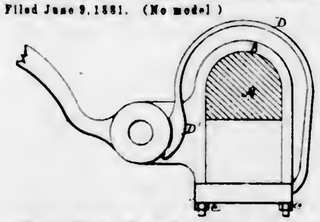
253,065. TOOTH FOR CLEANING ROLLERS OF CARDING-MACHINES. THOMAS KERSHAW and HERMON E. CUNNINGHAM, Philadelphia, Pa. Filed June 23, 1881. (No model.)

Brief.—The teeth are bent or coiled midway of their length or coiled at the base, whereby their elasticity is increased.



Claim.—The combination of the roller A with a series of teeth, each of which is coiled or otherwise bent at or above the base, whereby its elasticity is increased, substantially as set forth.

253,066. THILL-COUPLING. HENRY F. KIPP, Buffalo, N. Y. Filed June 9, 1881. (No model.)



Claim.—In a thill-coupling, the double clips B B and the spring D in combination therewith, the spring constructed with the cup-shaped end D', partly inclosing the rear end of the thill *e*, substantially as and for the purpose specified.

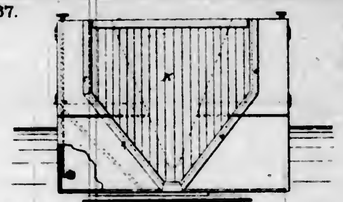
253,067. COFFER-DAM. HENRY P. KINGHAM, Brooklyn, N. Y. Filed Nov. 30, 1881. (No model.)

Brief.—A conical opening at one end of the dam has hinged doors, upon which fits a sliding door, which closes the opening and also keeps the hinged doors closed.

Claim.—1. A coffer-dam with a conical opening at one end provided with hinged doors, substantially in the manner shown and described.

2. In a coffer-dam provided with an opening at one end having folding doors, a removable sliding gate, whereby the opening in the end of the dam may be closed and the hinged doors kept closed, substantially as is shown and described.

253,067.



253,068. WINDOW-CORNICE. CHRISTIAN P. KLINGENBERG, Toledo, Ohio, assignor to Osborne Cornice Company, same place. Filed Sept. 5, 1881. (No model.)

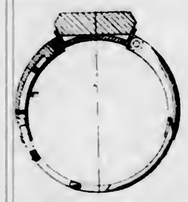
Brief.—The tenon on the return-piece is inserted in the mortise on the cornice and held by a wedge.



Claim.—The combination of the return-piece having the tenon, the side molding having the mortise, and the wedge.

253,069. FINGER AND SCARF RING. ROBT. J. LA GRANGE, Philadelphia, Pa. Filed Nov. 30, 1881. (No model.)

Brief.—The ring is expanded or contracted by means of the pivoted and sliding segments.



Claim.—1. The ring having a head with grooved or hollow segments hinged or pivoted thereto and an expansible and contractile segment fitted into the former segments, substantially as and for the purpose set forth.

2. The ring having hinged segments, an expansible and contractile segment, and spring fastening-plate C therefor, substantially as and for the purpose set forth.

253,070. BURGLAR-ALARM. STEPHEN D. LAKE, Jersey City, N. J., assignor of one-half to Asa W. Dickinson, same place. Filed Dec. 10, 1881. (No model.)

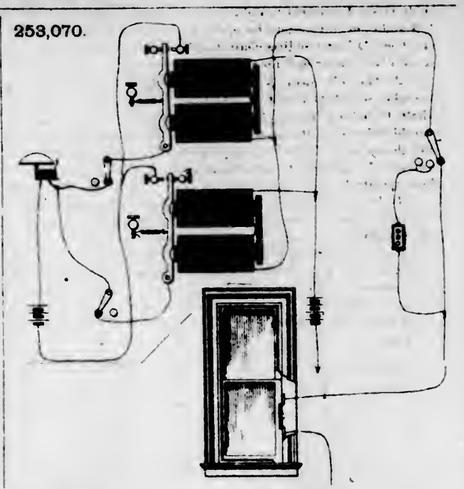
Brief.—Two relays are arranged in multiple arc in the main line and their armature-levers in multiple arc in the local line, which also includes an alarm. The main circuit is normally closed, the local normally open. Any interruption or change in resistance of the main circuit actuates one or the other of the relays and causes an alarm.

Claim.—1. The combination, substantially as hereinbefore set forth, of a main battery, a main circuit, two relays included in said main circuit, a local battery, a local circuit having two branches connected respectively to the front contact-stop of one of said relays and the rear contact-stop of the other, and a signaling or alarm apparatus.

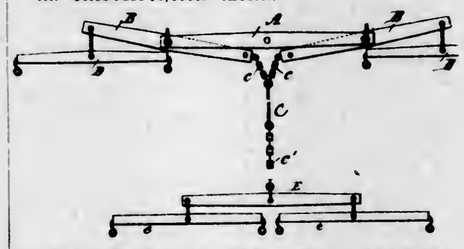
2. The combination, substantially as hereinbefore set forth, of a main battery, a main circuit, two relays included in said main circuit, a local battery, a local circuit having two branches connected respectively to the front contact-stop of one of said relays and the rear contact-stop of the other, a signaling or alarm apparatus, and a switch adapted to open or close said branch circuits.

3. The combination, substantially as hereinbefore set forth, of a main line, a main battery, two relays having their respective electro-magnets included in multiple arc with said battery and their circuit-breaking armature-levers respectively included in two branches of a local circuit, a local battery, means for adjusting the retractile force exerted upon said armature-levers, and contact-stops for closing the local circuit through a signaling apparatus by the movement of either of said armature-levers.

253,070.

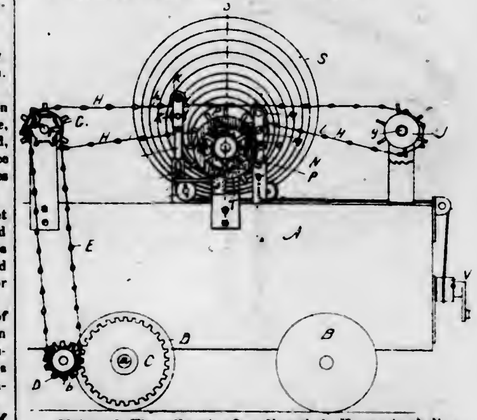


253,071. DRAFT-EQUALIZER. JOS. M. LANGSTON, Waverly, Ill. Filed June 18, 1881. (Model.)



Claim.—The herein-described equalizer, consisting of the double-tree A, the intermediate centrally-pivoted bars, B, the single-trees D, the chains *c c'*, the rod C, the double-tree E, and single-trees *e*, substantially as and for the purpose set forth.

253,072. SPRING-MOTOR FOR CARS. WILLIAM T. LARIMORE, St. Louis, Mo. Filed Nov. 25, 1881. (No model.)



Claim.—1. The coil-spring S, endless chain H, running in line with sprocket-wheels G, P, Q, and J, of which two, I' Q, are upon a common shaft, O, in combination with the posts L N and their connections for operating the same, and with sprocket-wheels D F and endless chain E, connected to a car-axle, all substantially as described, for the purpose specified.

2. The coil-spring S, endless chain H, running in line with

sprocket-wheels G P Q J, of which two, P Q, are upon a common shaft; O, ratchet-wheel T, and pawl *s*, in combination with the posts L N and their connections for operating the same, and with sprocket-wheels D F and endless chain E, connected to a car-axle, all substantially as described. for the purpose specified.

3. The coil-spring S, endless chain H, running in line with sprocket-wheels G P Q J, of which two, P Q, are upon a common shaft, O, having sliding clutch R, ratchet-wheel T, and pawl *s*, in combination with the posts L N and their connections for operating the same, and with sprocket-wheels D F and endless chain E, connected to a car-axle, all substantially as described, for the purpose specified.

4. In combination with the coil-spring S, endless chain H, running in line with sprocket-wheels G P Q J, of which two, P Q, are upon a common shaft, O, in combination with the posts L N and their connections for operating the same, the sprocket-wheel G, connected to its shaft by a spline, *f*, substantially as and for the purpose specified.

253,073. GRAIN-BINDER. CHRISTOPHER W. LEVALLEY, St. Paul, Minn. Filed July 22, 1881. (No model.)

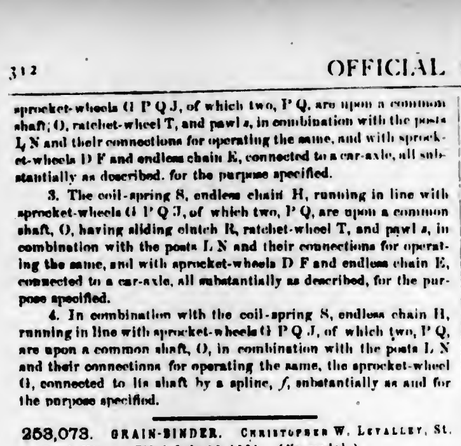


Claim.—1. In a grain-binder, the combination, with the needle-shaft *m*, of the clutch-plate *m' m²*, fast thereon, and the segment *L'*, adjustable to each other by means of bolts and slots arranged upon opposite sides of the needle shaft, whereby the segment *L'* is secured to the clutch-plate independently of said shaft, substantially as set forth.

2. The combination, with the needle-shaft *m*, of the clutch-plate *m' m²*, fast thereon, and the segment *L'*, provided with the adjusting-slots and the clamping-bolts *m²*, substantially as set forth, whereby the segment *L'* is rigidly secured to the clutch-plate independently of said shaft.

253,074. APPARATUS FOR PRESERVING EGGS. KELLOGG E. LOOMIS, New York, N. Y., assignor to John Van Nest, same place. Filed Sept. 13, 1881. (No model.)

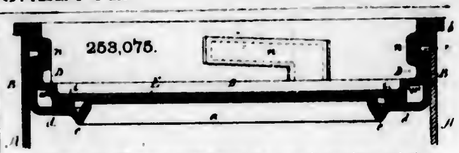
Brief.—A partial vacuum is formed in the chamber and the silicate fluid admitted from below. The deflecting-plate causes this to be thrown in the form of spray. When sufficiently covered the cocks are opened and the fluid runs off to the reservoir beneath.



Claim.—1. In an apparatus for preserving or sealing eggs, an air-tight reservoir having a perforated injecting-pipe, a deflecting-disk, and an egg-receptacle, substantially as specified.

2. In an apparatus for preserving or sealing eggs, the combination of a deflecting-disk and an egg rack or tray, the latter consisting of a number of concentric rings or hoops, and a series of smaller rings located between the same, substantially as shown and described.

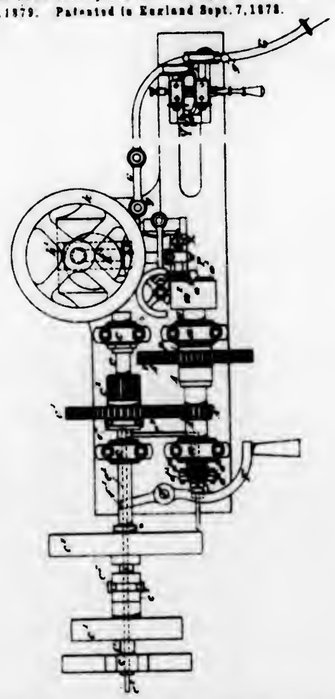
253,075. CAP FOR CANS. CHARLES W. LYON, Philadelphia, Pa. Filed Dec. 5, 1881. (No model.)



Claim.—1. The combination of the can A, the internal ring, B, having lugs *m*, and the sunken cover D, having slots or recesses *n*, and an annular groove, *w*, as set forth.

2. The combination of the can A, the internal ring, B, having a flange, *d*, with annular groove *e*, the disk E, the sunken cover D, and the packing-ring *i*, as set forth.

253,076. AUGER-MAKING MACHINE. PETER MACKAY, Glasgow, County of Lanark, Scotland, assignor to himself and Bennet Bruce Burley and Robert Hoyt, same place. Filed Nov. 8, 1879. Patented in England Sept. 7, 1878.



Claim.—1. The machine for turning and preparing the points or ends of augers and for cutting the entering screw thread or threads thereon, consisting of the driving-shaft C and differential driving-gear c' c^2 C' C^2 A' A^2 and parts in connection therewith, the mandrel A, with screw *d* and parts in connection therewith, and shaper P, also these parts in combination with the tools or apparatus X and Y.

2. The apparatus marked X in Figs. 1 and 2 and further illustrated in Figs. 7, 8, 9, and 10, for turning and preparing the ends of augers preparatory to cutting the entering screw thereon.

3. The lever N, arm a', screw *b*, and parts in connection therewith for effecting the movements of the upper part, M, of the apparatus X.

4. The apparatus marked Y in Figs. 1 and 2 and further illustrated in Figs. 3 to 6, for cutting the entering screw thread or threads and the entering point on the ends of augers.

5. The block J' and connections for adjusting the angle of the screw-cutting disks

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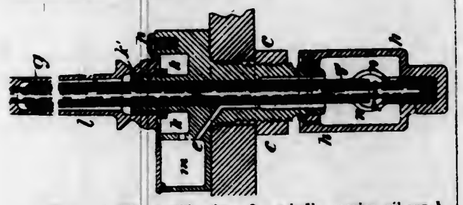
253,077. WAGON-SPOKE. JAMES MARIS, Wilkesville, Ohio. Filed Aug. 4, 1881. (No model.)



Claim.—A wood spoke having a strengthening tongue or tongues, pin or pins, of superior wood, inserted in or combined with the end or ends thereof, substantially as specified.

253,078. SPINDLE AND BEARING THEREFOR. JAMES MASON and JAMES A. MASON, Ashton-under-Lyne, County of Lancaster, England, assignors of one-half to Thomas Henry Rushton and Benjamin Alfred Dobson, Bolton, England. Filed May 23, 1881. (No model.) Patented in England Mar. 17, 1880, in France Sept. 28, 1880, in Belgium Sept. 30, 1880, and in Germany Oct. 3, 1880.

Brief.—At the upper end of the bolster is a bushing composed of anti-friction metal, provided with a spiral slot, which allows the oil conducted to said bushing to overflow and pass into a receiver in the bolster-carrier, from whence it is conducted to the footstep. The interior of the shoulder of the receiver is lined with anti-friction metal, against which the lower end of the sleeve bears when an excessive strain is put thereon.



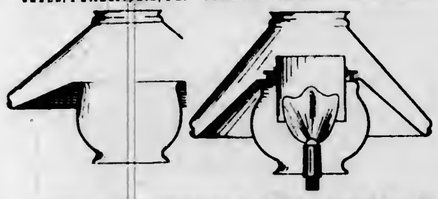
Claim.—1. The combination of a spindle, carrier, oil-cup *h*, and footstep-bearing, with a bolster having a bush, *g*, at its upper end, provided with a spiral slot, and having at its lower end an opening to admit oil from the cup to the spindle above the bearing, all substantially as set forth.

2. The combination of the spindle, oil-cup *h*, and footstep-bearing, with bolster, leaving a communication between the oil-chamber and spindle, and a bolster-carrier provided with ducts *e*, and a sediment-collector communicating with said ducts.

3. The combination of the spindle, bolster, and footstep-bearing, with oil-cup *h*, and carrier, having oil-chambers *k* and *m*, and oil-ducts *e*, substantially as described.

4. The combination of the spindle, footstep-bearing, bolster, and bearing at the upper end of the bolster, with a sleeve, *l*, and whirl, and the carrier having a shoulder, *k'*, provided with a bushing for the sleeve to bear against, substantially as set forth.

253,079. SHADE AND CHIMNEY FOR LAMPS. WM. H. MARSHALL, Philadelphia, Pa. Filed Oct. 10, 1881. (No model.)



Claim.—1. The combination of a chimney of flint glass having a depressed reflector silvered or coated with metal and an opal or other shade supported thereon, substantially as set forth.

2. The combination of a chimney of flint glass having a shoulder at the top, a reflector silvered or coated with metal set on the chimney, and an opal or other shade set on the reflector, substantially as set forth.

3. The combination of a chimney having a depressed reflector and a shade supported thereon, substantially as set forth.

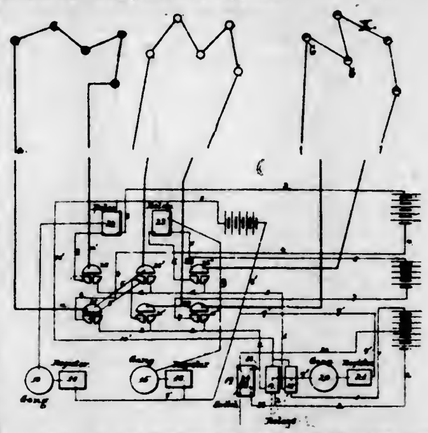
4. The combination of a chimney, a depressed reflector having a heat-non-conducting support, and a shade supported on the reflector, substantially as set forth.

5. The combination of a chimney, a depressed reflector supported on the chimney, a shade supported on the reflector, and a cylinder inside of the chimney to reflect the light and steady the flame from a lamp or gas burner, substantially as set forth.

6. The combination of a flint-glass chimney, a cylinder of mica, a reflector, and a shade, substantially as set forth.

253,080. DISTRICT-TELEGRAPH SYSTEM. CHAUNCEY F. MCCULLOH, Baltimore, Md. Filed Oct. 25, 1881. (No model.)

Brief.—An arrangement whereby breaks in the line are prevented from rendering a circuit inoperative. Each circuit of a district system is normally closed through an independent battery and relay at the central station, which controls a local circuit operating a gong and register. A break or a ground at any point is announced by the gong and an operator manipulates a switch in such a manner as to ground the circuit through relays on either side of a central-station battery, said relays being provided with front and back contacts and switch-plugs, which operate to close a local circuit to the signaling gong and register. Each signaling-box puts on a local ground when operating.



Claim.—1. In a district or analogous telegraph system, a continuous metallic circuit connecting the several stations with the central office, a battery adapted to be grounded in the center, and a switch for shunting said battery into circuit, in combination with a relay intermediate each pole of said battery and the termini of the circuit, said relays working a local-circuit register and gong, and having means for changing their stroke from forward to backward, whereby, in the event of the breaking of the main line, the contingency of the grounding of either end of the line is provided for, as and for the purpose set forth.

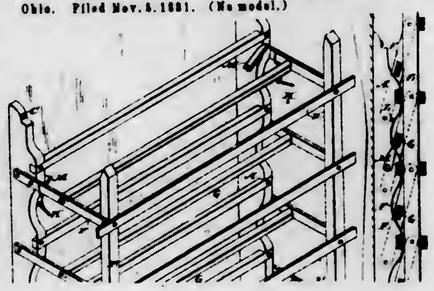
2. In combination with the conventional district-telegraph plant, a normally-open ground-connection for each box, and means for closing such connection, a central office having a ground-connection from an extra battery, arranged to be shunted into circuit, and having a register and gong, and relays 17 18, having means for reversing their stroke, and the switch 19, as set forth.

3. In combination with the main-line wires of the closed metallic circuit, the extra battery 12, having ground-wire 30, and the relays 17 and 18, having disks 32 33 34, plugs 31, and connections from said disks with the local battery, and the insulated pins and frame of the relays, as set forth, whereby provision is made for every possible contingency in the event of a break in the line with respect to the grounding of either end.

4. In combination with the main line and battery 12, the relays 17 18, on opposite sides of the battery, the double-lever switch 19, having ground 30 from the center of the battery, the relays 17 18, and wires 37 38, as set forth.

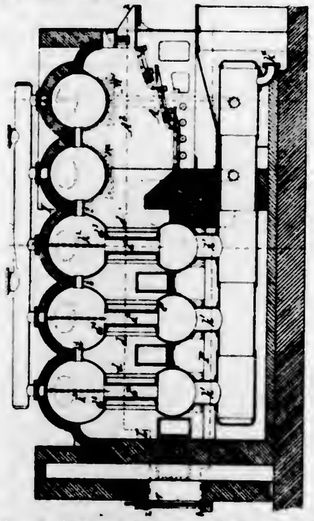
5. The box mechanism herein described, consisting of the notched disk J' and smaller toothed disk J, concentric therewith, lips *k k'*, and main line and ground connections, as set forth.

253,081. CLOTHES-RACK. WILLIAM H. MCKENSIE, Waverly, Ohio. Filed Nov. 5, 1881. (No model.)



Claim.—In a clothes-drier constructed substantially as described, the combination of the uprights A, having aperture L, pivoted buttons M, and pins K, flexibly attached thereto, with the upper bars, F, apertured near the end and pivoted to uprights, whereby the hinged frames may be adjustably supported, as described.

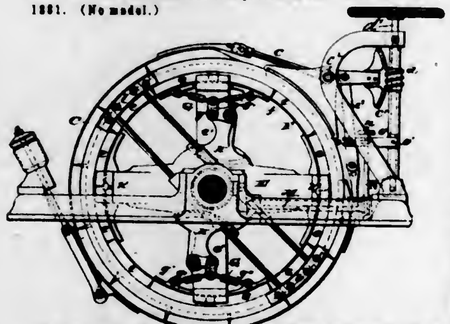
253,082. STEAM-BOILER. JULIUS H. MEISSNER, Philadelphia, Pa. Filed Sept. 10, 1881. (No model.)



Claim.—1. A steam-boiler composed of a series of sections, having an upper and lower shell or drum and horizontal connections, substantially as shown, said shells or drums being connected by water-tubes *d*, of a length less than the space within the walls of the shells or drums, whereby the tubes may be put in place or withdrawn from the inside of the drum, as hereinbefore set forth.

2. The combination, in a steam-boiler composed of an upper and lower section or drum connected by water-tubes the length of which is less than the space within the walls of the drum, said tubes being thus adapted to be placed or withdrawn from within the drum, of outer circulating and connecting tubes for staying and supporting the drums, as hereinbefore set forth.

253,083. FRICTION CLUTCH AND BRAKE FOR HOISTING, &c. DANIEL H. MERRITT, Marquette, Mich. Filed Nov. 29, 1881. (No model.)



Claim.—1. The combination, with the friction-rim, of the movable or sliding starting-gear, having cross-bars provided with friction-blocks *l*, adapted to engage the side of said rim for the purpose of stopping said gear, substantially in the manner as and for the purpose herein shown and described.

2. The combination, with the friction-rim B' and the internal clutch-band, F, of the movable or sliding starting-gear having cross-bars provided with friction-blocks *l*, adapted to engage the side of said rim, and intermediate mechanism for connecting said gear with the internal clutch-band, all substantially in the manner as and for the purpose herein shown and described.

3. The combination, with the friction-rim and clutch-band and a revolving starting-gear adapted to be stopped in its rotation, of mechanism connecting said band with the starting-gear, consisting of the toggle G and pivoted toothed segment, all substantially in the manner as and for the purpose herein shown and described.

4. The combination, with the friction-rim and clutch-band, of the pivoted toothed segments, mechanism, substantially as described, for connecting said segments with the clutch-band, movable or sliding and rotating starting-gear, and means for throwing it into mesh with said segments and stopping its rotation, all substantially in the manner as and for the purpose herein shown and described.

5. The combination, with the friction-rim on the drum and internal clutch-band, F, of the toggles G G, having adjustable sectional bars *g' g'*, toothed segments H, fulcrumed on the driver and connected to said toggles, and a movable or sliding and rotating starting-gear, and means, substantially as described, whereby said gear is adapted to mesh with said toothed segments and be stopped in its rotation, substantially in the manner as and for the purpose specified.

6. The combination, with the friction-rim on the drum and the internal clutch-band, F, of the toggles G G, toothed segments fulcrumed on the driver and connected to said toggles, and a movable or sliding starting-gear having cross-bars provided with friction-blocks *l*, adapted to engage said rim, substantially in the manner as and for the purpose herein shown and described.

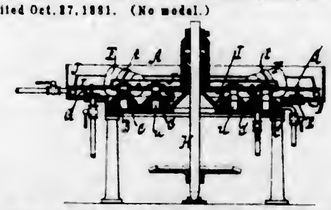
7. The combination, with the friction-rim on the drum and an internal sectional clutch-band, F, of toggles G G, connecting the ends of said sectional brake-band, and retracting spring or springs K, connected to said band, substantially as and for the purpose herein shown and described.

8. The combination, with the friction-rim on the drum and an internal sectional clutch-band, F, of toggles G G, connecting the ends of said sectional brake-band, and having adjustable sectional bars *g' g'* and retracting spring or springs K, connected to said band, substantially as and for the purpose herein shown and described.

9. The combination, with the friction-rim B' and external and internal brake and clutch bands and levers for operating said bands, of the intermediate connecting and adjusting mechanism, consisting of the pivoted lever O and adjusting-rod N, provided with small adjusting-wheel *n*, substantially as and for the purpose herein shown and described.

10. The combination, with the friction-rim B', of external and internal brake and clutch bands, C F, and a sliding sleeve or starting-gear having cross-bars provided with friction-blocks *l l*, adapted to engage the side of said rim, substantially as and for the purpose herein shown and described.

253,084. AMALGAMATOR. WILLIAM MOLLER, New York, N.Y. Filed Oct. 27, 1881. (No model.)



Claim.—1. The combination of the pan A, having its bottom constructed with circular concentric troughs C, and the mullers B, overlapping the two adjacent troughs and resting on the bottom of the pan, and provided with two sets of teeth, projecting respectively into the said troughs, substantially as described.

2. The combination of the pan A, having its bottom constructed with a circular concentric trough, C, and provided with a raised border, D, having a circular trough, E, the vertical shaft H, radial arms I, mullers B, having teeth *r*, and rakes G, both the rakes and the mullers being connected with the radial arms, substantially as described.

3. The combination of the pan A, having a raised border, D, the vertical shaft H, the radial arms I, the mullers B and rakes G, the rings J, carried by the radial arms, and the crushing-rollers journaled in the rings, substantially as described.

4. The combination, substantially as hereinbefore set forth, of the pan having its bottom constructed with a raised border and with a circular concentric trough in such border, and the crushing-rollers (one or more) traveling on the raised border and having a circumferential flange projecting into such trough, for the purpose specified.

5. The combination of the pan A, having its bottom provided with a circular concentric trough, C, and provided with a raised border, D, having a circular concentric trough, E, and the mullers B and rake G, both provided with teeth, projecting respectively into the troughs in the pan and raised border, substantially as described.

253,085. VEHICLE. GEORGE M. F. HOLLINGWORTH Bideford, County of Devon, England. Filed Sept. 23, 1881. (No model.) Patented in England Aug. 20, 1880.

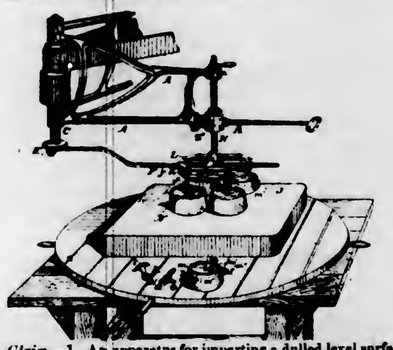


Claim.—1. In an omnibus or vehicle for use on common roads, the combination, with the coach-body A, of the platform B and extensions B', carrying the bent rod D, said rod and extensions forming a frame-work, within which the small wheels, with their carriage and accessories, are free to revolve and swivel as far as may be expedient, substantially as and for the purposes set forth and shown.

2. In an omnibus or vehicle for use on common roads, the combination, with the coach-body A, platform B, and extensions B', of the lower steps, C, intermediate platform, C', carrying the driver's seat, and upper steps, C', substantially as and for the purposes set forth and shown.

3. In a vehicle of the class described, the combination, with the body A, of the main carrying-wheel axle, located centrally, or nearly centrally, of the longer axis of the vehicle, the main springs F, and the auxiliary springs F', arranged for operation substantially as and for the purposes shown and described.

253,086. GRAINING DEVICE. CHARLES W. HOBART, Cincinnati, Ohio. Filed Sept. 3, 1881. (No model.)



Claim.—1. An apparatus for imparting a dulled level surface to lithographic slabs, &c., consisting of one or more flat-bottomed grainers, vertical shafts adapted to oscillate the grainers, driving-bar engaging with the said vertical shafts, a supporting-frame for the shafts, and pintle C, having wrist-pin E, and rotated by suitable mechanism, as set forth.

2. In a graining apparatus, one or more separable grainers capable of resting by their flat bottoms upon the work, and having central perforations, *m*, and notched lugs *m''*, in combination with oscillating driver J N, upheld in folding crane A *a* B, and driven by an oscillating connection with reciprocating bar F upon eccentric E in said crane, substantially as set forth.

3. A power-driven grainer separable from the driving mechanism, capable of resting by its proper weight by one flat end upon and of being oscillated in the plane of the work, and having in its crown the central perforation, *m*, raised margin *m'*, and notched lugs *m''*, substantially as set forth.

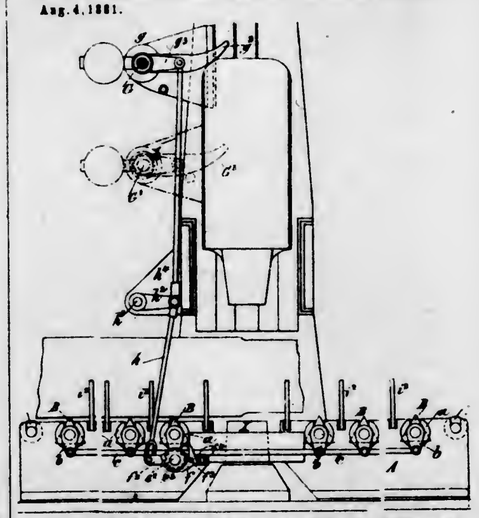
4. The combination of one or more grainers having vertical projections, the folding bearing-crane A B, rotating pintle C, prolonged downward, wrist-pin E, reciprocating bar, supporting-frame, and vertical shafts J, each shaft having an arm at top and a cross-bar at bottom, the said arms being engaged by the reciprocating bar, and the cross-bar engaging with the projections on the grainers, as and for the purpose set forth.

253,087. ADVERTISING DEVICE. EDWARD L. MORRIS, Boston, Mass. Filed June 9, 1881. (No model.)



Claim.—An advertising device consisting of the mirror B, frame D, and base A, having thereon an advertisement, in combination with the statue C, arranged to be reflected within the mirror, substantially as described, and for the purpose set forth.

253,088. DEVICE FOR PRESENTING FORGINGS TO STEAM-HAMMERS. ANDREW MUNN, Glasgow, County of Lanark, Scotland. Filed Dec. 16, 1881. (No model.) Patented in England Aug. 4, 1881.



Claim.—1. In machinery for moving and holding forgings or ingots under steam-hammers or other hammering apparatus, the carriers B, of a form and operated in a manner to form a resting-surface for the ingot or forging during hammering, and to lift and feed the said ingot or forging under the hammer between the strokes, as described.

2. In machinery for moving and holding forgings or ingots under steam-hammers or other hammering apparatus, the combination, with the carriers B, of the means for operating the same, consisting of the wiper g^3, acted upon by the hammer, the shaft G, arm g^3, rod *h*, pawl-lever f^4, pawl *f*, and ratchet-wheel e^3, and

shaft c^1 and transmitting-wheels d e, as hereinbefore described, and illustrated in the accompanying drawings, and the combination, with these parts, of the extra shaft G^2 and tappet G^3 and clutch G^4, as and for the purpose described.

3. In machinery for moving and holding forgings or ingots under steam-hammers or other hammering apparatus, the combination, with the carriers B, of the means for turning and supporting the ingot or forging, consisting of the arms b^1 b^2 b^3 b^4, shafts k k and i i i i, and arms i^2 i^2, and their connections, as hereinbefore described, and illustrated in the accompanying drawings.

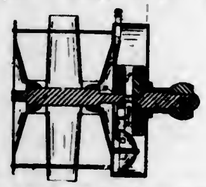
253,089. WRENCH. WM. O'CONNELL, Jr., Pittsfield, Mass. Filed Dec. 13, 1881. (No model.)



Claim.—1. The combination, with the lever A, provided with the jaw C and slots E, the latter approximating a circle in form, of the movable jaw D, having the arms F, adapted to embrace the lever A, and supporting the fulcrum-pin G, the latter being constructed with a short diameter to adapt the pin for insertion in said slots, and with a longer diameter to lock the pin against removal, substantially as set forth.

2. The combination, with the lever A, having the jaw C and slots E, of the removable jaw D, provided with the arms F, adapted to embrace the lever, the fulcrum-pin G, constructed to be inserted and turned within said slots, and thus locked therein, and the spring H, secured at one end to the jaw D, while its opposite end bears upon the lever A, substantially as set forth.

253,090. FISHING-REEL. WARREN OSAYDE and TAYLOR O'BANNON, Indianapolis, Ind., assignors to the American Reel Company, same place. Filed Nov. 14, 1881. (No model.)



Claim.—1. The combination, in a fishing-reel, with the gear-wheels thereof, one of which is mounted on the spool-shaft and another on the crank-shaft without any direct connection between them, of a crank and a crank-shaft, the latter of which is mounted in a single bearing directly in line with the bearings of the spool-shaft, but entirely separated therefrom, substantially as shown and specified.

2. The combination, in a fishing-reel, with a bell, of a bell-hammer, a lever which is adapted to throw said hammer into or out of operative position, a wheel, and studs on said wheel, which operate to vibrate the bell-hammer when in operative position, and thereby ring the bell, all substantially as set forth.

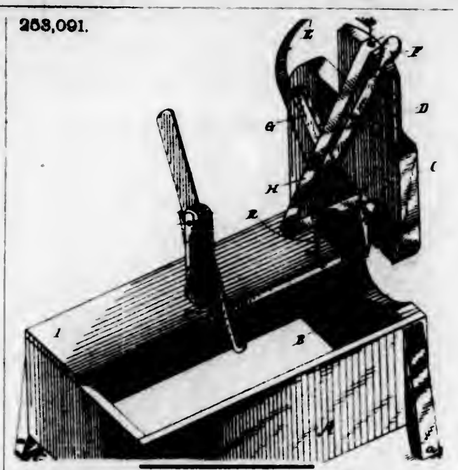
253,091. CORN-HUSKING MACHINE. FERDINAND ORMARY, Saginaw, Mich. Filed Oct. 29, 1881. (No model.)

Claim.—1. The combination, with the standard and stationary knife, of a plunger provided with a cutter, a spring for retracting the plunger, an operating-lever, and a triangular bracket carrying the adjustable arm, substantially as set forth.

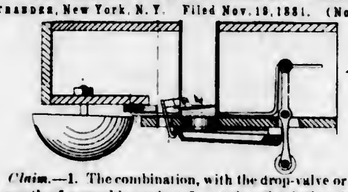
2. The combination, with the box, partial cover, and cutting devices, of a standard having a longitudinal slit and a pivoted hook-lever, substantially as set forth.

3. The combination, with the box A, end B, and standard C, the latter being recessed and grooved, as described, of the stationary cutter, the plunger D, sliding in the grooves of the standard, the cutter I', triangular bracket H, arm B, lever F, link G, and the spring E, substantially as set forth.

253,091.



253,092. SPEAKING-TUBE ANNUNCIATOR. WILLIAM R. OSTRANDER, New York, N. Y. Filed Nov. 19, 1881. (No model.)



Claim.—1. The combination, with the drop-valve or cover for the mouth of a speaking-tube, of a catch or latch therefor, a trip-plate which swings in said speaking-tube and trips the catch for the purpose of automatically releasing the valve, substantially as shown and described.

2. The combination, with the pivoted catch or latch for the drop-valve, of a plate which swings vertically in the speaking-tube, so as to interrupt an air-current therein, and is adapted to act on said catch for raising it, and thereby releasing the valve automatically, as hereinbefore set forth.

3. The combination, with the gravity drop-valve catch, pivoted as shown, of the trip-plate K, which swings in the speaking-tube and is provided with the vertical extension or finger d, for acting on the catch to raise it for the purpose of releasing the valve, as set forth.

4. The combination, with the drop-valve catch and the swinging trip-plate, which are hinged independently within the fixed speaking-tube, of a detachable mouth-piece or tube whose diameter is less than that of said speaking-tube, all as shown and described, whereby said plate may be raised or displaced by inserting the mouth-piece, and will automatically resume the vertical position when said mouth-piece is withdrawn, as and for the purpose specified.

253,093. DRAIN AND IRRIGATING TILE. MORGAN PAYNE, WILLIAM P. FOUST, and ROBERT M. THOMAS, Cardington, Ohio, said Payne assignor to Morgan Foust, same place. Filed Apr. 22, 1881. (Model.)



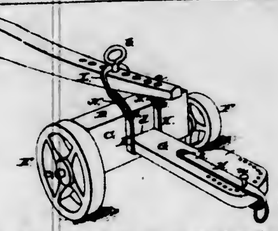
Claim.—1. As a new article of manufacture, a draining and irrigating tile provided with a reservoir or liquid-holding compartment, as set forth.

2. A tile for draining and irrigating purposes, the same consisting of a plain cylindrical or other shaped tile or conduit, with contracted ends to form a reservoir therein, as set forth.

3. The process herein described of draining and irrigating land, the same consisting in forming the drain tiles or conduits with water-holding compartments or reservoirs, which are filled with water during the rainy or wet season, which evaporates or percolates into the soil to irrigate the same in the dry season.

253,094. PLOW. PETER PETERSEN, Laporte City, Iowa. Filed Nov. 9, 1881. (No model.)

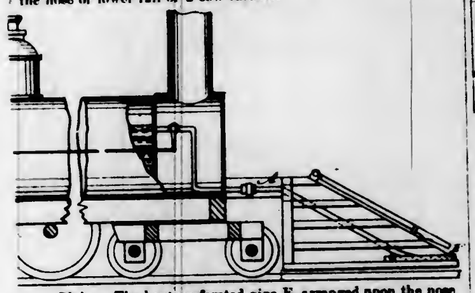
253,094.



Claim.—In a plow, the axle-block C, mounted on the wheels E and F, the broad tongue G, and the plow-beam A, having perforations a, in combination with the brackets K and L, the links N, and the pin b, substantially as specified.

253,095. STOCK-ALARM FOR LOCOMOTIVES. WILLARD A. PLACE, Lincoln, Nebr. Filed Nov. 18, 1881. (No model.)

Brief.—A pipe leading from a boiler is connected to a bent perforated pipe, which ejects steam or water, and is arranged upon the nose or lower rail of a cow-catcher.



Claim.—The bent perforated pipe E, arranged upon the nose or lower rail of the cow-catcher, in combination with a steam-pipe leading from the boiler, as and for the purpose specified.

253,096. BUTTON-FASTENING. GEO. W. PERVIER, Providence, R. I. Filed Nov. 17, 1881. (No model.)



Claim.—As an improved article of manufacture, the herein-described fastening device for attaching buttons to wearing-apparel, consisting of the base or plate A, provided with the upwardly-extending prong B, formed from the central part of said plate and bent at right angles thereto, and with the spurs a upon each side of the plate and integral therewith, substantially as and for the purpose specified.

253,097. MINING APPARATUS. OLIVER S. PHAENEY, Port Henry, N. Y. Filed Apr. 13, 1881. (No model.)



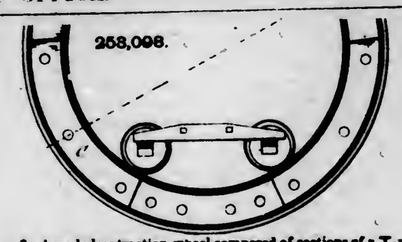
Claim.—In a portable mining apparatus, the combination of a boiler, engines, drum, and compressors, said engine arranged to operate the driving and drum shafts and compressors, the whole in relative position on the bed-plate A, as set forth.

253,098. TRACTION-WHEEL. THEAT T. PHOENIX, Chicago, Ill. Filed Nov. 19, 1880. Renewed Jan. 5, 1882. (No model.)

Claim.—1. A spokeless traction-wheel composed of a T-rail and bound with a tire, substantially as described.

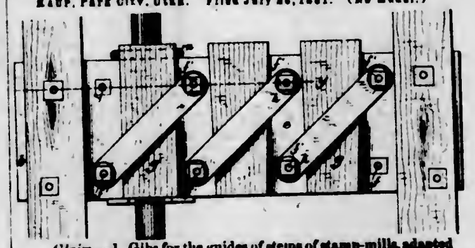
2. A spokeless traction-wheel composed of a T-rail in sections and bound with a tire, substantially as described.

253,098.



3. A spokeless traction-wheel composed of sections of a T-rail connected by fish-plates and combined with alternate sections of wood, substantially as described.

253,099. GUIDE FOR STEMS OF STAMP-MILLS. WILLIAM RAUP, Park City, Utah. Filed July 26, 1881. (No model.)



Claim.—1. Gibs for the guides of stems of stamp-mills, adapted to be laterally reversed in their sockets to compensate for wear, combined with the guide-rail and blocks secured thereto, forming sockets in shape corresponding with and to receive the gibs, and with means to hold the gibs in such sockets, substantially as described.

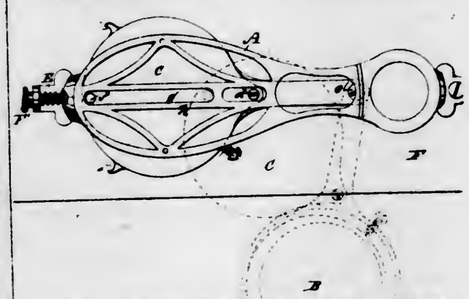
2. The gibs for the guides of the stems of stamp-mills, combined with clamping plates or bars arranged diagonally, or nearly so, across them to hold them in place, substantially as described.

3. The gibs for the guides of the stems of stamp-mills, held firmly against or upon the guide-rail, and secured against displacement in any direction by means of plates or bars attached at an incline across their faces, the parts being combined substantially as described.

4. The gibs for the guides of the stems of stamp-mills, adapted to be reversed or adjusted to present new wearing-surfaces for the stems, combined with a socketed guide-rail and diagonal clamps to hold the gibs in place, substantially as described.

5. A sectional gib for the guides of the stems of stamp-mills adapted to receive the stem, combined with a separate clamp for each gib to hold the gib-sections together and them and the stem in place, the said clamp being held at each end and adapted to be released at one end and swung aside to permit the withdrawal of the front section of the gib and its contained stem, whereby the stem-tappet may be renewed readily without interfering with any other stem or gib or interrupting the operation of the stamp-mill or battery, substantially as described.

253,100. COMBINED BLACKING-BOX HOLDER AND FOOT-REST. JACOB REAS, Cleveland, Ohio, assignor of one-fourth to Samuel Wagner, same place. Filed Oct. 18, 1881. (Model.)

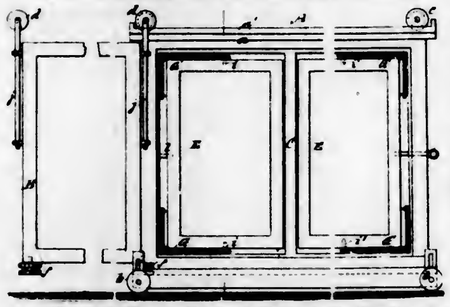


Claim.—1. The foot-rest A, formed with the slot g, in combination with the swinging box-holder B, and the cover C, provided with the pin f, substantially as and for the purposes set forth.

2. The combination of the foot-rest A, having slot *g*, the cover C, pivoted to box at *d* and provided with the opposite stud *f*, and the box B, having arm *a* pivoted at *e*, whereby the box is automatically uncovered when swung out on its pivot *e*, as described.

3. The combination of the foot-rest A, having the bracket E the spring-stop F, passing through the said foot-rest, and the box-holder having a notch to receive the end of said stud, as described.

253,101. BACKGROUND-FRAME FOR PHOTOGRAPHERS. GEORGE H. RICHARDS, Philadelphia, Pa., assignor to Thomas H. McCollin, same place. Filed Dec. 6, 1881. (Model.)



Claim.—1. The combination, with the vertically-adjustable main frame A, of the sliding scenery-frames B D, arranged upon the outside of said main frame, as and for the purpose specified.

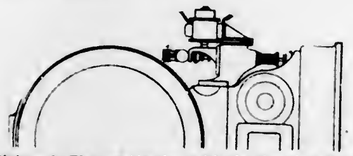
2. The main frame A, in combination with the scenery-frames B, C, and D, substantially as described.

3. The frame A, carrying the movable frames B, C, and D, in combination with the adjustable casters *b*, substantially as and for the purposes set forth.

4. The combination, with the frame C, of the two reversible panels E E, pivoted in frame C on the studs *i i'*, said studs forming a part of bent rods G G', secured to the vertical bars of frame C, as and for the purpose specified.

5. The frame B, provided with the wheels *f* at the bottom and the wheels *d* at the top, in combination with the gutter *g*, and the way *a* of the main frame, the wheels *d* being journaled upon the rod *j*, which is loosely connected to the frame, substantially as and for the purposes set forth.

253,102. SPEED-GOVERNOR. JOHN RICHARDSON, Lincoln, County of Lincoln, England. Filed Dec. 7, 1881. (No model.) Patented in England Jan. 23, 1881.

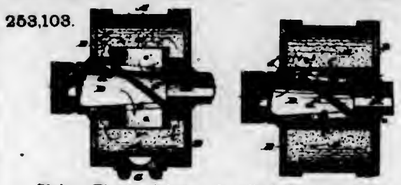


Claim.—1. The combination, with the throttle-valve of an engine which drives the dynamo-electric machine to produce the current for electric lighting purposes, of a speed-governor acting on said valve and an electrical device, constructed essentially as described, which governs or controls the speed of the said governor and is included in the circuit the current through which produces the electric light, all substantially in the manner and for the purposes set forth.

2. The combination, with the throttle-valve of an engine which drives the dynamo-electric machine to produce the current for electric lighting purposes, of a speed-governor acting on said valve, and an electromotor which drives said governor and is included in the circuit the current through which produces the electric light, substantially as and for the purposes described.

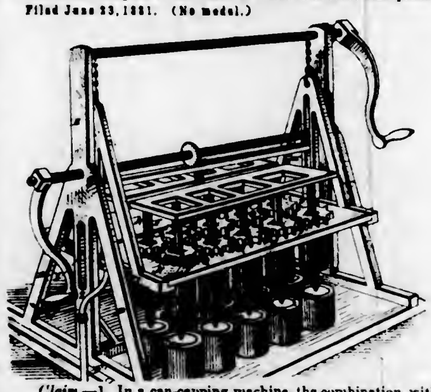
3. The combination, with the throttle-valve of an engine and a dynamo-electric machine driven by said engine and serving to produce a current for electric lighting purposes, of an electro-magnet included in the circuit the current through which produces the electric light, and operated thereby to close said throttle-valve when the current through said circuit ceases, substantially in the manner and for the purposes set forth.

253,103. FILTER. CHAS. L. RIDGWAY, Boston, Mass. Filed Apr. 9, 1881. (Model.)



Claim.—The hereinbefore-described filter, consisting of the cylindrical shell A B, the axial pipe C, provided upon opposite sides with radial central openings, *c* and *c'*, which are covered by means of wire strainers *c²*, and having the recess *c³* midway between said openings, the hollow plug D, provided with radially-opposite ports *d*, *d'*, and *d²*, and having its interior divided by means of the diagonal partition *d³*, and the thimble E, fitted into the smallest end of said plug, in combination with each other and with filtering material placed within said shell, substantially as and for the purpose specified.

253,104. CAN-CAPPING MACHINE. JOSEPH ROBERTS, Baltimore, Md., assignor of one-third to Wm. F. Roberts, same place. Filed June 23, 1881. (No model.)



Claim.—1. In a can-capping machine, the combination, with a standard, an adjustable frame suspended therefrom, and a removable plate supported in said frame, of a series of soldering-irons having cog-wheels attached thereto and arranged to retain the soldering-irons in place, and suitable gearing for imparting rotary movement to the series of soldering-irons simultaneously, substantially as set forth.

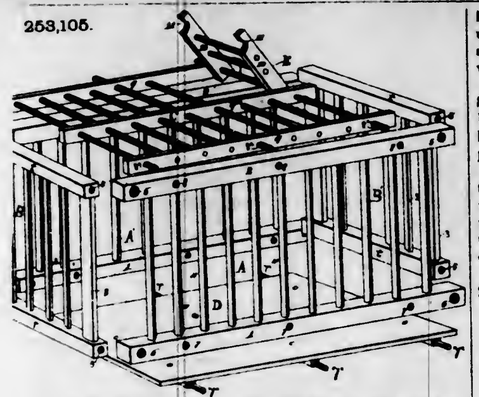
2. In a can-capping machine, the combination, with a standard having a shaft journaled therein, a frame, and flexible connection between said shaft and frame, and a plate supported in the lower end of said suspended frame, of a series of soldering-irons connected with said plate, cog-wheels attached to each soldering-iron, and gearing for imparting simultaneous rotary motion to the entire series of soldering-irons.

3. In a can-capping machine, the combination, with a standard, of a frame, perforated plates removably secured thereto, soldering-irons attached to said plates, cogs secured to the several irons and arranged to mesh with each other, centering-irons adapted to reciprocate in the vertical axes of the cogs and soldering-irons, and gearing to revolve them, substantially as set forth.

4. In a can-capping machine, the combination, with a standard, of an adjustable frame, two perforated plates mounted in said frame and adapted to be inserted therein or withdrawn therefrom from opposite sides of the standard, soldering-irons mounted in each of said plates, gearing to rotate them, and centering-irons rigidly secured to frames located above the plates and adapted to reciprocate in the vertical axes of the cogs and soldering-irons, substantially as set forth.

5. In a soldering-iron, the combination, with a block provided with two or more collars of different sizes, of a metallic ring secured according to its size to one of said collars, the ends of the ring being cut away to form a slot where they come together, substantially as set forth.

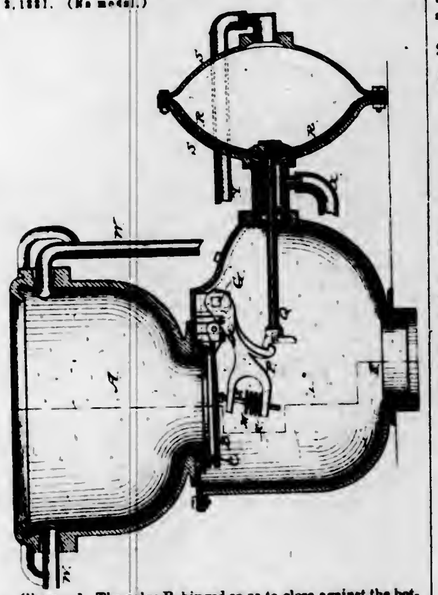
253,105. CRATE FOR TRANSPORTING VEGETABLES, LIVE POULTRY, &c. JNO. W. ROGERS, Denver, Colo. Filed Oct. 18, 1880. (Model.)



Claim.—1. A knockdown crate consisting of the bottom D and sides A A', secured together by tongues 7* and eyes 7, the ends B B', secured to the sides by binding-screws 5*, and eyes or slots 5, and the top secured to the sides by tongues 8* and eyes 8, as set forth.

2. A knockdown crate having the top C, consisting of longitudinal pieces 9 9 and center piece, 9*, said pieces connected by cross slats or bars, in combination with the hinged door E, provided with recesses 11, substantially as described.

253,106. WATER-CLOSET. WILLIAM H. SACK, Oakland, Cal., assignor of one-half to Ezra A. May, same place. Filed Sept. 2, 1881. (No model.)



Claim.—1. The valve B, hinged so as to close against the bottom of the bowl A, in combination with the lever H, mounted upon a shaft, G, and connected with the valve, the acting diaphragm R, and the rod Q, substantially as and for the purpose herein described.

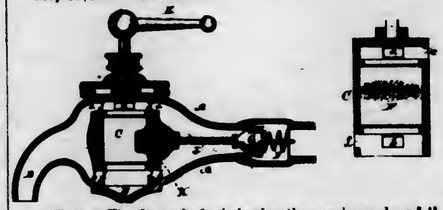
2. The forked lever H, secured to the rotating shaft G, and having the pin J sliding through its two fork ends, in combination with the spring K, so that after the pin has closed the valve B the compression of the spring will allow the shaft to continue its rotation, substantially as and for the purpose herein described.

3. The diaphragm R, having its edges secured between the convex cases S, and the rod Q, extending from its center to operate the lever H, as shown, in combination with the water-pipes opening into the cases upon each side of the diaphragm, so that water under pressure may be admitted to force the diaphragm to one side or the other of the case and move or release the lever and valve, substantially as herein described.

4. The diaphragm R, moving within the double-convex case S and operating the rod Q, in combination with the four-way cock U, the supply and discharge pipes V W, and the pipes X Y, leading to opposite sides of the case S, substantially as and for the purpose herein described.

5. The diaphragm R, moving in the case S, with its rod Q the four-way cock U, and the connecting-pipes, the operating-lever Z *a*, and connecting-rods, in combination with the shaft *c*, lever-arm *d*, and the lug *f*, which are operated therefrom and made to engage a lever, *g*, upon the shaft G, so as to prevent the rotation of the latter until released, substantially as herein described.

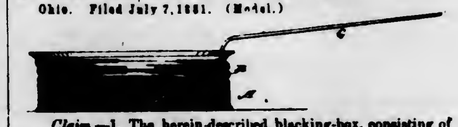
253,107. FILTERING-FAUCET. WILLIAM H. SACK, Oakland, Cal., assignor of one-half to Ezra A. May, same place. Filed July 21, 1881. (No model.)



Claim.—The faucet-body A, having the openings *a b*, and the plug C, having the filter F, and the openings *d*, *e*, and *f*, as shown, and having the channel or groove K upon its exterior surface, in combination with the valve G, having the stem or spindle J, extending in and resting against the plug in line with the groove K, substantially as and for the purpose herein described.

253,108. WITHDRAWN.

253,109. BLACKING-BOX. ALONZO H. SAVAGE, Ashtabula, Ohio. Filed July 7, 1881. (Model.)

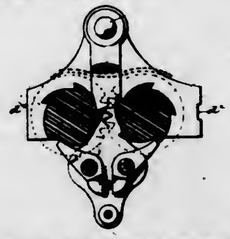


Claim.—1. The herein-described blacking-box, consisting of a box having screw-threaded sides, and lid having a screw-threaded flange and a central aperture, as and for the purpose set forth.

2. In a blacking-box, the combination, with the box A, having screw-threaded sides B, of the lid D, having a screw-threaded flange, F, and provided with a central aperture, K, and scraper H, substantially as and for the purpose set forth.

3. In a blacking-box, the combination, with the box A, having screw-threaded sides B, of the lid D, having a screw-threaded flange, F, central aperture, K, handle G, and scraper H, substantially as and for the purpose set forth.

253,110. CORN-PLANTER. LEVI SCOFIELD, Grand Haven, Mich. Filed Apr. 26, 1881. (Model.)



Claim.—1. The combination, with the two meshed gear-wheels having the reversed ratchets on their hubs, of the pivoted arm or pawl-carrier moving between the hubs of the gear-wheels and carrying the pawls which alternately engage with the ratchets as the arm is vibrated, substantially as described.

2. The combination, with the two meshed gear-wheels having the reversed ratchets on their hubs, of the pivoted vibratory arm,

or pawl-carrier moving between the hubs of the gear-wheels, the ratchets mounted on said pivoted arm, and an elastic friction-brake or stop, also mounted on the said pivoted arm and operating alternately on the peripheries of the gear-wheels, substantially as described.

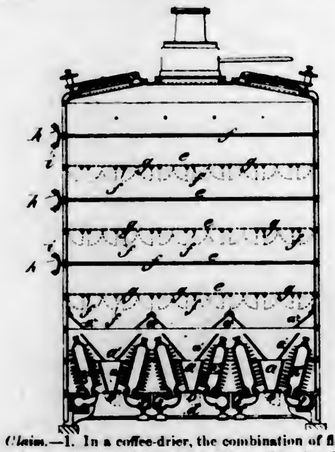
3. The combination of the meshed gear-wheels, the pivoted arm or pawl-carrier, the pawls, and the friction-brake or stop consisting of an elastic plate mounted centrally upon the pawl-carrier, and projecting laterally so as to bear alternately against the peripheries of the gear-wheels as the pawl-carrier is vibrated or swung on its pivot, substantially as described.

4. The combination of the meshed gear-wheels, the pivoted arm or pawl-carrier, the pawls, and the elastic stop or friction-brake, curved so as to conform to the outline of the gear-wheels and to bear upon two or more of the teeth of the same at once, substantially as described.

5. The combination, with the vibrating pawl-carrier, of the reversed pawls and the single spring interposed between the two pawls to operate both, substantially as described.

6. The arched casting D, having the shouldered side flanges, d^3 d^3, and the shouldered rib d^2, in combination with the plate D', carrying the gear-wheels and the pawl-carrier, and having the arched end d^4 and plain end d^5, the parts being connected together substantially as described.

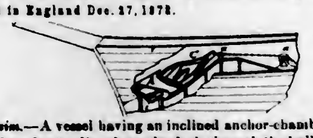
253,111. APPARATUS FOR DRYING COFFEE, GRAIN, &c. HENRY SCHOLFIELD, New York, N. Y. Filed Aug. 3, 1881. (No model.)



Claim.—1. In a coffee-drier, the combination of flaps *g*, rods *f*, crank-arms *h*, pivoted bars *i*, hand-levers *k*, and yokes *m*, substantially as and for the purposes described.

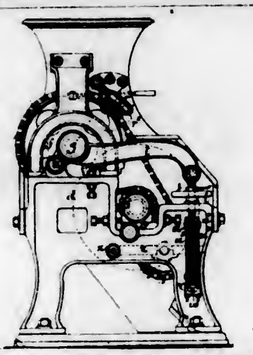
2. The combination, with the discharge valves or flaps *e* and the radiators E, of the plates $a\ a'\ a^2$, about and above said radiator, substantially as described, whereby the air is guided in contact with the radiators and the dried coffee in conducted to the discharge-valves, as set forth.

253,112. ANCHOR-WELL FOR VESSELS. JAMES SCOTT and JOHN H. RISDEL, Glasgow, County of Lanark, Scotland, assignors to said Scott. Filed Feb. 28, 1881. (Model.) Patented in England Dec. 27, 1878.



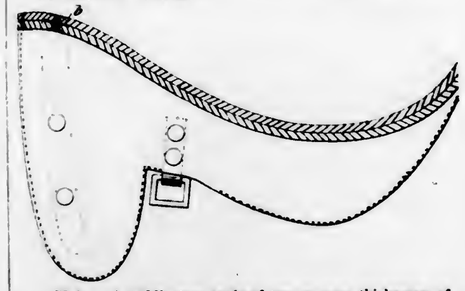
Claim.—A vessel having an inclined anchor-chamber open at both ends and extending from the deck through the hull to a point above the water-line, and provided with a sliding cover, the said chamber conforming in shape to the shape of the anchor, substantially as herein shown and described, and for the purpose set forth.

253,113. ROLLER-MILL FOR GRINDING CORN, &c. CHRISTIAN SECK, Dresden, Saxony, Germany, assignor of one-half to Carl Seck, same place. Filed July 9, 1881. (No model.) Patented in Germany Nov. 28, 1880, in England Apr. 13, 1881, in Austria-Hungary June 4, 1881, in Belgium June 21, 1881, and in Italy June 30, 1881.



Claim.—In a roller-mill, the combination of two rollers, a chain for transmitting motion from one to the other, pivoted levers comprising bearings for one of said rollers, a chain-wheel or idler around which said chain is passed, and a lever comprising bearings therefor, and a shaft and connections whereby said levers may be simultaneously raised to remove one roller from the other and for slackening said chain, substantially as specified.

253,114. SADDLE-TREE. MARTIN SEDLACEK, Troy, Mo. Filed Nov. 11, 1881. (Model.)



Claim.—A saddle-tree made of two or more thicknesses of leather molded into the form of a saddle and secured together, and provided with the front stay, *b*, inserted and secured between the layers of the leather, substantially as described.

253,115. BORING AND CUTTING IMPLEMENT. ISAAC SHARP, Waveland, Ind., assignor of one-half to George Seybold, same place. Filed Mar. 16, 1881. (Model.)

Brief.—A semi-cylindrical cutter has routing-lugs upon its convex surface and an adjustable bit upon the concave side.



Claim.—1. A plug cutter or borer consisting of a semi-cylindrical bit having a sharp arcuate edge and a slotted abrading-tool adjustable on the concave surface of said bit, substantially as shown and described.

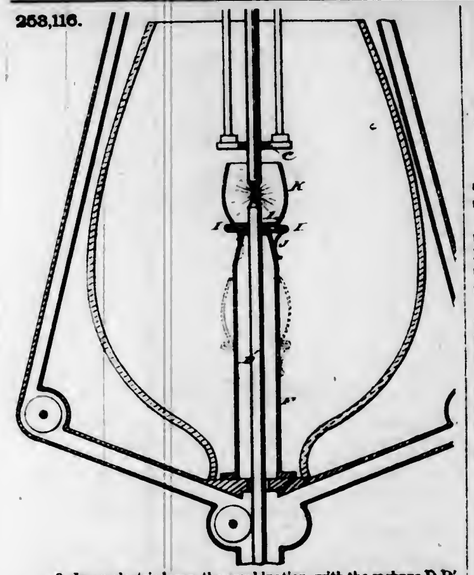
2. A plug cutter or borer consisting of a semi-cylindrical bit having a sharp arcuate edge and piercing and cutting lugs on its convex face, and a slotted abrading-tool adjustable on the concave face of the said bit, substantially as shown and described.

253,116. ELECTRIC LAMP. HENRY B. SHERIDAN, Cleveland, Ohio. Filed Oct. 26, 1881. (No model.)

Claim.—1. An electric-arc lamp having a small adjustable globe with a closed bottom and open top arranged within a larger globe and surrounding the adjacent points of the carbon, substantially as shown and described, whereby a circulation of air in the region of the arc is prevented and the flicker of the light avoided, as set forth.

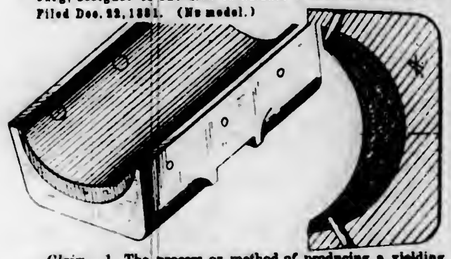
2. In an electric lamp, the combination, with the tube F, having tapered upper end and surrounding the lower carbon, of the annular support I, provided with springs J, and the globe K, provided with the plate L, substantially as and for the purpose set forth.

253,116.



3. In an electric lamp, the combination, with the carbons D D' and the tube F, having its upper end tapered and provided with the fillet G, of the annular support I, provided with the springs J, the globe K, and the apertured plate L, substantially as and for the purpose set forth.

253,117. JOURNAL-BEARING. GEORGE J. SHIMER, Freemansburg, assignor of one-half to Samuel J. Shimer, Milton, Pa. Filed Dec. 22, 1881. (No model.)



Claim.—1. The process or method of producing a yielding journal-bearing, which consists in forming alternate layers of hard and soft metals by bending or folding and casting, substantially as described.

2. The process or method of producing a yielding journal-bearing, which consists in forming alternate layers of hard and soft metals by bending or folding, casting, and riveting the parts together, substantially as described.

3. A yielding journal-bearing for a journal-box, composed of a series of alternate layers of hard and soft metals arranged crescent-shaped in cross-section, substantially as described.

4. A yielding journal-bearing for a journal-box, composed of layers of punctured or indented sheet metal or its equivalent and layers of soft metal arranged crescent-shaped in cross-section, substantially as described.

5. The combination of a yielding journal-bearing composed of a series of alternate layers of thin and hard and soft metals, an outer shell, and fastening means, substantially as described.

253,118. CHEESE-VAT. GOTTLIEB H. SIMON, Kiel, Wis. Filed Oct. 14, 1881. (Model.)

Claim.—1. The pivoted levers arranged at the corner legs of the vat and having angular slots through which their pivots pass, substantially as and for the purpose described.

2. The combination, with the outer vat, A, having depression D, of the fine *d*, the wooden cover E, held by bolts passing through slotted lugs *e*, the channels F, perforations *f*, metal plates *f'*, wooden strips G, and the perforated wooden cut-off H, held by

253,118.



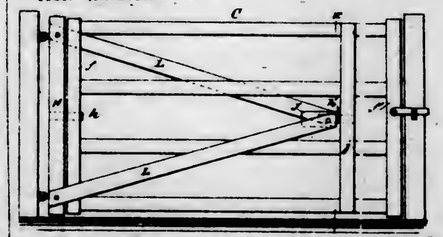
spring-fingers and operated by levers, said members being constructed and adapted for use substantially as described.

3. The combination of the outer vat having a central longitudinal depression, a heating-flue extending through the same, the heater *a* at the end of said flue, the boiler Q, the outlet-flue a^3 through the boiler, and the regulating valve or damper a^5, substantially as described.

4. The combination of the outer vat having a central longitudinal depression, the flue extending through the same, the false bottom, the perforations *f*, cross-channels F, the cut-off H, its yielding guides A, and the inner vat, substantially as described.

5. The combination of the outer vat, the flue passing centrally through its depressed bottom, the cover E, channeled and perforated at F *f*, the cut-off H, and deflector-plates *f'*, substantially as described.

253,119. FARM-GATE. DANIEL SPENCER, Albion, assignor of one-half to Albert W. Austin, Marengo, Mich. Filed Dec. 9, 1881. (No model.)



Claim.—1. The gate C, pivoted upon the pivots or studs A and A', the pivot A being secured to and the pivot A' being supported from the post H, substantially as described.

2. The diagonal bars L L, secured at one end to the post H and carrying the block J at their outer ends, in combination with the gate C and the pivots A and A', substantially as described.

253,120. APPARATUS FOR MANUFACTURING GAS. THEODORE G. SPRINGER, New York, N. Y. Filed Dec. 6, 1881. (No model.)

Brief.—Steam is decomposed in the lower chamber of a cupola in contact with incandescent fuel, and the resulting gases are enriched with hydrocarbon liquid or vapor on their passage through a flue leading to the upper chamber of the cupola, where the mixture is highly heated in contact with fire-brick, and thus converted into a fixed gas. The upper chamber is filled with fire-brick for storing up and retaining the heat given off from the fuel during the period when it is being brought to an incandescent condition by air-blasts preparatory to the decomposition of steam.



Claim.—1. A cupola or gas-generating apparatus having a decomposing-chamber wherein steam and solid hydrocarbon may be mutually decomposed, a fixing-chamber wherein mixed gas and hydrocarbon vapor may be fixed, and a connecting-flue wherein the liquid hydrocarbon and the hydrogen and carbonic oxide gases may be mixed before entering the fixing-chamber and the heat of the cupola thoroughly utilized, the respective chambers being located respectively one above the other, substantially as specified.

2. An apparatus for generating gas, consisting of a cupola divided into communicating compartments by means of a perforated diaphragm or diaphragms, the lower of said compartments being adapted to contain fuel and the upper refractory material, the fuel-compartment being provided with suitable air-inlet and steam-inlet pipes, whereby air may be admitted to create the proper heat, or steam may be admitted for decomposition, and the intermediate flue provided with suitable means for the introduction of liquid or vaporized hydrocarbon, substantially as specified.

3. The combination, in a cupola divided into communicating compartments by a perforated diaphragm, of the damper adapted to open and close communication between compartments, substantially as and for the purposes specified.

4. In combination with the communicating compartments of a vertical cupola, the flue extending from the lower to the upper compartment, and the hydrocarbon-induction tube leading into said flue, whereby the hydrogen and carbonic oxide and hydrocarbon may be mingled and the hydrocarbon vaporized before entering the upper compartment, substantially as specified.

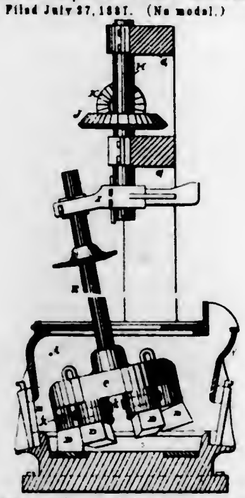
5. In combination with the communicating chambers of the cupola, the perforated diaphragm, the connecting-flue, and the damper arranged to cut off direct communication between the two chambers and direct the gases from the lower chamber through the flue into the upper chamber, substantially as specified.

6. The combination, with the communicating chambers, the perforated diaphragm, the damper, and connecting-flue, of an oil-supply pipe leading into said connecting-flue, substantially as specified.

7. In combination with the communicating chambers, the perforated diaphragm and damper and the connecting-flue, the air-blast pipes leading into the ash-pit and combustion-chamber, and the smoke-stack and damper, whereby the fuel may be prepared for the subsequent decomposition of the steam and the carbonic oxide utilized for heating the fixing-chamber, substantially as specified.

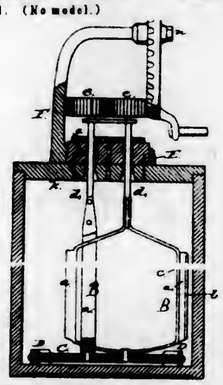
8. In combination with the communicating chambers, the perforated diaphragm and dampers, the connecting-flue and oil-inlet, and the air and steam blast pipes, whereby a current of air or steam, as may be required, may be passed through the ignited fuel for heating the fixing-chamber or generating a fixed gas, substantially as specified.

253,121. QUARTZ-CRUSHER. CHAS. P. STANFORD, San Francisco, Cal. Filed July 27, 1881. (No model.)



Claim.—An ore-crusher consisting of the mortar A, pestle C, with its separated peripheral dies D, keyed to the bosses, as shown, and stem E, and the crank I, revolving shaft H, gears J and K, shaft L, and driving pulley M, substantially as herein described.

253,122. CHURN. FRANK P. STEBBINS, Collins, Mich. Filed Oct. 25, 1881. (No model.)

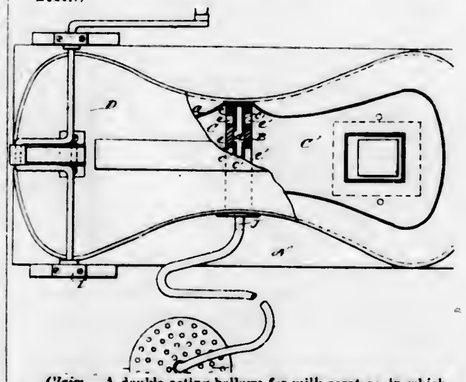


Claim.—1. In a double-dash rotary churn, the foot-bearing C, carrying the pivots of the dashers, and the transverse guards D, substantially as specified.

2. In a double-dash rotary churn, the dashers B B, their foot-bar C, and guard D, the pintles *e e*, raised sectional bearings *g h*, and fastening-band E, carrying the drive-wheel bearing, substantially as specified.

3. In a rotary churn, the combination, with the cover-sections and the raised bearings *g h*, of the fastening-band E, its arm F, and terminal journal-bearing *n* for the drive-wheel, substantially as specified.

253,123. DOUBLE-ACTING BELLOWS FOR MILK-AERATORS. NORMAN G. STEBBINS, Rome, N. Y. Filed July 12, 1881. (No model.)



Claim.—A double-acting bellows for milk-aerators, in which are combined valved air-chambers C C', a chambered partition, B, with inside valves over openings *e e'*, and a board, D, hinged to the top of said partition B, as shown and described.

253,124. EVAPORATING-PAN. HENRY B. STEVENS, Buffalo, N. Y., assignor to George L. Squier, same place. Filed June 8, 1881. (No model.)



Claim.—1. An evaporating-pan having its bottom provided with a depression, B, in combination with a bent discharge-pipe, c, adapted to be turned down into the depression B, substantially as set forth.

2. An evaporating-pan constructed with a cast end piece, *a'*, having a depression, B, cast therein, to accommodate the bent discharge-pipe c when turned down, and provided with a water-tight joint, *c'*, through which the pipe *c* passes, substantially as set forth.

3. The combination, with an evaporating-pan, of one or more scum-gatherers, E, constructed with open ends for the admission of the scum, substantially as set forth.

4. The combination, with an evaporating-pan, of a scum-gatherer, E, constructed with open ends for the admission of the scum, and having its inner wall projecting to or above the level of the liquid to prevent the escape of the scum, substantially as set forth.

5. The combination, with an evaporating-pan, of a scum-gatherer made vertically adjustable, substantially as set forth.

6. The combination, with an evaporating-pan, of hinged scum-troughs D and removable scum-gatherer E, substantially as set forth.

7. The combination, with the manifold head G, of the straight diaphragm A, cast in one piece with the head G, steam-supply pipe *j*, and exhaust-pipe *k*, communicating respectively with chambers on opposite sides of the diaphragm, substantially as set forth.

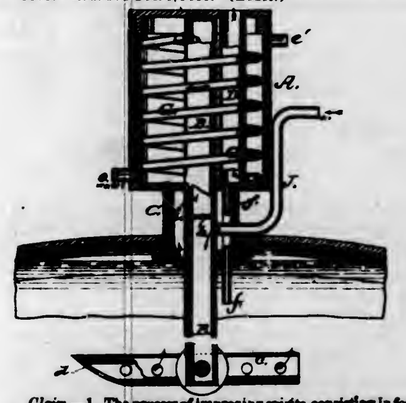
8. The combination, with the steam-pipes F, of exhaust-pipes *i*, arranged on the bottoms of the pipes F, substantially as set forth.

9. The combination, with the manifold head G, of the steam-pipes F, exhaust-pipes *i*, arranged in the pipes F, and caps *g*, applied to the open end of the pipes F, substantially as set forth.

10. The combination, with an evaporating-pan, of steam-heating pipes F, movable scum-troughs D, and a bent discharge-pipe, *c*, substantially as set forth.

11. The combination, with an evaporating-pan, of steam-heating pipes F, connected with the pan by trunnions, movable scum-troughs D E, and bent discharge-pipe *c*, substantially as set forth.

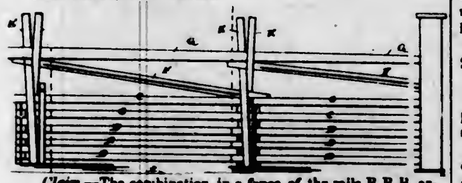
253,125. PROCESS OF AND APPARATUS FOR IMPROVING SPIRITS. FREDERICK SUTTER, Louisville, Ky. Filed Oct. 11, 1879. Renewed Dec. 8, 1881. (Model.)



Claim.—1. The process of improving spirits, consisting in forcing air through a retort containing burning charcoal and conducting the resulting gas directly into the spirits, and condensing the alcoholic vapors taken up by the gas, substantially as specified.

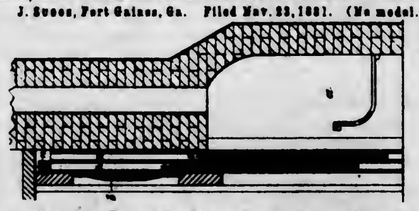
2. The spirit-improving apparatus consisting of the close vessel A, having tube B, provided with the swiveled gravitating rose-pipe c, an induct and educt, a perforation or perforations, *i*, and a diaphragm, *b*, the escape-pipe D, containing coarse gravel, and having drip-pipe *f*, the worm G, opening at its upper end into the pipe B and its lower end into pipe D, and a hot-gas-supply pipe, J, opening into the said pipe B below its diaphragm, the whole arranged and operating as set forth.

253,126. FENCE. ANDREW R. STORMONT, Princeton, Ind. Filed Oct. 19, 1881. (Model.)



Claim.—The combination, in a fence, of the rails B B B, arranged in line one above the other, the rails C C, located above the rails B B B and out of line with the same to serve as a barrier to prevent animals from jumping the fence, the inclined rails F and crossed stakes E, the longitudinal rail G, and the cross-pieces D, interposed between the rails B B B and C C, substantially as specified.

253,127. COMBINED FIRE-SCREEN AND FENDER. THOMAS J. SUGGS, Fort Gaines, Ga. Filed Nov. 23, 1881. (No model.)



Claim.—1. The combination, with a fire-place and a mantel-piece surmounting said fire-place, of a fender and a screen arranged in front of the fender, the fender and screen being each balanced by a separate weight and adapted to be raised and lowered independently of each other in a space between the mantel-piece and the fire-place, substantially as described, and for the purpose set forth.

2. The combination, with the fire-place *a* and the mantel-piece *b*, provided with channels c and vertical grooves *b b*, of the fender *l*, screen *k*, arranged in front of the fender, cords *m m'*, pulleys *n n'*, and weights *o o'*, substantially as described, and for the purpose set forth.

253,128. FIRE-EXTINGUISHER. CHAS. W. TALCOTT, Woonsocket, R. I. Filed Apr. 6, 1879.



Claim.—1. The combination, with a distributer designed to spread water or other fluid over a large area, of a hinged metal cap arranged to cover and protect the distributer, substantially as described.

2. The combination, with a distributer designed to spread water or other fluid over a large area, of a hinged metal cap arranged to cover and protect the distributer, said cap being secured to its base with a low fusible material, substantially as described.

3. The combination, with a distributer designed to spread water or other fluid over a large area, of a hinged metal cap arranged to cover and protect the distributer, and fastened to the base with a pin made of a low fusible material, substantially as described.

4. The combination, with a distributer designed to spread water or other fluid over a large area, of a hinged metal cap arranged to cover and protect the distributer, and fastened to the base with a pin made of low fusible material, and a packing-annulus, substantially as described.

5. The combination, with the base provided with projections or ears, and a distributer designed to spread water or other fluid over a large area, of a hinged metal cap arranged to cover and protect the distributer, and fastened to said base with a pin made of low fusible material, substantially as described.

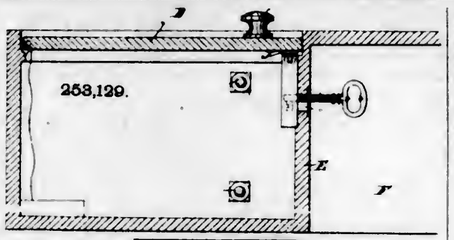
6. The combination, with a perforated distributer, of a cap closely fitting over the perforated portion of the distributer and secured by solder fusible at a low temperature, substantially as described.

7. The combination, with a distributer, of a cap extending over the distributer to protect the same, and held to a flange or shoulder by fusible solder, and a seal placed between the distributer and the fusible solder, so as to prevent the water from reaching the solder joint, substantially as described.

253,129. SAFE. ROBERT W. TOWNS, Parker's Landing, Pa. Filed Oct. 5, 1881. (Model.)

Claim.—1. An improved safe, having an open-bottom compartment at its key-hole end adapted to cover the key-hole, substantially as and for the purpose set forth.

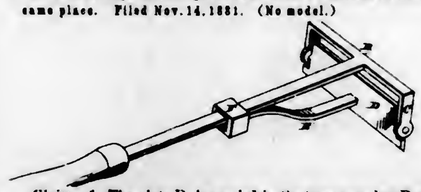
2. In a safe, the combination, with the box A, of the cover or door D and the partition E, forming a compartment, F, having its opening in that side of the box opposite the one in which the door or cover D is placed, substantially as and for the purpose set forth.



253,130. BASIC PROCESS OF TREATING IRON IN THE MANUFACTURE OF BESSEMER STEEL. SIDNEY G. THOMAS, 3 Queens Road Villas, County of Surrey, England. Filed Nov. 9, 1879. Patented in England Sept. 3, 1879, in Belgium Oct. 15, 1879, and in France Dec. 5, 1879.

Claim.—The herein-described improvement in the process of treating iron, which consists in adding to the refined metal which has been dephosphorized in a basic-lined converter, with basic additions at the end of the after-blow, from three to seven per cent. of ordinary non-phosphoric pig-iron, preferably containing less than three per cent. of silicon, immediately followed by the addition of spiegeleisen or ferro-manganese, so as to recarburize the metal and prevent red-shortness without rephosphorizing it, without wasting manganese, and without leaving so much as one-tenth per cent. of silicon in the metal, substantially in the manner and proportions herein described.

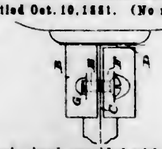
253,131. COMBINED MOP-HOLDER AND SCRAPER. JOHN E. TIFFIN, Redding, Cal., assignor of one-half to William A. Smith, same place. Filed Nov. 14, 1881. (No model.)



Claim.—1. The plate D, journaled in the transverse bar B, so that it may be turned to receive the material of the mop, and having the projecting arm or brace E engaging with the slide F, whereby it may be locked to hold the material in place, substantially as herein described.

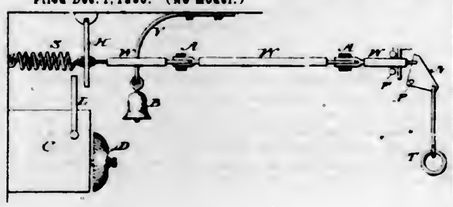
2. The combined mop and scraper, consisting of the plate D, having its edge formed into a scraper, as shown, and ends journaled to the bar of the frame, and provided with the arm E, adapted to be held by the slide F, so as to retain the material of the mop, substantially as herein described.

253,132. KNOB ATTACHMENT. HENRY R. TOWNE, Stamford, Conn., assignor to the Yale Lock Manufacturing Company, same place. Filed Oct. 10, 1881. (No model.)



Claim.—A knob-shank provided with a longitudinal slot, C, transverse slot D, and lugs E and F, in which works the screw G, substantially as herein set forth.

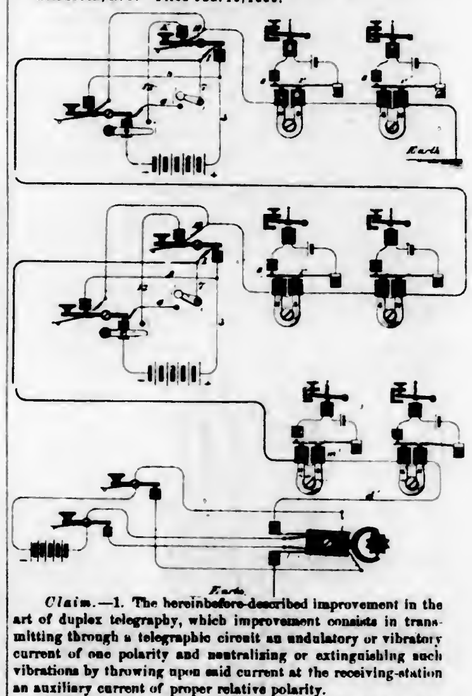
253,133. AUTOMATIC FIRE-ALARM. PETER H. VANDER WEYDE, Brooklyn, assignor to Charles Colne, New York, N. Y. Filed Dec. 1, 1880. (No model.)



Claim.—1. The combination, with the bell-wire and bell operated by a pull of the wire in the usual manner, of a piece of easily-fusible alloy and a separate signal-alarm, which is operated by the release or breakage of the bell-wire by heat, in the manner set forth.

2. The combination of wooden strips connected by an easily-fusible alloy with the bell-pull spring and alarm, in the manner described.

253,134. DUPLEX TELEGRAPH. HENRY VAN HOEVENBERGH, Elizabeth, N. J. Filed Jan. 16, 1880.

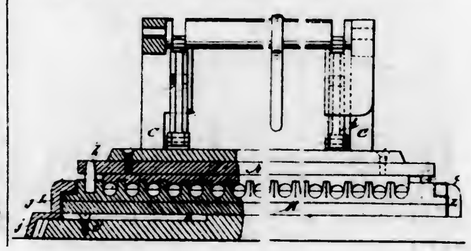


Claim.—1. The hereinbefore-described improvement in the art of duplex telegraphy, which improvement consists in transmitting through a telegraphic circuit an undulatory or vibratory current of one polarity and neutralizing or extinguishing such vibrations by throwing upon said current at the receiving-station an auxiliary current of proper relative polarity.

2. The hereinbefore-described improvement in the art of duplex telegraphy, which improvement consists in transmitting undulatory or vibratory currents of opposite polarities through a telegraphic circuit, cutting off from the line, at the pleasure of the transmitting-operator, either set of vibrations, and in neutralizing either current so transmitted by throwing upon the line at the receiving-station an auxiliary current of the proper relative polarity.

3. The hereinbefore-described improvement in the art of duplex telegraphy, which improvement consists in transmitting through a telegraphic circuit undulatory or vibratory currents of opposite polarities and neutralizing or extinguishing at pleasure either one of said currents (while strengthening the other) by throwing upon said current at the receiving-station an auxiliary current of a polarity opposite to that of one of the transmitted currents.

253,135. CIGAR-MOLD PRESS. GEORGE VOLLKOMMER, Brooklyn, N. Y. Filed Dec. 8, 1881. (No model.)



Claim.—1. The combination, with the base A, having grooves i i, of the sliding plates J, having flanges j, as and for the purpose specified.

2. The combination, with the grooved base A and mold M, having the shoulders, of the extensible plates J, having beat flanges, with the horizontal portions c, as and for the purpose specified.

253,136. FAUCET. JAS. O. WADDELL, Elizabeth, N. J. Filed May 11, 1881. (Model.)



Claim.—1. The combination, in a faucet, with the eccentric a, of a collar, b, and a stem and valve-head formed integral with one another, said head having a regular outline, the shape being that of a round-based cone, said parts being arranged and operating substantially as and for the purposes set forth and shown.

2. In a faucet having a metallic valve-head operated by an eccentric, the combination, with the body of said faucet having a flange, and a thimble having a co-operating flange, h, of a tubular rubber (or composition of rubber) valve-seat the depth of which approximates the diameter thereof, substantially as and for the purposes set forth and shown.

3. The combination, with the faucet-body A, having an upper bearing formed integral therewith, of a shaft having a shoulder formed thereon engaging with said bearing, and a bottom screw, forming a lower bearing for said shaft, secured in an opening of sufficient size and adapted to allow the upward passage of said shaft, all substantially as and for the purpose herein set forth and shown.

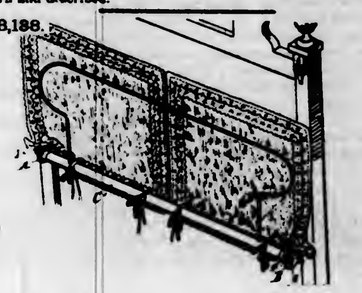
253,137. WINDOW-SCREEN. ROBERT B. WALTER and JOHN P. VOELKER, New York, N. Y. Filed Sept. 24, 1881. (No model.)

Brief.—The screen, mounted on a spring-roller, and with a bar at its upper edge attached by eyes to knobs on the lower sash, its side edges being covered by guard-bars having guide-rollers at their lower ends, has a spring-plate bearing against the roller.



Claim.—The hollow screen-roll C, carrying internally a spiral spring on a rod, E, secured to the brackets F, in combination with the bar H, having eyes I, the sash-knobs J, the guard-bars K, carrying pivoted rolls L, and the spring-plate M, all arranged as shown and described.

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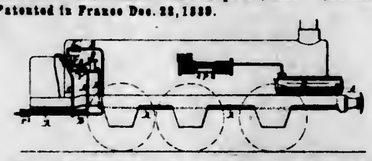


253,138. PILLOW-SHAM HOLDER. JOHN A. WARLEBE, Toledo, Ohio. Filed Oct. 26, 1881. (No model.)

Claim.—1. A pillow-sham holder consisting of a frame, D, a rod, C, and means, substantially as described, for locking the rod and frame in position when partially rotated, as and for the purpose specified.

2. The combination, in a pillow-sham holder, of the fastenings A B, the rod C, and the frame D, said rod being provided with the bearings and said fastenings being constructed and the parts arranged and operating as and for the purposes set forth.

253,139. FLUID-PRESSURE RAILWAY-BRAKE. ADOLPHE WEBER, Paris, France. Filed Sept. 28, 1881. (No model.) Patented in France Dec. 28, 1880.



Claim.—1. A railway-car provided with a cylinder, a differential piston therein, a pipe communicating with said cylinder on the side of said piston of least area, another pipe communicating with said cylinder on the side of said piston of greatest area, the said pipes extending from end to end of the car, and connections between said piston and the brake-shoes, combined substantially as set forth, whereby, when the pressure against the side of the piston of greatest area exceeds by more than the difference of area the pressure on the opposite side, it moves the piston and applies the brakes.

2. The combination, with a railway-car and its brakes, of a brake-applying mechanism consisting of a cylinder, a differential piston therein, a pipe extending from end to end of the car, a connection between said pipe and the cylinder on the side of the piston of greatest area, a branch from said pipe connecting with said cylinder on the side of the piston of least area, and a check-valve in said pipe, substantially as set forth.

3. A locomotive provided with an air-compressing pump, a reservoir arranged to receive the compressed air therefrom, a pipe leading from said reservoir extending to the rear of the locomotive and provided with a coupling at its end, and a reducing-valve in said pipe, consisting of a differential piston controlling a cut-off valve, combined and arranged substantially as set forth, whereby a high pressure in the reservoir generates a proportionately less pressure in the pipe beyond the valve.

4. The combination of a source of compressed air on the locomotive, an air-pipe leading thence through the train and communicating with cylinders on the cars, the said cylinders, differential pistons therein, and a second pipe, connected also to said cylinders on the opposite side of said pistons, extending to the locomotive, and there connected with a source of compressed air through the medium of a valve under the control of the engineer, whereby the latter may control the pressure in the said second pipe, substantially as set forth.

5. The combination of cylinder F, differential piston K, pipes A and B, and escape-valve G', substantially as set forth.

6. The escape-valve G', consisting of the casing, the plunger f therein, holes r r in said plunger, and valve g, operated thereby, in combination with pipe B and cylinder F, substantially as set forth.

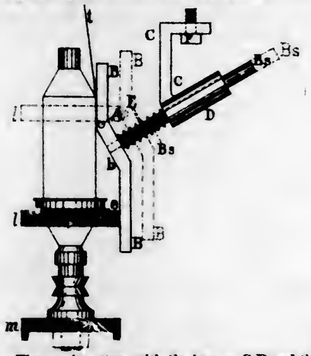
7. The combination of the differential piston K, provided with an axial rod or plunger, with a cylinder, F, having a stuffing-box through which the said rod or plunger passes out, and a washer of packing substance arranged inside the cylinder, around said rod or plunger, where it enters said stuffing-box, whereby, when the brakes are off and said piston is forced toward the washer and a shoulder on the piston compresses said washer, the latter supplements the stuffing-box and more effectually prevents the escape of air, substantially as set forth.

8. The combination of the car-wheels, brake-applying mechanism, hanger b^2, brake-shoe S, having cheeks a' a', embracing said hanger, pin a', jointing said shoe to said hanger, and springs a^2, inserted in sockets in the hanger and bearing against the cheeks of the shoe, substantially as set forth.

253,140. THREAD-SEPARATOR FOR RING-SPINNING MACHINES. FRANKLIN H. WYMAN, Lowell, Mass. Filed Sept. 19, 1881. (No model.)

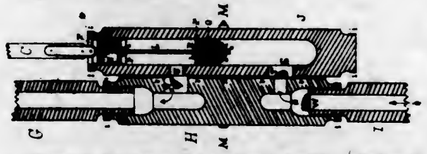
Brief.—The separator-wire is suspended between supporting-rods having inclined surfaces, said rods being in turn suspended

from hangers by inclined stems. The ring-rail in its upward traverse engages with the inclined surfaces on the supporting-rods, thereby moving the separator-wires from the bobbin.



Claim.—The combination, with the hanger C D and the ring-rail *l*, of the support B, having the inclined portion *b*, the sliding stem B *s*, and the separator-wire A, as set forth.

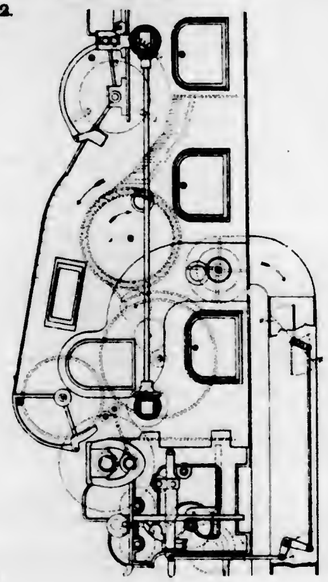
253,141. FORCE-PUMP. MILO L. G. WHEELER, Oregon City, Oreg. Filed Jan. 11, 1881. (No model.)



Claim.—1. In a pump, the combination of the cylinders H and J, the pin *x*, let into the surfaces of said cylinders, the clamp M, and the rubber packing-rings *r*, substantially as shown and described.

2. In a pump, the combination of the cylinder J, having ports U and S and valves V and T, the plunger N and bucket O, secured to the same lift-rod, and the cylinder H, communicating with cylinder J through the ports of the latter, whereby the weight of the column of water being lifted is supported in cylinder H instead of cylinder J, substantially as specified.

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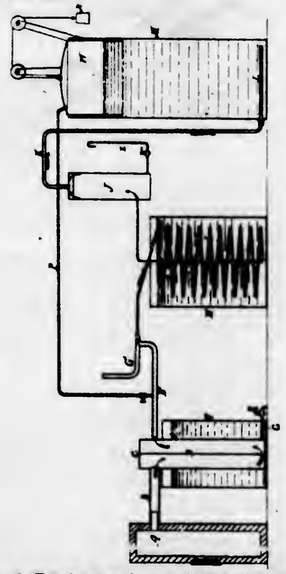


253,142. MACHINERY FOR OPENING OR PREPARING COTTON OR OTHER FIBROUS MATERIAL. WILLIAM E. WHITEHEAD, Tewksbury, assignor to the Whitehead & Atherton Machine Company, Lowell, Mass. Filed Nov. 18, 1881. (No model.)

Brief.—A damper is placed in the dust-flue, and by rods and levers is connected to and operated by the drop-lever in such manner that when, through the operation of said lever the feed is stopped, the damper will be closed, thereby preventing a spread of fire which may have been generated in the machine.

Claim.—The combination, with the drop-lever, the exhaust-fan, and the dust flue or trunk, of an automatic damper placed in said trunk at or near the discharge or delivery end of the exhaust-fan, and connected with and operated by the drop-lever, substantially as and for the purposes hereinbefore set forth.

253,143. APPARATUS FOR MANUFACTURING SODIUM HYPOSULPHITE. WILLIAM H. WHITMORE and GEORGE H. PRATT, Boston, Mass., assignors to said Whitmore. Filed Oct. 21, 1881. (No model.)



Claim.—1. For the manufacture of hyposulphite of soda by forcing sulphurous-acid gas through a solution of sulphide of soda, an apparatus or combination, substantially as described, consisting of an oven or retort, A, one or more coolers, C F or H I, the steam-jet G', the gas and water separator J, the conduit K, and tank M, all being connected and to operate essentially as set forth.

2. The combination of the gasometer-bell W and the conduit P with the oven or retort A, the pipe B', steam-jet G', one or more coolers, C F H I, the separator J, pipe K, and tank M, all being adapted essentially in manner and to operate as set forth.

253,144. STOVE. TENGEOAN WILLI, Dayton, Ohio, assignor of two-thirds to Frank S. Richeimer and Clement L. Baumann, both of same place. Filed Feb. 17, 1881. (Model.)

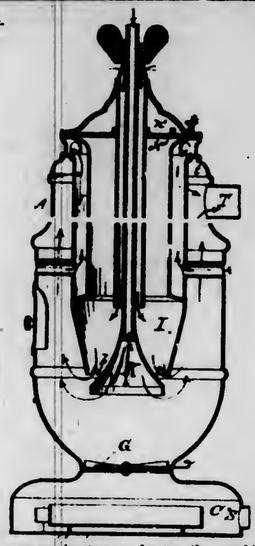
Claim.—1. In a stove or heater, a bottomless fire-pot connected to a magazine having an air-tight cover, said fire-pot having a centrally-supported base provided with a central downward-draft flue, in combination with the shell of the stove, provided with a chimney-flue and an air-tight base, substantially as shown and described.

2. The combination of a bottomless fire-pot, a cone-shaped base provided with an adjustable supporting-rod, and a main downward-draft flue, substantially as shown and described.

3. The combination of the air-tight shell, the suspended bottomless fire-pot, the adjustably-suspended base, the register G, and the ash-chamber C, substantially as shown and described.

4. In a reservoir-stove, the combination of the reservoir, a suspended fire-pot attached thereto, a central main downward-draft flue, and an adjustably-suspended base, substantially as shown and described.

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5. In a reservoir stove or heater, the combination of a centrally-suspended downward-draft flue, a concentrically-arranged reservoir having an air-tight cover, a fire-pot suspended from the covered magazine, and an encircling jacket provided with induction and eduction air-passages, substantially as shown and described.

6. The combination, with the air-tight shell, of the base separated therefrom by a partition provided with a register, a cylinder resting upon the upper flange of the shell and laterally braced by induction-pipes, a superimposed flanged reservoir resting upon said upper flange, and an air-tight top resting upon said reservoir-flange and supporting a main downward-draft flue, which terminates within the fire-pot, substantially as shown and described.

7. The combination of the flaring fire-pot I, notched at its lower edge, and the base K, conical in shape, ribbed, as shown, and adjustably suspended therein, as shown and described.

253,145. DREDGING-MACHINE. ESPHARIAN WILLIAMS, Oakland, Cal. Filed Aug. 5, 1881. (No model.)

Brief.—Corner towers on the boat guide vertically-adjustable frames, over which travel the chains of buckets. The buckets deliver by chutes into a central tank, whence the silt is again elevated to a hopper and spout. Suitable gearing adjusts the frames and actuates the chains. The boat is advanced by swinging it alternately upon either of two spuds astern, and the cut of each chain of buckets is in the arc of a circle, the two arcs meeting at the center of oscillation.

Claim.—1. In a dredger, the vertical corner towers, C C, the ladders E E, with their racks F, said ladders being rendered adjustable within the towers by means of the gears G G, double gearing H H, shafts K and I, worm-screws *a*, worm-wheels *b*, and pinions *c*, substantially as herein described.

2. In a dredger, the vertical corner towers, C C, the adjustable ladders E E, having pulleys L L, boxes *d d*, and carrying-chains M, with buckets N, said chains being revolved by means of the sprocket-wheels O O, bevel-gears Q, T, and U, pinions R R, feathered shafts S S, and driving-shaft V, substantially as herein described.

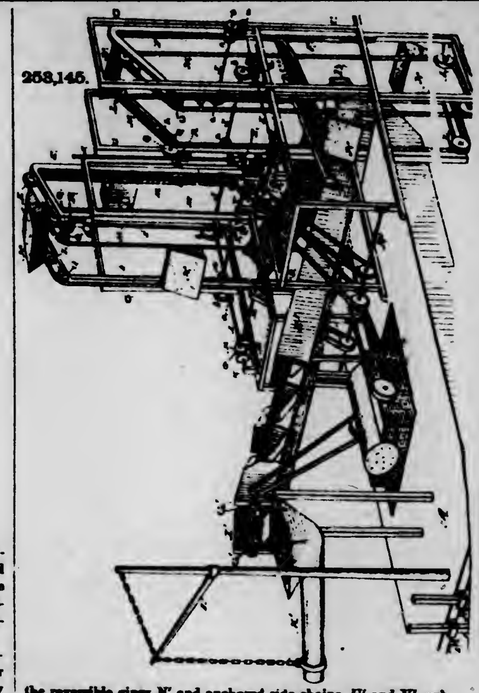
3. In a dredger having vertical corner towers, C C, adjustable ladders E E, and carrying-buckets N, the inclined spouts C' C', with the central receiving-tank, D', when arranged substantially as and for the purpose herein described.

4. In a dredger, the combination of vertical corner towers, C C, adjustable ladders E E, carrying-buckets N, the inclined spouts C' C', central receiving-tank, D', and extended inclined way E', substantially as and for the purpose herein described.

5. In a dredger, the combination of the vertical towers C C, the adjustable ladders E E, with their system of traveling buckets N, and the inclined way E', with its system of buckets I', substantially as and for the purpose herein described.

6. In a dredger, the rear spuds, M' M', in combination with

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the reversible gipsy N' and anchored side chains, U' and V', substantially as and for the purpose herein described.

7. The method of advancing a dredger, consisting of securing it at its rear end alternately by means of spuds set on each side of the central line, and causing its front to swing to one side or the other over an arc, each spud acting alternately as a pivot-point, and being advanced at each swing of the scow, substantially as herein described.

8. The method of dredging by means of a dredger having towers and adjustable ladders on its forward corners, said ladders carrying the traveling dredging-buckets, which consists in advancing said dredger by securing it at its rear end alternately by spuds set on each side of the central line, and causing its front to swing alternately to one side or the other over an arc, and causing one system of dredging-buckets to stop at a point on the arc where the other began, each spud acting alternately as a pivot-point, and advancing at each swing of the scow, substantially as herein described.

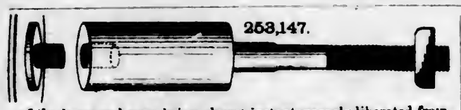
253,146. OIL-CAN. CHARLES B. WILSON, Orange, Tex. Filed July 25, 1881. (Model.)



Claim.—The combination, with the oil-can A, of the handle B, the air-tube C, and the cap D, substantially as herein shown and described, and for the purpose set forth.

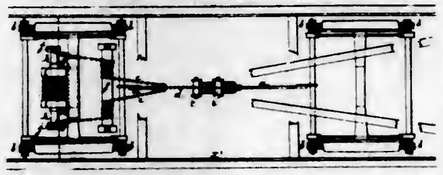
253,147. TRACE-FASTENING BOLT. CORNELIUS WOOLNOUGH, No. 2 Elizabeth Street, Eaton Square, County of Middlesex, England. Filed Sept. 26, 1881. (No model.) Patented in England Mar. 3, 1880, in France Aug. 21, 1880, and in Belgium Sept. 15, 1880.

Claim.—A carriage roller-bolt or dragon-tongue bolt having a movable head capable of being easily detached from the shank, so as to allow of the trace being readily slipped off the same and



of the horse or horses being almost instantaneously liberated from a carriage, wagon, or other vehicle in case of accident.

253,148. ELECTRIC APPARATUS FOR WORKING RAILWAY-BRAKES. FERDINAND A. ACHARD, Paris, France. Filed Mar. 17, 1881. (No model.) Patented in England June 17, 1880.



Claim.—1. The combination, with the electric apparatus for operating the brakes of a railway-train, comprising drums suspended by swinging supports beneath the car-body, and electro-magnets connected with said drums, and adapted by their attraction to bring and hold said drums in contact with the car-axles, of two piles or sources of electricity located at opposite ends of the train, and means, as indicated, for simultaneously bringing said piles into action, so that the brakes throughout the train receive substantially the same quantity of electricity, as set forth.

2. The combination, with an electric circuit and electric-brake apparatus located on branches of said circuit, so as to be supplied by derivation therefrom, of two piles or other sources of electricity at opposite ends of the train, adapted to be simultaneously brought into action, substantially as described.

3. The combination, with the brake apparatus and circuit for conveying electricity thereto and two piles or sources of electricity, of a commutator and relay with connections for connecting said piles in the brake-circuit, substantially as described.

4. The combination of brake-circuit, electric-brake apparatus supplied by said circuit, a relay-circuit, a relay located in the relay-circuit and adapted to connect in with the brake-circuit a pile or other source of electricity, two piles normally connected in opposition in said relay-circuit, and a commutator with conductors and contacts, as indicated, whereby said piles can be connected in tension to operate the relay, substantially as described.

5. The combination, with electric circuits extending through a railway-train and electric-brake apparatus in the cars of said train, of electric piles, and means, as indicated, for connecting in said piles, arranged symmetrically at opposite ends of the train, substantially as described.

6. In an electric-brake apparatus, the electro-magnets, the swinging supports for suspending the same from the car-frame, and the springs for supplying electricity thereto, combined and operating substantially as described.

7. The combination, in an electric-brake system, with electric apparatus for applying the brakes, of a normally-closed circuit containing piles or other sources of electricity connected in opposition and placed at opposite ends of the train, said circuit comprising suitable conductors on the several cars, and of couplings for completing the circuit through the train, constructed and operating substantially as described, so that in case a coupling breaks the circuit is automatically closed for the two parts of the train and the brakes applied, as set forth.

8. The combination of the brake-circuit, its piles, the additional circuit, its piles and relays, and the commutator for altering simultaneously the connections of the two circuits, substantially as described.

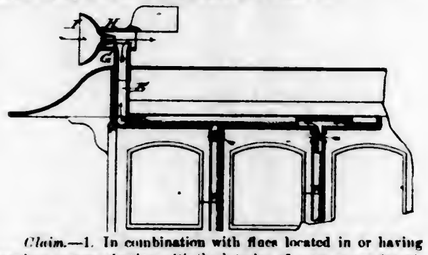
9. The combination of the brake apparatus, the brake-circuit and its piles, the relay, the relay-circuit and its piles, the couplings between the cars for the two circuits, and the commutators, substantially as described.

10. The combination, with electric-brake apparatus, conductors for supplying electricity thereto, one or more piles, and a commutator, of operating cords or rods connected with said commutator, substantially as described.

11. The combination, with the commutator or the controlling device of a brake system, of a cord connected at one end with the commutator or device and fastened at the other to a car of the train other than that on which the commutator is placed, so that the tension on the cord caused by separating of the train acts upon said commutator or device and applies the brakes, substantially as described.

253,149. APPARATUS FOR VENTILATING CARS, &c. JAMES ARNELL, Canajoharie, N. Y. Filed July 12, 1881. (No model.)

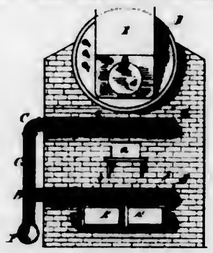
Brief.—The apartment to be ventilated is provided with vertical air-tubes, which are furnished with registers at varying heights. These vertical tubes terminate in a horizontal tube running the length of the apartment near its top, the end of which tube projects upward through the roof and is provided on the outside with a funnel-shaped device to receive the currents of air.



Claim.—1. In combination with flues located in or having openings communicating with the interior of a car or apartment, a series of registers located some near the bottom and some near the top of the car or apartment, and an exhausting device, substantially as shown and described, connected with a pipe outside of the apartment and communicating with said flues, all substantially as set forth.

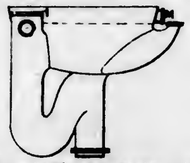
2. In combination with the exhaust end of a ventilator-tube, E, an ejector-like contrivance composed of a tube, G, having the upper end of its bore flared, as described, a tube, H, arranged with its bore transversely to that of tube G, and the lowermost part of it about coincident with the plane of the mouth of G, and a funnel-shaped receiver, I, the whole constructed and operating substantially as described.

253,150. HEATING-FURNACE. BENJAMIN BAYLISS, Sr., Pittsburg, Pa. Filed Oct. 5, 1881. (No model.)



Claim.—In a heating-furnace, the combination and arrangement herein set forth of the horizontal air-supply blast-pipes B C, the said pipes provided with a different number of air-jet nozzles *b* and *c*, the pipe B having the lesser number and larger jets and the pipe C the greater number and smaller jets, the upright service-pipe G, connecting the pipes B and C, the main air-flue F, and the combustion-chamber A, with solid stationary bottom without a grate, substantially as described.

253,151. WATER-CLOSET. DANIEL T. BOSTEL, Brighton, County of Sussex, England, assignor to Henry C. Meyer and Samuel F. Sniffen, New York, and Frederick R. Smart, Bayside, N. Y. Filed May 23, 1881. (No model.) Patented in England Oct. 11, 1880.



Claim.—1. In a water-closet apparatus, a trunk or exit-pipe located at one side of the bowl or basin and at its front, for the purposes set forth.

2. In a side-delivery water-closet, the combination, with the bowl and the outlet-trunk, of an intermediate channel or water way, D, substantially as and for the purpose set forth.

253,152. WATER-CLOSET. DANIEL T. BOSTEL, Brighton, County of Sussex, England, assignor to Henry C. Meyer and Samuel F. Sniffen, New York, and Frederick R. Smart, Bayside, N. Y. Filed Aug. 4, 1881. (No model.) Patented in England Apr. 21, 1877.

Brief.—Water is admitted to the flushing-rim through two independent inlets, E E. The flushing-rim is provided with larger apertures at the point opposite the delivery side and with apertures of diminishing capacities from said point toward the delivery side.

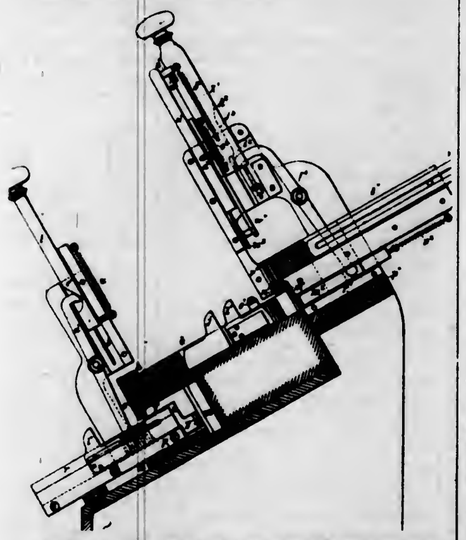


Claim.—1. In combination with the bowl of a side-delivery closet provided with a flushing-rim, the two water-inlets E E, arranged to supply the flushing-rim with two streams of water directed into the rim from points near that opposite the front part of the bowl, as and for the purpose set forth.

2. In combination with a side-delivery bowl having a flushing-rim formed with apertures largest at the point opposite the delivery side of the bowl, and of diminishing capacities from said point toward the delivery side of the bowl, the two water-inlets E E, arranged to supply the flushing-rim with two streams of water directed into the rim, as hereinbefore described.

3. The combination, with the side-delivery bowl having a flushing-rim and an open communication with the trap, of a trunk, D, extended upward from the trap nearly or quite to the level of the top of the bowl, and provided with a removable top, D^3, all in substantially the manner and for the purpose set forth.

253,153. TYPE SETTING AND DISTRIBUTING APPARATUS. ERNST W. BRACKELSBERG, Hagen, Westphalia, Prussia, Germany. Filed July 13, 1881. (No model.) Patented in England Apr. 13, 1881, in France Apr. 16, 1881, in Germany Apr. 17, 1881, in Belgium Apr. 19, 1881, in Austria-Hungary June 24, 1881, and in Italy June 30, 1881.



Claim.—1. The combination, with the setting mechanism or composer B, containing the ejector-bar *i*, with ejector *l*, spring *u*, and composing-race *r*, of the type-driver *x* and the adjuster *y*, co-operating with the vertical grooves *m*, or their specified equivalent, together with mechanism, substantially as described, for imparting the required reciprocating motion to the driver *x* and the adjuster *y* by the downward motion of the bar *i*, as and for the purpose specified.

2. A type-distributing apparatus consisting, first, of a number of type-channels *b*, and of a register, *q'*, corresponding with these channels; and, secondly, of the distributing mechanism or distributor C, guided in a suitable manner, and movable transversely to and in the rear of the channels *b*, this distributor comprising the bar *a'*, to be depressed by hand or by the foot and drawn upward by the spring a^2, the ejector-bar *a'*, having the ejector a^3 attached to it, and connected by a spring, b^3, with the bar *a'*, the holding-down bar *w'*, connected with the bar *a'* by a spring, c^3, the distributing-race *l'*, projecting with its front end above the channels *b*, and the pointer *c'*, whose distance from the distributing-race is equal to the distance between any type-channel and the corresponding point of the register *q'*, substantially as described.

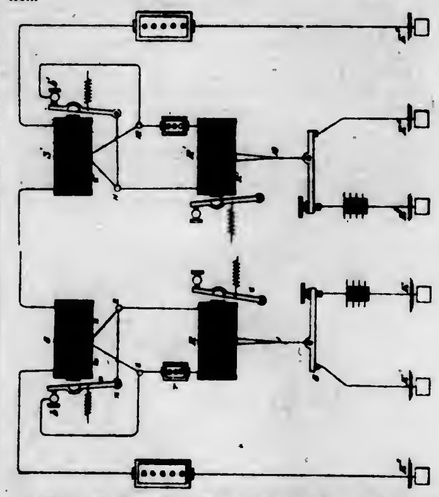
3. The combination, with the distributing mechanism C, containing the bars *a'*, *u'*, and *w'*, ejector a^3, springs a^2, b^3, and c^3, and the distributing-race *l'*, of the bar m^2, serving as type-driver and as adjuster, and operated by the inclined surfaces b^2 and c^2 on the bar *a'*, together with the lever f^2 and spring e^2, as and for the purpose specified.

4. The type-containing race or channel having the front portion of its bottom formed of a spring, a^5, in combination with the type-ejecting mechanism, substantially as hereinbefore set forth.

5. The combination, with the bars *a'*, *u'*, and *w'*, and the springs b^3 and c^3, of the projections or stops *s'* and c^2 on the bars *w'* and *a'*, respectively, and the projection or pin d^3, fixed to the bar *a'* or *u'*, and acting against a shoulder or other suitable part of the bar *w'*, as and for the purpose specified.

253,154. DUPLEX TELEGRAPH. CHARLES L. BUCKINGHAM, Elizabeth, N. J., assignor to the Western Union Telegraph Company, New York, N. Y. Filed Dec. 27, 1881. (No model.)

Brief.—A contrivance for avoiding troubles due to static charge and discharge. A normally-closed bridge unites the artificial and main lines at points beyond the differential receiving-instrument, and the static charge and discharge are caused to act equally upon both coils of the receiver by reason of the bridge. This bridge, however, is broken by a signal from the distant station.



Claim.—1. In a telegraph system for simultaneous transmission in opposite directions, the combination, substantially as specified, at each station of the main line, an artificial line, a differential receiving-instrument, an electro-magnet, and a bridge-conductor joining the main and artificial lines, which is opened and closed by the agency of said electro-magnet.

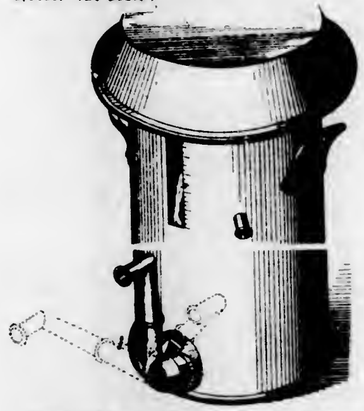
2. In combination with a duplex-telegraph line, an artificial circuit, a differential receiving-relay, a normally-closed bridge or branch conductor, and an electro-magnetic circuit-breaker whose armature is adjusted to be insensible to the static discharge from the line, but which is actuated by a sufficiently prolonged current from a distant station to make a signal, whereby the static discharge will pass to earth through both coils of the differential relay, while a prolonged signal-current sent from a distant station will cause the bridge-conductor to be broken.

3. The combination, substantially as specified, of a main and artificial line, differential relay R, polarized circuit-breaker S, and

a normally-closed bridge which is broken and closed by means of said circuit-breaker S.

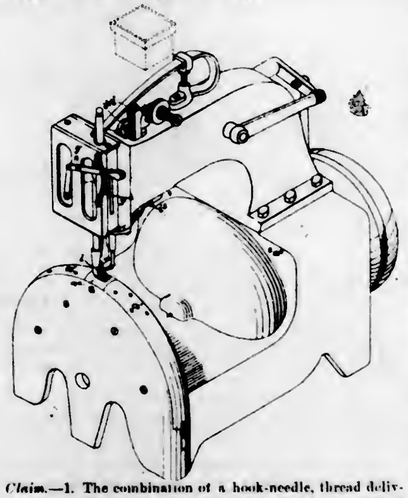
4. In combination with a duplex-telegraph line, an artificial circuit, a differential receiving-relay, a bridge or branch conductor connecting the main and artificial lines, and means for opening and closing said bridge, whereby said bridge may be closed to cause an equal division of current between the two oppositely-wound coils of the receiving-relay, both at the time of inductive charge and discharge of the main line, substantially as specified.

253,155. PROCESS OF SEPARATING CREAM FROM MILK. FRANCIS G. BURLEN, West Hartford, Conn., assignor to the Vermont Farm Machine Company, Bellows Falls, Vt. Filed Nov. 3, 1881. (No model.)



Claim.—The within-described method of separating cream from the milk from or upon which it shall have been raised, which consists in first ascertaining, as set forth, the quantity or depth of cream raised in the vessel, and then adjusting a discharge-faucet to the desired point and withdrawing the milk from beneath the cream, leaving such predetermined quantity of cream within the vessel.

253,156. WAX-THREAD SEWING-MACHINE. DUNCAN H. CAMPBELL, Pawtucket, R. I., assignor of three-fourths to Henry B. Metcalf, Frank E. Comey, and Daniel McNiven, all of same place. Filed Aug. 5, 1881. (Model.)



Claim.—1. The combination of a hook-needle, thread delivering and controlling mechanism, a curved shuttle, and an arched shuttle-race, serving as a heating-flue, substantially as described.

2. The combination of a hook-needle, thread delivering and controlling mechanism, a curved shuttle, an arched shuttle-race, and an arched work-plate, said needle, shuttle, and race being beneath the work-plate, substantially as described.

3. The combination of the hook-needle, the work-plate convex laterally and longitudinally, and the shuttle beneath the work-plate operating in a race which serves as a heating-flue, substantially as described.

4. The combination of a hook-needle, a curved centrally-pointed shuttle, an arched shuttle-race which supports the shuttle in its course therein and serves as a heating-flue, and a shuttle-driver mounted on a rock-shaft below the center of the race, substantially as described.

5. The combination, with a shuttle having a longitudinally-recessed web or groove on its upper side, of a race-plate grooved on its under side for co-operating with the shuttle for causing the slack shuttle-thread to occupy the recess in the top of the shuttle during its backward movement, substantially as described.

6. In an arched or curved shuttle-race serving as a heating-flue, upper bearings for the shuttle, composed of cork or similar yielding material not injuriously affected by heat, substantially as described.

7. A curved shuttle provided with a longitudinal thread-recess extending from nose to heel on its upper side, substantially as described.

8. A curved shuttle provided with a longitudinal thread-recess on its upper side and a thread-delivery aperture near the nose of the shuttle, substantially as described.

9. A curved shuttle having a thread groove or recess on its upper side extending from nose to heel, and a spring for bearing upon the thread within the recess, substantially as described.

10. In a sewing-machine, a segmental plate integrally affording an arched shuttle-rail, and bearings for a needle-bar, substantially as described.

11. The combination, with the awl-bar, its operating rock-shaft, and the arm or lever thereon, of the bearing-disk on the awl-bar, slotted to receive said arm, substantially as described.

12. The combination, substantially as hereinbefore described, with the feed-slide carrying an awl or a needle for feeding its vibrating mechanism and coupling mechanism, of a feed-graduating lever for varying the position of said coupling mechanism, whether the feed-slide is in motion or at rest, and for supporting said mechanism in position, as set forth.

13. The combination, substantially as hereinbefore described, of the slide-vibrating mechanism, the feed-slide having an inclined slot, and the coupling-blocks capable of a sliding movement for varying the vibrations of the feed-slide while in active operation, as set forth.

14. The combination, substantially as hereinbefore described, of the slide-vibrating mechanism, the feed-slide having the inclined slot, the coupling-blocks, and means for fixedly adjusting said block, and thereby varying the vibrations of the feed-slide, as set forth.

15. The combination, substantially as hereinbefore described, of the vibrating slotted arm, the slotted feed-slide, the coupling-blocks, the lever for moving said blocks in their slots, and the graduated scale.

16. The combination, substantially as hereinbefore described, of the feed-slide carrying an awl or a needle, the feed-graduating lever, the coupling mechanism controlled by said lever, the graduated scale, and a locking device for maintaining said lever and supporting the coupling mechanism in any desired position.

17. The combination, with a hook-needle below a work-plate and take-up mechanism, including a pulley over which thread passes just prior to approaching the needle, of an inclined thread-tube which occupies a direct line from the periphery of said pulley to the path of the needle, substantially as described.

18. The combination, with a hook-needle and a presser-foot, of a thread-eye for carrying thread across the path of the needle and above the presser-foot, and a thread-arm vibrating in the arc of a circle wholly at one side of the presser-foot and the path of the needle, substantially as described, whereby the space above the presser-foot, less that required by the thread-eye, is rendered available for the complete elevation of the presser-foot.

19. The combination, substantially as hereinbefore described, of a hook-needle, a thread-arm, a thread-eye, and operating mechanism for the arm and eye, which causes said eye to first carry and deliver the thread to the arm and thence deliver thread to the needle, and also causes the arm to merely retain and release the thread delivered to it by the eye, whereby said arm is prevented from abrading the thread, as set forth.

20. The combination, substantially as hereinbefore described, of a hook-needle, take-up mechanism, a thread-tube in line with the path of the needle, and a thread-eye which, when it has delivered thread to the needle, rests in line with the thread-tube during the operation of the take-up, for obviating deflection and the consequent abrasion of the thread by the eye, as set forth.

21. The combination of the hook-needle, the thread-eye, its lever and reciprocating slide, and the stationary slotted plate, substantially as described, whereby the path traversed by the eye toward and from the needle is laid in a straight line, and in a curved line in delivering thread thereto, as set forth.

22. The combination, substantially as hereinbefore described, of a hook-needle, a presser-foot, a vibrating thread-eye, and a thread-measuring arm which is variably adjusted for measuring off thread by the vertical movement of the presser-foot.

23. The combination of the presser-foot and the thread-arm pivoted upon an axis, which is varied in its location by raising or lowering the presser-foot, substantially as described.

24. The combination, with the presser-foot provided with a rounded projection on its bar, of a thread-arm rotatively mounted on a lever, a vertically-inclined lug or web on said lever, and a spring for maintaining the surface of the inclined lug in contact with the projection on the presser-foot bar, substantially as described, whereby the position of said thread-arm is varied by the vertical adjustment of the presser-foot, as set forth.

25. The combination of the thread-arm, mounted on a movable axis, the presser-foot controlling the position of said axis, the reciprocating rod, and the bell-crank lever and link connecting said rod with the thread-arm, substantially as described.

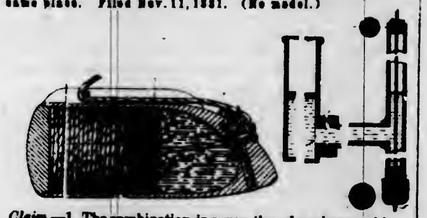
26. The combination, with the presser-foot, its bar, and lifting-finger, of the vibrating lever which lifts the foot during the feeding operation, and an adjustable seat for the lifting-finger on said lever, substantially as described.

27. The combination of an arched shuttle-race, a wax-thread shuttle, and one or more heating-burners located near the lower ends of the race, substantially as described, for heating the shuttle and its contents, as set forth.

28. The combination, substantially as hereinbefore described, with the parts to be heated in a wax-thread machine, of a burner or burners remotely located from said parts, and intermediate metallic connections for metallically conducting heat from said burners to said parts, as set forth.

29. The combination, with a thread-tube for heating thread in its passage through said tube, and a heating-burner remote from said tube, of a heating rod or plate connected with said tube at one end and exposed to the flame of the burner at its opposite end, substantially as described.

253,157. WAX-THREAD SEWING-MACHINE. DUNCAN H. CAMPBELL, Pawtucket, R. I., assignor of three-fourths to Henry B. Metcalf, Frank E. Comey, and Daniel McNiven, all of same place. Filed Nov. 11, 1881. (No model.)



Claim.—1. The combination, in a wax-thread sewing-machine, of a main wax-cup, and an auxiliary wax-cup on a level with the main cup, adapted to be supplied with wax by flowage from the main cup, and arranged to be traversed by the thread on its way to the work-plate, substantially as described.

2. The combination, in a wax-thread sewing-machine, of a main wax-cup, and an auxiliary wax-cup connected with the main cup and located between the take-up mechanism and the work-plate, and in the straight path of the thread, substantially as described, whereby the thread enters and leaves the auxiliary cup in a direct line, as set forth.

3. In a wax-thread sewing-machine, a tubular wax-cup traversed longitudinally by the thread on its way to the work-plate, and provided at top and bottom with perforated plugs, substantially as described, whereby the wax is inclosed and guarded against injurious exposure, as set forth.

4. A wax-thread shuttle having a thread-chamber, a wax-chamber, and an aperture provided with packing for stripping the surplus wax from the thread as it leaves the shuttle, substantially as described.

253,158. FLUX FOR ALLOYING PLATINUM. MILTON H. CAMPBELL, New York, N. Y., assignor of one-half to Marvin Green, same place. Filed Oct. 20, 1881. (Specimens.)

Claim.—1. A flux for metallurgic purposes, consisting of sodic hyposulphite for effecting ebullition, an oxygen-yielding substance for generating intense heat, and a slag-producing substance for affording a covering which shall be impervious to air and a non-conductor of heat, substantially as specified.

2. A flux consisting of sodic hyposulphite, potassium nitrate, and sodic biborate, or their equivalents.

3. A flux consisting of twenty parts sodic hyposulphite, thirty parts potassium nitrate, and fifty parts sodic biborate, substantially as specified.

253,159. ELECTROPLATING WITH PLATINUM AND SILVER. MILTON H. CAMPBELL, New York, N. Y., assignor of one-half to Marvin Green, same place. Filed Oct. 20, 1881. (No specimens.)

Claim.—1. In an electroplating-bath, an electrolyte containing a dissolved double salt of platinum and silver, in combination with an anode of the homogeneous alloy of platinum and silver.

2. In an electroplating-bath, an electrolyte containing a dissolved double salt of platinum and silver, in combination with means, as specified, for repleting the solution with the double salt.

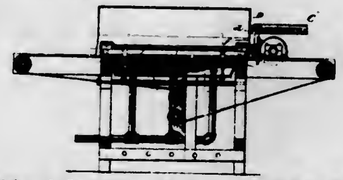
3. In an electroplating-bath, the combination of an anode of a homogeneous alloy of platinum and silver, and a liquid for said bath having in solution a compound chloride of platinum and silver.

253,160. METHOD OF STICKING FUR TO FIBROUS GOODS. WILLIAM E. DOUBLEDAY, Bay Ridge, N. Y., assignor to Ellen M. Doubleday, same place. Filed Nov. 9, 1881. (No model.)



Claim.—The herein-described improvement in the art of making hats which have a flowing nap of fur, the same consisting in applying a bat of fur to a hat-body which has previously been felted and shrunk to the size and density which it is desired that it shall have when the hat is completed, next subjecting the fur bat and body to the combined rubbing and pressing action of a vibrating plate, whereby the fur is stuck to the surface of the previously-felted hat-body, and subsequently scalding the same, substantially as set forth.

253,161. MACHINE FOR BEATING UP THE NAP OF FUR FACED ARTICLES. WILLIAM E. DOUBLEDAY, New York, N. Y., assignor to Ellen M. Doubleday, same place. Filed Dec. 9, 1881. (No model.)



Claim.—1. In a machine for whipping or beating fur-faced articles, the combination of a stationary bed, a traveling apron above the bed, whippers, and means for imparting moisture to the fur-faced fabric, substantially as set forth.

2. In a machine for whipping or beating fur-faced fabrics, the combination of perforated stationary bed, a traveling apron above the bed, whippers, and means for passing a heated current through the perforated bed, substantially as set forth.

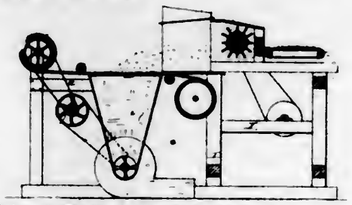
3. In a machine for whipping or beating fur-faced fabrics, the combination of a stationary bed, a traveling apron above the bed, whippers, means for imparting moisture to the fur-faced fabric, and means for passing heated currents upward through the perforated bed, substantially as set forth.

4. In a machine for whipping or beating fur-faced fabric, a support for the fabric to be beaten, whippers, an inclosing-chamber above the support for the fur-faced fabric, and means for imparting moisture to the material, substantially as set forth.

5. In a machine for whipping and beating fur-faced fabric, a support for the fabric to be beaten, whippers, an inclosing-chamber above the support for the fur-faced fabric, and means for imparting moisture and heat to the material, substantially as set forth.

6. In a machine for whipping or beating fur-faced fabrics, the combination, with the traveling apron and the whippers, of the water-pipe C D, substantially as set forth.

253,162. MAKING FUR BATS. WILLIAM E. DOUBLEDAY, New York, N.Y., assignor to Ellen M. Doubleday, same place. Filed Dec. 13, 1881. (No model.)



Claim.—1. The herein-described fur bat, consisting of a layer of loose fur, in combination with a supporting fabric of substantially non-feltable fibrous material.

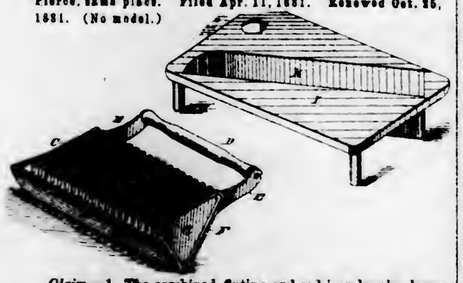
2. The herein-described method of making a fur bat in a continuous flat sheet—that is to say, by depositing a layer of loose fur upon a traveling fabric of substantially non-feltable fibrous material and attaching the fur to the fabric by means of an air-current which passes through the fur and the fibrous material, substantially as set forth.

3. In a machine for making fur bats, the combination of the following elements, namely: a perforated surface, means for moving a fabric over said surface, means for depositing fur upon the fabric, and means for causing the fur to adhere to the fabric, substantially as set forth.

4. In a machine for making fur-faced articles, the combination of the following elements, namely: means adapted to move a continuous non-feltable fabric over a perforated suface, means adapted to deposit fur on said fabric, means for causing the fur to adhere to said fabric, means for supplying a feltable fabric to the fur bat thus produced, and mechanism adapted to stick the fur bat to the feltable fabric.

5. The herein-described process of making a continuous fur bat—that is to say, by depositing a layer or surface of fur by means of the practically continuously-feeding mechanism upon a continuous fibrous base, substantially as set forth.

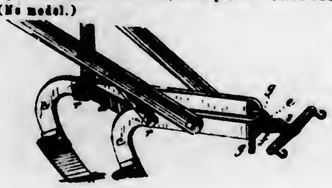
253,163. COMBINED FLUTING AND SAD IRON. HIRAM R. ELLIS, Grand Rapids, Mich., assignor of one-half to Byron R. Pierce, same place. Filed Apr. 11, 1881. Renewed Oct. 25, 1881. (No model.)



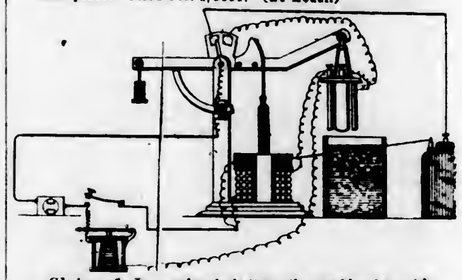
Claim.—1. The combined fluting and sad iron herein shown and described, composed of a hollow triangular body, A, having a polished bottom, B, a corrugated side, C, and a smooth side, F, the sides C F converging to form the top ridge or apex of the triangular body, and the side F having a pair of rigid curved arms or brackets, E, for supporting the handle D vertically above or in a line with the top ridge or apex of the iron, as shown and set forth.

2. The combination, with a combined fluting and sad iron, constructed substantially as herein described, and having a non-detachable handle, of a stand, I, having groove or recess K, substantially as and for the purpose shown and specified.

253,164. CULTIVATOR. MILTON T. HANCOCK, Thomasville, Ga., assignor to James P. Turner, same place. Filed Jan. 3, 1882. (No model.)



253,165. APPARATUS FOR IMMERSING GALVANIC-BATTERY PLATES. ARTHUR J. HOLT, Grand Rapids, Mich., assignor of two-thirds to William H. Jones and John J. Sours, same place. Filed Oct. 4, 1881. (No model.)



Claim.—1. In a galvanic battery, the combination, with a weighted tilting beam supporting the electrodes, of a cell or cells, an electro-magnet, and a core, all arranged substantially as described, so that the electrodes are immersed in or withdrawn from the exciting-fluid by the current of the battery itself, as set forth.

2. In a galvanic battery, the combination, with the electrodes adapted to be immersed in or withdrawn from the exciting-fluid by means of the current formed by the battery itself, of a core and a magnetic coil placed in the circuit of the battery, said circuit being provided with a suitable circuit-breaker, substantially as set forth.

3. In a galvanic battery, the combination, with the suspended electrodes, of a magnetic coil placed in the circuit of the battery and adapted to act upon a core, thus immersing the electrodes, and a key or equivalent device by which the circuit is broken, the magnetic coil rendered inoperative, and the electrodes withdrawn from the exciting-fluid, substantially as set forth.

4. In a galvanic battery, the combination, with the suspended electrodes adapted to be immersed in the exciting-fluid by means of the current formed by the battery itself, of a core, a magnetic coil placed in the circuit of the battery, and means for compensating for the decrease in weight of the electrodes when immersed, substantially as set forth.

5. In a galvanic battery, the combination, with a standard supporting a pivoted weighted beam and a stop device, of a core and electrodes suspended from the beam, and a magnetic coil arranged in the circuit of the battery, adapted to act upon said core, and thus immerse the electrodes in the exciting-fluid, and a circuit-breaker by means of which the electrodes are raised, substantially as set forth.

6. In a galvanic battery, the combination, with the electrode and cell, of the standard, the weighted beam, and the adjustable stop, substantially as set forth.

7. In a galvanic battery, the combination, with the electrodes and cells, of the standard and its adjustable stop and the beam provided with a segment, to which the core is flexibly connected, substantially as set forth.

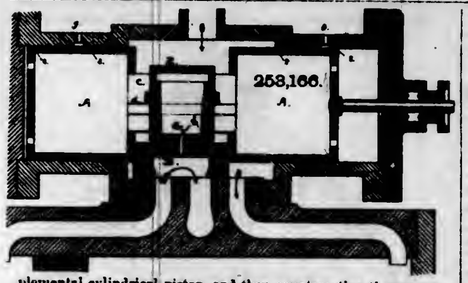
8. In a galvanic battery, the combination, with the electrodes and cells, of the standard, the adjustable stop, and the weighted beam provided with the upwardly-inclined end supporting the electrodes, substantially as set forth.

9. In a galvanic battery, the combination, with the main battery and its suspended electrodes, of the standard and weighted beam and a local constant cell, and a switch, substantially as set forth.

10. In a galvanic battery, the combination, with the cells and electrodes, of the standard and beam, and a variable resistance located on a derived circuit, substantially as and for the purpose set forth.

253,166. BALANCED VALVE. WILLIAM D. HOOKER, Oakland, Cal. Filed June 8, 1881. (No model.)

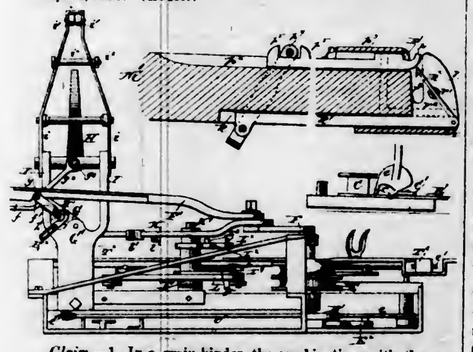
Claim.—1. The improvement in balancing slide-valves, consisting in transferring the steam-pressure from the valve to a supplemental cylindrical piston, and then counteracting the pressure upon the piston by exposing a corresponding area of the piston to the steam-pressure in a counter direction, substantially as described.



2. The inverted-cup-shaped cylinder E, attached to the horizontally-moving supplemental piston A A, in combination with the slide-valve B, with its piston G fitting in the cylinder E, and having the space above it connected with the exhaust or open air by a passage, *i*, substantially as described.

3. The hollow supplemental piston A A, arranged to move in a case or shell having a space, *g*, connected with the open air, in combination with the inverted-cup-shaped cylinder E and main valve B, with its piston G and the passage *i*, all combined and arranged to operate substantially as above described.

253,167. GRAIN-BINDER. CHRISTOPHER LIDDEN, La Fayette, Ind., assignor to himself and R. Jackson, same place. Filed Apr. 4, 1881. (Model.)



Claim.—1. In a grain-binder, the combination, with the reciprocating rake-carriage arranged below the platform, the rake hinged to the rake-carriage, a pair of latches, the one adapted to hold the rake in an upright position and the other adapted to hold the rake prostrate below the platform, a stop-pin, *c'*, and stops or dogs for raising and depressing the rake and for engaging and disengaging the latches, so that the rake will be held upright while carrying the grain in gavels to the binder-arm, and then knocked down and held prostrate while moving away from the binder-arm, substantially as described.

2. The combination, with the vibratory binder-arm, of the slotted reciprocatory bar F', the crank-arm having a wrist-pin passing through the slot of said bar, the swiveled connecting-rod connecting the crank-arm with the binder-arm, and the lever H', arranged to raise the slotted bar F' at certain periods to free the wrist-pin of the crank from a notch at one end of the slot in said bar, substantially as described.

3. The combination, with the vibratory binder-arm, of the slotted reciprocatory bar F', having a notch formed at one end of its slot, the crank G, provided with a wrist-pin passing through the slot of the reciprocatory bar, the connecting-rod swiveled at each end to a collar, one of which collars is arranged loosely upon an arm, A, of the binder-arm and the other similarly arranged upon a wrist-pin of the crank, and the lever H', having a slotted bar, H', pivoted thereto, said lever being adapted to raise the bar F' at the proper moment, so as to free the wrist-pin of the crank from the notch at the end of the slot in the said bar, whereby the latter will travel to a certain extent without actuating the crank, substantially as described.

4. The combination, with the binder-arm, of the spring-bars *i*, the tension-pulleys arranged between the ends of said spring-bars, and a bolt passing through the spring-bars and provided with a nut for drawing them together, one of said tension-pulleys being mounted upon a hub of the other, substantially as described.

5. The combination, with the oscillatory shaft carrying the tying devices, of a vibratory lever having its ends connected with the oscillatory shaft by means of a chain wrapped several times around the shaft, a sleeve or hub upon the vibratory lever provided with radial arms and studs upon said arms, and a slotted bar guided by the axle that passes through the hub of the lever, said slotted bar being provided with dogs that act at certain moments upon the studs of the hub-arms, and being also connected with the crank of the driving-shaft, substantially as described.

6. The combination, with the binder-arm, of the armed rotary cord-holder N, and the arm N', pivoted to the lever L, and arranged to act upon the rotary cord-holder at certain moments, so as to cause the holder to engage the cord, substantially as described.

7. The combination, with the oscillatory shaft M', of the cutter and holder P, arranged to slide along said shaft, the links connecting the cutter and holder with a collar loose upon the oscillatory shaft, and the vibratory lever arranged to move the collar, substantially as described.

8. The combination, with the oscillatory shaft, of the cutter and holder P, arranged to slide in a longitudinal channel in the shaft, a sheath into which the cutter and holder is retracted in order to sever the cord between the rotary armed holder and the said cutter and holder, and also to gripe the ends of the cord between the cutter and holder and the gavel, substantially as described.

9. The combination, with the oscillatory shaft, of the cutter and holder P, arranged to slide along said shaft, a link, *p'*, connecting with the cutter and holder bar and pivoted to the oscillatory shaft, the link *p'*, connecting said link with a grooved collar, Q, arranged to slide upon the oscillatory shaft, the vibratory yoke-bar *q'*, arranged to move the loose collar, the lever-arm L', provided with a wrist-pin, and the slotted bar connecting with the vibratory yoke-bar, and having its slot arranged to receive the wrist-pin upon the lever-arm, substantially as described.

10. The combination, with the oscillatory bar carrying the cutter and holder, of a bar arranged to slide along said shaft, and having pivoted to its outer end a notched grabber or finger, and guides arranged to raise said grabber when the bar is retracted and to depress the same when the bar is extended out from the oscillatory shaft, substantially as described.

11. The combination, with the oscillatory shaft carrying the movable cutter and holder, of the movable bar carrying the pivoted finger or grabber, the cutter and holder and the grabber-bar being connected by a link pivoted to the oscillatory shaft, so that the vibration of the link will cause the said two devices to slide along the shaft in opposite directions, substantially as described.

12. The combination, with the oscillatory shaft having the longitudinal channel R, of the pivoted grabber R', arranged to work in said channel, the cutter and holder P, and devices for moving the bars of the cutter and holder and the grabber, said shaft also having the slots *r'*, in which the cord is received as it is being wound around the shaft, substantially as described.

13. The combination, with the oscillatory shaft, of the movable cutter and holder, the grabber pivoted upon a sliding bar, and mechanism timed to rotate the shaft in one direction, so as to cause the cutter and holder to engage the cord and then to cause the grabber to engage the same, said mechanism being also timed to cause the shaft to then rotate in a reverse direction and to actuate the cutter and holder, so as to release the cord after the knot has been tied, substantially as described.

14. The combination, with the oscillatory shaft, of the cutter and holder P, mechanism for actuating the same, the grabber-hook R', the slots *r'*, the channel *r'*, the guide *r'*, and the arm S, connected with the cutter and holder bar and arranged to push the loop off from the end of the oscillatory shaft, substantially as specified.

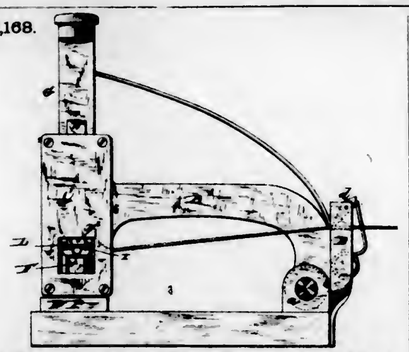
253,168. STAPLING-MACHINE. BLOOMER E. MILLER, La Fayette, Ind., assignor to himself and Charles A. Reynolds. Filed Oct. 10, 1881. (Model.)

Claim.—1. The combination, with the anvil F, of the plunger G and the sliding check I, substantially as described.

2. In a wire cutting and bending machine, the combination of the check I, having the bent ends *i i*, with the slotted clearer-bar L and plunger G, having pin *i'*, all constructed and arranged to operate substantially as described.

3. In a wire cutting and bending machine, the combination, with a plunger and a swinging clearer-bar, of the check I, having bent ends *i i*, screw-threaded pin *k*, and spring *k'*, all constructed and arranged to operate substantially as and for the purpose specified.

253,168.

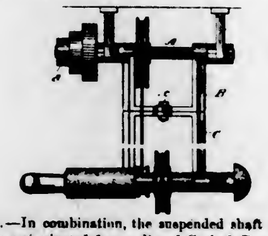


4. The combination of the swinging clearer-bar L, formed with slot *l* and inclines *l' l'*, with the sliding check I, plunger G, and anvil F, all constructed and arranged to operate substantially as and for the purpose set forth.

5. In a wire cutting and bending machine, the combination of the clearer-bar L, plunger G, spring M, pin *m*, sliding check I, and anvil F, all constructed and arranged to operate substantially as and for the purpose set forth.

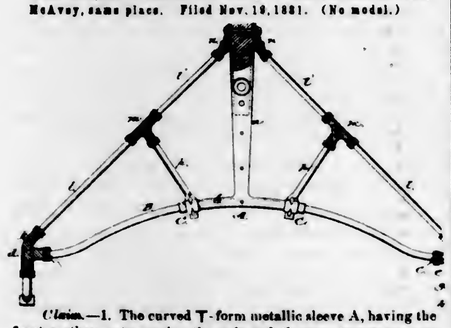
6. In a wire cutting, bending, and clinching machine having a base plate and a vibrating arm hinged or pivoted thereto, the combination of the head C, provided with a suitable anvil therein, with a bifurcated plunger, a bifurcated and swinging clearer-bar, the sliding check I, auxiliary plunger N, and plate P, having clinching grooves, all constructed and arranged to operate substantially as and for the purpose set forth.

253,169. SOLE BUFFING, CLEANING, AND EDGE SETTING MACHINE. EDES PATTEN and THOMAS DAVEY, Lynn, Mass.: said Davey assignor to said Patten. Filed June 6, 1881. (No model.)



Claim.—In combination, the suspended shaft A, provided with pulleys *a a'*, pivoted frames B and C, shaft D, carrying pulleys *e* and *f*, frame E, arm E', arm F, axially pivoted thereto, and head G, carrying shaft, pulley, and tools, all as set forth.

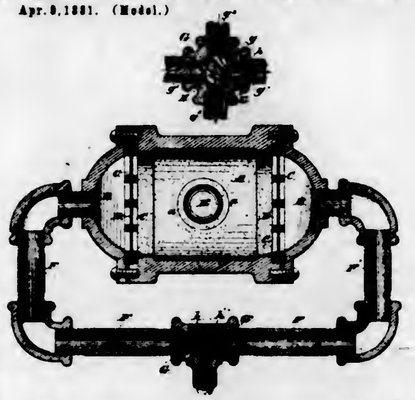
253,170. VEHICLE-POLE. HEZEKIAH B. RICHARDS, Racine, Wis., assignor of one-half to Henry W. Hurlbut and Anthony McAvoy, same place. Filed Nov. 19, 1881. (No model.)



Claim.—1. The curved T-form metallic sleeve A, having the front portion, *a*, to receive the pole and the rear transverse portion, *b*, to engage the circle-bar, substantially as specified.

2. The carriage-pole having the curved T-form metallic sleeve A, the circle-bar B, clip-braces *p*, and clips C, the braces *l* and *l'*, and stem-eyes *k* and the screw-couplings *d*, *m*, and *n*, substantially as specified.

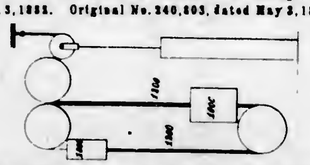
253,171. FILTER. CHAS. L. RIDGWAY, Boston, Mass. Filed Apr. 9, 1881. (Model.)



Claim.—In combination with the cylindrical shell A B B, filled with filtering material, and having its ends connected by means of the pipes F and F', the casing G, placed at the intersection of said pipes, and provided with an axial opening, *g*, and with four radial water-ways, *g'* and *g²*, and the plug H, fitted within said axial opening, and having within opposite sides of its periphery ports *h* and *h'*, each of which may be caused to simultaneously coincide with and connect two of said radial water-ways, substantially as and for the purpose specified.

REISSUES.

10,017. ELEVATOR. CYRUS W. BALDWIN, Chicago, Ill. Filed Jan. 3, 1882. Original No. 240,603, dated May 3, 1881.



Claim.—The combination, with a car, counter-balance, and flexible suspensories, of a supplementary cable suspended from the lower ends of and connecting the car and counter-balance, the supplemental, suspensory, and counter-balance cables, being relatively proportioned, substantially as set forth.

10,018. STEAM AND WATER PRESSURE REGULATOR. NATHANIEL C. LOCKE, Salem, Mass., assignor, by mesne assignments, to the Locke Regulator Company, of Connecticut. Filed May 17, 1881. Original No. 113,069, dated Mar. 28, 1871. Reissue No. 7,108, dated May 10, 1876.

Claim.—1. The combination, in a pressure-regulator constructed to be connected with a street-main or other supply-pipe and having a receiving-chamber, A, of a supply-valve, F, and safety-valve G, when both valves are so arranged as to be operated by one and the same diaphragm, substantially as shown and described.

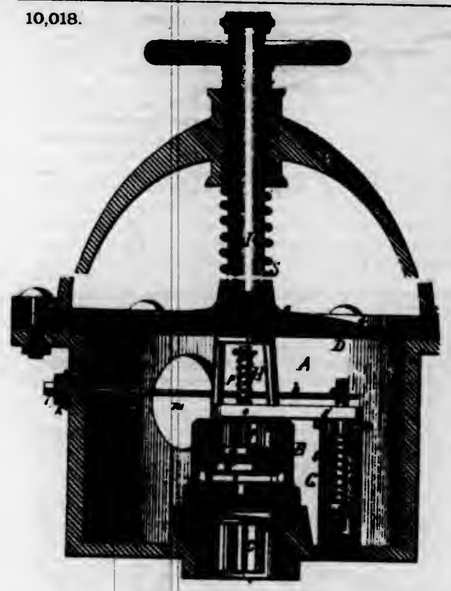
2. The yielding connection between the supply-valve F and the diaphragm or piston D, whereby, after the supply-valve is closed, the diaphragm or piston can have a further upward movement, and thus operate upon a safety or relief valve, substantially as described.

3. The combination, in a pressure-regulator constructed with a receiving-chamber, A, a flexible diaphragm, D, and a check-valve, C, of a relief-valve, G, substantially as and for the purpose described.

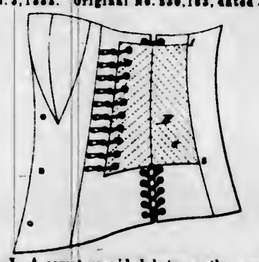
4. In a pressure-regulator having receiver A, supply-valve F, loaded diaphragm D, and safety-valve G, the combination of extension *g'*, of yoke J, carried by the stem of valve F and so arranged as to engage with stem *s*, of safety-valve G, for operation substantially as described.

5. The combination, in a valve having body B, with metallic seat and valve-opening, and having valve F, with projection L closely fitting and entirely filling said opening, of the soft renewable packing, all combined for operation substantially as shown and described, and for the purpose specified.

10,018.



10,019. CORSET. CHAUNCEY F. ALLEN, Waterbury, Conn. Filed Jan. 3, 1882. Original No. 230,163, dated July 20, 1880.

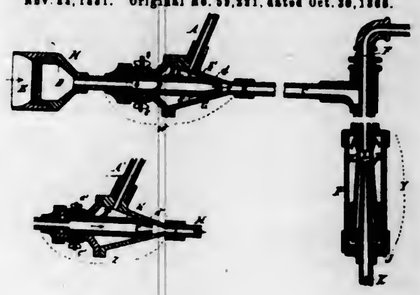


Claim.—1. A corset provided between the arm and the hip with a stiffened section overlying the body portion and secured thereto at the edges, substantially as set forth.

2. A corset provided with one or more stiffened wings, each attached externally to the body at one edge, overlapping the body and extending between the arm and the hip, and provided at the opposite edge with lacing or other fastening, substantially as set forth.

3. The combination, in a corset, of the overlying stiffened side sections and the sides stiffened beneath said sections, substantially as set forth.

10,020. STEAM AND AIR EJECTOR. SHUBAEL E. HEWES, Hoopeston, Ill., assignor to James Jenks, Detroit, Mich. Filed Nov. 22, 1881. Original No. 50,221, dated Oct. 30, 1865.



Claim.—1. In an injector, the combination of the injector W, projector Y, and ejector Z, operating together substantially as described.

2. In an injector, the adjustable nozzles *h i*, operating substantially as described.

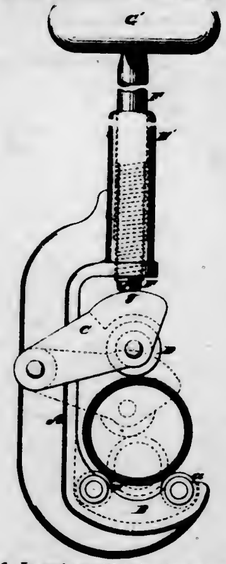
3. In an ejector, the expansible and contractible slit nozzle *i'*, constructed and operating substantially as and for the purpose described.

4. In an injector, the slotted nozzle *h'*, in combination with an outer casing and an inner nozzle, substantially as described.

5. In an ejector, the combination, with the chamber I and the socket J, of the pipes K and L, and the flanges *l* within said chamber I, substantially as and for the purpose specified.

6. In an injecting device, the combination, with an ejector having a supply-pipe, of an internal tube affording communication between said ejector and an injector, substantially as and for the purpose specified.

10,021. PIPE-CUTTER. ANDREW SAUNDERS, Yonkers, N. Y., assignor to D. Saunders' Sons, same place. Filed Jan. 10, 1881. Original No. 226,888, dated Nov. 23, 1880.



Claim.—1. In a pipe-cutting implement, the combination of the stock A, having the extended internally screw-threaded shank E', and the bearing B, formed on the stock at a point opposite the axis of the said screw-threaded opening, with the movable rotary cutter, the cutter-carrying arm C, pivoted to the stock A, and the screw F, working through the shank E', and constructed to serve both as a handle by which to turn the implement and as a screw for forcing the movable cutter-carrying arm toward the bearing B, all arranged substantially as and for the purpose set forth.

2. In a pipe-cutting implement, the combination of the anti-friction rollers *a* and an adjustable rotary cutter, D, with a stock, A, and a screw for forcing the cutter toward the material to be cut, substantially as and for the purpose herein set forth.

3. The combination, in a pipe-cutting implement, of the following elements, to wit: the stock A, the anti-friction rollers *a*, placed in the jaw B of the stock, the rotary cutter D, the arm C, pivoted to the said stock, and the feeding-screw F, all combined and arranged for joint use and operation substantially as and for the purpose herein set forth.

10,022. METHOD OF CONNECTING SPUTS TO BOILERS. JOHN TRAUBEL, New York, N. Y. Filed Dec. 24, 1881. Original No. 210,476, dated Dec. 3, 1878.

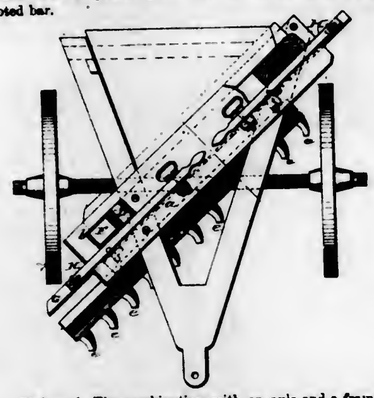


Claim.—1. The method of connecting sputs to boilers, consisting in calking the metal of the boiler against the surface of the sput and brazing the joint, substantially as shown and described.

2. The method of connecting sputs to boilers, consisting in forming a recess around the body of the sput, into which recess the metal of the boiler is worked and the joint brazed, substantially as shown and described.

10,023. ROAD-SCRAPER. SAMUEL PENNOCK, Kennet Square, Pa. Filed Sept. 19, 1881. Original No. 194,367, dated Aug. 21, 1877.

Brief.—The scraper is suspended diagonally beneath the axle and is independently vertically-adjustable at its ends. A pivoted toothed bar is suspended parallel to the scraper to an adjustable pivoted bar.



Claim.—1. The combination, with an axle and a frame connected therewith, of a scraper suspended at its ends beneath the axle and arranged diagonally thereto, practically one half of the length of the scraper being located in front and the other half in rear of the axle, and devices for adjusting the ends of the scraper independently of each other, substantially as set forth.

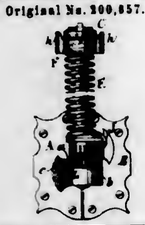
2. The combination, with a frame connected with an axle supported by carrying-wheels, of the scraper-bar G, rods c, slotted pivoted standards I, standards D, and levers H, substantially as set forth.

3. The combination, with a scraper, of a pivoted toothed bar located parallel to the scraper, and means for imparting vertical adjustment to said toothed bar, substantially as set forth.

4. The combination, with a scraper, of a pivoted toothed bar located parallel to the scraper, and means for raising said bar and locking it out of operative position, substantially as set forth.

5. The toothed bar K, pivoted to the scraper G and connected with the pivoted rod *f*, substantially as set forth.

10,024. SPRING-HINGE. WESLEY HULL, Fort Wayne, Ind., assignor to Scovill Manufacturing Company, Waterbury, Conn. Filed July 5, 1881. Original No. 200,857, dated Feb. 26, 1878.



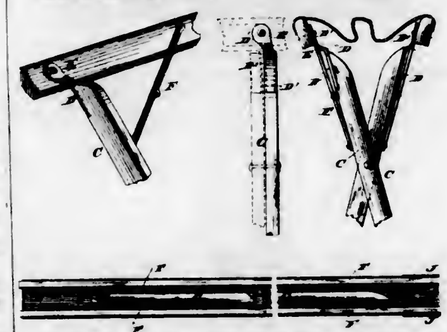
Claim.—1. The combination, with the leaves of a hinge, a rod serving to connect the leaves, and a spring adapted to impart a swinging motion to said leaves, of a lower bearing consisting of a circular shell extending from and turning with a socket affixed to one of the said leaves, wholly surrounding the rod, and receiving around it the end portion of the spring which acts upon the leaf of the hinge that is provided with said socket, thereby holding the spring away from said rod, and an inclined end bearing for the spring at the base of said shell, substantially as described.

2. The combination, with the leaves of a hinge and a rod whereby they are connected, of a spring adapted to impart a swinging motion to said leaves, and an upper bearing for the end portion of the spring, impinging against the outer side of the same, and holding it out of contact with the rod, the spring being exposed below said upper bearing, substantially as specified.

3. The combination, with the leaves of a hinge and a rod whereby they are connected, of a spring adapted to impart a swinging motion to said leaves, a lower bearing consisting of a shell extending from and turning with a socket affixed to one leaf, fitting upon the rod and receiving around it one end portion of the spring, and an upper bearing, for the other end portion of the spring, impinging against the outer side of the same and holding it out of contact with the rod, the spring being exposed between said lower bearing and upper outside bearing, substantially as specified.

4. The regulating-drum F, cap C, and rod R, in combination with spring E, secured to the exterior end of socket D, substantially as and for the purpose set forth and described.

10,025. FOLDING COT. THOMAS W. B. MURRAY and CALEB J. BAKER, Chicago, Ill. Filed Jan. 6, 1882. Original No. 240,533, dated Apr. 26, 1881.



Claim.—1. In a folding cot, the angle-irons or hinge-plates D D, the upper ends of each pair of which are deflected toward each other, so as to bring the pivoting-points of the legs C, which they connect, to the side rails of such cot in the same axis, substantially as shown and specified.

2. In a folding cot, the hinge-plates D, bent at E, so as to afford room between the legs and side rails for the jointed braces F, substantially as set forth.

3. In a folding cot, the angle-irons or hinge-plates D, having deflected upper ends, D′, and bent at E, for securing the legs to the side rails, substantially as and for the purpose set forth.

4. The combination of the side rails, A, flexible cover B, legs C, angle-irons D, bent at E, and the jointed braces F, substantially as and for the purpose set forth.

5. In a folding cot having a flexible cover, as shown, the head-rest consisting of rods G G, pivoted standards H H, bars I I, and the flexible strip J, secured to the bars I I, and having its front corners secured permanently and its rear corners detachably to the side rails of the cot, substantially as and for the purpose set forth.

THE ELIOTYPE PRINTING CO. BOSTON

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

JAMES v. CAMPBELL, *et al.* CLEXTON v. CAMPBELL *et al.* CAMPBELL v. JAMES *et al.*

Decided January 9, 1882.

1. REISSUE NO. 4,143—POST-OFFICE STAMP.
Norton's reissue patent, dated October 4, 1870, for an improved post-office stamp for printing the postmark and canceling the postage-stamp at one blow, *Held* to be void by reason of not being for the same invention specified in the original.

2. REISSUE—EXPANDING CLAIMS.
If a patent fully and clearly describes and claims a specific invention, complete in itself, so as not to be inoperative or invalid by reason of a defective or insufficient specification, a reissue cannot be had for the purpose of expanding and generalizing the claim so as to embrace an invention not specified in the original. *Burr* v. *Duryee* (1 Wall., 531) reaffirmed.

3. SAME—EXPLORATION OF HISTORY OF ART BY COURT—HOW PATENTEE IS BOUND.
In such case the court ought not to be required to explore the history of the art to ascertain what the patentee might have claimed. He is bound by his statement of what his invention was.

4. CLAIMS FOR THINGS CLAIMED OR DESCRIBED IN PRIOR PATENTS.
A patentee cannot claim in a patent the same thing claimed by him in a prior patent, nor what he omitted to claim in a prior patent in which the invention was described, he not having reserved the right to claim it in a separate patent and not having seasonably applied therefor.

5. REISSUE OF MACHINE PATENTS TO COVER PROCESSES.
A patent for a machine cannot be reissued for the purpose of claiming the process of operating that class of machines, because, if the claim for the process is anything more than for the use of the particular machine patented, it is for a different invention. *Powder Company* v. *Powder Works* (98 U. S., 126) reaffirmed.

6. RIGHT OF GOVERNMENT TO USE PATENTED INVENTIONS.
The Government of the United States has no right to use a patented invention without compensation to the owner of the patent.

7. SUITS AGAINST GOVERNMENT OFFICERS—COURT OF CLAIMS.
Query, whether an officer of the Government can be sued for using an invention only for and in behalf of the Government, and whether the Court of Claims is not the only tribunal in which the claim for compensation can be prosecuted.

APPEAL from the Circuit Court of the United States for the Southern District of New York.

Mr. George H. Williams and *Mr. B. F. Butler* for Campbell.

Mr. Attorney-General Devens and *Mr. S. B. Clark* for James.

Mr. Justice BRADLEY delivered the opinion of the Court.

This case is founded on a bill in equity filed by Christopher C. Campbell, the complainant below, against Thomas L. James, United States postmaster in and for the city of New York, to enjoin him from using a certain implement for stamping letters, which the complainant claims to have been patented to one Marcus P. Norton by letters patent dated April 14, 1863, and surrendered and reissued on the 23d of August, 1864, and again surrendered and reissued on the 3d of August, 1869, and again, finally, on the 4th of October, 1870. The complainant claims to be assignee of Norton, the patentee. Other persons, claiming an interest in the patent, were made parties to the suit. The circuit court rendered a decree in favor of the complainant and adjusted the rights of the several parties to the amount of the decree. The defendant, James, appealed. The other parties, not being satisfied with the decree, as it affected their mutal interests, also appealed. The case is now before us in all its aspects. Supposing the court below to have had jurisdiction of the case, the first question to be considered will be the liability of the principal defendant, James, to respond for the use of the machine or implement in question.

That the Government of the United States, when it grants letters patent for a new invention or discovery in the arts, confers upon the patentee an exclusive property in the patented invention, which cannot be appropriated or used by the Government itself without just compensation any more than it can appropriate or use without compensation land which has been patented to a private purchaser, we have no doubt. The Constitution gives to Congress power "to promote the progress of science and useful arts by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries," which could not be effected if the Government had a reserved right to publish such writings or to use such inventions without the consent of the owner. Many inventions relate to subjects which can only be properly used by the Government, such as explosive shells, rams, and submarine batteries, to be attached to armed vessels. If it could use such inventions without compensation, the inventors could get no return at all for their discoveries and experiments. It has been the general practice, when inventions have been made which are desirable for Government use, either for the Government to purchase them from the inventors and use them as secrets of the proper department, or, if a patent is granted, to pay the patentee a fair compensation for their use. The United States has no such prerogative as that which is claimed by the sovereigns of England, by which it can reserve to itself, either expressly or by implication, a superior dominion and use in that which it grants by letters patent to those who entitle themselves to such grants. The Government of the United States, as well as the citizen, is subject to the Constitution; and

when it grants a patent the grantee is entitled to it as a matter of right, and does not receive it, as was originally supposed to be the case in England, as a matter of grace and favor. But the mode of obtaining compensation from the United States for the use of an invention where such use has not been by the consent of the patentee has never been specifically provided for by any statute. The most proper forum for such a claim is the Court of Claims, if that court has the requisite jurisdiction. As its jurisdiction does not extend to torts, there might be some difficulty as the law now stands in prosecuting in that court a claim for the unauthorized use of a patented invention, although, where the tort is waived and the claim is placed upon the footing of an implied contract, we understand that the court has in several recent instances entertained the jurisdiction. It is true it overruled such a claim on the original patent in this case, presented in 1867, but, according to more recent holdings, it would probably now take cognizance of the case. The question of its jurisdiction has never been presented for the consideration of this Court, and it would be premature for us to determine it now. If the jurisdiction of the Court of Claims should not be finally sustained, the only remedy against the United States, until Congress enlarges the jurisdiction of that court, would be to apply to Congress itself. The course adopted in the present case of instituting an action against a public officer, who acts only for and in behalf of the Government, is open to serious objections. We doubt very much whether such an action can be sustained. It is substantially a suit against the United States itself, which cannot be maintained under the guise of a suit against its officers and agents except in the manner provided by law. We have heretofore expressed our views on this subject in the case of *Carr* v. *The United States*, (98 U. S., 433,) where a judgment in ejectment against a Government agent was held to be no estoppel against the Government itself. But, as the conclusion which we have reached in this case does not render it necessary to decide this question, we reserve our judgment upon it for a more fitting occasion.

The subject-matter of the patent on which the bill in this case was founded is an implement or stamp for postmarking letters and canceling revenue and postage stamps. The original patent, dated April 14, 1863, exhibited two stamps connected together by a cross-bar, which was attached to a handle, one stamp being intended for printing the postmark and the other for canceling the postage-stamp, both operations being performed by a single blow. The stamps consisted of small hollow blocks or cylinders, in which were inserted and fastened the types which produced the impressions desired. In one were placed the lettered types, which produced the postmark, and in the other a single type, which blotted or canceled the postage-stamp.

The patentee, in his specification, described the invention as follows:

> The nature of my improvements herein described consists in the employment and combination of a device for canceling postage or other stamps by means of wood, cork, or similar material inserted in a tube or recess therein for the purpose of effacing or blotting such stamps with indelible ink.
>
> It also consists in the combination of a canceling device having wood, cork, rubber, or any similar material for the type or blotter therein with any postmarking device, so as to blot, cancel, or efface postage-stamps with indelible ink at the same time and operation of postmarking of letters, packets, &c.
>
> To enable others skilled in the art to which my invention relates to make and use the same, I will here proceed to describe the construction and operation thereof, which is as follows, to wit:
>
> I construct the postmarking-stamp D of any suitable material. E, Fig. 3, is the mortise or recess, of suitable dimensions to receive the type for the month, the day of the month, and the year, around which is the name of the place where used, and is the same as the postmarking device described in my letters patent bearing date the 16th day of December, 1862, and which is secured to the cross-piece B in the same manner and by the same means as described and set forth in the said patent, which is also the case with the canceling device C.
>
> I construct the canceling stamp or device C of any suitable material, of any size required in diameter, and in length to correspond to the postmarking device D. F, Fig. 3, is the tube or recess in the device C, for the purpose of receiving the blotting or canceling device G, Figs. 2 and 5, which device is made of wood, cork, rubber, or similar material, so as to closely fit the said tube or recess F, Fig. 3. The face of this device may contain a plan or form for canceling with indelible ink, like that shown at Fig. 2, or it may have any plan or form for that purpose thought best to devise or use. This device G may project somewhat below the lower end of the said tube F, as seen at Fig. 5, and may also project below the face of the postmarking or rating device D, Figs. 2 and 3, and it may be driven out of the said tube or recess by means of a pin or bolt operating through the hole A, Figs. 3 and 5, for the purpose of repairs, or to replace it by a new one. The said tube or recess G may be of any size in diameter required or any depth desired. The said canceling stamp or device C being thus constructed with cork, rubber, or other elastic substance for type or blotter, will receive and hold on the face thereof ink in quantities sufficient to blot or cancel the postage-stamp in such manner as to prevent the possibility of the said postage-stamp being cleansed of the canceling-ink by any chemical or other process, for the said ink would be so effectually put thereon that any attempts to remove it therefrom would entirely destroy the said postage-stamp, and thereby render the same incapable of a second or re use. The said cork, rubber, or other elastic substance, as aforesaid, will render the said stamp capable of an easy and rapid use, for there being a yielding of the same when the blow is given, the operator will not tire as soon by a constant or continued use of the same as though it were of solid metal, and the same will greatly aid in raising the entire stamp from the paper and postage-stamp when the impression shall have been given by the operator. The said blotter or type can be more easily repaired or replaced by a new one at less expense than if made of solid metal. The said cork, rubber, or other elastic material may extend upward to the said cross-bar B, and there be connected to the same by a screw or pin bolt, if desired, which will be the same in effect and in operation.
>
> Having thus described my invention and improvements in marking and canceling stamps, what I claim, and desire to secure by Letters Patent of the United States of America therein, is—
>
> 1. The canceling device C, with wood, cork, or rubber type or blotter G therein, or any device substantially the same, so as to cancel the postage-stamp with indelible ink, substantially as herein described and set forth.
>
> 2. The canceling device C, with wood, cork, or similar material forming the type or blotter G therein, in combination with the cross-piece B, and with the postmarking device D, substantially as herein described and set forth.

We have given the description and claim in full for the purpose of better comparing it with the reissued patent on which the suit was brought, and which is dated October 4, 1870. It will be seen that the invention claimed is very specific and definite in its character. In the first place, the canceling device is claimed separately, consisting of a hollow tube, in which is inserted the canceling type or blotter, made of wood, cork, rubber, or other elastic substance. The nature of the substance of which the blotter was to be made is emphasized thus:

> The said cork, rubber, or other elastic substance, as aforesaid, will render the said stamp capable of an easy and rapid use, for there being a yielding of the same when the blow is given, the operator will not tire as soon by a constant or continued use of the same as though it were of solid metal, and the same will greatly aid in raising the entire stamp from the paper and postage-stamp when the impression shall have been given by the operator. The said blotter or type can be more easily repaired or replaced by a new one, at less expense, than if made of solid metal.

It is plain, therefore, that elasticity in the material of which the blotter was to be composed was a distinctive feature of the blotting device thus separately claimed. Besides the advantages referred to in the foregoing extracts, its superior adaptability to hold indelible ink was evidently regarded by the inventor as important. From the facts appearing in the case it is quite clear that a separate claim of this blotting device could not have been sustained had it not presented these special characteristics, had it not, in fact, contained all the elements it did contain. The patentee himself, as

will be more fully seen hereafter, had shortly before his application for this patent obtained a patent for a double stamp exactly like the one patented in this, except that the blotter-type was made of "steel or other material which would answer the purpose." Of course he could not claim a blotter of like material in the patent now under consideration. And the record is full of evidence to show that hand-types for stamping letters and other characters with or without the use of ink had long been constructed of almost every kind of material. The general form of the instrument was old. Stamps fastened to what is called a "brad-awl handle," adjusted thereto centrally, so as to balance the pressure, were used for seals and other instruments, for making impressions of every sort, from time immemorial, and hand-stamps of the same general description, having a cylindrical type-holder in place of a seal, made hollow for inserting and holding the type, had long been used in the Post-Office Department. It was not without good cause, therefore, that the separate claim for the canceling device as a distinct invention was confined to an elastic type or blotter inclosed in a hollow tube. In like manner, the combination of devices in the entire instrument, forming the subject of the second claim, was necessarily specific in its character, being restricted by the special construction of the canceling device. The specific form of a cross-bar to sustain the type-holder and balance the effect of the blow or pressure when making the impression was substantially contained in the common hand-type long before used for printing names on linen with indelible ink. This instrument consisted of a metallic trough or receiver to hold the type, the bottom of which, at its middle part, was attached to a wooden brad-awl handle. Inserting the types for a postmark in one end of this device and the type for blotting the postage-stamp in the other, it would be a complete double stamp like that claimed by Norton, the patentee. The fact that it might require a stronger piece of metal for post-office uses than was required for stamping letters on cloth, or that the type-holder would be better adapted to the purpose by being divided into two compartments, does not detract from the substantial similarity of the instruments. Given the idea of stamping the postmark and blotting the postage-stamp with one instrument at a single blow, it required but little invention, in view of what was then in common use, to adjust the printing apparatus to the handle by means of a block, shoulder, or cross-bar, or other similar device. The needs and requirements of the instrument would soon be developed and manifest themselves to any skilled workman in that branch of mechanics.

The evidence does not show to our satisfaction that Norton was by any means the first inventor of a double post-office stamp, so constructed as to make the postmark and cancel the postage-stamp at one blow. If that fact was important, the burden of proof was on the complainant to show that Norton's invention antedated those of others proven in the cause, of which there were several independent of each other; but there is no satisfactory proof that Norton ever produced prior to 1862, or, at most, prior to 1861, any other double stamp than the one which he patented in 1859. In connection with one C. A. Haskins, he obtained a patent in October, 1857, for a hand-stamp attached to a standard with a projecting arm, and provided with a spring to lift it from the paper automatically after the blow which made the impression was given. This stamp was an elaborate and complicated contrivance of wheels and cylinders for arranging and manipulating the types for making letters and figures, showing the month and day of the month in the postmark. It had no hint of any secondary apparatus for effacing a postage-stamp at the same time. But in August, 1859, Norton obtained a patent for the use of his assignees, Reynolds and Low, which did contain a device for effacing the postage-stamp. Low seems to have been associated with him in the patent of 1857 in the way of furnishing money, but what was the nature or extent of the assignees' real interest in the patent of 1859 is not made to appear. The application for this patent was dated May 3, 1859, but when filed in the Patent Office is not shown. The principal feature of the stamp described in this patent was also an elaborately-contrived device for arranging the types for the letters and figures in the postmarking-stamp, something in the same line with that described in the patent of 1857, no claim of which, however, was allowed. But to the postmarking-stamp, which was fixed to the handle in the ordinary way, was attached on one side, entirely outside of the bearing of the handle, a flat piece of metal, to be used as a blotter, for which, in combination with the postmarking-stamp, a claim was allowed. It is clear to us that this was the stamp to which Norton alluded, and which he asked to have the privilege of testing in the post-office at Troy, in his letter to the Assistant Postmaster-General of the 11th of April, 1859, on which much stress has been laid by the complainants. The letter does not give a description of the stamp he wished to test, but it concludes with these words:

> I herewith inclose you an envelope containing a postmark from the stamp on the left and an erasure upon the stamp made at the same operation of postmark. As now constructed is believed to work well.

This is a clear intimation that what he desired to have tested had been recently brought to its existing form. In a former part of the letter he had said:

> While the order given by your department was in force I was unable, in consequence of sickness, to thoroughly test my stamp. It was used upon about three thousand letters only during that time. I have since made some changes in it, which seem to make it a much better thing for the purpose designed. Now I ask the opportunity to test it without any expense to the Government.

An order was made by Mr. King, the Assistant Postmaster-General, on the 4th of May, 1859, authorizing the postmaster at Troy to use for postmarking letters at his office for the term of three months "Norton's improved marking-stamp." The application for the patent had been prepared and sworn to the day previous to this order—namely, May 3, 1859. In this application the description of the invention commences thus:

> The nature of my invention consists in constructing, combining, and arranging a hand-stamp hereinafter described, so as to contain a cylinder with the initials of each and every month in a year, and two other cylinders with figures for the respective days of each and every month; also, a cylinder with figures to represent ten years, more or less, as the case may be, which cylinders shall revolve upon the same shaft with each and within a stationary form of type, and thereby print the month, the day of the month, and the year in connection with each, and each in connection with and at the same time of the printing of the subject-matter upon the aforesaid stationary form of type. It also consists in attaching a blotter, hereinafter described, to the hand-stamp aforesaid, upon one or two sides thereof, for the purpose of cutting, blotting, canceling, or effacing the frank or postage-stamp, so as to prevent a second use of the same, while at the same time the name of the post-office, the year, the month, and the day of the month is printed upon the envelope and one side of the said frank or postage-stamp, thereby giving a good impression of the same and prevent undue wear of the said postmarking-stamp in consequence of being used upon the uneven surface made by the said frank or postage-stamp.

Now, if Norton had, as he pretends, invented as early as 1854 the stamps for which he took out his subsequent

patents in 1862 and 1863, it is hardly conceivable that he should have taken out the patents of 1857 and 1859 in the form in which they stand. The fact that he did take them out reduces it almost to a demonstration that he had not invented any such stamps at this time. It is true he produces a caveat, filed by him in 1853, which has or had an amendment, bearing date "Tinmouth, Vt., August 7, 1854," which amendment contained a full description of the double stamp as finally exhibited in his patent of 1863 and the reissue thereof; but this amendment was shown to have been surreptitiously introduced by him among the papers of the Office certainly as late as 1864, ten years after its pretended date. In his examination as a witness in this cause he admitted that he made the paper referred to in the summer of 1864, when his assignees, Shavor and Corse, were applying for a reissue of the original patent now in question, and that it was used in that application; but he pretends that it was a copy of a paper which he made and sent to the Patent Office in 1854. No such original paper, however, has ever been found in the Patent Office, and on a regular charge for the offense of making the surreptitious paper and introducing it among the files he was found guilty in September, 1871, and debarred, by order of the Commissioner of Patents, from further access to the papers of the Office. This amended caveat, therefore, as well as the testimony of Norton on the subject, may be laid out of view.

A witness by the name of Sherwood, a machinist and model-maker, was examined, who produced a sheet or two of items of account copied from his books, showing charges against Norton for work on stamps in 1857, 1859, 1860, and 1862. There were four items in 1857, under date of May, for certain hours of work charged, thus: "May 8, to 3 hours, finish stamp." There was a large number of items of similar character in the other years named, particularly in January and March, 1859, and August, September, November, and December, 1862, corresponding, as will be observed, with the times when Norton must have been getting up his models for his different patents. The witness was unable to distinguish the kind of stamps he worked on at these different dates, except that he professed to feel quite sure that the first one would postmark a letter and cancel a stamp thereon at the same time. Describing on his cross-examination the stamp which he thus referred to, he says:

> It was a dating-wheel stamp, the wheels giving the dates, with a die for the office and year in the top of the frame that held it, blotting or canceling at one end the impression given by a blow on the lever by the hand.

Now, this description applies aptly to both the stamp patented in 1857 and to that patented in 1859, except that it was the latter only which had the blotting attachment. We think it perfectly apparent that the witness had, by a very natural mental process, confounded the instruments together and imagined that the blotter was attached to the first instead of the second invention. His examination took place twenty years after the date of the accounts, and he relied solely on his memory as to the character of the articles which he worked upon.

This is really the strongest evidence that can be found in the record affording any ground for the conclusion that Norton ever produced any double stamp at all prior to the one he patented in 1859. The testimony of Mr. King, the former Assistant Postmaster-General, when compared with his own contemporary letters and other circumstances, clearly indicates that he had, quite naturally, confounded the device of one date with that of a later date. Other evidence was relied on, but all of such a loose and indefinite character that no reliance can be placed on it in support of the complainant's theory, and it is quite significant that no stamp of the kind claimed, made at the period in question, was produced in the examination. Had such stamps ever been in existence, it is strange that they should have altogether disappeared.

Now, there is abundant evidence in the record to show that double stamps were conceived of and used before 1859, and that about that time they sprung up spontaneously in various parts of the country. It was but recently that there had been any demand for their construction, since postage-stamps had not been in general use in the country for any long period. They were first authorized to be issued and used by the act of March 3, 1847, (9 Stats., 201;) but it was optional to use them or not. By the act of 1851 postage on single letters was reduced from five cents to three on being prepaid. (9 Stats., 587.) It was not till the passage of the act of March 3, 1855, that all postage was required to be prepaid. This law first brought postage-stamps into universal use, and, as they must be canceled, two impressions had to be made on a letter, one for the ordinary postmark, giving the place and date of mailing the letter, the other for canceling or effacing the postage-stamp. This required two blows and produced double work; but, without any great exercise of ingenuity, postmasters and clerks in various places improvised double stamps, generally by screwing, welding, or binding to the side of the common stamp an appendage to serve as a blotter at the same time. This was done by Ezra Miller, at Janesville, Wisconsin, as early as January, 1859, or in 1858, and by General Dix, in New York, and one Powers, in Buffalo, in the summer of 1860. There is also evidence that a similar appendage for the purpose of stamping a large figure 5, to show the postage due, was invented and used by one Rees in the Philadelphia post-office as early as 1845, when the rates of postage were five and ten cents, and that one Ireland devised and used at the same office a like appendage for canceling postage-stamps as early as 1853. Other similar devices were referred to in the evidence. The adoption of a more artistic and convenient form of the instrument thus spontaneously originated as its use was continued and became more imperative was a matter of course. Norton's particular form and construction of the double stamp, as described in his patent of 1863, was undoubtedly an improvement; but we should expect to find, as we do find, that he was restricted in his claim to the particular form and construction set forth in his specification.

A reference to Norton's application for the original patent in question in this case, a copy of which is in evidence, and which being preserved of record in the Patent Office may properly be referred to, shows that the functionaries of that Office regarded it important that the instrument sought to be patented should be specialized with particularity. This application was presented to the Office on the 5th of January, 1863, and was rejected on the 21st of February. On the 21st of March, 1863, the application was renewed in a letter addressed by Norton to the Commissioner of Patents,

and after certain amendments were made to the specification the patent was allowed to pass. The most important amendment was the insertion of that portion of the specification commencing with the words "The said canceling stamp or device C being thus constructed with cork, rubber, or other elastic substance for type or blotter," and so on to the end of the paragraph. This amendment derives further importance and illustration from the letter of Norton above referred to, in which a renewal of the application was made, and which was dated at the National Hotel, in Washington, March 21, 1863. In that letter the writer says:

> I do not understand that the device referred to in your letter of the 21st of February last is "a common ink canceling-stamp, such as has been used for years in our post-offices for blotting and thus canceling post-office stamps." The devices to which you undoubtedly refer have always been made of metal entirely or of wood entirely. Wood was found to answer no purpose, because not at all durable, so metal ones were used. Now, this device consists of a barrel or tube, into which wood, cork, rubber, or some such material is inserted, for the purpose of holding an indelible ink in quantities sufficient to blot the postage-stamp so thoroughly as to prevent the same being washed or cleansed by a chemical mixture and again being used in payment of postage. This tube or barrel holds firmly the elastic substance therein, and prevents the same from undue wear and exposure. The elastic substance therein being worn out can again be replaced at the office where used, thus saving the trouble and expense of returning the same to the Government contractors for such repairs. This therefore constitutes a new device, composed of two distinct parts in combination, producing new results, besides blotting the postage-stamp.
>
> This device being new, its combination with the postmarking device for the purposes set forth in the specification is of course new. Upon these two claims I therefore most respectfully ask a patent.

On the same day that this letter was received, according to the memorandum on the file-wrapper, the specification was returned to the applicant to enable him to amend it, and was re-examined on the 26th of March, and favorably passed upon on the 1st of April. No one can read the patent in the light of these contemporary documents and of the previous history of the stamp without arriving at the conclusion that, so far as the blotting device was separately concerned, the invention consisted of and was confined to a tube containing a type-blotter made of an elastic substance as contradistinguished from iron or other hard substance. The iron or steel blotter had been patented in 1862, as already mentioned, and as will be shown more fully hereafter. There was not, there could not have been, any inadvertence or mistake in confining the invention to the combination described and claimed in the patent.

The second claim is merely that of a combination of this specific device with the other parts of the apparatus. As the patentee says in his letter to the Commissioner, "this device being new, its combination with the postmarking device for the purposes set forth in the application is of course new." In other words, the substantive invention for which the applicant desired a patent was the blotting device constructed specifically in the manner and for the purpose described. The addition of the combination claim was for the purpose of possibly securing the combination if the principal claim should be found to be untenable.

Perhaps we have gone more minutely into the evidence relating to the progressive improvements in this instrument than was necessary to show that the claim of the patent was not more restricted than it should have been. The court ought not to be called upon to explore the entire history of an art in order to ascertain what a patentee might have included in his patent had he been so disposed. If he was the author of any other invention than that which he specifically describes and claims, though he might have asked to have it patented at the same time and in the same patent, yet if he has not done so, and afterward desires to secure it, he is bound to make a new and distinct application for that purpose, and make it the subject of a new and different patent. When a patent fully and clearly, without ambiguity or obscurity, describes and claims a specific invention, complete in itself, so that it cannot be said to be inoperative or invalid by reason of a defective or insufficient specification, a reissue cannot be had for the purpose of expanding and generalizing the claim so as to make it embrace an invention not described and specified in the original. It is difficult to express the law on this subject more aptly and forcibly than in the words of Mr. Justice Grier in the case of *Burr* v. *Duryee*, (1 Wall., 577,) where, in delivering the unanimous opinion of the Court, he says:

> The surrender of valid patents and the granting of reissued patents thereon, with expanded or equivocal claims, when the original was clearly neither "inoperative nor invalid," and whose specification is neither "defective nor insufficient," is a great abuse of the privilege granted by the statute, and productive of great injury to the public. This privilege was not given to the patentee or his assignee in order that the patent may be rendered more elastic or expansive, and therefore more "available" for the suppression of all other inventions.

Of course, if by actual inadvertence, accident, or mistake, innocently committed, the claim does not fully assert or define the patentee's right in the invention specified in the patent, a speedy application for its correction, before adverse rights have accrued, may be granted, as we have explained in the recent case of *Miller et al.* v. *The Bridgeport Brass Company;* but where it is apparent on the face of the patent or by cotemporary records that no such inadvertence, accident, or mistake as claimed in a reissue of it could have occurred, an expansion of the claim cannot be allowed or sustained.

Turning now to the reissued patent on which the present suit was brought, which is the third reissue, dated October 4, 1870, we find the invention described as follows:

> The nature of my said invention and improvements herein contained and described consists in the employment and combination of a device or die used for the more complete and perfect cancellation of postage-stamps or letter-franks by means of soft wood used endwise, or of cork, rubber, or other suitable material, whereby such stamp or frank is effaced and canceled in and by indelible or other ink in the manner substantially as herein described and set forth.
>
> It also consists in the combination of a postage-stamp canceling device or die constructed of wood, cork, rubber, or any suitable material, with any suitably arranged and constructed postmarking stamp or device, so as to cancel, efface, or destroy the postage-stamp or letter-frank with indelible or any suitable ink at the same time, blow, or operation of the stamp or instrument by which the postmark is given or made upon the letter, envelope, or packet, substantially as herein described and set forth.
>
> It also consists of the postmarking of letters, envelopes, or packets, and in the cancellation of the postage stamp or stamps thereon with, in, or by any suitable ink, or similar material, by means of some soft wood used endwise against the postage-stamp, or by the means of cork, rubber, iron, or steel, or by means of any other suitable material so combined with the postmarking stamp or instrument as to cancel, efface, or destroy the postage stamp or stamps at one and the same blow or operation of the entire instrument thus constructed for that purpose, whereby to prevent a second or re use of such postage stamp or stamps.

After some details as to the mode of construction, the specification proceeds:

> The said canceling type or die can be easily repaired or replaced by a new one whenever desired and at very little expense; and such canceling die or type G may extend upward to the said cross-bar B, and there be connected to the same by means of a screw, pin, or small bolt. In such case there would not be any tube or pipe surrounding said canceling die or type G. The operation and effect produced would in such case of construction be the same. The said postage-stamp-canceling device, die, or type G may be of any desired distance from the aforesaid postmarking or dating device or stamp D, or it may be securely fastened to the immediate side of the said postmarking and dating part or stamp or device D by any convenient and suitable mechanical means. The said canceling die, type, or device G I prefer to use made of cork, as it will hold a much greater quantity of canceling-ink upon and in the lower face thereof, and when it comes in contact with

the printed surface of the postage-stamp such surface will become somewhat and sufficiently broken by means thereof, and thus and thereby inject into or impregnate such broken surface with the said canceling-ink, whereby such postage-stamp, so operated upon and filled with such ink, cannot be sufficiently cleansed by any means as to enable it to be reused or used a second time, in fraud upon the postal revenue, without immediate detection of the same. Soft wood used e wise will answer nearly the same purpose. Still, long and continued use after the granting of my said patent (April 14, 1863) has fully proven the superiority of the cork for the canceling die or type used upon postage-stamps, as aforesaid. * * *

I also construct my said postage-stamp-canceling device, die, or type of cast iron, steel, or other suitable metal, substantially as shown at G', Figs. 5 and 6, and which may be secured to the said cross bar or piece B in like manner as the said tube or cylinder C, Figs. 2 and 4, and which is done either by screw and nut where the same unites with the said cross-bar, or it may there be firmly fastened by means of suitably constructed and arranged pins or rivets, or the same may be soldered to the under side of said cross bar or piece B, or otherwise attached thereto. * * *

The aforesaid metal canceling device, die, or type G', Figs. 5 and 6, may also be fastened or secured to the immediate side of the said postmarking device by any good and sufficient means, substantially as hereinbefore described and set forth, in reference to the said device C, or tube or cylinder, constructed to receive and contain the said type or die G, Figs. 2, 3, and 4.

Such metallic device, die, or type may also have upon its lower face or lower surface any suitable configuration deemed best to use for the purpose of canceling the postage-stamp in, with, or by any suitable ink at the same time, blow, and operation of the instrument or apparatus, as hereinbefore stated and set forth.

In any and every case the postmarking of the letter, envelope, or packet, and the effacing or cancellation of the postage-stamp or letter-frank thereon representing value are done at the same time and by the same blow or operation of the said several devices and parts, constructed and combined in the manner and by the means substantially as herein described and set forth.

Both the postmarking and cancellation of the said postage-stamp are done with indelible or other and suitable ink used for such cancellation or effacing of the postage-stamp.

Omitting much more of this verbose specification, containing, among other things, a dissertation on the supposed advantages and importance of the invention, we add the summary of the patentee's claims, which is as follows:

What I claim, and desire to secure by letters patent of the United States of America, is—

1. The postage-stamp-canceling device, cylinder, or tube C, containing a die or type, G, made of cork, wood, or other suitable material, or any equivalent for said cylinder or tube C, or for the said canceling die or type G, whereby to efface, cancel, or destroy the postage-stamp with indelible or other ink, in the manner and for the purposes substantially as herein described and set forth.

2. The canceling device, cylinder, or tube C, with cork or wood, or any substantial equivalent thereof, forming the die or type G therein, in combination with the cross bar or piece B, and with the postmarking device D, substantially as and for the purposes herein described and set forth.

3. The postmarking of letters, envelopes, and packets and the cancellation of the postage-stamps thereon with ink at one and the same blow or operation of the instrument in the manner and by the means substantially as herein described and set forth.

4. The employment and combination of a postmarking device with a postage-stamp-canceling device, both being operated by one and the same handle, for the postmarking of letters, envelopes, or packets, and for the cancellation of the postage-stamps thereon with indelible or other ink, in the manner substantially as herein described and set forth.

By these extracts from the specification and the summary of claims it appears perfectly obvious that the patentee has embraced in the reissued patent several matters of supposed invention different from and additional to the invention which formed the subject of the original patent; and it is principally, if not wholly, these new and additional claims which the appellant, James, as postmaster of New York, is charged with infringing. In the first place, a new form of the canceling device is set forth and claimed, different from that described in the original patent, to wit: a canceling type or die attached directly to the cross-bar, without any tube or pipe surrounding and holding the same. This is not contemplated or hinted at in the original patent. The latter does suggest, it is true, that "the cork, rubber, or other elastic material may extend upward to the cross-bar, and there be connected to the same by a screw or pin-bolt, if desired;" but this suggestion had reference to a type inclosed at the same time by a surrounding cylinder, which formed the distinctive feature of the invention. The context shows that nothing more was intended by the suggestion than the extension of the type upward through the cylinder and fastening it in a particular way. The thought seems to have occurred to the patentee that it might be an advantage, under some circumstances, in addition to fastening the type in the cylinder by compression, to extend it through the cylinder and fasten it to the bar to secure it from any danger of falling out of the cylinder by becoming loose. Not a hint was given that the cylinder could be dispensed with. This was an after-thought. The cylinder was clearly and distinctly set forth as a necessary constituent of the device and an essential element in the combination of which the blotting device consisted. The bearing which this new feature in the reissued patent has on the case is evinced by the fact that one of the devices used for several years in the post-office which is complained of as an infringement of the patent was a naked blotter made of cork, directly attached to the cross-bar, without any inclosing cylinder to support it. Also, by the fact that the other device used in the post-office during the defendant's term of office, consisted of an iron blotter directly attached to the side of the postmarking-stamp without any inclosing cylinder. In our judgment, this addition to the patent was no part of the original invention, and could not lawfully be embraced in the reissue, and that the claim for it is therefore void. It is true that this particular feature is not made the subject of a distinct claim, but it is described as part of the invention, and would probably be included in the general and sweeping terms employed in the claims that are made. Regarded as not being a part of the original invention, those claims cannot stand if they are construed to include it. If they are construed so as not to include it, then the use of this form of device by the defendant cannot be adjudged an infringement of the patent.

Another new matter, forming no part of the original invention, but expressly disclaimed in the original patent, is the making of the blotter of cast iron, steel, or other suitable material. The original specification, in various forms of expression, excludes such materials. The words "wood, cork, rubber, or any similar material" have this intention, as shown by the context. A claimed advantage is that—

The said cork, rubber, or other elastic substance, as aforesaid, will render the said stamp capable of an easy and rapid use, for there being a yielding of the same when the blow is given, the operator will not tire as soon by a constant or continued use of the same as though it were of solid metal. * * * The said blotter or type can be more easily repaired or replaced by a new one, at less expense, than if made of solid metal.

This language amounts to an express disclaimer of solid metal. The merit claimed for the invention was that the elastic materials proposed to be used for the blotter, and the use of which the patent throughout supposes possible by the support received from the surrounding cylinder, were far superior to solid metal and other solid and inelastic substances. How after this it could be supposed that the use of solid metal as a material for the type-blotter was included in the invention, and that a claim for it was omitted through inadvertence and mistake, it is difficult to understand. Besides, as already seen, and will be again adverted to, the use of steel or other material that would answer the purpose had already been described and claimed in Norton's patent of 1862. We think that any claim in the

reissued patent which can be fairly construed to embrace a blotter made of metal is void, and that the use of such a blotter by the defendant did not afford the patentee or the complainant any just ground of complaint.

In connection with this branch of the subject it is observable that the patentee has added two new diagrams to his drawings for the purpose of exhibiting and illustrating this new ground of claim. This fact, though not decisive, is strongly corroborative of the conclusion which we have reached on the subject.

A third addition in the reissued patent to the invention described in the original is that of the process of stamping letters with a postmark and canceling the postage-stamp at one and the same blow or operation of the instrument in the manner and by the means described and set forth. Leaving out of view the history of the art prior to the invention claimed by the patentee, what possible pretense can there be for contending that the general process was part of the invention which formed the subject of the original patent? Suppose it be true that Norton was the first inventor of this process, was that process the invention which he sought to secure in the original patent? A patent for a process and a patent for an implement or a machine are very different things. (*Powder Company* v. *Powder Works*, 98 U. S., 126.) Where a new process produces a new substance the invention of the process is the same as the invention of the substance, and a patent for the one may be reissued so as to include both, as was done in the case of Goodyear's vulcanized rubber patent. But a process and a machine for applying the process are not necessarily one and the same invention. They are generally distinct and different. The process or act of making a postmark and canceling a postage-stamp by a single blow or operation as a subject of invention is a totally different thing in the patent law from a stamp constructed for performing that process. The claim of the process in the present case, however, is not so broad as this. It is for the process or act of stamping letters with a postmark and canceling the postage-stamp at one and the same blow or operation of the instrument in the manner and by the means described and set forth. Perhaps this claim amounts to no more than a claim to the exclusive use of the patented instrument or device. If it is anything more, it is for a different invention from that described in the original patent. If it is not for anything more, the question is brought back to the instrument or device itself which forms the subject of the patent, and which has been already considered.

The last claim—to wit, "the employment and combination of a postmarking device with a postage-stamp-canceling device, both being operated by one and the same handle, for the postmarking of letters, envelopes, or packets, and for the cancellation of the postage-stamps thereon with indelible or other ink in the manner substantially as herein described and set forth"—may admit of two constructions. It may either amount to a claim for a combination of any kind of devices for stamping and blotting or for a combination of the particular devices described in the patent. Inasmuch as these specified devices, as we have already shown, embrace new devices not described in the original patent, the claim is too broad in either of its aspects to be advanced in a reissue of that patent, unless the patentee was really the inventor of the general combination of such devices in a double stamp and was entitled to add a claim therefor to such reissue. We have seen that his original patent was for a specific blotting device and for the combination of such specific device with a poststamping device in the same instrument. Could he in a reissue of the patent lawfully make the broad claim of the combination of any and all devices for blotting and poststamping at one and the same time in one and the same instrument? This would be, it is true, only adding a new claim to his patent, but greatly enlarging its scope and making it to embrace every kind of double stamp that can be conceived. Did he forget to insert this claim in his original patent? Was it omitted through accident and mistake? When we examine his original application, the changes it underwent, the careful exclusions, as well as inclusions, which it contained, and the particularity of the specific combination which he did claim, could he, after the lapse of more than a year, (if we take the date of his first application for a reissue as the time for consideration,) be allowed to return to the Patent Office and pretend that he had inadvertently omitted the principal claim of the whole thing? If he were, or pretended to be, really the inventor of the entire double stamp, did not the patent on its face show that the invention was not secured to him, that it contained no such claim? And was not this omission obvious upon inspection? The truth is that when he made his original application and got his original patent all the documents show demonstrably that he did not intend it to embrace any such broad invention. That was not the invention he sought to secure. Having obtained a patent for his specific device and combination, if he afterward wished to claim the general combination, and had not already abandoned it by taking a narrower patent, he was bound to make a new application for that purpose. Patentees avoid doing this when they can and seek to embrace additional matters in a reissue in order to supersede and get possession of the rights which the public, by lapse of time or other cause, have acquired in the meantime. It is for this very reason that the law does not allow them to take a reissue for anything but the same invention described and claimed in the original patent. But these broad claims in the reissued patent, if construed according to the latitude in which they are expressed, are void by reason of embracing inventions which had been patented both in England and in this country prior to the patentee's application for the original patent.

A stamp with a postmarking device and a blotting device combined in one instrument was described in an English patent, dated April 24, 1860, granted to one David G Berri. As shown in the drawing, the postmarker and blotter were attached to one metallic plate, analogous and equivalent to the cross-bar described in Norton's patent, to the center of which plate the handle was attached, so that the instrument was equally balanced. The particular object of the patent was to secure a method of hinging the plate containing the types onto the fixed plate to facilitate the insertion and change of the types. But the double stamp is fully exhibited, and the patentee, in the specification, says:

In conclusion to the foregoing description, it may be here necessary to note that my improved date-stamp may be employed either in connection with the double or obliterating mark, as represented, or separately, in conformity with the usual requirements.

The same combination of postmarker and blotter in one instrument was also exhibited in Norton's own patent of August 9, 1859. As he did not then reserve the process of stamping letters with such an instrument,

nor the combination of a postmarker and a blotter, and did not make any simultaneous application therefor, he could not afterward obtain a patent for such process and combination, but would be restricted to such particular combination or process as might be exhibited in a new device or apparatus. We have already referred to this patent of 1859, and will here only quote from the specification to show the construction of the tamp and the scope which the patentee claimed his invention to possess. He says:

The blotter J is fastened to the frame B upon one side thereof by the use of the shaft D, one end of which passes through the upper part of the said blotter, and which is firmly secured to the said frame by means of the nut E, or by using it for the nut in place of the said nut E, as aforesaid. This blotter is then and thereby retained in a fixed and strong position by means of the screw S in connection with the said shaft D, the blotter J, or nut E, and is for the purpose of cutting, inking, blotting, effacing, and effectually canceling the frank or postage-stamp, while at the same time and operation the name of the post-office, the year, the month, and the day thereof are given upon the envelope or letter at one side of the said frank or postage-stamp, and not upon it, as now practiced, in order to efface and to cancel it under the operation of stamping, which unduly wears out the marking-stamp, gives a bad and unintelligible impression, and is in direct violation of the rules or statute of the Post-Office Department. This stamp may have another blotter like J, which shall be upon the opposite side thereof, by the use of which the frank or postage-stamp would be cut, inked, blotted, effaced, and canceled upon any part of the letter or envelope where it may be placed. One blotter like J, however, is believed to answer the required purpose. This blotter J may be made of any size or shape, and of any material to answer the end or purpose sought to be obtained. The face, which receives the ink, and which comes directly upon the frank or postage-stamp, is grooved or cut, thereby leaving various projections, which have a sharp or knife edge sufficient for each to cut entirely through the frank or postage-stamp, but not through the envelope immediately under the same, while at the same time the places thus cut are inked by the same sharp-edged projections or cutters on the face of said blotter, as aforesaid. The said blotter J should be made of the best kind of cast-steel, and in such shape as not to break any part thereof. The projections upon the face of the said blotter may be kept sharp and in cutting order by filing and sharpening them when dull.

The claim of this patent is as follows:

Having thus set forth and described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

The blotter J, connected or attached to the main part of any post-office postmarking-stamp for the purpose of cutting and inking, blotting and effacing, so as to successfully cancel the frank or postage-stamp of any letter or any package at the same time and operation of marking or printing upon such letter or package the name of any post-office, the year, the month, and the day of the month, substantially as and for the purpose herein set forth.

Another patent was taken out by Norton on the 16th of December, 1862, for a double stamp containing a combination of the postmarker and blotter and the cross-bar connecting them, and to which they were attached. The drawings attached to this patent exhibit exactly the same form of instrument which is exhibited and described in the drawings and specification of the patent sued on in this case. The blotter, however, instead of being confined to wood, cork, or other elastic material, was proposed to be made of "steel or other material which will answer the purpose," and to have on its face circular cutters inclosed in circular rings to cut the postage-stamp at the same time that it defaced it with ink.

The invention is described in the specification as follows:

The nature of my improvement consists in so constructing canceling-stamps that the same shall cut the postage-stamp or any stamp similar thereto without injury to the contents of the envelope or packet inclosed therein, and at the same time cause a heavy circular mark upon the inside and one upon the outside of that part of the stamp or letter-frank canceled by the cutting device, so that said postage-stamp or letter-frank shall readily show cancellation in ink, and when removed from the letter or packet on which the same may have been canceled it shall be reduced to parts or pieces, whereby a second use of the said stamp or frank is thus prevented, although it may have been previously cleaned by a chemical or other process.

It also consists in the employment and combination of a canceling-stamp with a cutting and inking device thereon with a postmarking or rating stamp, so that the canceling of the letter-frank and the postmarking on the envelope or packet shall be effectually done by the means fully described hereinafter.

To enable others skilled in the art to which my invention relates to make and use the same, I will here proceed to describe the construction and operation thereof, which is as follows, to wit:

I construct the postmarking-stamp D of steel or any material which will answer the purpose.

G is the mortise or opening to receive the type for the month, the day of the month, and the year, around which is the name of the place where used. E is a screw for the purpose of holding the type in the said openings G.

This stamp is secured or firmly fastened to the block or cross-piece B, Figs. 1, 2, and 3, by means of the screw K, which is held in its place by means of the small screw *a*, Figs. 1 and 2, which is placed near one side of the said screw K, so as to prevent the same from becoming loose by reason of turning backward.

After further directions as to the construction of the canceling-stamp, he adds:

The cross-piece B is made of iron or steel, and in width the same as the diameter of the said rating and canceling stamp, and of any thickness required. The said canceling-stamp *c* is securely fastened to the said cross-piece B, and at any desired distance from the said rating-stamp D, as seen at Figs. 1, 2, and 3, and in the same manner as that of the said stamp D. H is a screw-bolt or stem, the lower end of which is screwed into the center of the said cross-piece B. The handle A is then screwed upon the said bolt or stem H, and firmly upon the said cross-piece B, thereby making a strong and reliable joining of the handle to the whole stamp.

The claim in this patent is, first, for the canceling-stamp separately, and, secondly, as follows:

I also claim the combination of the canceling-stamp *c* and the postmarking or rating stamp D with the cross-piece B, substantially as and for the purposes herein described and set forth.

It is hardly necessary to remark that the patentee could not include in a subsequent patent any invention embraced or described in a prior one granted to himself any more than he could an invention embraced or described in a prior patent granted to a third person. Indeed, not so well; because he might get a patent for an invention before patented to a third person in this country if he could show that he was the first and original inventor, and if he should have an interference declared.

Now, a mere inspection of the patents referred to above will show that after December, 1862, Norton could not lawfully claim to have a patent for the general process of stamping letters with a postmark and canceling-stamp at the same time, nor for the general combination of a post-stamper and blotter in one instrument, nor for the combination of a poststamper and blotter connected by a cross-bar, for all these things, in one or other specific form, were exhibited in these prior patents. Any such claim, therefore, in the reissued patent of 1870 must be inoperative and void, as well because the thing claimed was anticipated in former patents as because it would be for a different invention from that contained and described in the original patent. We may, therefore, dismiss from consideration the third and fourth claims of the reissued patent. If they are to be construed as being broader and claiming more than the original patent, they are void; if to be construed as claiming nothing more, they are simply redundant, because the first and second claims embrace all that was in the original and more.

The case, then, upon the patent is narrowed down to the claim of the specific device of the blotter as described and claimed in the original patent and the combination thereof with the postmarking device in one instrument by means of the cross-bar. This being the case, it will be pertinent next to inquire whether the defendant used that device or combination. If he did not, it is unnecessary to pursue the subject further.

As we have already seen, the canceling stamp or device described in the patent consisted of a cylinder corresponding in length to the postmarking device and containing a type of wood, cork, rubber, or other elastic material slightly projecting therefrom. It does not appear that this device was ever used by the defendant. The stamp used by him until January, 1876, had a blotter of cork, it is true, but it was not the specific device described in the patent and to which the patent was restricted. The cork was not inclosed in a cylinder, as demanded by the patent. It was a naked piece of cork directly attached to the cross bar by a common wood screw passing through a hole in the cross-bar and driven into the cork, firmly holding it to the bar. This device, of course, was different from that which was patented. The only other stamp used by the defendant had a steel blotter connected with the postmarker by a solid metallic plate or mass of metal and having no cylinder. Neither of these devices infringed the complainant's patent, construed as we consider it must be in order to have any validity at all.

The decree of the circuit court is reversed and the cause remanded, with directions to dismiss the bill of complaint. This decision in effect disposes of all three appeals.

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Issue of February 7, 1882.

Patents	317—No. 253,172 to No. 253,488,	inclusive.
Designs	27—No. 12,733 to No. 12,759,	inclusive.
Trade-Marks	23—No. 9,079 to No. 9,101,	inclusive.
Labels	4—No. 2,610 to No. 2,613,	inclusive.
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Montana Territory	1	....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia	....	....	England	9	2
Austria	....	1	France	5	....
Barbadoes	....	....	Germany	3	....
Belgium	1	....	Italy	....	....
Bermuda	....	....	New Zealand	....	....
Brazil	....	....	Russia	....	....
Canada	7	....	Spain	....	....
Chili	....	....	Sweden	....	....
Colombia, U. S of	....	....	Switzerland	3	....
Cuba	....	....			
Denmark	....	....	Total to citizens of foreign countries	26	3
Ecuador	....	....			

DESIGNS.

12,733.—TOY FOR EXPLODING CAPS AND FULMINATES.—*Charles Coester, Jr.*, Bridgeport, Conn. Application filed July 7, 1881. Term of patent 14 years.

12,734.—CARPET.—*John Fisher*, New York, N. Y., assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Application filed January 7, 1882. Term of patent 3½ years.

12,735.—JEWELRY.—*Herbert G. Mackinney*, Providence, R. I. Application filed November 30, 1881. Term of patent 3½ years.

12,736 and 12,737.—OIL-CLOTH.—*Charles T. Meyer* and *Victor E. Meyer*, Bergen, N. J., assignors to *Edward C. Sampson*, New York, N. Y. Applications filed January 6, 1882. Term of patents 3½ years.

12,738.—OIL-CLOTH.—*Charles T. Meyer* and *Victor E. Meyer*, Bergen, N. J., assignors to *Edward C. Sampson*, New York, N. Y. Application filed January 6, 1882. Term of patent 7 years.

12,739 to 12,742, inclusive.—OIL-CLOTH.—*Charles T. Meyer* and *Victor E. Meyer*, Bergen, N. J., assignors to *Edward C. Sampson*, New York, N. Y. Applications filed January 6, 1882. Term of patents 3½ years.

12,743.—OIL-CLOTH.—*Charles T. Meyer* and *Victor E. Meyer*, Bergen, N. J., assignors to *Edward C. Sampson*, New York, N. Y. Application filed January 6, 1882. Term of patent 7 years.

12,744.—BEDSTEAD.—*Alexander F. Miles*, Pittsburg, Pa. Application filed December 24, 1881. Term of patent 7 years.

12,745.—EASEL.—*Ethaman L. Moodie*, New York, N. Y., assignor to *Gillespie & Moodie*, same place. Application filed November 18, 1881. Term of patent 3½ years.

12,746.—LAMP, &c.—*Jacob J. Nichols*, Brooklyn, and *William S. McLeesse*, New York, N. Y.; said *McLeesse* assignor to said *Nichols*. Application filed November 2, 1881. Term of patent 7 years.

12,747.—RUG, CARPET, &c.—*Adolph Petzold*, Philadelphia, Pa., assignor to *John Bromley & Sons*, same place. Application filed January 7, 1882. Term of patent 3½ years.

12,748.—FRINGE.—*Joseph Reshower* and *August Heck*, New York, N. Y. Application filed December 16, 1881. Term of patent

9,086.—TONIC BITTERS.—*Carl Spengler*, Kansas City, Mo. Appli-

12,748.—FRINGE.—*Joseph Reshower* and *August Heck*, New York, N. Y. Application filed December 16, 1881. Term of patent 3½ years.

12,749.—TOY FOR EXPLODING CAPS AND FULMINATES.—*Charles F. Ritchel*, Bridgeport, Conn., assignor to *Edward R. Ives*, same place, and *Cornelius Blakeslee* and *Edward G. Williams*, Brooklyn, N. Y. Application filed November 29, 1881. Term of patent 7 years.

12,750.—TOY FOR EXPLODING CAPS AND FULMINATES.—*Charles F. Ritchel*, Bridgeport, Conn., assignor to *Ives, Blakeslee & Co.*, same place. Application filed October 20, 1881. Term of patent 7 years.

12,751.—PANEL FOR MANTELS.—*John Williamson*, Louisville, Ky. Application filed November 11, 1881. Term of patent 14 years.

12,752.—JEWELER'S STAND.—*John B. Wood*, Montreal, Quebec, Canada. Application filed December 23, 1881. Term of patent 3½ years. Patented in Canada December 21, 1881.

12,753.—CARPET.—*Walter J. Gadsby*, Boston, Mass., assignor to *The Roxbury Carpet Company*, same place. Application filed January 12, 1882. Term of patent 3½ years.

12,754.—CARPET.—*David McNair*, Boston, Mass., assignor to *The Roxbury Carpet Company*, same place. Application filed January 12, 1882. Term of patent 3½ years.

12,755 and 12,756.—CARPET.—*Thomas J. Stearns*, Boston, Mass., assignor to *The Roxbury Carpet Company*, same place. Applications filed January 12, 1882. Term of patents 3½ years.

12,757.—HANDLE FOR ARTICLES OF TABLE-WARE.—*George Wilkinson*, Providence, R. I., assignor to *Gorham Manufacturing Company*, same place. Application filed November 2, 1881. Term of patent 7 years.

12,758.—TOY MONEY-BOX.—*Louis Kyser* and *Alfred C. Rex*, Philadelphia, Pa. Application filed January 9, 1882. Term of patent 3½ years.

12,759.—CLOCK-CASE.—*Thomas Lincoln* and *Daniel S. Wesson*, New Haven, Conn. Application filed January 9, 1882. Term of patent 3½ years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

9,079.—HOG-PRODUCTS, INCLUDING HAMS, BACON, PORK, LARD, AND SUCH OTHER FOOD SUBSTANCES AS ARE USUALLY PUT UP BY PORK BUTCHERS AND PACKERS.—*Henry Denny & Sons*, Chicago, Ill. Application filed November 16, 1881.

"The letter 'D' surrounded by seven stars arranged in a circular form."

9,080.—STARCH.—*Thomson Kingsford*, Oswego, N. Y. Application filed January 9, 1882.

"The representation of two United States flags, one floating to the right and the other to the left, each supported by a staff, the staffs crossing each other near the lower parts thereof over a Centennial medal."

9,081.—STARCH.—*Thomson Kingsford*, Oswego, N. Y. Application filed January 9, 1882.

"The word-symbol 'SNOW FLAKE.'"

9,082.—STARCH.—*Thomson Kingsford*, Oswego, N. Y. Application filed January 9, 1882.

"The representation of an eagle with spread wings, as in the act of flying."

9,083.—STARCH.—*Thomson Kingsford*, Oswego, N. Y. Application filed January 9, 1882.

"The representation of a shield or escutcheon supported on the left by the figure of a female Indian and on the right by the figure of a farmer holding a sickle, and embellished at the bottom and on either side by the representation of the leaves and ears of Indian corn."

9,084.—CORN-STARCH.—*T. Kingsford & Son*, Oswego, N. Y. Application filed September 30, 1881.

The words 'SILVER GLOSS.'"

9,085.—STEEL AND METALLIC PENS.—*William Mitchell*, Birmingham and London, England. Application filed January 9, 1882.

"The representation of the city of London arms."

9,086.—TONIC BITTERS.—*Carl Spengler*, Kansas City, Mo. Application filed January 3, 1882.

"The arbitrary word-symbol 'MALARIAL SHIELD,' in connection with a representaton of an amazon with shield and spear guarding a gladiator."

9,087.—GRATES FOR STOVES AND RANGES.—*Spicers & Peckham*, Providence, R. I. Application filed December 31, 1881.

"The word 'REFLEX.'"

9,088.—ASTHMATIC PASTILLES.—*Elizabeth D. Stowell*, Charlestown, Mass. Application filed April 2, 1881.

"The words 'SAMUEL KIDDER & Co.'s' and the words 'ASTHMATIC PASTILLES.'"

9,089.—PLUG AND OTHER KINDS OF CHEWING-TOBACCO, SMOKING-TOBACCO, CIGARS, AND CIGARETTES.—*L. & E. Wertheimer*, New York, N. Y., and San Francisco, Cal. Application filed January 10, 1882.

"The arbitrarily-selected words 'MAN'S COMPANION.'"

9,090.—BUTTONS.—*Williston Knight & Co.*, New York, N. Y. Application filed July 28, 1881.

"The representation of a crown in the center of a sun-burst, above which, in a cloud-like center, is contained a representation of the world bearing the inscription 'NORTH AMERICA,' surmounted by an eagle holding a pennant in his beak bearing the inscription 'FINIS CORONAT OPUS.'"

9,091.—SEWING COTTON AND THREAD.—*Jonas Brook & Brothers*, Meltham Mills, near Huddersfield, county of York, England. Application filed October 5, 1881.

"The words 'J. BROOK & BROS., MELTHAM MILLS.'"

9,092.—LOZENGES FOR THE CURE OF DYSPEPSIA, INDIGESTION, AND KINDRED DISEASES.—*J. Niven Hegeman*, New York, N. Y. Application filed January 14, 1882.

"The word 'GASTRICINE.'"

9,093.—PLUG AND TWIST CHEWING-TOBACCO.—*Dabney A. Martin*, Greenville, Ky. Application filed December 3, 1881.

"The symbol of a star."

9,094.—BAKING-POWDER.—*John J. O'Brien*, Kansas City, Mo. Application filed December 30, 1881.

"The word 'WELCOME,' in connection with the image of a bird with outspread wings having a can suspended from its beak."

9,095.—BOOTS, SHOES, AND SLIPPERS.—*Ordway & Clark*, Haverhill, Mass. Application filed January 13, 1882.

"The arbitrarily-selected word 'DONGOLA.'"

9,096.—LEATHER.—*Ordway & Clark*, Haverhill, Mass. Application filed January 13, 1882.

"The arbitrarily-selected word 'DONGOLA.'"

9,097.—REFINED PETROLEUM.—*Henry W. Peabody & Co.*, Boston, Mass. Application filed January 14, 1882.

"The word-symbol 'INVINCIBLE.'"

9,098.—LINIMENT.—*Bernard M. Ross*, Peoria, Ill. Application filed December 24, 1881.

"The words 'GRAND FATHER'S' in connection with the picture of an old man sitting in an arm-chair holding in one hand a bottle and approached by a cripple with extended hand."

9,099.—CLEANING AND POLISHING PREPARATIONS.—*Bertram G. Seeback*, Peru, Ill. Application filed January 14, 1882.

"The arbitrary word-aymbol 'ZINCINE.'"

9,100.—MEDICAL SALT.—*Stadtgemeinde Karlsbad*, Karlsbad, Austria. Application filed October 6, 1881.

"A rampant lion having a crown on his head and two tails. Beneath the lion there are three undulated stripes which cover the hind legs of the same."

9,101.—QUICKSILVER-FLASKS.—*The Quicksilver Mining Company*, New Almaden, Cal. Application filed September 14, 1881.

"The letter 'A.'"

LABELS.

2,610.—Title: "BOWERS' ELECTRIC SUSPENDERS."—*James Bowers*, Newark, N. J. Application filed January 5, 1882.

2,611.—Title: "CRANE'S LADIES NOTE PAPER AND ENVELOPES, DISTAFF."—*Z. Crane, Jr., & Brother*, Dalton, Mass. Application filed January 5, 1882.

2,612.—Title: "SWEDISH BITTERS."—*Swedish Bitters Co.*, Woodbury, N. J. Application filed November 14, 1881.

2,613.—Title: "TOLMAN'S BELT HOOKS."—*Henry Tolman*, Wallingford, Pa. Application filed January 13, 1882.

PATENTS

GRANTED FEB. 7, 1882.

253,172. AUTOMATIC ELEVATOR-GUARD. JEREMIAH F. ARNETT, Revere, assignor of one-half to Marie Brofée Robbins, Boston, Mass. Filed Dec. 27, 1881. (No model.)



Claim.—1. In an elevator-guard, the head *k*, with its two supports, K K, the tumbler *d*, located in bearings in the post *c*, and having two fulcra, D and D', located on two opposite sides of the center of gravity of the head and guard *k k'*, as and for the purpose set forth.

2. In an elevator-guard, the head *k*, with its supports K K', the tumbler *d*, having fulcra D D' and trunnions *d' d'*, arranged in bearings on the post *c*, and the connecting mechanism *e f f' f'' g' g' g''* *h*, or its equivalent, combined with a projection or wedge *b'*, on the elevator *b*, as and for the purpose set forth.

253,173. DOOR-SPRING. WILLIAM F. H. AMWAKE, Lancaster, Pa. Filed Oct. 13, 1881. (No model.)



Claim.—A flange, F, of a bracket, B, having an opening, O, parallel with an opening in the same, through which the stem S passes, and having a countersink at its lower side, in combination with a fast-pin, P, having a head at its upper end and a flange about the lower corresponding with the countersink aforesaid, and lugs L, projecting from the collar C, all as and for the purpose specified.

253,174. ROOFING-TILE. THOMAS B. ATTERBURY, Pittsburg, Pa. Filed Dec 10, 1881. (No model.)

Brief.—A wedge-shaped portion or lug on the under surface forms the support of and a continuous bearing-surface for the tile.

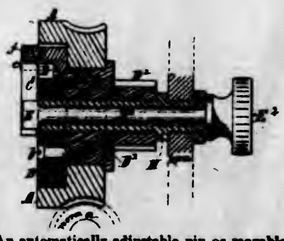


Claim.—1. A tile or shingle made of glass or other vitreous material, adapted to be placed on the roof with break and lap joints, as in the ordinary shingle roof, and provided with lugs or inclined portions *s*, to form a continuous bearing-surface for the tile or shingle, as set forth.

2. A tile or shingle constructed substantially as described—that is to say, with the horizontal under surface having wedge-shaped or inclined portions on its upper outer edges running parallel with each other and forming supports for the upper end of the shingle or tile, and adapted to be laid or secured in position shingle fashion, as set forth.

253,175. FRICTION-CLUTCH. JOHN R. BACK, Worcester, Mass., assignor of one-half to Frederick E. Reed, same place. Filed Sept. 3, 1881. (No model.)

253,175.



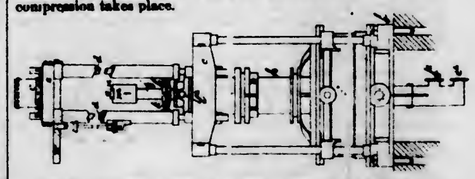
Claim.—1. An automatically-adjustable pin or movable fulcrum-bearing sustaining the operating-levers in a friction-clutch device, substantially as set forth.

2. The combination, substantially as described, of the wheel-rim with internal friction-surface, the divided friction-band arranged within said rim, the levers pivoted on the ends of said band, the automatically-adjustable fulcrum-piece arranged between the short arms of said levers, and means for forcing apart the long arms of said levers, substantially as hereinbefore set forth.

3. The combination, with the worm-wheel A, feed-pinion D^2, and hand-knob E^2, of the friction-band B, fixed on the feed-pinion disk D, the expanding-levers C C, pivoted on the ends of said friction-band, and the eccentric button or cam E, fixed on the end of the hand-knob spindle E', substantially as and for the purposes set forth.

253,176. PROCESS OF AND MACHINE FOR CASTING STEEL INGOTS. GEORGE W. BILLINGS, Cleveland, Ohio. Filed Oct. 29, 1881. (No model.)

Brief.—The bottom block attached to the piston of the hydraulic cylinder is raised into the ingot-mold, and is gradually lowered as the metal is poured. After the required length of ingot is obtained the compression-plate is run under the mold and the ingot compressed by the action of the steam-piston. To insure the withdrawal of the ingot during pouring it is secured to the bottom block by a key, which is knocked out just before the compression takes place.



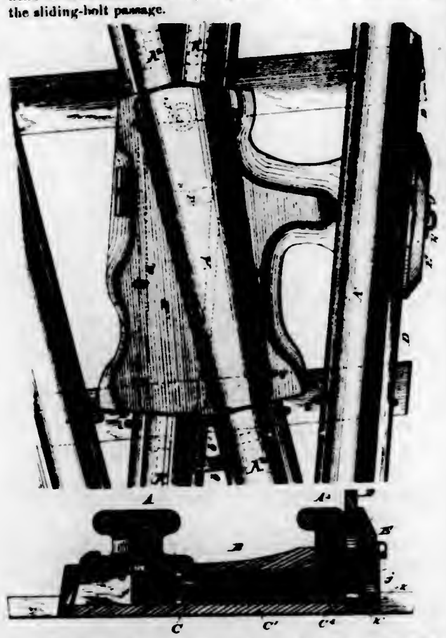
Claim.—1. The continuous process of making and compressing steel ingots by pouring the molten steel into the mold and at the same time gradually lowering the ingot until it has reached the required length, and then compressing the ingot lengthwise, substantially as set forth.

2. The steam-cylinder *f* and its piston *g*, the water-cylinder *h* and its piston-rod *j*, in combination with an ingot-mold bottom, a separate bottomless ingot-mold, and an adjustable compression-plate, substantially as and for the purpose set forth.

253,177. RAILROAD-FROG. THOMAS BERSH, Knowlton, Pa. Filed Oct. 15, 1881. (No model.)

Brief.—The frog-rail is pivoted by a pin having rounded re-enforcing shoulder fitted in a countersunk aperture in the bed of the casting. The rail is operated by a spring-beld rod having a beveled end, which in turn is operated by a lever having a beveled

point and supported upon elastic bearings, and which is depressed by a passing train. A plate is provided adapted to embrace the head of the bolt and to be sprung over and cover the entrance of the sliding-bolt passage.



Claim.—1. In an automatic railway-frog, the combination, with the frog-rail A, of the pivotal pin having a rounded re-enforcing shoulder fitted in a countersunk aperture in the bed or casting, substantially as and for the purpose set forth.

2. In an automatic railway-frog, the combination, with the shifting rail A, of the spring-actuated rod C and its beveled bar C^3, and means for imparting a sliding motion thereto by the action of the car or train wheels, substantially as and for the purpose set forth.

3. In an automatic frog, the combination, with the shifting rail A, having connected thereto a spring-actuated rod, C, provided with a beveled bar, C^3, of the lever D, having a beveled point and supported upon elastic bearings, substantially as and for the purpose set forth.

4. In an automatic frog, the combination, with the headed pivotal bolt of the lever D, of the plate *j*, adapted to embrace the head of the bolt, and to be sprung over and cover the entrance of the sliding-bolt passage, as set forth, substantially as and for the purpose specified.

5. In an automatic railway-frog, the combination, with the frog-operating rod and bar C C^3, having the beveled face, of the lever D, having the beveled point, and the vertical slot through which its pivot passes, and supported in an elevated position out of forcible contact with the aforesaid bar upon springs encircling rods having vertical movement, substantially as and for the purpose specified.

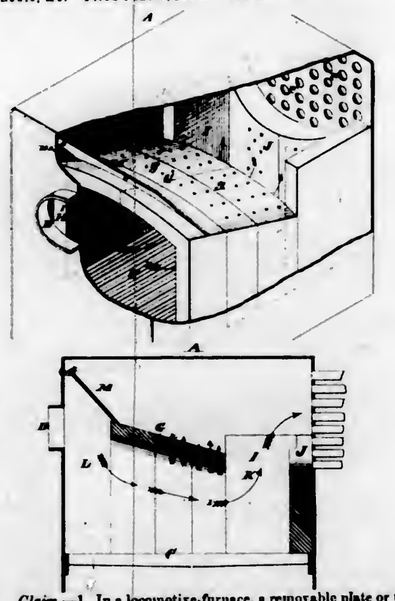
253,178. MILK-COOLER. AUGUSTUS H. BAILL, Oxford, N. Y. Filed Aug. 26, 1881. (No model.)



Claim.—1. In a milk-cooler, a vat to contain milk, provided with horizontal ribs open upon one end and bottom and closed on the top and other end, combined with a water-tank in which said milk-vat sits, said water-tank being longer than the milk-vat to form an ice-box on the end, and pipes, independent of the ribs, extending up into the same to feed cold water at the closed ends and near the top of the ribs, and through which it passes to the open ends and into the ice-box, said open ends of the ribs opening directly into the ice-box, substantially as and for the purpose specified.

2. In a milk-cooler, a water-tank, A, in combination with a milk-vat, B, secured to a frame and supported in said water-tank, said milk-vat being shorter than the water-tank to form an ice-box, and provided with hollow ribs D, closed at one end and open on the bottom and other end, passage-way *b*, feed-pipes H, independent of the ribs, extending up into said ribs and close to the closed ends, an ice-box located in said water-tank and at one end of said milk-vat, the open ends of the ribs opening into the ice-box, and an overflow, J, the overflowing water being drawn through the ice-box and passed back to the feed-pipes H through the medium of a pump, substantially as and for the purpose specified.

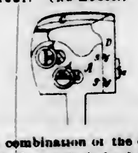
253,179. LOCOMOTIVE-FURNACE. THOMAS A. BUCKLAND, St. Louis, Mo. Filed June 6, 1881. (No model.)



Claim.—1. In a locomotive-furnace, a removable plate or tile, M, extending from the front *a* of the furnace to and having its forward edge resting upon the arch, serving, when lowered, to close the space L, between the arch and furnace-front *a*, substantially as described, and for the purposes set forth.

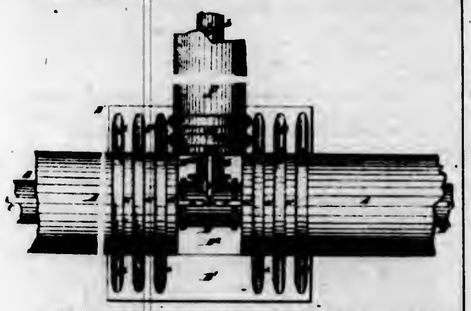
2. The combination of the furnace A, arch G, and plate M, said plate extending and closing, as described, the space L, between the furnace-front and arch, and the latter not extending to the farther end of the furnace, the throat K being arranged beyond said arch, substantially as described.

253,180. SOLE-EDGE PLANE. WILLIAM F. BULLOCK, Boston, assignor to himself and HORACE A. LOTHROP, Sharon, Mass. Filed Nov. 21, 1881. (No model.)



Claim.—The combination of the channeled cutter C and its set-screws *a a* with the stock A, having slots *b b*, wider than the shanks of such screws, and also with the channeled guard D, adapted to the stock so as to be adjustable laterally with respect to it and the cutter, substantially and for the purpose set forth.

253,181. MEANS FOR PROTECTING UNDERGROUND PIPES AND WIRES. AUGUSTUS CAMPBELL, Hoboken, N. J. Filed Mar. 28, 1881. (Model.)

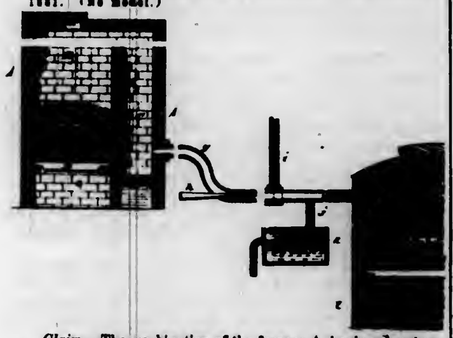


Claim.—1. A protector for steam or other pipes and telegraphic wires or similar wires, having corrugations *a'*, in combination with blocks D D', formed each in two parts halved together, and provided with corrugations *d*, substantially as shown and described.

2. The combination, with the sectional blocks D D', provided with a man-hole, D^2, and corrugations *a' a²*, of main sections A A and branch sections F F, formed with corrugations for the reception of cement, substantially as shown and described.

3. As an improvement in what is known as the "Holly" system of steam-heating, the protector A, of burnt clay or analogous earthy cheap non-conducting material, having the large central passage, A', and surrounding smaller passages *a*, in combination with the steam-pipe B and wires or cables *c*, arranged to serve substantially as and for the purposes herein specified.

253,182. APPARATUS FOR EXTINGUISHING FIRES IN COKE-OVENS. JOSEPH H. CAMPBELL, Pittsburg, Pa. Filed Mar. 5, 1881. (No model.)



Claim.—The combination of the furnace A, having chambers B and C, pipe *g*, steam-jet pipe *h*, water-pipes *i j*, trap *k*, and coke-oven, all constructed and operating substantially as herein described, and for the purpose set forth.

253,183. FRICTION-ROLL. THOMAS M. CHAPMAN, Old Town, Me. Filed July 26, 1881. (No model.)



Claim.—In a friction-roller having alternate rubber and metallic disks *g g d d*, the former projecting beyond the latter and having side surfaces of greater extent than their edge surfaces, the combination of the shaft *a*, roll *b*, having longitudinal grooves *e e* therein, perforations *e* in said disks corresponding to said grooves, and screws *i i*, passing through said grooves and through the holes *e*, and serving both as splines and to hold the parts together, as set forth.

253,184. ORNAMENTAL WIRE. JAMES A. CHARELEY, Providence, R. I. Filed Jan. 19, 1880.



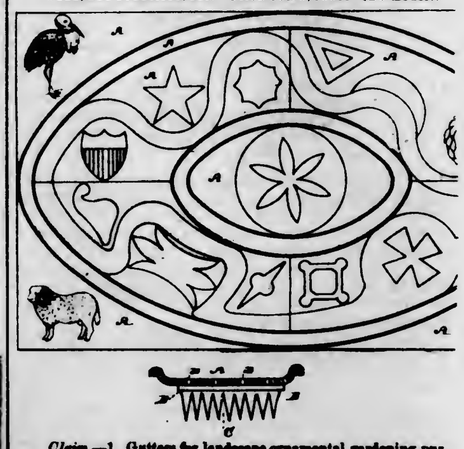
Claim.—As a new article of manufacture, a flexible wire having engraved or depressed upon its exterior surface any suitable design or ornamentation, substantially as and for the purposes specified.

253,185. IMPLEMENT FOR BLEEDING TREES. MATHIAS CHRISTMILLER, Washington, D. C. Filed Dec. 19, 1881. (Model.)



Claim.—In an implement for bleeding trees, the combination, with the two-part handle having the slotted metallic guard at its point, of the threaded shaft having the key-post, and the sleeve I, having the removable blade and the stationary sleeve within which the shaft works, substantially as specified.

253,186. ORNAMENTATION OF GROUNDS. HENRY D. COGSWELL, San Francisco, Cal. Filed Oct. 8, 1881. (No model.)



Claim.—1. Gutters for landscape ornamental gardening purposes, provided with openings of fanciful form cut in their surfaces and covered with raised skeleton-frames, through which may be trained the protruding vegetation, as specified.

2. The sections A, having their meeting ends perforated, as shown, in combination with the supports B, having the pins or lugs D, and the extension C, substantially as and for the purpose herein described.

253,187. TURNED SHOE. WILLARD COBBY, Westborough, assignor to the Improved Sole Sewing Machine Company, Boston, Mass. Filed Nov. 9, 1881. (No model.)



Claim.—The improved mode of manufacturing turned shoes, consisting in channeling the sole upon the grain side from or near its edge inward, then folding back the channel-flap toward the middle of the sole, then lasting the shoe with the inner surface of the channel-flap of the sole resting against the sole of the last, then drawing the last, and sewing, turning, and finishing the shoe, as set forth.

253,188. CAR-VENTILATOR. EDWARD O. COSSONS, Lorain, Ohio. Filed July 14, 1881. (No model.)

Claim.—The herein-described ventilator, consisting of the curved trumpet-shaped tubes A A, having open flaring mouths

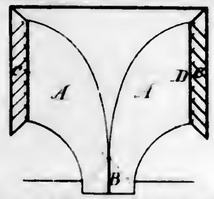
253,188.

5. In a whip-socket, the combination of an external ring, in-

Claim.—1. In a furnace, the combination, with the flour or

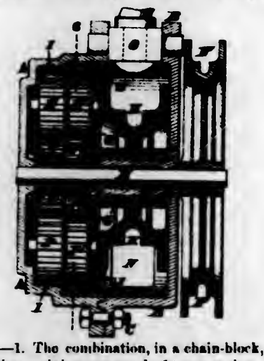
253,195. MACHINE FOR CLEANING HEMP. THOMAS J. FER-

253,188.



provided with horizontal diagonal slats C C and wire screen D, said tubes united in a common throat having a swinging valve, B, as shown and described.

253,189. DIFFERENTIAL CHAIN-BLOCK. JOSEPH D. DAVIES, Bond Hill, Ohio. Filed Nov. 14, 1881. (No model.)



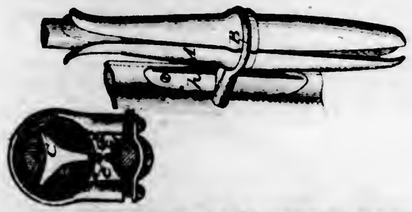
Claim.—1. The combination, in a chain-block, of a driving-shaft operating a pinion composed of two members, one of which engages with a fixed circular rack, while the other member gears with the hoisting-sheave, the pitch-lines of said rack and sheave-rim being of different diameters, for the purpose specified.

2. The combination, in a chain-block, of driving-shaft E, arm G, pinion H H', fixed circular rack I, and toothed sheave-rim J, the pitch-lines of said rack and sheave-rim being of different diameters, for the purpose specified.

3. The combination, in a chain-block, of driving-shaft E, arms G G', pinions H H' P P', fixed circular rack I, and toothed sheave-rim J, the pitch-lines of said rack and sheave-rim being of different diameters, as and for the purpose specified.

4. The combination, in a chain-block, of housings A B, box D, driving-shaft E, master-wheel F, arm G, pinion H H', fixed circular rack I, toothed sheave-rim J, and sheave K, the pitch-lines of said rack and sheave-rim being of different diameters, as and for the purpose specified.

253,190. WHIP-SOCKET. GEORGE W. EDDY, Waterford, N. Y. Filed Oct. 19, 1881. (Model.)



Claim.—1. In a whip-socket, the combination, substantially as described and shown, of a horizontal sustaining-ring, a series of vertical staves pivoted thereon, and the spring or springs to retain the staves in position with reference to the ring.

2. The improved whip-socket consisting of the body staves or sections, the sustaining-ring encircling the same, and internal means, substantially as described, for holding the staves outward against the ring.

3. The combination of the external ring, the internal rocking staves supported thereon, and the two internal springs.

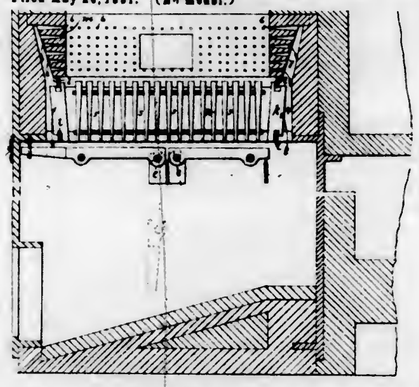
4. The combination of the supporting-ring, the staves, the key inserted between the staves, and the internal springs applied to hold both the staves and the key.

5. In a whip-socket, the combination of an external ring, internal rocking staves or body-sections mounted thereon, and a key inserted between two staves for the purpose of holding them in an expanded condition within the ring.

6. In combination with a whip-socket composed of longitudinal pivoted body-sections, a single circular spring arranged to bear upon all the sections and hold the socket normally in an open position.

7. The staves or body-sections and the supporting-ring provided with the extended curved foot-plate *h*, in combination with the second plate, *i*, attached thereto, substantially as shown.

253,191. FURNACE. ALEXANDER C. FULTON, Warwick, Mass. Filed May 26, 1881. (No model.)



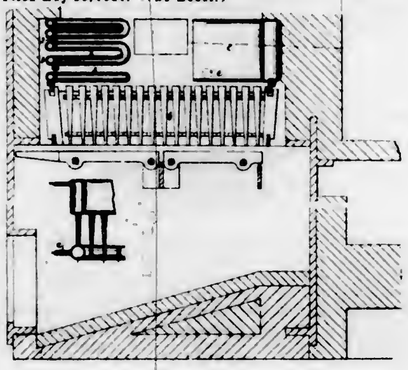
Claim.—1. In a furnace, the combination of the bottom or floor grating with upright gratings the bars of which are tapered from end to end in their thickness, measured parallel with the wall of the furnace that they constitute, to afford a variable amount of space for the passage of air between them, as and for the purpose set forth.

2. The series of grate-bars connected together to form a continuous grating, and strung or mounted at one end upon a rod pivoted and supported on a suitable bearing-bar, combined with a removable support for the other end of the said grate-bars, whereby the entire connected grating may be permitted to turn on the pivoted rod to remove the fire or fuel from the furnace, substantially as described.

3. In a furnace, the following elements in combination: the bottom or floor grate, the upright gratings on all sides thereof, the perforated refractory lining above the said upright gratings, and a continuous air-passage behind the said upright grating and refractory lining, substantially as described.

4. The main bearing-bar provided with notched wings and a series of grate-bars with perforated lugs and rods passed therethrough, one rod being supported in the said wings and sustaining one end of the said bars, combined with a removable hook or support for the other end thereof, substantially as described.

253,192. FURNACE. ALEXANDER C. FULTON, Warwick, Mass. Filed May 26, 1881. (No model.)

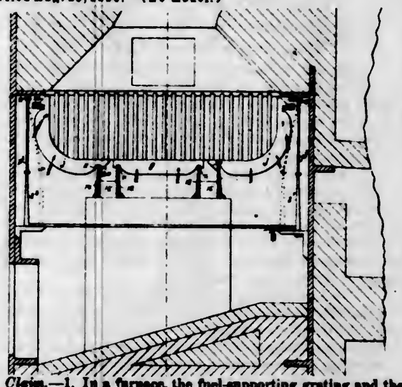


Claim.—1. In a furnace, the combination, with the floor or bottom grating and vertical gratings extended upward therefrom, of a water-back surrounding the fire-chamber above the said vertical gratings, substantially as and for the purpose described.

2. The combination, with the bottom or floor grating, of the water-back consisting of a series of horizontal tubes surrounding the furnace, and a continuous chamber connected with the upper ends thereof, spaces being left behind and between the said pipes for the admission of air to the fuel, substantially as and for the purpose described.

3. In a furnace, the combination, with the bottom or floor grating, of a water-back consisting of a series of tubes surrounding or lining the wall of the furnace at the sides of the said grating, and provided with air-spaces between them gradually diminishing in size toward the upper part of the furnace, substantially as described.

253,193. FURNACE. ALEXANDER C. FULTON, Warwick, Mass. Filed Aug. 25, 1880. (No model.)



Claim.—1. In a furnace, the fuel-supporting grating and the fire-chamber, having its side walls inclined upward and inward from the edges of the said grating toward the middle of the furnace, to reduce the pressure of the fuel against the side walls, and thereby prevent the adhesion of clinker material thereto, substantially as and for the purpose set forth.

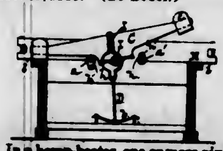
2. In a furnace, the upwardly-extending gratings at the sides thereof, and side dampers to control the draft or flow of air through the said gratings, as and for the purpose described.

3. In a furnace provided with upwardly-extended side gratings, side dampers to control the draft through the said gratings, and damper-operating mechanism to move all the said dampers simultaneously, substantially as described.

4. In a furnace-grate, the bearing-bar A, having two ribs, each to support the ends of adjoining sections of grate-bars, and provided with notches to insure the proper spacing of the said bars, combined with grate-bars having notches to engage and be held in place by the said notched ribs, substantially as described.

5. In a furnace, the removable side bars, beveled at their ends, as described, to enable them to be readily removed from their supports, substantially as and for the purpose set forth.

253,194. HEMP-BEATER. THOMAS J. FERGUSON, Pikesville, Md. Filed Nov. 23, 1881. (No model.)



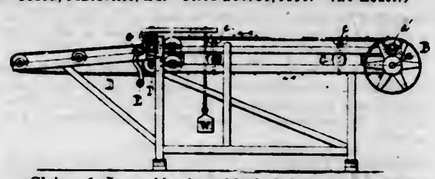
Claim.—1. In a hemp-beater, one or more pivoted arms carrying mallets or beaters, in combination with cranks or cams adapted, as described, to raise the arms and fallow them through a part only of their downward strokes, as and for the purpose set forth.

2. In combination with the arms C, having beaters *c*, the springs *h*, attached to the arms above their pivots, and the cranks A, as set forth.

3. In combination with the beds H, the beaters *c*, and arms C, the cranks A, springs *h*, and rod and loop D J, as set forth.

4. In combination with the frame A, having shafts *a a'* I, the beds H, arms C, having beaters *c*, cranks A, rollers E E', and the actuating-springs attached to the arms, as set forth.

253,195. MACHINE FOR CLEANING HEMP. THOMAS J. FERGUSON, Pikesville, Md. Filed Nov. 23, 1881. (No model.)



Claim.—1. In combination with the belts having transverse bars provided with interlocking teeth, the feed-rollers F F', roller *e*, and crank E, as set forth.

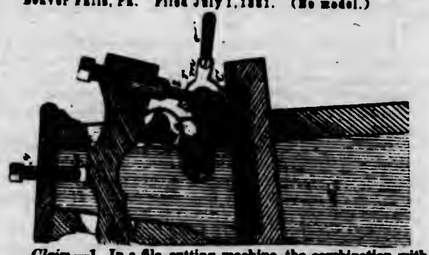
2. In combination with the belts having interlocking teeth, as described, the rollers F F', endless apron D, roller *e*, and crank E, substantially as and for the purpose set forth.

253,196. ABRASIVE BELT. GORDON H. P. FLAGG and WILLIAM GORDON, Boston, Mass.; said Gordon assignor to said Flagg. Filed Dec. 29, 1880. (No model.) Patented in Canada July 26, 1881.



Claim.—The sand-paper belt above described, consisting of a strip of sand-paper the ends of which are joined together, the end *a* being denuded of sand and the end *a'* skived and lapped over and connected to the end *a*, as set forth, thereby bringing the outer surfaces of the abrasive coating on a line at the joint.

253,197. FILE-CUTTING MACHINE. FREDERICK FOSKAY, Beaver Falls, Pa. Filed July 1, 1881. (No model.)

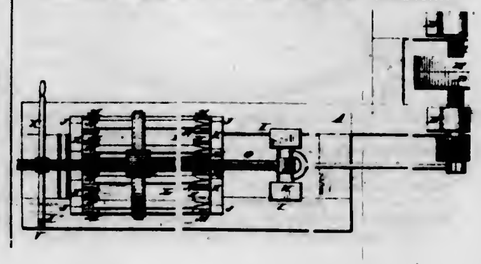


Claim.—1. In a file-cutting machine, the combination with the hammer, cutter-box, and the cutters, of the pivoted and yielding holder adapted to engage with the front and long bevel of the cutter to hold it in position in the cutter-box by mere frictional contact, as herein described, and for the purpose set forth.

2. In a file-cutting machine, the combination, with the cutter, holder, and presser, having the pivoted part *j*, of the cutter-box provided with detachable cutter-supports having less area of surface than the rear face of the cutter, substantially in the manner herein shown and described.

3. In a file-cutting machine, the combination of the cutter-box *i*, cutter *l*, pivoted holder *m*, springs *n q*, and pivoted lever *o*, substantially in the manner herein shown and described.

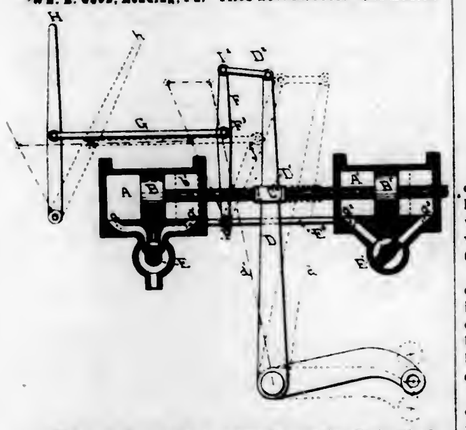
253,198. MACHINE FOR STRIPPING FILES. FREDERICK FOSKAY, Beaver Falls, Pa. Filed June 30, 1881. (No model.)



Claim.—1. In a file-stripping machine, the combination of a pivoted table or tables, L, having independently-pivoted file-blank supports N, pivoted stripping-file support or supports S, and operating mechanism, substantially in the manner as and for the purpose herein shown and described.

2. In a file-stripping machine, the combination, with the pivoted lever O, of the pressure-lever X, provided with the friction-roller Y, and the spring Q, having the friction-roller *b*, substantially in the manner as and for the purpose herein shown and described

258,199. REVERSING APPARATUS FOR STEAM-ENGINES. WM. E. GOOD, Reading, Pa. Filed Nov. 21, 1881. (No model.)



Claim.—1. In a steam or automatic reversing device, the lever F, in combination with the valve E of the cylinder A, valve-rod E^1, link D^2, and arm D, as shown, and for the purpose specified.

2. The lever F, connected as shown, whereby the joints F', F^2, and F^3 automatically become the fulcrum-points of movement, in combination with the valves E E', cylinders A A', pistons B B', piston-rods C C', arm D, link D^2, lever H, or its equivalent, rod or link G, and valve-rod E^2, substantially as shown, and for the purpose specified.

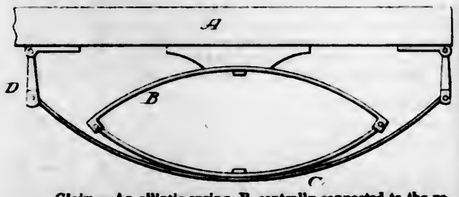
3. In a steam or automatic reversing device, the automatic opening and closing of the valves E E' over their respective ports by the movement of piston B and arm D, in combination with lever F, link D^2, and rod E^2, substantially as shown, and for the purpose set forth.

258,200. COMPOSITION FOR BUTTONS, &c. TIMOTHY GUILFORD, New York, N. Y. Filed Nov. 12, 1881. (Specimens.)

Claim.—1. The herein-described compound, comprising as its elements pulverized horn or hoof and steatite, substantially as and for the purposes set forth.

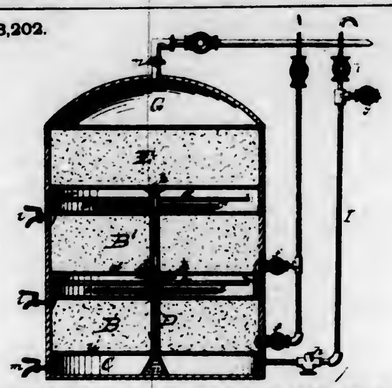
2. The combination, with a compound composed of pulverized horn or hoof and steatite, of a coloring-pigment, substantially as and for the purposes set forth.

258,201. VEHICLE-SPRING. ALBERT GUMMER, Omro, Wis. Filed Dec. 21, 1880. (Model.)



Claim.—An elliptic spring, B, centrally connected to the vehicle-body A, or a projection thereof, on one side and within the curve to the half-spring C on the opposite side, in combination with jointed coupling-studs D, substantially as shown and described, and for the purpose set forth.

258,202. CARBURETOR. JACOB HARRINGTON, Ocean Beach, N. J. Filed Apr. 5, 1881. (No model.)



Claim.—1. In a carbureting apparatus, the combination of an evaporating-chamber and an air-conduit, the latter provided with lateral perforated exit-pipes surmounted by a shield or deflector, whereby air is conducted to and in contact with the hydrocarbon vapor, and both are checked in their flow and are spread and intermixed, substantially as shown and described.

2. In a carbureting apparatus, an air-conduit divided into two or more independent sections, each of which is provided with an inlet and with lateral perforated exit-pipes surmounted by a shield or deflector, in combination with an evaporating-chamber located between the inlet and exit pipes of each section, whereby air may be successively charged and intermixed with hydrocarbon vapor, substantially as shown and described.

3. In a carbureting apparatus, the combination of the air-receiving chamber provided with a drip-cock, and communicating with an air-conduit, terminating at its base in an inverted perforated funnel, and provided with lateral perforated exit-pipes surmounted by a shield, with an evaporating-chamber encircling said conduit and having an imperforate bottom and perforated top and located between said funnel and exit-pipes, substantially as shown and described.

4. In a carbureting apparatus, the combination of an evaporating-chamber, a central conduit provided with lateral perforated exit-pipes surmounted by a shield, and a purifying-chamber having a perforated top and bottom, substantially as shown and described.

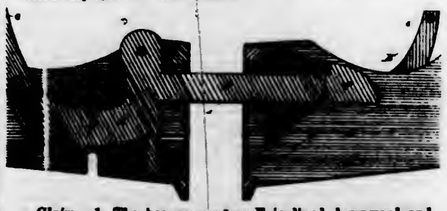
5. The combination of chamber C, provided with inlet *h* and outlet *m*, conduit D, provided with exit-pipes *e e'*, shields *e e'*, and ports *d*, with evaporating-chambers B B', each provided with inlets *f f* and outlets *l l*, and purifying-chamber E and chamber G, provided with outlet *a*, substantially as shown and described.

258,203. ORNAMENTAL CHAIN. ANDREW J. HARRIS, Providence, R. I. Filed Jan. 31, 1881. Renewed Jan. 4, 1882. (Model.)



Claim.—As a new and improved article of manufacture, the ornamental chain herein described, consisting of major links B, made of wood and finished in enamel, and having eyes *a a*, connected by one or more minor links, C, of gold or other suitable metal.

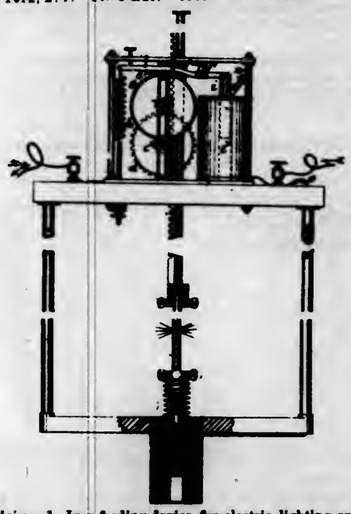
258,204. CAR-COUPLING. MICHAEL HERRING, St. Louis, Mo. Filed July 8, 1881. (No model.)



Claim.—1. The bearing-surface F, inclined downward and forward, combined with the coupling-bar E, having head or hook *d* and operating-lever *c*, to allow the uncoupling of the cars when under draft, as specified.

2. The standard K *h*, spring L, and pivoted hook J, or their equivalents, combined with the coupling-bar E *d'* and inclined bearing F, as and for the purposes set forth.

258,205. ELECTRIC LAMP. ALFRED S. HOLCOMBE, Danielsonville, Conn., assignor to the Standard Electric Light Company, New York, N. Y. Filed Mar. 1 1881. (No model.)



Claim.—1. In a feeding device for electric lighting apparatus, in combination, a brake-wheel actuated by the gravity of the carbon-holding rods by means of suitable connecting-gearing, a lever provided with a narrow-edge contact-shoe, caused to bear on the periphery of the brake-wheel by means of an adjustable spring, a stop device to govern the extent of movement of the lever, and an electro-magnet adapted to move the lever away from the brake-wheel and against the stop device, substantially as and for the purpose set forth.

2. In an electric lighting apparatus, an axial magnet included in the branch circuit of the lamp which is always closed, the movable core connected to the brake-lever, a brake-wheel actuated by a rack on the upper-carbon-holding rod, an adjustable spring for causing the lever to bear on the brake-wheel, and the upper carbon adapted to feed down by gravity when the axial magnet raises the lever off the brake-wheel, in combination with the lower carbon, its holder and supporting-spring, the core of an axial magnet, and the axial magnet, the whole of which, with the upper carbon, constitutes the main circuit of the lamp through which a part of the electric current flows to form the arc between the ends of the carbon rods when the lower carbon is depressed by the action of the axial magnet on its core, substantially as and for the purpose hereinbefore set forth.

258,206. COOKING-STOVE. JAMES A. HORTON, New Castle, Pa. Filed Nov. 22, 1881. (No model.)



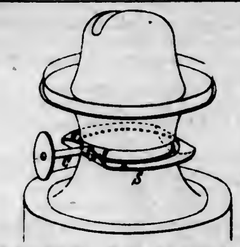
Claim.—The combination, with the central flue, C, and side flues, A B, communicating therewith, of the scrapers *e*, arranged in said side flues, and the pivoted valves *l*, substantially as and for the purpose herein shown and described.

258,207. LAMP FOR RAILWAY-CARS, &c. CHAS. P. HOWARD, Hartford, Conn. Filed Dec. 9, 1880. (Model.)

Claim.—1. The combination, with the ratchet or wick-raising shaft, of the spring S, properly fastened by one end or portion, and bearing with its free portion against the ratchet or wick-raising shaft, and thereby preventing it from being turned casually by the joltings of the car, substantially as described.

2. The spring S, provided with an upturned portion, C, having reverse inclines *g g*, and a notch, N, between the inclines, in combination with the fount, burner, and wick-raising shaft, substantially as described.

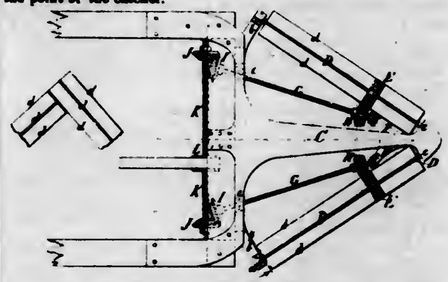
258,207.



3. The combination of a fount, the spring S, properly fastened by one portion, a rotary wick-raising shaft provided with a pinion, and a longitudinal rotary shaft passing through the fount and provided with a gear to engage with the pinion on the wick-raising shaft, substantially as and for the purpose described.

258,208. COW-CATCHER FOR LOCOMOTIVES. OLOF P. JOHNSON, New York, N. Y. Filed Oct. 15, 1881. (No model.)

Brief.—An axle or shaft operated by suitable mechanism has cog-wheels intermeshing with intermediate shafts provided with cog-wheels, which in turn intermesh with converging shafts provided longitudinally with radial vanes. The vanes of one shaft may extend to the outer circumference of the other, thus forming the point of the catcher.



Claim.—1. The combination of the axle or shaft K, having cog-wheels J, and the converging shafts D, provided longitudinally with radial vanes *d*, and having cog-wheels E, not exceeding in diameter the side vanes, with the intermediate shaft, G, provided with cog-wheels I H, gearing into the said wheels J E, all constructed and operating as and for the purposes shown and described.

2. The combination of the two shafts D, provided longitudinally with radial vanes *d*, when arranged as in Fig. 4, the vanes of one shaft extending to the outer circumference of the vanes of the other and forming the point of the catcher.

258,209. SURGICAL NEEDLE-HOLDER. GEORGE E. JONES, Cincinnati, Ohio, assignor to William Antonrieth, same place. Filed Oct. 24, 1881. (No model.)



Claim.—1. A needle holder or forceps having its working-handle hinged or pivoted to its accompanying handle, and provided with a sliding wedge-bar, which is actuated by the opening and closing of the working-handle, and which bar operates to open and close the griping-jaws, substantially as described.

2. In a needle-holder, the combination of an actuating-lever and shifting-wedge for closing and opening the jaws, substantially as shown and described.

3. A needle-holder having an elongated handle, the front extremity of which serves as one of the jaws, the arm forming the other jaw being inclined and pivoted thereto, and operated by a shifting-rod beveled for the purpose, which in turn is thrown forward by the closing of one of the handles, substantially as described.

4. In a needle-holder, the combination of the fixed handle, the movable working-handle, the sliding wedge-bar, the clamping-jaws, and the catch or lock for locking the parts when the working-handle is closed, substantially as described.

5. The combination, with a needle-holder, of the rings D D, or their equivalent, to allow actuating-rod B to pass freely back and forth, at the same time holding it securely in position, substantially as described.

253,210. COMPOSITION FOR IMPROVING LACE-LEATHER. LOUIS JUNIOR, Belleville, Ill. Filed Aug. 8, 1881. (No specimens.)

Claim.—The herein-described composition of matter, consisting of water, alum, sal-soda, common salt, and bran, in the proportions and for the purpose stated.

253,211. CARRIER ATTACHMENT FOR BICYCLES. CHARLES H. LAMSON, Portland, Me. Filed Dec. 8, 1881. (No model.)



Claim.—1. The described metallic frame for a bicycle bundle-carrier, constructed with arms *a a'*, curved rests a^2 a^2, and a stop, a^4, substantially as shown and described.

2. A bicycle bundle-carrier consisting of a metallic frame, A, having arms *a a'*, curved rests a^2 a^2, and stop a^4, and straps B B', connected therewith, constructed and combined essentially as set forth.

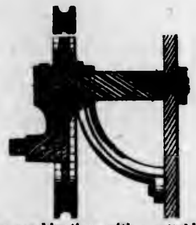
3. In a bicycle bundle-carrier having arms *a a'* to support a load and means of attachment to the head of a bicycle, the steadying-strap C, constructed and adapted substantially as set forth.

4. In combination with a bicycle bundle-carrier having a frame, A, and straps B B', a cross-strap, D, constructed and adapted substantially as and for the purposes set forth.

5. A bundle-carrier consisting of a frame, A, and straps B, B', and D, substantially as herein described and shown.

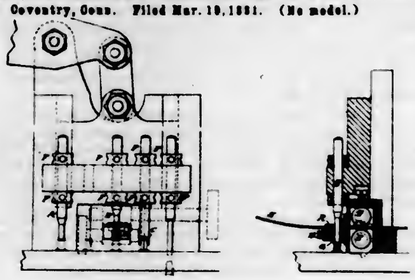
6. In combination with a bicycle-head and handle-bar, the arms *a a'* and straps B B', essentially as set forth.

253,212. TREADLE FOR SEWING-MACHINES. JOHN D. LAWLOR, Montreal, Quebec, Canada. Filed Dec. 20, 1881. (No model.)



Claim.—The combination, with a suitable frame, of a shaft having at one end a conical point or shoulder fitting in a bearing in said frame, and at its other end a conical recess to receive a conical-pointed screw adjustable in said frame, a jam-nut adjustable upon said set-screw, and a band-wheel or treadle rigidly mounted upon said shaft, as set forth.

253,213. CARTRIDGE-MACHINE. HENRY W. MASON, South Coventry, Conn. Filed Mar. 10, 1881. (No model.)

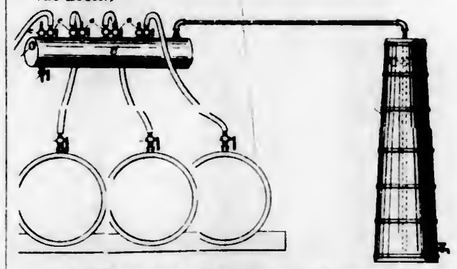


Claim.—1. In a cartridge-loading machine, the combination, with the shell-carrying mechanism, of the rammer A, the wad cutter and setter, having feed-rolls E E to supply the wad material thereto, and holding-down plate E, as described, and the swaging-punch C, operating together, as set forth.

2. The combination, with the shell-conveying mechanism, of the rammer A, the wad cutting and setting mechanism, substantially as described, and the swaging or closing punch C, substantially as set forth.

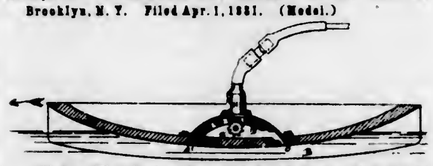
3. In combination with the shell-conveyer, the wad cutting and setting punch and mechanism for supplying the wad material thereto, substantially as described, and the swaging or closing punch, all substantially as set forth.

253,214. APPARATUS FOR FERMENTING MALT LIQUORS. MATTHIAS A. MAUS, Indianapolis, Ind. Filed Oct. 25, 1881. (No model.)



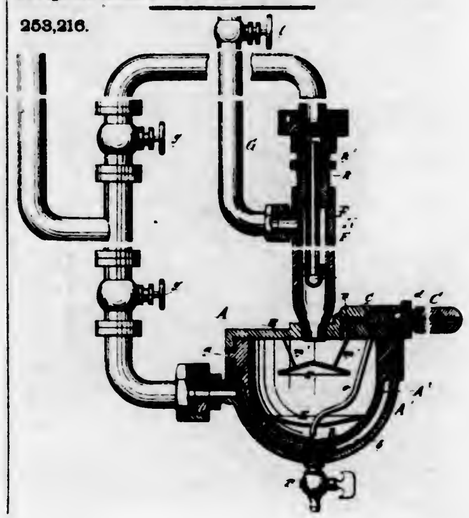
Claim.—In an apparatus for regulating the pressure in a series of fermenting-vessels, a hollow cylinder, common to all, for receiving and detaining foam, yeast, and particles of solid matter, and connected, by pipes entering at the top of the cylinder, with each cask or vat separately, in combination with a water-column which is connected also with such cylinder.

253,215. PNEUMATIC PROPELLER. ALFRED MAYNARD, Brooklyn, N. Y. Filed Apr. 1, 1881. (Model.)



Claim.—The air-chest C, provided with ports *o o'*, in combination with the slide-port D and pinion G, constructed to open and close either port and admit and cut off the pressure of the air through the bottom of the vessel.

253,216.



253,216. LIQUID-FUEL INJECTOR. FREDERICK A. MEYER, New York, N. Y., assignor of two-thirds to Marshall Lefferts and John A. Lefferts, same place. Filed June 16, 1881. (No model.)

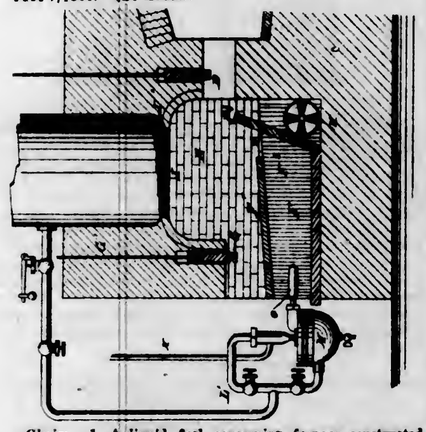
Claim.—1. A liquid-fuel injector constructed substantially as herein shown and described, consisting of double hemispherical shell A' A^3, provided with cap B, and nozzle C, diaphragm K, conductor F, adjustable bushing *k*, and conically-tipped pipe H, arranged as set forth.

2. In a liquid-fuel injector, the combination, with the double shell A' A^3, having a steam-space, *b*, of the receptacle A, formed by the diaphragm E, substantially as herein shown and described, said receptacle being designed to receive the excess of fuel entering the injector, as set forth.

3. In a liquid-fuel injector, the combination, with the receptacle A, and diaphragm E, and double shell A' A^3, of the escape-pipe *e*, substantially as and for the purpose described.

4. In a liquid-fuel injector, the combination, with the cap B, provided with chamber *c*, communicating with the double shell A' A^3 and the interior of the injector, of the nozzle C, substantially as herein shown and described.

253,217. FURNACE FOR BURNING LIQUID FUEL. FREDERICK A. MEYER, New York, N. Y., assignor of two-thirds to Marshall Lefferts and John A. Lefferts, same place. Filed June 7, 1881. (No model.)



Claim.—1. A liquid-fuel-consuming furnace constructed substantially as herein shown and described, provided with a combustion-chamber, E, having in its bottom a mixing-chamber, F, provided with an adjustable sliding cover, F', damper D, for regulating the admission of the products of combustion to the furnace working-chamber, damper G, for regulating the admission of air over the chamber F into the combustion-chamber, and register H in rear of the mixing-chamber F, to regulate the admission of air especially for affecting the character of the flame, as set forth.

2. In a liquid-fuel-consuming furnace, the combination, with the combustion-chamber, of a gas-and-steam-mixing chamber provided with a sliding cover and located in the bottom of said combustion-chamber, substantially as herein shown and described.

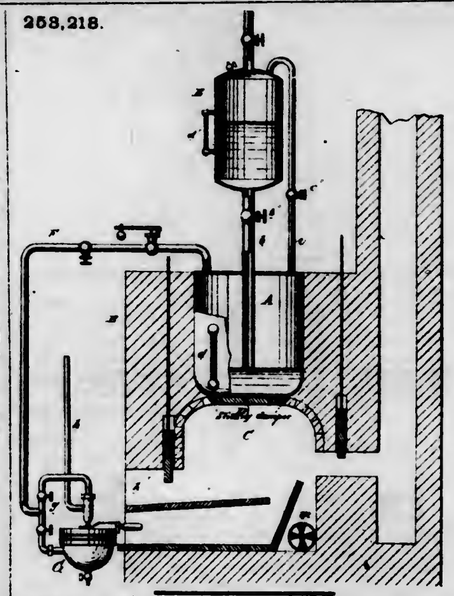
3. In a liquid-fuel-consuming furnace, the gas-and-steam-mixing chamber F, provided with sliding cover or partition F' and inclined upward-projecting rear end, F^4, substantially as herein shown and described.

4. In a liquid-fuel-consuming furnace constructed, substantially as herein shown and described, with mixing-chamber located in the bottom of the combustion-chamber, the register H, fixed in the side of the combustion-chamber near its bottom and in rear of the mixing-chamber, as and for the purpose set forth.

253,218. HEATER AND FEEDER FOR STEAM-BOILERS. FREDERICK A. MEYER, New York, N. Y., assignor of two-thirds to Marshall Lefferts and John A. Lefferts, same place. Filed June 7, 1881. (No model.)

Claim.—The combination of furnace B, having sliding damper D, boiler A, reservoir E, water-pipe *b*, extending from the bottom of said reservoir into said boiler A and terminating at its water-line, and steam-pipe *a*, extending from the top of boiler A to the top of said reservoir, and provided with valve *c'*, substantially as and for the purpose specified.

253,218.



253,219. LATH-HOLDER. ISAAC MILNE, Manistee, Mich. Filed Aug. 26, 1881. (No model.)

Brief.—When the laths are inserted between the pins the springs hold them in place. A fastening put through the perforations in the bar holds the frame to the studding. A metallic plate on the cross-bars evens the laths at the ends.



Claim.—1. In a lath-holder, the combination, with the perforated bar *a*, of the cross-bars *b b*, each provided with pins *c* and springs *d*, substantially as described.

2. In a lath-holder, the combination, with the perforated bar *a* and cross-bars *b b*, of the pins *c*, springs *d*, and metallic plate *e*, substantially as described.

253,220. SKATE-BAR. HENRY MILLER, Providence, R. I. Filed Mar. 26, 1881. (No model.)



Claim.—The combination, with the supporting-bar *a*, of the short bars *c c c*, the central one of which is connected integrally for an intermediate portion of its length with said supporting-bar, the said short bars being connected laterally by the brackets *d*, substantially as described.

253,221. PISTOL-HANDLE. DANIEL MOORE, Brooklyn, N. Y. Filed Aug. 27, 1881. (No model.)

Claim.—1. A pistol-handle having a portion of the metallic strap extended below the side pieces in form of a crest, the concave curve of the crest being at the front or inner curve of the handle, substantially as shown and described.

2. A pistol-handle having a portion of the metallic strap extended below the side pieces in form of a crest, the concave curve of the crest being at the front or inner curve of the handle, said extended portion being perforated, substantially as shown and described.

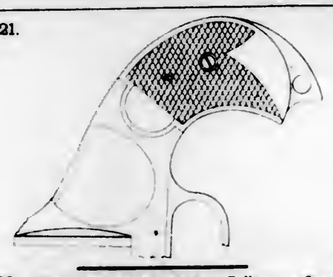
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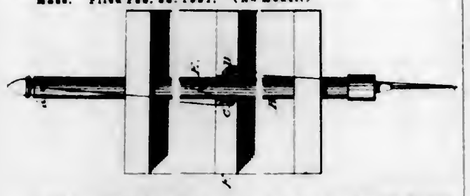
Claim.—The combination of the coil of asbestos or other inflammable cord or strip with the receptacle adapted to hold the molten zinc, substantially as and for the purposes above set forth.

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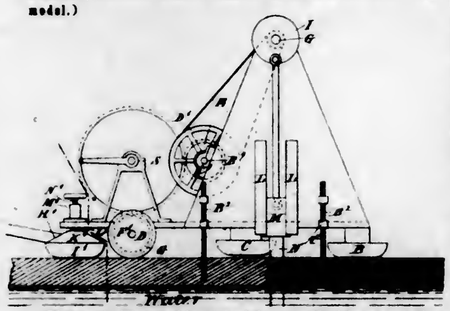


253,222. SEWING-MACHINE. GEORGE F. NEWELL, Greenfield, Mass. Filed Feb. 26, 1881. (No model.)



Claim.—The face-plate of a sewing-machine, provided with a broken or slotted cross-bar, F, having loops C D, placed thereon at opposite points, in combination with a needle-bar playing vertically in said slot, provided with a simple loop, E, substantially as and for the purpose set forth.

253,223. MACHINE FOR CUTTING ICE. FELIX L. DESCARRIS FRANCOIS, Montreal, Quebec, Canada. Filed Dec. 22, 1881. (No model.)



Claim.—1. The combination of the saws N with an operating mechanism, substantially as described, and traction-wheels D, simultaneously operated to move the machine forward, and runners B, substantially as described.

2. The combination of the saws N, wheels D, runners B, and operating mechanism by which the saws and wheels D are simultaneously operated, and guides B', the whole substantially as and for the purposes set forth.

3. The combination of the saws N, wheels D, runners C, and operating mechanism by which the saws and wheels D are simultaneously worked, substantially as described.

4. The combination of the platform A, provided with runners B C, wheels D, truck H', and guides B', also jacking device for raising the wheels D, with the saws N, and an operating mechanism for simultaneously working the said saws and wheels, the whole substantially as and for the purposes set forth.

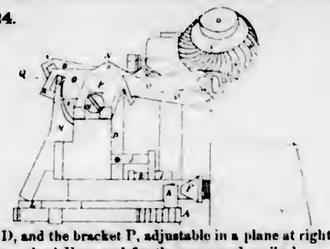
253,224. THREAD-GUIDE MECHANISM FOR KNITTING-MACHINES. WILLIAM H. PEARSON and JOHN BRADLEY, Lowell, Mass. Filed Aug. 10, 1878. Renewed Sept. 24, 1881. (Model.)

Brief.—The thread-guides and their actuating mechanism are used with a loop-wheel having two nibs on each leaf for carrying two yarns, to be shifted from one set of nibs to the other. By shifting the yarns each stripe may be ended in its own color. The guides are operated by a lever, cam, and spring.

Claim.—1. The combination, with the loop-wheel U, provided with two sets of nibs, of the yarn-guide O, provided with the slot R, the lever M, provided with the pin Q, and the cam L, as and for the purpose described.

2. The combination of the loop-wheel U, the yarn-guide O,

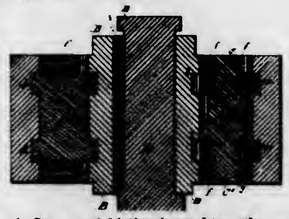
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the stud D, and the bracket P, adjustable in a plane at right angles to the loop-wheel U, as and for the purpose described.

3. The combination of the yarn-guide O, the slotted stop-plate W, and the loop-wheel U, as and for the purpose described.

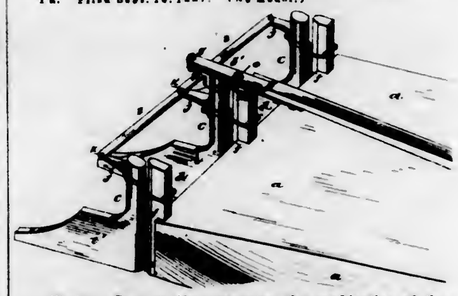
253,225. JOURNAL-BOX. SIMON E. PETTEE, Cleveland, Ohio. Filed June 30, 1881. (No model.)



Claim.—1. In an anti-friction journal-box, the combination, with the axle D and casing A, provided with annular grooves *a a*, of the sleeve B, provided with a smooth periphery and with annular grooves *b b*, and anti-friction rollers interposed between the sleeve and casing, a portion of said rollers being provided with collars which fit within the grooves *a a b b*, substantially as set forth.

2. In an anti-friction journal-box, the combination, with the axle D and casing A, the latter provided with annular grooves *a a*, of the sleeve B, having smooth periphery and provided with grooves *b b*, and the large and small anti-friction rollers interposed between the sleeve and casing, the large rollers being provided with collars that fit in grooves *a a b b* and the small rollers provided with enlarged portions that fit between the collars on the large rollers, substantially as set forth.

253,226. STEERING APPARATUS. JAMES RANS, Pittsburg, Pa. Filed Sept. 10, 1881. (No model.)



Claim.—In a steering apparatus, the combination of the series of rudders and stocks c c c, having fixed arms *j* projecting aft of said stocks, and links *l l* for connecting said arms, and the tiller fulcrumed forward of one of the stocks, having an arm, A, projecting aft of it, and said tiller having an extension connected to said arm A, substantially in the manner as and for the purpose herein shown and described.

253,227. MANUFACTURE OF ZINC-COATED WIRE. WILLIAM E. RICH, Worcester, Mass. Filed Aug. 15, 1881. (No model.)



Claim.—The combination of the coil of asbestos or other inflammable cord or strip with the receptacle adapted to hold the molten zinc, substantially as and for the purposes above set forth.

253,228. GLOVE-FASTENER. WILLIAM S. RICHARDSON, Newton, Mass. Filed Dec. 7, 1881. (Model.)



Claim.—1. In a fastening device for gloves and other articles, the combination of the spring catch or clasp, consisting of the yielding sections *a' a²*, connecting-bar *a'*, and spring-arms *a³ a³*, with the tongue *b* and its cross-bar *b'*, the said catch and tongue being adapted to be fastened to the material and used substantially as specified.

2. The spring catch or clasp consisting of the yielding sections *a' a²*, connecting-bar *a²*, and spring-arms *a³ a³*, all substantially as described.

253,229. CONCENTRATOR FOR ORE-SEPARATING APPARATUS. JNO. P. HANSONS, Ogden, Utah. Filed June 28, 1881. (No model.)



Claim.—In a concentrator, A, having transverse ribs *d d*, which divide it into compartments, the sieves *i i*, placed above the receiving-bottom *l* of the concentrator and below the upper edges of the ribs, substantially as and for the purpose described.

253,230. APPLICATION OF COLORING-MATTER TO FABRICS. ANTONIE SAUSSE, Manchester, County of Lancaster, England, assignor of one-half to Henry D. Dupee, Boston, Mass. Filed Oct. 17, 1881. (No specimens.) English Patent No. 3,889 of 1881.



Claim.—1. That improvement in the art or method of applying coloring-matter to fabrics which consists in applying to the mordanted and wet fabric a dry insoluble granulous or powdered substance, such as described, coated or covered with an aniline or other suitable color substance, as set forth.

2. That improvement in the art or method of simultaneously producing spotted or stippled effects on mordanted fabrics which consists in first coating or covering separately insoluble granulous or powdered substances, substantially as described, with each of the several aniline or other color substances suitable to produce the different-colored spots to be shown on the fabric and drying the same thereon, and then mixing the said separately-prepared dried granulous or powdered substances and scattering and applying them on a wet mordanted fabric, so as to deliver to the said mordanted parts of the said fabric the coloring substance thereon, and then drying the fabric, substantially as set forth.

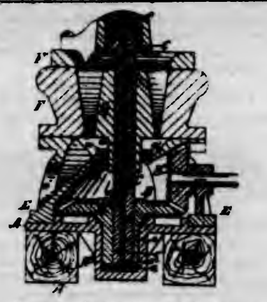
3. The herein-described process of producing stippled effects on woven fabrics, which consists in scattering upon the mordanted wet fabric sand or powdered insoluble granular substances, such as described, a portion of which has been previously coated with aniline or other suitable coloring substance, as described, and dried thereon, and a portion of which is in its natural dry state, all substantially as and for the purposes set forth.

253,231. ORE-CRUSHER. HIRAM H. SCOVILLE, Chicago, Ill., assignor to Fraser & Chalmers, same place. Filed Oct. 20, 1881. (No model.)

Claim.—1. The ore-crusher provided with the conic frustum-skirt for conducting away the crushed ore freely and protecting the actuating-gears, substantially as and for the purpose set forth.

2. The ore-crusher provided with a hollow vertical gyrating shaft, C, having openings for the emission of the oil fed to the interior thereof, combined with the rotating step-gear B, having an eccentric socket for said shaft C, and a stationary socket-hub, A',

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wherein said wheel B has its bearing, and the foot-plate *a*, substantially as specified.

3. The ore-crusher the frame whereof is divided into sections E, F, and A, whereof section F contains the grinding-surfaces, section E contains the conic frustum-skirt, and the section A contains the hollow hub wherein is the bearing for the operative mechanism, substantially as described.

253,232. AUTOMATIC GATE. EPHRAIM E. SPITLER, Amity, Ohio. Filed Sept. 27, 1880. (No model.)

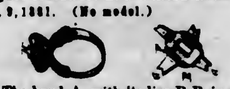


Claim.—1. In an automatic gate, the combination, with the lower pintle, G, and the operating-rods L, of the slotted plate H, levers J and K, meshing together with lost motion, and having the hooked fingers *l*, substantially as and for the purpose specified.

2. In an automatic gate, the adjustable upper hinge, consisting of the pivoted arm E, with an enlarged serrated end, *b*, in combination with the pintle D and bracket F, having corresponding serrations, and thumb-screw *d* substantially as set forth.

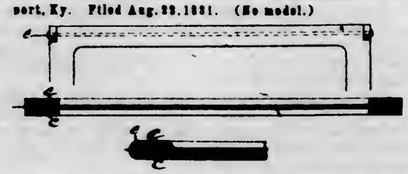
3. The combination, with the single trips M and operating-rods L, of the adjustable actuating-chains *e e'*, weighted lever P, and link *t*, substantially as and for the purpose specified.

253,233. FINGER-RING. JAMES H. SPRAGUE, Providence, R. I., assignor to Edward A. & William H. Luther, same place. Filed Nov. 9, 1881. (No model.)



Claim.—The band A, with its lips B B, in combination with the slotted ornamental piece C and the slotting-setting E, the whole firmly united without the aid of solder by passing said lips through the slots in the ornamental piece and setting and turning down the protruding ends thereof, as described.

253,234. SLATE-FRAME. ALBERT W. STOCKBRIDGE, Newport, Ky. Filed Aug. 23, 1881. (No model.)



Claim.—1. A slate-frame consisting of continuous annular strips of pasteboard or other similar material, cut from the merchant sheets and overlapping the edges of the slate, and interposed narrower strips surrounding the slate, all held together by cementing adjacent surfaces, substantially as specified.

2. In combination with the slate-frames as constructed, the continuous pintles *e e*, held between the overlapping strips, the slate-edge, and the interposed strip, and the yokes *g g*, in which the ends of the pintles are riveted, substantially as and for the purpose set forth.

3. As a new article of manufacture, a school-slate having a frame made of two continuous annular strips of pasteboard, tar-

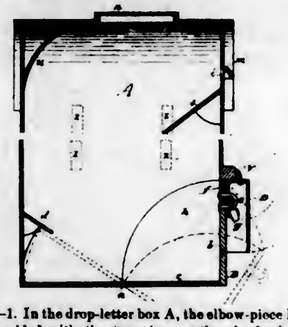
board, hard felting, or similar material, commonly produced in merchant sheets, cut from such sheets, and interposed narrower strips of the same or other material surrounding the slate at the edges, substantially as set forth.

253,236. OVEN AND FURNACE DOOR. WM. H. STRICKLER, Mount Pleasant, Pa. Filed June 23, 1881. (No model.)



Claim.—In a furnace-door, the combination, with a metallic front, of a fire-brick back bolted thereto, the said front and back being some distance apart, and the heads of the bolts embedded in the fire-brick, as described, for the purpose set forth.

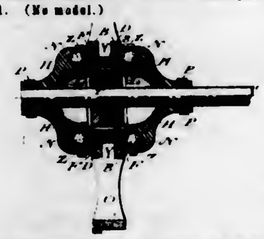
253,236. STREET LETTER-BOX. SAMUEL STRONG, Washington, D. C. Filed Apr. 1, 1881. (No model.)



Claim.—1. In the drop-letter box A, the elbow-piece B, herein described, provided with the trunnions *c*, the cheeks *h*, and the staple *e*, in combination with the ledge *d*, as and for the purposes specified.

2. The combination, in a street letter-box, of the letter-opening *i*, the rigid external hood, *m*, the internal chute, *s*, and the curved plate *u* in the upper part of the box, opposite the letter-opening *i*, extending downward to or below the level of said letter-opening.

253,237. WHEEL. ALBERT J. TAPLIN, Chicago, Ill. Filed Aug. 4, 1881. (No model.)



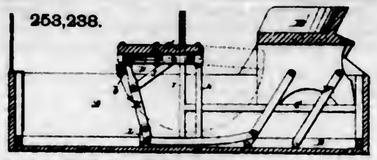
Claim.—1. The combination, in a wheel, of a spoke or radial arm, O, whereon is supported by step-bearing a cheek-plate, B, the cheek-plate R, the hub Y, and balls or rollers D, provided with holes K K and bolts E and F, with screw-nuts S S, substantially as and for the purpose set forth.

2. In combination with a shaft or axle, C, a ring, I, whereon encircling is arranged a system of balls or rollers, D, and whereon is placed a wheel with spokes or radial arms O, the hub Y, the cheek-plates B, and bolts E and F, with screw-nuts S S, substantially as and for the purpose set forth.

3. In combination with a shaft or axle, C, a wheel secured by adjustable frictionless wheel-blocks H, provided with set-screws P, the bolts and screw-nuts Z, and spherical-formed rollers N, designed to rotate on a circular step or projecting plane, L, substantially as and for the purpose set forth.

4. The combination of a wheel and wheel-block arranged on a shaft or axle, substantially as shown and described, and for the purpose herein specified.

253,238. SHIFTING SEAT FOR VEHICLES. JNO. C. THRASHER, Salem, Ohio. Filed Aug. 3, 1881. (Model.)



Claim.—1. The seat G, hinged at its rear, so as to swing and fold, in combination with hinged legs K and braces J, connecting the seat and legs together, the seat resting on the legs K when raised and swinging free of the same when lowered, substantially as set forth.

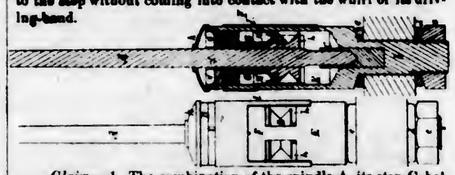
2. The seats E and G, connected together, so as to be shifted one by the other, the seat G being hinged at its rear, so as to swing and fold, and connected with legs K and bars J, so as to rest upon the legs when raised and swing free of the same when lowered, substantially as and for the purpose set forth.

3. The seat G, hinged at its rear, so as to swing and fold, and provided with shifting ears N, in combination with hinged legs K and braces J, the legs supporting the front of the seat and engaging with the ears when raised and disengaging from both when lowered, substantially as set forth.

4. The seat G, hinged at its rear, so as to swing and fold, and provided with shifting ears N, in combination with braces J and hinged legs K, provided with lugs *a*, whereby the legs and ears engage to support the seat when raised and the lugs and braces engage to support it when lowered, substantially as set forth.

253,239. MECHANISM FOR SUPPORTING AND LUBRICATING THE SPINDLES OF RING-SPINNING FRAMES. WALTER I. TISEHAM, Taunton, Mass. Filed Aug. 15, 1881. (No model.)

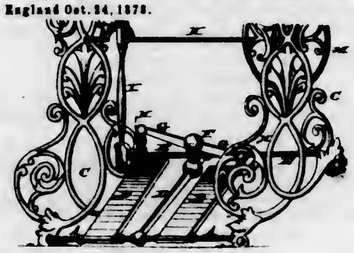
Brief.—The step and bolster are carried by a step-supporter and a perforated tubular standard, the latter of which is provided with a sleeve, which serves to partially cover the lateral openings in the same, leaving a sufficient opening for the passage of the driving-band to and from the whirl. The oil that flows from the bolster is caught by an oil-cup, which revolves with the spindle, and any oil that escapes from this cup enters another oil-cup, which is fixed within the standard, and from this cup it is discharged against the periphery of the bore of the standard and then flows to the step without coming into contact with the whirl or its driving-band.



Claim.—1. The combination of the spindle A, its step C, bolster D, and whirl B and step-supporter E with the laterally-perforated tubular standard F, extending from the step-supporter E upward around and above the whirl, and supporting the bolster, as described, and with the oil intercepting and discharging cups G and H, adapted to the spindle and the standard, substantially as specified, all being constructed and to operate essentially as explained.

2. The combination of the sleeve *l* with the step-supporter, laterally-perforated tubular standard, the step, bolster, spindle, whirl, and the two intercepting and discharging oil-cups, all being constructed, arranged, and adapted substantially in manner and to operate as set forth.

253,240. DRIVING MECHANISM FOR SEWING AND OTHER MACHINES. THOMAS S. TOSCER, Birmingham, County of Warwick, England. Filed Dec. 28, 1881. (No model.) Patented in England Oct. 24, 1878.



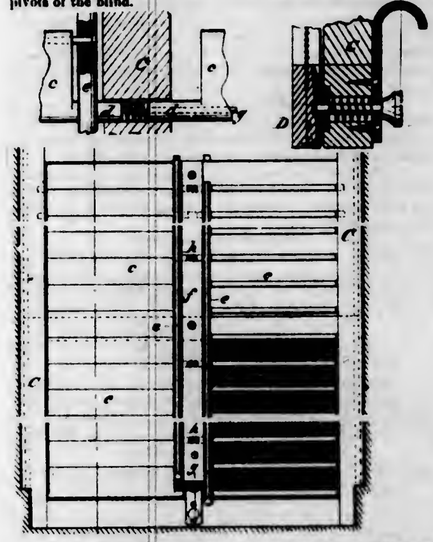
Claim.—1. The combination, with the treadle mechanism having the fulcrum-bar A at the front of the machine, from which extend rearwardly the treadles connected by a vibratory beam, G, at the rear of the machine in lieu of the front, and a rod connecting the treadles with the driving-shaft, of the fly-wheel secured rigidly on the latter, and having pins R, and the fly-wheel carrying a spring-ring, N, adapted to turn within an annular channel, and having the wedge P, adapted to be engaged by the pins on the fly-wheel, substantially as and for the purpose herein shown and specified.

2. The combination, with the fulcrum-bar A at the front of the machine, of the treadles B, pivoted or having bearings thereon at their front ends, and extending rearwardly therefrom and connected by the vibratory beam G at the rear of the machine in lieu of the front, and the rod connecting one of the treadles with the crank of the driving-shaft, substantially as and for the purpose specified.

3. The combination, with the fly-wheel rigid on the driving-shaft and having eccentrically-arranged pins R R, of the driving-wheel having a recess to receive a spring-ring, N, arranged to turn in a channel in said recess, and having a slot, O, to receive one end of a wedge, P, adapted to be engaged by the pins R R, as set forth.

253,241. SCREEN AND BLIND FOR CAR-WINDOWS. ISAAC H. VAN WAGNER, Mynak, N. Y. Filed Sept. 14, 1881. (No model.)

Brief.—The sliding screen and blind are connected by a spring-bolt. A strengthening-wire extends through the slats and pivots of the blind.



Claim.—1. In a car-window, the combination of a blind and a screen fitted to slide in grooves in a window-frame, and connected together by a removable fastening for simultaneous movement, or disconnected from each other by removing the fastening from the screen, so that they can be moved separately, substantially as described.

2. The combination of sliding blind C, screen D, and spring-bolt *i*, substantially as and for the purposes set forth.

3. The wire *g*, inserted through the pivots of slats *c*, substantially as and for the purposes set forth.

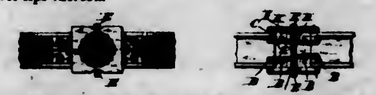
253,242. BRACELET. ADOLPH VRETEN, Providence, R. I. Filed Nov. 21, 1881. (No model.)



Claim.—A bracelet having a band, A, composed of a single piece of metal having its edges turned over and rolled into a cylindrical form, as described, and bent into an elliptical shape without hinge or joint, in combination with a continuous interior torsional spring, B, the whole constructed, arranged, and operating in the manner substantially as specified.

253,243. BRACELET. ADOLPH VRETEN, Providence, R. I. Filed Oct. 15, 1881. (No model.)

Brief.—The box contains a clasp having plates provided with teeth, which lock into the hollow ends of the bracelet by catching over lips thereon.

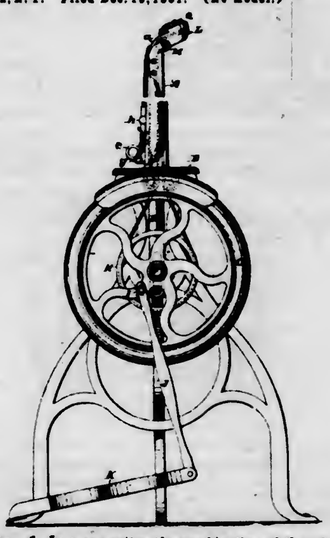


Claim.—1. A bracelet with its two ends clasped into a box, and adjustably held therein by means of a spring-clasp located in said box and interlocking with the ends of the bracelet at different fixed points, enabling the bracelet to be adjusted to different sizes, substantially as herein described.

2. A bracelet with its two ends fitting into a box, and adjustably held there at certain points by a spring-clasp interlocking with the ends of the bracelet, as herein described, and with posts connected and arranged, as herein described, to govern the action of said spring-clasp, substantially as and for the purposes herein described.

3. A bracelet-clasp consisting of a box containing a spring, H, plates A, teeth B, posts E, and rod K, arranged to adjustably connect with and hold the ends of the bracelet, substantially as herein set forth.

253,244. PEG-CUTTING MACHINE. NATHAN B. WAKEFIELD, Camden, N. Y. Filed Dec. 19, 1881. (No model.)



Claim.—1. In a peg-cutter, the combination of the wheel G, carrying the grooved pulley H, with the spindle F, slotted arm D, and suitable tightening devices for the spindle F, all arranged and operating for the adjustment of the pulley to take up the slack of the cord.

2. The combination of the pulley X, standard A, tightening-pulley Y, spring, and cord W, whereby the cord is kept constantly tight, substantially as shown and described.

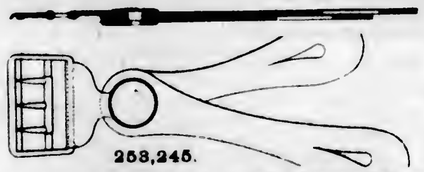
253,245. TAB-CONNECTOR FOR SUSPENDER-BRACES. THOMAS WALKER, Birmingham, County of Warwick, England. Filed Aug. 4, 1881. (No model.) Patented in England Mar. 17, 1881.

Claim.—1. A tab-connector formed of a bent metal strip with an eyelet drawn out of one arm of the strip and spanning the entire space between the arms, and having its end riveted or expanded on the outer face of the other arm, substantially as described.

2. The combination, with two separate tabs having holes in their upper ends, of a tab-connector comprising a bent strip of metal with an eyelet formed in one piece with said strip, said eye-

253,252. SHEARS FOR CUTTING FLOWERS, PLANTS, &c.

253,254. PROCESS OF AND APPARATUS FOR AMALGAMAT-



253,245.

let passing through the holes in said tabs and forming a pivot on which they may turn independently of each other, substantially as described.

3. A tab-connector comprising a bent metal strip with one arm straight and provided with an eyelet, and the other arm cranked and provided with a hole to receive the eyelet, the ends of the two arms being connected by the eyelet, so that an approximately-rectangular recess is made between the said arms, and said eyelet serves as a pivot to the tabs, substantially as described

4. The combination, with a tab-connector having disk-shaped ends secured together by an eyelet, as described, of a cupped disk covering the eyeleted end, substantially as described.

253,246. CAR-COUPLING. JOHN F. WALLACH, Pittsburg, Pa. Filed Nov 17, 1881. (No model.)

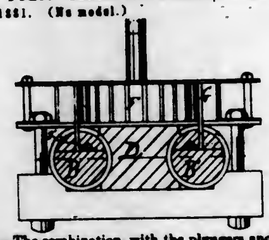


Claim.—1. A draw-head having a lateral link-opening and a re-enforce or brace upon the open or slotted side thereof, substantially as and for the purpose specified.

2. A draw-head having a lateral link-opening and projections or link-guides in front of and in line with the hole of the coupling-pin, substantially as and for the purpose specified.

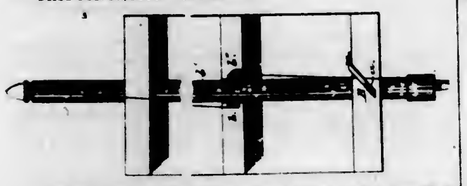
3. The draw-head having the flaring lateral link-opening, the link-guides and re-enforces arranged in front of and in line with the hole of the coupling-pin, and the transverse brace or re-enforce upon the slotted side of the draw-head, substantially as and for the purpose specified.

253,247. PUMP. THOMAS V. WARREN, Waukegan, Ill. Filed May 31, 1881. (No model.)



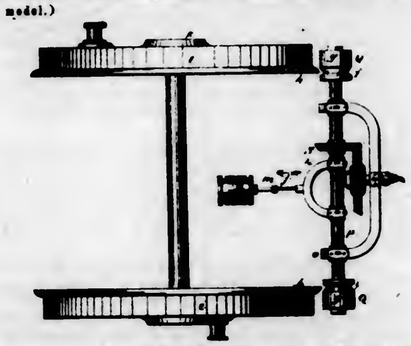
Claim.—The combination, with the plungers and the up-flow tube, of the pinion and racks, whereby the semi-rotation of the tube is caused to reciprocate the plungers and the tube to serve a double purpose, substantially as specified.

253,248. SEWING-MACHINE. WASHINGTON WORDELL, Orange, assignor of one-half to George F. Newell, Greenfield, Mass. Filed Feb. 26, 1881. (No model.)



Claim.—In a sewing-machine having a face-plate provided with a broken or slotted middle bar, the take-up composed of three loops, *b b' b'*, the first two being on said bar and the latter on the needle-bar, in combination with the spring B, attached to said face-plate, provided with a curvature, *c*, substantially as and for the purpose set forth.

253,249. CAR-BRAKE. ROBERT J. WILSON, Pittsburg, and AUGUST SPYKER, Allegheny, Pa. Filed May 27, 1881. (No model.)



Claim.—1. The combination, with a shaft or shafts, coupled by flexible connections, and provided with a wheel, T, of a movable shaft having pulleys adapted to engage with the car-wheels, and a wheel to engage the wheel T, substantially in the manner as and for the purpose specified.

2. In a mechanism for operating the brake-levers of brakes for railway-cars, the combination, with a revolving shaft or shafts coupled through the medium of flexible connections, of movable mechanism adapted to be thrown into engagement with the rim of the car wheel or wheels, and thereby communicate motion to said shaft or shafts, substantially in the manner herein shown and described.

3. In a mechanism for operating the brake lever or levers of brakes for railway-cars, a revolving shaft or shafts coupled through the medium of a flexible section of wire rope and coupling L M, substantially in the manner herein shown and described.

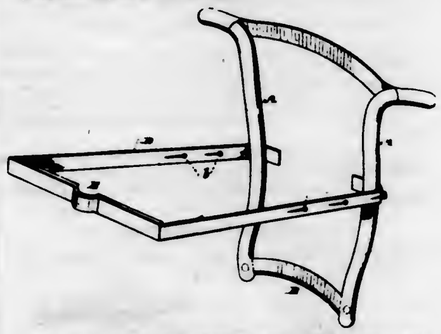
4. The shaft P, having pulleys Q and wheel S, in combination with the wheel T, coupled to a shaft or shafts through the medium of a flexible section, substantially as herein described, and for the purpose set forth.

253,250. METHOD OF PREPARING HEADED TACKS FOR USE. ERASTUS WOODWARD, Somerville, Mass., assignor to the Copeland Tacking and Lasting Company, Paterson, N.J. Filed Dec. 5, 1881. (No model.)



Claim.—The method of preparing large-headed tacks having long sharp shanks for use, comprising the shearing, punching, or removal of the head of each tack to reduce the size thereof preparatory to or in the act of driving, all substantially as specified.

253,251. BODY-BRACE. JAMES W. ANDERSON, Bodie, Cal. Filed Nov. 18, 1881. (No model.)



Claim.—The body and shoulder brace and straightener consisting of the strips A A, base-strip B, and top strap, C, adapted to fit the abdomen, and the adjustable strap D, secured to the strips A A, and having the pad or brace E, said strap being adapted to pass around the waist as a belt and fit its pad E into the small of the back, substantially as and for the purpose herein described.

253,252. SHEARS FOR CUTTING FLOWERS, PLANTS, &c. JOSEPH S. BADIA, Philadelphia, Pa. Filed Sept. 27, 1881. (No model.)



Claim.—1. In shears for cutting plants, the combination, with the blades *a a*, of the spring B, formed with a bow, *b*, and jaws *b' b'*, composed of flaring sides *b² b²*, constructed and arranged substantially as and for the purpose described.

2. In shears for cutting plants, the spring B, having bow *b*, jaws *b' b'*, and recesses *b³ b³*, for the reception of holding pins or screws *c c'*, substantially as shown and described.

3. In shears for cutting plants, the spring B, having bow *b*, with corrugation *l*, jaws *b' b'*, composed of flaring sides *b² b²*, and recesses *b³ b³*, substantially as shown and described.

4. In combination with the spring B, the scissors or shears A, having blades *a a*, with projections *a²*, and pins *c c'*, substantially as shown and described.

5. In combination with scissors or shears A, the spring B, composed of a bow, *b*, and spring-jaws *b' b'*, substantially as shown and described.

6. The combination, with scissors or shears A, of holding pins or screws *c c'* and spring B, formed with corrugated bow *b*, flaring spring-jaws *b' b'*, and recesses *b³ b³*, for the reception of said pins or screws, substantially as shown and described.

253,253. HEATER FOR RAILWAY-CARS. WILLIAM C. BAKER, New York, N. Y. Filed June 20, 1881. (No model.)



Claim.—1. The combination, with the heating-pipes in a circulating hot-water apparatus for heating cars, of a radiator placed outside the car and a cock in the pipe, which connects the boiler with the heating-coil to force the water to circulate through the outside radiator, substantially as set forth.

2. The combination, with the radiating-pipe *d* inside the car, of the pipe *f*, passing from one of the circulating-pipes near the boiler to the radiator-pipe near the end of the car, and one or more cocks to prevent the hot water circulating through the radiator *d* and direct the same through such pipe *f*, substantially as set forth.

3. In a hot-water warming apparatus for cars, the combination, with the radiators within the car, of tubes passing below the floor, and cocks to exclude the hot water to a greater or less extent from the radiators in the car without preventing the circulation of the water from and to the heater, substantially as set forth.

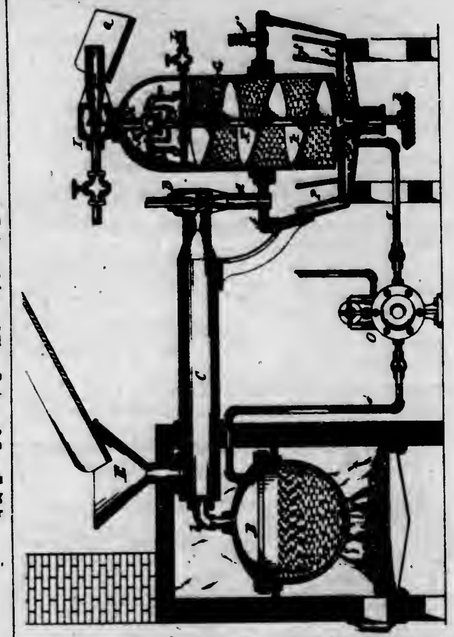
4. The combination, with the circulating-pipes *a e e*, radiators *d*, and cock *n* within the car, of the tubes *f* and *y* and radiator *l* outside the car, substantially as specified.

5. In a car-heating apparatus, the pipe *v*, in combination with the radiator-pipes *d*, to which it is connected, near the end of the car, and a cock to divert the circulating hot water from the radiator-pipes through such pipe *v*, and through a connection, *e*, to the boiler, substantially as set forth.

6. The combination, in a car-heating apparatus, of radiators inside the car, a heating-furnace, a radiator outside the car, connecting pipes, and cocks, substantially as set forth, whereby, in regulating the temperature of the car, the circulating hot water may be diverted to a greater or less extent from the radiators within the car to the radiator outside the car, substantially as set forth.

7. In a hot-water warming apparatus, the combination, with the boiler, pipes *a* and *e*, and radiator *d*, of the pipe *s* and its cock connecting the radiator, and the return-water pipe *e*, substantially as set forth.

253,254. PROCESS OF AND APPARATUS FOR AMALGAMATING ORES. CHARLES E. BALL, Philadelphia, Pa. Filed May 4, 1880. (No model.)



Claim.—1. The method or process herein described for collecting finely-divided mercury in amalgamating by drawing the same by suction or exhaust into a suspended body of liquid mercury and subjecting the same to artificial pressure or squeezing, substantially as specified.

2. The combination of a retort, B, a cylinder or mixing-chamber, C, an ejector or suction device, D, and a hopper or ore-feeder located between the ejector and retort, whereby suction or exhaust is created in said cylinder or chamber, and ore and mercury vapors drawn into and mingled in the same, substantially as shown and described.

3. The combination, with a mercury-chamber, G, and an ejector or exhaust device, I, for holding mercury suspended therein, of a screw or spiral blade, *k*, for exerting pressure or a squeezing action on such suspended mercury, substantially as shown and described.

4. In combination with a central discharge-pipe, H, the branch pipes *m m*, supported upon said discharge-pipe by means of a swiveled collar, M, substantially as shown and described.

5. In combination with discharge-pipe H, having swivel-collar M, with branch pipes *m m*, the shaft K, with arms N N, substantially as shown and described.

6. The water-discharge pipe consisting of ring *l*, with radial arms *l' l'*, in combination with the inclosing amalgamating-chamber, substantially as shown and described.

7. An amalgamating apparatus comprising a lower chamber or section to receive the charge, an upper or vacuum chamber, a mercury-chamber connecting the two, and a screw arranged to rotate in the mercury-chamber, substantially as and for the purpose set forth.

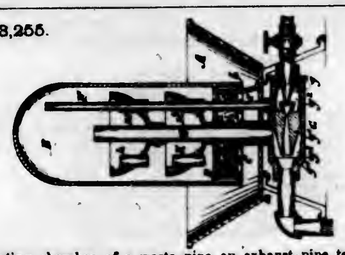
8. An amalgamating apparatus comprising a lower chamber to receive the charge, an upper or vacuum chamber, a mercury-chamber connecting the two last-named chambers, a central vertical shaft which passes through the three chambers, a screw on said shaft and in the mercury-chamber, and agitators fixed on said shaft in the upper and lower chambers and arranged to rotate with the said shaft and screw, substantially as set forth.

253,255. AMALGAMATOR. CHARLES E. BALL, Philadelphia, Pa. Filed Dec. 16, 1879.

Claim.—1. In combination with an amalgamating-vessel, B, a fibrous or filamentary packing located at the base or mouth of said vessel, substantially as and for the purposes set forth.

2. The combination, in an amalgamator or with an amalga-

258,255.

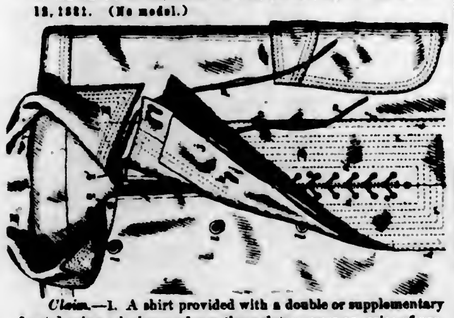


mating-chamber, of a waste-pipe, an exhaust-pipe terminating above said waste-pipe, and an ejector common to both said pipes, and to which both said pipes independently lead, substantially as and for the purpose set forth.

3. In combination with the waste-pipe E, exhaust-pipe F, and an amalgamating-vessel, B, the ejector G, having steam-jet *g*, and nozzle *g'*, forming two separate annular chambers, *g' g'*, substantially as shown and described.

4. In combination with an amalgamating-vessel, B, one or more cups or troughs, H, with hollow stems *h*, substantially as and for the purpose set forth.

258,256. SHIRT. JOSEPH G. BARKER, Watertown, assignor to Marsh Brothers, Pierce & Co., Boston, Mass. Filed Dec. 13, 1881. (No model.)

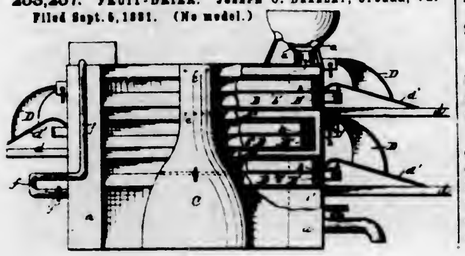


Claim.—1. A shirt provided with a double or supplementary front, having a lacing-cord run through two rows or series of eyelet-holes arranged upon each side of the central vertical line of said front, and detachably secured to the body of the shirt along one of its vertical edges by buttons and button-holes or other separable fastenings, substantially as described.

2. In combination with a shirt of ordinary plain construction, a supplementary front permanently secured along its bottom and one vertical edge to the body of the shirt and detachably secured along its other vertical edge by buttons and button-holes or other separable fastenings to said body, a pair of folds or plaits in the center of said front and extending from its top to a point near its bottom, a series of eyelet-holes in each of said plaits, and a lacing-cord run through said eyelet-holes, substantially as and for the purposes described.

3. In combination with a shirt of ordinary plain construction, the supplementary front D, provided with the folds or plaits *s* and *s'*, and secured along one of its vertical edges to the body of the shirt by buttons and button-holes or other separable fastenings, the two series of eyelet-holes *o o*, formed in the folds *s* and *s'*, the two eyelet-holes *q* and *q'*, formed in the opposite ends of the collar or collar-band, and the lacing-cord *p*, all arranged and adapted to operate substantially as described.

258,257. FRUIT-DRIER. JOSEPH O. BRADLEY, Urbana, Va. Filed Sept. 5, 1881. (No model.)

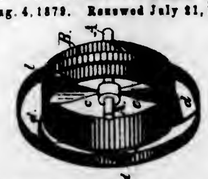


Claim.—1. In a fruit-drier, the combination of the steam-chambers, arranged one above another and connected at alternate ends with a hot-air gatherer, perforated upper chambers, and a steam-generator, as set forth.

2. The hot-air gatherer C, having flaring mouth opening downward, combined with the perforated hot-air and steam chambers and a generator, as set forth.

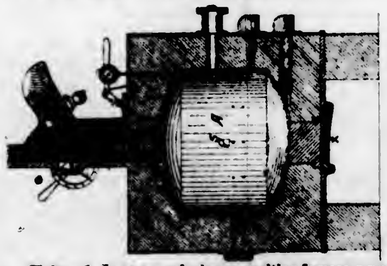
3. The guides *d* and inclines *d'*, combined with scraper D, spring D', and trays having inclines *d'*, as and for the purposes set forth.

258,258. SCREW-PROPELLER. JOS. BELDUKE, San Francisco, Cal. Filed Aug. 4, 1879. Renewed July 21, 1881. (Model.)



Claim.—In a propeller for vessels or ships, the combination, with the band or cylinder B, connected to the propeller-shaft A, with an intermediate space between them, of the buckets *d d*, with concaved edges and chambers and disposed obliquely across the periphery of said cylinder, with their apices fastened to a ring, *i*, substantially as and for the purposes set forth.

258,259. SMELTING-FURNACE. JONATHAN BELL, New York, N.Y. Filed Dec. 16, 1880. (No model.)



Claim.—1. In an ore reducing or smelting furnace, a smelting or heating chamber the interior of which is substantially that of an oblate spheroid provided around its interior with a double set of graduated inlets for the heat-producing gases, as hereinbefore set forth.

2. The combination, in a smelting-furnace, with the smelting-chamber, of the ore-roasting chamber above it communicating with the stack and provided at its bottom with a slide-valve, and having hopper with valve or gate, as and for the purposes hereinbefore set forth.

3. In a smelting-furnace, the combination, with the stack provided with damper and perforated wall, of the roasting-chamber, communicating through perforated wall with the stack and provided with check-valve at its bottom, as hereinbefore described.

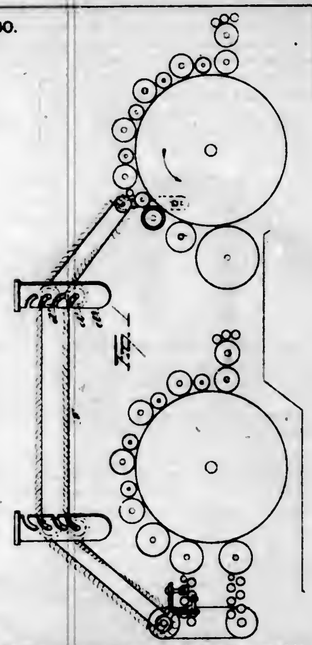
4. The combination, with the chamber A, of the pipes or flues K L, for supplying the heating-gases encircling the chamber, and provided with lateral branches or inlets K' A, &c., leading into the interior of the chamber, said inlet branches or flues being graduated in size—that is, smallest toward the conduits from the gas-generator and largest toward the end of the flues—as and for the purposes hereinbefore set forth.

258,260. CARDING-MACHINE. GEORGE BERNHART, Amana, Iowa. Filed Apr. 14, 1881. (No model.)

Claim.—1. The combination, with a finisher-card and a breaker-card, of an endless conveyer or conveyers extending from the rub of the finisher-card over the same to the last stripper of the second breaker-card, substantially as set forth.

2. The combination, with a finisher-card and a breaker-card, of endless conveyers (one or more) extending from the finisher-card over the same and leading to the breaker-card, of a stripper located between the endless conveyer and breaker-card, and a worker located between the stripper and doffer of the breaker-card, said worker having a girdle of card-clothing removed from each end thereof, substantially as set forth.

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3. In a waste-roving conveyer for carding-machines, the combination, with the finisher and second breaker cards, of an endless conveyer or conveyers, removable shafts, and adjustable rollers above said finisher and breaker cards for supporting such conveyer or conveyers, the said conveyer or conveyers being adapted to convey the waste rovings from the rub of the finisher to the last stripper of the second breaker-card, substantially as set forth.

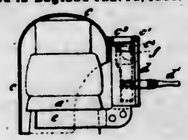
4. In a waste-roving conveyer for carding-machines, the combination, with the finisher-card, endless conveyer or conveyers, fixed guard and last stripper of second breaker-card, of a worker situated below said stripper, said worker having a girdle of card-clothing removed from each end, which allows the rovings to pass uninterrupted to the doffer, where it is mixed with the new wool, substantially as set forth.

5. In a waste-roving conveyer for carding-machines, the combination, with a finisher-card and second breaker-card, of an endless conveyer or conveyers provided with card-clothing on one face and supported above the said finisher and second breaker cards, adjustable hangers, rub-roll gearing of the finisher-card, and suitable mechanism by which the desired motion is imparted to said conveyer, substantially as set forth.

6. In a waste-roving conveyer for carding-machines, the combination, with a finisher and second breaker card, the endless conveyer, removable and shafts therefor, and intermediate removable shafts adapted to be vertically adjusted, as described, of hooks adapted to receive said removable end shafts and hold them up out of the way while grinding and cleaning the cards, and suitable supporting means for said hooks, substantially as set forth.

7. The combination, with the main cylinder of the second breaker-card, of the fifth worker provided with card-clothing of less width than that on the main cylinder, and arranged to form an annular naked space around each end of the fifth worker, substantially as set forth.

258,261. MEANS OR APPARATUS FOR SECURING OR LOCKING UP THE CONTENTS OF BOTTLES AND OTHER HOLLOW ARTICLES. JOHN BUTTENSHAW, 36 and 38 Pentonville Road, County of Middlesex, England. Filed July 23, 1881. (No model.) Patented in England Jan. 13, 1881.



Claim.—The combination of the cap or cover *c*, hasp *c'*, clip *c*, and lock *d*, receiving the hasp within it and forming the sole means of connection between the said cap and clip, substantially as herein shown and described, and for the purpose set forth.

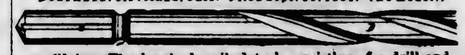
258,262. REED FOR MUSICAL INSTRUMENTS. MELLEN BRAY, Newton, Mass. Filed Nov. 11, 1881. (No model.)

Claim.—1. A reed-tongue for musical instruments reduced to the desired variable thickness by compression, as distinguished from milling or filing, substantially as described.

2. A reed and reed-plate formed from a single piece of metal and having the tongue of the reed made of the desired varying thickness by pressure, as distinguished from filing, substantially as described.

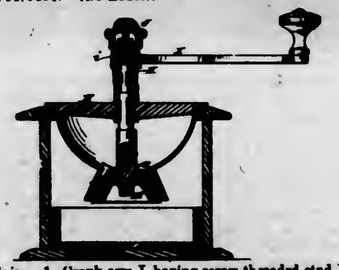
3. The process of forming a reed and its reed-plate from the same piece of metal, which consists in forming the necessary recesses and condensing and hardening that portion of the metal from which the reed is to be formed by pressure and cutting away the surplus metal to separate the sides and one end of the reed from the reed-plate, substantially as described.

258,263. COMBINED DRILL AND REAMER. FREDERICK H. BULTMANN, Cleveland, Ohio. Filed Sept. 28, 1881. (No model.)



Claim.—The herein-described tool, consisting of a drill and reamer combined, constructed and arranged substantially as and for the purposes set forth.

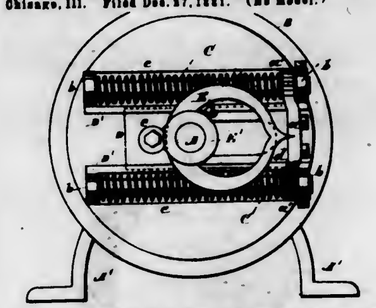
258,264. COFFEE-MILL. FRANK H. CHAPMAN, Meriden, Conn., assignor to the Charles Parker Company, same place. Filed Dec. 14, 1881. (No model.)



Claim.—1. Crank-arm I, having screw-threaded stud I', permanently connected thereto, in combination with adjusting-nut J, slotted sleeve K, a support for said sleeve, and the detachable spindle of the runner, which is connected to said crank-arm within said sleeve.

2. In a coffee-mill, a crank-arm having a spindle or stud and screw formed therewith, in combination with an adjusting-nut, a slotted sleeve, means for supporting said sleeve, and the spindle F, substantially as set forth.

258,265. SELF-ADJUSTING CRANK. WILLIAM H. CLARK, Chicago, Ill. Filed Dec. 27, 1881. (No model.)



Claim.—1. The hollow shaft B'', having the disks or plates B B' attached to its ends, in combination with the interior shaft, A, substantially as and for the purpose specified.

Claim.—1. The curved spring-bars G, in combination with

2. The combination of the disk or plate B with the springs c and slide D, substantially as described.

3. The combination of slide D, having the roller or pin e, with the cam or eccentric E, substantially as set forth.

4. The combination of the disk or plate B, springs c, and slide D, having the pin or roller e, with the cam or eccentric E and shaft A, substantially as specified.

5. The combination of the disk or plate B′ and its guide-plates with the crank-block H, having the projections *f* and shoulders *g*, substantially as described.

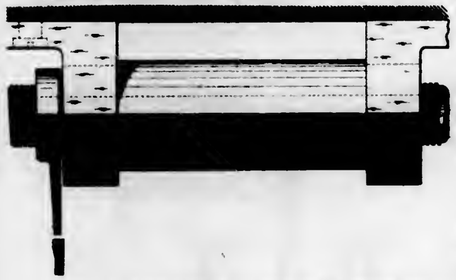
6. The combination of the crank slide or block H, having the shoulders *g*, with the nut I and the eccentric *h*, substantially as set forth.

7. The combination of the disk or plate B′, having the guides G G′, and hollow shaft B″, with the sliding or crank block H, having guide-projections and shoulders, the nut I, eccentric *h*, and shaft A, substantially as and for the purpose set forth.

8. The combination of the disks or plates B B′ and hollow shaft B″, connected together as described, and the springs c, with the shaft A, cams or eccentrics E *h*, slide D, and crank-block I, substantially as specified.

9. The combination of the double cam or eccentric E, having the stop *d*, with the pin or roller e, for operating the slide when the eccentric is turned in either direction, substantially as described.

253,266. SCREW-NUT. SAMUEL DARLING, Providence, R. I. Filed Oct. 29, 1881. (No model.)



Claim.—1. A nut made in two parts for the leading-screws of dividing and screw-cutting engines, micrometers, and all screws that require great accuracy, one part being fixed and the other adjustable independently of the fixed part, the fixed part and a holder for the adjustable part being made in one piece or separate pieces rigidly held together, the same being constructed and operating substantially as herein described, for the purpose set forth.

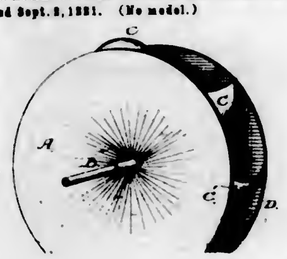
2. A nut made in two parts, one part being fixed and the other adjustable, the fixed part and a holder for the adjustable part being made in one piece or separate pieces rigidly held together, the adjustable part having a screw on a part or the whole of its outer contour fitting a female screw in the holder by which it is held and adjusted, substantially as described.

3. A nut made in two or more parts, one or more of the parts being adjustable when used for truing screws by attrition, the parts being constructed and operating substantially as herein described.

4. A nut made in two or more parts, one of the parts being adjustable and having a radial index-arm for adjusting the nut, to be used with or without a graduated scale, substantially as described.

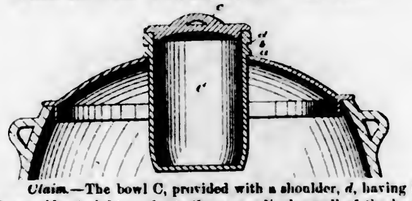
5. A nut in two or more parts, one or more of the parts being adjustable, mounted on bearings or centers, substantially as described, and for the purpose set forth.

253,267. WATER-WHEEL. ROYAL M. DAVISSON, Weaverville, Cal. Filed Sept. 8, 1881. (No model.)



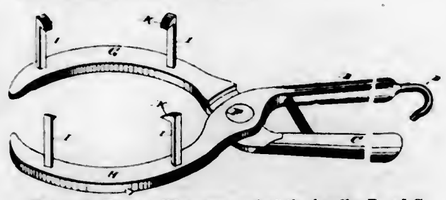
Claim.—A water-wheel consisting of the convex or conical side A, having a central axis, B, the tapering buckets or flanges C, secured upon the convex side and curved and tapering toward the center of the side A, and the rim or side D, with its open center, substantially as and for the purpose herein described.

253,268. POT FOR COOKING PURPOSES. JAMES DOWLING, Wilkes-Barré, Pa. Filed Aug. 25, 1881. (No model.)



Claim.—The bowl C, provided with a shoulder, *d*, having its lower side at right angles to the perpendicular wall of the bowl, and a shoulder, *e*, having its upper side beveled and its lower side at right angles to the perpendicular wall of the bowl, all arranged and operating to suspend the bowl and form bearing-surfaces for the lifter, substantially as shown and described.

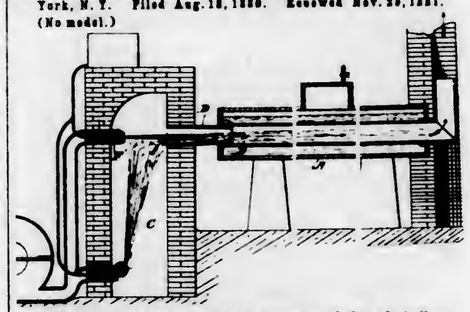
253,269. LIFTER FOR POTS. JAMES DOWLING, Wilkes-Barré, Pa. Filed July 11, 1881. (Model.)



Claim.—1. The pot-lifter composed of the handles B and C and jaws G and H, provided with hooks I, substantially as set forth.

2. In a pot or bowl lifter composed of jaws G and H, provided with hooks I and handles B and C, a hook, D, connected to one of the handles, substantially as specified.

253,270. HYDROCARBON-FURNACE. GEORGE DUNYON, New York, N. Y. Filed Aug. 18, 1880. Renewed Nov. 29, 1881. (No model.)

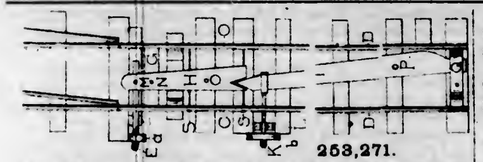


Claim.—A steam-generating apparatus consisting of a boiler, A, having a flue, B, combined with an upright fuel-furnace, C, in front, and a compound blow-pipe delivering a blast of combined air and fluid fuel across the flame in the fuel-furnace in line with the boiler-flue, as described.

253,271. RAILROAD-SWITCH. NATHANIEL EATON, Mount Vernon, N. Y. Filed Apr. 9, 1881. (No model.)

Brief.—The switch is shifted through horizontal levers detachably connected at their meeting ends to allow of their disconnection when desirous of running a train onto or off of the siding. Otherwise the passing wheel-flanges would bear against one of the levers and set the switch for the main line.

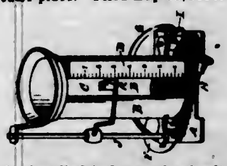
Claim.—In an automatic railroad-switch, the combination of horizontal levers H and I, switch-rails C C, and cross-bar G, pivoted to lever H, said parts being adapted to be moved by the flanges of the wheels of passing locomotives or cars striking one of said



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levers, the levers H and I being adapted at their meeting ends to be disconnected to direct a train upon the siding, all substantially as shown and described.

253,272. COIN HOLDER AND COUNTER. JOHN W. ELLIOT, Toronto, Ontario, Canada, assignor of one-half to Thomas H. Sheppard, same place. Filed May 18, 1881. (No model.)



Claim.—1. A cylindrical case, A, of suitable diameter, set over a hole in the base B, and having a vertical slot, C, cut in it, as described, to permit the insertion of the divider-arm K, in combination with the pivoted trap E, held over the hole in the base A by the bow-spring G and operated by the handle I, substantially as and for the purpose specified.

2. The slotted cylindrical case B, having a horizontal slot cut through it at or near its base, in combination with the pivoted push-plate F, curved to pass through said slot, and the bow-spring G, substantially as and for the purpose specified.

3. In connection with a cylindrical case containing coin, and having a pivoted push-plate to remove the coin one by one, and a pivoted trap through which the coin may be dropped when more than one is required, the combination of a bow-spring, G, one end of which is connected to the trap, so as to keep it closed, while its other end is attached to the push-plate, so as to keep it clear of the case.

4. In connection with a cylindrical case containing coin, and having a vertical slot cut through it to expose the coin, and an index, D, to indicate their number, the combination of a dividing-arm, K, sliding on the vertical spindle J, substantially as and for the purpose specified.

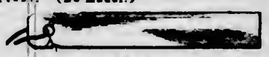
253,273. CUTTER-HEAD FOR WOOD-WORKING MACHINES. THOS. FITZSIMMONS, Burlington, Vt. Filed Nov. 10, 1881. (No model.)



Claim.—1. The combination of the grooved cutter, with a plate, B, having a projection on its inner side to catch in the slot, a clamping-bolt, and a cutter-head, substantially as shown.

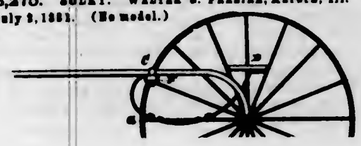
2. The combination of the grooved cutter-head, the plate B, provided with the projection *b*, and having one or more grooves made in its outer surface, the bolt E, nut F, and cutter having a bead or beads on its inner surface, substantially as described.

253,274. TAG. SIMON E. FLEISHER, Philadelphia, Pa. Filed Nov. 26, 1881. (No model.)



Claim.—A tag, made of fibrous or analogous material, having an opening, a, extending slit a′, and notch a², substantially as described.

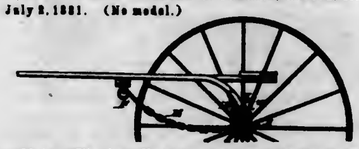
253,275. SULKY. WALTER S. FRASIER, Aurora, Ill. Filed July 2, 1881. (No model.)



Claim.—1. The curved spring-bars G, in combination with the seat D, foot-rest E, and the cross-bar or shafts, substantially as specified.

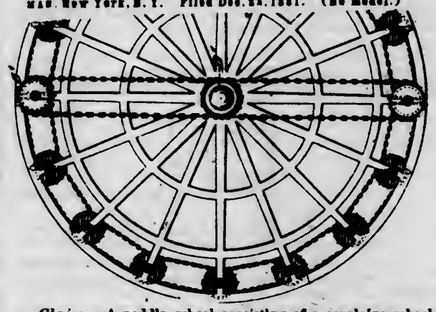
2. In a sulky or two-wheeled vehicle, the spring arms or bars G, curved to support the foot-rest and seat in their proper relative positions, substantially as described.

253,276. SULKY. WALTER S. FRASIER, Aurora, Ill. Filed July 2, 1881. (No model.)



Claim.—The bars F, in combination with the springs a and axle A, substantially as specified.

253,277. FEATHERING PADDLE-WHEEL. GEORGE F. FREEMAN, New York, N. Y. Filed Dec. 23, 1881. (No model.)



Claim.—A paddle-wheel consisting of a revolving wheel-frame having a number of paddles pivoted to bearings at the circumference of the frame, of a circumferential transmitting-chain engaging sprocket-wheels on the pivots of the paddles, and of endless radial transmitting-chains engaging sprocket-wheels upon the pivots of one or more paddles, and being actuated by a stationary sprocket-wheel affixed to the bearing of the paddle-wheel shaft, substantially as and for the purpose set forth.

253,278. CLIP FOR BRAID, TAPE, &c., IN ROLLS. LYMAN B. GOFF, Pawtucket, R. I. Filed Jan. 17, 1878.



Claim.—1. A spring-clip for tapes, braids, and other coiled narrow fabrics, which is provided with a rigid sliding guide, serving as a lateral support for a portion of the coil in a line practically radial from the center, and a suitable spring or springs for confining said sliding guide to its working position, substantially as described.

2. The combination of a rigid sliding guide, serving as a lateral support for a portion of a coil of fabric, and a separate spring or springs, the whole constituting a spring-clip, substantially as described.

253,279. HAMMER. CHRISTOPHER J. GRELLNER, St. Louis, Mo. Filed June 23, 1881. (No model.)



Claim.—1. The hammer or mallet head A, having the cylindrical handle bore or eye B and grooves or recesses *b b*, extending from the top of the head down into the same and terminating in

rounded shoulders *a a*, substantially as and for the purpose herein shown and set forth.

2. The combination of the hammer-head A, having eye B and

small pipes P P′, L-shaped pipes *a a*, glass tubes E and N, and interior pipe, L, in combination with the steam-pipe of an engine, substantially as and for the purpose specified.

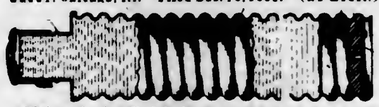
253,285. SEEDER AND CULTIVATOR. JOHN E. KERSIS, Dixon, Cal. Filed Aug. 12, 1881. (No model.)

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rounded shoulders *a a*, substantially as and for the purpose herein shown and set forth.

2. The combination of the hammer-head A, having eye B and grooves or channels *b b*, rounded at their terminal points *a a*, wedges D D, terminating each in a notched hook, *d*, and the handle C, substantially as shown and described, for the purpose set forth.

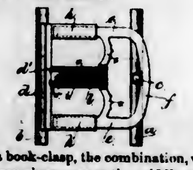
253,280. PAINT AND OTHER CANS AND TUBES. FRANK R. GROUT, CHICAGO, Ill. Filed Dec. 16, 1881. (No model.)



Claim.—1. A cylindrical can or tube, the cylinder being provided with a spiral screw-thread, and the bottom of the can being a follower fitting into such spiral screw-thread upon the cylinder, substantially as and for the purpose set forth.

2. A cylindrical can or tube, the cylinder being provided with an internal spiral screw-thread, and containing a follower mounted in the screw-thread for discharging the contents thereof, the follower being provided with means for the engagement of a driver therewith to force the same along the interior of the can, substantially as described.

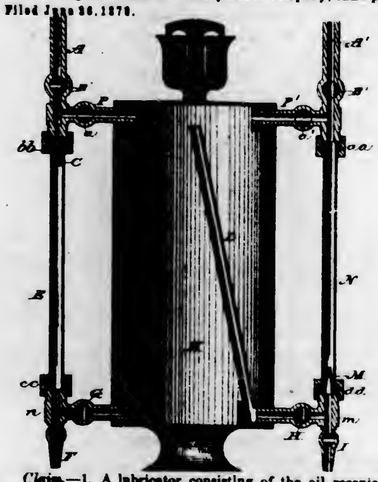
253,281. ALBUM-CLASP. ALFRED C. HAFELY, New York, N. Y. Filed Dec. 27, 1881. (No model.)



Claim.—1. In a book-clasp, the combination, with the extensible clasp, of the finger-pieces *s* near the middle of the clasp, substantially as set forth.

2. In an extensible book-clasp, the tubes A, side pieces, *e*, bow *f*, and tube *l*, in combination with the spring *i*, tube *o*, hinge *d*, and clips *a b*, substantially as set forth.

253,282. LUBRICATOR. CHARLES H. HARRUN, Waterbury, Conn., assignor to the Waterbury Brass Company, same place. Filed June 26, 1876.



Claim.—1. A lubricator consisting of the oil receptacle or reservoir K, provided with the two pipes A A', glass cylinders E and N, and lower pipes, *n* and *m*, arranged respectively upon opposite sides and connecting with the interior of said reservoir and the inclined pipe L, arranged therein, and with the steam-pipe of an engine, substantially in the manner and for the purpose specified.

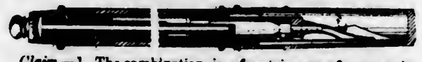
2. In a lubricator constructed as hereinbefore described, the oil-reservoir K, provided with the pipes A A', having bends or small pipes P P', L-shaped pipes *n m*, glass tubes E and N, and interior pipe, L, in combination with the steam-pipe of an engine, substantially as and for the purpose specified.

3. In a lubricator, the pipes A A', provided with the stop-cocks B B', pipes P P', provided with the stop-cocks *a a'*, pipes *n* and *m*, provided with the stop-cocks G and H and pet-cocks F and I, intermediate glass tubes, E and N, having nozzles C and M, projecting respectively therein, in combination with an oil-reservoir provided with the inclined pipe L, and with the steam-pipe of an engine, substantially as and for the purpose specified.

4. In a lubricator, the oil-reservoir K, provided with the pipes A A' and P P', L-shaped pipes *n* and *m*, and interior pipe, L, glass tubes E and N, and nozzles C and M, the several parts being adapted for operation in connection with the steam-pipe of an engine, substantially as and for the purpose specified.

5. In a lubricator, the pipes A' and P' and *m*, having the nozzle M and glass cylinder N, arranged within the stuffing-boxes *a a* and *d d*, in combination with the reservoir K, inclined pipe L, pipes A, P, and *n*, and glass cylinder E, arranged within the stuffing-boxes *b b* and *c c*, substantially as and for the purpose specified.

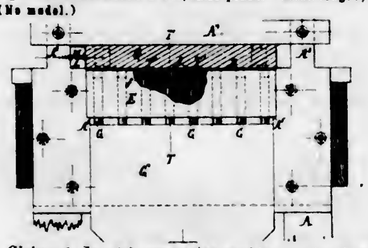
253,283. FOUNTAIN-PEN. GEORGE F. HAWKES, New York, N. Y. Filed Apr. 1, 1881. (No model.)



Claim.—1. The combination, in a fountain-pen, of a reservoir-handle, a detachable pen-section provided with a curved spout adapted to feed ink to a common pen, a coupling between the pen-section and reservoir-handle, and a detachable air-tube having a perforated end extended into the pen-section, substantially as described.

2. The combination, in a fountain-pen, of a reservoir-handle, a detachable pen-section provided near its upper end with a shoulder, and at its lower end with a curved spout adapted to feed ink to a common pen, a coupling having an enlarged bore, whereby an annular recess adapted to receive a common pen is formed between said coupling and the pen-section, and an air-tube having a perforated end extended into the pen-section, substantially as described.

253,284. MACHINE FOR ATTACHING TAGS AND LABELS TO PLUG-TOBACCO. EDWIN R. HEARN, Jersey City, N. J., assignor to P. Lorillard & Co., same place. Filed Aug. 9, 1881. (No model.)

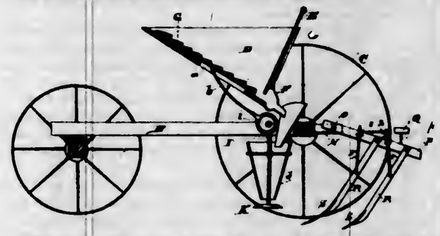


Claim.—1. In a tobacco-tagging machine, a series of equidistant posts, G, standing loosely within corresponding holes in a single continuous piece, serving as a platform, and serving by relative changes of position first to present a series of cavities by holding the ends of the posts lower than the surrounding piece, to receive the tags T' *t* upon the tops of the posts, and then to bring the working surfaces flush with each other to attach the tags to the tobacco, and to engage them firmly therewith, as herein specified.

2. In a tobacco tagging and labeling machine, the platform A' A', independently-movable strip E, inclosed loosely therein, stops A', and posts G, standing in perforations in the strip, combined and arranged as shown, with provisions for moving one relatively to the other, so that the posts, strip, and platform will all stand at different levels to receive the tags and paper, and afterward be all brought to the same level and into firm contact with the face of a tobacco-plug, and unite therewith the tags T' *t* and paper B, all substantially as specified.

3. In a tobacco-tagging machine, a series of equidistant posts rigid with and arranged vertically upon a bar, G', which is forced to reciprocate in guides by means of pitman and pedal-lever connections, combined with a platform having a series of holes, in which the posts operate loosely, in such a manner that the upstroke brings the upper ends of the posts flush with the upper face of said platform, and the receding stroke affords recesses, as and for the purposes set forth.

253,285. SEEDER AND CULTIVATOR. JOHN E. HERRIS, Dixon, Cal. Filed Aug. 12, 1881. (No model.)



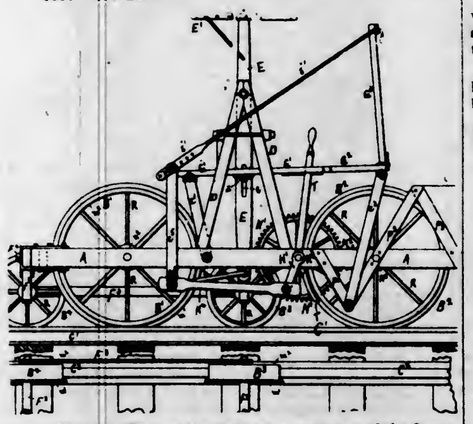
Claim.—1. In a seeder and cultivator, the hopper D, with its regulating-plate E, spout F, and reciprocating feeding-plate G, arranged at an angle, as shown, to accelerate the gravity-feed, substantially as herein described.

2. In a seeder and cultivator, the combination of the hopper D, with its regulating-plate E, spout F, and reciprocating feeding-plate G, arranged at an angle, as shown, to accelerate the gravity-feed, the spouts or carriers L L, funnel-shaped receivers J, and rotating distributing-disks K, substantially as herein described.

3. In a seeder and cultivator having the hopper D, with a slot, *a*, the feeding-plate G, rod *b*, supports H, eccentric *c*, shaft N, pinion *e*, gear *d*, and wheel C, when arranged substantially as and for the purpose herein described.

4. In a seeder and cultivator, the distributing-disks K, funnel-shaped receivers J, vertical shafts or spindles I, bevel-pinions *n*, supports H, shaft M, bevel-gears *m*, pinion *e*, gear *d*, and wheel C, when arranged substantially as and for the purpose herein described.

253,286. MAN-POWER. THOMAS HILL, Troy, assignor of one half to Charles Culbath, Kinnickinnick, Wis. Filed July 25, 1881. (No model.)



Claim.—1. The combination and arrangement of the frame A D, lever E, plate G', and back-support G², substantially as set forth.

2. The combination and arrangement of the frame A D, lever E, plate G', back-support G², pivoted standards *c' c² c³ c⁴*, and treadles M' M², connecting-rods H⁴ H⁵, bent rod *h*, and crank-shaft H' H³ H⁴, whereby the power of the levers may be communicated to the mechanism it is desired to operate, substantially as set forth.

3. The combination and arrangement, with the frame A, wheels B' B², and rigidly-held trailing-wheel B¹, of the guiding-wheel B³, connected flexibly to the frame A and axle of the wheel B², substantially as and for the purpose set forth.

4. The combination and arrangement of the plate G', back-support G², and adjustable tie-rods *i' i²*, whereby the angle of the back-support may be adjusted, substantially as and for the purpose set forth.

253,287. SHIP'S LOG. WILLIAM S. HOSE, Washington, D. C. Filed Sept. 14, 1881. (No model.)

Claim.—1. In a ship's log, a vacuum apparatus constructed to permit a current of water to pass through the same as it is towed through the water, a gage upon a vessel, and a flexible tube connecting the gage and vacuum apparatus, and of a length to permit the latter to occupy a position in the water beyond the area affected by the vessel's motion, all as set forth.

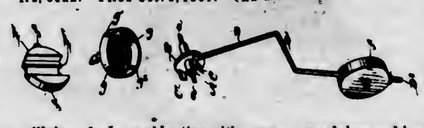
2. The combination, with the appliances described and claimed, of a gage and throttling device, substantially as described.

3. The combination of the vacuum device, gage, connecting flexible pipe, and a float, substantially as and for the purpose set forth.

253,287.



253,288. CLOCK-PENDULUM. ARTHUR E. HUTCHINS, Cheshire, Conn. Filed Oct. 6, 1881. (No model.)



Claim.—1. In combination with a verge, a pendulum-rod having its end bent at right angles to its length and inserted in a recess or perforation of the verge, substantially as and for the purpose set forth.

2. A pendulum-ball consisting of a perforated scalp or shell and a filling attached thereto by a part of its material extending into the perforation or perforations of said scalp or shell.

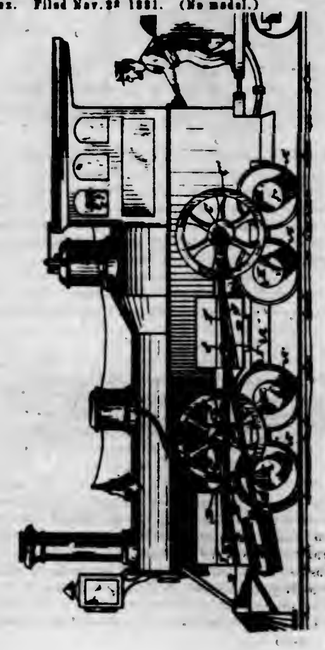
3. The collect on the verge-shaft carrying the pallets of the escapement and supporting the pendulums, as set forth.

4. Shell G, provided with an annular side wall, in combination with pendulum-rod D, which has a flattened or angular part, D', that passes through said side wall from top to bottom, to prevent the pendulum-ball from turning.

5. A pendulum-rod which is all in one piece, in combination with a shell or scalp, G, through the side walls of which it passes, said rod and the perforations in said scalp being of such shape as to prevent said shell from turning on said rod.

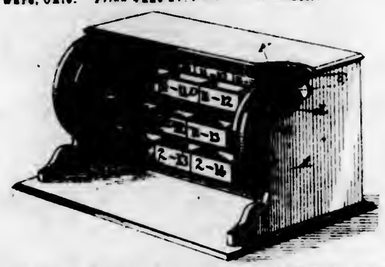
6. In combination with scalp G, the filling or body F, having pins *f f*, which extend into holes *g g* of said scalp, said parts composing a pendulum-ball, substantially as described.

253,289. LOCOMOTIVE. BENJAMIN F. HUNSUCK, Bear Creek, Tex. Filed Nov. 28, 1881. (No model.)



Claim.—The frame B, having inclined guides J J', and the reciprocating carriages I I', connected by the pitman E, the arms D F, connecting the carriages I I' to the driving-wheels, respectively, and the piston-rod G, all combined with the wheels C', cylinder H, and riding-wheels A', having circular bearings K for the driving-wheels, as set forth.

253,290. CASE FOR DISPLAYING WARES. JOHN E. HUSTUS, Washingtonsburg, (assignor of one-half to John H. Smith, Delaware, Ohio. Filed June 27, 1881. (No model.)

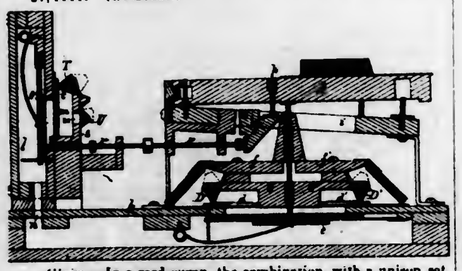


Claim.—1. In a case for containing and displaying wares, a revolving carrier provided with a series of teeth, *c*, having upright rear faces, and a pawl or dog adapted and arranged to engage automatically with said teeth and prevent the backward rotation of the carrier.

2. In combination with the rotating carrier provided with teeth *d*, a dog or hook adapted to engage with said teeth, and provided with a clamping device, whereby it may be held out of action.

3. In combination with the carrier provided with teeth *c d*, the pawls or dogs E F, adapted and arranged to operate as and for the purpose set forth.

253,291. REED-ORGAN. JOHN JAMES, Cambridgeport, Mass., assignor of one-half to George Woods, same place. Filed Oct. 27, 1881. (No model.)



Claim.—In a reed-organ, the combination, with a unison set of reeds, *d' d'*, and its stop D', of an additional set of reeds, *m m*, and tube-board S, with its two stops T U and corresponding reed-openings, the reeds *m m* being so tuned as to be in tune when both of its stops T U are open and out of tune when either of said stops alone is open, as and for the purposes described.

253,292. BREECH-LOADING FIRE-ARM. IVAN JOHNSON and MARTIN BYE, Worcester, Mass. Filed Sept. 6, 1880. (No model.)



Claim.—1. The front stock, B, composed of the metal piece *b* and the wood stock *b'*, the metal piece *b* having a hollow projection formed on it, which extends through a mortise in and terminates flush with the exterior surface of the wood stock *b'*, and having the locking-lever *b²* and its spring *b³* mounted in this hollow projection, substantially as set forth.

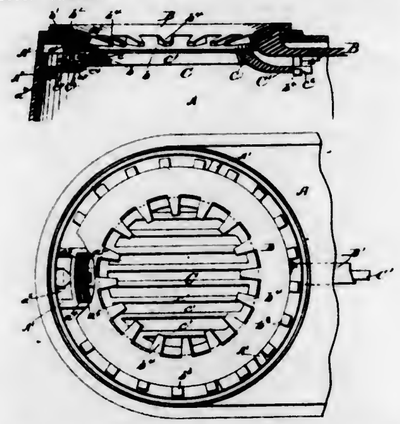
2. A breech-piece for fire-arms, consisting of the breech-piece D and a lock-plate, *d*, having projections *d²* for supporting the hammer and tumbler, and a projecting piece on its rear end, the tang of the breech-piece D passing between the projections *d²*, to which and the projecting piece it is fastened, substantially as and for the purposes set forth.

3. The combination of a hammer having a tumbler provided with a recess the upper shoulder of which is shorter and nearer the center of motion than the lower shoulder thereof, with a double-leafed mainspring, both leaves of which lie in the recess in the tumbler, the upper leaf bearing against the upper shoulder and the lower leaf resting on a set-screw, by turning which it can be raised or lowered to the proper position to catch the lower shoulder while the hammer is falling, so as to throw the hammer back after it has struck, substantially as set forth.

4. The combination of the cartridge-extractor *g* and its arm *g'* with the metal piece *g³*, mounted in a recess in the breech-piece D and held out by the spring *g⁴*, so that its shoulder *g²* is in the arc described by the end of the arm *g'* in opening the gun, and its shoulder *g²* is struck and depressed by the barrels of the gun, so as to cause the shoulder *g²* to move away from the arm *g'* and leave it free to be pushed in when the gun is open, substantially as set forth.

5. The hammer and tumbler rigidly connected by a connecting-piece, *f'*, lying at one side of the pin *f'*, which supports the hammer and tumbler, in combination with the projection *d²*, lying between the hammer and tumbler, substantially as described.

253,293. GRATE. GEORGE KAMP, Utica, N. Y. Filed June 10, 1881. (Model.)



Claim.—1. A two-part grate consisting of an upper section having a motion around its own center coincident with the center of the grate as a whole, and a lower section having its center of motion at the rear of the grate, substantially as and for the purpose set forth.

2. In a two-part grate, the upper part consisting of an annular section, B, concave upon its upper side, and provided with radial fingers *b² b'*, flanges *b b'*, and handle B', having depending stud *b³* and hook *b⁴*, substantially as described.

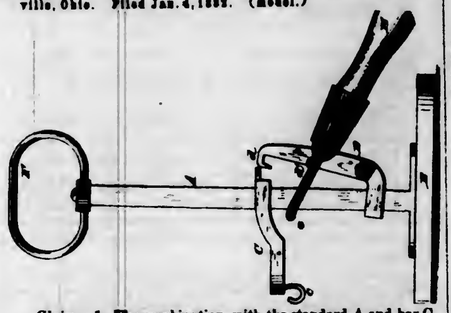
3. In a two-part grate, the combination of the grate C, having arm C' and bifurcated lug *c²*, with the tongue *c³*, pivoted at its forward end in said lug *c²*, and provided at its rear end with a downwardly-projecting stud, *c⁴*, whereby to pivot said tongue to the lug A^3 upon the base of the stove, substantially as described, for the purpose specified.

4. In a two-part grate, the combination of the lug A^3, tongue *c³*, and bifurcated lug *c²*, attached to the grate C by pivot *c⁴*, whereby the said grate is capable of being moved up or down or from side to side, substantially as described.

5. In a two-part grate, the combination of the upper rotary section, B, provided with radial fingers *b² b'*, flanges *b b'*, handle B', having depending stud *b³* and hook *b⁴*, with the lower laterally-moving grate, C, provided with bifurcated lug *c²* and curved arm C', substantially as described.

6. In a two-part grate, the supports A', having their outer ends provided with recesses *a* to receive and hold friction rollers or balls *a'*, and provided also with suitable openings a^4 a^5, for the escape of ashes, cinders, &c., in combination with the lower grooved surface, b^5, of the annular section B, substantially as described.

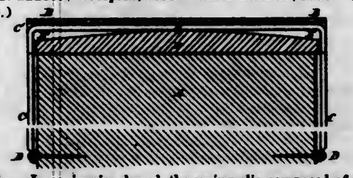
253,294. LIFTING-JACK. WILLIAM KIGHTLINGER, Marysville, Ohio. Filed Jan. 4, 1882. (Model.)



Claim.—1. The combination, with the standard A and bar C, with its opening, of the bracket D, adapted to be detachably connected to bar C, and the lever E, having metallic looped ends *e e'*, substantially in the manner as and for the purpose herein shown and described.

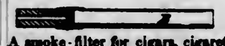
2. The herein-described lifting-jack, consisting of the base B, standard A, having front and rear roughened sides, the bar C, having openings through its rear end, the notched bracket D, having hook *d*, and the lever or handle E, having metallic looped ends *e e'*, substantially as and for the purpose specified.

253,295. IRONING-BOARD. THOS. E. KING, Saugatuck, and WM. H. SAXTON, Westport, Conn. Filed June 23, 1881. (No model.)



Claim.—In an ironing-board, the spring-clip composed of the bar B, having a groove, B', deeper at the ends than at the middle, and the wire C, hinged at the sides, whereby the wire acts as a spring where it passes through B, substantially as described.

253,296. SMOKE-FILTER FOR PIPES AND CIGARETTES. FRANCIS S. KINNEY, New Brighton, assignor to the Kinney Tobacco Company, New York, N.Y. Filed Nov. 25, 1881. (No model.)



Claim.—1. A smoke-filter for cigars, cigarettes, pipes, and the like smoking articles, composed of a vehicle of the character described, carrying in a powdered or finely-granulated condition a substance having purifying properties, substantially as described.

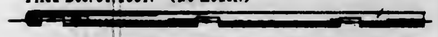
2. As a new article of manufacture, a smoke-filter for cigars, cigarettes, pipes, &c., composed of a suitable vehicle charged with or carrying charcoal, substantially as described.

3. As a new article of manufacture, a smoke-filter for cigars, cigarettes, pipes, &c., composed of cotton charged with or carrying charcoal, substantially as described.

4. The combination of a cigarette, as B, a mouth-piece, as C, and a filter, as A, composed of a vehicle of the character described charged with or carrying in a powdered or finely-granulated condition a substance having purifying properties and interposed between the tobacco of the cigarette and the mouth-piece, all three being permanently secured together, substantially as described.

5. The combination of a cigarette, as B, a mouth-piece, as C, a filter, as A, interposed between said cigarette and mouth-piece, and an encircling band, as *a*, by which all three are secured permanently together, substantially as described.

253,297. FIRE-ALARM. ISIDOR KITZER, Cincinnati, Ohio. Filed Dec. 31, 1881. (No model.)



Claim.—1. In an automatic fire-alarm or fire-extinguisher actuated by rupture of fusible connections, a cord divided into sectional lengths, the several sections being joined by fusible coupling-links inclosed within a tube having under openings coincidentwith the fusible links, substantially as described.

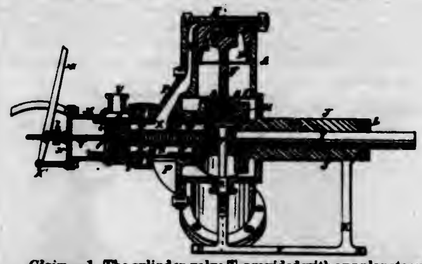
253,298. FIRE-EXTINGUISHER. ISIDOR KITZER, Cincinnati, Ohio. Filed Nov. 30, 1881. (No model.)

Brief.—The inlet-valve is held to its seat by a friable brace, E. A weighted arm is suspended above it by fusible supports, which, in case of fire, melt and allow the weight to descend on brace E, breaking it and letting the water to the distributor through the valve.



Claim.—In an automatic fire-extinguisher, the conduit-pipe *a*, provided with a spring-pressed valve, in combination with the friable truss-brace E and swinging arm *f*, provided with weighted head *g* and the supporting fusible brace h, substantially as described.

253,299. THREE-CYLINDER ENGINE. LEOPOLD LAPYRE, Cincinnati, Ohio. Filed May 27, 1881. (No model.)



Claim.—1. The cylinder-valve T, provided with annular steam-opening *y*, annular steam-port space X', port X, counterbalancing piston or part 5, annular exhaust-port space Z', exhaust-port Z, annular diaphragm *p*, and central axial chamber 7, in combination with valve-spindle 3 and bell-crank 4 and pin 6, and a valve-case, substantially as and for the purposes specified.

2. The cylinder-valve T, provided with annular steam-opening *y*, annular steam-port space X', port X, counterbalancing piston or part 5, annular exhaust-space Z', and exhaust-port Z, annular diaphragm *p p*, and devices enabling the valve to be rotated by the crank-pin *e*, substantially as and for the purposes specified.

3. The cylinder-valve T, provided with annular steam-opening *y*, annular port-space X', port X, counterbalancing piston or part 5, annular exhaust-space Z', exhaust-port Z, annular diaphragm *p p*, and devices for enabling the valve to be rotated and operated longitudinally, substantially as and for the purposes specified.

4. The cylinder-valve T, provided with annular steam-opening *y*, annular port-space X', port X, counterbalancing piston or part 5, annular exhaust-port space Z', exhaust-port Z, annular diaphragm *p p*, and devices for rotating the said valve, and cap *i*, in combination with rod V, provided with head *j*, lever W, and a valve-case, substantially as and for the purposes specified.

5. The reverse steam-ports E E E, in combination with the valve-case M, provided with cap N, annular steam-space S, having steam-inlet U, and provided with steam-ports P P P, and flange O, substantially as and for the purposes specified.

6. The valve-case M, provided with cap N, annular steam-space S, having steam-inlet U, steam-ports P P P, reverse-ports E E E, and flange O, in combination with the cylinder-valve T, provided with annular steam-opening *y*, annular steam-port space X', steam-port X, counterbalancing piston or part 5, annular steam-exhaust space Z', steam-exhaust port Z, annular diaphragm *p p*, and devices for enabling the valve to be rotated and operated longitudinally, substantially as and for the purposes specified.

253,300. LIFTING-JACK. FREDERICK LEHMAN, Milwaukee, Oreg. Filed Dec. 2, 1881. (No model.)

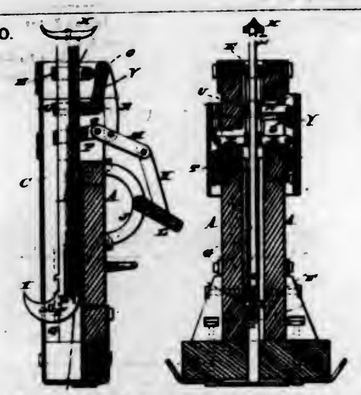
Claim.—1. In a lifting-jack, the combination of the upright A and slide D, the sleeves P U, having arms or studs projecting through slots in upright A, the springs T Y, and lever mechanism, substantially as described, for operating the slide D through the medium of sleeve P, all arranged and operating as herein described.

2. In a lifting-jack, the combination, with the upright A and

253,306.

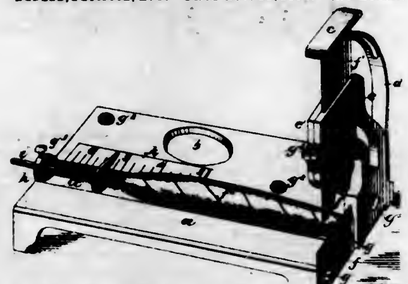
Claim.—The combination of the eyelets on opposite sides of the slit in the glove, the elastic or inelastic lace of a length as in-

258,300.



slide D, of the hand-lever L, the transverse bolt O, having pivoted rods or hangers N V, carrying the lever M and pivoted sleeve U, the sleeve P, pivoted to lever M, and the rods K, connecting the levers L M, substantially as herein described, for the purpose shown and specified.

258,301. CIGAR-CUTTER. GEORGE H. MARSH and HARRY E. BUSELL, Paterson, N. J. Filed Nov. 28, 1881. (No model.)



Claim.—The combination of the V-shaped cutter f', frame e, constructed with a removable plate, e', screw g', spring a, spring d, flanges d', hood c, screw g^2, and bed-plate a, as shown, and for the purposes set forth.

258,302. LANTERN. FREDERICK MCLUWEE, New York, N. Y. Filed Nov. 7, 1881. (No model.)



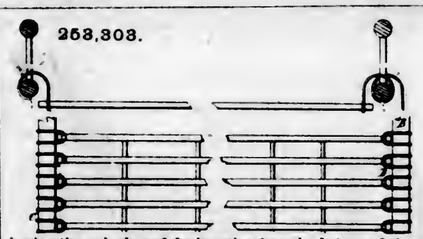
Claim.—1. In a lantern, the combination of the globe, through which the rays of light pass unobstructed, with a perforated metallic frame that encircles the exterior of said globe and carries in its apertures refracting-crystals, substantially as specified.

2. The combination of the base A of the lantern with the supports or straps D, encircling band E, crystals F, and globe B, substantially as herein shown and described.

3. In a lantern having base A and globe B, and posts or straps D, that project from said base, the combination thereof with the vertically-adjustable band E and clamping device *b*, substantially as herein shown and described.

258,303. BED-BOTTOM. NATHAN T. MULVIS, Lodi, Ohio. Filed Nov. 28, 1881. (No model.)

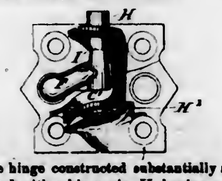
Claim.—1. The coiled spring formed into a sustaining-loop having the ends thereof for insertion into the bottom of the rail and being curved around the rail, substantially as and for the purpose shown and described.



2. The combination of the coiled springs formed into sustaining-loops and the bed-supporting slats or rods with necks or grooves at each end, substantially as and for the purpose described.

3. A series of coiled springs formed into sustaining-loops and with ends for insertion into the rail, as described, arranged alternately on opposite sides of the rail, substantially as and for the purpose described.

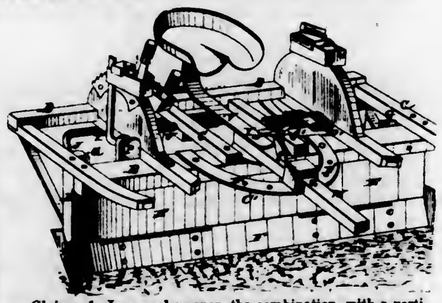
258,304. LOCK-HINGE. FELIX MENARD, Montreal, Quebec, Canada. Filed Dec. 16, 1881. (Model.)



Claim.—The hinge constructed substantially as hereinabove described, provided with a hinge-pin, H, having a shoulder, I, in combination with a pawl, F, the whole constructed, arranged, and operating substantially as set forth.

258,305. COMBINED ROAD SCRAPER AND SCOOP. HENRY H. MESSERSMITH, Harvey's, Pa. Filed Sept. 17, 1881. (No model.)

Brief.—Consists of a vertical shield having a hinged scraper on its lower edge swung at an angle by lever mechanism connected to a transverse shaft on the scraper-frame. The wheel-legs are vertically adjustable on the frame by lever mechanism connected to a transverse shaft, formed in two sections, joined by an adjustable sleeve or coupling.



Claim.—1. In a road-scraper, the combination, with a vertical shield secured to a suitable frame, of a hinged scoop or scraper and suitable adjusting mechanism, as described, for the purpose set forth.

2. The combination, with the frame having the shield E and hinged scraper F, of the side standards carrying guards or plow-blades, as herein described, for the purpose shown and specified.

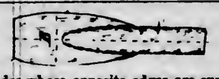
3. In a road-scraper having side guards or plows, the vertically-adjustable legs having swiveled wheels or casters, substantially as and for the purpose set forth.

4. The combination, with the vertically-sliding wheel-carrying legs, of the operating or adjusting levers mounted upon shafts which are capable of being connected by a suitable sleeve or coupling, as herein described, for the purpose shown and specified.

258,306. AUTOMATIC VENT. FERDINAND HESSMER, St. Louis, Mo. Filed Nov. 8, 1881. (No model.)

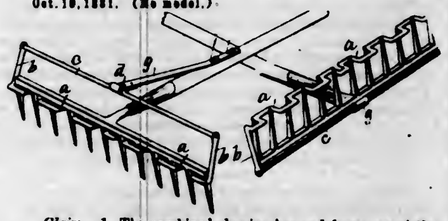
Claim.—The automatic vent herein described, consisting of

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two united flat sides whose opposite edges are curved, said sides being wider crosswise on a line midway of their length, the mouth as well as any cross-section of said sides being oval in shape, with its said curved edges made thinner than the longitudinal central portion of said sides, and the taper end of a tubular stem extending into the body and up to the center and widest portion of the vent proper, substantially as and for the purposes set forth.

258,307. TEETH-CLEANING ATTACHMENT FOR GARDEN-RAKES. CHARLES D. MILLER and GEORGE L. EAGER, Des Moines, Iowa, assignors of one-third to A. D. Crain, same place. Filed Oct. 19, 1881. (No model.)

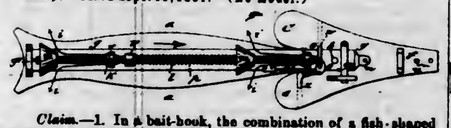


Claim.—1. The combined clearing-bar and frame, consisting of the bent wire or rod *a a*, adapted to be intertwined between rake-teeth, and the frame *b b c*, adapted to extend above the rake-head, substantially as shown and described, for the purposes specified.

2. The attachment for cleaning rakes, composed of the combined clearing-bar and frame *a b c* and the spring *g*, adapted to be fastened to a rake-handle, substantially as set forth, to operate in the manner described, for the purposes specified.

3. A combined clearing-bar and frame adapted to surround, extend between, or intertwine the teeth of a rake, a spring extending from said frame and adapted to be fastened to a rake-handle, arranged and combined relative to each other and a rake substantially as shown and described, to operate in the manner set forth, for the purposes specified.

258,308. BAIT-HOOK. KARL MÜLLER, Hornberg, Baden, Germany. Filed Sept. 19, 1881. (No model.)



Claim.—1. In a bait-hook, the combination of a fish-shaped shell, having helically-bent fins back of the head and longitudinal slits in the body thereof, with outwardly-swinging hooks, a spring-actuated mechanism for throwing out the hooks, and a latch mechanism projecting through the head of the shell, whereby the hook-actuating mechanism is locked or released, substantially as set forth.

2. In a bait-hook, the combination of the longitudinally-guided rod *l*, having fixed cones *m* and spring *p*, with the outwardly-swinging hooks *i*, hinged to the bracket- *k*, substantially as set forth.

3. In a bait-hook, the combination of the outwardly-swinging hooks *i* and guided slide-rod *l* with a recessed locking-latch, *o*, spring *o'*, forked rod *w*, and fulcrumed lever *x*, substantially as specified.

4. In a bait-hook, the combination of the guide-brackets *k*, having each a grooved cone, *t*, with hooks *i*, retaining-collars *v*, shell *a b*, having slits *c'* for the hooks *i*, and means for operating the hooks, substantially as set forth.

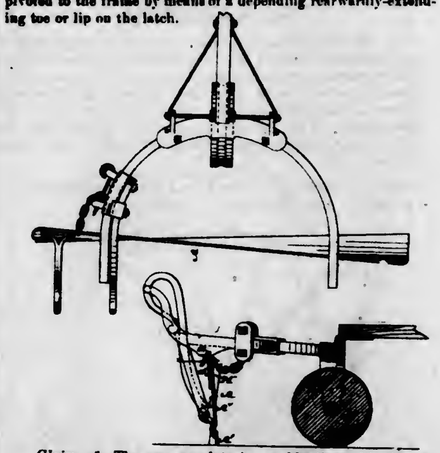
258,309. FASTENING FOR GLOVES, &c. FRANÇOIS A. C. J. OHLEN, Bonnevoie-les-Luxemburg, Luxemburg. Filed Dec. 19, 1881. (No model.)



Claim.—The combination of the eyelets on opposite sides of the slit in the glove, the elastic or inelastic lace of a length as indicated, the lace hook or button at the wrist of the glove, and the hook or similar device at the end of the lace, substantially as described.

258,310. ROAD-SCRAPER. WILLIAM PATTERSON, Salem, N. J. Filed May 4, 1881. (No model.)

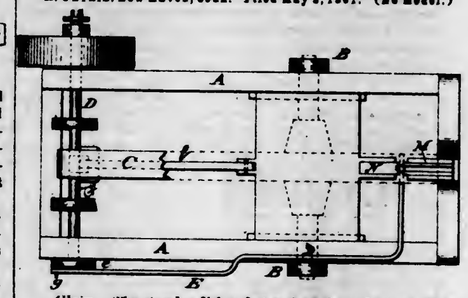
Brief.—The vertically-swinging scraper-plate has an adjustable lip on its upper edge, which is guided into a notch on a latch pivoted to the frame by means of a depending rearwardly-extending toe or lip on the latch.



Claim.—1. The scraper-plate, in combination with the adjustable tongue and the latching-lever, substantially as and for the purpose set forth.

2. The scraper-plate A, having a tongue, H, in combination with a latching-lever having a depending rearwardly-extending toe and a notch in front of said toe, operating substantially as and for the purpose set forth.

258,311. MACHINE FOR MAKING BLIND-HOOKS. WALTER R. PETRIE, New Haven, Conn. Filed May 2, 1881. (No model.)



Claim.—The circular disk *e*, fastened on the end of the shaft D and provided with the pin *g*, in combination with the lever E, turning on the stud *y* as a fulcrum in the upright part B, its front end being bent at right angles to the side of the frame A and coming in rear of the die M, as set forth.

258,312. TENDER AND OTHER BRAKES. DAVID S. RANDOLPH, St. Louis, Mo., assignor to the American Brake Company, same place. Filed July 18, 1881. (No model.)

Claim.—1. In a tender or like brake, the combination, with the horizontally-arranged brake-cylinder and its piston, of a brake-lever having its fulcrum supported by the brake-cylinder, said lever being pivotally connected directly to the piston of the brake-cylinder, substantially as and for the purpose specified.

2. In a tender or like brake, the combination, with the horizontally-arranged brake-cylinder and its piston, of a swiveling fulcrum-frame pivoted on the axis of the cylinder, a brake-lever pivotally connected to the piston, and a fulcrum-link pivotally connected to the swiveling fulcrum-frame and to the brake-lever, substantially as and for the purpose specified.

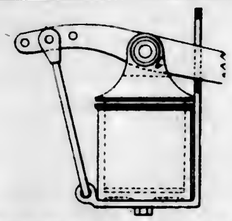
258,312.

Claim.—1. In combination with the tool-spindle J, with its bevel-gear wheel L turning in the sleeve or box K, which is supported and adjusted upon a fixed standard, E, as shown, the swivel-

nected in pairs through a battery and a signaling device, which shows when the circuit is closed and a current is on the line. A suitable electro-magnetic switch at subscriber's station is operated from the central office to cut out the high resistance and give a

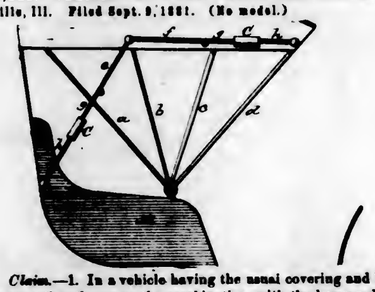
12. The combination, with a series of line-circuits and a central-office instrument normally connected with said lines and common to the series, of a switch-board provided with means for connecting said lines with each other and for disconnecting them from

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3. The combination, in a tender or like brake mechanism, of the horizontally-arranged brake-cylinder and its piston with the fulcrum-frame pivoted on the axis of the cylinder, the brake-lever pivotally connected to the piston and having a series of holes at its ends for the adjustment of the connections with the brakes and fulcrum-link, and the fulcrum-link pivotally connected with the fulcrum-frame and the brake-lever, substantially as and for the purpose specified.

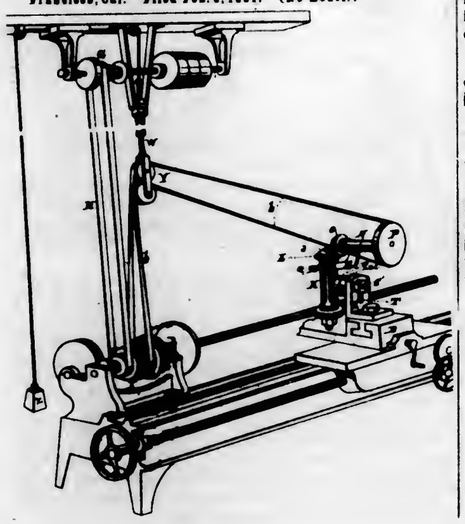
253,313. VEHICLE-TOP JOINT. HENRY REUTCHLER, Belleville, Ill. Filed Sept. 9, 1881. (No model.)



Claim.—1. In a vehicle having the usual covering and bows for supporting the same, the combination, with the brace-rods *e f*, of the right and left screw-rods *g h*, forming the outer brace-rods of the vehicle-top, and connected at their inner or screw-threaded ends with a coupling-sleeve, C, having a right and left screw-thread, and formed in a singe piece to made a rigid connection between the rods *g h*, substantially as and for the purpose set forth.

2. In a vehicle, the combination, with the brace-rods *e f* and rods *g h*, having right and left screw-threads, as shown, of the right and left screw-threaded coupling-sleeve C, having the plain extensions *l* at its ends, of such diameter as to receive the plain or unscrew-threaded portions of the rods *g h*, substantially as and for the purpose specified.

253,314. LATHE ATTACHMENT. HENRY RICHMANN, San Francisco, Cal. Filed Feb. 8, 1881. (No model.)



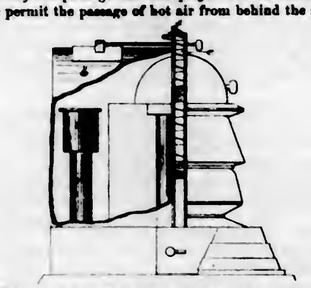
Claim.—1. In combination with the tool-spindle J, with its bevel-gear wheel L turning in the sleeve or box K, which is supported and adjusted upon a fixed standard, R, as shown, the swivel-arm M, turning loosely about the sleeve K and having the set-screw Q, said arm supporting the shaft carrying the bevel-gear O and pulley P at right angles with the tool-spindle, so that it may be fixed at any point radially around the tool-spindle, substantially as and for the purpose herein described.

2. The fixed standard R, slotted at T, and the sleeve K, within which the tool-spindle J revolves, as shown, in combination with the disk *u*, having a projection or lug to fit the slot T and a threaded portion to receive the nut S, and the disk *v*, having a bolt passing through the disk *u* and its projection, and threaded to receive the nut S', whereby a vertical adjustment or an angular adjustment about the bolt as a center may be made, substantially as herein described.

3. In combination with a lathe having the driving-pulley I, and the supplemental tool-carrying spindle J, turning in the sleeve K, which is supported and adjusted upon a standard, R, fixed to the movable rest D, the sliding tension-bar W, with the counter-balance Z, the pulleys Y, the pulley P, and the belt *b*, all combined and operating substantially as herein described.

253,315. FIRE-PLACE HEATER. GEORGE D. SANFORD, Peekskill, assignor of one-half to Watson Sanford, Brooklyn, N. Y. Filed Dec. 5, 1881. (No model.)

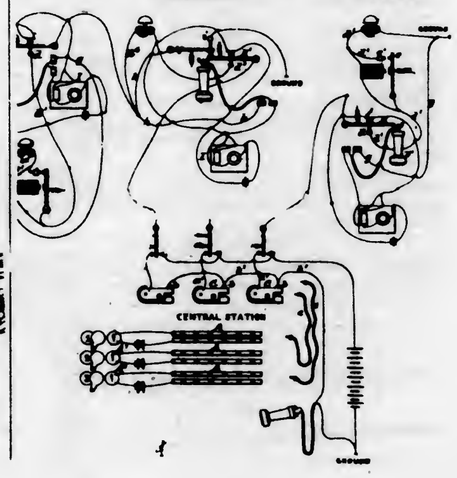
Brief.—Openings between projections on the frame of the heater permit the passage of hot air from behind the same.



Claim.—An extension-frame, *e*, constructed with a series of open spaces, *e*, in combination with the division-plate *f* and the casing of a fire-place heater, substantially as and for the purpose described.

253,316. TELEPHONE-EXCHANGE SYSTEM AND APPARATUS. GEORGE E. SCOTT, Brooklyn, N. Y., assignor to Eugene F. Phillips, Providence, R. I. Filed Feb. 17, 1880.

Brief.—Subscribers' lines having high resistance at their distant terminals are connected at central office to a common ground-line, including a telephone. Switch apparatus is provided for making connections between subscribers and breaking their ground-connections. The horizontal bars of the switch-board are connected in pairs through a battery and a signaling device, which shows when the circuit is closed and a current is on the line. A suitable electro-magnetic switch at subscriber's station is operated from the central office to cut out the high resistance and give a calling-signal.



Claim.—1. In a telephonic exchange system, a series of independent subscribers' wires or circuits, all branching out from and normally in connection with a receiving-instrument at a central office, but adapted to prevent the currents, or a too great portion thereof, from being diverted from the circuit through said central instrument into the branch circuits not in use, and provided with apparatus to receive and enable signals to be made from said central office.

2. In a telephonic exchange system, a series of closed circuits centering in and passing through a single central instrument, and resistance in the said circuits, to confine the electric currents, or the main portion thereof, in the circuit passing through said central instrument.

3. In a telephonic exchange system, a series of circuits, all uniting and passing through a single central instrument and adapted to confine the main portion of the current to the circuit passing through the central instrument, combined with electric switches adapted to be operated from the central office to close the distant end of said circuit through a suitable connection to ground, to enable the usual signals to be operated on any of the circuits from central office.

4. The combination, substantially as hereinbefore described, of a series of wires for telephonic communication with one or more subscribers on each, and radiating from a single ground-wire at a central station, with a listening-telephone connected with said ground-wire and a high resistance near the outer terminus of each subscriber's wire.

5. A telephonic exchange system embodying, substantially as hereinbefore described, a series of subscriber's wires, a telephone, a high resistance, and a signaling apparatus at the outer terminus of each wire, and a central station having a ground-wire and a listening-telephone common to all of the subscribers' wires, in combination with a suitable battery or its equivalent and means for applying the electric power thereof to any and all of the subscribers' wires for overcoming the high resistances thereon and operating the calling-signal.

6. The combination, substantially as hereinbefore described, of a series of telephonic subscribers' wires radiating from a central station, and provided in each case with a subscriber's calling apparatus located near the outer terminus of the wire and between a high resistance and ground, with means at the central station for attaining an electric power to overcome said high resistances and means for applying said power to any and all of the wires in the series for operating subscribers' signals.

7. In a telephonic exchange system involving a series of subscribers' wires or circuits branching from a ground-wire common to all the subscribers' wires, a high resistance located near the end of each subscriber's wire, as and for the purposes specified.

8. In a telephonic exchange system involving a series of subscribers' wires or circuits branching from a ground-wire common to all of them, a calling-signal near the outer end of each subscriber's wire, a high resistance, and a relay operating as a switch for cutting out said resistance, as and for the purposes specified.

9. On a telephonic line-wire provided at its outer terminus with a high resistance, the combination of a spring switch-lever maintained in a depressed position by the weight of a telephone thereon, and a switch to ground, which is automatically controlled by the switch spring-lever when loaded with or released from the weight of the telephone, substantially as described.

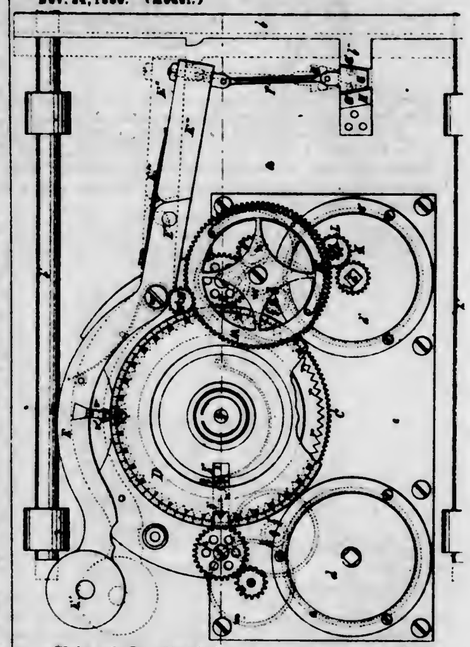
10. At a central station in a telephonic exchange system, the connecting-bars, constructed in pairs, coupled together and to a battery, substantially as described, whereby the power of said battery is placed on any two subscribers' wires when coupled by the connecting-bars, as set forth.

11. A battery and electric indicator combined, in substantially the manner described, with means, such as connecting-bars and conducting-cords, for connecting subscribers' lines with each other, so that in connecting said lines by the aforesaid means the electric indicator and battery are included in the circuit, as set forth.

12. The combination, with subscribers' lines having each a high resistance at the end and a telephone-switch of ordinary or suitable construction for cutting out the said resistance and connecting in the telephone, of a battery, an electric indicator, and means—such as connecting-bars and conducting-cords—for connecting subscribers' lines, said indicator and battery being connected with the said means, as indicated, so that when the subscribers' lines are connected with each other the battery and electric indicator are included in circuit, substantially as described.

12. The combination, with a series of line-circuits and a central-office instrument normally connected with said lines and common to the series, of a switch-board provided with means for connecting said lines with each other and for disconnecting them from said instrument, substantially as described.

253,317. TIME-LOCK. SUMNER SHAW, Boston, Mass. Filed Nov. 24, 1880. (Model.)



Claim.—1. In a time-lock mechanism for safes, the disk-operating gear-wheel C, with its V-shaped teeth *r r r*, combined with its concentrically-arranged index-disk D, having notch *e*, sliding block *t*, and locking-projection *t'*, and the lever E, with its projection *v*, as set forth, by which the index-disk D may be disconnected from the disk-operating gear-wheel C by drawing the block *t* toward the center or automatically by the action of the lever E, as described.

2. The combination of the jointed lever E, its projection *v*, index-disk D, its notch *e*, the stationary block H on the door *a*, the movable wedge G, attached to and operated by the lever E, to effect a lock between the stationary block H and the bolt-work of the safe when the door is shut and the bolts thrown in, as described.

3. In a time-lock mechanism, the gear-wheel M, actuated by the driver *d'*, and having a segmental gear-ring, M', attached to its face, to engage with the small pinion N upon shaft N', in combination with wheel O, having projections O' upon the opposite end of said shaft, striker S, and connecting mechanism, whereby the bell-alarm T is actuated to the running down of driver *d'*, as set forth.

253,318. CAN. JOSEPH SIMPSON, Columbus, Ohio, assignor of one-half to William A. Gill, same place. Filed Dec. 19, 1881. (No model.)

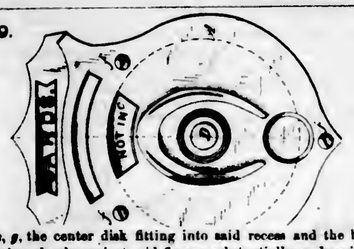


Claim.—The combination, in a can or jar, of the arched top *a*, having upright flange *b*, the convex lid or cap B, having a slight flat horizontal flange, *c*, the packing *c*, and the coiled spring-fastening C, of the form shown, coiled at its center, bearing at one or more points upon the lid and hooked on one side of the top *a* to ear *d*, with the other end curved and held in latch or clasp *d'* on the opposite side of the top, substantially as described.

253,319. INDICATOR. WILMOT STEPHENS, Binghamton, N. Y. Filed Nov. 23, 1881. (Model.)

Claim.—1. In a business-indicator and card-holder, the combination of the front plate provided with an annular recess, *c*, and

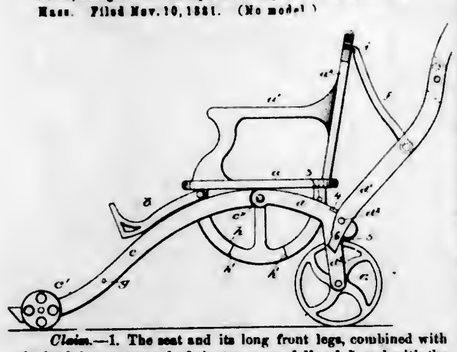
253,319.



a flange, *g*, the center disk fitting into said recess and the back plate fitting closely against said flange, substantially as described.

2. In a business-indicator and card-holder, the combination of the two plates A B, the front one provided on its back with a circular flange and the back one fitting flatly against said flange and extending above the front plate to form the card-holder, substantially as described.

253,320. CHILD'S CHAIR. ASHER B. STEVENS, Stapleton, N. Y., assignor to Thompson, Perley & Waite, Baldwinsville, Mass. Filed Nov. 10, 1881. (No model.)



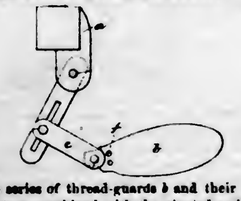
Claim.—1. The seat and its long front legs, combined with the back legs composed of the two parts *d d*³ and *d'*, and with the wheels *e*, the portions *d*³ of the parts *d* of the rear legs carrying the wheels *e*, while the portions *d'* of the said rear legs are pivoted with relation to the portions *d*, as described, to be turned up for a handle when the seat is lowered for a carriage, substantially as set forth.

2. The long front legs, *c*, and the wheel-carrying parts *d d*³ of the rear legs, and parts *d'*, pivoted thereto at *d*³, combined with the brace *f*, pivoted to the rear legs, whereby it is adapted at times to be engaged with the front legs to keep the front and back legs together for a high chair, and at other times to be engaged with the back or other fixed part of the seat or chair, substantially as described.

3. The part *d d*³ of the rear leg, provided with the stops 4 5, combined with the part *d'*, pivoted at *d*³, and having the short end 6 to engage the said stops, substantially as shown and described.

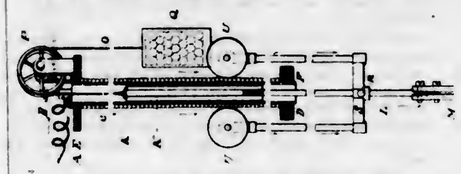
253,321. THREAD-GUARD FOR SPINNING-MACHINES. HORACE E. SWIFT, Hopedale, Mass., assignor to George Draper & Sons, same place. Filed Sept. 6, 1881. (No model.)

Brief.—The intermediate thread-guards of the series are carried by rods, which are supported by the end guards, which in turn are supported by jointed arms or levers, whereby the entire series of thread-guards may be adjusted horizontally or vertically, or in a direction the resultant of both, when desired.



Claim.—The series of thread-guards *b* and their connecting-rods *f* and brackets *a*, combined with the pivoted or jointed arms or levers, whereby the thread-guards may be adjusted vertically or horizontally, as described, or in a direction the resultant of both, to thus place the thread-guards in the described position with relation to the bobbins or their spindles, for the purpose set forth.

253,322. ELECTRIC LAMP. WILLIAM H. THOMAS, Cincinnati, Ohio, assignor of one-half to Samuel W. Skinner, same place. Filed Oct. 27, 1881. (No model.)



Claim.—1. In combination with an electro-magnetic helix, connected at one end with the positive wire from the generator, and constituting the terminus thereof, one or more conductors which travel on naked tracks on the external peripheries of the convolutions of the helix, and have electrical connection with the positive electrode and mechanical attachment to the suction-core, substantially as set forth.

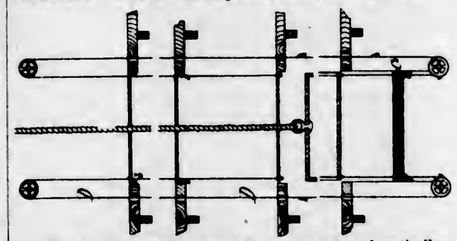
2. In combination with an electro-magnetic helix that constitutes the terminus of the positive wire from the generator, one or more conductors which travel upon naked tracks on the peripheries of the convolutions and have electrical connection with the positive electrode, and direct mechanical attachment, by means of adjustable fastening R, to the suction-core, substantially as set forth.

3. In the described combination, the stationary negative electrode J, of refractory metal, the stationary electro-magnetic coil or helix C, constituting the terminus of the positive rheophore, the positive electrode N, and one or more conductors, U, that traverse naked tracks *e* on the peripheries of the coil-convolutions, and which have electrical connection with the positive electrode and direct mechanical attachment to the suction-core, substantially as set forth.

4. In combination with the electro-magnetic helix C *e*, shifting conductor U, positive electrode N, and suction-core K, the adjustable counterpoise O P Q, substantially as set forth.

253,323. AUTOMATIC ELEVATOR-HATCH. HARRIET R. TRACY, New York, N. Y., assignor to Benjamin T. Babbitt, same place. Filed June 3, 1881. (No model.)

Brief.—The series of hatches above and below the car are connected to and operated by endless bands passing over pulleys and attached to the car or to independent operating mechanism. Suitable stops for the hatches are placed on the endless bands. The lowest hatch above the car is adjustable on the hoisting-cable.



Claim.—1. In an elevator-shaft, the two series of vertically-moving hatches, one above and the other below the car, adapted to close the openings in each floor as the car passes either up or down, the two series being connected by a chain or cable passing over suitable pulleys in the region of the top and bottom of the shaft, substantially as and for the purposes set forth.

2. In an elevator-shaft, the two series of vertically-moving hatches, one above and the other below the car, adapted to close the openings in each floor as the car passes either up or down, the two series being connected by a suitable chain or cable passing over pulleys or wheels, said chain or cable being provided with blocks or stops which determine the location and movement of the hatches in the lower series, substantially as shown and described.

3. In an elevator-shaft, the two series of vertically-moving hatches connected by an endless band or cable having suitable stops or blocks, and running over suitable wheels or pulleys in the region of the top and bottom of the shaft, substantially as shown and described.

4. In an elevator-shaft, the two series of vertically-moving hatches connected by an endless band or cable having suitable stops or blocks, and running over upper and lower pulleys, as explained, the two series being unconnected with the car, and capable of being operated in the manner and for the purposes set forth.

5. In combination with the hatch above the car connected with those below the car by a suitable chain or cable, the adjustable stop located upon the elevator-cable, as and for the purposes set forth.

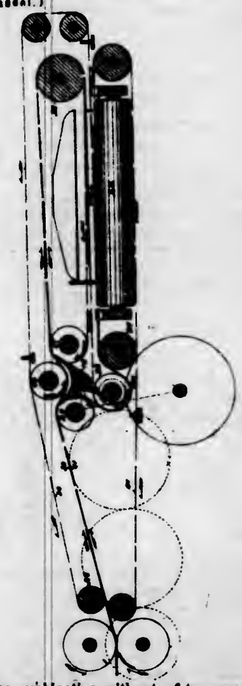
253,324. CARBON-HOLDER FOR ELECTRIC LAMPS. JOHN THOMSON, New York, N. Y., assignor to the United States Electric Lighting Company, same place. Filed Jan. 10, 1881. (No model.)



Claim.—1. The combination, with the lower carbon pencil of an electric lamp, of the flexible or expanding jaws *e*, resting in a tapering socket, *a*, and adapted to clamp the carbon and to be drawn down into the socket by means of a screw-rod and nut, substantially as described.

2. In combination with the socket and griping-jaws of a carbon-holder, a screw-rod for drawing the jaws down into the socket, and adapted to be pushed up between the jaws for displacing the ends of the carbons retained thereby.

253,325. SHEET-DELIVERY APPARATUS FOR PRINTING-MACHINES. STEPHEN D. TUCKER, New York, N. Y. Filed June 28, 1880. (No model.)

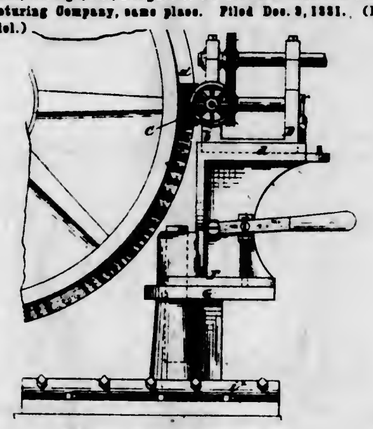


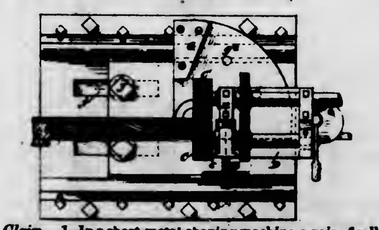
Claim.—1. The combination, with sets of tapes properly sustained so as to constitute two paths of travel for the sheets, and provided with an entrance-point between rollers, as 40 20, of a switching device for directing sheets alternately into said paths of travel, whereby successive sheets are superposed in said pathways, and a detaching device for removing said sheets, all substantially as described.

2. The combination of the cylinder 50 and the devices with which it is supplied, whereby the sheets are primarily acted upon, with sets of tapes properly sustained so as to constitute two paths of travel, and provided with an entrance-point between rollers, as 40 20, a switching device for directing sheets alternately into said paths of travel, and means for removing said sheets simultaneously therefrom, all substantially as described.

3. The combination, with sets of tapes properly sustained so as to constitute separate long and short paths of travel leading from the same, and sheet-conducting devices whereby successive sheets are superposed, of a folding mechanism for delivering said sheets simultaneously as a single product, substantially as described.

253,326. SHEET-METAL-SHAPING MACHINE. ISAAC VAN HAGEN, Chicago, Ill., assignor to the Adams & Westlake Manufacturing Company, same place. Filed Dec. 3, 1881. (No model.)





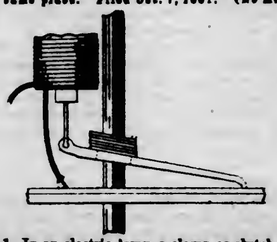
Claim.—1. In a sheet-metal-shaping machine, a pair of rollers, C C', and a rotary chuck, combined and operating substantially as set forth.

2. In a sheet-metal-shaping machine, a pair of rollers, C C', a rotary chuck, and rotary bed-piece F, combined and operating substantially as set forth.

3. In a sheet-metal-shaping machine, a pair of rollers, C C', a rotary chuck, and sliding frame D, combined and operating substantially as set forth.

4. In a sheet-metal-shaping machine, a pair of rollers, C C', a rotary chuck, sliding frame D, and rotary bed-piece F, combined and operating substantially as set forth.

253,327. ELECTRIC LAMP. ADDISON G. WATERHOUSE, New York, N. Y., assignor to the United States Electric Lighting Company, same place. Filed Oct. 7, 1881. (No model.)



Claim.—1. In an electric lamp, a clamp or clutch composed of two or more superposed perforated plates surrounding the carbon-carrier, and adapted to gripe and move the same, substantially as described.

2. The combination, in an electric lamp, with a rod or tube constituting the carbon-carrier, of a clutch composed of two or more superposed perforated plates surrounding the said rod, and mechanism for moving the plates, as and for the purpose set forth.

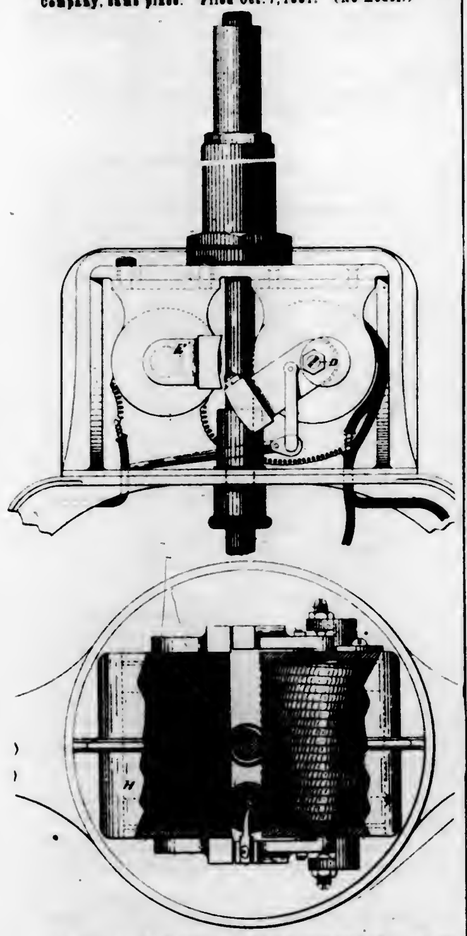
253,328. ELECTRIC LAMP. ADDISON G. WATERHOUSE, New York, N. Y., assignor to the United States Electric Lighting Company, same place. Filed Oct. 7, 1881. (No model.)

253,329.

Claim.—In a sled, the combination, with the cross-bars *a*, side rails, *b*, and seat-board *c*, of the metallic arches *f'*, the side bars, *f*, turned horizontally outward at the top, and the T-iron runners A, the said arch-bars and side bars being riveted together and to the

253,385.

253,328. ELECTRIC LAMP. ADDISON G. WATERHOUSE, New York, N. Y., assignor to the United States Electric Lighting Company, same place. Filed Oct. 7, 1881. (No model.)

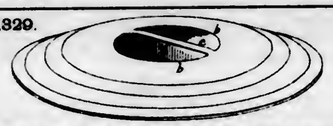


Claim.—1. In an electric lamp, the combination, with the feed-controlling mechanism, of a fixed and pivoted electro-magnet, each containing a single core, with pole-pieces extending at right angles therefrom, one of said magnets being included in the main or lamp circuit and the other in a shunt or derived circuit, substantially as and for the purpose set forth.

2. In an electric lamp, the combination of a fixed electro-magnet, composed of a helix and core, with right-angled polar extensions, with a similarly-constructed electro-magnet connected with the feed-controlling mechanism and pivoted in such a manner that its polar extensions may swing in face of those of the said fixed magnet, one of said magnets being included in the lamp-circuit, the other in a shunt or derived circuit about the lamp, as set forth.

3. The combination, in an electric lamp, with the feed-controlling mechanism, of a fixed electro-magnet composed of a single helix, and a core having right-angled polar extensions, and an electro-magnet composed of a stationary helix and a core capable of rotation therein, and provided with right-angled polar extensions, one of said magnets being included in the main or lamp circuit, the other in a shunt about the lamp, substantially as and for the purpose set forth.

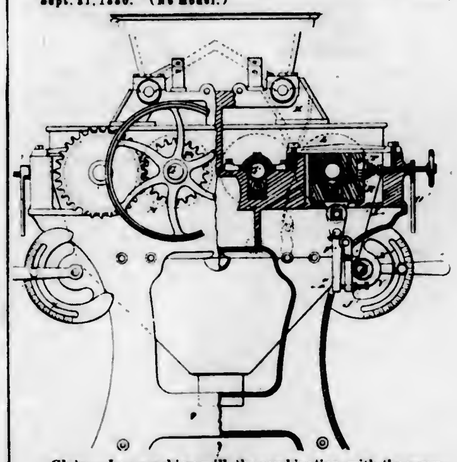
253,329. EARTHENWARE COVER AND HANDLE. CHARLES S. WATKINS, Davenport, Iowa. Filed Nov. 14, 1881. (No model.)



Claim.—1. An earthenware cover or lid provided with the cavities *b b* and the partition *c*, forming the handle molded on and with the cover, substantially as described.

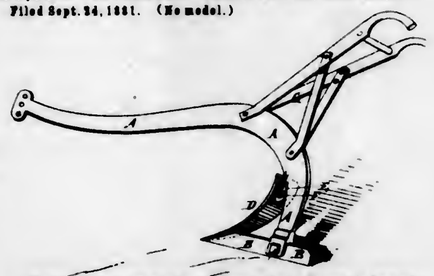
2. The mold B, provided with the convexity *d*, having the groove *d'*, for forming the upper side of an earthenware cover and the handle thereon, substantially as described.

253,330. ROLLER-MILL. JEAN WEBER, Uster, Switzerland, assignor to John Feichter & Sons, Minneapolis, Minn. Filed Sept. 21, 1880. (No model.)



Claim.—In a crushing-mill, the combination, with the movable journals R, of the lever F', the arm H', pivoted thereto, the adjusting-screw J', and the eccentrics K', substantially as herein shown and described, and for the purpose set forth.

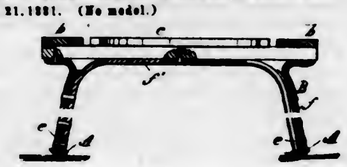
253,331. SHOVEL-PLOW. GEORGE S. ACRE, Mint Hill, No. Filed Sept. 24, 1881. (No model.)



Claim.—1. In a shovel-plow, the curved plow-beam A, formed, as described, with a slotted lower end and with the inclined lug E, substantially as and for the purpose set forth.

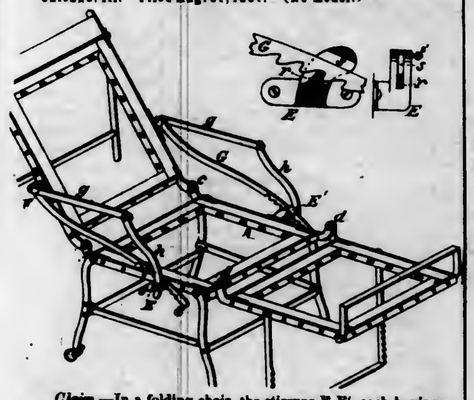
2. In a shovel-plow, the combination, with the beam A, having its lower end slotted and provided with the inclined lug E, of the shovel D, secured at its upper part to the said lug and welded along the center line to the beveled forward end of the bar B, secured in the slotted end of the beam, substantially as and for the purpose set forth.

253,332. SLED. CHARLES M. AMSDEN, Wooster, Ohio. Filed Oct 21, 1881. (No model.)



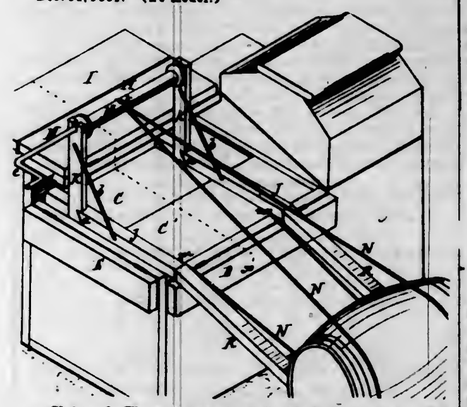
Claim.—In a sled, the combination, with the cross-bars *a*, side rails, *b*, and seat-board *c*, of the metallic arches *f'*, the side bars, *f*, turned horizontally outward at the top, and the T-iron runners A, the said arch-bars and side bars being riveted together and to the rib *e* of the runners, as shown and described.

253,333. FOLDING INVALID-CHAIR. WILLIAM ARMSTRONG, Chicago, Ill. Filed Aug. 31, 1881. (No model.)



Claim.—In a folding chair, the stirrups E E', each having a slot, *s*, and interior stud, *s'*, at the bottom of said slot, and provided with an exterior pin, *s'*, in combination with the seat and the back frames, the arm-rests *g h*, and the ratchet-arms G G, the said arm-rests being pivoted to the said stirrup-pins *s'* and at the back to the pivot-connections of said ratchet-arms, as shown and described.

253,334. OIL-TANK. JOHN D. ARNOLD, Holley, N. Y. Filed Dec. 12, 1881. (No model.)



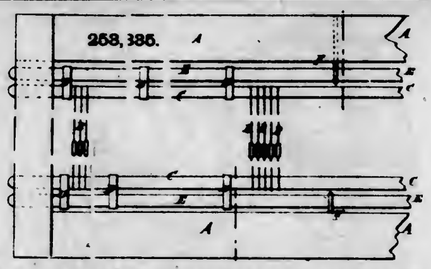
Claim.—1. The casing constructed with the hinged covers H I and the hinged front and end pieces, D E, arranged, as described, so that when turned backward and downward they leave a flat and unobstructed space on top of the case to receive a barrel when rolled thereon, as herein shown and described.

2. In combination with the casing having an upper portion capable of being opened and closed, the knockdown elevator consisting of the cross-bars J J, standards K K, braces *b b*, windlass M, rope or cable N, and skids E E, the parts being of dimensions to be inclosed in the upper portion of the casing, substantially as described.

253,335. HEDDLE-FRAME. JOHN ASHWORTH, Wetherodville, Md. Filed July 2, 1881. (No model.)

Brief.—The bars on which the heddles are strung are connected by links to outer bars suspended by hooks or eyes from the top and bottom of the frame. The side bars of the frame are made double or slotted for the passage of the heddle-supporting bars.

Claim.—The combination, with the frame A, having slotted side bars, the heddles B, and the heddle-bars C, of the bars E, arranged between the said frame and heddle-bars, the links D, and



the hooks or eyes F, whereby the heddle-bars are prevented from bending and twisting and the heddles rendered easily changeable, substantially as shown and described.

253,336. HORSE-POKE. FRANKLIN P. ATHEY, Middleway, W. Va., assignor to himself and Benjamin C. Roberts, same place. Filed Aug. 30, 1881. (No model.)

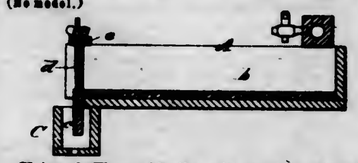


Claim.—1. The reach B, formed with the slot *a*, in combination with the frame C and the bow A, substantially as and for the purpose specified.

2. The frame C, pivoted to the bow below the pivot *a'*, upon which the reach is pivoted, in combination with the slotted reach and the bow, the reach being formed with a rear extension, substantially as and for the purpose set forth.

3. The reach B, formed with the slot *a*, and provided with the spring *f*, in combination with the frame C, pivoted in the bow below the pivot of the reach, substantially as and for the purpose set forth.

253,337. APPARATUS FOR THE MANUFACTURE OF STARCH. ANTHONY ATKINSON, New York, N. Y. Filed Sept. 15, 1881. (No model.)



Claim.—1. The combination, with starch-troughs, of adjustable gates or dams, substantially as shown and described.

2. The adjustable gates *c*, combined with trough A, substantially in the manner and for the purposes set forth.

3. The combination of trough A, spout C, sliding gates *c*, and adjusting-screws *d*, substantially as shown and described, for the purpose specified.

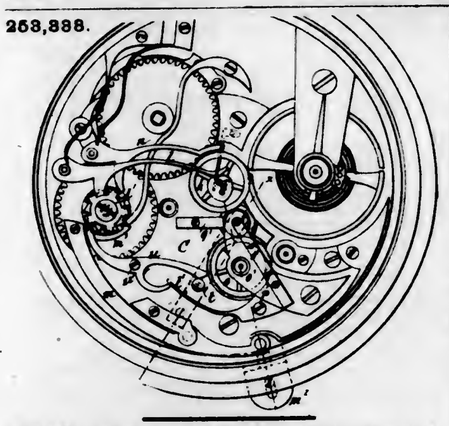
253,338. STOP-WATCH. CHARLES H. AUDEMARS, Brassus, Switzerland. Filed June 23, 1881. (No model.)

Claim.—1. In a stop-watch, the combination, with the arbor *p*, which carries a fixed pinion, *r*, and a spring-supported loose pinion, *q*, of the two springs *r' s'*, of unequal power, and arranged to bear upon opposite ends of said arbor, whereby the pinions are forced out of connection by a strong spring and into connection by a weak spring, for the purpose specified.

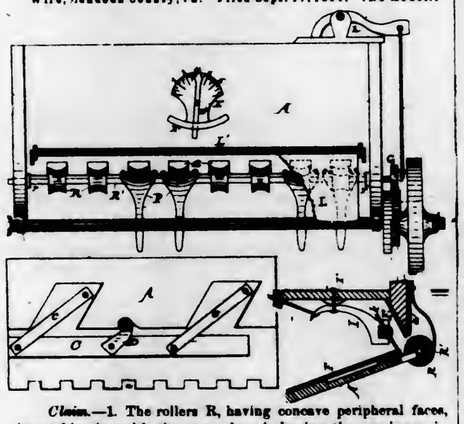
2. The loose pin *t*, bevel-ended and protruding through plate C, the lever *u*, pressed by a spring, *s'*, and the ratchet-wheel *t'*, movable by a stem, m^2, in combination with the spring *r'*, arbor *p*, and spring *s*, the spring *s* being weaker than the spring *r'*, whereby the weak spring *s* is allowed to raise the arbor *p* and wheel *r*, as described.

3. In stop-watches, the combination, with the pinion *k* on arbor *s* and the second-hand pinion on arbor *s'*, of the loose pinion *q* and fast pinion *r* on the same vertically-movable arbor *p*, the former gearing with pinion *o* and the latter with pinion *k*, said pinions *r q* having respectively pin and teeth on their opposite faces, as and for the purpose specified.

253,838.



253,839. FERTILIZER-DISTRIBUTER FOR GRAIN-DRILLS. GIDEON D. BAKER, Lovettsville, assignor of one-half to George Wire, Loudoun County, Va. Filed Sept. 17, 1881. (No model.)



Claim.—1. The rollers R, having concave peripheral faces, in combination with the guano-box A, having the openings *a* in the lower rear corner, said rollers being mounted on a shaft outside of said corner, and extending flush with or a little beyond the inner line of the box, substantially as set forth.

2. The combination of the slide C, links *e e*, and operating-lever D, shaft D′, hand-lever D², and spring *d*, forcing one end of the lever D² outward, with the ratchet E′ mounted outside of the lever D², the latter being adapted to be released from the ratchet by pressing down the spring end of it, as set forth.

3. The dial E, formed into the journal-box *e*, and having the ratchet E′ formed on the under side of an elevated portion, in combination with the lever D², shaft D′, and with the spring *d*, forcing the lever D² into engagement with the ratchet, as set forth.

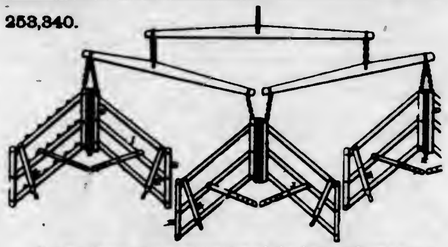
4. The guano-box described, cut away in the back to receive the slide and its operating-links, and having a sloping bottom formed on the wood, and a feather-edge, *a′*, at the point where the rollers revolve, and having the lining F, covering the entire interior of the box, lying over the slide and attachments, and also having the openings *a* in the rear corner provided with the metal boxes *a²*, forming with the lining F a complete metal cover for the port *a′*, substantially as set forth.

253,840. HARROW. JAMES M. BARLEY, Sedalia, Mo. Filed July 28, 1881. (Model.)

Claim.—1. The combination of an equalizing-draft attachment, substantially as set forth, with six sections of harrow-frames, the harrow being connected together in pairs, substantially as shown.

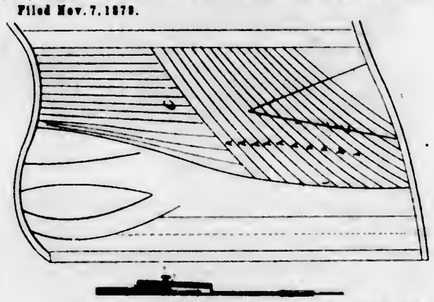
2. In a harrow, the combination of a set of rigid teeth which are adapted to run between the rows and a set of elastic spring-teeth which are intended to run directly upon the growing plants, substantially as set forth.

253,840.



3. In a harrow, the combination of the harrow-frame carrying rigid teeth with one or more bars placed at any suitable angle thereto, and provided with a series of elastic spring-teeth, substantially as specified.

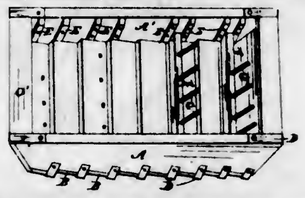
253,841. CORSET. ISAAC W. BIRDSEYE, Birmingham, Conn. Filed Nov. 7, 1879.



Claim.—1. In a corset, a pocket formed in the clasping-edge by turning a part over onto itself, and so that said pocket will receive the steel *b*, combined with a second pocket stitched upon the folded-over portion of the first pocket, then turned back and stitched to the first part, and so as to form a pocket overlapping the first pocket, and form a pocket for the second steel, *c*, overlapping the first, and secured by the stitching of the second pocket upon the first, substantially as described.

2. In a corset, the hip-section constructed with a series of stays, *h*, running diagonally from the rear edge of said section downward and forward over the hip-gore, and vertical stays arranged above said diagonal stays, substantially as described.

253,842. COMBINED HARROW AND PULVERIZER. JACOB BLESSING, Bloomdale, Ohio. Filed Dec. 16, 1881. (No model.)



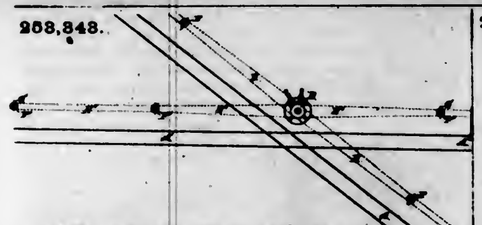
Claim.—In a harrow and earth-packer, the combination of the notched side A, provided with guides for the reception of the tooth-bars, and cross-pieces B, seated in the notches of the sides A, and having a metallic strip or plate, D, as and for the purpose set forth.

253,843. SAFETY-SIGNAL FOR RAILWAYS. PETER C. SOUCK, Pittsfield, Mass. Filed June 16, 1881. (No model.)

Brief.—The targets of each series of signals pertaining to different lines of track, where the lines cross each other, are operated simultaneously from a given point, but are capable of independent movement when desiring to block both lines for any reason.

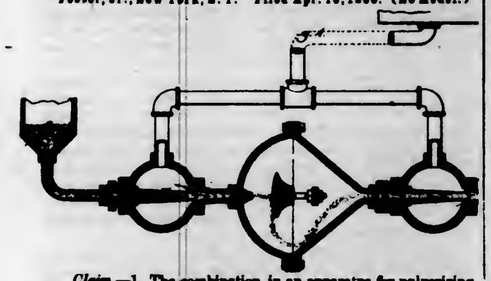
Claim.—1. In a safety-signal for the crossing-points of different railway-tracks, the combination, with a central operating-station, as herein described, of several series of connected signal-targets adapted to receive a simultaneous changing movement by a positive motion imparted to them from the said central station, as herein set forth, each of the several series of targets being exclusively appropriated to a line of tracks running parallel with that particular line of targets, but all the targets being connected to move conjunctively, as and for the purpose herein specified.

253,843.



2. In a safety-signal apparatus, the combination, with a sleeve, *b′*, provided with a lever, D, of the sleeve *b²*, surrounding the sleeve *b′*, and provided with a lever, D′, both of said sleeves being supplied with appliances for moving different lines of signals, as herein described, and adapted to move conjunctively as one piece, or separately, as and for the purpose specified.

253,844. APPARATUS FOR PULVERIZING GRAIN, ORES, &c. LEWIS S. CHICHESTER, Jersey City, N. J., assignor, by direct and mesne assignments, to Charles G. Francklyn and William Foster, Jr., New York, N. Y. Filed Apr. 13, 1880. (No model.)



Claim.—1. The combination, in an apparatus for pulverizing grain, ores, and other materials, of a supply-pipe, a jet-pipe from which air under a high pressure is caused to issue, a target against which the material to be shattered is hurled, and a case surrounding the target and sufficiently close to the same to confine the air, and against which onto the materials are hurled by the current of air as they are deflected from the target, substantially as set forth.

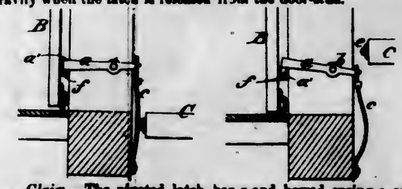
2. In an apparatus for pulverizing grain and other material, the combination, with the supply-pipe, the jet-pipe, and the target, of a case around the target, against which the material is hurled as it is deflected from the target, and which case is contracted, and a second pipe, and jet-pipe, connected with the case and a second target, substantially as specified, whereby the material receives two or more shattering impacts in the apparatus, substantially as specified.

3. In an apparatus for pulverizing grain and other materials, the combination, with the supply-tube and jet-tube for air under a high pressure, of a convex target, against which the material is shattered and from which the said material passes freely as it rebounds, as set forth.

4. The combination, with the ejector and target in an apparatus for pulverizing grain and other materials, of a central support at the back of the target and a cross-bar for the same, substantially as set forth.

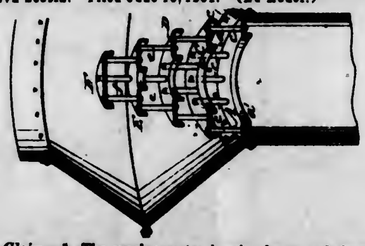
253,845. SELF CLOSING ELEVATOR-DOOR. THEODORE M. CLARK, Boston, Mass. Filed Nov. 1, 1881. (No model.)

Brief.—A lug on the elevator bears against a bowed spring on the door-frame, which tilts a latch, so as to engage a stud on the door and retain it in an open position. The sliding door closes by gravity when the latch is released from the door-stud.



Claim.—The pivoted latch-bar *a* and bowed spring *c*, combined with door B, having stud *f*, and platform C, having a lug or projection for contact with the spring, substantially as and for the purposes set forth.

253,846. SPARK-ARRESTER. GIDEON S. COOK, Windsor, Nova Scotia. Filed June 13, 1881. (No model.)

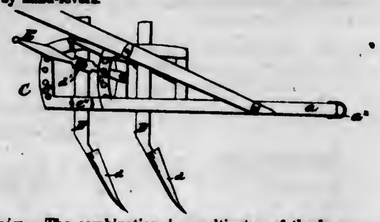


Claim.—1. The spark-arrester herein shown and described, composed of the series of annular flanged plates of gradually-diminishing diameter secured in the stack and supported upon posts one above the other, the whole being surmounted by the solid plate F, all constructed and arranged substantially as shown and described.

2. The annular plates C, D, and E, formed with downwardly-projecting flanges, in combination with the flanged plate A and the flanged solid plate F, said plates being arranged one above the other and supported upon posts, substantially in the manner and for the purposes herein described.

253,847. PLOW. FRANCIS E. COOPER and JOHN LEHNER, Colerain, Ohio. Filed Dec. 14, 1881. (Model.)

Brief.—The standards are adjustable vertically in guides, and are held by hand-levers.



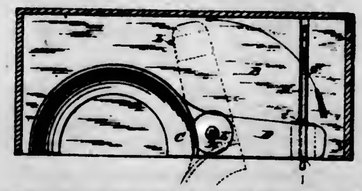
Claim.—The combination, in a cultivator, of the beams *a*, frames C, with perforated sides *c²*, and sockets *c′*, the lever E, having slots *e* and studs *d′*, the pin and spring *d′ d²*, and standard D, substantially as shown and described.

253,848. REVOLVING BOOT-HEEL. WILLIAM CRAIG, Jamestown, N. Y. Filed July 26, 1881. (No model.)



Claim.—The combination, in a revolving heel for boots or shoes, of the stationary part B, having the central recess, *f*, and chamber *a*, spindle D, having the top plate, E, provided with the central lug, F, and notched bottom cross-head, G, and revolving part C, attached permanently to the spindle D, substantially as and for the purpose herein shown and described.

253,849. STORE-COUNTER SEAT. ANDREW J. CULBERTSON, San Andreas, Cal. Filed May 31, 1881. (Model.)

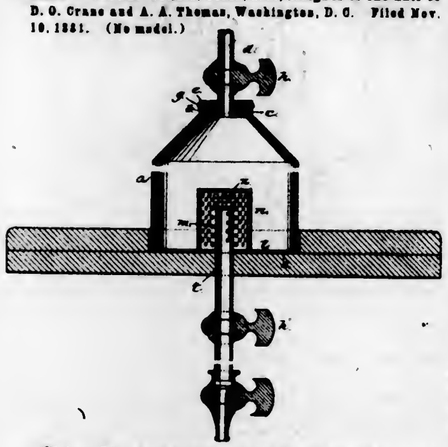


Claim.—In a store-counter, the combination of a seat, B, pivoted on the shaft H, and provided with arm D, the case E, carrying a coiled spring, G, attached at one end to said shaft, the stop I, and the spring-lever J, having shoulders *i i*, substantially as shown and described.

253,850. INEXTINGUISHABLE SELF-IGNITING SIGNAL.

253,853. FRUIT-SQUEEZER. WILLIAM B. DEAN, New York.

253,350. INEXTINGUISHABLE SELF-IGNITING SIGNAL-LAMP. THOMAS CURTIS, Ocala, Fla., assignor of one-half to D. O. Crane and A. A. Thomas, Washington, D. C. Filed Nov. 10, 1881. (No model.)



Claim.—The air-tight lamp-body *a*, having the screw-neck *b*, packing *g*, screw-burner *d*, and stop-cock *h* at its upper end, and at its lower end the downwardly-extending inlet-tube *k*, its perforated upper end, *m*, within the receiver, the perforated inclosing-wall *n* of the chamber *z* around said end, and the lower stop-cock, *h'*, substantially as specified.

253,351. ORNAMENTAL CHAIN-LINK. SALOMON DAVIDSON, New York, N. Y. Filed Dec. 7, 1881. (No model.)

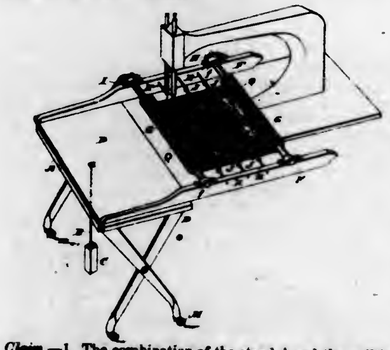
Brief.—The link has recesses formed at its ends. Collars embrace the link and fit into recesses. An ornamental plate may be secured to the link by said collars.



Claim.—1. In a chain-link, the tube having recesses *a* at its ends, with one or more collars embracing the tube and fitting in said recesses, substantially as described.

2. The combination, in a chain-link, of the tube A, having at its ends the collars *b*, fitted into recesses in the tube, and an ornamental plate arranged upon the exterior of the tube and engaging at its ends with the said collars, substantially as described.

253,352. QUILTING-FRAME. HENRY T. DAVIS, Sherman, Tex. Filed Mar. 31, 1881. (Model.)



Claim.—1. The combination of the stand A and the quilting-frame movable thereon, having board D, arms F, and rollers G G', substantially as described.

2. The combination of a stand, A, the quilting-frame having board D, arms F, and rollers G G', the cord B, and the weight C, substantially as set forth.

3. The combination of the stand A, pivot-screw L, and the quilting-frame having board D, arms F, and rollers G G', substantially as and for the purposes set forth.

253,353. FRUIT-SQUEEZER. WILLIAM B. DEAN, New York, N. Y. Filed May 10, 1881. (Model.)

Brief.—The device is provided with handles parallel with each other, the lower handle being provided with legs at its extremities. The removable bottom die is provided with an upwardly-projecting flange, whereby the pulp is forced upon the top of said die.



Claim.—1. In a lemon-squeezer, the combination, with the upper handle, E, of the lower handle, G, running parallel therewith and having legs or standards H H, secured at its extreme end, whereby in squeezing a lemon the power of compression by the hand may be combined with pressure exerted upon the upper handle, substantially as shown and described.

2. A lemon or fruit squeezer constructed substantially as herein shown and described, consisting in the combination of the legs I H with the lower handle, G, provided with a frame, A, the juice-cup B, the removable die C, and the hinged handle E, provided with a stationary die D, as set forth.

3. In a lemon-squeezer, the combination, with the frame A, having ring or shoulder F, of a juice-cup, B, forming part of the squeezer and supporting a perforated die, substantially as herein shown and described, whereby the juice will be caught as it is expressed from the lemon and re-strained through the die by inverting the squeezer, as set forth.

4. In a lemon-squeezer, the removable bottom die, C, constructed with a projecting cutting-edge, P, around its top, substantially as herein shown and described, whereby the pulp is collected above the die, as set forth.

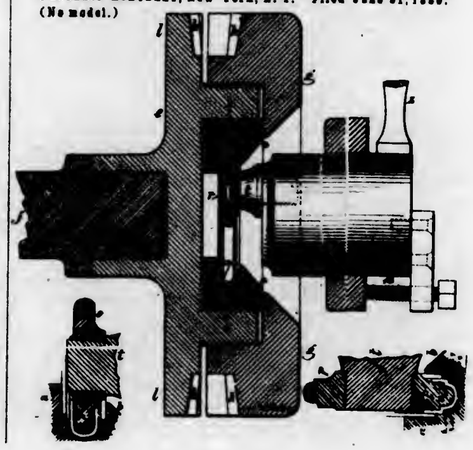
5. In a lemon-squeezer, the combination, with the frame A, having ring F, of the juice-cup B, having shoulders L M, and the separate die C, substantially as herein shown and described, whereby the said cup and die are connected with and supported by the said frame, as set forth.

253,354. PHOTOGRAPHIC PAPER. GEO. EASTMAN, Rochester, N. Y. Filed Dec. 19, 1881. (Specimens.)



Claim.—As a new article of manufacture, a package for photographers' use composed of sheets of sensitized photographic paper cut to suitable sizes, glued at their margins, provided with a suitable backing, and inclosed in a light-tight case or wrapper, substantially as and for the purposes described.

253,355. DEVICE FOR MAKING WATCH-CASE CENTRES. FREDERIC SCHUBERT, New York, N. Y. Filed June 21, 1880. (No model.)



Claim.—1. In a two-part die having offsets, annular flanges, and knurled surface for watch-case centers, a circular recess in one ring-die and a corresponding circular projection on the other ring-die, to prevent lateral movement of one die or the other, in combination with pins on one ring-die and holes in the other ring-die, as and for the purposes set forth.

2. In combination with the rings *a b*, forming a hollow die corresponding to the exterior of the watch-case center, the chuck *c*, having a recess for the rings *a b*, and the ring *g*, screwed upon the outside of the chuck and clamping the rings *a b* together, as set forth.

3. The chuck *c*, having teeth *h* and dies *a b* jointly with toothed ring *g*, screwed upon said chuck and pinion *m*, substantially as described.

4. The method herein specified of manufacturing watch-case centers, consisting in clamping a hollow sheet-metal ring between two ring-shaped dies, rolling the metal out into the knurled portion of the die to form the largest portion of the watch-case center first, then spreading the metal outwardly by a second roller to form the annular offsets or shoulders for the lids, substantially as set forth.

5. The method herein specified of manufacturing watch-case centers, consisting in clamping a hollow sheet-metal ring between two ring-formed dies, rolling the metal outwardly into the die by one roller to form the largest or knurled portion of the watch-case center, then spreading the metal outwardly by a second roller to form the offsets or shoulders for the lids of the case, and then spreading the metal outwardly by a third roller to form the annular offsets or shoulders for inner lid and ring of the glass, substantially as set forth.

6. In the manufacture of watch-case centers, the combination, with the hollow die that corresponds to the exterior surface of the center, of a roller corresponding to the interior surface of the watch-case center and having a groove at 10 to form the rib upon which the plate of the watch-works rests, substantially as specified.

7. The combination, with the die *a b* and its clamping and revolving mechanism, of the cylindrical stock *w*, having an eccentric arbor at one end for the rollers *s p* or *r*, and the lever *z*, for giving to such stock a partial rotation for the purposes and as set forth.

253,356. SPECTACLE-LENS CASE. GEORGE D. EDMONDSON, Detroit, Mich. Filed Apr. 25, 1881. (No model.)



Claim.—A lens-package consisting of an envelope adapted to hold two lenses side by side, said envelope provided with two transverse lines or creases, along which it may be folded to bring the lenses face to face, and adapted to receive a printed or written description of the contents between the said lines, substantially as described.

253,357. METHOD OF TREATING WOOD IN ORDER TO OBTAIN FIBER SUITABLE FOR PAPER-MAKING, &c. JARL D. EKMAN, 87½ Old Broad Street, London, England. Filed Dec. 10, 1881. (No specimens.) Patented in England July 13, 1881, in France Nov. 16, 1881, and in Belgium Nov. 12, 1881.

Claim.—The boiling of wood under pressure with a solution containing sulphurous acid and magnesia, in the proportions and under the conditions substantially as described.

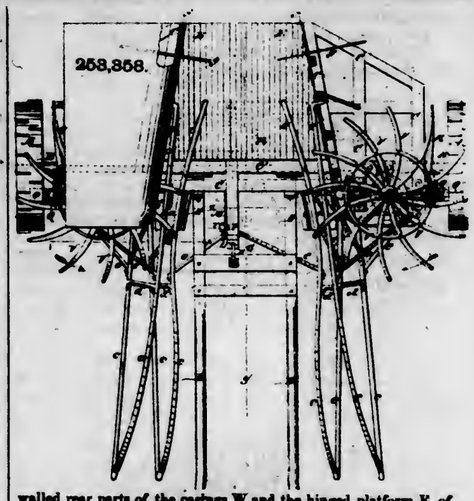
253,358. CORNSTALK-HARVESTER. WILLIAM I. ELY, Freehold, N. J. Filed Oct. 26, 1881. (No model.)

Claim.—1. The combination of the hinged platform E, the frame C, having arms F, the chains G, the angle-lever H, the lever I, pivoted to arm F, and the connecting-bar J, pivoted to hanger K, said hanger being rigidly attached to the middle of the lower side of platform, as and for the purpose specified.

2. The combination, with the cutters *a*, of the guide-arms *c*, made V-shaped, with the angle in front, with the lower arm nearly or quite horizontal, and with the upper arm rising gradually as it extends to the rear, said arms being connected at the middle by rods *d*, for the purpose specified.

3. In a cornstalk-harvester, the combination, with the frame C and the guides *c*, of the tie-rods *d* and the braces *e*, substantially as herein shown and described, whereby the said guides are strengthened in place, as set forth.

4. In a cornstalk-harvester, the combination, with the double-



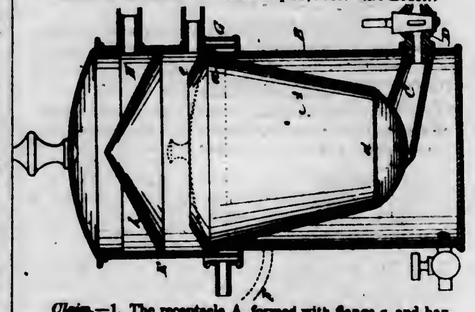
walled rear parts of the casings W and the hinged platform E, of the flanges *f*, substantially as herein shown and described, whereby stalks are kept from getting between the said casings and platform, as set forth.

253,359. HOG-TENDON CUTTER. ORVILLE RWING, Decatur, Ill. Filed Dec. 24, 1881. (No model.)



Claim.—The instrument for cutting tendons, consisting of bar *a*, knife *c*, knives *i i*, sliding bar *d*, and means for forcing said sliding bar forward, all combined substantially as shown, and for the purpose set forth.

253,360. COMBINED PERCOLATOR AND STILL. BYRON FREEMAN, Westfield, N. Y. Filed May 25, 1881. (No model.)



Claim.—1. The receptacle A, formed with flange *a*, and having opening *c* in the bottom, and diaphragm *d* and the surrounding water-tank B, formed with water-seal G, in combination with the removable still attachment E, substantially as and for the purpose specified.

2. The still attachment E, provided with the flange *e*, and the conical partition I, forming the condenser H, in combination with the tank B and water-seal G, substantially in the manner and for the purposes set forth.

3. The water-tank B, formed with the water-seal G and the receptacle A, suspended in the tank, in combination with the removable still, the lower edge of which is adapted to fit in the chamber G, substantially as set forth.

253,361. APPARATUS FOR THE PRESERVATION OF MILK. [illegible] GR[illegible], [illegible], Switzerland. Filed Dec. 19, 1881. (No model.) Patented in Switzerland Aug. 31, 1881.

Claim.—1. The combination, with the milk-chamber A, of the cooling-chamber B, the ice-chamber C, the pipe *a*, and the pipe *b*, substantially as and for the purpose specified.

2. The combination, with the milk-chamber A, of the cooling-chamber B, the ice-chamber C, the pipe *a*, the pipe *b*, and the pipe *c*, substantially as and for the purpose specified.

3. The combination, with the milk-chamber A, of the cooling-chamber B, the ice-chamber C, the pipe *a*, the pipe *b*, the pipe *c*, and the pipe *d*, substantially as and for the purpose specified.

4. The combination, with the milk-chamber A, of the cooling-chamber B, the ice-chamber C, the pipe *a*, the pipe *b*, the pipe *c*, the pipe *d*, and the pipe *e*, substantially as and for the purpose specified.

253,362. CHAIR. JOHN W. FOSTER, Boston, Mass. Filed Dec. 19, 1881. (No model.)

Claim.—1. The combination, with the seat-frame, of the back-frame, the rock-shaft, the arms connecting the back-frame with the rock-shaft, the arms connecting the seat-frame with the rock-shaft, and the spring, substantially as and for the purpose specified.

2. The combination, with the seat-frame, of the back-frame, the rock-shaft, the arms connecting the back-frame with the rock-shaft, the arms connecting the seat-frame with the rock-shaft, the spring, and the adjusting-bar, substantially as and for the purpose specified.

3. The combination, with the seat-frame, of the back-frame, the rock-shaft, the arms connecting the back-frame with the rock-shaft, the arms connecting the seat-frame with the rock-shaft, the spring, the adjusting-bar, and the stop, substantially as and for the purpose specified.

253,363. CHAIR. JOHN W. FOSTER, Boston, Mass. Filed Dec. 19, 1881. (No model.)

Claim.—1. The combination, with the seat-frame, of the back-frame, the rock-shaft, the arms connecting the back-frame with the rock-shaft, the arms connecting the seat-frame with the rock-shaft, and the spring, substantially as and for the purpose specified.

2. The combination, with the seat-frame, of the back-frame, the rock-shaft, the arms connecting the back-frame with the rock-shaft, the arms connecting the seat-frame with the rock-shaft, the spring, and the adjusting-bar, substantially as and for the purpose specified.

3. The combination, with the seat-frame, of the back-frame, the rock-shaft, the arms connecting the back-frame with the rock-shaft, the arms connecting the seat-frame with the rock-shaft, the spring, the adjusting-bar, and the stop, substantially as and for the purpose specified.

253,364. CHAIR. JOHN W. FOSTER, Boston, Mass. Filed Dec. 19, 1881. (No model.)

Claim.—1. The combination, with the seat-frame, of the back-frame, the rock-shaft, the arms connecting the back-frame with the rock-shaft, the arms connecting the seat-frame with the rock-shaft, and the spring, substantially as and for the purpose specified.

2. The combination, with the seat-frame, of the back-frame, the rock-shaft, the arms connecting the back-frame with the rock-shaft, the arms connecting the seat-frame with the rock-shaft, the spring, and the adjusting-bar, substantially as and for the purpose specified.

3. The combination, with the seat-frame, of the back-frame, the rock-shaft, the arms connecting the back-frame with the rock-shaft, the arms connecting the seat-frame with the rock-shaft, the spring, the adjusting-bar, and the stop, substantially as and for the purpose specified.

253,365. CHAIR. JOHN W. FOSTER, Boston, Mass. Filed Dec. 19, 1881. (No model.)

Claim.—1. The combination, with the seat-frame, of the back-frame, the rock-shaft, the arms connecting the back-frame with the rock-shaft, the arms connecting the seat-frame with the rock-shaft, and the spring, substantially as and for the purpose specified.

2. The combination, with the seat-frame, of the back-frame, the rock-shaft, the arms connecting the back-frame with the rock-shaft, the arms connecting the seat-frame with the rock-shaft, the spring, and the adjusting-bar, substantially as and for the purpose specified.

3. The combination, with the seat-frame, of the back-frame, the rock-shaft, the arms connecting the back-frame with the rock-shaft, the arms connecting the seat-frame with the rock-shaft, the spring, the adjusting-bar, and the stop, substantially as and for the purpose specified.

253,366. CHAIR. JOHN W. FOSTER, Boston, Mass. Filed Dec. 19, 1881. (No model.)

Claim.—1. The combination, with the seat-frame, of the back-frame, the rock-shaft, the arms connecting the back-frame with the rock-shaft, the arms connecting the seat-frame with the rock-shaft, and the spring, substantially as and for the purpose specified.

2. The combination, with the seat-frame, of the back-frame, the rock-shaft, the arms connecting the back-frame with the rock-shaft, the arms connecting the seat-frame with the rock-shaft, the spring, and the adjusting-bar, substantially as and for the purpose specified.

3. The combination, with the seat-frame, of the back-frame, the rock-shaft, the arms connecting the back-frame with the rock-shaft, the arms connecting the seat-frame with the rock-shaft, the spring, the adjusting-bar, and the stop, substantially as and for the purpose specified.

253,367. CHAIR. JOHN W. FOSTER, Boston, Mass. Filed Dec. 19, 1881. (No model.)

Claim.—1. The combination, with the seat-frame, of the back-frame, the rock-shaft, the arms connecting the back-frame with the rock-shaft, the arms connecting the seat-frame with the rock-shaft, and the spring, substantially as and for the purpose specified.

2. The combination, with the seat-frame, of the back-frame, the rock-shaft, the arms connecting the back-frame with the rock-shaft, the arms connecting the seat-frame with the rock-shaft, the spring, and the adjusting-bar, substantially as and for the purpose specified.

3. The combination, with the seat-frame, of the back-frame, the rock-shaft, the arms connecting the back-frame with the rock-shaft, the arms connecting the seat-frame with the rock-shaft, the spring, the adjusting-bar, and the stop, substantially as and for the purpose specified.

253,368. CHAIR. JOHN W. FOSTER, Boston, Mass. Filed Dec. 19, 1881. (No model.)

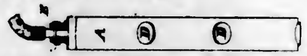
Claim.—1. The combination, with the seat-frame, of the back-frame, the rock-shaft, the arms connecting the back-frame with the rock-shaft, the arms connecting the seat-frame with the rock-shaft, and the spring, substantially as and for the purpose specified.

2. The combination, with the seat-frame, of the back-frame, the rock-shaft, the arms connecting the back-frame with the rock-shaft, the arms connecting the seat-frame with the rock-shaft, the spring, and the adjusting-bar, substantially as and for the purpose specified.

3. The combination, with the seat-frame, of the back-frame, the rock-shaft, the arms connecting the back-frame with the rock-shaft, the arms connecting the seat-frame with the rock-shaft, the spring, the adjusting-bar, and the stop, substantially as and for the purpose specified.

253,361. APPARATUS FOR THE TREATMENT OF TIMBER FOR PRESERVING IT. HENRY FLAD, St. Louis, Mo. Filed May 4, 1881. (No model.)

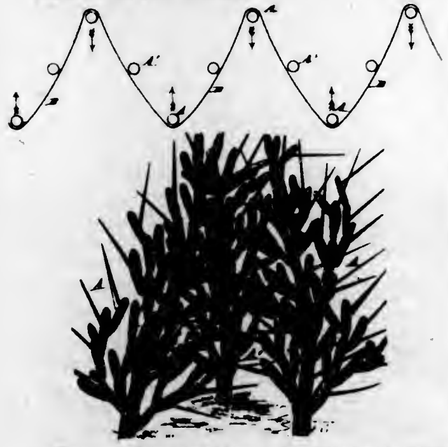
Brief.—The flexibility of the ring or hoop allows it to conform to the periphery of the log.



Claim.—1. The flexible metal hoop A, whose edge is fitted to enter the timber, provided with means for connection of a pipe or hose, for the purpose set forth.

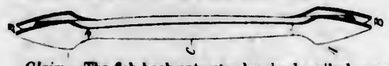
2. The flexible metal hoop A, whose edge is fitted to enter the timber, provided with bosses D and nozzle E, substantially as and for the purpose set forth.

253,362. HEDGE. EDWARD H. FLEMING, Thery's Spring, Tex. Filed Oct. 31, 1881. (No model.)



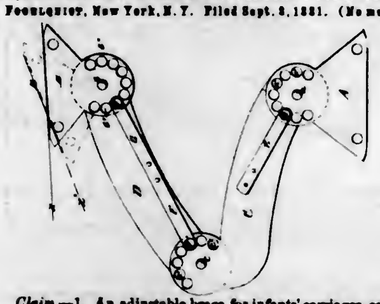
Claim.—A living cactus hedge or fence composed of three rows of plants, A A' A, arranged as described, combined with a chain or rope, B, passing around the alternating plants of the outer rows, as described, whereby the said plants will be trained to converge toward each other, substantially as set forth.

253,363. FISH-HOOK EXTRACTOR. JEREMIAH W. FOARD, San Francisco, Cal. Filed Oct. 1, 1881. (Model.)



Claim.—The fish-hook extractor herein described, consisting of the shaft C, having overlapping flanges A at the point and adjacent sides, forming recesses B, substantially as shown, and for the purposes specified.

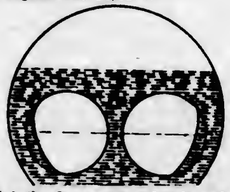
253,364. FOLDING BRACKET FOR CARRIAGE-TOPS. CARL M. FOERLEICH, New York, N. Y. Filed Sept. 8, 1881. (No model.)



Claim.—1. An adjustable brace for infants' carriages, consisting of the body-bracket A, the arms C and D, and the top bracket, B, pivoted together successively and held in position by spring-catches, substantially as specified.

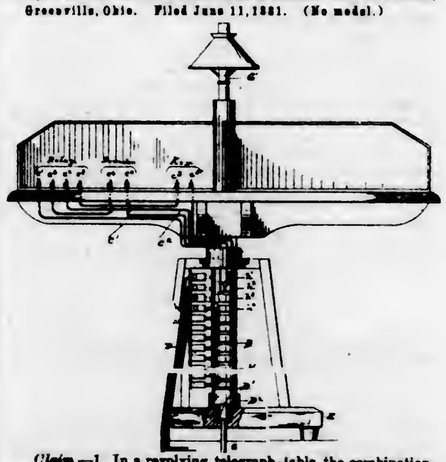
2. A carriage-brace consisting of the bracket-plates A B and arms C D, pivoted together at *a c b*, substantially as shown and described, the said bracket-plates and one of the said arms being provided with a series of notches or catches, *a' c' b'*, partly surrounding the said pivots *a c b*, respectively, and the said arms C D, having springs E F G, provided with catches or notches *e f g* to interlock with the respective notches or catches *a' c' b'*, for the purpose set forth.

253,365. STEAM-BOILER. CHAS. J. GALLOWAY, Manchester, County of Lancaster, England. Filed Mar. 8, 1880. (Model.) Patented in England Jan. 14, 1876.



Claim.—A boiler-flue constructed at its end substantially as described, whereby the distance between the shell of the boiler and the edge of the opening through the head is increased at one or more places, for the purpose specified.

253,366. REVOLVING TELEGRAPH-TABLE. JNO. L. GARNER, Greenville, Ohio. Filed June 11, 1881. (No model.)

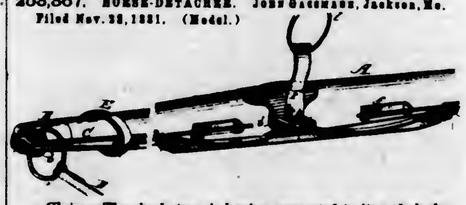


Claim.—1. In a revolving telegraph-table, the combination, with a series of rings on the revolving central post and connected with both the main and local circuit wires, of a series of contact-tongues connected with both main and local circuit wires and attached to the inner side of the hollow leg surrounding the central post, substantially as and for the purpose set forth.

2. In a revolving telegraph-table, the combination, with the wires C and C, of the rings H on the post D, and of the plates L, the stem N, and the sockets J, attached to the hollow leg F, substantially as herein shown and described, and for the purpose set forth.

3. In a revolving telegraph-table, the contact-tongue, made substantially as herein shown and described, and consisting of the segmental plate L, attached to a countersunk item, N, in combination with a socket, J, and the spiral spring M, as set forth.

253,367. HORSE-DETACHER. JOHN GATEMANN, Jackson, Mo. Filed Nov. 28, 1881. (Model.)



Claim.—The single-tree A, having connected to its ends locking-arms C, and the seats *b*, in combination with the clamping-rings

E, having connected thereto rods *e*, the guide-plates *f*, and strap F, constructed and arranged to operate substantially as described, and for the purpose set forth.

253,368. TRACING-DESK. EDWARD T. GIBSON, Fort Washakie, Wyo. Filed Dec. 5, 1881. (No model.)



Claim.—In a tracing-desk, the combination of the base C, open at one side for the entrance of the light and lined with a reflecting-surface, the frame B, secured thereto in an inclined position, the glass plate A, let into the frame, and the strips E and F, substantially as shown and described.

253,369. WATERPROOFING AND PRESERVATIVE COMPOUND. JAMES H. GILLESPIE, Warwick, N. Y. Filed Dec. 8, 1881. (No specimens.)

Claim.—1. A waterproofing and preservative compound composed of ceocerite or mineral wax and a siccative vegetable oil, substantially as herein described.

2. A waterproofing and preservative compound composed of ceocerite or mineral wax and linseed-oil, substantially as herein described.

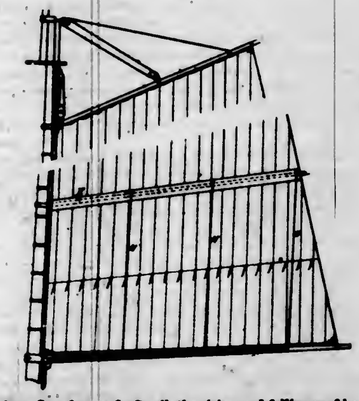
253,370. BUTTON. CHARLES H. GOODWIN, Waterbury, Conn., assignor to the Waterbury Button Company, same place. Filed Dec. 15, 1881. (No model.)



Claim.—1. The herein-described button, consisting of the metal back *a*, the hollow flange-neck *c*, secured to said back, and the eyelet *e* through said neck, and having its flange inside said back, combined with the cap *b*, closed over said back and upon the flange of the said eyelet, substantially as described.

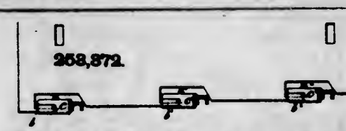
2. The combination of a button provided with an eyelet-like fastening with a collar on the reverse side constructed with a countersunk-like recess in its outer side to receive the turned-over end of the eyelet, substantially as described.

253,371. REEFING SAILS. WILLIAM H. GRISWOLD, New York, N. Y. Filed Dec. 5, 1881. (No model.)



Claim.—In a fore-and-aft sail, the rising and falling roof-boom located in a pocket in said sail between the gaff and main-boom, and combined with suitable lines for hauling it down upon the main-boom and setting it in position thereon for the purpose of reefing the sail, substantially as shown and described.

253,372. SEWING-MACHINE GUIDE. JAMES F. J. GUNNING, New Haven, Conn. Filed Oct. 21, 1881. (No model.)

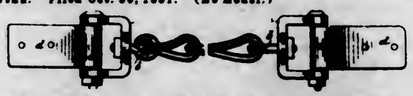


Claim.—1. A sewing-machine guide consisting of the tongue *b*, arranged to lie between the presser-foot and work-plate and outside the needle, so that a previously-made line of stitches will run against the outside of the tongue as a guide, while the next line of stitches will be run close against the in or opposite side of the tongue, substantially as described.

2. A sewing-machine guide consisting of the tongue *b*, in transverse section corresponding to the transverse area of the pocket to be produced, combined with a presser-foot recessed upon its working-face to permit the said tongue to lie in said recess, one thickness of fabric above and the other below the said tongue, the body of the said presser-foot bringing the two thicknesses together inside the tongue and in line with the needle, substantially as described.

3. The combination of two or more tongues, *b b*, each arranged in a recess beneath its own presser-foot, each succeeding tongue and presser-foot arranged relatively to the next preceding, so that the line of stitches formed in the two thicknesses of fabric inside the next preceding tongue will run close to the outside of the next succeeding tongue and cause the succeeding line of stitches to be run upon the inside of that tongue and parallel with the preceding line, substantially as described.

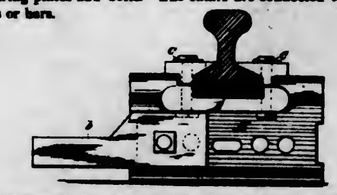
253,373. HOPPLE. CHARLES J. GUSTAVSON, Salt Lake City, Utah. Filed Oct. 26, 1881. (No model.)



Claim.—A hopple consisting of the curved plates *d d*, adapted to inclose, or partly inclose, the legs of an animal, and having perforations whereby they shall be secured to hopple-straps, in combination with the detachable chain A, having twisted links *e* and swivels *b b* connecting said plates, substantially as shown and described.

253,374. RAILROAD-CHAIR. LEVI HAAS, Chester, Pa. Filed July 18, 1881. (No model.)

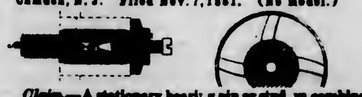
Brief.—The chair is provided with recesses for the reception of wooden pieces, upon which rest the rails, which are secured by securing plates and bolts. The chairs are connected together by rods or bars.



Claim.—1. In a railway-chair, the securing-plates C and chair having recesses *a* and *a'*, in combination with rail-supports A, wooden pieces B, and rods or bars *b*, substantially as shown, and for the purpose described.

2. A railroad-chair adapted to be constructed of waste T-rail iron, provided with rods and bars *b*, the chair having securing-plates C, and being recessed for reception of wooden pieces B, placed therein, as shown, and for the purpose described.

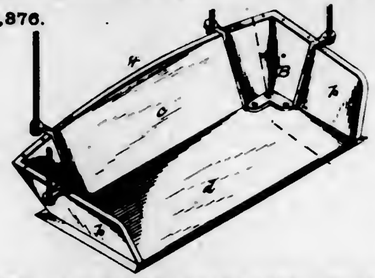
253,375. BEARING-PIN OR STUD FOR MACHINERY. HENRY M. HALL, Philadelphia, Pa., assignor of one-half to Wm. Huey, Camden, N. J. Filed Nov. 7, 1881. (No model.)



Claim.—A stationary bearing pin or stud, in combination with a piece adapted to run thereon, said studs having gibs adjustable at the periphery thereof, on which said piece runs, substantially in the manner and for the purpose set forth.

253,376. CORNER-IRON FOR WAGON-SEATS. DAVID H. HARRIS, Detroit, Mich., assignor of one-half to Edward S. Chapman, same place. Filed Dec. 9, 1881. (No model.)

253,376.

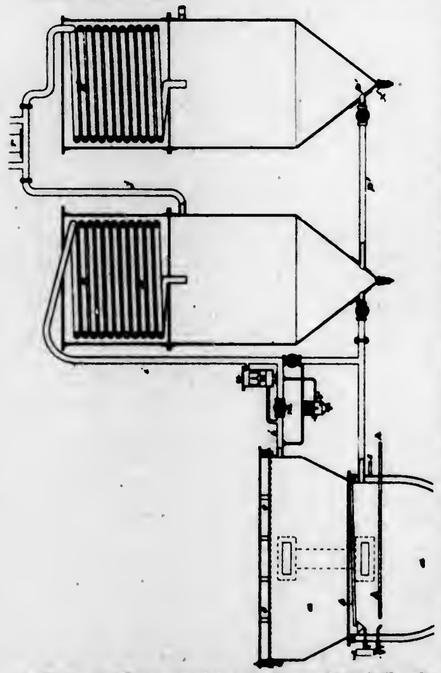


Claim.—As an improved article of manufacture, the corner-iron for a vehicle-seat, consisting of the corner-fitting walls, the bottom flange, *f*, top flanges, *h*, and the re-enforcing ribs *e*, with extensions forming socket-arms, substantially as shown, and for the purpose set forth.

253,377. MANUFACTURE OF ALUMINOUS CAKE. THOMAS S. HARRISON, Philadelphia, Pa., assignor to Harrison Brothers & Co., same place. Filed June 7, 1881. (No specimens.)

Claim.—As a new article of manufacture, a blue-colored aluminous cake containing ferro-cyanide of iron, as set forth.

253,378. RECOVERING VOLATILE SOLVENTS WHICH HAVE BEEN USED IN EXTRACTING SOLUBLE MATTER. EDWARD B. HART, Strandtown, County of Belfast, Ireland. Filed Sept. 2, 1881. (No model.)

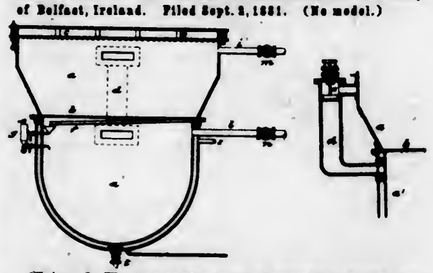


Claim.—1. The improved process of recovering volatile solvents which have been used in extracting soluble matter from substances containing it, the same consisting in heating the upper part or cover of the vessel inclosing said substance, introducing steam thereinto on one side of said substance, causing said steam to pass through said substance, and conducting it thence from said vessel into and through a condenser, substantially in the manner and for the purposes set forth.

2. The improved process of recovering volatile solvents held in absorption in a substance from which it has been used to extract soluble matter, which consists in heating the upper part or cover of the vessel containing said substance, admitting steam to said vessel on one side of said substance, producing by the action of an air pump or exhauster a partial vacuum in said vessel on the opposite side of said substance, whereby said steam is drawn through the substance, and conducting said steam thence through one or more condensers, substantially as set forth, whereby steam may be used at a less temperature than 212° without condensation.

3. The combination, to form an apparatus for recovering volatile solvents, of a vessel, *a*, a filter-bed, *b*, therein, a steam-jacketed cover or top, *c*, therefor, a steam-pipe, *h*, a pipe, *i*, a condenser, *k*, and a pump or exhauster, *r*, substantially as set forth.

253,379. EXTRACTING BY VOLATILE SOLVENTS SOLUBLE MATTER FROM SUBSTANCES CONTAINING IT, AND APPARATUS THEREFOR. EDWARD B. HART, Strandtown, County of Belfast, Ireland. Filed Sept. 2, 1881. (No model.)



Claim.—1. The improved process of extracting soluble matters by volatile solvents in a closed vessel divided horizontally by a filter-plate, which consists in placing the material containing the soluble matter on said filter-plate, placing the solvent in the lower compartment of the vessel, below said plate, applying sufficient heat to said lower compartment to vaporize the solvent, thereby causing its vapor to ascend and permeate the material, and in part to pass through the same and ascend into the upper compartment, cooling the surface of the upper compartment sufficiently to condense the vapor that comes in contact therewith, thereby causing the same to fall back on the material, maintaining for a while a pressure in the lower compartment sufficiently in excess of that in the upper compartment to prevent the condensed solvent falling from the material into the lower compartment, thereby retaining it in the material and boiling it therein, and finally equalizing the pressure in the two compartments or otherwise neutralizing or overcoming the superior pressure in the lower compartment, thereby causing the condensed solvent to flow downward through the material and fall into the lower compartment, all substantially as set forth.

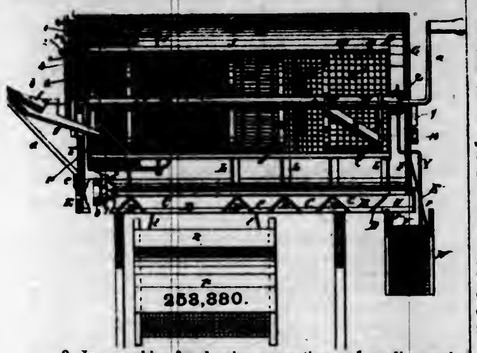
2. An apparatus for extracting soluble matter by volatile solvents, consisting of the combination of a closed vessel, a filter-plate arranged horizontally therein and dividing it into two compartments, a steam-jacket around the lower compartment, or equivalent means of applying heat thereto, a condensing-jacket formed as the top of the upper compartment, the lower or condensing plate thereof being flat, level, and uniformly roughened or corrugated to cause the vapor condensed upon it to drop from the portion of the plate on which it is condensed, thereby insuring a uniform fall of condensed vapor from all parts of the plate, and means for equalizing at will the pressures in the two compartments, substantially as set forth.

3. An apparatus for extracting soluble matters by volatile solvents, consisting of the combination of a closed vessel, a horizontal filtering-plate, *b*, dividing said vessel into an upper compartment, *a*, and a lower compartment, *a'*, a steam-jacket surrounding the compartment *a'*, or equivalent means of applying heat thereto, a condenser, *c*, arranged at the top of the compartment *a*, a pipe or passage, *d*, connecting the two compartments, and a valve, *e*, in said pipe, substantially as set forth.

253,380. MACHINE FOR CLEANING, SEPARATING, AND GRADING GRAIN. JAMES H. HAWLEY, Odin, Ill. Filed Oct. 3, 1881. (No model.)

Claim.—1. In a machine for cleaning, separating, and grading grain and seeds, the combination, with the boards B, provided with the openings U and the plate X, the case F, spout R, and the reel, of the screen W, having plate V, the bails *o o*, and its operating mechanism, substantially as and for the purpose set forth.

2. In a machine for cleaning, separating, and grading grain and seeds, the combination, with the reel, the reel-shaft H, and the rake-teeth Q, attached to the reel-ribs J, of the suspended spout R, substantially as herein shown and described, whereby coarse refuse raised from the lower part of the reel by the said rake-teeth is conducted out of the said reel, as set forth.



3. In a machine for cleaning, separating, and grading grain and seeds, the combination, with the boards B, provided with the opening U, the case F, and the reel-shaft H, provided with the projection Z, of the screen W, suspended from the end of the case, and the lever Y, provided with an offset and projecting within the case, substantially as and for the purpose set forth.

4. In a machine for cleaning, separating, and grading grain and seeds, the combination, with the hopper *b*, provided with the false bottom *f*, the apertured lower end of the case F, and the reel-flange P, having inwardly-projecting lugs *h*, of the shoe *g*, pivoted at its upper end by the pivot *g'* to the outer side of the said hopper and having its lower end projecting into the case F, substantially as and for the purpose set forth.

5. In a machine for cleaning, separating, and grading grain and seeds, the combination, with the hopper *b* and its feed-gate 1, of the inclined block 3, the inclined bar 4, and the keeper 5, substantially as and for the purpose set forth.

6. In a machine for cleaning, separating, and grading grain and seeds, the combination, with the hopper *b*, having the projecting edges of its vertical inner side beveled, and the lower part, F, of the case, of the beveled vertical cleats *c c*, the horizontal cleat *e*, and the inclined brace-bar, *d*, substantially as herein shown and described, whereby the said hopper is secured to the said case detachably, as set forth.

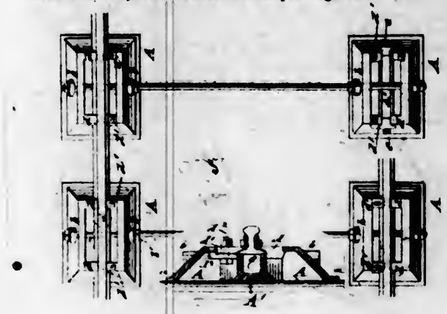
7. In a machine for cleaning, separating, and grading grain and seeds, the combination, with the reel H I J, of the exterior reel, *f*, detachably secured thereto by bolts or screws *f*, substantially as and for the purpose set forth.

8. In a machine for cleaning, separating, and grading grain and seeds, the combination, with lower part, F, of the case and the reel-shaft H, of the lever 9, and the lever-cam 10, substantially as herein shown and described, whereby the inclination of the reel can be regulated, as set forth.

9. In a machine for cleaning, separating, and grading grain and seeds, the combination, with the fan-shaft *e* and the reel H I J, of the cone-pulley 6, the band 7, and the segmental cone-pulley 8, substantially as herein shown and described, whereby the fan-blower will be operated from the said reel, as set forth.

253,381. RAILROAD-TIE. CHARLES F. HERNEY, Brenham, Tex. Filed Oct. 1, 1881. (No model.)

Brief.—Oblong pot-sleepers are provided with a supporting central box, adapted for storing telegraph-wires, and recesses, in which the rails are securely held in position by fixed jaws on one side of the rails and detachable fastening devices on the other. Rods secured by bolts connect the sleepers together.



Claim.—1. As an improvement in railroad-ties, pot-sleepers provided with a supporting central box adapted for storing signal-telegraph wires, in combination with rails securely held in position upon the sleepers by fixed jaws on one side of the rails and suitable detachable fastening devices on the other side, substantially as described.

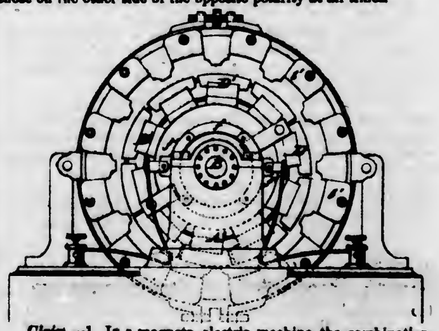
2. In a railroad-tie, the combination of a pot-sleeper, A, having recessed ends and a longitudinal center portion, A', with fixed jaws *d*, made integral with the sleeper, and with detachable jaws *e*, set into recesses and secured to interior shoulders, *d'*, of the sleeper, substantially as specified.

3. In a railroad-tie, a pot-sleeper of oblong shape provided with a longitudinal box-shaped center portion for laying telegraph-wires, substantially as described.

4. The combination of oblong pot-sleepers provided with top recesses for the rails and a supporting central box under the rails for depositing telegraph-wires, said box having a hole, *c*, for the exit of the wire, the rails, the fixed and detachable jaws for fastening the rails, the fish-plates, the projecting sockets, and connecting-rods, substantially as described.

253,382. MAGNETO-ELECTRIC MACHINE. LUDWIG HERMAN, Union, N. J., assignor to himself and Julius Jensen, New York, N. Y. Filed May 13, 1880. (No model.)

Brief.—An armature mounted on an eccentric driving-shaft is brought in contact with or in close proximity to the field-of-force magnets. The magnets are parallel with the shaft, and the entire body of the armature is wound with conducting-wire in the direction of rotation. Pole-pieces are provided at the ends and in the centers of armature and field-of-force magnets. The electrical connections are such that the field-magnets at one side of the point of nearest approach of the armature are of one polarity and those on the other side of the opposite polarity at all times.



Claim.—1. In a magneto-electric machine, the combination of fixed outer electro-magnets, an eccentric armature, springs *b* and *f*, revolving rings and cams, substantially as described.

2. In a magneto-electric machine, the combination of fixed outer electro-magnets, intervening insulated blocks, conducting-rods, radial springs, and an armature attached to an eccentric portion of main shaft revolving within the circle of the electro-magnets, substantially as described.

3. In a magneto-electric machine, the combination of a main shaft adapted to receive a laterally-adjustable eccentric armature, mechanism for transmitting currents, and a laterally-adjustable eccentrically-revolving armature, the field and armature magnets having end and intermediate poles, substantially as described.

4. In a magneto-electric machine, the combination of fixed outer electro-magnets having end and intermediate poles, an eccentric armature composed of segmental cores parallel with the axis, and a coil wound about said cores in the plane of rotation of said axis, substantially as described.

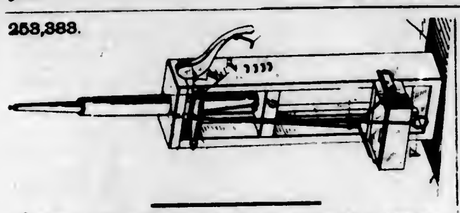
5. In a magneto-electric machine, a series of fixed exterior electro-magnets arranged in a circle with intermediate isolated blocks, radial springs attached thereto, and conducting-rods which pass through said blocks, in combination with a laterally-adjustable revolving armature, a main shaft which carries an eccentric and an eccentric armature which revolve within the circle of the magnets, contact-pieces, contact-rings, and cams attached to said shaft, which transmit the current to the radial springs, substantially as described.

253,383. CLOTHES-DRIER. ANTHONY HIPPCHEN, Minneapolis, Minn. Filed Sept. 8, 1881. (Model.)

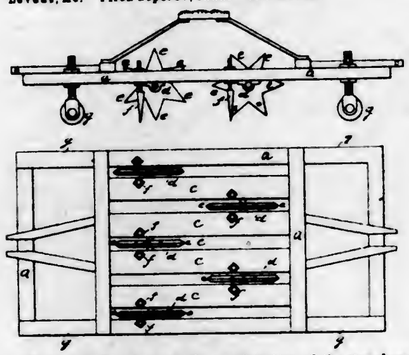
Claim.—In combination with the upright standards, the reel-supporting standard and block, the strap passing through the upright standards, and the cam for clamping the same, substantially as specified.

Claim.—1. The combination of the reciprocating disc D and

253,383.



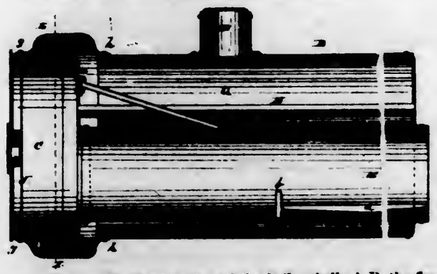
253,384. HARROW AND PULVERIZER. BENUS L. HODGDON, Levant, Me. Filed Sept. 17, 1881. (No model.)



Claim.—1. In a harrow, the combination of the star-shaped wheels *d d*, and vertically-adjustable stationary teeth *f*, placed on each side of said wheels and co-operating with them, substantially in the manner described.

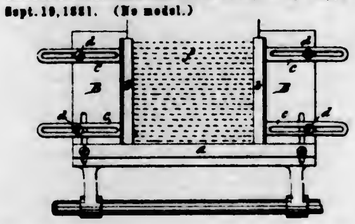
2. The reversible harrow and pulverizer having the star-shaped wheels *d*, adjustable teeth *f*, and adjustable rollers *g g*, operating as a deep-soil harrow when drawn in one direction and as a surface-pulverizer when said direction is reversed, substantially as set forth.

253,385. WATER-JACKET SMOKE-BOX. EDWARD HUSSE, Marion, Ohio. Filed Dec. 12, 1881. (No model.)

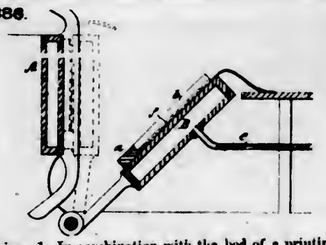


Claim.—The combination of the boiler-shells A B, the flue-sheet *c*, and the cylindrical wall K with the bulging jacket L, riveted to the outer shell, B, and to the said wall K, the latter being riveted to the flue-sheet, the whole forming a space, *i*, communicating directly with and being a part of the space G, substantially as and for the purposes specified.

253,386. COMBINED PRINTING-PRESS AND STEREOTYPE CASTING-BOX. MARSHALL J. WOODRUFF, Jersey City, N. J. Filed Sept. 19, 1881. (No model.)



253,386.

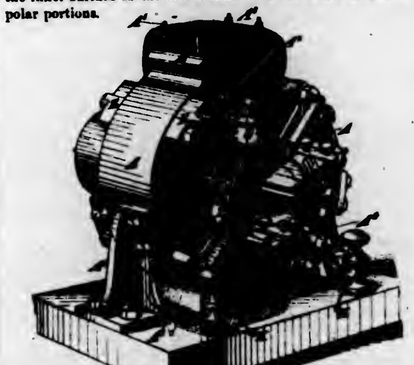


Claim.—1. In combination with the bed of a printing-press, the hollow platen B, provided with a steam-pipe, *d*, and removable bars or gages suitably arranged on its face for securing the stereotype-matrix and forming the sides of a stereotype casting-box, as shown and described.

2. In combination with the bed A of a printing-press, a platen, B, provided on its face with removable gages or bars, for the purpose specified, and with a heating appliance, whereby said bed and platen are adapted for use in forming stereotype-casts and drying-matrices for the same, as specified.

253,387. DYNAMO-ELECTRIC MACHINE. CHAS. A. HUSSEY, New York, N. Y., assignor to the Hussey Electric Company, same place. Filed Aug. 31, 1881. (No model.)

Brief.—The field-magnet is circular, inclosing the armature, and has the portion upon which the wire is wound offset, so that the inner surface of the coil is flush with the inner surface of the polar portions.

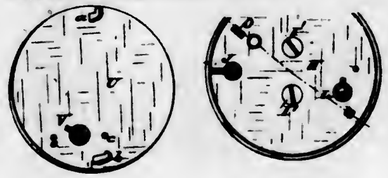


Claim.—1. A field-magnet for a dynamo-electric machine, composed of corresponding principal or main arc-shaped portions and intervening portions made continuous with the said principal or main portions wound with wire, and sufficiently offset from the main arc-shaped portions that when a proper quantity of wire is wound on them it will on the interior be approximately coincident with the interior surface of the main arc-shaped portions, substantially as specified.

2. The field-magnet composed of the corresponding arc-shaped portions A, the intervening offset portions made continuous with said arc-shaped portions A, the wire A^3, and the pins A^2, substantially as specified.

3. In a dynamo-electric machine, the combination, with a field-magnet composed of corresponding principal or main arc-shaped portions and intervening offset portions made continuous with said principal or main portions wound with wire, of an armature arranged to rotate within the same and consisting of a core wound longitudinally with wire, substantially as specified.

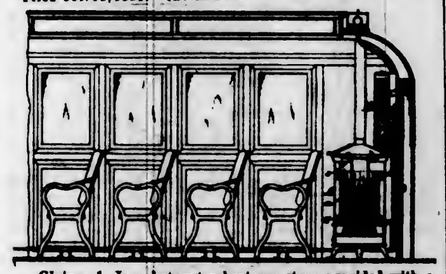
253,388. SEAL-LOCK. FRANCISCO P. IANNARONE, Washington, D. C. Filed Aug. 31, 1881. (No model.)



Claim.—1. In combination with the lock secured on the under side of the lid of the box and a cap-plate having a key-hole through which the lock-operating key is passed, a concealing guard-plate, U, provided with a key-hole, V, out of register with the key-hole of the lock and adapted to receive a different key, so that the guard-plate must be unlocked and removed before access can be had to the key-hole of the lock, substantially as hereinbefore set forth.

2. In combination with the plate H, provided with openings N O and latch P, and the guard-plate U, provided with hooks *a b*, the spring-stud R, substantially as and for the purpose set forth.

253,389. CAR-HEATER. JONATHAN JOHNSON, Lowell, Mass. Filed Oct. 18, 1881. (No model.)



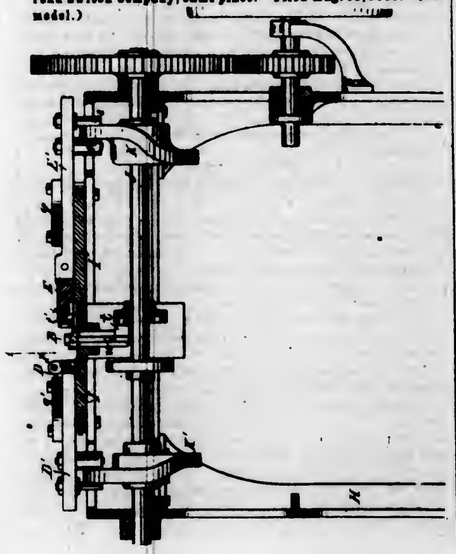
Claim.—1. In a hot-water heater, a stove provided with a space around the fire-pot to receive the heated gases, and with a fire-pot consisting of separate vertical pipes *a*, arranged to leave intervening air-passages and to hold the body of the fuel, and upper and lower water-chambers, F G, communicating with said pipes and with the outlet and inlet branches of a circulating and radiating system open to the air, all as specified.

2. The combination, with the circulating and radiating system of water-pipes open to the air, of a heater containing a fire-pot with vertical pipes exposed to the fuel, arranged to insure the passage of air between the same and a free, rapid, and straight upward flow of the water without pressure from the lower to the upper circulating-pipes and through the latter, as specified.

3. The combination with the stove, its fire-pot having vertical water-channels, water circulating and radiating pipes, and casing C, open at the top and arranged in the line of the water-circulation, as specified.

4. The combination of the circulating and heat-radiating pipes, heater, casing C, and condenser communicating with said casing and with the air, as set forth.

253,390. MACHINE FOR BENDING LINKS. EDWARD H. JOHNSTON, Philadelphia, Pa., assignor to the Wharton Railroad Switch Company, same place. Filed Aug. 15, 1881. (No model.)



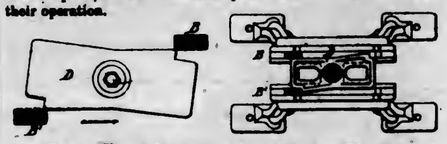
Claim.—1. The combination of the reciprocating dies D and E, and fixed die B, all constructed to form the link-blank A, substantially in the manner described.

2. The combination of the bar E' and its die E, the bar D' and its die D, with the shaft J and its cam-wheels K K', substantially as specified.

3. The combination of the fixed die B, the fingers *a a*, and knocking-off finger *g* with mechanism, substantially as described, for operating the said fingers.

253,391. INTERLOCKING SWITCH AND SIGNAL MECHANISM. EDWARD H. JOHNSTON, Philadelphia, Pa., assignor to the Wharton Railroad Switch Company, same place. Filed Aug. 23, 1881. (No model.)

Brief.—Switch and signal levers are interlocked by a pivoted notched plate, which is actuated by the contact of said levers in their operation.



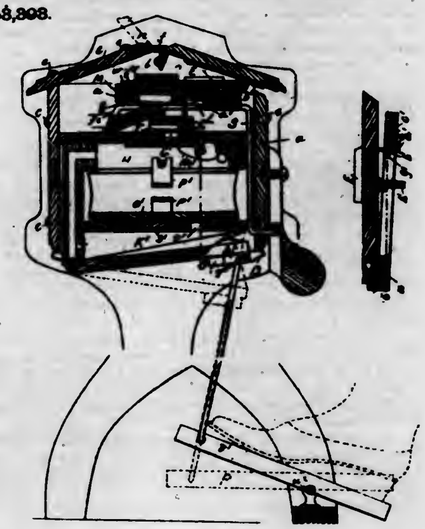
Claim.—The combination of the switch-lever B' and signal-lever B with the pivoted safety-plate D, constructed to directly act on and to be directly operated by both levers, substantially as described.

253,392. DEVICE FOR HOLDING LETTERS, CARDS, PHOTOGRAPHS, &c. WALTER E. JONES and CLARK L. MIDDLETON, Flatbush, N. Y. Filed Apr. 8, 1881. (Model.)



Claim.—A device for holding and supporting letters, cards, photographs, and similar articles, or for hanging light goods or other materials in show-cases, or for the purpose of holding articles used in dressing or decorating store or other windows or places, and for holding rods for that and for other purposes, and as a toy for lifting weights, as herein shown and described, the device being a combination consisting of a hollow or concave rubber cup of graded thickness so arranged in their proportions as to give the cup the greatest power of adhesion, a cap or ferrule, a clip-spring which is opened or closed and entirely regulated by the screw-knob and without automatic arrangement, a screw, a screw-knob, and a rod or bar, all adapted to the concave rubber cup, as described.

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253,393. REED-ORGAN. GEORGE E. KELLY, Boston, Mass., assignor to the Mason & Hamlin Organ Company, same place. Filed Oct. 18, 1881. (Model.) Patented in Canada Apr. 29, 1881.

Claim.—1. The combination, in a reed-organ, of the bellows located below the wind-chest and forming a continuation of the same, with the supplementary operating-exhausters K K', connected by rods to foot-treadles, and also connected to the boards *s'*, provided with air-inlets and valves, the air-passages *s'* connecting the wind-chest and bellows, and the exhauster and the spring *p'* acting upon the bottom board of the bellows, said members being constructed and organized substantially as described.

2. In a reed-organ, a key of reduced thickness supported at its rear end by the key board or frame, said key being provided with a long pin, *a'*, rigidly secured thereto and projecting downwardly therefrom into a slot in said frame, whereby the key is guided in its movement, substantially as and for the purpose specified.

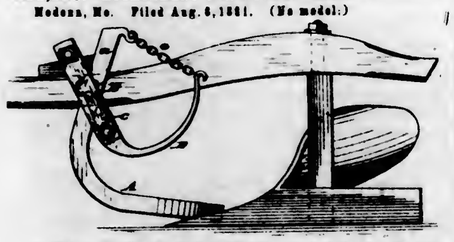
3. In a reed-organ, a key-frame having a slot, *b'*, in the front portion, *c'*, for the pin *a'* of the key E, in combination with the strip *g*, secured to the portions *f* between said slots, substantially as and for the purpose specified.

253,394. SUSPENDER-BUCKLE. GEORGE E. KELSEY, West Haven, Conn. Filed Dec. 24, 1881. (No model.)



Claim.—The herein-described buckle, consisting of the plate A with ears *b* at each side, said ears constructed with recesses *d* upon their inner side, combined with the lever constructed with the cylindrical ends *f*, to set into said recesses and form bearings upon which the lever may be turned, substantially as described.

253,395. ATTACHMENT FOR PLOWS. RULIF V. KENNEDY, Modena, Mo. Filed Aug. 6, 1881. (No model.)



Claim.—1. The hook A, having the vertical shank *a*, in combination with the clip B, bolted to the plow-beam, and having the plate *c*, provided with a pin, *c'*, upon which the hook is hung or pivoted, substantially as and for the purpose set forth.

2. The combination, with the hook A, having the vertical shank *a*, of the clip B and spring D, connected to the hook-shank and the clip, substantially as and for the purpose set forth.

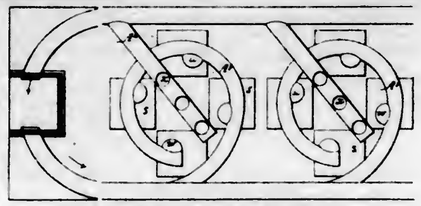
253,396. STORE-SERVICE SYSTEM. PATRICK KENNELLY, Bridgeport, Conn., assignor of one-third to Harris H. Hayden, New York, N. Y. Filed Mar. 20, 1880. (No model.)

Brief.—The way is a semi tube or trough. Each has branches to the counters, the return-way also having pockets adjacent to the counters. Varying stops or slits in the ways govern the distance to which each carrier shall run. Said carriers are hollow balls.

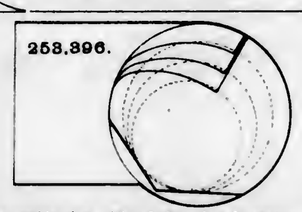
Claim.—1. A way for a store-service apparatus, consisting of a tube or trough having graduated stops or passages adapted to discharge at different points hollow rolling carriers, substantially as set forth.

2. The combination, in a store-service apparatus, of a main desk, series of counters, and two ways, each extending from the desk past all the counters, one of the ways being provided with openings or stops arranged to arrest and discharge at their respective counters hollow rolling carriers running on said way, substantially as set forth.

3. The combination, in a store-service apparatus, of a desk, series of counters, two ways, extending each from said desk past all the counters, and a series of graduated hollow rolling carriers and graduated stops, whereby each carrier is discharged from the way at the counter from which it was sent, substantially as set forth.



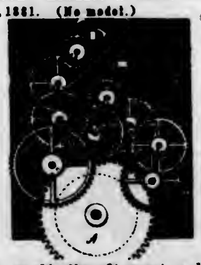
253,396.



4. The combination, with a desk, series of counters, and the ways of a store-service system, of lateral or branch ways arranged to conduct the rolling carriers between the main way and counters, substantially as set forth.

5. The combination, with the trough or tube having openings, of pockets *e*, substantially as specified.

253,397. CLOCK. ALMERON H. LAKE, West Winsted, Conn. Filed Oct. 11, 1881. (No model.)



Claim.—The combination of two main or driving wheels upon the same shaft, concentric with each other, a mainspring arranged between the said wheels, so that one end engages with one wheel and the other with the other wheel, whereby one of the said wheels is caused to revolve in one direction and the other in the opposite direction, a train of gearing leading from one of said driving-wheels to impart rotation to the escapement-wheel shaft and to the hour and minute pointers, with a second train of wheels leading from the other driving-wheel to a shaft from which an arm projects outward, and so as to engage the teeth of a wheel on the escapement-shaft, and from which teeth it escapes by the rotation of the escapement-shaft produced by the first train, and by such escapement of the said arm an intermittent movement is given to the said second train and communicated through said second train to an independent second-pointer on the central shaft, substantially as described.

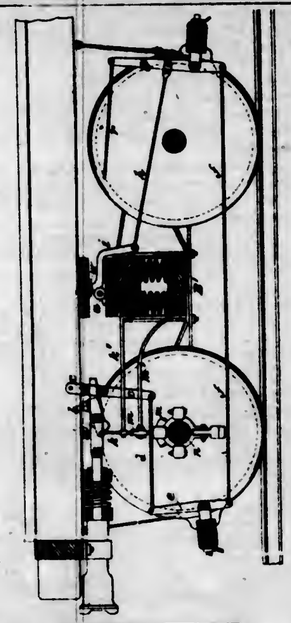
253,398. AUTOMATIC CAR-BRAKE. CHARLES W. LANPHER, Norwich, N. Y. Filed Oct. 18, 1881. (No model.)

Claim.—1. The combination, in an automatically-acting brake applying and relieving mechanism, of the push-bar *a*, pawl *b*, swinging lever *c*, rod *d*, lever *e*, rod *f*, lever *g*, connecting-rod *h*, bent lever *i*, or its equivalent, and a governor constructed substantially as shown and described, the parts being arranged substantially as set forth, and for the purpose specified.

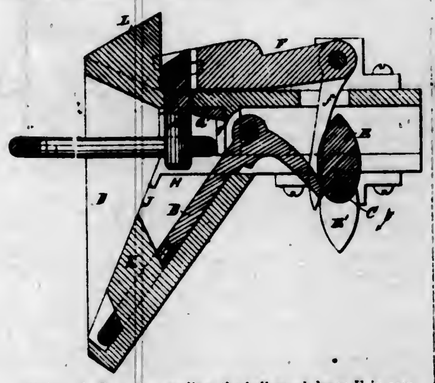
2. In an automatic brake applying and releasing mechanism, the combination of a governor constructed substantially as herein described, a bent lever or equivalent device for raising the body of the car, and suitable intermediate mechanism, the operation being substantially as described.

3. The combination, in an automatically-acting brake mechanism, of a pivoted swinging push-bar carrying a pivoted pawl, a swinging pivoted lever for communicating the movements of the push-bar to the brakes, suitable levers and rods for operating the brake-shoes, and a rod, *h*, and lever *i*, the latter being pivoted to the transom-beam of the truck, the parts being arranged for joint operation, substantially as set forth, whereby provision is made for raising the car-body and its load, for the purpose set forth.

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253,399. CAR-COUPLING. AUSTIN LEYDEN, Atlanta, Ga. Filed Sept. 5, 1881. (No model.)



Claim.—1. In a car-coupling, the bell-crank lever F, in combination with the connecting-bolt A and the rod or shaft C, provided with the cam E', substantially as and for the purposes set forth.

2. The plate G, placed in the throat of the bumper and adapted to tip forward to support the connecting-bolt, substantially as and for the purposes set forth.

3. The hinged connecting-link B, formed with the extension *a*, in combination with the shaft C, provided with the cam E, as and for the purposes set forth.

4. The bumper D, formed with the chamber H, in combination with the hinged connecting-link B, substantially as and for the purposes described.

5. The bumper D, provided with the chamber H, having a central plate, K, in combination with the hinged link B, whereby the link is protected from injury when not in use, substantially as herein shown and described.

6. The bumper D, provided with the top guide, L, in combination with the bolt A and the means for holding the same elevated, substantially as and for the purposes set forth.

7. In a car-coupler, the shaft or rod C, provided with the cams E and E', in combination with the bolt A and the hinged link B, substantially as and for the purposes set forth.

8. The shaft or rod C, provided with the cams E and E', in combination with the bell-crank lever F and the bolt A, and the hinged connecting-link B, provided with the extension *a*, substantially as and for the purposes set forth.

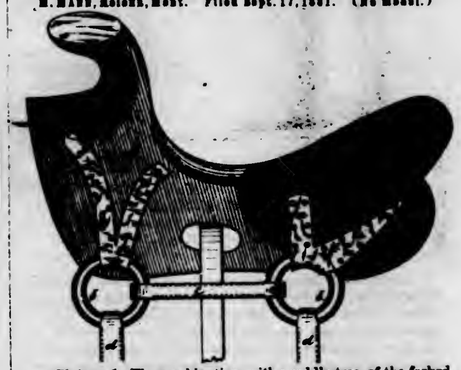
253,400. APPARATUS FOR DISINFECTING WATER-CLOSETS, &c. EDWARD J. HALLETT, Jr., New York, N. Y. Filed Nov. 12, 1881. (No model.)

Brief.—The receptacle E contains antiseptic or disinfecting liquid, which is taken up by the absorbent plunger G, and is diffused through the grating *h* in the face of the box D when said absorbent plunger is elevated from the well by manipulating the elevating devices.



Claim.—The combination, with a water-closet or the like, of a vessel to contain antiseptic or disinfecting liquid, and an absorbent diffusing-plunger connected with and operated by the closet-lid or other appropriate part of the closet or closet-room, substantially as and for the purposes hereinbefore set forth.

253,401. GIRTH ATTACHMENT FOR SADDLE-TREES. WM. H. HAHN, Helena, Mont. Filed Sept. 17, 1881. (No model.)



Claim.—1. The combination, with a saddle-tree, of the forked metallic straps *a a*, secured to the tree near its ends and on each side thereof, and provided with rings *b b* at their ends, substantially as described.

2. The combination, with the saddle-tree A, of the forked metallic straps *a a*, secured to the tree, as set forth, and not extending as high as the horn of the tree, rings *b b*, straps *c*, and girths *d d*, substantially as described, and for the purpose set forth.

253,402. FOOT-PROTECTOR. HERBERT W. MARTIN, Bennington, Vt. Filed Oct. 12, 1881. (No model.)

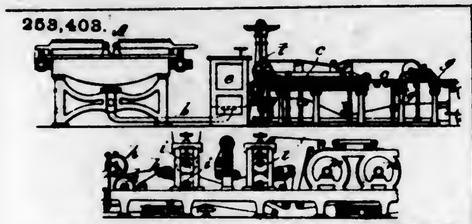


Claim.—A foot-protector having an elastic opening made up of the parts A B C and an elastic, D, all arranged and connected as shown and described.

253,403. MANUFACTURE OF BOARD FROM WOOD PULP. HERBERT M. MASON and GEORGE M. WORSTER, Bristol, N. H., assignors of one-half to David Mason and Benja. F. Perkins, same place. Filed Aug. 27, 1881. (No model.)

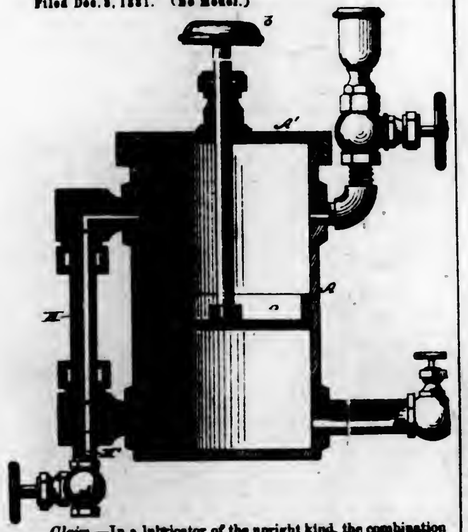
10. In combination with the coupling E, having arms *c c*, and the wheel D, the described bearing, consisting of the cones G and

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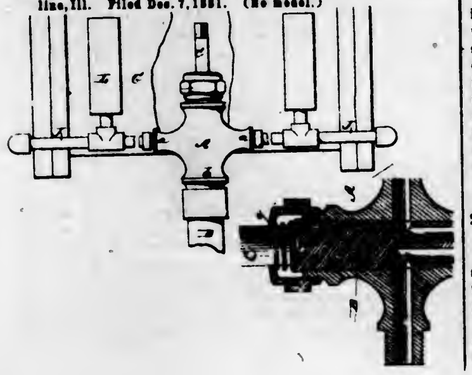
Claim.—In a machine for making boards from wood pulp, the combination of the vats A *e*, wire tables *c c*, shaker *t*, and suction-boxes *g g* of a Fourdrinier paper-machine with the endless felt aprons *h h* and press-rollers *i i*, whereby the soft board, being sufficiently dry, may be passed through said press-rollers *i i* without damage or structural change and a thick and uniform board be produced, substantially as shown and described.

253,404. LUBRICATOR. LEMUEL MAXFIELD, Moline, Ill. Filed Dec. 8, 1881. (No model.)



Claim.—In a lubricator of the upright kind, the combination of the cylinder A, the piston therein provided with a rod extended through the cylinder-head, the steam-supply pipe provided with a cock, the glass gage and oil-outlet pipe H, communicating with the oil-chamber above the piston, the pipe H', communicating with the lower end of the pipe H, and provided with a cock and means for allowing the refuse oil and water of condensation to be drawn from said cylinder A, all substantially as described.

253,405. STEAM-CYLINDER COCK. LEMUEL MAXFIELD, Moline, Ill. Filed Dec. 7, 1881. (No model.)

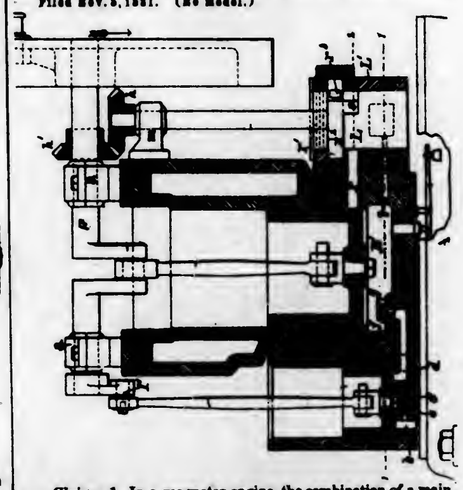


Claim.—1. The combination, with the steam-cylinder, of the drip-pipes J J, the two-way cock constructed with independent passages, the drip or discharge pipe D, and the air-chambers applied to pipes J J, substantially as described.

2. The combination, in a steam-cylinder cock, of the body A, having four limbs, the tapered plug B, fitted into two of these limbs, the independent L-shaped passages *g g*, and the spring *e*, substantially as described.

3. The combination of the body A, the tapered plug B, fitted into the body, the independent L-shaped passages *g g* through the plug, the pipe D, and the pipes J, communicating with the ends of the steam-cylinder.

253,406. GAS-ENGINE. THOMAS MCADOO, Baltimore, Md. Filed Nov. 5, 1881. (No model.)



Claim.—1. In a gas-motor engine, the combination of a main cylinder having the driving-piston and provided at its closed end with a cavity, a separate air-and-gas-compressing cylinder provided in the closed head with two independent valves, one serving to admit air and the other to admit gas, and a duct leading from the compressing-cylinder into the cavity in the main cylinder, as set forth.

2. In a gas-motor engine, the combination of a vertical main cylinder having the driving-piston, a vertical air-and-gas-mixing cylinder having a compressing-piston, a duct to connect the two cylinders, a rotary igniting-valve turning in a horizontal plane, and a crank-shaft mounted above the whole and directly connected with the two pistons and the rotary valve, as set forth.

3. In a gas-motor engine, a main cylinder having the driving-piston and provided with an exhaust-duct, *r*, and an ignition-duct, *q*, in combination with a rotary valve provided with means to effect the explosion in the main cylinder through the ignition-duct, and also provided with means to allow the exhaust from the main cylinder to escape, as set forth.

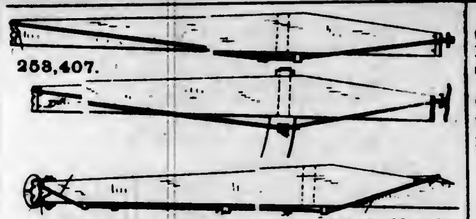
4. In a gas-motor engine, a main cylinder having the driving-piston and provided with an exhaust-duct, *r*, in combination with a cylindrical valve-case, L', having an inlet, *i*, for gas, a jet, *n*, for igniting the gas, an inlet, *p*, for air to maintain the ignition of the gas, an ignition-duct, *q*, communicating with the main cylinder, an outlet, r^2, for the escape of the exhaust, and a valve, L, to rotate within the cylindrical case, having a central interior gas-chamber, *k*, provided with an igniting-duct, *q'*, to coincide with the inlet *i* and duct *q* in the case, and also provided with a groove, r^3, to connect with the exhaust-outlet r^2, and a cavity on one side of the groove to coincide with the exhaust-duct *r*, as set forth.

253,407. CLAMP FOR PLOW-BEAMS. JOHN A. MCNEAL, Montgomery County, Md. Filed Dec. 28, 1881. (No model.)

Claim.—1. A strengthening-clamp for plow-beams, constructed substantially as described, combining a straining-rod, a tightening device, and bearings for the rod, and adapted to be applied to and removed from the plow-beam, as set forth.

2. The combination, with a plow-beam, of a strengthening-clamp composed of a straining-rod, a tightening device, and bearings for the rod, substantially as described, whereby the beam may

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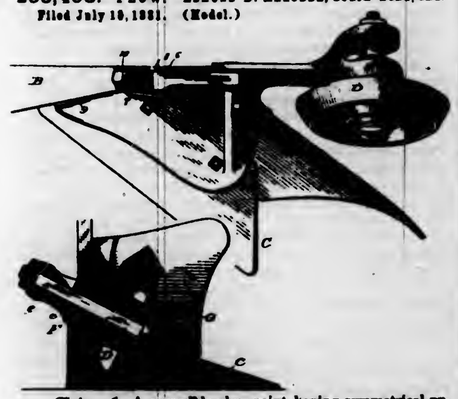
be re-enforced temporarily or permanently, as desired, without interfering with the standard or attachments of the plow.

3. The combination, with the plow-beam, straining-rod, tightening device, and bearings, of a grooved metallic plate or plates applied at or near the end of the beam, substantially as described.

4. A strengthening-clamp for plow-beams, composed of a U-shaped straining-rod adapted to run each side of the plow-beam, a tightening device, and bearings for the rod, substantially as described.

5. In a clamp for strengthening a plow-beam, the combination of a U-shaped straining-rod, a tightening-screw or its equivalent, bearings for the rod, and bearing-plates at or near the ends of the beam, substantially as described.

253,408. PLOW. EDMUND D. MEACHEM, South Bend, Ind. Filed July 19, 1881. (Model.)



Claim.—1. A reversible plow-point having symmetrical upper and lower faces, upper and lower flanges, and a connecting-web at the rear edge adapted to the foot of the standard, substantially as described.

2. A plow-point removable and reversible, having symmetrical upper and lower faces, the thickened central portion adapted to rest against the notch in the tip of the foot, and the connecting-web, substantially as described.

3. The wedge-shaped plow-point, wide at the front end and tapering to the rear, having the thickened central portion, and web adapted to the foot of the plow-standard and to the wing, substantially as described.

4. In combination with the described plow-point, having upper and lower flanges and connecting-web 1, the hooked rod extending through the brace 8 and adapted to draw back the point upon its bearings, substantially as described.

5. The combination of the plow-point, having upper and lower flanges, with the foot of the standard having inclined upper and lower faces and side recesses, and shoulder and notch in the tip thereof, all adapted to furnish solid bearing for the point, substantially as described.

6. The reversible wing C, having the inclined bevels on opposite faces and ends tapering from upper to lower edge adapted to the recessed reversible point B, and in combination therewith, substantially as described.

7. The combination, in a plow, of a supporting landside-wheel and an elastic landside, substantially as described.

8. The combination, with a supporting and landside wheel adapted to be vertically adjusted, of a landside, H, having a rear portion partially overlapping the wheel and normally in a plane outside the vertical face of the wheel, as described.

9. The landside H, having the rear portion elastic and partially overlapping the wheel and the forward portion covering the recess in the point B, the parts being combined as described.

10. In combination with the coupling E, having arms *e e*, and the wheel D, the described bearing, consisting of the cones G and F, and the connecting-bolt adapted to draw upon both cones, substantially as described.

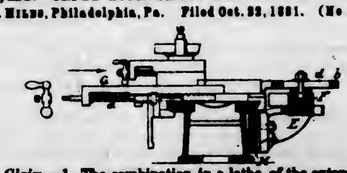
11. The combination of the wheel having the annular flange, the cones G and F, coupling E, and the connecting-bolt, substantially as described.

253,409. NECKTIE-FASTENING. LEON MICHAUX, Paris, France. Filed Nov. 16, 1881. (No model.)



Claim.—The necktie or cravat fastener herein shown and described, consisting of the plate *a*, having a vertical slot, *b*, with the enlargement *b'* at its lower end, the body of the plate being embossed at *c c*, on opposite sides of the slot, and bent at its lower end across the enlargement *b'* to form a right-angled knee, b^2, substantially as and for the purpose set forth.

253,410. TAPER ATTACHMENT FOR LATHES. FREDERICK B. HILDS, Philadelphia, Pa. Filed Oct. 22, 1881. (No model.)



Claim.—1. The combination, in a lathe, of the extension *b* of the slide G of the slide-rest with an adjustable guide-bar, F, and a block, *p*, adapted to the said bar and constructed for attachment to the said extension of the slide G, substantially as set forth.

2. The combination of the bracket E, constructed for attachment to the bed of a lathe, the guide-bar F, adjustable on the said bracket, the block *p*, adapted to the guide-bar, and the slotted extension *b* of the slide G of the slide-rest.

3. The combination of the bracket E, having segmental slots *s s*, with the guide-bar F, pivoted to the bracket and constructed for attachment to the same by bolts or screws passing through the said segmental slots.

4. The combination of the grooved bar H, constructed for attachment to the bed of a lathe, the bracket E, adjustable longitudinally on the said bar, and the guide-bar F, adjustable on the bracket, all substantially as set forth.

5. The combination of the bracket E, having segmental ends, and the indexes *e* and *f* with the guide-bar F, pivoted to the bracket, as set forth.

253,411. THILL-COUPLING. ROBERT J. MITCHELL, Girard, Ill. Filed Nov. 29, 1881. (No model.)



Claim.—The combination, with the bow A, lugs C, thill-iron D, the clamping device H J, and the packing strip of leather, K, of the angular recessed block G, made of compressible material, and provided with the rear slot, G, said block being removable or adjustable by simply loosening the clamp, as described.

253,412. HAIR-FRONT. EMMA HITTLEGARDT, New York, N. Y. Filed Nov. 21, 1881. (No model.)



Claim.—1. A hair-front composed of waves A, having strands

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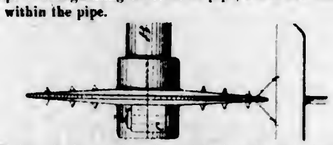
Claim.—1. The combination, with a felting-roller having grooves in its periphery, of lags pivoted within the said grooves,

Claim.—1. A hair-front composed of waves A, having strands *b* at the rear, connected by a transverse binding-weft, substantially as described.

2. A hair-front composed of waves A, having strands *b* at the rear, connected by a transverse binding-weft, provided with eyes and loops at the ends, substantially as described.

253,413. HEAT-ABSORBING APPARATUS. WM. M. MIXER, New York, N. Y., assignor to the De La Vergne & Mixer Refrigerating Company, same place. Filed Dec. 14, 1881. (No model.)

Brief.—The disks are cast solid in halves, their hubs bolted in close contact with the exterior of pipe B at any part of its length, and absorb and conduct heat from air through metal of disk, hub, and pipe to refrigerating contents of pipe, which are confined entirely within the pipe.



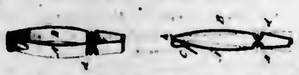
Claim.—1. In combination with pipes for the circulation of gas or liquid as a refrigerant, one or more heat-absorbing disks, when made in sections and attached to such pipes, substantially as described.

2. In combination with pipes for the circulation of gas or liquid as a refrigerant, one or more tapering heat-absorbing disks, when made in sections and attached to such pipes, substantially as described.

3. In combination with pipes for the circulation of gas or liquid as a refrigerant, one or more heat-absorbing disks, when made in sections having an enlarged bearing or hub, by which it is firmly attached to such pipes, substantially as described.

4. In combination with pipes for the circulation of gas or liquid as a refrigerant, and a series of heat-absorbing disks made in sections and closely secured to such pipes, one or more gutters, also attached thereto, substantially as described.

253,414. CLASP. BENJAMIN F. NEAL, Waterbury, Conn., assignor to the Steele & Johnson Manufacturing Company, same place. Filed Jan. 3, 1882. (No model.)



Claim.—1. The herein-described clasp, consisting of the two parts A B, the said two parts constructed with the transverse grooves *d* and corresponding internal ribs, with the wire loop placed in the groove of one part and closed into the groove of the other part to form the hinge between the two parts, the two parts forming jaws at one end, their other ends curved and brought together at the extremes to form springs to force the jaws together, substantially as described.

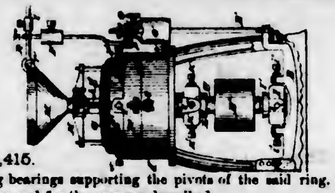
2. The two parts A B, each constructed with a transverse groove, *d*, and corresponding internal ribs, with a notch, *i*, in each side at the said grooves, the two parts forming jaws at one end, their other ends curved and brought together at the extremes to form springs to force the jaws together, and a wire loop set through the said notches *i* and closed into the grooves to form the hinge, substantially as described.

3. The herein-described clasp, consisting of the two parts A B, the said two parts constructed with the transverse grooves *d* and corresponding internal ribs, with the wire loop placed in the groove of one part and closed into the groove of the other part to form the hinge between the two parts, the two parts forming jaws at one end, their other ends curved and brought together at the extremes to form springs to force the jaws together, one of said parts constructed with an extension bent to form the hook C, substantially as described.

253,415. GRINDING-MILL. JOHN T. OHNESHAIN, Logansport, Ind. Filed Aug. 19, 1880. (No model.)

Claim.—1. The combination of the millstone and the annular ring in which it is arranged with an outer concentric ring arranged to create an annular space between the two rings for receiving weights, and partitions *c'*, arranged in said annular space to prevent the weights from shifting during the rotation of the stone, substantially as and for the purposes described.

2. In a grinding-mill, the combination, with the spindle, of the tram-pot I', the ring I, the pivots *i i*, supporting the tram-pot, the pivots *i' i'*, on which the ring is suspended, and the bridge-tree



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having bearings supporting the pivots of the said ring, substantially as and for the purpose described.

3. In a millstone-bush, the combination of the journal-bearing L, the ring K, the adjustable pivots K' K', supported by the ring, and on which the journal-bearing is suspended, the lugs *l*, and the pivots *l'*, passing through the lugs and sustaining the said ring, substantially as and for the purpose described.

4. In a two-part millstone-spindle, the combination, with the lower spindle, of the part c, constituting a feed-saucer, and detachably connected with the upper end of the lower spindle at a point below the face and within the body of the lower running-stone, substantially as and for the purpose described.

5. A balanced pivoted pressure-plate and lever arranged upon the hopper, with the float or plate portion adapted to be held down or kept from rising by the weight of the material or charge in the hopper, in combination with the swinging bridge-tree and devices adapted by connection with the pressure-plate lever to raise the bridge, and to admit, after their disconnection from said lever, of the shifting of the bridge, so as to remove the grinding-pressure from the millstone, substantially as herein set forth.

6. In combination with the pivoted lever R and float S, the tripping-rod P', scale-beam O, swinging bridge-tree B, and rod B', substantially as herein set forth.

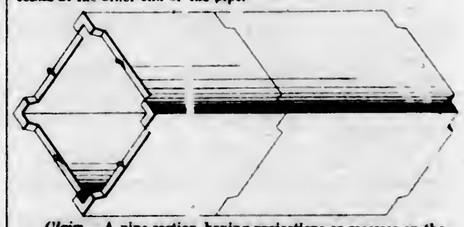
7. The pressure-plate S and lever R, in combination with tripping devices arranged to automatically remove the grinding-pressure from the millstone as the charge or grist leaves the hopper by shifting the bridge and the running-stone, substantially as herein set forth.

8. The combination, with the lower running-stone, D, the upper stationary stone, G, the outer surrounding curb, F, the hopper and the double feed-tube composed of the outer tube, *m*, and the inner tube, *m'*, of the vertically-adjustable spider U, connected with the outer tube and supported directly on the upper surface of the stationary stone, and the vertically-adjustable spider H, connected with the inner tube and supported by the curb, said members being arranged, substantially as described, for adjusting both parts of the double feed-tube, for the purposes set forth.

9. The combination, with the lower running and upper stationary stones, the surrounding curb, the hopper, and the double feed-tube, composed of the outer and inner movable tubes, of the spider U, connected with the outer tube, and having the arms *u u'* and adjusting-screw *e*, supported by the upper surface of the stationary stone, for adjusting the outer tube, and the spider H, supported by standards rising from the curb and connected with the inner tube, and provided with the set-screw *h*, for adjusting the inner tube, all substantially in the manner and for the purpose set forth.

253,416. CONNECTING SMOKE, HOT-AIR, AND OTHER FLUES. SIMPSON O'BRIEN, New Cumberland, W. Va., assignor to Freeman Brothers, McCoy's, Ohio. Filed Aug. 11, 1876.

Brief.—One end of the pipe-section has projections and recesses which are the exact counterpart of the projections and recesses at the other end of the pipe.

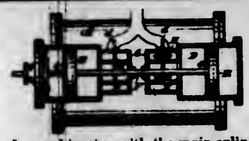


Claim.—A pipe-section having projections or recesses on the end thereof set at an angle to one another, so as to lock against lateral displacement when the section is joined with its counterpart, substantially as set forth.

253,417. VALVE-GEAR FOR STEAM-ENGINES. JAMES O'DONNELL, Central City, Dak. Filed Oct. 12, 1881. (No model.)

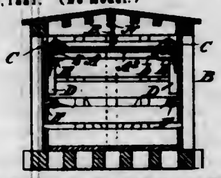
Brief.—The main piston-valves are connected to a small crank on the main shaft to assist engine over the dead-centers.

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Claim.—In combination with the main cylinder, cylinders D D, and the pistons E E, for controlling admission of steam to the former, the puppet-valves for controlling induction and exhaust of said cylinders D D, the gearing, cams, cam-shafts, and piston-rod F, substantially as shown and described.

253,418. STOCK-CAR. GEORGE F. ORNEL, Belle Vernon, Pa. Filed Dec. 15, 1881. (No model.)



Claim.—1. The combination, with the car B and the horizontal rods F, held a short distance from the inner sides of the car, of the vertically-sliding platform A, provided with the L-shaped hooks E on its under side, and means for raising and lowering said platform, substantially as and for the purpose set forth.

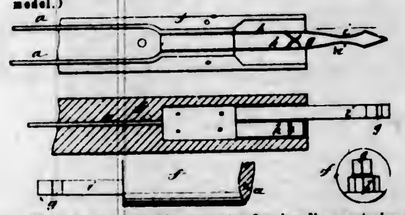
2. The combination, with the car B, the tracks D, and horizontal rods F, secured to the inner sides of the car, of the vertically-sliding platform A, provided with the rollers C and the hooks E, and means for raising and lowering said platform, substantially as and for the purpose set forth.

3. The combination, with the car B, provided with the tracks D, of the vertically-sliding platform A, provided with the rollers C, the pivoted L-shaped hooks S, and means for raising and lowering said platform, substantially as and for the purpose set forth.

4. The combination, with the vertically-sliding platform A, the doorway-standards *c*, and the sliding gate L, of the cattle-guards H, having the outer edges grooved, and the hooks J, secured to the said standards, substantially as and for the purpose set forth.

5. The combination, with the car B, provided with the tracks D, of the platform A, provided with the rollers C, the longitudinal rod N, the hand-wheel O, the pawl and ratchet P, and the chains R, substantially as and for the purpose set forth.

253,419. ELECTRIC COUPLING FOR TRAIN-TELEGRAPHS. EDWARD D. PARKER, Salina, Kans. Filed June 11, 1881. (No model.)



Claim.—In an electric apparatus for signaling on trains, the combination, with the electric wires *a a*, of the coupling formed with the springs *h h*, plates *i i*, and tongues *g g*, of non-conducting material, said plates *i* and springs *h* being integral and attached to the wires *a*, whereby, when the coupling is detached, the circuit is closed through the springs *h h*, when coupled electric continuity of the line-wires is secured, the plates *i i* being separated from each other at all times, substantially as shown and described.

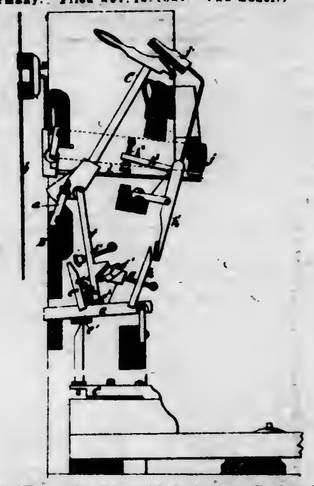
253,420. MACHINERY FOR FELTING HAT-BODIES. AUGUSTE PELISSE, Newark, N. J., assignor to John T. Waring, New York, N. Y. Filed Apr. 6, 1881. (No model.)



Claim.—1. The combination, with a folding-roller having grooves in its periphery, of lags pivoted within the said grooves, substantially as herein described.

2. The combination, with the grooved roller A, of the pairs of pivoted lags B B, matched at their adjacent ends, and the springs *d d*, substantially as herein described.

253,421. PIANO-ACTION. GOTTLOB PHILIPP, Forst-in-the-Lausitz, Germany. Filed Nov. 19, 1881. (No model.)



Claim.—1. The combination, with the hammer C, of the lever *e*, the bar or piece *e'*, the jack or hopper *f*, provided with the screw *f'* and the spring *f''*, and regulating-screw *g*, substantially as specified.

2. The combination, with the damper D and its lever I, of the lever *e*, the bar h, the jack *h'*, provided with the arm *h²*, and the screw *h³*, substantially as specified.

3. The combination, with the hammer C and lever *e*, of the jack *h'*, the check *f*, carried thereby, and the bar or piece h, fixed to the said lever *e*, substantially as specified.

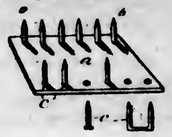
4. The combination, with the hammer C, its flange *c*, and the jack or hopper *f*, of the spring *m*, arranged in said flange and having one end acting on said jack or hopper, and the screw *n*, for adjusting the tension of said spring, substantially as specified.

253,422. BREECH-LOADING FIRE-ARM. ALEXANDRE PICARD, Montaigu, France. Filed Mar. 16, 1880. (No model.) Patented in France Feb. 3, 1879.



Claim.—In a breech-loading gun, the combination of the rocking spring-actuated block B, having a hammer or piercing-point, *l*, made in one piece and provided with lever-arm *f*, the catch or sear h, pivoted to the rear portion of the breech-block, a fixed claw or shoulder, *j*, on the breech-piece, and the barrel having a hole in its under side to receive the hammer-point, as shown and described.

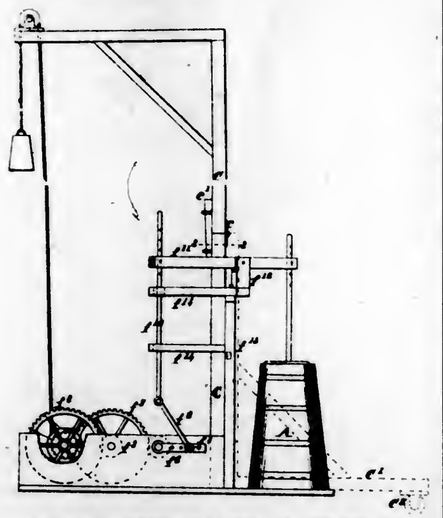
253,428. BELT-HOOK. ALFRED B. PITKIN, Hartford, Conn. Filed July 29, 1881. (No model.)



Claim.—1. The combination of the belt-hook plate *a*, having permanent teeth *b* on one edge and holes or perforations at its opposite edge, with the removable teeth *c*, all substantially as described, and for the purpose set forth.

2. The combination of the belt-hook plate *a*, having permanent teeth *b* on one edge and holes or perforations at its opposite edge, with the removable double teeth *c*, all substantially as described, and for the purpose set forth.

253,424. CHURN-MOTOR. GEORGE C. QUICK, Centralia, Ill., assignor of one-half to Thomas Quick, St. Louis, Mo. Filed Dec. 12, 1881. (No model.)



Claim.—The combination of churn A *a'*, connecting arm f^{11}, fulcrumed on post f^{10}, frame f^{10}, connecting-rod f^{12}, guide-arms f^{14}, arm f^{9}, crank f^{8}, box B *b*, gearing f^{7} f^{6} f^{5} f^{4} f^{3} f^{2} *f*, drum F, crank f', ratchet-wheel A, pawl *h'*, rope D, weight E, pulley C', and supporting-post C' C, all made substantially as and for the purpose set forth.

253,425. APPARATUS FOR EXPRESSING MALT EXTRACTS FROM THE REFUSE OF BREWERS' MASH. HENRY R. RANDALL, Brooklyn, N. Y., assignor of one-half to Charles G. Till, same place. Filed July 23, 1881. (No model.)

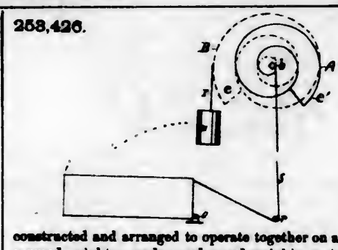


Claim.—1. The combination, with a reticulated or foraminous apron, of rollers arranged one above the other and both having faces of india-rubber or other elastic material, between which said apron passes and to which material is carried by said apron, and a receptacle for liquid under the lower roller and that portion of the apron which is between and adjacent to the rollers, substantially as and for the purpose specified.

2. The combination of a reticulated or foraminous apron having its edges bound with india-rubber or other suitable material, with rollers arranged one above another and having faces of india-rubber or other elastic material, between which the apron passes and to which material is carried by said apron, and a receptacle for liquid under the lower roller and that portion of the apron which is between and adjacent to said rollers, substantially as and for the purpose specified.

253,426. MECHANICAL MOVEMENT. JOHN W. REID, Chicago, Ill. Filed Nov. 18, 1881. (No model.)

Claim.—1. In combination with the spiral pulleys A and B,

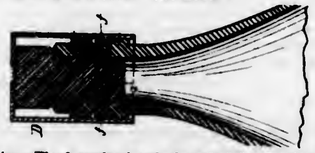


constructed and arranged to operate together on a shaft, *b*, the fulcrumed weight *a*, cords *s* and *r*, and weight *w*, substantially as and for the purpose specified.

2. The fulcrumed weight *a*, suspended weight *w*, pulley *p*, and cords *s* and *r*, in combination with the spiral pulleys A and B, constructed and arranged substantially as specified.

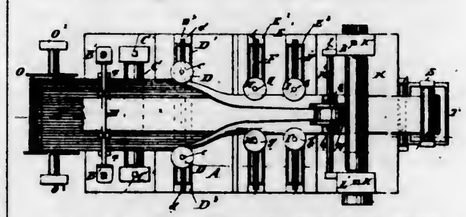
3. The spiral pulleys A and B, constructed as shown, provided with cords *s* and *r*, attached as shown, the cord *r*, provided with a weight, *w*, and the cord *s*, attached, as shown, to a fulcrumed weight, *a*, offering a variously increasing or decreasing resistance, substantially as specified.

253,427. BOTTLE-STOPPER FASTENING. H. L. CHARLES RENAULD, Brooklyn, and MARSHALL B. STAFFORD, New York, N. Y. Filed Nov. 3, 1881. (No model.)



Claim.—The fastening herein described for securing the stopper in bottles and other vessels, consisting of the cap D, adapted to pass over the stopper and mouth of the vessel, and provided at its lower portion with the slots *a b*, in combination with the ring *f*, composed of sections *g h*, having intermeshing ends and carrying the lugs *i*, the ring being applied on the neck of the vessel to turn and cause the lugs to lock or free the cap, substantially as set forth.

253,428. MACHINE FOR MAKING RUBBER BELTING. JOS. T. RIDGWAY, Trenton, N. J. Filed July 30, 1881. (No model.)



Claim.—1. In a machine for making rubber belting, the combination, with the bed-plate A and the grooved or flanged rollers D H I, of the open frames D' E' E', the sliding blocks D' G G', and screws D' F F', whereby each roller is adapted to have an independent adjustment, substantially as and for the purpose set forth.

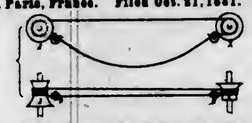
2. In a machine for making rubber belting, the combination, with the bed-plate A and the open frames D', provided with the lugs d^3, of the blocks D^3, rollers D, and screws D^3 D^4, whereby the said rollers can be adjusted to or from each other or lengthwise of the bed, substantially as and for the purpose set forth.

3. In a machine for making rubber belting, the combination, with the bed-plate A and the roller D, of the frame D', provided with the lug d^3 and the screw D^4, whereby the said roller is adapted to be adjusted lengthwise of the said bed, substantially as set forth.

4. In a machine for making rubber belting, the combination, with the standards K', provided with brackets *l f*, of the shaft M', the adjustable spool M, shaft M', and adjustable flanged guide-roll M^5, substantially as and for the purpose set forth.

5. In a machine for making rubber belting, the combination, with the roll O, carrying the stock, and the roll O', carrying the covering, of the hinged arms Q and the rollers Q', substantially as and for the purpose set forth.

253,429. SYSTEM FOR TRANSMITTING MOTION. ANTONIO SAMPER, Paris, France. Filed Oct. 21, 1881. (No model.)



Claim.—1. The concaved pulleys having the rope or belt coiled around them, in combination with the tension-pulley D, substantially as and for the purposes set forth.

2. In combination with the conical motor-pulley X and the conical driven pulley A, the rollers B, placed near the pulleys and applied to each end of the rope or belt, so as to produce tension, as set forth.

3. In combination with the pulleys A and X, the pulleys B, C, and D, for rounding angles and for tightening the rope or belt, substantially as described.

4. The separated motor-pulley X, in combination with the pulleys *y y* and the rope or belt wound around the pulley X, and having its ends free and weighted, substantially as and for the purposes set forth.

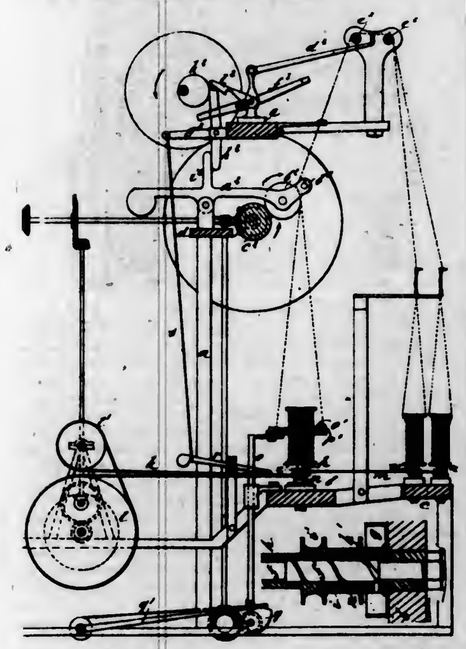
253,430. SOFT-METAL LINING FOR DOVETAIL SOCKETS. JAMES A. SANDFORD, Albany, N. Y. Filed Sept. 26, 1881. (No model.)



Claim.—1. A sheet-metal shell, C, having an inclined side or face, *a*, and having its ends partly closed by the turned-over metal of the shell, whereby it is adapted to form a part of the pattern for molding dovetail sockets and a lining for the sides or bearing-surfaces of the finished sockets, substantially as described.

2. The combination, in molding patterns for dovetail sockets, of fixed ribs or projections F and separate or disconnected sheet-metal shells C, substantially as and for the purpose described.

253,431. MACHINE FOR SPINNING, DOUBLING, AND TWISTING FIBROUS MATERIALS. FRANCIS SEYMOUR, Paterson, N. J. Filed Aug. 10, 1881. (No model.)



Claim.—1. The combination, with fallers d^3, lever f^3, cam k^2, roller c^3, and mechanism for operating said cam and roller, of lever g^3, provided with lug h^3, and lever d^3, provided with lug f^3, and carrying rolls b^3 b^3, substantially as and for the purposes specified.

2. The combination of the spindle *f f'*, the pulleys *i n*, the tube *h h'*, the rail *b*, and the oil-cup *g*, substantially as shown and described.

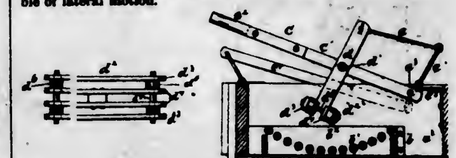
253,432. CAN-OPENER. FRANK SHARP, Socorro, N. Mex. Filed July 8, 1881. (Model.)



Claim.—A can-opener constructed substantially as herein shown and described, consisting of the handle A, the bar B, having a curved point, C, and a perforated lug, D, upon its forward end, the swiveled screw E, having thumb-wheel F upon its inner end, and the cutter H, having in its shank G a screw-hole to receive the screw E and a perforation to receive the bar B, as set forth.

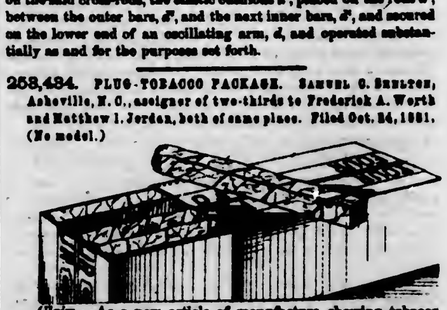
253,433. WASHING-MACHINE. HOWARD A. SHAW, Galena, Ohio. Filed Sept. 30, 1880. (Model.)

Brief.—The rubber is composed of a series of parallel bars held on cross-rods, the two outer being held loosely in place and having rubber cushions placed between them and the next inner bars, the said inner bars being immovable, while the outer ones are capable of lateral motion.



Claim.—In a washing-machine, the rubber d^5, composed of a series of parallel bars, d^2 d^3, arranged and held on cross-rods d^4, the bars d^3 being placed and held loosely, so that they slide inwardly on the said cross-rods, the elastic cushions d^7, placed on the rods d^4, between the outer bars, d^2, and the next inner bars, d^3, and secured on the lower end of an oscillating arm, *d*, and operated substantially as and for the purposes set forth.

253,434. PLUG-TOBACCO PACKAGE. SAMUEL C. SHELTON, Asheville, N. C., assignor of two-thirds to Frederick A. Worth and Matthew I. Jordan, both of same place. Filed Oct. 24, 1881. (No model.)



Claim.—As a new article of manufacture, chewing-tobacco formed into blocks, each composed of a definite number of plugs of equal size and weight, said plugs being separately enveloped in a wrapper of leaf-tobacco, with their opposite ends cut and twisted, respectively, and the entire block of adhering plugs packed in a box of paper or like material, substantially as shown and described.

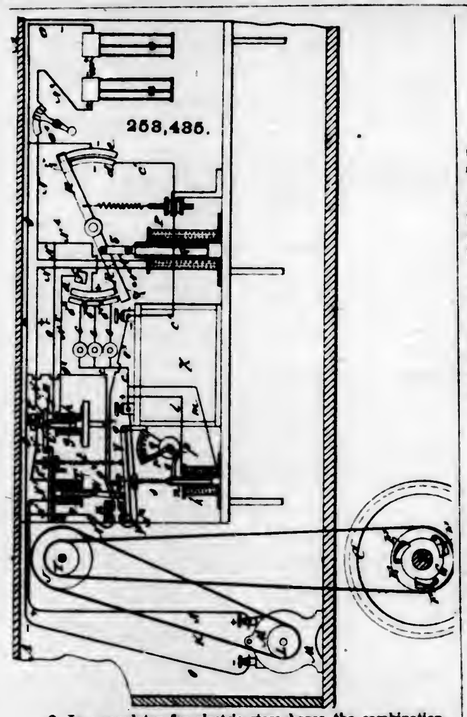
253,435. REGULATOR FOR ELECTRIC STORE-BOXES AND LIGHTS. HENRY B. SHERIDAN, Cleveland, Ohio. Filed Aug. 11, 1881. (No model.)

Brief.—A dynamo-electric generator and a secondary battery are mounted upon a railway-car, the generator being driven by band-and-pulley connections from the axle of one pair of wheels, and electric lights are placed in and operated by the main circuit. A derived circuit contains a secondary battery. This circuit is automatically opened when the charge in the secondary battery reaches its maximum, and the current from the latter is diverted through the light-circuit when the generator fails to supply the full complement of the required current or when it stops entirely, by reason of stoppage of the car.

Claim.—1. The combination, with the car-axle D and a dynamo-electric machine, of the pulley E, pawls F, ratchet-wheel G, and the belts and pulleys H K I J L, substantially as herein shown and described, whereby electricity will be generated by the advance of the car, as set forth.

7. The oil-pump arranged to slide into a recess in the door of

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2. In a regulator for electric store-boxes, the combination, with the dynamo-electric machine M, the circuit-wires N O, and the storage-box X, of the magnet T, the hinged lever V, connected with the core of the magnet T, the insulated connections Y Z, and the connecting-wires N' N' N³ O' N³ O', substantially as herein shown and described, whereby the excess of electricity beyond the amount necessary to keep the lamps alight will be automatically conducted into and stored in the said storage-box, as set forth.

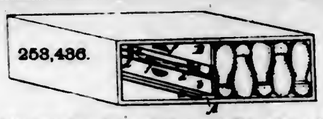
3. In a regulator for electric store-boxes, the combination, with the dynamo-electric machine M, the positive circuit-wire N, and the storage-box X, of the magnet P, the lever R, and the switch-blocks *a*, *b'*, *b'*, *b'*, and *d e*, and the connecting-wires *e c'* and N' O', substantially as herein shown and described, whereby the deficit of electricity below the amount necessary to keep the lamps alight will be automatically supplied from the storage-box, as set forth.

4. In a regulator for electric store-boxes, the combination, with the dynamo-electric machine M, the positive circuit-wire N, having switch, the storage-box X, the magnet P, the lever R, the switch-blocks *a*, *b'*, *b'*, *b'*, and *d e*, the connecting-wires *e c'* and N' O', of the magnet *g*, the arm *i* and spring *j*, the insulated connections *v w*, the connecting-wires N³ O', and the switch-block *f*, substantially as herein shown and described, whereby, when the generated current becomes very weak or stops and the lamps are kept alight from the storage-box, the main circuit is broken to prevent the current of electricity from passing back to the generator, as set forth.

5. In a regulator for electric store-boxes, the combination with the dynamo-electric machine M, the storage-box X, the magnet T, the lever V, the insulated connections Y Z, and the wire N' N' N³ O' N³ O' and wire *c*, included in the circuit of the storage box, of the magnet *k*, the arm *o*, the lever *p*, the hand *r*, the dial *q* and the springs *s t*, substantially as herein shown and described whereby the amount of electricity in the storage-box will be accurately indicated, as set forth.

258,486. DEVICE FOR SUPPORTING BOOTS IN BOOT-BOXES. E. H. SLAGLE, Algona, Iowa. Filed Oct. 5, 1881. (No model.)

Claim.—1. An improved device for supporting boots in boxes, consisting of two boards having coiled springs interposed between them, substantially as herein shown and described, whereby the said boards will be forced against the sides of the box, as and for the purpose set forth.

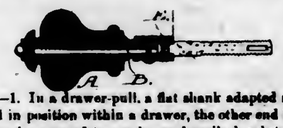


2. The main board A, provided with the rods *c c*, in combination with the board B and the coiled springs *d d*, substantially as and for the purposes set forth.

3. The board B, provided with the points *i i*, in combination with the rods *c c*, springs *d d*, and the main board A, the main board being composed of the bottom piece, *a*, and the upright piece *b*, the board B and the upright piece being formed with the hand-opening *f f*, substantially as and for the purposes set forth.

258,487. DRAWER-PULL. FRIEND W. SMITH, Bridgeport, Conn., assignor to the Smith & Egge Manufacturing Company, same place. Filed Dec. 29, 1881. (Model.)

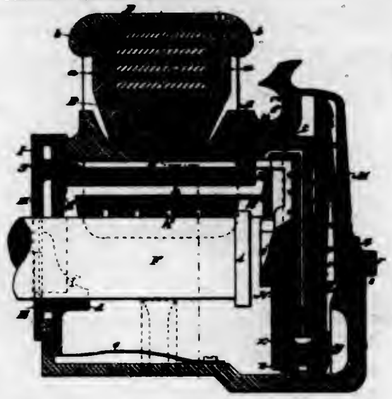
Brief.—A flat shank is riveted to a yoke, which in turn is secured to a tube and its ferrule, said tube passing through the handle, and being provided at its lower end with an ornamental plug.



Claim.—1. In a drawer-pull, a flat shank adapted at one end to be secured in position within a drawer, the other end being riveted or otherwise secured to a yoke, as described, substantially as and for the purpose specified.

2. In a drawer-pull, the tube B, arranged interiorly of the knob A, in combination with the ferrule E, yoke B, and shank C, substantially as and for the purpose set forth.

258,488. CAR-AXLE BOX. JOSEPH M. SMITH, New York, N.Y. Filed Nov. 1, 1881. (No model.)



Claim.—1. A detached saddle for an axle-box, having a rounded or convex seat for the spring and a socket to rest upon a ball on the top of the housing, whereby perfect freedom of movement without friction is attained, substantially as set forth.

2. The saddle provided with a rounded seat for the spring, arranged between raised guard-flanges, which have short laterally-projecting flanges to receive the clip, in combination with the said clip arranged to engage the lateral flanges, substantially as shown.

3. The combination, with the housing and the bearing-cap, of the slide or cap I, the washer-collar H, and the half-collar E, provided with oblique scraping-edges *f f* and a supporting-spring, *e*, all constructed and arranged substantially as set forth.

4. The bearing-cap provided with the serpentine oil-channel in its concave face, said channel being arranged to receive oil from the pump at the inner end of the bearing, as set forth.

5. The bearing-cap J, provided with the internal channel, *h*, the serpentine channel h^2, and the recess h^3 for the button on the axle-journal, substantially as specified.

6. The combination, with the housing, of the slide I, arranged to engage and rest upon the inner end of said housing, and the bearing-cap provided with bearings in the housing and with a projection to engage a recess in the said slide I, substantially as herein shown, and for the purposes set forth.

7. The oil-pump arranged to slide into a recess in the door of the box, and provided with a spring at its back to engage a shoulder on the said door, in combination with a door provided with a recess to receive the pump, a shoulder to engage the spring on the same, and an aperture near said shoulder, through which the spring may be released from said shoulder, substantially as set forth.

8. The combination of the housing constructed to receive the door, the said door provided with marginal flanges to take over the margin of the opening in the housing, with a recess and keeper to receive the oil-pump, a shoulder to engage the spring on the pump, and an aperture through which the disengagement of the spring is effected, and the oil-pump provided with a projecting part to take under the roof of the housing, and a spring on its back to engage a shoulder on the door, all arranged to operate substantially as set forth.

9. The combination of the housing provided with margins or marginal flanges *s s'*, the door provided with marginal flanges *r r' r²*, with a shoulder, *p*, and aperture *g*, the oil-pump provided with springs *o* and *n* of unequal length, and a projecting part, *t*, to take under the roof of the housing, and the stopping-bar arranged to be attached to and detached from the pump, all arranged to operate substantially as set forth.

10. The combination, with the housing and the door of the box, of the stopping-bar arranged to embrace the pump and to slide in keepers on the door, the said pump and the plate *j*, attached removably to the stopping-bar, all constructed and arranged to operate substantially as set forth.

11. The combination, with the pump-chamber and the outer valve-chamber, arranged to slip over its lower end, of the stopping-bar made to embrace the body of the pump-chamber, and provided with a flange to take under a projecting portion of the valve-chamber and prevent it from escaping, substantially as set forth.

12. The combination of the following coactive elements, namely: the housing, the bearing-cap provided with a projection, *g*, the slide I, having a provision to engage the projection *g*, the oil-pump, the stopping-bar connected with the pump, and the door M, all provided, constructed, and arranged to operate substantially as and for the purposes set forth.

13. The combination, with the housing having a ball-support for the saddle, of the saddle B, provided with a socket to rest on the said ball-support, a rounded convex seat for the spring C, two raised guards, *a a*, and two short lateral flanges, *b b*, on the guards *a*, and a clip, D, having curved ends to engage the flanges *b b*, all arranged to operate substantially as set forth.

258,489. CAR-TRUCK. JOSEPH M. SMITH, New York, N.Y. Filed Nov. 1, 1881. (No model.)

Claim.—1. A car provided with two trucks, one under each end of the car-body, and each truck pivoted at its end to the end of the car-body, and having its free end arranged to swing under the body of the car, whereby, whichever end of the car be foremost, the wheels of the front truck will be behind the pivot-point and the wheels of the back truck in front of the pivot-point, substantially as set forth.

2. The evener provided with sockets to receive the springs, substantially as set forth.

3. The evener provided with sockets to receive the springs, and provided with a socket at the center to receive a ball on the housing or truck-frame, all constructed substantially as set forth.

4. The combination, with the housing and pedestals, of the socketed evener, the springs secured in sockets in the same, the axle-boxes, and the saddles of the said boxes, having convex tops to receive the springs, all constructed and arranged substantially as set forth.

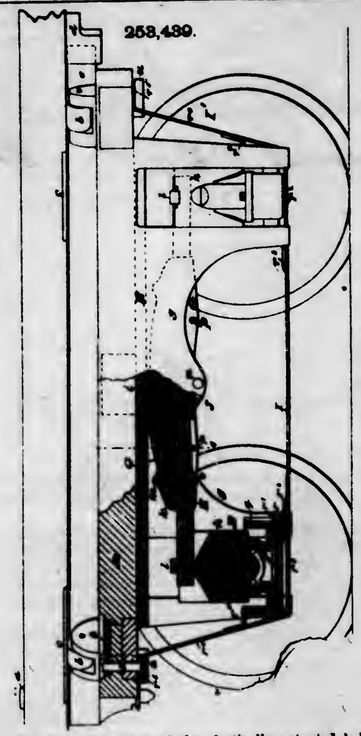
5. The combination, with the housing and pedestals, of the socketed evener mounted in the housing, the laminated springs secured in sockets in the evener, the axle-boxes, the saddles, removable from said boxes and provided with convex tops for the springs to rest on, and the clips which secure the springs to the saddles, all constructed and arranged substantially as set forth.

6. The combination, with the truck-frame, of the housings provided with side plates, *g*, and recesses or pedestals for the axle-boxes, the evener G, springs H, secured thereto, the axle-boxes, and their saddles, all arranged substantially as set forth.

7. The evener provided with sockets to receive the springs, and with cams *p*, substantially as set forth.

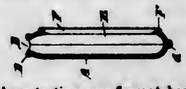
8. The evener provided with sockets to receive the springs, with cams *p*, and with pins or bolts *o*, all arranged substantially as and for the purposes set forth.

9. The stirrup-strap consisting of the stretcher I, provided with a lip, *r'*, and a hole to receive the pin on the strap I', and the said strap provided with a pin, *r²*, all arranged substantially as set forth.



10. The combination of the elastically-actuated bolt *o*, the button *u*, the strap I', provided with pin *r²* and bracket *r³*, and the stretcher I, provided with a lip, *r'*, and a hole to receive the pin *r²*, all constructed and arranged substantially as and for the purposes set forth.

258,440. RUBBER WATCH-CASE. GUSTAV SPECKHART, Nuremberg, Germany. Filed Nov. 12, 1881. (No model.)



Claim.—1. A protecting-case for watches, made, substantially as herein shown and described, of soft rubber, and with an aperture, B, for the pendant and an opening, E, for the dial, as set forth.

2. The combination, with the soft-rubber watch-protecting case A, provided with a pendant-aperture, B, and a dial-opening, E, of the beads D and F, surrounding these openings or apertures, respectively, substantially as herein shown and described, and for the purpose set forth.

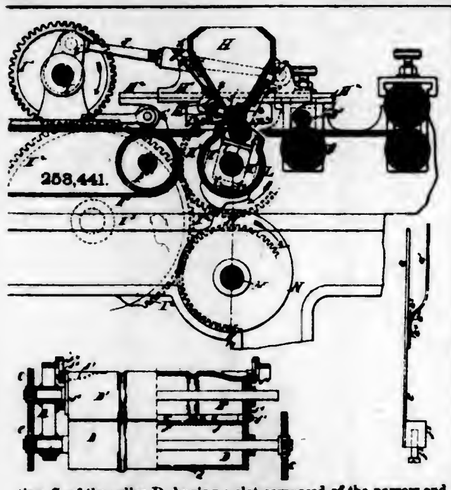
3. The combination, with the soft-rubber watch-protecting case A, of the circumferential rib G, substantially as herein shown and described, and for the purpose set forth.

258,441. MACHINE FOR MAKING PAPER BAGS. EDWARD STANLEY, New York, N.Y., assignor to the National Paper Bag Company, same place. Filed Oct. 21, 1881. (No model.)

Claim.—1. A knife for a paper-bag machine, composed of a straight stock-piece, a bowed stock-piece detachably secured thereto, and a sectional blade, substantially as herein specified.

2. A knife for a paper-bag machine, composed of a straight stock-piece cut away upon the under side, a bowed stock-piece slitted at each end to form two fingers, the upper of which are detachably secured to the straight stock-piece and the lower of which lap under the same, and the sectional blade, substantially as herein specified.

3. The combination, with the roller D' and the reciprocating knife carried thereby, and composed of the main stock-piece *c* and blade-sections *f*, and the removable stock-piece *c'* and blade-sec-



tion *f'*, of the roller D, having a slot composed of the narrow end portions, *g*, and the wider intermediate portion, *g'*, substantially as herein specified.

4. In a paper-bag machine, the combination of two rollers, between which the paper passes, having circumferential beads and corresponding grooves near each end, and having the portions on the outer sides of and between said beads and grooves of cylindric form and uniform diameter, and a reciprocating knife carried in one of said rollers, substantially as herein specified.

5. In a paper-bag machine, the combination of a paste-box, a reciprocating carriage supporting said box and guides therefor, and a crank-shaft and a connecting rod or rods for operating said carriage, substantially as herein specified.

6. In a paper-bag machine, the combination of a paste-box, a plate for supporting bags while paste is being applied, a shaft with which said plate rotates, and mechanism, substantially as described, for moving said plate toward and from the center of the shaft, substantially as herein specified.

7. In a paper-bag machine, the combination of a creasing blade or knife, an elastic creasing-roller, a shaft with which said roller rotates, and mechanism, substantially as described, for moving said roller toward and from said shaft, substantially as herein specified.

8. In a paper-bag machine, the combination of a paste-box, a creasing knife or blade, a plate for supporting the bags while paste is being applied, an elastic creasing-roller, a shaft with which said plate and creasing-roller rotate, and mechanism, substantially as described, for moving said plate and roller toward and from said shaft, substantially as herein specified.

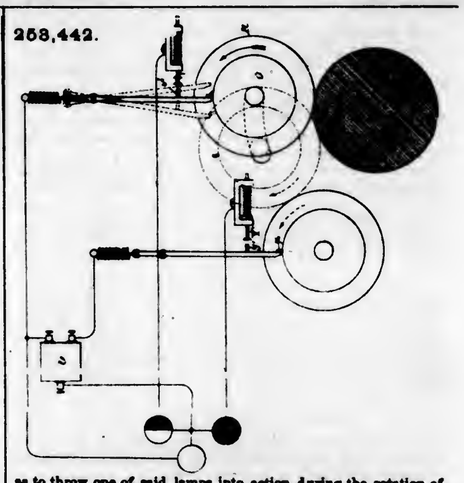
9. In a paper-bag machine, the combination of a reciprocating paste-box, a plate for supporting bags while paste is being applied, a shaft with which said plate rotates, yokes to which said plate is attached, and cams for moving said yokes and plate from the center of said shaft, substantially as herein specified.

10. The combination of the paste-box H, the creasing blade or knife *p*, the plate P, the sliding yokes I', the elastic creasing-roller *p'*, and the cams N, substantially as herein specified.

253,442. APPARATUS FOR PRODUCING SIGNALS AND LIGHTS UPON RAILWAY-TRAINS. ELI T. STARR, Philadelphia, Pa. Filed Nov. 10, 1881. (No model.)

Claim.—1. The combination, substantially as hereinbefore set forth, of a vehicle or train of vehicles, a rotating axle or moving part of said vehicle or train, an electric circuit including a source of electricity mounted upon said vehicle or train, an electric lamp, and mechanism operated by said axle or moving part, whereby said axle, when turning in one direction, throws said lamp into circuit to give out light, while when turning in the opposite direction said lamp is thrown out of circuit.

2. The combination, substantially as hereinbefore set forth, of a vehicle or train of vehicles, an axle or moving part of said vehicle or train, a source of electric supply mounted upon said vehicle or train, electric lamps, circuit-connections between said electric source and said lamps, and mechanism operated by the movement of said axle or moving part of the vehicle or train, so



as to throw one of said lamps into action during the rotation of said axle in one direction, and another of said lamps into action during the rotation of the axle in the opposite direction.

3. The combination, substantially as hereinbefore set forth, of a vehicle or train of vehicles, a source of electricity mounted upon said vehicle or train, two circuits including said source, and a switch automatically operated by the movement of said vehicle or train to close one of said circuits when the vehicle or train is advancing and to close the other of said circuits when said vehicle or train is backing.

4. The combination, substantially as herein before set forth, of a vehicle or train of vehicles, an axle or rotating part of said vehicle or train, electric lamps to indicate the direction of travel of said vehicle or train, circuit-connections including said lamps and a source of electricity mounted on said vehicle or train, mechanism operated by the movement of said axle so as to throw one of said lamps into action during the rotation of said axle in one direction and another of said lamps into action during the rotation of the axle in the opposite direction, and a third lamp to indicate when the vehicle is at rest.

5. The combination, substantially as herein before set forth, of an axle or rotating part of a vehicle, an arm carrying friction-wheels journaled therein, so as to be driven by the revolution of said axle, circuit-connections including electric lamps and a source of electricity, and circuit-breaking wheels turned by said friction-wheels to make and break said circuit-connections.

6. The combination, substantially as herein before set forth, of an axle or rotating part, a hanging arm, a roller journaled in said arm so as to rotate a circuit-breaker to make and break an electric circuit, a second roller journaled in said arm so as to be driven by said axle and capable of being moved into and out of contact with said first-mentioned roller, and a circuit-breaker rotated by said second roller to make and break an electric circuit.

253,443. COLORING-MATTER OR DYE-STUFF. JAMES H. STEBBINS, Jr., New York, N. Y. Filed Dec. 31, 1881. (Specimens.)

Claim.—The blue dye-stuff produced by the action of chloride of lime upon an alkaline mixture of dimethyl-paraphenylendiamine hydrochloride and orthocresol, substantially as set forth.

253,444. COLORING-MATTER OR DYE-STUFF. JAMES H. STEBBINS, Jr., New York, N. Y. Filed Dec. 31, 1881. (Specimens.)

Claim.—The blue dye-stuff produced by the action of dimethyl-paraphenylendiamine hydrochloride upon an alkaline solution of orthocresol in presence of an oxidizing agent, substantially as set forth.

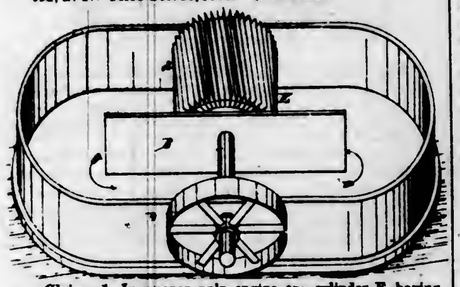
253,445. COLORING-MATTER OR DYE-STUFF. JAMES H. STEBBINS, Jr., New York, N. Y. Filed Dec. 23, 1881. (Specimens.)

Claim.—As a new article of manufacture, the blue dye-stuff or coloring-matter herein described, and having the characteristics above set forth.

253,446. INSULATION OF ELECTRICAL CONDUCTORS. HENRY C. STRONG, Chicago, Ill., assignor of one-half to James Lloyd and Llewellyn R. Lloyd, same place. Filed Aug. 26, 1881. (No model.)

Claim.—As an improved article of manufacture, an annealed telegraph-wire coated with a sizing of adhesive preparation and wrapped in pure asbestos, said asbestos wrapping being coated with a covering of pulverized asbestos and oil, substantially as specified.

253,447. PAPER-PULP ENGINE. WILLIAM B. TAYLOR, Fulton, N. Y. Filed Dec. 23, 1881. (No model.)



Claim.—1. In a paper-pulp engine, the cylinder E, having the plain cutting-blades *d*, set diagonally across the surface of the cylinder, substantially as and for the purposes set forth.

2. The combination of the cylinder E, having the plain cutting-blades *d* set diagonally across its surface and the blades *f* arranged under the said cylinder and parallel with its axis, substantially as shown and described, whereby a shearing action or cut is given to the blades, as set forth.

253,448. HEAD-COVERING. RICHARD H. TRESEDER, Greenville, N. J. Filed Dec. 1, 1881. (Model.)



Claim.—1. As a new article of manufacture, a plush hat made of one continuous piece of plush having a nap on both sides, substantially as set forth.

2. A lady's or child's hat made of silk plush or cotton-napped fabric, napped on both sides, sized, and blocked into shape, substantially as specified.

3. The method herein described of making ladies' and children's hats by cutting a blank from a continuous piece of fabric napped on both sides, sizing the same, and then blocking it into shape, substantially as set forth.

253,449. LEATHER-SPLITTING MACHINE. GEO. L. TYLER, Lynn, Mass. Filed July 30, 1881. (No model.)



Claim.—1. In a leather-splitting machine, two adjusting-arms attached to the journals of two feed-rolls, said two adjusting-arms being held together by a connecting-bar at each end of the machine, and held firmly to the frame of the machine by a bar at each end of the machine, said adjusting-bars being adapted to spread and contract upon pivots, the whole constructed and arranged substantially as described, and for the purpose set forth.

2. In a leather-splitting machine, two equalizing-levers crossed at their centers, and held upon a pivot at said centers, said pivot forming a fulcrum for both levers, said levers being provided with an elongated slot at each end of each lever, each of said slots being adapted to receive a friction-bolt, which friction-bolts are attached to the adjusting-arms B and B', constructed and arranged substantially in the manner described and shown, and for the purpose specified.

3. In a leather-splitting machine, an elliptic tension-spring attached to and adapted to bear against the adjusting-arm B and to bear upon the adjusting-arms B', said spring being provided with an adjusting-screw, *d*, constructed and arranged substantially as described and shown, and for the purpose set forth.

4. In a leather-splitting machine, in combination with the two feed-rolls of a leather-splitting machine, the two adjusting-arms B and B', the connecting-bars G, with pivots *g* and *g'*, the bars H, held by the bolts *h* and *h'*, the friction-belts *d'*, attached to said adjusting-arms B and B', the two crossed equalizing-levers C, provided with the elongated slots *e* and with the pivot E, and the elliptic spring J, with the adjusting-screw *d*, all constructed and arranged substantially as described and shown, and for the purpose set forth.

253,450. JEWELRY. JOHN B. VAN HOUTEN, Newark, N. J. Filed Oct. 11, 1881. (No model.)



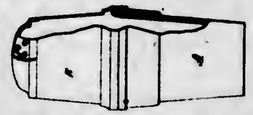
Claim.—1. The combination, with a crown-piece composed of the back plate, *d*, and cramps *b*, of the cylinder and stone held in combination by said cramps, substantially as and for the purposes set forth and shown.

2. The combination of the back plate, *d*, having a pin and cramps thereon, of a tubular portion, *c*, and stone held in said combination by said cramps, substantially as and for the purpose set forth.

3. In a scarf-pin, the combination, with the back plate, *d*, of the crown-piece, of the pin *c* and supplementary pin, *f*, arranged and operating substantially as and for the purposes set forth and shown.

4. As a new article of manufacture, the scarf-pin having therein the crown-piece A, tubular bearing *c*, stone, pin *c*, and supplemental pin *f*, the whole being arranged and operating substantially as and for the purpose set forth.

253,451. SHAKER FOR MIXING DRINKS. LEON WARD, SIDNEY A. SMITH, and GEORGE FACKLEY, Bridgeport, Conn. Filed Oct. 31, 1881. (No model.)



Claim.—1. The herein-described shaker for mixing drinks, consisting of the glass body A, provided with the metal neck *a*, combined with a metal cup constructed to fit upon said neck and close the mouth of the body, substantially as described.

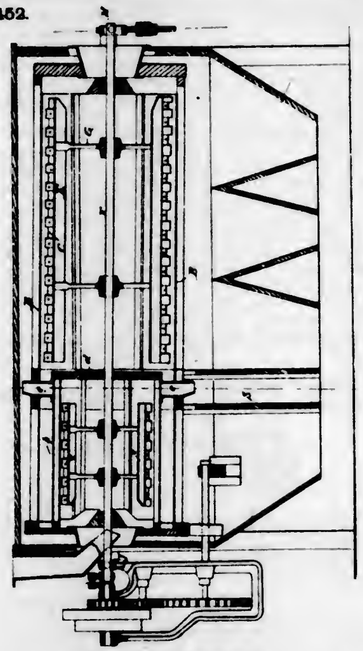
2. The herein-described shaker for mixing drinks, consisting of the glass body A, provided with the metal neck *a*, combined with a metal cup constructed to fit upon said neck and close the mouth of the body, the said cup perforated at its closed end, and with the cap C, substantially as described.

253,452. FLOUR-DRESSING MACHINE. JOHN WEBER, Uster, Zurich, Switzerland, assignor to John Feichter & Sons, Minneapolis, Minn. Filed July 8, 1881. (No model.)

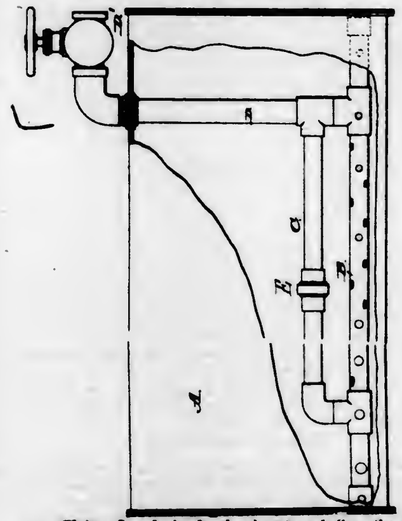
Claim.—1. In a machine for dressing flour, the scutchers C, constructed substantially as herein shown and described, and consisting of a series of metal plates or strips alternately bent forward and backward, the plates bent forward being provided with one or more perforations, as set forth.

2. In a machine for dressing flour, the combination of the adjustable and jointed shaft F, having arms G, carrying scutchers C, that are bent forward and perforated, and scutchers *c*, that are bent backward and not perforated, cylinder B, clothed with gauze, an inner cylinder, *b*, within cylinder B, occupying only a part of its length, and covered with gauze, radial tubes *c c*, and chutes S, as and for the purposes described.

258,452.



258,453. CLEANING STEAM-BOILERS. JOSEPH B. WEEKS, Barnesville, Ohio, assignor of one-half to Mathew C. McKeown, same place. Filed Aug. 27, 1881. (No model.)

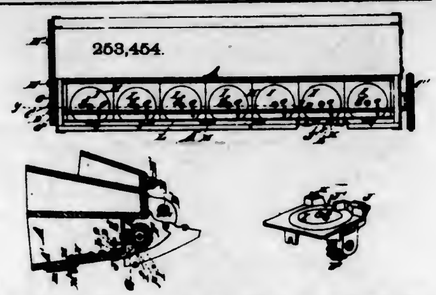


Claim.—In a device for cleaning steam-boilers, the combination, with the boiler A, of the perforated pipe B, having perforations of unequal size arranged so that no two are opposed, and the pipe C, having the union-joint E, and being connected to the pipes B and D by ⊥ and ⊤ joints, and the pipe D, having the valved outlet D′, substantially as and for the purposes specified.

258,454. FERTILIZER-DISTRIBUTER. JOHN M. WHITCOTT, Richmond, Ind. Filed Feb. 22, 1881. (Model.)

Claim.—1. A fertilizer-distributing device composed substantially of a plain rotating disk, I, upon the face of which is

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carried the fertilizer, in combination with an open discharge-chute formed on one side by the scraper J′ and the opposite side by the ledge J, the ends of which chute terminate vertically above the peripheral plane of the disk and forming the discharge-orifice, as set forth.

2. A fertilizer-distributing device composed substantially of a plain rotating disk, I, upon the face of which is carried the fertilizer, in combination with an open discharge-chute formed on one side by the scraper J′ and the opposite side by the ledge J, the ends of which project through the rear side of the hopper and form the discharge-orifice vertical above the peripheral plane of the disk, as and for the purpose specified.

3. A fertilizer-distributing device composed of the horizontal rotating disk I and a scraper, J′, and a ledge, J, forming a delivery-orifice, arranged in the box A, in combination with the agitator B, working in front of and in the same horizontal plane as the discharge chute and orifice *j*, substantially as herein set forth.

4. A fertilizer-distributing device composed of the horizontal rotating disk I and scraper J′ and ledge J, forming a discharge-chute arranged in the seed-box A, in combination with the agitator B, working in the rear of the vertical axial plane of the disk I and in front of the discharge-orifice, substantially as herein set forth.

5. In combination with the fertilizer-distributer I J′ K, the adjustable cut-off and regulating-gate L, arranged to operate in front of the discharge chute and orifice *j*, substantially as herein set forth.

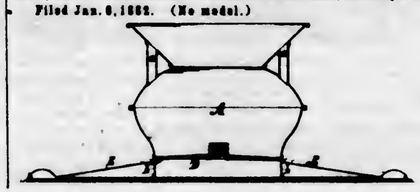
6. The hopper-bottom provided with a vertical ledge, J, a vertical wall, K, and a discharge-orifice, *j*, the said ledge having an attached immovable scraper, J′, which extends inwardly and occupies a fixed position at all times, in combination with a plane-faced disk, I, supported by the hopper-bottom directly beneath the scraper, said disk extending through an opening in the rear side of the hopper and rotating under the extreme outer edge of the discharge-orifice *j*, all substantially as described.

7. In a machine for distributing fertilizing material, the combination of the following characteristics, namely: a hopper-bottom having a lateral discharge-orifice, *j*, open at its top, a plane-faced rotary disk extending through an opening in the rear side of the hopper and rotating under the extreme outer edge of the discharge-orifice, an immovable scraper, J′, extending longitudinally across the rotating disk, and forming also one of the stationary boundaries of the discharge-orifice, an agitator arranged to rotate between the discharge-orifice and the axis of the rotating disk, and an adjustable gate arranged within the hopper and extending across the mouth of the discharge-orifice, all substantially as described.

8. In a machine for distributing fertilizing material, the skeleton-spider connected with the hopper-bottom, and having a central recessed hub, G′, in combination with the rotating plane-faced disk I, having a central boss, *g*″, resting in the hub, and the bolt *g*, passing through and connecting the parts, substantially as described.

9. In combination with the horizontally-rotating disk I, the spindle G, having hub G′, provided with annular bearings *g*′, and openings *f*, for the escape of dirt, substantially as herein set forth.

258,455. CUSPIDOR. WILLIAM WHITLARE, Brooklyn, N. Y. Filed Jan. 6, 1882. (No model.)



Claim.—1. A cuspidor provided with tubes set in its body and adapted to hold umbrellas, substantially as described and shown.

2. In a cuspidor, the combination of tubes set in its body and adapted to hold umbrellas, and a base-plate or platform extending laterally beyond the body of the cuspidor, substantially as and for the purpose described.

3. A cuspidor provided with a base-plate or platform detachably secured to its bottom and extending beyond its body in a downward incline to form a bracing-support, substantially as and for the purpose described.

4. A cuspidor platform or base provided with a flat central portion, D, to receive the bottom of the cuspidor, and with an inclined bracing portion, E, substantially as and for the purpose described.

5. A cuspidor-platform provided with the bracing-incline E and a supporting hook or ring, *b*, substantially as and for the purpose described.

6. A china or earthenware cuspidor provided with a recess or cavity adapted to receive a screw-socket, substantially as and for the purpose described.

258,456. FISHING APPARATUS. MARCIENE H. WHITCOMB, Holyoke, Mass. Filed Jan. 5, 1881. (No model.)



Claim.—1. The combination of the tubular body, the spring-piston with its signal-top, the tripping-lever, and the fish-line, all substantially as described, and for purposes specified.

2. The combination of the tubular body, the spool thereon, the spring-piston, the tripping-lever, and the fish-line, all substantially as described, and for purposes specified.

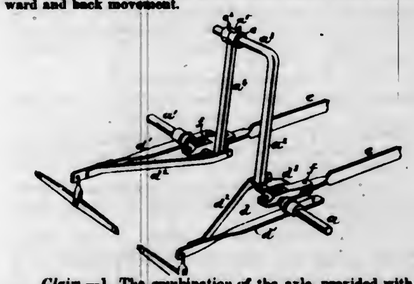
258,457. MIRROR-HANDLE. FRITZ WINDBERG, New York, N. Y. Filed Nov. 8, 1881. (No model.)



Claim.—The combination, substantially as hereinbefore set forth, of the eye for attachment to the back of the mirror, provided with notches at its opposite ends, those at one end alternating with those at the other end, and the wire handle sprung into the eye and provided with pins or projections adapted to automatically engage the notches of the eye, for the purpose set forth.

258,458. CULTIVATOR. JACOB WILLIAMS, Dublin, Ind. Filed Oct. 13, 1881. (Model.)

Brief.—Couplings with limited oscillation upon the axle, and kept horizontal by a cross-bar on the rear extension of the draft-bars. Arched axle made adjustable in width, and to allow a forward and back movement.

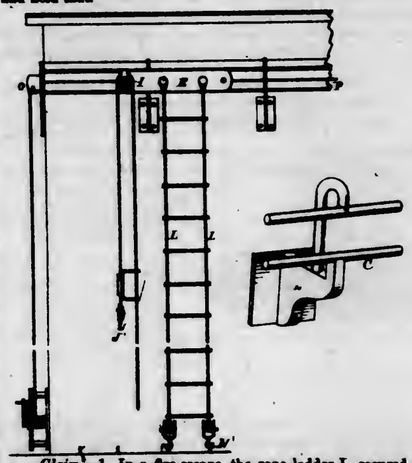


Claim.—1. The combination of the axle, provided with pin *f*′, the coupling *f*, journaled on said axle, and provided with slot *f*″, the beam *e*, pivoted to the coupling *f*, and the cross-bar *d*³ of the frame *d*, extended under and arranged to support the rear end of the coupling, substantially as set forth.

2. The combination, substantially as hereinbefore set forth, of the arched bar *a*² of axle *a*, provided with a series of vertical holes, the upright bar *a*⁴ of axle *a*′, provided with eye *a*³, and the clips *c*, provided with parallel ears projected part way across the flattened sides of bar *a*⁴, and the pin *c*², as set forth.

258,459. FIRE-ESCAPE. WILLIAM WINKLESS, Newport, Ky. Filed Sept. 13, 1881. (No model.)

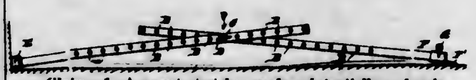
Brief.—The track upon which the carriage runs has an upper and lower rail, and the lower end of the rope ladder is provided with windlasses and ratchets and pawls, so that it can be drawn and held taut.



Claim.—1. In a fire-escape, the rope ladder L, secured to a movable carriage above, having at the lower end of each rope a windlass, M, or block and tackle, provided with suitable pawl, ratchet, and key, by means of which each rope may be drawn taut independently of the other, as and for the purpose herein set forth.

2. In a fire-escape, the movable carriage E F, having the wheels H H, in combination with the rods or tracks C D, secured to the building, substantially as and for the purpose herein set forth.

258,460. CARPET-STRETCHER. MICHAEL WIENER, Sr., Union City, Ind. Filed Jan. 6, 1882. (No model.)

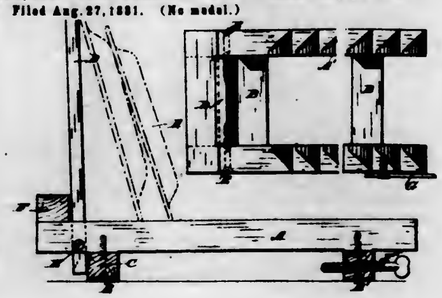


Claim.—1. A carpet-stretcher made substantially as herein shown and described, and consisting of two crossed and adjustably-pivoted rods or bars, one of which is provided at its outer end with a cushion, the other being provided at its outer end with a serrated carpet-griping plate, as set forth.

2. In a carpet-stretcher, the combination, with the crossed bars or rods A, each provided with a series of apertures, B, of the pintle or bolt C, the winged nut D, the cushion E, on the outer end of one of the rods, and a carpet-griping plate, F′, on the outer end of the other rod, substantially as herein shown and described, and for the purpose set forth.

3. In a carpet-stretcher, the combination, with the crossed bars or rods A, of the detachable ferrule or cap F, mounted on the end of one of the rods, and provided with a griping-plate, F′, substantially as herein shown and described, and for the purpose set forth.

258,461. DISH-DRAINER. GEO. B. WOLD, Bridgeport, Conn. Filed Aug. 27, 1881. (No model.)



Claim.—1. A dish-drainer composed of two bars, A A, provided with a series of dish-notches, A′, substantially such as de-

258,465. ATTACHMENT FOR MAGAZINE-STOVES. THOMAS D. WOOLSON, Buffalo, N. Y., assignor of one-half to Henry C.

258,468.

the ejection of the finished bale automatically operates the wire-inserting devices, as set forth.

20. In a baling-press, the wire-inserters automatically oper-

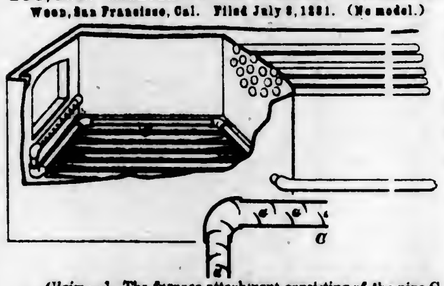
Claim.—1. A dish-drainer composed of two bars, A A, provided with a series of dish-notches, A′, substantially such as described, and connecting cross-pieces B B′, secured in place in the manner and for the purposes set forth.

2. In combination with the bars A A and cross-pieces B B′, the head-board D, pivoted between the bars, and adapted to operate in the manner and for the purpose set forth.

3. In combination with the bars A A and head-board D, the upper cross-piece or check, E, substantially as and for the purpose set forth.

4. In combination with the cross-pieces B B′, adjusting-screws F′, substantially as and for the purpose set forth.

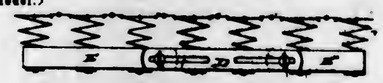
253,462. ATTACHMENT FOR FURNACES. MORTIMER F. WOOD, San Francisco, Cal. Filed July 8, 1881. (No model.)



Claim.—1. The furnace-attachment consisting of the pipe C, with its alternately oppositely placed blades or flanges G, said pipe entering the fire-box and having the apertures *a*, when arranged and used substantially as and for the purpose herein described.

2. The pipe C, connected with the exhaust of an engine, and having the alternately oppositely placed blades or flanges G, for muffling the sound of the exhaust, substantially as herein described.

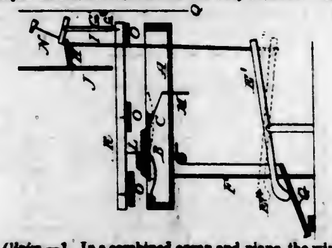
253,463. BED-BOTTOM. FRANK H. WOODS, Harrisburg, and THOMAS J. CURLEY, Reading, Pa. Filed July 12, 1881. (No model.)



Claim.—1. A folding bed-bottom consisting of detachable sections, each having slats, springs, and flanged end pieces, which latter pieces are adjustably connected by thumb-screws working in slots in the middle end piece and binding on the other end pieces, in the manner as and for the purposes herein set forth.

2. A folding bed-bottom consisting of sections D, E, and E′, each provided with flanges, slats, and springs adjustable to fixed positions with respect to each other, all in the manner and for the purpose described and illustrated.

253,464. COMBINED ORGAN AND UPRIGHT PIANO. WILLIAM CARLOS WOODWARD, Marseilles, Ill., assignor of one-half to Elijah Yelles, Union, Wis. Filed July 21, 1881. (No model.)

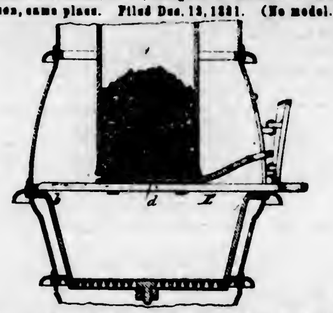


Claim.—1. In a combined organ and piano, the wind-chest A, having valves B and D, in combination with the pedal E and rods D′ and M, substantially as and for the purposes specified.

2. In a combined organ and piano, the combination, with the piano-action N G′ and hinged strip H, of the pedal E′ and connecting-rod I, substantially as and for the purposes specified.

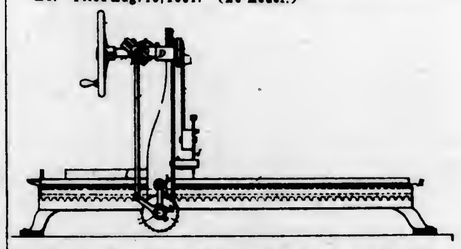
3. In a combined organ and piano, the combination of the divided piano-action C² C³ N² N³, connected to the strip A′ by buttons D², with the slides B² B³ and stops E² E³, substantially as and for the purposes specified.

253,465. ATTACHMENT FOR MAGAZINE-STOVES. THOMAS D. WOOLSON, Buffalo, N. Y., assignor of one-half to Henry C. Woolson, same place. Filed Dec. 13, 1881. (No model.)



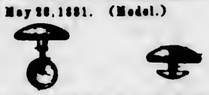
Claim.—A device for closing the base of the magazine of a base-burning stove, consisting of a supporting-bar, E, and a plate, *d*, sliding on the bar E and adapted to close the lower end of the magazine, substantially as set forth.

253,466. CARAMEL-CUTTER. ISAAC H. WRIGHT, Baltimore, Md. Filed Aug. 19, 1881. (No model.)



Claim.—In a caramel-cutter, a frame carrying a pair of revoluble crank-wheels, connected by gearing to effect their uniform rotation, a knife secured to a frame attached to pins projecting from the faces of the said crank-wheels, and a sliding plate adapted to have an intermittent longitudinal motion, carrying a removable cutting-board, to the upper surface of which the edge of the said knife descends at each stroke or revolution of the crank-wheels, all combined substantially as specified.

253,467. BUTTON OR STUD. JOHN HENRY WRIGHT, Newark, N. J. Filed May 28, 1881. (Model.)



Claim.—An improved button or stud provided with an extensible post consisting of an outer cylindrical portion and an inner sliding and inseparable portion, in combination with a back flexibly connected to the inner sliding portion, all arranged to operate substantially as set forth.

253,468. BALING-PRESS. FARVIN WRIGHT, Hayden's Station, Colo. Filed Jan. 17, 1882. (No model.)

Claim.—1. The combination, in a baling-press, of a series of wire-inserters arranged to be automatically operated by the traverser, substantially as described.

2. In a baling-press, an independent adjustable tension device whereby the ejection of the finished bale may be retarded, as and for the purpose set forth.

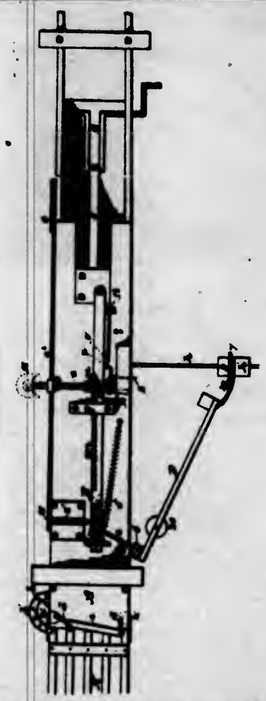
3. In a baling-press, means for operating the wire-inserters through the gravity of the ejected bale, as and for the purpose set forth.

4. In a baling-press, a series of wire-inserters operated by the power applied to the traverser, said operation and insertion being controlled by an independent hand mechanism, as and for the purpose set forth.

5. In a baling-press, a series of wire-inserters operated by the traverser at a right angle to the line of compression, as and for the purpose set forth.

6. A baling press arranged to continuously and automatically compress, tie, and eject completed bales by the power applied to the traverser, as and for the purpose set forth.

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7. In a baling-press, a wire-inserting device arranged to insert the tying-wire so that the subsequent process of completing the bale will cause the wire to encompass three of the sides thereof, and a second operation of the inserters cause the tie-wire to be carried completely around the bale, as set forth.

8. In a baling-press, a wire-inserting device arranged to automatically insert the tie-wire, so that the process of completing the bale will cause the wire to partially encompass said bale, as set forth.

9. In a baling-press arranged to automatically press and tie bales, an intermediate means for operating the tying mechanism by and through the power derived from the traverser, as set forth.

10. In a baling-press arranged to press and tie bales, a wire-inserting device which, when in use, causes the wire-tying mechanism to operate, as set forth.

11. In a baling-press provided with a wire tying and twisting mechanism, a series of wire-inserters arranged to be simultaneously operated with the traverser, as set forth.

12. The combination, in a baling-press, of the rollers *a a′*, provided with cranks *d d* and rod *e*, lever *b*, rack *b′*, and pin *b²*, as set forth.

13. The combination, in a baling-press, of the crank *d*, connecting-rod 3, and traverser C, provided with horizontal recesses, as set forth.

14. The combination, in a hay-press, of the traverser, its connecting-rod, and means for operating the same with the rod B, arm *e*, and the frame D, arranged to operate the wire-inserters *i*, as set forth.

15. In a hay-press, the combination, with the traverser and means for operating the same, of the rod B, arm *e*, frame D, and wire-inserters *i*, and the hand-lever G, rod *d′*, and shaft *d′*, as set forth.

16. The combination, in a hay-press provided with wire cutting and twisting mechanism, of the gate H, crank 13, rod *d²*, spring 19, shaft *d′*, frame D, rod B, and traverser C, as set forth.

17. The combination, in a hay-press, of the traverser and means for operating the same, of the rack *m*, pinion *n*, clutch *p*, rod *q*, stud *s*, dog *s*, and pawl *o*, and the frame D, provided with the shaft *e* and spring *f*, as set forth.

18. The combination, in a baling-press, of a series of wire-inserters arranged to be automatically operated by the forward motion of the traverser, as set forth.

19. In a baling-press, the combination of the means whereby the ejection of the finished bale automatically operates the wire-inserting devices, as set forth.

20. In a baling-press, the wire-inserters automatically operated in and by the forward motion of the traverser, in combination with a baling-chamber provided with orifices arranged to receive the wire-inserters, as set forth.

21. In a baling-press, a bale-chamber provided with orifices for the reception of the wire-inserters, in combination with the devices for automatically operating the same, as set forth.

22. In a baling-press, the traverser C, having the recess 18, for the reception of the end of the pitman 3, as set forth.

23. In a baling-press, the combination of the crank 4, connecting-rod 3, and traverser C, having slots 17 and recess 18, as set forth.

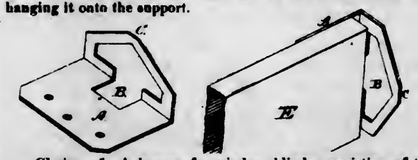
24. In a baling-press, a bale-chamber provided with circular orifices for the insertion of the wire for tying the bale, as set forth.

25. In a baling-press, a bale-chamber having rigid parallel sides, in combination with a tension device whereby the ejection of the finished bale may be controlled, as set forth.

26. In a baling-press, a slotless bale-chamber having orifices for the insertion of the tying-wires, as set forth.

253,469. HANGER FOR INSIDE BLINDS. CHAS. M. YOUNG, Lockport, N. Y. Filed Dec. 8, 1881. (No model.)

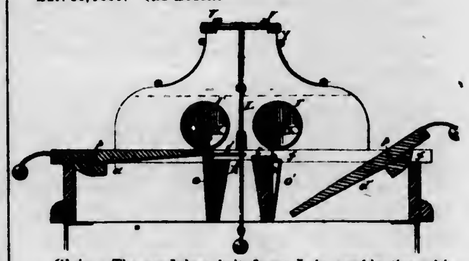
Brief.—The plate is bent at right angles and attached to the end of the upper slat, projecting therefrom and with the slot for hanging it onto the support.



Claim.—1. A hanger for window-blinds, consisting of the plate A, bent at right angles, so as to be applied directly to the end of the top slat, E, and having the slotted triangular end B C, in combination with the support D, placed inside of the window-frame, substantially as shown.

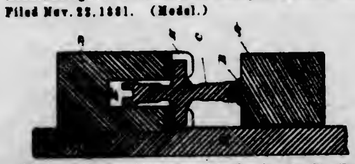
2. The combination of the plate A, having a slot, B, and triangular end C, and adapted to be fastened directly to the end of the slat E and project beyond its side, with a support, D, secured to the inside of the frame, substantially as set forth.

253,470. RAT-TRAP. HENRY YOUNGER, Austin, Tex. Filed Mar. 26, 1881. (No model.)



Claim.—The pendulum bait-frame L, in combination with triggers *t* and *t′*, attached to cam-springs O and O, weighted trap-doors *d* and *d′*, and rollers *r* and *r′*, substantially as shown and described.

253,471. DOOR-HANGER. WILLIAM B. CROSBY, Minneapolis, Minn., assignor of one-half to Henry A. Hamlin, same place. Filed Nov. 23, 1881. (Model.)



Claim.—In combination with the longitudinally-grooved block D, the grooved metallic frame H, having a flat bearing-surface on its lower side for the journals of a friction-roller and abutments at each end, the friction-roller C, grooved on its periphery, and the rail B and support A, substantially as and for the purposes specified.

253,472. EAR-WIRE LOCK. P. K. DE MUR, New York, N. Y., assignor to Van Houten, Sayre & Co., Newark, N. J. Filed Aug. 3, 1881. (No model.)

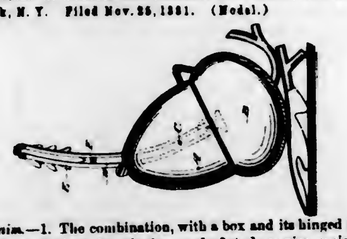


Claim.—1. The combination, in an ear-ring, of a revolving lock, *d*, with a ring secured to said ear-ring, having an opening therein, said parts being arranged to operate substantially as and for the purposes set forth and shown.

2. In an ear-ring, a locking device adapted to receive and hold the ear-wire, composed of a ring, *c*, having an opening therein, and a revolving piece, *d*, having a notch therein adapted to coincide with said opening, substantially as and for the purposes set forth and shown.

3. In an ear-ring, a revolving piece, *d*, having an annular groove therein, working within a ring, *c*, secured upon a wire, *a*, and adapted to receive the ear-wire, substantially as and for the purposes set forth and shown.

253,473. JEWEL-BOX. GUSTUS GOUGH, Brooklyn, assignor to Elisur G. Webster and Adelbert A. Webster, both of New York, N. Y. Filed Nov. 25, 1881. (Model.)



Claim.—1. The combination, with a box and its hinged lid or cover, of a bail pivoted to the box, and of studs or pins projecting from the sides of the hinged lid or cover, substantially as herein shown and described, and for the purpose set forth.

2. The combination, with the box B and the hinged lid A, of the longitudinally-slotted bail E, pivoted to the box B, and of the studs or pins C, projecting from the lid A through the slots of the bail E, substantially as herein shown and described, and for the purpose set forth.

3. The combination, with a box and its hinged lid or cover, of a bail pivoted to the box, of lateral studs or pins on the lid or cover, and of a checking device on the bail, against which checking device the pins are to strike to prevent the cover from being opened too far, substantially as herein shown and described, and for the purpose set forth.

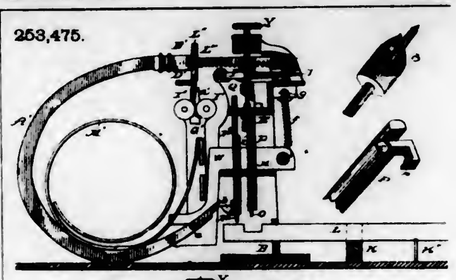
4. The combination, with the box B and its hinged lid or cover A, of the bail E, pivoted to the box, the studs C on the lid A, and the check button or knob F on the bail E, substantially as herein shown and described, and for the purpose set forth.

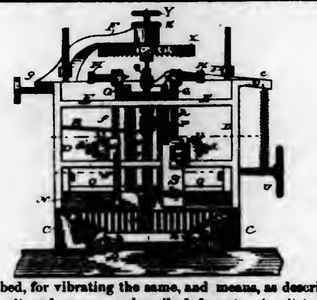
253,474. THREAD-CUTTER FOR SEWING-MACHINES. CHAS. H. GREEN, Philadelphia, Pa., assignor of one-half to Joseph R. Clausen, same place. Filed Sept. 2, 1881. (No model.)



Claim.—The combination of the slotted bars A A', each having a lug, *a*, with the blades B B', secured to and between the bars, and the whole being otherwise constructed, as set forth.

253,475. TYPE-WRITER. JAMES B. HAMMOND, New York, N. Y. Filed Jan. 10, 1880. (No model.)





Claim.—1. A type-wheel provided with a double series of arresting-surfaces on either side of a zero-point, and facing in opposite directions, substantially as described, and a stop-lever, I, which arrests the wheel moving in opposite directions.

2. In combination with the feed-pawl *z*, constructed as described, and the paper-carriage, the double combs H'.

3. In combination with the paper-carriage of a type-writing machine, the wheel N'', with its cords *o o'* and spring *r*, arranged and operating substantially as and for the purposes set forth.

4. In combination with the carriage and guiding-rails, the rolls I' I'', worm L', weighted pawl-lever *d''*, and pinion *b'*, for raising the paper, substantially as set forth.

5. A type-wheel, in combination with means, substantially as described, for vibrating the same, and means, as described, for retaining it, and means, as described, for returning it to normal position, said wheel having the letters or characters arranged on its periphery on either side of a zero-point, in manner set forth, whereby those most frequently used shall be nearest to the said zero-point, all as described.

6. The helical paper-holders M', secured to the carriage-frame, and adapted to receive the paper.

7. The type-wheel X, formed with a suitable shaft and a double-faced cam, and secured in position independently by means of bearings Y *i*.

8. In combination with the type-wheel and double-faced cam Q, the frames O, posts P, and operating-levers L.

9. In combination with the levers L, frames O, and type-wheel X, the frame N, provided with lifting-pawl *b* and hammer A'.

10. In a type-writing machine, the combination, with a type-wheel adapted to turn on its bearings in either direction from a normal position through a series of characters to present any given letter to the paper, of finger key-levers by which the operating power is applied, of intermediate mechanism, as described, between said key-levers and the wheel, by which the proper motion is imparted to said wheel, and of a stop mechanism, substantially as described, set in motion by the key-levers, and acting in opposition to the motion imparted to the type-wheel to arrest said type-wheel at the proper point, as set forth.

11. A type-wheel adapted to turn on its bearings from a normal point in either direction through a series of characters to bring any one of said series of characters to said point, key-levers, and intermediate mechanism, substantially as described, whereby said right and left hand motion is communicated to said wheel, a stop mechanism set in motion by the key-levers, and adapted to arrest the said wheel at a series of points on the right or left, substantially as set forth.

253,476. ORE-GRINDING MILL. WILLIAM E. HARRIS, New York, N. Y., assignor to himself and HENRY C. Hepburn, same place. Filed May 25, 1881. (No model.)

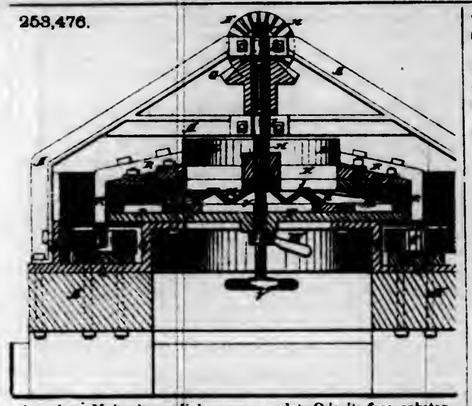
Claim.—1. In an ore-grinding apparatus constructed substantially as herein shown and described, the combination of the shafts C H, the gear-wheels F G, the upper grinding-plate, J, attached to the shaft H, having its lower side or face concaved and provided with V-shaped or angular grooves N, and having a strengthening-plate, K, attached to its upper side, the lower grinding-plate, M, having radial grooves or slots in its face, the strengthening-plate P, attached to the grinding-plate M, the trough Q, provided with facing-plates T U, and the ring-plates S, carried around by the angular bars R, attached to the plate K, as set forth.

2. In an ore-grinding apparatus, the upper grinding-plate, J, made with V-shaped grooves N in its concaved face, substantially as herein shown and described.

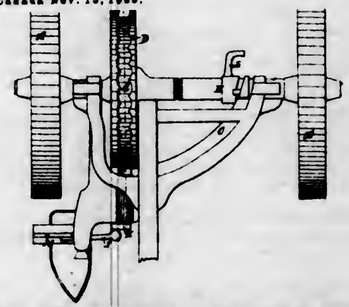
3. In an ore-grinding machine, the combination, with the upper grinding-plate, J, having V-shaped grooves N in its concaved face, and its supporting and driving mechanism, of the lower grinding-plate, M, having radial grooves or slots O in its face, substantially as herein shown and described, whereby the ore is crushed, as set forth.

4. In an ore-grinding apparatus, the combination, with the grinding-plates J M and the ring-trough Q, of the angular bars R, the ring-plates S, and the facing-plates T U, substantially as herein shown and described, whereby the grinding of the ore is completed, as set forth.

253,476.

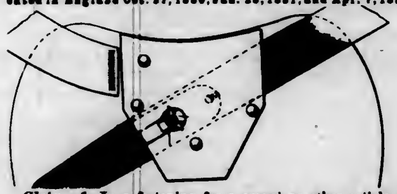


253,477. REAPER AND MOWER. FREDERICK J. HARRIS, Belleville, Ontario, Canada, assignor of one-half to Thomas Fuller, same place. Filed Dec. 10, 1880. (Model.) Patented in Canada Nov. 15, 1880.



Claim.—The combination of the drive-wheel D, having the peripherical undulating groove *d*, with rounded shoulders *a*, horizontal rock-shaft G, having cross-head F, and a pair of rollers, E E, journaled upon said cross-head in contiguity to one another, so that the axis of the rock-shaft, if produced, shall be coincident with the peripheries of both rollers across a line drawn between their centers, as shown and specified, for the purpose set forth.

253,478. FASTENING FOR CRAVATS, NECKTIES, &c. JOHN HINKS, THOMAS HOOPER, and FRANCIS B. BAKER, Birmingham, County of Warwick, England; said Baker assignor to said Hinks and Hooper. Filed Aug. 23, 1881. (No model.) Patented in England Oct. 27, 1880, Jan. 26, 1881, and Apr. 7, 1881.

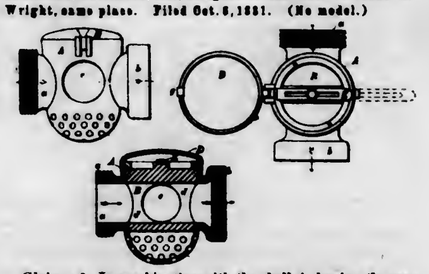


Claim.—1. In a fastening for a cravat or other article, the combination of the carrying-plate for the body of the fastening and operating or griping lever with one or more springs made in one piece with the said plate or body, and adapted to operate with said lever, substantially as described.

2. The combination, with a carrying or supporting plate and an operating or griping lever, of a spring-tongue the elasticity of which tends to draw the free end inward, all substantially as described.

3. A fastener for a cravat or other article, comprising a carrying-plate or supporting-frame, a spring-tongue, and an operating or griping lever, said tongue passing through a slot in said lever, substantially as described.

253,479. RELIEF-COCK FOR FIRE-ENGINES. JOHN T. HOUGHES, Baltimore, Md., assignor of one-half to Isaac H. Wright, same place. Filed Oct. 6, 1881. (No model.)



Claim.—1. In combination with the shell A, having the nozzles *a* and *b* and the lateral discharge-aperture *c*, the key B, provided with the opening *d*, branch opening *e*, and the groove or depression *f*, substantially as specified.

2. In combination with the shell A and key B, the latter having means whereby it may be turned in the shell, the cap D, hinged to the shell and fitted with a locking device, substantially as specified.

3. The shell A, having suitable nozzles and a perforated chamber at a point below the lower end of the key B, combined with the said key, the same having a groove or depression whereby one of the nozzle-openings may be placed in communication with the said perforated chamber, substantially as specified.

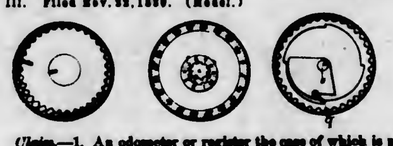
4. The key B of the cock, having an extension handle or lever which may be closed so as to not extend beyond the periphery of the said key, combined with the shell A and hinged cap D, substantially as specified.

253,480. CHUCK. EDGAR KNIGHT, Bridgeport, Conn., assignor of two-thirds to Charles E. Smith and Oliver C. Smith, same place. Filed Nov. 2, 1881. (No model.)



Claim.—The jaws A, having their heel-surfaces *c* inclined in the manner herein described, in combination with the stock C, recessed to receive and form an abutting wall, *d*, for the heel-surfaces *c* of jaws when they are brought into working position by the sleeve E, substantially as herein set forth.

253,481. CYCLOMETER. PATRICK E. MCDONNELL, Lawndale, Chicago, assignor of one-half to Bernard McMANUS, Chicago, Ill. Filed Nov. 23, 1880. (Model.)

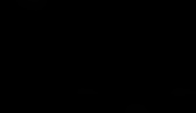


Claim.—1. An odometer or register the case of which is provided with internal gears, in which mesh wheels of a less number of gears, each wheel controlling the next by an eccentric having a slot or a shoulder, in which meshes a slot or a shoulder of the wheel rotating it, substantially as and for the purpose set forth.

2. In combination with an odometer or register the case of which is provided with internal gears, in which mesh wheels of a less number of gears, each wheel controlling the next by an eccentric having a slot or a shoulder in which meshes a slot or a shoulder of the wheel rotating it, the weighted eccentric *e w*, pawl *g*, and ratchets *r*, substantially as and for the purpose set forth.

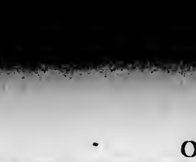
3. In an odometer or register substantially as described, the combination of the wheel *i*, dial *d*, and shoulders *n n*, as and for the purpose set forth.

253,482. FLANGE-UNION FOR REFRIGERATING OR ICE-MACHINES. JOHN A. HOLLY, Lockport, N. Y., assignor to Holly Manufacturing Company, same place. Filed Nov. 14, 1881. (No model.)



Claim.—The combination, with the body of a shell of an ice-machine, of the flanged pipe-sections, the flanged union-nut, and the packing-ring, substantially as described.

253,483. SAFETY-VALVE. JOHN A. HOLLY, Lockport, N. Y., assignor to Holly Manufacturing Company, same place. Filed Nov. 14, 1881. (No model.)



Claim.—1. The combination, with the valve-seat, of the valve, the stem, the spring, and the adjusting-nut, substantially as described.

2. The combination, with the valve-seat, of the valve, the stem, the spring, the adjusting-nut, and the lever, substantially as described.

253,484. SAFETY-VALVE. JOHN A. HOLLY, Lockport, N. Y., assignor to Holly Manufacturing Company, same place. Filed Nov. 14, 1881. (No model.)

Claim.—1. The combination, with the valve-seat, of the valve, the stem, the spring, and the adjusting-nut, substantially as described.

2. The combination, with the valve-seat, of the valve, the stem, the spring, the adjusting-nut, and the lever, substantially as described.

253,485. REED-ORGAN. CHARLES AUSTIN, Lowell, Mass. Filed Dec. 15, 1881. (No model.)

Claim.—1. The combination, with the reed-bar, of the tuning-screw, the nut, and the spring, substantially as described.

2. The combination, with the reed-bar, of the tuning-screw, the nut, and the spring, the latter being arranged to bear upon the nut, substantially as described.

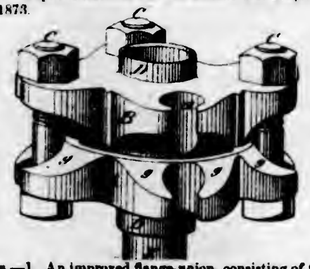
3. The combination, with the reed-bar, of the tuning-screw, the nut, and the spring, the latter being arranged to bear upon the nut, and the nut being provided with a groove, substantially as described.

253,486. BORING DEVICE. JOHN A. HOLLY, Lockport, N. Y., assignor to Holly Manufacturing Company, same place. Filed Nov. 14, 1881. (No model.)

Brief.—The boring device is supported from braced verti-

253,482. FLANGE-UNION FOR REFRIGERATING OR ICE-MAKING MACHINERY. WILLIAM M. MIXER, New York, N. Y., assignor to the De la Vergne & Mixer Refrigerating Company, same place. Filed Jan. 10, 1882. (No model.)

Brief.—Improvement on Letters Patent No. 139,877, dated June 17, 1873.



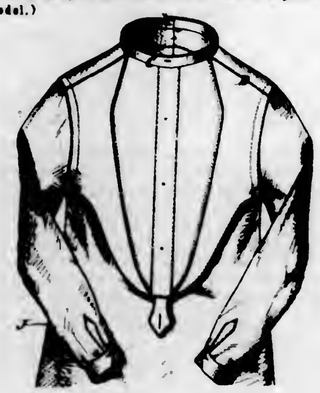
Claim.—1. An improved flange-union, consisting of the male and female blocks A and B, each having a threaded pipe-aperture and interlocking surfaces, corresponding bolt-holes, *a*, exterior to the washer *c*, an interposed gasket, *i*, and bolts C, the female block having a depressed gasket-seat with an annular ring or raised washer, *d*, upon its inner side, and another annular ring or raised washer, *e*, upon its outer side, and the male block having a raised washer, *h*, corresponding in location to the depressed gasket-seat *b*, substantially as described.

2. An improved flange-union, consisting of a male and female block and an interposed gasket and bolts, each block having a dished or cut-away flange or sections of a flange, *g g*, a threaded pipe-aperture, and corresponding bolt-holes exterior to their interlocking parts, the female being provided with a raised washer or annular ring both upon the inside and outside of a depressed gasket-seat, and the male block with a raised washer or annular ring corresponding in location to the gasket-seat of the female block, substantially as described.

3. An improved flange-union, consisting of a male and female block, an interposed gasket and bolts, each block having corresponding bolt-holes, a threaded pipe-aperture, and an annular recess or recessed collar surrounding either extremity of such aperture, the female block being provided with a depressed gasket-seat having a raised washer both upon the inner and outer side of said seat, and bolt-holes exterior thereto, the male with a washer or annular ring corresponding in location to the gasket-seat of the female block, substantially as described.

4. An improved flange-union, consisting of the female block A, with the raised washers *e* and *d*, a depressed gasket-seat, *b*, bolt-holes *a*, exterior to the washer or ring *c*, a threaded pipe-aperture, a recess or recessed collar, K or D, surrounding either end of the pipe-aperture, and dished or cut-away flanges or sections of flanges *g g*, the male block having a raised washer or ring, *h*, corresponding in location to the gasket-seat of the female block, bolt-holes *a*, corresponding to those of the female block, a recess or recessed collar, K or D, surrounding either end of the pipe-aperture, and dished or cut-away flanges or sections of flanges *g g*, in combination with a gasket, *i*, and bolts C, substantially as described.

253,483. SHIRT. FRANKLIN C. MOTT, Catskill, assignor to Frederick S. Gwyer, New York, N. Y. Filed Sept. 22, 1881. (No model.)



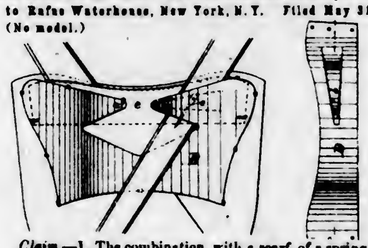
Claim.—1. The combination, with the body of a shirt, of an extra front attached at the shoulder-seams and to a part or the whole of the front sleeve-seams, but unattached to the shirt-body below, and a bosom united to the extra front, substantially as specified.

2. The combination, with the body of a shirt having an opening in the back, of an extra front attached at the neckband, the shoulder-seams, and to a part or the whole of the front of the sleeve-seams, but unattached to the shirt-body below, and a bosom united to the extra front and to the neckband, but unattached to the shirt-body elsewhere, substantially as specified.

253,484. BED-COMFORT, BLANKET, RUG, &c. CHARLES D. MURDOCK, Nashville, Tenn. Filed Nov. 28, 1881. (No model.)

Claim.—The herein-described method of manufacturing bed-comforts, blankets, rugs, and analogous articles, consisting in first joining the edges of the outside material, with the exception of a single orifice, then stuffing the article with raw cotton, then sewing up the receiving-orifice, and finally beating the cotton smooth within the covering and quilting the whole together, substantially as specified.

253,485. NECKSCARF. HOWARD SELVAGE, Brooklyn, assignor to Rufus Waterhouse, New York, N. Y. Filed May 31, 1881. (No model.)

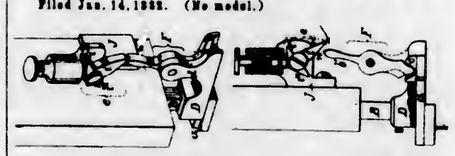


Claim.—1. The combination, with a scarf, of a spring, *b*, constructed and arranged as described, so that the neckband may be passed edgewise under said spring and thereby held, as specified.

2. The combination, with a scarf, of a shield, B, having the central upper portion cut away, leaving the projections *a a'*, with space *c* between their points, as and for the purpose described.

3. The combination, with a scarf, of the shield B, having the central upper portion cut away, leaving the projections *a a'*, with space *c* between their points, the projection *a* being provided with a detaining-pin, *e*, as and for the purpose described.

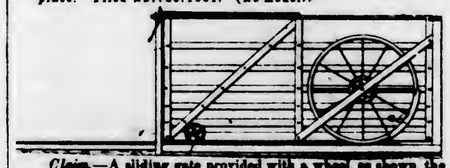
253,486. SEWING-MACHINE ATTACHMENT. JAS. F. SUDDINS, Philadelphia, Pa., assignor to John C. Love, same place. Filed Jan. 14, 1882. (No model.)



Claim.—1. In a sewing-machine attachment, the combination of a retaining-spring, pivoted tappet or lever, needle-carrying bar or slide *a*, block D, arm or lever F, and devices for operating said tappet or lever.

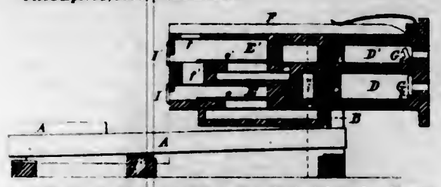
2. The combination of the needle-bar and its block D, having a slide, *a*, and lever F, with the plate J, carrying a pivoted spring-lever, *e*, with three arms, *i i' i²*, as specified.

253,487. FARM AND YARD GATE. GEORGE W. FOULDS, Newman, Ill., assignor of one-half to William J. Huffman, same place. Filed Nov. 29, 1881. (No model.)



Claim.—A sliding gate provided with a wheel, as shown, the circumference of which is equal to or greater than the length of the gate, part of the rim of said wheel being weighted, substantially as described.

253,488. REED-ORGAN. CHARLES AUSTIN, Lowell, Mass. Filed Apr. 11, 1881. (No model.)



Claim.—1. The combination of a single inlet-valve, F, with a plurality of connected reed-boxes, E E', all arranged substantially as described, and for the purpose specified.

2. The combination of a single inlet-valve, F, and a plurality of connected reed-boxes, E E', with a single tracker-pin, B, and key-lever A, all arranged substantially as described, and for the purpose specified.

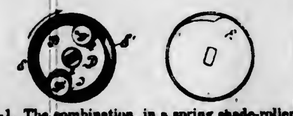
3. The combination of a plurality of reed-boxes, E E', connected with each other, and an equal number of independent wind-chests, D D', each having a separate exhaust-valve, G G', as and for the purpose specified.

4. The combination of the wind-chests D D' with the reed-boxes E E', arranged in front of the wind-chests and one over another as and for the purpose specified.

REISSUES.

10,026. SPRING CURTAIN-ROLLER. CHAS. DE QUILLFELDT, New York, N. Y. Filed Nov. 17, 1881. Original No. 168,802, dated Feb. 16, 1876.

Brief.—The pivoted pawls are thrown out by centrifugal force between a stationary stop and the stops on the end plate and lock the spindle.



Claim.—1. The combination, in a spring shade-roller, of the end plate, having pivoted centrifugal pawls and stops for the pawls, with a stationary contact-stop exterior to the end plate, against which and the stops of the end plate the pawls are thrown whenever the centrifugal force overcomes the gravity of the pawls, substantially as set forth.

2. In a spring-roller, the combination of the end plate, having pivoted centrifugal pawls and stops for the pawls, with a stationary exterior contact-stop which is engaged by the pawls when they are thrown out by centrifugal power, but which is cleared by the same when their gravity overcomes the centrifugal force, substantially as and for the purpose set forth.

3. In a spring shade-roller, the combination of centrifugal pawls pivoted to the end plate of the roller, a stop for each pawl, and a stationary contact-stop secured to the fixed axle or shaft of the roller, said contact-stop projecting into the path of the centrifugal pawls, so that the roller is stopped by the pawls when they are thrown by centrifugal force against the stops, as described.

4. In a spring shade-roller, the combination of centrifugal pawls applied to pivots of the end plate of the roller, a stop for each pawl, a stationary contact-stop within the path of the centrifugal pawls, the pivot of each pawl, the stop of each pawl, and the stationary contact-stop being so arranged relatively to each other as to form three binding-points for the pawl and lock the spring-roller when the centrifugal force exerted on the pawls overcomes the gravity of the same, substantially as set forth.

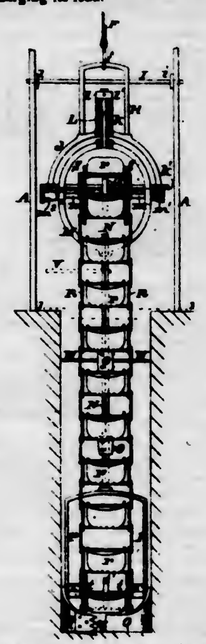
5. The combination, in a spring shade-roller, of an end plate, having eccentrically-pivoted centrifugal pawls and a fixed stop for each pawl, with a stationary contact-stop secured to the fixed axle or shaft of the roller, substantially as set forth.

6. The combination, in a spring shade-roller, of the end plate, D, having pivoted centrifugal pawls D' and fixed stops *d*, with a stationary exterior cam or stop, E', substantially as described.

7. The combination, in a spring shade-roller, of the end plate, D, having centrifugal pawls D' and stop-recesses *b d*, with an inclosing-cap, E, secured to the shaft *a*, and provided with a cam or stop, E', substantially as specified.

10,027. EARTH BORER AND EXCAVATOR. JOHN W. CARLEY, Cotton Gin Tex., assignor of part interest to Julius W. Storey and Andrew B. Carley, same place. Filed Nov. 9, 1881. Original No. 234,532, dated Nov. 16, 1880.

Brief.—The boring device is supported from braced vertically-slotted posts, which guide a cross-bar, on which is a ball, secured to the hub of the main gear-wheel. The under side of said wheel has a toothed surface and a smooth bearing-flange, against the latter of which bears a steadying-wheel. To one or more of the shaft-couplings is secured a recessed guide-disk, through which passes the endless bucket-chain. A tappet-lever actuated by pins on one of the upper chain-wheels strikes the bottom of each bucket, to assist in discharging its load.



Claim.—1. The combination of guide-posts A A, having slots *a a*, bracing devices C B D, the cross-bar I, having cross-heads *i i*, the ball H, vertical ring M, and shaft L, as set forth.

2. In combination with the auger and endless chain and buckets and driving mechanism, the rapper X *x*, secured to the ring M and operated upon by pins on one of the chain-wheels, substantially as and for the purpose set forth.

3. The combination of ball H, carrying toothed rim K, the vertical ring M, horizontal elevator-shaft m, carrying wheels m' and m², and the connecting-shaft L, as set forth.

4. The combination of ball H, having rim K, formed with toothed portion and a smooth portion, *k'*, and the ring M, having shaft m, carrying rollers m' m², as set forth.

5. The disk-guide W, having openings *w w*, and the shaft N, having couplings O, for supporting the disk-guides, in combination with chain of buckets and auger, as set forth.

6. In an earth-digging auger wherein an endless chain of buckets is employed, a guide for the said chain, in combination with the auger-shaft or its coupling, substantially as set forth.

7. The combination, with a sectional shaft, N, of the coupling O, having lugs *o*, provided with orifices for receiving the hook of the hoisting-chain, as set forth.

10,028. CUTTING-NIPPERS. THOS. G. HALL, New York, N. Y., assignor, by mesne assignments, to the Interchangeable Tool Company, of New York. Filed Jan. 16, 1882. Original No. 209,877, dated Nov. 6, 1878. Patented in England Sept. 24, 1878, in Germany June 13, 1879, and in France Feb. 20, 1880.



Claim.—1. A cutting-nipper consisting of the following parts, constructed and combined as described, viz: two jaw-levers, *c d*, upon one end of each of which a jaw and cutting-edge is made, and each of which is suspended upon an independent fulcrum, *e f*, between two side plates, *p p*, two handle-levers, *i k*, each of which is also suspended upon an independent fulcrum between said side plates, and each of which is provided with a short toe, *n o*, set between the long ends of the jaw-levers, but not connected to them, for the purpose of closing the nippers, and a spring, *g*, held between said side plates and set between the jaw-levers, for the purpose of opening the nippers, substantially as shown and described.

2. The combination, with the levers *c d* and plates *p*, of the pin *q*, arranged between said levers and in front of their fulcrums, as and for the purpose specified.

10,029. RAZOR-STROP. JOHN LAMONT and ALEXANDER P LAMONT, Rochester, N. Y., assignees of James Lamont, deceased. Filed Oct. 7, 1881. Original No. 173,477, dated Feb. 15, 1876. Reissue No. 8,181, dated Apr. 18, 1878.



Claim.—1. The combination, in a razor-strop, of the four-sided oblong or prismatic body A, with the suspended belt passing over two sides of said body and attached to a nut at the handle end of the strop, guides rigid with and projecting from the body at one end of the strop and bearing against the nut, and the adjusting-screw passing through a bearing secured to the outer ends of said guides at a point between the nut and the handle, said screw also having a bearing at its end in one end of the bone-body, substantially as described and shown.

2. The combination, in a razor-strop, of the four-sided oblong or prismatic body A, with the suspended belt passing over two sides of said body, and attached to a nut at the handle end of the strop, guides rigid with and projecting from the body at one end of the strop and bearing against the nut, and the adjusting-screw passing through a bearing secured to the outer ends of said guides at a point between the nut and the handle, substantially as described and shown.

3. The combination, in a razor-strop, of the body A, with the suspended belt passing over two sides of said body and attached to a nut at the handle end of the strop, means rigid with the body and opposing the edge of the nut to prevent the rotation of the latter, and the screw provided with a handle and passing through the nut, and a bearing for the screw secured to the outer ends of the guides at a point between the nut and the handle, substantially as shown and described.

4. The combination, in a razor-strop, of the bone-body A, having a recess, *d*, formed at one end, with a suspended belt passing through said recess and over two sides of the bone-body, and applied to an adjustable nut that is fitted upon the adjusting-screw and is arranged between the walls of the recess, substantially as set forth and shown.

5. The combination, with the bone-body A, of the belt passing over two of the sides of said body, and also through a recess in one end of the latter, the nut for holding and tightening the belt arranged and guided within the recess, and the screw passing through the nut and working in bearings at opposite sides of the nut, substantially as shown and described.

6. A body, A, constructed with the bone-sides *a a*, recess *d*, and channels *b*, in combination with the belt or strap *b*, with means to adjust the tension of said belt or strap, substantially as shown and described.

7. A bone-body, A, provided with a recess, *d*, and suspended belt *b*, in combination with the nut-block *c*, screw *g*, handle B, and block A, substantially as shown and described.

10,030. POROUS PENETRABLE TILE FOR PLASTERING, &c. SANFORD H. LOBING, Castleton, Vt., assignor to Thomas A. Johnston, Boston, Mass. Filed Oct. 8, 1881. Original No. 180,361, dated Oct. 27, 1876.

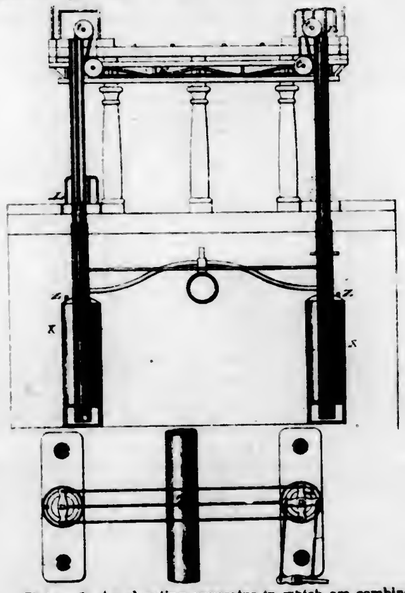
Claim.—1. A method of rendering walls, columns, beams girders, floors, and roofs fire or water proof by applying (as a substitute for other and ordinary methods and material used for plastering and deadening sounds, &c.,) porous and penetrable earthenware or terra-cotta directly to or around the constructive framework and securing it in any suitable manner, then to be afterward covered with plaster, cement, paint, or other suitable finish or water-proof covering.

2. In the construction of water-proof walls, floors, roofs, &c., the combination of iron, wood, or combined iron and wood with spongeous or porous and penetrable earthenware and a water-proof cement, paint, or other water-proof coating or covering, fastened together in a suitable manner.

3. In the construction of fire-proof columns, beams, walls, floors, and roofs, the combination of iron, wood, or combined iron and wood with porous and penetrable earthenware or terra-cotta, the earthenware covering the columns or other parts of the structure and secured to or around them in any suitable manner.

10,031. HYDRAULIC AND PNEUMATIC ELEVATOR. OTIS BROTHERS & COMPANY, Yonkers, N. Y., assignees of Sarah Gould Day, Executrix of Horace H. Day, deceased. Filed Mar. 31, 1881. Original No. 113,886, dated Sept. 5, 1871.

Brief.—Compressed air is the motive power, and it is furnished by apparatus actuated by steam, wind, or water. It is transmitted to water contained in suitable chambers, causing it to flow into the working-cylinders containing the plungers or pistons, thereby raising said pistons and carrying with them suitable platforms, upon which persons and merchandise may be placed. By means of valves and connections the operator perfectly controls the movements of the platform.



Claim.—1. An elevating apparatus in which are combined the following elements, namely: a cylinder and piston, means for affording a supply of compressed elastic fluid in quantities sufficient to propel the pistons, a chamber containing an inelastic fluid communicating with the cylinder and with the elastic-fluid pipe or reservoir, and valve arrangements, whereby the elastic fluid may be admitted to, cut off, or exhausted from said chamber, substantially as set forth.

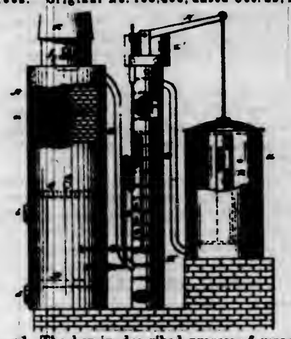
2. In an elevator, the combination, with the cylinder and piston, of a tank containing inelastic fluid communicating with the cylinder and with an inlet for compressed elastic fluid, and inlet and outlet ports and valve appliances, whereby the admission and discharge of the elastic fluid and the consequent operating of the platform is effected, substantially as set forth.

3. The combination, with the piston and cylinder of an elevator, or a chamber containing an inelastic fluid, and suitable ports and valve appliances, whereby the admission and discharge of an elastic fluid to and from said chamber is made the means of carrying the inelastic fluid to and from the same, and thereby operating the piston which actuates the platform, substantially as set forth.

4. The combination, with an elevated railway, of the receiver A, containing compressed elastic fluid, the chambers X, containing an inelastic fluid, the valves, cylinders, and pistons, the platforms L, and the connecting devices, substantially as described.

5. A water-supply pipe, Z, combined with the receptacle for the inelastic fluid, arranged between the elastic-fluid supply-pipe and the piston, substantially as set forth.

10,032. PROCESS OF AND APPARATUS FOR THE MANUFACTURE OF GAS. THEODORE C. SPRAGUE, New York, N. Y. Filed Jan. 10, 1882. Original No. 196,495, dated Oct. 23, 1877.



Claim.—1. The herein-described process of manufacturing gas, the same consisting in the following steps, to wit: raising to incandescence a mass of carbonaceous material by a current of air, producing carbonic oxide; then burning the carbonic oxide by means of air above the bed of carbonaceous material and causing the products to pass into a mass of refractory material for highly heating the same; then decomposing water and naphtha by the incandescent carbonaceous material, producing water-gas; and finally fixing such gas by passing it through the mass of highly-heated refractory material, substantially as specified.

2. The method herein described of producing gas by storing up in a mass of refractory material the heat generated and carried off by the ignited gas evolved from the burning fuel while it is being prepared to decompose the liquid gas stock into mixed gases, and subsequently utilizing such heat by converting the mixed gases produced from liquid gas stock in contact with incandescent fuel into a fixed gas by passing such gases into and through the refractory material, substantially as described.

3. A cupola or gas-generating apparatus having a combustion and decomposing chamber for burning solid hydrocarbons, wherein water and hydrocarbon may be mutually decomposed, and a fixing-chamber partly or wholly filled with some refractory material for absorbing heat and converting the hot gases from the combustion-chamber into a fixed gas, the two chambers being formed in one structure, substantially as and for the purpose specified.

4. A cupola or gas-generating apparatus having a decomposing and combustion chamber, a perforated diaphragm at the top thereof, and a fixing-chamber containing refractory material above, and provided with an air-supply pipe for supplying air to support combustion of gases from the lower chamber for storing heat in the fixing-chamber, for the purpose specified.

5. The process of making a fixed illuminating-gas by feeding hydrocarbon liquid and water automatically in proportion as the gas is consumed, into an incandescent body of coal in the combustion-chamber of the cupola or generator, and forcing the gas and water there generated through a heat-absorber for making a fixed gas, as set forth.

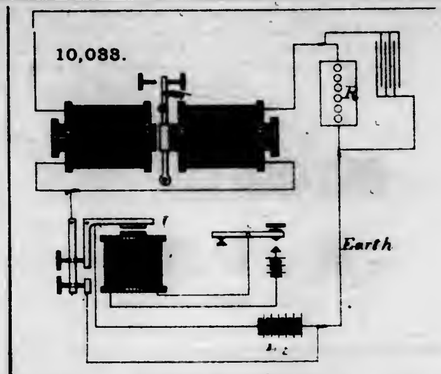
6. In combination with a gas-holder and an automatic regulator, a gas-generator consisting of an exterior shell and interior lining, with air-space between them, and a perforated division or diaphragm inside the lining, forming a heat-absorber above a combustion-chamber below the division, whereby the heat may be stored during the day-time for use in the manufacture of illuminating-gas at night in the proportion as such gas is being consumed, as set forth.

7. The generator consisting of the outer shell, A, inner brick lining, B, and space *a* between them, and provided with doors *b d*, perforated diaphragm C, grate D, air-pipe *e*, valve *f*, and stack E, all substantially as and for the purposes set forth.

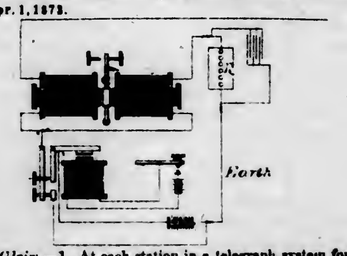
10,033. DUPLEX-TELEGRAPH APPARATUS. JOSEPH B. STEARNS, Boston, Mass., assignor to the Western Union Telegraph Company, New York, N. Y. Filed Nov. 23, 1881. Original No. 126,847, dated May 14, 1872; Reissue No. 5,344, dated Apr. 1, 1873.

Claim.—The method of preventing the return-current or static discharge from a telegraph-line from producing false signals upon the receiving-instrument at the home station in the process of transmitting signals therefrom, which consists in the simultaneous production at the home station of an artificial static discharge capable of exerting an effect substantially equal but opposite to that of the main line upon the receiving-instrument at the home station.

10,033.



10,034. DUPLEX-TELEGRAPH APPARATUS. JOSEPH B. STEARNS, Boston, Mass., assignor to the Western Union Telegraph Company, New York, N. Y. Filed Nov. 23, 1881. Original No. 126,847, dated May 14, 1872; Reissue No. 5,344, dated Apr. 1, 1873.



Claim.—1. At each station in a telegraph system for double transmission, the combination of the main line, a branch electrically connected with the main line, provided with means for giving said branch an artificial electro-static capacity, a receiving-instrument responsive to signals sent from a distant station only, and transmitting apparatus whereby the effects of static induction of the branch shall prevent the effects of static induction of the main line due to the transmission of signals from the home station from producing false signals upon the associated instrument.

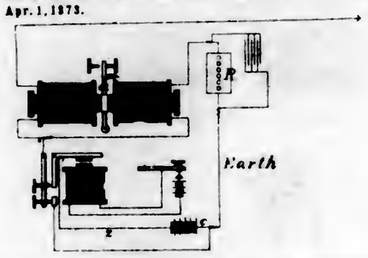
2. The combination, in a telegraphic apparatus for double transmission at each station, of a receiving-instrument always in circuit and responsive to signals from a distant station only, a condenser electrically connected therewith, and a transmitting device, whereby the effects of static induction caused by and accompanying the transmission of signals to a different station shall not produce false signals upon the associated receiving-instrument.

3. At each station in a telegraph system for double transmission, the combination of a receiving-instrument constantly in the main line, and responsive to signals from a distant station only, and a condenser electrically connected therewith, whose static discharge shall prevent the static discharge from the main line from producing a false signal upon said receiving-instrument at the termination of each signal sent to a distant station.

4. A transmitting device and a receiving-instrument at each station, which is responsive to signals from a distant station only, in combination with a branch conductor, and means for giving said branch an artificial electro-static capacity, said branch conductor being electrically connected with the associated transmitting and receiving apparatus, whereby the current of static charge and current of static discharge set up in the branch accompanying the transmission of a signal to a distant station shall prevent the current of static charge and the current of static discharge of the main line from producing false signals.

5. A receiving-instrument at each station, in combination with a branch, and means for giving said branch an artificial electro-static capacity, said means consisting in a metallic conducting-surface in electrical connection with said branch, and an additional conducting-surface in close proximity to the first one, but insulated therefrom, and electrically connected with the earth, whereby the inductive reaction between the metallic plates of the branch and the earth may be made to correspond to that between the main line and the earth.

10,035. **DUPLEX-TELEGRAPH APPARATUS.** JOSEPH B. STRAUSS, Boston, Mass., assignor to the Western Union Telegraph Company, New York, N. Y. Filed Nov. 23, 1881. Original No. 136,247, dated May 14, 1873; Reissue No. 5,344, dated Apr. 1, 1873.



Claim.—1. The combination, in a duplex telegraph substantially as hereinbefore set forth, of a receiving-instrument responsive to signals from a distant station only, a main telegraph-line, a branch or compensating line, and means for giving said branch an artificial capacity for storing electricity, and a key or transmitter for charging and discharging the main and branch lines simultaneously.

2. The combination, in a duplex telegraph substantiallly as hereinbefore set forth, of a battery, a main line, an artificial or compensating line, a rheostat in said artificial line, and a condenser having its terminals respectively connected with said artificial line and the earth.

3. The combination, substantially as hereinbefore set forth, of a battery, a main line, an artificial or compensating line, a differential electro-magnet having two coils capable of producing simultaneous, equal, and contrary effects upon its armature, one of said coils being in the main and the other in the artificial line, and a condenser having one of its terminals electrically connected with the artificial line and the other with the earth.

ELIOTYPE PRINTING CO. BOSTON

DECISIONS
OF THE
COMMISSIONER OF PATENTS
AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Northern District of Illinois.

WILSON PACKING COMPANY *et al. v.* CHICAGO PACKING AND PROVISION COMPANY. SAME *v.* ST. LOUIS BEEF CANNING COMPANY. SAME *v.* HUNTER *et al.*

Decided November 25, 1881.

1. LETTERS PATENT—COOKED MEATS.
Reissued Letters Patent No. 6,370, dated April 6, 1875, and issued to William J. Wilson, for a new and useful improvement in the process for preserving and packing cooked meats for transportation, consisting in thoroughly cooking the meat by boiling it in water, removing the bone and gristle, then placing it while yet warm with cooking into a box or case, and pressing it by some suitable apparatus with sufficient force to remove the air and all superfluous moisture and make the meat form a solid cake, and finally closing the box or case air-tight upon the meat, are void for want of novelty.

2. SAME—SAME.
Claim 1 of Reissue No. 7,923, dated October 23, 1877, and issued to John A. Wilson, for an improvement in metallic cases for containing cooked meats, which is for a can for packing food hermetically sealed, and constructed of pyramidal form, with rounded corners and offset ends to support the heads, and claim 3, which is a claim, as an improved article of manufacture, of solid meat compressed and secured within a pyramidal case or can, so that said can forms a mold for the meat and permits its discharge as a solid cake, are also void for want of novelty.

3. SALES OF PRODUCT OF PATENTED PROCESS—EVIDENCE OF VALIDITY.
In all doubtful cases involving the validity of a patent the fact that the article made by the use of the process described in the patent has been extensively sold is a consideration of great weight with the court, but it is not enough *per se* to sustain the patent.

Messrs. West & Bond and *Messrs. Munday, Evarts & Adcock* for the Wilson Packing Company.
Mr. John N. Jewett and *Messrs. Offield & Towle* for Libby, McNiell & Libby.
Mr. William H. Clifford and *Mr. B. F. Thurston* for all the complainants.
Messrs. Noble & Orrick, Messrs. Coburn & Thatcher, and *E. N. Dickinson* for the defendants.

Before DRUMMOND, *C. J.*, and BLODGETT, *D. J.*
PER CURIAM:
The cases have all been argued together, and involve the same questions of law and fact, and are founded upon the reissued patent of William J. Wilson, No. 6,370, of April 6, 1875, for a new and useful improvement in the process for preserving and packing cooked meats for transportation, and in the reissued patent of John A. Wilson, No. 7,923, of October 23, 1877, for a new and useful improvement in metallic cans for containing cooked meat.
The reissued patent of William C. Marshall, No. 6,451, of May 25, 1875, for a new and improved process for preserving meats, although set forth in the pleadings, is not relied on in the argument, and need not be further considered as an independent ground of relief. These patents were before us in 1879 in the case of *Wilson Packing Company* v. *Clapp*. (11 Chicago Legal News, 353.)
The most important questions in the case grow out of the patent of William J. Wilson. In his original patent he stated that in carrying out his invention the meat was to be first cooked thoroughly at a temperature of 212° Fahrenheit, so that all the bone and gristle could be removed and the meat yet retain its natural grain and integrity; that a measured quantity of this cooked meat was then, while yet warm with cooking, pressed by any suitable apparatus into a previously-prepared box or case with sufficient force to remove the air and all superfluous moisture and make the meat form a solid cake, and that then the box or case was closed air-tight upon the meat. It will be observed that he did not distinctly set forth in this original patent in what manner the meat was to be first cooked. There is in the reissue no change in the description of carrying out the invention, except he declares it is a "preferable" mode of putting the meat cooked into a box or case while yet warm with cooking. The implication, of course, is that it was not an indispensable part of his description of the invention that it should be thus put in warm.
There were two claims in the original, as there are in the reissue, and the only difference between them is that in the original the first claim states that the cooked meat is to be pressed into an air-tight package "while heated with cooking," these last words being omitted in the first claim of the reissue.
While these suits have been pending the plaintiffs have filed a disclaimer of the use of the word "preferably" of the reissue, thus eliminating it from the description therein contained and leaving the patent in this respect as it was in its original form. They have also disclaimed the use of the following words of the description in the reissued patent: "The meat is first cooked thoroughly at a temperature of 212° Fahrenheit, so that all the bone and gristle can be removed and the meat yet retain its natural grain and integrity;" and, instead thereof, insert the following words, viz: "The meat is first cooked thoroughly by boiling it in water, so that all the bone and gristle can be removed and the meat yet retain its natural grain and integrity."
Waiving the objections which have been made to the validity of these disclaimers, we may now state what the invention of the William J. Wilson patent is. The meat is to be first thoroughly cooked by boiling it in water, so that all the bone and gristle can be removed and the meat yet retain its natural grain and integ-

and if it is also implied that the box, as we have here-

a represents the body of my can made in the form of a truncated

rity. While yet warm with cooking it must, by some suitable apparatus, be pressed into a box or case previously prepared with sufficient force to remove the air and all superfluous moisture and make the meat form a solid cake. The box or case is then to be closed air-tight upon the meat. So that the invention contains these elements: (1) Thoroughly cooking the meat by boiling it in water, removing the bone and gristle; (2) placing it while yet warm with cooking into a box or case, and pressing it by some suitable apparatus with sufficient force to remove the air and all superfluous moisture and make the meat form a solid cake; (3) closing the box or case air-tight upon the meat.

It will thus be observed that the first requisite is that the meat must be thoroughly cooked by boiling it in water, that mode of cooking called "stewing" not being necessarily excluded, unless the words declaring that "the meat yet retain its natural grain and integrity" have that effect. The patent limits the cooking to this particular mode, baking, roasting, and steaming being excluded as modes of cooking meat. After the bone and gristle are removed there is no description given of any particular manner in which the meat is to be treated before it is put into the box or case, unless the use of the language that "it is then wholesome and palatable" has that effect. And although the evidence shows that all the meat, put up by the plaintiffs, and which has entered so extensively into the markets of the country for sale, is corned meat that is not a part of the patent, and fresh meat, without antiseptics of any kind, if thoroughly cooked by boiling in water, with the bone and gristle removed, and if, while yet warm with cooking, put into a box or case closed air-tight, would be within the description of the patent. Neither is anything said of the extent of the pressure to which the meat is to be subjected when placed in the box or case, except that it must be with sufficient force to remove the air and all superfluous moisture, so that the meat will form a solid cake. Nor is the degree of warmth named which must exist when the meat is put into the box or case. Neither is any description given of the manner in which the box or case is to be closed air-tight upon the meat.

It is claimed by the plaintiffs that this combination of the manner of cooking and preserving meats for transportation is new, and entitled William J. Wilson to a patent.

It should be stated that in the original, as well as in the reissued patent of William J. Wilson, it seems to be implied by the second claim, which is made in each, that the box or case must be "hermetically" sealed. Some criticism has been made upon the use of this word. We do not understand it to mean the same as if it were employed in describing anything as hermetically sealed in a laboratory, but only that the package should be so sealed as to exclude the passage of air into or out of the box or case. The patentee says that this box or case may be made of wood or metal, or both combined, of any suitable form or shape, and of any desired dimensions. It is, perhaps, unnecessary for us to inquire, as all the parties in this case use metal, whether or not the box or case could possibly be made of wood, or whether, in order to accomplish the object which the patentee had in view, it must always be made of metal. We will therefore direct our attention, in the first place, to the question whether or not what William J. Wilson describes in his specifications, as just stated, was the proper subject of a patent.

The cooking of meat thoroughly by boiling it in water, so that the bone and gristle can be removed, has always been known. If it be admitted that the box or can must be hermetically sealed in order to be air-tight, that was an old device. The Appert process, described in Durand's English patent of 1810, required that the vessel (case or box) in which the food was placed should be air-tight, and that has ever since been regarded as indispensable in any process for preserving such food as is the subject of controversy here. Before the date of the patent to William J. Wilson meat was placed in a package and subjected to pressure to remove the air, and it is clear any superfluous moisture was thus also removed from the meat. This is shown in the Marshall patent of 1864, because it is manifest his description of the process necessarily implies the removal of the superfluous moisture from the meat, as well as the removal of the air from the meat by pressure, and the hermetical sealing of the box or case in which the meat is placed for preservation, transportation, and sale. De Lignac (1855) submitted meat to a high pressure in the tin cans in which it was to be preserved, and which apparently were hermetically sealed. Lyman (1869) roasted his meat before putting it into the box or can, and he speaks in his specifications of stewing, boiling, or roasting the meat as being the ordinary mode at that time employed for preserving meat before packing it in cans. It will thus be seen that prior to the issuing of William J. Wilson's original patent, in 1874, meat was cooked in various ways; was subjected to pressure, by which the air and the superfluous moisture were expelled from it, both before and after it was put in the case or box for preservation, and these boxes or cases were hermetically sealed, in order to make them air-tight.

The evidence seems to show that at the present time, in order most surely to preserve meat, it is necessary to subject the case or can in which the meat is packed to what is called "processing," which we understand to mean this: There is an opening in the can through which the meat is introduced. When the can is filled the hole is soldered up. It is then subjected to heat, a puncture made, the air and steam permitted to escape, and then the puncture also soldered up. This is not a new operation, but has long been known. In fact, it is substantially described in the Durand patent as a part of the Appert mode of preserving meat; for, although the details here described are not fully given in the Durand patent, still they are necessarily implied from the statement that the aperture is left in the vessel until the heat shall have produced the proper effect, when it is to be closed. In Appert's method of preserving animal and vegetable food, vessels containing it were placed in a boiler filled with cold water, and then heat was applied up to the boiling-point, and vegetables were to be put into the vessels in a raw or crude state—animal substances raw or partly cooked. The "processing," as it is termed, is not set forth in the William J. Wilson patent, unless necessarily implied from the statement that in thus preparing and packing the meat in an air-tight box or case it is a part of the operation. All that the patent says is that after the meat is put into the box or case and the proper pressure is applied the box or case is then closed air-tight upon the meat;

and if it is also implied that the box, as we have heretofore assumed, is hermetically sealed, still it is not stated that it is to be subjected to the "ordinary process" in canning. It seems to be conceded that the reasons which render this necessary, in order to properly preserve meat or vegetables, were not well known at the time it was adopted. The theory at present received upon this subject is that it is necessary to expel from the can or case the air and what are called the germs of fermentation and putrefaction, which exist in the air, and which are destroyed when a high degree of heat is applied; and the air being thus expelled before it can re-enter, the box is made air-tight. These invisible germs, supposed to be floating in the air, must be killed or removed, or they will enter into the vegetable or animal substances, and in a short time produce putrefaction, and, of course, destroy them as an article of food. There seems to be, therefore, nothing left in the description of the mode of preserving meat pointed out in the patent of William J. Wilson unless it is in putting the meat while warm with cooking into the box or case. Can that be said to be patentable as a part of the mode of preserving meat, even if it be conceded it had never been done before? We think not; no more than if, prior to the date of the William J. Wilson patent, in order to preserve meat, it had never been put into a can or case thoroughly cooked. Neither of them seems to require ingenuity or the exercise of the inventive faculty. It is manifest, when we consider what was known at the date of the William J. Wilson patent, that these or other methods could be adopted of putting the meat into the case or can for preservation without encroaching upon the domain of the invention of any one.

There can be no doubt that within a few years past the method of preserving meat adopted by William J. Wilson has caused the article to be extensively used and sold in the markets of this and other countries. That argument has been pressed with great force upon the court in this case.

It may be admitted that in all doubtful cases involving the validity of a patent the fact that a mode described in the patent has gone into extensive use has and often will induce courts to decide in favor of the patent. But while this is so courts ought not, merely because of such use, to sustain a patent. The rights of the public are to be protected as well as those of individuals, and a monopoly should not be allowed unless the right to it is clearly shown. But the true explanation of the success which has attended this and similar modes of preserving meat may be in the fact that there has been a tendency in the public of late years to use all kinds of canned meats and fruits to a much greater extent than formerly, owing to the increased care and skill in their preparation and packing; and we think all William J. Wilson and those who act under him can claim is that they have been particularly careful in selecting, preparing, seasoning, cooking, and canning their meat, by which it has acquired a high reputation; and upon that, in our opinion, they must rely, and not upon a monopoly under the patent law.

The John A. Wilson patent of October 23, 1877, Reissue No. 7,923, is for an improvement in metallic cans for containing cooked meats, and, as he describes it—

> Consists in a pyramidal-shaped can having rounded corners and both ends slightly flaring to form shoulders, against which the head or end pieces rest. * * *
>
> a represents the body of my can made in the form of a truncated pyramid, with rounded corners, and of any desired number of sides, though I prefer to make with four sides. * * *
>
> In packing cooked meats it is done by means of a plunger through an aperture in the large head B, which opening is afterward hermetically sealed by means of a cap or plate, D. * * * The can is to be opened at the larger end, at or near the shoulder e, by means of a suitable can-opener, so that when the can is reversed a slight tap on the smaller head C will cause the solidly-packed meat to slide out in one piece, so as to be readily sliced, as desired.

The claims in controversy here are the first and third:

> 1. A can for packing food, hermetically sealed, and constructed of pyramidal form, with rounded corners and offset ends to support the heads, said heads being secured as shown and described.
>
> 3. As an improved article of manufacture, solid meat compressed and secured within a pyramidal case or can, so that said can forms a mold for the meat and permits its discharge as a solid cake, substantially as specified.

And to these claims defendants interpose two defenses: (1) That the patent is void for want of novelty so far as the two features or claims in question are concerned; (2) that defendants do not infringe.

It will be seen that the case or can covered by this patent must have certain features or characteristics: (1) It must be of "pyramidal form, with rounded corners;" (2) it may have "any number of sides," although the patentee "prefers four sides;" (3) it must have "rounded corners," and the ends must be "slightly flaring," to form shoulders, against which the "head or end pieces rest."

There are some further details of construction, such as the mode of fastening in the heads by turning the flaring edge of the can inward over the flange of the head, so as to make three thicknesses of metal, and, as he said, make a tight joint "with or without solder," and leaving an aperture or stud-hole in the large head through which the meat is to be forced, which hole is to be closed by a cap. But as no notice is taken of these in the claims, we presume they are not considered as of the substance of the patent.

By a stipulation filed in these cases, found on page 942 of defendants' record, it is admitted that "conical tin cans were made and used for canning alimentary substances, and sealed air-tight, prior to the date of the Wilson patents that are the subject of controversy in these cases."

The proof also shows that the French patent of one Emile Peltier was recorded in April, 1859, wherein he described pyramidal-shaped cans for the preservation of food by hermetically sealing such cans. We may also add to this, from our common knowledge, the well-known glasses and molds used by housekeepers in domestic life for preserving jellies, boned turkey, head-cheese, &c., which were all, from the very necessity of the uses to which they were applied, more or less flaring, conical, or pyramidal in shape, and made so, presumably, for the purpose of turning out or discharging the contents in a solid cake. If therefore there was occasion at the time this patentee entered the field of improvement to use a pyramidal or conical-shaped can or case, there was no need to call in the aid of inventive genius to secure or contrive its construction. Those who wanted such a can or case had only to take those forms of cans then in general use and adapt them, by mere mechanical changes, to the purpose for which they were designed. With these conical and pyramidal-shaped cans, well known and described in the art of preserving food, there was not only no room, but absolutely no need, for invention in applying them to the purposes of preserving cooked meats. There is nothing in the proof showing, or tending to show, that cooked

meats require any different-shaped cans to contain or preserve them than do other alimentary substances. The only advantage gained by this shape suggested in the patent, is that the solidly-packed meat can be more compactly turned out of this form of can in a cake, so as to be readily sliced; but it could be equally well turned out of a conical can. In fact, a conical or pyramid shaped or flaring can would seem naturally to suggest itself, from kindred uses in domestic life, almost as part of the idea or suggestion of packing meat solidly in a can for preservation. To come within this claim of the patent, the can must not only be pyramidal in shape, but it must have "rounded corners" and "offset ends to support the heads." The cans shown in the proof to have been used by the St. Louis Beef Canning Company and by Robert D. Hunter and others are eight-sided pyramidal-shaped cans—that is, they are made with four narrow sides or panels and four wider ones—while those used by the Chicago Packing and Provision Company are pyramidal-shaped cans with rounded corners. But this peculiarity of construction alone can hardly be deemed the subject-matter of a patent. In making a pyramidal-shaped can of sheet metal it is obvious that the corners would be naturally more or less rounded, unless special pains were taken to avoid that shape and turn the corners squarely; and with conical and pyramidal shaped cans, known to the art, it would not seem to be invention to vary the form of construction by turning the corners with a curve instead of forcing the sheet metal forming the shell of the can into an angle more or less obtuse.

In his specifications describing the mode of constructing his can this patentee says:

> Both ends of the body are made slightly flaring, so as to form shoulders or offsets, against which the heads are to rest.

Waiving the question whether this feature of construction in a sheet-metal can could be the subject-matter of a patent, it is sufficient to say that we do not find this feature in the cans used by any of the defendants, while the complainants' cans put in evidence show that they do not confine themselves to this form of construction. All the defendants' cans which are shown as exhibits in the case are made by turning a rim of the head down over the outside of the body or shell of the can and fastening the head in place with solder, and none of them have the "offset" ends called for by the specifications of this patent; and, as we have already said, this seems to be the form of construction practically adopted by the plaintiffs, probably because all packers find they can make a can just as tight and useful, and more cheaply, by turning the head over the outside of the shell than by following the exact description of the patent. But we also find in the proof that the cans shown to have been used by Gibbie and by Perl as early as 1872 show the offset ends claimed by this patent. The "Gibbie" can has both the "rounded corners" and "offset ends," while the "Perl" can has "offset ends" as a distinctive feature of construction. We have therefore conical and pyramidal shaped cans, and the "Gibbie" and "Perl" cans, with flat sides, but rounded corners and offset ends, known and in use long before this inventor entered the field, and feel compelled to reach the conclusion that there was no novelty in the device of a pyramidal-shaped can with rounded corners and offset ends, as described in this claim; so that it seems clear to us that the first claim of this patent must be held void for want of novelty.

As to the third claim, the proof shows that Marshall packed meat solidly in a can in 1864. He says:

> I then subject a given quantity of the meat to pressure in a box or cylinder under until all air is driven out, and the space occupied by the meat agrees with the size of the package it is intended to fill. When the meat is in its place the box is hermetically sealed, and in this state, retaining all its nutritive qualities, the meat will remain perfect as long as the package remains intact.

So Lyman, in his patent of 1870, described his process of packing meats solidly in cans as follows:

> I grind or otherwise reduce the roughest parts to about the consistency of thick mortar or putty, and then pack the best pieces in this reduced meat and press it all into a compact mass in the can, the interstices being filled with the reduced meat firmly pressed in, so as to expel the air, instead of filling them with the gravy or with water, as by the common modes. Sometimes I grind the whole of the meat and pack the can with it, compressing it into a solid mass, then heat and seal it up from the air, and reheat it to combine any free oxygen that may possibly be left in the can.

Here we have in both cases solid meats, and in one case cooked meats, packed in cans for preservation. Neither of these patentees tell us the shape of their cans. But we cannot see how, with conical and pyramidal cans well known in the art as packages for the preservation of meats and other food, and the old art of packing or compressing meats solidly into cans, there can be any invention which should be protected by a patent in taking these well-known shaped cans and pressing into them cooked meat, so as to form a solid mass or cake. The can was old and the meat cake was old.

The result is that the bills will be dismissed.

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ANNUAL REPORT
OF THE
COMMISSIONER OF PATENTS
TO CONGRESS,
FOR THE YEAR ENDING DECEMBER 31, 1881.

Laid before the House of Representatives by the Speaker February 2, referred to the Committee on Patents, and ordered to be printed.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., January 31, 1882.

To the Senate and House of Representatives of the United States of America in Congress assembled:

In compliance with the requirements of section 494 of the Revised Statutes, I respectfully submit to Congress the following report for the year ending December 31, 1881.

RECEIPTS.

Detailed statement of all moneys received for patents, for copies of records or drawings, or from any source whatever.

Applications (including caveats, trade-marks, and disclaimers):		
Cash received	$703,986 00	
Cash refunded	1,895 00	
Net cash	702,091 00	
Certificates of deposit	57,535 00	
Total cash and certificates		759,626 00
Copies:		
Cash received	60,014 82	
Cash refunded	1,644 70	
Net cash	58,370 12	
Certificates of deposit	925 70	
Total cash and certificates		59,295 82
Recording assignments:		
Cash received	24,424 38	
Cash refunded	1,006 10	
Net cash	23,418 28	
Certificates of deposit	306 55	
Total cash and certificates		23,724 83
Subscription to Official Gazette:		
Cash received	9,328 79	
Cash refunded	170 15	
Net cash	9,158 64	
Certificates of deposit	166 60	
Total cash and certificates		9,319 24
Registration of labels:		
Cash received	2,103 00	
Cash refunded	480 00	
Net cash	1,623 00	
Certificates of deposit	77 00	
Total cash and certificates		1,700 00
Aggregates.		
Cash received	$799,850 99	
Cash refunded	5,195 95	
Net cash	794,655 04	
Certificates of deposit	59,010 85	
Total cash and certificates		853,665 89

EXPENDITURES.

Amount expended under the several appropriations from January 1, 1881, to January 1, 1882.

Salaries	$467,478 49
Contingent expenses	17,965 38
Official Gazette	21,240 86
Photolithographing	55,177 80
Copies of drawings	34,517 39
Scientific library	5,373 98
Abridgment of patents	2,819 88
Total	605,173 28

Statement of contingent expenses in detail.

Furniture and labor connected therewith	$2,209 40
Repairing and extra labor	5,317 82
Painting	335 46
Carpets	267 00
Ice	500 63
Engraving and printing patent-heads	529 00
Extra labor on indexes	56 00
Other contingencies, viz:	
Subscription to journals, washing towels, keeping horse, shoeing, repairing carriage and harness, rent of telephones, lumber, copies of court decisions, paste, file-wrappers, file-holders, Bristol board, &c.	8,590 07
Total	17,965 38

RECEIPTS OVER EXPENDITURES.

Total receipts	$853,665 89
Total expenditures	605,173 28
Receipts over expenditures	248,492 61

Statement of balance in the Treasury of the United States on account of the Patent fund.

Amount to the credit of the fund January 1, 1881	$1,631,696 71
Amount of receipts during the year 1881	853,665 89
Total	2,485,292 60
Deduct expenditures for year 1881	605,173 28
Balance January 1, 1882	1,880,119 32

SUMMARY OF THE BUSINESS OF THE OFFICE.

Number of applications for patents for inventions	24,878
Number of applications for patents for designs	678
Number of applications for reissues of patents	503
Total number of applications relating to patents	26,059
Number of caveats filed	2,406
Number of applications for registration of trade-marks	611
Number of applications for registration of labels	363
Number of disclaimers filed	14
Number of appeals on the merits	789
Total	4,183
Total number of applications requiring investigation and action	30,242

Number of patents issued, including designs	16,113
Number of patents reissued	471
Number of trade-marks registered	834
Number of labels registered	202
Total number of patents granted and certificates issued	17,620
Number of patents expired during the year	4,638
Number of patents withheld for non-payment of final fee	1,511

PATENTS ISSUED.

Patents issued to citizens of the United States, with the ratio of population to each patent granted.

States and Territories.	Patents and Designs.	One to every—
Alabama	47	26,861
Arizona Territory	4	10,110
Arkansas	48	16,719
California	440	1,965
Colorado	73	2,662
Connecticut	693	898
Dakota Territory	11	12,288
Delaware	31	4,739
District of Columbia	152	1,168
Florida	21	12,833
Georgia	93	16,582
Idaho Territory	3	10,870
Illinois	1,122	2,743
Indiana	448	4,415
Indian Territory	3	.....
Iowa	300	5,415
Kansas	119	837
Kentucky	170	9,587
Louisiana	74	12,701
Maine	133	4,879
Maryland	265	3,598
Massachusetts	1,708	1,043
Michigan	537	3,058
Minnesota	146	5,347
Mississippi	41	27,599
Missouri	410	5,288
Montana Territory	18	2,164
Nebraska	57	7,936
Nevada	14	4,447
New Hampshire	110	3,154
New Jersey	827	1,367
New Mexico Territory	3	39,855
New York	3,207	1,584
North Carolina	64	21,871
Ohio	1,099	2,909
Oregon	31	5,637
Pennsylvania	1,502	2,119
Rhode Island	278	994
South Carolina	45	22,123
Tennessee	88	17,413
Texas	177	8,991
Utah Territory	17	8,468
Vermont	69	4,380
Virginia	108	14,005
Washington Territory	19	30,543
West Virginia	44	14,055
Wisconsin	238	5,527
Wyoming Territory	3	6,929
United States Army	6	.....
United States Navy	2	.....
Total	15,118	.....

Patents issued to citizens of foreign countries.

Of patents issued to foreigners there were granted to citizens of—

Australia	2
Austria	29
Algeria	1
Belgium	7
Brazil	1
Canada	215
Central America	2
Cuba	2
Denmark	2
Ecuador	1
England	343
France	116
Germany	213
Hungary	1
Italy	5
Mexico	4
Netherlands	2
New Zealand	6
Russia	7
Spain	9
Sweden	9
Switzerland	16
West Indies	1
Total	995

Comparative statement of the business of the Office from 1837 to 1881, inclusive.

Year.	Applications.	Caveats filed.	Patents and reissues.	Cash received.	Cash expended.	Surplus.
1837	.....	.....	435	$29,280 08	$33,506 98	.....
1838	.....	.....	590	42,123 54	37,402 10	$4,721 44
1839	.....	.....	495	37,260 00	34,543 51	2,716 49
1840	735	228	473	38,056 51	39,090 67	.....
1841	847	312	495	40,413 01	52,666 87	.....
1842	761	391	517	36,505 68	31,241 48	5,264 20
1843	819	315	510	35,315 81	30,776 96	4,538 85
1844	1,045	380	495	42,509 26	36,244 73	6,264 53
1845	1,246	452	504	51,076 14	39,395 65	11,680 49
1846	1,272	448	638	50,264 16	46,158 71	4,105 45
1847	1,531	553	569	63,111 19	41,878 35	21,232 84
1848	1,698	607	652	67,576 69	58,905 84	8,670 85
1849	1,955	595	1,068	80,752 98	77,716 44	3,036 54
1850	2,193	602	993	86,927 05	80,100 95	6,816 10
1851	2,258	760	872	95,738 61	86,916 93	8,821 68
1852	2,639	996	1,019	112,656 34	95,916 91	16,739 43
1853	2,673	901	961	121,527 45	132,869 83	.....
1854	3,328	868	1,844	163,789 84	167,146 32	.....
1855	4,435	906	2,012	216,459 35	179,540 33	36,919 02
1856	4,960	1,024	2,506	192,588 02	199,931 02	.....
1857	4,771	1,010	2,896	196,132 01	211,592 09	.....
1858	5,364	934	3,695	203,716 16	193,193 74	10,522 42
1859	6,225	1,097	4,504	245,942 15	210,278 41	35,663 74
1860	7,653	1,084	4,778	256,359 59	252,820 80	3,531 79
1861	4,643	700	3,329	137,354 44	221,491 91	.....
1862	5,038	824	3,532	215,754 99	182,810 39	32,944 60
1863	6,014	787	4,194	195,563 39	189,414 14	6,179 15
1864	6,932	1,063	5,025	240,919 98	229,868 00	11,051 98
1865	10,664	1,937	6,616	348,791 84	374,199 34	74,592 50
1866	15,989	2,793	9,458	495,665 38	361,724 28	133,941 10
1867	21,276	3,597	13,026	646,581 92	639,263 39	7,318 60
1868	20,420	3,705	13,410	681,565 86	698,679 77	52,886 09
1869	19,271	3,694	13,997	693,145 81	486,430 78	206,715 03
1870	19,171	3,373	13,333	669,456 76	557,149 19	112,307 57
1871	19,472	3,366	13,056	678,716 46	560,595 08	118,121 38
1872	18,246	3,090	13,613	699,736 39	665,591 36	34,135 03
1873	20,414	3,248	12,864	703,191 77	691,178 98	12,012 79
1874	21,602	3,181	13,599	738,278 17	679,288 41	58,989 76
1875	21,638	3,004	14,837	743,453 36	721,657 71	21,795 65
1876	21,425	2,697	15,595	757,987 65	652,542 60	105,445 05
1877	20,308	2,809	14,187	732,342 85	613,152 62	119,190 23
1878	20,260	2,755	13,444	725,375 55	593,092 89	132,282 66
1879	20,059	2,690	13,213	703,931 47	529,638 97	174,292 50
1880	23,012	2,490	13,947	749,685 32	538,865 17	210,820 15
1881	26,059	2,406	16,584	853,665 89	605,173 28	248,492 61

The receipts of the Office during the past year exceed those of any previous year by nearly $100,000, or more than fourteen per cent., and the excess of receipts over expenditures ($248,492.61) has been correspondingly greater. In no former year have there been so many applications for patents or so many patents granted.

The ratio between the number of applications and the number of grants, as gathered from the Commissioners' reports since 1836, has varied from time to time, and it is matter of interest to trace briefly the causes of this variation. At first, although the number of patents which could serve as references was comparatively small, yet the proportion of rejections was far greater than it is to-day, approaching in 1847 two-thirds the whole number of applications. This is largely attributable to the fact that the means of learning the little that had actually been done were in the hands only of those having special opportunities, such as were possessed by the Commissioner of Patents and his subordinates. Hence many crude inventions were presented in application, and the same invention many times by different persons. Afterward, when the publications of the Patent Office became more widely disseminated and inventors had at command facilities for making independent investigations before applying for patents, the number of rejections became proportionately smaller. During the past fifteen years, however, the variation in the ratio has been small. This essential stability manifestly represents a like stability in the requirements fixed by the Office as prerequisite to the grant of a patent. It is equally manifest that such stability tends to strengthen public confidence in the decisions of the Patent Office as being prompted, not by personal whim, but by conformity to fixed principles of judgment. In order, however, to secure this end there must be permanence in the examining force.

In his report for the year 1874 Mr. Commissioner Leggett says:

> It is well known that complaints from many sections of the country against our whole patent system arise almost exclusively from patents that are improperly granted because of the want of proper supervision in their examination; and with so many persons examining and passing applications for issue it is an impossibility to establish anything like a uniformity of practice in the Office.

The confusion here noted is largely augmented when to the differences of mental make-up is added the lack of special knowledge to which those are subject who take the place of retiring officers. It is worthy of note that the few exceptional years since 1867 during which there has been any considerable variation in the number of patents granted as related to the number of applications have been marked by frequent resignations.

In this connection, the attention of Congress is called to the fact that there has been no increase in the salary of principal examiners since 1848, when it was fixed at $2,500. Since 1877 the appropriations for the salaries of these officers has been only $2,400. The salaries of First and Second Assistant Examiners were fixed in 1855 and have not since been increased. As a result the best men not unfrequently leave the Office for more lucrative positions, much to the detriment of the service. It is unnecessary to say that the qualities required to make a good examiner are of the very highest order, such as command the largest salaries in positions outside the Office. In view of these considerations, it is hoped that Congress will consider the expediency of increasing the salaries of the examining officers in this Bureau, with a view to greater permanence in the force and the consequent increase of its efficiency.

INCREASE OF FORCE NECESSARY.

The needs of the Office as regards working force and room for the force actually employed have been so often and so forcibly pressed upon the consideration of Congress that it might be deemed a work of supererogation to renew reference to them here were it not that the cumulative character of the reasons for such pressure must rescue any words of mine from the criticism of presenting a mere repetition of what has already been said. Even were that the case, the necessity for action would be sufficiently urgent. The request for an increase of force which Mr. Commissioner Paine made to Congress in 1879 was repeated by Mr. Commissioner Marble in 1880 and emphasized with the words, "The force employed * * * is entirely inadequate to the amount and character of work required." Since that time the work has increased more than fourteen per cent., and the force, which was then inadequate, has received an addition of about three per cent. At the present rate of increase in the number of applications for patents either the work must accumulate upon the examiners' desks or the quality of the work done must be such as to bring discredit upon the thoroughness of official examinations. The annual increase alone represents a number two-thirds as great as the entire number of patents applied for in the year 1861, at which time Congress appropriated money for the support of sixteen principal examiners, each to be provided with a first and second assistant.

I cannot refrain from pursuing this comparison still further. The Office now has twenty-six principal examiners, twenty-four of whom have first, second, and third assistants. The Examiner of Trade-Marks and the Examiner of Interferences have no assistants. The full examining corps, then, numbers ninety-eight, while in 1861 it numbered forty-eight. Now, the total number of applications for patents in 1861 was 4,643 as against 26,059 during the year just past. It is, however, only fair to suppose that the act by which Congress fixed the number of examiners at forty-eight was based upon an estimated advance upon the business of the preceding year. Granting, then, that the force provided by Congress in 1861 was adequate to the proper examination of 9,000 applications, (the number for 1860 was 7,653, and that for 1859, 6,225,) the present force could only be expected to dispose of 18,000 cases, whereas the actual number of cases presented for action during the year 1881 is fifty per cent. greater. If to this be added the fact that the field of search becomes every year more extended; that, instead of the 31,000 American patents existing in 1861, the examining corps now has to become familiar with 250,000, and if it be considered that a similar increase has taken place in the number of foreign patents to be reviewed, and that scientific publications, which every examiner should read, have multiplied in like proportion, it will be obvious that all the increased facilities furnished by the printing of the specifications and the reproduction of the drawings in convenient form cannot offset the enormous disproportion shown by the above comparison. The mere mass of the work, however much the facilities for examination might be multiplied, would require a larger force than is provided for by the annual appropriations of Congress.

In view, therefore, of all these considerations, I recommend that Congress authorize the appointment and provide for the compensation of four additional examining divisions, each to consist of a principal examiner and three assistants.

ROOM.

Scarcely less urgent is the need of room. This need is particularly felt in the Draftsman's Division and in the Library. The former is now distributed in three widely-separated parts of the building, an arrangement which is especially inconvenient for this division, owing to the constant need on the part of examiners and attorneys of consulting it in all its branches. A large number of messengers is thus required, whose services could otherwise be dispensed with. The Library can neither shelve all its books and pamphlets nor properly accommodate those persons who would gladly make use of its stores. The Record Room and the Attorneys' Room should, for obvious reasons, be closely connected with the Library; but both are far removed from it, and are also apart from each other. Owing, too, to lack of space, work is now being done in rooms which are unfit for occupancy.

The evils of overcrowding in examiners' rooms have been fully set forth in the reports of former Commissioners. It is manifestly impossible for the assistants properly to attend to their own work while the examiner is conducting a hearing in the same room; yet only

three of the examiners have consulting-rooms apart from those occupied by their assistants. Besides, it should be noted that the custom of keeping the photolithographs and specifications in each room—a custom which lack of space elsewhere would have compelled if convenience had not recommended it—has necessitated the employment of shelves and drawers, which narrow very considerably the desk capacity of all the rooms. For this reason most of the rooms now in use are overcrowded to a degree of great inconvenience. More than double the space now available for the examining force is absolutely required for the proper dispatch of business and the health of the employés.

DIGESTS.

The digest of American patents, for which a provisional appropriation was made by Congress at its last session, has been in progress since the beginning of August last. It is proposed to furnish to the Office and the public at large classified briefs of all American patents. The classification in the body of the work will conform in general to that already existing in the several examining divisions, while the indices will contain cross-references to every sub-device which is of sufficient importance to be described in the specification of the invention to which it belongs. Thus the examiner or the inventor will not only have at hand an adequate digest of each case under its proper classification, but he can dispense with a search that is often very laborious for references in the broader classes under which the special invention is comprised. It is hardly possible to overestimate the benefit that will inure to the Office and to inventors from the prosecution of this work. A specimen of the work already done will soon be laid before Congress, and it is believed that when its nature becomes clearly understood from actual examination there will be no doubt as to the desirability of completing it.

AMENDMENTS OF THE LAW.

Section 4886 of the Revised Statutes provides, as one of the conditions necessary to the obtaining of a patent, that the invention shall not have been "in public use or on sale for more than two years prior to the application;" and section 4920, relating to the grounds of defense in an action for the infringement of a patent, provides that the defendant may plead "that it had been in public use or on sale for more than two years before his application for a patent or had been abandoned to the public." The theory of our patent system is that it is the duty of the Commissioner to determine in advance the right of an applicant to a patent. The plea of public use, if sustained, operates to defeat a patent. Notwithstanding the theory above stated, and notwithstanding the fact that public use is made a bar to the grant and to the validity of a patent if granted, the Commissioner has no means of ascertaining the fact except in cases of notorious public use. It frequently happens that the fact is alleged by parties interested in the defeat of an application, and affidavits to that effect are filed, coupled with a protest against the granting of the patent. As these protests are prompted by self-interest, and as the only practical means of bringing the matter to the attention of the Commissioner is by *ex parte* affidavits procured by interested parties, and as the affiants cannot be compelled to appear for cross-examination by any process of law, this kind of evidence is of a very unsatisfactory character, and applicants may well object, as they do, to having their rights determined upon such questionable evidence. I therefore recommend a provision of law for taking testimony in cases where the question of public use is raised similar to that already existing for taking testimony in interference cases.

Serious question has arisen as to the proper construction to be put upon that part of section 4887 which provides that—

> Every patent granted for an invention which has been previously patented in a foreign country shall be so limited as to expire at the same time with the foreign patent; or, if there be more than one, at the same time with the one having the shortest term, and in no case shall it be in force more than seventeen years.

It is contended by many lawyers practicing before this Office that the limitation here indicated applies only to inventions which were patented abroad before the application was filed for an American patent, while others of equal authority hold that the priority contemplated by the provision is priority of grant, and this corresponds with the later rulings of the Office. As a matter of fact, it is often impossible to ascertain whether a given invention has been patented in a foreign country or not. The case may be pending in several countries at once, and after the American patent has been granted it may be discovered that the same invention was patented abroad on the day before it was issued here. If it is the desire of Congress to limit in any case the duration of the American patent by that of a previous foreign patent for the same invention, it is hoped that the statute will be so amended as to leave no room for doubt. But when it is considered that our patent system is intended to "promote the progress of the useful arts," and when it is remembered what our liberal patent system has already done for the accomplishment of this end, it may well be doubted whether all proper inducements should not be offered the foreign inventor to patent his invention in this country. There would seem to be no valid reason why an invention that has been patented elsewhere should not, if found new and useful, be protected in this country for the same number of years as any other invention. The statute (sec. 4887, part 1) furnishes a sufficient inducement to promptness in making application by providing that such an invention shall be patentable, "unless the same has been introduced into public use in the United States for more than two years prior to the application." Besides, the statute operates in effect to discriminate against the American inventor. In some foreign countries a patent cannot be maintained for an invention which has been previously patented in the United States. American inventors may thus be debarred from protection in those countries; or, if they choose to secure that, are deprived of some at least of the privileges which were meant to foster the spirit of domestic invention. I therefore recommend that that part of section 4887 of the Revised Statutes which limits the term of the American patent by that of the foreign patent be repealed.

Section 4897 of the Revised Statutes is ambiguous, the application for patent therein referred to being designated "an application," "second application," and "renewed application." In order to make the section consistent with other parts of the law and all parts of it compatible with each other, I recommend that the same be amended so as to read:

> SEC. 4897. Any person who has an interest in an invention or discovery, whether as inventor, discoverer, or assignee, for which an *application was made and* a patent was ordered to issue upon the payment of the final fee, but who fails to make payment thereof within six months from the time at which it was passed and allowed and notice thereof was sent to the applicant or his agent, shall have a right to *renew such* application *and obtain* a patent for such invention or discovery *upon the payment of the fee required by law* the same as in the case of an original application. But such *renewed* application must be made within two years after the allowance of the original application. But no person shall be held responsible in damages for the manufacture or use of any article or thing for which a patent was ordered to issue under such renewed application prior to the issue of the patent. And upon the hearing of renewed applications preferred under this section abandonment shall be considered as a question of fact.

PRINTING.

Provision is made by statute for the sale of printed copies of specifications and drawings of patents at a minimum price of ten cents per copy. There is no provision of law for the gratuitous distribution of the same. A custom, however, has grown up in the Office of furnishing without charge to the several governmental departments and bureaus such copies of patents as they may desire for actual use. Furthermore, in order to reciprocate the courtesies extended to this Office by the corresponding bureaus of other governments, we are now supplying England, France, Belgium, Germany, Austria, and Italy with complete sets of printed specifications and drawings as they are issued. These copies, added to such as are required for the use of examiners and other officers of the Bureau in the discharge of their duties, exceed in number the copies sold. In the absence of any legal sanction for the free distribution of copies, it is recommended that express authority be given the Commissioner of Patents to exercise his discretion in this regard. The necessity for printing the specifications from No. 1 to No. 48,126, issued prior to June 6, 1865, has already been referred to in previous reports of the Commissioner of Patents. This action is necessary in order to continue the international exchange, and at the same time to meet the demands of the Office and the general public.

REPORTS.

I repeat here the following from Mr. Commissioner Marble's report for the year 1880:

> Through some inadvertence the illustrations of the Patent Office Reports for the year 1870 have not been printed. If printed, the reports of this Office would be complete. It is estimated that these illustrations can now be reproduced by the photolithographic process at a cost of about six thousand dollars. The propriety of having the reports of this Office complete must be apparent to all. I therefore recommend an appropriation of the sum of six thousand dollars to complete this work, the same to be immediately available.

During the year an International Electrical Exposition and Congress of Electricians was held in the Palais de l'Industrie, at Paris, France, under the auspices of the French Government. Mr. Frank L. Freeman, Principal Examiner of the Class of Electricity, was appointed by the honorable Secretary of State as one of the honorary Commissioners of the United States, and was also designated by the Commissioner of Patents, with the approval of the honorable Secretary of the Interior, to represent this Office. A complete set of copies of all United States patents relating to electricity granted prior to July 1, 1881, was compiled and indexed, making sixteen large volumes, and this was sent to the Exposition as the exhibit of this Office. This exhibit attracted much attention, and helped very materially to show the leading position occupied by the inventors of this country in the development of the arts appertaining to the science of electricity. A diplome d'honneur was awarded the Office for this exhibit by the jury of awards.

In concluding this report, I again call attention to the showing made by the tables with which it opens. The large increase in the receipts of the Office argues great activity in the field of invention and continued confidence in the measures taken by our Government to encourage the inventive spirit. There is every reason to believe that the record of the present year will furnish even greater cause for congratulation in both particulars than is afforded by the report which I have the honor now to submit.

Respectfully submitted,

V. D. STOCKBRIDGE,
Acting Commissioner.

WASHINGTON, D. C., *January* 31, 1882.

Statement showing the number of the first patent, design-patent, and reissued patent, and the number of the first certificate of registration of a trade-mark and a label issued in each calendar year since 1843, together with the total number of each issued during the year.

Year.	Number of first patent and certificate issued in each calendar year.					Number of patents and certificates of registration issued during each calendar year.						
	Patents.	Designs.	Reissues.	Trade-marks.	Labels.	Patents.	Designs.	Reissues.	Total patents.	Trade-marks.	Labels.	Total certificates.
1843	2,901	1	59	.....	.....	494	14	2	510	.....	.....	.....
1844	3,385	15	61	.....	.....	477	12	6	495	.....	.....	.....
1845	3,872	27	67	.....	.....	476	17	11	504	.....	.....	.....
1846	4,348	44	78	.....	.....	566	59	13	638	.....	.....	.....
1847	4,914	103	91	.....	.....	495	60	14	569	.....	.....	.....
1848	5,409	163	105	.....	.....	583	46	23	652	.....	.....	.....
1849	5,992	209	128	.....	.....	949	49	30	1,068	.....	.....	.....
1850	6,981	258	158	.....	.....	884	83	26	993	.....	.....	.....
1851	7,865	341	184	.....	.....	757	90	25	872	.....	.....	.....
1852	8,922	431	209	.....	.....	890	109	20	1,019	.....	.....	.....
1853	9,518	540	229	.....	.....	846	86	29	961	.....	.....	.....
1854	10,358	696	258	.....	.....	1,759	57	28	1,844	.....	.....	.....
1855	12,117	683	286	.....	.....	1,891	70	51	2,012	.....	.....	.....
1856	14,008	753	337	.....	.....	2,316	107	83	2,506	.....	.....	.....
1857	16,394	860	490	.....	.....	2,686	113	97	2,896	.....	.....	.....
1858	19,010	973	517	.....	.....	3,467	102	126	3,695	.....	.....	.....
1859	22,477	1,075	643	.....	.....	4,165	108	231	4,504	.....	.....	.....
1860	26,642	1,183	874	.....	.....	4,363	183	232	4,778	.....	.....	.....
1861	31,005	1,366	1,106	.....	.....	3,040	142	147	3,329	.....	.....	.....
1862	34,045	1,508	1,253	.....	.....	3,221	195	116	3,532	.....	.....	.....
1863	37,266	1,703	1,369	.....	.....	3,781	176	227	4,184	.....	.....	.....
1864	41,047	1,879	1,586	.....	.....	4,638	139	248	5,025	.....	.....	.....
1865	45,685	2,018	1,844	.....	.....	6,099	221	286	6,616	.....	.....	.....
1866	51,784	2,239	2,140	.....	.....	8,874	294	290	9,458	.....	.....	.....
1867	60,658	2,533	2,430	.....	.....	12,301	325	400	13,026	.....	.....	.....
1868	72,950	2,858	2,830	.....	.....	12,544	446	420	13,410	.....	.....	.....
1869	85,503	3,304	3,250	.....	.....	12,957	506	534	13,997	.....	.....	.....
1870	98,460	3,810	3,784	1	.....	12,157	737	439	13,333	121	.....	121
1871	110,617	4,547	4,223	122	.....	11,667	905	464	13,036	486	.....	486
1872	122,304	5,456	4,687	608	.....	12,200	884	529	13,613	491	.....	491
1873	134,594	6,336	5,216	1,099	.....	11,616	747	501	12,864	492	.....	492
1874	146,190	7,063	5,717	1,591	1	12,230	886	483	13,599	557	232	791
1875	158,350	7,909	6,200	2,150	233	13,291	915	631	14,837	1,138	232	1,370
1876	171,841	8,884	6,831	3,288	465	14,172	802	621	15,595	959	472	1,431
1877	185,813	9,686	7,452	4,247	937	12,920	699	568	14,187	1,216	392	1,608
1878	198,733	10,385	8,030	5,463	1,329	12,345	590	509	13,444	1,435	492	1,947
1879	211,076	10,975	8,529	6,918	1,821	12,133	592	488	13,213	872	355	1,227
1880	223,211	11,567	9,017	7,790	2,176	12,926	515	506	13,947	349	203	552
1881	236,137	12,082	9,523	8,139	2,379	15,548	565	471	16,584	836	202	1,038
1882	251,685	12,647	9,994	8,973	2,581	.....	.....	.....	.....	.....	.....	.....

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[*BY AUTHORITY OF CONGRESS.*]

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Subscriptions for 1882.

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Issue of February 14, 1882.

Patents	339	No. 253,489 to No. 253,827, inclusive.
Designs	12	No. 12,760 to No. 12,771, inclusive.
Trade-Marks	1	No. 9,102
Reissues of patents	2	No. 10,036 to No. 10,037, inclusive.
Total issue	354	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	.....	.....	Nebraska	1	.....
Arizona Territory	.....	.....	Nevada	.....	.....
Arkansas	.....	.....	New Hampshire	3	.....
California	9	.....	New Jersey	12	.....
Colorado	3	.....	New Mexico Territ'y	.....	.....
Connecticut	14	.....	New York	58	1
Dakota Territory	.....	.....	North Carolina	8	.....
Delaware	1	.....	Ohio	31	.....
District of Columbia	.....	.....	Oregon	.....	.....
Florida	.....	.....	Pennsylvania	29	.....
Georgia	5	.....	Rhode Island	14	.....
Idaho Territory	.....	.....	South Carolina	2	.....
Illinois	15	.....	Tennessee	2	.....
Indiana	15	.....	Texas	5	.....
Indian Territory	.....	.....	Utah Territory	.....	.....
Iowa	10	.....	Vermont	4	.....
Kansas	4	.....	Virginia	.....	.....
Kentucky	3	.....	Washington Territ'y	1	.....
Louisiana	2	.....	West Virginia	1	.....
Maine	2	.....	Wisconsin	5	.....
Maryland	3	.....	Wyoming Territory	.....	.....
Massachusetts	43	.....	United States Army	.....	.....
Michigan	10	.....	United States Navy	.....	.....
Minnesota	6	.....			
Mississippi	.....	.....	Total to citizens of the United States	327	1
Missouri	6	.....			
Montana Territory	.....	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia	.....	.....	England	9	.....
Austria	.....	.....	France	5	.....
Barbadoes	.....	.....	Germany	5	.....
Belgium	.....	.....	Italy	.....	.....
Bermuda	.....	.....	New Zealand	.....	.....
Brazil	.....	.....	Russia	.....	.....
Canada	4	.....	Spain	.....	.....
Chili	.....	.....	Sweden	.....	.....
Colombia, U. S. of	.....	.....	Switzerland	1	.....
Cuba	.....	.....			
Denmark	.....	.....	Total to citizens of foreign countries	24	.....
Ecuador	.....	.....			

DESIGNS.

12,760 and 12,761.—KNIT FABRIC.—*Scits Condé*, Oswego, N. Y. Applications filed November 7, 1881 Term of patents 7 years.

12,762 to 12,765, inclusive.—KNIT FABRIC.—*Scits Condé*, Oswego, N. Y. Applications filed December 12, 1881. Term of patents 7 years.

12,766.—WATCH-CHAIN.—*William Marckstine*, Irvington, assignor to *William O. Edge*, Newark, N. J. Application filed November 2, 1881. Term of patent 14 years.

12,767.—BLOUSE.—*Nathan J. Schloss*, New York, N. Y. Application filed January 13, 1882. Term of patent 3½ years.

12,768.—HEATING-STOVE.—*George G. Thomas*, Philadelphia, Pa. Application filed January 13, 1882. Term of patent 7 years.

12,769.—CORSET.—*Horace H. Chittenden*, New Haven, Conn., assignor to *Foy, Harmon & Co.*, same place. Application filed January 16, 1882. Term of patent 3½ years.

12,770.—HANDLE FOR SPOONS, FORKS, OR KNIVES.—*Arthur W. Lyman*, Montague, Mass. Application filed December 9, 1881. Term of patent 7 years.

12,771.—LAMP.—*Edward J. Orington*, Brooklyn, N. Y. Application filed January 17, 1882. Term of patent 3½ years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

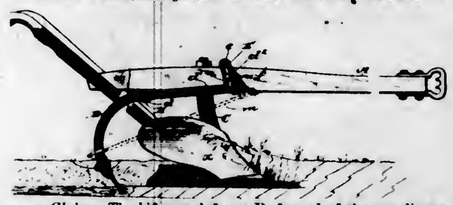
9,102.—LEAD-PENCILS.—*The Eagle Pencil Company*, New York, N. Y. Application filed January 17, 1882.

"The word-symbol 'AUTOMATIC.'"

PATENTS

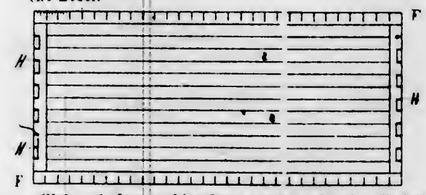
GRANTED FEB. 14, 1882.

253,489. PLOW. JOEL J. ADCOCK, GEORGE J. LUMPKIN, and MILTON WHITE, Subligna, Ga. Filed Nov. 23, 1881. (No model.)



Claim.—The bifurcated frame D, formed of the two diverging arms *d'*, cross-heads E, having slots *e*, and pivoting-bracket H, combined with the beam A, pivotal bolt *d*, adjusting-bolt *f*, and tie-rod *m*, the frame being adapted to be applied to ordinary mold-board plows, as and for the purposes herein set forth.

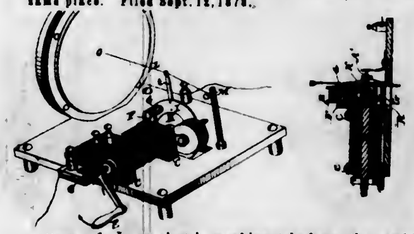
253,490. DEVICE FOR MARKING CLOTH, &c. ALFRED W. ALLEN, Grand Rapids, Mich., assignor to Danford M. Crosby, same place, and John Mann, Chicago, Ill. Filed Apr. 23, 1881. (No model.



Claim.—1. In a marking-frame constructed as described, the frame provided with the series of notches H H H, in combination with the marking-cord *a a*.

2. The frame F F, provided with notches H H, in combination with the cord *a a* and intermediate pins, c c c, when constructed as and for the purpose described.

253,491. TELEPHONE-RECEIVER. GARDNER L. ANDREWS, Boston, Mass., assignor to American Bell Telephone Company, same place. Filed Sept. 12, 1878.



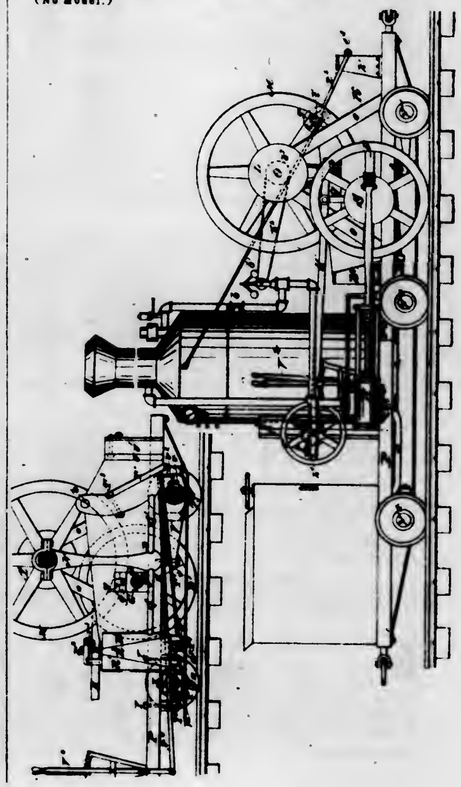
Claim.—1. In an electric speaking-telephone, the combination of a diaphragm, a cord connected therewith, a device for regulating the tension of said cord, and consequently that of the diaphragm, and means for causing vibrations in said diaphragm by variations in the friction between a moving magnetic body and a magnetic body connected with said diaphragm and cord, said friction being varied by the varying magnetic attractions between the surfaces of said magnetic bodies caused by a varying current of electricity, substantially as described.

2. The combination, with a diaphragm, of a ring of magnetic material connected therewith, a revolving core, and a helix arranged as explained, so that the friction between the ring and core is varied by electric currents traversing the helix, substantially as described.

3. The combination of the diaphragm O, the iron ring I, mounted so as to be capable of rotation in a plane perpendicular to the diaphragm, and connected at a point on its circumference to the center of the diaphragm, a revolving core, G, in contact at one extremity with the surface of the iron ring I, and the helix P, surrounding said core G and placed in an electric circuit, substantially as and for the purpose as set forth.

4. The combination of the rotating shaft A, piece F, cylinders G, coil P, disk H, iron ring I, spring K, diaphragm O, and the stretched cord L, connecting the center of the diaphragm to a point on the circumference of the ring I, substantially as and for the purpose as set forth.

253,492. LOCOMOTIVE BALLAST-CRUSHING MACHINE. ANONAMOUS B. AUSTIN, Fort Wayne, Ind. Filed Mar. 1, 1881. (No model.)



Claim.—1. The combination, substantially as described, of the drivers D D', provided with sliding boxes and levers H H, and con-

2. In a barrel-support, the combination of the pivot B, socket c, roller C, casters D and E, and hooks *e* and *f*, substantially as

Claim.—1. In a vapor-burner, the combination of the four-way needle-valve seat D, compound injector C, and burner A, as and for the purpose set forth.

Claim.—The herein-described sportsman's game-ring, constructed from a single piece of wire bent to form a circular ring, A, an eye, *e*, for suspending said ring, an opening, *g*, for the re-

Claim.—1. The combination, substantially as described, of the drivers D D', provided with sliding boxes and levers H H, and connecting mechanism for enabling the power used for propelling the machine to be transferred to the crushing mechanism without any stoppage of the engines, substantially as and for the purposes set forth.

2. In combination with a supporting-vehicle, an engine, and a ballast-crushing mechanism, the friction-pulley L, and the friction-driver D, and connecting mechanism for enabling the driver D to be shifted so as to be brought against the friction-pulley L or the track or ground, substantially as and for the purposes set forth.

3. In combination with a supporting-frame, an engine, a ballast-crushing mechanism, the friction-pulley L, and friction-driver D, and lever V, axle V', toothed wheel V², double pawl c', lever V⁴, and supporting and operating mechanism, substantially as and for the purposes set forth.

4. The hand-wheel I, lever H, pinion I², rack I², and pawl i, in connection with the springs h² h² and pitman g, for operating the sliding box G, as herein described, and for the purposes specified.

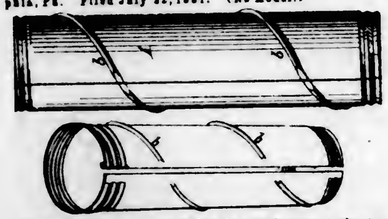
5. The hand-wheel I, lever H, pinion I², rack I², and pawl i, in connection with the springs h² h² and pitman g, for operating the sliding box G, axle S, driving-wheel D, and the friction-pulley L, substantially as and for the purposes specified.

6. The combination of the lever V, toothed wheels V², double pawls c', levers V⁴, and connecting mechanism, as herein described, and for the purposes specified.

7. The combination of the levers V V, toothed wheels v², double pawl c', lever V⁴, pitman N, and pivot and nut connections v³, substantially as and for the purposes specified.

8. The sliding box G, composed of the cross-head g', straps g², boxes g³ g³, key g', and set-screws g⁴ g⁴, and set-screw g⁵, combined and operating as herein described.

253,493. SHEET-METAL PIPE. WILLIAM AUSTIN, Philadelphia, Pa. Filed July 22, 1881. (No model.)



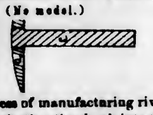
Claim.—1. As a new article of manufacture, a sheet-metal pipe having its body-sections stiffened by means of a spiral rib formed by pressing up the metal, substantially as shown and described.

2. The improved pipe-section, consisting of a single sheet of metal folded into tubular form, with its edges united longitudinally and having a spiral rib formed thereon, as described and shown.

3. A blank for a sheet-metal pipe, consisting of the curved sheet of metal having the oblique ribs *b* raised thereon.

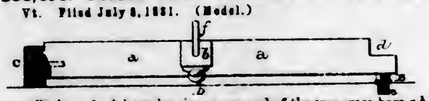
4. The improved pipe-blank, consisting of a curved sheet of metal having one flat and one folded edge, and having also the oblique ribs *b* formed thereon, as described and shown.

253,494. RIVET. ERSKINE L. BABCOCK, Cuyahoga Falls, Ohio. Filed Oct. 6, 1881. (No model.)



Claim.—The process of manufacturing rivets by inserting the end of a short rod constituting the shank into the opening through a common metallic washer and welding the rod and washer together, and forming the latter into a suitable shape for the rivet-head, substantially as described.

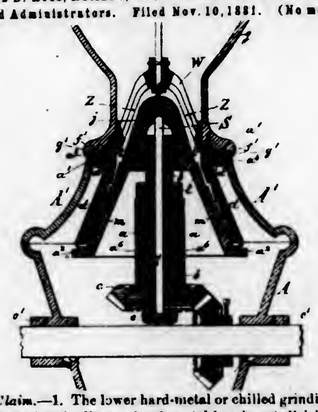
253,495. BARREL-SWING. JUDSON A. BALDWIN, Shelburne, Vt. Filed July 8, 1881. (Model.)



Claim.—1. A barrel-swing composed of the two cross-bars *a b*, in combination with a pivotal support and the rollers C D E, the tread of the roller C being lower than that of the other two, substantially as shown.

2. In a barrel-support, the combination of the pivot B, socket c, roller C, casters D and E, and hooks *e* and *f*, substantially as shown and described.

253,496. GRINDING-MILL. ROCKWOOD BARRETT and JAMES G. DUNN, Administrators of THOMAS ROSS, deceased, and CRAWFORD D. ROSS, Rutland, Vt.; said Crawford D. Ross assignor to said Administrators. Filed Nov. 10, 1881. (No model.)



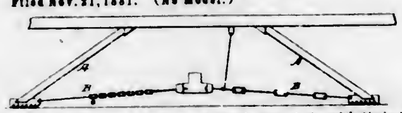
Claim.—1. The lower hard-metal or chilled grinding-cone, m, provided with the lip *o* and soft-metal bearing-shell *j*, in combination with the hollow upright shaft *b*, adjusting-rod *s*, grooved collar *t*, and outer grinding-cone, *d*, substantially as and for the purpose described.

2. The upper or outside stationary grinding-shell, *d*, provided with lips *a'*, coated with soft metal *i*, in combination with the outer case, A', provided with flange a^2 and annular recess a^4, substantially as and for the purpose described.

3. The outer grinding-shell, *d*, provided with lips *a'* and soft metal *i*, in combination with the case A', provided with flange *f'*, and the hopper *g*, provided with annular recess *g'*, substantially as described.

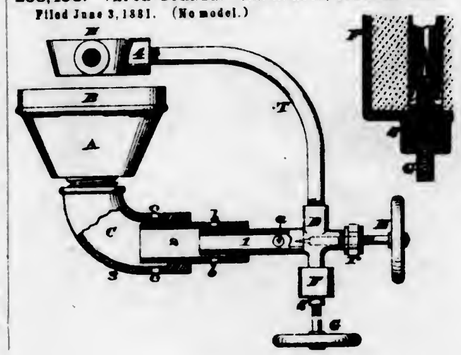
4. The combination of the hollow stationary perforated feed-cone Z, the upper movable and correspondingly-perforated cone, W, hopper *g*, rod *k'*, and grinding-cones *d* and m, substantially as and for the purpose described.

253,497. MACHINE-BRACE. MOSES BEAL, Elyria, Ohio. Filed Nov. 21, 1881. (No model.)



Claim.—The combination of two braces A A, with their top ends inclined toward each other, connected at or near the bottom with the rods B B or other suitable device of suitable strength, and so constructed as to be shortened or lengthened at pleasure, the whole to be constructed and operated in the manner and for the purpose substantially as described.

253,498. VAPOR-BURNER. JOS. E. RUAN, Bond Hill, Ohio. Filed June 3, 1881. (No model.)

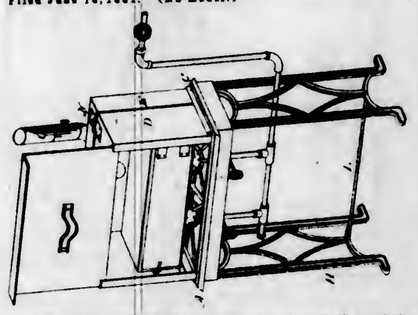


Claim.—1. In a vapor-burner, the combination of the four-way needle-valve seat D, compound injector C, and burner A, as and for the purpose set forth.

2. In a vapor-burner, a lighting-cup filled with an absorbent and combined with and arranged in relation to the oil-pipe in the manner described, so that the gasoline from the needle valve or fount may be made to enter at or near the bottom of the cup, instead of at the top, as and for the purpose set forth.

3. The burner described, consisting of the bowl A, perforated lid B, compound injector C, needle-valve seat D, heating-cup F, needle-valves E and G, pipe T, and retort H, substantially as described, and for the purpose set forth.

253,499. GAS COOK-STOVE. JOS. E. RUAN, Bond Hill, Ohio. Filed June 18, 1881. (No model.)



Claim.—As a combination, the gas-stove described, consisting of the plate A, with its flange C, the hood E D, shield B, band M, hinges N, elbow F, pipe G, damper P, and legs H, substantially as and for the purpose set forth.

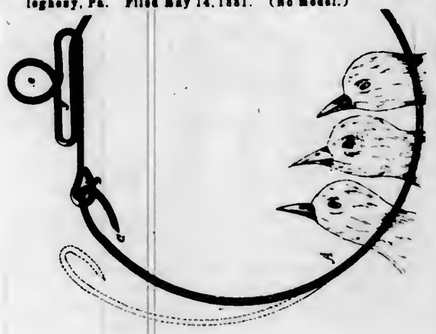
253,500. WRENCH. WILLIAM H. BIELSFELD and DAVID C. BIELSFELD, Moulton, Ohio. Filed Dec. 28, 1881. (Model.)



Claim.—1. In a wrench, the stock A, having laterally-projecting lugs C and transverse pin F, in combination with the jaws D, having recesses G and perforations E, and mechanism for operating said jaws, substantially as set forth.

2. In a wrench, the combination of the stock A, having laterally-projecting lugs C and transverse pin F, the jaws D, having perforations E and recesses G, the thumb-screw I, and the spring K, all arranged and operating substantially as and for the purpose set forth.

253,501. SPORTSMAN'S GAME-RING. EDWARD BOURNE, Allegheny, Pa. Filed May 14, 1881. (No model.)



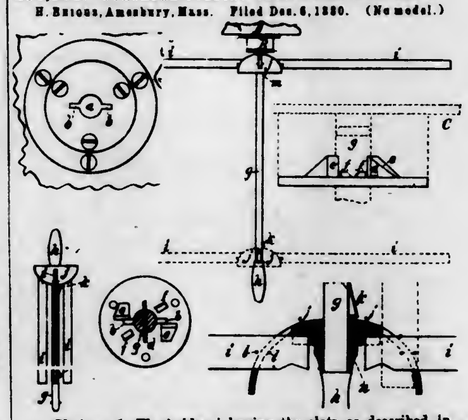
Claim.—The herein-described sportsman's game-ring, constructed from a single piece of wire bent to form a circular ring, A, an eye, *e*, for suspending said ring, an opening, *g*, for the reception of a shoulder-strap, a loop, D, and a pointed end, C, bent to form an open loop or hooked end to engage said loop D, as specified.

253,502. CRADLE AND CRIB COMBINED. CHARLES H. BOUTWELL, Leominster, Mass. Filed June 27, 1881. (No model.)



Claim.—In combination with the bed of a crib or cradle, the levers *b*, the links *a*, the slotted cross-bars *a*, with shoes A' and bolts a^3, the rocking-springs *g*, the rockers C', the bases A, with shoes or tracks a^2, the swivel connecting-rod D, the corresponding connecting-rod with screws *d'*, the treadle E, and treadle-arm E', all constructed and arranged substantially as described and shown, and for the purposes set forth.

253,503. PORTABLE FOLDING CLOTHES-DRIER. GEORGE H. BRIGGS, Amesbury, Mass. Filed Dec. 6, 1880. (No model.)



Claim.—1. The holder *j*, having the slots, as described, in combination with the arms *i*, adapted to such slots, and the pins *l l*, arranged in pairs and passing through said arms, one pin of each pair being inside of the holder, the other pin outside of the holder, whereby the arms are held pivotally in the slots between the pins, all substantially as set forth.

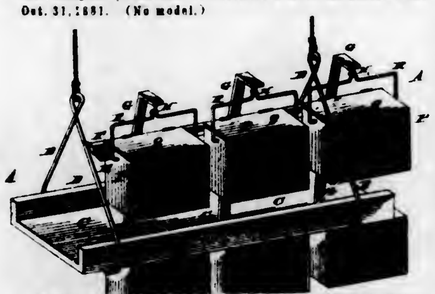
2. In a vertically-supported clothes-drier, the combination of plate A, formed with passage *a*, slots *b*, studs *c c*, and the minor studs *f f*, and the supporting-rod *g*, with its locking-pin *d*, substantially as specified.

253,504. SADDLE FOR BICYCLES. FRANKLIN G. BURLEY, Boston, Mass. Filed June 6, 1881. (No model.)



Claim.—The improved bicycle-saddle consisting of the base A, turned up at the front and having a cross-piece, B, at the rear, and having slots *d* through cross-piece B, and a slot, *d'*, at the front and the strap-seat C reeved through the slots, all as set forth.

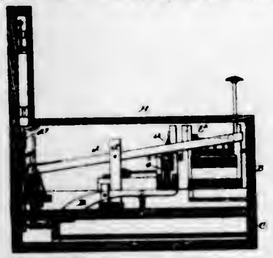
253,505. PROCESS OF AND APPARATUS FOR APPLYING WATERPROOFING MATERIAL. ROBT. M. CAFFALL, St. Louis, Mo., assignor of one-half to Theodore Hunt, same place. Filed Oct. 31, 1881. (No model.)



Claim.—1. The process of treating the walls of buildings with waterproofing and preserving compounds, which consists in first heating the wall, next applying the compound in a fluid and heated state, and, finally, reheating the wall to cause the complete absorption of the compound, substantially as described, for the purpose set forth.

2. The scaffold A, having stirrups B, provided with brackets E, side guards, D, rail F, uprights G, having hooks H, and the hooks I, in combination with the fire-cages I', suspended upon the hooks H I above and below the scaffold, as described, for the purpose set forth.

253,506. CASH-REGISTERING APPARATUS. MICHAEL CAMPBELL, Boston, Mass. Filed Aug. 1, 1881. (No model.)



Claim.—1. In a cash-registering apparatus, a series of keys provided with type designating certain amounts, a strip of paper to be marked by the said type, and a series of toggle-levers, *x*, one for each key, combined with a pawl-carrying bar common to all the said keys, and levers to operate the said strip of paper and move it intermittingly below the type of the said keys, substantially as described.

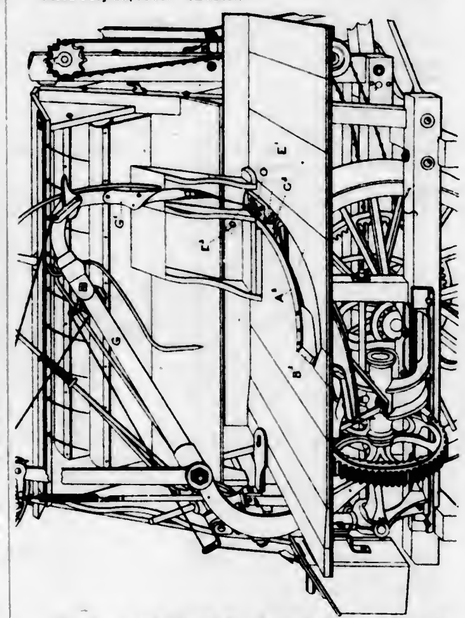
2. In a cash-registering apparatus, a series of keys to designate certain amounts, a pawl-carrying bar, *c*, and a series of toggle-levers, *x*, intermediate between each key and the said pawl-carrying bar, the toggle-lever *b*, actuated by the bar *c*, combined with the drawer-holder D and drawer C, substantially as described.

3. In a cash-registering apparatus, a series of keys to designate certain amounts, combined with the drawer, the draw-holder D, mediately connected with said keys, and the spring to throw the drawer open when released by the drawer-holder, substantially as described.

4. In a cash-registering apparatus, a series of keys indicating certain amounts, and a series of slides indicating corresponding amounts, combined with bars connected with said keys by cords and pulleys to lift the slides when the keys are depressed, and with a series of hooks and arms to retain the said slides in elevated position until the keys are again lifted, substantially as described.

5. The series of keys to correspond with numbers thereon, type carried by the said keys, a pawl-carrying slide common to all the said keys, a ratchet, and strip to be numbered by the said type, combined with a series of numbered slides, and intermediate devices, substantially as described, between the said keys and slides to operate them as the said keys are actuated to impress a figure or number on the said strip.

253,507. GRAIN-BINDER. HENRY J. CASE, Auburn, N. Y. Filed July 23, 1881. (Model.)



Claim.—1. The lifting-bar A', attached at one end to the grain-table, and provided at its outer end with the block B', in combination with the oscillating knotter-arm O', substantially as and for the purpose described.

2. The oscillating knotter-arm O', provided with the roller C', in combination with the lifting-bar A', substantially as described.

3. The combination of the binder-table E', the lifting-bar A', and the oscillating knotter-arm O', substantially as and for the purpose described.

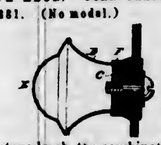
253,508. MOUNTING FOR GLOBES. FLAVIUS CHERRY, Seneca Falls, N. Y. Filed June 21, 1881. (No model.)



Claim.—1. The combination, with the semicircular meridian-bar D, adjustable in channels in the lugs I upon the semicircular bar G, and the semicircular meridian-bar E, hinged as shown, of the globe A, having its axis C journaled in the ends of bar D and supported thereby, as set forth.

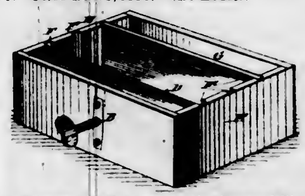
2. The combination, with the globe, of the circular horizon-bar F, hinged to the bar G, substantially as specified.

253,509. STOVE-KNOB. JOHN CHESTER, Providence, R. I. Filed Dec. 12, 1881. (No model.)



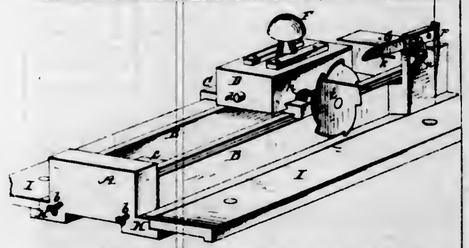
Claim.—In a stove-knob, the combination of the nut C, body-piece D, re-enforcing cap F, and end cap, E, substantially as described.

253,510. STEREOSCOPE-VIEW CASE. ALLEN J. CLARK, Norwich, N. Y. Filed Nov. 1, 1881. (No model.)



Claim.—A box or case for stereoscopic views and like articles, having thumb-screw C, carrying a swiveled follower, D, and partition-plate G, having notches H, said plate being adjustable in grooves F in the sides E, extending from the upper edge nearly to the bottom of the box, as described, for the purpose set forth.

253,511. MILLSTONE-DRESSING MACHINE. WALLACE W. CLEAVELAND, Marshall, Mich. Filed Dec. 15, 1881. (No model.)

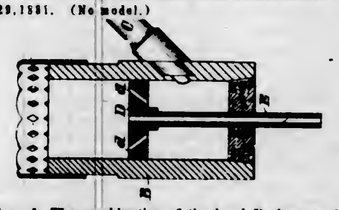


Claim.—1. In a millstone-dressing machine, the frame A and adjustable tracks or ways B, in combination with the bed C, carriage D, screw-rod E, carrying diamond *f*, and handle F, for adjusting the height of the screw-rod, said carriage having suitable spring-buffers, *d*, connected thereto, substantially as and for the purpose set forth.

2. In a millstone-dressing machine, the combination, with the movable bed C, carriage D, screw-rod E, screw-handle F, adjusting-screw *h*, carrying toothed wheel *i*, of the pivoted arm G, carrying pin *k* and set-screw *m*, and the spring *p*, constructed to operate substantially as and for the purpose set forth.

3. In a millstone-dressing machine, the combination, with the frame A, of the removable weights I, substantially as and for the purpose set forth.

253,512. SMOKING-PIPE. JAMES COLE, St. Louis, Mo. Filed Nov. 29, 1881. (No model.)

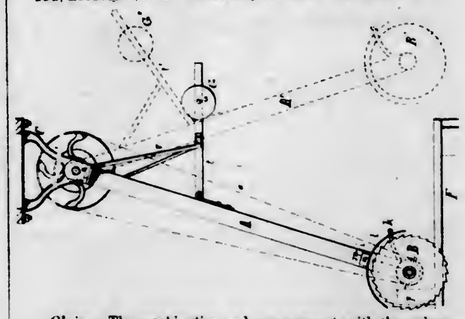


Claim.—1. The combination of the bowl B, the stem C, the movable bottom D, having the perforations *d d d*, and the hollow stem E, substantially as described.

2. The combination of the bowl B, the adjustable perforated band G, and the movable bottom D, substantially as described.

3. A smoking-pipe bowl having an adjustable perforated band, for the purpose described.

253,513. SWING-SAW. JOHN CONNELL and VALENTINE DENOLER, Rochester, N. Y. Filed May 31, 1880. (No model.)



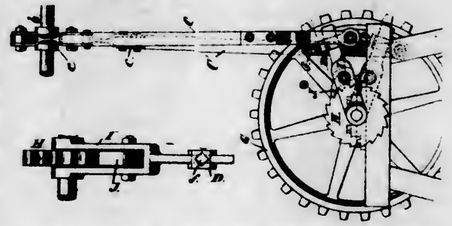
Claim.—The combination and arrangement, with the swing-saw frame A, pivoted vertically over the work-supporting table F on the line of the driving-shaft E, and provided with saw B and belt *a*, of the arm *t*, projecting laterally from the frame and carrying the weight G, operating substantially as and for the purposes set forth.

253,514. DRAWING-SLATE ATTACHMENT. DANL. S. COOKE, Providence, R. I. Filed Nov. 2, 1881. (No model.)



Claim.—The slate A, with its grooved frame B, in combination with the ruler and eraser C and elastic bands D D, the whole combined, constructed, and arranged substantially as described.

253,515. POWER-CONVERTER FOR CONVERTING RECIPROCATING INTO ROTARY MOTION. HENRY CROFT, Jr., Springfield, Ohio, assignor of one-half to Francis M. Bookwalter, same place. Filed Dec. 27, 1881. (No model.)



Claim.—1. In a power-converter, the combination, with a driving-wheel whose shaft is provided with ratchets arranged on each side of the driving-wheel, of a vibrating pivoted beam actuated by the reciprocating rod and carrying at its ends beams provided at their lower ends with dogs and connecting mechanism, substantially as described, whereby the vibration of the pivoted beam causes a continuous revolution of the driving-wheel.

2. In a power-converter, the combination, with the ratchets H and the beams C C', of the links I, provided with dogs J, and adjustably connected to the beams by the slotted pivoted blocks D and set-screws *f*, substantially as described.

3. In a power-converter actuated by a reciprocating prime mover, the driving-wheel provided with sprockets or engaging-points for a driving-chain, substantially as described.

253,516. FURNACE-SHEET FOR STEAM-BOILERS. HENRY C. DARBY, Wyandotte, Kans. Filed Jan. 28, 1881. (Model.)

Claim.—A furnace-sheet for fire-boxes, presenting on its anterior surface, or that side facing the water-space, a series of shallow spherical depressions or recesses closely grouped in lines at right angles to each other, and on its posterior surface, or that pre-

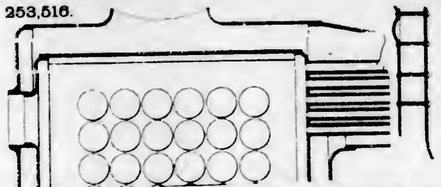
253,516.

Claim.—In a combined commode and slop-pail constructed

sides of the car, and the openings *r*, for producing hot-air currents and conducting the same to the inside of the car, substantially in

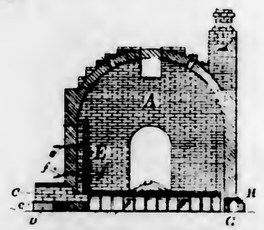
253,522.

253,516.



sented to the furnace, a series of raised or projecting surfaces corresponding to the depressions first mentioned, for the purposes and objects named, and substantially as described.

253,517. KILN FOR BURNING ARTICLES MANUFACTURED FROM CLAY. JOHN DAWSON, Colfax, Ind. Filed Jan. 3, 1882. (No model.)

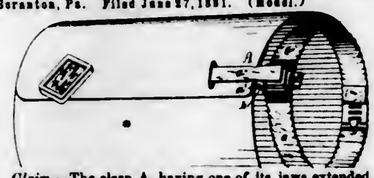


Claim.—1. The combination, in a kiln, of the fire-spaces and two sets of fires, one set of which runs underneath the articles to be burned in the kiln and the other to a point at or near their top, each being capable of being cut off from the fire-space, so that the products of combustion will necessarily pass through the other, whereby both an up and down passage thereof may be secured from the same set of fires, substantially as set forth.

2. The combination, in a kiln, of the fire-spaces C, flues F, having dampers *f*, and flues E, having dampers *e*, all substantially as shown and described, and for the purpose specified.

3. The combination of the fire-spaces C, flues F, flue G, and openings H, all substantially as shown and described, and for the purposes specified.

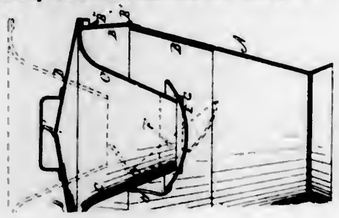
253,518. CUFF HOLDER AND ADJUSTER. HENRY E. DEACON, Scranton, Pa. Filed June 27, 1881. (Model.)



Claim.—The clasp A, having one of its jaws extended rearward, and provided with the bend or shoulder *a'*, and having also the spring *c*, in combination with the socket and the band on which the socket is secured, said band being adapted to pass around the arm of the wearer, and the whole arranged to operate substantially as described.

253,519. PORTABLE COMMODE AND SLOP-PAIL COMBINED. J. W. DREW, Boston, Mass. Filed Aug. 17, 1881. (No model.)

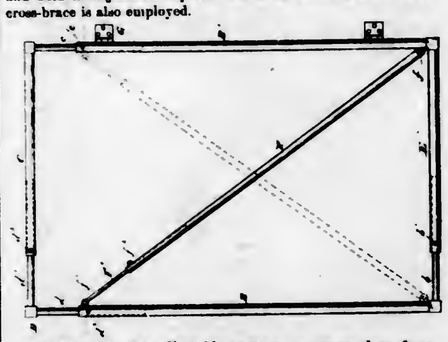
Brief.—Upon the upper flange of the vessel A is supported a shell, B, whose upper flange, in its turn, supports a seat, C, which may be covered by a lid, D, whose flange overhangs the side of the vessel. Communication between C and A is regulated by a pan-valve pivoted on a rod, F, secured in brackets G, and which is operated by the insertion and removal of the seat C.



Claim.—In a combined commode and slop-pail constructed as herein described, the shell or casing B, adapted to removably fit within the upper part of the slop-pail A, and provided with the valve E, having arm H, and pivoted by means of the rod F in brackets G, in combination with the removable seat C, substantially as and for the purpose specified.

253,520. ADJUSTABLE VENTILATING-DOOR. JOSIAH S. DU BOIS, Haddonfield, N.J. Filed May 26, 1881. (No model.)

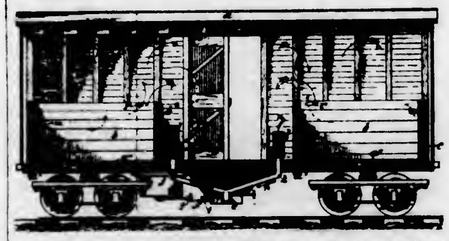
Brief.—Consists of tubes and rods sliding upon one another and held in adjustment by set-screws. A similarly-constructed cross-brace is also employed.



Claim.—1. An adjustable summer or screen door frame adapted to both vertical and horizontal adjustment, in combination with the screen and means to brace said frame, as and for the purpose specified.

2. In an adjustable summer or screen door frame, the combination of side tubes, B B', bottom tube, E, rod *b*, top tube, C, provided with leg *c*, corner-piece D, provided with legs *d d'*, brace-tube F, rod F', and means to secure said parts together, as and for the purpose specified.

253,521. APPARATUS FOR HEATING FREIGHT-CARS. WM. E. EASTMAN, Boston, Mass., assignor to the American Freight Car Heater Company, Portland, Me. Filed Nov. 25, 1881. (No model.)



Claim.—1. In combination with a stove or heater placed under the body of a car, the flues or passages beneath the floor, and the air-spaces at the ends of the car, adapted, as described, to discharge the heated air into the perforated air-spaces at the sides of the car, substantially as shown and described.

2. In combination with a stove or heater placed under the body of the car, and provided with the safety-tube *t*, for the purpose specified, the flues or passages beneath the floor, and the air-spaces at the ends of the car, adapted to discharge the heated air into the air-spaces at the sides of the car, substantially as shown and described.

3. In the stove or heater placed under the body of the car, and provided with the safety-tube *t*, for the purpose specified, the tubes O', passing through the oil-chamber in the heater for the purpose of supplying fresh air and keeping the oil cool.

4. In combination with a stove or heater for burning liquid fuel, supplied automatically by a tank, *j*, said tank operated by atmospheric pressure in the manner set forth, the flues or passages beneath the floor, the closed air-spaces at the ends, and the open air-spaces at the sides of the car, all connected and operating substantially as described.

5. The stove or heater *c*, arranged to form the floor of the hot-air chamber *d*, and the automatic tank *j*, having tubes 3 and 4 and stopper 2, constructed and operating together, as described, in combination with the flues beneath and the air-spaces at the ends and sides of the car, and the openings *r*, for producing hot-air currents and conducting the same to the inside of the car, substantially in the manner and for the purpose described.

6. A heater for burning liquid fuel, attached to a vehicle, and provided with a safety-tube for the overflow of superfluous fuel.

7. The stove or heater so placed under the car that its top surface forms the floor of a hot-air chamber, and provided with tubes O', passing through the oil-chamber in the heater for the purpose of supplying fresh air and keeping the oil cool.

8. The stove or heater so placed beneath the car that its top surface forms the floor of a hot-air chamber, and provided with tubes O', passing through the oil-chamber in the heater for the purpose specified, in combination with the pipes *k*, which supply air to the hot-air chamber from the inside of the car, substantially in the manner described.

9. The heater, in combination with the flues C, registers *l*, and pipes *k*, for effecting complete circulation of air in a car or other vehicle.

10. The stove or heater placed under the car in such a manner that its top surface forms the floor of a hot-air chamber, and provided with tubes O', passing through the oil-chamber in the heater, for the purpose described, in combination with the flues beneath the floor, the air-spaces at the end, and the air-spaces at the sides of the car.

11. The combination of the pipes or return-flues *k* and a stove or heater for burning liquid fuel, placed beneath the body of a car and provided with a safety-tube, *t*, substantially as described.

12. The combination of the pipes or return-flues *k*, a stove or heater placed under the body of a car, and the hot-air flues C, substantially as described.

13. The stove or heater placed under the body of a car in such a manner that its top surface forms the floor of a hot-air chamber, in combination with the hot-air passages or flues beneath the floor of the car, the closed air-spaces at the ends, the open air-spaces at the sides of the car, and the pipes or return-flues *k*, substantially as described.

14. In combination with a stove or heater for burning liquid fuel, supplied automatically by a tank, *j*, said tank operated by atmospheric pressure in the manner set forth, the flues or passages beneath the floor, the closed air-spaces at the ends, the open air-spaces at the sides of the car, and the pipes or return-flues *k*, all connected and operating in the manner described.

15. The combination of the stove or heater provided with the tubes O', which pass through the oil in the heater for the purposes described, the hot-air passages or flues beneath the floor of the car, and the closed air-spaces at the ends, adapted to discharge the hot air into the open air-spaces at the sides of the car, for the purpose described.

16. The combination of the stove or heater provided with the tubes O', which pass through the oil in the heater for the purposes described, the hot-air passages or flues beneath the floor of the car, the closed air-spaces at the ends, adapted to discharge the hot air into the open air-spaces at the sides of the car, and the pipes or return-flues *k*, all operating in the manner and for the purpose described.

17. The combination of the stove or heater provided with the tubes O', which pass through the oil in the heater for the purposes described, and also provided with the safety-tube *t*, for the purpose specified, the hot-air passages or flues beneath the floor, the closed air-spaces at the ends, and the open air-spaces at the sides of the car, for the purpose specified.

18. The combination of the stove or heater provided with the tubes O', which pass through the oil in the heater for the purposes described, and also provided with the safety-tube *t* for the purpose specified, the hot-air passages or flues beneath the floor, the closed air-spaces at the ends, the open air-spaces at the sides of the car, and the pipes or return-flues *k*, all operating substantially as described, and for the purposes specified.

19. The stove or heater for burning liquid fuel, placed beneath the body of a car in such a manner that its top surface forms the floor of a hot-air chamber, and provided with the safety-tube *t*, for the purpose specified, in combination with the hot-air passages or flues beneath the floor, the closed air-spaces at the ends, the open air-spaces at the sides of the car, and the pipes or return-flues *k*, substantially as described, and for the purpose specified.

20. In combination with the stove or heater for burning liquid fuel, supplied automatically by a tank, *j*, said tank operated by atmospheric pressure in the manner set forth, and furnished with the safety-tube *t*, for the purpose specified, the hot-air passages or flues beneath the floor, the closed air-spaces at the ends, and the open air-spaces at the sides of the car, for the purposes specified.

253,522. CURRY-COMB. O. CALVERT ESBATES, Baltimore, Md. Filed Nov. 22, 1881. (No model.)

253,522.



Claim.—1. A curry-comb having a slotted plate, through which the teeth project, adjustable so as to expose the teeth to any desired extent, and mechanism for rigidly securing the said plate in any position to which it may be brought, as set forth.

2. In combination with the top plate and teeth, the slotted movable lower plate and actuating-screw, as set forth.

253,523. BORING-BAR. LUTHER R. FAUCHT, Philadelphia, Pa. Filed Sept. 15, 1881. (No model.)



Claim.—1. The combination, substantially as set forth, of a transversely-slotted boring-bar, a tool or cutter fitting in the slot of the bar and bearing against one end of said slot, a gib having a segmental face bearing centrally against the opposite end of the slot, and a clamping-key interposed between the cutter and gib.

2. The combination, substantially as set forth, of a boring-bar having one or more pairs of transverse slots, the slots of each pair being at right angles one to the other, a cutter fitting in one of said slots, a cutter fitting in the corresponding slot at right angles thereto and held in position by a clamping-key, and a yielding or elastic pad or cushion interposed centrally between the two cutters and transmitting the thrust of the clamping-key to the cutter first specified.

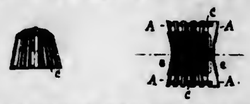
3. The combination, substantially as set forth, of a longitudinally-grooved and transversely-slotted boring-bar, a removable sectional cutter-head secured upon said bar, and one or more facing-cutters secured in said cutter-head.

4. The combination, substantially as set forth, of two blocks or sections adapted to be clamped together upon a boring-bar, two tool-holders, each fitted in a slide in one of the blocks and carrying a facing-cutter, and two feed-screws of respectively reversed lead, each mounted in one of the blocks and engaging a female screw on the tool-holder therein.

5. The combination, substantially as set forth, of a longitudinally-grooved boring-bar, a two-part facing cutter-head, two clamping-bolts uniting the sections of the head, and a key fitting in the groove of the bar and in a recess of the head.

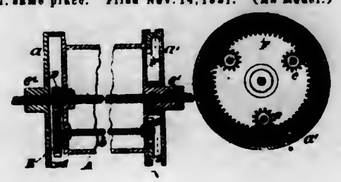
6. Jointly with a sectional cutter-head, a segmental sleeve or bushing fitting within the recesses of the sections on each side of a key fitting between said sections, substantially as and for the purpose set forth.

253,524. PROCESS OF MANUFACTURING GEM-SETTINGS. JAMES R. PEMBLEY, Providence, R.I. Filed Sept. 29, 1881. (No model.)



Claim.—The improved method of constructing gem-settings herein described, consisting in cutting a series of blank prongs, A, shouldered and recessed, as shown, and them in assembling and temporarily binding said blanks A upon a grooved hub, B, and then soldering the ring C within the series of blanks A, and finally cutting said blanks to form gem-settings, substantially as specified.

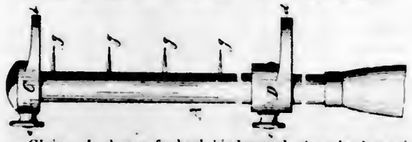
253,525. HOISTING AND WINDING DRUM. PRENDRICK A. GARDNER, Buffalo, N.Y., assignor to himself and R. Dunbar & Son, same place. Filed Nov. 14, 1881. (No model.)



Claim.—1. In a hoisting or winding drum, the hollow head *a*, having the gearing D and E, in combination with the shafts *b*, winding-drum A, and hollow head *a'* at the opposite end, having the gearing *c* F and their operating mechanism, substantially as and for the purposes specified.

2. A winding or hoisting drum composed of the parts *a* A *a'*, and provided with the driving-shaft, pulley, and gearing, substantially as specified, in combination with a brake, I, and its connecting and operating parts, substantially as described.

253,526. GAGE FOR BOOK-BINDERS AND OTHERS. JOHN J. ORIGER, Chicago, Ill. Filed Nov. 1, 1881. (No model.)

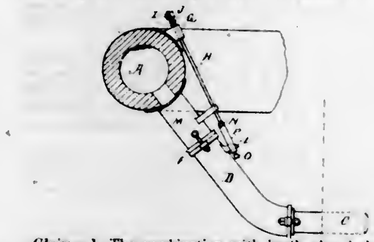


Claim.—1. A gage for book-binders and others, having points that are held between the coils of a spring and are guided in a slotted tube, so as to be moved proportionally with the expansion of said spring, substantially as set forth.

2. The combination, with a gage consisting of the slotted tube A, head-piece C, and adjustable sleeve D, of a coiled spring, F, inserted in said tube and connected to the head-piece and sleeve, and of cylindrical plugs G, inserted in such spring, and having points *g*, that project from between the coils of the spring and through the slot of the tube, all substantially as described and shown.

3. The combination, with the slotted tube A, having handle B, removable head-piece C, with gaging-arm *b*, and adjustable sleeve D, with gaging-arm *d*, of coiled spring F and plugs G, with points *g*, the whole being constructed and arranged substantially as and for the purpose described and shown.

253,527. TUYERE FOR FURNACES. FREDERICK W. GORDON, Pittsburg, Pa. Filed Aug. 8, 1881. (No model.)



Claim.—1. The combination, with bustle-pipe A, belly-pipe D, joint F, and tuyere-pipe C, of the rod H, attached to the bustle-pipe and belly-pipe, substantially as and for the purpose set forth.

2. The combination, with bustle-pipe A, belly-pipe D, joint F, and tuyere-pipe C, of the rod H and spring J, substantially as and for the purpose set forth.

3. The combination, with bustle-pipe A, belly-pipe D, joint F, and tuyere-pipe C, of the tension-rod H, having flexible joint N, substantially as and for the purpose set forth.

4. The combination, with bustle-pipe A, ball-joints F and E, and tuyere-pipe C, of the belly-pipe D, arranged at an inclination, and the rod H or equivalent device for maintaining the parts in position, substantially as and for the purpose set forth.

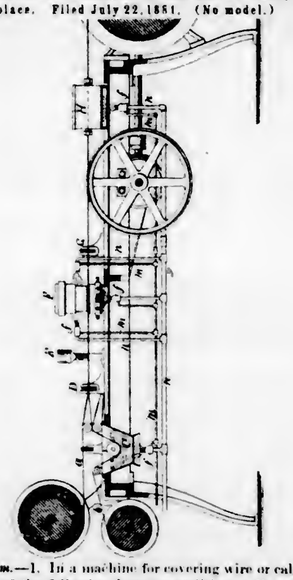
5. The combination, with a bustle-pipe, of a blow-pipe projecting downward and inward from the bustle-pipe toward the furnace, and sustained by its attachments to the bustle-pipe, independent of the furnace, substantially as and for the purpose set forth.

253,528. SAIL-HANK. TIMOTHY HAGGERTY, Fall River, Mass. Filed Dec. 17, 1881. (No model.)



Claim.—The improved sail-hank herein described, consisting of a clutch, B, having a ring, D, to confine the bolt-rope E of a sail, and formed with a bifurcation on each side, whereon are mounted friction-rollers C C C C, to run in the external vertical ways, *a a*, upon the opposite sides of a mast, substantially as specified.

253,529. MACHINE FOR COVERING ELECTRICAL CONDUCTING-WIRES WITH METALLIC ARMOR. WILLIAM HALKYARD, Providence, R. I., assignor of one-half to Henry A. Church, same place. Filed July 22, 1881. (No model.)

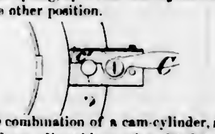


Claim.—1. In a machine for covering wire or cable, the combination of the following instrumentalities: a die constructed to form the strip of sheet metal around the wire or cable so as to lap over at the edges, a device for soldering or brazing the wire, and a drum or barrel to receive the wire, as described.

2. The combination, with the wire-drum A and sheet-metal strip *b*, of the tinning-vessel C', the die D, the flux-supply E, the soldering-block F, the die G, and means for drawing the wire through the machine and guiding the same so as to cover the wire by a sheet of metal which is lapped and soldered longitudinally, as described.

253,530. KNITTING-MACHINE. HOWARD W. HARLEY, Philadelphia, Pa. Filed Nov. 4, 1881. (No model.)

Brief.—The invention is designed to knit either plain or tuck work, as desired. The cam is composed of a fixed section and an adjustable section fitted to slide in a guide therein. A stem fitted to move longitudinally in bearings attached to the cylinder is connected to the adjustable portion of the cam, and a spring is secured around said stem, by which it is moved in one direction, holding the adjustable portion of the cam in one position. A latch or locking-plate is pivoted to one of the bearings of the stem, and is adapted to lock or hold said stem in its depressed position against the tendency of the spring, by which the adjustable portion of the cam is held in the other position.

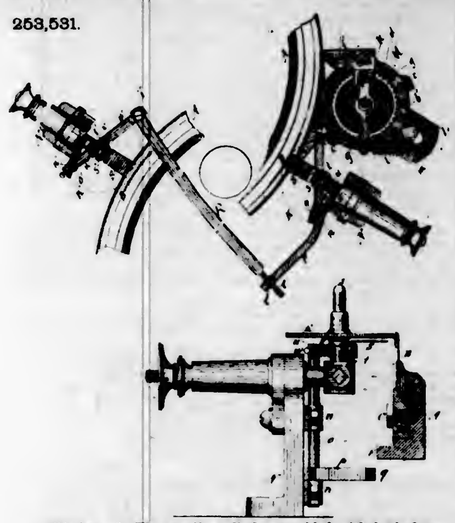


Claim.—The combination of a cam-cylinder, a cam having a fixed portion and an adjustable portion fitted to slide thereon, bearings connected to the exterior of the cam-cylinder, a stem fitted to move longitudinally in said bearings and connected to the adjustable portion of the cam, a spring adapted to move said stem longitudinally in its bearings, and a locking-plate by which said stem is secured in position, these members being combined for joint operation substantially as and for the purpose set forth.

253,531. CIRCULAR-KNITTING MACHINE. PETER I. HARVEY, Amsterdam, N. Y., assignor of one-half to Augustus Clark and Perry Kline, same place. Filed July 26, 1881. (Model.)

Brief.—An auxiliary plain presser is arranged underneath and close to the common figured presser, and operated to engage and press down the barbs of the needles at intervals, by which alternate circumferential strips of plain and figured fabric are knitted. A single-pattern mechanism is made to operate the pressers in two heads of the machine.

253,531.



Claim.—1. The needle-cylinder provided with barbed needles and cam E, combined with a feed-stand containing a loop or sinker burr, thread-guide, and presser G, a stand, N, provided with a figured circular presser, an auxiliary plain presser, rock-shaft *o*, arm *w*, spring *r*, lever *p*, and a cam ratchet-wheel consisting of a grooved disk having secured therein the cam *c*, ratchet-wheel *d*, spring *l*, pawl *m*, lever *f'*, and stand L.

2. The combination of the needle-cylinder having barbed needles and cam E attached thereto with loop or sinker burrs H, thread-guides I, and pressers G at the quarters or headings containing the figured and auxiliary plain pressers, and the stands N and N', having attached thereto the rock-shafts *o o'*, arms *w w'*, springs *r r'*, rods *u u'*, figured pressers K K', auxiliary pressers S S', connecting-rod R, and the cam ratchet-wheel M, constructed as described.

3. The combination of the cam ratchet-wheel, constructed as described, with the needle-cylinder provided with needles and a cam, E, attached, a series of feed-stands F F F F, containing loop or sinker burrs, thread-guides, and pressers, a series of presser-stands provided with plain and figured pressers S S' and K K', rock-shafts *o o'*, arms *w w'*, rods *u u'*, springs *r r'*, levers *p p'*, rod R, and a series of presser-stands containing plain circular loop-pressers J J, as specified.

253,532. CHECK-LINE GUIDE FOR CORN-PLANTERS. GEO. D. HAWORTH, Decatur, Ill. Filed Oct. 31, 1881. (No model.)



Claim.—1. In a check-line guide for corn-planters, the swiveling and jointed pulley-holder provided with pulleys arranged in pairs, substantially as described.

2. A check-line guide for corn-planters, composed of the jointed bar B and B' and the pulleys *a a' b b' c c'*, arranged in pairs, substantially as and for the purpose described.

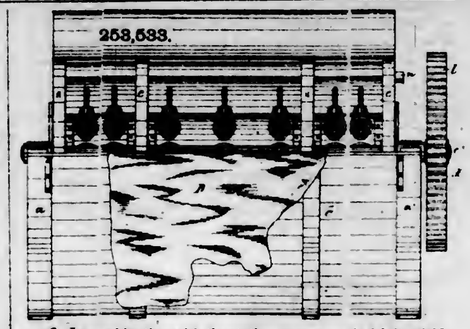
3. The combination, with the main frame bar of a check-row attachment to corn-planters, of the jointed and swiveling pulley-holder, with its guide-pulleys arranged and operating substantially as described.

4. The jointed and swiveling pulley-holder provided with guide-pulleys, and constituting the check-line guide, in combination with stops limiting the throw of the parts of the holder, substantially as described.

253,533. LEATHER BOARDING AND GRAINING MACHINE. JNO. H. HOVEY, Woburn, Mass. Filed Dec. 5, 1881. (No model.)

Claim.—1. In a boarding or graining machine, the stationary concave bed *b*, having an elastic or yielding inner surface, *b''*, and the reciprocating worker composed of frame *e e' e''*, with outer yielding surface, *e⁴*, and a holding device, *d d'*, for securing the leather to one end of the worker, as and for the purpose set forth.

253,533.



2. In combination with the stationary concave bed *b*, its yielding surface *b''*, and reciprocating worker *e e' e''' e⁴*, and holding device *d d'*, the rotary brush or roll *g*, arranged on the frame *e e* in advance of the holding device, as and for the purpose set forth.

3. In a graining or boarding machine, as described, the holding device consisting of the grooved bar *d*, movable bar *d'*, attached to levers *d'' d'''*, movable on fulcra *d''''*, and provided in their outer ends each with a hinged foot, *d⁵*, and spring *d⁶*, in combination with the dog *e* and the locking and releasing lever *f*, and connecting mechanism to the sliding rod *f'*, as and for the purpose described.

4. In a graining or boarding machine, a reciprocating worker, *e e''*, having adjustable outer surface, *e''' e⁴*, and a positive pressure device for regulating the pressure on the leather that is operated upon, as set forth.

5. A graining and boarding machine consisting of a stationary concave bed, *b b' b''*, reciprocating worker *e e' e''' e⁴*, a holding device for securing one end of the side of leather, and an automatic reversing device, as and for the purpose set forth.

253,534. FASTENER FOR MEETING-RAILS OF SASHES. JOHN E. HOWARD, Reading, Mass. Filed Dec. 23, 1881. (No model.)

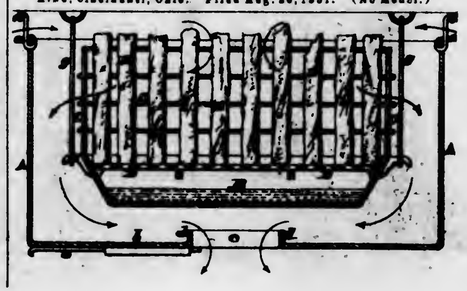
Brief.—The spring engages a notch on the bolt, the said bolt being provided with a bevel on its under side to allow of the disengagement of the spring when operated by the key. The parts are contained in a slotted case and the bolt operated by a finger-piece projecting through the slot.



Claim.—1. The herein-described improved window-fastener, consisting of the case C and screw or pin C', the case D, provided with the pivot E and opening P, and having the spring-catch H secured to it at the point *h*, and the bolt F, provided with the bevel K and notch I, all arranged and constructed substantially as and for the purpose set forth.

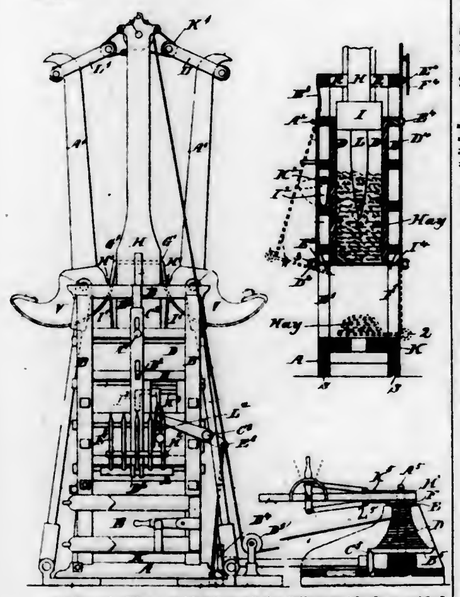
2. The combination of the case D, provided with the spring-catch H, secured thereto as shown, with the bolt F, provided with the bevel K and notch I, substantially as and for the purpose described.

253,535. DEVICE FOR COOLING DWELLINGS. JOHN A. B. KING, Cincinnati, Ohio. Filed Aug. 20, 1881. (No model.)



Claim.—The combination of the ice-rack C, suspended from the ceiling by the links *g g*, and open for the free circulation of air around the ice contained in it, and having the grated bottom D and drip-pan B, with the outer case, A, also suspended from the ceiling by the hooks *a a*, and inclosing the sides and bottom of the ice-rack, so as to leave an air-space between the two, and having the valve *e* at its bottom for controlling the size of its cold-air-exit opening *c*, the whole constructed and arranged for operation substantially as described.

253,586. HAY-PRESS. PETER LORD, Montreal, Quebec, Canada, assignor of two-thirds to Rosebe Mignault and Jean Baptiste Vinet, both of same place. Filed Oct. 26, 1881. (No model.)

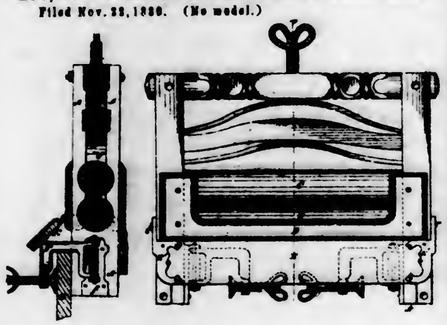


Claim.—1. The combination of the follower-block provided with an operating device by which said follower-block is moved, as described, and having pin L, with bed-block K, provided with an opening, as shown and described, and inclosing-casing and doors, the whole constructed and arranged substantially as described, for the purposes set forth.

2. The combination of the rakes E' I' and their operating mechanism, substantially as described, with casing D and follower-block I, substantially as set forth.

3. The combination of the ram H, provided with the follower-block I, cables G' I', segments of eccentrics V, levers A', line and pulleys and blocks, as described, bed-block K, casing, and doors, the whole constructed and arranged substantially as and for the purposes set forth.

253,587. CLOTHES-WRINGER. MELVIN N. LOVELL, Erie, Pa. Filed Nov. 22, 1880. (No model.)

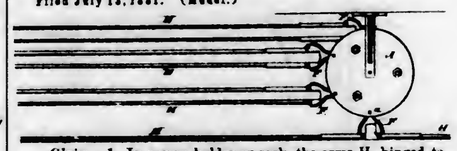


Claim.—1. A clothes-wringer having an apron pivoted to swing below the guide-board, in combination with clamp-arms located and arranged as shown, whereby they can swing laterally and automatically lift said apron and support it in an inclined position when the clamp-arms are in position for clamping, in the manner described.

2. A clothes-wringer having a gravity clothes-board, in combination with a clothes-guide located above the board, said board being pivoted above and to the rear of the lower edge of said guide, substantially as described, so that when the board has been raised into position for use its inner edge will be above the lower edge of the guide, for the purposes mentioned.

3. In a clothes-wringer having two semi-elliptical springs, the combination therewith of an intermediate movable bar having its upper and lower faces formed to conform to said springs when they are compressed to a certain degree of tension, substantially as and for the purposes described.

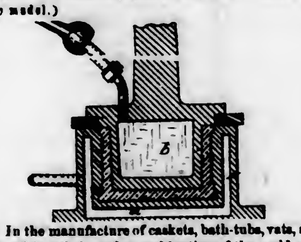
253,588. MAP-RACK. GEORGE A. MCLAWS, Chicago, Ill. Filed July 13, 1881. (Model.)



Claim.—1. In a map holder or rack, the arms H, hinged to a support, F, that is in turn hinged to its supports, whereby a double joint is provided, by means of which a map can be opened to view or folded over vertically at or near the middle and turned around to one side, substantially as specified.

2. The hinged arms H, in combination with the hinged irons F and rotating disks A B, substantially as and for the purpose specified.

253,589. MANUFACTURE OF GLASS COFFINS, BATH-TUBS, &c. CHRISTOPHER W. MCLEAN, New Berne, N. C. Filed Oct. 4, 1881. (No model.)



Claim.—1. In the manufacture of caskets, bath-tubs, vats, and other analogous articles of glass, the combination of the mold provided with a heating-chamber, with the plunger provided with a heating-chamber, whereby the glass is prevented from chilling in the mold and the article annealed or toughened while in said mold.

2. As a new article of manufacture, bath-tubs, caskets, vats, and other analogous articles of glass annealed or toughened throughout their entire structure, as set forth.

253,590. MANUFACTURE OF GLASS FITTINGS AND TRIMMINGS OF BUILDINGS. CHRISTOPHER W. MCLEAN, New Berne, N. C. Filed Oct. 4, 1881. (No model.)



Claim.—1. The method herein described of molding the interior trimmings, &c., of buildings—as sections of wainscoting, window seats or caps, stairs, door-frames, &c.—by pressing, annealing, and hardening them in molds having the base provided with a heating-chamber, and the plunger also provided with a heating-chamber, substantially as set forth.

2. The interior fittings, decorations, or linings of buildings, made of glass, annealed through the entire structure, substantially as specified.

3. An interior finishing part of a building—as a section of wainscoting, a window seat or cap, a stair, a door-frame, or the like—constructed integrally or in sections of glass, and adapted to be held in position without the use of bands or stiles made of metal or wood, said stiles or bands to be made of glass or analogous material, substantially as specified.

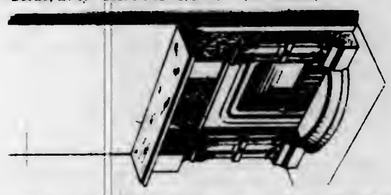
253,541. MANUFACTURE OF ANNEALED AND TOUGHENED GLASS SLABS. CHRISTOPHER W. MCLEAN, New Berne, N. C. Filed Oct. 13, 1881. (No model.)



Claim.—1. As a new article of manufacture, a glass furniture-top slab possessing the properties hereinbefore set forth.

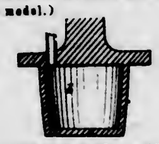
2. The method of tempering and toughening glass furniture-top slabs, which consists in subjecting the same to annealing or tempering heat in the mold in which they are formed and during the molding operation, substantially as hereinbefore set forth.

253,542. GLASS MANTEL. CHRISTOPHER W. MCLEAN, New Berne, N. C. Filed June 4, 1881. (No model.)



Claim.—A mantel composed entirely of glass molded to form, either as a whole or in parts, substantially as described.

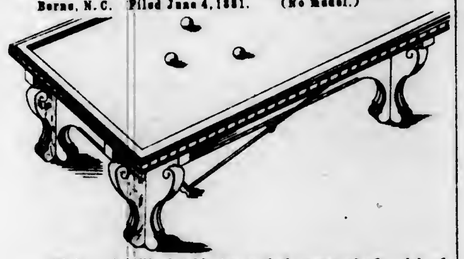
253,543. MANUFACTURE OF CASKS, BARRELS, &c., OF GLASS. CHRISTOPHER W. MCLEAN, New Berne, N. C. Filed Oct. 4, 1881. (No model.)



Claim.—1. The combination of a mold having a heating-chamber with a plunger, also provided with a heating-chamber, for the manufacture of casks, barrels, &c., and for the purpose of annealing them through the entire structure, substantially as specified.

2. A cask, barrel, or analogous article made of glass and annealed through its entire structure, and provided with strengthening and protecting hoops or surfaces, substantially as specified.

253,544. BILLIARD-TABLE. CHRISTOPHER W. MCLEAN, New Berne, N. C. Filed June 4, 1881. (No model.)



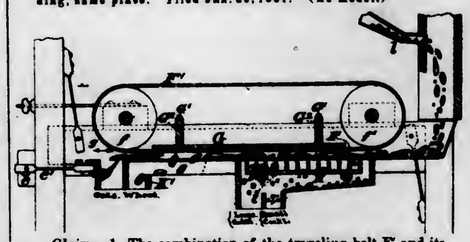
Claim.—A billiard-table top or bed composed of a slab of glass cast in one piece, as set forth.

253,545. GLASS COFFIN. CHRISTOPHER W. MCLEAN, New Berne, N. C. Filed Oct. 4, 1881. (No model.)



Claim.—The combination, in a glass coffin or casket, of the handle-supporting posts or stanchions D, provided with the tenon *d*, with the lid B, strip C, ledge *f*, and bolts *b* and *g*, as set forth.

253,546. SEPARATOR FOR GRAIN. CHARLES E. MCNEAL, Silver Creek, N. Y., assignor to himself and Albert H. Spaulding, same place. Filed Jan. 20, 1881. (No model.)

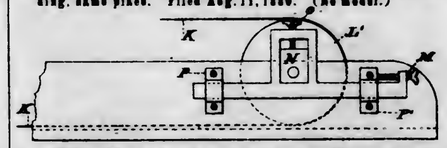


Claim.—1. The combination of the traveling belt F' and its supports *f f'* with a screen, E, a plate or rack, H, and means for vibrating the screen between the belt and rack, for the purposes described.

2. The traveling belt F', adjustable plate or rack G, the bars G', and the bolts or screws G', in combination with the vibrating screen and a stationary rack, H, arranged below it.

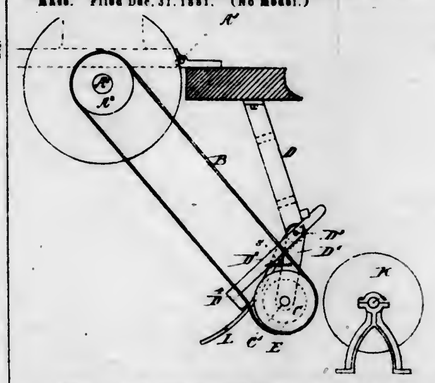
3. The combination of the vibrating screen and a rack arranged below it having a series of transverse bars, *i*, and a series of thin longitudinal strips, *i'*, for the support of and for limiting the distance between the transverse bars *i* and the screen, as and for the purpose specified.

253,547. SEPARATOR FOR GRAIN, &c. CHARLES E. MCNEAL, Silver Creek, N. Y., assignor to himself and Albert H. Spaulding, same place. Filed Aug. 11, 1880. (No model.)



Claim.—The combination of a grain-screen, H, and a movable endless belt, K, on rollers L L, arranged in boxes N in a frame supported by the caps P' P', and provided with the adjusting-screws O M, whereby the belt and its supporting-rollers may receive both a horizontal and vertical adjustment, substantially as and for the purposes described.

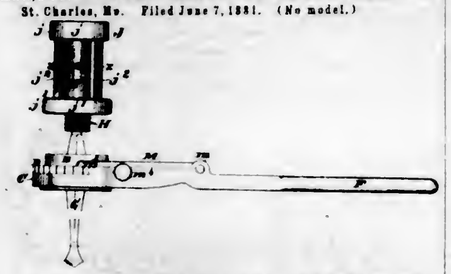
253,548. BELT ATTACHMENT. BENJAMIN MERRITT, Newton, Mass. Filed Dec. 31, 1881. (No model.)



Claim.—1. The combination of the pulley A' and belt B with the pulley C, swinging counter-shaft C', friction-pulley K, jointed housing D' D' D, and foot-lever L, all operating together in conjunction with the friction-pulley K, substantially as described, and for the purpose set forth.

2. The combination of the brake D' D' with the belt B, pulley C, counter-shaft C', and jointed housing D' D' D, all operating together substantially as described, and for the purpose set forth.

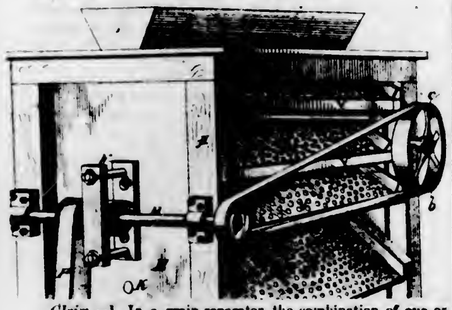
253,549. COMBINED WRENCH AND DRILL. JOHN A. MILLER, St. Charles, Mo. Filed June 7, 1881. (No model.)



Claim.—1. The combination of the wrench B, drill G, screw H, and holder J, having the heads *j j'*, bars *j*², pin K, and perforated nut I, said holder and screw being detachable from the drill and wrench, substantially as described.

2. The combination of the handle F, plate M, having the perforated tongue *m*', the recess *m*², and arms *m' m'*, the pawl E, having the projection *e*, the screw *m*³, the holder C, wrench B, and ratchet C, substantially as described.

253,550. GRAIN-SEPARATOR. LYMAN MORGAN, Port Washington, Wis. Filed Dec. 8, 1881. (No model.)



Claim.—1. In a grain-separator, the combination of one or more sets of screens, W, W'', &c., with the automatic tilting indented table W', arranged to catch the smaller impurities and detain and empty them automatically during the movement of the machine, and mechanism suitable for operating the same, substantially as and for the purposes set forth.

2. In a grain-separator, the combination of the two tilting indented tables W' W' and the vibrating tongue X, serving to direct the stream of grain over each alternately, substantially as and for the purposes set forth.

3. The combination of the intermittent gear E, spur-gears G G', eccentrics H H', links J J', and arm I, tongue X, and links e e, substantially as and for the purposes set forth.

4. The combination of shaft S, worm R, worm-wheel T, intermittent gear E, spur-gears G and G', eccentrics H and H', connecting-rods e e, arm I, links J and J', tilting indented tables W' W', and tongue X, substantially as and for the purposes set forth.

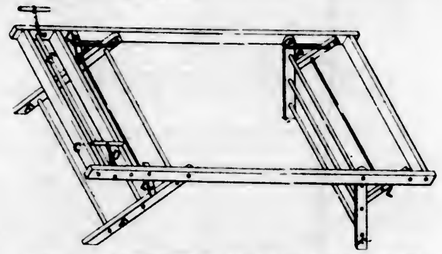
253,551. WASH-BASIN. FRED. A. PALMER, Westmoreland, S. C. Filed Mar. 23, 1879. Renewed July 2, 1881. (Model.)



Claim.—1. The one-piece Delft or crockery ware basin with its overflow C, strainer J, trap B and G, and coupling-sockets F H, constructed substantially as and for the purpose described.

2. The combination of the ring *a* and plug *b* with the basin provided with the trap B and socket F, having slots at S, substantially as and for the purpose described.

253,552. COT-BED. ISAAC S. PEAR, Cambridge, Mass. Filed Dec. 31, 1881. (No model.)



Claim.—1. The combination, with the side rails of a cot-bed having pivoted incline legs and braces, of a connecting rod or bar pivoted to said legs and braces near their upper ends, as and for the purposes set forth.

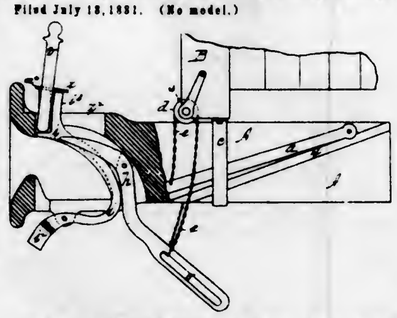
2. The combination, with the side rails of a cot-bed, of the head-rest supports, pivoted at their lower ends to the inner faces of the said rails and pivoted at their upper ends to the head-bars sustaining the flexible head-rest, all being constructed and arranged for operation substantially in the manner shown and described, as and for the purposes set forth.

253,553. DRIVING-REIN. ADAMS T. PRINCE, Dover, N. H. Filed Dec. 9, 1881. (No model.)



Claim.—A driving-rein made as herein described, having the stiffening substance applied to that part grasped by the hand in driving at intervals, as set forth, held in position by stitching, the said stiffening material being covered by and confined within the material comprising the rein, as set forth.

253,554. CAR-COUPLING. DANIEL P. PRESCOTT, Vernon, Vt. Filed July 18, 1881. (No model.)



Claim.—1. The combination, with the draw-bar A, of the link-lever A, pivoted in said draw-bar and having the transverse slot *o* therein, the chain *c*, and the shaft *d*, substantially as set forth.

2. In combination, the draw-bar A, the pin-latch *i*, having the counter-weight *i*³ and the arm *i*² thereon, the pin-lifter *a*, having the arm *z* and appliances, substantially as described, for raising up said pin-lifter, substantially as set forth.

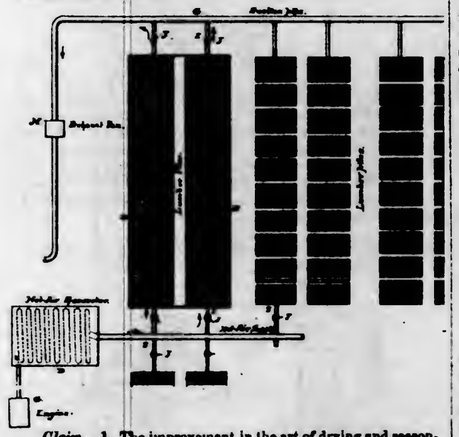
253,555. DEVICE FOR JOINTING SAWS. EDWARD PRESTON, Winona, Minn. Filed Oct. 1, 1881. (Model.)



Claim.—1. The combination, with the file-holder, of the inclined files, supported by pivoted adjustable bearings, and the intermediate file, arranged to be adjusted vertically between the inclined files, substantially as described.

2. The combination, with the file-holder A, having spring-jaws for embracing the saw-blade, of the inclined file-plates B, secured in brackets that are pivoted to set-screws passing through the sides of the holder, the intermediate file-plate, supported between the inclined file-plates by set-screws, and the springs, arranged to act against the inclined file-plates, substantially as described.

253,556. PROCESS OF AND APPARATUS FOR DRYING LUMBER. JAMES RANDALL, San Francisco, Cal. Filed May 25, 1881. (No model.)

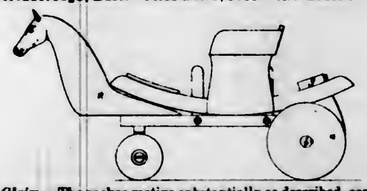


Claim.—1. The improvement in the art of drying and seasoning lumber, consisting in erecting a temporary cover or housing over the lumber after it is piled and passing a current of heated air through the lumber, substantially as above described.

2. The improvement in mill and lumber yards, consisting in laying permanent pipes E G between the piles of lumber, each of which pipes is provided with branch tubes I, extending toward the ends of the piles of lumber, and then connecting one of the pipes with a hot-air generator or heater and the other with a fan-blower, H, substantially as and for the purpose described.

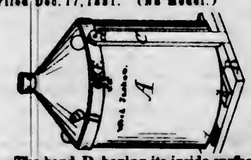
3. In the construction of piles of lumber in yards, the combination of the timbers built or placed at intervals in the piles, a clamping device, and a temporary cover, substantially as described.

253,557. HOBBY-HORSE OR ROCKER MOTIVE. HERBERT M. SMALL, Baldwinsville, assignor to himself and SUMNER SMALL, Northborough, Mass. Filed Dec. 3, 1881. (No model.)



Claim.—The rocker motive substantially as described, consisting of the four-wheeled truck, the rockers, their connecting-boards and seat, and the ratchet-wheel and pawl, all arranged substantially in manner and to operate as set forth.

253,558. TILTING OIL-CAN. HENRY C. SMITH, Cleveland, Ohio. Filed Dec. 17, 1881. (No model.)



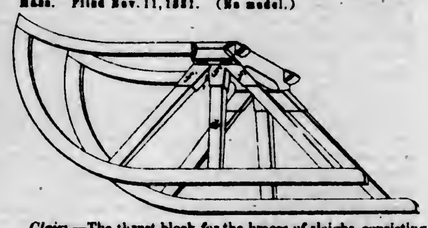
Claim.—The band D, having its inside surface roughened by punching holes from the outside, and provided with the lips *e e* for the thumb-screw E, and having the trunnions *d d*, in combination with the posts C C, set apart to permit the movements of the can to and from the base, and jacketed can A, as shown and described, and for the purpose set forth.

253,559. NAIL-BOX. THOMAS L. SMITH and WILLIAM S. DOTY, Brooklyn, N. Y. Filed Dec. 5, 1881. (No model.)



Claim.—In a box-nailing machine, the combination, with the nail-box, of the clamps or dies C C and supporting-springs D D, the upper ends of which are attached to the box and the other end supporting the clamps or dies and allowing them to yield laterally crosswise with the box, substantially and for the purpose set forth.

253,560. SLEIGH. ROMUALD J. TALBOT, North Attleborough, Mass. Filed Nov. 11, 1881. (No model.)



Claim.—The thrust-block for the braces of sleighs, consisting of the metal block F, having the central socket extending into it, and the lateral inclined sockets extending from inclined faces on each side of said central socket, and between which inclined faces and the upper portion of said central socket are thick solid portions integral with the main block, substantially as described.

253,561. WEATHER-STRIP. WILSON THOMPSON, Belleville, Kans. Filed Nov. 16, 1881. (No model.)

Brief.—The trough is braced by a bent spring-rod and the weather-strip is secured to the door under the trough. A fixed trough upon the door-jamb receives the drip from that upon the door and discharges it beyond the sill.



Claim.—The combination, with the door, of the trough secured thereto, the bent spring-rod for bracing the trough, the spout secured to the door-frame, and the weather-strip secured to the door below the trough, substantially as described.

253,562. MUSICAL CHART. EDWARD E. THRESHER, Reed City, Mich. Filed Apr. 23, 1881. (No model.)



Claim.—1. A music-chart having a carved surface, and provided with cords of a different color drawn across it and arranged to represent the lines of a musical staff, substantially as set forth.

2. The combination of a music-chart having a carved surface, and provided with adjustable cords drawn across it and arranged to represent the lines of a musical staff, holding in position adjustable notes and characters used in teaching and writing music.

253,563. SASH-FASTENER. HENRY P. TYLER, North Brookfield, and JAMES B. ATWOOD, Three Rivers, assignors of one-half to H. D. Sleeper, Springfield, Mass. Filed July 1, 1881. (No model.)

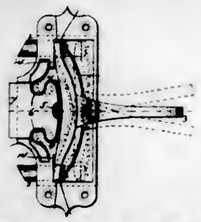
253,565.

253,566. BOTTLE-STOPPER. CHAS. A. WARFIELD, Philadelphia, Pa., assignor of one-half to Conrad Semper, same place.

253,569.

Claim.—1. The combination, substantially as hereinbefore described, with a spindle-rail, of a sleeve-whirl driven spindle and a

253,563.



Claim.—1. The combination, in a sash-holder, of a case, a lever provided with two oppositely-projecting arms, each having a bearing in said case, a spring secured to said lever between said arms, and with the ends of the spring against a bearing in the frame, with a friction-pad secured to said spring, whereby the friction-pad is operated by the movement of the lever in either of two directions, substantially as described.

2. The combination, in a sash-holder, of a case, a lever provided with two oppositely-projecting arms, each having a bearing in said frame, a spring secured to said lever between said arms, and with the ends of the spring against a bearing in the case, a friction-pad secured to said spring, with a sliding bolt adapted to engage with the end of either arm, and a spring secured in the case and bearing against the bolt, whereby the pad and bolt may be drawn away from engagement with the window-frame by the movement of the lever and the bolt thrown into engagement with the window-frame independent of the movement of the lever, substantially as described.

253,564. CONDUCTOR-PIPE. EZEKIEL VAN NOORDEN, Boston, Mass. Filed Oct. 14, 1881. (No model.)

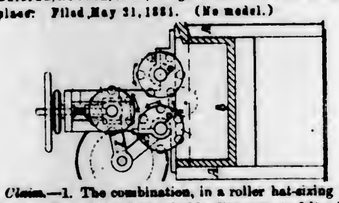


Claim.—1. A water-conductor pipe made in sections, each section provided with an expansion-joint and externally wound with wire, substantially as and for the purpose set forth.

2. In combination with the pipe A, the wire B, wound spirally around it and provided with the hooked ends B', said wire being fastened immovably to the pipe, substantially as and for the purpose described.

3. In combination with the sections A A' of pipe, the wire B, provided with the hooked ends B', the adjacent ends of two wires being connected by the wire loop D, substantially as and for the purpose specified.

253,565. ROLLER SIZING-MACHINE. AUGUST L. WARCKMEISTER, Newark, N. J., assignor to Charles A. Wharton, same place. Filed May 31, 1881. (No model.)



Claim.—1. The combination, in a roller hat-sizing machine, of three rollers adjusted at suitable distances to felt a bundle of hats by rolling and pressing it in the cavity between them, the felts being inserted into and removed from the cavity without altering the distances of the rollers, substantially as herein described.

2. The combination, in a roller hat-sizing machine, of one felting-roller mounted in vertically-adjustable boxes in housings over two felting-rollers revolving in fixed bearings, the upper roller being located nearer to the rear roller than to the front roller, for the purpose set forth, and the felts being inserted into and removed from the cavity without altering the distances of the rollers, substantially as herein set forth.

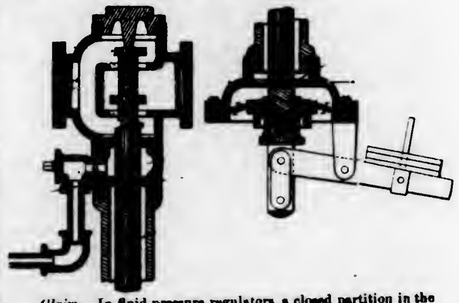
3. The combination, in a machine having felting-rollers operated in fixed positions, as herein described, of the anti-friction rolls r with the main felting-rollers, to remove the resistance of the main rollers to the removal of the felts from the cavity between them.

253,566. BOTTLE-STOPPER. CHAS. A. WARFIELD, Philadelphia, Pa., assignor of one-half to Conrad Semper, same place. Filed Oct. 26, 1881. (No model.)



Claim.—In a bottle-stopper device in which a bail-lever hinged about and encircling the neck of the bottle is connected with the stopper by means of a bail pivoted to said lever at points in advance of its fulcrum, a trigger or lever of the first order pivoted at or near its center to the front of the bail-lever and adapted to lock the stopper by pressure exerted upon its upper arm and to unlock said stopper by pressure exerted upon its lower arm, substantially in the manner set forth.

253,567. PRESSURE-REGULATOR. JOSEPH E. WATTS, Lawrence, Mass. Filed Dec. 24, 1881. (No model.)



Claim.—In fluid-pressure regulators, a closed partition in the steam-space of the water-well below the mouth of the equilibrium-pipe which connects the water-well with the delivery-pipe of the regulator, this partition having a passage to permit fluctuations in pressure at the point of connection with equalizing-pipe to be communicated to the column of water in the well, and through the latter to the elastic diaphragm.

253,568. AWNING. JOHN WILLIS, Wilmington, Del. Filed Dec. 1, 1881. (No model.)



Claim.—1. In a window-awning, the roller B, provided on its ends with depressions *b* and axle-pins E, in combination with bearing-blocks provided with corresponding extensions, provided with holes for the axle-pins, substantially as and for the purpose specified.

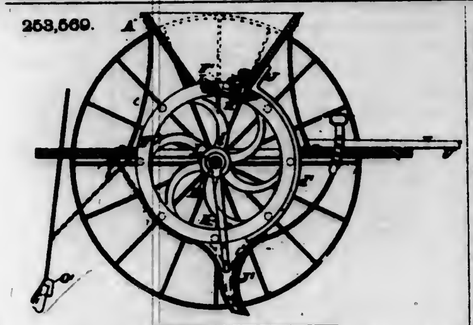
2. In a window-awning, the roller B, provided on its ends with depressions *b* and axle-pins E, in combination with grooved wheels D, flanges *d*, bearing-blocks C C', provided with recesses having conical extensions *c'*, provided with holes in the middle for the axle-pins, and cord G, blocks C being provided with hole or slot *c*, through which the cord G travels, substantially as and for the purpose specified.

253,569. POTATO-PLANTING AND FERTILIZING MACHINE. CHARLES L. WOODWARD, Angola, N. Y. Filed Nov. 5, 1880. (No model.)

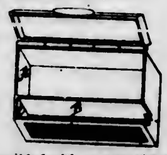
Claim.—1. The wheel F, secured to the shaft E and provided with a series of adjustable pockets, F', having a loose roller, I, for the purposes specified, in combination with a hopper, A, a shield, I', and a leg, J', for the purposes described.

2. In a planting and fertilizing machine, a wheel, F, having a series of pockets, F', provided with a loose roller, I, in combination with a hopper having a roller, C, and a suitable mechanism, substantially as specified, for operating it, for the purposes described.

253,569.

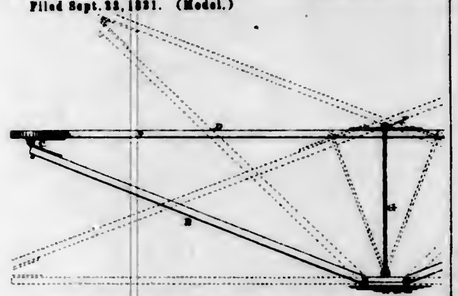


253,570. MATCH-BOX. JOSEPH WOODWARD, New York, N. Y. Filed Dec. 22, 1881. (No model.)



Claim.—A box provided with a compartment for matches and a compartment, C, for a wick or flexible punk, such latter compartment open throughout its entire length when the box is open, and having an opening at one end, through which the end of the wick can project, and a pin or catch to hold the wick in the box when the box is closed, substantially as described and shown.

253,571. SEESAW. LUTHER J. ADAMS, Leominster, Mass. Filed Sept. 22, 1881. (Model.)



Claim.—1. In a seesaw, the combination of the board D with rocking supports, to which the board is loosely attached, substantially as shown.

2. The combination of the base, the two supporting-boards B, the two hinged top boards, and the metallic supporting-brace, substantially as described.

3. In a seesaw, the combination of the board D, jointed at its center, with the hinges C, the supports B, loosely connected to the base A, and the pivoted brace G, the parts being adapted to be folded together, substantially as specified.

253,572. SUPPORT FOR SPINDLES FOR SPINNING-MACHINES. JOHN E. ATWOOD, Stonington, Conn., assignor to George Draper, Hopedale, Mass., and Stephen A. Jenks, Lincoln, R. I. Filed Feb. 27, 1880.

Brief.—The supporting-tube for the spindle is flexibly mounted on the rail, by which the spindle and all its bearings can to a certain limited extent move in all directions to adjust itself while in revolution to an unbalanced load.



Claim.—1. The combination, substantially as hereinbefore described, with a spindle-rail, of a sleeve-whirl driven spindle and a combined bolster and step mounted loosely on the spindle-rail and secured with relation to the rail by yielding attachments, as set forth, whereby the spindle is capable while in revolution of adjusting itself to an unbalanced load.

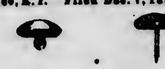
2. The combination, substantially as hereinbefore described, with a spindle-rail, of a sleeve-whirl driven spindle, a base-piece rigidly fixed to the spindle-rail, and a combined bolster and step mounted loosely in said base-piece and secured thereto by a yielding attachment, as set forth.

3. The combination, substantially as hereinbefore described, of a spindle-rail of a spinning-machine, a spindle, and a supporting-tube flexibly mounted with relation to the spindle-rail and containing step and bolster bearings.

4. The combination, substantially as hereinbefore described, of a spindle-rail, a spindle, a supporting-tube containing step and bolster bearings, flexible connections between said tube and the spindle-rail, and adjusting devices for varying the degree of flexibility of the supporting-tube and spindle therein.

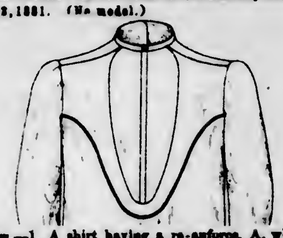
5. The combination of the spindle-rail, the spindle, the supporting-tube, loosely mounted with relation to the rail and containing the step and bolster bearings for the spindle, the spring, and the nut for compressing it, substantially as described.

253,573. BUTTON. CHARLES E. BAILEY and WILLIAM B. TALBOT, Providence, R. I. Filed Dec. 7, 1881. (No model.)



Claim.—That improvement in the art of forming the eyes or shanks of buttons consisting in embedding the head of a metallic nail or pin within the body of the button and then bending the projecting end over upon itself and into contact with the button-head to form an eye or shank, all substantially as set forth.

253,574. SHIRT. ALFRED BAXTER, Grand Rapids, Mich. Filed Nov. 22, 1881. (No model.)



Claim.—1. A shirt having a re-enforce, A, which extends around the sides and bottom of the bosom, substantially as set forth.

2. The improved seam for shirt-bosoms, formed by bringing the edges of the bosom, re-enforce, and body together, as described, stitching them, folding the body and bosom back into their final position, and then stitching around the edge of the bosom to secure the parts, as set forth.

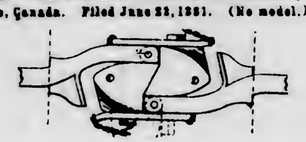
3. The combination, substantially as herein set forth, of the bosom, the re-enforce, and the body, the bosom being placed between the re-enforce and body, as described, the parts securely stitched, the body and re-enforce folded back, and the parts finally secured by stitching.

4. A shirt having a bosom which is secured to the shirt-body entirely around its edge, and the corners of which are curved or cut away, substantially as set forth.

5. The combination of a shirt body and bosom, which is secured to the body entirely around its edge, and having its upper corners curved or cut in and not included in the shoulder-seam.

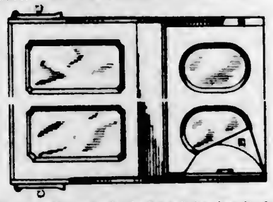
6. The combination of the shirt-body, the bosom having its upper corners curved in, as described, and a re-enforce which extends entirely around the sides and bottom of the bosom, substantially as set forth.

253,575. CAR-COUPLING. MICHEL A. BRESSETTE, Iberville, Quebec, Canada. Filed June 22, 1881. (No model.)



Claim.—In a car-coupler, the combination of the following elements: a curved draw-bar, a hooked head pivoted to the end of the draw-bar and arranged to slide horizontally past the meeting draw-head, and a swinging bar pivoted to the draw-bar and fitting into a catch projecting from the head, all substantially as herein set forth.

253,576. WARDROBE-BEDSTEAD. HENRY O. BICKNELL, Chicago, Ill. Filed Dec. 8, 1881. (Model.)



Claim.—1. A wardrobe-bedstead having its lower front corners made rounding and provided with hinged feet, substantially as described.

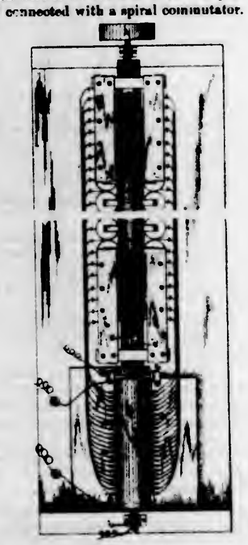
2. A wardrobe-bedstead having its lower front corners rounded away and provided with the hinged feet, in combination with the folding legs, which are pivoted to the sides of the upper end of the frame, the frame being made to support one end of the bed, while the pivoted legs support the other, substantially as set forth.

3. In a wardrobe-bedstead which rests solidly upon the floor at its lower end, removable head and foot boards, and suitable straps for holding the parts in place while the bed is raised against the wall, substantially as specified.

4. A wardrobe-bedstead which rests solidly upon the floor at its lower end, and which has its lower front corners rounded away and provided with hinged feet, the back portion of the frame being left entirely open for the reception of the bed, and made to close against the wall, substantially as shown and described.

253,577. MAGNETO-ELECTRIC MACHINE. JOHN B. BLAIR, Chicago, Ill., assignor of six-tenths to Aaron P. M. Jeffers and William S. Coffman, both of same place. Filed Sept. 27, 1881. (No model.)

Brief.—An elongated field-magnet having spiral grooves in which insulated wire is wound is surrounded by a series of fixed armatures, all connected with a spiral commutator.

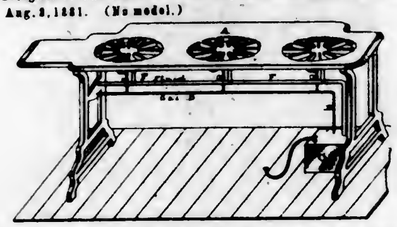


Claim.—1. In a magneto-electric machine, the rotating cylindric field-magnet A, consisting of a shaft spirally grooved on opposite sides and apertured as shown, and provided with the coil A', combined with a series of surrounding stationary armatures, substantially as described, and for the purposes set forth.

2. In combination with the field-magnet A, the series of secondary magnets C C', arranged in alternation and surrounding the field-magnet, as shown, and for the purposes stated.

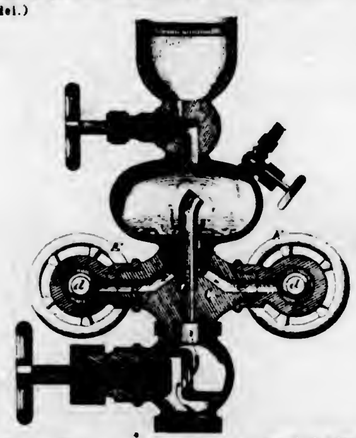
3. In combination with the field-magnet A, the series of secondary magnets C C', arranged in alternation about and in proximity throughout their length with the field-magnet, substantially as and for the purposes described.

253,578. VAPOR-STOVE. WILLIAM B. BLAKE, Canton, Ohio, assignor of one-third to Garson Myers, Pittsburg, Pa. Filed Aug. 3, 1881. (No model.)



Claim.—The combination of a vapor-stove, A, the reservoir C, provided with a pipe for the introduction of air, the fluid-pipe F, provided with a series of burners, and a gas-pipe, D, which extends along under the stove and has a branch pipe and regulating-cock for each burner, the branch pipes extending up close to the burners for the purpose of heating them, substantially as shown.

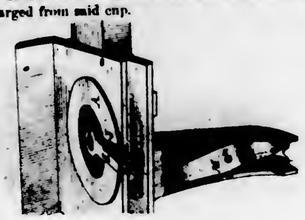
253,579. OILER FOR LOCOMOTIVES. ALVA O. BROOKS and PHILIP A. BOWER, Milwaukee, Wis. Filed Oct. 1, 1881. (No model.)

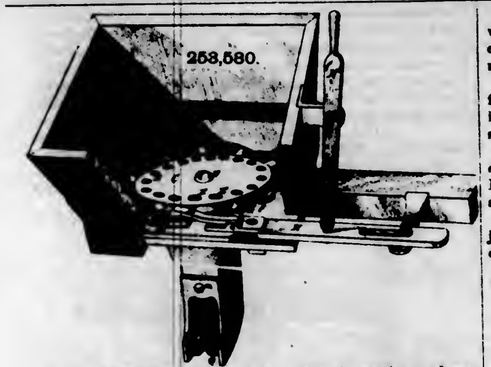


Claim.—The combination of oil-cup, reservoir having vent, the valve-chamber C, steam-inlet and oil-outlet, and valves or stop-cocks, as set forth.

253,580. CORN-PLANTER. GEORGE W. BROWN, Galesburg, Ill. Filed Sept. 18, 1879.

Claim.—1. In combination with a seed-cup disk having an intermittingly-rotating motion in one direction imparted to it by a reciprocating bar, H, which acts upon it by its throw in one direction and allows it to remain at rest while its throw is effected in an opposite direction, a cut-off slide, I, adapted to move with the forward movement of the bar H and seed-cup disk and act as a bottom to a seed-cup, and to be removed from beneath said seed-cup by the backward movement of the bar H, to allow the seed to be discharged from said cup.





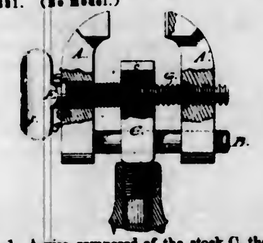
2. In combination with an intermittingly-rotating seed-cup disk in which two seed-cups are brought beneath the cut-off at each movement of the disk, a sliding bottom adapted to hold the seed in one seed-cup while another discharges its seed, and to be moved from beneath the seed-cup which it closes to allow it to discharge its contained seed while the seed-cup disk is at rest.

3. In combination with the intermittingly-rotating seed-cup disk C and sliding seed-cup bottom I, the bar H, adapted to give a partial rotation to the disk C by its alternate throws and to move before its action on the slide I at each throw, so as to properly place, retain, and remove said slide in relation to one of the seed-cups.

4. In combination with the intermittingly-rotating seed-cup disk C, and bar H, which acts upon it at alternate throws of the slide, the sliding seed-cup bottom I and valve M, arranged to operate in relation to each other and to the seed-cup disk substantially as and for the purpose specified.

5. In combination with the seed-cup disk C, and bar H, alternate throws of which act on said slide, a sliding seed-cup bottom located close beneath the seed-cup disk, and a vibrating valve located in the seed-tube, both of which are vibrated in one direction at each throw of the bar H, substantially as and for the purpose specified.

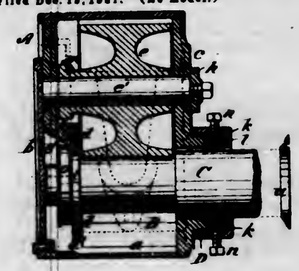
253,581. VISE. CALVIN L. HUTLER, Greenfield, Mass. Filed Dec. 23, 1881. (No model.)



Claim.—1. A vise composed of the stock C, the jaws A' A, and a differential screw operating the same, as and for the purpose specified.

2. The differential screw E, in combination with the jaws A A', the stock C, and guide-bar B, as and for the purpose set forth.

253,582. CAR-AXLE BOX. CHARLES E. CARDER, New York, N. Y. Filed Dec. 19, 1881. (No model.)



Claim.—1. The anti-friction roller e, provided with toothed wheel m, the loose wheel o, fitted in the oil-compartment, and the chain or band q, substantially as shown and described, in combination with the box A, for operation as specified.

2. The combination, with the box A and the axle C, of the friction-rollers *e f g*, placed loosely upon the spindles *e' f' g'*, having bearings in the front and rear plates of the said box, and the set-screws *t*, substantially as and for the purpose set forth.

3. The combination, with the box A, provided with partition *d*, and the axle C, provided with the shoulder *i*, of the stuffing-box D, the lapped circular flexible metal band *k*, the gland *l*, and the set-screw *n*, substantially as and for the purpose set forth.

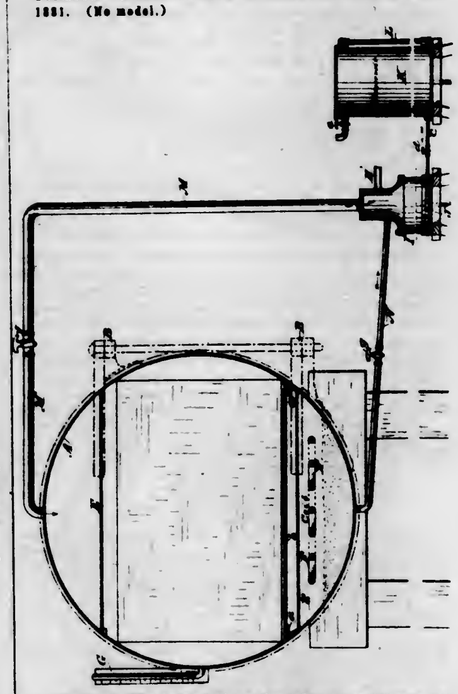
4. The anti-friction roller e, provided at one end with a projecting gear-wheel, m, for receiving and giving motion to a lubricating chain or band, substantially as described.

253,583. TOWEL-RACK. THOS. C. CLAPP, Gouverneur, N. Y. Filed Nov. 25, 1881. (Model.)



Claim.—The combination of the bracket-frame A, having curved grooves made in the inner sides of its ends, with a curved towel-rack, D, which fits in the grooves, and which is provided with stops to prevent the rack from being drawn out too far, substantially as shown and described.

253,584. METHOD OF AND APPARATUS FOR TREATING TOBACCO. GEORGE CLARK, New York, N. Y. Filed Oct. 11, 1881. (No model.)



Claim.—1. The method of treating tobacco, consisting essentially of establishing a vacuum within the containing-chamber and admitting vapor thereto in limited and regulated quantities at a comparatively low degree of temperature, whereby the moisture of the vapor is forced into the tobacco, in contradistinction to the process of absorption, as hereinbefore fully explained.

2. In an apparatus for treating tobacco, the cylinder A, adapted to have the air exhausted therefrom, whereby a vacuum is produced therein, in combination with a vapor-generator and water-reser-

Claim.—1. In a hand-cutter for thrashing-machines, the se-

253,585.

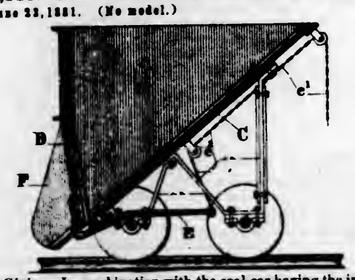
voir arranged at one side, and connected by pipes M N e, substantially as and for the purpose described.

3. The vapor-generator I, provided with the coil J, and the curing-chamber A, connected by the vapor-pipe M at the top of each, and a return water-pipe, g, inclined as described, in combination with suitable means for supplying water to the vapor-generator, substantially as and for the purpose set forth.

4. The curing-chamber A, connected with the vapor-generating apparatus, and provided with a steam-coil, F, to produce fermentation, substantially as hereinbefore set forth.

5. The curing-chamber A, adapted to be connected with suitable vacuum-producing apparatus, and provided with the barometer G, in combination with the vapor-generator and reservoir, the latter being provided with the water-gage L, whereby the pressure in the chamber A and amount of water vaporized are determined, substantially as hereinbefore set forth.

253,585. COAL-CAR. JOHN B. COLLIS, Altoona, Pa. Filed June 23, 1881. (No model.)



Claim.—In combination with the coal-car having the inclined bottom C and guide-boards F F, the upwardly-swinging door D and the catch-lever E, as described.

253,586. BOOT OR SHOE. WILLARD COMBY, Westborough, assignor to the Improved Sole Sewing Machine Company, Boston, Mass. Filed Dec. 19, 1881. (No model.)



Claim.—The improved shoe above described, consisting of the upper A, channeled insole B, partial belt or middle sole, C, and channeled outer sole, D, the welt or middle sole, C, being sewed to the fore part of the upper and insole, as described, by one line of stitches, and to the fore part of the outer sole by a second line of stitches, and the shank of the outer sole being sewed to the shank of the upper and inner sole by a third line of stitches, as described.

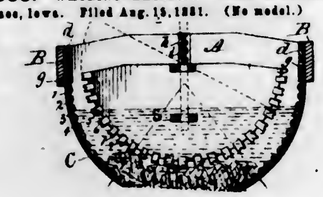
253,587. JEWELER'S BRAIDED METALLIC STOCK. AUGUSTUS S. CRANE, Newark, N. J. Filed July 19, 1881. (No specimens.)



Claim.—1. The process of manufacturing rigid metallic braided stock, consisting in binding the strands to a mandrel, and in applying while braiding an upward and circumferential pressure, substantially as and for the purpose specified.

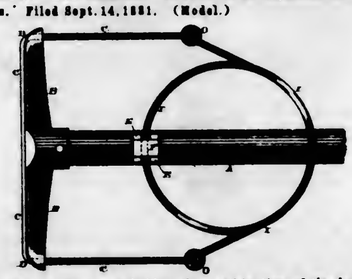
2. The rigid metallic braided stock when constructed substantially as set forth.

253,588. WASHING-MACHINE. MARK O. CUMMISON, Des Moines, Iowa. Filed Aug. 15, 1881. (No model.)



Claim.—In combination with a washing-machine tub composed of semicircular wooden side pieces, A, wooden end pieces, B, and a sheet-metal bottom, C, the fixed re-enforcing pieces d, the detachable wash-board surface composed of series of wooden bars 1 2 3 4, and the adjustable and detachable keying-pieces g, substantially as shown and described, to operate in the manner set forth, for the purposes specified.

253,589. MOP-HOLDER. REUBEN T. DAVIS, North Adams, Mass. Filed Sept. 14, 1881. (Model.)



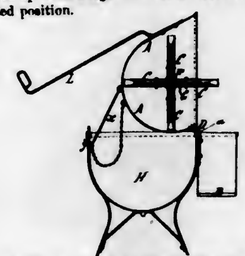
Claim.—1. In a mop-holder, the combination of the handle A, the head B, and the holder C with a separate spring which has a partial rotary movement, substantially as shown.

2. In a mop-holder, the combination of the head and the holder with a separate spring which has its ends attached to the holder, so as to always exert its pressure in drawing the holder tightly against the cloth, substantially as described.

3. The combination of the handle A, the head B, the holder C, the grooved block and clamp, and a separate spring which has a partial rotary movement, substantially as set forth.

253,590. ROOT AND VEGETABLE WASHER. LUDOVIC EDISH RAOUL, COMTE DE BRAUEPAIRE DE LOUVAGNY, Grivesnes, France. Filed Oct. 28, 1879. Renewed Nov. 23, 1881. (Model.)

Brief.—A sieve provided with revolving beaters is suspended in an outer casing by hinges at the side. A removable drainer is hung at the side of the casing to receive the roots, &c., when the sieve is turned up on its hinges. A chain and rod sustain the sieve in its elevated position.

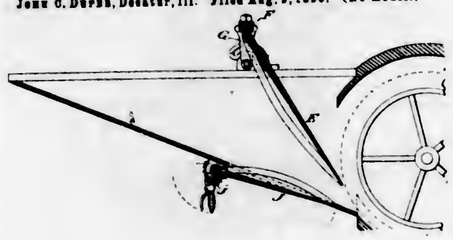


Claim.—1. The casing H, in combination with the overturning sieve A, provided with the beaters C, substantially as and for the purpose set forth.

2. The casing H and overturning sieve A, with beaters C, in combination with the removable drainer B, suspended from the side of the casing H, adjacent to the hinges D of said overturning sieve A, substantially as and for the purpose set forth.

3. The sieve A and casing H, in combination with the hook x and chain z, substantially as and for the purpose set forth.

253,591. BAND-CUTTING ATTACHMENT FOR THRASHERS. JOHN C. DUPEE, Decatur, Ill. Filed Aug. 9, 1880. (No model.)



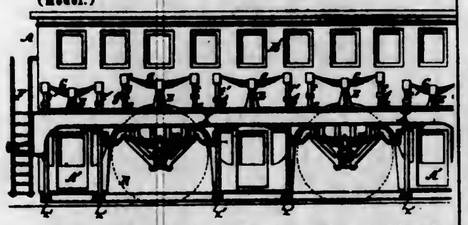
Claim.—1. In a band-cutter for thrashing-machines, the series of adjustable blades E E, in combination with the hopper and cylinder, substantially as shown and described.

2. In a band-cutter for thrashing-machines, the series of adjustable blades E E and J J J, in combination with the hopper and cylinder, substantially as shown and described.

3. The blades E E, in combination with the bar F, shoe G, and support H, substantially as and for the purpose set forth.

4. The blade for a band-cutter for thrashing-machines, consisting of the body O, blade P, and plate Q, substantially as shown and described.

253,592. RAILWAY-VEHICLE. AUGUSTE HUTRARD, near Perpignan, France. Filed Nov. 10, 1879. Renewed Dec. 13, 1881. (Model.)



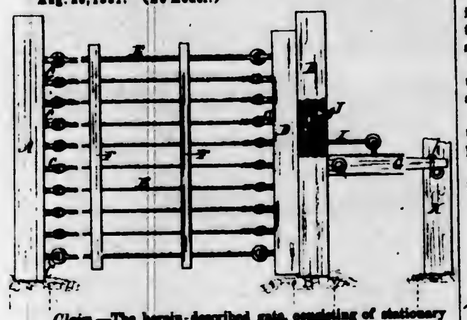
Claim.—1. The car-body having upper and lower apartments, A' B', and a duplex system of springs, G r, substantially as and for the purpose set forth.

2. The body A, in combination with a duplex system of springs, G r, and the intermediate frame, X, substantially as and for the purpose set forth.

3. The body A and frame X, in combination with the upper springs, G, uprights t, pedestals E, and lower springs, r, substantially as and for the purpose set forth.

4. The body A, with upper and lower apartments, A' B', in combination with the double set of springs G r, standards t, pedestals E, frame X, and extended standards t', substantially as and for the purpose set forth.

253,593. SWINGING GATE. LINDLEY H. EVANS, Cass Township, (Reeder's Mills P. O.,) Harrison County, Iowa. Filed Aug. 26, 1881. (No model.)



Claim.—The herein-described gate, consisting of stationary upright A and movable upright D, connected together by wires E, mortised upright B, lever G, fulcrumed to said upright B, and connected to upright D by hook I, substantially as specified.

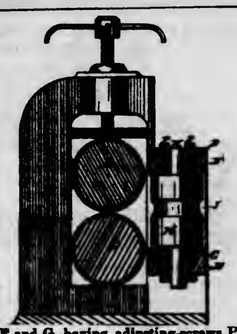
253,594. HAIR-TONIC. LEWIS FORBES, San Francisco, Cal. Filed Nov. 8, 1881. (No specimens.)

Brief.—The distillate of water and animal hides is obtained by subjecting distilled water and depilated hides to a boiling heat in a close vessel. The vapor arising is condensed. This is then mixed with alcohol and salt.

Claim.—A hair-restorer consisting of the herein described distillate of water and animal hides, in combination with alcohol and salt in substantially the proportions named, and for the purpose set forth.

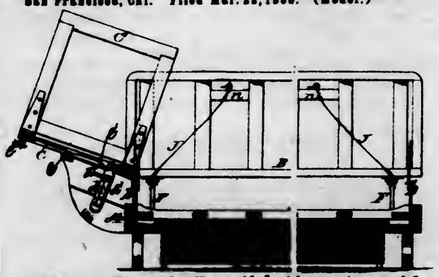
253,595. MILL FOR ROLLING IRON. CHARLES FORSTER, Pittsburg, and BENJAMIN WEAVER, Allegheny, Pa. Filed June 22, 1881. (No model.)

Claim.—1. The combination, with a pair of horizontal rolls, of the pair of vertical grooved guide-rolls, supports D and E, adjustable bearings F and G, having adjusting-screws P, plates N, and screws M, substantially as herein described, and for the purpose set forth.



2. In a mill for rolling iron, the combination, with a pair of horizontal grooved rolls, of a pair of vertical revolving grooved guide-rolls, adjusting-screws M, plates N, and adjusting-screws P', substantially as and for the purpose specified.

253,596. SOFA-BED AND LOUNGE. ALBERT S. I. GARDE, San Francisco, Cal. Filed Mar. 28, 1882. (Model.)

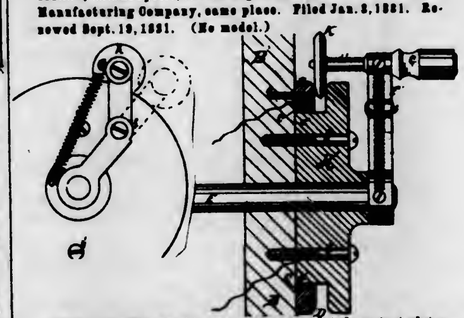


Claim.—1. The ratchet F, provided with an outer guard facing the row of notches, and having an enlarged notch or stop at the bottom, in combination with the pin K and the back B, substantially as set forth.

2. The combination of the stay-rods J, ratchets F, and clips under the back B, for attaching the ratchets with the stays b, substantially as set forth.

3. The combination of the back B, supporting and adjusting means, and drawer capable of being drawn out and forming a support for the back when down in a horizontal position, as set forth.

253,597. TELEPHONE-SIGNAL GENERATOR. JAMES F. GILLILAND, Indianapolis, Ind., assignor to the Gilliland Electric Manufacturing Company, same place. Filed Jan. 3, 1881. Renewed Sept. 19, 1881. (No model.)



Claim.—1. The combination of two insulated contact-plates, A A', with an extensible spring-retracted crank carrying a contact-ping, substantially as specified.

2. The combination, in a magneto-electric machine, of a crank consisting of arms pivoted together, a contact-piece carried by the outer arm, and a retractible spring, whereby the shunt-circuit is closed when the crank is at rest and opened and held open automatically when power is applied to turn the crank.

3. The combination of an extensible spring-retracted crank

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253,604.

3. The combination of an extensible spring-retracted crank with metallic disk K, and insulated contact-plates so placed as to form a groove in which said disk is held by the spring when the crank is at rest, so as to close the shunt-circuit around the armature, said disk, when power is applied to the crank, being lifted from the groove, so as to open and hold open the shunt.

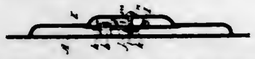
253,598. MANUFACTURE OF YELLOW COLORING-MATTERS. FRIEDRICH GRAESSLER, Cannstadt, Germany. Filed Mar. 13, 1880. (Specimens.) Patented in England Jan. 3, 1879, and in Germany Feb. 13, 1879.

Claim.—As a new product, the coloring-matter of a yellowish shade, which consists of the sulpho-acid of amidoazo-benzole, substantially as described.

253,599. MODE OF HEATING PILES. JOHN HALDEMAN, Philadelphia, Pa., now residing in London, England. Filed Jan. 12, 1882. (No specimens.) Patented in Belgium Oct. 30, 1880.

Claim.—This mode of heating piles or boxes composed of a steel core of any shape, said core surrounded by an envelope of puddled or other iron—viz., by first subjecting these piles to a low slow heat, such as will not injuriously affect the iron until the heat penetrates the whole body of steel degree by degree until it becomes partially, or preferably entirely, molten, and then, in the second place, changing the character of the heat, so as rapidly to bring the iron envelope to a high white welding-heat, and then by compression completing the process, and thus producing an absolute fusion instead of a weld of the two metals—substantially for the purpose described above.

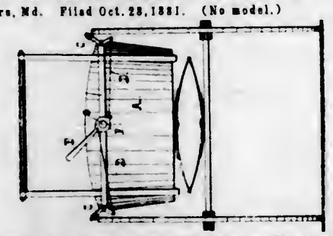
253,600. DEVICE FOR ATTACHING PLATES OR TABLETS TO STOVES. ROBERT HAM, Troy, N. Y., assignor to O. H. Phillips & Co., same place. Filed Jan. 3, 1882. (No model.)



Claim.—1. The device consisting of the combination of a lug, *b*, on a stove-plate, A, a support, *g*, attached to or forming a part of a plate, E, and arranged in a space, *f*, formed in the body of such plate E, and adapted to be secured to the lug *b* in a manner substantially as set forth.

2. The device consisting of the combination of a lug, *b*, on a stove-plate, A, a support, *g*, having an eye, *h*, and hole and slot *j k* therein, and arranged in a space, *f*, and connected with a plate, E, and a cap-piece, I, provided with a nut and screw, *l m*, all being disposed and adapted to be secured together substantially as described.

253,601. CHILD'S CARRIAGE. JOSEPH N. HAZELIP, Baltimore, Md. Filed Oct. 28, 1881. (No model.)



Claim.—1. In combination with the lever E and clamp, the bell-crank levers C, as and for the purpose set forth.

2. In combination with the rear standards and cross-bar, the brake-levers pivoted thereon and connected with the lever E, as set forth.

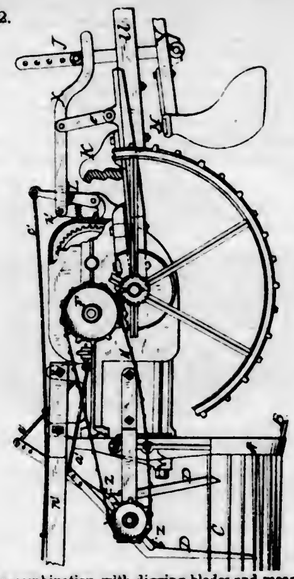
3. In combination with the lever E and clamping-disks F *f*, the bell-crank levers C, having shoes *c*, and the wires D, as set forth.

253,602. POTATO-DIGGING MACHINE. HENRY D. HERRINGTON, Hoosac, N. Y. Filed Aug. 10, 1881. (No model.)

Claim.—1. The combination, with a semicircular digging-blade, A, of a potato-digger, of a series of cutting-blades, B, attached to the circular blade A, as shown, and for the purpose stated.

2. The combination, with the plows of a potato-digging machine, of the adjustable upright J, secured to the plow-beam V, arms X, and fulcrum-support *e'*, substantially as described, and for the purpose set forth.

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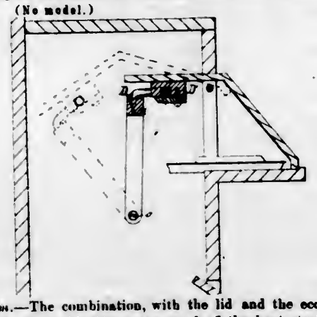


3. The combination, with digging-blades and means for oscillating said blades, of plows arranged in advance of the digging-blade and arranged to run at each side of the row of potatoes to be dug, cutting away the sides of the row and siding in removing the vines, substantially as described, and for the purpose set forth.

4. In a potato-digger, the combination, substantially as hereinbefore described, of the digging-blade A with the series of cutting-blades B and separating-fingers C, having an oscillating motion, cleaning-fingers D, and mechanism for operating the fingers, substantially for the purpose set forth.

5. The combination, in a potato-digger, of the digging-blade A, separating-fingers C, cleaning-fingers D, endless sprocket-chain, sprocket-wheels *d* F, cranks Z, and pivoted arms *s'*, substantially as described, and for the purpose set forth.

253,603. CABINET-ORGAN LID. JACOB HESSLER, Chicago, Ill., assignor to William W. Kimball, same place. Filed Nov. 2, 1881. (No model.)



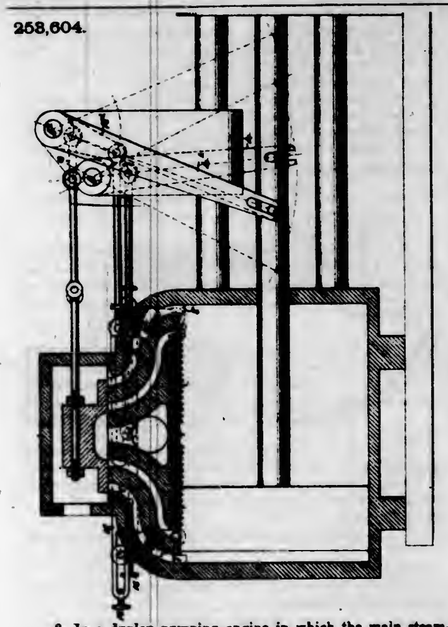
Claim.—The combination, with the lid and the eccentric frame, of the separable hinge composed of the bent staple, the slotted block, and the button, substantially as described.

253,604. DUPLEX PUMPING-ENGINE. DAUPHIN S. HIBBS, Brooklyn, N. Y. Filed Sept. 15, 1881. (No model.)

Claim.—1. In a duplex pumping-engine in which the main steam-valve of one engine is operated by the other engine, the combination, with each induction-port of the high-pressure steam cylinder or cylinders, of an intermediate valve operated to close such port during the pause on the reversal of the movement of the piston, substantially as described.

2. In a duplex pumping-engine in which the main steam-valve of one engine is operated by the other engine, the combination, with each induction-port of the high-pressure steam cylinder or cylinders, of an intermediate valve, and mechanism for operating the same, substantially as described.

253,604.



3. In a duplex pumping-engine in which the main steam-valve of one engine is operated by the other engine, the combination, with each induction-port of the high-pressure steam cylinder or cylinders, of an intermediate valve, with mechanism for operating the same, provided with means for adjusting the opening and closing of the same, substantially as described.

4. In a duplex pumping-engine in which the main steam-valve of one engine is operated by the other engine, the combination, with the high-pressure steam cylinder or cylinders, of ports 7 8, intermediate valves, 9 10, slotted bar 15, provided with adjusting-screws, and means for timely reciprocating said bar, substantially as described.

253,605. LEATHER BOX. AUGUSTUS HOFF and HENRY HOFF, Brooklyn, N. Y. Filed Dec. 10, 1881. (No model.)

Claim.—A leather box the body and cover of which are each made of a continuous binding, A, an end piece, B, stitched to the inner edge of the binding, and of a side portion, C, secured to the turned-over outer edge of the binding and made of one straight piece of leather having the ends secured together, substantially as and for the purpose described.

253,606. ROLL-BAR FOR PULP-ENGINES. JOHN HENRY HOBBS, Lawrence, Mass. Filed Jan. 9, 1882. (No model.)



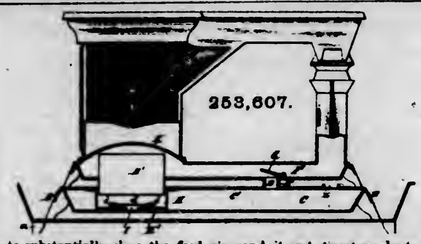
Claim.—1. The method of producing bars for pulp-engine rolls, which consists in rolling steel into a band of uniform size and shape and of the form of the destined roll, such band being cut into bars of the desired length as occasion requires.

2. A bar for pulp-engine rolls, having its sides upon opposite edges tapering, for purposes stated.

253,607. OIL-STOVE. JOHN M. IRWIN, Horton, Pa. Filed Sept. 13, 1881. (No model.)

Claim.—1. In a hydrocarbon-oil-burning stove of the character herein specified, an opening in the oil-pot having communication with the feed air-conduit to the burners, said opening being provided with a trap, hinged at one side, and adapted and arranged

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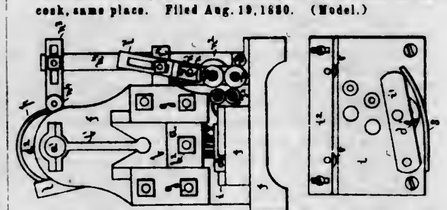
to substantially close the feed air-conduit and direct products of combustion escaping from the oil-pot toward the burners in case of explosion, substantially as shown and described.

2. In a hydrocarbon-oil-burning stove of the character herein specified, the combination, with the oil-pot, of outlet D, trap G, and air-conduit F, substantially as shown and described.

3. In a hydrocarbon-oil-burning stove, an oil-pot having a chamber surrounding the wick-tubes, and extending nearly to the bottom of the oil-pot, an opening for the passage of the fluid to the wicks being located in the bottom of said chamber, with a plate placed thereabove and secured to the bottom of said chamber, substantially as shown and described.

4. In a hydrocarbon-oil-burning stove, the combination, with the oil-pot, of jacket H, the same being perforated at bottom, and having a plate, I, located therein, substantially as and for the uses and purposes shown and described.

253,608. MACHINE FOR PUNCHING METAL. ANDREW J. JOHNSON, Cuyahoga Falls, Ohio, assignor to Erskine L. Babcock, same place. Filed Aug. 19, 1880. (Model.)



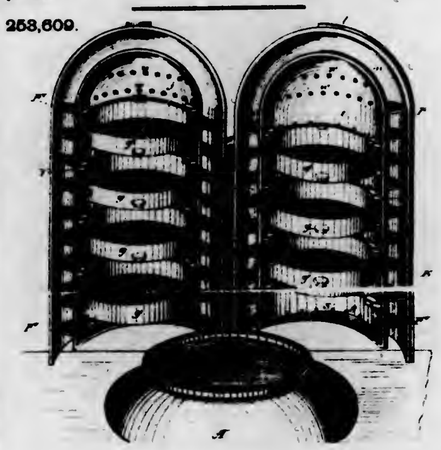
Claim.—1. The feed-rolls *m m'*, one of them having an intermittent motion away from the other, in combination with shaft *g'*, rock-shaft m^2, arms m^3 m^4 n^4, and cam d^3, substantially as described.

2. The jaws *n n'*, in combination with flanged wheel n^2 and arm l^2, provided with pin i^2, substantially as described.

3. The cam *d'* and lever *l*, in combination, and adjustably connected with arm *l*, jaws *n n'*, wheel n^2, and feed-rolls *m m'*, substantially as described.

4. The punch-holder *a*, in combination with pitman *b'*, shaft *a'*, cams d^2 d^3, lever *l*, arms l^2 m^4 m^5, jaws *n n'*, adjusting gnide-roll *o'*, and feed-rolls *m m'*, one of the feed-rolls having an intermittent motion away from the other, substantially as and for the purpose specified.

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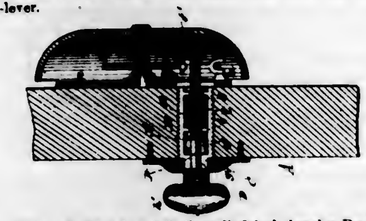
253,609. FRUIT-DRIER. JAMES J. JOHNSTON, Columbiana, Ohio. Filed Dec. 24, 1881. (No model.)

Claim.—1. A cylindrical fruit-drier consisting of a base forming a section of a hollow sphere, having a vertical flange and opening, a drying-chamber having perforated walls, and surrounded with a heating-chamber having spiral partitions and a flue, said chambers divided vertically into two parts, and hinged together on said base, substantially as herein described, and for the purpose set forth.

2. In a fruit-drier, the combination of the hollow base A, drying-chamber D, and heating-chamber E, having spiral partitions F, said chambers divided vertically into two parts and hinged together on the base A, substantially as herein described, and for the purpose set forth.

253,610. DOOR-BELL. JAMES J. JOHNSTON, Columbiana, Ohio. Filed Jan. 12, 1881. (No model.)

Brief.—The reciprocating movement of the operating-bar actuates the hammer by means of inclines on said bar and hammer-lever.



Claim.—1. In a door-bell, the cylindrical chamber B and B', made in two parts, having compartments *e* and *f*, partition *i*, square projection C, projections *h*, and recesses *g*, with openings D, *k*, and *l*, the outer walls of said parts B and B' furnished with screw-threads *j*, in combination with the operating-lever A', having a square portion, *p'*, round portion *p*, with collars *r s*, and spiral spring *t*, substantially as herein described, and for the purpose set forth.

2. In a door-bell, the combination of the cylindrical chamber constructed in two parts, B and B', operating-lever A', having detachable and adjustable piece *f'*, disk *s*, having projections *w* and *u*, hammer *x*, having projections *c'*, and springs *d* and *l'*, and the bell *o*, secured to the projection *u* of said disk, substantially as herein described, and for the purpose set fo.th.

253,611. MONUMENTAL VASE FOR FLOWERS. JAMES J. JOHNSTON, Columbiana, Ohio. Filed Dec. 23, 1881. (No model.)



Claim.—1. A monumental vase consisting of the base B, hard and porous shaft D, and vase A, having a water-chamber, *i*, arched wall *e*, having opening *h*, and a curved wall, *f*, substantially as herein described, and for the purpose set forth.

2. A monumental vase consisting of the base B, hard and porous shaft D, vase A, having recessed side walls for the reception of inscription tablet or tablets, water-chamber *i*, arched wall *e*, having opening *h*, an arched wall, *f*, and cap C, forming air-space *j*, substantially as herein described, and for the purpose set forth.

253,612. BRACELET. WILLAT A. JOHNSON, Phœnix, assignor to himself and P. & A. Liston, Providence, R. I. Filed Dec. 31, 1881. (No model.)

Brief.—The hinge is soldered to the outer side of the back plates and located at one side of the joint. To one of the plates is secured a flat catch-stud having a notch on its inner edge and on its outer edge a spring. The notch receives the catch on the opposite plate.



Claim.—1. In a bracelet, the combination of the back and front plate with a separately-formed hinge-joint placed to one side of the joint between the two arms of the bracelet, and concealed from view within the inner and outer plates and edges of the bracelet, substantially as described.

2. In a bracelet, the combination of the flat catch-stud D, provided at its edges with a notch, *d*, and spring E, attached to one arm of the bracelet, with the catch *e*, attached to the end of the opposite arm, to be operated by the edgewise movement of the arms, substantially as described.

253,613. WAGON-BRAKE. JOHN C. KIMES, Wodesville, W. Va. Filed Oct. 19, 1881. (No model.)



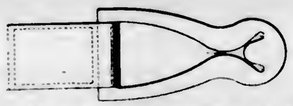
Claim.—The bounds C, supporting the plate D, having brackets or bails E, in combination with the brake-bar F, rods I, springs G, flexible protecting-straps F', and mechanism for operating the brake-bar, all arranged substantially as herein described, for the purpose set forth.

253,614. BAG OR SATCHEL. LUDWIG LOWENBERG, New York, N. Y. Filed Dec. 27, 1881. (Model.)



Claim.—A bag or satchel the body of which is made of longitudinal straw braids sewed sidewise of each other to a strengthening-backing, substantially as set forth.

253,615. GARMENT-SUPPORTER. MORRIS MARCUS, New York, N. Y. Filed Dec. 10, 1881. (Model.)

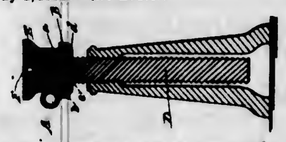


Claim.—The garment-supporter composed of a plate with a main opening and two branch slots that pass at the edges of a round-ended finger, *i*, the ends of the slots being the widest, and there being three narrow places to nip and hold the fabric, substantially as set forth.

253,616. PREPARING TALC AND COATING ARTICLES THEREWITH. HUGH MCCORMICK, San Francisco, Cal. Filed Nov. 12, 1881. (No specimens.)

Claim.—The method herein described for preparing talc for coating articles therewith, consisting in first cleaning it with water, then drying it and again moistening it with water, and then adding some substance to give it adhesion and cause it to dry hard—such as linseed-oil, varnish, glue, gelatine, silicates of soda or potassa, &c.—and reducing it to the required consistency with water, alcohol, or turpentine, &c., and then applying it with a brush or pen to any substance, substantially as herein described.

253,617. JACK-SCREW. SERVINE C. MCGILL, Chicago, Ill. Filed May 3, 1881. (No model.)



Claim.—1. The purchase-ring and pawl-carrier A, with socket K on the side to receive the purchase-lever, and socket *f*, in which the pawl acts, substantially as described and shown.

2. The removable head with holes or ratchet-teeth *h* and center socket, *d*, substantially as described and shown.

3. The pawl C, with handle *i*, in combination with spring *j*, substantially as described and shown.

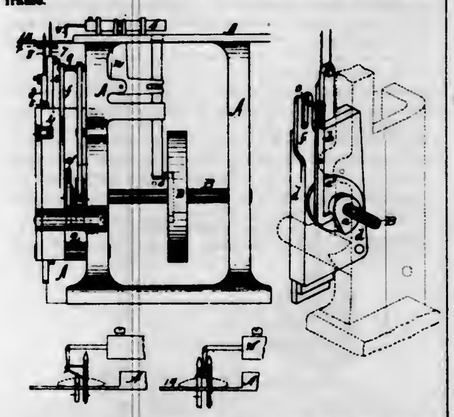
4. The screw D, with tenon *e*, in combination with ratchet and removable head B, substantially as described and shown.

5. The screw D and the ratchet-ring cap B, rigidly secured thereon, combined with the pawl-ring A, seated on the exterior periphery of said cap, and removable therefrom without disturbing the connection of cap B with the screw.

6. The screw D, the ratchet-ring cap B, rigidly secured thereto, and the pawl-ring A, seated on the exterior periphery of said cap, combined with the removable swivel-table or cap E, resting upon the cap B, and capable of turning thereon to support the weight to be lifted without contact with the screw.

253,618. MACHINE FOR SEWING FLAT BUTTONS TO FABRICS. JAMES H. MORLEY, Holyoke, Mass., assignor to the Morley Sewing Machine Company, of Maine. Filed Mar. 25, 1881. (No model.)

Brief.—The thread carried up through one hole in the button by an eye-pointed needle is carried by a looper across the path of a hooked needle, passing up through another hole and down, and enchained on the under side of the fabric. The buttons and fabric are fed along by the needles, which are carried by a swinging frame.



Claim.—1. The combination, in a needle-feed machine for sewing flat or drilled eyed buttons to fabrics with an eyed needle and a hook-needle, two independent needle-bars, a pivoted needle-bar case carrying both needle-bars side by side, and operating mechanism, of a loop-carrier located above the work on the cloth-plate to move forward and back across the line of the feed-motion of said needles, substantially as set forth.

2. The combination, in a needle-feed sewing-machine, of the needle-bar case *d*, pivoted in frame A, a hook-needle and an eyed needle, two needle-bars standing side by side, and of appliances, substantially as described, for imparting to said needle-bars differential vertical movements, and for imparting to said needle-bar case a vibratory movement in said frame, substantially as set forth.

3. The combination, in a sewing-machine, with a movable needle-bar case, of the crank-disk *a'*, having fixed in it the crank-pin *c*, and two needle-bars having cam-slots in them of varying form, in both of which slots said crank-pin operates simultaneously, substantially as set forth.

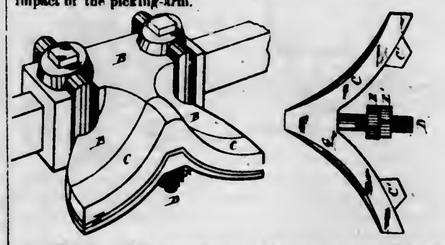
4. The combination, with the needle-bar case pivoted to frame A, and having the slotted arm *f* thereupon, of the feed-lever *b*, having the stud *e* adjustably secured thereto, cam *a* on shaft B, and spring 10, substantially as set forth.

5. In a needle-feed sewing-machine, the combination, with two independent needle-bars arranged side by side, and mechanism to operate said needle-bars vertically, and needle-feed mechanism, substantially as described, of a loop-carrier to catch and hold the thread-loop while the ends of the needles swing away from it, substantially as set forth.

6. The combination, in a sewing-machine, of two needle-bars, a hook-needle and an eyed needle, and operating mechanism, of a movable needle-bar case and feed mechanism, and of a loop-carrier having a reciprocating movement across the line of movement of said needles, substantially as set forth.

253,619. PICKING-SHOE FOR LOOMS. HERBERT E. MORLEY, Rockville, Conn. Filed June 3, 1881. (No model.)

Brief.—A detachable protecting-plate for receiving the blow of the picking-arm is secured to the body of the shoe by means of a screw-bolt attached to the plate, which is passed through and secured below the body by nuts. Studs upon the plate fit into sockets in the body to prevent displacement, and an elastic packing between the body and protecting-plate modifies the shock of impact of the picking-arm.



Claim.—1. The combination of the separate plate C, having a screw-bolt, D, and studs C', with the body of a picking-shoe for a loom, substantially as described.

2. The combination of the separate cam-plate C with its screw-bolt D and studs C', the elastic packing F, and the body of the shoe B, substantially as described.

253,620. TREADLE-POWER FOR GRINDSTONES. JOSHUA M. NELSON, Oakdale, Cal. Filed Dec. 19, 1881. (No model.)



Claim.—1. The stand A, with its mounted grindstone C, having a shaft, B, in combination with a driving-shaft, F, journaled under said stone and carrying ratchets J, and the levers K K, with their pawls N and treadles L L, and an intermediate means for transmitting the motion of the driving-shaft to the stone, substantially as herein described.

2. The stand A, with its grindstone C, shaft B, and trough D, in combination with the shaft F, journaled in bearings E, ratchets J, levers K K, pawls N, and swinging treadles L L, and the intermediate means for transmitting motion, consisting of the sprocket-wheels G and I and the chain-belt H, substantially as herein described.

3. The combination of the shaft F, ratchets J, and the levers K K, journaled on said shaft, and having the block M, with side

sockets, *m*, containing pawls N and springs *n*, substantially as herein described.

4. The stand or frame A, having a grindstone, C, operated by the treadle-levers K K through mechanism as shown, in combination with the seat P, having a stem, *p*, with notches or grooves *c*, and the support O, having its end bent upward and perforated to receive said stem, substantially as described.

5. The support O, with its upturned end, and having holes *o*, in combination with the seat P, having a stem, *p*, with notches or grooves *c*, arranged substantially as and for the purpose described.

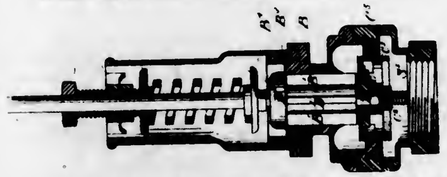
6. The combination and arrangement of the stand A, grindstone C, shaft B, trough D, sprocket-wheels G and I, chain-belt H, side supports or bearings, E, shaft F, with its ratchets J, levers K K, with their pawls N and the treadles L L, and the seat P, with its stem *p*, supported by the hanging piece O, as and for the purpose herein described.

253,621. SEWING-MACHINE SHUTTLE. WIDELOW R. PARSONS, Waterloo, Iowa. Filed July 28, 1881. (Model.)



Claim.—The shuttle A, provided with the notch B, projection C, and shoulder D, in combination with the spring F, provided with the hole G, hook J, and the points I, and the set-screw O, which is passed through the spring into the shuttle between the ends of the spring, substantially as shown.

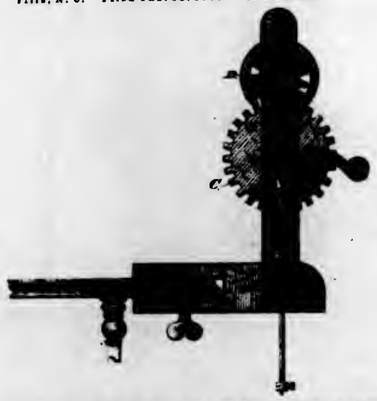
253,622. POP SAFETY-VALVE. WM. E. PEARSON, Boston, Mass., assignor to Samuel F. Pearson, Portland, Me., and John O. Cheever, Boston, Mass. Filed Sept. 12, 1881. (No model.)



Claim.—1. In a safety-valve device, the combination of the valve B with the piston C, having an annular lateral opening, and an adjustable cylinder, C^2, all operating together substantially as described, and for the purpose set forth.

2. In a safety-valve device, the combination of the piston C and adjustable cylinder C^2 with the recurved walls of the chamber S, all operating together substantially as described, and for the purpose set forth.

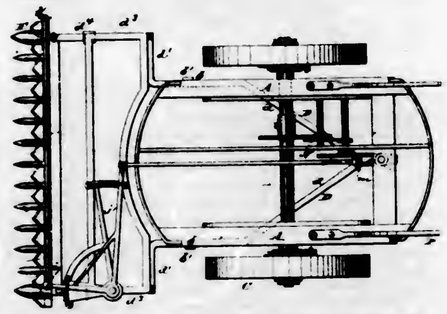
253,623. MOTIVE POWER. M. ALEXANDER PEELAND, Asheville, N. C. Filed Jan. 16, 1882. (No model.)



Claim.—1. In a mechanism for driving light machinery, the combination of the bracket, having at one end a pair of rigid jaws, with the set-screw for securing the bracket to a stand or table, the standard rising from the bracket, and supporting a pair of intermeshing gear-wheels, the fly-wheel upon the axle of one of these gear-wheels, and the reciprocating rod connected by a link with a wrist-pin upon the fly-wheel, substantially as described.

2. The combination, with the bracket having at one end a pair of rigid jaws and at its remaining end a slotted standard, with the set-screw passing through one of said jaws, the intermeshing gear-wheels C D, arranged in the slotted standard, and having their axles extended out from the standard on opposite sides thereof, the crank-handle upon the axle of one gear-wheel, and the vertical reciprocating rod working through guides attached to the standard, and connecting by a link or connecting-rod with a wrist-pin upon the fly-wheel, substantially as described.

253,624. WEED AND LAWN MOWER. ALONSO T. PIER and PERRY A. LOY, Clarinda, Iowa. Filed Sept. 17, 1881. (No model.)



Claim.—1. In a weed and lawn mower, the combination of the pivoted main frame A, having the depending upright rigid bars *b b*, provided with hooked or right-angled ends *b' b'*, and the bifurcated or forked shaft D, constructed substantially as shown, and flexibly connected to the main frame A, substantially as and for the purposes specified.

2. In a weed and lawn mower, the combination, with the main frame A, of the bifurcated or forked shaft D, suspended from said frame near its rear end by a flexible connection, the arms *d d* of said shaft extending forward of said frame and bent upward on substantially a horizontal line therewith and connected by the frame G, and the sickle-driver and operating mechanism, substantially as and for the purpose herein shown and described.

3. In a weed and lawn mower, the combination of the sickle-bar, flexibly connected to the arms of the bifurcated shaft, and the sickle-bar supporting-shoes flexibly connected to vertically-adjustable upright bars *f f*, connected to the arms of the bifurcated shaft, substantially as and for the purpose herein shown and described.

4. In a weed and lawn mower, the combination, with the supporting-shaft and wheels having pawl-and-ratchet connections, of the pivoted main frame provided with the supporting-arms *b b b' b'*, the bifurcated shaft D, flexibly connected at its rear end to the frame A and carrying at its forward end the sickle-bar and sickle, the sickle-driver connected to and extending over the entire length of sickle, and mechanism, substantially as described, for connecting said sickle-driver with the operating-gear of the machine, substantially as and for the purpose specified.

253,625. INSECT-DESTROYER. FRANCIS T. PISTER, Schulenburg, Tex. Filed Dec. 19, 1881. (No model.)



Claim.—The combination of the frame, collar, or ring, grooved upon its top so as to hold an absorbent material, and provided with the flange upon its under side, to be pressed into the earth, with a can provided with a stop-cock for holding the poisonous liquid, the can being placed in such relation to the collar that the fluid will drop from the cock into the collar, substantially as described.

253,626. CAR-COUPLING. JOHN A. PORTER, St. Louis, Mo. Filed Oct. 7, 1881. (No model.)

Claim.—1. The combination of the draw-heads B B', having the laterally-elongated mouths *b'* and the shoulders *b'* at the top and bottom, respectively, of the chambers *b*, and the bolt C, having the flattened heads *c c*, substantially as described.

253,626.



2. The combination of the draw-heads B B', having the laterally-elongated mouths *b'* and the shoulders *b'* at the top and bottom, respectively, of the chambers *b*, and the bolt C, having the flattened heads *c c* and the handle D, said handle being extended and shaped substantially as described.

3. The draw-head B, having the shoulder *b'*, shaped as shown, for the purpose of supporting the handle D of the bolt C, substantially as described.

253,627. BUTTON-FASTENING. GEORGE W. PRENTICE, Providence, R. I., assignor to the Heaton Button Fastener Company, same place. Filed Dec. 28, 1881. (No model.)



Claim.—As an improved article of manufacture, the herein-described button-fastener, consisting of the blank or plate A, provided with the fastening-prongs B, arranged upon the sides thereof, and with the curved spring-jaws C C', formed from the central part of said plate and bent at right angles thereto, substantially as and for the purpose specified.

253,628. MAGAZINE SPRING-GUN. ABRAHAM LINCOLN RICH, Water Cure, Pa. Filed Oct. 11, 1881. (No model.)

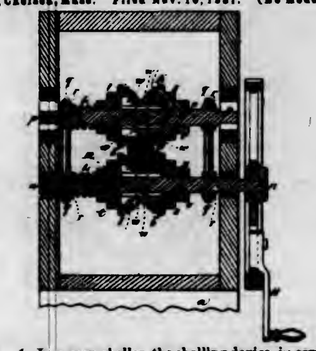


Claim.—1. In a spring-gun, the stock *a*, having its bore *b* formed by a top groove and the covering-plate *c*, and a magazine formed by a bottom parallel groove, *j*, and a bottom cover, *k*, the latter being of a less length than said bottom groove, *j*, in combination with the driver, its projecting spring *m*, the spring-trigger *g*, and the spring-feeder, all constructed and arranged substantially as described.

2. The magazine-forming groove in the under side of the stock, having a length greater than that of its bottom cover, *k*, in combination with a spring-feeder secured within said groove by the leather strip *n*, provided with the thumb-pin *n'*, substantially as described, for the purpose specified.

3. The target-practice gun herein described, consisting of a stock having parallel grooves formed in its top and bottom sides, and covered to form respectively the bore and a magazine, the shouldered driver, its inclosed spring, the spring-trigger, and the spring-feeder, the latter secured by the leather strip seated within the uncovered part of the bottom groove, and all constructed and combined as shown and described.

253,629. CORN-SHELLER. JOHN W. RICKER and TRISTRAM S. LEWIS, Chelsea, Mass. Filed Nov. 10, 1881. (No model.)

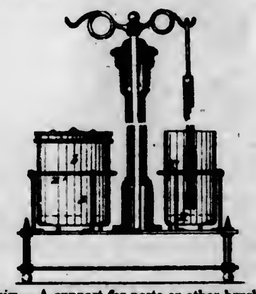


Claim.—1. In a corn-sheller, the shelling device, in combination with a pair of feed-rollers formed of a pair of conical-faced toothed portions, *e f*, one of each pair fixed upon its shaft and one of each pair sliding on its shaft, and the springs L, bearing against said loose portions, substantially as and for the purpose set forth.

2. In a corn-sheller, the combination of the feed-rolls I K, shafts *n p*, each of said rolls being composed of a portion, *e*, fixed upon its shaft, and a sliding portion, *f*, and springs L, bearing against the portions *f*, said rolls being also provided with the pointed bars *w*, projecting from each portion into the opposite hollow portion, said bars being provided with curved or inclined holding-edges 13, which fit around the cob when the portions *f* are separated from the portions *e*, and adapted to overlap and interlock with each other, whereby the rotary motive of the portions *e* is communicated to the portion *f*, all constructed to operate substantially in the manner and for the purpose set forth.

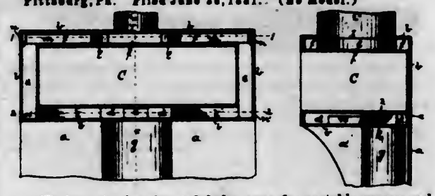
3. In a corn-sheller, the combination of the shelling device, the shafts *n p*, the latter movable in its bearings and adapted to be forced toward the former by springs *g*, the separable feed-rolls I K, having adjustable toothed bearing-faces, and interlocking bars *w*, having holding-edges 13, mounted upon said shafts *n p*, all constructed to operate substantially in the manner and for the purpose described.

253,630. BRUSH-SUPPORTER. ALBERT RITTMEYER, St. Gallen, Switzerland. Filed Dec. 27, 1881. (No model.)



Claim.—A support for paste or other brushes, consisting of a base-plate, a vertically-adjustable post having one or more supporting-arms at the upper end, and a vessel for the adhesive substance below the supporting arm or arms, substantially as set forth.

253,631. ELEVATED OVEN FOR RANGES. J. J. HENRY SCHLAG, Millvale, and THOMAS J. GRAFF and JAMES F. MCKEE, Pittsburg, Pa. Filed June 26, 1881. (No model.)



Claim.—1. An elevated bake-oven for portable ranges and stoves, provided with an inner baking-chamber, flues around said chamber, a smoke-entrance having its greatest diameter lengthwise of the oven, and a smoke-discharge having its greatest diameter crosswise of the oven, substantially as and for the purposes set forth.

2. An elevated bake-oven for portable ranges and stoves, provided with an inner baking-chamber, C, a bottom flue, *d*, end flues, *e*, and top flue, *f*, around said chamber, said bottom flue having a smoke-entrance, *g*, and deflecting-plates *h*, for throwing the products of combustion forward in the flue, substantially as set forth.

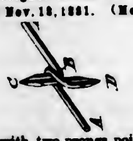
3. An elevated bake-oven for portable ranges and stoves, provided with an inner baking-chamber, C, a bottom flue, *d*, end flues, *e*, and top flue, *f*, around said chamber, said top being provided with the deflecting-plates *l* and *m*, for distributing the products of combustion in the flue, substantially as set forth.

4. In an elevated bake-oven for portable ranges and stoves, the inner baking-chamber, C, in combination with the bottom flue, *d*, having deflecting-plates *h*, end flues, *e*, and top flues having deflecting-plates *l m*, substantially as and for the purposes set forth.

5. In an elevated bake-oven for portable ranges and stoves, the top flue, *f*, provided with the discharge-opening I, having its greatest diameter crosswise of the oven, in combination with the deflecting-plates *l* in said flue around said opening, substantially as and for the purposes set forth.

Claim.—1. The actuating-train and its hand-operated main

253,632. BARB FOR WIRE FENCES. HENRY J. SCHNEIDER, Burlington, Iowa, assignor of one-third to Otto V. Hoffmann, same place. Filed Nov. 18, 1881. (Model.)



Claim.—A barb with two prongs pointing in opposite directions in one piece with the strand A, formed by bending the strand A at points B, C, and D, and twisting the same backward, over, under, and around the double wire at B, and leading it forward in the line of the strand A, the ends of C and D being trimmed to points in such manner as not to cut through the wire, substantially as and for the purpose described.

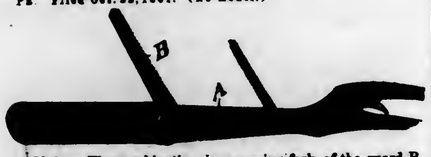
253,633. COMBINED MEASURE AND FUNNEL. O. SCHOMER, Milwaukee, Wis. Filed Oct. 10, 1881. (No model.)



Claim.—1. In the construction of measuring-cups, the method of fixing the gage-point, consisting in placing a cross wire or rod at the supposed point and bending this rod at the center until its apex coincides with the surface of an exact quantity of liquid from a standard measure, as described.

2. As a new article of manufacture, the combined measuring-cup and funnel described, consisting of the cup A, extension C, bent rod B, half-cover D, and spout E, arranged relatively to each other as shown, and for the purpose set forth.

253,634. CARVING-FORK. THORNTON A. SMITH, Philadelphia, Pa. Filed Oct. 22, 1881. (No model.)



Claim.—The combination, in a carving-fork, of the guard B, with file-teeth cut thereon, and the shank A, formed to operate as a steel, both substantially as set forth.

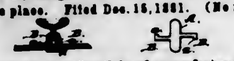
253,635. BUTTON-FASTENER. FRANKLIN A. SMITH, Jr., Providence, R. I., assignor to the Heaton Button Fastener Company, same place. Filed Dec. 15, 1880. (No model.)



Claim.—1. The herein-described button-fastener, consisting of the two prongs B B', provided respectively with an eye or loop, C, and a table or plate, D, substantially as and for the purpose specified.

2. The herein-described blank for button-fasteners, consisting of the plate provided with a front and rear prong, an intermediate nock or loop, and an enlarged base or table, substantially as and for the purpose specified.

253,636. BUTTON-FASTENING. FRANKLIN A. SMITH, Jr., Providence, R. I., assignor to the Heaton Button Fastener Company, same place. Filed Dec. 15, 1881. (No model.)



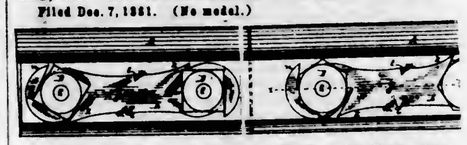
Claim.—As an improved article of manufacture, the herein-described button-fastener, consisting of the plate A, provided with the curved arms or wings B, having spurs *a*, adapted to interlock within the said wings or arms, substantially as and for the purpose specified.

253,637. BUTTON-FASTENER. FRANKLIN A. SMITH, Jr., Providence, R. I., assignor to the Heaton Button Fastener Company, same place. Filed Dec. 13, 1881. (No model.)



Claim.—A button-fastener formed as described, and composed of the intermediate table, A, one end whereof is bent up to form a loop or staple, C, terminating in a downwardly-projecting prong, B, and the opposite end provided with a similar prong bent upward and at right angles to the said plate A, substantially as and for the purpose specified.

253,638. NUT-LOCKING PLATE. JOHN SMITH, Verona, Pa. Filed Dec. 7, 1881. (No model.)



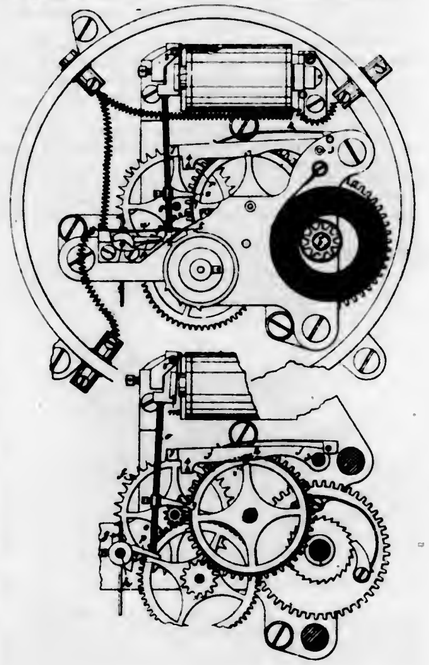
Claim.—1. The nut-locking plate E, adapted to fit over two adjacent bolts, and having the spring-lips *k*, the edges whereof extend into the plate beside the bolt-holes and diagonally of its length, and the auxiliary spring-lips *n*, the edges whereof are at a different angle from those of the spring-lips *k*, substantially as and for the purposes set forth.

2. The nut-locking plate E, adapted to fit over two adjacent bolts, and having the convex washers *f*, spring-lips *k*, the edges whereof extend into the plate diagonally of its length, and the auxiliary spring-lips *n*, having their edges differing in line from those of the spring-lips *k*, substantially as and for the purposes set forth.

3. A nut-locking plate having the spring-lip *k* extending into the plate beside the bolt-hole and diagonally of the length of the plate, and the fulcrum-point *m*, adapted to hold up the spring-lip, substantially as and for the purposes set forth.

4. The locking-plate E, adapted to fit over two adjacent bolts having convex washers *f* at each end, being formed concave in its length, as at *g*, between said washers, and having spring-lips *k*, the edges whereof extend into the plate beside the washers and diagonally of its length, substantially as and for the purposes set forth.

253,639. NON-INTERFERING FIRE-ALARM BOX. JOSEPH W. STOVER, Newton, Mass. Filed June 9, 1881. (No model.)



Claim.—1. The actuating-train and its hand-operated main stopping device, combined with the secondary or non-interfering stop for the said train and controlling electro-magnet therefor, arranged and to operate substantially as and for the purpose described.

2. The actuating-train and hand-operated main stopping device therefor, combined with the secondary stop, properly located to engage a different portion of the said train from the said main stopping device, and the controlling electro-magnet for the said secondary stop, substantially as and for the purpose described.

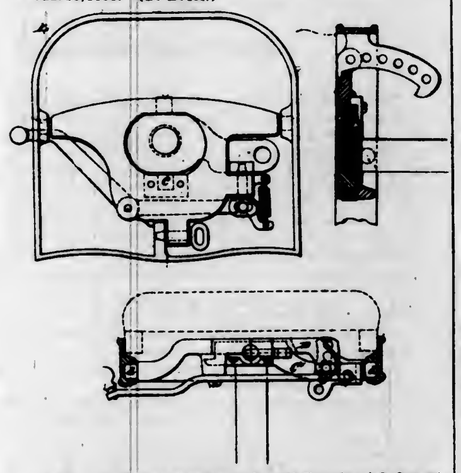
3. The actuating-train and its hand-operated main stopping device, and the secondary stopping device therefor and its controlling electro-magnet, combined with the holding device for the said secondary stopping device, substantially as and for the purpose described.

4. The actuating-train, including the stop-wheel and escapement, and the stop-engaging arm connected with the latter, combined with the main stop-arm and starting-lever therefor, and the electro-magnet, its armature, and stop-rod connected therewith, substantially as and for the purpose described.

5. In a non-interfering signal-box, the actuating-train, combined with the electro-magnet, its armature, and the non-interfering stopping device for the said train operated by the said armature, substantially as and for the purpose described.

6. The actuating-train and electro-magnet and its armature, provided with a stopping device for the said train, and the hooked finger connected with the said stopping device, combined with the train-wheel and its notched holding-flange, substantially as described.

253,640. DENTIST'S CHAIR. JOHN S. THOMPSON, Greenville, S. C., assignor to Melville M. Johnston, New York, N. Y. Filed Jan. 15, 1881. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of the post or plunger, the oscillatory cross-head swiveled thereto, the oscillatory seat-frame swiveled to the said cross-head so as to be capable of moving in a plane at right angles to the plane of oscillation of the cross-head, and independent locking mechanisms, substantially as described, the one locking the frame to the cross-head, the other locking the cross-head to the plunger.

2. The plunger or post and its hub, provided with a lateral extension for supporting the spittoon and bracket attachment, in combination with the oscillatory cross-head carried by and swiveled to the hub, the seat-frame carried by and jointed to the cross-head so as to be capable of independent oscillatory movement in a plane at right angles to the plane of oscillation of the cross-head, and independent locking mechanisms, substantially as hereinbefore shown and set forth.

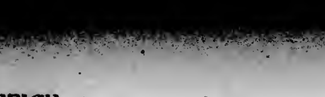
253,641. MAGAZINE FIRE-ARM. WILLIAM TRAUER, Louisville, Ky. Filed July 25, 1881. (No model.)

Claim.—In a magazine-gun provided with guides, as described, for directing the head of the shell into position, the combination therewith of a bolt provided with a longitudinal finger or extension adapted to travel underneath the shell and lift its forward end, substantially as and for the purpose set forth.

253,641.

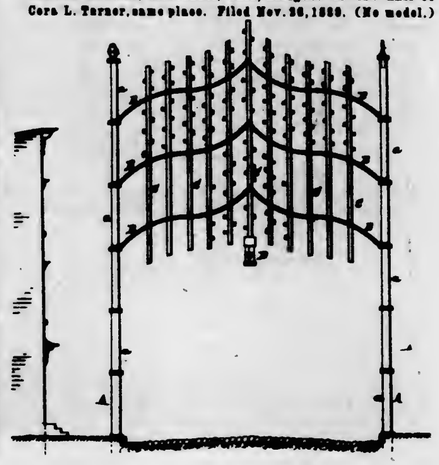


253,642. CLASP FOR CORSET-STIFFENERS. CHRISTIANA V. TURNER, Nicola Valley, British Columbia, Canada, assignor of one-half to David K. McMullen, San Francisco, Cal. Filed May 19, 1881. (Model.)



Claim.—The device for securing the stiffeners in corsets and protecting the cloth from wear at the ends of the stiffeners, consisting of the clasp or fastener C, having a perforated head, *c*, fitted with an eyelet, E, and having the points *e e*, when constructed and adapted to be applied substantially as herein described.

253,643. MEANS FOR SUPPORTING TELEGRAPH-WIRES. SAMUEL TURNER, Cincinnati, Ohio, assignor of one-half to Cora L. Turner, same place. Filed Nov. 26, 1880. (No model.)

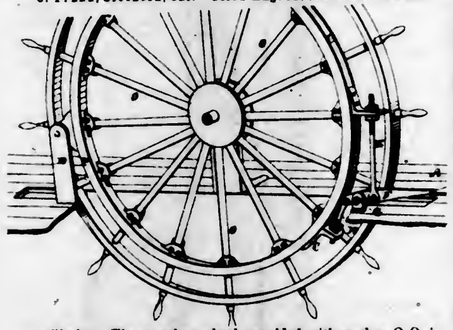


Claim.—1. The arches, as B, and stanchions, as C, vertically arranged upon said arches, and provided with insulators carrying the wires, combined and located substantially as and for the purposes specified.

2. The arches, as B, stanchions, as C, arranged upon said arches substantially as described, and constructed in sections and provided with insulators, all combined and located substantially as and for the purposes set forth.

3. The posts A, consisting of sections *a*, said sections being provided with shoulders *b b'*, in combination with the arches B, the latter being provided with Y-shaped extremities, substantially as and for the purposes specified.

253,644. FRICTION-BRAKE FOR STEERING-WHEELS. W. C. TYLER, Stockton, Cal. Filed Aug. 31, 1881. (No model.)



Claim.—The steering-wheel provided with spokes O O, in combination with the removable brake-rim P, provided with fastening-lugs, in combination with the fastening-stirrups straddling the spokes and secured to the lugs, and the brake-lever and compression-band, all constructed, arranged, and operated as set forth.

253,645. ELECTRIC LAMP. WILLIAM L. VORLEEB, Morton, Pa. Filed June 24, 1881. (No model.)



Claim.—1. In an electric lamp of the character herein specified, the incandescing filament of carbon A, plated at its extremities and united by means of solder to the extremities of platinum conducting-supports B, extending to the exterior of the lamp and held in place by a spherical mass of non-conducting material, C, seated in the neck of the globe, said conductors B and incandescing filament A forming a continuous unbroken conductor, substantially as shown and described.

2. In an incandescent electric lamp of the character herein specified, the combination, with the transparent bulb and neck formed in one piece, of a spherical mass of non-conducting material seated in the neck, the two conducting-supports for the carbon filament secured in said mass and passing downward side by side a slight distance apart from each other through the neck of the bulb, said neck being sealed around the conductors at its lower extremity, substantially as shown and described.

253,646. INCANDESCENT ELECTRIC LAMP. WILLIAM L. VORLEEB, Morton, Pa. Filed Dec. 13, 1881. (No model.)



Claim.—1. In an incandescent electric lamp of the character herein specified, a support for the incandescing filament of carbon, resting in the neck of the globe and held firmly in place by sealing the conductors firmly in the solid portion of the tube passing to the bulb or globe, substantially as set forth.

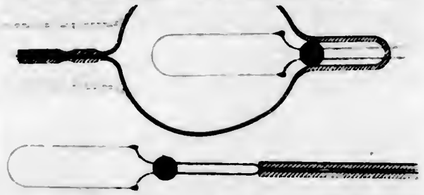
2. In an incandescent electric lamp, a support for the incandescing filament of carbon, constructed of glass, said support being provided with an enlargement fitting into the neck of the globe, and an arm containing one of the conductors extending upward within the globe, substantially as shown and described.

3. In an incandescent electric lamp, a support for the incandescing filament of carbon, formed of non-conducting material, said support being provided at bottom with an enlargement fitting into the neck of the globe and with an arm containing one of the conductors to the incandescing filament of carbon, adapted and arranged to support the carbon, substantially as shown and described.

4. The support for the incandescing filament of carbon F, having enlargement B' fitting into tube A', and arm B, extending upward within the lamp-bulb, the conductors to said carbon passing through the enlargement and supporting-arm, and being fused therein at *a*, substantially as shown and described.

5. In an incandescent electric lamp of the character herein specified, the combination, with the bulb or globe A, of the tube A', having a solid portion, A", at its lower extremity sealed around the conductors E, and the support for the incandescing filament of carbon, having enlargement B' and an arm B, the whole combined and arranged to operate substantially as shown and described.

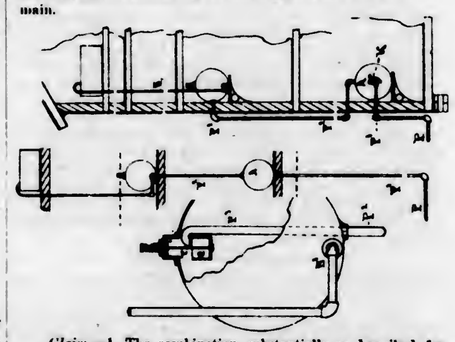
253,647. INCANDESCENT ELECTRIC LAMP. WILLIAM L. VORLEEB, Morton, Pa. Filed Dec. 12, 1881. (No model.)



Claim.—The herein-described improvement in manufacturing incandescent electric lamps, consisting in forming the glass bulb with an enlarged opening at the top and a contracted opening at the bottom, securing the platinum wires connected with the filament of carbon in a ball or mass of non-conducting material larger in diameter than the mouth of the opening from the small tube into the bulb, attaching the ends of the conductors to a rod or holder, and then passing the filament and the platinum wires thus prepared into the bulb at its enlarged opening and bringing the ball of refractory material against the neck of the bulb, and sealing the conductors in the extremity of the small tube and closing the lamp in the usual manner.

253,648. AUTOMATIC WATER-LIFTER. ADDISON G. WATERHOUSE, New York, N. Y., assignor of one-half to D. A. Schuyler, same place. Filed Sept. 1, 1881. (No model.)

Brief.—Water from the main is forced into the relay-tank B, the float-valve c opening to allow the escape of the air. The water is then withdrawn from the lower tank, A, the said tank and connecting-pipe filling with air, when water is again admitted to A, which forces the air into tank B, thereby forcing the water in B into the reservoir C. Fig. 2 shows a modification whereby the same result is obtained by the varying pressure of water in the main.

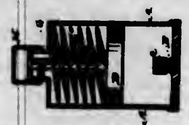


Claim.—1. The combination, substantially as described, for an automatic water-lifting apparatus, of a relay-tank placed at or near the level to which the water naturally rises, a pipe opening into said tank at or near its top, and having free and constant communication therewith, as described, an automatic air-valve in the top of the tank, and a pipe connected with the tank at or near its bottom and leading to a reservoir-tank.

2. The combination, substantially as described, of relay-tank B, pipe $P^{\prime\prime}$, in constant and free communication therewith at or near its top, so that it may either supply water thereto or may receive air therefrom introduced into said tank through an automatic air-valve at its top, an automatic air-valve for said tank controlling an air-vent, a supply-tank, A, and a two-way cock, K.

3. The combination, substantially as described, of the relay-tank provided with automatic air-vent, pipe $P^{\prime\prime}$, in free and constant communication with said tank at or near its top, supply-tank A, means for connecting and disconnecting said tank with the pipes supplying water under pressure and for drawing water from said tank, and outlet-pipe opening into the relay-tank at or near its bottom and leading to a storage-tank.

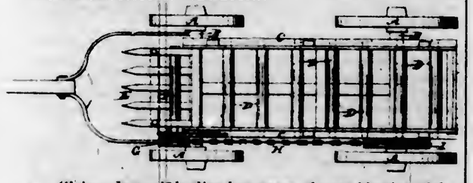
253,649. EXPLODER FOR FIRING BLASTS. ALEXANDER WATSON, San Francisco, Cal. Filed Nov. 5, 1881. (No model.)



Claim.—1. In a cartridge-exploder, a soldered firing device, in combination with a cap or receptacle adapted to receive and apply to the solder a body of mercury for the purpose of releasing the firing device, for the purpose set forth.

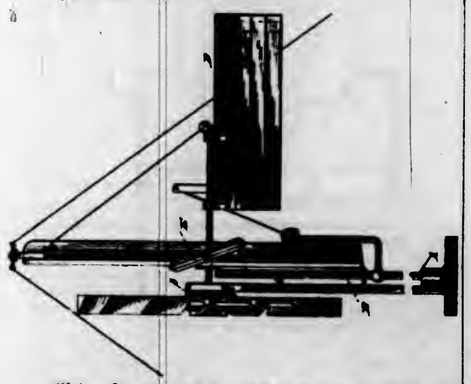
2. The cylinder A, having within it the anvil B, the hammer D, and the spiral or other spring F, against which the hammer is forced back, and held by a solder or cement, as shown, in combination with a receptacle, H, to contain quicksilver, and by which it may be applied to the solder, so as to release the hammer, substantially as and for the purpose herein described.

253,650. HAY-WAGON. WILLIAM H. WHITE, Elbi, Wash. Filed Oct. 25, 1881. (No model.)



Claim.—In a self-loading hay-wagon, the combination of the bent axle B, carrying the body or bed of the wagon close to the ground, the series of rollers D D, the rake E, roller F, pulley G, belt or chain H, and pulley I, substantially as and for the purposes set forth.

253,651. WINDMILL. JAMES M. ADAMS, Sterling, Kans. Filed Sept. 12, 1881. (No model.)



Claim.—In a windmill, the combination, with the shaft *a*, having the wheel C, the arm having the vane E, and the swinging vane D, having an arm, *d*, of the fixed shaft A, having the fixed right-angled hooked arm *f*, and the cord *e*, connecting the vane D to the arm *f*, substantially as shown and described, for the purpose set forth.

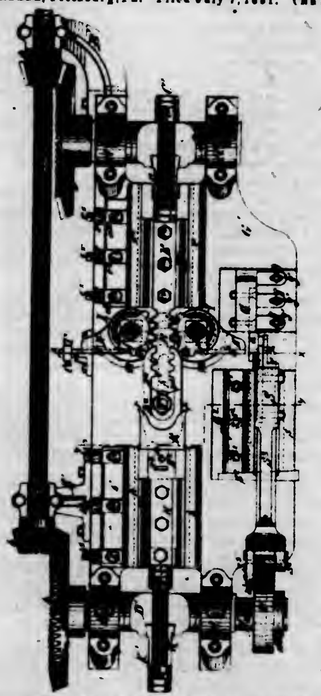
253,652. KNITTING-MACHINE. WALTER AIKEN, Franklin Falls, N. H. Filed Nov. 21, 1881. (No model.)

Brief.—The invention is an improvement upon the class of devices shown in Patents No. 15,435 and No. 211,743. The narrowing-slides are fitted to slide between the cam-bar and the needle-bed, and engage the auxiliary shanks of the needles from which the loops have been removed for narrowing the fabric, and hold the same back in their grooves, so that they do not reciprocate, as heretofore, after the yarn-loops have been removed.



Claim.—The cam-bar provided at its under side with the knitting-cam, combined with the narrowing-slides C C', fitted to slide under the said cam-bar as described, or between it and the needle-bed, and with the needle-bed and the series of needles provided with main and auxiliary shanks or projections, whereby some of the said needles may be held back and at rest in the grooves of the needle-bed during the reciprocation of the cam-bar, substantially as and for the purpose described.

253,653. MACHINE FOR BENDING CAR-COUPLING LINKS. J. B. ALEXR, Pittsburg, Pa. Filed July 7, 1881. (No model.)



Claim.—1. In a machine for bending car-coupling links, a bending-mandrel, F, arranged to move longitudinally with reciprocating motion, in combination with rotary moving dies I, arranged on either side of the path of motion of the mandrel, such dies having their working-faces formed of a curved part, *u*, and a straight tangential part, *u'*, substantially as and for the purposes set forth.

2. In a machine for bending car-coupling links, the combination of a reciprocating mandrel, rotary moving bending-dies ar-

ranged on either side of the path of motion of the mandrel, and adapted with the mandrel to bend the blank into U form around and clamp it upon the mandrel, and a reciprocating die arranged to press upon and bend the ends of the U-shaped blank together around the end of the mandrel, substantially as set forth.

3. The combination of reciprocating rack-bar E, rotary moving bending-dies I I, geared with the rack, mandrel F, secured to the rack-bar, and reciprocating die R, substantially as set forth.

4. In a machine for bending car-coupling links, the combination of a reciprocating mandrel, rotary moving dies arranged on either side of the mandrel and adapted therewith to bend the blank into U form, a reciprocating die for bending together the ends of such blank, and an anvil or rest adapted to support the blank as against the pressure of the latter die, substantially as set forth.

5. The combination of rack-bar E, rotary moving dies I I, geared with the rack-bar, reciprocating mandrel F, reciprocating die R, and anvil or rest V, substantially as set forth.

6. The combination of reciprocating mandrel F, rotary moving dies I I, arranged on either side of the path of motion of the mandrel, such dies having arc faces *n* and straight faces *n'*, and end-supporting anvil or rest V, having mandrel-recess *r* and link-recess *s'*, substantially as set forth.

7. The reciprocating bending-mandrel F, having a concave seat or shoulder, *f*, extending part way around the same above the plane or line of bending, in combination with rotary bending-dies I I, having straight bending-faces *n' n'*, with grooves n^3 therein, such grooves being adapted to register with the blank-seat on the mandrel formed by shoulder *f*, substantially as and for the purposes set forth.

8. The combination of reciprocating rack E, dies I I, geared with the rack, such dies having straight bending-faces *n'*, with grooves n^3 therein, which incline downward, as described, feed-supports *m m*, reciprocating mandrel F, and reciprocating die R, having divergent horns *r r*, substantially as and for the purposes set forth.

9. The combination of rack-bar E, mandrel F, yoke C', and cam C, adapted to give reciprocating motion to the mandrel, with a period of rest after each stroke, dies I I, geared with the rack, anvil V, reciprocating die R, arranged to bend together the ends of the blank while the mandrel is at one position of rest, and a shear device for severing blanks from a rod while the mandrel is at its other position of rest, substantially as set forth.

10. The combination of reciprocating mandrel F, rotary moving bending-dies I I, reciprocating die R, and means for separating die R and the mandrel on their back stroke to facilitate discharge of the bent blank, substantially as set forth.

11. The rotary moving bending-dies I I, having central pivots, O, and circular grooves *m' m'* in their under side faces, in combination with curved projections *m m*, adapted to enter the grooves and afford lateral support for the dies, mandrel F, and rack-bar E, the latter being geared with the dies and carrying the mandrel, substantially as set forth.

12. In combination with the bending mechanism of a machine for bending car-coupling links, the shear-head G and shear-blade *a*, reciprocating shear-head S, and blade *a'*, such shear heads and blades being adjustable in the direction of the line of feed, and gage or stop T, also adjustable in position in the line of feed, substantially as set forth.

13. In a machine for bending car-coupling links, the combination of fixed shear-head G and blade *a*, reciprocating shear-head S and blade *a'*, such shear-blades having inclined cutting-faces a^2, for giving an oblique cut to the blank, and reciprocating shear-guide Z, substantially as described.

14. The combination of table G', shear-head G, and blade *a*, such head having a slot-and-bolt connection, *g g'*, with the table, reciprocating shear-head S and blade *a'*, plate S^2, wedge S^3, removable guide-strip *s'*, and bolts s^4, substantially as and for the purposes set forth.

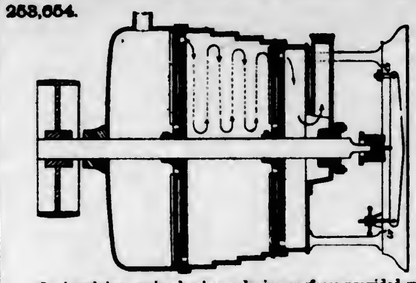
15. The combination of shaft D', yoke K', and cam K, the latter being arranged to give the yoke motion in a horizontal direction, rest *q'*, for the under side of the yoke, bar H, slide-block H', and die R, substantially as set forth.

253,654. APPARATUS FOR REDUCING WOOD AND OTHER MATERIAL TO PULP FOR PAPER. STEPHEN H. ALLEN, Duxbury, Mass. Filed Aug. 17, 1881. (No model.)

Claim.—1. The improvement in reducing wood and other material to fiber for paper-pulp, consisting in crushing or jamming the same between broad-faced bars, substantially as described.

2. The improvement in reducing wood and other material to fiber, consisting in crushing the material between metallic bars, plates, or other devices, and at the same time tearing or disintegrating the fiber by abrading material—such as natural or artificial stone—substantially as described.

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3. A pulping-engine having reducing-surfaces provided with broad-faced bars for crushing the fibrous material between them, substantially as described.

4. The combination, in a pulping-engine, of bars, blades, or other metallic devices with blocks or filling-pieces of natural or artificial stone, substantially as described.

5. The combination of the top and bottom plates or their equivalents, provided each with broad-faced bars arranged so that the bars on one plate cross those on the other, and means for removing one or both plates, substantially as described.

6. A series of reducing-plates arranged in pairs, in combination with a shaft carrying one plate of each pair and a casing supporting the other plate, substantially as described.

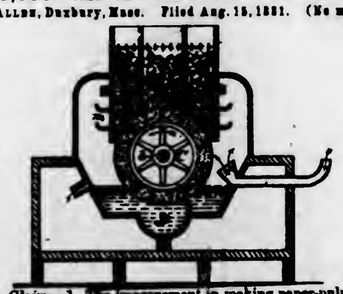
7. The combination, with the shaft and casing and a series of reducing-plates arranged in pairs, and attached one plate of each pair to the shaft and one to the casing, of means for raising and lowering the shaft and attached plates, so as to bring them closer to or farther from those attached to the casing, substantially as described.

8. A pulping-engine for reducing wood and other material to fiber for making pulp, comprising, in combination, a casing, supporting-frame, shaft, reducing-plates arranged in pairs and attached to said shaft and casing, an inlet for introducing the material into the engine and an outlet for the pulp, substantially as described.

9. The combination, with each other, of two or more pairs of reducing-plates or their equivalents—such as cylinders and concaves—provided each with bars, blades, or other metallic devices, with or without blocks or filling-pieces of abrading material, arranged in series with the space between the plates or their equivalent gradually diminishing, substantially as described.

10. A reducing-plate or its equivalent provided with bars, blades, or other metallic devices on its surface, and with blocks or filling-pieces of abrading material—such as natural or artificial stone—between the bars or blades, substantially as described.

253,655. MANUFACTURE OF PAPER-PULP. STEPHEN H. ALLEN, Duxbury, Mass. Filed Aug. 15, 1881. (No model.)



Claim.—1. The improvement in making paper-pulp, consisting in grinding or reducing to pulp wood and rags or similar material simultaneously in the same machine, substantially as described.

2. The method of preparing wood pulp so that it may be run off directly into paper by grinding wood and rags together and introducing sizing or coloring-matter, or both, into the pulp in the grinding apparatus, substantially as described.

3. The improvement in making wood pulp, consisting in reducing the wood to pulp by grinding it in the manner explained, introducing sizing between and around the fiber as it is reduced or disintegrated, and carrying off the pulp with a stream of water, substantially as set forth.

4. The combination, with a grinding-cylinder, of hoppers arranged as near as may be tangential to the periphery of the cylinder on opposite sides of the center, so that on one side the cylinder revolves against and on the other with the pressure of the stock, substantially as described.

5. The combination, with one or more grinders, of three or more hoppers arranged side by side, substantially as described.

6. The combination, with one or more grinders and two or more hoppers, of feed mechanism and a feed shaft or shafts common to the several hoppers, substantially as described.

7. The combination of one or more grinders, two or more hoppers, a feed shaft or shafts common to said hoppers, and a spiked feeder, substantially as described.

8. The combination, with the feed-shaft of a grinder for reducing wood or other stock to paper-pulp, of a set of cone-gears and means for changing at will the speed conveyed to the feed-shaft through said gears, substantially as described.

9. The combination of a pit, one or more grinders revolving in or above the same, two or more hoppers for each grinder, and one or more pipes or troughs for introducing water or other fluid, substantially as described.

10. The combination, with two or more grinding-cylinders, of a hopper between each adjacent pair of grinding-cylinders, and one or more additional hoppers for the several cylinders, substantially as described.

11. The combination, with a grinding-cylinder, of a hopper having a straight position as near as may be tangential to the periphery of the cylinder, and terminating in a tapering pocket, substantially as described.

12. A machine for reducing stock to pulp, comprising, in combination, a pit, one or more grinding-cylinders, two or more hoppers to each cylinder, a spiked feeder, and a pipe or pipes for introducing water or other fluid, substantially as described.

13. Pulp of wood and rag fiber ground or reduced to pulp by the same grinder or reducing-surfaces, substantially as described, said pulp being distinguishable by the character of the felting and interlacing of the fibers, as set forth.

253,656. MANUFACTURE OF PAPER-PULP, &c. STEPHEN H. ALLEN, Duxbury, Mass. Filed Aug. 30, 1881. (No specimens.)

Claim.—1. The method of making pulp from bark by separating the rough from the fibrous portion, tearing the latter into shreds by a picker, soaking, and beating, substantially as described.

2. The method of making bark pulp by removing the bark in sheets, separating the rough bark from the fibrous portions by planing, and then tearing the fibrous portions to shreds in a picker, soaking them, and beating them into pulp, substantially as described.

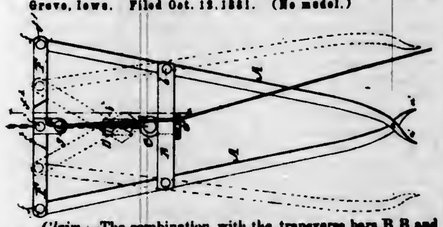
3. The method of preparing bark pulp for making paper, paper-board, and like articles by mixing the bark pulp with or without pulp from solid wood or other material while hot with asphalt sizing or other sizing, substantially as described.

4. Paper-pulp, paper, paper or leather board, or other manufacture of paper containing bark pulp alone or with other fiber sized with asphalt sizing, substantially as described.

5. The combination in paper-pulp, paper, paper or leather board, and the like, of bark pulp and solid-wood pulp, substantially as described.

6. A paper or leather board of bark pulp and solid-wood or other pulp, sized and colored with asphalt sizing or other sizing and coloring materials, substantially as described.

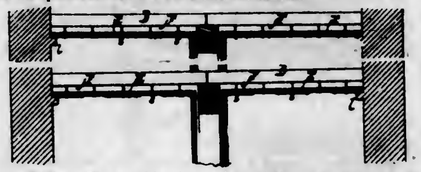
253,657. HORSE HAY-FORK. WILLIAM ANDREWS, Buffalo Grove, Iowa. Filed Oct. 12, 1881. (No model.)



Claim.—The combination, with the transverse bars B B and bar C, secured between them, and provided with the end rings, *c c'*, of the tines A, pivoted between said transverse bars, bifurcated arms F F, pivoted to the upper ends of the tines at their outer ends, and to each other at their inner ends, and each provided with oppositely-inclined inner ends, *f'*, and recesses having oppositely-inclined shoulders *f'*, and trip-plate G, pivoted to the toggle-arms by the same pin that pivots the toggles together, substantially as described.

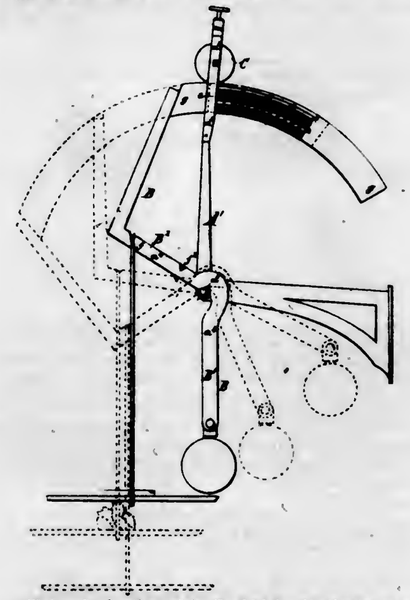
253,658. FIRE-PROOF BUILDING. JOHN ARBUCKLE, Brooklyn, N. Y. Filed Dec. 28, 1881. (No model.)

Brief.—The wooden parts of the building are covered by outer metallic plates and an inner layer of cement, secured so as to leave an air-space between the wood and the cement.



Claim.—The combination, substantially as hereinbefore described, with the wooden parts of a building, of a fire-proof covering which is composed of outer metallic plates and an inner layer of cement, and which is secured to the parts at a distance therefrom, leaving an air-space between the cement and the wood, for the purpose specified.

253,659. WEIGHING-SCALE. JOHN B. ATWATER, Chicago, Ill. Filed Nov. 12, 1881. (No model.)



Claim.—1. A roller-weight, C, which is self-adjusting to and acts as a brake upon a vibrating scaled plate of a weighing-scale, substantially as and for the purpose set forth.

2. A pressure device in combination with the roller-weight C, whereby the lever-beam B and scaled plate *g* may at will of the operator be temporarily held stationary, substantially as and for the purpose set forth.

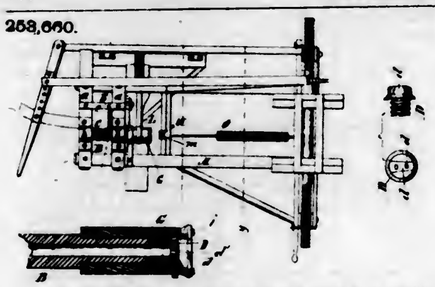
253,660. MACHINE FOR BARBING WIRE. JAMES AYARS and ALEXANDER C. DUCKER, Bushnell, Ill., assignors to the Washburn & Moen Manufacturing Company, Worcester, Mass. Filed June 14, 1879.

Claim.—1. The combination of the non-rotating holder for the main wires, the coiler, and the spring, the said parts being connected and arranged as explained, so that in operation the said holder and coiler are capable together of endwise movement against the pressure of said spring, substantially as described.

2. In a machine for barbing fence-wire, a tubular wire-holder, B, provided with holes at its tip end for two main wires, in combination with the coiling-shell G, mounted loosely on the wire-holder, about which it is arranged to revolve, and projecting over the tip end of the holder, substantially as described.

3. The tubular wire-holder B, in combination with the detachable tip D and the removable holding-die *d*, substantially as described.

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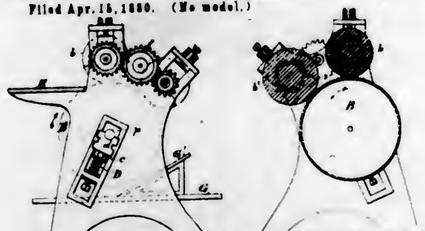
4. The coiling-shell G, provided with a notch, *g*, in combination with the adjustable lug H and the wire-holding tube B, substantially as described.

5. The face-plate I on the end of the coiling-shell, widened on one side to provide a flange, *i*, to hold the inner end of the barb, substantially as described.

6. The cylinder F, mounted on the wire-holder B, in combination with the detachable coiling-shell G, substantially as described.

7. The coiling-shell G, in combination with the wire-holder B, and the pivoted wire-support M, substantially as described.

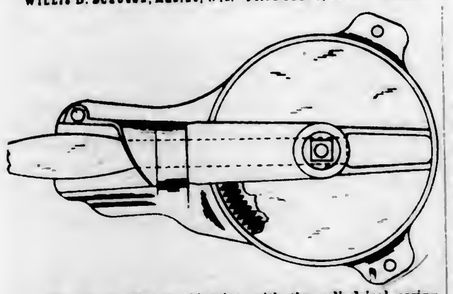
253,661. MANGLE. JOSEPH F. BALDWIN, Cambridge, Mass. Filed Apr. 15, 1880. (No model.)



Claim.—1. In a mangle, the smooth-faced heated metallic surface B, combined with the elastic-faced pressure-rolls *b b'*, having successively greater surface velocities, whereby the fabrics are stretched over and held closely against the heated polishing-surface, the elastic facings of the pressure-rolls facilitating the grasping and feeding of the fabrics, as set forth.

2. In a mangle, the combination of the polishing-surface, the pressure-rolls, a feeding-table to receive the articles to be ironed, the table G to arrest the ironed articles, and the inclined plane G' on said table to deflect the articles to the front, all constructed and arranged as shown.

253,662. WAGON-BRAKE LEVER. JOHN L. BARKER and WILLIS D. STAGGERS, Racine, Wis. Filed Jan. 3, 1882. (Model.)



Claim.—1. The combination, with the cylindrical casing adapted to be secured to the wagon or vehicle, of the friction-clutch adapted to work in said casing, the oscillating cover and its lugs, and the spring for holding the clutch in a normal position, and the lever fulcrumed to the outer face of the cover and adapted to bear against a lug on the clutch projecting through an opening in the cover, substantially as and for the purposes specified.

2. In combination with the casing provided with an internal segment and central boss, the friction-clutch located in said casing, the oscillating cover provided with lugs and a central boss, the spring for holding the parts normally, and the lever for moving the clutch, the whole arranged to operate substantially in the manner specified.

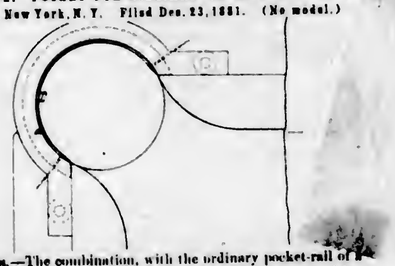
3. In combination with the casing provided with an internal segment and central boss, the friction-clutch located in said casing, the oscillating cover provided with lugs and a central boss, and the lever for moving the clutch, the whole arranged to operate substantially in the manner specified.

253,663. LOCK ESCUTCHEON. JOHN H. BARNES, New Haven, Conn., assignor to the Barnes Manufacturing Company, same place. Filed Jan. 3, 1882. (No model.)



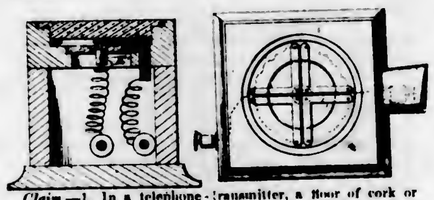
Claim.—The herein-described escutcheon, having the key-hole diametrically across its center, in width at the center substantially equal to the thickness of the key, to serve as a guide for the key, and expanded above and below to permit the turning of the key for the withdrawing of the bolt, substantially as described.

253,664. POCKET FOR BILLIARD-TABLES. PATRICK H. BARRY, New York, N. Y. Filed Dec. 23, 1881. (No model.)



Claim.—The combination, with the ordinary pocket-rail of a billiard-table, of an independent or separate cushion arranged below said rail and projecting inwardly beyond the inner edge of the rail to intercept and break the force of the ball before the latter strikes the rail, substantially as shown and described.

253,665. TRANSMITTER FOR TELEPHONES. SAMUEL H. BARTLETT and HENRY E. WAITE, New York, N. Y., assignors to Charles F. Livermore, same place. Filed Jan. 9, 1882. (No model.)



Claim.—1. In a telephone-transmitter, a floor of cork or equivalent material provided with a contact-button or electrode of carbon and loosely resting in a supporting-stand, in combination with recessed blocks of carbon or equivalent material secured to the supporting-stand, and a metallic tripod provided with pendent points resting on said button and recessed blocks, substantially as described.

2. The combination, in a telephone-transmitter, of a floor loosely upheld in its stand or support and provided with a contact-button or electrode, recessed blocks or cups of carbon or its equivalent, and a series of tripods provided with pendent points or spurs and resting by gravity on said recessed blocks or cups and button, substantially as described.

253,666. LAMP-WICK. GERHARD BÖCK, Waco, Tex., assignor of one-half to George D. Streater, same place. Filed Sept. 9, 1881. (No model.)



Claim.—A lamp-wick consisting of one or more layers of mineral wool inclosed in a textile material, the whole being sewed together by a series of parallel longitudinal stitches, substantially as described.

253,667. SETTING PEARLS ON FINGER-RINGS, &c. JULIUS BRAUNS, Newark, N. J. Filed Dec. 14, 1881. (No model.)

Brief.—The cavity in the gem is larger at the bottom than at its mouth, to receive the end of the shank having the wedge, which is forced into the cavity, causing the shank to spread and fill the cavity.



Claim.—1. The combination, in jewelry, with the body *b*, of the gem having the cavity *d* therein, the hollow shank, and wedge, all arranged and operating substantially as and for the purposes set forth and shown.

2. The combination, in jewelry, of the shank carried by the body *b*, adapted to be spread, the stone having a cavity therein enlarged at its bottom, and the wedge, all arranged and operating substantially as and for the purposes herein set forth and shown.

253,668. LOCKET. WILLIAM H. BLAISDELL, Attleborough, Mass., assignor of one-half to Sturdy, Brothers & Co., same place. Filed Dec. 16, 1881. (No model.)

Brief.—A spring forces the picture-holding slides through a slot in the side of the locket-case. Spring-catches hold such slides normally retracted within the case when desired.



Claim.—1. A locket or analogous article of jewelry, consisting of a slotted case, a slide adapted to be contained therein, a spring for forcing the slide out of the case, and a spring-actuated catch adapted for use in holding the slide retracted, and also for releasing it when desired, substantially as hereinbefore specified.

2. The combination, with the case of a locket or analogous article of jewelry, of the notched picture-holding slide, adapted to work in and out through a slot in the side thereof, a spring arranged between the inner sides of the case and slide, the spring-actuated catch, beveled as described, to adapt it for being raised automatically when the slide is forced in, and for engagement therewith and disengagement therefrom, substantially as shown and described.

3. The combination, with the locket-case having one side slotted, as specified, of the notched slide, the spring for forcing out the latter, and the spring-actuated sliding bar, which projects from the case, and has a beveled catch formed on upper end, to operate as and for the purpose shown and described.

4. The combination, with the locket-case provided with a lateral slot, of a slide having ears for engagement with portions of the case when forced out, and a spring, all arranged as shown and described, to operate as specified.

5. The combination, with the locket-case having a lateral slot, a notched picture-holding slide having ears on its outer side, as shown, a spring arranged within the case, and a spring locking-catch, all as shown and described, whereby the said slide is held steady in place within the case, as specified.

253,669. ART OF PRODUCING COLORED PHOTOGRAPHS. JEAN BAPTISTE GERMEUIL-BONNAUD, Paris, France. Filed July 7, 1881. (No specimens.) Patented in France Jan. 28, 1878, in Belgium June 30, 1879, and in Italy Sept. 30, 1879.

Claim.—1. The method of producing colored photographs, consisting in combining the coloring-matters with agents, such as albumen and sal-ammoniac, applying the colors thus prepared according to the general outlines of the picture, covering the colors with a sensitive layer and developing an image in said layer by exposure under a negative, substantially as described.

2. A pigment or coloring material mixed with albumen and sal-ammoniac, substantially as described.

3. A coloring compound comprising vegetable color, glycerine, albumen, and sal-ammoniac, substantially as described.

4. In the art of producing colored photographs with the colors covered by a layer having the photographic image developed therein, the improvement set forth, consisting in preparing the colors with agents, such as albumen and sal-ammoniac, applying the prepared colors to paper or other material, and treating the same with a bath of alcohol and acetic acid, substantially as described.

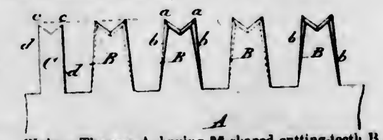
253,670. STEAM-TRAP. GEORGE B. BOOMER, New York, N. Y. Filed Dec. 1, 1881. (No model.)



Claim.—1. The combination, in a steam-trap, of the T-shaped casing having its neck provided with lateral water-escape orifices which are diametrically opposite to each other, and also provided with the steam-pipe opening into the upper portion of said casing, the open-mouthed T-shaped float, arranged to receive the water of condensation from the steam-pipe, and constructed with a neck, A', fitted in the neck B of the casing, and provided with lateral water-escape orifices *d*, substantially as shown and described.

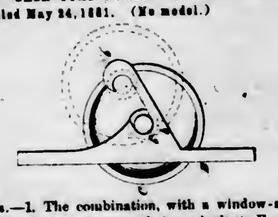
2. The combination, substantially as hereinbefore set forth, of the T-shaped casing having its neck provided with lateral water-escape orifices which are diametrically opposite to each other, and provided in its upper portion with a steam-pipe, the open-mouthed float, arranged to receive the water of condensation from the said steam-pipe, and constructed with a neck fitted into the neck of the casing, and provided with lateral water-escape orifices which are diametrically opposite to each other and in corresponding vertical planes to the orifices of the casing, the water-way connecting the lower portion of the neck with the head of the casing, and the float-guide, for the purpose specified.

253,671. CROSSCUT-SAW. ENOS M. BOYNTON, West Newbury, Mass. Filed Dec. 19, 1881. (No model.)



Claim.—The saw A, having M-shaped cutting-teeth B, each provided with two points, *a a*, dressed to cut in line, and two outer cutting-edges, *b b*, slightly inclined outward from the points, and the M-shaped clearing-teeth C, having points *c c* and vertical edges *d d*, said clearing-teeth being arranged alternately with two or more of said cutting-teeth, substantially as shown and described.

253,672. SASH-CORD PULLEY. THOMAS BREEN, Knowlton, Pa. Filed May 24, 1881. (No model.)



Claim.—1. The combination, with a window-sash and its frame, of the weighted straps or their equivalents E, and the pulleys C, adapted to slide out of the way of the ascending or approaching sash, substantially as and for the purpose set forth.

2. The combination, with the weighted metallic strap or band E, of the pulley C and its bracket B, having the upwardly-inclined ways or arms *b' b'*, substantially as and for the purpose specified.

253,673. GRIPE FOR PROPELLING CARS. RICHD. F. BRIDGWELL, San Francisco, Cal. Filed Nov. 10, 1881. (No model.)

Brief.—The automatic gripe has two jaws provided with rollers incased in ropes or belts, and consists of a stationary frame having one of the jaws secured thereto, and to a vertically-movable toothed frame is secured the other jaw, operated by a fly-wheel. The vertically-moving frame carries conical pulleys, which are automatically operated by inclined surfaces in the cable-way, whereby the cable is freed from the gripe when crossing another cable-line.

Claim.—1. A gripe for street-cars, having two jaws, which are provided with rollers which are incased in ropes or belts, in combination with the drawing-cable, substantially as shown.

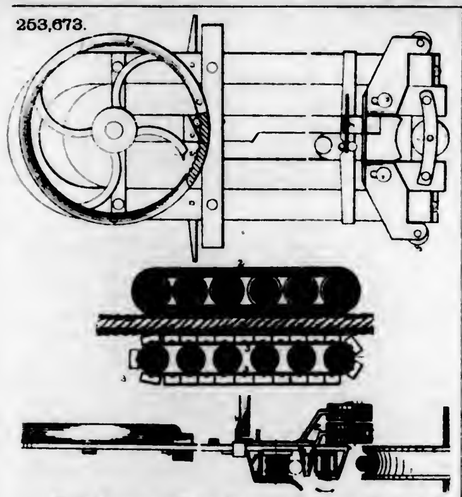
253,673.

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253,680. MECHANICAL MOVEMENT. PETER T. COFFIELD,

253,673.



2. In an automatic gripe for railroads, the combination of a stationary frame having one of the jaws secured thereto, a vertically-movable toothed frame having the other jaw secured to it, a fly-wheel, and a pinion, substantially as described.

3. In a gripe for street-cars, the combination of the two frames having the jaws secured to their lower ends, a fly-wheel, pinion, and automatically-acting dog for locking the jaws in any desired relation to each other, substantially as set forth.

4. The combination of the two frames having the jaws secured to their lower ends, a vertically-movable plate or frame provided with a flange or projection for raising the plate upward, and rollers to force the cable from between the jaws, with an inclined plane to catch under the said flange or projection, substantially as specified.

5. In a gripe for railroad-cars, the combination of the two frames having the jaws secured to their lower ends, a mechanism for raising the movable frame and its jaw, a dog for locking the movable frame and jaw in place, a projection in the road-bed for tripping the dog so as to allow the lower jaw to fall, a plate provided with means for throwing out the cable from between the jaws, and an inclined plane for raising this plate upward, substantially as shown.

6. In a gripe, the combination of the stationary frame and jaw, the vertically-movable frame and jaw, provided with a friction-roller, and an inclined plane for automatically closing the lower jaw on the cable, substantially as described.

253,674. METALLIC SEAL. EDWARD J. BROOKS, East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Filed Sept. 14, 1881. (No model.)



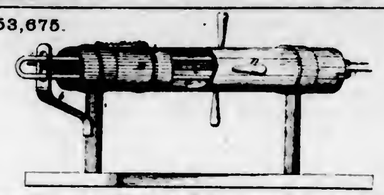
Claim.—1. In combination with a suitable shackle-wire, as herein specified, a soft-metal seal-disk cast on one end of said wire, and constructed with a threading-aperture to receive its other end, and with a recess in one of its lateral edges, into which the threaded shackle end is readily bent by a simple lateral movement, substantially as herein described.

2. The combination, in a metallic seal, of a soft-metal seal-disk constructed with recesses in its respective lateral edges, and with a threading-hole which extends into one of said recesses, and a suitable shackle-wire, as herein specified, having a straight cast-in end held in a solid portion of the seal-disk, substantially as herein described, for the purposes set forth.

253,675. MACHINE FOR BARBING FENCE-WIRE. JACOB BRUBAKER, Amos, Iowa, assignor, by mesne assignments, to the Washburn & Moen Manufacturing Company, Worcester, Mass., and Isaac L. Elwood, De Kalb, Ill. Filed Feb. 10, 1878.

Claim.—1. A fixed holder having two or more apertures for the passage of the main wires, in combination with a revolving and a reciprocating coiling-cylinder having barb-coiling lugs and

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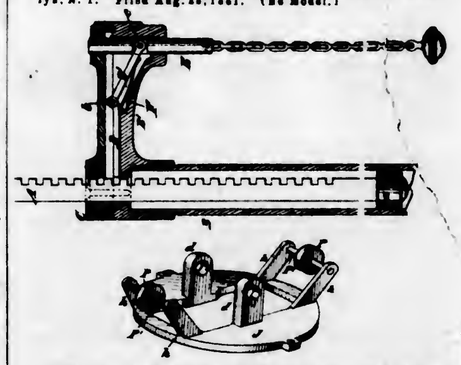


mounted on the holder so as to be free to revolve and reciprocate without imparting its motion thereto, substantially as and for the purposes set forth.

2. The combination, with means for supporting two or more main fence-wires adapted to permit their passage and at the same time prevent them from twisting, of mechanism for catching one end of the barb inserted between the aforesaid main wires and twisting the said end spirally around both or all the main wires, substantially as described.

3. The non-rotating holder adapted to prevent twisting of the main fence-wires, the barb-winder, and the spring, combined and arranged as explained, so that the barb-winder surrounds said holder and is adapted to move endwise during the coiling operation against the pressure of the spring without imparting its endwise or rotary motion to said holder, substantially as described.

253,676. EXTENSION-CHANDELIER. JOHN T BRUNT, Brooklyn, N. Y. Filed Aug. 26, 1881. (No model.)



Claim.—1. The combination, with a stationary part and an extensible part, one comprising a rack or indented bar and the other comprising guides for the said rack, of toggle-levers, one of which forms a catch for operating in conjunction with the rack to secure the extensible part in different positions, substantially as specified.

2. The combination, with a stationary part consisting of a rack or indented bar, and an extensible part provided with guides for said rack or indented bar, of toggle-levers arranged in a lateral slideway on the extensible part, and adapted to engage with the said rack or indented bar, substantially as specified.

3. The combination, with the rack or indented bar A and pipe or tube B, provided with the slideway B', of the toggle-levers D D' and slider-bar E, substantially as specified.

4. The combination, with the rack or indented bar A and the pipe or tube B, provided with the slideway B', of the toggle-levers D D', slider-bar E, and spring F, substantially as specified.

5. In an extension-chandelier provided with means for counterbalancing its extensible part, the plate J provided with the bearings *d* and the bearings *h*, made in one integral piece with it, substantially as specified.

6. The combination of the plate J, drum H, bearings *d*, and shaft I, substantially as specified.

7. The combination of the plate J, drum H, bearings *d*, shaft I, and pin *e*, substantially as specified.

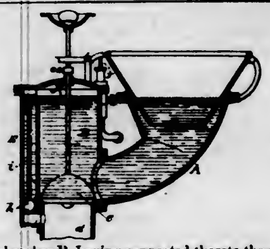
8. The combination of the plate J, drum H, spring L, shaft I, and pin *e*, substantially as specified.

9. The combination of the plate J, drum H, shaft I, and loop or hanger N N', substantially as specified.

10. The combination of the plate J, drum H, shaft I, loop or hanger N N', and pin *e*, substantially as specified.

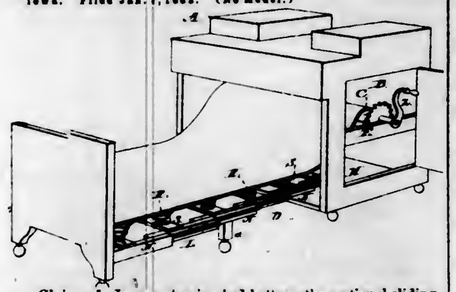
253,677. WATER-CLOSET. JOSEPH BUDDE, San Francisco, Cal. Filed Feb. 14, 1881. (Model.)

253,677.



Claim.—The chamber B, having connected thereto the curved pipe A above the upper end of the soil-pipe, said chamber having the overflow-passage E, in combination with the valve *h*, rod *i*, and float J, and the valve or plunger C, connected with mechanism, substantially as described and shown, for operating the water-supply valve, substantially as and for the purpose set forth.

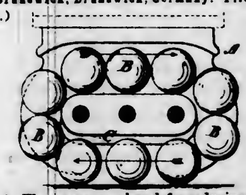
253,678. BED-BOTTOM. ALFRED S. BURNHAM, Parkersburg, Iowa. Filed Jan. 7, 1882. (No model.)



Claim.—1. In an extension bed-bottom, the sectional sliding bars N, forming the side rails, the transverse slats S, slotted at *b* and carrying the bed-springs, and the series of cross-levers *d*, pivoted at their centers to each other and at their ends to the slots of the slats, substantially as specified.

2. The combination, with the recessed case A, having the mattress-roller C and bottom H, of the foot-board K, sectional sliding side rails, L, the slotted slats S, the series of cross-levers *d*, pivoted each other and to the slats, and the mattress or mattress-cloth, substantially as specified.

253,679. ANTI-FRICTION ROLLER BEARING. HEINRICH BÜSSING, Brunswick, Brunswick, Germany. Filed Jan. 9, 1882. (No model.)

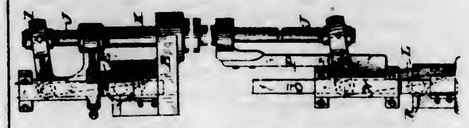


Claim.—1. The means employed for reducing the friction of the bearing-surfaces of a stationary and a moving body, which consists essentially in the combination of two such bodies, an endless track, and a series of spheres interposed between the bearing-surfaces of said bodies, said spheres being impelled by the moving body and caused to continuously travel around said track, which latter is arranged to cause the spheres to be successively brought into and moved out of contact with the bearing-surfaces of the two bodies, as described.

2. The casing A, composed of two or more sections, in which is formed an endless track or tracks having an opening in one portion thereof, a series of spheres, B, arranged to travel freely around said track when impelled by frictional contact with another body and projecting partly through the track to establish said frictional contact, in combination with a stationary track or road upon which said casing is moved to impel the spheres, or a moving shaft or axle that imparts motion to said spheres, all arranged for operation as described.

3. The combination, with the casing A and the spheres B, of an endless track, one section of which is provided with rails or ribs C, substantially as and for the purpose specified.

253,680. MECHANICAL MOVEMENT. PETER T. COFFIELD, Springfield, Ohio, assignor of one-half to Charles H. Paxson, same place. Filed Jan. 3, 1882. (No model.)



Claim.—1. In combination with the two cranks, the two reciprocating rods, the angular levers, and the sliding heads to which the levers are attached.

2. A mechanism for imparting a rotary motion to a crank, consisting in an angular vibrating lever mounted upon a reciprocating fulcrum.

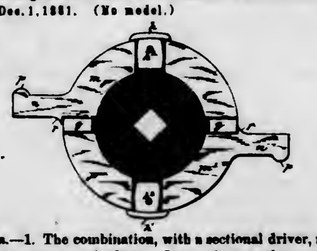
3. The combination, with the driven crank, of the angular lever, the reciprocating rod attached thereto, and the sliding fulcrum for said angular lever.

4. In combination with two cranks, two levers mounted upon the respective cranks, a connecting-rod between said levers, and positively-actuated sliding fulcrums supporting said levers, substantially as described and shown.

5. In combination with the driven crank, the angular lever connected thereto, and the sliding fulcrum for said lever, the connecting-rods J K, connected by swivel-joints to the sliding fulcrum, and angular lever connected with the driving-crank.

6. In combination with the driving-crank, the vertical guide H, reciprocating slide G, angular lever E, rods J K, guide O, slide N, lever L, and crank R.

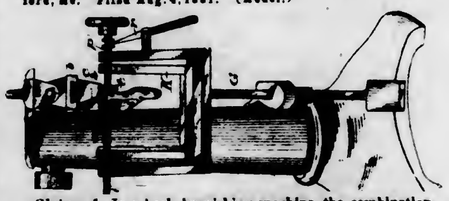
253,681. MILLSTONE-DRIVER. AMOS CALLAHAN, Maryville, Tenn., assignor to himself and William J. Davis, same place. Filed Dec. 1, 1881. (No model.)



Claim.—1. The combination, with a sectional driver, made in two separate parts, *m m'*, plates *c d*, opposite angular arms, *h h'*, secured to said plates, of the rubber blocks *q q*, inserted in the open spaces at the ends of the separate parts of the sectional driver, substantially as described, and for the purpose set forth.

2. The combination, with the upper and lower plates, *c d*, and opposite arms, *h h'*, provided with lugs *h²* at right angles to the arms and riveted to the plates, of the sectional driver, made in two separate reversible parts, *m m'*, each semicircular at its inner end, and provided with the recess *o* and arm *n*, and the rubber blocks *q q*, inserted between the ends of the parts of the sectional driver, substantially as described, and for the purpose set forth.

253,682. HEEL-BURNISHING MACHINE. JAMES W. CARVER, Lynn, Mass., assignor to the Cachaco Heeler Company, Biddeford, Me. Filed Aug. 4, 1881. (Model.)



Claim.—1. In a heel-burnishing machine, the combination of a head, *b*, adapted to swing laterally on a rigid arm, and carrying a burnishing-tool adapted to be reciprocated, substantially as described, with a vertically-movable shoe-holder for holding the shoe in contact with the tool, such holder being capable of free lateral movement while in action, at the will of the operator, across the path of the burnishing-tool, and also of rotary movement in the line of said path.

2. The combination, with the forked frame G, of the frame K,

the jointed rod *i*, and the adjusting screw-rod *p*, carrying the pressure-plate *f*.

253,685. MOTOR. JOSEPH L. DONNE, Chicago, Ill. Filed Dec. 27, 1881. (No model.)

2. The combination, with the barrels, nipples, and box, having board C on its bottom, of a breech-block, B, formed with right-

6. The shaft C, pivoted in the vertically and axially adjustable head B, and provided with the socket D, in combination with the thimble F, fitting in said socket, substantially as and for the

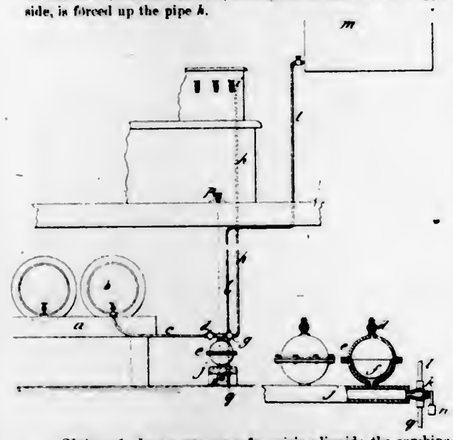
the jointed rod *i*, and the adjusting screw-rod *p*, carrying the pressure-plate *t*.

3. The combination, with the burnishing mechanism and with the forked frame G, of the frame K, having the rods *i p* fixed thereto, but adapted to slide loosely through the frame G, and the pivoted lever *r*.

4. The sole guard or plate 2, having the spring 4, in combination with the head-block, substantially as described.

253,683. APPARATUS FOR RAISING BEER, &c. PETER J. CATTERALL and EDWARD BIRCH, Manchester, County of Lancaster, England. Filed Oct. 19, 1881.[5] (No model.) Patented in England July 21, 1881.

Brief.—Beer is forced from the barrel *b* to the tap *i* by means of the water in tank *m* acting on the under side of the diaphragm in chamber *e*, whence the beer, having accumulated on the upper side, is forced up the pipe *h*.



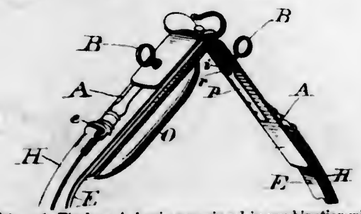
Claim.—1. In an apparatus for raising liquids, the combination, with the barrel *b*, the tap *i*, and the cistern *m*, of the chamber *e*, provided with the flexible diaphragm *f*, the tube *c*, the pipes *h l*, and the water-chest *j*, substantially as and for the purpose set forth.

2. In an apparatus for raising liquids, the combination, with the barrel *b*, the tap *i*, the cistern *m*, tube *c*, and the pipes *h l*, of the chamber *e*, provided with the flexible diaphragm *f* and the valves *d g*, and the water-chest *j*, substantially as and for the purpose set forth.

3. In an apparatus for raising liquids, the combination, with the chamber *e*, the water-chest *j*, and pipe *l*, of the three-way tap *k*, provided with the weighted lever *n*, substantially as and for the purpose set forth.

4. In an apparatus for raising liquids, the combination, with the chamber *e*, the water-chest *j*, and the pipe *l*, of the three-way tap *k*, provided with the weighted lever *n* and waste-pipe *q*, the cord *o*, and the treadle *p*, substantially as and for the purpose set forth.

253,684. HARNESS-SADDLE LOOP. LEE DARE, North Manchester, Ind. Filed Dec. 9, 1881. (No model.)

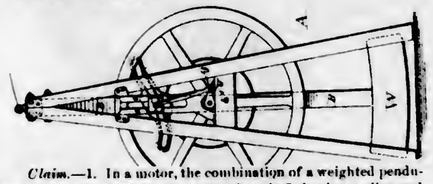


Claim.—1. The loop A, having opening *d*, in combination with the key P, provided with hook *c*, and the terret B, substantially as and for the purpose set forth.

2. The combination of the loop A, having the opening *d*, key P, provided with a hook, *c*, and opening *n*, burr *r*, and terret B, substantially as shown and described, and for the purpose set forth.

3. The combination of the loop A, key P, terret B, and burr *r* with the shaft-bearer H, skirt E, and pad O, substantially as described and shown.

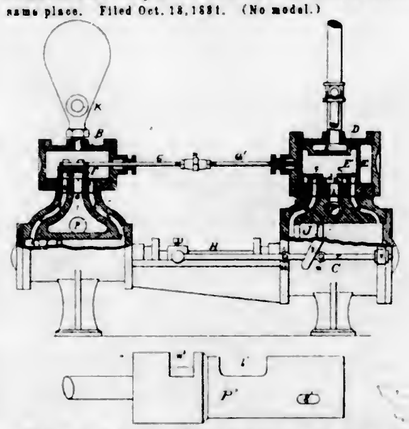
253,685. MOTOR. JOSEPH L. DONNE, Chicago, Ill. Filed Dec. 27, 1881. (No model.)



Claim.—1. In a motor, the combination of a weighted pendulum, a cam attached thereto, a rotating shaft having pulley and fly-wheel, and a cross-head, pitman, and crank connecting said cam and shaft, whereby the power is increased by the pendulum acting upon the shaft through the intermediate mechanism, substantially as described.

2. The combination of the weight W, lever B, cam C, cross-head D, pitman P', crank J, and shaft E, substantially as set forth and described.

253,686. STEAM-PUMP. EUGENE R. EATON and CYRUS TUPTS, Columbus, Ohio, assignors of one-third to Danforth H. Royce, same place. Filed Oct. 18, 1881. (No model.)

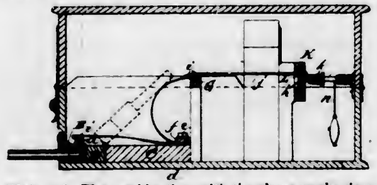


Claim.—1. In a steam-driven water-pump, the steam-valve proper, E, of piston form, having adjustable rigid connection G G' with the pump-valve, and having the central chamber, E', with the exhaust-ports *e e e*, and having the exterior circumferential and longitudinal steam-passages, *e e' e'' e'''*, substantially as described.

2. In combination with auxiliary valve P', having the auxiliary steam-cavity W, and having the central cavity, P'', with main and auxiliary exhaust-ports *b'* and *g''*, the auxiliary steam-ducts *f f''*, communicating with the extreme ends of valve-chamber D, and the auxiliary exhaust-ducts *g g''*, communicating with the said chamber at some distance from its extremities, substantially as described.

3. The combination of the steam-valve E and the auxiliary valve P', having the auxiliary steam-cavity W, and having the central cavity, P'', with main and auxiliary exhaust-ports *b'* and *g''*, as set forth.

253,687. ALARM-SIGNAL. HIRAM A. EATON, Manchester, Me. Filed Nov. 17, 1881. (No model.)

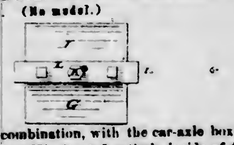


Claim.—1. The combination, with the alarm mechanism, the linked wires *g*, and the pivoted rods *j*, of the bar K, having sc[rew] *h*, and the slide L, as and for the purpose specified.

2. The combination, with the barrels, nipples, and box, having board C on its bottom, of a breech-block, B, formed with right-angled apertures and bolted to a bar hinged to said board C, as described.

3. The combination, with the springs *i*, of the linked wires *g*, the arms *j*, pivoted on cross-bar G, and the bar K, having slot *h*, whereby the wires *g* may be placed over the ends of the springs and under the arms, while the arms are placed in slot *h* to hold the springs back, as described.

253,688. CAR-AXLE BOX. JOHN H. ELWARD, Stillwater, Minn. Filed Dec. 27, 1881. (No model.)

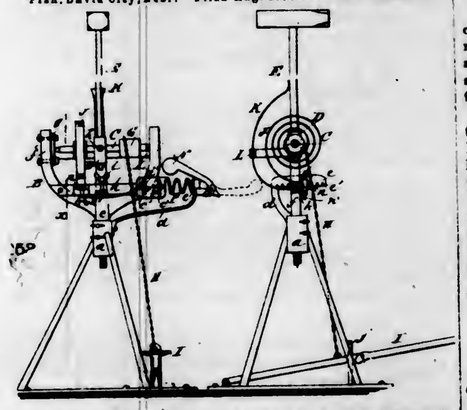


Claim.—1. The combination, with the car-axle box and the axle of the bearing-piece H', situated entirely inside of the walls of the box, the adjusting screw or bolt K, which supports the bearing-piece, and the pins *h h*, which hold the bearing-piece in proper position, substantially as set forth.

2. The combination, with the axle and the box surrounding its end, of the boss H, carried by the end piece of said box, the adjustable bearing-piece H', and the devices which prevent it from rotating, substantially as set forth.

3. The combination, with the box, the axle, the cover I, and the swinging pivoted strap L L', of the adjustable bearing-piece H' and the bolt K, passing through said strap and cover and adapted to adjust the bearing-piece H', substantially as set forth.

253,689. BLACKSMITH'S FORGING-HAMMER. MARTIN M. FISH, David City, Nebr. Filed Aug. 25, 1881. (No model.)



Claim.—1. The combination, with the adjustable bifurcated head B, provided with the cross-bar *k*, of the shaft C, journaled in the arms of the said head and provided with the handle-socket D, and the coiled spring J, having one end secured to the shaft C and its other end adjustably secured to the bar *k*, substantially as and for the purpose set forth.

2. The combination, with the adjustable bifurcated head B, provided with the cross-bar *k* and the bow L, and shaft C, provided with the socket D and handle E, of the spring K, adjustably secured to the said cross-bar and supported near its center by the said bow, substantially as and for the purpose set forth.

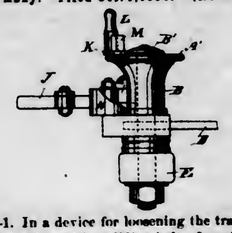
3. The combination, with the bifurcated head B, provided with the cross-bar *k* and bow L, and the rock-shaft C, provided with the socket D and handle E, and the means for operating it, of the coiled spring J, secured to said shaft and cross-bar, and the spring K, secured to the said cross-bar and supported at its center by the bow L, substantially as and for the purpose set forth.

4. The adjustable head B, provided with the adjustable spring-plate P, having the hinged weight N, in combination with the frame A, provided with the arm *d* and the notched plate *e*, substantially as and for the purposes set forth.

5. The perforated thimble F, adapted to be secured upon the handle of the sledge, in combination with the shaft C, formed with the socket D, the socket being provided with the set-screw *h'*, as and for the purposes set forth.

6. The shaft C, pivoted in the vertically and axially adjustable head B, and provided with the socket D, in combination with the thimble F, fitting in said socket, substantially as and for the purpose set forth.

253,690. HORSE-DETACHER. HEINRICH FLEISCHHAUER, Berlin, Germany. Filed Oct. 1, 1881. (No model.)



Claim.—1. In a device for loosening the traces of animals of draft, the combination, with a sliding bolt, of a rotating collar with a spiral edge or ridge for operating the bolt, and of a spring pressing on the bolt, substantially as herein shown and described, and for the purpose set forth.

2. In a device for loosening the traces of animals of draft, the combination, with the casing B, of the sliding bolt A, the annular ridge G, the projection G', and the rotating collar H, provided with a spiral ridge or shoulder, H', substantially as herein shown and described, and for the purpose set forth.

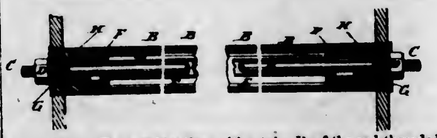
3. In a device for loosening the traces of animals, the combination, with the casing B, of the sliding bolt A, the annular ridge G, the projection G', the spiral spring F, and the rotating collar H, provided with a spiral ridge or shoulder, H', substantially as herein shown and described, and for the purpose set forth.

4. In a device for loosening the traces of animals of draft, the combination, with the casing B, of the sliding bolt A, the annular ridge G, the projection G', the spring F, the collar H, having a spiral ridge, H', and the lever J, projecting from this collar H, substantially as herein shown and described, and for the purpose set forth.

5. The combination, with the whiffletree E, of the casings B, the sliding bolts A, the collars H, having spiral shoulders or ridges H', the levers J, the bar or rod N, and the handle N' of one of the levers J, substantially as herein shown and described, and for the purpose set forth.

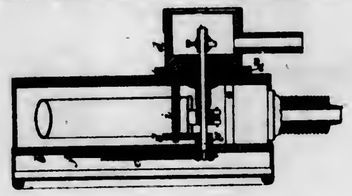
6. In a device for loosening the traces of animals of draft, the combination, with the casing B, of the pintle or bolt A, the head B', and the latch K, provided with a stud or projection, M, substantially as herein shown and described, and for the purpose set forth.

253,691. METALLIC STOPPER FOR BOILER-TUBES. JOHN W. FOWLER, Brooklyn, N.Y. Filed Oct. 21, 1881. (No model.)



Claim.—The combination, with a tube, B, of the end-threaded rod C, the nuts D D, the tubular washer E, surrounding said rod, the centrally-perforated loose blocks F G, respectively tapered and flared, and the leaden collars H, all constructed and arranged substantially as shown and described.

253,692. FLUID-PRESSURE REGULATING AND INDICATING APPARATUS FOR VULCANIZING HEATERS, &c. JOHN H. GARTRELL, Penzance, County of Cornwall, England. Filed June 7, 1881. (No model.) Patented in England Dec. 13, 1879.

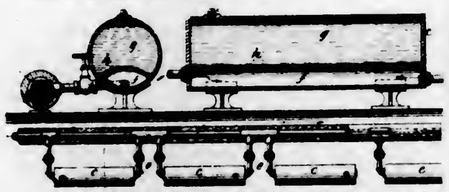


2. A steam-engine comprising two cylinders, A A', two pis- | 3. The cam-faced disks s s' and suitable mechanism for con-

Claim.—1. The combination, in a fluid-pressure regulating and indicating apparatus, of the pointer *c*, actuated by the means, substantially as described, for denoting the steam-pressure, with the valve arranged to be closed at a predetermined time by the devices that move the said index-hand, and the pointer *j*, adjustable with the valve, whereby by adjusting the valve this index will indicate the pressure at which the valve will be closed, substantially.

2. The combination, with the pointer *c*, actuated by devices operated by steam-pressure, and including means for acting upon and closing the valve of the pointer *j*, connected with and moved by the adjustable gas-chamber casing *d*, and the valve carried by said casing, whereby the adjustment of the latter will vary the position of the valve with relation to the device which closes the same, and which is operated by the devices that control the movement of the pointer *c*, substantially as described.

253,693. STEAM-HEATER. EDWARD E. GOLD, Brooklyn, N. Y. Filed June 23, 1881. (No model.)



Claim.—1. A locally-controllable steam heating apparatus adapted for long narrow spaces, consisting of a main longitudinal steam-pipe and a series of distinct heating chambers or radiators arranged at intervals lengthwise with and parallel to the main, with lateral branch pipes connecting the same with the main, and controlling-valves in said branches, substantially as and for the purpose set forth.

2. In a heating apparatus of substantially the described kind, the combination, with a longitudinal main pipe, *a*, of the elongated heating-drums *c c*, arranged at intervals parallel with the main, lateral branches *d d*, connecting the same with the main, and valves *e e*, controlling said branches, substantially as herein shown and described.

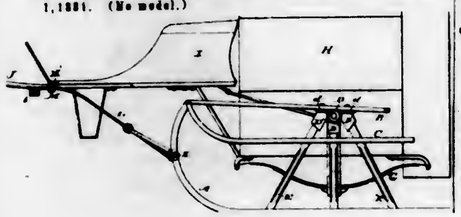
3. A locally-controllable steam heating apparatus adapted for long narrow spaces, consisting of a longitudinal main steam-pipe covered to present a non-radiating exterior, in combination with a series of distinct heating or radiating chambers, exposed to give out their heat and arranged closely adjacent to and parallel with the main, and connected therewith by lateral branches provided with regulating-valves, substantially as and for the purpose set forth.

4. A steam heating drum or radiator constructed with two distinct cells or chambers, one placed directly over the other and separated by a partition, the upper one being charged with a sealed body of liquid, while the lower one is adapted to connect with a supply of steam admitted against the intervening partition, substantially as and for the purpose set forth.

5. A steam heating drum or radiator formed of cast metal, and constructed with two distinct cells or cavities, the one being adapted to receive the steam and arranged in the base of the drum, and the other being adapted to be charged with a confined mass of liquid and placed over the steam-chamber, and the whole embodied in one integral structure, substantially as and for the purpose set forth.

6. A steam heating drum or radiator formed in one continuous casting with two distinct cavities, the one placed upon the other, and the lower one adapted to receive the steam and the upper one to be charged with a confined body of liquid, substantially as and for the purpose set forth.

253,694. SLEIGH. J. THEODORE GURNEY, Boston, Mass., assignor of one-half to Samuel Little, same place. Filed Dec. 1, 1881. (No model.)



Claim.—1. The combination of the body H, the thills J, and thill-frame, which are rigidly attached to said body, the runners connected to the body by a single pivot situated behind the centers of the runners, and devices, substantially as described, which connect the front ends of the runners together and to the thill-frame.

2. The combination of the runners, the tongue L, hinged to the runners and adapted to have the draft applied thereto, the body H, connected to the runners by a single pivot on each side, the thills J, and the thill-frame, arranged, substantially as described, to prevent the body from swinging forward when the thills are connected to the harness.

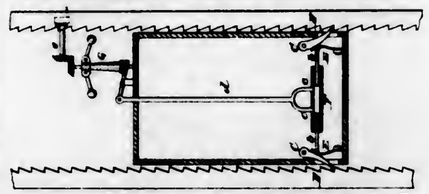
3. The combination of the body H, the thills J, connected to the body independently of the runners, the supplemental tongue L, and whiffletree *l*, connected to the shaft-frame loosely, whereby said tongue and whiffletree can slide forward and back independently of the thills, substantially as set forth.

4. The combination of the body H, the runners mounted upon pivots or trunnions, whereby they can rock independently of the body, the thills and thill-frame connected with the body independently of the runners, the draw-bar K, connected at its ends with the runners by universal joints, and the supplemental tongue L, and whiffletree *l*, supported loosely upon the thills and thill-frame, as and for the purposes set forth.

5. The herein-described metallic connecting and supporting piece for a hub-runner, consisting of the flanges *d* at the upper side, the cylindrical bearing-piece D below said flanges, and the sockets D' D', all cast in one piece of metal.

6. The combination, with the spokes or braces E E, the runner A, and the rave B, of the metallic connecting and supporting part D D' *d*, situated at the upper end of said braces or spokes E and arranged to support the rave B above the axle, and the bar D therefor, substantially as set forth.

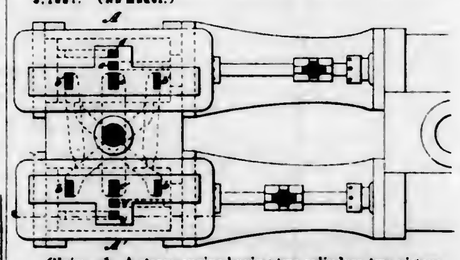
253,695. GOVERNOR ATTACHMENT FOR ELEVATORS. A. HAVNER, Eatonton, Ga. Filed Dec. 27, 1881. (No model.)



Claim.—1. The combination, with the loosely-suspended pawls C C, of the springs E, the slide-rods *d d*, attached to the upper ends of said springs, the case F, to receive the sliding rods, and the pins *c*, passing through said case and rods to hold the springs back and allow the pawls to drop out of the ratchets, as shown and described.

2. The combination, with the pins which lock the spring-holding rods to the case, of the rod *d*, extending up through the cage and connecting by a lever with the described governor mechanism, as and for the purpose specified.

253,696. STEAM-ENGINE. MILAN W. HALL, Plainfield, N. J., assignor of one-half to Albert E. Hall, same place. Filed June 3, 1881. (No model.)



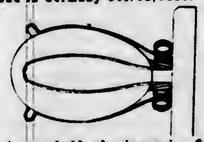
Claim.—1. A steam-engine having two cylinders, two pistons with their piston-rods, and two slide-valves, the valves having a stroke equal to that of the pistons and actuated directly thereby, and the piston in one cylinder actuating the valve which controls the admission of steam to actuate the piston of the adjacent cylinder, and which also controls the admission of steam as a cushion in front of the piston which actuates it, substantially as and for the purposes set forth.

2. A steam-engine comprising two cylinders, A A', two pistons arranged to move therein, two piston-rods attached to said pistons, two steam-chests, and two slide-valves, E E', connected directly with the piston-rods, and having a stroke equal to that of the pistons, the valve E being arranged to control ports for admitting steam to actuate the piston in cylinder A, and to control also cushion-ports *e e*, for admitting steam to cylinder A', and the valve E' being arranged to control ports for admitting steam to actuate the piston in cylinder A', and to control also cushion-ports *e e*, for admitting steam to cylinder A, all arranged to operate substantially as and for the purposes set forth.

3. A steam-engine having two cylinders, two pistons, their piston-rods, and two slide-valves, the valve which controls the admission of steam to one cylinder being actuated by the piston in the adjacent cylinder, and also arranged to control the admission of steam as a cushion in front of the piston which actuates it, substantially as and for the purposes set forth.

4. A steam-engine having two cylinders, two pistons, their piston-rods, and two slide-valves, each cylinder having the usual steam-ports opening into it, and in addition to these two cushion-ports opening into it nearer its ends than the principal steam-ports, the valve which controls the admission of steam for driving the piston of one cylinder being actuated by the piston of the adjacent cylinder, and being arranged to control the cushion-ports of the cylinder whose piston actuates it, substantially as and for the purposes set forth.

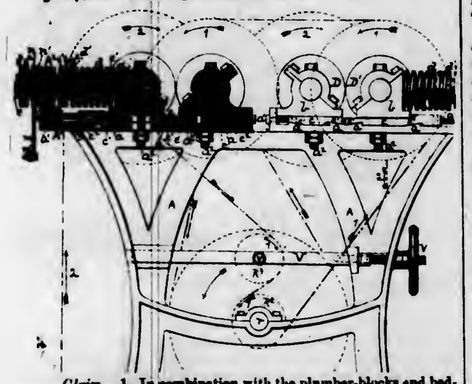
253,697. APPARATUS FOR HOLDING AND CARRYING EGGS. JOHN HALLEY and ALEXANDER BAIN, Glasgow, County of Lanark, Scotland. Filed Jan. 3, 1882. (No model.) Patented in England Aug. 31, 1880, in France Sept. 30, 1880, in Belgium Oct. 1, 1880, and in Germany Oct. 13, 1880.



Claim.—1. An egg-holder having spring-fingers, each shaped with a concave curvature adapted to the sides of an egg, and having its extreme upper end shaped with an outward flare, whereby an egg on being introduced acts like a wedge in opening the fingers, which close inward again by their spring action when the egg reaches the concave holding parts.

2. An egg-holder consisting of a plate with a number of wire fingers formed into spring-coils C at their lower parts.

253,698. ROLLER GRINDING-MILL. CYRUS T. HANNA, Allegheny, Pa. Filed Sept. 19, 1881. (No model.)



Claim.—1. In combination with the plumber-blocks and bed-plate of a roller grinding-mill, the inclines *a a* in the bed-plate at each end of the roll, and one on each side of the vertical plane of the roll-axis, and adjustable wedge-plates *c*, having each a pair of counter-inclines, *c'*, in position corresponding to position of the inclines *a*, substantially as and for the purposes set forth.

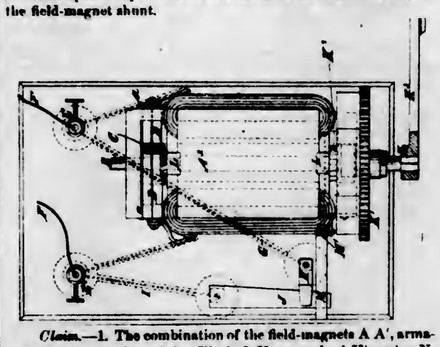
2. In combination with the movable roll of a roller grinding-mill, the stems *e*, connected to the plumber-blocks in the horizontal axial plane of the roll-axis, adjusting and jam nuts *e' e² e²* on opposite sides of the fixed bearings A⁵, sleeves *e²*, and springs *d*, substantially as and for the purposes set forth.

3. The cam-faced disks *n n'* and suitable mechanism for connecting them together in pairs, in combination with the described horizontal adjusting mechanism, substantially as set forth.

4. As a means of changing or varying the adjustments of a movable roll, a pair of cam-faced disks, *n n'*, having inclines and counter-inclines of suitable form terminating at their apexes in flat bearing-points *n²*, for imparting motion in one direction, in combination with a spring for effecting the opposite or reverse throw, substantially as set forth.

253,699. MAGNETO-ELECTRIC MACHINE. MARCUS A. BARNY, Newport, R. I. Filed Aug. 15, 1881. (No model.)

Brief.—The machine is designed for firing mines, lighting gas, or other analogous operations in which a sudden discharge of considerable intensity is desired. The circuit, when started, is through the field-magnets by a shunt from the main circuit, but upon breaking this shunt the whole current is directed through the main circuit. The machine is driven by a convolute spring, and is provided with the necessary pawls, ratchets, and detents. Pressure upon a key first starts the machine and afterward breaks the field-magnet shunt.



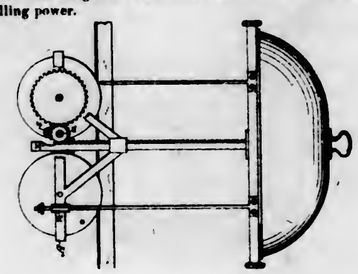
Claim.—1. The combination of the field-magnets A A', armature B, gear-wheel or pinion B', shaft K, gear-wheel K', spring N, ratchet-wheel K², pawl O, and a brake for controlling the wheel K', substantially as specified.

2. The combination, with a magneto-electric machine having an electro field magnet or magnets, means for driving the machine, and mechanism for storing up power in the means for driving the machine, of a brake for controlling the means for driving the machine, and a switch actuated by said brake, whereby the electric current generated in the machine may at first be caused to magnetize the field-magnets of the machine, and after that is accomplished to direct or shift the electric current upon an outside circuit, substantially as specified.

3. The combination, with a magneto-electric machine having electro field magnet or magnets, means for driving the same, and mechanism for storing up power in the means for driving the machine, of a brake for controlling the means for driving the machine, comprising a lever, M, and the binding-posts E E', connected with the wire of the field-magnets, the wires G I, and the arms H J, substantially as specified.

253,700. STORE-SERVICE CARRIER. HARRIS H. HAYDEN, New York, N. Y. Filed May 31, 1881. (No model.)

Brief.—The carrier is raised and lowered on its frame, being suspended by guide-rods. A vertical rack-bar on the carrier is geared to a pinion on one of the carrier-wheels by means of a pinion whose axis-bearings may travel in curved slots. The rack-bar has a recess above its upper teeth, in which the loose pinion may revolve. The weight of the carrier and its contents affords the propelling power.



Claim.—The herein-described pitcher, consisting of the base

3. The oscillating frame B, supported upon the ground-wheel

253,707. LAMP-FIXTURE, &c. WOLCOTT A. HULL, New York, N. Y., assignor of one-half to the Annapis Brass and Copper

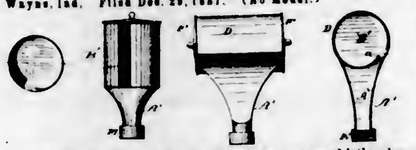
Claim.—1. A store-service system comprising the tracks between the main desk and counters, cars adapted to travel thereon, and motor appliances carried by the cars and serving as a means of propelling the same, substantially as set forth.

2. A car for store service, consisting of a frame supported by wheels and a rack-bar geared to one of the wheels to turn the latter by its descent, substantially as set forth.

3. The combination of the frame, pinion, and rack-bar, having a recess, *r*, above its upper teeth, substantially as set forth.

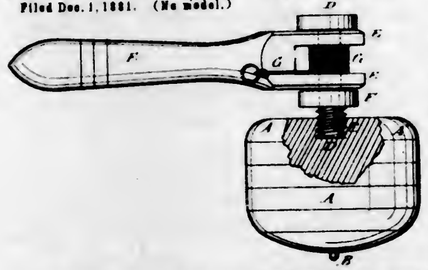
4. The combination, with the sliding rack-bar, of a pinion having a shaft extending into slots *s*, substantially as set forth.

253,701. STEAM-WHISTLE BLANK. WILBUR F. HEATH, Fort Wayne, Ind. Filed Dec. 29, 1881. (No model.)



Claim.—The herein-described blank for steam-whistles, having the hollow stem A', the cylindrical part B, the ends F F, all cast in one piece, and the throat *d*, as set forth.

253,702. SPINNING-TOP. JONATHAN HILL, New York, N. Y. Filed Dec. 1, 1881. (No model.)

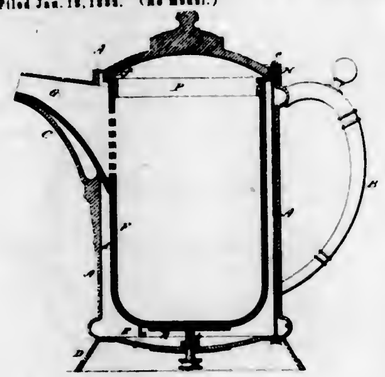


Claim.—1. A spinning-top constructed substantially as herein shown and described, and consisting of a slotted handle, E, a spindle, D, permanently connected with the handle and having a screw-thread upon its lower end, the top A, having screw-hole, and the cord G, substantially as herein shown and described.

2. In a spinning-top, the spindle D, permanently swiveled to the slotted handle E, and provided with a screw-thread to receive the top, substantially as herein shown and described.

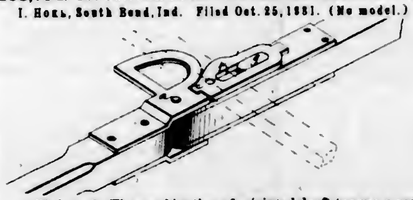
3. In a spinning-top, the combination of the slotted handle E, the spindle D, having screw-thread, and being permanently swiveled to the slotted handle, the top A, having screw-hole, and the cord G, permanently attached to the spindle, substantially as herein shown and described, whereby the top will be detached from the spindle automatically, as set forth.

253,703. PITCHER. LOUIS C. HILLER, Meriden, Conn., assignor to the Meriden Silver Plate Company, same place. Filed Jan. 18, 1881. (No model.)



Claim.—The herein-described pitcher, consisting of the base D, constructed with the bottom E, the outer shell, A, seated on the said base and provided with the handle and shell for the spout, the water-holder F, constructed with its spout G, the ring H, carrying the cover L and arranged upon the upper edge of the outer shell, constructed with a flange to set within the outer shell, rods extending from the ring at the top through the bottom below to secure the parts together, and the adjusting-screw *k* through the bottom to force the water-holder against the ring at the top, substantially as described.

253,704. TONGUE FOR AGRICULTURAL IMPLEMENTS. JOHN I. HOLL, South Bend, Ind. Filed Oct. 25, 1881. (No model.)

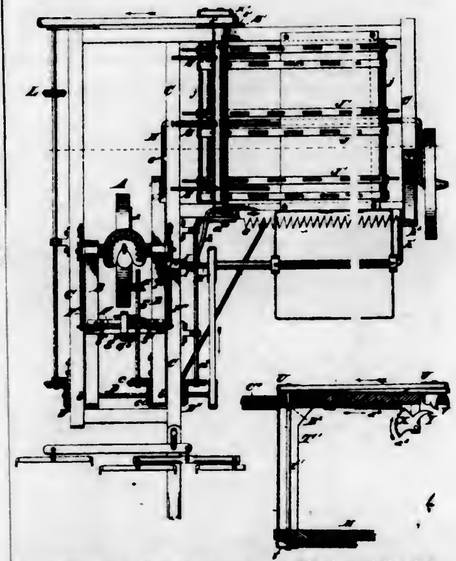


Claim.—1. The combination of a jointed draft-tongue, a cam, a latch, a notch to receive the locking-nose on the latch, and a double-tree attached to the latch, all constructed and arranged to operate substantially as described.

2. The combination of the two-part jointed draft-tongue, the lapped strengthening-plates, the joint-bolt *a*, the cam, the latch, and its guides, all constructed and arranged to operate substantially as described.

3. The combination of the two-part jointed draft-tongue, the cam, the slotted and guided latch, and the convex bearing-edge on this latch, against which the said cam acts, all constructed and arranged to operate substantially as described.

253,705. HARVESTING-MACHINE. JOHN W. HULL, Alquina, assignor of one-half to William Newkirk and William H. Wherrett, both of Connersville, Ind. Filed May 12, 1881. (Model.)



Claim.—1. A harvester-frame composed substantially of the oscillating frame B, on which the driver's seat is mounted, and supporting-frame C C, the crank-shaft E, wheels A E', and mechanism on the oscillating frame for raising and lowering the supporting-frame, substantially as herein set forth.

2. In a harvesting-machine, the oscillating frame B, supported upon the driving-wheel and attached to the main frame by axial bearings *b b*, through which the transmitting-shaft passes and imparts motion to the operating mechanism, substantially as herein set forth.

3. The oscillating frame B, supported upon the ground-wheel A and pivoted to the main frame upon a transmitting-axis, in combination with the supporting-frame C and the windlass F on the oscillating frame, for raising and lowering the frame, substantially as herein set forth.

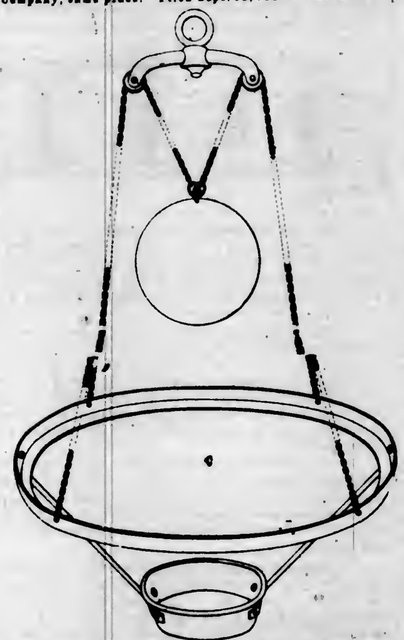
4. The combination of a crank-shaft and the main frame arranged thereon, and supporting the operating mechanism of a harvester, and capable of rising and falling in a vertical plane, with the oscillating supplemental frame pivoted to said main frame and connected with said crank-shaft, and a drive-wheel attached to the oscillating frame and imparting motion to the mechanism located on the main frame, all substantially in the manner and for the purpose described.

5. In combination with the rod S and carved apron R', the chute-rods R'' and the hinged rod *r*, catch *r'*, and spring *r''*, for checking the delivery of the grain and allowing it to be deposited intermittently in bunches, in the manner substantially as herein set forth.

6. In a harvesting-machine, a straw-binding mechanism composed substantially of the pivoted revolving arm M', grapples O O', twister V, and tucker X Y, combined to operate in the manner substantially as herein set forth.

7. In a harvesting-machine, a straw-band-tucking mechanism composed substantially of the rotary twister V, mounted on the frame T, and the band-tucker X Y, pivoted on the frame T below the twister, and intermittently operated by a rack-bar, *a'*, as set forth.

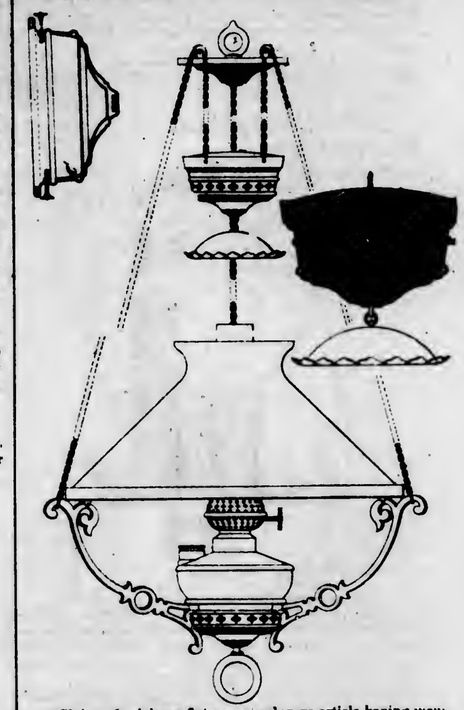
253,706. LAMP-FIXTURE. WOLCOTT A. HULL, New York, N. Y., assignor of one-half to the Ansonia Brass and Copper Company, same place. Filed Sept. 15, 1881. (No model.)



Claim.—1. The combination, with a shade-supporting ring, a holder for a lamp, rods or arms connecting them, and a hanger, of two chains having their ends fastened at about equidistant points to the said ring, and two other chains fastened to the bight or middle portion of the first-mentioned chains and extending to the hanger, substantially as specified.

2. The combination, with a shade-supporting ring, a holder for a lamp, rods or arms connecting them, a hanger, and a counterbalancing-weight, of two chains having their ends fastened at about equidistant points to the said ring, and two other chains fastened to the bight or middle portions of the first-mentioned chains, extending to the hanger and passing over pulleys arranged therein at some considerable distance apart, and then down to the counterbalancing-weight, substantially as specified.

253,707. LAMP-FIXTURE, &c. WOLCOTT A. HULL, New York, N. Y., assignor of one-half to the Ansonia Brass and Copper Company, same place. Filed Sept. 15, 1881. (No model.)



Claim.—1. A lamp-fixture or analogous article having members composed severally of a body-piece of cheap, strong metal having its exterior japanned or otherwise decorated, and a thin perforated exterior shell of brass or other ornamental metal closely fitting the body-piece and preserved in form thereby, substantially as specified.

2. In a lamp-holder, the combination of a cup or socket of iron or other cheap metal having its exterior surface japanned or otherwise decorated, and a thin exterior perforated shell of brass or other bright ornamental metal closely fitting the same and preserved in form thereby, substantially as specified.

3. In a lamp-holder, the combination of an imperforate cup or socket of iron or other cheap material, and a thin exterior shell of brass or other ornamental metal closely fitting the same and preserved in form thereby, whereby I produce, with the use of a small amount of the ornamental metal, a beautiful and strong lamp-holder, and one that may constitute a drip-cup, substantially as specified.

4. In a lamp-holder, the combination of a cup of iron or other cheap metal, and a thin exterior shell of brass or other ornamental metal closely fitting the former and preserved in form thereby, save at the bottom, where a space is left and the ornamental shell turned in and threaded to form a socket for the attachment of a pull-piece, substantially as specified.

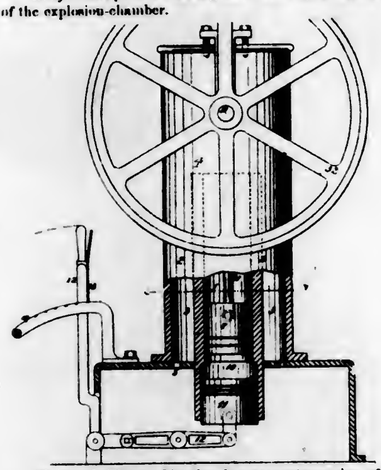
253,708. BURIAL-CASKET. HARWORTH HUTCHISSON, Burlington, Iowa. Filed June 28, 1881. (Model.)



Claim.—In a burial-casket, the combination of the sides and ends, having vertical recesses or grooves, the open-work corners B, having end flanges, *b*, and lugs *c*, the padded back or panel D, and the corner-block E, having tongues *f* and screw *g* connecting it to the panel D, which is thereby held in position, substantially as set forth.

253,709. GAS-ENGINE. RICHARD HUTCHINSON, London, England. Filed Sept. 13, 1881. (No model.) Patented in England Dec. 28, 1880.

Brief.—The power of the engine is varied by changing the area of the explosion-chamber.



Claim.—1. The combination, in a gas-motor engine, of the piston-cylinder with the semicircular jackets arranged so that an agitation or a circulation of air will be maintained at each stroke of the working-piston, and thereby keep the cylinder cool, substantially as described.

2. The combination, in a gas-motor engine, of the piston-cylinder and piston with the plunger 11, arranged within the compressing-cylinder at one end of the piston-cylinder, and devices for operating and adjusting said plunger for the purpose of increasing or decreasing the area of the explosion portion of the cylinder, substantially as described.

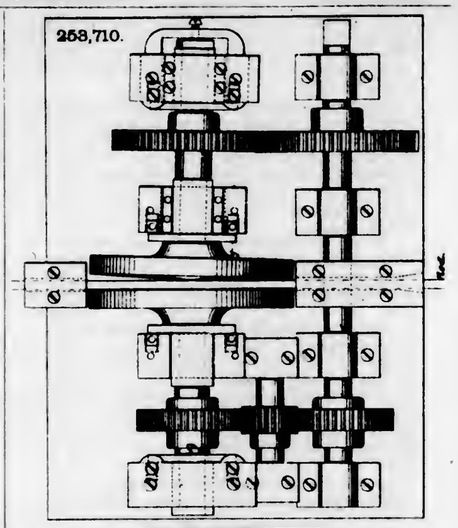
3. The combination, in a gas-motor engine, of the piston with the working-cylinder provided with a port or passage, 20, the plunger-valve 17, located within the cylinder 18, and provided, substantially as described, with ports and chambers for admitting at the proper moment the mixture of gas and air into the said working-cylinder, the crank-shaft 9, the gear-wheels 15, and connections between one of these gear-wheels and the plunger-valve, substantially as shown and specified.

4. The combination, in a gas-motor engine, of the working-cylinder 1, provided with a port or passage, 20, the cylinder 18, provided with a chamber, 21, communicating with pipes for the admission of air and gas, the plunger-valve 17, provided with a port, 19, for discharging the air and gas into the port of the working-cylinder, the chamber 24, and the port 25, communicating therewith, the chamber 26, for receiving gas from a small supply-pipe and for discharging the same into the port 25 when said port and chamber are brought into communication, the air-port for feeding air into the chamber 24, the chamber 27, and connections between the piston and the plunger-valve, said members being constructed and organized for operation substantially as described.

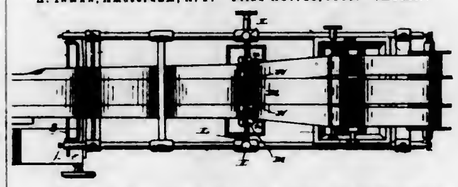
5. The combination, in a gas-motor engine, of the working-cylinder, the cylinder 18, and the plunger-valve 17, having the necessary ports, chambers, and passages for admitting air and gas to the working-cylinder, with the exhaust-valve 36, adapted to be opened to admit of the expulsion of the exhaust-gases by the down-stroke of the piston, the tappet upon the rod of the plunger-valve, and the bell-crank levers 34 and 35, adapted to operate, substantially as described, to actuate the exhaust-valve rod, for the purpose specified.

253,710. MACHINE FOR STRAIGHTENING AND POLISHING IRON, STEEL, AND OTHER METAL RODS. JOHN ILLINGWORTH, Newark, N. J. Filed Sept. 14, 1881. (No model.)

Claim.—The combination, with the plane-faced disk C, of the conical-faced disk C', arranged as and for the purpose set forth.



253,711. PAPER-BOX COVERING AND TRIMMING MACHINE. H. INMAN, Amsterdam, N. Y. Filed Nov. 28, 1881. (Model.)



Claim.—1. In a machine for covering boxes, the combination, with the bifurcated legs and the supporting-bars, of a feeding-reel bearing covering and trimming strips, the paste-tank and paste-roller, the standards with their guiding and supporting devices, and the cross-bar and guides for uniting, supporting, and guiding the covering and trimming strips, substantially as set forth.

2. In a machine for covering boxes, the supporting-frame, in combination with the paste-tank carrying a paste-roller, the standards with their guiding and supporting devices, and the cross-bar for uniting the covering and trimming, the said tank, standards, and uniting cross-bar being adapted to slide on the supporting-bars, whereby their relative distance is changed and a proper tension of the covering material maintained, substantially as shown and described.

3. In a machine for covering boxes, the combination, with the devices, substantially as described, for feeding, pasting, guiding, supporting, and uniting the covering material of a lateral adjustable carriage carrying a revolving form, and provided with mechanism for automatically rotating the same, substantially as shown and described.

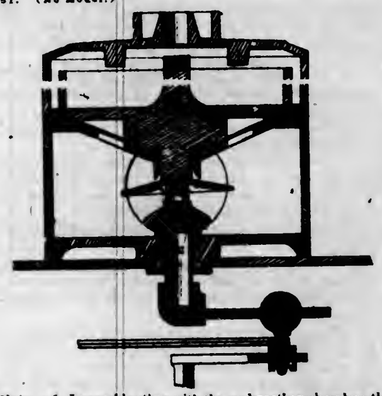
4. In a machine for covering boxes of the character herein described, adapted to manipulate a plurality of covering and trimming strips of paper, &c., the combination of the standards I I, shaft K, having link *k*, and shaft L with heads M M and fingers or guides N n, for guiding and lapping the strips, as shown and described.

253,712. MANUFACTURE OF SIRUP FROM CANE-JUICE. ALFRED H. ISAACSON, New Orleans, La. Filed Jan. 10, 1882. (No specimens.)

Claim.—1. The herein-described process of preserving sirup or molasses, consisting in heating to a degree below the boiling-point the sirup after it has been expressed from the cane, and then filling the sirup while hot into cans or other receptacles and hermetically sealing the same, for the purpose specified.

2. As a new article of manufacture, sirup from sugar-cane or molasses put up in a hermetically-sealed can or other vessel after the sirup has been heated to a degree below the boiling-point to kill the germs of fermentation, and before it has been converted into crystallized sugar, substantially as described.

253,713. OIL-DISTRIBUTING MECHANISM FOR CARBURETORS. WALTER H. JACKSON, Providence, R. I. Filed Oct. 22, 1881. (No model.)



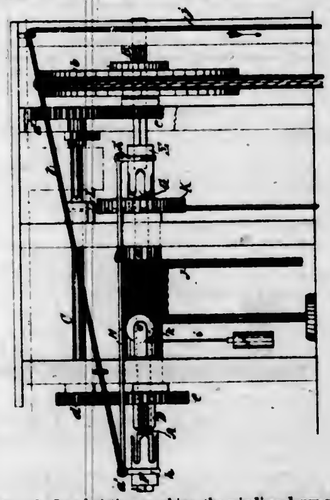
Claim.—1. In combination with the carbureting-chamber, the valve-chest provided with an inclined conoidal or beveled seat, having ports and recesses, as described, and the valve having an inclined conoidal or beveled face and a series of radial recesses, substantially as specified.

2. In combination with the valve-casing and carburetor, the valve and valve-seat provided with recesses and ports, as described, the valve-stem and vertical rotating shaft, and suitable means for detachably connecting the two, substantially as and for the purposes specified.

3. In combination with the valve-chamber and carburetor and the valve and valve-seat provided with ports and recesses, as described, the conoidal shield or distributer secured to the valve-stem, substantially as and for the purposes set forth.

4. In combination with the vertical shaft which actuates the valve and the horizontal arm secured thereto, the central meter-shaft and its horizontal arm and the swiveled head secured thereto, through which head passes loosely the arm of the valve-actuating shaft, whereby the valve is operated without the use of ordinary gearing, substantially as specified.

253,714. HOISTING-MACHINE. VERNON C. JARBOE, Wyandotte, Kans. Filed June 13, 1881. (No model.)



Claim.—1. In a hoisting-machine, the winding-drum and the power-wheel placed upon separate shafts, in combination with means, substantially as described, for shifting the power from direct to indirect action upon the winding-drum, and vice versa, as and for the purposes specified.

2. In a hoisting-machine, the shaft C, provided with the gear-wheels *d d'*, in combination with the shaft A, provided with the winding-drum *a* and the loose gear *e*, and the shaft B, provided with the driver *g*, pulley *b*, and the gear *c*, the said shafts being provided with clutch mechanism, whereby the winding-drum is adapted to be driven directly or indirectly from the pulley-shaft, as set forth.

3. The drum-shaft A and the pulley-shaft B, in combination with the sliding clutches E and F and the clutches D and G, the clutch D being formed upon the loose wheel *e* and the clutch G being formed upon the drum-shaft, substantially as and for the purposes set forth.

4. In hoisting-machines, the sliding clutches E and F, in combination with the rod H, arms A A', weight *f*, and operating-cord *j*, substantially as and for the purposes set forth.

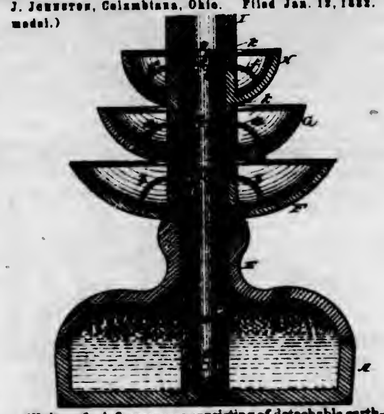
5. The brake-wheel K, secured directly upon the separate drum-shaft A, in combination with the brake L, substantially as and for the purposes specified.

253,715. VASE FOR CULTIVATING STRAWBERRY AND OTHER PLANTS. JAS. J. JOHNSTON, Columbiana, Ohio. Filed Jan. 12, 1882. (No model.)



Claim.—A vase for plants, of hour-glass contour, with open ends and a water-channel, B, communicating with an angular channel, C, for conveying water down into the earth below the roots of the plants, substantially as herein described, and for the purpose set forth.

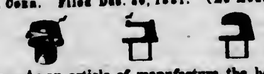
253,716. FLOWER-VASE FOR WINDOW-GARDENING. JAS. J. JOHNSTON, Columbiana, Ohio. Filed Jan. 12, 1882. (No model.)



Claim.—1. A flower-vase consisting of detachable earth-chambers of different diameters and having hollow centers with a recess at the upper end and a ledge at the lower end, said centers adapted to fit and rest on each other and upon the same pedestal, substantially as herein described, and for the purpose set forth.

2. The combination of the reservoir A, having tube B, pedestal E, and earth-chambers F, G, H, and I, the chambers H G F communicating with the tube B through the medium of siphons or wicks, substantially as herein described, and for the purpose set forth.

253,717. LACING-STUD FOR SHOES. JOSEPH L. JOYCE, New Haven, Conn. Filed Dec. 30, 1881. (No model.)



Claim.—As an article of manufacture, the herein-described shoe-stud, constructed with a rim, *d*, projecting from its head, substantially as and for the purpose described.

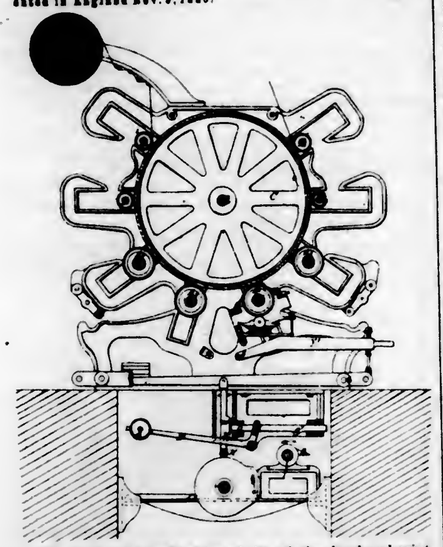
253,718. MACHINERY OR APPARATUS FOR PRINTING FABRICS. JAMES KERR and JOSEPH HAWORTH, Church, County of

and described, whereby the cotton from the gin discharge-spout is forced into the bailing-box of the press, as set forth.

253,721. MANUFACTURE OF COLORS OR DYE-STUFFS. HERMANN KOECHLIN, Lowrach, Baden, Germany. Filed Dec. 14, 1881.

11. The combination of the evaporator C, its chute C^2, the supplementary vibratory evaporator F, the inclined screen *f* therein,

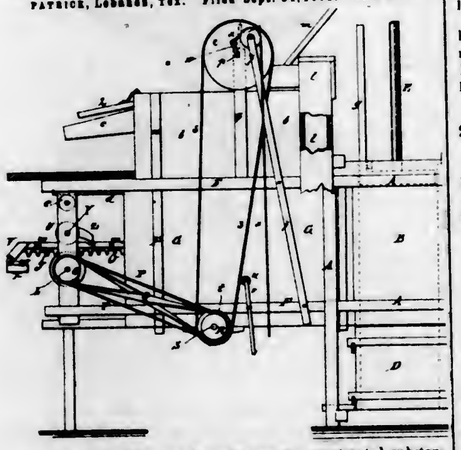
253,718. MACHINERY OR APPARATUS FOR PRINTING FABRICS. JAMES KERR and JOSEPH HAWORTH, Church, County of Lancaster, England. Filed June 13, 1881. (No model.) Patented in England Nov. 9, 1880.



Claim.—1. The combination of the printing-bowl and printing-roller with levers supporting said roller and tending to keep it in contact with the bowl, cams for raising the levers to withdraw the roller, and automatic locking devices, substantially as described, for retaining the levers in a raised position.

2. The combination of the printing-bowl and printing-roller with levers supporting said roller and tending to keep it in contact with the bowl, cams for raising the levers to withdraw the roller, automatic locking devices for the lever, and rotary cams for periodically releasing the locking devices, all substantially as described.

253,719. FEEDER FOR COTTON-PRESSES. ROBERT L. KIRKPATRICK, Lebanon, Tex. Filed Sept. 24, 1881. (No model.)



Claim.—1. A feeder for cotton-presses, constructed substantially as herein shown and described, consisting of the packing-box and its follower and operating mechanism and the receiving-box and its movable top board, as set forth.

2. The combination, with the baling-box B of a cotton-press and the discharge-spout *c* of a cotton-gin, of the packing-box G, the follower H and its operating mechanism, and the receiving-box *b* and its movable top board, *j*, substantially as herein shown and described, whereby the cotton from the gin discharge-spout is forced into the bailing-box of the press, as set forth.

3. In a feeder for cotton-presses, the combination, with the packing-box G, the follower H, and the drive-shaft S, of the rack-bar J, the gear-wheel K, and the pulleys and bands M N O R P Q, substantially as herein shown and described, whereby the said follower can be moved forward and back, as set forth.

4. In a feeder for cotton-presses, the combination, with the packing-box G, the gear-wheel K, the guide-roller U, the shaft Y, and the pawl Z, of the follower H, provided with the roller I, and the rack J, provided with a notch on its upper side, substantially as and for the purpose set forth.

5. In a feeder for cotton-presses, the combination, with the rack-bar J, of the arms V, roller W, and track X, substantially as herein shown and described, whereby the said rack-bar will be supported when drawn outward, as set forth.

6. In a feeder for cotton-presses, the combination, with the receiving-box *b* and the movable top board, *j*, having slotted lower end, of the rack *k*, the flue *l*, and the hinged board *m*, substantially as herein shown and described, whereby the dust and air entering the receiving-box with the cotton are allowed to escape freely, as set forth.

7. In a feeder for cotton-presses, the combination, with the movable top board, *j*, and the driving-shaft S, of the connecting-bar *n*, the crank-shaft *p*, the pulleys and band *r t s*, and the springs I, substantially as herein shown and described, whereby the said top board will be operated to press down the cotton and clear the dust-flue rack, as set forth.

8. In a feeder for cotton-presses, the combination, with the belt *s*, that operates the crank-shaft *p* of the receiving-box top-board, *j*, of the pulley and lever *u v*, substantially as herein shown and described, whereby the movement of the receiving-box top board can be stopped and started, as set forth.

9. In a feeder for cotton-presses, the combination, with the crank-shaft *p*, that operates the receiving-box top board, *j*, of the crank *w*, and the cord *x*, and guide-pulley *y*, substantially as herein shown and described, whereby the said top board can be raised and held, as set forth.

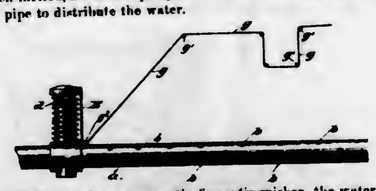
10. In a feeder for cotton-presses, the combination, with the baling-box B, having open side, and the follower C, of the vertical board G, attached to the inner side of the said follower, substantially as herein shown and described, whereby cotton is prevented from entering the baling-box when the follower is forced down, as set forth.

11. In a feeder for cotton-presses, the combination, with the packing-box G, having open upper side, and the follower H, of the horizontal board *d*, having its forward end attached to the upper end of the said follower, substantially as herein shown and described, whereby the cotton is prevented from entering the said packing-box when the follower is pushed forward, as set forth.

12. In a feeder for cotton-presses, the combination, with the horizontal board *d*, attached to the packing-box follower H, of the roller *v*, pivoted to the rear upper part of the packing-box frame F, substantially as herein shown and described, whereby the said board is supported, as set forth.

253,720. FIRE-EXTINGUISHER. ISAIAH KITSON, Cincinnati, Ohio. Filed Dec. 8, 1881. (No model.)

Brief.—The water-induction valve to the perforated pipe *a* is held to its seat by the fusible brace E and fusible wires *g*, which, when melted, allow the spring to raise the valve from its seat and the pipe to distribute the water.



Claim.—1. In an automatic fire-extinguisher, the water-conduit pipe *a*, provided with perforations *b*, in combination with a valve-closing fusible brace, E', and branch fusible wires *g*, substantially as described.

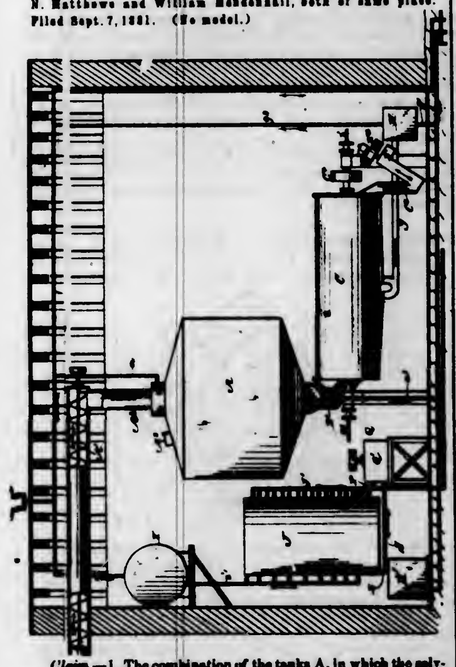
2. In an automatic fire-extinguisher, the fusible valve-closing truss-brace E, in combination with spring *d* and fusible wire *g*, substantially as described.

3. In an automatic fire-extinguisher, the vertical stand-pipe A, having lateral perforated branches *a*, each provided with a valve closed with a fusible brace, E', in combination with fusible wires *g* and fusible valve-closing brace E, substantially as described.

253,721. MANUFACTURE OF COLORS OR DYE-STUFFS. HORACE KOECHLIN, Lowsch, Baden, Germany. Filed Dec. 16, 1881. (No specimens.)

Claim.—The improvement in the manufacture of coloring-matters, consisting in the production of violet coloring-matters by the action of nitroso derivatives of the tertiary amines on tannin, or equivalent reaction, substantially as described.

253,722. APPARATUS FOR THE SEPARATION OR EXTRACTION OF OIL FROM VEGETABLE SUBSTANCES. HARRIS LANCASTER, Richmond, Ind., assignor of two-thirds to William N. Matthews and William Mendenhall, both of same place. Filed Sept. 7, 1881. (No model.)



Claim.—1. The combination of the tanks A, in which the solvent and vegetable substance are mixed, the reservoirs X Y, the connecting-pipes, and the herein-described evaporator C, and the condenser H, both constructed substantially as set forth.

2. The combination of the tanks A A with the conveyer B, chutes B', the evaporator C, the superheater Q, pipe *n*, and condenser H, constructed and organized substantially as described.

3. The tank A, having the inclined bottom and screen *s'*, shafts B², open-link chains B⁴, conveyer B, and chute B'.

4. The combination of the outer casing, C, of the evaporator, its hollow shaft, the inner revolving casing, *c*, and the steam-pipes disposed therein, substantially as set forth.

5. The combination of the outer casing of the evaporator C, the inner revolving casing, *c*, having the perforated or woven-wire portion *c'*, and the condenser H, substantially as set forth.

6. The evaporator C, composed of an outer case and an inner rotary case, the hollow shaft, and the radiating steam-pipes, substantially as described.

7. The combination of the evaporator C, formed in two parts with a vapor-space between them, the condenser H, the pipe connecting the condenser and vapor-space, the pipe leading to the reservoir, and a fan, G', substantially as and for the purpose set forth.

8. The combination of the evaporator C, having an inner and an outer case, with a vapor-space between them, its discharge-chute C², having a perforated bottom, and the delivery conveyer-screw E, in combination with the fan G' and the condenser H, substantially as set forth.

9. The combination of the tanks A, the evaporator C, the fan G', the condenser H, the reservoirs, the system of ventilating-pipes, the branch outlet-pipe, and its inlet and outlet valves, substantially as set forth.

10. The evaporator F, the cam for vibrating it, its inclined dust-screen *f*, its inlet and outlet chutes, and its draft or air outlet *f'*, substantially as set forth.

11. The combination of the evaporator C, its chute C², the supplementary vibratory evaporator F, the inclined screen *f* therein, its outlet-chute, and the draft-opening *f'*, leading to the condenser, substantially as set forth.

12. The combination of the separator-case J, the pans K, a steam-coil in each pan, the inlet-pipes *i'*, the oil-outlet pipe J² for each pan, its elbow J³, and the discharge-pipe J', substantially as set forth.

13. The evaporating or separating pan herein described, having the oil-discharge pipe connected to its bottom, so that the purest oil, or that having the least amount of solvent with it, and which is heaviest, will be first delivered from the pan.

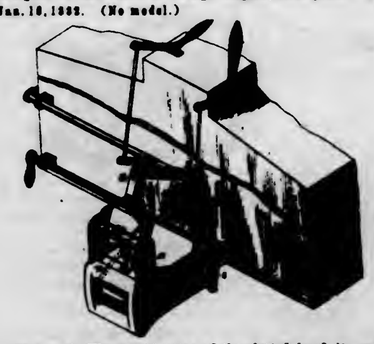
14. The separator J herein described, provided with evaporating-pans and inlet and discharge pipes, and having the glass panel, substantially as described.

15. The combination of the separator J, the outlet-pipe J', its valve, the superheater Q, the pipe P and its valve, and the condenser M, substantially as set forth.

16. The combination of the superheater, the steam-pipes and agitator therein, and the condenser M.

17. The combination, with the separator, the evaporator, and the condenser, of the ventilating-pipes *n*, the branch T, and the valves T' T², combined and arranged as specified.

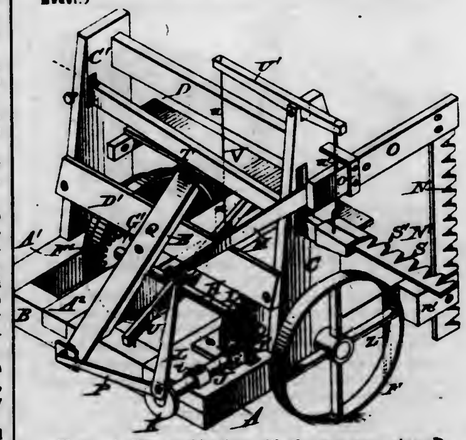
253,723. CAR-COUPLING. MICHAEL W. LAHR, Ladoga, Ind., assignor of one-third to George Rogers, same place. Filed Jan. 18, 1882. (No model.)



Claim.—1. The combination of the slotted head, its guides, rock-bar and pin and the yoke *d*, carrying the rock-bar and jointed to an arm upon a shaft, *g*, substantially as set forth.

2. The combination of the slotted draw-head, rod *e*, shaft *n*, having an arm connected to said rod, and shaft *i*, provided with a handle and connected to said shaft *n*, substantially as set forth.

253,724. COMBINED HEDGE-TRIMMER AND MOWER. JACOB V. LATTNER, Waxahachie, Tex. Filed Nov. 19, 1881. (No model.)



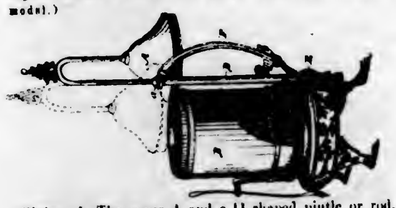
Claim.—1. The combination, with the rear cross-piece, B, standard C, and adjustable and detachable bar T, carrying cutter

S and cutter-bar S', of the lever U, pivoted to the rear cross-piece, the lever U', pivoted to the standard, and the rods u u', connecting the lever U' with the lever U and bar T, respectively, whereby the latter is raised, substantially as shown and described.

2. The combination, with the side pieces, A A', and vertical guard Z, of the horizontal bar T, pivoted in a recess in the side piece A', and supported by a rod connecting with the lever U on the standard C, and the horizontally-reciprocating cutter S, inclosed in the stationary cutter-bar S', and provided with suitable operating mechanism, substantially as shown and described.

3. The combination of the side pieces, A A', standards C C', transverse bar T, carrying horizontal cutter S and cutter-bar S', longitudinal bar O, supporting vertical cutter N and cutter-bar N', the crank-wheel K, the pitman P, rod P', and lever Q, connecting the horizontal cutter with said wheel, the pitman L and lever M, connecting the crank-wheel with the vertical cutter, and suitable gearing for transmitting motion from the drive-wheels to the crank-wheel, whereby the revolution of the latter will cause the vertical and horizontal cutters to reciprocate alternately, substantially as shown and described.

253,725. COVER FOR JARS OF PICKLE-CASTERS AND OTHER RECEPTACLES. THOMAS LEACH, Taunton, Mass., assignor to Reed & Barton, same place. Filed Jan. 9, 1882. (No model.)



Claim.—1. The cover A and a U-shaped pintle or rod, in combination with a receptacle, B, and vertical tubular guide, in which said rod is adapted to slide vertically and rotate, substantially as specified.

2. The cover A and U-shaped rod C, having a fixed roller, *a*, on its longer arm, in combination with the jar B and a tubular guide, D, in which said rod is adapted to slide and rotate, so that the cover may be raised and swung off the jar, and then be held supported, as shown and described.

3. The base of the pickle-caster, having the handle F and tubular standard D formed in one piece, and the latter rigidly attached to said base, as shown and described.

4. As a new article of manufacture, the pickle-caster having the jar-cover A and U-shaped rod C rigidly attached, and a vertical hollow standard, D, in which one arm of said rod is adapted to slide and rotate, and on which it may be supported, as shown and described.

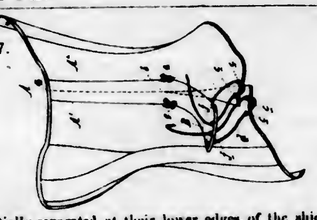
253,726. COVER FOR PICKLE-JARS AND OTHER RECEPTACLES. THOMAS LEACH, Taunton, Mass., assignor to Reed & Barton, same place. Filed Jan. 9, 1882. (No model.)



Claim.—1. The combination, with a jar or receptacle, B, of a cover, A, a laterally-curved hinge-rod attached thereto, and having a vertical portion adapted to slide and rotate as specified, and a tubular guide for the latter, which is located above said receptacle, as and for the purpose set forth.

2. The combination, with the jar or receptacle B, of the cover A, the laterally-curved hinge-rod C, having a lateral pin, as specified, and a slotted tubular guide, which is located laterally from the center of the jar and above the same, as specified, whereby, in removing and replacing the cover, said rod is guided in its vertical movement and the cover is supported above the jar when swung off the same, all as shown and described.

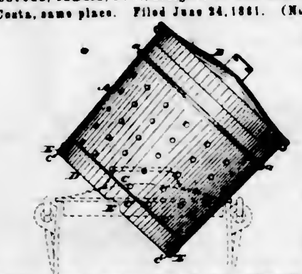
253,727. CORSET. JOHN N. ERMEN, Jackson, Mich. Filed June 6, 1881. (No model.)



Claim.—1. In a corset, the combination, with the side pieces, A' A', partially separated at their lower edges, of the shield B, secured to the exterior of the corset and constructed to cover the junction of the pieces A' A', and the lacings *d*, adapted to draw the pieces A' A' together and the shield to the pieces A' A', substantially as described, and for the purpose specified.

2. In a corset, the combination, with the side pieces, A' A', partially separated at their lower edges, of the shield B, secured to the exterior of the corset and adapted to cover the junction of the pieces A' A', and the lacings *d*, secured to the outer edges of the shield and passing through holes e e in the side pieces and through holes *f f* in the shield, substantially as and for the purpose specified.

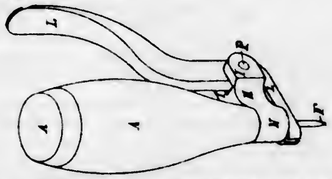
253,728. ATTACHMENT FOR DOMESTIC BOILERS. SILAS LUCKROAD, Camden, N. J., assignor of one-half to James S. Da Costa, same place. Filed June 24, 1881. (No model.)



Claim.—1. The perforated body A, having the bottom C, formed with a flange, C', connected to the lower rim of said body, said flange being in one piece with said bottom, and said rim having notches E, substantially as set forth.

2. The combination, with an outer close vessel or boiler, of the body A, formed with a bead, *a*, below the top thereof, and having a perforated bottom, C, a bottom rim, D, provided with notches E, and a lid, B, adapted both to said body and to the containing boiler, substantially as and for the purpose set forth.

253,729. AWL. THOMAS H. LOGAN, Lowell, Mass., assignor of one-half to Frederick Taylor, same place. Filed Dec. 10, 1881. (No model.)



Claim.—1. The combination of the handle A and the lever L, having its fulcrum P on said handle, as and for the purpose specified.

2. The combination of the handle A and the lever L, provided with the slot S, and pivoted to said handle, as and for the purpose specified.

3. The combination of the chuck B and the nut N, provided with the arm H, as and for the purpose specified.

4. The combination of the handle A, the chuck B, the nut N, provided with the arm H, and the lever L, pivoted to said arm H, as and for the purpose specified.

253,730. PICTURE-EXHIBITOR. AUGUST LUNCKEL, Brooklyn, N. Y. Filed Oct. 26, 1881. (No model.)

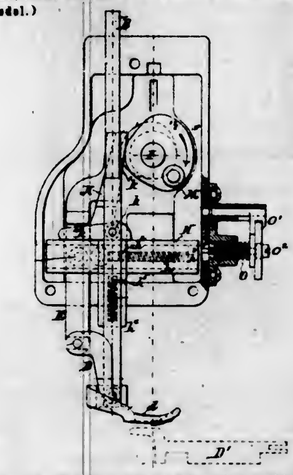
Claim.—A picture-exhibitor consisting of the sheet *a*, with cut-out leg *b*, the folding card *c*, attached to sheet *a*, and the leaves

253,730.



d, flexibly connected with card *c*, whereby several ornamental designs or pictures may be shown, as described.

253,731. FEED MECHANISM FOR SEWING-MACHINES. CLAUS LUNDERS, Celle, near Hanover, Germany. Filed Oct. 18, 1880. (No model.)



Claim.—1. In a sewing-machine, the combination of a presser-foot with feed-dog D, bar E, slide H', and cross-head H, having a vertically-reciprocating motion.

2. The combination of the feed-dog bar E, its slide H', and cam with cross-head H, carrying said slide, elevating-spring L, and devices for depressing said cross-head, substantially as described.

3. The combination of the presser-bar and spring L with cross-head H, carrying the feed-dog bar, pin h^4, bell-crank lever K, and cam, all substantially as specified.

4. The combination of the presser-bar and spring L with cross-head H, slide H', feed-dog bar E, lever K, and operating-cams, all substantially as set forth.

5. The combination of the head of a sewing-machine and feed-dog bar E with cross-head H, slide H', to which said bar E is secured, and screw O in the machine-head, forming an adjustable stop for the slide, all substantially as described.

6. The combination of the feed-dog bar E and slide H', carrying said bar, with adjusting-screw O and its set-screw O^2, substantially as and for the purpose set forth.

7. The combination of the feed-dog bar E and slide H' with adjusting-screw O, having a graduated plate and index-finger, O'.

8. The combination of the presser-bar and spring B' with lever K and cross-head H, carrying the feed-dog bar, whereby the said spring acts on the said presser-bar and on the feed-dog through the lever, as set forth.

253,732. GUARD FOR DOORS AND WINDOWS. JOHN L. MACDONALD, Shakopee, Minn. Filed Oct. 1, 1881. (No model.)

Brief.—Provides a frame in which is secured a wire-netting and a heavy wire guard.

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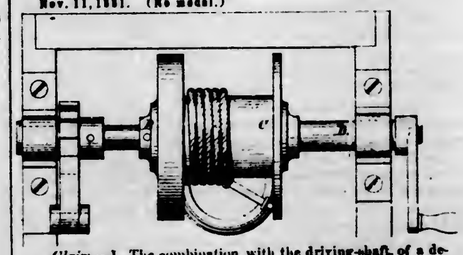


Claim.—1. As an improved article of manufacture, a guard for doors, windows, and other openings, provided with a fine screen to exclude insects and with a heavy wire guard to exclude burglars, substantially as set forth.

2. The improved article of manufacture consisting of a frame adapted to fill and to be permanently secured within a window or like opening, and furnished with a heavy open-work guard adapted to exclude burglars without materially excluding the light and a fine screen to exclude insects, substantially as described.

3. The guard consisting of frame *a*, netting *b*, gauze *c*, and strip *d*, combined as set forth.

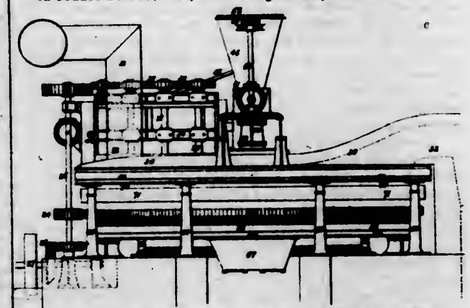
253,733. WINCH. EBENEZER R. MACOMBER, Providence, R. I., assignor of one-half to William H. Barron, same place. Filed Nov. 11, 1881. (No model.)



Claim.—1. The combination, with the driving-shaft, of a device for holding said shaft against rotation in one direction, a driving-head secured to said shaft, a barrel loose on the shaft, a crank mounted upon the shaft and having movement at times independent of the rotation of said shaft, and a sleeve surrounding the shaft and operated by the crank for pressing the barrel against the driving-head in locking frictional contact and releasing it from said locking contact, substantially as described.

2. The combination, with the driving-shaft, of a device for holding it against rotation in one direction, a driving-head fixed upon the shaft, the barrel C, loose upon the shaft, the sleeve D, having a longitudinal movement upon the shaft, a device for moving said sleeve endwise and against the barrel, and thereby moving the barrel into locking frictional contact with the driving-head, and means for turning the shaft in one direction, substantially as described.

253,734. FURNACE FOR CHEMICAL PROCESSES. JAMES MACTEAR, Glasgow, County of Lanark, Scotland. Filed Dec. 27, 1881. (No model.) Patented in England Nov. 28, 1879, in France Dec. 15, 1880, and in Belgium May 23, 1881.



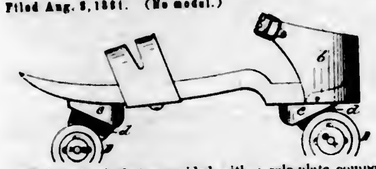
Claim.—1. In combination, a rotating hearth in a reverberatory chamber, the said rotating hearth being made with a dish or rimmed compartment at the center and with a raised rim at the circumference, continuous feeding apparatus for supplying materials to the central dish, and continuous discharge apparatus near the circumferential rim, substantially as and for the purposes set forth.

2. In combination, the feeding-screw 47, the ratchet 52, and pawl-lever 54, with screw-adjustment to vary the stroke given by

the connecting-rod 55, the hopper 46, with its rotating skeleton-frame 57 58, the pipe 48, with its delivery-outlet above the central dish, 28, of the rotating hearth, and the said rotating hearth, all arranged and operating substantially as set forth.

3. The continuous discharge apparatus consisting of the ducts 63, fitted to the outer part of the rotating hearth, and having the annular channel-cover 65 fixed to them, and also of the fixed annular channel 64 and its discharge box or boxes 67, substantially as set forth.

253,735. ROLLER-SKATE. CHARLES E. MARSHALL, Boston, Mass., assignor to himself and George N. Parker, same place. Filed Aug. 8, 1881. (No model.)



Claim.—1. A skate provided with a sole-plate composed of paper, substantially as and for the purpose set forth.

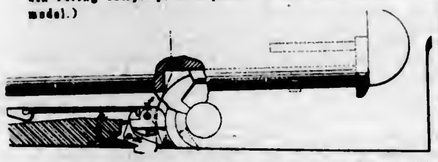
2. In a roller or parlor skate, the combination, with the usual sole-plate and axles thereof, of suitable rollers composed of paper, substantially as and for the purpose specified.

3. As an improved article of manufacture, a roller for parlor-skates, composed of paper, substantially as and for the purpose described.

4. In a roller or parlor skate, the axle B, cast with seats C inclined in opposite directions, as shown, and a central eye, *e*, in combination with the elastic cushions *d*, disposed upon each side of the eye *e*, the latter being pivoted to the box c by pin *f*, substantially as and for the purpose set forth.

5. In a roller or parlor skate, the combination, with the axle B and roller D, having the metal bushing *i*, of the round bars *k*, loosely retained around the axle and between it and the bushing by suitable disks or plates connected to the axle upon the inner and outer sides of the roller, substantially as and for the purpose specified.

253,736. BREECH-LOADING FIRE-ARM. WILLIAM MASON, Hartford, Conn., assignor to the Colts Patent Fire-Arms Manufacturing Company, same place. Filed Dec. 24, 1881. (No model.)



Claim.—1. In that class of fire-arms in which the barrel is arranged to tilt up at the breech, the combination, with the barrels and extractor-spindle, of a finger hinged at the pivot and so as to bear against the extracting-spindle as a shoulder to start the extractor, a cam hung to the fore end and so as to turn with the barrel in its opening and closing movement, and so that its rear end will come beneath the finger as the barrels approach their extreme opening movement, and a spring to turn said cam and impart to said finger a sudden rear movement during the last part of the opening movement of the barrels, substantially as described.

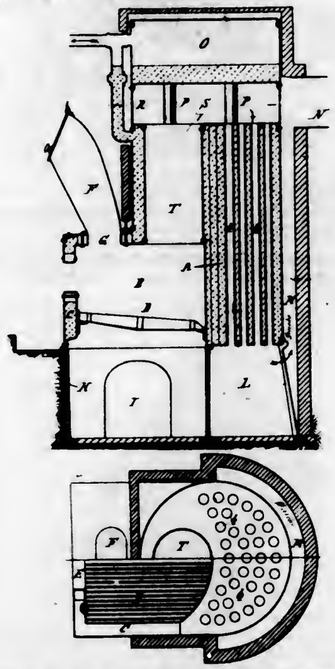
2. In that class of fire-arms in which the barrel is arranged to tilt up at the breech, the combination, with the barrels and extractor-spindle, of a finger hinged at the pivot and so as to bear against the extractor-spindle as a shoulder to start the extractor, a cam hung to the fore end and so as to turn with the barrel in its opening and closing movement, and so that its rear end will come beneath the finger as the barrels approach their extreme opening movement, and a spring to turn said cam and impart to said finger a sudden rear movement during the last part of the opening movement of the barrels, and a trigger to lock and release said cam, substantially as described.

253,737. POCKET-HANGER FOR HATS AND COATS. THOMAS MCDONALD, Austin, Tex. Filed July 21, 1881. (No model.)



Claim.—As a new article of manufacture, a hat-holder consisting of the two parallel plates A, connected at each end by a rivet, and the two hooks B B', pivoted on said rivets and turned in opposite directions, as shown and described.

253,738. STEAM-GENERATOR. THOMAS MCGUNNIGLE, Detroit, Mich. Filed Oct. 12, 1881. (No model.)



Claim.—1. A vertical flue and tubular steam-generator provided with a low-down partially-projecting furnace, B, surrounded by a water-space, C, and provided with a feed-hopper, F, substantially as and for the purposes set forth.

2. In a vertical flue and tubular steam-generator, and in combination with the furnace and fire-tubes thereof, the base H, supporting the furnace and forming an ash-pit beneath the same, and also forming a division between the ash-pit and the lower smoke-chamber, substantially as described.

3. In a steam-generator provided with a vertical flue and vertical tubes opening into a smoke-chamber, as described, and in combination therewith, the steam-dome O, forming the top of said smoke-chamber, and the pipes P, connecting said steam-dome with the generator, as and for the purpose specified.

4. In a vertical flue and tubular boiler, the steam-dome O and ring R, forming a smoke-chamber above the tube and flues, in combination with the pipes P and pipe V, connecting said dome with the generator, as and for the purpose specified.

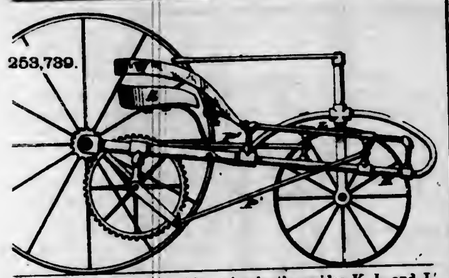
5. In a vertical flue and tubular boiler, the combination of the base H, the partially-projecting furnace B, resting on said base, the flue T, the steam-dome O, and ring R, forming a smoke-chamber, S, the pipes P V, tubes *b*, smoke-chamber L, and smoke-flue M, substantially as and for the purpose described.

6. An upright steam-generator provided with a partially-projecting furnace, an eccentric ascending flue, and a series of descending flues in rear thereof, all of which are inclosed within the water-space of the boiler-shell, substantially as described.

253,739. VELOCIPEDE. THOMAS MCGANNON, Dayton, Ohio, assignor to Anna Maria MacGregor, same place. Filed Apr. 8, 1881. (No model.)

Claim.—1. In a tricycle, the combination, with the substantially horizontal frame, of the cross-heads M, arranged to slide back and forth on the guides K L L', and provided with stirrups *r*, and the pitmen P P', connected at their forward forked ends to said stirrups and at their rear ends to cranks upon the driving-shaft, substantially as and for the purpose specified.

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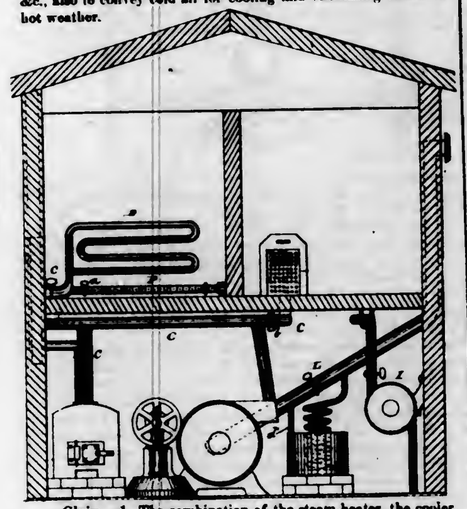


2. In combination with a tricycle, the guides K, L, and L', along which the cross-heads slide and by which they are supported, as and for the purpose specified.

3. In a tricycle having substantially horizontally-sliding driving pedals or stirrups, the arrangement and combination, with such pedals, of the seat S and band W, whereby a firm bracing is provided for the driver, substantially as described.

253,740. COOLING AND VENTILATING HOUSES. THOMAS MCGREGOR, Philadelphia, Pa., assignor of one-half to Howard Hanes, same place. Filed Aug. 16, 1881. (No model.)

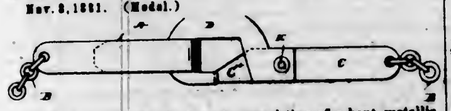
Brief.—Utilizes the steam-heating or hot-air pipes, registers, &c., also to convey cold air for cooling and ventilating rooms in hot weather.



Claim.—1. The combination of the steam-heater, the cooler, the air-inlet pipe L, the forcing-engine, pipes O N, valves *a b c*, radiator D, and the perforated pipe P, substantially as described.

2. The combination of a radiator, D, the perforated pipe P, and valves *a c*, substantially as and for the purpose described.

253,741. BALE-TIE. THOMAS F. MCNAIR, Dawson, Ga. Filed Nov. 8, 1881. (Model.)

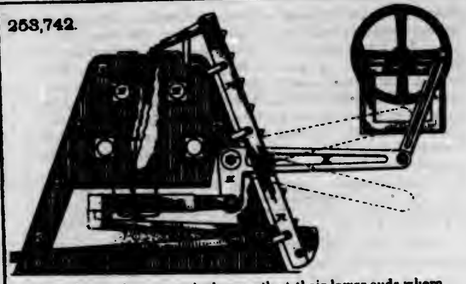


Claim.—A bale-tie fastening consisting of a bent metallic strip, A, a straight strip, C, having a beveled end, C', a pivoted hook, D, adapted to hold the strip A and, in connection with the beveled end C' of the strip C, lock the parts, and the straps B, all arranged substantially as and for the purposes specified.

253,742. STONE AND ORE CRUSHER. HARRISON H. MERCH, New York, N. Y. Filed Nov. 19, 1881. (No model.)

Claim.—In an ore-crusher, the combination of the two jaws pivoted at their upper ends and having both concave and convex surfaces, the said surfaces being roughened at their tops where the

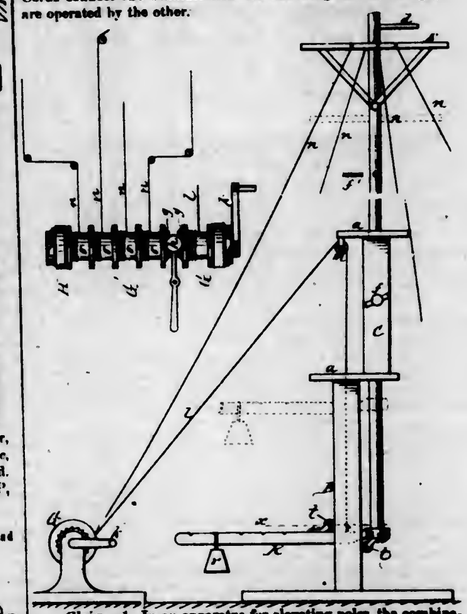
253,742.



ore is broken and comparatively smooth at their lower ends where the broken ore is ground, with the frame D, the pivoted connecting-link, and the cranked lever H, which is connected at its outer end to an operating mechanism, substantially as shown.

253,743. APPARATUS FOR ELEVATING POLES FOR ELECTRIC LIGHTS, &c. JOHN D. A. MENNING, Rochester, N. Y. Filed July 8, 1881. (No model.)

Brief.—The frame consists of two guideways, the upper one being offset from the lower. An elevating device passes through the lower guide, being provided with friction-rollers and a socket for the reception of a pole at one end, and an arm notched to receive a counter-weight at the other. The purpose is to raise the pole by adding sections from below, the raised portion being projected successively upward by a double windlass, the two parts of which are connected by an engaging and disengaging gearing. Cords connect one windlass with the elevating device, and guys are operated by the other.



Claim.—1. In an apparatus for elevating poles, the combination of the two guideways B C, the elevating device K, the two sections of windlass G G', connected by an engaging and disengaging gearing, the cord or cable *l*, connecting the section G with the elevating device, and the guys *a a a a*, connecting the section G' with the pole, as shown and described, and for the purpose specified.

2. In an apparatus for elevating poles, the frame consisting of the two guideways B C, the upper guideway being offset from the lower one, so that the sections of the pole may be inserted in the upper one outside of the lower one, as herein shown and described.

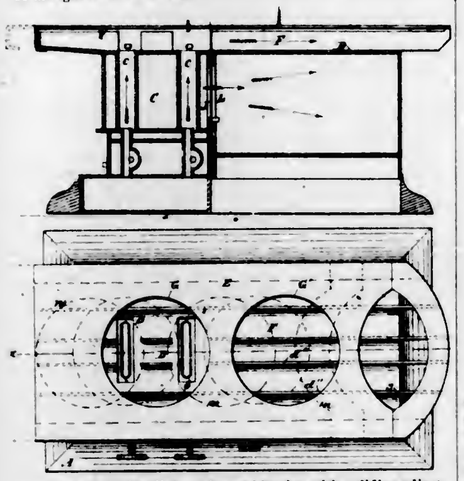
3. In an apparatus for elevating poles, the combination, with the guideway B, provided with the slot *p*, of the elevating device K, passing through the guideway, having a socket, *s*, at one end for receiving the pole, a long arm at the other end, notched to re-

ceive a counter-weight, and provided with friction-rollers *t t*, for running against the guideway, as herein shown and described.

4. In an apparatus for elevating poles, the combination, with the pole erected in sections, of the two windlass-sections G G', connected by engaging and disengaging gears, the cord or cable *l*, connecting with one windlass-section and being attached at the opposite end to the elevating device K, and the cords or cables *a a a a*, connecting with the other windlass-section and being attached at the opposite end to the pole, the several cords of one section being paid out as the cord of the other section is drawn up, as herein shown and described.

253,744. OIL-STOVE. RUFUS H. HERRILL, Englewood, Ill. Filed Nov. 16, 1881. (Model.)

Brief—Either one or two holes of the sliding top plate may be brought over the frame.



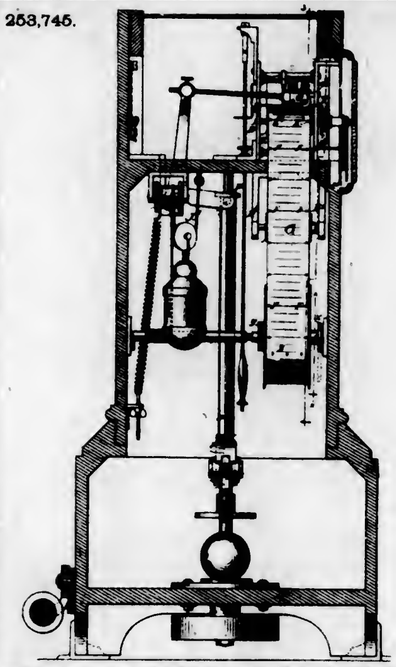
Claim.—1. An oil-stove, in combination with a sliding adjustable top plate, provided with openings to receive cooking utensils, and operating substantially as and for the purpose set forth.

2. In an oil-stove top, a movable adjustable top plate provided with openings for the reception of cooking utensils, in combination with a bottom plate, and arranged to form a flue, as shown, to operate substantially in the manner and for the purpose set forth.

3. In combination with an oil-stove provided with plates D and E, forming a flue, a warming-closet arranged to operate substantially as and for the purpose set forth.

4. In an oil-stove, a tilting or removable heating-drum provided with the opening J, in combination with a fixed warming-closet having a corresponding aperture, L, and arranged and operating substantially as shown and set forth.

253,745. CONTINUOUS RECORDER. JOHN B. MOSCROP, Stratford, County of Lancaster, England. Filed Jan. 14, 1882. (No model.) Patented in England Mar. 24, 1881.



Claim.—1. The combination, in a recording apparatus, substantially as herein specified, of a time mechanism, a rotary drum geared with said mechanism and provided with peripheral stud-pins arranged in equidistant pairs, and diagram-paper having corresponding holes to receive said pins, with a receiving-reel, to which said paper passes from said drum, and means for giving said reel a constant tendency to wind up said paper, for the purpose set forth.

2. The combination, in a recording apparatus, substantially as herein specified, of a time mechanism, a rotary drum geared with said mechanism and provided with peripheral stud-pins arranged in equidistant pairs corresponding with divisions of time, and diagram-paper having corresponding holes and parallel transverse lines marking minor subdivisions of time, for the purpose set forth.

3. In a recording apparatus, a marker comprising a marking-wheel, an inking-pad in contact with said wheel, and means for limiting the rotation of said wheel to one direction, substantially as herein specified, for the purpose set forth.

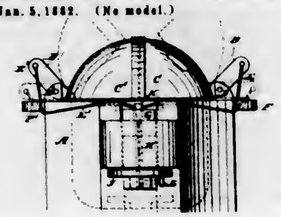
4. In a recording apparatus, a marker having a marking-wheel, an inking-pad in contact with said wheel, and means for limiting the rotation of said wheel to one direction, in combination with continuous diagram-paper supported beneath said marker and propelled longitudinally thereunder, and means for reciprocating said marker transversely of said paper, said marking-wheel being arranged to rotate in the line of reciprocation, substantially as herein specified, for the purpose set forth.

5. The combination, substantially as herein specified, of a time mechanism, continuous diagram-paper propelled longitudinally by said mechanism, a marker having a marking-wheel, an inking-pad in contact with said wheel, and means for limiting the rotation of said wheel to one direction, and adapted to reciprocate transversely of said paper, and mechanism for so moving said marker, for the purpose set forth.

6. In an apparatus for recording the performance of a steam-engine or other motor, the combination of a time mechanism, continuous diagram-paper propelled longitudinally by said mechanism, a marker adapted to reciprocate transversely of said paper, and mechanism for so moving said marker, comprising a centrifugal governor driven by said engine or motor, and constructed with ears or cams, a gravitating slide resting upon said cams, and a spring partly counterbalancing the weight of said slide through the medium of a connecting-lever, as means for transmitting proportionated motion to said marker, substantially as hereinbefore described and illustrated.

7. In an apparatus for recording the performance of a steam-engine or other motor, the combination of a time mechanism, continuous diagram-paper propelled longitudinally by said mechanism, a marker adapted to reciprocate transversely of said paper, and mechanism for so moving said marker, comprising a centrifugal governor driven by said engine or motor, and constructed with ears or cams, and a gravitating slide resting upon said cams and partly counterbalanced, as means for transmitting a steady proportionated motion from the governor-balls to said marker, substantially as hereinbefore described and illustrated.

253,746. SPITTOON. OTTO MOSSENBOCK, Guttenburg, N. J. Filed Jan. 5, 1882. (No model.)



Claim.—1. A spittoon constructed, as herein shown and described, with swinging covers, and with foot-levers for operating these covers, whereby the covers can be swung open by depressing one of the foot-levers, as set forth.

2. The combination, with a spittoon, of swinging covers and of cords, and sliding blocks provided with foot-rests for operating the covers, substantially as herein shown and described, and for the purpose set forth.

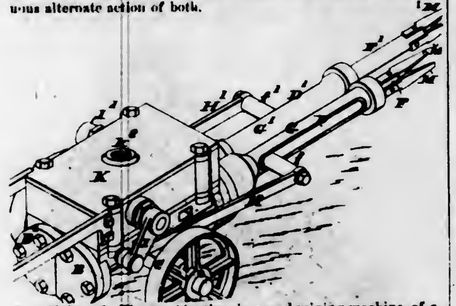
3. The combination, with the spittoon A, of the swinging covers C C', provided with lugs or arms D D', the cords E E', the guide-brackets H H', and the vertically-sliding blocks G G', with projecting foot-rests J J', substantially as herein shown and described, and for the purpose set forth.

4. The combination, with the spittoon A, of the swinging covers C C', provided with lugs or arms D D', the cords E E', the apertured side brackets, F F', the guide-brackets H H', and the vertically-sliding blocks G G', provided at the lower ends with foot-rests J J', substantially as herein shown and described, and for the purpose set forth.

5. The combination, with the spittoon A, of the swinging covers C C', provided with lugs or arms D D', the cords E E', the guide-brackets H H', the vertically-sliding blocks G G', provided with projecting foot-rests J J', and the binding-screws L, for holding the cords E E' in the blocks G G', substantially as herein shown and described, and for the purpose set forth.

253,747. COAL-MINING MACHINE. THOMAS MURRAY, St. Louis, Mo., assignor of one-half to Andrew C. Bryden, same place. Filed Oct. 8, 1881. (No model.)

Brief.—The stroke of each drill actuates the steam-valve of the other drill, thus avoiding dead-points and producing a continuous alternate action of both.



Claim.—1. The combination, in a coal-mining machine, of a pair of engines and a pair of picking devices, each of said engines operating the valve-gear of the other engine, as and for the purpose described.

2. The combination of the engines B B', the rods F F', arms *f f'*, rods H H', cranks I I', shafts J J', cams *j j'*, chest K, bearing *k*, flange *f'*, and valves L L', substantially as described.

3. The combination, in an air-engine, of the chest K, the bearing *k*, the shaft J, and flange *f'*, substantially as described, and for the purpose set forth.

4. The combination of the engines B B', the rods F F', the guides G G', the arms *f f'*, the rods H H', the cranks I I', and the shafts J J', substantially as described.

5. The combination of the engine B, the piston E, and the disks N N', substantially as described.

6. The combination of the rod F and two or more chisels, M M', said chisels being grouped exclusively at one side of the end of the rod, substantially as described.

7. A coal-striking device having two or more chisels grouped exclusively at one side of the end of the striker-rod, for the purpose described.

253,748. FURNACE-LINING AND BRICKS THEREFOR. WILLIAM MANNING, Cincinnati, Ohio, assignor to the Queen City Malleable Iron Company, same place. Filed Dec. 29, 1881. (No specimens.)

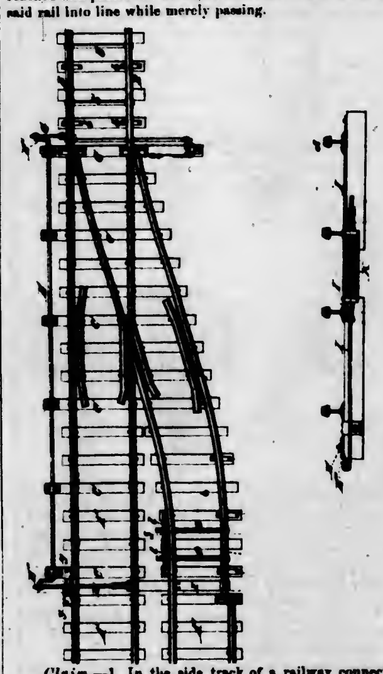
Brief.—Forty-five parts of old fire-brick; twenty-five parts of old crucibles; twenty parts of blue clay; nine parts of graphite; one part of green vitriol; one part of potash-alum.

Claim.—1. A fire-proof lining-mortar for furnace walls and arches, consisting of the rubbish of old used fire-brick, fragments of old crucibles, blue clay, graphite, green vitriol, and potash-alum compounded in the manner and proportions substantially as set forth.

2. A fire-brick consisting of the rubbish of old used fire-brick, fragments of old crucibles, blue clay, graphite, green vitriol, and potash-alum compounded in the manner and proportions substantially as described, and air-dried, as set forth.

253,749. RAILROAD-SWITCH. PATRICK HOLAN, Rockwood, Texas. Filed Aug. 1, 1881. (No model.)

Brief.—A break is maintained in one of the rails of a siding when the main switch is set to the main line, whereby shunted cars are prevented from returning and fouling with the main line. The rod operating said rail has a spring-connection, whereby, if the switch were reset to the main before the car in shunting had reached and passed the break, the wheels of the car would spring said rail into line while merely passing.

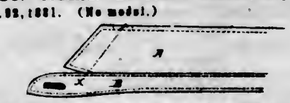


Claim.—1. In the side track of a railway connected by a switch to the main track, the short blocking switch-rail *a*, combined with the main switch, the crank-rod E, connected with and operating the latter, and a spring-connection between the blocking switch-rail and the crank-rod, said members being arranged for operation substantially as described, for the purposes set forth.

2. The combination, with a railway-switch, of the short blocking-rail *a*, crank-rod E, arranged parallel to the track-rails, and the spring connecting-rod I, all constructed and arranged substantially as and for the purpose described.

3. The combination, with the switch and main siding track-rails, the connecting-rod I, the short blocking-rail *a*, and the crank-rod E, of the switch-spring K, all arranged for operation substantially as described.

253,750. COLLAR. ROWLAND S. MORTON, Troy, N. Y. Filed Dec. 22, 1881. (No model.)

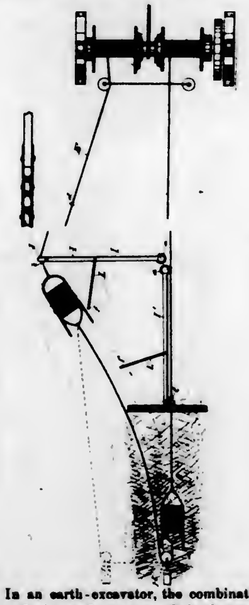


Claim.—In a collar, the combination, with its band, of a collar-body having its outward ends, at their lower or band edge, detached from the band and turned outward, so as to serve as a guard to prevent the necktie from slipping up above the neckband, substantially as herein described.

253,751. EARTH-EXCAVATOR. WILLIAM A. MOTT, Quincy, Ohio. Filed Dec. 1, 1881. (No model.)

Brief.—The scrapers are connected front and rear by ropes or cables, the former having bails passing through eyes in the end of

swinging levers and thence to winding-drums, around which they are reversely wound, knots on said ropes limiting their movement through said eyes, whereby, after each scraper has been filled, it is directed to one side of the excavation and then dumped through contact of an inclined bar on said swinging lever with the scraper-handle.



Claim.—1. In an earth-excavator, the combination, with a scraper or similar device, and a rope or chain for operating the same, of a pivoted lever adapted to turn the direction of said scraper, substantially as and for the purpose shown and described.

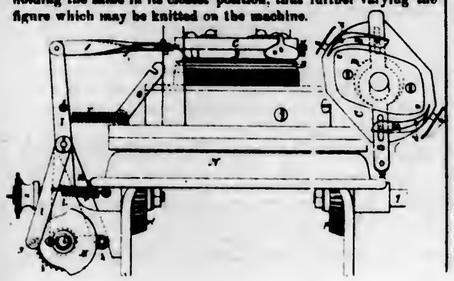
2. In combination with an earth-excavator, an arm, said arm being pivoted at one end at or near the line of excavation, and adapted to turn the direction of said scraper, substantially as and for the purpose shown and described.

3. In an earth-excavator, the combination of the long arm I and rope or chain E, with its knots *b d* and *c e*, substantially as and for the purpose shown and described.

4. In an earth-excavator, the combination, with the long arm I, of arm L, secured to the arm I and adapted to dump the scraper, substantially as set forth.

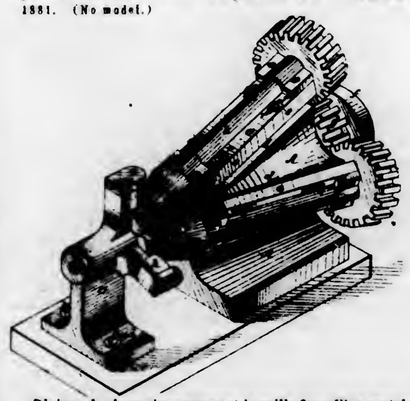
253,752. KNITTING-MACHINE. GEORGE E. NYE, Bristol, Pa., assignor to himself and HIRAM P. BALLOU, Needham, Mass. Filed Nov. 9, 1881. (No model.)

Brief.—The two drawing-in cams of the dial-needles are pivoted at one of their ends to the cam-supporter, and at their other ends they are attached to slides, which are operated by the mechanism set forth in the first clause. Two thread-guides are provided opposite each push-out cam, to which yarns of different colors are supplied. The improvement gives the ribbed fabric produced thereby a striped, checked, or block-work appearance. The invention embraced by the second clause is for locking one of the levers operating one of the cams to prevent it from being moved, holding the same in its closest position, thus further varying the figure which may be knitted on the machine.



Claim.—1. The removable handle for portable lifting-jacks, constructed, as herein shown and described, with ratchet-gear D, having sleeve F, provided with square hole G, and the two-armed lever B, fitted to turn freely upon said sleeve, and provided with the double pawl E, arranged to push the gear in either direction, the sleeve being secured in the gear by pin or collar, and the whole operating substantially as herein set forth.

253,754. ROLLING-MILL. JONATHAN OSTRANDER, West Middlesex, Pa., assignor of two-thirds to Joseph W. Russell, same place, and Phillip M. Haas, Youngstown, Ohio. Filed June 18, 1881. (No model.)



Claim.—1. As an improvement in mills for rolling metal articles of cylindrical form, the tapering rolls *a*, arranged with their axial lines diverging from the same point, forming a tapering space between their contiguous surfaces equal to the length of the rolls and in axial line with a feeding-tube, substantially as described, for the purpose specified.

2. In a rolling-mill for metal articles of a cylindrical form, the tapering rolls *a*, arranged with their axial lines diverging from the same point, forming a tapering space between their contiguous surfaces equal to the length of the rolls and in axial line with the feeding-tube, in combination with means whereby said rolls are adjusted in the line of their axes to increase or diminish the tapering space, substantially as described, for the purpose specified.

3. The rolls of a rolling-mill for metal articles of cylindrical form, arranged with their axial lines diverging from the same point, forming a tapering space between their contiguous surfaces equal to the length of the rolls and in axial line with the feeding-tube, in combination with the roll-bearing beds *c* and the housing A, to which said beds are adapted for adjustment with the rolls, substantially as described, for the purpose specified.

4. The rolls of a rolling-mill for metal articles of cylindrical form, arranged outside of their housing bearings or supports, with their axial lines diverging from the same point, forming a tapering space between their contiguous surfaces equal to the length of the rolls, in combination with a feeding-tube arranged within said housing, substantially as described, for the purpose specified.

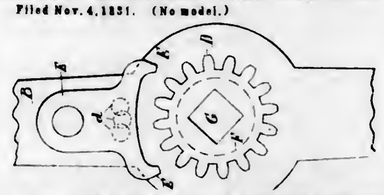
5. The rolls of a rolling-mill constructed and arranged for adjustment and operation with a feeding-tube substantially as herein described, in combination with a tri-armed adjustable standard provided with adjustable abutments for supporting the non-journaled ends of the rolls, and with a delivering and supporting tube for the finished article, substantially as described, for the purpose specified.

6. In a mill for rolling metal articles of cylindrical form, the combination, with rolls arranged for adjustment and operation substantially as described, of a permanent tube and interchangeable feeding and delivering tubes having different interior diameters adapted to suit different sizes of articles to be rolled, substantially as described.

7. The combination, in a mill for rolling metallic articles of cylindrical form, with the rolls arranged for adjustment and operation in relation to each other, and a feeding-tube arranged in central relation to said rolls, of a furnace having a heating-tube arranged in the relation to said feeding-mill tube, substantially as described, for the purpose specified.

8. A mill for rolling metal articles of cylindrical form, consisting of rolls arranged with their axial lines diverging from the same point, forming a tapering space between their contiguous surfaces and adapted for adjustment in the line of their axes, a feeding-tube carried by the roll-housings, and a delivering-tube carried by an adjustable standard having adjustable abutments for supporting the non-journaled ends of said rolls, substantially as described, for the purpose specified.

253,753. LIFTING-JACK. GEORGE A. OHL, Newark, N. J. Filed Nov. 4, 1881. (No model.)



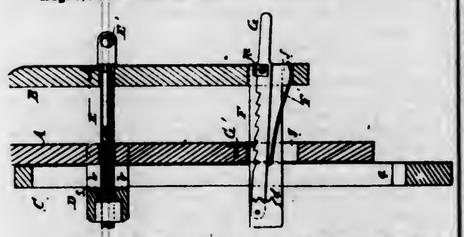
Claim.—The removable handle for portable lifting-jacks, constructed, as herein shown and described, with ratchet-gear D, having sleeve F, provided with square hole G, and the two-armed lever B, fitted to turn freely upon said sleeve, and provided with the double pawl E, arranged to push the gear in either direction, the sleeve being secured in the gear by pin or collar, and the whole operating substantially as herein set forth.

253,755. GARMENT. GEORGE W. PARKER, Detroit, Mich., assignor to F. Buhl & Co., same place. Filed July 27, 1881. (No model.)



Claim.—The coat A, provided with a fixed collar or lapel, B, in combination with the triangular flap or shield G, permanently secured to the interior of the same at one side only, and provided with means for fastening at the opposite side, said flap being constructed to entirely close the opening in the coat below the neck of the wearer and adapted to be folded under one side of the coat, whereby the flap can be used in cold weather to close the breast-opening or in mild weather be folded back entirely out of view, substantially as described.

253,756. BENCH-VISE. JESSE LISBON PARKER, Fountain City, Ind., assignor to himself and E. F. Willcuts, same place. Filed Aug. 6, 1881. (No model.)



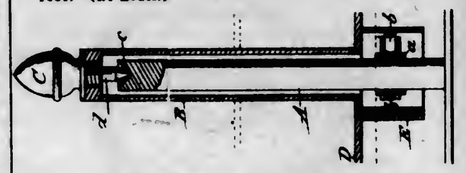
Claim.—1. An improved bench-vise constructed substantially as herein shown and described, consisting of jaw A, provided with screw E, block D, and opening *g*, of catch-plate G, and of jaw B, having opening *f*, and provided with slotted block F and pivoted ratchet-spring treadle G′, arranged as set forth.

2. In a bench-vise, the combination, with the jaws A B and the slotted bench-leg C, of the screw-block D, provided with tenons *b* and shoulders *c*, substantially as and for the purpose set forth.

3. In a bench-vise, the combination, with the jaws A B, of the slotted block F, catch-plate G′, and spring-actuated treadle G, substantially as herein shown and described, whereby the relative positions of the lower parts of said jaws are fixed, as set forth.

4. In a bench-vise, the combination, with jaw B, block F, and treadle G, provided with dog *m*, of the ratchet *n*, substantially as herein shown and described, whereby said treadle is held disengaged, as set forth.

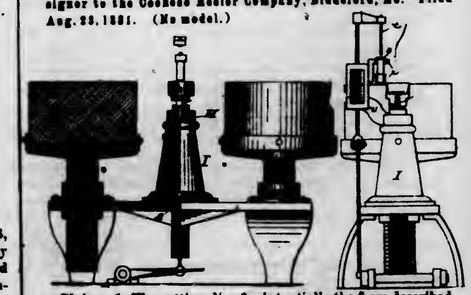
253,757. REVOLVING SHOW-STAND. FREDERICK PEARCE, New York, and JAMES JONES, Brooklyn, N. Y. Filed Dec. 1, 1881. (No model.)



Claim.—1. The combination, with the standard A, having a bracket carrying rollers *b b*, adapted to revolve within a collar, of the tube B and disk D, having collar E, adapted to revolve around the standard, substantially as set forth.

2. In a revolving show-stand, the combination of the standard A, having rollers *b b* and oil cup or cavity *c*, the tube B, inclosing said standard, and provided with a disk, D, having a band or collar, E, adapted to revolve upon the rollers *b*, and the cap-piece C, having a threaded spindle, *d*, passing through a corresponding opening in the upper end of the revolving tube and adapted to support the same, substantially as shown and described.

253,758. HEEL-MACHINE. FRANK PEASE, Lynn, Mass., assignor to the Goodyear Hosier Company, Biddeford, Me. Filed Aug. 23, 1881. (No model.)



Claim.—1. The cutting-die of substantially the form described, adapted to receive and retain the lifts required to form a heel-blank, in combination with the nailing device consisting of an upper part, A, adapted to receive the said cutting-die and to hold the nails, and a nail-driving device, the whole operating by means of a blow upon the die to drive down both the cutter and cup, and to impale the lifts in the die, all substantially as described.

2. The combination of the sleeve sliding upon the plunger-rod, the spring-support, the nail driver or drivers, the perforated block to hold the nails, and the plate or cup A, and the nail-driver adapted to move in the holes in the nail-holding block, in combination with the vertically-adjustable post H and standard I of the table, substantially as described.

4. The combination of the table, the cutting-blocks, and their vertically-adjustable posts arranged on each side of the standard I, and in connection, as described, with the nailing devices mounted thereon, all as set forth.

5. The central standard, I, the nailing devices, as described, mounted thereon, the bracket *c*, vertical rod supported by spring and connected to treadle, and the arm and plunger-rod *f*, arranged over the slotted arm which supports the cutting-die, all as set forth.

6. The detachable plate *e*, having a flange, *d*, in combination with the plate or cup A of the described nailing device, all as set forth.

7. In combination with the cutting-die having cutting-flange and cavity, to receive the lifts of a heel-blank, the tapering brads provided with serrations at their ends, all as set forth.

253,759. SIGNAL-BOX FOR DISTRICT AND ALARM TELEGRAPHS. GEORGE H. PHELPS, Brooklyn, N. Y. Filed Dec. 13, 1881. (No model.)

Brief.—One end of the volute spring is connected with the crank and the other with the circuit-breaking wheel, the latter being free to rotate on the crank.

253,760. RAILWAY SIGNALING APPARATUS. FRANK J. PIERCE, Boston, Mass., assignor to himself and WILLIAM H. PIERCE, Cambridge, Mass. Filed Nov. 14, 1881. (No model.)

Brief.—The invention consists in the combination, with a train-signal, of a pivoted arm, a spring, and a pivoted hook, which is engaged by the arm when the signal is set, and is disengaged by the passing train, whereby the signal is released and the arm is caused to be moved by the spring, substantially as described.

253,761. SAW-SET. ALBERT PIKE, Auburn, Me. Filed Nov. 14, 1881. (No model.)

Brief.—The invention consists in the combination, with the anvil and the hammer, of a pivoted gage-plate, a spring, and a stop, whereby the gage-plate is held in position to gage the saw-tooth, and is moved out of position by the hammer, substantially as described.

253,762. RAILWAY SIGNALING APPARATUS. FRANK J. PIERCE, Boston, Mass., assignor to himself and WILLIAM H. PIERCE, Cambridge, Mass. Filed Nov. 14, 1881. (No model.)

Brief.—The invention consists in the combination, with a train-signal, of a pivoted arm, a spring, and a pivoted hook, which is engaged by the arm when the signal is set, and is disengaged by the passing train, whereby the signal is released and the arm is caused to be moved by the spring, substantially as described.

253,763. SAW-SET. ALBERT PIKE, Auburn, Me. Filed Nov. 14, 1881. (No model.)

Brief.—The invention consists in the combination, with the anvil and the hammer, of a pivoted gage-plate, a spring, and a stop, whereby the gage-plate is held in position to gage the saw-tooth, and is moved out of position by the hammer, substantially as described.

253,764. SAW-SET. ALBERT PIKE, Auburn, Me. Filed Nov. 14, 1881. (No model.)

Brief.—The invention consists in the combination, with the anvil and the hammer, of a pivoted gage-plate, a spring, and a stop, whereby the gage-plate is held in position to gage the saw-tooth, and is moved out of position by the hammer, substantially as described.

253,765. SAW-SET. ALBERT PIKE, Auburn, Me. Filed Nov. 14, 1881. (No model.)

Brief.—The invention consists in the combination, with the anvil and the hammer, of a pivoted gage-plate, a spring, and a stop, whereby the gage-plate is held in position to gage the saw-tooth, and is moved out of position by the hammer, substantially as described.

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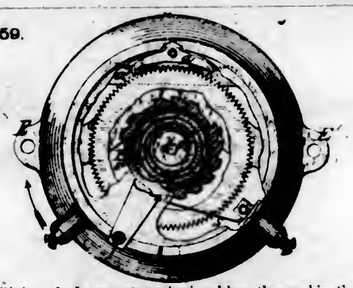
253,767. SAW-SET. ALBERT PIKE, Auburn, Me. Filed Nov. 14, 1881. (No model.)

Brief.—The invention consists in the combination, with the anvil and the hammer, of a pivoted gage-plate, a spring, and a stop, whereby the gage-plate is held in position to gage the saw-tooth, and is moved out of position by the hammer, substantially as described.

253,768. SAW-SET. ALBERT PIKE, Auburn, Me. Filed Nov. 14, 1881. (No model.)

Brief.—The invention consists in the combination, with the anvil and the hammer, of a pivoted gage-plate, a spring, and a stop, whereby the gage-plate is held in position to gage the saw-tooth, and is moved out of position by the hammer, substantially as described.

253,759.



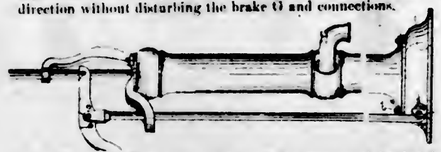
Claim.—1. In an automatic signal-box, the combination of a crank capable of continuous rotation in one direction, an automatic circuit-breaker capable of continuous rotation in the same direction as that of the crank, and a volute spring whose opposite ends are respectively connected to said crank and circuit-breaker.

2. In an automatic signal-box, the combination of a crank capable of continuous rotation in one direction, an automatic circuit-breaker capable of continuous rotation in the same direction as that of the crank, a volute spring whose opposite ends are respectively connected to the crank and circuit-breaker, and an escapement or governor for rendering the movement of the circuit-breaker uniform.

3. An automatic circuit-breaker having a stop upon its disk, and a crank operating said circuit-breaker through the medium of a spring, whereby in the rotation of the automatic circuit-breaker the crank cannot revolve in advance of said circuit-breaker to the extent of more than one revolution.

253,760. PUMP. FRANK F. PINACH, Brodhead, Wis. Filed Dec. 9, 1881. (No model.)

Brief.—The device is adapted to be operated by wind-power by attaching the piston-rod E to the wind-wheel and disconnecting brake G from the piston-rod. The spout may be turned in any direction without disturbing the brake G and connections.

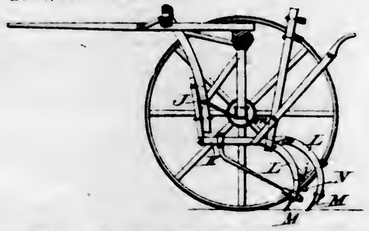


Claim.—1. The combination, with the pump-stock having the depending annular flange at its upper end, of the base having the depending annular flange, the cap carrying the guide for the fulcrum, the hooked bolts and nuts for uniting the stock to the base and to the cap, and the handle and fulcrum, the latter hinged to the base, the whole arranged and adapted for adjustment substantially as described.

2. The cap having the upwardly and inwardly extending arm, forming a guide for the plunger, and the laterally-slotted arm for guiding and supporting laterally the fulcrum, substantially as described.

3. The combination, with the parts to be united by them, of the hooked bolts and their nuts, each bolt having a slot in its upper end, for the purpose specified.

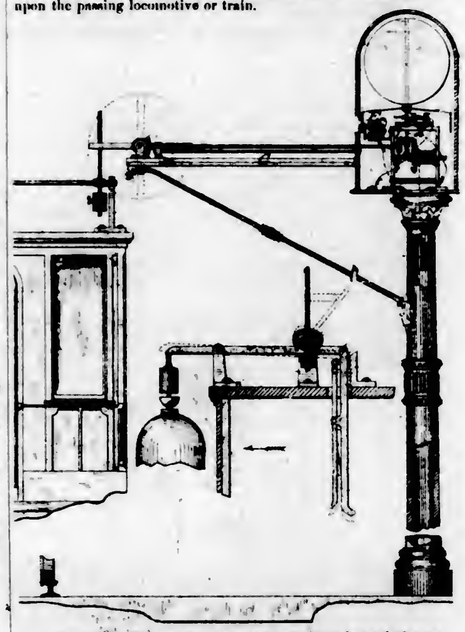
253,761. SULKY-PLOW. THOMAS V. PLICH, Polk, Ohio. Filed Nov. 3, 1881. (No model.)



Claim.—The combination, in a sulky-cultivator, with the swiveled rods J J, of the pivoted beams K K, shovel-beams L L, pivoted thereto, and provided with handles N N and shovels M M, and the scraper R, connected with one of said beams by a curved bar, substantially as shown and described.

253,762. RAILWAY SIGNALING APPARATUS. FRANK L. POPE, Elizabeth, N. J., assignor to the Union Switch and Signal Company, Hartford, Conn. Filed Nov. 18, 1881. (No model.)

Brief.—The visual signal controls a rotating arm which lies across the path of an audible signal upon the locomotive or train, whereby, when the visual signal is at "danger," an alarm is given upon the passing locomotive or train.



Claim.—1. The combination, substantially as hereinbefore set forth, with a locomotive or car, of an audible signal, a movable lever whereby the same is actuated, a shaft capable of rotation in its bearings, an eccentric cam, and upright projecting arm mounted upon said shaft, whereby, when said arm is depressed, the audible signal is sounded by the action of said cam.

2. The combination, substantially as hereinbefore set forth, with a locomotive or car, of an audible signal, a lever for actuating the same, a double-acting cam, and projecting arm attached thereto, which arm, when deflected in either direction, acts through the cam to sound the audible signal.

3. The combination, substantially as hereinbefore set forth, with a locomotive or car, of an audible signal, mechanism for putting said signal in action automatically, controlled by a stationary signaling mechanism situated at fixed points along the track traversed by said locomotive or car, and means, substantially such as described, for locking the actuating mechanism of the audible signal after it has been automatically started until released by the attendant.

4. The combination, substantially as hereinbefore set forth, of a visual or semaphoric signal mounted upon a vertical axis and capable of two positions at right angles to each other, and a rotating arm mounted upon a horizontal axis and moving synchronously therewith, for actuating an audible signal upon a moving locomotive or car.

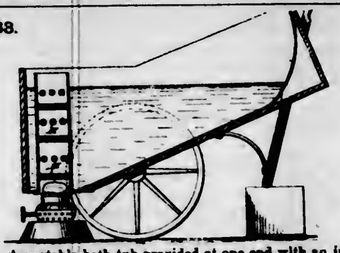
5. The combination, substantially as hereinbefore set forth, with a locomotive or car, of an audible signal, a projecting arm, whereby the same is actuated, a stationary visual signal, an arm mechanically connected with said signal, which engages with the first-named arm, and a friction-roller mounted thereon.

253,763. PORTABLE COMBINED BATH-TUB AND HEATER. WILLIAM Q. PERWITT, Lexington, Ky. Filed Dec. 1, 1881. (No model.)

Brief.—The flue has cross water-pipes, by which more heating surface is afforded.

Claim.—1. A portable bath-tub provided at one end with a hot-air flue, and pivoted upon a support, whereby the tub can be tilted, so as to throw the water to the end in which the flue is located, substantially as described.

253,763.

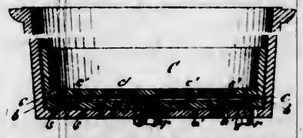


2. A portable bath-tub provided at one end with an inclined extension, and with a hot-air flue arranged within said extension, the tub being pivoted upon a support, so that it can be tilted, in order to cause the greatest depth of water to be at the point where the flue is located, substantially as described.

3. A portable bath-tub provided with an axle supported by wheels, and having at its end an inclined extension with a hot-air flue arranged therein, whereby the tub can be tilted, so as to cause the water to rise around the flue in order to expose the water to a greater area of heating-surface, and also so that the tub can be readily moved from place to place, substantially as described.

4. The combination, with the portable bath-tub provided at one end with an inclined extension, of the wheels and legs for supporting the tub, the handles, and the hot-air flue arranged in the said inclined extension, substantially as described.

253,764. KETTLE FOR MAKING DROP-SHOT. THOMAS E. RUDDY, Pittsburg, Pa., assignor to himself and JAMES McKEOFERY, same place. Filed Nov. 17, 1881. (No model.)



Claim.—1. A drop-shot kettle having two perforated bottoms, arranged face to face without any interposed device to interrupt or regulate the flow of molten lead from the perforations in one to and through the perforations in the other, substantially as set forth.

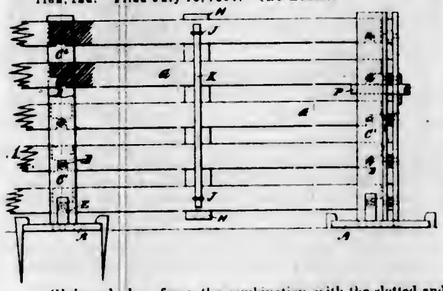
2. The combination of the kettle having a perforated bottom, a perforated vertically-movable false bottom, and means for adjusting and holding such false bottom at different heights from the kettle-bottom, substantially as set forth.

3. A drop-kettle for making drop-shot, having a perforated bottom with grooves in its inner face leading to the perforations, in combination with a false bottom having perforations therein smaller in size than the perforations in the kettle-bottom, substantially as and for the purposes set forth.

4. A drop-kettle having a perforated bottom, in combination with a perforated false bottom, B, and an inner perforated kettle or pan, C, substantially as set forth.

5. A drop-shot kettle having a perforated bottom, in combination with perforated false bottom B, having one plain face and a projection, *b*, on its other face, a perforated inner kettle or pan, C, having a projection, *c*, on its under face, and means for binding the false bottom to the kettle-bottom, substantially as set forth.

253,765. PORTABLE FENCE. OSCAR E. H. N. REICHLING, Marion, Ind. Filed July 15, 1881. (No model.)



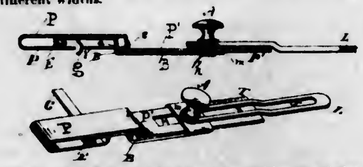
Claim.—1. In a fence, the combination, with the slotted and apertured base-board A, of the upright boards C C², the transverse pins D, and the wedge-blocks E, substantially as herein shown and described, and for the purpose set forth.

2. In a fence, the combination, with the base-board A, provided with a slot, B, and apertures F, of the upright boards C C², the transverse pins D, the wedge-blocks E, and the slats G, substantially as herein shown and described, and for the purpose set forth.

3. In a fence, the combination, with the uprights C C² and the base A, of the slats G G, the bracing-board H, with loops or staples J J at the ends, and of the rod or bar K, substantially as herein shown and described, and for the purpose set forth.

253,766. HEMMER FOR SEWING-MACHINES. CHARLES E. RICE, Owensborough, assignor of one-half to John C. Schrader, Daviess County, Ky. Filed Oct. 27, 1879.

Brief.—The hemmer is adjustable to provide for sewing hems of different widths.

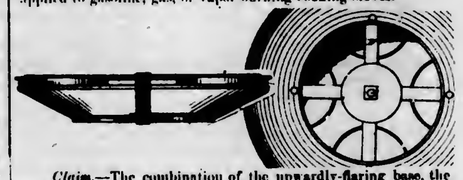


Claim.—1. A hemmer for a sewing-machine, consisting essentially of the plate B, having the bent end or ear E, presser C, screw-shank *h*, and strap *m*, in combination with the plate P, having slotted extension P', provided with a graduated scale, T, and tongue *i*, having guide *g*, substantially as described.

2. A hemmer for a sewing-machine, consisting of the plate B, having bent end E, presser C, screw-shank *h*, and strap *m*, also the plate P, having slotted extension P', provided with a graduated scale, T, and tongue *i*, having guide *g*, in combination with the thumb-screw A and slotted bar L, substantially as described, and for the purposes set forth.

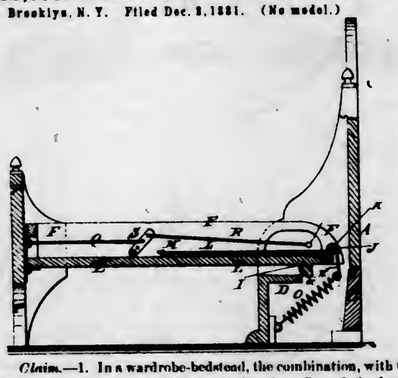
253,767. GAS-STOVE. CHARLOTTE RUPERT, Fort Wayne, Ind. Filed Dec. 12, 1881. (Model.)

Brief.—The invention is adapted by its open bottom to be applied to gasoline, gas, or vapor burning cooking-stoves.



Claim.—The combination of the upwardly-flaring base, the perforated top plate thereof, the central flame-deflecting plate connected to the said base by rigid arms, the tubular post between the deflecting-plate and the top plate, and the bolt for tying the same together, substantially as and for the purposes described.

253,768. WARDROBE-BEDSTEAD. TOWNSEND SAXTON, Brooklyn, N. Y. Filed Dec. 3, 1881. (No model.)



Claim.—1. In a wardrobe-bedstead, the combination, with the side boards and bottom, E F, the spiral springs O, and the levers N, of the spiral springs K and the rod J, substantially as herein

shown and described, whereby the springs O are re-enforced, as set

Claim.—The combination, with a reflector and air-exhauster,

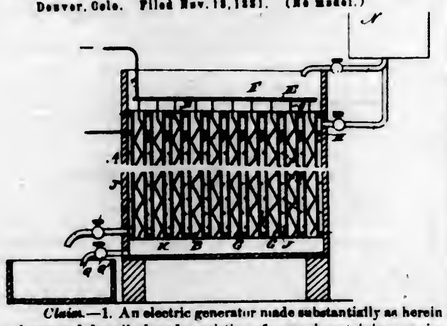
same, slide L', carried by said lever, the needle-bar-carrying frame

shown and described, whereby the springs O are re-enforced, as set forth.

2. In a wardrobe-bedstead, the combination, with the head-board A and the bottom E, of the rod J, the spiral spring K, provided with levers N, the spiral springs O, and the levers L, substantially as and for the purpose set forth.

3. In wardrobe-bedstead, the combination of the head-board A, the side boards, F, and the hinged foot-board P, of the lever S, pivoted to the side board, F, and the levers Q R, pivoted to the said lever and to the head and foot board, respectively, substantially as and for the purpose set forth.

258,769. GALVANIC BATTERY. ANDRÉS M. G. SORILLOT, Denver, Colo. Filed Nov. 13, 1881. (No model.)



Claim.—1. An electric generator made substantially as herein shown and described, and consisting of a vessel containing a series of porous tubes for mixing two chemicals flowing down the surfaces of the same, which tubes contain and are surrounded by conducting-wires for conducting the electricity produced to collecting-plates, as set forth.

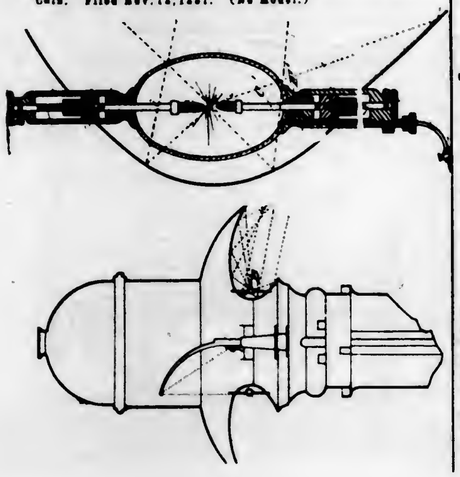
2. In an electric generator, the combination, with the cylinder A, of the porous tubes B, the internal spiral wires, G, and the external spiral wires, J, substantially as herein shown and described, and for the purpose set forth.

3. In an electric generator, the combination, with the cylinder A, having a tank, F, at the top, and a tank, K, at the bottom, of the porous tubes B and the spiral wires G and J, substantially as herein shown and described, and for the purpose set forth.

4. In an electric generator, the combination, with the cylinder A, of the porous tubes B, the spiral wires G and J, and the metal plates E and H, substantially as herein shown and described, and for the purpose set forth.

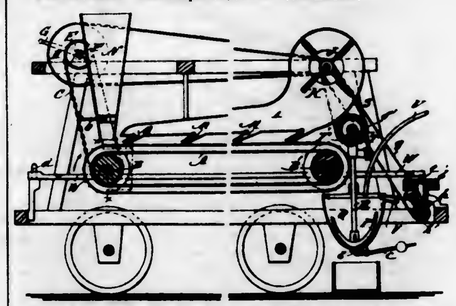
5. In an electric generator, the combination, with the cylinder A, of the porous tubes B, the spiral wires G and J, the metal plates E and H, and the tanks M and N, for containing the chemical solutions, substantially as herein shown and described, and for the purpose set forth.

258,770. ELECTRIC LAMP. ANDRÉS M. G. SORILLOT, Denver, Colo. Filed Nov. 13, 1881. (No model.)



Claim.—The combination, with a reflector and air-exhauster, substantially as described, of a ring of electric lamps having opposite adjustable carbons surrounded by a transparent vessel connected with the air-exhauster, whereby the vacuum may be maintained and the rays of light reflected, as described.

258,771. ORE-CONCENTRATOR. ANDRÉS M. G. SORILLOT, Denver, Colo. Filed Apr. 25, 1881. (No model.)



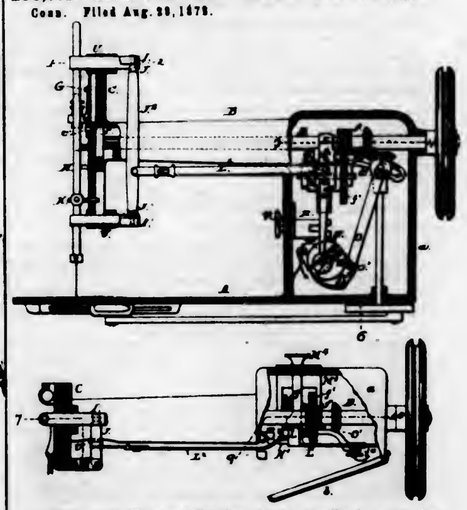
Claim.—1. In an ore-concentrator, the combination, with a superposed blower, of an endless carrier-belt, A, having a deep concavity arranged longitudinally therein in the shape of a trough, as shown and described, for the purpose specified.

2. The combination, with an ore-carrying belt, of a blower provided with a series of nozzles and arranged over said belt, as shown and described.

3. In an ore-concentrator, the combination, with the trough-shaped ore-conveying belt A, of the vibrating frame W, the pins *d e*, and the eccentric wheel X, with an inclined groove, *b'*, substantially as herein shown and described, and for the purpose set forth.

4. In an ore-concentrator, the combination, with the ore-conveying belt A, of the pulleys B B', the blower L, the hopper N the vibrating frame W, the settler Q, and the agitator P, substantially as herein shown and described, and for the purpose set forth.

258,772. SEWING-MACHINE. JEROME B. SWEAN, Bridgeport, Conn. Filed Aug. 30, 1878.



Claim.—1. The combination of the needle-bar-carrying frame, vibrating lever L, pin *e*, connecting-rod L^5 and pivot *y*, cam-cylinder M and its operating appliances, and adjusting devices, whereby movement of the connecting-pivot *y* may be thrown to a greater or less extent to either side of a vertical line drawn through the lever-fulcrum *x*, substantially as set forth.

2. The combination, with the lever L and pin *e*, of the operating cam-cylinder M and devices for adjusting the latter longitudinally, as specified.

3. The combination of the lever L, devices for vibrating the

same, slide L', carried by said lever, the needle-bar-carrying frame U, connecting-rod L^2, and devices for automatically moving the slide on the lever, substantially as set forth.

4. The combination of the lever L, frame U, needle-bar H, slide L', connecting-rod N^2, crank-wheel N', its adjustable pin i', connecting-rod L^2, and appliances whereby to turn the wheel, substantially as set forth.

5. The combination of the lever L, slide L', connecting-rod N^4, crank-wheel N', and devices for turning the said crank-wheel N', constructed to automatically vary the speed with which it is turned, and appliances to automatically throw said crank-wheel in and out of operation, substantially as specified.

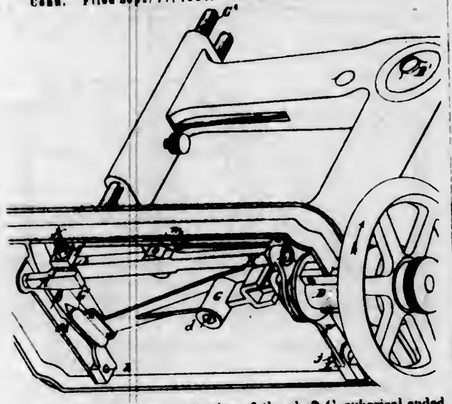
6. The combination of the lever L, provided with arm i^2 and operating devices, pin i^4, crank-wheel N', ratchet-wheel I^2, secured to the wheel-shaft, vibrating arm O', carrying a spring-pawl, and connecting-rod O, attached to the pin i^4, substantially as set forth.

7. The lever L, provided with the graduated arm i^2, and adjustable pin i^3, connecting-rod O, and slide L', in combination with the graduated crank-wheel N', pin i', connecting-rod N^2, and devices constructed to rotate the crank-wheel from the movement of the connecting-rod O, substantially as set forth.

8. The combination of the crank-wheel N' and needle-bar-adjusting devices arranged to be operated thereby, and the ratchet-wheel I^2, arranged to turn independently of the crank-wheel, and intermediate devices for automatically connecting and disconnecting the crank and ratchet wheels, substantially as specified.

9. The combination of the crank-wheel N', having a pin, *n*, ratchet-wheel I^2, having a spring, *o*, and notched flange *m*, switch T, and devices for supporting said switch above and between the crank and ratchet wheels, substantially as and for the purpose set forth.

258,773. SEWING-MACHINE. JEROME B. SWEAN, Bridgeport, Conn. Filed Sept. 17, 1881. (No model.)



Claim.—1. The combination of the shaft C, spherical-ended crank-pin *e*, shuttle-lever G, arranged on the same horizontal plane as the shaft, having a vertical slot at the rear end, and a box adapted to receive the head of the crank-pin *e*, and sliding in the slot of the lever, substantially as set forth.

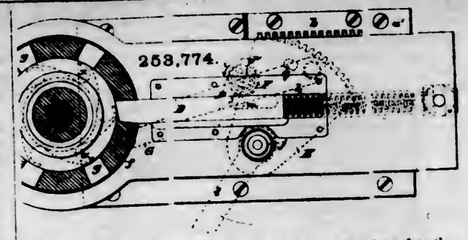
2. The combination of the driving-shaft, its spherical crank H, slotted rock-disk W, rod V, connecting the disk and crank, and needle-bar lever slotted to receive a pin, *z*, extending across the slot of the disk, substantially as specified.

3. The shaft C, carrying the cam E, crank R, disk S, and crank-pin *e*, in combination with the needle-bar-operating appliances connected with the crank R, the feed device connected with the cam E, and the shuttle-lever connected with the crank-pin *e*, substantially as set forth.

4. The combination of the feed-plate M, sliding at one end on a pin, *b*, a lever, H, connected to the opposite end of said feed-plate, an adjustable horizontal fulcrum-pin, *k*, extending through a slot in the lever, a vertically-pivoted adjustable fulcrum-block, O, slotted for the passage of the lever, and appliances for vibrating the rear end of the lever vertically and horizontally, substantially as set forth.

258,774. DEVICE FOR OPERATING TOOL-HOLDING TURRETS. JEROME B. SWEAN, Bridgeport, Conn. Filed Aug. 3, 1881. (No model.)

Claim.—1. The combination, with a slide, B, and its bed A



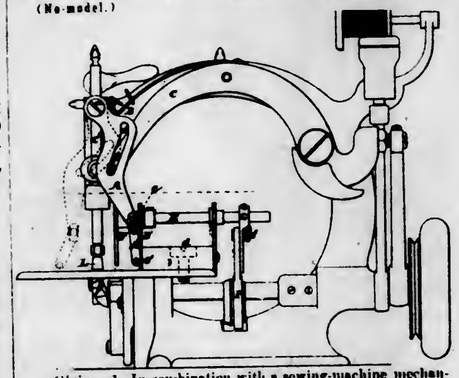
and turret, of the rack *b* on the bed and segment E, pivoted to the slide, and segment-lever *l*, substantially as set forth.

2. The combination, with the slide, turret, and segment E, of the arm G, adapted to engage with the ratchet-wheel *d*, substantially as set forth.

3. The combination, with the slide, segment, and turret having a ratchet-wheel, *d*, of the arm G, adapted to the teeth of said wheel and pivoted to the segment, substantially as set forth.

4. The combination, with the slide and revolving turret having notches *g*, of a spring-bolt, D, carried by the slide, a lever, F, engaging with said bolt, and a segment, E, provided with a stud, *q*, arranged to strike and turn the lever to retract the bolt as the segment is turned, substantially as described.

258,775. SEWING-MACHINE ATTACHMENT FOR MAKING FRINGE. DE LANA SHAPLIN, Boston, Mass. Filed Oct. 8, 1881. (No model.)



Claim.—1. In combination with a sewing-machine mechanism, the pendent thread-guiding lever A, the needle-bar operating lever C, connected therewith, as described, and the pendent loop-forming hook F, constructed and arranged for operation as an attachment for making fringe, as herein set forth.

2. In combination with the driving-shaft and sewing mechanism of a sewing-machine, the yarn-guiding lever A A', the rocker-shaft E, the pendent loop-forming hook F, the lever G, the eccentric-rod H, and the eccentric I, all arranged and adapted to operate substantially as and for the purposes described.

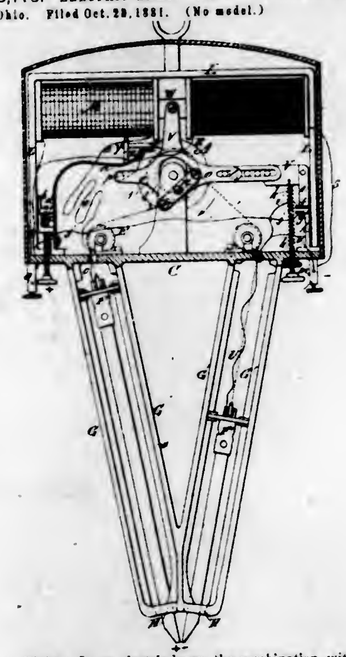
3. In a mechanism for making fringe, the combination of the yarn-guiding lever A A', made in two parts adjustably secured together, and provided with the cam-slot *a'*, the loop-forming hook, the needle-bar-operating lever C, and the roll or stud a^2, all arranged and adapted to operate substantially as described.

4. The combination, with the needle-bar-operating lever C, of the pendent thread-guiding lever A, having its lower eyed part, A', adapted for vertical and lateral adjustment in relation to its pivoted part, the pendent loop-forming hook, and a sewing mechanism, substantially as herein set forth.

5. The combination, with a sewing mechanism, of the adjustable thread-guiding lever, with the loop-forming hook F, means for increasing and diminishing the throw of said hook, and means for adjusting said hook in relation to its throw, so that its forward movement will always be to a given point in taking the thread without regard to the length of the loops, substantially as described.

6. The combination, substantially hereinbefore set forth, of a sewing mechanism, a pendent thread-guiding lever, and a pendent loop-forming hook with the presser-foot and means for operating said thread guide and looper in relation to said presser-foot, substantially as described.

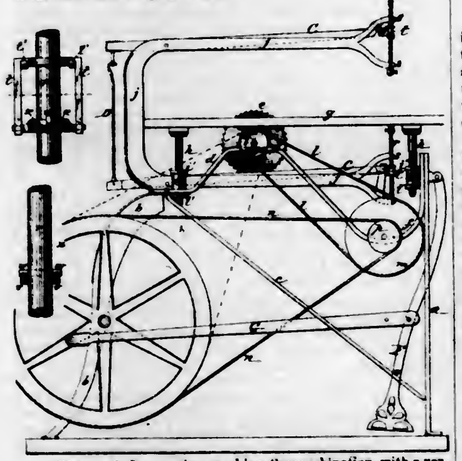
253,776. ELECTRIC LAMP. HENRY B. SHERIDAN, Cleveland, Ohio. Filed Oct. 28, 1881. (No model.)



Claim.—In an electric lamp, the combination, with the base-plate C and the carbon-holders F F', controlled by the movements of the cone-pulley A, of two or more pairs of converging guide-rods, G G G' G', connected at their lower ends by a plate, H, provided with cement-lined guide-perforations for the carbons, substantially as herein shown and described, whereby the carbons are made to approach each other on converging lines and separate on diverging lines, as set forth.

253,777. SCROLL AND CIRCULAR SAWING MACHINE. ABRAHAM SHOWALTER, Pataskala, Ohio, assignor of one-third to Wm. D. Arnold, same place. Filed Oct. 11, 1881. (No model.)

Brief.—The novelty lies in the construction of the frame and of the scroll-saw hanging device.



Claim.—1. In a sawing-machine, the combination, with a vertically-adjustable table, *g*, of a top-frame bracket having an elevated part, *d*, for carrying and supporting the circular-saw shaft, and a depressed front part, *f*, for carrying and supporting the crank-shaft *k*, for operating the scroll-saw, and the pulley *m*, for operating the circular saw, substantially as described, for the purpose specified.

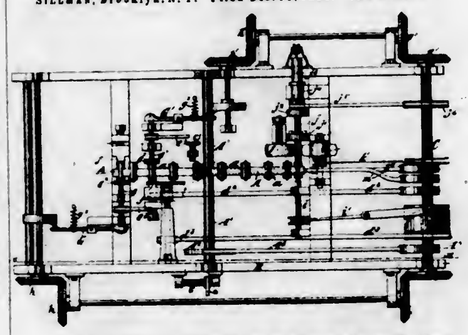
2. In a combined scroll and circular sawing machine, the top-frame bracket having a front hanger part, *f*, and an arched part, *d*, and adapted to support and carry the table, the means by which the table is vertically adjusted, the circular-saw shaft, the U-frame for supporting and carrying the scroll-saw, and the means for operating both saws, substantially as described, for the purpose specified.

3. The combination, in a scroll-sawing machine, of the pivoted bars C, each having an end forked plate, *u*, with saw-carrying guide-rods *r*, each having a cross-pin, *w*, and the slotted yokes *t t'*, having the pivoted notched eyed cross-bars *v x*, substantially as described, for the purpose specified.

4. The combination of the fixed frame *j*, the pivoted bars C *u*, and their connecting stretcher-rod D with the saw-carrying guide-rod *r*, having the cross-pins *w*, and the slotted yokes *t t'*, having the notched eyed cross-bars *v x*, substantially as described, whereby the saw is both stretched and adjusted to operate in any direction.

5. The pivoted arms C, each having a forked end plate, *u*, and their stretcher-rod D, in combination with the saw-carrying guide-rods *r*, each having a cross-pin, *w*, the yokes *t*, each having a closed slotted end, and the notched cross-bars *v*, pivoted in the open ends of said yokes, the said forked plates hooking within the closed ends of the yokes and the said cross-bars held against said pins by said pivoted arms, substantially as described, whereby the said notched cross-bars may be released from said pins *w* to allow the saw to be set to operate in any direction without disconnecting any of the parts, for the purpose described.

253,778. MACHINE FOR MAKING SPOOLS, &c. HENRY B. SILLMAN, Brooklyn, N.Y. Filed Oct. 31, 1881. (No model.)



Claim.—1. The combination, with the wheel having holders in its periphery, and having a step-by-step rotary motion, and dogs for holding blanks in the holders, of two pivoted stops and mechanism for moving them to obtrude them in the path of said dogs to move the dogs, first to permit of the insertion of the stick in the holders and subsequently to release the blanks and to move the stops out of the way of said dogs, substantially as specified.

2. The combination, with the wheel having holders in its periphery, and having a step-by-step rotary motion imparted to it, of a longitudinally-movable shaft on one side of said wheel, a pusher-shaft on the other side of said wheel, adapted to move longitudinally and push the bobbins or other articles from the wheel and against the opposite shaft, and by its further movement to move the said shaft longitudinally, and a cutter-head, opposite to which the bobbins or other articles are carried by the two said shafts, substantially as specified.

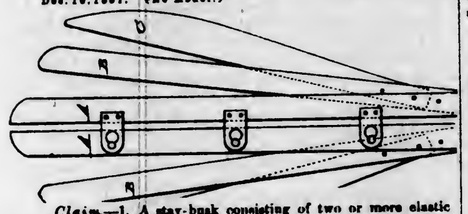
3. The combination of the wheel A, having holders in its periphery, and having a step-by-step rotary motion, the pusher-shaft *i* and shaft *j*, arranged on opposite sides of said wheel in line with each other, the fixed clutch-piece *j'* and the rotary clutch-piece *j''*, for rotating the shaft *j*, the sleeve *j''*, surrounding the shaft *j*, the spring *j'''*, and the cutter-head *k*, substantially as specified.

4. The combination of the wheel A, having holders in its periphery, and having a step-by-step rotary motion, the spindles *e e'*, arranged one in advance of the other, the stationary rests or abutments *f f'*, the pusher-shaft *i* and shaft *j*, arranged in line on opposite sides of said wheel, and both longitudinally movable, and the cutter *k*, substantially as specified.

5. The combination, with the wheel A, having holders in its periphery, and having a step-by-step rotary motion, the pusher-shaft *i*, and the longitudinally-movable shaft *j*, arranged in line with said pusher-shaft, of a cutter-head, and a round or smoothing roll, between which the bobbins are carried and rotated by said pusher-shaft and shaft, substantially as specified.

6. The combination, with the wheel A, having holders in its periphery, and having a step-by-step rotary motion, of the rollers *e*, between which the sticks are fed into said wheel, the adjustable stop *e'*, the spindles *e e'*, arranged one in advance of the other on opposite sides of said wheel, and the adjustable stationary rests or abutments *f f'*, all substantially as specified.

253,779. STAY-BUSK. HENRY SIMPSON and BENJAMIN G. SIMPSON, Sheffield, County of York, assignors to Robt. Symington, Market Harborough, County of Leicester, England. Filed Dec. 19, 1881. (No model.)

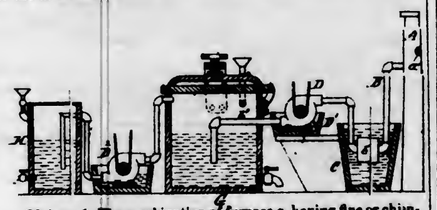


Claim.—1. A stay-busk consisting of two or more elastic blades secured together at one end, and having their opposite ends separated from each other and spread apart to form a wide or fan-like bearing, and each being arranged to yield independently of the others.

2. A stay-busk composed of the blades or fingers A, B, and C, substantially as described and shown.

253,780. APPARATUS FOR UTILIZING THE WASTE PRODUCTS OF COMBUSTION IN FURNACES. THOMAS S. SPEAKMAN, Philadelphia, Pa. Filed Jan. 16, 1881. (No model.)

Brief.—The heat of the products of combustion passes into the water of the cooling-reservoirs, raising the temperature thereof, while the condensed products are deposited in receiving-chambers for use as fertilizers.

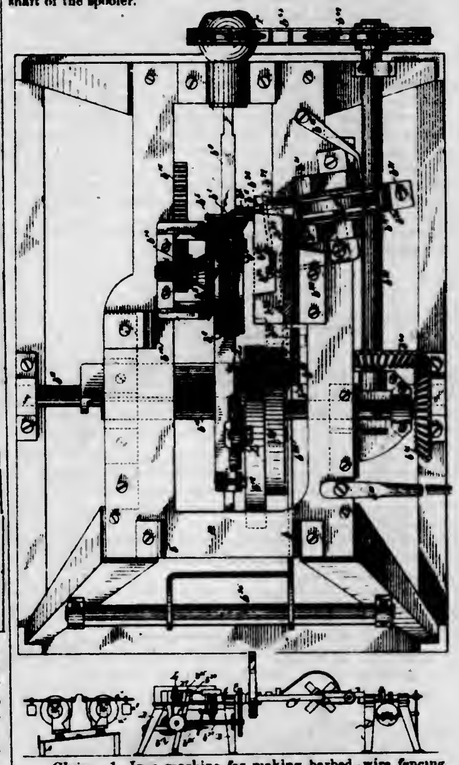


Claim.—1. The combination of furnace *a*, having flue or chimney A, provided with damper *a'* and pipe B, the latter terminating in a condenser, *b*, immersed in water contained in a tank, C, the collecting-chambers G H, provided with removable covers, and a fan or blower, D, said parts being arranged for operation substantially as shown and described, and for the purpose set forth.

2. In an apparatus for utilizing the waste products of combustion in furnaces, the combination of the following elements, viz: a furnace provided with a flue or chimney having a damper and a pipe leading therefrom, said pipe terminating in a condenser immersed in water contained in a tank, a collecting chamber or chambers, and pipe-connection between said chambers and condenser, and a fan or blower, said parts being arranged for operation, substantially as shown and described.

253,781. MACHINE FOR MAKING BARBED-WIRE FENCING. SIDNEY M. STEVENS, Elwood, Ill., assignor, by mesne assignments, to Washburn & Moen Manufacturing Company, Worcester, Mass., and Isaac L. Ellwood, De Kalb, Ill. Filed Dec. 3, 1877.

Brief.—The barb-wire is fed through cutters and through an eye in the coiler and between the main wires. The main wires are wound on delivery-reels, passed through the coiler, and attached to the spool. The power-shaft of the barbing-machine is belted to the shaft of the twister, and both are continuously revolved. Within the hollow shaft of the continuously-revolving twister and in frictional bearing contact with its interior is mounted the shaft, from which power passes to rotate the spooler. A weighted brake is on the spooler power-shaft. When the operation begins there is a tension on the main wires by the pull of the delivery-reels against the spooler. The friction of the bearing of the spooler power-shaft and the twister-shaft is adjusted by the weighted brake to balance the tension of the delivery-reels, so that the spool is stationary. Power being applied, the twister revolves, the barb-wires are fed, and the barb-cutters are operated, and the coiling-tube simultaneously advances and rotates, bending the rear end of a cut-off barb around the main wires, while the middle part of the barb, being between the main wires, which are kept from twisting, is by the bending of the barb bound against the main wires, and being itself advanced by the advancing coiler advances the main wire as the coiling progresses. Thus the pull of the delivery-reels is transferred from the spool to the coiler, and the spool, being freed from so much tension in one direction, is revolved in the opposite direction to take up the barbed and twisted wire by the undiminished frictional power of the twister-shaft on the power-shaft of the spooler.



Claim.—1. In a machine for making barbed-wire fencing, mechanism constructed to simultaneously feed the main fence-wires and apply the barbs thereon, in combination with means for operating said mechanism, substantially as described.

2. The combination, in a machine for making barbed-wire fencing, of mechanism for feeding the barb-wire and mechanism for cutting said barb-wire to form the barbs with mechanism constructed to simultaneously feed the main fence-wires and apply the barbs thereto, substantially as described.

3. The combination of a non-rotating wire-holder having two or more apertures for the main wires with a coiling-cylinder rotating on the said holder, substantially as set forth.

4. The combination, with supports for the main fence-wires, of automatic mechanism for inserting the barbs between said wires and mechanism for catching one end of the several barbs and coiling said end around said fence-wires, substantially as described.

5. The combination, with supports for the main fence-wires, of automatic mechanism for inserting barbs between the said main wires, and mechanism for catching one end of the several barbs and coiling said end around both said main wires, and mechanism for twisting the latter between the barbs, substantially as shown and set forth.

253,787.

Claim.—1. The combination of the knob-shank having the slots *x* and *y* with the slotted sleeve A, provided with lugs C and

6. A coiling-wheel provided with a pierced projection for receiving the barb, substantially as described.

7. The combination, with the hollow shaft b^3, of the slotted keys b^7, substantially as described.

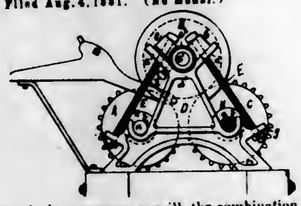
8. The combination, with the rotating and reciprocating coiling mechanism, of the gearing b^{13} upon the frame and the intervening devices, whereby the reciprocating motion of the coiling mechanism is made to rotate the same, substantially as set forth.

9. The inclined track-stand, in combination with the reel-carriage and its rollers, substantially as specified.

10. The combination, with the feed-wheel b^{10}, of the friction-brake, consisting of the arm pivoted upon the axis of the wheel and having an inclined surface opposed to the periphery of the wheel, and the small roller interposed between such inclined surface and the periphery, substantially as described.

11. The combination of a delivery apparatus comprising a carriage supporting the wires to be barbed and mounted on inclined ways, a spooling apparatus comprising a spool journaled in bearings, a continuously-revolving power-shaft, means for conveying power from said shaft to said spool through a friction-connection, and means for regulating or adjusting the power conveyed to said spool, and a barbing apparatus comprising main wire-feeding and barb-applying mechanism and means for operating said mechanism substantially as described, whereby the main fence-wires are constantly stretched by the balanced tension in opposite directions of the said delivery and spooling apparatus, and the barbed wires are rapidly wound upon said spool as the main wires are advanced and the barbs applied thereto, substantially as set forth.

253,782. SUGAR-CANE MILL. JOEL STUBBS, Minneapolis, Minn. Filed Aug. 4, 1881. (No model.)

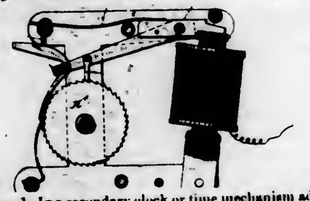


Claim.—1. In a sugar-cane mill, the combination of a main or pressure roll, a feed-roll, and a discharge-roll, the discharge-roll being adapted to rotate at a higher rate of speed than the feed-roll, whereby the cane is rapidly discharged and clogging prevented, substantially as set forth.

2. The combination of the rollers A B C, frame D, having the forked bearings d, angular boxes c^1, and set-screws k^1 k^2, substantially as set forth.

3. The combination of the rollers A B C, frame D, having the forked bearings d, angular boxes c^1, and rods E, substantially as set forth.

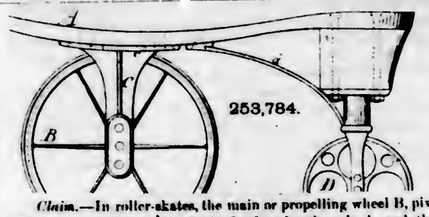
253,783. SECONDARY ELECTRIC CLOCK. D. PRUD SWEET, Hastings, Mich. Filed July 23, 1881. (No model.)



Claim.—1. In a secondary clock or time mechanism adapted to be operated by an intermittent electric current established through the medium of a prime motor, the combination, with an electro-magnet, of a vibrating lever carrying an armature and a bent pawl, the latter being pivoted to the rear end of the lever, and a pin adapted to bear upon the upper end of said pawl and press the same into contact with the ratcheted minute-hand wheel, substantially as and for the purposes specified.

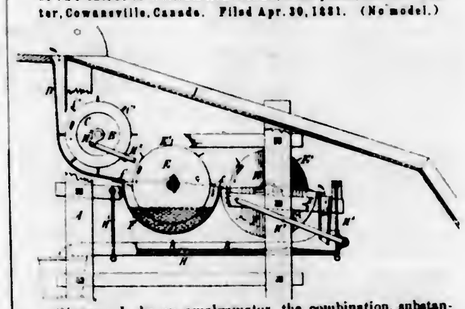
2. In combination with the lever carrying the armature, the electro-magnet, and the ratcheted minute-hand wheel, the detent secured to the said lever and adapted to engage the ratchets of the said wheel to hold the same when the circuit is open, substantially as and for the purposes specified.

253,784. ROLLER-SKATE. HENRY YAPPEL, Cleveland, Ohio. Filed Dec. 12, 1881. (No model.)



Claim.—In roller-skates, the main or propelling wheel B, pivoted in bracket C and adjustably fixed under the sole A, and the rear wheel or caster, D, fixed in post and brace d to the bottom of heel a, all constructed to operate substantially as specified.

253,785. APPARATUS FOR SEPARATING AND AMALGAMATING GOLD. CHARLES TAYLOR, Montreal, Quebec, assignor of two-thirds to William H. Burland, same place, and A. F. Foster, Cowansville, Canada. Filed Apr. 30, 1881. (No model.)



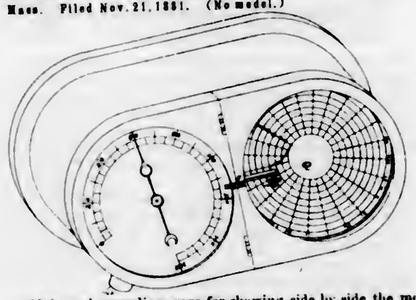
Claim.—1. In an amalgamator, the combination, substantially as before set forth, of the rotating drums and the lipped pans pivoted to the shafts of said drums.

2. In an amalgamator, the combination, substantially as before set forth, of the drums, the lipped pans pivoted to the shafts of said drums, and the shaking-table beneath the pans.

3. In combination with a water-wheel, C, the drums E E, revolving in pans F F, and shaking-table H, substantially as and for the purposes described.

4. In combination with the revolving drums E E and pans F F, the grating I, shaking-table H, and means for shaking said table, as and for the purpose described.

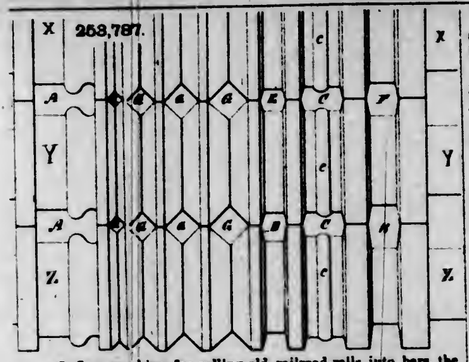
253,786. RECORDING-GAGE. EARL AMBI THISSELL, Lowell, Mass. Filed Nov. 21, 1881. (No model.)



Claim.—A recording-gage for showing side by side the momentary indications of pressure and a continuous record of the same on a pair of circular dials, comprising a paper dial removable from a rotary carrier for receiving the record of each day, a marker having a jointed rod connected with the shaft of the index-hand, a notched stationary dial in front of the marker-rod, behind said index-hand, and a hinged and slotted front plate, substantially as herein specified, for the purpose set forth.

253,787. MACHINERY FOR ROLLING RECTANGULAR BARS FROM OLD RAILS. JOHN J. THOMAS, Zanesville, Ohio. Filed Nov. 18, 1881. (No model.)

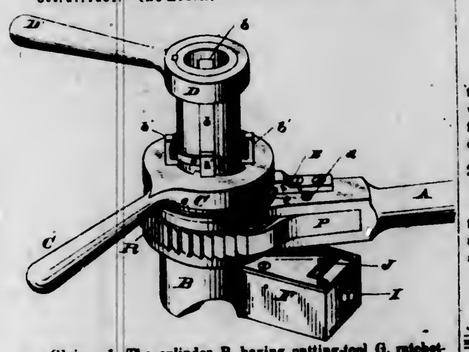
Claim.—1. In a machine for rolling old railroad-rails into bars, the rolls X Y Z, constructed, substantially as shown and described, with ridges and grooves adapted to form the several passes A, B, F, D, E, and G, as set forth.



2. In a machine for rolling old railroad-rails into bars, the rolls X, Y, and Z, provided with the passes A, having the shape of a pear-head rail having a thick base, the hexagonal passes B, F, D, and E, and the flat hexagonal passes C and the ridges c, forming concave recesses in the flat sides of the billet passing through the passes C, substantially as herein shown and described, and for the purpose set forth.

3. In a machine for rolling old railroad-rails, the rolls X Y Z, provided with passes or grooves A, in the shape of a pear-head rail with a thickened or upset base, substantially as herein shown and described, and for the purpose set forth.

253,788. STAY-BOLT CUTTER. NICHOLAS THOMAS, Chicago, Ill., assignor of one-half to Allen Barker, same place. Filed Oct. 27, 1881. (No model.)



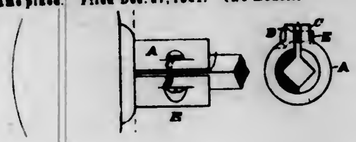
Claim.—1. The cylinder B, having cutting-tool G, ratchet-wheel R, and pawls f, and handle A, having pawl P and piece E, in combination with a sleeve, S, having jaws b and spring a, and a cam-piece, C, having a ratchet, O, substantially as described and shown.

2. The combination, with the rotating cylinder B, having box F and handle A, provided with projection h, of the feed-screw I, nut H, carrying cutter G, ratchet J, and washers i g, substantially as and for the purpose described.

3. In a stay-bolt cutter, a sleeve provided with jaws operated by a cam, whereby said sleeve may be secured directly to the bolt to be cut off, in combination with a device for carrying the cutting-tool which rotates upon said sleeve, substantially as described.

4. A sleeve, S, having collar D and handle D', and provided with jaws b b, and a cam-piece, C, having a handle, C', in combination with a cutter, G, substantially as and for the purpose described.

253,789. KNOB ATTACHMENT. HENRY E. TOWNE, Stamford, Conn., assignor to the Yale Lock Manufacturing Company, same place. Filed Dec. 27, 1881. (No model.)

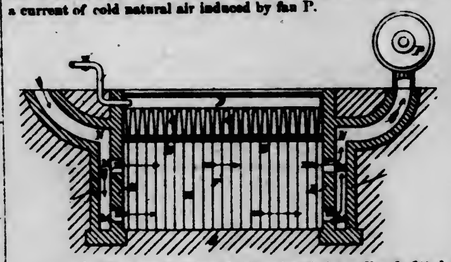


Claim.—1. The combination of the knob-shank having the slots x and y with the slotted sleeve A, provided with lugs C and D, in which works the screw E, substantially as herein set forth.

2. The combination of the knob-shank having the slots x and y and groove F with the slotted sleeve A, provided with lugs C and D, in which works the screw E, substantially as herein set forth.

253,790. ICE-HOUSE. ARTHUR VON KRAUSE and MATHIAS KRUSE, Blauvelt ville, N. Y. Filed Nov. 4, 1881. (No model.)

Brief.—Water enters house through pipe H, passes down funnels C and down on vertical wires F, where it is frozen into ice by a current of cold natural air induced by fan P.



Claim.—The tapering funnels C, having their small ends fitted into apertures of a water-tank bottom, D, in combination with pendent wires F, supported at their upper ends in said funnels and extending down into a freezing-chamber, as shown and described.

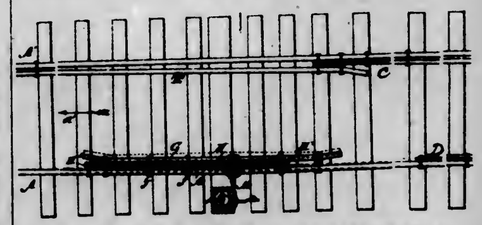
253,791. FASTENING DEVICE. RICHD. H. WARLOW, Atlanta, Ga. Filed Nov. 14, 1881. (Model.)



Claim.—In combination, the part A, having cruciform slot a, the part B, having upturned slotted end, and the part C, provided with strap d, adapted to slide freely in the said slotted end, and to fit the slot a, the whole constructed and operating substantially as described.

253,792. RAILROAD-SWITCH. JOHN H. WAIT, East Minneapolis, Minn. Filed Sept. 12, 1881. (No model.)

Brief.—A safety-switch for main line wherein an unbroken flexible main-line rail having secured thereto an auxiliary rail and a guard-rail is employed as the movable part, combined with a fixed point and main-line rail on the opposite side of the track.



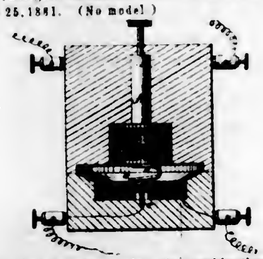
Claim.—1. A railroad-switch constructed, substantially as herein shown and described, with a laterally-movable main rail, with which a guard-rail and a middle rail are united, so as to move with this laterally-movable main rail, as set forth.

2. The combination, with the laterally-movable rail A of a railroad-switch, of the guard-rail G and the middle rail, H, firmly united with the rail A, substantially as herein shown and described, and for the purpose set forth.

3. The combination, with the laterally-movable rail A of a railroad-switch, of the guard-rail G, the middle rail, H, both attached firmly to the rail A, the rail A', the guard-rail E, and the tongues C and D, substantially as herein shown and described, and for the purpose set forth.

4. The combination, with the laterally-movable rail A of a railroad-switch, of the guard-rail G, the middle rail, H, the guard-rail E, the fixed rail A', the tongues C and D, the connecting-rod M, the vertical crank-rod L, and devices for operating this rod L, substantially as herein shown and described, and for the purpose set forth.

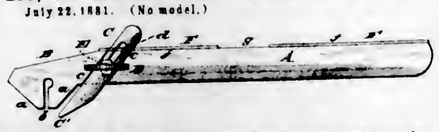
253,793. TELEPHONE-RELAY. HENRY E. WAITE, Bridgeport, Conn., assignor to Charles F. Livermore, New York, N. Y. Filed June 25, 1881. (No model.)



Claim.—1. In a telephone-relay, the combination of a magnet provided with a recurved spring-extension of one of its poles, a coil surrounding said magnet and arranged within one line or circuit, and a microphone arranged within another and independent line or circuit, the recurved arm of the magnet resting in contact with one of the electrodes of the microphone, substantially as described.

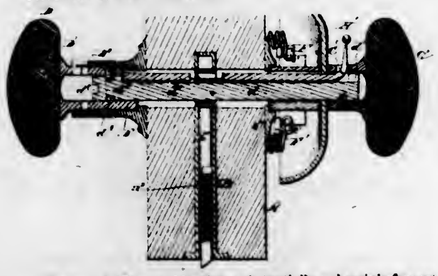
2. In a telephone-relay, the magnet surrounded by the coil of one line or circuit, and provided with the recurved arm resting upon and in combination with the microphone of another and independent line, said magnet, coil, and microphone being inclosed in a box or case, preventing their displacement.

253,794. SAW-SET. NELSON J. WEBB, Denver, Mich. Filed July 22, 1881. (No model.)



Claim.—The described saw-setting tool or implement, consisting of a handle, A, having head B, beveled at *a a* and slotted at *b*, laterally-projecting top plate, F *f*, discontinued to form the opening *g*, slotted gage-plate C C', sliding in the grooved way or recess *c*, parallel to the contiguous bevel *a* of the head, and thumb-screw D, provided with the washer E, all constructed and combined to operate as shown and specified, for the purpose set forth.

253,795. ALARM-LOCK. JAMES E. WELLS, Auburn, N. Y. Filed June 8, 1881. (Model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of the spindle *d*, provided with a longitudinal groove, *d'*, and a circumferential groove, *d*², the knob D, constructed with one or more longitudinal grooves, D², a retaining-screw put through the shank of the knob D and projecting into the circumferential groove *d*², with the key-rod *d*, having a cut-away portion, H², and inserted in the groove *d'* in spindle *d*, with its end having the cut-away portion resting in the hub of the knob D and its opposite end carried through the lock and projected at the other knob, substantially as set forth.

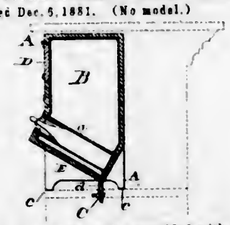
2. The combination, with the hub *c*, having a series of longitudinal grooves, *c'*, formed in its central opening, and provided on its periphery with means for drawing back the latch of the lock, and the spindle *d*, fitting in the opening in the hub *c* and having a longitudinal groove, *d'*, extending from its seat in the hub to the inner end of the key-rod H, placed within the groove *d'* and passed through the hub *c*, and constructed with a cut-away portion, H², arranged within the hub and having its outer end projected at the knob C, substantially as set forth.

3. The combination, substantially as hereinbefore set forth, of the spindle *d*, constructed with a cross-slot, *d'*, in its end, a circumferential groove, *d*², formed around it near the end, with the knob D slipped into the end of the spindle, and provided with a key-hole, D', and a set-screw put through the hub of the knob and projecting into the circumferential groove in the end of the spindle, substantially as set forth.

4. The combination, substantially as hereinbefore set forth, of the casing B, the latch-bolt *a*, having the parallel arms *a' a*², provided with hooks *a'*, the spring *a*², the gravitating dogs *b b'*, having hooks on both ends, and the sleeve *c*, for receiving the spindle *d*, and provided with the projecting hooks *c'*, substantially as set forth.

5. The combination, substantially as hereinbefore set forth, of the spindle *d*, provided with a spline, *d'*, the key-rod H, the reversible cam F, provided with a longitudinal groove and locked to the spindle *d* by the key-rod H, and the hammers F, supported on spring-rods *e*, bent into elbows *e'* and made fast to the door or plate *e*², substantially as set forth.

253,796. BOTTLE-COOLER. PAUL M. WENTHER, Sioux City, Iowa. Filed Dec. 5, 1881. (No model.)



Claim.—1. In a bottle-cooler provided with cooling-tubes *a*, a door, D, opening into the space B above said tubes, substantially as shown and described, and for the purpose set forth.

2. In a bottle-cooling device, the metallic cooling-tubes *a*, placed at an angle to the main part of said cooler, substantially as shown and described.

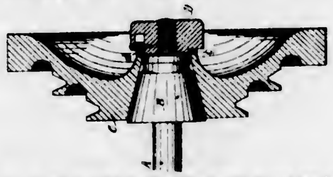
3. In a bottle-cooler provided with cooling-tubes *a*, a door, D, opening into the space B above said tubes, in combination with a discharge-pipe, *d*, leading from the space below said tubes, and provided with a stop-cock, C, substantially as shown and described.

4. In a bottle-cooler, the case A A and end pieces, E E, in combination with the cooling-tubes *a* and labels *b*, substantially as described and shown.

5. In a bottle-cooling device, the case A A, provided with the cooling-tubes *a*, doors D, discharge-pipe *d*, and stop-cock C, in combination with the end pieces, E E, having feet *c c*, substantially as shown and described.

6. The combination of the case A A, cooling-tubes *a*, labels *b*, doors D, discharge-pipe *d*, stop-cock C, and end pieces, E, having feet *c c*, substantially as and for the purpose set forth.

253,797. GOOSE PULLEY. ELBERT D. WHYBURN, Atlanta, Ga. Filed Sept. 7, 1881. (No model.)



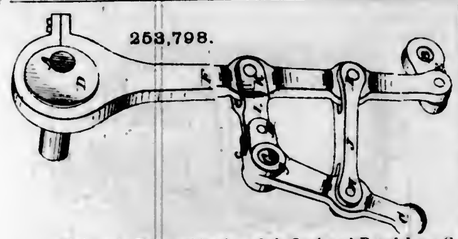
Claim.—1. The combination of the pulley C and nut D, one having a pawl and the other ratchet-teeth, with the shaft A, whereby the nut serves the double purpose of securing the wheel on the shaft and forming one part of the clutch, substantially as described.

2. The combination, with the revolving shaft A, provided with the cone B, of the pulley C, having an aperture loosely fitting said cone, and the nut D, for securing the pulley on the cone B, substantially as described.

3. The combination of the pulley C and the nut D, one having a pawl and the other ratchet-teeth, with the shaft A, having a cone, B, fitting in an aperture in the pulley, substantially as described.

253,798. MECHANICAL MOVEMENT. RUEL W. WHITNEY, New York, N. Y., assignor of one-half to Peter S. Baylor, Jersey City, N. J. Filed Jan. 11, 1881. (No model.)

253,798.



Claim.—1. The combination of shafts A and B and lever C and means, substantially as shown and described, for rotating shaft B and vibrating lever C by the rotation of shaft A, as and for the purpose set forth.

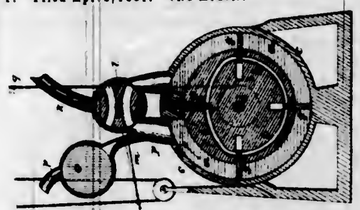
2. The combination of a power-driven shaft, an eccentrically-connected rod attached concentrically to a second shaft and pivotally connected at two points to a pivoted lever, substantially as shown and described.

3. The combination of a power-driven shaft, an eccentrically-connected rod, and a pivoted lever connected at two points pivotally to said rod, substantially as shown and described.

4. The combination of shaft A, eccentric D, lever F, links L and J, and pivoted lever C, substantially as shown and described.

5. The combination of shaft A, lever F, shaft B, lever C, and connecting-links L and K, substantially as shown and described.

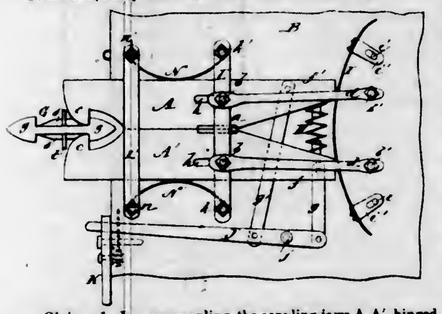
253,799. HYDRAULIC ELEVATOR. CHARLES T. WIDSTRAND, Minneapolis, Minn., assignor to Mary B. Thayer, New York, N. Y. Filed Apr. 5, 1881. (No model.)



Claim.—1. The combination, with an elevator, of a suitable hydraulic rotary engine, pressure-wheel, or pump having an inlet-pipe leading to one side of the pistons and an outlet-pipe leading from the opposite side thereof, a reservoir communicating with the outlet-pipe, and an induction-valve located between said pipes, and which is adapted to connect them with each other, substantially as shown and described, whereby the cylinder may be kept full of water and the descent of the cab regulated by the free or retarded circulation of the water through the port of the said induction-valve, as set forth.

2. The combination, with an elevator, of a hydraulic rotary engine, pressure-wheel, or pump having valve *l*, provided with arm *m* and rope *n*, inlet-pipe *k*, having check-valve *s*, escape-pipe *p*, and reservoir *o*, and hoisting-rope *q*, substantially as shown and described.

253,800. CAR-COUPLING. LA VERA T. WILLIAMS and EDWIN D. KNIGHT, Pooryville, Ind. Filed Oct. 11, 1881. (No model.)



Claim.—1. In a car-coupling, the coupling-jaws A A', hinged together by the hinge *a* a little beyond the center of their length, and provided with hooks *c*, having their adjacent faces serrated or cut away to form a series of openings or passages, *e*, substantially as and for the purpose set forth.

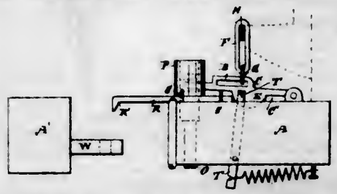
2. In a car-coupling, the combination, with the hinged coupling-jaws A A', provided with hook *c* and openings *e*, of the link G, provided with the heads *g*, the fins *s*, and the cross-bar *t*, substantially as and for the purpose set forth.

3. In a car-coupling, the combination, with the car-body B and hinged jaws A A', provided with the slots *h*, of the cross-bars L L', and the connecting-rods *d*, and the bolts *b b'*, *k k'*, and *n n'*, substantially as and for the purpose set forth.

4. In a car-coupling, the combination, with the car-body B and the coupling-jaws A A', of the spring I, the slotted ears *i'*, and the rods *i*, substantially as and for the purpose set forth.

5. In a car-coupling, the combination, with the hinged coupling-jaws A A' and the bolts *k k'* and *n n'*, of the coiled spring H, between their rear ends, and the flat side springs, N N', substantially as and for the purpose set forth.

253,801. CAR-COUPLING. MICHAEL WIRTER, Sr., Union City, Ind. Filed Dec. 29, 1881. (Model.)



Claim.—1. In a car-coupling, the combination, with the draw-head, of a lever pivoted on the top of the draw-head and provided with a cam-projection, of the coupling-pin adapted to be acted upon by the front end of this lever, and of a projecting sliding rod on the top of the draw-head, adapted to raise the cam-lever, thereby raising the coupling-pin, substantially as herein shown and described.

2. In a car-coupling, the combination, with the draw-head A, of the coupling-pin O, the lever C, pivoted on the top of the draw-head and provided with a cam-projection, E, and of the projecting sliding rod R, substantially as herein shown and described, and for the purpose set forth.

3. In a car-coupling, the combination, with the draw-head A, of the coupling-pin O, the pivoted cam-lever C, projecting sliding rod R, the lever T, and the spring V, substantially as herein shown and described, and for the purpose set forth.

4. In a car-coupling, the combination, with the draw-head A, provided with a vertical guide-collar, P, of the coupling-pin O, the pivoted cam-lever C, and the projecting sliding rod R, substantially as herein shown and described, and for the purpose set forth.

5. In a car-coupling, the combination, with the draw-head A, of the coupling-pin O, the pivoted cam-lever C, the link F, and the sliding bar H, passing through this link and provided with a beveled projection, J, substantially as herein shown and described, and for the purpose set forth.

6. In a car-coupling, the combination, with the draw-head A, of the coupling-pin O, the pivoted cam-lever C, the link F, the sliding bar H, provided with a beveled projection, J, and the lever L, pivoted to the end of the car and to the bar H, substantially as herein shown and described, and for the purpose set forth.

7. In a car-coupling, the combination, with the draw-head A, of the coupling-pin O, the pivoted cam-lever C, the link F, the sliding bar H, provided with a beveled projection, J, the projecting sliding rod R, the pivoted arm T, and the spring V, substantially as herein shown and described, and for the purpose set forth.

253,802. APPARATUS FOR MAKING EXTRACTS FROM VEGETABLE SUBSTANCES. MORRIS WISE, New York, N. Y., assignor to the West India Manufacturing Company, same place. Filed July 9, 1881. (No model.)

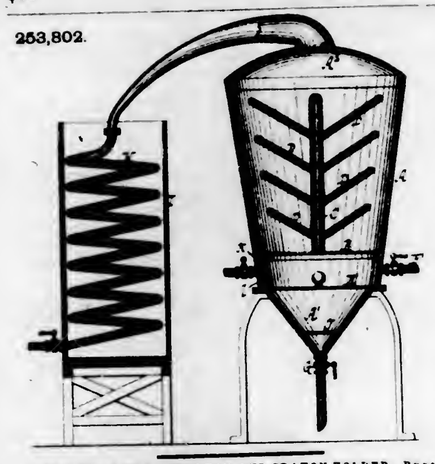
Claim.—1. The combination, with a distilling-tank, of a foraminous false bottom provided with an attached foraminous vertical stem having lateral foraminous branches, substantially as described, whereby the steam admitted beneath the false bottom will enter the tank through the false bottom and through the stem and its branches, as and for the purpose set forth.

2. The combination, substantially as hereinbefore set forth, with the distilling-tank A, of the primary foraminous false bottom B, the secondary false bottom E, and the central upwardly-projecting hollow foraminous stem of the primary bottom having laterally-projecting foraminous branches.

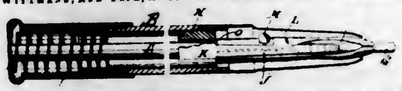
2. The combination, with the wheels *a*, endless chains B, and [illegible]

11. The combination of the plow A, wheel O, brace *o'*, and

253,802.



253,803. AUTOMATIC LEAD AND CRAYON HOLDER. RUDOLF WITTMANN, New York, N. Y. Filed Nov. 11, 1881. (No model.)



Claim.—1. In a lead or crayon holder, the combination, with the sheath, of a longitudinally-movable lead or crayon receiving tube provided with longitudinal slots and with a cam-plate, and of spring-strips provided with lugs, substantially as herein set forth.

2. In a lead or crayon holder, the combination, with the sheath, of a longitudinally-movable lead or crayon receiving tube provided with longitudinal slots and with a cam-plate, of spring-strips provided with lugs, of a cap at the rear end of the sheath, and of a spring for pressing this cap from the rear end of the sheath, substantially as herein set forth.

3. In a lead or crayon holder, the combination, with the sheath B, of the longitudinally-slotted lead or crayon receiving tube A, provided with a transverse cam-plate, M, the spring-strips J, provided with lugs L, the shoulder or projection O, and the collar N, the tube A being longitudinally movable in the sheath B, substantially as herein set forth.

253,804. STOCK-CAR. HORACE S. WOLFE, Kalamazoo, Mich., assignor of two-thirds to Frank W. Corsell and Chester Kellogg, both of same place. Filed Sept. 27, 1881. (No model.)



Claim.—1. In a stock-car provided with sectional water and feed troughs, the troughs secured to a bar having the end grooves, in combination with a car having the semicircular projections and rods, between which the ends of the trough-bar are movably located, all substantially as set forth.

2. In a stock-car, the grain-chambers occupying the limited space set forth, provided with the obliquely-angled beams, serving to brace the structure and guide the grain to the mouth of the feed-spouts, substantially as specified and shown.

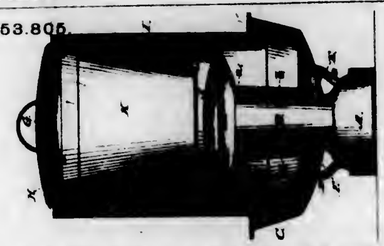
3. In a stock-car, the double rafters in the roof, constituting inclosures for the water-pipes, substantially as described.

253,805. COOKING-BOILER. JAMES A. WOOD, Rochester, N. Y. Filed Dec. 30, 1881. (No model.)

Claim.—1. In a cooking-boiler, the combination of the removable base, the double-walled flue having the tubes or pipes connecting the interior of the flue B with the water-pan C, the receptacle D', the perforated diaphragm, the cover, and condenser, substantially as specified.

2. In a cooking-boiler, the combination of a steam generator and flue, the receptacle D', the closed cup or vessel K, the lid F, having the projection G, and the condenser L, substantially as specified.

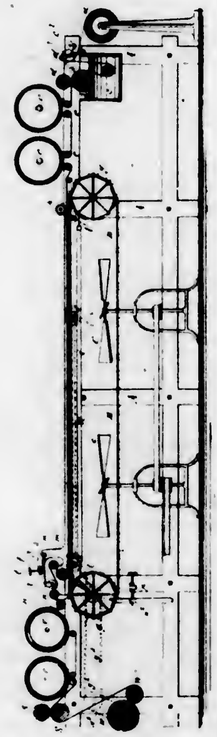
253,805.



3. In a cooking-boiler, the combination, with the cold-water pan, of the double-walled flue B, having the pipes E E and the perforations *a* in its outer wall, substantially as and for the purposes specified.

253,806. CLOTH TENTERING, DRYING, AND CALENDERING MACHINE. ALVIN WOODMAN, Lewiston, Me., assignor to himself and Cyrus I. Barker, same place. Filed Mar. 14, 1881. (No model.)

Brief.—The cloth upon entering the machine passes through a diagonally-fluted and adjustable tension device. The parallel tracks and the ends next thereto of the diverging tracks are adjusted in width at one movement. Rollers adjustable horizontally at either end serve to bring the plaid or stripe of the cloth into position at right angles with the sides of the cloth. A series of short rollers held in arms, each adjustable vertically, is used to straighten the line of the plaid if curved, any of said rollers being made to bear on or left free from the cloth, as may be necessary. Both sets of rollers serve to deliver the cloth to the calendering-roll with its figure correct.



Claim.—1. The combination, with roll *a*, of the spreader, consisting essentially of bars *b'*, diagonally fluted in opposite directions from the middle, and pivoted end pieces, *b'*, provided with a ratchet-wheel, *c'*, and pawl *d'*, substantially as and for the purposes described.

2. The combination, with the wheels *g*, endless chains B, and tracks *h*, of the screw-shafts *l*, nuts *l'*, shaft *l*^{3} and its gearings, and mechanism for driving the wheels *g*, substantially as shown and described.

3. The combination, with the cylinders *s* and rollers *r*, of the rollers *s n'*, winding-drum *w*, and the pulleys *g*^{5} *g*^{6} and belts *g*^{7} *g*^{7}, substantially as shown and described.

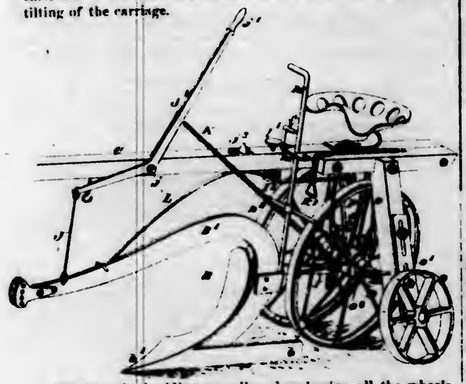
4. The combination of rollers *r* and mechanism for their vertical adjustment with rollers *m' n'*, substantially as and for the purposes specified.

5. The combination, with the guide-rollers *n' n*, the rollers *r*, and fixed guide-rollers *m m'*, of mechanism for adjusting the rollers *n n'* horizontally and rollers *r* vertically, as and for the purposes set forth.

6. The combination of arms *r'*, spring *u'*, adjusting-screws *t'*, rollers *r*, guide-rollers *n n'* and *m' m*, substantially as and for the purposes specified.

253,807. SULKY-PLOW. JAMES K. WORTHINGTON, Kirkwood, Mo. Filed June 7, 1881. (Model.)

Brief.—Two wheels on an axle so short as to allow both to run behind the plow in the furrow. A push-bar extends rearward from the plow to a loop at the axle and bent-lever connections from it lift the heel of the plow. From the main lifting-lever a chain passes around the grooved hub and over pulleys to the driver's foot. By tightening the chain the turning of the wheel assists in raising the plow. A spring operates to hold down the point of the plow. A handle with foot-rests to guide or tilt the plow. A wheel carried on the land side and a fender on the furrow side limit the tilting of the carriage.



Claim.—1. A riding or sulky plow having all the wheels which support the sulky when upright in the rear of the plow, and arranged to travel in the furrow being turned.

2. The combination, in a sulky-plow having a seat, of the plow B and sulky-wheels D D', used in supporting the sulky in an upright position, and constituting the entire support when in that position, all of said wheels being arranged to travel in the furrow being turned.

3. The combination of the axle E, the wheels D D', the grooved collar G', the chain K, the beam C, bearings *k k*, lever J', link J, beam B', and plow B, substantially as described.

4. The combination, in a plow, of the chain K and the pulley G', said chain at its forward end being connected directly or indirectly with the plow B, and to enable it, when tightened upon the pulley G', to draw and lift the plow B.

5. The combination, in a sulky-plow, of the axle E, the bearing G', the chain K, the bearings *k k*, and the beam C, substantially as described.

6. The combination, in a sulky-plow, of the axle E, bearing G', chain K, beam C, lever J', link J, and plow-beam B', substantially as described.

7. The combination, in a plowing device, of the beam C, the plow B, the beam B', the spring L, the handle M, and the spring L', substantially as described.

8. The combination, in a plowing device, of the plow B, handle M, beam C, and spring L', substantially as described.

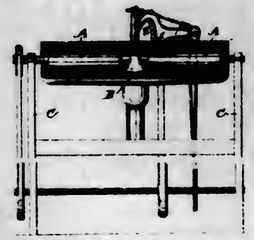
9. In a sulky-plow, the combination of the plow B, the carriage-beam C, the arm I, the link I', the lever I^3 in the form of a spring, and the bearing *f'*, substantially as described.

10. A sulky-plow having the side wheel, O, and the fender P, neither said wheel nor fender touching the ground saving when the sulky is tilted, substantially as described.

11. The combination of the plow A, wheel O, brace *o*^{2}, and step *o*^{3}, substantially as described.

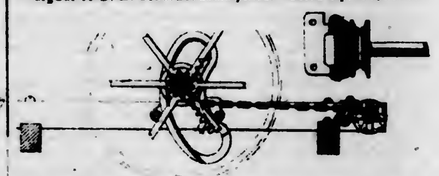
12. The combination of the axle E, loop H, arm I, and plow B, serving to guide said arm as the plow is lifted at the heel, and also allowing the plow to be canted by means of the handle M, substantially as described.

253,808. SOLE-BUFFING MACHINE. BARNES C. YOUNG, Boston, Mass. Filed July 25, 1881. (No model.)



Claim.—The herein-described organized buffing-machine, consisting of the frame-work C, the horizontal buffing-rolls A A, the buffing-pad B, mounted on the vertical shaft D, and arranged between the rolls A A and in close proximity to them, as shown, and the single driving-shaft, from which both rolls and the pad receive motion through the connecting-belts, substantially as set forth.

253,809. HARVESTER. CALVIN YOUNG, Auburn, N. Y., assignor to D. M. Osborne, same place. Filed Apr. 11, 1876.



Claim.—1. The button-shaped formations at each end of the axle, formed to act independently of the pinions thereon for preventing endwise movement, in combination with the open guideway in the rack-standards, in which guideways said button-shaped formations have a vertical movement.

2. The supporting-plates attached to the frame of the machine at either end of the axle, each provided with a rack for the pinion on the axle and an open guideway for the end of said axle formed by flanges in front and rear thereof, in combination with the axle having disks or button-shaped formations at its ends.

3. The supporting plates or standards for the main axle, each formed with a rack for the pinion, an open guideway, raised flanges at the sides of said guideway, meeting each other at the top and open at the bottom, and a channel outside of said flanges for the reception of a disk or button upon the end of the axle.

4. The combination, with the supporting plates or standards, formed, as described, with racks, open guideways, raised flanges, and underlying channels, and the axle and its pinions, and the disks or buttons on the ends of said axle.

5. The combination, with the supporting plates or standards having the racks, open guideways, raised flanges, and underlying channels, as described, of the main drive-wheel axle, with its pinions, disks, or buttons, and chain-wheel or sheave for actuating the same, substantially as described.

253,810. SWINGING GATE. JACOB W. SHUMAKER, Hagerstown, Md. Filed Dec. 17, 1881. (No model.)

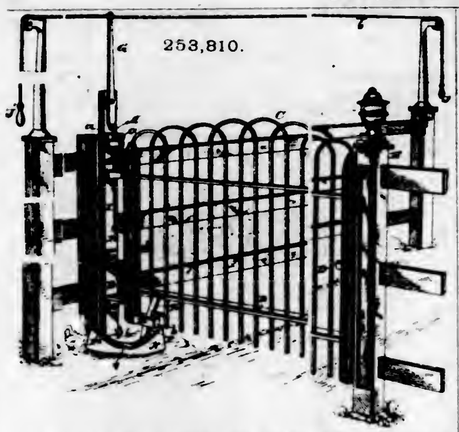
Claim.—1. The combination, with a swinging gate adapted to be moved vertically, of a swinging arm adapted to rest over an inclined trackway when the said gate has been moved upward.

2. The combination, with the gate-post having a lever pivoted thereto, which latter is connected to suitable operating-handles, of a gate secured to the said post and connected to the said lever by suitable chain, by which the gate is moved upward, and provided with a swinging arm having a roller thereon, which latter is adapted to rest over inclined trackways when the gate is moved upward, substantially as set forth.

3. The combination, with a vertically-movable gate having an arm pivoted thereto, the latter being provided at its lower end with a roller, of a track or guideway provided with two single inclined

Claim.—The thimble-race herein described, consisting of the

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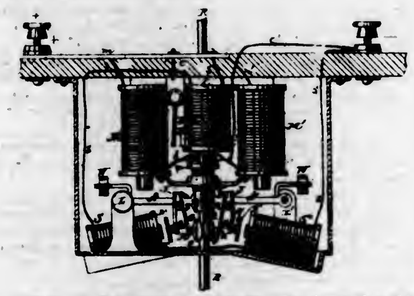
tracks and a double inclined track, on which the said roller is adapted to move, substantially as set forth.

4. The combination, with a vertically-movable gate having an arm pivoted thereto, the latter being provided at its lower end with a roller, a guide for holding the said arm in position, and suitable levers and chains for operating the said gate, of a track or guideway provided with a single inclined track on which the said roller moves while the gate is being opened by the lever, before referred to, a single inclined track on which the roller moves while the gate is being closed by the levers before referred to, and a double inclined track on which the roller moves when the gate is being either opened or closed by simply pushing thereon.

5. The combination, with the gate-post A, staples B, lever G, chain I, ropes J, and levers J', of the gate provided with the swinging arm K, the latter having the roller K' secured to its lower end, and the track or guideway N, the above parts being constructed and adapted to operate substantially as set forth.

6. The combination, with the gate-post A, staples B, lever G, rope or chain I, ropes J, levers J', and pulleys *a a*, of the gate having the swinging arm K pivoted thereto, the latter being provided at its lower end with the roller K', the guide M, and the track or guideway N, all of the above parts being constructed and adapted to operate substantially as set forth.

253,811. ELECTRIC LAMP. ALBERT L. AREY, Cleveland, Ohio. Filed Aug. 31, 1881. (No model.)



Claim.—1. An electro-magnet in the main circuit of an electric lamp, provided with the vibrating armatures, with their heads and geared segments, and the double lifting-clamp mechanism attached to said armatures, and consisting of one set of clamps arranged in respect to the upper carbon in the line described, and actuated by said armatures to separate the carbon points, in combination with the electro-magnets of high resistance in the shunt-circuit and its armatures T T', whereby the said clamping mechanism is released when an increased resistance of the main circuit diverts the current into the shunt-circuit.

2. The electro-magnet of low resistance in the main circuit, wound only of such strength that with less than the normal current it just lifts the vibrating armatures A A', in combination with said vibrating armatures, whereby, after the voltaic arc is increased in length, the said magnet continues to hold the said armatures up, substantially as described.

3. The combination of the electro-magnets M M', of low resistance in the main circuit, the vibratory armatures A A', actuated by said magnets, the double lifting-clamp mechanism attached to said vibrating armatures, and the upper carbon point, whereby the upper carbon point is separated from and fed to the lower point, and whereby, after the voltaic arc is increased in length, the said vibrating armatures and lifting mechanism are held by the said magnets in the same position to feed the upper carbon point to the lower one that they occupy after the points are separated, substantially as described.

4. The combination of the vibrating armatures, the counter-balance-weights, the adjusting-nut, the clamps O O, and their connecting mechanism, substantially as described.

5. The double lifting mechanism connected with the vibrating arms, and consisting of the segmental gears G, the heads H, the plates J, the springs K, the clamps O, armatures T, rods e, and nuts N, in combination with the bearings L and counter-weights *s*, substantially as described.

6. The combination of the magnets M M', vibrating armatures A, and armatures T with their connecting mechanism and the helices S, substantially as described.

7. The combination of the magnets M M' in the main circuit, the vibrating armatures A A', having the geared segments G G', the armatures T T', and their connecting mechanism, substantially as described.

8. In a lower-carbon holder, the plates provided with holes, and an annular space between the plates to inclose a disk or disks, in combination with such disks, to provide for the displacement and lateral adjustment of the carbon point, substantially as described.

9. The combination of the adjustable lower-carbon holder, the disk or disks for carrying one or more carbon points, and the plates which inclose and clamp the said disk or disks, substantially as described.

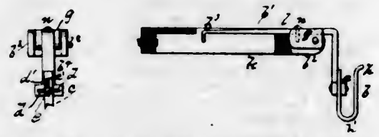
253,812. TELEPHONE-RECEIVER. SAMUEL H. BARTLETT and HENRY E. WAITE, Bridgeport, Conn., assignors to Charles F. Livermore, New York, N. Y. Filed Aug. 31, 1881. (No model.)



Claim.—In a telephone-receiver, the combination, with the bar-magnet, coil, and a diaphragm of non-magnetic material, of a spring-armature rigidly secured at one end and bearing at its other end against the diaphragm, said armature being disconnected from the magnet, but in inductive proximity thereto.

253,813. WEFT-FORK FOR LOOMS. JOHN C. BURKE, Great Falls, assignor of one-half to Eben N. Higley, Somersworth, N. H. Filed May 14, 1881. (No model.)

Brief.—The body portion of the fork is clamped by means of a screw to the block pivoted between the arms at the end of the carrier-strap. The bent front end of the body is slotted transversely, and the head, secured to it by a bolt, is slotted vertically, whereby both vertical and horizontal adjustment of the head and its tines can be effected.



Claim.—1. The weft-fork-body portion having the transverse slot *d*, in combination with the head *c*, having the upwardly-bent tines and the longitudinal slot *d'*, and the connecting-bolt *e*, substantially as specified.

2. The pivoted seat-block *g*, recessed at *s*, in combination with the body *l*, the carrier-strap *b'*, screw *n*, slotted front *b'*, slotted head *c*, and connecting-bolt *e*, substantially as specified.

253,814. MANUFACTURE OF PAPER. DANIEL R. BURNS, Dayton, Ohio, assignor of one-half to Francis J. McCormick, same place. Filed Jan. 9, 1882. (Model.)

Claim.—1. The herein-described process of manufacturing paper, which consists in first cooking the stock, then reducing it to pulp, and finally in bleaching it in a separate vessel, substantially as described.

253,814.



2. The process of manufacturing straw board and paper, which consists in first cooking the stock and then reducing it to pulp, whereby the fiber is separated, but not destroyed, and all the albumen and gluten of the straw preserved, in the manner substantially as set forth.

3. The process of manufacturing paper, which consists in first cooking the stock, then reducing it to pulp, and finally subjecting it to a bleaching process, which consists in eliminating chlorine gas from chloride of lime by heat and passing the same through the material to be bleached in a separate vessel, substantially as set forth.

4. The process of cooking, disintegrating, and bleaching paper-stock, whereby all the gluten and albumen are retained and the bleaching is effected without the introduction into the stock of any of the solid particles of chloride of lime, caustic alkali, or the like, substantially as herein described.

5. A cooking-vessel having a central upright perforated steam-pipe provided with a deflecting-cap, substantially as herein shown and described.

6. A grinding-disk having a concave face, substantially as set forth.

7. A grinding-disk having a concave face and central feed-orifice, substantially as set forth.

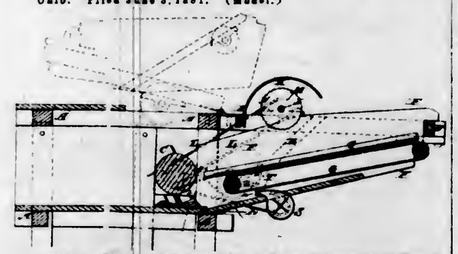
8. The shaft A, having the washer B, stationary plate C, and adjusting-screw E, substantially as set forth.

9. The process of treating the stock and fiber with carbonate of soda and tannic acid, substantially as described, and set forth.

10. The process of treating the stock and fiber with carbonate of soda, substantially as described and set forth.

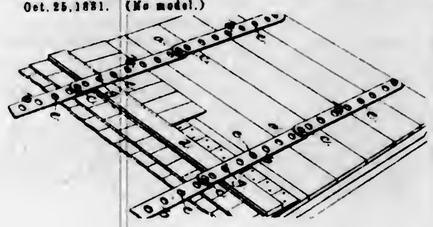
11. The herein-described tub P, containing the chloride of lime, provided with steam-pipe R, and tub Q, containing the stock to be treated, provided with gas-pipe S, substantially as described and set forth.

253,815. BAND-CUTTING AND FEEDING ATTACHMENT FOR THRASHERS. SAMUEL CALDWELL and JORDAN BURGESS, Greenfield, assignors of one-third to Luther Bradley, Ross County, Ohio. Filed June 3, 1881. (Model.)



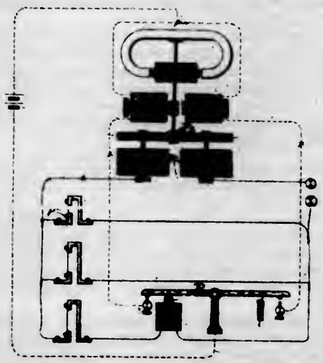
Claim.—The combination, with the hinged frame D E F and feed-apron G, of the fan-blower S, having its discharge-spout made of the same width with the feed-apron, substantially as shown and described, and for the purpose set forth.

253,816. SHINGLING-GAGE. GEORGE B. CLARK, Springville, N. Y., assignor of one-half to F. G. Eaton, same place. Filed Oct. 25, 1881. (No model.)



Claim.—The shingle-gage herein described, consisting of the strips *a a*, formed of the perforated sections *b*, pivoted together at *c*, and the adjustable rule or straight-edge *d*, provided with pins or studs *g*, substantially as specified.

253,817. ELECTRIC LIGHTING APPARATUS. MOSES G. FARMER, Newport, R. I., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Mar. 7, 1881. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of a rheostat, mechanism for increasing or decreasing the resistance of said rheostat, an electro-magnet included in the same electric circuit with the rheostat, or in a branch thereof, and a lever for controlling the action of said mechanism, which is normally balanced between the attractive force of said electro-magnet and a constant antagonistic force, and contact-stops for limiting the motion of and determining the action of said lever.

2. The combination, substantially as hereinbefore set forth, of a generator of electricity, an electric circuit uniting the poles of said generator, one or more electric lamps included in said circuit, an electro-magnet included in said circuit, a lever acted upon in opposite directions by said electro-magnet and by an antagonistic force, electrical contact-stops limiting the motions of said lever, reversible mechanism actuated by electricity and controlled by said lever, and having its motion in one direction or the other determined by the respective preponderance of the opposing forces acting upon said lever, and mechanism for increasing and decreasing the current traversing said circuit, which mechanism is controlled by the reversible mechanism.

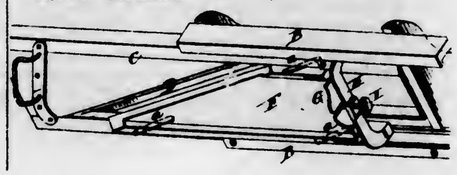
253,818. APPARATUS FOR SHAPING HAT-BRIMS. LUCIUS H. HOYT, Danbury, Conn. Filed Jan. 6, 1882. (No model.)



Claim.—1. The within-described device for shaping fronts and backs of hat-brims, having two blocks or shaping-surfaces, A B, with means E, for conveniently adjusting their distances apart, as herein specified.

2. The combination of the bed C, having guiding means *c*, with the fixed support C, movable support D, dowels *b b*, and false blocks A B, adapted to serve relatively to each other and to hats of different sizes, substantially as herein specified.

253,819. MEAT-SLICER. ANTHONY ISER and ALBERT ISER, Lancaster, Pa., assignors to I. L. Landis, same place. Filed June 17, 1880. Renewed Feb. 7, 1881. Again renewed Nov. 12, 1881. (No model.)



Claim.—In a slicing-machine, the combination of the knife-

253,823. AXLE-BOX GAGE. JOHN A. MYERS, Monroe City,

253,825. FOLDING SETTEE. CORNELIUS H. DUMARSEY, Brooklyn, N. Y. Filed Jan. 15, 1881. (Model.)

shunt or subsidiary circuit passing through the helices wound around said armatures, substantially as described, and for the pur-

Claim.—In a slicing-machine, the combination of the knife-slide C, the bar H, fixed thereto, the board F, the links *a*, connecting the board to the said slide, the horizontally-slotted plate G, fixed to said board, and the set-screw I, screw-tapped through the bar H and swiveling in the slot of plate G, substantially as described.

253,820. PROCESS OF TREATING BUTTER. GEORGE W. KENDALL and ROBERT E. ROBERTS, New Orleans, La., assignors to the Golden Butter Company, same place. Filed Nov. 17, 1881. (No specimens.)

Claim.—The process herein described for the treatment of butter, which consists in first melting the butter and mixing therewith a vegetable oil, then filtering the mixture through bone-black, next adding the coloring-matter and a quantity of fresh sweet butter for the purpose of flavoring the mass, which is finally congealed by being brought in contact with ice, and is then ready for use, substantially as herein described.

253,821. MANUFACTURE OF OIL-CAKE. JOHN MCDOUGALL, London, England. Filed Aug. 4, 1879. Patented in England Dec. 20, 1878.

Claim.—1. The method of treating cotton-seed by cracking or partially grinding the seed between millstones—such as commonly employed for grinding wheat—set far enough apart to crack or mash the seed without liberating the oil, so that the fiber on the seed is balled by the action of the stones, substantially as described.

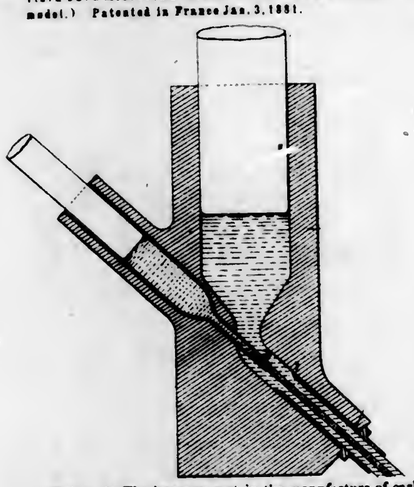
2. The method of treating cotton-seed in manufacture of oil-cake by cracking or partial grinding between millstones, crushing and grinding under edge-runners, and pressing, substantially as described.

3. The method of utiliaing cotton-seed husks by grinding the same apart from the kernels and introducing the ground husks into oil-cake, substantially as described.

4. The process of making oil-cake, consisting in treating cotton-seed by cracking or partial grinding between millstones, crushing and grinding under edge-runners, and pressing, in separating the husks after the cracking operation, and grinding them apart from the kernels, and in introducing the ground husks into the oil-cake in admixture with said kernels, substantially as described.

5. The new product described, being oil-cake containing ground cotton-seed husks.

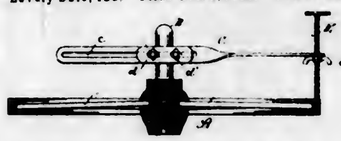
253,822. CANDLE FOR ELECTRIC LIGHTING. JEAN BAPTISTE JAVA MIGNON, Paris, France. Filed Sept. 17, 1881. (No model.) Patented in France Jan. 3, 1881.



Claim.—1. The improvement in the manufacture of carbons or electrodes for electric lights, consisting in pressing out from plastic material a double carbon, both core and outer coating at one operation, substantially as described.

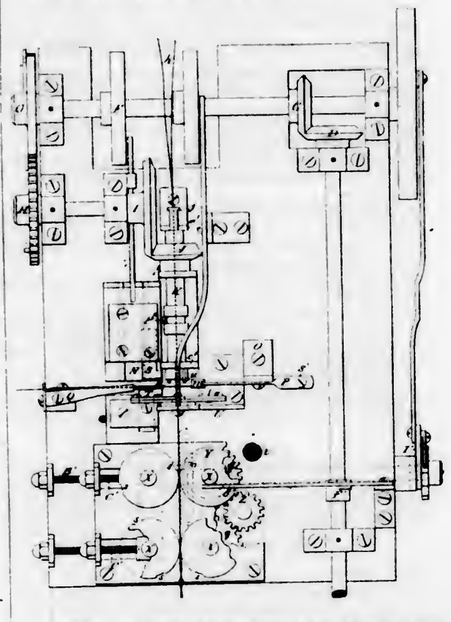
2. The apparatus described for making double carbons at one operation, comprising the inner and outer molds, with their rams and contracted tubes or orifices, the tube or orifice of the outer mold being concentric with but lower than the orifice of the inner mold, and being contracted below said orifice of the inner mold, substantially as described.

253,823. AXLE-BOX GAGE. JOHN A. MYERS, Monroe City, Lovely Dale, Ind. Filed Dec. 9, 1881. (No model.)



Claim.—The combination of the spindle B, gage C, nuts *d'*, and washer *d* with the index-rod E, operating in a threaded hole in the outer end of the gage-arm, and provided with a lock-nut, *e*, and with the wheel A, substantially as shown and described.

253,824. FENCE-WIRE-BARBING MACHINE. HENRY W. PUTNAM, Bennington, Vt. Filed Dec. 23, 1878.



Claim.—1. The non-rotating tubular guide *j* for the two longitudinal fence-wires, adapted to prevent them from twisting around, and at the same time allowing them to be drawn through such tubular guide, in combination with a barb-winder surrounding such tubular guide and receiving a rotary movement, substantially as set forth.

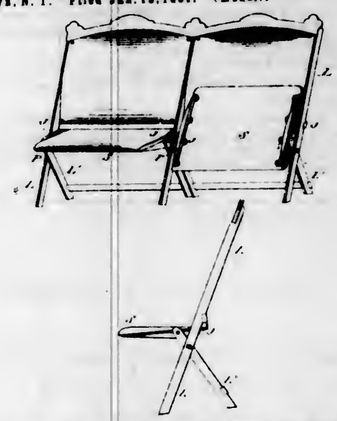
2. The non-rotating tubular guide for the two longitudinal fence-wires and the barb-winder surrounding such tubular guide, in combination with mechanism for revolving the barb-winder and mechanism for moving the barb-winder and guide endwise, substantially as set forth.

3. The combination, in a fence-wire-barbing machine, of mechanism for introducing the barb-wire between two longitudinal wires, mechanism for twisting the barb-wire around the longitudinal wires, mechanism for feeding along the wires, and mechanism for twisting the longitudinal wires together, substantially as set forth.

4. A non-rotating guide and holder for the main fence-wires, adapted to permit their passage along it, and at the same time to prevent them from twisting around each other at their guided portions, in combination with a barb-winder surrounding such guide, and with means for imparting a rotary movement to the winder, substantially as described and shown.

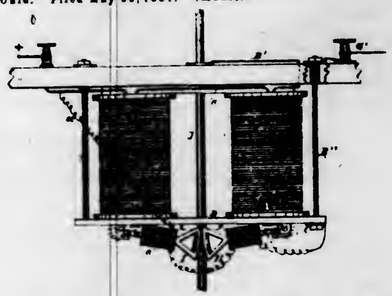
5. The combination, in a fence-wire-barbing machine, of mechanism for feeding longitudinal wires through the machine, mechanism for introducing the barb between the longitudinal wires, and mechanism for twisting it around both said longitudinal wires, substantially as described.

253,825. FOLDING SETTEE. CORNELIUS B. DEMAREST, Brooklyn, N. Y. Filed Jan. 15, 1881. (Model.)



Claim.—In folding settees, the folding legs L and L', connected by the straps J J, in combination with the seat S, pivoted back of its center to the legs L' only and at their upper ends, whereby the frame of the settee may be folded and the front side of the seat S is made movable upward and the rear end is made movable downward independently of the folding frame, and like an opera-seat, in the manner and for the purpose set forth.

253,826. ELECTRIC LIGHT. ALBERT L. ADEE, Cleveland, Ohio. Filed May 23, 1881. (Model.)



Claim.—1. In lampstructures for electric lights, a pair of armatures pivoted respectively below the helices A B, and having the free ends of the armatures terminating in a segment provided with a peripheral groove, a section of which from *y* to *z* is an arc of a circle having its center at the pivotal point of the armatures, and the section of the groove from *z* to *x* a straight line, or nearly so, at right angles to the radius *z* to *l* of the segment of the armature, and the section of the groove from *y* to *x* formed or shaped so as to allow the rod J to pass freely through the grooves of the segment when the said segments are approximated to each other and the rod between *x* and *y*, substantially as and for the purpose set forth.

2. In combination with the rod J, carrying the upper carbon point of an electric lamp and an electro-magnet, a pair of armatures surrounded with coils in a derived circuit, as described, below the helices of said magnets, the opposite or free end of the armatures terminating in a segment, with or without a peripheral groove adapted to clamp said rod between them for regulating and controlling the carbon point, substantially as set forth.

3. The helices A and B of an electro-magnet, and rod J, carrying the carbon point, in combination with the vibrating armatures having free segmental ends, provided respectively with a peripheral groove adapted to and arranged in relation to said rod so as to clamp the same, and the said armatures having thereon respectively shunt-magnets operated by a portion of a divided main circuit, substantially as described, and for the purposes set forth.

4. In electric lamps, the combination of the electro-magnets A B, the rod J, and the vibrating segmental armatures with a shunt or subsidiary circuit passing through the helices wound around said armatures, substantially as described, and for the purpose set forth.

5. In an electric lamp, the combination, with the rod J, carrying the carbon terminal point, of a pair of armatures forming vibrating electro-magnets pivoted to the apparatus below the magnets A B, as described, and operated by one portion of the main circuit and the said electro-magnets A B, substantially as herein set forth.

6. In electric lamps, a pair of vibrating armatures having helices arranged thereon connected with the shunt-circuit, and a rod for carrying the electrode in the main circuit and between the segmental terminals of the armatures and in connection with the magnets A B, the latter being in the main circuit with the carbons and the said helices in a derived circuit, substantially as described, and for the purpose set forth.

253,827. PREPARATION OF PHOTOGRAPHIC PAPER FOR MAKING GELATINE-BROMIDE OF SILVER PRINTS. JEAN J. D. HUTINET and PIERRE E. LAMY, Paris, France. Filed Apr. 27, 1881. (No specimens.) Patented in France Apr. 5, 1881.

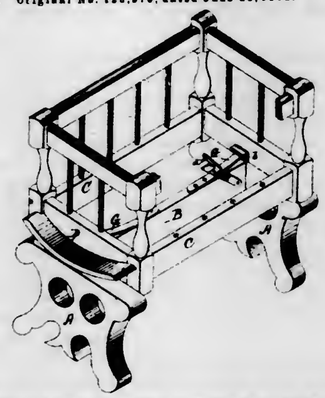
Claim.—1. The method of preparing photographic paper with gelatine-bromide of silver or analogous sensitive compound for positive printing, which consists in applying, in connection with said compound, a varnish for imparting brilliancy, and thus rendering brilliant the sensitive pellicle itself, so that varnishing after the printing operation is rendered unnecessary, substantially as described.

2. Photographic paper prepared for positive printing with a sensitive pellicle of gelatine-bromide of silver or analogous compound, combined with a varnish for imparting brilliancy, substantially as described.

3. Photographic paper prepared for positive printing with a sensitive pellicle of gelatine-bromide of silver or analogous compound, combined with a varnish for imparting brilliancy, and calendered, substantially as described.

REISSUES.

10,036. CRADLE. WILLIAM H. EARHART, Parkersburg, W. Va., assignor to John R. Ebert; said Ebert assignor to Charles Streit and Henry Schmit, Cincinnati, Ohio. Filed Sept. 1, 1881. Original No. 188,375, dated June 26, 1872.



Claim.—1. The combination, substantially as specified, of the stand and the rocking frame with the metal keepers G, arranged at right angles to the rockers, one end of said keepers being attached to the rocking frame and the opposite end attached to the stand, for the purpose set forth.

2. The stand A A B and rocking frame, in combination with metal strips or keepers G G, said keepers having their inner ends attached to the bar B and their outer ends slotted and attached to the ends of said rocking frame at right angles to the rockers, substantially as and for the purpose set forth.

3. The combination, substantially as specified, of the stand, the rocking frame resting thereon, and the metal keepers connecting the said stand and rocking frame with the stirrups J J, to limit the motion of the cradle and prevent its rocking too far.

4. The combination of the stand A B, rocking frame, metal strips or keepers G G, stirrups J J, and projection b, all constructed and arranged substantially as and for the purpose herein set forth.

10,087. PROCESS OF COATING REAL AND IMITATION PRECIOUS STONES. FRANCIS ED. MEYER, New York, N. Y. Filed Jan. 20, 1882. Original No. 236,603, dated Jan. 11, 1881.

Brief.—Improvement on Letters Patent Nos. 223,237, and 229,328, and 233,364.



Claim.—1. The process herein described of applying a reflective coating, B, to the rear face or collet of a real or imitation precious stone or gem, composition of glass or paste, A, by first coating the said stone A entirely with the reflective material B and then removing by any suitable means the reflective coating from the front face or crown of the said stone or gem.

2. The process of protecting the outside of the reflective coating on the collet side of the stone by means of an electroplating or a metallic shield, substantially as described

3. The electroplated covering or cap for the reflective substance, applied to and combined with the reflective cap B, substantially as described.

4. The application by electricity of a solid metallic coating or cap on the back or collet of a real or imitation precious stone, paste, or gem on the outside of a reflective substance, B, which has been previously placed on the said collet side of the stone.

THE ELIOTYPE PRINTING CO. BOSTON

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Northern District of New York.

WRIGHT, JR., *v.* RANDEL *et al.*

Decided August 4, 1881.

1. EQUITY.
Between equal equities the law will prevail.

2. LETTERS PATENT—ASSIGNEES—SUPERIOR TITLE.
Bona fide purchasers, for value, without notice, under an instrument of assignment which was duly recorded, whereby interests are assigned in an unpatented invention, and wherein the Commissioner is requested to issue the patent to such assignees, as was duly done, can convey a good title to such patent as against prior assignees of a prior patent which was issued to the same inventor, to whom such inventor at the same time assigned interests in new inventions which he had made, of which the invention above referred to was one, the prior instrument of assignment having been executed and recorded first, and the invention the nature of which was definitely referred to in such prior instrument having been made before any of such assignments.

3. REVISED STATUTES, SECTION 4898, CONSTRUED—RECORDS.
Section 4898 of the Revised Statutes does not provide for the recording of assignments, grants, and conveyances of interests in patents not yet issued.

4. REVISED STATUTES, SECTION 4895, CONSTRUED—CONSTRUCTIVE NOTICE—RECORDS.
Section 4895 of the Revised Statutes makes no provision for the recording of an assignment of an unpatented invention on which the patent is not to be issued to the assignee; therefore its record is not constructive notice of its contents to one who subsequently deals with a party to it in respect to its subject-matter.

Mr. N. Davenport for the plaintiff.
Mr. Enck Cowen for the defendants.

BLATCHFORD, *C. J.*:

On the 17th of August, 1875, Letters Patent No. 166,810 were issued to the defendant, William Randel, for an improvement in button-hole attachments for sewing-machines. Randel, by an assignment made September 19, 1876, and recorded September 22, 1876, assigned to Oscar Smith and Benjamin H. Downer each an undivided one-third interest in said patent—

Together with an undivided one-third each of any improvements or new inventions that I have or may produce in button-hole attachments or button-hole machines, and agree to assign interests, as stated above, and make application for letters patent for such improvements on machines; * * * and it is a subject of agreement by myself and the said assignees this date that we will neither of us sell, assign, or set over to other parties any portion of our interest in said patent, reissues, or new patents in said button-hole attachments or machines that we now have or may have, unless by the written consent of each party now owning the same.

By an assignment made January 31, 1877, and recorded February 9, 1877, and which recited that Randel had assigned to Smith and Downer an undivided one-third interest to each in said patent, "and to any improvements or new invention in button-hole attachments or button-hole sewing-machines that the said Randel might make or produce," Randel and Smith assigned to Downer "all our right, title, and interest in and to said inventions, as secured to us by said letters patent and assignment."

By an assignment made February 5, 1877, and recorded February 9, 1877, and which recited the contents of said two assignments, Downer assigned to one House "one undivided half of all my right, title, and interest in and to said inventions as secured to me by said letters patent and assignment, and to any improvements or new inventions in button-hole attachments or button-hole sewing-machines that the said Randel might make or produce."

By an assignment made February 19, 1877, and recorded February 22, 1877, and which recited the contents of said three assignments, Downer and House assigned to the Randel Button-Hole Machine Company "all our right, title, and interest in and to said invention, as secured to us by the said letters patent and assignments."

By an assignment made March 7, 1878, and recorded May 31, 1878, and which recited the contents of said prior assignments, and that Lysander Wright, Jr., (the plaintiff in this suit,) "is desirous of obtaining an undivided interest in and to certain improvements and inventions in button-hole attachments made by said William Randel previous to the 19th day of September, 1876, and for which a United States patent was issued bearing date the 2d day of January, 1877, and numbered 192,008," the said company assigned to said Wright all its right, title, interest, and claim in and to said invention, as set forth in said Letters Patent No. 192,008, and which bear date January 2, 1877, as set forth in abovementioned assignments.

On the 2d of January, 1877, Randel filed in the Patent Office an application for a patent for an "improvement in button-hole attachments for sewing-machines."

On the 28th of March, 1877, Randel and the defendants, John W. Cipperly, John C. Cole, and Theodore E. Haslehurst, executed an agreement, whereby Randel agreed to assign to the other three (one-third each) a one-half "interest in his invention of an attachment to a sewing-machine for making button-holes, and all benefits and advantages to be derived therefrom, excepting his interest in a patent issued by the United States and already assigned to B. H. Downer and Oscar Smith," and in consideration thereof the other three agreed "to be to the expense of procuring patents in such countries as may be mutually agreed upon."

By an assignment dated May 22, 1877, which recited that Randel had invented an invention in button-hole attachments for sewing-machines, an application for a patent for which was filed on or about January 15, 1877,

same instrument of an undivided one-third interest to

Randel assigned to the said Cipperly, Cole, and Haslehurst each an undivided sixth part of all his right, title, and interest in and to the said invention, as set forth in the specification filed with the application, and requested the Commissioner of Patents to issue the patent jointly to him and the said Cipperly, Cole, and Haslehurst. The patent was issued to the four June 12, 1877.

By an assignment dated June 28, 1877, Randel, with the consent of the other three, assigned to Joseph W. Smart all his right, title, and interest in and to said inventions, as secured by said Patent No. 192,008.

On the 28th of June, 1877, the said Oscar Smith executed an instrument, which recited the contents of the said assignment of September 19, 1876, and assigned to said Cipperly, Cole, and Haslehurst all his right, title, and interest of whatever nature remaining or reserved to him in said instrument.

On the 7th of July, 1877, the Randel Button-Hole Machine Company served on Cipperly, Cole, and Haslehurst a written notice, which recited the said assignments of September 19, 1876, and January 31, 1877, and that the Randel Button-Hole Machine Company, by assignments executed by said Downer and said House, had become the sole owner of said Patent No. 192,008 and of all the inventions transferred by the said assignments, and that Randel had no right which he could assign in said patent to said Cipperly, Cole, and Haslehurst, and required them to assign to said company all their interest in said Patent No. 192,008 and all the interest they had acquired since September 19, 1876, by any and all assignments from said Randel for any patents issued to Randel, or to him and them, as his assignees, for any button-hole attachments for sewing-machines or for any improvements in such attachments.

In December, 1877, Cipperly, Cole, Haslehurst, and Smart, and one Huntington formed a corporation, under the laws of New York, called "The Empire Button-Hole Machine Company, (Limited,)" which is one of the defendants in this suit.

By an assignment dated January 4, 1878, which recited the said assignment by Randel to Smart, the said Cipperly, Cole, Haslehurst, and Smart assigned to the said Empire Button-Hole Machine Company, (Limited,) all their right, title, and interest in and to said inventions, as secured to them by said Patent No. 192,008 and said assignment.

The bill in this case sets forth that the inventions afterward patented by Patent No. 192,008 were invented and reduced to practice by Randel on or about August 16, 1876, or prior thereto, and that the said assignments by Randel to Smith and Downer and by Randel and Smith to Downer were made and recorded; but it does not state when they were recorded, nor does it base any cause of action on any notice claimed to have been given by the recording. Its cause of action is based on actual knowledge by the codefendants with Randel of the contents of the said prior assignments by him and on want of the consideration for the assignments from Randel under which the codefendants with him claim.

The bill avers that the expenses of the application for Patent No. 192,008 were paid by Smith and Downer; that prior to May 22, 1877, Cipperly, Cole, and Haslehurst, each of them, knew of the contents of said assignments of September 19, 1876, and January 31, 1877; that the assignment to them was made without any valuable consideration, and for the purpose of defrauding the prior assignees of Randel of their interest in said invention and the patent which might issue for the same; that said patent was issued without the consent or knowledge of the Randel Button-Hole Machine Company and in violation of their rights; that the assignment of June 28, 1877, was without the consent or knowledge of said company; that Smart knew of the contents of said assignments of September 19, 1876, and January 31, 1877; that the assignment to Smart was made without any valuable consideration and for the purpose of defrauding said company; that the Empire Company knew of the said assignments of September 19, 1876, and January 31, 1877; that Cole was the president and Cipperly, Haslehurst, and Smart were directors of it; that Randel was and is interested in and connected with it; that all said parties, both officers and directors of said company, knew of the said prior actions and doings of Randel; that said assignment to the Empire Company was for the purpose of defrauding the Randel Company and without any valuable consideration; that after said Patent No. 192,008 was issued the Randel Company requested Randel to assign to it the said patent, but he refused, and the same request was made of his assignees, and they refused, and that the plaintiff after he acquired his title requested said Randel and his said assignees to assign said patent to the plaintiff, but he refused.

The prayer of the bill is that the title to said Patent No. 192,008 may be decreed to belong to the plaintiff; that the defendants assign it to the plaintiff, and that Randel assign it to the plaintiff in accordance with the terms of said assignments of September 19, 1876, and January 31, 1877.

The answer admits that the invention of Randel, patented in No. 192,008, was made and perfected on August 16, 1876, or prior thereto. It denies that Cipperly, Cole, and Haslehurst, or either of them, at and prior to the date of the assignment of said invention to them, had any knowledge of said assignments and the contents thereof, made September 19, 1876, and January 31, 1877. It avers that the assignment to them was for a full and valuable consideration paid by them, and that the assignment to Smart was for a full and valuable consideration paid by him to Randel. It denies that at the time of said assignment to Smart he had any knowledge of said prior assignments and the contents thereof, and it denies that at the time of said assignment to the Empire Company it had, through its officers, any knowledge of the prior acts and doings of Randel in relation to said previous assignments made by him. It admits that previous to the date of said assignment to the Empire Company Cipperly, Cole, and Haslehurst had heard that some claim was made by Downer or his assignees to the invention secured by said patent, and understood it to be by virtue of an assignment by said Randel of future inventions. It avers that the Empire Company paid its assignees a full and valuable consideration for their assignment. It is proved that Cipperly, Cole, Haslehurst, and Smart paid a valuable consideration for what was assigned to them. No attempt is made to show actual notice to any one but Haslehurst of the prior agreement by Randel in respect to the sale of improvements.

The answer admits that the invention of Randel patented June 12, 1877, was made and perfected "on the

16th of August, 1876, or prior thereto, as is alleged in the said complaint." The allegation of the bill is that the improvements covered by the patent afterward issued June 12, 1877, were "invented and reduced to practice" on or about August 16, 1876, or prior thereto. The assignment of September 19, 1876, besides conveying to Smith and Downer each an undivided one-third interest in Patent No. 166,810, conveyed to them "an undivided one-third each of any improvements or new inventions that I have or may produce in button-hole attachments or button-hole machines, and agree to assign interests, as stated above, and make application for letters patent for such improvements or machines, the same to be held and enjoyed" by the said Smith and Downer. Then the assignment, which is signed by Randel alone, goes on to say:

> And it is a subject of agreement by myself and the said assignees this date that we will neither of us sell, assign, or set over to other parties any portion of our interest in said patent, reissues, or new patents in said button-hole attachments or machines that we now have or may have, unless by the written consent of each party now owning the same.

Although this assignment does not refer specifically to any particular improvements which Randel had already made and had not patented, yet the use of the words "that I have or may produce" shows that the existence of improvements which he had made and not yet patented was before the minds of himself and Smith and Downer when this assignment was made, on the 19th of September, 1876.

Randel testifies that the first machine, embracing the invention described in Patent No. 192,008, was made in August, 1876. Randel agreed in said assignment to apply for patents "for such improvements or machines," and also agreed not to assign to other parties any portion of his interest in "new patents in said button-hole attachments or machines" that he might have without the written consent of Smith and Downer. The "new patents" referred to are patents for such improvements. They were to be held by Smith and Downer, each an undivided third thereof. This assignment was recorded in the Patent Office September 22, 1876.

It is very clear that the legal title of Patent No. 192,008 is in the Empire Company. The patent was properly issued to Randel jointly with Cipperly, Cole, and Haslehurst under the assignment of May 22, 1877, which contained a request to that effect by Randel. The statute (section 4895, Rev. Stats.) provides that "patents may be granted and issued or reissued to the assignee of the inventor or discoverer, but the assignment must first be entered of record in the Patent Office." Under the decision in *Gaylor* v. *Wilder* (10 How., 477) the legal title to the patent would, under said assignment of May 22, 1877, have been in Randel and the other three jointly, even if the patent had afterward been issued to Randel alone. The question arises, then, whether Downer acquired an equitable title as against Randel to the improvements which Randel had so made and perfected prior to August 16, 1876. The assignment of September 19, 1876, was broad enough in its terms to carry to Smith and Downer each an undivided third of "any improvements or new inventions" which Randel had made prior to that time "in button-hole attachments or button-hole machines." He had admittedly before that time made the inventions embraced in the subsequent Patent No. 192,008. The agreement in the instrument "to assign instruments, as stated above," must be read in connection with the prior absolute assignment in the same instrument of an undivided one-third interest to each of any past unpatented inventions in button-hole attachments or button-hole machines, and is an agreement to assign by further papers anything needed either to complete the equitable title conveyed or to perfect legal titles to the patents when they should be issued. The further agreement in the instrument excluding all parties from assigning to any one any interest in any patent to be applied for thereafter and obtained thereafter for any improvements which Randel had already made in button-hole attachments or button-hole machines is consistent with the conveyance of such equitable title. The instrument provided that Randel should apply for the new patents for the past improvements, but it did not while assigning the improvements provide that the new patents should be issued to Randel and the assignees jointly. Out of this all the trouble has arisen.

The assignment of January 31, 1877, by Randel and Smith to Downer recites Patent No. 166,810, and recites the assignment of September 19, 1876, as having conveyed to Smith and Downer an undivided one-third interest to each in that patent and in "any improvement or new invention in button-hole attachments or button-hole sewing-machines that the said Randel might make or produce." It does not add "had produced," which would have been a correct recital, but it refers to the paper by date, and as having been recorded in the Patent Office in a specified book and page of transfers of patents. It then recites that Downer "is desirous of obtaining the exclusive right and all the right, title, and interest in and to the letters patent and to the rights transferred by the said assignments." The defendants contend that "the letters patent" mean only Letters Patent No. 166,810, and that there were no rights transferred to Randel by the assignment of September 19, 1876. The instrument of January 31, 1877, then goes on to say that Randel and Smith assign to Downer "all our right, title, and interest in and to said inventions, as secured to us by said letters patent and assignment." The defendants contend that by that paper Randel did not assign to Downer the one-third interest in the as yet unpatented improvements which he had not assigned by the paper of September 19, 1876, inasmuch as there were no rights transferred to Randel by that paper and there was nothing secured to Randel by that paper, and that therefore by that paper Randel assigned nothing but his one-third remaining interest in Patent No. 166,810. But the paper has a wider scope. It refers to the prior instrument by its date and place of record, and identifies it as conveying something more than an interest in Patent No. 166,810. The expression in regard to Downer is that he desires to obtain "the exclusive right and all the right, title, and interest"—that is, the whole title, exclusive of every one else—in and to the letters patent and rights transferred by the prior paper. It does not say "the said letters patent," confining it to No. 166,810, but it says "the letters patent and rights transferred by the prior paper." Now, in substance, two-thirds of any new patent for any improvements already made were transferred by the prior paper. Those were the rights that were transferred by the prior paper.

The second paper was framed to transfer to Downer "the exclusive right and all the right, title, and interest" in such new patent, as well as in the old patent,

of all which he before had but an undivided one-third. So in the granting part, when the paper conveys "all the right, title, and interest of Randel and Smith in and to said inventions as secured to us by said letters patent and assignment," it means all their interest "in said inventions"—that is, the inventions "transferred by" or the subject of transfer in the prior assignment. The words "as secured to us by said letters patent" mean "as secured to us by the letters patent transferred to us by the prior assignment," which includes the new patent. The paper is unskillfully drawn, but is capable of such construction, and it is in the interest of fair dealing that it should be so construed in a court of equity in favor of those who are prior in time and have acted in good faith.

Downer, being thus the equitable owner of the inventions which Randel had so made and had not patented, conveyed to House the undivided half of all the rights which he had so received, and Downer and House conveyed to the Randel Button-Hole Machine Company all of the rights which either of them had so received which they possessed. That company thus became the owner of the improvements embraced in Patent No. 192,008, and the owner of the equitable title to that patent as against Randel before the codefendants with Randel acquired any interest in said improvements. The omission of a request by Randel to the Patent Office to issue the patent to Smith and Downer jointly with himself, or to Downer alone, enabled Randel to make a second transfer of the invention and to secure the issuing of the patent as it was issued. The Randel Company had no legal title to the patent when it was issued, and the most it could do was to claim and assert an equitable title. (*Gaylor* v. *Wilder*, 10 How., 477; *Clum* v. *Brewer*, 2 Curtis, 506.) That title was prior in time to the legal title obtained by the codefendants with Randel. Can it be asserted as superior in right by reason of any notice, constructive or actual, with which the codefendants with Randel are chargeable?

The assignments of September 19, 1876, and January 31, 1877, were not instruments the recording of which was provided for by section 4898 of the Revised Statutes, which is confined to assignments, grants, and conveyances of interests in patents after they are issued. Fees are prescribed by section 4934 for recording "every assignment, agreement, power of attorney, or other paper;" but it does not follow from this that the record of every paper which may happen to be recorded is to be taken as constructive notice of its contents to every person subsequently dealing with a party to it in respect to its subject-matter. The record of an instrument is not constructive notice to a subsequent purchaser, unless the statute requires the instrument to be recorded. No assignment of an unpatented invention is required by section 4895 to be recorded, unless it is an assignment on which a patent is to be issued to the assignee; and in such case the invention must be so identified in the assignment—by a reference to a specification, or an application, or otherwise—that there can be no mistake as to what particular invention is intended.

The two assignments in question so far as they relate to unpatented inventions of Randel already made do not fall within section 4895 in either of the above particulars, and it must be held that the record of them was not constructive notice to the subsequent purchasers of the prior assignment by Randel of said unpatented inventions.

As to actual notice, the burden is on the plaintiff to establish it. There is not sufficient proof to show that Haslehurst had notice before he became a *bona fide* purchaser for a valuable consideration. The contract was made March 28, 1877, expressing, as a consideration, that Cipperly and the two others were to pay the expense of procuring patents. They paid three hundred and fifty dollars toward procuring foreign patents April 18, 1877, and afterward paid more for that purpose. The full assignment was made May 22, 1877. The assignment by Smith to Cipperly and the two others was made June 28, 1877, after the patent was issued. The assignment of Randel to Cipperly and the two others was to them individually and not as copartners. Haslehurst acted for himself and the other two for themselves. Downer's testimony as to what passed between him and Haslehurst does not make out notice, and Downer is contradicted directly as to what he said by Haslehurst. Phelps's testimony as to what Randel said to Haslehurst is contradicted by Randel, and it is wholly improbable that Randel, who was trying to effect a sale to Haslehurst of an invention which he had before sold to another, would inform Haslehurst of such prior sale. Haslehurst was informed by Randel before purchasing that the patent papers had been drawn by Mr. Lowe, and he applied to Mr. Lowe and was informed by him that he had drawn an assignment of the patent that had been issued, but had drawn no assignment of the pending patent, and that Randel was the owner, so far as he knew. All this tended to show that the invention had not been assigned. There is nothing to show any notice to Cipperly, Cole, or Smart. The title of the Empire Company is sustained by the title of the prior *bona fide* purchasers for a valuable consideration without notice, although that company was formed after the notice of July 7, 1877, had been served on three of the persons who afterward became directors of it.

The bill is dismissed, with costs.

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U. S. Circuit Court—Southern District of New York.

MACAULAY *v.* THE WHITE SEWING MACHINE COMPANY *et al.*

Decided December 14, 1881.

1. WANT OF JURISDICTION CURED BY APPEARANCE.

A party becomes amenable to the jurisdiction of the court by appearing in the suit.

2. VIOLATION OF INJUNCTION.

It was a violation of the injunction granted against defendant in this case to sell machines at Cleveland, whether or not they were sent within the territorial jurisdiction of the court.

Mr. F. H. Betts for the plaintiff.

Mr. S. A. Duncan and *Mr. S. J. Gordon* for the defendants.

BLATCHFORD, *J.*:

The injunction was served on Mr. Baylor and on the company. Although it was not served on Mr. White personally, he knew of its service. He, as president of the company, directed the doing of what the company did in violating the injunction. He did not intend to have the injunction violated, but it was violated by the company by selling machines at Cleveland and sending them from there to purchasers, whether they were sent by it within the territorial jurisdiction of this court or not. The company made itself amenable to the jurisdiction of this court by appearing in this suit. The advice that it was no violation of the injunction for the company to sell machines at Cleveland so long as such machines were not sent by it within the territorial jurisdiction of this court was erroneous advice. Moreover, some of the machines so sold were sent by the company to places within this district, although Mr. White thought that this district comprised only the city of New York. Mr. White acted for the company. I do not think he ought to be punished personally, but the company must pay a fine of two hundred and fifty dollars, which will go to the plaintiff toward his expenses and counsel fees about this motion. The profit and damages from the infringement involved in the violation will remain to be accounted for in the suit. Mr. Baylor did not violate the injunction.

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[*BY AUTHORITY OF CONGRESS.*]

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The OFFICIAL GAZETTE is published every Tuesday, two volumes a year, commencing in January and July. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound volumes, $3.50 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Issue of February 21, 1882.

Patents	275	No. 253,826 to No. 254,103,	inclusive.
Designs	20	No. 12,772 to No. 12,791,	inclusive.
Trade-Marks	38	No. 9,103 to No. 9,140,	inclusive.
Labels	8	No. 2,614 to No. 2,621,	inclusive.
Reissues of patents	6	No. 10,038 to No. 10,043,	inclusive.
Total issue	347		

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama			Nebraska	2	1
Arizona Territory			Nevada		
Arkansas			New Hampshire	2	1
California	9		New Jersey	14	3
Colorado			New Mexico Territ'y		
Connecticut	17	5	New York	61	15
Dakota Territory			North Carolina		
Delaware			Ohio	21	
District of Columbia			Oregon		
Florida	1		Pennsylvania	29	1
Georgia	3		Rhode Island	10	2
Idaho Territory			South Carolina		
Illinois	23	3	Tennessee	1	
Indiana	13	1	Texas	6	
Indian Territory			Utah Territory		
Iowa	4		Vermont		
Kansas	1		Virginia	2	
Kentucky	4	1	Washington Territ'y		
Louisiana			West Virginia	2	
Maine			Wisconsin	12	
Maryland	4	2	Wyoming Territory		
Massachusetts	21	1	United States Army		
Michigan	9	1	United States Navy		
Minnesota	3				
Mississippi	1		Total to citizens of the United States	279	37
Missouri	2				
Montana Territory					

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia			England	5	
Austria			France	2	8
Barbadoes			Germany	4	
Belgium	1		Italy		
Bermuda			New Zealand		
Brazil			Russia		
Canada	4	1	Spain		
Chili			Sweden		
Colombia, U. S of			Switzerland		
Cuba					
Denmark			Total to citizens of foreign countries	16	9
Ecuador					

DESIGNS.

12,772.—AQUARIUM AND STAND FOR SAME.—*Charles F. Klepper*, Covington, Ky. Application filed January 14, 1882. Term of patent 7 years.

12,773.—CORSET.—*Paul T. Hertzog*, Newark, N. J., assignor to *Henry S. Strauss* and *Solomon Heilner*, both of New York, N. Y., and *Samuel Strauss*, North Brookfield, Mass. Application filed January 9, 1882. Term of patent 14 years.

12,774 and 12,775.—WATCH-CASE.—*Eugene F. Margot*, Boston, Mass. Applications filed January 12, 1882. Term of patents 7 years.

12,776 to 12,782, inclusive.—CARPET.—*Thomas Onslow*, Philadelphia, Pa., assignor to the *Horner Brothers*, same place. Applications filed January 11, 1882. Term of patents 3½ years.

12,783.—CARPET.—*George W. Pugh*, Philadelphia, Pa., assignor to the *Horner Brothers*, same place. Application filed January 11, 1882. Term of patent 3½ years.

12,784.—CARPET.—*Stephen Smith*, Philadelphia, Pa., assignor to the *Horner Brothers*, same place. Application filed January 11, 1882. Term of patent 3½ years.

12,785.—CARPET.—*Thomas J. Stearns*, Boston, Mass., assignor to *The Roxbury Carpet Company*, same place. Application filed December 17, 1881. Term of patent 3½ years.

12,786.—CARPET.—*Thomas J. Stearns*, Boston, Mass., assignor to *The Roxbury Carpet Company*, same place. Application filed January 13, 1882. Term of patent 3½ years.

12,787.—PENCIL-STAMP.—*Arthur H. Rogers*, Springfield, Mass. Application filed January 10, 1882. Term of patent 3½ years.

12,788.—CURTAIN-BAND.—*Bernhard Dreyfus*, New York, N. Y. Application filed January 24, 1882. Term of patent 14 years.

12,789.—PAPER-CAP OR TOY PISTOL.—*Henry S. Lockwood*, South Norwalk, Conn. Application filed January 24, 1882. Term of patent 7 years.

12,790.—FINGER-RING.—*William P. Sinnock*, Newark, N. J., assignor to himself and *Horace D. Sherrill*, New York, N. Y. Application filed January 18, 1882. Term of patent 7 years.

12,791.—CASTER-BOTTLE.—*John McC. Watson*, Pittsburg, Pa. Application filed January 18, 1882. Term of patent 3½ years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

9,103.—BLACK-LEAD PENCILS.—*The Eagle Pencil Company*, New York, N. Y. Application filed January 20, 1882.
"Word-symbol 'CHROMO.'"

9,104.—LEAD-PENCILS.—*The Eagle Pencil Company*, New York, N. Y. Application filed January 20, 1882.
"The word-symbol 'OFFICE.'"

9,105.—GINGER-ALE.—*Henry Sugden Evans*, Montreal, Quebec, Canada, and Rouse's Point, N. Y. Application filed January 17, 1882.
"The monogram 'S. G. A.,' the autograph 'H. SUGDEN'S,' and the triangles on which they are placed."

9,106.—CLARET-WINE.—*Eschenauer & Co.*, Bordeaux, France. Application filed December 27, 1881.
"A fac-simile of the autograph of 'ESCHENAUER & CO.'"

9,107.—COTTON, LINEN, OR OTHER FABRICS.—*E. Milne French*, Brooklyn, N. Y. Application filed May 11, 1881.
"A mesh of a fish-net which incloses the device of a shield ermine charged with a chevron sable, the crest a dolphin, and the motto 'MALO MORI QUAM FŒDARI.'"

9,108.—LINIMENTS.—*Gish & Garner*, Hopkinsville, Ky. Application filed January 18, 1882.
"The arbitrarily-selected words 'WILD GOOSE.'"

9,109.—CERTAIN MEDICAL PREPARATIONS.—*Lewis M. Green*, Woodbury, N. J. Application filed January 10, 1882.
"The fanciful words 'AUGUST FLOWER.'"

9,110.—CERTAIN MEDICAL PREPARATIONS.—*Lewis M. Green*, Woodbury, N. J. Application filed January 10, 1882.
"The word 'GERMAN.'"

9,111.—COOKING-RANGES.—*James & Kirtland*, New York, N. Y. Application filed January 26, 1882.
"The word 'BEEBE.'"

9,112.—COMPOSITION OR WASH FOR DRESSING HAIR.—*Mary E. Johnson*, Newburyport, Mass. Application filed January 23, 1882.
"The word-symbol 'CALMANTINE.'"

9,113.—CIGARS, CHEROOTS, AND CIGARETTES.—*Kinney Tobacco Company*, New York, N. Y. Application filed January 7, 1882.
"A Turkish cap A placed in the center of a semicircular space, B. The space B surrounded by radial groups C of lines arranged alternately closer together and farther apart to represent pencils of light. The outer edge of the pencils of light C may be rectangular."

9,114.—HUMAN-HAIR GOODS.—*Jean R. Krause*, New York, N. Y. Application filed January 16, 1882.
"The arbitrarily-selected word 'MASCOTTE.'"

9,115.—ORNAMENTAL JEWELRY-CHAINS.—*S. & B. Lederer*, Providence, R. I. Application filed December 22, 1881.
"The arbitrarily-selected letter-symbol 'X L N T.'"

9,116.—LIQUID DRESSING.—*Morse & Gilman*, Chicago, Ill. Application filed December 27, 1881.
"The word 'JEWEL.'"

9,117.—CHAMPAGNE-WINE.—*Louise H. L. R. Olry*, Rheims, France. Application filed January 25, 1882.
"The letter and word 'L. ROEDERER.'"

9,118.—CHAMPAGNE-WINE.—*Louise H. L. R. Olry*, Rheims, France. Application filed January 25, 1882.
"The name 'L. ROEDERER' and a symbol of a star and point."

9,119.—CHAMPAGNE-WINE.—*Louise H. L. R. Olry*, Rheims, France. Application filed January 25, 1882.
"The title or designation 'N. H. SCHREIDER.'"

9,120.—CHAMPAGNE-WINE.—*Louise H. L. R. Olry*, Rheims, France. Application filed January 25, 1882.
"The word-symbol 'CABINET' and the name or title 'L. ROEDERER,' arranged within the ornamental frame-like border *b* upon a ruled ground, *a*."

9,121.—CHAMPAGNE-WINE.—*Louise H. L. R. Olry*, Rheims, France. Application filed January 25, 1882.
"The word 'SCHREIDER,' in connection with the figure of an anchor."

9,122.—CHAMPAGNE-WINE.—*Louise H. L. R. Olry*, Rheims, France. Application filed January 25, 1882.
"The title or designation 'LOUIS ROEDERER.'"

9,123.—CHAMPAGNE-WINE.—*Louise H. L. R. Olry*, Rheims, France. Application filed January 25, 1882.
"The letters word and 'N. H. SCHREIDER' and an anchor, arranged in connection with a border, *a*, placed upon the figure of an ermine robe, *b*.

9,124.—TOCOLOGICAL MEDICINE.—*Nicanor B. Peraza*, Brooklyn, N. Y. Application filed January 23, 1882.
"The picture of Dr. N. Bolet."

9,125.—TOBACCO-PIPES.—*Rejall & Becker*, New York, N. Y. Application filed January 24, 1882.
"The letters 'G. P. D.'"

9,126.—WATCHES.—*Adolphe Schwob*, New York, N. Y. Application filed January 16, 1882.
"The arbitrarily-selected word 'CONGRESS.'"

9,127.—WATCHES.—*Adolphe Schwob*, New York, N. Y. Application filed January 16, 1882.
"The arbitrarily-selected word 'UNIVERSAL.'"

9,128.—BATE FOR TANNERS' USE.—*Walton C. Tiffany*, New York, N. Y. Application filed January 16, 1882.
"The representation of a stretched skin or hide."

9,129.—CERTAIN MEDICINAL PREPARATIONS.—*Susanna Titcomb*, Baltimore, Md. Application filed January 12, 1882.
"The pictorial representation of two females, one an invalid reclining on a bed, with one hand supporting her head, and looking at the other female as she holds a bottle in her left hand and in her right hand a bunch of herbs."

9,130.—SOAP.—*Jas. B. Williams & Co.*, Glastonbury, Conn. Application filed January 3, 1882.
"The word 'POCKET.'"

9,131.—SOAP.—*Jas. B. Williams & Co.*, Glastonbury, Conn. Application filed January 3, 1882.
"The word 'CLIPPER.'"

9,132.—SOAP.—*Jas. B. Williams & Co.*, Glastonbury, Conn. Application filed January 3, 1882.
"The word 'YANKEE.'"

9,133.—SOAP.—*Jas. B. Williams & Co.*, Glastonbury, Conn. Application filed January 3, 1882.
"The word 'FAVORITE.'"

9,134.—LAUNDRY-STARCH.—*American Starch Company*, Columbus, Ind. Application filed November 12, 1881.
"The word 'SPRAY.'"

9,135.—HOPS AND MALT BITTERS.—*George Pickering Glazier*, Chelsea, Mich. Application filed January 18, 1882.
"A sheaf of barley."

9,136.—CERTAIN MEDICAL PREPARATION.—*George G. Green*, Woodbury, N. J. Application filed January 10, 1882.
"The fanciful word 'CONQUEROR.'"

9,137.—BUILDERS', AGRICULTURAL, AND GENERAL HARDWARE.—*Theophilus Hessenbruch*, Philadelphia, Pa. Application filed May 24, 1881.
"The figure of a bear."

9,138.—WHISKY.—*Iler & Co.*, Omaha, Nebr. Application filed January 20, 1882.
"The word 'WINCHESTER.'"

9,139.—CANNED FRUITS AND VEGETABLES, EXCEPT CANNED CORN.—*Augustus W. Kriete*, Baltimore, Md. Application filed December 19, 1881.
"The word 'EAGLE.'"

9,140.—LEAD-PENCILS.—*The Eagle Pencil Company*, New York, N. Y. Application filed January 20, 1882.
"The word-symbol 'ACADEMIC.'"

LABELS.

2,614.—Title: "GRIGG'S GLYCERINE SALVE."—*Griggs & Company*, Ottawa, Ill. Application filed January 5, 1882.

2,615.—Title: "DR. BIGELOW'S POSITIVE CURE."—*Griggs & Company*, Ottawa, Ill. Application filed January 5, 1882.

2,616.—Title: "KNIGHT'S CURE." (A MEDICINE.)—*David M. Holbrook*, Watertown, N. Y. Application filed January 14, 1882.

2,617.—Title: "STARCH."—*John C. Hubinger, Joseph E. Hubinger*, and *Nicholas W. Hubinger*, New Haven, Conn. Application filed October 29, 1882.

2,618.—Title: "HEATH'S ENGLISH SALVE."—*John A. Heath*, Colebrook, N. H. Application filed January 14, 1882.

2,619.—Title: "HORSE TONIC, THE GREAT BLOOD PURIFIER AND A SURE CURE FOR EPIZOOTIC, COUGHS, COLDS, HEAVES, &c."—*A. E. Mosher*, Cattarangus, N. Y. Application filed January 11, 1882.

2,620.—Title: "ORCUTT'S SURE RHEUMATIC CURE."—*William N. Orcutt*, Woonsocket, R. I. Application filed December 12, 1881.

2,621.—Title: "DR. N. BOLET'S TOCOLOGICAL PILLS."—*Nicanor B. Peraza*, Brooklyn, N. Y. Application filed January 23, 1882.

PATENTS

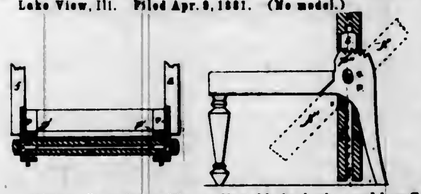
GRANTED FEB. 21, 1882.

258,828. GATE-HANGER. WILLIAM G. ALEXANDER, Ocheloosa, Iowa. Filed Dec. 26, 1881. (No model.)



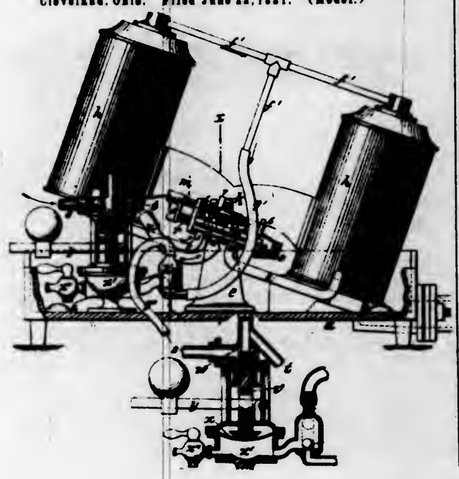
Claim.—In a gate-hanger, the angle-plate C, having pivoted thereto the bolt *e*, with lug *f*, in combination with the disk D, formed with slot *i* and shoulder *d*, the roller E, and disk F, formed with lugs *m*, substantially as and for the purpose set forth.

258,829. PHOTOGRAPHER'S CHAIR. JONAS A. ANDERSON, Lake View, Ill. Filed Apr. 9, 1881. (No model.)



Claim.—In a chair with an adjustable back, the pawl-bars S, provided with a toothed shoulder, in combination with the legs P P, provided with a ratchet, *p''*, and the back A, provided with the clamping flaps or skirts A' A', substantially as described, and for the purposes set forth.

263,830. HYDRAULIC AIR-COMPRESSOR. WILLIAM A. BABCOCK, South Coventry, Conn., assignor to Bishop & Babcock, Cleveland, Ohio. Filed June 22, 1881. (Model.)



Claim.—1. The combination, with a rocking pump substantially such as described, of a slide-valve governing the flow to each pump-cylinder alternately, mounted or fixed on the rocking beam at or near the axis thereof, with a fixed fork or projection extending from the support or base of the pump and engaging the sliding portion of the valve, so as to shift the same at each rock of the beam, substantially as herein shown and described.

2. The combination, with a rocking pump such as described, of a valve controlling the flow to each cylinder alternately, fixed on the rocking beam at or near the axis thereof, with a fixed projection engaging the operating part of the valve, so as to move and shift the same at each rock of the beam, with rigid pipes extending from the opposite ports of the valve directly to the corresponding pump-cylinders on the ends of the beam, substantially as and for the purpose set forth.

3. The combination, with a sliding valve-plunger, *r*, substantially such as herein described, having an inclosing-cylinder, *l l*, from which the ports proceed, formed in sections abutting one against the other, with a fixed sustaining-frame, *n*, formed to inclose or embrace said sections, with a fixed head at one end, against which the one end of the sections abut, and a fixed head at the opposite end, through which a clamping device extends, bears upon the opposite end of the sections, and binds the whole together firmly in said frame.

4. The combination, with the sliding valve-plunger *r*, substantially such as described, of the inclosing sectional cylinder *l l*, rigid sustaining-frame *n*, and hollow screw *o*, clamping said sectional cylinder in said frame and inclosing the protruding end of the valve-plunger, substantially as herein shown and described.

5. The combination, with the sliding valve-plunger *r*, of the parallel operating-rod *m*, coupled thereto, with the rigid sustaining-frame *n*, holding the inclosing-cylinder of said valve, and formed with the lateral guide-wings 6 6, through which said operating-rod slides, substantially as herein shown and described.

6. The combination, with a hydraulic air-compressor, of an automatic water-regulator constructed with an adjustably-loaded throttle-valve, arranged to directly throttle the flow of water to the pump, in combination with a diaphragm actuated by the direct pressure of the air compressed to close said throttle, substantially as herein shown and described.

7. The combination, with a hydraulic air-compressor, of an automatic water-throttle constructed with an adjustably-weighted throttle-valve forced to its seat by the pressure of the compressed air, and having its seat arranged lateral to the flow of water, whereby its movements are independent of the water-pressure, substantially as herein set forth.

8. The combination, with an automatic pump substantially such as described, of an automatic water throttle-valve formed with the valve-plunger *r*, having one end acting as the throttle-valve and the opposite end resting loosely or disconnectedly upon a diaphragm against which the back-pressure is exerted, substantially as and for the purpose set forth.

9. In an automatic hydraulic air-pump, the combination, with a supply of water under pressure and an air vessel or vessels into which said water is admitted to compress and displace the air therefrom, of a pipe leading from said air-vessels to a beer-barrel or other receptacle into which the air is discharged, with an accumulating-trap or drip-chamber arranged on said pipe between the said air-vessel and the said receptacle, whereby any water overflowing from the air-vessel through the air-pipe may be accumulated and removed without being forced into the receptacle, substantially as herein set forth.

10. The combination, with an automatic pump such as set forth, of an automatic water-throttle having its diaphragm-chamber *x'* connected with the air-discharge pipes from the pump-cylinders, and arranged to form an accumulating drip-chamber on

said pipes to receive overflowing water which may enter the same, with a cock, *a''*, on said diaphragm-chamber, to allow said drip or overflow to escape, substantially as herein set forth.

11. The combination, with an automatic hydraulic air-pump substantially such as set forth, of an accumulating drip or trap chamber located on the air-discharge pipe between the pump-cylinders and the beer-barrel or receptacle into which the air is discharged, with a detached float inclosed thereby and adapted on the overflow of water into said chamber to rise against and close the outlet-orifice of said chamber, whereby one part forms both a float and valve and acts to confine or "trap" said overflow until removed from the chamber, substantially as herein shown and described.

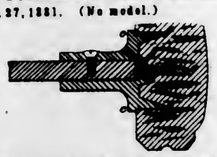
12. In a hydraulic air-pump substantially such as set forth, the guards or flanges *g'*, arising from the sink or tray into which the cylinders discharge, and adjacent to and at one side of the discharge-ports of the cylinders, whereby splash is prevented, substantially as herein shown and described.

13. The combination, with the pump-cylinder of an automatic hydraulic air-pump substantially such as set forth, of air and water vent valves operatively connected through the same actuating device, with a play or interval between the two valves, whereby both valves are opened by one action, but the air-vent in advance of the water-vent, substantially as and for the purpose set forth.

14. The combination, with the pump cylinder or chamber of a hydraulic air-pump, of an air-vent valve mounted on the top of a tube opening from the base of a cylinder and rising therein, with a wire or rod operating said valve through said tube from the base of the cylinder, substantially as herein shown and described.

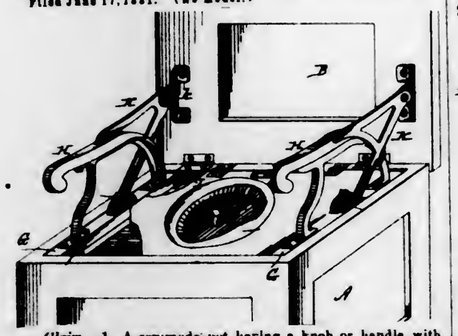
15. The combination, with the pump cylinder or chamber of a hydraulic air-pump, of a water-vent valve opening in the base of said cylinder, with a tube, *r'*, fixed to and rising from said valve into the top of the cylinder and open throughout, together with an air-vent valve, *t'*, mounted on the top of said tube, and an operating device arranged to lift both valves successively, substantially as herein shown and described.

253,831. DOOR-KNOB. JOSEPH BARDSLEY, Newark, N. J. Filed Sept. 27, 1881. (No model.)



Claim.—The attachment for wooden knobs herein described, consisting of a spindle-socket formed with a collar having wedge-pins and an interior central shoulder, in combination with a wooden knob, a central fastening-screw, and a lock-spindle, substantially as described.

253,832. COMMODE. JOSEPH BENSON, Philadelphia, Pa. Filed June 17, 1881. (No model.)



Claim.—1. A commode-pot having a knob or handle, with elastic plug or buffer, substantially as shown and described.

2. The combination, of a pot having a lid with elastic seat or joint and an elastic plug or buffer with a commode having a top constructed and arranged to press upon said buffer and hold said lid tight on the pot, substantially as shown and described.

3. The combination, with commode-body A, having pivoted bars G, affording supports for arms H, of the hinged lid B and braces K K, connecting said lid and bars G, substantially as shown and described.

4. The combination, with the commode-body A, of bars G G, hinged or pivoted at one end and affording supports for the arms H, substantially as shown and described.

5. In combination with the hinged or pivoted arm-supporting bars G G, the slide I, substantially as shown and set forth.

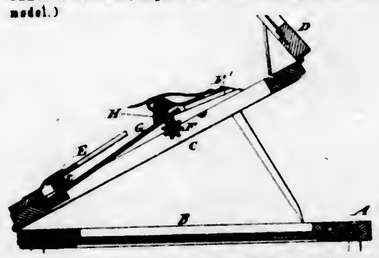
6. The combination of body A, top B, hinged arm-supporting bars G G, and pivoted braces K K, substantially as shown and described.

253,833. MANUFACTURE OF FEATHER PILLOWS, BOLSTERS, &c. HERMAN BENSEN, Milwaukee, Wis. Filed Dec. 16, 1881. (No model.)



Claim.—In the manufacture of pillows, bolsters, cushions, and similar articles, the filling composed of chicken, turkey, or other inferior feathers chopped fine, substantially as and for the purpose set forth.

253,834. APPARATUS FOR RETOUCHING NEGATIVES. THEOS N. BENSON, Elgin, Iowa. Filed Aug. 11, 1881. (No model.)



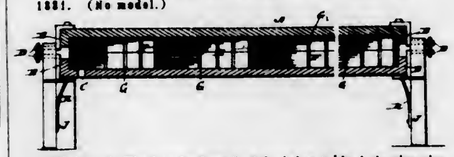
Claim.—1. The combination, with the negative-easel of a negative-retouching machine, of the ribbed corrugated roll or mechanism bearing directly on the negative-plate, and adapted to impart to the said plate a vibratory motion, substantially as set forth.

2. In a negative-retouching machine, the hand-rest E, having the elastic holding-bar *e*, substantially as set forth.

3. In a negative-retouching machine, the combination, with the negative-easel C, of the ribbed, fluted, or corrugated roll F, hand-rest E, having the elastic bar *e*, and elastic bar H, substantially as and for the purpose set forth.

4. In a machine for retouching negatives, the combination, with the negative-easel C and the roll F, of the pivoted or hinged bearing-plates F', covering two or more bearing-sockets in the easel, substantially as and for the purpose set forth.

253,835. CHEESE-DRAINING TABLE AND MOLD. JAMES W BLAIR and ERASTUS H. WILDER, Brooklyn, Wis. Filed Dec. 26 1881. (No model.)



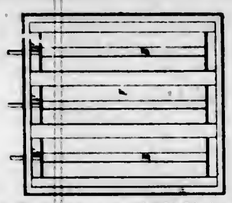
Claim.—1. The herein-described draining-table A, having rim or flange B, openings C, and half-round pivots D, in combination with a suitable frame or support, substantially as and for the purpose set forth.

2. The herein-described mold, consisting of a pair of frames, E, having longitudinal partitions F, the sides of which and of the frames are provided with vertical grooves G, and a loose bottom, I, said bottom and frames being connected by dowels H, substantially as and for the purpose set forth.

3. The combination of the supports J, having springs K, with a pair of draining-tables A A, having half-round pivots D, and the molds E, held between said tables, substantially as and for the purpose set forth.

253,836. REFRIGERATOR. CHARLES BOSS, Bathurst, New Brunswick, Canada. Filed Jan. 21, 1881. (No model.) Patented in Canada Apr. 11, 1877.

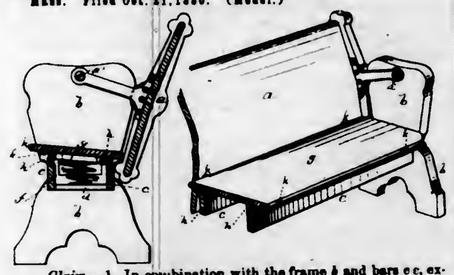
253,836.



Claim.—1. In a refrigerator, the double ice-receptacle *a*, surrounding two sides and the top and bottom of the chamber E, in combination with the single ice-receptacles B, and shelves *a' a''*, all arranged substantially as described, whereby chambers of three different degrees of coldness are obtained, as and for the purpose specified.

2. In a refrigerator, the chamber E and the ice-receiver *a*, in combination with a hopper, F, having a contracted lower end, whereby an even thickness of ice or freezing-mixture is maintained entirely around the chamber E, substantially as described.

253,837. REVERSIBLE SEAT. ELISHA B. BRIDGMAN, Boston, Mass. Filed Oct. 21, 1880. (Model.)

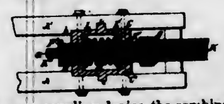


Claim.—1. In combination with the frame *b* and bars *c c*, extending from one end to the other of the settee, the back *a* and seat *g*, provided with the longitudinal ribs *h h*, extending the length of the seat and placed nearer together than said bars, as shown, each rib acting alternately as a seat-support and back stop as the seat is reversed, substantially as and for the purpose set forth.

2. In combination with the frame *b*, provided with the relatively large openings *b'* and bars *c c*, the seat *g*, provided with the ribs *h h*, blocks *f*, and tenons *f'*, substantially as and for the purpose described.

3. In combination with the bars *c c*, cross-bars *d d*, and springs *e e*, the seat *g*, provided with the ribs *h h*, and blocks *f*, provided with the tenons *f'*, and the frame or end pieces, *b*, provided with the large openings *b' b'*, arranged and constructed substantially as and for the purposes specified.

253,838. CAR-COUPLING. GEORGE BUTLER, Cincinnati Ohio. Filed Aug. 12, 1881. (No model.)



Claim.—In a car-coupling device, the combination of the case M and the sleeve F, provided with flange or collar J, and the draft-rod G and key K', and an appropriate draw-head, substantially as and for the purposes specified.

253,839. MACHINERY FOR FORMING AND FASTENING BOXES AND DISHES. LAUREN CARPENTER, St. Joseph, Mich. Filed Nov. 1, 1881. (No model.)

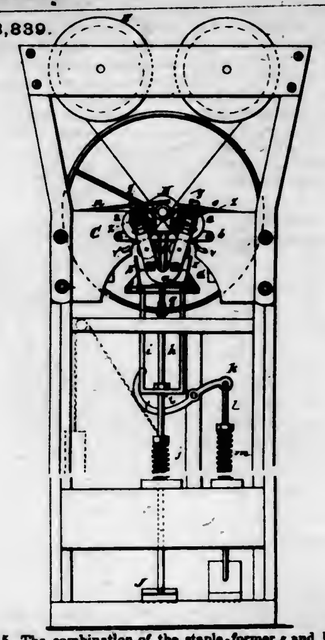
Claim.—1. In a machine for forming and fastening boxes, dishes, &c., the combination of the feed-wheels *c d* with the ratchet *c'*, arms *e*, rods *f*, and rod or shaft, substantially as specified.

2. The combination, with the dish-former, of the supporting-rods *i*, and suitable mechanism, such as described, for holding the said former in its elevated position, substantially as set forth.

3. The staple-former *s*, having the notches or openings *s'* and the depression *t*, in combination with the hammer or plate *q*, having the projections *r* and *t'*, substantially as and for the purpose set forth.

4. The driving hammer or plate *q*, in combination with the forming-hammer *q'* and staple-former *s*, substantially as specified.

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5. The combination of the staple-former *s* and hammers or plates *q u* with the rods *n o* and disks or eccentrics N N', substantially as described.

6. The combination of the rods *h i* and dish-former G with the spring *j* and treadle J, substantially as set forth.

7. The combination of the feed-wheels *c d* with the staple-former *s* and hammer or plate *q*, all constructed and operating substantially as specified.

8. The combination of the feed-wheels *c d*, having an intermittent movement, with the staple-former *s* and cutting-hammer *q*, substantially as described.

9. The combination and arrangement of the feeding devices *c d*, staple-former *s*, hammers *q u*, and casings or boxes *p* with the dish-former G, having the grooved clinch-plates *w*, all constructed and operating substantially as specified.

10. The folding and forming springs *a' a''* and *b' b''*, in combination with the dish-former G, so arranged as to fold the blank on the former as it is pressed upward to receive the staples, substantially as described.

253,840. WATER-PROOF PAPER. WILLIAM B. CARPENTER, Newark, N. J., assignor to himself and the Celluloid Novelty Company, New York, N. Y. Filed May 24, 1881. (No specimens.)

Claim.—1. A paper made from a combination of paper-pulp and a plastic water-proof material—such as celluloid, lignoid, or similar plastic water-proof material—substantially as specified.

2. The process of making a compound paper-pulp by mixing or grinding in water the water-proof material and the ordinary paper-pulp, substantially as and for the purpose set forth.

3. The process of putting the paper, when made from the compound pulp, as described, through the bath and afterward through the heated rollers, substantially as and for the purpose named.

253,841. CIGAR AND CIGARETTE WRAPPER. WILLIAM B. CARPENTER, Newark, N. J. Filed Apr. 9, 1881. (No specimens.)

Claim.—1. An improved paper for the wrappers of cigarettes and cigars, composed of asbestus and vegetable fiber properly pulped and formed into sheets.

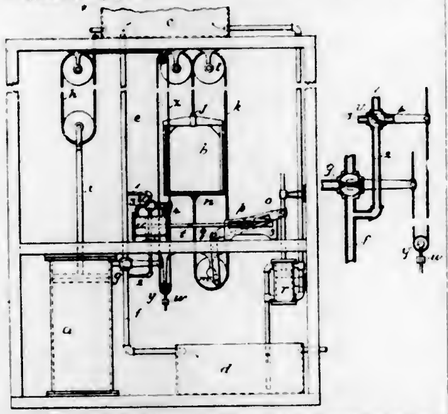
2. An improved paper for the wrappers of cigarettes and cigars, composed of asbestus and tobacco fiber combined.

3. An improved paper for the wrappers of cigars and cigarettes, composed of tobacco, asbestus, and saltpeter, the latter to excite combustion and give piquancy of sensation.

4. An improved paper for the wrappers of cigars and cigarettes, composed of tobacco, asbestus, and a coloring of charcoal, substantially as specified.

263,842. HYDRAULIC ELEVATOR. CLARENCE A. CHANDLER, East Bridgewater, Mass. Filed Sept. 15, 1881. (No model.)

Brief.—When in motion the car operates a pump, which forces water into the tank *c*. The length of the stroke of the pump-piston depends on the location of the fulcrum *p* in the slotted lever *o*. This in turn is actuated by the piston in cylinder *u*, to which water is admitted by valve *r* on either side of the piston. This valve, and also valve *g*, which admits water to cylinder *s*, are operated by the conductor by means of the cord *x*, and are held in place by the weighted pulley *y w*.



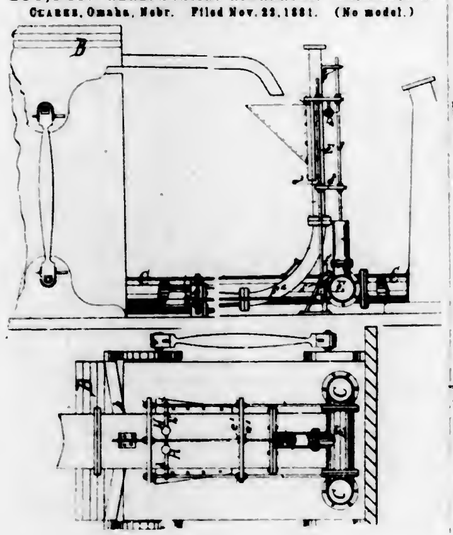
Claim.—1. In a hydraulic elevator, the combination of a cylinder, *u*, its piston, and the movable fulcrum *p* with the guides *z z*, oscillating lever *o*, and the piston and pump *r*, all operating substantially as described, and for the purpose specified.

2. The combination, in a hydraulic elevator, of a hand-rope, *x*, the weighted pulley *y w*, and the valve *e* with the cylinder *u*, with its injection and ejection pipes 1, 2, 3, and 4, connected and operating substantially as shown, and for the purpose set forth.

3. In a hydraulic elevator, the combination of the piston *i*, cylinder *s*, and the valve device *g* with the hand-rope *x* and weighted pulley *y w*, all arranged substantially in the manner shown, and for the purpose specified.

4. In a hydraulic elevator, the combination of the hand-rope *x* and the weighted pulley *y w* with the valve devices *v* and *g*, whereby both valves are controlled by a single hand-rope, substantially as described, and for the purpose specified.

263,843. AMALGAMATING APPARATUS. ALEXANDER D. CHARES, Omaha, Nebr. Filed Nov. 23, 1881. (No model.)



Claim.—1. In combination with blast-conducting devices to which and the hopper by which the sand is fed, a wind-gate in the former and a valve in the latter, and devices for actuating the said gate and valve simultaneously or substantially simultaneously substantially as specified.

2. The combination, with the hopper-valve, of governing mechanism and conduits for conducting the actuating-blast to said mechanism, substantially as specified.

3. The combination, with the wind-gate, of governing mechanism, conduits for conducting the blast to said mechanism, and the devices for conveying motion from the said mechanism to the gate, substantially as specified.

263,844. HEEL FOR BOOTS AND SHOES. HENRY E. CLINTON, Augusta, Ga. Filed Dec. 21, 1881. (No model.)



Claim.—The combination, with a boot or shoe having a plate, G, arranged upon the inside of the outer sole and provided with perforation *f* and prongs H, of the heel having a plate, A, secured to its upper side, said plate being provided with a boss, C, countersunk in the heel, and having a threaded opening, D, to receive a fastening-screw, S, and openings E E, to admit the prongs H, substantially as set forth.

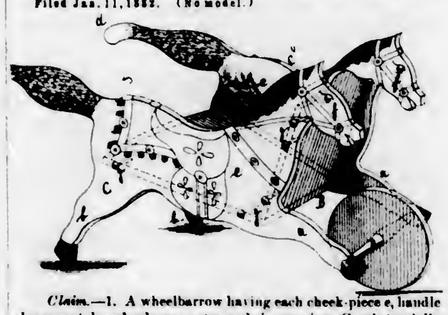
263,845. PLUMBER'S TRAP. PATRICK CONNOLLY, Brooklyn, N. Y., assignor, by mesne assignments, to Julia Connolly, same place. Filed Nov. 14, 1881. (No model.)

Brief.—The spherical casing is made of transparent material with thickened threaded extensions at the points, through which the pipes enter to engage with threaded couplings, as shown in the drawings.



Claim.—The spheroidal casing D, formed in one piece of transparent material, provided with the threaded nozzles or re-enforces D', in combination with the pipe B, having a screw-thread, B', and the pipe E, having a screw-thread, E', and with the couplings M, adapted to serve as herein specified.

263,846. TOY WHEELBARROW. JESSE A. CHANDALL, Brooklyn, N. Y., assignor to Ives, Blakeslee & Co., Bridgeport, Conn. Filed Jan. 11, 1882. (No model.)



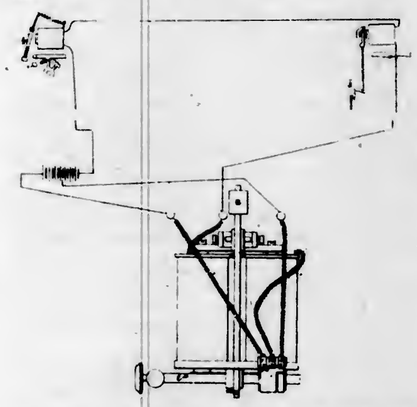
Claim.—1. A wheelbarrow having each cheek-piece *e*, handle *d*, rear rest, *b*, and axle-support *a* made in one piece, C, substantially as described.

2. A wheelbarrow having each cheek-piece, handle, rear rest, axle-support, and front projection, *f*, made in one piece, C, substantially as described.

3. As a new article of manufacture, a wheelbarrow having its sides constructed in form of animals, substantially as and for the purpose herein shown and described.

263,847. NON-INTERFERING FIRE-ALARM SYSTEM. MOSES G. CRANE, Newton, Mass. Filed Oct. 10, 1881. (No model.)

Brief.—The armature-levers are all held up at the signal-boxes by a normally-strong current. When a signal is turned in a repeater or switch mechanism throws part of the battery out of circuit, leaving sufficient battery in circuit to transmit signals, but not enough to hold up said armatures, which carry spring-blocks resting normally between the locking and tripping levers of the boxes



Claim.—1. That improvement in the method of operating a fire-alarm-telegraph system for the purpose of producing non-interference of signals which consists in employing a current of less strength while a signal is being sounded than is normally used on the lines while no signals are passing over them, and in producing the said signals by opening and closing the said circuit while the reduced current is flowing, substantially as and for the purpose described.

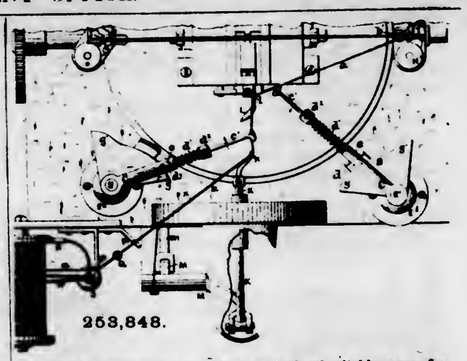
2. In a fire-alarm-telegraph system, a circuit-terminal or contact-spring and a battery or electric generator for producing a current of a certain strength, having one pole connected therewith, and a circuit-terminal or contact-spring properly connected with the said generator to receive a current of diminished strength therefrom, and a circuit-terminal and a fire-alarm-telegraph circuit connected therewith extending to the other pole of the said generator, and including signal-boxes with controlling-magnets, to operate as described, combined with a rheotrope-shaft operated by a repeater, and the rheotrope thereon co-operating with the said circuit-terminals, in the manner and for the purpose set forth.

263,848. MACHINE FOR MAKING WEAVERS' HARNESS. JOHN H. CROWELL, Providence, R. I., assignor to the Kendrick Loom Harness Company, same place. Filed May 20, 1881. (No model.)

Brief.—A single twine secured at its end to one of the back bands is laid by vibrating hooked arms into continuous folds, being returned upon itself and knitted to the back-bands at the ends of each fold. To provide for proper engagement by the vibrators the twine is laid by a reciprocating guide-rod into the notch of an intermediately-situated plate, and is engaged between such notch and guide by the hooks of the vibrators, which, in order to properly engage the twine and deliver it to the latch-needles at the back-bands, are made extensible and contractible. Each vibrator is in two parts, connected by a contractile spring, and the projection or retraction of the movable hooked member is controlled by a stationary cam-surface. The eyes of the heddles are formed between metal clasps, which secure two adjacent lengths of twine together.

Claim.—1. The combination, substantially as before set forth, of the extensible and contractible vibrators, suitable means, as described, for reciprocating the same, and the fixed cams for varying the lengths of said vibrators.

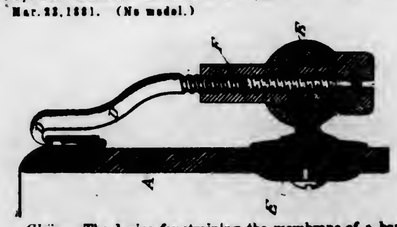
2. The combination, substantially as before set forth, of a stand for supporting a twine-bobbin, devices, as described, for leading the twine to one of the back-bands of the harness, suitable means for supporting said back-bands, two oppositely-moving vibrators arranged to engage the twine and return it upon itself to form two strands of the heddles, and simultaneously, or nearly so, to carry said strands to the back-bands, mechanism for fastening the heddles to the back-bands, and suitable means, as described, for actuating the operative devices.



263,848.

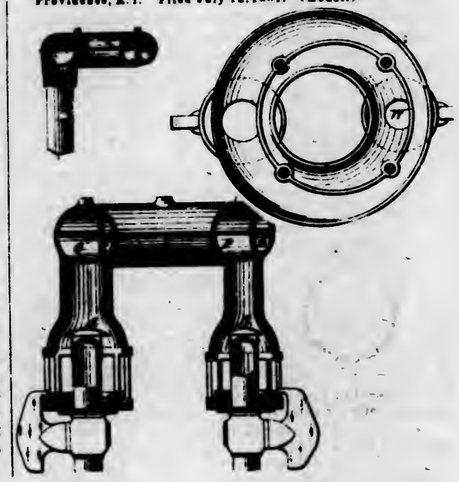
3. The combination, as before set forth, of suitable means for supporting the back-bands of the harness, a device having a notch, *i*, for holding a portion of the length of twine that is to enter into the formation of the next ensuing heddle, a movable guide-eye, *k*, the hooked vibrators, adapted to engage with the length of twine between such notched device and the guide-eye, and carry the twine returned upon itself to the back-bands, mechanism for fastening the twine to the back-bands, and suitable means, as described, for actuating the operative devices.

263,849. BANJO. EDWIN J. CURLEY, Ravenswood, Ill. Filed Mar. 23, 1881. (No model.)



Claim.—The device for straining the membrane of a banjo, tambourine, drum, or other similar instrument, operating wholly upon the outside of the instrument, and consisting of the firmly-fixed stud E, the screw-hook D, and the long socketed or long sleeved nut F, which protects the screw-thread on the hook D, and has two bearings—that upon and along the shank of said hook and that upon and through the fixed stud—constructed and arranged substantially as described, and adapted for attachment to the banjo or other similar instrument, as set forth.

263,850. GAS HEATING APPARATUS. SAMUEL DARLING, Providence, R. I. Filed July 12, 1881. (Model.)



Claim.—1. A gas-burner having two narrow continuous combustion-apertures, one larger than the other, the larger one being in the outer and the smaller one in the inner contour of the burner, substantially as described.

2. A double gas-burner in one piece, having in combination two combustion-apertures, one larger than the other, the larger one in the outer and the smaller one in its inner contour, a partition within the burner dividing it into two gas-chambers, and a supply-pipe and gas-cock for each chamber, substantially as described.

253,851. DOOR-SPRING. WILLIAM C. DE LONG and ANSON A. SCHOONER, Warren, Ill. Filed July 8, 1881. (Model.)



Claim.—In a spring-hinge, the combination, with a spring consisting of a single piece of wire bent to form a central section having arms projecting from each end and coiled in spiral form, of a central core or tube provided with flanged ends and a longitudinal slot, substantially as set forth.

253,852. BASIN AND SINK TRAP. CHARLES H. DENISON, New York, N. Y. Filed June 3, 1881. (No model.)



Claim.—1. In a basin or sink trap, the supplemental reservoir C in the second arm, in combination with the ball-valve bulb B in the first arm of the trap, by which a double action is secured to valve *a*, substantially as described.

2. In a basin or sink trap, the bulb D, with valve *c* in the waste-pipe below the trap, in combination with ball-valve bulb B, substantially as described.

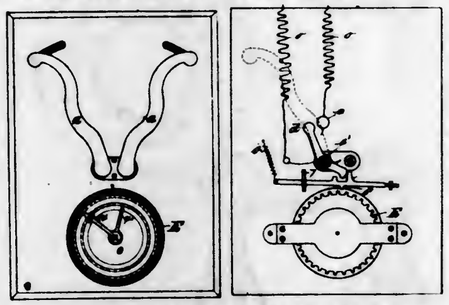
3. In a basin or sink trap, the air chamber or bulb D, in combination with ball-valve bulb B, substantially as described.

4. In a basin or sink trap, the air-chamber D, in combination with reservoir C and ball-valve bulb B, substantially as described.

5. In a basin or sink trap, the bulb D, with valve *c*, in combination with reservoir C, and bulb B, with its valve *a*, substantially as described.

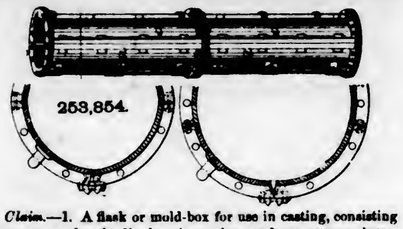
253,853. CALL-REGISTER FOR TELEPHONES. WILLIAM J. DENYER and WILLARD W. SAWYER, Springfield, Mass. Filed May 16, 1881. (No model.)

Brief.—The movement of the switch-lever in putting the instrument into circuit actuates a registering device.



Claim.—In a telephonic or other electric signaling apparatus, the combination, with the switch-lever *a*, having the arm *d* secured thereto, and with the registering apparatus E, of the notched bar *i*, having the tooth *f* thereon and spring *i*', substantially as set forth.

253,854. FLASK FOR CASTING. JACOB K. DIMMICK, Newport, Ky., assignor to the Cincinnati and Newport Iron and Pipe Company, same place. Filed May 24, 1881. (No model.)



Claim.—1. A flask or mold-box for use in casting, consisting of two or more longitudinal main sections and one or more intermediate removable sections, substantially as described.

2. A flask for casting, adapted to be separated to open for discharging the casting, and to be separated at points other than at said opening lines to receive an enlarging section.

3. A flask for casting, composed of two or more sections, each having a curvature forming an arc of a circle of a diameter greater than the smallest diameter of the flask, whereby it is adapted to receive enlarging sections.

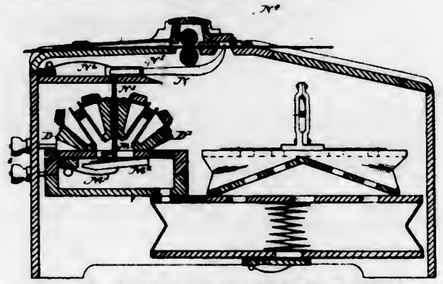
4. In a flask provided with removable sections, a series of longitudinal sections having a curvature differing from the true circumference of the flask, substantially as described, whereby the minimum deviation from a true circle is secured under variations in the number of sections employed.

5. A flask for casting, composed of detachable longitudinal and transverse main sections and supplementary longitudinal enlarging sections, whereby both its diameter and its length may be varied at will.

6. In combination with the swinging sections of a flask for molds, one or more centering-spindles affording support in the pivotal axis upon which they swing.

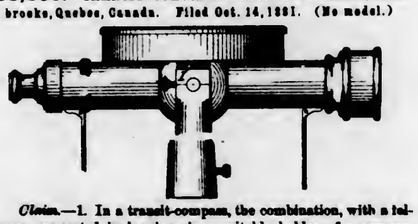
7. In combination with a flask for molds, a hinge composed of vertical and horizontal bolts, substantially as described.

253,855. MECHANICAL ORGANETTE. PATRICK J. DUGGAN, Boston, Mass. Filed Aug. 22, 1881. (No model.)



Claim.—In a mechanical musical instrument, the combination of the segment reed-board D D' D² D³ and the valves M⁵ with the set of push-pins N⁵, levers N, and music-paper, all arranged and operating together substantially as described, and for the purpose set forth.

253,856. TRANSIT-COMPASS. ARTHUR W. ELKINS, Sherbrooke, Quebec, Canada. Filed Oct. 14, 1881. (No model.)



Claim.—1. In a transit-compass, the combination, with a telescope supported in bearings in a suitable holder, of a compass located above, attached to and having a fixed relation with said telescope, substantially as and for the purpose set forth.

2. The combination, with a telescope supported in a suitable holder, of a compass located above, attached to, and having a fixed relation with said telescope, and provided with two or more levers, substantially as and for the purpose set forth.

3. In a surveying-instrument, a compass having the levels arranged thereon for the purpose set forth, in combination with and attached to a telescope, substantially as described.

4. The combination, with the telescope provided with a compass and the trunnions, as shown, of the bifurcated holder having the socket *b*, substantially as shown and described.

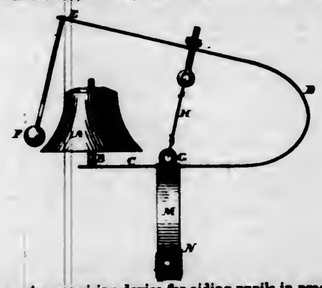
5. The combination, with a telescope provided with a compass and the trunnions, of a bifurcated holder adapted to support the telescope, as and for the purpose set forth.

6. The combination, with a telescope provided with a compass and the trunnions, of the bifurcated holder having the set-screw, substantially as and for the purpose set forth.

7. The combination, with the telescope provided with a compass and the trunnions, of the swinging bifurcated holder and the hinged sights, said sights secured to the under surface of said telescope, substantially as and for the purpose set forth.

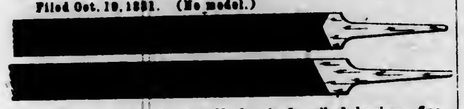
8. The combination, with a telescope provided with a compass having the levels as shown, of a pair of sights secured to the under surface of said telescope, substantially as and for the purpose set forth.

253,857. LEGATO MONITOR FOR PIANO-FORTE PLAYERS. STEPHEN A. EMERY, Newton, Mass. Filed Nov. 25, 1881. (No model.)



Claim.—An exercising device for aiding pupils in practicing on key-board musical instruments, which consists of the adjustable spring C D E, hammer F, and bell A, mounted upon the wrist-let M, or its equivalent, all constructed and arranged substantially in the manner described, and for the purpose set forth.

253,858. FILE. CRAWFORD H. FAIRBANKS, Pawtucket, R. I. Filed Oct. 10, 1881. (No model.)



Claim.—The safe-edge file herein described, having a fine over cut and a coarse upper cut, as and for the purposes specified.

253,859. PULLEY-BLOCK. GEORGE A. FOOS, Cleveland, Ohio. Filed Aug. 23, 1881. (No model.)

Brief.—About the axle of the block are placed free anti-friction rollers, leaving a vacant space about equal to the diameter of one roller. The rollers are laterally retained in position by loose washers.

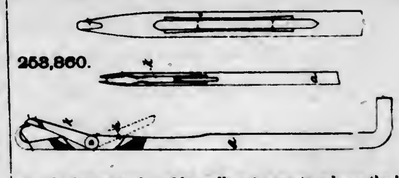


Claim.—In pulley-blocks, a series of free anti-friction rollers, placed around the axle of the pulley, having a vacant space nearly or equal to the diameter of one of the rollers, in combination with loose end washers, and the bosses of the cheek-pieces, substantially as and for the purpose described.

253,860. KNITTING-MACHINE NEEDLE. FREDERICK E. GILFORD, Manchester, N. H., assignor to William Corey, same place. Filed Sept. 5, 1881. (No model.)

Brief.—The latch-receiving slit is enlarged from the latch-pivot toward the hook and butt of the needle, and shoulders are formed in said slit upon which the latch may rest when thrown over on the body of the needle. The improvement obviates the liability of the latch catching or sticking in the slit, and enables the said latch to be made stronger by gradually increasing the same in thickness from its pivoted end to the sides of the "spoon."

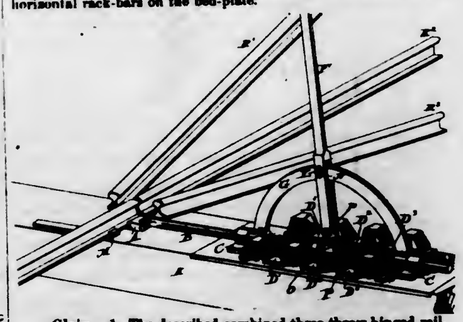
Claim.—1. As an improved article of manufacture, a latched knitting-machine needle composed of a latch and a body part having the inner portion of its walls cut away to enlarge the latch-receiving slit from near the pivot of the latch toward the end of the slit in the direction of the butt of the needle, whereby the liability of the latch to catch in the said slit is obviated, substantially as described.



2. As an improved article of manufacture, a knitting-machine needle composed of the latch *b*, shaped, as shown and described, to strengthen it and enable the loop on the body of the needle to be cast over the latch without sudden strain, and a body part having a slit widened from the pivot of the latch toward the butt of the needle, and having shoulders upon which the latch may rest when thrown over on the body of the needle to uncover the hook of the needle, substantially as described.

253,861. RAILWAY SWITCH-STAND. JOHN H. GREENWOOD and WILLIAM H. COWELL, Logan, Ohio. Filed Jan. 3, 1882. (No model.)

Brief.—The switch-lever is fulcrumed to a hinged arc or quadrant, whereby both can lie horizontally out of the way when not being operated, the lever being secured in either of its positions by horizontal rack-bars on the bed-plate.



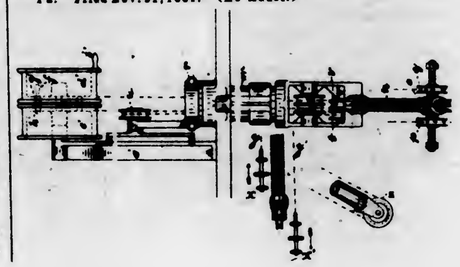
Claim.—1. The described combined three-throw hinged railway switch-stand, the quadrant and lever of which are hinged to the base, so that after use in an upright position they can be dropped upon the ground on either side of the tie on which they are supported, so as to be out of the way of passing trains or persons, all substantially as specified.

2. The combination of the plate H, hinges C, hollow pintles C' C', hinged quadrant G, lever F, swivel O, strap E, racks D, and rod B, in the manner and for the purposes set forth.

3. In a railway switch-stand, the combination of the switching-lever with a hinged quadrant capable of being folded down upon the ground on either side, so that the lever and arc will be out of the way, as described.

4. In a railway switch-stand, the locking device consisting of the combination of the rod B, sleeve P, strap E, and racks D', in the manner and for the purpose stated.

253,862. FLUE-CLEANER. JOHN H. HARTMAN, Philadelphia, Pa. Filed Nov. 21, 1881. (No model.)



Claim.—1. In combination with a regenerative stove, a flue-cleaner, with an arm, sleeve, and scraper swinging under the dome

253,865.

253,867. MOTOR. ALBERT IEKE, Lancaster, Pa., assignor of one-half to Anthony Ieke, same place. Filed Aug. 30, 1881. (No model.)

ceptacles, each entrance being adapted to be closed by the appropriate cover after the receptacle has entered.

2. In combination with an oscillating tube and a pair of re-

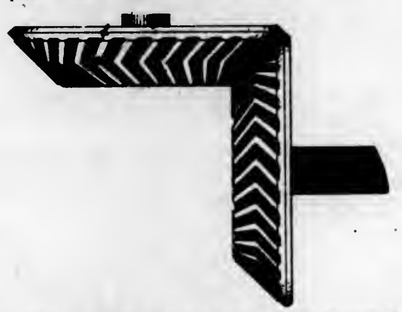
Claim.—1. In combination with a regenerative stove, a flue-cleaner, with an arm, sleeve, and scraper swinging under the dome of the stove.

2. In combination with a regenerative stove, a flue-cleaner having an arm swinging under the dome of the stove, with the chains *r* and sheaves *t v s u* to change the position of the sleeve on the arm.

3. In combination with the flue-cleaner of a regenerative stove, the double drum *c' d'*, made in two pieces, the pin *f'*, the chains *y y'*, and scrapers *x x'*.

4. In combination with the flue-cleaner of a regenerative stove, the arm *n*, swinging under the dome, the hollow shaft *m*, the bearing *o'*, the drums *c' d'*, the sleeve *o*, the chains *r y y'*, the sheaves *t v s u*, the sheaves *a' b' p q*, and scrapers *x x'*

253,863. SPIRAL BEVEL-GEAR. URI HASKIN, Pittsburg, Pa., assignor of one-half to the Atlas Works, (Limited,) same place. Filed Nov. 25, 1881. (No model.)

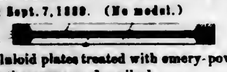


Claim.—1. In bevel or like gearing wherein the plane of the teeth intersects that of the shaft or axis, a series of interlocking teeth arranged on intersecting or double spiral lines, substantially as and for the purpose specified.

2. A beveled-gear wheel having shroudings extending around it at the ends of the teeth, substantially as and for the purpose described.

3. A beveled-gear wheel having a shrouding extending around it at the lower end of the teeth and at a plane above the base of the teeth, substantially as and for the purpose described.

253,864. SLATE. CHARLES H. HAYS and JAMES H. HAYS, Newark, N. J. Filed Sept. 7, 1880. (No model.)



Claim.—1. Celluloid plates treated with emery-powder or like material, as and for the purposes described.

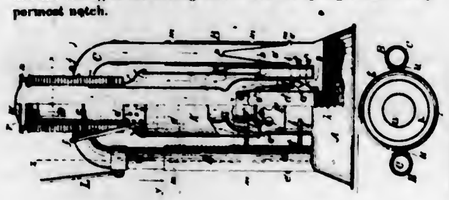
2. Slates of celluloid treated with emery-powder, as set forth and described.

3. Slates composed one side of celluloid and one of celluloid treated with emery-powder, as set forth and described.

4. Slates composed wholly of celluloid treated with emery-powder, or partly of celluloid and partly of celluloid treated with emery-powder, and re-enforced with a lining, as set forth and described.

253,865. HAND-LANTERN. LEONARD HOEKLE, Rochester, N. Y. Filed Dec. 27, 1881. (No model.)

Brief.—The air-supply tubes consist of tubes attached to the reservoir and vertically-sliding tubes within the same, to which the air-deflecting device is secured. The sliding tubes are provided with springs engaging with notches in the stationary tube. At the upper end the stationary tubes are cut away at one side to permit the tilting of the sliding tubes when the spring enters the uppermost notch.



253,865.



Claim.—1. A thimble, D, provided with strips *a* and flange *e*, and side tubes, C C, with means to hold said tubes and thimble rigidly together, and leaving a clear air-space between the ends of the tubes and said strips *a* and flange *e*, for the purpose of insulating said latter parts from the tubes, so that heat may not be communicated to the tubes, substantially as shown and described.

2. The reservoir or base A of a hand-lantern, provided with tubes B B, in which are fitted respectively smaller tubes, C C, and made to slide freely therein, which latter tubes support upper parts of the lantern, said tubes C C being vertically adjustable within the tubes B B, as and for the purposes set forth.

3. The reservoir or base A of a lantern, provided with tubes B B, and tubes C C, arranged to slide within said tubes B B, respectively, and means to hold said tubes C C in positions of vertical adjustment within the tubes B B, substantially as shown, and for the purpose set forth.

4. In combination, the fringed or perforated band *b* of the burner-cone F, the thimble D, provided with the perforated globe cap or holder *d*, globe K, and chimney G, substantially as shown and described.

5. The combination, with the conical ring *c'*, fringed band *b*, and inverted conical ring *c²*, of an ordinary Argand burner for lamps, a close band, *l*, forming a curtain to cover the said ring *c²*, and plate *h*, substantially as shown.

6. The combination, in lanterns, of an Argand burner, F, provided with a close band, *l*, and reservoir A, provided with an internal air-passage, *s*, and socket *k*, to receive said burner, substantially as shown.

7. The reservoir or base A of a lantern, provided with tubes B B, and tubes C C, arranged to slide within said tubes B B, the tubes C C being provided with locking devices *p m*, by means of which said tubes C C are held in any desired position of vertical adjustment within the tubes B B.

8. The chimney G of a lantern, in combination with vertically-adjustable tubes C C, and thimble D, provided with a cap or part, *d*, for shedding rain away from said chimney, substantially as shown, and for the purpose set forth.

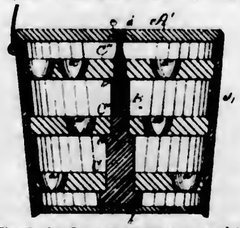
9. In combination with air-supply tubes B B of lanterns, a reservoir, A, provided with an air-passage, *s*, within the oil-chamber leading to the burner, substantially as shown and described.

10. In combination with the burner and chimney of a lantern, a reservoir, A, containing an internal air-passage, *s*, and extensible air-supply tubes B B and C C, substantially as shown.

11. An oil-reservoir, A, for a lantern, in which the socket *k*, for receiving the burner, is depressed below the surface of the upper plate of said reservoir.

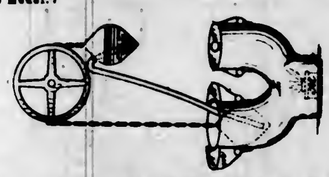
12. Tubes B B of a lantern, provided with holes *m* and indentations *o'*, in combination with tubes C C, provided with locking devices *p*, substantially as shown, and for the purpose set forth.

253,866. EGG-PAIL. ANDREW L. HILL and GEORGE S. SIMPSON, Decatur, Ill. Filed Oct. 7, 1881. (No model.)



Claim.—The device for conveying eggs, consisting of a series of disks, C C' C'', of relatively different areas, made with beveled edges, and having different numbers of holes *a a' a''* bored therein to receive eggs, and central holes, *c c' c''*, of different diameter in each disk, in combination with the standard B, constructed with a broad base, *b*, a series of shoulders, and a knob, *d*, whereby the series of disks may be lifted together, and a pail, A, having a cover, A', of larger diameter than the bottom of the pail, substantially as and for the purposes described.

253,867. MOTOR. ALBERT ICKE, Lancaster, Pa., assignor of one-half to Anthony Icke, same place. Filed Aug. 30, 1881. (No model.)



Claim.—1. In a motor, the combination of a flexible connecting-tube with two air-tight exhausted receptacles provided with easily-vaporizable liquid in sufficient quantities to partly fill said receptacles and tube, and a caloric device or devices acting on said receptacles alternately for the purpose of vaporizing a part of said liquid and causing the remainder to shift in vacuo from receptacle to receptacle, substantially as set forth.

2. In a motor, the combination of a flexible connecting-tube with two air-tight exhausted receptacles provided with steam, to which said tube is attached, and with easily-vaporizable liquid in sufficient quantities to partly fill said receptacles and tube, and a caloric device or devices acting on said receptacles alternately for the purpose of vaporizing a part of said liquid and causing the remainder to shift in vacuo from receptacle to receptacle, substantially as set forth.

3. In a motor, the combination of a flexible connecting-tube with two air-tight exhausted receptacles provided with easily-vaporizable liquid in sufficient quantities to partly fill said receptacles and tube, one or more supporting-chains and wheels, and a caloric device or devices acting on said receptacles alternately, for the purpose of vaporizing a part of said liquid and causing the remainder to shift in vacuo from receptacle to receptacle, substantially as set forth.

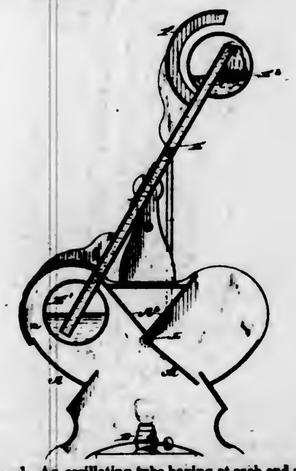
4. The combination of a pair of pointed bulbs with a flexible connecting-tube, a suspending-chain and pulley, and a heating device.

5. A heating-chamber provided with a sliding sectional top, in combination with a bulb adapted to automatically open said top in its descent, substantially as set forth.

6. A bifurcated heating-chamber having each of its divisions covered by an automatically-closing top, in combination with a pair of pointed bulbs, an intermediate support, and a flexible connecting-tube, all operating substantially as set forth.

7. In combination with a pair of bulbs or receptacles and a flexible connecting-tube, a heating device arranged to act alternately and directly on each of said bulbs as it descends, keeping up thereby an oscillating movement of said motor.

253,868. MOTOR. ANTHONY ICKE and ALBERT ICKE, Lancaster, Pa. Filed Nov. 4, 1881. (No model.)



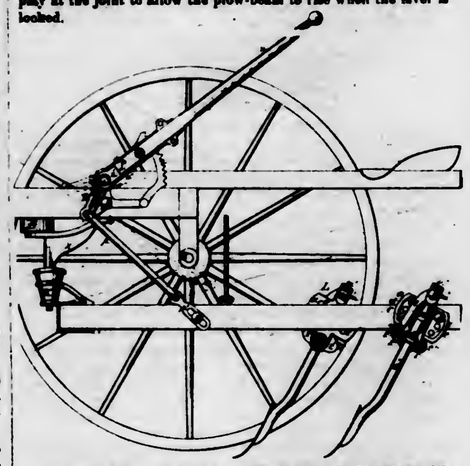
Claim.—1. An oscillating tube having at each end a receptacle for volatile liquids and a cover, in combination with a caloric chamber provided with an entrance for the admission of said receptacles, each entrance being adapted to be closed by the appropriate cover after the receptacle has entered.

2. In combination with an oscillating tube and a pair of receptacles for volatile liquid, attached to the ends of said tube, a caloric chamber divided into two parts or passages, and a gate or valve within said chamber connected to said tube in such manner that the oscillation of said tube cuts off the hot air from one of said parts or passages and directs it into the other.

3. In combination with tube E and terminal receptacles E' E², the casing A, the gudgeons or pivot-shaft for said tube, rock-shaft L, gate M, and the cranks and pitman or connecting-rod, whereby the oscillation of said tube is enabled to automatically control the vibration of said gate, substantially as set forth.

253,869. CULTIVATOR. JAS. H. JOHNS, Rockford, Ill. Filed Oct. 4, 1881. (No model.)

Brief.—A standard frictionally held by means of an eyebolt and a pointed rotating support entering the notch of a friction-lever made to yield to a heavy strain. The whole is arranged to be reversible on a bed-plate. A two-part lever having limited play at the joint to allow the plow-beam to rise when the lever is locked.



Claim.—1. In a cultivator slip-tooth, the combination, with the bed-plate, of a lever-support for the shovel-standard pivotally supported in a bearing of the bed-plate, a slotted lever for holding the support, and a screw-eyebolt adapted to receive the shovel-standard and connect the standard-lever and bed-plate, substantially as set forth.

2. The combination, with the bed-plate and the standard-support, the latter being pivoted to the bed-plate, of a friction-lever pivoted on the bed-plate, and having a gear-tooth connection with the standard-support, substantially as set forth.

3. The combination, with the bed-plate and with the lever-standard support having a pivotal connection therewith, of a friction-lever having a screw-clamping bolt, pivotal connection with the bed-plate, and a gear-tooth connection with the lever-support, substantially as and for the purpose hereinbefore set forth.

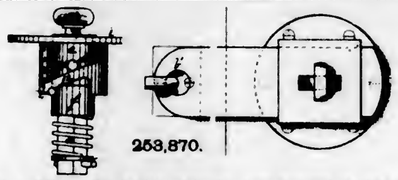
4. The combination, substantially as herein described, of the bed-plate capable of use on either side of the drag-bar, a lever-standard support and standard, having a screw-eyebolt pivotal connection with the bed-plate, and a friction-lever having pivotal clamping-bolt connection with the bed-plate and a gear-tooth-like connection with the pivoted lever-support, substantially as and for the purpose hereinbefore set forth.

5. The combination, with the bed-plate and the standard-support, of the pivoted friction-lever, having a gear-tooth-like connection with the said support, and provided with an enlarged end adapted to engage with the bed-plate, substantially as set forth.

6. In a cultivator, the combination, with the main frame, a ratchet-segment mounted thereon, and a drag-bar, of a two-part raising and holding lever, having a handle portion and a pendent portion capable of a slight upward movement independent of the handle portion, and a link connected to the lever and to the drag-bar, substantially as set forth.

253,870. SEAL-LOCK. LAWRENCE H. JUNKIN, Pittsburg, Pa. Filed Nov. 17, 1881. (Model.)

Claim.—1. The combination, in a seal-lock, of a rotating bar-



rel, a sliding collar having projecting pins mounted on the stem of the barrel so as to turn with it, a spring mounted on the stem between the collar and a stop or pin at the lower end of the stem, and inclines and notches upon which the pins of the collar play, substantially as and for the purpose described.

2. The combination of the headed barrel having both an axial and longitudinal movement with a recessed hasp and a slotted frangible seal of metal or glass.

253,871. SEWING-MACHINE SHUTTLE. WILLIAM H. KNELLER, Norwalk, Ohio, assignor to himself and J. W. Foster, same place. Filed Mar. 9, 1881. (Model.)

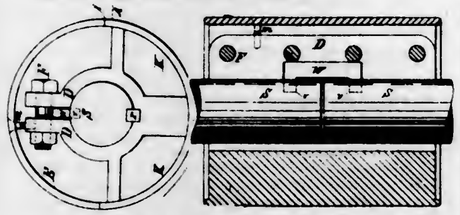


Claim.—1. The combination, with a shuttle provided with an open slot at its upper edge and an elongated slot communicating with said open slot, of a tension-plate the forward end of which is located in rear of said open slot, said tension-plate being constructed and arranged to cover the elongated slot, substantially as set forth.

2. The combination, with a shuttle provided with an open slot at its upper edge and an elongated slot communicating with the open slot, of a tension-plate arranged to cover the elongated slot and secured to the heel of the shuttle by a tension-adjusting screw, the forward end of said tension-plate being located in rear of the open slot, substantially as set forth.

3. The combination, with a shuttle provided with the open slot *a*, elongated slots *c c*, and communicating passage *d*, of the tension-plate C, adjustably secured to the heel of the shuttle, said tension-plate being arranged to cover the slots *c c* and allow the thread to be readily inserted in the open slot *a*, substantially as set forth.

253,872. SHAFT-COUPLING. CHARLES C. KLEIN, Philadelphia, Pa. Filed Jan. 3, 1881. (Model.)



Claim.—1. A shaft-coupling provided on one side of a plane dividing it longitudinally with the rim K and on the opposite side of the plane with the wings D D and tangential bolts F, substantially as and for the purpose specified.

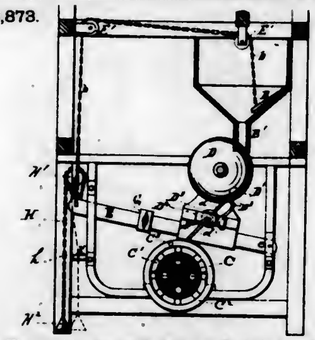
2. In combination with a shaft-coupling having the rim K wings D D, and tangential bolts F, the cap E and screw *m*, substantially as and for the purpose specified.

3. In combination with a shaft-coupling having wings D D the bolt F and differential nuts G *g*, substantially as and for the purpose set forth.

253,873. ALARM FOR MILLSTONES. WILLIAM LAUGOFF, Detroit, Mich. Filed Sept. 20, 1880. (Model.)

Claim.—1. In a grinding-mill, the combination, with a hopper and a valve or flexible wing located thereon, of a signal mechanism provided with a bell and a bell-hammer having a spring-arm provided with a projecting tripping tail or end, a pivoted lever carrying said signal mechanism, a rotary wheel arranged below said arm or adjacent thereto and having a projection arranged to strike the projecting end of the bell-hammer, an adjustable counterpoise arranged upon said lever, and a flexible connection between the free end of said lever and the valve or wing in the hopper, substantially as described.

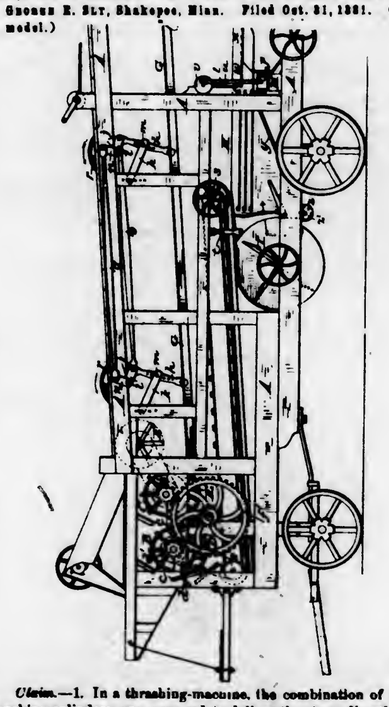
253,873.



2. The combination, with the lever E, chain *b*, and the signal mechanism carried by said lever, of the valve or wing B, chain H, having ring *h*, pin *h'*, and weight H³, substantially as described, and for the purpose set forth.

3. The combination, with the hopper and the valve or wing thereon, of the chain *b*, the pulleys E' E', over which said chain passes, the pivoted lever E, having its free end attached to the lower end of said chain *b*, the signal mechanism mounted on said lever and having a bell and a spring bell-hammer provided with the projecting end *d*³, the rotary wheel provided with the pin C', the chain H, connected to the free end of the lever, the pulley H', the ring *h*, inserted in said chain H, the weight H³, and the stationary pin *h'*, all arranged and operating substantially as described, and for the purpose set forth.

253,874. THRASHING-MACHINE. JOHN L. MACDONALD and GEORGE E. SLY, Shakopee, Minn. Filed Oct. 31, 1881. (No model.)



Claim.—1. In a thrashing-machine, the combination of two thrashing-cylinders, one arranged to deliver the straw directly to the other, concaves located beneath the respective cylinders, and an intermediate slatted section, substantially as described.

2. In combination with the cylinders B C, concaves D E, the dust-board *g*, located between them and serving to direct the dust downward, and the slatted section between the respective concaves, substantially as shown and described.

3. In a thrashing-machine, the combination of the two thrashing-cylinders B C, arranged, as described, to act conjointly upon the grain, and independently-adjustable concaves D E, for the respective cylinders, substantially as shown and described.

4. In combination with the cylinders B C, the independently-adjustable concaves D E and the wind-boards *f* and *g*, all combined and operating as set forth.

5. In a thrashing-machine, the combination of revolving cranks or eccentrics, a straw-carrier, sustaining and operating arms or levers connected at one end to the carrier and at the opposite end to said revolving cranks or eccentrics, said arms having a shifting fulcrum at a point between the two points of attachment, and the parts being combined and operating substantially as described.

6. In combination with the straw-carrier, sustaining-arms jointed thereto, revolving cranks carrying said arms, and pivoted arms jointed at one end to the sustaining-arms at a point between the ends of the latter and pivoted at the opposite end.

7. In combination with a straw carrier or platform and cranks *i*, arms *k*, provided with perforations, connected at their opposite ends with the cranks *i* and the straw-carrier, respectively, and the arms *k*, jointed to the arms A, and pivoted to the framing of the machine.

8. The combination, in a thrasher, of a straw carrier or platform, G, sustaining and operating arms A, swinging arms *k*, jointed to arms A, shafts *j*, provided with cranks *i* and *n*, and the pitmen *o* and *q*, all arranged and operating as set forth.

9. In combination with the arms A, connected with cranks at one end, the arms *k*, adapted and arranged to be adjusted substantially as shown and described.

10. In combination with a screening-shoe, a revolving crank or eccentric, a lever connected at one end with said revolving crank or eccentric and at the opposite end with the shoe, and arranged to oscillate and move endwise upon its fulcrum, whereby an elliptical motion in a vertical plane is produced.

11. In combination with the shaking-shoe of a thrashing-machine, the slotted levers *u*, crank-wheels *v*, and studs or pins *l*, located between the crank-wheels and the shoe, as and for the purpose set forth.

12. In combination with the straw-carrier G, the arms A and *k*, cranks *i* and *n*, and pitmen *o* and *q*, the weighted wheels *r*, applied to the crank-shafts, as and for the purpose set forth.

13. A shaking-shoe provided in rear of the tailings-trough with a corrugated or ribbed extension, closed on its lower side to prevent the return of matters to the screens or tailings-trough.

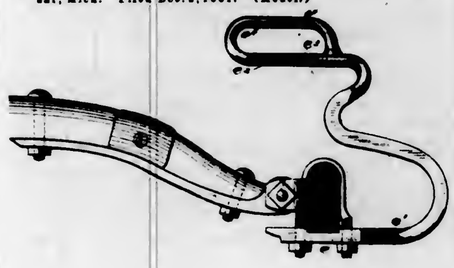
14. In a thrashing-machine, the combination of a tailings-trough, an upright pivoted prop or support at one end thereof, and an elbow-lever connected with the opposite end and with a rotating crank, substantially as shown.

15. The herein-described thrashing and separating machine, consisting of the cylinders B C and concaves D E, beater F, straw-carrier G, sustaining and operating arms A, cranks *i*, carrier-belt, screening-shoe H, and fan I, all combined and operating as set forth.

16. In a thrashing-machine, the combination, with a vertically-moving straw-carrier and screening devices, of a crank or eccentric, and one or more slotted arms connected at one end with the crank or eccentric and at the other with the screening devices, and arranged to move about a fixed stud extending through its slot.

17. In combination with a screening device, a crank or eccentric, and a slotted lever connected positively at one end with said crank or eccentric and at the other end with the screening device, a pin or stud extending through the slot and adapted to be adjusted therein and to be secured rigidly in its adjusted position, substantially as set forth, whereby an elliptical movement of varying scope may be imparted to the end of the lever connected with the screening devices.

253,875. TONGUE-SUPPORT. WELLINGTON B. MCFAIL, Vassar, Mich. Filed Dec. 9, 1881. (Model.)



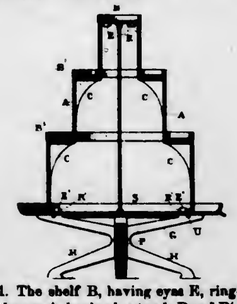
Claim.—The herein-described spring thill or tongue support, constructed in one piece, and comprising the U-shaped rod *c'*, gradually flattened so as to be capable of a lateral spring movement, and continued upwardly to form two oblique guides, *c² c²*, above which is formed a loop, *c'*, serving as a handle, all arranged and operating substantially as and for the purpose herein shown and specified.

253,876. RING-STAPLE FOR SUSPENDING PAPERS, &c. GEORGE W. MCGILL, New York, N. Y. Filed Dec. 15, 1881. (No model.) Patented in England Feb. 25, 1879, in Germany Mar. 15, 1879, in France Sept. 13, 1879, in Belgium Jan. 28, 1880, and in Austria-Hungary May 5, 1880.



Claim.—The improved ring-staple for holding and suspending papers, &c., consisting of the suspending-ring, the penetrating-legs, and the intermediate twisted shank, all from a single piece of wire, as set forth and shown.

253,877. FLOWER-STAND. BASIL H. MESSLER, Canton, Ill. Filed May 9, 1881. (No model.)



Claim.—1. The shelf B, having eyes E, ring-shaped shelves B' and B², and braces A, having bent ends R and R', in combination with the eyes E', the pan S, having stop-cock F and circular rod U, the standard G, having notched arms, the legs H, and pin P, substantially as and for the purpose set forth.

2. The combination of the shelf B, having eyes E, ring-shaped shelf B', braces A, strengthened by the V-shaped pieces C and having bent ends R and R', and the pan S, having eyes E', substantially as and for the purpose specified.

3. The combination of the pan S, having cock F, the circular rod U, fastened to the under side of said pan S, the standard G, legs H, and pin P, substantially as and for the purpose specified.

4. The pan S and circular rod U, fastened to the under side of said pan, in combination with the standard G, having notches at the upper ends of its arms, substantially as and for the purpose set forth.

253,878. ROLLER FOR GRADUAL-REDUCTION FLOUR-MILLS. WILLIAM M. MILLS, Dayton, Ohio. Filed Apr. 26, 1881. (No model.)



Claim.—1. A grinding-roll having peripheral corrugations the sides of each of which are of different lengths and together form an obtuse angle, substantially as described.

2. A grinding-roll having peripheral corrugations arranged spirally, the sides of each corrugation being of different lengths and together form an obtuse angle, substantially as described.

3. A pair of co-operating grinding-rolls having peripheral corrugations the sides of each of which are of different lengths and together form an obtuse angle, substantially as described, for the purpose specified.

253,879. CHURN. ALONZO W. NIBOT and MARTIN RHOADES, Rockford, Ill., assignors to Henry H. Palmer and George E. King, same place. Filed Oct. 7, 1881. (No model.)



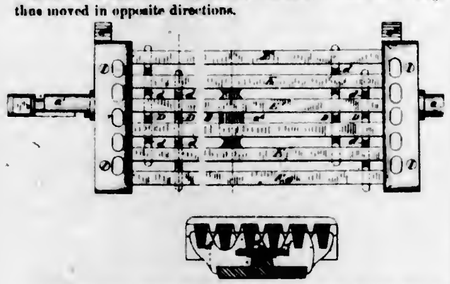
Claim.—1. The combination, with an annular ring-head, of anti-friction rollers supported to revolve on bearings above the surface of the annular ring-head, substantially as and for the purpose hereinbefore set forth.

2. The combination, with an annular ring-head provided with anti-friction rollers mounted to revolve on bearings above the surface of the annular ring, of a removable lid provided with radially-moving bolts to engage the anti-friction rollers, substantially as and for the purpose hereinbefore set forth.

3. The combination, with an annular ring-head provided with anti-friction rollers mounted to revolve on bearings above the surface of the annular ring, of a removable lid provided with radially-moving bolts operated by a spirally-grooved rotary cam, substantially as and for the purpose hereinbefore set forth.

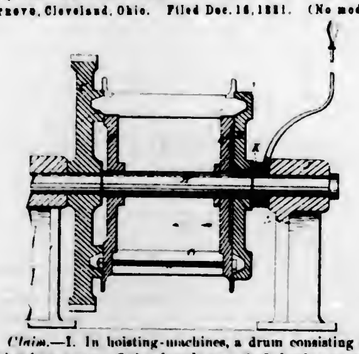
253,880. GRATE. JOHN F. MONTGOMERY, Taunton, Mass., assignor of one-half to Henry M. Ryder, same place. Filed Nov. 14, 1881. (Model.)

Brief.—The bar E' being reciprocated, motion is imparted to the alternate bars which are mounted on the standards, on which it rests, and through the connecting-lever B a reverse motion is imparted to the bar which is next to it, and this communicates motion to the bars which rest on its standard, all the bars being thus moved in opposite directions.



Claim.—The improved grate herein described, having one set of bars moving in one direction mounted on one pair of vibrating standards, the other set of bars mounted on a second pair of vibrating standards, a bar of one set being connected to the bar of the other set by a lever, so that by reciprocating one set the other set will reciprocate in the opposite direction, substantially as and for the purposes set forth.

253,881. DRUM FOR HOISTING-MACHINES. FRANK MUNGAVROVE, Cleveland, Ohio. Filed Dec. 16, 1881. (No model.)



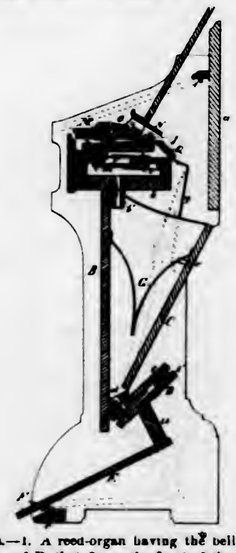
Claim.—1. In hoisting-machines, a drum consisting of the two heads or centers, fitting loosely on a shaft, having secured between and through the heads longitudinally a series of wooden lags or battens to form the exterior of the drum, the ends of these lags or battens projecting beyond the outer faces of the heads, and being beveled to fit the grooves in the friction-wheels, constructed substantially as and for the purpose described.

2. The combination of a hoisting-drum having wooden lags or battens with their ends projecting beyond the centers with the friction-wheel and disk, having beveled annular grooves to correspond with the ends of the lags or battens, substantially as and for the purpose described.

3. The combination of the spur-gear wheel having a beveled friction-groove, the drum constructed with wooden lags or battens projecting into the groove, the disk having a groove to correspond with the beveled ends of the wooden lags or battens, and the clutch consisting of the two sections with beveled ratchets, substantially as and for the purpose described.

4. The clutch consisting of the two sections K and L, having corresponding beveled ratchets, and the wings to prevent the turning of the stationary section, substantially as and for the purpose described.

253,882. REED-ORGAN. AUGUSTUS NOWELL, Chicago, Ill. Filed Aug. 14, 1881. (No model.)



Claim.—1. A reed-organ having the bellows-reservoir composed of board B, that forms the front of the organ-case, strip *d* back board, C, and spring G, all constructed and arranged substantially as set forth.

2. In a reed-organ, the perforated strip *d* of the bellows-reservoir, and the board *t* of the feeders D, secured thereto, in combination with the pedals E and E', each rigidly connected with a feeder-board, *t'*, by block, *u*, all constructed and arranged substantially in the manner described and shown.

3. The combination of the feeders D D', pedals E E', block *u*, base-strip *e*, and wire F, substantially as and for the purpose set forth.

4. The swell-cap Q, pivotally connected to the rear edge of the reed-board H, and having pending arm *q*, in combination with the back board, C, having pin *r*, substantially as and for the purpose described.

5. In a reed-organ, the key-board J, having grooved strip *j*, in combination with the keys M, having tapering rear ends that enter said groove and form a pivotal connection therewith, all substantially as described and shown.

6. In a reed-organ, the combination of the key-board J, reed-board H, bridge-board N, constructed and arranged to conceal the rear ends of the keys and also to form a supporting-shelf for the sheet-music, the swell-cap Q, pivotally connected to said reed-board and having arm *q*, and the back board, C, having pin *r*, substantially as and for the purpose set forth.

7. In a reed-organ, the combination, with the bridge-board N, of the cover or lid I', pivoted above said bridge-board, as described, so that when opened it forms the music-desk, substantially as set forth.

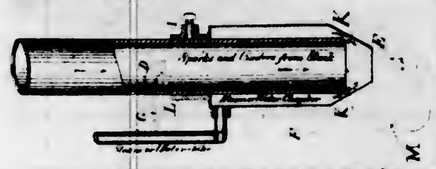
8. The reed-board H, formed of a single piece of wood grooved from the top and slotted in the rear, so as to form reed-cells that are open on top, with side grooves in the bottom for holding the reed, with the front end of the reed-frame close upon the projecting base-strip formed to said board, substantially as set forth.

9. In a reed-organ, the combination of the reed-board H, key-board J, and swell-cap Q, pivotally connected to the rear edge of said reed-board, substantially as and for the purpose described.

10. In a reed-organ, the key-board J and reed-board H, with pivoted swell-cap Q, having arm *q*, in combination with the back board, C, of the bellows-reservoir, having pin *r*, the same being constructed to operate substantially as set forth.

11. The case for a reed-organ, composed of standards A, back *a*, front B, forming one side of the bellows-reservoir, throat-board *b*, and base-strip *e*, all connected by wood-screws, and constructed in the manner substantially as shown and specified.

253,883. SPARK-ARRESTER. GEORGE B. NICHOLS, Galveston, Tex. Filed Nov. 7, 1881. (No model.)



Claim.—1. In a locomotive-engine, a pipe or pipes for conveying sparks from the smoke-stack, in combination with a diaphragm or cone placed in the stack and a steam or water chamber placed around the discharge of said pipe or pipes.

2. In locomotive-engines, a pipe or pipes for conveying the sparks and cinders from a stack, in combination with water or steam chambers and steam or water jets, substantially as and for the purposes described.

3. The downwardly-discharging steam or water chambers F F, surrounding the delivery-pipes D D, in combination with means, substantially as described, for supplying steam or water thereto, substantially as and for the purpose described.

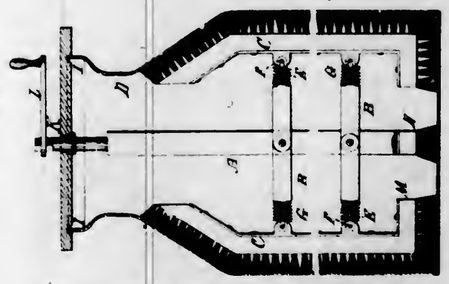
4. The steam or water chambers F F, having conical lower ends, in combination with spark-delivery pipes, substantially as and for the purpose described.

5. The chambers F F, having the opening at their lower ends smaller in area than the openings of the delivery-pipes D D, substantially as and for the purposes described.

6. The combination of the chambers F F and the set-screws for regulating the annular space K, substantially as and for the purpose described.

7. The steam or water jets M and I, in combination with spark-delivery pipes and chamber F, substantially as and for the purpose described.

253,884. BRUSH FOR CLEANING MILK-CANS. JOHN K. ODELL, Beckertown, N. J. Filed July 18, 1881. (No model.)

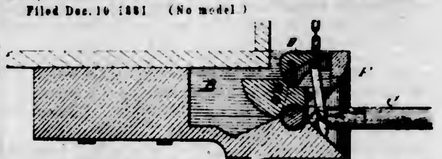


Claim.—1. The central shaft, A, having pivoted to it two or more sets of arms, carrying brushes, moved outwardly by pressing down said shaft, and adapted by adjustable mechanism to fit cans of different diameters, substantially as and for the purpose specified.

2. The combination of the shaft A, arms B, and brushes C, the said arms having the slots E and carrying the springs G, substantially as and for the purpose set forth.

3. In combination with the shaft A, carrying the arms and brushes, substantially as described and shown, the sections M and N, substantially as and for the purpose specified.

253,885. CAR-COUPLING. GEORGE T. OSBORNE, Atlanta, Ga. Filed Dec. 10, 1881. (No model.)



Claim.—1. In a car-coupling, the combination, with the draw-head thereof, of the pivoted jaw D and pivoted hook E, said jaw having pivoted thereto a suitable dog, F, substantially as and for the purpose set forth.

2. In a car-coupling, the combination, with the pivoted hook E, constructed as described, of the pivoted jaw D, carrying pivoted dog F, with shoulders *d*, substantially as and for the purpose specified.

3. In a car-coupler, the combination, with the pivoted jaw D and hook E, of the chains *f*, or other suitable connection, and the upright rod G, secured thereto, substantially as and for the purpose set forth.

253,886. SPRING-WASHER. EWALD OTTE, Indianapolis, Ind. Filed Jan. 3, 1882. (No model.)



Claim.—1. A washer for bolts, &c., in which several wings or their described equivalents are bent away from the plane of the body of the washer, upon all sides of the same, whereby a substantially equal spring force is caused to be exerted against all portions of the nut simultaneously, substantially as set forth.

2. The combination, with a bolt and its nut, of the spring-washer D, having the wings *d'*, *d*² bent alternately in each direction away from the plane of the body of the washer, substantially as set forth.

253,887. POCKET-KNIFE. JAMES M. PALMER, Cambridge, Mass. Filed Oct. 25, 1880. (No model.)

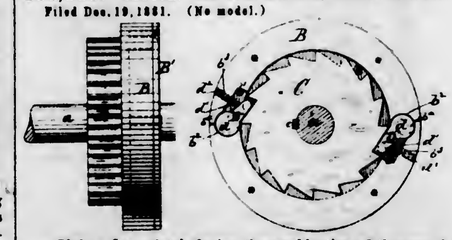


Claim.—In a finger-nail knife-blade, the combination of a shank, a cutting-blade end, and the longitudinally-arranged file ribs or teeth on the surface of the intermediate portion, substantially as described.

253,888. PROCESS OF REFINING AMALGAM OF GOLD AND SILVER CONTAINING BASE METALS. EUGENE M. KIOTZ, New York, N. Y. Filed Sept. 28, 1881. (No specimens.)

Claim.—The process of refining amalgam, which consists in subjecting the amalgam under agitation to the action of chlorine gas, whereby the base metals in said amalgam are transferred into insoluble chlorides, and then separating such chlorides from the amalgam, substantially as and for the purpose set forth.

253,889. CLUTCH. ISAIAH L. ROBERTS, Jacksonville, Fla. Filed Dec. 19, 1881. (No model.)



Claim.—In a clutch device, the combination of the gear A and housing B, loose on the shaft *a*, said housing being recessed at *b* to receive the ratchet-wheel C, keyed to said shaft, and having the dogs D, formed with cylindrical heels *d*, working in recesses *b*², together with recesses *b'*, springs *d'*, and the plate B', all constructed and arranged to operate substantially as and for the purpose specified.

253,890. MACHINE FOR GRINDING OR POLISHING THE HEADS OF SCREWS. CHARLES D. ROGERS, Providence, R. I., assignor to the American Screw Company, same place. Filed

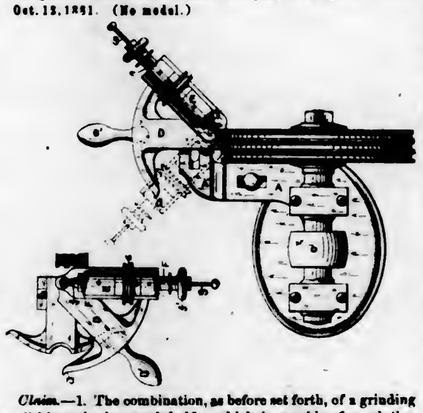
3. In a grain-drill, the combination of two parallel shifting-bars arranged in different horizontal planes, whereby one of the bars has in its shifting movement a compound motion, as described, and for the purpose set forth.

253,895. PLAYING-CARD AND DOMINO COMBINED. BENJAMIN A. SHELDON, New York, N. Y. Filed Dec. 6, 1881. (No model.)

disorganization, and soft flexible elastic sleeves interposed between the said collars and the central stick, substantially as and for the purpose specified.

2. In an umbrella, the collar around the central stick, to which

253,890. MACHINE FOR GRINDING OR POLISHING THE HEADS OF SCREWS. CHARLES D. ROGERS, Providence, R. I., assignor to the American Screw Company, same place. Filed Oct. 13, 1881. (No model.)

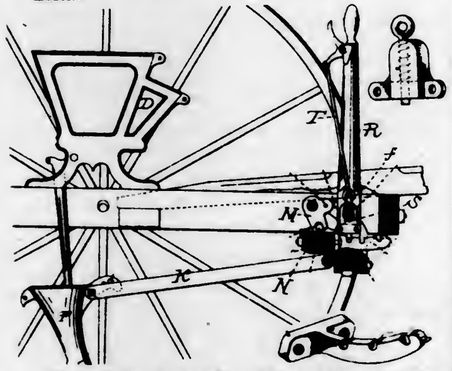


Claim.—1. The combination, as before set forth, of a grinding or polishing wheel, a work-holder which is capable of revolution and longitudinal movement in its bearings, a frame in which said holder is mounted, a sliding block to which said frame is pivoted, and a platform adjustable laterally and longitudinally with relation to the wheel upon which said sliding block is mounted, substantially as and for the purposes specified.

2. The combination, as before set forth, of a grinding or polishing wheel, a work-holder which is capable of revolution and longitudinal movement in its bearings, a frame in which said holder is journaled, a bed, D, upon which said frame is mounted, a sliding block to which said frame and bed are pivoted, a platform for supporting the parts, and suitable means, as described, for temporarily locking the bed to the platform, substantially as set forth.

3. The combination, as before set forth, of a grinding or polishing wheel, a spindle which is capable of revolution and longitudinal movement in its bearings, suitable jaws attached to said spindle for holding the work, a frame in which said spindle is journaled, a bed, D, upon which said frame is mounted, a sliding block to which said frame and bed are pivoted, a spring the pressure of which causes the said parts to move toward the grinding-wheel, and a stop to limit the extent of their forward movement.

253,891. GRAIN-DRILL. GEORGE W. RUDD, JOHN R. RUDD, and SQUIRE S. RUDD, Liberty, Ind. Filed Sept. 9, 1881. (No model.)



Claim.—1. In a grain-drill, a shifting-bar having attached thereto directly an operating-lever arranged at the front end of the frame and means for actuating a spring-bolt, in combination with a parallel transverse shifting-bar provided with a rack to receive the spring-bolt of the lever, substantially as described.

2. In a grain-drill, the combination of two parallel shifting-bars, one of which is provided with a curved bar having a plurality of notches, and the other provided with a hand-lever and an automatic spring-bolt for engaging with the notches of the curved bar to secure a lock, substantially as described.

3. In a grain-drill, the combination of two parallel shifting-bars arranged in different horizontal planes, whereby one of the bars has in its shifting movement a compound motion, as described, and for the purpose set forth.

4. In a grain-drill, the rear shifting-bar provided with the notched curved arm and the front shifting-bar provided with the hand-lever and side casing containing a spring-bolt, with means for withdrawing the bolt from its engagement, substantially in the manner as described.

5. In a grain-drill, the combination, with the operating-lever R, of the bell-crank lever M, connecting-rod T, and spring-bolt *f*, inclosed in a casing, substantially as described.

253,892. CIGARETTE. WOLF SALOMON, New York, N. Y., assignor to S. Jacoby & Co., same place. Filed Jan. 5, 1882. (No model.)



Claim.—The cigarette having the butt-end of its wrapper formed into a hollow cone, C, containing the air-space *a*, and the closed point of said cone covered with the igniting substance *b*, substantially as herein shown and described.

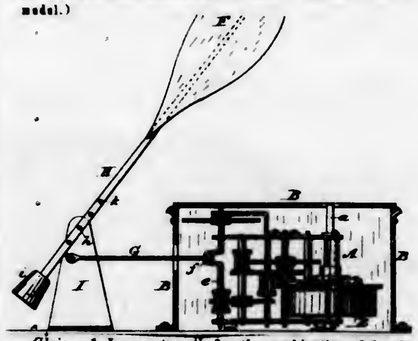
253,893. EXPLODER FOR BLASTING-CARTRIDGES. JOHN C. SCHRADER, Warwick, R. I. Filed Aug. 11, 1881. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, of the tubular blasting tube or bar, the cartridge connected therewith, and a fulminate-exploder connected with the blasting-tube, located within the cartridge and beyond the end of said tube, as and for the purposes specified.

2. The combination, substantially as hereinbefore described, of the tubular blasting tube or bar, the cartridge connected therewith, and a fulminate-exploder connected with the inner end of said tube within the cartridge and communicating with said tube for firing purposes by way of a passage or channel of lesser diameter than that of the blasting-bar, as and for the purposes specified.

253,894. AUTOMATIC FAN. ALBERT A. SELDEN and WILLIAM G. DUCKETT, Baltimore, Md. Filed Sept. 30, 1881. (No model.)

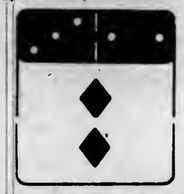


Claim.—1. In an automatic fan, the combination of the clock mechanism having a motive-power-imparting shaft, *e*, provided with a crank, *f*, with a connecting-rod, G, bracket I, and a counterbalanced fan, F, substantially as shown and specified.

2. In an automatic fan, the clock mechanism A, having the motive-power-imparting shaft *e*, provided with a crank, *f*, in combination with the casing B, connecting-rod G, bracket I, and a counterbalanced fan, F, all arranged substantially as shown and described.

3. The automatic fan herein described, consisting of the clock mechanism A, having the motive-power-imparting shaft *e*, provided with a crank, *f*, to which the connecting-rod G is attached and connects with the pivoted fan F, having transverse adjustable shaft *h* and counterbalance-weight *i*, journaled in bracket I, and the case B, all constructed and arranged for operation substantially as shown and hereinbefore set forth.

253,895. PLAYING-CARD AND DOMINO COMBINED. BENJAMIN A. SHELDON, New York, N. Y. Filed Dec. 6, 1881. (No model.)

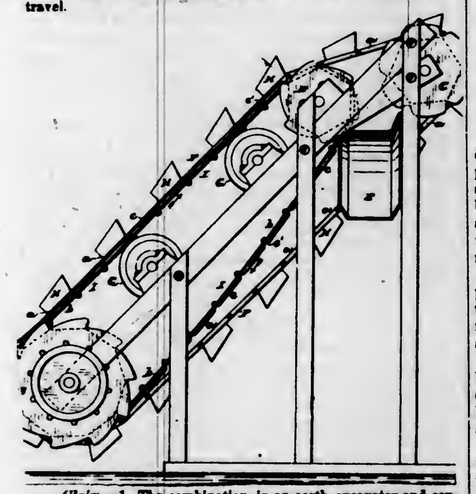


Claim.—1. As a new article of manufacture, a combined playing-card and domino, substantially as shown and described.

2. A playing-card of rectangular shape provided with the representation of a domino at one end, as shown and described.

253,896. EARTH EXCAVATOR AND CONVEYER. CHARLES A. SMITH and FRED. D. SMITH, New Carlisle, Ind.; said Fred. D. Smith assignor to Charles A. Smith. Filed Jan. 3, 1882. (No model.)

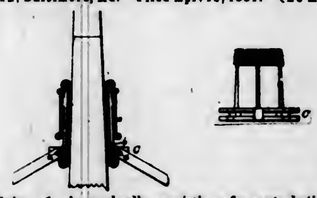
Brief.—Bottomless buckets are temporarily closed in their under side by an independent endless apron or belt underneath and traveling with said buckets during a part only of their upward travel.



Claim.—1. The combination, in an earth excavator and conveyer, of an endless chain, F, carrying bottomless scoops, shovels, or buckets H H, and an independent apron or belt, I, supported against or directly underneath and traveling with the said buckets during only a part of their upward travel, substantially as and for the purposes specified.

2. The combination, in an earth excavator and conveyer, of an endless chain consisting of centrally-open links carrying bottomless buckets H H, the independent endless apron or belt I, made shorter than the chain F, the chute E, and the wheels B, C, and D, the wheels B and C carrying the chain F and the wheels B and D carrying the belt I, all arranged substantially as shown and described with relation to each other, for the purposes set forth.

253,897. COMBINED CANE AND UMBRELLA. GILBERT T. SMITH, Baltimore, Md. Filed Apr. 18, 1881. (No model.)



Claim.—1. An umbrella consisting of a central stick, a complete covered frame connected to the said stick by means of diametrically-compressible collars, which admit of its removal without disorganization, and soft flexible elastic sleeves interposed between the said collars and the central stick, substantially as and for the purpose specified.

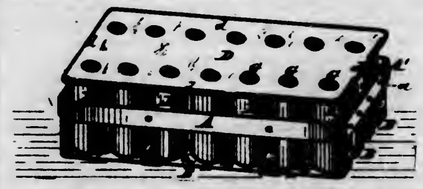
2. In an umbrella, the collar around the central stick, to which the ribs are hinged, provided with a diametrically-compressible extension and an inclosed soft elastic sleeve, and means for effecting the closing of the said extension around or about the said sleeve, substantially as and for the purpose specified.

3. In an umbrella, the collar to which the rib-braces are hinged, provided with a diametrically-compressible extension having a soft elastic sleeve or lining, and means for effecting the closing of the said extension around or about the said sleeve, and the clamping of the central stick, substantially as and for the purpose specified.

4. The collars C and E, or either of them, having an internal soft elastic sleeve, substantially as and for the purpose specified.

253,898. TRAY FOR HOLDING FRUIT-CANS. JOB TAYLOR, East Hamburg, N. Y. Filed Nov. 9, 1881. (No model.)

Brief.—The plate D is heavy and prevents the cans from floating before becoming filled with syrup.



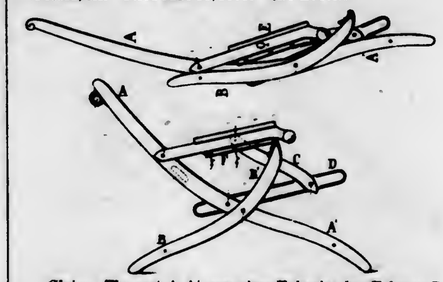
Claim.—1. As a new and improved article of manufacture, a dipping-tray for fruit-cans, consisting of a metallic basket composed of two U-shaped bands, A A', two (or more) longitudinal U-shaped slats, B, secured with their ends between the parallel members *a a'* of said bands A A', and the U-shaped transverse slats C, and a plate, D, having cone-shaped perforated protuberances G, the whole being constructed and combined substantially in the manner as and for the object stated.

2. The combination, with the tray A, of the cans E and the plate D, said plate being provided with a series of perforated protuberances, G, corresponding in position with the position of the filling-apertures *e* in said cans E, substantially as and for the use and purpose stated.

3. A tray for holding fruit-cans, consisting of two U-shaped bands, A A', placed together as specified, the longitudinal U-shaped slats B, secured with their ends between the parallel members *a a'* of said bands A A', and the U-shaped transverse slats C, substantially as and for the object stated.

4. The combination, with the plate D, having a series of apertures, of the cone-shaped baskets G, having the flange *g*, as specified, said cone-shaped baskets being permanently affixed to said plate, substantially in the manner as and for the purpose indicated.

253,899. FOLDING RECLINING-CHAIR. ARTEMAS H. UPHAM, Peoria, Ill. Filed June 13, 1881. (No model.)

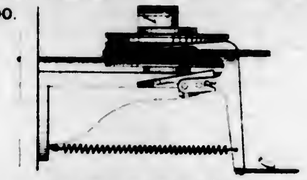


Claim.—The part A A', arm-piece E, having bar F, brace C, and side bar, D, in combination with the leg B, prolonged to B', and having adjusting attachments H J, substantially as and for the purpose specified.

253,900. BELT-SHIPPER. WILLIAM H. UPHAM and CHARLES W. SCOTILL, Cohoes, N. Y. Filed Dec. 24, 1881. (No model.)

Claim.—1. The combination of a drive-pulley, an idle-pulley, a shipper for transferring a belt from one pulley to the other, and a shoe connected to the shipper and operated thereby so as to be

253,900.



thrown against the drive-pulley when the belt is shipped from that to the idle-pulley and away therefrom when the belt is shipped back, substantially as set forth.

2. The combination, with a drive-pulley and idle-pulley, of a shipper adapted to ship a belt from one pulley to the other, and an adjustable shoe connected with and operated by the shipper so as to be thrown against the drive-pulley and away therefrom as the belt is shipped from off and onto said pulley, substantially as set forth.

3. The combination of a drive-pulley and idle-pulley, a shipper for shipping a belt from one of said pulleys to the other, a shoe connected with and operated by the shipper, means for moving the shipper and shoe in one direction, and a spring for moving them in the opposite direction, substantially as set forth.

4. The combination of a drive-pulley provided with a sleeve and fitted over a shaft so as to turn thereon, an idle-pulley fitted to the sleeve of the drive-pulley so as to turn thereon, a shipper for transferring a belt from one of said pulleys to the other, and a shoe connected with the shipper and operated by it, substantially as set forth.

5. The combination of a pulley provided with a perforated sleeve and mounted on a hollow perforated shaft, a pulley mounted on the sleeve of the first pulley, and a collar and cup for respectively holding the pulleys on the shaft and for feeding a lubricant thereto through the said shaft, substantially as set forth.

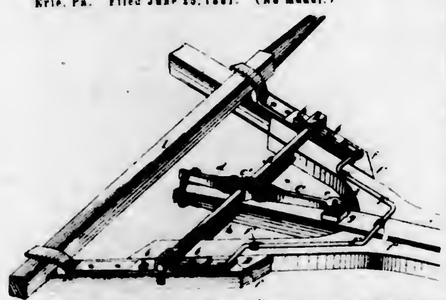
253,901. BUTTON-FASTENER. JACOB WEIDEMANN, New York, N. Y. Filed Mar. 3, 1881. (No model.)



Claim.—1. A button provided with a fastening device consisting of one or more hinged levers bearing one or more curved teeth, the levers being operated from the upper side of the button, and the teeth passing through holes in the button and adapted to pierce into and through the fabric to which the button is secured and secure the button thereto, substantially as described.

2. The combination, in a button-fastening device, of one or more hinged levers bearing one or more curved teeth passing through holes in the button and one or more curved stationary teeth, the whole being adapted to secure the button to the fabric, substantially as described.

253,902. WAGON-TONGUE SUPPORT. JEROME W. WETMORE, Erie, Pa. Filed June 25, 1881. (No model.)



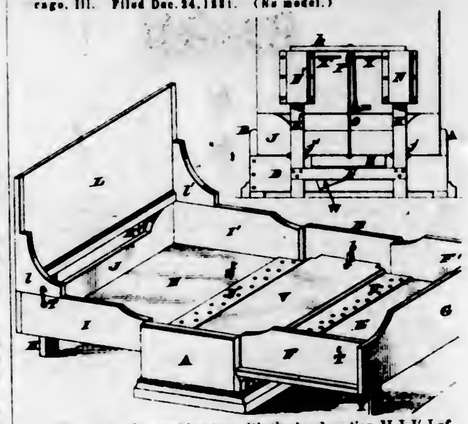
Claim.—1. The square torsion-spring bar, when both of its ends are held by bearings bolted to the bounds under the axial bolt, in combination with the movable central iron arm, C, substantially as described.

2. The torsion-spring bar attached to the bounds under the axial bolt, in combination with the arms C and *c'* substantially as described

3. The counter torsion-spring F, substantially as shown, for the purpose specified.

4. The combination of the straight torsion spring wagon-tongue support, held by bearings at its ends with the key-boxes for adjusting the lifting strain, substantially as described.

253,903. FOLDING CABINET-BED. SAMUEL H. WITMER, Chicago, Ill. Filed Dec. 24, 1881. (No model.)



Claim.—1. In combination with the head-section H I I' J of a folding or cabinet bedstead, the frame K K' *k k'*, hinged thereto at *j j'*, and carrying a shiftable extension, L, the latter being counterbalanced by a concealed weight, R, suspended from a rope, O, passing over a pulley, P, of said frame, and then secured to said extension L, substantially as herein described.

2. A folding or cabinet bedstead consisting of the supporting-base A B C D, to which is coupled, at *e e'* and *d d'*, respectively, the foot-section E P F' G, having swinging legs Y Y', and the head-section H I I' J, having hinged to it at *j j'* the frame K K' *k k'*, carrying a shiftable extension, L, the latter being counterbalanced by a weight, R, suspended from a rope, O, passing over a pulley, P, of said frame, and then secured to said extension L, substantially as herein described

253,904. SNAP-HOOK. FRANK C. WRIGHT, New York, N. Y. Filed July 27, 1881. (No model.)

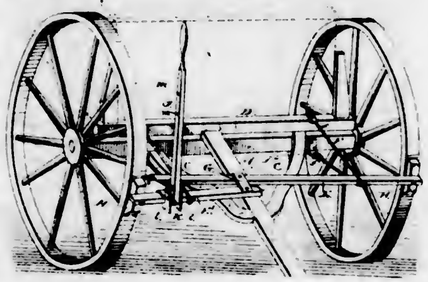


Claim.—As an article of manufacture, a snap-hook consisting of the plates A and B, pivoted together as described, plate A having one end turned over upon itself to form the wide-ended hook with the thinned and inwardly-curved edge *a'*, and having at the opposite end the wide transverse slot *b*, and plate B being actuated by spring *f*, and having the thumb-piece *e* and the upwardly-turned thin end *d*, adapted to conform to and rest upon the edge *a'* of hook *a*, all constructed and arranged to operate as specified, whereby the device is particularly adapted for use in a suspender in connection with the ring of a suspender-end, as described.

253,905. ORNAMENTING METALS. HORACE WRIGHT, Pittsburg Pa. Filed Dec. 6, 1881. (Specimens.)

Claim.—As a new article of manufacture, tops for sirup-jugs, pitchers, salt and pepper receptacles, &c., of soft metal, ornamented in colors, in contrast with the polished surface of the metal produced by turning or trimming off a portion of the metal.

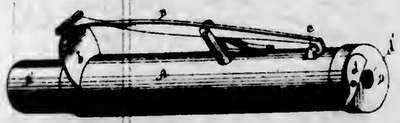
253,906. WAGON-BRAKE. ROBERT E. SALLUS, Denison, Tex. Filed Apr. 4, 1881. (No model.)



Claim.—1. The brake-beams E E', pivoted in the clamp G, in combination with the bent rods F, when constructed to operate substantially as and for the purpose set forth.

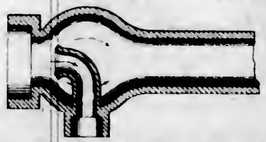
2. The brake-beams E E', pivoted to the clamp G, in combination with the bent rods F, castings I, brake-blocks H, and lever J, constructed substantially as and for the purpose described.

253,907. ANIMAL-TRAP. ALEXANDER ANDRÉ, Bakersfield, Cal. Filed May 11, 1880. (No model.)



Claim.—An animal-trap consisting of the tube A, slotted to receive the door, and open-end tube-section A', extending beyond the door, in combination with the spring-lever B, operating directly the door *b*, arranged to move at right angles to the line of tube A, the trigger *c*, and removable end D, provided with opening *d'* and shutter *d*, all constructed, arranged, and operated as set forth.

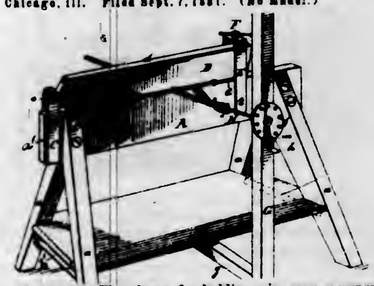
253,908. MAIN FOR CONVEYING FLUIDS. JAMES BRADY, Brooklyn, N. Y. Filed Jan. 4, 1881. (No model.)



Claim.—1. A water or fluid main constructed or provided with a branch pipe or nipple opening from the side of the main and extending into the bore thereof, with an orifice of less area than the main, and opening therein opposite the direction of the flow through the main, and in the center thereof, or thereabout, whereby the main current is at all times free to flow around the branch, while the orifice of the branch, when opened, intercepts a column equal to its area, substantially as herein set forth.

2. A fluid-main constructed with a branch pipe opening from the side of the main and extending into the bore thereof, and opening therein in a direction to face the current, with a lateral swell, bend, or enlargement in the main at or around the location of the inwardly-turned orifice of the branch, whereby the full area of the main is maintained constant along its length, or nearly so, while the orifice of the branch always opens in the middle of the current, or nearly so, and facing the same, substantially as and for the purpose herein set forth.

253,909. WIRE-ROPE-SPLICING BENCH. HENRY CHARRON, Chicago, Ill. Filed Sept. 7, 1881. (No model.)

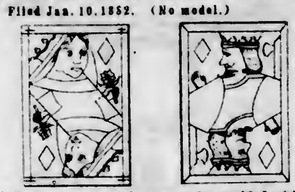


Claim.—1. The clamp for holding wire rope, composed of beam A, having stirrup C, yoke E, and screw F, and of bar D, in combination with the crank-hook H, for opening the strands of the rope, as and for the purpose of making eye-splices in the manner set forth.

2. A splicing-bench composed of beam A, with legs *a*, hinged beam D, and yoke E, with screw F, in combination with crank-hook H, all substantially as and for the purpose set forth.

3. A splicing-bench composed of beam A, with legs *a*, hinged clamp-bar D, and yoke E, with clamp-screw F, in combination with post G, having perforated plate *j*, pin *m*, and crank-hook H, all constructed and arranged substantially as and for the purpose set forth

253,910. PLAYING-CARDS. SOLOMON L. COHEN, New York, N. Y. Filed Jan. 10, 1882. (No model.)

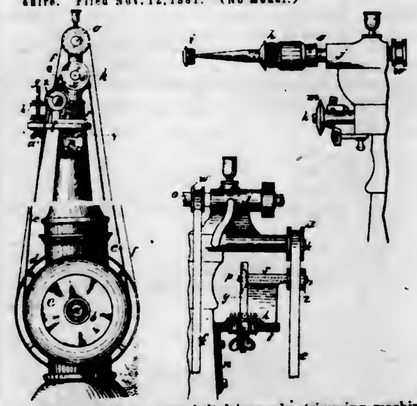


Claim.—1. A pack of playing-cards provided with indicative emblems independent of the face illustrations, the court-cards of which have additional emblems diverse to those on the rest of the pack, adapted to distinctly designate the several court-cards from the other cards when displayed, substantially as described.

2. A pack of playing-cards, the court-cards of which have lines parallel to their side edges and carried out close to said side edges, substantially as described.

3. In a pack of playing-cards, each class of court-cards provided with a designating-emblem distinct from each other, and distinct from the emblems on the cards of other character in the pack, substantially as described.

253,911. COMBINED SOLE-EDGE TRIMMER AND TRIMMING-TOOL GRINDER. SAMUEL N. CORTHELL, Quincy, Mass., assignor to the Corthell Manufacturing Company, of New Hampshire. Filed Nov. 12, 1881. (No model.)



Claim.—1. In a rotary belt-driven edge-trimming machine, a rotary cutter-grinder arranged to be brought into contact with, to be separated from, and to be actuated by, the cutter-driving belt, when so brought into contact therewith, by means substantially as specified.

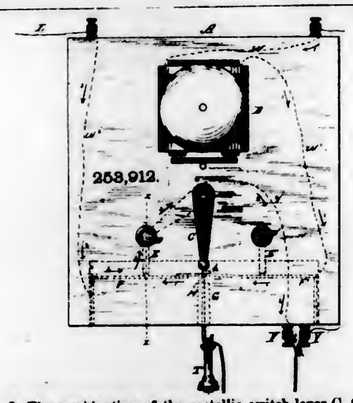
2. The combination of the adjustable standard *g*, the standard *a*, carrying the arbor *p*, with its pulley *x* and disk *i*, and adjustable relatively to the driving-belt, substantially as specified.

253,912. TELEPHONE-STATION APPARATUS. GEORGE W. COY, Milford, Conn., assignor, by mesne assignments, to the United States Telephone Manufacturing Company, New York, N. Y. Filed June 25, 1881. (No model.)

Brief.—A secrecy-switch and a telephone-switch are so combined with the circuit-wires that the telephone-switch may be left to connect the telephone with the line in either direction without interfering with the circuit through the secrecy-switch. The latter is controlled by the weight of the telephone.

Claim.—1. In a telephone-station apparatus, the combination, with the main line and a telephone branch ground-line, of a secrecy-switch and a separate telephone branch switch, the latter being capable of closing and breaking the main-line circuit independently of the former, but both co-operating to ground the main circuit through the telephone branch line, substantially as described.

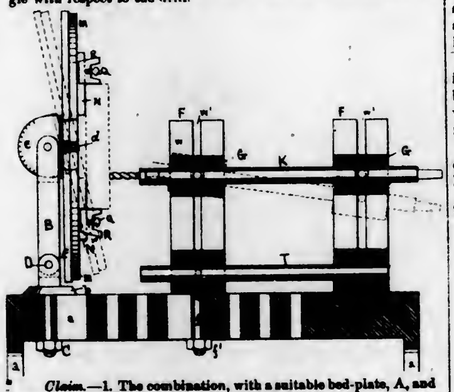
2. The secrecy-switch consisting of a pivoted metallic switch-lever and two metallic contacts, in combination with a wire leading from said lever to a telephone branch circuit, and a separate switch arranged to break the main-line circuit and connect the two parts thereof with the contact-plates of the secrecy-switch, substantially as described.



3. The combination of the metallic switch-lever C, the contact-plates D and D', the springs F and F', telephone-supporting rod H, suitable projections from the said contact-plates into the paths of said springs, and the conducting-wires, substantially as described.

253,913. BORING-MACHINE. ELIJAH D. DAVIS, Brooklyn, N.Y. Filed Dec. 15, 1881. (No model.)

Brief.—The drill-arbor is capable of longitudinal and vertical adjustment. The article to be bored is supported by a plate pivoted to a rotary standard, and is thus capable of assuming any angle with respect to the drill.



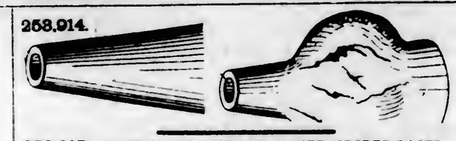
Claim.—1. The combination, with a suitable bed-plate, A, and with an arbor, K, adapted to receive and carry a drilling-tool and to traverse longitudinally and rotate freely in adjustable bearings over said bed-plate, of a table, C, for holding the work to be drilled, supported upon a standard, B, upon the bed-plate, and adjusted to tip upon and to turn with said standard to any desired angle in front of the drill, substantially in the manner and for the purpose herein set forth.

2. The combination, with an arbor or drill-shaft, K, and with a drill-table, C, adapted to tip and to turn to any angle with the drill, of a plate, M, pivoted centrally to said table to rotate thereon, and fitted with retaining or clamping devices for holding the work thereon, substantially in the manner and for the purpose herein set forth.

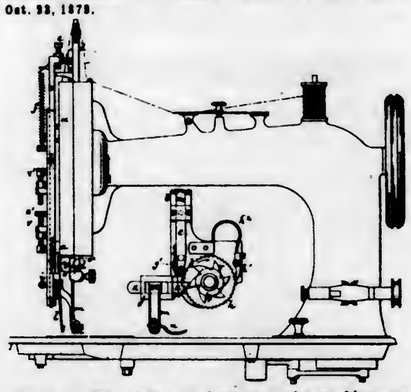
3. The combination, with the drill-table C and drill-arbor K, of the pivoted strips N N and the sliding clamps R R, traversing upon said strips, adapted for holding the work in position for the drill, substantially in the manner and for the purpose herein set forth.

253,914. TESTER FOR EXPLOSIVES. GILBERT S. DEAN, San Francisco, Cal. Filed June 24, 1881. (No model.)

Claim.—The method herein described for testing the blasting force of explosives, consisting in inclosing them in conical lead or other vessels having a predetermined resistance to a fracturing strain, tamping the charge, and exploding it, whereby the altered shape and condition of the vessel indicates and registers the force of the explosive charge, substantially as set forth.



253,915. MACHINE FOR PURLING MANUFACTURED LACES, &c. OCTAVE L. DESCHAMPS, Paris, France. Filed Apr. 8, 1881. (Model.) Patented in France Oct. 16, 1879, and in England Oct. 23, 1879.

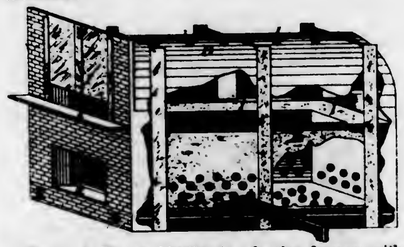


Claim.—1. The purling-attachment to sewing-machines, consisting of the combination of the slide *c*, pawl *g*, ratchet-wheel *h*, and star-wheel *r*, with the slide *k*, purling-needle *n*, and oscillating lever *l*, substantially as herein described.

2. The combination of the pivoted lever *l*, which is suspended in front of the needle and has the projection o^3, with the needle-bar *d*, having projection *p*, and with the spring o^3, all arranged to vibrate the lever at right angles to the direction in which the fabric is fed, substantially as herein shown and described.

3. The slide *c*, having projection *c'*, in combination with screws *e* and *v*, and with the needle-bar *d*, for operation substantially as herein shown and described.

253,916. REHEATING-FURNACE. JAMES F. DUFFY, South Chicago, assignor of one-half to Augustus D. Lamb and Francis W. Newland, both of Chicago, Ill. Filed June 13, 1881. (No model.)



Claim.—1. The combination in reheating-furnaces, with a perforated fire-box, having a perforated plate arranged below and between said fire-box and the tuyeres to obtain an even distribution of heat, of a surrounding ledge to receive the articles to be heated.

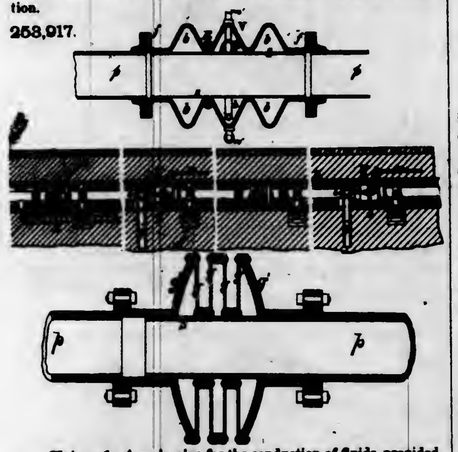
2. A heating-furnace consisting of the perforated fire-box, the furnace-walls, an air-chamber surrounding said fire-box, and air-inlets entering said chamber, as and for the purpose set forth.

3. A reheating-furnace consisting of the perforated fire-box the air-chamber surrounding said box, the air-inlets of a perforated plate arranged below and between said fire-box and the tuyeres, and said tuyeres, substantially as and for the purpose set forth.

253,917. APPARATUS FOR SUPPLYING CITIES WITH STEAM, &c. CHARLES E. HENRY, Brooklyn, N.Y. Filed Mar. 8, 1880. (No model.)

Brief.—The invention relates to expansion-joints for street-mains designed for steam-distributing systems, and it has for its object to dispense with slip-joints and large stuffing-boxes. The variations in the length of the main due to changes of temperature are compensated for by constructing portions of the pipe of such shape as to utilize the flexibility and elasticity of the metals, &c. The claims define the precise points comprised in the invention.

253,917.



Claim.—1. A main pipe for the conduction of fluids, provided with a series of flexible or elastic sections or variators to permit expansion and contraction, and a series of outlets to permit the distribution and delivery of the fluid.

2. In combination with a main pipe, *p*, the variators V and branch pipes *m* and *n*, substantially as and for the purposes specified.

3. In combination with a steam street-main and an exterior protecting-gallery for the same, the skeleton segments or chocks *l*, substantially as and for the purposes specified.

4. A main pipe for conveying fluids, made continuous without slip-joints or stuffing-boxes, and provided with means, substantially as described, for permitting expansion and contraction, and for supplying fluid at intervals, in combination with and adapted to the distinguishing locating features of a public highway or street.

5. In combination with the elastic variators, arranged at intervals in a steam main pipe, anchorages and attachments from the same to the main pipe at or near the outlets, substantially as described.

6. A curved outlet-pipe, *m'*, combined with the bottom of a lobe of an elastic variator, substantially as and for the purpose specified.

7. An outlet, *n'*, combined with the enlarged chamber of an elastic variator.

8. An annular flexible diaphragm, *l*, combined with the two sections of a pipe, substantially as and for the purpose specified.

9. The combination of the diaphragm *l*, sleeve *o*, head *n*, and chamber *q* with the pipes *p* and *p'*.

10. In combination with a main for conveying heated fluids, drains *d d*, arranged at the lower corners or angles of the trench in which each street-main is laid and below the level of the soil or other supports under each main, substantially as and for the purpose specified.

11. A continuous metallic main pipe constructed without slip-joints or stuffing-boxes, but provided with elastic sections or variators at intervals to permit expansion and contraction, and outlets to service-pipes and laterals at intervals, in combination with apparatus for the supply of steam or other fluid adapted to furnish heat and power.

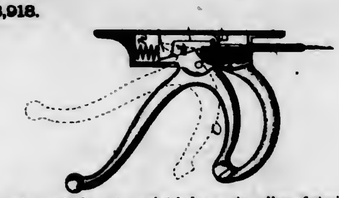
12. In combination with a main pipe for conveying heated fluids and a lateral connected therewith, one or more variators in the lateral to make the same flexible and permit free expansion of the main without injuring the lateral.

13. The separate lengths of pipe, rigid disks or flanges, and elastic disks, in combination with each other and with the smooth pipe extended through the space within the disks.

253,918. WARDROBE-HOOK. WILLIAM G. PECTER, Chicago, Ill., assignor of one-half to Leverett E. Pitts, same place. Filed Dec. 16, 1881. (No model.)

Claim.—1. In a wardrobe-hook, the combination, with the pivoted jaw or loop, of one or more locking-wedges continuously bearing against said jaw at a point below or in a line of strain outside of their pivot, substantially as described.

253,918.

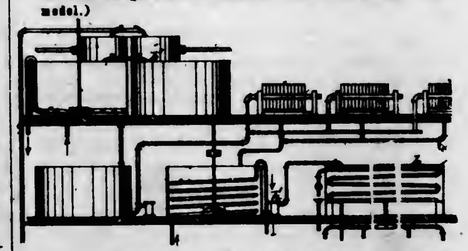


2. The combination, with a wardrobe-hook, of a pivoted jaw and one or more locking-wedges having a curved edge engaging with said jaw, substantially as described.

3. The combination, with the swinging jaw of the locking wedge or wedges having the curved projection, of an expansion-spring automatically operating said wedge or wedges, substantially as described.

4. The swinging jaw having the beveled extension, in combination with the locking-wedge having the curved projection, substantially as described.

253,919. PROCESS OF MANUFACTURING CORN-SIRUP. ADOLPH GIESECKE and HARRY HAMLIN, Buffalo, N.Y.; said Giesecke assignor to said Hamlin. Filed Jan. 5, 1882. (No model.)



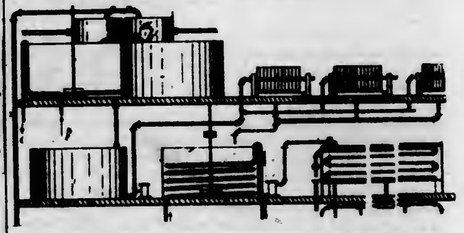
Claim.—1. The process, substantially as before set forth, of manufacturing the compound of glucose and cane-sirup, consisting of the mixture of the two sirups and the subjection of the mixture to heat and agitation.

2. The process, substantially as before set forth, of manufacturing the compound of glucose and cane-sirup, consisting of the mixture of the two sirups, the subjection of the mixture to heat and agitation, and the subsequent filtration of the mixture.

3. The process, substantially as before set forth, of manufacturing the compound of glucose and cane-sirup of the required color, consisting of the mixture of the two sirups, the subjection of the mixture to heat and agitation, the subsequent filtration of the mixture, and the adjustment of the color subsequent to filtration.

4. The process, substantially as before set forth, of manufacturing the compound of glucose and cane-sirup in a condition ready for barreling it, consisting of the mixture of the two sirups, the subjection of the mixture to heat and agitation, the subsequent filtration of the mixture, and the rapid cooling of the filtered product.

253,920. COMPOSITE CORN-SIRUP. ADOLPH GIESECKE and HARRY HAMLIN, Buffalo, N.Y.; said Giesecke assignor to said Hamlin. Filed Jan. 5, 1882. (No model.)



Claim.—As a new article of manufacture, the composite corn-sirup hereinbefore set forth.

253,921. CHAIR. JOSEPH GREEN, Whitewater, Wis., assignor

253,924.



253,925.

253,928.

253,921. CHAIR. JOSEPH GREEN, Whitewater, Wis., assignor to James Oscar Green, same place. Filed Oct. 15, 1881. (No model.)

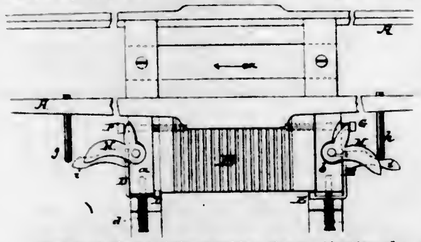


Claim.—1. In seats having back and bottom formed of spiral-wire fabric, the device herein described for attaching said fabric to the frame, consisting in the combination of grooved bars G and E, rod F, as interposed between said bars within the circular recess formed by said grooves, fabric D, having the ends of the respective wires forming said fabric wound around said rod upon both its upper and lower surfaces, and retaining screws or rivets *a a*, all substantially as set forth.

2. The improved chair herein described, consisting in the combination of sides M M, formed of two separate pieces, I and J, said sides being curved to form the front legs and side frames to the seat and back cross-pieces O, rear legs, P, and spiral-wire fabric H, said fabric being secured around a retaining-rod within a groove between said pieces, all substantially as and for the purpose specified.

253,922. KNITTING-MACHINE. HUGO GÜNTHER, Chemnitz, Saxony, Germany, assignor of one-half to Matthäe Herfurth, same place. Filed Nov. 30, 1880. (No model.)

Brief.—The devices specified in the claims operate to adjust the needle-plate horizontally and hold it in its adjusted position.



Claim.—1. In a knitting-machine, the combination of a reciprocating carriage, A, having projecting pins *g* and *h*, with the needle-plate B, devices for moving the same, and with two locking-catches, all arranged so that the needle-plate will always be locked by one of the catches, as set forth, and in position to be moved by one of the projecting pins of the carriage, substantially as specified.

2. The combination of the carriage A, having pins *g* and *h*, with needle-plate B, having pins F and G, and with the levers H and spring-catches D and E, all arranged to operate substantially as described.

253,923. ART OF MANUFACTURING STARCH. HARRY HAMLIN, Buffalo, N. Y. Filed Jan. 5, 1882. (No specimens.)

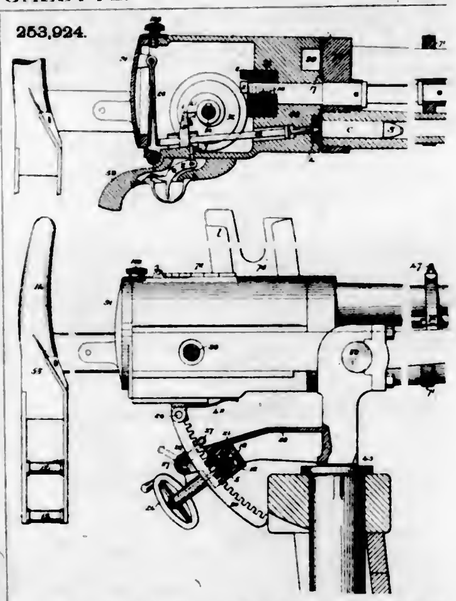
Claim.—1. The process, substantially as before set forth, of separating starch from starch-water, consisting of the separation of a portion of the starch directly from the starch-water by subsidence, the treatment of the residuary starch matter with caustic alkali, and the separation of the remaining portion of starch by subsidence.

2. The process of subjecting starch matter to the action of alkali, consisting in conducting the settlings from several settling-tanks into one mixing-tank, in which the alkali is applied, and in which the collected settlings may be simultaneously reduced to the desired consistency.

253,924. MACHINE-GUN. BENJAMIN B. HOTCHKISS, New York, N. Y. Filed Mar. 3, 1881. (Model.) Patented in France July 9, 1878, in Germany Oct. 26, 1879, and in England Nov. 15, 1879.

Brief.—A trigger serves to stop the loading mechanism at a point just short of firing position. A pull of the trigger completes the movement and fires the gun, or the trigger may be thrown out of connection and the gun operated entirely by the crank. The elevating-gear may serve as an auxiliary to the shoulder-piece in training the gun or may be thrown out of gear and the gun manipulated entirely by means of the shoulder-piece.

253,924.



Claim.—1. A shoulder-piece for attachment to guns, to aid in training the same, consisting of an upper arm having a shoulder and breast bearing and a lower arm provided with one or more handles, substantially as described.

2. The combination, with a cannon or similar gun provided with a shoulder-piece for training it, of a segment-rack attached to the rear part of the gun, and a worm, and means for rotating it, the latter being carried by an arm fixed on a support which participates in the horizontal movement of the gun, but is not affected by its vertical movement, all substantially as described.

3. The combination, with a cannon or similar gun, its carriage, and shoulder-piece, of a segment-rack, as 20, a worm-wheel, as 21, worm-wheel 6, and a worm, 18, carried by an operating-shaft, 19, extending rearward under the breech, substantially as described.

4. The combination, with a cannon or similar gun and its carriage, of an elevating and depressing mechanism consisting of a segment-rack depending from the breech, a worm or similar driving wheel co-operating with said rack, and means, substantially as described, for engaging and disengaging said rack and driving-wheel.

5. The combination, with a cannon or similar gun and its carriage, of a swinging segment-rack, a driving-wheel, as 21, means for rotating the same, and a cam, as 29, operating to hold said rack and wheel engaged, or to admit of their disengagement, substantially as described.

6. The combination, with the operating mechanism in a machine-gun, of an independent trigger, arranged, substantially as described, to arrest the movement of the operating mechanism and control the firing action.

7. The combination, with a cannon mounted upon trunnions, of a shoulder-piece and a mechanical elevating mechanism constructed to be thrown into and out of operation, all substantially as described.

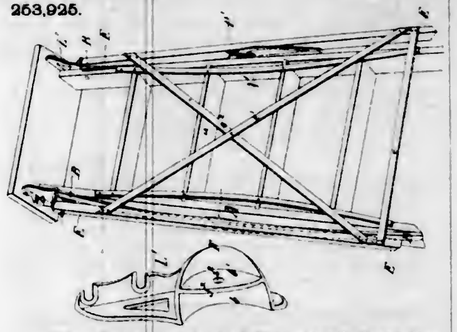
8. The combination, with a revolving cannon or other system of machine-gun, of a trigger arranged and operating substantially as shown and described, whereby the discharging movement of the firing-pin is controlled, independently of the cocking action thereof, through the ordinary movements of the gun mechanism.

9. The trigger operating to arrest and liberate the firing-pin, in combination with the projection 1 on the firing-pin, arm 9, and the stop 11 on the face of the worm-stock, whereby the continuance of the revolution of the shaft 33 is prevented when the gun is cocked, substantially as described.

253,925. STEP-LADDER. GEO. KIRK, Frederick, Md. Filed Nov. 2, 1881. (No model.)

Brief.—The bracket is partitioned so that one socket receives the end of the swinging brace and the other the end of the fixed brace.

253,925.

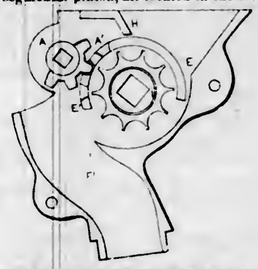


Claim.—1. A bracket for stop-ladders, cast entire in one piece, with bearing-plates *f* and *f'* and a cap or shoulder bearing, F, provided with a partition-plate, *f*^{3}, substantially as and for the purpose described.

2. Swinging braces E and braces B, in combination with brackets L L', provided with separate sockets, *b b'*, to receive the upper ends of said braces, substantially as and for the purpose described.

253,926. SEED-CUP FOR GRAIN-DRILLS. JACOB KING, Indianapolis, Ind. Filed July 8, 1881. (Model.)

Brief.—Cylindrical cut-off for graduating the flow of seed, operated by segmental pinion, all located in the seed-cup.



Claim.—1. In a seed-cup for grain-drills, the segmental pinion A', constructed and arranged to gear into the teeth E' of the cylindrical slide E E', substantially as and for the purpose set forth.

2. In a seed-cup for grain-drills, the combination and arrangement of the segmental pinion A', the teeth E', and the cylindrical slide E E', substantially as and for the purpose set forth.

253,927. TENSION-BRACE. AARON LAWSON, Gilroy, Cal. Filed Sept. 8, 1881. (No model.)

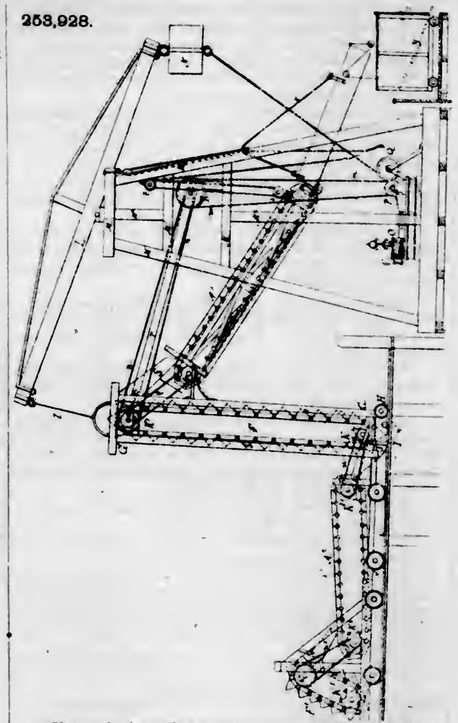


Claim.—1. A tension-brace consisting of a wire or other flexible rod bent or twisted at its center to form the double loop B or equivalent locking-loop, and having its ends *a a* formed into or provided with screws, one of which is a right-hand and the other a left-hand screw, substantially as and for the purpose herein described.

2. A tension-brace consisting of a wire or other flexible rod having its ends *a a* in line, and provided with right and left hand screws, and its center so bent that the ends may be allowed considerable end play for the purpose of inserting them, said center being so crossed that when drawn up its sides will lock, so that the whole will form a rigid rod, substantially as and for the purpose herein described.

253,928. DEVICE FOR HANDLING COAL, ORES, &c. ALFRED LAWTON, Elizabeth, N. J. Filed Jan. 12, 1881. (No model.)

253,928.



Claim.—1. An endless conveyer composed of a series of pans hinged together (by links and rods) in such manner that their sides and ends overlap each other, and that they can be readily disconnected for the purpose of lengthening or shortening the conveyer, substantially as set forth.

2. The combination of an endless conveyer provided with a series of pans hinged by rods and link-eyes, substantially as described, and revolving spiders, the conveyer being driven by the arms of the spiders engaging with the link-eyes, substantially as and for the purpose set forth.

3. The combination, in an endless conveyer provided with a series of hinged pans and driven by revolving spiders, of a series of wheels attached to rods beneath the pans, and an adjustable lower track, substantially as and for the purpose set forth.

4. An upper track provided with angle-iron as guides for the wheels of an endless conveyer, substantially as and for the purpose set forth.

5. An endless conveyer constructed and arranged to be shortened or lengthened at pleasure, substantially as set forth, in combination with a suitable supporting-frame constructed and arranged to be adjusted so as to conform to the varying lengths of the conveyer, substantially as set forth.

6. The combination of an endless conveyer constructed to be lengthened and shortened at pleasure, substantially as set forth, and an endless elevator, the conveyer being located to deliver material to or remove it from the elevator, substantially as described.

7. The combination of an endless elevator and an endless conveyer, each provided with a separate series of buckets or pans, the construction and arrangement being such that the conveyer is driven by power taken from a spider-shaft or equivalent revolving device of the elevator and transmitted to the conveyer, substantially as and for the purpose set forth.

8. In combination with a boat or barge, and suspended from a frame permanently secured thereto, an endless elevator and endless conveyer, each provided with a separate series of hinged buckets or pans, the conveyer being driven by power transmitted to it from the elevator, substantially as and for the purpose set forth.

9. A vertically-adjustable endless elevator mounted upon a turn-table, in combination with an endless conveyer, substantially as and for the purpose set forth.

10. A laterally-adjustable endless elevator provided with wheels upon its foot, substantially as and for the purpose set forth.

11. In combination with an endless elevator and endless conveyer, a chute having its receiving end located below the top of the elevator and its delivering end over the receiving end of the conveyer, so that the contents of the inverted buckets of the elevator is received upon and transferred by the chute to the pans of the conveyer, substantially as described.

12. In combination with an endless elevator and endless conveyer, an adjustable chute, S', connected with the delivery end of the conveyer and suspended from the frame of the barge or boat, substantially as and for the purpose described.

13. An endless conveyer, in combination with scales for weighing, located at the delivery end of the conveyer, substantially as set forth.

14. The combination of a shoveler and endless conveyer to deliver the material to a main elevator, and a main elevator laterally adjustable in the direction of the shoveler, substantially as and for the purpose set forth.

15. The combination of a shoveler, an endless conveyer located between the shoveler and main elevator, a main elevator and a conveyer to remove the material from the main elevator, substantially as set forth.

16. The combination of the receiver J with an endless conveyer and the foot of an endless elevator, substantially as and for the purpose set forth.

17. In combination with a wheeled platform, a vertically-adjustable elevator and a vertically-adjustable conveyer, each provided with an endless series of buckets or pans, and so arranged that the conveyer is driven by power transmitted from the elevator, substantially as and for the purpose set forth.

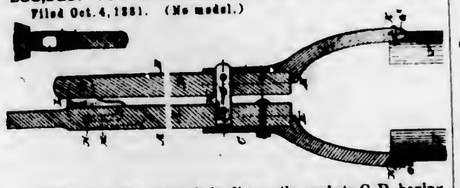
18. The combination of the sword-plates 15 with the conveyer-frame for adjusting the chute 15', as set forth.

19. A chute, 16, provided with a hinged door, 18, for varying the delivery length of the chute, as set forth.

20. The combination of main and cross conveyers, each provided with a separate series of hinged pans, the arrangement and connection being such that the cross-conveyers are driven by power transmitted from the main conveyer, substantially as and for the purpose described.

21. The combination of the wheels 30, 29, 27, and 28, as described and shown.

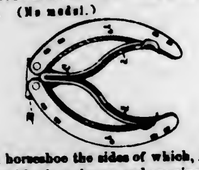
253,929. POST-HOLE DIGGER. JOHN LEA, Mansfield, Ohio. Filed Oct. 4, 1881. (No model.)



Claim.—1. In a post-hole digger, the sockets C D, having shoulders E E, and provided respectively with a laterally-projecting arm, G, and a slot, H, in combination with the handle A and lever B, arranged and operating as herein described, for the purpose set forth.

2. In a post-hole digger, the combination of the handle A, secured to socket C, having laterally-projecting arm G, the handle B, pivoted to said arm, and the cam-lever L, pivoted to handle B, and having an angular slot, M, working upon a stud, N, of handle A, substantially as and for the purpose set forth.

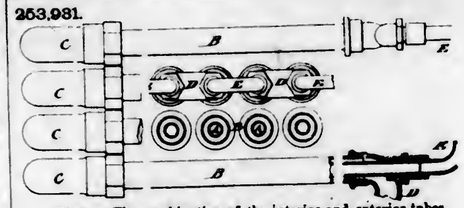
253,930. HORSESHOE. WM. LARUE, Oroville, Cal. Filed Sept. 8, 1881. (No model.)



Claim.—A horseshoe the sides of which, A A, have the nail-holes at the toe and heel, as shown, and are pivoted at their forward ends to a toe-plate, B, in combination with the spring C, the base of which rests upon the toe-plate, and its diverging arms a a press against the inner rear edges of the sides A A, substantially as and for the purpose herein described.

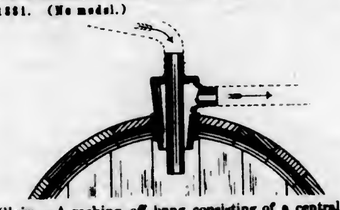
253,931. APPARATUS FOR SUPERHEATING STEAM. RICHARD LEHMANN, Dresden, Saxony, Germany. Filed Nov. 14, 1881. (No model.) Patented in Germany Sept. 4, 1880, in Austria Oct. 8, 1880, and in Hungary Oct. 6, 1880.

253,931.



Claim.—The combination of the interior and exterior tubes, A and B, closed end portions, C, attached to tubes B and extending into the furnace, couplings D, connecting the tubes B, and couplings E, connecting the tubes A, the latter being arranged outside of the furnace, substantially as specified.

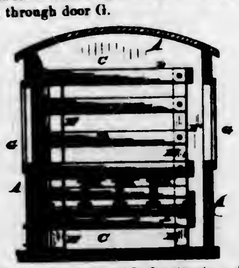
253,932. RACKING-BUNG. JOHN S. LIPPS, deceased, (Algernon S. Sullivan, Administrator,) New York, N. Y. Filed June 3, 1881. (No model.)



Claim.—A racking-off bung consisting of a central supply-tube connected with a rubber tube and surrounded by a conically-tapering exterior tube, which latter is connected to the central tube below its upper end, and closed at the top, but open at the bottom, and of a lateral discharge-tube connected to the exterior tube, substantially as described.

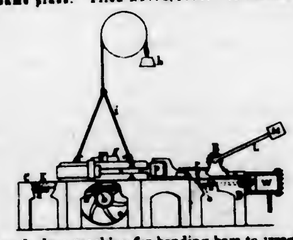
253,933. REFRIGERATOR-CAR. HIRAM MCCRAY, Kendallville, Ind., assignor to himself, Elmer McCray, same place, and John Reynolds, Union City, Ind. Filed Dec. 1, 1881. (No model.)

Brief.—Sets ice-bunker in the end of car and fills from outside as required through door G.



Claim.—The combination, with the structure A, having partitions B, with spaces or air-passages C at the top and bottom, and doors G, of the ice-boxes D, arranged as herein described, and having open ends F, substantially as set forth.

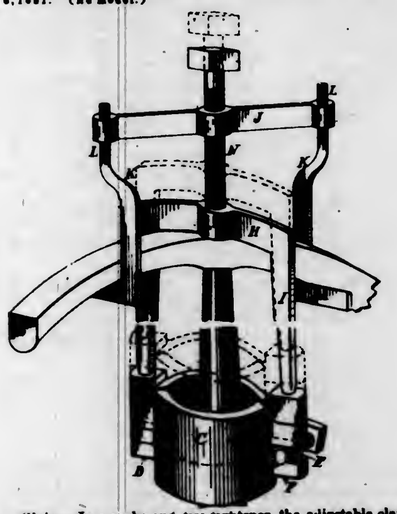
253,934. BENDING-MACHINE. JOHN MCDOWELL, Chicago, Ill., assignor to the Union Foundry and Pullman Car Wheel Works, same place. Filed Nov. 4, 1881. (No model.)



Claim.—1. In a machine for bending bars to irregular form, a table having an opening in its top, a revolving bed loosely seated in said opening, with pattern-dies of irregular form attached to said bed and rotating therewith, substantially as shown, in combination with an anti-friction roller which, by a yielding pressure against the bar, shall shape it to the form of the pattern, substantially as and for the purpose set forth.

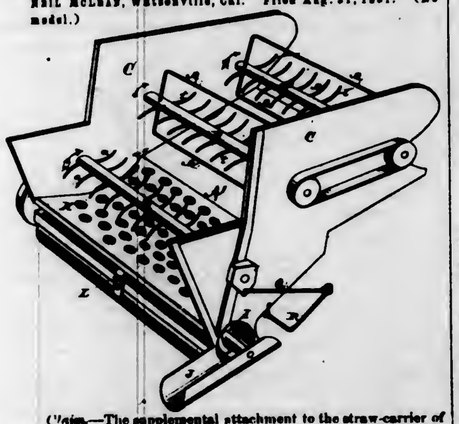
2. In a bending-machine, the dies A B, constructed in parts, the part A constructed with an offset or smaller sectional part, c, whereby a recess or groove is formed, the sectional part c forming the bottom of the recess or groove, as shown, and with post f and key g, substantially as and for the purpose set forth.

253,935. TIRE-TIGHTENER. JOHN T. MCELHANEY, Atlanta, Ga., assignor to William R. Christian, Milan, Tenn. Filed Oct. 6, 1881. (No model.)



Claim.—In a spoke and tire tightener, the adjustable clamp C C', in the upper side of which are loosely socketed the legs I I, projecting downward from the frame H over the felly, in combination with the threaded bolt N, passing centrally through a cross-bar, J, and socketed in the cross-frame H, and carrying at each end a screw-threaded arm, K, having at the lower end a hook, M, to be placed under the felly, substantially as and for the purpose herein set forth.

253,936. GRAIN-SAVING ATTACHMENT FOR SEPARATORS. NEIL MCLEAN, Watsonville, Cal. Filed Aug. 31, 1881. (No model.)

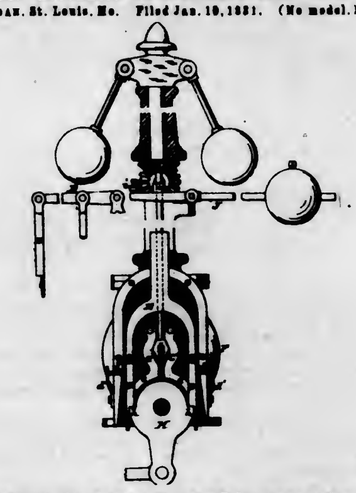


Claim.—The supplemental attachment to the straw-carrier of a grain-separator, consisting of the spout formed by side boards, C C, having the inclined floor A', and revolving shafts B B', provided with fingers *t t*, and reels A A, the screw-conveyer I, spout J, perforated screen K, and revolving shaft M, provided with fingers *a a*, all constructed, arranged, and operated as set forth.

253,937. BATH FOR TREATING METALS. JOHN MESSENGER, Etna, Pa. Filed Dec. 22, 1881. (No specimens.)

Claim.—A bath for treating cast-iron or malleable cast-iron, composed of Jamestown weed, apples, turnips, and water, substantially in the proportions and for the purposes specified.

253,938. AUTOMATIC CUT-OFF-VALVE GEAR. JOHN W. MENDAM, St. Louis, Mo. Filed Jan. 10, 1881. (No model.)

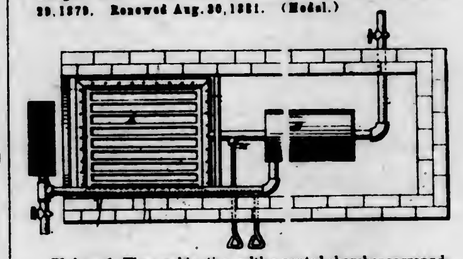


Claim.—1. In an automatic cut-off for steam-engines, the governor-stem a, provided with a wedge-block, B, in combination with the adjusting-links C and adjustable links D, connected to the valve or valves of an engine and operated by a rock-arm, H, substantially as described, and for the purpose set forth.

2. The combination of the plug-valve *f*', constructed and arranged, as shown, with the governor-valve F, having seats *f f*', all as herein described, and for the purpose set forth.

3. The bracket I, pivoted to the governor-frame and provided with a bearing-bar, *i*, in combination with the counterbalance rod and weight, as described, and for the purpose set forth.

253,939. FURNACE. NATHAN L. NEWCOMB, Cleveland, Ohio, assignor to himself and John Pollock, same place. Filed Aug. 29, 1879. Renewed Aug. 30, 1881. (Model.)



Claim.—1. The combination, with a vented chamber surrounding the fire-space, a rear heater, and a pipe connecting said chamber and heater, of a forward heater communicating with the exit-flue, and a pipe connecting said rear and forward heaters, substantially as set forth.

2. The combination, with a vented chamber surrounding the fire-space, a rear heater, and a pipe provided with a valve which controls communication between said heater and chamber, of a forward heater connecting with the exit-flue, and a pipe provided with a valve which controls communication between said two heaters, substantially as set forth.

3. The combination, with a vented chamber surrounding the fire-space, a rear heater, and a pipe having a valve which controls communication between said heater and chamber, of a forward heater connecting with the exit-flue, a pipe having a valve which controls communication between the two said heaters, and a pipe provided with a valve which controls communication of said forward heater direct with the open air, substantially as set forth.

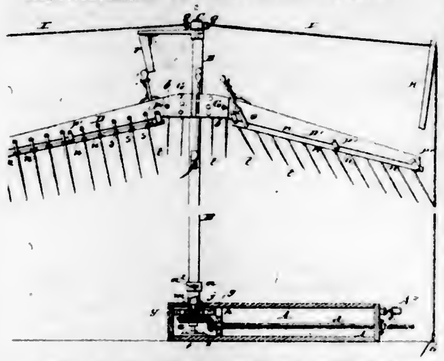
253,940. STACKER FOR HAY AND STRAW. NATHAN NEW-

circuit, of the movable contact-plates *b'* and *b''*, connected with the main-line wires, contact-strip *b''*, connected with the short circuit

253,945.

253,948.

253,940. STACKER FOR HAY AND STRAW. NATHAN NEWSOM, Columbus, Ind. Filed Aug. 29, 1881. (No model.)



Claim.—1. In a stacking-machine, the combination, with a gear-box provided with suitable gear, of a stacking-shaft actuated by said gear, substantially as and for the purpose set forth.

2. In a stacking-machine, the combination of the stacking-shaft, a rake-head vertically adjustable on the shaft and having four openings equidistant from each other, and rake-arms adjustably secured to the rake-head, substantially as and for the purpose set forth.

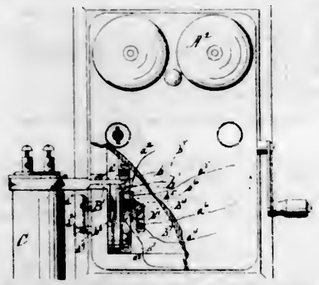
3. In a stacking-machine, the combination of a shaft, B, a rake-head, the rake-arms adjustably secured to said head and provided with teeth, and an adjustable bar provided with teeth-guides, substantially as and for the purpose set forth.

4. In a stacking-machine, the combination, with actuating mechanism for operating the vertical stacking-shaft B, of the inclined or wedge-shaped box A, inclosing said mechanism, and provided with a hook, A^1, for withdrawing the box from under the stack when completed, substantially as set forth.

5. In a stacking-machine, the combination, with the stacking-shaft B and socket *m*, of the shaft *j*, toe-rest *f*, and bevel-gear *k c*, substantially as set forth.

253,941. AUTOMATIC SWITCH FOR TELEPHONES. JOHN B. ODELL, Chicago, Ill. Filed Aug. 8, 1881. (No model.)

Brief.—The telephone-support consists of a pair of yoke-shaped jaws, one of which is pivoted and provided with an arm which controls spring-contacts whereby the circuit is closed through the bell when the telephone is in the support and through the telephone and microphone when the telephone is taken from its support. A switch which serves to connect the line on either side of the station through the telephone to ground is automatically operated to cut the ground-line by the restoration of the telephone to its support.



Claim.—1. The combination, with the spring switch-bar provided with two insulated contact-plates, of two movable contact-plates and contact-strip b^{11}, arranged and adapted, substantially as described, so that when said switch-bar is moved to make connection between said insulated and said movable contact-plates the connection between said movable contact-plates will be broken and connection made between one of said movable contact-plates and contact-strip b^{11}, substantially as specified.

2. The combination, with spring switch-bar provided with insulated contact-plates b^1 and b^2, connected with the local telephonic circuit, of the movable contact-plates b^3 and b^4, connected with the main-line wires, contact-strip b^{11}, connected with the short circuit for shunting the ringer, and a pair of pivoted yoke-shaped jaws for holding the telephone, one of said jaws being provided with an arm for operating the switch-bar, substantially as specified.

3. The means of cutting out either of the line-wires for the purpose of holding secret communication over the other line-wire, consisting in the combination of pivoted contact-maker *d*, spring-strips b^9 b^{10}, connected with the line-wires, crank d^6, and stops d^7 d^8, connected with the ground, whereby, when either of said spring-strips b^9 or b^{10} are in connection with the telephone, the other line-wire may be grounded by turning said crank to the right or left until it comes in contact with the stop d^7 or d^8, and whereby, when the telephone is not in such connection, the contact between said crank and the stop d^7 or d^8 is automatically broken and both lines put in communication with the ringer, substantially as set forth.

253,942. POCKET COAT-HOOK. ROBERT ODDERDORN, New York, N. Y. Filed Dec. 31, 1881. (No model.)



Claim.—The combination, with a main outer slotted hook, of an inner hook or bolt pivoted thereto to close and fold completely therein and be guarded thereby, substantially in the manner and for the purpose herein set forth.

253,943. HOD-ELEVATOR. JESSE POWERS, Chicago, Ill., assignor to John H. Edelmeyer and William C. Morgan, both of New York, N. Y. Filed Jan. 11, 1882. (No model.)

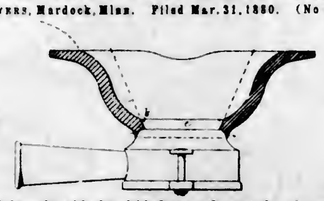


Claim.—1. In a hod-elevator apparatus, the combination, with links of the chain A, of the brackets B, arranged in pairs upon the links, and carrying the hooks *b'*, whereby a hod provided with the studs *c* projecting from the sides of the hod-bowl will engage said hooks, as and for the purpose specified.

2. In a hod-elevator apparatus, the hod C, having the laterally-projecting studs *c* upon the exterior of the sides of the hod-bowl, whereby the hod may be hung upon brackets B on the elevating-chain, as and for the purpose specified.

3. In a hod-elevator apparatus, the hod C, in combination with the saddle D, composed of the seat *d*, and the upwardly and outwardly extending arms d', carrying the studs *c*, whereby the hod may be hung upon brackets B on the elevating-chain, as and for the purpose specified.

253,944. FIRE-POT FOR BLACKSMITHS' FORGES. JOHN POWERS, Mardock, Minn. Filed Mar. 31, 1880. (No model.)

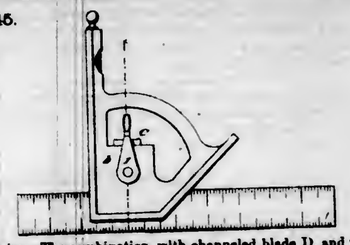


Claim.—In a blacksmith's forge, a fire-pot therefor made separate from the tuyere, and constructed with a central opening, *c*, having a wall, *b*, directing the blast, as described, a concave wall, *d*, to the pot, diverging from the top of the wall of central opening, *c*, and a recess, *e*, about and below the opening *c*, so as to adapt the pot to be snugly fitted to the tuyere, all substantially as and for the purpose set forth.

253,945. CLAMP FOR TRY-SQUARE BLADES. FRANCIS H. RICHARDS, Springfield, Mass., assignor to Elwin R. Hyde and Clarence L. Hyde, same place. Filed June 23, 1881. (No model.)

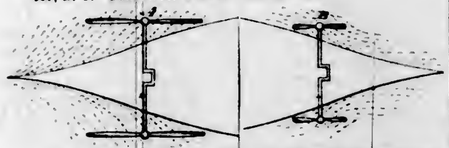


253,945.



Claim.—The combination, with channeled blade D, and with a stock provided with a recess to receive the blade, and with a socket, V, having the incline *d'* to seat the clamp-jaw and direct its movement by means of said incline, of jaw C, adapted to bear simultaneously upon the blade and incline, and combined with the screw H and lever I, or similar draw mechanism to cause it to follow upon the incline to clamp the blade to the stock upon two of its surfaces, substantially as shown and described.

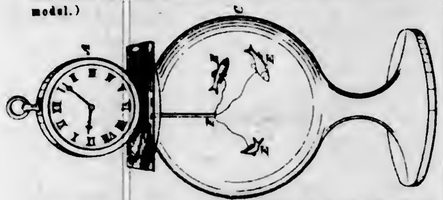
253,946. PROPULSION OF SHIPS. JOHN B. ROOT, Port Chester, N. Y. Filed Dec. 6, 1881. (No model.)



Claim.—1. In a vessel, a screw or other equivalent device arranged to move the water transversely to the line of movement of the vessel, in combination with an inclined propelling-surface of the hull for receiving the increase or decrease of pressure produced by the transverse movement of the water, such surface being inclined to or at an angle with the fore-and-aft line or line of movement of the vessel, whereby the vessel will be propelled in one direction by throwing the water transversely against such inclined surface, and will be propelled in the opposite direction by drawing the water away from such inclined surface, substantially as described.

2. In a screw-propeller, a screw or screws working upon a shaft or axis placed at substantially right angles to the line of movement of the vessel and constructed to move the water transversely to such line of movement, in combination with an inclined propelling-surface of the hull for receiving the increase or decrease of pressure produced by the transverse movement of the water, such surface being inclined to or at an angle with the fore-and-aft line or the line of movement of the vessel, whereby the vessel will be propelled in one direction by throwing the water transversely against such inclined surface and in the opposite direction by drawing the water away from such inclined surface, substantially as described.

253,947. ORNAMENTAL ATTACHMENT FOR CLOCKS. AARON C. SANFORD, Winsted, assignor to Frank S. Grant, Augusta, and Frank Sackett, Winsted, Conn. Filed July 21, 1881. (No model.)



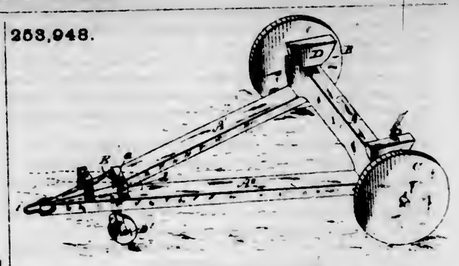
Claim.—1. The combination, with a clock, A, of the globe C, containing suspended imitation fish E, substantially as described.

2. The combination of the clock A, the globe C, the fish E, and the suspending device F, connected with the clock mechanism, substantially as described.

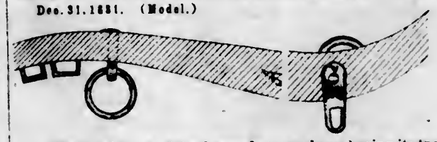
253,948. TRUCK. TOLLIE J. SCARFF, New Carlisle, Ohio. Filed Dec. 12, 1881. (No model.)

Claim.—The truck herein described, consisting of beams A A' A^2, wheels B C, bolsters D D, guide-wheel D', and staples *b c*, substantially as and for the purpose set forth.

253,948.



253,949. HAME. BENJAMIN S. SEAMAN, Corning, N. Y. Filed Dec. 31, 1881. (Model.)



Claim.—As an article of manufacture, a hame having its tug-loop secured thereto by the breast-ring eyebolt, which is passed through the hame, the diagonally-apertured branch b', and the apertured branch b^2 of said loop, and headed or riveted against said branch b^2, whereby the loop is firmly drawn and held against the hame in the finished article, substantially as shown and described.

253,950. MECHANISM FOR ROLLING FINGER-RINGS. CHAS. R. SMITH, Providence, R. I. Filed Oct. 29, 1881. (No model.)

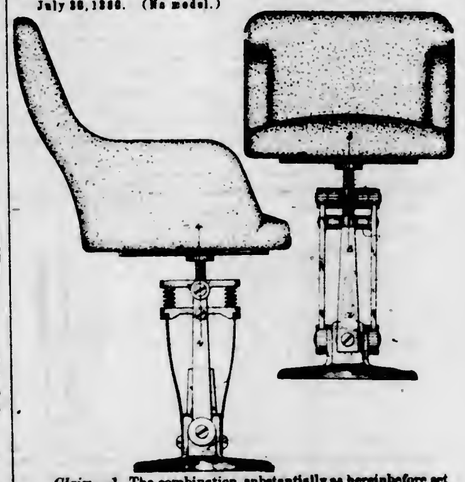


Claim.—1. The combination, with the adjustable arbor a' and roll C, of the interchangeable spools *a*, substantially as shown and described.

2. The combination of the holder B, having the collared arbor a', adjustably connected thereto, with the spool *a* and roll C, substantially as shown and described.

3. In a machine for embossing, engraving, and finishing rings, a metallic spool loosely fitted to a rigidly-supported arbor and adapted to guide the rings when in contact with the figured roll, substantially as shown and described.

253,951. CAR-SEAT. ELI T. STARR, Philadelphia, Pa. Filed July 28, 1880. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of a base, a rocking or yielding support connected with said base, a chair body or seat carried by said rocking support, and an

Claim.—1. The combination of a polarized receiver, an induc-

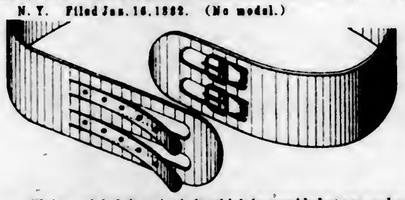
7. The combination, with an electric lamp, of two divided in-

independent rocking connection between said rocking support and said chair body or seat.

2. The combination, substantially as hereinbefore set forth, of a base, a rocking or yielding support connected with said base, a chair body or seat carried by said rocking support, and a rocking and turning connection between said support and said chair body or seat.

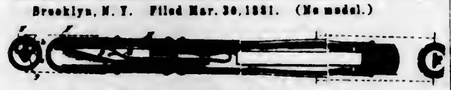
3. The combination, substantially as hereinbefore set forth, of a base, a rocking or yielding support connected with said base, the chair body or seat carried by said rocking support, and the rocking, turning, and elevating and lowering connection between said support and said chair body or seat.

253,952. WAIST-BELT. FRIEDMAN STERNBERGER, New York, N. Y. Filed Jan. 16, 1882. (No model.)



Claim.—A lady's waist-belt which is provided at one end with tongues cut from the body of the belt and at the other end with tongues cut similarly from the body of the belt, the last tongues being folded back and adapted to carry the buckles, substantially as and for the purpose set forth.

253,953. FOUNTAIN PEN-HOLDER. WILLIAM W. STEWART, Brooklyn, N. Y. Filed Mar. 30, 1881. (No model.)



Claim.—1. A holder with its interior made of vulcanite or other material, and provided, substantially as described, with capillary and glazed surfaces, whereby the capillary surfaces will cooperate with the gravity of the fluid, and the glazed surface will facilitate the movement of the entering bubbles of air.

2. A holder portions of the interior surface whereof are made dissimilar—viz., roughened and glazed—and so arranged that capillary attraction of the one and the non-capillary action of the other will be graduated with relation to each other for the purpose of regulating the flow.

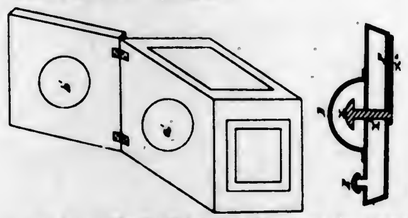
3. A permeable strand or cord arranged to be moved by the pen as a pipe to draw off the ink from the reservoir, combined with said pen and a trough or bath under the same.

4. A fountain pen-holder provided with an ink tube or gutter, *g*, and a pen, F, combined with a permeable elastic strand, *b*, at its end, secured to the point of the ink-gutter *g*, and maintained in contact with the pen by a pin, *e*, substantially as set forth.

5. In combination with a fountain-holder provided with interior smooth or glazed surfaces, a permeable fibrous covering for a part of said glazed surface, substantially as set forth.

6. A permeable strand or cord to act as a pipe to draw off the ink from the reservoir, combined with an elastic part in contact with the pen, whereby the motion of the pen will impart motion to said strand, as set forth.

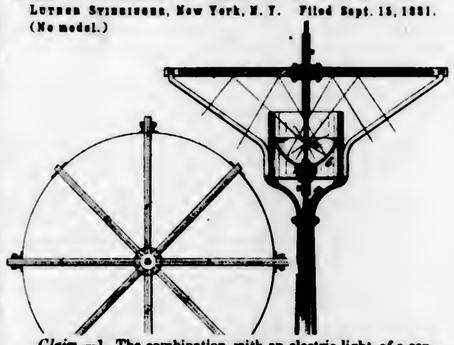
253,954. COMMODE. HENRY P. STICHTER, Pottsville, Pa. Filed Mar. 1, 1881. (No model.)



Claim.—1. In the disinfecting lid or cover for commodes herein described and constructed as shown, the combination of the receptacle fog holding a disinfecting-powder, having a partly perforated bottom at F, the perforations being covered by a sliding cover, X', which is operated by means of a stem, X', and knob X, the handle D, and screw-cap E, all substantially as set forth.

2. In the commode herein shown and described, the disinfecting lid or cover, in combination with the commode-case having a cover provided with the opening *b'*, adapted to receive the disinfecting-lid when not in use.

253,955. LANTERN FOR ELECTRIC AND OTHER LIGHTS. LUTHER STIRLINGS, New York, N. Y. Filed Sept. 15, 1881. (No model.)



Claim.—1. The combination, with an electric light, of a septum formed of an opaque substance and a closed reflector extending across above the light, substantially as set forth.

2. The combination, with an electric light, of a septum formed of an opaque substance having a reflecting-surface next the light, a closed reflector extending across above the light, and formed of slabs of porcelain or earthenware having a white enameled surface and a metallic supporting-frame, substantially as set forth.

3. The reflector formed of the grooved radial bars connected together at the center and the triangular slabs of porcelain introduced into the grooves and secured in place, as set forth.

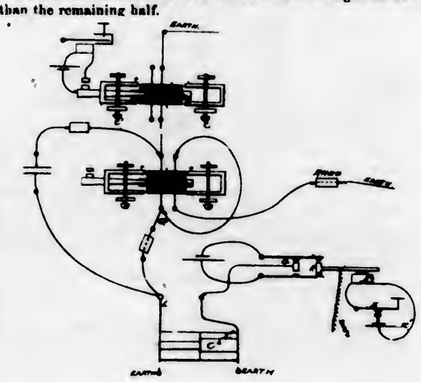
253,956. KNOB ATTACHMENT. WARREN H. TAYLOR, Stamford, Conn., assignor to the Yale Lock Manufacturing Company, same place. Filed Oct. 11, 1881. (No model.)



Claim.—The combination, with a spindle, screw-threaded shank, and screw-threaded sleeve, of a washer fitting upon and turning with the spindle and extending between the end of the sleeve and shank and the surface of the rose or thimble, substantially as and for the purpose specified.

253,957. TELEGRAPHIC APPARATUS. BENJAMIN THOMPSON and CHARLES SELDEN, Toledo, Ohio. Filed Nov. 21, 1879.

Brief.—Induced currents of alternate polarity are sent to line, which act upon delicately-balanced relays. A peculiar form of induction-coil in which one half of the core is of larger diameter than the remaining half.



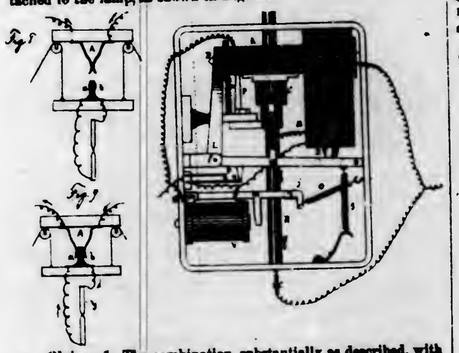
Claim.—1. The combination of a polarized receiver, an induction-coil whose secondary is connected to line, and suitable means, substantially as described, for reversing the direction of the primary current of said induction-coil without interrupting the continuity of the current, as and for the purpose set forth.

2. The combination, substantially as described, of an induction-coil whose secondary is connected to line, a primary coil in circuit with a local battery, and a continuity-preserving pole-changing key whose contact-points are in said local-battery circuit.

3. The combination of a swinging straight-bar electro-magnet and two permanent horseshoe-magnets arranged each to embrace with its poles one pole of said electro-magnet, the poles of said magnets being arranged to act as stops to the poles of the electro-magnet, and adjusting devices for adjusting the poles of the permanent and electro magnets with relation to one another.

253,958. ELECTRIC LAMP. ELIHU THOMSON, New Britain, Conn., assignor to the American Electric Company, same place. Filed Apr. 9, 1881. (No model.)

Brief.—Three electro-magnets control the carbons. One in the main or arc circuit and a second in a derived or shunt of high resistance about the lamp act upon the opposite ends of a common armature-lever to establish the arc and operate the clutch mechanism, respectively, while the third is normally shunted out of circuit by spring-contacts, which may be broken when too great a current passes through the shunt-magnet around the lamp. This third magnet is connected with devices for feeding or forcing the upper carbon forward positively when the clutch mechanism accidentally holds it. A peculiar form of electro-magnet (see Fig. 3) cuts out mechanism connected with the lamp-sustaining devices. (See Figs. 8 and 9.) A contrivance for polishing the carbon attached to the lamp, as shown in Fig. 10.



Claim.—1. The combination, substantially as described, with the regulating mechanism of an electric lamp, of an electro-magnet provided with a polar projection, conoidal or tapered in form, and an armature less in thickness than the extent of the tapered portion of said projection, substantially as and for the purpose set forth.

2. The combination, substantially as described, with the regulating mechanism of an electric lamp, of an electro-magnet provided with a conoidal or tapered projection, and a perforated armature encircling said projection and less in thickness than the extent of the tapered portion thereof, so that it may move in a field of force, where its motion results from the difference of attraction toward the body of the core, and toward the polar projection extending beyond said armature, as and for the purpose set forth.

3. The combination, with the regulating mechanism of an electric lamp, of an electro-magnet having a paraboloidal pole, and a perforated armature encircling said pole and adapted to move between the extremity of the polar projection and the body of the core, substantially as and for the purpose set forth.

4. The combination, with the regulating mechanism of an electric lamp, of an electro-magnet having a tapered pole and an armature provided with an opening whose inner edges are rounded, as shown and described.

5. In an electric-light regulator, a safety device consisting of an electro-magnet, V, armature W, pivoted in a slot, impact surface *j*, adapted to engage with the carbon-carrier, and spring *e*, substantially as described.

6. In an electric-light regulator, a safety device consisting of an electro-magnet and a pivoted and sliding armature carrying an engaging-piece to strike and impel the carbon-carrier, substantially as described.

7. The combination, with an electric lamp, of two divided insulated plates, constituting the poles of the regulator and attached to the frame of the lamp, two circuit-closing springs, as described, in permanent connection with the general circuit and fixed to the frame or support from which the lamp is hung, and means for lowering and raising the lamp into position, all combined as described, so that when the lamp is raised the springs are separated by the insulated plates, thus putting the lamp into circuit, while, when the lamp is lowered for renewal of the carbons, the springs come together and preserve the general circuit.

8. The combination, substantially as described, of the conducting carbon carrier or rod R, the arc C, lined with polishing and abrasive material, and spring F, for holding said arc normally out of contact with the rod.

253,959. SOLAR CAMERA. BENJAMIN TITCOMB, Baltimore, Md. Filed Sept. 19, 1881. (Model.)



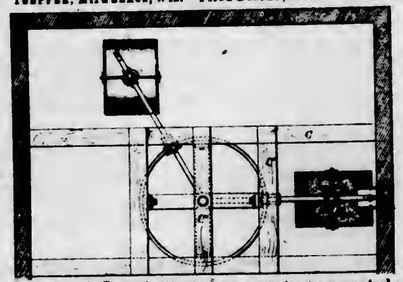
Claim.—1. In a solar camera, the adjusting-bars Q Q', for the purpose of suspending the same, constructed and arranged substantially as set forth.

2. The suspended easel V and adjustable brace Y, in combination with the skeleton-camera N N and adjustable plate A, substantially as and for the purpose set forth.

3. The shaft G and journal-boxes H H, in combination with the arms F F, toothed wheel E, mirror-brace I, adjustable arm J, joint K, and screw-rod L, arranged substantially as and for the purpose herein set forth.

4. The negative-holder S, springs T T, and latch U, in combination with the adjustable screw-rod R, arranged substantially as set forth.

253,960. GRAIN-DISTRIBUTER FOR MALT-KILNS. WRIGHT THOMPSON, Milwaukee, Wis. Filed Dec. 29, 1881. (No model.)

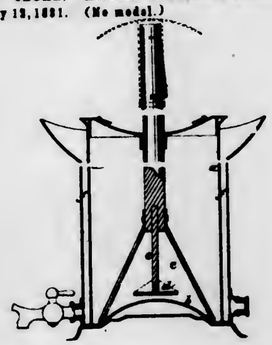


Claim.—1. In grain-distributers, arms having a central pivotal support, in combination with buckets suspended from sheaved brackets traveling thereon.

2. The combination, with pivoted arms, of supporting-brackets having sheaves that travel on a circular way.

3. The combination of circular way, a central supporting-rod, arms having brackets *g*, and brackets supported on said arms from sheaved brackets, as set forth.

253,961. CHURN. MICAGER C. WALLACE, Saulsbury, Tenn. Filed July 13, 1881. (No model.)



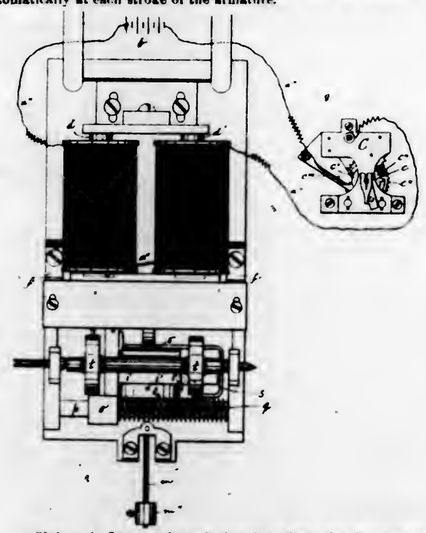
Claim.—A churn-dash consisting of the perforated conical dash-c provided with the oblique ribs *d* upon its outer surface, the

Claim.—In a watchman's time-detecter, the combination, with a clock-movement, having arbor A provided with screw B, of the

Claim.—A churn-dash consisting of the perforated conical dash *c*, provided with the oblique ribs *c'* upon its outer surface, the inner flat dash, *d*, and a spring-catch at its handle end adapted to engage with the tubular holder of an attachable strainer, *i*, as shown and described.

253,962. WATCHMAN'S ELECTRIC REGISTER. GEORGE G. WHITE, Boston, Mass. Filed Aug. 24, 1881. (No model.)

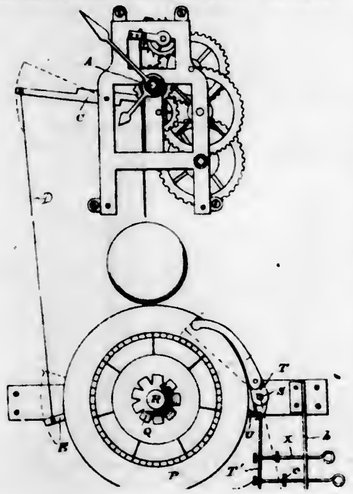
Brief.—The spring-power to operate the stylus is wound automatically at each stroke of the armature.



Claim.—1. In a watchman's electric register, the electro-magnet *a a' d d'* and movable armature *e*, and mechanism connecting it to the spring-driver *k*, by means of which the latter is wound up automatically by the attractive power of the electro-magnet, as described.

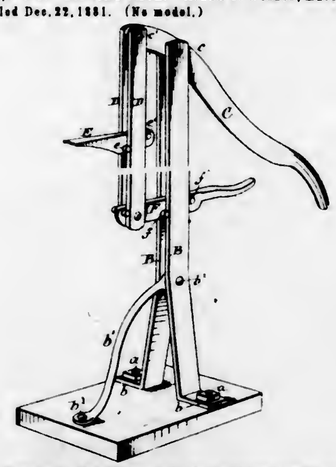
2. In a watchman's electric register, the combination of the movable armature *e*, armature-lever *e'*, winding-up lever *g*, ratchet-wheel *h*, pawls *g' g''*, spring-driver *k*, escapement *l l' l'' m m' m''*, locking and let-off lever *n n'*, projections *i' i''* on spring-case *i*, projections *l' l''* on escapement-wheel *l*, the depressing-lever *s s''*, laterally-movable stylus-bar *o*, its tooth *o'*, and spring *q*, as and for the purpose set forth.

253,963. WATCHMAN'S TIME-DETECTER. HERMAN J. WESSEL, San Francisco, Cal. Filed Sept. 30, 1881. (No model.)



Claim.—In a watchman's time-detecter, the combination, with a clock-movement having arbor A, provided with cams B, of the levers C and E, connected by rod D, ratchet G, having pinion H, pawls K L, adapted to engage with said ratchet, spur-wheel I, meshing with said pinion, and provided with bearing O, rotating disk P, clamped to bearing O, and registering-lever T, provided with suitable mechanism for holding a pencil in contact with the rotating disk, substantially as shown and described.

253,964. LIFTING-JACK. HIRAM J. WILSON, Mason, Mich. Filed Dec. 22, 1881. (No model.)

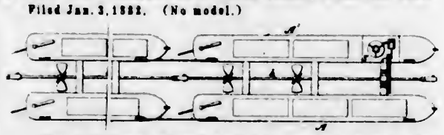


Claim.—1. In a lifting-jack, the combination of a slotted upright, a slotted link, an operating-lever, and a supporting-bar and a catch-bar, each of the latter provided with pins adapted to bind upon the front and back edges of their respective coacting members, substantially as shown and described.

2. The combination of the parallel upright straps B B, bound laterally at *b'* against the brace *b'* between them, the handle C, pivotally secured therein at *c*, and pivotally secured between two links, D D, the supporting-bar E, provided with the pins *e e'*, and means, substantially as shown and described, for securing said links in desired positions, substantially as and for the purpose set forth.

3. In a lifting-jack, the combination of links D D, supporting-bar E, provided with pins *e e'*, and catch-bar F, provided with pins *f f'*, substantially as shown and described.

253,965. CANAL-BOAT. JACOB BAKER, Greenville, Ohio. Filed Jan. 3, 1882. (No model.)



Claim.—1. The combination of the connected sections A A' and the shaft *h*, extended to the ends of the boat and provided with couplings for connecting the same to the shafts of other boats, substantially as specified.

2. The combination of a series of boats, each having a longitudinal propeller-shaft coupled detachably to the shafts of the contiguous boats in the same line, and a driving-engine arranged upon one of the boats and propelling all the shafts, substantially as specified.

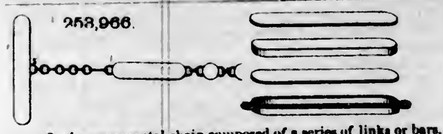
253,966. ORNAMENTAL CHAIN. ROBERT BARKER, East Attleborough, Mass. Filed Nov. 25, 1881. (No model.)

Brief.—The central blank is of cheap metal. A band of gold covers the sides of the blank and side pieces of gold cover its edges.

Claim.—1. An ornamental chain-link or other equivalent article of jewelry composed of a blank of cheap metal, a band of gold or gold plate covering the edges of the blank, and plates of gold covering the sides of the plate, as set forth.

2. An ornamental chain-link or other equivalent article of jewelry composed of a blank of cheap metal, a band of gold plate covering the edges of the blank, and plates of gold covering the sides of the plate and the edges of the band, as set forth.

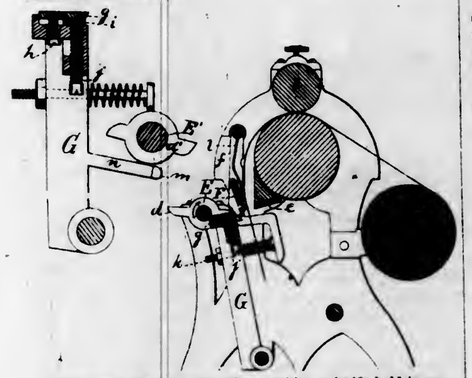
253,966.



3. An ornamental chain composed of a series of links or bars, each composed of a blank of cheap metal, a band of gold plate covering the edges of the blank, and provided with rigidly-attached eyes, gold plates covering the sides of the blank and the edges of the band, and ordinary links connecting the links or bars, substantially as shown and described.

253,967. MACHINE FOR CUTTING PAPER. ROBERT BIRRS, South Windham, Conn. Filed Apr. 30, 1881. (No model.)

Brief.—The lower cutting-blade is attached to a swinging frame and rests upon an adjustable elastic cushion that allows the blade to yield sufficiently to insure its proper contact with the stationary blade. The swinging frame carries pressure-rods that force the clamp-bar against the paper, which rods are provided with springs that allow them to yield when the paper is clamped, so that the blade can finish its cut. The swinging cutter-frame is actuated by a cam-shaft.



Claim.—1. In a paper-cutting machine, a knife held in contact with an elastic cushion between said knife and its bed by means of screws loosely connected to said bed, the cushion being located at a point nearer the cutting-edge of the blade than are the holding-screws, whereby the blade may rock so as to tip its side edges, substantially as described, and for the purpose specified.

2. The combination of a pair of shear-blades, *e g*, the bed for supporting the broad side of the blade *g*, the elastic cushion *i*, against which the broad side of the blade rests, the set of screws *h*, for holding the broad side of the blade in contact with said cushion, but loosely connected to the bed, so that the blade may rock and tip its side edges, and the set of adjusting-screws *j*, for acting upon the cushion near the cutting-edge of the blade *g*, substantially as described, and for the purpose specified.

3. The combination of the main frame bearing the fixed blade, the frame G, carrying the movable blade, the pressure-rod mounted in the frame G, the spring mounted on said pressure-rod, the arms *f*, and clamp-bar F, mounted on said arms, substantially as described, and for the purpose specified.

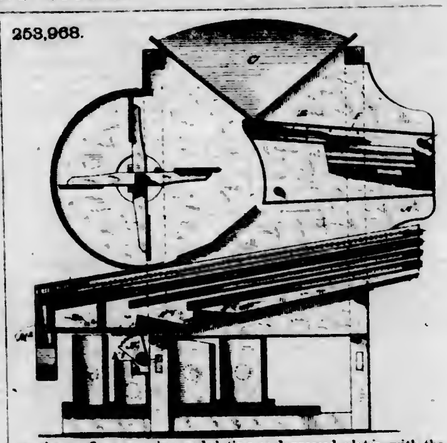
4. The combination of the main frame bearing the fixed blade *e*, the frame G, bearing the blade *g* and carrying it edgewise by the fixed blade with their broad sides toward each other, the bed on the frame G, which the broad side of the blade *g* faces, and the elastic cushion interposed between said bed and broad side of the blade, substantially as described, and for the purpose specified.

5. The combination of the continuously-acting feed-rollers, the fixed shear-blade *e*, frame G, blade *g*, and spring pressure-rod *k*, mounted on said frame, the arms *f*, clamp-bar F, mounted on said arms, and the cam-shaft E, bearing cam *d*, for acting upon the frame G.

253,968. PARKING-MILL. FRANCIS M. RUSSELL, Coldwater, Mich., assignor of one-half to John Stearns and Andrew J. McGowan, same place. Filed July 20, 1881. (No model.)

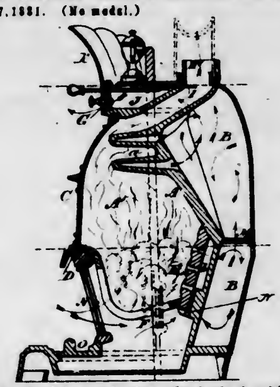
Claim.—In a fanning-mill, the combination of the shaking-shoe having a series of inclined sieves, and a horizontal bottom section or floor provided with rack-plates, and an upper inclined

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section or floor carrying undulating or depressed plates, with the rock-shaft provided with spur-segments engaging with the rack-plates, and the mill-casing having rollers engaging with the depressed plates, as and for the purpose herein set forth.

253,969. HEATER. PHILIP BERCHER, Louisville, Ky. Filed Sept. 17, 1881. (No model.)



Claim.—1. A heater having a fire-back, A, with hollow air-circulating chambers projecting into the fire-chamber formed by the walls of the teats *a*, and communicating with a hot-air chamber in rear of said plate A, substantially as described.

2. The combination, in a heater, of a fire-back, A, with hollow projections or teats *a*, arranged staggering, the two hot-air chambers in rear of said plate, and a reticulated or air-jet diaphragm between said chambers, substantially as described.

3. A heater having a fire-back, A, provided with hollow projections or teats *a*, an air-space, B, divided by a numerously-perforated diaphragm, M, in combination with the lower perforated fire-back, E, air-space *b*, passage N', leading into this space, and the registers F N, substantially as described.

4. The combination of a fire-box, A', an inclined back, A, provided with hollow projections *a*, arranged staggering, a divided air-space, B, a lower perforated fire-back, E, an air-space, *b*, passage N', registers F G N, heating-chamber J, damper I, flues H H', doors G, and a deflector or hood, K, all arranged substantially as described.

5. In a heater, the combustion-chamber provided with an ordinary grate, having a fire back or wall, A, with a series of hollow pins or conical teats, *a*, cast thereon, which project into said combustion-chamber or fire-box, in combination with the upwardly and backwardly directed flue L, substantially as described, and for the purposes specified.

6. In a heater, the combustion-chamber A', having a fire back or wall, A, provided with hollow pins or conical teats *a*, cast thereon, which project into and nearly across the fire-box, arranged in two or more rows in a staggering manner, as shown and described, and for the purposes specified.

7. In a heater, a combustion-chamber having a fire back or wall, A, provided with hollow pins or conical teats *a*, arranged in two or more rows in a staggering manner, whose outer surfaces project into and nearly across the fire-box, and whose inner surfaces or hollows lead into and form part of the air-chambers B in rear of the same, substantially as shown and described, and for the purposes specified.

8. In a heater, a combustion-chamber with a fire back or wall, A, provided with hollow pins or conical teats *a*, arranged in two or more rows staggering, in combination with a divided air-space, B, in rear of said wall, the said air-space being divided by a reticulated or numerously-perforated diaphragm, M, into two compartments, substantially as described, and for the purposes specified.

9. In a heater, a combustion-chamber having a fire back or wall, A, provided with hollow pins or conical teats *a*, arranged in two or more rows staggering, and an air-chamber, B, divided into two compartments by the reticulated or numerously-perforated diaphragm M, in combination with the registers F N, substantially as described, and for the purposes specified.

10. In a heater consisting of a combustion-chamber having a fire back or wall provided with hollow pins or conical teats *a*, arranged in two or more rows in a staggering manner, whose outer surfaces project into and nearly across the fire-box, and whose inner surfaces or hollows lead into and form part of the air-chamber B, which is divided by the perforated diaphragm M, the registers F N, in combination with the vents H H, dampers I I, hot-air flue L, smoke-flue H', air-space J, register G, and heat and dust deflector K, all arranged in the manner shown and described, and for the purposes specified.

11. In a heater, the combination of the combustion-chamber A', having a fire back or wall, A, provided with hollow pins or conical teats *a*, cast thereon, arranged in two or more rows in a staggering manner, whose outer surfaces project into and nearly across the fire-box, and whose inner surfaces or hollows lead into and form part of the divided air-chamber B, which is divided by a reticulated or numerously-perforated diaphragm, M, the registers F N, vents H, dampers I, arch and main hot-air flue L, smoke-flue H', air-space J, register G, hood or deflector K, and doors C, all arranged substantially as described, and for the purposes specified.

253,970. HAND CORN-HUSKER. ALEXANDER W. BRINKERHOFF, Upper Sandusky, Ohio. Filed Oct. 10, 1881. (Model.)



Claim.—In a corn-husking implement, the combination, with the section A, provided with the spur *c*, curved guard *c'*, and lips and grooves *a a* and *b b*, of the section B, having the curved guard and the lips *c c*, substantially as specified.

253,971. FERTILIZER. ISAAC BROWN, Elm Croft Grange, Edinburgh, Scotland. Filed Nov. 21, 1881. (No specimens.) Patented in England Nov. 16, 1878.

Claim.—As a manure or ingredient of manure, the product herein denominated "supersulphate," said product consisting of a solid mixture of sulphuric acid and gypsum, peat, or equivalent medium, substantially as described.

253,972. GLOVE. REMUS D. BURR, Kingsborough, N. Y. Filed Dec. 19, 1881. (No model.)



Claim.—1. In a glove or gauntlet, the combination of a palm-section having the inner portion of the first and third fingers integral therewith, and the separate inside portions of the second and little fingers seamed at their bases to the palm-section, substantially as described.

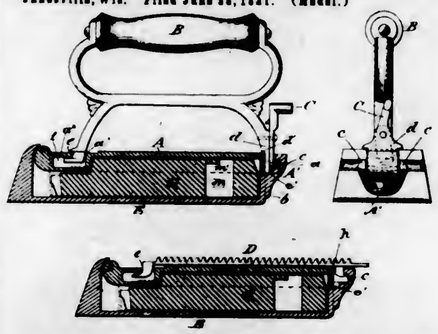
2. In a glove or gauntlet, the combination of a palm-section having the inner and side portions of the first and third fingers integral therewith, and the separate inside and side portions of the second and little fingers seamed at their bases to the palm-section, substantially as described.

3. In a glove, gauntlet, or mitten, the combination of a palm-section having a thumb-opening provided with a curved open slot at its upper end, and also with an inward angular projection adjacent to said slot, with a thumb-section provided with an angular projection and a concaved edge, substantially as described.

4. In a glove or gauntlet having inside finger and side sections seamed to the palm-section at their bases, the reversely curved or concaved coincident edges *b'*, substantially as described, whereby when said edges are stitched together the seam is relieved from strain at the ends or corners thereof, as set forth.

5. A glove or mitten having two side openings at the wrist, and a back wrist-piece overlapping said openings and secured by suitable fastenings to a front wrist-piece, substantially as described.

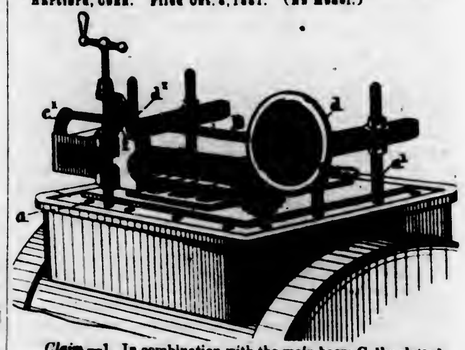
253,973. COMBINED SAD-IRON AND FLUTER. IRA I. BURR, Janesville, Wis. Filed June 25, 1881. (Model.)



Claim.—1. The combination, with the body E, provided with the heel A', the latter being constructed substantially as shown, and the cover A, hinged to the said body E, and provided with the recess *f* and projecting lip *a²*, of the fluting-plate D, adapted to be secured to the said cover when the handle is removed, and provided at its front end with the toe *e*, adapted to fit under the lip *a²*, and at its rear end with the depending flange h, adapted to occupy the space formerly occupied by the shank *d*, substantially as set forth.

2. The combination, with the body E, constructed substantially as described, and having the cover A hinged thereto, the latter being provided with the cavity *f* and lip *a²* and arm *e*, of the handle B, the front shank of which is provided with a toe having two lips, which fit respectively above and below the said lip *a²*, while the rear shank is adapted to rest between the said arms *e*, and is provided with a pawl, C, having a catch, *a*, on its lower end, adapted to move in a semicircular groove in the heel A', and a shoulder, *d'*, formed integral with the shank *d*, and adapted to bear on the cover A and prevent it from being raised when the handle is in position, substantially as set forth.

253,974. MILLING-MACHINE. ALEXANDER E. CAMPBELL, Hartford, Conn. Filed Oct. 6, 1881. (No model.)



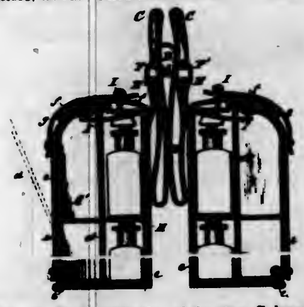
Claim.—1. In combination with the main beam C, the slotted arms B B and the independent threaded standards *a' a'*, the construction being such that adjustment to chests of different sizes may be made either in a vertical, lateral, or longitudinal direction, according to the necessities of the case.

2. In combination with the beam C, having the projection *c*, the slotted arms B B, having a recess corresponding to said projection, as described.

3. In combination with the beam C and the mechanism, substantially as described, for securing the beam to any desired base, the tool-carrier E and the feed-shaft J, for actuating the same.

4. The milling-machine described, having the standards *a' a'*, the slotted arms B B, the main beam C, the main shaft D, with gearing *d²*, the tool-carrier E, with gearing, and the feed-shaft J, as described.

253,975. MEDICAL SADDLE-BAGS. GEORGE H. CARPENTER, Moorefield, W. Va. Filed Mar. 21, 1881. (No model.)



Claim.—1. The combination of the strap C, loops F F', and catch or hook G with the pouches A A and saddle-piece B, having devices for attachment of the strap, as shown and described.

2. The improved saddle-bags, consisting of the pouches formed of the self-supporting part A, having lateral wings *c c*, and the folding part A', which is hinged at its lower edge to part A, so as to fold between its wings, and the seat-piece B, which connects the pouches, as shown and described.

3. The combination, with the pouches A A' and seat-piece B, of the rods or pintles E, by which said parts are jointed together, as and for the purpose specified.

253,976. GATE-LATCH. GEORGE E. CHANDLER, Jacksonburg, Ind. Filed Aug. 29, 1881. (No model.)



Claim.—1. The combination of the latch-lever *l*, extending nearly the entire length of the gate, provided with a notch at the rear end and a cross-bar handle, *d*, at the front end, and pivoted to the gate by the bolt *o* nearly midway the length of both lever and gate, with the staple *r* and catch *c*, adapted to strengthen the gate itself and to prevent sagging, substantially as described.

2. The catch *c*, fixed in the hinge-post and extending toward the front end parallel with the gate when closed, and having a shoulder, *n*, running across the same diagonally, in combination with the lever *l*, adapted to secure an easy and sure latching of the gate and to prevent unlatching in any other manner than by raising the latch end of the lever, substantially as described.

253,977. CARBON TELEPHONE-TRANSMITTER. GEORGE D. CLARKE, Chicago, Ill. Filed Oct. 16, 1880. (No model.) Patented in England Nov. 29, 1878.

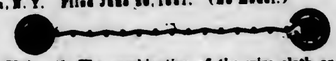


Claim.—An elastic support for the carbon button, which consists in the combination of the bed-piece with ball I, spring-clamp M, yielding bar K, and means for adjusting said bar, substantially as shown and described.

253,978. PAINT FOR ROOFING, &c. GEO. J. CLINE, Goshen, Ind. Filed Nov. 16, 1881. (No specimens.)

Claim.—The water-proof paint herein described, consisting of coal-tar, silicate of soda, alkali, and water-lime, with asphaltum, compounded in the proportions and manner set forth.

253,979. WIRE SCREEN-WORK. ARTHUR COLLINS, Brooklyn, N. Y. Filed June 30, 1881. (No model.)



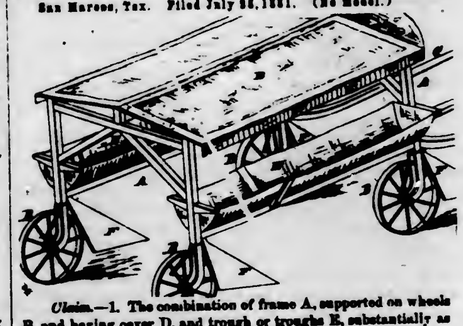
Claim.—1. The combination of the wire cloth or net-work and the split tubing or slotted tubes surrounding the net-work and firmly compressed upon the edges of the net-work to constitute the outer framing or support for the net-work, substantially as and for the purpose hereinbefore set forth.

2. The combination of the wire cloth or net-work and the double frame completely surrounding it, and consisting of the wire or light internal frame and the outer or split tubing frame firmly compressed thereon, substantially as and for the purpose hereinbefore set forth.

3. The combination of the wire cloth or net-work, the split tubing, and the braces, the net-work and braces being clamped in the tubing, substantially as and for the purpose hereinbefore set forth.

4. The combination of the framed wire net-work, the swinging hook E, the movable disks or plates to which the hook is jointed, and the set-screws or pinch-nuts, whereby the guard-supporting hook may be adjusted in the openings or meshes of the net-work, substantially as and for the purpose hereinbefore set forth.

253,980. COTTON-PICKER'S WAGON. CHARLES P. COLLINS, San Marcos, Tex. Filed July 26, 1881. (No model.)



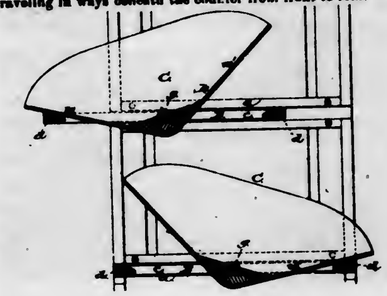
Claim.—1. The combination of frame A, supported on wheels B, and having cover D, and trough or troughs E, substantially as set forth.

2. The cotton-picker's wagon consisting of frame A, wheels B, cover D, trough or troughs E, and shafts C.

3. The cotton-picker's wagon consisting of frame A, wheels B, cover D, trough or troughs E, and separator F, as set forth.

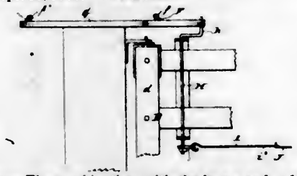
253,981. STORE-COUNTER. WILLIAM J. CONRAD, Gainesville, Tex. Filed Nov. 26, 1881. (No model.)

Brief.—Tilting angular boxes are mounted in sliding frames traveling in ways beneath the counter from front to rear.



Claim.—The store-counter described, having the horizontal slideways *a*, extending from front to rear, the rectangular slide-frames B, having the central pivot-rods, *g*, and the end rests, *d*, and the symmetrical angular boxes C, pivoted by their angular portion to said rods of the slide-frames and reversible therein, substantially as specified.

253,982. GATE. JOHN F. COPPOCK, West Newton, Ind., assignor of one-half to Tertius A. Hill, Pleasant Plain, Iowa. Filed Sept. 21, 1881. (No model.)



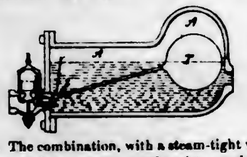
Claim.—The combination, with the levers and rods for operating a gate, of the crank-lever H, having arms h' h' upon one end thereof, and rods I I', having loops i' i' upon their ends, which engage with the latch-rod J, whereby, when the lever H is turned in either direction, the latch will be withdrawn from the catch, substantially as shown and described, and for the purposes specified.

253,983. COMPOUND FOR PRESERVING FOOD. THEODORE L. CORWIN, Marathon, N. Y. Filed Jan. 9, 1882. (Specimens.)

Brief.—Consists of a mixture of potassium nitrate, salicylic acid, and sodium chloride, each one ounce, in powder, dissolved in one quart of boiling water, to which is afterward added one dram of hydrochloric acid diluted with one ounce of water.

Claim.—The above-described combination or compound of nitrate of potassium, salicylic acid, chloride of sodium, hydrochloric acid, and water in the proportions before stated, for the use and purpose herein set forth.

253,984. STEAM-TRAP. NELSON CURTIS, Newton, Mass. Filed Dec. 14, 1881. (No model.)



Claim.—1. The combination, with a steam-tight water-chamber, of a discharge pipe or passage and a piston-valve therein, a smaller passage connecting the two parts of said discharge-passage, the one above the piston and the other below the port of the said piston-valve, an auxiliary valve in the said smaller passage, and suitable mechanism within the said water-chamber for automatically controlling said auxiliary valve, substantially as described.

2. The combination, with a steam-tight water-chamber, of a discharge-passage and a piston-valve therein, a smaller passage connecting the two parts of said discharge-passage, the one above the piston and the other below the port of the said piston-valve, an auxiliary valve in the said smaller passage, and a float in said water-chamber connected with said auxiliary valve, substantially as described.

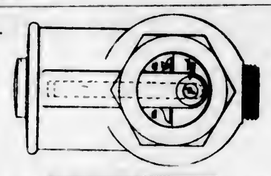
3. The combination of the blow-off pipe R with the steam-tight water-chamber A, a discharge-passage and piston-valve therein, a smaller passage connecting the two portions of said discharge-passage, one above the piston and the other below the port of said piston-valve, and an auxiliary valve in said smaller passage, substantially as described.

4. The combination of the steam-tight water-chamber A and blow-off pipe R with an exterior discharge-passage and a valve therein, substantially as described, for the purpose specified.

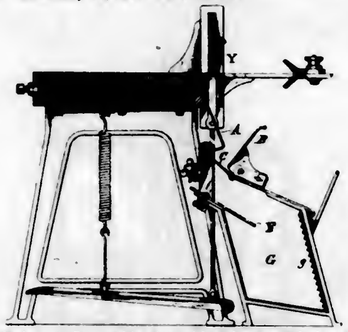
253,985. STEAM-TRAP. NELSON CURTIS, Newton, Mass. Filed Dec. 14, 1881. (No model.)

Claim.—A main passage for steam or other fluid under pressure and a piston-valve therein, a smaller passage connecting the two portions of the main passage which lie on either side of the port of the piston-valve, and a thermostatic valve within said smaller passage, in combination with the steam-tight water-chamber of a steam-trap, the stem of the thermostatic valve extending into and connected with said water-chamber, substantially as described, for the purpose specified.

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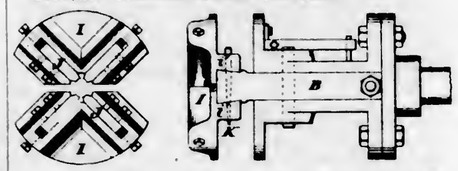
253,986. SEPARATOR FOR SQUARING-SHEARS FOR CUTTING SHEET METAL. WILLIAM R. DANDALS, Philadelphia, Pa. Filed May 18, 1881. (No model.)



Claim.—1. In combination with a sheet-metal shears, Y, an apron, A, fender B, and pivoted trap C, constructed substantially as and for the purposes described.

2. In a separating attachment for squaring-shears, the fender B, pivoted trap C, and inclined plane F, in combination with the box or frame G, having inclined bottom and sides and corrugated surface *g*, substantially as and for the purposes set forth.

253,987. SCREW-CUTTING MACHINE. JOHN DELKER, St. Louis, Mo. Filed June 16, 1881. (No model.)

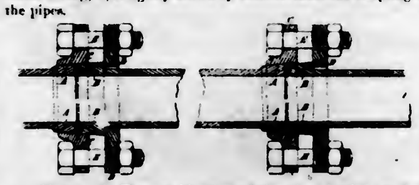


Claim.—1. The combination, with the oscillating levers B B, of the removable die-holders I I, the said levers and holders having tongue-and-socket connection and a suitable locking device inserted through the tongues and sockets, as set forth.

2. The combination of tapering key or pin K with the lever B and die-holder I, the said pin adapted to be withdrawn and forming the device for securing the holder to the lever, as set forth.

253,988. PIPE-COUPLING. LOUIS DE MARNEF, Brussels, Belgium, assignor to Naeyer & Co., same place. Filed Nov. 21, 1881. (No model.) Patented in Belgium May 13, 1879.

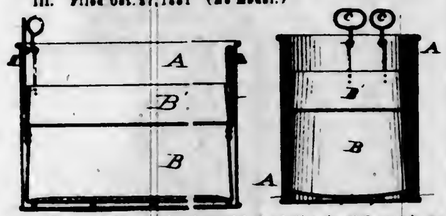
Brief.—The pipes to be coupled have conical flanges A B at their ends, forming when together a frustum of a cone, upon which a ring, C, is tightly drawn by bolts to effect the coupling of the pipes.



Claim.—1. The combination of the pipes having at their meeting ends the external conical flanges, A B, conjointly forming, when the ends of the pipes meet, the frustum of a cone, with the ring C, having its inner side beveled, substantially as described, the ring D, held upon one of the pipes, and the bolts E, passing through said rings, substantially as and for the purpose set forth.

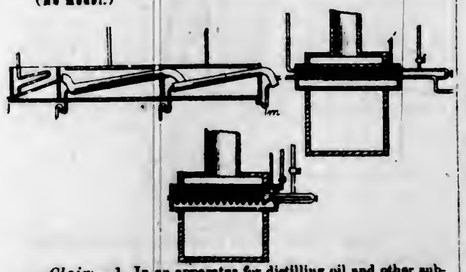
2. The combination of the pipes having at their meeting ends the external conical flanges, A B, conjointly forming, when the ends of the pipes meet, the frustum of a cone, with ring C, having its inner side beveled, substantially as described, the ring D, arranged to abut against the end of the beveled flange B, and the bolts E, passing through said rings, as and for the purpose set forth.

253,989. CLOTHES-STRAINER. ANNA M. DENNISON, Chicago, Ill. Filed Oct. 27, 1881. (No model.)



Claim.—The combination, with the boiler A, of the strainers B B', having inwardly-inclined sides, perforated bottoms, and jointed handles, substantially as shown and described.

253,990. APPARATUS FOR FRACTIONAL DISTILLATION. ERNEST F. DIETERICHS, Cleveland, Ohio. Filed Sept. 23, 1881. (No model.)



Claim.—1. In an apparatus for distilling oil and other substances, the combination of a retort located in a suitable furnace and a distilling-coil located in said retort with the steam-supply and eduction pipes leading to and from the retort, the said pipes being connected with the retort and a suitable oil-supply pipe, and provided with an injector for forcing the oil into the distilling-coil, substantially as specified.

2. In combination with the still or stills, the condensers consisting of a series of tubes arranged in step-like form in a series of suitable vessels, the said tubes increasing in diameter successively, and being provided with suitable traps, substantially as specified.

253,991. FERTILIZER. ISAAC ELSASSER, Houston, Tex. Filed Sept. 24, 1881. (No specimens.)

Claim.—The fertilizer herein described, consisting of bat-guano, cotton-seed meal, the crude pulverized shell known as "*Goathaden cumsata*," and bone-dust, as and for the purpose specified.

253,992. MACHINE FOR CLEANING PAPER, &c. FRANCIS J. RUMRICH, New York, N. Y. Filed Aug. 31, 1880. (No model.)

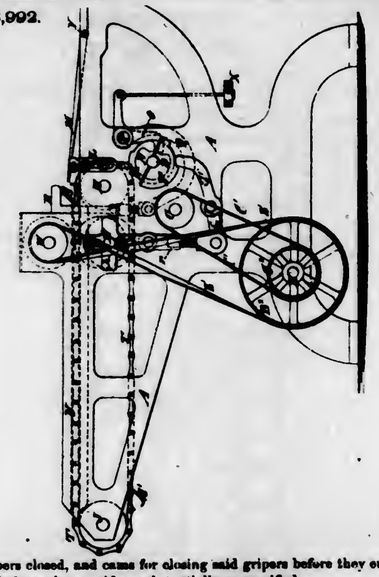
Claim.—1. In a machine for cleaning paper or other fabrics, the combination, with two brushes, of two chains or carriers and gripers attached to and extending between them and adapted to take the sheets and carry them between said brushes, substantially as specified.

2. In a machine for cleaning paper and other fabrics, the combination, with two brushes, of two chains or carriers, gripers attached to and extending between them and adapted to carry the sheets between said brushes, and mechanism, substantially such as described, for moving one brush away from the other to permit the gripers to pass between them, substantially as specified.

3. In a machine for cleaning paper and other fabrics, the combination, with a brush or brushes, of two chains or carriers, gripers attached to and extending between them, and channels or guides through which the chains or carriers pass and which hold the gripers tightly closed, substantially as specified.

4. In a machine for cleaning paper and other fabrics, the combination, with a brush or brushes, of two chains or carriers, gripers attached to and extending between them, channels or guides through which said chains or carriers pass and which hold the

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gripers closed, and cams for closing said gripers before they enter said channels or guides, substantially as specified.

5. In a machine for cleaning paper and other fabrics, the combination, with a brush or brushes, of two chains or carriers having an intermittent motion, gripers attached to and extending between them, and stops for arresting the forward movement of said chains or carriers, substantially as specified.

6. In a machine for cleaning paper and other fabrics, a brush composed of a shaft, flanges fitted thereon and having their faces parallel to each other and oblique to the shaft, and disks of fabric held between said flanges in corresponding oblique position relatively to the shaft, substantially as specified.

7. The combination, with the chains or carriers having an intermittent motion and provided with gripers, of a feed-table having a rising motion to permit the gripers to pass under it and a falling motion to permit the sheets to be fed therefrom into the gripers, substantially as specified.

8. The combination, with the brush H, feed-table M, and sliding rods or bars R, of the shaft D, with its cams F, K, and N, the rock-shaft I, arms G, lever G', and rods r, the slide-bar L, and the rock-shaft I', arms Q, and lever O, substantially as specified.

9. The combination, with the chains T and gripers S, of the rising and falling rods or bars R, having the stop lips or ears *l*, substantially as specified.

253,993. RAILWAY-CAR. AUGUSTE RUTHARD, Perpignan, France. Filed Nov. 21, 1881. (No model.) Patented in France Sept. 16, 1876, and June 16, 1881, and in England Aug. 23, 1881.

Claim.—1. The combination, with an exterior frame sustained above the axles of the vehicle through the medium of springs, of the vehicle-body arranged over the said surrounding frame and extending downward below the same, thereby inclosing it, and springs or their described equivalent suspending the exterior body from the upper portion of the interior surrounding frame, substantially in the manner and for the purpose described.

2. The combination of an interior surrounding frame, T, sustained above the axle through the medium of interposed springs, the exterior body arranged over the interior frame and extending downward to inclose the same, and springs or their described equivalents suspending the exterior body from the upper portion of the interior frame, said body being vertically recessed at its sides to receive the supporting or driving wheels, substantially in the manner and for the purpose described.

3. The combination of the interior frame having the downward-curved ends I, and supported on the axles through the medium of springs, with the exterior body arranged over said frame and extended downward to inclose the same, and devices, substantially as described, suspending the body from supports on the interior frame, substantially in the manner and for the purpose described.

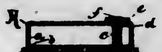
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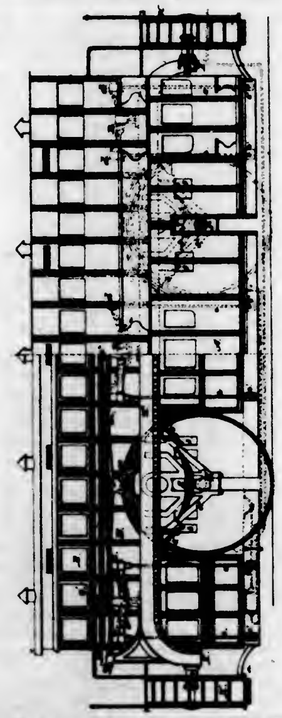
253,997. MACHINE FOR MAKING DOWEL-PINS. EDWIN GAGER, Norwalk, Ohio. Filed Dec. 10, 1881. (No model.)

Brief.—The end of the pin is driven through the former and

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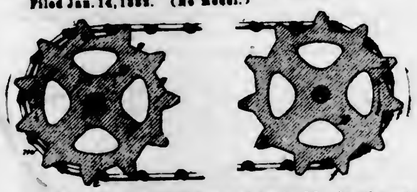
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4. In a locomotive-engine having its body suspended by springs within a frame that is carried by other springs upon the wheels, the rollers *f*, carried by the said frame and bearing against rails or ribs *e'* on the body, substantially as and for the purposes set forth.

5. In a locomotive-engine having its body suspended by springs within a frame that is carried by other springs upon the wheels, the connection of the cylinders A' with the body A' by means of the plate E' and frame F', substantially as herein described.

253,994. CHAIN-WHEEL. WILLIAM D. EWART, Chicago, Ill. Filed Jan. 14, 1882. (No model.)



Claim.—A chain-wheel or sprocket-wheel having the roots of the teeth of different depths at their opposite sides, so as to produce a differential pitch according to whichever of said sides may be made the working sides of the teeth, for the purpose set forth.

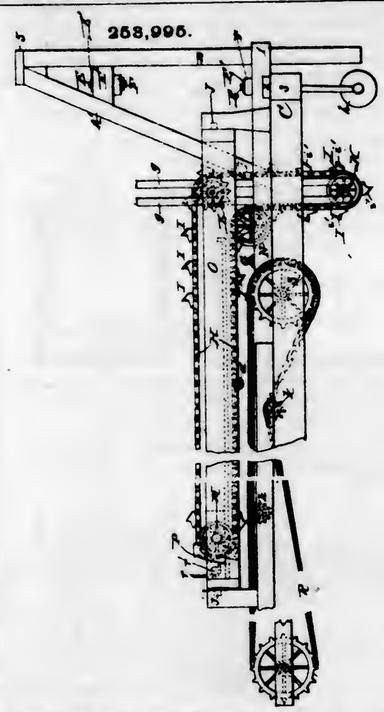
253,995. MACHINE FOR EXCAVATING EARTH IN TRENCHES. CHARLES A. FERRY, New Haven, Conn. Filed Feb. 19, 1881. (No model.)

Brief.—The endless bucket-chain is carried in a tilting frame and is horizontally and vertically adjustable therein. Pivoted and laterally-movable pile-drivers are secured on the front end of the machine to drive sheeting. An endless canvas-carrier is secured to its driving-ropes by hooks secured in the edges of the canvas, said carrier having cross-braces.

Claim.—1. The combination, with the main frame C, of the drivers D, bolts E, slotted planks F, and bolts G, substantially as and for the purpose set forth.

2. The combination of the wheels K L M N, endless chain H,

253,995.



wheel *d*, buckets I, and the frame O, substantially as and for the purpose set forth.

3. The combination of the frame O, trunnions J, guides *g*, and frames *f*, constructed and operating substantially as and for the purpose set forth.

4. The buckets I, having a separable scraping-edge, *i'*, pivots *c*, strengthening-rib *b*, and prongs *i*, substantially as and for the purpose set forth.

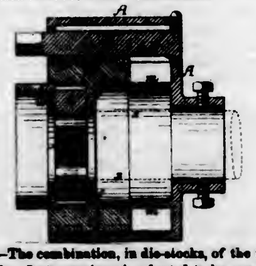
5. The combination of the carrier B, consisting of two endless wire ropes, the wheels S and T, wire hooks H' H', and endless trough U, substantially as and for the purpose set forth.

6. The wheels S and T, having teeth T' and shoulders S', as and for the purpose described.

7. The combination of the buckets I, chain H, wheels K and M, drive-wheel L, wheel N, and endless concaved trough U, substantially as and for the purpose set forth.

8. The brace Q, in combination with the canvas trough U, substantially as and for the purpose described.

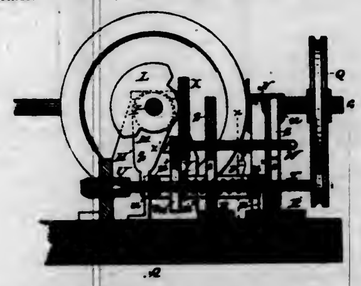
253,996. SCREW-CUTTING DIE. WM. D. FOSSUS, Bridgeport, Conn. Filed Nov. 14, 1881. (No model.)



Claim.—The combination, in die-stocks, of the following elements, namely: first, a casing, A, adapted to be secured to the object to be threaded; second, a threaded die-carrying ring having teeth on its periphery and a screw-thread adapted to a corresponding thread in the casing; and, third, an elongated pinion having teeth adapted to those of the die-carrying ring, all substantially as set forth.

253,997. MACHINE FOR MAKING DOWEL-PINS. EDWIN GARNS, Norwalk, Ohio. Filed Dec. 19, 1881. (No model.)

Brief.—The end of the pin is driven through the former and pointed by a revolving cutter while the body of the pin remains in the former.



Claim.—1. In a machine for making wooden pins, the combination, with the driving crank-shaft, of a pitman and a plunger adapted to drive the pin-blanks, a block upon which said plunger is guided, suitable stationary shaping-dies, and a revolving hollow cutter, substantially as described.

2. In a machine for making dowel-pins, the combination, with devices for squaring and rounding the pin-blank, of a revolving shaft carrying a hollow cutter, and means, substantially as described, for automatically retracting, raising, and lowering said shaft, as set forth.

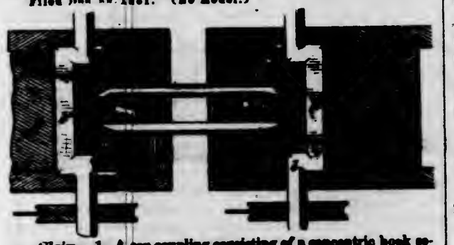
3. The combination, with the standards and the revolving shaft and pointing-cutter, of the vibrating frame and the eccentric and connecting-link, substantially as described.

4. In a machine for making dowel-pins, the combination, with the base A, the standards H H', and the shaft I, mounted in bearings of said standards, of the slotted guides S and guide-plate X, a cam, L, and eccentric M, mounted on the shaft I, a vibrating frame, V, a link, Z, connecting said frame to the shaft I, a shaft, T, carrying a hollow cutter, U, and means for rotating the latter, substantially as set forth.

5. In a machine for making dowel-pins, the combination, with the blank feeding and shaping devices, of the slotted guides S, the frame V, the guide-plate X, the revolving shaft T, the collar Y, and spiral spring Y', arranged as described, and adapted to retract the shaft T, substantially as set forth.

6. The combination, with the standards H and H' and the gearing, of the vibrating frame V, the revolving shaft T and hollow cutter U, the rod Y, having the projection *a'*, and the spring Y', encircling the shaft T, substantially as set forth.

253,998. CAR-COUPLING. LLOYD W. GAYER, Calhoun, Ky. Filed Dec. 29, 1881. (No model.)



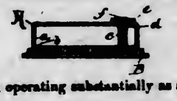
Claim.—1. A car-coupling consisting of a concentric hook secured to a crank-shaft, combined with a draw-head having a cylindrical chamber for containing the hook and a stop for limiting the rotation of the shaft, substantially as shown and described.

2. The combination of a draw-head having a cylindrical chamber formed at the rear of its mouth and transversely thereto, a crank-shaft having its crank weighted and provided with a concentric hook, and means for limiting the rotation of the shaft, and a suitable device for operating the shaft, substantially as shown and described.

253,999. WATCH TRAIN-PLATE. JAMES H. GERRY, Newark, N.J. Filed Oct. 28, 1880. (No model.)

Claim.—1. The combination, with the front train-plate, B, of the back train-plate, A, post *c*, having the shoulder *d* thereon and fastened to said plate B, as shown, the bridge or cock *e*, and screw

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f, all arranged and operating substantially as and for the purpose set forth.

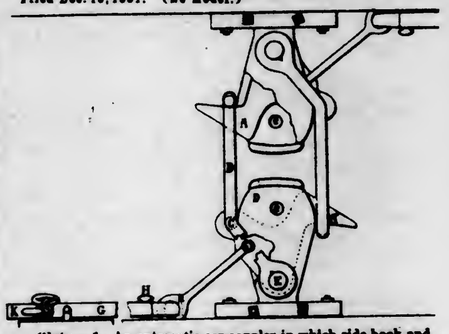
2. The combination of the front train-plate, B, having the undercut shoulder *b*, the back train-plate, A, having a returned portion or flange, *a*, sprung into engagement with the shoulder *b* of plate B, post *c*, having the shoulder *d* thereon and fastened to plate B, as shown, the bridge or cock *e*, and the screw *f*, all constructed substantially as and for the purpose set forth.

254,000. KNOB ATTACHMENT. JAMES A. GIBBS, Chicago, Ill., assignor to the Union Brass Manufacturing Company, same place. Filed Sept. 19, 1881. (Model.)



Claim.—The combination, with a latch-case, of the fixed part *b* of the knob-shank, the pivoted arms C C, and the collar *f*, holding the arms apart, substantially as set forth.

254,001. CAR-COUPLING. ELLIOT GLOVER, Cortland, N. Y. Filed Dec. 19, 1881. (No model.)

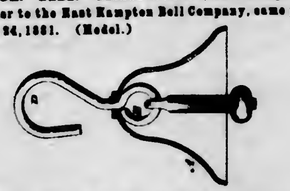


Claim.—1. An automatic car-coupler in which side hook and draw-bar are firmly united, and are attached to a draw-head by a single pin, on which they turn in unison, substantially as set forth.

2. The duplex draw-bars B, arranged as shown, and the hooks A A', combined with the lever G and connections, as and for the purposes set forth.

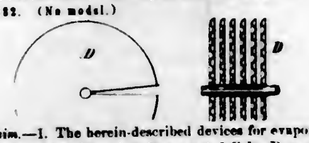
3. The draw-bars B, having vertical arms C, and the hooks A A', arranged in pairs, and each pair secured to the draw-bar by a single pivot, E, combined with the Hook J, lever G, and chain K, as and for the purposes set forth.

254,002. BELL. GUSTUS W. GOFF, East Hampton, Conn., assignor to the East Hampton Bell Company, same place. Filed Dec. 24, 1881. (Model.)



Claim.—The combination of the bell A, constructed with a perforation through its head end and a wire inserted through said perforation, with the hammer hung to the inner end of the wire, the outer end bent to form an open hook, D, the bend serving also to secure the parts together, substantially as described.

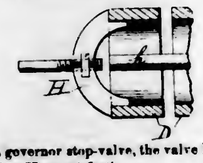
254,003. EVAPORATING AND COOLING APPARATUS. A. GONTARD, Mockau, near Leipsic, Saxony, Germany. Filed Jan. 6, 1882. (No model.)



Claim.—1. The herein-described devices for evaporating liquids, which consist of a series of corrugated disks, D, mounted spirally upon a shaft, S, in combination with a suitable vessel for containing the liquid to be evaporated, in the contents of which said disks are partially immersed and caused to revolve, whereby the liquid is not only more rapidly evaporated, but kept continuously moving from one end of the vessel to the other, as set forth.

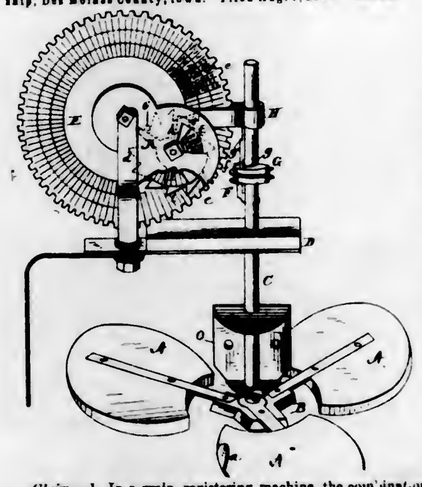
2. The combination, with a supporting-shaft, of a series of disks, D, provided with a central aperture and a radial slot gradually increasing in diameter from the central aperture to the periphery of the disk, whereby said disks may be mounted upon the shaft in the form of a spiral or Archimedean screw, substantially as and for the purpose specified.

254,004. GOVERNOR-VALVE. PAUL W. GARDEN and ALEXANDER E. TURNER, Philadelphia, Pa. Filed Dec. 16, 1881. (No model.)



Claim.—In a governor stop-valve, the valve D, provided with the divided cross-bar H, as set forth.

254,005. GRAIN-TALLY. JAS. GRIFFITH, Flint River Township, Des Moines County, Iowa. Filed Aug. 1, 1881. (Model.)



Claim.—1. In a grain-registering machine, the combination of the frame B, revolving covers A, standard C, and worm-gear G with register-plate E, having its edges toothed or serrated at e, and provided with stud or trip e', disk I, and plate M, all substantially as and for the purposes set forth.

2. In a grain-registering machine, the combination of worm-gear G, having slot g, with standard C, provided with stud or trip F, having shoulder g' and spring f, and the disk E, having toothed edge e, substantially as and for the purposes described.

3. In combination with the register-disk E, operated as described, and having stud or trip e', the plate K, provided with an opening, k, plate M, and register-disk I, having saw-teeth i, substantially as and for the purposes set forth.

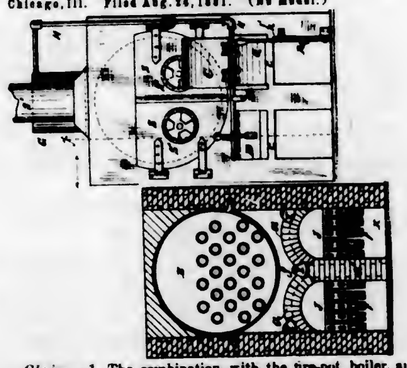
254,006. BOUQUET SUPPORT AND FORMER. FRANK D. HAAS, Milwaukee, Wis. Filed Sept. 19, 1881. (No model.)



Claim.—1. The bouquet support and former described, consisting of a number of concentric vertical cylinders of different heights and diameters, secured together and provided with movable stem-holders adapted to be supported by the upper edges of the cylinders and to move laterally thereon, as and for the purpose set forth.

2. In a bouquet support and former, the series of concentric cylinders arranged in the form of a stepped cone, secured together and provided with movable stem-holders adapted to be supported by the upper edges of the cylinders and to move laterally thereon, as and for the purpose set forth.

254,007. SMOKE-CONSUMING FURNACE. JOSEPH J. HALL, Chicago, Ill. Filed Aug. 24, 1881. (No model.)



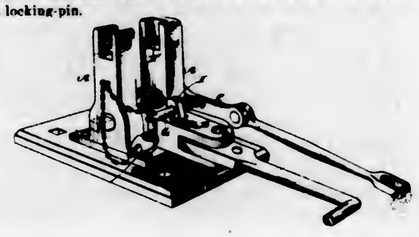
Claim.—1. The combination, with the fire-pot, boiler, and grate of a smoke-consuming furnace, of the retort B, open at its rear or inner end, and arranged in the forward part of the fire-pot and between the boiler and the grate and containing the central wall, a', dividing the retort into two longitudinal chambers, each having the grate of the furnace for a floor, substantially as and for the purposes specified.

2. The combination, with the fire-pot, boiler, and grate of a smoke-consuming furnace, of the retort B, arranged in the forward part of the fire-pot and having over it the air-space g, and open at its inner or rear end and arranged between the boiler and the grate, and containing the central longitudinal wall, a', the grate serving as the floor of the retort, substantially as and for the purposes specified.

3. The combination, in a smoke-consuming furnace, of the fire pot or chamber A, the boiler E, the grate J the retort B, arranged in the forward part of the fire-pot and extending over the grate and underneath the boiler and having an open rear end, and the bridge-wall F, arranged in the rear of the pot or chamber A and having its upper portion, F', inclined toward the rear or open end of the retort, substantially as and for the purposes specified.

254,008. RAILROAD-SWITCH. ARCHIBALD HARLEY, Topeka, Kans. Filed Dec. 16, 1881. (No model.)

Brief.—The switch-rails are shifted through a vertically-swinging jointed hand-lever pivoted at its inner lower end between vertical standards, in which it is secured when, in vertical position, and when horizontal it is secured by lugs on the base-plate which enter a mortise in the lever, and through which passes a locking-pin.

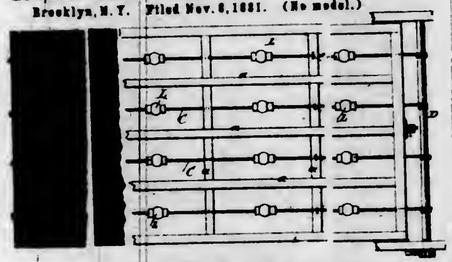


Claim.—1. The combination, in a railroad-switch, of the switch-rod with a vertically-swinging jointed switch-lever, pivoted at the inner end of its lower section, the upper part of said jointed switch-lever being adapted to be swung down and secured to a supporting-standard of the apparatus after the lower part of said lever has been brought into a vertical position, substantially as described.

2. The combination, in a railroad-switch, of the vibratory jointed switch-lever for operating the switch-rod with the standards between which the switch-lever is pivoted, one of these standards having its upper end formed with a mortise to secure the upper part of the switch-lever when said part is swung down to a horizontal position, suitable openings being formed through the switch-lever and the mortised standard for receiving the locking-pin, substantially as and for the purpose described.

3. The combination, in a railroad-switch, of the standards A with the jointed switch-lever pivoted between said standards, the arms I, the jointed locking-pin, and the padlock, the upper part of the jointed switch-lever being adapted to be secured by the locking-pin in a mortise in one of the standards when the lower part of said lever is brought into a vertical position, and the arms I being each adapted to receive the locking-pin, so that after the switch-lever has been turned down and either arm received in the mortise of the switch-lever the pin can be engaged with the arm and secured by the padlock, substantially as described.

254,009. SIEVE-CLEANING ATTACHMENT. JOHN HARVEY Brooklyn, N. Y. Filed Nov. 6, 1881. (No model.)



Claim.—1. The combination of a shaking sieve, a rope or cord attached at one end thereto and at the other end to a fixed object, and one or more bulbs or disks mounted upon said cord and adapted to strike said sieve as the cord is alternately slackened and tightened by the motions of said sieve, substantially as set forth.

2. The combination, with the shaking sieve, the cord or cords, and one or more bulbs or disks attached thereto, of one or more pads or cushions attached to the cloth of sieve to prevent injury thereto from the action of the bulb or disk, as set forth.

254,010. PUMP. JOSEPH A. HAYDRICK, Barnhart's Mills, Pa. Filed Oct. 8, 1881. (No model.)

Claim.—1. In a pump, the combination, with the tubing d and the follower-chamber d^3, of the intermediate double shell d', having upper packer-seat, G G', and lower packer-seat, G^3, and intermediate passage for fluid, substantially as shown and described, and for the purpose set forth.

2. In a pump, the combination, with the rod a and the shell d', having seat G, of the packer b', and the pipe b, inclosing a layer of Babbitt metal and screwing into the top of said packer, substantially as shown and described.

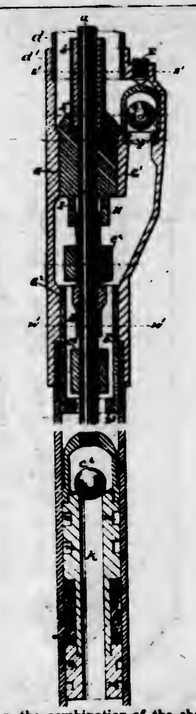
3. In a pump, the combination, with the rod a, the shell d', having seat G^3, and the packer b', having collar H and ports I, of the packer b^3, constructed of two cylindrical portions connected by longitudinal ribs, and having ports between the ribs, and the drop-valve C^3, adapted to close said ports, substantially as shown and described.

4. In a pump, the combination of the packer b^3, having a cage formed in its lower portion, the drop-valve C^3, arranged therein, the seat b^3, screwed into the lower end of said packer, and the seat G^3, substantially as shown and described.

5. In a pump, the combination of the shell d', its partition G', seat F, ball-valve E, the valve-cage, the set-screw E, for holding the cage, and means for supporting and operating the said parts, substantially as shown and described.

6. In a pump, the combination, with the chamber d^3 and the rod a, of the follower K, made in two sections and having sand-recesses m and cups n and rings o, and the valve-cage of ball-valve C^3, screwed to the said rod and follower, substantially as shown and described.

254,010.



7. In a pump, the combination of the shell d', having two packer-seats, the packer b', and the packer b^3, connected together by a screw substantially as shown and described, whereby both packers shall be adjusted to their seats, as set forth.

8. In a pump, the combination, with the packers b' and b^3, of the collar H, secured to packer b', and provided with a female thread, and ports I, leading to the rod a, substantially as shown and described, whereby the continuous packing shall be relieved, as set forth.

9. In a pump, the combination, with the rod a and shell d', of the packing b, b', and b^3, extending continuously above and below the packer-seats, substantially as shown and described.

10. In a pump, the combination of the double shell d', the packer b', the ball-valve C, the rod a, the packer b^3, and seat b^3, the drop-valves C^3 C^3, the follower K, ball-valve C^4, and follower-chamber d^3, substantially as shown and described.

11. In a pump, the combination, with a shell or chamber and the rod a, of the valves C^3 C^3 and the packer b^3, having seats for the said valves, substantially as shown and described.

254,011. ELASTIC-CENTER EMERY GRINDING AND POLISHING WHEEL. MARTIN HOPKINS, San Leandro, Cal. Filed Aug. 3, 1880. (No model.)



Claim.—1. A combined grinding and polishing wheel consisting of a central hub, a polishing-disk, a removable grinding-rim, and means, substantially as described, for securing the polishing-disk upon the hub and the grinding-rim upon the polishing-disk.

2. The combination, with the flanged hub, the clamping-rings C, and the yielding or elastic center F, of the outer removable clamping-rings, B, and the detachable grinding-rim A.

3. The combined grinding and polishing wheel composed of the outer rim, A, the outer clamping rings or flanges, B, the inner clamping-rings, C, the yielding center, and the hub having fixed and loose flanges, all substantially as described.

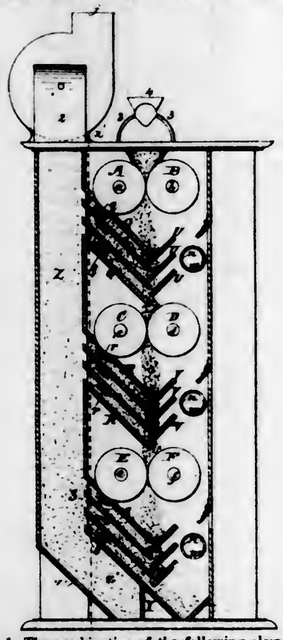
254,012. PROCESS OF AND MACHINERY FOR GRADUAL REDUCTION OF GRAIN TO FLOUR AND MIDDLINGS. NOAH W.

the coarser middlings from the material before it reaches the lower rollers, an inclosed adjacent air-trunk into which said coarser mid-

of the month to an aperture, a weighted disk, 34, having offset 36 for said stop pin or rod, pawl 38, acting on mouth-cylinder, latch

8. In combination, the fixed case 10, having heads 9 and 11, and central opening, the cylinder 6, fixed to shaft 1, the cylinder

254,012. PROCESS OF AND MACHINERY FOR GRADUAL REDUCTION OF GRAIN TO FLOUR AND MIDDLINGS. NOAH W. HOLT, Buffalo, N. Y. Filed Aug. 15, 1881. (No model.)



Claim.—1. The combination of the following elements, viz: the rollers A B, the inclosed trunk Z adjacent thereto, the boards Q Q, arranged to have unobstructed air-passages between them communicating with said trunk Z, a screening mechanism below said unobstructed air-passages, mechanism which forces the air through said passages and through the material immediately below the rollers A B before it reaches the screen, and the rollers C D, which receive the tailings from the screening mechanism when said rollers A B, the air-passages, the screen, and the rollers C D are all arranged to have the material pass downward from one to the other entirely by the action of gravity.

2. The combination of the series of rollers, the air-forcing mechanism which withdraws the flour, the dust, and fine middlings from the crushed material immediately below each pair of rollers before subjecting it to the action of screens or of succeeding rollers, the inclosed trunk which receives said flour, dust, and fine middlings, devices which mingle in said trunk the middlings from the several rollers of the series and guide them to a receptacle, devices which receive the bran portion from the rollers and guide it to another receptacle, and devices which receive the flour and dust from the inclosed trunk and guide them to a third receptacle, whereby the remingling of the middlings either with the flour or bran is avoided.

3. The combination, with two or more pairs of crushing-rollers and the hopper or receptacle for conducting away in a separate mass the bran portion of the material which they do not reduce, of a suction-fan which causes an air-current to pass below all the rollers and carries with it a portion of the crushed material, a separating-chamber adjacent to the rollers, which receives the materials removed by the air-current, and which is provided with one outlet for the light material carried by the air-current and another outlet, separate from the flour-outlet and from the bran-outlet, for the heavier material which drops by gravity from said air-current.

4. The combination of rollers A B, fan I, rollers C D, the inclined reciprocating screen G' H' between the pairs of rollers, air-passages adapted to guide the air-current through the material as it passes down from the upper rollers and before it reaches the said screen G' H', the trunk Z, in which the air-current carries the flour, dust, and fine middlings, a dust at X which receives the bran from the rollers, the dust Z', in which the middlings pass by gravity, and the dust *j*, into which the flour is forced by the air-current, substantially as set forth.

5. The combination of the rollers A B, the lower rollers, C D, the reciprocating screen above the lower rollers, which removes the coarser middlings from the material before it reaches the lower rollers, an inclosed adjacent air-trunk into which said coarser middlings are delivered, air-passages above said screen, mechanism for forcing air through said passages into said trunk to remove the flour, dust, and fine middlings before the material reaches the screen, whereby clogging of the screen is prevented, substantially as set forth.

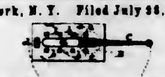
6. The combination, with the upper rollers, A B, the lower rollers, C D, and the screening mechanism above the lower rollers, of a series of two or more chutes, Q Q, above said screen, arranged to have inclined air-passages between them and to successively receive the material one from the other before it passes to the screen below, substantially as set forth.

7. The combination of the crushing-rollers, the casing around them, the dust-collector, the fan, the air-trunk leading from the fan to the collector, and the air-trunk leading back from the collector to the roller-casing, substantially as set forth.

8. The herein-described method for treating grain in the manufacture of flour, it consisting in first subjecting the grain to the action of rollers, then by means of a current of air removing from the crushed material the flour, dust, and middlings, and carrying them into a common compartment, then removing from the residue of the crushed material the coarser middlings by the action of a screen, then subjecting the tailings of the screen to further crushing, air-currents, and screening, then separating the flour and dust from the middlings by an air-current, then conducting the middlings in a separate mass to a purifying mechanism, conducting the bran portion in a separate mass to other mechanism for further reducing it, and conducting the flour and dust to a third mechanism for collection.

9. The herein-described method for treating grain in the manufacture of flour, it consisting in first subjecting the grain to the action of crushing-rollers, then by means of air-currents dividing the crushed material into a mass of light particles, a separate mass of coarser particles, and another mass of mingled coarser particles and bran, next conveying the first aforesaid mass to a dust-collector, the second to a middlings-purifier, and the third to a mechanism for further reduction, substantially as set forth.

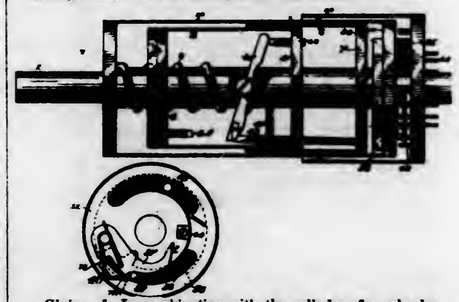
254,013. FASTENER FOR GLOVES, GAITERS, &c. ANTON HOFFER, New York, N. Y. Filed July 26, 1881. (No model.)



Claim.—1. A fastener consisting of the hook C, pivotally secured upon a suitable attaching-plate, and having the seat *s* and the catch *d*, also mounted upon an attaching-plate, the hook being adapted to have a horizontal swinging movement and to be retained by the catch *d* when closed, substantially as set forth.

2. A fastener consisting of the plate A, having a guide-slot the disk B, pivotally-secured hook or arm C, and catch *d*, the disk being adapted to be locked at different points along the guide-slot, substantially as set forth.

254,014. CALENDAR. THOMAS H. HAVENDEN, Ingersoll, Ontario, Canada. Filed Oct. 20, 1881. (No model.)



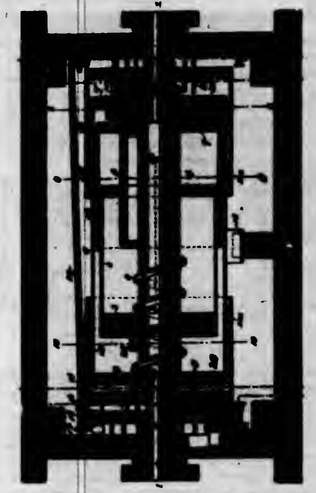
Claim.—1. In combination with the cylinder of a calendar having characters indicating the numbers of the days of the month, and adapted to turn to bring these characters successively to view, and with a cylinder carrying the names of the months arranged in proper order, a variable arresting device, substantially as described, regulated by the month-cylinder and adapted to arrest the numeral-cylinder at the proper point for each month, substantially as set forth.

2. The combination of a cylinder having stop pin or rod and turning on its axis to bring successive numbers representing days of the month to an aperture, a weighted disk, 34, having offset 36 for said stop pin or rod, pawl 35, acting on month-cylinder, latch 37, and devices, as described, for operating the same, said latch acting on pin 39 of the weighted disk, substantially as described.

3. The combination of the weighted disk, having offset adapted to act in connection with stop pin or rod on the cylinder, and carrying pawl 35, the latch pivoted on the head 11, having stops to act on pin 39 in weighted disk, and arm 40, adapted to be operated upon by the pins upon the head of the month-cylinder, the whole constructed and operating substantially as described.

4. The improved double pawl 19 23, formed out of one piece of wire, having an eye formed to fit over its holding-pin, and with the pawls extending on opposite sides of the wheel, said pawls being formed with V-shaped bends to form yielding stops, and adapted to the pins of the wheel and head and in combination therewith, substantially as described.

254,015. CALENDAR. THOMAS H. HAVENDEN, Ingersoll, Ontario, Canada. Filed July 14, 1881. (Model.)



Claim.—1. In a calendar, a cylinder having a series of unit figures, from 1 to 9, inclusive, arranged in direct line around its periphery, in combination with a cylinder telescoping therewith and provided with a spirally-arranged series of numerals, adapted to act as decimal figures, with the aforesaid unital figures, substantially as described.

2. The described series of calendar-slips, each series representing six months of successive years, in proper order, one above and the other below the line of apertures, said slips being suitably attached to the front or frame, substantially as described.

3. The cylinders carrying numerals indicating days of the months, in combination with a cylinder having the names of the days of the week, and with intermediate connecting mechanism, substantially as described, whereby the said numeral-cylinder carries the name-cylinder step by step in its advance, but leaves it undisturbed in reverse movement, as set forth.

4. The cylinders carrying numerals indicating days of the month, in combination with cylinders having names of the days and months, respectively, and with intermediate connecting mechanism, as described, whereby advance only of the numeral-cylinders moves the day-name cylinder and reverse movement only of the same moves the month-name cylinder, as set forth.

5. The numeral-carrying cylinders, in combination with the cylinder carrying the names of the months, and with pawl and stop mechanism, as described, whereby the last backward movement only of the numeral-cylinders moves the month-cylinder one step, as set forth.

6. In a calendar, and in combination, cylinders carrying on their peripheries numbers of the days of months rotated by positive movement of shaft, a cylinder carrying names of the days, and intermediate mechanism, substantially as described, between the shaft and name-cylinder, adapted to transmit to the said name-cylinder an amount of motion varied from that of the shaft.

7. In combination, the cylinder 6, fixed on shaft 1, the cylinder 2, connected to shaft by spline, and the fixed spiral 8, substantially as described.

8. In combination, the fixed case 10, having heads 9 and 11, and central opening, the cylinder 6, fixed to shaft 1, the cylinder 2, telescoping therein, and the spiral 8, as set forth.

9. In combination, cylinder 6, fixed to shaft, cylinder 2, telescoping therein, fixed case 10, and cylinder 13, carrying the names of the days of the week and operated from the shaft by the push and pull pawls, substantially as described.

10. The cylinders 2 and 6 and the fixed case 10, all arranged as described, in combination with the wheel 16, shaft 1, and the connected pawls 17 and 18, substantially as described.

11. The combination of the rod 22, pawls 17 and 18, wheel 16, and head 15, both provided with pins, as set forth.

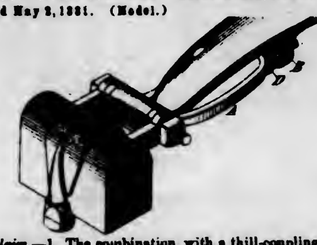
12. The wheel 16 and head 15, provided with pins, as described, in combination with the connected push and pull pawls 17 and 18 and the yielding stop-pawls, as described.

13. In a calendar, the combination of the fixed cylinder carrying the unit figures, telescoping cylinder carrying the spirally-arranged decimal figures, the stop pin or pins in the head of the telescoping cylinder, and the shoulders, as described, adapted to arrest the rotation of the telescoping cylinder, all as set forth.

14. The head 11 of the fixed case 10, slotted as described, in combination with weighted wheel 34 and pawl carried thereon by pin extending through slot in head 11 and connecting with pins in the head of cylinder 14, substantially as described.

15. In combination with a cylinder having characters arranged spirally upon its surface, and with a fixed case having openings to display such characters, the revolving shaft, fixed spiral rod surrounding said shaft, and the cylinder splined to the shaft, its head having a hole adapted to the shaft, and a surface bearing on the shaft, approximately spiral, said surface being adapted to pass between the coils, and the overlapping or meeting ends of said spiral bearing-surface saddling closely the spiral rod, all the parts being combined in a calendar and operating substantially as described.

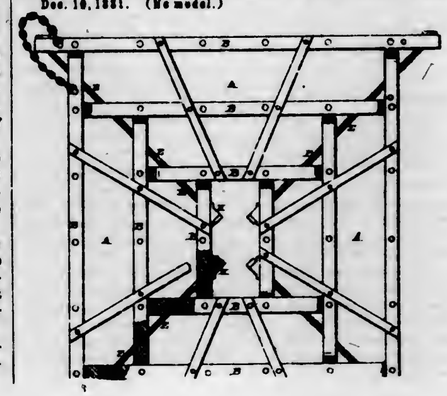
254,016. THILL-COUPLING. ELIAS HOXIE, Red Creek, N. Y. Filed May 2, 1881. (Model.)



Claim.—1. The combination, with a thill-coupling, of an adjustable brace secured to the thill and connected to the bolt of the coupling, substantially as shown and described, and for the purpose set forth.

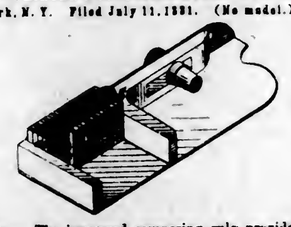
2. The brace A, having a threaded stem at one end and perforated prongs at the other, in combination with a nut, D, screwed on said stem, a bracket, B, for holding said stem, the thill-iron C, and the bolt of the coupling-joint, substantially as shown and described, whereby the brace may be adjusted to take up wear, as set forth.

254,017. HARROW. GEORGE JACKSON, Boscobel, Wis. Filed Dec. 10, 1881. (No model.)



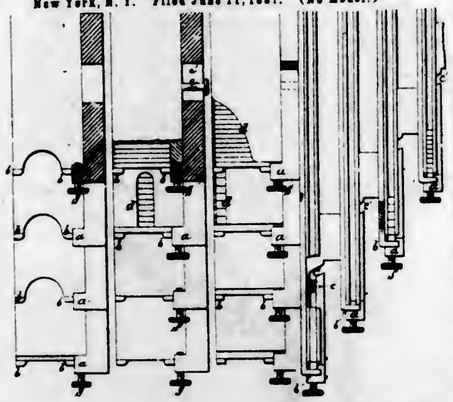
Claim.—In a harrow, the combination of a number of sections, A, each one of which is composed of a number of beams or bars, B, of unequal length, with the pivotal rods E, which pass diagonally through the ends of the beams, substantially as shown.

254,018. PRINTER'S COMPOSING-RULE. LOUIS K. JOHNSON, New York, N. Y. Filed July 11, 1881. (No model.)



Claim.—The improved composing-rule, provided with the combined guide and protector, substantially in the manner and for the purposes described.

254,019. TYPE AND SPACE HOLDER. LOUIS K. JOHNSON, New York, N. Y. Filed June 11, 1881. (No model.)



Claim.—1. In a type and space holder for the purpose indicated, one or more bearings or shoulders, *b b*, situated in the frame or case A, and affording support for the columns of type independent of the channels containing them, in combination with the said type-containing channels, substantially in the manner and for the purposes described.

2. In a type or space holder for the purpose indicated, the bearing-shoulders *a*, for supporting the channels independent of the columns of type contained therein, in combination with the type-supporting shoulders *b b*, substantially in the manner and for the purpose set forth.

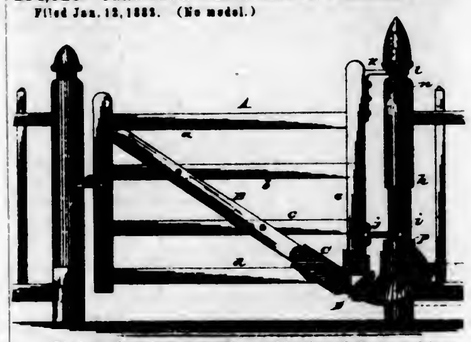
3. In a type or space holder substantially such as described, the adjustable bearings or rests S, for supporting the channels independent of the columns of type contained therein, in combination with said channels and with the type-supporting shoulders *b b*, for the purpose and substantially in the manner designated.

4. A type or space holder for the purpose indicated, provided with the type-supporting shoulders *b b*, constructed and arranged, substantially as described, to support the lowest type of a column at or near its extremities, while the intervening space between said points of support is unobstructed, for the purposes and in the manner substantially as described.

5. A type and space holder substantially such as indicated, provided with sockets, recesses, or seats arranged relatively in advance of and one above another, substantially as described, and constructed to receive, support, and present the type-containing channels with their broad sides toward the operator, for the purpose and substantially in the manner set forth.

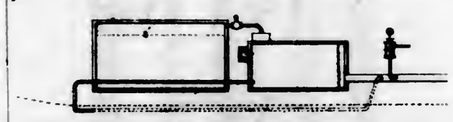
6. In a type and space holder for the purpose indicated, the combination of the channel-supporting recesses or seats arranged with relation to each other, substantially as described, so as to leave the spaces P between them for the purpose of allowing the channels to be inserted from the front of the case into their respective positions therein, substantially in the manner and for the purpose described.

254,020. FARM-GATE. JAS. J. JOHNSTON, Columbiana, Ohio. Filed Jan. 13, 1882. (No model.)



Claim.—In a farm-gate, the combination of the curved inclined tread *g*, having vertical flange *p*, friction-roller D, forming the frustum of a cone, adapted to said inclined tread and pivoted in bearing C on the lower end of the brace B, so that the angle of strain of the gate A will be upon said roller and tread, the forked hinge *j*, pintle *m*, and post *h*, constructed, arranged, and operating substantially as herein described, and for the purpose set forth.

254,021. APPARATUS FOR PROPELLING TORPEDOES. W. F. JOHNSTON, Clifton, N. Y. Filed Aug. 8, 1881. (No model.)



Claim.—1. The method of maintaining the combustion of the fuel employed to heat the liquefied gas used as a motor-fluid on submerged torpedoes, which consists in supplying the chamber containing the ignited combustible with gas drawn from a reservoir containing a liquefied gas—such as nitrous-oxide gas—which is a supporter of combustion, substantially as hereinbefore set forth.

2. The improvement in the art of producing a motor-fluid for submerged torpedoes and like purposes, which consists in conducting a liquefiable gas—such as nitrous-oxide gas—which is a supporter of combustion, on its way to the engine into and through a combustion-chamber containing ignited carbon or other fuel, substantially as and for the purposes hereinbefore set forth.

3. The method of increasing the volume of the motor-fluid by injecting water, or water and oil, into the gas after it is heated and before it passes into the engine, substantially as and for the purposes hereinbefore set forth.

4. The combination of a reservoir containing a liquefied gas—such as nitrous-oxide gas—which is a supporter of combustion, a combustion-chamber containing carbon or other suitable fuel, and pipes or connections, substantially as described, whereby the products of combustion from the chamber are caused to heat the liquefied gas in the reservoir and the gas from said reservoir is conducted both to the chamber to serve as a supporter of combustion and to the engine to serve as a motor-fluid, substantially as hereinbefore set forth.

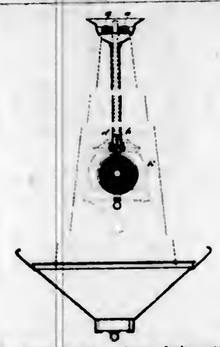
5. The method of obtaining a motor-fluid for driving the engines of submerged torpedoes and for similar purposes, consisting in acting upon ignited carbon or other fuel with a compressed liquefiable combustion-supporting gas, which unites with the combustible to form a highly-heated gaseous motor-fluid, substantially as and for the purposes hereinbefore set forth.

254,022. EXTENSION LAMP-FIXTURE. AUGUSTUS H. JONES, Meriden, Conn., assignor to Bradley & Hubbard Manufacturing Company, same place. Filed Dec. 19, 1881. (No model.)

Claim.—1. In an extension lamp-fixture, the combination of the pulleys *a a*, a coiled spring arranged below said pulleys and rigidly supported, with two or more cords or chains attached by one end to said spring running upward over said pulleys, thence downward, and respectively attached to the lamp holder or support, substantially as described.

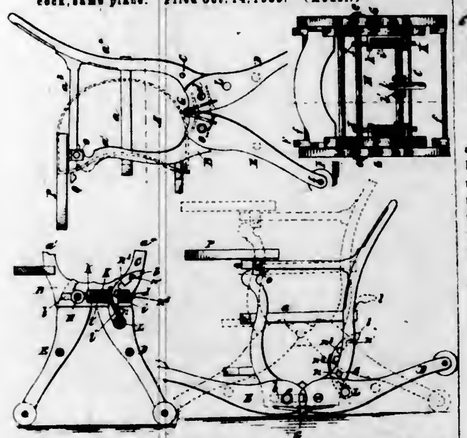
2. In an extension lamp-fixture, the combination of the pulleys *a a*, a coiled spring arranged below said pulleys and rigidly

254,022.



supported, with two or more cords or chains attached by one end to said spring, running upward over said pulleys, thence downward, and respectively attached to the lamp holder or support, with the shield E inclosing said spring, substantially as described.

254,023. CHILD'S CHAIR AND CARRIAGE. JOSEPH W. KNUSA, Chicago, Ill., assignor of one-half to Reuben A. Hitchcock, same place. Filed Oct. 14, 1880. (Model.)



Claim.—1. In an adjustable chair, one pair of supports, in combination with independent movable bearings provided with springs for the purpose of holding them at a fixed distance from the points of attachment of the other pair of supports, substantially as described.

2. A chair-body, in combination with a pair of front supports and a pair of back supports pivotally attached near their upper ends to its lower part, each pair independently of the other, but hinged together, as described, one pair having its pivotal motion on fixed points and the other in horizontally-movable bearings provided with springs tending to hold them at a fixed distance from the pivotal points of the first pair, substantially as described.

3. A chair-body whose frame extends below the seat and is provided near its lowest part with a transverse stretcher, in combination with a pair of front supports and a pair of back supports pivotally attached to the lower part of the body independently of each other, but hinged together, as described, one pair having its pivotal motion on fixed points and provided with a stretcher carrying a spring-catch, (arranged to engage at several points in its length with the stretcher on the chair-body,) the other pair having its pivotal motion in horizontally-movable bearings provided with springs tending to hold said bearings at a fixed distance from the fixed pivotal points, substantially as and for the purposes described.

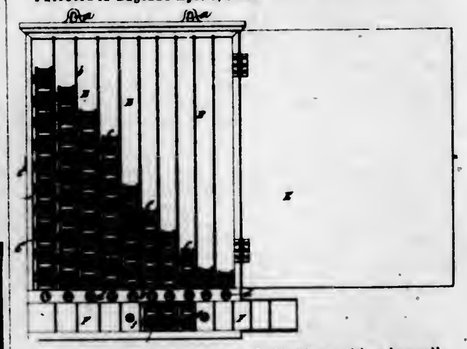
4. The chair-body A, provided with the side bars, B, and stretcher C, in combination with the supports D and E, shaped and hinged together as described, pivots *d*, pivotal rods H, rods I, provided with the rings *i* and springs *i'*, stretcher L, bent arm *l*, and spring *l'*, substantially as and for the purposes described.

5. A chair-body, provided with a transverse stretcher, C, in combination with pivoted supports D and E, the stretcher L, bent arm *l*, and spring *l'*, substantially as and for the purposes described.

6. A chair-body, in combination with the pivoted supports D, supports E, hinges G, rod H, and rods I, provided with the ring *i* and spring *i'*, substantially as and for the purposes described.

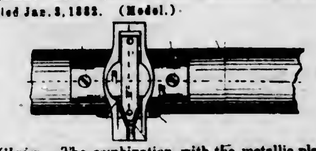
7. In a child's chair, the pivoted shelf P, provided with the pin *p*, in combination with the grooved chair-arm *a*², the pin *s* set therein, and the spring-catch Q pivoted therein, tapering as described, and having the slot *q*² arranged to engage with the pins *s* and *p*, the back margin of said slot projecting beyond the front margin, substantially as and for the purpose described.

254,024. SHOW-BOX FOR SPOOLS. ROBERT KNOX, Paisley, County of Renfrew, Scotland. Filed Oct. 28, 1881. (No model.) Patented in England Apr. 6, 1881.



Claim.—The cabinet or case A, divided by partitions into cells or compartments B, extending to the bottom thereof, the indicator bar or rail D, extending across the front of the cabinet or case, near the bottom thereof, the hinged door or doors E, for closing the front above said bar or rail, and which may be opened to fill the cabinet or case, and the sliding door or doors F, for closing the front below said bar or rail, and which may be opened to withdraw the spools one by one, substantially as herein described.

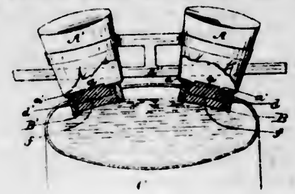
254,025. REEL-LOCK. LOUIS A. KIEFER, Indianapolis, Ind. Filed Jan. 3, 1882. (Model.)



Claim.—The combination, with the metallic plate provided with a button cut away on one side, of the metallic block having a boss and recess, the boss being cut away in front to permit the device to be passed over the head of the button, and the spring and angular plate attached thereto, and the transverse strip for operating the same, all constructed and arranged substantially as and for the purposes specified.

254,026. FIRE-ANNIHILATOR. ISIDOR KITZER, Cincinnati, Ohio. Filed Nov. 25, 1881. (No model.)

Brief.—This invention contemplates holding chemicals in separate receptacles until required for use. Two inverted vessels, A A', are mounted on a frame, E', over a common reservoir, C. The mouths of the bottles are closed by stoppers *a*, which are held in place by the fusible solder *f* between them and the outer serrated edges of the mouths B B'. The vessels hold the chemicals necessary to the formation of a fire-annihilating gas, and do not discharge their contents into the reservoir C, filled with water, until the requisite temperature fuses the solder which confines the stoppers.



Claim.—1. In an automatic fire-annihilator, inverted vessels sealed with a fusible composition and supplied with chemicals, which, when united, form a fire-extinguishing gas or vapor, and a

254,028.

Claim.—1. The combination, with the two crank-shafts B B', arranged at different angles, as described, and the paddle-uprights F, journaled therein, of the connecting-rods M M, attached re-

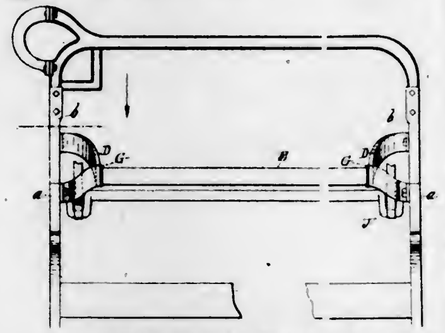
254,035. SLEEVE OR OTHER BUTTON. SAMUEL MOORE, Providence, R. I., assignor to Frank Buffington, same place. Filed June 13, 1881. (No model.)

Claim.—1. In an automatic fire-annihilator, inverted vessels sealed with a fusible composition and supplied with chemicals, which, when united, form a fire-extinguishing gas or vapor, and a generating-reservoir to receive the contents of said vessels, substantially as described.

2. In an automatic fire-annihilator, the combination of the vessels A A', having mouths B B', provided with serrated interior surfaces, *d d'*, and flanges *a' a'*, with stoppers *a a*, sealed with fusible composition, and a receiver, C, substantially as described

254,027. BACK ROLL AND SUPPORT THEREFOR FOR LOOMS. LUCIUS J. KNOWLES, Worcester, Mass. Filed July 16, 1881. (No model.)

Brief.—The back roll is composed of a hollow metal cylinder having heads inserted in its ends and held in position in the loom by means of a tie-rod passing through it and fastened to the supporting-stands by nuts. The openings through the heads are made flaring on the inside to facilitate the passage of the tie-rod. The supporting-stands are curved so as to extend out over and down between the circles described by the cranks, and are secured at one end to the main frame and at the other to the arch-stands. They are slotted to permit of adjustment forward or back of the roll.



Claim.—1. The combination of back-roll stands or supports D D with tie-rod H, provided with suitable nuts, *e*, heads F F, provided with rims G G, and made with conical-shaped openings upon their inner faces, and shell part or cylinder E', substantially as and for the purposes set forth.

2. The combination of back roll, E, provided with heads F F, and tie-rod H, back-roll stands or supports D D, and the loom-sides *a* and arch-stands *b* of the frame of a loom, constructed and arranged substantially as shown and described, for the purpose stated.

254,028. CAR-COUPLING. ELIAS LARNER, Germantown, N. Y. Filed Dec. 22, 1881. (No model.)

Claim.—1. The combination, with the fixed cross-timber A, of the cushioned pins *l l*, secured therein, the hook-bar *b b'*, also secured therein, the stop *i*, and the bumper-frame, the latter supporting said hook-bar and having a sliding movement over and independent of it, and the said hook-bar having a sliding movement within the bumper-frame and independent of it, substantially as described, for the purpose specified.

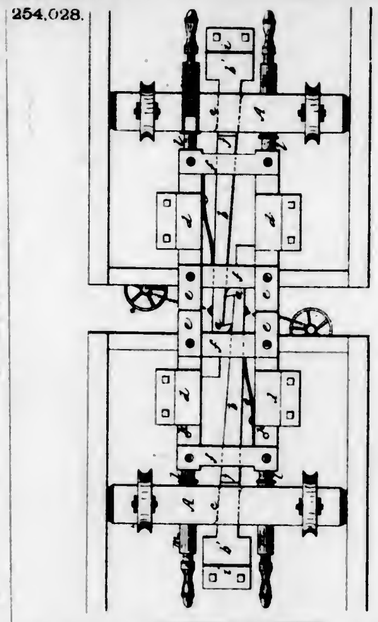
2. The combination, with the fixed cross-timber A, of the cushioned pins *l l*, secured therein, the hook-bars *b b'*, also secured therein, the stop *i*, and the bumper-frame, consisting of the side bars, *e e*, and the cross-bars *f f* pivoted together, whereby, although connected, each side bar is free to have a limited movement independent of the other against their cushioned pins, substantially as described, for the purpose specified.

3. The bumper-frame consisting of the side bars, *e e*, and the under cross-bars, *f f*, in combination with the hook-bar arranged between the side bars and supported upon the cross-bars, and the fixed mortised cross-timber A, supporting the cross-head end of said hook-bar and forming the draft-abutment therefor, substantially as herein set forth.

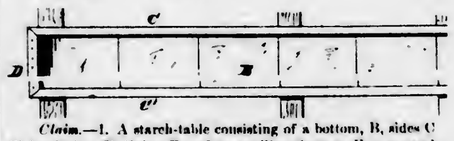
4. In combination, the bumper-frame having the stops *k k*, the fixed guides *d d*, the hooked cross-head bar having the rib *j*, the mortised cross-timber A, the separate cushioned pins *l l*, and the stop *i*, substantially as described, for the purpose specified.

5. In combination, the hooked cross-head bar *a b*, the fixed mortised cross-timber A, the bumper-frame *e f*, its guides *d d*, the springs *g g*, the cushioned pins *l l*, and the stop *i*, all constructed and arranged substantially as described.

254,028.



254,029. STARCH-TABLE. CHARLES LAUTZ, Buffalo, N. Y., assignor to Wesp, Lautz Brothers & Co., same place. Filed Dec. 6, 1881. (No model.)

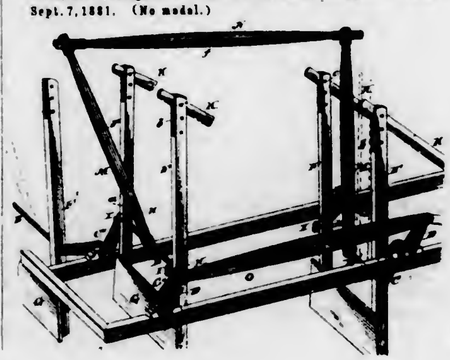


Claim.—1. A starch-table consisting of a bottom, B, sides C C', head-piece D, lining F, and an auxiliary bottom, E, composed of slabs of calcareous or argillaceous stones, substantially in the manner as and for the object specified.

2. A starch-table consisting of a bottom, B, sides C C', head-piece D, lining F, and an auxiliary bottom, E, composed of slabs of calcareous or argillaceous stones coated or saturated substantially in the manner as and for the object specified.

3. In a starch-table, the combination, with the bottom B, of the sides C C', head-piece D, lining F, and the auxiliary bottom E, said auxiliary bottom E being composed of slabs of stone placed upon the lining F in said table, substantially in the manner as and for the object stated.

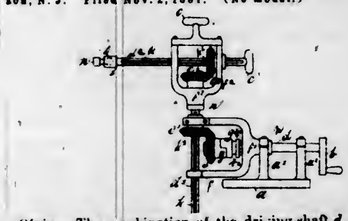
254,030. CRANK-PADDLE. JULIUS I. LEMONFIELD, Grenville, Miss., assignor to William A. Pollock, same place. Filed Sept. 7, 1881. (No model.)



Claim.—1. The combination, with the two crank-shafts B B', arranged at different angles, as described, and the paddle-uprights F, journaled therein, of the connecting-rods M M, attached respectively to the two crank-shafts, and the walking-beam N, jointed to the upper ends of said connecting-rods, as described.

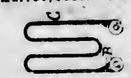
2. The combination, with the crank-shaft B, of the paddle-uprights F, having slots *a*, the sliding block H, carrying the crank-shaft and made adjustable in said slot, and the oscillating rods K, as set forth, and for the purpose described.

254,031. DRILLING-MACHINE. GEORGE W. LONGMAN, Paterson, N. J. Filed Nov. 2, 1881. (No model.)



Claim.—The combination of the driving-shaft *d*, adjustable frame *f*, sleeves *f'*, gear-wheels *e e'*, collars *h*, clutch *g*, feathers h^2, standards *a'*, driving-spindle *d'*, provided with a groove, *k*, feathers *k'*, adjustable frame f^2, gear-wheels e^2 e^3, spindle d^3, having groove *k*, collar *i*, socket *l*, chuck *n*, operating-handles *o o'*, bed-plate *a*, and crank *b*, all arranged as shown, operating as and for the purposes set forth.

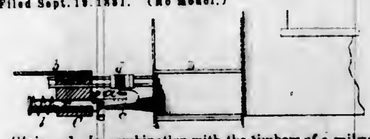
254,032. ELECTRIC LAMP. HIRAM S. MAXIM, Brooklyn, assignor to the United States Electric Lighting Company, New York, N. Y. Filed Mar. 31, 1881. (No model.)



Claim.—1. In an incandescent electric lamp, the combination, with the conductors sealed therein, of a continuous conductor of carbon gradually enlarged at or near its ends, substantially as and for the purposes set forth.

2. A continuous conductor of carbon for use with an incandescent electric lamp, consisting of the stem C, having enlarged portion A and gradually-tapering portion B, substantially as and for the purposes set forth.

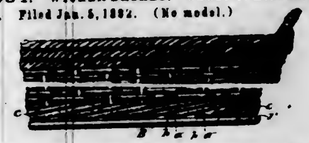
254,033. CAR-COUPLING. RICHARD N. MCKAY, Carlton, N. Y. Filed Sept. 19, 1881. (No model.)



Claim.—1. In combination with the timbers of a railway-car platform a coupling device consisting of a cylindrical part, *r*, with offset-hook *e*, provided with a retroverted part, *c*, and means to turn said hook in its bearing, substantially as described.

2. In combination, the timber C of the platform, and the offset coupling-hook *e*, with retroverted part *c*, said hook being provided with a slot, *r*, substantially as and for the purpose set forth.

254,034. WICKER BASKET. JAMES O. MILLER, Liverpool, N. Y. Filed Jan. 5, 1882. (No model.)



Claim.—The combination of the bottom board, B, having cut out of its upper edge the rabbet *r*, and provided in the inner shoulder of said rabbet with the horizontal holes *a* and *b*, the standards *c*, having their lower extremities bent and inserted in the holes *a*, and the wickers *d* of the bottom braiding having their ends bent around the exterior of the standards *c* and terminating in the holes *b*, the horizontal portion of the rabbet projecting over the base of the basket-body, all constructed and combined substantially in the manner described and shown

254,035. SLEEVE OR OTHER BUTTON. SAMUEL MOORE, Providence, R. I., assignor to Frank Buffington, same place. Filed June 13, 1881. (No model.)

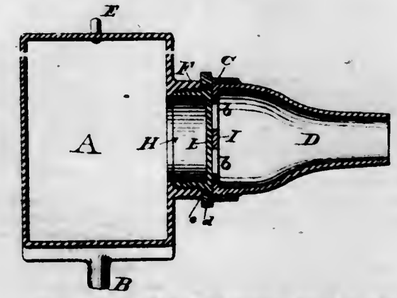


Claim.—1. A sleeve or other button with a shoe fastened to and turning on the end of a hollow post, a spring-actuated link attached to said shoe running through said post and the bottom plate of the button to a spring located in said button, the post being rigidly attached to the bottom plate and slotted its whole length, with the link so attached to shoe at one side of the fulcrum of same on the post that the tension of the spring is made to keep the shoe in its respective positions, substantially as herein described

2. The combination, with a button-head having a perforated plate, A', and a post, B, secured thereto and provided with a groove, *b*, and pivots *b' b'*, of a spring, D, located in the button-head, a link, E, connected to said spring, and a shoe provided with a disk, C', pivoted, as described, to the post and to the link.

3. The combination, as before set forth, with a button-head having a perforated plate, A', and a post, B, secured thereto and provided with a groove, *b*, and pivots *b' b'*, located as described, of a spring, D, located in the button-head, a link, E, connected to said spring, and a shoe composed of a shell, C', a disk, C^2, and a disk, C^3, and pivoted, as described, to the post and to the link.

254,036. MEASURING-FAUCET. JOHN C. NORRIS, Crate, Nebr. Filed Nov. 14, 1881. (No model.)



Claim.—1. A box, A, having openings B and E, in combination with the disks L and I, having openings *a a* and *b b*, substantially as shown and described, and for the purpose set forth.

2. The combination of the box A, provided with vent and discharge openings E and B, the nipple H, with disk L, having openings *a a*, stock D, with disk J, having openings *b b*, and coupling or sleeve C, substantially as shown and described, and for the purpose set forth.

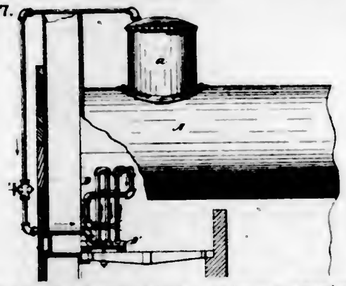
3. In a measuring device, the combination of a rotatable box provided with a vent and discharge opening, a nipple attached to said box and having a disk provided with openings, a stock adapted to be attached to a barrel or other vessel and provided with a perforated disk, and a coupling connecting said stock and nipple, whereby the measuring-box is adapted to be rotated so as to cause the openings in said disks to coincide and permit the passage of liquids or other materials to the interior of the box when the discharge-opening is turned upward and escape therefrom when said opening or spout is turned down, substantially as described.

254,037. SMOKE-CONSUMER. CARUTH OLSON, Chicago, Ill., assignor of one-half to the Tobey Furniture Company, same place. Filed Oct. 25, 1881. (No model.)

Claim.—1. The steam-heater D, in combination with the shoe D', attached to the grate-bars of the furnace, and the boiler A, between which and the furnace-wall the upper end of the heater is held, substantially as described.

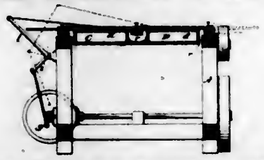
2. An apparatus for consuming or preventing smoke, consisting of a single steam holder or receiver, D, arranged within the furnace and at one corner of the draft end thereof, and provided with a horizontal fan-jet nozzle, D^2, extending diagonally from the receiver and arranged just above the bed of coals, whereby the steam is superheated and then delivered in an unbroken horizontal sheet just over the coal-bed, but not in contact therewith, substantially as and for the purpose set forth.

254,037.



3. In combination with the fire-box of a furnace, a superheater, steam-pipes for supplying said superheater, a discharge-pipe attached to said superheater, having a horizontally-slotted nozzle arranged a little above the grate, and adapted to discharge an unbroken and a continuous sheet of steam horizontally over practically the whole fire, substantially as described

254,038. MIDDLINGS-PURIFIER. THOMAS B. OSBORNE, New Haven, Conn. Filed Dec. 19, 1881. (No model.)



Claim.—1. The combination of a receiver arranged and operated to agitate the ground material passing thereon, one or more plates arranged substantially parallel with the surface of the moving material and so as to present an electrified surface to the passing material, guides for said plates arranged transversely across the receivers, and mechanism, substantially such as described, to impart to said plates a reciprocating movement, substantially as described.

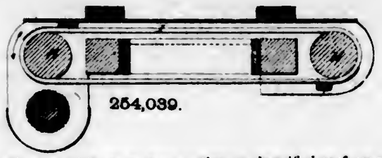
2. The combination of a receiver arranged and operated to agitate the ground material passing thereon, one or more plates arranged substantially parallel with the surface of the moving material and so as to present an electrified surface to the passing material, guides for said plates arranged transversely across the receivers, mechanism, substantially such as described, to impart to said plates a reciprocating movement, and brushes to electrify the working-surface of the said plates, substantially as described.

3. The combination of a receiver arranged and operated to agitate the ground material passing thereon, one or more plates arranged substantially parallel with the surface of the moving material and so as to present an electrified surface to the passing material, guides for said plates arranged transversely across the receivers, mechanism, substantially such as described, to impart to said plates a reciprocating movement, and strippers to take the particles from the plate which have been attracted to it in its passage over the moving material, substantially as described.

4. The combination of a receiver arranged and operated to agitate the ground material passing thereon with one or more plates arranged substantially parallel with the surface of the moving material and so as to present an electrified surface to the passing material, guides for said plates arranged transversely across the receiver, and mechanism, substantially such as described, to impart to said plates a reciprocating movement, the said guides made adjustable, whereby the position of the reciprocating plates relative to the material over which they pass may be adjusted, substantially as described.

5. The combination of a receiver arranged and operated to agitate the ground material passing thereon, one or more plates arranged substantially parallel with the surface of the moving material and so as to present an electrified surface to the passing material, guides for said plates arranged transversely across the receivers, mechanism, substantially such as described, to impart to said plates a reciprocating movement, and brushes to electrify the working-surface of the said plates, said brushes made adjustable with relation to the plates, substantially as described.

254,039. MIDDLINGS-PURIFIER. THOMAS B. OSBORNE, New Haven, Conn. Filed Dec. 19, 1881. (No model.)



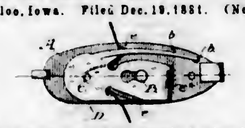
254,039.

Claim.—1. The combination of a receiver for the ground material, arranged and operating to agitate the ground material passing thereon, with one or more stationary electrified surfaces above the surface of the ground material passing in the receiver, substantially as described.

2. The combination of a receiver for the ground material, arranged and operating to agitate the ground material passing thereon, with one or more stationary electrified surfaces above the surface of the ground material passing in the receiver, and a brush or brushes, *e*, arranged to travel on the working-surface of said plates between that surface and the ground material, substantially as and for the purpose described.

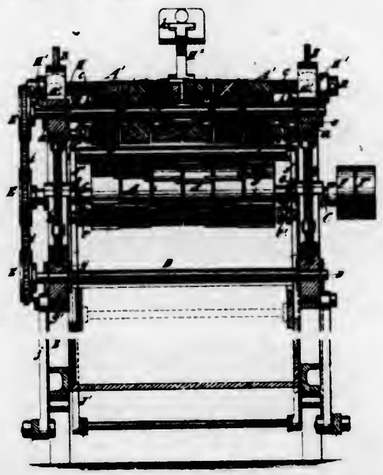
3. The combination of a receiver for the ground material, arranged and operating to agitate the ground material passing thereon, with one or more stationary electrified surfaces above the surface of the ground material passing in the receiver, with a stripper or strippers arranged to travel between the surfaces of the ground material and the electrified surface of the plates to take from the surface of the plates the particles attracted thereto and carry them to a receptacle, substantially as described.

254,040. SEWING-MACHINE SHUTTLE. WINSLOW E. PARSONS, Waterloo, Iowa. Filed Dec. 19, 1881. (No model.)



Claim.—In a sewing-machine shuttle having its lid hinged at its forward end, the lid A, provided with the adjusting-screw hole *a*, depressions *c c*, hole *b*, and the pin C, in combination with the tension-spring D, provided with the slots *d d'*, points *d'' d'''*, the finger *b'*, hole *c*, bent end *c'*, and the adjusting-screw B, all constructed and combined to operate substantially as and for the purpose set forth.

254,041. FELTING-MACHINE. AUGUSTE PALISSE, Newark, N. J., assignor to John T. Waring, New York, N. Y. Filed Nov. 23, 1881. (No model.)



Claim.—1. In a felting-machine, a felting-roller the periphery of which is capable of being extended or contracted lengthwise, substantially as specified.

2. A felting-machine comprising two or more felting-rollers capable of being extended or contracted lengthwise, substantially as specified.

3. In a felting-machine, a felting-roller composed of sections capable of approaching and receding from each other in the direction of the length of said roller, substantially as specified.

4. The combination, in a felting-machine, with a roller or rollers composed of sections capable of movement toward and from each other in the direction of the length of the roller or rollers, of mechanism for producing such movement, substantially as specified.

5. In a felting-machine, the combination of a roller-shaft, sleeves mounted thereon and movable longitudinally thereof, roller-sections fitted to said sleeves, and mechanism for moving said sleeves toward and from each other, substantially as specified.

6. The combination, with the roller-shaft, of the sleeves *b*, provided with oblique flanges *c*, the cams *c'*, and the roller-section adapted to be moved by the longitudinal movement of said sleeves, substantially as specified.

7. In a felting-machine, the combination of the lower rollers and the rising and falling upper roller or rollers, of a back roller for preventing the rolls being felted from being thrown out at the back of the machine, substantially as specified.

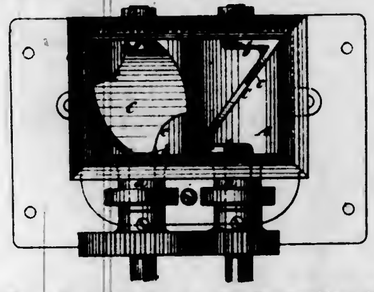
8. In a felting-machine, the combination of the lower rollers, the rising and falling upper roller or rollers, the back roller, and mechanism for adjusting it toward and away from the felting-rollers, substantially as specified.

9. In a felting-machine, the combination, with the two lower felting-rollers, the rising and falling upper roller or rollers, and a shaft below said lower rollers, having its bearings connected with those of the upper roller or rollers, of wheels upon said rollers and shaft, and a chain or band passing around all said wheels for imparting rotary motion from one wheel to all the others, substantially as specified.

10. The combination of the three roller-shafts C C C', the shaft D, the rods A, connecting the bearings of the shafts C' and D, the wheels E, and the chain or band *i*, and the treadle and rods for raising the shafts C' and D, substantially as specified.

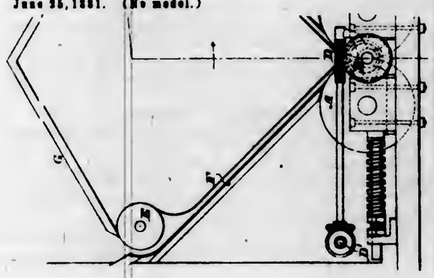
11. In a felting-machine, the combination of the upper rising and falling roller, A, the rock-shaft H, the levers H', and the lever H'' and weight *k*, substantially as specified.

254,042. KNEADING AND MIXING MACHINE. PAUL PELNIDERRE, Norwood, County of Surrey, England. Filed Feb. 10, 1880. Patented in England Dec. 31, 1878, in France June 30, 1879, in Belgium July 7, 1879, in Austria Nov. 11, 1879, in Italy Jan. 31, 1880, and in Germany Aug. 13, 1880.

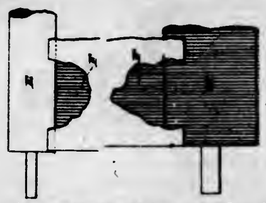


Claim.—The combination, in a kneading-machine, with a trough or case, of blades adapted to rotate therein, and composed of elliptical or ellipse-like disks set obliquely to their axes of rotation and having gaps *e* in their perimeters, substantially as specified.

254,043. ROLLER-MILL. HENRY H. POMEROY, Madison, Wis., assignor of one-third to Charles E. Hall, same place. Filed June 25, 1881. (No model.)



254,043.

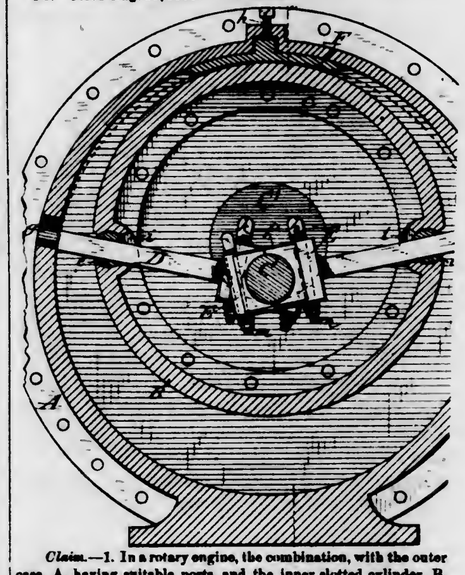


Claim.—1. The combination of two grooved grain-splitting rolls having intervening sharp-edged projections or cutting-edges passing or overlapping each other and not opposite each other, the rolls being adapted to be revolved at a uniform speed for splitting kernels of wheat or like grain longitudinally without grinding them, substantially as described.

2. The combination of the corrugated grain-delivery apron F and the grooved rolls, constructed and operating substantially as set forth.

3. The combination of the apron G, the feed-roll E, the inclined corrugated apron F, and the grooved rolls A A, substantially as set forth.

254,044. ROTARY ENGINE. HENRY W. PETTIS, Titusville, Pa. Filed Aug. 29, 1881. (No model.)



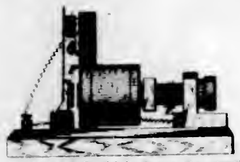
Claim.—1. In a rotary engine, the combination, with the outer case, A, having suitable ports, and the inner slotted cylinder, B, journaled eccentrically within said case and provided with adjustable pistons D D, of a fixed pin for the attachment of the piston-boxes, said pin consisting of the shaft C, concentric with the outer case and having an enlarged eccentric head, C', concentric with the inner cylinder, said head C' being detachably connected with the outer case and adapted to form a bearing for one head of the inner cylinder, substantially as shown and described.

2. In a rotary engine, the combination of the outer chambered case, A, having ports *g g*, inner slotted cylinder, B, journaled eccentrically within said case, fixed crank-pin C, having an eccentric head or bearing, C', adjustable pistons D D, journaled on the shaft of said pin concentrically with the outer case and eccentrically with the inner cylinder, and the adjustable plate or abutment F, arranged at the upper chambered portion of the outer case, substantially as shown and described

254,045. ELECTRO-MAGNETIC RELAY. CHARLES A. RANDALL, New York, N. Y. Filed Apr. 5, 1880. (No model.)

Claim.—1. The combination, in an electro-magnetic relay, of the elastic or spring arm constituting one terminal of the apparatus, the carbon or other suitable button constituting the other terminal, and with which the elastic arm is in permanent contact, an elec-

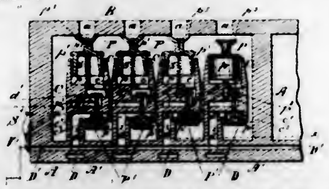
254,045.



tro-magnet the attraction of which draws the elastic arm against the carbon button, and suitable electrical connections whereby the terminals may be held in contact with a varying force and the current correspondingly varied, the spring-arm affording the proper elasticity of contact, substantially as and for the purpose set forth.

2. The combination, in an electro-magnetic relay, of the elastic or yielding lever, a suitable fixed terminal or button in permanent contact with the lever, an electro-magnet which draws the lever against the fixed terminal, and a screw for adjusting the magnet, substantially as and for the purpose set forth.

254,046. PNEUMATIC ACTION FOR ORGANS. MORITZ REITER, Berlin, and GUSTAV SANDER, Breslau, assignors to Oswald Dinse and Paul Dinse, Berlin, Germany. Filed Dec. 1, 1881. (No model.)



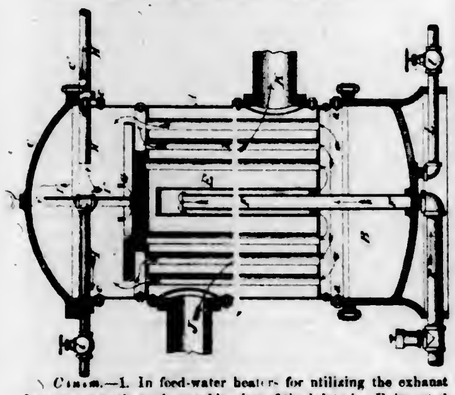
Claim.—1. In wind-instruments of the class described, the combination, with the wind-chest, its air-ducts *a*, *a'* *d* D, and *d*² *d*³ D', and the valves V V', of the double valves P P", all constructed and arranged for operation substantially as and for the purpose specified.

2. The combination of the wind-chest, its air-ducts *a*, *a'* *d* D, *d*² *d*³ D', and the valve-casings C, of the valves P P' and V V', all arranged for operation substantially as and for the purpose specified.

3. The combination of the wind-chest, its air-ducts *a*, *a'* *d* D, *d*² *d*³ D', and the valve-casings C, open at one end and having ports *c c'* *c*², of the valves P P", each provided with a valve-head, *p*', and a valve-flange, *p*', and the valves V V', all arranged for operation substantially as and for the purpose specified.

4. In a wind-chest for musical instruments of the class described, a valve-casing having a hollow cylindrical body, open at one end to form a valve-seat, and ports *c c'* *c*², and air-ducts *d d'* *d*² *d*³, in combination with the valves P P', all constructed, arranged, and operating substantially as and for the purpose specified.

254,047. FEED-WATER HEATER. EDWIN REYNOLDS, Milwaukee, Wis. Filed Dec. 1, 1881. (No model.)



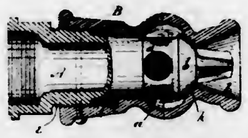
Claim.—1. In feed-water heaters for utilizing the exhaust from steam-engines, the combination of the inlet-pipe F, inverted descending pipe E, and settling-chamber B, substantially as and for the purpose described.

2. In feed-water heaters for utilizing the exhaust from steam-engines, the combination of the tubes D D D, deposit-pan G, and removable cap C, substantially as and for the purpose described.

3. In feed-water heaters for utilizing the exhaust from steam-engines, the surface blow-off I I' I', arranged in the head of the heater, in combination with the deposit-pan G, substantially as and for the purpose described.

254,048. HOSE-NOZZLE. FREDERICK W. ROBERTSHAW, Pittsburg, Pa. Filed Oct. 3, 1881. (No model.)

Brief.—The central conical valve, which has its seat within the shell, is adjustable axially and controls the only outlet for the water.



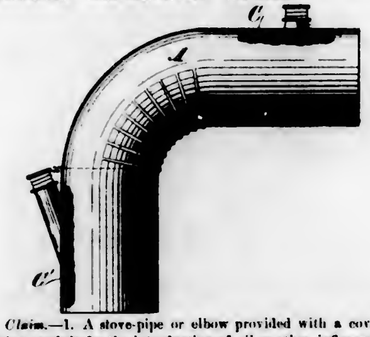
Claim.—1. A hose-nozzle constructed with a central conical valve and a surrounding conical valve-seat, the adjacent surfaces of both valve and valve-seat converging toward the discharge end of the nozzle, said valve-seat being formed in a shell placed around the central valve and confining the discharge to the space between the valve and seat, substantially as described.

2. A hose-nozzle constructed with a central conical valve and a surrounding conical valve-seat, the adjacent surfaces of both valve and valve-seat converging toward the discharge end of the nozzle and adjustable to and from each other axially, substantially as described.

3. In a hose-nozzle, the piece A, having lateral openings *a* and solid plug *b*, in combination with the movable outer shell, B, having internal enlargement, *h*, and convergent discharge-surface *k*, substantially as described.

4. The combination of piece A, threaded externally and having part of its thread cut away, with shell B, provided with set-screw *m*, substantially as specified.

254,049. STOVE-PIPE. EDGAR ROBINSON, Cincinnati, Ohio, assignor, by mesne assignments, of one-half to Guy Webber, same place. Filed Jan. 10, 1882. (No model.)



Claim.—1. A stove-pipe or elbow provided with a covered priming-conduit for the introduction of oil or other inflammable material, as and for the purpose specified.

2. A priming device formed on a stove-pipe, consisting of the covered priming-hole and a spreading-plate, C, arranged upon the inside of the pipe, under the priming-hole, substantially as herein set forth.

3. A priming device in a stove-pipe, consisting of a priming-hole, a surrounding screw-cap, and a spreading-plate attached to the interior of the pipe, under said priming-hole, said plate being attached so as to spread the oil over the interior sooty surface of the pipe, substantially as herein set forth.

254,050. COOKING APPARATUS. EDGAR ROBINSON, Cincinnati, Ohio. Filed Nov. 21, 1881. (No model.)

Claim.—1. A cooking apparatus composed substantially of the water-boiler A and one or more cooking-vessels, B, having the outside sectional supply-pipes, E, and a secondary intersecting supply-pipe, G, substantially as herein set forth.

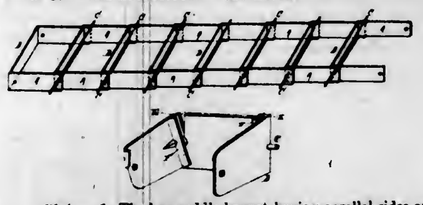
2. A cooking apparatus composed substantially of water-boiler A, cooking-vessels B, having the outside supply-pipe, E, and a secondary intersecting supply-pipe, G, extending below the false bottom C and terminating near the real bottom *c*, so as to form the water seal, substantially as set forth.

254,050.



3. The sectional removable cooking-pan B, having a permanent outside supply-pipe, E, and the intersecting supply-pipe G, projecting into pipe E, substantially as described.

254,051. CHAIN-PROPELLER. JAMES M. ROGER, Tarrytown, N. Y. Filed Nov. 21, 1881. (No model.)

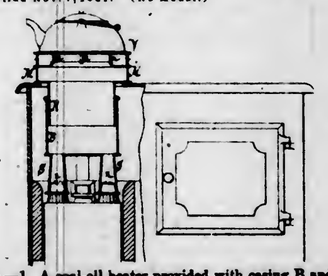


Claim.—1. The box paddle-bucket having parallel sides and an end or cross piece substantially at right angles with said sides, of equal width therewith, and having an axle-projection on each side close to the junction of the parallel sides with the cross piece or end, said axle-projections being located midway between top and bottom of the bucket, substantially as shown and described.

2. The chain of paddles herein described, consisting of buckets having side wings at right angles to the float, and projections extending from the ends of the float or side of the arms, to which projections the succeeding buckets are pivoted about midway of their height, thereby forming a series of inclosures composed wholly of the buckets and side pieces, substantially as described.

3. In combination with the wheels D D, the chain of paddles herein described, consisting of buckets having side wings at right angles to the float and projections extending from the ends of the float or side of the arms, to which projections the succeeding buckets are pivoted about midway of their height, thereby forming a series of inclosures composed wholly of the buckets and side pieces, said chain of paddles being mounted upon the wheels, and the whole constructed and arranged to operate substantially as herein shown and described.

254,052. COAL-OIL HEATER. JARED S. ROWLAND, Jamaica, N. Y. Filed Nov. 7, 1881. (No model.)

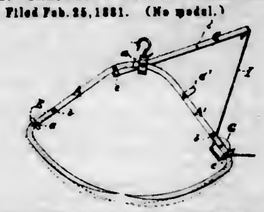


Claim.—1. A coal-oil heater provided with casing B and adjustable hollow cylinder R, sliding on said casing and carrying a drum, M, substantially as and for the purpose set forth.

2. A coal-oil heater provided with casing B and adjustable hollow cylinder R, carrying the drum M and stand V, substantially as and for the purpose set forth.

3. A coal-oil heater provided with chimneys S, casing B, and adjustable hollow cylinder R, carrying the drum M and stand V, substantially as and for the purpose set forth.

254,053. GRAPPLE HAY-FORK. GEORGE RUSSELL, Palmyra, Wis. Filed Feb. 25, 1881. (No model.)

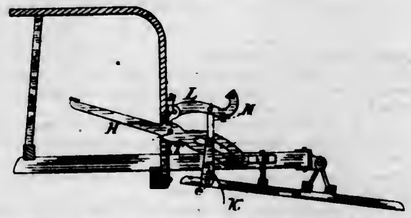


Claim.—1. The fork-heads A A', formed of metallic bars, bent or shaped as shown and described, and pivoted on a central assembling-pin, *a*, in combination with the adjustable teeth B B', the whole operating to form a grapple hay-fork, substantially as described and set forth.

2. The fork-teeth B B' and the fork-head A A', adjustably combined together by means of the pivot-pins *b*, sliding plates or clamps E, and set-screws *e*, substantially as described and set forth.

3. The lever C, provided with a transverse pin, *c'*, near its central part, arranged to be engaged by an automatic spring-latch, C', secured to the central bar, F, of the rake-head, so as to hold or release the parts as required by the operation of the fork, substantially as described and set forth.

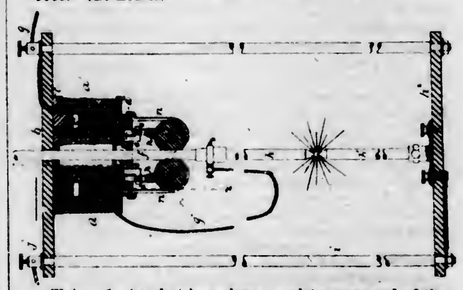
254,054. CORN-PLANTER. ANDREW RUSSTETLER, Dayton, Ohio, assignor to the Farmers Friend Manufacturing Company, same place. Filed Sept. 10, 1881. (No model.)



Claim.—1. In a corn-planter having the rear frame mounted on driving-wheels, to which is pivoted a front runner-frame, the foot-lever L, pivoted to the front of the seat-standard and connected with the rear end of the runner-frame by pendent links for forcing the runners into the ground, in combination with the independent treadle H, also pivoted to the seat-standard for raising the runners from the ground, substantially as described.

2. The foot-lever L, pivoted to the front of the driver's seat, and connected to the rear end of the runner-frame by means of link-connections K M, all substantially as herein set forth.

254,055. ELECTRIC LAMP. GEORGE W. SAWYER, New York, N. Y., assignor to Bernard Lande, same place. Filed Nov. 28, 1881. (No model.)



Claim.—1. An electric-arc-lamp regulator composed of the following instrumentalities in combination: friction guide-pulleys embracing the upper-carbon-holding rod, and the moving core or armature of an electro-magnetic device provided with brake-arms adapted to prevent the rotation of the guide-pulleys and raise them with the carbon-holding rod clamped between them, when the core or armature is acted on by induction from the electric current passing through the coils of the electro-magnetic device, substantially as set forth.

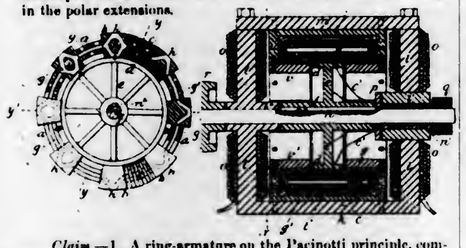
2. In combination with the moving core or armature of an electro-magnet, the brake-arms *n n*, pulleys *l l*, fitted in vertically-sliding bearings, and the carbon rod *f*, substantially as and for the purpose hereinbefore set forth.

3. In combination, the rod *f*, pulleys *l l*, yokes *k k*, having slotted necks, brackets *e e*, having set-screws *e' e'*, and brake-arms *n n*, connected to bar *d'* of the moving cores *d d*, substantially as set forth.

4. The electro-magnetic device composed of the helices *a a'*, fixed connected cores *c' c'*, and movable connected cores *d d*, in combination with the brake-arms *n n*, pulleys *l l*, yokes *k k*, and carbon rod *f*, substantially as set forth.

254,056. DYNAMO-ELECTRIC MACHINE. WILLIAM E. SAWYER, New York, N. Y., assignor to Bernard Lande, same place. Filed Dec. 3, 1881. (No model.)

Brief.—The pole-pieces of the field-magnets nearly surround the cylindrical armature within and without. The armature is cast in one piece, and has air-passages extending through those portions upon which the wire is wound, and having external openings in the polar extensions.



Claim.—1. A ring-armature on the Pacinotti principle, composed of one piece of metal, and having air-passages extending through the parts on which the induced conductor is wound and out at the external periphery of the polar projections, substantially as and for the purpose set forth.

2. A ring-armature on the Pacinotti principle, composed of one piece of metal, and having air-passages extending through the parts on which the induced conductor is wound and out at the external and internal peripheries of the polar projections, substantially as and for the purpose set forth.

3. A ring-armature core composed of the parts *a a* and polar extensions *b*, having air-passages *g g* and openings *h h*, in combination with the conductor *c*, wound on the parts *a a*, substantially as set forth.

4. A ring-armature core having the polar projections *b b*, depressions *a a*, for the reception of the conductor *c*, the air-passage *g g*, openings *h h* in the outside periphery and openings *i i* in the inside periphery of the polar projections *b b*, substantially as set forth.

5. The armature composed of a paramagnetic ring with polar projections *b b*, and having air-passages, as described, and an insulated electric conductor wound thereon between the polar projections, in combination with the diamagnetic wheel *d e f*, substantially as set forth.

6. A frame for dynamo-electric machines, composed of a base-plate, *k*, and side pieces, *l l*, having bearing *l' l'* in their center for the armature-shaft *a*, and forming cores for the coils of the field-magnets *o o*, substantially as described.

7. In combination with the frame *k l l m*, the grooved curved poles *s s'*, substantially as set forth.

8. In combination, the frame *k l l m*, poles *s s'* having side flanges, *u u'*, and the curved plates *v v'*, substantially as described.

9. In a dynamo-electric machine, the ring-armature *a b c*, diamagnetic wheel *d e f*, poles *s s'*, frame *k l l m*, field-armature coils *o o* on the side pieces, *l l*, and bearings for the armature-shaft in the center thereof, substantially as set forth.

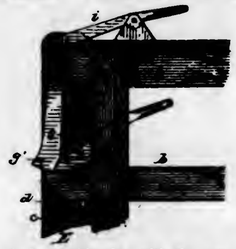
10. A ring-armature core composed of the parts *a a* and polar extensions *b*, having air-passages *g g* and openings *h h*, in combination with the deflectors *i i*, substantially as set forth.

254,057. MARKING-TAG. STEPHEN D. SHATTUCK, Cohoes, N. Y. Filed Dec. 31, 1881. (No model.)



Claim.—As an improved article of manufacture, a double hook, to be used in suspending articles exposed for sale, and which is provided with an eye or bend near its center, into which the tag is made to catch, substantially as shown.

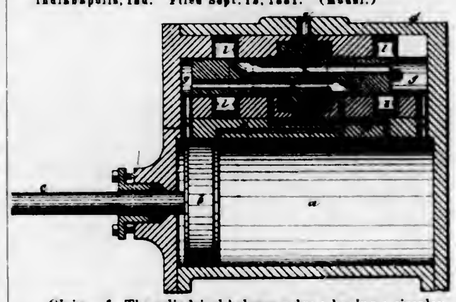
254,058. LATCH FOR SLIDING GATES. ISAAC S. SHERWIN, Battle Creek, Mich. Filed Nov. 10, 1881. (No model.)



Claim.—1. In combination with the gate-post E, provided with a transverse pin, *d*, and with a drop-pawl, *g*, a sliding gate provided with a projecting tapering beveled rail, *b*, which rides over the pin *d* and engages with the pawl *g*, the gate being further provided with the connected levers *h i*, adapted to unlock the gate by tripping the pawl, substantially as specified.

2. The slotted gate-post E, provided with a pivoted drop-pawl, *g*, and a transverse pin, *d*, in combination with a sliding gate provided with the projecting tapering beveled rails *a b*, and the lever *h*, whereby the gate may be secured either in a horizontal position or with one end raised, substantially as and for the purpose set forth.

254,059. STEAM-ACTUATED VALVE. ALONSO J. SIMMONS, Indianapolis, Ind. Filed Sept. 13, 1881. (Model.)



Claim.—1. The cylindrical balance-valve *s*, having a circular recess, *t*, and beveled sides, and provided with the opposite cylindrical valve-stems, *u*, having annular recesses *v w*, and angular main steam and exhaust passages *x x'*, substantially as described, and for the purpose set forth.

2. The cylindrical steam-chest *d*, provided with the opposite cylindrical valve-stem seats, *g g*, having annular exhaust-ports *l l*, annular steam-passages *o*, annular central chamber, *h*, between the valve-stem seats, and valve-chambers *h'*, substantially as described, and for the purpose set forth.

3. The combination, with the cylindrical balance-valve *s*, having opposite valve-stems, *u*, all constructed as set forth, of the cylindrical steam-chest *d*, provided with the opposite valve-stem seats, *g g*, ports *l l*, annular steam-passages *o*, annular steam-chamber *h*, and valve-chambers *h'*, substantially as described, and for the purpose set forth.

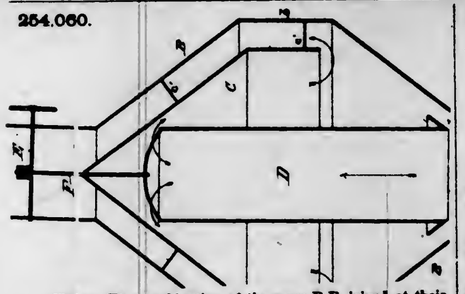
4. The combination, with the automatic cylindrical balance-valve *s*, having opposite valve-stems, *u*, and main steam and exhaust passages *x x'*, of the steam-cylinder *a* and angular steam-passages *p p'*, whereby the valve is automatically reciprocated, substantially as described, and for the purpose set forth.

5. The combination, with the steam-chest *d*, provided with annular exhaust-ports *l l*, of the valve *s* and valve-stems *u*, having the angular passages *x x'*, connecting alternately with both opposite exhaust-ports at the same time, substantially as described.

6. The combination, with the cylindrical steam-chest *d*, provided with opposite cylindrical valve-stem seats, *g*, annular chamber *h*, valve-chambers *h'*, and balance-valve *s*, having valve-stems *u*, all constructed as set forth, of the steam-cylinder *a*, provided with the piston *b* and rod *c*, and angular steam-passages *p p'*, leading from the steam-chest to the cylinder, substantially as described, and for the purpose set forth.

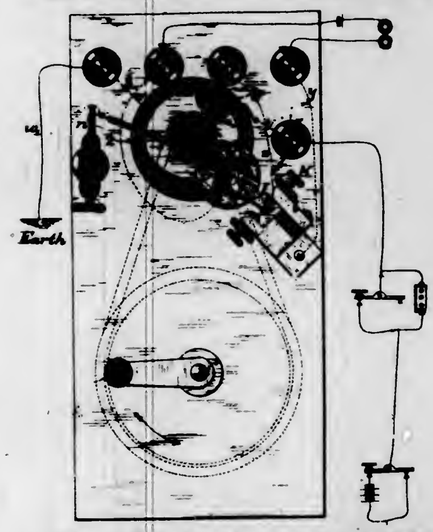
254,060. HEATING-DRUM. ALEXANDER STARK, Merrillan, Wis. Filed Feb. 21, 1881. (No model.)

254,060.



Claim.—The combination of the cones B B, joined at their bases to the section *b*, and the cone C, arranged within the upper cone, B, with the straight funnel D, connecting-rod F, and crank-shaft E, all arranged to operate substantially as and for the purpose set forth.

254,061. TELEGRAPHIC RECEIVING-INSTRUMENT. GRANITT SMITH, Astoria, N. Y. Filed Dec. 29, 1881. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of a rotating cylinder of magnetic metal, a magnetizing-coil acting upon said cylinder, an armature maintained in permanent magnetic contact with the moving surface of said cylinder and capable of receiving motion therefrom by friction, a retractor exerting a constant force upon said armature in a direction opposed to that derived from its frictional contact with the moving cylinder, and fixed stops for limiting the movements of the armature in each direction.

2. The combination, substantially as hereinbefore set forth, of a rotating cylinder of magnetic metal, a magnetizing-coil acting upon said cylinder, an armature maintained in permanent magnetic contact with the moving surface of said cylinder and capable of receiving motion therefrom by friction, a retractor exerting a constant force upon said armature in a direction opposed to that derived from the moving cylinder, an electric circuit including said magnetizing-helix, and a key or transmitter in said circuit for alternately increasing and decreasing the strength of the current traversing said circuit.

3. The combination, substantially as hereinbefore set forth, of a rotating cylinder of magnetic metal, a magnetizing-coil acting upon said cylinder, an armature maintained in permanent magnetic contact with the moving surface of said cylinder and capable of receiving motion therefrom by friction, a retractor exerting a constant force upon said armature in a direction opposed to that derived from the moving cylinder, and an independent circuit traversed by an electric current which is controlled by the movements of said armature.

254,062. FIRE-PLACE GRATE. LUTHER H. SMITH, Pittsburg, Pa. Filed June 28, 1881. (No model.)

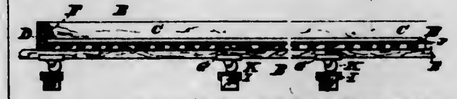


Claim.—1. The fore plate, *b'*, having slit *i* and notch *i'*, in combination with socketed shaker-stem *e* and handle *n*, having pin *n'* and test *n²*, substantially as set forth.

2. In combination with a grate set back from the fire-front, a horizontal fore plate, *d*, having a register therein, front plates, *b' b²*, and fender *b*, making a close front, substantially as set forth.

3. The vertical plates *m m*, having lugs *e e'*, in combination, by bolt and nut *z*, with fore plate, *d*, substantially as set forth.

254,063. STARCH-TABLE. RICHARD J. STARK, Buffalo, N. Y., assignor to Wasp, Lauts Brothers & Co., same place. Filed Dec. 6, 1881. (No model.)



Claim.—1. A starch-table composed of a bottom, B, sides C C', end pieces, D, and an auxiliary bottom, E, placed above the true bottom B, substantially as described, for the object specified.

2. A starch-table composed of a bottom, B, sides C C', end pieces, D, lining or sheeting F, and an auxiliary bottom, E, placed above the lining F and bottom B, substantially as and for the object stated.

3. In starch-tables, an auxiliary bottom, E, placed upon the true bottom B, substantially as described.

4. In starch-tables, a device for instantly raising and lowering, consisting, in combination with the bottom B, of plates G, having lugs H H', a cam-disk, K, provided with means, substantially as described, for rotating said disk, and a base-plate, I, substantially in the manner as and for the object specified.

5. The improved starch-table hereinbefore described, consisting of a bottom, B, sides C C', end piece, D, lining or sheeting F, an auxiliary bottom, E, saturated or coated with materials, substantially as described, and means whereby the said table can be raised and lowered, the whole being constructed for operation substantially in the manner as and for the use and purpose stated.

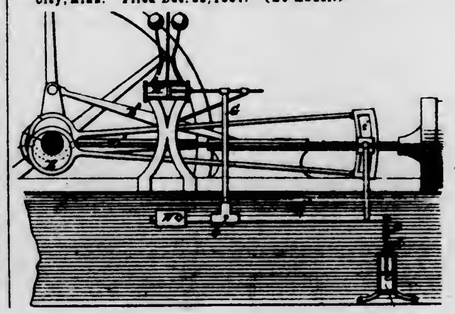
254,064. DYE-STUFF OR COLORING-MATTER. JAMES H. STEBBINS, Jr., New York, N. Y. Filed Jan. 16, 1882. (Specimens.)

Claim.—The blue dye-stuff produced by the action of diethyl-paraphenylendiamine chloride upon an alkaline solution of the soda salt of alpha-naphthol monosulpho-acid in presence of an oxidising agent, substantially as set forth.

254,065. DYE-STUFF OR COLORING-MATTER. JAMES H. STEBBINS, Jr., New York, N. Y. Filed Jan. 16, 1882. (Specimens.)

Claim.—The blue dye-stuff produced by the action of diethyl-paraphenylendiamine chloride upon an alkaline solution of alpha-naphthol in the presence of an oxidising agent, substantially as described.

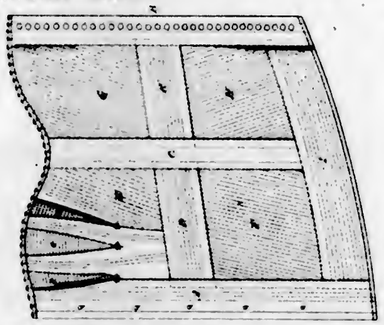
254,066. CUT-OFF-VALVE GEAR. HOYT T. STEVENS, Lake City, Minn. Filed Dec. 28, 1881. (No model.)



Claim.—1. The combination of the auxiliary steam-cylinder, the steam-valves thereof actuated directly by the governor, the balanced levers G' G', connected to the piston-rod of the said cylinder, the adjustable link connected to the lever G', and also to one or two eccentrics on the main shaft, and the dash-pot piston-rod connected to said lever G', substantially as described.

2. In an automatic link-motion of the character substantially as described, the combination of the spring attached to the piston-rod of the dash-pot, the balanced lever G', its connection with the link, and also its lever-connection with the rod of the piston in the steam-cylinder when controlled by the governor, substantially as described.

254,067. CORSET. ISAAC STROUSS, New Haven, Conn. Filed Nov. 9, 1881. (Model.)

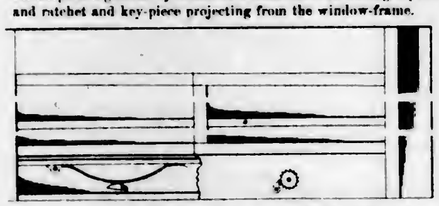


Claim.—1. The herein-described corset, consisting of the front and rear sections, A B, the transverse sections D E', respectively extending from section A to section C, and from section C to section B on the waist-line, combined with the sections E and F between the two sections A C, and respectively above and below the transverse section D and sections G H between the sections C B, and respectively above and below the transverse section E', substantially as described.

2. The herein-described corset, consisting of the front and rear sections, A B, the vertical central stayed section, C, with the transverse sections D and E', stayed longitudinally, and the sections E F G H, introduced between the vertical and waist sections, with the transverse corded section I, extending from the front to rear on the lower edge of the corset, substantially as described.

254,068. WINDOW-FRAME. WILLIAM STORM, Galveston, Tex. Filed Dec. 2, 1881. (No model.)

Brief.—The tension of the springs of the sash-holding vertical strips is regulated by a cam on a transverse rod having a pawl and ratchet and key-piece projecting from the window-frame.



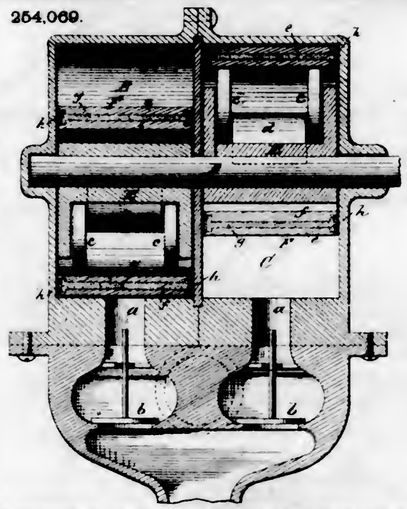
Claim.—The combination, with a window-frame and the sashes thereof, of the movable vertical strips, the flat springs secured thereto, and the cams mounted upon the transverse shafts, the latter being provided with ratchets controlled by suitable pawls, whereby the tension of the springs may be regulated, substantially as specified.

254,069. ROTARY PUMP. JOHN MITCHELL TAYLOR, Hartford, Conn. Filed Aug. 18, 1881. (No model.)

Brief.—An eccentrically-mounted piston revolves upon a shaft within a cylindrical case, carrying rollers *c d*, of different diameters, their peripheries bearing against the interior face of a ring, F, revolving in chambers B and C. Ring F is composed of two sections, *e* and *f*, between which is a packing, *g*, which presses against flat metal rings *h*, keeping them in close contact with the interior of chambers B and C.

Claim.—1. In a rotary pump, the shaft D, having connected thereto crank E, carrying rollers *c d*, in combination with the rings

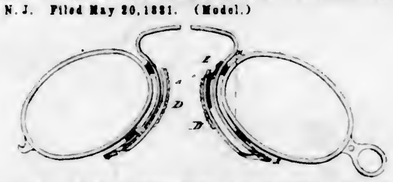
254,069.



F, consisting of the sections *e f*, packing *g*, and bands *h*, substantially as and for the purpose set forth.

2. In a rotary pump, the combination, with the crank E, carrying rollers *c d*, and ring F, of the cut-off valve G, containing packing *l* and plates *m*, substantially as and for the purpose set forth.

254,070. EYEGLASS-FRAME. FRED TRESTROWE, Elizabeth, N. J. Filed May 20, 1881. (Model.)



Claim.—1. As an improvement in nose-pieces for eyeglasses, a nose-piece adapted to be moved out of the plane of the glasses and fastened in the required position, substantially as herein described.

2. In combination with a nose-piece provided with a suitable device for fastening it in the desired position out of the plane of the glasses, a suitable spring for automatically closing the nose-piece, substantially as herein described.

3. A nose-piece for eyeglasses, having both ends connected with the frame or lenses and adapted to be moved out of the plane of the glasses, in combination with a suitable device for fastening the nose-piece in the required position, substantially as herein described.

4. A nose-piece for eyeglasses, having both ends connected with the frame or lenses and adapted to be moved out of the plane of the glasses, in combination with a suitable device for retaining the nose-piece in the required position and a spring for automatically closing the said nose-piece, substantially as herein described.

5. In combination with the nose-piece D, provided with the pin *d*, the slotted connecting-link E, provided with a notch, *e*, substantially as described.

6. The combination of the nose-piece D, provided with a spring for automatically closing the same, with the link E, for connecting its swinging end with the frame, lens, or bow-spring, substantially as described.

7. A nose-piece for eyeglasses, adapted to adjust itself axially to the surface it bears against, in combination with a suitable spring to retain it in place and automatically adjust it to a position out of the plane of the glasses, substantially as herein shown and described.

254,071. BOOT. ROBERT THOMPSON, San Francisco, Cal. Filed Aug. 2, 1881. (No model.)

Claim.—1. In a boot, the front thereof and quarters cut in a single piece on parallel perpendicular lines down the sides to the

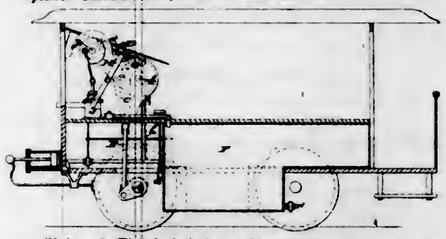
254,071.



height of the ankle-bone and thence at that height around the heel, in combination with the rear portion, D, as set forth.

2. In a boot, the upper, front of the leg, and quarters formed in a single piece cut on parallel perpendicular lines down the sides to the height of the ankle-bone and thence on that level around the heel, in combination with the rear leg portion, D, and stiffening-piece F, extending up the leg above the quarters, as set forth.

254,072. COMPRESSED-AIR MOTOR. R. STOCKTON TICE, Camden, N. J., assignor of one-half to GIDEON RICHMAN, same place. Filed Nov. 22, 1881. (No model.)



Claim.—1. The shaft A, in combination with the piston-cylinder and connecting-rods, the valve and valve mechanism, the pumps, and the tanks F with the connecting-pipes *a a* G, substantially as and for the purpose set forth.

2. The engine, the pumps, and tanks, in combination with the exhaust-pipes H, leading from the valve of the engine to said pumps, substantially as and for the purpose set forth.

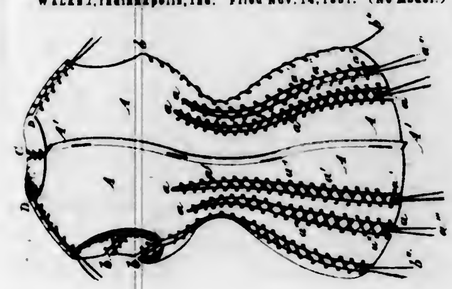
254,073. GATE. WILLIAM H. TOPPER, St. Johns, assignor of one-half to Lawrence A. Lawrason, Fowler, Mich. Filed Oct. 27, 1881. (No model.)



Claim.—1. A gate having a sliding plate, *a*, provided with the fixed pin *c*, in combination with the pins *d* and the spring-latches *p*, the parts being constructed and secured in position substantially as and for the purposes described.

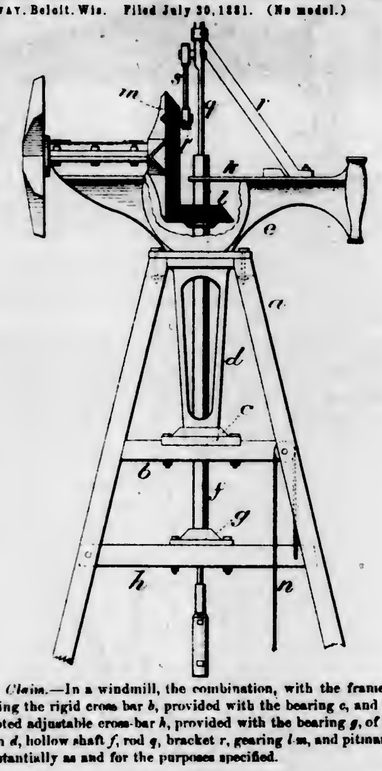
2. In a gate, the sliding plate *a*, having the fixed pin *c*, and moving in guides, in combination with the spring-latch *g*, the vertical pins *d*, pulleys *n*, and spring-latches *p* on platform D, the plate being provided with connections A and *o*, substantially as set forth.

254,074. DRESS CUTTING AND FITTING MOLD. KATE WALKER, Indianapolis, Ind. Filed Nov. 14, 1881. (No model.)



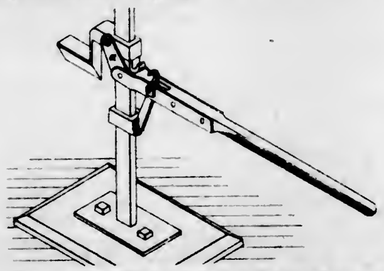
Claim.—A mold for fitting dresses, consisting of a foundation, A, having a front overlapping seam, A', front slits, *a a a a*, in the bottom part of the mold, their edges being provided with lacing-eyelets *a''*, in which are placed lacing-cords *a'''*, curved slits *b b b*, also furnished with lacing-eyelets *b''* and lacing-cords *b'''*, a rear slit, C, extending from the bottom to the top of the mold, furnished with lacing-eyelets and lacing-cords, and shoulder-slits D D, also provided with eyelets and lacing-cords, all substantially as and for the purposes specified.

254,075. WINDMILL. JOHN WARWICK and WALTER C. WHITAWAY, Beloit, Wis. Filed July 30, 1881. (No model.)



Claim.—In a windmill, the combination, with the frame *a*, having the rigid cross-bar *b*, provided with the bearing *c*, and the pivoted adjustable cross-bar *h*, provided with the bearing *g*, of the stem *d*, hollow shaft *f*, rod *q*, bracket *r*, gearing *l m*, and pitman *s*, substantially as and for the purposes specified.

254,076. LIFTING-JACK. JAMES WEATHERS, Indianapolis, Ind., assignor of one-half to John A. Robbins, same place. Filed Jan. 12, 1882. (Model.)

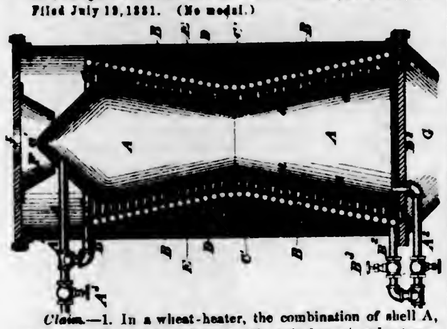


Claim.—1. In a lifting-jack, the combination of the vertical standard, the dog adapted to slide upon the same, the lever fulcrumed thereto, and the slotted bracket adapted to slide upon the standard and connected to the lever by suitable links, the whole arranged to operate substantially in the manner specified.

2. In combination with the standard, the dog, the lever, and the bracket and the engaging-hook on the dog and bracket, substantially as and for the purposes specified.

Brief.—Vertical standards upon a horizontal frame carry a

264,077. WHEAT-HEATER. JAMES E. WELCH, Petersburg, Ill., assignor of one-half to Albert B. Bowman, St. Louis, Mo. Filed July 19, 1881. (No model.)

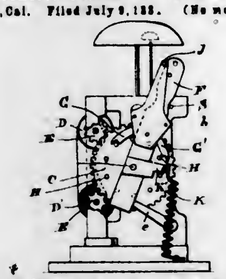


Claim.—1. In a wheat-heater, the combination of shell A, contracted at the waist and formed with conical top *a'*, and a steam-coil, B, surrounding the shell, as set forth, the lower portion of the shell being provided with downwardly-projecting circumferential ribs, the upper faces of which are inclined downward and outward, as and for the purpose set forth.

2. The combination of the shell A, having projections *a*, steam-coil B, conforming thereto, case D, packing E, and induction and eduction pipes A' B' A³ B³, all arranged substantially as and for the purpose set forth.

3. The combination of shell A, ribs *a*, coil-pipe B, annular space C, case D, with hoppers F G, and openings *f g*, packing E, and induction and eduction pipes, for the purpose set forth.

264,078. STATION-INDICATOR. HERMANN J. WEHRLE, San Francisco, Cal. Filed July 9, 1881. (No model.)



Claim.—1. The movable reversing-plate J, pivoted to the lever F, and provided with pins *b b*, adapted to engage with the pawls G G', whereby the movement of the lever F throws said pawls alternately out of engagement, substantially as and for the purpose specified.

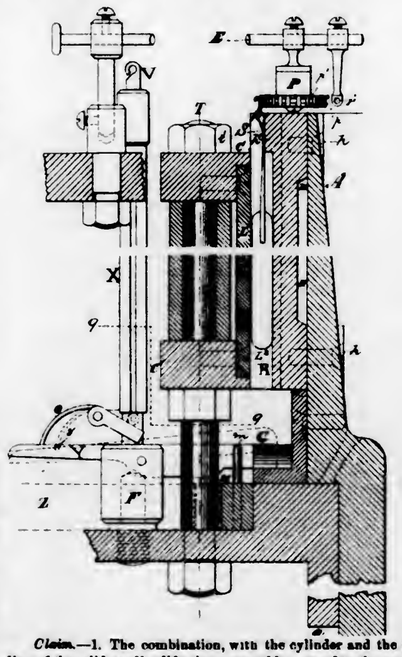
2. The combination, with the indicating-rollers D D', having pinions E E, and the wheel C, gearing with said pinions, and provided upon its face with pins H H, of the lever F, having pawls G G' pivoted thereto, and reversing-plate J, pivoted to lever F, and provided with pins *b b*, for engagement with said pawls, whereby the pawls G will alternately engage with the pins H when the lever is moved to the right or left, and thus operate the indicating-rollers, substantially as shown and described.

3. The combination, with the lever F, having lug K', spring K, and pawls G G', provided with lugs *d d*, of the reversing-plate J, having pins *b b*, adapted to engage with the lugs at the ends of the pawls G G' and lift them alternately, substantially as and for the purpose set forth.

4. The triangular piece M, connected to the hammer-shaft L by means of the arm *e*, and operating upon the pin *h* between the two pins upon the face of the wheel C, so that the wheel C will be held in position and be made to strike the gong at the proper time when the position of the indicator is changed, the whole constructed, arranged, and operating substantially in the manner as herein set forth and specified.

264,079. CIRCULAR WEFT-THREAD KNITTING-LOOM. NATHANIEL W. WESTCOTT, Providence, R. I. Filed Aug. 9, 1881. (No model.)

Brief.—The guide or partition plates separating the needles and their jacks are secured in grooves in the needle-cylinder. This construction enables the operator to remove a division-plate when damaged and substitute for it another and a perfect plate. That portion of the needle-cylinder containing the needles is removably secured to the main portion, by which the machine is readily adapted to different grades of work. The toes of the needle-jacks extend through the slot of the cam, and are always in sight and easy of access in the event of their requiring special attention. The cam-slot is of such form as to permit of but one stitch being completed at a time, and during a greater portion of the time in the operation of the machine the needles are held in a half-elevated position, which affords means for the ready repairing of broken threads, &c. The weft-thread is introduced by a notched wheel having a groove extending around its periphery, into which the weft-thread is laid. The filling-thread takes its place behind the needles which rise in the notches of the wheel and in front of those which are pressed out by the beveled projections. The stop-motion consists of a lever latched in elevated position. The thread passes through and sustains a light drop-wire guided in a tube arranged over the latch. Upon the breaking of a thread the wire drops upon the latch and unlocks the lever, the outer end of which falls in the teeth of a ratchet-ring and is carried around, unshipping the belt and stopping the machine.



Claim.—1. The combination, with the cylinder and the needles, of the solid needle-slide ring removably secured to the outside of the cylinder, and the guide-plates secured in vertical grooves in said ring, substantially as set forth.

2. The combination, with the cylinder and the needles, of the solid needle-slide ring H, removably secured to the outside of the cylinder and having shoulder *h'*, and the guide-plates R, secured in vertical grooves in said ring, substantially as described and shown.

3. The combination, with the vertical wires or rods of the stop-motion, of a lever, a latch supporting said lever in an elevated position, and a ratchet-ring engaging said lever when released and operating the shipper, substantially as set forth.

4. The pivoted block F, vertical wires or rods V, and guides therefor, the latch O, lever Y, ratchet-ring G, ring M, and lever Z, substantially as described and shown.

5. The combination, with the cylinder, the needles, the solid needle-slide ring removably secured to the outside of the cylinder, and the guide-plates secured in vertical grooves in said ring, of the cam-plates L' L², forming between them the cam-groove L, and means for supporting said plates with relation to the needles, substantially as described.

6. The combination, with the pivoted block F, lever Y, provided with notch *y*, latch O, and guides X, of the vertical wires V, as and for the purposes set forth.

7. The combination, with the bolts T and rings C C', of the cam-plates L' L², secured to said rings, and the thimble *t* and nuts *t'*, as and for the purposes set forth.

254,080. RAILWAY-POINT AND MANNER OF WORKING THE SAME. HENRY WHITEHEAD and THOMAS DODD, London, England. Filed Aug. 26, 1881. (No model.) Patented in England Apr. 8, 1881.

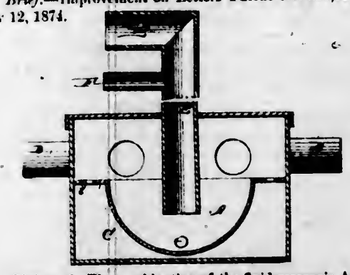
Brief.—Vertically-moving switch-rails operated through wedge-blocks are actuated by a rock-shaft through connecting crank-arms and links.



Claim.—The combination, with the fixed rails, of the chairs secured to said rails, the movable rails B' and C', received in recesses in the chairs, the rock-shaft M, the wedge-shaped blocks connected with lever-arms upon the rock-shaft, and the links connected with the movable rails and with the said levers, said members being organized and adapted to operate substantially as described.

254,081. AIR COOLING AND PURIFYING APPARATUS. SAMUEL WHITNUM, Brooklyn, N. Y. Filed Sept. 28, 1881. (No model.)

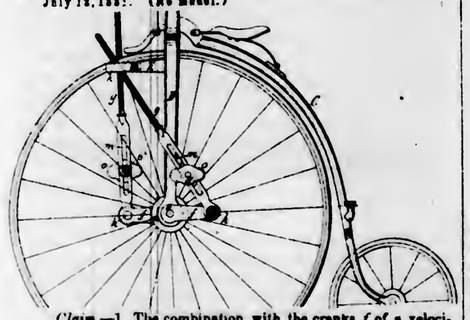
Brief.—Improvement on Letters Patent No. 150,920, dated May 12, 1874.



Claim.—1. The combination of the fluid-reservoir A, the air-chamber C, the blast-pipe E, leading down into the reservoir, the feed-pipe F, located below the elbow of the blast-pipe, the waste and gage pipes, and the pipes for conducting the cooled or charged air out of said air-chamber, substantially as described.

2. Means substantially as described for cooling air and charging it with a watery vapor containing any of the well-known soluble muriates, for the purpose set forth.

254,082. VELOCIPEDE. GEO. WIARD, Batavia, N. Y. Filed July 13, 1881. (No model.)

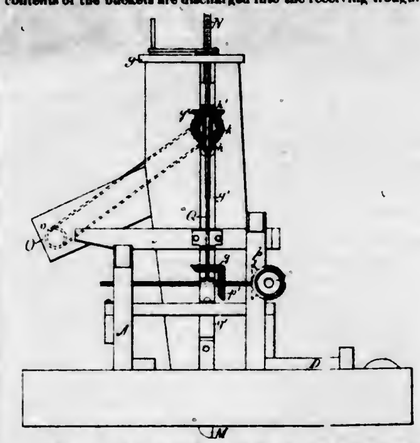


Claim.—1. The combination, with the cranks *f* of a velocipede, of rods *g*, attached to said cranks and supported at their upper ends in guides *h*, and treadles *e*, made vertically adjustable on the rods *g*, substantially as set forth.

2. The combination, with the cranks *f*, of the connecting-rods *g*, provided with slots *m*, and adjustable treadles *e*, secured to the rods *g* by set-screws *e²*, substantially as set forth.

254,083. DITCHING AND TILE-LAYING MACHINE. WILLIAM WILSON, Earlville, Ill. Filed May 24, 1880. (No model.)

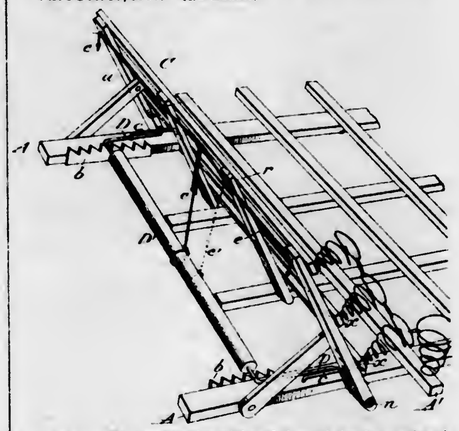
Brief.—Vertical standards upon a horizontal frame carry a vertically-sliding frame, within which works an endless bucket-chain. The lower upper sprocket-wheel of said frame has lugs which engage projections on the hinged bucket-backs, whereby the contents of the buckets are discharged into the receiving-trough.



Claim.—1. In a ditching-machine, the combination of the horizontal frame, vertical standard fixed thereto, and vertically-sliding frame H, said sliding frame having a lower and two upper sprocket-wheels carrying a belt and buckets, said upper sprocket-wheels being arranged with the rear lower than the forward and in the described relation to the discharge-spout O, all as set forth.

2. The combination of the buckets M, attached in the chain as described, with the hinged bottom *s'* and spur *s²*, and the projections *j'* on the sprocket-wheel J, substantially as described.

254,084. BED-BOTTOM. DANIEL D. WYMAN, Lockport, N. Y. Filed Dec. 27, 1881. (No model.)



Claim.—The combination of the side bars, A, having ratchets *b* and guides *c*, the rods D, secured by nuts *n*, and the movable head-rest C, connected with said rods by means of suitable cords, and adapted to be raised from the back or sides, substantially as shown and described.

254,085. PLASHED HEDGE. WESLEY YOUNG, Dayton, Ohio. Filed Dec. 16, 1881. (No model.)

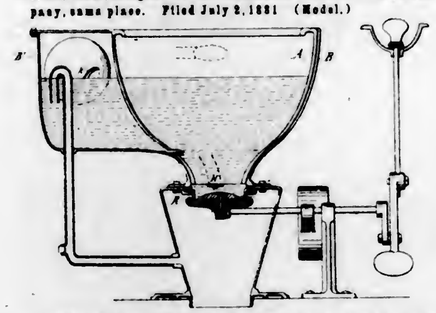
Claim.—1. A hedge fence composed of live plants bent down in the plane of the fence and held in place by suitable fastenings, and having a line of wire extending along the base of the plants near the ground, said wire being secured to the plants and operating to prevent the passage through the spaces between the plants of small stock before said spaces have become closed or protected by the growth of the shoots, substantially as described.

2. A hedge fence composed of live plants bent down in the



plane of the fence and held in place by suitable fastenings, and having a horizontal line of wire extending along the upper portion of the plants and secured thereto to give increased lateral strength, and having also a horizontal line of wire extending along and secured to the bases of the plants, for preventing the passage through the spaces between the plants of small stock before said spaces have become closed or protected by the growth of the side shoots, substantially as described.

254,086. WATER-CLOSET. ALEXANDER G. ALEXANDER, Detroit, Mich., assignor to the Alexander Manufacturing Company, same place. Filed July 2, 1881. (Model.)



Claim.—In a water-closet, the combination of the bowl A, bowl B, having the passage H cast therein, and valve-seat R, the upper portion thereof being beveled to deflect the stream of water passing through passage H, as and for the purposes described.

254,087. SLEEVE-BUTTON. FREDERICK P. BJORBY, Newark, N. J., assignor to Bjoran Brothers, same place. Filed Jan. 10, 1882. (No model.)



Claim.—1. In a button, the combination, with the slotted shank having a cross-head, *d*, thereon, of a cross-bar pivoted thereon, having a lug, *g*, and a spring secured to the face of the shank engaging with said lug, the whole being arranged and operating substantially as and for the purposes set forth.

2. The combination, in a button, of the slotted shank, the spring secured to the face of said shank, and the cross-bar, having a projecting lug working in said slotted shank and engaging with said spring, all being arranged and operating substantially as and for the purposes set forth and shown.

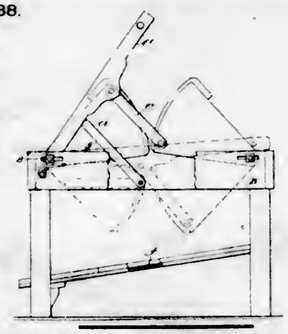
3. The combination, with the body *a* and shoe *b*, of the slotted shank secured to said body, the cross-bar pivoted on said shank and secured to said shoe, and the spring secured upon the face of the shank and bent backward through the slot therein and bearing forward against the lug, all substantially as and for the purpose set forth and shown.

254,088. BUTTER-WORKER. GEO. A. BLANCHARD, Concord, N. H. Filed Nov. 7, 1881. (No model.)

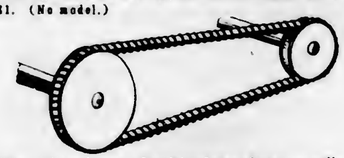
Claim.—1. The movable bed and the pivoted segmental presser connected and adapted to move with it, substantially as described, combined with the handle attached directly to the presser, to operate the said parts in one and then in the opposite direction in unison, substantially as specified.

2. The pivoted segmental presser and handle and movable bed, combined with the links *c*, each pivoted at one end to the presser and at its other end to the bed, to thus cause the presser and bed to travel together in the same direction, substantially as described.

254,088.

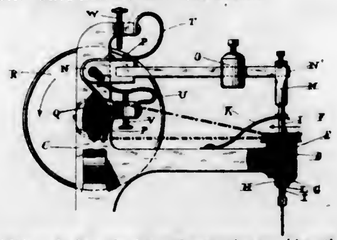


254,089. ELASTIC PULLEY-BAND. ARTHUR E. BRIGGS, Road Hill, assignor to Post & Co., Cincinnati, Ohio. Filed Dec. 5, 1881. (No model.)



Claim.—As an improved article of manufacture, a pulley-band consisting of an elastic cord surrounded with metallic rings or spirals, substantially as shown, and for the purpose set forth.

254,090. CHASING AND ENGRAVING MACHINE. LEWIS T. CARR, Providence, R. I., assignor to Godfrey & Gardiner, same place. Filed Mar. 29, 1881. (No model.)



Claim.—1. In a chasing and engraving machine, the combination of the spindle I, spring K, and thumb-screws V and W with the combined cam and spring actuated hammer N N', substantially as described.

2. In a chasing and engraving machine, the combination of the spindle I, spring K, and thumb-screw V with the combined cam and spring actuated hammer N N', substantially as set forth.

3. In a chasing and engraving machine, the combination of the spindle I, spring K, and thumb-screw W with the combined cam and spring actuated hammer N N', substantially as described.

4. In a chasing or engraving machine, springs K and U and thumb-screw V, arranged to operate substantially as set forth.

5. In a chasing or engraving machine, springs K and T and thumb-screw W, arranged to operate substantially as set forth.

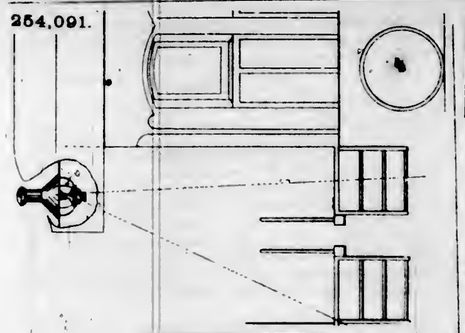
6. In a chasing or engraving machine, the spindle I, spring K, and thumb-screw V, arranged to operate substantially as set forth.

7. In a chasing or engraving machine, the spindle I, spring K, and thumb-screws V and W with the combined cam and spring actuated hammer N N', together with a device for rotating the tool, all substantially as described.

254,091. APPARATUS FOR LIGHTING THE PLATFORMS AND STEPS OF RAILWAY-CARS. WILLIAM E. CHAMBERLAIN, Providence, R. I., assignor of one-half to Edgar G. Windsor, same place. Filed May 17, 1881. (No model.)

Claim.—The combination, substantially as described, of a car-hood, a lamp mounted centrally therein, and an inclined reflector surrounding said lamp, having its angles of reflection arranged, as described, with special reference to lighting an area extending beyond the end of the platform and the steps thereof, as set forth.

254,091.



254,092. OVERALLS. GEORGE FRANK and JOHN GALLIGAN, Kalamazoo, Mich., assignors of one-half to Abraham I. Frank and Joseph H. Frank, both of Chicago, Ill. Filed Aug. 30, 1881. (No model.)

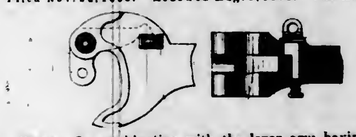


Claim.—1. Overalls and like garments constructed with seamless backs, and having the point at which the inner leg-seam terminates in the seat located in the rear of the center of said seat, substantially as described and shown.

2. Overalls and like garments constructed with seamless backs, composed of the rear and two front pieces, with the point at which the upper end of the inner leg-seams terminate located as set forth, all substantially as described.

3. Overalls and like garments composed of a seamless rear piece, with point *c*, and two front pieces, with portions *a a*, and cut in circular form from *a* to *c*, all substantially as described and shown.

254,093. CAR-COUPLING. ELI H. JANNEY, Fairfax County, assignor to Janney Car Coupling Company, Alexandria, Va. Filed Nov. 24, 1880. Renewed Aug. 9, 1881. (No model.)



Claim.—In combination with the lever-arm having an inclined face, the vertically-moving locking-pin provided with an inclined face.

254,094. BLACKBOARD-ERASER. CHAUNCEY M. LOTHROP, Norwood, Mass., assignor to Stillman C. Davis, same place, and John P. Preuss, East Walpole, Mass. Filed June 6, 1881. (No model.)

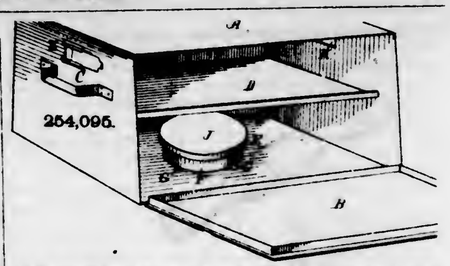


Claim.—The improved tablet erasing-block, consisting of the connected parts A B, in combination with the serrated metal plates E E, the holding-bar H, provided with a depression, *j*, the stop-pin K, and screw G, all arranged to operate substantially as and for the purpose described.

254,095. BREAD-RAISING OVEN. LEWIS B. HORNAR, West Liberty, W. Va., assignor of one-half to John E. Wayt, same place. Filed Nov. 28, 1881. (No model.)

Brief.—Designed for raising dough for bread preparatory to baking.

Claim.—The combination of the oven A B C, having the sliding shelf D, with the heating pan or vessel F, having the movable lid J, the inside shoulders or brackets H, and the removable circular body or disk I, as shown, all constructed and arranged substantially as and for the purpose herein set forth.



254,096. MEDICAL COMPOUND. WILHELM PICKHARDT, New York, and HERMANN ENDEMANN, Brooklyn, N. Y., assignors to Wilhelm Pickhardt and Adolf Kuttroff, both of New York, N. Y. Filed Dec. 6, 1881. (Specimens.)

Brief.—The improvement consists in the separation of impurities from the commercial chinoline and the conversion of the latter into an acid tartrate of that base.

Claim.—As a new article of manufacture, the acid tartrate of Skraup's chinoline, hereinbefore described, and having the characteristics above set forth.

254,097. MEDICAL COMPOUND. WILHELM PICKHARDT, New York, and HERMANN ENDEMANN, Brooklyn, N. Y., assignors to Wilhelm Pickhardt and Adolf Kuttroff, both of New York, N. Y. Filed Dec. 6, 1881. (Specimens.)

Brief.—The compound produced is the hydrochlorate of chinoline purified from the presence of associated bases.

Claim.—The hydrochlorate of chinoline prepared from Skraup's chinoline in the manner hereinbefore described, and having the characteristics above set forth.

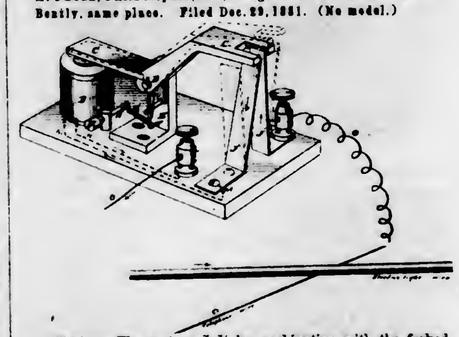
254,098. MANUFACTURE OF CHINOLINE. WILHELM PICKHARDT, New York, and HERMANN ENDEMANN, Brooklyn, N. Y. Filed Dec. 6, 1881. (Specimens.)

Brief.—Purification of the commercial chinoline of Skraup so as to render it suitable for medical use.

Claim.—1. The within-described process of preparing and refining chinoline by exposing the chinoline of Skraup to the action of tartaric acid, then separating from the solution the acid tartrate of chinoline, and finally, liberating from this acid tartrate the chinoline by the action of caustic alkalies.

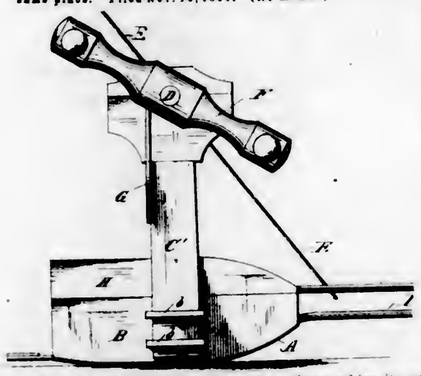
2. The refined chinoline hereinbefore described and having the characteristics above set forth.

254,099. SAFETY DEVICE FOR ELECTRIC WIRES. SAMUEL M. PLUSH, Philadelphia, Pa., assignor of one-half to Henry Bently, same place. Filed Dec. 29, 1881. (No model.)



Claim.—The springs J J', in combination with the forked pivoted armature C and magnet B, all forming parts of an electric circuit, and the spring G, which resists said magnet, whereby a weak current of electricity is allowed to pass in said circuit for telephonic or other purposes, but a dangerously strong current causes the magnet B to overcome the resistance of spring G and draw one end of the armature down, so as to free said springs from the other end, and thereby break the current.

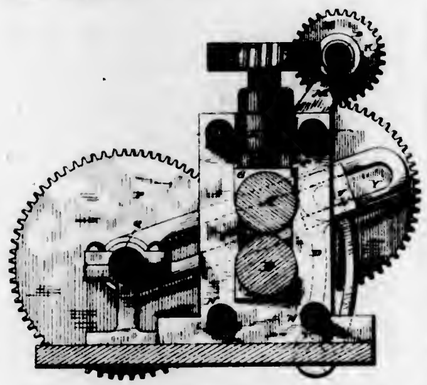
254,100. CLOVER-SEED GATHERER. JOHN P. RIMEL, Stribling Springs, Va., assignor of one-half to Emanuel Kircher, same place. Filed Nov. 10, 1881. (No model.)



Claim.—1. The combination, with a mowing-machine, its cutter-bar, and finger-bar, of the platform secured to the finger-bar, the standards C C', shaft D, provided with notches *c c*, rake-teeth E, spring G, crank F, and the fingers I I, substantially as and for the purpose set forth.

2. The combination, with a mowing-machine, its cutter-bar, and finger-bar, of the platform A, secured to said finger-bar, and having sides B B, provided with staples *b b* and holes *c c*, the standards C C', having tenon *h h*, and cleats H H, having pins *d d*, shaft D, provided with notches *c c*, rake-teeth E, spring G, crank F, and fingers I I, all constructed and relatively to operate substantially as and for the purpose herein shown and described.

254,101. MACHINE FOR ROLLING BLANKS FOR CLOCK-SPRINGS. WALLACE BARNES, Bristol, Conn. Filed July 20, 1881. (No model.)



Claim.—1. In a machine for making clock-spring blanks, the combination, with two rolls, one of which is arranged to recede from the other by the gradual withdrawal of screws which impinge upon its journal-bearings, of a train of gearing adapted to actuate said screws, the driving and driven gears of said train being changeable, the intermediate gear being provided with a vertically and laterally adjustable bearing adapting it to be meshed with changeable driving and driven gear-wheels, substantially as set forth.

2. The combination, with a stationary and a receding roll, the recession of the latter being effected by the gradual withdrawal of screws from its journal-bearings, of a train of gearing to actuate the screws, the intermediate gear of said train being provided with a vertically and laterally adjustable bearing, consisting of a two-armed plate, the upper end of which is provided with an elongated slot in which the stud upon which the gear is mounted is adjusted, the lower arm of the bearing being provided with an arc-shaped slot which receives a stud adapted to be secured in any part of it, substantially as set forth.

254,102. MANUFACTURE OF BOOTS AND SHOES. THOMAS LAYCOCK, Northampton, England. Filed Nov. 7, 1881. (No model.) Patented in India Nov. 4, 1881.

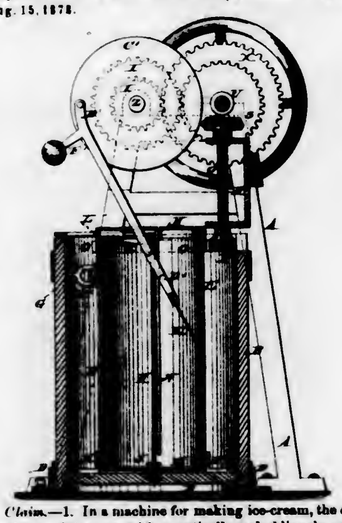


Claim.—1. That improvement in the manufacture of boots and shoes provided with a double insole or combined sock and insole, consisting in lasting the insole to the upper as usual, then removing the last and placing within the lasted shoe an additional insole or sock, and then attaching an outer sole and securing all the parts together by screws passing through the outer sole, upper, inner sole, and into the second inner sole or sock, all substantially as set forth.

2. A boot or shoe having its outer sole, upper, and double inner sole connected together by screw-fastenings passing through the outer sole, upper, and inner sole and into the insole or sock, all substantially as set forth.

REISSUES.

10,038. ICE-CREAM FREEZER. CHARLES L. DEXTER, Philadelphia, Pa. Filed Jan. 6, 1882. Original No. 121,056, dated Aug. 15, 1878.



Claim.—1. In a machine for making ice-cream, the combination of a revolving can with a vertically and obliquely reciprocating scraper or paddle, so connected and operated by intermediate mechanism with the driving-shaft as to scrape the side of the can throughout its descending stroke, substantially as and for the purpose set forth.

2. In a machine for making ice-cream, the combination of a progressively-revolving can with a vertically-reciprocating scraper or paddle rigidly attached to a bar connected at its upper end to a revolving crank, and pressed obliquely against the side of the can during its descending stroke, substantially as and for the purpose set forth.

3. In a machine for making ice-cream, the combination of a progressively-rotating can and a vertically and obliquely reciprocating scraper with propelling-gearing adapted to operate the can and scraper at different relative velocities, substantially as and for the purpose set forth.

4. The combination, in an ice-cream freezer, of the outer tub, B, having arms G, friction-rollers F, and angle-irons H, with the inner revolving can, E, and operating-gearing, substantially as herein described, for the purpose set forth.

5. The combination of the cross-bar J, the rods K, the arms L, the cross-bar M, and the floats N with the can E and tub B, substantially as herein shown and described.

6. The combination of the gear-wheels X X, the sliding gear-wheels Y Y, the crank-wheel C', and the pivoted bar D', provided with a paddle, E', and the weighted arm F C', substantially as herein shown and described.

7. In a machine for making ice-cream, the combination of stationary scrapers or floats M with the rotating can and vertically-reciprocating paddle, arranged to operate substantially as and for the purpose set forth.

10,039. COMPOSITION FOR DRYING PAINTS AND OILS. ALPHEUS W. PRATT, Flushing, N. Y., assignor of one-half to Henry S. Lambert, Orange, N. J. Filed Nov. 10, 1880. Original No. 211,838, dated Feb. 4, 1879.

Claim.—1. The within-described process of producing a manganese-lead soap by treating oil with caustic alkali, or its equivalent, and the resulting plastic mass with a mixture of manganese and lead salts, as described.

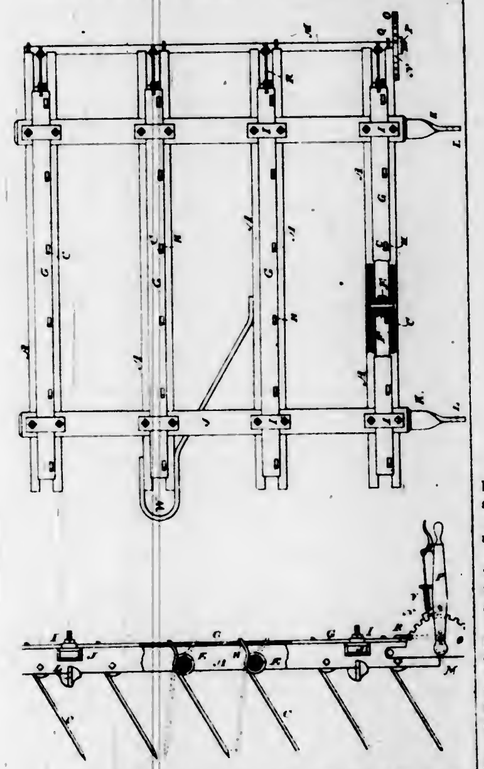
2. The within-described process of producing a manganese-lead soap by treating oil with caustic alkali or its equivalent, and the resulting plastic mass with a liquid mixture of manganese chloride and lead salts, and adding thereto rosin or other resinous substances.

10,040. LIQUID DRIER FOR OILS. ALPHEUS W. PRATT, Flushing, N. Y., assignor of one-half to Henry S. Lambert, Orange, N. J. Filed Nov. 10, 1880. Original No. 211,783, dated Jan. 28, 1879.

Claim.—1. The within-described process of producing a manganese-soap by treating oil with caustic soda, or its equivalent, and then with a solution of chloride of manganese or its equivalent.

2. The within-described process of producing a manganese-soap by treating oil with caustic soda, or its equivalent, and then with chloride of manganese, or its equivalent, and adding thereto rosin or other resinous substances.

10,041. HARROW. ABRAHAM J. STEWART, Chillicothe, Mo., assignor to Charles La Dow, Albany, N. Y.; said La Dow assignor of one-half to Wheeler & Melick Company, Albany, N. Y. Filed Nov. 21, 1881. Original No. 144,236, dated Nov. 4, 1873.



Claim.—1. In a harrow, the combination of a frame, two or more series of adjustable teeth which are springs within themselves and which act in concert on the soil, one tooth being capable of passing an obstruction without raising the other teeth, and mechanism for holding the teeth at the angle adjusted.

2. In a harrow, the combination of a frame, two or more series or rows of teeth which are springs within themselves and which act in concert on the soil, one tooth being capable of passing an obstruction without raising the other teeth, and lever mechanism for simultaneously varying the angle of the different series of teeth and holding them in their adjusted position.

3. A harrow-frame having sections and teeth which are adjustable at different angles and able to rebound independently when passing obstructions.

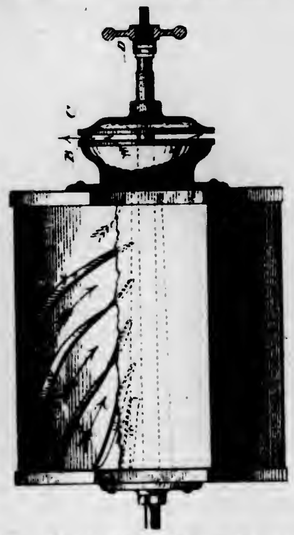
4. In a harrow, the combination of a frame, digging points or teeth which support the frame, arranged in two or more series or rows, and coil-springs which encircle the bearings of and coact with the teeth.

5. In a harrow, the combination of a frame, digging points or teeth arranged in series or multiple rows and supporting the frame, and coil-springs which connect the teeth directly to the frame.

6. In a harrow, the combination of a frame with two or more series of spring-teeth vibrating independently thereon and capable of being angularly adjusted, said teeth being arranged between opposing parts of said frame for the purpose of securing the teeth to their bearings and regulating their angle and vibration.

7. The spring-harrow teeth C, supported on bearings in the beams A, in combination with the slides G, operated by the rock-shaft M, provided with lever P, ratchet O, and pawl N.

10,042. RAG-WASHING MACHINE FOR RAG AND PAPER WASHING ENGINES. JOHN TYLER, Claremont, N. H. Filed May 21, 1881. Original No. 216,585, dated June 17, 1879.



Claim.—1. The bell-shaped outlet B and the concave movable head C, in combination with the regulating-wheel and nut D, as and for the purpose herein described.

2. The curved wings or guides on the inside of the bucket, substantially as set forth.

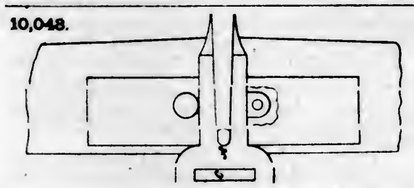
3. A rag-washing machine for rag and paper washing engines with scroll-shaped buckets with one or more graduated and curved wings with varying angles running toward the center of the outlet, as represented in Fig. 1.

4. A movable head to a rag-washing machine for rag and paper washing engines, in combination with the outlet, substantially as and for the purpose described.

5. A gate attached to and sliding on a hollow cylinder, with which to regulate the discharge of water from the washer, in combination with the outlet, substantially as and for the purpose described.

10,043. HARNESS-HOOK. J. J. WILKINS, Virden, Ill., assignor, by mesne assignments, to Eberhard Manufacturing Company, Cleveland, Ohio. Filed Sept. 24, 1881. Original No. 55,942, dated June 26, 1866.

10,048.



Claim.—1. A pad-hook provided with the transverse opening or hole *n*, and also with the horizontally-projecting ears *a*, the whole constructed and operating as and for the purposes set forth.

2. A pad-hook provided with the transverse opening or hole *n*, substantially as and for the purpose described.

3. A pad-hook the base of which is provided with horizontal transverse ears *a* projecting from opposite points of the sides of the base, substantially in the manner and for the purpose specified.

ELIOTYPE PRINTING CO
BOSTON

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

VINTON *et al.* v. HAMILTON *et al.*

Decided January 9, 1882.

1. REDUCING SLAG—PRIOR KNOWLEDGE AND USE.

Patent granted October 14, 1873, to John J. Vinton, for an improvement in the manufacture of iron from furnace-slag, *held* to be invalid in view of facts developed by the testimony as to knowledge and use of the invention therein claimed by others prior to the invention or discovery of the patentee.

2. SAME—INVENTION—DOUBLE USE.

In a process of reducing slag, the application for the first time to a cupola-furnace of the cinder-notch previously used in the blast-furnace to accomplish the same end is devoid of invention. When applied to a cupola-furnace, the cinder-notch performed the same function in the same way.

APPEAL from the Circuit Court of the United States for the Northern District of Ohio.

Mr. A. W. McCallum for the appellants.

Mr. T. W. Sanderson for the appellees.

STATEMENT OF THE CASE.

The bill of complaint alleged that the defendants were infringing certain letters patent, dated October 14, 1873, granted to the complainant, John J. Vinton, for an improvement in the manufacture of iron from furnace-slag, and prayed for an injunction to restrain them from further infringement and for damages and an account of profits. The answer of the defendants denied that Vinton was the original or first inventor or discoverer of the improvement in the manufacture of iron from furnace-slag or from the slag of blast or smelting furnaces, set out in his patent, and denied infringement. Upon final hearing in the circuit court the bill was dismissed because the process described in complainant's letters patent was known and in common use before the complainant's application for his letters patent, and the same were therefore null and void. The complainants have therefore appealed the case to this Court.

The specifications of the letters patent declare as follows:

My invention relates to the production of cast-iron from the slag or refuse of the smelting or blast furnace. Heretofore a large percentage of good metallic iron has been thrown away with the slag and become lost to commerce so far as its use as metallic iron is concerned. This is more particularly the case with rich ores, such as the Missouri and lake ores, which, from their nature, flux imperfectly in the ordinary smelting-furnace. When imperfectly fluxed the slag assumes a thick consistency and cools with a general grayish color, and though the presence of metal in it cannot be detected by the eye, yet the slag will be found to be of comparatively great specific gravity, and in fact contains a very large percentage of good metallic iron, often as great as the amount of metal reduced from the ore in the process of smelting. To reduce this metal from the heavy slag of the smelting-furnace, and thereby increase the production of iron from the same amount of ore, is the object of my invention.

To accomplish the desired result I employ a cupola-furnace, but furnaces specially adapted to the purpose may be constructed and conveniently used in connection with the blast-furnaces where the iron is smelted.

The heavy slag is first pulverized or broken up into small pieces, or it may be made granulous or spongy by passing water or air through it when in a molten state, or in any of the well-known ways. A bed of coke or other suitable material is first placed in the cupola, and on the top of the coke a small quantity of scrap or other oxidized iron (preferably scale or black oxide of iron) is sprinkled. The slag to be operated on is then introduced as evenly as possible on the top of the coke and iron oxide, and on the top of the slag I sprinkle a small quantity of limestone broken up into small pieces, then a layer of coke, followed with scrap and scale slag and lime, as before, alternately, until the whole cupola is charged. The fuel is then ignited, and when the fire is above the tuyeres the blast is turned on to the full. Owing to the presence of the iron oxides the heat is very great when brought in contact with the slag, and the latter is speedily reduced, and as the operation goes on fresh charges of the materials are supplied from the top of the cupola, provision being made for the passage of the remaining slag from the furnace at a point below the tuyeres. In this way it will be seen that the process is continuous, and the furnace is not permitted to get cool.

The charge is made up in about the following proportions, but may be slightly varied as occasion requires: After the furnace is in operation, first, three bushels of coke; second, fifty pounds iron oxide (scrap or scale;) third, eight hundred pounds slag; fourth, one-fourth of a bushel of limestone, thrown into the cupola in succession, and from time to time, as required.

When there is much sulphur in the iron a small quantity of the black oxide of manganese may be blown in through the tuyeres, and salt or litharge, or a mixture of any two or all three of these ingredients, may be used in this manner with good effect. The iron thus obtained is run into molds in the usual way.

What I claim as my invention, and desire to secure by Letters Patent, is—

The herein-described method of reducing iron from the slag or refuse of blast or smelting furnaces, substantially as set forth.

Mr. Justice WOODS delivered the opinion of the Court.

It is matter of general knowledge that pig-iron is made from iron ore in a blast or smelting furnace; that to secure this product the furnace is charged, first, with a layer of coke or charcoal, then with a layer of iron ore mixed with broken limestone, and so on in alternate layers until the proper quantity of these materials is placed in the furnace. The fuel is then ignited, and for the purpose of increasing the heat, streams of air are forced into the furnace by means of blast-pipes, the nozzles of which, called "tuyeres," are inserted in openings in the walls of the furnace, usually from four to six feet above its bottom. The limestone is used merely as a flux. The ore under this process undergoes a chemical change, and iron is formed and sinks in a molten state to the bottom of the hearth, by which is meant not only the bottom of the furnace, but its sides as high up as the foot of the boshes. The refuse left after the melted iron has dropped into the hearth is also in a molten state, and, being lighter than the iron, floats on its top. This is indifferently called "cinder and slag." About three or four times in every twenty-four hours the melted iron is drawn from the furnace. This is accomplished in the following manner: The furnace is constructed with two holes, one called the "iron" and the other the "cinder" notch. The iron-notch is made at the bottom of the hearth. The cinder-notch is higher up the side of the furnace, just below the level of the tuyeres—so high that the cinder can be drawn through it without letting off the molten iron. These holes are kept habitually closed with clay or other similar material. At frequent intervals, and always just before drawing off the molten iron, or making a "cast," as the

iron-mongers call it, the cinder-notch is opened and the cinder or slag is allowed to escape, and is carried away from the furnace in a trough made of moistened sand. The cinder-notch is then closed and the iron-notch is opened, and the molten iron is drawn off through a sand trough, and conducted into molds made in sand beds, called the "sow and pigs," where it is allowed to cool. The result is the pig-iron of commerce. In the meantime the furnace is supplied with constant charges of fuel and ore mixed with limestone in alternate layers, dumped in from the top, and this process is kept up without cessation for months and sometimes for years. The sand trough which connects the pig-beds with the iron-notch is usually larger and deeper, but more elevated than the sow or general gutter which conducts the iron into the molds or grooves in the pig-beds. When the metal is first let into the trough it accumulates so as to fill it nearly to the brim. As the flow from the iron-notch decreases, the iron and a small quantity of cinder or slag, which has been chilled by coming in contact with the cold surface of the trough, adhere to its sides and bottom. When the molten iron on the hearth is about exhausted the blast is increased, and the material left on the hearth is blown out through the iron-notch into the sand trough. This also cools in the trough, and thus is formed what are known as "trough-runners," consisting of iron and slag, which have been forced through the iron-notch by letting on the blast, as just mentioned.

A cupola-furnace is one used for melting pig-iron for the purpose of casting it into useful forms and articles. It constitutes part of the equipment of a foundry. In shape it is generally a hollow cylinder. The iron is melted by substantially the same process as the ore in a blast-furnace. The cupola-furnace has an iron-notch, but no cinder-notch, because there is generally so little cinder or slag in pig-iron as to render such an opening unnecessary.

In order to reach the merits of the controversy it is necessary to obtain a definite idea of what, if anything, the appellants are entitled to under their patent. The specifications are ambiguous in respect to the particular kind of slag which is to be used in the process therein described—that is to say, whether it is the slag drawn off through the cinder-notch or the runners which are left in the trough through which the molten iron is discharged from the iron-notch of a blast-furnace. It appears, however, from the evidence that the use of the latter only is contemplated, the former containing such a very inconsiderable quantity of iron as to be valueless.

We observe, in the first place, that the patent cannot be held to cover the discovery that the slag which is to be used in the process described in the specifications contains so large a percentage of good metallic iron that it can be profitably extracted by again smelting it.

The evidence shows beyond controversy that for many years before September 18, 1873, (the earliest date assigned to the discovery or invention of the complainant,) it had been well and generally known that the trough-runners contained a large proportion of metallic iron, and they were broken up and resmelted in blast-furnaces. They were thrown into the furnace with scrap-iron and iron ore, and smelted in the same manner. It was formerly a notion among old-fashioned furnacemen that the use of this material injured the furnace and deteriorated the quality of the iron produced: but this conceit had been exploded long before the date of appellant's patent, and the runners and other heavy slag were used habitually in many blast-furnaces, as above stated.

Secondly. The appellant cannot claim as any part of his invention the use of a cupola-furnace for the purpose of resmelting trough-runners and heavy slag. The evidence in the record shows that as early as the year 1844, at the Jackson Furnace, in Venango county, Pennsylvania, which was a blast-furnace, a cupola-furnace was erected and used for the purpose of smelting heavy slag, from which was manufactured plow-points and hollow ware, such as skillets, pots, and Dutch ovens. Sometimes the product was made into pig-iron. This cupola-furnace was thus used for three or four years. The fact of such use was public; no effort was made to keep it secret, and it was known, in the language of the witnesses, "all around the furnace."

The testimony of Robert Paisley, William J. Shaner, and Thomas W. Kennedy, which is found in the record, shows that the Beaver Falls Co-operative Foundry Association, in April, 1872, made the experiment of using slag and runners in their cupola-furnace, and, the experiment proving successful, the runners, as early as August, 1872, were procured by the car-load and mixed with pig-iron and run into stove-plates. In this way fifty-eight or sixty tons of runners were used prior to October 1, 1873, the date of appellant's patent. This use of heavy slag and runners was open and public. No one was excluded from the foundry where the work was carried on. Any one was at liberty to enter and see what was going on, and persons not interested in the furnace, among them the witness, Thomas W. Kennedy, did so. No injunction of secrecy was imposed on them. It is true the operatives at the furnace, who were all stockholders of the association, said nothing about the use they were making of trough-runners because, as they said, if it was a good thing they wanted to keep it to themselves, but they took no steps to keep it a secret, except that they did not talk about it. In fact, it was at the suggestion of Kennedy that the Beaver Falls Co-operative Foundry Association made the experiment of melting runners and heavy slag in their cupola-furnace. After the experiment made by the Beaver Falls Co-operative Foundry Association in April, 1872, had proved successful, Kennedy, in August, 1873, furnished the defendant Hamilton with a quantity of trough-runners to be smelted in his cupola-furnace, and before October 1, 1873, had sold to foundrymen not less than one hundred tons of the same material to be used for the same purpose. In fact, the record shows that Kennedy, more than a year before the date of appellant's patent, revived the practice of smelting trough-runners and heavy slag in a cupola-furnace. As early as the spring of 1872 he declared to the defendant, Hamilton, Thomas Struthers, and others the feasibility of the process, and suggested to Struthers that they ought to take out a patent for it; but Struthers said that unless they could get up some new way of extracting the iron it would not be patentable, and that was the conclusion they came to after talking the matter over. But Kennedy at once, in the spring of 1872, commenced buying up the trough-runners from the blast-furnaces and selling them to foundrymen for use in cupola-furnaces. It is therefore abundantly shown in the record that

before the date of complainant's patent or of his invention the smelting of trough-runners and other heavy slag in cupola-furnaces was practiced and well known.

Thirdly. The method of making slag granulous or spongy by passing water or air through it when in a molten state is not new, nor is it claimed to be new. Besides, there is no evidence that this process is used by the appellees.

Fourthly. The method of charging the cupola-furnace and of smelting the slag as described in the specification of appellant's patent is as old as the art of making pig-iron, except, perhaps, the sprinkling of scale or black oxide of iron on the top of the coke, and this is not done by the appellees.

Fifthly. The appellant does not claim that his invention covers a cupola-furnace. A review of the case shows therefore that appellant did not first discover the value of furnace-runners or heavy slag for resmelting; that he was not the first to smelt them and use them for running into pigs or castings either in a blast-furnace or a cupola-furnace, and that there is nothing new in his process of smelting which is used by the appellees.

All therefore that is left for his invention to cover, and which appellant can claim as infringed by the appellees, is the employment of a cinder notch or hole in a cupola-furnace to draw off the cinder when the furnace is employed in smelting furnace-runners or heavy slag. But if the testimony of unimpeached and uncontradicted witnesses is to be believed, as early as June, 1872, at Beaver Falls, Pennsylvania, a cinder-notch was used by the Beaver Falls Co-operative Association in a cupola-furnace when employed in smelting furnace-runners. The notch was put in the cupola at the suggestion of the witness, Thomas W. Kennedy, who was not a member of the association, but who, being the owner of a blast-furnace, was selling to it furnace-runners to be resmelted and used for making castings. He testifies to the fact distinctly and clearly, and designates the part of the cupola where the notch was placed, namely: between the tuyeres at the back of the cupola to draw off the slag. He is fully corroborated by the witness, W. J. Shaner, who was a member of the association, and whose business was to do the smelting.

This use of the cinder-notch in the cupola was public. No effort was made to exclude spectators from the foundry or to conceal the notch. The invention therefore of a cinder-notch in a cupola-furnace, if it was an invention at all, was made by Thomas W. Kennedy fifteen months before the appellant, according to his own testimony, ever conceived the idea, and Kennedy during all that time allowed it to be used by others, without any injunction of secrecy or any restriction or limitation, in a foundry which was open to all who might choose to visit it, and which was visited by many spectators not concerned in its operations. But even if the application of a cinder-notch to a cupola-furnace was first made by the appellant, the question remains whether, standing alone, it implies invention and is patentable.

We think this question must be answered in the negative. Neither a cupola-furnace nor a cinder-notch is new. The use of a cinder-notch for drawing off cinders from a blast-furnace is as old as blast-furnaces themselves. The function which the cinder-notch performs in the process covered by the appellant's invention is precisely the same for which it is used in a blast-furnace. In smelting slag in a cupola-furnace it was found that the molten cinder accumulated and floated on the top of the molten iron. The application to a cupola-furnace, for the purpose of drawing off the cinder, of the cinder-notch used in the blast-furnace to accomplish the same end would occur to any practical man. When applied to a cupola-furnace the same function was performed in the same way by the same means. In making this application there was no invention. (*Pearce* v. *Mulford*, 102 U. S., 112.)

We are of opinion, therefore, that the application of a cinder-notch to a cupola-furnace for the purpose designated is neither patentable nor new, and that all the other parts of the process and appliances covered by appellant's patent were old and well known long before the date of his alleged invention and the patent therefor. The complainant was not the first inventor, either in fact or in law, of the discovery or invention described in his letters patent. The patent is therefore void, and the decree of the circuit court dismissing the bill was right and must be affirmed.

Mr. Justice MATTHEWS did not sit in this case and took no part in its decision.

WORLEY *et al.* v. THE LOKER TOBACCO COMPANY *et al.*

Decided January 16, 1882.

1. DATE OF APPLICATION, IN ABSENCE OF PROOF, DATE OF PATENT.
   In the absence of all other proof the date of the patent will be taken as the date of application and the date of assignment.
2. PLUG-TOBACCO—PUBLIC USE—PATENT INVALID.
   Letters patent granted to Christian Worley and Henry McCabe, August 22, 1876, for an improvement in the mode of finishing plug-tobacco, applied for on same date, *held* to be invalid, the evidence showing that the invention had been in open and public use for more than two years prior to the filing of the application.
3. SAME—SAME—EMPLOYER'S USE.
   If a person employed in the manufactory of another, while receiving wages makes experiments at the expense and in the manufactory of the employer, has his wages increased in consequence of the useful results of his experiments, makes the article invented, and permits his employer to use it, no compensation for its use being paid or demanded, and then obtains a patent for it, the patent is invalid and void. (*McClurg* v. *Kingsland*, 1 How., 202.)
4. SAME—PUBLIC USE—BY ASSIGNEE.
   The inventor cannot relieve himself of the consequences of the prior public use of his patented invention by assigning an interest in his invention or patent to the person by whom the invention was thus used.

APPEAL from the Circuit Court of the United States for the Eastern District of Missouri.

Mr. R. H. Parkinson for the appellants.

Mr. Justice WOODS delivered the opinion of the Court.

The bill of complaint averred that on August 22, 1876, letters patent of that date were issued to Christian Worley and Henry McCabe, the complainants, for an improvement in the mode of finishing plug-tobacco, of which Worley was the inventor and McCabe was his assignee of an undivided half, and that the defendants were infringing said patent, and prayed for an injunction to restrain further infringement, and for damages and an account of profits. The answer asserted the invalidity of the patent and denied infringement. Upon final hearing the circuit court dismissed the bill, and the complainants have appealed to this Court.

The specifications on which these letters patent were issued declare as follows:

The common way to proceed in finishing plug-tobacco is to press the bunches into plugs having the form seen in the retail stores. The plugs are next removed from the molds in which they are pressed and packed in boxes, and the boxes placed in a room where the tobacco is sweated and cured. The plugs are afterward

taken from the boxes and subjected to a second pressing before they are packed in the boxes for sale.

My improved mode consists in finishing tobacco by placing the plugs in a box in alternate layers with thin metal plates, applying extreme pressure thereto, and subjecting the plugs to dry heat for several hours while they are tightly compressed between the plates, which are in contact with the broad sides of the plugs; and, finally, removing the box and leaving the contents therein until cold, the whole process being adapted to give a fine and smooth finish to the wrapper, and, by putting the plug in proper condition, doing away with its tendency to bulge out at the sides, as plugs are apt to do when they have not been thus treated.

The claim was thus set forth:

I am aware that there is not any novelty in, first, the simple finishing of tobacco by placing it in a heated room, and, secondly, the simple pressing of tobacco between metallic plates, and therefore I do not claim this distinct heating and pressing of tobacco broadly; but

What I do claim as new and of my invention, and desire to secure by Letters Patent, is—

The mode of finishing tobacco substantially as described, consisting of placing the plugs in a box in alternate layers with thin metal plates, applying extreme pressure thereto, and subjecting the plugs to dry heat of about 140° Fahrenheit for several hours while they are tightly compressed between the plates, which are in contact with the broad sides of the plugs, and finally removing the box and leaving the contents therein until cold.

It will be seen that the patent disclaims the simple pressing of tobacco between plates and the finishing of it by simply placing it in a heated room.

What appellants insist is new is this, namely: that while the plugs of tobacco are still confined in the finisher, (which is the name given to the box in which they are placed before being subjected to extreme pressure,) and while still tightly compressed between the metallic plates, they are placed in a sweat-room and allowed to remain several hours, and before being removed from the finisher are taken from the sweat-room and allowed to cool. This process, it is contended, brings the oil of the tobacco to the surface of the plug and gives it a glossy coating, which improves its appearance and keeps the tobacco from molding or swelling. The patent is therefore for the process described, and nothing more. None of the appliances by which it is carried on are claimed as new, and the evidence abundantly shows that they are all old devices.

The appellees insist that the patent is void because the improvement described therein was in public use at the factory where Worley, the patentee, was employed for more than two years prior to his application therefor.

The law applicable to the case is section 24 of the act of July 8, 1870, now embodied in the Revised Statutes as section 4886, which declares—

Any person who has invented or discovered any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvement thereof, not known or used by others in this country, and not patented or described in any printed publication in this or any foreign country before his invention or discovery thereof, and not in public use or on sale for more than two years prior to his application, unless the same is proved to have been abandoned, may, upon payment of the fees required by law, and other due proceedings had, obtain a patent therefor,

Neither the bill of complaint nor the evidence shows the date of Worley's application for his patent nor of the assignment of an undivided half of his invention to McCabe. The patent itself bears date August 22, 1876, and this must consequently be taken as the date of the application and of the assignment. The question is therefore whether the improvement patented to Worley was in public use for more than two years prior to that date—that is to say, whether a public use prior to August 22, 1874, is proven. We think that the testimony of the appellants themselves shows that this question must be answered in the affirmative.

From their depositions the following state of facts appears: McCabe was the proprietor of a tobacco-manufactory in the city of St. Louis and Worley was in his employment as a workman in the factory. In the summer of 1869 McCabe moved his factory from Second Street to Cass Avenue, and lost about two months of good working-weather in so doing. The work of the factory was consequently carried on pretty late in the fall, and McCabe told Worley that they should have to go to work early in the spring. It was to prevent the sweating of tobacco which was manufactured in the spring of the year that Worley, in the fall of 1869, conceived the process for which he afterward obtained his patent. It was at the suggestion of McCabe that he turned his attention to the subject, and the process was contrived for McCabe's benefit. It is not pretended that Worley and McCabe were joint inventors. The invention was made by Worley alone. He at once began using his invention in McCabe's factory. He testifies that it was complete and he became satisfied with its results in 1871. It is true that after that date he made experiments to decide upon the best mode of constructing his finishers so as to secure the requisite strength, but the finisher constituted no part of his patented invention. In 1871 his invention was complete, and in his opinion successful, and was adhered to from that date without change. The process was used in the factory of McCabe under the direction of Worley until the application was filed for the patent in 1876, and, according to the testimony of McCabe, Worley continued the process for McCabe's benefit, who paid him a salary larger than was usual, for his knowledge as a tobacco-manufacturer. During all the time from 1870 to 1876 thousands of pounds of tobacco finished by means of this process in the factory of McCabe were sold in the market every year. No injunction of secrecy was laid on McCabe by Worley, no one was excluded from the factory where his process was carried on, and at least one manufacturer learned the process from observing it in McCabe's factory, and adopted it and used it in his own. Worley, it is true, testifies that he told several of the hands employed in the factory not to say anything about what they were doing, and McCabe says that before the patent was obtained there was "an outside understanding" that they were "to keep it away from the public eye as much as possible." The testimony of the appellants on this point is most vague and unsatisfactory, and it is evident that no means were taken by them to keep the process invented by Worley a secret, and it was not kept a secret. Worley, according to his own testimony, communicated his process not only to McCabe, but to others, and used it openly in McCabe's factory for a period of six years before applying for his patent.

It has been repeatedly held by this Court that a single instance of public use of his invention by a patentee for more than two years before the date of his application for his patent will be fatal to the validity of the patent when issued. (*McClurg* v. *Kingsland*, 1 How., 202; *Consolidated Fruit Jar Company* v. *Wright*, 94 U. S., 92; and *Egbert* v. *Lippman*, decided at the present term.) We think the testimony of the appellants themselves shows such a public use of the process covered by Worley's patent as to render it invalid. This evidence brings the case clearly within the terms of the decision of *McClurg* v. *Kingsland*, (1 How., *ubi supra*,) where it was declared that if a person employed in the manufactory of another, while receiving wages makes experiments at the expense and in the manufactory of the employer, has his wages increased in consequence of the useful result of the experiments, makes the article invented, and permits his employer to use it, no compensation for its use being paid or demanded, and then obtains a patent for it, the patent is invalid and void. Suppose Worley had not assigned an interest in his invention to McCabe, and after obtaining his patent had brought suit against the latter for infringement, it is perfectly clear that McCabe could have defended the suit successfully on the ground of his own public use of the invention for two years before the date of the patent. If such defense could be made by McCabe it could be made by any one else, for the facts relied on would render the patent void.

The fact that McCabe, just before the patent was applied for, became the assignee of an interest in it does not make this defense any the less effectual, for the assignee of a patent-right takes it subject to the legal consequences of the previous acts of the patentee. (*McClurg* v. *Kingsland*, 1 How., *ubi supra*.)

The inventor cannot relieve himself of the consequences of the prior public use of his patented invention by assigning an interest in his invention or patent to the person by whom the invention was thus used.

We think the evidence of the appellants themselves establishes clearly the defense under consideration. The decree of the circuit court must therefore be affirmed.

THE

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Subscriptions for 1882.

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Issue of February 28, 1882.

Patents	343	No. 254,103 to No. 254,445,	inclusive.
Designs	6	No. 12,792 to No. 12,797,	inclusive.
Trade-Marks	8	No. 9,141 to No. 9,148,	inclusive.
Labels	8	No. 2,622 to No. 2,629,	inclusive.
Reissues of patents	6	No. 10,044 to No. 10,049,	inclusive.
Total issue	371		

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama			Nebraska	1	
Arizona Territory	1		Nevada		
Arkansas	1		New Hampshire	2	1
California	6		New Jersey	13	
Colorado			New Mexico Territ'y		
Connecticut	15		New York	79	4
Dakota Territory	2		North Carolina	2	1
Delaware	2		Ohio	22	
District of Columbia	2		Oregon	1	
Florida	1		Pennsylvania	33	2
Georgia	1		Rhode Island	9	
Idaho Territory			South Carolina	2	
Illinois	26	3	Tennessee	4	
Indiana	8		Texas	6	
Indian Territory			Utah Territory		
Iowa	13		Vermont	2	1
Kansas	2		Virginia		1
Kentucky	1	1	Washington Territ'y		
Louisiana			West Virginia		
Maine			Wisconsin	10	1
Maryland	1		Wyoming Territory		
Massachusetts	33		United States Army		
Michigan	14		United States Navy		
Minnesota	5				
Mississippi	1		Total to citizens of the United States	332	15
Missouri	11				
Montana Territory					

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia			England	3	1
Austria	1		France	6	
Barbadoes			Germany	1	
Belgium			Italy		
Bermuda			New Zealand		
Brazil			Russia	1	
Canada	5		Spain		
Chili			Sweden		
Colombia, U. S. of			Switzerland		
Cuba					
Denmark			Total to citizens of foreign countries	17	1
Ecuador					

DESIGNS.

12,792.—CARD-RECEIVER.—*Henry Berry*, Birmingham, Conn., assignor to *The Derby Silver Company*, same place. Application filed November 26, 1881. Term of patent 3½ years.

12,793.—FORK OR SPOON HANDLE.—*Joseph B. Knowles*, Providence, R. I. Application filed December 27, 1881. Term of patent 7 years.

12,794.—ORNAMENTAL CHAIN.—*Sigmund L. Lederer*, Providence, R. I. Application filed December 22, 1881. Term of patent 7 years.

12,795.—SCALES.—*James T. McNally* and *Walter H. Harrison*, New York, N. Y. Application filed January 6, 1882. Term of patent 7 years.

12,796.—FONT OF PRINTING-TYPE.—*Carl Müller*, Chicago, Ill., assignor to *Marder, Luse & Co.*, same place. Application filed November 18, 1881. Term of patent 7 years.

12,797.—BACK OF A BRUSH.—*George A. Scott*, New York, N. Y. Application filed January 10, 1882. Term of patent 14 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

9,141.—CIGARS.—*Rocky Ca.*, New York, N. Y. Application filed February 6, 1882.

"The arbitrary word 'FAUSTO.'"

9,142.—VIOLIN-STRINGS.—*Estey Organ Company*, Brattleborough, Vt., and Atlanta, Ga. Application filed October 31, 1881.

"A millstone suspended on a single violin-string between two uprights and the face of the millstone bearing the words 'CLEAR GRIT.'"

9,143.—CHEWING AND SMOKING TOBACCO AND CIGARS.—*Robert Hamilton*, Covington, Ky. Application filed January 31, 1882.

"The flowing ribbon fastened to the package by means of a seal or rosette."

9,144.—FLOUR.—*Holt & Co.*, New York, N. Y. Application filed October 17, 1881.

"The words 'LA FAVORITA.'"

9,145.—MANUFACTURED SMOKING-TOBACCO FOR PIPES.—*E. G. Irvine*, Lynchburg, Va. Application filed January 14, 1882.

"The picture of the Indian girl represented as a queen and the words 'INDIAN QUEEN.'"

9,146.—MEDICINAL OIL.—*Theodore W. Poole*, Williamston, N. C. Application filed January 23, 1882.

"The word-symbol 'ST. PATRICK.'"

9,147.—STOCKINGS.—*Smyth & Co.*, Dublin and Ballbriggan, Ireland. Application filed February 3, 1882.

"The representation of a stockinged leg on a shield."

9,148.—CIGARS, CIGARETTES, CHEWING AND SMOKING TOBACCO, AND GRANULATED AND PLUG TOBACCO AND SNUFF.—*G. W. Van Slyke & Co.*, Albany, N. Y. Application filed February 1, 1882.

"The arbitrarily-selected letters 'P's & Q's.'"

LABELS.

2,622.—Title: "DONAHUE'S DRESSING."—*T. J. Donahue*, Philadelphia, Pa. Application filed December 22, 1881.

2,623.—Title: "HUMECTIC PEPSIN."—*Clarence A. Fowerden*, New York, N. Y. Application filed January 30, 1882.

2,624.—Title: "DR. WM. SHEPPARD'S COLIC REMEDY FOR HORSES." *Oakley Griggs*, Streator, Ill. Application filed January 30, 1882.

2,625.—Title: "GRIGG'S SPECIFIC FOR THE PREVENTION AND CURE OF HOG CHOLERA."—*Oakley Griggs*, Streator, Ill. Application filed January 30, 1882.

2,626.—Title: "DR. MINOR'S SPECIFIC LINIMENT FOR RHEUMATISM." *Oakley Griggs*, Streator, Ill. Application filed January 30, 1882.

2,627.—Title: "DR. LOCKERBY'S LIVER PILLS."—*F. S. Le Bosquet*, Concord, N. H. Application filed January 12, 1882.

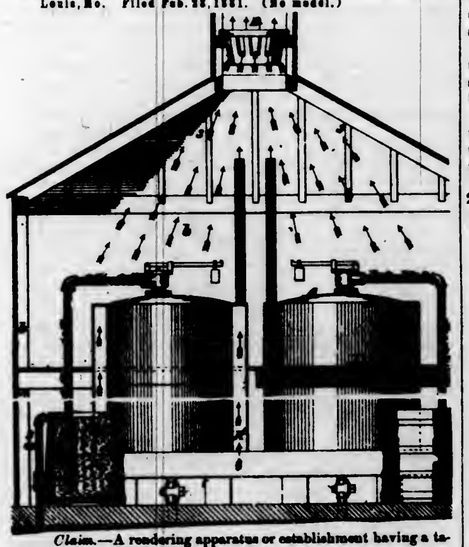
2,628.—Title: "SUPERIOR SCREW CUTTING OIL."—*J. S. Ramsey & Co.*, Pittsburg, Pa. Application filed December 29, 1881.

2,629.—Title: "THE FAMOUS UNTEARABLE OVERALL."—*Joseph H. Rice* and *Ignatius Friedmann*, Milwaukee, Wis. Application filed January 3, 1882.

PATENTS.

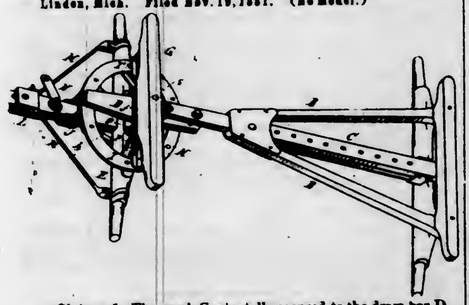
GRANTED FEB. 28, 1882.

254,103. RENDERING APPARATUS. GEORGE BAYNE, St. Louis, Mo. Filed Feb. 28, 1881. (No model.)



Claim.—A rendering apparatus or establishment having a tapering roof and a flue at the top of the latter, wherein is placed a basket for fire, in combination with the inclosed tanks surrounded by casings, from which pipes run upward to the roof, the whole constructed and arranged as and for the purpose set forth.

254,104. RUNNING-GEAR FOR VEHICLES. ALLEN J. BEACH Linden, Mich. Filed Nov. 19, 1881. (No model.)



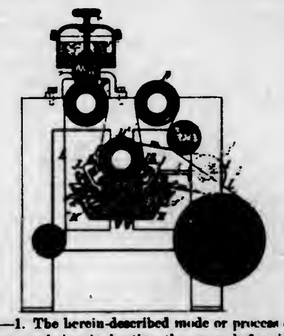
Claim.—1. The reach C, pivotally secured to the draw-bar D, in combination with the circle I below the draw-bar D, the bolster G, and the bolster-barrier F above said draw-bar, and the bent bearing-brackets I', secured to the bolster and adapted to act against the circle I, and the axle E, as and for the purpose specified.

2. In combination with the draw-bar D, bolster G, and axle E, the circle I, secured to the axle, and the bent bearing-plates I', secured to the bolster and adapted to act against the circle, substantially as specified.

3. In a wagon, and in combination with the axle E thereof, the bolster-barrier F and draw-bar D, provided with the double-shouldered thimble *d*, adapted to support the center of the bolster-barrier, substantially as and for the purposes described.

4. In a wagon, and in combination with the circle H, provided with the hanger J, in which is pivotally hung the tongue K, the sliding sleeve L, and draft-rods M, substantially as and for the purposes set forth.

254,105. MODE OF AND MACHINE FOR WAXING PAPER. JOSEPH T. BEDFORD, New York, N. Y. Filed June 3, 1881. (No model.)



Claim.—1. The herein-described mode or process of making waxed paper, consisting in heating the paper before it is waxed, supplying the paraffine or other wax to the paper in thin films, at points above the mass or body of paraffine, by having it pass through felt rubbers or feeders by capillary attraction, and reheating the paper and wax thereon, and simultaneously rubbing the thin films of paraffine into the traveling heated paper, substantially as described.

2. The combination of felt feeders, applied nearly in contact with a revolving hollow heated roller, and caused to reciprocate in a tank containing melted paraffine or other wax, and by capillary attraction and a rubbing action to apply melted wax in thin films to the surface of the paper, and a hollow revolving roller for heating the paper between the supply-roll and the tank, substantially as and for the purpose described.

3. The combination of a paraffine or other wax-holding tank provided with steam-pipes for keeping the wax melted, reciprocating felt feeders partly immersed in the tank, hollow revolving heating-rollers D D^2, and deflecting-rollers, substantially as and for the purpose described.

4. The combination of the auxiliary or upper waxing mechanism, provided with a felt feeder, with the lower main waxing mechanism, also provided with a felt feeder, which by capillary attraction supplies the paraffine to the paper in thin films at points above the mass or body of paraffine, and with hollow rolls which heat and deflect the paper, substantially as described.

5. The felt feeders applied in clamps, and made adjustable by means of rocking guide-bars I, lever-arms e^2, and set-screws, substantially as and for the purpose described.

6. Felt feeders, in combination with mechanism, substantially as described, whereby they are reciprocated beneath the paper and within the paraffine or other wax-holding tank, as set forth.

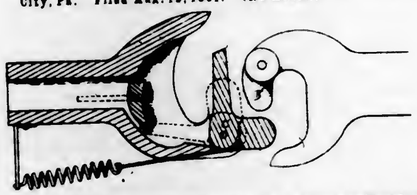
7. The combination of the supplying-roll, heating-rolls, main and auxiliary waxing mechanisms, provided respectively with a felt feeder, main and auxiliary tanks for holding and keeping the paraffine or other wax melted, and a roll for receiving the waxed paper, the whole being substantially as and for the purpose described.

8. The upper tank provided with steam-pipes for heating the paraffine or other wax, a felt holder or clamp, and a regulating-valve applied centrally over the perforated and raised portion of the felt-holder, substantially as described.

9. The combination of a felt feeder, a tank for holding the paraffine or other wax, and hollow heating-rollers D D' D², arranged in a triangle, or nearly so, substantially as and for the purpose described.

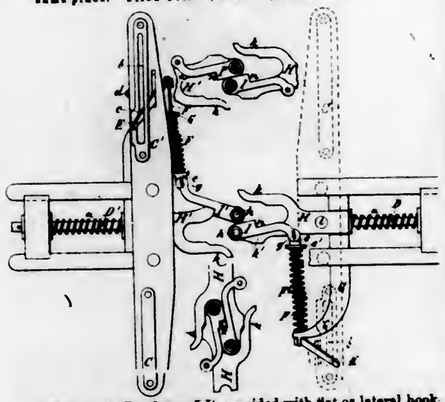
10. The clamps H, having hinged inner jaws, *f*, lever-arms J', and set-screws *c*, substantially as described.

254,106. CAR-COUPLING. CLINTON BROWNING, Shousetown, assignor of one-half to Lindsay & McCutcheon, Allegheny City, Pa. Filed Aug. 15, 1881. (No model.)



Claim.—In a car-coupling composed of a bifurcated head and rotary interlocking hook, the combination, with said rotary hook, of means, substantially such as described, for automatically opening and retaining said hook in proper position for coupling.

254,107. CAR-COUPLING. CLINTON BROWNING, Allegheny City, Pa., assignor of three-eighths to Lindsay & McCutcheon, same place. Filed Oct. 10, 1881. (No model.)



Claim.—1. The levers I I', provided with flat or lateral hooking or interlocking shoulders *n* between their front and rear extensions, and with pivot-pin holes in their front extensions, in combination with the draw-heads H H', formed as described, and with the pivot-pins *h* *h*, substantially as and for the purpose described.

2. The levers I I', provided respectively with a flat or laterally-extended shoulder, *n*, and a bevel, *n'*, and with two arms at their front and two at their rear ends, and with pivot-pin holes in their front ends, and both levers united by a body of metal, which forms also a shoulder from top to bottom of the respective draw-heads, in combination with the draw-heads formed respectively, as described, with a bifurcated end and with a depression, *l*, substantially as and for the purpose described.

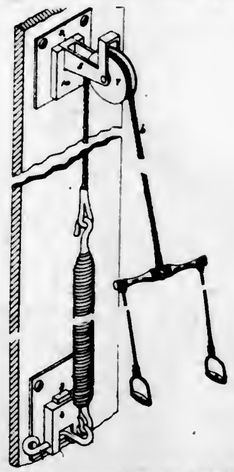
3. The levers I I', provided respectively with a flat or lateral shoulder, *n*, and upper and lower rear and front extensions, in combination with the bifurcated draw-heads H H', rods F, springs F', hand-levers E, and locking-bars C', substantially as and for the purpose described.

4. The combination of the bifurcated draw-heads H H', levers I I', provided with flat or lateral shoulders *n*, and the spring draw-bars D D', connected to the draw-heads by vertical hinge-pivots *i*, substantially as and for the purpose described.

5. The hinging-ears *m* of the draw-heads H H', having a space, *m'*, between them, and rounded at their corners *p*, in combination with the binging ears or ends of the levers I I', and with the vertically-sliding or removable pivot-pins *h*, substantially as and for the purpose described.

6. The bifurcated draw-heads H H', provided with interlocking levers which have flat or lateral interlocking shoulders *n*, and are pivoted as described, and are arranged and constructed to pull squarely against the respective flat shoulders *n* of one another on a line diagonal to a central line of draft of the cars, and thereby relieve the springs of the levers I I' from strain while at the same time the draw-heads maintain their coupled position, substantially as described.

254,108. EXERCISING APPARATUS. WILLIAM J. O. BRYON, Jr., New York, N. Y. Filed Dec. 1, 1881. (No model.)



Claim.—1. In an exercising apparatus provided with an elastic spring or other suitable resistance, the combination of a pulley and a hook or fixed attachment interchangeable in position with one another, substantially as described.

2. The combination, with the fixed socket-plates, of a pulley whose frame is provided with a tongue or extension at right angles thereto for entering said sockets, and a hook or ring whose shank is provided with a similar tongue, substantially as and for the purpose described.

3. In an exercising apparatus which is provided with an elastic spring or other suitable resistance, the combination, with a pulley over which passes the cord attached to one end of said spring, of a hook, eye, or other suitable device, to which the fixed end of said spring may be attached, and means whereby said pulley and hook may be interchanged in position, for the purpose described.

4. In a wall exercising apparatus, the combination of fixed holders or supports and removably-attached pulley and hook or its equivalent, substantially as and for the purpose described.

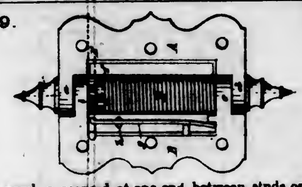
5. In a wall exercising apparatus, a hook or eye for attaching the fixed end of the resistance-spring, whose shank is provided with a tongue or extension at right angles thereto, substantially as and for the purpose described.

6. In a wall exercising apparatus, a pulley block or frame provided with a tongue or extension at right angles thereto, in combination with a socket fixed to the wall or other suitable support, substantially as described.

7. In combination with the removable pulley and hook and their tongues or extensions, sockets or clamps consisting of the side pieces, cross-piece, and base-plate, whereby said clamp may be attached to a wall or other suitable support.

254,109. SPRING-HINGE. THEODORE BUTLER, Cleveland, Ohio, assignor to the Butler Door Spring Company, same place. Filed Sept. 13, 1881. (Model.)

Claim.—The combination, with the pintle, ratchet, spiral spring, and leaves A and B, the latter having a perforation, *h*, of a spring-pawl, *g*, secured at one end between studs on the inner side of leaf B, and then passing under the perforation *h* and terminating in a bent end secured in a perforation of the leaf B, and engaging with said ratchet, substantially as set forth.



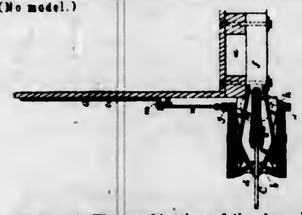
254,110. CIRCULAR-SAW MILL. JOHN CAMPBELL, Windsor, Ontario, Canada. Filed Dec. 9, 1881. (No model.)



Claim.—1. The combination, with a gang of two circular saws arranged at a suitable distance apart, of a chain-supporting way arranged between said saws and extending on opposite sides thereof, and an endless-band chain arranged to travel upon said way between said saws, and provided with a series of spaced links having outwardly-projecting log-holders arranged to pass between said saws and carry logs longitudinally between the same, substantially as described.

2. The combination, with the two circular saws and a chain-way between and extending on both sides thereof, of the band-chain provided with the spaced log-carriers and means for driving said saws and chain, the said chain and its supporting-way being of sufficient length and properly arranged to support simultaneously a log that is being sawed, another that has been sawed and is being carried away from the saws, and another that is approaching the saws, so that receiving, sawing, and delivering the logs are performed as a continuous operation, substantially as described.

254,111. CAR-COUPLING. LUE L. CHASE, Swanton, Vt., assignor to Fletcher Tarble, same place. Filed Jan. 3, 1882. (No model.)



Claim.—1. The combination of the draw-head having the double inclined partition, and its mouth, with the link extended through such partition and supported by an arm, as set forth, and also with the catch-levers applied to such draw-head, and provided with mechanism for moving them, (the said catch-levers,) as explained.

2. The combination for operating the two lever-catches D to effect disengagement of one of them from a link, C, such combination consisting of the rock-shaft *k*, two crank-wheels, *i*, four links, *h*, and two cross-bars, *g*, all arranged and applied, and the rock-shaft having handles, substantially as set forth.

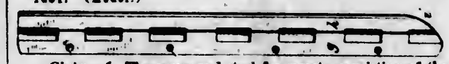
3. The combination of the lever *m*, lifter-rod *o*, and link *n*, the rock-shaft *k*, two crank-wheels, *i*, four links, *h*, and two cross-bars, *g*, all arranged and to operate essentially as set forth.

254,112. HARBOR DEFENSE. ROBERT A. CHESEBROUGH, New York, N. Y. Filed Feb. 3, 1881. (No model.)



Claim.—The method of defending harbors by delivering inflammable liquid through submerged pipes or conduits into the water thereof, allowing it to rise to the surface, and then igniting and burning the liquid as it floats upon the water, substantially as herein specified.

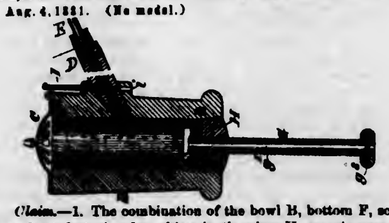
254,113. STEEL FOR CORSETS. DWIGHT H. CHURCH, Birmingham, Conn., assignor of two-thirds to Lyman H. Loomer and Andrew F. Loomer, both of same place. Filed June 23, 1881. (Model.)



Claim.—1. The compound steel for corsets, consisting of the two narrow removable pieces *g* and *h*, one of which is provided with a groove at one edge adapted to receive and slide upon the edge of the other piece, and the two, when in the same pocket, serving to hold each other in place, substantially as shown and described.

2. A corset having its front steels made in the two removable parts *g h*, as described, the part *h* having edge-clasps or their equivalents to receive the edge of the part *g*, and having its inner end of wedging shape, as and for the purposes described.

254,114. SMOKING-PIPE. JAS. COLE, St. Louis, Mo. Filed Aug. 4, 1881. (No model.)



Claim.—1. The combination of the bowl B, bottom F, screw G, perforated at *g'* and working in the plug H, carrying mouth-piece E, and gate I, substantially as described.

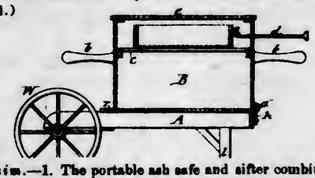
2. The combination of the bowl B, bottom F, plug H, perforated screw G, gate I, gate *g'*, and stem D, and mouth-piece E, substantially as described.

254,115. VEHICLE-SEAT. FRANK A. COMSTOCK, Columbus, Ohio. Filed Sept. 30, 1881. (No model.)



Claim.—A vehicle-seat back composed of sheet-metal sections having their proximate edges turned back toward the body of the sections, and strong strengthening-corners having grooves for the reception of the turned-back edges of the sections, and operating to hold the sections firmly together, substantially as described.

254,116. COMBINED PORTABLE ASH SAFE AND SIFTER. MARSFIELD J. COOK, Syracuse, N. Y., assignor of one-half to Jason I. Freeman, same place. Filed Jan. 14, 1882. (No model.)

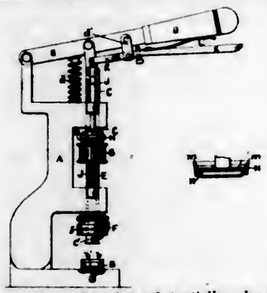


Claim.—1. The portable ash safe and sifter combined, consisting essentially of a frame provided with a carrying wheel or wheels or with sled-runners, and an ash-receptacle removably mounted on said frame and provided with a removable sieve sliding on guides in the interior of the ash-receptacle, all as set forth and shown.

2. The combination of the frame A, provided with the wheel W and with legs *l* and hook *k*, the box B, provided with the staple *a*, end handles, *b b*, secured to the sides of the box, guide-bars *c*, arranged removably inside of the said box, the sieve *e*, mounted on said bars, the handle *d*, detachably connected to said sieve, and the removable cover *e*, all constructed and combined substantially in the manner described and shown.

254,117. MACHINE FOR COMBINING THE BACKS AND FRONTS OF ARTICLES OF JEWELRY. DANIEL S. COOKE and JOHN HAGERTY, Providence, R. I.; said Hagerty assignor to said Cooke. Filed Oct. 29, 1881. (No model.)

254,117.



Claim.—1. The combination, substantially as herein set forth, of a stationary die for supporting the work, a plunger adapted to co-operate with said die, as described, a rotating and sliding sleeve mounted on said plunger and provided with a cutting-tool, and suitable means, as described, for moving the plunger and sleeve to and from the die.

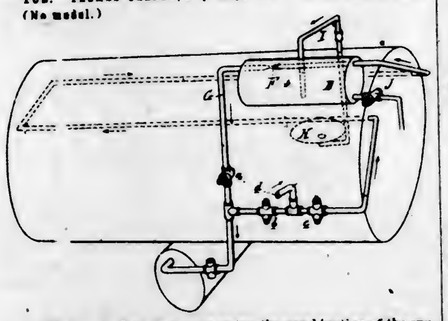
2. The combination, substantially as herein set forth, of a stationary die for supporting the work, a plunger adapted to co-operate with said die, as described, a rotating and sliding sleeve mounted on said plunger, engaging a shoulder on the same when in normal position, and provided with a cutting-tool, a lever for moving the plunger and sleeve simultaneously toward the die, a second lever for giving the sleeve a further movement toward the die independently of the plunger, and suitable means, as described, for retreating the parts.

3. The combination, substantially as herein set forth, of a stationary die for supporting the work, a plunger adapted to co-operate with said die, as described, a rotating and sliding sleeve mounted on said plunger and provided with a cutting-tool, a lever for moving the plunger toward the die, a second lever connected with the sleeve and with the first lever for moving the sleeve and cutting-tool up to the work, and suitable means, as described, for retreating the parts.

4. The combination of the stationary die B, the plunger C, the sleeve E, adapted to hold a cutting-tool, F, the lever D, the lever K, connected with the sleeve E and with the lever D, and springs for retreating the plunger and sleeve, substantially as set forth.

5. The combination of the detachable die B, having a shoulder, *b*, and cavity *b'*, the plunger C, provided with a detachable member, C', having a central cavity, the sleeve E, adapted to hold a cutting-tool, F, and provided with a pulley, G, the levers D K, the rods J J, yoke H, and springs *d* L, substantially as described and shown.

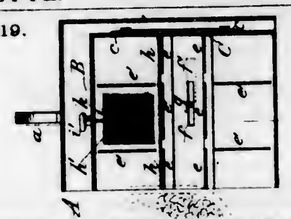
254,118. BOILER-CLEANER AND CIRCULATING APPARATUS. THOMAS CRANBY, Bay City, Mich. Filed July 8, 1881. (No model.)



Claim.—1. In a steam-generator, the combination of the supply-pipe J, drum D, injector F, pipe I, surface-pan H, and the pipe G, as and for the purpose specified.

2. In combination with the steam-generator and its water-supply pipe, the drum D, which incloses an injector, F, said drum being connected to the boiler by the pipe G and to the surface-pan within the boiler by a pipe, I, substantially as and for the purposes set forth.

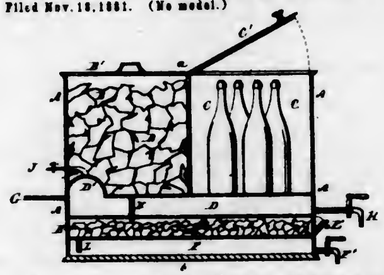
254,119. CULINARY APPARATUS. WILLIAM H. DANIELL, Pottsville, Pa. Filed May 16, 1881. (No model.)



Claim.—1. In a culinary apparatus, the combination, with an outer inclosing shell having handles and suitable hinged sides, of an inner shell provided with handles and openings and having interior shelves or gratings supported on brackets, substantially as and for the purpose shown and described.

2. In a culinary apparatus, the combination, with the outer shell, A, of the inner shell, B, having brackets *c c'*, grated partitions *h h*, spit-rod *g*, supported in slot *f f*, and hook *i*, supporting a wire broiling-frame, *h'*, substantially as and for the purpose specified.

254,120. BEER-COOLER. PATRICK J. DARCY, Hartford, Conn. Filed Nov. 16, 1881. (No model.)



Claim.—1. In combination with a tight beer-chamber, D, provided with the inlet and outlet pipes G H, and the air-chamber D', provided with the cock J, the cooling-chambers C and E, above and below said beer-chamber, connected by the drip-pipe K, substantially as described.

2. In combination with the beer-chamber D, the ice-receptacles B and E and the separate cold-water receiver F, provided with the faucet F', and connected with the ice-receptacles by the pipes K and L, substantially as described.

254,121. RECIPROCATING CHURN. HENRY T. DAVIS, Sherman, Tex. Filed Apr. 14, 1881. (No model.)



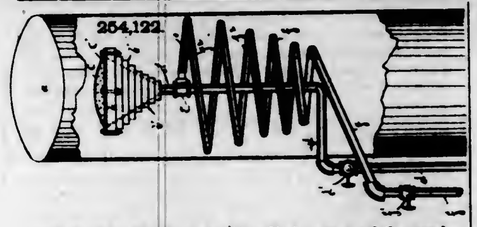
Claim.—In a reciprocating churn, the vertical open-ended flanges, perforated shell B, side tubes or pipes, C C, attached thereto, and cover E, formed with perforations *f e' e'*, for receiving the upper ends of the dasher-rod and tubes or pipes, in combination with the rod F, dasher D, and tub A, as set forth.

254,122. SPARK-EXTINGUISHER. ISAAC DEVELL, St. Thomas, Ontario, Canada. Filed Dec. 12, 1881. (No model.)

Claim.—1. The spark-extinguisher for smoke-stacks, consisting of the steam-receptacle *b*, having the exterior steps or shoulders, *b'*, and cap *c*, so arranged thereon as to leave the annular space *c'*, the whole being connected with the source of steam-supply through pipe *d*, and the coil of perforated pipe *f*, connected with the source of supply, all being combined and operating substantially as shown and described.

2. In a spark-extinguisher, the steam-receptacle *b*, provided

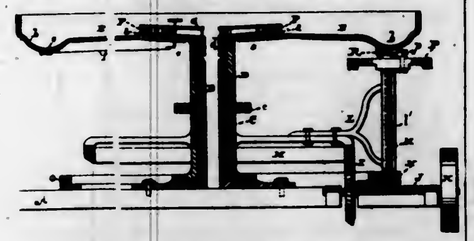
254,122.



with the series of steps or shoulders *b'*, the cap *c*, and the annular space or opening *c'*, as and for the purpose stated.

3. In a spark-extinguisher, the steam-receptacle *b*, provided with the series of steps or shoulders *b'*, the annular space or opening *c'*, and the perforated cap *c*, substantially as shown and described.

254,123. ORE-CONCENTRATOR. JOSEPH S. DUNCAN, San Francisco, Cal., assignor of a part to A. P. Brayton and John H. Wells, same place. Filed Aug. 5, 1881. (No model.)



Claim.—1. The concentrating-pan E, with its peripheral channel *b*, said pan being journaled upon a central post and given a rotary motion thereon by means of the connecting-crank R, plate P, shaft M, traveling bracket L, gear-wheel H, pinion I, shaft J, and pulley K, and given an oscillating or shaking motion at the same time by means of the crank R, revolving crank-plate P, shaft M, pinion N, large gear-ring O, traveling bracket L, gear-wheel H, pinion I, shaft J, and pulley K, the whole constructed to act in combination, substantially as herein described.

2. The concentrating-pan E, with its peripheral channel *b* and central aperture, in combination with the hollow king-post B and mechanism, substantially as and for the purpose herein described, for imparting to said pan a rotary and vibratory movement.

3. The concentrating-pan E, with its peripheral channel *b* and central aperture, and having the S-shaped flanges F, in combination with the hollow king-post B, substantially as and for the uses and purposes herein described.

4. The concentrating-pan E, with its peripheral channel *b* and central aperture, and having the S-shaped flanges F and protecting-plate G, in combination with the hollow king-post B, substantially as and for the uses and purposes herein described.

5. The concentrating-pan E, with its peripheral channel *b*, said channel having an aperture, *c*, covered by a valve operated by the rod *f* and crank *g*, and the mechanism, substantially as and for the purpose herein described, for imparting to said pan a rotary and vibratory movement.

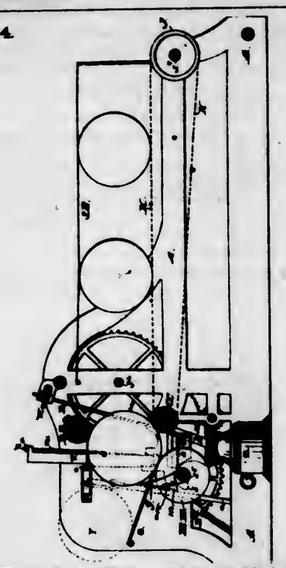
254,124. AUTOMATIC SOLDERING-MACHINE. JOHN ALEXANDER FORBES, Dover, Del., assignor of one-half to Frederic A. Williams, same place. Filed Sept. 17, 1881. (No model.)

Brief.—The can is fed between clamping-disks and rotated by them and by rollers C C, D D, E E, while each end rests upon a grooved soldering-iron. Bits of solder cut by a knife fall upon the heated irons at regular intervals. Soldering-irons are pivoted and are oscillated gently to flow the solder. The can is discharged by arms *g* and an endless belt.

Claim.—1. The combination of the tube V, rod *a*, nut *c*, and pin *h* with the knife *e*, box *d*, screws *f* and *a*, lever *a*, pivot *b*, spring *p*, and the pin *i* and wheel I on shaft S', as and for the purpose herein set forth.

2. An oscillating iron reservoir, M, pivoted at *r* on the frame A, containing the copper bar N, the lug *m*, and the screw *n* *m*, M and N being shaped upon the upper end to fit the curve of a can, and the whole being moved by *s* and S', as and for the purpose herein set forth.

254,124.



3. The copper bar N, in combination with the grooved oscillating iron M and the adjustable rod R, pivoted to N, R and N being adjustable by means of the wheel W.

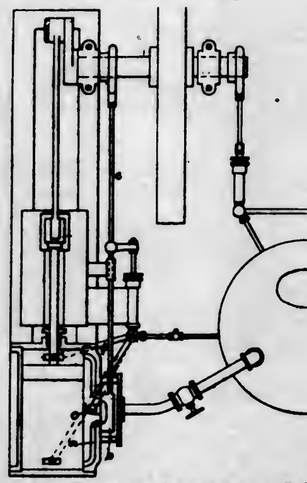
4. The combination of the pulleys E E with the disks P and P', the rollers C C and D D, and the parts M and N, for holding and guiding cans during the soldering operation.

5. In a soldering-machine, the combination of M and N with the means, P and P', D D, and C C, for rotating, and also with the means, O, *g*, and K, for carrying cans through the machine.

6. In a soldering-machine, the combination of the following parts for automatically reciprocating the disk P': shaft S', wheel I, and pin *i*, with the bar L', wedge *w*, shoulder *x* or other projection from shaft S', and S' carrying the disk P, and the spring P Z, substantially as herein described and set forth.

7. In a soldering-machine, the combination of the brake S B with the carrier K, substantially as and for the purpose specified.

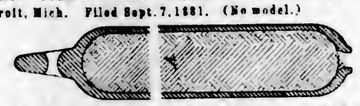
254,126. STEAM-ENGINE. ERIK GUSTAF PRYTZBERG, Newark N.J. Filed Oct. 1, 1881. (No model.)



Claim.—The combination of a steam-cylinder of sufficient clearance, supplied with a valve mechanism for operating the steam expansively, induction-ports for the admission of live steam to the cylinder, and passages for the escape of water of condensa-

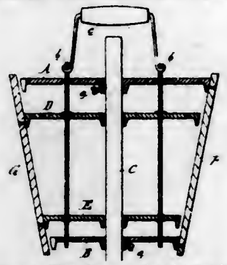
tion from the cylinder, and a pump connected with such water-passages, suitably connected and operated to return such water to the steam-generator, substantially as and for the purpose set forth.

254,126. CORE FOR SASH-WEIGHTS. P. HENRY GRIFFIN, Detroit, Mich. Filed Sept. 7, 1881. (No model.)



Claim.—A core for casting sash-weights, composed of sand and silicate of soda, as and for the purpose specified.

254,127. MANUFACTURE OF PAPER PAILS. ADELBERT J. GRINNELL, Detroit, Mich. Filed Dec. 12, 1881. (No model.)

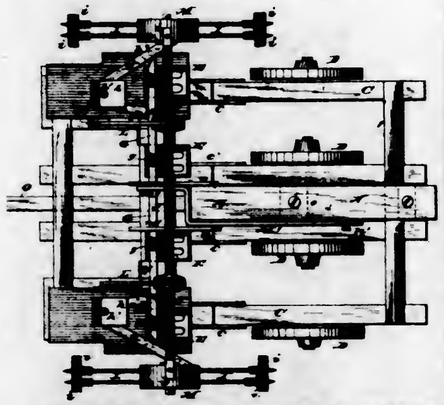


Claim.—1. A rolling former wherein one-half of the staves used are secured to one holding device and the remaining staves to a separate holding device, whereby each alternate stave is adapted to be partially removed, substantially as and for the purpose specified.

2. A roller-former for the purposes set forth, consisting of a fixed head and bottom secured to a central shaft, and with rigidly-secured staves, intermediate head and bottom, with staves secured thereto, each intermediate head and bottom having a limited reciprocating motion upon the shaft, substantially as and for the purposes specified.

3. A roller-former for the purposes set forth, consisting of the head A, bottom B, and staves F, the intermediate head, D, bottom E, and staves G, in combination with the shaft C, and means, substantially as described, for reciprocating the parts D E upon the shaft, substantially as and for the purposes set forth.

254,128. CORN-PLANTER AND CHECK-ROWER. HENRY P. HALL, Danvers, Ill. Filed July 28, 1881. (No model.)



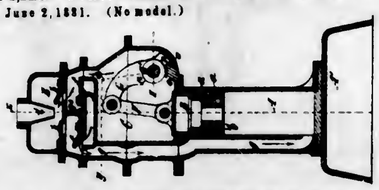
Claim.—1. In a check-rower corn-planter, the combination, with the shaft J, of the hubs M M, mounted on the ends thereof, and each hub provided with two rows of radially-projecting marking-arms, I, the arms of said rows alternating with each other, as shown, whereby the inner row of arms on each hub will come on a line with the outer row of arms on the other hub, the dropping-bar and operating mechanism adapted to be alternately operated by the inner row of arms on the hubs, substantially in the manner as and for the purpose herein shown and described.

2. In a check-rower corn-planter, the combination, with the dropping-bar G, of the pivoted bent or elbow levers H H, connected to said bar by the short arms A^3 A^3, with their long arms A^4 A^4 projecting beyond the sides of the machine, and the shaft J, having hubs provided with rows of arms I I, adapted to alternately engage the long arms A^4 A^4 of said levers for operating the dropping-bar, substantially in the manner as and for the purpose herein shown and described.

3. In a check-rower corn-planter, the combination of the dropping-plates having forked arms F, the dropping-bar G, provided with the studs *g g* and *g' g'*, pivoted bent or elbow levers H H, having short forked arms h^3 h^3 and long arms A^4 A^4 projecting beyond the sides of the machine, and the shaft J, provided with hubs M M, each hub having two rows of marking-arms, the several parts arranged and operating substantially in the manner herein shown and described.

4. The combination, with the bent or elbow levers H H, of the metallic caps *h h*, in which the bent or elbow portions of said levers are arranged, and a screw, pin, or its equivalent, passing through each cap and lever, by which they are pivoted upon the frame of the machine, substantially in the manner as and for the purpose herein shown and described.

254,129. PUMP. FRANK B. HANSON, New York, N. Y. Filed June 2, 1881. (No model.)



Claim.—1. In a pump, the combination of an upright cylinder and a piston, a chamber above the cylinder containing mechanism for imparting motion to said piston, suction and discharge chests containing suction and discharge valves arranged immediately above said chamber, and passages leading from said chests to said cylinder above and below the piston, substantially as specified.

2. The combination of the cylinder A and piston B, the chamber C, arranged above and supported by said cylinder, mechanism for operating the piston, contained in said chamber, the suction and discharge chests B and E, containing valves *f h*, the passages *g g'*, and the partition g^4, separating said passages, all substantially as specified.

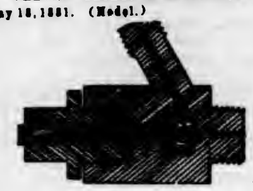
3. The combination of the cylinder A and piston B, the chamber C, arranged above and supported by said cylinder, mechanism for operating said piston, arranged in said chamber, the suction and discharge chests D and E, containing valves *f h*, the passages *g g'*, and the inwardly-projecting nozzle *i* in the chest E, whereby the latter is made to serve as an air-chamber, substantially as specified.

4. In a pump, the combination of a cylinder and piston, a lever or arm and a link for operating said piston, and a rock-shaft inserted through said lever or arm, and comprising square or polygonal shoulders, between which said lever or arm is held, and which enter corresponding seats in opposite sides thereof, one of said shoulders being formed by a sleeve fitting upon said shaft, substantially as specified.

5. The combination of the lever or arm G, the rock-shaft H, having a shoulder, *j*, the sleeve I, forming the shoulder *j'*, and the nut *h*, for securing said sleeve I upon the rock-shaft, substantially as specified.

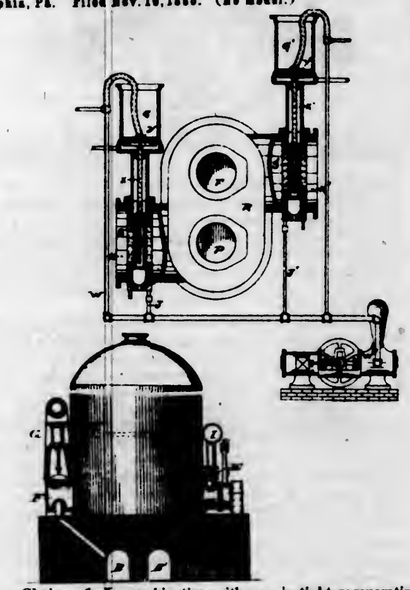
6. In a pump, the combination of a cylinder and piston, a link and a lever or arm for imparting motion to said piston, a rock-shaft to which said lever or arm is secured, stops upon the interior of the pump, and projections upon said lever or arm, which are adapted to engage with said stops for limiting the movement of said lever or arm, substantially as specified.

254,130. VALVE. THOMAS E. HARRISON, Philadelphia, Pa. Filed May 16, 1881. (Model.)



Claim.—In a valve for retaining and regulating the flow of gas under high pressure, the combination of a raised valve-seat of soft metal with a capped or conical concave valve of harder metal, provided with a guide to prevent rotation and insure the closing thereof at all times in the same position, substantially as and for the purpose set forth.

254,131. HOT-BLAST STOVE. JOHN M. HARTMAN, Philadelphia, Pa. Filed Nov. 10, 1880. (No model.)



Claim.—1. In combination with an air-tight regenerative stove, an external foundation having in it the flue B, for conveying the unburned gas to the stove, and the flue B', for conveying the burned gas to the chimney, the said flues being placed under the stoves, and the connections from the stoves to the flues being external to the stoves.

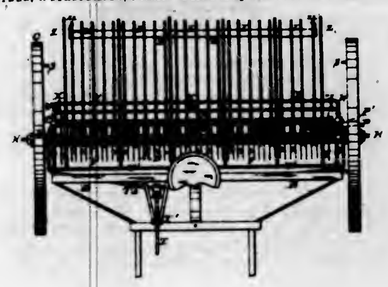
2. The method of cleaning the passages of a regenerative stove, which consists in stopping or closing part of the passages and discharging a current of compressed air through the remaining passages, whereby the air-blast is concentrated in the open passages and a thorough cleaning is obtained.

3. In combination with a regenerative stove having water-cooled valve-disks S S', the cylinders G G', the pistons V V', the piston-rods X X', and pipe T T', for operating the valve-disks.

4. In combination with a regenerative stove, a compound nozzle containing the valve bodies K K' and one or more openings, F F', into the stove.

5. The combination, with the valves and their seats, of a regenerative stove, the valves and valve-seats being provided with water-circulating passages, an eduction-pipe, and exhausting device, whereby a circulation of water is induced through the said passages by suction.

254,132. COMBINED HAY RAKE AND TEDDER. EDWIN A. HILLS, Wethersfield, Conn. Filed May 4, 1881. (No model.)



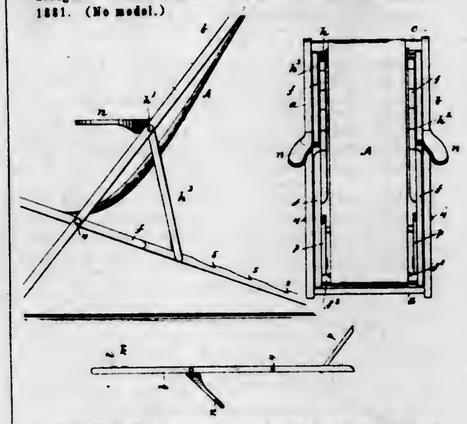
Claim.—1. In a hay rake and tedder, the combination of a series of teeth upon a shifting frame with a series of alternating cams and channels upon the revolving axle of the wheels, whereby the said teeth can be laterally shifted to remain at rest in the channels or be operated by the cams, substantially as described.

2. The combination of the teeth L, the sliding frame M, and the lever P with the fixed frame of the machine, substantially as described.

3. The combination of the bar R, having the jointed-lever ends R^2, with the pins S and the teeth L, substantially as described.

4. The horizontal perforated piece Z, in combination with the chains Z' and the teeth L, substantially as described.

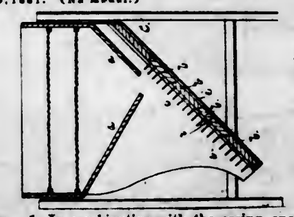
254,133. RECLINING-CHAIR. GEORGE F. HOLT, Boston, Mass., assignor to Nathaniel Cummings, same place. Filed May 2, 1881. (No model.)



Claim.—1. The convertible chair and screen composed of a seat supported by a suitable frame adapted to be folded together as shown, combined with the adjustable foot *p*, which, when the chair is folded, is extended out from the frame to enable the chair to stand upright to serve as a screen, substantially as described.

2. The convertible chair and screen composed of the main frame *a b c d*, the auxiliary notched frame *f*, braces A^3, and seat A, adapted to be extended in chair form, as shown, and to be folded together and supported as a screen by means of the foot *p*, substantially as specified.

254,134. CORN-SILKING MACHINE. JOHN M. HOPKINS, Edgewood, Md., assignor to Rachel L. Hopkins, same place. Filed Sept. 8, 1881. (No model.)



Claim.—1. In combination with the casing, one or more removable inclined boards having pins projecting from the upper surface for retaining the silk, the boards acting as a chute to deliver the corn into a suitable receptacle, as set forth.

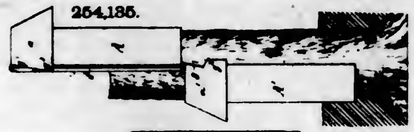
2. In combination with the casing having inclined cleats *i*, the removable boards *b*, resting thereon, and provided with pins *c*, as set forth.

254,135. TREE-PROTECTOR. AUGUST HORSUNG and ADOLPH H. FUSS, Castroville, Tex. Filed Dec. 31, 1881. (No model.)

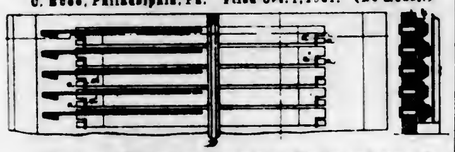
Claim.—1. A tree-protector composed of two half-cylinders, A and A', and two half-cones, *a a'*, and with means whereby said half-cylinders and cones can be interlocked together by a sliding joint, substantially as and for the purpose described.

2. In a tree-protector, the half-cylinder A', provided with a half-cone, *a'*, cut away so as to form an oblique edge, *g*, and an extended portion, g^4, in combination with a half-cylinder, A, provided with a half-cone, *a*, substantially as and for the purpose described.

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254,136. VALVE FOR MUSICAL WIND-INSTRUMENTS. GEO. C. HUGG, Philadelphia, Pa. Filed Oct. 1, 1881. (No model.)

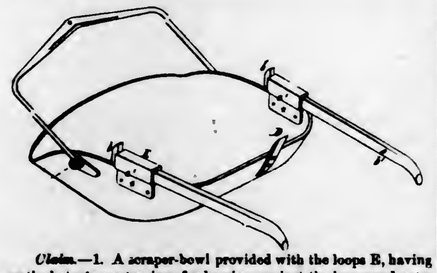


Claim.—1. The organ-valve formed with the gudgeons *a* integral therewith, in combination with the eyes *a'*, secured to the reed-board and receiving said gudgeons, substantially as and for the purpose set forth.

2. The reed-board and valves, in combination with the guard extending under all of the valves as a common check or stop, substantially as and for the purpose set forth.

254,137. ROAD-SCRAPER. WILLIAM E. JACOBS and HENRY L. JACOBS, Columbus, Ohio. Filed Dec. 16, 1880. (No model.)

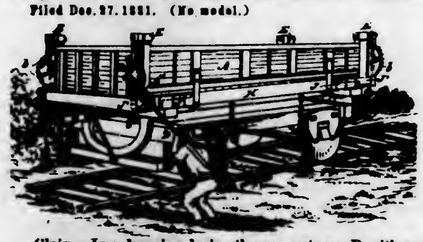
Brief—Loops secured by flanges upon the top of the sides of the scraper-bowl carry sliding handles, which may be fixed, the position of the loops permitting the handles to revolve with the bowl through the bail of the scraper.



Claim.—1. A scraper-bowl provided with the loops E, having vertical staying-extensions for bearing against the inner and outer surfaces of the bowl, said loops serving to receive and permit the handles to slide, and also as a means whereby the handles may with bolts be fastened and held from sliding, substantially as described.

2. A scraper provided with sliding handles, whereby the bowl with the handles is allowed to revolve through the bail of the scraper, substantially as described.

254,138. DUMPING-CAR. FRANK P. JOHNSON, Waltham, Mass. Filed Dec. 27, 1881. (No model.)

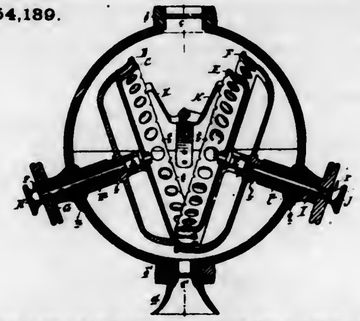


Claim.—In a dumping device, the segment-gear B, with cogs *b*, the corner-post E, with elongated strengthening-plate J, and strengthening-plate J', inserted in and attached to the sill H, the pin G, with lip *g'*, and the adjustable detachable lever D, constructed and arranged substantially as described and shown, and for the purpose set forth.

254,139. OPTOMETER. GEORGE JOHNSTON, Detroit, Mich. Filed Sept. 26, 1881. (Model.)

Claim.—1. In an optometer or eye-tester, one or more sets of frames carrying lenses of different focal power and quality, and adapted to revolve at different angles, whereby any one of the lenses

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of one frame can be brought into a direct line of vision with any one of the lenses of the other frame or frames, substantially as and for the purpose specified.

2. In an optometer, and in combination with a suitable supporting-frame, one or more sets of rings or frames carrying lenses of different focal power and quality, said frames being secured to shafts mounted at an angle to each other, substantially as and for the purpose described.

3. In combination with a series of lens-carrying frames supported at two different angles, as described, a frame for supporting said lens-frames, adapted to be turned or partly turned, whereby each lens in the lens-frames can be rotated upon the line or axis of sight, substantially as and for the purpose specified.

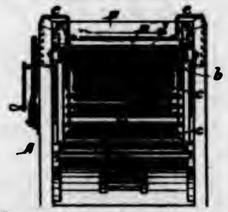
4. In an optometer, and in combination with a suitable supporting-frame, two or more sets of shafts mounted at different angles to the line of vision through the supporting-frame, and each shaft provided at its inner end with a frame or ring provided with a series of lenses of different focal power, and a blank opening, substantially as and for the purpose specified

5. In an optometer, the combination of the rings or frames C D E F, carrying lenses of different quality and power, and arranged in two sets, each set being mounted on shafts independent from and at an angle to the shafts of the opposite set, substantially as described.

6. In an optometer, the frame B, consisting of one stationary and one revolving section, in combination with shafts and lens-frames arranged at different angles within said revolvible section, and suitable gages for indicating the proper movement of the supporting and the lens frames, substantially as and for the purpose specified.

7. In an optometer, the combination of the lens-frames D F, secured to tubular shafts *i i*, mounted at different angles, the lens-frames C E, secured to shafts *h h*, revolving in said tubular shafts *i i*, and the supporting-frame B, made in one stationary and one movable section, said movable section carrying the shafts and lens-frames, substantially as and for the purpose specified.

254,140. FANNING-MILL. HERBERT E. KNELSH, La Crosse, Wis. Filed Apr. 26, 1881. (No model.)



Claim.—The combination, in a grain-cleaning machine, of the hopper B, having a contractible throat or opening, *b*, the laterally-vibrating shoe C, and the bar D, provided at its ends with the arms *c c*, connected to the shoe, and the said bar having therein the depending teeth or fingers *d d*, the lower ends of which are arranged above the said throat or opening, substantially as and for the purposes specified.

254,141. CULINARY UTENSIL. WILLIAM W. KENFIELD, Canadaigua, N.Y. Filed Oct. 29, 1881. (No model.)

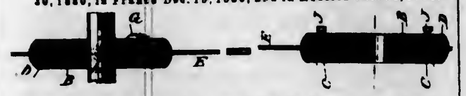
Claim.—The herein-described bottom for culinary utensils, consisting of a disk V-shaped in cross-section, and provided with radial grooves extending from the extreme edge of the disk down-

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wardly to a point near the center thereof, circumferential downwardly-extending vertical rim C, horizontal flange D, and upwardly-projecting rim E, substantially as and for the purpose specified.

254,142. HANGING CIRCULAR SAWS. JACOB KITZ, Neuschleusig, near Leipsic, Germany. Filed Dec. 12, 1880. (No model.) Patented in Germany Oct. 8, 1880, in England Nov. 30, 1880, in France Dec. 15, 1880, and in Austria Feb. 16, 1881.



Claim.—In combination with a hub, B, firmly secured to a driving-shaft, A, and provided with projecting pins or journals C C, the ring D, with saw-blade E, the screw G, and set-screws J J, constructed and arranged to operate in the manner and for the purpose substantially as described.

254,143. DRUM. GEORGE S. KNAPP, Chicago, Ill. Filed June 9, 1881. (No model.)



Claim.—1. As an improvement in drums, the combination of the hoops, the hooks or jaws engaging with the hoops, and the straining-rods provided with right and left threads, as described and shown.

2. In a drum, the combination of the threaded straining-rods and the hooks or jaws provided with the extended necks adapted to cover and protect the screw-threads of said rods, as shown.

3. In a device for stretching the head of a drum or similar instrument, the hook provided with the recess *b*, as and for the purpose described.

4. As an improvement in drums, the wooden straining-hoops provided with a circumferential groove, and the metal band seated in said groove, as described and shown, whereby the hoop is prevented from springing and the band supported in position to receive the devices attached thereto.

5. In combination with a drum and hinged knee-rest, a spring arranged, substantially as described, to urge the same to an open position.

6. In combination with a folding knee-rest upon a drum, a detent or locking device arranged to operate, substantially as described, to keep the knee-rest in a folded or closed position.

7. The combination of the drum-body and the straining-hoops provided with bearing-plates *i i*, the threaded rod *h*, seated in said plates, the snare-strings, and the clamping-plate *g*, secured to the ends of the strings and mounted upon the screw-rod, as described and shown.

8. In combination with a drum, a knee-rest having a pivotal connection therewith, the pivot having its axis in substantially a radial line with reference to the body of the drum.

9. In combination with the drum and the straining-rods applied thereto, folding arms applied to the rods, substantially as shown.

254,144. WIRE-SPLICING TOOL. WILLIAM T. LEMAN, Detroit, Mich., assignor to Wm. G. Avery, same place. Filed Dec. 2, 1881. (No model.)



Claim.—1. The wire-splicing tool consisting of a metallic hook and an adjustable shoulder projecting laterally from the shank of said hook, the hook being arranged to catch over a wire and the shoulder to engage the free portion of another wire being spliced therewith, substantially as described.

2. The combination, with the shank provided with the hook A', of the adjustable slide A', having the laterally-projecting shoulders A', substantially as described.

3. The combination, with the hooked and serrated shank A, of the serrated slide A' and means for clamping said slide to said shank, substantially as described.

254,145. VEHICLE-WHEEL. PERRIN LINCOLN, Coldwater, Mich. Filed Sept. 24, 1881. (No model.)



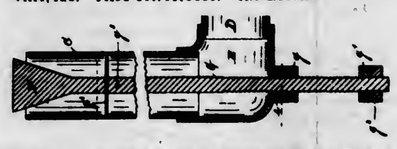
Claim.—1. The combination, with the spoke C, felly D, and thimble A, having exterior threaded portion, *b*, of the screw-threaded band E, having inclined planes or cone-shaped edges *f*, and the ring or dog F, having similar inclined planes or cone-shaped edges *f'*, substantially as and for the purpose herein shown and described.

2. The combination, with the spoke C, felly D, and thimble A, having exterior threaded portion, *b*, of the screw-threaded band E, having the ratchet-teeth *h'* and inclined planes or cone-shaped edges *f*, and the ring or dog F, having similar inclined planes or cone-shaped edges *f'*, interior pawl, *h*, and teeth *g'*, substantially as and for the purpose herein shown and described.

3. The combination, with the ends of the fellies and connecting-band I, of the intermediate spring or springs, *i i*, substantially as and for the purpose herein shown and described.

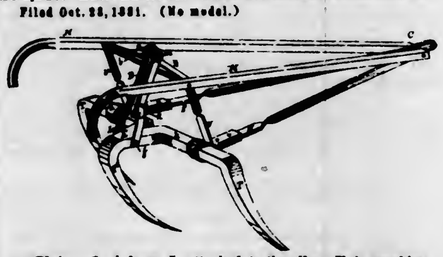
4. The combination, with the ends of the fellies and connecting-band I, of the springs *i i* and intermediate spring, *i'*, substantially as and for the purpose herein shown and described.

254,146. EXHAUST-NOZZLE. JAMES F. MANN, Crawfordsville, Ind. Filed Oct. 11, 1881. (No model.)



Claim.—The combination of the nozzle C, pipe D, elbow E, having boss *e*, cone F, and rod G, having cross-bars *g'*, a jam-nut, *g*, and a head upon its lower end, whereby the cone can be easily, conveniently, and expeditiously regulated to the desired position, substantially as shown and described, and for the purposes specified.

254,147. MANURE-HOOK. SIMON B. MINNICH, Landisville, Pa. Filed Oct. 28, 1881. (No model.)



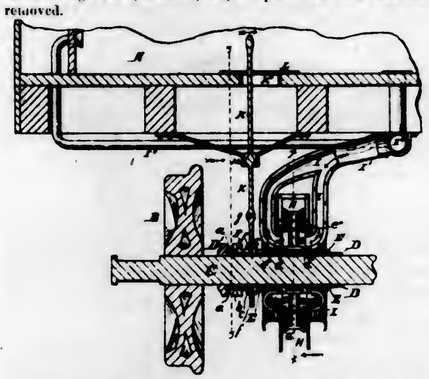
Claim.—1. A lever, L, attached to the elbow E, in combination with the link B and bar *g*, having the yoke O, whereby, when the tines are in a horizontal position, the ends thereof are prevented from being thrown upward, substantially as set forth.

2. A hook having a tine or tines, T', set back of those, T, at the ends of the hook *h* by means of an elbow or elbows, E, in combination with the bearings *a* and lever L, substantially as and for the purpose specified.

3. The handles H, connected by a bar, *g*, having a yoke, O, in the middle thereof, combined with the link B, lever L, and uprights U, as herein specified.

254,148. RAILWAY-CAR VENTILATION. EDWARD H. MOTT, Chicago, Ill. Filed Sept. 5, 1881. (No model.)

Brief.—A blower is placed on a car-axle in order that it may be revolved by the revolution of the axle. It may be either thrown in or out of gear by the handle K. The car is ventilated by the suction of said blower, which exhausts the foul air. Fresh air will enter through doors, windows, &c., to replace that which has been removed.



Claim.—1. The combination, in a car-ventilating apparatus, of a fan having a hollow axle, a rotating axle entering the said hollow axle, a fan-chamber surrounding the said hollow axle and fan, and having one or more ports, J J', and one or more ports or openings for communication with an air-tube, substantially as specified.

2. The combination, in a car-ventilating apparatus substantially as described, of a rotary fan, a fan-rotating axle, a fan-chamber having an induction and containing two ports, J and J', and valves or doors for opening and closing the said ports.

3. The combination, substantially as described, in a car-ventilating apparatus, of a rotary fan, a fan-rotating axle, a fan-chamber having an induction and containing two ports, J and J', the valves or doors P and P', and an automatic valve-shifting device for operating the said valve, as and for the purposes specified.

4. The combination, in railway-car-ventilating apparatus, of a fan adapted to be mounted on and rotated by the car-wheel axle, a fan-chamber communicating with an exhaust-tube and containing two exit-ports, and automatic valve-shifting mechanism adapted to open first one of the said ports and then the other upon the reverse rotation of the said fan, for the purposes set forth.

5. The combination, substantially as described, in a car-ventilating apparatus, of a fan having a hollow axle, the rotating axle C, the fan-chamber H, and the air-tube I, surrounding the said hollow axle and entering the central part of the chamber H, the latter having therein one or more air-ports, J J', for the purposes set forth.

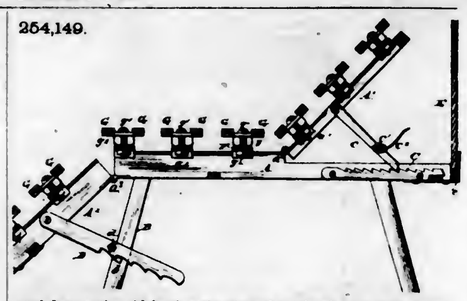
6. The combination of the rotating axle C, carrying a clutch, D' *a*, the sliding sleeve E, adapted to be engaged by the said clutch and carrying the fan G G', the fan-chamber H, having therein induction and eduction ports, the air-tube I, entering the chamber H and connected to the said sleeve, and a lever for shifting the said sleeve in and out of engagement with the said clutch, substantially as and for the purposes specified.

7. The combination, with a blower containing ports J J', of the slide O, carrying the valves or doors P P', the yielding rocking lug R, the rotating fan-shaft C, and the air pipes or ducts of a car-ventilating apparatus, substantially as and for the purposes specified.

8. The gates A' A', one or more, arranged substantially as shown and described with relation to the exit-port of a blower containing a fan mounted on an axle, C, for the purposes set forth.

9. The combination, in a car-ventilating apparatus, of a blower containing a fan mounted on an axle, C, the slots h'' h'', the ports J J', the gates A' A', the slide O, the slotted bar W, and the yielding lug R, substantially as and for the purposes specified.

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oted foot-section A', having the pivoted ratchet-bars D D, the several parts constructed and arranged relatively to each other substantially in the manner as and for the purpose herein shown and described.

2. The combination, with the side rails, A A, of the transverse spring-slats F, having the bent springs H H, transverse side slats, G G, connecting cross-bar *g*, and threaded bolt or screw and nut *g' g''*, substantially in the manner as and for the purpose herein shown and described.

3. The combination of the side rails, beveled on their inner and upper sides, spring-slats F, having slotted ends, headed securing bolts or screws *f'*, and the pieces of tin h, arranged between the ends of said slats and side rails, all substantially in the manner as and for the purposes herein shown and described.

4. The combination, with the side rails and head and foot boards, of the right-angled metallic straps *e*, secured to and projecting beyond the ends of said side rails, substantially in the manner as and for the purpose herein shown and described.

254,150. LAST. WILLIAM O. NICHOLS, Lynn, Mass. Filed Dec. 8, 1881. (No model.)

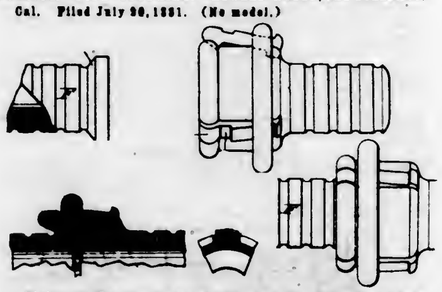


Claim.—1. As a new article of manufacture, the bottomless shell or expander for a boot or shoe, having flexible or elastic sides.

2. An improved device for expanding the upper of a boot or shoe for the purpose set forth, formed from a single piece or blank bent into shape and having free spring sides, all substantially as set forth.

3. An improved device for expanding the upper of boots or shoes, consisting of a hollow body portion of the contour of the front top portion of a last, terminating in rearwardly-extending spring side pieces having free ends, all substantially as shown, for the purposes set forth.

254,151. PIPE-COUPLING. EDWARD NUSAR, San Francisco, Cal. Filed July 20, 1881. (No model.)



Claim.—1. In a pipe-coupling the female portion of which is provided with longitudinal slots or openings and recesses at the base thereof, the arms or levers having holding lugs or projections at their upper and lower ends to fit into said recesses and receive and engage with the head of the male portion of the coupling, and adapted to be compressed or tightened and held in position by a tightening-ring, constructed, arranged, and operating substantially in the manner as herein set forth and specified.

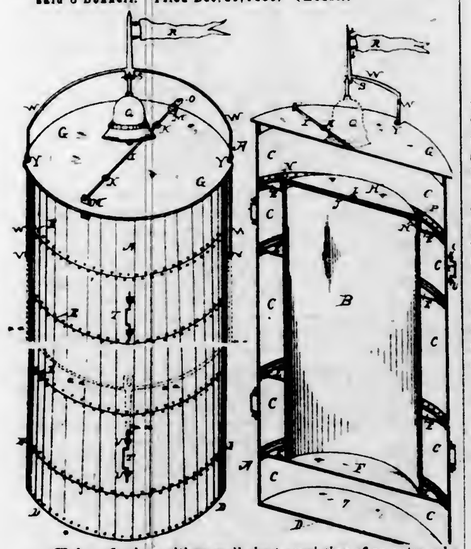
254,149. INVALID-BED. LORENZO D. MOTT, Jr., Marshalltown, Iowa. Filed Jan. 16, 1882. (No model.)

Claim.—1. The combination, with the side rails, A A, having ratchet-bars C C secured to their inner side, and supporting-legs B B, provided with lugs *b b*, of the hinged or pivoted head-section A' *a' a'*, formed from and forming a portion of the main side rails, A A, having pivoted pawls *e e*, and the hinged or piv-

2. The combination, with a pipe-coupling having the arms or levers movable in longitudinal slots in the female portion thereof, of the eccentric ring provided with transverse slots and flanges adapted to engage with and compress the arms or levers so that the beveled ends thereof will engage with and firmly hold the beveled end or head of the male portion of the coupling, substantially in the manner and for the purposes herein set forth and specified.

3. In combination with the male portion of a pipe-coupling having a beveled head, the cap or female portion provided with longitudinal arms or levers having beveled ends to fit over and engage with the end of the male portion and hold it in place when surrounded or compressed by a ring or band, substantially as herein set forth and specified.

254,152. MARITIME MAIL-CHEST. JOHN O'DONNELL and SAMUEL JELLINEK, New York, N. Y.; said Jellinek assignor to said O'Donnell. Filed Dec. 28, 1880. (Model.)

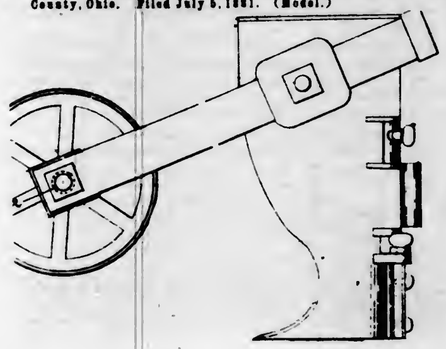


Claim.—1. A maritime mail-chest consisting of an outer cylinder, A, inner cylinder, B, horizontal partitions E, intermediate cork-filled sections, C, weighted bottom D F, and removable interior and exterior covers, G and H, substantially as and for the purpose set forth.

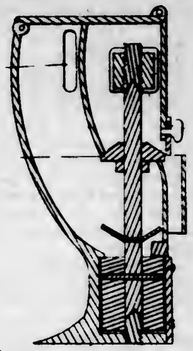
2. In a maritime mail-chest, the combination, with the outer cylinder, A, and its cover G, having recesses Y, of a pivoted bell-frame, W, carrying a central flag-rod and devices for attaching flag and bell, substantially as and for the purpose described.

3. The combination of a double-walled and bottom-weighted maritime chest having a cork-filled jacket and removable covers, with alarm and signaling devices adapted to be secured to the top of the chest, substantially as set forth.

254,153. SEED-PLANTER. ALEXANDER W. PAGETT, Clarke County, Ohio. Filed July 5, 1881. (Model.)



254,153.

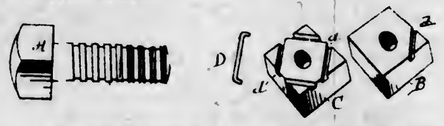


Claim.—1. A hoe for seed drills or planters, having within the shell of the same separate receptacles for holding seeds of different kinds, or seed and a fertilizer, in combination with a separate seed-sowing device for each of said receptacles, all of said seed-sowing devices being upon a single vertical shaft within said hoe, whereby they are operated together, as set forth.

2. A seed-planter in which the distributing or seed-sowing devices are operated by a traction-wheel revolving in a horizontal plane wholly or partially beneath the ground-surface, said wheel or driver deriving its motion from contact with the side of the furrow as the hoe or plow in which said wheel and seed-sowing devices are incased is drawn through the ground.

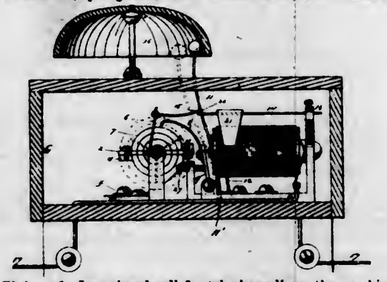
3. In a hoe or plow for seed-planters, the combination of a horizontal drive-wheel, operated as described, and distributing or seed-sowing devices for sowing different kinds of seeds, or seed and fertilizer, either separately or combined, on a single vertical shaft within said hoe or plow, as hereinbefore specified.

254,154. NUT-LOCK. JOSEPH PRESTON, Rochester, assignor of one-half to Margaret E. Preston, Buffalo, N. Y. Filed Oct. 8, 1881. (No model.)



Claim.—The combination and arrangement of the bolt A, with the right and left hand threads thereon, and the nuts B and C, having the diagonal grooves *d d* in the sides for the key-pin D to set in, all substantially as and for the purpose specified.

254,155. SIGNAL-CALL FOR TELEPHONE-LINES. FRANCIS R. RICHMOND, Springfield, Mass. Filed Aug. 8, 1881. (Model.)



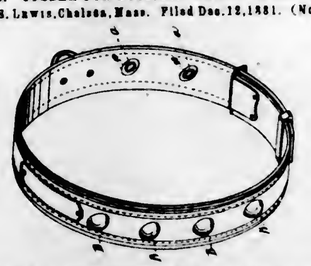
Claim.—1. In a signal-call for telephone-lines, the combination, with a bell-hammer, of a spring-catch adapted to engage with and hold said bell-hammer in a stationary position, a vibrating shaft connected with said spring-catch and regulated in its movements by a vibrating weight or bar secured thereto, and an actuating-spring secured to said shaft, substantially as described.

2. In a signal-call for telephone-lines, the combination, with the armature of a magnet and a bell-hammer, of a vibrating shaft provided with a vibrating weight or bar, an actuating-spring connected with said shaft and operated by said armature, and a spring-catch adapted to engage with and hold the bell-hammer in a sta-

tionary position and connected with said vibrating shaft, whereby the said bell-hammer may be released from engagement with the spring-catch and the alarm-bell struck by the combined movements of the vibrating shaft and the armature of the magnet, substantially as described.

3. In a telephone system, the combination, with the main line, of a series of signal-calls, each provided with a vibrating bar and shaft connected with and operating to disengage a spring-catch from the bell-hammer and actuated by the armature of an electro-magnet located in the main line, and a revolving cylinder provided with a series of contact-surfaces, each said series being in adjustment with and controlling the synchronous movements of the vibrating bar and shaft of one of said signal-calls, whereby any one of the signal-calls in said series may be struck from the central office, substantially as described.

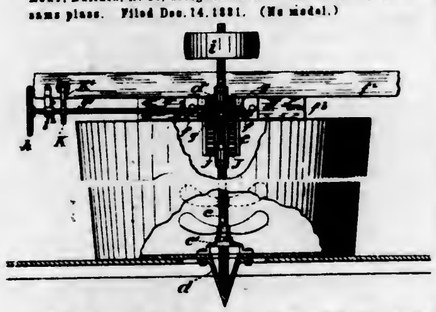
254,156. COLLAR FOR DOGS, &c. JOHN W. RICKER and THISTRAM S. LEWIS, Chelsea, Mass. Filed Dec. 12, 1881. (No model.)



Claim.—1. A dog or animal collar having one or more chambers or receptacles adapted to contain an insect or vermin exterminating substance or compound, each receptacle being provided with an outlet or eduction passage to allow of the escape of the exterminating substance, substantially as described.

2. A dog or animal collar having one or more hollow receptacles, B, for containing an insect or vermin exterminating substance or compound, each receptacle being provided with an open tubular shank, *a*, which forms a conductor or outlet for the exterminating substance, substantially as set forth.

254,157. APPARATUS FOR WASHING STARCH. EDWIN ROAT, Buffalo, N. Y., assignor of one-half to Harry Hamlin, same place. Filed Dec. 14, 1881. (No model.)



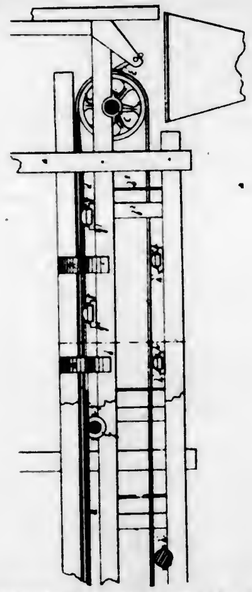
Claim.—1. A starch tank or vessel provided with a step or supporting-box, *c'*, and a recess, *d*, in combination with a rotating shaft having an agitating device, and made vertically adjustable by means substantially as described.

2. A starch-tank having a shaft, *e*, collars *e'*, and a rack-plate, *e*, having racks J, and projecting parts *d'*, adapted to receive said shaft, in combination with the pinions *g* and shaft *g'*, provided with a hand-wheel, A, and a ratchet-wheel and pawl, K K', substantially as and for the purposes described.

254,158. STARCH MACHINERY. EDWIN ROAT, Buffalo, N. Y., assignor of one-half to Harry Hamlin, same place. Filed Oct. 3, 1881. (No model.)

Claim.—1. An apparatus for conveying starch, &c., consisting of a frame-work suspended from the ceiling and having mounted therein a series of concave rollers, upon which the upper portion of an endless band or carrier travels, and inclined sides or strips for keeping the starch, &c., upon the carrier while in transit thereon, substantially as shown and described.

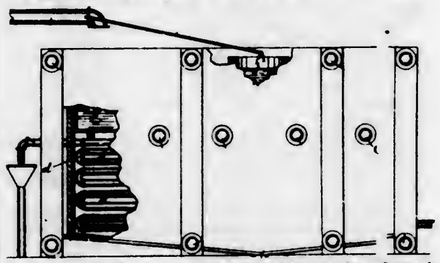
254,158.



2. In an apparatus for conveying starch, &c., the combination of the endless band or carrier with the concave supporting-rollers, substantially as shown and described.

3. In an apparatus for conveying starch, &c., the combination of the endless band or carrier with the concave supporting-rollers and the inclined strips or sides for keeping the starch upon the carrier while in transit thereon, substantially as shown and described.

254,159. APPARATUS FOR COOLING SIRUPS AND OTHER LIQUIDS. EDWIN ROAT, Buffalo, N. Y., assignor of one-half to Harry Hamlin, same place. Filed Dec. 14, 1881. (No model.)



Claim.—1. The box cooler consisting of the perforated trough or receptacle, and the system of pipes below such trough, through which cold water is passed from bottom to top, the whole being suitably inclosed, and operating substantially as shown and described.

2. In a box cooler, the combination of the perforated trough or receptacle, and the system of pipes through which a continuous stream of water can be passed from bottom to top, with an automatic device for regulating and controlling the supply of sirup to be cooled, substantially as shown and described.

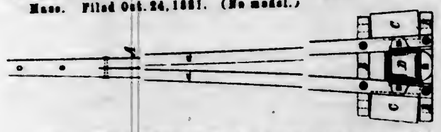
254,160. ANCHOR-SUPPORT. ELISHA ROBBINS, Worcester, Mass. Filed Dec. 8, 1881. (No model.)



Claim.—The combination, with the hull, rail, and cat-head of a navigable vessel, of a step, substantially as described, arranged below the cat-head and projecting from the hull, and serving not

only to support the lower end of the stock of an anchor when such anchor is catted and resting on the rail, but to facilitate in manner as explained the tripping of the anchor.

254,161. ANCHOR-SUPPORTER. ELISHA ROBBINS, Worcester, Mass. Filed Oct. 24, 1881. (No model.)



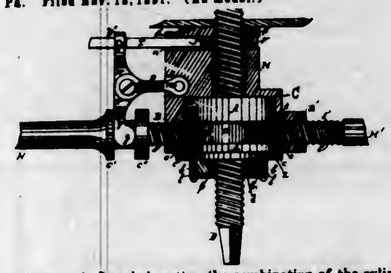
Claim.—The combination of the furcated tongue A, parallel bars B B, and anchor bill-pocket D, arranged as represented, with the rollers C C, supported by the said bars, and disposed nearly parallel to the axis of the tongue and inclined toward a common center, all being substantially and for the purpose as set forth.

254,162. FELLY-CONNECTION FOR VEHICLE-WHEELS. O. O. ROSS, Penfield, N. Y. Filed Jan. 20, 1882. (No model.)



Claim.—In a carriage-wheel, the combination, with the beveled ends of a felly, of the felly plate or clip consisting of the wedge-shaped body *d* and thin-edged flanges *e e*, said body being thickest in the center in line with the joint of the felly and provided with the dovetailed hole *i* to receive the tenon of the spoke, and the flanges being secured to the felly by the cross rivet or bar *g*, as shown and described, and for the purpose specified.

254,163. STAY-BOLT CUTTER. CHARLES V. ROTH, Lancaster, Pa. Filed Nov. 15, 1881. (No model.)



Claim.—1. In a bolt-cutter, the combination of the cylinder C, having bosses B and B', handles H and H', with cylindrical ends *c*, and the sleeve A, having the groove G, by which the said sleeve is held in the cylinder when the cutter is not being operated, substantially as herein set forth.

2. In a bolt-cutter, the combination of the cylinder C, having bosses B B', handles H and H', with cylindrical ends *c* and tents *t*, and the sleeve A, having the groove G and sockets *s*, whereby the sleeve can be prevented from revolving within the cylinder, substantially as herein specified.

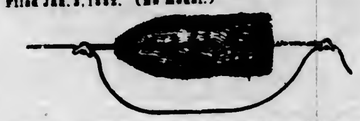
3. In a bolt-cutter, the combination of the cylinder C, having bosses B and B', handles H and H', with cylindrical ends *c*, the sleeve A, having a groove, G, and the box *b*, provided with the dies *d* and *d'* and thumb-screws *s*, whereby part of the cutter remains stationary, holding the whole in place while the other revolves in cutting a bolt, substantially as herein set forth.

4. The combination, in a bolt-cutter, of the sleeve A, having the box *b*, with dies *d* and *d'* and screws *s*, the cylinder C, having a neck, N, with an enlarged cylindrical opening, and the plate *p'*, with an opening the periphery of which fits closely to the bolt, as and for the purpose specified.

5. In a bolt-cutter, the combination of the handle H, working back and forth in the boss B, the walking-beam W, operating in the yoke *y'* of the post O, and the tool T, all constructed and operated substantially in the manner described.

6. The combination of the sleeve A, provided with the groove G and sockets *s*, and having attached thereto the box *b*, with the dies *d* and *d'*, and screws *s*, the cylinder C, with the bosses B and B' and neck N, handles H and H', with projections and tents, walking-beam W, and tool T, with blade *r*, all substantially as and for the purpose specified.

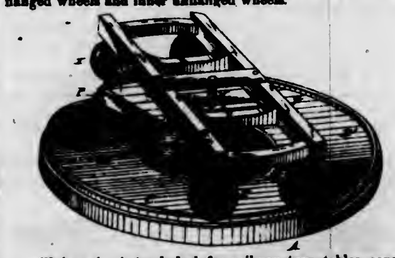
254,164. DRIVING-MITT. JULIUS E. SCHMIDT, St. Paul, Minn. Filed Jan. 3, 1882. (No model.)



Claim.—As a new article of manufacture, a driving-mitt having a strap or loop fixed therein, said strap or loop adapted to be attached to or form part of the driving-reins, substantially as set forth.

254,165. TURN-TABLE. JAMES SCHUYLER, Findlay, Ohio. Filed Dec. 9, 1881. (No model.)

Brief.—The track-bed consists of two inclined planes extending in opposite directions provided with an exterior and interior track. The table is pivoted to a cone and is provided with outer flanged wheels and inner unflanged wheels.



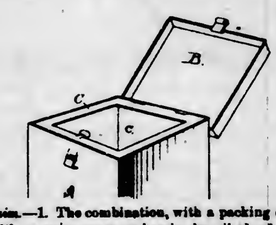
Claim.—1. A track-bed for railway turn-tables, consisting of two inclined planes, each of which forms a half-circle and inclined in opposite directions, and provided with tracks curved and inclined with the face of the plane to which they are secured, substantially as shown and described, and for the purpose set forth.

2. A track-bed for railway turn-tables, consisting of two inclined planes provided with an exterior and interior track, as described, and a cone and pipe secured to said bed and adapted to receive a guide-shaft secured to the center of the table, substantially as shown and described.

3. A turn-table provided with outer flanged wheels and inner unflanged wheels, and adapted to travel on tracks secured to inclined planes in such manner that the table will be level at any position, substantially as and for the purpose set forth.

4. The combination of the bed A, having the inclined surfaces B B', tracks C D, cone F, and pipe F', with the table G, provided with wheels I K, and shaft H, substantially as described, and for the purpose set forth.

254,166. PACKING CAN AND BOX. JOSEPH W. H. SHATTUCK, Albany, N. Y. Filed Jan. 18, 1882. (No model.)



Claim.—1. The combination, with a packing can or box provided with an outer cover, as herein described, of an inner cover attached to said can or box and provided with a transparent panel, as herein specified.

2. In a packing can or box, the combination, with the body A, provided with an outer cover, B, of the inner cover, C, hinged beneath the outer cover, B, to the body A, and provided with a detachable transparent panel, *c*, as and for the purpose herein specified.

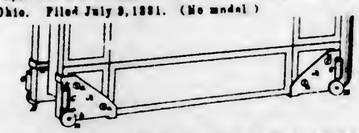
254,167. BELT-FASTENER. JACOB SEUSTER, Washington, D. C., assignor of one-half to George W. Hensel, Jamestlle, N. J. Filed Dec. 1, 1881. (No model.)

Claim.—The plate A, one end of which is adapted to be rigidly attached to a belt, and having its sides turned up, imparting



to the plate an approximate U shape in central cross-section, provided with the fixed pointed tongue or tooth, and an opening into which the tongue or tooth projects and one end of the belt passes, substantially as and for the purpose set forth.

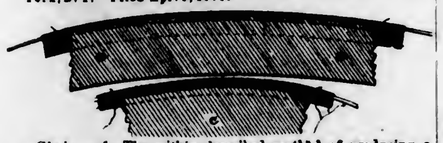
264,168. BOOK-PROTECTOR. OSCAR F. SILCOTT, Felicity, Ohio. Filed July 9, 1881. (No model.)



Claim.—1. A book-protector consisting of a metal plate to be secured to the corners and edges of the cover, said plate being provided with rollers to prevent the edge of the cover from sliding on the shelf and to prevent each book from rubbing against adjacent books or partitions, substantially as described.

2. A device for protecting the corners, edges, and sides of books, consisting of the plate A, provided with clamping-arms *a'*, and the rollers B and C, said rollers being secured to the outer face of the plate, substantially as and for the purpose set forth.

264,169. SWEAT-BAND FOR HATS AND CAPS. FRANK W. SMITH, Bethel, Conn., assignor to Thomas W. Brasher, New York, N. Y. Filed Apr. 9, 1879.



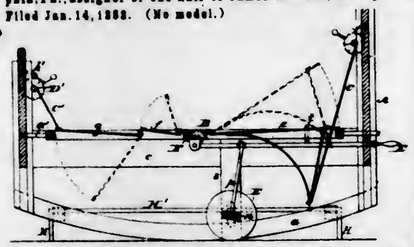
Claim.—1. The within-described method of producing a flared-edge sweat-band for hats and caps, consisting of covered reed and leather band.

2. The combination of a sweat-leather and a covered reed, united so as to form a flared-edge sweat-band for hats and caps, substantially as described.

3. The combination of a sweat-leather and a covered reed, united and formed substantially as described.

4. As a new article of manufacture, a machine-made flared-edge sweat-band for hats and caps, substantially as described.

264,170. INVALID-BEDSTEAD. HENRY D. SNYDER, Philadelphia, Pa., assignor of one-half to James McComb, same place. Filed Jan. 14, 1882. (No model.)



Claim.—1. The bottom B, provided with the pivotal sections *e f e*, which are adjustable independently of each other, substantial *j* as and for the purpose set forth.

2. The frame of the bottom B, pivoted to the frame of the bedstead, whereby said bottom may be tilted laterally, substantially as and for the purpose set forth.

3. The bedstead provided with a rising and falling truck, whereby it may be set on the truck and thereby wheeled, substantially as and for the purpose set forth.

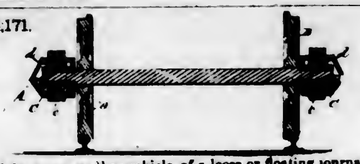
4. The bedstead, in combination with the truck F and lever K', substantially as and for the purpose set forth.

5. The bedstead provided with rockers and feet or props H, which are on the ends of a rod, H', pivoted to the bedstead, substantially as and for the purpose set forth.

264,171. CAR-AXLE BOX. JAMES SOPER and JONATHAN SLADE, Chicago, Ill. Filed Aug. 31, 1881. (No model.)

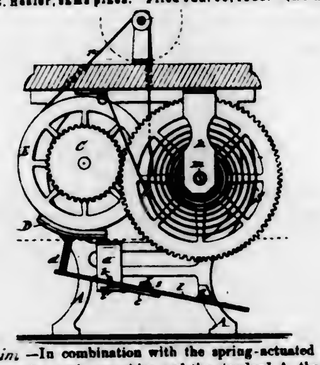
Claim.—The combination, with the main axle or journal of a

264,171.



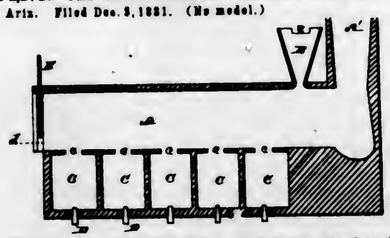
wheel for a car or other vehicle, of a loose or floating journal and bearing, C, having lubricant-opening *c* and annular rib or ribs *a*, the cap D, and bearing *d*, substantially as and for the purpose herein shown and described.

264,172. MOTIVE POWER FOR SEWING-MACHINES. GEORGE W. SOWLES, Chittenango, N. Y., assignor of one-half to Lawrence C. Hosler, same place. Filed Jan. 28, 1882. (No model.)



Claim.—In combination with the spring-actuated driving mechanism of a sewing-machine and the standard A, the hanger *a*, provided with the stud *b*, the plate *c*, hinged on said hanger, the lever *l*, pivoted on the stud *b*, and provided over the plate *c* with the transverse slot *s*, the set-screw *r*, passing through said slot and entering the plate *c*, the post *d* on the end of the lever, and provided with the brake-shoe D, and a suitable catch, *e*, on the standard A, all constructed and combined substantially in the manner described and shown.

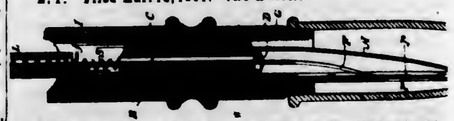
264,173. ORE-CONCENTRATOR. EDWARD STAHL, Prescott, Ariz. Filed Dec. 3, 1881. (No model.)



Claim.—1. The channel or passage A, having the funnel A' and hopper B in open connection therewith, as shown, and the discharge *d*, with its adjustable gate E, in combination with the series of chambers or compartments C under said channel A, and in open relation therewith, substantially as and for the purpose herein described.

2. The ore-concentrator consisting of the channel A, with its funnel A', hopper B, and discharge *d*, adjustable gate E, and the series of chambers C under said channel A, and in open relation therewith through openings *e*, said chambers having the plugs D, substantially as and for the purpose herein described

264,174. FOUNTAIN-PEN. WILLIAM W. STEWART, Brooklyn, N. Y. Filed Mar. 16, 1881. (No model.)



Claim.—1. The gutters A and supply-tube C, combined with the valve D and spring F, one end whereof is connected to said

valve and the other end attached to the point of said gutter, and the middle portion adjusted to bear against the inner side of the nibs of the pen, as set forth.

2. The supply-tube C of a fountain pen-holder, with a valve, D, and spring F, combined with a rod, R, extending from said valve up through said supply-tube, and a tube or rod, L, within the reservoir, whereby said valve may be opened independently of the pen, as set forth.

3. A supply tube or port provided with a reciprocating valve opening outward, and kept closed by pressure from the pen, and means, substantially such as described, whereby said valve may be opened at will, combined with an ink reservoir or barrel, provided with walls made elastic by slots K, or otherwise, as set forth.

4. In a fountain-holder, a reservoir and a supply-tube, C, combined with an open capillary tube, constituted by a coil, S, of fine non-corrodible wire, extending from said supply-tube upward into the reservoir, to conduct away the little air-bubbles without impeding the flow of ink.

5. In a fountain pen-holder, a reservoir and a supply tube or port, C, whereby ink may pass from the reservoir to the pen, combined with an open capillary tube, constituted by a coil of fine non-corrodible wire, extending upward from said supply-tube, and a tubular rod, L, to inclose and protect said coil, as set forth.

264,175. RESERVOIR PEN-HOLDER. WILLIAM W. STEWART, Brooklyn, N. Y. Filed Mar. 16, 1881. (No model.)



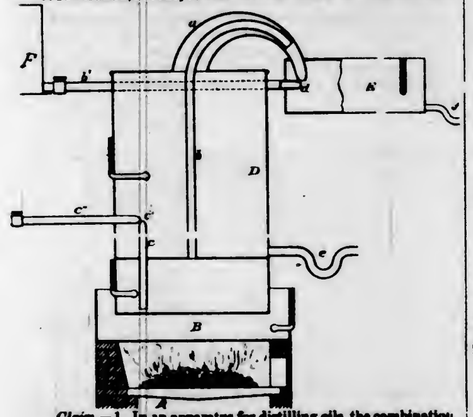
Claim.—1. In a reservoir pen-holder, a pen and an ink-tube arranged to deliver ink on its concave side, combined with the ink-chamber of the same, and one or more threads of permeable fibrous material arranged lengthwise in said chamber beneath the pen, for the purpose set forth.

2. In a reservoir pen-holder provided with an ink-chamber at its lower end, and combined with the same, a capillary wire, F, and a fibrous permeable thread or strand, G, substantially as and for the purpose set forth.

3. A fountain pen-holder provided with a pen and ink-tube, *b*, whereby the ink is delivered to said pen, combined with an exterior jacket, N, substantially as set forth.

4. The combination, in a reservoir pen-holder, of an ink-chamber, E, at the lower end of said holder, provided with a capillary wire, F, and permeable thread or strand G, inclosed in said chamber, and one or more froth-chambers above said ink-chamber, provided with automatic agitators within said froth-spaces, as and for the purpose set forth.

264,176. APPARATUS FOR DISTILLING PETROLEUM. CHAS. J. TAGLIABUE, Brooklyn, N. Y. Filed Jan. 4, 1882. (No model.)

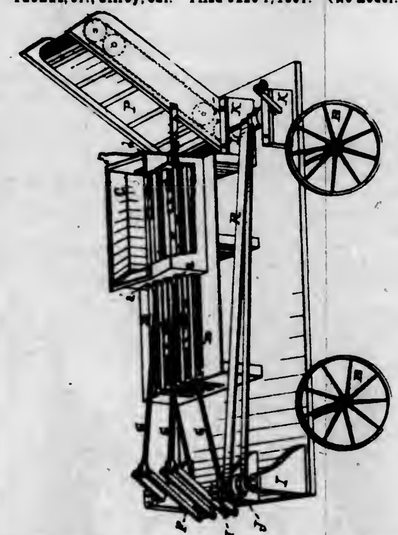


Claim.—1. In an apparatus for distilling oils, the combination of a furnace, a liquid-receptacle above the same, an oil-tank and vapor-chamber, a condenser, a vapor-pipe leading from the vapor-chamber to the condenser, a vapor-pipe leading from the oil-tank also to said condenser, an oil-lifting pipe extending from the oil-tank into the vapor-chamber, and a steam-pipe uniting at its end with the end of the oil-lifting pipe and forming therewith a steam-atomizer, all substantially as hereinbefore set forth.

2. In an apparatus for distilling oils, the combination, with an oil-tank and a vapor-chamber, of a steam-atomizer for spraying the oil and a water-atomizer for drawing over and condensing the vapor formed in the vapor-chamber, substantially as set forth.

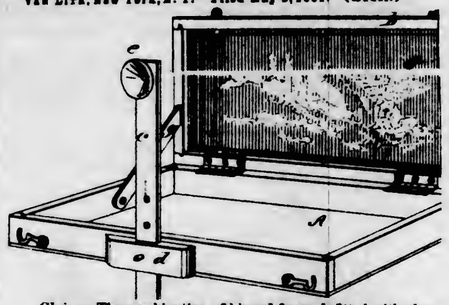
3. The combination of the furnace A, liquid-receptacle B, vapor-chamber D, oil-tank C, condenser E, tank F, pipes *a b' c c''*, and outlets *e f*, substantially as and for the purposes set forth.

254,177. FEEDER FOR THRASHING-MACHINES. HARRY THOMAS, Jr., Gilroy, Cal. Filed June 1, 1881. (No model.)



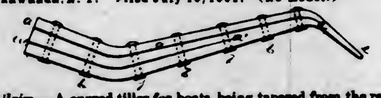
Claim.—The hopper C, having sliding door S, reciprocating arms E, having guide-tongues and forks *c*, constructed substantially as described, pitmen G, crank-shaft F, pulleys J and Q, belt B, shaft L, and the elevator P, pivoted in front and below said hopper, all constructed to operate in combination in the manner set forth, and for the purpose described.

254,178. PERSPECTIVE DELINEATOR. GERARD M. PERE VAN LITH, New York, N. Y. Filed May 3, 1881. (Model.)



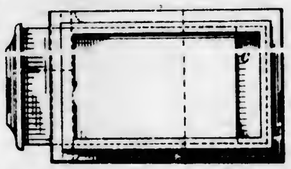
Claim.—The combination of hinged frame *b*, fitted with glass *a*, vertically-adjustable slide *c*, provided with an eye-piece or opening, and the supporting box or base A, having socket *d* and pivoted brace *g*, substantially as shown and described.

254,179. TILLER. HIRAM WALKER and ANDREW MILTNER, Tonawanda, N. Y. Filed July 18, 1881. (No model.)



Claim.—A curved tiller for boats, being tapered from the rear to the handle end and formed of a single piece of wood, having a long slit, *a*, extending nearly the entire length of the tiller, and a shorter slit, *a'*, stopped further back, steamed and bent into proper curved shape, and secured by rivets *b*, substantially as set forth.

254,180. PLATE-HOLDER FOR PHOTOGRAPHIC CAMERAS. WILLIAM H. WALKER, Rochester, N. Y. Filed Apr. 9, 1881. (No model.)



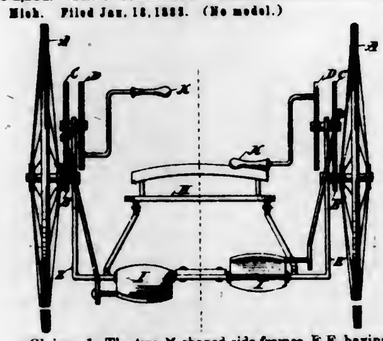
Claim.—1. As a new article of manufacture, the dry-plate holder or dark frame for photographic purposes having its body formed from plastic material in one continuous piece.

2. As a new article of manufacture, the seamless dry-plate holder or dark frame constructed of plastic material without joints or seams, substantially as shown and described.

3. As a new article of manufacture, a dry-plate holder consisting of an external frame cast in one continuous piece, having a plate or shutter inserted through an opening in one end and seated in grooves in its interior edges.

4. In combination with a plate-holder for photographic cameras, the shutter-recess F, bored or molded from one side of the frame and closed by a cap, D, substantially as described.

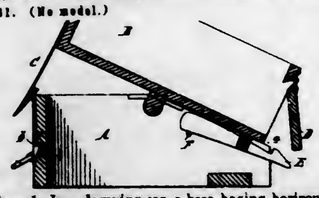
254,181. HAND-CARRIAGE. MARIA WHEELER, Farmington, Mich. Filed Jan. 18, 1881. (No model.)



Claim.—1. The two X-shaped side frames, E E, having their lower limbs connected by transverse bars, upon which the seat is supported below the axis of the wheels, in combination with wheels A A, gear-wheels C D, pinions B F, and cranks K K, all substantially as described.

2. The two connected X-shaped side frames, E E, the gear-wheels C D, pinions B F, wheels A A, pedals I I, connecting-rods, and hand-cranks K K, all combined and operating substantially as described.

254,182. DUMPING-CAR. SAMUEL R. WHEELER, Dexter, Mich., assignor of one-half to F. H. KRANSE, same place. Filed Dec. 23, 1881. (No model.)



Claim.—1. In a dumping-car, a base having horizontal and inclined bearing-surfaces for the body in its respective positions of rest and dump, combined with said body, having a hinged dumping-door, means for automatically opening and locking said door, and means for automatically securing the body in a horizontal position, as specified.

2. The combination of the base A *a*, having stops F and notch *b*, with the body B, door D, weighted catch E, the spring-catch C, and crank-bar G *d*, all constructed, arranged, and adapted to serve as and for the purposes specified.

254,183. MILK-PAIL. DANIEL S. WILLARD and HENRY D. DUNBAR, North Hartland, Vt. Filed Oct. 19, 1881. (No model.)

254,183.



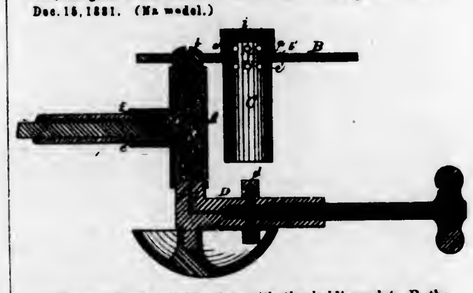
Claim.—In an improved milk-pail, the combination, with the pail, of a cover therefor, and an inverted conical strainer-reservoir fitted into said cover and provided with a strainer at a point between its lower end and the cover, and a guard-reservoir adapted to be inserted into the strainer-reservoir and provided with side apertures near its lower end for the outflow of milk into the strainer-reservoir, substantially as set forth.

254,184. AUGER-BIT. THOMAS WOOD and JAMES HORRIS, Birmingham, Conn. Filed July 18, 1881. (No model.)



Claim.—A boring-bit having a cast-iron body and a steel point welded or fused thereto, all substantially as described, and for the purpose set forth.

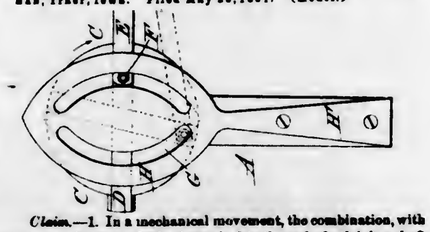
254,185. VAPOR-BURNER. T. TRASK WOODWARD, Decatur, Ill., assignor of one-half to John F. Flood, same place. Filed Dec. 16, 1881. (No model.)



Claim.—1. In combination with the holding-plate B, the burner C, fitted into the central hole, *b'*, of the plate, and suspended therefrom by the shoulder or offset *a*, and provided with a row of holes, *c*, above the plate and a row of holes, *d*, below the plate, substantially as shown, and for the purpose described.

2. In a vapor-burner, the combination of the generator A, the holding-plate B, secured thereto by screw or rivet, and burner C, having two rows of holes, one above and one below the plate, the flame issuing from the lower row of holes being spread by the plate and compelled to continually envelop the generator, as herein set forth.

254,186. MECHANICAL MOVEMENT. OLISTHUS G. ALDERMAN, Traer, Iowa. Filed May 28, 1881. (Model.)



Claim.—1. In a mechanical movement, the combination, with a transversely-grooved wheel attached to the end of a driving-shaft journaled in suitable bearings, of a face-plate or bearing having an elliptical groove or slot, a sliding bar reciprocating within the grooved face of the wheel at each reciprocation of the same, and provided with a roller adapted to engage with the elliptical groove or slot, and a pitman attached to the sliding bar, whereby the movements of the pitmen are equalized and an elliptical motion imparted to its ends at each reciprocation, substantially as specified.

2. In a mechanical movement, the combination, with the transversely-grooved wheel C, attached to a driving-shaft, B, journaled in the bearing A, and a face-plate, H, having an elliptical slot or groove, G, and shank H', by which it is attached to the bearing A of the sliding crank-bar D, carrying a pitman, R, and a roller, F, adapted to engage with the elliptical groove in the face-plate, substantially as and for the purpose shown and described.

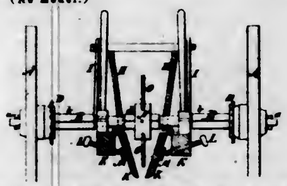
254,187. FLASHED-HEDGE FASTENING. WILLIAM BALDWIN, Marion, Ind. Filed Dec. 23, 1881. (No model.)



Claim.—1. In a hedge fence formed as described, the fastening consisting of a continuous wire or cord extending from end to end of the fence and formed into twisted loops, each of which embraces two or more of the inclined twigs, substantially as and for the purpose set forth.

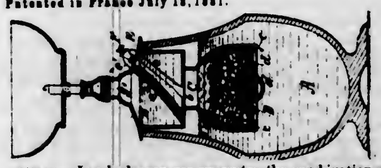
2. The combination, with a hedge fence consisting of twigs or plants bent at an angle, as described, of a continuous wire or cord extending from end to end of the fence and formed into twisted loops, each of which embraces two or more of the twigs or plants, substantially as and for the purpose specified.

254,188. COMBINED PLANTER AND FERTILIZER-DISTRIBUTER. BENJAMIN F. BARNES, Campbellton, Fla. Filed Jan. 13, 1881. (No model.)



Claim.—In a combined cotton-planter and fertilizer-distributer, the combination, with the wheels A, having notched hubs C, and axle B, provided with the rounded ends *a*, squared parts *b*, rounded parts *c*, and squared middle *d*, carrying the stirrer N O, of the clutch-bars D, sliding on the axle, frame E, hopper H, provided with side extensions, J, and hinged sides K, having flat springs M, secured at their ends, and set-screws L, whereby the machine may be employed as a cart or fertilizer-distributer, substantially as described.

254,189. HYDROGEN-GAS GENERATOR. ALEXANDRE BERLAND, St. Petersburg, Russia. Filed Sept. 9, 1881. (No model.) Patented in France July 18, 1881.

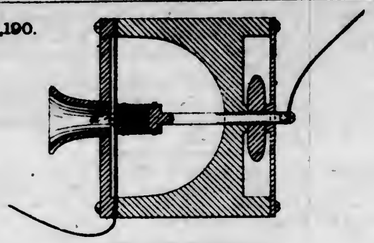


Claim.—In a hydrogen-gas generator, the combination of the acid-reservoir A, carrying the burner, the carbureting-chamber B, arranged below said burner and carrying the inverted bell C, the zinc-holder D, provided with a perforated bottom and supported by and arranged within said bell, the two-branch pipe E, having stop-cock F, and the tubular wick *e'*, all combined, constructed, and arranged for operation substantially as and for the purpose specified.

254,190. TELEPHONE-TRANSMITTER. EMILE BERLINER, Boston, Mass. Filed Dec. 15, 1881. (No model.)

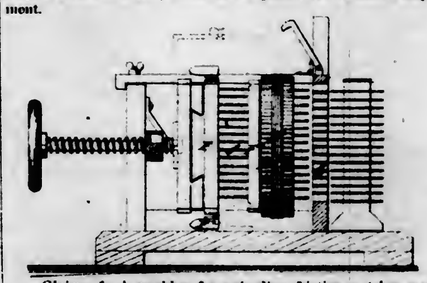
Claim.—A telephone-transmitter consisting essentially of a diaphragm, in combination with a button or mass of conducting pellets, globules, or similar well-rounded particles, which can be vibrated under the action of sound-waves, substantially as described.

254,190.



254,191. MACHINE FOR UNLOADING FRICTION-MATCHES AFTER DRYING. CHAS. F. BOSBACK, New York, N. Y. Filed Dec. 13, 1881. (No model.)

Brief.—The matches projecting from the bunch of splints are deposited by the push-pins in regular numbers on shelves, so that they can be conveniently removed and packed into boxes for shipment.

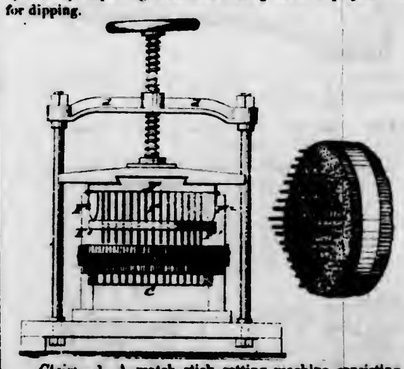


Claim.—1. A machine for unloading friction-matches, consisting of a horizontally-movable follower, of a setter applied thereto and holding the bunch with the set and finished matches, of a stop-frame having horizontal partitions, and of removable horizontal unloading-shelves, all substantially as and for the purpose set forth.

2. The combination, in a machine for unloading matches, of a guided setter having push-pins and a perforated guide-board with locking devices applied to the upper and lower parts of the guide-board, so as to retain the same and the bunch for withdrawing the push-pins from the latter, substantially as set forth.

254,192. MACHINE FOR SETTING MATCH-STICKS. CHAS. F. BOSBACK, New York, N. Y. Filed Dec. 13, 1881. (No model.)

Brief.—Match-splints are set in position by the machine, whereby they may be readily dipped and dried. The splints are held together by a strong rubber band. The push-pins are arranged equidistant and take against the ends of the splints, thereby forcibly displacing them and causing them to project suitably for dipping.



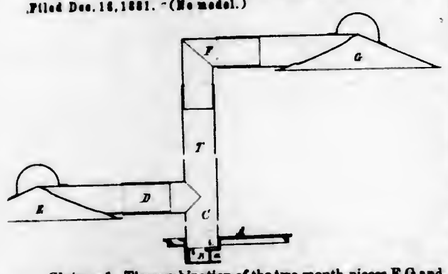
Claim.—1. A match-stick-setting machine consisting of a fixed wire grating, of means for locking the bunch of sticks to the grating, of a movable and detachable setter having a series of equidistant push-pins and a perforated guide-board, and means for operating the setter, all substantially as and for the purpose set forth.

2. The combination, in a match-stick-setting machine, of a

fixed grating, C, with locking side straps, E, pivoted to a fixed side piece, E', and locked to a hinged side piece, E², at the opposite side for retaining the bunch of match-sticks in position on the grating, substantially as set forth.

3. In a match-stick-setting machine, a stick-setter, F, consisting of a top piece having equidistant push-pins *f*, an adjustable perforated guide-board, F', and hinged side pieces, E², substantially as and for the purpose described.

254,193. STEAM-DISCHARGING APPARATUS FOR COOKING-STOVES. ALFRED B. BOWDEN, Barrington, assignor to Myron T. Kinyon, Pawtucket, and Caleb B. Parker, Warwick, R. I. Filed Dec. 16, 1881. (No model.)

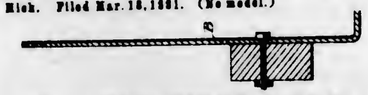


Claim.—1. The combination of the two mouth-pieces E G and their discharge and joining pipes C, D, T, and F, and the socket plate or cover A, the whole constructed and arranged substantially as set forth.

2. The stove plate or cover A, provided with the pipe-receiving socket B, having a lateral opening, and the pipe-sustaining shoulder, as set forth.

3. The stove plate or cover A, constructed with a socket, B, and having in combination therewith a rotating shoulder or valve, H, for the purpose of opening and closing the opening *a*, as specified.

254,194. FENCE-POST. JOSEPH H. BROKAW, Grand Rapids, Mich. Filed Mar. 18, 1881. (No model.)



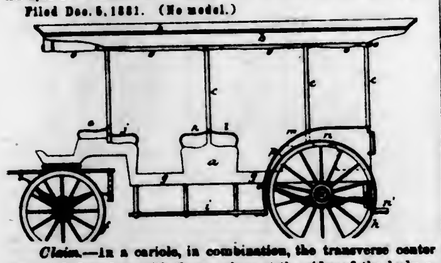
Claim.—A fence-post composed of a base having a grooved seat, and the upright B, located in said seat and provided with a right-angled bend at its lower end, substantially as and for the purposes specified.

254,195. HAND-ANVIL. WILLIAM H. BROWN, Grand Forks, Dak. Filed Dec. 13, 1881. (No model.)



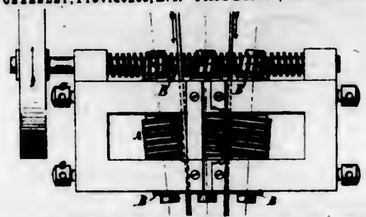
Claim.—The improved hand-anvil herein described, as and for the purposes set forth.

254,196. CARIOLE. GOTTFRIED BENGARD, Brooklyn, N. Y. Filed Dec. 5, 1881. (No model.)



Claim.—In a cariole, in combination, the transverse center seats, *j*, *h*, *l*, and *m*, with the openings at the sides of the body *a*, and side steps, *i i*, and the transverse rear seat, *n*, with the opening at the rear of the body, and rear step, *a'*, substantially as and for the purpose set forth.

254,197. MACHINE FOR ORNAMENTING WIRE. JAMES A. CHAMBLEY, Providence, R. I. Filed Dec. 27, 1881. (No model.)

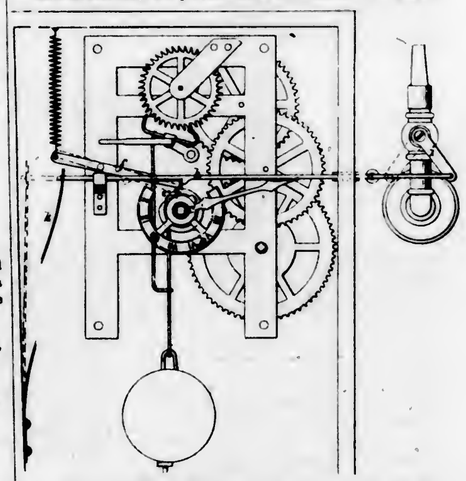


Claim.—1. A machine for ornamenting wire, consisting of two or more rolls having two continuous spiral grooves formed on the same, one or both of which is engraved so as to produce ornamented designs, as described.

2. A machine for ornamenting wire, consisting of a central roll supported in fixed bearings, and two rolls, one on each side of the central roll, supported in adjustable bearings, on which rolls a pattern is engraved, the axis of which passes spirally around the roll, as described.

3. The combination, with the central roll A and the two side rolls A A, of the adjustable bearings B B, the screws C C, and the guides *g g*, arranged to roll and ornament two wires simultaneously, as described.

254,198. AUTOMATIC GAS-LIGHT EXTINGUISHER. WILLIAM CLANCHY, Providence, R. I., assignor of one-half to Bernard McTiernan, same place. Filed Nov. 11, 1881. (No model.)



Claim.—1. The combination, with a clock, of the auxiliary dial D, adjustably secured upon the hour-hand sleeve and provided with the notched flange E, the rod A, provided with a catch or shoulder and connected with a gas-cock, the lever having one end arranged to engage with said shoulder and to rest upon the periphery of the flange E, and a spring arranged to press said lever into the notch in said flange and release it from said shoulder, substantially as described.

2. The combination, with a clock and the cock of a gas-burner, of an adjustable tripping device upon the sleeve of the hour-hand, a rod operated automatically to move the gas-cock in one direction, and a device arranged to hold said rod at a point of its movement in the opposite direction and to be disengaged therefrom at a predetermined period by the action of tripping device upon the hour-hand, substantially as described.

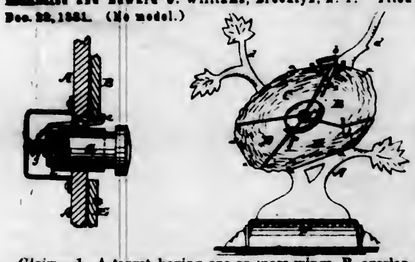
254,199. PROCESS OF PREPARING THE SURFACES OF GRINDING-ROLLS. WILLIAM H. COSGROVE, Faribault, Minn. Filed Nov. 2, 1881. (No model.)

Claim.—1. The herein-described mode or process of dressing smooth metal rolls, consisting in pressing sand, emery, corundum, and other analogous or equivalent material into the surfaces of said rolls to form an indented dress, as set forth.



2. The process of indenting smooth metal rolls, consisting in passing sand, emery, corundum, or other like equivalent material between a pair of such rolls closely adjusted together, substantially as described.

254,200. TARGET. JESSE A. CRANDALL, Brooklyn, N. Y., assignor to Edward E. Ives, Bridgeport, Conn., and Cornelius Blakeslee and Edward O. Williams, Brooklyn, N. Y. Filed Dec. 22, 1881. (No model.)



Claim.—1. A target having one or more wings, B, overlapping its back A, and a movable bull's-eye or plug, G, separate from said wing or wings, and mechanism, substantially as described, for locking and moving said wing or wings, all arranged to unlock said wing or wings from said plug when said bull's-eye or plug is moved, and then to unfold said wing or wings, substantially as specified.

2. A target having a fixed body or back, A, one or more movable wings, B, means for locking the same, and a movable plug, G, separate from said wing or wings, said wing or wings being combined with a spring, *b*, for moving it or them in one direction, substantially as specified.

3. The target-back A, combined with the hinged wing B, spring *b*, catch *c*, and movable button or plug G, all arranged to operate substantially as specified.

4. The target-back A, having one or more projections, *d*, in the plane of the back, combined with one or more hinged wings, catch *c*, and sliding button or plug G, as specified.

5. The folding wing B, provided with spring *b* and projection *i*, in combination with the folding wing C and supporting-back A, all arranged to move the wing C by the projection *i*, as specified.

6. The combination, on a target, of the folding wing B and its holding-catch *c*, for holding it down, with the projection *j* and folding wing E, the projection *j* on wing B serving to hold the wing E in one position, substantially as specified.

7. The combination of the back A with the hinged wings B C D E, plug or button G, spring *b*, for raising wing B, rests *d*, for wings to fold against, catch *c*, for locking wing B, and projections *i* and *j*, for holding the wings C D E, substantially as herein shown and described.

254,201. GATE. THOS. CRANE, Fort Atkinson, Wis., assignor of one-half to L. S. Kellogg, same place. Filed Apr. 14, 1881. (No model.)

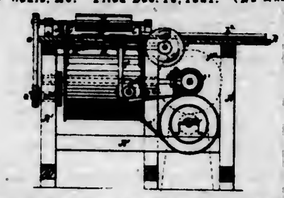


Claim.—1. The gate C, having the central cross-bar, K, hinged to the center post, B, and having the end cross-bars, L, and intermediate cross-bars, L', said end and intermediate cross-bars being placed on one side for one half of the gate and on the opposite side for the other half, substantially as and for the purpose set forth.

2. In combination with the posts A and B, and gate C, hinged to said post B, the latch comprising the lever F, fulcrumed at its lower end to the face of the gate, the bar G, pivoted to said lever, guide *n*, catch *m* upon the post A, and cam H upon the bar G, substantially as described.

3. In combination with the posts A and B, and gate C, hinged to said post B, and with the latch, comprising the bar G, lever F, cam H, guide *n*, and catch *m*, arranged and operating as described, the posts D, eye *k* upon the gate, and cords *l*, connecting the said posts to the lever F and passing through the said eye, substantially as set forth and shown.

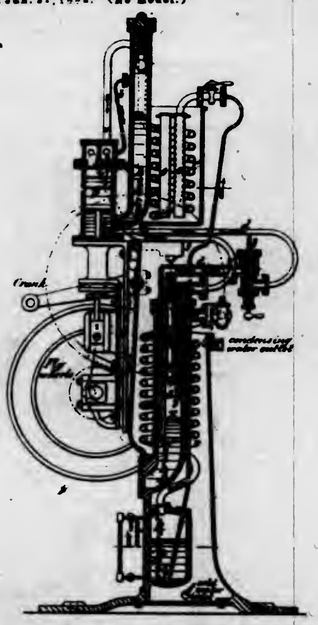
254,202. CIRCULAR SAWING MACHINE. ALEXANDER RUSSAW, St. Louis, Mo. Filed Dec. 16, 1881. (No model.)



Claim.—1. In a sawing-machine, the combination of table A, pairs of saws B B' and C C', said pairs being located in the table at right angles to each other, as described, and being driven by same shaft, *a*, guides b^2 and d^2, and traveling platform D, arranged to work between saws C C', provided with counter-weight d^1, and when at rest to be adjacent to the part A^2 of the table, said part A^2 being between the saws B B' and elevated above the plane of platform D, all constructed and arranged to operate as and for the purpose specified.

2. In a sawing-machine, the combination of table A, pairs of saws B B' and C C', said pairs being located in the table at right angles to each other, as described, guides b^2 and d^2, platform D, traveling on ways between saws C C', counterweighted at d^1 and recessed at d^3, rollers E E', and belt or apron F on drum F', said saws, rollers, and belt being all driven by same shaft, *a*, in the machine-frame, all constructed and arranged to operate as and for the purpose specified.

254,203. ICE-MACHINE. EDOUARD PIXARY, Paris, France. Filed Jan. 21, 1881. (No model.)



Claim.—1. The combination, with the pump or pumps for compressing ammonia or other gas, of a lubricant-chamber adapted to be kept cool, in free communication with the pump-cylinder, substantially as described, so that the lubricant flows back and forth between said cylinder and the lubricant-chamber.

2. The combination, with the pump cylinder, piston, and valves, of a lubricant-chamber in communication with the interior

of the cylinder on one side of the cylinder, and a pipe communicating with the upper part of said lubricant-chamber and with the valve-chamber on the other side of the piston, substantially as described.

3. The combination, with the pump and refrigerator, of a lubricant-chamber communicating with the interior of the pump-cylinder, and adapted to be cooled by the low temperature in the refrigerator, substantially as described.

4. The combination of the pump, the lubricant-chamber communicating with the pump-cylinder freely at the bottom and by a small pipe at the top, the lubricant receptacle or trap connected with the outlet-pipe from the pump, and the return-pipe for returning the lubricant to the pump, substantially as described.

5. The pin and ball in the lubricant-chamber for indicating excess of lubricant therein, substantially as described.

6. The combination, with the lubricant-receptacle and pump, of a supply-controlling and relief valve in the connecting-pipe, substantially as described.

7. The supply-controlling and relief valve described, comprising a valve pressed toward its seat by a spring and a device for regulating the space between the said valve and its seat, substantially as described.

8. The combination of the regulator, pump, cooled lubricant-chamber, lubricant receptacle or trap, condenser, and connecting-pipes, substantially as described.

9. The lubricant receptacle or trap inclosed in the condenser, substantially as described.

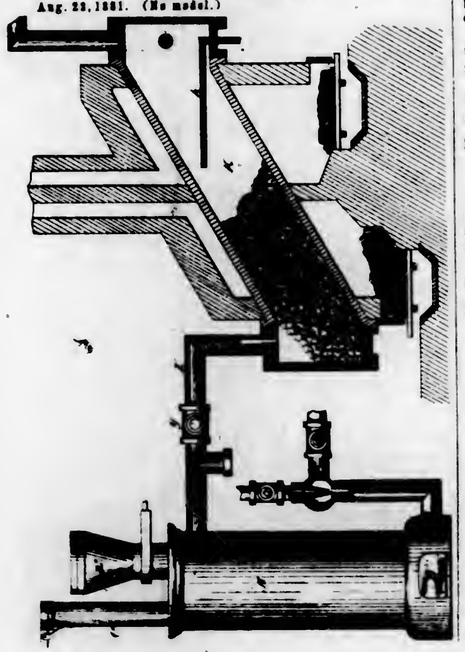
10. In an ice-machine, the hollow column, serving both as the machine-frame and the jacket or vessel for containing the condenser-coils, substantially as described.

11. The combination, with the hollow column, of the pump and refrigerator supported thereby, and the condenser and refrigerant-reservoir inclosed therein, substantially as described.

12. The lubricant receptacle or trap, condenser-coils, and refrigerant-reservoir, attached together to form a single structure, and inclosed in a common jacket or vessel, substantially as described.

13. An ice-machine comprising in combination the hollow column, the condenser, lubricant receptacle or trap, and refrigerant-reservoir united in a single structure and inclosed therein, the pump, the communicating lubricant-chamber, and the refrigerator supported by said column, and the connecting-pipes, substantially as described.

254,204. PROCESS OF AND APPARATUS FOR MANUFACTURING GAS. THOMAS B. FOGARTY, Brooklyn, N. Y. Filed Aug. 23, 1881. (No model.)



Claim.—1. The process herein described of generating and purifying gas, said process consisting of the several parts and processes described, substantially as follows: first, in injecting or forcing air and steam into or through incandescent carbon contained in a suitable furnace, causing the air and steam to combine with the carbon and to produce carbonic oxide and carbonic acid, the hydrogen of the decomposed steam and the nitrogen of the air being at the same time set free; second, in the separation of the nitrogen from the gas by converting it into ammonia, said conversion being effected by causing it to combine with carbon and alkali, so as to form cyanogen, and subsequently decomposing the cyanogen so formed by means of steam, the product being ammonia, the oxides of carbon, and alkali, and subsequently removing the ammonia, substantially as described; third, in decomposing the carbonic oxide in the gas and converting it into carbonic acid by means of incandescent steam, the product of said decomposition being carbonic acid and hydrogen gas; fourth, in the removal of the carbonic acid from the gas by means of ammonia, substantially as described.

2. In the manufacture of gas through the decomposition of steam and air by incandescent carbon, the process of separating the resulting nitrogen from the crude gas, which consists in introducing the latter into a suitable retort or series of retorts containing carbon and alkali, or any suitable form, compound, or combination thereof in an incandescent state, and causing it to combine therewith and to form cyanogen, and subsequently decomposing such cyanogen by means of steam and forming ammonia, substantially as described.

3. In the manufacture of water-gas, the process of separating nitrogen and carbonic oxide from the gas, consisting in, first, the introduction of the gas into a suitable retort or series of retorts containing carbon and alkali in an incandescent state, and causing it to combine therewith to form cyanogen, and subsequently decomposing the cyanogen so formed by means of steam, the products of said decomposition being ammonia, oxides of carbon, and alkali; second, the removal of the ammonia from the gas by means of suitable scrubbers; third, the removal of the carbonic oxide from the gas by causing it to be decomposed by incandescent steam, the result of such decomposition being carbonic acid and free hydrogen, substantially as described.

4. In a process for manufacturing gas by decomposing steam and air by incandescent carbon, and for purifying such gas from nitrogen and carbonic oxide by converting the former into ammonia and the latter into carbonic acid, the process of converting the nitrogen into ammonia and of separating the latter from the gas previous to the decomposition of the carbonic oxide by incandescent steam, substantially as described.

5. A furnace, U, containing a retort, V, and placed between the scrubbers X and *b*, in combination with said scrubbers, in the manner and for the purpose substantially as set forth and described.

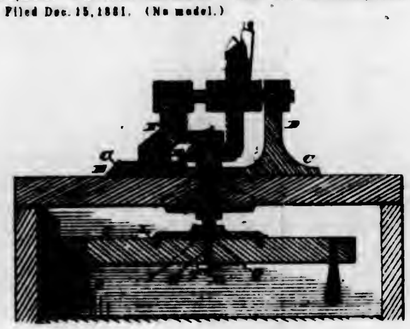
6. The combination of a furnace or cupola, A, retorts K and V, and scrubbers X and *b*, constructed and operated substantially as described.

254,205. TEMPORARY STOPPING FOR TEETH. GEORGE A. FOWLER, Philadelphia, Pa. Filed Nov. 28, 1881. (Specimens.)

Claim.—1. The hereinbefore-described composition of matter to be used as a temporary stopping for teeth, consisting of wax, gutta-percha, oxide of zinc, and chalk or whiting, in the proportions as set forth.

2. The hereinbefore-described composition of matter, molded in a pencil or stick form for convenience in using the same.

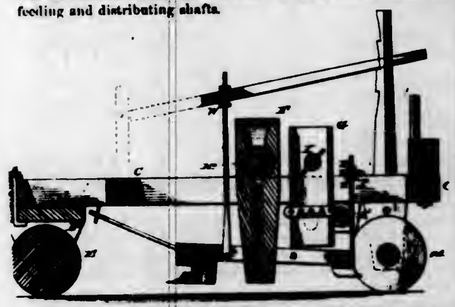
254,206. WASHING MACHINE. JOHN FOX, Oskaloosa, Iowa. Filed Dec. 15, 1881. (No model.)



Claim.—The base-plate C, having upright D, and provided with transverse ribs b, E, between which a detachable upright, F, may be secured, substantially as set forth.

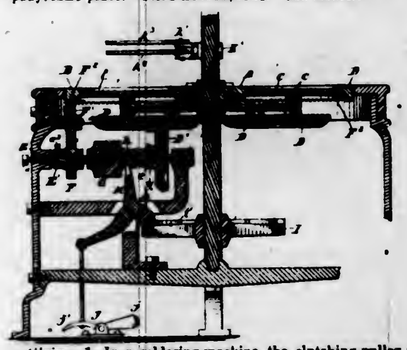
254,207. COMBINED CORN PLANTER AND FERTILIZER-DISTRIBUTER. JEREMIAH PEARCE, Centre Square, Pa. Filed Sept. 19, 1881. (No model.)

Brief.—The frame is mounted upon a front swiveled roller and a rear roller formed in three sections, the central one of which is removable. The hoppers for the seed and fertilizer are formed with downward extensions or tubes, and are mounted upon the feeding and distributing shafts.



Claim.—The combination of the frame mounted upon rollers M, N, and E, the shafts H I, journaled in said frame and provided respectively with seed-cups and stirring-fingers, the hoppers F G, mounted upon said shafts and having downward extensions or tubes, and suitable operating mechanism, substantially as set forth.

254,208. SOLDERING-MACHINE. GEORGE B. GLEASON, Chicago, Ill., assignor to the Union Brass Manufacturing Company, same place. Filed Nov. 14, 1881. (No model.)



Claim.—1. In a soldering-machine, the clutching-pulley G, lever H, wheel I, with notches the width of which is greater than the thickness of the arm *h'* of said lever, table B, clutching-wheel F, and wheel F', combined and operating substantially as set forth.

2. In a soldering-machine, the clutching-pulley G, lever H, having arm *h'*, wheel I, table B, can-disk C, wheel D, clutching-wheel D', and treadle J, with weight end *j*, all combined and operating substantially as set forth.

3. In a soldering-machine, the clutching-pulley G, lever H, wheel I, with notches the width of which is greater than the thickness of the arm *h'* of said lever, table B, can-disk C, wheels F' and D, and clutching-wheels F and D', all combined and operating substantially as set forth.

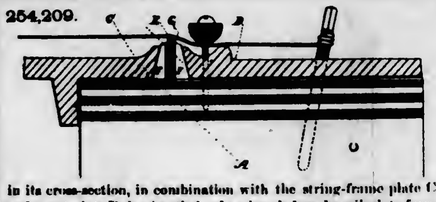
4. In a soldering-machine, the clutching-pulley G, lever H, wheel I, table B, can-disk C, wheel D, and clutching-wheel D', having their digging-edges turned down, all combined and operating substantially as set forth.

5. In a soldering-machine, the clutching-pulley G, lever H, table B, can-disk C, wheel D, clutching-wheel D', and treadle J, with weight end *j*, all combined and operating substantially as set forth.

254,209. WREST-BLOCK BRIDGE FOR PIANOS. PAUL GUHRLIN, New York, N. Y. Filed Sept. 14, 1881. (No model.)

Claim.—1. A piano-forte wrest-block bridge of dovetail form

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in its cross-section, in combination with the string-frame plate C and wrest-plate D, having their edges beveled, as described, to form a dovetail groove to receive the bridge B, when mounted upon the wrest-block A, with its base resting thereon, for the purpose set forth.

2. A piano-forte wrest-block bridge of dovetail form in its cross-section, it being composed of three pieces of wood, F F G, the outside pieces, F F, having the grain running longitudinally, and the center piece, G, having the grain running transversely and vertically to the base of the bridge, and with the bearing-wire E, supported along the top of the center piece, G, in combination with the string-frame plate C and wrest-plate D, having their edges beveled, as described, to form a dovetail groove to receive the bridge when mounted with its base upon the wrest-block, as set forth.

254,210. ADJUSTABLE WRENCH. WILLIAM R. GODFREY, Sidney, Mohr. Filed Aug. 19, 1881. (Model.)



Claim.—As an improvement in wrenches, the combination, with the shank A, provided with straight screw-threaded portion E, having a central longitudinal slot, *c*, and a V-shaped portion, *c'*, of the jaws B B, pivoted in said slot and having their tops beveled to fit said V-shaped portion, and the single adjusting-nut C, arranged around portion E, substantially as and for the purpose herein shown and specified.

254,211. METHOD OF TREATING ANIMAL HAIR FOR MANUFACTURING FELT. GEORGE J. GREGERSEN, Millburn, N. J. Filed Dec. 3, 1881. (Specimens.)

Claim.—1. The herein-described process of treating the coarse hair of wild fur-bearing animals, such as hereinbefore specified, with a mixture of alum, muriatic acid, and a composition of a mixture of nitric acid and mercury, or their equivalents, and neutralizing with ammonia, substantially as herein described, and for the purpose described and set forth.

2. The changing of the tubular form of the coarse hair of wild fur-bearing animals, such as heretofore has been considered of no commercial value and entirely unfit for sizing, into straight, pliable, and partly-split fibers by boiling them in a solution of alum, muriatic acid, and a mixture of nitric acid and mercury, or their equivalents, substantially as described, and for the purpose described and set forth.

3. The changing of the tubular form of the coarse hair of wild fur-bearing animals, such as heretofore has been considered of no commercial value and entirely unfit for sizing, into straight, pliable, and partly-split fibers by boiling them in a solution of alum, muriatic acid, and a mixture of nitric acid and mercury, or their equivalents, drawing off the liquid, and neutralizing with ammonia, substantially as described, and for the purpose described and set forth.

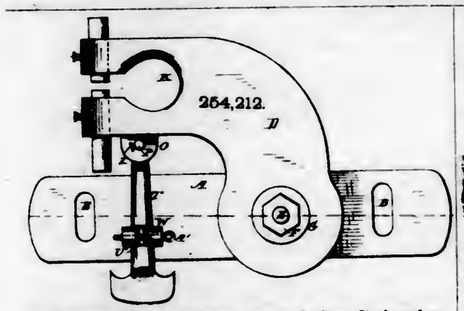
4. The changing of the tubular form of the coarse hair of wild fur-bearing animals, such as heretofore has been considered of no commercial value and entirely unfit for sizing, into straight, pliable, and partly-split fibers by boiling them in a solution of alum, muriatic acid, and a compound of nitric acid and mercury, or their equivalents, drawing off the liquid, neutralizing with ammonia, and disintegrating with suitable machinery into a product equivalent to the natural fur at present used in manufacturing fur hats, substantially as described.

5. The coarse hair of wild fur-bearing animals, such as herein described and specified, treated and changed into straight, pliable fine fibers of different lengths, as herein described, and for the purpose described.

6. The new product obtained as above substantially described.

254,212. SAW-GUIDE. JOHN F. HALL, Blafftos, Ind. Filed Dec. 31, 1881. (Model.)

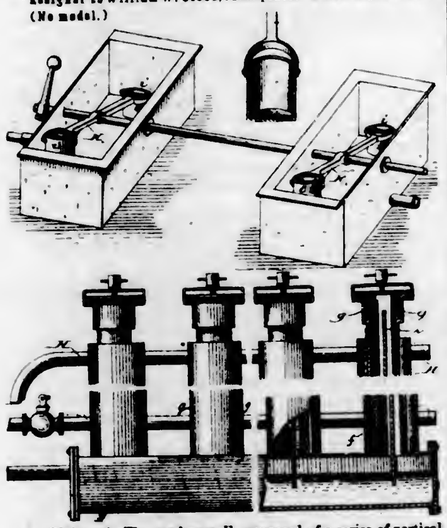
254,213. FOLDING UMBRELLA. CHARLES L. HUBD, Newbury-



Claim.—1. The base-plate A, having the lever D pivoted on a boss projecting therefrom, and having at its bifurcated end the lug O, in combination with the screw-nut R, connected thereto, and the adjusting screw-shaft T, substantially as and for the purpose set forth.

2. The base-plate A, cast with the frustum-shaped boss C, in combination with the lever D, constructed as described, and having screw-nut R, to operate in connection with the adjusting screw-shaft T, and means, substantially as shown, for connecting said lever to the base-plate, substantially as and for the purpose set forth.

254,213. GAS APPARATUS. JOHN HANLON, New York, N. Y., assignor to William W. Gibbs, same place. Filed July 18, 1881. (No model.)



Claim.—1. The condenser F, composed of a series of vertical cylinders surrounded with water jackets and provided with diaphragms, in combination with a cold-water pipe connecting directly with each jacket and a discharge-pipe similarly connected, substantially as and for the purpose described.

2. The cylinders *f*, having the caps *g*, provided with a rubber packing and water seal, in combination with the cylinder-cap provided with a dip-rim, substantially as and for the purpose described.

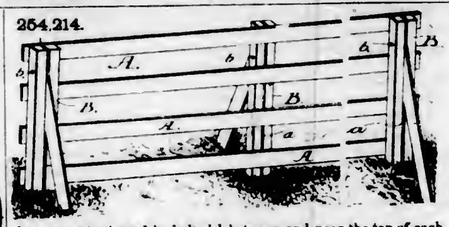
3. The purifier I, in combination with the central crank-shaft, J, and the seals *i*, connected therewith, whereby the compartments are cut off or opened, substantially as described.

4. The central shaft, J, provided with the cross-arms K, in combiantion with the journaled seals *i*, substantially as and for the purpose set forth.

5. The seals *i*, provided at their bottoms with a thin sheet of elastic packing, and on that a liquid seal, in combination with the dip-pipes of the purifier, substantially as described.

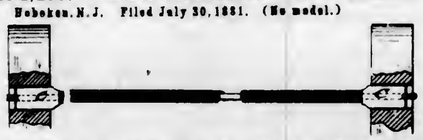
254,214. PORTABLE FENCE. WILLIAM H. HAY, Prospect, Pa. Filed Jan. 5, 1882. (No model.)

Claim.—The portable fence-panel consisting of the planks A A, held together by the posts B B, arranged on their alternating opposite sides in pairs with the intervening spaces, *a a*, and the swing-



ing supports pivoted by bolts *b b* between and near the top of each pair of posts, all constructed, arranged, and operated as set forth.

254,215. GYMNASTIC APPARATUS. WILLIAM HENSELER, Hoboken, N. J. Filed July 30, 1881. (No model.)

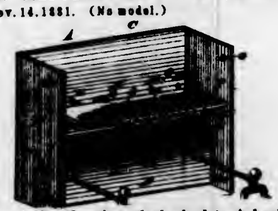


Claim.—1. A horizontal bar for gymnastic apparatus, composed of a square steel core and of a cylindrical shell or covering of moisture-absorbing material, substantially as and for the purpose set forth.

2. A horizontal bar for gymnastic apparatus, consisting of a square steel core and a covering or shell formed of disks of paper or other suitable material, substantially as set forth.

3. In a horizontal bar for gymnastic apparatus, the combination of a square steel core with a shell or covering formed of disks of suitable material, and with compressing end blocks and fastening devices, substantially as and for the purpose described.

254,216. FIRE-PLACE. JOHN W. HOEY, Rhea's Mills, Tex. Filed Nov. 14, 1881. (No model.)



Claim.—1. In a fire-place, the back plate, A, having shoulder B, openings I, and bearings L, in combination with the adjustable cranes J, substantially as and for the purpose set forth.

2. In a fire-place, the combination, with the cranes J, of the top plate, M, having openings N, covers O, and flanges P, substantially as and for the purpose set forth.

3. As an improvement in fire-places, the combination of the back plate, A, having shoulder B, openings I, and bearings L, the side plates, F, having flanges H, the cranes J, and the detachable top plate, M, all constructed, arranged, and operating substantially as herein described, for the purpose shown and specified.

254,217. REVOLVING SHUTTLE FOR SEWING-MACHINES. ELIAS H. HULL, Warren, Ohio. Filed Oct. 24, 1881. (Model.)



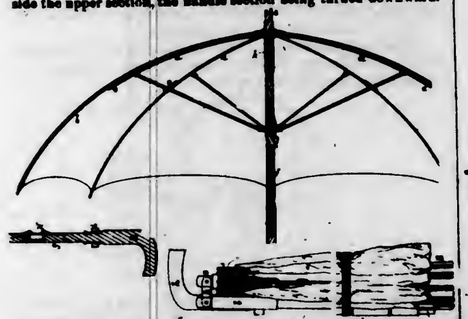
Claim.—1. The combination of a revolving shuttle, a bobbin, a bobbin-casing having a spur-gear wheel attached thereto, an intermediate spur-wheel secured to the shuttle, and a stationary gear-wheel, arranged for operation in the manner substantially set forth.

2. The shuttle A, having the spur-gear wheels K S and the bobbin N, in combination with the circular track or shuttle-plate C, having the stationary gear-wheel E, substantially as described.

3. The revolving shuttle-carrier B, in combination with the loose circular rim or casing G, having an opening in the same corresponding with the opening in the shuttle-carrier, whereby the shuttle is entered and the rim revolved upon the carrier to secure the same.

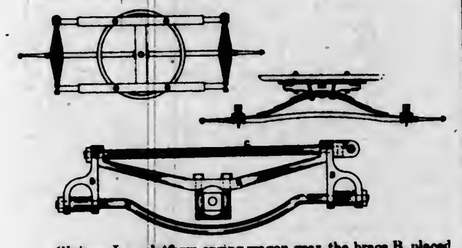
254,218. FOLDING UMBRELLA. CHARLES L. HUBB, Newburyport, Mass. Filed Dec. 16, 1881. (No model.)

Brief.—The middle section of the stick folds upward alongside the upper section, the handle section being turned downward.



Claim.—In a folding umbrella having its stick and each of its ribs in sections jointed or connected together as described, the brace-runner having a diameter larger than that of the hinge-ring, in combination with the ribs hinged to the said ring and the braces to the runner and inner sections of the ribs, and with the outer sections of each rib connected with the inner sections thereof, so as to be capable of being turned upward over alongside of them, all being substantially as set forth, in order that the ribs and braces may be turned upward alongside of each other and the upper section of the stick and the outer sections of the ribs be turned in between the stick and the inner sections of each rib, as explained.

254,219. PLATFORM-SPRING FOR WAGONS. JEREMIAH P. JOHNSON, Toronto, Ontario, Canada, assignor, by mesne assignments, to Johnson, Rose & Co., Detroit, Mich. Filed June 9, 1881. (No model.) Patented in Canada June 7, 1881.

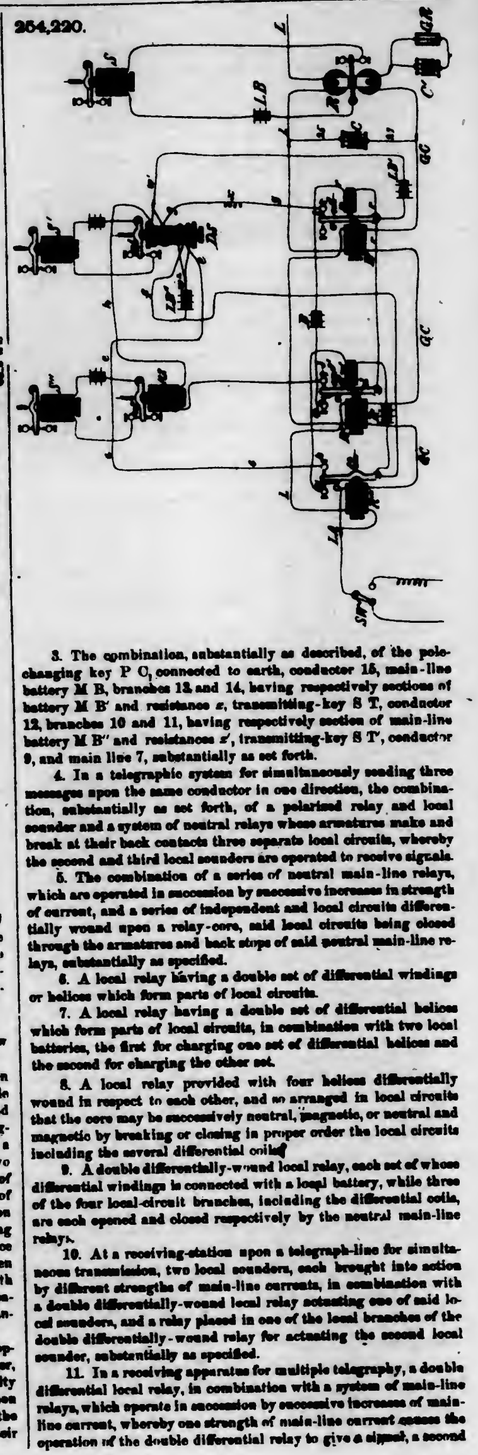


Claim.—In a platform-spring wagon-gear, the brace B, placed at right angles with the axle, spread in the center to form a brace sidewise, and raised at each end about two and one-half inches to form a brace downward, and a lip on each end of the brace extending upward, in combination with rods C and E, shaft-coupling F, and hangers D.

254,220. SEXTUPLEX TELEGRAPH. FRANCIS W. JONES, New York, N. Y. Filed Feb. 9, 1881. (No model.)

Claim.—1. In a system for simultaneous transmission upon a single line, a transmitting or key system arranged upon a single conductor, consisting of the combination of a fragment of said conductor, whose ends may be reversed by means of pole-changing key in respect to the earth and main-line connections and a series of tension-changing transmitting-keys thereon, and two branch conductors at each transmitting-key, through either of which branches the main-line circuit may be established, one of said branches being normally open and having thereon a section of main-line battery, and the other branch normally constituting a portion of the main-line circuit, having an artificial resistance substantially equal to that of the battery in the normally-open branch, the two branches of each key also being so arranged with said key that by its movement the two branches may each separately and alternately be placed in the main-line circuit, substantially as described.

2. A fragmentary portion of a main-line conductor, the opposite ends of which are connected to a main-line pole-changer, said fragmentary portion of the main line having its continuity preserved through the branches having the resistances *s s'* when the transmitting-keys are upon their back stops and through the battery branches of M B' and M B'' when the keys are upon their front stops, substantially as described.



3. The combination, substantially as described, of the pole-changing key P C, connected to earth, conductor 15, main-line battery M B, branches 13 and 14, having respectively sections of battery M B' and resistance *s*, transmitting-key S T, conductor 12, branches 10 and 11, having respectively section of main-line battery M B'' and resistance *s'*, transmitting-key S T', conductor 9, and main line 7, substantially as set forth.

4. In a telegraphic system for simultaneously sending three messages upon the same conductor in one direction, the combination, substantially as set forth, of a polarized relay and local sounder and a system of neutral relays whose armatures make and break at their back contacts three separate local circuits, whereby the second and third local sounders are operated to receive signals.

5. The combination of a series of neutral main-line relays, which are operated in succession by successive increases in strength of current, and a series of independent and local circuits differentially wound upon a relay-core, said local circuits being closed through the armatures and back stops of said neutral main-line relays, substantially as specified.

6. A local relay having a double set of differential windings or helices which form parts of local circuits.

7. A local relay having a double set of differential helices which form parts of local circuits, in combination with two local batteries, the first for charging one set of differential helices and the second for charging the other set.

8. A local relay provided with four helices differentially wound in respect to each other, and so arranged in local circuits that the core may be successively neutral, magnetic, or neutral and magnetic by breaking or closing in proper order the local circuits including the several differential coils.

9. A double differentially-wound local relay, each set of whose differential windings is connected with a local battery, while three of the four local-circuit branches, including the differential coils, are each opened and closed respectively by the neutral main-line relays.

10. At a receiving-station upon a telegraph-line for simultaneous transmission, two local sounders, each brought into action by different strengths of main-line currents, in combination with a double differentially-wound local relay actuating one of said local sounders, and a relay placed in one of the local branches of the double differentially-wound relay for actuating the second local sounder, substantially as specified.

11. In a receiving apparatus for multiple telegraphy, a double differential local relay, in combination with a system of main-line relays, which operate in succession by successive increases of main-line current, whereby one strength of main-line current causes the operation of the double differential relay to give a signal, a second

or increased strength of main-line current renders the double differential relay inoperative, but causes a signal to be given upon an additional device, while upon a third or further increase in strength of main-line current the double differential relay is operated to give a signal as well as the device responding to give a signal upon the preceding strength of current.

12. The combination of local relays R S and D S, main-line relays R' R'' R''', and circuit-connections, the said main-line relays being operated in succession by successive increases and decreases in strength of the main-line current, one strength rendering D S magnetic to give a signal, a second strength rendering it neutral, whereby it can give no signal, but said second strength of current at the same time causing R S to be energized to give a signal, while a third strength causes both R S and D S to respond, substantially as specified.

13. The combination of relays R S and D S, relay D S having branches *e f g h*, of which *e*, *g*, and *h* may be broken, in combination with main-line relays R' R'' R''', arranged and operated as described, a weak current operating R' and breaking branch *g* of D S to give a signal, a stronger current operating R' and R'' to break branches *g* and *h*, to render D S neutral and silent and R S operative, and a still stronger main-line current operating R', R'', and R''' to break branches *e g h*, whereby both R S and D S are actuated to give signals.

14. In combination with relay D S and its differential coils and local branch circuits, the relay R S, placed in branch *h*, whereby the second strength of main-line current simultaneously causes the operation of R S and neutralization of D S.

15. A double differential relay, D S, whose coils *h* and *p* are so wound in respect to the local batteries by which they are charged that the currents of electricity will, in passing around relay D S through coils *h f*, induce superposed magnetism of the same polarity in the ends of the core D S, whereby, when the magnetism of the core is first due to currents in coil of branch *f* and then to currents in coil of branch *h*, a magnetic reversal in said core will not occur.

16. The combination of a relay whose tongue is adjusted to be responsive only to strong currents of electricity, a relay in the same line whose tongue is responsive both to weak and strong currents, and an auxiliary retracting device which is automatically brought to the assistance of the retractor of the relay which is responsive to weak currents, said auxiliary retracting device being brought into action only upon the operation of the relay which is responsive to strong currents.

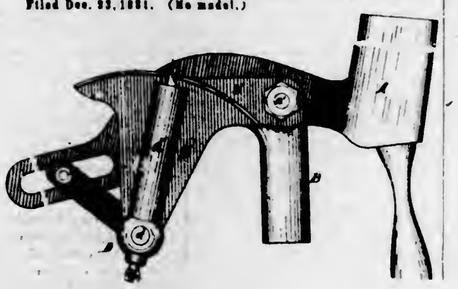
17. The combination, as set forth, of relay R', armature-lever *o'*, retractor *s*, local electro-magnet *m*, relay R'', armature *o''*, and local circuit, including battery B, which is opened and closed by armature *o''*, whereby the strength of current sufficient to actuate armature of relay R'' will automatically bring local electro-magnet *m* into action to aid retractile force of spring *s* in amount corresponding with the increase of current strength for which spring *s* is adjusted.

18. In combination with local relays R S and D S, local branches *e*, *f*, *g*, and *h*, so arranged that *g* and *h* are broken by action of relays R' and R'', while branch *e* is broken by an increased strength of current through the agency of relay R'''.

19. Armature-levers *o''* and *o'* of relays R'' and R''', provided with continuity-preserving devices, in combination with local electro-magnets *m* and *m'*, whereby the retractile force of *m* and *m'* may not be varied by slight movement of arms *o''* or *o'''* upon the reversal of line-currents.

20. The combination of the relay-arm *o''* of R'' and spring *40* with local retracting electro-magnet *m* of relay R', whereby the action of *m* may be uniform upon reversing the line-currents.

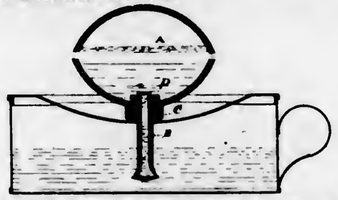
254,221. JACK OR LAST-HOLDER. JOSEPH E. KIMBALL, Milford, assignor to Henry S. Jenkins, Trustee, Boston, Mass. Filed Dec. 23, 1881. (No model.)



Claim.—The combination of the lever A, socketed to receive the stem of the last, the support B, and the second lever, D, substantially as described.

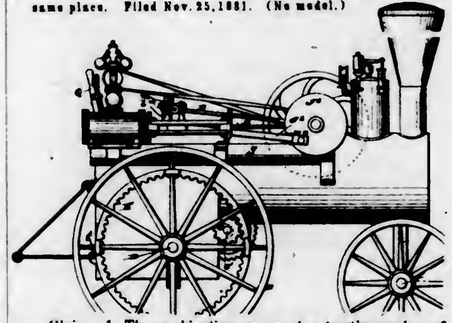
254,222. CLOTHES-SPRINKLER. JOHN KROCHE, Cincinnati, Ohio. Filed Nov. 22, 1881. (No model.)

Brief.—The rubber bulb is secured to the metallic nozzle by the exterior collar and the interior nut, the collar resting against a shoulder on the stem of the nozzle.



Claim.—The combination, substantially as specified, of bulb A, nozzle B, flanged collar C, and threaded nut D, for the purpose set forth.

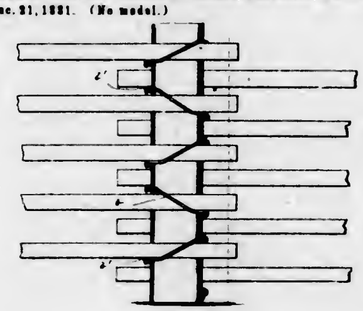
254,223. TRACTION-ENGINE. HORATIO M. LANE and HOWARD CAMPBELL, Richmond, Ind., assignors to Gaar, Scott & Co., same place. Filed Nov. 25, 1881. (No model.)



Claim.—1. The combination, in a road or traction engine, of the fire-box having curved sides and bottom extending below the boiler, the continuous rear axle provided with a central bow or inverted arch adapted to support and strengthen the fire-box, driving-wheels having internally-toothed gear-rings, the shaft journaled in bearings on the front of the fire-box, and having gears meshing with said internally-threaded toothed rings, and means for actuating said shaft, substantially as shown and described.

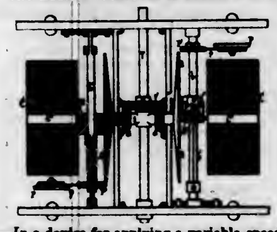
2. The combination, in a road or traction engine, of an arched axle surrounding the fire-box, a shaft carrying at each end a gear-wheel supported on the forward end of the fire-box, the rear driving-wheels having internally-toothed gear-rings, the bevel-wheel G, attached to and turning loosely with the gear F, bevel-wheel G', mounted firmly on the shaft *e'*, gear-wheel H, mounted loosely on the same shaft between the wheels G G', and provided with pinions *h h*, adapted to gear with said wheels and the driving-shaft J', and connecting mechanism, substantially as shown and described.

254,224. FENCE. ISRAEL L. LANDIS, Lancaster, Pa. Filed Dec. 21, 1881. (No model.)



Claim.—In a fence, the combination of the rails, the post, the diagonal and vertically-arranged wire loops which bind the rails to the post, and which pass vertically and diagonally around alternate rails, and the nails *b'*, driven into the posts for supporting the loops and rails, substantially as described.

254,225. MECHANISM FOR APPLYING POWER TO SEWING-MACHINES. IRENEE LECOEUR, Darnetal, France. Filed July 9, 1881. (No model.) Patented in France Mar. 16, 1881



Claim.—In a device for applying a variable speed to sewing-machines, the combination of the disk A with the friction-wheel B, collar *b'''*, pin *b''*, fork *c''*, treadle-shaft C', and treadle C, substantially as described, and for the purpose set forth.

254,226. CAR-SEAT LOCK. ADAM LOEFFELHOLZ, Milwaukee, Wis. Filed Nov. 22, 1881. (Model.)



Claim.—In a car-seat lock, the combination of the seat-arm having aperture B and countersink *c* with the shell E F, cam-disk H G *d d*, and the bolt D, its base-plate, and a retracting-spring, as set forth.

254,227. PUMP. SAMUEL W. MARTIN, Springfield, Ohio. Filed May 18, 1881. (Model.)

Brief.—A cap, C, unites the base of the cylinder to the upper end of the suction-pipe. At its upper horizontal side the cap is centrally depressed, its inner wall raised to a narrow lip, and its outer end forming a seat for a packing-ring, *b*, which supports a metallic valve-seat whose other end is sustained by the raised lip. The valve is then inserted between the cylinder, the cap, and the valve-seat, and its edges are firmly held by these means.



Claim.—1. In combination with the cylinder and the cap, the non-corrodible valve-seat having its outer edge secured between the cylinder and cap and its inner edge supported by a narrow raised lip or rim on the cap, as described and shown.

2. In combination with the pump-cylinder and cap, the thin metal valve-seat having its outer edge confined between the cylinder and cap, its inner edge supported upon a raised annular lip, and its middle portion depressed, substantially as described and shown.

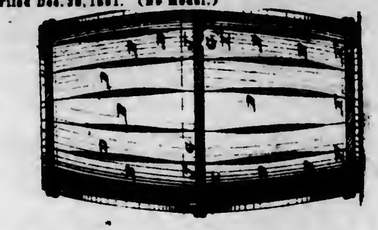
3. The cylinder and its cap or base, in combination with the valve, the thin metal valve-seat, and the packing, all three inserted and secured between the cylinder and cap, substantially as described and shown.

4. In combination with a pump-cylinder and its cap, a thin metal valve-seat having its outer edge seated upon an elastic packing and subject to a downward pressure from the pump-cylinder.

5. The combination of the pump-cylinder, its cap, the leather valve, the packing-ring, and the thin metal valve-seat having its edge seated between the packing-ring and the valve, as described and shown.

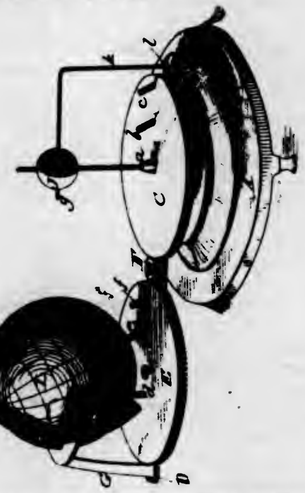
6. In a pump, the combination, with the inlet or throat-piece, of an annular sheet-metal valve-seat sustained at its inner edge by an annular lip or flange upon the throat-piece.

254,228. BARREL. WILLIS B. MCCORMICK, Weimar, Tex. Filed Dec. 30, 1881. (No model.)



Claim.—The herein-described barrel having slotted sides and ends, and provided with a slotted diaphragm secured in place by means of wedges, so that an open space, S, shall be left between the edge of said diaphragm and the inside of the barrel, substantially as described, for the purpose set forth.

254,229. EDUCATIONAL GLOBE. THOMAS MCDERMOTT, Chicago, Ill., assignor of one-half to Thomas Kane, same place. Filed Aug. 28, 1881. (No model.)



Claim.—1. The combination of the central stationary disk provided with a central socket and an inclined eccentric socket, the second disk revolving upon its own axis and also around the stationary disk, and provided with an eccentric socket, and the two globes adapted for application to the sockets and to be transposed or exchanged one for the other, substantially as described and shown.

2. The combination of the base-frame, the horizontal revolving arm, the central stationary toothed disk provided with the vertical and the inclined sockets, the outer toothed disk pivoted upon the arm and provided with the vertical and inclined sockets, and the pinion mounted upon the arm and connecting the two disks, as shown and described.

3. In combination with a horizontally-rotating arm, a revolving disk mounted upon its outer end and provided with two inclined sockets, *e* and *f*, and an earth-globe, I, adapted for application to either of said sockets at will.

4. In combination with a tellurian and lunarian, two disks of equal size connected by an intermediate pinion, one fixed and the other caused to revolve around the same, in combination with inclined sockets upon both disks, the vertical socket at the center of the non-rotating disk, the earth and sun globes, each adapted to be applied to either of the various sockets, as required, whereby the transposition of the globes is permitted to illustrate the different phenomena of nature.

5. In combination with the central disk and the outer disk revolving around the same and geared therewith, an earth-globe adapted and arranged for eccentric attachment to the inner disk, and the moon-globe adapted and arranged for eccentric attachment to the outer disk, as described and shown.

6. The combination of the base-frame, the stationary toothed disk C, arm D, revolving disk E, pinion F, globes I and J, and arm L.

7. In a combined tellurian and lunarian, the stationary base-frame, the central disk, the outer disk revolving around the central disk, the sun and moon globes applicable to the disks and interchangeable at will, in combination with diagrams and graduations indicating the months and seasons applied to the two disks and base, as described and shown.

8. The disks C and E, having teeth formed in their under inner edges, in combination with the supporting-arm D and the intermediate pinion, F, having its outside constructed and arranged to engage with the under edges of the disks, as and for the purpose described.

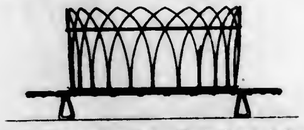
9. The combination of a central stationary disk provided with an eccentric inclined socket, the horizontally-revolving arm, the pinion, the outer disk mounted upon the arm, and also provided with an eccentric inclined socket, and the two interchangeable globes adapted for application to the sockets, as described and shown.

10. The disk E, arranged to revolve upon its own axis and also around the central disk, and provided with the vertical socket *d* and inclined socket *e*, adapted to receive the globes, as described and shown.

11. In combination with the revolving arm, the disks C and E, constructed and arranged to operate as described, the earth-globe upon the outer disk, the central sun-globe, J, the connection K, extending from the outer end of arm D to the central globe, J, independent of the outer globe, and the pointer *g*, as described and shown.

12. A miniature comet consisting of a standard provided with a pointer and an expanded tail extending in opposite directions, as described and shown.

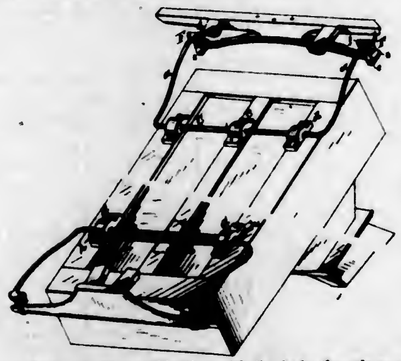
254,230. DISH-DRAINER. THOMAS W. MCFARLAND, Chicago, and CLARA L. FORD, Palatine, Ill.; said Ford assignor to said McFarland. Filed Sept. 13, 1880. (No model.)



Claim.—1. The combination, with the inner shell or receptacle and with or without the outer shell, of a wire bottom provided with a surrounding ring, and connected with and extending outside the inner shell and forming a support for the dishes, as and for the purpose set forth.

2. The combination, with the inner shell and with the wire bottom extending outside the same for supporting the dishes, of a ring surrounding said bottom and having supporting-legs formed by bends in said ring, substantially as and for the purpose described.

254,231. SPRING FOR VEHICLES. RICHARD HOLMOLLAND, Dunkirk, N. Y. Filed Sept. 27, 1880. (Model.)

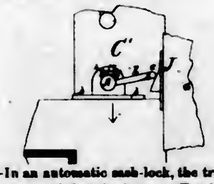


Claim.—1. The combination, with the body, the axle or end bar of a vehicle, and torsion spring or springs, of the boxes G, having square or equivalent formed seats *h*, and circular bearings *i*, over which are placed caps *m*, substantially as and for the purpose specified.

2. The combination, with a torsion and semi-elliptical spring of the coupling device consisting of the shackles F, having eye-plates *e f*, arranged with relation to each other as shown, and for the purpose described.

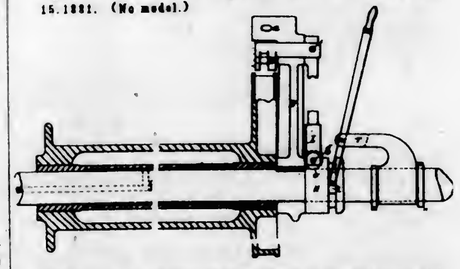
3. In a vehicle, the shackle F, constructed substantially as shown and described, and having the rubber or elastic cushion *g* extending upon both sides of the bed portion thereof, substantially as and for the purpose set forth.

254,232. SASH-FASTENER. THOMAS OXTON, Chicago, Ill. Filed Oct. 13, 1881. (No model.)



Claim.—In an automatic sash-lock, the tripping-lug J, placed on the side casing, and the tripping-arm E *e*, in combination with each other and with the spring-bolt and its casing, slotted as described, and having the rounded shoulder or shoulders A, the said bolt and its casing placed on the top of the lower sash and the receiving-sockets on the side rail of the upper sash, substantially as specified.

254,233. FRICTION-CLUTCH. RALPH E. OSGOOD, Troy, assignor to Osgood & MacNaughton, Albany, N. Y. Filed Dec. 15, 1881. (No model.)



Claim.—1. In a friction-clutch, a rocking lever connected with the friction-band, said lever being mounted in an arm keyed to the revolving shaft and provided with a crank, inclined as explained, a clutch-shipper mounted upon the revolving shaft and movable in the direction of the length thereof, and a connecting-rod having multiple joints, the several parts being combined and arranged to operate substantially as explained.

2. The clutch-collar movable in the direction of the axis of the shaft, a jointed connecting-rod hinged at its base to the clutch-collar and at the opposite end swiveled upon the crank of the rocking lever, the crank movable parallel with the face of the drum, the several parts being combined and arranged to operate substantially as shown and described.

3. In combination with the crank which controls the rocking lever, the thimble mounted thereon and journaled in the forked section of the coupling-rod, the base-section of said rod being hinged to the clutch-collar, substantially as and for the purpose set forth.

4. In a friction-clutch, the combination, with the clutch-collar made movable back and forth upon the shaft, of a traveling wheel mounted in said collar and bearing upon the shaft, substantially as and for the purpose set forth.

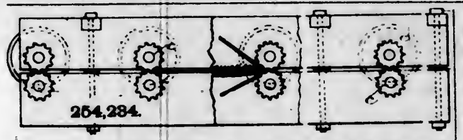
5. In combination with the drum-head, the wooden segments or blocks forming bearing-surfaces for the band, the same being held in place by and bearing against the ledges formed in or on the drum-head, substantially as shown and described.

6. The herein-described wooden blocks or segments forming the bearing-surface for the band, the same being held in place by the ledges formed in or on the drum-head and grooved for the reception of an angular band, substantially as and for the purpose set forth.

254,234. ASSORTING-MACHINE. SAMUEL M. PARK, Chicago, Ill. Filed Dec. 31, 1881. (No model.)

Claim.—1. An assorting-machine provided with sets of feed-rolls arranged at varying distances apart, substantially as described.

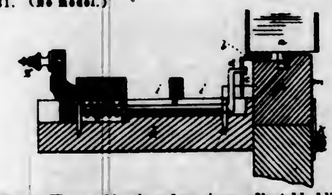
2. In an assorting-machine, the combination, with the sets of feed-rolls arranged at increasing distances apart, of the inclined guides, substantially as hereinbefore set forth.



3. In an assorting-machine, the combination, with the series of lower feed-rolls, of the series of upper feed-rolls, set somewhat in advance thereof, and a series of inclined guides, substantially as described.

4. In an assorting-machine, a tray or receptacle having an inclined bottom and a longitudinal slot therein, as described.

254,235. BLIND-SLAT ADJUSTER. CHARLES H. PHILLIPS and EDWARD C. GARDNER, East New York, N. Y. Filed Nov. 21, 1881. (No model.)



Claim.—The combination of a series of adjustable blind-slats *a*, provided with a connecting-strip, *b*, and stirrup *c*, a lever, *e*, provided with spring *g* and beveled seat *i*, and a window-frame, *h*, to which said lever is permanently attached, substantially as and for the purposes described.

254,236. BASKET. WILLIAM PHIPPS, Newark, N. J. Filed Jan. 12, 1882. (No model.)

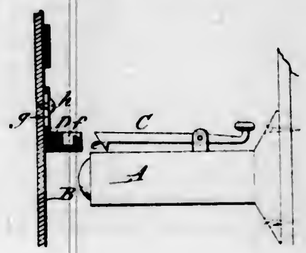


Claim.—1. In a meat-basket, the combination of the body A, band B, and stiffening-bars D, secured to the said band and body by rivets *b* and burrs *b'*, substantially as herein shown and described.

2. The combination, with the body A and band B, of four stiffening-bars, D, cut and forced inside the band in the manner described, and secured to the band and body by rivets *b* and burrs *b'*, as herein shown and described.

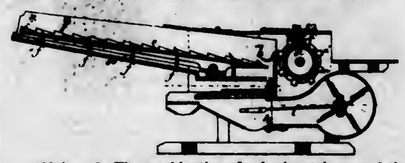
3. In combination with the body A, band B, attached to its upper edge, and corner-brackets E, secured to the inner or outer corners as described, the strap F, secured to the corners of the basket and extended to or under the bottom, as and for the purpose described.

254,237. DOOR-CHECK. JEREMIAH PICKERING, Lees, Iowa, assignor of one-half to J. A. Ray, same place. Filed July 19, 1881. (No model.)



Claim.—In a combined door-check and bumper, the stud A, having elastic bumper B, and latch C, provided with knob *e* and catch *e*, in combination with the adjustable latch-plate D, having recess *f*, slot *g*, and adjusting-screw *h*, substantially as and for the purpose shown and described.

254,238. THRASHER AND SEPARATOR. WILLIAM PIERPONT, Salem, N. J. Filed Mar. 29, 1880. (No model.)



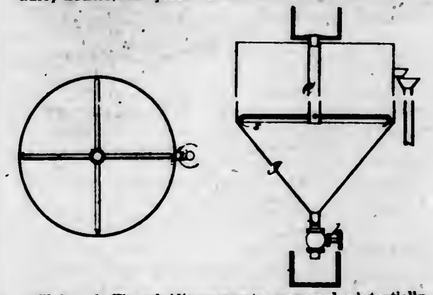
Claim.—1. The combination of a horizontal grooved thrashing-cylinder having teeth on its periphery with a narrow-toothed concave or breast, *m*, located above it, where the grain is thrashed, and means for intercepting the grain-dust, &c., passing from the cylinder, for the purpose and in the manner specified.

2. In combination with parts *c d* of the separator, moving in opposite directions to each other, the pins *f*, affixed to *d* and moving through oblong slots in *c*, in the manner and for the purposes specified.

3. The combination, in a riddle-shoe having the central suspension at the rear of the stationary frame, as described, and the straight connecting-rods *i i*, rigidly attached to the sides of the shoe and connecting it with the sunk cranks on the fan-shaft, as and for the purposes specified.

4. The combination, with the overshot thrashing-cylinder and concave and the oscillating separating-table, of the concave plate *b*, arranged tangentially, or substantially so, to the cylinder, substantially as herein set forth.

254,239. ART OF MANUFACTURING STARCH AND APPARATUS THEREFOR. EDWIN READ, Buffalo, N. Y., assignor to Harry Hamlin, same place. Filed Jan. 26, 1882. (No model.)



Claim.—1. The subsiding apparatus composed substantially, as before set forth, of the tank, the inlet-pipe, the outlet, and the overflow.

2. The process, substantially as before set forth, of concentrating starch from the running starch-milk by causing the same to flow at a slow speed through a tank in an upward direction.

3. The process, substantially as before set forth, of concentrating starch continuously from the running starch-milk by causing the same to flow slowly through a tank, permitting the larger portion of the liquid to overflow at the upper part of the tank, and withdrawing the concentrated residue from the bottom of the tank.

254,240. PROCESS OF AND APPARATUS FOR TREATING THE REFUSE OF STARCH AND OTHER SUBSTANCES. EDWIN READ and HARRY HAMLIN, Buffalo, N. Y.; said Read assignor to said Hamlin. Filed Jan. 26, 1882. (No model.)

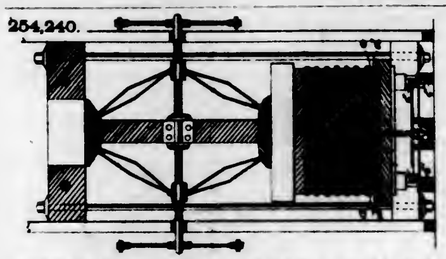
Claim.—1. The process, substantially as before set forth, of preparing animal food from the refuse of the starch-manufacture by subjecting the wet material to graduated pressure, disintegration, and heat, substantially as before described.

2. The combination, substantially as before set forth, of the disintegrating mechanism and the drying mechanism.

3. The combination, substantially as before set forth, of the disintegrating mechanism, the feeding device, and the drying mechanism.

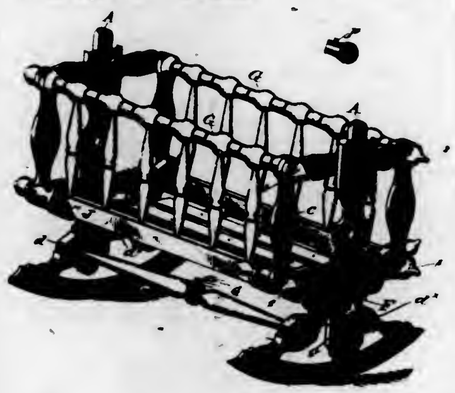
4. The combination and arrangement of mechanism for operating upon the wet refuse of the starch-manufacture, comprising the elastic rollers by which the first grade of pressure is applied,

254,240.



the press by which the second grade of pressure is applied, the disintegrating mechanism, the feeding mechanism, and the drying mechanism, all substantially as before set forth.

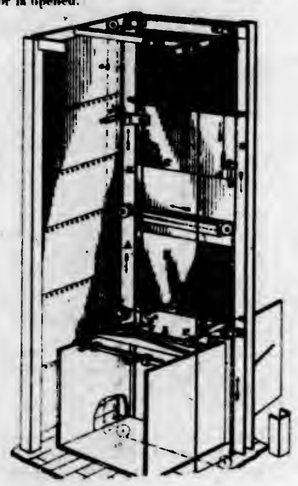
254,241. FOLDING CRADLE. JOHN Y. SAILOR, Tiffin, Ohio. Filed Sept. 17, 1881. (No model.)



Claim.—The combination of lock-boards A, having slots F, cross-legs *d d d x d x*, center under round, G *x*, and buttons *e x*, all substantially as and for the purpose shown and described.

254,242. HOIST. WILLIAM F. SEXTON, Sr., and WILLIAM F. SEXTON, Jr., Toronto, Ontario, Canada. Filed Apr. 25, 1881. (No model.)

Brief.—Adjustable catches on the cage engage projections on the doors or on an endless band connected to the doors, the doors being operated by an endless band and branch ropes. A projection on the door engages a stop on the check-rope and operates it when the door is opened.

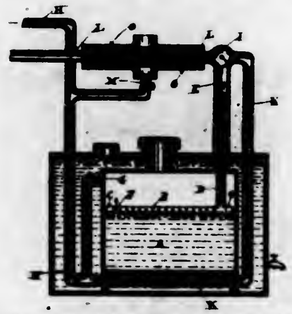


Claim.—1. In a hoist provided with independently-acting doors, an endless rope or band provided with branch ropes or bands connected to the doors, in combination with a cage provided with movable arms and projecting catches or brackets on the endless rope or the doors, substantially as and for the purpose specified.

2. In a hoist, a sliding door provided with a projecting arm, in combination with stops on the check-rope, and the check-rope, whereby the motive power moving the cage is stopped by the opening of the door, substantially as specified.

3. In combination with an endless rope or band having branch ropes and catches or projections on the cage, and sliding doors or endless rope, as described, a projecting arm on one of the sliding doors and stops on the check-rope, substantially as and for the purpose specified.

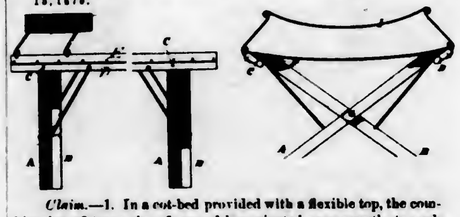
254,243. DEVICE FOR CARBURETING GAS OR AIR. DEXTER H. SMALL, East Providence, R. I. Filed Mar. 7, 1881. (No model.)



Claim.—1. The combination, in a carburetor, of the tank A, float B, pipes D and E, and pipes H, K, and L, with a valve at I, constructed to operate substantially as described.

2. The combination, in a carburetor, of a heating-chamber, O, constructed with partitions therein to form a narrow channel, in connection with the pipes M and L, all substantially as described.

254,244. FOLDING COT-BED. JAMES I SPENCER, Chelsea, Mass., assignor to Herman W. Ladd, same place. Filed June 18, 1879.



Claim.—1. In a cot-bed provided with a flexible top, the combination of two pairs of crossed legs pivoted permanently to each other at their crossing points, two side rails pivoted to said legs and extending without joint from head to foot of the cot, and diagonal braces permanently connecting said legs and rails, said flexible top and continuous side rails being wholly supported by the two pairs of crossed legs, the said rails adapted to yield and the whole adapted to fold, substantially as described, without disconnecting any of the supports or diagonal braces, for the purpose set forth.

2. The combination, substantially as described, of the frame with crossing legs pivoted thereto, united at their intersection by the bolt or rivet G, for the purpose set forth.

3. In a cot-bed provided with a flexible top, the combination of side rails supporting said top with crossing pivoted legs cut diagonally at their upper ends to avoid contact with said flexible top when it is depressed by the weight of the occupant, and metallic strengthening-pieces secured rigidly to the legs and pivoted to the side rails, so as to permit said legs to swing toward the longitudinal center of the bed when the sides approach each other, as set forth.

4. The combination, in a cot-bed substantially as described, of a flexible bolster suspended from spring-standards erected upon the side rails, with a flexible top supported by said rails and crossing pivoted legs, whereby the spreading of the legs in the use of the cot increases the tension of the bolster, for the purpose set forth.

5. The combination of the folding bed or cot frame with folding bolster-supports connected with the side rails, substantially as described, so that upon the folding of the leg-frames the bolster may be automatically folded, as set forth.

6. In a cot-bed provided with a flexible top, the combination and arrangement of the side rails, D D, and crossing legs A B, united to said rails by pivots C C, one of each pivots of each pair of legs being located higher on the side rail and farther from its end than the other, substantially as and for the purpose set forth.

7. As a new article of manufacture, a cot-bed consisting of a flexible top and side rails which support said top, with a flexible bolster mounted on spring-standards in said side rails, and with pivoted crossed legs which fold into parallelism with the frame when the side rails approach each other, substantially as set forth.

8. In a cot-bed, the combination of a flexible top secured only to the side rails with a flexible bolster mounted on spring-standards erected upon said rails, for the purpose set forth.

9. A folding cot-bed having a flexible bolster elevated horizontally above the side rails, as shown, and a flexible top secured only to said rails, in combination with supporting-legs adapted to fold into parallelism with the side rails when they approach each other, for the purpose set forth.

254,245. DOOR-HANGER. ALBERT L. SWEPT and WILLIAM H. SAMSON, Medina, N. Y. Filed July 11, 1881. (No model.)



Claim.—1. In a door, the combination of a plane-faced track and a carrying roller or wheel, R, mounted on said track, and having two treads, *a a*, of equal diameters, with an intervening circumferential recess, *r*, substantially as described and shown, for the purpose specified.

2. The combination, with a suspended sliding door, of the roller *c*, the plate *d*, extended over the roller and secured to the door by bolts *b b*, passing vertically through the ends of said plate and into the top of the door, and the pivotal pin *e*, inserted through the plate *d* and into the top of the door, substantially as described and shown.

254,246. CATTLE-CAR. HARVEY TOWNSEND, Alameda, Cal. Filed July 28, 1880. (No model.)



Claim.—1. A stock-car divided by two longitudinal partitions into two side compartments, having between them a clear central passage extending throughout the length of the car, in combination with transverse passages and with swinging doors E, forming when closed a portion of the flooring of the central passage, the stock being carried in the side compartments only.

2. The combination and arrangement of the side divisions, B and C, with the transverse passages G H I, when operated in connection with the trap-doors D, E, and F and the cross-bars S, substantially as and for the purposes set forth.

254,247. MANUFACTURE OF ARTIFICIAL STONE. STEPHEN TRUSC, Avoca, Ill. Filed Jan. 3, 1882. (No specimens.)

Claim.—1. The herein-described solution, consisting of water, rye-flour, Lewis's or any other lye, and common salt, combined in suitable proportion, for the purpose of producing the crystallization of the artificial stone, as specified.

2. An artificial stone composed of sand and cement moistened with a solution composed of water, rye-flour, Lewis's or any suitable lye, and common salt, substantially as set forth.

254,248. SPRING FOR KEEPING PITMEN OFF DEAD-CENTERS. CHARLES A. VAN ALLEN, Chicago, Ill., assignor to Robert K. Scott, Napoleon, Ohio. Filed June 18, 1881. (No model.)

Claim.—1. The combination, with a pitman and with its operating-treadle, of a spring connected with said pitman and treadle, and adapted to throw the pitman off its dead-centers, substantially as described.

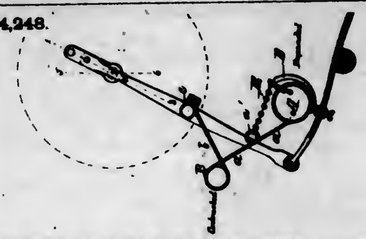
2. The combination, with a pitman and treadle, of an actuating-spring consisting of two or more coils, and adapted to simultaneously contract and expand, for the purpose set forth.

3. The combination, with a pitman and treadle, of a spring having two or more coils simultaneously expanding and contracting, and a tension chain or cord connected with and adapted to limit the expansion of one of said springs.

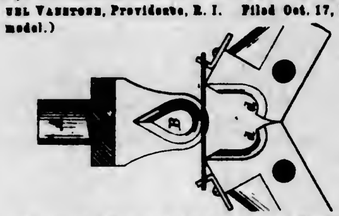
4. In a sewing-machine, the combination, with the pitman and treadle, of a spring consisting of the coils A B, an arm, *a*, connecting said coils, and an arm *b*, connecting the coil B with the pitman.

5. The combination, with the coils A B and arms *a b*, connecting said coils with each other and with the pitman and treadle, of an arm, D, and a tension chain or cord connecting the arm *a* with the arm D, substantially as and for the purpose set forth.

254,248.

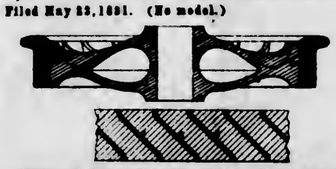


254,249. MACHINE FOR BENDING CLEW-THIMBLES. SAMUEL VAUGHTON, Providence, R. I. Filed Oct. 17, 1881. (No model.)



Claim.—In a machine for forming clew or other thimbles, the combination, with the follower A and the former B, supported in the cheeks E E, of a yielding two-part die constructed to bend the thimble around the former, as described.

254,250. CAR-WHEEL. NATHAN WASHBURN, Alleton, Mass. Filed May 23, 1881. (No model.)

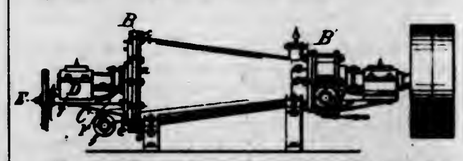


Claim.—1. In combination with a railway-car wheel having its body of cast-iron and its tire of steel, and united to the rim in the process of casting the body, a series of wrought-iron bars or re-enforces arranged obliquely, as described, in the tire, the latter being cast upon them, as set forth.

2. In combination with a railway-car wheel having its body of cast-iron and its tire of steel, and united to the rim in the process of casting the latter, a series of wrought-iron re-enforces, substantially as described, arranged in the body or rim and in close contiguity with the tire, all essentially as and for the purpose specified.

3. A car-wheel made of cast iron or metal, and having within its rim wrought-iron bars or re-enforces arranged therein obliquely, the metal of the part containing them being cast upon such re-enforce in the process of making the wheel.

254,251. PAPER-PULP ENGINE. JOHN R. ANDS, South Windham, Conn. Filed Nov. 16, 1881. (No model.)



Claim.—1. In a paper-pulp engine, the shell having slotted flanges projecting from the sides thereof, at each end, in combination with the heads of corresponding diameters and correspond-

ingly slotted, substantially as described, and for the purpose specified.

2. In a paper-pulp engine, the pipe-connections consisting of the short piece C and the flanges *e f*, substantially as described, and for the purpose specified.

3. In a paper-pulp engine, the combination of the head B, box-supporting frame F, having ways *k k*, the feed-screw E, box D, connected to said screw, and the cone and its shaft connected to said box, all substantially as described, and for the purpose specified.

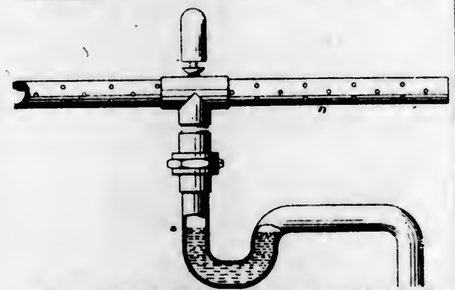
254,252. BUTTON OR STUD. GEORGE H. ADAMS, Providence, R. I. Filed Dec. 17, 1881. (No model.)



Claim.—In a sleeve-button composed of the front A, hinged shoe B, and slotted post C, having at its lower end the transverse bar *e*, provided with ends projecting beyond the sides of said slotted post, the combination, with the bar *e*, of the slotted cap-plate *a*, having three bearings, *a' a'*, adapted to engage with said bar, and two springs, *b b*, inclosed within the shoe, beneath said plate, and adapted to bear against the bar at the end of the post, thereby holding the shoe securely in a horizontal or vertical position, as specified.

254,253. AUTOMATIC FIRE-EXTINGUISHER. EDWARD H. ASHCROFT, Lynn, Mass. Filed July 5, 1881. (No model.)

Brief.—Between the perforated distributing-pipe and the steam-supply pipe is a fusible diaphragm adapted to be melted by the increase of temperature in the apartment where it is located. In order that the fusible diaphragm may not be affected by the direct action of the steam a liquid cut-off is provided on the supply side thereof.



Claim.—The combination of the steam-supply pipe, the delivery-pipe, and a fusible plug or diaphragm, and water-chamber or cut-off upon the supply side of said plug or diaphragm, all arranged and adapted to operate substantially as described.

254,254. BIRD-CAGE PERCH. JOSEPH BAGOT, Brooklyn, N. Y. Filed Dec. 31, 1881. (Model.)



Claim.—1. A bird-cage perch made substantially as herein shown and described, and consisting of the rubber perch with attached hooks, as set forth.

2. In a bird-cage perch, the combination, with the ends of the perch A, of the ferrules B and the catches C, having wedge-shaped inner ends, substantially as herein shown and described, whereby said perches and catches are firmly connected, as set forth.

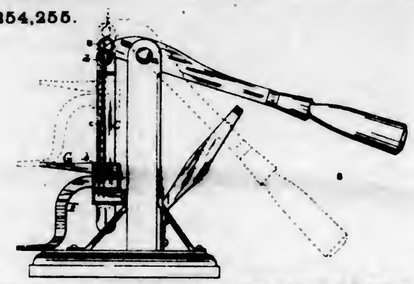
3. In a bird-cage perch, the catches C, having hook-shaped outer ends and wedge-shaped inner ends, in combination with the hollow rubber perch and cage-wire, substantially as herein shown and described, whereby the said catches are adapted for use in connecting the perch with the cage, as set forth.

4. The combination, with the rubber tube A, of end catches, whereby the said tube is adapted for use as a bird-cage perch.

254,255. LIFTING-JACK. SELAH H. BAIRD, Rolly, Mich. Filed Aug. 30, 1881. (No model.)

Claim.—1. The bent and curved arm F and the horizontal arm G, both sliding on the vertical shaft C, substantially as shown and described, and for the purposes set forth.

2. The chain *e*, attached to the horizontal arm G, and passing



through the eye *d*, attached to the upper end of the shaft C, in combination with the bent and curved arm F and the horizontal arm G, substantially as shown and described, and for the purposes set forth.

254,256. BRACELET. WILLIAM H. BALL, Newark, N. J. Filed Nov. 9, 1881. (No model.)

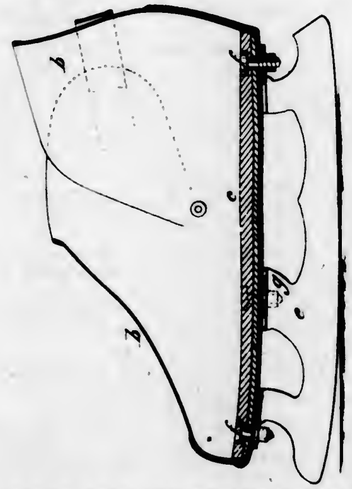


Claim.—1. The combination of the eye *b*, having an upper interior lug, *b'*, and the eye *b'*, having opening *a'*, with the sleeve C, provided with notch *c*, and its inclosed spring D, having impinging point *d* and extending arm *d'*, substantially as described.

2. In a segmental bracelet, the curved flanges B B', the eyes *b b'*, and the sleeve C, in combination with the coiled spring D, having impinging point *d* and extending arm *d'*, and the pivotal post E.

3. In a two-part bracelet joined by a spring-pressed hinge, each wing having a curved segmental flange provided with eyes *b b'*, in combination with the coiled spring D, having impinging point *d* and extending arm *d'* inclosed within sleeve C, and the pivotal pin E, substantially as described.

254,257. SKATING-SHOE. WILLIAM J. BARBER, Wallingford, Conn. Filed Aug. 15, 1881. (No model.)

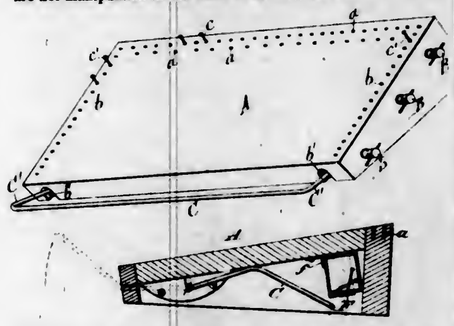


Claim.—1. A skating-shoe consisting of the rubber portion *a*, the water-proof cloth *b*, and the rubber-surfaced sole *c*, having holes for the head and shank of screws, as shown and described.

2. The combination of the screws *f*, the sole *c*, having holes for their heads and shanks, and the internally-threaded lugs on the front and rear of a skate, *c*, whereby said sole and skate may be fastened together, as shown and described.

254,258. DESK FOR MAKING MACRAMÉ LACE. THOMAS BARRON, Paterson, N. J. Filed Dec. 6, 1881. (No model.)

Brief.—The desk is provided with a folding horizontal bar for holding the ends of the fringe-forming threads that have been ordinarily held by attaching them to a button on the dress of the operator. Provision is made for pins in the top of the desk, and cleats are secured in the ends to hold the ends of the threads which are not manipulated in the work of making the lace.

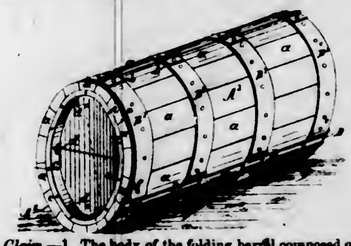


Claim.—1. The combination, with the lace-desk A, of the horizontal bar C, having arms C' C', and adapted to be turned outward for holding the threads and to be folded beneath the desk when not required for use, substantially as described.

2. The combination, with the desk A, having notches *b' b'*, recesses *d d*, and springs E E, of the folding bar C, having arms C' C', provided with eccentric lugs *e e*, substantially as described.

3. The combination, with the desk A, having cleats B B and perforations *a b*, for the reception of pins *c c'*, of the folding bar C, having arms C' C', provided with eccentric lugs *e e*, adapted to be held rigidly in position by means of springs E E, substantially as shown and described.

254,259. FOLDING BARREL. ARMISTEAD BARKSDALE, Statesville, N. C. Filed Aug. 26, 1881. (Model.)



Claim.—1. The body of the folding barrel composed of stave-sections and bands which are connected by links C and D, the width of one of which equals the thickness of the staves, and devices for fastening the free ends of the bands, all as shown and described.

2. The improved folding barrel consisting of the sections composed of staves attached to bands, which are hinged together, and the removable heads F, the hoops G, secured to the heads, and the detachable bolts provided with thumb-nuts and applied as shown, for securing said heads detachably to the body of the barrel, as shown and described.

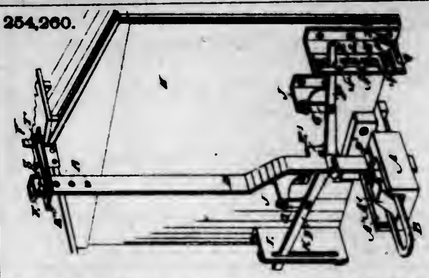
254,260. CAR-COUPLING. JEFFERSON E. BARRETT, Mount Vernon, Iowa. Filed Sept. 30, 1881. (No model.)

Claim.—1. The bar D, having two lugs, D' D', recess D^2, and flanges D^3, in combination with a draw-head having the vertical slot C, as and for the purpose specified.

2. The bar D, having a bent arm, E', connected by a pintle with the oppositely-extending levers F F, as shown and described.

3. In a car-coupling, the combination, with the draw-head A, provided with a U-shaped groove, A', of the bar D, the levers F, the connecting-bars G, and the brackets J, projecting from the car H, substantially as herein shown and described, and for the purpose set forth.

4. In a car-coupling, the combination, with the draw-head A, of the bar D, the levers F, the plates L, each provided with a vertical slot, K, and of the pivoted bars M, provided with teeth N' N^2, substantially as herein shown and described, and for the purpose set forth.

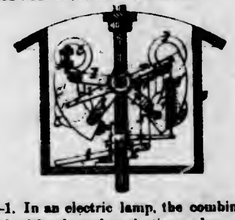


5. In a car-coupling, the combination, with the plate L, provided with a slot, K, of the pivoted bar M, provided with teeth N' N^2, &c., the guide-plate Q, and the latch P, substantially as herein shown and described, and for the purpose set forth.

6. In a car-coupling, the combination, with the plate L, provided with a slot, K, of the pivoted bar M, provided with a series of teeth, N' N^2, &c., and having its lower end, M^2, bent rectangularly, and of the pivoted latch P', provided with the lugs P' P^2, at the opposite ends, substantially as herein shown and described, and for the purpose set forth.

7. In a car-coupling, the combination, with the draw-head A, of the bar D, provided with a series of apertures, E, the slotted guide-plate E^2, the latch T, and the handle S, and the levers F, substantially as herein shown and described, and for the purpose set forth.

254,261. ELECTRIC LAMP. FRANKLIN H. BERRS, Newark, N. J., assignor, by mesne assignments, to the Metropolitan Electric Light and Power Company of the United States, New York. Filed June 27, 1881. (No model.)



Claim.—1. In an electric lamp, the combination of a rock-shaft provided with a lateral projection or lug, an armature connected with said shaft and arranged to oscillate in a vertical plane, and a clamp connected with the projection or lug on the rock-shaft, and operated thereby through the oscillating armature to lift the upper carbon, with two electro-magnets arranged at right angles to the plane of oscillation of the armature, one of said magnets being connected with the dynamo-electric generator and the other being in a circuit which includes the carbon sticks, substantially as and for the purposes described.

2. The combination, substantially as hereinbefore described, of the carbon sticks and their holders, the electro-magnets C D, the cores of which extend parallel to each other and at right angles to the carbon-holder *d*, the rock-shaft H, the armatures C' D', secured to a spider which is mounted on said rock-shaft, and the clamp L, connected to an arm extending from the rock-shaft.

3. The combination, substantially as hereinbefore described, of the carbon sticks and their holders, the electro-magnets C D, the rock-shaft H, the armatures C' D', secured to a spider mounted on said rock-shaft, the lever *l m*, set-screw *n*, bell-crank lever *i h*, adjusting-screw *h*, and spring *g*.

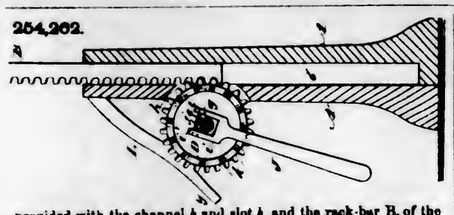
4. The combination, with the horizontal rock-shaft, the oscillating armature, and electro-magnets, of a depending rod, K, connected with the rock-shaft, a lever, *q*, pivoted to the lower end of the rod, and two jaws, *r r*, having a pivotal connection with the lever on opposite sides of the carbon, substantially as described.

254,262. LIFTING-JACK. JONATHAN BRIDE, Slippery Rock, Pa. Filed Jan. 3, 1882. (No model.)

Claim.—1. In a lifting-jack, the frame composed of the part A, provided with the longitudinal channel *b*, and the part A', provided with the slot *h'*, and bolted to the part A, substantially as herein shown and described.

2. In a lifting-jack, the combination, with the frame A A',

254,262.



provided with the channel *b* and slot *b*, and the rack-bar B, of the shaft *g*, provided with the grooved enlargement *e i*, the pinion D, provided with the projections *k*, and the lever J, provided with the arms *i'* and the pin *j*, substantially as and for the purpose set forth.

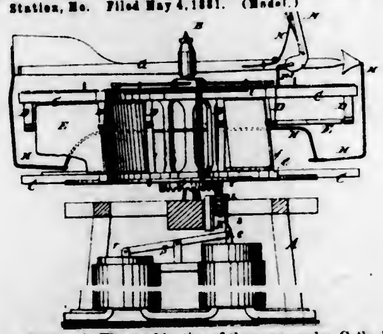
3. In a lifting-jack, the combination, with the frame A A', provided with the channel *b* and the slot *b*, and the rack B, of the shaft *g*, provided with the grooved enlargement *e i*, the pinion D, provided with the projections *k* and ratchet *l*, the lever J, provided with the arms *i'* and the pin *j*, and the pawl L, substantially as and for the purpose set forth.

254,268. COMPOUND FOR ETCHING VITREOUS SURFACES. PAUL BITTERLIN, Jr., Paris, France. Filed Mar. 7, 1881. (No specimens.) Patented in France Jan. 21, 1880.

Claim.—1. A compound for etching glass, consisting of hydrofluoric acid mixed with some finely-divided material which the acid will attack, as described.

2. A compound for varying the etched surfaces of glass, consisting of hydrofluoric acid mixed with a finely-divided material which the acid will not attack, as described.

254,264. WINDMILL. CHRISTOPHER C. BOMBERGER, Crooker Station, Mo. Filed May 4, 1881. (Model.)



Claim.—1. The combination of the upper spokes C, the hangers D, carried by said upper spokes, the sails E, pivoted in said hangers, and the lower spokes C, provided with the ribs or shoulders *f*, as herein shown and described.

2. The vane G and the rod H, arranged, as shown and described, in combination with the pivoted sails E, substantially as and for the purpose herein set forth.

3. The fan M, spring *n*, and arms P P', in combination with the branches L L' and shaft J, as shown and described, for the purpose specified.

4. The combination of rings *i*, the shaft J and its arm *k*, branches L L', and arms P P' with the pivoted sails E, as shown and described, for the purpose specified.

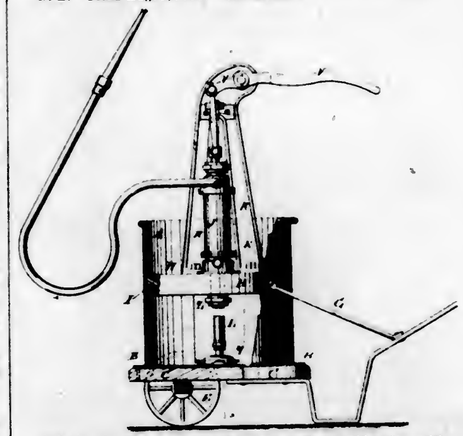
254,265. ELASTIC WATER-BED. EDWIN J. BUSH, South Boston, Mass. Filed Dec. 17, 1881. (No model.)



Claim.—1. Elastic water beds, mattresses, cushions, pillows, &c., made of thin rubber, rubber cloth, or other suitable material, having cells or divisions which are inflated by filling the beds, &c., with water, or with water and air combined, as described in the specification and shown on the drawings.

2. An improved and direct means of circulating water through the beds and rapidly changing the temperature, as set forth in specification.

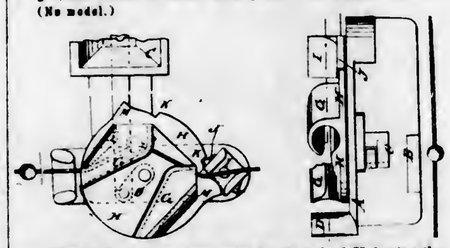
254,266. PORTABLE FORCE-PUMP. SAMUEL BOSSEN, Dover, N. H. Filed Aug. 8, 1881. (No model.)



Claim.—1. In a portable force pump, the combination, with the wheels and axle E D, of the platform C, the tank A, having a flange, B, around its bottom, the handle F, bent to form a foot and stirrup, and the handle-braces G, substantially as herein shown and described, whereby the pump and the liquid to be thrown by the pump can be readily held and carried, as set forth.

2. In a portable force-pump, the combination, with the tank A and the pump-barrel J, of the semicircular plate H, having its straight edge flanged, and the wooden strengthening-block I, substantially as herein shown and described, whereby the pump-barrel can be securely supported, as set forth.

254,267. CHECK-ROW CORN-PLANTER. LYCURGUS J. BOSWORTH, Monmouth, Ill., assignor to himself, A. Theny Clippinger, and James B. Clark, same place. Filed Sept. 14, 1881. (No model.)



Claim.—1. In a check-row planter, the wheel H, having the channels G G, bent at their rear ends and open at their inner sides, in combination with the rope or wire having balls at intervals, as and for the purpose described.

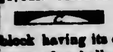
2. In a check-row corn-planter, the combination, with the wheel H, having shoulders K and inclined projections M, and the pivoted guide I, of the double pawl J, whereby the said wheel is held in place and prevented from rebounding, as set forth.

254,268. UNDERGROUND-TELEGRAPH LINE. DAVID BROOKS, Philadelphia, Pa. Filed Nov. 7, 1881. (No model.)



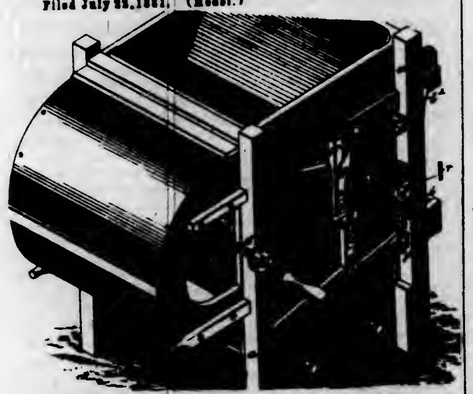
Claim.—The mode herein described of preventing the escape of insulating-fluid from the terminal pipes of underground-telegraph lines—that is, which consists in compressing paraffine or similar material around the wires in the pipe near the end of the pipe.

254,269. SLAB OR BLOCK FOR PAVEMENTS OR FLOORS. CALVIN BROWN, Vallejo, Cal. Filed Jan. 23, 1882. (No model.)



Claim.—A paving-block having its outer edge of a continuous thickness and the lower surface hollowed out, substantially as shown, whereby the sand or other material in which the block is laid may crowd up beneath the block, substantially as set forth.

254,270. GRAIN-SEPARATOR. JOHN BAUER, Albany, Oreg. Filed July 23, 1881. (Model.)

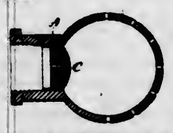


Claim.—1. The combination, with the shoe *l*, frame *a*, and hangers F F, the shoe being provided with the angular plate *m*, having a series of adjusting-holes, *m'*, of the shoe *l'*, arranged under the shoe *l*, and hangers F F, the lower shoe being provided with angular plate *n*, having adjusting-holes *n'*, bell-crank lever *j*, provided with a series of adjusting-holes, coupling-hooks *o*, and operating mechanism, substantially as described.

2. The combination, with the upper shoe, *l*, frame *a*, and hangers F F, the shoe being provided with the opposite perforated lugs *q*, of the lower shoe, *l'*, lying under the shoe *l*, and provided with opposite holes in the upper edges of the sides, and pins *r*, substantially as described, and for the purpose set forth.

254,271. FIRE-EXTINGUISHER. ALBERT M. BURRITT and ANGELO C. BURRITT, Waterbury, Conn., assignors to the A. Burritt Hardware Company, same place. Filed Dec. 24, 1881. (No model.)

Brief.—A hard-metal ring is secured in the water-way, which ring receives a soft-metal plug, which is adapted to be fused to open the passage for the water.

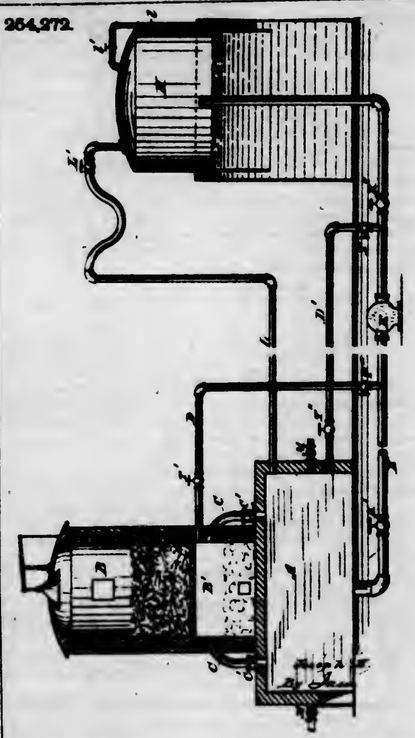


Claim.—The herein-described improvement in fire-extinguishers, consisting of the plug composed of the hard-metal ring A and the fusible part C, filling said ring, and the plug secured in the water-way by means of said hard-metal ring, substantially as described.

254,272. METHOD OF AND APPARATUS FOR ANNEALING AND TEMPERING GLASS. JOSEPH M. CAMPBELL, New York, N. Y., assignor of one-fourth to James McLain, Washington, D. C. Filed Jan. 24, 1882. (No model.)

Claim.—1. The method herein described of annealing and tempering glass and other articles, the same consisting in subjecting such articles to the action of gases heated and in motion, whereby the crystals are formed or are arranged in the line of direction of the traveling currents of the heated gases, as set forth.

2. The method herein described of annealing and tempering



glass, &c., the same consisting in submitting the articles to be annealed or tempered to the action of heated gases in motion until the proper degree of heat has been attained, and then to the action of said heated gases under regulated pressure until the desired molecular rearrangement, crystallization, or polarization has taken place, and finally cooling such articles by subjecting them to the action of carbonic-acid gas and nitrogen gas, as set forth.

3. The method herein described of annealing and tempering glass, &c., the same consisting in submitting the articles to be annealed or tempered to the action of heated carbonic-oxide gas and nitrogen gas in motion, as set forth.

4. The method herein described of annealing and tempering glass, &c., the same consisting in generating the gases for annealing or tempering the articles in a furnace, substantially such as described, and conveying the same direct in a heated condition to the annealing or tempering chamber, as set forth.

5. The furnace B, ash-pit B', pipes C, and sleeves C', in combination with the chamber A, pipe K, pressure blower or pump E, and gasometer H, whereby the articles in the chamber A are annealed or tempered by the passage therethrough of the heated gases, as set forth.

6. The furnace B and ash-pit B'; in combination with the pipes D D', pressure blower or pump E, valves K' K'', and chamber A, whereby the articles are annealed or tempered under pressure of the heated gases, as set forth.

7. The gasometer H, pipe L, and valve L', in combination with the annealing or tempering chamber A and pipes M M, whereby the cooling-gases from the gasometer are admitted to the annealing or tempering chamber and the articles cooled rapidly or slowly, as may be desired.

8. The method herein described of cooling annealed or tempered articles by convection, as set forth.

254,273. MANUFACTURE OF COACH-LAMPS AND DIES THEREFOR. FRED C. CANNON, New Haven, Conn. Filed Oct. 6, 1881. (No model.)

Claim.—1. The method herein described of making coach-lamp reflectors or linings, consisting in first spinning the center to produce the concave portion, then striking up the surrounding portion to produce the convex surface, and at the same time to

254,273.



form the projecting flange A around the edge of the reflector, substantially as described.

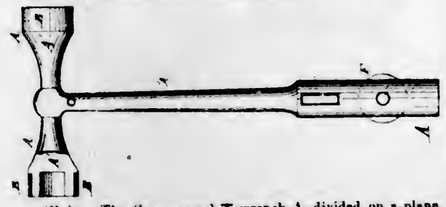
2. The dies for forming coach-lamp reflectors or linings, consisting of the part A, with a recess, B, therein, of the shape of the reflector required, combined with the part C, having a projection, D, on its face to enter the recess B in the other part, with a cavity, E, in said projecting part D, the surrounding surface of the said part D corresponding to the convex surface of the reflector or lining required, substantially as described.

254,274. PRESERVING WOOD. JOSEPH P. CARD, St. Louis, Mo. Filed June 15, 1881. (No specimens.)

Claim.—1. The herein-described mode of preserving wood, which consists in impregnating the wood with a solution of a mineral salt or a soluble antiseptic, then removing the moisture from the entire outer portion of the wood to beneath the surfaces, (lateral and end thereof,) the wood meanwhile being free of any pressure operating to retain the moisture in such outer portion, and then introducing the oil or other moisture-repellent into and throughout such outer portion, substantially as described.

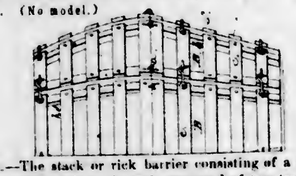
2. Wood impregnated throughout with a mineral salt or soluble antiseptic, and its entire outer portion, including its lateral as well as end surfaces, and to beneath such surfaces to a depth varying from about an eighth or tenth of an inch inward to, but not into, the central portion of the wood, with oil or other moisture-repellent.

254,275. ADJUSTABLE SOCKET-WRENCH. FELIX CHANTRELL, Bridgeport, Conn. Filed July 26, 1881. (No model.)



Claim.—The three-armed T-wrench A, divided on a plane passing through its three arms and their end sockets, and having its sections held together by the socket-bands B B on the short arms and intermediate rivet through the long arm and near the end of long arm by reversely-threaded screws on wheel F, and correspondingly-threaded sockets in the opposite sections of long arm, as shown and described.

254,276. DEVICE FOR INCLOSING AND PROTECTING STACKS. SAMUEL N. CLEVENGER, Rayville, Mo. Filed Dec. 24, 1881. (No model.)



Claim.—The stack or rick barrier consisting of a series of double trapezoidal sections, A, each composed of two trapezoidal frames hinged one above the other, said sections being connected side by side, forming an inclosing barrier, substantially as specified.

254,277. SPRING-BED. CLINTON S. COLGROVE, Winchester, Tenn. Filed Nov. 16, 1881. (No model.)



Claim.—In a bed-spring, the combination, with the end bars, A, the side bars, B, the intermediate bars, C, provided with notches a, the slats F, the spring G, secured to the upper surface of the said slats, and the springs H at their ends, of the arm D, hinged to the said intermediate bars and provided with the pawls E, the slats F, the springs G', secured to the upper surface of the slats, and the springs H' at their ends, substantially as and for the purpose set forth.

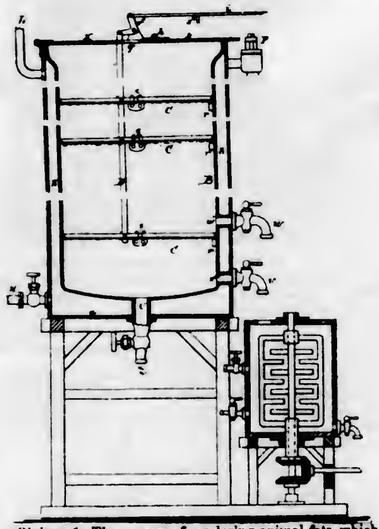
254,278. BARBED FENCE. JOSEPH H. CONNELLY, Pittsburg Pa. Filed Nov. 25, 1881. (No model.)



Claim.—As a new article of manufacture, a metallic fence-rail consisting of a twisted metallic ribbon having beveled or knife edges, substantially as and for the purposes described.

254,279. METHOD OF AND APPARATUS FOR RENDERING AND BLEACHING ANIMAL-FATS. GARRET COSINE, New York, N. Y. Filed Jan. 14, 1882. (No model.)

Brief—The fat is delivered from a hashing-machine, whence it falls in a stream through the heated air of the tank, being arrested momentarily by the diaphragms, which further subdivide it.



Claim.—1. The process of rendering animal-fats, which consists in causing the previously-comminuted particles thereof to pass through a heated atmosphere, the rendering being effected by the contact of the atmosphere acting upon the same in a finely-divided state, substantially as and for the purpose herein specified.

2. The process of rendering animal-fats, which consists in causing the previously-comminuted particles thereof to descend into a chamber or vessel containing a heated atmosphere to fall through one or more woven or perforated diaphragms therein and the melted fat to immediately flow therefrom, substantially as and for the purpose herein specified.

3. The process of rendering and bleaching animal-fats, which consists in causing the previously-comminuted particles thereof to fall into a vessel or chamber, in a separated state, through a heated and continually-renewed atmosphere therein, and the melted fat to immediately flow therefrom and into a bleaching-agitator, substantially as and for the purpose herein specified.

4. An apparatus for rendering animal-fats in a finely-divided and separated state by simple contact with a heated atmosphere therein, consisting essentially of a vessel, B, surrounded by a jacketed space for applying heat thereto, with one or more inlets for the fats at the top, one or more outlets for the melted fat near the bottom, and air inlets and outlets for renewing the heated atmosphere therein respectively at the bottom and top, substantially as and for the purpose herein specified.

5. In an apparatus for rendering animal-fats in a finely-divided state by simple contact with a heated atmosphere therein, two outlets, c c, for the fat, and inlets for the air, arranged one above the other, substantially as and for the purpose herein specified.

254,280. MANUFACTURE OF MATERIAL TO FORM ARTIFICIAL IVORY. FREDERICK W. COTTERELL, London, County of Middlesex, England. Filed Dec. 29, 1881. (No specimens.) Patented in England Aug. 4, 1881.

Claim.—1. In the manufacture of a material to form artificial ivory and for other uses, as above specified, the process of rendering fiber soluble in alcohol, (with or without addition of hydrocarbon,) which consists in immersing such fiber in a saturated solution of nitrous acid in sulphuric acid, substantially as described.

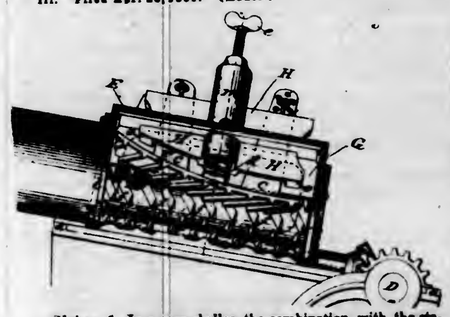
2. In the manufacture of a material to form artificial ivory and for other uses, as above specified, the process of rendering fiber soluble in alcohol, (with or without hydrocarbon,) which consists in immersing such fiber in a saturated solution of nitrous acid in sulphuric acid for a very short period, such as above specified, and then slightly pressing the fiber and allowing it to stand for from twenty minutes to an hour to complete its conversion, substantially as described.

3. In the manufacture of a material to form artificial ivory and for other uses, as above specified, the process of treating fiber that has been rendered soluble in alcohol, (with or without addition of hydrocarbon,) which consists in washing such fiber with water and then treating it with a saline solution to neutralize any remaining acid and to render the treated fiber non-explosive, substantially as described.

4. In the manufacture of a material to form artificial ivory and for other uses, as above specified, the process of treating fiber that has been rendered soluble in alcohol, (with or without addition of hydrocarbon,) which consists in washing such fiber, then treating the same with saline solution to neutralize any remaining acid and to render it non-explosive, and afterward adding to such fiber strong solutions of alum, and of carbonate of soda and of silicate of soda, all substantially as described.

5. In the manufacture of a material to form artificial ivory and for other uses, as above specified, the process of treating fiber that has been rendered soluble in alcohol, (with or without addition of hydrocarbons,) which consists in washing such fiber, then treating the same with a saline solution, then adding strong solutions of alum, carbonate of soda, and of silicate of soda, and afterward drying the material and dissolving it in alcohol, either alone or combined with hydrocarbons, substantially as described.

254,281. CORN-SHELLER. CYPRIAN U. CHANDALL, Sterling, Ill. Filed Apr. 28, 1881. (Model.)



Claim.—1. In a corn-sheller, the combination, with the stationary but yielding rag-iron or follower, of the rotary cylinders provided with the knives or projections *f* and *g*, respectively, the knives or projections in any one longitudinal row being all arranged at substantially the same angle, which is different from, though in the same general direction with, the angle of the knives or projections in the rows at each side of it, substantially as and for the purpose set forth.

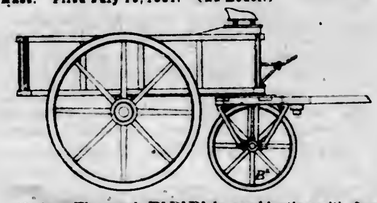
2. In a corn-sheller, the casing composed of the frame A, having one side higher than the other, and the jacket E, provided with the feed and discharge openings, in combination with the bladed or toothed cylinders mounted in said jacket and inclined, as described, from the feed to the discharge opening, for the purpose set forth.

3. The combination, with the cylinders and the rag-iron arranged opposite said cylinders, of the spring *d*, bearing upon the center of said rag-bar, and the tube *m*, in which said spring is supported, substantially as described.

4. The combination, with the oscillating spring-pressed rag-iron, provided with the lugs *c c*, and the jacket having slots for the passage of said lugs, of the plate H, projecting from the top of the jacket and provided with stops for said lugs, substantially as described.

5. The jacket having the partition-plate or stop G, and the tube-plate H, in combination with the spring-pressed rag-iron, having the lugs *c c* projecting between said plates and through slots in the top of the jacket, substantially as described.

254,282. DUMPING-CART. JAS. H. CRITTENDEN, Fall River, Mass. Filed July 15, 1881. (No model.)



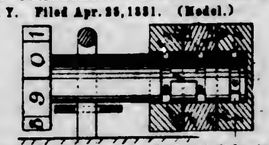
Claim.—The perch D^1 D^2 D^3, in combination with frame F^6 and king-bolt G^2, all constructed, combined, and operating as set forth, for the purpose specified.

254,283. FRICTION-CLUTCH. LESTER D. DANA, Waupaca, Wis. Filed Aug. 15, 1881. (No model.)



Claim.—The combination, substantially as hereinbefore set forth, with the driven shaft, of the fixed disk, the two segments having an inwardly-projecting toe at one end, the double cam having toes adapted to catch the toes of the segments, and the loose disk engaging the double cam, for the purpose described.

254,284. PERMUTATION-PADLOCK. JAMES E. DEAN, Fishkill, N. Y. Filed Apr. 28, 1881. (Model.)



Claim.—1. In a permutation-lock, a bolt having a polygonal head with numbered faces, and annular as well as longitudinal grooves on its end, in combination with a locking device formed of connected independently-rotating numbered sections provided with studs corresponding with the grooves of the bolt, as set forth.

2. In the locking device of a permutation-lock, the combination of several ring-sections, C, the central one having on each face a rigidly-secured ring, D, with projecting rim, and the others being provided with undercut grooves, as shown and described, whereby said sections are held together so that they can rotate independently of each other.

254,285. LABELING PLUG-TOBACCO. DAVID W. DE FORREST, Brooklyn, assignor to Donaldson Brothers, New York, N. Y. Filed Dec. 13, 1881. (No model.)



Claim.—1. A plug of tobacco having a flat label riveted thereto by a rivet formed of and integral with the body of the plug, substantially as shown and described.

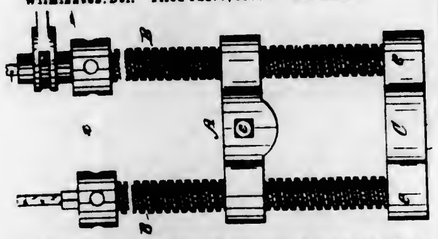
2. The method of attaching labels to plug-tobacco, which consists in forming a projection on the surface of a plug of tobacco, then placing a flat perforated label of less thickness than the height of the projection over said projection, and then subjecting the plug to pressure, so that the label will be riveted to the plug, and so that the outer surface of label, rivet, and plug will all be in the same plane, substantially as shown and described.

254,286. HOLLOW AUGER. FREDERICK S. DELLENBAUGH, New York, N. Y. Filed Apr. 21, 1881. (No model.)



Claim.—The combination of the tubular bit, the serrations C, the shoulder *a*, the brace H, having the angular curves, the socket G of the brace, having an opening through it, and means for securing the bit to the brace, substantially as described.

254,287. APPARATUS FOR DRAWING AND REPLACING BOILER-TUBES. LUCIUS M. DEBNEY and ALBERT C. JOHNSON, Wilmington, Del. Filed Jan. 6, 1882. (No model.)



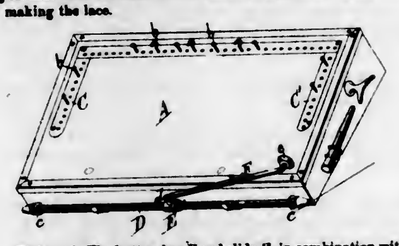
Claim.—1. The tube extractor and replacer consisting of apertured yoke A, screws B, and set-screw *c*, substantially as shown, combined for operation as specified.

2. In tube-extractors, the block C, having aperture *d*, combined with yoke A, provided with set-screw *c* and screws B, substantially as and for the purposes set forth.

3. The starting-plug D, having shoulder *f*, in combination with the yoke A, screws B, and means for connecting yoke and plug, substantially as and for the purposes set forth.

254,288. DESK FOR MAKING MACRAMÉ LACE. CHAUNCEY W. DIMMICK, Milford, Pa., assignor to Thomas Barbour, Paterson, N. J. Filed June 6, 1880. (No model.)

Brief.—The desk is provided with perforated metallic plates to receive the pins or hooks for holding the threads of which the lace is made. A cleat and pin is attached to the end of the desk, around which the loose ends of the "leaders" are wrapped. A button-bar provided with a button is arranged to slide on another bar placed lengthwise of and in front of the desk, which button-bar and button are designed to hold the free ends of the fringe-forming threads when the same are not immediately wanted in the work of making the lace.



Claim.—1. The button-bar F and slide E, in combination with the lace-board A and bar D, substantially as set forth.

2. The combination, with the board A and bar D, secured thereto by eyebolts *c*, of the slide E and pivoted button-bar F, as and for the purpose set forth.

254,289. BALE AND BOX HOOK. HENRY A. DIRKS, New York, N. Y. Filed Aug. 31, 1881. (No model.)



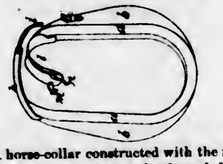
Claim.—1. A box or bale hook having its grasping end terminated with a broad or blunt abutting tip or head provided with one or more sharp teeth protruding from said head, and of limited length, adapted to enter the covering of the bale without reaching its contents, while the blunt surface of the abutting head bears upon the exterior thereof around the roots of the teeth, substantially as and for the purpose herein shown and described.

2. A box or bale hook formed of wrought or cast metal, with its hooked portion formed with a broad or blunt abutting tip or head, and with one or more sharp teeth or spurs formed separate from the hook and tightly inserted in the blunt abutting tip with the points protruding therefrom, substantially as and for the purpose set forth.

3. A cast-metal box or bale hook cast with a T-shaped section throughout its stem or body, with an enlarged and blunt abutting head at the tip end of the hook, and one or more isolated sharp teeth protruding therefrom, substantially as herein shown and described.

4. A box or bale hook formed with a broad or blunt abutting head at the tip of the hook, and with one or more pointed screws screwed into said head with the point protruding from the blunt abutting tip, substantially as and for the purpose set forth.

254,290. HORSE-COLLAR. MARSHALL R. DOWLIN, North Adams, Mass. Filed Oct. 25, 1881. (No model.)

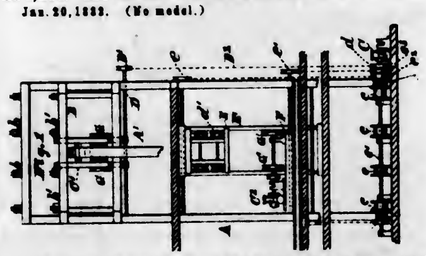


Claim.—1. A horse-collar constructed with the inner layer or leather, *c*, and the two outer layers or leathers, *b b'*, secured together, as shown, by a line of stitches or fastening devices, said outer layers being folded away from the inner layer and back upon themselves, covering the fastening-seam, substantially as shown and described.

2. A horse-collar constructed with the inner leather, *c*, and two outer layers, *b b'*, secured together, as shown, by a line of stitches, said outer layers being folded away from the inner layer and back upon themselves, covering the fastening-seam, and the free ends secured to the rim *a* by the line of stitches *f*, which form said rim, as specified.

3. In an open-top horse-collar, the strap *l*, permanently secured to the under side of one limb of the collar, and provided with straps to secure it to the under side of the opposite limb, in combination with the broad cap-band A, permanently secured to the upper part of the limb opposite to that to which the strap *l* is permanently fastened, and provided with a strap to secure it to the upper part of the latter limb, both the fastening devices of the cap-band being arranged in the hame-recess of the collar, substantially as described, and for the purpose specified

254,291. ELEVATOR. ROBERT DUNBAR, Buffalo, N. Y. Filed Jan. 20, 1883. (No model.)



Claim.—1. In an elevator, an engine, C, and shaft *c'*, provided with winding-drums *c*, in combination with the cables B', pulleys *b*, and tightening-pulleys *d'*, and their connections, for the purpose of giving the vertical adjustment to the elevator, as described.

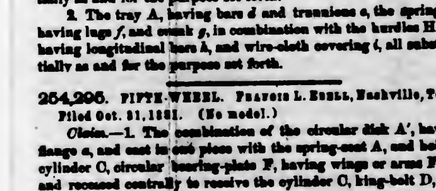
2. An elevator provided with a frame, A, and a vertically-adjustable supporting-frame, B, and connections, substantially as specified, in combination with a horizontally-adjustable frame, C', for supporting the elevator and its operating parts, substantially as and for the purposes specified.

3. In an elevator, a supporting-frame, B, provided with a horizontally-adjustable frame, C', for holding the elevator, in combination with the pulleys D' *d'*, engine C, and cable D², for giving the horizontal adjustment to the elevator, substantially as and for the purposes specified.

4. In an elevator, a frame, A, vertically-adjustable frame B

and its operating parts, substantially as specified, in combination with the frames E E', tightening-pulleys *d'*, and engine C', provided with driving-pulleys for connecting by cables with the pulleys G, substantially as and for the purposes set forth.

254,292. BARB-HOLDING DEVICE. THOMAS W. HATCH, Chicago, Ill. Filed Dec. 18, 1881. (No model.)



Claim.—The combination, with the cutting-machine for cutting the barb-strips and the portable trays whereon the same are compactly stowed, of the stationary guides D, receiving the strips as they are severed and delivering them to the trays, substantially as set forth.

254,293. TRACE-FASTENING FOR SINGLE-TREES. LUCIUS S. EDELBLUTH, Cincinnati, Ohio, assignor of two-thirds to Rufus P. White and Horace W. Smith, both of same place. Filed Jan. 28, 1881. (No model.)



Claim.—1. In a trace and yoke fastening device, the bolt *d'*, attached to one side of the shank *m*, said shank having the piston G riveted to its opposite side, and being provided with plate *n* and thumb-piece *d*, in combination with the casing B, single-tree A, and spring F, substantially as and for the purposes specified.

2. The combination of the single-tree A, casing B, and fastening device D, constructed substantially as described, and provided with cup or piston G, spring F, and bushing H, substantially as described.

3. In a trace-fastening device, the shank *m*, provided with thumb-piece *d* and bolt *d'* and projection *d''* and piston G, in combination with the single-tree A, casing B, and bushing H, substantially as and for the purposes specified.

4. In a trace and yoke fastening device, the combination of a suitable bolt and devices for retracting the same, and the spring F, bushing H, single-tree A, and casing B, substantially as described.

5. A sliding spring-bolt consisting of the shank *m*, provided with plate *n* and thumb-piece *d* and the bolt *d'* and piston G, said bolt being actuated by a suitable spring, substantially as described.

254,294. CHEESE-TURNER. ANDREAS ENDI, New Glarus, Wis. Filed Sept. 29, 1881. (No model.)



Claim.—1. In combination with the tray A, having block B, the hurdles H H', pivotal bars *d*, springs *e*, and lugs *f*, all substantially as and for the purpose set forth.

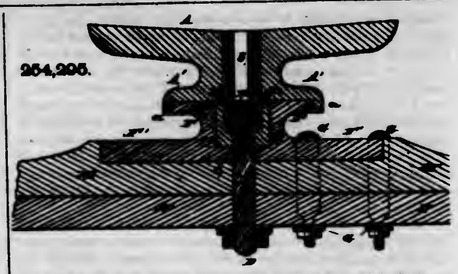
2. The tray A, having bars *d* and trunnions *e*, the springs *e*, having lugs *f*, and cleats *g*, in combination with the hurdles H H', having longitudinal bars *h*, and wire-cloth covering *i*, all substantially as and for the purpose set forth.

254,295. FIFTH-WHEEL. FRANCIS L. EUBEL, Nashville, Tenn. Filed Oct. 31, 1881. (No model.)

Claim.—1. The combination of the circular disk A', having flange *a*, and cast in one piece with the spring-seat A, and hollow cylinder C, circular bearing-plate F, having wings or arms F' F', and recessed centrally to receive the cylinder C, king-bolt D, and washer E, substantially as and for the purpose herein shown and described.

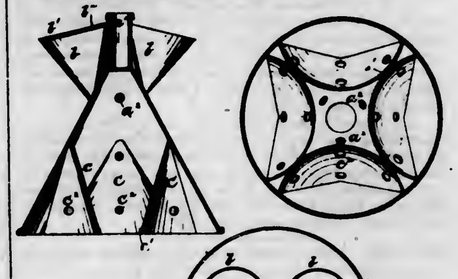
2. The combined fifth-wheel and spring-seat or head-block,

254,295.



comprising the concaved top A and flanged plate or disk A', having central recess, *b*, provided with apertures *b' b²*, and hollow cylinder C, cast in one piece, substantially as and for the purpose herein shown and specified.

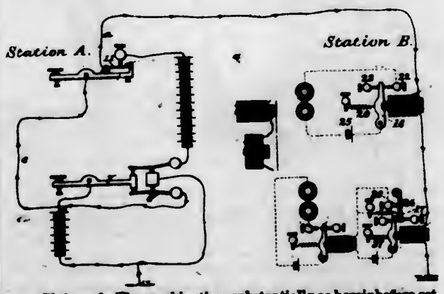
254,296. CLOTHES-POUNDER. LEROY A. FAHLENER, Scandia, Kans. Filed Nov. 16, 1881. (Model.)



Claim.—1. The combination, with the base *a*, having a series of orifices near its upper end, of a series of funnel-shaped water-receptacles secured to the top of the base and opening into the orifices therein, and having their outer ends closed by plates *b'*, having perforations *b²*, substantially as set forth.

2. The combination, with the conical base *a*, of a series of semi-conical plates, *c*, having a vertical length about half the height of the base, the said plates being placed within and arranged with their rims about flush with the rim of the base, and having their vertical edges secured to the walls of said base and their sides inclined inward and their rims in contact with each other, whereby they brace one against the other and against the sides of said base, substantially as set forth.

254,297. QUADRUPLEX TELEGRAPH. STEPHEN D. FIELD, New York, N. Y. Filed Oct. 20, 1881. (No model.)



Claim.—1. The combination, substantially as herein before set forth, of a key provided with one circuit-spring playing between a resting and a working contact, a key provided with two independent circuit-springs, each playing between a resting and a working

contact, a main battery in two sections of like polarity, the first of which has greater electro-motive force than the second, a main line connected to the circuit-spring of the first key, a branch which unites the resting-contact of the first key with the first circuit-spring of the second key, a branch which unites the working-contact of the first key with the second circuit-spring of the second key and includes the greater section of the battery, an earth-branch connected to both the first resting-contact and to the second working-contact of the second key, and including the lesser section of the main battery, and a branch extending from the first working-contact and the second resting-contact of the second key to the earth.

2. The combination, substantially as hereinbefore set forth, of an electro-magnet, its armature and armature-lever, a yielding contact-lever, an equalising-bar having its extremities attached respectively to said armature and contact levers, and an adjustable retractor attached to and acting upon said equalizing-bar.

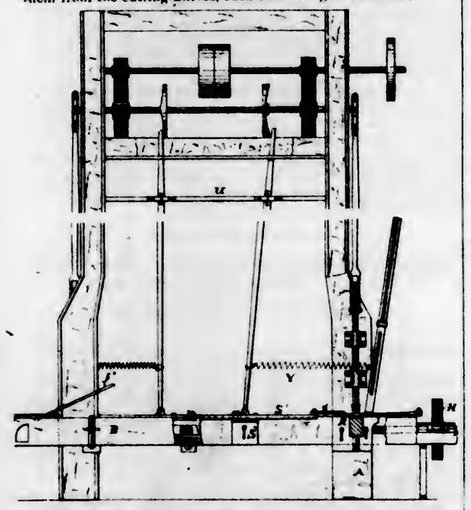
3. The combination, substantially as hereinbefore set forth, of two pivoted levers, an equalising-bar having its ends respectively connected with said levers, an electro-magnet for actuating said levers, a retractor attached to said equalising-bar, and a device for regulating the normal tension of said retractor.

4. The combination, substantially as hereinbefore set forth, of two pivoted levers, an equalising-bar having its respective ends mechanically connected with said levers, an electro-magnet for actuating said levers, a retractor attached to said equalising-bar, a device for regulating the tension of said retractor, and means, substantially as described, for varying the point of attachment of the retractor upon the equalising-bar.

5. The combination, substantially as hereinbefore set forth, of a main line, a main battery, devices, substantially such as described, for varying the strength of the current of said battery upon the line, and two independent electro-magnets in the main line at the receiving-station, one of said electro-magnets having cores of a sectional area twice or more times as great as the other, in proportion to the number of convolutions in its coils.

254,298. BUNG CUTTING AND COMPRESSING MACHINE. JACOB FRIESMANN, Cincinnati, Ohio, assignor of one-half to Henry Varwig, same place. Filed May 12, 1881. (No model.)

Brief.—The bungs are cut by stationary tubular cutters, against which the blanks are fed through a covered trough by a screw-follower. They are compressed by reciprocating plungers, to which they are automatically fed from the tube which receives them from the cutting-knives, such tube being removable.



Claim.—1. The combination, substantially as before set forth, of the elongated covered feed-box adapted to receive a number of blanks at a time, the stationary hollow cutter secured at the end thereof, the elongated plunger or follower, and a screw to feed the follower through the box for the purpose of forcing the square blanks through the hollow cutter.

2. The combination of two elongated covered feed-boxes arranged upon each side of a plunger-driving mechanism and adapted to receive a number of blanks at a time, the stationary hollow cutters fixed at the opposite ends of said feed-boxes, with the elongated follower *D*, and a screw to alternately drive said follower from one of the boxes into the other, substantially as specified.

3. In a bung-machine of the character described, the combination of two feed-boxes, B, the plunger-driving mechanism mounted in frame C centrally between the said boxes, with the plunger D, and cross-pieces *d*, secured to the plunger near each end thereof, and the shippers K, having projections in position to be acted upon by the cross-pieces *d*, to automatically stop the mechanism when the plunger has reached the limit of its stroke, substantially as specified.

4. The combination, substantially as hereinbefore set forth, of feed-box B, hollow cutter E, secured at the end thereof, with the screw-follower D, nut G, and driving-wheel H, keyed upon said nut, for the purpose set forth.

5. In a machine for cutting bungs, the combination, substantially as specified, of box B, follower D, changeable hollow cutter E, and the adjustable guide-strips F, to adapt the machine to feed and cut different sizes of bungs.

6. The combination, substantially as before set forth, of the elongated open-top feed-box adapted to receive a number of blanks at a time, the elongated plunger, and suitable mechanism to feed the same back and forth through said box, and the hollow cutter arranged at one end of said box, with the hinged bar *f'*, adapted to be elevated for the purpose of supplying the box with blanks and to be secured upon said blanks to prevent them from being forced up by the plunger as said blanks are fed to the hollow cutter.

7. The combination, substantially as specified, in a bung-machine, of the reciprocating hollow plunger M, fixed rod n, compressing-die M, and fixed die Q, having the annular groove *q*, with feeding mechanism consisting of a sliding frame, *s*, pusher *s'*, actuated by cams T and levers V, and the spring-fingers W, to hold the blanks until acted upon by the compressing-die.

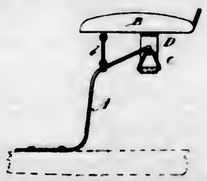
254,299. HAME-CLIP. FRED FRAZER, Syracuse, N. Y. Filed Jan. 24, 1882. (No model.)



Claim.—1. A hame-clip provided with two legs or members perforated at their inner ends to receive the bolt or rivet which fastens the clip to the hame, and connected at their outer ends by a bar which is extended and formed with an eye for the breast-strap ring, the said bar carrying a lug on its under side which is adapted to engage with a slot or aperture in the metallic binding of the hame, substantially as and for the purpose set forth.

2. The combination of a wooden hame having a metal binding, slotted as described, with a clip having two legs which straddle the hame, and secured thereto by a bolt or rivet, said clip having a bar, A, which is extended and formed into an eye for the breast-strap ring, and provided on its under side with a lug to engage with the slot in the metal binding, and a suitable tug-staple, all substantially as and for the purpose set forth.

254,300. MOWING-MACHINE SEAT. JAMES FULTON, Great Bend, N. Y., assignor to Haskel B. Fulton, same place. Filed July 22, 1881. (No model.)

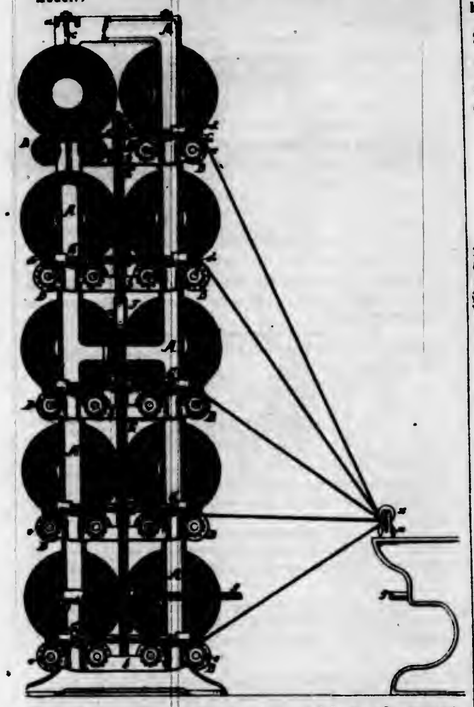


Claim.—1. The combination, with the standard A and seat B, of the support D and links *c*, substantially as and for the purpose set forth.

2. The combination, with the standard A, provided with the bifurcations *a* and the seat B, of the support D, provided with the lateral arms *d*, and the links *c*, substantially as and for the purpose set forth.

3. The combination, with the standard A, provided with bifurcations *a* and the seat B, of the support D, provided with the arms *d*, the links *c*, and the linked tie *b*, substantially as and for the purpose set forth.

254,301. CREEL-FRAME FOR CARDING-MACHINES. HERMILL A. PERBUSH, Philadelphia, Pa., assignor to himself and Charles A. Perbush, same place. Filed Nov. 28, 1881. (No model.)

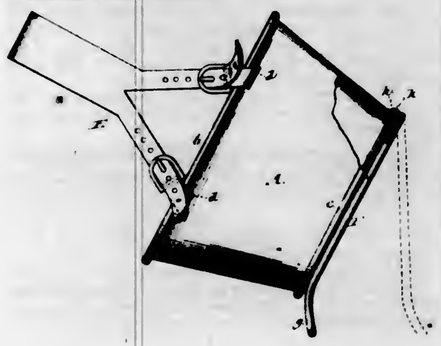


Claim.—1. The combination, in a creel-frame, of a supporting-structure and driving mechanism with two sets of spool-supports, each set comprising a number of pairs of horizontal rolls, arranged one pair above another, and the rolls of one set being in the rear of the rolls of the other set, as specified.

2. The combination, in a creel-frame, of a supporting-structure and driving mechanism with two sets of spool-supports, each set comprising a number of pairs of horizontal rolls, arranged one pair above another, and the rolls of one set being in the rear of the rolls of the other set, and so close thereto that a spool can be rolled directly from one set to the other, as specified.

3. The combination of the supporting-structure, the two sets of spool-supporting rolls B D, with worm-wheels *c*, the endless chain E, the shafts G, with wheels F and worms *d*, and the driving-shaft *g*, with wheel K, as set forth.

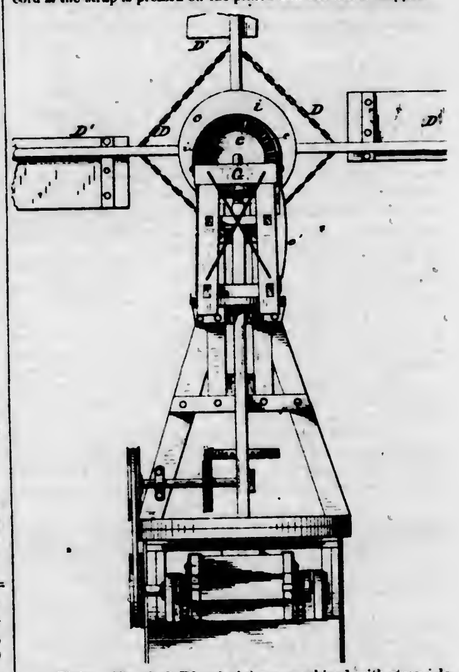
254,302. MUZZLE. NELSON GALLIVAN, Rapid City, Dak. Filed Jan. 7, 1882. (Model.)



Claim.—The muzzle herein described, consisting of the nose-band A, formed of metal, and having the wired ends *b c*, the straps E, attached thereto at the larger end, and the falling nose-cover F, hinged to the upper edge of the smaller end of the nose-band, and having its lower end turned outward, substantially as specified.

254,303. WIND-ENGINE. PETER GUNDO, Burton, Kans. Filed Dec. 8, 1881. (No model.)

Brief.—The pinion *e* on the wheel-shaft has a strap placed above it, secured to a lever, G, so that by drawing on the lever with cord *m* the strap is pressed on the pinion and the wheel stopped.



Claim.—The shaft D^1 and pinion *e*, combined with strap *i*, lever G, spring *e'*, and an operating-cord, *m*, as and for the purposes specified.

254,304. FENCE-POST. MIRON T. GLEASON, Brodhead, Wis., assignor of one-half to Eugene F. Warren. Filed Dec. 31, 1881. (No model.)



Claim.—1. The fence-post consisting of the bars A A, having the reversed-curved portions *a a* and substantially straight lower portions, *b*, and united by a clamp at their upper ends and joined together at the points of intersection, substantially as described.

2. The herein-described fence-post, consisting of the bars A A, having the reversed-curved portions *a a* and substantially straight lower portions, *b*, and united by a clamp at their upper ends and joined together at their points of intersection, and having the base-bar, to which the bars A A are connected, substantially as described.

254,305. IMITATION DIAMOND. JULES A. GROSSIORD, Jeuss, Paris, France, assignor to Edward E. Kipling, New York, N. Y. Filed Oct. 28, 1881. (No specimens.) Patented in France Nov. 20, 1880.

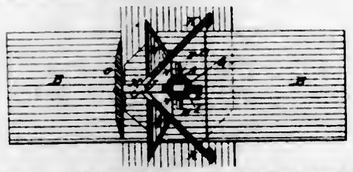
Claim.—1. In the manufacture of imitation diamonds, or in the preparation of artificial stones, natural stones, or other like ob-

jects wherein the brilliancy of the object is increased by means of a reflecting-coating at the back, the improvement consisting in depositing a coherent layer of metal over said reflecting-coating, so as to form a protection thereto, substantially as described.

2. An imitation diamond or other like object having a reflective coating applied at the back and a protecting layer of metal deposited over said coating, substantially as described.

3. The combination, with the reflective coating and its protective varnish, of the exterior protective layer of copper or other metal deposited thereon and plated, substantially as described.

254,306. FRUIT-DRYING SCAFFOLD. WILLIAM S. HALBY Columbia, Tenn. Filed July 28, 1881. (No model.)



Claim.—1. The combination, with a roof, K, of a post having the intersecting slots F G, the pin H, and the ridge-pole having apertured lug I, as and for the purpose specified.

2. In a fruit-drier, the combination of the post having slot G, the ridge-pole having slot I, rounded on its lower end, and the block R, concave at its upper end, for the purpose set forth.

3. In a fruit-drying scaffold, the combination, with the post A, provided with slots F G, and the hinged roof J K, of the separate bearing-blocks R, substantially as herein shown and described, whereby the roof can be adjusted at a higher elevation, as set forth.

4. In a fruit-drying scaffold, the combination, with the post A, of the detachable roof K, ridge-pole J, arm N, and cap O, substantially as shown and described.

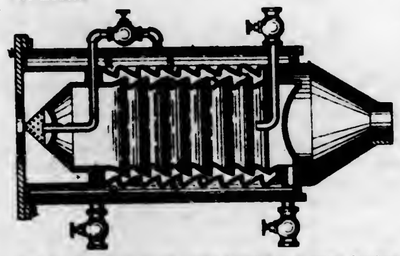
5. In a fruit-drying scaffold, the combination, with the roof K and ridge-pole J, hinged at one end, of the hinging-post, the hinged end M' M, and rope P', substantially as shown and described, whereby the roof can be tilted or raised into an upright position.

254,307. SEDIMENT-COLLECTOR FOR BOILERS. DAVID HANNA, Ogdensburg, N. Y. Filed Oct. 31, 1881. (No model.)



Claim.—The combination of the boiler A, feed-water rose or spraying nozzle B, discharging into the steam-space of the boiler, imperforate funnel C, placed underneath the spraying-nozzle, and blow-off pipe C', having valve or cock *b*, the whole constructed and arranged as and for the purpose herein shown and specified.

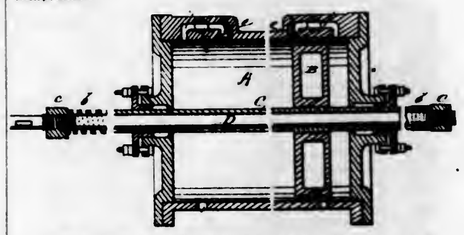
254,308. WHEAT STEAMER AND HEATER. CYRUS T. HANNA, Pittsburg, Pa. Filed Aug. 11, 1880. Renewed July 25, 1881. (No model.)



Claim.—The improved grain-heating apparatus having its inner cylinders constructed with circumferential corrugations *b*, which are formed integrally with them and arranged as shown, thus alternating in position, as and for the purpose described.

254,309. STEAM CYLINDER AND PISTON. WM. HANNA, Gilroy, Cal. Filed Oct. 17, 1881. (No model.)

Brief.—To prevent concussion in the operation of the piston when steam is admitted to the cylinder springs are applied to the rod, which relieve it of the full force of steam until the springs are compressed.



Claim.—The combination, with cylinder A and piston-rod D, of tube C, piston B, nuts *c*, and springs *b*, substantially as and for the purposes set forth.

254,310. FURNITURE-SOCKET. CHARLES HARING, Watkins, N. Y. Filed Jan. 6, 1880.



Claim.—The combination of the concaved body *a b*, having the annular bottom shoulder, I, and the elastic disk *c*, held by said shoulder, to form a socket for the rolling-casters that support furniture.

254,311. BUCKLE ATTACHMENT FOR STRAPS. LA FAYETTE HARVEY, Wyoming, Iowa. Filed Dec. 31, 1881. (Model.)



Claim.—A holed strap, tongued buckle, and two rivets combined, with a clip doubled to form two parallel parts apertured at the fold to allow the buckle-tongue to pass through, and having the strap end arranged between and riveted to both of said parts, as shown and described.

254,312. PRODUCTION OF VITRIFIED COVERINGS ON EARTHENWARE, GLASS, &c. CHARLES W. HEATON, Lodsness Heath, County of Kent, and THOMAS ROLAS, Chiswick, County of Middlesex, England, assignors to Ihlee & Horne, London, England. Filed Dec. 23, 1881. (No specimens.) Patented in England Oct. 31, 1881.

Claim.—1. In the manufacture of enamel or vitrified covering for earthenware or other substances, the combination therewith of phosphorescent powder of the kind above referred to, so as to make said enamel available for the purposes of practical illumination for several hours after exposure to light, substantially as described.

2. The process of manufacturing or producing luminous enamel or vitrified covering on earthenware and other substances, which consists in combining with the other ingredients constituting said enamels, as above set forth, phosphorescent powder having the property of remaining luminous for several hours after exposure to light, and afterward subjecting the mixture to heat of such intensity as to melt, or partially melt, the said mixture, substantially as described.

3. As a new article of manufacture, enamel rendered luminous by addition of phosphorescent powder of the kind above specified, substantially as described.

254,313. FISH-HOOK. WM. E. HEMMING, Redditch, County of Worcester, England, assignor to Charles F. Imbrie, New York, N. Y. Filed Aug. 5, 1881. (No model.) Patented in England Feb. 26, 1881.



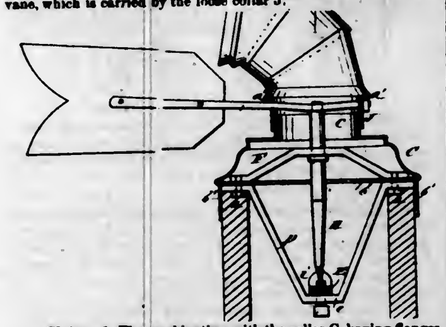
Claim.—1. As an improved article of manufacture, a fish-hook made substantially as herein shown and described, with a baiting-needle, B, attached to the rear portion of its shank, as set forth.

2. The combination, with the hooks A, of the spring baiting-needle B and clasp *b'*, substantially as specified.

3. The combination, with the hooks A and baiting-needle B, of the trolling-spoon C, provided with hooks or staples *d*, whereby said trolling-spoon may be removably attached to and locked next the barbed hooks, substantially as herein shown and described.

254,314. COWL. CHARLES S. HUMPSTEAD, Hagerstown, Pa., assignor to himself and Isaac P. Kendall, same place. Filed Oct. 26, 1881. (Model.)

Brief.—A bar, B, fastened in the chimney by the screws *f* and plates *h*, is supported by a bar, D, crossing it at right angles, both being secured together by a socketed screw, *d*, whose upper end forms a bearing for the spindle H. The bar F, which serves to guide the spindle, and the bar D are both secured to the wall of the chimney at each end by the screws *a*. A metal cap whose flanges embrace the sides of the chimney has a rigid collar at its upper end, around which a loose collar, J, rotates independently of the cowl, with which it forms a connection by means of the joint *a'*, thereby permitting of the adjustment of the cowl relatively to the vane, which is carried by the loose collar J.

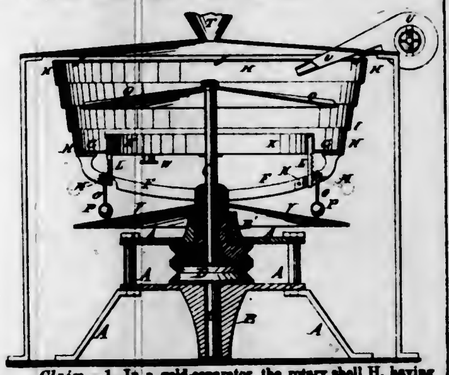


Claim.—1. The combination, with the collar C, having flanges *b b'* to hold it to the top of chimney, of the bars D F, provided with end flanges secured by bolts *a* to opposite sides of the flanges *b*, as shown and described.

2. The cross-piece E and the bar D, secured together by the socketed screw *d*, in combination with the spindle H, cross-bar F, and the vane-arm, substantially as and for the purposes set forth.

3. In combination with the cross-bar D, carrying the cross-piece E, provided with the set-screws *f f*, the plates *h h*, substantially as and for the purposes set forth.

254,315. GOLD-SEPARATOR. HORACE E. HENWOOD, Kansas City, Mo. Filed Nov. 10, 1881. (No model.)



Claim.—1. In a gold-separator, the rotary shell H, having offsets I, substantially as herein shown and described, whereby the support of the mercury upon the inner surface of the shell will be facilitated, as set forth.

2. In a gold-separator, the combination, with the base-flange G of the shell H, of the movable rim K and means, substantially as herein shown and described, for raising and lowering the same, whereby the height of the said rim will be graduated to the amount of mercury upon the flange G, as set forth.

3. In a gold-separator, the combination, with the base-flange G of the shell H, of the rim K, the toothed bars L, and the gear-wheels M, having weighted arms O P, substantially as herein shown and described, whereby the said rim is lowered automatically as the mercury passes up the inner surface of the said shell to allow the sand to escape freely, as set forth.

4. In a gold-separator, the combination, with the frame A, the shaft C, provided with the pulley D and carrying the distributer Q on its upper end, of the spider F, carrying the shell H, and the pulley E, having an upwardly-projecting hub, which is attached to the hub of the said spider, substantially as and for the purpose set forth.

5. In a gold-separator, the combination, with the shell H, having offsets *i*, of the fan-blower U, having its discharge-spout projecting into the said shell in a downwardly-inclined direction, substantially as and for the purpose set forth.

6. In a gold-separator, the combination, with the rotary shell H and the rim K, of the rotary discharge-plate V, below the said shell, substantially as herein shown and described, whereby the sand escaping from the said shell over the said rim will be discharged from the machine, as set forth.

7. In a gold-separator, the distributing-plate Q, made conical in form and provided with radial corrugations or channels on its convex surface, substantially as herein shown and described, whereby a more even distribution of the sand from the said plate is obtained, as set forth.

254,316. CORSET. JULIUS HILDERS, New York, N. Y., assignor to Moritz Cohn, same place. Filed Apr. 26, 1880. (Model.)



Claim.—1. The combination, in a corset having a side section stiffened at each edge from top to bottom of the corset, of front and rear hip gores or sections, substantially as described.

2. The combination, in a corset, of a stiffened side section and stiffened hip-gores at the front and rear of the side section, substantially as described.

3. In a corset, the combination, with front and rear hip-gores having stiffeners *h h*, of vertical stiffeners or bones above the hip-gores and curved or inclined stiffeners interposed between the vertical stiffeners and the hip-gores, substantially as described.

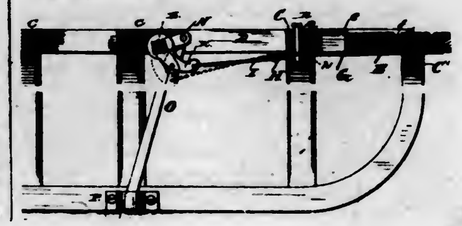
4. In a corset, the combination of the stiffened breast-section, the stiffened front hip-gore, and the stiffened complex side and front section interposed between the breast-section and the front hip-gore, each of said sections and said front hip-gore having separate and independent groups of bones, substantially as described.

254,317. INSECTICIDE FOR POULTRY, NESTS, &c. ERWIN D. HILL, Marietta, Ohio. Filed Aug. 25, 1881. (No specimens.

Brief.—The composition before hardening may be molded into the form of a nest-egg, or may be attached to roosts. When hard it may be broken into lumps or ground fine for distribution as a powder.

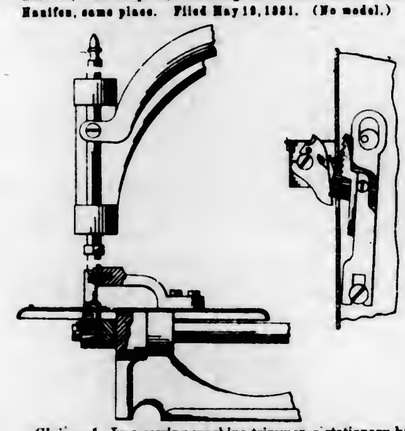
Claim.—A poisonous compound composed of plaster-of-paris, corrosive sublimate, lard-oil, and white precipitate, or the equivalents of the latter two ingredients—viz., red precipitate and linseed-oil—mixed in the manner and for the purposes set forth.

254,318. SLED-BRAKE. MICHAEL HOFFMAN, Loretto, Pa. Filed Apr. 1, 1881. (Model.)



Claim.—In a sled-brake, the combination, with the automatically-operating or self-setting brake mechanism, composed of the oblique brakes O O, rock-shaft L, having arms N N and K K, connecting-links I I, T-shaped cross-head G H, and sliding tongue E *e*, constructed and arranged as described, of the movable bolt R, inserted vertically through the front bench, C, of the sled, substantially as and for the purpose herein shown and specified.

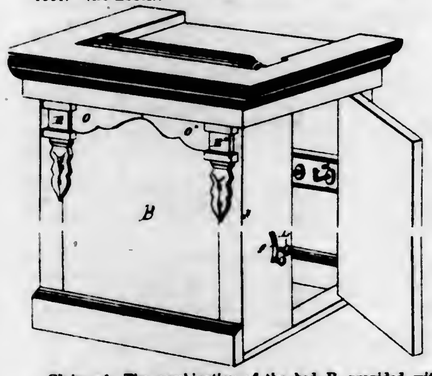
254,319. TRIMMER FOR SEWING-MACHINES. THOMAS J. HOLTON, Philadelphia, Pa., assignor of one-half to John E. Hanifen, same place. Filed May 19, 1881. (No model.)



Claim.—1. In a sewing-machine trimmer, a stationary knife or blade rigidly secured to the cloth-plate, on the upper side of the same, in combination with a knife or blade secured to the feed-bar and operated thereby to effect an upward cut, substantially as described.

2. The combination, with a sewing-machine, of a trimming or cutting attachment composed of a knife or blade secured to the feed-bar and moving therewith, and a bracket sustained on the cloth-plate and carrying a rigid or stationary knife, blade, or cutter-bar, substantially as shown and described.

254,320. COMBINED FOLDING BED AND WARDROBE. JNO. B. HOANN, Chicago, Ill., assignor of two-thirds to Thomas C. Lees and Raglan Cooper, both of same place. Filed Nov. 14, 1881. (No model.)



Claim.—1. The combination of the bed B, provided with grooves *d* and *d'*, with the spindles G and G' and their bearings, substantially as set forth.

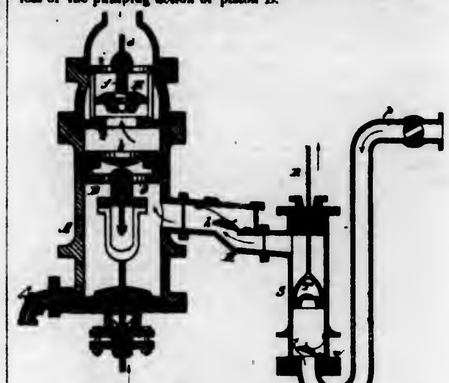
2. The combination of the case A, partitions H and H', springs K and K', lovers I and I', platens G and G', and bed B, substantially as shown and described.

3. The hinged leg O, sliding bar P, cross-bar Q, and bed B, substantially as shown and described.

4. The pivoted bed B, case A, and catches E and E', combined substantially as shown and described.

254,321. FEED-PUMP FOR STEAM-BOILERS. JOHN HENRY, Springtown, Pa. Filed Nov. 7, 1881. (No model.)

Brief.—The pump and its pipe-connections are provided with check-valves, to allow the hot water to pass into the boiler regardless of the pumping action of piston B.



Claim.—1. In a pump for feeding hot water to steam-boilers, the combination of the cylinder A, piston B, the latter having the relief-valve *b*, the spring check-valve *h* in the supply-pipe, and the outlet-valve in the discharge end of said cylinder, all arranged to operate as shown and described.

2. In a pump for feeding hot water to steam-boilers, the combination, with cylinder A, piston B *h*, and outlet and check valves, of the auxiliary feed-pump consisting of cylinder S, valved piston T, and valve *u*, all as shown and described, to operate, as hereinbefore specified, to produce an artificial pulsation and relieve undue pressure in the cylinder and supply-pipes.

254,322. MEANS FOR RECLAIMING LOW LANDS. GIDEON HOWELL, Philadelphia, Pa. Filed Oct. 4, 1881. (No model.)

Brief.—An endless conveyer passes over wheels on a vertically-adjustable frame which is anchored in the water and over wheels in a frame secured on land. The mud or sand is dredged from under the water, carried up over the beach, and distributed, the excavated places being resupplied with material by the action of the tide.



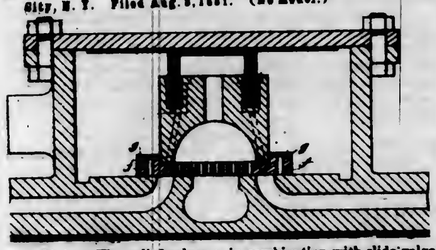
Claim.—1. The method herein described for reclaiming low lands lying adjacent to tide-water, consisting in dredging at suitable points along the shore the sand or mud from below high-water mark and beyond the beach, conveying it over the beach to a point above the reach of the tide, and distributing it over the said low lands, the resupply of sand or mud to the excavated places being caused by the action of the tide, substantially as set forth.

2. The combination, with endless apron or conveyer E, of a support, F, carrying a pivoted frame, F', adjustable by means of a screw, M, substantially as shown and described.

3. The combination, with endless conveyer E, of support F, carrying wheels *f*, and anchor H, substantially as shown and described.

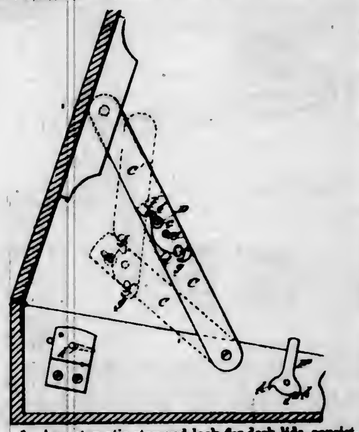
4. The combination, with endless band or conveyer E, of an anchored support, F, carrying a vertically-adjustable frame, F', and pivoted land-support or frame G, substantially as shown and described.

254,323. SLIDE-VALVE. WILLIAM S. HUNTER, Long Island City, N. Y. Filed Aug. 8, 1881. (No model.)



Claim.—The relief-valves *g*, in combination with slide-valve B, provided with apertured flanges *f*, substantially as shown and described.

254,324. AUTOMATIC LOCKING-STAY FOR DESK-LIDS. JOSEPH J. ISLEHART, Columbia, Mo., assignor to himself and Walter W. Barth, same place. Filed Aug. 24, 1881. (No model.)



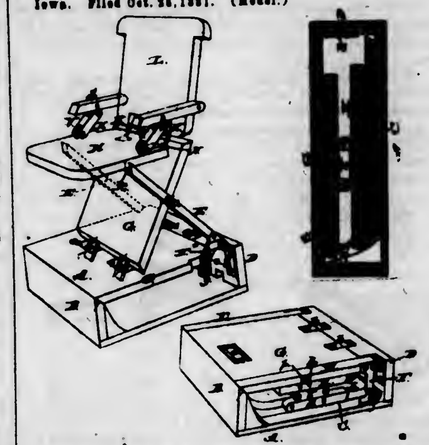
Claim.—1. An automatic stay and lock for desk-lids, consisting of two plates pivoted together at their overlapping ends and provided with a two-fold locking mechanism at the said overlapping ends for locking them together in either an extended position or in a folded position, whereby the lid is adapted to be supported when raised and locked when lowered, substantially as shown and described.

2. An automatic stay and lock for desks, &c., consisting of two plates pivoted together at their overlapping ends, one of the said plates being provided with a locking-pin working in a slot and the other with a locking-socket on each side of the pivot that connects the two plates, substantially as and for the purpose set forth.

3. In an automatic desk stay and lock, the combination, with the stay C, provided with the slot *h*, and the sliding locking-bolt D, of the stay C', provided with the locking-sockets *f f*, and hook *g*, the said plates being pivoted together at their overlapping ends, substantially as and for the purpose set forth.

4. The combination, with the desk stay and lock, substantially as herein shown and described, and desk A, of the pivoted stop F, provided with legs A and pin *i*, substantially as shown, whereby the desk-lid may be prevented from locking, as set forth.

254,325. FOLDING OPERA-CHAIR. JOHN JACKSON, Clinton, Iowa. Filed Oct. 26, 1881. (Model.)

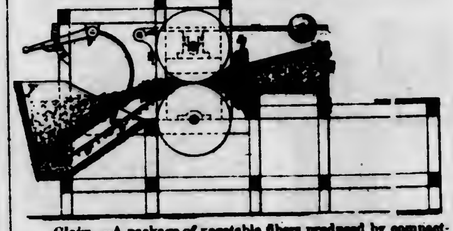


Claim.—1. A folding chair having two floor-sections connected therewith, one forming one of the chair-supports and arranged to take position as part of the floor when the chair is folded, and the other forming a portion of the floor when the chair is set up for use, in combination with the floor having a receptacle to receive the chair when folded, substantially as specified.

2. The combination, with the floor or base casing A, of the floor-sections C and G, the cross-legs E, folding seat H, back I, and arms S V, and connecting devices therefor, substantially as specified.

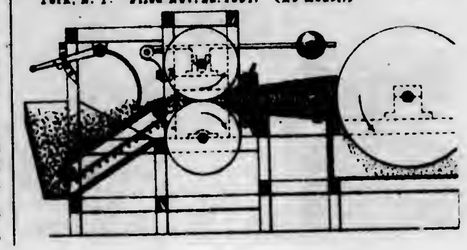
3. In a chair, the combination, with the floor-sections C and G, the cross-legs E, folding seat H, back I, and arms S V, and devices to pivot the chair to the floor-receptacle, whereby the chair may be folded and unfolded, substantially as specified.

254,326. COMPACTING PAPER-STOCK AND OTHER VEGETABLE FIBERS FOR TRANSPORTATION. GUSTAV L. JANSEN, New York, N. Y. Filed Dec. 31, 1881. (No model.)



Claim.—A package of vegetable fibers produced by compacting said fibers while in a moist state and then drying the packages so formed, substantially in the manner and for the purpose herein shown and described.

254,327. MAKING PAPER-PULP FROM STRAW, STALKS, AND OTHER FIBROUS MATERIAL. GUSTAV L. JANSEN, New York, N. Y. Filed Nov. 28, 1881. (No model.)



Claim.—1. The process of producing paper-pulp from straw or other stalks, which consists in first compacting the stalks and then subjecting the same to a grinding action, substantially as de-

254,329. METHOD OF AND APPARATUS FOR MANUFACTURING DISTILLED SPIRITS FROM GRAIN. THOMAS A. JESS and WILLIAM T. JESS, Buffalo, N. Y. Filed Jan. 24, 1882. (No

254,331. CORN-PLANTING MACHINE. JAMES HERVA JONES, Rockford, Ill. Filed June 20, 1881. (Model.)

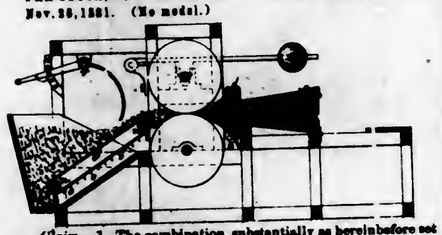
254,333. STEAM-PIPE HANGER. WILLIAM KANE, Philadelphia, Pa. Filed Jan. 12, 1882. (No model.)

Claim.—1. The process of producing paper-pulp from straw or other stalks, which consists in first compacting the stalks and then subjecting the same to a grinding action, substantially as described.

2. The process of producing paper-pulp from straw or other stalks, which consists in first crushing the stalks, then compacting the crushed stalks, and then subjecting the same to a grinding action.

3. The process of producing paper-pulp from vegetable fiber, which consists in first compacting the fiber and then subjecting the same to a grinding action, substantially as described.

254,328. MACHINE FOR CRUSHING AND COMPACTING PAPER-STOCK, &c. GUSTAV L. JARRAN, New York, N. Y. Filed Nov. 26, 1881. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of the compacting-rollers arranged to revolve in superficial contact with each other, and the receiver having its mouth arranged opposite to the bite of the rollers.

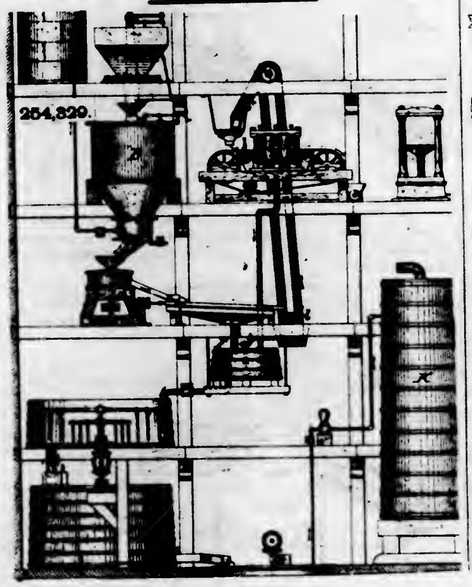
2. The combination, substantially as hereinbefore set forth, of the compound crushing and compacting rollers arranged to revolve in superficial contact with each other, and the receiver having its mouth arranged opposite to the bite of the rollers.

3. The combination, substantially as hereinbefore set forth, of the compound crushing and compacting rollers arranged to revolve in superficial contact with each other, the endless feeder armed with teeth for delivering the material to the rollers, and the receiver having its mouth arranged opposite to the bite of the rollers.

4. The combination, substantially as hereinbefore set forth, of the endless toothed feeder, the adjustable clearing-fork having its tines arranged above the surface of the feeder, the compound crushing and compacting rollers, and the receiver, for the purpose specified.

5. A package of straw or other stalks compacted or solidified, with its component particles laid approximately parallel to each other, for the purpose specified.

254,329.



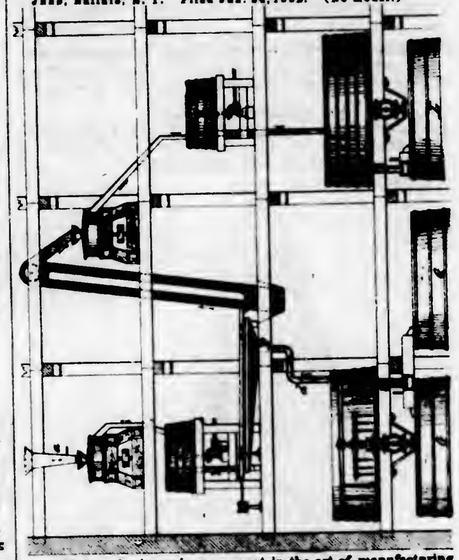
254,329. METHOD OF AND APPARATUS FOR MANUFACTURING DISTILLED SPIRITS FROM GRAIN. THOMAS A. JUDD and WILLIAM T. JUDD, Buffalo, N. Y. Filed Jan. 24, 1882. (No model.)

Claim.—1. As an improvement in the art of manufacturing distilled spirits from grain, the herein-described method, which consists in first moistening the grain, then reducing it, then separating the bran and other coarse offal from the starchy substance, then mashing the separated starch together with a suitable quantity of small grains or malt, and then fermenting the mash and distilling the fermented material, substantially as set forth.

2. In an apparatus for manufacturing distilled spirits from grain, the combination of a moistening or soaking device, a suitable grinding-mill, whereby the grain is reduced, a separator, whereby the bran and other coarse offal are separated from the starchy substances, a receiver in which the starchy substances are collected, a mash-tub in which the starchy substances are mashed, and one or more fermenting-tubs in which the mash is fermented, substantially as set forth.

3. In an apparatus for manufacturing distilled spirits from grain, the combination of a suitable grinding-mill, whereby the grain is reduced, a separator, whereby the bran and other coarse offal are separated from the starchy substances, a receiver in which the starchy substances are collected, a mash-tub in which the starchy substances are mashed, and one or more fermenting-tubs in which the mash is fermented, substantially as set forth.

254,330. METHOD OF AND APPARATUS FOR MANUFACTURING DISTILLED SPIRITS FROM GRAIN. WILLIAM T. JUDD, Buffalo, N. Y. Filed Jan. 24, 1882. (No model.)

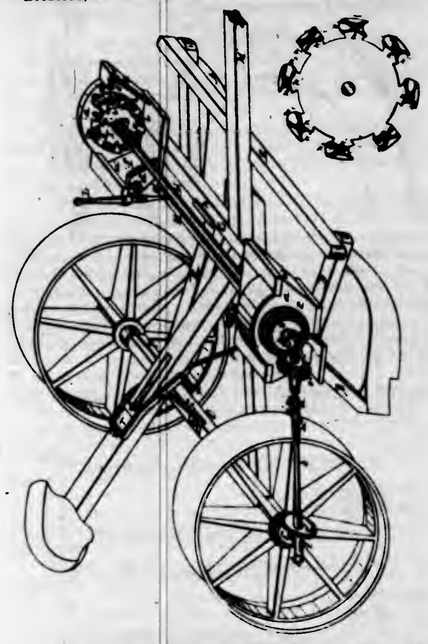


Claim.—1. As an improvement in the art of manufacturing distilled spirits from grain, the herein-described method, which consists in first moistening the grain, then reducing it, then separating the starchy portion of the grain from the bran, and then mashing, fermenting, and distilling the starchy portions and the bran separately, as set forth.

2. As an improvement in the art of manufacturing distilled spirits from grain, the herein-described method, which consists in first moistening the grain, then reducing it, then separating the starchy portion of the grain from the bran, then mashing, fermenting, and distilling the starchy portions, then regrinding the bran, and mashing, fermenting, and distilling the ground bran separately, substantially as set forth.

3. In an apparatus for manufacturing distilled spirits from grain, the combination of a suitable grinding-mill, whereby the grain is reduced, a receiving-tub, a separator, whereby the bran and other coarse offal is separated from the starchy substances, a receiver in which the starchy substances are collected, a suitable conveyer for the bran and other coarse offal, a regrinding-mill therefor, and suitable mash and fermenting tubs and connecting-conduits, substantially as set forth.

254,331. CORN-PLANTING MACHINE. JAMES HERVA JONES, Rockford, Ill. Filed June 30, 1881. (Model.)



Claim.—1. The herein-described seed-distributing wheels, having radial arms provided with opposite semi-seed-cups and capable of use on either side of the machine, substantially as and for the purpose hereinbefore set forth.

2. The herein-described seed-distributing wheels, having radial arms provided with opposite semi-seed-cups, varying in size, the respective sizes of said cups being on the same side of the radial arms, and said wheels made in pairs and capable of use on opposite sides of the machine, for the purpose of distributing seed varying in size, substantially as hereinbefore set forth.

3. The combination, with the fixed disk having the semicircular groove, of the herein-described seed-distributing wheels, mounted loosely on the transverse shaft to revolve therewith, and a spring operating to hold the seed-distributing wheels in contact with the fixed disk, substantially as set forth.

4. The herein-described seed-distributing wheels, having semicircular projections extending from their face side, forming the bottom of the seed-cups, in combination with a fixed disk provided with a semicircular groove adapted to receive the semicircular projections, substantially as and for the purpose hereinbefore set forth.

5. The combination of the herein-described rotary seed-distributing wheels, having semi-cups, as described, with a fixed disk having a semicircular groove on its face, and its upper peripheral portion cut away opposite the seed-conducting spout within the semicircular groove, substantially as set forth.

254,332. BUCKBOARD-WAGON. ISRAEL JEWETT and SYDNEY W. YATTAW, Fort Henry, N. Y. Filed Aug. 6, 1881. (No model.)



Claim.—The combination, with a wagon-backboard, a, of the stiffening-frame A, having the parallel downwardly-curved slats *k* inserted in the openings between the slats of the backboard, and secured thereto, and provided with the end transverse bars, *l*, adapted to support a wagon-body, substantially as described, and for the purpose set forth.

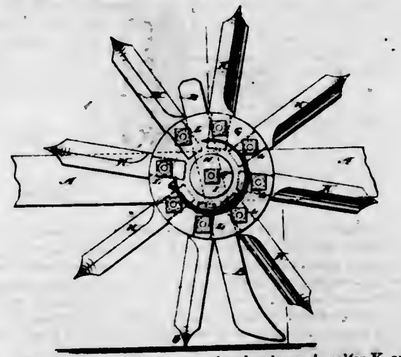
254,333. STEAM-PIPE HANGER. WILLIAM KANE, Philadelphia, Pa. Filed Jan. 12, 1882. (No model.)



Claim.—1. A steam-pipe hanger in which a hanger-plate, B, is combined with pivoted and laterally-held hooks A, substantially as described.

2. The plate B, provided with lugs *b*, each having a projecting pin, *d*, and with ribs *m*, each having a notch, *n*, in combination with hooks A, adapted to two of the pins *d*, and having at the back a rib adapted to a notch in one of the ribs *m*, all substantially as set forth.

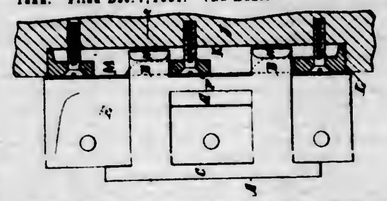
254,334. STALK-CUTTER. ALBERT A. KELLOGG, Chamois, Mo. Filed Dec. 16, 1881. (Model.)



Claim.—1. In a stalk-cutter, the plow-beam A, colter K, and cutter-carrying hub G, combined with and held together by a pivot, I, made to hold the cutter K fast to the beam and to allow the hub to turn on it, as shown and described.

2. The combination, with the plow-beam, of a fixed front-sharpened colter, B, and rear-sharpened cutters K, the latter extending beyond the former, arranged radially in a hub, G, attached, with the colter, to the side of plow-beam, as shown and described.

254,335. BEDSTEAD-HOOK. JACKSON J. KENNEDY, Cleveland, Tenn. Filed Dec. 7, 1881. (No model.)



Claim.—1. The combination, with the side rail, D, of a bedstead, of the frame A, provided with a hook or hooks, B, and of the block or cleat E, substantially as herein shown and described.

2. The combination, with the side rail, D, of a bedstead, of the adjustable frame A, provided with hooks B, and of the block or cleat E, substantially as herein shown and described.

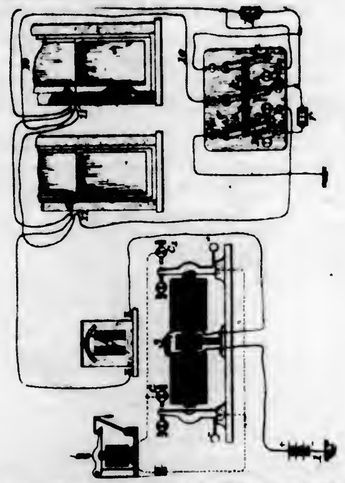
3. The combination, with the side rail, D, of a bedstead, of the frame A, provided with hooks B, and with a flange, C, at the opposite end, and of the block or cleat E, substantially as herein shown and described.

4. The combination, with the side rail, D, of a bedstead, of the frame A, provided with hooks B and a flange, C, and of the cleat or block E, provided with grooves for the longitudinal bars F of the frame A, and with a recess, G, for the end piece, F', of the frame A, substantially as herein shown and described.

5. The combination, with the side rail, D, and the post or leg J, of the frame A, provided with hooks B and the flange C, the cleat or block E, and the socket-plate L, substantially as herein shown and described.

6. In a bedstead-fastening, the frame A, constructed, substantially as shown, with one or more hooks, B, at one end and a flange, C, at the opposite end, as set forth.

254,336. ELECTRIC BURGLAR-ALARM. MARION H. KERNS, New York, N. Y. Filed Jan. 8, 1882. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of a main line, a main battery, one or more circuit-closers adapted to shunt a portion of the main line, two independent relays included in the main-line circuit, one of which responds to an increase and the other to a decrease in the normal strength of the current traversing said main line, and a signaling apparatus included in an independent local circuit and capable of being actuated by either of said relays.

2. The combination, substantially as hereinbefore set forth, of a main line, a main battery, a rheostat included in the main-line circuit, one or more circuit-closers adapted to shunt the portion of said main line including said rheostat, two relays included in the main-line circuit, one of which responds to an increase and the other to a decrease in the normal strength of the current traversing said main line, and a signaling apparatus included in an independent local circuit and capable of being actuated by either of said relays.

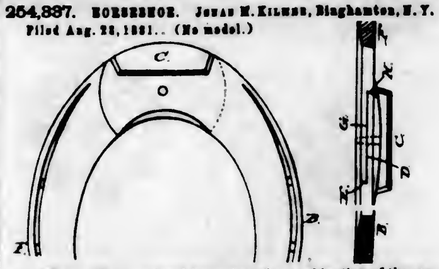
3. The combination, substantially as hereinbefore set forth, of a main line, a main battery, a rheostat included in the main-line circuit, one or more circuit-closers adapted to shunt the portion of the main line including said rheostat, a second rheostat placed in a branch circuit and having a resistance either greater or less than that of the first rheostat, a switch for disconnecting the main line from one rheostat and connecting it with the other, and a detecter for indicating the strength of current traversing the main line.

4. The combination, substantially as hereinbefore set forth, of a main line, a main battery, a rheostat included in the main-line circuit, one or more circuit-closers adapted to shunt the portion of the main line including said rheostat, a second rheostat having a resistance greater or less than that of the first one and placed in a branch line, a switch for disconnecting the main line from one rheostat and connecting it with the other, a detecter for indicating the strength of current in the main-line circuit, two relays included in the main-line circuit, one of which responds to an increase and the other to a decrease in the normal strength of the current traversing said main line, and a signaling apparatus under the control of either of said relays.

5. The combination, substantially as hereinbefore set forth, of a main line, a main battery, two rheostats, one or more circuit-closers adapted to shunt one of said rheostats and not the other, and a switch, whereby the resistance of either one of said rheostats may be removed from the main circuit at pleasure, but not both at the same time.

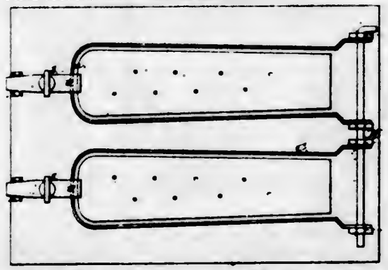
6. The combination, substantially as hereinbefore set forth, of a main line, a main battery, two relays included in the main-line circuit, one of which, having a lesser number of convolutions, responds to an increase, and the other, having a greater number of convolutions, responds to a decrease, in the normal strength of the current traversing said main line, and a signaling apparatus under the control of either of said relays.

254,337. HORSESHOE. JONAS M. KILMER, Binghamton, N. Y. Filed Aug. 21, 1881. (No model.)



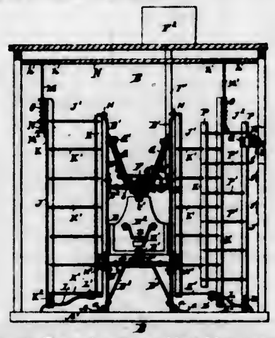
Claim.—In a sectional horseshoe, the combination of the section B, having the toe-calk C, rabbet, and under-beveled shoulder E, and the section F, having rabbet G and under-beveled shoulder H, the ends of said sections being convex and the shoulders concave, the said sections being pivoted together through the media of the tapered registering holes I I′ and the tapering pin J, passed up through said holes and upset at its smaller end, substantially as and for the purposes specified.

254,338. PAD-PRESS. EDWARD S. KIDDY, Black Earth, Wis. Filed Jan. 14, 1882. (No model.)



Claim.—The pad-press consisting of the press-plate having elongated, inclined, rounded, and perforated pad-forming projections, band-loops pivoted to bearings on the press-plate and extending around the head and sides of the projections, and fastening devices to secure the band-loops to the press-plate, substantially as specified.

254,339. CATTLE-CAR. JOHN G. KLETT, Brooklyn, N. Y. Filed Dec. 17, 1881. (No model.)



Claim.—1. The series of movable fodder-troughs D, having each a longitudinal central groove, D′, rolls e in said grooves, and recessed ends D^2, in combination with track-plates C′ C^2, as shown and described.

2. The combination, with a cattle-car, of a series of standards connected by transverse bars carrying tracks, and of troughs sliding on these tracks, substantially as herein shown and described, and for the purpose set forth.

3. The combination, with a cattle-car, of a series of standards on which gates are hung, of transverse bars connecting these standards, of tracks supported by these transverse bars, and of troughs adapted to slide on these tracks, substantially as herein shown and described, and for the purpose set forth.

4. The combination, with the cattle-car B, of the plates A on the floor of the same, the standards B′, held by these plates A, and of the gates J, hung on these standards, substantially as herein shown and described, and for the purpose set forth.

5. The combination, with a cattle-car, of plates A, turned up at the adjoining edges, the standards B′, having a bend at the lower ends, the clamping-plates a, and the gates J, hung on these standards, substantially as herein shown and described, and for the purpose set forth.

6. The combination, with a cattle-car, of the standards B′, the transverse bars B^2, the tracks C′ C^2, and the troughs D, adapted to slide on these tracks, substantially as herein shown and described, and for the purpose set forth.

7. In a cattle-car, the combination, with the standards B′, connected by transverse bars B^2, of the tracks C′ C^2, the troughs D, adapted to slide on these tracks, and the water-pipe F, resting on the upper transverse bars B^2, substantially as herein shown and described, and for the purpose set forth.

8. In a cattle-car, the combination, with the tracks C′ C^2, of a series of troughs, D, connected by coupling-bars E^2, substantially as herein shown and described, and for the purpose set forth.

9. In a cattle-car, the combination, with the tracks C′ C^2 and the troughs D, provided with swinging ball-handles E and loops E′, of the coupling-bars E^2, for connecting the troughs, substantially as herein shown and described, and for the purpose set forth.

10. In a cattle-car, the combination, with the tracks C′ C^2, of the troughs D, connected by coupling-bars E^2, and the clip T, attached to the track C′, for holding the coupling-bar E^2 of the end trough, substantially as herein shown and described, and for the purpose set forth.

11. In a cattle-car, the combination, with the tracks C′ C^2, of the troughs D, provided in the bottom with a longitudinal groove, D′, containing rollers e, substantially as herein shown and described, and for the purpose set forth.

12. In a cattle-car, the combination, with the tracks C′ C^2, of the troughs D, provided with longitudinal grooves in the bottom, and with enlarged ends D^2, having recesses d′ in the top, substantially as herein shown and described, and for the purpose set forth.

13. In a cattle-car, the combination, with the standards B′, of the transverse connecting-bars B^2, the braces B^3, turned up at the lower ends, and of the hay-racks G, resting on these braces, substantially as herein shown and described, and for the purpose set forth.

14. In a cattle-car, the combination, with the standards B′, of the transverse connecting-bars B^2, the braces B^3, turned up at the lower ends, the hay-racks G, resting on these braces, and the hooks G′, for holding the upper bars of these racks, substantially as herein shown and described, and for the purpose set forth.

15. In a cattle-car, the combination, with the standards B′, of the transverse connecting-bars B^2, the braces B^3, the racks G, and the pivoted transverse rod G^2, for holding these racks, substantially as herein shown and described, and for the purpose set forth.

16. In a cattle-car, the combination, with the standards B′, of the gates J, provided with a spring-rod, L, at the bottom, and a latch-rod, M′, at the top, which rods L and M′ pass into apertures in the floor and ceiling of the car, and thus hold the gates in the desired position, substantially as herein shown and described, and for the purpose set forth.

17. In a cattle-car, the combination, with the gate J, of the sliding bent spring-rod L, substantially as herein shown and described, and for the purpose set forth.

18. In a cattle-car, the combination, with the gate J, of the bent spring-rod L, passing through a slot, K^2, provided with shoulders g at the bottom of the outer gate-bar K, and of the block L′, sliding on the bottom transverse rod K′ of the gate, and attached to the inner end of the rod L, substantially as herein shown and described, and for the purpose set forth.

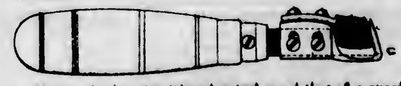
19. In a cattle-car, the combination, with the gate J, of the angle-piece N′, the latch-rod M′, provided with a rectangular bend, M^3, at the lower end, and of the spring O, surrounding and attached to the rod M′, substantially as herein shown and described, and for the purpose set forth.

20. In a cattle-car, the combination, with the standards B′, of the gate-section J′, hung on these standards, and of the gate-section J^3, sliding on the section J′, substantially as herein shown and described, and for the purpose set forth.

21. In a cattle-car, the combination, with the swinging gate-section J′, provided with bottom latch-rod, L, and top latch-rod, M′, of the section J^3, sliding on the section J′, substantially as herein shown and described, and for the purpose set forth.

22. In a cattle-car, the combination, with the swinging gate J, of the block Q, sliding on the outer bar of this gate and pivoted to a U-shaped clip, R, adapted to fit on the horizontal slats of the car, substantially as herein shown and described, and for the purpose set forth.

254,340. EDGE-TRIMMING TOOL. PEDERSON H. LANDER, Lynn, Mass. Filed Mar. 25, 1881. Renewed Jan. 30, 1882. (Model.)

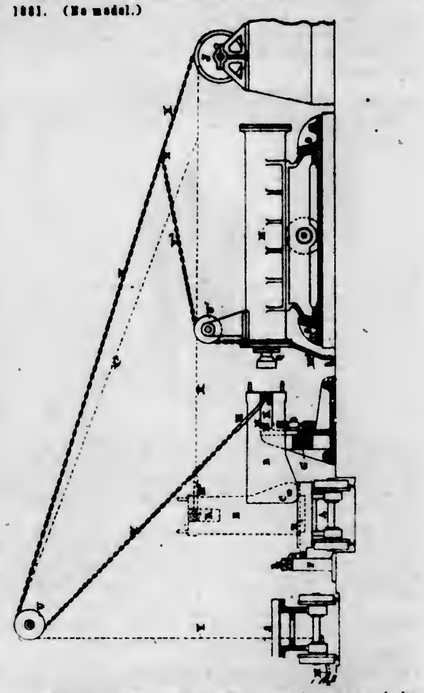


Claim.—1. An edge-trimming tool consisting of a guard, C, having a part adapted to be clamped to the blade, as shown, in combination with a guide-bar adjustably connected to said guard and adapted to be advanced toward the inwardly-turned outer end of guard C and toward the edge of the knife by one movement, substantially as shown.

2. The combination of the guard C, having extension adapted to be clamped to the blade, and a curved section of a guide-bar having shank fitted to said curved section and adjustably connected thereto, and a knife-blade and suitable clamps.

3. The combination, in an edge-trimming tool, of the guide C, provided with curved section on the part adapted to be clamped to the blade, a guard having curved shank adapted thereto and provided with enlarged slots and set-screws, whereby the said guard may be connected to the curved section and adjusted laterally and longitudinally, as set forth.

254,341. APPARATUS FOR STRIPPING INGOTS CAST IN MOLDS. LOUIS G. LAUBAUS, New York, N. Y. Filed Nov. 29, 1881. (No model.)



Claim.—1. The ingot-mold B, mounted on a car, A, by a hinged joint having an elongated hole, C, and having lugs or projections K, in combination with stops L, and with the punching-cylinder N and piston O, substantially as and for the purposes set forth.

2. The combination of the hinged mold B with lugs K, the stops L, the movable face-plates M, and cylinder N and piston O, substantially as and for the purposes set forth.

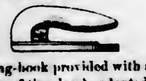
3. The combination of the car A, hinged ingot-mold B, roller-frame F, and lip E, to prevent the tipping of the car, as explained.

4. The combination of the car A, hinged mold B, support O, stops L, hooks H H′, chains X Y, and movable cylinder N and piston O, substantially as and for the purposes set forth.

254,342. ARTIFICIAL STONE. CARL F. LEIDHOLDT, Neillsville, Wis., assignor of one-third to Herrman Schuster, same place. Filed Jan. 11, 1882. (No specimens.)

Claim.—As an improved article of manufacture, an artificial stone composed of hydraulic lime, sand, leached ashes, glue-water, and bone-meal in the proportions stated.

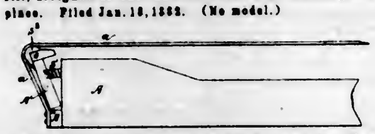
254,343. LACING-HOOK. EDOUARD C. LEQUIN, Keokuk, N. Y. Filed Nov. 10, 1881. (No model.)



Claim.—1. The lacing-hook provided with a projecting pin or needle point on the inside of the shank, adapted to prevent retraction of the lacing-cord, substantially as specified.

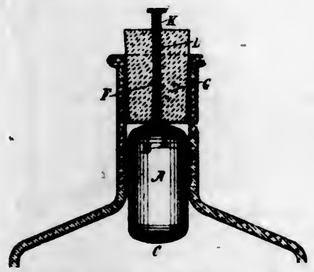
2. The lacing-hook having the projection *b* on the inside of its shank, and the pin or needle point *c*, fixed in said projection, and adapted to prevent retraction of the lacing-cord, substantially as specified.

254,344. ELASTIC BED-BOTTOM. JACOB H. LANOW, Chicago, Ill., assignor of one-half to Charles W. Fairrington, same place. Filed Jan. 18, 1882. (No model.)



Claim.—As an improvement in bed-bottoms, the strips *a*, secured to the frame A, in combination with springs a^2 and hinged flexible supplemental rails A′ at the head or foot, or at both head and foot, all arranged to operate substantially as and for the purpose shown.

254,345. BOTTLE-STOPPER ATTACHMENT. BENJAMIN B. LEWIS, West Stratford, Conn. Filed Nov. 10, 1881. (No model.)



Claim.—1. The combination, with the stopper G, having an aperture, F, of the rod D, having the enlargement or valve E, either with or without the spring K, and the vessel A, having the end apertures, B and C, substantially as herein shown and described, and for the purpose set forth.

2. As an article of merchandise, the stopper attachment consisting of the vessel A, having the end apertures, B and C, and the rod D, having the enlargement or valve E, either with or without the spring K, intended for application to a stopper in the manner and for the purpose set forth.

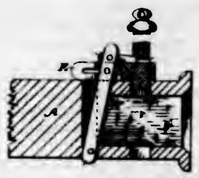
254,346. MOLD FOR CASTING METALS. JOHN L. LEWIS, Pittsburg, Pa. Filed June 16, 1881. (No model.)



Claim.—A mold having a sinking-head cavity with contracted neck and an annular cavity surrounding the said neck, substantially as described.

254,347. CAR-COUPLING. CHARLES E. MACARTHY, Forsyth, Ga. Filed Jan. 11, 1882. (No model.)

Claim.—1. The combination, with a plain draw-bar having a slot in its upper wall back of the pin-hole, of a vertical trigger-bar fulcrumed upon a horizontal pin in the draw-bar, the coupling-pin, and a rectilinearly-sliding device arranged above the top of the draw-bar, and jointed at its rear end to the trigger-bar, and arranged to trip the coupling-pin at its front end, substantially as shown and described.

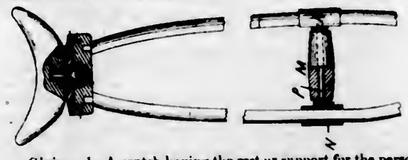


2. The combination, with the coupling-pin and a draw-bar having a slot in its upper surface back of the pin-hole, of a vertical trigger-bar fulcrumed in the draw-bar, and a piece, E, formed with an eye encircling the pin and connected to the trigger-bar above and outside the draw-bar, as and for the purpose described.

3. The perforated tongue H, with hollow socket I, in combination with a link having a shank adapted to fit in said socket, and made adjustable therein, as and for the purpose described.

4. The combination, with the coupling-pin of a car, of a pulley or wheel arranged above the same, a chain connecting with the pin and passing over the wheel to the side of the car, and a second chain connecting with the pin at a point below the wheel, and extending vertically to the top of the car, as and for the purpose described.

254,348. CRUTCH. SERVUS C. MAINE, Boston, Mass. Filed Sept. 16, 1881. (No model.)

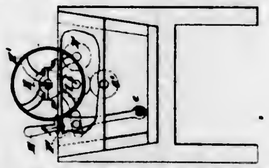


Claim.—1. A crutch having the rest or support for the person under the armpit attached to the staff with a single ball-and-socket joint, substantially as described, for the purpose specified.

2. A crutch having the rest or support for the person under the armpit made of cork, secured in a suitable shell or casing, substantially as and for the purpose described.

3. The combination, with the branches of a crutch, of the hand-rest M, the pin P, passing through the hand-rest, and screw-threaded at its ends, as set forth, and the sleeves N, having sockets receiving said screw-threaded ends of the pin, whereby by turning said hand-rest in one direction the sleeves will be drawn toward each other, and thereby secured upon the branches of the crutch, substantially in the manner and for the purpose described.

254,349. MACHINE FOR SCALDING AND STICKING FUR-BATS TO FELT HAT-BODIES. CHARLES A. MALLORY, Danbury, Conn. Filed Jan. 9, 1882. (No model.)



Claim.—1. The rollers B C D, arranged to leave a constant space, in which the hat-body can be introduced and removed, in combination with the levers E, adjusting means F therefor, pulleys B^a D^a, belt G, and pulleys K L, arranged for joint operation, as herein specified.

2. The rollers B C D, arranged to provide a space at the top in which the hat-body can be introduced and removed, gears B′ C′, pulleys B^a D^a, levers E, belt G, and pulleys K L, in combination with each other and with the water-tank A and steam-pipes *a*, as herein specified.

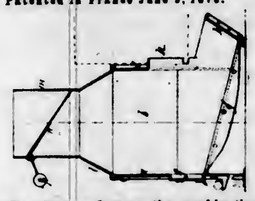
254,350. FENCE-POST. CHARLES A. MANN, Buffalo, N. Y. Filed Jan. 17, 1881. Renewed Dec. 10, 1881. (No model.)

Claim.—1. In combination with the iron post A A′, the anchor-base B, riveted to the post, and having the flanges *e e*, the brace loop or lug *h*, and brace C, all substantially as and for the purpose specified.



2. In a fence-post, the combination of the upright post A A′ *b* with an anchor, B, having the upright attaching portions *g e* and an intervening ledge closely fitting into the post, as set forth.

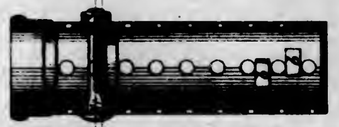
254,351. BAGASSE-FURNACE. MARIE JEAN LÉON MARIE, St. Pierre, Martinique, West Indies. Filed Oct. 29, 1881. (No model.) Patented in France June 9, 1879.



Claim.—In a bagasse-furnace, the combination of the door-plate *a*, the side plates, *b c*, the plate *d*, having flanged throat *k*, the fire-bars *g*, the bridge *h*, the crown-piece *l*, and the valved hopper *m*, all arranged substantially as shown and described.

254,352. PUMP-STRAINER. SAMUEL W. MARVIN, Springfield, Ohio. Filed Dec. 27, 1881. (No model.)

Brief.—This strainer can be readily attached to a suction-pipe by friction, and thus avoid cutting screw-threads on said suction-pipe.



Claim.—1. As a new article of manufacture, the pump-strainer consisting of the perforated body-sections united by a bolt or equivalent fastening device.

2. In combination with the pipe A, the divided strainer and the bolt or its equivalent, whereby the strainer is secured to the pipe by frictional contact.

3. The improved pump-strainer, consisting of the body-sections having their edges serrated to form openings when united, substantially as described and shown.

4. The perforated body-sections provided with the bolt or equivalent fastening device and the lips, as described and shown.

5. In combination with the pipe, a tubular perforated strainer provided with a clamping device and secured thereto by frictional contact, substantially as described.

254,353. IRON FENCE. SAMUEL W. MARTIN, Springfield, Ohio. Filed Dec. 27, 1881. (No model.)

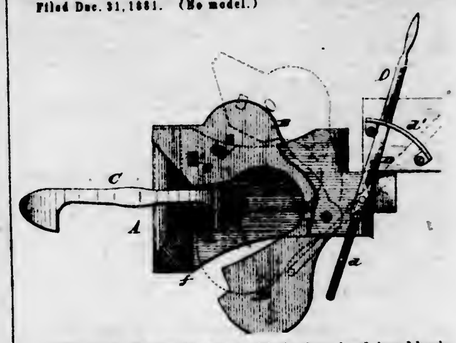


Claim.—1. In a metal fence, the combination of a rail, a vertical picket sustained by the rail and provided with a notch or recess and a rosette, substantially as described, engaging with the upper and lower edges of the rail, and also engaging with the upper and lower edges of the recess, whereby the picket is prevented from being raised or lowered.

2. In combination with the perforated rail, the vertical picket passing through the rail and provided with the transverse notch or shoulder, and the rosette adapted to engage around the picket, and provided with shoulders or bearings engaging with the picket and the fence-rail, respectively, in the manner described and shown.

3. The combination of the perforated rail, the picket passing loosely through the rail and provided with a transverse notch or shoulder, and the rosette encircling the picket and engaging with its shoulder, and also engaging with the upper and lower edges of the rail, as described and shown.

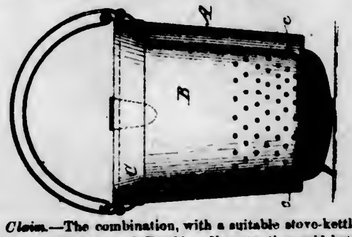
254,354. CAR-COUPLING. THOMAS MCCABE, St. Joseph, Mo. Filed Dec. 31, 1881. (No model.)



Claim.—1. The combination, with the draw-head A and hook C, of the catch B, projecting below the draw-head, the crank-shaft *d*, adapted to operate the catch, and the lever D, and means for locking the lever in any desired position, substantially as shown and described.

2. The combination, with the draw-head A and weighted catch B, of the pins *e* and *e′*, for holding the said catch in position to prevent the accidental disengagement of the link, substantially as shown and described.

254,355. VESSEL FOR COOKING. CHRISTOPHER C. P. MCCOMB, Walnut Grove, Ark. Filed Dec. 15, 1881. (No model.)



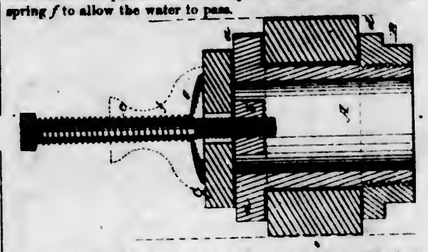
Claim.—The combination, with a suitable stove-kettle, A, of an inner perforated vessel, B, of less diameter than said kettle, and provided with a flaring extension, C, and radial pins *c*, extending from the sides of the vessel and adapted to come in contact with the interior sides of the kettle, whereby a continuous closed space is left around the entire outer surface of the vessel and inner surface of the kettle, substantially as and for the purpose set forth.

254,356. MEDICAL COMPOUND. WILLIAM R. MEAD, Fowlerville, Mich. Filed Oct. 31, 1881. (No specimens.)

Claim.—A medical compound for the treatment of epilepsy, composed of tincture of nux vomica, bromide of ammonia, bromide of potash, bicarbonate of potash, tincture of columbo, and distilled water, mixed in about the proportions set forth.

254,357. PUMP-PISTON. GODFREY MILLER, Anita, Iowa. Filed Nov. 11, 1881. (Model.)

Brief.—The flexible material *e* is retained in place by nut B and acts as the piston. Valve *c* is raised against the pressure of spring *f* to allow the water to pass.



Claim.—1. In a pump-piston, the combination, with the tubular casting A, provided with the cross-bar *b* and the piston-rod *e*, of the valve C, sliding freely upon the piston-rod, the washer *g*,

254,358. CAR-COUPLING. JOHN MILLER, Jr., Pittsburg, Pa. Filed Dec. 27, 1881. (No model.)

Claim.—1. The combination, with the draw-bar A, having the slot *a* and the pin-hole *b*, of the trigger-bar C, having the lug *c* and the arm *d*, the coupling-pin D, having the head *e* and the arm *f*, and the spring E, substantially as and for the purpose specified.

2. The combination, with the draw-bar A, having the slot *a* and the pin-hole *b*, of the trigger-bar C, having the lug *c* and the arm *d*, the coupling-pin D, having the head *e* and the arm *f*, the spring E, and the guard-plate F, substantially as and for the purpose specified.

254,359. CAR-COUPLING. JOHN MILLER, Jr., Pittsburg, Pa. Filed Dec. 27, 1881. (No model.)



Claim.—1. The combination, with the draw-bar A, having the slot *a* and the pin-hole *b*, of the trigger-bar C, having the lug *c* and the arm *d*, the coupling-pin D, having the head *e* and the arm *f*, and the spring E, substantially as and for the purpose specified.

2. The combination, with the draw-bar A, having the slot *a* and the pin-hole *b*, of the trigger-bar C, having the lug *c* and the arm *d*, the coupling-pin D, having the head *e* and the arm *f*, the spring E, and the guard-plate F, substantially as and for the purpose specified.

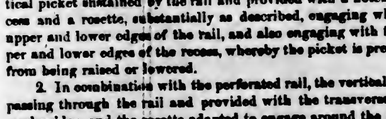
254,360. CAR-COUPLING. JOHN MILLER, Jr., Pittsburg, Pa. Filed Dec. 27, 1881. (No model.)



Claim.—1. The combination, with the draw-bar A, having the slot *a* and the pin-hole *b*, of the trigger-bar C, having the lug *c* and the arm *d*, the coupling-pin D, having the head *e* and the arm *f*, and the spring E, substantially as and for the purpose specified.

2. The combination, with the draw-bar A, having the slot *a* and the pin-hole *b*, of the trigger-bar C, having the lug *c* and the arm *d*, the coupling-pin D, having the head *e* and the arm *f*, the spring E, and the guard-plate F, substantially as and for the purpose specified.

254,361. CAR-COUPLING. JOHN MILLER, Jr., Pittsburg, Pa. Filed Dec. 27, 1881. (No model.)



Claim.—1. The combination, with the draw-bar A, having the slot *a* and the pin-hole *b*, of the trigger-bar C, having the lug *c* and the arm *d*, the coupling-pin D, having the head *e* and the arm *f*, and the spring E, substantially as and for the purpose specified.

2. The combination, with the draw-bar A, having the slot *a* and the pin-hole *b*, of the trigger-bar C, having the lug *c* and the arm *d*, the coupling-pin D, having the head *e* and the arm *f*, the spring E, and the guard-plate F, substantially as and for the purpose specified.

254,362. CAR-COUPLING. JOHN MILLER, Jr., Pittsburg, Pa. Filed Dec. 27, 1881. (No model.)



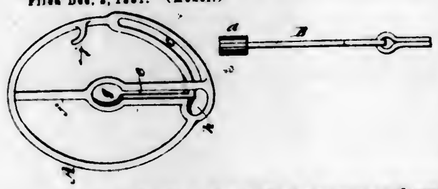
Claim.—1. The combination, with the draw-bar A, having the slot *a* and the pin-hole *b*, of the trigger-bar C, having the lug *c* and the arm *d*, the coupling-pin D, having the head *e* and the arm *f*, and the spring E, substantially as and for the purpose specified.

2. The combination, with the draw-bar A, having the slot *a* and the pin-hole *b*, of the trigger-bar C, having the lug *c* and the arm *d*, the coupling-pin D, having the head *e* and the arm *f*, the spring E, and the guard-plate F, substantially as and for the purpose specified.

and the spiral spring *f*, surrounding the said piston-rod, substantially as and for the purpose set forth.

2. In a pump-piston, the combination, with the tubular casting A, provided with the cross-bar *b*, the radial flange *a*, and the nut B and the packing *c*, of the piston-rod *e*, the spring *f*, and the valve C, substantially as and for the purpose set forth.

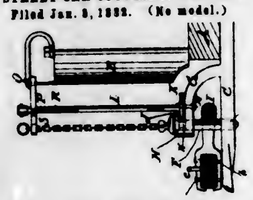
254,358. BRIDLE-RING. CHAS. B. HIETLE, Glenwood, Iowa. Filed Dec. 3, 1881. (Model.)



Claim.—1. The ring A, formed with the passages *c* and *e* and with the enlargements *g* and *h*, in combination with the headed hook B, substantially as described.

2. The ring having the diametrical portion *f* formed with the slot or passage *e* and enlargement *g*, and the rim formed with the slot or passage *c* and enlargement *h*, and having the horn *j*, in combination with the headed hook B, substantially as described.

254,359. STREET-CAR COUPLING. OLE A. A. HÖLOAL, Chicago, Ill. Filed Jan. 3, 1882. (No model.)



Claim.—1. In a horse street-car coupling, the combination, with the curved arm G, having recess J, and the coupling-pin F, having annular groove N, of the disk K, having recess O, and the disk-operating rod L, substantially as herein shown and described, whereby the coupling-pin can be readily locked and released, as set forth.

2. In a horse street-car coupling, the combination, with the disk-operating rod L, of the hinged handle R and the guide-bars P S, substantially as herein shown and described, whereby the said rod can be readily operated, locked, and unlocked, as set forth.

3. In a horse street-car coupling, the combination, with the curved arm G, having recess J and lugs V, and the coupling-pin F, having annular groove N, of the dog U, having tongue X and hook Z, substantially as herein shown and described, whereby the said coupling-pin will be securely locked and can be readily unlocked, as set forth.

4. In a horse street-car coupling, the combination, with the draw-bar C, of the projection *a*, having a shoulder at its forward side and its rear side inclined, substantially as herein shown and described, whereby the double-tree will be prevented from sliding rearward, while being allowed to slide forward freely, as set forth.

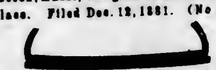
254,360. VENTILATOR. WILLIS E. MOORE, Thorntown, Ind. Filed Dec. 6, 1881. (No model.)

Brief.—The ventilating-pipe B has sliding sections, so that air may be obtained from a higher point, and consequently be more healthful.



Claim.—In a ventilator for dwellings, the combination, with the stationary pipe B, of the telescopic pipe-sections and means for elevating and lowering them, substantially as and for the purpose set forth.

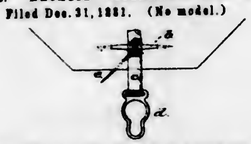
254,361. MANUFACTURE OF BOOTS AND SHOES. ANDREW NICHOLS, Boston, Mass., assignor of one-half to Charles Grant, Jr., same place. Filed Dec. 12, 1881. (No model.)



Claim.—1. The method of soling boots and shoes, consisting in splitting the edge of the sole circumferentially, applying the sole to the last, stretching the upper over the last right side out, inserting the edge of the upper in the circumferential slit of the sole, and securing it there by fastenings which attach it directly to both parts of said split sole, thus forming a complete shoe or boot with a circumferentially split or grooved sole without turning.

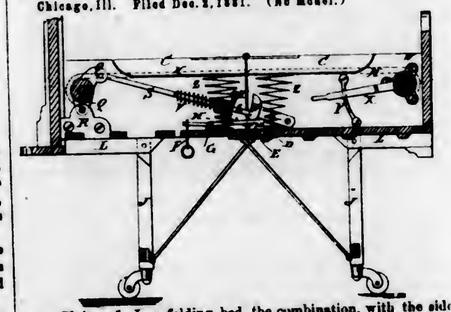
2. A boot or shoe having the margin of the upper inserted in a slit in the edge of the sole and attached thereto by stitches or other fastenings carried through and through both parts of the sole and the upper, substantially as set forth.

254,362. NECKTIE-FASTENER. ISAAC NOLAN, New York, N. Y. Filed Dec. 31, 1881. (No model.)



Claim.—The combination, in a breast-scarf fastening, with the collar-button loop *d* and its elastic, of the tag-fastening *b* and the coil-headed pin *e*, substantially as specified.

254,363. FOLDING BED. JOSEPH NOVAK and JOSEPH STROBEL, Chicago, Ill. Filed Dec. 2, 1881. (No model.)

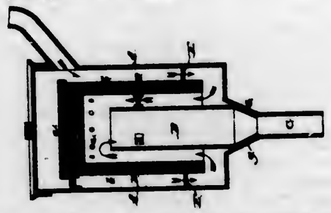


Claim.—1. In a folding bed, the combination, with the side boards of the bedstead and the bar O, to which one end of the mattress is attached, of the pivoted levers Q, attached to the ends of the said bar, the rods S, and the concaved stop-block U, substantially as and for the purpose set forth.

2. In a folding bed, the combination, with the side boards of the bedstead, the bar O, and the mattress N, of the pivoted levers Q, the rods S, stops U, and springs V, substantially as and for the purpose set forth.

3. In a folding bed, the combination, with the latches D and the catches E, of the rod G, provided with the arms H, the springs F, and the cords I, attached to said arms and passing through the bottom of the bed, substantially as and for the purpose set forth.

254,364. SEWER-TRAP. JAMES F. O'GRADY, Chicago, Ill. Filed Oct. 20, 1881. (No model.)



Claim.—1. In a sewer-trap, the combination, with the receiver A, permanently connected to the drain-pipe C by the conical seat *e*, of the discharging-vessel B, seated therein, and the gas-cap D, substantially as specified.

2. In a sewer-trap, the combination, with the receiver A, having the scraper E and a sediment-chamber below the same, of the discharging-vessel B and the drain pipe C, permanently connected to the vessel A by the conical seat *e*, substantially as specified.

254,365. ARTIFICIAL-STONE COMPOSITION. WILLIAM W. PATTERSON, Corning, Iowa, assignor of one-half to W. H. Hoxie, same place. Filed Nov. 16, 1881. (No specimens.)

Claim.—A composition to be formed into artificial stone, consisting of Milwaukee cement, Portland or other similar cement, unslaked lime in a dry and powdered state, and sand, and then adding thereto a solution made by combining soft water, salt, saltpeter, an alkali, and carbonate of ammonia, the proportions of ingredients used being substantially such as are hereinbefore described.

254,366. PAVING AND BUILDING MATERIAL. ANTONIO PELLETIER, Washington, D. C. Filed Dec. 7, 1881. (No specimens.)

Claim.—1. The combination of asphaltam or bitumen with sand or broken rock or stone, and an oxide of any metal or other base, and a chloride of the same base, in varying proportions, substantially as specified.

2. The combination of sand or broken rock or stone, and an oxide of any metal or other base, and a chloride of the same base with any mineral or vegetable bituminous or gluey substance to be used as a binder, in varying proportions, substantially as specified.

254,367. CARRIAGE-BOW IRON. JOSEPH B. PLATT, Cleveland, Ohio. Filed Jan. 10, 1882. (No model.)



Claim.—1. In combination with the slat-iron A, the rods B B, substantially as described.

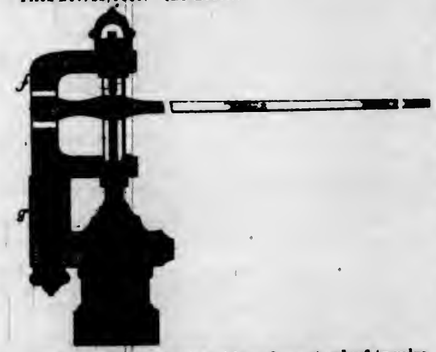
2. In combination with the slat-iron A and the rods B B, the metal socket C, substantially as described.

3. In combination with the slat-iron A, rods B B, and metal socket C, the wooden filling D, substantially as described.

4. The combination, with the slat-iron A, rods B B, metal socket C, and wooden filling D, of the metal strengthening E, substantially as described.

5. The combination, with the slat-iron A, rods B B, metal socket C, and wooden filling D, of the leather covering F, substantially as described.

254,368. SAFETY-VALVE. ALVIN D. PUFFER, Medford, Mass. Filed Nov. 25, 1881. (No model.)



Claim.—1. In combination with a valve-seat and safety-valve, an operating-lever and its support, said lever, valve, and support being adapted to turn horizontally for the purpose of removing said valve from said valve-seat.

2. In combination with a safety-valve and valve-seat and the operating-lever, the fixed part *g* of the supporting-bracket and the part *f* of said bracket, which is pivoted in part *g* and adapted to turn laterally, carrying the lever and valve away from the valve-seat, substantially as stated.

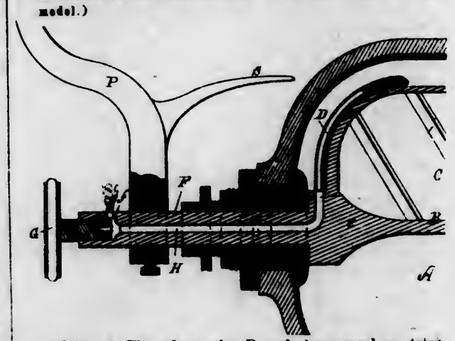
3. In combination with a valve-seat and safety-valve and the operating-lever for the latter, a supporting-bracket consisting of fixed part *g*, pivoted part *f*, and a screw whereby, said parts *f* and *g* may be locked together or released at will.

4. In safety-valves containing a vertical drop-valve and a horizontal lever controlling the same, the valve as composed of a cylinder or bar slotted to receive the lever and moving in a vertical plane, and connected with the lever by : joint, which permits the latter to move in the arc of a circle without disturbing the valve in its strictly vertical pulsations.

5. In combination with a notched safety-valve and lever, a pivot or rod, *l*, pointed at both ends and setting into said valve and lever, and the screw *n*, which prevents said lever from separating too far from said valve.

6. The general physical structure of the entire valve consisting of the hollow base or coupling, by which connection is made with the generator or other object, the bracket or standard in two parts hinged or swiveled together to permit the valve contained in its swinging part to be removed from over the valve-seat and swiveled horizontally to the base or coupling to permit of any desired adjustment of the valve-lever, and the lever and valve and their connections arranged substantially as described, whereby the lever moves in an arc of a circle and the valve in a vertical plane, the whole co-operating to produce results stated.

254,369. REVOLVING WATER-GAGE FOR CLOSED VESSELS. ALVIN D. PUFFER, Medford, Mass. Filed Mar. 31, 1881. (No model.)



Claim.—1. The tube or pipe D, arched or curved, as stated, in combination with the agitator having a web or blade which supports said pipe.

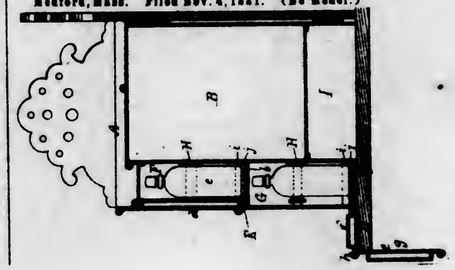
2. In combination with a vessel or receptacle for liquids, an agitator-shaft having a tubular outward extension, and a tube which is carried by said shaft within said vessel and communicates with the bore of said tubular extension.

3. In combination with a vessel or receptacle for liquids, an agitator-shaft, a tube carried thereby and affording an outlet from said vessel, and a crank and indicator attached to an external prolongation or extension of said agitator-shaft, substantially as set forth.

4. In combination with a vessel or receptacle for liquids, a shaft provided with agitating devices for said liquid, and having a tubular outward extension which communicates at its inner end with the interior of said vessel, and has an outlet-opening in its side near the other end, substantially as set forth.

5. The bottling-cylinder A and revolving agitator-shaft B, with its enlarged portion F, perforated as described, in combination with the tube D, valve G, and crank P, provided with a marker, S, having its end in proximity to the cylinder and on a level with the open end of tube D, these parts being constructed and arranged for joint operation, as herein shown and specified.

254,370. REFRIGERATING APPARATUS. ALVIN D. PUFFER, Medford, Mass. Filed Nov. 4, 1881. (No model.)



Claim.—1. A case for soda-water-dispensing apparatus containing an ice-chamber, B, in combination with additional chambers, F G, adapted to hold sirup-bottles in tiers one above another, substantially as set forth.

2. In combination with counter D and case A, the door *e*, consisting of sections *f g*, hinged together in order to allow section *g* to drop or fold down vertically against the edge of said counter, and thereby leave the space behind the counter unobstructed when the door is opened.

3. In soda-water fountains or dispensing apparatus, a series of transverse ridges erected upon the floor of each bottle-compartment and dividing such compartment into individual bottle-spaces, said ridges being of inverted-V shape in cross-section to provide inclined walls to each bottle-space for directing the bottle into its proper position, substantially as set forth.

4. In soda-water-dispensing apparatus, a chamber, F, divided into spaces for receiving separate sirup-bottles, and provided in its interior with rubber pads H opposite each bottle, for the purpose set forth.

5. In soda-water fountains or dispensing apparatus, a corrugated, indented, or perforated mat placed in the bottom of each bottle-space, and protecting the bottom of said bottle which rests thereon from injury by the bottom of the apartment or inclosure.

6. In combination with a sirup-bottle, an elastic band which clasps the same, said band having in or on its upper part a trough for receiving leakage or water of condensation.

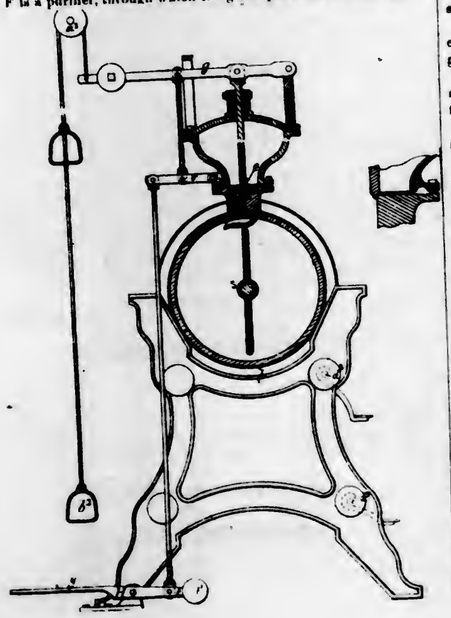
7. In combination with bottle *c*, the elastic band *l*, having a trough, *l'*, formed in its upper face, for the purpose set forth.

8. In combination with ice-chamber B, supplemental cooling-chamber I below it, and chambers F and G, arranged one above another, immediately behind chambers B and I, for the purpose of holding bottles in tiers during cooling, all of said parts being within one case or inclosure.

9. In combination with the ice-chamber B and a bottle-holding chamber in proximity thereto, a series of inverted-V-shape ridges dividing the spaces for the several bottles one from another, and a series of mats corrugated on their upper faces, which fill the spaces between the ridges, and on which the bottles rest, substantially as set forth.

254,371. GENERATOR. ALVIN D. PUFFER and ALVIN D. PUFFER, Jr., Medford, Mass. Filed Nov. 3, 1881. (No model.)

Brief.—The gas-generator A has a chute, *m*, from the acid-receptacle C, to distribute the acid, and the agitator-shaft E has a leaden cover, *s*, to protect it from the acid. An indicator, d^3, on the end of the generator shows the quantity of liquid contained therein. The flanged connections *c*, one side being roughened and the other grooved, are held by bolts and contain packing material. F is a purifier, through which the gas is passed to be cleansed.



Claim.—1. In combination with an acid-pot and a generator, a chute or guide, *m*, which receives the acid from said pot and directs it to one side or both sides of the agitator-shaft.

2. In combination with a purifier and its perforated supply-pipe, a foraminous screen or strainer through which the gas passes on issuing from said pipe.

3. A supplemental strainer, *o*, in combination with the purifier and its supply-pipe, said strainer being arranged to intercept the gas as it rises from the perforations in said pipe and to further subdivide the same.

4. In combination with a generator and its agitator-shaft, an anti-corrosive jacket or tube enveloping that part of said shaft which is most exposed to the action of acid.

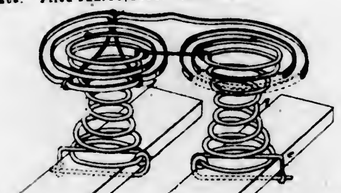
5. In combination with the acid-pot, its valve, and suitable connections, a weighted lever operating said valve and a pedal operating said lever in opposition to said weight, substantially as set forth.

6. In combination with a generator or generating-cylinder having a circular scale representing gallons marked on one end, an agitator-shaft which is made tubular for a part of its length, a curved pipe communicating with the bore of said shaft and carried thereby within said cylinder, and an index or pointer carried by the protruding end of said shaft over the aforesaid scale.

7. A generator composed of two sections, flanged at their joint, one flange being grooved and the other flat and roughened, in combination with a ring of elastic packing which sets between said flanges, substantially as set forth.

8. In combination with a generator and its supporting-frame, a pair of steps arranged obliquely one above another, and provided with arms, whereby they are attached to pins or studs on said frame, substantially as set forth.

254,372. SPRING BED-BOTTOM. ADDISON F. PURNELL, Wake Forest, N. C., assignor of one-fourth to Sidney Abernathy, same place. Filed Jan. 16, 1882. (No model.)



Claim.—1. A spring comprising a conical body and a flat or horizontal top formed of coils around the enlarged end of the cone, substantially as described.

2. A twin spring comprising the two conical bodies and flat extension-tops and the connection between said tops formed integral or of one wire, substantially as described.

3. A conical wire spring having the wire in one or more coils at the end flattened vertically to give greater rigidity, the wire in the main body being round, substantially as described.

4. In a twin spring, the connection-wire flattened vertically, substantially as described.

5. The method of giving greater rigidity to the tops of springs and the connection-wires of twin springs by flattening the wire vertically between rolls, or by other suitable means, as set forth.

6. In a twin spring, the connection-wire bent in the middle away from the coils, as explained.

7. The combination, with flat extension-tops of springs for bed-bottoms and like purposes, of stiffening-braces, substantially as described.

8. The combination, with springs having flat extension-tops, of supporting-braces connecting said springs, and adapted also to stiffen said tops by extending under them, substantially as described.

9. In combination with a twin spring having flat extension-top united by a connection-wire, a supporting-brace connecting the two parts of said twin spring, substantially as described.

10. The combination, with a bed-spring of coiled wire, of a fastener for attaching the same to a slat, connected with a coil of the spring by means of a loop or eye, and provided with two spring-arms to embrace the slat and a coil of the spring, and a hook for joining the ends of said arms, substantially as described.

11. In a bed-bottom, springs arranged in rows, with the springs in one row opposite the spaces between the springs in adjoining rows, and with half-width springs in the ends of alternate rows, substantially as described.

12. The half-width springs of elliptical shape in plan, substantially as described.

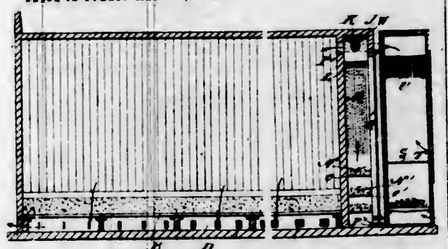
13. A spring bed-bottom comprising springs with flat extension-tops supported, braced, fastened, and arranged substantially as described.

254,373. CAR-COUPLING. J. H. PUTNAM, Tioga, Pa. Filed Nov. 19, 1881. (No model.)



Claim.—The combination, with a draw-head, B, and link *a*, of the bent coupling-rod C *c c'*, swung on easily-movable hangers *d*, and provided with the projection *c''*, located in the portion *c'* of the rod, directly under the link *a*, and adapted to engage therewith, and to serve as an accurate holding and guiding means for said link, substantially as set forth.

254,374. APPARATUS FOR MALTING CEREALS. JULIEN POUPART, Lille, France, assignor to himself and Marcisse Pigeon, New York, N. Y. Filed Mar. 10, 1881. (No model.) Patented in France Mar. 15, 1880.



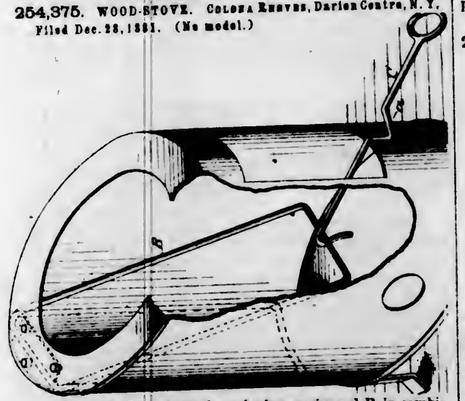
Claim.—1. In a malt-chamber, the floor constructed, substantially as herein shown and described, with alternating strips of wood and of perforated metal, as and for the purpose set forth.

2. The moisture-chambers J, provided with vertical openings Q, extending from top to bottom on the front side, whereby the sponges may be regulated, as described.

3. In a malt-chamber, the combination, with the air refreshing and moistening chamber, of the perforated tube K, and of the atomizing-plate W, arranged above it, substantially as herein shown and described, and for the purpose of atomizing the water, so that the air that passes through the chambers J J will be slightly impregnated with ozone.

4. In a malt-chamber, the combination, with the air refreshing and moistening chamber, of the water-tube K, the atomizing-plate W, the cloth strips U, and the sponges N, substantially as herein shown and described, and for the purpose set forth.

254,375. WOOD-STOVE. COLOSA REEVES, Darien Centre, N. Y. Filed Dec. 28, 1881. (No model.)



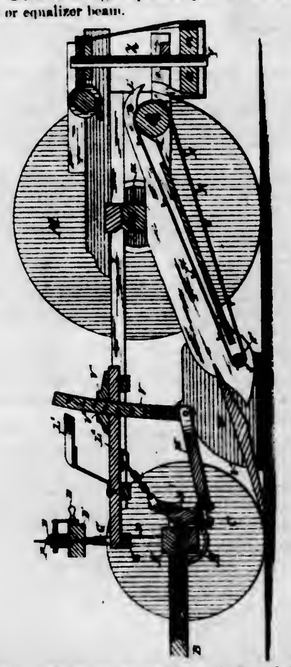
Claim.—1. In a stove, the swinging carrier-rod B, in combination with means, substantially as described, for holding said rod extended or at an angle from a perpendicular, substantially as and for the purpose set forth.

2. In a stove, the combination, with the swinging carrier-rod B, of the poker C, substantially as and for the purpose specified.

3. In a stove, the combination, with the swinging rod B, of the poker C, or other similar holding device having the shoulder *e*, substantially as and for the purpose described.

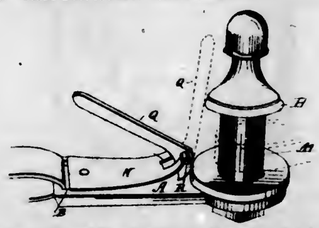
254,376. DITCHING-MACHINE. JOSEPH REINHARD, Celina, Ohio. Filed Aug. 10, 1881. (No model.)

Brief.—The forward end of the ditching-wheel frame is vertically adjusted by it bearing in a saddle that may be raised or lowered by rack and gear. The plow is further adjusted by a bar and pin. Draft is brought upon the plow by a vertically-swinging draft or equalizer beam.



Claim.—The combination of frame L, hinged chute T, having bucket-apron R R', hinged plow U U', setting-bar V, equalizing-bar W, and front carriage, A B C, provided with the balance-yoke I, connected at opposite ends to bar W and chain X, which said chain is fastened in the frame L, substantially as and for the purpose herein shown and specified.

254,377. CHECK-REIN HOOK. CYRUS M. REYNOLDS, Mifflin, Wis. Filed Dec. 1, 1881. (No model.)



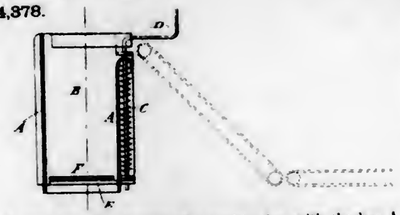
Claim.—In combination with the base-plate A, adapted to be secured to or cast with the saddle-tree of the harness, the upright bolt D, secured as described, the roller M, located thereon, the flanged nut H, and the lever Q and spring N, all arranged to operate substantially in the manner specified.

254,378. HARVESTER-DROPPER. IRA RICHARDSON, Lemond, (Meriden P. O.,) Minn. Filed Aug. 24, 1881. (No model.)

Claim.—1. A harvester-dropper constructed substantially as herein shown and described, consisting of the box A, the hinged door B, having handle D and flange E, the spring C, the tilting bottom F, having flange I, and the guard-plate J, as set forth.

254,379. SHIRT. ISAAC SCHERER, New York, N. Y. Filed

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2. In a harvester-dropper, the combination, with the box A, of the door B, having arm D and flange E, the spring C, the tilting bottom F, having flange I and spring H, and the plate J, substantially as herein shown and described, whereby the cut grain is received and dropped to the ground in a compact heap, as set forth.

3. In a harvester-dropper, the combination, with the box A, of the door B, having flange E and tilting bottom F, substantially as herein shown and described, whereby the tilting bottom is supported by the door and is released to drop the grain by opening the said door, as set forth.

4. In a harvester-dropper, the combination, with the box A, the door B, and the tilting bottom F, of the springs C and H, substantially as herein shown and described, whereby the said door and bottom are brought back to their places automatically when the grain has been dropped, as set forth.

5. In a harvester-dropper, the combination, with the box A and the tilting bottom F, having flange I, of the guard-plate J, substantially as herein shown and described, whereby the tilting bottom is guarded against becoming clogged and the discharge of the grain is facilitated, as set forth.

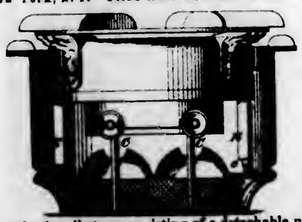
254,379. SWITCH FOR STREET-RAILWAYS. REUBEN H. RICKER, Boston, Mass. Filed Dec. 23, 1881. (No model.)

Brief.—The tilting platform which controls the position of the movable-point rail is held against a tendency to rebound through rolling weights in a trough connected to an arm of the platform.



Claim.—In a platform-switch, the combination of the moving weights W W' and the mechanism consisting of the trough L' L, pivot M', and arm H, whereby the said weights are made to change their position whenever the platform is tilted, substantially as described, and for the purpose set forth.

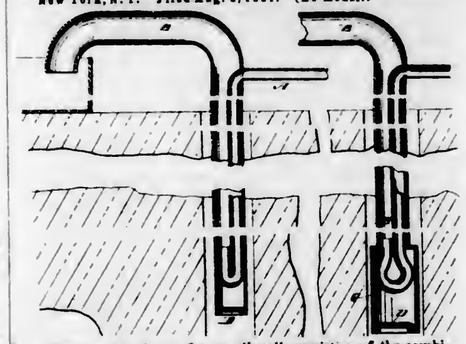
254,380. PETROLEUM COOKING-STOVE. CHRISTOPH RISSMAN, New York, N. Y. Filed Nov. 14, 1881. (No model.)



Claim.—1. An oil-stove consisting of a detachable upper section having a contracted bottom, and provided with an interior wire-gauze cylinder, exterior air-openings, tube-slots in the bottom and cones, in combination with a detachable base-section provided with wick-tubes and supporting recessed posts, the diameter of the said base-section being small enough to be inserted in an inverted position into the top of the upper section, substantially as described.

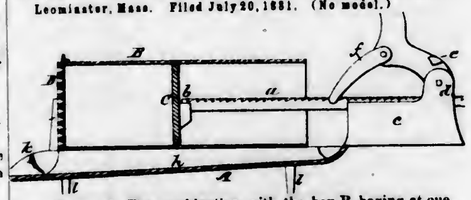
2. An oil cooking-stove composed of two detachable sections, the lower part of the upper section and the upper part of the lower section being of the same, or nearly the same, diameter, and the top part of the upper section being large enough to receive the top of the lower section in inverted position, whereby space is saved in storage and transportation, the posts E of the lower section resting upon the plate of the upper section above the wire-gauze, the wick-tubes C extending down through the cones, but not below the tube-slots, when inserted in the upper section, substantially as described.

254,381. EJECTOR FOR OIL-WELLS. WILLIAM O. ROBBINS, New York, N. Y. Filed Aug. 5, 1881. (No model.)



Claim.—An ejector for an oil-well, consisting of the combination, with the stand-pipe B, having an inwardly-opening valve, D, of the tube A, contained within the pipe B throughout its length, and having its lower end turned up within the pipe, as described.

254,382. MEAT AND LARD PRESS. THOMAS J. ROCKWOOD, Leominster, Mass. Filed July 20, 1881. (No model.)



Claim.—1. The combination, with the box B, having at one end the removable strainer D, of the follower C, connected to the toothed bar *a* by socket-joint *b*, and the pivoted lever E, with pivoted pawl *f*, substantially as and for the purpose set forth.

2. The bed A, having guide-plates *c*, in combination with the box B, follower C, connected to the toothed bar *a*, as shown, and the pivoted lever E, carrying pivoted pawl *f*, substantially as and for the purpose specified.

3. The box B, provided at one end with removable strainer D, and the horizontally-operating follower C, in combination with the bed A, inclined longitudinally, as described, and having throughout its entire length the sides *i*, inclined laterally toward and so as to communicate with a groove, *k*, arranged lengthwise in the bed at its middle and opening into a spout, *k*, all being substantially as and for the purpose set forth.

254,383. PORTABLE BURGLAR-ALARM. JOS. H. ROSS, Norwalk, Conn. Filed Nov. 10, 1881. (No model.)



Claim.—1. The combination, with a hanger and an alarm apparatus suspended therefrom by a pivot, and comprising an escapement-wheel and escapement-anchor for operating a bell-hammer, of an arm extending from said anchor, and a catch upon the hanger for engaging with said arm to hold the alarm apparatus inoperative, substantially as specified.

2. The combination of the hanger A, the case B, having the arm B' pivoted to said hanger at *b*, and containing the movement comprising the escapement-wheel F, the escapement-anchor A, and hammer *i*, the arm *j*, projecting from the escapement-anchor through an opening in the case, and the catch *k*, for engaging with said arm, substantially as specified.

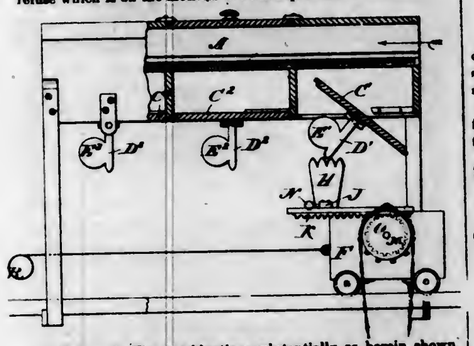
254,384. MEDICINAL TONIC. LENA ROUDEBUSH, Louisville, Ky. Filed June 16, 1881. (No specimens.)

Brief.—Unites one quart of wine or other desired liquor with one tea-cupful of strong infusion of wahoo bark, one-third that amount of infusion of valerian, and same amount of infusion of golden seal. The teaspoonful of the strength of two ounces to a pint of water. This is used as a general tonic for debility.

Claim.—The compound or tonic herein described, and consisting of wine or spirituous liquor, wahoo bark, valerian, and golden seal, substantially in the proportions named.

254,385. TRUNK FOR COTTON-OPENERS. PATRICK ROWE and JAMES J. SCARLES, Lowell, Mass. Filed Aug. 18, 1881. (No model.)

Brief.—The floor of the cotton-opener trunk is composed of a series of pivoted sections. A car provided with means for tilting the sections passes beneath the same, and thereby causes any refuse which is on the sections to be dumped into the car.



Claim.—1. The combination, substantially as herein shown and described, with a cotton-opener trunk provided with pivoted floor-sections, of a car adapted to pass under the floor-sections of the trunk and provided with means for tilting the sections thereof and dumping the refuse from the bottom into the car, as set forth.

2. The combination, with the cotton-opener trunk A, of the pivoted sections C' C², &c., the projections D' D², the cam H, and the car F, substantially as herein shown and described, and for the purpose set forth.

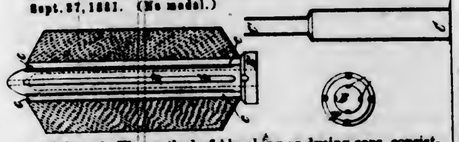
3. The combination, with the cotton-opener trunk A, of the pivoted sections C' C², the projections D' D², having the weights E' E² attached thereto, the cam H, and the car F, substantially as herein shown and described, and for the purpose set forth.

4. The combination, with the cotton-opener trunk A, of the pivoted sections C' C², the projections D' D², the cam H, and means for adjusting the same, and the car F, substantially as herein shown and described, and for the purpose set forth.

5. The combination, with the cotton-opener trunk A, of the pivoted sections C' C², the projections D' D², the cam H, the bar J, the binding-screw N, and the car F, substantially as herein shown and described, and for the purpose set forth.

6. The combination, with the cotton-opener trunk A, of the pivoted sections C' C², the projections D' D², the cam H, the bar J, the racks K, the cog-wheels L, the studded wheel O, and the chain P, substantially as herein shown and described, and for the purpose set forth.

254,386. BLEACHING COTTON IN THE FORM OF COPS. EMANUEL RUSON, Pottendorf, near Vienna, Austria. Filed Sept. 27, 1881. (No model.)

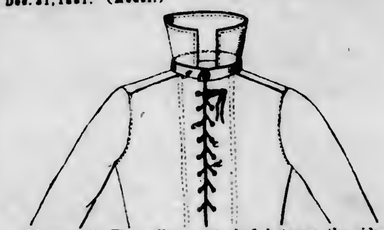


Claim.—1. The method of bleaching or dyeing cops, consisting in placing the cop after winding upon a bleaching spindle or spool which has an external diameter less than that of the hole in the cop, providing for a clear annular space all round between the cop and spindle or spool, and then placing the spindle or spool, with the cop upon it, in a vessel, wherein it is subjected both internally and externally at the same time to the action of bleaching or other liquid, substantially as herein described.

2. The combination, with a cop and its winding-bobbin A, of a bleaching-spindle, B, having a smaller external diameter than said bobbin, substantially as herein described.

3. The combination, with the winding-bobbin A and spindle B, of the tube C, with the extension C', substantially as herein described.

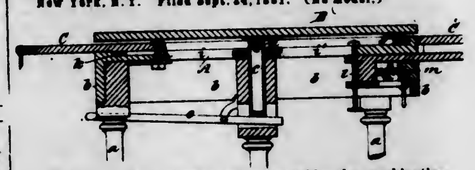
254,387. SHIRT. ISAAC SCHEBER, New York, N. Y. Filed Dec. 31, 1881. (Model.)



Claim.—1. The collar *c*, attached between the sides of a doubled strip forming the band, to enable it to hang inwardly straight below the band or outwardly to serve the purpose of a separate collar, as shown and described.

2. In shirts having open bosoms, the combination of inner flaps, *b*, outer flaps, *c*, having eyelets, and lacing-cord *d*, substantially as shown and described.

254,388. CIRCULAR EXTENSION-TABLE. JOHN F. SCHULTE, New York, N. Y. Filed Sept. 24, 1881. (No model.)

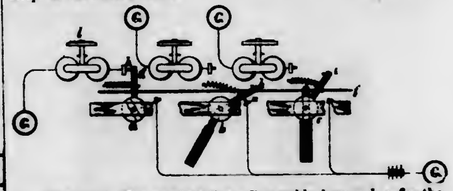


Claim.—1. In a circular extension-table, the combination, with the radially-sliding leaves C, of the intermediate radially-sliding leaves C', movable under the table-top B, and provided with means, substantially as described, whereby when the leaves are drawn out the leaves C' are raised to a level with leaves C, as and for the purpose specified.

2. In circular extension-tables, the combination of sliding leaves C, provided with pins *h*, segments C', having pins *l*, and blocks *m*, with the table A, having a slotted top and apertured rail *b*, substantially as shown and described.

254,389. ELECTRICAL SWITCH-BOARD. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Manufacturing Company, same place. Filed Dec. 22, 1881. (No model.)

Brief.—Each subscriber's line is connected to a vertical pivoted bar which carries an arm which is normally connected with the ground through an annunciator. In another position the arm is connected to a signaling-battery, and in a third position the arm is out of contact, but plug-connection may be made with the cross-strips of the switch-board.



Claim.—1. The combination of movable bars *a b c*, for the subscribers' lines, and transfer-strips *d e f*, having plug-holes at the intersections, contact-arms *g h i*, and two contact-points for each arm, one for closing the circuit through the annunciator to ground, the other for connecting with the signaling-battery, substantially as shown and described.

2. The combination, substantially as herein described, of upright bars intersecting the transfer-strips, with contact-arms, one attached to each bar, and pegs for connecting the line of any given bar to a transfer-strip.

254,390. WICK-TRIMMER. WILLIAM C. SEATON, Quebec, Province of Quebec, Canada. Filed Dec. 23, 1881. (Model.)

Claim.—1. A wick-trimmer made substantially as herein shown and described, consisting of a box or frame provided with a slot through which the wick is passed, which box contains or holds a sliding brush, as set forth.

2. The combination, with the box or frame H, of the sliding

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box F, containing a brush-wheel, A, substantially as herein shown and described, and for the purpose set forth.

3. The combination, with the box or frame H, of the sliding box F, the brush-wheel A, the pinion E on the shaft of this brush-wheel, and the rack P, substantially as herein shown and described, and for the purpose set forth.

4. The combination, with the box or frame H, of the sliding box F, the brush-wheel A, and the studs F', passing through the slots G in the sides of the frame H, substantially as herein shown and described, and for the purpose set forth.

5. The combination, with the box or frame H, of the sliding box F, the brush-wheel A, and the spring L, attached to the boxes F and H, substantially as herein shown and described, and for the purpose set forth.

6. The combination, with the box or frame H, provided with a slot, Q, of the sliding box F, the brush-wheel A, and the clippers or holder S, substantially as herein shown and described, and for the purpose set forth.

7. The combination, with the box or frame H and the spring L, of the sliding box F, provided with the handle-loop N, having its lower end projecting into the said box, and the rotating brush-wheel A, substantially as and for the purpose set forth.

8. The combination, with the box or frame H, provided with a slot, Q, of the sliding box F, the brush-wheel A, the fixed blade T, the pivoted blade U, and the spring W, substantially as herein shown and described, and for the purpose set forth.

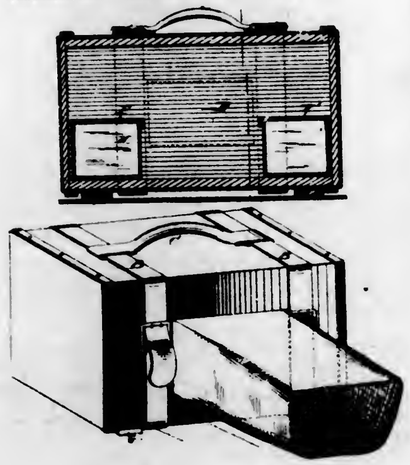
254,391. INHALER. WILLIAM F. SUMPLE, Mount Vernon, Ohio. Filed Aug. 1, 1881. (No model.)



Claim.—1. In an inhaler, the combination, with a container for holding medicine and the vapor thereof and an inhaling-tube attached to said container, of an atomizer located within said container, substantially as set forth.

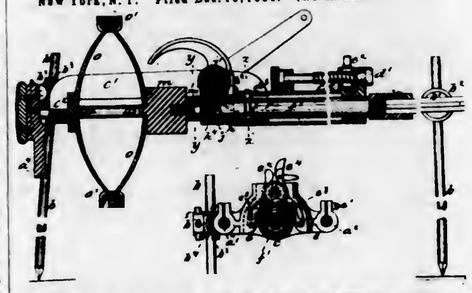
2. In an inhaler, the combination of the container A, air-pump C, having the pipe I, the pipe K, and the outlet or inhaling-tube F, substantially as and for the purposes shown.

254,392. PORTABLE DARK ROOM. JOHN SRADISKO, New Braunfels, Tex. Filed Dec. 22, 1881. (Model.)



Claim.—A box having the aperture D, the flexible sleeve E, projecting from the inside of said aperture, and the end compartments, H H', provided with swinging lids, as shown and described, whereby the inside may form a dark chamber, in which the plates may be transferred from and to the plate-holder of the camera without being exposed either to light or dampness.

254,393. ROCK-DRILLING MACHINE. ALFRED SEDLOCK, New York, N. Y. Filed Dec. 10, 1881. (No model.)



Claim.—1. In an adjustable leg for rock-drilling machines, a straight supporting-rod adapted to slide through a bolt fitted at right angles on a rod or a bar of the frame, clamping-washers between the straight supporting-bar and said rod or bar, and a nut on the end of the bolt for clamping the whole together, substantially as described.

2. In combination, the straight supporting-rod b, the bolt b', having two holes at right angles through it, one of which is laterally enlarged, the clamping-washers b^2 b^3 b^4, the nut b^5, and the rod or bar of the frame, adapted to pass through the plain hole in the bolt, substantially as set forth.

3. A frame for rock-drilling machines, composed of the two side bars, a' a^2, the one, a', of which is pointed and the other one, a^2, provided with an adjustable point, the end pieces, a, having the three short rods a^3 a^3 a^4, in combination with three adjustable supporting-legs, two adapted to be connected to the short rods a^3 a^3 and the other to the front end of one of the side bars, a', and also to the short rod a^4, substantially as and for the purpose set forth.

4. A frame for rock-drilling machines, composed of a rear end piece and two side bars, on which the body and operating parts of the machine slide, the front end of one of the side bars being pointed and the other one being provided with an adjustable point, substantially as and for the purpose set forth.

5. The body c, composed of a cylindrical shell, in which fits the drill-holding plunger, an end piece, c^2, the connecting-girders c' c', provided with bearings for the driving-shaft, and the bearings c^3 c^4, by which the body c is supported and free to slide on the side bars of the frame of the machine, substantially as set forth.

6. In a rock-drilling machine, a body carrying the operating mechanism and adapted to slide on the side bars of the frame, a hammer, also adapted to slide on the said side bars between one end of the main portion of the body and an end piece connected thereto by girders, and a spring located between the hammer and end piece of the frame, and adapted by its resilience to drive the hammer against the end of a plunger fitted in the main portion or cylindrical shell of the body, substantially as and for the purpose set forth.

7. The combination, with a sliding hammer and end piece of the body, of a spring adapted to be secured to the hammer and end piece and maintain its position between them by reason of its resilience only, substantially as set forth.

8. The curved flat spring q, in combination with the end piece, c^2, having the recess q', and the hammer m, having the recess q', substantially as set forth.

9. In combination, the body c c' c' c^2 c^3 c^4, the hammer m, with the actuating-cams on the shaft i, and the spring q, substantially as set forth.

10. The striking-plug of the hammer, having a concave face, in combination with the plug at the end of the drill-plunger, having a convex end, substantially as and for the purpose set forth.

11. A drill-holding plunger fitted to slide in the body of the machine, and operated to reciprocate to move the point of the drill to and from the bottom of the hole positively in both directions by means substantially as described, and actuated from the driving-shaft.

12. A drill-holding plunger fitted to slide in the body of the machine, and operated to reciprocate to move the point of the drill to and from the bottom of the hole positively in both directions by means substantially as described, and actuated from the driving-shaft, in combination with a compensating-spring.

13. A drill-holding plunger fitted to slide and rotate in the body of the machine, in combination with means, substantially as described, for positively moving the drill to and from the bottom of the hole, and means, substantially as described, for intermittently rotating the same when away from the bottom of the hole.

14. In combination, the plunger f', sliding head A, having bearers h^3 h^3, worm-wheel j, and cams i' i^2, whereby the plunger f' is caused to move to and from the bottom of the hole positively in both directions, substantially as described.

15. In combination, the plunger f', sliding head A, having bearers h^3 h^3, cams i' i^2, worm-wheel j, and worm-cams j', whereby the plunger f' is caused to move to and from the bottom of the hole positively in both directions, and be positively rotated when away from the bottom of the hole, substantially as described.

16. In combination, the plunger f', adapted to receive a reciprocating movement after each blow of the hammer thereon, the worm-wheel j, and worm-cams j', substantially as described.

17. In combination, the drill-holding plunger f', sliding head A, cams i' i^2, worm-wheel j, and spring h^4, whereby the head A is allowed to move a short distance after the drill has reached the rock, substantially as set forth.

18. In a rock-drill, a body carrying the operating parts of the machine and adapted to slide on the two side bars of the frame, in combination with the feed-screw fitted to rotate in bearings on the body, and a nut-holding frame adapted to be adjusted in position on and secured to the said side bars, substantially as set forth.

19. A feed-screw for rock-drilling machines, having a ratchet-shaped thread, substantially as and for the purpose set forth.

20. In combination with a ratchet-shaped thread feed-screw fitted in bearing on the body, spring-acting half-nuts carried by a frame connected to the main frame of the machine, substantially as set forth.

21. In combination, the screw d, the toothed wheel d^2, the spring-acting pawl d^3, the yoke f, the roller or stud d^4, and plunger f', substantially as set forth.

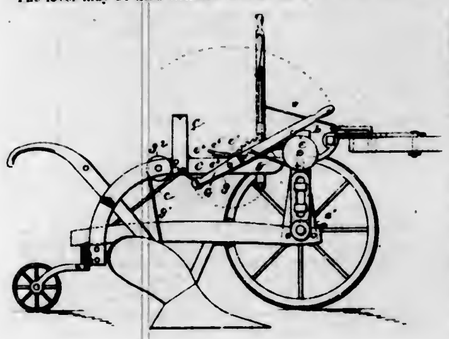
22. In combination, the screw d on the body and the half-nuts e^2, provided with the springs e^3, and the nut-frame e, substantially as described.

23. A drill-holding plunger fitted to slide in the body of the machine, and operated to reciprocate to move the point of the drill to and from the bottom of the hole positively in both directions by means substantially as described, and actuated from the driving-shaft, in combination with a compensating-spring and a feeding device constructed and operated to feed the machine forward as fast as the drill cuts, substantially as set forth.

24. A drill-holding plunger fitted to slide in the body of the machine, and operated to reciprocate to move the point of the drill to and from the bottom of the hole positively in both directions by means substantially as described, and actuated from the driving-shaft, in combination with a compensating-spring, a feeding device constructed and operated to feed the machine as fast as the drill cuts, and a spring-acting hammer, substantially as set forth.

254,394. PLOW. NATHANIEL SHAFFSTALL, Flint, Ind. Filed Dec. 7, 1881. (No model.)

Brief.—The front end of plow-beam is raised by a crank beneath the arch. The crank has a pulley upon it around which a rope passes, both ends of which are fastened to the lever. From the foot of the same lever a cord or chain passes over a sheave to lift the rear end. The pivoted tongue is vibrated by a bell-crank and lever. The lever may be used without the rear chain.



Claim.—1. The combination, in a sulky-plow, of the arched frame b, the crank E, journaled therein, the grooved pulley e, the bar e', connecting the crank to the front end of the plow-beam, and the lever G, provided with a chain, g, substantially as shown and described.

2. In a plow, the combination, with the frame and plow-beam, of the connecting-bar and crank E e e', and the lever G, having its chain g, attached to its lower end, passed around pulley e and secured to the lever above its fulcrum, and also provided with chain g', attached to the rear end of the plow and passing over pulley g^2, substantially as and for the purposes shown and described.

3. The combination of the plow-beam, its vertical bar e', the crank E, and its pulley e with the lever G, chain g, adapted to operate the forward end of the plow, and the chain g', passing over the pulley g^2 and adapted to operate the rear end of the plow, substantially as shown and described.

254,395. BILL AND FILE HOLDER. PALMER K. SHANKLAND and EDWIN A. BROOKS, Jamestown, N. Y. Filed Nov. 14, 1881. (Model.)

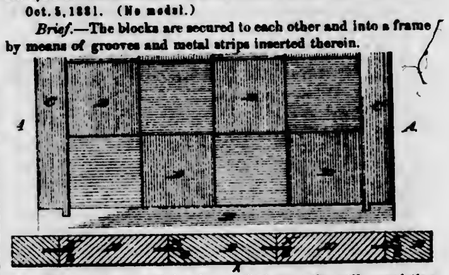


Claim.—1. The combination of the two parts of the cover, a clamp composed of two curved jaws which are hinged together, a screw-rod, and a thumb-screw, the parts being arranged to operate substantially as described.

2. The combination of a clamp composed of the two curved jaws, each one of which is provided with a suitable projection or flange, a screw-rod, and a thumb-screw which is placed between the two flanges, with the two parts of the cover, one of which has a groove formed in it, while the other has a suitable thickness or projection formed upon it for the clamp to catch behind, substantially as set forth.

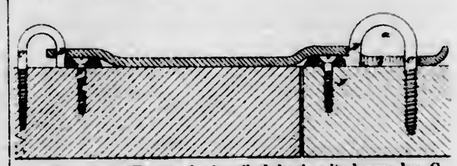
254,396. FLOOR-TILE. JOHN SIEBEL, Oskaloosa, Iowa. Filed Oct. 5, 1881. (No model.)

Brief.—The blocks are secured to each other and into a frame by means of grooves and metal strips inserted therein.



Claim.—As an article of manufacture, a floor-tile consisting of a number of blocks, D, arranged within a frame, A, the edges of said blocks and the inner edges of the ends and sides of said frame being provided with recesses or kerfs K for the sheet-metal strips S, which serve to make tight joints and also to secure the blocks in the frame, substantially as set forth.

254,397. HASP-LOCK. CHANCEY SMITH, Chicago, Ill. Filed Nov. 4, 1881. (No model.)



Claim.—1. The staple described, having its longer leg, C, screw-threaded, and its shorter leg, D, provided with a foot, E, apertured to receive a screw, F, substantially as described.

2. In combination with a hasp, the staple described, having one of its legs the longer and screw-threaded and the shorter leg provided with a foot intended to rest on the part to which the staple is applied, and to be arranged to extend beneath the hasp when the latter is in place thereon, substantially as described.

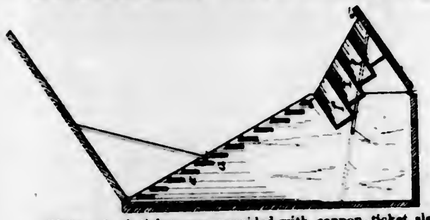
254,398. HOLLOW GRATE. JAMES G. SMITH, Cleveland, Ohio. Filed Sept. 29, 1881. (No model.)

254,398.



Claim.—In a grate for fire-places or open stoves, the combination, with the end and rear flues, B B and D, the former having communications C C and the latter communication E, of the front cross-flue, G, top flue, I, hollow grate-bars F, vertical front flues, H H, hollow angular or curved pipes or flues K, and the sliding damper J, substantially as and for the purposes set forth.

254,399. COMBINED COUPON AND LOCAL TICKET CASE. M. A. SMITH, Elmira, N. Y. Filed Dec. 5, 1881. (No model.)



Claim.—1. A ticket-case provided with coupon-ticket slats arranged in steps and with local-ticket cells arranged in steps, the former located above and oppositely arranged to the latter, whereby the longer coupon-tickets are, when the case is closed, arranged above the lower local tickets, and vice versa, substantially as shown and described.

2. In a combined coupon and local ticket case, the combination of an upper series of coupon-slats arranged in descending steps from rear to front, and a lower local-ticket case the cells of which are arranged in descending steps from front to rear, and are adapted to be swung in under and out from beneath said coupon-ticket slats, substantially as shown and described.

3. In a ticket-case, the combination of a slanted coupon-ticket section provided with hooks and a cover, with a tilting local-ticket section provided with eyes and a lock, substantially as shown and described.

4. In a ticket-case, the tilting front E, provided with rigidly-attached ticket-cells the bottoms of which are arranged in steps descending from front to rear, substantially as shown and described.

254,400. MACHINE FOR FILING GIN-SAWS. ELIAS WHITFIELD SOUTH, Anderson Court-House, S. C. Filed Nov. 1, 1881. (No model.)

Claim.—1. The combination, with the file-holders *a a'*, provided with a spring, *r*, pressing the files together, and pivoted to each other at their inner ends and crossing each other, and operated by mechanism, substantially as described, to impart a reciprocating and vibratory motion to the files, of the frame *a c d*, substantially as described, and for the purpose set forth.

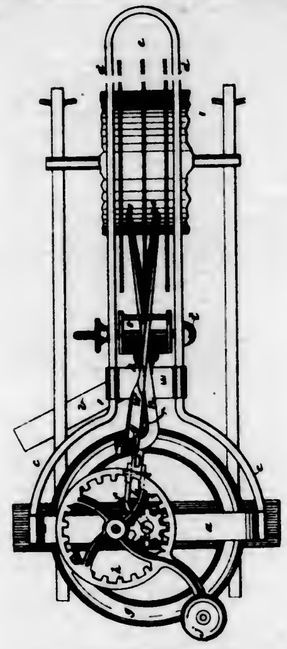
2. The combination, with the file-holders *a a'*, provided with a spring, *r*, and pivoted to each other at their inner ends, and operated by mechanism substantially as described, of the frame *a c d*, pivoted guide *s*, and strap *u*, provided with a stirrup or treadle, *e*, substantially as described, and for the purpose set forth.

3. The combination, with the file-holders *a a'*, pivoted to each other at their inner ends, crossing each other, and provided with a spring, *r*, of the pitman *l*, crank-shaft *f*, and gears *h k*, whereby a reciprocating and vibratory movement is given the file-holders, substantially as described.

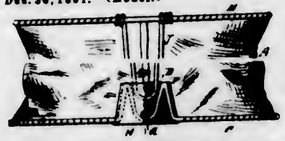
4. The combination of the file-holders *a a'*, constructed as set forth, spring *r*, pitman *l*, crank-shaft *f*, gears *h k*, frame *a c d*, pivoted guide *s*, and strap *u*, provided with a stirrup or treadle, substantially as described, and for the purpose set forth.

5. The combination, with the lower file-holder, *a*, curved at its inner end, and provided with the pin *g*, and also with a hole, *e*, at its curved outer end, of the upper file-holder, *a'*, pivoted to the lower file-holder at its inner end, and provided with a hole at its bent outer end, spring *r*, pressing the files together, and caps *p*, removably secured to the file-holders, substantially as described, and for the purpose described.

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254,401. COTTON-BASKET. GEORGE W. STARR, Vicksburg, Miss., assignor to himself and Joseph B. Gotthelf, same place. Filed Dec. 30, 1881. (Model.)



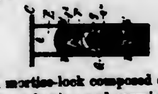
Claim.—1. A folding cotton-basket made, substantially as herein shown and described, of pliable material, and with sockets and swinging bails or arms on its hoops, as set forth.

2. In a cotton-basket, the combination, with the tubular casing A, made of canvas or other pliable material, of the bottom hoop, C, provided with sockets H, the top hoop, B, and the swinging arms or bails J, attached to this top hoop, substantially as herein shown and described, and for the purpose set forth.

3. In a cotton-basket, the combination, with the pliable tubular casing A, of the bottom hoop, C, provided with M-shaped bends F, the U-shaped bent plates D, secured over these bends, the top hoop, B, and the swinging arms or bails J, attached to this top hoop, B, substantially as herein shown and described, and for the purpose set forth.

4. In a cotton-basket, the combination, with the pliable tubular casing A, of the bottom hoop, C, provided with M-shaped bends F, the U-shaped bent plates D, the rivets G, the top hoop, B, and the swinging U-shaped bails or arms J, substantially as herein shown and described, and for the purpose set forth.

254,402. MORTISE-LOCK. SOLOMON P. STODDARD, New York, N. Y. Filed Sept. 3, 1881. (Model.)



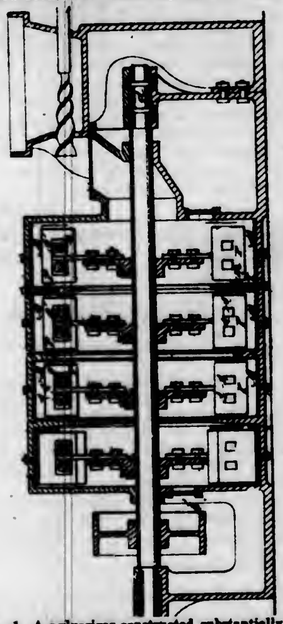
Claim.—1. A mortise-lock composed of the inner sheath, B, containing the lock mechanism and carrying the face-plate C, and the outer cylindrical case, A, adapted to receive and hold the said sheath, and having the longitudinal ribs *a*, formed by folding the edges of one half-cylinder about the edges of the other half-cylinder, said sheath and case having coincident keyways, substantially as and for the purpose specified.

2. In a mortise-lock, the combination, with the sheath B, as described, of the bolt E, the side *e'* of which has the rack *e²*, the other side, *e³*, being cut away at *e⁴*, together with the tumblers F, seated on the bottom plate of said bolt, and the pinion G, seated on top of the tumblers, and having the hub *g'* projecting through an opening in the side plate of said sheath, all constructed and arranged to operate as and for the purpose specified.

3. In a mortise-lock, the combination, with the bolt and its rack and the tumblers, of a pinion having a key-slot, which permits the key to make a quarter-turn in said slot and disengage the tumblers before rotating the pinion, substantially as and for the purpose specified.

4. In a mortise-lock, the combination, with the sheath B, the bolt E, and the tumblers F, substantially as described, of the pinion G, having the key-slot *g*, with the two diametrically-opposite inwardly-pointed projections *g'*, constructed and arranged to operate as and for the purpose specified.

254,403. MACHINE FOR PULVERIZING ORES, &c. JACOB J. STORER, New York, N. Y. Filed May 17, 1881. (No model.)



Claim.—1. A pulverizer constructed substantially as herein shown and described, consisting of a fixed horizontal cylinder, in combination with two or more pulverizing-chambers located therein and separated by annular ribs, and a separate discharge or fan chamber communicating axially with said chambers and provided with a peripheral discharge, said cylinder being also provided with a central horizontal shaft carrying pulverizing-paddles and exhaust-fans, the latter of which are of greater area than the former, and having adjustable end air-openings, as set forth.

2. In a pulverizer, the combination of a horizontal cylinder lined with plate-iron and having adjustable air-openings, two or more pulverizing-chambers located therein and formed by ribs and removable diaphragms, and a discharge-chamber communicating axially therewith and having a peripheral opening and containing fans of greater area than the pulverizing-paddles, substantially as shown and described.

3. In a pulverizer substantially as herein shown and described, the combination, with the ribs I, of the annular diaphragms I', substantially as shown and described.

254,404. POCKET-KNIFE. HERBERT SCRAY, Newark, N. J., assignor to himself and James E. Billings, same place. Filed May 12, 1881. (Model.)

Brief.—The invention consists in striking up the handle and spring in one piece from sheet metal.

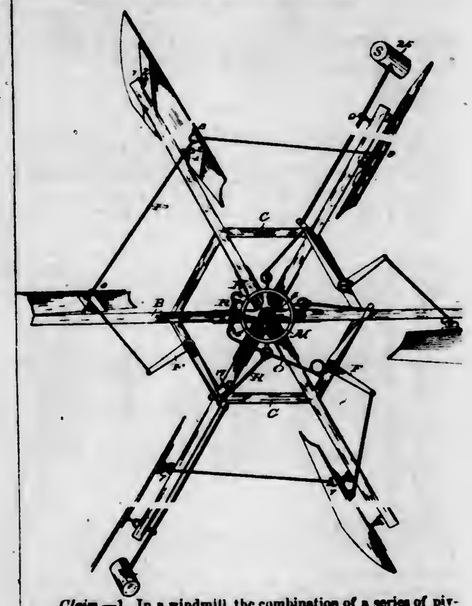
Claim.—As an improved article of manufacture, a knife-handle struck up from a single piece of sheet metal and formed with sides B and tongue C, as shown and described.

254,404.



254,405. WINDMILL. SAMUEL D. STRAW and ALFRED J. STRAW, Elkhart, Ind.; said Signor assignor to Orville T. Chamberlain, same place. Filed Oct. 6, 1881. (No model.)

Brief.—The sails are connected to a wheel, M, which rotates independently of the main shaft N, and which is controlled by spring O and governors T, whereby the amount of effective sail area exposed is dependent on the force of the wind.



Claim.—1. In a windmill, the combination of a series of pivoted fans, a wheel, M, on the main shaft, adapted to be revolved independently of the main shaft, one or more bell-crank levers connected to the wheel M and to the fans, and a spring, O.

2. The combination of the wheel M on the shaft, the spring O, the bell-crank, and the connecting-rods having double eye attachment to the wheel and to the fans, as described.

3. The wheel M, carried by the main shaft and adapted to revolve without longitudinal motion on such shaft, in combination with one or more bell-crank levers connected to the pivoted fan-sections and one or more centrifugal governors.

4. The wheel M, in combination with a bell-crank lever and a series of two or more fans connected together and operated simultaneously by the revolution of the wheel M.

5. The wheel M, in combination with a bell-crank lever and a pivoted fan operated through such bell-crank by the revolution of the wheel M.

6. In combination with the wheel M and one or more pivoted fans, the bell-cranks and the connecting-rods attached to the said wheel and fan or fans by a double eye joint composed of two connected rings or hooks, both having a free movement, whereby a universal connecting-joint is formed.

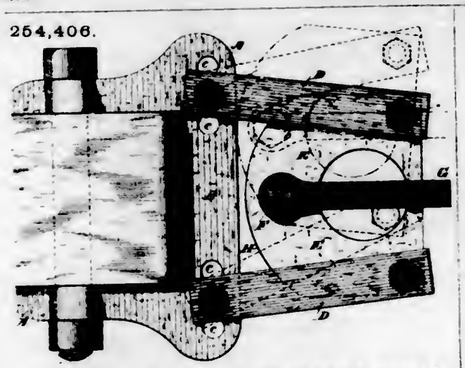
254,406. PLOW-GOVERNOR. DAVID B. TAGGART, Logan County, assignor of one-half to Charles D. Campbell and Harold E. Knight, Bellefontaine, Ohio. Filed Feb. 10, 1881. (Model.)

Brief.—Straps or links on each side of a horizontal clevis connect to the front side of a vibrating plate. In the rear of the link-pivots in the plate is pivoted the draft-hook. The oscillation thus provided neutralizes any irregularity in the course of the team.

Claim.—1. In a plow-governor, the sliding plate E, attached at its front end by link-connection to the end of the plow-beam, substantially as set forth.

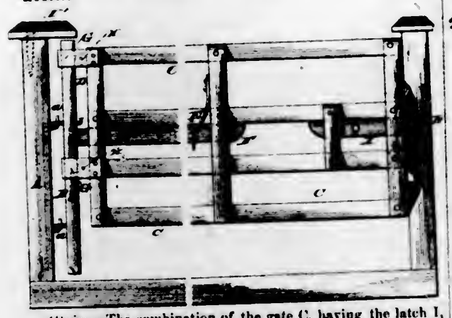
2. The combination of plate E, links D, adjustable in clevis A, and draft-link G, substantially as set forth.

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3. A plow-governor having a vibrating plate, E, attached by link-connection to the plow-beam, and carrying a draft pin or bolt moving in an arc as the team swerves from side to side, as described.

254,407. SWINGING GATE. WILLIAM B. TATMAN and WILLIAM C. DAVIS, Fairfield, Iowa. Filed Oct. 20, 1881. (No model.)



Claim.—The combination of the gate C, having the latch I, spring-latch F, beveled on its upper side, and the loops G, having frictional rolls H, bar D, having mortises *b*, embraced by the loops G, and hinged to the post A, having the pivoted caps I', overhanging the bar D, and post B, all constructed and arranged to operate as set forth.

254,408. COTTON-STALK CUTTER. FRANCIS M. THOMPSON, McKinney, Tex. Filed Nov. 12, 1881. (No model.)



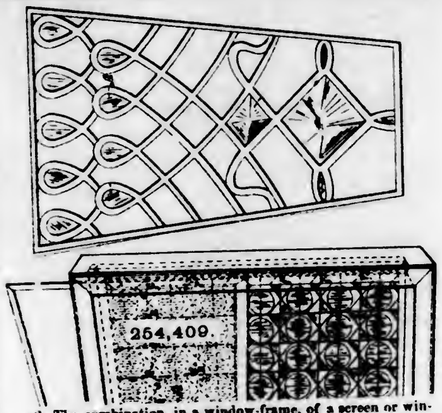
Claim.—1. In a cotton-stalk cutter, the combination, with the sled A, provided with a series of holes in its upper surface, of the hinged perforated bars C, the cross-bar D, the pins E, and the knives F, substantially as and for the purpose set forth.

2. In a cotton-stalk cutter, the combination, with the sled A, carrying the hinged perforated bars C, cross-bar D, and knives F, of the platform G, secured to the rear part of the sled, and the standards H, secured to a cross-bar of the sled in front of the platform, substantially as and for the purpose set forth.

254,409. COLORED-GLASS WINDOW. LOUIS C. TIFFANY, Morristown, N. J. Filed July 26, 1881. (No model.)

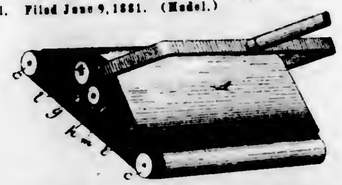
Brief.—Consists of a frame-work containing colored panes, forming a pattern of colored glass, and intermediate empty spaces for the passage of direct light. This screen is placed in a window-frame with an ordinary window.

Claim.—1. A window or screen consisting of a frame-work containing colored panes, forming a pattern of colored glass, and intermediate empty spaces for the passage of direct light, substantially as shown and described.



2. The combination, in a window-frame, of a screen or window consisting of pieces or a pattern of colored glass and intermediate empty spaces in a frame-work, with a second window of plain glass, substantially as shown and described.

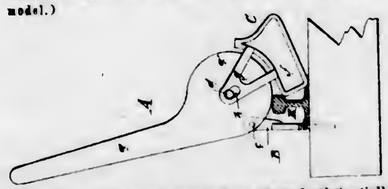
254,410. CARPET-SWEEPER. CHARLES L. TRAVIS, Minneapolis, Minn., assignor of one-half to Mervin Tabor, Aurora, Ill. Filed June 9, 1881. (Model.)



Claim.—1. In a carpet-sweeper, the combination of the following elements: the closed body, two traction-rolls, each extending the entire length of the body outside thereof, a central rotary brush, pulleys mounted upon the ends of the rolls, a fixed pulley upon the body, a movable pulley mounted upon the swinging arm acted upon by a spring, and a belt extending around the four pulleys, in the manner described and shown.

2. In a carpet-sweeper, the combination of the pulleys *c c*, mounted upon the traction-rolls, the brush-driven pulley *g*, sustained in the vertically-adjustable plate *h*, the pulley *k*, arm *l*, and spring *f*, with belt *i*, as shown, whereby a vertical adjustment of the brush is permitted and the belt kept taut.

254,411. SPIKE-EXTRACTOR. WILLIAM B. TURNER, Long Island City, and ALBERT P. PROUT, Woodhaven, N. Y.; said Turner assignor to said Prout. Filed June 30, 1881. (No model.)



Claim.—An improved claw-bar constructed substantially as herein shown and described, consisting of lever A, having an enlarged eccentric end, *a'*, provided with central transverse rod, *d*, swinging shoe C, provided with slotted hangers *g g*, and curved on the upper face to conform to the curve of the eccentric end of the lever, and swinging claw B, arranged as set forth.

254,412. SEAT FOR VEHICLES. OLIVER VARDEMAN, Racine, Wis. Filed Dec. 10, 1881. (No model.)

Claim.—1. A frame or support for the end of a wagon-seat, provided with a wide flange upon its top edge, through which the clamping-bolts are passed, and with a strengthening-flange around its other edges, and suitable locks or projections for extending down inside of the wagon-bed, one of which forms a support for

254,412.

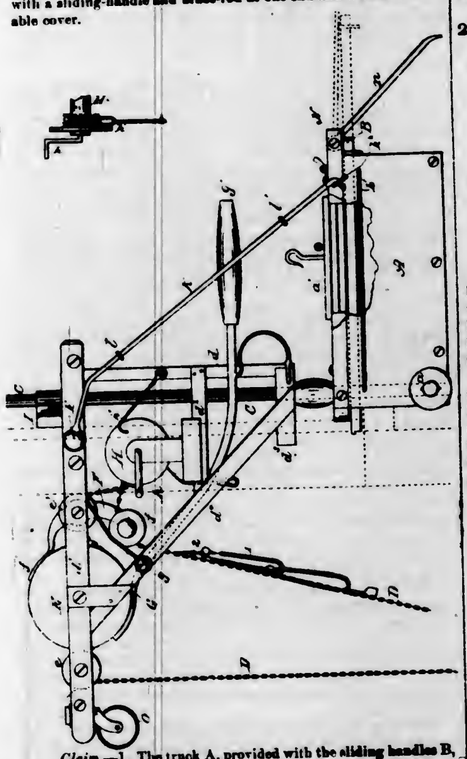


the clamping device which fastens the seat in position, substantially as described.

2. A metallic frame or support for one end of a wagon-seat, having the support for the clamping device in a single piece with it and the support braced by the flanges G, substantially as set forth.

254,413. FIRE-ESCAPE. THOMAS J. VINTON, Holly, Mich. Filed Jan. 4, 1882. (No model.)

Brief.—An upright rod removably attached to the truck carries the braced crane, in which the drum holding the endless chain is mounted. The chain passes over pulleys, also mounted in this crane. The center pulley is provided with a lower brake operated from within the room and an upper brake operated automatically by and proportionately to the weight on the chain. A brake-rod fastened to the frame is adapted to hook in the links of the chain to prevent its unwinding, when so desired. Suitable side braces are adjustably fastened to the truck. The truck is also provided with a sliding-handle and brace-rod at one end and with a removable cover.



Claim.—1. The truck A, provided with the sliding handles B, fitted in grooves in the truck, and the pivoted stay-bar *a*, in combination with the operating hoisting apparatus, substantially as shown.

2. The rod C, removably attached to the truck A, in combination with the transverse beam I and the crane *d' d² d³ d⁴*, substantially as described.

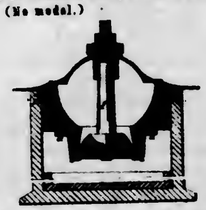
3. The combination of the crane consisting of the vertical beam *d*, horizontal beams *d' d² d³*, and angular brace *d⁴*, with the pulleys *e* E *e'*, pivoted arm F, its brake *f'* and pulley *f*, the drum-crank *h*, and brake G, all arranged to operate substantially as shown and described.

4. The combination of the crane consisting of the vertical beam *d*, the horizontal beams *d' d² d³*, and brace *d⁴*, and provided with pulleys *e* E *e'*, vertical arm F, brake *f'*, and pulley *f*, and drum H, crank A, brake-rod *h'*, and brake G, with the rod C, transverse beam I, and truck A, all arranged to operate substantially as shown and described.

5. The crane provided with the braces consisting of the rods K, pivoted thereto at their upper ends, and having their lower ends removably secured to the truck A, the rods K being held in position by the transverse bars *l l'*, in combination with the supporting-rod C and truck A, substantially as described.

6. The combination of the truck A, having the removable lid *a'*, the sliding handles B, and the pivoted stay-bar *a*, the supporting-rod C, upon which is pivoted the transverse beam I, and crane consisting of the vertical beam *d*, the horizontal beams *d' d² d³*, the said horizontal beam *d'* being provided with the pulleys *e* E *e'*, the pivoted arm F being formed into a brake, *f'*, at its upper end bearing against the pulley E, and having the pulley *f* at its lower end, the brace *d⁴*, having pivoted thereto the brake G, bearing against the under side of the pulley E, and provided with the handle *g'*, the beam *d²*, having mounted thereon the drum provided with the endless chain D and the crank *h*, the chain being provided with suitable detachable stirrups, 1, the crane being braced in proper position by means of the rods K, pivoted thereto at their upper ends, and having their lower ends removably attached to the truck A, and held in position by means of the transverse bars *l l'*, all being combined to operate substantially as shown and described.

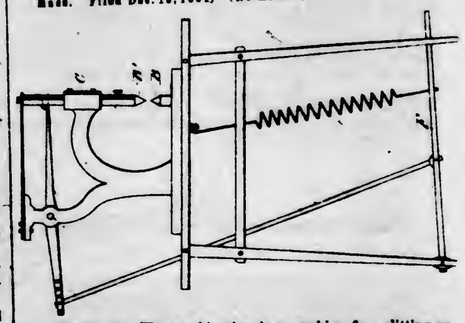
254,414. COFFEE-MILL. RODOLPHUS L. WARD, New Britain, Conn., assignor to Landers, Frary & Clark, same place. Filed Dec. 15, 1881. (No model.)



Claim.—1. A box mill having a hopper, C, arranged in the box at its upper edge and secured to the sides of the box, combined with a top having an opening corresponding to the opening in the hopper, constructed to fit upon the upper surface or body of the hopper, and secured to the box independent of the hopper, substantially as described.

2. The combination, in a box mill, of a wood hopper, C, arranged within the box and supported by the sides of the box, combined with a runner-shell upon the under side of the hopper, and a metal top having an opening corresponding to the opening in the hopper, and constructed to fit the body of the hopper and extend and secured to the sides of the box independent of the hopper, substantially as described.

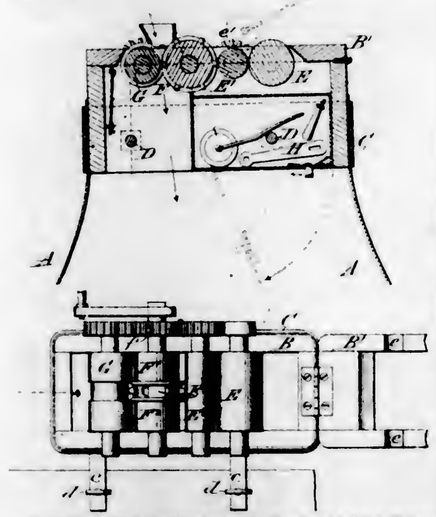
254,415. MACHINE FOR CRACKING OR SPLITTING MARBLE OR OTHER STONE. CHARLES A. WELLINGTON, Lexington, Mass. Filed Dec. 19, 1881. (No model.)



Claim.—1. The combination, in a machine for splitting or cracking stone, marble, &c., of the tool B', its supporting-rod, and actuating-spring with the tool or support B, all substantially as and for the purposes described.

2. The combination of the tool B', its supporting-rod and actuating-spring, the treadle F and connecting mechanism, substantially as specified, and the lower tool or support, B, all arranged so that the upper tool may be reciprocated by foot, all substantially as described.

254,416. COMBINED BALLOT-RECEPTACLE AND SATCHEL. OSBORN WELLS, Newberry, S. C. Filed Oct. 12, 1881. (No model.)



Claim.—1. The combination, with the frame of a ballot-receptacle, of a satchel detachably attached thereto, and provided with fastening devices, substantially as described, whereby the ballots and detached frame may be secured therein, as and for the purpose specified.

2. The combination, with the satchel A and detachable frame B, having hinged open cover B', adapted to be secured within said frame, of the inking-rollers E E', printing-roller F, and pressure or feed roller G, substantially as specified.

3. In a ballot-receptacle provided with devices arranged to print or mark the ballots as deposited, the combination, with suitable inking-rollers, of a feed-roller, G, having a central depressed portion composed of elastic material, and a printing-roller composed of a shaft having the central detachable type-collar, F, and securing-collars F' F², substantially as set forth.

4. In a combined ballot-receptacle and satchel, the combination, with the satchel A, frame B, and band C, having nuts or screw-caps *b b*, of the clamping screw-bolts D D, having jaws *c c* and thumb-screws *d d*, whereby the parts are connected and detachably secured to a suitable support, substantially as shown and described.

5. The combination, with a satchel having a detachable top or frame provided with rollers for printing or marking ballots as deposited, of clamping-bolts adapted to connect the satchel and frame and secure the same to a table or other support, and means, substantially as described, for securing the ballots and detachable frame and contents in the satchel, substantially as specified.

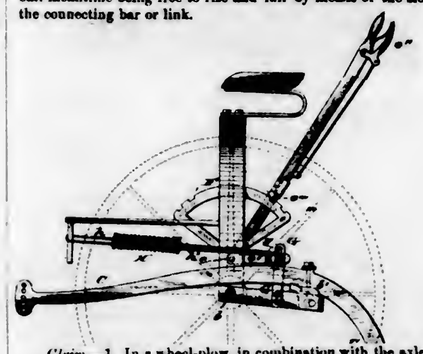
254,417. SHEET-METAL VESSEL. EDWARD H. WHITNEY, Cambridge, assignor to the Dover Stamping Company, Boston, Mass. Filed Dec. 7, 1881. (No model.)



Claim.—A hollow sheet-metal vessel comprising the body A, the bottom B, united to the body, substantially as specified, and the base C, struck up from a ring or disk of metal from which the center has been removed and fastened to the bottom B by rivets, all substantially as set forth.

254,418. WHEEL-PLOW. WILLIAM H. WILDS, Bushnell, Ill. Filed Sept. 29, 1881. (No model.)

Brief.—The elbow-lever is so placed that when locked the spring exerts its force on the lever-arm and its cross-bolt, the plow-bail meantime being free to rise and fall by means of the slot in the connecting bar or link.



Claim.—1. In a wheel-plow, in combination with the axle or frame, bail, and plow, a spring connected with the axle or frame or a projection therefrom at one end, and with the bail at its other end by a slotted connection, whereby it may be utilized in lifting the plow, and may be placed in position to exert no force on the plow when in operation, and permit it to rise and fall freely and independently of the spring, substantially as and for the purpose specified.

2. In a wheel-plow, in combination with the axle, plow, swinging bail, and lifting-lever connected with the plow by a slotted connection, a spring connected with the axle or a projection therefrom at one end and at its other end with the lifting-lever, whereby the lifting-lever may be locked in position and the entire force of the spring will be exerted thereon, and none of its force exerted on the plow, substantially as and for the purpose specified.

3. In combination with the axle, swinging bail having a slotted standard, G, and the lifting-lever having its arm *e'* pivoted in said slotted standard, a spring, H, connected at one end with the axle or a projection therefrom and at its other end with the distal end of the arm *e'*, substantially as and for the purpose specified.

4. In combination with the axle, swinging bail, plow, and lifting-lever loosely connected with the bail by a slotted connection, a spring adapted to be locked from action on the plow by the lifting-lever in one position, and permitted to act in raising the plow with the lifting-lever in other positions, substantially as and for the purpose specified.

5. In combination with the axle, plow, swinging bail, and lifting-lever having an arm, *e'*, connected with the plow, a spring adapted to act on the arm *e'*, and thereby on the plow, substantially as and for the purpose specified.

254,419. WOOD-TURNING LATHE. CHARLES W. WILDER, Fitchburg, Mass. Filed Jan. 25, 1881. (No model.)

Claim.—1. A tool-carriage having an interchangeable ring-rest, through which the stick passes, provided with a roughing-tool which is pivoted to a vertically-adjustable arm, and which is itself vertically adjustable, for the purpose of causing it to bear on said ring, substantially as described.

2. The combination, with the tool-carriage and a removable ring-rest, of a roughing-tool supported by a tool-holder which is adjustable vertically and longitudinally of the lathe on a stud fixed to a vertically-adjustable arm, substantially as described.

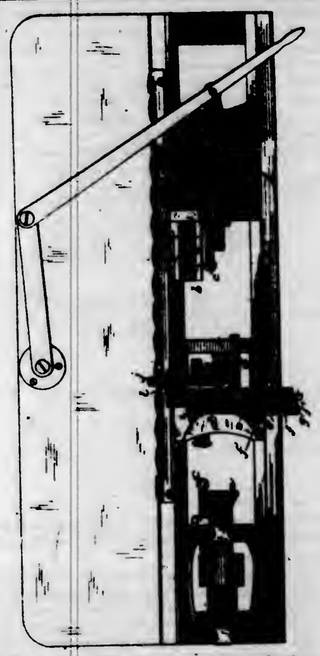
3. The combination, with the flanged and throated ring-rest of the tool-carriage, of the vertically-adjustable arm *f* and the adjustable tool-holder, the stud *f'*, and the set-screw *g*, substantially as described.

4. In a lathe of the character described, a tool-holder connected to the wrist-pin of a crank-wheel the hub of which turns about a bearing depending from the tool-carriage, in combination with a retracting-spring, an actuating-lever, and a flexible connection between the crank-wheel and lever, substantially as described.

5. The combination, in a lathe, of a movable tool-carriage, a movable finishing-tool, a knee-lever, a crank-wheel, a flexible connection between the knee-lever and crank-wheel which allows an unvarying leverage and an instantaneous release of the tool from the finished work, and means for retracting the tool when the knee-lever is released, substantially as described.

6. The combination in a lathe of the character described, of the holder of the finishing-tool, the arm rigid thereon, and the

254,419.



holder of the cutting-off tool, having right-angular intersecting-grooves therein, and the binding-screw for confining the tool and its holder to said arm, substantially as described.

254,420. GAME APPARATUS. VINCENT W. WILSON, Leominster, Mass., assignor to Charles L. Joslin and Albert W. Williams, both of same place. Filed Jan. 16, 1882. (No model.)



Claim.—1. The combination, with a bar or block having annular concavities or sockets in its upper surface, of a series of levers or triggers working in slots, one of which passes centrally through each of said sockets, the lower ends of said levers projecting a suitable distance below the bar or block, substantially as described.

2. The combination of the marble-holders, support therefor, and levers or triggers, substantially as described.

3. The combination, with a block having a number of hollows or depressions, each adapted to hold a marble, of triggers or devices acting when struck to throw the marble out of its socket, substantially as described.

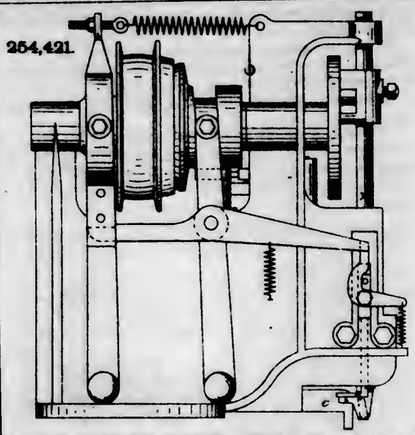
4. The combination of the block or bar having sockets and slotted at intervals, as explained, levers or triggers working in the slots, and folding legs for holding the toy when in use, substantially as described.

5. The combination, with the marble-holders and their support, of a series of pivoted triggers formed of flat strips of metal twisted near their lower ends, so as to present forward their flat sides, substantially as described.

6. A toy or game device comprising a block or bar having a number of sockets or hollows on top, a series of pivoted levers or triggers playing through slots, one of which passes through each of said sockets, a hook-stop or rest for said triggers, and holding pins or wires, substantially as described.

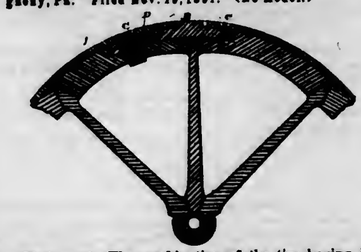
254,421. TACKING-MACHINE. ERASTUS WOODWARD, Somerville, Mass., assignor to the Copeland Tacking and Lasting Company, Paterson, N. J. Filed Jan. 7, 1881. (No model.)

254,421.



Claim.—In a tacking-machine, the combination of the start or start-and-stop motion mechanism with a foot, B, arranged in proximity to the nozzle, and having a horizontal, or substantially horizontal, movement in relation thereto, and connecting mechanism, substantially as specified, whereby upon the horizontal or swinging movement of the work in relation to the nozzle the machine is actuated, all substantially as and for the purpose set forth.

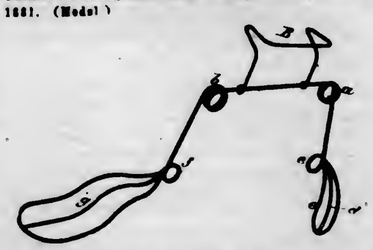
254,422. TIRE FOR WAGON-WHEELS. LEVI YAKEL, Allegheny, Pa. Filed Nov. 19, 1881. (No model.)



Claim.—1. The combination of the tire having its edges turned down over the sides of the felly and slots made through its free end with the slotted stay B, to which one end of the tire is rigidly fastened, the wedge D, and screws C, substantially as set forth.

2. A tire for vehicle-wheels, by the contraction of which the sections of the felly are drawn together and the outer ends of the spokes held between the sections secured by the downward-bent edges of the tire, substantially as shown and described.

254,423. BOOT AND SHOE EXHIBITOR. WILFORD W. YOKUM, Parkersburg, assignor to William Kegy, Butler County, and Guilford H. Rush, Blackhawk County, Iowa. Filed Nov. 11, 1881. (Model.)



Claim.—1. A device for exhibiting shoes, formed of wire and bent at its front end to form a wide and expanded bearing or lateral extension to conform to the instep, substantially as and for the purpose set forth.

2. A device for exhibiting shoes, formed of wire and bent at its front and rear ends to form wide and expanded bearings or lat-

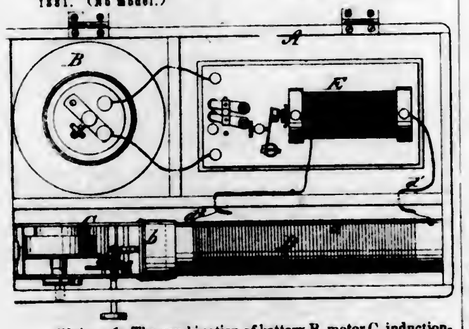
by means of cog-wheels and worm-gears, substantially as and for

eral extensions to conform to the instep and heel portions of the shoe, substantially as and for the purpose specified.

3. The shoe-exhibitor consisting of the wire A, bent so as to form one or more coils to give it the required elasticity, and having the lateral extension or widened ends formed by the wires *d g e h* or their equivalent, substantially as and for the purpose specified.

4. A device for exhibiting boots or shoes, consisting of the steel or spring wire A, bent to form coils *a*, and terminating in the curved extensions *d g*, and having connected thereto the curved wire loops *e h* and the wire hook B, substantially as and for the purpose set forth.

254,424. APPARATUS FOR THE CONTINUOUS PRODUCTION OF OZONE. THEODORE J. YOST, Mahwah, N. J. Filed Dec. 17, 1881. (No model.)



Claim.—1. The combination of battery B, motor C, induction-coil E, ozonizer D, and fan *h*, substantially as shown and described, for operation as set forth.

2. The glass tube *a*, provided with wire *d*, disks *g*, and outer winding of wire d^2, substantially as shown and described, for use as an ozonizer.

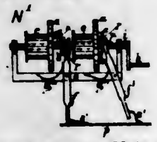
254,425. STAPLE. WESLEY YOUNG, Columbus, Ohio. Filed Aug. 15, 1881. (No model.)



Claim.—The double-pointed nail herein described, constructed from plate metal, and having the points substantially in line with its lateral edges, from which points the prongs are beveled inward and backward, so as to nearly meet at the inner edge of the dividing slot or space, and having a wide flat head in the same plane with the prongs, substantially as described.

254,426. RAILWAY-SEMAPHORE. WILLIAM ZIMMERMAN, Chicago, Ill. Filed Aug. 16, 1881. (No model.)

Brief.—The signal-boards are pulled to "safety" through cable-connections on winding-drums having clutch-connection with a winch, the drums being held by pawls when the winding-clutch is disengaged, the signals going to "danger" by their own weight when the pawls are raised.



Claim.—1. A signal apparatus, M, in combination with an operating apparatus, N, consisting of a drum, *e*, clutch *r*, lever *f*, rope *m*, and feathered shaft *i*, operating substantially as specified.

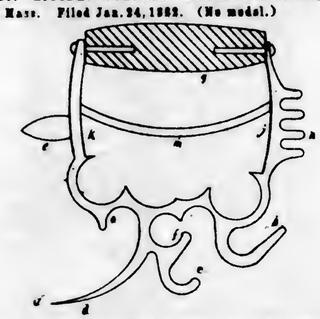
2. The shaft *i*, provided with feathers *n* and clutches *r*, operated by levers *f*, in combination with the drum *e*, ratchet-wheel *a*, pawl *k*, rope *m*, and signal apparatus M, substantially as specified.

3. The feathered shaft *i*, provided with clutch *r*, operated by lever *f*, spring *g'*, rod *p*, and cord *s'*, in combination with drum *e*, ratchet-wheel *a*, and pawls *k* and *c*, substantially as specified.

4. The combination of the drum *e*, ratchet-wheel *a*, pawl *k*, rod *r*, and cords *s*, substantially as specified.

5. In combination with a signaling apparatus consisting of a housing having an end opening, into and out of which pass colored signal-boards, and side openings to expose an interior light for the purpose of bringing before it screens attached to and forming a part of the signal-boards, and of the same color, arranged to fall automatically, the strand, and mechanism, substantially such as herein described, connected therewith, whereby said signals are held out of "danger," and by means of which any one or number of signals may be dropped into or removed from the position of "danger," and in which, by the breaking of said operating apparatus, the signal boards and lights will indicate "danger," all constructed to operate substantially as and for the purpose specified.

254,427. KITCHEN UTENSIL. BENJAMIN F. ADAMS, Springfield, Mass. Filed Jan. 24, 1882. (No model.)



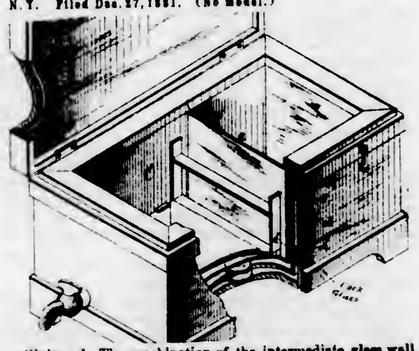
Claim.—1. A kitchen utensil embracing in its construction a non-conducting handle, *g*, and the uprights *j* and *k*, having hooks *d* and *b*, substantially as shown.

2. The upright *k*, having can-opener *c*, in combination with an upright, *j*, a handle, and one or more hooks, arranged for convenient use, substantially as shown, for the purposes stated.

3. In a kitchen implement having uprights *k* and *j* and a non-conducting handle, *g*, the stove-lid lifter *d*, notched for use as a nail-puller, substantially as shown.

4. In a kitchen utensil, the uprights having one or more hooks arranged at convenient points below, and having a non-conducting handle, substantially as shown.

254,428. SICK-ROOM REFRIGERATOR. SAMUEL F. CRUSS, Brooklyn, assignor of one-half to Joseph J. Walton, New York, N. Y. Filed Dec. 27, 1881. (No model.)



Claim.—1. The combination of the intermediate glass wall, the elastic supports therefor, the air-spaces, and the external and internal walls of a refrigerating-chest, substantially as described.

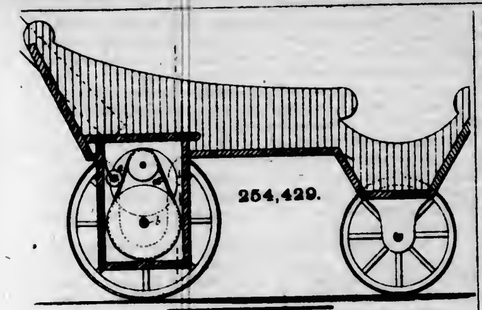
2. The reversible ice stool or support with a glass plate affixed to its perforated bottom, substantially as described.

254,429. TOY OR CHILD'S CARRIAGE IN COMBINATION WITH A MUSICAL BOX. CHARLES H. CRANDALL, Montrose, Pa., assignor to the C. H. Crandall Company, same place. Filed Jan. 9, 1882. (No model.)

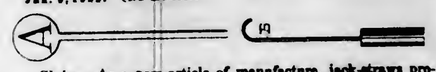
Claim.—1. A child's carriage in combination with a musical box, substantially as described.

2. In a child's carriage, one or more of its axles provided with a pulley-wheel, in combination with a musical box and pulley fixed thereto, and an endless belt, substantially as shown and described.

3. In a child's carriage, the combination, with a musical box and pulleys and endless belt, of a spring friction-pulley, as and for the purpose described.

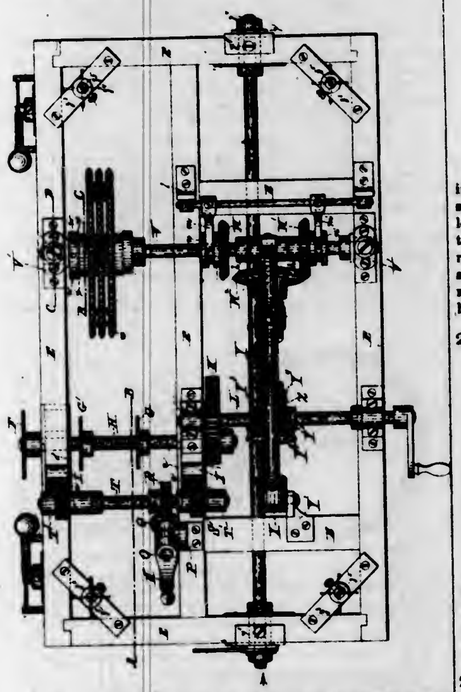


254,430. JACK-STRAWS. CHARLES H. CRANDALL, Montrose, Pa., assignor to the C. H. Crandall Company, same place. Filed Jan. 9, 1882. (No model.)



Claim.—As a new article of manufacture, jack-straws provided with letters or numbers, or both, as and for the purpose described.

254,431. ICE-CUTTING MACHINE. CHARLES H. CUTTER, Worcester, Mass., assignor of one-half to Edmund Converse, same place. Filed July 23, 1879.



Claim.—1. In a machine for cutting ice, the combination, with shaft V and propelling-wheel U, of the eccentric hub-piece *v* and its head *x*, provided with holes *w*, substantially as and for the purposes set forth.

2. The combination, with frame E of the ice-cutting machine and shaft V, carrying propelling-wheels upon an eccentric hub, of adjustable shaft H, marking-saw G, and cutting-saw F, arranged in relation to each other substantially as and for the purposes set forth.

3. The combination, with marking-saw G and cutting-saw F, of a second marking-saw, G', and an adjustable shaft, H, operated by means of cog-wheels and worm-gears, substantially as and for the purposes set forth.

4. The combination, with shaft H and frame E, of curved socket-pieces *b b*, geared segment-pieces I I, shaft T, worm-gear R, spur-gears S S, operating-crank N, and its shaft O, provided with worm-gear Q, substantially as and for the purposes set forth.

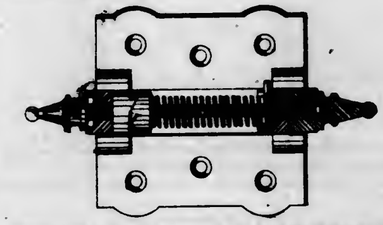
5. The combination, with shafts H, X, and L, relatively arranged and supported as described, of gears W, W', W^2, Y^2, Y^3, Y^4, and Y^5, substantially as and for the purposes set forth.

6. In an ice-machine, a frame, Y, pivoted at one end upon the shaft V, carrying the propelling-wheels, and adjustable vertically at the other end, in combination with shaft X, supported thereby, worm gearing-wheels upon said shaft, and worm-wheel Y^4, whereby shafts X and L are supported in relation to each other as and for the purposes set forth.

7. The combination, with the frame E of the ice-cutting machine and cross-pieces z^2, of upright parts z^3, upright shafts z', trucks or wheels z, and adjusting-screws z^4 z^4, said parts being constructed and relatively arranged substantially as and for the purposes set forth.

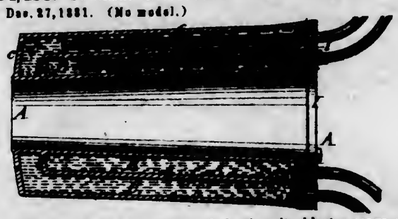
8. The combination, with the frame E, provided with stop-pins z^{12}, of guides z', fulcrumed at the point z^{13}, and provided with operating-handles z^{11} and downwardly-projecting parts or flanges z^5, substantially as and for the purposes set forth.

254,432. SPRING-HINGE. IRA S. DAVIS, Detroit, Mich., assignor to the Edwards Manufacturing Company, same place. Filed Dec. 5, 1881. (No model.)



Claim.—In a spring-hinge, an automatically-operating locking device acting by means of the longitudinal elasticity of a coiled spring, which also operates the hinge, and a pintle connecting the leaves of the hinge, and having thereon a shoulder or stop adapted to force open the locking device when the pintle is moved in a direction contrary to the longitudinal pressure of the spring, said said pintle being connected with the locking device, whereby neither can be rotated independent of the other, substantially as herein shown and described.

254,433. TUYERE. NICOLAS A. DIDIER, Pittsburg, Pa. Filed Dec. 27, 1881. (No model.)



Claim.—A furnace-tuyere, A, having its blast-passage surrounded by two separate water-chambers, B and C, the outer chamber, C, extending over both the side wall and front end of the inner chamber, with a separate water supply and discharge for each chamber, substantially as and for the purposes set forth.

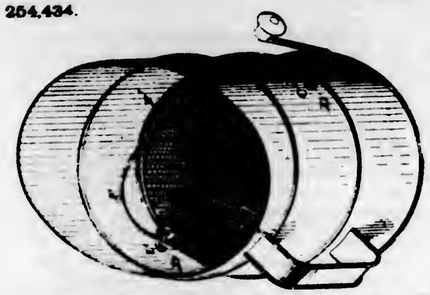
254,434. COMBINED FLOUR AND MEAL SIFTER. NAPOLEON DU HAIL, Cincinnati, Ohio, assignor to Brainerd T. Smith, Covington, Ky. Filed Dec. 10, 1879.

Claim.—1. In a sifter, the combination, with body A, hemispherical sieve B, and a suitable shaft, of the agitator, consisting of wires F F', collars E E', and short sleeves D D', projecting from the ends of the frame and journaled in the said body, as set forth.

2. The wire shaft G, having crank-handle *g'* and non-circular extremity *g*, in combination with the agitator, consisting of wires F F', collars E E', and short sleeves D D', the inner sleeve, D, being formed non-circular interiorly, as set forth.

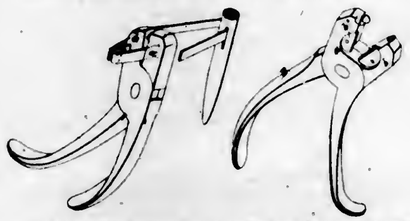
3. The combination of wire circles F F', having bent portions

254,434.



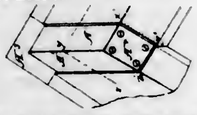
f at their mid-length, collars E E', having holes *e e*, adapted to receive the ends of the circular wires, the short sleeves D D', and shaft G, as set forth.

254,435. CAR-SEAL SET, CUTTER, AND EXTRACTOR. HEZEKIAH M. FOOTE, Lansing, Minn. Filed Dec. 31, 1881. (No model.)



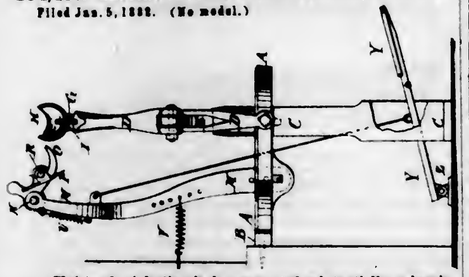
Claim.—The hereinbefore-described tool for securing, cutting, and extracting seals, in which the clamping, cutting, and eyelet-setting jaws are combined, substantially as and for the purpose specified.

254,436. METALLIC CORNER FOR BOXES. DE LANCY FERRONE and RICHARD B. PERKINS, Horseheads, N. Y. Filed Dec. 13, 1881. (No model.)



Claim.—The corner-piece consisting of the outside and inside plates, A A', having, one, beads *a*, the web A^2, connecting these together, the top plate, A^3, and the base-plate A^4, all cast in one piece, as set forth and shown.

254,437. LASTING-JACK. GEORGE W. HUTCHINS, Dover, N. H. Filed Jan. 5, 1882. (No model.)



Claim.—1. A lasting-jack constructed substantially as herein shown and described, and consisting of the cam-frame A, having spindle F, the swiveled bar E, the hinged lever D, the hinged bar G, the hinged bar M, provided with the curved arm O, having prongs P and spring U, the spring V, and the treadle Y, as set forth.

2. In a lasting-jack, the combination, with the frame A and the treadle Y, of the hinged bar M, the curved arm O, having prongs P and spring U, and the spring V, substantially as herein shown and described, whereby the upper can be drawn into place upon the last by operating the treadle, as set forth.

3. In a lasting-jack, the combination, with the frame A, having a cam edge, and the swiveled bar E, of the lever D, substantially as herein shown and described, whereby the last is guided as the swiveled bar is turned upon its pivot, as set forth.

4. In a lasting-jack, the combination, with the cam edge of the frame A and the lever D, of the set-screw J, substantially as herein shown and described, whereby the jack can be adjusted to receive lasts of different sizes, as set forth.

5. In a lasting-jack, the combination, with the spindle F, the lever D, and the arm G, of the swiveled bar E, having arm E', provided with a bearing, substantially as herein shown and described, whereby a firm and steady support is given to the said lever and arm, as set forth.

6. In a lasting-jack, the combination, with the swiveled bar E, provided with the projection L, of the arm G, pivoted to the said bar and provided with the concave head H, and the set-screw K, passing through a hole in the said lug, substantially as and for the purpose set forth.

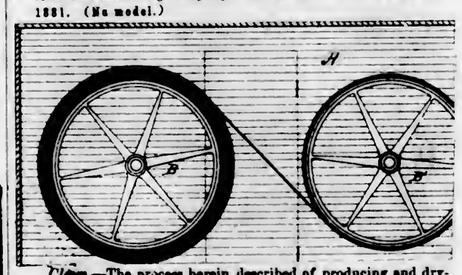
254,438. PROCESS OF MAKING KEY-BOARDS FOR MUSICAL INSTRUMENTS. JOHN W. HYATT, Newark, N. J., assignor to the Bonsilatc Company, (Limited,) Albany, N. Y. Filed May 2, 1881. (No model.)



Claim.—1. The within-described process of forming a key-board for pianos or organs, which consists in, first, introducing the material out of which the black keys are to be formed in an appropriate die or mold; second, introducing in the mold the material out of which the white keys are intended to be formed; third, uniting the materials by means of heat and pressure to form a complete key-board or section thereof; fourth, securing the board or section thereof to the key-board blank; fifth, severing the keys by sawing or otherwise, substantially as set forth.

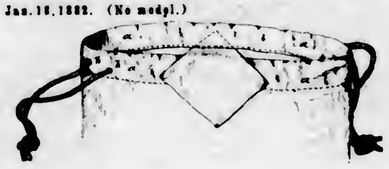
2. The process herein described of forming a complete key-board for pianos and organs, which consists in, first, forming an octave or section of both black and white keys by means of a die or mold; second, securing a number of the octaves or sections so formed to the key-board blank to form a complete key-board; third, severing the keys by sawing or otherwise.

254,439. PROCESS OF DRYING SHEETS OF PLASTIC MATERIAL. JOHN W. HYATT, Newark, N. J., assignor to the Celluloid Manufacturing Company, New York, N. Y. Filed Aug. 23, 1881. (No model.)



Claim.—The process herein described of producing and drying a sheet or continuous piece of plastic material of the nature of pyroxyline, which consists in first cutting the sheet from a roll or slab, and, second, moving the same upon drums, the sheet being given a sufficient tension to cause it to dry with hard, smooth surfaces, and the movement being such as to permit the sheet or piece to dry before the tension is discontinued, substantially as set forth.

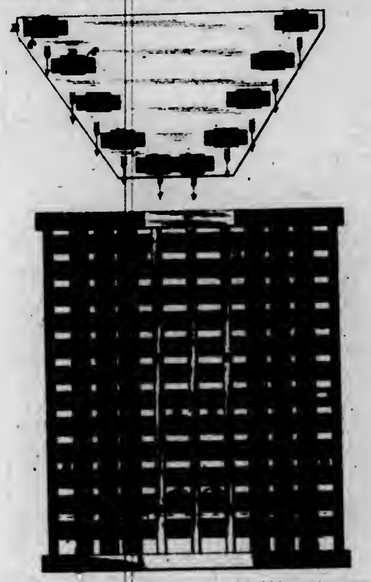
254,440. BAG-FASTENER. CHARLES W. KURTS, New York, N. Y., assignor to Bradley, Kurts & Co., same place. Filed Jan. 18, 1882. (No model.)



Claim.—A grain-bag provided with a hem, shirring-cords running in opposite direction to each other through the hem and closed by knots at their outer ends, and a small apron, which is attached at one corner to the lower inside edge of the hem, so as to extend diagonally below the mouth of the bag when the same is closed, substantially as and for the purpose set forth.

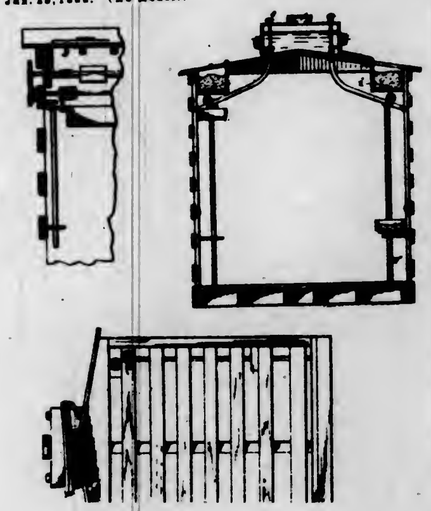
254,441. CREEL OR BOBBIN-RACK. JAS. O'NEILL, St. Louis, Mo., assignor of one-half to George H. Stewart, same place. Filed July 9, 1881. (No model.)

Brief.—The extra thread-guiding posts are omitted, and their function, when requisite, is transferred to the bobbin-posts.



Claim.—A creel having a series of bobbin-posts arranged in sets on parallel lines, the outer post of each set being arranged intermediate between the posts of the succeeding set and serving as thread-guides for the succeeding bobbins, whereby the thread is conducted to the loom in a direct line and undue friction avoided, substantially as described.

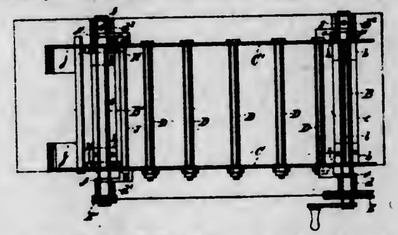
254,442. STOCK-CAR. ANNIE K. PERTS, Clearfield, Pa. Filed Jan. 25, 1882. (No model.)



Claim.—1. In a stock-car, a feed-bin arranged beneath the roof and having its bottom wall constructed with openings, in combination with a rod, *i*, extending longitudinally along the said feed-bin and journaled in bearings thereon, so as to be capable of rotation, and valves A, attached to said rod and rotated by the movement of the latter for opening and closing the openings in the bottom wall of the bin, substantially as described.

2. In a stock-car, the combination, with feed-bins arranged on each side beneath the roof, and provided with openings governed by valves adapted to be simultaneously operated, of adjustable troughs suspended beneath said bins and adapted to be secured at any desired elevation, substantially as shown and described.

254,443. WALL-PAPER-TRIMMING MACHINE. ROBERT STEEL, Philadelphia, Pa., assignor to Joseph E. Vanmeter, same place. Filed June 11, 1881. (No model.)



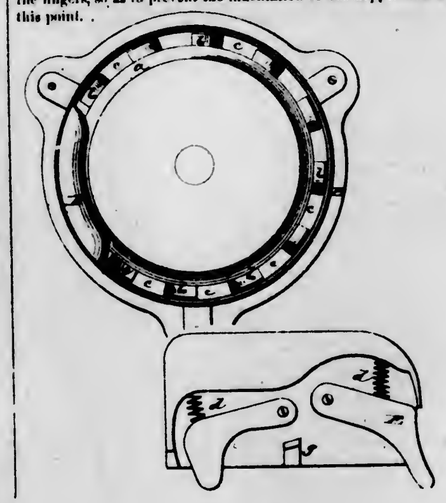
Claim.—1. In a wall-paper-trimming machine, in combination with the revolving shaft B, having a stationary knife, G, and an adjustable knife, G', the stationary guide C and adjustable guide C', having each a knife, H, and paper-roll rest *j*, whereby to adapt the trimming-machine to trim the paper to any desired width by simply adjusting the guide C' and the revolving knife or cutter G', substantially as described.

2. The combination of the series of supporting-rollers D, arranged in arch form, with the revolving cutter-shaft B', the guides C and C', and the winding-shaft B, having a longitudinal groove, *l*, substantially as and for the purpose set forth.

3. The combination of the revolving shaft B, having a pulley, E, provided with a hub, *d*, at one end, and a hub, d^2, at its other end, with the guides C and C', having arms *f* and *f'*, respectively, and with the cutter-shaft B', having a pulley, E', provided with a hub, *d'*, at one end, and a hub, d^3, at its other end, the hubs d^2 and d^3 being adjustable, substantially as described.

254,444. CORN-PLANTER. CHARLES W. VOGEL and HENRY BETTRELL, Centreville, Ind.; said Bettrell assignor to Anna M. Bettrell, same place. Filed Oct. 28, 1881. (No model.)

Brief.—Within the recessed shield are pivoted two spring-actuated fingers, one of which serves as a cut-off or clearer and the other as a discharger, and a lug is secured within the shield between the fingers, so as to prevent the indentation of the hopper-wall at this point.



Claim.—The combination of the shield D, the spring-actuated fingers therein, the hopper-flange, and the bracing-lug *g*, for the purpose specified.

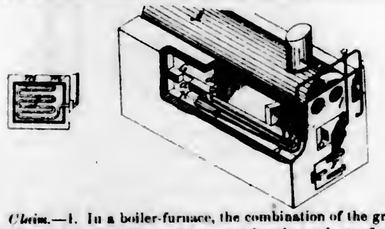
254,445. SAFETY-PIN. EDWARD WILLIAMS, New York, assignor to Susan T. Williams, Brooklyn, N. Y. Filed Sept. 15, 1881. (No model.)



Claim.—A safety-pin formed of a tube having at one end a fixed pin-point, and within the tube, at the other end, a movable bent wire surrounded by a coiled spring, with a pin-point projecting from the wire and operating through a slot in the side of the tube, substantially as and for the purpose described.

REISSUES.

10,044. BOILER-FURNACE. JAMES ELLIOTT, Montreal, Quebec, Canada, assignor to himself, Hascal A. Hogel, Yonkers, N. Y., and Robert A. Kelland, Montreal, Quebec, Canada. Filed Nov. 23, 1881. Original No. 248,925, dated Nov. 1, 1881.



Claim.—1. In a boiler-furnace, the combination of the grate, the hollow side walls, side pipes for conveying the products of combustion, and steam-pipes communicating with such side pipes at or near the discharge-orifices, whereby the products of combustion are drawn back and discharged into the fire.

2. In a boiler-furnace, the grate and fire-place and the hollow side walls, in combination with smoke and steam pipes arranged, substantially as described, within such hollow side walls.

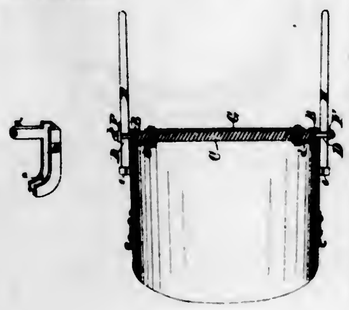
3. In a furnace for generating steam or other purposes, a fine or passage made in two divisions, one above the other, and connected by passages near the back, the upper flue or division receiving cold air from outside the furnace and the lower flue discharging same in a heated condition underneath the grate, in combination with and serving to hold pipes conducting smoke and steam to a point over the grate, substantially as described.

4. A hollow door for a furnace, inclosing a coil connected with a steam-supply, said door having openings for the admission of air and an exit-opening through which the air and steam are ejected into the furnace.

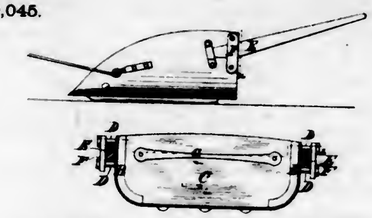
5. A hollow furnace-door inclosing a steam-coil and having inlet-openings, through which mingled air and steam are injected into the fire, and self-regulating steam-supply cock, substantially as described.

10,045. EARTH-SCRAPER. WILLIAM HASLUP, Sidney, Ohio. Filed Nov. 7, 1881. Original No. 234,882, dated Nov. 30, 1880.

Brief.—The ends of the back board rest in socket-plates bolted thereto and to a metallic strap across the back. The sides of the scraper-body and its handles are united to the socket-plates by bolts, between which the handles are inserted, and a strap and nuts on the outside of each handle.



10,045.



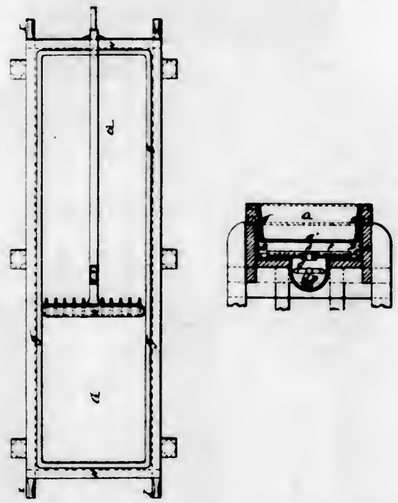
Claim.—1. The combination, with the side walls of a scraper, of a pair of socket-plates arranged inside the walls of the scraper, and adapted to receive and support the back board, the bolts D D, clamp-plates F, and the handles, whereby the socket-plates, side walls, and handles are firmly clamped, substantially as described.

2. In a scraper, the combination, with the scraper-body and back board, of a pair of socket-plates embracing the ends of the back board and extending from the top to the bottom edges thereof to form complete sheaths to the same, against which the side walls of the scraper rest, and devices, substantially as described, for confining the side walls of the scraper-body in proper position.

3. The combination, with the scraper-body and back board, of the curved socket-plates embracing the ends of the said board and extending from the top downward around the curved edges thereof, and devices, such substantially as described, for confining the socket-plates on the ends of the back board and retaining the scraper-body in proper position.

4. The combination, with the bent walls of the scraper and the back board, C, of the socket-plates B, the transverse bar G, the cross-bolts e, and devices, such substantially as described, for confining the bent walls in proper position relative to the socket-plates and the back board.

10,046. CHEESE-VAT. ALASCON SLAUGHTER, Middletown, assignor to Charles W. Thompson, Theresa, N. Y. Filed May 28, 1881. Original No. 61,359, dated Feb. 12, 1867.



Claim.—1. The herein-described cheese-vat, consisting of the combination of a milk-pan removably seated within a water-trough, said trough having steam-pipes entering below the water-line thereof, adapted to transmit steam-heat from a separate external generator through water contained in said trough to the aforesaid milk-pan, substantially as shown, and for the purpose specified.

2. The improved cheese-vat, consisting of a milk-vat removably seated within a water-trough, and having its vertical sides surrounded by the sides of said water-trough, having a water-space between them, and steam-pipes entering the water-trough below the water-line thereof, for the purpose of gradually and uniformly

heating the water surrounding the bottom and vertical sides of the milk-vat, substantially as set forth.

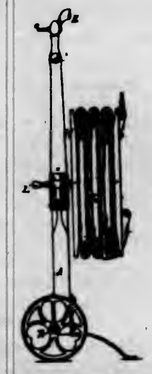
3. The combination, with the milk-vat G, of the water-trough A B, having projecting below its bottom the open segmental recess C, and the steam-pipes D, and drip-pipes E, arranged within said recess, substantially as set forth.

4. In combination with the milk-vat G, water-trough A B, and steam-pipes D *d*, arranged as described, the corrugated dissemminator F, having passages between it and the sides of the water-trough A, and provided in its depressed parts with apertures *f'*, substantially as and for the purpose specified.

5. The combination of the milk-vat G, hot-water trough A B, with its recess C, steam and drip pipes D E, arranged therein, the corrugated dissemminator F, and agitator K, substantially as and for the purpose herein specified.

10,047. FOUNTAIN-HOSE CARRIAGE. IVES W. MCGAFFEY, Chicago, Ill., assignor, by mesne assignments, to E. B. Preston, same place. Filed Jan. 21, 1882. Original No. 183,188, dated Oct. 10, 1876.

Brief.—The hose-nozzle can be held by clamp K in any position.



Claim.—1. The combined hose-carriage and fountain-standard, consisting in the combination of the following elements, viz: a wheeled carriage provided with a foot or brace by means of which it may be sustained in an upright vertical position, a nozzle-holding device, and a reel of large diameter to allow the water to flow through the hose when partially wound thereon, substantially as specified.

2. The combination of a hose-reel of large diameter to allow the water to flow through the hose wound thereon with a wheeled carriage for carrying said reel, provided with a foot or brace for sustaining it in an upright position, and devices for holding the nozzle both on the carriage and the reel, substantially as specified.

3. The reel pivoted in two ways to the standard, one pivot being its own axis for reeling and unreeling the hose, and the other pivot at right angles thereto, allowing the reel to swing around the standard, substantially as specified.

4. The combination, with a hose-reel of large diameter to permit the water to flow through the hose wound thereon and adapted to be fixed in position on its axle, of devices for holding the nozzle on the arms of the reel, substantially as specified.

5. The combination of the reel, the standard, and the sleeve which supports the former upon the latter, together with the steps upon the sleeve for locking it in several positions, substantially as specified.

6. The peculiarly-constructed clasp upon the top of the standard for holding the nozzle, consisting of two shell-like halves secured by a single bolt through the standard, which bolt serves as a pivot upon which the device may be adjusted, as a hinge upon which it may be opened, and as a means of locking it in the desired position when attained, substantially as specified.

7. The wheeled reel-bearing standard having handles L L near the top and the handle L' near the middle, substantially as specified.

8. The reel carried upon a spindle having grooves cut around it, in combination with the set-screw through the reel-hub, substantially as specified.

9. The combination, with a fountain-standard provided with wheels, of a hose-reel of large diameter to allow the water to flow through the hose wound thereon, substantially as specified.

10,048. FORCE-PUMP. PHILIP A. HYNES, Ashland, Ohio, assignor of one-half to F. E. Myers, same place. Filed Dec. 23, 1881. Original No. 238,102, dated May 26, 1880.

Brief.—A tube fixed within the discharge-pipe is open to the water only at the bottom and communicates with an air-chamber at the top of the discharge-pipe.

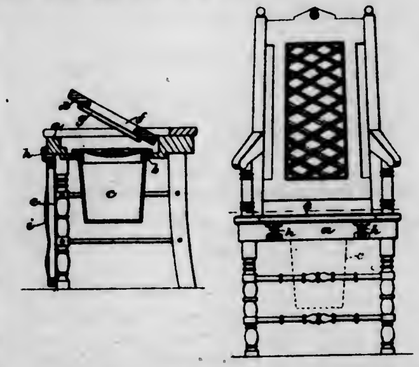


Claim.—1. The combination, with the discharge-pipe of a pump, of an air-tube fixed within said pipe and open to the water at the bottom, whereby the water, when forced up said discharge-pipe, is reacted upon by the compressed air in the air-pipe, substantially as described.

2. The combination of the discharge-pipe connected to the pump as described, with the air-pipe located therein and open to the water at the lower part, and with the diaphragm *j* and air-chamber J, all the parts being adapted to operate in the pump substantially as described.

10,049. COMMODE-CHAIR. TRUE RUSSELL, Boston, Mass., assignor to Abbie J. Russell, same place. Filed Jan. 20, 1882. Original No. 250,396, dated Dec. 6, 1881.

Brief.—The device can be used as a chair or as a commode. The vessel is tightly sealed by the sheet *i*.



Claim.—1. In a commode-chair of the class described, the combination of the seat-frame *a*, having an orifice, *b*, a vessel, *c*, inserted in said orifice, and having a flange resting upon the portion of the frame surrounding said orifice, a secondary seat, *d*, hinged to the frame *a* and provided with a packing, *g*, adapted to rest on the flange of the vessel, said flange supporting the weight of the seat, which compresses the packing *g* and presses the flange upon the supporting-surface of the seat-frame, thereby preventing the escape of odors excepting through the orifice *f* of the secondary seat, and the primary open-work seat *e*, having on its under side

a flexible sheet, *i*, adapted to cover the aperture in the secondary seat and prevent the latter from being seen, and also prevent the escape of odors through the opening in the seat *d*, as set forth.

2. In a commode-chair of the class described, the combination of the seat-frame *a*, having an orifice, *b*, a vessel, *c*, inserted in said orifice, and having a flange resting on the portion of the frame surrounding said orifice, a removable cover for said vessel, a secondary seat, *d*, hinged to the frame *a* and provided with a packing, *g*, adapted to rest on the cover of the vessel, said cover supporting the weight of the seat, which compresses the packing *g* and presses the cover upon the flange of the vessel and the flange upon the supporting-surface of the seat-frame, thereby tightly closing the vessel and preventing the escape of odors therefrom, as set forth.

3. The combination, in a commode-chair, of the seat-frame *a*, having an unobstructed space under its forward edge, the movable seat *c*, adapted to rest on said frame, and the link-hinges *h h*, connecting the seat *c* to the front of the frame, whereby the seat is enabled to be entirely removed from the seat-frame and swung into the unobstructed space under the forward edge of said frame, as set forth.

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DECISIONS
OF THE
COMMISSIONER OF PATENTS
AND OF
UNITED STATES COURTS IN PATENT CASES.

ACTING COMMISSIONER'S DECISIONS.

EX PARTE MARSTON.

Decided February 4, 1882.

1. INTERFERENCE *nunc pro tunc*—RULE 93.
Where one of two conflicting applicants has inadvertently obtained a patent without notice to the other an interference may then be declared *nunc pro tunc* between the application and the patent, under authority of the first clause of Rule 93.

2. CONFLICTING APPLICATIONS—PATENT PREMATURELY ISSUED.
Conflicting applications under the law and the rules sustain a hostile relation each to the other, irrespective of their relative dates of filing, and the premature issue of a patent to one applicant is not conclusive either for or against the right of the other.

3. MEANING OF "PATENT" IN RULE 93.
The second clause of Rule 93 has no application to such a case, the patent there referred to being one which was granted before the pending application was filed.

INTERLOCUTORY APPEAL.

ROLLING BEARINGS.

Application filed March 12, 1881.

Mr. A. H. Spencer for the applicant.

STOCKBRIDGE, *Acting Commissioner:*

It is claimed by the applicant in this case that during the pendency of his application a patent for substantially the same invention has wrongfully issued to a later applicant, and he now asks to be permitted to contest the question of priority with the existing patent.

The Examiner proposes to issue the patent forthwith, on the ground that the application has not been and should not be rejected upon reference to the patent of the subsequent applicant, and that the case therefore does not fall within the provisions of the second clause of Rule 93 governing interferences between pending applications and unexpired patents. I think, however, under the circumstances that an interference must be declared to enable the Office to judge whether a patent can, under the law, issue to the applicant for the invention. The error by which one of these rival claimants obtained his patent without controversy would be aggravated by now issuing a patent to the other without investigation. The necessity for ascertaining the applicant's right to a patent would seem to be increased rather than diminished by the fact that there is already an existing patent for the invention.

Conflicting applications under the law and rules sustain a hostile relation each to the other irrespective of their relative dates of filing. In such a case neither applicant is entitled to a patent, except as the prevailing party in an interference contest, and if by inadvertence a patent issues prematurely without investigation, it is clearly not conclusive either for or against the right of the other applicant. The applicant is then entitled to contest on equal terms the question of priority, and if he prove to be the prior inventor his right to a patent is unquestionable. The only effect of the granting of the first patent is that the Office is prevented by its own wrongful act from enforcing an unfavorable judgment against the patentee. This case then falls under the first rather than the second clause of Rule 93.

It is not as a "prior patentee" that one of two conflicting applicants who has inadvertently obtained a patent obstructs the application of the other, but as a rival claimant or conflicting applicant, necessitating an interference. The order of filing is an immaterial circumstance, a "prior patent" within the meaning of the law and rules being one which was not only filed but granted prior to the filing of the pending application. As against this applicant the grant of the patent was without authority of law and void, and if the Commissioner had as well the power to annul as to grant patents the patent would be canceled either in the premises or in the event of an unfavorable determination of the interference. But although Kaufman has by the error of the Office, and by reason of the limited power of the Commissioner over patents already issued, forestalled as to himself the result of the interference, the rights of Marston still remain undetermined, for the ascertainment of which an interference will be declared *nunc pro tunc* under the authority of the first clause of Rule 93.

The Examiner's decision is reversed.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—District of New Jersey.

SPRING *et al.* v. THE DOMESTIC SEWING MACHINE COMPANY.

Decided November 18, 1881.

1. SPRING'S PATENT—IMPROVEMENT IN LATHES FOR TURNING IRREGULAR FORMS—PATENT SUSTAINED.
The validity of the patent granted to Charles and Andrew Spring for an improvement in lathes for turning irregular forms not anticipated by the Pernot machine, the evidence showing that the devices for modifying the movement of the cutting-tool were added to the machine after the invention of the Springs, or that these devices, if originally present in the machine, accomplished their work so imperfectly that the inventor laid no stress upon them, and their existence was so fitful and uncertain that they must be put in the category of abandoned experiments. (*Spring* v. *Packard*, 7 O. G., 341.)

2. INFRINGEMENT—SINGLE WITNESS NOT REBUTTED SUFFICIENT.
The testimony of a single witness that defendant used machines substantially like complainants' not rebutted, *Held* to be sufficient proof of infringement upon authority. (*Bennett* v. *Fowler*, 8 Wall., 445.)

Mr. George E. Betton and *Mr. George S. Boutwell* for the complainants.

Mr. John Dane, Jr., for the defendant.

IN EQUITY—BEFORE M'KENNAN AND NIXON, JUDGES.

NIXON, *J.:*

The question of the validity of the patent on which this suit was brought was before the learned judges of the first circuit (Clifford and Lowell) at the term of October, 1874. It was there held that the complainants' patent was a valuable and ingenious improvement in lathes for turning irregular forms; that Charles and Andrew Spring were the original and meritorious inventors of the said improvement, but that the patent should be declared void in view of the fact that the testimony showed that they were not the first inventors; that the patent was for a combination, all the elements of which were old, and that the same was anticipated by the machine of one Pernot, proved to have been made in New York and operated there for several years in the manufacture of large quantities of sewing-machine needles. (*Spring* v. *Packard*, 7 O. G., 341.)

The great respect which we entertain for the opinion of that court, as well as interstate comity, would readily lead us to accept its decision as controlling this case if the truth of the facts on which it was based were not controverted and seriously questioned here.

It is insisted by the complainants, (1) that their proofs in the present case show the falsity of the testimony on which it is attempted to establish the existence of the Pernot machine, or, at least, that part of it embracing the mechanism which anticipates the Spring patent anterior to the date of the complainants' invention; (2) that even if its prior existence is admitted, the mechanism is not an anticipation of the specifications and claims of the Spring patent.

1. As to the first point, respecting the actual existence of the Pernot machine, it is a well-settled principle that the burden of proof is on the defendant. Pernot, the alleged inventor, testifies that he completed and used it as early as the year 1853 for turning needles, and that it was substantially in the same condition and contained the same mechanism of curving the shoulders and sharpening the points of the needles at the time of his examination as a witness in this case as when it was finished in 1853.

The claim of the Spring patent is for the combination of a griping-chuck, by which an article can be so held by one end as to present the other free to be operated upon with a rest preceding the cutting-tool, when it is combined with a guide-cam or its equivalent, which modifies the movement of the cutting-tool, all operating together for the purpose set forth.

The distinguishing features of the patent are the cams or formers for turning the curved shoulders and the points of the sewing-machine needles.

The patentees in their specifications state that the pattern *e'*, which is adjustable by means of the set-screw *s'*, is pivoted in *q* and serves to shape the shank, while the pattern *o'*, which is adjustable along the length of *q* as well as outward from it, serves to form and shape the point. Is there any mechanism found in the Pernot machine which produces either of these results; and if so, at what time do the proofs show that it was first attached? The curved or rounded shoulder to a needle made in this machine is doubtless formed by the wedge *a*, which operates to draw back the knife as it approaches the griping-chuck, and Pernot in his examination states that, although he never pointed the needles in the practical use of his lathe, the mechanism was capable of such adjustment that the points could be readily turned. We are then brought to the inquiry whether the wedge *a* and the bar *b* were in the Pernot lathe prior to the Spring invention in 1857. The first witness upon this point is the complainants' expert, Hoadley. He considers the wedge *a* and the bar *b* an evident afterthought, worked into the otherwise completed lathe at some time subsequent to its original completion and operation. This opinion is founded, first, upon the examination, under a glass, of the six needles marked "Pernot Needles, Exhibit 14," which had been exhibited by Pernot in a former suit as the product of his machine, and as proof that he had made upon the said machine needles with curved or rounded shoulders and sharp points, and which the witness thought gave unmistakable evidence of being finished by hand-tooling, both as to the shoulders and the points: and secondly, upon the striking differences in the execution of the work on different parts of the lathe, "all parts," says the witness, "being well formed, accurately fitted, and well finished, except the important bar *b* and its clamp-screws *c c*. These are coarse, rude, and devoid of finish, and have all the characteristics of a subsequent addition and of a temporary makeshift;" and thirdly, upon the conviction that the machine had been originally constructed for turning needles without points and to a square shoulder, as shown by the presence of the diagonal set-screw R, which could have no other purpose in connection with the organization of the lathe. He is strongly corroborated in all these particulars by the testimony of O. S. Hosmer and Edwin Strain, gentlemen of long experience in the manufacture of sewing-machine needles, and whose cautious methods of testifying have not failed to make a favorable impression upon the mind of the court. But the most remarkable evidence in regard to the Pernot machine came out in the final examination of Alonzo Taylor and Joseph Bellows. These were first offered by the defendant as witnesses to prove the product of the lathe previous to the date of the Spring invention. Taylor, in testifying for the defendant, said that he first saw the Pernot machine in 1855, and that needles were produced by it with rounded or tapering shanks; but when he was afterward recalled by the complainants he stated that his previous testimony had been given under a misapprehension of the matter in controversy; that he thought the suit had been brought for the infringement of a patent for a tapered shank-needle, and not for a machine which could make one; that he always supposed that the tapering shanks of the needles made on the Pernot machine were turned and formed by hand-tooling; that when he saw the machine in 1855 it had neither the wedge *a* nor bar *b*, nor any other device which could be used for forming a tapering shank or sharp point on the needle. He is confirmed by Bellows, who testifies to the alteration of and addition to the machine. He says that he went into the employ of Pernot in the fall of 1855 or spring of 1856, and continued with him for several years; that he was his foreman in 1858, and was married on the 17th of June of that year, and that the wedge and bar were added to the machine after that date; that before these were

attached Pernot made his needles by turning up to a square shoulder and then filing them and grinding them down on an emery-wheel. Such testimony throws serious doubts upon the truth of the statement of Pernot and his brother-in-law Dahis that as early as 1853 the former invented and used in connection with his lathe the mechanism needed to taper the shoulders and sharpen the points of needles produced by his machine. In view of the great commercial value of such a discovery in forming sewing-machine needles, it seems incredible that after making the invention he should so soon have abandoned it and returned to the old and more imperfect and costly methods of producing them.

2. In consequence of such improbability we have been led to carefully consider the evidence which induced the learned judges who decided the former suit to hold that the Pernot machine was in fact an anticipation of the Spring invention, and we are bound to say, although with great diffidence, that we question the correctness of their conclusions.

Springs' patent claims to be and is an organized mechanism capable of completely shaping sewing-machine needles throughout their entire length from point to hilt at one operation.

If Pernot's machine, under any of the proved circumstances of its organization and use, ever accomplished this, which we seriously doubt, it performed its work so imperfectly that the inventor laid no stress upon it, and preferred to sharpen his needles by hand, and soon laid aside the supplementary mechanism, which had reference to the forming of a tapering shank. If it existed at all, its life was so fitful and uncertain that it must be put in the category of abandoned experiments, and such a failure ought not to be regarded as an anticipation of the invention of the Springs, who, it is conceded, were original inventors, and who, in our judgment, were the first inventors of a successful machine which was capable of turning the barrel, point, and curved shoulder of a sewing-machine needle at one continuous movement of the cutting-tool.

It only remains to consider the question of infringement, in proving which the burden is upon the complainants. The evidence of infringement is slight. It rests mainly upon the testimony of John Armstrong, who commenced work with the inventors of the complainants' machine in 1858, continued in their employ until 1862; then went to the war; came back to them in 1865, and remained with them until 1869, during which times he worked and became well acquainted with the Spring machine. He afterward went into the employ of the defendant corporation in July, 1876, and remained there ten months. While with them he saw in use by the defendant company machines operating to turn sewing-machine needles having substantially the same parts or elements that he was familiar with in the Spring machines, to wit: a griping-chuck, which held one end of the wire, leaving the other end free to be operated upon, and the wire passing through the dies or rest, which was preceded by a knife that was governed by cams or a former.

In view of the decision of the Supreme Court in *Bennett* v. *Fowler*, (8 Wall., 445,) this proof, if not rebutted, would seem to be sufficient. In that case the proof of infringement was that the defendant used machines substantially like the complainant's, and the court held that if the defendant intended to contest the point he should have introduced proof to that effect.

Upon the whole case, we are of the opinion that a decree should be entered for the complainants.

U. S. Circuit Court—Northern District of Illinois.

NATIONAL FEATHER DUSTER COMPANY v. HIBBARD.

Decided November 26, 1881.

1. LETTERS PATENT—FEATHER DUSTERS—REV. STATS. SEC. 4918—INTERFERING PATENTS.
   Letters Patent No. 177,933, dated May 30, 1876, and issued to Susan M. Hibbard, for an improvement in feather dusters, *Held* to interfere with Letters Patent No. 154,985 and set aside.
2. ESTOPPEL.
   Under the circumstances Susan M. Hibbard is estopped to deny that her husband was the inventor of the device in controversy.
3. INVENTOR.
   One who made a valuable suggestion to the conceiver of the idea of substituting in a feather duster feathers of the common domestic fowls in place of ostrich-feathers while he was engaged in a series of experiments with a view to discover some means whereby such feathers might be made pliable, did not thereby become the inventor of the duster.

Messrs. Sleeper & Whiton for the complainant.

Messrs. West & Bond for the defendant.

BLODGETT, *D. J.:*

This is a bill in equity, framed under section 4918 of the Revised Statutes of the United States, for the purpose of setting aside and declaring void a patent issued by the United States to Susan M. Hibbard, for an improvement in feather dusters, dated May 30, 1876, and numbered 177,933, upon the ground that the patentee, Susan M. Hibbard, was not the inventor of the device described in and covered by the patent.

The complainant claims to be the owner of Patent No. 154,985, issued by the United States on the 15th of September, 1874, to William H. Curwin, Charles J. Sauter, and William W. Clark, as assignees of George W. Hibbard, for an improvement in feather dusters, and charges that George W. Hibbard is the husband of the defendant, Susan M. Hibbard, and that after the said George had made the invention described in the Letters Patent No. 154,985, and before the issue of his patent, he sold and assigned his invention and his right to a patent thereto to the parties named therein, to wit, Curwin, Sauter, and Clark, and the patent was duly issued to them as assignees of George W. Hibbard; and that after said George W. had made the invention described in his patent and sold the same, as stated, he and the said Susan M., his wife, colluded together to obtain the letters patent which were issued to said Susan upon the pretext and false assumption that said Susan was the real inventor of the device covered by the first-issued letters patent. And the bill prays that the patent so issued to said Susan M. in violation of the exclusive rights of the complainants in the invention therein described may be canceled and set aside.

The peculiar feature which characterizes both these patents is a feather duster made of turkey-feathers, or the feathers of our ordinary domestic fowls adapted to such purpose, made pliable by removing the pithy part or body from the stem of the feathers so as to adapt the feathers more perfectly to such use when combined with the other elements to form a duster or brush.

The proof in this case shows conclusively that Mrs. Susan M. Hibbard knew of the fact that her husband had applied for a patent upon this device; knew also that he was poor and unable to pay the expense of obtaining a patent, and that he made the bargain with Curwin and Sauter to advance the expenses and obtain the patent, on condition that they should become half-owners thereof. She also knew of the negotiations between her husband and Clark for the sale of the other half of the patent, and made no objection to the negotiation, and knew that her husband was to receive what was considered very liberal pay for the remaining half of the patent, and the only objection she ever made to the negotiation was that she insisted that the purchase-money to be paid by Clark should be given to her, not because she was the inventor or had anything to do with the invention of the duster to be covered by the patent, but because her husband, being an improvident man, would squander the money, which she wished to use in the purchase of a home for the family. During all the negotiations between her husband and Curwin and Sauter and her husband and Clark she never claimed or pretended, or by any conduct on her part insinuated, that the invention was in any degree her own, but allowed these men to invest their money in the procurement of the patent, and Clark pay for the unsold half of the patent, upon the understanding—to which she seems to have been as fully a party as her husband—that he was the inventor of the duster to be covered by the patent. It seems to me that the proof shows that Mrs. Hibbard, in allowing her husband to deal with Curwin, Sauter, and Clark as the original and first inventor of this device, has so far conceded or admitted him to be the original inventor thereof as that she should be estopped from now claiming otherwise, and especially claiming that she and not her husband was the inventor. If there were no other features in the case, therefore, than the conduct of Mrs. Hibbard toward the persons with whom her husband dealt I should think it enough to cancel this patent as against the patent previously issued to him.

But the case is perhaps susceptible of solution upon another ground. It appears from the proof that George W. Hibbard, for some time prior to the alleged invention described in his patent, had been engaged in the manufacture of dusters from turkey-feathers by setting them in their natural condition into a handle, so as to make a brush or duster; that some little time prior to the 10th of February, 1874, he conceived the idea of making a better duster by softening the stems of turkey-feathers and rendering them more pliable, so as to make a feather duster which would supersede or take the place of dusters then and theretofore made from ostrich-feathers, his idea being that if he could make turkey-feathers or the feathers of our common fowls pliable, he could use them in place of foreign feathers and make as good if not a better duster. He experimented some time in this direction with chemicals for the purpose of softening the stem or rib of these feathers, and, not succeeding to his satisfaction in any of these experiments, was discussing the subject on one occasion with his wife, when she suggested to try cutting or shaving down the stem of the feathers, so as to make them pliable and limber. The suggestion was at once acted upon and a duster made which proved satisfactory, and the patent issued to his assignees was obtained for this device as the invention of George W. Hibbard.

Mrs. Hibbard's sole claim to the invention covered by her patent, which is the same as that covered by the patent of her husband, is that the suggestion or idea of cutting or trimming these feathers down so as to make them limber first came from her, and upon this fact she claimed and obtained the patent in controversy.

The specifications and claims in the two patents are substantially the same, and are for—

> As an improved article of manufacture, a feather duster having the stems of the feathers split longitudinally, and a part thereof severed from the remaining part, substantially as specified.

The patent, it will be seen, is for this new article of manufacture—namely, a feather duster made of split feathers. It is not upon split feathers as such or upon the process of splitting feathers, but upon a combination of the split feathers with the other elements by which a duster is made. The idea of a feather duster, to be made of feathers of the common turkey or other domestic fowls seems clearly to have originated with George W. Hibbard. The *desideratum* was to make those feathers pliable. He was seeking to accomplish this when the suggestion was made to him by Mrs. Hibbard to try cutting or splitting them. The proof on the part of Mrs. Hibbard fails to show, indeed it falls far short of showing, that she ever made a feather duster or thought of making one from turkey-feathers made pliable by splitting them until after her husband had been for some time at work in that direction. The most the proof does show is that she suggested the mode of making feathers limber and pliable which were used for the purpose of making the feather dusters described in this patent. The successful feather duster covered by both these patents was, it seems to me from the proof, the invention of George W. Hibbard. While he was experimenting—I may say, perhaps, groping—for some method of rendering his feathers pliable, Mrs. Hibbard suggested the experiment of splitting the feathers. He acted upon that suggestion, and finding that the feathers were thereby made pliable, combined them with the other material and made the feather duster which before that time had only had existence in his mind. Although Mrs. Hibbard may have made a valuable suggestion in the progress of the experiment, yet that does not make her the inventor. (*Agawam Company* v. *Jordan*, 7 Wall., 602; *Pitts* v. *Hall*, 2 Blatchf., 229.)

For these reasons, but mainly upon the ground of the estoppel, which I think the most cogent, the bill of the complainant will be sustained and a decree entered setting aside the patent issued to Susan M. Hibbard.

THE
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OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

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Subscriptions for 1882.

The OFFICIAL GAZETTE is published every Tuesday, two volumes a year, commencing in January and July. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound volumes, $3.50 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., February 25, 1882.

SIR: I am directed by the Secretary to inform you that he has ordered that William U. Saunders, of New Orleans, Louisiana, be not recognized from and after this date as an attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,

GEO. M. LOCKWOOD,
Chief Clerk.

The Commissioner of Patents.

Issue of March 7, 1882.

Patents	341	No. 254,446 to No. 254,786,	inclusive.
Designs	4	No. 12,798 to No. 12,801,	inclusive.
Trade-Marks	34	No. 9,149 to No. 9,182,	inclusive.
Labels	9	No. 2,621 to No. 2,629,	inclusive.
Reissues of patents	11	No. 10,050 to No. 10,060,	inclusive.
Total issue	399		

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Colorado	4	....	New Mexico Territ'y	....	....
Connecticut	8	....	New York	75	12
Dakota Territory	....	....	North Carolina	2	1
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Indiana	8	....	Texas	2	....
Indian Territory	....	....	Utah Territory	1	....
Iowa	8	1	Vermont	2	....
Kansas	4	....	Virginia	1	1
Kentucky	2	....	Washington Territ'y	....	....
Louisiana	2	....	West Virginia	2	....
Maine	3	....	Wisconsin	5	....
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Massachusetts	40	7	United States Army	....	....
Michigan	12	....	United States Navy	....	....
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Barbadoes	....	....	Germany	2	2
Belgium	....	....	Italy	....	....
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Canada	3	....	Spain	....	....
Chili	....	....	Sweden	2	....
Colombia, U. S. of	....	....	Switzerland	....	....
Cuba	1	1			
Denmark	....	....	Total to citizens of foreign countries	25	11
Ecuador	....	....			

DESIGNS.

12,798.—BLANK BILL-HEAD.—*Alfred Dwight*, Springfield, Mass. Application filed February 4, 1882. Term of patent 3½ years.

12,799.—HEATING-STOVE.—*Thomas J. Hodgkins*, Peekskill, N. Y., assignor to *The Union Stove Works*, same place. Application filed January 16, 1882. Term of patent 7 years.

12,800.—FRINGE.—*Rebecca McLaughlin*, Philadelphia, Pa., assignor to *E. H. Godshalk*, same place. Application filed February 9, 1882. Term of patent 3½ years.

12,801.—FONT OF PRINTING-TYPE.—*Carl Müller*, Chicago, Ill., assignor to *Marder, Luse & Co.*, same place. Application filed August 16, 1881. Term of patents 14 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

9,149.—CIGARS.—*Julian Alvarez*, New York, N. Y. Application filed February 7, 1882.
"LA FLOR DE HENRY CLAY."

9,150.—CIGARS.—*Julian Alvarez*, New York, N. Y. Application filed February 7, 1882.
"PRIMERA DIANA."

9,151.—CIGARS.—*Justo Alvarez y Ca.*, New York, N. Y. Application filed February 7, 1882.
"FLOR DE P. A. ESTRILLO."

9,152.—CHEWING-TOBACCO.—*Brown & Brother*, Winston, N. C. Application filed February 9, 1882.
"The words 'SLAP JACKS.'"

9,153.—PAPER.—*Crane Brothers*, Westfield, Mass. Application filed February 6, 1882.
"The figure of a crane."

9,154.—LEAD-PENCILS.—*The Eagle Pencil Company*, New York, N. Y. Application filed January 20, 1882.
"The numerical symbol '2½.'"

9,155.—CIGARS.—*Bengochea y Fernandez*, New York, N. Y. Application filed February 7, 1882.
"LA COMERCIAL."

9,156.—CIGARS.—*Bengochea y Fernandez*, New York, N. Y. Application filed February 7, 1882.
"LA MODESTIA."

9,157.—CIGARS.—*Bengochea y Fernandez*, New York, N. Y. Application filed February 7, 1882.
"LA TRAVIATA."

9,158.—STEEL UMBRELLA-FRAMES AND PARTS THEREOF.—*Samuel Fox & Co.*, (Limited,) Stocksbridge Works, Deepcar, near Sheffield, county of York, England. Application filed June 2, 1881.
"The figure of a fox."

9,159.—SILKS, SATINS, VELVETS, AND PLUSHES.—*Peltzer Gebrueder*, Crefeld, Prussia, Germany. Application filed February 4, 1882.
"The word 'CHAMPION.'"

9,160.—CIGARS.—*Alvarez é Hijo*, New York, N. Y. Application filed February 7, 1882.
"LA SELECTA."

9,161.—HORSE-MEDICINE.—*The Hogle Rock Oil Company*, Chicago, Ill. Application filed February 6, 1882.
"The arbitrarily-selected word 'HOOFOLINE' and the horse's hoof with the protruding horse's head and neck breaking through the same."

9,162.—COTTON PIECE-GOODS.—*E. W. Holbrook & Co.*, New York, N. Y. Application filed February 1, 1882.
"The representation of the thistle."

9,163.—SMOKING-TOBACCO FOR PIPES.—*E. G. Irvine*, Lynchburg, Va. Application filed January 14, 1882.
"The arbitrarily-selected term 'JOCKEY CLUB.'"

9,164.—COTTON, MIXED WOOLEN, AND MIXED SILKEN FABRICS.—*Mechanische Weberei zu Linden*, Linden, near Hanover, Prussia, Germany. Application filed January 16, 1882.
"The representation of the clover-leaf."

9,165.—CHAMPAGNE-WINE.—*Louise H. L. R. Olry*, Rheims, France. Application filed January 25, 1882.
"The title or designation 'LOUIS ROEDERER' printed on a rectangular white label."

9,166.—CHAMPAGNE-WINE.—*Louise H. L. R. Olry*, Rheims, France. Application filed January 25, 1882.
"The words 'GRAND VIN IMPÉRIAL.'"

9,167.—CHAMPAGNE-WINE.—*Louise H. L. R. Olry*, Rheims, France. Application filed January 25, 1882.
"The title or designation 'L. ROEDERER' impressed upon a black label having a straight-line border."

9,168.—CHAMPAGNE-WINE.—*Louise H. L. R. Olry*, Rheims, France. Application filed January 25, 1882.
"The words 'CARTE BLANCHE.'"

9,169.—MEDICINE.—*Joseph C. Richardson*, St. Louis, Mo. Application filed February 2, 1882.
"The word 'CELERINA.'"

9,170.—SOAP.—*Robinson Bros. & Co.*, Boston, Mass. Application filed January 27, 1882.
"The arbitrarily-selected word 'LOTUS.'"

9,171.—BITTERS.—*A. S. Udell & Co.*, Ottumwa, Iowa. Application filed February 9, 1882.
"The word-symbol 'ST. JACOBS.'"

9,172.—CIGARS.—*H. Upmann & Co.*, Havana, Cuba, and New York, N. Y. Application filed February 10, 1882.
"An arbitrary design."

9,173.—HAIR-RESTORING COMPOUND.—*Andrew von Ginther* and *Emil Michbach*, Cincinnati, Ohio. Application filed January 21, 1882.
"Two human heads, one bald and the other hairy."

9,174.—ILLUMINATING-OILS.—*Wadsworth, Martinez & Longman*, New York, N. Y. Application filed February 8, 1882.
"The representation of a female figure in the act of filling a lamp from a can."

9,175.—WRITING-PAPER AND ENVELOPES.—*John Walker & Co.*, London, England. Application filed February 8, 1882.
"The arbitrarily-selected words 'RUSSIA LEATHER.'"

9,176.—STEEL PENS.—*John Walker & Co.*, London, England. Application filed February 8, 1882.
"The arbitrarily-selected word 'ANCHOR' and the representation of an anchor."

9,177.—STOMACH-BITTERS.—*Wilmerding & Co.*, San Francisco, Cal. Application filed October 14, 1881.
"The word 'PERUVIAN.'"

9,178.—MEDICAL COMPOUND.—*E. K. Thompson*, Titusville, Pa. Application filed January 19, 1882.
"The word-symbol 'BAROSMA.'"

9,179.—PAPER.—*Crane Brothers*, Westfield, Mass. Application filed February 6, 1882.
"The arbitrarily-selected word 'RELIANCE.'"

9,180.—CIGARS.—*Charles Baker*, New York, N. Y. Application filed February 13, 1882.
"The representation of the bust and head and the words 'JOHN MCCULLOUGH.'"

9,181.—VEGETABLES AND FRUITS, EITHER RAW, PICKLED, OR OTHERWISE PRESERVED.—*Du Vivier & Co.*, New York, N. Y. Application filed February 13, 1882.
"The words 'WINDSOR MANOR.'"

9,182.—CUTLERY.—*John Wilson*, Sheffield, Yorkshire, England. Application filed February 1, 1882.
"The representations of four pepper-corns and the diamond-shaped figure."

LABELS.

2,630.—Title: "DR. J. A. DICKEY'S PAINLESS EYE WATER."—*James A. Dickey*, Bristol, Tenn. Application filed February 1, 1882.

2,631.—Title: "HENRY'S COMPOUND LICORICE STRUP."—*Conner & Mitchell*, Haverhill, Mass. Application filed February 2, 1882.

2,632.—Title: "MULLIN'S GREAT DISCOVERY. SURE AND ONLY CURE FOR CONSUMPTION."—*B. A. Mullin*, Philadelphia, Pa. Application filed January 9, 1882.

2,633.—Title: "MUSSELMAN'S PRACTICAL BOOK-KEEPING."—*De Lafayette Musselman*, Quincy, Ill. Application filed February 8, 1882.

2,634.—Title: "SUPERIOR BRILLIANT LIGHT SIGNAL OIL."—*J. S. Ramsey & Co.*, Pittsburg, Pa. Application filed December 29, 1881.

2,635.—Title: "SUPERIOR TOPAZ COLOR WOOL OIL."—*J. S. Ramsey & Co.*, Pittsburg, Pa. Application filed December 29, 1881.

2,636.—Title: "THE BOSTON BREAKFAST OR LUNCH COCOA."—*Swain, Earle & Co.*, Boston, Mass. Application filed February 13, 1882.

2,637.—Title: "THE BOSTON BROMA."—*Swain, Earle & Co.*, Boston, Mass. Application filed February 13, 1882.

2,638.—Title: "THE BOSTON CRACKED COCOA."—*Swain, Earle & Co.*, Boston, Mass. Application filed February 13, 1882.

PATENTS

GRANTED MARCH 7, 1882.

254,446. CLEANER FOR STEAM-BOILERS. EDWARD H. ANCHORY, Lynn, Mass. Filed Jan. 13, 1883. (No model.)

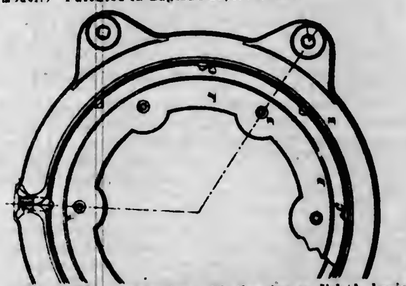


Claim.—1. The combination, in a steam-boiler, of the mud or scum pipe located near the surface of the water therein, said mud-pipe being capable of reciprocating longitudinally in hollow plugs inserted in the boiler-heads, and provided with scum-collecting cups, in the manner shown and described.

2. The combination, in a steam-boiler, of the mud or scum pipe and its end bearings, one end of said pipe being rigidly fixed in one of its bearings and the other end adapted to loosely slide in the opposite bearing, said bearings being inserted in the boiler-heads to allow lengthwise expansion, said pipe being provided with scum-collecting cups, in the manner set forth.

3. An article of manufacture, consisting of the blow-off, its tight and loose bearings, consisting of hollow plugs adapted to be inserted in boiler-heads, and its scum-collecting cups constructed in such manner that as a device it may be adapted to any boiler to which it is capable of being attached, substantially as described.

254,447. CARRIAGE-TOP JOINT. GEORGE ADDIS, Birmingham, County of Warwick, England. Filed Dec. 14, 1881. (No model.) Patented in England Sept. 14, 1881.



Claim.—The combination, with the ring or disk A, having upwardly-inclined edge B extending outwardly to form circumferential horizontal flange B', of the outer annular ring, E, provided along its inner circumference with a vertical flange or shoulder, F, abutting against the edge of flange B' and extending outwardly at its lower inner end to form a horizontal flange, G, having its edge G' inclined or beveled so as to fit against the inclined edge B and form a bearing for the same in turning, substantially as set forth.

254,448. MEDICAL COMPOUND. JACINTO AVERHOFF, Havana, Cuba. Filed Nov. 5, 1881. (No specimens.)

Brief.—To gum frankincense, gum myrrh, and gum mastic, one-half ounce each, and Socotrine aloes one and one-half ounce, adds twenty-four ounces of alcohol, to be used as an embrocation.

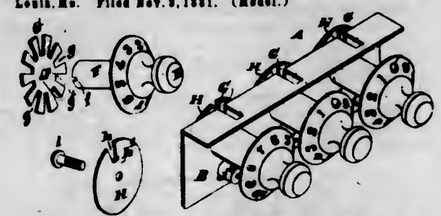
Claim.—The herein-described composition of matter to be used principally as a medicament or embrocation to cure wounds, headache, megrim, neuralgia, rheumatism, ulcers, sores, bruises, swellings, burns, and other similar complaints, consisting of frankincense, mastic drops, myrrh, aloes, and alcohol in the proportions specified.

254,449. KITCHEN-SAFE. RUBEN B. AYRES, St. Louis, Mo. Filed July 11, 1881. (No model.)



Claim.—In a knockdown safe, one portion provided with a slot, c, and pin c', in combination with the other portion provided with a plate, D, having slot d, a lower portion, z, provided with straight edge y and curve e, coming to the point f of the slot d, and the hook u, the point p of which projects beyond the mouth of the slot d, all constructed and arranged substantially as set forth, whereby is formed a certain and efficient means of uniting the parts.

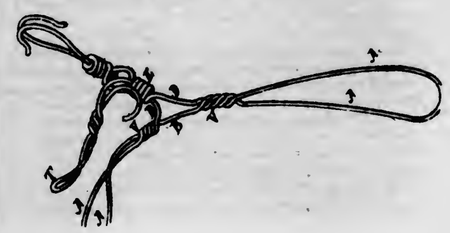
254,450. PERMUTATION-LOCK. FRANK S. BALDWIN, St. Louis, Mo. Filed Nov. 9, 1881. (Model.)



Claim.—1. A permutation-lock having, in combination, the spindle F, having the notches *f*, the disks G, having the projections *g'*, and the slots *g*, the disk H, having the projection *h'*, and the screw I, substantially as described.

2. The combination of the disk G, having the notches *g*, the disk H, having the slot *h*, the spindle F, the plate B, and the stop J, substantially as described.

254,451. COAT-HANGER. WILBUR B. BIDDER, Lowell, Mass., assignor of one-half to Frederick Taylor, same place. Filed Sept. 16, 1880. (No model.)



Claim.—1. A coat-yoke formed of wire, as shown and described, and provided with a socket, E, formed in said wire, to receive and sustain a hat-hook, T, in combination with said hat-hook, as and for the purpose specified.

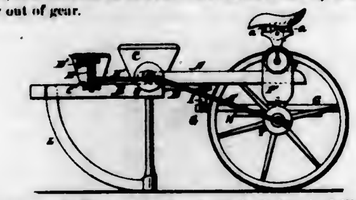
2. A wire coat-yoke having its shoulder-pieces formed of separate loops A A, each of the inner ends of said loops being twisted to and with the other inner end of the same loop, as and for the purpose specified.

3. A wire coat-yoke having its shoulder pieces formed of loops A A, the inner ends of each loop being twisted together, at V, and said loops being held apart from each other by a stiffening bar or brace, B, as and for the purpose specified.

4. A coat-yoke provided with shoulder-pieces consisting of loops A A, extended from front to back to form a broad bearing for garments suspended thereon, and provided with a brace, B, as and for the purpose specified.

254,452. GRAIN-DRILL. George G. Blunt, Chicago, Ill. Filed Oct. 3, 1881. (No model.)

Brief.—Two pairs of treadles linked together. One pair is rigid to the drill-frame and the other to the axle-frame. Either may be depressed by the foot to press down or lift the cutters and seed-tubes. Hinged seat with rocking bearings and springs at top and bottom of the standard. The feed-shaft has covers at each outlet, and both are removable. The feed-shafts may be thrown in or out of gear.



Claim.—1. The combination, in a wheeled grain-drill, of the tilting frame B, carrying the grain tubes and drills, the horizontal bars or treadles D D, rigidly connected at their forward ends to the said tilting parts, the horizontal tilting bars or treadles G G, jointed at their forward ends to the rear ends of the treadles D D, and the driver's seat mounted on a tilting or vibrating standard having feet adapted and arranged for tilting the treadles G G vertically as the said standard is moved back and forth, substantially as and for the purposes specified.

2. The combination of the removable feed-shaft N, detachably connected to its driver, and the removable interior covers or boxes O O, substantially as and for the purposes specified.

3. The combination of the laterally-yielding driving-shaft J', the rotary post N', and the hook-shaped connecting-rod O', connecting the said shaft and post, substantially as and for the purposes specified.

254,453. MAGAZINE FOR FIRE-ARMS. Hugo Borchardt, Bridgeport, Conn., assignor to Joseph W. Frazier, New York, N. Y. Filed Nov. 18, 1881. (No model.)



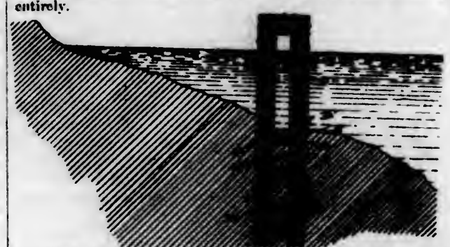
Claim.—1. A trapezoidally-shaped magazine substantially such as described, for holding laterally-superposed cartridges, made of two pieces of sheet metal, each flanged upon three sides, the two pieces being united by inserting the flange of one piece within the flange of another piece, and brazing or otherwise fastening the lapped flanges, the projecting rib or joint composed of the lapped flanges upon the rear wall of the magazine being cut away to form the notch for the reception of the spring-latch by which the magazine is detachably secured to the gun, substantially as described.

2. In a cartridge-magazine substantially such as described, a movable lock or yoke near the forward end of the mouth of the magazine for holding down the point of the uppermost cartridge, and thus preventing the cartridges contained in the magazine from being tilted upward by the outward thrust of the magazine-spring.

3. In combination with a cartridge-magazine substantially such as described, a suitably-tempered zigzag spring composed of sinusoidally-curved metallic strips or leaves, laterally superposed with their curves alternating in direction and successively riveted to each other at the ends where their convex surfaces are in contact.

254,454. SEA-WALL. David H. Burleen, St. Louis, Mo. Filed Jan. 11, 1882. (No model.)

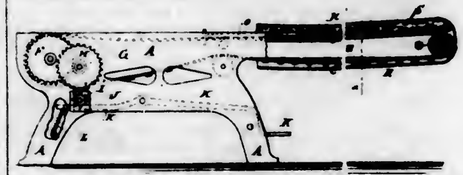
Brief.—Boxes or troughs formed with two parallel walls of cement, and the outer spaces between the walls filled with cement in a plastic state. The air inclosed in the upper part of the intervening space between the walls prevents the section from sinking entirely.



Claim.—1. The improved sea-wall or similar structure, composed of boxes or troughs constructed of hydraulic or other cement, or artificial stone, with double walls, the spaces between the outer walls being adapted to be filled with cement to sink the said troughs, the whole being surmounted by a suitable cap to confine the air in the central space, substantially as specified.

2. A sea-wall constructed of two parallel double walls provided with suitable bottoms and an intervening inclosed space adapted to contain air to arrest the sinking of the structure, substantially as and for the purpose specified.

254,455. MACHINE FOR FILLING MATTRESSES, BED-QUILTS, &c. Alvin L. Burley, Westville, Conn. Filed July 30, 1881. (No model.)



Claim.—1. A machine for filling bed-quilts, mattresses, and other articles, containing the following elements, viz: a pair of projecting arms on which the bag or case that is to receive the filling is held, and an endless belt suitably mounted upon the said arms and adjacent frame, said belt being adapted to carry the filling material into and deposit the same within the bag or case, when the latter is placed upon the said arms, substantially as herein shown and described.

2. In a machine for filling bed-quilts, mattresses, and other articles, the combination, with the frame A, having a forwardly-projecting part or arms, B, of the endless apron C, the rollers D E, the gear-wheels F G H I, and the drive-shaft J, substantially as herein shown and described, whereby the filling will be carried forward into the cover or case, as set forth.

3. In a machine for filling bed-quilts, mattresses, and other articles, the combination, with the frame A B, the endless apron C and its driving-gearing, and the drive-shaft J, of the lever K and spring L, substantially as herein shown and described, whereby the said drive-shaft and endless apron can be thrown into and out of gear with each other, as set forth.

4. In a machine for filling bed-quilts, mattresses, and other articles, the combination, with the endless apron C, of the guide-bars O, having heads Q, and the lap-bars P, substantially as herein shown and described, whereby the folded or lapped edges of the filling can be kept in place while the said filling is being introduced into the cover or case, as set forth.

5. In a machine for filling bed-quilts, mattresses, and other articles, the endless belt or apron C, constructed substantially as herein shown and described, consisting of two or more belts, C', and the cross slats or cleats C², the said cleats having their ends bent into U form to receive and clamp the side belts, C', as set forth.

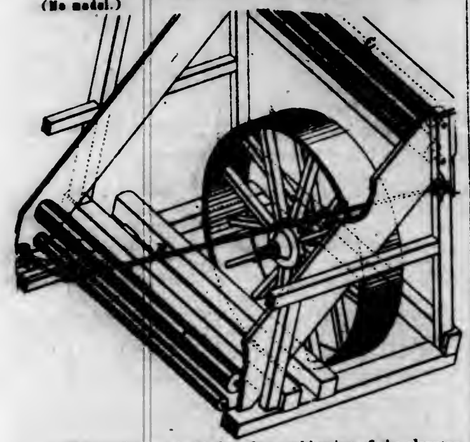
6. In a machine for filling bed-quilts, mattresses, and other articles, the cross-cleats C', made substantially as herein shown and described, with their ends bent into U form to receive and clamp the endless belts that carry the said cleats, as set forth.

7. The method herein described of filling bed-quilts, mattresses, and other articles, which consists in drawing the casing over the arms of a frame that carries an endless belt, there depositing the filling material upon the belt and giving motion thereto, so as to begin the deposit of the filling material in the bottom of the casing and pushing off from the arms the casing as fast as it is filled, substantially as herein set forth.

8. The method herein described of folding over the edges of the filling material to allow it to be readily passed into the case, which consists in laying the guide-bars O upon the filling at the edges of the endless apron C, turning the edges of the filling material over the said guide-bars O, and laying the lap-bars P upon the lapped or folded edges of the said filling material, substantially as herein set forth.

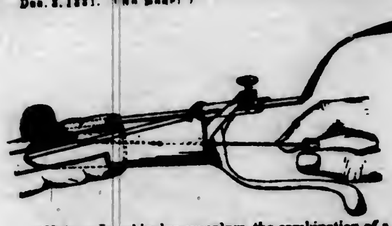
9. The method herein described of unfolding and smoothing out the folded edges of the filling material after the said material has been introduced into the case, which consists in withdrawing the lap-bars P and turning the folds of the filling material outward to fill out the edges of the case by moving the guide-bars laterally, substantially as set forth.

254,456. ELEVATOR-FRAME OF GRAIN-BINDERS. Isaac P. Cadman, Beloit, Wis., assignor of one-half to L. Holden Parker and Fred. A. Bennett, same place. Filed Nov. 14, 1881. (No model.)



Claim.—In a grain-binder, the combination of the elevator-frame, the canvas-carrying rollers mounted thereon, and an adjustable diagonal tie rod or brace extending from the lower inner forward corner to the upper and outer rear corner of said elevator-frame, whereby said canvas-carrying rollers may be adjusted and maintained in adjustment, thus allowing the canvas moving thereon to run perfectly true, substantially as specified.

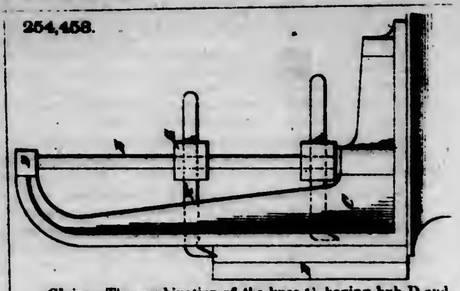
254,457. SPECULUM. John E. Cape, Cincinnati, Ohio. Filed Dec. 8, 1881. (No model.)



Claim.—In a bivalve-speculum, the combination of a hinged sleeve, an upper blade-shank sliding in the same, and a set-screw working in a bracket extending upward from the lower blade for depressing the shank and elevating the sliding blade, all for the purpose set forth.

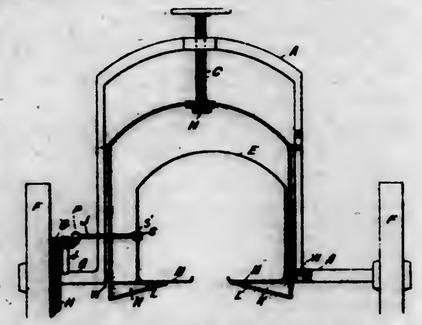
254,458. SAW-MILL DOG. Timothy L. Carley, Syracuse, N. Y. Filed Dec. 16, 1881. (No model.)

254,458.



Claim.—The combination of the knee C, having hub D and recess J, with the standard E, the hooked dog H, and sliding carriage G, as and for the purpose set forth.

254,459. POTATO-BUG-CATCHING MACHINE. Frederick D. Casey, West Door Park, N. Y. Filed Apr. 19, 1881. (No model.)



Claim.—1. The frame D, mounted on wheels, as described, and provided with the pans K and the perforated plates L, substantially as and for the purpose specified.

2. The frame D, provided with the pans K, in combination with the sliding frame E, shakers M, and means, substantially as described, for giving said shakers a reciprocating movement, as and for the purpose specified.

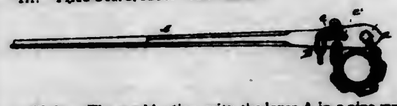
3. The frame D, pans K, and perforated plates L, in combination with the perforated shakers M, and means, substantially as described, for giving said shakers a reciprocating movement, as and for the purpose specified.

4. The axle A, provided with a screw, C, in combination with the frame D, the pans K, and the reciprocating shakers M, as and for the purpose specified.

5. In combination with the axle A, the frame D, provided with pins W, moving between the lateral arms of said axle, and with pans K, the frame E, carrying the reciprocating shakers M, and the screw C, substantially as and for the purpose specified.

6. The axle A, supporting the vertically-adjustable frame D and pans K, in combination with the shakers M, the frame E, provided with the slot S', the rod J, gearing G H, and the wheel F, as and for the purpose specified.

254,460. PIPE-WRENCH. Matthew T. Chapman, Aurora, Ill. Filed Dec. 8, 1880. (No model.)



Claim.—The combination, with the lever A in a pipe-wrench, of the two independent chains secured one on each side of the gripping end of the lever by means of a common bolt, and the pins c', projecting in pairs from opposite sides of the lever at a point in rear of said bolt, as herein shown and described, and for the purpose specified.

254,461. WATER-PROOF COMPOSITION. John D. Chesver, New York, N. Y. Filed Jan. 24, 1882. (Specimens.)

Claim.—1. The herein-described compound for waterproof-

ing, consisting of a strong vegetable fiber, finely-powdered minerals —such as pagodite—finely-powdered bark, earthy minerals—such as chalk, oxide of iron, or the like—and caoutchouc treated with vaseline or other product of petroleum, with or without coal-tar or bitumen, all substantially as set forth.

2. Powdered bark in combination with short fibers cemented together by caoutchouc, substantially as described.

3. The mixture of jute fiber, prepared as described, with powdered bark in compounds, of which caoutchouc is the cementing ingredient.

4. The use of vaseline in compounds of caoutchouc.

5. The process of preparing burlaps to receive a compound coating, consisting in applying to the same by hot calendering a composition of glue, yellow soap, and alum, all substantially as described.

254,462. WATER-PROOF AND PLASTIC COMPOSITION. J. D. CHEEVER, New York, N. Y. Filed Jan. 24, 1882. (Specimens.)

Claim.—1. The composition herein described, consisting of jute, waste rubber rendered plastic by means of vaseline, or equivalent product of petroleum and sulphur, the whole treated substantially as described.

2. Jute, in combination with old waste vulcanized rubber which has been made plastic, as described.

3. The combining of powdered bark, with or without jute, with old waste rubber which has been made plastic by the process described.

4. The method of converting old waste rubber into a plastic condition by the use of vaseline, as set forth.

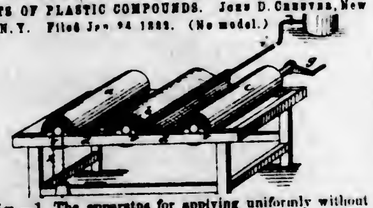
254,463. WATER-PROOF AND PLASTIC COMPOUND. JOHN D. CHEEVER, New York, N. Y. Filed Jan. 24, 1882. (Specimens.)

Claim.—1. The compound herein described for forming water-proof and plastic compounds, consisting of disintegrated fibrous materials, earthy materials such as described, sulphur, vaseline, and siccative oil treated with chloride of sulphur, all substantially as described.

2. The use of vaseline with either or any of the products derived from the siccative or drying oils, substantially as and for the purposes described.

3. The use of the products derived from the siccative or drying oils, in combination with the plastic products obtained by heating waste vulcanized rubber with vaseline or petroleum-oil, for cementing pigments and fibers separately or together in the manufacture of water-proof compositions and fabrics, as described.

254,464. APPARATUS FOR APPLYING SOLUTIONS OF CHLORIDE OF SULPHUR IN BISULPHIDE OF CARBON TO SHEETS OF PLASTIC COMPOUNDS. JOHN D. CHEEVER, New York, N. Y. Filed Jan. 24, 1882. (No model.)



Claim.—1. The apparatus for applying uniformly without waste solutions of chloride of sulphur in carbon disulphide and other liquids to sheets formed of plastic materials and to cloth, consisting of a roll to hold the fabric to be coated, a supporting-roll, and a liquid-distributing pipe, constructed substantially as described.

2. In a machine for coating fabrics with volatile liquids, a brush of bristles, fibers, felt, or cloth, with a tube or channel connected with a reservoir for holding liquids, having small apertures for supplying fluids to the brush, substantially as described, and for the purposes set forth.

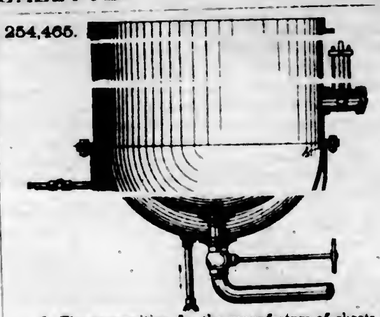
3. The combination, in a machine for coating fabrics with materials in volatile solvents, of the rollers *a*, *b*, and *c* with a pipe, *i*, provided with a brush, all substantially as set forth.

254,465. WATER-PROOF AND PLASTIC COMPOUND. JOHN D. CHEEVER, New York, N. Y. Filed Jan. 24, 1882. (Model.)

Claim.—1. The product obtained by mixing the siccative oils and vaseline and treating the mixture with chloride of sulphur in the manner described.

2. The product obtained by mixing the siccative oils, vaseline, and plekum gum and treating the mixture in the manner described.

254,465.



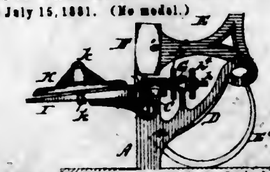
3. The composition for the manufacture of sheets for floor-coverings, embossing artificial leather, and for articles obtained from molds, consisting of the product obtained from the mixture of the siccative oils, vaseline, and pickum gum with powdered cork, tan-bark, short fibers, and coloring-matter, substantially as described.

254,466. VEHICLE-AXLE. CHARLES COOK, Winsted, Conn. Filed Nov. 12, 1881. (No model.)



Claim.—The flange F, in combination with the axle provided with the flanges D and E, and the axle-box B, closely surrounding said flanges, whereby the two inclosed grooves or channels G H are formed, substantially as described.

254,467. SAW-SET. JOHN M. DRAPER, Philadelphia, Pa. Filed July 15, 1881. (No model.)



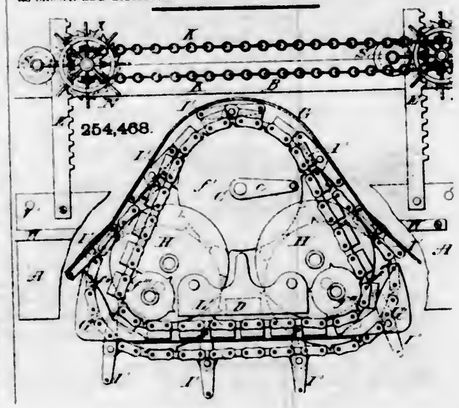
Claim.—1. In combination with stock A, having projecting arm D, the three-armed lever E, one arm of said lever being pivoted and the other two arms respectively forming a handle and carrying a die-head, substantially as shown and described.

2. In combination with the stock A, having arm D, the pivoted three-armed lever E, the curved spring E', operating to move said lever forwardly and downwardly, as shown and described.

3. In a saw-set, a clamp composed of a platform, I, and a disk, K, secured thereto by a screw, *k*, said disk being extended over the platform I and free to rotate on the screw *k*, substantially as shown and described.

4. The combination of stock A, arm D, three-armed lever E, spring E', gage H, platform I, disk K, and screw *k*, substantially as shown and described.

254,468.

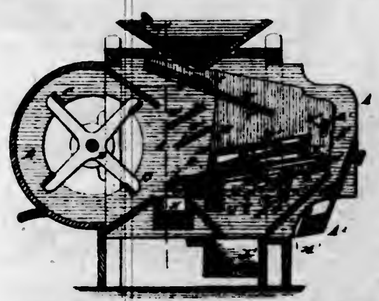


254,468. CHAIN-PROPELLER. JAMES T. DRUMMOND, Mount Pleasant, Iowa. Filed Jan. 17, 1880.

Brief.—An endless adjusting-chain, together with its system of cams and revolving idlers, is arranged beside and operates in connection with a series of revolving paddles, pivoted at regular intervals to the links of a pair of endless chains, which chains are so operated by sprocket-wheels as to give said paddles a long horizontal stroke in the water. By means of connections made between appendages of the paddles and the adjusting-chain and cams the paddles are made to assume a vertical position during their immersion in the water.

Claim.—An endless chain-propeller for boats, consisting of the chains L, chain L', pivoted paddles I, being provided with arms I', having pins *e* attached thereto, cam G, cams G', idlers H, sprocket-wheels *f*, *f'*, *f''*, and *f'''*, shaft C, shafts C', and crank *c*, in combination with the frame-work A, D, D', and D', all substantially as herein arranged, and for the purposes specified.

254,469. PANNING-MILL. CARROLL C. RUDY and AMBROSE A. LUVAS, Pekin, N. Y. Filed Dec. 21, 1881. (No model.)



Claim.—1. The combination of the casing A, the reversible chute or spout N, having studs M M, the T-lever H, having slot l, and suitable operating mechanism, substantially as and for the purpose set forth.

2. The combination of the casing A, the reversible chute or spout N, the shoe, the T-lever H, and suitable operating mechanism, all constructed and arranged substantially as herein set forth.

3. The combination, with the shoe having a cross-piece, E', of a set or gang of sieves suitably secured or connected to each other, the lower one extending beyond the others, so as to pass under the said cross-piece E', which thereby serves to hold the entire set in position, as set forth.

4. The combination of the shoe having cross-piece E' and slots in which a screw-threaded rod, F', having a tightening-nut, G', is vertically adjustable, with the set or gang of sieves C' D', which are suitably secured together, the lower one extending under the cross-piece E', which serves to hold the front end of said set of sieves in position, their rear ends being clamped between the sides of the shoe by means of the rod F' and nut G', as set forth.

5. The combination, with the shoe, of the rock-shaft, suitable bearings therefor, the arms or cranks N' O', lever P', pivoted upon the side of the casing, and a hammer on crank N', adapted to strike the sieves, as set forth.

6. The combination, with the shoe, of the rock-shaft M' and crank N', provided with a threaded opening, Q', and an adjustable screw-threaded hammer, R', and mechanism for operating said rock-shaft, as set forth.

254,470. CLOTHES-RACK. DAVID A. EPPENBER, Haubstadt, Ind. Filed Dec. 21, 1881. (No model.)



Claim.—As an improvement in clothes-drying racks, the lazy-tongs sides A A, connected by cross-pieces C C, having projecting ends D F, provided with hinged rods E, and hinged arms G, having notches H, substantially as herein described, for the purpose shown and specified.

254,471. BLEACHING CANE-JUICE, SIRUP, AND OTHER MATERIALS WITH SULPHUROUS ACID, &c. ANDREW S. FULL, New York, N. Y., assignor to William H. Smith, Urbana, Ill. Filed Oct. 8, 1881. (No specimens.)

Claim.—1. The method of treating cane-juice, sirups, or other materials, solid or liquid, with sulphurous acid by subjecting the same to the action of the sulphurous acid under pressure, substantially as described.

2. The method of bleaching cane-juice, sirups, or other materials, liquid or solid, by subjecting the same in a close vessel to the action of compressed sulphurous acid under a high degree of pressure, and using agitation to bring the acid-gas in contact with all parts of said cane-juice or other materials, substantially as described.

3. The method of obtaining compressed sulphurous acid for storage or for immediate use by burning sulphur, or a compound of the same, in a close vessel, forcing compressed air or oxygen into said vessel to support combustion, and conveying the products (sulphurous-acid gas) into a close vessel, wherein the pressure is allowed to accumulate to the desired degree, substantially as described.

4. The method of producing sulphurous acid by burning sulphur, or a compound thereof, in compressed air or oxygen in a revolving cylindrical vessel or chamber, so as to expose to the oxidising action a large and thin area of sulphur, substantially as described.

5. The improvement in treating cane-juice or other materials, solid or liquid, with sulphurous acid, consisting in burning sulphur, or compound thereof, in compressed air or oxygen, so as to obtain sulphurous acid under pressure, and subjecting the cane-juice or other material to the action of the compressed sulphurous acid, substantially as described.

6. The improvement in clarifying or bleaching cane-juice or other sirup, consisting in treating the dark-colored sirup with sulphurous acid under pressure, substantially as described.

7. The method of producing sulphurous acid for use in the arts by burning sulphur, or a compound thereof, in compressed air or oxygen in a vessel or chamber, and using the pressure in the chamber to force the sulphurous acid, whether gaseous or liquid, into close and strong storage-vessels, substantially as described.

254,472. CAR-COUPLING. DAVID FETTERS, Baltimore, Md. Filed Dec. 8, 1881. (No model.)



Claim.—In combination with the draw-head having recess *b*, the gravity-catch C, of shape conforming thereto, pivoted at its upper end, and provided with an arm, *c*, for sustaining the pin, a recess, *c'*, for holding the link, and a slot, *d*, through which the pivot-pin passes, substantially as set forth.

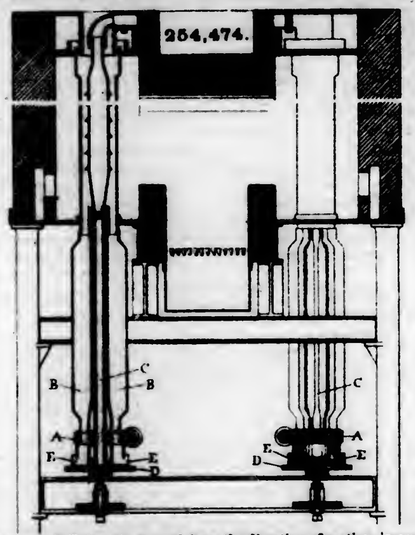
254,473. ROPE-CLAMP. JOHN GAYER, Portland, Oreg. Filed May 26, 1881. (No model.)



Claim.—A rope-holder having an eye enlarged at one end and reduced at the other, combined with a screw-follower adapted to press the rope into the contracted portion of the eye, substantially as described.

254,474. AUTOMATIC DISCHARGING APPARATUS FOR BONE-BLACK KILNS, &c. AUGUSTE A. GOUBERT, Jersey City, N. J. Filed July 9, 1881. (No model.)

Claim.—1. In an automatic discharging apparatus, the wings

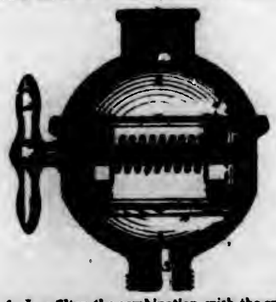


or arms E E, bent backward from the direction of motion, in combination with the disk D and the revolving shaft C, substantially as herein specified.

2. The arms E E, substantially as herein described, in combination with the wheel A, the disk D, and the coolers B B of a revolving charcoal-kiln.

254,475. FILTER. JOTT GRANT, Boston, Mass. Filed May 16, 1881. Renewed Jan. 11, 1882. (Model.)

Brief.—The filter is adapted to turn in its case, so as to allow the water to pass by in either a filtered or unfiltered condition. Leather washers serve as a packing to prevent the escape of unfiltered water when the device is arranged to operate as a filter.



Claim.—1. In a filter, the combination, with the outer casing, of a filtering-receptacle therein, and washer connected with the said receptacle and projecting laterally outward therefrom, and adapted to be seated upon the inside of the said outer casing, substantially as described.

2. The outer casing and the filtering-receptacle therein, combined with its operating rod or stem pivoted in the outer casing and passing through slots in the receptacle, as described, whereby the said receptacle is caused to rotate with the said rod, but has an independent movement transverse thereto, substantially as and for the purpose described.

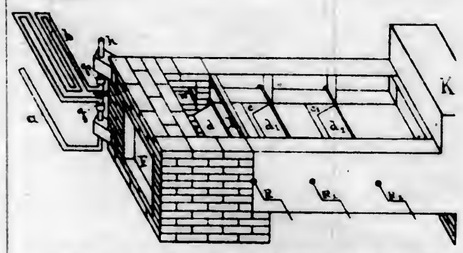
3. The receptacle and its operating-rod passing through slots therein, combined with washers fitting the said rod and covering the said slots, substantially as and for the purpose described.

4. The filtering receptacle and its operating-rod passing through slots therein, combined with washers fitting the said rod, and a spring to press them against the slotted portion of the receptacle, substantially as and for the purpose described.

5. The spherical outer casing, combined with the movable receptacle therein, and its operating-rod, extending loosely through the said receptacle and pivoted in the casing, substantially as described.

6. The outer casing having an internal seat portion and the receptacle therein having openings on opposite sides, combined with washers surrounding the said openings, and the operating-rod adapted to positively rotate the said receptacle and to permit it to have an independent transverse movement, whereby the said washers are pressed into tight contact with the said seat portion of the casing, substantially as and for the purpose set forth.

254,476. SUGAR-EVAPORATOR. GUSTAVE H. GRIMM and ISAAC H. CLARK, Hudson, Ohio. Filed Nov. 21, 1881. (No model.)



Claim.—1. In an evaporating apparatus, the combination therewith of the sap-supply pipe *a*, having the coiled section *b* passing through the furnace of such apparatus before leading to and discharging into the evaporator-pan, substantially in the manner and for the purpose set forth in the foregoing drawings and specifications.

2. In an evaporating apparatus, the combination, with the sap-supply pipe thereof, of a coiled section, *b*, movable into and out of the furnace of such apparatus without detaching from the adjoining sections of such pipe, substantially as set forth in the foregoing drawings and specifications.

3. In a system of evaporator-pans, the combination therewith of the pockets P P' P² P³ P⁴, &c., the siphon *l p l*, and the siphon-cups *k k'*, substantially in the manner and for the purpose set forth in the foregoing drawings and specifications.

4. As a means of communicating between the successive pans of an evaporator system, the siphon *l p l*, opening at the receiving end at or near the bottom of and within the cup K, attached to such siphon for the purpose of excluding sediment therefrom and from succeeding pans, substantially as and for the purpose set forth.

5. The combination, with a siphon employed as a movable means of communication between evaporating-pans, of the cups *k* and *k'*, whose sides extend above the ports *o*, through which the siphon-limbs communicate with such cups, for the purpose of rendering such siphon easily portable without inverting, substantially as set forth.

6. The trough J, exterior to and separably attached to the system of evaporator-pans, and communicating therewith by removable siphons, substantially as and for the purpose set forth.

7. In a system of evaporator-pans heated by furnace or flue beneath such system, the chair I, comprising the horizontal flanges *y* and *y'* and the vertical diaphragm or cross-strips *x*, substantially in the manner and for the purpose set forth in the foregoing drawings and specifications.

254,477. COUPLING FOR DRILL-RODS. EMERY E. HARDY, Kendall Creek, Pa. Filed July 7, 1881. (Model)



Claim.—1. The combination of the rod A, having threaded neck *b*, tool B, having the external thread, packing F, and sleeve H.

2. The combination of the rod A, having threaded neck *b*, the tool B, having thread *f*, the sleeve H, and packing E.

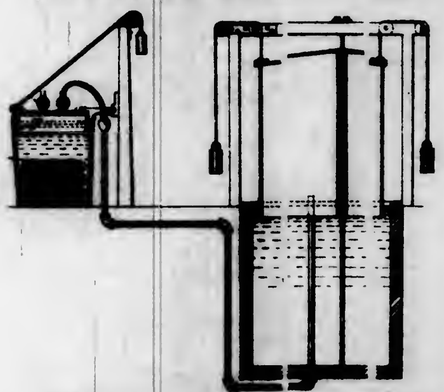
3. In combination with the rod A, tool B, and connecting-sleeve H, the collar C and packing E, applied as shown.

4. In a drill-rod coupling, the combination of an external connecting sleeve and elastic packings, applied at the ends of said sleeve, substantially as shown, to exclude water from the interior of the coupling.

5. In combination with the rod A, having neck *b*, the externally-threaded tool B, having the cylindrical portion *a*, and the external connecting-sleeve, H, arranged to bear closely upon the exterior of the portion, *a*, substantially as shown.

6. The combination of the rod A, tool B, sleeve H, and packings E and F.

254,478. APPARATUS FOR CLEANING IRON WIRE AND COLLECTING THE WASTE HYDROGEN GAS. WILLIAM NEWITT, Trenton, N. J., assignor to the Trenton Iron Company, same place. Filed Oct. 3, 1880. (No model.)



Claim.—An apparatus for cleaning wire and such articles and for collecting the waste hydrogen gas evolved in such process, which consists in an acid-proof tub provided with an air-tight cover, having a flange extending downwardly within said tub into the liquid contained in the same, which cover is likewise provided with air and gas cocks and is hinged at a point horizontally remote from the edge of the tub, substantially as specified.

254,479. BASKET. JOSEPH HIBBARD, South Butler, N. Y. Filed Dec. 6, 1881. (No model.)



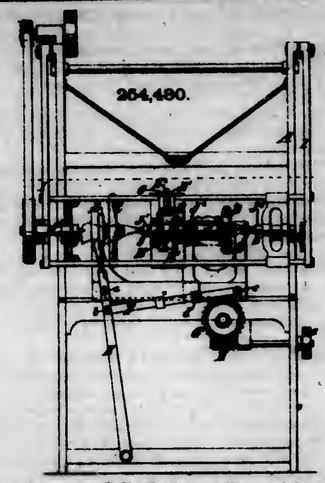
Claim.—1. In a stave basket, the combination of the concave-convex plate C and rivet-plate D, each perforated as shown, and the rivet or bolt E, combined with inclined perforated staves, and adapted to serve as set forth.

2. The combination of the staves A *a*, re-enforcing plates B *b b'*, filling-staves F, and hoops with the concave-convex plate C *c*, rivet-plate D *d*, and securing-bolt E, as and for the purposes set forth.

254,480. LATHE FOR TURNING IRREGULAR FORMS. WILLIAM S. HUNTINGTON, Brooklyn, N. Y. Filed Nov. 18, 1881. (No model.)

Brief.—The spindles carrying the pattern may be locked to those carrying the work, so as to revolve in the same direction therewith, or unlocked and connected by gearing, so as to revolve in the opposite direction.

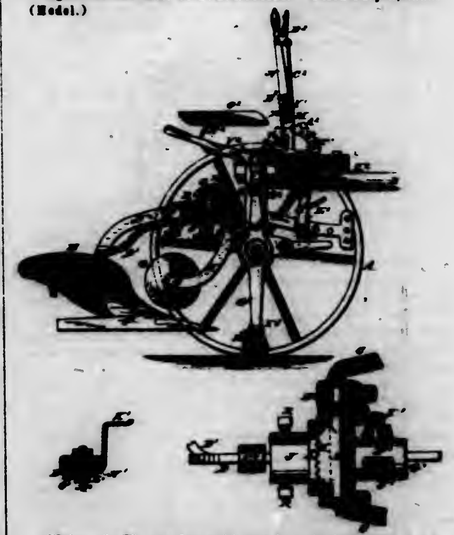
Claim.—1. The combination, in a lathe, of a shaft or spindle comprising sections J J', for carrying a pattern, and sections J² J³ in line therewith, for carrying the work, means for locking the sections J' J² together, so that all the sections will rotate together, and gear-wheels which may be engaged when the sections J' J² are unlocked from each other, to cause the sections J J' to rotate reversely to the sections J² J³, all substantially as and for the purpose herein described.



2. The combination, in a lathe, of a shaft or spindle for supporting a pattern and the material to be turned, comprising sections J' and J², the pin L, the bevel-gear wheels M M', the pinion N, and its adjustable shaft N', substantially as and for the purpose specified.

3. The combination, in a lathe, of a shaft or spindle for supporting a pattern and the material to be turned, comprising sections J' J², the pin L, the bevel-gear wheels M M', the pinion N, the shaft N', screw N², and lever O, substantially as and for the purpose specified.

254,481. SULEY-PLOW. FRANKLIN B. HUNT, Richmond, Ind., assignor of one-half to D. B. Robbins. Filed July 8, 1881. (Model.)



Claim.—1. The quadrant A', cast in a single piece and provided with notches in its periphery, holes P', and integral bearing U' for the lever, in combination with said lever and the adjustable pin S', for the purpose specified.

2. The quadrant A', cast in a single piece and provided with notches in its periphery, holes P', and integral stud or bearing U' for the lever M.

3. The quadrant A', cast in a single piece and provided with notches in its periphery, holes P' for the pin S', stud U', cleats V' V', and hold onto the timber A'' by means of bolt W', in combi-

nation with levers M N, clamp X', and pawl Y', substantially as set forth.

4. The quadrant A', cast in one piece and provided with notches in its periphery, holes P', and integral stud U', in combination with levers M N, clamp X', pawl Y', and pin S', substantially as set forth.

5. The stop K', attached to the plow-beam D, and made adjustable by means of clamp L', incline N', lip O', and bolt M', substantially as set forth.

6. In a wheel-plow, the combination, with the plow-beam, of the oscillating or vibrating leveling device J, through which the plow-beam passes, said device being provided with a wedge-shaped hole and set-screws for the oblique adjustment of the beam, substantially as set forth.

7. In a wheel-plow, the combination of the seat-arch, the stationary furrow-wheel axle, and the land-wheel axle, attached to the slide V², and both connected to and by said seat-arch, and each operating independent of the other, the slide carrying the land-wheel being locked to the seat-arch by means of cam-lever C² and block D².

8. In combination with the axle of a wheel-plow, the pendant G², suspended from said axle and carrying a conical roller the axis of which is turned outward, substantially as set forth.

9. The pendant G², attached to the axle and provided with the shield I², in combination with a conical roller arranged with the side next the land perpendicular, substantially as set forth.

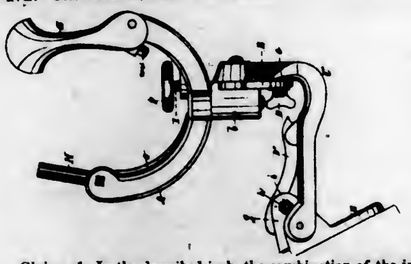
10. In combination with lever M, clamp X', and pawl Y', the set-screw Z', for the purpose specified.

11. The seat-arch B, provided with integral double socketed bearings Z Z, in combination with the tongue-timbers A' A'', permanently fixed therein, for the purpose specified.

12. In combination with the seat-arch provided with bearing Z, and tongue-timber A', the foot-rest L² and seat-spring, the whole being held together by means of the bolts M².

13. In a wheel-plow, the combination, with the plow-beam D and ball C, of the pivoted hanger I and oscillator J, forming a direct connection between said plow-beam and ball, the beam passing through the hanger and oscillator, the said hanger and oscillator being provided with corrugations X, and being held together by means of the bolts W and U, substantially as set forth.

254,482. SHOE-MAKER'S JACK. GEO. W. HUTCHINS, Dover, N. H. Filed Jan. 23, 1882. (No model.)



Claim.—1. In the described jack, the combination of the inverted-arched body A, and the heel-spindle H, fulcrumed thereto, with the elastic arm or carved spring e, extending down from such spindle and within the segment of said body in manner as represented, and with the adjusting-screw I, having its head *p* arranged within the said segment and projected over the spring, all being substantially as set forth.

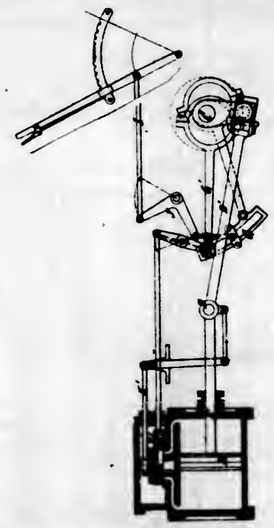
2. The toe-rest clamp-screw *m*, arranged so that its head shall be on or project from the inner side of the arched body A, in manner substantially as shown and described, while the end of the shank of the screw may be against the lower part of the toe-rest, as represented.

3. The combination of the base E, its standards *g g*, and their connecting catch or bolt *h* with the bent arm C, hinged to such base, and with the leg F, having the catches *h* and back stop, *l*, and hinged to the bent arm, all being substantially as set forth.

4. The slotted sector B, its clamp-screw D, pivot *c*, and journal-bearing *b*, in combination with the bent arm C and with the arched body A and its journal *a*, all arranged as specified and represented.

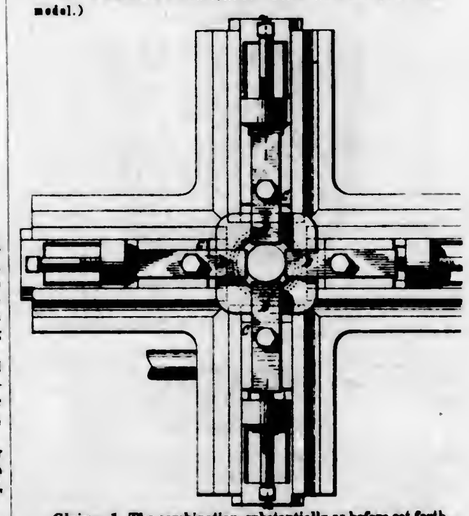
5. The combination of the base E, having the standards *g g*, and cross catch or bolt, *h*, with the bent arm C and catch-leg F, and with the adjustable sector B and its clamp-screw D, pivot *c*, and journal-bearing *b*, and the inverted-arched body A, provided with foot-supporting devices and applied to such bearing, substantially as described.

254,483. CUT-OFF-VALVE GEAR FOR STEAM-ENGINES. JOHN JAMES, New York, N. Y. Filed Apr. 9, 1881. (No model.)



Claim.—In an engine, the combination, with a main or distribution slide-valve, and an ordinary link-motion for varying the motion thereof, of a cut-off slide-valve consisting of a single plate driven by a connection with the piston-rod or cross-head of the engine, so that it has an invariable travel and an invariable motion relatively to the piston, substantially as and for the purpose specified.

254,484. BOLT-HEADING MACHINE. HENRY J. JOHNSON, Providence, R. I., assignor, by mesne assignments, to Plumb, Burdict & Barnard, Buffalo, N. Y. Filed Nov. 29, 1881. (No model.)



Claim.—1. The combination, substantially as before set forth, of the die-slides and the tubular shield.

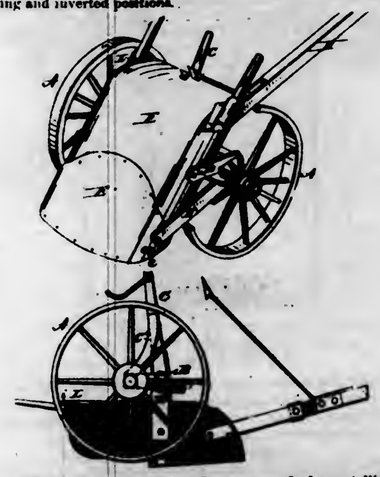
2. The combination, substantially as before set forth, of the die-slides and the shield-plate.

3. The combination, substantially as before set forth, of the die-slides, the tubular shield, and the frame of the machine, fitted with the receiver for the scale and water.

4. The combination, substantially as before set forth, of the die-slides, constructed with recessed ends, and the shield-plate, extended to overlap said recessed ends.

254,485. DIRT-SCRAPER. JEREMIAH JOHNSON, Mount Pleasant, Iowa, assignor of one-third to Waldo A. Stearns, same place. Filed Nov. 7, 1881. (No model.)

Brief.—The bottom of the scraper has a supplementary steel plate fitted underneath and up the sides of the forward part of the scoop. The scraper is suspended by pendants from the horizontal portion of a bent axle, and a horizontal lever projects at right angles from the horizontal portion of the axle, forming, with the upright parts of the axle, a bell-crank lever, and is strengthened by braces connecting with the lower part of the vertical portions of the bent axle. Suitable catches retain the box in its carrying and inverted positions.

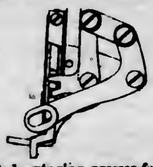


Claim.—1. A scraper-box, E, constructed of a metallic plate constituting the inner or principal dirt-holding device, in combination with a supplementary steel plate, E', fitted underneath and up the sides of the forward part of the box E, and fastened thereto, constituting both the wearing part and a stiffening device to a scraper-box, and forming its cutting-edge, substantially as herein shown, and for the purposes specified.

2. The combination of an arched or double-elbow crooked axle, B, wheels A, lever C, with braces C', pendants D, and box E, all formed and arranged substantially as herein shown, and for the purposes specified.

254,486. SEWING-MACHINE. WILLIAM JOHNSON, Haverhill, Mass. Filed Nov. 19, 1881. (Model.)

Brief.—The swinging presser-foot moves forward with the feed, and is then raised by the lifting-bar and returned to its first position by a spring.



Claim.—1. The pivoted swinging presser-foot and the vertically-movable lifting-bar, adapted to descend upon the material being sewed near the needle-hole of the plate which supports the material to lift the presser-foot above the material, combined with an under feeder, adapted to engage the under side of and feed the material for each stitch, the presser-foot moving with the said feeder and cloth as the cloth is being fed forward, substantially as and for the purpose described.

2. The under feeder to engage the under side of the material and carry it forward, and a swinging presser-foot above the material and moving with it, combined with a vertically-movable lifting-bar adapted to be thrown down upon the material while at rest to lift the presser-foot, and with a spring to move the said presser-foot toward the operator, substantially as and for the purpose set forth.

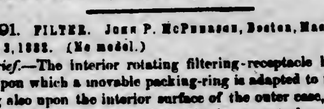
3. The bracket A, the swinging presser-foot pivoted thereon, and the spring to throw it toward the operator, combined with the short lifting-bar guided by the said frame and reciprocated vertically therein, substantially as described.

4. The bracket A, swinging presser-foot pivoted thereon, and the lifting-bar guided by the bracket, combined with the system of levers carried by the said bracket, and adapted to be actuated by the needle-bar, substantially as described.

254,487. COMPOSITION FOR BLEACHING AND WASHING LINEN, &c. CERF MAYER LEVY and GUSTAVE ALEXANDRE, Paris, France. Filed Sept. 30, 1881. (No specimens.) Patented in France Feb. 11, 1880.

Claim.—The composition of a mixture of water, *Fucus crispus*, resin, and liquid caustic soda, with silicate of soda, and with liquid caustic soda, and with a mixture of oleic acid and carbonate of soda, in about the proportions specified, all compounded to produce a solid lye, substantially as set forth.

254,488. CAN-OPENER. ARTHUR W. LYMAN, Brooklyn, N. Y. Filed Dec. 15, 1880. (No model.)



Claim.—The can-opener described, consisting of the handle and body A, the puncturer B, cutter D, riding-plate C, having stop and fulcrum portion *e*, and the gage E, all formed of one piece of steel, and adapted to serve as set forth.

254,489. FOUNDATION-BLOCK FOR BUILDINGS. MATTHEW R. MARKS, Orlando, Fla. Filed Oct. 18, 1881. (No model.)



Claim.—1. A hollow building-block having ornamental openings E and openings or slots F, as described, for the purpose set forth.

2. A building-block provided near its upper and lower ends with grooves or gutters D, as and for the purpose set forth.

3. The herein-described improved building-block A, having flange B, projection C, grooves or gutters D, and openings E F, as and for the purpose herein shown and specified.

254,490. PITMAN-CONNECTION FOR HARVESTERS. OLIVER H. MCMILLAN and MOSES C. MCMILLAN, Clinton County, Ohio. Filed July 27, 1881. (No model.)



Claim.—1. The self-fastening head *a*, having the two parts *a' a''*, hinged together at their extreme outer ends and provided with the self-fastening bolt *d*, substantially as shown and specified, for the purpose set forth.

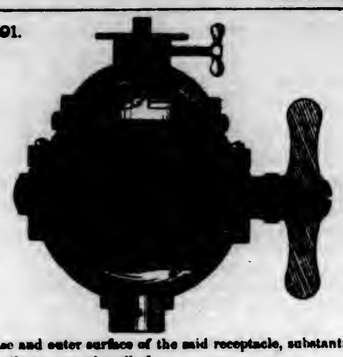
2. In a pitman-rod head divided in two sections hinged together as shown, a self-fastening bolt by which said sections are united, and a thin metallic reversible and interchangeable packing having central transverse lugs fitting in slots in the two opposite sections of the head, substantially as hereinbefore set forth.

254,491. FILTER. JOHN P. MCPHERSON, Boston, Mass. Filed Jan. 3, 1882. (No model.)

Brief.—The interior rotating filtering-receptacle has plane seats, upon which a movable packing-ring is adapted to rest, and, bearing also upon the interior surface of the outer case, prevents the water from passing around the filtering-receptacle.

Claim.—1. In a filter, the combination, with the external case and filtering-receptacle therein, of the independent movable packing-ring having a tight fit on a portion of the inner surface of the

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said case and outer surface of the said receptacle, substantially as and for the purpose described.

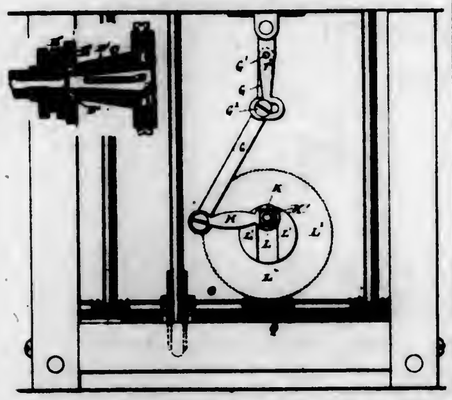
2. The external case and filtering-receptacle therein, provided with a plane seat, combined with the independent packing-ring, having a tight fit on a portion of the inner surface of the said case and being movable toward and from the said seat, whereby it can obstruct the flow of water between the said case and receptacle or not, substantially as and for the purpose set forth.

3. The case provided with inlet and outlet passages and an internal cylindrical portion and the filtering-receptacle mounted to rotate therein and provided with plane seat portions, combined with the packing-ring having a circumferential tight bearing in the cylindrical portion of the case, and means to move it longitudinally therein onto or off from the said seat portions of the filtering-receptacle, substantially as described.

254,492. MACHINE FOR TURNING CYLINDRICAL OR TAPERING HANDLES. NATHAN T. MELVIN, Lodi, Ohio, assignor to himself and Albert B. Taylor, same place. Filed Apr. 26, 1880. (No model.)

Brief.—The cutter in the revolving hollow mandrel can be expanded or contracted by means of the train of mechanism leading to the shaft which controls the feed of the blanks.





Claim.—1. The combination, with the cutter-head, of tapering knife-holders pivoted therein, and a sliding collar having internal bosses adapted to bear on said knife-holders, and provided with means for sliding said collar to turn articles of tapering form and for holding said collar stationary when articles of cylindrical form are to be turned, substantially as described.

2. The combination, with the sliding collar and cutter-head having pivoted knife-holders, of the adjustable wrist-pin, worm-wheel, and suitable connecting levers and links, substantially as described.

3. The combination, with the shafts B and O, the cutter-head, and annularly-grooved collar, of the worm-wheel, lever F, having a boss-bearing in the groove of the collar, an adjustable wrist-pin, K, and suitable connections, said wrist-pin being adapted to be adjusted both concentrically and eccentrically to said wheel, substantially as set forth.

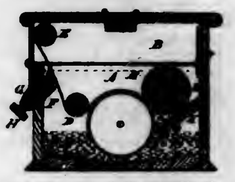
4. The combination, with the shafts B and O, the collar E, the cutter-head provided with pivoted knife-holders and knives, of worm-gear Q L', the adjustable wrist-pin K, link H, lever G, pivoted, as described, to the slotted lever F', and the latter provided with the boss F, the whole constructed to cause the knives to approach and recede from each other, substantially as described.

254,493. EVAPORATOR FOR REGISTERS. JOHN F. MEYER, Baltimore, Md. Filed Dec. 9, 1881. (No model.)



Claim.—The device herein described, consisting of the wire frame having catches to engage with the register and formed to support the device upright when not in use, and provided with the inclined front plate and a water-pan, as set forth.

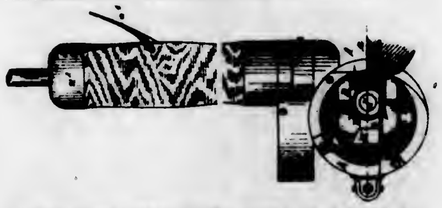
254,494. PAPER-HANGING MACHINE. RUSSELL H. HIBBS, Elk City, Pa. Filed June 8, 1881. (Model.)



Claim.—1. The slide-rests G G and adjusting thumb-screws H H, in combination with the brush F, constructed and arranged substantially as shown and described, and for the purpose set forth.

2. A paper-hanging machine composed of the case A, cover B, paste-roller C, pressure-roller D, parallel roller E, and inclined table K, in combination with the adjustable brush F, substantially as described.

254,495. SOLE-EDGE-TRIMMING MACHINE. JOHN R. HOFFITT, Boston, Mass. Filed Jan. 31, 1882. (No model.)



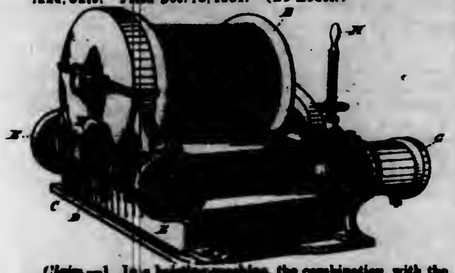
Claim.—1. The improved edge-trimmer, consisting of the holder A, provided with a handle, the knife *b* and its carrier B, and mechanism, substantially such as is described, for revolving the carrier B, the whole device adapted to be moved about the sole-edge, substantially as described.

2. In combination, the cylindrical knife *b*, carrier B, follower *b'*, and holder A, the follower screwing into the carrier and the carrier mounted in the holder, as described.

3. In combination, the cylindrical knife *b*, carrier B, holder A, feed-frame D, feed-wheel *d*, shaft F, and spring *f*, substantially as described.

4. In combination, holder A, carrier B, knife *b*, frame D, post *d'*, feed-wheel *f*, and sleeve-gear *g*, substantially as described.

254,496. HOISTING-MACHINE. FRANK HERGARDEN, Cleveland, Ohio. Filed Dec. 13, 1881. (No model.)



Claim.—1. In a hoisting-machine, the combination, with the eccentric of a horizontal engine, of a shaft adapted to be revolved by said eccentric, worm-gearing C, and a revolving drum provided with a gear-wheel adapted to mesh with and be revolved by said worm-gear, substantially as set forth.

2. In a hoisting-machine, the combination, with the frame or stand A, of the drum B, provided with gear-wheel B', shaft D, worm-gear C, and the eccentric E, the latter being adapted to revolve the shaft D, and connected directly to the pitman of a horizontal engine, substantially as set forth.

254,497. NECK-YOKE CLIP. JAMES HELLIS, Ypsilanti, Mich., assignor of one-half to George W. Voorhees, same place. Filed Dec. 1, 1881. (No model.)



Claim.—1. A neck-yoke consisting of two semi-cylindrical parts, A F, provided with overlapping rear edges, C G, with interlocking front edges, H' E E, and with ears I, by which they are secured together, substantially as and for the purpose specified.

2. In a neck-yoke clip, the section A, provided with a flange, C, and with opening B D, in combination with the section F, provided with a flange, G, and with a lip, H', to fit the opening D, and suitable devices for securing the two together, substantially as and for the purpose specified.

3. In a neck-yoke clip, the section A, provided with a flange, C, opening B, and with the lips E E, in combination with the section F, provided with a lip, H', to fit between the lips E E and a flange, G, a loop, J, and fastening-ears I, substantially as and for the purpose specified.

254,498. APPARATUS FOR FILLING RUBBER-MOLDS. EDWARD NELSON, Frederick, Md. Filed Aug. 31, 1881. (No model.)



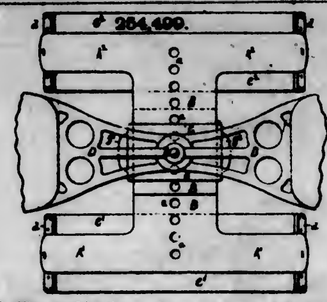
Claim.—In combination with the mold having a tapering opening, the tank provided with the cylinder B, having conical nozzle, the forcing mechanism, and the clamping-screw E, as set forth.

254,499. COLLAR-PAD. JACOB H. HESSER, Ayr, Miss. Filed Aug. 6, 1881. (No model.)

Claim.—1. The combination, with a horse-collar, of the adjustable auxiliary pads A' A' and plate C, clasping the pads, substantially as set forth.

2. The combination and arrangement of the pads A' A', bars B' B', provided with perforations *a* or other suitable means for adjusting them, and plate C, pin *b*, and swivel-cap D, substantially as set forth.

254,499.

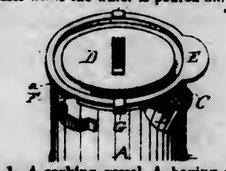


3. The combination and arrangement of the plates A' A', straps *c' c'*, and connecting-bars B' B', substantially as set forth.

4. The combination and arrangement of the curved plates A' A', straps *c' c'*, and swivel-plates *d*, substantially as set forth.

254,500. COOKING-VESSEL. AUGUST W. OSENBAUM, Chicago, Ill. Filed Nov. 18, 1880. Renewed July 20, 1881. (No model.)

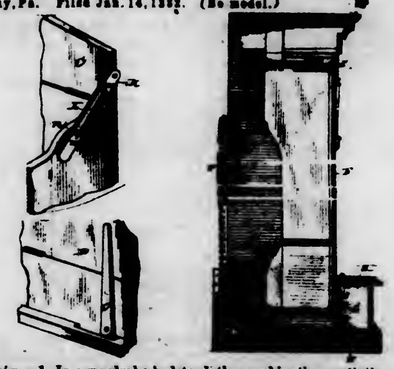
Brief.—The vessel is provided with a notched flange. The lid has two hooks for embracing the flange and a projection for covering the nozzle of the vessel. The lid is secured to the vessel by passing the hooks through the notches and twisting. By further twisting the lid the nozzle is uncovered, the lid being firmly held to the vessel while the water is poured off.



Claim.—1. A cooking-vessel, A, having a lip, B, provided with a strainer, C, in combination with the cover D, having the flap E projecting therefrom, whereby the lip can be opened and closed by twisting the cover on the vessel without removing it therefrom, substantially as described and shown.

2. A cooking-vessel having lip B, perforated plate C, flange *a*, and notches F, in combination with the cover D, provided with a flap projecting therefrom for closing the lip, the cover being locked to and unlocked from the vessel and the lip being closed and unclosed by the twisting of the cover on the vessel, substantially as described and shown.

254,501. WARDROBE-BEDSTEAD. ANTON ORTLIEB, Allegheny, Pa. Filed Jan. 14, 1882. (No model.)

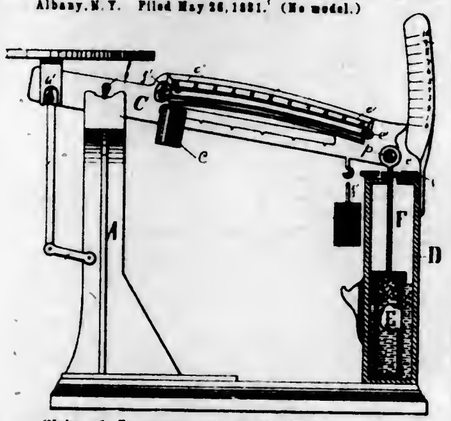


Claim.—1. In a wardrobe-bedstead, the combination, with the case A, of the bedstead B, pivoted and journaled therein, and having folding head-board C and securing devices consisting of slotted arm K, having recesses *n* and pin *n*, and foot-board D, and securing devices *c'* and *f'*, and pivoted bar *c'*, and folding or hinged rail *d'*, having feet E, the several parts constructed and relatively arranged substantially in the manner as herein described.

2. In a wardrobe-bedstead, the case A and the bedstead pivoted and adapted to fold therein, the spiral springs P R, arranged in the rear of and connected with the case, and chains T V, passing under rollers and connecting said springs with the head and

of the bedstead, in combination with the spring Q and chain U, arranged substantially in the manner herein shown and described, whereby tension is first brought upon the outer springs, P R, and subsequently upon the spring Q, in the operation of lowering the bedstead, substantially in the manner as and for the purpose specified.

254,502. AUTOMATIC WEIGHING-SCALE. FRANK D. PAYS, Albany, N. Y. Filed May 26, 1881. (No model.)



Claim.—1. In an automatic or self-adjusting weighing-scale, the combination, with a pivoted beam or arm, of a scale-pan and an equipoise-plunger, substantially as described.

2. In an automatic weighing-scale, the combination, with a pivoted beam or arm, of a scale-pan, an equipoise-plunger, and a dash-pot, substantially as set forth.

3. In a weighing-scale, the combination of the beam C with the stem F, the cup E, and the dash-pot D, substantially as herein described.

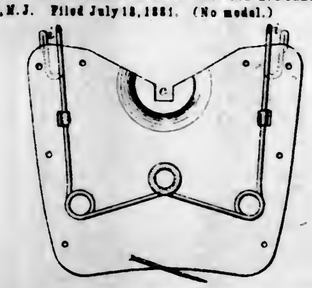
4. The combination, in a weighing-scale, of the beam C, the stem F, having disk *e*, and the dash-pot D, provided with turn-buttons *f f*, substantially as described.

5. In a weighing-scale, the combination, with a slotted beam or arm, of a measuring-tube set therein, substantially as described.

6. In a weighing-scale, the combination, with a slotted beam or arm provided with projecting flanges, of a measuring-tube set in said slot and protected by said flanges, substantially as set forth.

7. In a weighing-scale, the combination, with the measuring-tube, of an index float or pointer which shifts with each change in poise of the beam, substantially as herein described.

254,503. CRAVAT-FASTENING. GEORGE E. POLAND, Hasbrouck, N. J. Filed July 18, 1881. (No model.)



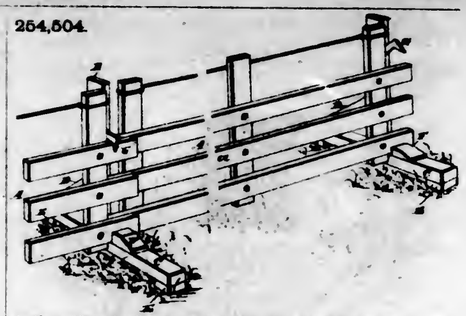
Claim.—1. The combination, with the base-plate having a notched upper edge to set below the collar-button, of spring-hooks to hook over the collar-band, substantially as set forth.

2. The spring-hooks for a cravat or bow, formed of one piece of wire with coils, in combination with the plate and the guides thereon, through which the wire slides, and the attachment for the center of the wire, as set forth.

254,504. PORTABLE FENCE. WILLIAM H. RANDALL, Ypsilanti, Mich. Filed Dec. 8, 1881. (No model.)

Claim.—1. The combination, with the base C, having the post B and block F rigidly secured thereto, and a hook pivotally secured

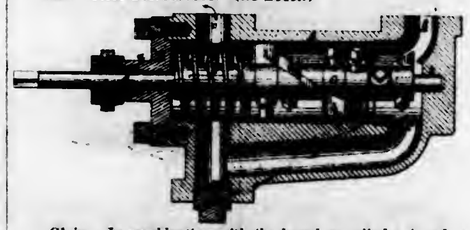
254,504.



to the said post, of fence-panels the adjacent edges of the lower boards of which are adapted to rest on the base between the block F and the post B, while the adjacent edges of the upper board of the panel are adapted to be secured by the said hook G, substantially as set forth.

2. The combination, with the fence posts and panels, of hooks pivotally secured to the fence-posts and adapted to clasp the panels and hold them against the posts, the outer ends or clasping-arms of said hooks being provided on their inner faces with bevels to accommodate the hooks to panels of different thicknesses, substantially as set forth.

254,505. ORE-SEPARATOR. SAMUEL G. ROLLINS, Boston, Mass. Filed Dec. 15, 1881. (No model.)



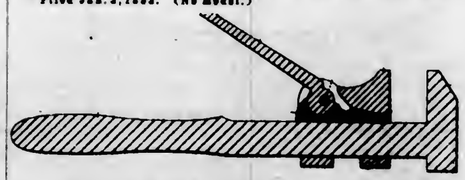
Claim.—In combination with the barrel or cylinder A and its rotary propeller and agitator, arranged therein and to operate therewith as described, the separate chamber D, inclined and extended along beneath the cylinder, as represented, and opening out of such at or near one end only of it, (the said chamber D,) and having a discharge-opening at its lower part or opposite end, all substantially as set forth.

254,506. MEN'S DRAWERS. ISAAC SCHEUER, New York, N. Y. Filed Dec. 21, 1881. (No model.)



Claim.—In men's drawers, the edgings or linings *b* and *c* of the front slit, carried down and crossed on the crotch, substantially as specified.

254,507. WRENCH. GEORGE P. SCHNEIDER, Cleveland, Ohio. Filed Jan. 3, 1882. (No model.)



Claim.—1. In a wrench, the combination of a fixed arm and movable jaw, said movable jaw being secured in any desired position on said arm by means of a wedge and cam-lever, said cam-lever operating at the same time to drive the wedge and clamp the

movable jaw against the said arm, substantially as and for the purpose shown and described.

2. In a wrench, the combination of a fixed arm, said arm made V-shaped at its rear portion, with a movable jaw, said jaw being provided with a socket, which is also made V-shaped and held in place on said arm by means of a cam and wedge, substantially as shown and described.

254,508. PROCESS OF TREATING IRON AND STEEL. ALEXANDER H. SIEGFRIED, Selin's Grove, assignor of one-half to Truman H. Purdy, Sunbury, Pa. Filed Feb. 1, 1881. (No specimens.)

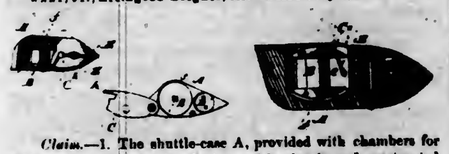
Claim.—1. The process of treating molten cast iron or steel containing phosphorus or sulphur to remove said elements therefrom, the same consisting in incorporating with the molten metal a compound composed of sulphate of copper and carbonate of soda, in proportions substantially such as herein specified.

2. As an improvement in the art of eliminating phosphorus and sulphur from iron or steel, incorporating therewith while it is in a molten condition sulphate of copper and carbonate of soda in substantially the proportion of one and a half ounce to each hundred pounds of metal.

3. The herein-described method of treating iron and steel for the removal of sulphur, phosphorus, and silicon, consisting in incorporating therewith while it is in a molten condition carbonate of soda and sulphate of copper, substantially as described.

4. As an improvement in the art of treating iron and steel to purify and strengthen it, the process consisting in repeatedly melting the metal and incorporating therewith during each of its molten periods a compound consisting of sulphate of copper and carbonate of soda.

254,509. SHUTTLE FOR SEWING-MACHINES. JOHN S. CRAWALT, Jr., Arlington Heights, Ill. Filed July 2, 1879.

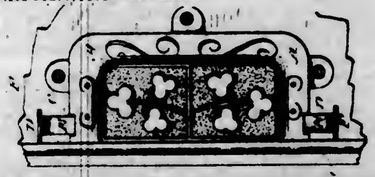


Claim.—1. The shuttle-case A, provided with chambers for the bobbin and the tension device, and having its end constructed with a slit, E, which extends inwardly a short distance in a straight line, and thence passes in a slanting direction through the shuttle-case into the chamber containing the tension device, substantially as and for the purpose described.

2. The combination, with the case A, provided with a slit, E, and cover C, of the tension device and bobbin B, as and for the purposes set forth.

3. The combination, with the case A, provided with a slit, E, and cover C, of the bobbin B, having a yielding bearing, *f*, and a tension mechanism, as and for the purposes set forth.

254,510. SASH-HOLDER. JACOB G. SLAYER, Wyandotte, Kans. Filed Jan. 7, 1882. (No model.)

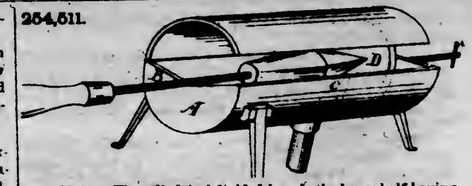


Claim.—As an article of manufacture, the herein-described improved sash-holder, consisting of the casing A, having recess B, and a longitudinal groove or recess, C, at right angles to the latter and on the under side of the casing, the operating-slide D, adapted to work in said groove C, consisting of a flat plate, E, having its ends bent or turned upwardly to form ears or thumb-pieces F, and the cage or holder G, consisting of a flat plate, J, having its ends struck up to form walls H I, between which the elastic ball or roller K is to be held, the cage being secured to the face of plate E, substantially in the manner and for the purpose herein shown and specified.

254,511. VAPOR-BURNING SOLDERING-FURNACE. LUCIUS B. SHAW, Cleveland, Ohio. Filed Jan. 13, 1882. (No model.)

Brief.—The web or support C is notched similar to the end B, so that the irons to be heated may be held in position over the flame.

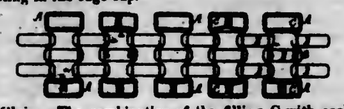
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Claim.—The cylindrical divided box A, the lower half having the inclined webs B C and provided with the adjustable stop D, in combination with the burner E, provided with the wire-gauze cap *f*, substantially as described.

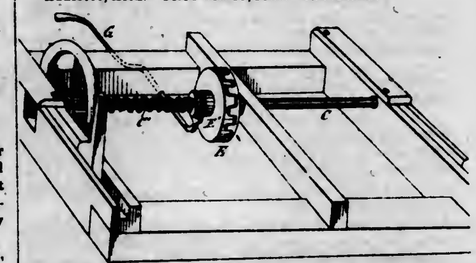
254,512. NECK OR BRACELET CHAIN. OLIVER S. SPAULDING, Mansfield, Mass. Filed Jan. 9, 1882. (No model.)

Brief.—The filling-cup closes the edge cup and hides the connecting-wires therein from view. It also prevents foreign matter collecting in the edge cup.



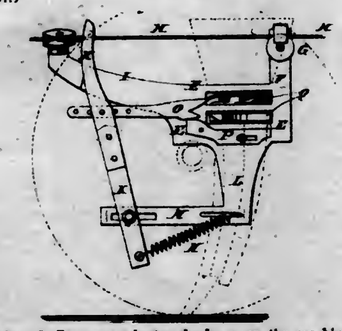
Claim.—The combination of the filling C with each fellow pair of edge cups A and their connection or connections and immediately-intervening links or units B, such fillings being arranged within the edge cups, substantially as specified and represented.

254,513. HEAD-BLOCK FOR SAW-MILLS. JOHN W. STORER, Manistee, Mich. Filed Oct. 12, 1881. (No model.)



Claim.—In a circular-saw-mill carriage, the two shafts C C', provided at their outer ends with gears for operating the knees, in combination with the clutch-section E E', the section E being rigidly secured to the shaft C and provided with an internal bearing for the inner end of the shaft C I, and the section E' constructed to slide on the shaft C', and the spring E and lever G, for sliding the clutch-section E' on its shaft, substantially as shown, and for the purpose specified.

254,514. CHECK-ROW ATTACHMENT FOR CORN-PLANTERS. CHARLES E. SWEENY, Geneseo, Ill., assignor to Mary E. Swaney and George G. Mowry, same place. Filed July 13, 1881. (No model.)



Claim.—1. In a corn-planter check-rower, the combination, with the frame E, adjustably secured to the seed-box, and the bent levers O, connected to the seed-slide, of the forked lever K, the

pivoted finger O, and the spring N, substantially as and for the purpose set forth.

2. In a corn-planter check-rower, the combination, with seed-slide-connecting bar B, the forked lever K, the pivoted finger O, and spring N, of the bent levers Q and the bar B, having its inner end perforated and its outer end slotted, substantially as and for the purpose specified.

3. In a corn-planter check-rower, the combination, with the plate C, adjustably secured to the seed-box, of the plate E, adjustably secured to the plate C, and provided with the arms I F, carrying pulleys G J, and the slotted arm M, the forked lever K, and the spring N, substantially as and for the purpose specified.

4. In a corn-planter check-rower, the combination, with the plate E and the finger O, of the adjustable guide P, substantially as and for the purpose specified.

5. In a corn-planter check-rower, the combination, with the forked finger O, pivoted to the forked lever K, of the bent levers Q, connected to the seed-slide, and having their forward ends concaved on their edges, whereby they may hold the finger O in contact therewith, substantially as and for the purpose specified.

6. In a corn-planter check-rower, the combination, with oscillating bent levers adapted to actuate the planter seed-slides by means of suitable connection therewith, of a forked push-bar which acts alternately on said bent levers and receives motion from an ordinary forked lever and tappet-wire, substantially as and for the purpose specified.

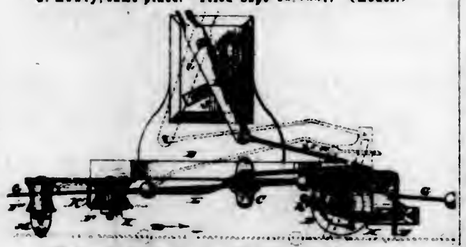
7. In a corn-planter check-rower, in combination with bent levers pivoted to a base-plate and connected by a bar, whereby the movement of one of said bent levers in one direction imparts a simultaneous movement to the other bent lever in an opposite direction, a forked push-bar adapted to act alternately on said bent levers, substantially as and for the purpose specified.

8. In a corn-planter check-rower, in combination with a push-bar forked at its free end and pivoted at its other end to an ordinary forked lever, oscillating bent levers beveled at their sides to adapt them to coact with the forked push-bar and guide it while in contact with one bent lever so that it may pass the outer end of the other bent lever without coming in contact therewith, substantially as and for the purpose specified.

9. In a corn-planter check-rower, bent levers pivoted at their bends and connected, one arm of one lever with an arm of the other lever, by a slotted bar, in combination with suitable connection with the planter seed-slides, whereby the oscillations of the levers will impart movement to the seed-slides, substantially as and for the purpose specified.

10. In a corn-planter check-rower, in combination with oscillating bent levers, a slotted bar connecting said levers by one end of each, and a pivoted forked push-bar adapted to act on the other ends of said levers, substantially as and for the purpose specified.

254,515. CORN-PLANTER CHECK-ROWER. CHARLES E. SWEENY, Geneseo, Ill., assignor to Mary E. Sweeny and George G. Newry, same place. Filed Sept 29, 1881. (Model.)



Claim.—1. In a check-rower, in combination with a tappet-wire and check-row devices, a tripper adapted to be swung to engage with and release the wire from the check-row devices, substantially as and for the purpose specified.

2. In a check-rower, in combination with the tappet-wire and pulley for guiding the tappet-wire to the check-row devices, a swinging tripper adapted to force the tappet-wire out of the groove of said guide-pulley, and having an incline plane, over which the wire may rise and pass over the pulley, substantially as and for the purpose specified.

3. In combination with the tappet-wire and check-row devices, a swinging tripper, H, having the ordinary guard-arm, E, attached thereto so that it will swing therewith, substantially as and for the purpose set forth.

4. In combination with a tappet-wire and with the check-row devices, a swinging tripper, H, journaled on the same shaft as the guide-pulley D, substantially as and for the purpose specified.

5. In a check-rower, the combination, with a tappet-wire, of a cam-shaped tripper adapted to be swung to engage with and release said wire from the check-row devices, substantially as and for the purpose specified.

6. In combination with the tappet-wire, check-row devices, and tripper for engaging with and throwing the tappet-wire, the lever and connecting-rod for operating the tripper, substantially as and for the purpose specified.

7. In combination with the tripper H, for engaging with and throwing the tappet-wire, and lever I, a step, J, for holding the lever I, and thereby the tripper H, in working position, substantially as and for the purpose specified.

8. In a check-rower, in combination with the swinging tripper, a swinging guard adapted to swing to allow the tappet-wire to pass off the rear guide-pulley, substantially as and for the purpose specified.

9. In combination with the swinging tripper H, a swinging guard, K, for the pulley F, connected with the tripper by a connecting-rod, so as to have simultaneous movement therewith, substantially as and for the purpose specified.

10. In combination with the tappet-wire and check-row devices, a tripper, H, and lever I for actuating the same, and a swinging guard, K, actuated through the movement of said tripper, substantially as and for the purpose specified.

11. In combination with the tappet-wire, check-row devices, and rear pulley, F, a guard, M, projecting outwardly from the lower side of the pulley F, substantially as and for the purpose specified.

12. In combination with a swinging tripper, H, a swinging arm, K', for raising the tappet-wire from the pulley F, substantially as and for the purpose specified.

13. In a check-rower, a swinging arm adapted to raise the tappet-wire from the rear guide-pulley, F, and a swinging guard adapted to swing to allow the tappet-wire to pass off from said pulley, substantially as and for the purpose specified.

14. In combination with the swinging tripper H, a swinging arm, K', and guard K, substantially as and for the purpose specified.

15. In combination with the swinging tripper H, a swinging arm, K', connected with the tripper by a connecting-rod, so as to have simultaneous movement therewith, substantially as and for the purpose specified.

16. In combination with the swinging tripper H, a swinging guard, K, and arm K' for the pulley F, connected with the tripper by a connecting-rod, so as to have simultaneous movements therewith, substantially as and for the purpose specified.

17. In combination with the tappet-wire and check-row devices, a tripper, H, and lever I for actuating same, and a swinging guard, K, and swinging arm K', actuated through the movement of said tripper, substantially as and for the purpose specified.

254,516. MACHINE FOR MAKING BARBED-WIRE FENCING. SALMON THOMPSON and WILLIAM E. FARRELL, Mooreville, Iowa. Filed Aug. 26, 1881. (No model.)

Claim.—1. In a machine for making barbed-wire fencing, wherein the barbs to be placed upon each wire are strung upon the wire in a body, the divider R, by means of which the barbs are separated or picked up and passed to the operating parts of the machine, substantially as specified.

2. In a machine for making barbed-wire fencing, the wheels D, rotating toward each other, and provided with the recesses b and channel E, for the purpose of embracing the wire and barb and holding the same while it is being operated upon, substantially as and for the purposes set forth.

3. In a machine for securing barbs upon wire, constructed as described, the trip-hammer V and double knife W, in combination with and actuated by the wheels D and intermediate mechanism for the purpose of forming a spur in the wire upon each side of the barb, substantially as set forth.

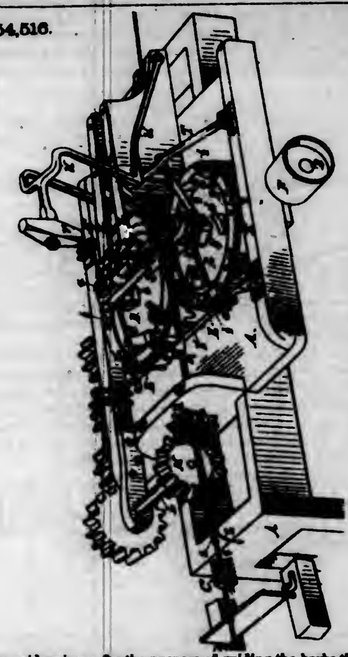
4. In a machine for securing barbs on wire, the step-bar B', in combination with the trip-rods A' and devices, substantially as described, for alternately raising said trip-rods, as and for the purpose specified.

5. In a machine for barbing wire, the divider R, consisting of two intermeshing plates, *r r*, in combination with the hollow shaft P, to which it is secured, substantially as and for the purpose specified.

6. In a machine for barbing wire, a rotating spiral divider provided with a central opening for allowing the passage of the fence-wire, and adapted to separate one barb at a time from a series of barbs on said wire, substantially as described.

7. In a machine for barbing wire, and in combination with the divider R, stop-bar B', and the grooved and recessed wheels D,

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the guide-wire c, for the purpose of guiding the barbs through the machine, substantially as described.

8. In a machine for barbing wire, and in combination with mechanism, substantially as described, for feeding the barbs and wire, the double knife W, mounted on springs X X, and suitable means for striking said knife, as and for the purpose specified.

9. In a machine for barbing wire, the wheels D, provided with grooves E, recesses b, and cams *d*, in combination with the trip-rods *c* A', step-bar B', rods T', hammer-yoke U, and mechanism, substantially as described, for imparting movement to the several parts, as and for the purpose specified.

10. In a machine for barbing wire, the step-bar B', in combination with the trip-rods A', the wheels D, provided with cams *d* for alternately operating the trip-rods, and mechanism, substantially as described, for producing spurs on the fence-wire, as and for the purpose specified.

11. The wheels D D, rotating toward each other, and provided with recesses b and grooves E, in combination with the cams *d*, secured to said wheels, the trip-rods A' *c*, the step-bar B', the rods T, hammer-yoke U, hammer Y, double knife W, divider R, and connections, substantially as described, between the divider R and the wheels D, as and for the purpose specified.

254,517. RAG-CARRIER. NELSON F. TIPTON, Colony, Kans. Filed Nov. 28, 1881. (No model.)

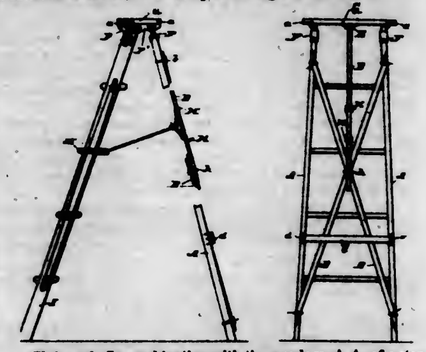


Claim.—1. The combination of shelves having rows of perforations adapted to receive an egg at the middle of its length with bent, notched, and interlocked strips E, secured to said shelves between the rows of perforations, so as to have a portion of their edge project in the way of said perforations, substantially as and for the purpose set forth.

2. The combination of shelves having rows of perforations adapted to receive an egg at the middle of its length with bent strips E, secured on edge to said shelves, and a sheet of pasteboard, F, provided with waves, and perforations *f* in the top of each wave, substantially as and for the purpose described.

254,518. STEP-LADDER. CALVIN G. UDELL, North Indianapolis, Ind. Filed Aug. 16, 1881. (No model.)

Brief.—Clamps of peculiar construction fasten the cross-braces and cross-bars to the legs of the ladder. One end of a sliding brace is connected to a vertical bar on the back side of the ladder and the other end secured to the center of a step. The hinge-bracket is fastened to the top steps by spurs taking into the wood.



Claim.—1. In combination with the rear legs, A A, of a step-ladder and the cross-braces B B, the hand-fastenings *i*, substantially as shown and described.

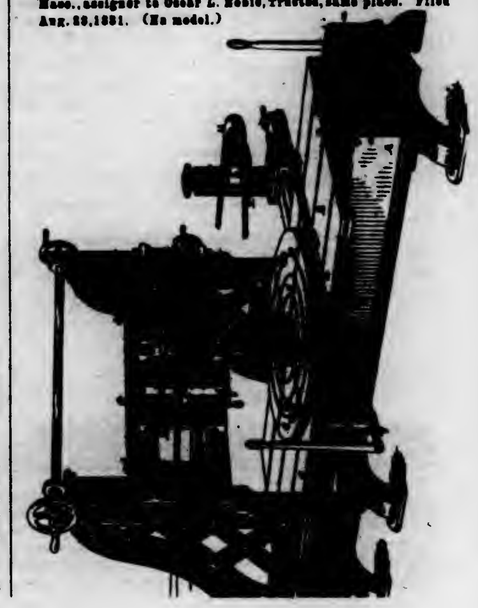
2. In combination with the rear legs, A A, of a step-ladder and the cross-bar C, the staple-fastenings *d*, substantially as specified.

3. In combination with the rear legs, A A, of a step-ladder, the bar D, with slide H, and the brace J, pivoted to the step M of the ladder and to said slide, substantially as specified.

4. In combination with the step-ladder I, the hinge-bracket P P', or its equivalent, as shown, with spurs *a a*, fastening-pin *f*, and hole *f'*, and the top step, G, substantially as shown and described.

5. In a step-ladder, the upright bar D, having its lower end made flat to the cross-braces B B and its upper end pivoted to the top step, G, substantially as specified.

254,519. STONE-CUTTING MACHINE. JOHN WARREN, Boston, Mass., assignor to Oscar L. Noble, Trustee, same place. Filed Aug. 29, 1881. (No model.)



Claim.—1. In a stone-dressing machine, the combination of

254,522. SUPPORTER FOR ELECTRIC-LIGHT REFLECTORS.

into said trough, the parallel steam-boxes G, supported at each end

bushings loosely encircling different portions of the spindle and

Claim.—1. In a stone-dressing machine, the combination of a longitudinally-movable carrier, an independently-revolving table, a vertically-adjustable cross-slide, and a slide-rest laterally adjustable on such cross-slide and carrying an adjustable tool-holder.

2. The combination, with the slide-rest and cross-slide, of the stops *d d* and graduated scale, substantially as described.

3. The combination of the revolving table mounted on a longitudinally-moving carriage with shaft K, adapted to carry a side cutter.

4. The combination, with the revolving table and carriage B, of the pin 24 and adjustable bar 25, substantially as described.

5. The combination of the cross-slide and the slide-rest with the adjustable stops *d d* and threaded rods, whereby the stops may be adjusted and held in any position, substantially as described.

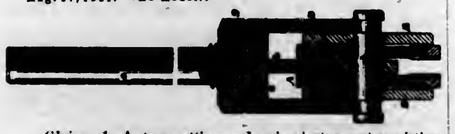
6. The combination of the slide-rest, the vertically-adjustable tool-holding frame, and the cam-lever pivoted upon said slide-rest and adapted to impinge upon the back of the tool-holding frame and lock it in position, substantially as described.

7. The bed A, provided with the V-grooves *u u* and the inwardly-curved flanges or lips *t t*, in combination with the carriage B, provided with the downwardly and outwardly projecting guide-rails *v v*, fitted to and adapted to slide in said V-grooves *u u*, substantially as and for the purpose described.

8. In combination with the reciprocating carriage B, the independently-revolving table provided with radial and concentric T-shaped grooves, substantially as and for the purpose described.

9. In a stone cutting or dressing machine, the combination of two sets of tool-operating mechanisms arranged to operate upon different faces of the stone, substantially as described.

254,520. STONE-CUTTING TOOL. JOHN WARREN, Boston, Mass., assignor to Oscar L. Noble, Trustee, same place. Filed Aug. 17, 1881. (No model.)



Claim.—1. A stone cutting or dressing instrument consisting of one or more disks having plain cylindrical peripheries and mounted loosely upon and adapted to be revolved about a pin or shaft placed at right angles to the spindle and adapted to be revolved in its bearings, said disk or disks being arranged upon one or both sides of the axial line of said spindle, substantially as described.

2. A stone cutting or dressing instrument consisting of disks corrugated on both sides and mounted on and adapted to be revolved about a pin or shaft placed at right angles to the spindle and adapted to be revolved in its bearings, said disks being arranged symmetrically on each side of the axial line of the said spindle, substantially as described.

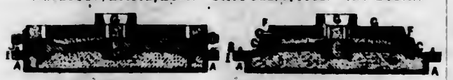
3. In combination with the yoke D, having slotted ends, the perforated central plate, *b*, of the spindle *c*, and disks having smooth cylindrical peripheries, the pin *d*, having enlarged center and reduced bearings near its ends, substantially as described.

4. In a stone-cutting tool, a head composed of the spindle *c*, provided with the plate *b*, having a transverse opening, the collar *e*, and male screw-thread, the yoke D, provided with central hole to receive the spindle *c*, and slots to receive the disk-bearing pin, and the nut *g*, all arranged and adapted to operate substantially as described.

5. The central perforated plate, *b*, integral with the spindle, in combination with the pin *d*, one or more cutting-disks, and the yoke D, said yoke having a central perforation for the spindle and slots for the pin, substantially as described.

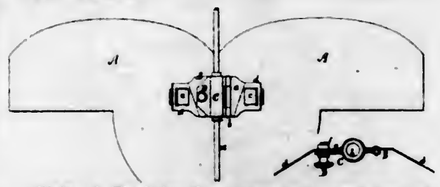
6. The combination of the pin *d*, plate *b*, yoke D, disks A, and collars B B, substantially as described.

254,521. MOLD FOR CASTING CAR-WHEELS. LUCIUS W. WASHBURN, Boston, Mass. Filed Jan. 9, 1882. (No model.)



Claim.—The combination, with the base A and cope G of the mold, of the stop-ring consisting of the horizontal flange B and internal incline faces F and C, united by the horizontal face or shoulder D, all being formed of one continuous piece of metal, substantially as shown and described, as and for the purposes set forth.

254,522. SUPPORTER FOR ELECTRIC-LIGHT REFLECTORS. WILLIAM WHEELER, Concord, Mass., assignor to the Wheeler Reflector Company, of Boston, Massachusetts. Filed Dec. 8, 1881. (No model.)

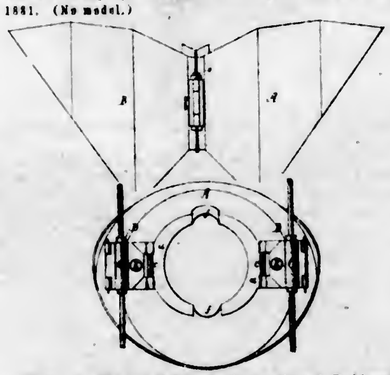


Claim.—1. The light-reflector supporter or attachment substantially as set forth, consisting of the recessed plate, and hinged clamp, and its set-screw, and provided with an insulator, all combined and arranged in the manner and to operate essentially as shown and described.

2. The light-reflector supporter as set forth, having wings, each being provided with an opening, *g*, and an elastic tongue, *h*, arranged to operate therein substantially and for use as explained.

3. The light-reflector A, provided with the clasps *e e*, in combination with the supporter and insulator-carrier, substantially as described, having its wings provided with openings *g*, and elastic tongues *h*, to engage with such clasps, as set forth.

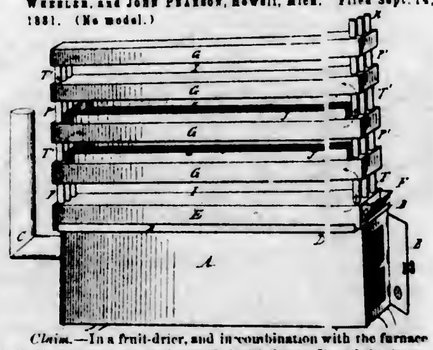
254,523. ELECTRIC-LIGHT REFLECTOR AND ITS SUPPORT. WILLIAM WHEELER, Concord, Mass., assignor to the Wheeler Reflector Company, of Boston, Massachusetts. Filed Dec. 8, 1881. (No model.)



Claim.—1. The two light-reflecting sections A B, hinged to each other, and provided with ears and clamps for holding insulating-tubes and confining them to rods, all being substantially as set forth.

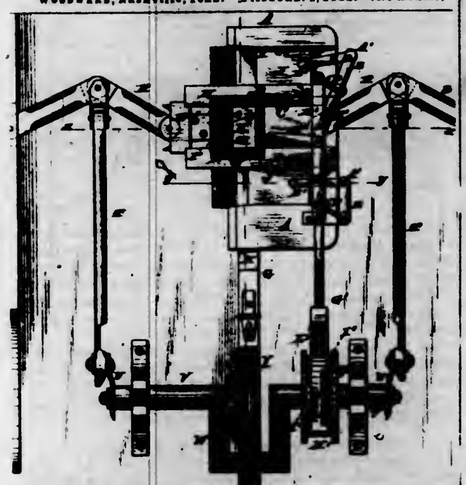
2. A reflector provided with laterally-projecting ears and with clamps hinged thereto and furnished with screws, all being substantially and to operate as and for the purpose set forth.

254,524. FRUIT-DRIER. LESLIE E. WOODRUFF, HARRY P. WHEELER, and JOHN PEARSON, Howell, Mich. Filed Sept. 14, 1881. (No model.)



Claim.—In a fruit-drier, and in combination with the furnace A, having an open top, and provided with flanges D, and the water-receptacle E, provided with a trough, F, and perforations leading into said trough, the parallel steam-boxes G, supported at each end by alternate steam-pipes T and posts P, arranged in superposed vertical series, and the drawers J, having perforated bottoms, and adapted to rest on the steam-boxes between the pipes T and posts P, as and for the purpose specified.

254,525. BRICK-MACHINE. WILLIAM WOODWARD and ABEL B. WOODWARD, Nashville, Tenn. Filed Jan. 4, 1882. (No model.)



Claim.—1. In a brick-machine, the combination of the bench or table A, having transverse recess C, intersected at right angles by a longitudinal recess, F, the plungers E E, the slide G, having recesses H, the sliding cap-plate K, and suitable operating mechanism, substantially as set forth.

2. In a brick-machine, the combination of the bench or table A, having transverse recesses C I I, and intersecting longitudinal recess F, the plungers E E J J, the slide G, having recesses H, the sliding cap-plate K, the hopper N, and suitable operating mechanism, substantially as set forth.

3. The combination of the plungers E, connecting-rods R, levers S, shaft V, having cranks U, and the pitmen T T, having their rear ends connected adjustably to the cranks U and their front ends to the connecting-points of rods R and levers S, substantially as set forth.

4. The combination, with the plungers J J and cap-plate K, arranged as herein described, of the bell-crank levers Z Z, one of which has an arm, E', the connecting-rods B' F' D', and mechanism for imparting to the latter an intermittent reciprocating motion, substantially as set forth.

5. The combination, with the flanged disk H', having studs I' I' J' J', arranged as herein described, of the forked pitman G', the prongs of which, L', have slots K' M', substantially as and for the purpose set forth.

254,526. BEARING FOR SPINNING-SPINDLES. GEORGE H. ALLEN, Ayer, Mass. Filed Mar. 18, 1881. (No model.)

Brief.—A movable magazine is located in the well formed in the lower part of the bolster-case. The lower end of the spindle is conical or pointed, and rests and turns upon the flat surface of a plug of hardened metal in the bottom of the magazine. The said plug, which extends through the bottom of the magazine, is likewise pointed at its lower end and rests upon the plane surface of the bottom of the well. The spindle is also provided with independently-movable bushings, the whole being designed to relieve the lateral bearing of the spindle and lessen friction and wear.



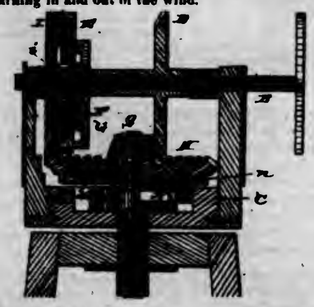
Claim.—1. The combination, with a spindle and a step for supporting the spindle, of separate and independently-movable bushings loosely encircling different portions of the spindle and constructed and adapted to be rotated thereby, and supports for retaining the movable bushings in proper adjustment, substantially as set forth.

2. The combination, with a spindle, a magazine located on the lower portion of the spindle, and a step for supporting the spindle, of independently-movable bushings located between the spindle and upper and lower ends of the magazines, substantially as set forth.

3. The combination, with a spindle bolster-case having a well formed therein, a magazine located in said well, and a spindle having its lower portion situated in the magazine, of independently-movable bushings situated between the spindle and upper and lower ends of the magazine, substantially as set forth.

254,527. WINDMILL. GEORGE H. ANDREW, Brooklyn, Wis. Filed Dec. 14, 1881. (Model.)

Brief.—By means of the gearing illustrated, motion is transmitted to the rod L from the wheel, and provision is made for the wheels turning in and out of the wind.



Claim.—1. The combination, in a windmill, of bevel-gear and the miter-gear upon the wind-wheel shaft, with the bevel-gear and the miter-gear rotating about the axis of the vertical shaft and driven in opposite directions, one of said last two mentioned gears being rigid upon the vertical shaft, and the other being loosely arranged and connected by a spur-wheel with a spur-gear upon the vertical shaft, substantially as described.

2. The combination, with the horizontal wind-wheel shaft, of the loose bevel-gear D, connected with an internally-toothed gear, E, and engaging with a bevel-gear that is rigid upon the vertical shaft, the miter-gear I, engaging with the miter-gear K, the arm upon the horizontal shaft carrying a loose spur-gear engaging the internally-toothed wind-gear E and the spur-gear *i*, the spur-gear a upon a stationary arm, N, and the gears O and Q upon the vertical shaft, said members being combined and organized for operation substantially as described.

3. The combination of the horizontal shaft B with the bevel-gear D, the bevel-gear Q upon the vertical shaft, the miter-gears I and K, the spur-gears a O, and the internal gear, M, constructed and organized for operation substantially as specified.

254,528. BOTTLE-STOPPER. CHARLES BENCHER, Meriden, Conn. Filed Jan. 23, 1882. (No model.)



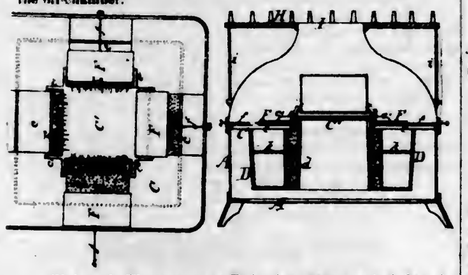
Claim.—1. The combination of a stopper having a cap-piece with vertically-slotted lugs, of a bail or yoke passing through the slotted lugs and being applied to supporting devices on the bottle-neck, and of a toggle-joint interposed between the yoke and cap-piece of the stopper, and provided with an operating and locking lever applied to one member of the toggle-joint, substantially as set forth.

2. The combination of a stopper having vertically-slotted lugs and a recess or indentation between the lugs, of a bail or yoke passing through the slotted lugs and being applied to supporting

devices on the bottle-neck, and of a toggle-joint the upper member of which is pivoted to the yoke and provided with an operating and locking lever, while the lower member is pivoted into the recess of the cap-piece, substantially as set forth.

254,529. COAL-OIL STOVE. GEORGE W. BILLINGS, Cleveland, Ohio. Filed Jan. 11, 1882. (No model.)

Brief.—The oil-chamber has a vertical perforated and removable partition, behind which is placed ashes or other porous material in lieu of wicking. The flame is regulated by slides over the oil-chamber.



Claim.—1. The square pot D, having square central flue, *d*, and provided with the perforated ash-chambers E, and the diaphragm *b*, comprising the oil-fount of an oil-stove, substantially as described.

2. The combination, with the pot D, comprising the oil-fount above described, of the plate C, having the openings *c c* over the ash-chambers E, and also having the raised central plate, C', over the flue *d*, and provided with the sliding plates F, for regulating the flames, substantially as described.

254,530. MANUFACTURE OF ARTIFICIAL STONE AND MARBLE. DAVID H. BURLESS, St. Louis, Mo. Filed Jan. 11, 1882. (No specimens.)

Claim.—1. The compound herein described for the manufacture of artificial stone or marble, in connection with sharp silicious sand or gravel, quartz-tailings, coal-screenings, and cement or other similar material, substantially as specified.

2. The process herein described of producing a variegated surface upon the blocks of artificial stone or marble, the same consisting in first pouring the composition of proper consistency into a mold or form, then placing upon the same the compound in different colors, then blending the same by stirring, and finally forming the surface by turning the partially-hardened block out upon a suitable surface, substantially as specified.

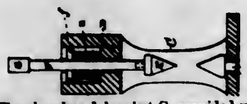
254,531. HORSESHOE. JOHN R. CANCIO, New York, N.Y. Filed Nov. 23, 1881. (No model.)



Claim.—1. The combination of a shoe, A, and detachable front and side straps, C D, with articulated fastening-bands B B, which are detachably connected to the straps, substantially as set forth.

2. The combination of the shoe A, having socket-recesses *g'*, detachable front and side straps, C D, having angular and T-shaped ends *g*, and fastening-bands B B, the latter being connected with said front strap by a transverse screw-bolt and pivot-eyes, substantially as set forth.

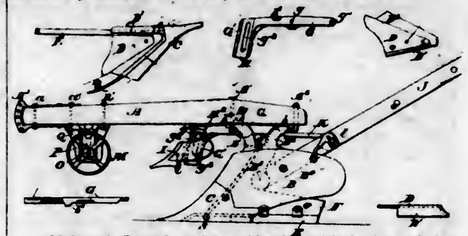
254,532. CUTTER AND PUNCH ATTACHMENT FOR ANVILS. OSMER T. CHILDS, Lookout, Cal. Filed Aug. 5, 1881. (No model.)



Claim.—The chambered bracket C, provided with the cross-head *f* and springs *e*, the removable plate D, and tool-stock F, all constructed, arranged, and operated substantially as described.

254,533. PLOW. AUGUSTUS G. CHRISTMAN, Reading, Pa. Filed June 16, 1881. (Model.)

Brief.—Mold-board cast integrally with two standards and seats for the attachment of the landside, point, special shoe, and handles. A straight jointer-bar bolted to both standards, and having a lug which engages a recess in the front standard. Construction of caster-wheel support and its connections, whereby the wheel may be adjusted vertically or at an angle to the beam.



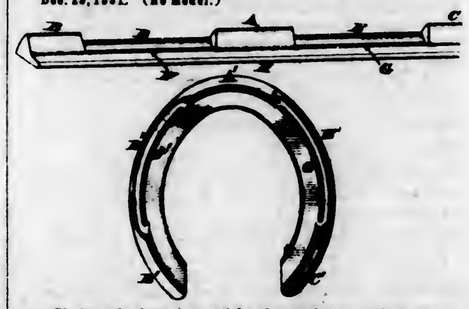
Claim.—1. In a plow, the combination, with the beam A, of the double standards B' B', cast with and forming an integral part of the mold-board B, said mold-board being provided with a seat for the point C, landside F, and special shoe D, and with a reverse face having an ear, B', and a pad, B', forming fulcrum-points for the handles J J', substantially as shown, and for the purpose set forth.

2. The combination, with the double-standard mold-board B B' B', of the straight jointer-bar G, secured by bolts *g g'* to the stands B' B', said bar being further provided with a lug, *b'*, adapted to engage a recess, *b'*, in the standard B', substantially as shown, and for the purpose specified.

3. The straight jointer-bar G, provided with jointer-head (I', in combination with the double-standard mold-board B B' B', said jointer-bar being attached to the standards B' B' by bolts *g g'*, lug *b'*, and recess *b'*, substantially as shown, and for the purpose described.

4. The caster-wheel pedestal Q, having a vertical guide-recess, Q', oblong bolt-slot *q*, fulcrum-foot Q', and adjustable foot Q', provided with circumferential slot R, in combination with the beam A, bolt B', clevis A', bolt *s'*, caster-wheel M, and sliding head P, having bolt P', and shaft O, substantially as shown, and for the purpose herein set forth.

254,534. HORSESHOE. JOHN M. CLARKE, Cincinnati, Ohio, assignor of one-half to Henry McNicoll, same place. Filed Dec. 29, 1881. (No model.)



Claim.—1. As a new article of manufacture, a horseshoe-blank bar consisting of the web or sole H, armed with a central elevation, A, and end elevations, B C, united by uninterrupted ridges D E, of less height than said elevations, continuous grooves F G being located between said ridges and the inner margin of the blank, as herein described.

2. A bent horseshoe having side calks, D' E', extending uninterruptedly from the toe-piece A' to the heel-pieces B' C', the apices of said calks being situated in a different horizontal plane to the bearing-surface of said members A' B' C', and continuous grooves F' G' being located between said side calks and the inner margin of the shoe, substantially as herein described.

254,535. METHOD OF AND MACHINE FOR ORNAMENTING RODS OF WOOD. OSBORN CLEVELAND, Jersey City, N.J., assignor to E. F. C. Young, Receiver of the Joseph Dixon Crucible Company, same place. Filed Apr. 16, 1881. (No model.)

254,535.



Claim.—1. The herein-described method of impressing designs upon rods of wood, the same consisting in rolling said rods, while subjected to a yielding pressure, across the face of a die bearing the desired design, substantially as described.

2. The combination, with the roller and die or pattern, one of which is elastically seated, of the bed D and overhanging guides 3 4, substantially as described.

254,536. PLAITING ATTACHMENT FOR SEWING-MACHINES. JACOB L. CHLDS, Newark, N.J. Filed Dec. 2, 1881. (No model.)



Claim.—1. In a plaiting attachment for sewing-machines, the blade R, carried by the swing-arm H, pivoted at K to the frame A, in combination with the cam F on the shaft B, said cam working within a slot in the said arm, and the spring L, together with the gear-wheels C and D, by which a rotary motion is transmitted from the main shaft E to the shaft B, substantially as shown and described.

2. In combination with the blade R, arm H, spring L, cam F, and frame A, the shaft B and gear-wheels C and D, substantially as and for the purpose set forth.

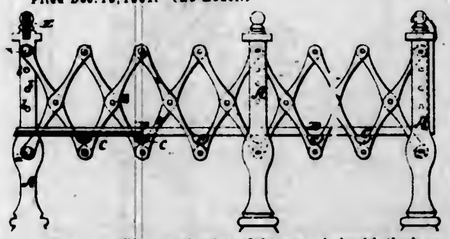
3. In combination with the blade R, arm H, spring L, frame A, and cam F, the spring G and screw I, substantially as and for the purpose set forth.

4. In combination with the blade R, arm H, spring L, frame A, and cam F, the stub P and screw O, substantially as and for the purpose named.

5. The blade R, carried by the slotted arm H, said arm being moved in one direction by the cam F on the shaft B and in the other by the spring L, in combination with the separator-blade T, secured to the frame A, substantially as set forth.

6. The combination of the blade R, arm H, spring L, frame A, cam F, and blade T and the extended end of stub P, substantially as and for the purposes specified.

254,537. TOY ELEVATED RAILROAD. JESSE A. CRANDALL, Brooklyn, assignor to Edward I. Horsman, New York, N.Y. Filed Dec. 16, 1881. (No model.)



Claim.—1. The combination of the posts A A with the lazy-tongs B B to constitute a toy elevated railroad, substantially as described.

2. The posts A A, having series of sockets or holes *b b*, in combination with the pins *a* and adjustable lazy-tongs B B, substantially as specified.

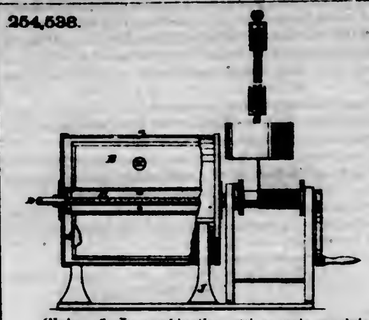
3. The combination of posts A and lazy-tongs B with the sleepers C, having notches *d*, substantially as specified.

4. The combination of the posts A, lazy-tongs B, sleepers C, and rails D, substantially as specified.

5. The combination of the posts A, lazy-tongs B, sleepers C, rails D, and cross-ties E, substantially as specified.

254,538. AIR-BLOWER. OSSIAN C. DAVIS, Racine, Wis., assignor to himself and Parker Grace, Chicago, Ill. Filed Oct. 28, 1880. (No model.)

254,538.



Claim.—1. In combination with a main receiving and discharging reservoir of an air-blower, one or more self-compressible buckets or receivers, located and operating within each main reservoir and having a continuous rotation therein, by which they are made to ascend and descend and automatically open and close, and self-acting in respect to receiving and discharging air for producing a more uniform, reliable, and efficient current, substantially as and for the purposes specified.

2. The combination, in a stationary air receiving and discharging reservoir, of a hollow revolving cylinder arranged horizontally within the reservoir, one or more automatically compressible or expansible buckets or receptacles connected and rotating with the cylinder, and an inlet pipe or tube extending into the cylinder for supplying air to the same and to the buckets or receptacles, all substantially as and for the purpose described.

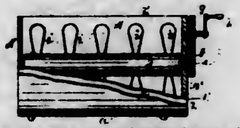
3. The main receiver or reservoir A and buckets B, constructed to be self-compressible, and having an outlet-valve, *e*, in combination with the cylinder or air-conduit C, having an inlet-valve, *f*, leading to each receiver B, and a mechanism for revolving the cylinder, whereby the receivers B will be caused to ascend and descend and to receive and discharge air, substantially as and for the purposes specified.

254,539. BARBED WIRE. ALEXANDER C. DUCKER, Highwood, Ill., assignor to the Washburn & Moen Manufacturing Company, Worcester, Mass., and Isaac L. Ellwood, De Kalb, Ill. Filed Jan. 18, 1882. (No model.)



Claim.—The combination, with the main wires A A, of the sheet-metal barb C, inserted between the main wires, and the barb-wire B, encircling the main wires and supporting the sheet-metal barb C, substantially as shown and described.

254,540. EGG AND SUGAR BEATER. CHARLES DUIS, Buffalo, N.Y. Filed Jan. 13, 1882. (No model.)



Claim.—In a baker's egg and sugar beater, the combination of the shaft *d*, having the wire whips *i i i* thereon operated by cog-wheels *f g* and crank *h*, with the box A A' A', having the rounded bottom *a* and double walls *b b'*, (and bottom,) all arranged and operating substantially as specified.

254,541. STAMP-CANCELER. C. CALVERT RIXEYON, Baltimore, Md., assignor of one-fifth to George P. Gunther, Louisville, Ky. Filed Oct. 17, 1881. (No model.)



Claim.—1. A revenue-stamp canceler consisting essentially of two plates hinged and pivoted together, and provided with pins or projections for perforating the stamp, and a locking device which prevents any movement of the upper plate with reference to the lower, except laterally, whereby the stamp is torn and defaced, as set forth.

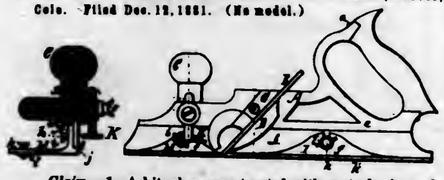
2. In a revenue-stamp canceler, a plate or disk for permanent attachment to the head of the cask, provided with an aperture to register with the head-bung, and with a series of pins and ribs, in combination with a second plate having a similar series of pins and ribs, the said plates being hinged together and pivoted at the hinge, as set forth.

3. In combination with the permanent plate, the hinged plate pivoted at the hinge and a locking device for defeating other than lateral movement of the upper plate, as set forth.

4. In combination with the stationary or permanent plate, the plate H, hinged and pivoted thereto, and having openings through which the stamp is visible, as set forth.

5. In combination with the plates hinged and pivoted together, the registering ribs *b c*, adapted to clamp the stamp and insure its perforation by the pins, as set forth.

254,542. VARIABLE BENCH-PLANE. AMOS PALEN, Denver, Colo. Filed Dec. 12, 1881. (No model.)



Claim.—1. A bit-plane constructed with a stock, A, as described, changeable cutter E, and separate changeable front and back form-plates, H I, the said form-plates being independently attached to the stock, substantially as and for the purpose herein specified.

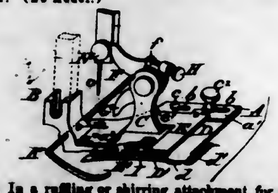
2. The stock A, constructed with a ledge or bracket, D, projecting from one side thereof, and of sufficient width to support all the different widths of cutters used, with the laterally-acting wedge G to clamp the cutters on the ledge, and with the vertical flange *f*, to one side of which the front and back form-plates are attached, substantially as and for the purpose herein specified.

3. The separate form-plates or molds H I, each constructed with the horizontally-extended body or form *h*, the vertical flange *g*, for attaching to the stock-flange *f*, and the ledge or shoulder *j*, for holding them accurately in line under the flange *f*, substantially as and for the purpose herein specified.

4. The combination, with the stock A, of the cross-bar J and gage-stop K, the former being horizontally adjustable in the stock and the latter mounted and vertically adjustable in the cross-bar, substantially as and for the purpose herein specified.

5. The auxiliary stock L and its removable cutter-holder O and mold-forms P, in combination with the main instrument, substantially as and for the purpose herein specified.

254,543. RUFFLING AND SHIRRING ATTACHMENT FOR SEWING-MACHINES. ISAAC O. FARWELL, Cresco, Iowa. Filed Dec. 30, 1881. (No model.)

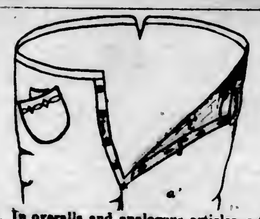


Claim.—1. In a ruffling or shirring attachment for sewing-machines, the combination, with the base-plate A, having projection *a'* and slots *b b*, of the withdrawing shield-support D, having rivet *c*, screw *c'*, and nut *c²*, substantially as shown and described.

2. In a ruffling and shirring attachment for sewing-machines, the angular sliding plate E, having projection *h*, shoulder *i*, and nut or ring *i'*, in combination with the base-plate A, levers F G, and blade E', substantially as shown and described.

3. In a ruffling and shirring attachment for sewing-machines, the combination of the base-plate A, presser-foot B, provided with gage-rod K, sliding plate E, having ruffling-blade E', actuated by cam-levers F G, adjusting-screw H, for regulating the throw of said ruffling-blade, withdrawing shield-support D, having guide *d'* and blade D', and the guide I on ruffling-blade, all constructed and arranged substantially as shown and described.

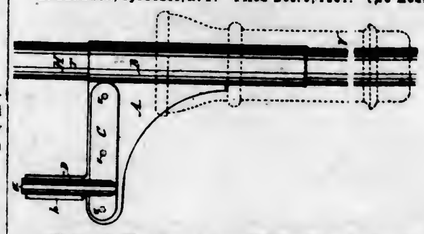
254,544. OVERALLS, PANTALOONS, &c. SIMON FEDER, Buffalo, N. Y., assignor to Augusta Feder, Lee S. Warner, Ludwig A. Warner, Edmund Jellinek, and Ludg. A. Warner, Jr., all of same place. Filed Jan. 5, 1882. (No model.)



Claim.—1. In overalls and analogous articles, a fly and the front portion of the said overalls made integral or all cut from one and the same piece, thereby forming a continuous fly and a seamless crotch, substantially as shown and described.

2. In overalls, the leg portions *a* and *a'* and the continuous strip portions *f f'*, all cut from one and the same piece of material, and adapted to be folded as shown and described, and for the purpose stated.

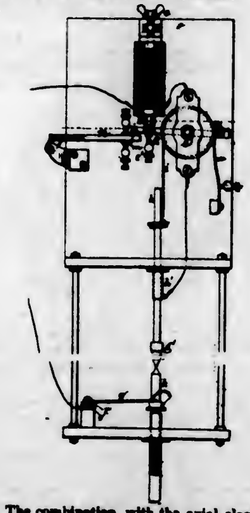
254,545. REIN-HOLDER. CHARLES H. GRANNIS and JUDSON L. THOMSON, Syracuse, N. Y. Filed Dec. 9, 1881. (No model.)



Claim.—1. The plate A, provided with suitable devices for holding the rein, and having the concavo-convex shank B inserted between the whip-socket and dash-board frame, and clamped in position by the clamp which attaches the whip-socket, substantially as described and shown.

2. In combination with the plate C, provided with the post *a*, the plate A, having the arm *b*, provided with side flanges, *c c*, and the block D, having the dovetailed end *d*, clamped between the flanges *c c*, substantially as described and shown.

254,546. REGULATOR FOR ELECTRIC LIGHTS. J. H. GURLEY, Brooklyn, N. Y. Filed Aug. 30, 1880. (Model.)



Claim.—1. The combination, with the axial electro-magnet, the lever, pawl, and feed-wheel, of an armature on the lever, and a permanent magnet, and the circuit-connections and electrodes of an electric light, substantially as set forth.

2. The combination, with a thermostat, of a block of carbon or similar material and electric-circuit connections passing through

the carbon, substantially as set forth, whereby the thermostat is heated by conduction from the carbon.

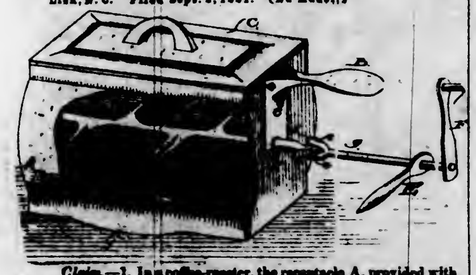
3. The combination, in an electric lamp, of two electrodes, a thermostat operated by the heat developed from the current and acting to separate the electrodes, an axial electro-magnet, a lever and pawl, a feed-wheel, and a connection from the same to one electrode for feeding the carbon, substantially as set forth.

4. The thermostat-bars *q*, carbon block *r*, and circuit plate or ring *q'* at the opposite side of the carbon block, in combination with the clamping screw or screws to bind the parts together, substantially as set forth.

5. The combination, with an electric lamp, of a resistance and a thermostat in a shunt around the lamp, and a circuit-closing device operated by the thermostat to short-circuit the current, substantially as set forth.

6. The combination, in an electric lamp, of an axial magnet, a permanent magnet, a lever, a wheel, a pawl, the carbon and carbon-holder, a connection from the latter to the wheel, and a friction device applied to the wheel, substantially as set forth.

254,547. COFFEE-ROASTER. EPHRAIM A. HARVEGAL, Big Lick, N. C. Filed Sept. 6, 1881. (No model.)



Claim.—1. In a coffee-roaster, the receptacle A, provided with the flanges S S and the slot P, in combination with a plate, *i*, cast integral with the handle S and fastened to the receptacle over the slot P, substantially as set forth.

2. The coffee-roaster A and its stirrer-shaft D, provided with a projecting end, *b*, and legs *c c*, in combination with shaft *g*, provided with the twisted prongs *f f*, holding-support E, and crank F, all constructed, arranged, and operated as set forth.

254,548. IRON BED. AUGUSTE HERBET, Paris, France. Filed Mar. 16, 1881. (No model.) Patented in France Aug. 16, 1880.

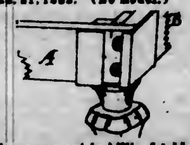


Claim.—1. A mattress or elastic frame composed of spring-plates, as C D, suitably connected together, and provided with means for suspending it to allow its expansion or contraction, substantially as described.

2. The combination, in a cot-bed, of the spring-plates C D, connected together by end bands, F, with trestles A B, arm *b*, connecting-arm *c*, and pivot *a*, substantially as described.

3. The combination, in a cot-bed, of a trestle, as B, provided with a seat, P, and table T, said table being capable of vertical adjustment, substantially as described.

254,549. BILLIARD-TABLE. RUDOLPH HERMAN, Cleveland, Ohio. Filed Jan. 21, 1882. (No model.)



Claim.—The improvement in billiard-tables consisting of the side rail, A, having the holes *a* and nuts *a'*, and provided with the block *d'*, and half of plate C, the end rail, B, having bolt-holes *a*, block *d'*, pin *b*, and half-plate C, and the leg having screw D and nut *d*, all constructed and combined as shown and described.

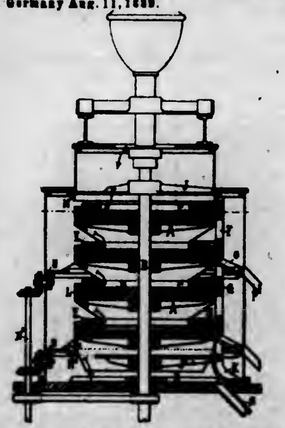
254,550. PROCESS OF DYEING COLORS ON TEXTILE FABRICS. THOMAS HOLLIDAY and ROBERT HOLLIDAY, Huddersfield, County of York, England. Filed Aug. 30, 1881. (No specimens.) Patented in England July 9, 1880.

Claim.—1. The direct production of the within-described azo colors upon cotton or other textile fibers by the action of naphthols upon diazo-azo compounds of benzole or its equivalent, substantially as described.

2. The within-described process for forming the within-described azo color directly in or upon a textile fiber, yarn, or cloth by impregnating the same with a solution of naphthol or naphthols and with a solution of a diazo-azo compound, substantially as described.

3. The within-described process for the direct production of the within-described azo color on cotton or other fiber by the action of beta-naphthol on the diazo compounds of amidoazo-benzole, or on combinations or mixtures of them, substantially as described.

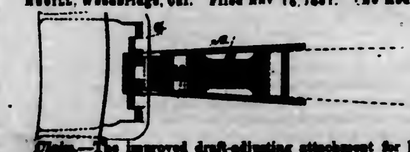
254,551. GRAIN-MILL. LOUIS HOFFMANN, Grunbach, Wurtemberg, Germany. Filed Dec. 28, 1881. (No model.) Patented in Germany Aug. 14, 1880.



Claim.—1. In a mill for reducing grain to flour by a series of grindings and separations at one continuous operation, the combination, substantially as hereinbefore specified, of a vertical power-shaft carrying a series of horizontal disks, a series of rotary grinding-rings carried concentrically by said disks, a like series of non-rotary grinding-rings supported adjustably above the former, wire cages surrounding the respective rings to permit the flour produced at each grinding to escape from the residue of the grain by centrifugal force, means for conducting said residue downward for the succeeding grindings and final discharge, and means for collecting and carrying off the flour from outside each of said wire cages, for the purposes set forth.

2. The annular tables N and means for rotating the same, in combination with stationary scrapers O and means for receiving and carrying off the removed flour, substantially as hereinbefore specified, for the purpose set forth.

254,552. DRAFT-ADJUSTING DEVICE FOR HARNESS. JAS. HOGILL, Woodbridge, Cal. Filed Nov 18, 1881. (No model.)

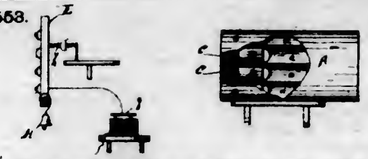


Claim.—The improved draft-adjusting attachment for harness, consisting of the box A, containing the spring-actuated block B, in combination with the notched or corrugated bar C, secured to the hames and passing through an opening in the front of the box A, substantially as and for the purpose herein described.

254,553. AUTOMATIC FIRE-ALARM. ISTVAN KITONS, Cincinnati, Ohio. Filed Dec. 13, 1881. (No model.)

Claim.—1. In an automatic fire-alarm, a chambered gun provided with cartridges held retracted by springs compressed by fusible keys, in combination with a target provided with detonating-nipples, substantially as described.

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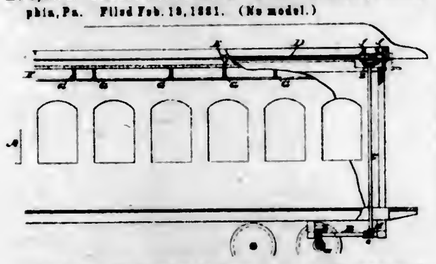


2. In an automatic fire-alarm operated by melting of fusible connections, the target E, having fulminating nipples *e*, in combination with a sounding alarm, substantially as described.

3. In an automatic fire-alarm, the chambered gun A, provided with retracted ejectible cartridge B and spring C, anchored in fusible keys, substantially as described.

4. An operating mechanism for fire-alarms, having a series of fusible connections composed of substances which melt at different degrees of temperature, whereby a succession of alarms is given, as and for the purpose intended, substantially as described.

254,554. STATION-INDICATOR. DANIEL H. KLOTZ, Philadelphia, Pa. Filed Feb. 10, 1881. (No model.)



Claim.—1. In a station-indicator, the index E, conveyer D, and shaft C, in combination with the reversing-wheels *f*, connected to each other by the sliding sleeve *f'*, the gear-wheel *e*, and suitable gearing, whereby the motion of the driving-wheel is transferred to said shaft C, substantially as and for the purpose set forth.

2. The index, conveyer, and sign-board frame, in combination with the gear-wheel *e*, shaft C, shaft C'', and removable timing-wheels C' C'', and with the driving-wheel and gearing, substantially as and for the purpose set forth.

3. In a station-indicator, the index E, conveyer D, sign-board frame F, having movable name-blocks G, shaft C, the removable timing-wheels C' C'', and the driving-wheel and connecting-gearing, combined and operating substantially as and for the purpose set forth.

254,555. SULKY-PLOW. CHARLES E. KENDALL, Moline, Ill., assignor of two-thirds to the Moline Plow Company, same place. Filed Jan. 3, 1882. (No model.)

Brief.—The locking-bolt of the main lever has two slotted connecting-rods engaging one on each side of the pivotal point of the right-angled finger lever or latch. When this latch is moved outward the bolt is withdrawn from the rack and the pawl thrown forward to engage the wheel-ratchet, causing the team to raise the plow. If the latch is pressed inward, only the locking-bolt is withdrawn and the hand-lever used.



Claim.—1. In a plow, the combination, with the hand-lever, of a pawl, a locking device for the lever, and a finger-lever attached to the hand-lever and connected with the pawl and locking devices, substantially as described, so that upon being moved in one direction the finger-lever operates the locking device only, and upon being moved in the opposite direction it operates both the locking device and the pawl.

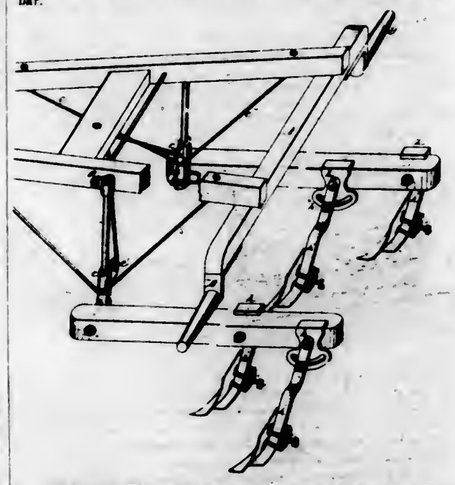
2. In combination with the hand-lever, its locking device and pawl, the pivoted finger-lever connected at one end with the pawl and at both ends with the locking device, substantially as described, whereby the finger-lever is adapted to operate the pawl alone or both the pawl and the locking device, according as it is moved in one direction or the other.

3. In combination with the hand-lever, a finger-lever adapted to swing in opposite directions from its normal position, a locking device for the lever, a lifting-pawl attached to the lever, a connection, substantially such as described, extending from the finger-lever to the pawl, and double connection from the finger-lever to the locking device.

4. In combination with the stationary rack-bar, the hand-lever, its pawl, the locking device mounted upon the lever and engaging with the rack-bar, the central pivoted finger, the lever, the rod *b*, and the slotted rods *c d*.

254,556. CULTIVATOR. WILLIAM A. KNOWLTON, Rockford, Ill. Filed Dec. 15, 1881. (No model.)

Brief.—A socket on the pendant having at one side a tubular stud-journal, which passes through the drag-bar, and a hook-bolt clasps the grooved pendant and is passed the stud and drag-bar.



Claim.—1. The combination, with the main frame of a cultivator, of pendant E, having a suitable connection therewith, the truss-braces *c''*, connecting its dependent portion with the tongue-beam both in front and rear of said pendant, the collar *c*, and brace *c''*, said parts being constructed and arranged substantially as described.

2. The combination, with a pendant provided with an annular groove, of a socket to receive the pendant and a bolt to engage the annular groove in the pendant, said bolt also serving to secure the shovel-beam to the socket-piece, said parts being arranged and operating substantially as described.

3. The combination, with the pendant and with the socket provided with a lateral tubular stud-journal, of a shovel-beam journaled on the stud-journal and a bolt to connect the parts, substantially as and for the purpose hereinbefore set forth.

4. The combination, substantially as hereinbefore set forth, of the shovel, the skeleton-socket fixed to the shovel, the grooved or slotted screw-nut and set-screw, and the shovel-standard, the several parts constructed and operating substantially as and for the purpose hereinbefore set forth.

254,557. CULTIVATOR. WILLIAM A. KNOWLTON, Rockford, Ill. Filed Dec. 17, 1881. (No model.)

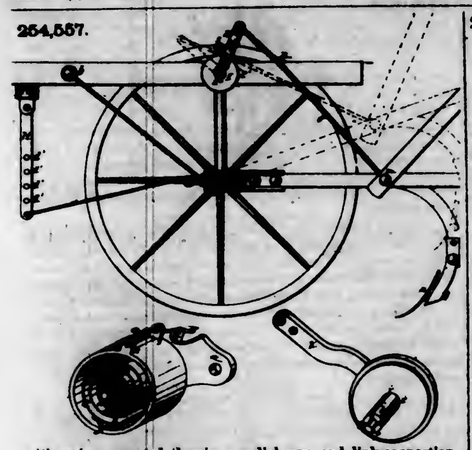
Brief.—A coiled or volute spring in a drum upon the arch. One end of the spring is secured to the drum and the other to a slitted stud upon the head-piece, both of which turn, allowing the spring to exert a lifting force upon the drag-bars through an arm rigid upon the drum-head and a connecting-rod. The device supports the drag-bars by a pin passed over the rod and through the ears.

Claim.—1. The combination, with the mounted frame of a cultivator and the shovel-beams having a suitable connection therewith, of the volute spring provided with the cap I and radial arm *h*, and link-connection *e*, substantially as and for the purpose described.

2. The combination, with the volute spring mounted upon the supporting-frame of a cultivator and a supporting link-connection with the shovel-beams, of the uprising-ears or other equivalent, to receive the supporting-link when the shovel-beams are elevated, substantially as and for the purpose hereinbefore set forth.

3. The combination, substantially as herein described, of the axle, the tongue-beams, and the herein-described spring-support

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with spring mounted thereon, a radial arm, and link-connection with the shovel-beams, substantially as and for the purpose hereinbefore set forth.

4. The combination, substantially as hereinbefore set forth, with the cultivator-frame, drag-bar, and connecting-rod, of the drum-like portion of the spring-case, a removable cap with radial arms attached, and a volute spring, the said parts being constructed and arranged substantially as described.

5. The herein-described spring-case, consisting of the drum-like portion fitted to engage the outer end portion of the spring, and provided with an axial shaft, a cap provided with an axial tubular shaft to receive the axial shaft of the drum-like portion of the case, and fitted to engage the inner end of the spring, substantially as and for the purpose hereinbefore set forth.

254,558. SULKY-PLOW. AUGUST LINDGREN, Moline, Ill., assignor of two-thirds to the Moline Plow Company, same place. Filed Jan. 18, 1882. (No model.)

Brief.—Devices whereby the pivotal point of the finger-lever is changed as the said lever is moved in opposite directions. When it is drawn toward the main lever it will only unlock and allow the use of the hand-lever; but if pushed away from the main lever it will both unlock it and engage the pawl with the wheel-ratchet, causing the draft to lift the plow.



Claim.—1. In combination with the hand-lever, the arm *b*, pivoted thereto, and the finger-lever *d*, pivoted to said arm, substantially as described and shown.

2. In combination with the hand-lever, the arm pivoted thereto, and the finger-lever pivoted to the arm, connecting devices, substantially such as shown, extending to the pawl, and the locking device.

3. In a sulky-plow, the combination, with the rack-bar and the ratchet-wheel or equivalent lifting device, of a hand-lever, the arm pivoted to said lever, the finger-levers pivoted to the arm, and the two rods extending from the finger-lever to the pawl, and the locking device, substantially as shown.

4. In a sulky-plow, the combination of the hand-lever, its locking device, a pawl, a finger-lever mounted upon the hand-lever, and arranged, substantially as described, to swing upon different centers, according as it is moved to one side or the other of its normal position.

5. The combination of the hand-lever, its pawl, and a locking device, the pivoted arm, the finger-lever pivoted to said arm, the connecting-rods, and a spring, substantially as described and shown.

6. In combination with a hand-lever and two co-operating rods, a finger-lever pivoted to the hand-lever, and arranged to swing from different centers, according as it is moved to one side or the other of its normal position, substantially as described and shown.

254,559. WIRE FERRULE. HENRY O. LOTHROP, Boston, Mass., assignor to himself and William H. Lothrop, same place. Filed Nov. 21, 1881. (No model.)



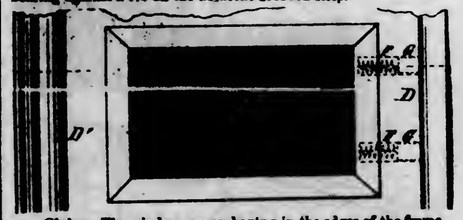
Claim.—As an improved article of manufacture, a ferrule made of wire wound spirally on a cylinder, and having the coils covered and connected by solder, and subsequently with the solder expanded, as described, so as to cause the ferrule to taper between its ends, as set forth.

254,560. FIRE-EXTINGUISHING COMPOUND. MICHAEL MAYNE, Jersey City, N. J., assignor to himself and Gustav Stoup, same place. Filed Dec. 22, 1881. (No specimens.)

Claim.—A fire-extinguishing compound made by the direct mixture of soda, alum, borax, and potash with liquid water-glass, in or about the proportions set forth, to form a solid cake, readily dissolvable in water, substantially as specified.

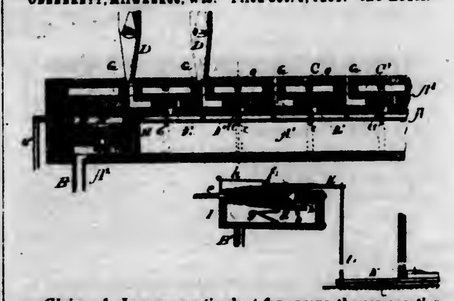
254,561. WINDOW-SCREEN. SILAS HEAD, Newark, N. J. Filed Apr. 20, 1881. (No model.)

Brief.—A grooved frame is fitted to grooved side strips having overlapping flanges, and has spring-blocks in one of its grooves bearing against a rib on the adjacent grooved strip.



Claim.—The window-screen having in the edges of the frame the grooves and in one of said grooves the contact-sections G, actuated by the spiral springs F, in combination with the detachable strips D D', having the ribs H and flange-stops K, substantially as and for the purpose specified.

254,562. PNEUMATIC CHEST FOR PIPE-ORGANS. PHILIP ODENBRETT, Milwaukee, Wis. Filed Oct. 4, 1881. (No model.)



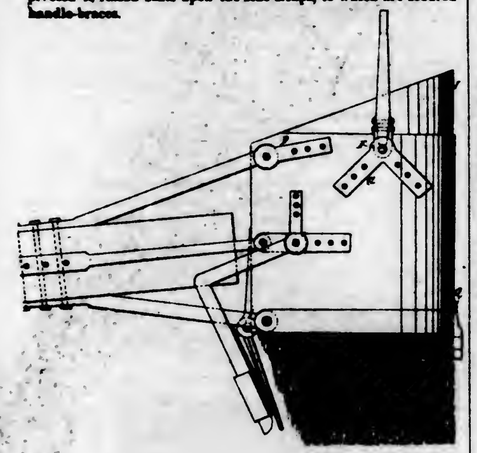
Claim.—1. In a pneumatic chest for organs, the combination of the main air-chambers A', pallet-chests A^2, having air-passages *a* G, upper air-chambers C', key-pallets E, arranged above the air-passages *a*, pallet-covers *d'*, top board, C, and frame having air-passages H and *e*, all arranged as shown and described, and for the purpose set forth.

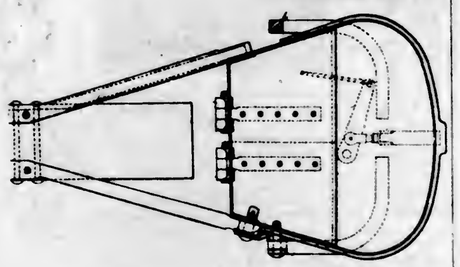
2. In a pneumatic chest for organs, the combination of the auxiliary air-chamber A^2, having upper air-chamber, *d''*, step-pallet E', air-pipe *d'*, wind-trunk B, and main air-chamber A', connected to the auxiliary air-chamber by the air-passage H, all arranged as shown and described, and for the purpose set forth.

3. The pneumatic chest for organs described, consisting of the main air-chambers A', auxiliary air-chambers A^2, upper air-chambers, C' *d''*, pallet-chests A^2, pallets E E', with flexible air-tight covers and guides, top board, C, and frame, with air-passages *a*, G, *e*, *d'*, H, and B, all combined and operating as shown and described, and for the purpose set forth.

254,563. DREDGE-DIPPER. RALPH R. GOSSON, Troy, assignor to Gosson & MacNaughton, Albany, N. Y. Filed Dec 12, 1881. (No model.)

Brief.—A two-part dipper-bottom, the lower front section secured by an adjustable catch and being pivoted to the opposite sides of the dipper, the other or top section being capable of swinging in as well as out, and when hooked resting against the upper edge of the lower section. The arms of the bottom section are pivoted to raised seats upon the side straps, to which are secured handle-braces.





Claim.—1. In a dipper of the character herein set forth, the door or bottom composed of two independently-hinged sections made to swing or open in the same direction, the hinges for the front section being located on opposite sides of the dipper, substantially as shown and described.

2. In a dipper of the character herein set forth, the door or bottom composed of two hinged sections, one supported in place by a suitable latch, the free end of the other supported upon the latched section, and the latched section hinged upon opposite sides of the dipper, substantially as shown and described.

3. In combination with a dipper of the character herein set forth, the two-part door or bottom, one section of which is arranged to swing inwardly as well as outwardly, and the other section hinged upon opposite walls of the dipper, substantially as and for the purposes set forth.

4. In combination with the dipper door or bottom, the latch, the operating-lever, and the adjustable coupling-bar uniting the two, substantially as shown and described.

5. In combination with the dipper having flaring side walls and side bars or braces for connecting it with the handle, the hinge-strap provided with raised seat and perforated for the reception of the bolt, the same being arranged substantially as shown, so as to allow the hinge-arms to swing outside of the side bars or braces, for the purposes set forth.

6. In combination with the dipper, the hinged door composed of two parts, one part hinged upon the rear of the dipper-shell and the other part hinged upon opposite sides of said shell at points removed from the bottom and back, substantially as shown and described.

254,564. SELF-GENERATING VAPOR-BURNER. WM. P. PATTON, Harrisburg, Pa., assignor of three-eighths to David Luther Jauss, same place. Filed Jan. 27, 1882. (No model.)

Claim.—1. The combination of the vapor-gas-generating

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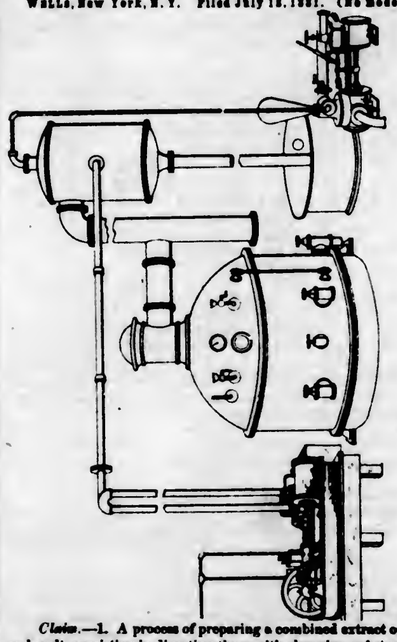


chamber A, thin-slitted burner-tip J, heat-deflecting cone O, and feed-screw E, substantially as is herein set forth, and for the purpose specified.

2. The combination of the gas-generating chamber A, in which carbon vapor or gas is evolved by heat unmixed with air, with the thin-slitted burner-tip J, hot-air jacket L, heat-deflecting cone O, and feed-screw E, the whole being constructed and operating substantially as is herein shown, and for the purpose set forth.

3. The combination of the carbon-vapor-gas-generating chamber A, heat-deflecting cone O, hot-air jacket L, burner-tip J, feed-screw E, charging-valve G, and receiving-cup F, the whole being made and operating substantially in the manner and for the purpose specified.

254,565. BREWING. SAMUEL R. PERCY and WALTER S. WELLS, New York, N. Y. Filed July 18, 1881. (No model.)



Claim.—1. A process of preparing a combined extract of hops and malt, consisting in digesting them with glycerine, substantially as described.

2. A process of preparing a combined extract of hops and malt, consisting in digesting them with glycerine and alcohol, as described.

3. A process of preparing a combined extract of hops and malt, consisting in digesting them with glycerine, alcohol, and an alkali, as described.

4. A process of preparing a combined extract of hops and malt, consisting in digesting them with glycerine and alcohol, substantially in the proportions of one gallon each of glycerine and alcohol to one hundred pounds of combined hops and malt.

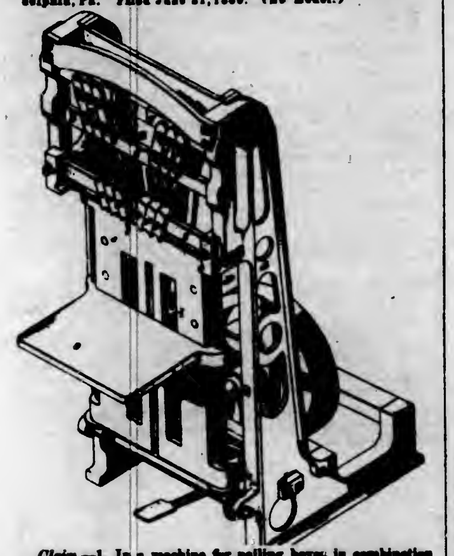
5. A process of preparing a combined extract of hops and malt, consisting in digesting them with glycerine, alcohol, and an alkali, substantially in the proportion of one gallon each of glycerine and alcohol and one pound of alkali to one hundred pounds of combined hops and malt.

6. A process of preparing a combined extract of hops and malt, consisting in digesting them with alcohol and glycerine, the alcohol and glycerine being used in the proportion of one gallon each of glycerine and alcohol to one hundred pounds of combined

hops and malt, and in evaporating the products of digestion with a saccharine substance in the proportion of one gallon, or its weight equivalent thereof, to one hundred pounds of combined hops and malt, substantially as set forth.

7. A process of preparing a combined extract of hops and malt, consisting in digesting them with alcohol, glycerine, and an alkali, the alcohol, glycerine, and alkali being used in the proportions of one gallon each of glycerine and alcohol and one pound of alkali to one hundred pounds of combined hops and malt, and in evaporating the products of digestion with a saccharine substance in the proportion of one gallon, or the weight equivalent thereof, to one hundred pounds of hops and malt, substantially as set forth.

254,566. NAILING-MACHINE. GEORGE H. PERKINS, Philadelphia, Pa. Filed June 21, 1880. (No model.)

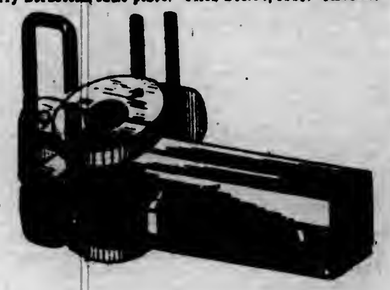


Claim.—1. In a machine for nailing boxes, in combination with a series of separately and angularly adjustable nail-driving plungers adapted to be simultaneously operated in whatever positions they have been placed, a corresponding series of separately and angularly adjustable nail-holders, each provided with separable jaws constituting their nail-emerging orifices, and each adapted to assume and to be operative when they have assumed angles correspondent with those of the plungers, substantially as set forth.

2. In a machine for nailing boxes, a series of independent and angularly adjustable nail holders, each provided with a pair of separable jaws to constitute the nail-emerging orifice, substantially as described.

3. In a machine for nailing boxes, the combination of a fixed cross-bar or kindred supporting device in the frame-work, a series of separate and angularly adjustable nail-holders, and means, substantially as set forth, for connecting and adjusting said holders upon said bar.

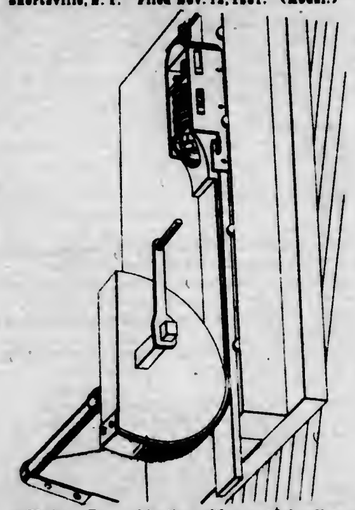
254,567. TUBING-CLAMP. JUSTUS PERRETTE, Titusville, Pa., assignor of one-half to E. C. TATT, A. A. Schiene, and Harry Bernstein, same place. Filed Dec. 10, 1881. (Model.)



Claim.—1. In a tubing-clamp, the herein-described jaws, hinged together and having forward-extending arms beveled upon their inner or adjoining front ends, so as to admit a prying-tool, as set forth.

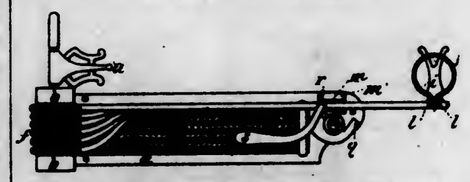
2. In a tubing-clamp having semi-cylindrical jaws, the combination, with said jaws, of the semi-cylindrical reducing-shells having flanges at their upper and lower ends, to enable the device to be used with either side uppermost, as set forth.

254,568. WOOD-BENDING MACHINE. GEORGE H. PERKINS, Shortsville, N. Y. Filed Nov. 18, 1881. (Model.)



Claim.—In combination with a wood-bending machine, a spring-follower constructed with a spring having two compressing-heads connected together and adjustable by means of one or more bolts having nuts, whereby said spring may be compressed or relaxed, as desired, and movable upon ways or guides on the bending-lever, said spring-follower also compressible by means of a stationary screw in the end of said bending-lever, all substantially as described.

254,569. MUSIC-LEAF TURNER. EDWARD B. ROBINSON, Deering, Me. Filed Dec. 12, 1881. (No model.)



Claim.—1. The double-pointed spring-pivoted catch *g r*, with its arm, helix, and standard *a*, as herein set forth.

2. In combination with the double-pointed spring-pivoted catch *g*, its arm, helix, and standard *a*, the grooved wheels *d*, arms *e*, spiral springs *f*, and socket *m*, as herein set forth.

254,570. NAIL-FEED ATTACHMENT FOR NAILING-MACHINES. FERDINAND ROSSOW, Brooklyn, N. Y. Filed Dec. 22, 1881. (No model.)

Claim.—1. The combination of the hopper A with the scatterer D and one or more feed-troughs or channels, B, between which and the hopper the scatterer is operative, substantially as described.

2. The scatterer D, having inwardly-projecting wires *h*, attached to a fixed board or frame, in combination with the feed-hopper A and feed-trough B, substantially as described.

3. The combination of the feed-wheel C and its ratchet-wheel *d* with the actuating-pawl *e*, with mechanism for vibrating said pawl, and with a spring, *i*, which will yield to the resistance of a nail clogging the feed-wheel, substantially as described.

4. The combination of the feed-wheel C and its ratchet-wheel *d* with the pawl *e*, link *f*, having pin *g*, slotted rod A, and spring *i*,

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and with mechanism, substantially as described, for imparting up-and-down motion to said rod, substantially as specified.

5. In a nail-feed machine, the laterally-reciprocating conveyer F, combined by a link and lever, n and o, with the spring H, and reciprocating bar or mechanism E, substantially as described, and for the purpose specified.

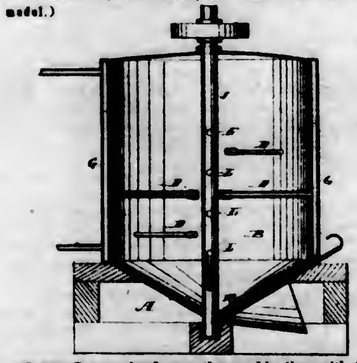
6. In a nailing-machine having an intermittently-rotating feed-wheel, the combination thereof with mechanism for turning it, and with a spring, i, which is connected to said mechanism and placed between the parts thereof, for permitting the moving mechanism to continue in its operation without moving the wheel when the latter is clogged by a nail, substantially as specified.

7. In a nail-feed machine having a notched nail-conveyer, the combination thereof with mechanism for moving it and with an interposed spring, H, which is placed between the parts of said mechanism, and will allow said mechanism to continue in its motion if the conveyer is clogged, substantially as specified.

8. In a nail-feed machine, the combination of the movable conveyer F with the stationary wiper G, said wiper being placed below the upper face of the conveyer, substantially as described.

9. The movable conveyer F, grooved on its inner face, combined with the wiper G, which is placed in said groove, substantially as described.

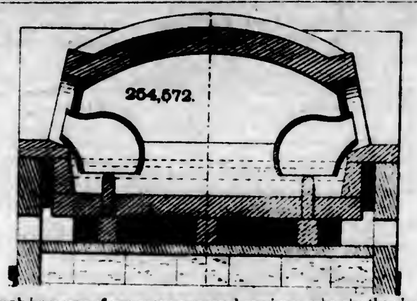
254,571. GRAIN-CLEANER. JACK H. SHACKELFORD and JOHN W. K. MCCLURE, Blue Mound, Ill. Filed June 21, 1881. (No model.)



Claim.—In a grain-cleaner, the combination, with the grain vessel or receptacle B, the central shaft, J, having stirrer-arms L, and the steam jacket or chamber G, of the hollow arms D, connecting at the open end with said steam-chamber, and having the closed end extended toward but not to the central agitator-shaft, as shown and described.

254,572. MELTING, REFINING, AND WORKING OUT GLASS. CHARLES WILLIAM SIEMENS, Westminster, County of Middlesex, England. Filed June 16, 1880. (No model.) Patented in England Nov. 21, 1873.

Claim.—1. The process of continuously melting, fining, and working out glass in a regenerative gas-furnace having a single



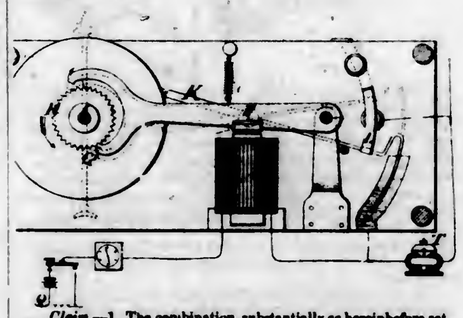
tank by means of one or more covered receivers, whereby the glass is freed from the impurities floating on the surface of the metal and protected from the action of the flame.

2. The combination, with a continuous glass-melting furnace having a single tank, of one or more covered receivers having an opening or openings at the bottom for the inflow of the glass, and an opening or openings at or near the top, where the glass is worked out, as and for the purposes described.

3. The combination, with a continuous glass-melting regenerative gas-furnace having a single compartment, of one or more receivers having an opening or openings at the bottom for the inflow of the glass, and an opening or openings at or near the top, where the glass is worked out, as and for the purposes described.

254,573. INDIVIDUAL SIGNALING APPARATUS FOR TELEPHONE-LINES. HENRY D. SIBLEY, Mill River, Mass. Filed Mar. 28, 1881. (No model.)

Brief.—A disk is rotated step by step. On the face of the disk and near the edge are projecting pins, on which rests a weighted end of a pivoted contact-lever. At each station one of the pins is nearer the center of the disk and out of line, so that when that pin, by the revolution of the disk, comes to the lever, a pause in the revolution allows the lever to fall and close the branch circuit containing the bell.



Claim.—1. The combination, substantially as hereinbefore set forth, of the alarm-bell placed in the loop of the main line, the electro-magnet, its armature, the step-by-step escapement actuated thereby, the disk rotated by said escapement, the series of pins thereon, (all concentric save one, this one being placed nearer the center of said disk,) the pivoted circuit-breaking lever controlled by said pins, and the circuit-closer carried by said lever for shunting said loop, and thus preventing the action of the alarm-bell.

2. The individual signaling apparatus for telephone-lines hereinbefore described, consisting of the combination at each station of an electric circuit of the alarm-bell placed in the loop of the main line, an electro-magnet included in the main circuit, its armature, the step-by-step escapement actuated thereby, the disk rotated by said escapement, the series of pins on each disk, (one for each station and all concentric, save the one at each station corresponding to that station, this one being situated nearer the center of said disk than the remaining ones,) the pivoted circuit-breaking lever controlled by said pins, and the circuit-closer carried by said lever for shunting said loop, and thus preventing the action of the alarm-bell.

254,574. GRAIN-SEPARATOR. ROBBINS A. SMITH and GEORGE CRABB, Okoboji, Iowa. Filed June 28, 1881. (No model.)

Claim.—1. In a grain-separator, the combination, with the

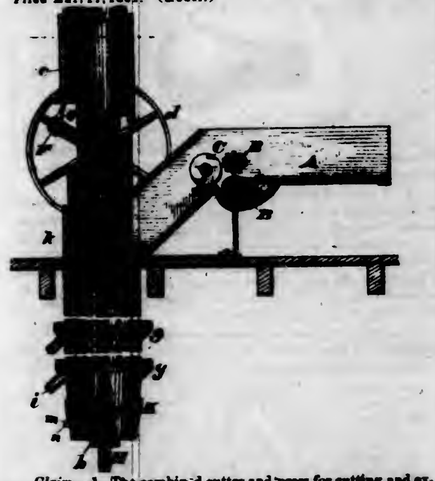
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pitted rollers, of wires i, stretched parallel to the faces of the rollers, substantially as and for the purpose set forth.

2. The combination of the inclined pitted rollers A A, wires i i, and receptacles D and E, substantially as set forth.

254,575. CANE-MILL AND PROCESS OF EXTRACTING SACCHARINE SUBSTANCES. SPENCER W. SOULE, Meridian, Miss. Filed Mar. 17, 1881. (Model.)



Claim.—1. The combined cutter and press for cutting and expressing the juices of cane or other material, consisting essentially in the combination, with a cutting device or apparatus, of a chambered press and a conduit for conveying the cut cane or other material into the upper portion of the press-chamber, the latter being perforated for the escape of the juice, and having a discharge-outlet at the lower end for the intermittent expulsion of bagasse, whereby the operation of cutting and pressing is rendered continuous, substantially as set forth.

2. In a machine for extracting the juice from cane or other material, the combination, with a perforated press-chamber, the lower end of which is constructed to be contracted or expanded in size to regulate the discharge of the cane after the juice has been expressed therefrom, and a feed-opening located in the side of the press-chamber, near its upper end, and an inclined conduit leading to said feed-opening, of a plunger of sufficient length to close the feed-opening and cut off the supply of cane to the press-chamber while pressure is being imparted to the cane, substantially as set forth.

3. In a machine for extracting the juice from cane or other material, the combination, with a plunger, of a perforated press-chamber provided with a discharge-opening constructed to be expanded or contracted to regulate the discharge of the cane after the juice has been expressed therefrom, substantially as set forth.

4. In a machine for extracting the juice from cane or other material, a perforated press-chamber provided with two or more annular troughs and with an adjustable discharge-opening, substantially as set forth.

5. In a machine for extracting the juice from cane or other material, the combination, with a perforated press-chamber having a feed-opening in its side, near its upper end, and an inclined conduit connecting with said feed-opening, of a plunger of sufficient length to open and close said feed-opening, substantially as set forth.

6. In a machine for extracting the juice from cane or other material, the combination, with a perforated press-chamber, of a plunger located in a suitable guide or extension of the press-chamber, a crank-shaft, and a link, substantially as set forth.

7. In a machine for cutting and extracting the juice from cane or other material, the combination, with a perforated press-chamber and a plunger, of a cutting device arranged to allow the cut cane or other material to be fed to the press-chamber below the plunger, substantially as set forth.

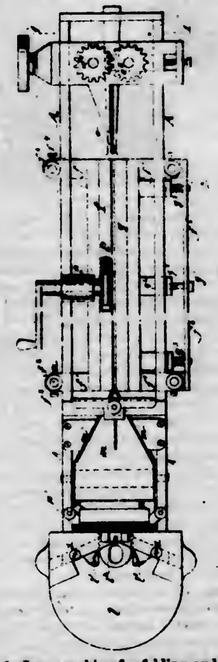
8. In a machine for extracting the juice from cane or other material, the combination, with a perforated press-chamber and a plunger, of a steam-pipe, rod, or shaft passing centrally through the same, said chamber and pipe, rod, or shaft constructed to prevent the pressed material from rising after the plunger has ascended, substantially as set forth.

9. In a machine for cutting and extracting the juice from cane or other material, the combination, with a perforated press-chamber and a plunger, of a steam or water pipe passing through the same for the purpose of introducing steam, water, or other liquid into the interior of the compressed mass while the same is under pressure, substantially as set forth.

10. In a machine for cutting and extracting the juice from cane or other material, the combination, with a perforated pressing-chamber and a steam or water pipe passing centrally through the same, of a rod secured to the lower end of the steam-pipe and a cone adapted to increase or diminish the size of the exit-opening of the chamber, substantially as set forth.

11. The process of extracting saccharine substances, consisting in compressing the material, and, while the material is under compression, forcing steam or liquid outwardly and through the mass of compressed material, substantially as set forth.

254,576. MACHINE FOR FOLDING AND PRESSING NECKTIES. MORRIS STRIPECK, New York, N.Y. Filed Apr. 7, 1880. Renewed Dec. 21, 1881. (Model.)



Claim.—1. In a machine for folding and hot-pressing neckties, the herein-described mechanism for carrying the four quarter-turn belts or bands, consisting of the two horizontal rollers b and c, with their tension-rollers b' and c', and the two vertical rollers d and e, substantially as specified.

2. In a machine for folding and hot-pressing neckties, the feed-board l, in combination with two adjustable gages, l' l', and the zinc-blade l², for the purpose of turning over the edges of the strip, as described.

3. In a machine for folding and hot-pressing neckties, the feed-board l, with its side gages and zinc-blade, in combination with the mechanism for lateral adjustment, consisting of the two descending arms l³, the screw l⁴, and the rod l⁵, substantially as and for the purpose specified.

4. In a machine for folding and hot-pressing necktie, the middle folder, consisting of an upper convex piece, *m*, and a lower concave piece, *m'*, by which the four bands, in passing through, are converted from a horizontal position to a vertical one, or quarter-turned, and the strip of material is doubled up and receives its last fold.

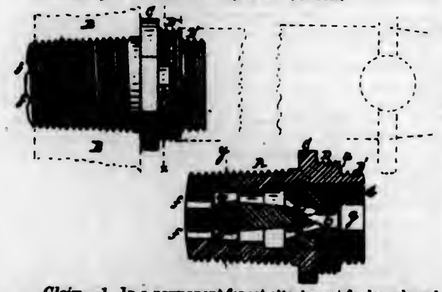
5. In a machine for folding and hot-pressing necktie, a pair of stationary heated irons, *f* and *g*, between which the bands carry through the necktie for the purpose of hot-pressing it or ironing the same, one of the irons so arranged as to give a yielding and adjustable pressure to the other one, substantially as described.

6. In a machine for folding and hot-pressing necktie, the heated irons *f g*, substantially as shown and described, horizontal arms *f'*, vertical rod *f*², frame A, eccentric P, and crank and shaft P², as and for the purpose set forth.

7. In a machine for folding and hot-pressing necktie, the discharging-blade *e*, which enters the necktie in its center as the said necktie leaves the heating-irons and gradually forces it downward and from between the bands and deposits it in a discharge-funnel, from where it leaves the machine.

8. In a machine for folding and hot-pressing necktie, two or more endless bands for carrying the necktie-strip through the operation of folding and ironing, and protecting the said necktie from stretching and from receiving a gloss by rubbing.

254,577. FAUCET ATTACHMENT. WILLIAM W. SWEENEY, Middlebury, Vt. Filed Mar. 7, 1881. (Model.)



Claim.—1. In a permanent faucet attachment for barrels and kegs, the combination, with an outer hollow shell having end perforations, of a rotating core inclosed entirely within the shell, and provided with slots or channels at each end and with attached devices controllable from the exterior of the shell for rotating the core without manipulating the faucet, which is applied to the outer end of said shell, substantially as described.

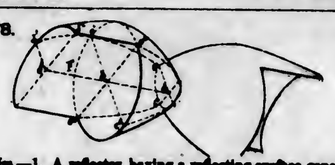
2. In a faucet attachment for barrels and kegs, the combination, with an exterior hollow shell having perforations in its rear end, of a channeled rotating core having cylindrical end portions, and inclosed within the shell, and provided with means controllable from the exterior of the shell for rotating the core independent of any movement of the faucet applied to the outer end of said shell, substantially as and for the purpose described.

3. In a faucet attachment for barrels and kegs, the combination, with an exterior hollow shell having end perforations and a rotating channeled core entirely inclosed within the shell, and provided with means to rotate it from the exterior of the shell independent of any movement of the faucet attached to the latter, of a nut screwed within the outer end of said shell, and provided with a perforation registering with the channel in the forward end of the core, substantially as described.

4. The combination, with the shell A, constructed in the manner set forth, of the core B and nut G, said core being provided with pins I I, lying in slots *i i* in the shell A, and adapted to be turned to open the communication between the faucet and keg, or to close the same, substantially in the manner and for the purpose set forth.

5. As a new article of manufacture, a permanent faucet attachment, consisting of a shell, A, having threaded surfaces, a nut, C, and two differently-sized portions, D and D', both threaded, a core, E, having the cylindrical ends F and F', channeled and slotted as shown, the perforated nut G, and the detachable cap L, the said core being provided with pins I I, lying in slots *i i* in the part D of the shell, and said shell being perforated at *f f*, all substantially as and for the purpose set forth.

254,578. REFLECTOR. WILLIAM WHEELER, Concord, assignor to the Wheeler Reflector Company, Boston, Mass. Filed Sept. 9, 1881. (No model.)



Claim.—1. A reflector having a reflecting-surface generated by the revolution about its principal axis of a curve which is constantly variable throughout the said revolution, all being substantially as described.

2. A reflector having a reflecting-surface generated by the revolution about two or more axes, successively, of a curve which is constantly variable throughout its revolution about one or more of the said axes, all being substantially as set forth.

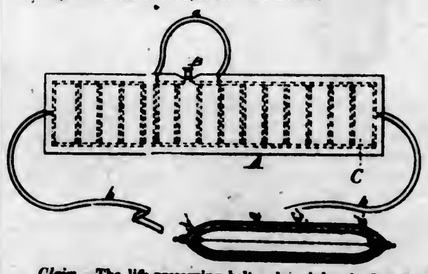
254,579. URETHRAL SYRINGE. FRANZ WILHOFT, New York, N.Y. Filed Dec. 12, 1881. (Model.)



Claim.—1. A urethral syringe consisting of a flexible bulb, a nozzle made conical to enter the urethra, and an intermediate screw-threaded neck, all of soft rubber, in one piece, and adapted to receive a cap, substantially as described.

2. A urethral syringe consisting of a flexible bulb, a conical nozzle adapted to enter the urethra, and an intermediate screw-threaded neck, all of soft rubber, in one piece, in combination with a screw-threaded cap composed of hard rubber or other suitable material, and slightly shorter in length than the combined lengths of the nozzle and neck, whereby said cap is adapted to press upon the point and close the orifice of the nozzle when in position on the syringe, substantially as described.

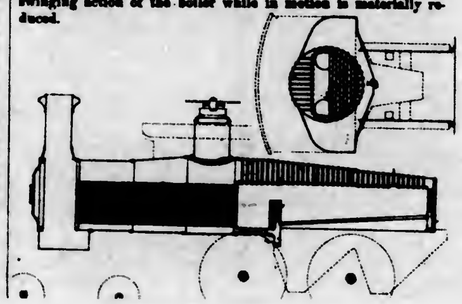
254,580. LIFE-PRESERVER. BENJAMIN J. WILLARD, Portland, Me. Filed Jan. 14, 1882. (No model.)



Claim.—The life-preserving belt or bag A herein described, having walls C, inflating-cock B, neck-string *a*, body-strings *b*, folds *c*, and air-passages *d*, the said bag or belt being shaped as set forth.

254,581. LOCOMOTIVE-BOILER. JOHN B. WOOTTEN, Philadelphia, Pa. Filed Dec. 26, 1881. (No model.)

Brief.—The fire-box extends laterally over the drivers. The cylindrical body of the boiler is below the fire-box and the top of the said drivers, lowering the weight of the boiler, by which the swinging action of the boiler while in motion is materially reduced.

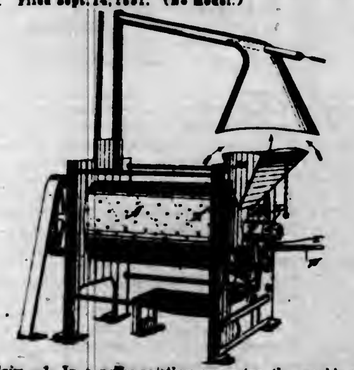


Claim.—1. In a locomotive-boiler, the combination, substantially as set forth, of a waist or barrel and a fire-box extended laterally beyond and located entirely above the bottom line of said waist.

2. In a locomotive-boiler, the combination, substantially as set forth, of a laterally-extended fire-box, a waist or barrel having its bottom line in a plane below the bottom of the fire-box, and a water-connection formed by a curved or inclined bottomed downward extension of the forward water-space of the fire-box.

3. In a locomotive-boiler, a laterally-extended fire-box having its outer forward sheet flanged outwardly for connection to the waist and extended downwardly below the waist for a sufficient distance to serve as a flange for the reception of the rivets of the bottom water-space sheet or bar, substantially as set forth.

254,582. COPPER-ROASTER. CHRISTIAN ADELB, New York, N.Y. Filed Sept. 14, 1881. (No model.)



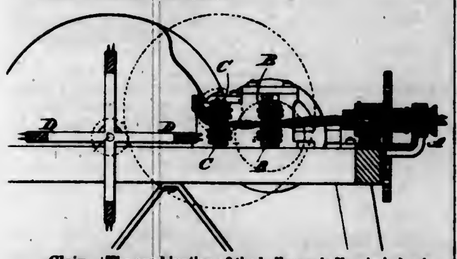
Claim.—1. In a coffee-roasting apparatus, the combination of the cylinder, its supporting-rim and journal, with the bearing or hub upon the front plate, E, as hereinbefore set forth.

2. The combination of the roasting-cylinder having a supporting-rim, C, arms C', and journal supported in a hub with the front plate, E, the outer edge of which is flanged to receive the end of the cylinder or its supporting-rim C, as hereinbefore set forth.

3. The combination of the plate E with the front plate of the furnace, provided with bearings for the cylinder and having a space around its outer edge to permit the escape of the gases and smoke, as hereinbefore set forth.

4. The plate E, outlet-opening, and door, and the link and levers T and W, all combined and arranged as and for the purposes hereinbefore set forth.

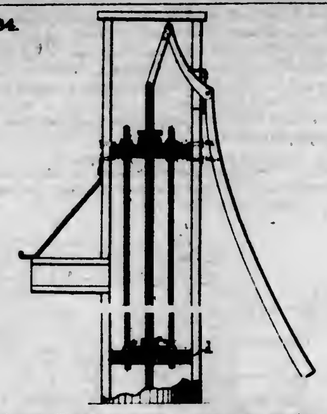
254,583. MACHINERY FOR UNTWISTING AND CARDING CURLED HORSE-HAIR. THOMAS ANCOCK, Adelaide, South Australia. Filed Jan. 5, 1882. (No model.) Patented in South Australia Mar. 1, 1880.



Claim.—The combination of the hollow spindles A A, having serrated springs *a*, the fluted feed-rolls B B, the rolls C C, revolved at greater speed than the rolls B, and the beater D, said beater consisting of arms and bars provided with small spikes at their ends, whereby the hair rope, after being untwisted and the fibers loosened, is carded and finished, as described.

254,584. PUMP. WINSLOW ALDERDICE and RICHARD B. WILLIAMS, Baltimore, Md. Filed Jan. 16, 1882. (No model.)

Brief.—The partitions are expanded in an ordinary cucumber-pump stock to form an air-chamber, and thereby change the lift into a force pump.



Claim.—1. The device herein described for attachment to an ordinary sucking or lifting pump to convert it into a forcing-pump, consisting essentially of a pair of partitions adapted to be secured within the barrel respectively above and below the spout or outlet, the said partitions being perforated for the passage of the piston-rod, and the lower one being provided with an upwardly-opening valve, as and for the purpose set forth.

2. The device herein described, for the purpose set forth, consisting of a pair of partitions adapted to close the barrel of the pump at each side of the spout, the said partitions being arranged to be expanded against the inner walls of the pump, as described.

3. The device herein described, for the purpose set forth, consisting of a pair of partitions, each of said partitions being composed of two disks having an interposed expansible gasket and means for compressing the disks of each pair together, whereby the gaskets are expanded against the inner walls of the pump, as described.

4. The device herein described, for the purpose set forth, consisting of two connected partitions arranged to be secured within the pump-barrel respectively above and below the spout, as described.

5. In a sucking and forcing pump, a pair of partitions, one on each side of the spout, in combination with mechanism, substantially as described, for expanding said partitions after insertion within the pump.

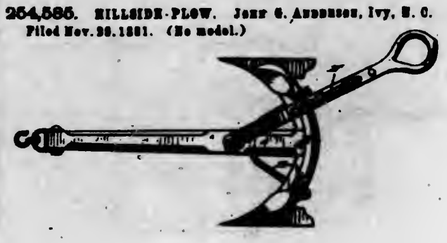
6. In a sucking and forcing pump, a pair of partitions, each consisting of a pair of disks having expansible gaskets, in combination with two or more rods having shoulders, against which the inner faces of the partitions rest, the said rods being at one end threaded for engagement with an exterior disk, and having nuts on their opposite ends, whereby upon turning the rods and nuts the disks of each pair are brought together and the gaskets are expanded, as set forth.

7. In a sucking and forcing pump, a partition above the spout, having a stuffing-box, through which the piston-rod passes, and an expansible gasket, in combination with a second partition below the spout, having an upwardly-opening valve, whereby the said partitions are adapted for the purpose set forth.

8. In combination with the partitions, each composed of a pair of disks having beveled edges, and the expansible gaskets, the shouldered rods connecting the partitions, squared at the upper and threaded at both ends, as set forth.

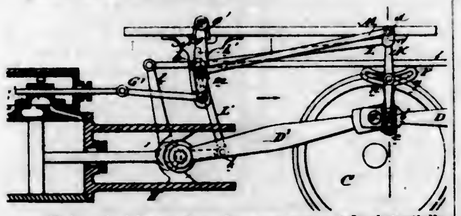
9. The combination, with the partitions connected by means of the rods E, and having respectively a valve and stuffing-box, of the bolts *m*, for securing the partitions in place, as set forth.

254,585. HILLSIDE-PLOW. JOHN G. ANDERSON, Ivy, N. C. Filed Nov. 26, 1881. (No model.)



Claim.—In a hillside-plow, the combination of the beam, the curved double standard attached to the rear end thereof, the handles pivoted to the beam, the curved rack-bars E, secured to the double standard, and the sliding latches F, adapted to engage the rack-bars and to move on the plow-handles, and having their ends extended rearwardly adjacent to the outer end of said handles, said parts being constructed and arranged to operate as and for the purposes set forth.

254,586. LOCOMOTIVE VALVE-GEAR. LEONARD ANDERSON, Painesville, Ohio, assignor to himself and Edgar Jenkins, same place. Filed July 26, 1881. (Model.)



Claim.—1. A locomotive valve-gear constructed substantially as herein shown and described, consisting of lever K, rods L M, stud h, slotted arc N, rocking-arm O, and slotted quadrant-lever P, arranged as set forth.

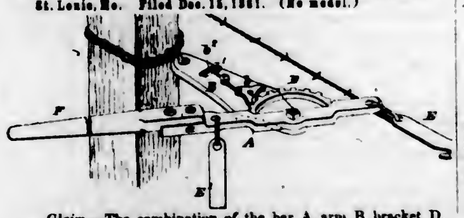
2. In a locomotive, the combination, with the parallel rod D, of the quadrant-lever P, lever K, provided with stud n and pins *d d*, rod L, carrying stud h, fixed slotted arc N, rod M, stud *m*, lug O', rocking arm O, and valve-stem and valve G² G', arranged and operated substantially as herein shown and described, whereby the admission of steam into the steam-cylinder is regulated, as set forth.

3. In a locomotive valve-gear, the combination, with the lever K, rod L, carrying stud h, and slotted arc N, of the rocking bar H', provided with cranks *k l*, connecting-rod L' I', and lever L², substantially as herein shown and described, whereby said gear may be reversed, as set forth.

4. In a locomotive valve-gear, the combination, with the parallel rod D and rods L M, of the connecting-lever K, provided with conical horns *d* and annular channels *f*, substantially as and for the purpose set forth.

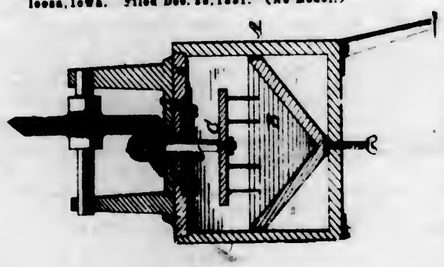
5. In a locomotive valve-gear, the combination, with the parallel rod D, of the slotted quadrant-lever P, lever K, provided with stud *n*, rod M, stud *m*, lug O', rocking arm O, and valve-stem G², substantially as herein shown and described, whereby the steam-cylinder valve is reciprocated, as set forth.

254,587. FENCE-WIRE STRETCHER. GEORGE ARROWSMITH, St. Louis, Mo. Filed Dec. 15, 1881. (No model.)



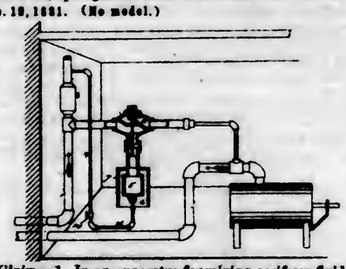
Claim.—The combination of the bar A, arm B, bracket D, pawl *b*, or its equivalent, claws E and E', and lever F, substantially as and for the purpose set forth.

254,588. WASHING-MACHINE. RANSOM G. BALDWIN, Ocaloosa, Iowa. Filed Dec. 29, 1881. (No model.)



Claim.—In a washing-machine, the combination, with the rude-box A, agitator C, and mechanism for operating the same, of the removable and adjustable funnel-shaped hopper B, substantially as and for the purpose set forth.

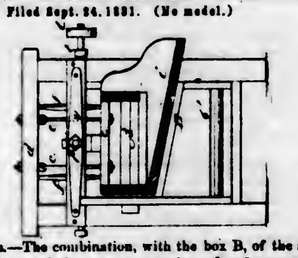
254,589. APPARATUS FOR MIXING ARRIFORM FLUID. J. F. BARNES, Springfield, Mass. Filed Mar. 26, 1881. Renewed Dec. 19, 1881. (No model.)



Claim.—1. In an apparatus for mixing aeriform fluids, a pipe through which one of the fluids passes to the mixing-pipe, provided with a valve-orifice, in combination with a valve to increase or diminish the opening of said orifice, and connected with a suitable medium susceptible of being expanded and contracted by the variable heat of a flame applied thereto, whereby the said valve is operated by the expansion and contraction of said medium, according as the heat in said flame is increased or diminished by any variation in the conditions of the fluids in the pipe after being mixed, substantially as described.

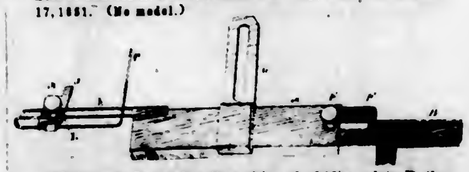
2. The combination, in an apparatus for mixing aeriform fluids, of a pipe through which one of the fluids passes to the mixing-pipe, provided with a valve-orifice, in combination with a valve to increase or diminish the opening of said orifice, and connected with a suitable medium susceptible of being expanded and contracted by the application of different degrees of heat, a vessel to contain said medium, a chamber surrounding said vessel to equalize the heat, and a burner attached to a branch from the pipe containing the mixed fluids, and adapted by its location to have the heat of its jet applied to said vessel, substantially as described.

254,590. FLAXSEED-CLEANER. GEORGE BEAL, Gilman, Iowa. Filed Sept. 24, 1881. (No model.)



Claim.—The combination, with the box B, of the suspended screen A, bars *c*, links *e*, upper cross-bars, *d*, and prop-sticks *f*, arranged substantially as shown and described.

254,591. COMBINED HEMMER AND TUCKER FOR SEWING-MACHINES. JOSEPH H. BEAN, Cincinnati, assignor of one-half to Charles M. Davis, Hamilton County, Ohio. Filed Nov. 17, 1881. (No model.)

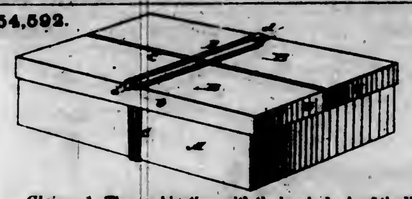


Claim.—1. In combination with tuck-folding plate B, the flanged plate A, and the hem and scroll guide H, as and for the purpose described.

2. As a combination, the tuck-guide B, flanged plate A, holdfast G, hem and scroll guide H, scroll J, guiding-tongue I, and binding-screw N, substantially as and for the purpose set forth.

254,592. PAPER AND OTHER BOXES. CHARLES BRIGGS, Toledo, Ohio. Filed Jan. 11, 1882. (Model.)

254,592.



Claim.—1. The combination, with the box-body A, of the lid-sections B B, having respectively the hooks *d d'* and the elastic band D, as and for the purpose specified.

2. A paper or other box the body of which has combined with it a slip lid or cover formed of two halves or sections arranged to meet intermediately over said body, and united or drawn together by an elastic strap or band attached to the lid-sections, and arranged over or outside of said lid and capable of detachment from either of said sections when required to uncover the box, essentially as described, and whereby said strap or band also serves as a handle for the box.

3. The combination, with the body A of the box and its two-part slip lid or cover B B, of one or more elastic connections, C, secured to the lid parts on opposite sides of the box, and uniting said lid parts or sections with the bottom or lower portion of the box, whereby the lid-sections are made self-opening, and are retained against the sides of the box when the latter is uncovered, substantially as specified.

4. The combination, with the body A of the box, of the two-part slip lid or cover B B, the elastic strap or band D, applied to said lid to hold said sections together, and to provide for their separation when required, and one or more elastic connections, C, uniting the two sections of the divided lid on opposite sides of the box with the body thereof, essentially as and for the purpose or purposes herein set forth.

254,593. RAKE. OLOF BENGTSSON, Finshyttan, Sweden. Filed Dec. 3, 1881. (No model.) Patented in Sweden Oct. 5, 1881.



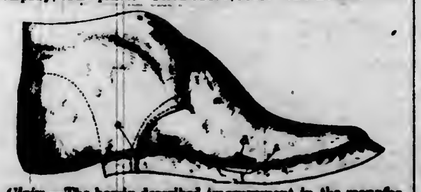
Claim.—1. A rake constructed, substantially as herein shown and described, with a metal plate provided with apertures, through which the teeth are passed, the outer longitudinal edge of this plate being bent over the upper transverse pieces of the teeth, as set forth.

2. In a rake, the combination, with the plate A, bent to form a hollow bead, E, at the outer longitudinal edge, of the teeth B, passed through apertures in the plate A, substantially as herein shown and described.

3. In a rake, the combination, with the plate A, bent to form a hollow bead, E, at the outer longitudinal edge, of the teeth B, passed through apertures in the plate A, and of the filling-pieces D, substantially as herein shown and described.

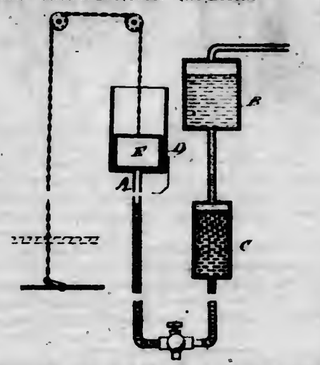
4. In a rake, the combination, with the plate A and teeth B, of the socket F, formed of two U-shaped bent strips, G, and a bent strip, J, all these parts being riveted to the plate A, substantially as herein shown and described.

254,594. METHOD OF LASTING AND UNITING THE UPPER AND SOLES OF BOOTS AND SHOES. ELI BERTRAND, Boston, Mass., assignor to the Goodyear & McKay Sewing Machine Company, same place. Filed Jan. 7, 1882. (No model.)



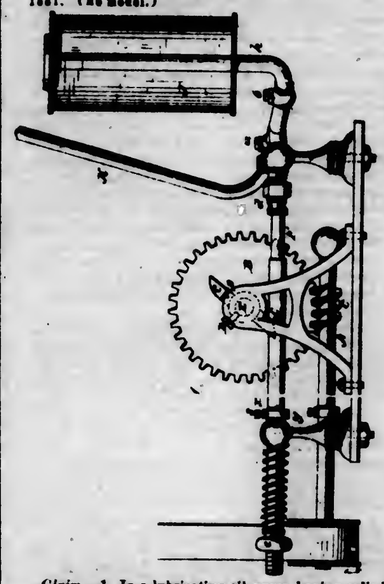
Claim.—The herein-described improvement in the manufacture of that class of boots and shoes in which the upper is turned outward and secured to the top surface of the outer sole, the same consisting in drawing the upper over the last and securing it thereto by fastenings at or near the bottom edge of the last, then turning the edge of the upper outwardly on a line with the said fastenings, and stitching such outturned upper to the top surface of the outer sole, substantially as and for the purpose set forth.

254,595. DRAFT-REGULATOR. HIPPOLYTE BIBEAU, Henderson, Minn. Filed June 3, 1881. (No model.)



Claim.—In a draft-regulator, the combination, with the reservoir D and float E, of the siphon-pipe A, connecting with the boiler by extension *a*, the mercury-reservoir C, and the condenser B, whereby a body of water is interposed between the steam and mercury, as described.

254,596. LUBRICATING-PUMP. JOHN BOWIN and WILLIAM C. BROWN, Manistee, Mich., assignors, by direct and mesne assignments, to Denville & Sleeman, same place. Filed April 2, 1881. (No model.)



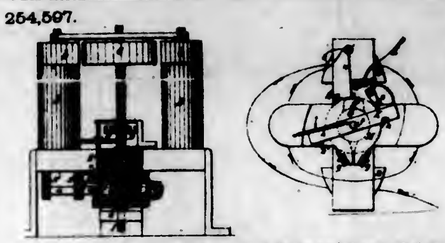
Claim.—1. In a lubricating-oil pump having cylinder *d* and piston F, the spring G, cam C, worm *e*, worm-wheel B, and shaft A, all combined for operation substantially as herein shown and described.

2. In a lubricating-oil pump having cylinder *d* and piston F, shaft A, the adjustable cam C, movable collar *s* on piston F, and adjusting-nut E.

254,597. ELECTRIC METER. CHARLES V. BOYS, Wing, near Oakham, County of Rutland, England. Filed Dec. 3, 1881. (No model.) Patented in England Oct. 18, 1881, and in France Nov. 11, 1881.

Claim.—1. In an electric meter, the combination of clock-

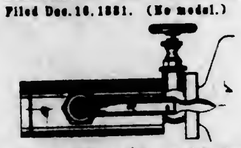
254,597.



work having an escapement governed by a pendulum or balance of magnetic metal, with an electro-magnet the poles of which are arranged to determine the movements or oscillations of the pendulum or balance, said magnet being in the electrical circuit the current through which is to be measured, substantially as and for the purpose described.

2. In an electric meter, the combination of a spring-actuated train of gears, a pendulum or balance of magnetic metal arranged between the poles of an electro-magnet, said magnet being included in the electric circuit the current through which is to be measured, and a rewinding mechanism, all substantially as shown and described.

254,598. LUBRICATOR. HENRY R. A. HOVE, Barrie, Ontario, Canada. Filed Dec. 16, 1881. (No model.)



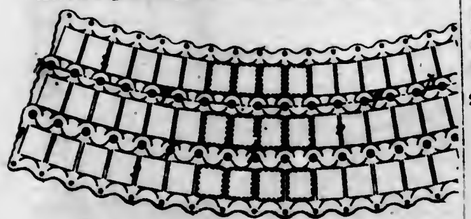
Claim.—1. In a lubricator, the combination, with the condensing-chamber and steam-pipe, of an air and gas passage leading from the upper part of the condensing-chamber to the steam-pipe above the steam-passage, and communicating with the said steam-passage at its inner end, substantially as herein shown and described, whereby the air and gas are ejected from the condenser into the steam-pipe, as set forth.

2. In a lubricator, the combination, with the condensing-chamber B, provided with the slot G and the steam-pipe D, of the connection H, provided with the steam-passage A, having the projection L on its lower part extending into the steam-pipe, and the air and gas passage J above said steam-passage and communicating therewith at its inner end, substantially as herein shown and described, whereby steam will be admitted faster than required and the air and gas thereby ejected, as set forth.

3. In a lubricator, the combination, with the condensing-chamber B, internally screw-threaded and provided with the slot G, of the apertured and externally screw-threaded plug C, substantially as and for the purpose set forth.

4. In a lubricator, the combination, with the condensing-chamber B, of the supplementary condensing-chamber X, pivoted to the side of the main chamber B, to adapt it to be swung in a horizontal position, to empty its contents into the said main chamber, substantially as herein shown and described.

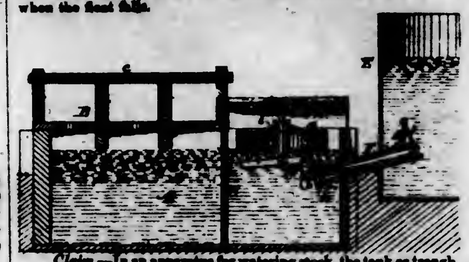
254,599. LIFE-PRESERVER. FRANCIS W. BENWELL, Westminster, England. Filed Jan. 19, 1882. (No model.) Patented in England May 10, 1881, and in France Oct. 14, 1881.



Claim.—As a new article of manufacture, buoyant devices for life-preserving garments, consisting of a series of strips of fabric or material stitched across to form pockets, inclosing rows of corks or similar buoyant material, the series of each separately-inclosed rows or strips being connected by eyelets, all substantially as and for the purpose set forth.

254,600. APPARATUS FOR WATERING STOCK. DAN DALEMAN, Chatsworth, Ill. Filed Dec. 15, 1881. (No model.)

Brief.—The operating-rod is not connected to the valve, and the latter is kept closed by the spring *f*, and is opened by said rod when the float falls.



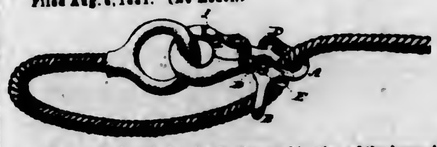
Claim.—In an apparatus for watering stock, the tank or trough A and tank E, connected thereto by pipe F, said pipe having the valve *c* and spring, in combination with the float G, lever H, and rod *h*, the latter being disconnected or independent of the valve, and constructed to operate substantially as and for the purpose set forth.

254,601. SEALING-PRESS. EDWARD J. BROOKS, East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Filed Oct. 31, 1881. (No model.)



Claim.—In a sealing-press composed principally of two main parts, E F, having lever-handles integral therewith, and a head on one of said parts containing a pair of seal-dies substantially at right angles to said handles, the combination, with said head, of a hammer attachment, *h*, formed on the lower edge of said head in line with said dies, substantially as herein specified, for the purpose set forth.

254,602. HALTER-HOOK. F. BARTON BROWN, Boston, Mass. Filed Aug. 6, 1881. (No model.)



Claim.—1. In a halter-hook, the combination of the loops A B, connected to form ears D D, with a cam, E, hung between said ears, the said cam extending from the bearing and terminating in device for engagement therewith, substantially as described.

2. The combination of the loops A B, connected to form ears D D, with a cam, E, hung between said ears, the said cam extending from the bearing and terminating in a snap-hook, substantially as described.

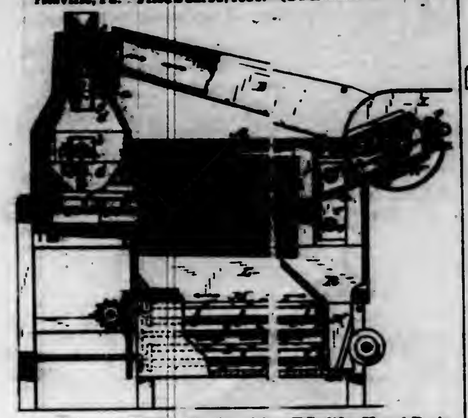
3. A snap-hook having the tongue hinged to its shank by a pivot parallel with the plane of the hook, and so that the tongue will swing in a plane at right angles to the hook, the said tongue provided with the stud *f* at the point of the tongue and on the side opposite that toward which the tongue swings, projecting from the tongue in a plane parallel with the plane in which the tongue swings, substantially as described

254,603. TENSION DEVICE FOR SEWING-MACHINES. DANIEL W. BROWN, Providence, R. I., assignor to John B. Anthony, same place. Filed May 2, 1881. (No model.)



Claim.—The intermediate or needle-bar tension device consisting of the needle-clamp bolt having a head grooved or recessed vertically and laterally, in combination with a lateral thread-pin occupying said lateral recess in said head, substantially as described.

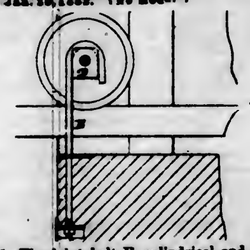
254,604. NEEDLING-PURIFIER. P. STUCKER BROWN, Gethricsville, Pa. Filed Jan. 23, 1882. (No model.)



Claim.—1. The combination of frame E I, slides K, reel B, air-conductor C, and the chest A, having openings *b l* and slides *m*, substantially as and for the purpose set forth.

2. The adjustable steel-spout consisting of the sections *c d e*, constructed as described, in combination with the conical spreader F, adapted to be adjusted vertically, as and for the purpose specified.

254,605. DOOR-HANGER. CHARLES W. BULLARD, Chicago, Ill. Filed Jan. 30, 1882. (No model.)

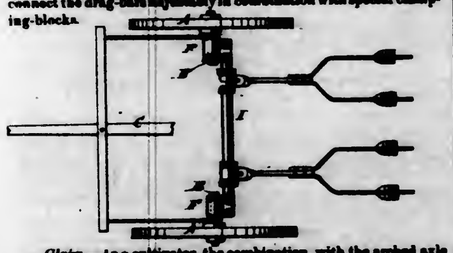


Claim.—1. The joint-bolt E, cylindrical and hooked at its upper end, in combination with the sheave C C', substantially as and for the purpose described.

2. The joint-bolt E, in combination with the box D and sheave C C', substantially as and for the purpose described.

254,606. CULTIVATOR. JOHN W. BUNCH, Commercial Point, Ohio. Filed Jan. 6, 1882. (No model.)

Brief.—A removable cross-bar to span the arch at its base to connect the drag-bars adjustably in combination with special clamping-blocks.

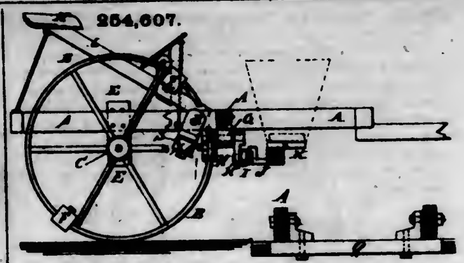


Claim.—In a cultivator, the combination, with the arched axle B, of the couplings H and the cross-bar I, substantially as herein shown and described, whereby the plow-beams can be adjusted close together for cultivating small plants, as set forth.

254,607. SEED-PLANTER. JOHN W. BUNCH, Commercial Point, Ohio. Filed Oct. 24, 1881. (No model.)

Brief.—Two-part marking-blocks, one on each wheel, being also a tripping-block, which, by means of cranks, reciprocate the pitman and seed-slide. A loosely-hung brake-bar which, by foot-lever and connections, engages the inside of the wheel-felloe.

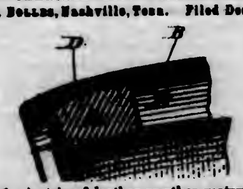
254,607.



Claim.—1. In a seed-planter, the combination, with the wheels B, of the blocks F, made in two parts, secured to each other and to the wheel-rim by set-screws, substantially as herein shown and described, whereby the hills will be marked and the seed-dropping mechanism operated, as set forth.

2. In a seed-planter, the combination, with the wheels B and the frame A, of the two-part blocks F, the cranks H, having cams H', the reciprocating-bar I, and the pitman J, having arm K, substantially as herein shown and described, whereby the revolution of the transporting-wheels will vibrate the said connecting-bar to operate the seed-dropping slide, as set forth.

254,608. CARRIAGE-TOP. ROBERT BUTTERWORTH and REUBEN S. BOLLES, Nashville, Tenn. Filed Dec. 8, 1881. (No model.)

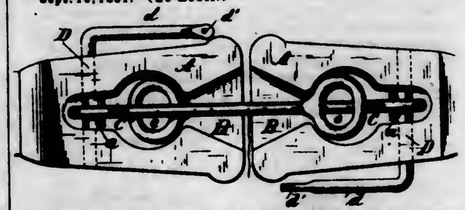


Claim.—1. A strip of leather or other material, D or D', secured to the top of a vehicle at the front or rear, substantially as and for the purpose set forth.

2. The combination of the strip D, roof-piece B, facing *c*, welt *b*, and the bow A of a vehicle-top, substantially as shown and described, and for the purpose set forth.

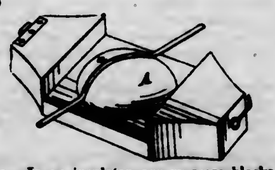
3. The herein-described improvement in the trimming of vehicle-tops, consisting in securing to the bows at front and rear a strip of leather or other material, whereby a hood is formed in line with the top or roof-piece, substantially as shown and described.

254,609. CAR-COUPLING. GEORGE CADE, Milan, Tenn. Filed Sept. 16, 1881. (No model.)



Claim.—In a car-coupler, the draw-head A, having recesses B C and slot *a'*, in combination with the link or draw-bar E *e*, and the shaft D, having the dog *a* and crank *d*, substantially as and for the purpose set forth.

254,610. INSULATOR FOR TELEGRAPH-WIRES. WILLIAM E. CAPEWELL, Philadelphia, Pa. Filed June 23, 1881. (No model.)



Claim.—In an insulator, one or more blocks, A, having a rounding surface and a concave surface, *c*, and provided with groove *a*, substantially as and for the purpose described.

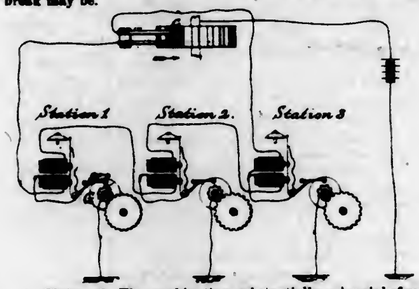
254,611. CIRCUIT FOR FIRE-ALARM TELEGRAPHS. ROBERT

4. The combination of the bracket G, the knife *a* and an adjustable knife-supporting block, F, having two slots arranged at an

254,617.

264,611. CIRCUIT FOR FIRE-ALARM TELEGRAPHS. ROBERT CARTER, New York, N. Y. Filed Nov. 21, 1881. (No model.)

Brief.—A device whereby signals are transmitted from a central station to all outlying sub-stations, even though the circuit be broken between any two of said sub-stations. Normally no circuit exists on line, but when the transmitter is set in motion the battery-current divides at the transmitter and passes by different routes to the first sub-stations at each end of the line, whereby mechanism is set in motion which automatically repeats the signal to each succeeding sub-station until all have received it, no matter where the break may be.



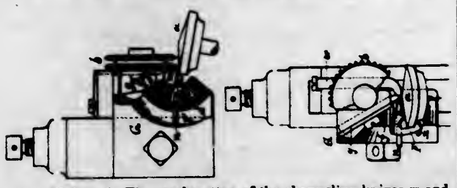
Claim.—1. The combination, substantially as hereinbefore set forth, of a battery one pole of which is electrically connected with the earth, mechanism for transmitting electrical impulses from the opposite pole of said battery to the terminals of a system of signal-boxes connected together in series, a ground-connection for each of said signal-boxes, and mechanism, substantially such as described, for automatically breaking the earth-connection of each signal-box in succession upon the operation of the same commencing at either or both ends of the system.

2. The combination, substantially as hereinbefore set forth, of an electro-magnet for operating a signal, a conductor attached to an intermediate point in the wire constituting the helices of said magnet and normally connected with the earth, and a circuit-breaker for automatically severing such connection upon the operation of the signaling mechanism.

3. The combination, substantially as hereinbefore set forth, of two or more electro-magnets for operating an equal number of signals electrically connected with each other in series, an earth-connection from the central point of the wire constituting the helices of each of said magnets, and automatic mechanism for breaking said earth-connections successively upon the operation of the corresponding signal.

4. The combination, substantially as hereinbefore set forth, of a series of electro-magnets included in the same circuit, a normally-open shunt-circuit around each of said electro-magnets, an earth-connection for each of said magnets, and mechanism for automatically breaking said earth-connection and closing said shunt-circuit upon the magnetization of said electro-magnet.

264,612. SHOE-SOLE-CHANNELING MACHINE. CYPRIEN CHABOT, Philadelphia, Pa. Filed Jan. 24, 1881. (No model.)



Claim.—1. The combination of the channeling-knives *m* and *n*, the latter of which is adjustable to different angles, the work-supporting bed occupying during the operation of the machine a fixed vertical position, and feeding devices carried by a frame capable of moving vertically as the sole varies in thickness, as set forth.

2. The combination of the bracket G, having a segmental recess, *f*, and segmental slot *i*, with the knife-carrying block F, adapted to the recess, and the confining-screw A, adapted to the slot *i*, as specified.

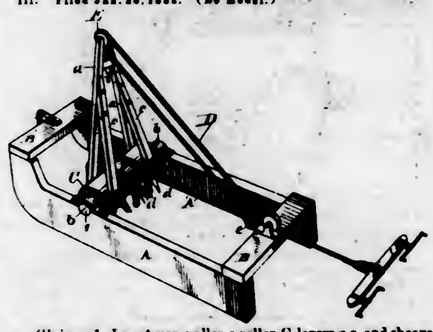
3. The combination of the bracket G, having a segmental recess, *f*, segmental slot *i*, and a segmental groove, *i'*, with the knife-carrying block F, adapted to the recess and having lugs or projections *s*, and the securing-bolt A, as set forth.

4. The combination of the bracket G, the knife *n* and an adjustable knife-carrying block, F, having two slots arranged at an angle in respect to each other, and each adapted for the reception of the knife, as specified.

5. The combination of the bracket G, the block F, adjustable thereon, and having two slots, as described, the knife *n*, the filling-piece *x*, and the clamping-plate *p*, as set forth.

6. The combination of the work supporting and feeding devices, substantially as described, with the edge-channeling knives and the spring presser-bar *w*, adapted to bear upon the upper face of the sole, adjacent to the edge thereof, and immediately in advance of the channeling-knives, as set forth.

264,613. STUMP-EXTRACTOR. JAMES D. CRESSWELL, Alvin, Ill. Filed Jan. 26, 1882. (No model.)



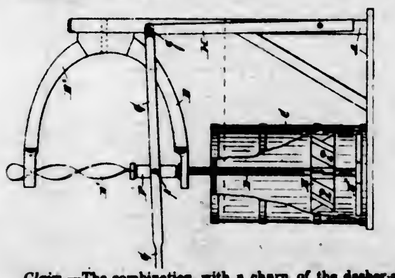
Claim.—1. In a stump-puller, a roller, C, levers *a a*, and sheave E, in combination with chains F and rope D, substantially as and for the purpose set forth.

2. The combination of the roller C, levers *a a*, braces *c c*, and sheave E, substantially as shown and described.

3. A stump-puller, substantially as set forth, having a roller, C, journaled in bearings *b b* in side pieces, A A', with levers *a a* attached thereto, and provided at their upper ends with a sheave, E, in combination with chains F and ropes, substantially as shown and described.

4. The combination of the rollers C, having trunnions *t*, side pieces, A A', rounded off in front and provided with bearings *b b*, cross-pieces B and B', levers *a a*, braces *c c*, sheave E, rope D, pulley H, and chains F, substantially as and for the purpose set forth.

264,614. CHURN. GEO. H. CLEVELAND, Oaktown, Ind. Filed Dec. 5, 1881. (No model.)

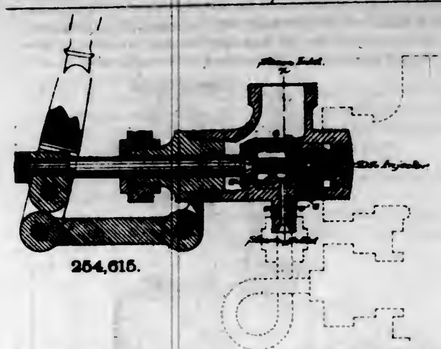


Claim.—The combination, with a churn, of the dasher-shaft composed of the dash-rod D, bearing the dashes, and the spiral rod D', and passing through bearings in the arms B B', the block F, the lever G, and link or rod H, all substantially as shown and described, and for the purposes specified.

264,615. STEAM-VALVE FOR INJECTORS. HENRY F. COLVIN, Philadelphia, Pa. Filed Oct. 4, 1881. (Model.)

Claim.—1. A steam-valve consisting of a shell having two discharge-passages and two valves connected to a common stem, one of said valves being fixed on the stem and provided with a seat and the other valve loosely connected to said stem and provided with two seats, the latter valve being surrounded by a steam-passage leading to its end seat, substantially as and for the purpose set forth.

2. The valve-stem, in combination with the lever and pivoted block, substantially as and for the purpose set forth.



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3. The shell and valve-stem, in combination with the lever, pivoted block, link, and ring, substantially as and for the purpose set forth.

264,616. ASH-SIFTER. JAMES F. GORDON, Detroit, Mich. Filed Jan. 26, 1882. (No model.)



Claim.—1. An ash-sifter consisting of a proper body provided with a partially-grated partition, and adapted to be entirely closed by suitable covers and slides, substantially as described.

2. In an ash-sifter, the combination, with the body A thereof, provided with the covers B C D, of the partition F, grating or screen G, and slide H, substantially as specified.

3. In an ash-sifter, the combination, with the body A thereof, provided with the covers B C D, of the partition F, screen G, slide H, and a bottom provided with the slide J, substantially as and for the purposes set forth.

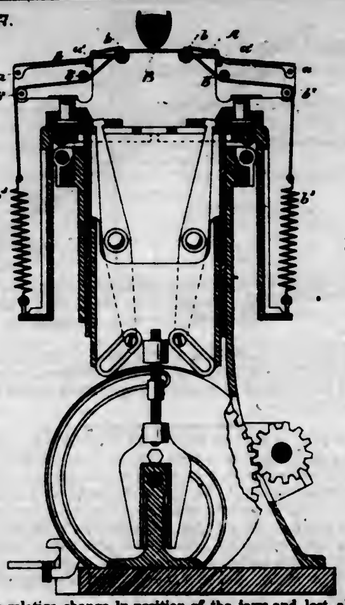
264,617. BOOT AND SHOE LASTING MACHINE. GEORGE W. COPELAND, Malden, and MATTHIAS BRUCK, Boston, Mass., assignors to the Copeland Lasting Machine Company, Hartford, Conn. Filed Jan. 28, 1882. (No model.)

Brief.—The girth is attached to springs at each of its ends and is passed over rolls on the end of the lasting-fingers.

Claim.—1. In a machine for lasting the uppers of boots and shoes, a vamp-lasting device comprising one or more straps or bands, constructed and supported substantially as specified, and adapted to be brought in contact with the vamp at or near the median line of the last, and from that line or section to conform to the surface of the last and fit the vamp thereto and hold it thereon, all substantially as described.

2. In a lasting-machine, the combination of one or more vamp-lasting straps or bands, and supports for the same, and means, substantially as specified, for providing it or them with automatic yielding and take-up movements at their upper ends upon or over said supports, all substantially as and for the purpose described.

3. In a lasting-machine, the combination of side supports or fingers, having the movements in relation to the last substantially as specified, and a series of vamp-lasting straps or bands carried or supported by said supports or fingers, and movable in relation thereto during the operation of lasting, whereby they automatically conform to the surface of the last from or near its median line to the inside without being drawn or advanced thereon during the relative change in position of the jaws and last, all substantially as and for the purpose described.



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4. In a lasting-machine, the combination of a series of continuous straps or bands, having elastic yielding end connections, a last, and means, substantially as specified, for causing the straps or bands to conform to the surface of the last without causing them to be dragged thereon, all substantially as and for the purpose described.

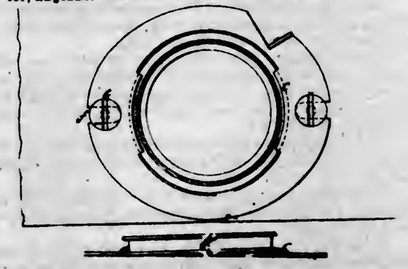
5. In a lasting-machine, a shank-lasting device consisting of the yielding fingers *c*, the straps *c'*, and the springs *c''*, all substantially as described.

6. The combination of the fingers A, rolls *b*, and straps or bands B.

7. The combination of the strap or band with the shield or guard *d'*.

8. The combination of the straps or bands B, the fingers A, the guiding-rolls *b' b'*, and springs *b''*, all substantially as described.

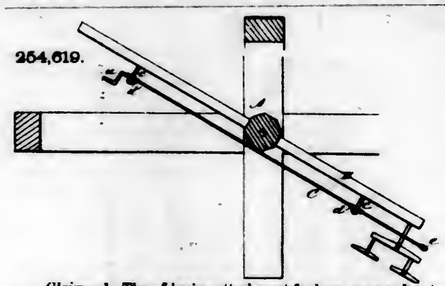
264,618. RING-HOLDER FOR SPINNING AND TWISTING MACHINES. THOMAS COULTHARD, Preston, County of Lancaster, England. Filed Nov. 26, 1881. (No model.)



Claim.—A ring-holder for ring spinning and doubling machines, consisting of a thin metal annulus provided with a round central opening and two inner extending lips or projections, constructed and arranged substantially as herein described, whereby the lower flange of the ring is, without springing the holder, passed freely through said opening, overlapped by said lips or projections, and its periphery surrounded by the annulus when the holder is fastened in place.

264,619. WHIP ATTACHMENT FOR HORSE-POWERS. JOHN L. CRAWFORD, Pine Grove, Miss. Filed Dec. 6, 1881. (No model.)

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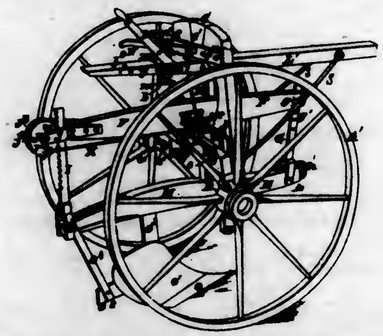


Claim.—1. The whipping attachment for horse-powers herein shown and described, consisting of the rod C, formed with the crank *a*, and adapted to carry the whip *b*, substantially as described.

2. The lever B, provided with the yokes *c c*, which carry the wheels *d d*, in combination with the crank-rod C and the whip *b*, the rod being adapted to be moved longitudinally, as and for the purposes set forth.

254,620. COMBINED PLOW AND CULTIVATOR. FRANCIS GRUBER, St. Louis, Mo. Filed Sept. 19, 1881. (Model.)

Brief.—The plow-beam is attached at front and rear to a beam that rocks upon the axle. The devices for elevating are a rack-bar pressed by a spring against a rack-pulley, from which a cord passes around sheaves to a lever-pulley, and, after being wound around it, returns to the rack-pulley. The lever is loose and works its pulley with a ratchet held by a drop-pawl. The central hangers slide in the beam-clamp. The plow is convertible into a straddle-row cultivator.



Claim.—1. An arch-axle in which are combined wooden vertical side pieces, *a a*, wedge-shaped or key piece *a'*, metal plate *a²*, angle-iron *c'*, and short axles B B, as set forth.

2. The combination, with the carriage and plow, made substantially as set forth, of the uprights P P, connected by their upper and lower ends to the carriage and plow, respectively, and furthermore connected to the former by a coupling, Q Q' Q², as and for the purpose set forth.

3. The rocking beam F, connected to the cross-beam E, substantially as set forth, and forming support to the forward and rear ends of the plow-beam.

4. The adjustable connections G I, in combination with the plow-beam H, rocking beam F, and cross-beam E, substantially as shown and described.

5. The wheel J, connected to the rear end of the beam F, and made, substantially as set forth, with grooves on each side for receiving the adjusting-rope K, and a central groove having cogs engaging with the rack I to raise the plow.

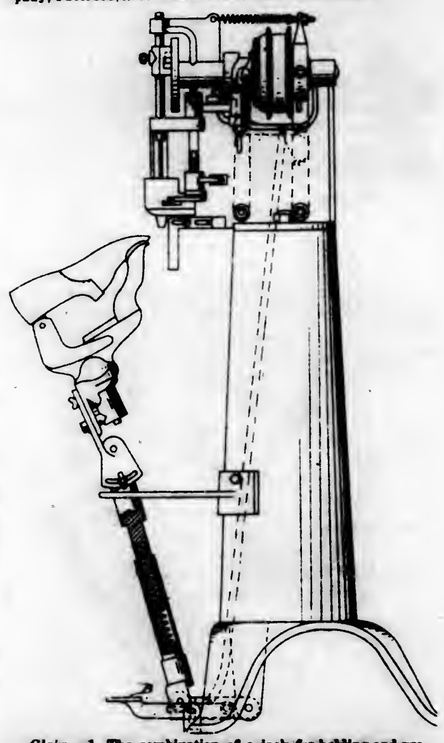
6. The combination of the rope K, wheel J, beam F, having pulleys *b'*, and pulley L, as set forth.

7. The combination of pulley L, sliding lever M, locking-lever N, rope K, wheel J, rack-bar I, and plow-beam H, as set forth.

8. The combination, with the carriage and plow, made substantially as set forth, of the uprights P P, connected by their upper and lower ends to the carriage and plow, respectively.

9. The combination of angle-iron *c²*, yoke C, tongue L', and uprights P P, adjustable in said angle-iron, as set forth.

254,621. TACKING-MACHINE. JOSEPH E. CRISP, Boston, Mass., assignor to the Copeland Tacking and Lasting Company, Paterson, N. J. Filed Jan. 6, 1882. (No model.)



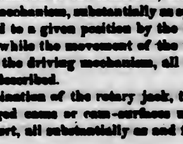
Claim.—1. The combination of a jack for holding and presenting the last to an automatic fastening-driving device, and means, substantially as specified, for setting said fastening-driving device in operation, arranged or located to be moved after the placing in position of the last to receive the fastening by a further movement of the treadle used in placing the work in position to receive the fastening, all substantially as and for the purpose described.

2. The combination of the start-and-stop-motion mechanism of a fastening-driving machine, a jack for holding and presenting the last to said fastening-driving device, a treadle, and intermediate connecting mechanism, substantially as specified, whereby upon the movement of the treadle the work is presented to the nozzle of the fastening-driving device, and upon its further movement the start-motion mechanism of the machine is actuated, all substantially as and for the purpose described.

3. The combination of the treadle B, the jack, and intermediate supporting mechanism, substantially as specified, whereby the jack may be lifted to a given position by the treadle and then become stationary, while the movement of the treadle may be continued to actuate the driving mechanism, all substantially as and for the purpose described.

4. The combination of the rotary jack, the jack-support, and conversely-arranged cams or cam-surfaces upon or between the jack and its support, all substantially as and for the purpose described

254,622. ART OF PREPARING VULCANIZED RUBBER FOR ERASIVE PURPOSES. HENRY T. CUSHMAN, North Bennington, Vt. Filed Jan. 27, 1882. (No model.)



Claim.—1. The herein-described process of rendering vulcanized erasive rubber available for use without removing the external hardened coating or skin resultant from the vulcanizing process, consisting of combination or abrasion of such skin and the filling of such abrasion or combinations with a powdered material capable of effecting further abrasion of the rubber by attrition when used substantially as specified.

2. As a new article of abstinency, a rubber erasive tablet having its toughened external vulcanized surface ramified or abraded, and such abrasions filled with a powdered material capable of effecting the purposes described in the manner set forth.

254,623. VAPOR-BURNER. SIMEON DAVIS, Canton, Ohio. Filed Jan. 11, 1882. (No model.)

Brief.—The air passes through the groove O to the flame, before reaching which it is heated by contact with the hot metal.

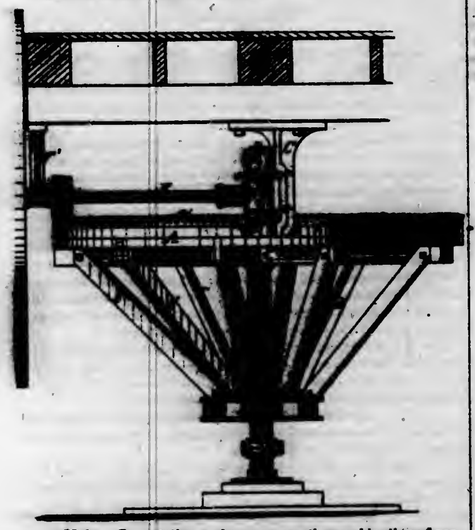


Claim.—1. In a vapor-burner, a vertically-adjustable tip provided with a guard-plate upon its inner side, in combination with a recessed, flaring, curved deflector-plate, substantially as shown.

2. In a vapor-burner, the casting A, having an air-channel formed in its inner end just under the outer edge of the guard-plate, and having a suitable depression or opening formed between the base of the tip and the inner end of the curved deflector-plate, to allow the air to flow freely in and to become heated before it is made to commingle with the vapor, substantially as described.

3. In a vapor-burner, the combination of the casting A, having the curved deflector-plate, socket for the inlet-tube, the vertical tube in which is placed a screw-valve, the vertically-adjustable tip having a guard-plate upon its inner side, and the deflector-plate having a depressed air-channel formed in the top of its inner end, substantially as set forth.

254,624. HORSE-POWER. WILLIAM DURBIN, Louisville, Ky. Filed Dec. 16, 1881. (No model.)

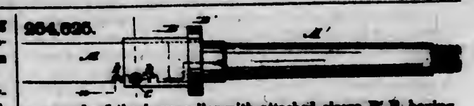


Claim.—In a stationary horse-power, the combination of vertical shaft B, master-wheel A, counter-shaft F, geared with the master-wheel, cut-off journal-block E, having free pivot-connection with shaft A, central hanger, C, for supporting the upper end of such shaft, and adjustable bearings *e f* on this shaft above and below the journal-block, substantially as described, whereby provision is made for separate adjustment of the journal-block and central hanger.

254,625. VEHICLE-AXLE. ALFRED BRIDSON and WILLIAM H. ADAM, Fleetwood, Pa. Filed Aug. 15, 1881. (Model.)

Claim.—1. The combination, with the axle A, of the loose collar B', provided with the sleeve B, and adjustably secured to the axle by the bolt C, substantially as and for the purpose set forth.

2. The combination, with the axle A, provided with groove *b*, of the loose collar with attached sleeve B' B, having bolt-holes *f* and bolt C, substantially as herein shown and described, whereby said collar is adjusted and held in position, as set forth.



254,626. BOOT OR SHOE. SILAS C. DIXON, Brookline, Mass. Filed Feb. 6, 1881. (No model.)

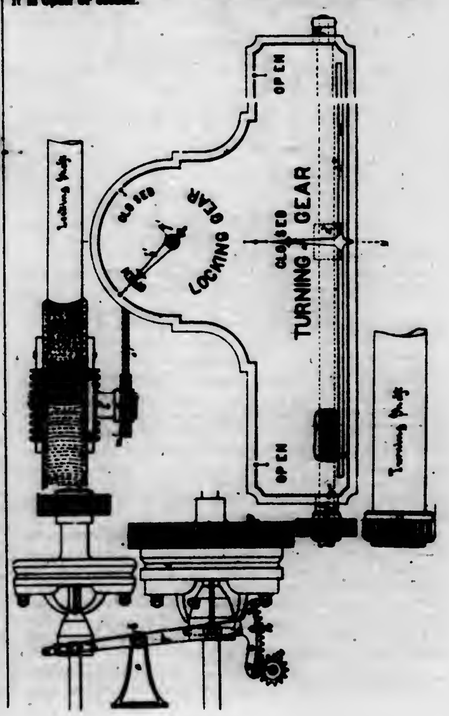


Claim.—1. As an improved article of manufacture, a boot or shoe composed of an upper, inner sole, and slip-sole, all connected by stitches extended completely through and through them from side to side, as shown, and of an outer sole attached to the slip-sole, upper, and inner sole by stitches which at the shank of the boot or shoe extend through the outer sole, upper, and inner sole, and are covered by a channel-flap, while the stitches made about the fore part of the outer sole are left fully exposed at the top of the slip-sole and upon the bottom of the outer sole, as shown and described, instead of being covered by a channel-flap, as heretofore common, substantially as described.

2. In a boot or shoe having an upper, inner sole, slip-sole, and outer sole united together, as described, a row or series of stitches made therein through the flap of the channel, the outer sole, and the edge of the slip-sole, substantially as described.

254,627. DRAW-BRIDGE. JOSEPH EDWARDS and JAMES E. F. KELLY, Brooklyn, N. Y. Filed Dec. 17, 1881. (No model.)

Brief.—The turning-shaft and locking-shaft are provided each with a clutch. A lever operates said clutches oppositely, one out of engagement when the other is in. A hand-wheel operates said lever. Each shaft operates an indicator at the operator's stand to show, the one when the draw is locked or unlocked, the other when it is open or closed.



Claim.—1. The combination, substantially as hereinbefore described, of the draw, the turning-shaft and its clutch mechanism, the locking-shaft and its clutch mechanism, and the clutch-lever common to both clutch mechanisms, but acting on them in an opposite sense.

2. The combination, substantially as hereinbefore described, of the draw, the turning-shaft and its clutch mechanism, the locking-shaft and its clutch mechanism, and the hand-wheel which is geared together with both clutch mechanisms, so as to actuate them in an opposite sense.

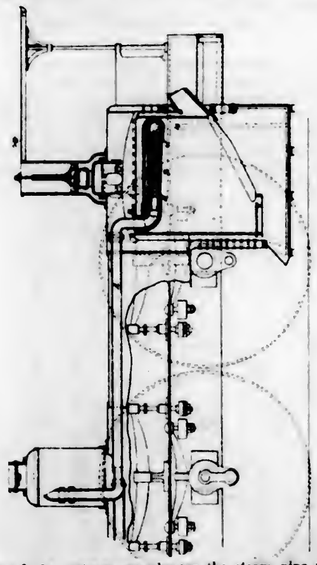
3. The combination, substantially as hereinbefore described, of the draw, its turning-shaft, and the index *a'*, geared together with the turning-shaft and serving to indicate the position of the draw.

4. The combination, substantially as hereinbefore described, of the draw, its locking-shaft, and the index *b'*, geared together with the locking-shaft and serving to indicate the position of the locking mechanism.

5. The combination, substantially as hereinbefore described, of the draw, its turning-shaft, its locking-shaft, and the indexes *a' b'*, geared together with said shaft, one to indicate the position of the draw and the other that of the locking-gear.

6. The combination, substantially as hereinbefore described, of the draw, the turning-shaft, its clutch mechanism and index, the locking-shaft, its clutch mechanism and index, and the clutch-lever common to both clutch mechanisms, but acting on them in opposite directions.

264,628. APPARATUS FOR SUPERHEATING STEAM. AUGUSTE ESTRADE, Perpignan, France. Filed Nov. 21, 1881. (No model.) Patented in France Sept. 10, 1880, and in England Sept. 28, 1881.

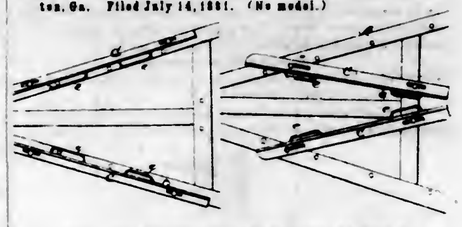


Claim.—1. In a steam-superheater, the steam-pipe passing through the roof of the fire-box, extended horizontally therein, and thence passing upward through the roof of said fire-box for connecting with the cylinders of the engine, in combination with a tube inclosing that part of the steam-pipe located within the fire-box to create an intervening water-space between the two, said tube having its ends secured in the roof of the fire-box and in communication with the water-space of the boiler, all substantially as shown, for the purpose described.

2. In a steam-superheater, the steam-pipe passing through the roof of the fire-box, extended horizontally therein, and thence passing upward through the roof of said fire-box to connect with the cylinders of the engine, in combination with a series of wire-gauze or foraminous plates located within that part of the steam-pipe within the fire-box, and a tube inclosing said steam-pipe and having its ends secured within the roof of the fire-box, all substantially as shown, and for the purposes described.

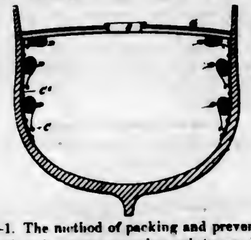
3. In a steam-generator, the steam-pipe extended into the fire-box, in combination with a series of wire-gauze or perforated disks arranged transversely within said extended part of the steam-pipe, and a water-jacket or tube surrounding the latter, substantially as and for the purpose described.

264,629. COTTON-SCRAPER. JAMES L. FARNSWORTH, Dalton, Ga. Filed July 14, 1881. (No model.)



Claim.—The combination, with the frame and teeth of a harrow or cultivator, of the coverers C C, provided with staples *c c* and slots *b b*, whereby the said coverers are adapted to be adjusted and secured upon the teeth in the several positions specified, substantially as and for the purpose set forth.

264,630. DEVICE FOR SECURING GRAIN, GUANO, COAL, &c., FROM SHIFTING IN VESSELS. EDGAR H. FARRAR, New Orleans, La. Filed Nov. 28, 1881. (No model.)



Claim.—1. The method of packing and preventing the shifting of bulks of grain, guano, or other substances in a ship, consisting in pressing and holding down the grain or other article in successive layers by stretching flexible diaphragms upon the layers as they are formed.

2. The combination, with a ship, of the flexible flaps or semi-diaphragms connected with the sides of the ship's hold, and means for drawing said diaphragms together so as to form a series of horizontal partitions for pressing upon and holding down the grain or other articles to be transported, substantially as described.

3. The combination of the horizontal rows of hooks secured to the inner side of the vessel with the flexible diaphragms adapted to be connected with said hooks, substantially as described.

4. The combination, with the flaps arranged for forming horizontal partitions in the ship's hold, of the side curtains adapted to prevent the passage of grain between the outer edges of the flaps and the sides of the vessel, substantially as described.

5. The combination, with the flaps or semi-diaphragms arranged for forming horizontal partitions in the ship's hold, of the strip F, adapted to close the space between the inner opposing edges of the semi-diaphragms, substantially as described.

6. The combination, with the semi-diaphragms arranged for forming horizontal partitions in a ship's hold, of the head and foot strips N, substantially as described.

7. The combination, with the flaps or semi-diaphragms D, adapted to be connected to the sides of the ship's hold, and having the stiffening-rod *d'*, of the sheave E, the pulleys upon the stanchions, and the tightening-rope passing over the sheaves and pulleys and up through the decks, substantially as described.

8. The combination, with the flexible flaps and the tightening-rope arranged to tighten the flaps within a ship's hold, of the clamp for securing the rope after it has been tightened, substantially as described.

9. The combination, with the metal strips secured to the sides of the hold of a vessel and provided with hooks, of the flexible semi-diaphragms adapted to engage with said hooks, and devices for drawing the inner edges of said diaphragms together, substantially as described.

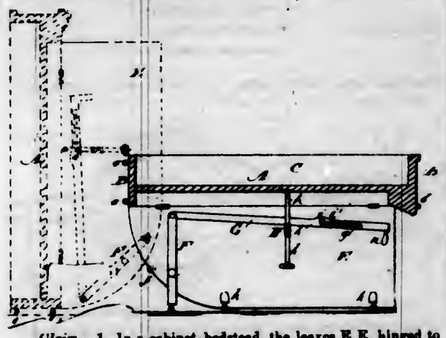
264,631. COMBINATION-TOOL. HENRY FISHER, Canton, Ohio. Filed May 3, 1881. Renewed Jan. 30, 1882. (No model.)

Claim.—1. In a corn-sheller of the character described the arms A' A', each being cast with a spur, C, to form a stop or bearing for the operator's hand, with a stud, *a*, to hold the end of a spiral spring, with the shelling-plate E, with the pivot-ear B, and with the teeth F F', as set forth.



2. In an implement of the character herein described, the arm A', having the pivot-ear B, the wrench-jaw *b* on one side of said pivot-ear, the corn-sheller plate E on the other side of the pivot-ear, and the grooved pincher-plate H at the outer edge of the sheller-plate, as set forth.

264,632. FOLDING CABINET-BED. JOSEPH FOURNIER, Jr., New York, N. Y. Filed Jan. 23, 1882. (No model.)



Claim.—1. In a cabinet-bedstead, the leaves E E, hinged to the end rails, C, and adapted to support the bedstead in horizontal position, and to be folded in against the bottom of the bedstead when the same is in vertical position, substantially as described.

2. In a cabinet-bedstead, the leaves E E, hinged to the end rails, C, and having lower rounded ends, *f f*, whereby the bedstead may be easily raised and lowered to its different positions, substantially as set forth.

3. The hinged leaves E E, in combination with the sliding panel J, as and for the purposes set forth.

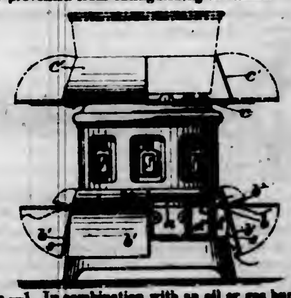
4. The hinged leaves E E, in combination with the jointed braces H H and the sliding sleeves *h'*, substantially as described.

5. In combination with the hinged and rounded leaves E E, the pivoted legs F F, slotted rods G G, and pins *i*, substantially as described.

6. The body of the bedstead formed with the molding *b* and the panels L L, in combination with the hinged leaves E E and sliding panel J, the leaves being rounded at the lower inner corners, substantially as and for the purposes set forth.

264,633. AUTOMATIC DRAFT-REGULATOR FOR OIL AND GAS STOVES. ROBERT A. GARDNER, Providence, R. I. Filed Jan. 13, 1881. (No model.)

Brief.—The currents of air tend to close the deflectors, and are thereby prevented from extinguishing the flame.

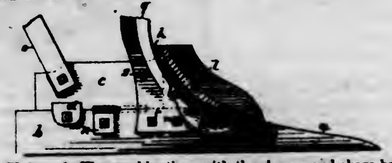


Claim.—1. In combination with an oil or gas burning stove, the series of hinged deflectors *b'*, provided with springs *c*, arranged to control the action of air-currents upon the burners, substantially as shown and described.

2. In combination with the top portion of an oil or gas burning stove, a series of deflectors, *c'*, arranged to close against the cooking-vessel, substantially as and for the purpose specified.

3. In combination with an oil or gas burning stove the top portion of which is provided with deflectors *c'*, the deflectors *b'* and *b'*, the latter provided with springs *c*, the whole constructed and arranged substantially as and for the purpose specified.

264,634. PLOW. JOSEPH GREEN, Fayetteville, Ark. Filed Aug. 6, 1881. (Model.)



Claim.—1. The combination, with the share *a* and share-bar *b*, made in one piece, and mold-board *k*, of the landside *c*, having the wing *h*, and a plow-standard secured to the share-bar and landside, and abutting against the wing *h*, substantially as described.

2. The combination of the share *a* and share-bar *b*, made in one piece, mold-board *k*, landside *c*, provided with the wing *h*, and beam *w*, having a central hole, standard *u*, provided with a circular recess, *x*, having a central hole, and beam *t*, substantially as described, and for the purpose set forth.

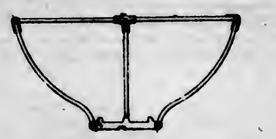
264,635. PACKING-BAND. JOHN E. GIFFORD, New York, N. Y. Filed Aug. 30, 1881. (No model.)



Claim.—1. A packing-band constructed with the double hook B B, the longitudinal slots C C, the re-enforce hooks D D, (one or more,) and the eyes E E, substantially as shown and described, for the purpose set forth.

2. A packing-band constructed with the double hook B B, the longitudinal slots C C, the re-enforce hooks D D, (one or more,) the eyes E E, and the cavities *f f'*, substantially as shown and described, for the purpose set forth.

264,636. LAMP-SHADE HOLDER. EDWIRE H. GÖTSCHIUS, Greenville, N. J. Filed Nov. 8, 1881. (No model.)



Claim.—1. A shade-holder having the top or shade-receiving ring and the connecting-arms formed of the compound bent-wire sections, in combination with the T-couplings and lower or attaching ring, for the purpose specified.

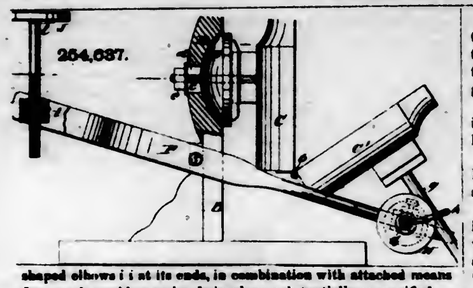
2. The combination, in a shade-holder, of the shade-receiving ring, the connecting-arms formed of the compound bent-wire sections, the lower attaching-ring, the T-couplings, and the hooks *f*, or the bent-wire sections, to form a firm connection with the T-couplings.

264,637. FRAME AND TREADLE FOR GLASS-MOLDS. MILAS GRAVES, Saratoga Springs, N. Y. Filed Jan. 24, 1882. (No model.)

Claim.—1. The divided mold hinged at its base to provide for the opening and closing of it, and having one of its sections supported in its rear by a ball-and-socket joint, in combination with means for holding it when adjusted by said joint, whereby provision is made for adjusting or setting the mold in an upright position, substantially as specified.

2. The combination, with the opening and closing hinged section C of the mold, having a projection or stem, *g*, on its back, and the side arms, F F, of the treadle, of the cross-head G, made adjustable along said arms for closing and holding the mold, and whereby provision is made for working different-sized molds, essentially as described.

3. The cross-head G, constructed of a pipe, A, and hollow T-

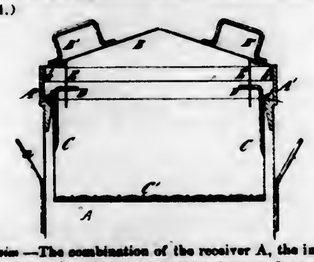


shaped elbows *i i* at its ends, in combination with attached means for securing said cross-heads in place, substantially as specified.

4. The combination, with the opening and closing hinged mold-section C' and its stem *g*, of the cross-head G of the treadle, and the loose grooved wheel or roller H on said cross-head, for operation on the stem *g*, essentially as described.

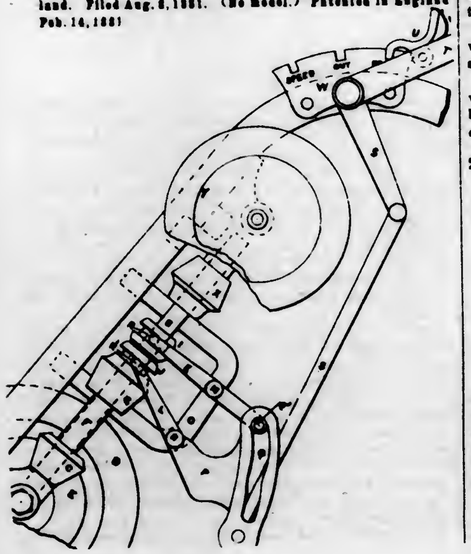
5. The combination, with the side arms, F F, of the treadle, of the pivoted and rocking nut or foot-rest block I, the foot-rest J, and the stem *l* of said rest, adjustable within and through said nut, substantially as specified.

254,638. ASH-SIFTER. JOHN GRAVES, Green Point, assignor to Herman Miller, New York, N. Y. Filed July 23, 1881. (No model.)



Claim.—The combination of the receiver A, the imperforate cover B, the sifter or sieve C, adapted to be turned or rotated, the loops or sockets D, projecting inward from the said sifter or sieve and forming convenient handles whereby it may be lifted, and the lugs E, projecting downward from the under side of said cover and engaging with said loops or sockets, all substantially as herein specified.

254,639. DIFFERENTIAL GEAR FOR VELOCIPEDES. WILLIAM H. J. GREEN, South Hornsey, County of Middlesex, England. Filed Aug. 6, 1881. (No model.) Patented in England Feb. 14, 1881.



Claim.—1. The combination, with the driving-shaft and treadle, of the sliding feather, the pinions and clutches thereon, the rod on which the feather slides, the pinion fixed to the end of the rod, the gear fixed to the driving-shaft, and the differential gears, substantially as described.

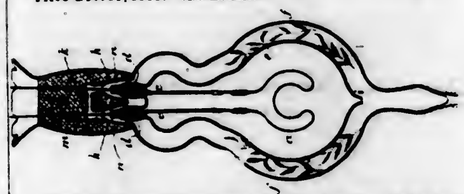
2. In a velocipede, the segmental gage-plate and spring-pawl, in combination with the handle T, lever S, cam Q, bell-crank P, levers K and L, bracket, and clutches, substantially as described.

3. In combination with the bevel-pinions C G, the forked rod K, and cam-slotted bell-crank P, the bell-crank lever S operating such, substantially as set forth.

4. In velocipede differential gear, the double-pitched cam-slot in the bell-crank for moving the lever E, in combination with lever L, both moved by lever S, so that different sliding velocities are imparted to the pinions in changing the gear from "power" to "speed," and vice versa, or throwing it out to insure the pinions instantly engaging with or being freed from the large bevel-wheels, substantially as specified.

254,640. WITHDRAWN.

254,641. ELECTRIC LAMP. JOHN H. GENET, Brooklyn, N. Y. Filed Nov. 19, 1881. (No model.)



Claim.—1. In an electric lamp, the combination, with the incandescing filament and conducting-wires, of the glass *e*, surrounding the filament, and the glass shade *f* around the glass *e*, there being a vacuum in both the shade *f* and glass *e*, substantially as set forth.

2. The combination, with the glass *e*, tubes *d*, incandescing filament, conducting-wires, and lead packing between the glass tubes and wires, of the outer ornamental glass shade, *f*, hermetically sealed at the conducting-wires, substantially as set forth.

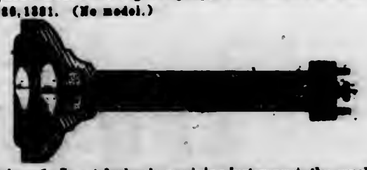
3. The combination, in an electric lamp, of the incandescing filament, its wires, the inner glass, *e*, the outer glass shade, *f*, the tubes *h*, cap *m*, and the plaster uniting the tubes *h* and shade *f* with the cap *m*, substantially as set forth.

4. In combination with the conducting-wires, incandescing filament, and glass shade, a cap, *m*, a packing of fibrous material between the cap and the parts of the glass shade, and plaster within the cap, for the purposes and as set forth.

5. In combination with the tubes and hermetically-sealed wires in an incandescing electric lamp, the bridge of glass between said tubes, for the purposes and as substantially set forth.

6. The semi-cylindrical clips for the carbon, made of flattened wire, and the twisted portion to hold the parts together, in combination with the carbon having thickened ends and the plating of metal upon the parts, as set forth.

254,642. TELEPHONIC RECEIVING-INSTRUMENT. WILLIAM E. HALL, Washington, D. C., assignor to the United States Telephone Manufacturing Company, New York, N. Y. Filed July 26, 1881. (No model.)



Claim.—1. In a telephonic receiving-instrument, the combination, with a diaphragm which is fixed at its center, but capable of vibrating at its perimeter and between its perimeter and center, of an electro-magnet having its core fixed at one end, and mechanical means for transmitting motion from the other end of said core to the margin of the diaphragm when said core is caused to expand by the influence of electric currents, substantially as described.

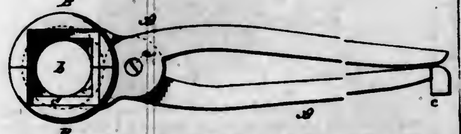
2. In a telephonic receiving-instrument, the combination, with a vibratory diaphragm having its center confined, of an electro-magnet having its core provided with an extension impinging against the margin of said diaphragm and arranged to cause the same to vibrate in response to the action of the core under the influence of electric currents traversing the coil of the magnet, substantially as described.

3. In a telephonic receiving-instrument, the combination, with the vibratory diaphragm, of an electro-magnet having a tubular core provided with an extension impinging against the margin of said diaphragm, a rod having one end secured to the center of said diaphragm and passing through the tubular core of the magnet, its other end being fixed, and a suitable stop for the end of the core opposite to that next the diaphragm.

4. The combination, with a suitably-supported concave diaphragm, of the tubular core of an electro-magnet arranged to bear against said diaphragm, a rod extending from the apex of said diaphragm through the core of the magnet, and arranged to hold the center of the diphragm in a fixed position with relation to the core, substantially as described.

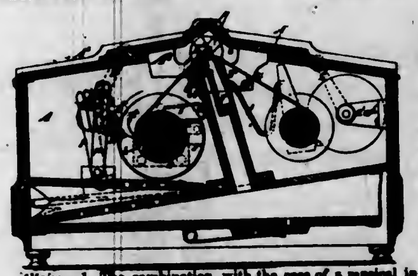
5. The combination, with the vibratory diaphragm, of an electro-magnet having a tubular core, one end of which is provided with an extension bearing against the margin of said diaphragm and the other end resting against a magnetically inert support, a rod secured to the center of said diaphragm and extending through the tubular core of the magnet and arranged to hold the center of the diaphragm in a fixed position with relation to the core, substantially as described.

254,643. COMBINED AXLE CLEANER AND WRENCH. CHAS. H. HAMILTON, Three Mile Bay, N. Y. Filed Jan. 23, 1882. (No model.)



Claim.—An axle wrench and cleaner consisting of the arms A A, pivoted across each other at *a*, and having a hollow semicircular jaw, B, upon each arm, said jaws having formed in one end an annular groove, *b'*, and in the other end rectangular grooves *c'*, adapted to clinch an axle-nut, substantially as set forth.

254,644. MECHANICAL MUSICAL INSTRUMENT. ANDREW H. HAMMOND, Worcester, Mass. Filed Jan. 31, 1881. (No model.)



Claim.—1. The combination, with the case of a musical instrument wherein the operation of reeds is controlled by a traveling perforated music-sheet, of a reed-board inclining foward and extending nearly to the center portion of the cover of the case, substantially as specified.

2. The combination, with a musical instrument, of a cover composed of two portions, A' A², and a bridge-piece or bridge-pieces, A², connecting them.

3. The combination, in a musical instrument, of a swell-opening, two slats for controlling the same, and means whereby said slats are enabled to work outward and inward through the cover of the instrument to approach and recede from each other.

4. The combination, in a musical instrument, of a swell-opening, two slats for controlling the same, and means whereby said slats are enabled to work outward and inward through the cover of the instrument to approach and recede from each other, and to form, when moved inward, a conduit adjacent to the openings of the reed-cells for directing the sound from the instrument.

5. The combination, in a musical instrument, of a swell-opening and two slats for controlling the same, working outward and inward through the cover of the instrument to approach and recede from each other, and connected so that both may be moved or adjusted by manipulating one only.

6. The combination, in a musical instrument, of a swell-opening, two slats for controlling the same, working outward and inward through the cover of the instrument to approach and recede from each other, and levers whereby said slats are pivoted in place.

7. The combination, in a musical instrument, of a swell-opening, slats for controlling the same, pivoted by levers so as to work outward and inward through the cover of the instrument to approach and recede from each other, links for connecting said levers, and a spring applied to said links.

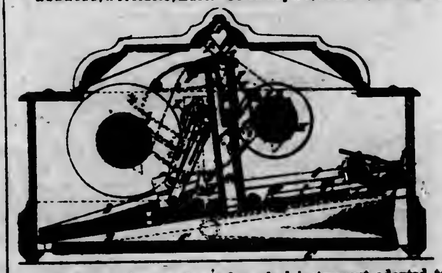
8. The combination, in a musical instrument, of a receiver arranged at the bottom thereof, bellows mounted on the top board of said receiver near one end, and a wind-chest and reed-board mounted on the top board of the receiver opposite said bellows, and extending nearly to the top of the central portion of the case of such instrument, substantially as specified.

9. The combination, in a musical instrument, of a receiver arranged at the bottom thereof and having an inclined top board, and a wind-chest and reed-board mounted on the top board of said receiver, and also being inclined, substantially as specified.

10. The combination, in a musical instrument, with a top board for a receiver grooved or recessed to form shoulders or shoulder-like portions, of bellows-leather, india-rubber, or like flexible material having its edges fitting over said shoulders or shoulder-like portions, and cleats or strips fitted to the grooved or recessed portions and against the bellows-leather, india-rubber, or like material, and serving to aid in securing the latter in place, as also to brace and stay said top board.

11. The combination, with a roller provided with a peripherical recess and a hook or analogous device arranged therein, of a music-sheet provided at one end with a ring or loop secured to it by a tape or strip, and extending beyond the music-sheet, and adapted to be engaged with the said hook or device for securing the music-sheet to said roller, substantially as specified.

254,645. MECHANICAL MUSICAL INSTRUMENT. ANDREW H. HAMMOND, Worcester, Mass. Filed Sept. 6, 1881. (No model.)



Claim.—1. In a mechanical musical instrument adapted to be operated by a traveling music-sheet, the combination, with a roller around which the sheet is wound or passes, and a driving-shaft for imparting motion thereto, of a rest for the traveling music-sheet overhanging said shaft, substantially as specified.

2. In a mechanical musical instrument, the combination, with a music-roller and a take-up roller, of a driving-shaft arranged between them, a bearing-block for one end of said shaft fulcrumed or pivoted above or at one side of said shaft, and mechanism connected with said block below or at an opposite side of said shaft for moving said block to cause the shaft to impart motion to either of said rollers and simultaneously release it from the other roller, substantially as specified.

3. In a mechanical musical instrument, the combination of music and take-up rollers, a driving-shaft arranged between them, a bearing-block for said shaft capable of adjustment to cause said shaft to impart motion to one of said rollers and simultaneously release the other, an elastic arm, and means for actuating said arm to adjust said bearing-block, and at the same time put such a tension on the arm as to cause it to exert a spring force, whereby it holds said shaft with a yielding pressure in position to transmit the desired motion, substantially as specified.

4. The combination of the music and take-up rollers H H', the driving-shaft E, the pivoted bearing-block I, having the elastic arm or tail-piece I', and mechanism connected with said arm or tail-piece for moving said block, substantially as specified.

5. In a mechanical musical instrument, the combination, with music and take-up rollers, and a driving-shaft arranged between them, of a crank connected with the bearing supporting one end of said shaft, and serving to adjust said shaft transversely and hold it in the position to which it is adjusted, substantially as and for the purpose specified.

6. The combination of the music and take-up rollers H H', the driving-shaft E, the pivoted bearing-block L, the crank *h*, and rod *g*, all substantially as specified.

7. In a mechanical musical instrument, the combination of a wind-chest or receiver, a relief-valve, a rock-shaft provided with two arms, to one of which said valve is connected, and means for acting upon the other arm to raise said valve, substantially as and for the purpose specified.

8. The combination of the driving-shaft E, the bearing-block L, the rod *g* and crank *h*, the relief-valve *j*, and the rock-shaft *k*, having the arm k^2, which is acted upon by the rod *g* to open said valve, substantially as specified.

9. In a wind musical instrument, the combination, with an expansible wind-chest or receiver, of a valve and means deriving motion from the movable board of the wind-chest or receiver, and serving to impart to the valve a slower and more gradual motion than it would derive if operated directly from the movable board of the wind-chest or receiver, substantially as and for the purpose specified.

10. In a wind musical instrument, the combination, with an expansible wind-chest or receiver, of a valve and means comprising a lever deriving motion from the movable board of the wind-chest or receiver, and imparting to the valve a slower and more gradual motion than the said board would impart to the valve if it acted directly on the valve, substantially as and for the purpose specified.

11. In a wind musical instrument, the combination, with an expansible wind-chest or receiver, of a valve, a lever extending beyond the valve, and a pin projecting into the wind-chest or receiver through the fixed board thereof, and adapted to be operated by the movable board to slowly and gradually open the valve, substantially as and for the purpose specified.

12. The combination of the wind-chest or receiver C, the valve *j*, having a projection, *n*, the lever *l*, arranged below said projection *n*, and carrying the pin *m*, which is acted upon by the movable board C', substantially as specified.

254,646. WATCH-CASE. C. WESLEY HANNAH, Cincinnati, Ohio. Filed Nov. 5, 1881. (No model.)



Claim.—1. A watch-case in which the central frame and the bezel are spun or struck up in a single piece and the crystal is secured in the immovable bezel, the back of the case being composed of a single piece of metal detachably secured in place on the frame of the case, having winding and setting mechanism adapted to be operated without opening the case, all substantially as shown and described.

2. The band or ring containing the movement, which rests within said band or ring on an annular shoulder formed thereon, the dial of the movement seating upon a rim on the inside of the bezel, and a flange on the band or ring seating upon a flange on the shell or casing and detachably connected thereto by a screw, said parts being constructed and combined substantially as shown and described.

3. The body of the case spun or struck up in a single piece with the bezel which receives the crystal, and at its rear side with the rim *d''* and flange *d'*, in combination with the ring D, containing the movement C, and provided with the flange *d*, detachably secured to the flange *d'* on the body of the case, substantially as described.

4. The body A of the case, formed in a single piece with the bezel which receives the crystal, and at its rear side with the threaded rim *d''* and interior flange, *d'*, in combination with the solid back plate, the ring D, containing the movement C, and formed with the flange *d*, and the screw E, detachably securing the flange *d* of the ring to the flange *d'* of the case, all substantially as and for the purpose described.

5. In a stem-winding watch, the winding-arbor H, provided on its outer end with a crown, H', and between its ends with right and left handed screw-threads engaging corresponding screw-threads on the inside of the hollow stem or pendant, substantially as and for the purpose specified.

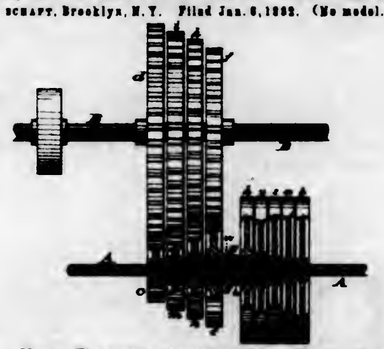
6. In a stem-winding watch, a device for operating the setting mechanism, composed of a hollow cap, K L, within which the hooked end *i* of the setting-lever I is sustained and operates, substantially in the manner and for the purpose herein set forth.

254,647. CALCIMINE. C. EDWARD HUCHY, Easton, and WALTER S. DAVIS, Reading, Pa. Filed Aug. 2, 1881. (No specimens.)

Claim.—1. A water-proof calcimine ready mixed for application, composed of pure zinc oxide or other pigment, linseed-oil, caustic soda, rosin, soda-carbonate, water, glue, wax, soap, and lime, mixed together substantially as specified.

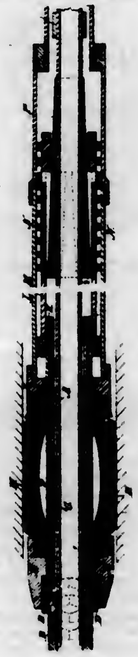
2. The process of compounding a water-proof liquid calcimine, consisting of the following steps: first, mixing zinc oxide or other pigment and linseed-oil with a solution of caustic soda to form a stiff mass; second, adding to said mass a compound mixture composed of a compound (A) of rosin, glue, and soda carbonate mixed in rain-water, and a compound (B) of white wax, white soap, and glue, also mixed in rain-water; and, third, adding to the whole a cream of fresh lime slaked in hot water, all in about the proportions specified, substantially as described.

254,648. MECHANICAL MOVEMENT. CHRISTOPHER HEBBSCHAFT, Brooklyn, N.Y. Filed Jan. 6, 1882. (No model.)



Claim.—The combination of the idler-pinions *m n*, idler spur-wheels *i k*, and the pulleys *s x* and sleeves *w r* with the driving-shaft A, carrying the pulleys *a h*, sleeve *g*, and pinions *o c*, and the driven shaft B, carrying the spur-wheels *f d*, the idler-pinions *m n* being placed between the pinions *o c*, and the several parts being constructed, combined, and arranged substantially as described, to effect the purpose herein set forth.

254,649. PACKING FOR OIL-WELLS. JESSE A. HEYDRICK, Barnhart's Mills, Pa. Filed Sept. 27, 1881. (No model.)



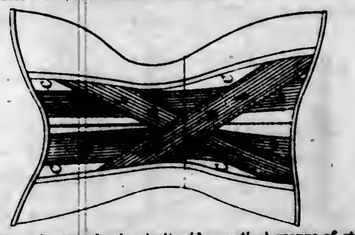
Claim.—1. In a well-packing, the combination, with the packer H and the tubing A, of the internally-threaded casing P, the screw-sections N, and the conoidal wedge O, all arranged and adapted to operate substantially as specified.

2. In a well-packing, the combination, with the packer H, the tubing A, having knocker S, an outer casing having an internal screw-thread, and an inner casing having longitudinal slots therein, of the screw-sections N N and the conoidal wedge O, adapted to move longitudinally between the said sections, substantially as shown and described.

3. In a well-packing, the combination, with the packer H, the outer casing, M P, and the tubing A, of the thimble B, having two quadrantal recesses in its lower end, and the thimble C, having quadrantal projections on its upper end, whereby the casing L G may be rotated, as shown and described.

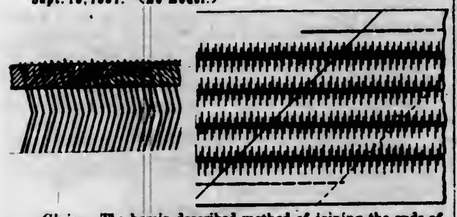
4. In a well-packing, the combination, with the packer H, the outer casing, M P, and the tubing A, of the thimble E, screwing on the said packer, the lining F, the thimble C, held in engagement with the thimble E by the packer D, and the thimble B, screwed on the said tubing and meshing with thimble C, substantially as shown and described.

254,650. CORSET. JULIUS HILDEBR, New York, N.Y., assignor to Moritz Cohn, same place. Filed Dec. 8, 1881. (Model.)



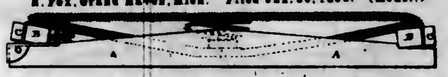
Claim.—A corset having in its sides vertical groups of stays and groups of stays arranged diagonally in opposite directions, the said diagonally-arranged groups of stays crossing each other, and also crossing the said vertical groups of stays, substantially as herein described.

254,651. METHOD OF JOINING DOFFER-RINGS FOR CARD-SETTING MACHINES. JOHN J. HOEY, Lawrence, Mass. Filed Sept. 19, 1881. (No model.)



Claim.—The herein-described method of joining the ends of doffer-rings for card-setting machines, consisting in beveling the obliquely-cut ends and joining them together by cement and stitching, substantially as shown and described.

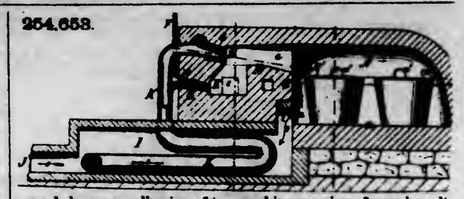
254,652. SPRING BED-BOTTOM. LORRIN H. HOOD and GEORGE H. FOX, Grand Haven, Mich. Filed Jan. 30, 1882. (Model.)



Claim.—The combination of the side supporting-bars, A, the clamping-pieces B C, the cross-bar, the spiral springs placed upon the bar, the longitudinal springs, the castings which are applied to the ends of the side supporting-bars, and the set-screws, whereby the tension of the fabric and longitudinal springs can be increased or decreased at will.

254,653. GLASS-FURNACE. JOSHUA W. HOUCHIN and JOSHUA R. HOUCHIN, Brooklyn, N.Y. Filed July 20, 1881. (No model.)

254,653.

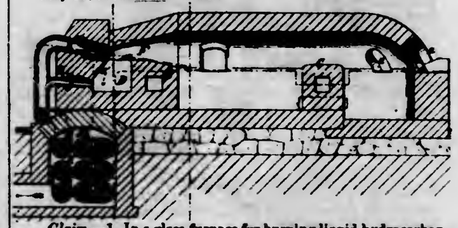


rounded corners, allowing of two working-openings for each melting-pot, substantially as specified.

2. In a glass-melting furnace provided with a liquid-fuel atomizer, G F, and superjacent air-blast nozzle D, the tapering blast and fire flue *e*, widening into the upper part of the furnace proper, A, in combination with the return-flue *i*, issuing through the wall C at the furnace-floor, the oblong heating-chamber I, terminating into the chimney-flue J, and the coiled blast-pipe K, placed in the said chamber and leading thence up to the said nozzles, all constructed and arranged substantially as shown and set forth.

3. In a glass-melting furnace using liquid-hydrocarbon fuel, the upper blast and fire entering flue, *e*, and the lower returning discharge-flue, *i*, both arranged in the front wall, C, of the furnace proper, A, in combination with the heating-chamber I, the coiled blast-pipe K, the atomizing-nozzle G F, and the superjacent air-blast nozzle D, substantially as specified.

254,654. CONTINUOUS GLASS-MELTING FURNACE. JOSHUA W. HOUCHIN and JOSHUA R. HOUCHIN, Brooklyn, N.Y. Filed July 20, 1881. (No model.)



Claim.—1. In a glass-furnace for burning liquid hydrocarbon, the kindling-box provided with upward-flaring side walls diverging from a narrow bottom to about the width of the blast-nozzle G and flue F, and having overhanging front wall, *d*, causing upward-diminishing length, in combination with the atomizer H I and superjacent blast-nozzle G, arranged substantially as shown and described.

2. In a continuous glass-furnace having atomizer H I and superjacent blast-nozzle G, the combination of the central entering-flue, F, melting-trough A, and lateral return-flues N with the blast heating chamber M, placed across and underneath the front end of the furnace, substantially as specified.

254,655. WIRE-BRUSH MACHINE. JOHN E. HOWARD, Reading, Mass., for himself and as Administrator of Clarence E. Howard, deceased. Filed Aug. 26, 1878.

Brief.—Headed pins are fed automatically one by one from a hopper to the inserting-plunger. Power is applied (it may be by the handle shown) to a horizontally-reciprocating frame carrying the pricker and pin-inserting plunger. To the reciprocating frame is attached a lever operating a sliding wedge, said wedge operating a pawl, which engages with a rack attached to a vertically-sliding frame, which indirectly carries the rubber backing. This moves the backing step by step vertically between the pricker and plunger. In this vertically-sliding frame is mounted a frame carrying the backing, and adjusted horizontally by a hand-wheel to shift the backing for each successive row of pins.

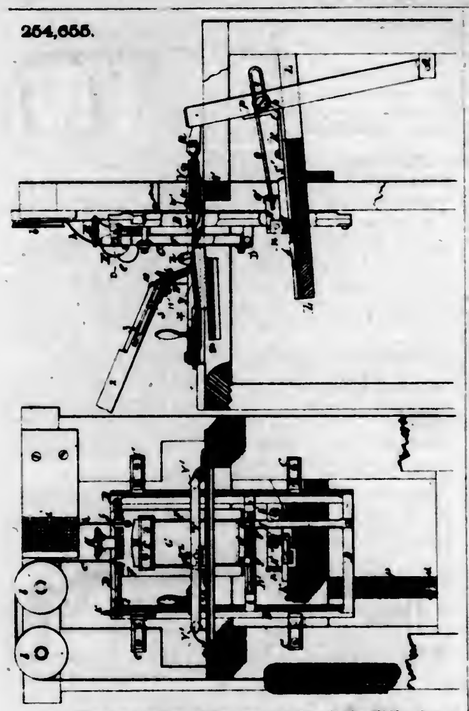
Claim.—1. The combination, with the sliding carriage F, of the adjustable sliding clamp *g* and thumb-screw H, as and for the purpose set forth.

2. In a wire-brush machine, the combination of the needle W and the driver *x*, each attached to opposite ends of a moving carriage, the shoe or guide 22, and the trough *y*, all arranged and operating as and for the purpose set forth.

3. The combination, with the movable frame F, carrying the rubber back G, of the screw-rod D, provided with the wheel E and spring-catch *e*, the index *i*, and the pointer *h*, as and for the purpose described.

4. The combination, in a wire-brush machine, of the carriage B, the ratchet-bar I, and the pawls *l* and T, as set forth.

254,655.

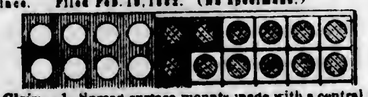


5. The combination of the recessed plate S, the sliding bar *s*, the angular plate M N, the rod O, and the rocking bar P, all arranged for operating the intermittently-elevating pawl *l*, as set forth.

6. The combination, with the finger 4, of the bar 11, the shipping-block 12, and the slotted bar 13 14, operated by the sliding frame V, as and for the purpose specified.

7. In a wire-brush machine, the combination, with the hopper *k* and raceway 2 3, of the standards 16 18, the bar 20, and the angularly-slotted bar 21, operated by the carriage V, for imparting an oscillating motion to the hopper and raceway, as set forth.

254,656. ILLUMINATING-GRATING. THADDEUS HYATT, New York, N. Y., assignor to Elizabeth Adelaide Lake Hyatt, same place. Filed Feb. 10, 1882. (No specimens.)



Claim.—1. Spread-surface mounts made with a central opening formed with practically straight sides, substantially as and for the purposes herein set forth and illustrated.

2. Spread-surface mounts combined with glasses, substantially as and for the purposes herein set forth and illustrated.

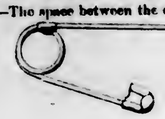
3. Spread-surface mounts formed of soft metals, hardened rubber, asphaltum, bituminous mastic, natural and artificial stone, plastic materials, concretes, baked clay, and their equivalents, substantially as and for the purposes herein set forth and illustrated.

4. Metal-banded spread-surface mounts, substantially as and for the purposes herein set forth and illustrated.

5. Illuminating-gratings faced with spread-surface mounts, substantially as and for the purposes herein set forth and illustrated.

254,657. SAFETY-PIN. JOEL JENKINS, Montclair, N. J., assignor of one-half to George P. Farmer, same place. Filed Jan. 9, 1882. (No model.)

Brief.—The space between the coils is closed by soldering.



Claim.—A spring or safety pin with a portion of the front of the coils of its spring soldered together, as and for the purpose described.

254,658. SAFETY-PIN GUARD. JOEL JENKINS, Montclair, N. J., assignor of one-half to George P. Farmer, same place. Filed Jan. 3, 1882. (No model.)

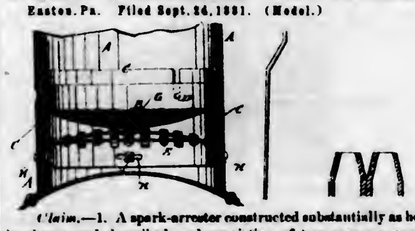
Brief.—The hood covers the inner side of the coil and fills the space between the limbs of the pin.



Claim.—1. The guard B, provided with the pin-hole *e* and lugs *b b*, and adapted to be applied upon the pointed member of a safety-pin and cover the inner part of its coil, substantially as shown and described.

2. The safety-pin provided with a coil, *d*, combined with the hood B, having lugs *b b* clamped over the inner part of said coil to cover said part and fill the space *g* between the limbs of the pin, substantially as shown and described.

254,659. SPARK-ARRESTER. JOHN L. KASTNER, South Easton, Pa. Filed Sept. 26, 1881. (Model.)



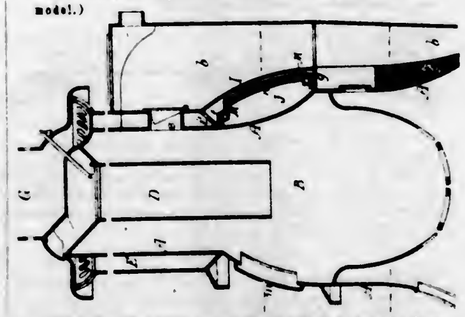
Claim.—1. A spark-arrester constructed substantially as herein shown and described, and consisting of two concavo-convex grates made with parallel bars and connected at their centers by a bolt and at their rims by an interposed rim, C, as set forth.

2. In a spark-arrester, the combination, with the smoke-stack A, of the two concavo-convex grates B E, the central bolt, G, and the interposed rim C, substantially as herein shown and described, whereby sparks will be broken up before escaping from the smoke-stack, as set forth.

3. In a spark-arrester, the concavo-convex grate E, made of parallel curved bars attached at their centers to a curved cross-bar, and having the ends of the alternate parallel bars attached to a rim, the ends of the other bars being at a little distance from the said rim, substantially as herein shown and described, whereby large sparks that pass through the said grate can fall back into the smoke-chamber, as set forth.

4. The combination, with the grate B, of the grate E, provided with horizontal slots H in its rim, substantially as herein shown and described, whereby the relative position of the two grates can be readily adjusted, as set forth.

254,660. HEATING-STOVE. OLIVER B. KEELEY, Spring City, Pa., (Joseph Keeley and Mary E. Keeley, Administrators of said Oliver B. Keeley, deceased.) Filed Nov. 28, 1881. (No model.)

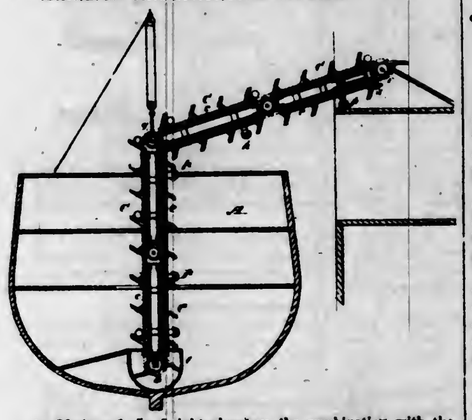


Claim.—1. The combination of the casing A, hot-air chamber E, flue-casing I, and the heating-chamber made in two parts, J J', separated by the flange *g*, as set forth.

2. The combination of the hot-air chamber E, the combustion-chamber B, the flue-casing I, the air-heating chamber J between the flue-casing and the casing of the combustion-chamber, and the shields M, adapted to form with the stove-casing air-heating chambers communicating with the chamber J, as set forth.

3. The combination of the stove-casing having illuminating doors or windows *m*, with the sliding shields M, having mica-covered openings *n* formed therein, as and for the purpose specified.

254,661. FREIGHT ELEVATOR AND CONVEYER. THOMAS KEITH, New York, assignor to Charles B. Mesereau, New Rochelle, N. Y. Filed Nov. 15, 1881. (No model.)



Claim.—1. In freight-elevators, the combination, with the endless chain *a*, provided with tables *m*, and the sprocket-wheels *h*, of the sections *c*, provided with the apertured plates *d*, hinged together, and cross-bar *f*, substantially as shown and described, whereby the said sections are held at any desired angle, as set forth.

2. In freight-elevators, the jointed sections composed of rails *c*, united by joint-plates *d* and rods *g*, and the endless chains *a*, carrying tables *m*, substantially as shown, described, and combined, for operation as set forth.

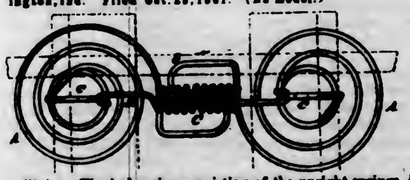
3. The endless chains *a a*, provided with eyes *g'*, and connected by rods *g*, and the V-shaped bars *m*, held by braces *n*, in combination with the jointed sections C, forming a supporting-frame, substantially as shown and described.

254,662. FENCE-POST. CYRUS KIDDEY, Windsor, Ontario, Canada. Filed Jan. 11, 1882. (No model.)



Claim.—The post A, in combination with the inverted cup B, having a downward-projecting flange tapering inwardly from the lower to the upper edge, both post and cup being constructed to allow the cup to be driven into the ground after the post has been driven, whereby the tapering inner surface of the cup serves to compact the earth about the foot of the post, substantially as set forth.

254,663. SPRING BED-BOTTOM. THOMAS B. LAYCOCK, Washington, Ind. Filed Oct. 28, 1881. (No model.)



Claim.—The bed-spring consisting of the upright springs A, with their upper ends connected together to enable the varying of the distance between them, and their lower ends provided with hooks or eyes, combined with the spring C, connected to the lower ends of the springs A, substantially as and for the purpose described.

254,664. SIDE-BAR VEHICLE. CHARLES E. LEE, Louisville, Ky., assignor to James L. Clark and Herbert H. Clark, Oshkosh, Wis. Filed Dec. 19, 1881. (No model.)

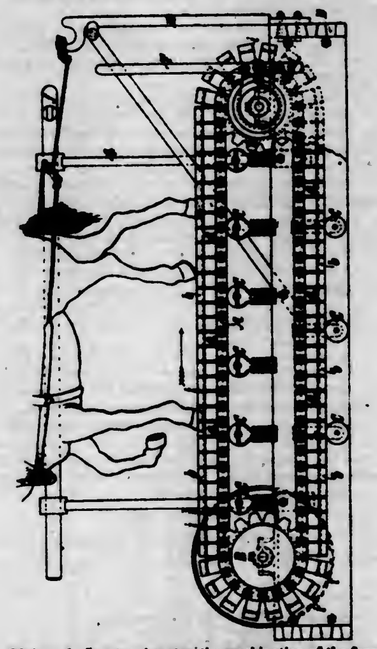


Claim.—1. The combination, with the side bars, *a*, of the side springs, *h*, secured thereto, near their ends, and provided with ears *h' h'*, secured to the head-block or front bolster, *e*, and hind-axle bed, *g*, by bolts *x*, substantially as described, and for the purpose set forth.

2. The combination, with the side bars, *a*, and side springs, *h*, secured thereto near their ends, and provided with ears *h' h'*, secured to the front bolster and hind-axle bed, of the braces *n*, couplings *o*, and cross-springs *p*, substantially as described, and for the purpose set forth.

3. The combination, with the side bars, *a*, and rear side springs, *h*, secured thereto by the clips *l*, and provided with the ears *h' h'*, secured to the axle-bed *g* of the hind axle by the bolts *x*, of the braces *n*, and clips *w*, provided with four prongs and straddling the hind axle, substantially as described, and for the purpose set forth.

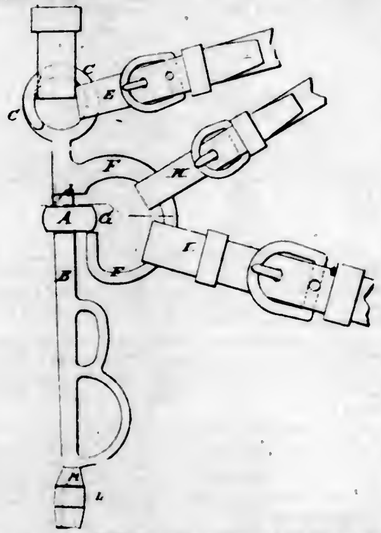
254,665. TREAD-MOTOR. OSKAR LEINHAGEN, Gottleuba, near Dresden, Saxony, Germany. Filed Oct. 26, 1881. (No model.)



Claim.—1. In a tread-motor, the combination of the four pulleys B with the endless band A, consisting of two endless chains, *c*, to the links of which the cross-laths *a* and the ledges *b* are secured, the plates *i*, attached to the heads of the ledges *b*, the frame D, surrounding and supporting the entire machine, the guiding-wheels C, and the post E, to which the horses or cattle for draft are attached, the whole being arranged in the manner and for the purpose substantially as described.

2. The ledges *b*, having small plates *f* attached to their heads as described, for the purpose specified.

254,666. BRIDLE-BIT. ELLIS LITTLE, New York, N. Y. Filed Jan. 9, 1882. (Model.)



Claim.—1. In a bridle-bit, the combination, with the mouth-piece A, of the side bars, B, provided with curved hooks F, adapted to be swung under the ends of the mouth-piece, substantially as and for the purpose set forth.

2. An improved bridle-bit having its side bars provided with split rings at their upper ends, and with curved hooks adapted to swing under the ends of the mouth-piece, substantially as and for the purpose set forth.

3. In a harness-bit, the combination, with the mouth-piece A, of the side bars, B, provided with the curved hooks F, having their free ends bent up under the ends of the mouth-piece and parallel with the said side bars, substantially as and for the purpose set forth.

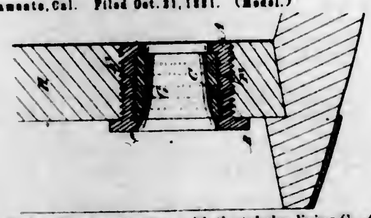
4. In a harness-bit, the combination, with the mouth-piece A, having projections G upon the rear side of its ends, of the side pieces, B, having curved hooks F, substantially as herein shown and described, whereby the check-strap and the reins will be kept in place and can be readily attached and detached, as set forth.

5. In a harness-bit, the combination, with the mouth-piece A, provided with the projections G, of the side bars, B, provided with the curved hooks F, and the journals b, longer than the thickness of the said mouth-piece, substantially as and for the purpose set forth.

6. In a harness-bit, the combination of the side bars, B, provided with the mouth-piece A, made of two parts secured together by screws, one of the said parts being provided with the projections G on its ends, substantially as and for the purpose set forth.

7. In a harness-bit, the combination, with the lower ends of the side bars, B, having journals M, of the cross-bar K, having eyes L, and the washers or nuts N, substantially as herein shown and described, whereby the side bars are kept parallel while being allowed to turn freely, as set forth.

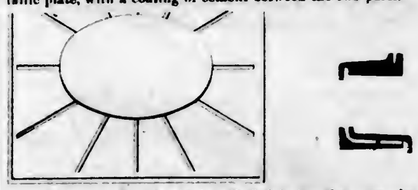
254,667. BUSHING FOR BARRELS. THOMAS J. LOFTUS, Sacramento, Cal. Filed Oct. 31, 1881. (Model.)



Claim.—The combination, with the tubular lining G, of the bushing A, provided with the flange B at its outer end, and the annular recess C, beveled from the outer toward the inner end, and having a series of annular teeth projecting toward the rear end of the said bushing, whereby the lining will be retained in the bushing, substantially as shown and described.

254,668. DRIP-TRAY FOR WATER-CLOSETS. HENRY S. LOMB and ROBERT E. DAY, Hartford, Conn., assignors to the Hartford Sanitary Plumbing Company, same place. Filed Nov. 25, 1881. (No model.)

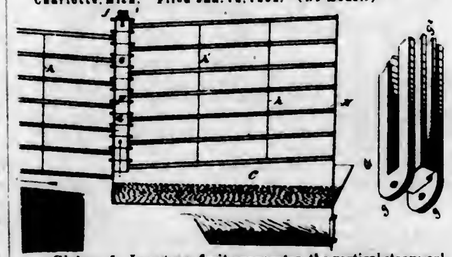
Brief.—The drip-tray is made of glass and rests upon a metallic plate, with a coating of cement between the two parts.



Claim.—1. The herein-described drip-tray for water-closets, as made from glass, constructed with the upwardly-projecting flange *a* and the downwardly-projecting flange *b*, substantially as specified.

2. A drip-tray for water-closets, consisting of the tray A, as made from glass, with the metal plate C beneath it, with a coating of cement between the glass tray and the metal plate, substantially as described.

254,669. STEAM-HEAT EVAPORATOR. SETH W. LOWELL, Hume, N. Y., assignor to the Steam Heat Evaporator Company, Charlotte, Mich. Filed Jan. 16, 1882. (No model.)



Claim.—1. In a steam fruit-evaporator, the vertical steam-column F, communicating with boiler C, and consisting of the castings G, arranged one above the other, and adapted to convey the steam to the sections H, substantially as shown and described.

2. In a steam fruit-evaporator, the castings G, having horizontal flanges *g g* formed around their upper and lower edges, and provided with recessed projections g^3, extending the entire length of the castings, and adapted to convey the steam from the column F to the sections H, substantially as shown and set forth.

3. In a steam fruit-evaporator, in combination with the boiler and steam-sections, the steam-column F, formed of the separate castings G, provided with recessed projections g^3, adapted to afford means of connection with said steam-sections, substantially as shown and described.

4. In a steam fruit-evaporator, the steam-sections H, formed of the sheets A' A', each bent into the form of a rectangular pipe, A^3, having flaps A extending from them and secured to the opposite ends of the rectangular pipes A^3, substantially as shown and described.

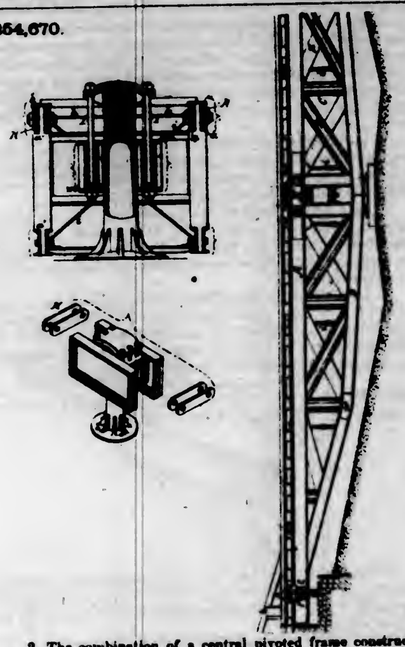
5. In a steam fruit-evaporator, the steam-sections H, provided with partitions A^4, formed of the bent ends of the rectangular boxes, said partitions having their ends turned up and riveted to the horizontal portion of the sections, and adapted to give additional strength to the sections, substantially as shown and described.

254,670. TURN-TABLE. FRANCIS C. LOWTHORP, Chambersburg, N. J. Filed Sept. 27, 1881. (No model.)

Brief.—Each girder of the turn-table is composed of two trusses abutting end to end at the center of the table and strong links connecting said abutting ends. From a cap on the center pivot are suspended by bolts two short longitudinal beams. These support transverse vertical beams, which in turn are secured to and support the girders.

Claim.—1. The combination, in a turn-table, of two wrought-iron or steel truss-frames, the upper and lower chords of one abutting against those of the other, with links N for connecting the upper chords of both frames together, substantially as described.

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2. The combination of a central pivoted frame constructed substantially in the manner described with the two truss-frames and connecting-links.

254,671. LOG-ROLLER FOR SAW-MILLS. JOEL LUCIA, Little Suamico, Wis. Filed Apr. 6, 1881. Renewed Jan. 25, 1882. (No model.)



Claim.—1. In a log-roller, the combination of a driving-shaft and pinions with the rack-bars G and cross-heads, and the pivoted weighted levers H, provided with the spur-wheels I, substantially as shown.

2. The combination of the driving-shaft provided with pinions, the rack-bars, cross-heads, pivoted weighted levers provided with the spur-wheels I, and the spring-catches J, substantially as described.

254,672. CARBON FOR ELECTRIC LAMPS. HIRAM S. MAXIM, Brooklyn, assignor to the United States Electric Lighting Company, New York, N. Y. Filed Apr. 25, 1881. (No specimens.)



Claim.—The process of manufacturing carbon conductors for incandescent lamps by first carbonizing at a high temperature in a flask sheets of proper material, then cutting or punching from these the conductors in any desired shape, and lastly heating the said conductors in a carbonaceous gas or vapor, substantially as set forth and described.

254,673. UNITING AND SEPARATING FROG. HOSTUS McDONALD, Nashville, Tenn. Filed Nov. 16, 1881. (No model.)

Brief.—Broad and narrow gage cars are directed to and from their respective lines onto a "compromise gage" on a hoist, so their tracks will be centered on a common line, through guards and a point which directs the cars from the two gages onto a three-railed track, from whence they are directed into the compromise gage at the point end of the inner rail of said three-railed line by a contraction in the outer rails next said point and guard-rails arranged opposite said contraction and extending through the length of said compromise line or gage.

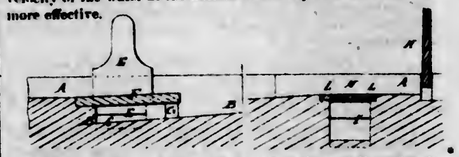


Claim.—1. An automatically-acting switch for joining standard and broad gage cars upon a compromise track and to separate the same upon their respective tracks, consisting of the rails C C C, the point *y* of the rail B, guards *b* and *x*, point-rails *v z*, and the hoist guard-rails F F, all arranged to operate substantially as shown and described.

2. The guard-rails F F of the hoist, in combination with the point-rails *v* and *z*, and the rails C C C, substantially as and for the purposes set forth.

254,674. IRRIGATING-DITCH. DENNIS D. MCILVOY, Golden, Colo. Filed Nov. 19, 1881. (No model.)

Brief.—At intervals in an irrigating-ditch A are formed traps I and depressions B, having side exits to collect the sediment from the water and prevent it settling on the arable land. The depression B has a contracted passage formed by plate F, to increase the velocity of the water at the bottom of the depression and make it more effective.

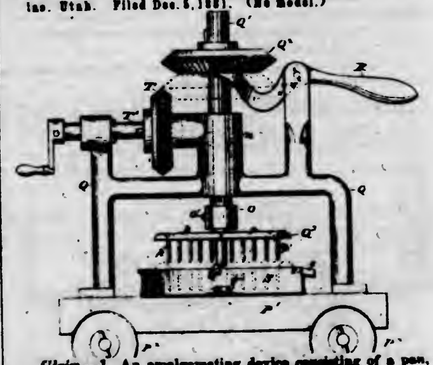


Claim.—1. An irrigating-ditch made, substantially as herein shown and described, with a depression, B, in its bottom and a discharge-opening, C, closed by a gate, E, at the side of the said depression, whereby the ditch can be cleared of sediment by the action of the water passing through the said ditch and the sediment kept from being spread over the land, as set forth.

2. In an irrigating-ditch, the combination, with the ditch A, and the depression B, having side discharge-opening, C, of the plate F, substantially as herein shown and described, whereby the action of the outflowing water is made more effective in clearing the said depression of sediment, as set forth.

3. In an irrigating-ditch, the combination, with the ditch A, of the well-hole I, having side opening, J, and covered with a slotted plate, L, substantially as herein shown and described, whereby the heavier sediment is drawn out and is thus kept from passing down the ditch, as set forth.

254,675. AMALGAMATOR. ANDUS MCKELLAR, Fort Douglas, Utah. Filed Dec. 5, 1881. (No model.)

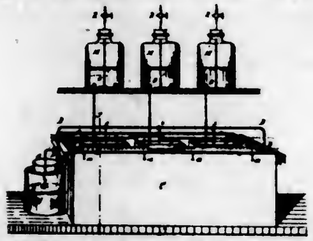


Claim.—1. An amalgamating device consisting of a pan, a frame-work carrying a horizontal shaft, with rigid vertical gear-

wheel T, and adjustable vertical shaft O, with a rake at its lower end and single gear-wheel Q^2 at the top, resting above the wheel T, and means, substantially as described, for simultaneously raising the rake and disconnecting the gears by one and the same movement, as set forth.

2. The combination of the platform P', the detachable pan S, frame Q, horizontal shaft T', with rigid vertical gear-wheel T, vertically-adjustable shaft O, with rake Q^2 at its lower end and a gear-wheel, Q^2, at the top, resting above gear-wheel T, and the lever R, fulcrumed on a standard from the frame Q, and having its end arranged beneath the wheel Q^2, for simultaneously disconnecting the gears and raising the rake, substantially as shown and described.

254,676. GALVANIC BATTERY. ALFRED MICHAUD, Paris, France. Filed Sept. 8, 1881. (No model.) Patented in France Apr. 19, 1880, and July 11, 1881, and in England Aug. 26, 1881.



Claim.—1. In a galvanic vat, the combination, with the vat C and the porous vessels P, of the bar B, the metallic plates D, the wooden blocks *n*, and the hooks *s*, substantially as shown and described, whereby the zinc plates are suspended in the said porous vessels, as set forth.

2. In a galvanic vat, the combination, with the flasks M and the porous vessels P, of the siphons *t*, provided with the india-rubber pipe *a'*, having a glass tube on its inner end, substantially as and for the purpose set forth.

3. In a galvanic vat, the combination, with the vat C, provided with the overflow-pipe G, the flasks M, and the porous vessels P, of siphons *t*, provided with india-rubber pipes *a'*, having glass tubes on their inner ends, substantially as and for the purpose set forth.

254,677. HAMMOCK OR BED. CHARLES HOGER, Lowell, Mass., assignor of one-half to John Sherey, same place. Filed Dec. 10, 1881. (No model.)



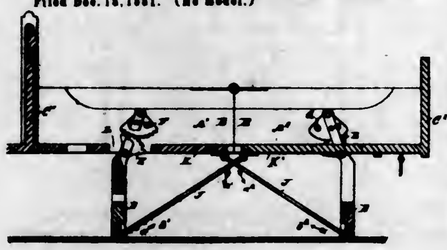
Claim.—1. The combination of the slats A A', provided with holes C, and the ropes B, crossing each other in said holes and between said slats, as and for the purpose specified.

2. The combination of slats A A', flexibly connected together, and the spiral springs D, as and for the purpose specified.

3. The combination of the spiral spring D and the elastic covering E, as and for the purpose specified.

4. The combination of the spiral spring D and the rubber covering E, as and for the purpose specified.

254,678. FOLDING BED. CHARLES H. MORRISON, New York, N. Y., assignor to himself and RHEA H. NORTON, Chicago, Ill. Filed Dec. 16, 1881. (No model.)



Claim.—1. In a folding bedstead, the combination, with the hinged sections A' A^3, of the bars H, pivoted to the upper ends of the legs D and to the inner surfaces of the rails B, the segmental racks E, attached to the upper ends of the legs D and engaging with the racks F, attached to the inner sides of the rails B, substantially as herein shown and described, and for the purpose set forth.

2. In a folding bedstead, the combination, with the hinged sections A' A^3, of the legs D, the pivoted bars H, the segmental racks E and F, and the covering-plates G, substantially as herein shown and described, and for the purpose set forth.

3. In a folding bedstead, the combination, with the hinged sections A' A^3, of the bottoms K K', provided with slots or recesses L, the pivoted bars H, the segmental racks E and F, and the legs D, substantially as herein shown and described, and for the purpose set forth.

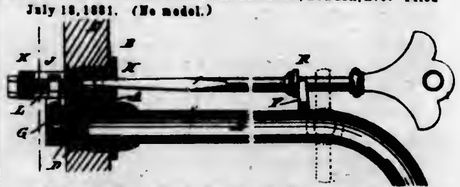
4. In a folding bedstead, the combination, with the hinged sections A' A^3, of the legs D, the pivoted bars H, the segmental racks E and F, and the braces J, attached to the inner ends of the sections A' A^3 and to the lower ends of the legs D, substantially as herein shown and described, and for the purpose set forth.

254,679. FOLDING PACKING-BOX. ALONZO P. HASH, Weymouth, Mass. Filed Jan. 23, 1882. (Model.)



Claim.—The herein-described folding packing-box, consisting essentially of the creased sides *a a a a* and hinged ends B B, having lips B' B' and inwardly-projecting parts B'' B'', as and for the purpose set forth.

254,680. FAUCET. GUSTAV A. HAUHARD, Newark, N. J. Filed July 18, 1881. (No model.)



Claim.—1. In a faucet, the combination, with the valve G and screw L, of the apertured plug A, provided with the guide-bars J, united at their outer ends by the cross-piece K, substantially as and for the purpose set forth.

2. In a faucet, the combination, with the apertured plug A, provided with the guide-bars J, of the valve G, the screw L, having an aperture in its head, and the key P, substantially as and for the purpose set forth.

3. In a faucet, the combination, with the apertured plug A, of the valve G on the inner side of the same, the screw L, with a head, N, having an aperture, O, the guide-bars J, the key P, and the tube E, substantially as herein shown and described, and for the purpose set forth.

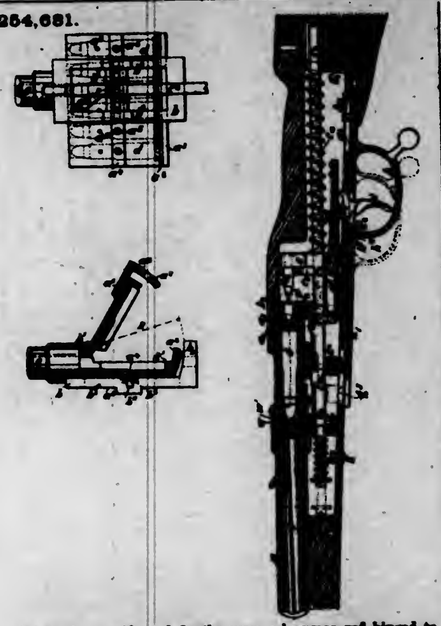
4. In a faucet, the combination, with the apertured plug A, of the valve G on the inner side of the same, the screw L, with a head, N, having an aperture, O, the key P, having a shoulder, R, and the tube E, having a recessed projection, F, substantially as herein shown and described, and for the purpose set forth.

254,681. BREECH-LOADING FIRE-ARM. JOSEF NAGUSY, Vienna, Austria-Hungary. Filed Aug. 26, 1881. (No model.) Patented in Italy July 30, 1881, in Belgium Aug. 10, 1881, in Sweden Oct. 3, 1881, in France Oct. 28, 1881, in Austria Nov. 10, 1881, and in Hungary Nov. 18, 1881.

Claim.—1. In a magazine fire-arm, the combination, with the barrel, a laterally-movable cartridge-magazine, a hammer provided with a firing-pin, a guide-rod for the same, and a hammer-rod hinged to said firing-pin, of a sliding trigger-guard, and means, substantially as set forth, whereby a lateral movement is imparted to the magazine, and the firing-pin, through the medium of its hammer-rod, is locked into position for firing by the operation of the trigger-guard, substantially as and for the purpose specified.

2. In a magazine fire-arm, the combination, with the barrel, a laterally-movable cartridge-magazine, a hammer provided with

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a firing-pin, a guide-rod for the same, a hammer-rod hinged to said firing-pin, a sliding trigger-guard, and means, substantially as set forth, whereby a lateral movement is imparted to the magazine, and the firing-pin, through the medium of its hammer-rod, is locked into position for firing, of the trigger and the actuating-spring c^{10}, substantially as and for the purpose specified.

3. The magazine herein before described, composed of the parts *a*, carrying the hinged locking-plate a^2, and having a dovetailed projection, a^3, and guide-pins a^4, and the part a', hinged to part *a*, and having the locking-plate a^5, said parts *a* a' being constructed to form chambers for the reception of a series of cartridges, substantially as described.

4. In a magazine fire-arm, a hammer or firing-pin, a hammer-rod to which said hammer is hinged, and a sliding trigger-guard, in combination with a guide-rod upon which said firing-pin is mounted, the parts being arranged to move together in one direction, while the hammer and its rod are capable of independent motion in a reverse direction, substantially as and for the purpose specified.

5. The combination, with the magazine *a* a', constructed as set forth, of its casing or inclosing-frame *b*, provided with a dovetailed groove, b^2, and a prism-shaped slot, (in cross-section,) b^3, formed in the bottom of said groove b^2, for the reception of the dovetailed projection a^3, and the guide-pins a^4 of the magazine, substantially as described, for the purpose specified.

6. The inclosing case or frame *b*, composed of two side pieces, b^1, united in front by a screw-threaded tubular head for the reception of the barrel *c*, said head having a rearwardly-projecting ledge or flange, b^7, and in rear by a breech-block, b^4, perforated for the passage of the firing-pin, the cross-bar b^5, provided with a dovetailed groove, b^6, and a prism-shaped slot, (in cross-section,) b^3, formed in the bottom of said groove b^6, substantially as described, for the purpose specified.

7. The hammer *e*, provided with guide-cheeks e^2 and a firing-pin, e', a sliding trigger-guard, and mechanism to retract the hammer into position for firing, in combination with the guide-rod c^2, upon which said hammer slides, an actuating-spring, c^{10}, to throw the hammer and firing-pin forward, after being retracted into position for firing, through the medium of said trigger-guard by pressure upon the trigger, substantially as described.

8. The combination, with the hammer, its guide-rod c^2, its actuating-spring c^{10}, the hammer-rod e^3, hinged to the hammer, as described, and having the stop e^4, the spring e^5, and the plate or strap *g*, having stop g^2, of the trigger *l*, substantially as described, for the purpose specified.

9. The combination, with the hammer, its guide-rod c^2, carrying the plate c^3 and the actuating-spring c^{10}, the hammer-rod e^3, hinged to the hammer, as described, and having the stop e^4, the spring e^5, and the plate or strap *g*, having stop g^2, of the trigger-guard and plate *h h'*, all arranged and operating substantially as and for the purpose specified.

10. The combination, with the guide-rod c^2, the hammer *e*, mounted upon said rod, and mechanism to retract the rod and hammer into position for firing and lock said hammer into such position, of the spring c^{10}, to move the rod c^2 forward independently of the hammer, substantially as and for the purpose specified.

11. The combination, with the plate *g*, having recess g^3, of the guide-rod c^2, its spring c^{10}, the trigger-guard plate h', carrying a spring, h^2, provided with a lug or pin adapted to engage the recess g^3, and the trigger *l*, having the nose P, adapted to engage the free end of the spring to release the lug from the recess, substantially as described, for the purpose specified.

12. The combination of the breech-block b^4, the magazine-casing, the magazine, the guide-rod c^2, carrying the plate c^3, the hammer *e*, and actuating-spring c^{10}, the hammer-rod e^3, having stops e^4, and the strap *g*, having stop g^2, with the trigger-guard plate *h* and the spring c^{10}, all arranged and operating substantially as and for the purpose specified.

13. The combination of the hammer guide-rod c^2 and the safety-plate c^3, carrying the pins c^4, with the breech-block b^4 and the outer locking-plate, a^5, of the magazine, both the breech-block and plate being perforated for the passage of said pins c^4 and the firing-pin, substantially as and for the purpose specified.

14. The combination, with the outer plate, a^5, of the magazine, provided with a recess, a^6, and the breech-block b^4, of the pin *i* and spring i^2, substantially as and for the purpose specified.

15. The combination of the breech-block b^4, the plate a^5 of the magazine, and pin *i*, having an arm, i^3, and the spring i^2, with the guide-rod c^2, having the abutment c^{10}, all arranged and operating substantially as and for the purpose specified.

16. The combination, with the outer locking-plate, a^5, of the magazine, the breech-block b^4, and the hammer and its firing-pin *e*, of the rod c^2, its safety-plate c^3, and the springs c^{10} c^{11}, all arranged and operating substantially as and for the purpose specified.

17. The combination, with the magazine carrying-pins c^4 and its casing or frame, of the guide-rod c^2, its actuating-plate c^{10}, and the trigger guard and plate *h h'*, all arranged and operating substantially as and for the purpose specified.

254,682. CORN-HUSKING IMPLEMENT. JASON HIXON, Winfield, Kans. Filed Jan. 17, 1882. (No model.)



Claim.—1. In a corn-husking implement, a shank bent to form a hook for its attachment to the hand, and provided with a spirally-twisted husking-pin so arranged in relation to the shank that its cutting-edge will be presented in a line with the grain of the husk, in combination with an auxiliary hook adapted to receive the second finger of the hand, substantially as set forth.

2. In a corn-husking implement, a shank bent to form a hook, and provided with a spirally-twisted husking-pin whose point is bent outwardly, in combination with an adjustable hook secured to said shank, substantially as set forth.

3. In a corn-husking implement, the combination, with the shank A, provided with the spirally-twisted pin B, of the slotted and hooked strip C, the screw D, and guiding-stud *d*, substantially as set forth.

254,683. HAME-TUG. ISAAC W. HUMAN, Canton, Ohio. Filed Dec. 31, 1881. (No model.)



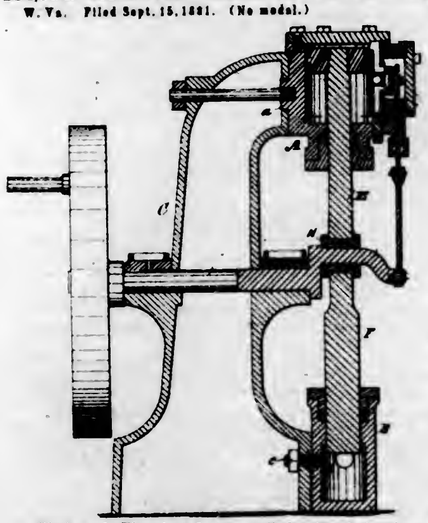
Claim.—1. The combination, with the hames and the hame-tug, of a frame adapted to receive the end of the tug, a screw-rod

for adjusting the tug, and devices, substantially such as set forth, for engaging said rod with the tug and the frame.

2. The combination, with the tug and the hame, of the frame A B C, the screw-rod mounted therein, the thumb-wheel engaging therewith, and the nut attached to the tug, substantially as set forth.

3. The combination, with the hame and the tug, of the metal frame A B, carrying the tug and provided with a screw-threaded socket, and the eyebolt I, having the bolt portion divided, substantially as set forth.

254,684. STEAM-PUMP. CAMPBELL H. OSBORN, Clarksburg, W. Va. Filed Sept. 15, 1881. (No model.)



Claim.—1. The pivoted steam-cylinder A and the pivoted pump-cylinder B, in combination with the rigidly-joined piston-rod E and plunger-rod F, as and for the purposes set forth.

2. The rigidly-joined rods E and F, in combination with the cross-head H and the pivoted or swiveled cylinders A and B, substantially as and for the purposes set forth.

254,685. NUT-LOCK. WILLIAM H. PAIGE, Springfield, Mass. Filed Nov. 14, 1881. (No model.)



Claim.—1. The nut A, comprehending the narrow flange or fillet 1, made on one of its faces and provided with transverse openings, as 2, the interior of said flange or fillet being made on the same plane as the bore of the nut and its exterior made smooth and inclined or beveled with reference to its interior, substantially as and for the purpose described.

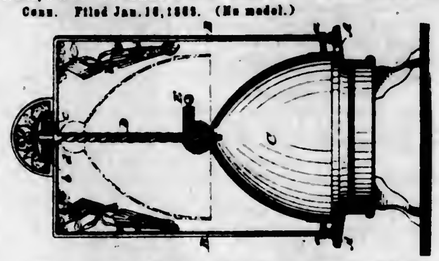
2. In an improved lock-nut, a sectional fillet made on one of its faces, with openings, as 2, between the sections, with the inner side of the sections on the same plane with the bore of the nut, and the exterior side of each section inclined to the interior side, and with one end of each section made thicker than the adjacent end of the next section, substantially as described.

254,686. STRAW-CONVEYER BELT. ALTON J. PAGE, Jr., Virginia, Ills. Filed July 19, 1881. (No model.)



Claim.—The combination, with a straw-conveyer belt, of cross-slats, metallic end sockets or caps for said slats, and the metallic fastening passing through the edges of the belt, as shown and described, whereby the edges of the belt will be held so closely to the end and sides of the caps as to prevent the straw from catching between the caps or sockets and the belt.

254,687. COVERED DISH. EDMUND A. PARKER, Meriden, Conn. Filed Jan. 16, 1882. (No model.)

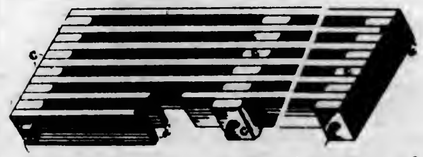


Claim.—1. The dish A, provided with a cover-support, B, and lifting cover C, in combination with means for automatically lifting and holding the cover, as hereinbefore set forth.

2. The dish A, provided with cover-support B, and means, substantially as described, for raising and holding the cover, in combination with a latch or locking-bolt, E, substantially as and for the purpose set forth.

3. The cover C, connected with the frame B by guide-arms *a a*, in combination with a coil-spring, *c*, having a hub, *d*, and a rotary quick-screw shaft, D, adapted to travel in a female thread in the apex of the cover, whereby the latter is raised, substantially as described.

254,688. GRATE AND GRATE-BAR. ALLEN R. PARKISON, Monongahela City, Pa. Filed Dec. 30, 1881. (No model.)

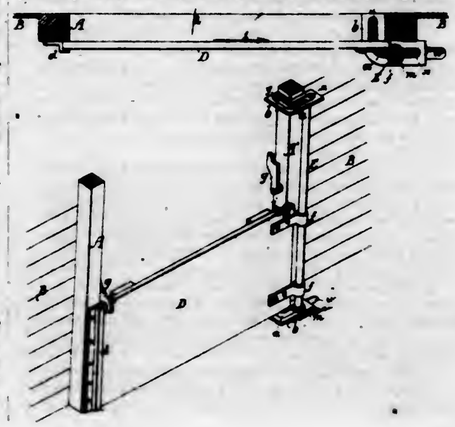


Claim.—1. The steel or wrought-metal grate-bar herein described, of the shape set forth, and cut without waste from a straight-rolled strip of steel or wrought metal.

2. The combination of the grate-bars formed, as set forth, of sections of straight-rolled steel or wrought metal, spacing-washers which are flush with the upper and lower faces of the bars and brace them their entire width, and the securing-bolts, substantially as and for the purpose set forth.

254,689. GRAIN-CAR DOOR. ALBERT E. PEPPER, Philadelphia, Pa. Filed Nov. 21, 1881. (No model.)

Brief.—The inner end of the door is secured by straps, so as to swing or slide on a vertical rod. The ends of the rod move in curved slotted plates, so as to permit the front edge of the door to be withdrawn from a retaining-plate and swung outward. Pivoted catches on the door-posts engage notched plates in the upper edge of the door. The slot, into which the lower end of the rod projects, is provided with an inclined outlet for the escape of grain.



Claim.—1. The combination of the door D and its pivot-rod E with the plates *b*, having curved or angular slots *a*, to which the ends of said pivot-rod are adapted, and in which they can slide, as set forth.

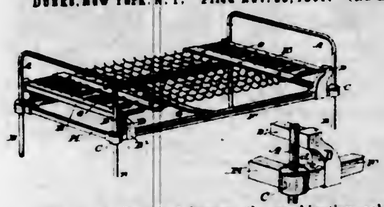
2. The combination of the door D, the plates *b*, having curved or angular slots *a*, and the pivot-rod E, on which the door is free to slide vertically, as set forth.

3. The combination of the door D, having a notched plate, *i*, with a pivoted retaining-catch adapted to said notched plate, as described, whereby the door is retained in position both vertically and longitudinally, as specified.

4. The combination of the door D, the pivot-rod E, the plates *b*, with curved or angular slots *a*, and the retaining-plate *d*, as set forth.

5. The combination of the pivot-rod E of the door, the lower slotted plate, *b*, and the floor of the car, having an inclined passage, *x*, at the end of the plate, as set forth.

254,690. BEDSTEAD. WILLIAM R. PITT and CHARLES H. DUNKS, New York, N. Y. Filed Nov. 23, 1881. (No model.)

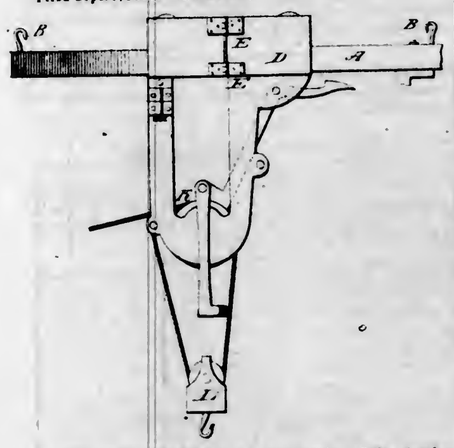


Claim.—1. In a bed-bottom, the combination, substantially as herein set forth, with the side rails and the end rails, of the metallic corner-pieces, constituting a frame adapted to support a flexible fabric, each corner-piece being provided with one member of a detachable socket-fastening device, adapted to be connected with and rest upon a corresponding member of a socket-fastening device of an iron bedstead, substantially as set forth.

2. In a bedstead, the combination, with the posts, of the socket-pieces C, having the end bars, H, permanently attached thereto, the corner-pieces D, detachably connected with the socket-pieces, the end rails, E, and side rails, F, substantially as described.

3. In a bed-bottom, the herein-described cast-metal corner-piece D, supporting one end of an end rail and one end of a side rail, and provided with one member of a detachable socket-fastening device, substantially as set forth.

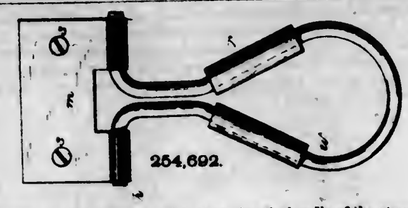
254,691. HAY-CARRIER. JOSEPH E. PORTER, Ottawa, Ill. Filed Sept. 5, 1881. (No model.)



Claim.—The combination, in a hay-carrier, of the circular way A, having hooks B B, with the frame D, hinged at E in such a manner as and for the purpose described.

254,692. BROOM-HANGER. JOSEPH RATH, Columbus, Ohio. Filed July 30, 1881. (Model.)

Claim.—The broom-holder herein described, consisting of the combination of a metal hinge, *m*, having a flat back, provided with eyes formed on the side opposite to the wall, with the wire loop *w*, having an oval-shaped opening to receive the handle of the utensil to be suspended, and bent outwardly, as shown, and also having ears *h h*, which enter the eyes of the said metal hinge, substantially as set forth.



254,692.

254,693. FROG OR BLOCK FOR RAILWAY-CROSSINGS. JAS. RUSH, Cochran, Ind. Filed Sept. 24, 1881. (No model.)

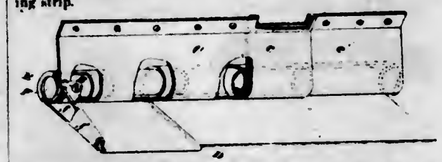
Brief.—The blocks have sockets to receive the ends of the track-rails, and are grooved across their length for the passage of wheel-flanges, said grooves having flaring entrances.



Claim.—A railway frog or block the same height and flush with the rails to be connected, formed with sockets S, fitting the vertical sides, and adapted to receive the ends of the rails which rest on the sleepers, and having grooves or channels C, extending the whole length of the block and terminating in downwardly and laterally flaring openings or entrances C′ and *c*′, as set forth.

254,694. DOOR-STRIP. CLARENCE E. RICE, Sedgwick, Kans. Filed May 25, 1881. (No model.)

Brief.—An extensible metallic swinging strip is hinged to a fixed metallic extensible piece on the door by their adjacent rolled edges overlapping. A spring actuating the hinged strip is secured to a plug fastened in the tubular portion of the hinged strip at one end and has its outer end secured by a lip on the end of the swinging strip.



Claim.—1. In combination with a door-strip consisting of members C D, extensible in length, as described, and cam G, the spring F, having an arm, *f*, whose end is inclosed by a lip, *f*′, of the member D, the spiral part of said spring surrounding the plug E, to which its other end is secured, and which is itself inclosed by the tubular-formed edge of the member D, and held securely from turning by a screw, *e*, attaching it to the member C, all substantially as described.

2. The plug E and spring F, having arm *f*, the former connected to the member C of the door-strip, and the latter surrounding and secured to the former and operating to raise the free edge of the member D, as and for the purpose set forth.

3. The combination of the member C, having the plug E, with the member D, hinged to the member C, spring S, supported on the plug E, and having its ends bearing respectively on the two strips, and a cam, G.

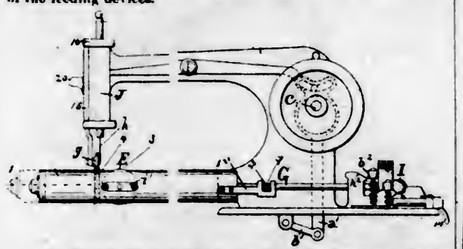
254,695. PRESERVING FORAGE BY STORAGE IN SILOS. CHARLES H. ROBERTS, Lloyd, N. Y. Filed Jan. 27, 1882. (No specimens.)

Claim.—The method, substantially as herein shown and described, of preserving dry or partly-dried cornstalks for forage, consisting in wetting the stalks with water or steam before or after they are placed in the silo and compressing and packing them in the silo in this wet or moistened state, as set forth.

254,696. SEWING-MACHINE. WILLIAM ROBERTS, Baltimore, Md. Filed Aug. 31, 1881. (Model.)

Brief.—Upon a cylindrical work-supporting arm are mounted two rotary feed devices arranged at right angles to each other and

adapted to be moved longitudinally upon said arm, so that either may be brought into working position for the purpose of feeding the goods being sewed either around said arm or longitudinally thereof, at the pleasure of the operator. The roller-presser is adapted to be placed in such positions as properly to co-operate with either of the feeding devices.



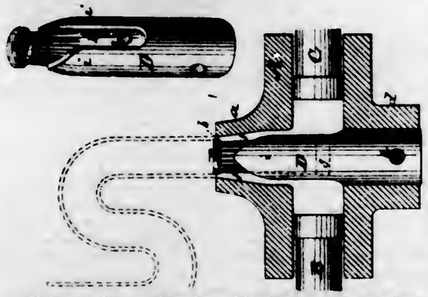
Claim.—1. In a sewing-machine, the combination, substantially as set forth, of a needle-bar and two rotary feed devices movable with respect to the needle-bar, one of said feed devices being arranged to rotate in a plane at a right angle to the plane in which the other rotates.

2. In a sewing-machine, the combination, substantially as set forth, of a needle-bar, a cylinder adapted to have a sliding movement and provided with a feed device, and a cylinder adapted to have both a sliding and a rotary movement and provided with a feed device.

3. In a sewing-machine, the combination, substantially as set forth, of a needle-bar, a stationary arm, two movable cylinders mounted upon the arm, each cylinder carrying a rotary feed device, and two needle-holes so placed in the cylinders that one hole will be used in connection with each rotary feed device.

4. The combination, substantially as set forth, of a head, a needle-bar to play vertically through the head, a presser movably secured to and capable of moving partly around the head, and two rotary feed devices, each of which rotates in a plane at right angle with respect to the plane of the other.

254,697. MACHINE FOR MAKING LEAD TRAPS. JOHN ROBARTSON, Brooklyn, N. Y., assignor to E. W. Blatchford & Co., Chicago, Ill. Filed Aug. 29, 1881. (Model.)



Claim.—1. In a machine for making lead traps, the combination of the cylinder A, containing two plungers, B C, with the perforated or reduced core D and outlet-nozzle *a*, all constructed to leave a passage in line with the plungers from one end of the cylinder to the other, past or through the core, so that when one plunger is moved the lead will be ejected from the cylinder on both sides of the core, substantially as specified.

2. In combination with the cylinder A, having two plungers, B C, the core D, having aperture *g*, substantially as specified.

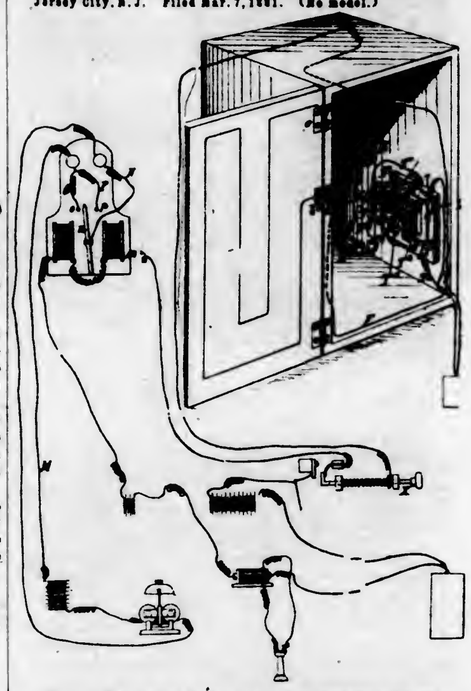
3. In combination with the cylinder A, having two plungers, B C, the core D, having aperture *g* and staying-ribs *i i*, substantially as specified.

254,698. BOILER-CLEANER. ARTHUR ROGERS, Barnesville, Ohio. Filed Jan. 4, 1882. (No model.)



Claim.—The combination, within the shell of a steam-boiler, of the imperforated pipe C, one or more perforated pipes running parallel thereto and communicating therewith, a blow-off pipe, and a cock applied to this pipe, substantially as described.

254,699. ELECTRIC BURGLAR-ALARM. HENRY C. ROGERS, Jersey City, N. J. Filed Mar. 7, 1881. (No model.)



Claim.—In an electric burglar-alarm, a telephonic transmitter connected with the electric circuit at the structure to be guarded, a device for giving audible sounds located at the structure to be guarded, and a telephonic receiver in the station or office where watch is kept, substantially as specified.

254,700. PRINTER'S GALLEY. ELIJAH E. RUDOLPH and JOSEPH A. L. WOLFE, McKinney, Tex. Filed Aug. 19, 1881. (No model.)



Claim.—In a printer's galley, the bed-plate A, rails B, C, and D, spring-clip G, and guides *e e'*, in combination with the adjustable rail E, having studs *a a'* and pin A, and the springs F, substantially as and for the purpose set forth.

254,701. LIGHTING APPARATUS FOR LAMPS, &c. STEBBINS RUSSELL, Waterbury, Conn., assignor to the Scovill Manufacturing Company, same place. Filed Aug. 24, 1881. (No model.)



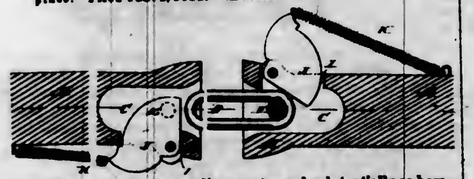
Claim.—1. The combination, with a lamp, lantern, or like device having an opening in its air-distributor or draft-plate, of a lighting apparatus having a case comprising a body and a conduit made in one integral structure with the body, and projecting therefrom, so as to be adapted to be inserted through the said opening, and means for detachably connecting the body of said case to said air-distributor or draft-plate, substantially as specified.

2. The combination, with the air-distributor or draft-plate of a lamp, lantern, or like device, of the case F, base J, and pin H, substantially as and for the purpose specified.

3. In a lighting apparatus for a lamp, lantern, or like device, a pivoted scratching igniting device, substantially as and for the purpose specified.

4. The combination, with the conduit of the case F, of the igniting device K, bearings therefor in which it may be turned, and a catch, *c*, substantially as and for the purpose specified.

254,702. CAR-COUPLING. THOMAS C. RYAN, Fort Collins, Colo., assignor to himself and William Lindenmeier, same place. Filed Jan. 4, 1882. (Model.)

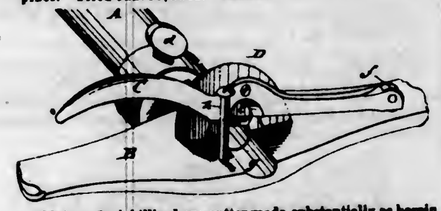


Claim.—1. A car-coupling constructed substantially as herein shown and described, and consisting of the bumper-heads A, having side apertures, I, the pivoted plates J and their springs K, the spring-pressed levers F, carrying the coupling-pins E, and the link D, as set forth.

2. In a car-coupling, the combination, with the bumper-head A, provided with the side aperture, I, of the triangular plate J, having its rear edge curved on the arc of a circle and pivoted at its angle at the forward end of the said aperture, and the spiral spring K, attached to the outer angle of the said plate and to the draw-head, substantially as and for the purpose set forth.

3. In a car-coupling, the combination, with the bumper-head A, provided with the stud G, and the coupling-pin E, of the lever F, the spiral spring H, and the button B, substantially as and for the purpose set forth.

254,703. BILLIARD-CUE CUTTER. PATRICK RYAN, New York, N. Y., assignor to the J. M. Brunswick & Blake Company, same place. Filed Jan. 16, 1882. (Model.)



Claim.—1. A billiard-cue cutter made substantially as herein shown and described, and consisting of a cue-receiving sleeve or shell on the end of which is swiveled a stock that carries a hinged knife for dressing the cue, as set forth.

2. The billiard-cue cutter made, substantially as herein shown and described, with a clamping attachment, whereby the cue may clamped and held from longitudinal movement with respect to the blade during the cutting, substantially as set forth.

3. In a billiard-cue cutter, the sleeve A, provided with the screw *d*, substantially as and for the purposes set forth.

4. The combination, with the stock B, of the sleeve A, handle C, and the hub D, the handle carrying the blade *e* and the sleeve the screw *d*, substantially as and for the purposes set forth.

5. The sleeve A, provided with the screw *d* and formed with the flange *h*, in combination with the stock formed with the depressions *a' g* and channel *c'*, the hub D, formed with the cut-away place *a* and channel *c*, the handle C, and the stop *h*, the handle carrying the blade *e*, substantially as and for the purposes set forth.

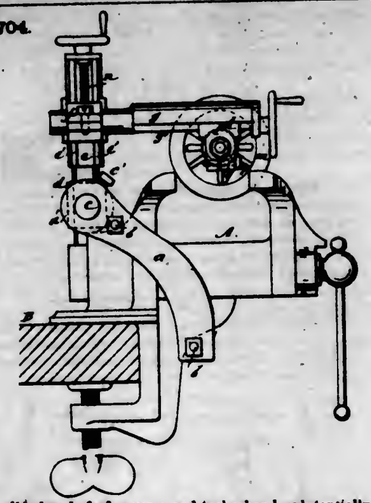
254,704. MILLING ATTACHMENT FOR VISES. EDWARD E. SCHRAMMBERGER, New York, N. Y. Filed Nov. 16, 1881. (No model.)

Claim.—1. The milling attachment consisting of clamping-bars *a*, shaft *c*, having clamping-box *d*, post *e*, slide *f*, arm *g*, box *h*, and tool-arbor *k*, substantially as shown and described, combined for operation as set forth.

2. In milling attachments, the combination of post *e*, adjustable box *f*, arm *g*, and adjustable box *h*, carrying the tool-arbor, substantially as shown and described.

3. In milling attachments, the combination of adjustable

254,704.



arm *g*, slide-box *h*, feed-screw *o*, and tool-arbor *k*, substantially as shown and described.

4. In milling attachments, the combination of adjustable box *h*, screw-sleeve *i*, and tool-arbor *k*, substantially as shown and described.

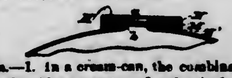
5. In milling attachments, the clamping-box *h* and screw *r*, combined with the screw-sleeve *i* and tool-arbor *k*, substantially as and for the purposes set forth.

254,705. SHIRT-BOSOM. ISAAC SCHNURR, New York, N. Y. Filed Dec. 26, 1881. (No model.)



Claim.—The combination, with a shirt having a forward fold, *d*, of a three-part bosom having a back, *c*, projected beyond the parts *a b*, passed around the fold *d*, and secured to it by stitches 2, the parts *b c* being embraced within said fold and all the parts bound together by the stitches 3, as shown and described.

254,706. CREAM-CAN. HORACE B. SCOVILLE, Cortland, Ohio. Filed Nov. 26, 1881. (No model.)

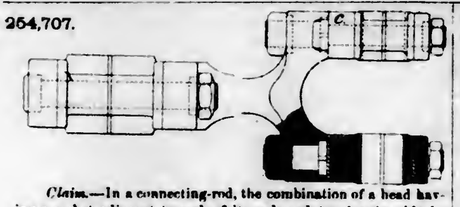


Claim.—1. In a cream-can, the combination, with the body A, having the oblong aperture *d* and raised edges *b*, of the gage H, having the aperture I, with depressed edges *e*, forming a chamber, L, and the glass plate M, cemented within the gage H, substantially in the manner as and for the object stated.

2. In a cream-can, a gage consisting of a plate of sheet metal having the four wings *b*, *b'*, *i*, and *i'*, oblong aperture I, with depressed edges *e*, and the scale-marks K, the whole being adapted for attachment to the body A, to operate in conjunction with a transparent plate, M, substantially as and for the object mentioned.

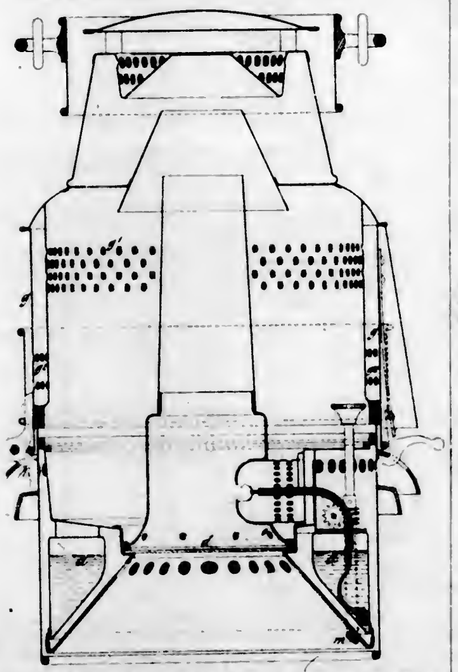
254,707. CONNECTING-ROD. HORACE ROE, Philadelphia, Pa., assignor of one-half to the William Cramp & Sons Ship and Engine Building Company, same place. Filed Jan. 26, 1882. (No model.)

254,707.



Claim.—In a connecting-rod, the combination of a head having a socket adjacent to each of its ends and two bearing blocks or sections, each abutting against the head, and having a central threaded stem fitting one of the sockets thereof and secured thereto by a nut, and being bored out on each side of the stem for the reception of a cap-bolt, substantially as set forth.

254,708. LAMP FOR LIGHTING RAILWAY-CARRIAGES. JOHN F. SHALLIS and THOMAS C. J. THOMAS, Minories, London, England. Filed Nov. 28, 1881. (No model.) Patented in England Aug. 16, 1881.

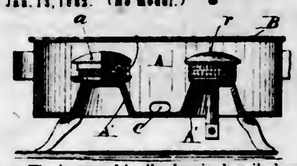


Claim.—1. In a lamp or lighting apparatus wherein oil or spirit is consumed, the combination of a combustion-chamber, a burner or burners projecting through and into the same horizontally or angularly, a metal chimney, a flat transparent diaphragm closing the bottom of the said combustion-chamber, a reflecting-chamber arranged below the combustion-chamber, and a reservoir or receptacle for combustible liquid, substantially as described.

2. In a lamp or lighting apparatus wherein oil or spirit is consumed, the combination of a combustion-chamber having holes to admit air, one or more burners projecting into such chamber horizontally or angularly, a metal chimney, a transparent diaphragm closing the bottom of the said combustion-chamber, a reflecting-chamber arranged below the combustion-chamber and perforated to admit air thereto, and a reservoir or receptacle for combustible liquid surrounding, or partly surrounding, the said reflecting-chamber and in communication with the burner or burners, substantially as described.

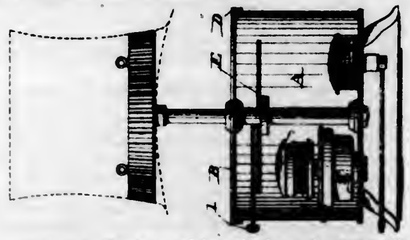
3. In a lamp or lighting apparatus, the combination of a combustion-chamber having holes to admit air, a burner or burners projecting into such chamber, a metal chimney, a flat transparent diaphragm closing the bottom of the said combustion-chamber, a reflecting-chamber below the same, a reservoir or receptacle for combustible liquid to supply the burner or burners, and a case or cover arranged to afford efficient ventilation and to keep the above-named reservoir or receptacle cool, and to carry off the vapor of any spirit [illegible] may escape or be spilled, all substantially as hereinbefore described and shown.

254,709. BROILER. MERRAY M. SHELDON, Pawtucket, R. I. Filed Jan. 13, 1882. (No model.)



Claim.—The improved broiler herein described, consisting of the dish A, its bottom provided with the truncated cones A' and spout C, the gridiron B, and vapor-retort or gas-burners *s* and *r*, the whole arranged as and for the purpose specified.

254,710. HAT-BRIM HEATER. HENRY H. SHELDON, Pawtucket, R. I. Filed Jan. 13, 1882. (No model.)

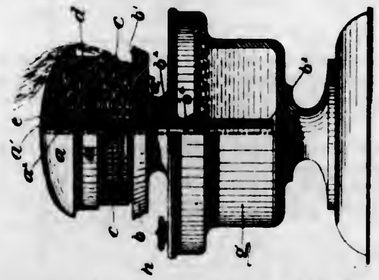


Claim.—1. The improved hat-brim heater herein described, consisting of the stove A, heated with vapor-retort or gas burners, deflector E, size-gage F, and support G, constructed and arranged as and for the purpose specified.

2. In combination with a hat-brim heater, the gage F, provided with one or more size-rings, F' F", substantially as shown and described.

254,711. VAPOR-RETORT BURNER. HENRY H. SHELDON, Pawtucket, R. I. Filed Jan. 13, 1882. (No model.)

Brief.—The heat from the flame is conducted to the oil-reservoir below through the metallic tubes in the center of the device, and the oil is thereby vaporized.



Claim.—1. In combination with the reservoir *g*, the vapor-retort burner herein described, consisting of the top *a*, provided with a downwardly-projecting hollow stem, *a'*, base *b*, having a tube, *b'*, perforated guard *c*, and perforated ring *c*, all substantially as and for the purpose set forth.

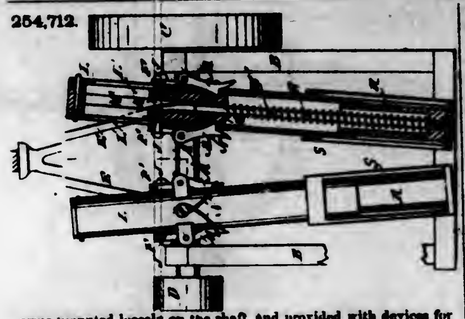
2. In combination with the top *a*, base *b*, guard *c*, and ring *c*, the asbestos packing *d*, all substantially as described, and for the purpose set forth.

254,712. MOTOR. SAMUEL N. SILVER, Auburn, Me. Filed Jan. 21, 1882. (Model.)

Claim.—1. A motor made substantially as herein shown and described, and consisting of reciprocating devices for bringing springs in tension, combined with devices for rotating a shaft by these stretched springs, as set forth.

2. In a motor, the combination, with a shaft, of the rocking

254,712.



arms mounted loosely on the shaft, and provided with devices for acting on the shaft, and of the reciprocating cylinders provided with springs for forcing the cylinders upward, substantially as herein shown and described, and for the purpose set forth.

3. In a motor, the combination, with the shaft A, of the rocking arms F, provided with devices for acting on the shaft, the reciprocating cylinders L, containing pistons K, connected with the ends of the arms J, and of the springs P, substantially as herein shown and described, and for the purpose set forth.

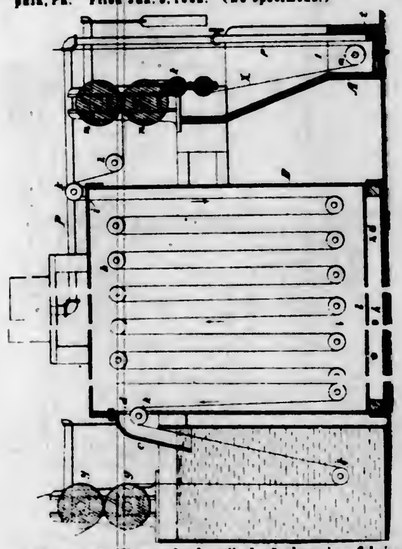
4. In a motor, the combination, with the shaft A, of the rocking arms F, provided with devices for acting on the shaft, the reciprocating cylinders L, containing the pistons K, each provided with a longitudinal slot, K', and sliding on the rods E', and of the springs Q, substantially as herein shown and described, and for the purpose set forth.

5. In a motor, the combination, with the shaft A, of the rocking arms F, provided with devices for acting on the shaft A, the cylinders L, the pistons K, the rods E', the springs Q, and the latches M, substantially as herein shown and described, and for the purpose set forth.

6. In a motor, the combination, with the shaft A, of the rocking arms F, provided with devices for acting on the shaft A, the cylinders L, the pistons K, the rods E', the springs Q, the clutches M, and the springs N, substantially as herein shown and described, and for the purpose set forth.

7. In a motor, the combination, with the shaft A, of the rocking arms F, provided with devices for acting on the shaft A, the cylinders L, the pistons K, the rods E', the springs Q, the cylindrical sockets R, and the guide-frames S, substantially as herein shown and described, and for the purpose set forth.

254,713. CHROMING FABRICS. THOMAS SIMPSON, Philadelphia, Pa. Filed Jan. 3, 1882. (No specimens.)



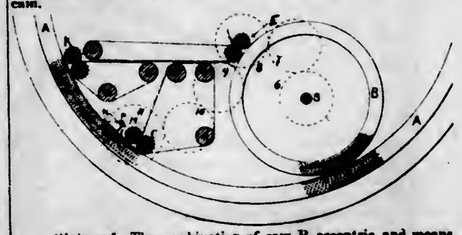
Claim.—1. The mode described of chroming fabrics, the same consisting in passing a traveling strip of padded or printed and dried fabric through a volume of chroming-solution sufficient to permit the thorough saturation of the moving strip, and feeding said volume from a main body as fast as it is taken up by the fabric, then heating said fabric without drying, and then passing the same while wet through a bath of water.

2. In the chroming of fabrics, feeding the chroming-solution into a supplemental tank, through which the fabric travels, so as to maintain a uniform quantity therein, and after passing the fabric from said tank heating the same and passing it before drying through a water bath, as specified.

3. In the process of chroming fabrics, first chroming the fabric, then heating the same, and then subjecting it before drying to a bath, as and for the purposes set forth.

254,714. COMBING-MACHINE. ALBERT SMITH, Bradford, County of York, England. Filed Oct. 29, 1881. (No model.) Patented in France Aug. 29, 1881, and in Belgium Aug. 27, 1881?

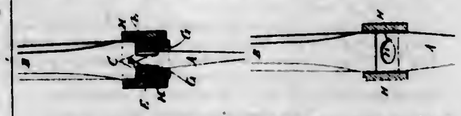
Brief.—The short comb is placed behind the drawing-off rolls, and is provided with two spindles, which slide within two vertical projections formed on a clip which surrounds an eccentric secured to a perpendicular shaft. The said comb is rotated elliptically by the eccentric, and is raised and lowered by means of an inclined cam.



Claim.—1. The combination of cam P, eccentric, and means for rotating the same with clip H', having guide-rod and bearing therefor, and short comb N, carried by said clip.

2. The combination of the cam P, eccentric, and means for rotating the same with clip H', having guide-rod and bearing and carrying projections L L', and a comb, N, having spindles adapted to said projections, all substantially as set forth.

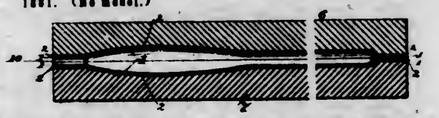
254,715. SAW-SWAGE. FURMAN S. SMITH, Woodville, Miss. Filed May 25, 1881. (No model.)



Claim.—1. A saw set and swage substantially as herein shown and described, formed of the handle B, the center piece, A, having grooves C and recesses D upon its opposite sides, the side pieces, E, having shoulders F and angular notches G, and the band H, as set forth.

2. A saw setting and swaging device consisting of the handle B and center piece, A, having the grooves and recesses C and D deeper on one side than on the other, the notched blocks E, having shoulders F, and the band H, whereby saw-teeth may be swaged and set, substantially as shown and described.

254,716. MANUFACTURE OF ARTICLES OF INDIA-RUBBER, &c. JOHN J. C. SMITH, College Point, N. Y. Filed Sept. 8, 1881. (No model.)



Claim.—1. The process of making hollow articles of rubber or other vulcanizable gum, by pressing the separate halves or parts in suitable molds or dies between sheet metal and foil, then removing the foil from surfaces which are to be joined together, uniting the parts under pressure, and vulcanizing the hollow articles in water under pressure, the water being admitted to the interior to prevent collapsing.

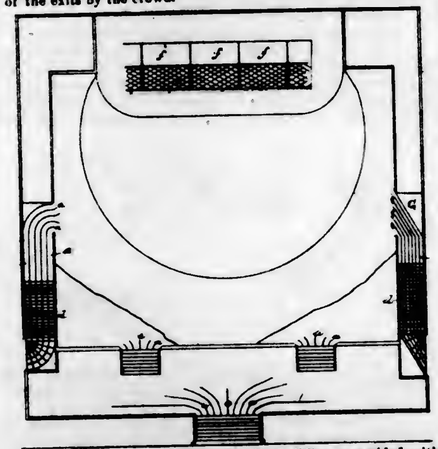
2. The process of forming hollow articles of rubber or other vulcanizable gum, which consists in pressing plastic-rubber composition into the parts of the mold while they are in a heated state, placing them together, so as to cause cohesion between the mar-

gins of the rubber in the respective parts of the mold, and then vulcanizing under water-pressure admitted to the interior of the article as well as to the outside of the mold.

3. The process of vulcanizing articles of rubber or other vulcanizable gum, which consists in placing them together with their molds in a tightly-closed vessel, completely filling said vessel with water under pressure, and subjecting the whole to the necessary degree of heat for a proper length of time.

254,717. EXIT FROM THEATERS. JOHN H. SMITH, Buffalo, N. Y. Filed Dec. 16, 1881. (No model.)

Brief.—Subdividing the exits of public buildings by arranging partitions lengthwise therein, allowing the audience to pass out in single files in case of fire, thereby preventing the blocking of the exits by the crowd.



Claim.—1. The exits from public buildings, provided with narrow passage-ways, allowing the audience to pass out single file, said passage-ways extending a greater or less distance into the corridors or rooms from the exits, and flaring at the inner ends thereof for a short distance in order to more readily receive the bodies of the outgoing crowd, as set forth.

2. The herein-described divisions for the exits of public buildings, placed at suitable distances apart across the entire corridor and extending from the exits of the several departments or portions of the building separately down the corridors and stairways to the final opening to the street, substantially as set forth.

254,718. STOPPER FOR BOTTLES, JARS, &c. GEORGE A. SMITH, Newport, R. I. Filed Dec. 31, 1881. (No model.)



Claim.—In combination with the jar or bottle B, the blown stopper A, ground to fit said jar, and provided with an interior chamber containing filtering material, and having upper and lower openings, whereby vapor can pass from or air into the interior of the jar without allowing the admission of germs of decay, substantially as described, and for the purpose specified.

254,719. LATHE-HEAD. ELI T. STARR, Philadelphia, Pa., assignor to the S. S. White Dental Manufacturing Company, same place. Filed Jan. 24, 1882. (No model.)

Claim.—1. The combination, substantially as hereinbefore set forth, of the lathe-head frame, the bearings of said frame, the spindle fitted to turn in said bearings, the cone-journals of said spindle, one of which is formed by a longitudinally-adjustable cone-collar, and the screw-ring working upon said spindle to hold said adjustable cone-collar in its seat in its bearing.

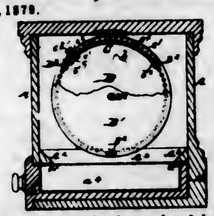
2. The combination, substantially as hereinbefore set forth, of the lathe-head frame, the bearings of said frame, the socketed spindle fitted to rotate in said bearings, the pulley to drive said spindle, the pivoted latch to lock a shank in said socket as against endwise movement, and a sliding ring to control said latch.

254,719.



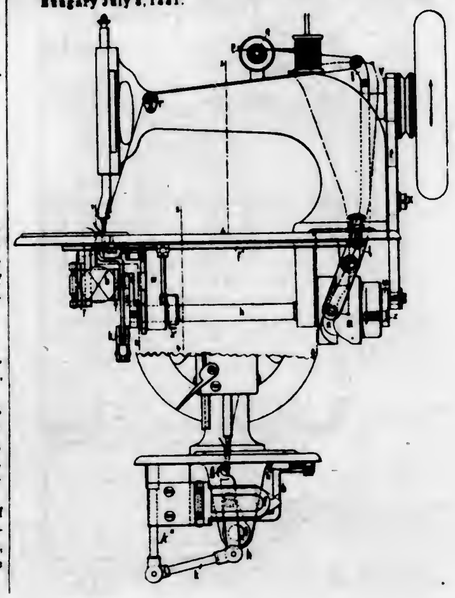
3. The combination, substantially as hereinbefore set forth, of the lathe-head frame having the branching arms, the spindle fitted to turn in bearings in said arms, the pulley having a recess in its side keyed upon said spindle between said arms, the latch mounted in a recess in said spindle between said pulley and one of the bearings of said spindle, and the device to control the movement of said latch.

254,720. ASH-SIFTER. CHARLES STEEL, New York, N. Y. Filed Apr. 21, 1879.



Claim.—In an ash-sifter having a closed box and removable drawer, the rotary sifter described, consisting of the main body B' *b* and removable door C, having the curved side pieces, C', bars *b*, turn-button *c*, and handle *c*', constructed and arranged substantially as set forth, whereby the door may be entirely removed or merely opened as a hinge-door, substantially as set forth.

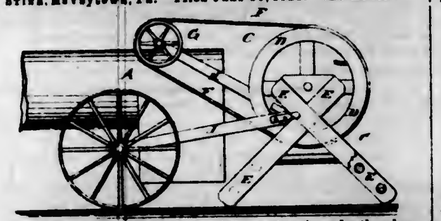
254,721. SEWING-MACHINE. JULIUS STEIN, St. Petersburg, Russia. Filed June 20, 1881. (No model.) Patented in England May 10, 1881, in France May 20, 1881, and in Austria-Hungary July 8, 1881.



Claim.—1. The shuttle herein described, consisting of cone *b*, formed with cone-point *b'* and recess *c'*, the pin *c*, set-screw *d*, and spring *e*, as set forth.

2. The combination of shuttle *b*, shuttle-carrier *f f' f'' f'''*, shaft A, crank *i*, hook *g*, bent at *g''*, radius-rod *h*, and depending bar *h''*, as set forth.

254,722. MOTOR AND THRASHER CONNECTION. CYRUS STINE, McVaytown, Pa. Filed June 30, 1881. (No model.)

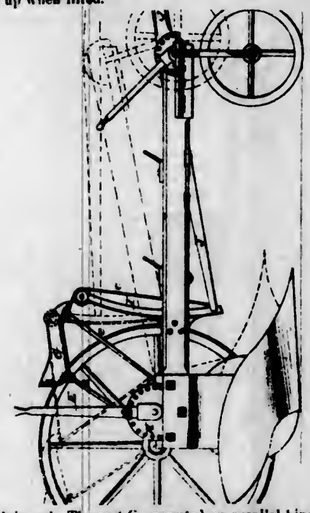


Claim.—1. The combination, with a motor, A, and a thrasher, B, of a jack, C, a tumbling-rod, L, a belt, F, and the braces H I, substantially as herein shown and described, whereby the engine can be placed at any desired distance from the thrasher and a short belt used, as set forth.

2. In a motor and thrasher connection, the combination, with the motor A and the jack C, formed of X-shaped frames E, of the braces H I, having their outer ends resting in the angles of the said frames and their inner ends against the bearing of the hand-wheel and axle, respectively, of the motor, substantially as and for the purpose set forth.

254,723. PLOW-TRUCK. OAKLAND B. ST. JOHN, Cedar Rapids, Iowa. Filed Sept. 27, 1881. (No model.)

Brief.—The sulky has at one end of the axle a land-wheel and at the other a plow with a disk or wheel for a land side. The latter also serves as a carrying-wheel, and its angle may be turned for that and other purposes. The rear end of the tongue moves vertically in a segment-guide. A cord from the tongue is attached to the hinged seat passing over a pulley. Backward movement of the seat raises the tongue and lifts the front end of the plow. The driver's weight tends to force down the plow at work and to hold it up when lifted.



Claim.—1. The seat G, mounted on parallel hinged supports *e e*, regulated by suitable stops, combined with the chain *c*, sheave *a*, segment I, and tongue J, substantially as shown and described.

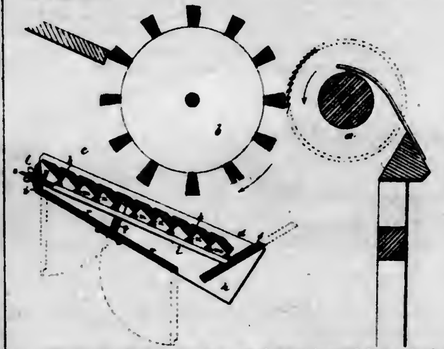
2. The combination of the landside-wheel F, pivoted axle K, lever I, and quadrant *o*, or their equivalents, substantially as and for the purpose set forth.

254,724. COLLYRIUM. ABSALOM TEMPLETON, Round Rock, assignor of one-half to Daniel Spillars Page, Williamson County, Tex. Filed Jan. 17, 1881. (No specimens.)

Brief.—Unites with one quart of rain-water one tea-cupful of honey, one tea-spoonful and a half of verdigris, (*Cupric acetate*,) one tea-spoonful of borax, and ten grains of morphia. After standing twenty-four hours the mixture is filtered.

Claim.—An eye-water composed of the following ingredients, viz: rain-water, honey, verdigris, borax, and morphia, mixed in about the proportions set forth.

254,725. COTTON-GIN ATTACHMENT. JESSE WOOD THAMES and ROBERT I. RILEY, Greenville, Ala. Filed Sept. 24, 1881. (No model.)



Claim.—1. In a cotton-gin attachment located beneath the brush-cylinder, the combination of the frame *h i* and slats *k*, journaled in the frame and forming the bottom of the gin-flue, with the rod *l*, attached to the slats, and means, substantially as described, for adjusting the openings between the slats, substantially as described, and for the purpose set forth.

2. In a cotton-gin attachment located beneath the brush-cylinder, the combination of the frame *h i*, having slats *k* journaled therein and forming the bottom of the gin-flue, with the rod *l*, secured to the slats, screw *s*, spiral spring *p*, and thumb-nut *t*, substantially as described, and for the purpose set forth.

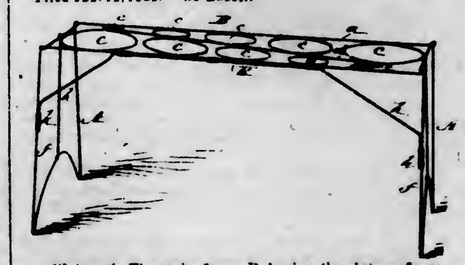
3. In a cotton-gin attachment located beneath the brush-cylinder, the combination of the frame *h i* and slats *k*, journaled in the frame, with the center board, *q*, substantially as described, and for the purpose set forth.

4. In a cotton-gin attachment located beneath the brush-cylinder, the combination of the frame *h i*, provided with inclined grooves and slats *k*, journaled in the frame, with the sliding mote-board *s*, whereby when the mote-board is raised and the slats closed the motes will be carried over the slats into the lint-room, substantially as described.

5. The combination, with the frame *h i* and slats *k*, journaled in the frame, of the center board, *q*, and a receptacle under the slats provided with doors *r r*, substantially as described, and for the purpose set forth.

6. The cotton-gin attachment herein described, composed of the tapering side boards, *h*, and end board, *i*, slats *k*, journaled in the side boards, rod *l*, attached to the under faces of the slats, screw *s*, spring *p*, thumb-nut *t*, center board, *q*, and doors *r r*, substantially as described, and for the purpose set forth.

254,726. FILTER-STAND. HENRY B. TIFFANY, Clyde, Ohio. Filed Jan. 12, 1882. (No model.)



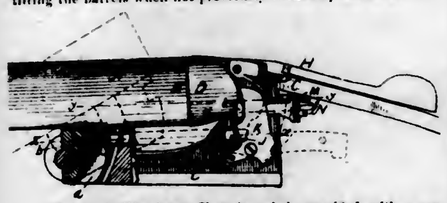
Claim.—1. The main frame B, having the rings or funnel-supports *c*, and the hinged legs A A, in combination with the rod H, bent to form the braces A A, and the sliding sleeves *k*, substantially as described.

2. The wire frame B and the wire *d*, bent to form the series of rings *e*, in combination with the hinged legs A A and means for bracing the legs, substantially as described.

3. In combination with the frame B and hinged legs A A, and the sleeves *k k*, the rod H, secured to the frame by the sleeve *i*, and bent to form the braces *h* and the straight portions *j*, substantially as described.

254,727. BREECH-LOADING FIRE-ARM. JOS. TOMES, Malden, Mass. Filed June 13, 1881. (No model.)

Brief.—The top lever, when swung in one direction, cocks the hammers. When swung in the other direction it unlocks the barrels without cocking the hammers. A cam on the front lug of the barrels operates a slide-rod to cock the hammers in the act of tilting the barrels when not previously cocked by the lever.

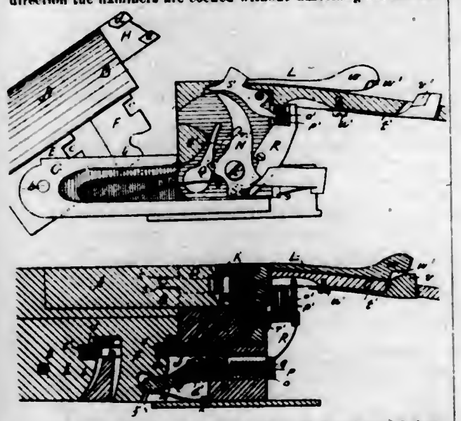


Claim.—1. The lump E to barrel A, provided with a cam groove or grooves, *a*, in combination with a slide bar or bars, J, and hammer K, all arranged together substantially as described, for the purpose specified.

2. In a breech-loading fire-arm, the combination, with the hammer, the swinging lever H, having the hub L, fulcrumed on the stock and provided with the side arm, *f*, and the pivoted lever M, of the stirrup-slide N, fitted to slide on the stock and provided with the forwardly-projecting arms extended by the hammers, and having at their front ends the lateral projections *h*, bearing against the front edges of the hammers, said stirrup-slide being provided with the cross-piece *g* and acted on by a spring, *l*, all arranged for operation substantially as and for the purpose described.

254,728. BREECH-LOADING FIRE-ARM. JOS. TOMES, Malden, Mass. Filed Apr. 4, 1881. (No model.)

Brief.—By turning the top lever in one direction the barrels are unlocked and the hammers cocked; by turning in the opposite direction the hammers are cocked without unlocking the barrels.



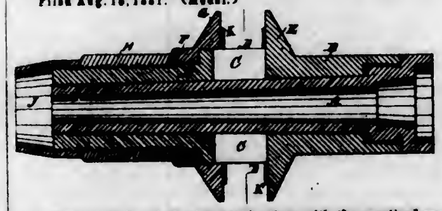
Claim.—1. The upper and lower bolts, K J, and lever L, having notches *x z*, in combination with the lug *y* of the upper bolt, K, and the lever M of the lower bolt, all substantially as and for the purpose specified.

2. The lever L, with the cam *a'*, lever *p'*, provided with a friction-roll, lever R, and hammer N, relatively arranged and constructed and to operate all substantially as described, for the purposes specified.

3. In fire-arms, the barrel hinged to the stock and provided with notched lumps E F, one in advance of the other, bolt J, adapted to fit the notches of said lumps, a lug, H, having side notches, *f*, and side lugs, *d e*, adapted to fit an opening, *g*, in the stock, in combination with a bolt, K, provided with two prongs, *z*, arranged to fit sockets *k* in breech end of the barrel, both of said bolts being operated through suitable connecting mechanism by one and the same lever, L, by which the barrel is locked and unlocked from the stock, substantially as described.

4. In a breech-loading fire-arm, the lever L, pivoted on the upper side of the stock, and provided in one side of its rear end with the notch *w'*, and devices, substantially as described, operated by the lever, to cock the hammer and lock and unlock the barrel, in combination with the depressible spring-catch *t*, having at one side of its rear end the vertical lip *v'*, arranged to engage the notch in the lever to prevent the latter from swinging in one direction unless the parts are disengaged, but permitting the lever to swing in the other direction without manipulating said catch, as and for the purpose set forth.

254,729. HUB. JOHN D. TORRENCE, Vermillionville, La. Filed Aug. 16, 1881. (Model.)

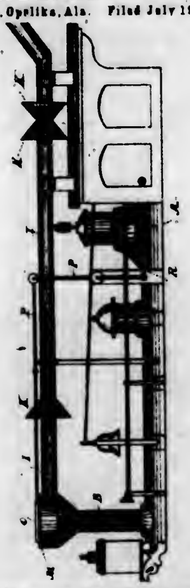


Claim.—1. In a hub, the combination, with the mortised core B and fixed collar E, provided with sharp-edged annular ring K, of the adjustable flanged ring F, provided with sharp-edged annular ring K, sleeve H, and dust-cap J, substantially as herein shown and described.

2. In a hub, the combination, with the mortised core B, fixed collar E, adjustable flange-ring F, sleeve H, and dust-cap J, of the detachable axle-box A, provided with screw-threads and adapted to be removed and replaced, substantially as shown and described.

3. In a hub, the combination, with the core B, provided with the ring E, and flanged ring F, provided with the sharp annular rings on their inner surfaces, sleeve H, and dust-cap J, of the partitions D, forming spoke-mortises C between them integral with and projecting above the surface of the core B, substantially as shown and described.

254,730. SPARK-ARRESTER. JOHN W. TRIMBLE and ALFRED H. STANDIFER, Opelika, Ala. Filed July 15, 1881. (Model.)

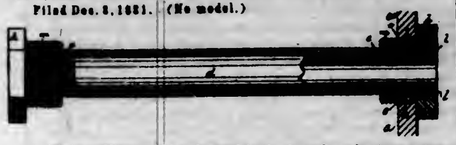


Claim.—1. In combination with the smoke-stack provided with a suitable top and valve, the inner, forward, and rear deflectors, adapted to operate substantially in the manner specified.

2. In combination with the smoke-stack and deflectors, constructed as shown and described, the tube extending to the rear

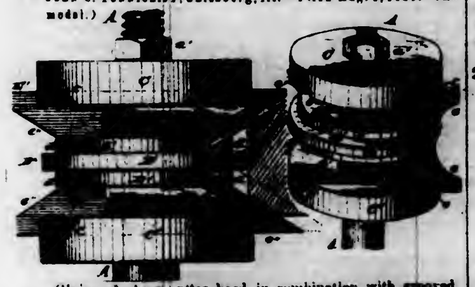
and provided with reversely-set air-funnels and apertures for the admission of air, substantially as and for the purpose set forth.

254,731. BOILER-FLUE. HORACE L. TROUT, Prentonville, Va. Filed Dec. 8, 1881. (No model.)



Claim.—The combination, with the iron flue-sheets *a a*, provided with the opposite orifices, *b*, threaded at *c*, and iron flues *d*, each threaded exteriorly on its ends at *e*, of the copper nuts A A, each threaded exteriorly and interiorly at *l* and *m*, whereby the iron threads on the flues and flue-sheets are prevented from corroding by the galvanic action of the metals, substantially as described.

254,732. CUTTER-HEAD FOR WOOD-WORKING MACHINES. JOHN C. TUPPICLIFF, Galesburg, Ill. Filed Aug. 6, 1881. (No model.)



Claim.—1. In a cutter-head, in combination with grooved head-stocks, the gage-collar D, having a thicker portion, D', or projection, with grooves in said thicker portion, in which grooves the cutters are seated, and may be adjusted lengthwise, and held after adjustment by said head-stocks, with all parts of their cutting-edges projecting beyond said portion D' to give clearance to the cutters, substantially as specified.

2. In a cutter-head, in combination with a shaft, A, grooved head-stocks C C', and nut *a'*, a gage-collar, D, having a thickened portion of smaller diameter and grooved for the reception of the cutters, substantially as and for the purpose specified.

3. The gage-collar D, having a thicker portion, D', or projection, for holding the cutters, which project beyond said portion, D', to give clearance to the cutters, in combination with the cutters and suitable head-stocks, substantially as and for the purpose specified.

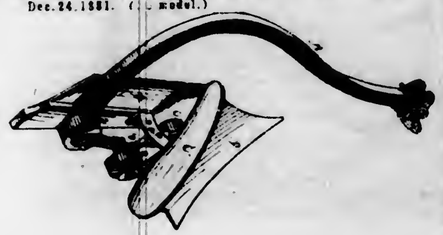
254,733. MORTISING-CHISEL. GEORGE R. VALENTINE, New Bedford, Mass. Filed Dec. 10, 1880. (No model.)

Brief.—Passed after interference with the patent of Richard Hackett for same device, No. 234,669, dated November 23, 1880.



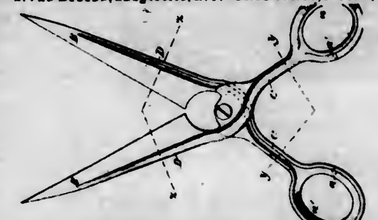
Claim.—A mortising-chisel provided within its back with a longitudinal groove which has its sides or flanks serrated to form horizontal cutters or teeth, substantially as and for the purpose specified.

254,734. PLOW. JAMES VANDERGRIFT, Princeton, Ill. Filed Dec. 24, 1881. (No model.)



Claim.—In a plow, the combination of the bearing-frame *a b f*, substantially as described, with the wheels *c*, *d*, and *e*, mounted and arranged substantially as described, and for the purpose set forth.

254,735. CORRUGATED SCISSORS AND SHEARS. WILLIAM S. VAN HUSEN, Saugerties, N.Y. Filed Oct. 17, 1881. (Model.)



Claim.—Cutting-blades of scissors and shears struck up of sheet metal with corrugation or corrugations running along or near the back edge of the blades and through the handle, terminating in the bows, as and for the purpose specified.

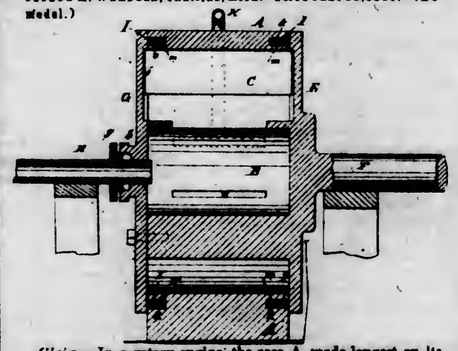
254,736. STEAM-PACKING. CHARLES H. VAN TINE, Hattenwan, N.Y. Filed July 6, 1881. (No model.)



Claim.—1. A packing-ring consisting of a band adapted to closely encircle the rod to be packed, and having a flange or flanges which project outward from the same at an angle greater than a right angle and terminate at a point in near relation to the wall of the stuffing-box, substantially as specified.

2. A packing consisting of a ring or series of rings, D, having the flanges *a*, which extend outward at an angle greater than a right angle and terminate in near relation to the wall of the stuffing-box, substantially as and for the purpose set forth.

254,737. ROTARY STEAM-ENGINE. GEORGE W. WADE and JOSHUA H. WARDELL, Cadillac, Mich. Filed June 30, 1881. (No model.)



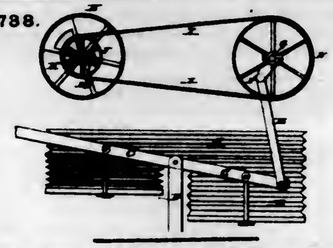
Claim.—In a rotary engine, the case A, made longest on its vertical diameter, drawn in at the sides, having recesses *c*, and provided with heads E G, in combination with the radially-slotted cylinder B, having a steam-chest at its center B', the cut-away valves *b* C, and the packing-strips D, arranged in said recesses *c* of the case, whereby the engine operates as described.

254,738. MECHANISM FOR WORKING ORGAN-BELLOWS. JULIUS WAGNER, Reading, Pa. Filed Dec. 30, 1881. (No model.)

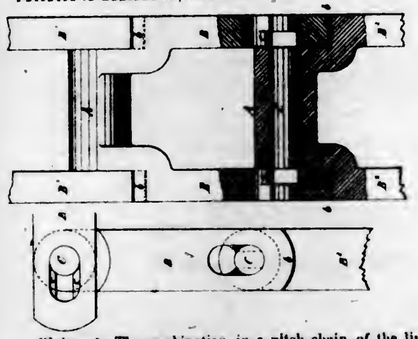
Brief.—The bellows are worked by means of lever C, operated by the wheel H, fly-wheel L, and appropriate connecting crank-shafts.

Claim.—The combination, with the lever C, connected with the bellows B of an organ, of the connecting-rod E, the crank-shafts F G M K, the pulleys and belts H J I, and the fly-wheel L, substantially as herein shown and described, whereby the said bellows can be readily worked, as set forth.

254,738.



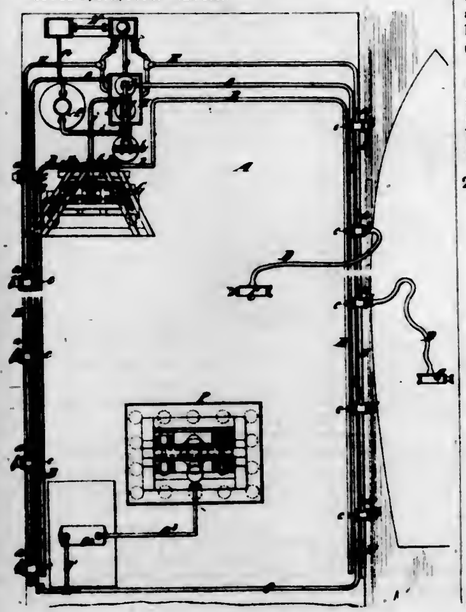
254,739. PITCH-CHAIN. ARTHUR H. WILLIS, Basingstoke, County of Hants, England. Filed Oct. 17, 1881. (Model.) Patented in England Sept. 15, 1881.



Claim.—1. The combination, in a pitch-chain, of the links, each consisting of a tubular boss, A, provided with slotted fork-arms B, and having ribs e within the slots of said arms, with the notched pins C, passing through the tubular boss of one link and through the ribbed hole or slot in the fork-arms of the next adjoining link, substantially as described.

2. In a pitch-chain, the bush D, fitted in the elongated hole of the boss A, substantially as and for the purpose set forth.

254,740. APPARATUS FOR STOWING CARGOES IN VESSELS. MAURICE J. WALSH, New York, N. Y. Filed Apr. 21, 1880. Renewed Feb. 2, 1882. (Model.)



Claim.—1. The combination, with a jack and its supply-pipe, of a waste-pipe extending from said jack and surrounding the supply-pipe, substantially as specified.

2. The combination, with a dock, of a line supply-pipe extending along the same for supplying a motive agent to a series of jacks, a line waste-pipe also extending along the dock for receiving the exhaust from said jacks, and a series of jacks connected with the said pipes by flexible hose-connections, substantially as specified.

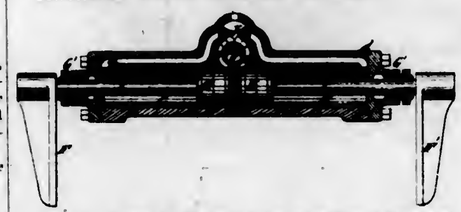
3. The combination, with a dock, of a line supply and a line waste pipe extending along the same, a series of couplings or T-pieces connected to said waste-pipe by branch connections, flexible supply-pipes extending through said couplings and connected to a series of jacks, and flexible exhaust-pipes connecting said jacks with said couplings, and surrounding the flexible supply-pipes, substantially as specified.

4. The combination, with a dock, of line supply and waste pipes extending along the same, a pump for supplying a motive agent to said supply-pipe, an accumulator for maintaining a uniform pressure in said supply-pipe, and a series of jacks connected with said supply and waste pipes by flexible hose-connections, substantially as specified.

5. The combination, with a dock, of line supply and waste pipes extending along the same for operating a series of jacks, a pump connected with said supply-pipe for supplying a motive agent thereto, and a second pipe connected with said waste-pipe for exhausting the motive agent therefrom, substantially as specified.

6. The combination, with a jack and its supply and exhaust pipes, the exhaust-pipe surrounding the supply-pipe, of the valve C^2, for controlling the operation of the jack, substantially as specified.

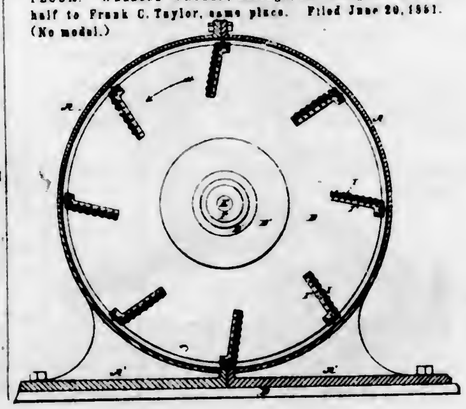
254,741. JACK. MAURICE J. WALSH, New York, N. Y. Filed Dec. 21, 1880. Renewed Feb. 2, 1882. (No model.)



Claim.—1. The combination of a jack-cylinder, a piston and rod fitted thereto and adapted to be reciprocated therein for extending or contracting the jack, and two claws, arms, or pressers adapted to embrace the material to be compressed or moved and be drawn together by the operation of the jack, substantially as specified.

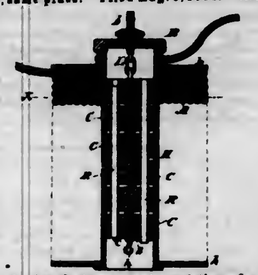
2. The combination, in a jack, of a cylinder, two pistons fitted thereto, two piston-rods working through opposite ends of said cylinder, passages or ports for supplying a motive agent to the two ends of said cylinder upon the outside of said pistons, and other passages or ports for supplying a motive agent to said cylinder upon the inner sides of said pistons, substantially as specified.

254,742. PROCESS OF MANUFACTURING WHOLE-WHEAT FLOUR. WALLACE WARREN, Chicago, Ill., assignor of one-half to Frank C. Taylor, same place. Filed June 20, 1881. (No model.)



Claim.—The method of making whole-wheat flour, which consists in first separating the inner grain substance from the bran; second, reducing the inner grain substance and the bran separately to flour, and thereafter mixing the two flour-products, substantially as described.

254,743. ELECTRO-MAGNET. ADDISON G. WATERHOUSE, New York, N. Y., assignor to the United States Electric Lighting Company, same place. Filed Aug. 1, 1881. (No model.)

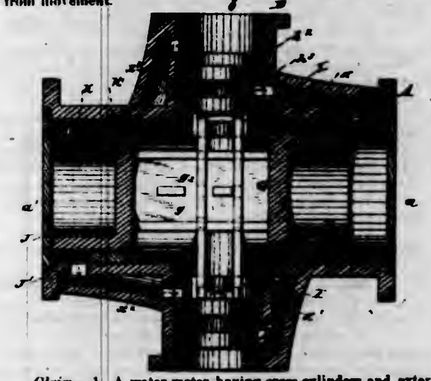


Claim.—1. An electro-magnet consisting of a hollow core of non-magnetic metal, having a coil or coils wound thereon, in combination with a core composed of independent sections of iron, suspended at short distances apart by means of connections passing through the sections, which allow the sections to be drawn together when magnetized, substantially as described.

2. The combination of helix A, cylindrical case H, of non-magnetic metal, the cap B, adjusting-screw *d*, and a core composed of a number of independent sections connected together as described and suspended by a link, *l*, from the screw *d*, as set forth.

254,744. WATER-METER. PARKER WELLS, Lynn, Mass. Filed Oct. 12, 1881. (Model.)

Brief.—The pistons act alternately, each forming valves to the other, and each during its own movement locking the other from movement.



Claim.—1. A water-meter having cross-cylinders and external chutes to lead the water under force to reciprocating cross-pistons, and from said pistons to the service-pipes after measurement, the pistons acting alternately and automatically without the aid of internal valves or other moving mechanism, as herein specified.

2. A water-meter case having internally-projecting rings covering the area of the stroke of the piston-heads, said case being formed of cross-cylinders adapted to receive alternately-acting pistons and to be formed into a true cylinder by turning, boring, or otherwise, as set forth.

3. In a water-meter, the main piston and auxiliary piston, both being lapped up against friction by confined air and operating at approximately right angles with each other, as set forth.

4. In a water-meter, a lift-valve adapted to allow the water in the house-pipes to gravitate into the sewer as the water-pressure is cut off, as and for the purposes set forth.

5. The main piston G, having lugs g^2 upon the plate g, combined with the auxiliary piston H, having the recesses h', adapted to serve with the cross-cylinders A B, as set forth.

6. The receiving-chamber C, having ports w w' w^2 w^3, combined with the pistons G H, having connecting and shifting recesses, and with the cross-cylinders A B, as set forth.

7. The removable cap D, having exit D', aperture d, and inlet E, combined with the case A B, having central aperture, and with pistons and ports, as and for the purposes specified.

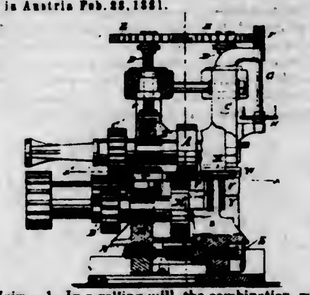
8. The cap D, having pipes D' and K, combined with the valve f and case A B C d, as and for the purposes set forth.

9. The cross-cylinders A B, having chamber C, ports w w', &c., and chutes x x', &c., combined with the pistons and chamber-cap D, as set forth.

10. The piston G, having groove h, recess h', and connected barrels, and the auxiliary piston H, with heads h^2, having annular recesses h^3, combined with the ports in the cross-cylinders A B, as and for the purposes set forth.

11. The recesses J' in the cylinder-heads, and the cross-bars J, adapted to limit and control the stroke of the pistons G H, as specified.

254,745. ROLLING-MILL. WILHELM WESTMAN, Orebro, Sweden. Filed Oct. 13, 1880. (No model.) Patented in England July 22, 1880, in France July 23, 1880, in Germany July 27, 1880, in Belgium July 29, 1880, in Sweden July 31, 1880, and in Austria Feb. 25, 1881.



Claim.—1. In a rolling-mill, the combination, with the rolls A K T V, of four short flat guides, one edge guide, G', fixed at the standard, a second a flanged guide, H', that follows the sliding frame M in all its movements, a third, H^2, leading from the lower roll underneath the bar or plate, and a flat guide, G^2, moving with the top roll, as shown and described.

2. In a rolling-mill, the combination of the horizontal rolls A and K, secured upon their journals midway between the bearings thereof, and the vertical rolls T and V, arranged between the bearings of rolls A and K on opposite sides of said rolls, whereby strain upon the upper and lower rolls shall be equally distributed between their respective bearings, substantially as shown and described.

3. In a rolling-mill, the combination, with the gear-wheels C' D', movable to and from each other, of the broad gear-wheel F, made broad to accommodate the lateral adjustment of wheel D', and the gear-wheel E', adapted for accommodating the vertical adjustment of wheel C', substantially as shown and described.

254,746. FIBER DISINTEGRATED FROM COTTON-STALKS. FRANK WEBATON, Brooklyn, N. Y. Filed Jan. 26, 1882. (No specimens.)

Claim.—1. Staple formed of disintegrated cotton-stalks having the fiber separated therefrom, preserved, and prepared substantially as set forth.

2. The method of disintegrating cotton-stalks, consisting in separating the fiber from the stalk by passing through rollers, or by retting, then drying, then scutching or breaking, and then carding or hackling the same, thus producing a staple of the fiber alone, substantially as and for the purpose set forth.

254,747. PAPER MADE FROM THE FIBER OF THE COTTON-PLANT. FRANK WEBATON, Brooklyn, N. Y. Filed Jan. 26, 1882. (No specimens.)

Claim.—Paper made from the fiber of the cotton-plant separated from the bark and stalk and prepared and steeped or boiled, cut, beat, or ground, and finished substantially as set forth.

254,748. WEAVING THE FIBER OF THE STALK OF THE COTTON-PLANT INTO FABRICS. FRANK WEBATON, Brooklyn, N. Y. Filed Jan. 26, 1882. (No specimens.)

Claim.—1. Fabrics, including bagging and cloth covers, made of the fiber of the cotton-plant stalk separated, prepared, and woven substantially as set forth.

2. A woven fabric made from the fibers of the cotton-plant, substantially as herein set forth.

264,749. SEPARATION OF FIBER FROM THE COTTON PLANT AND MANUFACTURE OF ARTICLES THEREFROM. FRANK WRAXTON, Brooklyn, N. Y. Filed Nov. 3, 1881. (No specimens.)

Claim.—1. The separation of the fiber from the stalk of the cotton-plant and the spinning of the same, when prepared substantially as described, into fabrics, in the manner set forth.

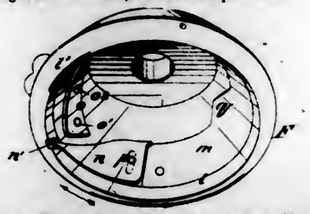
2. Fabrics made by the spinning of the fiber of the stalk of the cotton-plant, when separated and prepared substantially as set forth, including twine, rope, cordage, and yarns, as well as threads.

3. Fiber separated from the stalk of the cotton-plant and prepared for wadding, stuffing, packing, and calking, substantially as set forth.

4. The fiber separated from the cotton-stalk and dried and prepared substantially as set forth, for wadding, stuffing, and calking.

264,750. KNITTING-MACHINE. GEORGE A. WHITE, Halifax, Nova Scotia, Canada, assignor of one-half to Williston I. Alvord, Bridgeport, Conn. Filed Oct. 4, 1880. (No model.)

Brief.—The lower portion of the cone or upper stationary cylinder is fitted with a ring suspended by rods or arms, and the upper part of the lower cylinder is fitted with a like ring sustained in the same way. The rings are grooved to receive the outer ends of the needles, to sustain them against side strain. By this construction the operative is enabled to observe the work at all times, and is afforded free access thereto. Novel stitch-forming cams and thread-guide and latch-opener are also provided.



Claim.—1. The needle-cylinder B, provided with grooved ring *f*, sustained by rods *f'* at the upper end of said cylinder, substantially as shown and described, and for the purposes set forth.

2. The cone E, for sustaining the upper needles, provided with grooved ring *e* at its base, sustained by arms or rods *e'*, combined with needle-cylinder B, substantially as shown and described, and for the purposes specified.

3. The combination, with the revolving cylinder C and the thread-guide *g*, of the latch-opener or fender *k*, provided with the eyes *a' b'*, and having its forward end pointed and curved outward from the thread-guide, substantially as and for the purpose set forth.

4. The combination, with the revolving cylinder C, provided with rib *r*, pin *m'*, the fixed cams *s u*, and the adjustable stitch-cam *t*, of the gate *v*, provided with the projections *v²*, pivoted to the said cylinder between the said ribs and adjustable cam, substantially as and for the purpose set forth.

5. The combination, with the slotted conical sleeve F, provided with the diagonal slot *n'* and the fixed plate *m*, of the triangular stitch-cam *n*, secured to the said sleeve by the set-screw *p*, substantially as and for the purpose set forth.

6. The combination, with the cone E, of the conical sleeve F, provided with the adjustable stitch-cam *n*, the swing-gate *v*, and the plate *m*, provided with the triangular projection *q*, substantially as and for the purpose set forth.

7. The combination, with the cone E, carrying the upper set of needles, and the conical sleeve F, provided with rib *l*, and the adjustable triangular stitch-cam *n*, of the plate *m*, arranged above the said rib and provided with a triangular projection, *q*, arranged at a distance of three or four needles from the said stitch-cam, as shown and described, whereby the old loop is shaken off after a new stitch is formed, the new loop being held by three or more new stitches when its needle reaches the point *q*, and the operation of casting the old loop cannot alter the new stitch, as set forth.

264,751. APPARATUS FOR DETERMINING THE NITRITION OF CELLULAR FIBER. LEWIS WHITE and KIRK WHITCOMB, Hoosick Falls, N. Y. Filed Dec. 19, 1881. (No model.)

Claim.—1. In the manufacture of pyroxyline or the combining of acids for similar purposes, the employment of a mixing-vessel in combination with a galvanometer or its equivalent for determining the condition of the compound, as hereinbefore set forth.

264,751.

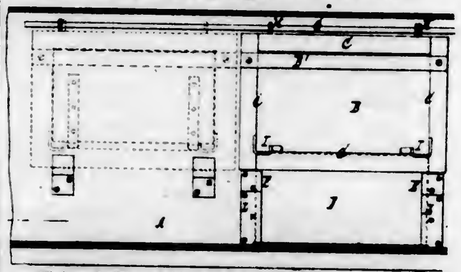


2. The combination, with the mixing-vessel, of the pockets at opposite sides for holding the anode and the cathode attached to a galvanometer or its equivalent, as hereinbefore set forth.

3. The method of determining the nitrition of cellulose fiber or the condition of the acids for the same, which consists in mixing the elements always in the same vessel or one of the same size and connecting the opposite sides by an anode and a cathode attached to a magnetic needle or its equivalent, as hereinbefore set forth.

264,752. GRAIN-CAR DOOR. JAMES H. WICKES, New York, N. Y. Filed Aug. 15, 1881. (No model.)

Brief.—The door is hinged to a swinging frame, which slides on a rod on the side of the car. Shoulders are located at the sides of the opening for the door to rest on in sliding and swinging inward, and stops to prevent its falling outward when folded.



Claim.—1. The combination, substantially as hereinbefore set forth, of the door-frame on the interior and upper portion of the door-opening, adapted to slide horizontally and swing inwardly away from such opening, the door hinged to the lower side of the frame to swing outward and upward therein from a lower or closed position, and the stops at the opposite ends of the door-opening, for the purpose specified.

2. The combination, substantially as hereinbefore set forth, of the door-frame on the interior and upper portion of the door-opening, adapted to slide horizontally and swing inwardly away from such opening, the door hinged to the lower side of the frame to swing outward and upward therein from a lower or closed position, and the shoulders and stops at the opposite ends of the door-opening, for the purpose specified.

264,753. MOWING-MACHINE. JOHN D. WILDER, Towanda, Pa. Filed Dec. 16, 1881. (No model.)

Claim.—1. In a mowing-machine, the shoe A, constructed and arranged substantially as described, and provided with a vertically-sliding block, substantially as and for the purposes set forth.

2. In a mowing-machine, the shoe A, provided with a vertically-sliding block, A', in combination with finger-bar C, pivotally secured within said block and arranged at an angle thereto, substantially as and for the purposes set forth.

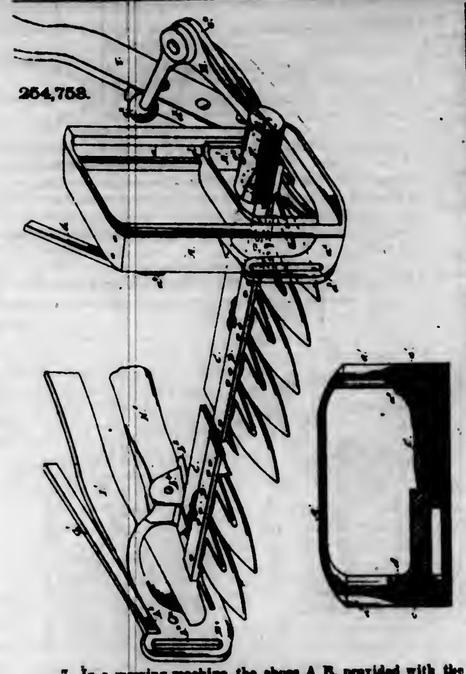
3. In a mowing-machine, the combination of the shoe A, provided with vertically-sliding block A', and finger-bar C, provided with arm c^3, and pivotally secured within block A', substantially as and for the purposes set forth.

4. The bell-crank lever E, provided with balls e^2 at the ends of its arms, as described, in combination with finger-bar C, provided with arm c^3, cutter-bar D, provided with ball *d*, and coupling F, adapted to receive the ball upon the end of the bell-crank lever at a right angle to that upon the cutter-bar, substantially as and for the purposes set forth.

5. The combination, in a mowing-machine, of the shoe A, vertically-sliding block A', finger-bar C, provided with arm c^3, bell-crank lever E, secured pivotally upon said arm, and having its arms terminating in the balls e^2, cutter-bar D, provided with the ball *d*, and the coupling F, connecting said cutter-bar and bell-crank lever, the several parts constructed, arranged, and adapted to operate substantially as set forth and shown.

6. In a mowing-machine, the shoe B, provided with bracket b^3, said bracket being arranged at a point in advance of the finger-bar C, in combination with side arm, I', pivotally secured within said bracket, as and for the purposes set forth.

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7. In a mowing-machine, the shoes A B, provided with the horizontal ledges a^2 and b^2, arranged respectively in rear of the cutter-bar and at the base of the sockets a^3 and b^3, with which said shoes are provided, substantially as and for the purposes set forth.

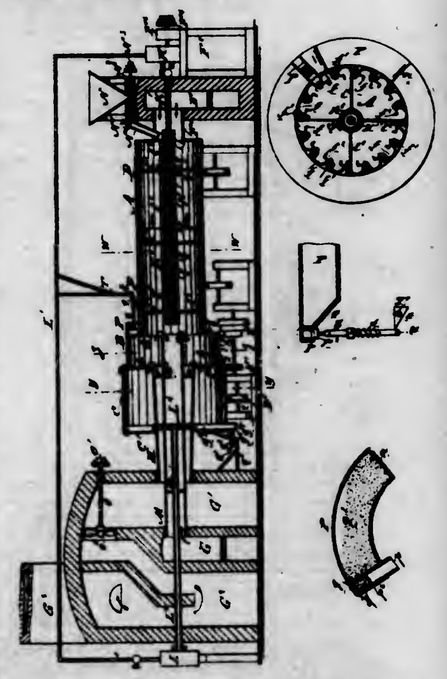
264,754. CAR-COUPLING. CHARLES B. WILLSON, Summit Point, W. Va. Filed Jan. 27, 1882. (No model.)

Claim.—1. The draw-hook *d* herein described, consisting of the plate *c*, provided with the rear slotted arm, *h*, arms *h h*, secured to the upper and lower faces of said plate, and having their inner rear faces semi-circularly curved and their front outer surfaces hollowed out in arch of vertical and horizontal circles, and having the rounded front end of the plate *c* provided on its upper face with a curved plate, *l*, made convex on the rear of its lower face, and provided on its under face with the plate *l'*, having a concave edge, *F*, and the rear part of its upper face hollowed out inwardly, substantially as described, and for the purpose set forth.

2. The combination, with the draw-bars *a a*, provided with draw-heads *b b* at their opposite ends, having semicircular curves *b' b²* on the upper and lower faces of their ends, of the draw-hooks *d d*, pivoted in the draw-heads and constructed as set forth, substantially as described, and for the purpose set forth.

264,755. FURNACE FOR ROASTING, DESULPHURIZING, AND CHLORIDIZING ORES. WILLIAM P. WITHERELL, Chicago, Ill., and BENNETT H. VARY, Ogdensburg, N. Y. Filed Sept. 3, 1881. (No model.)

Brief.—The ore in the first division of the furnace A is desulphurized by the action of the products of combustion and heated air. At the rear end of this first division of the furnace the salt is added by the automatic feeding device for chloronating the ores. Here the ore is subjected to an increased temperature, by which the sulphates formed are decomposed. The mass then passes to the second division, B, of the furnace, where any lumps are crushed and the ores and chemicals mixed, the remaining excess of sulphur escaping. The ore then passes to the third division, C, of the furnace, where it is completely oxidized.



Claim.—1. An ore roasting, desulphurizing, and chloridizing furnace constructed substantially as herein shown and described, consisting of the revolving cylinders, divided into sections A B C, longitudinally connected and communicating with each other, having a fire-box and flue at each end, provided with suitable dust-collecting chambers, and with interior air-distributing pipes, K' L' L', interior buckets, *f f²* and *g g²*, corrugated lining B', and pulverizing-balls A^2, arranged as set forth.

2. In an ore-working furnace, the combination, with the longitudinally-corrugated cylinder A, of the longitudinal angle-irons *f²*, substantially as herein shown and described, whereby ore-lifting buckets are formed in said cylinder, as set forth.

3. In an ore-working furnace, the combination, with the cylinder B, provided with perforated annular flanges *h h* and corrugated lining B', of the iron pulverizing-balls A^2, substantially as and for the purpose described.

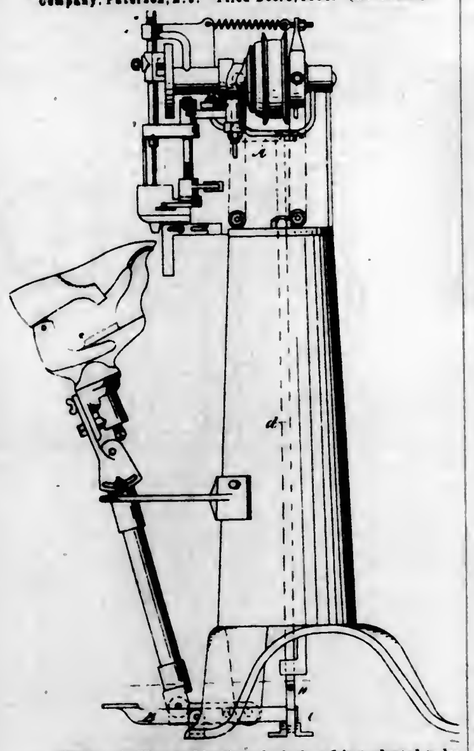
4. In an ore-working furnace, the combination, with the revolving cylinder A, of the perforated air-distributing pipe K', and its perforated jacket K², held in place by spiders F, substantially as herein shown, and for the purpose described.

5. In an ore-working furnace, the combination, with the revolving cylinder A B C, fire-box G, and dust-collecting chambers G' G^2, of the revolving flues H M, air-distributing pipes L^2 L', and spiders n n', substantially as herein shown, and for the purpose described.

6. In an ore-working furnace, the salt-box P, provided with slide u, slotted tube p, slide-valve p^2, and slides p^3, substantially as herein shown and described.

7. In an ore-working furnace, the combination, with the salt-box P, provided with slide-valve p^2, of the rod S, spiral spring s, and rod T, provided with wedge-shaped block t, substantially as herein shown and described, whereby said box is automatically operated, as set forth.

254,756. TACKING-MACHINE. ERASTUS WOODWARD, Somerville, Mass., assignor to the Copeland Tacking and Lasting Company, Paterson, N.J. Filed Dec. 5, 1881. (No model.)

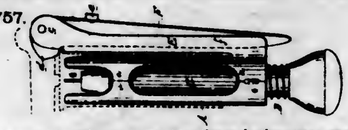


Claim.—1. The combination of a jack and last adapted to be operated by a foot-treadle to present the work to the nozzle of the fastening-driving device, said fastening-driving device, and its start or start-and-stop motion mechanism, the said treadle having the movements, substantially as indicated, and mechanism, substantially as specified, for connecting the treadle with the start or start-and-stop motion mechanism, whereby the work is presented to the nozzle of the fastening-driving device and held by the foot-treadle, and by an additional sidewise movement thereof the fastening-driving mechanism is put in operation, all substantially as and for the purposes described.

2. The combination of a fastening-driving device, its start or start-and-stop motion mechanism, the treadle B, and intermediate mechanism for connecting the treadle with the start or start-and-stop motion mechanism, adapted to be actuated by the sidewise movement of the treadle, all substantially as and for the purposes described.

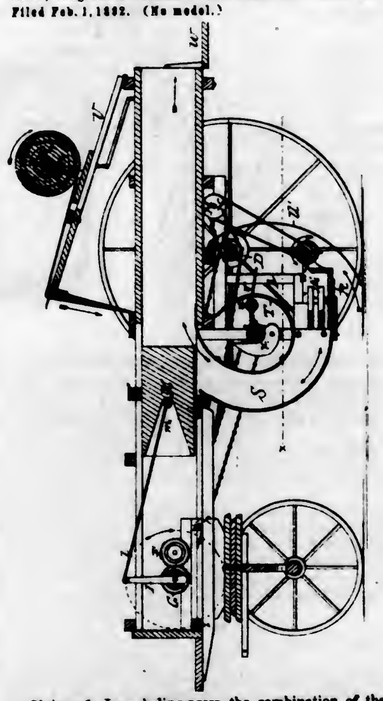
254,757. CARTRIDGE CAPPING AND UNCAPPING IMPLEMENT. ALVA WORDEN, Ypsilanti, Mich. Filed Oct. 12, 1881. (No model.)

Claim.—The cartridge implement herein described, consisting of the cylindrical open-ended frame A, having internally-projecting pins b, combined with the post C, sliding within the cylinder



A and provided with pin e, moving through the upper open end of said cylinder, and recess which receives and limits the stroke of the pins b, the spring D, surrounding the post and abutting against a shoulder on the post and against the pins b, the standard E, secured to the lower end of the cylinder A, and the lever F, all constructed, arranged, and combined to operate as and for the purpose set forth.

254,758. TRAVELING HAY-PRESS. PARVIS WRIGHT, Granite, Colo., assignor to William F. Dieterichs and Conrad Schaefer. Filed Feb. 1, 1882. (No model.)



Claim.—1. In a baling-press, the combination of the bale-chamber with the rake-teeth and intermediate mechanism for converging and delivering the hay from the teeth to the bale-chamber, as and for the purpose set forth.

2. In a baling-press, the combination, with a baling-box, one of the sides of which is free at the end, of a compressing means for reducing the diameter or passage of the exit end of the baling-box, substantially as described.

3. In a baling-press, the combination, with a baling-box having one of its sides free at the exit end, of the compressing means attached to the side and end of the discharge end of the box and actuated by a lever from the driver's seat, substantially as described.

4. In a traveling press, the combination, with raking-teeth, of a suspended box for receiving the hay or similar material before it is carried to the baling-chamber, substantially as described.

5. In a traveling press, the combination, with raking-teeth, of a revolving rake-stripper and a receiving-box, substantially as described, and for the purpose set forth.

6. In a traveling press, the combination, with raking-teeth, of a suspended box for receiving the hay from the raking-teeth, a curved chute leading into the baling-chamber, and means for elevating the hay from the box into the baling-chamber, substantially as described.

7. In a traveling press, the combination of raking-teeth, a suspended box for receiving the hay from the teeth, a curved chute leading into the baling-chamber, and side means for gathering and concentrating the hay in the receiving-box to the chute, substantially as described.

8. In a traveling press, the combination, with raking-teeth, of a revolving roller provided with studs or pins to strip the hay from the raking-teeth, and formed with annular grooves and fingers, attached to a suspended box, fitting in the grooves of the roller for shedding the hay from the roller and depositing it in a receiving-box, substantially as described.

9. In a traveling press, the combination, with a receiving-box and a curved chute leading to the baling-box, of side revolving forks mounted on vertical revolving shafts working in slots in the end and front walls of the receiving-box, substantially as described.

10. In a traveling press, the combination of raking-teeth, a receiving-box, a curved chute, side compressing or concentrating means, a carrier, a feeder, and press, all operating automatically to take the hay from the ground and press it into a bale, substantially as described.

11. In a traveling press, the combination of raking-teeth, a receiving-box, a curved chute, side compressing or concentrating means, a carrier or elevator, a feeder, a press, and a binder, all operating automatically, substantially as described.

12. A revolving shaft, s, provided with arms t, oscillating shaft u, with fingers or arms v, and a retractile device, substantially as described.

13. A revolving shaft, s, provided with arms t, oscillating shaft u, with fingers or arms v and trip-arm w, and a retractile spring, y, substantially as described.

14. The hay-lifting device composed of the revolving shaft s, arms t, oscillating shaft u, fingers v, trip-arm w, and a retractile spring, y, in combination with an eccentric or cam trip device, substantially as described.

15. A revolving vertical shaft provided with arms d^2, carrying at the outer ends an oscillating shaft, d^3, with fingers d^4, substantially as described.

16. A revolving shaft provided with arms d^2, carrying at their outer ends an oscillating shaft, d^3, with fingers d^4 and trip-arm f, and a retracting-spring, f^2, substantially as described.

17. A means for concentrating the hay in a receptacle that is on its way to a baling-chamber, composed of oppositely-arranged revolving shafts provided with fingers, trip-arms, and retractile springs, in combination with eccentric or cam trip means for guiding the movement of the concentrating means and returning them to normal position, substantially as described.

18. The combination, with a box or receptacle for receiving the hay from the rake, of means for concentrating the hay to a chute leading into a baling-chamber, means for elevating the hay through the chute into the baling-chamber, and trip devices for returning the concentrating and elevating means to their respective positions for further operation.

254,759. BED-MATTRESS. JOHN NELLES YOUNG, Sacramento, Cal. Filed Nov. 3, 1881. (No model.)

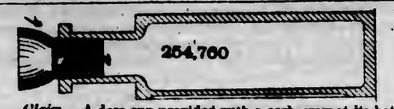


Claim.—1. The wedge-shaped mattress or bed A, having the head end D thick and gradually tapering to the foot end E, which is thin, thus making an upper incline surface from D to E, thereby securing a proper elevation of the head and upper portions of a person lying thereon, and maintaining that elevation by uniform support, as specified.

2. The openings or depressions B in a mattress or bed, as shown from b to c and b to d d, as herein set forth, for the purpose specified.

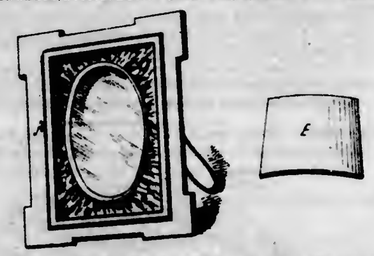
3. The separate and detachable piece C, to fit in the depressions of B, as herein set forth, and all for the purposes specified, in combination with the mattress or bed, as described.

254,760. DOSE-CUP BOTTLE-STOPPER. J. HENRY SHILLE, Philadelphia, Pa. Filed Aug. 5, 1881. (Model.)



Claim.—A dose-cup provided with a cork-screw at its bottom, whereby it may be attached to the outer end of the cork stopper of a bottle, substantially as and for the purpose stated.

254,761. PICTURE-FRAME. WILLIAM H. SIBB and HENRY EDWARDS, Boston, Mass. Filed July 3, 1881. (No model.)



Claim.—The herein-described spring for holding pictures, glasses, or similar objects in frames or cases, the same consisting of a sheet of boot card or other analogous stiff spring board, substantially as and for the purpose set forth.

254,762. ELECTRIC-LAMP REGULATOR. BENJAMIN B. BREWER and ADDISON O. WATERHOUSE, Sacramento, Cal., assignors of one-fourth to W. S. Johnston, same place, and Richard W. Tully, Stockton, Cal. Filed Oct. 11, 1880. (Model.)



Claim.—1. In an electric lamp, the combination, with the carbon-carrier, of an electro-magnet, an armature, and a train of wheels sustained thereby and gearing with the said carbon-carrier, a time-escapement consisting of a click-wheel, y, and an oscillating pallet or verge and detent mechanism, substantially as described.

2. In a regulator for electric lights, the tube T, with box B, containing gearing controlled by a time-escapement, and the controlling rod or detent e, in combination with the electro-magnetic helix H, core C, lever a, and link l, substantially as and for the purpose set forth.

3. The combination, in an electric lamp, with the gravitating carbon-carrier, of an electro-magnet, an armature, and train of wheels sustained thereby and gearing with the said carbon-carrier, a cylinder-escapement consisting of the cylinder-wheel w, oscillating spindle w' and balance-wheel, and a stationary detent, e, substantially as and for the purpose set forth.

4. The combination, with the carbon-holder R, having spiral or threaded teeth, of a pinion, P, for controlling the position of the electrode R and allowing the same to be turned for adjustment, substantially as described.

5. The combination of the rod R, tube T, guides g g, frame F, flexible connecting-link l, and lever a with an electro-magnet and its armature, as described.

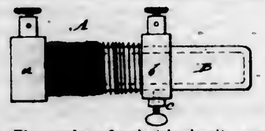
254,763. THILL-LUG. NEHEMIAH T. FOLSOM, Boston, Mass., assignor to John S. Folsom, same place. Filed Sept. 5, 1881. (No model.)



Claim.—The combination of the thill-leg having the recess a' in its upper end, the leather loop holding the buckle in its bight,

the clamping-plate *c*, operating to clamp the ends of the loop in the recess of the lug, and the screws *d d*, substantially as described.

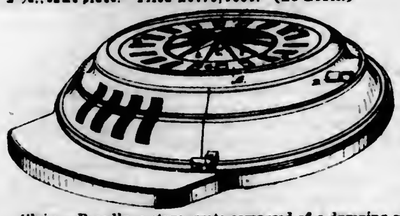
254,764. RHEOSTAT FOR ELECTRIC LAMPS. PATRICK H. FOX, New York, N.Y. Filed July 7, 1881. (Model.)



Claim.—1. The regulator for electric circuits, consisting of a loose coil, A, adjustable slide *b*, and sustaining-rod B, combined for operation substantially as shown and described.

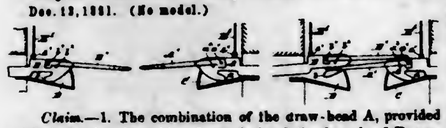
2. The combination with the circuit-wires of an electric lamp, of the coil A, fixed at one end, the slide *b*, and the slide-rod B, substantially as shown and described, for the purposes set forth.

254,765. STOVE-GRATE. ROBERT GALBRAITH, Troy, N. Y., assignor to the M. S. Vedder Pattern Works, Bascom, Galbraith & Co., same place. Filed Nov. 9, 1881. (No model.)



Claim.—Broadly, a stove-grate composed of a dumping central portion surrounded by a register-section capable of such manipulation as to cause its air-openings to be closed when desired, substantially as and for the purpose specified.

254,766. CAR-COUPLING. LYSANDER T. GOSS, Rome, Ind., assignor of one-half to Henry Vickrey, same place. Filed Dec. 13, 1881. (No model.)



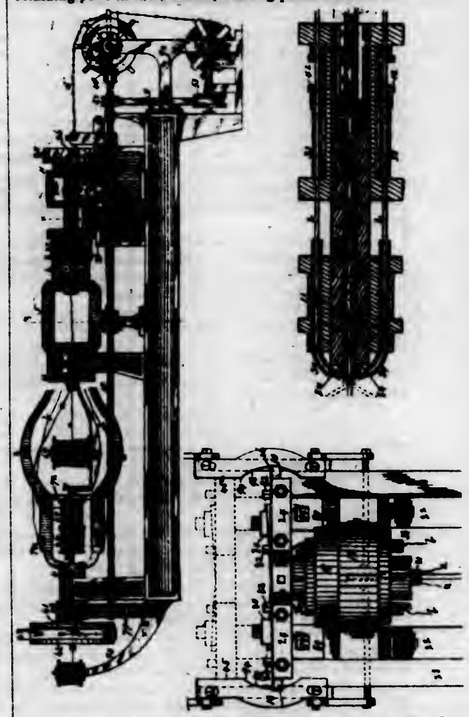
Claim.—1. The combination of the draw-head A, provided with the hook *a*, loop A', and guard-pin *a'*, the draw-head B, provided with the hook *b*, loop B', and guard-pin *b'*, and the guides C D, all substantially as shown and specified.

2. The combination, in a car-coupling, of two draw-heads, each partially surrounded by a flaring guide and provided with both an eye and a loop, arranged as shown, whereby either one may pass under and engage with the other, being guided to its place by said guide, all substantially as shown and specified.

3. The combination, in a car-coupling, with a draw-head which is moved vertically during the operation of being uncoupled, of the lever E, pivoted to the car at *e*, and having a branch, E', which is attached to the draw-head at *e'*, substantially as shown and described, and for the purpose specified.

254,767. WIRE-BARBING MACHINE. JAMES J. BATHAWAY, Beaver Falls, Pa., assignor of one-half to John H. McMahon, same place. Filed Oct. 31, 1881. (No model.)

Brief.—The rotary barbing-head is in two parts. The front part reciprocates and the rear part is non-reciprocating. In front of the barbing-head and reciprocating therewith in a frame carrying bending-slides, which are forced inward as the head advances and rotates by stationary cams at the side of the frame. The main wires are drawn intermittingly through the machine, along grooves in the central core of the barbing-head, by the spooling device. The barb-wires pass through guides at the sides of the barbing-head, and the front ends of the guides are curved inwardly, to direct the barbs between the main wires. When the machine starts the barb-wires are bent around the main wires by the combined action of the rotating head and the bending-slides as the former moves forward and rotates and the latter move inward past each other. The bending of the barb causes it to bite against the main wires, and thus the barb-wires are drawn from their spools and through retaining-pawls on the non-reciprocating rotary part of the head by the advance of the reciprocating part of the rotary head. So soon as the coiling is finished the barbs are reversed by knives on the bending-slides, the ends of the barb-wire guides acting as stationary cutters. The barbing-head then begins to recede, and exposes the barb-wires at their front ends for a sufficient distance to form the next barbs, the barb-wires being prevented from slipping back the retaining-pawl in the non-reciprocating part of the head.



Claim.—1. The combination of a reciprocating rotating head a pair of laterally-reciprocating bending-slides, and a knife or knives moving with the slides, substantially as and for the purposes described.

2. A pair of laterally-reciprocating bending-slides, forked or grooved in the ends for receiving the ends of the barb-wire, and each provided with a recess for allowing the withdrawal of the finished barb, and a knife for cutting off the barbs at the end of the stroke, substantially as and for the purposes described.

3. A pair of laterally-reciprocating bending-slides, in combination with stationary cams, which force them inward to bend the barbs, the said cams having straight surfaces at their outer ends, which permit the slides to have a short stop while the applied barb is being withdrawn, substantially as and for the purposes described.

4. The combination of a rotating reciprocating head having a hollow spindle and curved barb-wire guides with a pair of laterally-reciprocating bending and covering slides, substantially as and for the purposes described.

5. A bending-slide forked or grooved in the end, and provided with a lateral recess back of the groove, and a knife or shear in the rear side of the recess and projecting into it, substantially as and for the purposes described.

6. The rotating barbing-head having a hollow spindle and inwardly-curved barb-wire guides, in combination with a core-rod having lateral grooves in its end, substantially as and for the purposes described.

7. The reciprocating barbing-head having a curved guide or guides through which the barb-wire is fed, in combination with devices which hold the barb wire or wires stationary, so that the head shall slip over them during its backward movement, substantially as and for the purposes described.

8. The reciprocating barbing-head having a barb-wire guide or guides, in combination with the non-reciprocating spring-dog, which permits the barb-wire to be drawn forward at the forward movement of the head and prevents its moving back at the backward movement of the head, substantially as and for the purposes described.

254,768. TOY BALL. EDGAR K. HAYNES, Boston, Mass., assignor to John B. Penby and John P. Lowell, both of same place. Filed Dec. 19, 1881. (No model.)



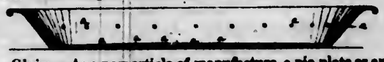
Claim.—The herein-described toy, consisting of the ball A, having sound-openings E E, the metal ball B, entirely inclosed within said ball, and the ball-clapper C, mounted on the spiral spring D, the said clapper being arranged to ring only when the ball is forcibly jarred and the ball being entirely protected from direct external blows, as shown.

254,769. CHILD'S TOY. SIEGFRIED L. HOCKNEY, Cincinnati, Ohio. Filed Dec. 14, 1881. (No model.)



Claim.—The combination, with the handle and the open ring, of the cord having one end loosely looped around and in a groove in the ring at a point in line with the handle, and provided at its other end with a ball or other object, whereby the loop of the cord will turn freely on the ring, in the manner and for the purposes described.

254,770. PIE-BAKING PLATE. CHARLES T. HERD, Peoria, Ill. Filed Aug. 11, 1881. (No model.)



Claim.—As a new article of manufacture, a pie-plate or analogous culinary utensil made of a single piece of foraminous material and provided with a concave bottom, substantially as shown and described.

254,771. JOURNAL-LUBRICATOR. GEORGE JACKSON, New York, N.Y., assignor to the United States Electric Lighting Company, same place. Filed Oct. 27, 1881. (No model.)



Claim.—1. In a self-lubricating journal-bearing, the combination of a bearing having longitudinal recesses or channels connected at their ends by annular grooves with a journal having grooves adapted to register with the annular grooves in the journal, substantially as set forth.

2. In a self-lubricating journal and bearing, a journal having an enlarged shoulder adapted to fit in a corresponding enlargement of the bearing, and annular grooves at either end, in combination with a bearing having longitudinal recesses or channels and annular grooves in position to register with those in the journal, as described.

254,772. MAIL-BAG FASTENING. ADMIR JOHNSTON, Hoisbridge, N.Y. Filed Dec. 19, 1881. (No model.)



Claim.—In a mail-bag fastening, the jointed strap C, having tongues D and the shouldered tongue E, in combination with the staples *a* and lock F, consisting of the pivoted claws *c*, pivoted arm *g*, and spring *f*, substantially as and for the purpose specified.

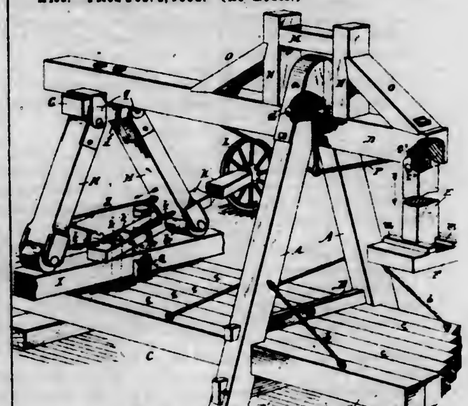
254,773. NUT-LOCK. PRESTON JONES, Shelbyville, Ind., assignor to Hugh McKenzie, Cincinnati, Ohio. Filed June 13, 1881. (No model.)



Claim.—1. The plate E', having the housings *d'* and *d'*, jointly with the keys F' and F', substantially as and for the purpose set forth.

2. The combination, in fastenings for nuts, of washer-plates having housings folded over and provided with recesses *e* and keys F', as set forth.

254,774. COTTON-PRESS. GEORGE E. JUDSON, Williamsburg, Miss. Filed Feb. 4, 1882. (No model.)



Claim.—1. The combination, with the lever D and a supporting-frame, of the roller toggle-arms H, means for operating said toggle-arms, pivotal connections between the toggle-arm and lever, and the track I, substantially as and for the purpose specified.

2. The combination, with the lever D and a supporting-frame, of the roller toggle-arms H, pivotal connection between said toggle-arms and lever, mechanism for operating said arms, and the track I, both the toggle-arms and the track being arranged at right angles to the lever D, substantially as and for the purpose specified.

3. The combination, with the lever D, a supporting-frame, the roller toggle-arms H, means for operating the same, and the track I, of the lever K, supported at its outer end by a wheel, L, and pivotal connections between the lever K and the toggle-arms, substantially as and for the purpose specified.

4. The combination, with the posts A, lever D, roller toggle-arms H, and the track I, of the base C, extending the full length of the lever D, substantially as and for the purpose specified.

5. The combination, with the lever D, a supporting-frame for the same, roller toggle-arms H, and track I, of the lever K, staples *h k*, and adjustable chains *l*, constructed and operating substantially as and for the purpose specified.

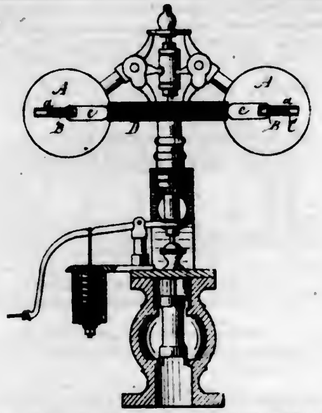
6. The lever D, provided with a compression-truss frame, M N O, one side of its pivotal point, and on the opposite side with a tension-truss, P, substantially as and for the purpose specified.

7. The lever D, provided with an upper concave recess, *c*, in combination with the posts A, having rounded portions to fit in said recesses, substantially as and for the purpose specified.

8. The lever D, provided with an upper concave recess, *c*, and with lower concave recesses, *c' c'*, in combination with the posts A, the toggle-block G, and the follower-bar E, having rounded portions to fit in said recesses, substantially as and for the purpose specified.

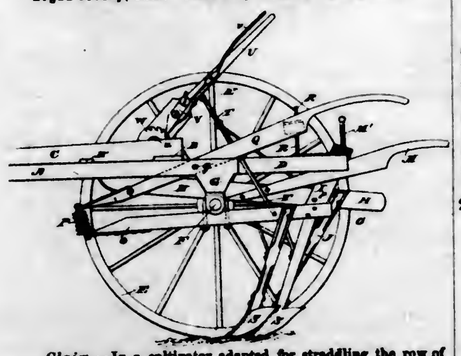
254,775. GOVERNOR. JOHN L. JUDSON and WILLIAM A. COGSWELL, Rochester, N.Y., assignors to Junius Judson & Son, same place. Filed May 21, 1881. (No model.)

254,775.



Claim.—In a governor, the combination, with the balls A A, of cross-bars B B, attached to the balls and made adjustable forward and back, and coiled springs D D, connecting the cross-bars, as shown and described, and for the purpose specified.

254,776. CULTIVATOR. GABRIEL MARTIN, Monroe Township, Logan County, Ohio. Filed July 18, 1881. (No model.)



Claim.—In a cultivator adapted for straddling the row of corn, the combination of supplemental cultivators O S, hinged near their centers to the axle, springs P at the forward end of the beams of said cultivators, handles or levers Q, extending from said springs to the rear of the cultivator, and racks R, all arranged substantially as and for the purposes set forth.

254,777. BEDSTEAD. JNO. HOENEL, Chicago, Ill., assignor to Hoenel & Price, same place. Filed Jan. 25, 1882. (No model.)

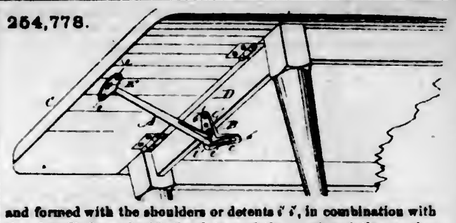


Claim.—In combination with the main portion A of a bedstead head-board, the paneled top B, consisting of the grooved uprights F, having the shorter facings F, the top rail, E, and the panel C, the parts being secured and the panel being retained by the grooves *f* in the uprights F', and free to move vertically behind the rails D and E, or one of them, substantially as described.

254,778. TABLE-LEAF SUPPORT. JOSIAH H. HOSMER and GUERNON H. CRANE, Portland, Mich., assignors to Emory W. Blanchard and Jeptha B. Morehouse, same place. Filed Sept. 24, 1881. (No model.)

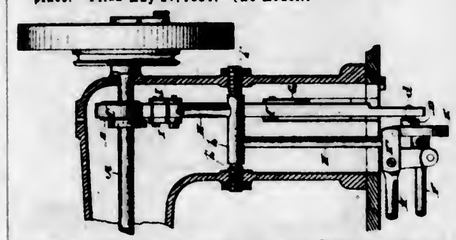
Claim.—The hinged arm A, having its outer end enlarged

254,778.



and formed with the shoulders or detents *c' c'*, in combination with the plate B, formed with the slot *c* and the opening *c'*, the opening *c'* being wider than the slot *c*, as and for the purposes set forth.

254,779. SEWING-MACHINE. GEORGE M. PRATT, Middletown, Conn., assignor to the Victor Sewing Machine Company, same place. Filed May 27, 1881. (No model.)



Claim.—The combination, in a sewing-machine, of the hollow standard, the driving-shaft, the feed-shaft, the connecting-rod C between the driving and feed shafts, the rod G, pivoted to the hollow standard and to the connecting-rod, the crank-lever H, one arm of which is in line with the connecting-rod and is linked thereto by the link I, and the other arm of which is to one side of the connecting-rod and is connected with the shuttle-lever K, the elongated hub of the lever H, and its bearings in the hollow standard, substantially as and for the purpose set forth.

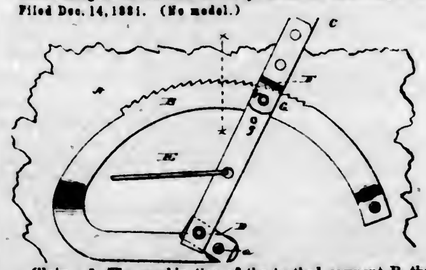
254,780. ELECTRIC INCANDESCENT LAMP. EDWIN A. SCHIERER, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Jan. 26, 1882. (No model.)



Claim.—1. An electric incandescent lamp containing a rarefied atmosphere of chlorine.

2. In an electric lamp, a carbon conductor adapted to be rendered incandescent, in combination with an inclosing-globe containing a rarefied atmosphere of chlorine, substantially as described.

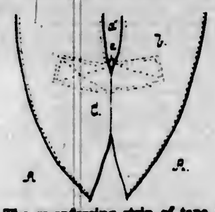
254,781. WAGON-BRAKE LEVER. GEO. L. SLAPER, Buchanan, Mich., assignor of one-half to Joseph L. Richards, same place. Filed Dec. 14, 1881. (No model.)



Claim.—1. The combination of the toothed segment B, the lever C, and its short pivoted link D, substantially as described, with the rod E, for the purpose set forth.

2. The combination of the toothed segment B, the lever C, its short link D, pivoted to an extension of said segment, the rod E, the arm F, and the spring-actuated pin *b*, substantially as described.

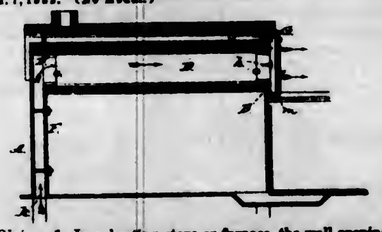
254,782. DRAWERS AND OTHER GARMENTS. JULIUS STIEFEL and MAX JUHR, Baltimore, Md. Filed Nov. 16, 1881. (No model.)



Claim.—1. The re-enforcing strip of tape C, or equivalent unyielding material, quilted to the garment across the end of the opening *a'* and between the parts A and *b*, as set forth.

2. In a garment, a re-enforcing strip of tape, C, or equivalent unyielding material, secured across the end of the opening and having the slack edges, as set forth.

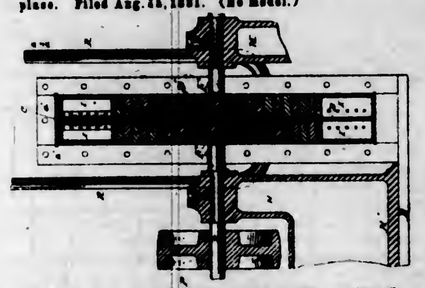
254,783. HEATING-STOVE. JOHN STRASSER, Manchester, No., assignor of one-half to George Strasser, same place. Filed Jan. 7, 1882. (No model.)



Claim.—1. In a heating stove or furnace, the wall-openings B B' in the upper portion, the up-draft-flue plate extending from the rear opening, B', to the bottom of the stove, the rim-bearing *c*, the removable front collar, E, and the removable horizontal hot-air flue D, having its ends seated on said rim-bearing, substantially as specified.

2. In a heating-stove, the combination, with the horizontal flue D and its front opening, E, of the register-door G, having a hinge at its lower edge, and a stop-shoulder, *n*, whereby it forms a shelf below said opening, substantially as specified.

254,784. BRAN-FLOURING MACHINE. WALLACE WARREN, Chicago, Ill., assignor of one-half to Frank C. Taylor, same place. Filed Aug. 25, 1881. (No model.)



Claim.—1. In a bran-souring machine, the combination, as shown, of the cylindric shell and winged disk, said shell having its inner periphery minutely and sharply rough, as described, and having a suitable inlet and a lateral adjustable outlet located near but slightly inward from the periphery, whereby the bran may be swept about against the rough face of the shell until suitably reduced and then discharged, substantially as described.

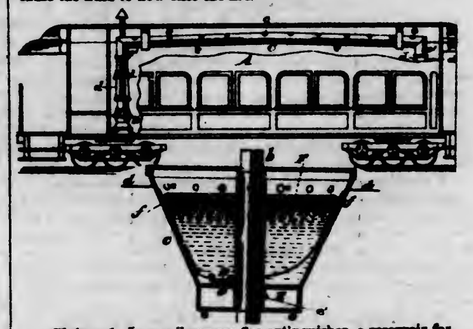
2. In combination with the shell having the lateral marginal opening J, the slide I, having the slot *l* arranged with the opening J, so as to vary the distance of the discharging-orifice from the periphery of the shell, substantially as described, and for the purpose set forth.

3. In the bran-reducing machine described, the disk D, provided with the wings I, having the flanges I' turned backward and supported from the disk at the outer margin of the wings, substantially as described.

4. In the bran-reducing machine described, the disk D, provided with opposite wings, I, each pair consisting of a single plate having a slot, *i*, and bent at the extremity of the slot, as shown and described, and for the purposes set forth.

254,785. AUTOMATIC FIRE-EXTINGUISHER FOR RAILROAD-CARS. FRANK A. WHITE, Cortland Village, N. Y., assignor of one-half to Wm. B. Stoppard, same place. Filed Feb. 13, 1882. (No model.)

Brief.—The reservoir C, for fire-extinguishing agent, has a distributer, E, attached thereto to spread the water or other fluid. In case of accident, whereby the stove is displaced or upset, the cords *d*, which are attached to the stove, will open the valves and cause the fluid to flow onto the fire.



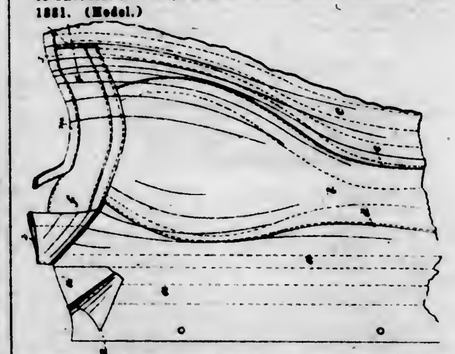
Claim.—1. In a railway-car fire-extinguisher, a reservoir for the fire-extinguishing medium, provided with valved apertures at top and bottom, in combination with the fluid-distributing chamber and operating cords or wires for releasing the valves, the ends of said cords or wires being secured to the stove, as and for the purposes specified.

2. In a railway-car fire-extinguisher, a reservoir for the extinguishing medium, provided with valved apertures at the top and bottom thereof, in combination with a fluid-distributing chamber having suitable perforations and means for operating the valves which control the apertures in said reservoir, substantially as shown and described.

3. A reservoir for the fire-extinguishing medium and a fluid-distributing chamber, communicating with each other by valved apertures, in combination with a stove-flue, with which said distributing-chamber also communicates, the opening between said chamber and stove-flue being suitably valved, substantially as set forth.

4. The reservoir C, having apertures *a*, and distributing-chamber E, having perforations *a*, in combination with the stove-flue having channel *d'*, valves D, and operating cord or wire *d*, as set forth.

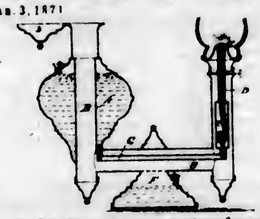
254,786. CORSET. CHAS. E. WILLIAMS, Worcester, assignor to Theodore C. Bates, North Brookfield, Mass. Filed Apr. 18, 1881. (Model.)



Claim.—In a corset having a gorelum breast portion, as set forth, the distending-strip *f*, combined with the pieces *a* and *c*, and pockets or slits made in the material thereof to receive and retain the ends of the said distending-strip, substantially as shown and described.

REISSUES.

10,050. LAMP. FRANKLIN T. GRIMES, Liberty, Mo., assignor, by mesne assignments, to Michael Hicks and Thomas Smith, New York, N. Y. Filed June 3, 1879. Original No. 110,648, dated Jan. 3, 1871.



Claim.—1. In a lamp, the combination of an oil-reservoir, A, air-supply tube B, passing through said reservoir and thence to the burner, an oil-conducting passage, G, and a closed burner, E, the wick-tube being set apart from the oil-reservoir, and to one side thereof, and connected therewith by the air-tube B and oil-tube G, whereby the heat from the flame will not come into contact with the reservoir, substantially as described.

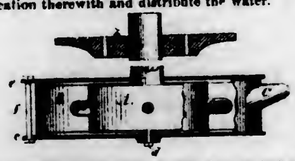
2. In a lamp, the combination of an oil-reservoir, A, an air-supply tube, B, passing through said reservoir in the direction of the greatest length of the latter, to thoroughly cool the oil, and thence to the closed burner E, oil-conducting tube G, wick-chamber C, and the said closed burner E, the wick-tube being set apart from and to one side of the oil-reservoir A, whereby the heat from the flame will not come into contact with the latter, substantially as described.

3. In a lamp, the combination of an oil-reservoir, A, an air-supply conduit, B, the walls of which are in contact with the oil in the reservoir, the wick-tube C, and closed burner E, to which latter the air is conducted by the conduit B, the said wick-tube being arranged or set away from and to one side of said oil-reservoir A, and connected therewith by the air and oil tubes or conduits B G, whereby the oil is thoroughly cooled by the passage of air to the burner, and the heat from the flame will not come into contact with the oil-reservoir, substantially as described.

4. In a lamp, the combination of oil-reservoir A, air-conduit B, the walls of which are in contact with the oil in the reservoir, a separate wick-chamber, C, the latter being arranged away from and to one side of the reservoir, and the connecting air and oil tubes B G, all arranged substantially as shown, to cool and preserve the oil at a low temperature, and the closed burner E, the chimney of which is set directly upon the burner, closely inclosing it, whereby all the air supplied by tube B comes into direct contact therewith, and the products of combustion are completely and immediately carried away by the chimney.

10,051. FIRE-EXTINGUISHER. ELIAS JONES, Pierrepont, N. Y., assignor to Joseph A. Miller, Jr., Providence, R. I. Filed Dec. 9, 1880. Original No. 110,931, dated Oct. 17, 1871.

Brief.—The pipe *a* has an enlarged head, A, which has discharge-outlets *c*. The head is surrounded by case B, which, being attached to said head by pivots and having tangentially-arranged water-outlets, is caused to revolve when the water-supply is in communication therewith and distribute the water.

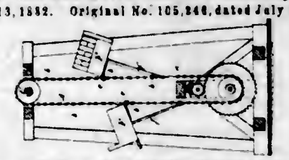


Claim.—1. The combination, with the supply-head consisting of a pipe with a head having one or more outlets, of a revolving vessel provided with outlets, the direction of which is inclined or oblique to the surface of the vessel, so as to revolve the vessel by the reaction of the discharging water and distribute the same, as described.

2. The combination, with the case B, provided with tangential discharge-outlets, of the pipe *a*, terminating in a case or supply-head, A, having outlets *c*, and forming a bearing for the surrounding case B, and the screw *d*, by which the case B is secured, the whole constructed to distribute water under pressure over a circular area and diffuse the same by centrifugal force, as described.

3. In a fire-extinguisher, the combination of a supply-head, consisting of a pipe with a head having one or more outlets, and a revolving distributer consisting of a loosely-fitting case surrounding said pipe and its head and covering the outlets thereof, said case having outlets from which water is discharged tangentially, as described.

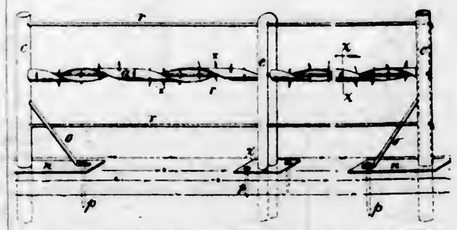
10,052. HOD-ELEVATOR. JESSE POWERS, Chicago, Ill. Filed Jan. 13, 1882. Original No. 105,246, dated July 12, 1870.



Claim.—1. The endless traveling ladder A, combined with a detachable hod, F, having hook *e* and shank *f* attached thereto, the said hook being attached to one end of the hod, as and for the purpose described.

2. The hod F, provided with the shank *f* and hook *e*, secured to one end of the hod, adapted to be suspended upon a round of the traveling ladder A, as and for the purpose described.

10,053. BARBED-WIRE FENCE. WILLIAM WATKINS and HIRAM B. SCUTT, Joliet, Ill., assignors to Washburn & Moen Manufacturing Company, Worcester, Mass., and Isaac L. Ellwood, De Kalb, Ill. Filed Jan. 23, 1882. Original No. 163,055, dated June 1, 1875.

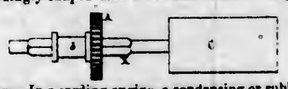


Claim.—1. The attachment of wire fences herein described, consisting of wire-encircling strip *a*, formed of spiral metal and having barbs *x* projecting through the sides thereof, constructed as and for the purposes described.

2. The combination, with a fence-wire, of a barbed metal strip, the metal strip being wrapped around or encircling the wire to form a strand of barbed fencing for the purpose of turning stock, as set forth.

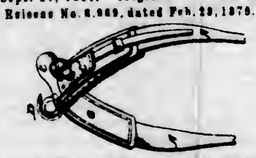
10,054. CONDENSING-CYLINDER FOR CARDING-ENGINES. JAMES GREAVES, Philadelphia, Pa., assignor of one-half to John Dobson and James Dobson, same place. Filed Mar. 24, 1877. Original No. 187,820, dated Feb. 20, 1877.

Brief.—A portion of the shaft of the condensing-cylinder, near its end, is made polygonal in cross-section, and works through a correspondingly-shaped hole in the hub of the driving-gear.



Claim.—In a carding-engine, a condensing or rubber cylinder mounted on a polygonally-shaped horizontal shaft, in combination with a driving-gear, A, having a sleeve-shaped bearing, *b*, said shaft and cylinder being adapted to be revolved by the drive-wheel A, and at the same time to be rapidly and continuously reciprocated by suitable mechanism, substantially as and for the purposes described.

10,055. GIG-SADDLE. ANDREW ORTMAYER, Chicago, Ill. Filed Sept. 27, 1881. Original No. 169,095, dated Apr. 13, 1875; Reissue No. 8,949, dated Feb. 29, 1876.



Claim.—1. The combination, substantially as hereinbefore specified, of a removable pad with an unstuffed gig-saddle containing removable nuts located above the said pad, for the purpose set forth.

2. The combination, substantially as hereinbefore specified, of a removable pad consisting of a complete article of itself, and capable of attachment and removal without structural change or alteration, and an unstuffed gig-saddle containing removable terret-nuts supported by pockets arranged for exposure and for access to the said nuts when the said pad is removed, for the purposes set forth.

3. In a gig-saddle, the combination, with the metal jockey, of the skirts A A, provided with the pockets F F, to secure the terret plates or nuts *a a*, substantially as specified.

4. In combination, the metal jockey provided with the check-hook D, fastened thereto by means of a nut on the under side of the jockey, and the removable pad G, having an opening in its upper face to allow the said nut and the bolt of the hook to enter the padding of the pad, substantially as and for the purposes specified.

5. The combination, in a gig-saddle, of the check-hook D with the removable pad G, having therein the loop *e'*, adapted and arranged to receive the check-hook, and extending across the forward end of an opening adapted and arranged to receive the nut and screw of the check-hook when the pad is fastened to the latter by means of the said loop, substantially as and for the purposes specified.

10,056. PROCESS OF AND APPARATUS FOR MANUFACTURING GAS FOR HEATING AND ILLUMINATING PURPOSES. HENRY Y. ATTRILL and WILLIAM FARMER, New York, N. Y.; said Farmer assignor to said Attrill. Filed Mar. 30, 1880. Original No. 224,266, dated Feb. 10, 1880.



Claim.—1. The within-described process for the manufacture of gas, consisting in causing the gas-producing material to traverse slowly through a generator, and be subjected to a continuous or increasing high temperature and distilled to different degrees, and drawing off and conducting away independently different grades of gas at different points in the generator, as herein specified.

2. The within-described mode of operation to produce gases of different grades, consisting in, first, causing the gas-producing material to slowly traverse the generating-chamber; second, admitting air and maintaining the residuum of said material in a state of partial combustion; third, heating thereby a current of air for subsequent application to the gas; fourth, withdrawing the poor gas mixed with the carbonic oxide resulting from the partial combustion of the residuum; fifth, separating and conducting away a portion of the mixed gases; sixth, admitting the heated air to the remainder of the mixed gases and burning them; seventh, heating thereby the part of the chamber in which fresh material is introduced; eighth, distilling by such heat the gases and vapors from the freshly-introduced charges; ninth, passing said vapors and gases through partially distilled and coked portions which have a higher temperature; and, tenth, withdrawing the illuminating-gas without admixture with the poor gas, the two gases being kept separate, as herein specified.

3. The combination of the chamber or stack *m*, having a combustion-chamber at the bottom, with the independent pipes *e* and *e* for withdrawing the gases of different grades without admixture, substantially as described.

4. The combination of the chamber *m*, having combustion-chamber at the bottom and the flue c^2 surrounding its upper part, with the independent pipes *e* and *e*, the latter communicating with the flues c^2, substantially as described.

5. The apparatus described, having, in combination, the upright retort *m*, surrounding flue c^2, fire-grate *a*, provisions *e* for taking away the illuminating-gas, provisions e' e^3 c^3 for taking away and utilizing the poor or heating gas, and passages *g g'* for supplying heated air to mingle with the products of combustion and supply heat to the material at the early stages of its distillation, substantially as herein specified.

6. In the construction of an apparatus for the continuous and simultaneous production and separation of heating and illuminating gases, or for the continuous manufacture of heating-gases alone, the combination of a furnace or combustion-chamber, a retort or distilling-chamber, with its surrounding flues at top and bottom, and the pipes arranged at different levels for withdrawal at will of gases of different composition, and the flue connecting the lower eduction-pipe with the upper flue surrounding the retort, whereby the said apparatus may at will be devoted to the simultaneous production and separation of illuminating and heating gases or the production of heating-gases alone, all in the manner substantially as described.

10,057. HOMINY-MILL. THEODORE HUSSEY, Terre Haute, Ind. Filed Jan. 27, 1862. Original No. 132,172, dated Dec. 26, 1871; Reissue No. 5,530, dated Aug. 5, 1873.



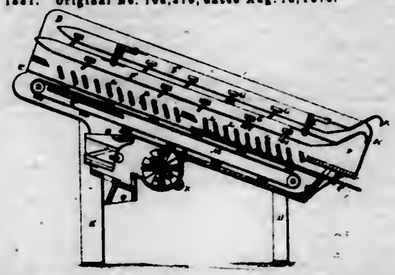
Claim.—1. The combination of the shaft B, plates E, lugs F, arms I, cutters G, and the collars D, all substantially as specified.

2. The combination of the cutters G, lugs F, arms I, shaft B, and plates E, substantially as specified.

3. The combination, with the shaft B, of longitudinal side plates formed with rigid lugs, and cutters bolted to said lugs, as and for the purpose described.

4. The combination, with the shaft B and the cutters, of longitudinal side plates formed with rigid lugs, which lugs on one plate alternate with those on the next plate to form broken spirals, as described.

10,058. SEPARATOR ATTACHMENT FOR THRASHING-MACHINES. MOSES A. KELLER, Littlestown, Pa. Filed July 18, 1881. Original No. 108,370, dated Aug. 16, 1870.



Claim.—1. The combination, with a series of reciprocating straw-carriers and series of slats located beneath the straw-carriers and adapted to separate the straw from the grain and chaff, of an endless carrier provided with cross-bars, and a grain-board or inclined bottom placed below the carrier, whereby the grain and chaff fall between the cross-bars of the carrier onto the grain-board, and are then conveyed to the winnower, substantially as set forth.

2. The combination, with a reciprocating straw-carrier and a slatted separator, of an endless carrier located beneath the separator and grain-boards, one being located within the endless carrier near its upper end and the other being located below the lower end of the carrier, substantially as set forth.

3. The combination, with the reciprocating straw-carrying bars F G, of the adjustable slats I, located beneath the straw-carrying bars and in close proximity thereto, substantially as set forth.

4. The combination, with the fan and fan-shaft, of the pivoted bar *a*, weights *b*, rod *d*, register *g*, and devices for connecting the rod *d* and register, substantially as set forth.

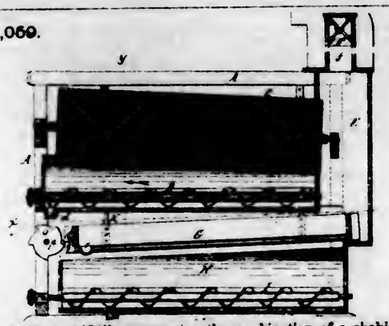
5. The combination, with the pulley for actuating the straw-carrier R and pulley T, of the belt S and guide-pulleys U, the latter supported on an elongated vertical stud, V, and adapted to be vertically adjustable thereon, substantially as set forth.

10,059. MACHINE FOR SEPARATING MIDDLINGS. WILLIAM R. MIDDLETON, Commonwealth, Wis., assignor, by mesne assignments, to W. W. Huntley, A. P. Holcombe, and Aug. Heinz. Filed Aug. 2, 1881. Original No. 102,926, dated Nov. 1, 1870. Reissue No. 4,237, dated Mar. 28, 1876. Division B.

Brief.—The original patent is reissued in two divisions, Division A having been granted September 6, 1881, No. 9,862.

Claim.—1. In a middlings-separator, the combination herein described of a shaking-sieve, whereby the middlings are sifted, a fan for causing an air-current, and a reel for separating the finer flour from the middlings before the latter reach the air-current and sieve.

10,059.

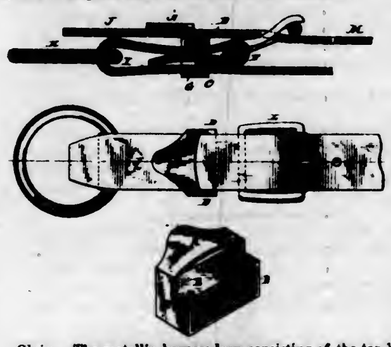


2. In a middlings-separator, the combination of a shaking-screen, a hopper arranged lengthwise underneath the screen, in which the sifted middlings are received, a conveyer arranged lengthwise in the hopper, whereby the sifted middlings are collected and removed, a suction-fan, whereby the floating impurities are drawn off, and a preliminary dusting-bolt, whereby the flour is separated from the middlings previous to subjecting the middlings to the action of the air-current and the shaking-sieve, substantially as set forth.

3. The combination, with a dusting-reel, whereby the flour is separated from the middlings, of a hopper arranged lengthwise underneath the reel, in which the flour is received, a conveyer arranged lengthwise in the hopper, whereby the flour is removed, a shaking-sieve which receives the middlings from the dusting-reel, a hopper arranged lengthwise underneath the shaker, in which the middlings are received, and a conveyer arranged lengthwise in this hopper, whereby the sifted middlings are collected and removed, substantially as set forth.

4. The combination, with a dusting-reel, whereby the flour is separated from the middlings, and a shaking-sieve by which the middlings are separated from the offal, of a suction-fan, and an air-trunk connected with the eye of the fan, through which an ascending air-current is drawn to the fan, and through which the middlings pass from the dusting-reel to the shaking-screen, substantially as set forth.

10,060. HARNESS-LOOP. DUNCAN MCMILLAN, Webster City Iowa, assignor, by mesne assignments, to Carrie M. McMillan, same place, and Edwin D. Myers, Cleveland, Ohio. Filed Nov. 4, 1881. Original No. 183,135, dated Sept. 12, 1876.



Claim.—The metallic harness-loop consisting of the top bar, A, the intermediate bar, B, extending in front of said top bar, the bottom bar, C, the side bars, D, and the rivet G, passed through the intermediate bar in front of the top bar, all constructed and relatively arranged as herein shown, and adapted to receive and secure a strap or straps, for the object stated.

THE ELIOTYPE PRINTING CO BOSTON

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

GOTTFRIED *v.* MILLER.

Decided January 23, 1882.

1. CONTRACTS OF CORPORATIONS—CORPORATE SEAL.
   A corporation may bind itself by a contract not under its corporate seal when the law does not require the contract to be evidenced by a sealed instrument.
2. SAME—AGENTS.
   Such contracts may be executed by an agent, and the rule is that the agent should in the body of the contract name the corporation as the contracting body, and sign as its agent or officer.
3. ASSIGNMENTS OF PATENTS—NOT UNDER SEAL.
   Assignments of patents are not required to be under seal. The statute simply provides that "every patent or any interest therein shall be assignable in law by an instrument in writing."
4. SAME—SAME—PARTICULAR CONTRACT.
   An assignment therefor, purporting on its face to be the contract of the corporation therein named, declaring that the consideration has been received by the company, that it is executed in pursuance of a resolution passed by the company and purporting to be signed by Smith, president of the company, who declares that he signs it as the act of the company, is transfer of said company and not the personal deed of Smith.
5. STOCK COMPANY—ATTACHMENT OF STOCKS—ENCUMBRANCE.
   The fact that a person holds stock in a company gives him no title to its property, and the attachment of such stock in the hands of a stockholder for a personal debt of the stockholder does not in any way encumber the property of the company.
6. SALE OF MACHINE—IMPLIED LICENSE.
   Where Stromberg sold to Miller a machine and the right to use the same and Stromberg subsequently acquired an interest in the patent covering the machine, *Held* that such sale was a license to Miller to use the machine so far as Stromberg could grant a license.

Messrs. E. & T. A. Banning for the appellant.

Mr. E. H. Abbott for the appellee.

APPEAL from the Circuit Court of the United States for the Eastern District of Wisconsin.

STATEMENT OF THE CASE.

The bill of complaint alleged that on May 3, 1864, letters patent of that date were granted to the complainants, Matthew Gottfried and John F. T. Holbeck, for an improvement in a machine for pitching beer-barrels. It charged that the defendant was infringing said letters patent, and prayed for the writ of injunction against him to restrain further infringement and for damages and an account of profits. The only defense relied on was that on November 25, 1872, one John H. Stromberg was the owner of an undivided one-third of the entire interest in the letters patent sued on, and being such owner had sold and delivered to the defendant for his use forever a machine for pitching barrels containing some of the improvements purporting to be secured by said letters patent; that the defendant had paid for said machine, and had since said November 25, 1872, hitherto continued to use, and was still using the same, and that the defendant, except as aforesaid, had never in any manner used or employed the method or improvements or the process or machine set forth in said letters patent. The cause was heard in the circuit court upon bill, answer, replication, and evidence, and that court, being of opinion that the defense had been made out, dismissed the bill. The appeal of the complainant brings the case to this court for review.

The controversy relates to the right of the defendant to use the machine purchased by him from Stromberg. The evidence establishes the following state of facts, about which there seems to be no dispute:

Letters patent dated May 3, 1864, were granted to Gottfried and Holbeck, the complainants, for an improvement in the mode of pitching barrels.

On November 25, 1872, one Stromberg sold to the defendant, Miller, a pitching-machine containing, as complainants asserted, the improvements covered by their patent. Miller claimed the right to use this machine, and has used it from the time of his purchase up to the filing of the bill. This is the infringement of which complaint is made. The controversy depends on several transfers and other transactions between the parties who at different times had or claimed to have an interest in the patent. They were as follows:

On December 19, 1870, Gottfried, one of the patentees, by written assignment, in consideration of five dollars paid and a royalty to be paid of ten dollars on every machine to be manufactured by Holbeck, sold and transferred to Holbeck all his interest in the patent and the invention, reserving to himself, however, in the same instrument the right to revoke the assignment if the royalty reserved should not be paid, and on January 3, 1871, Holbeck, being then the sole owner of the patent, sold and assigned to Charles F. Smith and Henry C. Comegys an undivided two-thirds of all his title and interest therein.

On January 25, 1871, the title to the patent being at that time in Holbeck, Smith, and Comegys, they, by written assignment, transferred all their right, title, and interest in and to various patents, including the Gottfried and Holbeck patent, to the Barrel Pitching Machine Company, of Baltimore. The assignment contained this provision:

> The same to be held and enjoyed by the said company as fully and entirely as they would have been held by us if this assignment and sale had not been made, with the exception that the said company shall not assign to any one but ourselves any or all the interest in and to the above-named patents in the proportion as they are now held by us, this assignment to hold good until the dissolution or liquidation of the said company, when the said company shall reassign to us in the same proportions as now assigned by us.

Afterward, on June 1, 1871, Holbeck, Smith, and Comegys made a further assignment to the company of their interest in the patents mentioned in the first assignment, which contained the following clause:

> And provided also that this assignment shall continue in full force until the dissolution of said company, in which event, or in the event of the liquidation of the affairs of said company, the several interests of each grantor in said patents shall, subject to the lawful rights of the creditors of said corporation, be reassigned to each grantor.

On December 9, 1875, the directors of the Barrel Pitching Machine Company resolved that all the right, title, and interest of the company in and to this patent acquired by the assignment from Smith, Comegys, and Holbeck should be assigned and conveyed back to those parties for the sum of five hundred dollars; and it was further resolved that Charles F. Smith, who was the president of the Barrel Pitching Machine Company, be

directed to execute and deliver to Smith, Comegys, and Holbeck an assignment on behalf of the Pitching Machine Company.

On the 11th day of December, 1875, in pursuance of the resolution just mentioned, an instrument was executed which purported to be an assignment, for the consideration of five hundred dollars, by the Barrel Pitching Machine Company to Smith, Comegys, and Holbeck of all the right, title, and interest of the company in and to the patent.

The attestation clause and signature were as follows:

In testimony whereof and in pursuance of a resolution passed by said company on the 9th day of December, 1875, a copy of which is appended hereto, the said Charles F. Smith hath hereto set his hand, as the act of the said company, this 11th day of December, 1875.

(Signed) CHARLES F. SMITH,
President Barrel Pitching Machine Company.

On the same day, December 11, 1875, Smith, for the alleged consideration of five hundred dollars, granted and assigned to Holbeck and Gottfried all his right and title to the patent; and afterward, on June 7, 1876, Comegys transferred to Stromberg all his interest in the patent.

It next appears that on October 9, 1876, Gottfried, Holbeck, and Stromberg, who are named as jointly interested in the patent by a certain instrument in writing, appointed J. H. B. Latrobe, of Baltimore, their attorney, with authority to prosecute suits against infringers of the patent and to compromise or adjust the same. This instrument contained the following clause:

And it is understood that all expenses, costs, and charges, including counsel fees, attending the litigation, if any, shall be deducted from the collections aforesaid and the balance paid over to the parties hereto in the proportion of their interest in the said patents, and particularly it is understood that the said John H. Stromberg shall be paid out of said collections, as fast as made, all moneys that he may have advanced in the prosecution of claims under said letters patent.

This instrument bears the signatures and seals of Holbeck, Gottfried, and Stromberg. During the years 1877 and 1878 bills in equity were filed by them against various defendants, in which they averred themselves to be joint owners of the letters patent.

On December 15, 1879, Stromberg, in consideration of the sum of five thousand dollars, assigned to Gottfried all his interest in the patent, and in all claims of every kind or nature for past infringements and all rights of action arising out of or connected with infringements This instrument of assignment recited the fact that Stromberg had theretofore disposed of rights and licenses under the patent as a part owner under mesne assignments of the same, and had caused suits to be instituted against infringers, and that it was a part of the consideration of the assignment from him that he should be released from all claim which Gottfried or Holbeck or their assignees might or could have against him for or by reason of any collections theretofore made by him or his attorneys, or against any person or persons to whom he had granted licenses to use the patented improvements, and it was then declared as follows:

Now therefore the said Matthew Gottfried and the said John F. T. Holbeck, (the said Holbeck uniting herein for the purpose of carrying out the agreement aforesaid,) for and in consideration of the premises, have released, and by these presents do hereby release, the said John H. Stromberg from all claim that they or either of them might or could have against the said Stromberg for or by reason of any collection he may have made from parties to whom he or his attorneys * * * may have granted licenses to use the said patented improvement, hereby ratifying and confirming all such licenses and all the acts of the said Stromberg and his attorneys in the premises; and the said Matthew Gottfried doth hereby covenant and agree that he will save harmless the said Stromberg and his attorneys from all claims that may be made against them, or either of them, for or by reason of any interest which the said Gottfried and Holbeck, or either of them, may have given to any other party in the said letters patent.

It appears also that in September, 1873, Charles F. Smith brought a suit against Henry C. Comegys in the superior court of Baltimore city upon an indebtedness from Comegys to him, in which an attachment was issued and a seizure made of the shares of capital stock held by Comegys in the Barrel Pitching Machine Company, which proceedings, on October 27, resulted in a judgment condemning the stock, according to the laws of the State of Maryland, for the satisfaction of Smith's claim.

On the day upon which Stromberg sold the machine to the defendant, Miller, he had no interest in the patent and no license under it, and it is admitted that in making and selling the machine to Miller Stromberg was an infringer.

At the January term, 1881, on motion of both complainants, the court below dismissed the bill as to Holbeck, and, upon final hearing in June following, a decree was made dismissing the bill as to Gottfried, the other complainant. From this decree Gottfried appealed.

Mr. Justice WOODS delivered the opinion of the Court.

The appellant rests his right to a decree in this case upon these grounds: First, that Stromberg never owned any part of the patent sued on; and, second, that if he did his ownership could not inure to the protection of the defendant, Miller. We shall consider these contentions in the order stated.

Upon the first point we remark that it is entirely clear that the assignment of his interest in the patent by Comegys to Stromberg, dated June 7, 1876, transferred to the latter an interest therein, provided the retransfer of the patent by the Barrel Pitching Machine Company to Holbeck, Smith, and Comegys vested the title to the patent in them. Briefly stated, the following is the chain of title: Gottfried and Holbeck are the joint patentees; Gottfried conveys all his interest in the patent to Holbeck, who, becoming thus the owner of the entire patent, conveys one undivided third to Smith and another to Comegys; Holbeck, Smith, and Comegys convey the entire interest in the patent to the Barrel Pitching Machine Company; the company reconveys its interest in the patent to its assignors, Holbeck, Smith, and Comegys; Smith conveys his interest to Gottfried and Holbeck, and Comegys conveys his to Stromberg. The contention of the appellant is that the assignment of December 11, 1875, by the Barrel Pitching Machine Company to Holbeck, Smith, and Comegys was not properly executed, and was therefore ineffectual to pass any title.

The assignment declares that in pursuance of a resolution passed by the Barrel Pitching Machine Company, and in consideration of five hundred dollars received by it from Smith, Holbeck, and Comegys, the said company has granted to them all its title and interest in said letters patent. It is officially signed by Smith as president of the company, who declares the setting of his hand thereto to be the act of the company. The resolution referred to in this assignment is in the record, from which it appears that the company decided to make the assignment, and directed Smith to execute and deliver the same to Smith, Comegys, and Holbeck on behalf the company on receiving from them the sum of five hundred dollars. On account of the want of the corporate seal and of the manner of its execution, it is insisted by appellant that this assignment was not the transfer of the Barrel Pitching Machine Company, but the personal deed of Smith.

There is no ground whatever for this contention to stand on. Assignments of patents are not required to be under seal. The statute regulating their transfer simply provides that "every patent or any interest therein shall be assignable in law by an instrument in writing." (16 Stats., 203, sec. 36; Rev. Stats., sec. 4898.) A corporation may bind itself by a contract not under its corporate seal when the law does not require the contract to be evidenced by a sealed instrument. (*Bank of Columbia* v. *Patterson*, 7 Cranch, 299; *Fleckner* v. *U. S. Bank*, 8 Wheat., 338; *Andover T. Corporation* v. *Hay*, 7 Mass., 102; *Dunn* v. *St. Andrew's Church*, 14 John., 118; *Kennedy* v. *Baltimore Ins. Co.*, 3 Harris & J., 367; *Stanley* v. *Hotel Corporation*, 13 Maine, 31.) Even the parole contracts of a corporation made by its duly authorized agent are binding. (*Fanning* v. *Gregoire*, 16, How., 524; *Fleckner* v. *Bank of the U. S.*, 8 Wheat., 338.) The absence therefore of the corporate seal from the contract of assignment does not render it invalid or void. The assignment is executed in the manner required by law of an agent when making a simple contract in writing for the corporation and by its authority. The rule as laid down by the authorities is that the agent should in the body of the contract

name the corporation as the contracting party and sign as its agent or officer. This is the mode in which bank bills, policies of insurance, and many other contracts of corporations are ordinarily executed. (*Mott* v. *Hicks*, 1 Cowen, 513; *Bowen* v. *Norris*, 2 Taunt., 374; *Shelton* v. *Darling*, 2 Conn., 435; *Brockway* v. *Allen*, 17 Wend., 40.)

The assignment under consideration purports on its face to be the contract of the Barrel Pitching Machine Company. It declares that the consideration has been received by the company; that it is executed in pursuance of a resolution passed by the company, and it purports to be signed by Smith, president of the company, who declares that he signs it as the act of the company. It would be an absurdity to hold that this instrument is the individual contract of Smith and not of the Barrel Pitching Machine Company. It is not the company which asserts that this instrument was ineffectual to divest it of title to the patent, and the record shows that the assignees therein named acted upon the assumption that the assignment vested them jointly with the title. We are of opinion therefore that the assignment was well executed by the Barrel Pitching Machine Company, and transferred the letters patent to Holbeck, Smith, and Comegys, and that Stromberg, on June 7, 1876, by virtue of the assignment made to him on that day by Comegys, became vested with an undivided interest in the patent.

It is contended by counsel for appellant that the attachment of the stock of Comegys in the Barrel Pitching Machine Company at the suit of Smith in the superior court of Baltimore city prevented Comegys from acquiring any interest in the patent by the assignment thereof to Smith, Holbeck, and Comegys by the Barrel Pitching Machine Company, and therefore Comegys could convey no interest in the patent to Stromberg. This position seems to be founded on the clause of the instrument by which the patent was transferred to the Barrel Pitching Machine Company, to wit, that any reassignment of the patent to the assignors should be subject to the lawful rights of the creditors of the company.

The answer to this contention is that Smith was the creditor of Comegys and not of the company, and the clause in the instrument of transfer to the Barrel Pitching Machine Company gave Smith no claim on the patent to secure a debt due him, not from the company, but from a stockholder in the company. The fact that Comegys held stock in the company gave him no title to its property, (Mr. Justice Bradley in *Morgan* v. *The Railroad Company et al.*, 1 Woods, 15; *Bradley* v. *Holdsworth*, 3 Mees. & W., 334; *Arnold* v. *Ruggles*, 1 R. I., 165.,) and the attachment of his stock did not in the least encumber the property of the company or prevent the assignment of the letters patent by it to Smith, Holbeck, and Comegys, or the transfer by Comegys to Stromberg.

It remains to consider whether the sale by Stromberg to the defendant, Miller, of one of the pitching-machines containing the improvement described in the patent, protects him from liability for its use in this suit. By the contract of sale Stromberg warranted not only the title to the machine itself, but of the right to use it. If at the time of the sale he had been the owner of the patent, the sale would have constituted a license to Miller to use the machine as long as it lasted; but Stromberg did not acquire any interest in the patent until long after the date of his sale to Miller. If he had subsequently become the sole owner of the patent his previous sale to Miller of a machine embodying his patented invention would have estopped him from prosecuting Miller for an infringement of the patent by the use of the machine. In analogy to estates in land by estoppel, Miller would have acquired a right to use the machine which could not have been controverted by Stromberg; but having acquired only a part interest in the patent, we do not undertake to decide that his previous sale of the machine to Miller bound the other joint owners of the patent. It is clear, however, that such sale was a license to Miller to use the machine so far as Stromberg could grant a license, and in our opinion the covenants of Gottfried and Holbeck in the contract by which Stromberg assigned his interest in his patent to them are sufficient to protect Miller from this suit. In that contract it is declared to be part of the consideration of the transfer by Stromberg of his interest in the patent to Gottfried and Holbeck "that he should be released from all claims which Gottfried or Holbeck, or either of them, or any person to whom they or either of them may have assigned an interest in said letters patent, might or could have against him * * * or against any person or persons to whom Stromberg may have granted licenses to use the said patented improvement." And by said instrument Gottfried and Holbeck, for and in consideration of the premises, declare that they do release said Stromberg from all claim they or either of them may have against him or the parties to whom he may have granted licenses to use said patented improvement.

We think there can be no doubt that it was the purpose of all the parties to this instrument, and it is clearly expressed therein that, as a part of the consideration of the transfer, Stromberg was released from claims against him arising out of his transactions in reference to said patent, and that all licenses granted by him were in effect confirmed. This contract, therefore, affords complete protection to Miller, the appellee, and is an effectual bar to the prosecution of this suit.

The decree of the circuit court dismissing the bill must therefore be affirmed.

U. S. Circuit Court—Eastern District of Pennsylvania.

COMBINED PATENTS CAN COMPANY v. LLOYD.

Decided January 30, 1882.

1. LAW OF 1870—REISSUE—NEW CLAIMS—ESTOPPEL.
The statute of 1870, relating to reissues, authorizes the insertion of new claims, founded upon the original invention as exhibited by the specifications or drawings, in reissues when the omission results from "inadvertence, accident, or mistake," and where the claimant has not by some act or omission estopped himself from exercising the right to amend.

2. SAME—SAME—MISTAKE—DECISION OF COMMISSIONER CONCLUSIVE.
The question whether a patent is "inoperative or invalid by reason of defective or insufficient description or specification," and whether such defect has arisen by "inadvertence, accident, or mistake, and without any fraudulent or deceptive intention," appears from the decisions of the Court to be submitted finally to the judgment of the Commissioner wherever the circumstances bring it within the jurisdiction conferred upon him by the statute.

3. SAME—SAME—ADDITIONAL CLAIMS—QUESTION OF ERROR.
Where additional matter is claimed, however, which does not appear by reference to the patent or contemporary records to be embraced in the invention, or where it appears by such reference that the alleged omission "could not have occurred through inadvertence or mistake," as said by the Court in *James* v. *Campbell et al.*, the case is not within the jurisdiction of the Commissioner, and a reissue for additional claims may be declared void.

4. SAME—DELAY THIRTEEN YEARS—ESTOPPEL.
Where the only mistake suggested is an omission of a claim, and the patentee neglects for thirteen years to file his application for reissue, *Held* that he must be regarded, in view of his conduct, as intending to dedicate such invention to the public, and he is estopped from asserting his claim to such invention in a reissue.

Mr. E. N. Dickerson for the complainant.
Mr. Henry Baldwin, Jr., for the defendant.

BUTLER, *J.*, MCKENNAN, *J.*, concurring.

On the 30th day of August, 1864, a patent, No. 43,979, was issued to August Destouy for a new and useful improvement in the manufacture of metal moldings, in which the claims, two in number, read as follows:

1. The T-shaped metal molding, made substantially as and for the purpose specified.
2. The jaws B and D D', either straight or curved, and tool C, constructed and operating substantially as herein set forth, for the purpose of imparting to the moldings the final touch before they are applied to the article to be ornamented.

On the 17th day of April, 1877, the patent was surrendered and a reissue, No. 7,609, granted to Herman Miller, with the claims enlarged and multiplied to four in number, the third and fourth, which were new, reading as follows:

3. The combination, with a table having a stationary jaw or angle, of movable jaws operating, as shown and described, to compress the bent metal against said stationary jaw.

4. The combination, with a table having a stationary jaw or anvil and movable jaws, as described, of treadles connected with said movable jaws by levers, substantially as and for the purposes herein set forth.

The complainant, charging infringement, prays for an injunction and account.

The respondent denies the validity of the reissued patent and the charge of infringement.

As the infringement alleged respects the third claim alone, our attention will be confined to it. This claim, as we have seen, was not embraced in the original patent. That the matter herein described was a part of the invention as shown by the specifications and drawings the plaintiff's expert testifies and the defendant seems to admit. That additional and enlarged claims may thus be inserted in reissues of patents under proper circumstances is too well settled by the decisions to admit of question. The statute of 1870, which did not materially change the law as previously understood and administered, provides that—

Whenever any patent is inoperative or invalid by reason of a defective or insufficient specification, * * * if the error has arisen from inadvertence, accident, or mistake, and without any fraudulent or deceptive intention, the Commissioner shall, on the surrender of such patent and payment of the duty required by law, cause a new patent for the same invention * * * to be issued to the patentee in accordance with the patentee's corrected description and specification.

That this statute authorizes the insertion of new claims, founded on the original invention as exhibited by the specifications or drawings, in reissues when the omission results from "inadvertence, accident, or mistake," and where the claimant has not by some act or omission estopped himself from exercising the right to amend, has been uniformly held, not only by the several circuit courts, but by the Supreme Court also. In *Seymour* v. *Osborne*, (11 Wall., 516,) the latter Court said:

Power is unquestionably conferred upon the Commissioner to allow the specifications to be amended if the patent is inoperative or invalid, and in that event to issue the patent in proper form; and he may under that authority allow the patentee to redescribe his invention and to include in the description and claims of the patent not only what was well described before but whatever else was suggested or substantially indicated in the specifications or drawings which properly belonged to the invention as actually made and perfected.

The reissue there involved, it is true, antedated the statute now in force, but as respects the question here involved this is unimportant, as before indicated.

In the last cases in which this subject is discussed (*Miller & Co.* v. *The Brass Company* and *James* v. *Campbell et al.*, very recently decided and not yet reported) the right to insert new and enlarged claims is clearly stated. In the first of these cases the Court says:

If a patentee who has no corrections to suggest in his specifications, except to make his claims broader and more comprehensive, uses due diligence in returning to the Patent Office, and says, "I omitted this" or "my solicitor omitted that," his application may be entertained, and on proper showing correction may be made.

And again—

While, as before stated, we do not deny that a claim may be enlarged in a reissued patent, we are of opinion that this can only be done where an actual mistake has occurred, * * * a real *bona fide* mistake, inadvertently committed, such as a court of chancery in cases within its ordinary jurisdiction would correct. Reissues for the enlargement of claims should be the exception.

In the last of these cases it is said:

Of course, if by actual inadvertence, accident, or mistake, innocently committed, the claim does not fully assert or define the patentee's right in the invention specified in the patent, a speedy application for its correction before adverse rights have accrued may be granted, as we have explained in the recent case of *Miller et al.* v. *The Brass Company*.

The question whether a patent is "inoperative or invalid by reason of defective or insufficient description or specification," and whether such defect has arisen by "inadvertence, accident, or mistake, and without any fraudulent or deceptive intention," appears from the decisions of the Court to be submitted finally to the judgment of the Commissioner wherever the circumstances bring it within the jurisdiction conferred upon him by the statute. It is so stated by Mr. Curtis, (Curtis's Law of Patents, sec. 282, 282ª, 282ᵇ,) who cites *Stimpson* v. *Railroad Company*, (4 Howard, 380;) *Woodworth* v. *Stone*, (3 Story R., 749, 753;) *Allen* v. *Blunt*, (3 Story R., 742;) *Jordan* v. *Dobson*, (2 Abbott's U. S. Reports, 308;) *Rubber Company* v. *Goodyear*, (7 Wall., 788,) and other cases in support of the proposition, and it has been so understood by the several circuit courts, in which it has been repeatedly announced and followed. While the language of the Supreme Court on several occasions may have exhibited a feeling of restiveness in view of the abuses which have grown out of the exercise of the extensive powers accorded to the Commissioner, no decision, we believe, has yet been announced inconsistent with the understanding and practice just stated. Where the additional matter claimed, however, does not appear by reference to the patent or contemporary records to be embraced in the invention, or where it plainly appears by such reference that the alleged omission "could not have occurred through inadvertence or mistake," as said by the Court in *James* v. *Campbell et al.*, the case is not within the jurisdiction of the Commissioner, and a reissue for additional claims may be declared void. Such, however, is not the case before us.

We are thus brought to the inquiry before suggested. Was the patentee estopped by delay and acquiescence from claiming correction of his patent by means of the reissue obtained? Nearly thirteen years elapsed before his application was made. If the matters described in the additional claims were a part of the original invention (as has been conceded) and were omitted through "inadvertence, accident, or mistake," it is impossible to believe that he did not discover the omission much earlier. In the language of the Court in *Miller & Co.* v. *The Brass Company*, it plainly appeared on the face of his patent and must have been seen on opening the paper. The patentee knew what he had invented, must necessarily have understood its scope and extent. He may not have comprehended all the *uses* to which it might eventually be applied. But to secure a different use simply does not require a different or additional claim. What he did not claim he must be regarded, in view of his subsequent conduct, as intending to dedicate to the public. He cannot, therefore, after others have acted upon what he thus did, be allowed to change position, and thereby suppress their enterprises and destroy their business.

This application of the equitable doctrine of estoppel has more than once been suggested by the Supreme Court, and it is announced and applied in *Miller & Co.* v. *The Brass Company* above cited. Every word there uttered relating to this question is as applicable here as it was there. The Court says:

The only mistake suggested is that the claim was not as broad as it might have been. This, if it was a mistake, * * * and if any correction was desired, should have been applied for without delay. The pretence that it was inadvertence or oversight which had escaped the patentee's notice for fifteen years is too bald for human credence. * * * It must be remembered that the claim of a specific device or combination and an omission to claim other devices or combinations, apparent on the face of the patent, are in law a dedication to the public of that which is not claimed. It is a declaration that that which is not claimed is either not the patentee's invention, or, if his, he dedicates it to the public. This legal effect of the patent cannot be revoked unless the patentee surrenders it and proves that the specification was framed in inadvertence, accident, or mistake, without any fraudulent or deceptive intention on his part; and this should be done with all due diligence and speed. Any unnecessary laches or delay in a matter thus apparent on the record affects the right to alter or reissue the patent for such cause. If two years public enjoyment of an invention with the consent and allowance of the inventor is evidence of abandonment and a bar to an application for a patent, a public disclaimer in the patent itself should be construed equally favorable to the public. Nothing but a clear mistake or inadvertence and a speedy application for its correction is admissible when it is sought to enlarge the claim.

The bill must, for the foregoing reasons, be dismissed with costs, and a decree may be prepared accordingly.

THE

OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 21—NO. 11. TUESDAY, MARCH 14, 1882. PRICE—$5 per year

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Subscriptions for 1882.

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Erratum.

OFFICIAL GAZETTE, March 14, 1882, Volume 21, page 726, Patent No. 254,834, in title, second line, after the word "assignor," insert *of two-thirds*.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., February 25, 1882.

SIR: I am directed by the Secretary to inform you that he has ordered that William U. Saunders, of New Orleans, Louisiana, be not recognized from and after this date as an attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,

GEO. M. LOCKWOOD,
Chief Clerk.

The Commissioner of Patents.

Issue of March 14, 1882.

Patents	302—No. 254,787 to No. 255,094,	inclusive.
Designs	15—No. 12,802 to No. 12,816,	inclusive.
Trade-Marks	21—No. 9,183 to No. 9,203,	inclusive.
Labels	5—No. 2,639 to No. 2,643,	inclusive.
Reissues of patents	3—No. 10,061 to No. 10,063,	inclusive.
Total issue	352	

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Arizona Territory	1	.....	Nevada	.....	.....
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California	7	.....	New Jersey	13	.....
Colorado	1	.....	New Mexico Territ'y	.....	.....
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Kansas	2	.....	Virginia	3	.....
Kentucky	1	.....	Washington Territ'y	1	.....
Louisiana	1	.....	West Virginia	3	.....
Maine	4	.....	Wisconsin	5	1
Maryland	5	.....	Wyoming Territory	.....	.....
Massachusetts	37	11	United States Army	.....	.....
Michigan	13	.....	United States Navy	.....	.....
Minnesota	3	.....			
Mississippi	2	.....	Total to citizens of the United States	294	26
Missouri	2	.....			
Montana Territory	.....	.....			

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Barbadoes	.....	.....	Germany	6	.....
Belgium	.....	.....	Italy	.....	.....
Bermuda	.....	.....	New Zealand	.....	.....
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Chili	.....	.....	Sweden	.....	.....
Columbia, U. S. of	.....	.....	Switzerland	.....	.....
Cuba	.....	.....			
Denmark	.....	.....	Total to citizens of foreign countries	29	.....
Ecuador	.....	.....			

DESIGNS.

12,802.—CARPET.—*Walter J. Gadsby*, Boston, Mass., assignor to *The Roxbury Carpet Company*, same place. Application filed February 6, 1882. Term of patent 3½ years.

12,803.—PICKLE-BOTTLE.—*Henry J. Heinz*, Pittsburg, Pa. Application filed January 27, 1882. Term of patent 14 years.

12,804 and 12,805.—FONT OF PRINTING-TYPE.—*Charles E. Heyer*, Chicago, Ill., assignor to *Arthur M. Barnhart*, *Alson E. Barnhart*, and *Charles E. Spindler*, all of same place. Applications filed January 27, 1882. Term of patents 14 years.

12,806 and 12,807.—CARPET.—*Henry Horan*, East Orange, N. J., assignor to *The Hartford Carpet Company*, Hartford, Conn. Applications filed February 11, 1882. Term of patents 3½ years.

12,808 to 12,810, inclusive.—CARPET.—*Winthrop L. Jacobs*, East Orange, N. J., assignor to *The Hartford Carpet Company*, Hartford, Conn. Applications filed February 11, 1882. Term of patents 3½ years.

12,811.—TOY PISTOL.—*Thomas Lloyd*, New York, N. Y. Application filed February 6, 1882. Term of patent 7 years.

12,812.—CARPET.—*David G. Melville*, Medford, assignor to *The Roxbury Carpet Company*, Boston, Mass. Application filed February 4, 1882. Term of patent 3½ years.

12,813.—CARPET.—*David McNair*, Boston, Mass., assignor to *The Roxbury Carpet Company*, same place. Application filed February 6, 1882. Term of patent 3½ years.

12,814.—TOY SAVINGS-BANK.—*Charles G. Shepard* and *Peter Adams, Jr.*, Buffalo, N. Y.; said *Adams* assignor to *Walter J. Shepard*, same place. Application filed February 4, 1882. Term of patent 7 years.

12,815.—PRINTING-TYPES.—*Henry H. Thorp*, Cleveland, Ohio, assignor to *The H. H. Thorp Manufacturing Company*, same place. Application filed January 18, 1882. Term of patent 14 years.

12,816.—PRINTING-TYPE.—*Henry H. Thorp*, Cleveland, Ohio, assignor to *The H. H. Thorp Manufacturing Company*, same place. Application filed January 23, 1882. Term of patent 14 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

9,183.—WRITING-PAPER OF ALL KINDS.—*Z. Crane, Jr., & Brother*, Dalton, Mass. Application filed January 27, 1882.
"The pictorial representation of a crane."

9,184.—VEGETABLES AND FRUITS, EITHER RAW, PICKLED, OR OTHERWISE PRESERVED.—*Du Pavier & Co.*, New York, N. Y. Application filed February 13, 1882.
"The words 'TINY TIM.'"

9,185.—CEMENT AND ADHESIVE LIQUID.—*Noah L. Freese*, Salem, Mass. Application filed February 3, 1882.
"The coined word 'CEMENTINE.'"

9,186.—BOOKS.—*Alfred Ireland*, Philadelphia, Pa. Application filed February 4, 1882.
"The words 'AT HOME.'"

9,187.—SPOOL-SILK.—*George W. Knight*, Newton, Mass. Application filed February 16, 1882.
"The word-symbol 'NAUMKEAG.'"

9,188.—PETROLEUM-OIL.—*Maverick Oil Company*, Boston, Mass. Application filed December 17, 1881.
"The word 'CENTENNIAL.'"

9,189.—CAKES OF CHOCOLATE.—*Swain, Earle & Co.*, Boston, Mass. Application filed February 14, 1882.
"The picture of the port of Boston, with the view of the city."

9,190.—SOAP.—*Jas. B. Williams & Co.*, Glastenbury, Conn. Application filed January 3, 1882.
"The symbolical representation of a fanciful package."

9,191.—TANKS, CANS, AND PACKAGES.—*John A. Wright*, Keene, N. H. Application filed February 3, 1882.
"The syllable 'VUL' and the syllable 'IZED' arranged on either side of the symbol of a can, the whole combined indicating a fanciful representation of the word 'VULCANIZED.'"

9,192.—CIGARS AND CIGARETTES.—*Louis Ash & Co.*, New York, N. Y. Application filed February 16, 1882.
"The arbitrary word 'NOBILITY.'"

9,193.—CIGARS AND CIGARETTES.—*Louis Ash & Co.*, New York, N. Y. Application filed February 16, 1882.
"The arbitrary words 'BOSTON HERALD.'"

9,194.—CIGARS, CIGARETTES, SMOKING-TOBACCO, AND CHEWING-TOBACCO.—*Goodwin & Co.*, New York, N. Y. Application filed February 16, 1882.
"The word 'CHANCELLOR,' in connection with the bust of a man wearing a wig and robe, after the manner of a judge in his official capacity on the bench."

9,195.—CIGARS.—*George P. Lies & Co.*, New York, N. Y. Application filed February 1, 1882.
"The words 'MARIE ANTOINETTE,' accompanied by the portrait of the Queen of France of that name."

9,196.—CIGARS AND CIGARETTES.—*Louis Ash & Co.*, New York, N. Y. Application filed February 18, 1882.
"The arbitrary word 'HERALD.'"

9,197.—FLOUR.—*William S. Hills*, Boston, Mass. Application filed January 4, 1882.
"The arbitrarily-selected words 'LADIES DELIGHT.'"

9,198.—MEDICINE.—*The Hoyle Rock Oil Company*, Chicago, Ill. Application filed February 6, 1882.
"The arbitrarily-selected words 'MOUNTAIN ROCK.'"

9,199.—LINIMENT.—*John C. Weis*, Peoria, Ill. Application filed February 6, 1882.
"The compound word 'OLD-GOLD.'"

9,200.—FLOUR.—*D. L. Wing & Co.*, Springfield, Mass. Application filed March 25, 1881.
"The word 'NEPTUNE.'"

9,201.—FLOUR.—*D. L. Wing & Co.*, Springfield, Mass. Application filed March 25, 1881.
"The words 'QUEEN-BEE.'"

9,202.—FLOUR.—*D. L. Wing & Co.*, Springfield, Mass. Application filed March 25, 1881.
"The word 'PLANET.'"

9,203.—FLOUR.—*D. L. Wing & Co.*, Springfield, Mass. Application filed March 25, 1881.
"The word 'CLIMAX.'"

LABELS.

2,639.—Title: "BOWERS' WORLD RENOWNED EYE REMEDY, SIGHT PRESERVER AND RESTORER."—*Sylvester J. Bowers*, Canandaigua, N. Y. Application filed February 13, 1882.

2,640.—Title: "CRANE'S LADIES NOTE PAPER AND ENVELOPES. SATIN FINISH."—*Z. Crane, Jr., & Bro.*, Dalton, Mass. Application filed January 27, 1882.

2,641.—Title: "DR. WARREN'S SYRUP OF WILD CHERRY."—*Silas B. Stiles* and *Frank M. Givens*, Fond du Lac, Wis. Application filed January 23, 1882.

2,642.—Title: "ROSE BLANCHARD'S COLD CREAM."—*Ferdinand Smith*, New York, N. Y. Application filed December 9, 1881.

2,643.—Title: "WHEAT BITTERS."—*Wheat Bitters Company*, New York, N. Y. Application filed February 16, 1882.

DISCLAIMERS.

No. 240,997.—*William Goodman*, Boston, Mass., dated May 3, 1881. IMPROVEMENT IN LEATHER-DRESSING MACHINES. Disclaimer filed March 8, 1882, by the inventor.

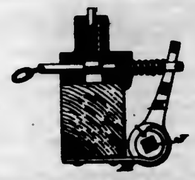
Enters his disclaimer "to that portion of the claim in said specification which is contained in the eighth clause thereof, and is in the following words, to wit: '8. The screw-shaft operating with the vertically-adjustable carriage and the tool-carrier to effect the traverses of the latter upon the carriage, substantially as herein set forth and described.'"

PATENTS

GRANTED MARCH 14, 1882.

254,787. HORSE HAY-RAKE. DAVID G. AUCHEY, Dayton, Ohio, assignor to E. C. Taylor, same place. Filed Sept. 21, 1881. (No model.)



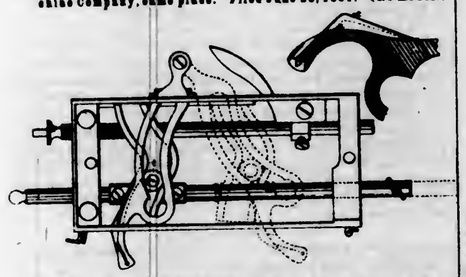


Claim.—1. In a horse hay-rake, the combination of the ratchets revolving with the carriage-wheels, the oscillating rod on the rake-head, the arms on the ends of said rods, and the sliding dogs with the central lever mounted on the oscillating rod, the sliding bolt projecting through the central lever, and the spring on said bolt operating to throw back the lever when the bolt is pushed back.

2. In a horse hay-rake, the combination of the oscillating rod on the rake-head, the central lever mounted on said oscillating rod, the sliding bolt projecting through the central lever, the spring on said bolt operating to throw back the lever when the bolt is pushed back, and the spring-bolt bearing on the sliding operating-bolt with frictional contact and serving to assist in holding it in adjusted position, substantially as described.

3. The combination, with the ratchets on the wheel-hubs, of the bearing-plates J, secured to the ends of the rake-head and having the bearings R R, the spring-bolts *r*, sliding longitudinally in said bearings, the oscillating rod, and the crank-arms on the ends of said rod, substantially as described.

254,788. TAKE-UP FOR SEWING-MACHINES. GEORGE W. BAKER, Cleveland, Ohio, assignor to the White Sewing Machine Company, same place. Filed June 28, 1881. (No model.)



Claim.—1. The combination, with a take-up lever the free end of which is provided with intersecting longitudinal and transverse slots, of a spring having its free end located within the longitudinal slot in the arm, the lower end of the spring having a thread-retaining hook formed thereon, substantially as set forth.

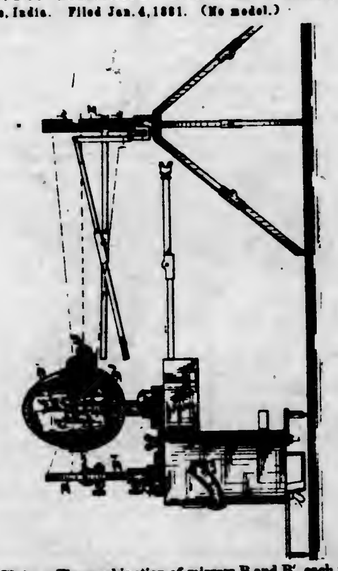
2. The combination, with the needle-bar, a cam attached thereto, a rotary shaft, and crank-pin for imparting a reciprocating movement to said needle-bar, of a take-up lever pivoted at one side of the needle-bar, and located between the crank-pin disk and needle-bar cam, and constructed with an arc-shaped slot, within which engages the crank-pin, which latter imparts motion in both directions to the take-up lever, substantially as set forth.

254,789. GALVANIC BELT. ARTHUR A. BALDWIN, Ionia, Mich. Filed July 27, 1881. (No model.)



Claim.—In an electric belt, and in combination with the batteries and the fixed electrode F thereof, the adjustable electrode F', loop K, extension-wire J, wire coil I, and a suitable connection between said coil and the batteries, substantially as described.

254,790. HELIOTROPE. ELPHINSTONE W. HEBBIR, Bangalore, India. Filed Jan. 4, 1881. (No model.)



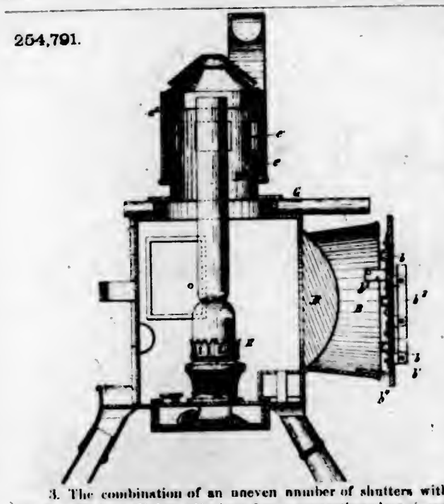
Claim.—The combination of mirrors B and B', each provided with a central opening and a screen, consisting of three shutters, E', connected by brace E², and mechanism attached to the central shutter, whereby the rays of sunlight may be directed to a distant station and interrupted at the will of the operator, as and for the purpose specified.

254,791. SIGNALING-LANTERN. ELPHINSTONE W. HEBBIR, Bangalore, India. Filed Jan. 4, 1881. (No model.)

Claim.—1. The combination, in a signaling-lantern, of an uneven number of shutters connected by a cross-piece, b², and operated by means of lever C, substantially as and for the purpose specified.

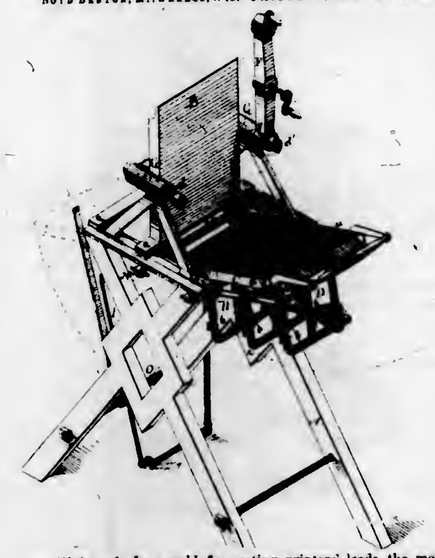
2. The combination, in a signaling-lantern, of shutters, as described, with cross-piece b², attached thereto, and the lever C, whereby the shutters are operated, substantially as and for the purpose specified.

254,791.



3. The combination of an uneven number of shutters with the lens D, lamp E, lever C, pivoted at c, connecting-piece c', and crank c^2, said crank being attached to the central shutter, as and for the purpose set forth.

254,792. MOLD FOR CASTING PRINTERS' LEADS. LISA ROYD BENTON, Milwaukee, Wis. Filed Jan. 9, 1882. (No model.)



Claim.—1. In a mold for casting printers' leads, the mold-segment C, having a concave shape when cold, whereby it becomes plane when heated in use, substantially as and for the purposes set forth.

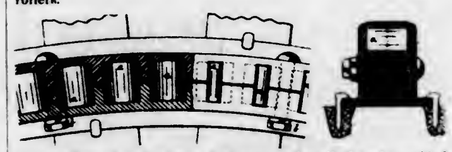
2. The combination of mold-segments B and C, constructed and operating as described, with the heaters D D, substantially as and for the purposes set forth.

3. The combination of the mold-segments B and C, constructed and operating as described, with the heaters D D and the jointed smoking jet or torch I, substantially as and for the purposes set forth.

4. In combination with a mold for casting printers' leads, a heater composed of separate burners D D D, constructed so as to be capable of being extinguished separately and arranged in such position relatively to each other and to the mold as to permit the heating of a portion only of the mold-segment whenever desired, substantially as and for the purposes set forth.

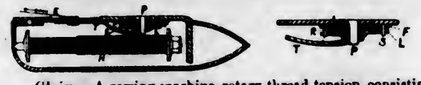
254,798. RAIL FOR RAILROAD-CURVES. LEVI BRIGHAM, Osseo, Minn. Filed Apr. 22, 1881. Renewed Jan. 20, 1882. (No model.)

Brief.—A rail separated vertically in two parts and provided with a series of separated sockets having fitted in them a series of rollers.



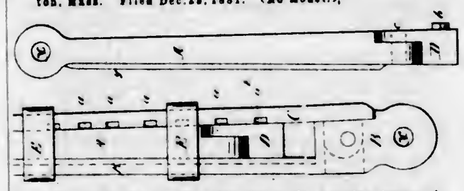
Claim.—A rail made in two parts, as described, and provided with a series of separate sockets running partially through the rail at right angles to its length, in combination with a series of rollers fitting in said sockets and protruding above the tread of the rail, substantially as set forth.

254,794. SEWING-MACHINE TENSION DEVICE. GEORGE W. BUNGESS Boston, Mass. Filed July 5, 1881. (No model.)



Claim.—A sewing-machine rotary thread-tension consisting of the wheels or disks F and L, adapted to be rotated upon the journal or pin P at a slight angle of inclination with each other by means of the wedge R and spring T, whereby the tension of the thread passing between the same near their peripheries may be automatically regulated, substantially in the manner described, as and for the purposes set forth.

254,795. ADJUSTABLE ROPE-CLAMP. WILSON C. BURNS, Somerville, assignor of four-fifths to Frank Hasey, Joseph W. Smith, William E. Woodbury, and James L. Smith, all of Boston, Mass. Filed Dec. 29, 1881. (No model.)



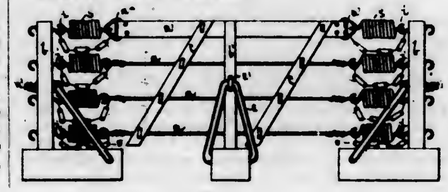
Claim.—1. In an adjustable clamp, the tapering tongue A, having a rib, *y*, in combination with the side plate B, having a slot, *z*, the side plate C, and bands E E, substantially as and for the purposes set forth.

2. In an adjustable clamp, the tapering tongue A, with the attachment D, having a projection, *b*, in combination with the side plate C, with the circular slots *a a a*, the plate B, and the bands E E, substantially as and for the purposes set forth.

3. In an adjustable clamp, the tapering tongue A, having a rib, *y*, with the attachment D, having a projection, *b*, in combination with the side plate B, having a slot, *z*, and the side plate C, with circular slots *a a a*, and the bands E E, all substantially as and for the purposes described.

4. An adjustable clamp consisting of a movable central piece or tongue having a guiding-rib, two sides plates, one provided with a slot to receive the guide-rib of the tongue, the other having suitable devices for temporarily holding the movable tongue during adjustment, and bands encircling and inclosing the said tongue and side plates, all combined and operating substantially as and for the purposes described.

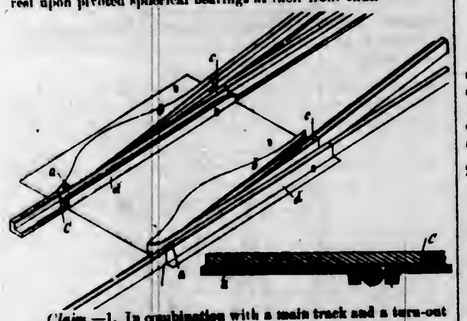
254,796. WIRE FENCE. SAMUEL CALHOUN, Edinburg, Ohio. Filed Nov. 7, 1881. (No model.)



Claim.—The wires *a*, springs *s*, hooks *i*, and chains *c*, connecting the hook and wire, in combination with posts *b*, substantially as described.

254,797. RAILWAY-SWITCH. JOHN B. CAREY, Boston, Mass., assignor of one-half to William V. Hutchings, same place. Filed Oct. 29, 1881. (No model.)

Brief.—Spring-held switch-plates are actuated to direct cars to the siding by a lateral pull by the draft-animal. The plates rest upon pivoted spherical bearings at their front ends.

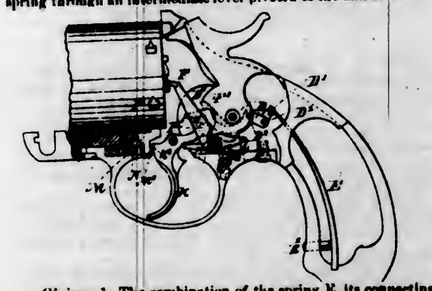


Claim.—1. In combination with a main track and a turn-out track, a pair of pivoted switch-plates, each provided with the three rails *b*, *c*, and *d*, and springs for returning them automatically to their normal position, said plates being adapted to be shifted laterally on their pivots by the action of the car-wheels, substantially as set forth.

2. The pivoted switch-plates, each provided with rails *b*, *c*, and *d*, in combination with springs *f*, inclosed within said plates and operating to return the said switch-plates to their normal position after the car passes from them onto the turn-out.

254,798. REVOLVING FIRE-ARM. GEORGE W. CILLEY, Norwich, Conn. Filed Dec. 30, 1881. (No model.)

Brief.—The mainspring is made to serve as trigger and pawl-spring through an intermediate lever pivoted to the hammer.



Claim.—1. The combination of the spring E, its connecting-link D^3, the sickle-lever D D^4, having a cross-axis, D^5, with the revolver-lever F, having a friction-stud, F^3, all operating together substantially as described, and for the purpose set forth.

2. The combination of the trigger K, having a notch, K^3, with the stop-piece M M^1, having a notch at N, whereby it is allowed to move back and forth, all arranged substantially as described, and for the purpose set forth.

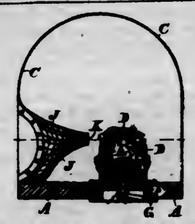
254,799. SUSPENSORY-BANDAGE. JOHN CODMAN, Boston, Mass. Filed Jan. 23, 1882. (No model.)



Claim.—In combination with a suspensory-bandage, a contracting and supporting strap, C, passing around the scrotum-sac at or near its inner edge, and secured to the body-belt independently of the sac by one or more buckles applied to such belt, all being substantially and to operate as set forth.

254,800. ROACH-TRAP. MEYER COHEN, Newark, N. J., assignor of one-half to Samuel Cohen, same place. Filed Dec. 21, 1881. (No model.)

254,800.



Claim.—The roach-trap constructed, as herein shown and described, with wire-netting C, having the depression J formed in one side and provided with a nozzle, K, the opening F in the floor A, and the skeleton bait-box D, provided with sponge E and secured in the opening F, substantially as and for the purpose described.

254,801. CAR-MOVER. GEORGE P. COFANY, Geneva Lake, Wis., assignor of two-thirds to Albert E. Lytle, same place, and Carles A. Cook, Chicago, Ill. Filed Dec. 14, 1881. (No model.)

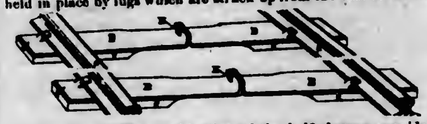


Claim.—1. In a car-mover, the combination of the lever A, having a shoe, S, provided with V-shaped notch c, the arm B, pivoted near the end of the lever and provided with hook C and loop *a*, and the brace E, one end of which is secured to the lever and the opposite end to the arm, substantially as shown and described.

2. In a car-mover, the combination of the hook C, loop *a*, and the arm B, substantially as shown and described.

254,802. RAILWAY-TIE. JOHN CONLEY, New Buffalo, assignor of one-half to Luther V. Moulton, Grand Rapids, Mich. Filed Mar. 13, 1880. Renewed Nov. 10, 1880. Renewed Aug. 13, 1881. (No model.)

Brief.—A metal tie composed of two sections which are united by a bolt, the joint being at a point midway between the rails. The edges of the sections are turned down and the rail is held in place by lugs which are struck up from the seat of the tie.



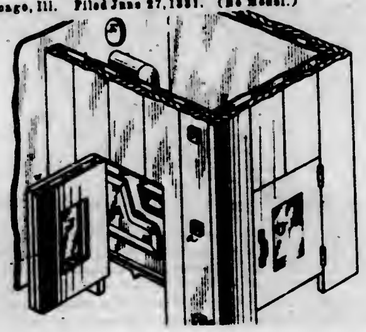
Claim.—1. The combination of the half-sleepers provided with the hooks D D D D and fastening E, substantially as and for the purpose specified.

2. The combination of the fastenings E with the plates B B, substantially as and for the purpose specified.

3. The combination of the plates B B with the hooks D D D D and the fastening E, substantially as and for the purpose specified.

4. In combination with the rails A A, the plates B B, hooks D D D D, and fastenings E, substantially as and for the purpose specified.

254,803. HEAT-FENDER FOR STOVES. JAMES A. COWLES, Chicago, Ill. Filed June 27, 1881. (No model.)



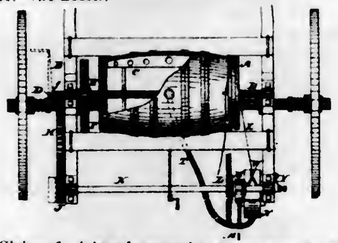
Claim.—1. A heat-fender composed of the separable sections

Claim.—1. The process above described for making rolls with

Claim.—1. A heat-fender composed of the separable sections, provided with air-flues, as described, and having the posts M, N, and O, held together by bolts, all constructed and arranged as set forth.

2. A heat-fender composed of sections, provided with the posts M, N, and O, for securing them together, and with the air-flues *r*, and with illuminated doors, as and for the purpose shown and described.

254,804. DISTRIBUTER FOR INSECT-POISON AND FERTILIZERS. DAVID E. DARNELL, Masonville, N. J. Filed June 15, 1881. (No model.)



Claim.—1. A barrel mounted on a carriage or truck, gearing operated by said truck, and an outlet-pipe connected to said barrel, in combination with a rotary fan, N, operated by said gearing, the case of said fan communicating with said barrel, substantially as and for the purpose set forth.

2. A barrel mounted on a carriage or truck, in combination with a rotary fan and gearing operated by said truck, the case of the fan being adjustable in vertical, lateral, and angular directions, substantially as and for the purpose set forth.

3. The barrel A, inclosed agitator C, and shaft D, in combination with the shifting wheel E, the shaft K, the pipe or tube T, and the fan, substantially as and for the purpose set forth.

4. The barrel and fan in combination with the belt S, laterally-shiftable belt-pulley L, and shaft K, substantially as and for the purpose set forth.

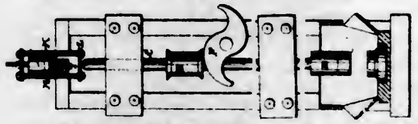
5. The fan in combination with the pulley L, bushing *a*, and swivel M, substantially as and for the purpose set forth.

6. The fan in combination with the rods P Q and lever R, substantially as and for the purpose set forth.

7. The suspended fan in combination with the yoke V, piece W, and cord X, substantially as and for the purpose set forth.

8. The shaft K, with pinion J, and pulley L, and carrying the suspended fan, in combination with the latch Y, substantially as and for the purpose set forth.

254,805. QUARTZ-MILL. JAMES DAY, San Francisco, Cal. Filed July 18, 1881. (No model.)



Claim.—In a crushing-mill, a stamp or beater and mechanism for raising and dropping the same, in combination with the cylinder G, air-tight piston H, and sliding frame consisting of the cross-head J, cross-base L, and side bars or rods, K K, arranged for operation substantially as set forth.

254,806. METHOD AND MEANS OF EXHIBITING PHOTOGRAPHS. JOHN DAWS, Ottawa, Ontario, Canada. Filed July 27, 1881. (No model.)

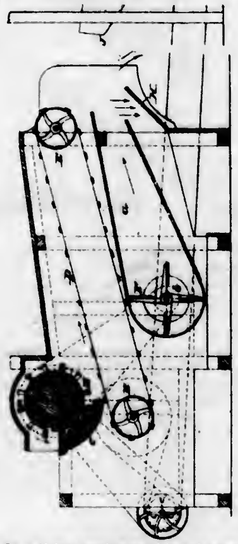


Claim.—1. The improved art of exhibiting photographs by first making the picture translucent and exposing it on a suitable frame to the rays of light reflected from a colored and reflecting surface or surfaces at the back of the picture, whereby the reflected hue or hues are seen by an observer viewing the picture, and a natural effect of light, shade, and color produced.

2. The art of imparting a scenic effect to photographs exhibited by the aid of rays of light reflected against the back of the picture, consisting in applying coloring material to that portion of the back of the picture to which the desired hue of color is to be given, and then reflecting colored rays of light from a suitably-colored surface or surfaces at the back of the picture, substantially as described.

3. In combination with the frames A B and props C, the intermediate frame, D, provided with an axially-rotating slat or slats, E, as set forth.

254,807. MACHINE FOR DISINTEGRATING CORN-HUSKS, &c. JOSEPH B. DU YOUNG, Philadelphia, Pa. Filed Feb. 8, 1881. (No model.)



Claim.—1. In a disintegrating-machine, the toothed cylinder, toothed concave, endless conveyor, fan, and wind-chest, combined and operating substantially as and for the purpose set forth.

2. The disintegrating-machine formed of a toothed cylinder, toothed concave, endless conveyer, a fan, and a wind-chest, which latter extends under the conveyer and has its outlet adjacent to the back of said conveyer and below the same, substantially as and for the purpose set forth.

3. The disintegrating-machine having a conveyer, D, and wind-chest G, and a chute, H, which is secured to the casing at the back of the machine below the outlet of said chest, substantially as and for the purpose set forth.

4. The disintegrating-machine consisting of the toothed cylinder, toothed concave, endless conveyor, fan, wind-chest, and shaker, the latter being separated from the casing of the other parts, whereby the fiber or disintegrated husk is directed to the shaker and discharged clean at one end thereof, and the stubs and refuse are collected at places in advance of the other end of said shaker, substantially as set forth.

254,808. DREDGE-BOX FOR SPICES, &c. PATRICK DIAMOND, Philadelphia, Pa. Filed July 30, 1881. (No model.)



Claim.—The combination of the box A, having a shoulder, *a*, and a projection above the same, the strip D, of foil or other thin metal, larger in diameter than said projection, and the lid B, having an opening, *d*, and a flange, *b*, between which and the projection of the box the edge of the strip D is bent down and confined, thereby securely retaining the same and forming a tight joint, all as set forth.

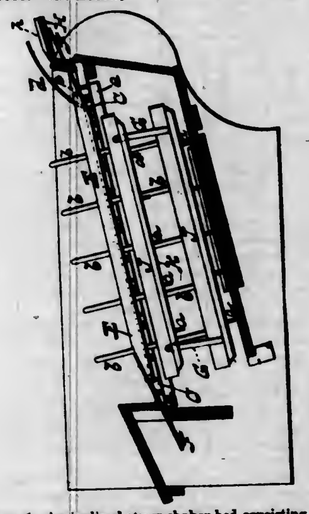
254,809. SHADE FOR LAMPS AND LANTERNS. JOHN H. EWING and EDWARD L. BILL, Wheeling, W. Va. Filed July 14, 1881. (No model.)

254,809.



Claim.—A lamp-shade consisting of a single piece of molded glass having the form of a truncated pyramid, the several faces of which are each provided with a bull's-eye lens, substantially as shown and described.

254,810. STRAW CARRIER AND SHAKER FOR THRASHING-MACHINES. JOSIAH FAHRNEY, Waynesborough, Pa. Filed Jan. 4, 1882. (No model.)



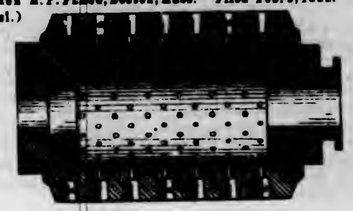
Claim.—1. An inclined straw-shaker bed consisting of fixed scalloped bars, intermediate vertically and longitudinally reciprocating bars, carrying teeth vertically movable through the latter, and ribbed inclined guides at the upper or tail ends of the fixed or scalloped bars, substantially as described.

2. In a straw-shaker, the combination of the fixed scalloped bars, the intermediate endwise-reciprocating bodily-moving bars, cranks for operating said bars, and the raking-teeth *b*, vertically movable through the reciprocating bars by means substantially as described.

3. The combination of the wire bridges *d*, the scalloped fixed bars C, to which these bridges are secured, the endwise and vertically movable bars J, rake-teeth *b*, mounted thereon, and the bars E, substantially as described.

4. The combination of the board H, provided with ribs A, the scalloped bars C, the bridge-wires *d*, extending from these bars over the said board H, the guide-bars E, and raking-teeth *b*, operating substantially as described.

254,811. ROLL FOR BUFFING OR POLISHING MACHINES. GEORGE H. P. PLACE, Boston, Mass. Filed Feb. 3, 1882. (No model.)



Claim.—1. The process above described for making rolls with a cellular rubber covering, consisting in first applying the covering A to the core B; secondly, truing the covering, and then forming the cells *a*.

2. The improved roll above described, consisting of the core B, rubber covering A, having the cells *a* formed in it, and the cells provided with vents, substantially as and for the purpose specified.

254,812. MACHINE FOR SPLITTING GRAIN. LOUIS GATHMANN, Chicago, Ill. Filed June 27, 1881. (No model.)



Claim.—1. In combination with a smooth-surfaced disk provided with furrows *b*, having inclined-bottom faces, an opposing disk, A, having grooves *a*, of fluted or rounded form, substantially as described, and for the purposes set forth.

2. The combination of the disk A, having the grooves *a*, of fluted or rounded form, and the disk B, having the alternating furrows *b*, lands *b'*, and recesses C, substantially as described.

254,813. GRINDING-MILL. LOUIS GATHMANN, Chicago, Ill. Filed June 27, 1881. (No model.)

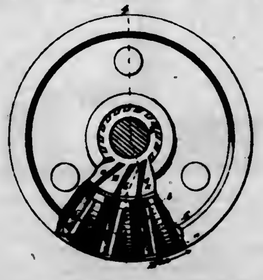


Claim.—1. In combination with the disk A, having the alternating closed furrows *a*, lands *a'*, and open recesses A^2, and also having the land-faces smooth, the opposing disk B, having its working-face *b* continuous and of a sharply rough or granular structure, substantially as described.

2. In combination with the disk A, having the alternating closed furrows *a*, lands *a'*, and open recesses A^2, and also having its land-faces smooth, the opposing disk B, of porcelain, the working-face *b'* thereof presenting the natural granular structure of the porcelain in opposition to the smooth faces *a'* of the disk A, substantially as described, and for the purposes stated.

3. In the disk A, having the alternating closed furrows *a*, lands *a'*, and outwardly-open recesses A^2, the said recesses cast in form to cut the working-face of the disk in a curve parallel with the curved feather-edge of the furrows *a*, substantially as described, and for the purposes stated.

254,814. MILL-DISK. LOUIS GATHMANN, Chicago, Ill. Filed Oct. 11, 1880. Renewed Apr. 29, 1881. (No model.)



Claim.—1. In a grinding-mill, the combination, with an opposing disk having a relatively-plane working-face, of a disk, B, provided in its working-face with alternating blind feeding-furrows G, lands I, and recesses H, having abrupt rear walls and discharge-openings, arranged and operating substantially as and for the purposes set forth.

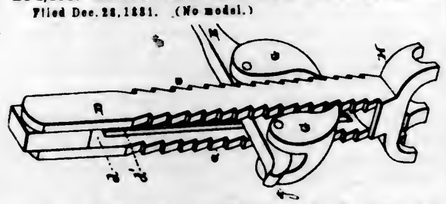
2. In a grinding-mill, the combination, with an opposing disk having a relatively-plane working-face, of a disk, B, having in its

working-face furrows G, leading from the bosom outward and terminating near the periphery, recesses H, having abrupt rear walls and extending inward from the periphery nearly to the bosom, and intervening lands I, of practically uniform width, substantially as and for the purposes set forth.

3. In a grinding-mill, the combination, with an opposing disk, of the disk B, having the blind feeding-furrows G, the discharging-recesses H, and the intervening lands I, of practically uniform width, arranged in alternation as shown, substantially as and for the purposes set forth.

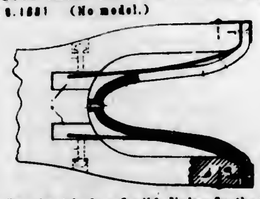
4. In a grinding-mill, the combination, with the disk B, having blind furrows G, discharging-recesses H, and intervening lands I, arranged in alternation as shown, of the opposing disk A, unlike the disk B, in having a relatively plane and uniform surface, whereby all parts thereof present the same acting surface in opposition to the lands I, substantially as described.

254,815. LIFTING-JACK. CHARLES GRACEY, Contention, Ariz. Filed Dec. 26, 1881. (No model.)



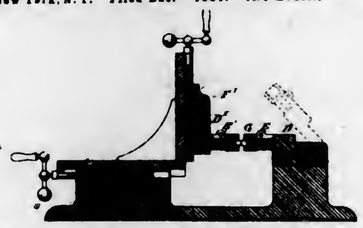
Claim.—The slotted standard D, provided with a bifurcated foot, H, grooves *d'*, and notches *e*, flat on their upper faces, in combination with the lever E, having projecting end *g* and studs *h* fitting into the grooves *d'*, and the pair of swinging pawls G, all constructed, arranged, and operated as set forth, whereby the lever is made to travel toward the top of the standard, as specified.

254,816. BOOT-JACK. JOSEPH J. GERSTENWALD, Newark, N. J. Filed Dec. 6, 1881. (No model.)



Claim.—In a boot-jack, a flexible lining for the jaws, consisting of a rubber-covered metallic spring having its end secured to the front ends of the jaws, combined with means for securing the lining within the jaws at a fixed level, substantially as set forth.

254,817. DIAMOND-CUTTING MACHINE. FRED. A. HARKINS, New York, N. Y. Filed Dec. 8, 1881. (No model.)



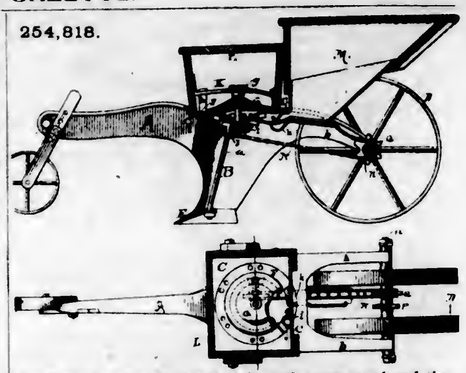
Claim.—In a diamond-cutting machine, the swinging blocks D D', provided with clamps E E', and attached at one end to the carriages C and J, respectively, by means of hinge-joints, substantially in the manner and for the purpose described.

254,818. SEED-PLANTER. REUBEN HOFFMEIER, York, Pa. Filed Jan. 23, 1881. (Model.)

Brief.—The various sets of devices are cast integral. The journals for the several operating-wheels are cast upon a chill.

Claim.—1. In a seeding-machine, the beam A, frame or bed-plate C, with its central opening and seat for the feed-ring, standard B, and wheel-arms *b*, all cast integral in one piece.

2. In a seeding-machine, the standard B and bed-plate C, with its circular opening for the feed-ring and crown-wheel, and the lug I, projecting laterally from the side of the standard across and below said opening, and provided with a step-socket, all cast integral in a single piece.



3. The bed-plate and hopper, with the feed-ring and the driving-pinion and sprocket, the latter located close to the axis of said ring, combined with the crown-wheel G, concave on its under side to admit and cover the sprocket, and in engagement with said pinion and feed-ring to communicate motion from one to the other, substantially as set forth.

4. The bed-plate or frame C, provided with the chilled seat *e* and socket *f*, all cast integral in one piece, as set forth.

5. The double-rim open-web or spoked wheel D, with its tubular hub, all cast integral in one piece, as set forth.

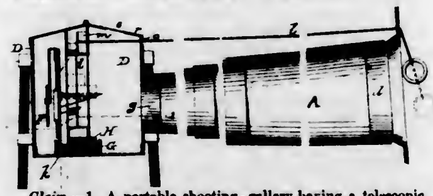
6. The seed-hopper L and the phosphate or fertilizer hopper M, placed between said hopper L and the supporting-wheel D, combined with the sprocket-chain N, which drives the seed-feeding devices, and is also arranged to pass through said hopper M at its bottom, to feed the fertilizer, as set forth.

7. The fertilizer-hopper M and the feeding-chain N, combined with the side-delivery feeder-chute at the discharge-opening of the fertilizer-hopper, to cause the fertilizer to fall toward the side clear from the returning part of the feed-chain, as set forth.

8. In a seeding-machine, the seed-hopper and its feeding devices and the supporting-wheel D, combined with the hoppers mounted upon the axle of said supporting-wheel, and their distributers operated thereby, whereby seeds may be simultaneously dropped in three rows.

9. For a seeding-machine, a beam-standard or boot, frame or bed-plate, and wheel-arms provided with jags, bearings, seats, and bolt-holes for attachment of parts, all substantially as shown and described herein, cast integral and completed in a single piece.

254,819. PORTABLE SHOOTING-GALLERY. JAMES HOLAHAN, Ansonia, Conn. Filed Oct. 31, 1881. (No model.)



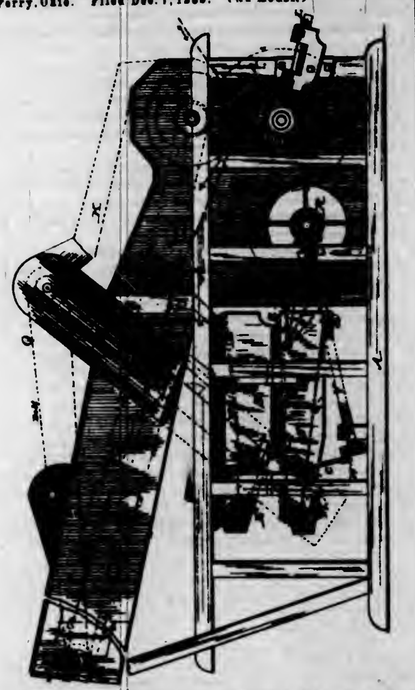
Claim.—1. A portable shooting-gallery having a telescopic shooting-tube, removable legs for supporting the same, and a case for containing the target, said case being removable from the telescopic tube, substantially as and for the purpose set forth.

2. In a shooting-gallery, the combination, with the target, of a brush and a suitable device, substantially as described, for guiding said brush across the face of the target to obliterate the shot-marks, and cords or equivalent mechanism for operating said brush from the shooting-stand, for the purpose described.

3. The case D, having guides *i*, tray G, and target E, in combination with brush H, rollers *m*, and cord or chain *l*, substantially as and for the purpose set forth.

4. The portable shooting-gallery herein described, consisting of telescopic tube A, perforated front plate, C, folding legs B, case D, centrally-perforated target E, disk F, tray G, brush-guides *i*, brush H, cord or chain *l*, and rollers *m*, substantially as and for the purpose set forth.

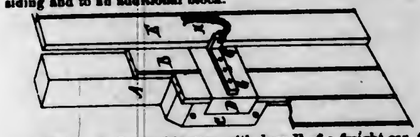
254,820. GRAIN-SEPARATOR. ELLIS J. HOYLE, Martin's Ferry, Ohio. Filed Dec. 7, 1880. (No model.)



Claim.—The combination, with the shoes S S' and mechanism for vibrating them in opposite directions, the shoe S, having screen E and inclined board or bottom E', and the shoe S', having inclined board *b*, short riddle F, and long riddle G, the adjustable deflector Y, and the blast-fan, of the canvas Z, for connecting said shoes together at their sides to close the openings between them, substantially in the manner, as and for the purpose herein shown and described.

254,821. FASTENING FOR FREIGHT-CAR DOORS. JAMES JACKSON and JAMES W. BROCKWAY, New York, N. Y., assignors of one-third to Edward H. Carpenter, same place. Filed Dec. 22, 1881. (No model.)

Brief.—An L-shaped iron cleat is connected to a freight-car door by a chain, and has nail-holes to secure it behind the car-door when closed to a removable wooden block bolted to the car-siding and to an additional block.



Claim.—1. In combination with door E of a freight-car, the brace or cleat G, provided with nail-holes to secure it to the removable block D, and secured by chain and staple H to door E, substantially as and for the purpose set forth.

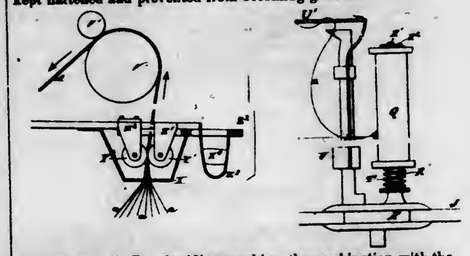
2. The combination of block D and brace or cleat G, secured to the door, substantially as and for the purpose set forth.

3. In combination with post A of the doorway of a freight-car, the removable block D, substantially as and for the purpose set forth.

4. In combination with post A and removable block D, the block C.

254,822. BRAIDING-MACHINE. NICHOLAS JERRIDS, New Haven, Conn. Filed Feb. 26, 1880.

Brief.—Adapted for braiding wire. The drop-weights of the carriers are provided with extensions, which rest on the wires at some distance from the holes in the guide-posts through which the wires pass, so that the weights can depress the ends of broken wires and descend to stop the machine. The wires pass upward from the carriers through an aperture in a guide-plate and between a pair of pressure-rolls situated at the point at which they become braided together, and by said rolls the braided fabric is kept flattened and prevented from becoming guttered.



Claim.—1. In a braiding-machine, the combination, with the stop-levers W W' and stop-weight U, having an attachment, U', of the rod B^2, an ordinary or suitable carrier, R, and spindle R', adapted to carry a bobbin, Q, the stop-weight being adapted to rest on the wire *a* after it has passed the guide-hole and at a distance from the guide, as and for the purposes set forth.

2. In a braiding-machine, the combination, with a series of bobbin-carriers, R, of framing J, having serpentine grooves in which the carriers are moved, carrying means $J' J^3$, weights U, having the loops U', and flattening-rollers $Y' Y^3$, arranged to guide the wires *a* at the point where they are braided together, so as to cause the braid to be produced in a plain condition, as herein specified.

3. In a braiding-machine, the spring Z^2 and adjusting means Z^1, in combination with the rollers $Y' Y^3$, the carriers R, gearing $J' J^3$, framing J, provided with serpentine paths, and suitable take-up mechanism, as set forth.

254,823. LIFTING-JACK. THOMAS J. JEBB and CHARLES S. HARMON, Chicago, Ill. Filed July 29, 1881. (No model.)

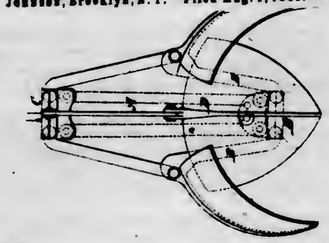


Claim.—1. In a lifting-jack substantially as described, a removable stop for the sliding pawl, as and for the purpose set forth.

2. In a lifting-jack comprising a standard, A, lifting-bar B, pivoted lever D, friction-pawls E and E', and clevis F, constructed and operating substantially as described, a removable stop at the rear of the said standard, below the upper pawl, as and for the purpose set forth.

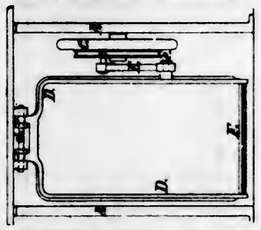
3. In a lifting-jack, the combination of the standard A, having its upper part forked and provided with a plate, *c*, recessed as shown at *a*, and having notches *b*, lifting-bar B, sliding vertically in guides on the said standard, collar C, journaled to the top of the standard and surrounding the bar B, lever D, having the trunnions of the collar C for a fulcrum, friction-pawls E and E' upon the bar B, clevis F, connecting the short arm of the lever with the upper pawl, and bar G, adapted to fit the notches *b*, substantially as described.

254,824. AUTOMATIC GRAPPLING-BUCKET. FRANK G. JOHNSON, Brooklyn, N. Y. Filed Aug. 1, 1881. (No model.)



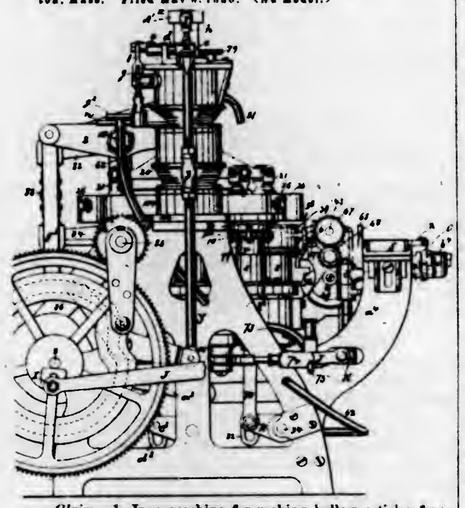
Claim.—In connection with the semi-globular bucket, Fig. 1, the combination of the head-plate C and foot-plate E with the ball-and-socket joints, substantially in the manner and for the purposes described.

264,825. TREADLE. HEINRICH KAMPRATH, Culln, Prussia, Germany. Filed Dec. 31, 1881. (No model.)



Claim.—The combination of the swinging frame D, hinged at a point above the axis of the crank or fly wheel, and provided with the foot-rest D', the crank or fly wheel, and the pitman or connecting rod E, connecting the crank or fly wheel directly to the swinging frame at a point between its hinge and the foot-rest, substantially as described.

264,826. PAPER-BOX MACHINE. WILLIAM J. KNAPP, Boston, Mass. Filed May 6, 1880. (No model.)



Claim.—1. In a machine for making hollow articles from pulp, a vat-valve to control the flow of pulp from the pulp-vat to the receiving-cylinder and means to operate it intermittingly, combined with the pulp-receiving cylinder and the pulp-controlling valve between them to retain the pulp in the receiver and to permit its discharge therefrom intermittingly into the forming-cylinder.

2. In a machine for making boxes from pulp, the pulp-receiving cylinder and forming-cylinder, combined with an intermediate pulp-controlling valve to permit the intermittent discharge of pulp from the receiving into the forming cylinder, substantially as described.

3. The pulp-receiving and the forming cylinders, combined with the automatically-operated pulp-controlling valve *a*, to permit the discharge of the pulp from the pulp-receiving into the forming cylinder, and then to close the opening between said parts, substantially as described.

4. The vat-valve, in communication with a supply of pulp, means to move it intermittingly, and the pulp-receiving cylinder, combined with the forming-cylinder and pulp-controlling valve therein to permit the pulp in the receiving-cylinder to be discharged intermittingly into the forming-cylinder, substantially as described.

5. The pulp-receiving cylinder, the forming-cylinder, the pervious former adapted to be placed therein, and the pulp-controlling valve between them, combined with the valve and pipes to introduce compressed air into the forming-cylinder to quickly force the water of the pulp through the pervious former.

6. The forming-cylinder and pulp-controlling valve to close it and the pervious former, combined with the port *e* and inlet and outlet valves for the compressed air, substantially as described.

7. In a machine for forming hollow articles from pulp, the vat-valve and its connected adjustable slotted link and the pulp-controlling valve, combined with the rocker-shaft *d* and its arms *h i*, to operate the said valves at the proper times, substantially as described.

8. The rocker-shaft *d*, and the adjustable pitman to operate the arms *h*, *i*, and *e* on the said shaft, and the link and lever *g*, combined with the vat-valve, the pulp-controlling valve, and the outlet and inlet valves for the compressed air, to operate all substantially as described.

9. In a machine to produce hollow articles from pulp, the forming-cylinder, largest in diameter at its upper end and tapered to join with a cylindrical portion of smaller diameter, combined with a pervious former of less diameter and length than the cylindrical portion of the forming-cylinder, herein described as of least diameter, substantially as and for the purpose set forth.

10. In a machine to produce hollow articles from pulp, a stationary or fixed forming-cylinder with a valve for the admission into the said cylinder of compressed air, a table and means to rotate it intermittingly, a series of pervious formers, and means to successively place the formers and lower portion of the said cylinder in proper contact and relation to enable the formers to successively receive a deposit of pulp, substantially as described.

11. The former provided with the hollow stem *r*, combined with the air-pipe and valve to act as a stop for the same, substantially as and for the purpose described.

12. The pervious former combined with the deflecting-plate 76, as and for the purpose described.

13. The pervious former having a hollow stem and outlet, combined with a hollow reciprocating plunger to elevate the said former and make connection between its stem and the plunger to enable water within the former to be delivered out through the plunger, as described.

14. The pervious former and means to elevate it within the space between the compressing-dies, combined with the compressing-dies and means to close them to express the water from and compact the pulp at the sides of the former, substantially as described.

15. In combination, the pervious former, reciprocating side-compressing dies, and the box-plunger and sleeve in which it moves, substantially as described.

16. The box to contain the pressing-dies, and the pressing-dies, combined with the adjustable gibs, as and for the purpose described.

17. The sleeve q^3, extended upward above the box in which the pressing-dies move, and the pressing-dies and toggle-levers, combined with the collar and its arms to simultaneously move the said dies, substantially as set forth.

18. The radially-movable series of pressing-dies recessed, as described, at one side, combined with the toggle-levers and headed connecting-rods A^3, as and for the purpose described.

19. In a machine to produce hollow articles from pulp, the combination, with the pervious former and its hollow stem, of a pipe connecting the interior of the former with an exhausting-pump or vacuum-chamber to remove fluid from the inside of the former and box thereon, substantially as described.

20. In a machine to produce hollow articles from pulp, a pervious former, a series of radially-movable pressing-dies, a die-box to contain them, a plunger and sleeve in which it moves, and means to exhaust the water from the interior of the former as it is expressed from the fiber on the former, substantially as described.

21. The pervious former and bood to cover it, combined with a pipe to lead water under pressure to and discharge it within and cleanse the former, substantially as described.

22. The former, the receiving-bed, and the two concaved jaws of the taking-off cap, combined with means to move the jaws into position above the former and then above the bed, and means to lower and raise the said jaws in each of their two positions and open and close them at the stated times to transfer the box from the former to the receiving-bed, substantially as described.

23. The two concaved pivoted jaws of the taking-off cap and their oscillating carrying-shaft, the slide, and means to lower the jaws in position to surround but not to touch the box on the former, combined with the slide and its forked part to close the said jaws together while they surround the former and box, substantially as described.

24. The two pivoted concaved jaws of the taking-off cap, the oscillating shaft 43, to move the said jaws from a position above the former to a position above the receiving-bed, and vice versa, and the bevel-gear carried by the said shaft, combined with the shaft 46, its bevel-gear 45, and cover 44, to operate all substantially as described.

25. The oscillating shaft, the yoke 43, provided with the finger 6, and the two pivoted concaved jaws actuated by the said shaft, combined with mechanism, substantially as described, to oscillate the said shaft, and the slide and its projections 56 67, to check the oscillation of the said shaft and place the jaws in proper horizontal position preparatory to the descent of the slide.

26. In a machine for the manufacture of hollow articles from pulp, the former upon which the box is pressed into shape, its hollow stem, the taking-off cap composed of the two concaved jaws, which, when closed together, do not come into contact with the box, and the cover 41, combined with a valve and pipe to introduce compressed air into the former to expand the box, detach its inner face from the perforations of the former, and place the outside of the box in contact with the concaved jaws, substantially as described.

27. In a machine for making hollow articles from pulp, a taking-off cap to remove the box from the former, a receiving-bed for the hollow articles, and means to move said bed forward intermittingly, as and for the purpose set forth.

28. In a machine for the manufacture of hollow articles from pulp, an intermittingly-rotating table and a series of sleeves thereon, and a series of formers having stems fitted to the said sleeves, combined with the plunger-bed and a series of hollow plungers, and means to reciprocate the plungers at the proper times, as stated, to lift the formers into operative position, substantially as set forth.

29. The combination, in a machine for the manufacture of hollow articles from pulp, of the following instrumentalities—viz., a pulp-receiver, the forming-cylinder, a valve located between them, a rotary table and a series of formers carried by it, means to place the formers successively within the said cylinder, a series of hollow reciprocating plungers and means to automatically place the plungers in connection with the stems of the formers to exhaust the water from the formers, a set of dies to compress the fiber upon the formers, and a taking-off cap and means to operate it at the proper times—the combination being and operating, substantially as described, to automatically form and deliver the said hollow articles, as set forth.

30. That improvement in the art or process of manufacturing articles from paper-pulp wherein the water of the pulp is pressed through the pervious former by compressed air, which consists in heating the pulp before it is delivered into the forming-cylinder about the pervious former, whereby the water of the said pulp as the compressed air is permitted to expand is kept at the proper temperature to flow freely through the fiber of the pulp and the perforations of the former, substantially as and for the purpose set forth.

31. In a machine for making hollow articles from pulp, the pervious former upon which the box is formed and pressed, combined with the separate taking-off cap to remove the hollow article to be dried.

32. The perforated metallic seamless former-shell, substantially as described.

33. In a machine to produce hollow articles from paper-pulp, a stationary forming-cylinder, a pervious former adapted to be placed below the same to receive a charge of pulp, as described, a rotating table and means to remove the former from the forming-cylinder into position between pressing-dies, and pressing-dies and means to move them to compress the hollow article on the said former.

34. The series of formers and their rotating carrying-table, notched at its edges, its supporting-shaft, ratchet, and pawl, combined with the reciprocating rack to move the table intermittingly and a stop to hold the table at rest at the proper time, substantially as described.

35. The pulp-vat, receiving-cylinder, and forming-cylinder, combined with a vat-valve located between the pulp-vat and receiving-cylinder, and with a pulp-controlling valve between the receiving and forming cylinders, substantially as described.

36. The pervious former provided with a hollow stem for the passage of air and water, substantially as and for the purpose described.

37. In a machine to make paper boxes from pulp, a taking-off cap composed of two jaws and a cover, 41, to operate substantially as described.

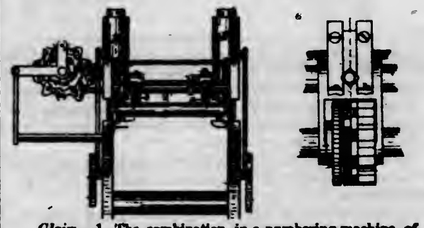
38. In combination, the hood 72 and means to hold it, the former *p*, the force-pump 74, and a suitable pipe or passage for water from the said pump into the former in the said hood, substantially as described.

39. A paper-box-making machine provided with a suction-pump for withdrawing water from the pulp on the former *p*, and with a force-pump, 74, for clearing the interior of the former, substantially as described.

40. The combination of the sliding bolt 95, provided with a finger, 98, and the teeth 94 upon the circular table *t*, that carries the pervious formers *p*, and with the projection 99 on the rock-bar, that rotates the said circular table, substantially as described.

41. That improvement in the art or method of manufacturing hollow articles from pulp which consists in forcing the water from the pulp through a pervious former surrounded by it by means of compressed air, and subsequently pressing the fibrous portion of the pulp so left on the pervious former between the said former and pressing-dies, substantially as described.

264,827. NUMBERING-MACHINE. WELLINGTON P. KIDDER, Boston, Mass. Filed Mar. 18, 1881. (No model.)

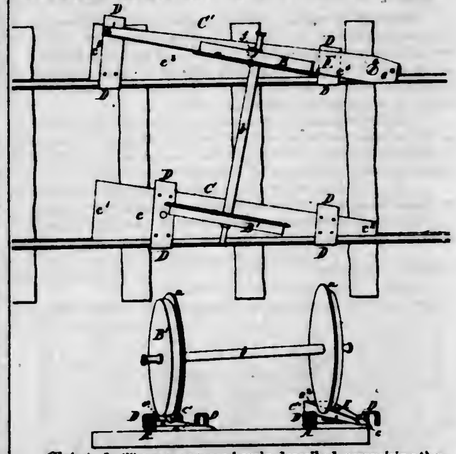


Claim.—1. The combination, in a numbering-machine, of a units-wheel and a tens-wheel and mechanism, substantially such as is described, for not only giving the proper motions to the wheels to print from 1 upward in regular order, but in addition for moving the tens-wheel two steps with the unit, as above described, in order to begin again at 1, as above explained.

2. In a numbering-machine, the tens-wheel above described, carrying, in addition to types for printing the digits, the type for printing 10 and the blank space, and arranged and operating with the units-wheel, as set forth, the tens-wheel having a double motion with the units-wheel after 99 has been printed, the first step of this double motion bringing the 10 in line with the 0 of the units-wheel and printing 100, and the next step the blank space in line with the 1 of the units-wheel and printing 1.

264,828. CAR-REPLACER. JEAN LAFITEAU, New Orleans, La. Filed Aug. 8, 1881. (No model.)

Brief.—Consists of sloping plates having right and left hand hooks, one of which is provided with a pivoted stop and guide-rail.

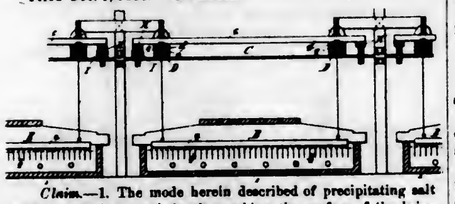


Claim.—1. The car-replacer herein described, comprising the horizontally-flaring and vertically-tapering portions C and C', the portion C consisting of a double wedge-shaped track-plate, *c*, having right and left handed hooks D D, a broad and thin front end, and a narrow and high rear end, *c'*, which supports the flange of the car-wheels, and thereby brings the tread of the wheel higher than the surface of the railroad-rail, and also having a sloping or

downward inclination from its highest point, c^2, while the portion C' consists of a plate, a^2, similar to the plate c of portion C, and provided with right and left handed hooks and a pivoted swinging rail, E, of tapering form, the portion e^2 of which projects over the railroad-rail and slopes down gradually to the top surface thereof, all substantially as and for the purpose described.

2. The combination of the removable pin f, pivoted rail E, and plate c of portion C, whereby the rail E is allowed to vibrate on its pivot when in use and may be fastened in position while it is out of use and is being transported, substantially as described.

254,829. MAKING SALT. JAMES M. LAISE, Bay City, Mich. Filed Dec. 1, 1881. (No model.)



Claim.—1. The mode herein described of precipitating salt particles in brine, consisting in combing the surface of the brine substantially in the manner set forth.

2. The rakes B, provided with teeth b, dipping into the brine and actuated on by suitable mechanism for raking off the brine, substantially as and for the purpose specified.

3. The combination of the carriage C and suspended rakes B, as and for the purpose described.

4. In combination with the carriage C, the tracks D, suspended above the grainers so as to form no obstruction around or near these, substantially as described and shown.

5. The mechanical movement for operating the rakes, consisting of the gear-wheels K O O', lever L, revolving tappets M M', and arms N N', when constructed, operating, and combined substantially as described.

254,830. CORE-BOX. CURTIS H. LEWIS, Indianapolis, Ind. Filed Nov. 5, 1881. (No model.)

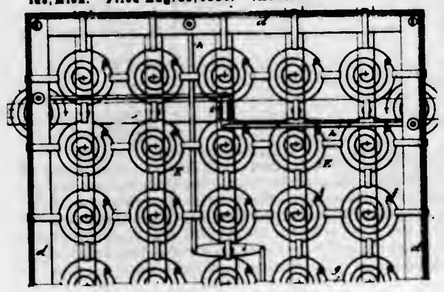


Claim.—1. A core-box made in two parts, provided with openings for the insertion of a rubber or other elastic cushion, the upper half having end extensions, D, for closing the box and fitting guides in the lower part, the abutting edges of the two parts being beveled off, so as to cut the sand when the parts are closed, substantially as and for the purpose set forth.

2. A core-box made in two parts, each part having a rubber or other elastic cushion, G, and provided with flanges h h', having beveled cutting-edges, whereby irregular or flanged cores may be formed, substantially as and for the purpose set forth.

3. A core-box provided with rubber or other elastic cushions, as described, and one or more extension-boxes, B', having openings d, to receive the shank of a partition, C, whereby T-shaped cores can be formed, substantially as and for the purpose set forth.

254,831. SPRING BED-BOTTOM. WILL J. LOWN, Grand Rapids, Mich. Filed Aug. 25, 1881. (Model.)



Claim.—1. In a spring bed-bottom, the combination, with the upper and lower frames and the intermediate springs, c, of the longitudinal rods h h, and pivoted connecting-bar i, and the transverse rods h h, and pivoted connecting-bars i, arranged near the forward and rear ends of the bed-bottom, substantially as and for the purpose herein shown and described.

2. In a spring bed-bottom, the combination, with the upper and lower frames, the intermediate springs, c, and the springs E, having the hook and eye f, of the longitudinal rods h h, and pivoted connecting-bar i, and the transverse rods h h, and pivoted connecting-bars i, arranged near the forward and rear ends of the bed-bottom, substantially as and for the purpose herein shown and described.

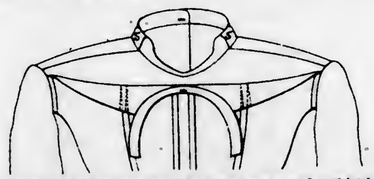
254,832. NEUTRAL POTASH SOAP. WILLIAM J. HUSSINS, Saint Helen's, County of Lancaster, England. Filed Feb. 8, 1882. (No specimens.)

Claim.—1. A neutral potash soap, substantially as herein described.

2. The process herein described for producing potash soaps, consisting in treating saponifiable oils and fats with a caustic potash free from carbonate, substantially as set forth.

3. In the manufacture of potash soap, the treatment of a caustic potash of the purity and strength described with saponifiable oils and fats, in substantially the proportions set forth.

254,833. SHIRT. HORACE W. HUSSEY, Troy, N. Y., assignor of two-thirds to Manville & Clark, same place. Filed Sept. 21, 1881. (No model.)

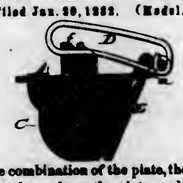


Claim.—In a bosom shirt, the combination of a shirt-bosom unattached to the shirt-body at the top of the bosom, subtending tabs formed upon the neckband of the bosom, and pockets or guides made in the neckband of the shirt-body, as and for the purposes described and set forth.

254,834. COMPRESSED VENEER. MURRAY E. HOGAN, Chicago, Ill., assignor of two-thirds to George Farnsworth, same place, and John Thomas, Defiance, Ohio. Filed Oct. 27, 1881. (No specimens.)

Claim.—As an article of manufacture, cold-compressed wood veneer for barrels, cheese-hoops, &c., having the qualities herein described—viz., toughness, density, and pliability—in degree essentially distinguishing it from natural veneer of like thickness, substantially as set forth.

254,835. BOTTLE-STOPPER. JOSEPH HORSCHHAUSER, Poughkeepsie, N. Y. Filed Jan. 30, 1882. (Model.)



Claim.—1. The combination of the plate, the plunger, the elastic stopper, the spring-loop above the plate, and the swinging bail or stirrup.

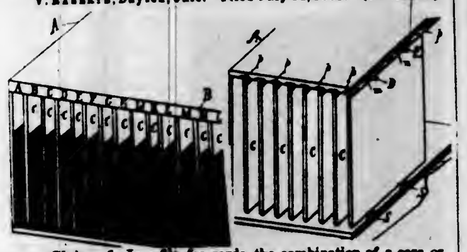
2. In combination with the plate A, piston B, and elastic stopper C, the inclined spring-loop D and the bail or equivalent pressure device arranged to swing within the loop and seat itself in the upper end of the piston.

3. In a bottle-stopper, the combination of a top plate, a vertical plunger passing through the same, an elastic stopper upon the lower end of a plunger, and pressure devices, substantially as shown, acting upon the upper end of the piston to force the same downward through the plate.

4. In a stopper, the combination of a perforated plate, a piston passing through the same, an elastic stopper applied to the lower end of the piston, a spring operating to raise the piston, and means, substantially as described, to force both the piston and the plate downward.

5. The combination of the plate, the elastic stopper, and the bail with the plunger having its upper end provided with the seat e.

254,836. FILE FOR POSTAL AND OTHER CARDS. GEORGE V. MARRETT, Dayton, Ohio. Filed July 26, 1881. (No model.)



Claim.—1. In a file for cards, the combination of a case or frame-work, and laterally-movable partitions suspended within said box, and a provision, substantially as described, whereby said partitions are prevented from coming into contact, substantially as and for the purposes specified.

2. In a file for cards, the case or frame-work A and the suspended laterally-movable vertical partitions, said case being provided with recesses in the top and bottom of the box, receiving the ends or extensions of the vertical partitions and controlling the extent of the lateral adjustment of said partitions, substantially as and for the purposes specified.

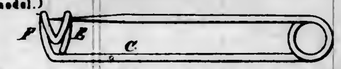
3. The combination of the case A, provided with the rods D E, and the separate laterally-movable partitions, suspended on said rods by means of hooks or eyes, substantially as and for the purposes specified.

4. The combination of the case A, provided with the rods D E, and the recesses p, and the separate laterally-movable partitions, suspended on said rods by means of hooks or eyes entering the said recesses, substantially as and for the purposes specified.

5. The combination of the case A, provided with rods D E, and the recesses p s, and the vertical partitions provided with beveled edges and suspended from and sliding laterally on said rods, substantially as and for the purposes specified.

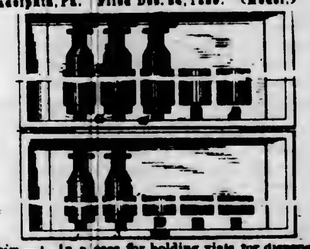
6. In a postal-card file, the vertical laterally-movable partitions C, suspended from the under side of the top of the case, and not resting on the bottom of said case, the upper and lower edges of said partitions being provided with means, substantially as described, for controlling the amount of the lateral movement of said partitions and for permitting an equal degree of movement at top and bottom, substantially as and for the purposes specified.

254,837. SAFETY-PIN. EDWIN L. PAINE, Newark, N. J., assignor to Charles R. Lane, same place. Filed Mar. 5, 1881. (No model.)



Claim.—The safety-pin having the loop A, bent at right angle with the shank C, and folded upon itself at a, said fold forming a lock, E, and guard F, substantially as specified.

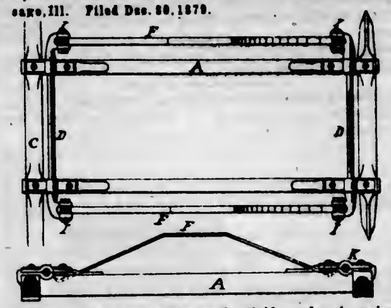
254,838. MEDICINE CHEST AND CASE. MYLA H. PEACOCK, Philadelphia, Pa. Filed Dec. 24, 1880. (Model.)



Claim.—1. In a case for holding vials for dispensing medicines, clasping-springs attached to the back of such case, adapted to hold the sides of the vials and display the fronts thereof, in combination with springs placed beneath the vials and adapted to press them upward upon the stoppers, in the manner and for the purpose as shown and described.

2. The combination, with a packing-case, of a clasping-spring open in front, so as to display the label and contents of the bottle, with a lifting-spring adapted to press the stopper against the case and into the bottle, as set forth and shown.

254,839. SIDE-SPRING BUGGIES. GEORGE PENOYER, Chicago, Ill. Filed Dec. 20, 1879.



Claim.—The combination of the rigid reaches A, springs F, and equalizing-bars D, the equalizing-bars D being located in bearings on top of reaches A, said bearings consisting of a strap or tip iron having a recess in its upper face, and a cap-piece similarly recessed and secured upon the strap by bolts or screws, whereby the removal of the equalizer-bar at any time is permitted.

254,840. SAMPLE-FASTENER FOR PACKAGES. WALTER R. PERRY, New London, Conn. Filed June 20, 1881. (No model.)



Claim.—1. In combination with a box or package, a sample-fastener comprising a coiled spring secured to said box or package, as explained, so as to leave beneath the spring a space for the reception of the sample, substantially as described.

2. The combination, in a device for attaching samples to packages, of the spring c, the loops d, and the loop-fasteners A A, all as set forth.

3. The combination of the box or package A, the coiled spring c, the loops or rings d, and the fasteners A A, as set forth.

254,841. LUMINOUS ATTACHMENT FOR HARNESS. RUDOLF F. PFLUGER, Akron, Ohio. Filed May 19, 1881. (No model.)



Claim.—1. A plate of metal or other suitable material provided with devices for attaching it to the bridle or harness of a horse, and coated with a paint composed of sulphide of calcium and a siccative oil or paint varnish, substantially as and for the purpose hereinbefore set forth.

2. A new article of manufacture consisting of a plate of metal or other suitable material adapted to be attached to the bridle or harness of a horse, and covered with a substance which is luminous in the darkness, substantially as and for the purpose hereinbefore set forth.

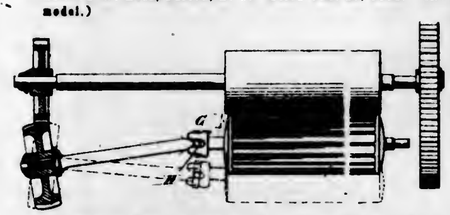
254,842. BUTTON AND BUTTON-FASTENING. EMIL PFLUG, Berlin, Germany, assignor to Nicolay Fritzner, same place. Filed Oct. 26, 1880. (No model.) Patented in Germany Apr. 26, 1881.



Claim.—1. The hollow button-head described, formed of two pieces, a and b, the latter extended into the nipple c, as shown, in combination with the fastening-strip d, bent upon itself and inclosed in the head a b, which it fills, substantially as set forth.

2. The button described, consisting of the two head-pieces *a* and *b*, fastened together as described, the fastening-piece *d*, having a bent portion lying within and filling the head *a b*, and the washer *e*, having a central hole, radial depressions *e'*, and recessed edges for engaging the points of the fastening-piece *d*, all constructed and arranged as herein set forth.

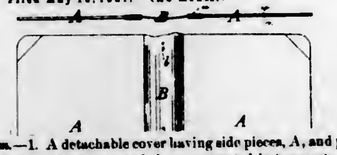
254,843. EXTENSIBLE UNIVERSAL JOINT FOR SHAFTS. ELMORE W. ROSS, Fulton, N. Y. Filed Jan. 27, 1882. (No model.)



Claim.—1. The two parts of a jointed tumbling-shaft, provided one with a slotted cylindrical head and the other with a hub or collar having rigid radial pins passing through the slots of said head, and forming in connection therewith an extensible universal joint, substantially as described.

2. An extensible universal joint for shafting, consisting of the slotted cylindrical head G and the hub or collar H, having rigid radial pins adapted to pass through and to slide in the slots in the cylindrical head, as described.

254,844. TEMPORARY BINDER. EDWARD ROSS, Hoboken, N. J., assignor to A. Liebenroth, Von Auw & Co., New York, N. Y. Filed May 10, 1881. (No model.)



Claim.—1. A detachable cover having side pieces, A, and pliable back B, the said side pieces being constructed in two parts, *a a*, or of one piece split on the inner edge, forming the lips *a'*, to overlap the said pliable back on either side, which is securely fastened between them by glue or other adhesive material, substantially and for the purposes shown and described.

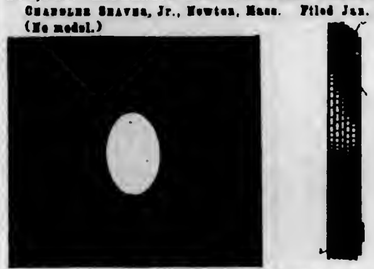
2. A detachable cover having side pieces, A, and pliable back B, the said side pieces being constructed in two parts, *a a*, or of one piece split on the inner edge, forming the lips *a'*, to overlap the said pliable back on either side, which is securely fastened between them by glue or other adhesive material, said cover and back being reversible by having the same finish on both sides thereof, substantially and for the purposes shown and described.

3. A detachable cover having side pieces, A, and pliable back B, the said side pieces being constructed in two parts, *a a*, or of one piece split on the inner edge, forming the lips *a'*, to overlap the said pliable back on either side, which is securely fastened between them by glue or other adhesive material, said cover and back being reversible by having the same finish on both sides thereof, said back having two or more eyelet-holes, through which a binding may be run to attach the leaves of a book, substantially and for the purposes shown and described.

4. The combination of a detachable cover having side pieces, A, and pliable back B, the said side pieces being constructed in two parts, *a a*, or of one piece split on the inner edge, forming the lips *a'*, to overlap the said pliable back on either side, which is securely fastened between them by glue or other adhesive material, said cover and back having two or more eyelet-holes, through which a binding may be run to attach the leaves of a book, combined with the leaves C and binding D, substantially and for the purpose shown and described.

5. The combination of a detachable cover having side pieces, A, and pliable back B, the side pieces being constructed in two parts, *a a*, or of one piece split on the inner edge, forming the lips *a'*, to overlap the said pliable back on either side, which is securely fastened between them by glue or other adhesive material, said cover and back being reversible and having the same finish on both sides thereof, said back having two or more eyelet-holes, through which a binding may be run to attach the leaves of a book, combined with the leaves of a book secured to the pliable back by the binding D, substantially and for the purposes shown and described.

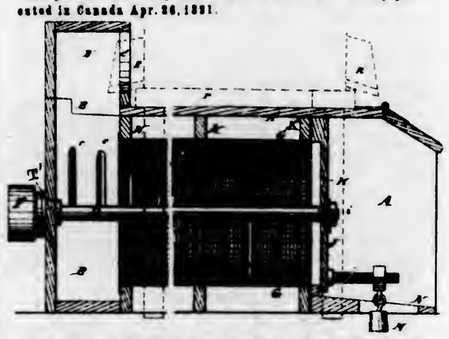
254,845. APPARATUS FOR VIGNETTING PHOTOGRAPHS. CHANDLER SEAVER, Jr., Newton, Mass. Filed Jan. 9, 1882. (No model.)



Claim.—1. The device for vignetting photographic pictures substantially as herein described, consisting of a plate with an opening to admit rays of light to the negative, and the combination, with said plate having such opening, of a series of semi-transparent sheets, each having an opening to permit of the unobstructed passage of light, the series of openings gradually increasing in size outward to proportionately increase the opacity of the combined sheets about the lesser opening and stop off the rays of light with regular gradations as the margin of the negative is approached.

2. In a printing and vignetting device, the removable or changeable shield or screen *c*, in combination with the plate A and sheets *a a*, substantially as and for purposes stated.

254,846. BARLEY-BEARDING MACHINE. JAMES SENDALL, Brockport, N. Y., assignor of one-half to Dewain Richards, same place. Filed Sept. 6, 1880. (No model.) Partly patented in Canada Apr. 26, 1881.



Claim.—1. A barley-bearder consisting of a chamber at the feeding end, provided with a bottom depressed or lowered below the screening-cylinder to form a box, in combination with a screening-cylinder and a rotating shaft provided with spirally-arranged beaters or blades, substantially as and for the purpose specified.

2. A barley-bearder consisting of a chamber at the feeding end, provided with a bottom depressed or lowered below the screening-cylinder to form a box, in combination with a screening-cylinder opening therefrom, an automatic discharge-door, and a rotating shaft provided with a series of spirally-arranged blades or beaters, substantially as and for the purpose specified.

3. In a barley-bearder, a screening-cylinder in which the grain is treated, in combination with a feed-chamber at one end, into which said cylinder opens, said chamber extending below the bottom of the cylinder to separate stones, dirt, &c., from the grain fed into the chamber, to prevent its passing into the cylinder with the grain, and means to feed the grain to be treated from the feed-chamber into the cylinder, substantially as and for the purpose specified.

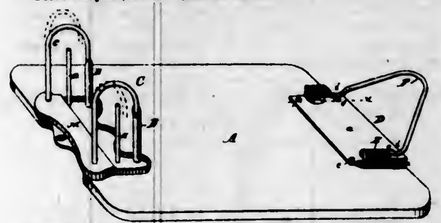
4. In a barley-bearder, a chamber to separate stones, dirt, &c., from the grain, located in the feeding end of the machine, the bottom of said chamber being depressed or lowered some distance below the screening-cylinder to form a box, in combination with said cylinder, and an extension of said chamber above the body of the machine, and provided with a feeding-aperture located on the side facing the rear end of the machine, as and for the purpose specified.

5. A discharging-door for a barley-bearder in which the door is hung and arranged with reference to the center of gravity, so that it exerts automatically an increased pressure to close itself in proportion as the discharge increases, and vice versa, in combination with a screening-cylinder and means to feed the grain through said cylinder and door, as and for the purpose specified.

6. In a barley-bearder, a screening-cylinder, in combination with a vertical door hinged at the top and provided with an arm and a regulating-weight adjustable thereon, said door operating to increase its tendency to close in proportion as the discharge of grain increases, and vice versa, as and for the purpose specified.

7. In a barley-bearder, the combination of the screening-cylinder G, supported in a frame, A, open on the bottom, with chamber B, having bottom O below the cylinder G, shaft D, with spirally-arranged beaters *e*, and discharge-door J, as shown and described.

254,847. PAPER-FILE. JAMES S. SHANNON, Chicago, Ill. Filed July 26, 1880. (No model.)

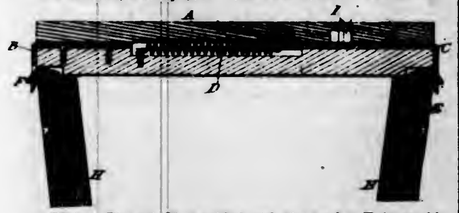


Claim.—1. The paper-file described, consisting of a base, A, and two parallel receiving-wires, B B, provided with a double punch mounted upon the same base, and adapted to simultaneously punch two holes in the paper in position and of size to admit the receiving-wires, substantially as set forth.

2. The paper-file consisting of a base, A, having receiving-wires B arranged at one end of the base, provided with the punch described, consisting essentially of the fixed studs *d*, the apertured movable plate *a*, and the hinged cam-lever F, secured to the base at the opposite end, and adapted to perforate the papers to fit the wires B, substantially as set forth.

3. The paper-file consisting of the base A, receiving-wires B, and a gage, G, provided with a punch adapted to perforate the papers to fit the wires, and having a gage corresponding with the gage of the receiving-wires, substantially as described.

254,848. FASTENING FOR BUTTER-PAIL COVERS. CHESTER L. STEPHENS, Brooklyn, Pa. Filed Oct. 1, 1881. (No model.)



Claim.—The tub H, provided with the catches F, in combination with the cover A, provided with the fixed plate B and the sliding plate C, having thumb-piece I, and retracting-spring D, all constructed to operate substantially as described.

254,849. METALLIC TRAY. JOB TAYLOR, East Hamburg, N. Y. Filed Nov. 9, 1881. (No model.)



Claim.—1. A dipping-tray having a removable handle-frame locked to the tray, substantially in the manner as and for the object specified.

2. A dipping-tray having a removable handle-frame and cross-bars over the cans to hold them down in said tray, as stated.

3. A dipping-tray having a removable handle-frame, the handles of which are fixed to and form an integral part of said handle-frame, said handle-frame forming a separate frame for said tray, as stated.

4. A dipping-tray having handles attached to and forming a part of a frame, said tray being constructed with capability of being removed from said frame, as specified.

5. A dipping-tray, in combination with a removable frame having handles, as stated.

6. In dipping-trays, the combination, with the trays, of a frame having a pair of handles and a locking device, substantially as described.

7. In dipping-trays, the combination, with the tray, of a frame having two handles and a U-shaped locking-bar for the cans and frame, substantially as described.

8. In dipping-trays, the combination, with said tray, of a handle-frame having two handles and a U-shaped locking-bar pivoted to one of said handles, as specified.

9. The combination, with a dipping-tray, of a pair of cross-bars over the cans, said cross-bars being constructed with capability of being locked to the handles for said tray, as stated.

10. The combination, with the tray, of a frame consisting of the bars F F', formed into the U-shaped handles E E', cross-bars L, and locking-bars H, as stated.

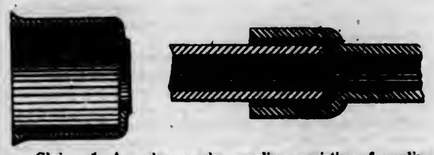
11. The combination, with the tray, of a frame consisting of the bars F F', formed into the U-shaped handles E E', cross-bars L, and locking-bar H, said bar H consisting of a U-shaped rod pivoted to one of said handles, as specified.

12. The combination, with the tray, of a frame consisting of the bars F F', handles E E', cross-bars L, and U-shaped locking-bar H, said locking-bar being pivoted to the handle E' and adapted to engage pins I on the handle E, substantially as and for the object specified.

13. A dipping-tray having a frame provided with handles formed integral with the longitudinal slats of said frame, as specified.

14. A dipping-tray having a frame provided with handles formed integral with the longitudinal slats of said frame, and with cross-bars L, having upwardly-pointing ends, as shown and described.

254,850. PIPE-COUPLING. JOHN C. TELFER, Cleveland, Ohio. Filed July 11, 1881. (No model.)



Claim.—1. A washer or pipe-coupling consisting of a cylindrical portion having an inwardly-projecting flange adapted to fit upon the end of a pipe-section, said cylindrical portion adapted to receive the end of the same pipe-section, substantially as set forth.

2. As an article of manufacture, a washer or pipe-coupling made of tarred paper, consisting of a cylindrical portion and an inwardly-projecting flange formed on one end thereof, substantially as set forth.

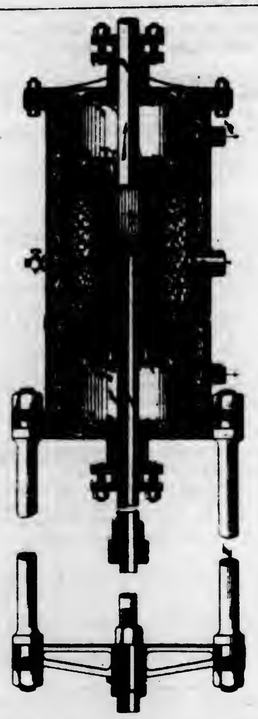
3. The combination, with two pipe-sections, one having an enlarged end adapted to receive the adjacent end of the next pipe-section, of a washer or coupling having a cylindrical body adapted to snugly fit between the adjacent cylindrical surfaces of the pipe-sections, and provided with an inwardly-projecting flange adapted to fit between the end of one section and a shoulder on the other section, substantially as set forth.

254,851. AIR-COMPRESSOR. JOHN B. WARING, New York, N. Y., assignor of one-half to Milan C. Bullock, Chicago, Ill. Filed May 21, 1881. (No model.)

Claim.—1. The combination, in an air-compressor, of a stationary outer cylinder, a movable inner cylinder, piston-heads fitting said outer cylinder and movable with said inner cylinder, a stationary piston fitting said inner cylinder, and the several valves, substantially as described, for admitting air to each end of the outer cylinder for controlling the passage of air from the outer to the inner cylinder and for the discharge of air from the inner cylinder, substantially as and for the purpose specified.

2. The combination, in an air-compressor, of a stationary outer cylinder, a movable inner cylinder, piston-heads fitting said outer cylinder and movable with said inner cylinder, a stationary piston fitting said inner cylinder, inlet-valves for the outer cylinder, valves controlling the passage of air from the outer to the inner cylinder, discharge-valves for the inner cylinder arranged in the stationary

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piston, and a hollow piston-rod, to which said piston is attached, and which serves as a discharge-pipe, substantially as and for the purpose specified.

3. The combination, in an air-compressor, of a stationary outer cylinder, a movable inner cylinder and piston-heads, valves for the proper operation of said cylinders, a stationary piston fitting said inner cylinder, a piston-rod therefor, and a tube surrounding said piston-rod secured in one of the movable piston-heads and provided outside the cylinders with a stuffing-box which works upon said piston-rod, substantially as and for the purpose specified.

4. The combination, in an air-compressor, of a stationary outer cylinder, an inner movable cylinder, piston-heads movable with said inner cylinder and fitting said outer cylinder, valves for the proper operation of the cylinders and pistons, a water-inlet passage leading to the annular space between the outer and inner cylinders and between the movable piston-heads, and a water-outlet from said space, substantially as and for the purpose specified.

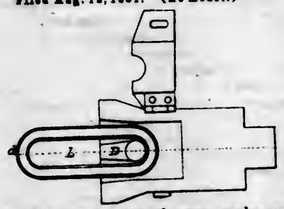
5. The combination, in an air compressor, of a stationary outer cylinder constructed with a surrounding jacket, a movable inner cylinder and piston-heads, a stationary piston fitting said inner cylinder, valves for the proper operation of said cylinders and pistons, a water-inlet passage leading to the annular space between the inner and outer cylinders and between the movable piston-heads, a port or aperture leading from said annular space to the jacket surrounding the outer cylinder, and a water outlet or outlets from said jacket, substantially as and for the purpose specified.

6. The combination, with a valve opening or openings in a valve-seat, of a valve composed of a circular disk of corrugated spring metal having a central opening and means for securing it in place at one edge, substantially as specified.

7. The combination, with a valve-seat having in it an annular groove or channel and openings communicating therewith, of a valve composed of a circular disk of corrugated spring metal secured to the seat near its center and overlapping said annular groove or channel, substantially as specified.

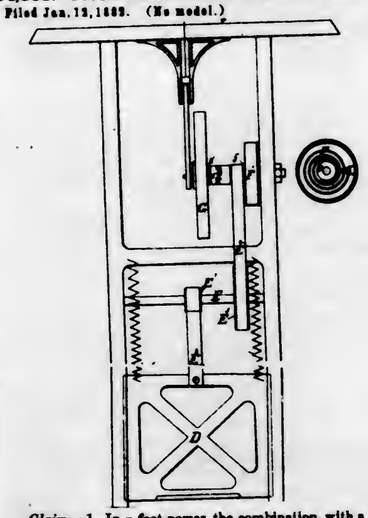
8. The combination, with a valve-seat in which is an opening or openings, and which is constructed with a projecting annular lip or flange having an inclined inner surface forming a conical or taper seat, of a valve composed of a circular disk of corrugated spring metal overlapping said opening or openings and bearing against the taper or conical seat, substantially as specified.

254,852. CAR-COUPLING. WILLIAM W. WATKINS, Bellevue, Iowa. Filed Aug. 12, 1881. (No model.)



Claim.—The combination of a car-coupler, substantially as described, with a draw-head that is open on the top, with a cover that can be locked, a pin that is fastened and can with reasonable ease be removed when wished, and all in connection with a link of the same size, or nearly so, as those in most common use, and that may be coupled to cars using such or similar links.

254,853. FOOT-POWER. JOHN A. WEBSTER, Detroit, Mich. Filed Jan. 12, 1882. (No model.)



Claim.—1. In a foot-power, the combination, with a shaft, of a reciprocating hub arranged to work upon said shaft and provided with clutch-teeth at one end, a drive-wheel fixed upon said shaft and having a hub provided with clutch-teeth projecting toward the clutch-teeth of the reciprocating hub, but inclined in an opposite direction therefrom, and an intermediate shifting clutch-ring, arranged to be driven toward the drive-wheel and engaged therewith by the reciprocating hub when the latter moves in one direction and to be thrown out of engagement with said drive-wheel when said hub moves in the opposite direction, said ring at the same time reciprocating with said reciprocating hub, substantially as described.

2. In a foot-power, the combination, with a drive-wheel having a ratcheted hub, f', an engaging clutch, I, and driving-hub f, of a spring, F, the construction being such that the spring acts to reverse the motion of the hub after it has been rotated forward by the belt, substantially as described.

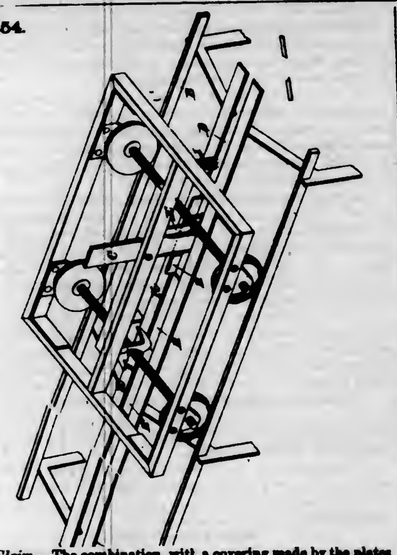
3. The combination, with the drive-wheel, the clutch I, and hub f, of the spring F, the belts E^2 and E', and a treadle, substantially as described.

4. The combination of a drive-wheel provided with ratchets f', a clutch-ring provided with ratchets i, inclined faces i', and shoulders i^2 and i^3, and in connection therewith a reciprocating driving-hub, f, provided with inclined faces f' and shoulders f^3, substantially as described.

254,854. COVERING THE SLOT OF CABLE-ROADS. MARY JEFFRIES WHALEY, Lincoln, Nebr. Filed Nov. 21, 1881. (No model.)

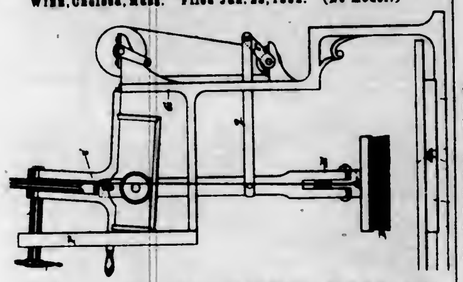
Brief.—Beveled hinged plates that are operated by means of an opening and a closing plow secured to a car or truck are arranged to cover the slot of a cable-railway.

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Claim.—The combination, with a covering made by the plates H, fastened on hinging-rod K, for the beveled slot D of cable-roads, of the opening-plow E and closing-plow F, for operating the same.

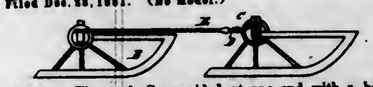
254,855. MACHINE FOR CLEANING CASTINGS. STEPHEN WISE, Chelsea, Mass. Filed Jan. 23, 1882. (No model.)



Claim.—1. The machine substantially as described, consisting of the movable table or platform and the brush and its mechanism for vibrating it, its mechanism for depressing and raising it, and its mechanism for turning it laterally, all being adapted and to operate substantially as and for the purpose specified.

2. The combination of the spring i, with the brush and its carrier or vibrator, and the frame F, adapted to such vibrator, in manner essentially as set forth.

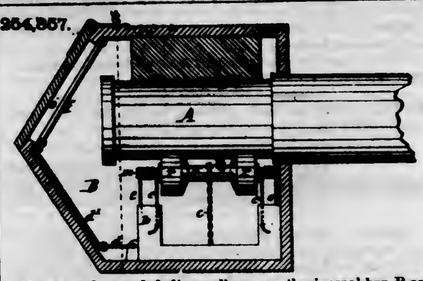
254,856. BOB-SLEIGH. FRANK YAGER, Clarkston, Mich. Filed Dec. 28, 1881. (No model.)



Claim.—The neck C, provided at one end with a hole, a, adapted to lie loosely between the bolster and beam of the forward bob, and having a bifurcated rear end, in combination with the part D, provided at one end with a tongue adapted to be pivoted in the bifurcated end of the neck C and at its other end with a ball or knob, and the reach E, connected to the rear bob and provided with a spherical recess to receive the ball end of the part D, substantially as shown and described, and for the purpose specified.

254,857. CAR-AXLE BOX. GEORGE H. YOST, Theresa, N. Y. Filed Dec. 20, 1881. (No model.)

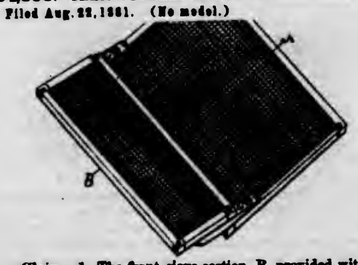
Claim.—1. In combination with the journal A and box B, the frame a, provided with ears b b, the spring-arms c c, fixed to



said ears and extended diagonally across the journal-box B and carrying respectively at opposite sides of the journal the mandrel m and the rollers r, journaled on said mandrel, and provided with the endless chain e, substantially as set forth.

2. The combination, with the frame a, supporting the rollers r r, with their lubricating-chain e, as set forth, of the hail formed of sections d, d', and f, the latter of which is provided with the diagonal bars f f across the front opening of the journal-box B, substantially as described and shown.

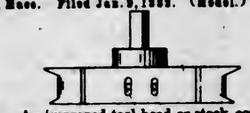
254,858. GRAIN-SEPARATOR. DAVID YOUNG, Stockton, Cal. Filed Aug. 22, 1881. (No model.)



Claim.—1. The front sieve-section, B, provided with fingers forming a comb upon its rear beveled-frame edge, and connecting-bars C C, combined with the rear sieve-section, A, having a front beveled-frame edge, all constructed substantially as set forth.

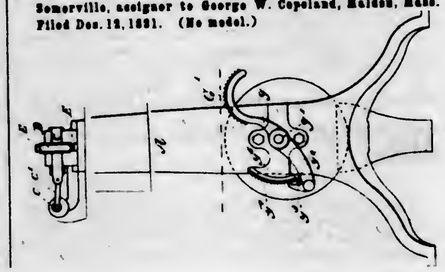
2. The combination of two sieves of unequal size, which are secured together at an angle to each other, the smaller one of the two being provided with fingers upon its edge where it overlaps the larger one, and the two sieves having their edges beveled away so as to permit the grain to escape between them, substantially as described.

254,859. EDGE SETTING AND BURNISHING MACHINE. ROBERT ADEE, Somerville, assignor to George W. Copeland, Malden, Mass. Filed Jan. 9, 1882. (Model.)



Claim.—An improved tool head or stock, consisting of a hollow holder provided with a bushing or sleeve adapted to oscillate therein, and a tool having a spindle fitting within such sleeve or bushing and held therein by frictional contact, all substantially as set forth.

254,860. EDGE-BURNISHING MACHINE. ROBERT ADEE, Somerville, assignor to George W. Copeland, Malden, Mass. Filed Dec. 12, 1881. (No model.)

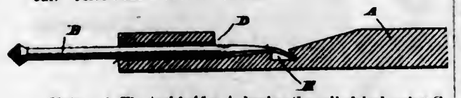


Claim.—1. A rod for trimmers consisting of a coiled wire bar, [illegible] space, where it rests upon the rail, to allow the lower end of the

Claim.—1. In a burnishing-machine, the foot-rest G, as and for the purposes described.

2. In a burnishing-machine, the foot-rest G and means for varying the height, all substantially as specified.

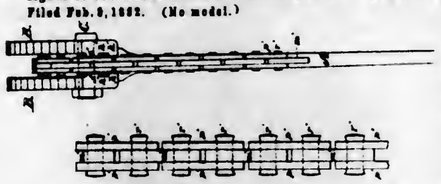
264,861. TOOL-HANDLE. THOMAS BOLTON, San Francisco, Cal. Filed June 27, 1881. (No model.)



Claim.—1. The tool-holder A, having the cylindrical socket C extending longitudinally into one end, and the inclined surface D, with the slot or notch E, formed across it at such a point that the angle or shoulder F stands in a line with the center of the socket C, substantially as and for the purpose herein described.

2. The tool B, having the curved elastic and flattened tang G, as shown, in combination with the holder A, with the socket C, the inclined flattened surface D, transverse groove or notch E, and shoulder F, whereby the tang of the tool is engaged and held, substantially as herein described.

264,862. CHAIN-WRENCH. WILLIAM H. BROCK, Corona, assignor of one-fourth to John W. Alexander, New York, N. Y. Filed Feb. 8, 1882. (No model.)

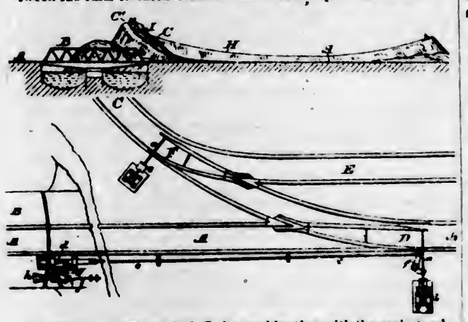


Claim.—1. The combination, in a chain-wrench, with the two detachable serrated double jaws B, with claws *f'* and lugs *k'*, the bolt C, pin D, and shank A, of a flat-link chain, E, with its links *m'* and *p'* fashioned, located, and riveted, as shown, for short adjustment of chain, and projecting rivets *r'*, for locking the chain, all substantially as and for the purposes as herein set forth.

2. The combination, in a chain-wrench, with the jaws B, made with claws *f'* and lugs *k'*, the bolt C, pin D, and shank A, of a flat-link chain, E, with its rivets *r'*, projecting laterally for locking the chain, substantially as herein described.

264,863. RAILWAY DRAW-BRIDGE APPLIANCE. JOHN CHANDLER, Brooklyn, N. Y. Filed Dec. 6, 1876. Renewed Feb. 10, 1882. (No model.)

Brief.—The draw is locked in position by the act of shifting the switch to the main line, its normal position being to the siding, and it cannot be so shifted unless the bridge is in proper position in view of a lug upon the bridge which operates a locking-bolt to permit the switch-lock bolt to secure the bridge. The siding has an incline, whereby trains will be brought to a stand, and an automatic switch at the summit of the siding acts to direct a runaway locomotive into a double inclined siding, whereby it will be brought to rest. Weighted tilting forked catch-levers are arranged between the rails to catch about the axles and stop the locomotive.



Claim.—1. The switch D, in combination with the main track A, safety-siding C, and draw-bridge B, and provided with a weight, *c*, or its equivalent, tending constantly to open it from the track A to the siding C, substantially as and for the purposes set forth.

2. The combination of the main track A, draw-bridge B, and safety-siding C, having a heavy upward grade, and connected with the track A by a switch, D, which constantly tends to open to it from the track A, substantially as set forth.

3. The combination of the main track A, draw-bridge B, safety-siding C, and switch D with the connecting-rod *a* of that switch, the weight *c*, or its equivalent, tending to operate it, the draw-bridge bolt *d*, and its rod or rope *e*, whereby the opening of the switch D to the main track locks the draw-bridge in position, substantially as set forth.

4. The combination of the main track A, the draw-bridge B, the safety-siding C, and the switch D with the connecting-rod *a* and weight *c*, or its equivalent, for operating the switch, and with the locking device at the draw, consisting of the bolts *d* and *g* and tappet *h*, and with the rod or rope *e*, for connecting the locking device with the switch mechanism, whereby when the draw is open the switch is locked in position, substantially as set forth.

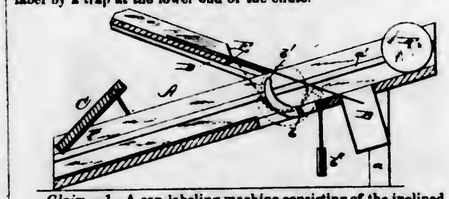
5. The combination, with the track A, draw B, siding C, and switch D, of the siding E, connecting with the siding C by an automatic switch, F, operated by a weight, *c*, or its equivalent, whereby a train backing off from the siding C will be directed onto the siding E instead of onto the track A, substantially as set forth.

6. The combination of the track A, switch D, safety-siding C, having a heavy upward grade, switch I, and siding H, having a double grade rising in both directions toward its ends, substantially as and for the purposes set forth.

7. The sidings C and H, having upward grades toward the switch I, and provided with automatic pawls J J, consisting each of a pawl-arm, *q*, a weighted arm, *p*, and a depressing-lever, substantially as and for the purposes set forth.

264,864. CAN-LABELING MACHINE. JOHN F. CHASE, Augusta, Me., assignor of one-fourth to Henry Sewall, same place. Filed Jan. 24, 1882. (No model.)

Brief.—The label is fed down into the reservoir, so as to get paste on both sides of its lower end, and then drawn back until its pasted end rests on bottom of trough just above the pivoted U-shaped attaching device. The can being rolled down the chute, upon reaching the label the latter adheres to the can and begins to wind around it, and when the can rolls on the arms of the attaching device they rise and press the label against the can. As the can continues to move down the chute a final pressure is given the label by a trap at the lower end of the chute.



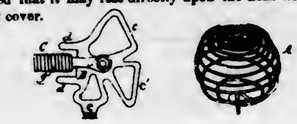
Claim.—1. A can-labeling machine consisting of the inclined trough A, having attached to its sides the upwardly-inclined guides D, supporting the adjustable holder E, the paste-reservoir B, placed in the bottom of the trough, attaching device *b*, pivoted centrally in a U-shaped slot, and having upwardly-inclined hooks extending into the trough, and the trap C, pivoted across and above the sides of the chute, all operating in combination, substantially as shown and described.

2. In a can-labeling machine, in combination with the trough A, the attaching device *b*, consisting of a straight bar placed in a slot extending across the trough immediately below the paste-reservoir, and having its ends bent at right angles and curved upwardly in the arc of a circle, and placed in slots extending along the direction of the chute, substantially as and for the purposes set forth.

3. In combination with the trough A and holder E, the attaching device *b*, adapted to press against the side of the can and draw the label around it, substantially as shown and described.

264,865. TRUSS. CHARLES CLOVER, Toronto, Ontario, Canada. Filed Nov. 4, 1881. (Model.)

Brief.—The entire pad is formed of a coil of wire so flattened and arranged that it may rest directly upon the flesh without an intervening cover.



Claim.—1. A pad for trusses, consisting of a coiled wire having close coils extending across its face and approximately flattened at the point of contact with the body, whereby it is adapted to press on the hernia with or without an intervening covering and to exert its greatest pressure at its exterior circumference, substantially as described.

2. In a double truss and in combination with the cross-bar connecting the pads, the plates B, turning on the same centers which hold the cross-bar, and provided with stops *d d*, to limit their motion, substantially as and for the purpose specified.

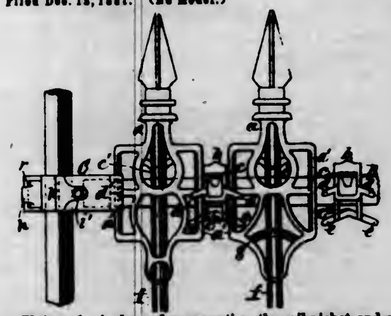
3. The top plate, B, for trusses, provided with the loops *c c'*, stops *d*, and screw *e*, constructed and arranged substantially as and for the purpose set forth.

4. The combination, with a double truss, of the stiff spiral-spring cross-bar C, provided with open at each end for pivotally attaching it to the pads, substantially as described.

5. The combination, with a double truss, of the stiff spiral-spring cross-bar C, provided with adjustable screw-eyes *f*, substantially as and for the purpose specified.

6. The combination, with a truss, of a thigh-strap consisting of a stiff spiral spring rigidly secured to the pad-plate at one end and flexibly connected with the belt at the beak, whereby said spring assumes a curve when applied to the body to prevent contact with and chafing of the skin, substantially as described.

264,866. IRON FENCE. BENJAMIN G. DEVOR, Kenton, assignor of one-half to Albert C. Ramsay, Bellefontaine, Ohio. Filed Dec. 13, 1881. (No model.)



Claim.—1. A clamp for connecting the rail-picket and post together, in two vertically-divisible sections, with self-connecting devices at one end, and a hook on the front section, at the other end, for catching over the side bar of the ornament of the picket, whereby the latter is held, in connection with the rail, to the post, when bolted together as specified.

2. In a fence-picket constructed with a wrought-iron rod and malleable ornaments thereon, as shown, an ornament having a separable spear-head with a hole in the base end for the picket-rod, and having a key-seat or groove cast in one side of said hole for the insertion of a tang formed upon the top of the ornament and extending above the latter, whereby the head is firmly fastened upon the picket and prevented from turning, as set forth.

3. In iron fences having wrought rods and malleable ornaments, a clamp for connecting the rail and end picket with the post, in two sections, having self-connecting devices at the post end and a hook at the opposite or rail end cast upon the front plate for connecting with the ornament of the picket, whereby said ornament is clamped to the rail, prevented from lateral displacement, and at the same time allowed sufficient movement to incline the picket when adjusting it to the grade.

4. The buckle-clamp C, having its sections *b* and *b'* self-connecting at the post end by means of the loop *c'* and hook *h*, and having an inwardly-bent hook, *d'*, on the rail end of plate *b*, for catching over the bar *a* of ornament *a*, securing it to the rail and preventing the picket from lateral displacement, or the rail from being withdrawn from its fastening, as shown and described.

5. A clamp for connecting the ornaments of an iron fence, having a bearing-hook provided with an angle on the under side of the same, where it rests upon the rail, having parallel sides and lateral lugs extending from either side of its frame-bars, the upper arms or lugs extending from the front and the lower and longer lugs extending from the rear side of said frame-bars, and diverging from their point of union with the body of the clamp to their ends, so as to straddle the side bar of the ornament-frames and hold it tightly when connected together, as shown and specified.

6. In iron fences constructed with wrought rods and malleable ornaments, a bracket or supporting ornament for a picket, having its bearing-hook formed with an angle on the under side of the same, where it rests upon the rail, to allow the lower end of the picket to be swung to the right or left to suit the inclination of the rail, substantially as hereinbefore specified.

7. In iron fences constructed with wrought rods and malleable ornaments, a clamp or clip for connecting said ornaments, having a single bearing-hook, vertically central therewith, extending rearward from the top end, and having an angle on its under side for a bearing upon the top of the rail to allow it to be placed in its position from the front of the rail, and to adapt it, in connection with the pickets, to be inclined either to the right or left to suit the rail when the latter is inclined, substantially as hereinbefore set forth.

8. A clamp or clip for connecting the pickets of iron fences, having a hook extending from the rear side, at the top end, vertically central with the body thereof, said hook being formed with an angle on its under side, as described, and having lateral extending limbs or lugs from either side for clamping the picket-ornament on both its front and rear sides, whereby it may be more securely fastened and greater strength given to the connections, and allowed to be inclined in either direction to suit any inclination of the rail, substantially as shown and specified.

9. The clamp or clip *b*, having parallel sides, the hook *b*, with an angle, *c*, on its under side, the lateral limbs *d*, extending from its front sides, near the middle line thereof, and the lateral limbs *e*, extending from its rear sides at the lower end, and connected centrally, forming the angle *c'''*, said limbs *e* being extended beyond the limbs *d*, for catching under the side bar of the ornament-frame in guiding the latter into its place between the lugs *d* and *e*, and to prevent the clamp from tilting during the operation of connecting the pickets therewith, as hereinbefore set forth.

10. A clamp or clip for connecting the ornaments of pickets in iron fences with the rail, having a single bearing-hook, and having front and rear lugs extending from its side bars and diverging laterally from each other, each pair of lugs connected across the body of the clamp for the purpose of strengthening the same, and, with reference to the front upper limbs, of connecting the lines of ornamentation at the middle of the ornament and clamp.

11. A foot-plate, H, for line-posts, divided vertically and longitudinally in the center, and having the sockets *t t*, for inserting the pickets therein, and the oblong transverse holes *s''*, for adjusting the post upon its base P when attaching it thereto, substantially as shown and specified.

12. A buckle-clamp, G, in two sections, 1 and 2, for connecting the top end of the brace to the post in an iron fence, having self-connecting devices *r'* and *h* at one end, and an inclined hole, *j*, formed by a groove cast in the inside surface of each section at the opposite end for securing the upper end of the brace-rod *g*, and connecting the same with the post-bar when clamped in place and secured by the bolt *i*, as shown and specified.

264,867. COMBINED REGISTER AND OTTOMAN. JOHN A. GRAHAM, AMELIA L. GRAHAM, and EMILIE C. RAUDOH, Red Wing, Minn. Filed Jan. 30, 1882. (No model.)



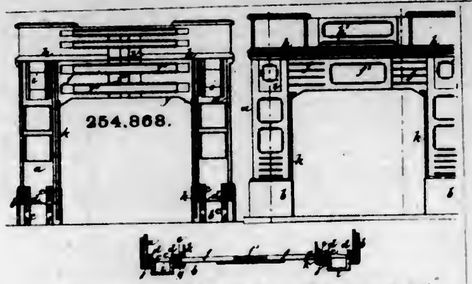
Claim.—1. An ottoman or like article of furniture, having an open base or bottom, and provided with doors in its sides, whereby it is adapted to receive and distribute heat from a register-opening, as set forth.

2. The herein-described article of furniture A, provided with doors or valves C, latches D, and keepers E F, substantially as and for the purposes set forth.

3. The ottoman A, provided with doors C and stops H, substantially as shown and described.

264,868. ADJUSTABLE MANTEL. ROBERT H. GIBBONS, Winchester, County of Hants, England. Filed Nov. 28, 1881. (No model.) Patented in England Feb. 8, 1881.

Brief.—The jambs are vertically adjustable, and the frieze, shelf, &c., laterally adjustable. Panels are adjusted in grooves in the jambs.



Claim.—1. The combination, in a chimney or mantel piece, of the slides *c c*, plinths *b*, pins *d*, and vertically-adjustable jambs *a a*, constructed substantially as shown and described.

2. The combination of the slides *c c*, jambs *a a*, and adjustable frieze *f f'*, substantially as shown and described.

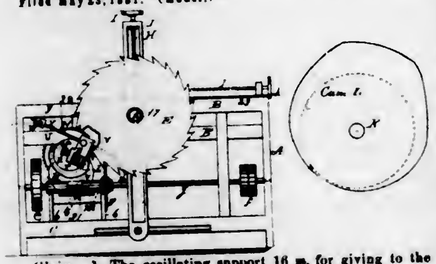
3. The combination of the slides *c c*, jambs *a a*, adjustable frieze *f f'*, and mantel-board *h h'*, substantially as shown and described.

4. The combination of the slides *c c*, jambs *a a*, adjustable frieze *f f'*, mantel-board *h h'*, and shifting panels *i*, substantially as shown and described.

5. The combination of the adjustable friese composed of the part *f'* and of the shifting dovetailed pieces *f f* with the jambs *a*, provided at the upper ends with dovetail grooves *e e*.

6. The shifting panels *i*, formed with the series of grooves *j*, in combination with corresponding projections on the jambs, as and for the purposes shown and described.

254,869. SAW-SHARPENING MACHINE. WILLIAM H. HALLADAY, Chicago, Ill., assignor of one-half to Edwin Benjamin, Jasper E. Mallery, and Engiebert Fischer, all of same place. Filed May 23, 1881. (Model.)



Claim.—1. The oscillating support 16 *m*, for giving to the wheel F a diagonal position, in combination with the tilting frame 2 3 4 *n*, as and for the purpose specified.

2. The combination of the feeding devices for bringing the saw-teeth to the wheel F, consisting of the blocks S T, weighted pawl X, and T-bolt *b*, substantially as specified.

3. In a saw-sharpener, the grinding-wheel F, combined with suitable operating and adjusting supports 2 3 4 *n* and 16 *m*, placed below the axis of the saw, as and for the purpose specified.

4. The tilting frame 2 3 4 *n*, in combination with a continuous cam, L, and supporting-frame 16 *m*, and wheel F, with the feed devices S R T X, as and for the purpose specified.

5. The combination of the reciprocating bar 11, tilting frame 2 3 4 *n*, support 16 *m*, and wheel F with the grooved cam M, as and for the purpose specified.

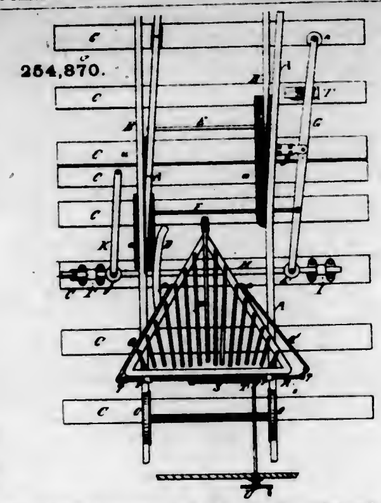
254,870. SAFETY RAILWAY-SWITCH. PAUL G. HARSON, Rochester, Minn. Filed Sept. 7, 1881. (No model.)

Brief.—The switch-rail is shifted automatically through pivoted levers alongside the track, which are actuated by laterally-adjustable bars on the pilot or cow-catcher. A transverse rod, to which one end of each of said levers is pivoted, slides in guide-shoes having anti-friction rollers, a hand-operating lever being secured to said rod in one of the guide-shoes.

Claim.—1. In combination with rails A A' and B B', sole-plates *a a'*, and guard-rail D, the bar H, guide-shoes I I, side lever, G, and connecting-bar F, all constructed and arranged for automatically adjusting the switch-rail A' from the pilot of an approaching locomotive, substantially in the manner set forth.

2. In combination with rails A, A', B, and B', sole-plates *a a'*, and guard-rail D, the cross-bar H, guide-shoes I I', levers G and K, with wheels *h*, *h'*, and *j*, and connecting-rod F, all constructed

254,870.



and arranged for automatically adjusting the switch-rail A' from the pilot of an approaching locomotive, substantially in the manner set forth.

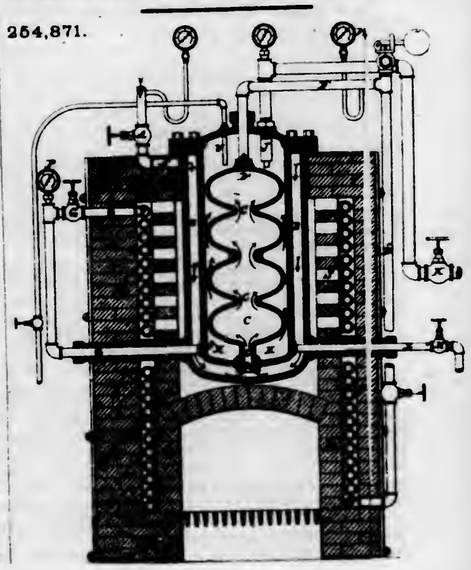
3. In combination with the switch-rail A, connected by bar F with lever G, which is again connected by bar H with lever K, the pilot of a locomotive, having side bars, Q Q', connected by a bar, R, and arranged to be adjusted from the cab of a locomotive by any suitable devices and connections, all substantially in the manner and for the purpose specified.

4. In combination with the switch-rail A', connected by bar F with lever G, which again is connected by bar H with lever K, such levers G and K having wheels *h*, *h'*, and *j*, the pilot of a locomotive, having side bars, Q Q', connected by bar R, and arranged to be adjusted by a crank, T, and pitman S, all substantially in the manner and for the purpose described and shown.

5. The combination, with the automatic switch, as described, of the shoes I and I', forming the guides for cross-bar H, and having rollers *i* and cap-plates *l*, all substantially as and for the purpose set forth.

6. In combination with the automatic switch described, the cross-bar H, having slot *n*, and the guide-shoe I', having tapering slot *m*, all substantially as and for the purpose described and shown.

254,871.



254,871. APPARATUS FOR GENERATING VAPOR FROM LIQUID HYDROCARBONS. HENRY P. HAYDEN, Washington, D. C., assignor to the International Vapor Fuel Carbon Iron and Manufacturing Company, same place. Filed June 11, 1881. (No model.)

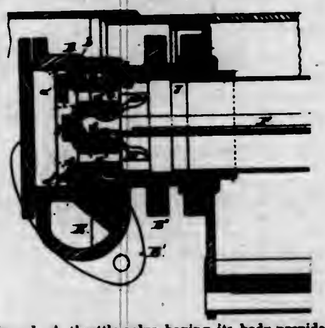
Claim.—1. In the apparatus for generating vapor from liquid hydrocarbons, herein described, the generating-chamber having an internal steam-space consisting of two or more communicating spheroidal receivers, as and for the purposes described.

2. In the apparatus for generating vapor from liquid hydrocarbon, herein described, the generating-chamber provided with internal spheroidal steam-spaces and external steam-jacket, as and for the purposes described.

3. The combination of the spheroidal receivers, the pipe through which the superheated steam enters the generating-chamber, and the oil-supply pipe.

4. The combination of the outer steam-jacket, B, spheroidal receivers C, connecting-pipe D, superheater F, and generating-chamber H, as and for the purposes described.

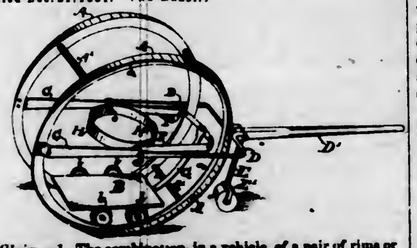
254,872. THROTTLE-VALVE FOR LOCOMOTIVES. SAMUEL J. HAYES, HENRY SCHLACHS, and O. FILLMORE STARKWEATHER, Chicago, Ill. Filed Sept. 5, 1881. (No model.)



Claim.—1. A throttle-valve having its body provided with openings or passages leading from its rear to its front face, and loosely connected to a valve stem or rod by a ball on the end of the rod fitted within the half-boxes *c* of the valve, and a box adapted to receive the valve and to be attached in the smoke-arch at the end of the dry-pipe, and provided with interior valve-seats, steam space or chamber in front of the valve, and a steam-passage leading to the steam-pipes, in combination with a valve stem or rod and a dry-pipe, substantially as and for the purposes specified.

2. The combination, with the valve-box B, having seats on its inner face, of the valve A, provided with exterior seats and steam-passages *a''* and with a central opening, the half-boxes *c*, fitted in the central opening of the valve and having a recess receiving a ball, *f*, upon the end of the valve-rod F, and the nut *g*, said members being constructed and arranged for operation substantially as described.

254,873. VEHICLE. JAMES E. HELLER, Indianapolis, Ind. Filed Dec. 21, 1881. (No model.)



Claim.—1. The combination, in a vehicle, of a pair of rims or follies of large size, having track-rails upon their internal surfaces, means, substantially as described and acting directly upon said rims, for propelling the same, and a truck or carriage having much smaller wheels, which is adapted to travel upon said rails, whereby when said large rims are revolved a continually-inclined track is formed for said truck, down which it will continually of its own weight descend, substantially as set forth.

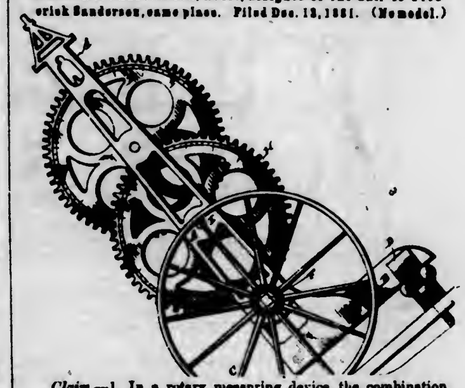
2. The combination, with a pair of large wheels or rims and a truck which runs upon a truck formed by the internal faces of said wheels, of a pair of arms running from said rims to a point central thereto, short shafts or gudgeons thereon, outside supporting draft or other rods, a frame-work running around in proximity to the rims and the cross-bars connecting them, and a rod connecting said frame-work and said truck, whereby the motion of said truck is steadied, substantially as set forth.

3. The combination, with a pair of large wheels or rims the internal faces of which form the track for a truck, of arms extending from said rims to a point central thereto, provided at said central point with short shafts or gudgeons, and draft-rods attached to said gudgeons and extending to a point to one side of said rims, where the motive power can be readily applied thereto, substantially as set forth.

4. The combination of the rims A, truck B, arms C, having shafts or gudgeons *c*, and draft-rods D, all substantially as shown and described, and for the purposes specified.

5. The combination of the rims A, truck B, arms C, short shafts *c*, rods D, frame F, and rod G, all substantially as set forth.

254,874. ROTARY CLOTH-MEASURING APPARATUS. ORLANDO HUFFMAN, Friend, Nebr., assignor of one-half to Frederick Sanderson, same place. Filed Dec. 13, 1881. (No model.)

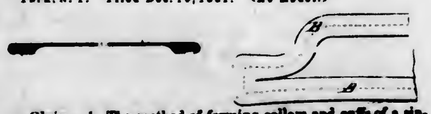


Claim.—1. In a rotary measuring device, the combination, with the upright frame adapted to support bearing-wheels and a system of graduated wheels, the said frame being provided at its lower end with an outwardly-extending tongue, of a retaining-lever adapted to be removably secured at one end to a counter and afford pivotal bearing for the said tongue at the other end, substantially as set forth.

2. In a rotary measuring device, the combination, with the upright frame adapted to support bearing-wheels and a system of graduated wheels, the said frame being provided at its lower end with an outwardly-extending tongue and with pointers to note the number of yards and fractions of yards passing under the bearing-wheels, of a retaining-lever adapted to be removably secured at one end to a counter and afford pivotal bearing at its opposite end for the said tongue, substantially as set forth.

3. The combination, with the frame A, tongue B, bearing-wheels C, shaft F, cog-wheel G, wheel H, shaft I, cog-wheel J, wheel L, and pointers M and N, the said wheels H and L being provided with graduated circumferential scales, and adapted to operate as described, of the retaining-lever D, adapted to be secured at one end to the counter, and provided with the spindle *a*, adapted to pass through a hole in the tongue B and form a pivotal support for the frame, substantially as set forth.

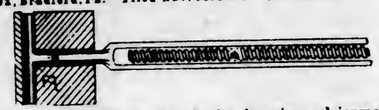
254,875. COLLAR AND CUFF. CHARLES O. KANOUSE, New York, N. Y. Filed Dec. 16, 1881. (No model.)



Claim.—1. The method of forming collars and cuffs of a single sheet or thickness of xylonite, celluloid, or analogous material, which consists in first cutting the article to the desired shape from a single sheet, then strengthening by strips of woven fabric applied at the edges upon the sides and ends only of the plastic sheet, then folding the strips and edges of the body material to form a seam, and finally finishing the article by heated dies, as hereinbefore set forth.

2. As a new article of manufacture, a collar or cuff formed of a single sheet of xylonite, celluloid, or analogous substance, and strengthened by strips of woven fabric applied at the edges of the body material, the strips and edges being folded, cemented, and finished by heat and pressure, as set forth.

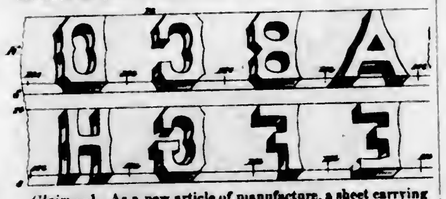
254,876. TEMPER-SCREW FOR DRILLING WELLS. ORRIN A. KNOX, Bradford, Pa. Filed Nov. 16, 1881. (No model.)



Claim.—1. A temper-screw having its reins and journals formed in one piece, substantially as and for the purpose set forth.

2. A temper-screw having a neck to fit within the slot of a walking-beam, and journals formed integral with the neck, substantially as described.

254,877. PRINT FOR TRANSFER-LETTERS. WILLIAM H. KNOX, Cincinnati, Ohio, assignor of one-half to James R. Anderson, same place. Filed July 25, 1881. (No model.)



Claim.—1. As a new article of manufacture, a sheet carrying on its face side transfer-letters and provided on its back side with the spacing-marks *m*, substantially as and for the purposes specified.

2. As a new article of manufacture, a sheet carrying on its face side transfer-letters and on its back side the spacing-marks *m* and lines *n* and *s*, straight or curved, substantially as and for the purposes specified.

3. As a new article of manufacture, a sheet carrying on its face side transfer-letters and the marks *m* and on its back side the marks *m*, substantially as and for the purposes specified.

4. As a new article of manufacture, a sheet carrying on its face side transfer-letters and the marks *m* and on its back side the lines *n* and *s*, substantially as and for the purposes specified.

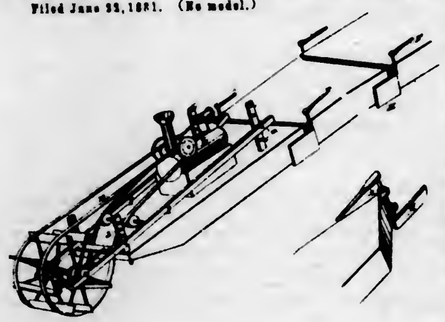
5. As a new article of manufacture, a sheet carrying on its face transfer-letters and the marks *m* and on its back side the lines *n* and *s* and marks *m*, substantially as and for the purposes specified.

6. As a new article of manufacture, a sheet carrying on its face transfer-letters and lines *n* and *s* and on its back side the marks *m*, substantially as and for the purposes specified.

7. As a new article of manufacture, a sheet carrying on its face transfer-letters and lines *n* and *s* and on its back side the marks *m* and lines *n* and *s*, substantially as and for the purposes specified.

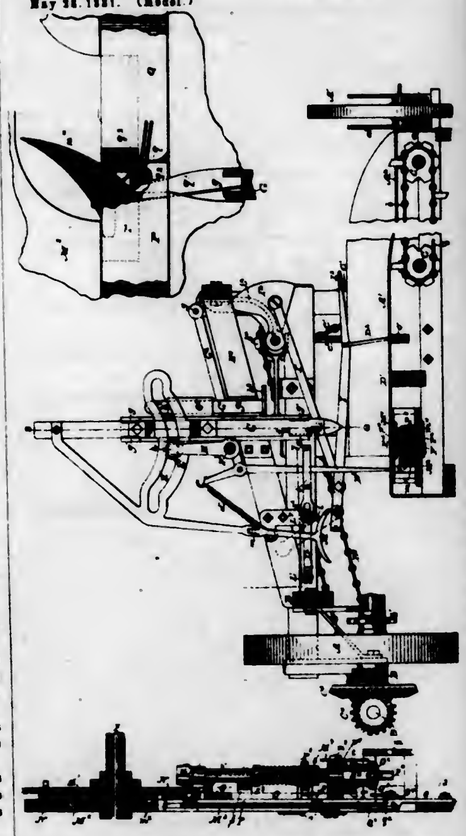
8. As a new article of manufacture, a sheet carrying on its face transfer-letters and marks *m* and lines *n* and *s* and on its back side the marks *m* and the lines *n* and *s*, substantially as and for the purposes specified.

254,878. TRAIN-BOAT. WILLIAM J. LITTLE, Stockton, Cal. Filed June 23, 1881. (No model.)



Claim.—In a train of boats coupled appropriately, as by the cross-chains D D, the supplementary rudders or flanges E, extending from the boat-section preceding, along the sides of the boat-section following, and covering the ends of the joint or line of contact between the boat-sections, substantially as and for the purpose described.

254,879. GRAIN-BINDER. WILLIAM LEVERINGH, Osage, Iowa, assignor of eight-eighteenths to Martin V. Nichols and four-eighteenths to Cyrus H. Cotter, both of same place. Filed May 26, 1881. (Model.)



Claim.—1. The combination of the platform, the grain-delivering apparatus thereof, the gavel-evener, the pivot passing through its base near its outer end, and means by which the evener is vibrated to cause its vertical portion to repeatedly strike the butts of the grain, substantially as and for the purpose hereinbefore set forth.

2. The combination of the platform, the grain-delivering bands or chains, the binding-table, the vibrating gavel-evener, and the pair of driven pulleys, by connections with which the grain-delivering chains and gavel-evener are actuated, substantially as and for the purpose hereinbefore set forth.

3. The combination, substantially as hereinbefore set forth, of the binding-table, the vibrating gavel-evener, to which the butts of the grain are presented as passing to the binding-table, the pitman connected to said evener, the link-rod, the elbow-lever connecting said pitman and link-rod, the driven pulley, and its crank connected to the link-rod, for the purpose described.

4. The combination of the driving-chain F', the shaft C', the pair of connected loosely-mounted pulleys thereon, the chain C', the shaft C, driven thereby for actuating the platform grain-delivering apparatus, the pulley-crank, and the vibrating gavel-evener actuated thereby, substantially as and for the purpose hereinbefore set forth.

5. The combination, substantially as hereinbefore set forth, of

the platform, the grain-delivering apparatus, the binding-table, the gavel-gatherer, its pivoted and jointed or elongating and contracting shank, the rotating crank plate or cam by which the gatherer is lifted and dropped, and the controller-arm or link-rod connecting the crank-plate and gatherer-shank, and by which the gatherer is moved outward while elevated by the action of the cam-plate and drawn inward after it is dropped.

6. The combination of the reciprocating rising and falling gavel-gatherer, the intermittently-rotating actuating-shaft, the cam-shaped crank-plate, and the guide or lifter arm of the gatherer, substantially as and for the purpose hereinbefore set forth.

7. The combination, substantially as hereinbefore set forth, of the cam-shaped crank-plate, the shaft by the rotation of which the crank-plate is actuated, the reciprocating rising and falling gatherer operated by the crank-plate, the loosely-mounted constantly-rotating pulley on the actuating-shaft, and the clutch-coupling connection between said pulley and shaft to throw the gatherer out of operation upon the descent of the binder-arm.

8. The combination of the gavel-gatherer, the shaft by the rotation of which the gatherer is operated, the clutch-coupling for throwing the shaft into and out of operation, the lever acting on the clutch-coupling and by which its two members are normally held in gear, the controlling-rod engaged by said lever, and the binder-arm acting upon the controlling-rod to throw the clutch out of gear and intermit the operation of the gatherer, substantially as hereinbefore set forth.

9. The combination of the grain-delivering apparatus, the gavel-gatherer, the gavel-evener, and the driven pulley, by connections with which said delivering apparatus, gatherer, and evener are actuated, substantially as and for the purpose hereinbefore set forth.

10. The combination, substantially as hereinbefore set forth, of the reciprocating binder-arm, the reciprocating pivoted gavel-arrester or stop-arm against which the grain is compressed, its spring acting with a tendency to hold it in its lowermost position and against movement by the pressure of the grain, the arm or link actuated by the swing of the arrester to throw the bundle-securing mechanism into operation, the crank on the binder-arm actuating-shaft, and mechanism actuated by said crank to lift the arrester upon the ascent of the binder-arm, for the purpose described.

11. The combination, substantially as hereinbefore set forth, of the binding-table, the gavel-gatherer, the vibrating and reciprocating gavel-arrester, between which and said gatherer the grain is accumulated and compressed, bundle-securing mechanism thrown into operation by the swing of the arrester when a sufficient quantity of grain has been gathered to form a gavel, the rotating shaft, its crank, and mechanism connected with the arrester and actuated by said crank to elevate the arrester and free a bundle.

12. The combination, substantially as hereinbefore set forth, of the swinging gavel-arrester, the vibrating arm to which it is pivoted, and the vertically-reciprocating bar to which said vibrating arm is linked, for the purpose described.

13. The combination of the swinging gavel-arrester, the vibrating arm to which it is pivoted, the vertically-reciprocating bar, the link connecting it with the vibrating arm, the stud on the reciprocating bar, and the roller on the crank of the binder-arm actuating-shaft, substantially as and for the purpose hereinbefore set forth.

14. The combination, substantially as hereinbefore set forth, of the reciprocating binder-arm, its actuating-shaft, the cam-way or slot of the binder-arm, the crank of the actuating-shaft, its pin or roller passing through said cam-way, and the vertically-reciprocating gavel-arrester actuated by said roller upon the ascent of the binder-arm, for the purpose described.

15. The combination of the vertically-reciprocating binder-arm and the swinging pusher pivoted thereto, to insure the discharge of a bound bundle upon the descent of the binder-arm, substantially as hereinbefore set forth.

16. The combination of the vertically-reciprocating vibrating gavel-arrester, the reciprocating arm, in the slot or link of which the arrester works to move it in one direction to throw the binding mechanism into operation, and by the positive movement of which arm in the opposite direction the arrester is caused to forcibly compress the gavel, substantially as and for the purpose hereinbefore set forth.

17. The combination of the vibrating gavel-arrester, the reciprocating arm in the slot or link of which the arrester works, the vibrating arm to which this reciprocating arm is pivoted, the thrust-arm pivoted to said vibrating arm, the stud or roller on the thrust-arm, and the wiper on the binder-arm actuating-shaft, substantially as and for the purpose hereinbefore set forth.

18. The combination of the vertically-reciprocating binder-arm, the cranked actuating-shaft thereof, the tyer-actuating shaft, the intermittently-revolving driving-shaft E, by which said actuating-shafts are thrown into operation, the constantly-rotating loosely-mounted pulley or chain-wheel on said driving-shaft, the clutch-coupling connection between the pulley and shaft, the clutch-shifter by which the clutch-sections are normally held apart, the vibrating gavel-arrester, mechanism connecting it with the clutch-shifter and by the actuation of which the binder-arm and tyer are thrown into action, the roller on the crank of the binder-arm actuating-shaft, and mechanism connected with the arrester and acted upon by said roller upon the ascent of the binder-arm, substantially as and for the purpose hereinbefore set forth.

19. The combination of the driving-shaft E, the binder-arm actuating-shaft geared therewith, the clutch-coupling on said driving-shaft, the clutch-shifter, the reciprocating bar pivoted to the clutch-shifter, the vertically-vibrating elbow-lever pivoted to said bar, its spring, the link-connection between the downwardly-projecting arm of the elbow-lever and a vibrating arm actuated by the gavel-arrester, and the wiper-cam on the binder-arm actuating-shaft operating upon a roller carried by the horizontally-projecting arm of the elbow-lever, substantially as and for the purpose hereinbefore set forth.

20. The combination of the cord-clamps, the two vibrating cord-placers, their reciprocating actuating-arms, and the oscillating shaft, to the opposite ends of which the cord-placers are respectively fixed, substantially as and for the purpose hereinbefore set forth.

21. The combination of the cam-carrier, its cams N n, the arm N^3, its roller, the oscillating shaft to which said arm is pivoted, and the cord-placers carried by said shaft, substantially as hereinbefore set forth.

22. The combination, substantially as hereinbefore set forth, of the cam-carrier, the reciprocating actuating-arm M^3, the cutter, and the slide or reciprocating carrier-frame to which the cutter is pivoted.

23. The combination of the reciprocating arm M^3, the pivoted cord-placers vibrated thereby, the reciprocating carrier-frame, the bracket thereon, and the lug on said reciprocating arm, substantially as hereinbefore set forth.

24. The combination of the reciprocating carrier-frame, the cam-carrier, by the direct action of which it is moved in one direction, the arm M^3, acted upon by the cam-carrier and serving to move the carrier-frame in the opposite direction, and the cutter, substantially as and for the purpose hereinbefore set forth.

25. The combination of the binder-arm, the vibrating cord-placers, and the upper and lower cord-clamps arranged in different vertical planes, and above and below which the cord-placers work to direct the band ends first to the upper clamp and subsequently place the end of the cord in the lower clamp, substantially as and for the purpose hereinbefore set forth.

26. The combination, substantially as hereinbefore set forth, of the binder-arm, the cord-placers, the upper cord-clamp, by which the band ends are held while being looped by the tyer, the lower cord-clamp, by which the end of the cord passing direct to the binder-arm is held, and the cutter for severing the cord forming the band after the end of the binder-arm cord is nipped by the lower clamp and before the release of the band ends by the upper clamp.

27. The combination, substantially as hereinbefore set forth, of the binder-arm, the upper cord-clamp, knotting mechanism acting on the cord while the band ends are held by said clamp, and the lower cord-clamp, to which the end of the cord passing to the binder-arm is directed before the completion of the knot, and by which the end of the cord is nipped before the release of the band ends, for the purpose described.

28. The combination, substantially as hereinbefore set forth, of the reciprocating inner slide-bar or main section of the cord-clamp, the griper-bar or outer sliding section thereof, provided with upper and lower clamping-surfaces in different vertical planes, and the spring acting upon said griper-bar, for the purpose described.

29. The combination of the cord-clamp main slide, the griper-bar or outer clamp-slide, the shoulder thereon, between which and the main slide the cord is nipped, and the cord-arresting nose of said outer slide, substantially as and for the purpose hereinbefore set forth.

30. The combination of the inner clamp-section or slide-bar, the spring-actuated griper-bar or outer section of the clamp, and the stationary clamp-plate, these members being and operating substantially as hereinbefore set forth.

31. The combination of the outer clamp-slide or griper-bar, the stationary plate slotted at its end, and the lower clamping projection of said griper-bar provided with the horn and nose, substantially as and for the purpose hereinbefore set forth.

32. The combination, substantially as hereinbefore set forth,

of the clamp-slide or main section, its arm or shank, the cam-car-

ward toward and against the arrester, and falling into position be-

upon opposite sides of the frame, a shaft journaled upon said bear-

2. In a book-sewing machine, a sliding head to which one or

of the clamp-slide or main section, its arm or shank, the cam-carrier, the griper-bar provided with two clamping-surfaces, the spring bearing on the griper-bar, and the clamp-plate or stationary clamping-surface, for the purpose described.

33. The reciprocating griper-bar Q, provided with the shoulder q, the horn Q^2, and the incline q^2, substantially as and for the purpose hereinbefore set forth.

34. The combination, substantially as hereinbefore set forth, of the rotating non-reciprocating mandrel, the sliding vibrating cord-engaging outer hook rotating with said mandrel, mechanism for imparting the sliding and vibratory movements to said hook, and means whereby the mandrel and hook are turned first in one direction and then in the other to form the loops in the band ends, as described.

35. The combination, substantially as hereinbefore set forth, of the mandrel, turning first one way and then the other, against which the band ends are pressed and upon which the cord is wound to form the outer loop of the knot, the vibrating reciprocating outer hook rotating with said mandrel, and by which the inner loop of the knot is formed, the reciprocating inner hook rotating with the mandrel, and means whereby said hook is caused to engage the inner loop to draw tight the knot, as described.

36. The combination of the rotating mandrel, the vibrating outer hook, its carrier or sliding head, by which it is reciprocated upon the mandrel and caused to rotate therewith first one way and then the other, and the inner hook, rotating with the mandrel and reciprocating therein to draw one loop through the other as cast off, substantially as and for the purpose hereinbefore set forth.

37. The combination of the mandrel, to which is first imparted a movement of rotation in one direction and then a partial reverse turn, the reciprocating hook-carrier or sliding head turning with the mandrel, the vibrating hook, and the incline acting thereon to rock the hook, to allow the loop formed in the cord about the mandrel to be cast off by the sliding head, substantially as hereinbefore set forth.

38. The combination of the rotating mandrel turning in both directions, the reciprocating inner hook rotating therewith, the reciprocating vibrating outer hook, also turning with the mandrel, the head sliding on the mandrel to cast off the cord, the cord-placer, by which the cord is directed to and pressed against the mandrel, cord-clamping mechanism, and the cutter to sever the band ends and enable the inner hook to draw the knot tight, substantially as hereinbefore set forth.

39. The combination of the cord-looping mandrel, the pinion thereon, the sector-rack, the recessed cam-carrier, and the stop-pin on the mandrel, substantially as and for the purpose hereinbefore set forth.

40. The combination of the cord-looping mandrel, the pinion thereon, the cam-carrier, and the stud thereon operating on the pinion to give the reverse turn to the mandrel, substantially as hereinbefore set forth.

41. The combination of the mandrel, the cam-carrier, the sector-rack, the mandrel-pinion, the stop-pin on the mandrel, the stud on the cam-carrier, the stop-lug on the mandrel, and the yielding stop-arm acting thereon, substantially as and for the purpose hereinbefore set forth.

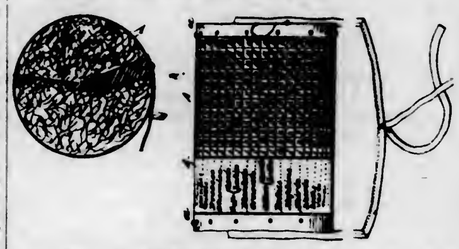
42. The combination of the cord-looping mandrel, the outer cord-engaging hook rotating therewith, the hook-carrying head sliding on the mandrel, the reciprocating carrier-frame, and the bracket thereon engaging the hook-carrying head, substantially as and for the purpose hereinbefore set forth.

43. The combination of the tubular-ended non-reciprocating mandrel, the cam-carrier, mechanism actuated thereby for turning the mandrel first one way and then the other, the reciprocating cord-engaging hook sheathed in the mandrel and rotating therewith, the spring acting on the hook to move it one direction, and the slide-bar actuated by the cam-carrier and serving to move the hook in the opposite direction, substantially as and for the purpose hereinbefore set forth.

44. The combination of the reciprocating carrier-frame, its guideway, the rotating non-reciprocating cord-looping mandrel supported in bearings above the carrier-frame, the cam-carrier acting on said frame to move it outward, the slide-bar actuated by the cam-carrier to retract said frame, mechanism actuated by the cam-carrier for turning the mandrel first one way and then the other, the sliding vibrating outer hook rotating with the mandrel, the reciprocating inner hook also rotating with the mandrel, the thrust-spring acting on the inner hook, the slide-bar of said hook actuated by the cam-carrier, and the bracket on the carrier-frame acting on the outer hook, for the purpose described.

45. The combination of the binding-table, mechanism by which the grain is accumulated thereon, the grain-arrester or stop-arm against which the grain is gathered, and the grain holder (or holders) lifted by the upward pressure of the grain as drawn inward toward and against the arrester, and falling into position behind the gathered grain, for the purpose described.

254,880. LAUNDRY-CUSHION. JAMES A. B. LOVETT, Huntsville, Ala. Filed Jan. 4, 1882. (Model.)

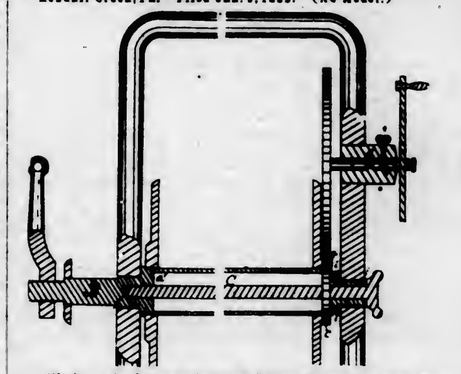


Claim.—1. A laundry-cushion with the ends or heads a, and the fabric-casing A, having a laundry-list and numbered columns or spaces thereon, said columns being adapted to be designated by removable means for indicating any particular number thereon, substantially as and for the purpose set forth.

2. In a laundry-cushion, the combination of the heads or ends a, the connecting-bar a', having its outer edges flush with the edges or peripheries of the ends or heads, the casing A, ruled and printed thereon, and having an internal packing, as shown and described, and for the purpose set forth.

3. In a laundry-cushion, the combination of the ends or heads a, their connecting-bar a', having its outer edges flush with the edges of the heads, the casing A, ruled and printed upon, as described, and having an internal packing, and the casing fastened to the said connecting-bar, substantially as and for the purpose set forth.

254,881. MEASURING-LINE REEL. ERNEST G. MCCLEAN, Kendall Creek, Pa. Filed Jan. 6, 1882. (No model.)



Claim.—1. A measuring-reel having its moving parts surrounded and supported by a frame provided with a device for attaching it to a stationary object, substantially as described.

2. A measuring-reel provided with a secondary shaft having a gear-wheel engaging with a spur-wheel on the main shaft, the whole supported and surrounded by a frame having a device for attaching it to a stationary object, substantially as described, and for the purpose set forth.

3. In a measuring-reel, a frame having a gudgeon provided with a nut anterior to the frame, for the purpose substantially as set forth.

4. In a measuring-reel, a frame having a gudgeon provided with a bearing for a shaft and a nut anterior to the frame, for the purpose substantially as set forth.

5. In a measuring-reel, a frame having an attaching-pin, provided with a bearing for a shaft, in combination with a gudgeon provided with a bearing for the shaft and a nut anterior to the frame, for the purpose set forth.

6. In a measuring-reel, a frame having an attaching-pin and a gudgeon arranged upon opposite sides of the frame, a shaft having its bearings upon said pin and gudgeon, and a clamping-bolt for holding the parts in place, all combined and arranged substantially as described, and for the purpose set forth.

7. In a measuring-reel, a frame having bearings arranged upon opposite sides of the frame, a shaft journaled upon said bearings and provided with a spur-wheel, a bolt for adjusting or clamping the parts, and a driving-wheel meshing in the spur-wheel, all combined and arranged substantially as described.

8. In a measuring-reel, a driving-wheel journaled in a frame and adapted to be moved laterally upon its bearing, and provided with a device, substantially as shown, whereby the shaft, when the wheel has been adjusted, can be fixed, all combined substantially as described, and for the purpose set forth.

9. In a measuring-reel, the combination of a revolving shaft or body having a spur at one end with a driving-wheel meshing in said gear-wheel and provided with an adjustable handle, substantially as shown, whereby the speed of the respective parts can be regulated.

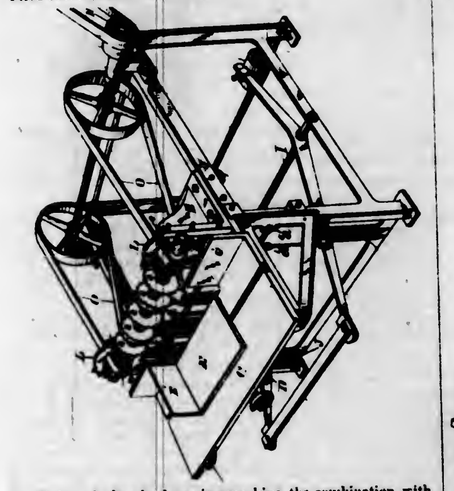
254,882. METALLIC REED FOR MUSICAL INSTRUMENTS. WILLIAM MUNSON, Worcester, Mass., assignor to the Munson Organ Reed Company, same place. Filed Apr. 8, 1881. (No model.)



Claim.—1. A metallic reed for musical instruments, consisting of the slotted reed-plate A, provided with projections c c, the forward end of each projection being inclined at an angle of about ten degrees (10°) to the rear of a line passing vertically through its lower forward end, in combination with the tongue B, secured on its seat between said projections by upsetting or flattening them down thereon, substantially as described.

2. As an improvement in metallic reeds for musical instruments, a reed-plate provided with the two projections on its upper side, having a dovetail groove or channel between them of such size and form as to receive the rectangular heel of a tongue whose upper edges only fit or come into contact with the sides of the channel, in order thereby to guide the free or vibrating portion of the tongue in line with the slot in the plate, a space being left in the channel at its bottom, on each side of the heel, whereby when pressure is applied to said projections the heel of the tongue will be upset and expanded into said spaces, and the metal of the projections for welding or uniting the plate and tongue also closed down therein to insure a solid and permanent bond or union between them which will preclude the possibility of any movement or vibration of the heel in or upon its bed or seat, as set forth.

254,883. BOOK-SEWING MACHINE. ERNEST J. HOLIN, Chicago, Ill., assignor to Edward P. Donnell, same place. Filed Oct. 19, 1881. (No model.)



Claim.—1. In a book-sewing machine, the combination, with a flanged table and an adjustable flanged carriage supported thereon, of one or more circular saws secured to shafts and journaled in vertically-sliding heads, substantially as shown and described.

2. In a book-sewing machine, a sliding head to which one or more saws are attached, in combination with a lever, said sliding head connected to and operated by said lever, substantially as described and shown, and for the purpose set forth.

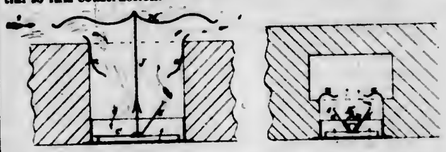
3. In a book-sewing machine, the sliding heads L L, in combination with the adjustable shafts S' S', carrying saws S, substantially as shown and described.

4. The sliding heads L L, to which are attached the shafts S' and S', carrying saws S, provided with racks d, in combination with pinions d^2 on shaft d^3, whereby said heads may be connected and made to move simultaneously when desired, substantially as shown and described, and for the purpose set forth.

5. The table C, having the flanges C' at right angles thereto, in combination with a movable carriage, E, having the right-angled flange E', whereby the sections of the book are evenly adjusted for sewing, substantially as described and shown.

254,884. VENTILATOR. JAMES G. PENNYCUICK, Boston, Mass. Filed Oct. 3, 1881. (No model.)

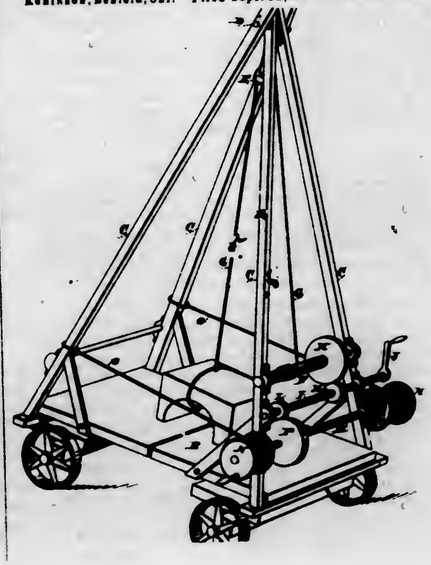
Brief.—The invention contemplates regulating automatically the escape of air from an apartment and to provide for excluding backdraft. To this end a frame built in the wall or loosely inserted in the flue or in direct contact with the atmosphere is provided with spindles arranged at an angle to the face of the frame, which carry suitable valves C C, which only serve to transmit air from the room and close when there is the slightest backdraft. When the frame is built in the chimney or atmospheric contact a division-plate, J, is provided, whereby the escape of air from the room is not effected by any downdraft. A wind-cap, H, is essential to this construction.



Claim.—1. In combination with a perforated ventilator-frame, A, the self-acting valves C C, attached to vertical spindles arranged at an inclination to the face of the frame A, substantially in the manner and for the purpose described.

2. In combination with a ventilator-frame, A, provided with valves C C, hung in an inclined position, the division-plate J and wind-cap H, arranged to operate in an opening passing direct through the wall of a building, in the manner and for the purpose substantially as specified.

254,885. COMBINED TRUCK AND DERRICK. ALEXANDER ROBINSON, Benicia, Cal. Filed Sept. 12, 1881. (No model.)

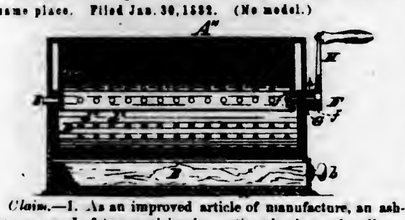


Claim.—1. The separate trucks A B, in combination with the derrick-timbers C, connected with the trucks and converging above and journaled or hinged at their tops, said trucks being adapted to separate or approach by means of appropriate ropes, as shown, when arranged substantially as and for the purpose herein described.

2. The trucks A B and derrick-timbers C, connected therewith and journaled together above, when combined with a lifting-rope, tl, and pulley E, and a means for separating or drawing together said trucks, substantially as herein described.

3. The trucks A B and derrick-timbers C, journaled together as shown, in combination with the shaft F, gear-wheel H, rope G, pulley E, and operating-shaft I, with its pinions K and L, whereby a weight is secured and raised, and the shaft M, with its gear-wheel P and drum N, and the connecting-ropes O, whereby the two trucks are drawn together and a weight is lifted upon them, substantially as herein described.

254,886. REVOLVING ASH-SIFTER. EDWARD G. SCHULTS, Buffalo, N. Y., assignor of one-half to Ferdinand J. Korsten, same place. Filed Jan. 30, 1882. (No model.)



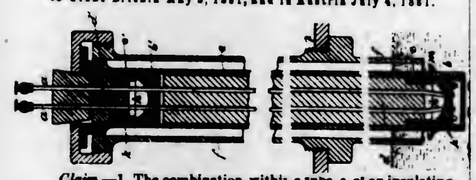
Claim.—1. As an improved article of manufacture, an ash-sifter composed of two semicircular sections having end walls, as specified, said sections being pivoted upon journals or axles located in the center of said sections, whereby the sections are opened and closed by revolving one section around the other, substantially in the manner as and for the object specified.

2. In ash-sifters, two semi-cylindrical perforated sections, D D', journaled as specified, in combination with angular sections F F' on the journal G and bolt *f*, and the handle H, with the socket A, as and for the object specified.

3. As an improved article of manufacture, an ash-sifter consisting of a hinged casing, A, having the drawer B, two semi-cylindrical perforated sections, D D', provided with pivot E and hollow journal G, respectively, the latter having the angular section F', and the bolt *f*, having the angular section F, the whole being constructed and combined substantially in the manner as and for the use and purpose indicated.

4. In ash-sifters having a drum consisting of two semi-cylindrical sections journaled as specified, the means, substantially as described, whereby said sections are locked together in either an open or a closed position, substantially as described, for the object mentioned.

254,887. SAFETY APPARATUS FOR STEAM-BOILERS. RICHARD SCHWARTZKOPFF, Berlin, Germany. Filed Oct. 18, 1881. (No model.) Patented in Germany Aug. 10, 1880, and Apr. 30, 1881, in France May 4, 1881, in Belgium May 4, 1881, in Great Britain May 5, 1881, and in Austria July 4, 1881.



Claim.—1. The combination, within a tube, *e*, of an insulating-cup, *b*, of two insulated conducting-wires, *a a*, connected with an electric alarm-bell or other electric receiver and passing into the said cup, and of a metallic body so arranged with regard to the wires *a a* that it will cause contact between them either by its own fusion or by the fusion of tallow, wax, paraffine, stearine, or any other easily-fusible substance by which the said metallic body is kept suspended, substantially as and for the purpose described.

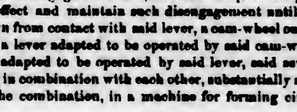
2. The combination, with the tube *e*, containing in its upper part the insulating-cup *b'*, the two insulated conducting-wires *a a*, connected with an electric alarm-bell or other receiver and passing into the said cup, and the easily-fusible metallic ring or body *c'*, arranged as described, of the tube *f*, surrounding the tube *e* and hermetically attached to the same at the top, as hereinbefore described, and for the purpose specified.

3. The combination, with the tubes *e* and *f* and the two conducting-wires *a a*, of the two insulating-cups *b* and *b'* and the two easily-fusible metallic rings or bodies *c* and *c'*, the wires *a a*, passing into or through the cup *b'* and into the cup *b*, substantially as described, and for the purpose stated.

4. The combination, with the tube *e*, containing the cups *b* and *b'*, the conducting-wires *a a* and the fusible metallic rings or bodies *c* and *c'*, and with the tube *f*, made of two parts, of the pipe *l*, as hereinbefore described, and for the purpose specified.

5. The combination, with the tube *e*, surrounded by the tube *f* and containing the described parts *a a*, *b b'*, *c*, and *c'*, of the collar *m*, as and for the purpose stated.

254,888. FENCE-WIRE BARB. SCOTT SHALLWOOD, Chicago, Ill., assignor of one-half to Frank F. Cole, same place. Filed Dec. 23, 1881. (No model.)



Claim.—A sheet-metal barb having two holes about central and at the outer edges thereof, in combination with a single wire passing through said holes, substantially as and for the purpose specified.

254,889. CAR-DOOR HANGER. DENNIS F. VAN LIEW, Aurora, Ill. Filed Jan. 17, 1882. (No model.)

Brief.—Improvement on Letters Patent No. 245,033 by making the horizontal portion of the carrier and hanger inclined.

Claim.—The ball-and-socket hanger composed of the carrier, the hanger, and the ball, both carrier and hanger having laterally-inclined horizontal surfaces or channels upon said surfaces, substantially as and for the purpose set forth.

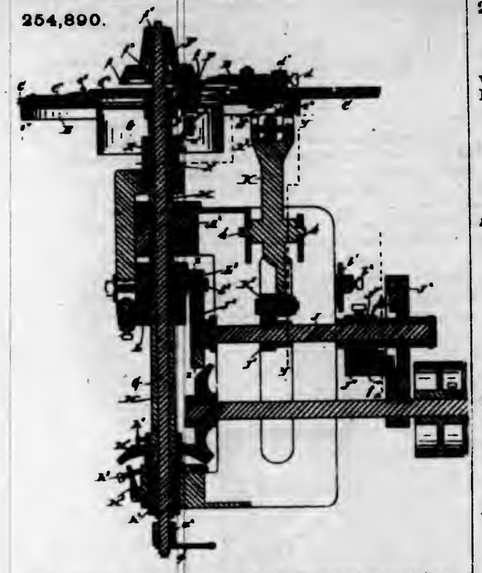
254,890. MACHINE FOR FORMING CIRCUMFERENTIAL CRIMPS IN SHEET-METAL PIPES. WILLIAM A. WHEELER, Indianapolis, Ind. Filed Nov. 14, 1881. (No model.)

Brief.—Improvement on Letters Patent No. 224,974. At a little distance above a ring supporting the end of the pipe the pipe is automatically clamped between an interior cone and exterior sliding jaws. Crimping-wheels carried on a revolving head are automatically forced outward against the pipe.

Claim.—1. In a machine for forming circumferential crimps in sheet-metal pipes, a driving-shaft, a counter-shaft, a loosely-running clutch-wheel thereon which is driven by a wheel on the first shaft, a clutch part on said counter-shaft provided with a spring-bolt adapted to engage with the clutch-wheel, a lever adapted to disengage said bolt, a detent adapted to operate said lever to effect and maintain such disengagement until purposely withdrawn from contact with said lever, a cam-wheel on said counter-shaft, a lever adapted to be operated by said cam-wheel, and a plate, E, adapted to be operated by said lever, said several parts operating in combination with each other, substantially as set forth.

2. The combination, in a machine for forming circumferen

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tial crimps in sheet-metal pipes, of a shaft adapted to rotate intermittently, having a cam-wheel thereon, a vibrating lever operated by said cam-wheel, and a disk adapted to be partially rotated by said lever and connected with the clamps D, which are thereby operated, substantially as set forth.

3. In a machine for forming circumferential crimps in sheet-metal pipes, a disk adapted to partially revolve, and which is provided with slots running at an angle to the radii thereof, through which project points from the clamps D, whereby said clamps, as said disk is turned, are caused to move toward and from a common center, in combination with the lever K and means, substantially as described, for operating the same, substantially as specified, and for the purposes set forth.

4. The combination, in a machine for forming circumferential crimps in sheet-metal pipes, of a horizontal shaft having a cam-wheel and adapted to revolve intermittently, a vertical shaft having a vertically-moving sleeve thereon, with which (or an anti-friction truck thereon) said cam-wheel will engage, a toggle-joint mechanism, means for connecting said sleeve and said mechanism when they are some distance apart, and a set of revolving formers or crimping-wheels adapted to be expanded from each other by said toggle-joint mechanism, substantially as set forth.

5. The combination, with the crimping-wheel-expanding mechanism of a machine for forming circumferential crimps in sheet-metal pipes and means for operating the same, of the two sleeves L N and a connecting-arm, M, which is capable of adjustment by means of a screw-bolt, *m*, and an adjusting-screw, *m'*, substantially as set forth.

6. The combination, with crimping mechanism of a machine for forming circumferential crimps in sheet-metal pipes, of the shaft H, the sleeve H^2, the bell-crank lever H^3, and the adjusting-screw h^4, whereby said mechanism may be adjusted vertically and the position of the crimps in the pipe thus determined, substantially as set forth.

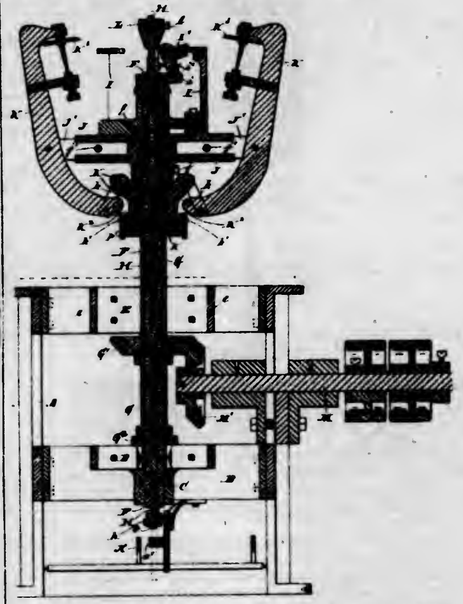
7. The combination of the clamping mechanism of a machine for forming circumferential crimps in sheet-metal pipes, the shaft whereby said mechanism is driven, the clutch parts J^2 J^4, the spring-bolt j^4, which is the means of engagement between said two parts, a lever, J^3, for withdrawing said bolt, and a detent, b', for operating said lever, substantially as set forth.

8. The combination, with the adjustable segments *f*, of the inside sleeve, *f'*, and cone-shaped nut f^2, whereby said segments can be expanded and the size of the working portion of the inside clamp or rest, F, thus increased to compensate for the wear incident to its use or varied to accommodate variations in the size of the pipe to be operated upon, substantially as set forth.

9. The combination, with the ring C^2, upon which the pipe-section rests while in the machine, of the adjustable brackets C', which sustain said ring, and by which the position thereof can be varied, substantially as set forth.

254,891. MACHINE FOR CLOSING DOWN THE SEAMS OF SHEET-METAL PIPE. WILLIAM A. WHEELER, Indianapolis, Ind. Filed Nov. 5, 1881. (No model.)

Brief.—Pressure on the treadle first operates clamping devices, then throws in revolving jaws which carry seaming-wheels. Device O locks clamping devices until treadle rises.



Claim.—1. In a machine for closing down the seams connecting sections of sheet-metal pipe together, the combination of a circular frame of about the same diameter inside as the outside diameter of the pipe for supporting said pipe, rollers carried by jaws which revolve around outside of said frame and said pipe, means for revolving said jaws, and means for bringing said rollers down close to said frame, whereby they are enabled to force the crimps forming the seam of said pipe down upon the top of said frame, and thus pinch said seams tightly together, substantially as set forth.

2. The combination of the outside revolving hollow shaft carrying the arms and jaws, means whereby said jaws may be operated, the inside stationary hollow shaft carrying the frame and inside clamps, and the inside vertically-movable rod, whereby said clamps may be operated, substantially as set forth.

3. The combination, with the clamps for holding the pipe while being operated upon, of the treadle N, device O, studs *a* and *a'*, and rod H, substantially as set forth.

4. The combination of the treadle N, rod P, head P', trunnioned ring K^2, toggle-center K', toggle-links *k*, and jaws K, the upper ends of which are armed with devices for closing the pipe-seams, substantially as described, and for the purposes specified.

5. The combination, with the jaws K, having suitable devices upon their upper ends for closing the pipe-seams, of the device J, having adjustable arms J', whereby the distance between said jaws may be increased or lessened, substantially as set forth.

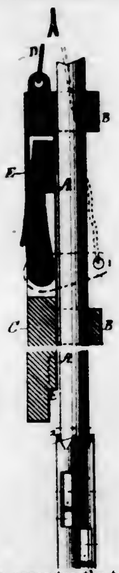
6. The combination, with the adjustable arms J', of the tie-rods J^5, whereby said arms are secured in position and are at the same time rendered accurately adjustable, substantially as set forth.

7. The combination of the treadle N, rod H, head L, clamps I I', vibrating jaws K, pivoted at *j*, and carrying closing-down wheels, and mechanism for operating the same, substantially as set forth.

254,892. WELL-BORING APPARATUS. FRANK WESLAR, San Francisco, Cal. Filed May 6, 1881. (No model.)

Claim.—1. The tool-holder C, with its clasps B, sliding upon the rods A, and the rope or flexible connection D, by which it is raised or lowered independent of the rods, in combination with the square lower section of the rod A, to receive the clasps and unite the holder with the rod, substantially as and for the purpose herein described.

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2. In a well-boring apparatus, the tool-holder C, having the clasps B to slide upon the rods A and fit the lower section, in combination with the acute-angled projections *a* on the rod and the similar projection or guide, *c*, upon the holder, substantially as and for the purpose herein described.

3. In a well-boring apparatus, the tool-holder C, having the clasps B to slide upon the rods A and fit the lower section, in combination with the latch or catch E, which engages and locks in slots in the rod or shank, substantially as and for the purpose herein described.

4. In a well-boring apparatus, the tool-holder C, with its clasps B, sliding upon and fitting the lower end of the rods A, and united thereto by the latch E, in combination with the arm *s* and rope *s*, connected with the main rope or an equivalent device, substantially as and for the purpose herein described.

5. In a well-boring apparatus, a tool-holder, C, guided so as to move up and down the actuating-rods by means of a rope, D, without moving said rods, in combination with a latch or equivalent connection by which to unite said tool-holder with the lower end of the rods, substantially as and for the purpose herein described.

254,893. BAG-HOLDER. JAMES E. WHITMAN and ELBRIDGE M. BROWN, Spring Valley, Minn. Filed June 11, 1881. (No model.)

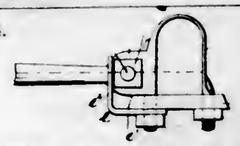


Claim.—As an improvement in bag-holders, the combination, with the forwardly inclined or slanting platform A, having a single coaster, F, swiveled at its rear end, of the two parallel uprights, B B, secured one on each side of the platform and connected near their center by rearwardly-curved rigid semicircular cross-brace C, and having rigidly secured to their top the horizontal cross-pieces or braces D D, having projecting edges, over which cross-pieces the top of the bag is adjusted.

254,894. THILL-COUPLING. GEORGE E. WILSON, Morristown, assignor of one-half to Austin D. Taylor, Belmont County, Ohio. Filed Dec. 30, 1881. (Model.)

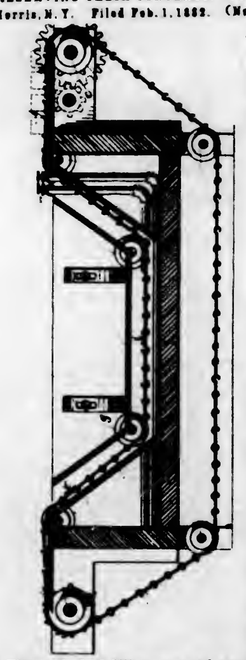
Claim.—1. The combination, with the clip and bolt for holding the thill to the axle, of a lock-bar pivoted and turning laterally to and from the jaw of the clip and against the edge of the nut on the end of the bolt which holds the thill to the clip, substantially as set forth.

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2. The combination, with the clip and bolt for holding the thill to the axle, of an L-shaped lock-bar having its end *c'* fixed and turning on the under end of the bolt which holds the clip to the axle, and turning laterally to and from the jaw, and having its end *c²* arranged to turn in against the jaw and close to the edge of and lock the nut on the end of the bolt which holds the thill to the clip, substantially as set forth.

254,895. METHOD OF AND APPARATUS FOR FILLING CANS AND PRESERVING THEIR CONTENTS. JOHN C. WINTERS, Mount Morris, N. Y. Filed Feb. 1, 1882. (No model.)



Claim.—1. The method of filling cans and preserving their contents, the same consisting in mechanically passing such cans through the filling liquid at a rate of speed commensurate with the length of time required for the processing of their contents, substantially as described.

2. A water-tight tank, an endless carrier passing through such tank, and guides in said tank for the article carried by such carrier, combined substantially as shown and described.

3. A machine for filling cans and preserving their contents, the same consisting of a water-tight tank, an endless carrier traveling through said tank, means to move such carrier at a regulated speed, variable at pleasure, and guides through which the carrier moves in taking its burden through the apparatus, substantially as shown and described.

4. The water-tight tank, an endless carrier adapted to travel therethrough, and adjustable guides, combined substantially as and for the purpose set forth.

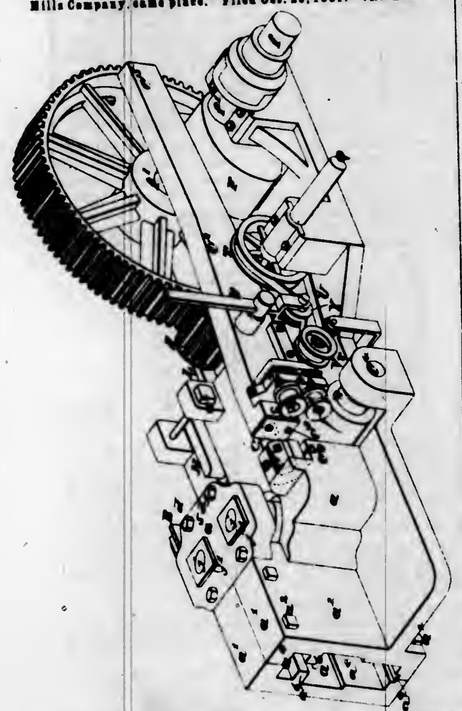
5. The water-tight tank, endless belts adapted to travel therethrough, lugs connecting said belts transversely to forward positively the article supported by said belts, and guides for retaining in the proper position the article carried by said belts, combined substantially as described.

6. The water-tight tank, the endless carrier, two sets of guides adjustable horizontally toward or from each other, one set of such guides being also adjustable vertically to vary the distance between the two sets, substantially as and for the purpose described.

7. A water-tight tank, heating apparatus within the same to keep its contents at a given temperature, an endless carrier, and

guides, and means to operate said carrier to cause it to forward its burden in the path of the guides through the contents of said tank at a given uniform rate of speed, whereby fruit, vegetables, and other material in cans, jars, or other like receptacles may be supplied with the requisite quantity of liquid and preserved, substantially as described.

254,896. LINK-BENDING MACHINE. LEONARD ACHESON, St. Louis, Mo., assignor to the Helmbacher Forge and Rolling Mills Company, same place. Filed Oct. 29, 1881. (No model.)



Claim.—1. The combination of the shear-arm C^2 and the feed-rolls B B', substantially as described.

2. The combination of the shear-arm C^2, the feed-rolls B B', and the shears C C', substantially as described.

3. The combination of the frame *a*, the shear C, the arm C^2, having the extension C^3, the fulcrum C^4, and the shear C', said shears being arranged as shown and described.

4. The combination of the shear-arm C^2, the feed-rolls B B', the gears W W' W^2 W^3, the shaft *r*, and the pulley V, substantially as described.

5. The combination of the shear-arm C^2, the feed-rolls B B', the gears W W' W^2 W^3, the pulley V, the belt U, the pulley T, and the pulley Y, substantially as described.

6. The combination of the shear-arm C^2, the pulley V, the belt U, the shaft Q, the pulley T, and the pulley Y, substantially as described.

7. The combination of the mandrel H, having the shank *h*, the carriage I, and the friction-belt O and spring *o*, substantially as and for the purpose set forth.

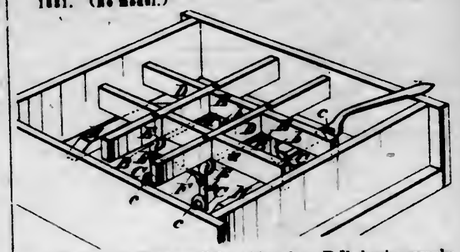
8. The combination of the frame *a'* *a'*, the projections a^3 a^3, the carriage I, having the mortise, the mandrel H, having the shank *h* and the arm *h'*, and the friction-belt O and spring *o*, substantially as described.

9. The combination of the frame *a'* *a'*, having the ledges a^4 a^4, the rotating heads J J', the carriage I, and the mandrel H, said mandrel being vertically adjustable in said carriage, as and for the purpose set forth.

10. The combination of the frame *a'* *a'*, having the ledges a^4 a^4, the mandrel H, the rolls D D', and the rotating heads J J', substantially as described.

11. The combination of the frame *a'* *a'*, the rolls D D', the mandrel H, the heads J J', the shafts *j j*, the pinions *j'* *j'*, the carriage I, and the racks K K, substantially as described.

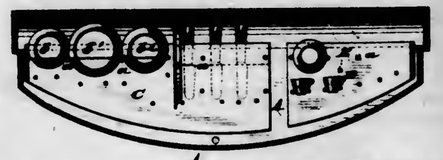
254,897. TIRE-COOLER. DORA AMMERMAN, THOMAS BAIRD, and EBENEZER H. FOREMAN, Fairmount, Ill. Filed Aug. 26, 1881. (No model.)



Claim.—1. The parallel rocking bars B B, having cranks with journals working in staples C, in combination with the rack D, connected by eyebolts E with the parts *a* of the rocking bars, as shown and described.

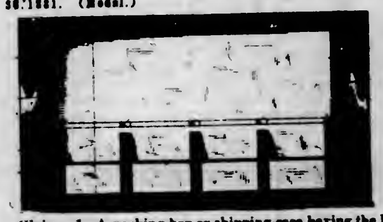
2. The combination, with the rocking bars B B, of the parallel leveling-bars H, arranged on opposite sides and in the bottom of box, as and for the purpose specified.

254,898. DISH-WASHING MACHINE. SALLIE J. ARMSTRONG, Bartlett, Tenn. Filed Dec. 8, 1881. (No model.)



Claim.—In a dish-washer, the combination of the pan or vessel A, provided with the rack C, and tilting rack D, having a crank-shaft, E, for rocking or tilting it from the outside within the pan A independent of the stationary rack C, as shown and set forth.

254,899. SHIPPING-CASE FOR JARS AND BOTTLES. BENJAMIN S. ATWOOD, South Abington Station, Mass. Filed July 26, 1881. (Model.)



Claim.—1. A packing-box or shipping-case having the lower interior portion of its sides and ends projecting inwardly beyond said upper portion and provided with vertical grooves, in combination with the strips of the rack, detachably fitted in said grooves substantially as herein set forth.

2. The box-head having a hand-hole, and an interior covering-board provided with a cavity located opposite said hand-hole, as and for the purpose set forth.

3. In a packing-box, the combination of the end boards, consisting of an outside apertured board, two vertical strips or bars, and a smaller interior board having a cavity, with the side boards, the cover, and the rack let into the side boards and end boards, as and for the purpose set forth.

254,900. BOX-FASTENER. BENJAMIN S. ATWOOD, South Abington Station, Mass. Filed Aug. 4, 1881. (No model.)



Claim.—The combination of the recessed or notched cover, the pendent slotted plate projecting below the same, the double-

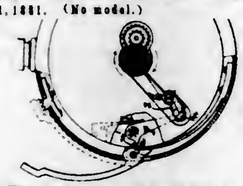
spring latch secured to the under side of the cover and extending

Claim.—1. The rear-wheel B, mounted upon shaft *b*, and

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spring latch secured to the under side of the cover and extending through the pendent plate, the box having a notch in its upper edge, the double-hooked plate extending above the bottom of said notch on the inner side of the box, and the stay-plate, as and for the purpose herein set forth.

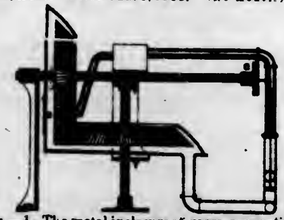
254,901. ALARM-WATCH. JOSEPH BACHNER, New York, N. Y. Filed Aug. 1, 1881. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of the anvil on the rim of the watch-case for the reception of a percussion-cap, the hammer hung by an interior pivot to the case-rim, and having its outer end adapted to strike the anvil, the hammer-spring on the interior of the case-rim, the index-wheel on the arbor of the hour-hand carrying a trip-pin, and the hammer-lock mechanism adapted to be actuated by the trip-pin for releasing the hammer.

2. The combination, substantially as hereinbefore set forth, of the anvil on the rim of the watch-case for the reception of a percussion-cap, the hammer hung by an interior pivot to the case-rim, and having its outer end adapted to strike the anvil, the hammer-spring on the interior of the case-rim, the dog engaging the hammer, the trigger engaging the dog, and the index-wheel on the arbor of the hour-hand carrying a trip-pin adapted to actuate the trigger.

254,902. AUTOMATIC LUBRICATOR. FRANK H. BARBER, Holyoke, Mass. Filed Jan. 6, 1882. (No model.)

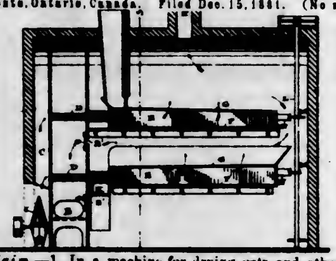


Claim.—1. The metal inclosure of gears, preventing the flying off of the lubricating material.

2. The connection of the same with the force-pump.

3. The reservoir, forming a settling-tank.

254,903. MACHINE FOR DRYING GRAIN. JOHN BARCLAY, Toronto, Ontario, Canada. Filed Dec. 15, 1881. (No model.)

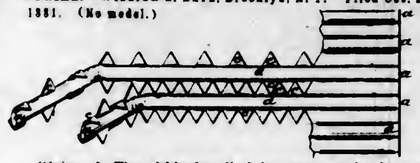


Claim.—1. In a machine for drying oats and other grain through the application of artificial heat, one or more sieves arranged to carry the grain, and contained within a chamber through which the smoke and heated gases from a furnace are conducted, an air-space below each sieve and supplied with heated air under pressure, so that in passing through the sieves the force of its escape prevents the smoke mixing with the grain carried on the sieves.

2. The sieves O, provided with air-chambers E, in combination with the furnace B, the pipes D, passing through the furnace and into the air-chambers E, and suitable means for forcing a current of air through said pipes D, substantially as described.

3. The combination, with the sliding sieves O, of springs at one end of said sieves, and the vertical shaft L, provided with wipers M, to operate against the opposite ends of said sieves, and the pipes D, serving as inlets to the sieves and as supports for the said springs, substantially as described.

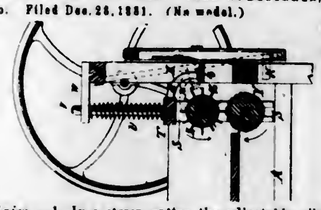
254,904. PROCESS OF PRODUCING BARBED FENCING MATERIAL. WILLIAM S. BATH, Brooklyn, N. Y. Filed Oct. 27, 1881. (No model.)



Claim.—1. The within-described improvement in the mode of making barbed fence-wire, the same consisting in first forming a sheet with a series of parallel ribs separated by thin webs, then cutting said webs on both sides of each rib and on zigzag lines, producing barbs on the opposite ribs and on both sides of each rib without waste, and then bending said barbs, as specified.

2. As a new article of manufacture, a barbed wire consisting of a strip, *a*, having △-shaped barbs, one-half the barbs on opposite edges being radial to the wire, the other and intermediate barbs being bent on opposite sides tangential to the wire, as set forth.

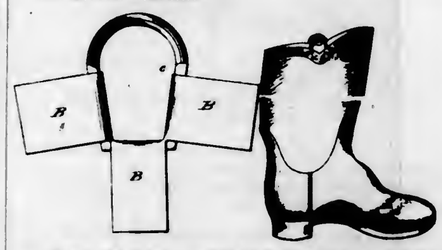
254,905. STRAW-CUTTER. JOHN W. BAUGHMAN, Wooster, Ohio. Filed Dec. 28, 1881. (No model.)



Claim.—1. In a straw-cutter, the adjustable gibs K, constructed substantially as herein shown and described, and consisting of the plate 1, having end and side flanges, the plate 2, having end flange and longitudinal slot, and the fastening-bolt 6, as set forth.

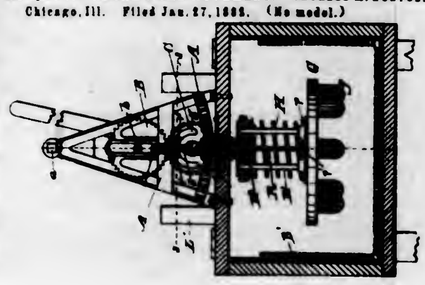
2. In a straw-cutter, the guide-arms W, the rods V, and the cross-bar T, in combination with the bars S and the device *a b*, whereby the top roll and plate *b* are pressed simultaneously upon the straw, as and for the purpose specified.

254,906. BOOT-STRAP. JOHN B. BELCHER, Charlotte, Mich., assignor of one-half to Frank S. Belcher, same place. Filed Jan. 18, 1882. (Model.)



Claim.—The combination of the metallic loop A, the cloth or rubber holder B, the cloth and rubber support D, and the rubber boot-leg, as and for the purpose herein described and specified.

254,907. MECHANICAL MOVEMENT. CHARLES A. BENYOUR, Chicago, Ill. Filed Jan. 27, 1882. (No model.)



Claim.—1. The gear-wheel B, mounted upon shaft *b*, and having wrist r^1, adapted to impart vibratory motion to segment-gear A, substantially as described.

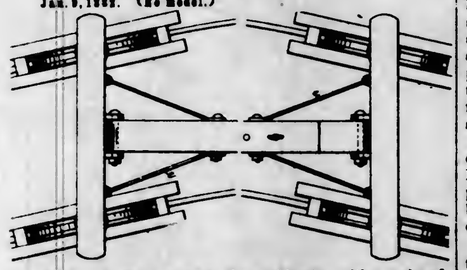
2. The combination of gear-wheel B, having wrist r^1, loop S, and connecting-rod R, adapted to transmit vertical motion to disk G, substantially as described.

3. The combination of slotted gear C with the pins *r*, adapted to secure true vertical motion to the lower part of loop S, substantially as described.

4. The gear-wheel C, mounted on shaft *c*, having teeth on its periphery and the circular slot S′ through it, adapted to impart motion from its shaft to gear-wheel B and move over pins *r* by reason of its semicircular slot S′, substantially as described.

5. The spring H, in combination with disk G, having the two guide-rods R′ and the hollow journal E, adapted to force down again the disk after it has been drawn up by the described mechanical movement, substantially as described.

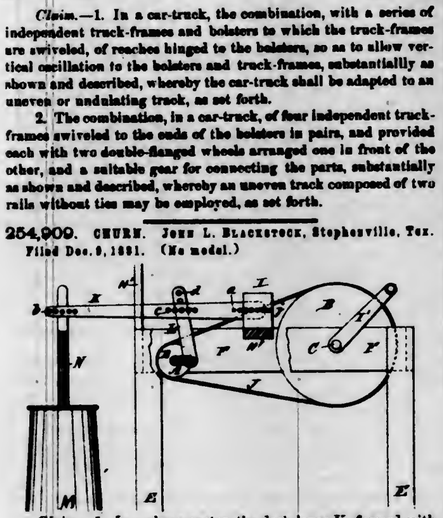
254,908. CAR-TRUCK. ALANSON A. BLACKMAN, ELNAHAN BLACKMAN, and HYRCANUS BLACKMAN, Snohomish, Wash. Filed Jan. 9, 1882. (No model.)



Claim.—1. In a car-truck, the combination, with a series of independent truck-frames and bolsters to which the truck-frames are swiveled, of reaches hinged to the bolsters, so as to allow vertical oscillation to the bolsters and truck-frames, substantially as shown and described, whereby the car-truck shall be adapted to an uneven or undulating track, as set forth.

2. The combination, in a car-truck, of four independent truck-frames swiveled to the ends of the bolsters in pairs, and provided each with two double-flanged wheels arranged one in front of the other, and a saltable gear for connecting the parts, substantially as shown and described, whereby an uneven track composed of two rails without ties may be employed, as set forth.

254,909. CHURN. JOHN L. BLACKSTOCK, Stephensville, Tex. Filed Dec. 9, 1881. (No model.)



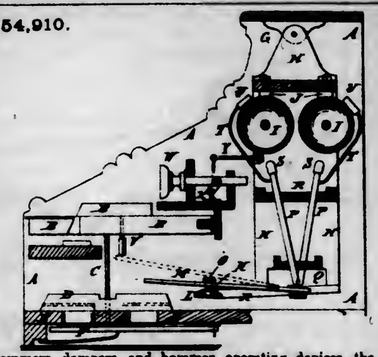
Claim.—1. In a churn-motor, the dash-lever K, formed with the series of holes *a*, *b*, and *c*, in combination with the vertical board I, formed with the series of holes *j*, and the connecting-rod L, formed with the series of holes *d*, substantially as and for the purpose set forth.

2. In a churn-motor, the combination, with the rectangular frame E F G, the cross-bar H, the drive-wheel B, and the crank-shaft A, provided with the pulley D, of the vertical board I, provided with the series of holes *j*, the dash-lever K, provided with the series of holes *a b c*, the connecting-rod L, provided with the series of holes *d*, and the guide-arms H′, substantially as and for the purpose set forth.

254,910. BELL ATTACHMENT FOR ORGANS. RUFUS W. BLAKE, Derby, Conn. Filed Dec. 13, 1881. (No model.)

Claim.—1. A bell attachment for organs, made substantially as herein shown and described, and consisting of a swinging bell-frame suspended within the organ-case and carrying the bells, their

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hammers, dampers, and hammer-operating devices, the whole adapted to be swung forward by the movement of a pull-stop, so as to bring the hammer-levers under the pins of the organ-keys and cause the sounding of the bells when the organ-keys are depressed, and by the contrary movement of the pull-stop to swing the bell-frame back, and thereby carry the hammer-levers away from the organ-keys, so that the latter will not sound the bells, all as set forth.

2. In a bell attachment for organs, the combination, with the case and the keys of an organ, of the hinged frame H, the bells I, the hammers S, the dampers U, the levers M, and the screw-pins V, substantially as herein shown and described, whereby the bells can be operated by the organ-keys and thrown into and out of gear, as set forth.

3. The combination, with the case A, having brackets G at the upper part, of the frame H, hinged at the projecting upper ends of its side bars to said brackets, whereby said frame may be applied to different organ-cases, as described.

4. The combination, with the case A, of the hinged frame H and bells I, attached in two rows by brackets J to the top board of said frame, as and for the purpose set forth.

5. The combination, with the bells, dampers T U, and hammer-pitmen P, passing through the boards Q, of the hinged frame H, having the top-beveled fulcrum-board L, the levers M, pivoted to the highest part of said board, and the cap-board O, as and for the purpose specified.

6. The combination of the keys B, having screw-pins V on the under side, the levers M, fulcrumed on board L, and the hinged frame H, whereby the ends of said levers are brought beneath the screw-pins, as described.

7. The combination, with the bell attachment and keys B, of the hinged frame H and draw-stop W, connected by rod Y, and crank-rod X, as and for the purpose specified.

254,911. VAPOR-BURNER. WILLIAM B. BLAKE, Bedford, Ohio. Filed Jan. 20, 1882. (No model.)

Brief.—The burner-slit is cut deeper upon one side than upon the other, and an irregular blaze is produced; but a portion of it is deflected by the deflector, thus leaving the remainder symmetrical in form.



Claim.—1. In a vapor-burner, a tip having its slit cut deeper upon one side than the other, in combination with a deflector which is placed upon the inlet-pipe, substantially as shown.

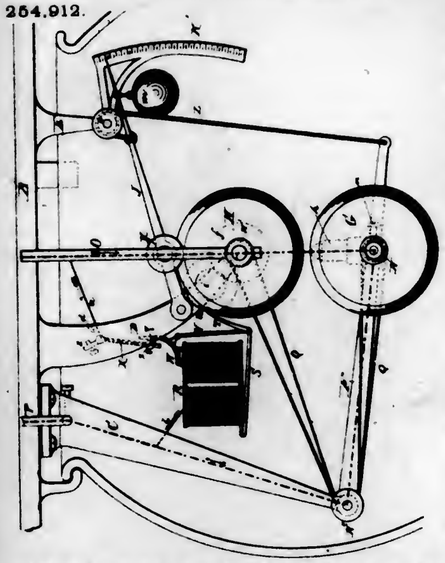
2. The combination of a vapor-burner with a deflecting device, the parts being so arranged that a portion of the gas which is escaping from the tip will be deflected without impairing the symmetry of the flame for the purpose of vaporizing the fluid, substantially as described.

3. The combination of the inlet-pipe provided with a deflector which has its inner edge to extend inward toward or against the side of the tip, the vaporizing-tube, and a tip which has its slit cut deeper upon the side which is next to the deflector for the purpose of producing a subsidiary jet, substantially as described.

254,912. ELECTRIC LAMP. VIRGIL W. BLANCHARD, New York, N. Y. Filed Feb. 10, 1881. (No model.)

Claim.—1. In an electric lamp, the combination of the light-

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producing devices and a meter for registering the total volume of electrical energy used, substantially as described.

2. The combination, in an electric lamp, of the suitably-supported revolving-disk electrode H with the arm J, carrying pulley K and the scale K', substantially as and for the purpose set forth.

3. The combination, in an electric lamp, with the revolving-disk electrodes H and G, the latter hung upon a pivoted arm, of the cord L, pulley *e*, weight *m*, arm J, and pulley K, whereby the one is automatically fed toward the other, substantially as described.

4. The combination, in an electric lamp, of the revolving disks H and G, arm F, pulleys N N' N'', band O, cord L, arm J, pulley *e*, weight *m*, and pulley K, substantially as described.

5. In an electric lamp, the combination, with the revolving disk H and the revolving disk G, mounted upon the swinging arm, of the feeding mechanism composed of the toothed pinions *i* and *f*, ratchet-wheel *u*, pawl T, armature S, and electro-magnet R, and the bands and pulleys for transmitting motion from one disk-shaft to the other, substantially as described.

6. The combination, in an electric lamp, of the conductor O, wire *a*, pendulum X, bell-crank lever W, electro-magnet R, armature S, arm V, and a suitable electrical connection between said magnet and the conductor P, substantially as described.

7. The combination, in an electric lamp, of the electrodes and their operating devices, and the pendent studs supporting the same, the cap B and the globe supported by said cap, substantially as described.

8. The combination, in an electric lamp, of the pendulum X with the bell-crank lever W, connecting-arm V, armature S, electro-magnet R, and suitable electrical connections between the opposite terminals of said magnet and the main light-circuit, substantially as described.

9. The combination, in an electric lamp, of the disk H, having beveled margins, with the grooved pulley, arranged to straddle the edge of said disk and bear upon said beveled margins without pressing heavily upon the edge formed by the junction thereof, substantially as and for the purpose set forth.

10. The combination, in an electric lamp, of the rotary-disk electrode H, having beveled margins, with the grooved pulley K, bearing upon said margins, but not upon the edge formed by the junction thereof, the arm J, weighted cord L, and the hinged arm F, carrying the electrode opposite to the disk H, substantially as and for the purpose set forth.

254,913. BUTTON. BERTHOLD BLOCK, New York, N.Y. Filed Dec. 29, 1881. (No model.)

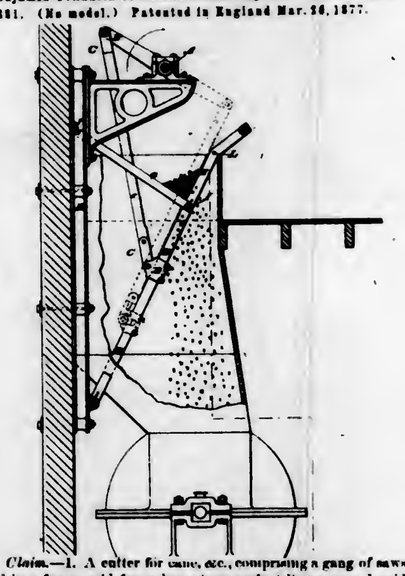


Claim.—1. The plates E and F, having angular hubs *d*, combined with the stem B of the button, in which they are hung, and with the yoke C and spring D, substantially as specified.

2. In a button, the combination of its body A and stem B with the yoke C, that straddles the stem, and with the spring D, placed beneath said stem into said yoke, and with the lower swinging plate or plates hung on the pivot-pin *b*, substantially as described.

3. The folding plates E F, combined in a button with spring D and yoke C, and made, one or both, with slotted hub *d*, to operate substantially as herein shown and described.

254,914. MACHINE FOR CUTTING SUGAR-CANE. FRANÇOIS ALCIDE BOUDUPIN, Mauritius Island, assignor of one-half to Benjamin Franklin Stevens, London, England. Filed Sept. 1, 1881. (No model.) Patented in England Mar. 26, 1877.

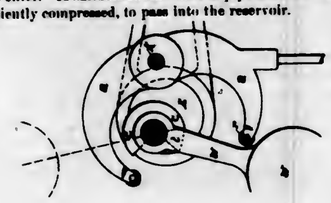


Claim.—1. A cutter for cane, &c., comprising a gang of saws fixed in a frame, said frame hung to a crank at its upper end, said crank mounted in rotative bearings, slides to which the frame is coupled at its lower end, said slides arranged to reciprocate on inclined guides when the crank is rotated, and a slotted cradle to hold the material to be cut, all combined and arranged substantially as set forth, whereby the gang of saws moves upward entirely outside of the bed occupied by the cane and is brought down upon the same with a chopper-like action, substantially as set forth.

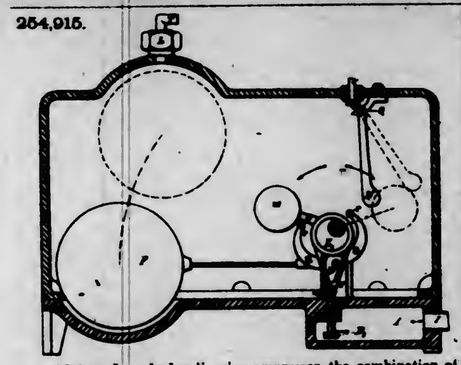
2. A cutter for cane, &c., wherein the cane is placed in its cradle or bed and cut at one operation, which comprises a gang of saws mounted in a frame, C, a crank, B, rotatively mounted, to which the upper end of the frame is coupled, slides D, to which the lower end of the frame is coupled, inclined guides E, on which the slides D reciprocate, and a cradle to hold the material to be cut, the bottom of which is composed of bars G, between which the saws reciprocate, and the front wall, H, of bars arranged in the same inclined plane with the guides E, substantially as set forth.

254,915. HYDRAULIC AIR-COMPRESSOR. JEROME BRADLEY, New York, N.Y. Filed Oct. 26, 1881. (No model.)

Brief.—Air is compressed by water rising in box A, which, by carrying with it the float F, opens an eduction-port when the operation is completed and allows the water to flow out and fresh air to enter. A suitable check-valve in pipe L allows the air, when sufficiently compressed, to pass into the reservoir.

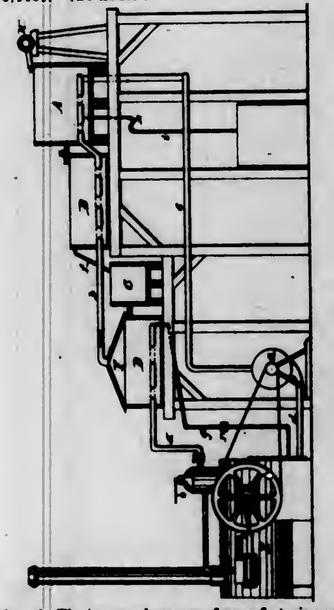


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Claim.—In a hydraulic air-compressor, the combination of the rubber-faced inlet and outlet poppet-valves D' and D, connected with suitably-set eccentrics E and E' on a shaft, S, with the cam *c* and weighted arm *w*, operated by the float F through the forked piece *a*, substantially as and for the purpose set forth.

254,916. PROCESS OF AND APPARATUS FOR MANUFACTURING SALT. OLIVER L. F. BROWNE, Syracuse, N.Y. Filed Dec. 13, 1881. (No model.)



Claim.—1. The improved process of manufacturing salt from natural brine, consisting in conveying the brine successively through preliminary evaporating and purifying tanks or vessels to the final evaporating and granulating vessel, applying the primary and main heating agent to said granulating-vessel, and collecting from the latter the vapor emitted from the brine in process of granulation, and applying said vapor to the preliminary evaporating and purifying vessels for the purpose of heating the contents thereof, substantially as set forth.

2. The within-described process of manufacturing salt from natural brine, consisting in passing the crude brine through one or more preliminary heating and purifying tanks or vessels to the final evaporating and graining vessel, applying the primary heating agent to the latter and gathering the vapor generated in the said evaporating and graining vessel, and applying said vapor to the preliminary heating and purifying tanks in such a manner as to heat the brine contained therein and bring the same to that degree of saturation at which oxide of iron, carbonate of lime, and the usual attendant sulphates are precipitated, then introducing soda-ash to neutralize and precipitate the chlorides of calcium and magnesium, and drawing off the purified brine into the final evaporating and graining vessel, and there reducing it to salt, substantially as set forth.

3. The within-described process of manufacturing salt from natural brine, consisting in introducing the brine into a suitable receptacle and admixing therewith a sufficient quantity of salt to increase its density to the degree of saturation, then allowing the impurities to settle, and subsequently drawing off the purified and saturated brine and conveying the same to the final evaporator or grainer, and there converting it into salt, substantially as specified.

4. The within-described process of purifying natural brine preparatory to converting the same into salt, consisting in introducing the brine into a suitable vessel or tank, and there heating the brine and admixing with it common salt in sufficient quantity to bring the brine to the point of saturation, thereby precipitating the oxide of iron, carbonate of lime, and the usual sulphates with which natural brine is generally contaminated, then drawing off the purified brine to the final evaporator or grainer, and there reducing it to salt, as set forth.

5. The within-described process of manufacturing salt from natural brine, consisting in introducing the brine into a suitable receptacle, and there heating the brine and admixing with it common salt sufficiently to saturate said brine, and adding thereto soda-ash, and after the resultant elimination of the impurities conveying the purified brine to an evaporating apparatus, and there converting said brine into salt, substantially as set forth.

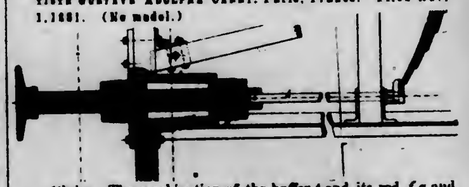
6. A salt-water-evaporating apparatus comprising a granulator or final evaporator heated by the primary heating agent, vats or suitable receptacles for preliminary heating and purifying of the brine heated by the vapor emitted from the granulator, and suitable ducts for conveying the brine successively through said tank to the granulator, substantially as set forth.

7. A salt-water-evaporating apparatus comprising a grainer or final evaporator heated by the primary heating agent, vats or suitable receptacles for preliminary heating, evaporation, and purification of the brine heated by the vapor emitted from the grainer or final evaporator, and a settling-tank interposed between the said grainer and preliminary heating and purifying tanks, the brine being conveyed successively through the said tanks to the grainer, substantially as set forth.

8. A salt-water evaporator consisting of the following appliances and arrangements, to wit: first, a receptacle for the crude brine; second, a brine-saturating tank or vessel having communicative connection with the first receptacle; third, a tank arranged to receive the saturated brine of the second tank and allow the impurities of said brine to settle; fourth, a grainer or final evaporator communicating with the third tank; fifth, a steam-generator; sixth, a steam-duct extended from the steam-generator through or along the grainer or final evaporator; seventh, a cover applied to the top of the grainer; eighth, a vapor-duct extended from the cover through the brine-saturating tank and the first crude-brine receptacle; and, ninth, a suction fan or pump having its induction-port communicating with the end of the aforesaid vapor-duct and its discharge directed to the fire-box or furnace of the steam-generator, all arranged and operating substantially as described and shown.

9. The receptacle A, saturating-tank B, settling-tank C, and grainer D, communicating successively, as described, in combination with the steam-generator E, having the steam-pipe *a* extended through the grainer D and returned from there to the steam-generator, the cover F, having the vapor-duct *b* extended through the saturating-tank B and through the crude-brine receptacle A, and the fan G, having its induction-pipe *c* connected with the vapor-duct *b* and the crude-brine receptacle A, and its discharge-pipe *d* communicating with the fire-box of the steam-generator E, all arranged and combined substantially as described and shown, for the purpose set forth.

254,917. HYDRAULIC BUFFER FOR VEHICLES. JEAN BAPTISTE GUSTAVE ADOLPHE CABET, Paris, France. Filed Nov. 1, 1881. (No model.)



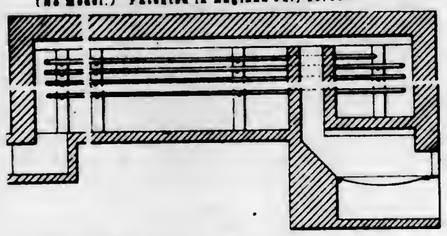
Claim.—The combination of the buffer *f* and its rod *f g* and piston *q*, having orifice or orifices *n*, with the cylinder *k*, having

tapering rod or rods m, and with the spring r, for operation substantially as specified.

254,918. PURIFICATION OF ALKALINE SOLUTIONS. EUSTACE CAREY, HOLBROOK GASKELL, Jr., and FERDINAND HUNTER, Widnes, County of Lancaster, England. Filed Dec. 15, 1881. (No specimens.) Patented in England Mar. 17, 1881.

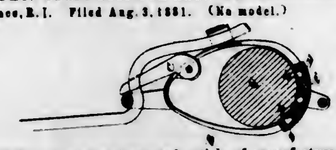
Claim.—In the purification of alkaline solutions, the addition of alumina to the solution, substantially in the manner and for the purpose hereinbefore described.

254,919. PURIFICATION OF ALKALINE SOLUTIONS. EUSTACE CAREY, HOLBROOK GASKELL, Jr., and FERDINAND HUNTER, Widnes, County of Lancaster, England. Filed Dec. 15, 1881. (No model.) Patented in England July 18, 1878.



Claim.—The system or mode of purifying alkaline solutions by submitting the same to the action of sulphur or sulphur compounds added to or produced in such alkaline solutions, and of carbonic acid, the solutions thus treated being then subjected to an elevated temperature in order that the iron which they contain may be separated therefrom, substantially as hereinbefore described.

254,920. SHAFT-LOOP FOR HARNESS. PETER CAREY, Providence, R. I. Filed Aug. 3, 1881. (No model.)

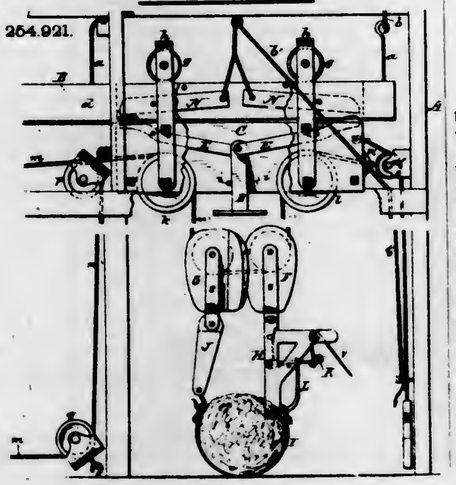


Claim.—1. As an improved article of manufacture, a shaft-loop provided with a rigid buckle-frame at its upper end, a tongue pivoted in its side, and a series of balls in its lower part, substantially as herein shown and described.

2. The combination, with the shaft-loop B, of the balls E, loosely held in bearings in the lower portion of the said loop, substantially as and for the purpose set forth.

3. The combination, with the shaft-loop B, provided with apertures D, of the balls E and the plate F, substantially as herein shown and described, and for the purpose set forth.

254,921.



254,921. HAY-ELEVATOR. PETER F. CRAMBARD, Fayette, Ohio. Filed Feb. 14, 1882. (No model.)

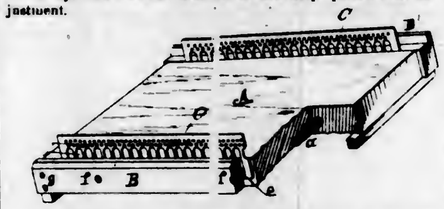
Claim.—1. The track B, composed of the outer timbers or sections, *c d*, center timber or section, *e*, and having the space *f*, in combination with the carriage C, having pivoted latch-arms E, curved at their outer ends, as shown, the tripping-lever D, hangers *h*, pulleys *g k l*, and hoisting-rope m, constructed to operate substantially as and for the purpose set forth.

2. The carriage C, tripping-lever D, pivoted latch-arms E, curved at their outer ends, as shown, in combination with the track B, constructed as described, with the space *f*, and having pivoted thereto the levers N, operated by the rope *b'*, substantially as and for the purpose specified.

3. The track B and carriage C, constructed substantially as shown and described, in combination with the hoisting-rope m, pulley-blocks G F, having straps *s* secured to their sides, and having detachably connected thereto the hooked arm J, bracket H, carrying pivoted tripping-hook L, latch K, with hole *t*, spring *u*, and rope r, and the sling I, constructed and arranged to operate substantially as and for the purpose described.

254,922. FLUTING AND PLAITING BOARD. LEWIS C. CHASE, Waupun, Wis. Filed Jan. 27, 1882. (No model.)

Brief.—The vertical slots in the side strips permit their adjustment.



Claim.—1. In a fluting-board, the combination of the body portion and strips provided with upper lines of perforations and lower upright slots or oblong perforations, substantially as shown and described.

2. In a fluting-board, the combination of the body portion and strips provided with upper lines of perforations and lower upright slots or oblong perforations and means for holding said strips in an elevated or in a depressed position, substantially as shown and described.

3. The combination of the base-board A, side cleats, B, and rods *a* with the perforated strips C, substantially as shown and described.

4. In a fluting-board, the combination of the body A, cleat B, screws *f*, and strip C, slotted at *e*, substantially as shown and described.

254,923. BARBED FENCE-WIRE. NORMAN CLARK, Sterling, Ill. Filed Jan. 5, 1882. (No model.)



Claim.—1. The herein-described method of constructing a barbed fencing material, consisting of first weaving or forming a web and afterward separating the same, substantially as shown.

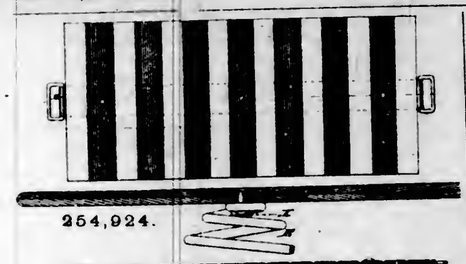
2. The combination of three or more strands, the same being neither braided nor twisted with each other, with barbs interwoven with said strands and held in position without being twisted or wrapped around any of said strands, substantially as shown.

3. An improved fencing material consisting of three or more strands, in combination with barbs held in position by being interwoven with said strands as contradistinguished from braiding or twisting, said strands not being in contact with each other, substantially as stated.

4. The method of manufacturing a coated fencing material having a sharp-pointed barb, consisting of subjecting the material to a galvanizing or coating process before pointing the barb, substantially as set out.

254,924. ELASTIC MATERIAL FOR SEATS, WINDOW-BLINDS, &c. HENRY B. COMB, Wilmington, Del. Filed Dec. 8, 1881. (No model.)

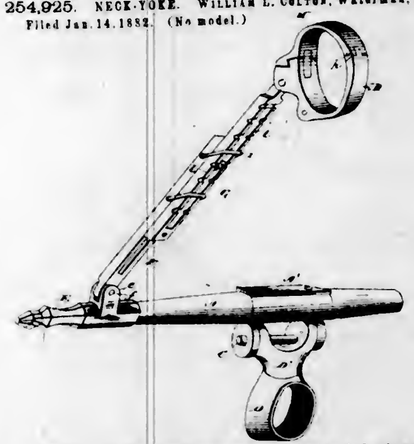
Claim.—An elastic material for car-seats, window-blinds, and other purposes, formed of a series of stiff slats each formed of two



254,924.

thin layers or leaves joined together crosswise and on both sides of a metallic spring-band, substantially as described.

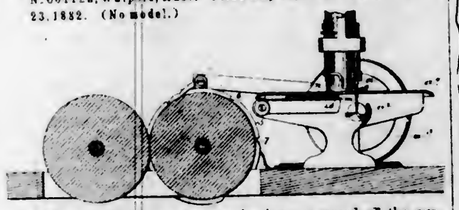
254,925. NECK-YOKE. WILLIAM L. COLTON, Waterman, Ill. Filed Jan. 14, 1882. (No model.)



Claim.—1. The combination of the yoke-bar A, having swiveled center-pieces D' D and end thimbles, E, hinged extensible stays F G, constructed as described, and hinged spring-clasps H, substantially as and for the purpose herein shown and set forth.

2. In a neck-yoke for harness, the extensible stay consisting of the recessed and slotted arm or bar F, having screw F' and adjustable spring-washer *n*, recessed slotted arm or bar G, having screw G', adjustable spring-washer *n'*, and notched side flanges, *l l*, and hinged loops or bails I I, the whole constructed and combined to operate substantially in the manner and for the purpose herein shown and described.

254,926. SEWING-MACHINE FOR QUILTING, &c. FREEMAN N. COTTLE, Walpole, Mass. Filed May 28, 1881. Renewed Jan. 23, 1882. (No model.)

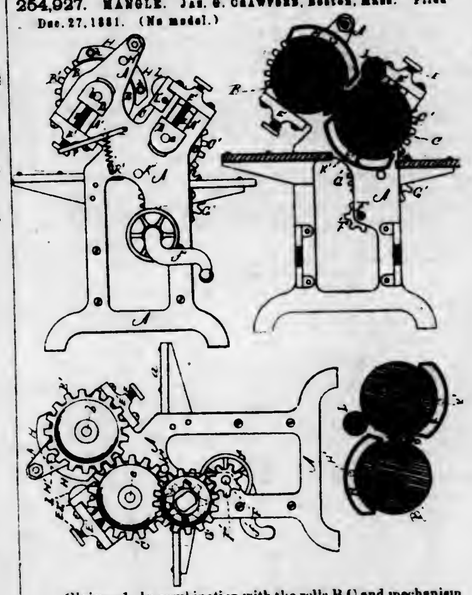


Claim.—1. The sewing mechanism composed of the eye-pointed needle and hook and means to operate them and the roller-feed located at one side of the sewing mechanism, combined with the ratchet and pawl, and pawl-controlling disk, *s*, described, adapted to operate the roller-feed intermittingly for a short distance and then for a long distance, leaving the feed-wheels at rest at intervals during two descents of the needle, to operate substantially as and for the purpose set forth.

2. The sewing mechanism composed of the eye-pointed needle and hook and the feeding mechanism, combined with the thread-cutting device *w*, located below the cloth-plate, over which the loop of thread is drawn and severed between the material being sewed and the eye of the needle, substantially as described.

3. The combination, with the cloth-plate *a'*, the needle-bar and eye-pointed needle, of the thread-holder *n*, adapted to receive between its forked end the end of the thread projecting beyond the eye of the needle and hold the same until the needle again descends to form a succeeding stitch, substantially as described.

254,927. MANGLE. JAS. G. CRAWFORD, Boston, Mass. Filed Dec. 27, 1881. (No model.)



Claim.—1. In combination with the rolls B C and mechanism for actuating and supporting the same, substantially as shown, the adjustable guide N, arranged substantially as described, whereby its upper edge will lie against the roll B, or about midway between the two said rolls, for the purpose specified.

2. In combination with the frame A and rolls B C, the guide-plate N, shaft O, spring-arm P P', and spring R, all substantially as described, and for the purpose set forth.

3. In a mangle, the combination, with an ironing-roll, of an ironing-bed centrally pivoted, or nearly so, for the purpose of allowing play between the roll and bed, substantially as specified.

254,928. PAPER-BAG MACHINE. WILLIAM C. CROSS, Boston, Mass. Filed Dec. 7, 1881. (No model.)



Claim.—1. In combination with the guide-bar, the rotating nipper-cylinder, and the intermittently-moving vibratory nipper carried by the same, adapted and arranged, substantially as herein-before set forth, to sever or cross-cut the adjoining ply of the blank at the point where said nipper subsequently takes hold of that ply in the operation of opening the mouth of the blank for the formation of the diamond fold.

2. The combination of the gnide-bar, the vibratory nipper arranged and adapted, substantially as described, both to cross-cut at the mouth end of the blank that portion of the adjoining ply opposite to it and to take hold of the part of the ply thus cut, the rotating nipper-carrying cylinder or roll, its rotating fellow roll, and the cutting mechanism carried by the same, the combination being and acting substantially as hereinbefore set forth.

3. The rotating diamond-fold forming or laying and pressing rolls and cutting mechanism carried by the same, arranged and operated, substantially as hereinbefore set forth, to make the final cut which separates the blanks from one another before the blank in rear enters the bite of said rolls, in combination with mechanism, substantially as described, for opening the mouth of the blank and presenting it to said rolls, the combination being and acting substantially as set forth.

4. The rotating diamond-fold forming or laying and pressing rolls, the cutting mechanism carried by the same, arranged and operated to make the final cut which severs the blanks from one another at the times specified, and the presser, in combination with mechanism, substantially as described, for opening the mouth of the blank and presenting it to said rolls, the combination being and acting substantially as set forth.

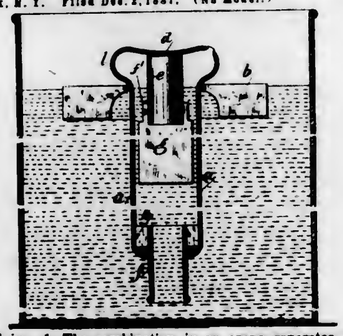
5. The guide-bar, the rotating nipper-cylinder and its fellow roll, the blank-cutting mechanism, and the vibratory nipper arranged and operating both to cross-cut and to grasp the central part of the adjoining ply at the times and in the manner substantially as specified, in combination with the rotating diamond-fold-pressing rolls and the final-cutting mechanism carried by the same, substantially as and for the purposes hereinbefore set forth.

254,929. CIGARETTE-WRAPPER. EDMOND A. G. D'ARGY, Paris, France. Filed July 27, 1880. (No model.) Patented in France Jan. 24, 1873, in England May 2, 1873, and in Belgium June 5, 1880.



Claim.—As an article of manufacture, a cigarette-paper which is saturated at one end with a saliva-proof substance and adapted to be used as a wrapper for making cigarettes at the convenience of the smoker or manufacturer, substantially as shown and described.

254,930. OZONE-GENERATOR. JOHN M. DAVIDSON, New York, N. Y. Filed Dec. 2, 1881. (No model.)



Claim.—1. The combination, in an ozone-generator, of the guide-tube *a*, float *b*, stop-finger *d*, phosphorus-cup *f'*, and float *g* within the guide-tube, substantially as set forth.

2. The combination, in an ozone-generator, of the guide-tube *a*, float *b*, stop *d*, float *g*, phosphorus-cup *f'*, and removable weighted stopper *h*, substantially as set forth.

3. The combination, in an ozone-generator, of a guide-tube, a removable weighted stopper at the lower end of a float, a phosphorus-holder, and perforated cap at the upper end of the guide-tube, forming also a stop for the end of the phosphorus, substantially as set forth.

4. The combination, with the guide-tube, phosphorus-holder, and its float, of a reversible float for the guide-tube, having one surface recessed, so that the phosphorus may be entirely immersed to stop the generation of ozone, substantially as set forth.

254,931. CHAIN-CROSS-BAR. SALOMON DAVIDSON, New York, N. Y. Filed Jan. 23, 1882. (No model.)

Brief.—The collar serves to firmly retain the ring in the bar-groove, the collar acting as a tie, thereby dispensing with the use of solder.



Claim.—1. The combination, substantially as hereinbefore set forth, of the bar having a groove or depression at about its mid-length, the collar fitted on the bar, and the cleft coupling-ring inserted into the bar-groove through the collar.

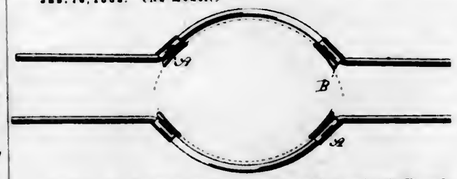
2. The combination, substantially as hereinbefore set forth, of the bar having a groove or depression at about its mid-length, the collar fitted on the bar and provided with notches or openings coinciding with the bar-groove, and the coupling-ring inserted into the bar-groove through the collar and engaging the collar notches or openings.

254,932. CULTIVATOR. WILLIAM J. DAVIDSON, Big Spring, Va. Filed Nov. 23, 1881. (No model.)



Claim.—The combination, with the single-bar beam A, of slotted brackets constructed as set forth and with their free ends projecting to the rear, and standards connected to the brackets and constructed for attachment to either side thereof and adjustable thereon, substantially as set forth.

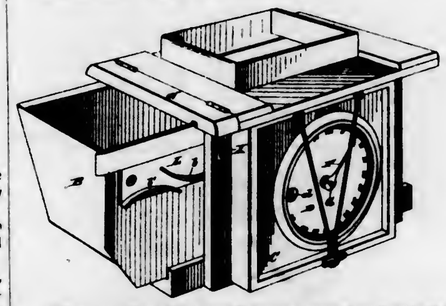
254,933. STOVE-LIFTER. GEORGE DAY, Dixon, Ill. Filed Jan. 14, 1882. (No model.)



Claim.—1. A stove-carrier consisting of the clutch B and sleeve A, the clutch being provided with teeth on its upper edge, substantially as shown and described.

2. The combination of the sleeve and clutch B with a lifting or carrying bar adapted to be run through the sleeve, substantially as and for the purposes set forth.

254,934. GRAIN MEASURE AND TALLY. THOMAS F. DODGE, Lawton, Mich. Filed July 2, 1881. (No model.)



Claim.—1. The sliding box B, having secured to its side the reversely-curved ribs or beads *l l'*, in combination with registering mechanism actuated by said ribs, substantially as set forth.

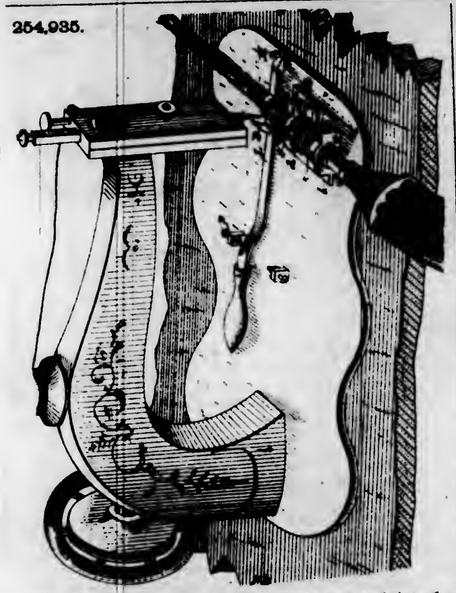
2. The sliding box B, having on its side a plate, L, provided with reversely-curved ribs or beads *l l'*, in combination with lever J, having end *j*, that enters the channel between said ribs, pawl I, toothed wheels H and E, shaft G, and lug *g*, substantially as set forth.

3. A box or drawer having a plate attached to its rear end and arranged to overlap the next succeeding box or drawer, in combination with the cage and registering mechanism, substantially as set forth.

4. In combination with the cage and drawer of a grain-measure, a striker, N, hinged to the edge of the cage so as to lie flatly on said drawer, and adapted to be turned back off from the same and retained in this inoperative position by its own gravity, substantially as set forth.

254,935. SEWING-MACHINE ATTACHMENT. GEORGE DOOLITTLE, Bridgeport, Conn. Filed Jan. 13, 1882. (No model.)

254,935.



Claim.—1. A sewing-machine attachment consisting of a tubular box or work-holder adapted to contain a rope or congregation of strands of yarn or other suitable material mounted in boxes or bearings arranged upon a securing-plate, said box or work-holder adapted to rotate in its bearings upon an axis at right angles to the needle, in combination with suitable intermediate mechanism between the work-holder and the driving mechanism of the machine, whereby a rotary feed is given to the rope or yarn contained in the tubular work-holder and short circumferential and intersecting diametric stitches are made, substantially as hereinbefore set forth.

2. In a sewing-machine attachment for the manufacture of yarn tufts, the combination, with the plate B, of the tubular box *c*, mounted in said plate, and means, substantially as described, for rotating the box, as hereinbefore set forth.

3. In combination with the tubular box *c*, provided with ratchets *d*, the plate B, pawl-carrier *e*, pawls *g h*, and suitable mechanism for vibrating the carrier *e*, substantially as hereinbefore set forth.

4. In combination with the plate B, box *c*, and the ratchets and pawls for giving rotary motion to the box *c*, the condensing-tube I, adapted to be secured within the box *c* and to rotate therewith, substantially as described.

5. The box *c*, having a feather-groove at its outer end, and the tube I, with a short feather, *k*, in combination with the loose ring *l*, whereby the tube I and box *c* are rigidly connected, substantially as described.

6. In combination with the box *c* and tube I and mechanism for producing rotary feed, as described, the vibrating lever L, provided with the hinged arm N, having spear O, substantially as described.

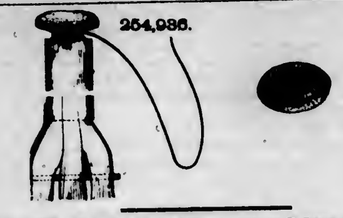
7. The box *c*, provided with two ring-ratchets, *d*, having their working-faces in opposite directions, the pawls *g h*, arranged upon a common shaft in relation to each other, as described, in combination with the spring-arm *i*, provided with teat for holding either pawl in working contact, substantially as and for the purpose set forth.

254,936. FURNITURE-TUFT AND METHOD OF MAKING THE SAME. GEORGE DOOLITTLE, Bridgeport, Conn. Filed Feb. 13, 1881. (No model.)

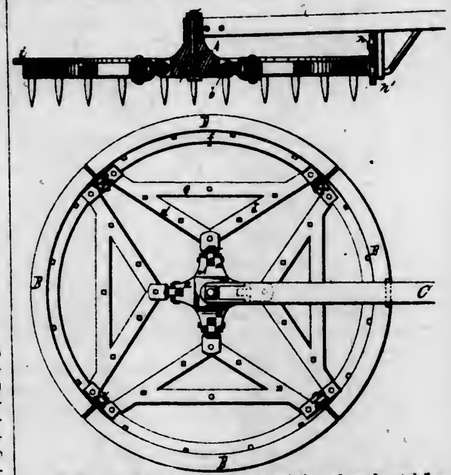
Claim.—1. The method of making tufts of yarn or other suitable material by condensing the strands and confining and associating the same together by circumferential and radial intersecting stitches, substantially in the manner hereinbefore set forth.

2. As an improved article of manufacture, a tuft for upholstery, composed of strands of yarn or other suitable material bound and stitched by circumferential and intersecting radial stitches, substantially as shown and described.

254,936.



254,937. ROTARY HARROW. ALPHONSO H. DOTY, Marshland, Wis. Filed July 16, 1881. (No model.)



Claim.—1. In a rotary harrow consisting of quadrantal flexibly-connected sections, the combination of a continuous sectional edge and endwise-projecting flanges, a flexibly-connected central head, and a centrally-pivoted draw-beam provided with anti-friction pulleys, substantially as shown and described.

2. The combination of the centrally-pivoted draw-beam C with the central head, A, and flexibly-connected sections B, each provided with the edge and endwise-projecting flange *i*, the said draw-beam being provided with anti-friction pulleys *n n'*, substantially as shown and described.

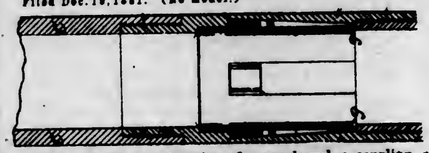
254,938. MANUFACTURE OF FUR-FACED FABRICS. WILLIAM E. DOUBLEDAY, Bay Ridge, N. Y., assignor to Ellen M. Doubleday, same place. Filed Nov. 1, 1881. (No specimens.)

Brief.—The fur fiber is first blown on the cone being fed by a continuous belt. The fibrous cotton is laid on the belt in the rear of the fur, so that it will be blown on the cone afterward, thus covering the fur.

Claim.—1. The herein-described process of forming a fur bat—that is to say, by first depositing a coating of fur upon a reticulated surface and subsequently depositing a coating of loose cotton upon the fur—substantially as set forth.

2. The herein-described fur bat, consisting of a layer of fur and a superimposed layer of loose cotton, substantially as set forth.

254,939. CORE LIFTER AND GUIDE FOR ANNULAR ROCK-DRILLS. SAMUEL W. DOUGLASS, New York, N. Y., assignor to the American Diamond Rock Boring Company, same place. Filed Dec. 19, 1881. (No model.)



Claim.—1. The combination of a core-barrel, a coupling, a ring fitting into an internal recess in the coupling, provided with separated guide projections or fingers, a split ring working in a

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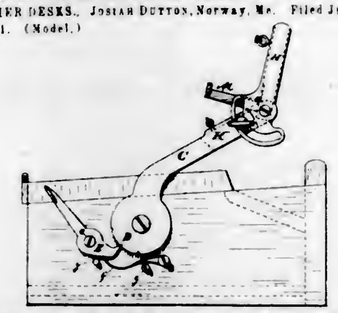
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tapered recess in the coupling, and provided with wedges which project inwardly between the guide-fingers, and a drill-head, all combined substantially as and for the purposes set forth.

2. A drill-rod coupling recessed on its inner periphery, and a guide-ring fitting into the recess, in which there are slots, through which the core-grasping wedges act, substantially as and for the purposes set forth.

3. The combination of a slotted ring supported in a recess in the coupling, through the slots in which ring wedges on a contractible ring act, said contractible ring working in a tapered recess in the coupling, all combined substantially as and for the purposes set forth.

254,940. BOOK-REST ATTACHMENT FOR SCHOOL AND OTHER DESKS. JOSIAH DUTTON, Norway, Me. Filed June 30, 1881. (Model.)



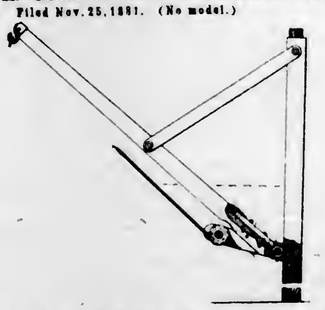
Claim.—1. A book rest or support consisting of arms C and H and H', the rest or cross-piece G, combined with the rest I, and mechanism for adjusting it, as described, to and from the plane of the rest or cross-bar G, as set forth.

2. The rest G, in combination with the rest I, provided with the hinged shelf M, and provided with adjusting devices substantially such as described, whereby the rest I may be set at any desired angle and converted into a large or small book-support at will, as set forth.

3. The combination, in a book-rest, of the arms C, provided with the notched disks, the pawl E, arm H, slotted as described, and the thumb-nut K, whereby the rest may be adjusted at any desired height or angle, as set forth.

4. A book-rest attached to the rear ends of arms which are pivoted at their front ends to the sides of a desk or table, and mechanism for adjusting the book-rest, substantially as described, to raise the rest above the surface of the desk or table and lower it onto or into a recess in the rear part of the table or desk, as set forth.

254,941. DERRICK. LOUIS DUVAL, Longueuil, Quebec, Canada. Filed Nov. 25, 1881. (No model.)

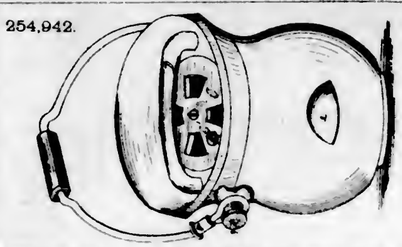


Claim.—A derrick or derrick-crane composed of the following elements, namely: a post suitably secured, a jib or boom of nearly the same length as the post, having a changeable point of connection therewith, and adapted to be folded vertically against such post, and braces or arms pivoted to the post and to the jib, all substantially as and for the purposes described.

254,942. COMBINED COMMODE AND SLOP-JAR. SAMUEL A. EMERY, East Liverpool, Ohio. Filed Jan. 12, 1882. (No model.)

Claim.—1. A concave or dished detachable cover of pottery or like ware, having a discharge port or ports, and a sliding valve for closing the same, in combination with a vessel of like material, said

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vessel having a beveled or flaring lip for the reception of the cover, whereby the article is adapted for use as a commode and a closed slop-jar, substantially as specified.

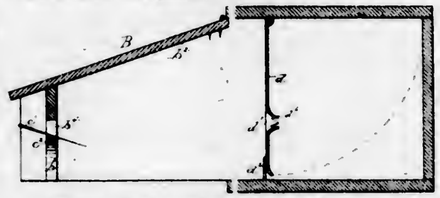
2. A detachable dished lid or cover having a discharge-valve and a handle which spans and protects the valve, substantially as and for the purpose specified.

3. A detachable dished lid or cover having a discharge opening or port, a slide-valve adapted to close the port of the cover, and an interposed packing arranged between the valve and its seat, substantially as and for the purpose specified.

4. The combination, with a pottery-ware vessel having lugs or pintles of like material formed thereon, of a wire bail having a coil or eye which receives the pintle, and a sliding sleeve which confines the free end of the wire next the bail-eye and prevents the escape of the pintle, substantially as and for the purpose specified.

5. The bail for pottery-ware, having a coil or eye adapted to receive a lug or pintle, and the notched free end, in combination with a slotted sliding ferrule, substantially as and for the purpose specified.

254,943. ANIMAL-TRAP. EZRA EMMERT, Dixon, Ill. Filed Dec. 29, 1881. (No model.)



Claim.—1. In an animal-trap, the automatically-acting needle c', pivoted on the wire c, passed through the slot b' of the partition b', supported therein by the supporter c^2, and adapted to turn upon its pivotal point when the animal passes under its point in entering the trap, substantially as shown and described.

2. In an animal-trap, the tunnel B, projecting from the side of the box or trap, formed of the extended side board, a, and partition b, provided with a hinged roof, b', a recessed partition formed with a slot, b', adapted to form a guide for the needle, and a supporter adapted to retain the needle within the slot, substantially as shown and described.

3. In an animal-trap, the pivoted partition d, placed within the box between the sides a and b, and having a perforation, d', and projections d^2, substantially as shown and described.

4. In an animal-trap, the combination, with the slotted and recessed partition b^2, of the needle c', pivoted to the wire c, and adapted to operate within the slot of the partition b', substantially as and for the purposes set forth.

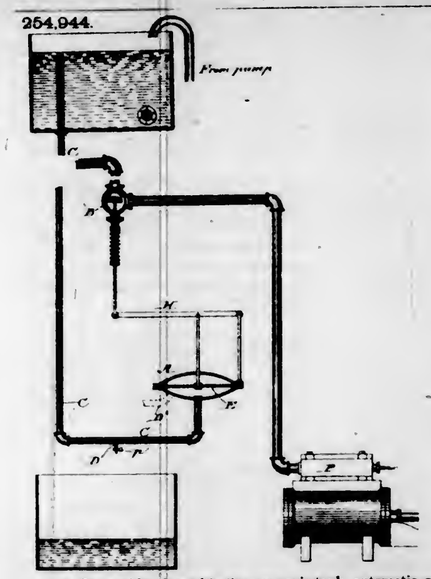
254,944. AUTOMATIC REGULATOR FOR TANKS AND RESERVOIRS. QUIMBY N. EVANS, Brooklyn, N. Y., assignor of one-half to Herbert A. Joslin, same place. Filed July 12, 1881. (No model.)

Claim.—1. The combination, with a reservoir-tank and a pump for supplying the same with liquid, of a steam-engine or equivalent motor, and an automatic regulator to control the throttle or operating-clutch of the motor, said regulator being governed in movement by the flow to and through it of a limited and intermittent current of liquid from the tank, substantially as set forth.

2. The combination, with a reservoir-tank and automatic regulator, of the supply-pipe C and the discharge-pipe D, of less diameter therewith, substantially as described.

3. The combination, with a reservoir-tank, of the supply-pipe C, the discharge-pipe D, of less diameter therewith, the regulator A, throttle-valve B, steam-pipe K, and engine P, substantially as herein set forth.

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4. In combination with the reservoir-tank, automatic regulator, and supply and discharge pipes, substantially as described, the valve-stem I, provided with the retraction-spring, the steam-pipe, and engine-pump, substantially as described.

254,945. MODE OF MAKING INLAID JEWELRY, &c. CHAS. P. PERT, Philadelphia, Pa., assignor to George P. Farmer, Montclair, N. J., and Wilson Pratt, Philadelphia, Pa. Filed Jan. 3, 1882. (No model.)

Brief.—The body-piece and the inlaid piece, being fastened together by cement, are cut at one operation. The inlay is inserted into the body and the surfaces made flush.



Claim.—The mode herein described of inlaying pearl, ivory, shell, and similar substances with substances of another shade or color, by first cutting out the two pieces in the desired outline at one and the same operation, leaving a tapering opening in the piece to form the body, and inserting the cut-out portion of the other piece into this opening, and finally making the surfaces of the two substances flush by grinding or otherwise, all substantially as set forth.

254,946. BATH-TUB. FRANKLIN H. PICKETT, Chicago, Ill. Filed Nov. 28, 1881. (No model.)

Brief.—The bath-tub A may be raised so as to be entirely within the casing B. For this purpose it is pivoted at i, and is raised by a weight, w, by means of pulleys l e and cords r x s f'. Splashers b b' are provided to prevent soiling the adjacent portions of the apartment. A wash-basin, a', resting upon hinged prongs a^2, can assume a position perpendicular to its normal. A flexible joint, h', is provided, whereby the oscillation of the tub will not affect the drain-pipe h^2.

Claim.—1. The bath-tub A, hinged at i, and attached by cords s to spiral pulley l' and spiral pulleys l l, in combination with the weight w and cords x and r, arranged to operate substantially as specified.

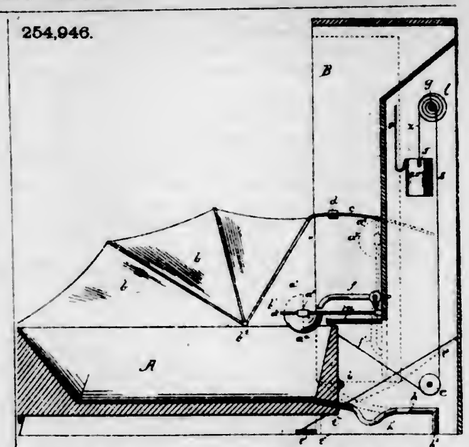
2. In combination with a bath-tub hinged to and so as to fold into a cabinet, and provided with a waste-pipe, the flexible joint h', and pipe h^2, constructed to operate substantially as specified.

3. In combination with a bath-tub hinged to and so as to fold into a cabinet, the hinged base t' and cord t, arranged to operate substantially as specified.

4. In combination with a bath-tub hinged to and so as to fold into a cabinet, the T-shaped and jointed cock f and lid m, arranged to operate substantially as specified.

5. In combination with a bath-tub hinged to and so as to fold into a cabinet, a folding splasher arranged upon the longitudinal

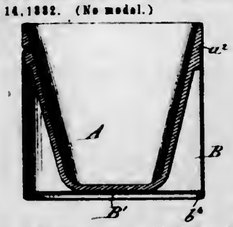
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sides of the tub and so as to fold with it into the cabinet, substantially as specified.

6. In combination with a bath-tub hinged to and so as to fold into a cabinet, the wash-bowl a', operated upon a hinged and vertically-swinging frame, a^2, substantially as specified.

254,947. CULINARY VESSEL. JOHN W. FISHER, New York, assignor of one-half to Michael W. Hamma, Brooklyn, N. Y. Filed Jan. 14, 1882. (No model.)



Claim.—1. The combination, with the bowl A, having annular shoulders a a^2 and groove a', the circumference of the upper shoulder being greater than that of the lower one, of the band B, having an inwardly-bent upper edge, b, adapted to engage within the groove a', whereby said parts are securely connected, substantially as described.

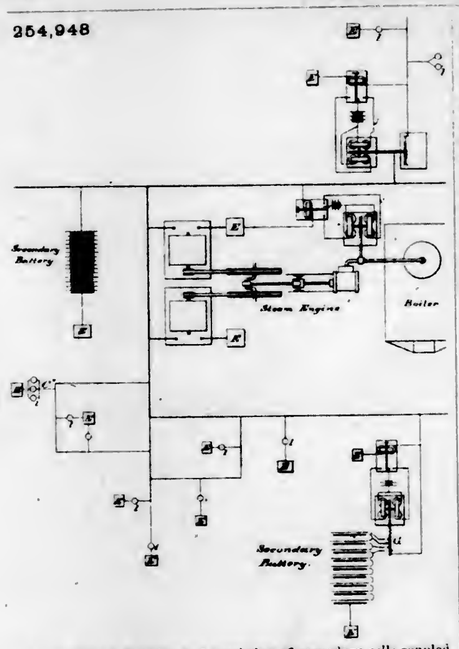
2. The herein-described vessel, consisting of the bowl A, having tapering sides, and provided near the top with annular shoulders and groove, and the casing B, having vertical walls and an inwardly-turned edge, b, adapted to engage with the annular groove formed in the bowl, said casing being provided with a bail, C, and having at its lower end an annular recess, b', for the attachment of the perforated flanged bottom B', a space being left between the bowl and its casing for the circulation of heat, substantially as specified.

254,948. DISTRIBUTION OF ENERGY BY ELECTRICITY. ST. GEORGE LANE FOX, London, England. Filed Jan. 13, 1881. (No model.) Patented in England Oct. 9, 1878, Oct. 13, 1878, and Nov. 14, 1878, in France Oct. 23, 1878, and in Belgium Oct. 30, 1878.

Claim.—1. The combination of an electric circuit divided into branches, a continuous-current generator arranged in the undivided portion thereof, a number of electric lamps arranged in said branches in multiple arc, and a secondary battery arranged in a branch by itself, whereby when the generator is supplying more electro-motive force than is required by the lamps the excess may develop a charging-current through the secondary battery, and when the potential in the circuit falls below the normal the secondary battery may discharge and supply a current to the lamps, re-enforcing that from the generator, substantially as set forth.

2. The combination of a continuous-current generator, an earth-connection with one electrode thereof, a conductor leading from the other electrode thereof, a number of branches from said conductor to earth, a number of electric lamps arranged in said branches in multiple arc, and a secondary battery arranged by itself

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in one of said branches and consisting of secondary cells coupled in series, substantially as and for the purposes set forth.

3. The combination of an electric-current generator, a conductor leading from one electrode thereof to the point or points where the current is to be used, an earth-connection with said point or each of said points, a compound secondary battery, one of whose electrodes is in connection with one electrode of the generator, and the other of whose electrodes is in connection with the earth, and commutators in connection therewith, constructed to operate substantially as set forth, whereby any one or more of the cells of the secondary battery may be cut out or replaced while the battery is being charged.

4. The combination of a continuous-current generator, a conductor leading therefrom to the point or points where the current is to be used, an earth-connection with said point or each of said points, a compound secondary battery, one of whose electrodes is in connection with one electrode of the generator and the other of whose electrodes is in connection with earth, a commutator in connection with said battery, an electro-magnetically-operated regulator in connection with said commutator, and means, substantially as herein set forth, interposed between said regulator and said commutator, whereby one or more of the battery-cells are automatically cut out and replaced, according to the varying intensity of the current, all substantially as herein described.

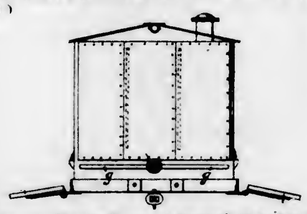
5. The combination of a current-generator, an earth-connection with one electrode thereof, a conducting-main leading from the other electrode thereof, a branch from said main, including a rheostat and a device to be acted on by the electric current and terminating in earth, a sub-branch leading from said branch between said rheostat and earth, including an electro-magnet, and also terminating in earth, and means, substantially as hereinbefore set forth, interposed between the armature of said electro-magnet and said rheostat, whereby more or less resistance is interposed in said branch, according as the charge of potential in said sub-branch becomes greater or less than normal.

6. The combination of a generator, an earth-connection with one electrode thereof, conducting mains or branches leading from the other electrode thereof to the several devices to be acted on by the electric current and thence to earth, an electro-magnetically-controlled variable rheostat interposed in one of the said branches, a sub-branch leading from said branch between said rheostat and earth, including the electro-magnet controlling said rheostat and terminating in earth, and a branch leading from either of said conducting mains or branches, except from between said rheostat and earth, including a secondary or reservoir battery, and also terminating in earth, substantially as and for the purposes set forth.

7. The combination of an electro-magnet, its armature, means for exerting a variable retractile force applied thereto, which force shall be greatest when the armature is attracted close to the magnet, and which shall decrease as it is drawn away therefrom, a contact-lever connected to and receiving motion from said armature, an arc along which said lever may move, and a pair of contact-stops arranged one on each side of said lever and capable of being adjusted or set to different positions along said arc, substantially as set forth.

8. The combination of electro-magnets *m m*, their armatures *n n'*, connected together substantially as shown, whereby when one armature approaches its magnet the other recedes from its magnet, rock-shaft *o*, receiving motion from said armatures, and retarding-fan *r*, actuated by said shaft, substantially as set forth.

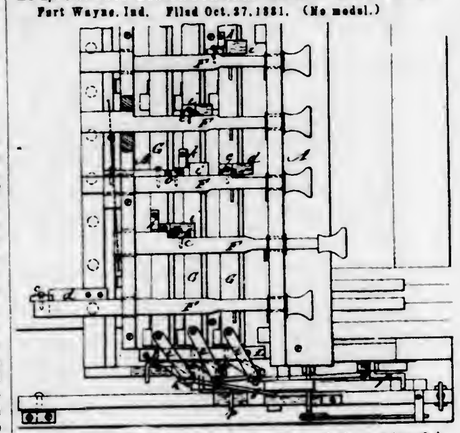
254,949. STOCK-CAR. FREDERICK W. FRANKLIN and WILLIAM F. FLAGG, Baltimore, Md. Filed Jan. 10, 1882. (No model.)



Claim.—1. In a stock-car, a water-tank to occupy the entire width of the car end, and provided with vertical partitions the edges of which are attached to the two opposite broad sides of the tank, said partitions extending from near the bottom to near the top, leaving openings below and above by which the water may have access from one side of the partition to the other, as set forth.

2. In a stock-car, the combination of a water-trough on the side of and located partly outside of the wall of the car, a slanting board which extends from the wall of the car to the outer top edge of the trough, and a horizontal rail to serve as a hip-fender, as set forth.

254,950. STOP-ACTION FOR REED-ORGANS. BROOKS FRENCH, Fort Wayne, Ind. Filed Oct. 27, 1881. (No model.)



Claim.—1. In organs, the combination, with the stop-board A and the stop drawers F, provided with the wheels *c*, of the flaps G, hinged to the said boards and provided with the fixed arms *d*, projecting beneath the wheels of the said stop-drawers, substantially as and for the purpose set forth.

2. In organs, the combination, with drawer F and the block I, of the hinged flaps G, provided with the fixed arms *e*, the mutes H, provided with the rigid arms *f*, the pivoted arms *h*, and the connecting-rods *g*, substantially as and for the purpose set forth.

3. In organs, the combination, with the grooved post *b* and the stop-drawer F, of the link *a*, suspended from the said post and pivoted to the stop-drawer, substantially as and for the purpose set forth.

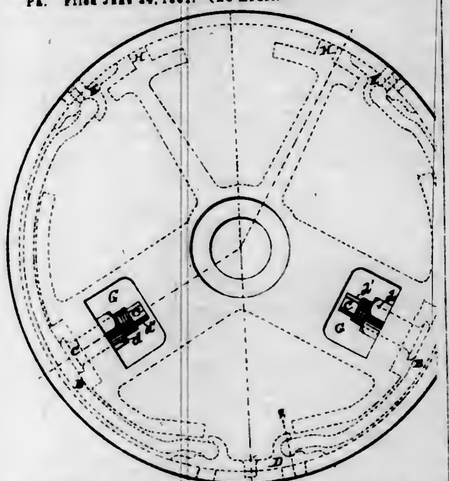
4. In organs, the combination, with the stop-board A and the hinged flaps G, provided with the fixed arms *e*, of the block I, provided with the pivoted arms *h*, and the means for connecting said arms to the mutes, substantially as shown and described, whereby the stop-board is adapted to be removed without disconnecting the several mutes, as set forth.

5. The adjustable arms *i*, combined with the flaps G and stop-drawers F, substantially as and for the purposes set forth.

6. In organs, the combination, with the stop-drawers F, provided with the wheels *c*, of the flaps G, provided with the rigid arms *d* and the adjustable arms *i*, substantially as and for the purpose set forth.

7. In organs, the combination, with the block D, the mutes H, provided with the arms *e* and the crank-wires *p*, of the lever I and the means for operating said lever, substantially as and for the purpose set forth.

254,951. PISTON-HEAD. HUGH D. GARRETT, Philadelphia, Pa. Filed June 24, 1881. (No model.)



Claim.—1. A piston-head provided with levers and supports, substantially as described, whereby the weight of the piston through said levers bears directly against the upper circumference of the packing-rings to expand the same in the upper part of the cylinder.

2. A solid piston-head provided with levers and supports, substantially as described, whereby the weight of the piston through said levers bears directly against the upper circumference of the packing-rings to expand the same in the upper part of the cylinder.

3. A piston-head provided with levers, supports, and centering device, substantially as described, whereby the piston is centered in the cylinder and the weight thereof utilized through said levers to bear directly against the upper circumference of the packing-rings to expand the same in the upper part of the cylinder.

4. A piston-head having a lever or levers fulcrumed in the lower portion of the piston and extending into the upper portion so as to rest against the packing at that point, with suitable bearings for the piston against the levers, whereby the weight of the piston is utilized to expand the packing, substantially as set forth.

5. In a solid piston-head, the combination of the levers B, bolts C, and openings G, substantially as and for the purpose specified.

254,952. PLOW. FERNANDO GAUTIER, Pascagoula, Miss. Filed Jan. 13, 1882. (No model.)

Brief.—The spoke-wheel, by its contact with the ground, revolves gearing, which rotates an eccentric which vibrates the cutting-plate, which makes a shear cut against both upper and lower jaws.

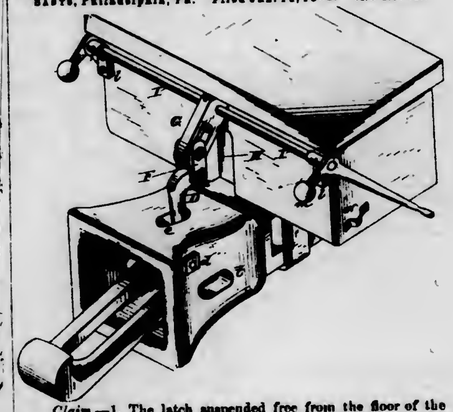


Claim.—1. In a plow, the combination, with the oscillating cutter G, of the stationary adjustable cutters E and F, substantially as shown and described, whereby the stationary cutters may be adjusted toward each other to take up wear and utilize the whole of their cutting-edge, as set forth.

2. In a plow, the beam A, having its forward end enlarged and provided with a vertically-flaring recess, in combination with the T-shaped clevis M, having a horizontal projection, P, substantially as shown and described, and for the purpose set forth.

3. In a plow, the combination of the beam A, having a deep longitudinal recess in its rear end, and the handles R, having standard Q, pivoted in said recess, and adapted for adjustment to a higher or lower position, substantially as shown and described, and for the purpose set forth.

254,953. CAR-COUPLING. DAVID H. GREEN and JOSEPH SAUPE, Philadelphia, Pa. Filed Jan. 14, 1882. (No model.)



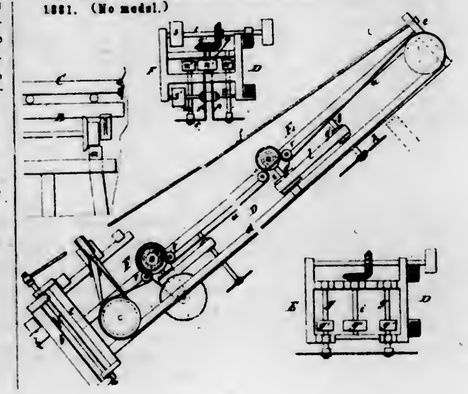
Claim.—1. The latch suspended free from the floor of the draw-head and balanced as described, so as to not rest with its entire weight upon the link, in combination with the vertically-supporting arm, the upper arm, and the swinging shackle connecting the said arms, having a loose bearing and sliding freely in a slot of said upper arm, substantially as described.

2. The combination of the side levers provided with counter-balance-weights at their upper inner ends, the sliding rod supporting said levers, the upper slotted arm, the lower vertical arm, their sliding connecting link or shackle, and the latch, substantially as described.

3. The combination of the vertical arm D, the swinging sliding link or shackle F, the arm G, provided with slot h, and the recess H, formed in the sill of the car to permit the swinging back of the first-named parts to their fullest extent.

4. In a car-coupling device, the link F, provided with bolt *x* and loose sleeve *w*, in combination with slotted arm G, and latch-arm D, substantially as described.

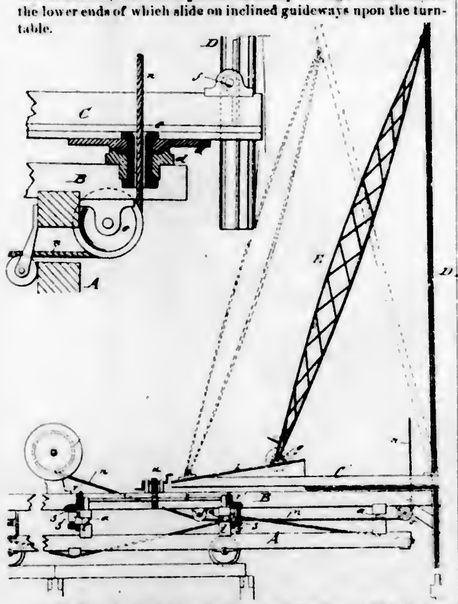
254,954. MACHINE FOR SAWING OFF AND TENONING PILES. ANDRUS L. GILBERT, Albany, N. Y. Filed Dec. 29, 1881. (No model.)



Claim.—The combination, with the adjustable platform C and swinging derrick D, of the saw-frames E F, carrying arbors, saws, and operative mechanism, whereby horizontally and vertically cutting saws may be successively brought to cut the piles, as described.

254,955. PILE-DRIVER. ANDRUS L. GILBERT, Albany, N. Y. Filed Dec. 29, 1881. (No model.)

Brief.—The hammer is mounted upon a turn-table turning about a hollow pivot, through which the hammer-rope passes, said turn-table resting upon a laterally-adjustable platform upon a car-platform. The hammer-leaders are formed of T-irons, over which are riveted channel-bars, and they are pivoted to the front edge of the turn-table, and are adjusted vertically through brace-frames, the lower ends of which slide on inclined guideways upon the turn-table.



Claim.—1. In a pile-driver, the combination, with the turn-table C, the leaders D, and the brace-frame E, provided with the pivoted slide-blocks *g*, of the inclined ways A, substantially as shown and described, whereby a greater inclination of the leaders is obtained by a shorter movement of the blocks, as set forth.

2. In a pile-driver, the combination, with the turn-table C, the leaders D, and the brace-frame E, and the pivoted blocks *g*, of the inclined ways A, provided with racks *i*, the shaft *l*, the pinions *k*, and means for operating said shaft, substantially as and for the purpose set forth.

3. In a pile-driver, the turn-table C, carrying adjustable pivoted leaders, and sustained on a hollow pivot through which the hammer-rope passes, substantially as shown and described.

4. In a pile-driver, the combination of shaft *r*, bevel-gears *r'*, shafts *s*, pinions *s'*, and racks *t* with the platform B and car A, substantially as shown and described.

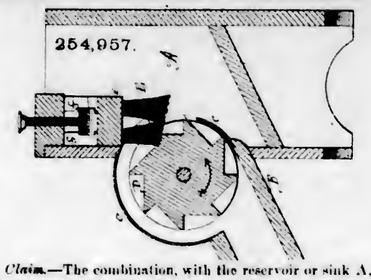
5. In a pile-driver, the leaders formed of T-plates *a'* and angle-plates *h'*, substantially as shown and described.

254,956. BUTTON-HOLE DEVICE FOR SUSPENDERS. BENJ. J. GUERLY, Boston, Mass. Filed Apr. 5, 1880. (No model.)



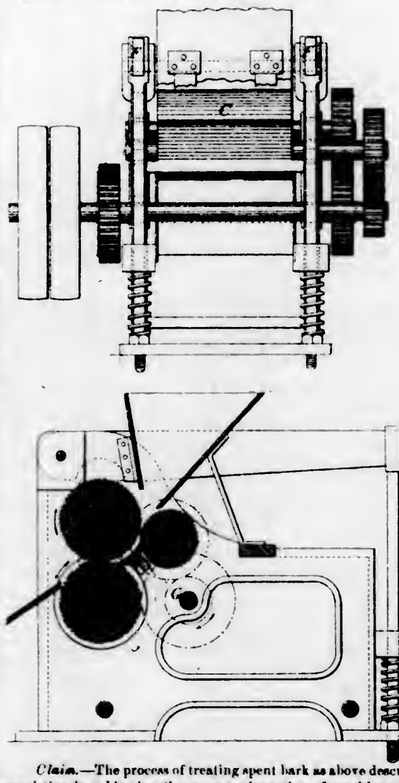
Claim.—The improved button-hole device above described, composed of the short cord *a*, having its ends brought together and each end encircled and compressed by the tubular portions 1 2 of clasp *b*, the clasp *b* being formed of one piece of metal with the two tubular portions 1 2, to receive and compress the ends of cord *a*, as described, and also with the attaching portion 3, by which the device is attached to the suspender, as set forth.

254,957. WHEAT-FEEDER. FRANK J. GROW, Alpha, Ind. Filed June 25, 1881. (Model.)



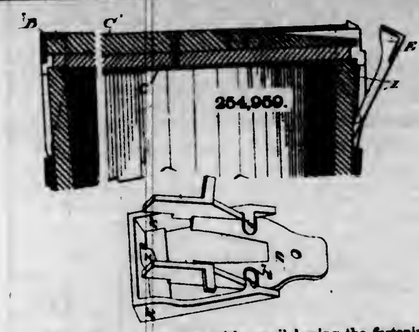
Claim.—The combination, with the reservoir or sink A, having side opening, *b*, of the discharge-spout having circular portion *c c* and flue *c'*, the grooved roller arranged in said circular portion, with its periphery projecting into said reservoir, and an adjustable brush arranged in said reservoir and engaging with the periphery of the roller, substantially in the manner as and for the purpose herein shown and described.

254,958. TREATING TAN-BARK, &c., TO RENDER THE SAME SUITABLE FOR USE IN MANUFACTURING PAPER. WILLIAM GOEST, Deptford, County of Kent, and CHARLES COURT, Rotherhithe, County of Surrey, England. Filed Jan. 14, 1882. (No model.) Patented in England June 18, 1881.



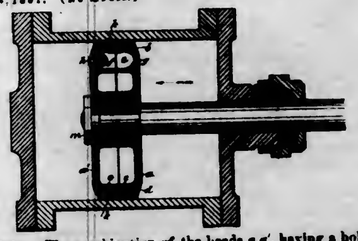
Claim.—The process of treating spent bark as above described, consisting in subjecting the same to the action of crushing-rollers to reduce the knots to a fibrous state, and then submitting the crushed material to agitation in a closed vessel under steam-pressure and in the presence of an alkaline solution, whereby the natural fibers of the bark are separated and converted into half-stuff in an economical manner and the tannic acid contained in the spent bark is extracted in a concentrated form.

254,959. BUTTER-PAIL EAR AND COVER-FASTENING. JOS. E. GUNN, Brooklyn, Pa. Filed Feb 23, 1881 (Model.)



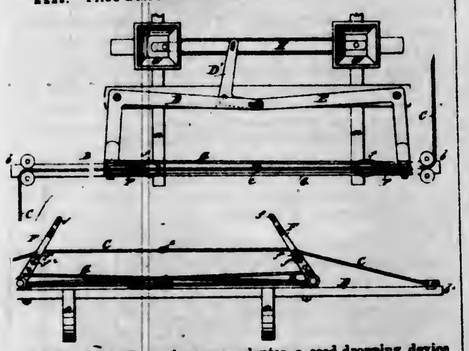
Claim.—The combination, with a pail having the fastening devices B, D, and E, of a cover provided with a cleat, C', one end of which fits in the ear B, while the other end is provided with a spring-latch, with which the bail E engages, substantially as set forth.

254,960. PISTON. JOHN C. HALL, Stephens City, Va. Filed Oct. 4, 1881. (No model.)



Claim.—The combination of the heads *a a'*, having a hollow space inclosed between them, a recess, *b*, formed in their adjacent peripheries, and provided with a groove, *i*, in its bottom, a ball-cage, *c*, communicating with the said recess and groove through the port *j*, and with opposite ends of the cylinder through ports *g* and *h*, the ball *f*, and the packing *k*, having its ends recessed and overlapped laterally, and provided with a lining, *l*, secured to one end and underlying the said joint, substantially as shown and described, and for the purposes set forth.

254,961. CHECK-ROW PLANTER. OLIVER L. HALL, Parsons, Kans. Filed Dec. 13, 1881. (No model.)



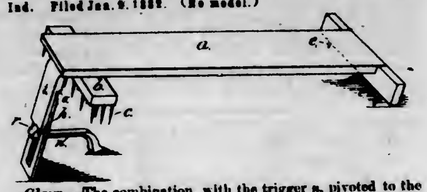
Claim.—1. In a check-row planter, a seed-dropping device composed of two horizontal crank-levers connected to a seed-dropping slide, and provided with vertical oscillating guide-arms and connecting-rods, and a knotted cord or wire, said parts being combined for operation substantially as specified.

2. In a check-row planter, the combination of the bar B, having two sheaves at each end, the crank-levers D E D', pivoted together and connected to a seed-dropping slide, the guide-arms F, journaled to the said levers D E, and provided with loops *f*, and the connecting-rods G and the knotted cord C, substantially as shown and described.

254,962. TANNING. JOHN W. HAMMOND, Osceola, Pa. Filed Dec. 29, 1881. (No specimens.)

Claim.—The improvement in the art of tanning hides and skins, which consists in first subjecting them to submersion in a liquor consisting solely of saltpeter and water, substantially as and for the purpose set forth.

254,963. MOLE-TRAP. WILLIAM S. HARMON, Owensville, Ind. Filed Jan. 9, 1882. (No model.)



Claim.—The combination, with the trigger *a*, pivoted to the bar A, and the bar *i*, supported on the top of the bar A by a notch near its upper end and retained in position by the trigger *a*, of the fall *a*, the armed end of which rests upon the top of *i*, substantially as described.

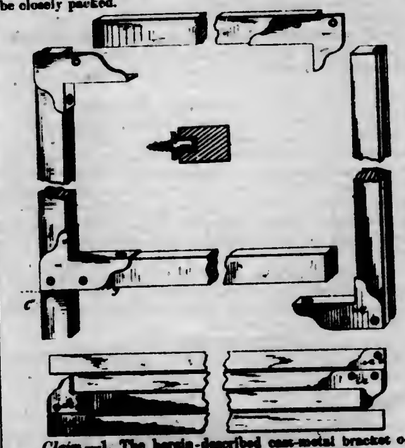
254,964. PLASTIC COMPOUND. BRUNO HARRASS, Schlan, near Gross Breitenbach, Schwarzburg-Rudelstadt, Germany. Filed Aug. 2, 1881. (Specimens.)

Claim.—1. The herein-described composition for making imitation wood objects, consisting of cellulose, starch, flour, and a small quantity of sawdust, in the proportions stated, substantially as described.

2. The herein-described composition for the first layer on the veneer in making imitation or artificial wood objects, consisting of from two to ten parts of cellulose, six to thirty parts of sawdust, one to five parts of binding material—such as dextrine, albumen, &c.—one to five parts of flour, and one-eighth to two parts of pipe-clay, chalk, &c., as set forth.

254,965. WINDOW-SCREEN. HENRY C. HART, Detroit, Mich. Filed Dec. 5, 1881. (No model.)

Brief.—Screws formed with a notched head and oblong in cross-section are placed on the sides of the screen and slide in grooves of a frame. The screen-frame consists of pairs of bars of different length, their joints covered by metallic corner-pieces consisting of a face-plate formed with an angular flange having a long side and a short side of such shape that the bars and plates may be closely packed.

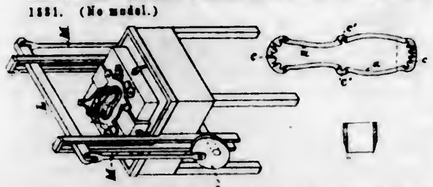


Claim.—1. The herein-described cast-metal bracket or corner-piece for a screen-frame, consisting of a solid face-plate, B, adapted to conceal the frame-joint, with the angular flange C, having a plane outer surface, and formed with a long side, *c'*, and a short side, *c²*, both arranged and adapted in length with relation to each other and to the face-plate, so that the distance between the corner of the flange and the outer end of its long side is equal, or nearly so, to the distance between the outer end of the short side of the flange and the outer edge, *c²*, of the face-plate, whereby the frame-bars, with these brackets attached, can be closely packed together, as specified.

2. The screw, in combination with the grooved side of a screen-frame, said screw being formed with a notched head made oblong in cross-section, and having a flange at its junction with the screw-threaded shank, substantially as described.

3. The combination, in a screen-frame, of the four bars in pairs of different length with the herein-described cast-metal brackets or corner-pieces, one attached to each bar, and each of said brackets consisting of a face-plate, B, with the angular flange C, having a plane outer surface formed with a long side, c', and a short side, c^2, both adapted in length so that the distance between the corner of the flange and the outer end of the long side is equal, or nearly so, to the distance between the outer end of the short side and the outer edge, c^3, of the face-plate, whereby these bars, with brackets attached, can be closely packed, in the manner and for the purpose specified.

254,966. METHOD OF AND MEANS FOR LASTING BOOTS AND SHOES. GILBERT HAWES, Lynn, Mass. Filed Mar. 31, 1881. (No model.)

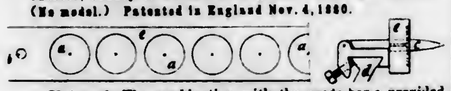


Claim.—1. The herein-described method of lasting a boot or a shoe, consisting in first drawing the upper over a last to which the inner sole has been previously applied, then cutting notches in the turned-over edges of the upper, next applying to the surface of the inner sole and turned-over portions of the upper a binding-strip coated with a fusible cement, and finally subjecting the whole to pressure under heat, sufficient to melt the cement, and thereby unite the parts, all in one continuous operation, substantially as specified.

2. In a lasting-machine, the combination of a last, a die having a continuous cutting-edge provided with scallops c c at the heel and toe and scallops c' c' at the sides, and suitable mechanism for operating said die, whereby notches are cut in the edges of the upper at the sides, heel, and toe, substantially as set forth.

3. In a lasting-machine, the combination, with a last, F, having yielding surfaces f f and a holder, B, for the attachment of a cutting or pressing tool, of the beam L, rods M M, eccentrics O O, and suitable supporting and operating mechanism, substantially as shown and described.

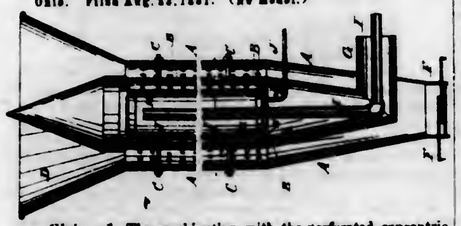
254,967. EMBROIDERING-MACHINE. ALFRED HEAVER, Manchester, County of Lancaster, England. Filed Oct. 1, 1881. (No model.) Patented in England Nov. 4, 1880.



Claim.—1. The combination, with the guide-bar e, provided with the recesses a, and the end apertures, b, of the pins c, hinged to the carriage d, which carries the needle-holders, and adapted to enter the apertures b of the said guide-bar, whereby a series of figures is adapted to be held in alignment with and to be placed automatically upon the needles, substantially as herein shown and described.

2. An improved device for placing the figures upon the needles of an embroidering-machine, consisting of the guide-bar e, provided with a series of recesses, a, having central apertures, substantially as shown and described.

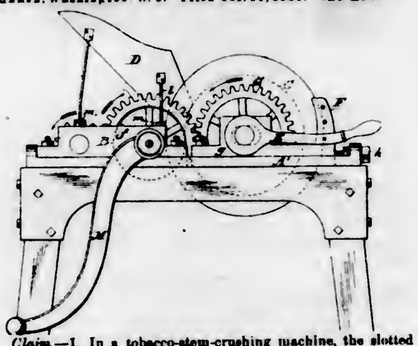
254,968. GRAIN-DRIER. HENRY R. HOPPNER, Circleville, Ohio. Filed Aug. 23, 1881. (No model.)



Claim.—1. The combination, with the perforated concentric cylinders A B, of the air-pipe G, inner cylinder, H, and the steam-supply pipe I, the latter passing through the air-pipe, entering the lower end of cylinder H, and extending nearly to its upper end, as and for the purpose specified.

2. In a grain-drier, the combination, with the outer cylinder, A, of the two slides F F, concave at the inner ends and overlapping each other, as and for the purpose specified.

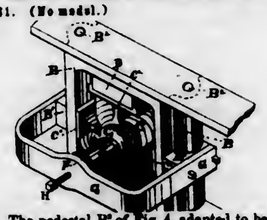
254,969. TOBACCO-STEM-CRUSHING MACHINE. CHARLES HENZE, Washington D. C. Filed Oct. 11, 1881. (No model.)



Claim.—1. In a tobacco-stem-crushing machine, the slotted journal-boxes g, provided with projections F and the eccentric adjusting-levers E, in combination with crushing-rollers, substantially as and for the purpose set forth.

2. In a tobacco-stem-crushing machine, the combination of the plain and flanged rollers B C, arranged side by side in a horizontal, or nearly horizontal, plane with the feed-box D, fitting between the flanges of one of the rollers, arranged as shown, and for the purpose set forth.

254,970. PEDESTAL, BOX, AND BEARING FOR AXLES, SHAFTS, AND SPINDLES. THOS. F. HENNICH, Reading, Pa., assignor of one-half to John G. Kalbach, same place. Filed Aug. 27, 1881. (No model.)



Claim.—1. The pedestal B' of Fig. 4, adapted to be used as a car-truck pedestal, and in combination therewith a yoke, G', cast with and forming an integral part of the jaws thereof, and having a set-bolt, H, substantially as shown, and for the purpose described.

2. The combination of pedestal B' of Fig. 4 with an anti-friction axle-box case, C, by the sliding lugs C', seat C', and spring D, and with the yoke G' by seat C', spring E, cap F, and set-bolt H, substantially as shown, and for the purpose set forth.

3. The axle-box case or seating C, provided with interior chilled wearing-surface, exterior lug-slides, C', vertical spring-seat C', end-thrust spring-seat C', cap C', ears C', opening in cap C', and dirt-discharge C', substantially as shown, and for the purpose specified.

4. The chilled bearing-shell L, provided with head or collar M, its interior adapted, by casting upon a mandrel within a chill, to be fitted upon the end A' of the axle, shaft, or spindle A, and to be retained upon the end of the same by the set-bolt A', substantially as shown, and for the purpose described.

5. The chilled anti-friction rollers K, adapted, by a bevel-chamfer at their base, to contact with the head or collar M of the shell-bearing L, the rollers being so arranged and combined with the case C and shell-bearing L that the thrust or weight of the axle, shaft, or spindle A shall be distributed upon the collar M, the chilled bed of the case C, and the roller guide-ledge K' at truncated end of the case, substantially as described, and for the purpose specified.

6. The combination of case C with the anti-friction rollers K, shell-bearing L, axle, shaft, or spindle A, and pedestal B', substantially as described, shown, and for the purpose specified.

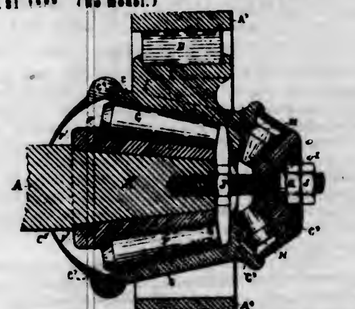
7. The combination of the chilled friction-rollers K with the chilled surface of the case C, and of the chilled shell-bearing L upon the axle, shaft, or spindle A, substantially as shown, and for the purpose described.

8. The combination of the chilled shell-bearing L, having the head M, with the axle, shaft, or spindle A by the reduced portion A', and with the interior chilled surface of the case C by the chilled anti-friction rollers K, substantially as shown, and for the purpose specified.

9. The drum-support N, cut away to form feet B, in combination with the case C, as adapted for a step to a vertical shaft or spindle, A, substantially as shown, and for the purpose set forth.

10. In combination with a vertical shaft or spindle, A, the case C, supported upon the drum N, cast therewith or bolted thereto, and having its interior surface chilled and filled with chilled anti-friction roller K, forming a seat and bearing for the toe L of the spindle A, the toe L being a chilled or case-hardened casting secured to the spindle or shaft by the set-bolt A', substantially as described, shown, and for the purpose specified.

254,971. CAR-AXLE BOX. THOMAS F. HENNICH, Reading, Pa., assignor of one-half to John G. Kalbach, same place. Filed Jan. 31, 1880. (No model.)

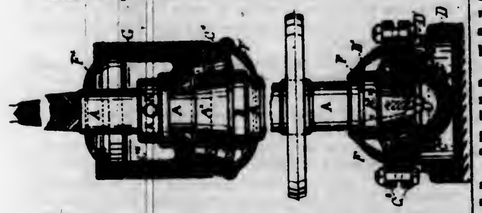


Claim.—1. In an anti-friction car-axle box, as described, the ledge or seat C', formed at the apex of the shell C as a bed for the rollers H, in combination with the fixed or loose cap C' and the bolt A', and nuts J K and washer I, substantially as shown, and for the purpose set forth.

2. In combination with an anti-friction-roller axle-box, C, the cap C', constructed, as shown and described, with a roller-bearing on its inner face, and adapted to be either fixed and revolving with the axle A and bolt A' or fitted to revolve independently upon the said bolt and in combination with the rollers H, substantially as and for the purpose described.

3. In combination with an anti-friction-roller axle-box, as described, the secondary or thrust anti-friction rollers H, constructed as shown, placed between the seat or ledge C' and the cap C', and secured in working-contact therewith by the bolt A', nuts J K, and washer I, whereby the end-thrust upon the axle is taken up and the bearing made positive upon the journal, substantially as shown, and for the purpose specified.

254,972. STEP AND BUSH FOR SPINDLES, &c. THOMAS F. HENNICH, Reading, Pa., assignor of one-half to John G. Kalbach, same place. Filed Nov. 10, 1881. (No model.)



Claim.—1. In combination with a shaft or spindle, A, provided with an anti-friction toe-collar, B', anti-friction rollers E, the case or shell C, provided with a hemispherical base, C', and abutments C', cap F, and internal bed adapted to receive the anti-friction rollers E, the bridge-tree-plate ring, and the screws D', substantially as shown, and for the purpose set forth.

2. The bridge-tree plate D, having a circular rim and ears D' and set-screws D', in combination with a spherical shell-step, C, having abutments C', rollers E, and toe B', of a spindle or shaft A, substantially as shown, and for the purpose described.

3. The exterior mill-bush shell, G, constructed as described, having wings G', cap F', and guide entrances or grooves H, in combination with the interior mill-bush, C', having feathers L, rollers E, collar B, and spindle A, substantially as and for the purpose hereinbefore set forth.

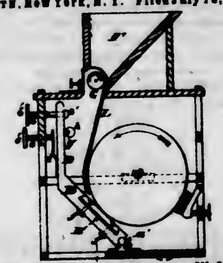
4. The interior mill-bush, C', provided with feathers L and an internal conoidal bed, the anti-friction rollers E, and cap F', in combination with the collar B, collar K, spindle A, and outer bush, G, having guide-entrances H, substantially as shown, and for the purpose described.

254,973. KITCHEN-RANGE BOILER. THEODOR HOPE, New York, N. Y. Filed Nov. 14, 1881. (No model.)



Claim.—A range-boiler consisting of a sheet-metal body with a suitable top and a sheet-metal bottom having a vertical downward flange adapted to fit the interior of the body, and an outward and upward return-flange of less depth than the downward flange overlapping the lower edge of the body, the downward flange being riveted to the body above the return-flange and the return-flange being calked to the body below the rivets, substantially as described.

254,974. MACHINE FOR REDUCING GRAIN, &c. JOHN HOLLINGSWORTH, New York, N. Y. Filed July 15, 1881. (No model.)



Claim.—1. The combination, in a mill for reducing grain or other substances, of a reducing-roll, a beam, D, carrying a resisting-bed, E, a spring, d, a tension-regulating screw, e, and an adjustable stop-bolt, all substantially as and for the purpose herein set forth.

2. The combination, in a mill for reducing grain or other substances, of a reducing-roll, a beam, D, carrying a resisting-bed, E, a spring, d, a tension-regulating screw, e, an adjustable stop-bolt, and an apron, L, for directing the grain or other substance between the bed E and the reducing-roll, all substantially as and for the purpose herein set forth.

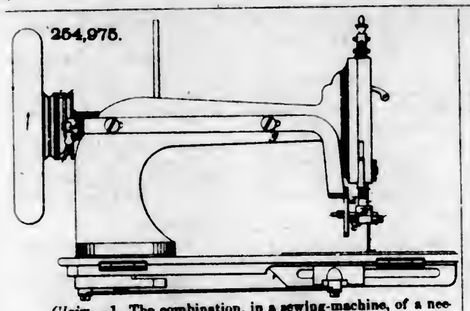
3. The combination, in a mill for reducing grain and other substances, of the series of supporting-beams D, pivoted at their lower ends and adjustable at their upper ends, the stop bolts or screws e, arranged to limit the inward movement of the beams D, the series of resisting-beds E, supported by the said beams, and the reducing-roller composed of parts or sections having surfaces of substantially-different character, all substantially as and for the purpose herein set forth.

4. The combination, in a mill for reducing grain or other substances, of the series of supporting-beams D, carrying the series of resisting-beds E, the springs d, tension-regulating screws e, stop bolts or screws e, and a reducing-roll composed of two or more parts or sections having surfaces of substantially-different character all substantially as and for the purpose herein set forth.

5. The combination, in a mill for reducing grain or other substances, of a cam or equivalent actuating device with the pivoted supporting-beams D, carrying the series of resisting-beds E, a reducing-roller composed of parts or sections having surfaces of substantially-different character, and the springs for holding the beams D and resisting-beds E toward the reducing-roller, all substantially as and for the purpose herein set forth.

254,975. SEWING-MACHINE. CHARLES E. L. HOLMES, New York, N. Y. Filed Feb. 14, 1881. (No model.) Patented in England Mar. 17, 1880, in France Mar. 17, 1880, in Belgium Mar. 16, 1880, and in Germany Mar. 25, 1880.

254,975.



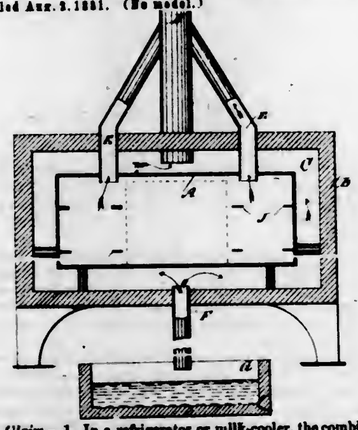
Claim.—1. The combination, in a sewing-machine, of a needle-bar sliding in stationary bearings and extending through and below the head, a needle-carrier sliding on said bar, a cam, and a rigid bar connected to said carrier beneath the head, and interposed between the cam and carrier and serving as a means of communicating motion directly from one to the other, substantially as set forth.

2. The combination of the slotted needle-bar carrier holding a needle in line with the needle-bar and extending through said slot, and appliances, substantially as described, for reciprocating the carrier.

3. The combination, with the needle of a sewing-machine, of a metal head or carrier cast upon the same and adapted to a socket in the part to which it is to be attached, and to guide the needle sliding in said socket, substantially as set forth.

4. The combination of the needle-bar having a transverse socket, open at the under side, formed directly in said bar, as specified, and a needle-carrier adapted to said socket, and appliances, substantially as described, for reciprocating said carrier.

254,976. REFRIGERATOR. GUSTUS H. HUNT, Kiowa, Kans. Filed Aug. 3, 1881. (No model.)



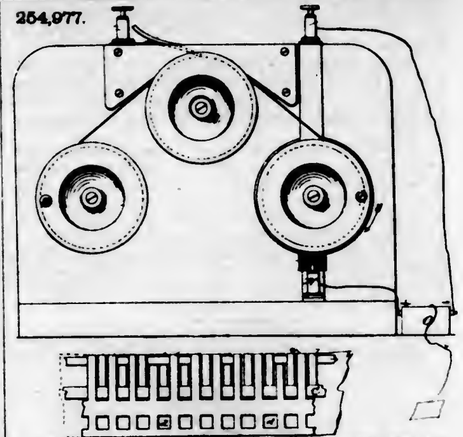
Claim.—1. In a refrigerator or milk-cooler, the combination, with the interior box, A, and the larger exterior box, B, of the draft-pipe D, leading from the exterior box, B, and the branch pipes E E, leading from the interior box, A, into the draft-pipe D, substantially as herein shown and described, and for the purpose set forth.

2. In a refrigerator or milk-cooler, the combination, with the interior box, A, and the exterior box, B, of the draft-pipe D, the branch pipes E E of the same, the pipe F, and the tank G, substantially as herein shown and described, and for the purpose set forth.

254,977. AUTOMATIC TELEGRAPHIC TRANSMITTER. E. L. HUTCHINSON, New York, N.Y. Filed May 18, 1881. (Model.)

Brief.—A message-strip is prepared by weaving a non-conducting strip between the alternate tongues of two conducting-strips, the dots and dashes being dependent upon the relative position of the tongues as to the non-conducting strip. The conducting-strips are insulated from each other, but connected respectively to opposite poles of the transmitting-battery and to ground. If no non-conducting strip were woven in, the stylus would send to line alternate impulses as the transmitting-drum advanced.

254,977.



Claim.—1. A transmitting-fillet for telegraphic purposes, consisting of a series of adjustable conductors connected with a common conductor, but separated from each other by intervening spaces, substantially as described, and for the purpose set forth.

2. A transmitting-fillet for telegraph purposes, consisting of a band or strip of conducting material secured upon a band of non-conducting material, and having projections or tongues separated from each other by intervening spaces and adjustable for arrangement in or out of line with each other, for the purpose of touching or not touching a style under which the fillet is drawn, essentially as described.

3. A flexible transmitting-fillet for telegraphic purposes, consisting of two flexible metallic strips, each having laterally-projecting tongues equally separated by intervening spaces, said strips being secured to a common flexible non-conducting band, with the tongues of one of said metallic strips arranged between those of the other, and means for adjusting the various tongues in or out of line with each other, so that only such as desired may come in contact with a style under which the fillet is drawn.

4. In a transmitting-fillet for telegraphic purposes, the combination, with the two tongued metallic strips and flexible non-conducting base-strip, substantially as described, of the composing-tape arranged to be interwoven between the tongues of said strips, essentially as and for the purpose set forth.

5. In an automatic telegraph transmitting apparatus, the combination, with the transmitting-fillet having the two metallic parts, constructed and adapted for arrangement substantially as described, of the supporting or transmitting drum, the fillet-moving drums, one of which is provided with means for connecting the separate metallic parts of the strips with the opposite poles of the battery, respectively, and a suitable style arranged to come in contact with the fillet in its movements, essentially as set forth.

6. In an automatic telegraphic transmitting apparatus, the combination, with a metallic transmitting-fillet, constructed, substantially as described, of the two reels for supporting and moving said fillet, one end of said fillet being electrically connected to a battery by means of intermediate connecting devices operated by one of the drums, the intermediate drum for guiding the same, and the style arranged adjacent to said intermediate drum, substantially as described.

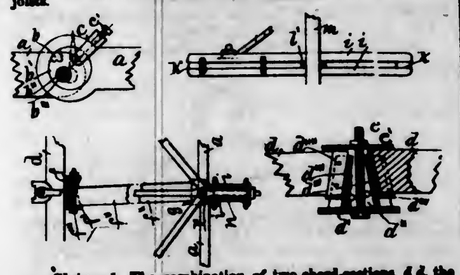
7. The transmitting-fillet composed of a flexible non-metallic strip, a series of separated conducting plates or pieces secured to said strip, and means for preventing each of said plates or pieces as desired from coming in electrical contact with a style in mechanical contact with which the fillet is drawn.

8. The combination, in an automatic transmitting-fillet for telegraphic purposes, of adjustable contact plates or tongues, with a flexible non-conducting base or band, to which the tongues are attached, and which projects as far as the ends of the adjustable tongues for the purpose of protecting said tongues, substantially as described.

254,978. TRUSS-BRIDGE. WILLIAM IRELAN, Oak Springs, assignor of one-half to C. W. Bowen, Centerville, Iowa. Filed Aug. 12, 1881. (No model.)

Brief.—A hollow wedge-shaped box with pockets on opposite sides to receive cased ends of chord-sections and a bolt to adjust the parts; an eccentric on a pin as an adjustable connection of

tension-chords and means for adjusting and holding it; counterpart wedges for adjusting posts to chords and braces; girders of channel-iron spaced by blocks, which also serve as sockets for floor-joists.



Claim.—1. The combination of two chord-sections, *d d*, the one having a simple perforation in its end and the other having a circular opening, *b*, adapted to receive a corresponding disk, the disk *b'*, having a perforation in an eccentric position, the bifurcated and pivoted block *c*, the clamping-screw *d'*, and a coupling or bolt, *b''*, substantially as shown and described, for the purposes specified.

2. A keystone-coupling consisting of a metal casting, *d'*, that has a central vertical perforation for the admission of a screw-bolt, side walls, *d''*, vertical and converging connecting-walls *d'''*, and open pockets adapted to receive sockets of corresponding size and shape, to connect the ends of timbers in a bridge, substantially as and for the purposes set forth.

3. The combination of the sliding keystone-coupling *d' d'' d'''*, the sockets *d'''*, the stay-timbers *d d*, the bolt *c*, and washer-plate *c'*, substantially as shown and described, for the purposes specified.

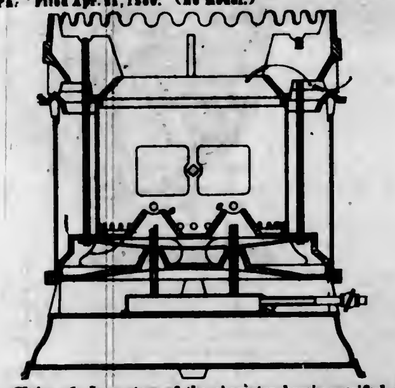
4. The flanged plate *f*, having an outside surface adapted to engage a piece of timber and an inside wedge-shaped surface, and a sliding shoe, *f'*, having a wedge-shaped outside surface, in combination with a rigid stay-piece, *f''*, substantially as shown and described, for the purposes specified.

5. The combination of a pivoted foot-plate, *g g' g''*, a detachable stay, *f''*, having a wedge-shaped sliding shoe, *f'*, on its free end, and a fixed wedge-shaped plate, *f*, substantially as shown and described, for the purposes specified.

6. The flooring joist or rail *m*, in combination with the stay-block *l*, having lugs *l'*, and the skeleton-girder *i i k k*, substantially as shown and described, for the purpose specified.

7. In a truss-bridge, the combination of a lower chord composed of sections flexibly connected, and having a tension and equalizing device, *b b' b'' b''' c c'*, an upper chord composed of detachable timbers *d*, and having a keystone-coupling and adjusting device *d' d'' d c c'*, a series of skeleton-girders *i i k l*, coupling-bolts *s* and *r*, pivoted foot-plates *g g' g''*, and detachable stays and tension-rods, substantially as shown and described, for the purposes specified.

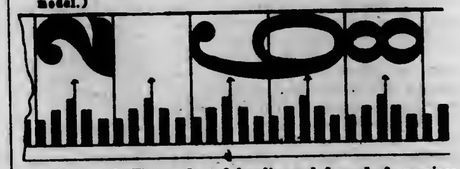
254,979. LAMP OR GAS STOVE. JOHN M. IRWIN, Horton, Pa. Filed Apr. 21, 1880. (No model.)



Claim.—1. In a stove of the character herein specified, the burner or burners for gaseous fuel, consisting of a continuous close-walled conduit or conduits, provided with inlet and outlet for the gas, said outlet being located below the top of the air-deflectors or burner-cones, substantially as shown and described.

2. In a stove of the character herein specified, the burners for gaseous fuel, constructed substantially as shown, and provided with an inlet for gas at bottom, and tight burner-tips or conduits leading therefrom, terminating at a point below the top of the burner-cones or air-deflectors, substantially as shown and described.

254,980. SURVEYOR'S SELF-READING LEVEL-ROD. THOS. H. JACKSON, Clarksburg, W. Va. Filed Nov. 10, 1881. (No model.)

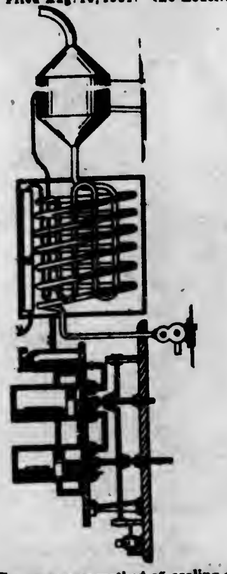


Claim.—1. The graduated leveling-rod formed of one piece having one straight edge, one flat graduated face, a swelled edge, and a swelled back, for the purpose described.

2. A leveling-rod to be used upright, having graduated marks transversely across its face, indicating feet and tenths of a foot, the feet being designated by figures two-tenths of a foot in length, and the even tenths by figures only one-tenth of a foot in length, the long and short bars of different colors indicating hundredths of a foot, and arrow-heads applied to the longest bars indicating the exact center of each tenth of a foot, the whole being arranged as shown and described.

3. A leveling-rod having a beveled straight edge, *a*, the graduating-marks extended only to the inner angle of the said bevel, the swelled back, and swelled right-hand edge, substantially as described.

254,981. AIR-COOLING APPARATUS. RALPH S. JENNINGS, Baltimore, Md. Filed Aug. 19, 1881. (No model.)



Claim.—1. The process or method of cooling air for apartments or buildings by means of a cooling agent, which consists in compressing the air and then expanding it so as to surround and cool a different current of air on its way to the apartment, substantially as described.

2. The method or process of cooling air for apartments or buildings by a cooling agent, which consists in compressing the air and then expanding it so as to cool a body of water and a different current of air on its way to the apartment.

3. The method or process of cooling and purifying air for apartments and similar purposes, which consists, first, in compressing air; second, expanding it in a chamber; third, passing water through the air-expanding chamber, so as to be cooled for saturating or wetting fibrous material in an air-cooling chamber; fourth, in passing currents of different air through a pipe within

an air-expanding chamber; and, finally, in passing the same

pinion *k*, and its system of levers *q q' q² q³*, and the grooved weight

254,982. PENCIL-SHARPENER. FRANZ F. KULLRICH, Berlin.

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an air-expanding chamber; and, finally, in passing the same through an air-cooling chamber for further cooling and purification, substantially as described.

4. In combination with a means for compressing air, a refrigerating-chamber through which passes the supply of air, which is cooled without coming in direct contact with the expanded air, substantially as described.

5. The combination, in an apparatus for cooling air, of one or more air-compressing cylinders and an air-expanding chamber for acting upon the water on its way to an air-cooling chamber, substantially as described.

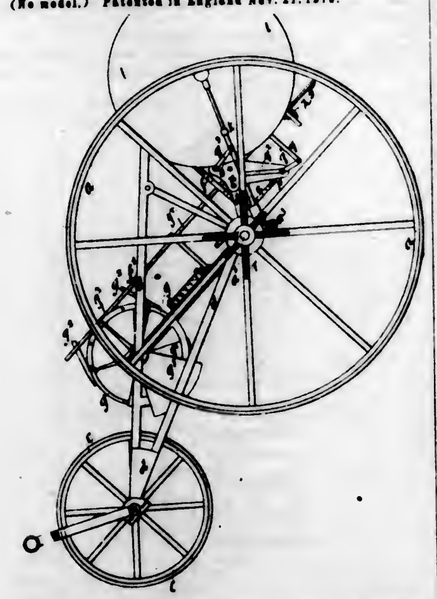
6. The combination, in an apparatus for cooling air, of one or more air-compressing cylinders, an air-reservoir, and an air-expanding chamber for acting upon the water on its way to an air-cooling chamber, substantially as described.

7. The combination, in an apparatus for cooling air, of one or more air-compressing cylinders, an air-reservoir, and an air-expanding chamber for acting upon the water and air on their way to an air-cooling chamber, substantially as described.

8. In combination with an air-compressing apparatus, an air-expanding chamber provided with coils of pipe, and a water box or pan, substantially as described, and for the purpose set forth.

9. The apparatus for cooling and purifying air, consisting of one or more air-compressing cylinders, an air-reservoir, an air-expanding chamber having arranged therein a water box or pan, an air-cooling pipe, and an air cooling and purifying chamber, said parts being connected together for operation substantially as described.

254,982. GRADE-RECORDING INSTRUMENT. ALEXANDER MADDOX RYNER-JONES, London, England. Filed Aug. 23, 1881. (No model.) Patented in England Nov. 21, 1879.



Claim.—1. A self recording and registering level for making sections for railway and other surveys in which the operating devices for recording are actuated primarily from a suspended and weighted wheel hung on a pivoted framing, *d*, and provided with horns or arms for giving motion to a sliding rod, substantially as shown and described.

2. In a recording and registering level for the purpose set forth, the combination of the following devices: a carriage one of whose wheels is a prime motor, the wheel *c*, framing *d*, axle *c'*, worm-wheel a^2, pinions a^2 and *k*, friction-plate *l*, weight *m*, and its described connections, surface-wheel *e*, and lever-motor *f*, the combination operating substantially as set forth.

3. In combination, the suspended and weighted wheel *g* and its curved horns, the vertical wheel or level-motor connected with such wheel, and the horizontal friction-plate, substantially as and for the purpose set forth.

4. In combination, the vertical friction-plate *l*, the friction-pinion *k*, and its system of levers *q q' q² q³*, and the grooved weight *m m'*, for adjusting the speed of the paper to receive the tracings of the level, substantially as set forth.

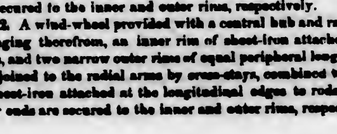
254,983. CURTAIN-HOOK PIN. HUBERT L. JUDD, Brooklyn, N. Y. Filed Jan. 16, 1882. (No model.)

Brief.—Where the wire is bent to form the hook it is held firmly by a metal clamp.



Claim.—In a curtain hook and pin made of one piece of wire, the combination, with the shield-pin and curtain-hook, of a metal clamp surrounding the wire at the junction of the hook and body of the shield-pin, substantially as specified.

254,984. CAR-COUPLING. LEANDER KISE, Georgetown, Ohio. Filed Jan. 7, 1882. (No model.)



Claim.—1. The combination, with the sliding rod K and the coupling-pin G, of the bent and slotted lever H, the bent strap N, secured to the said slide-rod, and provided with the yoke *e*, and the pin *f*, substantially as and for the purpose set forth.

2. The combination, with the sliding rod K and the coupling-pin G, of the bent and slotted lever H, the bent strap N, secured to the sliding rod, and provided with yoke *e*, the pin *f*, and the curved guide *d*, substantially as and for the purpose set forth.

3. The combination, with the sliding rod K, provided with lugs *g*, of the slotted boxes L, provided with the shoulders *h*, substantially as herein shown and described, whereby the lugs on the rod are made to register with the slots of the boxes, as set forth.

254,985. WIND-WHEEL. ROBERT G. KIRKWOOD, Ellicott City, Md. Filed Aug. 3, 1881. (No model.)

Claim.—1. A wind-wheel provided with sheet-metal inner and outer rims supported upon radial arms which spring from a central hub, combined with sheet-metal vanes supported at their longitudinal edges by straining-rods, which at their extremities are secured to the inner and outer rims, respectively.

2. A wind-wheel provided with a central hub and radial arms springing therefrom, an inner rim of sheet-iron attached to said arms, and two narrow outer rims of equal peripheral length, united and joined to the radial arms by cross-stays, combined with vanes of sheet-iron attached at the longitudinal edges to rods which at their ends are secured to the inner and outer rims, respectively.

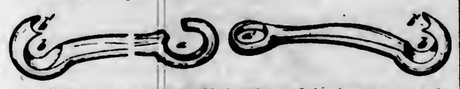
254,986. PENCIL-SHARPENER. FRANZ F. KULLRICH, Berlin, Germany. Filed Feb. 25, 1881. (No model.)



Claim.—1. A pencil-sharpener made substantially as herein shown and described, and consisting of two roughened convex plates attached to each other at one end by a hinge or band-spring, as set forth.

2. In a pencil-sharpener, the combination, with the plates A A, connected by a hinge or spring, of the roughened convex plates C C and the strips D, of cloth or analogous material, substantially as herein shown and described, and for the purpose set forth.

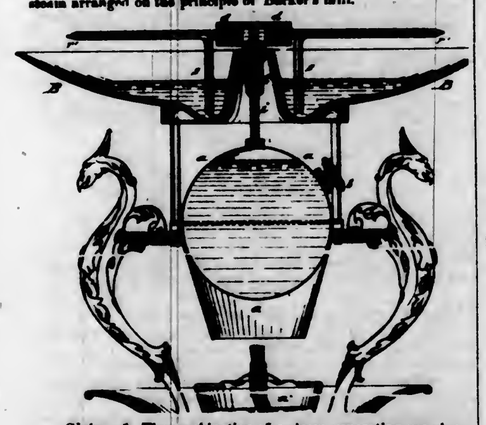
254,987. BRIDLE-BIT. GEO. J. LUTCHWORTH, Buffalo, N. Y. Filed Oct. 8, 1881. (No model.)



Claim.—A cast bit provided with eyes *b*, having concave ends *b'*, closed against the convex body of the bit, substantially as set forth.

254,988. ATOMIZER. PAUL LOCHMANN, Schkeuditz, Prussia, Germany. Filed Dec. 19, 1881. (No model.)

Brief.—The atomizing-tubes are forced to rotate by a jet of steam arranged on the principle of Barker's mill.



Claim.—1. The combination of a steam-generating vessel, *a*, having a connecting-tube, *i*, a basin, B, for the liquid to be atomized, radial steam-tubes *r r*, communicating with the tube *i*, and suction-tubes *s*, the latter extending from the basin to the nozzles of the steam-tubes, substantially as set forth.

2. The combination of a steam-generating vessel, *a*, an upright connecting-tube, *i*, having a top bearing and openings below the same, a coupling-sleeve, *d b'*, radial steam-tubes *r r'*, secured to the sleeve, and suction-tubes *s*, extending from the basin to the nozzles of the steam-tubes *r r'*, substantially as set forth.

254,989. FISH-TRAP. MAJOR B. MARSHALL, Vienna, Md. Filed Jan. 16, 1882. (No model.)

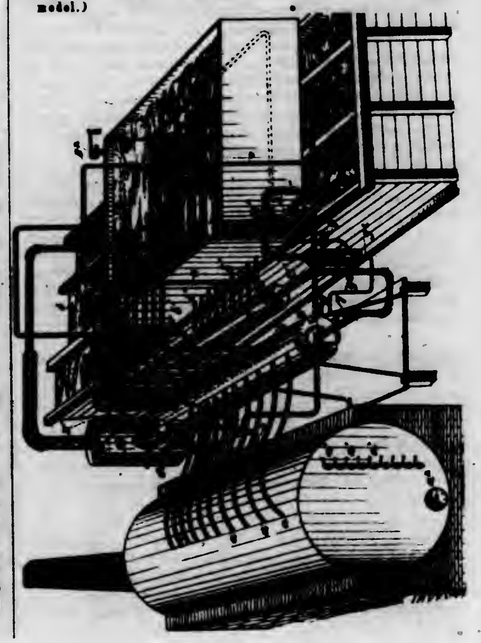
Claim.—1. The combination, with the stationary poles *a* and runner-poles *h*, each provided with a hole, *m*, near its lower end, of the spear-head-shaped net *k*, closed at its sides and bottom, and having cords *l* at the angles of its bottom, substantially as described, and for the purpose set forth.

2. The combination, with the spear-head-shaped net *k*, provided with the opening *k'*, and secured to the stationary and runner poles *a h*, of oblong figure *c*, inclosed by nets *n n'*, and provided with the opening *c e*, funnel *p*, opening into the oblong figure *c* and spear-head, oblong figure *d*, concentric with the figure *c*, open at both ends, inclosed by the net *r*, and provided with the opening *d'*, and net *a*, extending from the opening *d'* to the bank, and secured to the stationary and runner poles *a h*, substantially as described, and for the purpose set forth.

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254,990. PROCESS OF AND APPARATUS FOR DISTILLING OIL. JOHN H. MARTIN, Oil City, Pa. Filed Aug. 14, 1880. (No model.)



Claim.—1. The improvement in the process of distilling oil, which consists in separating the primary distillate from the still into oil and vapor, partially or wholly condensing such vapor, then separating the resulting condensed products into oil and light vapor by subjecting them to the action of the primary hot vapor distillate, and finally conducting away and condensing separately the light and heavy products.

2. The combination of a still having a series of goose-neck pipes, *a*, a primary separator, B, receiving said pipes *a*, and provided with escape-pipes *b*, connected with a condenser and a secondary separator, D, placed within the first and connecting conduits between the condenser and such secondary separator, said separator being heated by the vapors surrounding it, substantially as and for the purposes described.

3. The combination of a still, a primary separator connected therewith by pipes, and provided with escape-pipes passing through a condenser and connected with a secondary separator placed within the first, and having its escape-pipe leading into a drum, with a steam-pipe placed within the primary separator and having its escape opening into said drum, substantially as and for the purpose described.

254,991. PORTABLE SWING. GEORGE W. MASON, Washington, D. C. Filed Feb. 7, 1882. (No model.)



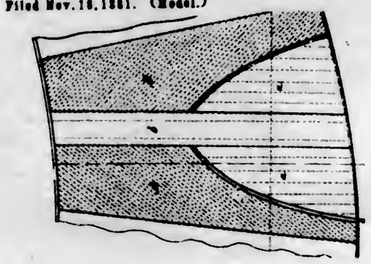
Claim.—1. A portable swing having a base, and permanently attached thereto outwardly-inclined standards, from which the swing is suspended, substantially as described.

2. A swing-frame consisting of a suitable base and standards adapted to sustain the weight of the swing without the use of a connecting-bar or stay above the point at which the swing is attached to the standards, substantially as described.

3. A portable swing having a base and provided with standards inclined outward from a perpendicular line with the base, in combination with a swing attached to the upper ends of said standards, as and for the purpose set forth.

4. A portable swing having a base and provided with standards, in combination with the arms or supports to which the seat of the swing is attached, said arms being adapted to sustain a weight in a line inside of the point at which they are attached to the standards, thereby dispensing with the use of a cross-bar or stay above the swing.

254,992. CORSET. WILLIAM MCCABE, New Haven, Conn. Filed Nov. 19, 1881. (Model.)



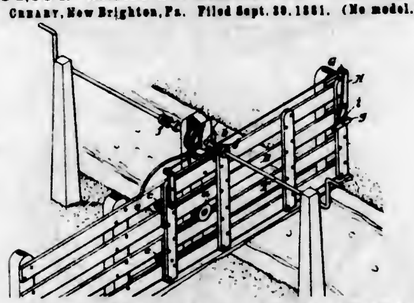
Claim.—A corset having the hip-section composed of a stayed body, combined with the corded overlay A B, extending from the top to the bottom of the section, said parts A B of the overlay cut away from the waist-line at the center respectively downward and forward and downward and backward to near the front and rear edges of said overlay, substantially as described.

254,993. BOOT. GEORGE C. MCCOY, Denver, Colo. Filed Dec. 21, 1881. (Model.)



Claim.—The herein-described boot, consisting of the vamp B, the quarters *d*, sewed together in the back and a short distance in front, from the top down, and provided with the hooks *e*, holes *i*, and a suitable lacing device, the strip *f*, secured over the said front seam, and the tongue G, secured to the said leg-pieces and vamp, substantially as set forth.

254,994. SLIDING AND ROLLING GATE. JAMES F. MCCREARY, New Brighton, Pa. Filed Sept. 30, 1881. (No model.)



Claim.—1. The combination, in a sliding gate, of appliances for causing the gate to move back and forth, and a lever, H, pivoted to the gate, arranged to bear on the keeper, and connected with and operated by said appliances to tilt and release the gate from the keeper, substantially as set forth.

2. The combination of the post G, catch *g*, and sliding gate B, provided with the pin *i* and lever, for the purpose set forth.

3. The combination, with the sliding gate, pin *i*, drum and cord *e*, and with the post G and catch *g*, of the lever H, connected with the cord, and arranged to operate substantially as set forth.

254,995. METHOD OF STEERING TOW-BOATS AND TOWS. DONALD A. MCDONALD, La Crosse, Wis. Filed Jan. 14, 1882. (No model.)



Claim.—1. The method substantially as herein set forth of guiding water-craft propelled by a boat in rear thereof, consisting in shifting or moving the point of bearing of the propelling-boat to one or the other side of the medial line of the propelled craft and turning the propelling-boat about its approximate center.

2. In combination with a raft, float, or other craft, a propelling-boat bearing against the rear of the craft and connected therewith substantially as shown and described, whereby the bearing-point of the propelling-boat may be moved either side of the normal bearing-point and the propelling-boat turned about its approximate center, substantially as and for the purpose set forth.

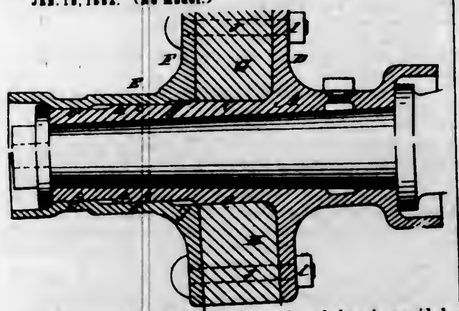
3. In combination with a raft, float, or other craft, a propelling-boat connected therewith substantially as shown and described, and adapted to swing or turn about its approximate center, a capstan or winding-drum mounted upon the propelling-boat, and a cable or hawser wound upon said capstan and having its ends secured to the propelling-craft at opposite sides of the center, substantially as explained, whereby the point of application of the propelling-power may be shifted to one or the other side of the medial line of the propelled craft.

4. In combination with craft B, boat A, cables C, capstan G, and hawser H, all arranged and operating substantially as explained, whereby the operation of the windlass is caused to shift the point of bearing to one side of the medial line of the propelled craft.

5. A boat for propelling and guiding rafts, floats, and other craft, provided with one or more vertical rollers at its bow, whereby the bow is adapted to move freely along the stern of the craft, in combination with mechanism, substantially such as described, for shifting the bow of the boat, as explained.

6. In combination with a boat having eyes or bearings *e e d* on its stem or bow and elongated shaft or axle E, and a roller, *b*, removable from said shaft, as described, whereby it is adapted to be placed at different heights.

254,996. HUB. ANGUS MCKELLAR, Fort Douglas, Utah. Filed Jan. 19, 1882. (No model.)

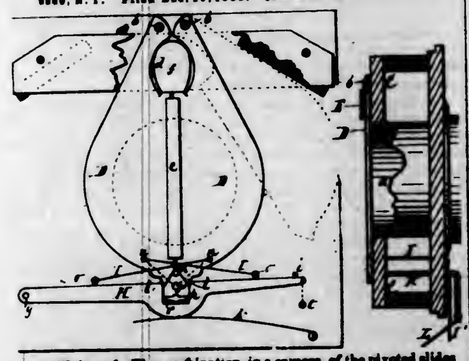


Claim.—1. The combination, with the axle-box A, provided with the flange D, the flat seats *i*, the step *a*, and the straight surfaces *c c*, of the sleeve E, provided with the flange F, the straight surfaces *c' c'*, and the flat seats J, substantially as and for the purpose set forth.

2. The combination, with the axle-box A, provided with the flange D, the flanged sleeve E, and the bolts J, of the spokes G, provided with the grooves *h* and the shoulders *h*, and the wedges H, provided with the grooves *g*, substantially as and for the purpose set forth.

3. The wedges H, formed with the grooves *g*, and the spokes G, formed with the grooves *h*, in combination with the flanged axle-box A, flanged sleeve E, and the bolts J, substantially as described.

254,997. PHOTOGRAPHIC CAMERA. JAY G. HERRELL, Geneseo, N. Y. Filed Dec. 19, 1881. (No model.)

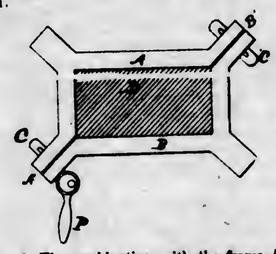


Claim.—1. The combination, in a camera, of the pivoted slides D D, provided with the lugs *l l*, the spring *d*, resting between the slides and serving to throw them apart, the pivoted spring-catch H, provided with the square notch *h*, with which the lugs engage, the cords I I I', attached to the slides and extending out through the case, and the shaft K, provided with the cross-head *r*, resting in the notch *h* and operated by the cord L, as shown and described, and for the purpose specified.

2. The combination, with the pivoted slides D D, of the cross-piece E, extending over the slides and forming guides thereto, and the cushions G G, of cotton or equivalent material, under the cross-piece, as herein shown and described.

3. The combination of the slides D D, pivoted at their tops and having an opening, *f*, between them, the cords I I, attached to the bottom of the slides for operating them, and the spring *d*, placed loosely between the slides in the opening *f*, and serving to open the slides when released by the cords, as herein shown and described.

254,998. PROCESS OF AND MEANS FOR PHOTO-ENGRAVING METALLIC PLATES. ALFRED NICHAUS, Paris, France. Filed Sept. 3, 1881. (No model.) Patented in France July 11, 1881.



Claim.—1. The combination, with the frame A B, provided with the slotted and jointed ends A' B', and the removable plates D, of the slotted cross-pieces C, provided with wedges, and the eccentrical handle P, substantially and for the purpose set forth.

2. The process herein described of producing a metal mold in relief, consisting in applying a gelatine bichromatic proof formed by the process above described to the surface of a melted alloy in a close vessel and subjecting it to pressure, as set forth.

254,999. TREATING TOBACCO-LEAF. JACOB D. MILLER, York, Pa., assignor of one-half to Reuben E. Kayler, same place. Filed Dec. 9, 1881. (No specimens.)

Claim.—1. The mode above described of treating leaf-tobacco to remove the white veins and fox marks, the same consisting in applying to the leaf carbon-black in a suitable liquid vehicle and then resweating the leaf, substantially as set forth.

2. The mixture for treating white-veined and fox-marked tobacco-leaves, consisting of carbon-black and vinegar, as specified.

255,000. DITCHING-MACHINE. SAMUEL E. MORRAL and JOHN MORRAL, Morral, Ohio. Filed Dec. 14, 1881. (No model.)

Brief.—The side cutters, mold-board, and shoe are braced by a block secured upon the shoe and between the mold-board and brace, which is attached to the mold-board and shoe.



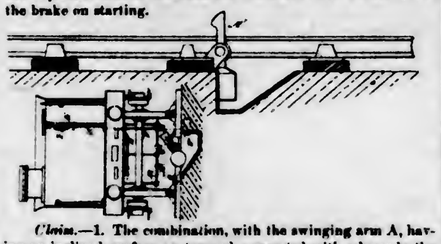
Claim.—1. In combination with the parallel beams *a*, draft-beam *c*, and upright B, the revolving spade-wheel E F G, the curved mold-board I, the shoe H, the brace K and block L, and the cutters M and laterally-delivering plates R, the whole arranged substantially as and for the purposes specified.

2. In combination with the shoe, mold-board, and cutters, the brace secured to the rear of the mold-board and to the shoe, and the block interposed between the shoe, mold-board, and brace, to which block the cutters are bolted, substantially as specified.

255,001. RAILWAY-SIGNAL. HENRY HERMIS, Manchester, County of Lancaster, England. Filed Nov. 26, 1881. (No model.) Patented in England Apr. 26, 1881.

Brief.—A vibrating arm operated by the signal cord or chain is held out of operative position when the signal shows "safety;"

but when at "danger" said arm stands in the path of a tappet on the locomotive, whereby the steam or air brake is applied and an alarm-whistle sounded. A similar independent arm is located on the departure side of a terminus or station, to automatically test the brake on starting.

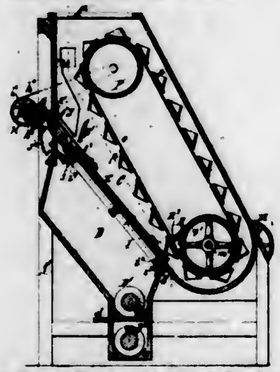


Claim.—1. The combination, with the swinging arm A, having an inclined surface on top and connected with a lever in the signal-box, of the shaft B, having a tappet, C, and crank E, the rods F G, the spring-catch H, and the spring K, all arranged substantially as and for the purpose specified.

2. The combination, with the rod G, having a catch, O, and arranged in a signal mechanism, substantially as described, of the connected pipes L M and a valve having the handle N, whereby the brake may be operated, as described.

3. The combination, with a railroad-track and a signal and brake mechanism on a locomotive, of a swinging arm, A', arranged on the departure side of a terminus and parallel with the rails, as and for the purpose specified.

255,002. BOLTING APPARATUS. ORVILLE M. MORSE, Springville, N. Y. Filed Oct. 3, 1881. (No model.)



Claim.—1. In a bolting-machine, the combination, with an inclined screen and an elevating mechanism facing the screen, of a wiper or brush bearing against the screen, and mechanism whereby the wiper or brush is caused to move horizontally back and forth over the screen, substantially as set forth.

2. The combination, with the inclined screen B and an elevating mechanism facing the screen, of a wiper or brush frame, E, arranged upon the upper side of the screen, and an endless belt, G, adapted to move the frame E back and forth over the screen, substantially as set forth.

3. The combination, with the inclined screen B, of the wiper or brush frame E, resting upon the screen and provided with hooked bars f, a rail, f', upon which the bars f slide, and mechanism whereby the frame E is moved back and forth over the screen, substantially as set forth.

4. The combination, with the inclined screen B, of a wiper or brush frame, E, resting upon the screen, and guides which support said frame, an endless belt, G, and a cord or chain, g^4, whereby the endless belt is connected with the frame E, substantially as set forth.

5. In a bolting apparatus, the combination, with an inclined screen, B, of brush or wiper frames E and I, arranged respectively above and below the screen, and mechanism whereby these frames are moved horizontally back and forth over the screen, substantially as set forth.

6. The combination, with a bolting-screen, B, of a brush or wiper frame, I, an endless belt, G, and a slack chain or rope, j^3, whereby an intermittent reciprocating motion is imparted to the frame I, substantially as set forth.

7. The combination, with an inclined bolting-screen, B, of a brush or wiper frame, I, arranged on the under side of the screen, cars j, which guide the upper part of the frame, and notches j', formed in the upper part of the frame I, whereby the frame is permitted to recede from the screen, substantially as set forth.

8. The combination, with an inclined screen, B, of an elevating mechanism composed of one or more endless bucket chains or belts arranged to face the screen and converging on its descending side toward said inclined screen from the top toward the bottom thereof, substantially as set forth.

9. In a bolting apparatus, an elevating mechanism composed of two or more endless bucket belts or chains, the buckets being arranged at increasing distances apart on the successive belts or chains from the head toward the tail of the machine, substantially as set forth.

10. In a bolting apparatus, the combination, with the elevator-belt, of buckets p, rivets r, and washers r', applied to the rivets between the buckets and the belts, substantially as set forth.

11. The combination, with the elevator belt or belts and the bottom pulley or pulleys, q q' q^2, of a scraper, R, bearing against the upper side of the bottom pulley or pulleys, substantially as set forth.

12. The combination, with the elevator belt or belts provided with openings R', and the bottom pulley or pulleys, q q' q^2, of a scraper-plate, R, bearing against the upper sides of the bottom pulley or pulleys and inclining toward the descending side of the elevator belt or belts, substantially as set forth.

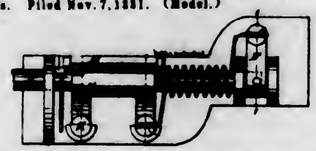
13. The combination, with the elevator belt or belts, of a wiper, R^3, bearing against the inner side of the belt or belts, substantially as set forth.

14. The combination, with the elevator belt or belts, of a bottom pulley or pulleys, of a scraper, R, bearing against the upper sides of the bottom pulley or pulleys, and a wiper, R', attached to the scraper R and bearing against the inner side of the elevator belt or belts, substantially as set forth.

15. The combination, with an inclined bolting-screen, B, of a plate, S, strip S^2, arranged above the upper edge of the screen and receiving the impact of the falling material, an elevating mechanism facing the inclined screen, and a shield or guide-board, S', adapted to prevent the material from falling directly from the elevating mechanism on the screen, substantially as set forth.

16. An inclined bolting-screen provided on its upper side with transverse ribs or cords t, secured to or resting on the bolting-surface, whereby the material is compelled to flow over these obstructions, thereby retarding its descent, substantially as set forth.

255,003. SASH-FASTENER. EPHRAIM S. MORTON, Brockton, Mass. Filed Nov. 7, 1881. (Model.)



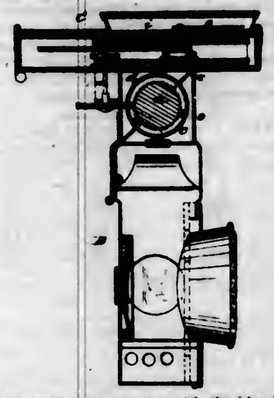
Claim.—1. In a window-sash fastener, the combination of two spring-impelled bolts or catches supported on a suitable plate on the window-casing, each arranged to fasten a different sash, a journaled operating-rod having an arm adapted to retract the inner bolt when said rod is rotated, an operating-sleeve journaled on said rod and provided with an arm adapted to retract the outer bolt when said sleeve is rotated, and means for rotating said sleeve independently of the rod, as set forth.

2. In a window-sash fastener, the combination of two spring-impelled bolts or catches supported on a suitable plate on the window-casing, each arranged to fasten a different sash, and each provided with devices substantially such as herein described, whereby they may be operated independently, and means, substantially such as herein described, for locking said operating devices and bolts either when the latter are projected so as to lock the sashes or retracted so as to be inoperative, as set forth.

3. In a window-sash fastener, the combination of two spring-impelled bolts or catches supported on a suitable plate on the window-casing, a journaled operating-rod having an arm engaged with the inner bolt, the rod being adapted both to swing said arm and to move lengthwise independently thereof, an operating-sleeve journaled on said rod and provided with an arm engaged with the outer bolt, said sleeve being adapted to rotate with the rod, but prevented from moving endwise, a lug on the rod adapted by an endwise movement of the rod to enter either of two notches formed in the sleeve, and a locking device substantially such as herein described, to prevent the operating-rod from rotating when its lug is engaged with either of the notches of the sleeve, thereby causing the operating-rod to hold both bolts either projected or retracted, as set forth.

4. The operating-bolt having a longitudinal key-hole and a lateral slot or opening, combined with a spring locking bolt or tongue adapted to project into said key-hole, and a key adapted to be inserted in the inner end of the operating-rod and disengage the locking-bolt therefrom, as set forth.

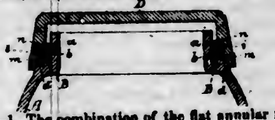
255,004. CYCLOMETER. JOHN J. MORTON, Albion, Mich. Filed June 14, 1881. (No model.)



Claim.—1. The combination, with the bicycle-lamp B and hinged box A, of the odometer C, fixed to the box with its dial facing upward, substantially as shown and described.

2. In combination with a bicycle, an odometer mounted upon the axle of the same, face uppermost, and retained in position by means of a pendulous weight, substantially as specified.

255,005. SEALING FRUIT-JARS. JOSEPH MURPHIN, Malaga, N. J., assignor of one-half to Alfred B. Richman, same place. Filed Jan. 12, 1882. (No model.)



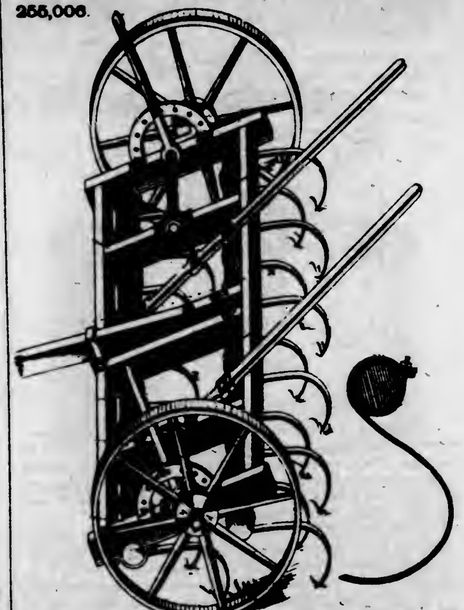
Claim.—1. The combination of the flat annular ring or gasket B, the jar A, having a contracted annular ring-supporting shoulder, a, and immediately below the same a vertical bearing-surface, b, and the cap D, having an internal annular bearing-surface, i, of a radius greater than that of the surface b by about the thickness of the ring B, and a shoulder adapted to bear near the outer edge only upon the ring B when the latter is supported in its horizontal position, whereby on depressing the cap an abrupt quarter-turn is imparted to the ring and the latter is confined in a vertical position between the bearing-surface b on the jar and the bearing-surface i in the cap, as set forth.

2. The combination of the flat annular ring or gasket B, the jar A, having a contracted annular shoulder, a, a shoulder, d, below the same, and between them an annular vertical bearing-surface, b, equal in depth to the width of the ring, and the cap D, having an internal annular bearing-surface, i, exceeding the diameter of the surface b to the extent specified, and a shoulder, m, adapted, when the ring B is supported horizontally, to bear upon said ring near the outer edge only, as set forth.

3. The combination of the flat annular ring or gasket B, the jar A, having a contracted annular shoulder, a, and an annular vertical bearing-surface, b, below the same, and a cap, D, having a shoulder, m, an internal annular bearing-surface, i, and an internal shoulder, n, the shoulder m being adapted, when the ring B is supported horizontally, to bear upon the said ring near the outer edge only, the diameter of the internal bearing-surface, i, exceeding that of the surface b to the extent specified, and the internal shoulder, n, being adapted to bear on the upper edge of the ring B when the latter is turned to a vertical position and confined laterally between the bearings b and i, as set forth.

255,006. WHEEL-BARROW. CRAIG MURRAY, Vicksburg, assignor to Spencer J. Wing, Schoolcraft, Mich. Filed Feb. 10, 1881. (Model.)

255,006.



Claim.—1. In a wheel-barrow, the combination, with a rigid frame supported at opposite ends by carrying-wheels, of independent series of rollers or rock-shafts journaled in the supporting-frame at opposite sides of its transverse center, whereby the series of rollers at opposite sides of the supporting-frame may be operated independently of each other, said rollers or rock-shafts having spring-metal teeth secured thereto, and connecting-rods pivotally connected to the rock-shafts of each series, said connecting-rods being jointed at a point between said rock-shafts or rollers, substantially as set forth.

2. In a wheel-barrow, the combination, with a rigid frame supported at opposite ends by carrying-wheels, of rock-shafts provided with spring-metal teeth, said rock-shafts being journaled in the rigid frame, and connecting-rods attached to two of said rock-shafts, said connecting-rods being jointed at a point between the rock-shafts, the joint constructed to cause the connecting-rod to operate as a rigid rod when subjected to end pressure and to fold when either end of the connecting-rod is raised, substantially as set forth.

3. In a wheel-barrow, the combination, with a rigid frame supported at opposite ends by carrying-wheels, of rock-shafts journaled in the rigid frame, and connecting-rods attached to said rock-shafts, said connecting-rods being each provided with a joint located between the rock-shafts, said joint allowing the two portions of the connecting-rod to be depressed and preventing said parts from yielding in an upward direction, the rear portion of the connecting-rod being formed with a handle, substantially as set forth.

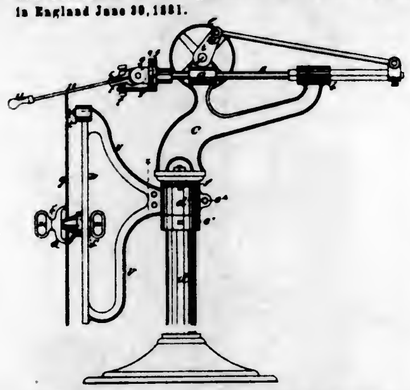
4. In a wheel-barrow, the combination, with independent rock-shafts having spring-metal teeth secured thereto, of a combined connecting-rod and operating-lever located above one rock-shaft and below the other and attached to said rock-shafts by means of spring-metal arms, substantially as set forth.

5. In a wheel-barrow, the combination, with a rigid frame supported at opposite ends by carrying-wheels, of rock-shafts provided with spring-metal teeth, and a connecting-rod attached to the under side of one rock-shaft and the upper side of the other, said connecting-rod being provided with a joint between the two rock-shafts, substantially as set forth.

6. The combination, with a tooth-supporting bar, of a circular harrow-tooth-fastening clip completely encircling the bar and provided with fastening devices on its opposite ends, whereby it may be drawn tightly around the bar and secured thereto in any desired rotary adjustment, substantially as set forth.

7. The combination, with a tooth-supporting bar, of a harrow-tooth-fastening clip constructed to completely encircle the bar, one end of said clip being screw-threaded and the other provided with an open slot, and a nut for drawing the clip tightly around the tooth-supporting bar, substantially as set forth.

255,007. MACHINE FOR FILING SAWS. FREDERICK HYDE, New York, N. Y. Filed Aug. 9, 1881. (No model.) Patented in England June 30, 1881.

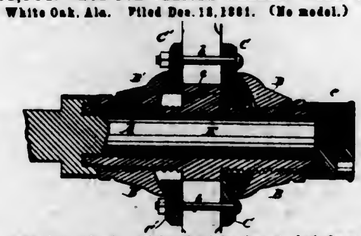


Claim.—1. In a saw-filing machine, the file-clamping jaws *r*, pivoted to the ings or head *g* of the adjustable disk *e*, pivoted to the head *f* of the reciprocating shaft *c*, and provided with the arm *s*, and adjusting-screw *t*, said devices being mounted on a standard and combined with a saw-holding device, also mounted on said standard, substantially as described.

2. The face-plate *w*, with steady-rest *c'* and center stud, *y*, combined with bracket *v* and standard *d*, said bracket being laterally adjustable on said standard, and said standard having a reciprocating file-carrier mounted upon it, substantially as described.

3. The combination of the adjustable conical center stud, *y*, clamp *a'*, screw *s*, and nuts *b'* with the slotted face-plate *w* and steady-rest *c'*, substantially as described.

255,008. HUB FOR VEHICLE-WHEELS. JAMES NEWMAN, White Oak, Ala. Filed Dec. 18, 1881. (No model.)



Claim.—1. A vehicle-wheel having its hub formed of the threaded tube A, provided with the annular flange *a*, the tapering nuts B B', having concave inner ends, and the ring-plates C C', provided with beveled annular projections *d*, and clamped to the spokes by bolts *b*, substantially as shown and described.

2. In vehicle-wheels, the combination, with the threaded tube A, provided with the annular flange *a*, of the nuts B B', having concave inner ends, and the ring-plates C C', having unequal openings and provided with beveled projections *d*, substantially as and for the purpose set forth.

3. In vehicle-wheels, the externally-threaded tube A, provided with the central annular flange, *a*, having spurs *c*, substantially as and for the purpose set forth.

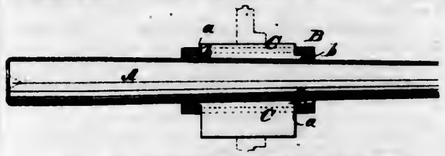
255,009. MANUFACTURE OF BOOTS AND SHOES. ARTHUR NEWTON, Boston, Mass., assignor, by mesne assignments, to the Newton and Hibbard Machine Company. Filed May 31, 1881. (No model.)



Claim.—1. The anvil *a*, having the inwardly and downwardly receding sides *a²*, and the enlarged angular edge *a³*, formed by the juncture of the top surface and sides, and adapted to be applied to the horn *h*, substantially as shown, and for the purpose described.

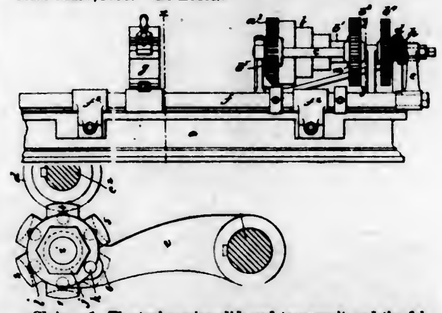
2. In a boot or shoe sole nailing machine the anvil or channel-opener corrugated or roughened on its upper surface, as and for the purpose specified.

255,010. EXPANDING MANDREL. WILLIAM H. NICHOLSON, Wilkes-Barré, Pa. Filed Sept. 24, 1881. (Model.)



Claim.—The combination of the plain conical arbor A, adapted to be held between the centers of a lathe, the short sleeve B, having longitudinal slots *a*, and the dogs C, tapered on their inner edges to conform to the taper of the arbor, and provided with integral end lugs, *b*, which extend beneath the sleeve and limit their outward projection, substantially as described.

255,011. LATHE. ALEXANDER W. NORTON, Boston, Mass., assignor to the American Tool and Machine Company, same place. Filed Jan. 7, 1882. (No model.)



Claim.—1. The tool-carrier, slide-rod to move it, and the follower-carrying arm, combined with a rotating follower adapted to engage the screw-threaded sleeve or portion *d*, substantially as and for the purpose described.

2. The arm *e* and rotating follower, having screw-threads of different pitch, combined with the nut and bolt and locking device to hold the follower firmly in adjusted position, substantially as and for the purpose described.

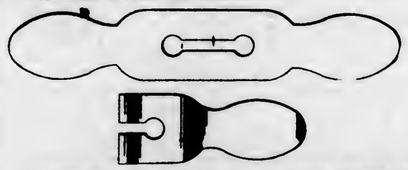
255,012. SHEET-METAL CAN. ERWIN NORTON, Chicago, Ill. Filed Dec. 27, 1881. (No model.)



Claim.—1. In a sheet-metal can, the improved double seam consisting in a seamless exterior flange on the can-body, interlocked and folded with the can-cover, substantially as shown and described.

2. The combination of a can-body with an exterior seamless flange, *d*, provided with inturned edge *d'*, soldered to the can-body, and cover D, folded with said flange into a double seam, substantially as and for the purpose specified.

255,013. SPOON-REST. CHARLES W. OLSEN, Lombard, Ill. Filed Aug. 17, 1880. (No model.)



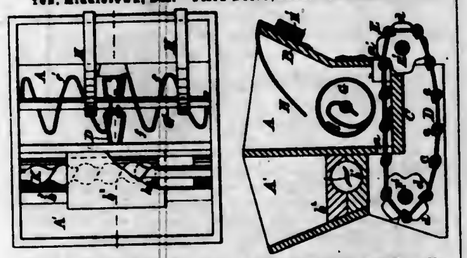
Claim.—A spoon-rest consisting of a single plate of metal, provided within its body portion, at or near the center thereof, with a longitudinal slot, said plate being doubled or folded upon itself, as described, to form two spring-arms, substantially as and for the purpose described.

255,014. OX-SHOE. WILLIAM PEARCE, Plantsville, assignor of two-thirds to H. H. Woodruff and H. A. Barnes, Southington, Conn. Filed Dec. 27, 1881. (No model.)



Claim.—An ox-shoe having the toe-calk extend across the toe end obliquely to said end and substantially parallel with the heel-calk, substantially as described, and for the purpose specified.

255,015. FERTILIZER-DISTRIBUTER. ALBERT R. PENNINGTON, Middletown, Del. Filed Dec. 6, 1881. (No model.)



Claim.—1. In combination with the hopper of a fertilizer-distributer, the endless chain D, composed of links having the hooked projecting ends *e*, the chain being adjusted to run transversely through the hopper, with the projecting ends of the links inclined toward the bottom of the hopper and in the direction of the movement of the chain, substantially as and for the purposes described.

2. The combination, with the force-feed chain D, of the reverse screw conveyors and agitators, consisting of the spiral rods *f f'*, arranged reversely on the revolving shaft G', adjusted to convey the fertilizers from each end to the middle of the hopper, over the chain, substantially as and for the purposes described.

3. The stirrer consisting of the arms H H, extended into the hopper A, over the agitator, and attached to the bar H', adjusted on the outside of the wall of the hopper to be reciprocated by mechanism, substantially as and for the purposes described.

4. The stirrer consisting of the arms H H, extended into the hopper A and attached to the bar H', adjusted on the outside of the wall of the hopper, in combination with the force-feed chain D, and the reverse screw conveyors and agitators, consisting of the spiral rods *f f'*, arranged reversely on the revolving shaft G', substantially as and for the purposes described.

255,016. METALLIC CHIMNEY-CAP. WALTER J. PUTTINGELL, Lowell, Mass. Filed Nov. 7, 1881. (No model.)

Brief.—The overlapping edges of the several metallic plates of the chimney-cap are so united by bolts as to provide an unperforated upper surface.



Claim.—1. A metallic chimney-cap made in sections adapted to fit upon each other, as described, each section having bolt-holes at one edge, and vertical bolts with protecting-bosses therefor, cast in one with the metallic plate at the overlapping edge, so as to extend downwardly from its under surface through the holes therefor in the adjacent section, whereby an unperforated upper surface is preserved, substantially as and for the purpose set forth.

2. A chimney-cap consisting of a metallic shell made in sections, having a horizontal top, with a vertical protecting-edge at the flue-opening, vertical corners, lutherns and sides, and bevried or oblique intermediate portions, all substantially as shown, and for the purposes set forth.

2. A metallic chimney-cap having interior ribs adapted to hold the body of the cap from contact with the chimney, substantially as and for the purpose set forth.

4. A metallic chimney-cap made in sections which are arranged to overlap each other at the edges, as shown, each section provided with a groove beneath one edge and a corresponding rib above the other edge, for the purpose set forth.

255,017. PACKAGE FOR OYSTERS, &c. CHARLES L. POND, Buffalo, N. Y. Filed Nov. 25, 1881. (No model.)



Claim.—1. The combination, with a barrel or tub, A, of a ring, *c*, composed of a strip of wood made of uniform cross-section throughout its length, and sprung into a recess of suitable shape formed in the barrel or tub near its end, substantially as set forth.

2. The combination, with a barrel or tub, A, provided on its inner surface, near its end, with a projecting ring, *c*, of a removable head, B, resting upon the ring *c*, and fastening devices applied to the under side of the head and adapted to be projected under the ring *c*, for securing the head and to be retracted for releasing the head, substantially as set forth.

3. The combination, with a barrel or tub, A, provided with a ring or shoulder, *c*, of a removable head, B, provided with sliding bolts *f f'*, attached to the under side of the head and adapted to engage with their outer ends under the ring *c*, and a lever, F, to which the inner ends of the bolts *f f'* are connected and whereby both bolts are moved in opposite directions, substantially as set forth.

4. The combination, with the removable head B, of the sliding bolts *f f'*, one of which is provided with a projecting tongue, *h*, and the lever F, having an opening, *h'*, substantially as set forth.

5. The combination, with the removable cover B, constructed with a projecting rim, *h*, of a packing-ring, *d*, applied to the under side of the rim *h*, and a hoop, *e*, which surrounds the lower contracted portion of the cover, and bears with its upper edge against the packing-ring *d*, and secures the latter in place, substantially as set forth.

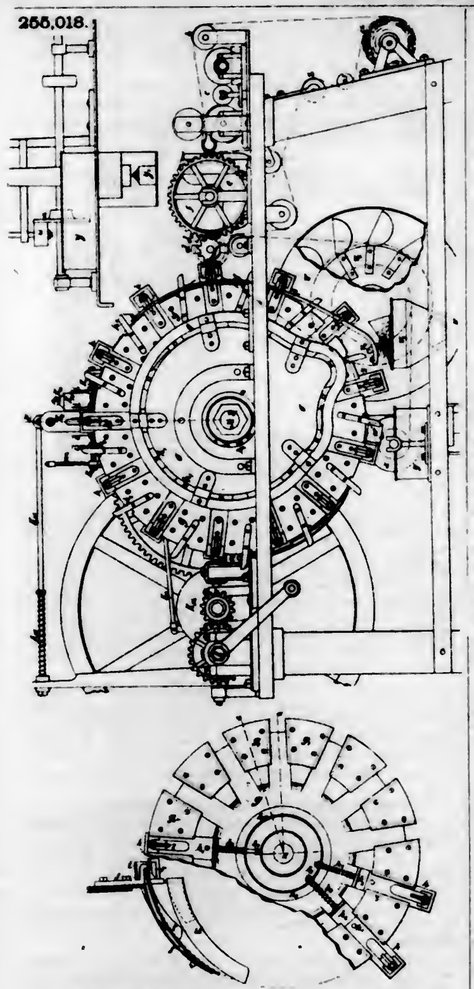
6. The combination, with the cover B, of a turn-button, L, secured to a bolt, *l*, having a head, M, provided with a nose, *m*, and a plate, N, secured to the cover B, and provided with stops *n*, between which the nose *m* swings, substantially as set forth.

255,018. PAPER-BOX MACHINE. CONRAD PRUNER, Wiener-Neustadt, Austria. Filed Nov. 2, 1881. (No model.) Patented in Austria Sept. 15, 1880.

Brief.—The material is taken from the web to pasting-disk *d* and cut into blanks by knives *i m*, that travel with the former-disk while making their cuts. The blanks are then forced into radial recesses in the periphery of former-disk *g* by the formers *h*, actuated by cam-plate *o*, which folds three sides of the box around the former. The projecting ends of the blank that form the remaining side are folded by blade *p'* and stationary turner *s*, and the projecting portions that form the bottom of the box are folded by roller p^3 and stationary turners *r t u*. The closed end of the box is coated with sand by means of the glue-roll *w* and the revolving bucket-wheel r^3, turning in sand-box *v*.

Claim.—1. In a machine for making boxes or tubes from paper, pasteboard, or other suitable material, a former-disk, *g*, provided with a number of recesses or radial slots, in combination with formers and former-slides *h* and spring counter-slides h^3, fitting into and sliding in the slots of said disk *g*, a stationary disk or plate having on its side an irregular eccentric groove moving by pin *h'*, the former-slides in the slots of the disk *g*, a folder or presser-arm, *p*, operated by suitable mechanism, and four stationary folders or pressers, *r s t u*, for the purpose and substantially as herein described and shown.

255,018.

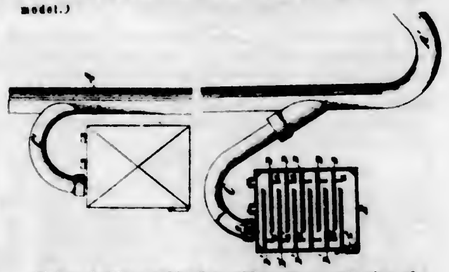


2. In machines for making boxes or tubes from paper, pasteboard, or other suitable material, the combination, with former-disk *g*, of a cutting apparatus, *h*, consisting of a number of cutters or knives, *i m*, for cutting the paper or other material while resting upon the circumference of disk *g*, and of a device, substantially as described, for operating said cutters, the whole cutting apparatus being loosely mounted upon shaft 3 of disk *g*, so that when engaged by catches h^4 of said disk it will move or swing in the same direction as disk *g*, for the purpose and substantially as described.

3. In a machine for making boxes of paper or other material, the combination of a pasting apparatus consisting of a roller, *w*, for applying paste or other adhesive substance to the bottoms of the boxes or tubes, a second roller, *x*, for taking paste or other adhesive substance from a reservoir or receptacle and feeding it to roller *w*, and a lamp underneath said receptacle for keeping the glue, when such is used, warm and soft, with an automatic sanding apparatus consisting of a stationary box and a bucket-wheel revolving inside of the same, for sprinkling sand upon the bottoms of the passing boxes, the superfluous sand falling back into the sand reservoir or box, to be used over again, substantially as described.

4. The combination, in a machine for making boxes or tubes from paper, pasteboard, or similar material, of a paste-roller provided with paste, applying ribs and segments, a former-disk, *g*, with slides and formers for holding and shaping the material, a cutting apparatus which cuts off the blanks and makes the necessary incisions for forming the bottom flaps, a movable folder or pressure-arm, and four stationary folders or pressers for folding the ends and bottom flaps of the blank, all substantially as described and shown.

255,019. APPARATUS FOR DISINFECTING WASTE-PIPES. ABRAM G. W. RASKIN, Jersey City, N. J., assignor of one-half to Walter H. Gilson, same place. Filed July 7, 1881. (No model.)

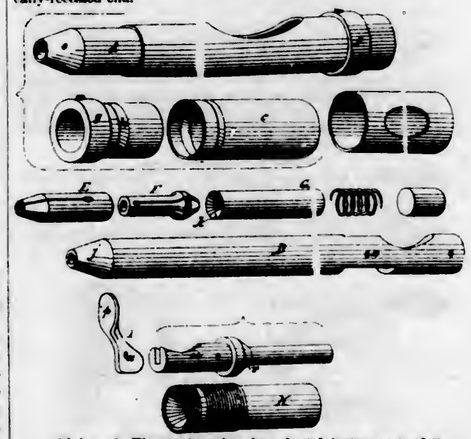


Claim.—1. The combination, with a soil or waste pipe, of a cabinet or chamber having internal horizontal shelves or pans adapted to contain disinfecting substance, and having an air-inlet and an inwardly-opening valve at the bottom, and a pipe connecting the upper part of said cabinet or chamber with said soil or waste pipe, substantially as and for the purpose specified.

2. The combination of the pipe A, the cabinet or chamber B, constructed with shelves or pans D D', the overflow-pipes *a a'*, the inlet-valve *c* and the outlet valve or valves *e*, and the pipe C, connecting said cabinet or chamber with the pipe A, substantially as specified

255,020. DENTAL HAND-PIECE. GUSTAV RAUPACH, Philadelphia, Pa., assignor to himself, John George Kohlhaas, and Martin O. Kohlhaas, all of same place. Filed Dec. 22, 1881. (No model.)

Brief.—Two slotted and conical ended griping-tubes are used and crowded upon the tool by a rod with a correspondingly conically-recessed end.



Claim.—1. The combination, in a dental instrument, of the following elements, namely: first, an outer casing or tube; second, a tubular shaft contained within the said tube; third, slotted griping-sleeves E and F, for seizing the stem of a dental tool, the said sleeves being contained within the tubular shaft; and, fourth, devices for acting on the said sleeves, all substantially as set forth.

2. The combination of the outer casing, the tubular shaft D, griping-jaws, and rod G with a cam-lever, I, adapted to be depressed within the limit of the tubular shaft, all substantially as set forth.

3. The combination of the outer casing, tubular shaft, griping-sleeves, and rod G with the cam-lever I, block *m*, and spring *n*, substantially as specified.

4. The combination, in a dental hand-piece, of the outer casing, its sleeve *d*, having a conical termination, *e*, the shaft D, having a conical termination, *j*, the slotted griping-sleeve E, made conical at one end, the slotted griping-sleeve F, also made conical at one end, and adapted to fit in or on the sleeve E, and mechanism for acting on the said sleeves, all substantially as set forth.

255,021. REFINING AND PURIFYING SUGAR. BERNHARD B. ERNDTES and JOHN WILLIAMSON, Glasgow, County of Lanark, Scotland. Filed Oct. 20, 1881. (No specimens.) Patented in England July 14, 1880.

Claim.—As an improvement in the art of filtering sugar-liquors and oils, the mode herein described of facilitating the filtering process, said mode consisting in mixing vegetable charcoal with the liquid prior to filtration, so as to absorb the mucilage or gum contained therein, substantially as set forth.

255,022. HAME-FASTENER. ALBERT C. RICHARDSON, South Frankfort, assignor of one-half to Christian C. Miller, Frankfort, Mich. Filed Oct. 25, 1881. (No model.)

Brief.—Improvement on Letters Patent No. 237,384, dated May 11, 1880.



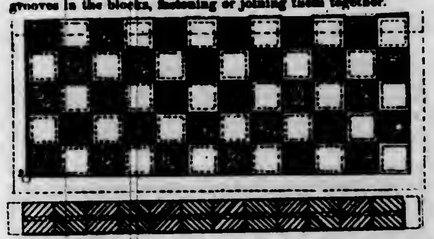
Claim.—1. In hame-fasteners, the combination of the frame having sides A B, inclosing-walls C C, bolt or latch K, and spring D, substantially as and for the purpose specified.

2. In hame-fasteners, the combination of frame M, S-shaped hook F, provided with loop I, and hook G, as permanently secured upon rod E', the respective ends of said hooks being inclined downward from the hames, substantially as and for the purpose specified.

3. The frame M, the hook G, pivoted therein and provided near its free end with a catch, J, shaped as described, and a spring-lock provided with a latch, K, arranged to engage at its forward end with the catch, all in combination substantially as and for the purpose described.

255,023. METHOD OF UNITING WOOD FOR FLOOR-COVERINGS, &c. CHARLES E. RIDER, Rochester, N. Y. Filed Oct. 26, 1881. (No model.)

Brief.—Molten lead or other suitable metal is poured into the grooves in the blocks, fastening or joining them together.



Claim.—1. The herein-described method of uniting wood, which consists in introducing lead or other suitable metal or alloy into grooves in the wood in the molten condition, substantially as and for the purpose described.

2. As a new article of manufacture, the wooden tiles herein described, consisting of wooden blocks united by the introduction of molten metal or alloy into grooves therein, substantially as described.

3. The herein-described method of forming joints in wood, consisting in introducing molten metal into grooves formed in the opposing surfaces of the wood while the latter is in a heated condition, substantially as and for the purpose set forth.

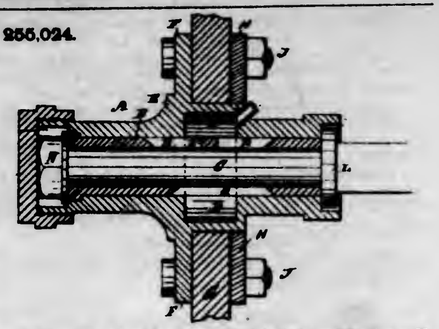
255,024. HUB FOR VEHICLE-WHEELS. FRANCIS T. RINGAL, Philadelphia, Pa. Filed Jan. 5, 1882. (No model.)

Claim.—1. In a vehicle-wheel, the combination, with the hub A, provided with the annular flange F, of the flange H, composed of the semicircular plates bolted to the said flange F, substantially as and for the purpose set forth.

2. In a vehicle-wheel, the hub A, provided with the central raised portion, E, having the annular flange F integral therewith and on the outer end of this hub, in combination with the flange H and the bolts J, substantially as and for the purpose set forth.

3. In a vehicle-wheel, the combination, with the apertured axle-box B, of the hub A, provided with the annular oil-chamber D', the central raised portion, E, and the annular flange F, integral therewith and on the outer end of the hub, and the flange H, formed of the semicircular plates bolted to the said flange F, substantially as and for the purpose set forth.

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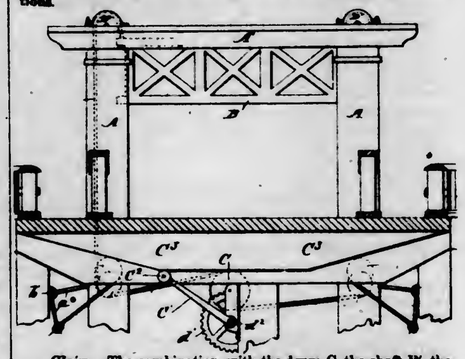
255,025. SASH-HOLDER. JAMES V. RISK, Point Pleasant, W. Va. Filed Jan. 11, 1882. (Model.)



Claim.—In a sash-fastener, the combination, with the sliding bolt A, provided at one end with a plate, B, and at the other end with a slot, C, and with an offset, *g*, and a stud, *d*, of the pivoted plate J, provided with a handle, K, an eccentric slot, *b*, into which the stud *d* passes, and with an eccentric edge, *c*, substantially as herein shown and described, for the purpose set forth.

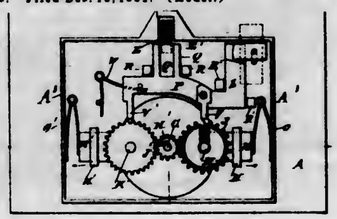
255,026. GUARD-GATE FOR SWING-BRIDGES. FRANK ROSER, Chicago, Ill. Filed Oct. 18, 1881. (No model.)

Brief.—Cam-projections on the bridge in succession actuate the roadway and footway gates by lever, pulley, and cord connections.



Claim.—The combination, with the drum C, the shaft B', the pinion *d*, the gear-wheel *d'*, the gear-wheel shaft d^2, the lever-arm C^1, the friction-roller C^2, the beveled cleat C^3, and the bridge A^3, all constructed, arranged, and operating as herein shown and described.

255,027. PERMUTATION-LOCK. WILLIAM ROWE, Biddeford, Me. Filed Dec. 15, 1881. (Model.)

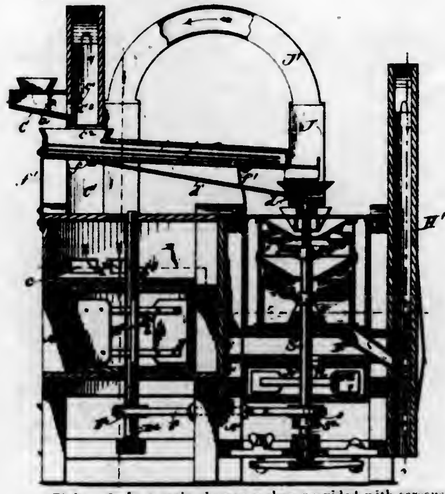


Claim.—1. The combination, with the shaft G, carrying pinion H, the sleeve G', carrying pinion H', and the spur-wheels J J', arranged on pintles K K' and carrying side disks, *k k'*, with notches l, of the bolt P, provided with two projections to fit the recesses of said side disks, as and for the purpose described.

2. In a permutation-lock, the combination, with the spur-wheels J J', having the notched side disks, of the slides M M', clips N N', and springs O O', arranged substantially as shown and described.

3. In a permutation-lock, the combination, with the bolt P, having a recessed tongue, Q, and rectangular arm S, of the studs R R', the hook E, the serrated block T, and the case A, having slot S', as and for the purpose specified.

255,028. GRAIN-CLEANER. JOHN RUSSELL, Berlin, Pa. Filed Oct. 22, 1881. (Model.)

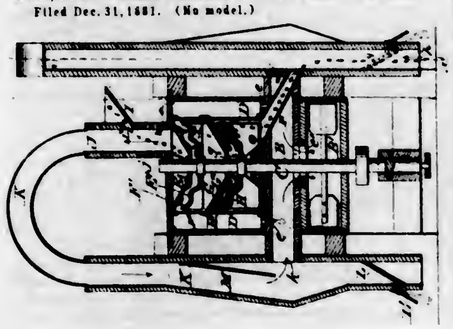


Claim.—1. In a grain-cleaner, a shoe provided with screens, means, substantially as described, for subjecting the grain to a reverse draft of air before it reaches the screen, in combination with means, substantially as described, for dividing the current of grain as it leaves the screen and subjecting each stream to a second air-draft, both air-drafts being incited by a single fan and the cleanings in each case being separated, the dust and lighter portions passing to waste through a common fan-box and the heavier portions deflected and fed to proper receptacles for use, as specified.

2. The combination of the fan-case W *b' b'*, fan *b b'*, and fan-box B, having dust-inlets *e j*, with the hopper C, chute C², having bifurcated branches, the shoe F, and chutes J J', provided with the ports *c' c'* and deflector *b'*, as and for the purposes specified.

3. The combination of the fan-boxes B, *e*, *j*, and N, shafts B' *b'* and S *s*, belt *b'*, the shoe F, the fans *b' s'*, the germ-separators and brushes, and the draft-chutes C' J' H, as and for the purposes specified.

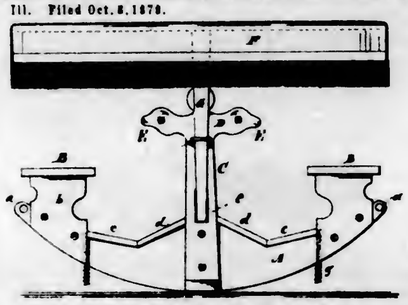
255,029. GRAIN-CLEANER. JOHN RUSSELL, Berlin, Pa. Filed Dec. 31, 1881. (No model.)



Claim.—1. The shaft C, carrying undulated concave rubber E' F', undulated brush H H', and the fans *s s'*, combined with the perforated cylinder D', having corresponding undulated rubber E F and undulated brush G G', and with the cylinder D, having dust-ports *e*, as and for the purposes set forth.

2. The fan-box B, having dust-ports *h* and *i*, the fan, and fan-case having dust-ports *c' c'*, combined with the arched chute K, conductor J *j*, chutes R' and R, deflector M, and exits, as set forth.

255,030. ROCKING TEETER. SAMUEL I. RUSSELL, Chicago, Ill. Filed Oct. 5, 1878.



Claim.—1. The rockers A A, in combination with two seats, B B, a floor, *c d*, standards C C, bars D D, and rods or bars E E, substantially as and for the purposes specified.

2. A rocking device consisting of rockers A, seats B, and standards C, provided with recesses *e* and bars D, having staples to receive and hold the posts of a canopy, F, all constructed substantially as specified.

3. A rocking device consisting of two rockers, A, provided at each end with a seat, B, the standards C, connected with the rockers intermediate of the seats, and the canopy F, detachably connected with the standards, all as herein shown and described.

4. A rocking device consisting of two rockers, A, a seat, B, at each end of the rockers, a suitable floor, and a spring, *g*, connected with one end of the rockers and adapted to be connected with the floor, all substantially as and for the purposes described.

255,031. TELEPHONE-EXCHANGE CIRCUIT AND APPARATUS. JOHN I. SARIS, San Francisco, Cal. Filed Aug. 6, 1881. (No model.)

Claim.—1. In a telephone-exchange system, the combination of a series of subscribers' lines, a conducting-cord inclosing a wire to connect any two of the said lines, and a second wire to complete the circuit of a local battery and electro-magnet arranged to restore the normal terminal connections of the main line, a single relay included in the main-line circuit of the cord of each pair, and a disconnecting-switch in the circuit of and controlling both main and local circuits, and adapted when operated by said relay to automatically disconnect the lines one from the other and simultaneously open the circuit of the local battery and restoring-magnet, substantially as and for the purposes described.

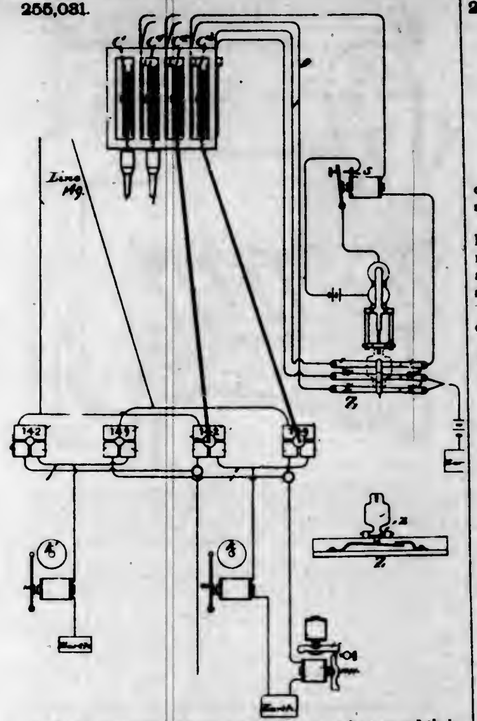
2. In a telephone-exchange system, the combination of a pair of subscribers' lines, a connecting-cord containing a main-line and a local-circuit conductor, a relay in the main-line circuit of said cord adjusted to respond only to currents of definite character, a sounder or annunciator in an auxiliary local circuit controlled by said relay, and a disconnecting-switch or circuit-breaker included in both main and local circuits, adapted and arranged to automatically and positively disconnect the two lines and simultaneously break the circuit of the restoring-magnet and local battery, substantially as specified.

3. In a telephonic-exchange system, the battery-wire T, open at one end or both, connected with a grounded battery at any desired point and branching to a series of subscribers' stations, in combination with direct wires to substations, substantially as described, and for the purpose set forth.

4. The combination, substantially as hereinbefore set forth, of a relay in the main circuit of a cord or wire connecting any two subscribers' lines, a battery-wire common to a series of subscribers' lines or substations, and means, as indicated, for connecting the battery-wire to any subscriber's line, the said relay being adapted to operate only when the battery-wire is so connected, for the purpose described.

5. The combination, substantially as hereinbefore set forth, of a telephone-switch cord inclosing two separate conductors, a reel provided with an automatic take-up, means, as indicated, for establishing connection between the said two conductors and their respective binding-screws, the clearing-out relay R, provided with its local circuit and annunciators, and the automatic circuit-breaking switch Z, acting to break simultaneously the connection between any two subscribers' lines and the local circuits.

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6. In a telephone-exchange system, the combination, substantially as hereinbefore set forth, of the clearing-out relay R, adapted to operate the disconnecting-switch Z, the double conducting-cord and reel, the three-contact commutators, the subscribers' private wires, and the battery-wire T, all arranged as and for the purpose described.

7. The combination, substantially as hereinbefore set forth, of a commutator having three contacts, one connected to the line, one to an electro-magnetic testing device, and one to an electro-magnet acting to restore the automatic switch of said line to its normal position, with a tripple-acting plug formed mainly of non-conducting material, but having a conducting contact-plate attached to the whole of its upper surface, a second conducting-plate attached to a portion of one side of its lower surface, and a third conducting-plate attached at the extreme end of its lower surface, each conducting-plate being completely insulated from the others, for the purpose specified.

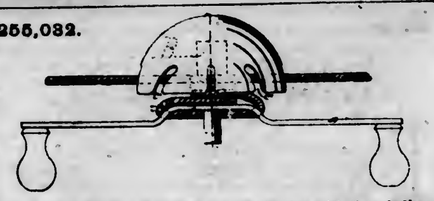
8. The combination of a series of normally-open branch circuits, a series of listening-telephones included therein, an electric switch at each line terminal, actuated automatically by an electro-magnet in the main-line circuit and adapted to transfer the said main-line circuit to the listening-telephone branch, and a switch-board interposed in the branch circuits, whereby all or any number of the electric switches or circuit-changers may be connected to any desired listening telephone or telephones, substantially as and for the purpose specified.

255,032. WIRE-STRETCHER. CHARLES H. SALISBURY, De Kalb, Ill. Filed Aug. 4, 1881. (No model.)

Claim.—1. The fence-stretcher consisting of the crank, the hollow windlass secured to the crank, a locking device mounted upon a stem inserted in the windlass and having a sliding movement therein, and the rope passing through the ends of the crank and the stem of the locking device, substantially as specified.

2. In a fence-stretcher, a locking device adapted to engage with the rope, mounted upon a stem held in the windlass, and secured so as to rotate therewith, in combination with the windlass and rope, substantially as specified.

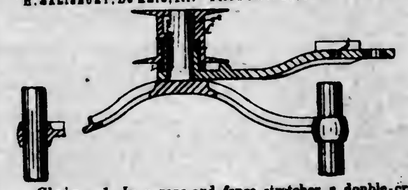
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3. In a fence-stretcher, a locking device secured to the windlass so as to rotate therewith, and movable toward and from the rope and adapted to engage the same at both sides of the windlass at the same time, in combination with the windlass and rope, substantially as specified.

4. The fence-stretcher provided with a non-sliding double crank, substantially as set forth.

255,033. WIRE AND CLOTHES-LINE TIGHTENER. CHARLES H. SALISBURY, De Kalb, Ill. Filed Nov. 26, 1881. (No model.)



Claim.—1. In a rope and fence stretcher, a double-crank handle provided with short handles projecting upon each side of the crank, substantially as specified.

2. The crank having the trunnion, in combination with the grappling-arm and the drum, both mounted and secured on said trunnion, the arm being between the crank and the drum, substantially as specified.

3. The combination, with the drum provided with a ratchet upon its side, of the grappling-arm, and the pawl pivoted upon the arm within the circumference of the drum-rim, whereby the pawl is confined on its pivot without riveting, substantially as specified.

4. The stretcher consisting of a crank having a projecting trunnion, a grappling-arm mounted upon said trunnion, next to the crank, and bearing a pivot for the ratchet-pawl, said pawl, and a drum having a ratchet cast thereon at one side, and secured upon the same trunnion with its ratchet side toward the arm, substantially as specified.

5. The trunnion and its stop, in combination with the drum slipped upon the trunnion and having an interior rim and cam-surface acting in conjunction with said stop to secure it thereon, substantially as specified.

6. In a stretcher, a grappling-arm having an eye, *b'*, at its outer end, substantially as and for the purpose set forth.

255,034. LOOPER FOR BUTTON-HOLE SEWING-MACHINES. FRIEDRICH H. SCHMIDT, Brooklyn, N. Y. Filed Dec. 16, 1881. (No model.)



Claim.—1. The U-shaped looper *b* for a button-hole sewing-machine, having hooks *h i* opposite one another, the whole being so constructed that one-half of the looper is a substantial duplicate of the other half, substantially as and for the purpose specified.

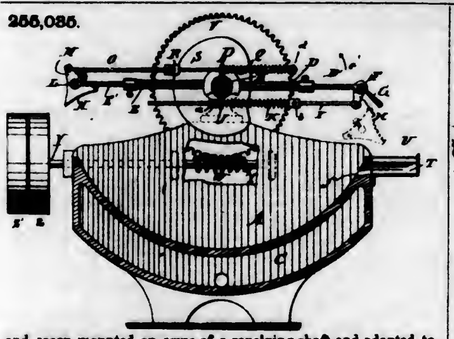
2. The looper *b* for a button-hole sewing-machine, composed of the parts *j m k* and hooks *h i*, the arm *m* being narrower than the shanks *j* and *k* and the shanks being both slotted, substantially as specified.

3. In a button-hole sewing-machine, the combination of a looper, *b*, made of two equal halves and having hooks *h i*, with the spreader *e*, having prongs *f g*, all being so constructed that the distance between the two heads of the hooks *h i* is greater than the distance between the prongs *f g* and less than the width of the entire spreader, substantially as specified.

255,035. BROOM AND SCOOP MECHANISM FOR EVAPORATING-PANS. CARL F. W. SCHRAMM, Brooklyn, assignor to himself and J. Monroe Taylor, New York, N. Y. Filed Jan. 13, 1882. (No model.)

Claim.—1. A brush and scoop for evaporating-pans, made substantially as herein shown and described, and consisting of a brush

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and scoop mounted on arms of a revolving shaft and adapted to sweep upon and clear the surface of the pan, as set forth.

2. The combination, with the brush and scoop, of devices for pressing the brush and scoop with a yielding pressure against the surface of the pan, substantially as herein shown and described, and for the purpose set forth.

3. The combination, with the evaporating-pan A, of the shaft B, provided with arms D and E, the shafts F and L, and the scoop N and brush G, substantially as herein shown and described, and for the purpose set forth.

4. The combination, with the evaporating-pan A, of the shaft B, provided with arms E, the scoop N, mounted on the ends of these arms, and of devices for tilting this scoop automatically, substantially as herein shown and described, and for the purpose set forth.

5. The combination, with the evaporating-pan A, of the shaft B, provided with arms D and E, the brush G, and the scoop N, mounted on these arms, respectively, and of devices for pressing the scoop and brush upon the surface or bottom of the pan, substantially as herein shown and described, and for the purpose set forth.

6. The combination, with the pan A, of the shaft B, provided with arms D and E, the rods D' and E', adjustable in these arms, the shafts F and L, the brush G, and the scoop N, the rods I and O, passing through guide-loops on the shaft B, and the spiral springs K and Q, substantially as herein shown and described, and for the purpose set forth.

7. The combination, with the evaporating-pan A, of the shaft B, provided with arms D and E, the rods D' and E', adjustable in these arms, the brush G, the scoop N, the rods I and O, the guide-loops J and P, the springs K and Q, the cam-plates S, and the blocks R, mounted on the rods O, and provided with projections resting against the edges of the cam-plates S, substantially as herein shown and described, and for the purpose set forth.

8. The combination, with the evaporating-pan A, of the shaft B, provided with arms D and E, the rods D' and E', adjustable in these arms, the brush G, the scoop N, the loops J and P, the springs K and Q, the cam-plates S, the blocks R, provided with projections, and the nut *d* on the rods O, and the blocks *a* and *b* on the rods I, substantially as herein shown and described, and for the purpose set forth.

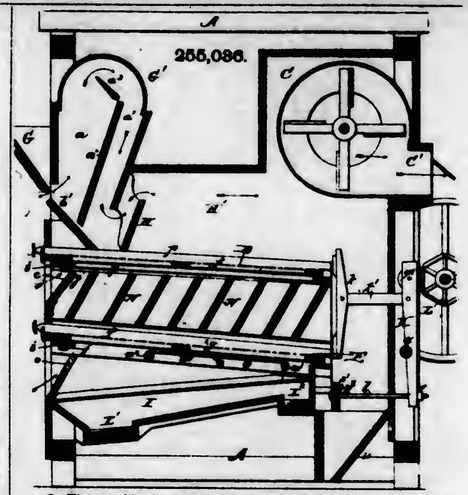
9. The combination, with the evaporating-pan A, of the shaft B, provided with arms D and E, the rods D' and E', adjustable in these arms, the shaft F, provided with arms H, the brush G, the rods I, and the springs K, substantially as herein shown and described, and for the purpose set forth.

10. The combination, with the evaporating-pan A, of the shaft B, provided with arms E, the rods E', adjustable in these arms, the shaft L, the arms or plates M, the scoop N, the rods O, the springs Q, the cam-plates S, and the blocks R, provided with projections resting on the cam-plates S, substantially as herein shown and described, and for the purpose set forth.

255,036. MIDDLINGS-PURIFIER. ANDREW J. SEYLER, Cedarville, Ill. Filed Dec. 12, 1881. (No model.)

Claim.—1. The combination of the feed-hopper G, the upright passages *a a'*, and valve *a²* therein, the air-inlet passage *b*, the chute *b'*, the board H, the shaking-sieve D, and a suction-fan, substantially as described.

2. The combination of the shaking-sieve frame, a cross-strip fixed to its head, the shaking-frame J, a slotted cross-strip fixed to its head, the bolt *j*, the binding-nut for securing the two frames together, and means for shaking the latter, substantially as described.



3. The combination of the stationary inclined chutes N, the shaking-sieves arranged above and below said chutes, the valves *e e*, at or below the heads of the sieves, an adjustable grading device, *c*, below the sieve E, and a suction-fan, C, substantially as described.

4. The combination of the shaking-sieves, the hangers thereof, the knocker *h*, its arm *h'*, lever K, anti-friction wheel *m*, and tappet-wheel L, substantially as described.

5. The combination of a flexible rolling cut-off apron adjustable at one end, as described, with the shaking screen E, the lower end of said apron terminating near the lower end of said screen, the laterally-discharging spout I', and the shaking-shoe I, all substantially as and for the purpose set forth.

6. The combination of the cut-off apron O, its rollers *m' m''*, strips O' O'', ratchet-wheel *r*, pawls *r'*, strip *n*, pointer *n'*, and a shaking-screen, substantially as described.

255,037. QUILTING-MACHINE. JOHN S. SKELDON, Montville, Conn. Filed July 28, 1881. (No model.)

Claim.—1. The carriage D, secured upon the rods *c c* and moved thereon by the levers *e* and *e'*, connected with the levers E, secured upon the shaft E', the shaft being rocked by the arm F, running in contact with the pattern or form G, substantially as and for the purposes set forth.

2. The carriage D and the shaft E', connected together by levers, substantially as described, in combination with the arm F, held upon the form or pattern by the spring *g*, as and for the purposes specified.

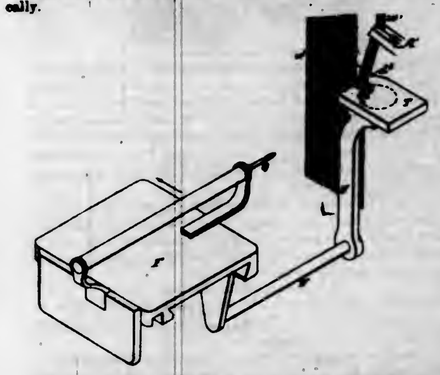
3. The form or pattern G, provided with the gears *j j*, in combination with the shafts J J, provided with the gears *j' j'*, as and for the purposes specified.

4. The combination, with the carriage B, the bent shafts J, and the form or pattern G, and the gear-wheels *j* and *j'*, substantially as and for the purposes set forth.

5. The traveling carriage B, carrying the transverse carriage D, the two carriages being secured together by, and the carriage D moved by, the levers *e e'*, levers E, and rock-shaft E', in combination with the arm F, rigidly fixed upon the shaft and running in contact with the form or pattern G, substantially as and for the purposes set forth.

255,038. MACHINE FOR DRAWING IN WARP-THREADS. LEWIS P. SHERMAN and RICHMOND H. INGERSOLL, Biddeford, and GEORGE MOORE, Berwick, Me. Filed June 11, 1881. (Model.)

Brief.—The threads of the warp are separated and drawn through their appropriate heddle and dent of the reed automatically.



Claim.—1. The combination in an organized machine for drawing in warp-threads, of a frame-work, a slide adapted to guides on the same, a hooked needle carried by and adapted to a guide or guides on the slide, mechanism for imparting the within-described intermittent feed to the slide and reciprocating movement to the needle, with heddle-holders and a reed-holder, whereby the heddles and reed are retained in a position parallel, or nearly so, with each other and presented to the reciprocating needle, all substantially as set forth.

2. The combination of the intermittently-fed slide and the reciprocating hooked needle carried by the slide with mechanism whereby the said needle is caused to turn on its axis as it is concluding its outward movement and to turn back again as it commences its inward movement, substantially as described.

3. The combination of the intermittently-fed slide F, its slotted tubular casing R, and the needle Q with the guided needle-carrier *r²* and mechanism whereby the within-described reciprocating motion is imparted to the said carrier and needle, substantially as specified.

4. The combination of the intermittently-fed slide F, the slotted casing R, the needle and guided needle-carrier, the driving-shaft L, shaft *m²*, wheels *n¹* and *p¹*, and eccentric P on the said shaft *m²* with mechanism through the medium of which the eccentric is caused to reciprocate the carrier and needle, all substantially as described.

5. The combination of the intermittently-fed slide, the slotted casing R on the same, the needle, the needle-carrier adapted to guides on the slide, the driving-shaft L, the eccentric P, and mechanism by which it is driven from the said shaft L, with the eccentric-rod *h'*, arm *i²*, rod *h²*, arm *i'*, and link *f''*, all connected directly or indirectly to the said slide, substantially as set forth.

6. The combination of the slide F, the feed-screw G, and mechanism for intermittently turning the same, the shaft *n*, and the worm-wheel H, constructed to turn with but slide to a limited extent on the shaft, with the devices, substantially as described, through the medium of which the said shaft *n* can be locked and released, as set forth.

7. The combination of the slide F, the feed-screw G, and mechanism for intermittently turning the same, with the worm-wheel H, the shaft *n*, having its bearings in the slide, the hand-wheel I on the shaft, the post *p*, and the nut *k*, adapted to the threaded upper end of the said shaft *n*, all substantially as specified.

8. The shaft L, the wheel N, the belt-pulley thereon, both being loose on the said shaft, the shaft *r*, geared to said shaft, and the friction-wheel *q*, constructed to slide on but turn with the said shaft *r*, in combination with devices whereby the friction-wheel can be moved to and fro on its shaft, all substantially as described.

9. The combination of the shaft L, the wheel N, and its belt-pulley, both loose on the said shaft, the shaft *r*, geared to the said shaft L, the friction-wheel *q* on the said shaft *r*, an arm or lever, P, a spring for causing the arm to move the said wheel N away from the friction-wheel, and a catch, *60*, or other equivalent retainer for causing the said arm P to maintain the wheel N in contact with the friction-wheel, in opposition to the action of the spring, all substantially as set forth.

10. The combination of the driving-shaft L, the slide F, mechanism through the medium of which the slide is intermittently fed by the said shaft, the needle carried by the slide, devices through the medium of which the said needle is reciprocated by the said shaft L, and a device whereby the actuating mechanism of the slide may be disconnected from that which actuates the needle, substantially as set forth.

11. The combination, in an organized machine for drawing in warp-threads, of the following elements, namely: first, the slide F and needle Q; second, mechanism for intermittently feeding the said slide and needle and reciprocating the latter; third, a device for retaining the whole of the warp-threads; fourth, a carrier, T, having a sharp bearing-edge, *d²*, for warp-threads; and, fifth, devices whereby the said carrier is caused to traverse in unison with the slide, all substantially as set forth.

12. The combination of the intermittently traversed and reciprocated hooked needle, a carrier, T, traversed in unison with the needle and provided with a sharp bearing-edge, *d²*, for the warp-threads, and a hook, with mechanism for oscillating the same and causing it to seize a warp-thread directly from the said sharp bearing-edge and move it within range of the needle, substantially as set forth.

13. The intermittently traversed and reciprocating needle Q, a traversed carrier, T, provided with a sharp bearing-edge, *d²*, for warp-threads, a recess, *m²*, in the said carrier, and the horizontal disk B', provided with a hook, in combination with mechanism for operating the disk and causing its hook to seize the last warp-thread of the series bearing against the said sharp edge *d²*, all substantially as set forth.

14. The combination of the traversed carrier T, provided with a bearing-edge, *d²*, the disk B' and pivoted hook, and mechanism for operating the disk, with nippers A' and devices for operating the same and causing them to seize a number of warp-threads and direct them toward the periphery of the disk, all substantially as set forth.

15. The carrier T, having the bearing-edge *d²* and projection *e²*, all being constructed substantially as described.

16. The carrier T, having the bearing-edge *d²* and the projection *e²*, provided with an adjustable shoe, *d³*, all being constructed substantially as set forth.

17. The carrier T, provided with the bearing-edge *d²*, rounded at its outer end, and with the projection *e²* and its shoe *d³*, also rounded at its outer end, all being constructed, as set forth, so as to present a flaring entrance, *c²*, to the space between the said bearing-edge and shoe, substantially as specified.

18. The combination of the within-described disk B', having a curved slot, 58, with the pivoted hook O' and spring *o²* for acting on the same, all being constructed substantially as described.

19. The combination of the within-described disk and its pivoted hook with a carrier, T, having a recess, *m²*, and a groove in the walls of the recess for receiving the point of the hook, all being constructed substantially as set forth.

20. The combination of the disk having a groove in its periphery and a pivoted hook with the carrier T, having the recess *m²* and a groove in the walls of the recess, all being constructed substantially as described.

21. The combination of the disk B', having a groove in its periphery, with the carrier T, provided with a plate, *d⁴*, the edge of which constitutes the bearing-edge *d²* and the inner end of which enters the groove in the said disk, all being constructed substantially as specified.

22. The combination, with the disk B', of the carrier T, having the projection *e²*, provided with a shoe, *d³*, formed with a central notch for the passage of the hook of the disk, and a projection overlapping and another underlapping the same, all being constructed substantially as described.

23. The combination of the oscillated disk with its pivoted hook, and devices, substantially as described, for regulating the extent of the outward movement of the hook, as set forth.

24. The combination of the carrier T, having the bearing-edge *d²*, with a rubbing device connected with the carrier and mechanism for causing the said device to act on the threads below the said bearing-edge, all substantially as set forth.

25. The combination of the carrier T, having the bearing-edge *d²*, with the lever *h²* and mechanism for operating the same, substantially as described.

26. The combination of the nippers A' and mechanism for operating the same, and the carrier T, having the bearing-edge *d²* and projection *e²*, with the pivoted lever *h²* and mechanism for operating the same, substantially as specified.

27. The combination of the nippers A' and mechanism for operating the same with the stops *i²* and *h²*, substantially as specified.

28. The carrier T and the within-described nippers, consisting of a bar, g^{10}, pivoted at F to the said carrier, and a jaw, g^9, pivoted to the said bar, in combination with mechanism, whereby both bar and jaw are vibrated, and whereby the jaw is opened and closed, substantially as described.

29. The combination of the carrier T with the nippers consisting of the bar g^{10}, pivoted to the said carrier, and the jaw g^9, pivoted to the said bar g^{10}, with the shaft a^2, the driving-shaft L, mechanism by which the said shaft a^2 is driven from the shaft L, the cam F, the lever h^2, a spring acting on the jaw, a crank, b^2, on the said shaft a^2, and mechanism whereby a vibrating motion is imparted from the said crank to the bar g^{10} and jaw g^9, all substantially as set forth.

30. The combination of the carrier T, having the recess m^2, the disk B', the fixed shaft n^2, on which the disk is caused to oscillate, the nut p^2 on the shaft, and the spring q^2, all being constructed substantially as set forth.

31. The combination of the reciprocating and traversed needle Q, the oscillated disk B', and its pivoted hook with the plate c^4, substantially as described.

32. The combination of the hooked needle and mechanism for reciprocating and traversing the same and turning it on its axis, and devices for holding the warp-thread, with mechanism for seizing the warp-thread and presenting it to the needle, all substantially as set forth.

33. The combination of devices for holding a heddle with the shaft p^4, mechanism for imparting the within-described intermittent vibrating motion to the shaft, the separating-arm q^4, constructed to slide on and vibrate with the shaft, the intermittently-fed slide F, and grooved attachments thereto for receiving the lower edge of the said separating-arm, all substantially as specified.

34. The combination of the intermittently vibrated and traversed separating-arm q^4 and its finger c^3 with the heddle-holders and mechanism for imparting a reciprocating endwise motion to the said holders, substantially as described.

35. The combination of the reciprocating and intermittently-traversed needle, the heddle-holders, the separating-arm q^4, and finger c^3 with mechanism for vibrating the said arm and finger and traversing both in unison with the traverse of the needle, all substantially as set forth.

36. The combination of the reciprocating and traversed needle Q, the intermittently-vibrated separating-arm q^4, holders for the heddles, the finger b^3, and mechanism whereby the said finger is actuated to operate on a heddle-eye, and is traversed in unison with the needle, substantially as set forth.

37. The combination of the intermittently traversed and reciprocated needle Q with the fingers c^4 and b^3, and with mechanism for traversing the said fingers in unison with the traverse of the needle, and for imparting the within-described movement to the fingers, substantially as described.

38. The combination of the separating-arm q^4 and the fingers c^4 and b^3 with mechanism for operating the same, substantially as described.

39. The combination of the finger b^3 with the yielding finger c^4, adapted to bear against the said finger b^3, substantially as specified.

40. The combination of the vibrated fingers c^4 and b^3 with the heddle-holders and mechanism for imparting a reciprocating endwise motion to the carrier, substantially as described.

41. The combination of the intermittently-vibrated separating-arm q^4 and the vibrated fingers with the reciprocated needle Q and mechanism whereby the said arm, fingers, and needle are traversed simultaneously, substantially as set forth.

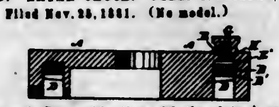
42. The combination of the reciprocating and traversed needle Q with the stripper c^5 and mechanism whereby the said stripper is caused to draw the thread away from the needle, substantially as described.

43. The combination of the heddle-holders and the bar t^5, constructed for attachment to and removal from the lower bar, g, of a heddle, with the bar u^5 and links w^5, substantially as described.

44. The within-described reed-holder, the same consisting of supports carried by the frame-work and adapted to the lower bar of the reed, the shaft e, adapted to bearings in the frame-work, arms on the said shaft, and retractile rods a a, carried by the arms and slotted to receive the ends of the reed, all substantially as set forth.

45. The combination of the reciprocating and traversed needle Q, the weighted lever c^6 and its plate g^6, both traversed in unison with the needle, the wheel N, a friction-wheel through the medium of which the said wheel is caused to drive the machine, an arm for controlling the wheel, a retainer for maintaining it in contact with the friction-wheel, and mechanism whereby the said lever in falling is caused to release the retainer and permit a spring to move the wheel N away from the friction-wheel, all substantially as set forth.

255,039. LATHE-CHUCK. JAMES H. SKINNER, New Britain, Conn. Filed Nov. 25, 1881. (No model.)



Claim.—1. In combination with the plate A and cam-ring B of a lathe-chuck, the clamping device consisting of the pin E, with its plate E', and the head G, said pin being separate from the said ring, and constructed and operating substantially as described.

2. In a lathe-chuck, the plate A, provided with the slot A' and locking-recess H, for holding the head D in position when clamped, in combination with the pin E, head G, and cam-ring B, substantially as described.

3. In a lathe-chuck, an independent pin moving in a groove or slot in the plate A, and adapted to be clamped to said plate, and fitting loosely into a hole in the ring B, whereby said ring may be moved radially and clamped in position without being attached to said pin, substantially as described.

255,040. CORDAGE AND TWINE DESIGNED TO BE USED IN BINDING SHEAVES OF GRAIN. SMITH A. SKINNER, Mechanic Falls, N. Y. Filed Apr. 26, 1880. (Specimens.)

Claim.—An improved cord or twine for binding sheaves of grain, adapted to simultaneously resist attacks of mice, crickets, grasshoppers, and like vermin, by containing among its fibers a deposit of sulphate of zinc or other analogous material, which is repugnant to the taste of such vermin or insects, and to resist the ravages of rot, decay, and spontaneous combustion, by having been treated with a hydrocarbon, substantially as specified.

255,041. WATER AND FIRE PROOF ROOF-PAINT. WILLIAM SLEEPER, Goshen, Ind., assignor of one-half to Llewellyn Wagner, same place. Filed Jan. 16, 1882. (No specimens.)

Claim.—A water and fire proof paint consisting of the following ingredients: boiled linseed-oil, Venetian red, plaster-of-paris, coal-tar, shellac, japan, and asbestus, substantially in the proportions named.

255,042. METHOD OF AND APPARATUS FOR BREAKING DOWN OR GETTING COAL, &c. CHARLES SEBASTIAN SMITH, Leicester, County of Leicester, and THOMAS HOOKS, Shipley, County of Derby, England. Filed Feb. 21, 1882. (No model.) Patented in England May 4, 1881.



Claim.—1. The method of breaking down or getting coal and other minerals by the introduction into bore-holes of caustic lime, which, after compression and confining by tamping or otherwise, is brought into contact with water or other suitable liquid along the entire or greater part of the length of the charge, so as by the expansion of the lime and pressure of the steam generated to produce sufficient force for breaking down the mineral, substantially as herein described.

2. For breaking down or getting coal and other minerals, a cartridge formed of compressed caustic lime, having one or more longitudinal grooves or passages to serve as channels for the introduction of water.

3. In combination with cartridges or charges of caustic lime, a perforated or slotted or permeable tube placed along the side or through the body thereof, and serving to bring water into intimate contact therewith, substantially as herein described.

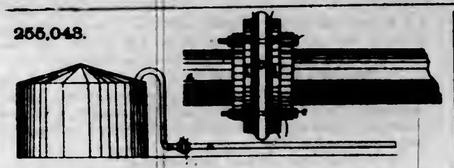
4. In combination with the perforated or slotted tube for lime-cartridges, a covering of woven fabric for preventing the lime from entering the holes of the tube, substantially as described.

255,043. PROTECTING OIL-TANKS FROM LIGHTNING. GEO. O. SMITH, Clear Creek, N. Y. Filed May 31, 1881. (No model.)

Brief.—Between flanged couplings on the inlet-pipe is fastened, by insulated bolts, an insulator, and attached to the pipe at the coupling are conducting-rods extending down to moist earth.

Claim.—1. In an insulating device for protecting oil-tanks from lightning, the combination with the flanged couplings with the insulator secured thereto by insulated bolts, the coupling being

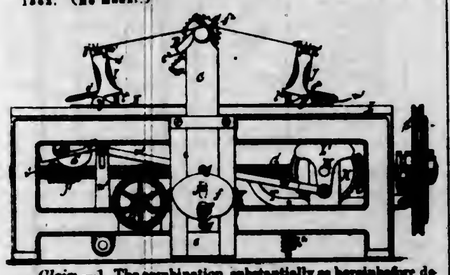
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provided with a suitable conductor or conductors, substantially as shown and described.

2. The combination of an oil-tank, its metallic pipe-line, and one or more conducting rods or wires connected to said pipe-line and extending to moist earth, substantially as and for the purpose described.

255,044. MACHINE FOR POLISHING THE EYES OF NEEDLES. IRA T. SMITH, Mount Carmel, Conn. Filed Jan. 28, 1881. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, of the needle-clamp, the thread-clamps, the needle-clamp holder, and mechanism, such as herein described, for imparting to the needle-clamp holder three distinct movements, viz: an up-and-down movement, a lateral reciprocating movement, and a partly-revolving or oscillating movement.

2. The combination, substantially as hereinbefore described, of the needle-clamp, the thread-clamps, the needle-clamp holder, and mechanism, substantially such as herein described, for imparting to the thread-clamps a longitudinal reciprocating movement and to the needle-clamp holder three distinct movements, viz: an up-and-down movement, a lateral reciprocating movement, and an oscillating movement.

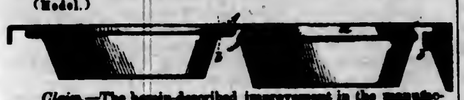
3. The combination, substantially as hereinbefore described, of the table K, carrying the thread-clamps I J, mechanism for imparting to this table a reciprocating longitudinal movement, the slides C C', fitted between the guides e, cams f f', and shaft E, the needle-clamp holder B, supported by pivots d, secured in the slides C C', the arm m, engaging with the needle-clamp holder, cam q, acting on said arm, and mechanism connected with the aforesaid shaft for operating the cam.

4. The combination, substantially as hereinbefore described, of the slides C C', the needle-clamp holder B, supported on pivots d, which are fastened in said slides, gear-wheel d', mounted on the needle-clamp holder, segment w, pivoted to the slide C', cam d^2, for imparting to this segment an oscillating motion, a shaft, G, and mechanism connected therewith for operating the said cam.

5. The combination, substantially as hereinbefore described, with the needle-clamp, the needle-clamp holder, the thread-clamps, the mechanism for imparting to the thread-clamps a longitudinal reciprocating motion, the mechanism for imparting to the needle-clamp holder three distinct movements of the cam-disk E, having pins f^3, a clutch mechanism controlled by said cam-disk for automatically stopping all the movements at the desired intervals, and a disk, U, having pins t^3, said parts being organized for operation substantially as described.

6. The combination, substantially as hereinbefore described, of the thread-clamp constructed of two jaws, I w', a pivot, t', on which said thread-clamp swings, the tension-springs t^3, the cam u', and the eccentrics v^3.

255,045. PATTY-PAN. JOSEPH SMITH, Portland, Conn., assignor to John H. Ingersoll, same place. Filed Dec. 30, 1881. (Model.)



Claim.—The herein-described improvement in the manufacture of patty-pans, consisting in the plate A, constructed with the flange a turned downward around the pan-opening, the pan, constructed with the shoulder b near its upper edge to set on over the downwardly-projecting flange of the plate, and then the edge of the pan and the flange struck together, to close the flange between the edge of the plate and the shoulder and secure the parts to the under side of the plate, substantially as described.

255,046. LATHE-CHUCK. JOHN C. STEVENS, New Haven, Conn. Filed Nov. 25, 1881. (No model.)

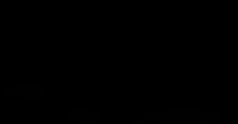


Claim.—1. The combination, with the shell of a chuck having recessed enlargements, of spindles provided with collars to bear against the inner walls of the recesses in the enlargements, and bushings secured in said recesses and arranged to bear against the said collars and hold the spindles in position.

2. The combination, with the shell of a chuck having recessed enlargements, of spindles provided with collars to bear against the inner walls of the recesses in the enlargements, bushings to bear against the said collars, and dowel-pins to hold the bushings in position.

255,047. FIRE-EXTINGUISHER. CHAS. W. TALCOTT, Woonsocket, R. I. Filed Dec. 10, 1881. (No model.)

Brief.—A rose-distributer for fire-extinguishers, having a cone-shaped plug, H, soldered at C, to retain the water in the pipe. In case of fire the fusible solder melts and the plug H falls to the bottom of the distributer, where, presenting a concave surface to the water, it assists in throwing the water outwardly.



Claim.—In an automatic fire-extinguishing nozzle, the pointed cone-shaped plug H, having the concave rear face, l, and the guide-stem s, rigidly attached thereto, these parts being adapted to operate in connection with the pipe A, having the annular bearing b, and the perforated cross-bar d, and the perforated bulb or cap D, substantially as specified.

255,048. TIMBER-RAFT. ROBERT E. TERRY, Bay Minette, Ala. Filed July 18, 1881. (No model.)



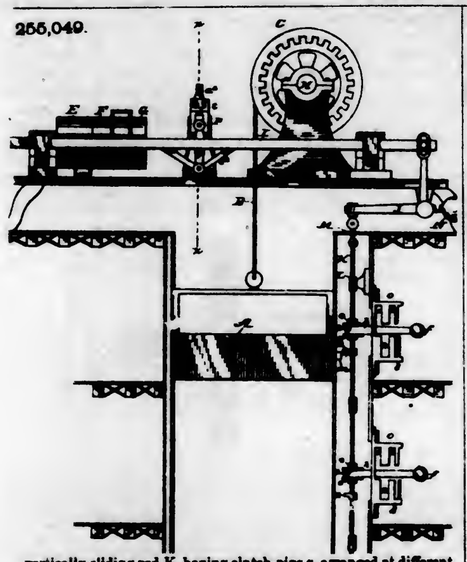
Claim.—A raft of logs bound together by the rods C and D and the tie-rods or wire a, the rod C passing through all of the logs of the raft near the ends of the logs, the rod D passing through the outside logs and over the center logs, the center logs being tied to the rod D by the rod or wire a, substantially as and for the purpose set forth.

255,049. ELEVATOR. GEORGE C. TEWKESBURY, Lynn, Mass. Filed Oct. 3, 1881. (No model.)

Claim.—1. The combination of the lever J, pivoted as shown, the pulleys E F G and intermediate belt-shifting devices, the revoluble vertically-sliding rod K, having suitable clutch-pins, a, arranged at different points on the rod, to project in different directions therefrom, the handles f, fulcrumed as shown, and the intermediate gearing mechanism, whereby the rod K may be turned and vertically reciprocated, substantially as described.

2. The combination of the lever J, pivoted as shown, the pulleys E F G and intermediate belt-shifting devices, the revolable

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vertically-sliding rod K, having clutch-pins *a*, arranged at different points on the rod, to project therefrom in different directions, substantially as described, the lever-handles *f*, fulcrumed as shown, the indicators O, for determining the relative position of the clutch-pins *a*, and the intermediate gearing mechanism, whereby the rod K may be turned, substantially as set forth.

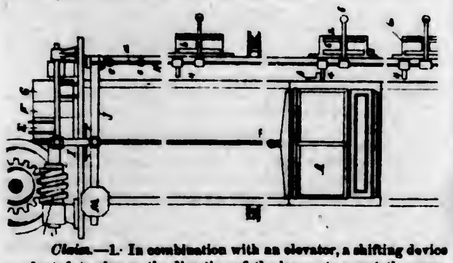
3. In an elevator of substantially the construction described, the combination of the revoluble vertically-reciprocating rod K, provided with clutch-pins *a*, gear-wheels *b*, and suitable disks *c*, said pins, gears, and disks being arranged upon the rod at different points, with the pins *a* projecting therefrom in different directions, substantially as described, the centrally-pivoted lever-handles *f*, having toothed plates on one end to mesh with the gears on the rod, and suitable indicating mechanism for locating the relative position of the clutch-pins *a*, substantially as set forth.

4. The combination, substantially as described, of the elevator-box A, the detachable block 12, the lever pivoted to the detachable block and provided with projecting tongues, as shown, and mechanism for pushing forward the lever, so as to keep the tongues in position, substantially as described.

5. The combination, with the movable lever on the elevator-box, of the stud-pins 15, attached to the wall of the building, adapted to automatically engage with the tongue 14 on the lever when the box is reciprocated, so as to throw the tongue 10 on the lever out of engagement with the clutch on the rod K, substantially as described.

6. The within-described indicator O, which consists of a semi-cylindrical case having two systems of vertical slots, one on each side of a central horizontal opening, with the vertical slots on one side communicating with the horizontal opening alternately with the vertical slots on the other side thereof, all of said openings being adapted to receive the handle *f*, and the vertical slots being numbered, as shown.

255,050. ELEVATOR-STOP. GEORGE C. TOWKSBURY, Lynn, Mass. Filed July 14, 1881. (No model.)

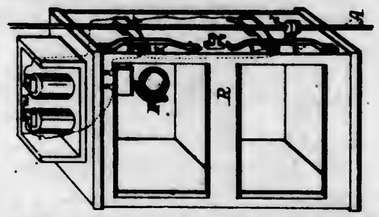


Claim.—1. In combination with an elevator, a shifting device adapted to change the direction of the box or to arrest the same, and an automatic stop mechanism adapted to be set for any given station or floor and to be acted on by the box to arrest the same when it reaches that point, all substantially as described.

2. The combination of the lever I J, pivoted as shown, the pulleys E F G, and the intermediate belt-shifting devices, the vertically-sliding rod K, and the handles 5 5 5, arranged at different points on the shaft and provided with suitable locking mechanisms, substantially as described.

3. In combination with a connecting-rod, K, provided with handles 5, and suitable projecting pins 4, an indicator, substantially as set forth, whereby the position of said pins may be regulated, as and for the purposes described.

255,051. ELEVATOR. GEORGE C. TOWKSBURY, Lynn, Mass. Filed Jan. 18, 1882. (No model.)



Claim.—1. In combination, an elevator-car, a shipper-rod having radial projections, an indicator, a handle for giving rotary motion to the said shipper-rod, and an independent pivoted lever for moving the said rod vertically, whereby the belts are shipped.

2. The combination of the shipper-rod having radial projections, the indicator-box having a gage or scale, and a handle having an index-hand and adapted to move horizontally in the slot in the indicator-box.

3. In an elevator, the combination of the shipper-rod having the elongated pinion, the handle D, having the rack, and the pivoted lever connected to the shipper-rod.

4. The described indicator consisting of a box or case having a double gage or scale and a central horizontal slot, in combination with the handle having an index-hand for each of said gages.

5. In combination with the shipping-lever having projections adapted to be set in the path of the elevator-dog, a device carried by the car, adapted to close an electric circuit by contact with one of the said projections, and thereby operate an alarm.

6. The combination of the plates 12, the spring 7, the battery, the alarm, and suitable electrical connections with the spring 9 and the shipper-rod.

255,052. SAFETY-LAMP. CELESTUS G. TINGLY and GEORGE A. SIPPAIT, Portland, Oreg. Filed Dec. 1, 1881. (No model.)

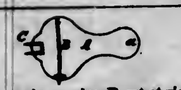


Claim.—A glass lamp formed with the inner and outer shells, A B, connected with each other at the top and with the pedestal at the bottom, but diverging from these points toward the middle, thereby surrounding the upper and lower parts of the sides of the oil-reservoir with the gas-chamber, as shown and described.

255,053. WORK-HOLDER. GEORGE B. TYLER, Palmyra, N. Y. Filed Dec. 16, 1881. (No model.)

Claim.—As an improved article of manufacture, a holder for materials upon which work may be done by hand, consisting of a back plate, A, having a pin or pins, B, set at right angles to the main line of said plate, and holding-brads C, said pin or pins B being nearer to the holding-brads C than to the rear end, *a*, of said back plate, substantially as and for the purposes herein set forth.

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255,054. CAR-STARTER. CHARLES B. UNDERHILL, Lancaster, N. Y. Filed Aug. 6, 1881. (No model.)



Claim.—1. A car-starter constructed substantially as herein shown and described, consisting of a wedge-shaped lever working between a pair of wedge-shaped clamps to which the lever is attached by a fulcrum-bolt, as set forth.

2. In a car-starter, the combination, with the sectional clamp E E, of the lever A, having a wedge-shaped section and pivoted between the said clamp-sections, substantially as and for the purpose set forth.

3. In a car-starter, the combination, with the sectional clamp E E, of the pivoted lever A, having a wedge-shaped section and provided with the roller B, substantially as and for the purpose set forth.

4. In a car-starter, the combination, with the lever A and the bolt D, of the sectional clamp E, having inclined inner faces, slotted holes *f f*, and outward-inclined outer faces, *g g*, above the slotted holes, substantially as and for the purpose set forth.

255,055. SULKY. JOHN V. SPINGTON, Lexington, Ky., assignor of one-half to James T. Spington, same place. Filed Jan. 16, 1882. (No model.)



Claim.—1. In a sulky or two-wheeled vehicle having shafts attached to the axle, the combination, with cross-pieces connecting said shafts, and provided with rubber cushions or springs, of seat-spring supports the forward ends of which bear upward against the springs on the forward cross-piece and downward on the springs attached to the rear cross-piece, and an adjustable foot-brace attached to said seat-supports, substantially as shown and described.

2. In a sulky, the combination, with shafts connected by cross-pieces and provided with slotted plates, of spring-seat supports having an adjustable foot-brace attached thereto and provided with pivot-plates adapted to engage with the slotted plates on the shafts, whereby the seat-supports and foot-brace may be adjustably secured in any desired position, substantially as shown and described.

3. In a sulky, the combination, with the shafts having suitable front and rear cross-bars and provided with plates having a series of slots or notches, of spring-seat supports arranged to bear upward against the front cross-piece and downward on the rear cross-piece, and provided with pivot-plates adapted to engage with the slotted plates on said shafts, whereby the supports may be adjusted forward or back, substantially as shown and described.

4. In a sulky, the combination, with the spring-seat supports H H, having slotted plates K K, of the suspended foot-brace I, having sliding bolts K' K', whereby said foot brace or support may be adjusted to regulate the distance between it and the seat, substantially as shown and described.

5. In a sulky, the combination, with the shafts C C, connected by cross-pieces D E, and having slotted plates M and springs F F', of the spring-seat supports H H, having pivot-plates N, adapted to engage with the slotted plates on the shafts, and an adjustable foot-brace, I, consisting of curved bars *a a* and cross-pieces *b b*, substantially as shown and described.

255,056. ELECTRICAL SWITCH-BOARD. THEODORE N. VAIL, Boston, Mass. Filed Dec. 14, 1881. (No model.)

Brief.—Improvement on Letters Patent No. 249,874, dated November 15, 1881, granted to Francis Blake. The plates are made very thin, and the contacting surfaces of the plugs are wider than the thickness of the plates to insure a connection. To prevent contact with two or more plates at the same time, their contacting portions are so arranged that no two consecutive plates are in the same vertical line.



Claim.—1. In an electric switch-board, the combination of the perforated connection-plates, the interleaved insulating-plates correspondingly perforated, and the switch-plugs constructed and arranged substantially as described, so that said plugs, when inserted, have a bearing extending over two or more such connection-plates, but in electrical contact only with the desired one of said connection-plates, as set forth.

2. In a series of connecting-plates separated by interleaved insulating-plates and piled one upon another, holes provided with conducting segmental contact-pieces, each of said contacts forming the arc of a circle and so arranged that the contacts in the holes of each plate shall occupy a relatively-different position in the said circle to that of the segmental contact in the holes of the conducting plate or plates adjacent thereto on either side, for the purpose specified.

3. In a switch-board of the class hereinbefore described, the combination of line-plates having the specially conformed or slotted holes and the connecting-plates having corresponding holes, each provided with a segmental conducting-surface differing in position for each consecutive plate, with the plug-connector, corresponding in shape at its shoulder to the conformation of the line-plate hole, and having its inner extremity adapted to make contact electrically with the desired connecting-plate only at that point of its peripheral surface which, when the plug is properly inserted, faces the said segmental conducting-projection of the connecting-plate hole, for the purpose specified.

4. The hereinbefore-described connecting-plug, adapted by a specially-conformed conducting-shoulder to fit and make contact with the line-plate only when properly inserted therein, and by a conducting-strip at one portion of the longitudinal surface of its foot or inner end (all other portions of said surface being insulated) to make a complementary contact to the required connection-plate, and consisting of the said conducting-shoulder, a contact-maintaining device therefor, the said foot or inner extremity, a conducting-shank, electrically connecting the said shoulder with the foot or opposite end, and a handle, substantially as and for the purpose specified.

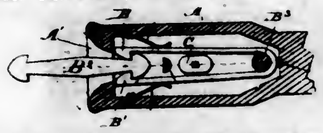
5. In a switch-board comprising a series of conducting-plates, each separated from its contiguous conducting-plate by an alternating succession of non-conducting plates or diaphragms, the whole piled one upon another, conducting-plates perforated with holes extending through the series and provided with segmental contact-pieces, each of said contacts forming the arc of a circle and so arranged that the contacts in the holes of each plate shall occupy a relatively-different position in said circle to that of the contact-piece in the holes in the connecting plate or plates adjacent thereto on either side, combined with a connecting-plug having at its inner extremity a conducting-strip opposite the projection in the hole of the desired connecting-plate, but being at all other points of the longitudinal surface of said inner extremity faced with non-conducting material, whereby contact is made only with the required connecting-plate, the contact-pieces of other contiguous connecting-plates impinging only upon the non-conducting face of the plug end, as described.

6. In a switch-board, the combination, substantially as hereinbefore described, of the connecting-plates, piled alternately with non-conducting plates or dielectrics, and having holes extending through the series fitted with conducting segmental projections, as specified, the line-circuit plates, each perforated with a hole corresponding to and forming part of the holes through the connecting-plates, but specially adapted to fit the shoulder of the plug-connector when properly inserted, and a connecting-plug, constructed as indicated, to make contact when properly placed in the line-plate hole and with that connecting-plate only which presents

a conducting-projection opposite and on the same plane as its own conducting-surface.

7. The combination, in a switch-board of the class specified, of the line-plate *c*, having the specially-conformed hole extending through the same, a circuit-closer, and a connecting-plug adapted to fit accurately in the specially-conformed hole when properly inserted therein, and by the act of insertion to operate the said circuit-closer and break the continuity of the line, substantially as described.

255,057. CAR-COUPLING. CHARLES VAN SMITH, South Bend, Ind. Filed Dec. 26, 1881. (No model.)

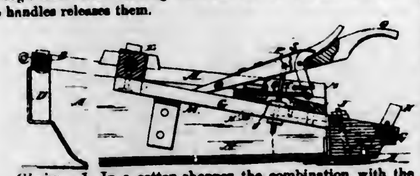


Claim.—1. In an automatic coupling device, the combination, with the draw-head A and the coupling-jaws B B', of the double elongated cams C C', whereby the process of uncoupling may be performed from the top of the car or from either side, substantially as described.

2. The combination, with the elongated cams C C', of the dowel-pin P, whereby the cams are retained in their proper position relative to each other and each adapted to be rotated independently of the other, substantially as and for the purpose set forth.

255,058. COTTON-CHOPPER. JOHN M. WALDEN, Fort Valley, Ga. Filed Dec. 13, 1881. (No model.)

Brief.—A runner-frame—a central rock-shaft rigidly secured to the front ends of the drag-bar frame. Half the drag-bars carry horizontal hoes, and each alternate bar a pair of guard-plates. Sprieg-latches hold the drag-bar frame down. An elbow-lever at the handles releases them.



Claim.—1. In a cotton-chopper, the combination, with the runners A and the rock-shaft E, of the beams F, carrying the chopping-hoes H I J, and alternating beams G, carrying the guard-plates K, substantially as herein shown and described, whereby the plants are chopped to a stand and the plants left for a stand are protected from injury, as set forth.

2. In a cotton-chopper, the combination, with the runners A, the rock-shaft E, and the intermediate beams, G, of the plates K, substantially as herein shown and described, whereby the crust of the soil is cut at the opposite sides of the plants left for a stand and the said plants protected from the soil moved by the chopping-hoes, as set forth.

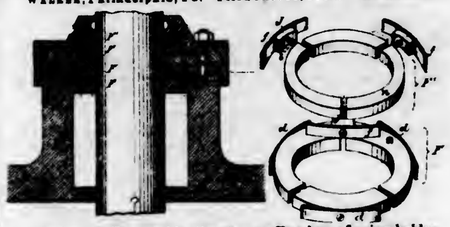
3. In a cotton-chopper, the combination, with the handles O, the side beams, F, and the runners A, of the bent lever R, the spring S, the rods T, and the latches U, having pins V, substantially as herein shown and described, whereby the beams can be locked in place and unlocked, as set forth.

255,059. ANIMAL-TRAP. ADDISON W. WALKER, Erie, Pa. Filed Jan. 6, 1881. (No model.)



Claim.—An animal-trap consisting of a base-block, A, having a block, B, of less diameter attached centrally thereto, thus forming a circumferential ledge or shelf, in combination with a series of spring-falls which have their triggers on said block B, and when sprung fall upon said ledge, substantially as shown.

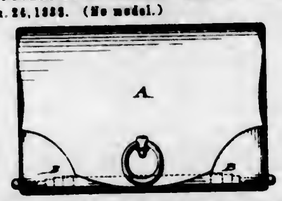
255,060. STUFFING-BOX FOR STEAM-ENGINES. THOMAS WALKER, Philadelphia, Pa. Filed Jan. 13, 1882. (No model.)



Claim.—1. The combination, in a stuffing-box, of a ring-holder or cap, with a pair of segmental packing-rings, F F', arranged one above the other, the ring F' being of less width than the ring F and having its joints closed by external caps, J, which have a bearing upon said ring F, as set forth.

2. The combination of the ring-holder or cap, the segmental ring F and its springs *d*, the segmental ring F', and the caps J with springs *f* and projecting pins or bolts *i*, as set forth.

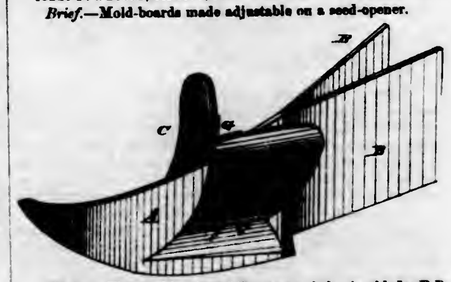
255,061. POCKET-BOOK. HERMANN WALTHER, New York, N.Y. Filed Jan. 26, 1882. (No model.)



Claim.—In a pocket-book, the combination, with the body A of a recessed barrel, B, having a spring-actuated slide-piece, *b*, the barrel being arranged near the bottom of the body, and of a locking-hook, C, secured to the cover and adapted to pass through a recess or perforation of the body A, in front of the recess of the barrel, into the latter, so as to be locked or released by the slide-piece of the barrel, substantially as set forth.

255,062. FURROW ATTACHMENT FOR SEED-PLANTERS. ISAAC P. WATSON, Clifford, Ind. Filed Jan. 5, 1882. (Model.)

Brief.—Mold-boards made adjustable on a seed-opener.



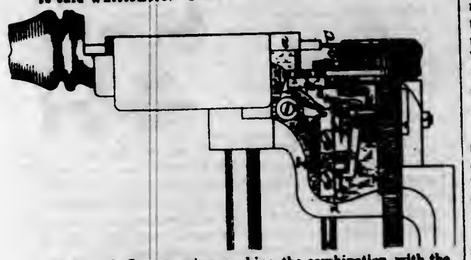
Claim.—The combination of the runner A, having blades B P and bolts D, with the mold-boards C C, having brackets F, provided with vertical slots E, and the bridge-piece G, substantially as and for the purpose set forth.

255,063. SAMPLE-DISPLAYING LID. WILLIAM H. WEBELER and THOS. F. WEBELER, Cape Girardeau and JOHN B. WEBELER and CHARLES M. BLACK, Jackson, Mo. Filed Nov. 1, 1881. (No model.)



Claim.—In combination with a packing-case, K, a sample-displaying lid consisting of the frame A, having the upper glass slide, B, and the lower slide, C, the said frame being hinged to a detachable strip, D, as shown and described.

255,064. PEGGING-MACHINE. DAVID WHITTEMORE and ANDREW EPPLER, Jr., Quincy, Mass.; said Eppler, assignor to said Whittemore. Filed Jan. 9, 1882. (No model.)



Claim.—1. In a pegging-machine, the combination, with the peg severing and driving mechanism, of the movable carrier adapted to hold two peg-strips, means for reciprocating said carrier, so as to cause it to present either strip to the severing and driving mechanism, two feed-rolls, one for each strip, feed-operating mechanism operated by the power of the machine, and automatic means whereby said operating mechanism is connected at each movement of the carrier with the feed-roll of the strip presented to the driver and disengaged from the other feed-roll, as set forth.

2. In a pegging-machine, the combination, with the peg severing and driving mechanism, of the movable carrier I, adapted to hold two strips of peg-wood, and provided with the guide-plates H H, projecting into a recess in the fixed head in which the driver reciprocates, as set forth.

3. In a pegging-machine, the combination, with the peg severing and driving mechanism, of the movable carrier adapted to hold two peg-strips, means for reciprocating said carrier, so as to cause it to present either strip to the severing and driving mechanism, two feed-rolls, J J, supported by and moving with the carrier, and the bent spring K, adapted to press each strip of peg-wood against its feed-roll, and pivoted to a fixed support, whereby the spring is enabled to swing back and forth and accommodate itself to the movements of the carrier, as set forth.

4. The combination of the peg severing and inserting mechanism, the movable carrier I, having the feed-rolls J J', the block Q, pivoted to a sliding support, R, and provided with pawls P P', adapted to engage respectively with the ratchets of the rolls J J', the arm U, attached to the carrier I and engaged with the pivoted block Q, whereby when the carrier I is moved one or the other of said pawls is automatically engaged with its ratchet, according to the direction in which the carrier I is moved, and mechanism for reciprocating the sliding support R and the pawls P P', as set forth.

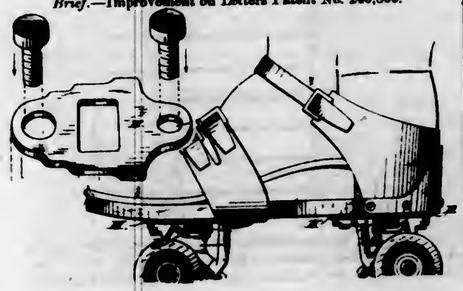
5. The movable carrier I, having duplicate feed-rolls J J' and pressure-spring K and the duplicate adjustable edge-guides M M', as set forth.

6. The combination, with the movable carrier I, having the duplicate strip holding and feeding devices and the slotted arm *e*, of the means for moving or adjusting said carrier, said means consisting of the pivoted lever *g*, engaged with the slotted arm *e*, and the rock-shaft *k*, having the crank *j* and connecting-rod *i*, as set forth.

7. The combination of the movable carrier I, the pivoted lever *g*, adapted, when turned on its pivot, to move the carrier I, and the vertically-reciprocating bar *p*, adapted to insure the proper adjustment of the movable carrier in either direction.

255,065. ROLLER-SKATE. SAMUEL WIELLOW, Worcester, Mass. Filed Jan. 25, 1882. (Model.)

Brief.—Improvement on Letters Patent No. 240,890.



Claim.—1. In a roller-skate, the combination, essentially as hereinbefore described, of the foot-piece, two depending front and rear stationary brackets or hangers supporting an inclined pin arranged substantially coincident with a central longitudinal line through the foot-piece, a roller-support arranged on said pin, a flat metallic plate interposed between the said stationary brackets or hangers and the under side of the foot-piece and constituting a broad plane bearing for the said brackets or hangers, and attaching screws or bolts passing through both the brackets or hangers and the flat plate, for the purposes set forth.

2. In a roller-skate, the metal bed-plate secured to the under side of the foot-piece and interposed between the said foot-piece and the hanger supporting the inclined pin upon which the rocking roller-carrier is mounted, said bed-plate being formed with an opening for an elastic block that is located between the foot-piece and the rocking roller-carrier, substantially as described.

3. In a roller-skate, the elastic block located between the foot-piece and the rocking roller-carrier, and provided with a tenon received in a recess in the under side of the foot-piece, substantially as described.

4. The combination, in a roller-skate, of the foot-piece with the long and short hangers supporting the inclined pin upon which the rocking bearing is mounted, and the metal bed-plate H, secured directly to the foot-piece and interposed between the foot-piece and the hangers, said bed-plate being formed at one end with an opening receiving a boss upon one of the standards, substantially as described.

255,066. PLOW ATTACHMENT. THOMAS P. WICH, Richmond, Va. Filed Dec. 9, 1881. (No model.)

Brief.—A land-side cutter to scrape the weeds and surface earth, with a vine-lifter serving as a guard, its curved rear end conducting the litter into the furrow behind the plow.

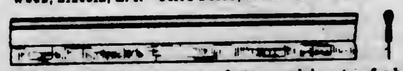


Claim.—1. The combination, with a plow, of an inclined blade, *a*, having its outer end slightly elevated above its inner end, and adjustably secured to the standard of the plow, and bent wing *h h'* at right angles to the blade and secured thereto and having its upper edge rounded, substantially as described, and for the purpose set forth.

2. The plow attachment herein described, consisting of the inclined blade *a*, provided with the shoulder *c*, arm *d*, and threaded bolt *e* at its inner end, bent wing *h h'*, secured to the outer end of the blade and having its upper edge rounded and provided with the downwardly-projecting hook *h'* at its front end, substantially as described, and for the purpose set forth.

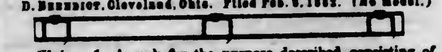
3. The combination, with a plow-standard, *g*, provided with a series of adjusting-holes, *i*, and recesses *j*, opposite the adjusting-holes, of the inclined blade *a*, having its outer end slightly elevated above its inner end and provided with the shoulder *c*, arm *d*, and threaded bolt *e* at its inner end, and bent wing *h h'*, secured to the outer end of the blade and having its upper edge rounded, and hook *h'*, secured to or integral with the front end of the wing, substantially as described, and for the purpose set forth.

255,067. PIPING FOR BOOTS AND SHOES. CHARLES D. WOOD, Lincoln, R. I. Filed Feb. 6, 1882. (No model.)



Claim.—As an article of manufacture, a piping-strip for boot and shoe uppers, composed of a strip of leather folded on and cemented to a strip of cloth, the latter projecting at one edge of the piping-strip, substantially as and for the purpose specified.

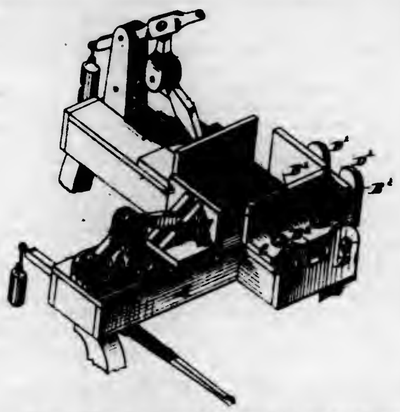
255,068. STOVE-RACK. WILLIAM H. WOODARD and LAURIE D. BRENDICE, Cleveland, Ohio. Filed Feb. 6, 1882. (No model.)



Claim.—1. A rack for the purpose described, consisting of longitudinal and end bars formed of wrought metal channeled and secured together, substantially as described.

2. The combination of lipped fastenings *b* with a rack composed of wrought-metal channeled bars, substantially as described.

256,069. BOX-PRESSING CLAMP. Charles W. Woodford, Essex, N. Y. Filed Dec. 28, 1881. (No model.)



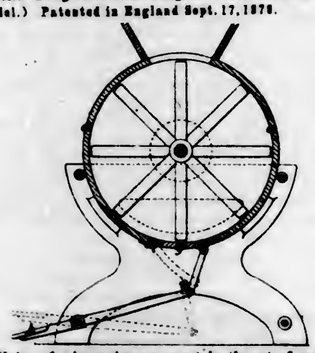
Claim.—1. In a box-squeezing-up machine, the movable jaws, substantially at right angles to each other, operated independently through toggles by separate levers, and drawn back by counterbalance-weights, substantially as herein set forth.

2. In a box-squeezing-up machine, the movable jaws carried on dovetails resting loosely in dovetail grooves substantially at right angles to each other formed in the frame, combined with fixed abutments, as and for the purposes set forth.

3. In a box-squeezing-up machine having movable followers, the fixed plates B B', secured in position substantially at right angles to each other by adjusting-screws attached to same and working in bearings D D', substantially as herein described.

4. The combination, in a box-squeezing-up machine, of movable jaws, arranged at right angles to each other and operated independently through toggle-levers, and adjustably-secured jaws, as herein shown and described.

256,070. MANUFACTURE OF SOAP-POWDER AND APPARATUS THEREFOR. William Wright, Droylsden, and Thomas Bintliff, Manchester, County of Lancaster, England; said Bintliff assignor to said Wright. Filed Oct. 20, 1881. (No model.) Patented in England Sept. 17, 1878.



Claim.—1. As an improvement in the art of making powdered soap, the mode herein described of cutting, pulverizing, and mechanically compounding together the hard soap and alkali in their ordinary dry state, substantially as set forth.

2. The herein-described soap cutting and mixing apparatus, consisting of a cylinder with a feed-hopper on the top and a discharge-opening below closed by a removable door, and a rotary shaft carrying cutting-knives parallel with their lines of movement, all substantially as set forth.

3. The combination of the rotary knife-shaft and a cylinder having a hopper and a discharge-opening with a door for closing said discharge-opening and a treadle under the control of the operater for opening and closing the door, as described.

256,071. STEAM-RADIATOR. James C. Ashbrook and John F. Sutherland, Philadelphia, Pa. Filed Nov. 15, 1881. (No model.)



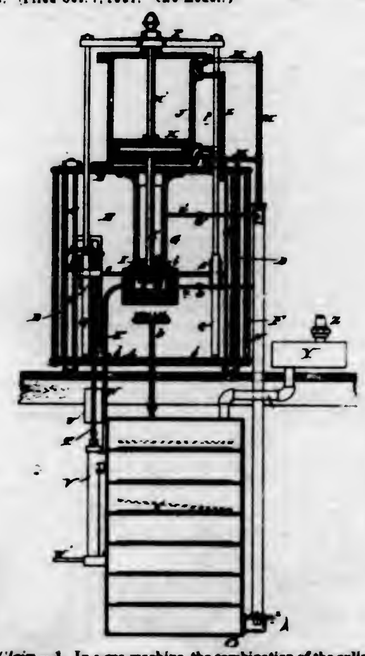
Claim.—The combination of the radiators A A A, provided with centrally-arranged partitions *k*, joints D, consisting of the plates *s s*, having arms upon opposite sides and cast to the sections A, the washers *e* and bolts *x x*, and the blocks M, said washers and blocks being adapted to keep the sections separate and readily detachable from each other, as shown and described.

256,072. CAR-COUPLING. Enoch H. Brooks and James H. Brooks, Jenkinsville, assignors of one-third to H. L. Bates and John H. Williams, Griffin, Ga. Filed Jan. 30, 1882. (No model.)



Claim.—In combination with the shouldered and weighted lever fulcrumed in the draw-head, the coupling pin and link, the lever being provided with an aperture at its lower end, to be engaged by the pin so as to hold the lever back and keep the shoulder away from the link, substantially as specified.

256,073. GAS-MACHINE. Edward C. Burgess, Philadelphia, Pa. Filed Oct. 7, 1881. (No model.)



Claim.—1. In a gas-machine, the combination of the cylinders G and J with their pistons I and K and piston-rods H H', cross-head P, rods *p*, carrying racks Q at their bottoms, ratchet-wheels R and R', pawls *r* and *r'*, pinions S, chain T, weight U, pump V, pipe W, and constant exhaust pipe *n*, substantially as and for the purpose specified.

2. In a gas-machine, the sheet-iron casing D and closed head B, in combination with the hydrocarbon-vapor generator G, means to heat the same located within the casing, blast-cylinder J, and pipes L and M with their respective check-valves, substantially as shown, the suction-pipe L, opening into the casing D, as and for the purpose specified.

3. In a gas-machine, the combination of hydrocarbon-vapor-generating cylinder G, piston I, gas-main N, pipes *n* and *n'*, provided respectively with valves O and O', and oil-supply pipe W, substantially as and for the purpose specified.

4. In a gas-machine, the generator-cylinder G, provided at the bottom with a chamber, *g*, in combination with the piston I and a continuous exhaust, *n* O, for gas, and intermittent supply pipe W, for oil, substantially as and for the purpose specified.

5. In a gas apparatus, the casing D, solid head B, and perforated head or plate A, in combination with means to heat the air within said casing, cylinders G and J, with their pistons, the cylinder J being provided with suction-pipes communicating with the hot-air chamber, whereby hot air is supplied to the blast-cylinder before being mixed with the hydrocarbon vapor, and wooden casing F, as shown and described.

6. In a gas-machine, the sheet-iron casing D and closed head or plate B, in combination with the hydrocarbon-vapor generator G, means to heat the same located within the casing, blast-cylinder J, pipes L and M, with their respective check-valves, the suction-pipe L, opening into the casing D, gas-main N, and pipes *n* and *n'*, provided with valves, substantially as and for the purpose specified.

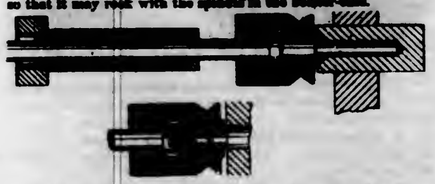
7. In a gas-machine, the generator-cylinder G, having the piston I, provided with a valve, *i*, in combination with the constant exhaust pipe *n*, for the hydrocarbon vapor, and the intermittent exhaust *n'*, substantially as shown and described.

8. In a gas-machine, the generator-cylinder G and its piston I, in combination with chamber E and its top plate, B, the hot-blast cylinder J, located above it, both of said cylinders being bolted to the said plate, hot-blast suction-pipes L, opening into the chamber E, surrounding the cylinder G, and piston K, both of said pistons being rigidly connected together by rod H, substantially as and for the purpose specified.

9. In apparatus for supplying oil to gas-machines, the combination of gear-wheel S, double ratchet-wheel R R', chain T, weight U, pump V, pawls *r'* and *r*, springs *r²*, rod *p*, rack Q, and stop *q*, substantially as and for the purpose specified.

256,074. SPINDLE. William T. Carroll, Worcester, assignor to George Draper & Sons, Hopedale, Mass. Filed July 25, 1881. (No model.)

Brief.—The whirl is sustained during its rotation by a short pintle below it, either connected therewith or loosely inserted therein. The lower end of the spindle is held and supported laterally by means of a washer of rubber or other yielding material fitted closely within a cavity at the upper end of the whirl. The bolster is made elliptical externally in the direction of its length, so that it may rock with the spindle in the bolster-cone.

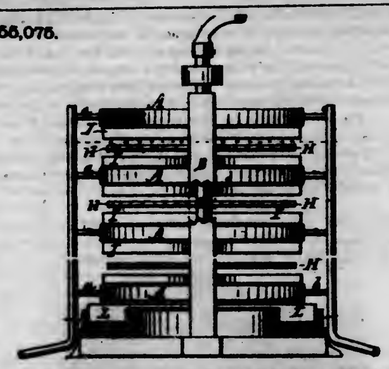


Claim.—The whirl, its cap, and a pintle, and yielding washer or block fitted closely therein and to the spindle, combined with the independent spindle, bolster-cone, and yielding or rocking bolster therein, substantially as shown.

256,075. SALT-EVAPORATOR. Sprout Dodge, Rochester, N. Y., assignor of one-half to William D. Clark, same place. Filed Aug. 24, 1881. (No model.)

Claim.—1. In an apparatus for evaporating salt, the combination of the series of evaporating-drums A A, the rotary water-pipe E, the perforated spray-pipes H H, attached to the rotary pipe and resting between the drums, the scrapers or brushes I I, also attached to the rotary pipe and resting between the drums, the annular trough K, resting below the drums, and the scrapers or brushes L L, attached to the rotary pipe and resting in the trough, as herein shown and described.

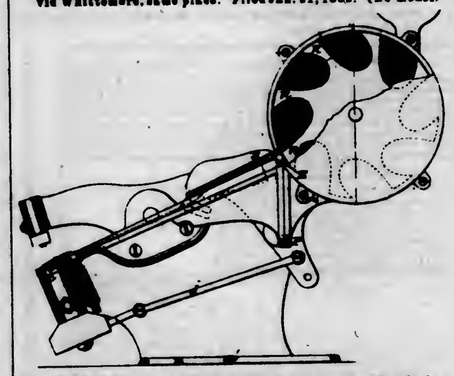
256,075.



2. In an apparatus for evaporating salt, the combination of a series of heating-drums having flat surfaces, a rotary water-pipe passing centrally through openings in the drums, a series of rotary spray-pipes arranged between the drums, and a series of rotary scrapers or brushes, also located between the drums, and serving to clear the flat surfaces of the drums of the deposit, as herein shown and described.

3. The spray-pipe H, consisting of an exterior pipe, *f*, and interior pipe, *g*, provided with coincident spray-holes, *l l*, the exterior pipe being provided with a stuffing-box at its outer end and the interior pipe being provided with an extension passing out through the stuffing-box, whereby the interior pipe may be turned axially to regulate the discharge through the spray-holes, as herein shown and described.

256,076. MACHINE FOR FEEDING AND SETTING LACING HOOKS. Andrew Eppler, Jr., Quincy, Mass., assignor to David Whittemore, same place. Filed Jan. 21, 1882. (No model.



Claim.—1. In a machine for feeding and attaching lacing-hooks, the reservoir having the rotary feeding-plate provided with arms, substantially as described, adapted to collect and discharge lacing-hooks, as set forth.

2. The reservoir having upon one of its sides an inwardly-projecting shoulder, whereby the lacing-hooks, when improperly placed upon the rotary feeding-plate, are dislodged from said plate, as set forth.

3. The combination of the reservoir having an aperture, I, the inclined guide or roadway set edgewise and projecting at its upper end into said opening, and the substantially vertical intermittently-rotating feeding-plate having arms E, adapted to collect lacing-hooks in the reservoir, each arm coinciding with the roadway when in an inclined position, whereby the hooks collected upon said arms are caused to slide upon the roadway, as set forth.

4. In a machine for feeding and attaching lacing-hooks, the reservoir having the substantially vertical intermittently-rotating feeding-plate having arms E, and the fixed tufts of bristles, whereby the accumulated hooks are prevented from interlocking and impeding the action of the feeding-plate, as set forth.

5. The combination, with the rotary feeding and supporting plates, of the spring-impelled yielding wedge, adapted to insert itself under the neck of a pronged lacing-hook, when the latter is

moved forward by said plate, and thereby firmly hold and support

Claim.—1. In a breast-drill adapted to be temporarily converted into a machine-drill, the combination with the supporting-

3. In combination with the arms C C and socketed portions

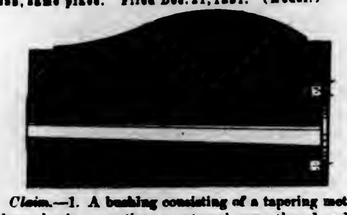
to fit upon the rotary shaft when the casing is in place upon the main casing, substantially as and for the purpose specified.

moved forward by said plate, and thereby firmly hold and support said hook for the action of the compressor, as set forth.

6. The reservoir having the rotary armed feed-plate J and a groove, 5, receiving the outer ends of the arms of said feed-plate, whereby the lacing-hooks are prevented from clogging the plate and from wearing the outer ends of the arms thereof, as set forth.

7. The reservoir having the rotary feed-plate J, the groove 5, receiving the outer ends of the arms of said feed-plate, and the cover 3, secured to the body of the reservoir by screws, whereby the space between the outer side of the plate J and the cover 3 may be regulated, as set forth.

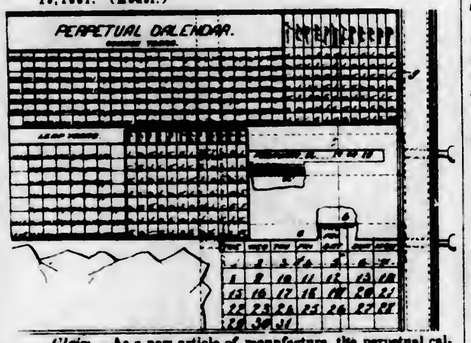
255,077. AXLE-BOX FOR VEHICLE-WHEELS. JESSE T. GARDNER, Valden, Miss., assignor of one-half to Reddon Thompson, same place. Filed Dec. 21, 1881. (Model.)



Claim.—1. A bushing consisting of a tapering metallic tube or sleeve, having a continuous external screw-thread, and an annular flange at its inner end, the sleeve being adapted to be screwed into the hub and bind its fibers together from end to end, and the flange to brace and bear against its inner end, as shown and described, and for the purposes set forth.

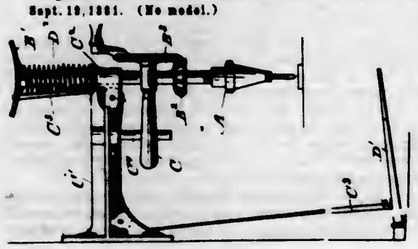
2. In combination with the externally-tapering threaded bushing flanged as described and recessed diametrically, the internally-tapered and screw-threaded hub having a seat for the flange on the sleeve, the two being secured together substantially in the manner and for the purpose specified.

255,078. CALENDAR. GEORGE F. GODDELL, Morrison, Ill., assignor of one-third to Charles Bent, same place. Filed Feb. 19, 1881. (Model.)



Claim.—As a new article of manufacture, the perpetual calendar having printed on its face the names of the week and month columns *g*, the common-year columns arranged in the relation thereto as specified, the leap-year columns, the days-of-the-week and days-of-the-month columns therefor, the monthly-calendar *f*, the days-of-the-week and days-of-the-month rollers, all combined and arranged substantially as specified.

255,079. DRILLING-MACHINE. D. BURT HARTLEY, Chicago, assignor of one-half to Frank F. Peats, Rockford, Ill. Filed Sept. 19, 1881. (No model.)



Claim.—1. In a breast-drill adapted to be temporarily converted into a machine-drill, the combination, with the supporting-bracket C, of the spring D', the drill stem or stock B, the breast-plate F, the cord C', and the treadle-board D, substantially as described.

2. The combination, with the hand-grasp C, of the locking-bolt C' and the supporting-bracket C, substantially as described.

255,080. LATHE-CHUCK FOR TURNING POLYGONAL BODIES. HENRY C. HUMPHREY, New York, N. Y., assignor of three-fourths to Siegfried Black, same place. Filed Aug. 31, 1881. (No model.)



Claim.—1. In a lathe-chuck for turning polygonal bodies, the combination of a revolving center spindle having laterally-adjustable flanged heads, with fixed exterior concentric rings secured thereto, said rings having stop-pins and the heads radial set-screws for securing the sticks, substantially as and for the purpose set forth.

2. The combination of the head B, having a circumferential flange, *a*, and radial set-screws *a'*, with a concentric ring, C, secured thereto, said ring having inwardly-projecting stop-pins *d*, substantially as set forth.

3. The combination of a revolving spindle and flanged laterally-adjustable heads provided with means for attaching the sticks, with one or more flanged disks arranged intermediately between the heads and being made of less diameter than the same, said disks having angular strips and set-screws below said strips for supporting the sticks at one or more intermediate points, substantially as specified.

4. In a lathe-chuck for turning polygonal bodies, the intermediate disks D, having a circumferential flange, with radial set-screws *f* and exterior angular strips, *f''*, which are attached at one end to the flange and adapted to be set to the sticks by their outer angular ends, substantially as set forth.

5. In a lathe-chuck for turning polygonal bodies, the combination of the head B at one end of the spindle, said head having a circumferential flange, *a*, and radial set-screws *a'*, with an exterior concentric ring, C, having inwardly-extending stop-pins *d* and a rectangular stop-flange, *e*, at the outer edge, as and for the purpose set forth.

255,081. ROLLING COLTER. FRANKLIN B. HUNT, Richmond, assignor of one-half to D. B. Robbins, Economy, Ind. Filed Dec. 8, 1881. (No model.)



Claim.—1. The arms C, provided with the recess E and holes F', in combination with the shank B, provided with the neck F, and elongated head D, and bolts G, substantially as set forth.

2. In combination with the journal of the rolling colter A, the cups H, cushions I, bearings K, and screw-plugs L, substantially as set forth.

3. In combination with the rolling colter and the socketed part P, the cushions I, wooden bearings K, and screw-plugs L, substantially as set forth.

4. In combination with the rolling colter and socketed part P, the wooden bearings K K, hollow screw-plugs L L, and bolt N, substantially as shown and described.

5. In combination with the socketed part P' and the bearings J of the rolling colter, the wooden bearings K, cushions I, and screw-plugs L, substantially as set forth.

6. The cups H, arranged to pass beyond the cushions I and embrace the flanges of the bearings J, in combination with said cushions, bearings K, and screw-plugs L, substantially as shown and described.

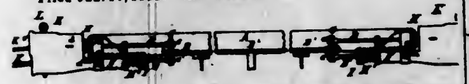
7. The cups H, arranged to pass beyond the cushions I and embrace the flanges of the bearings J, in combination with said cushions, bearings K, screw-plugs L, and bolt N, substantially as set forth.

8. In combination with the arms C C and socketed portions P P, provided with the screw-plugs L L, the bolt N, substantially as shown and described.

9. In combination with the arms C C and socketed portions P P, provided with the screw-plugs L L and cups or recesses H H, the bearings J K, cushions I I, and bolt N, substantially as set forth.

10. In combination with the socketed portions P P', provided with the recesses H and cushions I, the screw-plugs L L, and bolt N, substantially as shown and described.

255,082. CAR-COUPLING. JOHN R. LAWRENCE, Cincinnati, Ohio, assignor of one-third to Charles E. Parker, same place. Filed Jan. 17, 1882. (No model.)



Claim.—1. The combination, with a draw-head having two horizontal throats, J J', in one vertical plane for as many coupling-links secured by a single vertical coupling-pin, L, of the pair of draw-bolts D D' in the planes of said throats, pivoted in rear to a vertical cross bar or plate C, which is pivoted to the draw-bar, substantially as set forth.

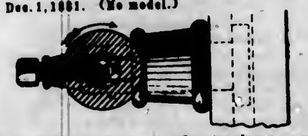
2. In combination with the double-throated draw-head E, the draw-bolts D D', cross bar or plate C, draw-bar B, brace-bolts *g g'*, and the vertical abutments *g''* I on the bed-frame, the helical springs H H', interposed between said abutments and the rear wall of the draw-head and occupying sockets *e e'* in the latter, substantially as set forth.

3. The draw-head E, having the two horizontal coupling-link throats J J', one above the other, and having that portion *e''* of its front wall which surrounds the upper throat and is in the plane of the car-bed frame projecting forward of the portion which surrounds the lower throat, substantially as and for the purpose set forth.

4. The additional or supplementary spring H', occupying socket *e'* in the rear end of a rear prolongation, F, from the lower portion of the draw-head in the described combination with abutment I and guiding and retaining strap G.

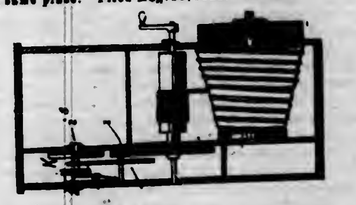
5. The support for the supplementary spring H', consisting of the abutment I and the double-headed or duplex bolt *g g'*, secured to the end sill, A, of the car-bed frame, as represented.

255,083. LATHE-TOOL. HENRY O. LUND, Bridgeport, Conn. Filed Dec. 1, 1881. (No model.)



Claim.—A tool for internal-surface turning or screw-cutting, consisting of the body A, having a V-shaped groove the entire length of the upper side of the same, and with a bridge, B, secured to one end, having a set-screw, C, passing through it, the boring-bar D, having seats at one or both ends of the same to receive the cutting-tips E and E', said boring-bar being secured in its proper position in the groove of the body A by means of the set-screw C, the whole being secured to the tool-post of a lathe and arranged to operate substantially as shown and described, for the object set forth.

255,084. SEWING-MACHINE MOTOR. CHARLES NICHOLSON, Washington, D. C., assignor of one-half to Robert M. Thompson, same place. Filed Aug. 16, 1881. (Model.)



Claim.—1. In combination with a rotary shaft and suitable winding mechanism, the main driving-spring secured in a suitable movable casing, and the hollow rotary hub, the latter being adapted to fit upon the rotary shaft when the casing is in place upon the main casing, substantially as and for the purposes specified.

2. In combination with the conical drum and the winding-drum and connecting-rope, the auxiliary spring secured to the shaft of the conical drum and to a suitable casing, and adapted to operate to rewind the conical drum when the small casing is removed, substantially as and for the purposes set forth.

3. In combination with the winding-drum provided with clutches on its inner end, the hub provided with similar clutches and a bearing for the shaft of the drum, and the collar and stop for holding the drum unclutched during the operation of winding, substantially as specified.

4. The combination, with the clutch or wheel loosely mounted upon a rotating shaft, and the gearing for transmitting power to said clutch or wheel, of the spring located in said clutch or wheel and secured thereto and to the shaft for the purpose of storing up power for the initial movement of the parts, substantially as set forth.

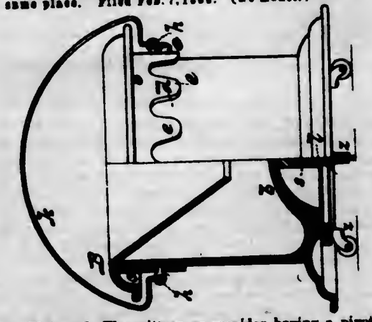
5. In combination with the clutch or wheel, its shaft and spring, and the gearing for imparting motion to said shaft, the friction-brake adapted to hold the clutch or wheel, and the mechanism for operating the said brake to release the clutch or wheel, substantially as specified.

6. In combination with the clutch or wheel, its shaft and driving mechanism, the ratchet on said shaft, and the pawl and cord for operating the ratchet to give a positive initial movement to the shaft, substantially as specified.

7. The clutch or wheel provided with a beveled recess on its face adapted to receive the driving-wheel of a sewing-machine, in combination with a spring interposed between the hub and clutch, and rotate the same directly by frictional contact, substantially as specified.

8. The combination of the fly-wheel K, shaft *i*, clutch R, and spring *r*, all arranged in such manner as to store up sufficient power to give the initial movement to the apparatus in starting, substantially as specified.

255,085. SPITTOON. ABNER B. NOTT, Fairhaven, Mass., assignor of two-thirds to James Parr and Benjamin F. Beetle, same place. Filed Feb. 7, 1882. (No model.)



Claim.—1. The spittoon or cuspidor having a pivoted base plate or ring on which it rests, and casters attached to said base plate or ring, substantially as specified.

2. A spittoon or cuspidor having an internally-convex bottom and a cover with an inclined inner flange, substantially as specified.

3. A spittoon or cuspidor having a pivoted base-ring, C, and casters *s*, and an externally-flanged cover, B, having rim-hooks *c*, to engage the eyes or studs *b* of the bowl, substantially as specified.

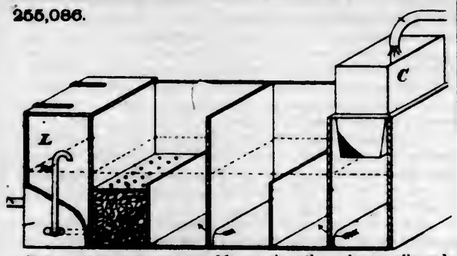
4. The spittoon or cuspidor having the pivoted base-ring C and casters *s*, the cover B, its outer rim, *c*, and fastenings, the eyes *b*, and the bail *b*, substantially as specified.

255,086. APPARATUS FOR PURIFYING THE WATER FROM CONDENSERS. JOHN B. RESNORD, Baltimore, Md., assignor of one-half to Edward Wilson, same place. Filed Dec. 13, 1881. (No model.)

Brief.—The base of each alternate diaphragm is perforated to draw off the fluid. The water in all the compartments will be on a level with the highest point on the goose-neck pipe *n*, which oscillates in a quadrant.

Claim.—1. In an apparatus for separating grease from the water discharged from steam-engine condensers, a horizontal case divided by walls into compartments having the same level or plane,

255,086.

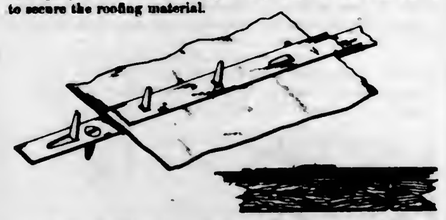


all the compartments connected by openings through the walls, and the said case provided at one end with a pivoted draw-off or overflow pipe, *n*, as shown and described.

2. An apparatus for separating grease from the water discharged from steam-engine condensers, having at one end a detachable strainer-box, C, at the opposite end and on the same level or plane a purified-water-receiving chamber, L, provided with a pivoted draw-off or overflow pipe, *n*, and between the said ends one or more compartments provided with a dam across the center of its bottom and openings for the passage of the water into and out of the compartment, as set forth.

255,087. DEVICE FOR SECURING ROOFING MATERIAL UPON ROOFS. L. LEWIS SACHSENMAIER, Cincinnati, Ohio, assignor to the New York Iron Roofing and Paint Company, New York, N. Y. Filed Dec. 13, 1881. (No model.)

Brief.—The projections on the under strip, which is fastened to the roofing-frame, project up through the roofing material and through perforations in the upper strip, and are then bent down to secure the roofing material.



Claim.—1. The combination, substantially as hereinbefore set forth, of a sheet-metal strip having a series of flexible points normally projecting at right angles from its surface, means, substantially as described, for securing said strip permanently to a roof or other structure, and a second strip perforated with a series of apertures corresponding to the projecting points of the first strip, whereby the edges of a roofing fabric may be secured to each other and to the roof by the interlocking of the two metallic strips between which they are placed.

2. The combination, substantially as hereinbefore set forth, with the edges of one or more pieces or sections of roofing fabric, perforated in such manner as to leave a burr, of two parallel clamping plates or strips of sheet metal, one of the latter being provided with a series of points, which pass through the fabric, and the other being perforated with a corresponding series of apertures of sufficient size to permit the said points to enter, together with a sufficient portion of the fiber of the fabric, to serve as a water-tight packing, the whole being afterward compressed together by bending down or clinching the projecting points of the first clamping-strip.

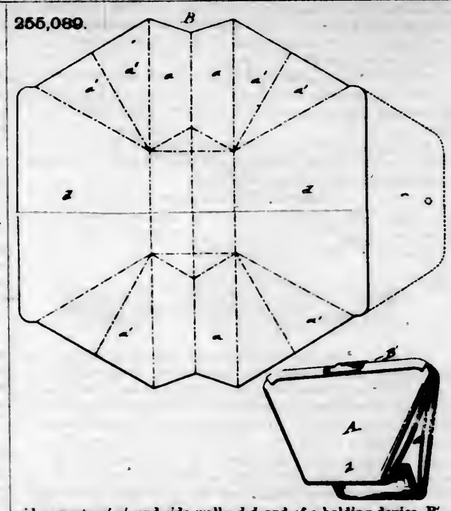
255,088. PROCESS OF MANUFACTURING ROOFING MATERIAL. L. LEWIS SACHSENMAIER, Cincinnati, Ohio, assignor to the New York Iron Roofing and Paint Company, New York, N. Y. Filed Nov. 26, 1881. (No specimens.)

Claim.—The hereinbefore-described process of manufacturing roofing material, which consists in saturating a fibrous or textile fabric with a liquid mixture composed of metallic substance and oils, substantially such as described, in subjecting the saturated fabric to pressure while in a plastic state, and in coating the surface thereof with hydraulic cement in a dry pulverulent condition.

255,089. POCKET-BOOK. PAUL SCHRADER, New York, N. Y., assignor to Schrader & Stahl, same place. Filed Jan. 21, 1882. (Model.)

Claim.—A pocket-book consisting of a body, A, made of a folding bottom, *b b*, central side gussets, *a a*, connecting triangular

255,089.



side gussets, *a' a'*, and side walls, *d d*, and of a holding device, B', applied to the side walls of the body, substantially as set forth.

255,090. TOY SAVINGS-BANK. CHARLES G. SHEPARD and PETER ADAMS, Jr., Buffalo, N. Y.; said Adams assignor to Walter J. Shepard, same place. Filed Feb. 4, 1882. (No model.)



Claim.—1. The combination, with a receptacle, A B, having an open mouth, *a*, of a pivoted arm, C, adapted to receive the coins and convey the same to the open mouth.

2. The combination, with a receptacle, A B, having an open mouth, *a*, of a pivoted arm, C, mounted on a horizontal shaft, I, and a thumb-piece, *i'*, whereby the shaft is actuated.

3. The combination, with a receptacle, A B, having an open mouth, *a*, of a pivoted arm, C, a pivoted tongue-plate, E, and means whereby the arm and tongue-plate are simultaneously actuated, substantially as set forth.

4. The combination, with a receptacle, A B, having an open mouth, *a*, of a pivoted arm, C, rock-shaft I, provided with an arm, J, and a pivoted tongue-plate, E, provided with an arm, H, adapted to be actuated by the arm J of the rock-shaft.

5. The combination, with a receptacle, A B, having an open mouth, *a*, of a pivoted tongue-plate, E, provided with an overhanging arm, H, whereby the lower edge of the tongue-plate is pressed forwardly against the mouth, and a lip, *g'*, formed on the tongue-plate, whereby the forward movement of the tongue-plate is limited.

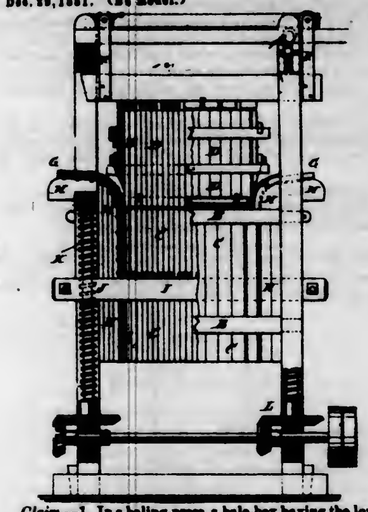
6. The combination, with a receptacle, A B, having an open mouth, *a*, of a pivoted arm, C, shaft I, provided with an arm, J, a pivoted tongue-plate provided with an arm, H, and a pivoted eye-plate, K, provided with a projection, L, adapted to be actuated by the arm H of the tongue-plate.

7. The combination, with the head A, provided with eye-openings *b* and a stop, *F*, of the hinged eye-plate K, having a depression, *l*, into which the stop *F* projects, and whereby the downward movement of the eye-plate is limited.

8. The combination, with the head A, provided with eye-openings *b*, of the hinged eye-plate K and a stop, *F*, arranged on the inner side of the head above the eye-plate, whereby the upward movement of the eye-plate is limited.

9. The combination, with the head A and body B, connected by a throat or contracted passage, *b*, of a hinged plate, M, hung in said throat to obstruct the same when the figure is placed in a horizontal position.

255,091. BALING-PRESS. WILLIAM F. SMITH, Overton, Tex., assignor of one-half to Andrew J. Gilliam, same place. Filed Dec. 19, 1881. (No model.)



Claim.—1. In a baling-press, a bale-box having the lower part of its ends made flexible and adapted to be elevated with the follower, substantially as and for the purpose set forth.

2. In a baling-press, the combination, with a bale-box having stationary sides and upper ends, the guide bars or plates H, and the follower I, of the flexible lower ends, G, substantially as and for the purpose set forth.

3. In a baling-press, the combination, with the bale-box C D, having stationary sides and flexible lower ends, and provided with doors E, having beveled lower edges, of the guide bars or plates H and the follower I, substantially as and for the purpose set forth.

4. In a baling-press, the combination, with the frame and the lower part, C, of the baling-press, having flexible ends G, of the guide bars or plates H, attached to the said frame and having their upper ends curved outward, substantially as and for the purpose set forth.

255,092. TUBULAR WELL. RANSOM E. STRAIT, Galesburg, Mich. Filed May 16, 1881. (No model.)



Claim.—1. The herein-described tubular-well packing-lock, consisting of the combination of the valve-joint having the packing-lock recess, with said packing device composed of the metal collar with the upper rim integral therewith, the thick rubber band or equivalent, the outer band, with its integral rim, under the lower edge of the rubber band, and the metallic washer movably located on the lower end of the metal collar, all constructed and adapted to operate substantially as set forth.

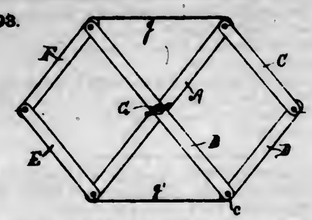
2. A leader or battering cap to a tubular-well pipe, having the rib on its inner surface, substantially as set forth, for the purpose specified.

3. The herein-described packing for locking valve-joints with the outer pipe of tubular wells, consisting of the metal collar with upper rim, the rubber band, the outer band, with its integral rim, under the lower edge of the rubber band, and the metal washer on the lower end of the metal collar, all in combination, substantially as described and shown.

4. A plunger-cylinder and connection which is designed for location at given points in the main well-pipe, in combination with the outer well-pipe, provided at its lower end with a battering or leader cap or joint having the internal rib, substantially as forth, whereby all danger of losing said cylinder and connections is obviated.

255,093. CANOPY-FRAME. CHARLES WITTENBERG, Indianapolis, Ind., assignor to Norman S. Byram and Edward C. Carnoline, same place. Filed Aug. 9, 1881. (No model.)

255,093.



Claim.—The two bars A B, pivoted together in the center by the pivot G, and having the short bars C D E F pivoted to their ends, combined with the cords *g g'*, adapted to be extended or folded up, substantially as shown and described.

255,094. METHOD OF AND APPARATUS FOR SHAKING THE COTTON FROM NAPPED HATS. GEORGE YULE, Newark, N. J. Filed Dec. 21, 1881. (No model.)



Claim.—1. The method herein described for removing the cotton from the fur of a hat after the same has been stuck and scalded upon a hat-body, consisting in hanging the same in hot water, without any interior cone or other support, and subjecting them to a continued shaking or other alternating movement to and fro, substantially as set forth.

2. The combination, in a machine for shaking napped hats, of a tank of hot water, a vibrating shaft or bar carrying a series of clamps for holding the hat-bodies, and mechanism, substantially as described, for shaking the shaft and clamps, as and for the purpose set forth.

3. The combination, in a hat-shaking clamp, of a pair of jaws pivoted together, and provided with a spring for automatically closing and a handle for voluntarily opening the jaws, substantially as herein described.

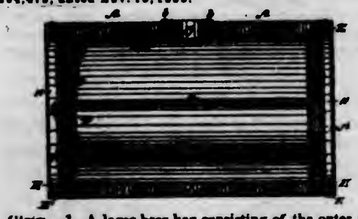
4. The combination, with a hot-water tank, of a series of clamps secured to a shaft, arranged to vibrate and to turn for lifting the hat-bodies from the water, and a movable plank arranged to slide under and support the hats when thus lifted, substantially as and for the purpose set forth.

5. The combination, with a series of clamps arranged to operate as herein described, of a series of connected wedges, cams, or equivalent devices for opening or closing the jaws of the clamps simultaneously, substantially as herein set forth.

6. In combination with a shaft mounted upon a hot-water tank and carrying a series of clamps for the purpose set forth, an adjustable crank, as E', and suitable connection to vibrate the shaft radially or longitudinally by the rotations of the crank, substantially as herein set forth.

REISSUES.

10,061. LAGER-BEER KEG. JOEL B. HAYDEN, Hempstead, assignor, by mesne assignments, to the Universal Beer Keg Company, New York, N. Y. Filed Jan. 13, 1882. Original No. 234,473, dated Nov. 16, 1880.



Claim.—1. A lager-beer keg consisting of the outer metallic can or keg, A, and the inner metallic can or keg, B, connected

together by the bushings C and D, and having the space between them filled with flexible strips of wood mixed with a compound of glue and plaster-of-paris in sufficient quantity to make it adhesive, substantially as described.

2. In a metallic lager-beer keg, the heads H H, secured to the angle-irons E E by the rivets *b*, the flange F' of said angle-irons being riveted to the outer casing to form the chine of the keg, substantially as described.

10,062. CLOCK-MOVEMENT. ARTHUR E. HOTCHKISS, Cheshire, Conn. Filed July 19, 1881. Original No. 221,310, dated Nov. 4, 1879. Reissue No. 9,656, dated Apr. 12, 1881.



Claim.—1. In a clock-movement having a frame consisting of three plates suitably connected together, a train which is divided into two parts, a front part and a back part, the front part arranged between the front and middle plates of the frame and the back part arranged between the middle and back plates of the frame, the point of division being between the center wheel and center pinion, the said center wheel and center pinion being arranged on the center arbor carrying the minute-hand, as set forth.

2. In a clock-movement having a frame consisting of three plates suitably connected together, the middle plate of the frame, the said middle plate dividing the train into two parts between the center wheel and center pinion, the said center wheel and center pinion being arranged on the center arbor carrying the minute-hand, as set forth.

3. In a clock-movement, a frame consisting of three plates suitably connected together, the middle plate of which divides the train into two parts between the center wheel and center pinion, the said center wheel and center pinion being arranged on the center arbor carrying the minute-hand, and the frame having the parts of the divided train arranged between its three plates, as set forth.

4. In a clock-movement having a frame consisting of three plates suitably connected together, a center arbor carrying the minute-hand and provided with a center wheel and center pinion, the wheel arranged between the front and middle plates of the frame and the pinion arranged between the middle and back plates of the frame, as set forth.

5. The improvement in a clock-train, consisting of three wheels suitably fastened on arbors carrying pinions, and arranged between the escape-wheel and its arbor carrying a pinion and the center arbor carrying the center wheel and center pinion, as set forth.

6. The improvement in a clock-train, consisting of three wheels having the same number of teeth and the same diameters, suitably fastened on arbors, the pivots of which are arranged in the circumferences of circles concentric with the center arbor, the several arbors carrying pinions having the same number of leaves and the same diameters, all the said parts arranged between the escape-wheel and its arbor carrying a pinion, and the center arbor carrying the center wheel and center pinion, as set forth.

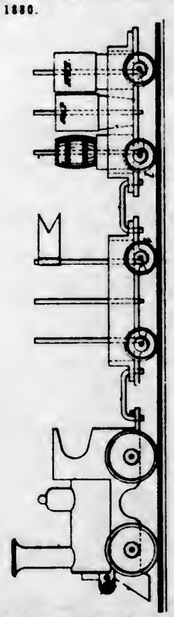
7. The improvement in a clock-train, consisting in the arrangement of the pivots of the escape-wheel arbor and of the pivots of the three arbors carrying the three wheels and the three pinions between the escape-wheel arbor and the center arbor carrying the center wheel and center pinion in a semicircle, as set forth.

8. In a clock-movement, the combination, with a train divided into two parts, a front part and a back part, by the middle plate of a frame having three plates, the division being made between the center wheel and center pinion, the said center wheel and center pinion being arranged on the center arbor carrying the minute-hand, the escape-wheel being arranged in the front part of the train and near the top of the frame, and the pivots of the front part of the train being arranged within a semicircle, of a pendulum attached to an arbor near the top of the frame and vibrating in a plane passing between the front and middle plates of the frame, as set forth.

9. In a clock-movement provided with a circular rack, the circular disk F, rotated by the mainspring and carrying the planet-wheel E only, which connects the rack with the center pinion, as set forth.

10. In combination with a pendulum-rod provided with the plate S, fastened to the rod, a spring arranged on the rod to hold the pendulum-ball against the adjusting-nut, as set forth.

10,063. TOY RAILWAY-TRAIN. FRANCIS W. CARPENTER, Harrison, N. Y. Filed Feb. 17, 1882. Original No. 227,956, dated May 25, 1880.



Claim.—1. In a toy, the combination, with the wheels and axle, of a body with the bottom and sides of one piece of cast metal, substantially as set forth.

2. In a toy, the combination, with the wheels and axle, of a body open at the top, with the bottom, sides, and bearings for the axle of one piece of cast metal, substantially as set forth.

3. In a toy, the combination, with the wheels and axles, of a box-body open at the top, with the bottom, sides, and end platform of one piece of cast metal, substantially as set forth.

4. In a toy, the combination, with the wheels and axles, of an open body and end platforms of one piece of cast metal, and coupling-staples passing vertically into holes in the end platforms, substantially as set forth.

5. In a toy, the combination, with the wheels and axles, of an open box with bottom and sides in one piece of cast metal, and the rods *g*, extending upwardly from the bottom, substantially as set forth.

THE ELIOTYPE PRINTING CO. BOSTON

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE FAIRCHILD.

Decided August 10, 1881.

TRADE-MARK—PROPER NAME OF APPLICANT.

The mere name of a person does not form a proper subject for trade-mark registration, although it appears that such name, by long association with a certain line of goods, has come to be applied as a name or title to such goods.

TRADE-MARK.

APPEAL from the Examiner of Trade-Marks.

Messrs. Dodge & Son for Fairchild.

MARBLE, *Commissioner:*

Appeal is taken in this case from the decision of the Examiner of Trade-Marks, who refused to register the word "Fairchild" as a trade-mark because it was "merely the name of the applicant."

Applicant alleges that the Examiner erred in refusing to register his alleged trade-mark, first, because the word "Fairchild" has been used as a trade-mark in connection with his manufacture and sale of pens and pencils for twenty years and upward, and is well known to the commercial world as the trade-mark of the applicant; second, because said word was registered as a trade-mark in this Office under the act of July 8, 1870, which act contained similar prohibitions to the act of March 3, 1881.

It appears by the records and files of the Office that Mr. Fairchild did register his name as a trade-mark in this Office in July, 1879. The proofs at that time submitted showed that the word "Fairchild" had been used by applicant as a trade-mark long prior to the passage of the act of June, 1870. While the act of 1870 in terms prohibited the Commissioner of Patents from registering as a trade-mark merely the name of a person generally, it also contained the following clause, as an exception to the general provisions of the statute:

But this section shall not prevent the registry of any lawful trade-mark rightfully in use on the 8th day of July, 1870.

Under this exception to the general provision of the statute the word "Fairchild," on the proofs presented, was registered as a trade-mark. The act of 1870, and all acts and things done under it, have been swept away by the decision of the Supreme Court declaring the law unconstitutional, and therefore void.

The application as now presented therefore comes before the Office the same as if no application had ever been made for the registration of the word "Fairchild," excepting that, having registered it under the act of 1870 and paid the fees then required by law to be paid for the registration of trade-marks, the applicant is now entitled to re-register without payment of additional fees, providing he has a legal trade-mark.

The act of March 3, 1881, provides—

That owners of trade-marks used in commerce with foreign nations or with the Indian tribes, provided such owners shall be domiciled in the United States or located in any foreign country or tribe which, by treaty, convention, or law, affords similar privileges to citizens of the United States, may obtain registration of such trade-marks by complying with the following requirements.

Then follows the necessary steps to be taken in order to secure registration.

By the third section it is provided that—

But no alleged trade-mark shall be registered unless the same appear to be lawfully used as such by the applicant in foreign commerce or commerce with Indian tribes, as above mentioned, or is within the provision of a treaty, convention, or declaration with a foreign power, *nor which is merely the name of the applicant.*

There is no saving clause in the act excepting from its prohibitions any particular class of cases, as there was in the act of 1870. The act does not define what shall constitute a legal trade-mark, but it does declare what shall not be registered as such. Among the prohibitions is "merely the name of the applicant." It is argued that the word "Fairchild," by reason of its long use on the goods of the applicant to distinguish them from others of like character, is not now applicant's name merely, but the name of a particular kind of goods. It is undoubtedly true that the goods manufactured by applicant, and upon which his name is stamped, are known as the "Fairchild" pens or pencils, as the case may be. The name as presented for registration, however, is not the name of a pen or pencil, but merely the name of the applicant, unconnected with any sign, mark, or illustration of any kind whatever. "Merely the name of the applicant" means, as I understand it, the name of the applicant separate and alone. The name of one person may be better known in the commercial world than another by reason of its use and identity with a certain line of business, trade, or class of goods, but that fact does not make it registrable as a trade-mark. It is, after all, the name of the person merely, and not the name of the business, trade, or kind of goods.

While it may be true that the name of the applicant in his trade is of great value, it cannot receive registration in this Office as such in violation of the prohibition of the statute. The prohibition of the statute was intended to prevent any person from using his name in any trade as a trade-mark to the exclusion of other persons of the same name in the same or any other avenues of trade. This intention of Congress would not be carried out if registration was permitted of the name of any person as a trade-mark, however long it may have been used.

The decision of the Examiner of Trade-Marks is affirmed.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

STOW v. THE CITY OF CHICAGO.

Decided January 9, 1882.

1. PATENTEE ENTITLED TO ALL USES OF INVENTION.
   A patentee who is the first to make an invention is entitled to his claim for all the uses and advantages which belong to it, and it is immaterial whether he perceived and stated such advantages in his patent.
2. REISSUE NO. 3,274—STREET-PAVEMENTS—ANTICIPATING.
   So the wood pavement described in Reissue Patent No. 3,274, *Held* to be anticipated by the patent of Stead, which does not in terms say that the purpose of driving the wedge-shaped block or pile through the space left by the octagonal blocks is to pack the earth or sand foundation, it appearing that such a result must follow from the construction described.
3. LETTERS PATENT NO. 134,404—WANT OF INFRINGEMENT.
   When every other part of the invention described in Letters Patent No. 134,404 was shown to be old, doubted whether it can be called invention to have the ground in the spaces between the blocks more compactly rammed, so as to drive it below the under surface of the pavement into the earth foundation; but the evidence failing to show that the defendant used this feature of the invention the bill is dismissed.

APPEAL from the Circuit Court of the United States for the Northern District of Illinois.

Mr. L. Hill for the appellant.

Mr. L. L. Bond for the appellee.

Mr. Justice WOODS delivered the opinion of the Court.

The appellant, Henry W. Stow, who was complainant in the court below, filed his bill in equity against the appellee, the City of Chicago, charging it with infringement of four certain letters patent for improvements in street-pavements, in which he was either the original patentee or of which he was the assignee. The City of Chicago denied infringement, denied the novelty of the inventions covered by the patents, and alleged license and payment of royalties. Upon final hearing the court below dismissed the bill and the complainant appealed. In this Court the appellant relies exclusively on the first and fourth patents set out in his bill of complaint. They will be separately considered. The first patent relied on is the Reissue No. 3,274, dated January 19, 1869, of an original patent granted to him, numbered 72,110, and dated December 10, 1867.

The invention covered by the reissued patent is thus generally described in the specification:

> The nature of my invention consists in putting down a pavement of wood or other suitable material upon a foundation-bed of sand or loose earth and packing the sand or earth by means of wedge-blocks driven down into the same and forming a part or whole of the pavement.

The pavement described in this reissued patent consisted essentially of blocks of wood or other material set upon end in rows across the street, with spaces between the rows, in which were driven narrow and probably wedge-shaped blocks, which, when driven down, extended a considerable distance below the under surface of the blocks first named into the foundation-bed of sand on which they rested. The claims were as follows:

> 1. A pavement composed of alternate tiers of square-ended and wedge-shaped blocks, the wedge-shaped ends of the latter being driven into a foundation-bed of sand or earth, substantially as and for the purpose described.
> 2. A pavement composed of blocks with lower ends wedge formed, and all driven down into a foundation-bed of sand or earth, substantially as shown and described.
> 3. A pavement composed of wood, or, in whole or in part, of other suitable material, laid on a foundation-bed of sand or loose earth, as described, and a portion of the blocks driven down into said foundation-bed to pack the same, substantially as and for the purpose specified.

The appellant does not contend that the second claim is infringed.

A cursory reading of the first and third claims will show that they cover the same invention, the third claim simply including with wood other suitable material, out of which the pavement may be constructed.

The invention described in these claims does not cover the making of a street-pavement of wood. The use of wood for that purpose is as old as the English patent of David Stead, granted August 23, 1839. The Nicholson patent, which bore date August 8, 1854, and which is referred to in the specification of the reissued patent under consideration, also covers a device for the construction of a pavement by the use of wooden blocks. Nor does the invention consist in laying the pavement upon a foundation-bed of sand or earth. This is as old as cobble-stone pavements. (*Stead* v. *Williams*, 7 Man. & G., 818.) The appellant does not claim either of these devices as a part of his invention. No particular form of block is described in the claims, except that some of the blocks used have their lower ends made wedge shaped. All, therefore, that there is left for the invention described in the first and third claims to cover is the making of the lower ends of a portion of the blocks of which the pavement is composed in wedge shape and the driving of these wedge-shaped blocks below the general under surface of the pavement into the sand or earth bed on which it rests, so as to pack it and render it solid and unyielding.

When thus reduced to what it really is the invention of the appellant is clearly and distinctly anticipated by the English patent issued to David Stead, dated April 23, 1839, which is set out in full in the record.

One of the drawings which accompanies Stead's specifications shows a pavement laid with contiguous rows of octagonal blocks, so placed as to leave rows of square unfilled spaces. In these square spaces were placed square blocks, longer than the octagonal blocks and wedge shaped at the lower end, and these were driven down into the earth foundation, upon which the octagonal blocks rested.

That part of Stead's specification which these figures illustrate is as follows:

> Figs. 18 and 19 are a plan and side view of a portion of a roadway formed by a series of octangular blocks, L L, placed with the fiber vertical, so as to leave a square recess or interval between them, into which may be inserted a corresponding piece, m. When this kind of paving is laid upon a road formed upon a newly-made embankment or shrinking base I should recommend a pile, to be driven into the earth through the square recess or interval, of about the size and form represented by the dotted lines, Fig. 19, in order to support and keep the blocks firm in their position. When the octangular-block paving is used for acclivities I should recommend the before-mentioned cavities either to be left unfilled or not filled up to the surface, to afford an assistance to animals ascending the same, as before described.

It is true this specification does not in terms say that the purpose of driving the wedge-shaped block or pile through the space left by the octagonal blocks is to pack the earth or sand foundation, but that it does so as effectually as the use of similar blocks in a similar way under the patent of appellant is too clear for argument.

A patentee who is the first to make an invention is entitled to his claim for all the uses and advantages which belong to it. (*Woodman* v. *Stimpson*, 3 Fish., 98.)

It is shown that Stead invented this device. Whether

he perceived and stated all its advantages is immaterial. (*Tucker* v. *Spaulding*, 13 Wall., 453; Mr. Justice Clifford in *Graham* v. *Mason*, 5 Fish., 1.)

Stead's specifications, it is clear, cover (to use the language of Stow's reissued patent) "a pavement composed of wood laid on a foundation-bed of sand or loose earth" and having "a portion of the blocks of which it is composed driven down into said foundation-bed."

Everything, therefore, in the first and third claims of appellant's reissued patent which he sets up as new was anticipated nearly thirty years by Stead's English patent. Appellant's patent, therefore, so far as it covers these claims, is void, and cannot be the foundation of any relief against the appellee.

The other patent which appellant insists that the appellee has infringed is No. 134,404, dated December 31, 1872, issued to appellant as the original inventor.

The invention covered by this patent is described in the specifications thus:

> The nature of my invention relates to that class of wooden pavements in which the blocks are laid directly upon the sand foundation; and it consists in laying the blocks in rows with spaces between the rows and in filling or partially filling said spaces with sand or gravel and driving or swaging the same into the sand foundation below in order to pack or compress the sand under the blocks for the purpose of sustaining the weight of heavy vehicles passing over the pavement.

The claim is as follows:

> A pavement composed of blocks laid in rows directly upon the sand foundation with spaces between the rows filled with sand or gravel, which is swaged or driven into said foundation, substantially as and for the purpose specified.

The use of wood for street-payments, the laying of the blocks directly upon a sand foundation, the placing of the blocks in rows, leaving spaces between the the rows, are all old devices. As already shown, they are all to be found substantially in the English patent of Stead, issued April 23, 1839, and they are found in the English patent to Lillie, dated October 13, 1860, and the American patent to Richard H. Willett, No. 114,895, and dated May 16, 1871, all of which are put in evidence by the appellee. Nor is the filling with sand or gravel of the spaces between the blocks or rows of blocks of which the pavement is composed a new device. It was part of the invention of Nichlson, (*Elizabeth* v. *Pavement Company*, 97 U. S., 126,) and, as appears by the record, was mentioned in the specification of the Letters Patent No. 112,945, issued to Gordon A. May, March 27, 1871. And in the specifications of the patent granted to W. H. Chappell, No. 42,347, dated April 19, 1864, set out in the appellee's evidence, it is stated that—

> Wooden pavements have been constructed on the continent of Europe and in the United States by laying wood blocks endwise of the grain in parallel rows with openings or channels between, into which gravel or gas-tar was placed.

All, therefore, that is left for the patent of the appellant now under consideration to cover is the ramming of the gravel between the blocks of which the pavement is composed, so as to drive the same into the sand foundation below the blocks, in order to pack it so that the pavement may sustain the weight of heavy vehicles without giving away. And this is all which seems to be claimed by appellant's counsel as the invention covered by this patent. The evidence is distinct and clear that the invention thus defined was anticipated by the pavement laid by J. K. Thompson, city superintendent, in the year 1864, at the intersection of North State and Kinzie streets, in the city of Chicago. This piece of pavement was made of wooden blocks, six inches square, set in rows on an earth foundation, with spaces between the rows, and the spaces were filled with fine gravel and the gravel rammed. This pavement was put down by Thompson as an experiment. It proved successful. It was in use until the great fire in Chicago in 1871.

The record further shows that in the fall of 1870, at the instance of Thompson, there was laid at the north end of the La Salle-street tunnel, in Chicago, a piece of pavement five hundred yards in length, constructed in the same manner precisely as that laid by him in 1864 at the intersection of North State and Kinzie streets. It was made with similar wooden block, placed in rows on an earth foundation, with spaces between the rows. The spaces were filled with gravel, which was rammed with an iron rammer made expressly for the purpose. We have here every part of the invention described in the letters patent under consideration, except that it does not appear that the gravel in the spaces between the rows was so compactly rammed as to drive it below the under surface of the pavement into the earth foundation. All, therefore, that is left for the appellant's patent of 1872 to cover is the giving of a few more strokes with the rammer, whereby the gravel-filling may be forced into the earth-foundation of the pavement. Can this be called invention?

The testimony shows that the pavements which the appellant charges to be infringements of his patent of 1872 are constructed according to the plan adopted by Thompson in 1864, and it fails to show that in their construction the gravel filling was forced by the ramming into the earth foundation, on which the pavements were laid. So that if there is anything new or patentable embraced in the appellant's patent of 1872, that part of his device is not infringed by appellee.

Therefore, without noticing the other defenses, we declare our opinion to be that the appellant is not entitled to any relief against the appellee upon either of the patents on which his demand for relief is now based. His case as presented here has no ground to stand on. The decree of the circuit court dismissing his bill must therefore be affirmed.

Mr. Justice FIELD did not sit in this case and took no part in its decision.

U. S. Circuit Court—Southern District of New York.

HART v. THAYER.

Decided February 13, 1882.

REISSUED PATENT NO. 7,909—NECKTIES—INFRINGEMENT.

The improvement in neckties set forth in Reissued Letters Patent No. 7,909, which consists in securing a straight pin to the shield by means of metallic fastenings—*i. e.*, metallic rivets either separate from or struck out from the body of the pin, which pass through the shield and are clinched or headed on the opposite side—is not infringed by a mode of securing pins to the shield, which dispenses with separate fastenings, and which consist in forming two bends in the length of the pin, so that by passing through suitable holes in the shield the pin may fasten itself.

Mr. F. H. Betts and *Mr. J. Van Santvoord* for the plaintiff.

Mr. J. P. Fitch for the defendant.

BLATCHFORD, *J.*:

This suit is brought on Reissue Letters Patent No. 7,909, granted to the plaintiff, William H. Hart, Jr., October 9, 1877, for an improvement in neckties, the original Patent No. 159,921 having been granted to him February 16, 1875.

The specification of the reissue is as follows, reading what is outside of brackets and what is inside of brackets, omitting what is in italics:

Figure 1 is a face view of the device embodying my invention. Fig. 2 is a side view thereof, partly in section. Fig. 3 is a side view, enlarged, of a detached part.

Similar letters of reference indicate corresponding parts in the several figures.

In the class of neckties wherein the front bow, which is made long and lies on the chest, is held in position by a band which passes around the neck, it is necessary to secure said band in some manner to prevent displacement of the tie. For this purpose pins have been sewed to the shields or supporting-plates of the ties and the neckbands engaged therewith; but this is objectionable, since the pin soon loosens and is lost. Again, the cost of thus attaching the pins is a matter of considerable moment.

My invention is designed to remedy these defects; and consists in securing the pins to the shields by metallic fastenings, whereby the pins are firmly retained in place, longer service is rendered thereby, and there is a cheapness in the product.

Referring to the drawings, A represents a shield or supporting-plate for a necktie, which consists of a long bow or knot, *a*, constituting the front portion, and a band, *b*, which passes around the neck, the two parts being shown in dotted lines.

To the bottom portion of the shield or plate I secure a pin, B, which projects downwardly, so that the band *b* may be attached thereto, in order that the band will not disengage from the neck and release the tie. I secure the pin to the shield by metallic rivets [or projections] C, which readily clinch on the shield and firmly connect the two parts. These rivets [or projections] are attached to the pin in any suitable manner, and they may be parts of the pin itself, or they may be separate pieces of metal fastened to it. Thus they may be passed through the flattened body of the pin *and the shield* and headed, or [they may be] punched out of the said [body] *body*. [The metallic rivet or projection is passed through the shield,] and [is] bent over [and] *or* clinched [upon the opposite side] *on the shield*.

It will be seen that the connection of the pin and shield is firm and [durable] *durable*, [whereas] *I overcome loosening of the pin due to cutting of* the threads [formerly] *which, heretofore* in use, [passing] *have been passed* through openings in the pin, [were cut by their edges or rotted away from corrosion of the pin through,] *or rotting of said thread consequent to* perspiration, [and the pin was soon lost or loosened,] *corroding the pin*.

Again, as the work can be performed by machinery, instead of stitching or sewing by hand, labor is materially reduced, whereby there is [a] great saving in the [cost of production] *product*.

[I do not claim any particular method of attaching the metallic fastenings to the pin, since any of the well-known methods of attaching metals together may be employed, either cohesion by welding or soldering, or forming both pin and fastenings out of one piece of metal, or adhesion and pressure by making one metal inclose the other.]

Reading in the foregoing what is outside of brackets, including what is in italics, and omitting what is inside of brackets, gives the text of the original specification.

The claims of the reissue are as follows:

1. The pin B and necktie-shield A, in combination with the metallic fastening C, substantially as and for the purpose set forth.
2. The pin B, formed with the fastening C, in combination with the necktie-shield A, substantially as and for the purpose set forth.
3. A metallic fastening or metallic fastenings, C, attached to and projecting from the pin B, substantially as and for the purpose set forth.

The original patent had only two claims. The first was the same as claim 1 of the reissue. The second was the same as claim 2 of the reissue, with the words "punched out" inserted between "the" and "fastening."

It is claimed that the defendant has infringed claim 2 of the reissue by making and selling necktie-shields with pins such as are described in Letters Patent No. 206,673, granted to Albert M. Smith and Hiram Thayer, April 23, 1878.

The pin is of metal, pointed at one end. In its length are two bends, which are nearly at right angles to the length of the body. One bend is farther from the point than the other bend is from the opposite end. Each bend is made by two right-angled deflections of the body of the pin. From the bend near the end farthest from the point the body of the pin proceeds on in a line not continuous with the line of the pin the other side of said bend, but parallel therewith. The other bend is so made as to bring back the line of the pin between said bend and the point to the line of the pin the other side of the first-named bend. The shape of the pin is thus: ⌐¬.

The pin is attached to the shield by passing it through two holes in the shield, one hole at each bend, so that the two ends of the pin are on one side of the shield and the middle part or body is on the other side of it. The bends are abrubt or short, and form shoulders, which bear in the holes and keep the pin from moving or slipping back and forth.

The pin, after it is in the shield, is flattened, especially at the unpointed end, so that it will lie more closely and firmly to the shield and not project from its surface.

The pin is put into the shield and fastened by springing its ends together sufficiently to put them through the holes made for them in the shield and then springing the pin back again.

The claim of the patent is to the combination of the shield with the pin, constructed and arranged to operate substantially as and for the purpose thus set forth.

The original Patent No. 159,921 speaks of only two ways of forming the fastenings of the pin. One is to have metallic rivets passing through the body of the pin and headed. The other is to have the rivets punched out of the body of the pin and bent over or clinched on the shield.

The first claim of that patent is for a combination of three things—the shield, the pin, and the separate rivet-fastening. The second claim is for a combination of the shield and the pin having rivets punched out of its body. But with either form of fastening the entire pin, when in place, is on one side of the shield and the bent over or clinched or headed ends of the fastenings are on the other side of the shield. The body of the pin is straight and continuous aside from the supplementary fastenings.

In the defendant's pin the body is not straight and there are no supplementary fastenings. The body of the pin by being bent fastens itself.

Manifestly the effort in the specification of the reissue is to enlarge the scope of the patent beyond what is warranted by the original. The reissue says that the projections may be "parts of the pin itself." No way is shown in the original of making the projections parts of the pin itself, except by punching them out of its body. That means partly detaching part of the body and letting it form a pin or projection, to be bent down and clinched on the other side of the shield. The defendant's bends are parts of the pin itself, but they are not projections from the body, as in the plaintiff's pin, but are projections of the whole body in its devious path.

The second claim of the reissue, if construed to mean anything more than the second claim of the original, so as to cover the defendant's pin, covers new matter not found in the original, and is for an invention not shown in the original. That defense is set up in the answer. The only pin with a fastening forming part of its body, a pin formed with a fastening which is part of the pin itself, is a form of description ingeniously devised to cover a punched-out fastening and also such bent fastenings as those in the defendant's pin; but the claim cannot be construed to cover any fastening but a punched-out fastening or one that is its equivalent. The defendant's bent fastenings are not equivalents. They are an invention in a new direction not based on the plaintiff's idea. As against the plaintiff's pin, the defendant's is patentable, and not an infringement of claim 2 of the plaintiff's reissue.

The radical difference between the two pins is that the principle of the fastening is different in the two. The defendant's pin dispenses with all fastenings that are separate from the pin itself or that are partly-detached parts of the body as fastening devices separate from the whole body.

As an incident of the difference in structure, and illustrating it, no two portions of the defendant's pin on opposite sides of the shield are directly opposite to each other. The parts do not form the jaws of a clamp, as in the plaintiff's. The shield is held by virtue of the strength of the cross-section of the pin, and not by the clamping action of two directly-opposite parts.

The bill is dismissed, with costs.

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

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Subscriptions for 1882.

The OFFICIAL GAZETTE is published every Tuesday, two volumes a year, commencing in January and July. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound volumes, $3.50 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Issue of March 21, 1882.

Patents	306	No. 255,095 to No. 255,400, inclusive.
Designs	17	No. 12,817 to No. 12,833, inclusive.
Trade-Marks	30	No. 9,204 to No. 9,233, inclusive.
Labels	9	No. 2,644 to No. 2,652, inclusive.
Reissues of patents	2	No. 10,064 to No. 10,065, inclusive.
Total issue	366	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama			Nebraska	1	
Arizona Territory	1		Nevada		
Arkansas			New Hampshire	1	
California	7		New Jersey	30	1
Colorado	2		New Mexico Territ'y		
Connecticut	11	1	New York	90	19
Dakota Territory			North Carolina	2	
Delaware	1		Ohio	14	
District of Columbia	4	1	Oregon		
Florida			Pennsylvania	28	2
Georgia	1		Rhode Island	2	
Idaho Territory			South Carolina	2	
Illinois	26		Tennessee		
Indiana	11		Texas	3	
Indian Territory			Utah Territory		
Iowa	9		Vermont	1	
Kansas	2		Virginia	3	
Kentucky	3		Washington Territ'y		
Louisiana	1	2	West Virginia	2	
Maine			Wisconsin	4	
Maryland	12	2	Wyoming Territory		
Massachusetts	25	7	United States Army	1	
Michigan	4	1	United States Navy		
Minnesota	3		Total to citizens of the United States	317	38
Mississippi					
Missouri	10	2			
Montana Territory					

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia			England	2	
Austria	1		France		1
Barbadoes			Germany		
Belgium	1		Italy		
Bermuda			New Zealand		
Brazil			Russia		
Canada	4		Spain		
Chili			Sweden		
Colombia, U. S of			Switzerland		
Cuba			Total to citizens of foreign countries	8	1
Denmark					
Ecuador					

DESIGNS.

12,817 to 12,830, inclusive.—CLOTH.—*Henry Dobbin*, Bound Brook, N. J., assignor to *The Bound Brook Woolen Mills*, same place. Applications filed November 25, 1881. Term of patents 7 years.

12,831.—CARPET.—*Arthur L. Halliday*, New York, N. Y., assignor to *The Bigelow Carpet Company*, Clinton, Mass. Application filed January 26, 1882. Term of patent 3½ years.

12,832 and 12,833.—CARPET.—*Henry Horsa*, East Orange, N. J., assignor to *The Hartford Carpet Company*, Hartford, Conn. Applications filed February 11, 1882. Term of patents 3½ years.

12,824 to 12,828, inclusive.—CARPET.—*Henry Hunt*, Greenville, N. J., assignor to *The Hartford Carpet Company*, Hartford, Conn. Applications filed February 11, 1882. Term of patents 3½ years.

12,829 and 12,830.—CARPET.—*Winthrop L. Jacobs*, East Orange, N. J., assignor to *The Hartford Carpet Company*, Hartford, Conn. Applications filed February 11, 1882. Term of patents 3½ years.

12,831.—WINE-COOLER.—*Charles F. Meyer*, Baltimore, Md. Application filed December 24, 1881. Term of patent 14 years.

12,832.—CLOTH.—*Louis Rosenfeld*, New York, N. Y., assignor to *The Bound Brook Woolen Mills*, Bound Brook, N. J. Application filed November 25, 1881. Term of patent 7 years.

12,833.—CARPET.—*Henry Hunt*, Greenville, N. J., assignor to *The Hartford Carpet Company*, Hartford, Conn. Application filed February 11, 1882. Term of patent 3½ years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

9,204.—LEAD-PENCILS.—*The Eagle Pencil Company*, New York, N. Y. Application filed February 20, 1882.

"The words 'CRAYONS AMERICAINS,' in conjunction with the representation of an eagle."

9,205.—LEAD-PENCILS.—*The Eagle Pencil Company*, New York, N. Y. Application filed February 20, 1882.
"The symbol 'EAGLE,' expressed either by word or pictorially."

9,206.—LEAD-PENCILS.—*The Eagle Pencil Company*, New York, N. Y. Application filed February 20, 1882.
"The word 'EXPRESS.'"

9,207.—LEAD-PENCILS.—*The Eagle Pencil Company*, New York, N. Y. Application filed February 20, 1882.
"The word 'ANTIQUE.'"

9,208.—LEAD-PENCILS.—*The Eagle Pencil Company*, New York, N. Y. Application filed February 21, 1882.
"The word 'SUN.'"

9,209.—CIGARS, CIGARETTES, AND SMOKING-TOBACCO.—*Estabrook & Eaton*, Boston, Mass. Application filed February 23, 1882.
"The arbitrarily-selected words 'THE SUNDAY HERALD' and the fac-simile of a portion or the whole of a page of the Sunday Herald newspaper."

9,210.—CIGARS.—*S. Fuguet & Sons*, Philadelphia, Pa. Application filed February 20, 1882.
"The title 'PRIDE OF KEY WEST.'"

9,211.—FINE-CUT SMOKING AND CHEWING TOBACCO, SNUFF, AND PLUG-TOBACCO.—*James M. Gardiner*, New York, N. Y. Application filed February 13, 1882.
"The letters and words 'LA PRIMAVERA' and symbol of a crown."

9,212.—CIGARS.—*Lopez, Fernandez y Ca.*, New Orleans, La. Application filed February 23, 1882.
"The fanciful word 'PUCK.'"

9,213.—CIGARS.—*Louis Marx*, New York, N. Y. Application filed February 23, 1882.
"The words 'LA FLOR DE DANIEL WEBSTER.'"

9,214.—LAGER-BEER.—*Conrad Stein*, New York, N. Y. Application filed February 20, 1882.
"The representation of a Maltese cross."

9,215.—CIGARS.—*M. Valle y Ca.*, New York, N. Y. Application filed February 23, 1882.
"The words 'AMERICAN JOCKEY CLUB.'"

9,216.—SPECIFICS FOR CORNS.—*Benjamin F. Arthur*, Holyoke, Mass. Application filed January 3, 1882.
"The arbitrary symbols of three men."

9,217.—BOXED CANS.—*George W. Banker*, Brooklyn, N. Y. Application filed April 7, 1881.
"The pictorial representation of two hands of a person, the body not visible, holding therein a can, on one side of which is a can and on the other a cup."

9,218.—CORDIAL.—*Distillerie de la Liqueur Bénédictine de l'Abbaye de Fécamp*, Paris, France. Application filed February 25, 1882.
"The representation of the holy St. Benoit carrying an abbot's crozier."

9,219.—CIGARS.—*Garcia y Montero*, New York, N. Y. Application filed February 25, 1882.
"The arbitrarily-selected words 'HIGH LIFE.'"

9,220.—MEDICATED TEA.—*Adrian M. Kloczewski*, Washington, D. C. Application filed February 3, 1882.
"The arbitrary word 'BABEK.'"

9,221.—CORDIALS.—*J. Lang & Co.*, New York, N. Y. Application filed February 25, 1882.
"The representation of the circular saw, the monogram, and the letters 'J' and 'B.'"

9,222.—CIGARS.—*Lopez, Fernandez y Ca.*, New Orleans, La. Application filed February 25, 1882.
"The fanciful term 'LA CORONA.'"

9,223.—PIANO-FORTES.—*Thomas F. Scanlan*, Boston, Mass. Application filed February 13, 1882.
"The arbitrarily-selected words 'NEW ENGLAND.'"

9,224.—ILLUMINATING-OIL.—*Bowring & Archibald*, New York, N. Y. Application filed February 25, 1882.
"The words 'LIGHTNING BRAND.'"

9,225.—WHISKY.—*C. Conrad & Co.*, St. Louis, Mo. Application filed February 28, 1882.
"The arbitrarily-selected words 'GOVERNOR'S CHOICE.'"

9,226.—WHISKY.—*C. Conrad & Co.*, St. Louis, Mo. Application filed February 28, 1882.
"The word-symbol 'MOSS ROSE.'"

9,227.—GLUE.—*T. M. Duché & Sons*, New York, N. Y. Application filed February 27, 1882.
"The representation of an anchor and stars."

9,228.—SMOKING-TOBACCO.—*Globe Tobacco Company*, Detroit, Mich. Application filed February 7, 1882.
"The character or characters Uncle Tom, indicative of Mrs. Harriet Beecher Stowe's story entitled 'UNCLE TOM'S CABIN.'"

9,229.—ELASTIC WEBS.—*Thomas Martin & Brother*, Chelsea, Mass. Application filed February 27, 1882.
"The arbitrary symbols of a crown and cushion."

9,230.—CIGARS.—*Henry Rosenheim*, Baltimore, Md. Application filed February 21, 1882.
"The title or name 'ATLAS.'"

9,231.—TABLE-SAUCE.—*Henry Rosenheim*, Baltimore, Md. Application filed February 21, 1882.
"The arbitrary word-symbol 'DURHAM' and the representation of a bull."

9,232.—CIGARS.—*Waterbury Bros.*, Newark, N. Y. Application filed October 14, 1881.
"The words 'PURE GOLD' and the cut of the nugget."

9,233.—PLUG AND OTHER KINDS OF CHEWING-TOBACCO, SMOKING-TOBACCO, CIGARS, AND CIGARETTES.—*L. & E. Wertheimer*, New York, N. Y., and San Francisco, Cal. Application filed February 18, 1882.
"The arbitrarily-selected words 'BRIGHT STAR.'"

LABELS.

2,644.—Title: "GERMAN CORN REMOVER."—*B. F. Arthur*, Holyoke, Mass. Application filed February 9, 1882.

2,645.—Title: "GREETINGS" (FOR A CARD HOLDER.)—*Bloomfield Brower*, New York, N. Y. Application filed November 16, 1881.

2,646.—Title: "DICKINSON'S COMPOUND BALSAM OF BONESET HOREHOUND, WILD CHERRY AND TAR."—*Samuel Dickinson*, Trenton, N. J. Application filed February 9, 1882.

2,647.—Title: "JAMAICA GINGER CORDIAL."—*Gustavus D. Dows*, Boston, Mass. Application filed February 20, 1882.

2,648.—Title: "GINGER CORDIAL."—*Gustavus D. Dows*, Boston, Mass. Application filed February 20, 1882.

2,649.—Title: "MEDICATED PAPER."—*Gayetty & Co.*, Brooklyn, N. Y. Application filed February 11, 1882.

2,650.—Title: "ÄCHTER AROMATIQUE FEINSTER MAGEN-LIQUEUR."—*G. F. Heublein & Bro.*, Hartford, Conn. Application filed February 20, 1882.

2,651.—Title: "NORTH CAROLINA TAR SYRUP."—*Edward J. Moore*, New York, N. Y. Application filed February 8, 1882.

2,652.—Title: "PENN'S WHITE LINIMENT."—*H. Schandein & Co.*, Philadelphia, Pa. Application filed February 27, 1882.

DISCLAIMER.

98,727.—*William M. Welling*, New York, N. Y., dated January 11, 1870. IMPROVEMENT IN COMPOSITION RESEMBLING HORN. Disclaimer filed March 14, 1882, by the assignee, *The Welling Compressed Ivory Manufacturing Company*, (Limited,) and by the patentee.

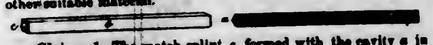
Enter their disclaimer "to such parts as include or claim, or may be construed to include or claim, any composition in which any animal or vegetable fiber other than cotton or wool, or their equivalents, in short pieces or in the form of flock, are a part of the elements of said composition."

PATENTS

GRANTED MARCH 21, 1882.

255,095. MANUFACTURE OF FRICTION-MATCHES. HALSEY H. BARBR, Plainfield, N. J. Filed June 18, 1881. (No specimens.)

Brief.—A quantity of the explosive compound sufficient to protrude slightly beyond the end of the splint is placed in the cavity in the end of the splint. The end is then dipped in paraffine or other suitable material.



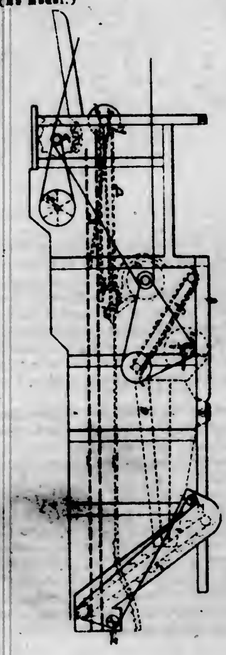
Claim.—1. The match-splint *c*, formed with the cavity *a* in its end for the reception of the explosive compound *c*, substantially as described.

2. A match having the explosive compound inserted in a cavity in the end of the splint, as a new article of manufacture.

255,096. MANUFACTURE OF OIL. GEORGE W. BARBR, Brooklyn, N. Y. Filed Dec. 12, 1879.

Claim.—The herein-described composite oil, composed of castor-oil, corn-oil, and heavy oil produced from petroleum or paraffine oil, in nearly equal proportions.

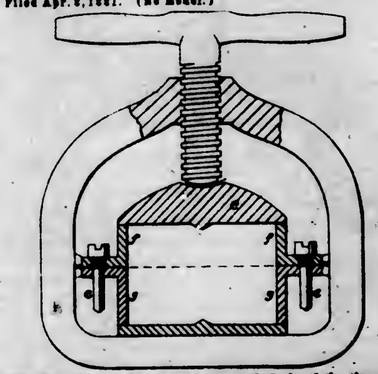
255,097. COMBINED CLOVER THRASHING AND HULLING MACHINE. J. BENJAMIN BIRDSELL, South Bend, Ind. Filed July 18, 1881. (No model.)



Claim.—1. In a combined clover thrasher and huller, the combination, with the bolting devices and hulling mechanism, of the tight shaking floor under the bolts, arranged to carry the materials passed through the bolts to the huller, and the elevating and conveying devices, substantially as described, arranged to take the tailings from the tailings-spout of the huller and deliver them upon said tight floor, to be reconveyed to the huller.

2. In a combined clover thrasher and huller, the tight conveying-floor having its outer end bowed downward, in combination with the huller, the elevator J, and the spiral conveyers I and E', the latter of which is arranged over said bowed end of the conveying-floor, substantially as and for the purpose set forth.

255,098. DENTAL FLASK. THOMAS W. BROWER, Delhi, N. Y. Filed Apr. 8, 1881. (No model.)



Claim.—The combination, in a dental flask, of the threaded-screw dowel or guide pins *e e*, with the cope *f*, and bowel *g*, constructed as and for the purpose herein set forth.

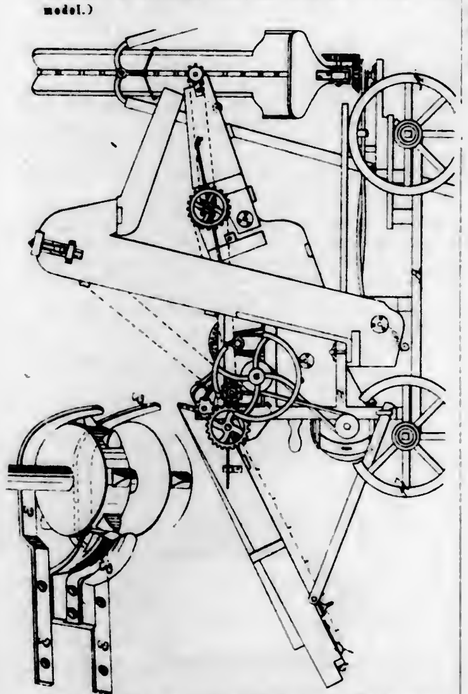
255,099. GRAIN-DRIER. JAMES H. GAYNOR, REUBEN FOSTER, and WILLIAM E. GRAHAM, Nebraska City, Nebr. Filed Aug. 27, 1881. (Model.)



Claim.—1. In a grain-drier, the drum-shaped boiler D, pierced by the exit-pipe C and provided with the steam-pipes E E', in combination with the double-conical steam-chamber F and the grain-chamber surrounded on the one side by the steam-chamber and on the other side by the hot-air chamber and the outer wall, A, substantially as shown and described.

2. The hopper G and the steam-chamber F, whose walls are in the form of a double cone, in combination with the grain-chamber, whose outer walls are equidistant from the said steam-chamber F, the hot-air chamber, and its outer wall, A, said outer walls of the air and grain chambers conforming to the conical shape of the steam-chamber, substantially as shown and described, and for the purposes set forth.

255,100. CORN-SHELLER. MILO S. COOK, Elwood, assignor to Andrew H. Shreffler, Joliet, Ill. Filed Dec. 27, 1880. (No model.)



Claim.—1. The combination, with the trough and the endless chain traversing the same, of the metal track *d*, sunken in the bottom of the trough and conforming to the under surface of the chain, substantially as set forth.

2. The combination of the sprocket-wheels secured to the same shaft, the pulleys mounted on separate shafts, adjustable blocks having shanks or slides at one end supporting straps secured to the bottom of the frame, and adjusting-screws connecting said blocks at the other end to the frame, substantially as specified.

3. The combination of curved guard E with the sprocket-wheel, elevator-trough, and feed-chain provided with projections to carry the corn-ears, substantially as specified.

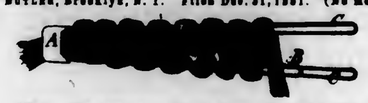
4. The combination of upper curved guard, E, with under curved guard, E', the sprocket-wheel, elevator-trough, and feed-chain provided with projections to carry the corn-ears, said guards forming a continuation of the trough to guide the corn-ears over the sprocket-wheel into the feed-holes of the machine, substantially as specified.

5. The vibratory back provided at its lower end with a flexible flap, in combination with the separator-screen and movable combs, substantially as described.

6. The combination of the elevator-troughs with the feed-chains provided with projections to carry the corn-ears, upper sprocket-wheels secured to the same shaft, and lower pulleys mounted in separate blocks or bearings adjustable independently of each other.

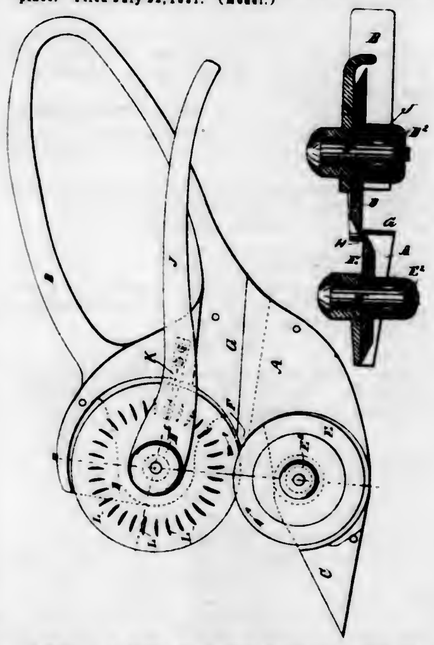
7. The combination of the endless chains having some of their links provided with ears, with combs riveted to said ears and provided with short teeth on their lower edge, and a screen of fixed rods on top of which said combs move or ride, substantially as specified.

255,101. HAIR-CRIMPER. JOHN M. CORWIN and HENRY D. BUTLER, Brooklyn, N. Y. Filed Dec. 31, 1881. (No model.)



Claim.—In combination with a crimping-pin having looped prongs C, made of wire or other suitable material, attached to shield A, the clamping loop-spring B, shorter than prong C and attached to said shield, and adapted to hold the end of the hair after being intertwined on the crimper, substantially as shown and described, and for the purpose set forth.

255,102. CUTTING MECHANISM. SANDOR DARNSIN, New York, N. Y., assignor of one-fourth to John S. Holmes, same place. Filed July 22, 1881. (Model.)



Claim.—1. A frame for a cutting mechanism, constructed, substantially as herein shown and described, with depressions or grooves in the sides, forming shoulders G and H, to prevent an undue spreading, bending, and buckling of the material, as well as prevent undue friction on the frame, as set forth.

2. In a cutting mechanism, the combination, with the frame A, provided with shoulders G and H on the sides thereof, of the disks D and E and the knife C at the lower end of the frame, substantially as herein shown and described, and for the purpose set forth.

3. In a cutting mechanism, the combination, with the frame A, provided with shoulders G and H on the sides, of the disks D and E, the knife C at the lower end of the frame, and of the projection F, substantially as herein shown and described, and for the purpose set forth.

4. In a cutting mechanism, the combination, with the frame A, of the cutting-disk E, the cutting-disk D, provided with notches or recesses L, the lever J, and the spring-pawl K, substantially as herein shown and described, and for the purpose set forth.

5. In a cutting mechanism, the combination, with the frame A, of the handle B, the point C, the projection F, the cutting-disk E, the cutting-disk D, provided with notches or recesses L, the lever J, and the spring-pawl K, substantially as herein shown and described, and for the purpose set forth.

255,103. SHAFT-COUPLING. FRANCIS O. DESCHAMPS, Philadelphia, Pa. Filed Aug. 19, 1881. (No model.)



Claim.—1. A coupling attachment, A, composed of sections A' A', having semi-spherical ends *b' b'*, with flanges *b² b²*, provided with adjustable pins or plugs F F, having semi-spherical cavities *f f* in their ends, substantially as shown and described.

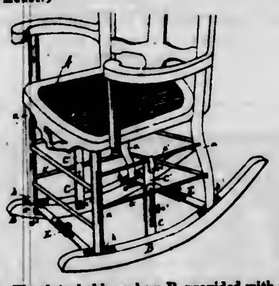
2. The combination, in a shaft-coupling, with the sections A' A', constructed and secured together substantially as shown and described, of shafts or rods D D', provided with grooved balls C C', and keys or spheres G G, substantially as and for the purpose set forth.

3. The coupling A, composed of sections A' A', having socketed ends *b² b²*, and flanges *b² b²*, provided with openings *f f*, which receive adjustable plugs or pins F F, in combination with means, substantially as shown and described, for locking said sections together, substantially as set forth.

4. The coupling A, composed of sections A' A', having ends *b' b'*, with sockets *b² b²*, and openings *f f* in flanges *b² b²*, adjustable plugs F, with cavities *f'*, balls C C', formed with grooves, key-spheres G G, and means for locking said sections together, substantially as shown and described.

5. The twin coupling device herein shown and described, composed of sections A' A', having the socketed ends *b² b²*, flanges *b² b²*, formed integrally therewith, and provided with adjustable plugs F, with socketed ends *f''*, and, in combination therewith, balls C C', grooved, as shown, for the reception of the keys or spheres G G, substantially as set forth

255,104. ROCKING-CHAIR. HENRY DEUPOSS, SAMUEL STRAUSS, and RAPHAEL STRAUSS, Chicago, Ill. Filed June 8, 1881. (No model.)



Claim.—1. The detachable rockers B, provided with mortises *b*, for the reception of the legs of the chair, in combination with adjustable braces C C', consisting of two strips of iron adjustably secured together, and adapted to be attached at one end to a round of the chair and at the other to the rocker, for the purpose of securing the rockers to the chair, substantially as specified.

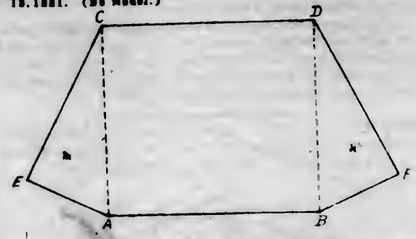
2. The combination, with rocker B, provided with metal-lined mortises *b* and buttons *c'*, of adjustable braces C C', provided with button-holes *c* and hooks *c²*, and adjustable cross-braces E, substantially as specified.

255,105. HOG-RINGING DEVICE. JOHN P. KWAN, Donovan, Ill. Filed Jan. 13, 1882. (Model.)



Claim.—A hog-ringing device consisting of a pair of pinchers or tongs the component parts of which A B A B are provided upon their inner adjoining sides with V-shaped recesses extending from the jaws toward the pivot-hole to receive a loop formed upon the ring blank, substantially as and for the purpose set forth.

255,106. TENT. EDWARD S. FARROW, U. S. Army. Filed Sept. 19, 1881. (No model.)



Claim.—An improved tent made up of the form and dimensions substantially as represented by letters A, B, C, D, E, and F, with the triangular ends *a a*, and having three (3) of its faces closed, all adapted for use as shown an described.

255,107. STEAM-GENERATOR. CHARLES GORTER, Albany, N. Y. Filed Oct. 13, 1881. (No model.)

Brief.—Two independent water-chambers are concentrically arranged, the inner one forming a fuel-reservoir, and located above the combustion-chamber, within the main flue of the outer boiler. An annular flue-space is left between them. They are connected together by hollow stay-bolts, through which circulation is maintained. The combustion-chamber is conical, and terminates at the lower end of the fuel-reservoir.



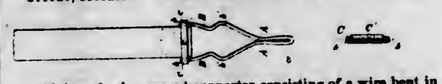
Claim.—1. The combination, in a steam-generator, of two independent water-chambers concentrically arranged, the bottom of the outer chamber being angular in cross-section, forming a conical combustion-chamber, and the central water-chamber forming a fuel-magazine and located at or near the apex of said combustion-chamber, in the manner shown and described.

2. The combination, in a steam-generator consisting of the outer water-chamber provided with a conical bottom, forming a conical combustion-chamber, of the inner water-chamber located at or near the apex of said combustion-chamber, and which forms a fuel-magazine, and the annular flame-flue formed by and between the inner and outer water-chambers, in the manner set forth.

3. The combination, in a steam-generator, of the two independent water-chambers, as described, the combustion-chamber, the annular flame-flue formed between said chambers and terminating at the lower end of the reservoir, and the upper and lower water-connecting pipes or hollow stay-bolts, constructed and arranged substantially as shown.

4. In a steam-boiler, the combination of the inner and outer water-chambers, connected as described, and forming the annular flame-chamber and the conical fire-box, a segmental portion of the inner wall of the outer chamber projecting above the steam-space, the horizontal and vertical partition, and the casting C, forming the top of the return-smoke flue, all arranged to compel the products of combustion to take an up-and-down and return course, for the purpose described.

255,108. GARMENT-SUPPORTER. ALBERT C. GREENE, Providence, R. I.: William B. Wightman, Administrator of said Greene, deceased. Filed June 10, 1881. (No model.)

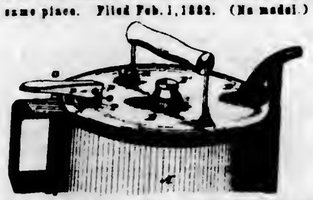


Claim.—1. A garment-supporter consisting of a wire bent in its middle to form a spring-clamp, with parallel sides A A, and adjacent to its free ends to form a tapering neck, B B, combined with a movable collar, C, which opens and closes said jaw as it is moved

to and fro along the neck B B, between the outwardly-turned ends *b b* and the shoulders *b' b'*, and holding the cloth by the clamping together of the parallel jaw-sides A A.

2. In a garment-supporter, a spring-clamp having a tapering neck, B B, provided with outwardly-turned ends *b b* and shoulders *b' b'*, combined with a movable collar, C, provided with recesses *c c*, to engage said ends *b b*, and adapted to slide to and fro along said neck, between said ends *b b* and shoulders *b' b'*.

255,109. OIL-CAN. LEWIS A. HARKER, Columbus, Ohio, assignor of two-thirds to Charles H. Amann and William Ewing, same place. Filed Feb. 1, 1882. (No model.)



Claim.—1. In an oil-can, the combination, with the discharge-spout constructed with an enlarged portion, D', at its lower end, said enlarged portion being secured to the top of the can over the oil-discharge opening formed therein, whereby the top of the can serves as a valve-seat, of a downwardly-closing valve loosely arranged within said enlarged portion of the spout or nozzle, and suitable levers for actuating the valve, substantially as set forth.

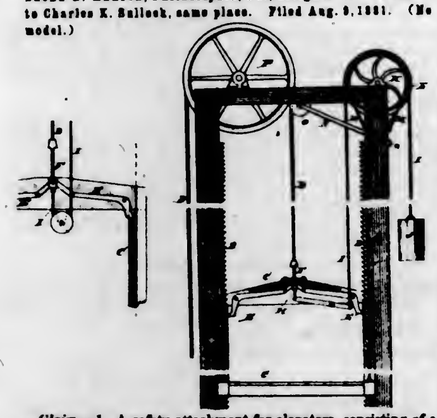
2. In an oil-can, the combination, with the discharge-spout constructed with an enlarged portion, D', at its lower end, said enlarged portion being secured to the top of the can over the oil-discharge opening formed therein, whereby the top of the can serves as a valve-seat, of the downwardly-closing valve loosely arranged within the spout, and levers I and O and connecting devices, the rod *b*, and universal joint connecting the valve stem and rod, substantially as set forth.

3. In an oil-can, the combination, with the bracket secured to the under side of the top of the can and the vent-valve stem working through the lower end of the bracket, of an angle-shaped lever, I, and a spiral spring encircling the valve-stem, one side of the spring having a bearing on the side of the bracket and the other side of the spring having a bearing on the vertical portion of the lever, substantially as set forth.

4. The combination, with the vent-valve and stem, of the supporting-bracket, the two spiral springs, and the thumb-lever, substantially as set forth.

5. The combination, with the vent-valve stem and spiral spring N, encircling its upper end, of the thumb-lever O and standard P, the latter constructed to form a stop and limit the upward movement of said lever, substantially as set forth.

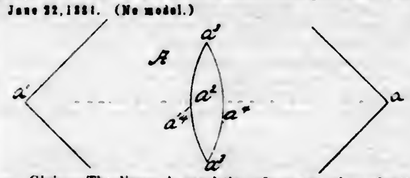
255,110. SAFETY ATTACHMENT FOR ELEVATORS. PHINEAS D. HARTER, Philadelphia, Pa., assignor of two-thirds to Charles K. Sullock, same place. Filed Aug. 9, 1881. (No model.)



Claim.—1. A safety attachment for elevators, consisting of a cable one end of which is secured to and combined with the latching mechanism adapted to arrest the descending cage and the other to a weight, in combination with a grooved wheel, over which said cable travels upon the ascent or descent of the cage, a brake to arrest or retard the rotation of said grooved wheel, and means to put said brake in action upon the falling of the cage, substantially as and for the purpose specified.

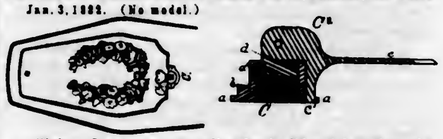
2. In a safety attachment for elevators, the sheave P, elevating-cable D, cage C, with its safety-latch, in combination with the safety-cable I, means to connect said cable with the latch, grooved pulley K, weight J, lever N, carrying on its end an idler-pulley, O, and a brake adapted to be operated by any movement of said lever to arrest the movement of the grooved pulley, substantially as and for the purpose specified.

255,111. DIAPER. HARRIET MORGAN, Washington, D.C. Filed June 22, 1881. (No model.)



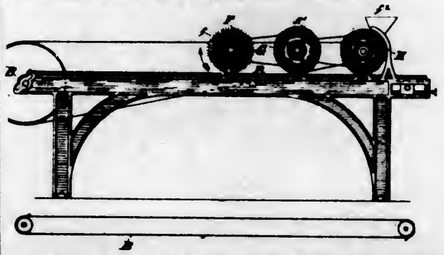
Claim.—The diaper A, consisting of a square piece of cotton or other suitable material woven, overlapped, or having cut therein an ellipsoidal opening, a^3, the sides a^4 a^4 being stitched together, whereby the desired form of the diaper is attained.

255,112. COFFIN. CHRISTOPHER H. OLSON, Decatur, Ill. Filed Jan. 3, 1882. (No model.)



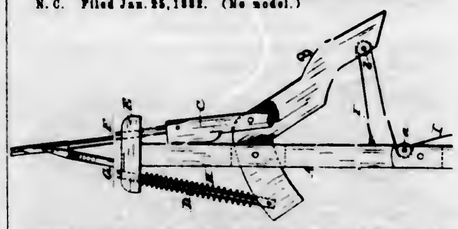
Claim.—In a two-part coupling for the lid and face-plate of a coffin, the part C, having annular flange *a*, annular elevation *b*, with low portion in front and high portion in the rear, and made hollow to receive the shaft *d*, to which is pivoted the part C^2, carrying the foot *c'*, and the part *c*, attached to the face-plate, as set forth.

255,113. PAN-CLEANING MACHINE. WALTER S. OWEN, Buffalo, N.Y., assignor to Charles E. Benedict and George B. Webster, same place. Filed Aug. 15, 1881. (No model.)



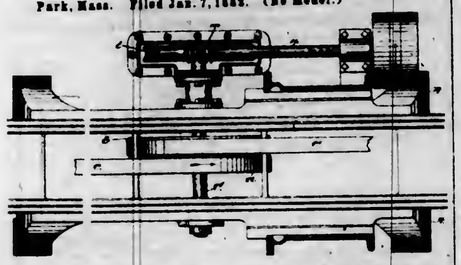
Claim.—In a machine for cleaning pans, the combination of a cleaning roller brush, F *f*, with a greasing roller brush, H *g*, an oil-reservoir, and an endless apron, B, and their operating gearing, substantially as described.

255,114. PRUNING-KNIFE. WARD C. PERLAND, Asheville, assignor of one-half to James M. Brockshier, Buncombe County, N.C. Filed Jan. 25, 1882. (No model.)



Claim.—A pruning implement consisting of the handle A, provided with the sheave *a*, pivoted bell-crank lever B, having sheave *b*, and perforated cross-bar E, in combination with the pivoted arm C, with inwardly-projecting enlargement, rods D, G, and F, provided with suitable knives, the coiled spring H, and operating-cord I, all constructed and adapted to operate substantially in the manner and for the purpose specified.

255,115. METAL-PLANER. BENJAMIN F. RADFORD, Hyde Park, Mass. Filed Jan. 7, 1882. (No model.)



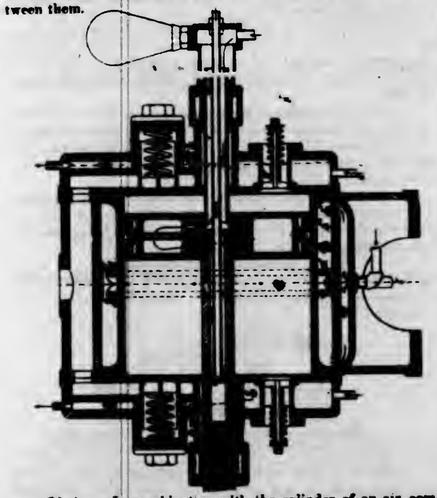
Claim.—1. In a metal-planer, the planer-bed and the drums *a b*, combined with the metal bands connected at one end with and passed about the drums in opposite directions, and secured at their other ends to the planer-bed.

2. The planer-bed, the drum *a*, and the sheet-metal band *c*, combined with the bolt and spring to form a yielding connection between the bed and band, substantially as and for the purpose described.

3. The planer-bed, the sheet-metal bands connected therewith at one end, and the slotted drums *a b*, combined with the cam-plates within the said drums, with which the other ends of the said bands are connected, substantially as shown and described.

255,116. AIR-COMPRESSOR. ANDREW C. RAND, New York, N.Y. Filed Nov. 5, 1881. (No model.)

Brief.—There are two independent water-chambers respectively upon the opposite ends of the cylinder, and a third water-chamber upon the body of the cylinder. The latter chamber is divided into two compartments, each of which is supplied with cold water at the bottom near the ends of the cylinder; but they have a common outlet through an annular passage arranged between them.

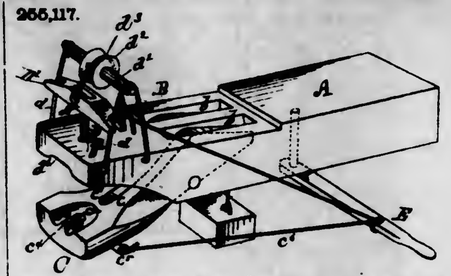


Claim.—In combination with the cylinder of an air-compressor, two independent water-chambers arranged respectively upon the heads of the cylinder, and a third water-chamber surrounding the body of the cylinder, each of the said chambers being provided with inlet and outlet passages for the admission and discharge of the cooling-water, substantially as and for the purposes described.

255,117. CAR-COUPLING. WILLIS J. ROBERTS, Eaton Rapids, Mich. Filed Feb. 3, 1882. (No model.)

Claim.—The combination of slotted bar A B, provided with

255,117.



uprights *d*, shaft *d'*, pulley d^3, cross-head D', carrying pin D, cord d^2, and lever E, with the bifurcated jaw C, weight F, and cord c^2, substantially as shown and described.

255,118. HASP-LOCK. JOSEPH F. ROBINSON, Verona, Pa. Filed Oct. 15, 1881. (No model.)

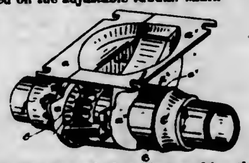


Claim.—1. In a hasp-lock, the combination of a hammer pivoted to one of the rivets securing the front plate of the lock to the body of the hasp, the elastic locking-bar to engage the forward end of the hammer, and the screw-threaded key-pintle to release the locking-bar, all constructed and arranged to operate substantially as herein set forth.

2. The combination of the hammer pivoted as specified, the elastic locking-bar to engage the forward end of the hammer, the threaded key-pintle and a pawl adapted to retain the locking-bar in a fixed position when relieved from the forward end of the hammer, constructed and arranged to operate substantially as and for the purpose set forth.

255,119. FORCE-FEED FOR SEEDING-MACHINES. SAMUEL ROTAN, Brownsville, Ind., assignor of one-half to John L. Riter, same place. Filed Apr. 8, 1881. (Model.)

Brief.—The feed-wheel and follower with the double cut-off are all mounted on the adjustable tubular shaft.



Claim.—1. In a force-feed seeding-machine, the combination of an enlarged tubular shaft working in contact with the grain and a feed-wheel, substantially as described.

2. In a force-feed seeding-machine, the combination of an enlarged tubular shaft working in contact with the grain, a feed-wheel, and cut-offs, substantially as set forth.

3. In a force-feed seeding-machine, the combination of a feed-cup having side openings and an elevated discharge-orifice, an enlarged tubular shaft passed through the side openings of the feed-cup and working in contact with the grain, a fluted feed-wheel, and upper and lower cut-offs, substantially as described.

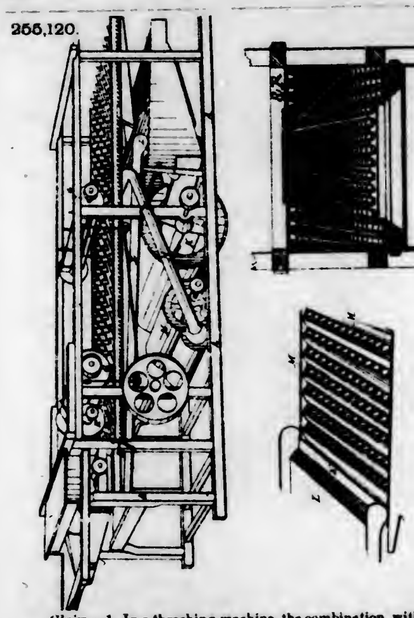
4. In a force-feed seeding-machine, the combination of a feed-cup having a side opening or passage and an enlarged tubular shaft with an exterior diameter fitting closely the said opening or passage of the feed-cup and revolving in contact with the grain, substantially as set forth.

5. In a force-feed seeding-machine, the combination of the feed-cup, the enlarged tubular shaft with the fluted feed-wheel fitted thereon, the independent cut-offs, and a rose-washer, said parts being arranged for operation substantially as described.

6. In a force-feed seeding-machine, the cut-offs consisting of the collar C, the lower cut-off, *c*, and upper cut-off, *d'*, with the longitudinal groove d^5, substantially as shown and described.

255,120. THRASHING-MACHINE. ALLEN A. RUSSELL, Indianapolis, Ind. Filed May 31, 1881. (No model.)

256,120.

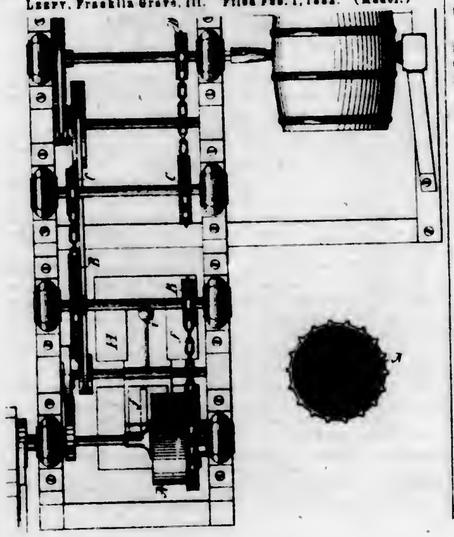


Claim.—1. In a thrashing-machine, the combination, with the straw-shaker, of a blast-fan, the air-casing, and the pipe supported by the frame of the machine below the shaker for sending a blast up through it, substantially as set forth.

2. The combination, with the riddle M, of the grain-table L, having its rear end imperforate and downwardly curved at L', the parts being arranged, as described, to cause the downwardly-projecting portion L' to move over and in close proximity to the upper end of the riddle M, substantially as set forth.

3. The combination of a toothed cylinder and concave sections arranged to form a central feed-opening and formed with ribs converging upwardly from said opening, a concave section over the cylinder provided with ribs converging rearwardly, and a concave section in rear of the cylinder arranged to leave a discharge-opening at each end and formed with ribs diverging toward said discharge-openings, substantially as set forth.

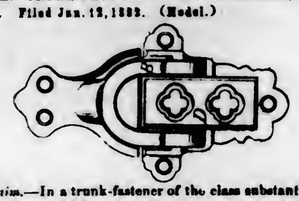
256,121. CHURN-MOTOR. ANTON SCHOTT and THEODORE LEEPY, Franklin Grove, Ill. Filed Feb. 1, 1882. (Model.)



Claim.—1. The coiled spring for a churn-motor and the chain-gear A, B, C, and D, combined substantially as and for the purpose set forth.

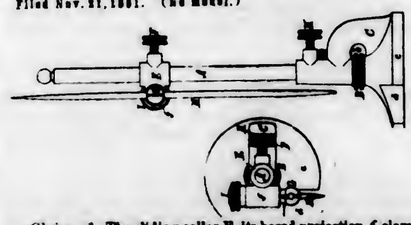
2. In a churn-motor, the combination of the coiled spring, chain-gear A B C D, fan H, with balls *i i*, and flanges *f f*, constructed substantially as and for the purpose herein set forth.

256,122. TRUNK-FASTENER. JOHN H. SESSIONS, Jr., Bristol, Conn. Filed Jan. 12, 1882. (Model.)



Claim.—In a trunk-fastener of the class substantially such as is herein shown and described, the plate and spring-box cast in one piece, with the snap-loop-receiving recesses and the thin lugs by the side of said recesses, said lugs being adapted to be bent for holding the snap-loop in place, substantially as described, and for the purpose specified.

256,123. SURFACE-GAGE. LAROY S. STARRETT, Athol, Mass. Filed Nov. 21, 1881. (No model.)



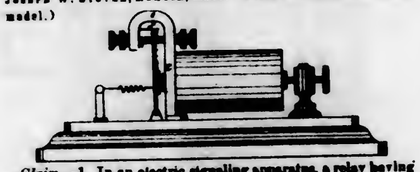
Claim.—1. The sliding collar E, its bored projection *f*, clamp-screws F G, and nut I, in combination with the pointer H, arranged in the screw G, and also with the grooved standard A and the stand C, adjusting-nut B, and guide-screw D, adapted to and arranged with each other, as set forth.

2. The standard C, provided with the notch *d*, arranged in its base, as set forth, in combination with the standard A, and with the pointer H, sliding collar E, bored projection *f*, clamp-screws F and G, and nut I, all arranged and adapted substantially as explained.

3. The sliding collar E, its tapering bored projection *f*, clamp-screw F, split and tapering screw G, and its nut I, in combination with the pointer H, arranged in the said screw G, and with the standard A, extending through the said collar, all being substantially as set forth.

4. The cylindrical standard A, provided with the longitudinal groove *e*, adjusting-screw *a*, and nut B, in combination with the stand C and the guide D, and clamp-screw K, all being arranged and adapted substantially as set forth.

256,124. APPARATUS FOR SIGNALING BY ELECTRICITY. JOSEPH W. STOVER, Newton, Mass. Filed Nov. 18, 1881. (No model.)



Claim.—1. In an electric signaling apparatus, a relay having a movable armature and retractor and a device for alternately breaking and closing the circuit thereof, combined with a local battery and circuit for operating registering apparatus the terminals of which are controlled by the said relay-armature, as described, whereby the condition of the said local circuit is changed both at the movement of the relay-armature from and at its movement toward the poles of its magnet, and a record is thus made both of the opening and closure of the main or relay circuit, substantially as and for the purpose set forth.

2. In a relay, the combination, with the relay-armature, of the local-circuit terminals controlled thereby and arranged as described, by means of which the local circuit is closed in the movement of the armature in either direction, but retained open at the end of the said movements, substantially as and for the purpose set forth.

3. The combination, with a relay-armature lever forming a portion of the local circuit, and insulating-stops therefor, of a contact-spring, also forming a portion of the local circuit, it being located, as described, relative to the armature-lever, whereby it is touched by the said armature-lever only in its movement from one to the other of the said stops, substantially as described.

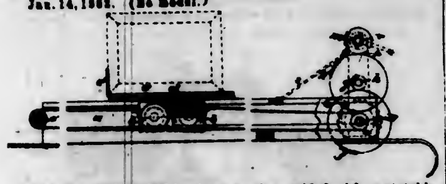
256,125. GUIDER FOR SEWING-MACHINES. E. F. THOMAS, New York, N. Y., assignor to the Gold Medal Sewing Machine Company, Orange, Mass. Filed Nov. 11, 1880. (No model.)

Brief.—The cord-delivering hub is provided with several eyes of different sizes, and one of which may be brought into use at the pleasure of the operator.



Claim.—The cord-delivering hub *c*, provided with a plurality of carried ends forming eyes 1 2 3, combined with the pivot *d*, upon which it may be rotated to bring either of its eyes into position, the detaining-spring *f*, arranged to bear against the periphery of the said hub to hold it in position, and carrier-arms *b b'*, substantially as shown and described.

256,126. SKID. GUSTAV TISCHER, Wilmington, Del. Filed Jan. 14, 1882. (No model.)

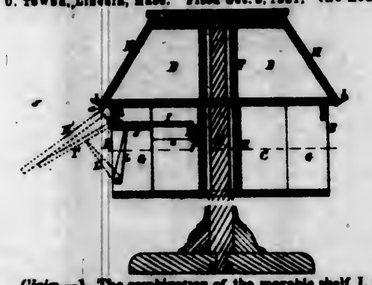


Claim.—1. The skid having a truck provided with a rotatable platform, substantially as and for the purpose set forth.

2. The frame, truck, and conveyer, in combination with the two squared shafts E F and the gearing, substantially as and for the purpose set forth.

3. The frame, truck, conveyer, and rollers, in combination with the pivoted uprights *p*, substantially as and for the purpose set forth.

256,127. ROTARY STUDY-TABLE OR BOOK-CASE. ALFRED O. TOWNE, Lincoln, Mass. Filed Oct. 8, 1881. (No model.)



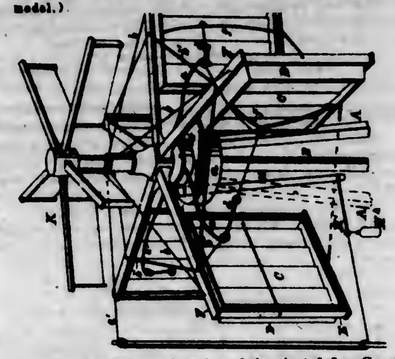
Claim.—1. The combination of the movable shelf I, its carrier K, having the ledge *f*, and tripper *e*, with the rotary case B, applied to the standard A, and provided with the cross-bars *d* and *g*, arranged as set forth.

2. The combination of the pivoted arm L with the case B, provided with the bars *d* and *g*, and with the movable shelf I and its carrier K, all being arranged and adapted to operate substantially as described.

3. The combination of the turn-down leaf or cover H, applied, as described, to the rotary case B, with such case, and with the movable shelf I, its carrier K, and arm or strut L, arranged in and adapted to such case, substantially as specified.

4. The rotary case B, having the two separate chambers C D, the tubular parts E F, prismatic posts G, and the covers H, arranged substantially as set forth.

256,128. HORIZONTAL WINDMILL. WILLIAM H. ACE, Jordan Township, Monona County, Iowa. Filed July 15, 1881. (No model.)



Claim.—1. The combination of the pivoted fans C and the pivoted frames D, carried below the radial arms F, with the check-wheel G and the friction-lever H, operated by mechanism substantially as and for the purposes described.

2. The combination of the pivoted fans C and the pivoted frames D, carried below the arms F, with the check-wheel G, having the arms *e*, connected with the chain *d*, attached to the pivoted frames, and the friction-lever H, connected with and operated by the governor-wheel K, substantially as and for the purposes described.

3. The combination, with the pivoted fans C in the pivoted frames D, of the rods *f'*, attached to the frames and bent and arranged to form stops to the fans, substantially as described.

256,129. MACHINE FOR WAXING PAPER. GEORGE W. BANCROFT, Lynn, Mass. Filed Oct. 17, 1879.



Claim.—1. The combination of the metallic roller D, and the elastic-surfaced roller D', located over the waxing-pan C, with the waxing-pan C, and with the steam-pipe, located near the bottom of the same, and operated together substantially as described.

2. The pressure-rolls D D', located above the waxing-pan, in combination with said pan, and with the steam pipe or bar *e*, submerged in the wax, and beneath which the paper passes from the grid to the pressure-rolls, substantially as set forth.

3. As a paper-waxing apparatus, the combination of a heated waxing-pan provided with a bar beneath its surface, with a pair of distributing, compressing, and calender rolls located above or nearly over said pan, and an independent smoothing and cleaning device located on the delivery side of said rollers, substantially as described.

4. The combination, in a machine for waxing paper, of the grid B with the bar *e*, pan C, and rollers D D', substantially as and for the purpose described.

5. The combination, in a machine for waxing paper, of the grid B with bar *e*, pan C, and smoothing device E E', substantially as described.

6. The combination, in a machine for waxing paper, of the grid B with bar *e*, pan C, and reel F, substantially as described.

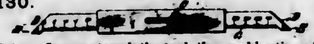
256,130. CONTOUR GAGE AND TOOL. HENRY C. BARBER, Sedalia, assignor to Thomas T. Clifford, Pettis County, Mo. Filed Aug. 4, 1881. (No model.)



256,130.

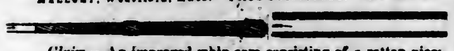
5. An armature for dynamo-electric machines, composed of a

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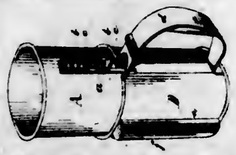
Claim.—In a contour lathe-tool, the combination of the frame A, thumb-screw C, rigid strips *a a*, and strips B, having shoulders S, substantially as shown, and for the purpose described.

255,131. WHIP-CORE. VIRAL B. BARSTOW and STANTON H. MALLORY, Westfield, Mass. Filed Feb. 3, 1882. (No model.)



Claim.—An improved whip-core consisting of a rattan piece having longitudinal saw-kerfs made therein, combined with thin flat rawhide strips glued into said saw-kerfs, substantially as described.

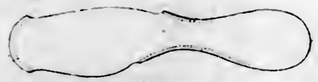
255,132. LIQUID MEASURE AND SCALES. CHAS. C. BECKER and PHILIPP JACOB, Chicago, Ill. Filed Oct. 29, 1881. (No model.)



Claim.—1. The combination of the vessel A, having dovetailed slide *a* and vertically-adjustable lugs *b* and set-screws *c*, and the frame D, having wire *h*, suspended therefrom by coiled springs *i*, all substantially as and for the purpose set forth.

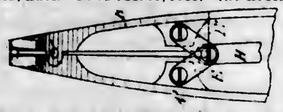
2. The combination, with vessel A, having dovetail slide *a*, vertically-adjustable lugs *b*, and set-screws *c*, of the frame D, having slotted handle *d*, tubes *f*, spring-inclosing tubes *g*, transverse connecting-wire *h*, and springs *i*, all substantially as and for the purpose set forth.

255,133. SHOE. JOSIAH C. BENNETT, Lynn, Mass. Filed Dec. 13, 1881. (No model.)



Claim.—The herein-described shoe, composed of the upper and outer sole and the inner sole, *c*, stitched to the upper and outer sole about its toe and heel, but cut away at its sides and not connected with the upper and outer sole along the sides of the inner sole, all substantially as described, whereby the toe of the inner sole, the sides of which at the ball of the foot are not connected with the outer sole by stitches, is made available to keep the toe of upper distended, substantially as described.

255,184. HORN AND PEG CUTTER. JOHN E. BICKFORD, South Abington, Mass. Filed Jan. 13, 1882. (No model.)



Claim.—In a shoe pegging or nailing machine, the combination of the supporting-horn A A' B, in which the part B operates as a cutting-jaw, in connection with the part A', with the operating mechanism H E E', all operating together substantially as described, and for the purpose set forth.

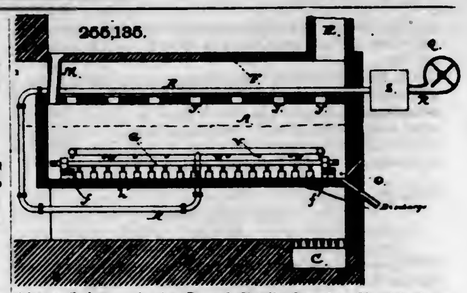
255,185. DESULPHURIZING-FURNACE. AMBROSE BLATCHLY, San Francisco, Cal. Filed May 11, 1881. (No model.)

Brief.—The air, before being admitted into the roasting-chamber, is dehydrated by being forced through a body of common salt.

Claim.—1. The process of desulphurizing ores, consisting of the following successive steps: first, drying the ore; second, subjecting the dried ore in a close chamber to thorough agitation; third, subjecting the ore to the action of heat; and, fourth, injecting hot air which has been dehydrated or deprived of its moisture, substantially as described.

2. A desulphurizing-furnace consisting of the closed chamber, retort, or muffle A, mounted over the fire-place C, and having the flue D, leading underneath, around the rear end, and over the top of the chamber to a stack, E, at the front of the furnace, the drying-floor F, arranged over the chamber and flue, the stirrers *h*, the

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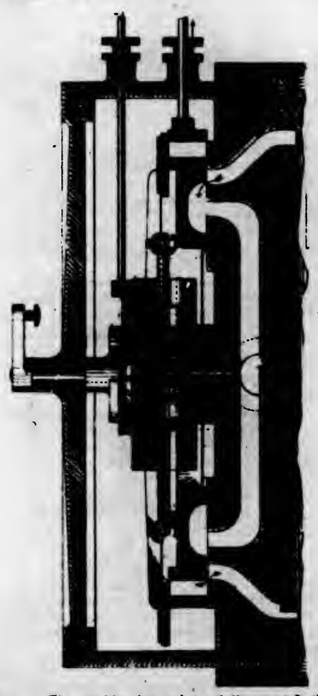


blower Q, box *s*, air-pipe R, and distributing-pipes V, with their perforations or nozzles *w*, all combined and arranged to operate substantially as above described.

3. In an ore-roasting muffle or retort furnace, the automatic stirring apparatus consisting of the beam G, with its plows or stirrers *h*, operated by the chains S and automatic reversing-gear, in combination with the bridge-walls or tracks *f*, with their vertical inclined planes K and horizontal inclines *i*, substantially as and for the purpose described.

4. The combination, in a furnace for desulphurizing ores, of the ore-chamber having holes through its top wall, the perforated air-injecting pipes arranged across the furnace to inject air downward into and against the ore on its bottom, and a dehydrating-box connected with the said injecting-pipes, and an air-forcing engine, substantially as described.

255,186. CUT-OFF VALVE. BENJAMIN BRASELLE, St. Louis, Mo. Filed Dec. 1, 1881. (No model.)



Claim.—1. The combination, substantially as set forth, of an open-ended cylinder having a central division or partition and a steam and an exhaust port on each side thereof, a pair of pistons fitted to said cylinder on opposite sides of its central partition, and a stationary controlling-valve which fits over the steam-ports of the cylinder and is adjustable, so as to regulate the period of admission of steam thereto.

2. The combination, substantially as set forth, of an open-ended cylinder having a central division or partition and a steam

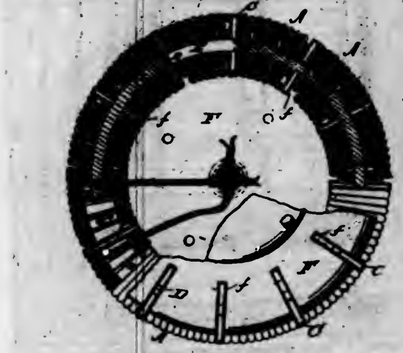
and an exhaust port on each side thereof, a pair of pistons, each fitted to said cylinder on one side of said partition, a slide-valve effecting the opening and closing of the steam and exhaust ports, and an adjustable controlling-valve regulating the period of admission of steam through said slide-valve.

3. The combination, substantially as set forth, of a double-ported slide distribution-valve, an open-ended cylinder connected to said valve and having a central division or partition, a pair of steam-supply ports leading into said cylinder on opposite sides of said partition, a pair of exhaust-ports extending from said cylinder through the distribution-valve to its working-face on opposite sides of said partition, and a valve-face upon the main steam-cylinder having channels or grooves leading to its eduction-passages, with which channels the exhaust-ports in the distribution-valve leading to the open-ended cylinder are adapted to be alternately brought into communication by the reciprocation of the valve.

4. The combination, substantially as set forth, of a double-ported slide distribution-valve, an open-ended cylinder having a central division or partition and a steam and an exhaust port on each side thereof, a pair of pistons fitted to said cylinder on opposite sides of the central partition, a cut-off valve connected to the rods of said pistons and governing the ports of the distribution-valve, a slide-valve governing the ports of the open-ended cylinder, and an adjustable controlling-valve regulating the admission of steam through said slide-valve to said ports.

255,187. ARMATURE FOR DYNAMO-ELECTRIC MACHINES. GUSTAV H. BROWN, New York, N. Y., assignor to Charles A. Cheever, same place. Filed Nov. 14, 1881. (No model.)

Brief.—The core of the armature has a section cut out, leaving a space, through which the separately-wound bobbins may be slipped to place them on said core. The ends of the core are dovetailed, and a section correspondingly dovetailed completes the ring. Before placing this section in place a bobbin is slipped thereon to complete the annular series of bobbins.



Claim.—1. An armature for dynamo-electric machines, consisting of a ring the ends of which are secured together by a removable key, and of a series of bobbins placed thereon, the sides of which overlap the cores of the bobbins, so as to interlock with wooden or other diamagnetic disks constituting the sides of the armature, substantially as shown and described.

2. A ring or band for holding the bobbins of the armature of a dynamo-electric machine provided with a removable key or section, whereby the placing of the bobbins on said ring or band is facilitated and they are more readily removed therefrom to obtain access to and replace burned or destroyed bobbins, substantially as shown and described.

3. An armature for dynamo-electric machines, consisting of a ring or band provided with a removable key, a series of bobbins the cores of which are composed of two or more bars of soft iron joined together, so as to have intervening air-spaces, and two disks or sides, said parts inclosing or forming an air-chamber which communicates with the external air, whereby during the revolution of said armature air will be drawn into said chamber and circulate into and through the air-spaces in the cores of the bobbins or sections, substantially as shown and described.

4. In a ring-armature, the combination of the following elements, viz: a bobbin holder or ring provided with a removable key, a series of bobbins the cores of which are composed of a series of soft-iron bars slightly separated from each other to form air-spaces, diamagnetic perforated disks or armature-sides, and an intervening air-chamber, substantially as shown and described.

5. An armature for dynamo-electric machines, composed of a series of bobbins the cores of which are formed of a series of bars secured together to form intervening spaces, each of such bobbins having two sides or ends projecting beyond the remaining sides or ends of its core, and a ring provided with a removable key and means for securing the same to said ring, substantially as shown and described.

6. The bobbin or section A, the spool or core of which is composed of a series of soft-iron bars with intervening air-spaces and enlarged or extended ends C C, having flanged edges, substantially as shown and described.

7. The bobbin or section A, having core A', composed of bars *a a* and ends C C, and provided with central slot or recess, A*, substantially as shown and described.

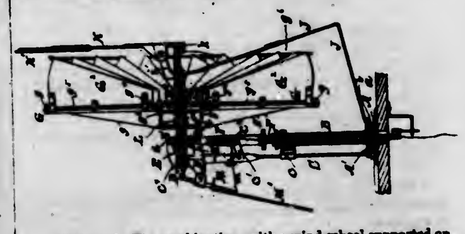
8. The bobbin or section A, having core A', composed of a series of bars with intervening spaces and of side plates, C C, the ends of which project beyond the core A', substantially as shown and described, and for the purpose set forth.

9. The combination of ring D, key or bar E, bobbins or sections A A, and sides F F, recessed or slotted at *f f*, substantially as shown and described.

10. An armature-bobbin ring or band provided with a removable key carrying a bobbin, whereby when said band is filled with bobbins its ends are locked by the insertion therebetween of said key, and at the same time completes the continuity or consecutiveness of the bobbins, substantially as shown and described.

255,188. WIND-WHEEL. EDMOND BUCKLEY, Swan, Iowa. Filed Dec. 17, 1881. (No model.)

Brief.—The wheel is provided with two vanes, K' and M', that are operated by the wind to regulate the working of the wheel. The trough N is also adapted to control the operation of the wheel by tilting and pulling on the cord *m*.



Claim.—1. The combination, with a wind-wheel supported on a hollow shaft and having its sails pivoted to turn into or out of the wind, of the vane placed in a vertical position in the rear of and pivoted to move to and from the sails, a wind-lever placed in front of the sails, a central connecting-rod put through the hollow shaft and connected to the arm of the wind-lever and bearing against the end of the arm of the vane, and the necessary mechanism connecting the central rod with the sails, substantially as set forth.

2. The combination, with the sails of a wind-wheel grouped in sections or series and pivoted to the spokes of the wheel to turn into or out of the wind, of the sliding head H, provided with arms A, cranks g', extended and forming spokes in the wheel, and having sails fastened thereto, and rods or links g^2, connecting the outer corners of the sails in the series, substantially as set forth.

3. The combination, with the wind-wheel having a hollow shaft, of the tilting trough N, cord *m*, lever M, pivoted to the frame, and pitman I', put through the hollow shaft of the wheel, and having one of its ends connected to the end of lever M and its other end connected by suitable mechanism to the pivoted sails in the wheel, substantially as set forth.

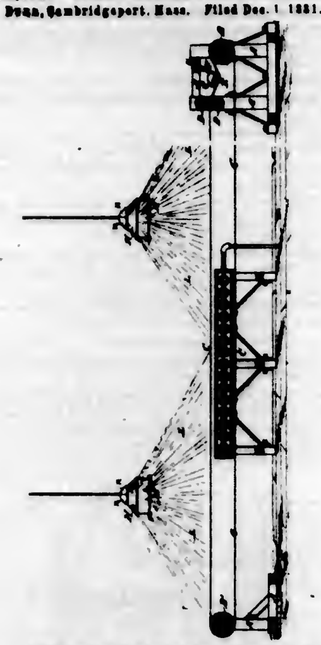
4. The combination of the shaft E, the wheel G, having the hinged sails G^2, with their spokes or shafts provided with cranks g', the spring L, the sliding head H, having arms A, the piston *l l'*, having the bar *k'*, and the governor K K', substantially as and for the purpose set forth.

5. The combination of the shaft E, the wheel G, having the hinged sails G^2, with their shafts provided with cranks g', the spring L, the sliding head H, having arms A, the piston *l l'*, the rod I', connected to the piston *l l'*, governor K', and the wind-lever M, substantially as and for the purpose set forth.

6. The combination of the shaft E, having the wheel G and the eccentric or cam E', the lever D, having its pivotal point at the convergent ends of its arms, while their divergent ends are provided with concaved bearings *c*, and the pitman F, substantially as and for the purpose set forth.

7. The combination of the trough-lever N, having the several adjustments, with the wheel G, having the hinged nails provided with cranks, the armed sliding head H, the piston *l f*, rod I', connected to the piston, lever M, and cord n or its equivalent, substantially as and for the purpose set forth.

255,139. CURING RUBBER-COATED FABRICS. HENRY W. BEAN, Cambridgeport, Mass. Filed Dec. 1 1881. (No model.)



Claim.—1. The art of curing rubber coatings applied to fabrics by subjecting them to the action of the electric light, substantially as described.

2. The described improvement in the art of curing rubber coatings on fabrics, the same consisting in subjecting said coatings to the action of the electric light while said fabric is in motion through the field of illumination of such light, substantially as set forth.

3. The improvement in the manufacture of rubber-coated fabrics, consisting in applying the rubber coating in successive layers while the fabric is moving through the coating-machine, subjecting each coating to the action of the electric light during each movement, and subsequently curing the rubber by means of said light before removal from said machine, substantially as set forth.

4. An apparatus for curing rubber coatings on water-proof fabrics, consisting of one or more electric lights and mechanical means for moving the rubber-coated fabric through the field of illumination, substantially as set forth.

5. The frame, the carrying-rollers B B', adapted to support and move the fabric C, and the calender-roller D D, in combination with the electric lights L L and suitable reflectors, N, for the purpose set forth.

6. The combination of the electric lights L and the glass shield M, for the purpose set forth.

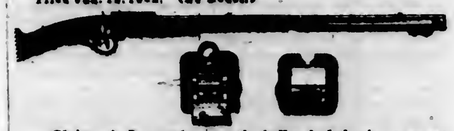
255,140. AUTOMATIC WAGON-BRAKE. BENSON I. BURTON, Washington, Iowa, assignor of one-half to William B. Adair, same place. Filed Nov. 7, 1881. (No model.)



Claim.—1. In an automatic wagon-brake, the combination of the bent shaft B, having upon it arms B² and B³ and brake-shoes B', the rod D, cross-head C, and spring C², the parts being arranged substantially as described, whereby the brake-shoes are released from the wheels in backing the wagon, substantially as set forth.

2. In an automatic wagon-brake, the combination of the double-tree, the sliding bar D', the rope or chain E, the rod D, the spring C², and the bent shaft B, carrying upon its ends brake-shoes B' B', the parts being arranged substantially as shown and described, and for the purpose set forth.

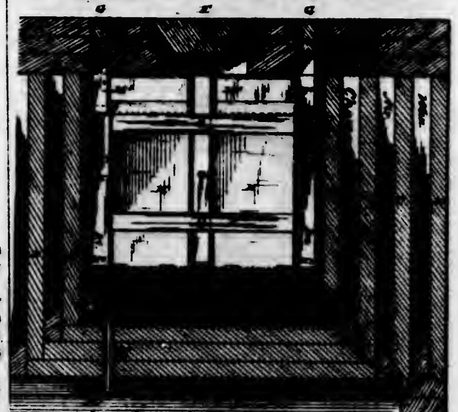
255,141. SPRING-GUN. FREDERICK CASPAR, Plainfield, N. J. Filed Jan. 12, 1882. (No model.)



Claim.—1. In a spring-gun, the hollow body having a groove and slot in its upper surface, in combination with a projector traveling in such groove and having a shank in the hollow body, and a contractile rubber spring attached at the forward end of the body, and a stop-pin across the hollow body and above the spring, for the purposes and substantially as set forth.

2. In a spring-gun, the hollow body formed of two grooved pieces of wood connected together at their lower edges and at the back end to the stock, in combination with the spring within such body, and the projector traveling in a groove in the top edge of such body, substantially as set forth.

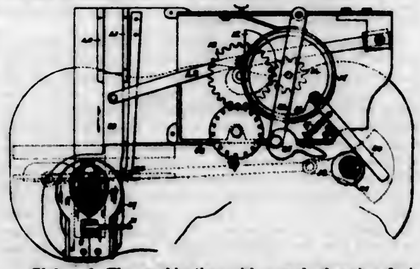
255,142. REFRIGERATOR. JAMES GASWELL, Macon City, Mo., assignor to James B. Helene and Thomas Edwin Sharp, same place; said Helene and Sharp assignors of one-third to John Shepherd, same place. Filed Nov. 23, 1881. (No model.)



Claim.—1. In a refrigerant-room and refrigerator, the walls B O D E, having an intermediate dead-air chamber and an intermediate space filled with boiled resin and tallow, lids G, and ice-pans H, having brackets H' inserted therein, substantially as shown, and for the purpose described.

2. The ice-pan H, having removable perforated bottom H', resting on cross-pieces of the pan, substantially as and for the purpose set forth.

255,143. BUTTON-HOLE SEWING-MACHINE. HENRY CHAMBERSBURY, Newark, N. J. Filed Mar. 29, 1881. (Model.)



Claim.—1. The combination, with a work-clamping device constructed and mounted to slide with and rotate upon its driving-bar, of means for imparting a step-by-step movement to the latter and a rotative movement to the former, substantially as described.

2. The combination, with a work-clamping device constructed and mounted to slide with and to rotate upon its driving-bar, and means for imparting a step-like movement to the latter, of a toothed segment connected with the work-clamping device and a rack carried by the driving-bar, whereby the onward movement of the said bar will impart both an onward and a rotative movement to the said work-clamping device, all substantially as described.

3. The combination, with the work-clamping device and its toothed projection, of the driving-bar 30, carrying said clamping device, and having the rack, as 4, and a mechanism for moving said driving-bar with a step-like action, all substantially as described.

4. The combination, with the work-clamping device and its projection, having toothed segment 9, with elongated teeth or surfaces 7 8, of the driving-bar 30, having rack 4 and surfaces 30 28, and means for moving said driving-bar with a step-like action, all substantially as described.

5. The combination, with the work-clamping device, its guide-opening 10, having an enlarged circular end, and a projection carrying a toothed segment provided with elongated teeth 7 8, of the guide-post 5, the intermittingly-moved driving-bar 30, having rack 4, surfaces 30 28, and a cam-like edge, 27, acted upon by a guide, as 28, substantially as described.

6. The combination, with the intermittingly-moved actuating-cam, and the lever transmitting motion from said cam to the driving-bar of the work-clamping device, and the lever for actuating said cam, of an adjusting device, as 55, whereby the throw if both levers is simultaneously adjusted, substantially as described.

7. The combination, with the work-clamping device, its driving-bar, the intermittingly-moved actuating-cam, a train of gearing transmitting motion from a driving clutch-wheel to said cam, the lever 20, and the bell-crank 44, of means for varying the point at which the power of said bell-crank shall be applied to the lever 20, substantially as described.

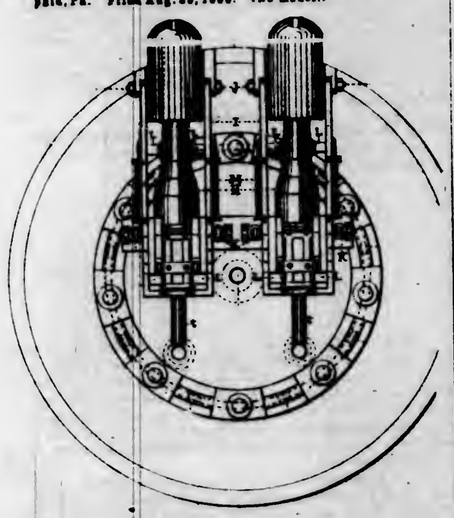
8. The combination, with the work-feeding clamp, the cam 12, its wheel 13, pinion 14, and the clutch-wheel 15, of the swinging bar 34 and cam 35, substantially as described.

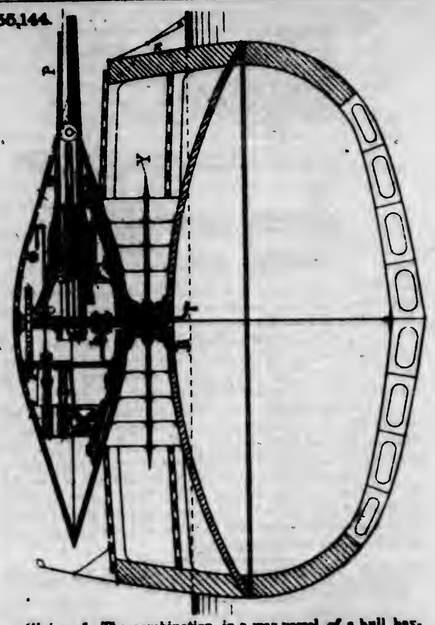
9. A work-clamp for sewing-machines, consisting of the plates 21 22 and the spring-tongue 6, having one of its ends rigidly secured to the end of the plate 22, substantially as described.

10. A work-clamp for sewing-machines, consisting of the plate 21, the divided plate 22, and the divided spring-tongue 6, having one of its ends rigidly secured to the end of plate 22, substantially as described.

11. The combination of the cam, as 52, the swinging needle-bar 56, having the slotted guide 100, the rock-arm 53, and adjustable connections, substantially as described.

255,144. ARMOR-CLAD SHIP. NAVAH B. CLARK, Philadelphia, Pa. Filed Aug. 23, 1880. (No model.)





Claim.—1. The combination, in a war-vessel, of a hull having a deflecting-shield, B, with a turret or gun-shield presenting to horizontal, or substantially horizontal, shots an acute-angled deflecting-surface only, said turret or gun-shield being elevated above the shield B, as described, whereby a practically-unobstructed passage for shot between the two is afforded, as set forth.

2. The combination, in a war-vessel, of a turret or gun-shield shaped exteriorly as described with an armored hull above which the said turret or gun-shield is elevated, whereby a practically-unobstructed passage for shot beneath the turret is afforded, as set forth.

3. The combination, in a war-vessel, of a hull having a shield, B, of deflecting form, with a turret or gun-shield elevated above the said shield B, shaped so as to present to horizontal shots an acute-angled deflecting-surface and capable of turning independently of the hull, as set forth.

4. A war-vessel in which a double-convex or plano-convex gun turret or shield is supported above a hull-protecting shield, B, of deflecting form, so as to provide a passage for shot between the two, as specified.

5. The combination, in a war-vessel, of a hull having a shield, B, of deflecting form, with a deflecting turret or gun-shield elevated above the same, and with one or more armored and hollow columns crossing the space between the shield B and elevated turret, as set forth.

6. The combination of the main hull-protecting shield B, of deflecting form, with the deflecting-turret supported above the same by a series of concentric tubes through which shot can pass without materially affecting their supporting properties, as set forth.

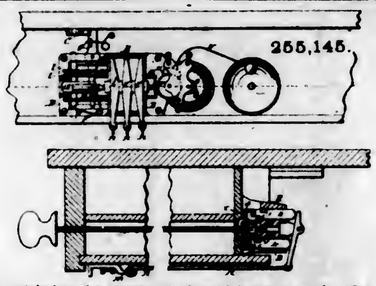
7. The combination, in a war-vessel, of a hull having a deflecting-shield, B, and a plate, A, supported above said shield, with a turret or gun-shield supported by and turning upon said elevated plate A, which forms part of the under surface of the turret, as set forth.

8. The supplementary deflectors P, of convex cross-section, secured to the projecting portions of the guns, to protect the latter from injury by side shots, as set forth.

9. The combination of the main hull-protecting shield of deflecting form, the deflecting turret or shield elevated above the same, and the intermediate deflectors, Y, as set forth.

255,145. TILL-ALARM. GEORGE A. COLTON, Oneida, N. Y. Filed July 27, 1881. (Model.)

Claim.—1. The combination, with a drawer, of a latch operated by a sliding bolt, a cam connected with the drawer-handle and operating the sliding bolt, tumblers engaging with said bolt



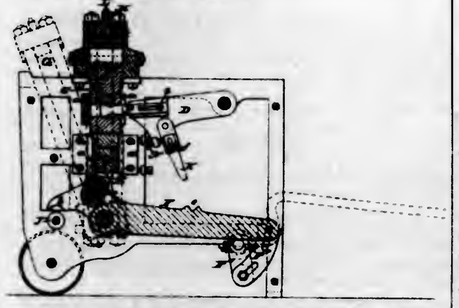
and restricting the movement thereof, levers operating the tumblers and manipulating handles or keys connected with said levers, substantially as set forth.

2. In a till-alarm, the push-rod *c*, provided with a cam, *e*, bolt *a*, provided with beveled shoulder *b*, and the pivoted latch *g*, having one end in the path of the bolt, all combined to operate with the catch in the manner set forth and shown.

3. The combination of the bolt *a*, provided on its sides with notches *h h*, the tumblers *k*, having notches *i j* and moving in guides in the case B, the levers *l* over the end of said tumblers, and the keys *m*, combined with the levers, as set forth and shown.

4. In combination with the bolt *a*, provided with notches *h h*, the tumblers *k*, having notches *i j*, the levers *l*, keys *m*, rods *n*, spring-arm *o*, provided with lug *p*, the escapement-wheel *r*, having the stud *y*, and the escapement provided with the hammer *v*, and the bell *w*, all as described and shown.

255,146. BRICK-PRESS. JOHN CHARVANS, Philadelphia, Pa. Filed Jan. 21, 1882. (No model.)



Claim.—1. The head-carrying frame G, the fulcrum J, the two-part plunger C, and the lever D, having a leg, in combination with the lever F, formed with a notch or serration, *e*, with which the lever D is adapted to engage, substantially as and for the purpose set forth.

2. The plunger in combination with the lever D, provided with an adjustable tongue, substantially as and for the purpose set forth.

3. The leg K, connected to the lever D, and adjustable thereon in angle and length, substantially as and for the purpose set forth.

4. The frame G and head H, provided with the bridge M, in combination with bent stay rod or bolt and the nuts *d*, substantially as and for the purpose set forth.

5. The face-plate of the plunger, formed of adjustable sections, substantially as and for the purpose set forth.

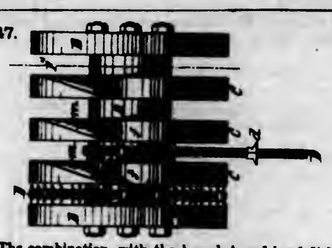
6. The face-plate having sections *g g' g''*, constructed as described, and the bolts *h*, combined and operating as stated, for the purpose set forth.

7. The mold formed of the side and end pieces, *k k'*, the bolts *m*, the facing or lining pieces *o o'*, and keys *p*, said pieces *k* having lips *n*, substantially as and for the purpose set forth.

255,147. SPOOL FOR WINDING BARBED FENCING. JOHN D. CURTIS, Worcester, Mass. Filed Dec. 27, 1881. (No model.)

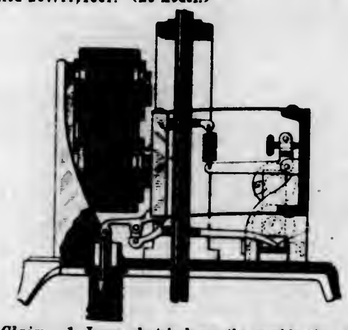
Claim.—1. A spool for winding flat-barbed fencing material, constructed with a series of grooves or spaces with intervening flanges or separating-disks, provided with inclines, guides, or passways for facilitating the transfer of the fence-strand from one groove or space to the next, as hereinbefore set forth.

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2. The combination, with the barrel A and head-disks B, of the intermediate disks or flanges, C, having passways E, with flat supporting-surfaces *e* and inclines *m*, substantially as and for the purpose set forth.

255,148. ELECTRIC LAMP. LEONARD E. CURTIS, New York, N. Y., and EDWARD WESTON, Newark, N. J., assignors to the United States Electric Lighting Company, New York, N. Y. Filed Nov. 11, 1881. (No model.)



Claim.—1. In an electric lamp, the combination, with the feed-controlling magnets, of a carbon-carrier, a clamp or clutch, a closed shunt of high resistance, and an electro-magnet, independent of the feed-controlling magnets, included therein, and mechanism adapted to be operated by the said magnet, and thereby liberate the said carrier from the clutch, as set forth.

2. In an electric lamp, the combination, with the feed-controlling magnets, of a carbon-carrier, a clutch by means of which the carrier is controlled, a shunt-circuit of high resistance, and a magnet, independent of the feed-controlling magnets, included therein, by the action of which the clutch is caused to release the carrier, substantially as set forth.

3. In an electric lamp, the combination, with the feed-regulating mechanism and carbon-carrier controlled thereby, of two electro-magnets independent of the feed-regulating mechanism, one in the main circuit, the other in a shunt about the lamp, and mechanism controlled by the differential action of said magnets for the purpose of releasing the carbon-carrier from the control of the feed mechanism, substantially as set forth.

255,149. SAFETY-VAULT FOR COFFINS. BENJAMIN G. DEVOE, Easton, assignor of one-half to John H. Ayers, Urbana, Ohio. Filed Nov. 14, 1881. (Model.)



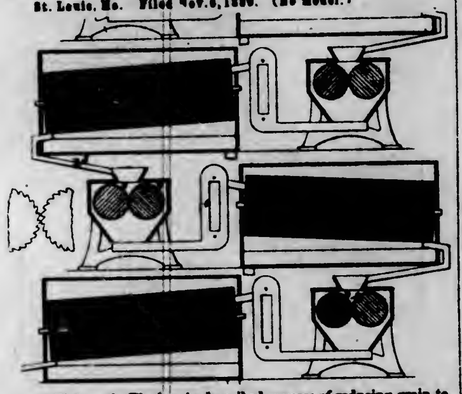
Claim.—1. The method of constructing the body or cap of coffin safes or vaults, which consists in first forming a blank, A, by stamping from a piece of sheet metal; second, forming a longitudinal crease or bend in said blank to form the ridge of the roof; third, folding down the end flaps 3 4 and the sides *a a'*, respectively; fourth, folding the end flaps 2 and 5 over the flaps 3 and 4, and, lastly, connecting said flaps together, substantially as and for the purpose specified.

2. In a coffin safe or vault, the combination, with the cap or body A', of the base B, provided at its edges with a downwardly-projecting flange, or its equivalent, constructed to form a support for said base-plate, and having a channel or groove for the reception of the edges of said cap and a guide at each corner to guide the cap into proper position, substantially as and for the purpose specified.

3. In a coffin safe or vault, the combination, with the cap or body A', of the base B, provided with a channel, or its equivalent, around its edges, and a lock-case at each corner, constructed to form guides and automatically lock said cap to the base when applied thereto, substantially as shown and described.

4. In a coffin safe or vault, the body or cap provided with stops or keepers *o o'*, in combination with the base provided with a groove or stirrup along its edges, the lock-cases D, and gravity-bolts D, all arranged for operation substantially as and for the purpose specified.

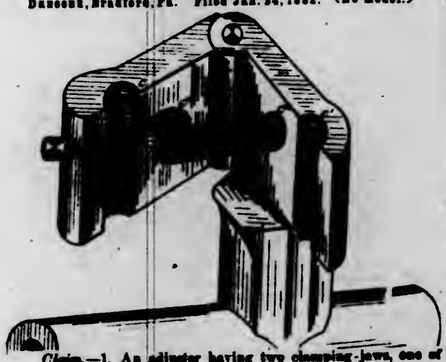
255,150. MANUFACTURE OF FLOUR. ROBERT L. DOWTON, St. Louis, Mo. Filed Nov. 6, 1880. (No model.)



Claim.—1. The herein-described process of reducing grain to flour and middlings, consisting in passing it through a series of sets of rolls revolving at differential speeds and in the same direction at their point of nearest approach to contact, and of successive degree of fineness of dress, the first part of said series of rolls having a dress of round or oval flutes and the latter part of said series having a dress of sharp or serrated flutes arranged at an inclination to the axis, and through belts arranged intermediate of each set and the succeeding set of rolls, substantially as and for the purpose specified.

2. In the manufacture of flour and middlings, a series of sets of rolls of successive degrees of fineness of dress arranged to revolve in the same direction at their point of nearest approach to contact and at differential speeds, the first part of said series of rolls having a dress of round or oval flutes and the latter part of said series of rolls having a dress of sharp or serrated flutes arranged at an inclination to the axis, in combination with belts arranged intermediate of each set and the succeeding set of rolls, substantially in the manner as and for the purpose herein shown and described.

255,151. ADJUSTER FOR OIL-WELL PUMPS. SOLOMON R. DUNCAN, Bradford, Pa. Filed Jan. 24, 1882. (No model.)

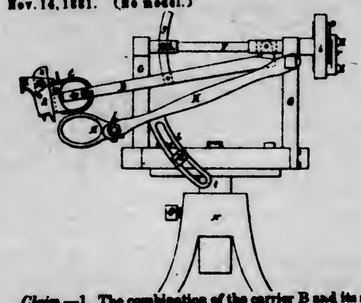


Claim.—1. An adjuster having two clamping-jaws, one of which is formed integral with the trunnions, and both hinged together and provided with clamping-faces having a device for holding the rod therein, and a bolt and nut for holding the jaws together.

2. An adjuster, a movable jaw having an oval hole for the purpose set forth, in combination with a fixed jaw having a clamping-bolt, substantially as described.

3. In an adjuster, a clamping-bolt having its head seated upon a ledge formed upon one of the clamping-jaws, as and for the purpose set forth.

255,152. MACHINERY FOR BURNISHING THE SOLE-EDGES OF BOOTS AND SHOES. HYRICK DUDLEY, Lynn, Mass., assignor to himself and Ruel E. Hickerson, same place. Filed Nov. 14, 1881. (No model.)



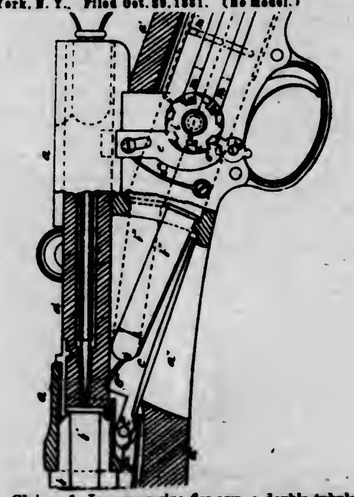
Claim.—1. The combination of the carrier B and its spring C, with the fore-part finisher A, adapted thereto as described, and with the shank-finisher E, supported by or fixed to the finisher A, all being substantially as set forth.

2. The combination of the finisher-carrier B and the rocker-shaft F with the arm B, applied to them, substantially as described, the mid shaft and arm having clamp-screws attached to them, as explained.

3. The combination of the connecting-rod *r* and the driving-pulley *o* and disk *i*, provided with crank-pins *l* and *q*, adjustable in them, as set forth, with the shafts m F and with the finisher-carrier supporting-arm D, applied to the rocker-shaft F, so as to be adjustable therewith, substantially as specified.

4. The combination of the ear I and the radial arm K, its slotted bar L, and clamp-screw M with the finger-rest H, all being arranged substantially as set forth.

255,153. MAGAZINE FIRE-ARM. WILLIAM H. ELLIOT, New York, N. Y. Filed Oct. 29, 1881. (No model.)



Claim.—1. In a magazine fire-arm, a double tubular magazine located in the butt-stock, and a reciprocating and oscillating bolt for opening and closing the arm, provided with the longitudi-

nal groove *d'*, and in combination therewith a revolving-pawl, *e*, provided with the bent end *e'* to work in said groove, a ratchet-disk, *i*, provided with cams *i''*, and the feed-pawls *m*, whereby a cartridge is released from the tubular spaces alternately, substantially in the manner shown and described.

2. In a magazine fire-arm, a stock or receiver provided with an opening, *a''*, in the lower side of the arm, a tubular magazine located in the butt-stock, a reciprocating bolt for closing the chamber, which moves in a line with the barrel, and in combination therewith a carrier, *c*, pivoted to the receiver under the rear end of the barrel, and provided with a cam, *c''*, located near its forward end, and with a spring, *c'''*, whereby the carrier is depressed by the forward end of the bolt into the opening *a''* to receive a cartridge from the magazine, raised again by its spring to carry the cartridge into the receiving-chamber, and is forced up into the receiving-chamber in the act of passing a cartridge into the magazine, constructed and operating substantially as described.

3. In a magazine fire-arm, a tubular magazine located in the butt-stock, a reciprocating bolt for closing the chamber, which moves in a line with the barrel, and in combination therewith a carrier pivoted to the receiver under the barrel, and provided with the cam *c''*, recess *c'*, and spring *c'''*; said recess being arranged upon the carrier at such distance from the forward end of the magazine that until the bolt is withdrawn the head of the first cartridge remains in the mouth of the magazine, and after it is withdrawn it is thrown upon the carrier and raised to the receiving-chamber, substantially as specified.

4. In a magazine fire-arm, a double tubular magazine located in the butt-stock, a bolt for closing the chamber, which moves in a line with the barrel, and in combination therewith a carrier pivoted to the receiver under the barrel, and provided with the cam *c''*, the two points *w* and *w'*, and a spring, *c'''*, whereby the carrier is depressed by the bolt to receive a cartridge from the magazine, raised to make room to charge the magazine, used as a guide to direct the cartridges into either tubular space, and returned by the spring to a proper position to serve as a bottom to the receiving-chamber, substantially as specified.

5. In a magazine fire-arm, a double tubular magazine located in the butt-stock, provided with the usual cartridge-propelling devices, and having a mortise through its rear end, and in combination therewith the key *s'*, screw *s''*, and washer *s'''*, whereby the magazine may be assembled, passed through the butt-stock, and fastened upon the arm, substantially as specified.

6. In a magazine fire-arm, a magazine located in the butt-stock and provided with the usual cartridge-propelling spring, and in combination therewith a follower provided with the shield *r''* and guide-pin *r'''*, whereby the point of the feed-pawl is prevented from catching the spring, substantially as specified.

7. In a magazine fire-arm, a double tubular magazine located in the butt-stock, a bolt for closing the arm, which moves in a line with the barrel, a revolving-pawl, *e*, which is actuated by said bolt, disk *i*, provided with ratchet-teeth *i'*, cams *i''*, and feed-pawls *m*, and in combination therewith the cut-off *v''*, whereby the magazine may be locked by moving the cut-off so as to prevent the pawl *e* from engaging the ratchet-teeth on the disk *i*, substantially as specified.

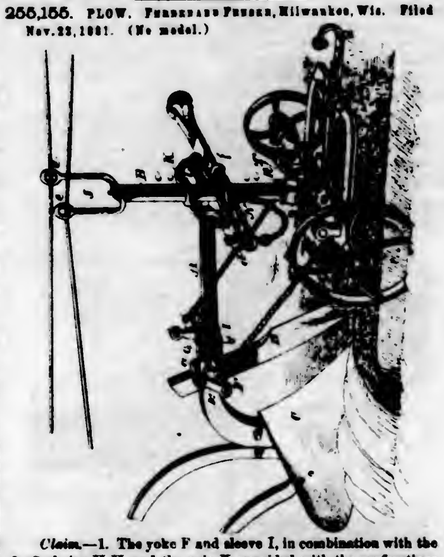
8. In a magazine fire-arm, the arrangement and operation of devices, as follows: a bolt for closing the chamber, which moves in a line with the barrel, a tubular magazine provided with the usual cartridge-propelling devices, a carrier pivoted below the line of the barrel and provided with the recess *c'*, and a feed-pawl for releasing the column of cartridges, so arranged in relation to the carrier and the recess thereon that the shock of arresting the movement of the column of cartridges is received upon the bolt and carrier before the feed-pawl engages the head of the second cartridge, substantially as and for the purpose specified.

255,154. CAR-COUPLING. WALTER H. FARRA, WILLIAM J. CLANAHAN, and JOHN BILLER, Mount Jackson, Va. Filed Jan. 26, 1882. (Model.)



Claim.—As an improvement in car-couplings, the draw-head A, having neck B, openings C, recess F, cap-plate G, recess J, lugs M, pivoted latch K, and transverse beveled or hook-shaped ridge O, in combination with the pin D, having flange E, all constructed and operating as set forth.

255,155. PLOW. FERDINAND FRESER, Milwaukee, Wis. Filed Nov. 22, 1881. (No model.)



Claim.—1. The yoke F and sleeve I, in combination with the draft-chains H H, and the axle X, provided with the perforations *n*, the said chains being rigidly attached at one end in perforations in the outer ends of the yoke F, and adjustably attached at their other ends in any two of the perforations *n*, as desired.

2. The beam A, having open head L, in combination with cross-piece N, having yoke K, the standard B, having perforations *e e*, and a supporting device adapted to enter the perforations.

3. The head L, having an open horizontal extension in which is a threaded opening, in combination with cross-piece N, screw-bolt *d*, and standard B, as set forth.

4. The axle X, having uprights *g g*, perforated to receive the rock-bar T, in combination with standard B, adjustably secured thereon by means of square slot in lower end of said standard, and the wedge *s* and set-screw, as described.

255,156. MANUFACTURE OF SCISSORS. NICHOLAS FINCK, Elizabeth, N. J. Filed July 25, 1881. (No model.)



Claim.—1. The herein-described improved method of manufacturing scissors or shears, consisting in casting the handles of iron and rendering them malleable, preparing the steel blades in the usual manner, welding the steel blades to the malleable-iron handles by hammers or dies acting upon the parts that are welded together, and then subjecting each handle and blade when cold to a powerful pressure between dies that act upon the malleable-iron portion to consolidate the metal, smooth the surface, and remove any imperfections in the shape, substantially as set forth.

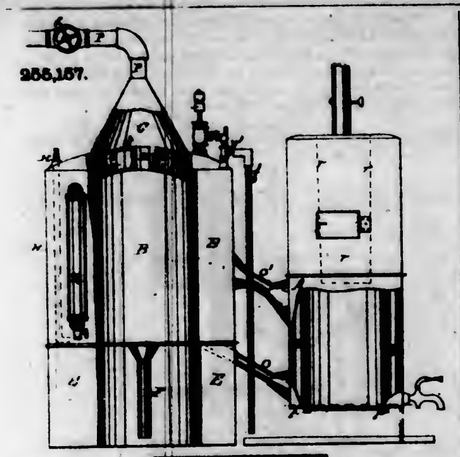
2. The dies A and B, having recesses corresponding to the shear or scissor handle and blade, in combination with the pins *b*, placed around the edges of the recessed portion of one die to guide the handle of the shear into the recess, the other die having openings for the said pins to pass into, substantially as set forth.

255,157. STEAMER. JACOB FOUSE, Lancaster, Pa. Filed Dec. 29, 1881. (No model.)

Claim.—1. The water-check D, having a perforated top and valves *v*, in combination with a boiler, B, and dome C, substantially as and for the purpose specified.

2. In a steamer, the combination of the boiler B, annular base E, and the expansion-foot F, as and for the purpose set forth.

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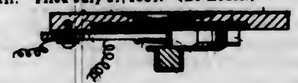
255,158. ELECTRIC TELEPHONE. JAMES P. FREEMAN, Chicago, Ill. Filed Sept. 24, 1881. (No model.)



Claim.—1. The combination, substantially as before set forth, of the diaphragm, the two electrodes, the mainspring for forcing one electrode against the other and the latter against the diaphragm, and the compensating-springs for modifying the action of the mainspring.

2. The combination, substantially as before set forth, of the diaphragm, the electrodes, two pivoted arms supporting the electrodes, the mainspring acting on both said arms for forcing one electrode against the other and the latter against the diaphragm, and a compensating-spring for each arm for modifying the action of the mainspring.

255,159. ELECTRIC TELEPHONE. JAMES P. FREEMAN, Chicago, Ill. Filed July 21, 1881. (No model.)



Claim.—1. The combination, substantially as before set forth, of the diaphragm, the fixed permanent magnet, the flat oscillatory keeper in constant contact with said magnet, and the electrode carried by the keeper and held in contact with the diaphragm solely by magnetic attraction exerted on the flat side of the keeper.

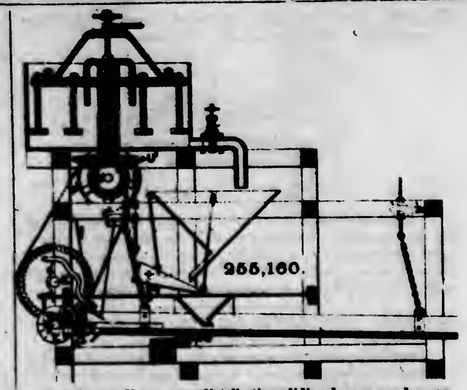
2. The combination, substantially as before set forth, of the diaphragm, the fixed permanent magnet, the flat oscillatory keeper in constant contact with said magnet, the electrode carried by the keeper and held in contact with the diaphragm solely by magnetic attraction exerted on the flat side of the keeper, and the fixed electrode.

3. The combination, substantially as before set forth, of the diaphragm, the electrode operated thereby, and the oscillatory keeper of a permanent magnet carrying said electrode, the fixed electrode, the cross-bar supporting said fixed electrode, and the elastic cushions interposed between the cross-bar and the door or side to which the cross-bar is secured by screws.

255,160. ORE CONCENTRATOR AND SEPARATOR. JOHN GARVIN, Philadelphia, Pa., assignor to William H. Myers, same place. Filed Sept. 28, 1880. (No model.)

Claim.—1. In an ore concentrator and separator, the combination of a laterally and horizontally oscillated spreading-pan, a sliding distributing-hopper, and a longitudinally-oscillating trough, substantially as described.

2. In an ore concentrator and separator, the combination of a mixing-trough, a receiving-hopper, a horizontally and laterally



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oscillated spreading-pan, a distributing sliding hopper, and an oscillating trough or tray, substantially as described.

3. The combination, with an oscillating trough or tray, of hanging and swinging flexible supports adjustable vertically and horizontally, substantially as set forth.

4. The combination, in an ore concentrator and separator, of an oscillating trough or tray provided with horizontally-adjustable supports, of an abutment and an adjustable cam, substantially as set forth.

5. The combination, in an ore-separator, of an oscillating trough or tray provided with hanging and swinging flexible supports, and of stops adjustable vertically and horizontally, substantially as described.

255,161. SKATE. SAMUEL C. SAULT, Cincinnati, Ohio. Filed Aug. 22, 1881. (No model.)



Claim.—1. In a skate, the combination, with the foot-plate A of a pair of double runners, E E and F E, connected to said plate by a universal-joint connection which has its vertical movement limited by an interposed spring, substantially as and for the purposes set forth.

2. In a skate, the combination, with the foot-plate A, of a pair of double runners connected to said plate by a universal joint which has its vertical and horizontal movements in planes inclined to the plane of said runners and has its vertical movement limited by an interposed spring, substantially as shown.

3. In a skate, a joint for connecting the runners to the foot-plate, consisting of the clip D, with pin *b*, post B, with flared opening *b'*, rubber block C, plates *c' c'*, and set-screws *c c*, substantially as shown.

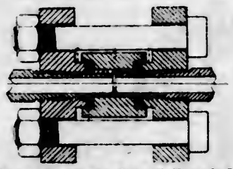
4. A skate having a pair of runners, one under the heel and the other under the ball of the foot, and each composed of two blades lying parallel with each other.

255,162. FAUCET. JOHN GIBLOW, Chicago, Ill. Filed Mar. 21, 1881. (No model.)



Claim.—The faucet-casing A, constructed at one side with the laterally-projecting closed chamber E, having its wall provided with a stuffing-box, G, in combination with the spring-impelled plunger C, formed with the recess *b* in one of its sides, and the lifter F, consisting of a stem extending transversely through the said stuffing-box and through the lateral chamber at one side of the plunger, and having the lateral projection *f* extending into the side recess in the plunger, all substantially as described and shown.

255,163. PIPE-COUPLING. THEODORE J. GOLDSCHMIDT, Philadelphia, Pa. Filed Dec. 6, 1880. (No model.)



Claim.—The combination, substantially as before set forth, of the cross-sectionally circular pipe ends, the flanges or plates secured thereto and having projecting collars concentric therewith, the loose socket snugly fitting and concentric with the pipe ends as well as the collars of the flanges, and the packings.

255,164. PERMUTATION-PADLOCK. CHARLES F. GROUT, New York, N. Y. Filed May 16, 1881. (Model.)

Brief.—The invention consists in the combination of an outer and inner ring, each having in it an opening or notch, and the inner ring having a toothed periphery and a nut surrounding the inner ring and engaging the toothed periphery thereof for operating it within the outer ring.



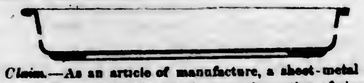
Claim.—1. The combination of an outer and an inner ring, each having in it a notch or opening, and the inner ring having a toothed periphery and a nut surrounding the inner ring and engaging with the toothed periphery thereof for turning or moving it within the outer ring, substantially as and for the purpose specified.

2. The combination of the outer ring, A, having the notch or opening *a* and the notch *c*, the inner ring, B, having the notch or opening *b* and a toothed periphery, the nut C, fitting in said notch *c*, and the crescent-shaped block *d*, for retaining it therein, substantially as specified.

3. The combination, with the outer and inner rings, each having a notch or opening and means for turning or moving the inner ring within the outer ring, of two or more permutation locking-rings engaging with said inner ring, substantially as and for the purpose specified.

4. The combination of the outer ring, A, having a notch or opening, *a*, and notches *f*, the inner ring, B, having a notch or opening, *b*, and notches *g*, means for turning or moving said inner ring within said outer ring, and the permutation locking-rings D, each having a rib or flange, *e*, in which is a notch, *d*, all substantially as specified.

255,165. SHEET-METAL VESSEL. JOSEPH HALL, Cheboygan, Mich. Filed Dec. 14, 1881. (No model.)



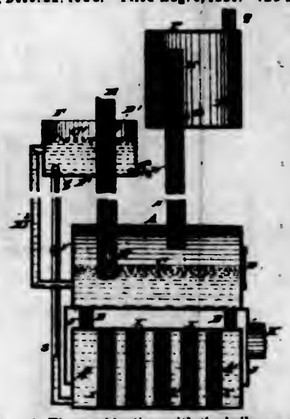
Claim.—As an article of manufacture, a sheet-metal vessel of iron or other metal subject to the corrosive action of air or liquids, having around its upper portions a ring of zinc held in position by bending over it the upper edge of the body of the vessel and upon its lower surface a ring of zinc covered and held in position by a plate of sheet metal soldered to the vessel, all substantially as shown and described, and for the purpose set forth.

255,166. HANDLE-FASTENER. ROBERT W. HARRIS, Albany, N. Y. Filed Nov. 3, 1881. (No model.)



Claim.—A handle-fastener consisting of the notched handle adapted to be inserted through the eye and to project therefrom at the outer side, the locking wedge piece or pieces *f*, fitted thereto, in combination with the flaring eye of the tool, whereby when the parts are all in place the centrifugal force is made to wedge the tool upon its handle, substantially as described.

255,167. STEAM HEATING APPARATUS. MARVIN P. HATHAWAY, Decorah, Iowa. Filed Aug. 6, 1881. (No model.)



Claim.—1. The combination, with the boiler or steam-generator A' A, having steam-pipe H, of the vertical open tube or pipe E, having aperture D', and open overflow-receptacle F, arranged and combined to operate in the manner and for the purpose shown and set forth.

2. The herein-described steam-generator for heating purposes, composed of the boiler A A', connecting-pipes B B, jacket J, flues I I and K, steam-outlet H, and vertical overflow-pipe E, having aperture D' and open overflow-receptacle F, the whole constructed and arranged as shown, for the purpose set forth.

3. The combination, with the steam-generator A A' and its steam-pipe H, having aperture R, and steam-drum P, provided with the steam-outlet Q, of the vertical overflow-pipe E, having aperture D', open receptacle F, having faucet W, and pipes E' and S, the latter provided with stop-cock V, the whole constructed and combined to operate substantially as and for the purpose herein shown and specified.

255,168. MANUFACTURE OF PAPER PLAQUES. GEORGE P. HULTMAN, Boston, Mass., assignor to Louis Prang, same place. Filed Nov. 21, 1881. (No model.)



Claim.—1. As a new or improved article of manufacture, a plaque having a body consisting of paper or pasteboard, and a re-enforcing plate of metal, arranged therein and completely covered thereby, and both rendered concavo-convex simultaneously between and by dies, as set forth.

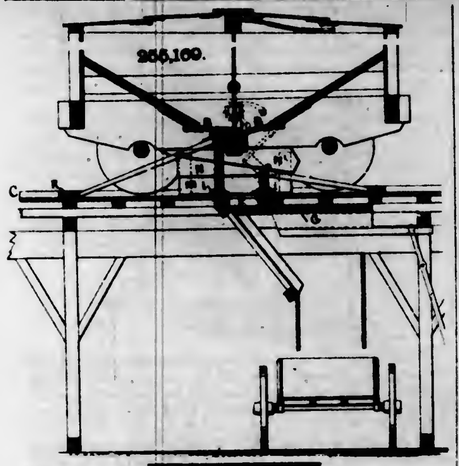
2. As an improved article of manufacture, a plaque composed of layers of paper or pasteboard and a foraminous or perforated metallic plate or meshed re-enforce, arranged as described, and rendered simultaneously concavo-convex and smoothed by means of dies, as set forth.

255,169. APPARATUS FOR DELIVERING COAL FROM CARS. LEVI HUTFIELD, Plainfield, N. J. Filed Dec. 31, 1881. (No model.)

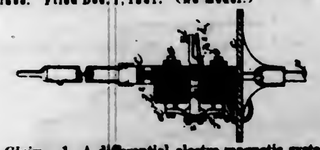
Claim.—1. The combination, with an elevated railway-track, a flooring between the rails of the track, and a suitable screen or chute arranged under the track to deliver coal from the flooring into the wagons or other receptacles beneath, of removable side boards, J J', and end boards, M N N', adapted to inclose the space about the opening into the chute between the flooring and the bottom of the car standing upon the track, substantially in the manner and for the purpose herein set forth.

2. The combination, with each other and with an elevated railway-track, a flooring laid between the rails of said track, a coal-chute beneath said flooring, and an inclosure about the mouth of said chute above the flooring, of one or more gates or slides, G, adapted to control the opening into the chute, substantially as and for the purpose herein set forth.

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255,170. ELECTRIC LAMP. ALPHEO G. HOLCOMBE, New York, N. Y., assignor to the Standard Electric Light Company, same place. Filed Dec. 1, 1881. (No model.)



Claim.—1. A differential electro-magnetic system composed of a horseshoe-magnet having coarse-wire helices and a horseshoe magnet having fine-wire helices, the cores of the two magnets being joined together by pole-pieces, in combination with an armature adapted to move in front of the pole-pieces from one magnet to the other, substantially as set forth.

2. In combination, the differential electro-magnetic system *a*, *a'*, *a²*, *b*, *d*, *d'* *d²*, *e*, *f*, and *f'*, lever *h*, armature *i*, carbon-rod *j*, and a clamping device, substantially as described, connecting the lever *h* and carbon-rod *j*, as and for the purpose set forth.

3. The coarse-wire electro-magnets *a b*, the fine-wire electro-magnets *d d e*, and connecting pole-pieces *f* and *f'*, in combination with the armature *i* and rocking lever *h*, substantially as set forth.

4. The rocking lever *h*, having a rounded surface at its end, in combination with the armature *i*, connected to said rounded surface by means of screws, substantially as and for the purpose set forth.

255,171. ELECTRIC LAMP. ALPHEO G. HOLCOMBE and LEVI H. COLBURN, New York, N. Y., assignors to the Standard Electric Light Company, same place. Filed Dec. 1, 1881. (No model.)



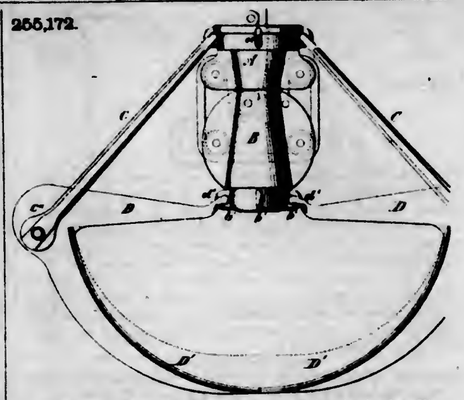
Claim.—1. In a clamping and feeding device for electric lamps, a rocking frame or lever provided with a supporting-edge, upon which rests the tail-piece of a ring-clamp embracing the carbon-holding rod, and a contact-point located on the frame or lever, so as to come in contact with the end of the tail-piece of the clamp, for releasing the carbon-rod held by the clamp, in combination, as hereinbefore set forth.

2. In combination, the frame or lever *g'*, provided with the supporting-edge *g* and adjustable screw *h*, the clamp composed of ring *f* and tail-piece *f'*, the carbon-rod *e*, and an electro-magnetic actuating device, by means of which the frame or lever *g'* is caused to rock on its bearings, substantially as set forth.

3. The lower-carbon-holding socket *l*, provided with the flange *r*, the set-screw *m*, and flange or washer *m'*, and the lower bar, *o*, having a large hole, through which the set-screw passes, in combination, substantially as set forth.

255,172. AUTOMATIC GRAPPLING-BUCKET. FRANK G. JOHNSON, Brooklyn, N. Y. Filed Aug. 15, 1881. (No model.)

255,172.

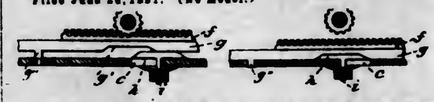


Claim.—1. In connection with the semi-globular bucket, Fig. 1, the sheave-blocks A and B, consisting of single pieces and having the form of a frustum of a cone, substantially in the manner and for the purposes set forth.

2. In connection with the semi-globular bucket, Fig. 1, the staple and eye joints consisting of the staples *b' b' b'* and the eyes *d' d' d'* and key-bolts *e e*, substantially in the manner and for the purposes described.

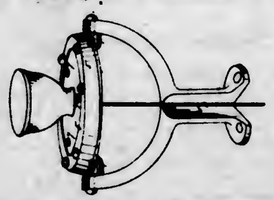
3. In connection with the semi-globular bucket, Fig. 1, the staple and eye joints *b' b' b'* and *d' d' d'*, as described, in combination with the conical sheave-blocks A and B and carrying-arms D D, substantially as and for the purpose set forth.

255,173. LATHE-CHUCK. SAMUEL J. KIRK, Windsor Locks, Conn., assignor to the E. Horton & Son Company, same place. Filed June 28, 1881. (No model.)



Claim.—In a chuck of the character hereinbefore described, the combination of the annular gear *f*, adjusting-ring *g*, provided with cam-mortises *g'* and guide-pins *g''*, chuck-body half *b*, having slots *c*, and cams *h*, provided with operating-pins *i*, all substantially as set forth.

255,174. ACOUSTIC TELEPHONE. JAMES A. LAKIN, Westfield, Mass. Filed May 2, 1881. (No model.)



Claim.—1. The combination of a bracket adapted to be secured in a permanent position upon a table or wall, and terminating in two supporting-arms, one opposite the other, and a telephone suspended between said arms upon pivots secured thereto, so as to tilt to any desired inclination therein, substantially as described.

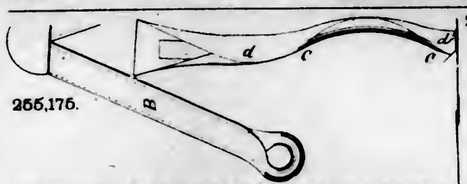
2. The combination, in a telephone, of the diaphragm and the front disk or cover supporting the mouth-piece, and provided with sound-apertures through said front disk for the diffusion of the sound from the sound-chamber, substantially as described.

3. The combination of the diaphragms of two telephones and a series of sound-conducting wires intertwined or braided together, and connecting said diaphragms by suitable means of attachment of said wires thereto, substantially as described.

255,175. SUSPENDER-END. JOSEPH LAUFFERTY, New York, N. Y. Filed Aug. 30, 1881. (No model.)

Claim.—1. The method hereinbefore more fully described and set forth of making suspender-ends for suspenders, which consists in taking a rectangular-shaped piece of leather or other suit

255,176.



able material, as described, and folding one side over on the other, and then pasting them together, then in bending said piece of leather at or near the center, so as to form the part indicated by *c c*, and, lastly, in laying the parts *d* and *d'* of said piece of leather on top of each other and sewing them, so that in the operation the part *c c* shall form the button-loop of the suspender-end.

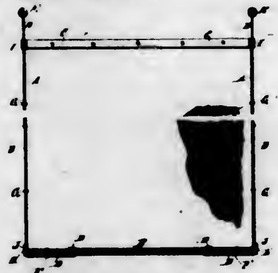
2. The suspender-end B, composed of one continuous piece of leather or other material, arranged as described, having at either end the parts indicated by *d* and *d'* and in the middle the arc-shaped portion *c c*, adjusted and arranged in the manner described, and for the purposes set forth.

255,176. PREPARATION OF YEAST. SAMUEL LEVY, Denver, Colo. Filed June 9, 1881. (Specimens.)

Brief.—Ferments a mixture of rye, corn, and malt with ten pounds of starch per bushel by addition of water and yeast. When this becomes exhausted restores with a mixture of rye and malt in water at 150° Fahrenheit, which is cooled to the same temperature as the wort before addition. The yeast produced can be compressed and dried without farinaceous additions.

Claim.—The process of preparing compressed yeast, consisting in mixing starch with a mash of rye, corn, and malt in a fermenting-tub, adding from time to time to the mixture as the fermentation grows weak a warm mixture of rye and malt, skimming the yeast from the surface as it rises, settling it in water, and then drying it, making the process continuous, substantially as set forth.

255,177. BASKET, &c. GEORGE S. LONG, Hartford, Conn., assignor, by mesne assignments, to P. J. Darcy, same place. Filed Nov. 27, 1880. (No model.)



Claim.—1. The vessel described, having a seamless body of woven material with a warp of wire extending up and down and a filling of fiber extending around horizontally, as herein specified.

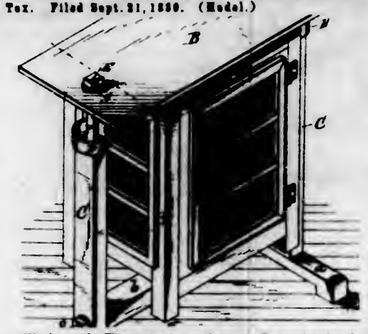
2. In a vessel composed of woven material with the warp of wire extending up and down and the filling of fiber extending horizontally, the bottom B, of wood or analogous rigid material, hoops C I J, and stout wires D, with suitable fastenings F G H, combined and arranged to serve as herein specified.

255,178. MACHINE FOR CRIMPING SEAMLESS BOOTS AND SHOES. THOS. T. MARSHALL, Jarvis, Ontario, Canada. Filed Nov. 10, 1881. (No model.)



Claim.—In a crimping-machine for crimping the uppers of boots or shoes wherein the upper consists of a single piece, the halved block A, having recess B, in combination with last-block C, press-screw F, frame G, screw-bolts E E, and screw J, substantially as described.

255,179. SUSPENDED SAFE, &c. SANFORD MASON, Galveston, Tex. Filed Sept. 21, 1880. (Model.)



Claim.—1. The safe A, having top B, projecting beyond its sides, as shown, in combination with the upright posts C, having liquid-cups D, the rods E, and sleeves F, for suspending the safe from contact with any object, substantially as and for the purpose set forth.

2. The safe A, having top B, extending beyond its sides, in combination with the liquid-cups D, rods E, sleeves F, packing-rings *d*, and washers *e*, as a means of connecting the projecting ends of the top B to the upright posts C, substantially as and for the purpose set forth.

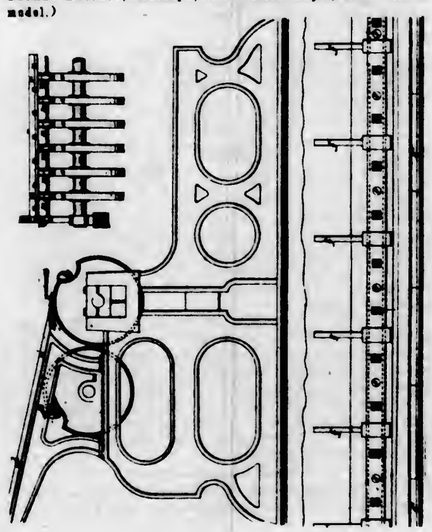
255,180. ELASTIC STOCKING. DAVID D. M. MASTEN, Flushing, N. Y. Filed Feb. 4, 1882. (No model.)



Claim.—1. An elastic stocking provided on each side with a series of loops or straps, C, substantially as and for the purpose set forth.

2. An elastic stocking provided on each side with longitudinal, flexible, but non-elastic stays, in combination with loops or straps attached to said stays, as set forth.

255,181. GRIPER ATTACHMENT FOR PRINTING-PRESSES. THOMAS MCILROY, Brooklyn, N. Y. Filed May 2, 1881. (No model.)



Claim.—1. The combination, with the impression-cylinder and its gripers, of a hinged feed-board, adjustable fingers, a bar carrying the same, and an indicator at the under side of each feed-board to denote the positions of the gripers, substantially as set forth.

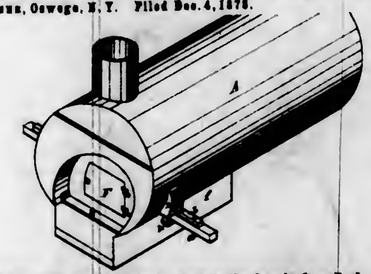
2. The combination, in a printing press, of the impression-cylinder and gripers, a delivery-cylinder and gripers, and an indicator having marks that denote the positions of the gripers on the impression-cylinder, substantially as set forth, whereby the gripers of the delivery-cylinder can be placed so as to avoid contact with the gripers on the impression-cylinder, substantially as specified.

255,182. WRENCH. MILTON H. MCNAIR, Meadville, Pa. Filed Aug. 24, 1880. (No model.)



Claim.—The combination and arrangement of lever A with recess G and casing B, spring C, lever D, guide E, button F, and serrated-faced cam H, forming with recess G the knuckle-joint 4, as and for the purpose set forth.

255,183. PORTABLE STEAM-BOILER. WILLIAM R. MICHENER, Oswego, N. Y. Filed Dec. 4, 1876.



Claim.—1. The improved steam-boiler herein described, consisting of the outer or main shell, A, of segmental form in cross-section, the inner segmental shell, B, of smaller diameter, united at its bottom edges with those of the main shell, and the independent flat bottom plate, C, secured to the edges of one of the segmental shells aforesaid and constituting the bottom of the main fire-flue, substantially as described.

2. The combination, with the bottom plate, C, of the removable plate G, corrugated longitudinally and confined laterally between the sides of the flue B, substantially as described and shown.

3. The combination, with the crescent-shaped boiler and its main flue, formed of the segmental plates A and B and bottom plate, C, and having at the end the fire-grate and the subjacent ash-pan *f*, as described, of the plate H, extended across the front of the latter and attached to the bottom edges of the boiler-shell, substantially as and for the purpose set forth.

4. The combination, with the segmental boiler-shell A, of the cheek-pieces I, secured to the exterior thereof and resting on the axle *a*, and the block L, attached to the latter and abutting against the cheek-pieces aforesaid, substantially as described, for the purpose set forth.

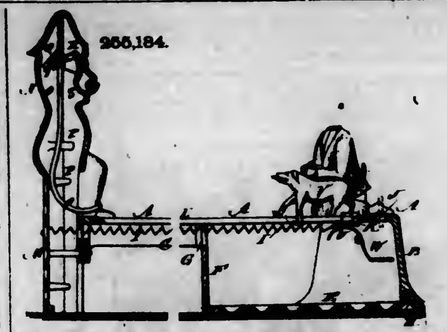
5. The combination, with the segmental boiler-shell A, of the cheek-pieces I, secured to the exterior thereof and having pendent bolts engaging a clip-bar, *k*, on the under side of the axle *a*, and the blocks L, attached to the top of the latter, substantially in the manner described and shown, for the purpose set forth.

255,184. TOY BANK. JOHN MURRAY, New York, N. Y. Filed Aug. 26, 1881. (No model.)

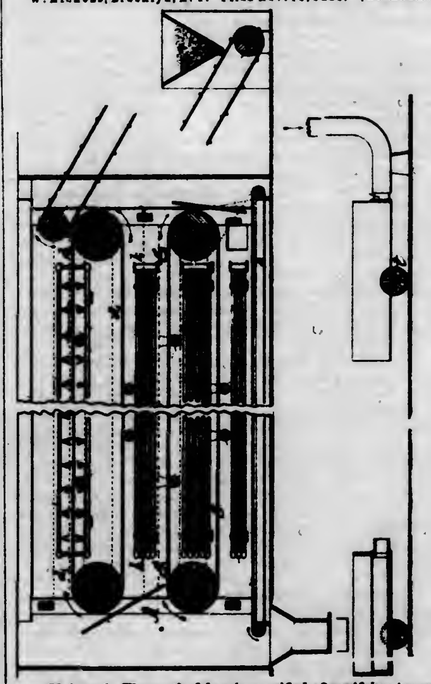
Claim.—1. A toy savings-bank constructed, substantially as herein shown and described, of a slotted platform, A, having a figure, X, of a man and a money-receiving compartment at its rear end and the figure of a hen-coop, M, and a man, N, at its other end, and carrying the figure V of a dog, connected with it by a slide, U, and spiral spring I, the trip-bar O, the pivoted eccentric block R, and the trip-lever W, as set forth.

2. In a toy savings-bank, the combination, with the slotted platform A and the figures M N of a hen-coop and of a man sitting upon the hen-coop, of the figure V of a dog connected with the platform A by a slide, U, and spring I, the trip-bar O, the eccentric block R, and the trip-lever W, substantially as herein shown and described, whereby the weight of a coin dropped upon the said trip-lever will release the dog and the forward movement of the dog will cause the figure of the man to roll his eyes and draw in his tongue, and will project chicken-heads from his hat, as set forth.

255,184.



255,185. METHOD OF PURIFYING AND DRYING TEA. ISAAC W. NICHOLS, Brooklyn, N. Y. Filed Nov. 16, 1881. (No model.)



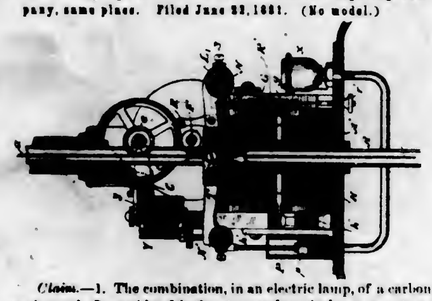
Claim.—1. The method herein specified of purifying tea and similar materials, consisting in bringing steam into direct contact with such material while spread in a thin layer upon a moving apron, the steam being blown down upon the material as well as passing up through the apron, and then drying the same, and driving off volatile impurities by the action of heat, substantially as set forth.

2. The method herein specified of purifying, agitating, and drying tea and similar material, consisting in spreading the material on a moving apron, carrying the same into contact with jets of steam blown down upon the material, passing the material from one apron to another, and exposing the same to the action of heat for drying the same, substantially as set forth.

3. The method herein specified of purifying, drying, and cool-

ing tea and similar materials, consisting in exposing a thin layer to the direct action of steam blown down upon the material, then to the action of heat, and then to the action of cool atmospheric air, substantially as set forth.

255,186. ELECTRIC LAMP. JOSEPH OLMSTED, New York, N. Y., assignee to the United States Electric Lighting Company, same place. Filed June 22, 1881. (No model.)



Claim.—1. The combination, in an electric lamp, of a carbon-carrier, a shaft capable of both rotary and vertical movement, and carrying one or more brake-wheels whose rotation is made to depend upon the movement of the carrier, an electro-magnet and pivoted armature for controlling the vertical movement of the said brake-wheels, and one or more friction-wheels placed in a position to intercept the downward movement of the brake-wheels at a predetermined point and release them from engagement with the armature, as and for the purpose set forth.

2. The combination, in an electric lamp, with a pinion-shaft or its equivalent connected with the carbon-carrier, and capable of both rotary and vertical motion, of a second shaft capable of a retarded rotary motion only, and an electro-magnet having an armature arranged to raise and lower the pinion-shaft, so as to prevent the rotation of the same when raised, but to permit it to revolve when lowered into engagement with suitable friction-wheels on the second shaft, as and for the purpose described.

3. In an electric lamp, the combination of a carbon-carrier, one or more brake-wheels carried by a swinging frame and connected with the carbon-carrier, so as to be revolved by the movement thereof, an electro-magnet and an armature adapted to control the vertical movement of the said brake-wheels, and rotary retarding devices placed in such position with reference to the brake-wheels that the latter when brought by the movement of the armature into contact therewith will be freed from engagement with the said armature and allowed to slowly revolve for a sufficient length of time to effect the necessary feeding together of the carbons, as described.

4. In an electric lamp, the combination, with a pivoted armature and the feed mechanism connected therewith, of an electro-magnet the cores of which form a U having its ends bent back upon themselves and wound with coarse wire included in the main circuit, the portions of the cores adjacent to the connecting-bar or neutral point being wound with fine wire in a shunt about the lamp, and exerting an opposite magnetic effect to that produced by the main coils, as and for the purpose set forth.

5. The combination, with an electro-magnet composed of cores G G′ and H H′, magnetically connected in pairs, as described, of an armature-bar and armatures N N′, the bar being pivoted at or near a point midway of the length of the main cores G G′, so that the attraction of both poles of the said cores may be utilized, as set forth.

6. The combination, with the armature-bar T, of a dash-pot composed of two chambers, I′ and *x*, the interior spaces within which are filled with oil or a similar heavy fluid and connected by means of a narrow duct or opening, as described.

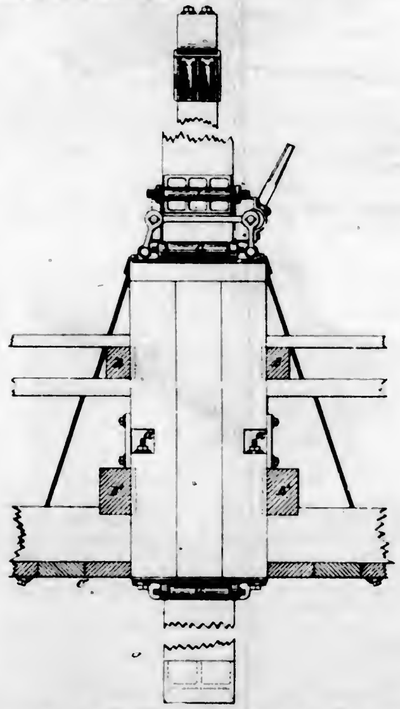
7. In an electric lamp, the combination of a carbon-carrier, a shaft carrying a pinion or its equivalent engaging therewith, electro-magnetic detent mechanism controlling the revolution of the shaft, an armature connected with the pinion or its shaft, and an electro-magnet included in a normally-open shunt-circuit about the lamp and operating by its attraction for the armature on the closing of the said circuit to release the pinion from engagement with the detent mechanism and allow the carbon-carrier to fall, as and for the purpose set forth.

8. In an electric lamp, the combination of a carbon-carrier, one or more brake-wheels carried by a swinging frame and connected with the carbon-carrier, so as to be revolved by the movement thereof, electro-magnetic detent mechanism for maintaining the movement of the brake-wheels proportionate to the consumption of the carbons, and an electro-magnet in a normally-open shunt or derived circuit about the lamp operating on the closing of said circuit to raise the brake-wheels out of engagement with the detent mechanism by its attraction for an armature attached to the swinging frame, substantially as and for the purpose set forth.

9. The combination of pinion-shaft E, carried by a swinging frame, wheels B B, and a shaft, F, journaled in fixed or adjustable bearings and provided with rotary retarding devices, with an electro-magnet and armature-bar, T, having a projecting arm, K, for raising or lowering the shaft E, as and for the purpose set forth.

255,187. SPUD-FIXTURE. RALPH R. OSGOOD, Troy, assignor to Osgood & MacNaughton, Albany, N. Y. Filed Dec. 12, 1881. (No model.)

Brief.—Each end of the spud-well is protected by a cap carrying friction-rollers, which bear against the spud, the top cap also having clamp devices to secure the spud and an automatically-acting lever for elevating the spud.



Claim.—1. In combination with the spud-well constructed substantially as described, the bottom casting secured thereon and carrying the friction-rollers for bearing against the sides of the spud-post, substantially as and for the purposes set forth.

2. In combination with the spud-well constructed substantially as described, the top casting or cap mounted thereon and carrying the friction-rollers for bearing against the sides of the spud-post, substantially as and for the purposes set forth.

3. In combination with the removable flanged cap secured upon the spud-well timbers and carrying the friction-rollers, the two-part clutch mechanism mounted upon said cap, and constructed and arranged to operate in connection with the spud, substantially as shown and described.

4. In combination with the spud-well, the top and bottom castings, each carrying friction-rollers for bearing against the faces of the spud-post, the parts being mounted and arranged substantially as set forth.

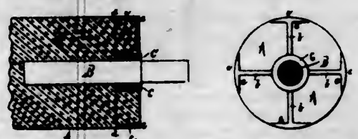
5. The combination of the cap-piece carrying the friction-roller, the spud-well timbers, and the inclined stay-rods, all united and secured substantially as shown.

6. The combination of the cap-piece for the spud-well, flanged as explained, the friction-rollers journaled thereon, the two-part friction-clutch mechanism, the links uniting the clutch with the cap-piece, and the eyebolts connecting two parts of the clutch, substantially as shown and described.

7. The spud-well timbers projecting above the deck and secured at top by a cap having a depending flange, which cap carries the friction-rollers and the holding-clutch mechanism, substantially as and for the purposes set forth.

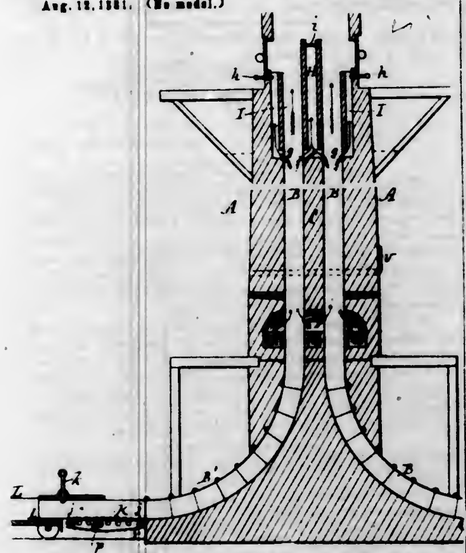
8. In combination with a spud-post, an automatic hoisting-clamp composed of two parts, one part carrying one or more pulleys for the application of the hoisting chain or cable and both parts united by suitable links or side bars, substantially as shown and described.

255,188. COMBINED FERRULE AND GUDGEON FOR WOODEN ROLLERS. JOHN LLOYD OWENS, Minneapolis, Minn. Filed Dec. 27, 1881. (No model.)



Claim.—The central collar, C, arms *b*, T-heads *c*, and gudgeon B, separately or in one piece therewith, in combination with a wooden roller, A, substantially as and for the purpose set forth.

255,189. BRICK-KILN. CLARK D. PAGE, Rochester, N. Y., assignor of one-half to De Witt C. Ellis, same place. Filed Aug. 12, 1881. (No model.)



Claim.—1. In a brick-kiln, the combination, with the two cupolas B B, of the four furnaces D D D D, arranged on opposite sides, two of said furnaces being located centrally opposite each other, communicating with an arch, E, which feeds the heated air to the inner sides of the cupolas, and two being located one side the center and communicating with arches F F, which feed the heated air to the outer sides of the cupolas, as herein shown and described.

2. In a brick-kiln, the combination, with the two cupolas B B, of the flue H, arranged centrally between the two cupolas, and the two side flues, I I, arranged outside the cupolas, said flues having ports or passages *f f f* at the bottom communicating with the cupolas and provided with the valves *h h i*, for controlling the draft through said flues, as herein shown and described.

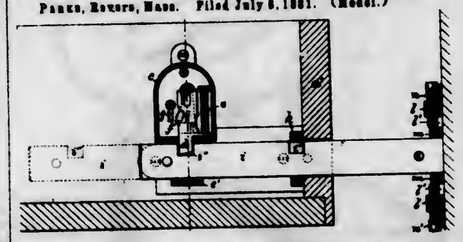
3. In a brick-kiln, the apron K, composed of cross-slats connected with endless chains at their ends, and provided with the longitudinal serrations or notches *w w*, as shown and described, and for the purpose specified.

4. The combination, with the endless apron provided with serrated cross-slats, of the cam *p*, resting under the upper length of the apron and serving as a brake, as herein shown and described.

5. In a brick-kiln, the combination of the car L, provided with the hooks *e*, and the pivoted arms M M, having hook ends *t t*, engaging with the hooks *e*, as herein shown and described.

6. In a brick-kiln, the combination, with the chute B′, provided with a valve, *k*, closing its passage, of a car, L, open at its inner end and telescoping or passing under and outside the end of the chute when in position to receive the load, as herein shown and described.

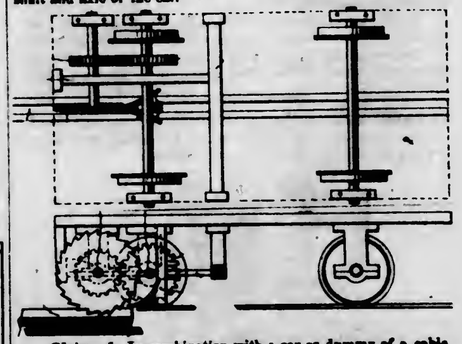
255,190. LOCKING-BOLT FOR SHIPS' BERTHS. GEORGE A. PARKS, Revere, Mass. Filed July 6, 1881. (Model.)



Claim.—In combination, the lock *c*, its spring-bolt *d*, the adjustable notched locking-bar *i i′ i″*, the striker-plate *l*, its adjustable striker *m*, and regulating-screws *n n*, as and for the purpose described.

255,191. MEANS OF CLEARING SLOTS OF WIRE-ROPE RAILWAYS. JOHN POWERS, San Francisco, Cal. Filed Aug. 19, 1881. (No model.)

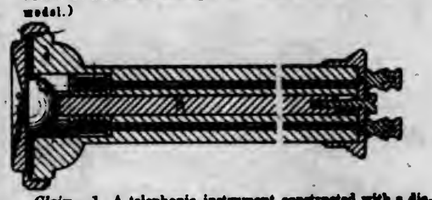
Brief.—A supplemental shaft is secured to a car or dummy, and is provided with a toothed wheel operating in the slot of a cable-railway, the whole being operated by spur-gearings upon the shaft and axle of the car.



Claim.—1. In combination with a car or dummy of a cable or wire-rope railway, the toothed or bladed wheel operating in the slot or groove in said railway upon a spindle, shaft, or mandrel, and connected in any suitable manner with the driving or propelling gear of said dummy or car, arranged and operating substantially in the manner as herein set forth and specified.

2. The combination and arrangement of a spindle or shaft having a toothed wheel or cutting and breaking edge upon its inner end, adapted to rotate or move in the slot of a cable-railway, with the driving-axle of a car or dummy, to which it is geared, and operating in a reverse manner from that of the tread of the wheels of said dummy or car, for the purpose substantially as specified.

255,192. ELECTRIC TELEPHONE. THEAT T. PROCTOR and JAMES P. FREEMAN, Chicago, Ill. Filed July 21, 1881. (No model.)

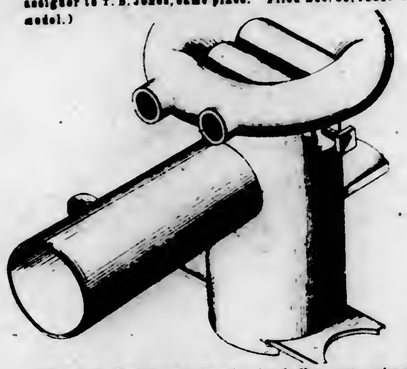


Claim.—1. A telephonic instrument constructed with a diaphragm the unsupported vibratory area of which is composed of a

flat annulus and a central hemispherical depression, substantially as before set forth.

2. The combination, substantially as before set forth, of the helix, the permanent magnet, and the diaphragm whose unsupported vibratory area is composed of a flat annulus and a hemispherical depression.

255,193. TUYERE. GEORGE W. RIGGS, Madisonville, Ky., assignor to T. B. Jones, same place. Filed Dec. 30, 1881. (No model.)

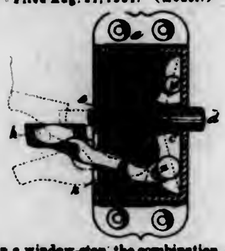


Claim.—1. In a tuyere, the circular hollow water-chamber formed with hollow transverse grate-bars connecting and opening therein, and pipe-connections, substantially as described.

2. In a tuyere, the circular hollow water-chamber formed with hollow transverse grate-bars, pipe-connecting means, and fastening-lugs, in combination with the chamber and tuyere-pipes, substantially as described.

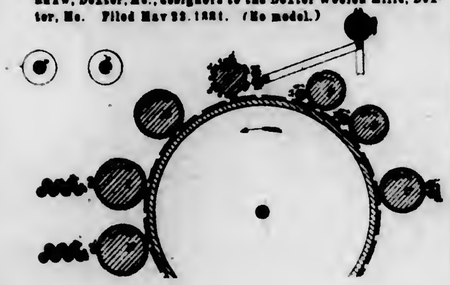
3. The tuyere herein described, consisting of the circular hollow water-chamber formed with connecting transverse grate-bars, the tuyere-pipe and chamber formed with the projecting piece, and the movable bottom, substantially as and for the purpose set forth.

255,194. SASH-FASTENER. HERBERT L. ROBERTSON, Brookfield, assignor of one-half to James B. Hankins, West Brookfield, Mass. Filed Aug. 31, 1881. (Model.)



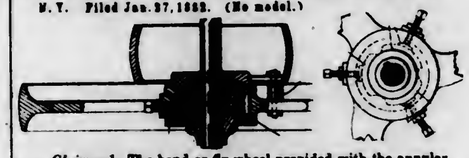
Claim.—In a window-stop, the combination, with case *a*, perforated to receive bolt *d*, and having the slot *a* therein, of the rocking lever *c*, provided with arm A, bolt *d*, having the cut *c* therein, in which said lever *c* engages, and spring *e*, substantially as set forth.

255,195. METHOD OF MANUFACTURING WOOLEN ROPING OR SLIVERS. RICHARD W. ROBINSON, Boston, Mass., and JOHN SHAW, Dexter, Me., assignors to the Dexter Woolen Mills, Dexter, Me. Filed May 23, 1881. (No model.)



Claim.—The mode, substantially as described, of making slivers composed of wool of one color and wool of a different color, such consisting in separating or dividing crosswise of it a lap or bat of wool of one color into sections or fillets, and laying them, with intervals between them, and crosswise, upon another or ground sheet or lap of wool of a different color, and subsequently separating the whole lengthwise of the said ground-lap into strips or slivers, all being substantially as explained.

255,196. SAND OR FLY WHEEL. ELMORE W. ROSE, Fulton, N. Y. Filed Jan. 27, 1882. (No model.)



Claim.—1. The band or fly wheel provided with the annular groove on the inner face of its hub, in combination with the friction-gibs moving radially in said groove and the set-screws for uniting the wheel to its shaft, said parts being arranged and operating substantially as described.

2. The band or fly wheel provided with the annularly-grooved hub, in combination with the radially-moving friction-gibs arranged therein, and provided with the bosses on their outer faces and the flat-ended set-screws for uniting said wheel to its shaft with a frictional grasp, said parts being arranged and operating substantially as described.

255,197. SLED. ASA S. RUSSELL, Ellisville, N. Y. Filed Jan. 19, 1882. (No model.)

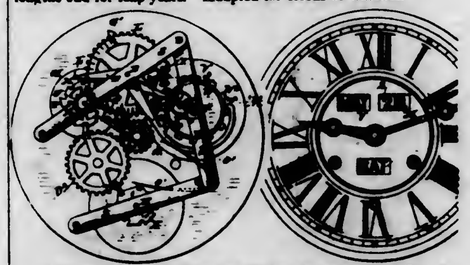


Claim.—1. A sled consisting of the combination of the board C with a frame, A, the latter consisting of a bar or bars bent to form runners B B, and having diagonal portions *g g*, extending close beneath the board, meeting each other, and inclined diagonal portions A A, extending from the point of intersection forward, outward, and downward to the runners, terminating thereon and fixed thereto, whereby a diagonal brace is formed to stiffen the runners, substantially as and in the manner set forth.

2. A sled consisting of the combination of a board, C, and two runners, B B, attached to the board at its opposite ends, and each runner prolonged beyond its rear point of attachment, extending thence diagonally close beneath the board, crossing the prolongation of the other runner, and descending thence diagonally forward and outward to the opposite runner, terminating thereon and fixed thereto, substantially as and for the purposes set forth.

255,198. TIME-PIECE CALENDAR. GEORGE ELMER SAFFORD, Geneva, N. Y. Filed July 14, 1881. (Model.)

Brief.—Indicates the hour and the day of the week and month, making the necessary corrections for months of different lengths and for leap years. Adapted for clocks or watches.



Claim.—1. In a time-piece calendar, the gage-wheel L and spring R, arranged to be wound upon the shaft of said wheel during the month or while the gage-wheel advances, and to react upon said wheel when released, in combination with mechanism for automatically releasing said wheel at the end of the calendar-month, as set forth.

2. In a time-piece calendar, the gage-wheel L, having arm G' and stopped flange H', substantially as set forth.

3. The combination of the units-wheel having projecting arm N with the tens-wheel P, having notches O, the toothed tens-disk Z, the regulator-wheel A', having crank B', the pitman D', and the spring S', all substantially as and for the purpose set forth.

4. The combination of the year-wheel having a notched rim, W, with the lever T, having spring K', the gage-wheel L, and the toothed wheel or units-wheel I, all substantially as shown, for the purpose specified.

5. The gage-wheel L, having arm G' and stopped flange H', in combination with the units-wheel I, the drive-wheel D', having arms E' F', and the week-wheel X, as herein described, for the purpose set forth.

6. In a calendar time-piece, the driving-wheel D', placed loosely upon one of the winding-posts, engaging the dial-wheel C', and having arms E' F', for simultaneously actuating the day-wheel and the unit-disk of the month-register, as herein shown and specified.

7. The combination of the year-wheel having rim W, provided with teeth W' and notches 28 30, the lever T, having spring K', and curved arm provided with hook M' and teeth N', and the gage-wheel L, having stopped flange H, substantially as set forth.

8. The combination of the units-wheel I, having teeth or ratchets J, the gage-wheel L, the lever T, having arm L', and the spring O', substantially as set forth.

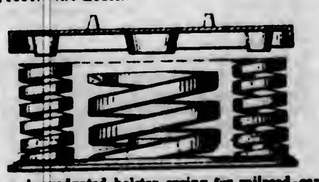
9. The combination of the year-wheel having notched rim W, the four-year wheel having projection R', the gage-wheel L, and the lever T, all arranged and operating substantially as and for the purpose herein shown and specified.

255,199. SPRING-BOLT. WILLIAM SCHENKEN, Denver, Colo. Filed Dec. 14, 1881. (No model.)



Claim.—A screw-bolt having longitudinal recesses D, lips F, and springs E, substantially as and for the purpose set forth.

255,200. CAR-SPRING. CHARLES T. SCHENK, Philadelphia, Pa., assignor of one-half to Charles Scott, same place. Filed Nov. 21, 1881. (No model.)



Claim.—A graduated bolster-spring for railroad-cars, composed of a group of spirally-coiled bars placed side by side, and in which the spiral or spirals having the greatest bearing and carrying capacity is not acted on by the load till after the other and weaker spirals of the group have been brought into action, and in which all the spirals under a given pressure shall become solid at the same time, all substantially as set forth.

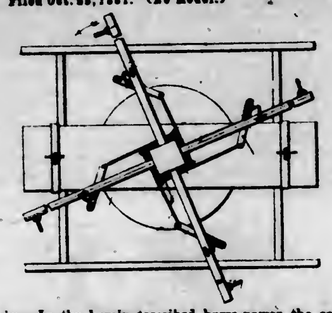
255,201. TAPING FURS. CONRAD SCHOENBURN, New York, N. Y. Filed Feb. 9, 1882. (Model.)



Claim.—1. The within-described method of taping furs, consisting in cutting the skin into narrow strips, applying the strips by an intermediate layer or sheet of caoutchouc or other adhesive material to a backing of a light textile fabric, next sewing the strips to the fabrics, and finally rubbing the entire piece to give it the required pliability, substantially as set forth.

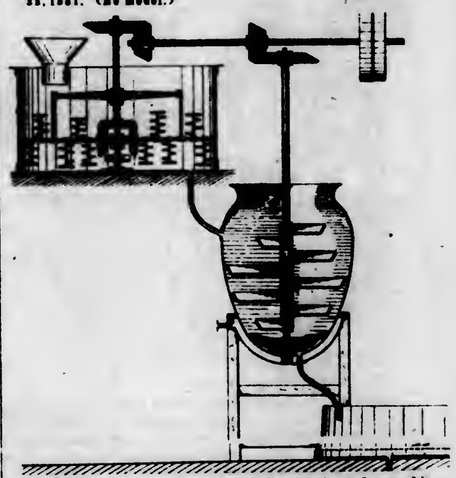
2. As a new article of manufacture, the within-described fur, consisting of narrow strips of fur which are cemented by an intermediate layer of caoutchouc or other adhesive material to a backing of light textile fabric, and secured thereto by sewing, substantially as specified.

255,202. HORSE-POWER. JOHN SCHWEIGER, Beaver Dam, Wis. Filed Oct. 28, 1881. (No model.)



Claim.—In the herein-described horse-power, the combination of the main shaft or post carrying the large pulley C, the removable sweeps or horse-levers, the metal plates passing through lateral slots in the sweeps and the wedges for securing them in adjusted position, the brace-rods connected to the metal plates, and the metal loops or eyes on the main shaft with which the hooked ends of the brace-rods engage, the whole being arranged and adapted for operation substantially in the manner described.

255,203. METHOD OF AND APPARATUS FOR MASHING MALT AND MALT SUBSTITUTES. GEORGE SEITZ, deceased; Mary C. Seitz, New York, N. Y., Administratrix. Filed July 22, 1881. (No model.)

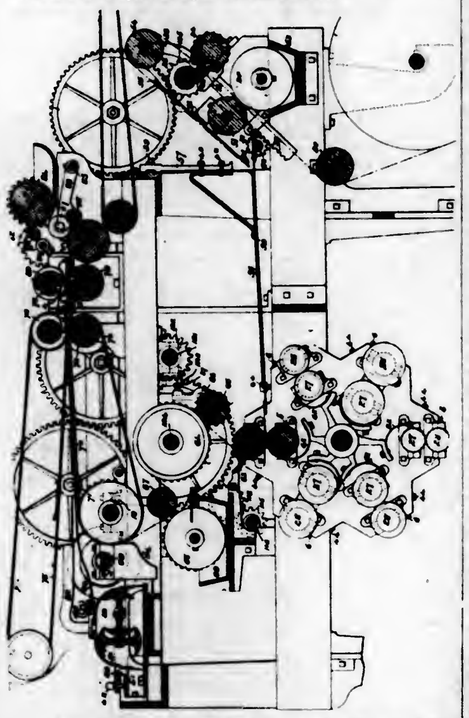


Claim.—1. As an improvement in apparatus for mashing malt or malt substitutes, the combination of a steam-jacketed saccharification-vessel having an interior stirring mechanism, an auxiliary mash-tun arranged above the level of the vessel, also provided with a stirring mechanism, a settling and drawing-off tun arranged below the level of the saccharification-vessel and provided with a perforated false bottom, and pipes connecting the vessel and mash-tun and vessel and settling-tun, substantially as described.

2. The process of mashing malt and unmalted malt substitutes, consisting in first steeping the malt in lukewarm water under agitation, then allowing it to stand for an hour or so, then mixing a portion thereof with a quantity of raw unmalted grain and subjecting the mixture, under continual stirring, to a boiling temperature at the ordinary atmospheric pressure, then adding the unboiled portion of the original mash and mixing the whole together until the temperature is reduced below a saccharification temperature, then slowly increasing the heat of the entire mass to a temperature of 160 to 170° Fahrenheit, and finally conducting off and draining the mass, substantially as described.

255,204. PAPER-BAG MACHINE. CHARLES B. STILWELL, Watertown, N. Y., assignor to the Union Paper Bag Machine Company, Philadelphia, Pa. Filed Oct. 21, 1881. (No model.)

Brief.—For making bags of varying size a series of different-sized interchangeable opening feeding-rollers provided with cutters and slitters are mounted in a rotatable carrying-frame, so that any one of the series, according to the size of bag to be made, can be brought into position for use. By means of the sliding frame 90, interchangeable gear 96, and an adjustable shaft-coupling the relation of the mechanisms for the final cutting, pasting, and creasing are adjusted to conform to the size of opening feeding-rollers used, said mechanisms either adjustable or interchangeable for the same purpose. The former is interchangeable to make different-sized tubes, and the cutters and slitters on the opening feeding-rollers are made to register with the primary transverse cut by means of the adjustable take-up roll 54. An air-blast is employed to insure the proper closing of the first final fold.



Claim.—1. In a machine for making paper bags, a carrying-frame supporting two or more interchangeable sets of mechanisms which operate in forming the bag-bottom, said frame being arranged to rotate in moving a set of said mechanisms into operative position, all substantially as described.

2. The combination, with interchangeable opening feeding-rollers having cutters and slitters, and an interchangeable creaser, as 3, of a primary cutting mechanism and an adjustable final cutting and creasing mechanism, all substantially as described.

3. The combination, with interchangeable opening feeding-rollers having cutters and slitters, and an interchangeable creaser, as 3, of a primary cutting mechanism, an adjustable final cutting and creasing mechanism, and an adjustable take-up roll, substantially as described.

4. The combination, with interchangeable opening feeding-rollers, an interchangeable creaser, as 3, a primary cutting mechanism, and an adjustable final cutting and creasing mechanism, of connecting-gearing driving the same, a movable frame carrying the shaft of creaser 3, an interchangeable gear, 96, and an adjusting crank-pin, as 45, coupling the shaft 89 to the stud of pinion 97, substantially as described.

5. The combination of the adjustable take-up roller with the cutting and creasing mechanisms, whereby the extent of paper stretched between two operating mechanisms is governed and a perfect register of the portion operated upon by one mechanism is secured with respect to the operation of the succeeding mechanism or mechanisms, all substantially as described.

6. The combination, with the opening feeding-rollers and means providing for interchanging one set for another of different size, and with cutting and creasing mechanisms and interchangeable gearing causing their movements to coincide with that of the said rollers, of the adjustable take-up roller controlling the extent of paper stretched between two operating mechanisms, whereby the concerted reaction of the various mechanisms is accomplished in the production of the bag-bottom by operations successively performed upon it, all substantially as described.

7. The combination, with interchangeable opening feeding-rollers, of the breaker constructed to be adjusted into different positions suited to the operation of forming different sizes of bags, all substantially as described.

8. The combination, with interchangeable opening feeding-rollers, cutting and creasing mechanisms, and an adjustable final pasting device, of means for changing their rotative movements to provide concerted action during the formation of a number of different sizes of bags, all substantially as described.

9. The combination, with a creasing-cushion and an adjustable frame carrying a creaser-blade co-operating with said cushion, of interchangeable opening feeding-rollers, substantially as described.

10. The combination, with a machine for making paper bags, of an air apparatus supplying one or more currents of air directed so as to impinge upon the free flap of the bag-bottom and turn it forward, substantially as described.

11. The combination, with means for feeding onward bag-lengths having rearward-projecting bottom flaps that require folding forward in forming the bottom, of a creaser, as 3, operating to define the line of folding, and one or more conductors, as 92, emitting an air-current to impinge upon and bend or fold said flap, all substantially as described.

12. In a machine for making paper bags, the combination, with guides operating to sustain the outer edges of the bag-bottom in place, of a belt the operating-surface of which is arranged to travel at greater speed and with increasing proximity to the surface of and in the same direction as the onwardly-fed material, said belt thus operating to engage with and gradually fold or lay each rearward bottom flap onto the partially-formed bag-bottom as the same passes beneath it, substantially as described.

13. The combination, with means for feeding onward bag-lengths having projecting bottom flaps that require to be folded in forming the bag-bottom, of guides operating to control the sides of the bag-bottom, and one or more conductors emitting an air-current to impinge upon and bend, lay, or fold said flap, all substantially as described.

14. The combination, with means for feeding onward bag-lengths having projecting flaps that require folding in forming the bag-bottom, of a creaser, as 3, operating to define the line of folding, guides operating to control the sides of the bag-bottom, and one or more conductors, as 92, emitting an air-current to impinge upon and lay, bend, or fold said flap, all substantially as described.

15. The combination, with means for feeding onward bag-lengths having rearward bottom flaps that require to be folded, of the inclined belt, as 75, and one or more conductors, as 92, emitting an air-current, the conjoint action of which secures the perfect laying or folding of such rearward bottom flap into proper position to be secured onto the bag-bottom, all substantially as described.

16. The combination, with means for feeding onward bag-lengths having rearward bottom flaps that require to be folded, of a creaser, as 3, operating to define the line of folding, an inclined belt, as 75, and one or more conductors, as 92, emitting an air-current, all substantially as described.

17. In a machine for making satchel-bottomed paper bags, the combination, with a guiding-roller, over which is carried the tube having its body partially severed to form bottom flaps, of one or more disks automatically supplied with paste, by the conjoint action of which each bottom flap is carried into contact with the periphery of the pasting disk or disks and pasted by the simple spring of the paper while the body of the tube or bag-blank is held out of such contact, all substantially as described.

18. The combination, with pasting-disks revolving upon fixed bearings, and with two fixed guides for conducting the material past said pasting-disks, of an adjustable guide hung in such relation to said fixed guides that it may be adjusted to guide the material more or less distant from the pasting-disks without increasing or diminishing the length of the path of travel, and thus distend or slack the material, all substantially as described.

19. The combination, with interchangeable opening feeding-rollers and devices they carry for forming bag-bottoms having rearward bottom flaps, of a guide and the laterally-adjustable pasting-disks 68, substantially as described.

20. The combination, with severing mechanism, of mechanism for creasing the front point of the diamond preparatory to folding, said mechanisms being adjustable with relation to each other, so as to operate upon bags of varying sizes, all substantially as described.

21. A combined creasing and cutting mechanism consisting of an arbor provided with a creaser-holding socket, upon which is mounted a sleeve that supports the cutting-blade, said sleeve being arranged to turn upon the arbor to adjust the relation of its cutter to the creaser, and provided with means, substantially as described, for securing its adjusted relation.

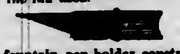
22. The combination, with the primary cutting mechanism and interchangeable opening feeding-rollers, of final creasing and cutting mechanisms the blades whereof are relatively adjustable, all substantially as described.

23. The combination, with the adjustable creaser-blade 4, operating to define the line of folding of the last bottom flap, of laterally-adjustable wheels 87 and interchangeable roller 88, which mechanisms are adapted to form the last bottom flap of various sizes of bags, substantially as described.

24. The combination, with the creaser-blade 4, of the wheels 87 and roller 88, the same constituting the mechanism for folding the last bottom flap, substantially as described.

255,205. FOUNTAIN PEN-HOLDER. MARVIN C. STONE, Falls Church, Va. Filed Aug. 30, 1881. (No model.)

Brief.—The open cylindrical holder that receives the pen contains a feeder made of fine wire-gauze, one end of which comes in contact with the pen and supplies it with ink. Air enters the reservoir in the handle of the pen-holder through the feeder to supply the place of the ink used.



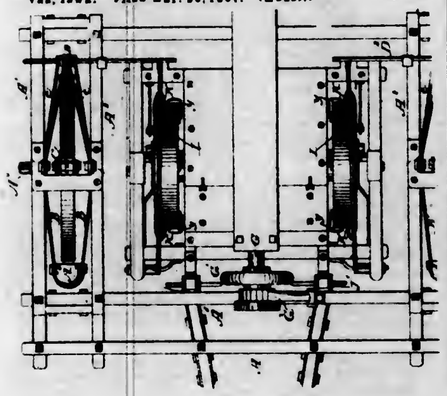
Claim.—A fountain pen-holder constructed substantially in the manner described, having a wire-gauze ink-feeder to provide for the automatic flow of ink to the pen and air to the reservoir, substantially as shown and described.

255,206. HORSE-COLLAR. JACOB STRAUS, St. Louis, Mo. Filed Jan. 21, 1882. (No model.)



Claim.—In an improved horse-collar, the combination, with the fore wale and after wale of the collar, of an intermediate strengthening-band secured to the two portions by stitches or other suitable means, whereby the hame-receiving crease or groove may be made wide or narrow, all substantially as described.

255,207. CHECK-ROW CORN-PLANTER. JOHN STUART, Bellevue, Iowa. Filed Mar. 26, 1881. (Model.)

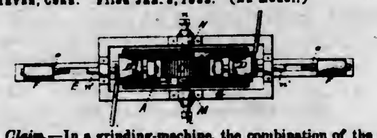


Claim.—1. The combination, with the frame A and the wheels C, of the fulcrum-block A^1, frames or arms B, carrying the fulcrum-block A^2 and pivoted on the axles of the wheels, the bar D', and levers *e*, pivoted to the frame A and to the bar D', and operating substantially as and for the purposes set forth.

2. The combination, substantially as set forth, of the hollow dropping-wheel I, having the chute K open at both ends and arranged diametrically across it, the plunger L, provided with the lug *m*, projected through the face-plate, the cam V, and the spring S, substantially as set forth.

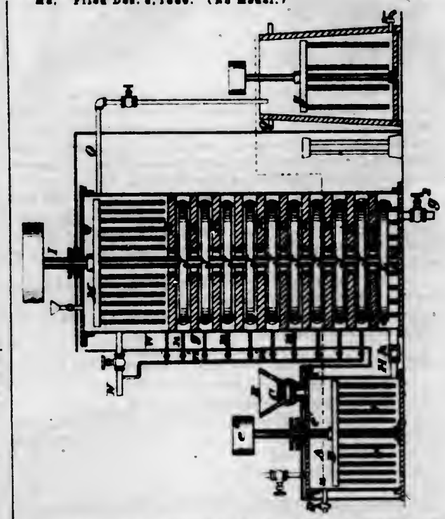
3. The combination, with the hollow dropping-wheel, of the diametrical chute K, the lateral chutes E E, connected at the opposite ends of the chute K, and divided into two channels by central partitions, the plunger L, and shuttle *q q*, substantially as set forth.

255,208. GRINDING-MACHINE. JOHN HENRY TAYLOR, New Haven, Conn. Filed Jan. 5, 1882. (No model.)



Claim.—In a grinding-machine, the combination of the pulley A, having a central portion, C, and beveled flanges M N of unequal thickness, the mandrels *a' a'*, provided with suitable chucks and having cones D, adapted to be rotated by the flanged pulley, the adjustable tail-blocks F, having spindles *e*, and suitable supporting and operating mechanism, substantially as described.

255,209. AMALGAMATOR. HUGH M. THOMPSON, St. Louis, Mo. Filed Dec. 8, 1880. (No model.)



Claim.—1. The chamber G, having the inlet N and outlet O, the shaft I, and stirrer M, combined substantially as described, and for the purpose set forth.

2. The combination of the chamber A, mixer E, hopper B, valve C, and pipes D and F, substantially as described, and for the purposes set forth.

3. In an amalgamator, the chambers A and G, connected by the pipe H, the latter enlarging, as described, from the mixing-chamber to the amalgamating-chamber.

4. The combination of the amalgamating-chamber G, having the inlet at the bottom thereof, and the shaft I and stirrer L, together with the disks K K K and J J J, substantially as described.

255,210. ILLUMINATED TILE. LOUIS C. TIFFANY, New York, N. Y. Filed Nov. 11, 1881. (No model.)



Claim.—A perforated glass or pottery tile having a portion or the whole of its openings filled with a thin layer of colored, iridescent, opalescent, metallized glass, metal, or pottery, or a combination of any of these substances, substantially as described.

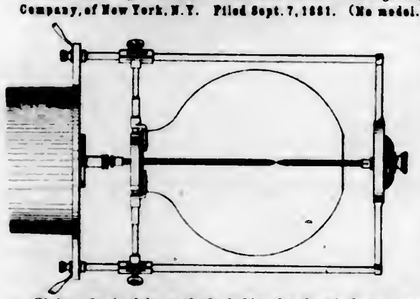
255,211. VEHICLE-SPRING. HENRY TIMKEN, St. Louis, Mo. Filed Dec. 23, 1881. (No model.)



Claim.—1. In a vehicle, a longitudinal spring rigidly attached at one end and pivoted at the other, in combination with a transverse spring attached by one end to a side bar and by the other to the longitudinal spring at or near the pivoted end, all substantially as described, and for the purpose set forth.

2. In a vehicle, longitudinal springs arranged in pairs, rigidly attached at one end and pivoted at the other, in combination with transverse springs attached by one end to a side bar and by the other to the pivoted end of the longitudinal spring, substantially as described, and for the purpose set forth.

255,212. GLOBE-SUPPORTER FOR ELECTRIC LAMPS. JOHN TRESCOTT, Philadelphia, Pa., and LEWIS H. LATIMER, New York, N. Y., assignors to the United States Electric Lighting Company, of New York, N. Y. Filed Sept. 7, 1881. (No model.)

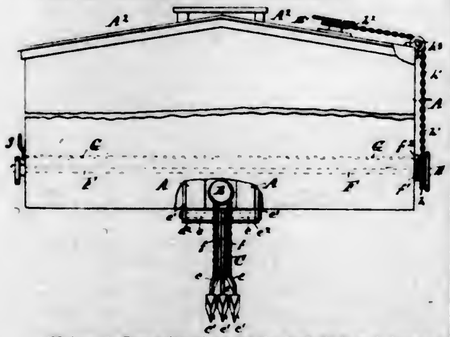


Claim.—1. A globe or shade holder for electric lamps, consisting of a cross-bar or frame formed to permit the passage of the carbon or carbons, and provided with end clasps, by which it may be adjustably fastened to the side rods of the lamp, in combination with spring-closing yokes or jaws, which receive and clasp between them the globe, substantially as hereinbefore set forth.

2. The cross-bar provided with central ring and end split spring sleeve and clamping-screws, in combination with the globe-holding jaws or yokes mounted on said bar, and the jaw or yoke actuating springs, under the arrangement and for operation as shown and described.

3. The combination, substantially as hereinbefore set forth, of the side rods of the electric lamp, the globe-holder adjustably connected with and supported by said side rods, and the globe carried by and suspended from said globe-holder.

255,213. CAR-COUPLING. GUSTAVUS TURREISCH, East St Louis, Ill. Filed Dec. 19, 1881. (No model.)



Claim.—1. In combination with the draft-timbers A, hangers or standards e', the transverse shaft e, the couplers C, each consisting of a series of draft-bars, c, formed each with arrow-heads c', the chain f, the main shaft F, having ratchet-wheel, pawl, and hand-wheel parts, by means whereof the said couplers can be raised or lowered and coupled or uncoupled, substantially as and for the purposes set forth.

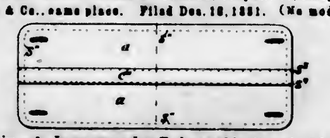
2. In combination with the bottom timbers of a car, the coupler C, secured to a transverse shaft, e, hangers e', chain f, main shaft F, carrying ratchet-wheel f', the pawl f'', made to engage the square end of a shaft, G, both said shafts F and G extending transversely across the car, by means whereof the said pawl can be disengaged from the ratchet-wheel from both sides of the car and the coupling as well as uncoupling of the couplers C can also be made from both sides of the car.

3. In combination with the draft-timbers A, the couplers C, consisting of the draft-bars c, having arrow-heads c', the transverse shaft e, hangers or standards e', chain f, main shaft F, arranged transversely across the bottom of the car, having hand-wheels F H, the pawl and ratchet-wheel, the former capable of being actuated by the separate shaft G, arranged similarly across the bottom of the car from side to side thereof, by means whereof the said pawl can be disengaged from its ratchet-wheel from either side of the car, also the said couplers C can be raised or lowered from either side of the car, substantially as and for the purposes set forth.

4. In combination with the draft-timbers A, the couplers C, consisting of draft-bars c, having arrow-heads c', the transverse shaft e, hangers e', chain f, main shaft F, having hand-wheel and ratchet-wheel, the pawl, with a lift-rod, extending along the side of the car to its top or roof, the endless chain passing around a lower chain-wheel on the end of said shaft F, also passing round an upper chain-wheel, with hand-wheel on the roof of the car, by means whereof from the top or roof of the car the said pawl can be disengaged from the ratchet-wheel and the couplers C be raised or lowered, as and for the purposes set forth.

5. In combination with the draft-timbers A, the couplers C, consisting of the draft-bars c, formed with arrow-heads c', the shaft e, hangers e', chain f, main shaft F, extending completely across the bottom of the car, the hand-wheels F H, the ratchet-wheel f', the pawl f'', capable of being actuated by the shaft G, which extends also across the car, the lift-rod G', the chain-wheel below on shaft F, the chain-wheel and hand-wheel on the roof of the car, the endless chain h', by means whereof the pawl can be disengaged from the ratchet-wheel, either from the roof or both sides of the car, also the couplers be raised or lowered by the operator either from the roof or top of the car or from either side thereof, substantially as set forth.

255,214. CUFF. ISAAC F. TURNER, Troy, N. Y., assignor to Coon & Co., same place. Filed Dec. 19, 1881. (No model.)



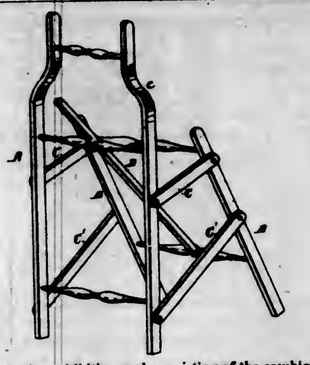
Claim.—1. In an apparel-cuff, the combination of a fabric ply-blank having a central longitudinal box-plait and a turning-slit in its face inside of the edge where sewed to be turned, an exterior fabric blank of the same width and length as the ply-blank when its box-plait is folded, two fabric facing half-blanks having the same length as the exterior blank, but half its width, and the aforesaid parts united by placing the exterior blank next to the plaited face of the ply-blank, and then inserting between them, on each side of the box-plait, one of the facing half-blanks, with its inner edge beneath the fold of the box-plait, then border-stitching the parts as placed, turning them through the slit in the plaited ply-blank, and stitching them longitudinally along the edges of the box-plait to secure the inner edges of the half-blanks and around the edge of cuff, as shown and described.

2. In combination, in an apparel-cuff, the exterior fabric blank B, the fabric ply-blank A, the fabric ply-blank C, the latter having the longitudinal box-plait C', and the turning-slit O, the two fabric facing half-blanks a a, and the aforesaid parts united by first laying the ply-blank A upon this the exterior blank C, with its plaited side down and one of the facing half-blanks inserted next beneath the blank C, upon each side of the box-plait, and its inner edge beneath the fold of the box-plait, the parts in this position being border-stitched and turned through the slit O and stitched along the edges of the half-blanks and around inside of the cuff-edge, as shown and described.

3. In an apparel-cuff, a cuff-facing, in combination, consisting of the two fabric half-blanks a a, the box-plait C', and the latter formed on a thickness of the intermediate filling-ply, with the inner edges of each one of the half-blanks beneath one of the plait-folds, and the rows of stitching b^3 b^4 connecting the inner edges of the half-blanks with the plait and ply on which the plait is formed, as shown and described.

255,215. EXHIBITING-RACK. JOSEPH W. TUTTLE, Chicago, Ill., assignor of three-fourths to Percival B. Palmer and Walter Proby, same place. Filed Jan. 16, 1882. (No model.)

255,215.

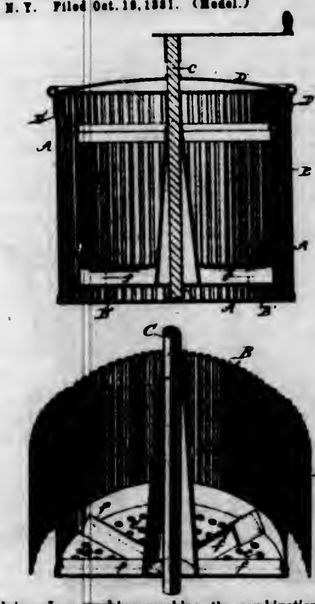


Claim.—1. An exhibiting-rack consisting of the combination of the frames A and B, the pivoted or hinged tongue or support D, and the bars C and C', substantially as and for the purposes specified.

2. An exhibiting-rack consisting of the frame A, in which are the shoulders e e, the frame B, the tongue D, hinged to the frame B, and the bars C and C', jointed to the said frames, all combined and adapted for operation together substantially as and for the purposes specified.

3. The combination of the frames A and B, the non-parallel bars C and C', hinged to each side of the said frame, and the tongue D, hinged at one end to the frame B and left free or loose at the other, substantially as and for the purposes specified.

255,216. WASHING-MACHINE. VAN VAN DEUSENBURG, Bacon Hill, N. Y. Filed Oct. 19, 1881. (No model.)

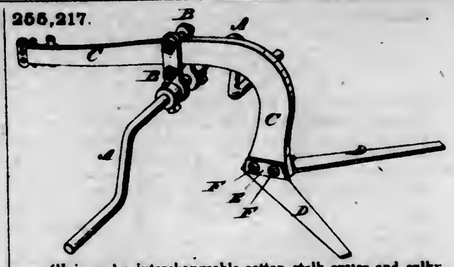


Claim.—In a washing-machine, the combination, with the cylinder A, of the disk B', having the shaft C e, the perforations e, and the radial bars or ribs f, and the bottomless cylinder B, having affixed to the inside of its lower end inverted-V-shaped arms or sockets a, fitted upon the ribs or bars f of the disk B', substantially as and for the purpose set forth.

255,217. COTTON-STALK AND WEED CUTTER. JAMES H. VARNEY, Farmington, Tex. Filed Nov. 2, 1881. (No model.)

Brief.—A curved beam adapted to receive a common turn-plow is hinged to the bail of an ordinary sulky-plow, and has inclined cutters detachably secured to its rear end, whereby the machine may be converted into a stalk-cutter or sulky-plow at will.

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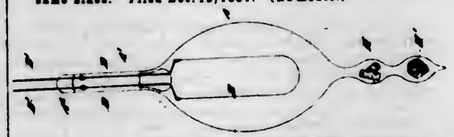
Claim.—An interchangeable cotton-stalk cutter and sulky-plow consisting of the bail A, the clamp B, the curved plow-beam C, adapted to receive a plow at its rear end, and inclined cutters D, provided with perforated flanges E, and detachably secured by bolts F to the opposite sides of the lower end of said beam, substantially as herein shown and described.

255,218. HARNESS-SADDLE. PETER J. VEHLEN, Michigan City, Ind. Filed Jan. 18, 1882. (No model.)



Claim.—In a harness-saddle that is flexible over the back of the horse, the stiff iron plates A, having socketed holes a and c for the terret and screw nuts, and being secured under the skirting D of flaps D of the saddle, as and for the purpose set forth.

255,219. INCANDESCENT ELECTRIC LAMP. WILLIAM L. VOELKER, Morton, Pa., assignor to John M. Irwin, Trustee, same place. Filed Dec. 13, 1881. (No model.)



Claim.—1. The herein-described method of attaining a perfect vacuum in incandescent electric lamps—that is to say, by forming the main bulb of the lamp with two small bulbs having free communication with said main bulb containing the incandescing filament of carbon, placing in one of said bulbs hydrate of potassa and in the other pumice-stone saturated with sulphuric acid, exhausting and sealing the lamp in the usual manner, and then heating the carbon gradually from a low red heat to incandescence, and finally sealing the main bulb of the lamp and removing the small bulbs, substantially as shown and described.

2. The main bulb A, incandescing filament of carbon B, connections D D', bulb H, for holding hydrate of potassa, and bulb H', for holding pumice-stone saturated with sulphuric acid, the whole combined and arranged to operate substantially as shown and described.

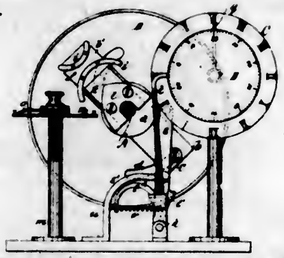
255,220. POWER INDICATOR AND RECORDER. GEORGE WALH, Paterson, N. J. Filed July 12, 1881. (Model.)

Brief.—By two sets of mechanism attached to arms of the main shaft an indicator denotes the amount of power being used and a registering mechanism makes a permanent record of the power taken from a main driving-shaft.

Claim.—1. In power indicating and recording mechanism, the combination of shaft A, carrying arms b b', pulley B, provided with eccentric slot h, spring c, connecting the arm b and pulley, and the slide f, engaging slot h of the pulley, substantially as shown and described.

2. In power indicating and recording mechanism, the com-

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bination of radially-moving slide *f*, cam-flanges *i*, and pointer *o*, placed for engagement with the cam-flanges of the slide, substantially as shown and described.

3. In power indicating and recording mechanism, the combination of radially-moving slide *f*, cam *l*, rock-shaft *r*, and arm *t*, substantially as shown and described.

4. The combination, in power-recording mechanism, of revolving dial D, arm *t*, arm *s*, shaft *r*, provided with stop-pin *t'*, cam *l*, and slide *f*, carrying the cam, substantially as shown and described, for operation as set forth.

5. The combination, in power-recording mechanism, of a graduated dial, revolved by friction-connections, a retarding-arm hung adjacent to the dial, and a cam operated by the driving-shaft to press the retarding-arm in contact with the dial with a varying pressure, substantially as shown and described.

6. The combination, in power-recording mechanism, of a recording-dial, a time-piece moving in unison with the dial, and a dynamometer acting to retard the dial, substantially as shown and described.

255,221. CANVAS BAG FOR HAMS. LUCIUS V. WALKLEY, Plantsville, Conn., assignor of one-half to Pults & Walkley Company, same place. Filed Feb. 24, 1879.



Claim.—The herein-described article, consisting of a flat ham bag or case having its two sides sewed together for about two-thirds of the way around their edges, said seamed edges being substantially of the contour shown in Fig. 1, and having also the open oblique mouth at one corner of its largest end, the length of which mouth is about equal to the greatest width of the bag, substantially as and for the purpose specified.

255,222. AIR-COMPRESSOR. WILLIAM WAHL, Philadelphia, Pa. Filed Jan. 7, 1881. (No model.)

Brief.—G is a balanced piston, and moves in either direction as the water is alternately admitted to either end of the valve through ports *f''* and *e'*. These ports are made coincident by the pistons F at the end of their strokes striking the plunger-valve K, in which is the groove or port *f''*. The exhaust takes place through the ports *e f f'* and *b*.

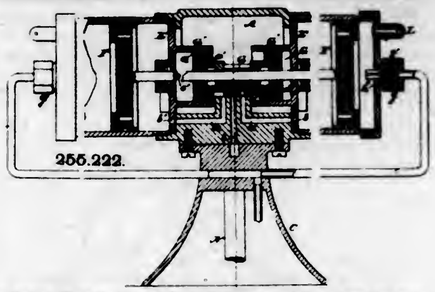
Claim.—1. Stationary cap E, cast in one piece with a cylinder, G', and a valve-chamber, J, in combination with a plunger or valve moving in said chamber and recessed to afford a passage, said cap closing said passage in one position of said plunger, substantially as set forth.

2. The caps or plates E, each having a valve-chamber, J, and a cylinder, G', cast with it on its inner side, the inner ends of said cylinders being open, in combination with a piston working in said cylinders, substantially as set forth.

3. In combination with chamber A and the two compressing-cylinders, the independent valve-cylinders G', arranged within said chamber and opening inwardly, and the hollow balanced piston G, reciprocating in said cylinders, substantially as set forth.

4. The piston-rod D, having hollow balanced piston G fitted to slide thereon and passing through stationary caps E and open-end cylinders G', in combination with said piston, caps, and cylinders, and the central packing, *a'*, substantially as set forth.

5. In combination with chamber A and the cylinders B B', arranged at the ends thereof, the caps E, having inwardly-opening



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cylinders G' on their inner faces, the piston-rod D, passing through the said chamber, caps, and cylinders, and the pistons F and G, carried by said rod, arranged and operating substantially as set forth.

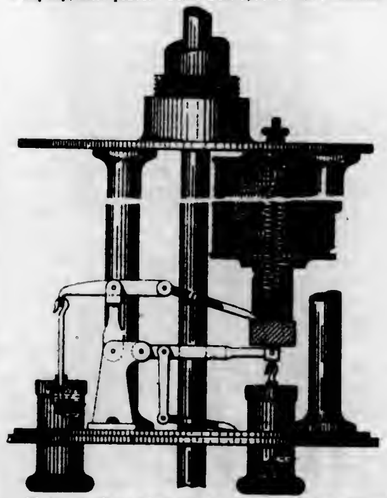
6. The plunger-valve K, with port *e* and neck *f''*, the valve-chambers J, the cylinders G', with ports *e'*, the caps E, with ports *f*, the seat with port *f'*, and the exhaust-port *b*, combined and operating substantially as and for the purpose set forth.

7. The cylinders B B' and chamber A, in combination with the separating-caps E, having openings *b'*, the valve H, and valve-seat H', with ports *a a b*, substantially as and for the purpose set forth.

8. The plunger-valves, with ports *e*, the cylinders G', with ports *e'*, the caps E, with ports *f*, the balance-piston G, the cylinders, and chamber, combined and operating substantially as and for the purpose set forth.

9. The chamber A and cylinders B B' at the ends thereof, in combination with the piston-rod D, provided with balanced piston G within said chamber, and pistons F within said cylinders, and the outwardly-opening valves *g* in the ends of said cylinders, substantially as set forth.

255,223. ELECTRIC LAMP. ADDISON G. WATHENHOUSE, New York, N. Y., assignor to the United States Electric Lighting Company, same place. Filed Dec. 3, 1881. (No model.)



Claim.—1. In an electric lamp, the combination of a carbon-carrier, an electro magnet or magnets, a feed-controlling clamp connected therewith, and a supplementary clamp, in conjunction with suitable retarding mechanism, arranged to engage with the carrier when the same is released by the magnets, substantially as set forth.

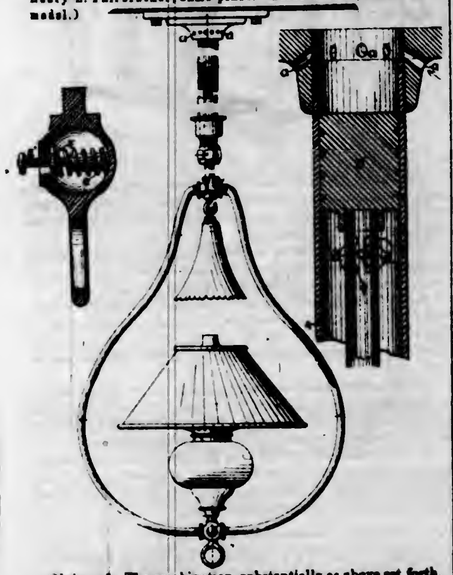
2. The combination, with a carbon-carrier, an electro magnet or magnets, and a feed-controlling clamp connected therewith, of a supplementary clamp pivoted or suspended above the first, and a retarding device for limiting its movement in one direction, substantially as set forth.

3. The combination, with a carbon-carrier, an electro magnet or magnets, and movable armature therefor, of a clamp adapted to engage with and raise the said carrier, and a pivoted or suspended

clamp, in conjunction with suitable retarding mechanism, and adapted to engage with the carrier and impede its descent, substantially as set forth.

4. The combination, with a carbon-carrier, of a clamp or clutch composed of two perforated plates of resilient metal connected together at one edge, substantially as shown.

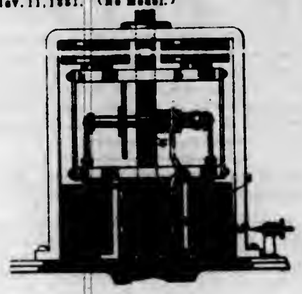
255,224. EXTENSIBLE DROP-LIGHT. CHARLES S. WHITLAND, Providence, R. I., assignor to Addison H. White and Henry L. Fairbrother, same place. Filed Oct. 12, 1881. (No model.)



Claim.—1. The combination, substantially as above set forth, of a pendent tube, a pipe arranged to slide within the bore of said tube, a piston attached to said sliding pipe, a stuffing-box preventing the escape of air from the mouth of the pendent tube, apertures in the sliding pipe connecting the annular space within the tube with the interior of the sliding pipe, and a relief-valve to permit the escape of any excess of air-pressure when the drop-light is lowered, and to permit the admission of air when the light is elevated.

2. The combination, substantially as above set forth, of a pendent tube, a sliding piston attached to a pipe arranged to move within the bore of the pendent tube, air-apertures to maintain an equilibrium of pressure located in the pendent tube above the range of movement of the piston, a stuffing-box to prevent the escape of compressed air at the mouth of the tube when the drop-light is extended downward, apertures in the sliding pipe connecting the annular space within the tube with the interior of the sliding pipe, and a relief-valve to permit the escape of any excess of air-pressure when the drop-light is lowered, and to permit the admission of air when the light is elevated.

255,225. ELECTRIC LAMP. EDWARD WESTON, Newark, N. J., and LEONARD H. CURTIS, New York, N. Y., assignors to the United States Electric Lighting Company, New York, N. Y. Filed Nov. 11, 1881. (No model.)

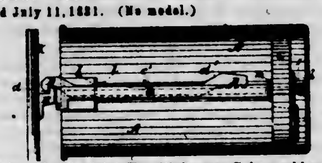


Claim.—1. In an electric lamp, the combination, with the feed-regulating mechanism and carbon-carrier controlled thereby, of a shunt-circuit of high resistance, and an electro-magnet included therein, and a releasing device adapted to be actuated by said magnet, and thereby release the carrier from the regulating mechanism, as set forth.

2. The combination, in an electric lamp of the kind described, of a train of wheels constituting the feed mechanism, a carbon-carrier engaging therewith by means of suitable connecting-gear, a closed shunt of high resistance, and an electro-magnet included therein, and mechanism independent of the feed mechanism adapted to be actuated by said magnet, and thereby release the said connecting-gear from the train, substantially as and for the purpose set forth.

3. The combination, in an electric lamp, with the pinion G, and a friction-clutch arranged to be held against said pinion by a spring, of a closed shunt of high resistance, an electro-magnet included therein, and an armature-lever adapted to be actuated by said magnet, and thereby withdraw the clutch from said pinion, substantially in the manner described.

255,226. DOOR-CHECK. JESSE W. WETMORE, Erie, Pa. Filed July 11, 1881. (No model.)



Claim.—1. The latch D, with its cam *d'*, in combination with the piston, piston-rod, and cylinder on the casing, and the catch on the spring-door, substantially as described.

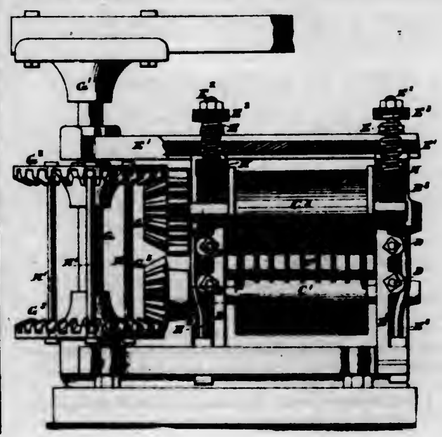
2. The air-cylinder, in combination with the detachable piston-rod, latch, and catch, constructed and operated substantially as described.

255,227. PEN-HOLDER. JESSE W. WETMORE, Erie, Pa. Filed July 11, 1881. (No model.)



Claim.—In combination with a pen-holder, the sleeve or case composed of sections A B C, said sections being recessed at their lower ends to afford rests for the thumb and fingers, and rabbeted at their upper ends so as to be independently adjustable longitudinally, and all held in place by the same ring in which they are also partially adjustable concentrically.

255,228. CANE-MILL. DANIEL WILDS, Washington, Iowa. Filed Dec. 2, 1881. (No model.)



Claim.—1. In a mill or machine for grinding or crushing sugar-cane, sorghum, and other similar substances, the combination of the beveled driving-wheels G^2 G^3, placed on a vertical shaft, the beveled wheels G^4 and G^5, and the grinding or crushing rolls C' and C^2, placed one above the other and driven by separate gears, substantially as and for the purpose set forth.

2. The combination of the grinding or crushing rolls C' C^2 and the bagasse-discharging rolls, the latter being arranged with reference to the grinding or crushing rolls substantially as described, whereby it is made to give an upward inclination to the bagasse, and thus effectually separate it from the juice, as described.

3. In combination with the grinding or crushing rolls of a cane-mill, the feed-roller E, which is capable of being rotated by the cane as it is fed to the mill, substantially as set forth.

4. The combination of the gear-wheels G^2, G^4, J, and J', and the discharging-roller C, the parts being arranged for joint operation substantially as and for the purpose set forth.

5. The combination of the grinding or crushing roller C^2, the springs E E, the bolts E^2, caps E^3, boxes B^2, and washers H, the parts being substantially as set forth, whereby they are made to control the vertical rise and fall of the upper crushing-roller, as set forth.

6. The combination of the vertical shaft G, the gear-wheels G^4 and G^5, and the adjusting-bolts H', they being arranged substantially as and for the purpose set forth.

7. In combination with the driving-gear G^4 and G^5 of a cane-crushing mill, the driving-shaft G, having upon it driving-wheels G^2 and G^3, and having a vertical as well as a rotary movement imparted to it, said vertical movement being simultaneous with and caused by the vertical movement of the upper crushing-roller, all substantially as described, and for the purpose set forth.

255,229. HAND-STAMP. CHARLES C. WILSON, Washington, D. C. Filed Jan. 20, 1881. (No model.)



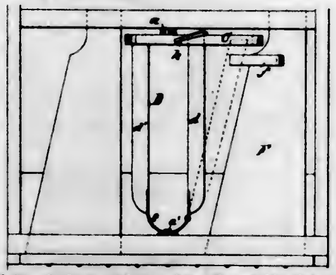
Claim.—1. In a hand-stamp, the plate F, having a type-receiving slot and catch-lugs, in combination with the type and detachable spring-catches for engaging said lugs, substantially as shown and described.

2. The type-plate F, journaled in the frame E and provided with the type-receiving slot, and having catch-lugs on its rear side, in combination with the detachable bearing W, carrying the endless bands, from which project type-strips s', and provided with spring-catches arranged, substantially as described, to engage the lugs on the type-plate, substantially as shown and described.

255,230. COMPOUND FOR ABSORBING OILS FOR BURNING AND ILLUMINATING PURPOSES. JOHN A. WRIGHT, Keene, N. H. Filed Feb. 3, 1882. (Specimens.)

Claim.—A compound made of infusorial earth, clay, and asbestus in the manner and proportions substantially as herein described, and for the purposes set forth.

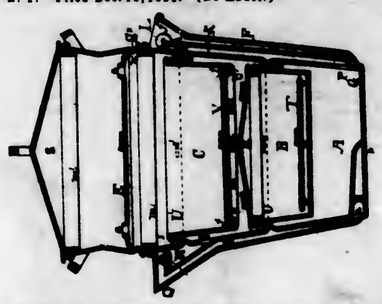
255,231. STANCHION. STEPHEN J. ADAMS, Willett, N. Y. Filed July 30, 1881. (No model.)



Claim.—1. In a cattle-stanchion, the combination, with the slotted top plate, C, having extension and pivoted at *a*, of the bars *d d'*, hinged and pivoted metal plate *e*, and keeper *f*, substantially as herein shown and described.

2. The pivoted stanchion D, in combination with the upright F, provided with the keeper *f*, as and for the purposes set forth.

255,232. STEAM-COOKER. ALEXANDER M. ADDS, Syracuse, N. Y. Filed Dec. 19, 1881. (No model.)



Claim.—1. The combination, in a steam-cooker, of the ball N, which is placed over the aperture *k* in the spout M, with the aperture J, tube K, having an aperture, P, and a whistle, L, substantially as set forth and described.

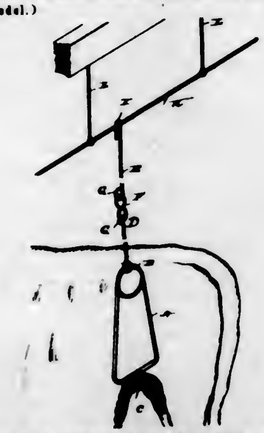
2. The combination of the tube K within the tube F, having an aperture, P, above the aperture G, and a whistle, L, within the spout *f*, substantially as shown, and for the purpose set forth.

3. The combination, in a flaring steam-cooker, of the ring C, having a flange, *c*, with perforations *i i*, and a movable bottom, V, with a flange, *j*, movable ring U', having perforations *s'*, the dish B, and movable ring U, substantially as and for the purpose set forth.

4. The combination, in a flaring steam-cooker, of the ring D, flaring from the center upward and downward, and having a rim, *m*, corresponding with the rim *m'* of the cover S, and binding on the lower extremity, substantially as shown and described.

5. The combination of the ring D, having a movable bottom, E, with a flange, *a*, resting on the bead *g''*, and having raised perforations *e e*, the rim *m*, cooker A, ring C, dish B, and cover S, substantially as and for the purpose set forth.

255,233. COW-TAIL HOLDER. THOMAS O. ANDRUS and NAPOLEON B. PRIEST, North Wolcott, Vt. Filed Dec. 21, 1881. (No model.)



Claim.—An improved device for holding and supporting cows' tails, consisting of the wire spring-clamp A, bent into a loop, B, at its center, and provided with rectangular crossed interlocking hooks C at its lower ends, and the links D F E, connected as described, the latter having an open hook, I, adapted to slide on the horizontal rod K, supported by the rods L, for the purpose specified, all being arranged as herein set forth.

255,234. HEEL-PLATE FOR BOOTS AND SHOES. HENRY W. ARNOLD, Utica, N. Y. Filed Oct. 29, 1881. (No model.)

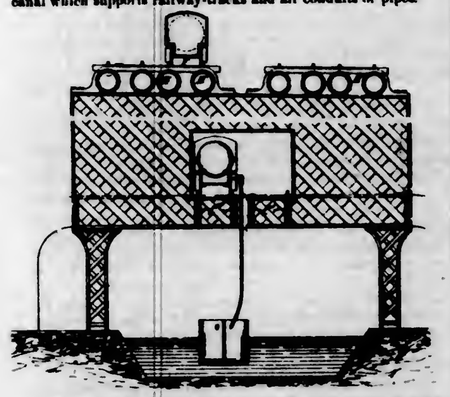


Claim.—1. In combination with the hinged heel plate or creeper constructed substantially as described, the strap B, substantially as set forth.

2. A removable heel-plate or ice-creeper having upward-projecting tongues on its edge, in combination with band B, the said tongues being constructed to be passed between the band B and the shoe and to extend over the upper edge of the band, substantially as and for the purposes described.

255,235. COMBINATION OF ELEVATED RAILWAY AND CANAL. BENJAMIN T. BARRITT, New York, N. Y. Filed July 23, 1881. (No model.)

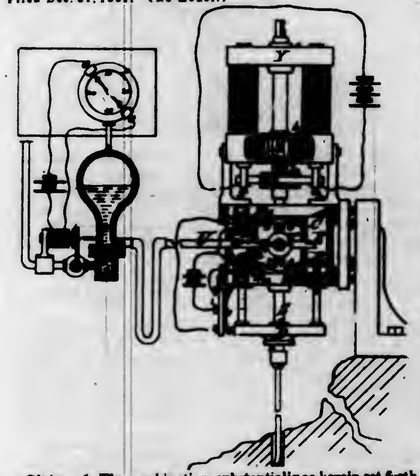
Brief.—Consists of an elevated-railway structure spanning a canal which supports railway-tracks and air conduits or pipes.



Claim.—1. The combination, with a canal, of an elevated-railway structure spanning the canal, railway-tracks supported thereon immediately over the canal, and pipes or conduits supported on or in said structure, and adapted for conducting compressed air, substantially as and for the purpose herein described.

2. The combination, with a canal, of an elevated-railway structure spanning the canal, railway-tracks supported thereon immediately over the canal, pipes or conduits for conducting compressed air arranged in groups on said structure, and railway-tracks supported upon said pipes or conduits, substantially as and for the purpose herein described.

255,236. ELECTRIC DRILL. CHARLES E. BALL, Philadelphia, Pa., assignor to Charles A. Cheever, Trustee, New York, N. Y. Filed Dec. 31, 1881. (No model.)



Claim.—1. The combination, substantially as herein set forth, of an electromotor, a drill stock or tool rotated thereby, mechanism for alternately advancing and retracting the tool, and electro-magnetic feed mechanism controlling said movements.

2. The combination, substantially as herein set forth, of a generator of electric currents, an electromotor, circuit-wires connecting said generator and motor, a drill stock or tool rotated thereby, a hydraulic feed mechanism, and automatic electro-magnetic regulating mechanism controlling said feed mechanism.

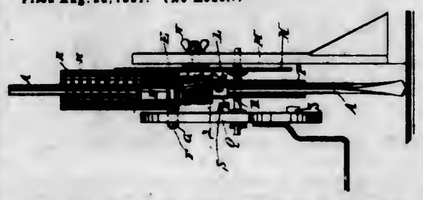
3. The combination, substantially as herein set forth, of a drilling-tool, an automatic hydraulic feed mechanism, a feed-valve, electro-magnets controlling said valve, a generator of electric currents, and circuit-connections between said generator and magnet to actuate said valve.

4. The combination, substantially as herein set forth, of the hydraulic feed-cylinders, the water-supply pipe, the feed-valve, its stem or handle constituting an armature, electro-magnets on opposite sides thereof to reverse the feed, a generator of electric currents, and circuit-wires connecting the generator and magnets.

5. The combination, substantially as herein set forth, of a generator, an electromotor, a drill rotated thereby, automatic hydraulic feed mechanism interposed between the drill and motor, a feed-valve, electro-magnets controlling said valve, and electrical connections between the valve and motor automatically to reverse the feed.

6. The combination, substantially as herein set forth, of an electromotor, a drill rotated thereby, hydraulic feed mechanism interposed between the motor and tool, a water-supply pipe, a compression-chamber, a valve, an electro-magnet controlling said valve, an electric circuit, a gage included therein, and mechanism actuated by pressure in the compression-chamber automatically to open or close said circuit to operate said valve, and thereby to regulate the water-supply, and consequently the feed.

255,237. ROCK-DRILL. WILLIAM J. BARBER, Covington, Ind. Filed Aug. 23, 1881. (No model.)



Claim.—1. The combination, with the drill A, of the stock B, provided with spiral grooves D, the loose ring E, provided with a projection, F, and the cam-wheel Q, provided with studs S, substantially as herein shown and described, and for the purpose set forth.

2. The combination, with the drill A, of the stock B, provided with spiral grooves D, the loose ring E, provided with a projection, F, the spring K, the casing H, and the cam-wheel Q, provided with a series of studs, S, substantially as herein shown and described, and for the purpose set forth.

3. The combination, with the drill A, of the stock B, the casing H, the adjustable plate L, the cam-wheel Q, the projection F of the drill-stock, and the standard M, substantially as herein shown and described, and for the purpose set forth.

4. The combination, with the drill A, of the stock B, the casing H, the adjustable plate L, the tubular guide P, the projection F of the stock, the cam-wheel Q, and the frame or standard M, substantially as herein shown and described, and for the purpose set forth.

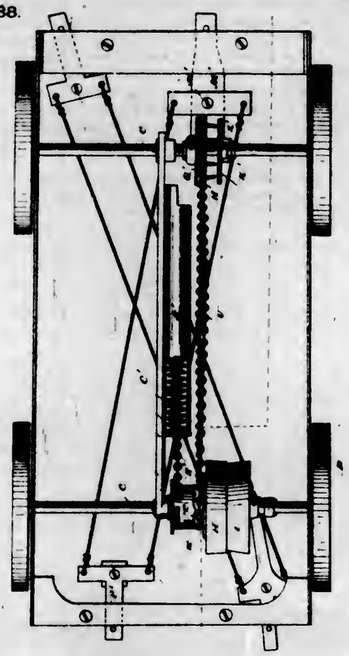
5. The combination, with the drill A, of the stock B, the casing H, the plate L, provided with a slot, N, the screw *e*, the nut M', the tubular guide P, the projection F of the stock B, the cam-wheel Q, and the standard or frame M, substantially as herein shown and described, and for the purpose set forth.

6. In a frame for a drill, the combination, with the frame or standard M, of the pivoted adjustable plate L, the casing H, and the tubular guide P, substantially as herein shown and described, and for the purpose set forth.

255,238. CAR-STARTER. JOHN L. BARNES and WILLIS D. SLAUSON, Racine, Wis. Filed Jan. 21, 1882. (Model.)

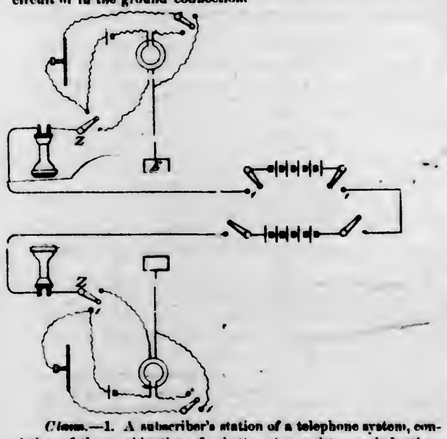
Claim.—The combination of the drum E, its disk and rim H, and the friction-wheel I, mounted loosely on one of the axles C, the slotted hub M and the pin N, and mechanism for throwing the parts into and out of gear, with the sprocket-wheel G', provided with pins on its face, and the disk K', provided with apertures for the pins, the mechanism for operating the disk to clutch the sprocket-wheel, and the chain U, spring C', and chain E', the whole arranged to operate substantially in the manner specified.

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255,239. TELEPHONE SYSTEM. EMILE BERLINER, Boston, Mass. Filed Dec. 15, 1881. (No model.)

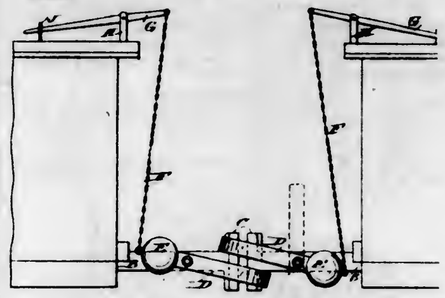
Brief.—By means of appropriate switches the line-battery, which is located at the central office, may be connected either through the transmitter or through the secondary of the induction-coil to ground, and the transmitter can be put either into the local circuit or in the ground connection.



Claim.—1. A subscriber's station of a telephone system, consisting of the combination of a battery-transmitter, an induction-coil, a local battery, a receiving-telephone, and switch Z, substantially as described, and so arranged that the line-circuit can by means of this switch be directed either through the secondary coil or through the transmitter to the ground.

2. A subscriber's station of a telephone system, consisting of the combination of a battery-transmitter, an induction-coil, a local battery, a receiving-telephone, and switch Y, substantially as described, and so arranged that the transmitter-circuit can be directed by this switch either through the local battery or to the ground.

255,240. CAR-COUPLING. JOAB BILLON, JAMES BILLON, and ROBERT L. SENSER, St. James, La. Filed Jan. 31, 1881. (No model.)



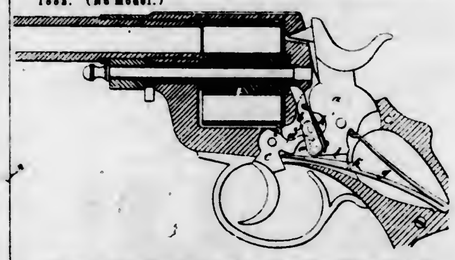
Claim.—1. A car-coupling made substantially as herein shown and described, and consisting of a draw-head provided at its outer end with a vertical projection, to which draw-head a bow is pivoted, provided at the ends of its shanks with weights, as set forth.

2. In a car-coupling, the combination, with the draw-head B, provided at its outer end with a cross-head, C, of the pivoted bow D, provided with weights E at the ends of the shanks, and of the chain or equivalent, F, for operating the bow, substantially as herein shown and described, and for the purpose set forth.

3. In a car-coupling, the combination, with the draw-head B, provided at the outer end with a cross-head, C, of the pivoted bow D, provided with weights E, the chain F, or equivalent, and the lever G, substantially as herein shown and described, and for the purpose set forth.

4. In a car-coupling, the combination, with the draw-head B, provided at the outer end with a cross-head, C, of the pivoted bow D, provided with weights E, the chain F, or equivalent, the lever G, and the locking-hook J, or equivalent, for securing the inner end of the lever G, substantially as herein shown and described, and for the purpose set forth.

255,241. LOCK FOR FIRE-ARMS. EDOUARD BLED, Paris, France, and JEAN WARDANT, Liege, Belgium. Filed Jan. 30, 1882. (No model.)



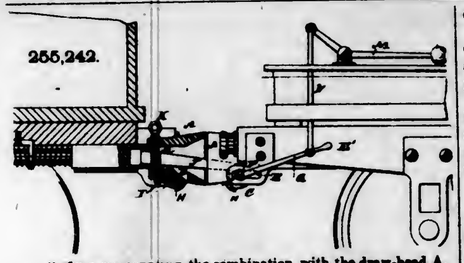
Claim.—In combination with the hammer, the mainspring, and the trigger having a projection, *d*, arranged for operation as described, the pawl *b*, pivoted to the hammer and provided with a projection, *f*, against which the trigger, by its projection *d*, exerts a lifting action, and from which it subsequently escapes, and the trigger is allowed to return to its normal position by the yielding of the pawl, essentially as herein set forth.

255,242. CAR-COUPLING. GEO. F. BOSS, Troy, N. Y. Filed Jan. 23, 1882. (No model.)

Claim.—1. In a car-coupling, the combination, with the draw-head A, provided with an aperture, B, in the bottom, of the cam-block C in this aperture, this cam-block being mounted on a transverse shaft, D, extending to the sides of the car, and provided with handles G at the ends, and of guide-plates F, provided with guide-slots E for the shaft D, substantially as herein shown and described, and for the purpose set forth.

2. In a car-coupling, the combination, with the draw-head A, provided with an aperture, B, in the bottom, of the swinging cam-block C in this aperture, the shaft D, the handles G, the connecting bar N, and the angular lever M, pivoted on the top of the car, substantially as herein shown and described, and for the purpose set forth.

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3. In a car-coupling, the combination, with the draw-head A, provided with an aperture, B, in the bottom, of the swinging cam-block C, provided at the inner end with a transverse check-ridge, I, substantially as herein shown and described, and for the purpose set forth.

4. In a car-coupling, the combination, with the draw-head A, provided with an aperture, B, in the bottom, of the swinging cam-block C, provided on the inner end with a transverse check-ridge, I, and at the outer end with a guide-ridge, H, extending from top to bottom, substantially as herein shown and described, and for the purpose set forth.

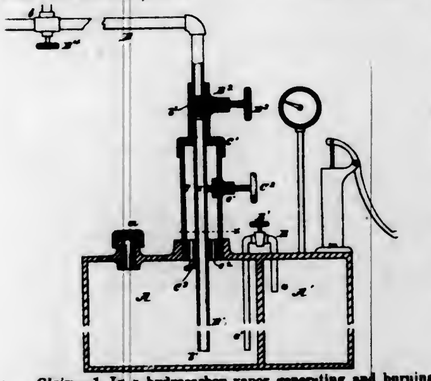
255,243. PERFORATING ATTACHMENT FOR PRINTING-PRESSES. JOSEPH M. BOWMAN, Jersey City, N. J. Filed July 13, 1881. (No model.)



Claim.—The perforating device or attachment herein described, comprising the stock K, having the opening E' and clamp-screw *b*, to permit it to be detachably secured to a rod or bar, the wheel or knife F, the spring G, the bearing *e* upon said spring, and the screw *f*, for adjusting said bearing, substantially as specified.

255,244. APPARATUS FOR SUPPLYING HYDROCARBON TO BURNERS. ADELBERT M. BRAINARD, Chicago, Ill. Filed Nov. 12, 1881. (No model.)

Brief.—Either carbureted air or oil may be supplied to the burner by adjusting the valve C⁵.



Claim.—1. In a hydrocarbon-vapor generating and burning apparatus, the combination, with a chamber for liquid, with a chamber for compressed carbureted air in open communication with the chamber for liquid, and with a generator and burner, of a single pipe leading from the said chamber for liquid, and through said air-chamber to supply the generator and burner, and suitable valves, whereby air or liquid may be successively supplied through the said pipe, substantially as described.

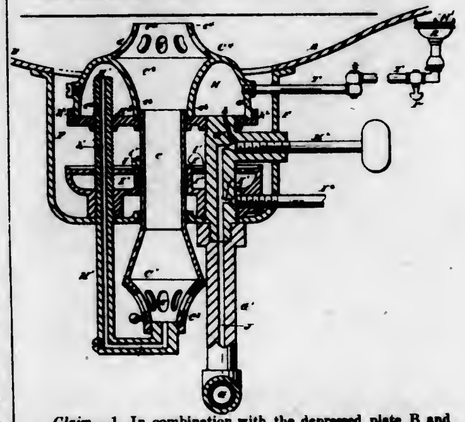
2. In a hydrocarbon-vapor generating and burning apparatus, the combination, with the close reservoir A and chamber C for liquid and compressed carbureted air, of a valved outlet-pipe, B B', leading from near the bottom of the reservoirs, and provided with an aperture, *c*, within the air-space above the liquid-level, and with a valve for opening and closing said aperture, arranged to be operated from the exterior of the chamber, substantially as described.

3. In the apparatus described, the combination, with the reservoir A, chamber C, and suspended pipe B', having the valved aperture *c*, of the support C⁶ for the pipe B', apertured to allow free passage to the air, substantially as and for the purposes stated.

4. In combination with the pipe B B', leading from near the bottom of the chamber A, and provided with a valved opening, *c*, above the liquid in said chamber, a valved passage, b^3, in the pipe B B', located above the opening *c*, and smaller than the general interior of said pipe, substantially as described, and for the purposes set forth.

5. In combination with the chamber A, contrived to hold both liquid and compressed air, and provided with means for permitting the discharge of either to the burner, the separate air-storing chamber A', provided with a pump, and the valved pipe E, connecting the chambers A and A', and leading to near the bottom of the latter, substantially as and for the purposes set forth.

255,245. HYDROCARBON-GAS STOVE. ADELBERT M. BRAINARD, Chicago, Ill. Filed Mar 11, 1881. (No model.)



Claim.—1. In combination with the depressed plate B and central shield, F, beneath said plate, the burner-tube C, having an annular generator, H, about its upper end, and a generator-heater beneath the generator and within the shield, said generator and initial heater being suitably connected with the source of hydrocarbon supply, and, together with the shield F, arranged and operating substantially as described.

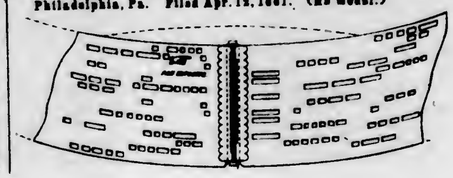
2. In the burner described, the annular generator H, composed of the base-plate H^2 and the dome-plate C^4, having the outer and inner flanges, c^2 and c^3, joined with the base-plate, and the upper flange, c^4, forming the mouth of the burner-tube, substantially as described.

3. In the burner described, the combination, with the burner-tube C and supply-stem G', of the initial heater-cup I, having the chamber I' and opening *i'* around the tube C, said cup being supported and supplied from the stem G', and surrounding the tube C by the rising flange c^5, substantially as described.

4. In a hydrocarbon-gas stove, the combination, with a main burner having a generator, of an additional burner, R, supported and supplied by a jointed tube leading from the main generator, and a support for an article to be heated from said additional burner, forming part of the unitary stove structure, substantially as described.

5. In combination with the burner described, comprising the central tube, C, the generator H, and the initial generator-heater I, arranged as shown, the dished plate B and the cup F, arranged to embrace the parts C, H, and I, as set forth.

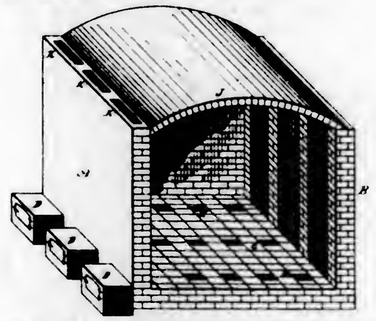
255,246. MUSIC-SHEET FOR ORGUINETTES. LOUIS REARDS, Philadelphia, Pa. Filed Apr. 12, 1881. (No model.)



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Claim.—As a new article of manufacture, a music-sheet having its ends provided with loops or pockets which are formed of separate pieces of fibrous or textile material folded on and pasted or gummed to the ends of the sheet on both sides thereof, all as set forth.

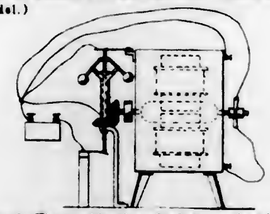
255,247. TILE-KILN. ROBERT A. BROWN and JOHN F. BROWN, Washington, Ind. Filed Feb. 3, 1882. (No model.)



Claim.—1. A brick-kiln the back wall of which is provided with vertical concave recesses communicating with the floor-flues, substantially as set forth.

2. The herein-described improved kiln, provided with furnaces D, floor-flues F, having openings H extending through the floor G, back wall, B, having vertical concave recesses I communicating with the flues F, arched roof J, flues K, and front wall, A, having openings L connecting the interior of the kiln with the lower ends of the exit-flues K, all constructed and arranged substantially as set forth.

255,248. MEANS FOR CHARGING SECONDARY BATTERIES. CHARLES E. BUELL, New Haven, Conn. Filed Jan. 13, 1882. (No model.)



Claim.—1. The combination of a dynamo-electric machine, a developing-circuit, on which the machine is worked temporarily, a main charging-circuit, including one or more secondary batteries, and means, substantially as described, for dividing the current through the developing-circuit and the main charging-circuit, and then breaking the developing-circuit while the main charging-circuit remains closed.

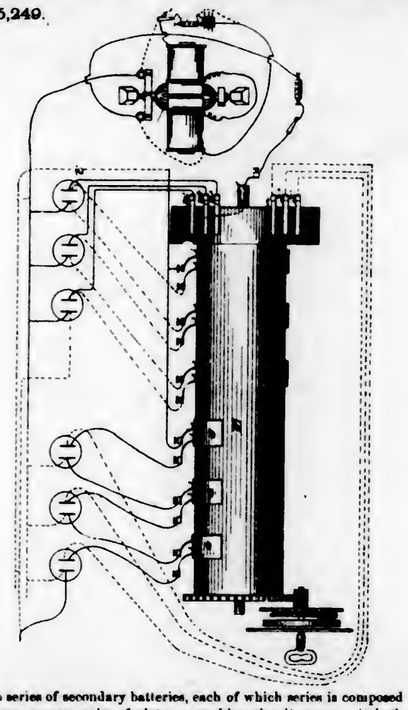
2. The combination, substantially as described, of a dynamo-electric machine, a developing-circuit, a main charging-circuit, including one or more secondary batteries, and automatic switching devices, substantially as described, normally completing the developing-circuit, and operating, when the machine is in motion, to make connection with the main charging-circuit without breaking the developing-circuit, and then to break the developing-circuit and keep the main charging-circuit closed, and when the machine slackens and stops to perform the said operations in reverse order, whereby the wasting of the charge of the secondary batteries is prevented when the machine is at rest.

3. The combination, substantially as described, of a dynamo-electric machine, a developing-circuit containing an adjustable resistance, a main charging-circuit, including one or more secondary batteries, and switching devices, substantially as described, for dividing the current through the developing-circuit and the main charging-circuit, and then breaking the developing-circuit while the main charging-circuit remains closed, all as set forth.

255,249. MEANS FOR CHARGING AND DISCHARGING SECONDARY BATTERIES. CHARLES E. BUELL, New Haven, Conn. Filed Dec. 28, 1881. (No model.)

Claim.—1. The combination, substantially as described, of a charging-circuit including a dynamo-electric machine or battery,

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two series of secondary batteries, each of which series is composed of two or more pairs of plates, a working-circuit common to both series, and a switching device for alternately connecting the pairs of one series successively to the charging-circuit, and at the same time discharging the pairs of the other series into the working-circuit in tension series.

2. The combination, substantially as described, with an electrical generating-machine, of a charging-circuit which includes the helices of the field-of-force magnets, a separate exterior charging-circuit which includes the helix of the armature, a working-circuit, two series of secondary batteries, and devices, substantially as described, for alternately placing the pairs of each series in the exterior circuit of the machine to be charged and in the working-circuit to be discharged.

3. The combination, with an electrical generating-machine, of a charging-circuit which includes the helices of the field-of-force magnets, a separate exterior charging-circuit which includes the helix of the armature, a working-circuit, two series of secondary batteries, and switching devices for alternately placing the pairs of each series successively in the exterior charging-circuit to be charged and in the working-circuit in tension series to be discharged, whereby the reversal of the magnetic condition of the machine by back flow from the batteries is avoided, and the loss of charge from the back flow of the batteries, if the generator slackens speed or stops, is confined to one pair of plates.

4. The combination, with an electrical generating-machine, of a charging-circuit which includes the helices of its field-of-force magnets, a separate exterior charging-circuit which includes the helix of the armature, a working-circuit, two series of secondary batteries, and devices for placing each series alternately in the exterior charging-circuit of the machine to be charged and in the working-circuit to be discharged, and independent means for separately regulating the circuits which include the armature-helix and the field-of-force magnets, substantially as described.

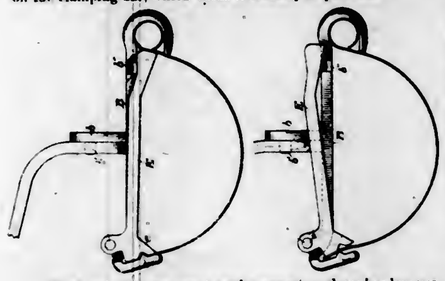
255,250. WHISTLING TOY. THOMAS E. BOLGER, Baltimore, Md. Filed Feb. 3, 1882. (No model.)



Claim.—The combination of a suitable whistling tube or pipe with a flexible tube containing water or other liquid, substantially as herein set forth.

255,251. EAVES-TROUGH HANGER. CHARLES BURRICK, Cleveland, Ohio. Filed Dec. 21, 1881. (No model.)

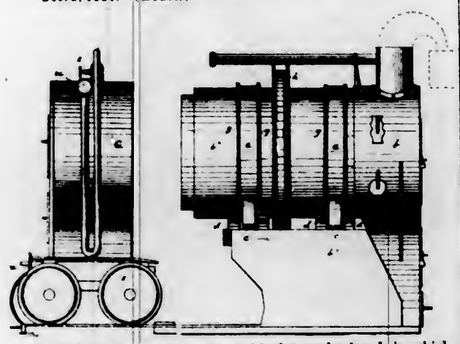
Brief.—A vertically-moving lever is pivoted to the clamping-bar, one end of which, with the end of the bar, clamps the edge of the trough, and the other end is sprung down under a projection on the clamping-bar, which holds it securely in position.



Claim.—1. As an eaves-trough support, a clamping-bar provided at one end with a hook to fit over the rolled bead of the trough, and with a lateral projection, and at its other end with a downward and inward bend having a corrugated inner surface, combined with a clamping-lever pivoted to the clamping-bar, and having its short arm toothed to engage with the toothed bend of the clamping-bar and its long arm adapted to fit under or engage the projection on said bar, substantially as specified.

2. The horizontal clamp B, having the lateral projection *b''*, combined with the clamping-lever E, whose long arm engages or locks with the projection *b''*, substantially as and for the purpose specified.

255,252. APPARATUS FOR REMOVING TIN AND GALVANIZED COATING. THOMAS H. CAMPBELL, Allegheny, Pa. Filed Dec. 2, 1881. (Model.)



Claim.—1. In combination with the smoke-box *b*, in which the volatile oxides are condensed, the rotating drum *c*, in which the metal is heated, and the movable section G, containing the heating devices, the removable receptacles F Z, in which the oxides and melted metal are collected, substantially as specified.

2. In combination with the movable section of the apparatus, the heating device consisting of a central tube having a sliding annulus and a spring, and the bent tubes extending into said tube and terminating in nozzles, as described.

3. In combination with the stationary section, the longitudinal tube extending centrally into the rotating drum and provided with perforations and gas-connecting pipes and with water-pipes, as set forth, substantially as and for the purposes specified.

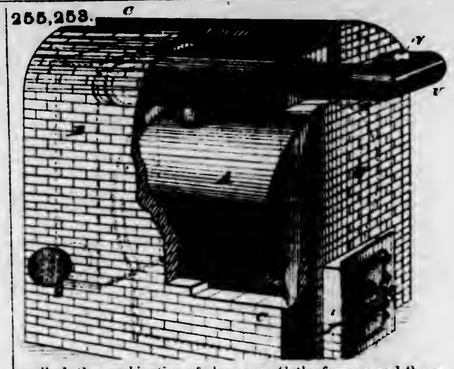
4. In combination with the drum and rear section of the apparatus, the perforated cylinder located within the drum and provided with a series of longitudinal ledges, substantially as specified.

5. The heating device herein described, consisting of a main outer pipe or casing having jet-apertures, and a number of smaller tubes having a water-space between them for conducting the fuel and water inlet and eduction pipes, substantially as shown, and for the purpose specified.

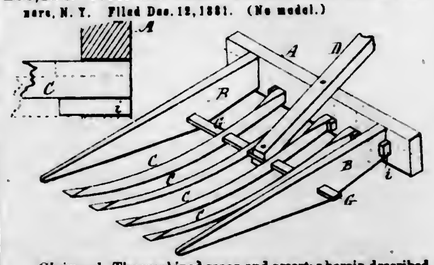
255,253. FURNACE. ANDREW CLARADON and MICHAEL B. MCDOWELL, Altoona, Pa. Filed July 30, 1881. (Model.)

Claim.—In a hot-air furnace constructed substantially as described, the combination of the casing C, the furnace, and the radiators N J, the latter of which is connected by a pipe, U, having damper V, with the inside of the casing, as described, for the purpose shown and specified.

255,253.



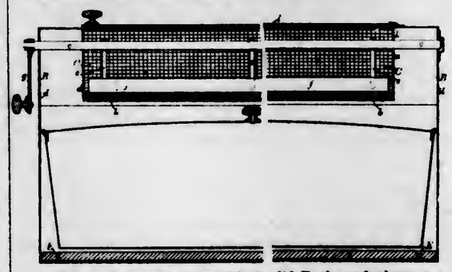
255,254. SCOOP AND FORK. GEORGE CLAFLIN, Miller's Corners, N. Y. Filed Dec. 12, 1881. (No model.)



Claim.—1. The combined scoop and assorter herein described, consisting of the head A, side guards, B B, tines or fingers C C, cross-piece G, and handle D, the guards and tines provided with tenons fitting in sockets in the head, adjustable to different positions therein, and secured by shifting keys *i i*, as shown and described, and for the purpose specified.

2. In combination with the guards B B and tines C C, provided with tenons resting in sockets of the head-piece, the keys *i i*, fitted in the sockets and capable of being shifted to either side of the tenons for the purpose of adjusting the guards and tines, as herein shown and described.

255,255. BREAD-MAKING UTENSIL. MARGARET J. COOK, Baltimore, Md. Filed Jan. 18, 1882. (No model.)

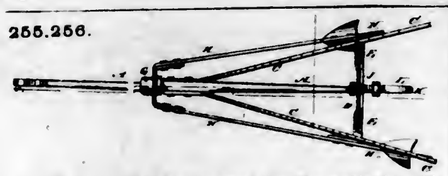


Claim.—In combination with the lid B, the end plates, *a a*, wire-cloth *b*, shaft *c*, pendent strips *e*, and handle *g*, substantially as specified.

255,256. CULTIVATOR. WALTER B. CULLUM, Benwood, W. Va. Filed Dec. 22, 1881. (Model.)

Brief.—The handles are rigidly attached to the draft-beam and move with it. The shovel-beams are swiveled upon the draft-beam and are locked by a spring-latch engaging the sector upon the handle-braces. When unlocked the handles turn from side to side, turning the draft-beam upon its axis.

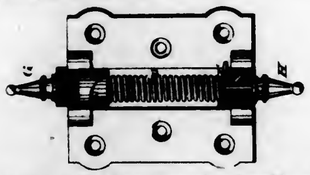
255,256.



Claim.—1. In a double-shovel plow, the combination, with the draw-bar A, of the loose collar G, the plow-beams H, the connecting-bar J, the lever K, and means for locking the same, substantially as and for the purpose set forth.

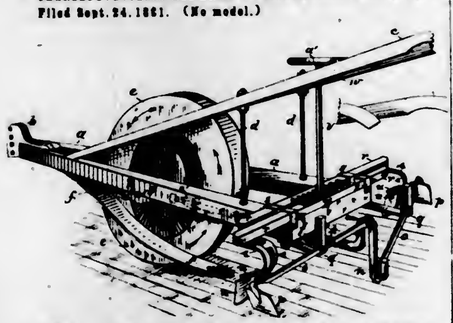
2. In a double-shovel plow, the combination, with the cross-bar J, attached to the plow-beams H, and the braces E, connecting the handles C and draw-bar A, of the lever K, the spring-catch lever L, and the cross-bar F, substantially as herein shown and described, whereby the plow-beams can be readily locked in place, unlocked, and adjusted, as set forth.

255,257. SPRING-HINGE. IRA S. DAVIS, Detroit, Mich., assignor to the Edwards Manufacturing Company, same place. Filed Dec. 5, 1881. (No model.)



Claim.—In a spring-hinge, the combination of the regulating-drum K, having ratchet-teeth thereon, with the pintle G H, made in two parts, adapted to screw together, the upper end of part H being made to fit into a hole in the center of drum K, whereby said pintle and drum cannot rotate independently of each other, substantially as shown and described.

255,258. IMPLEMENT FOR SIDING AND THINNING COTTON. CHARLES P. DICKERT and EMANUEL McD. HELLER, Walton, S. C. Filed Sept. 24, 1881. (No model.)



Claim.—1. The combination, with a rigid wheel-frame carrying two transverse laterally-adjustable bars, each provided with a pair of scrapers on its outer end, the pairs of scrapers lying on opposite sides of the frame, of mechanism, substantially as described, for laterally adjusting the bars, as set forth.

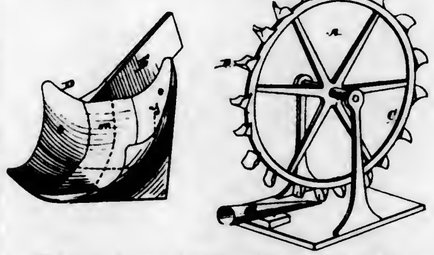
2. The combination, with a rigid wheel-frame carrying two transverse laterally-adjustable bars, each provided with a pair of scrapers arranged as set forth, and means, substantially as described, for laterally adjusting said bars, of mechanism, substantially as described, for operating two hoes on the same shaft for thinning out the plants, as set forth.

3. The combination, with the driving-wheel *e*, provided with the circular bevel-gear *i*, and the shaft *k*, provided with the bevel-pinion *e'* and double cranks *m n*, of the handles *o o'*, pivoted respectively to the double cranks, hoes *p p'*, and guides *q q*, substantially as described, and for the purpose set forth.

4. The combination of the frame *a*, laterally-adjustable rack-bars *r*, provided with scrapers *u*, shaft *v*, provided with hand-wheel *a'*, and cog-gear *b'*, driving-wheel *e*, having bevel-gear *i*, shaft *k*, provided with bevel-pinion *e'*, and double cranks *m n*, handles *o o'*, hoes *p p'*, and guides *q*, substantially as described, and for the purpose set forth.

255,259. WATER-WHEEL. DANIEL DONNELLY, Butter Creek, Cal. Filed Jan. 18, 1882. (No model.)

Brief.—The buckets D have concave sides O, and a central or bottom portion, *m*, concaved in the direction of its length and flat in the direction of its width, and rear portions fashioned like the prow of a ship in order to prevent the motion of the wheel from being impeded by the spray and waste water.



Claim.—1. A water-wheel, A, with its rim C, to which are secured the buckets D, said buckets having faces constructed with concaved sides *o*, and a central portion or bottom, *m*, concaved in the direction of its length and flat in the direction of its width, substantially as and for the purpose herein described.

2. A water-wheel, A, having buckets D secured to its rim, said buckets having their rear faces or sides formed like the prow of a ship—that is, carved to the line *o*—substantially as and for the purpose herein described.

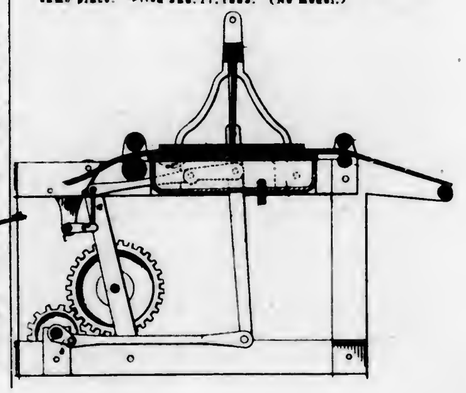
255,260. MANUFACTURING HATS AND OTHER FUR-FACED FABRICS. WILLIAM E. DOUBLEDAY, New York, N. Y., assignor to Ellen M. Doubleday, same place. Filed Jan. 19, 1882. (No model.)



Claim.—1. The herein-described improvement in the manufacture of fur-napped fabrics, which consists in applying a layer of fur to a fabric composed wholly or in part of feltable fiber, and which has been previously manufactured and has the density and thickness which it is desired it shall have after the fur has been stuck, and then subjecting the material to the combined pressing and rubbing action of a vibrating jigger.

2. The herein-described method of sticking fur to a previously-felted hat-body—that is to say, by applying a layer of fur to the felted hat-body and then subjecting the material to the combined pressing and rubbing action of a vibrating jigger, substantially as set forth.

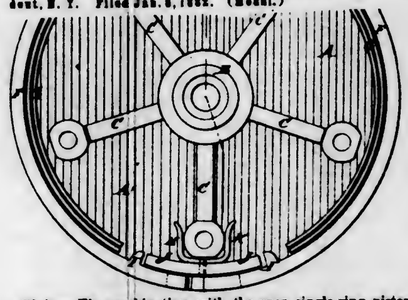
255,261. SCALDING FUR-NAPPED FABRICS. WILLIAM E. DOUBLEDAY, New York, N. Y., assignor to Ellen M. Doubleday, same place. Filed Jan. 17, 1882. (No model.)



Claim.—1. The herein-described improvement in the art of manufacturing fur-faced fabrics, consisting in pressing and rubbing the material while wet with hot water between the flat parallel surfaces after the fur has been stuck to the fabric by any suitable means, substantially as set forth.

2. In a machine for scalding fur-faced fabrics, the combination of two flat parallel surfaces, adapted to press and rub the material, with means, substantially such as described, for keeping the material in a wet and heated condition during the pressing and rubbing operation.

255,262. PISTON. JOHN DYKEMAN and JASON G. CORBIN, Rondout, N. Y. Filed Jan. 3, 1882. (Model.)



Claim.—The combination, with the open single-ring piston-packing F, having rim I, and the end of a web, C, of the piston-head, of the curved plate J, and the U-shaped plate K, substantially as herein shown and described, whereby key-plates to center or line the piston can be received and held, as set forth.

255,263. MILK-PAN COVER. CHARLES C. FAIRLAMB, Chicago, Ill. Filed Aug. 25, 1881. (No model.)



Claim.—1. The cover-body B, in combination with an elastic band, C, of cylindrical form normally, and clamping-rings D and E, applied to the upper and under sides of the cover, clamping both edges of the band to the cover, substantially as described.

2. The cover-body B, having its outer edge turned inward, in combination with the cylindrical rubber-cloth band C, the upper clamping-ring, D, having its edges bent substantially as described, and the lower clamping-ring, E, having its edges upset substantially as described, whereby the band is securely fastened to the cover and its edges covered and protected, substantially as and for the purposes set forth.

3. The cover-body B, in combination with the elastic band C, the upper clamping-ring, D, extending nearly or quite to the outer edge of the cover, and the lower clamping-ring, E, arranged nearly or quite inside the upper ring, whereby a wide surface of the band is left exposed on the under side of the cover, substantially as and for the purposes set forth.

255,264. BAKER'S OVEN. HENRY FALKE, Buffalo, N. Y. Filed Mar. 22, 1881. (No model.)



Claim.—1. The combination, with an oven, A, of the chamber B, provided with an opening, *b'*, a slide, C, and a shield, F, protecting the slide C, substantially as set forth.

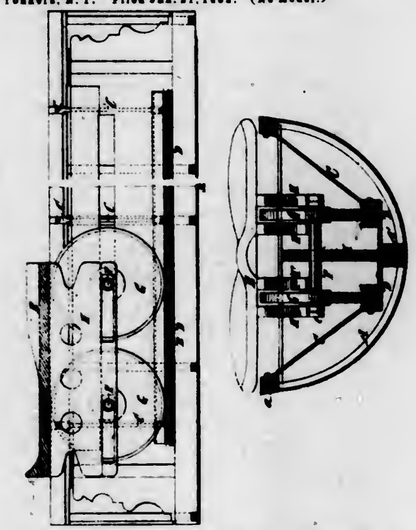
2. The combination, with an oven, A, of a chamber, B, provided with an opening, *b'*, and a removable table, H, provided with a vertical plate, K, having an opening, *k*, coinciding with the opening *b'* and covered by a sheet of mica, *k'*, substantially as set forth.

3. The combination, with an oven, A, of a chamber, B, provided with an opening, *b'*, and adapted to receive an illuminating apparatus, and air-conduits M *m m'*, surrounding the chamber B, whereby the latter is cooled, substantially as set forth.

4. The combination, with an oven, A, of a chamber, B, provided with an opening, *b'*, and a lamp, I, having its oil-reservoir provided on its under side with longitudinal ribs *n*, whereby an air-space is formed between the bottom of the oil-reservoir and the bottom plate of the chamber B and the oil-reservoir is kept cool, substantially as set forth.

5. The combination, with an oven, A, of a chamber, B, provided with an opening, *b'*, and a lamp, I, having a chimney, O, composed of metallic side plates, *p p*, and mica plates *p'*, arranged in line with the opening *b'*, substantially as set forth.

255,265. SLIDING SEAT FOR ROW-BOATS. THOMAS PEARCE, Yonkers, N. Y. Filed Jan. 21, 1882. (No model.)



Claim.—1. The combination, with a boat-seat, of axles provided with supporting-wheels and having a rolling connection with said seat, substantially as herein described.

2. The combination, with a boat-seat, of axles provided with supporting-wheels and having a rolling connection with said seat, and stops for limiting the rolling movement of the axles upon the seat, substantially as herein described.

3. The combination, with a boat-seat, of axles provided with supporting-wheels and having a rolling connection with or bearing upon the seat on each side of each wheel, substantially as herein described.

4. The combination of the seat E, the axles F, and wheels G, the slotted bearings H, receiving the rolling axles, and the bearings H', resting upon the rolling axles, substantially as herein described.

5. The combination, with a boat-seat, of axles and supporting-wheels, each axle being composed of an inner tube upon which the wheels are fitted, and outer tubes fitting on the inner tube, between and on the outside of the wheels, substantially as herein described.

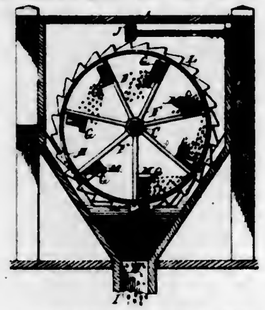
6. The combination, with a boat, of a platform or floor arranged therein, ways or rails upon said platform or floor covered with leather or analogous material, axles supporting said seat, and wheels running upon said ways or rails, substantially as herein described.

7. The combination, with a boat, of a platform or floor secured directly to the keel, ways or rails thereon, a seat, axles supporting said seat, and wheels running upon said ways or rails, substantially as herein described.

8. The combination, with the boat containing ways or rails,

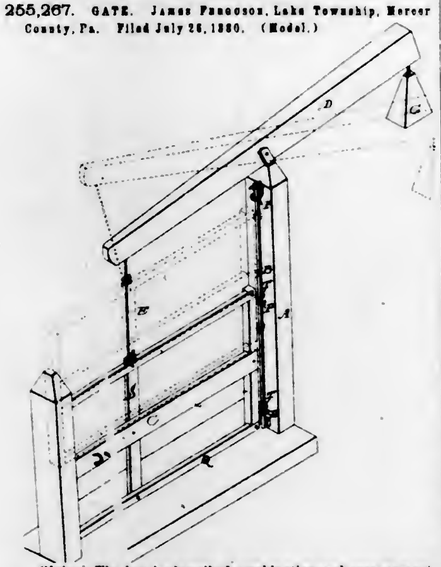
the seat and its supporting axles and wheels, of a slotted center piece or ledge secured in the boat and receiving the axles through it, substantially as herein described.

255,266. GRAIN SEPARATOR OR SIZER. JACOB FRIESNO, West Granville, assignor of one half to Jedocus Ehnert, Granville, Wis. Filed Aug. 30, 1881. (No model.)



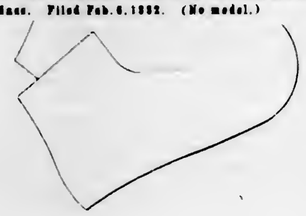
Claim.—The combination of screen A, shaft C, arms F, and the longitudinally-arranged troughs consisting of bars G and M, provided with angular surfaces X and Y, substantially as set forth.

255,267. GATE. JAMES FERGUSON, Lake Township, Mercer County, Pa. Filed July 26, 1880. (Model.)



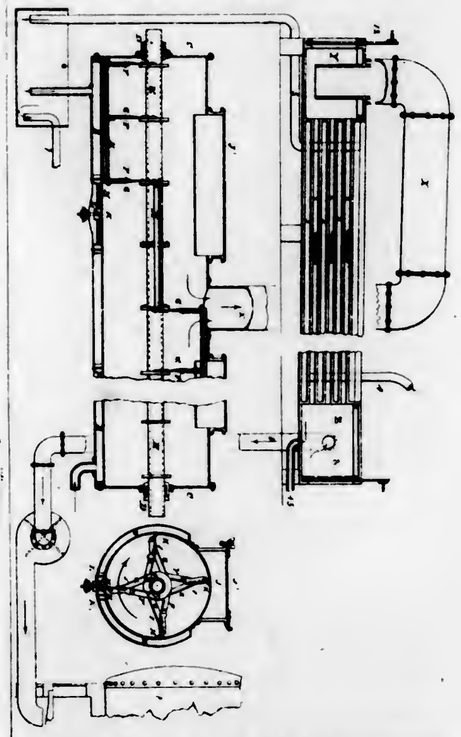
Claim.—The herein-described combination and arrangement of the gate-post A, having vertical rod B, the gate G, swinging and vertically adjustable upon said rod, and having central vertical brace, S, and the lever D, swiveled to the top of post A, and having its outer end weighted and its inner end extending over the center of the gate, and connected thereto by a link or rod, E, upon which said gate is evenly balanced, as set forth.

255,268. PLOW-SHOE. JOHN W. D. FIFIELD, North Brookfield, Mass. Filed Feb. 6, 1882. (No model.)



Claim.—The herein-described method of producing a crimped upper for a plow-shoe, which consists in first cutting the upper for a front opening to the point, substantially as shown and described, then crimping the same from such point to the toe, and then cutting the opening farther into the crimped portion, all substantially as set forth.

255,269. APPARATUS FOR REDUCING MATERIAL TO A PULVERULENT FERTILIZER. HENRY S. FIRMAN, New York, N. Y. Filed Nov. 8, 1881. (No model.)



Claim.—1. In a desiccator and mill for the purpose designated, the combination, with cylinder A, of disintegrating-arms F and knives H, both formed of thin plates of steel or mild steel set edgewise in direction of rotation and made sharp on their advancing edges, as shown and described.

2. In a desiccator and mill for the purpose designated, the long narrow angular discharging-holes K, with sink or depression formed by the walls of said hole and by the closing-plate L, and whose salient angle opposed to the advancing knife-edge is either sharply angular or toothed or serrated, as and for the purposes shown and set forth.

3. In a mill and drier for the purpose stated, the combination, with the cylinder A, of the revolving disintegrating-arms F and the knives H, pivoted thereto and adjustable thereon, as herein shown and described.

4. The provision at the discharge opening K of a desiccator and mill for the purpose described, and in combination with the bridge *k* and the bolt S at the mid-length of said opening, and with the nut T, of the depressible and swinging closing-plate L, substantially as set forth.

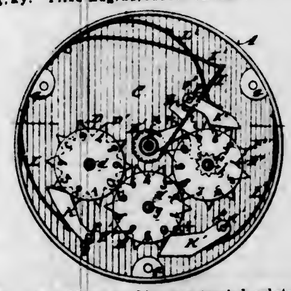
5. In a mill and desiccator for the purpose set forth, the combination, with the disintegrating-arms F, with their attached knives H, of the specially shaped and arranged discharge-apertures K, having the serrated salient edges M or M′ in opposition to the knife action, to secure grinding or granulating without balling, as set forth.

6. In a desiccator and mill for the purpose designated, the combination of the disintegrating-cylinder A and the condenser Y Z 2, connected therewith by vapor pipe or trunk X, all as herein shown and described.

7. In combination with a mill and desiccator for the purpose described, the condenser consisting of the cold-water tank 3, receiving and discharging chambers Y Z, tubes 2, and the sliding and removable ends or shutters 12 12′, substantially as set forth.

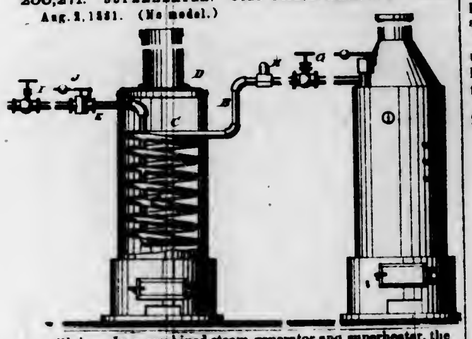
8. The combined mechanical organism consisting of a hermetical cylinder, within which the material is comminuted under a moderate heat, a condenser with exhaust attachment for withdrawing fetid vapors from the comminutor and expediting desiccation of its contents, a boiler-furnace which receives the thus exhausted vapor, and water-supply pipes, whereby the water, after performing refrigerating service in the condenser, is conveyed as heated water to the boiler-feed tank, substantially as and for the purpose set forth.

255,270. ADDING-MACHINE. JOHN GEORGE FISCHER, Flemingsburg, Ky. Filed Aug. 26, 1881. (Model.)



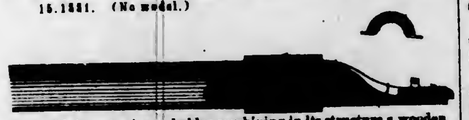
Claim.—An adding-machine constructed substantially as herein shown and described, consisting of pivoted disks and wheels D E F D′ E′ F′, respectively, case A, provided with numbered and perforated cover B, pivoted pointer and rack M H, respectively, pinion G, ratchet-wheel G′, and spring-actuated dogs, arranged as set forth.

255,271. SUPERHEATER. JOHN FISH, Summit, N. J. Filed Aug. 2, 1881. (No model.)



Claim.—In a combined steam generator and superheater, the combination, with the superheater-pipe C and the pipes B E, provided with valves G I, of the check-valve H and the safety-valve J, located in the said pipes between the said valves and the superheating-pipe, substantially as and for the purpose set forth.

255,272. PEN-HOLDER. BRADLEY A. FISKE, Naperville, Ill., assignor to Eberhard Faber, Port Richmond, N. Y. Filed Dec. 15, 1881. (No model.)



Claim.—1. A pen-holder combining in its structure a wooden staff or handle, provided at one end, on its under side, with a segmental-shaped groove, terminating at its inner portion in a flat seat, and a longitudinally-bent spring having a segmental-shaped tip and a flat end, resting respectively in the segmental groove and on the flat seat of the staff or handle, substantially as and for the purpose described.

2. The combination, substantially as hereinbefore set forth, of the sheet-metal pen-holding spring having a flat shank, segmental tip, and thumb-ears projecting laterally from the tip, with the handle having a longitudinal groove extending upward from its lower end for the reception of the spring, and means for attaching the spring to the handle.

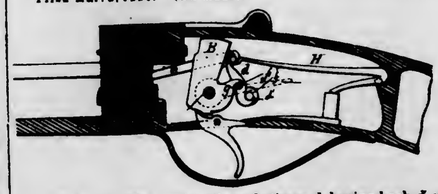
3. The combination, substantially as hereinbefore set forth, of the sheet-metal pen-holding spring, the handle having a longitudinal groove extending upward from its lower end for the reception of the spring, and the attaching-sleeve having the spring secured thereto, such sleeve being fitted loosely on the handle.

255,273. STUD AND BUTTON FASTENING. PARKE P. FLOURNOY, Bethesda, Md. Filed Feb. 8, 1882. (Model.)



Claim.—As an improved article of manufacture, an ornamental stud or button having the shank A permanently secured thereto and formed of a single piece of wire, bent at *a*, and having a return-bend at B, so that the parallel continuation C will be sprung against the bend *a* to prevent accidental unfastening, the whole constructed and arranged substantially as shown and described.

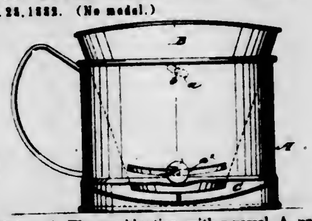
255,274. LOCK FOR FIRE-ARMS. GEORGE H. FOX, Boston, Mass., assignor to the American Arms Company, same place. Filed Mar. 5, 1881. (No model.)



Claim.—1. The combination of stirrup *d*, having hook *d′* on its lower end, with stop-pin *f′*, arranged to be engaged by said hook, mainspring H, operating to lift said stirrup, and hammer B, provided with a hook which catches against a stud on said stirrup substantially as set forth.

2. In combination with a firing-pin operating in axial alignment with the bore of the barrel or barrels, a vertical top-snap locking-shaft, said shaft being constructed with a passage for said firing-pin to play through.

255,275. SIFTER. AUGUSTUS J. FRANK, Warsaw, Ill. Filed Jan. 24, 1882. (No model.)



Claim.—1. The combination, with a vessel, A, provided with a sieve, C, of a tapering bottomless hopper, B, adapted to receive the material to be sifted, and arranged to oscillate inside of said outer vessel, substantially as and for the purpose herein described.

2. The combination of the outer vessel, A, provided with the sieve-bottom C and the slots *a* and *a²*, and the inner vessel, B, provided with the scraper E, and the stud *b*, and shaker-rod D, substantially as and for the purpose shown and described.

3. The combination of the curved sieve-bottom C of the vessel A and the scraper E, carried by the inner vessel or oscillating hopper, B, arranged and operating as herein shown and described.

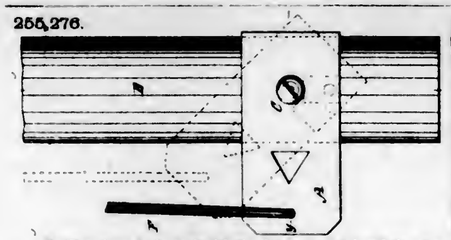
4. The combination of the curved slots or guides *a a²* with the stud *b* and the shaker-rod D, provided with the knob or handle *d*, as shown and described, for the purpose specified.

255,276. WASTE-VALVE FOR PUMPS. JEROME GILBS, South Bend, Ind. Filed Dec. 27, 1881. (No model.)

Brief.—When the plate A is at its extreme upper or lower position the water cannot escape from the pipe D through leak-hole *c* and space E, but only when it is horizontal.

Claim.—1. The herein-described waste-valve, consisting of the plate A, provided with the flanges *a b* and the stop *d*, and the packing B, provided with the passage E, substantially as specified.

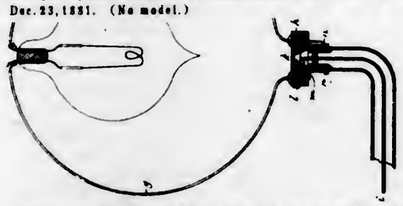
255,276.



2. The plate A, formed with the flanges *a* and *b* and the stop *d*, in combination with the packing B and the rod F, the packing being formed with the cut-away place or passage E, substantially as described.

3. The plate A, covering or inclosing the passage E in the packing B, and adapted to deflect the stream of waste water, substantially as and for the purposes described.

255,277. ELECTRIC LAMP. CHARLES H. GIMINGHAM, Newcastle-upon-Tyne, County of Northumberland, England. Filed Dec. 23, 1881. (No model.)



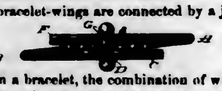
Claim.—1. The combination, with the carbon and tubular holder, of a paste formed of a salt of platinum and a carbonaceous compound, and a deposit of carbon at the junction of said carbon and its holder, as and for the purpose specified.

2. The method of attaching carbon threads to a tubular holder, which consists in first dipping the thread ends in a paste formed of a carbonaceous compound and a platinum salt, and then slipping them into the tube; and, secondly, holding them in a Bunsen gas-flame until the paste is carbonized and the platinum salt is reduced to metallic platinum, as described.

3. The combination, with a gas-pipe and fitting substantially as described, of the brass springs *g g'*, the insulator *h*, having the brass plug *k*, the insulated wire *i*, having spring *m*, the screw *l*, and the brass collar *n*, as and for the purpose specified.

255,278. BRACELET. GAMALIEL B. GOFF and GUSTAVUS LEBAU, Attleborough, Mass., assignors to S. E. Fisher & Co., same place. Filed Jan. 18, 1881. (No model.)

Brief.—The bracelet-wings are connected by a joint.



Claim.—1. In a bracelet, the combination of wings A B, the lateral tubes forming a joint, and a spring passing laterally through such tubes.

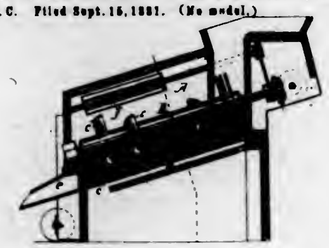
2. The combination of the wings A B, connected to lateral tubes D G, the spring, the notches 5 6 in the tubes, and the pins.

3. The combination, with the wings of a bracelet, of the arms C F and the lateral tubes D G.

4. The wings A B, arms C F, and tubes D G, in combination with the ferrule.

5. In combination, the wings A B, the arms C F, connected to the side of the said wings by the beads I, and the described joint, all substantially as set forth.

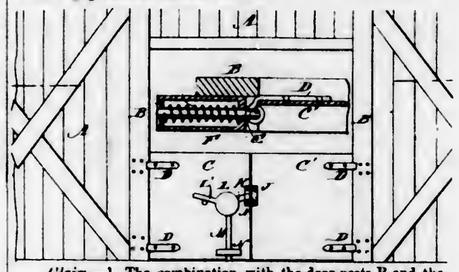
255,279. COTTON-WHIPPER. ROSS H. GOLDSMITH, Charleston, S. C. Filed Sept. 15, 1881. (No model.)



Claim.—The combination, with the shaft B, provided with the whipper-arms *c*, and the box A, of the longitudinally-bladed parallel and superposed roll *f*, and suitable mechanism for rotating the same, whereby the said roll is caused to press the cotton to the whipper-arms, as described.

255,280. GRAIN-CAR DOOR. MARTIN GRAFF, Terre Haute, Ind. Filed Jan. 30, 1882. (No model.)

Brief.—The double doors are hinged by means of eye-straps connected to hook-pintles sliding in sockets and governed by springs therein. An eccentric and handle on one of the doors carries two bolts, one of which fastens the doors together and the other engages a socket in the door-sill.



Claim.—1. The combination, with the door-posts B and the doors C C', of the eye-straps D, the hook-pintles E, the sockets F, and the springs H, substantially as herein shown and described, whereby the doors can be opened outward by the pressure of the grain and will close automatically when the outward pressure is removed.

2. The combination, with the doors C C', of the bolts K M and the eccentric L, substantially as herein shown and described, whereby the doors can be readily fastened and unfastened, as set forth.

255,281. COMPOSITION FOR SEWER, DRAIN, AND WATER PIPES, &c. JEREMIAH D. GREER, Troy, N. Y. Filed Jan. 10, 1882. (Specimens.)

Claim.—A concrete composed of coal-tar, asphaltum, oxide of iron, sulphur, sand or gravel, hydraulic cement or calcined plaster, and either with or without oils or salt, prepared substantially as described and set forth.

255,282. SASH FASTENER AND HOLDER. HARRY GREENFIELD, Harrison, N. J. Filed Dec. 10, 1881. (Model.)

Brief.—A loosely-pivoted holding-catch engages with the cam-projection on the pivoted locking-catch, thus locking the sash. By raising the locking-catch the holding-catch will disengage itself and the sash be free to be opened by both hands.

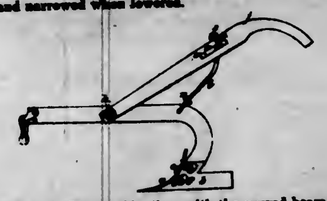


Claim.—1. The loosely-pivoted holding-catch B, in combination with the pivoted locking-catch A, formed with the cam-projection *a*, substantially as and for the purposes set forth.

2. The plate *b*, formed with the recessed lug *c*, in combination with the pivoted locking-catch A and the loosely-pivoted holding-catch B, substantially as and for the purposes set forth.

255,283. PLOW. MILTON T. HANCOCK, Thomasville, Ga. Filed Feb. 25, 1882. (No model.)

Brief.—By loosening the double screw-nut the handles may be slid up or down the length of the slot upon the brace. The heads of the latter are such that the handles are spread when raised and narrowed when lowered.



Claim.—1. The combination, with the curved beam-standard and the adjustable mold-board *a*, of the open box-plate *c*, the adjustable land-bar *h*, the screw-bolts, and their confining-nuts, the said box-plate and land-bar being secured to opposite sides of the standard by the screw-bolts by which the land-bar is secured, substantially as herein set forth.

2. The combination, with the plow-beam, of the handles *j*, provided with slots *r r*, the bent screw-threaded rod *l*, bound and tied to the beam and passed through said handle-slots, the right-and-left-screw nut *s*, and the shouldered cross-brace *t*, arranged within the said handle-slots, whereby the handles are adapted for vertical adjustment and braced and supported vertically and laterally, substantially as herein set forth.

3. The combination, with the beam, of the handles having the slots *r r*, the screw-threaded rod *l*, the clasp or link *u*, and the right-and-left-screw nut *s*, the said rod being passed through the handle-slots and having the inner and outer bands, *t t'*, on opposite sides of said handles, and united above the latter by the said screw-nut, whereby the handles are adapted to be set high or low and to vary the distance between the handles to suit a high or low position thereof, substantially as described.

255,284. EMBROIDERING-MACHINE. ALBERT HARDEGEN, New York, N. Y. Filed Oct. 24, 1881. (No model.)



Claim.—1. The combination, in an embroidery-machine, of the vertically and horizontally movable frame carrying rollers for the fabric that is to be embroidered with the series of reciprocating needle-bars arranged at one side of the frame, the series of rotary thread-conductors arranged at the opposite side of said frame and adapted to form loops upon the needles after the latter have penetrated the fabric, mechanism timed for intermittently moving said frame the length of a stitch, and devices arranged to be under control of the operator for causing said frame in its movements to be guided in accordance with the lines of the pattern to be produced, substantially as described.

2. The combination, in an embroidery-machine, of the vertically and horizontally movable frame carrying the rollers upon which the fabric to be embroidered is wound with the reciprocating needle-bars and needles, and the rotary thread-conductors, adapted and arranged to form lines of chain-stitches upon the fabric, devices for automatically and intermittently moving the frame to the extent of a stitch at requisite intervals, mechanism arranged to be under the control of the operator and adapted to direct the movement of the frame, and the pattern-guide arms connected with the frame, and having a pointer arranged to move over the pattern-board, whereby the operator can direct the movements of the frame in accordance with the pattern-lines upon the pattern-board, substantially as described.

3. The combination, with the movable frame upon which the fabric to be embroidered is supported, of the series of reciprocating needle-bars, the rotary shaft provided with cams for actuating the needle-bars, the rotary thread-conductors A^3, adapted to form the threads into loops upon the needles after the latter have penetrated the fabric, and the reciprocating rack-bar adapted to revolve the thread-conductor alternately in reverse directions, said members being constructed and arranged for operation substantially as described.

4. The combination, with the front row of standards, A, of the T-shaped bar secured thereon, the standards G, supported upon said bar, the rotary shaft provided with a series of cams and having its bearings in said standards, and the reciprocating needle-bar *g*, actuated by said cams, substantially as described.

5. The combination, in an embroidery-machine, of the movable frame upon which the fabric to be embroidered is supported with the horizontal reciprocating needle-bars, the hinged plate g^3, with openings for the passage of the needles, and the rotary thread-conductors, substantially as described.

6. The combination, in an embroidery-machine, of the reciprocating needle-bars and the movable frame for supporting the fabric to be embroidered with the rotary thread-conductors A^3, provided with spring-rings B^3, and the weighted brake or tension plates H', substantially as described.

7. The combination, with the rotary thread-conductor B^3, of the reciprocatory rack-bar for actuating the said thread-conductors, the vibratory levers L, pivoted to the rack-bar and connected with each other and with a vibratory lever, L^3, and the cam-grooved wheel adapted to actuate said levers, substantially as described.

8. The combination, in an embroidery-machine, of the vertically and horizontally movable frame supporting rollers upon which the fabric to be embroidered is wound with the crossed supporting-levers E^3, provided with wheels supporting said frame, and having the intermeshing segment-racks B^3, whereby the movement of one lever will cause a corresponding movement on the part of the other lever, substantially as described.

9. The combination, in an embroidery-machine, of the vertically and horizontally movable frame carrying supports for the fabric to be embroidered with the vertical standards E, connected in pairs by cross-bars E^2, the double fork-shaped levers E^3, weighted at their upper ends, and having at their lower ends grooved wheels bearing upward against the said cross-bars, and the pair of intermeshing segment-racks connected with the levers, substantially as described.

10. The combination, in an embroidery-machine, of the movable frame supporting the rollers upon which the fabric is wound, and comprising the bars C, with the adjustable rods C^3, passing through said bars, and the stretching-plates D^4, connected with the adjustable rods, substantially as described.

11. In an embroidering-machine, the vertically and horizontally movable frame comprising the bars C, the stretching-bars D^4, the end plates, C' and C^3, the rollers, and the mechanism for rotating one of said rollers, the above members being constructed and arranged substantially as described.

12. The combination, in an embroidering-machine, of the vertically and horizontally movable frame carrying the rollers upon which the fabric to be embroidered is wound with the horizontal rods *f*, arranged in pairs and journaled in the frame F', and the vertical guide-rod F, passing between the said horizontal rods, substantially as described.

13. The combination, in an embroidery-machine, of the movable frame provided with plate C^3 at one end and carrying supports for the fabric to be embroidered with the vibratory lever E^3,

and the rod m^3, adapted to bear against said plate and connected with the vibratory lever by a universal joint, substantially as described.

14. The combination, with the vibratory lever M^3, of the rod m^3, connected with said lever by a universal joint and passing through the hollow shaft N, the hollow cone N', arranged to slide upon the said shaft, and the lever N', connected at one end with the rod within the hollow shaft and at its remaining end resting upon the slidable cone, substantially as described.

15. The combination, with the vibratory lever M^3, of the hollow cone N', arranged to slide upon a hollow shaft and connected with said lever, the lever N', connected at one end with a rod, m^3, arranged to swing laterally within the hollow shaft, and having its remaining end rested upon the slidable cone, substantially as described.

16. The combination of the rotary shaft M with the cams m m', secured thereon, the vibratory levers M^2 and M^3, actuated by said cams, the swinging and longitudinally-movable rod m^3, the slidable cone arranged upon a hollow shaft inclosing the swinging rod, and the lever N', connected with said rod at one end and at its other end rested upon the slidable cone, substantially as described.

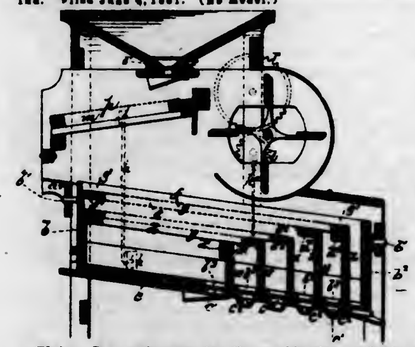
17. The combination, with the hollow shaft N, of the rod m^3, connected with a vibratory lever by a universal joint, the bevel-gear N^2, secured upon the hollow shaft, the lever N', pivoted to said gear and connected with the rod m^3, and mechanism for rotating the bevel-gear and hollow shaft, substantially as described.

18. The combination, with the rotary shafts M and M^1, connected by an endless belt, of the cams m and m', the vibrating levers M^2 M^3, the rods m^3, the slidable cones N^1, the hollow shafts N, and the bent levers N' and springs n^3, said members being constructed and organized for operation substantially as described.

19. The combination, with the rotary shaft p', provided at one end with a crank, of the bevel-gear at the opposite end of said shaft, gearing with a bevel-gear upon shaft P', the bevel-gear P on the last-mentioned shaft engaging a bevel-gear upon hollow shaft N, the lever N', pivoted to the bevel-gear that is fixed upon the hollow shaft, and the rod m^3, connected by a universal joint with a vibratory lever, and also connected with the bent lever, and the cone N^1, adapted to slide upon the hollow shaft and actuate the lever that is pivoted to the bevel-gear and connected with the said rod, said members being constructed and adapted for operation substantially as described.

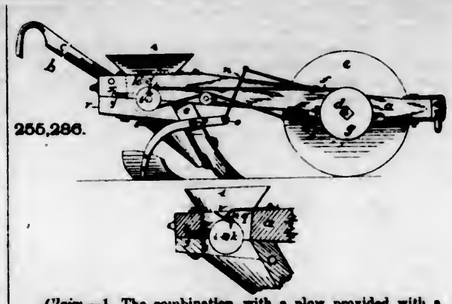
20. The combination, in an embroidering-machine, of the vertically and horizontally movable frame carrying rollers upon which the fabric to be embroidered is wound with devices for shifting said frame the length of a stitch after the needles have been drawn out from the fabric, the herein-described guide arranged over the pattern-board, and devices for varying the direction in which the frame is shifted, substantially as described.

255,285. GRAIN-SEPARATOR. JAMES F. HATFIELD, Dublin, Ind. Filed June 4, 1881. (No model.)



Claim.—In a grain-separator, the combination, with the oscillatory cradle *b*, having partitions *w x v y z* and discharge-openings b^2, of the inclined double-arched screens *d* and *f*, the single screen *e*, and the slide-board *c*, having apertures *c'* and inclined chutes c^2, substantially as specified.

255,286. SEED-PLANTER, COVERER, AND FERTILIZER-DISTRIBUTER. LEWIS S. HOOVER, Sparkling Catawba Springs, N. C., assignor to himself and E. O. Elliott, same place. Filed June 15, 1881. (No model.)



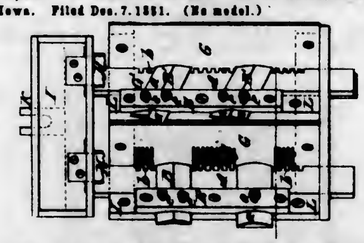
255,286.

Claim.—1. The combination, with a plow provided with a seed-dropper depositing seed in the furrow made by the plow, of the spring *m*, bail *n*, secured to the free end of the spring, coverer-standards *o o*, carrying right and left plows, and pivotally secured to the lower ends of the bail-arms and pivoted to the horizontal bolt *p*, having right and left screw-threads provided with nuts, whereby the spring-coverers may be adjusted laterally, substantially as described.

2. The dropping-wheel *k*, provided with a recess in its circumference, having one edge cut away, in combination with detachable and interchangeable plugs *u*, substantially as described, and for the purpose set forth.

3. The combination, with a plow provided with the supporting-wheel *o* and detachable and interchangeable hand-pulleys *g*, of the band *f*, axle *i*, carrying the pulley A, and recessed dropping-wheel *k*, having detachable and interchangeable plugs *u*, detachable box *r*, spring *v*, and piece *w*, having spring *y*, substantially as described, and for the purpose set forth.

255,287. OATMEAL-MACHINE. ANTON HEISS, Muscatine, Iowa. Filed Dec. 7, 1881. (No model.)



Claim.—1. The combination, with two plates, G G', arranged at an angle to each other, thus forming a trough, one of them having recesses or openings for passage of the meal as it is cut, of the recessed plates A and one or more knives, which are placed substantially at right angles and contiguous to said recessed plates A, substantially as set forth, to operate as specified.

2. The sliding frame formed of the triangular cross-pieces F F and F'', inclined plates G and G', and the knives, in combination with the stationary recessed plates A, substantially as and for the purposes set forth.

3. The recessed plates A and the knives, in combination with means, substantially as described, for diminishing and increasing the size of the recesses, as and for the purposes set forth.

4. The recessed plates A and inclined plates G and G', in combination with the toothed adjustable plate P, substantially as and for the purposes described.

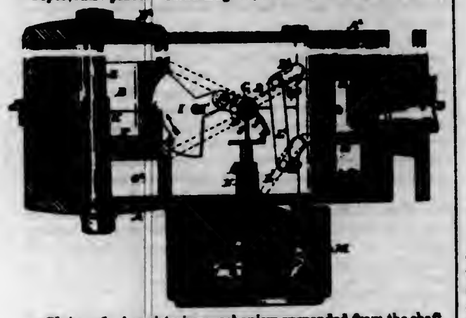
5. The hopper I, having the troughs H H, formed with the passages *h* and guides *i*, said hopper and troughs communicating and being adapted to reciprocate together, in combination with the inclined plates G and G', recessed plate A, and the knives, substantially as and for the purposes described.

255,288. HEAD-BLOCK FOR SIDE-BAR BUGGIES. ALONZO D. HICKOX, Columbus City, Iowa. Filed Nov. 14, 1881. (No model.)



Claim.—In a side-bar buggy, the combination of the axle having the plate B C secured to its top, the headed king-bolt F, secured in place by the plate, the metallic head-block D, having the fifth-wheel formed as a solid part thereof, and having the supports I secured to its ends, substantially as shown and described.

255,289. PISTON WATER METER AND REGISTER. SIDNEY W. HOAG, Sr., New York, N. Y., assignor of one-half to Henry B. Piper, same place. Filed Aug. 16, 1881. (No model.)



Claim.—1. A registering mechanism suspended from the shaft by which it is operated, in combination with a glass case mounted upon and revolving with said operating-shaft and inclosing the registering mechanism, and a stationary casing inclosing the revolving glass case and provided with a glass front, substantially as and for the purposes described.

2. The combination, in a water-meter, of the shaft N, a registering mechanism pendent from and operated by said shaft, the glass case O', mounted upon and revolving with the shaft N and inclosing the registering mechanism, a reciprocating piston and mechanism connecting with the shaft N, and adapted to be acted upon by said piston to intermittently rotate the shaft N, substantially as and for the purposes described.

3. The combination of the shaft N, provided with the star-wheel N', a registering mechanism pendent from and operated by said shaft, the sleeve-shaft H, provided with the radial arms *j* and *j'*, the levers A^4 and I, and the piston F, all arranged and adapted to operate substantially as and for the purposes described.

4. The combination of the piston F, the segmental lever I, provided with shoulders *i* and *i'*, the lever A^4, sleeve-shaft H, and the valve or gate H', all arranged and adapted to operate substantially as and for the purposes described.

5. The combination of the pistons F and F', the notched segmental levers G' and I, shaft G, sleeve-shaft H, lever A^4, and the gates G^2 and H', all arranged and adapted to operate substantially as and for the purposes described.

6. The valves or gates G^2 and H', arranged as set forth, and operated respectively by the pistons F' and F to open and close the induction-passages, in combination with the valves or gates J J' and L L', connected together in pairs and operated by the force of the incoming current of water to open and close the eduction-passages, substantially as described.

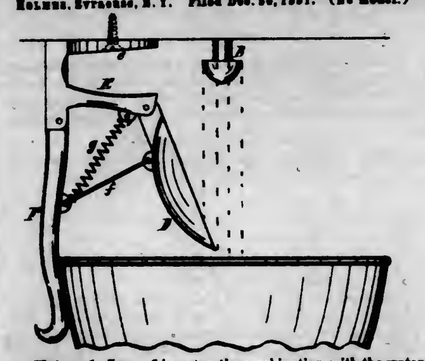
7. A water-meter case composed primarily of the three castings A, A', and A^1, packed at their joints by V-shaped tongues and grooves, in combination with the removable heads B^2 and B^3 and the clamping-bolts E and E', provided with the conical sections e^3, substantially as and for the purposes described.

8. The combination of the worm-shaft N, the metal disk O, the cylindrical chamber M, provided with the glass front M^2, the glass chamber O', attached to and adapted to revolve with the disk O and with the shaft N, and a registering mechanism contained within said glass chamber and pendent from and adapted to be operated by said worm-shaft, substantially as described.

9. The combination of the worm-shaft N, the frame *h*, pendent from said shaft and provided with the stationary or fixed index-fingers *a* and *a*, the graduated worm-wheel *p*, the worm-shaft *l*, the differential worm-wheels *q* and *r*, arranged to be operated by the worm-shaft *l* at different speeds, the index-finger *s*, arranged to move with the wheel *r*, and the circular graduated scale on the wheel *q*, all adapted to operate substantially as and for the purposes described.

10. The casting A^1, provided with the passages *a*, *b*, *c*, *d*, *e*, and *f*, and the induction-orifice D and eduction-orifice D', in combination with the castings A and A', having formed therein the cylinders B and B' and passages *a'*, *b'*, c^2, d^2, e^2, and f^2, arranged relative to each other and to passages in the casting A^1, substantially as described.

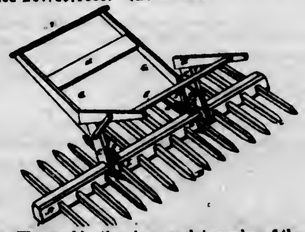
255,290. DRIP-PAN FOR REFRIGERATORS. GEORGE F. HOLBEN, Syracuse, N. Y. Filed Dec. 30, 1881. (No model.)



Claim.—1. In a refrigerator, the combination, with the water-discharge orifice, of a movable drip-pan, D, attached to the bottom of the refrigerator, a projection or arm whereby the pan is swung from under the discharge-orifice by the vessel which receives the waste water when said vessel is put in place and retained in this position while said vessel remains in place, and means whereby the pan is automatically returned under the discharge-orifice to receive the water when said vessel is removed, substantially as set forth.

2. The combination, with a refrigerator having a water-discharge orifice, B, of a bracket, E, a drip-pan, D, and arm F, pivoted to said bracket, spring *g*, connecting the arm with the bracket, and a rod, *f*, connecting the arm with the drip-pan, substantially as set forth.

255,291. REVOLVING HAY-RAKE. EDWARD HUBER, Marion, Ohio. Filed Nov. 29, 1881. (No model.)

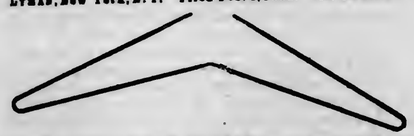


Claim.—1. The combination, in a revolving rake, of the rake-head A, revolving in the standards C, the plates K, notched at *c* and secured to the rake-head and tines, the handles G, pivoted to the standards C, the springs J, secured to said handles, and the two legs or projections *a a* on said springs, one projection serving to hold down the rake-teeth in working position and the other projection serving as a lifter, substantially as described.

2. The combination of the rake-head adapted to revolve in bearings of standards C, the metal bands L, encircling the rake-head, the spring catch-plates J, and the plates K, bearing against said bands, substantially as specified.

3. For a horse hay-rake of the character described, a curved spring, J, provided near its curved end with two catches, *a a*, adapted for use in combination with the plate K, notched at *c*, for the purpose described.

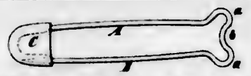
255,292. HAIR-PIN. CHARLES A. HERSEY and WILLIAM H. LYMAN, New York, N. Y. Filed Feb. 4, 1882. (No model.)



Claim.—As a new article of manufacture, a magnetized hair-pin, substantially as and for the purposes specified.

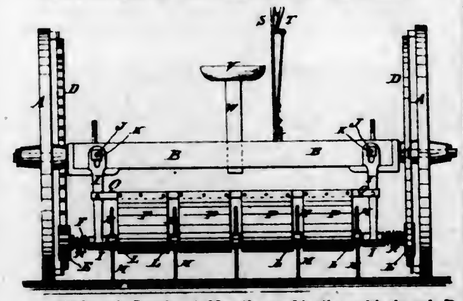
255,293. SAFETY-PIN. WILLIAM P. HYATT, Brooklyn, N. Y. Filed July 23, 1881. (No model.)

255,293.



Claim.—The safety-pin consisting of the limbs A B, the bends *a*, extending laterally outward beyond the limbs, and the bend *b* between or at the junction of the limbs, all said bends being in the same plane with the limbs, and the shield C, substantially as specified.

255,294. COMBINED HAY TEDDER AND RAKE. WILL R. JONES, Rockford, Ill. Filed Nov. 19, 1881. (No model.)

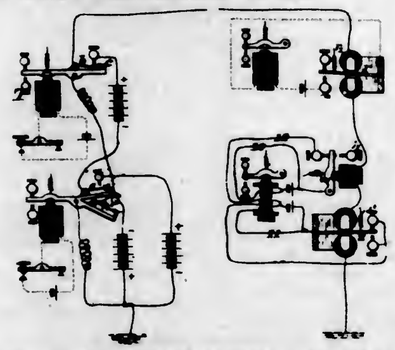


Claim.—1. In a hay-tedder, the combination, with the axle B and the shaft F, carrying the tedder-teeth, of the arms I, provided with bearings at their lower ends for the said shaft, and having their upper ends slotted, and the bolt and nut J K, substantially as and for the purpose set forth.

2. In a hay-tedder, the combination, with the drive-wheels A the cog-wheels D, and the axle B, of the shaft F, the gear-wheels E, the hubs L, provided with the teeth M, and the arms I, adjustably secured to the axle, substantially as and for the purpose set forth.

3. In a hay-tedder, the combination, with the rotary shaft F, the hubs and teeth L M, and the arms I, of the scroll-guards O P and the cross-bar Q, substantially as herein shown and described, whereby the tedder-teeth are kept from carrying hay over the shaft and becoming clogged, as set forth.

255,295. QUADRUPLEX TELEGRAPH. FRANCIS W. JONES, New York, N. Y. Filed Jan. 18, 1882. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of a key or transmitter, two insulated contact-springs mounted thereon, two insulated contact-stops with which said springs are simultaneously brought in contact when said key is depressed, two independent main batteries of like electro-motive force but unlike polarity inserted between the earth and said insulated contact-stops, respectively, and a second key or transmitter having an insulated contact-stop, said key and contact-stop being respectively connected with the two contact-springs of the first key, whereby said contact-springs are alternately placed in connection with the main line.

2. The combination, substantially as hereinbefore set forth, of a key or transmitter, two insulated contact-springs mounted thereon, two insulated contact-stops with which said springs are simultaneously brought in contact when said key is depressed, two independent main batteries of like electro-motive force but unlike polarity inserted between the earth and said insulated contact-stops, respectively, a second key or transmitter having an insulated contact-spring mounted thereupon, a line-wire extending from said spring to the distant station, a third main battery having one of its poles connected with that insulated contact-spring upon the first key, which, when said key is depressed, unites it with another battery of coincident polarity and its other pole with the working-contact of the second key, and a conductor uniting the remaining contact-spring of the first key with the resting-contact of the second.

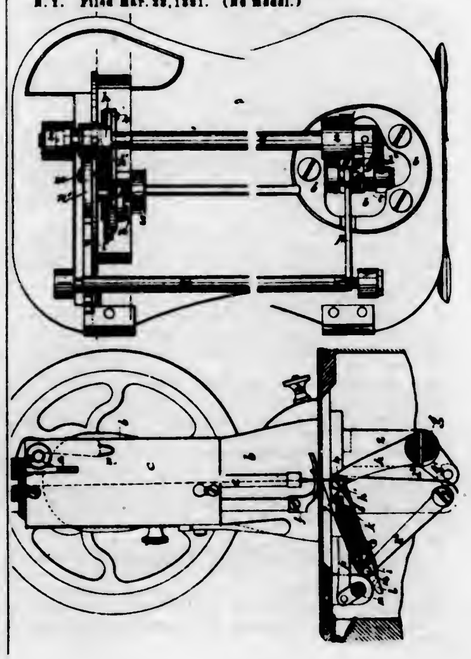
3. The combination, substantially as hereinbefore set forth, of a key or transmitter, two insulated contact-springs mounted thereon, two insulated contact-stops with which said springs are simultaneously brought in contact when said key is depressed, two independent main batteries of like electro-motive force but unlike polarity inserted between the earth and said insulated contact-stops, respectively, a second key or transmitter having an insulated contact-spring mounted thereupon, a line-wire extending from said spring to the distant station, a third main battery having one of its poles connected with that insulated contact-spring upon the first key, which, when said key is depressed, unites it with another battery of coincident polarity and its other pole with the working-contact of the second key, a conductor uniting the remaining contact-spring of the first key with the resting-contact of the second, and an artificial resistance inserted in said conductor equal to the resistance of the last-named battery.

4. The combination, substantially as hereinbefore set forth, of an electro-magnet provided with two pairs of differential or neutralising coils with two independent batteries and two independent relays, one having a polarized and the other a neutral armature.

5. The combination, substantially as hereinbefore set forth, of two independent relays included in the same main circuit, one having a polarized and the other a neutral armature, two independent local circuits controlled by the respective armatures of said relays, and an electro-magnet having two independent magnetizing-coils, one included in each of said local circuits.

6. The combination, substantially as hereinbefore set forth, of an electro-magnet provided with two pairs of differential or neutralising coils with two independent batteries and two independent relays, one having a polarized and the other a neutral armature, which, respectively, open and close local circuits traversing two coils, both having a like magnetic effect upon the core of the electro-magnet.

255,296. SEWING-MACHINE. JOHN THOMAS JONES, Utica, N. Y. Filed Mar. 28, 1881. (No model.)



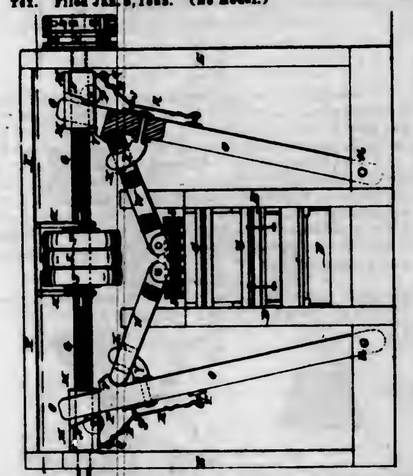
Claim.—1. In a sewing-machine, of the stationary hollow arm *h*, having brackets *i*, that project down through the bed *a*, the links *g* and *g*, hinged together, the rock-shaft *m*, and feed-bar *n*, the block *r*, grooved hub *s*, arm *v*, and pivot *s'* in the bracket *i* for the hub *s*, substantially as set forth.

2. The combination, in a sewing-machine, of the shuttle-link *h'*, having supports for the shuttle, with the arm *h²*, pivoted at 3, the arm *h*, rock-shaft *g*, and mechanism for giving motion to the rock-shaft, substantially as set forth.

3. The combination, with the arm *h²*, rock-shaft *g*, and arm *h*, of a shuttle-link, *h'*, having fingers 5 and 7 to receive the nose of the shuttle, and the lever *l*, pivoted at 14, and recessed for receiving the heel of the shuttle, and a spring to retain the lever *l* in position, substantially as set forth.

4. The combination, with the needle-bar and needle in a sewing-machine, of a thread-tension, the take-up lever 12, having a positive movement, and the spring cushioning device *o*, the parts being arranged substantially as specified, so that the thread passes from the controller 12 over the cushioning device and then directly to the needle, for the purposes set forth.

255,297. BALING-PRESS. ISAAC VAN SANDT JONES, Salado Tex. Filed Jan. 3, 1882. (No model.)



Claim.—1. In a press, the combination, with the follower *b*, the right-and-left screw G, and nuts M, of the hinged levers O and the bars W, swiveled to the said levers, substantially as and for the purpose set forth.

2. In a press, the combination, with nuts M, having shoulders N, and the levers O, having forked upper ends, of the anti-friction wheels P, journaled in recesses in the rear of the shoulders of the nuts, with their faces projecting beyond the said shoulders, substantially as and for the purpose set forth.

3. In a press, the combination, with the follower *b*, the right-and-left screw G, the nuts M, and the hinged bars O, of the slotted bars W, the hinged socket *a*, and the swiveled arms Y, substantially as and for the purpose set forth.

4. In a press, the combination, with the hinged levers O and the follower-bars W, having slots X, of the curved and flattened swiveled arms Y, substantially as herein shown and described, whereby the lower ends of the said follower-bars can have a lateral movement, as set forth.

5. In a press, the combination, with the nuts M and the levers O, of the connecting rods or chains R, substantially as herein shown and described, whereby the said nuts in their outward movements are made to carry the said levers with them, as set forth.

255,298. JOINTED HARVESTER-REEL. FREDK. F. KASER, Waterville, Minn. Filed Jan. 12, 1882. (No model.)

Claim.—1. The combination, with the reel-shaft *b*, journaled in the reel-post *a*, and provided with the gudgeon *d* at its opposite end, and cam *h*, being loosely on the reel-shaft on the driver's side of the machine, of the metallic hook *d*, having an eye, *e*, cord *f*, having a weight, *i*, at its rear end, and inclined brace *h*, provided with a pulley, *g*, at its upper end, substantially as described, and for the purpose set forth.

2. The combination, with the reel-shaft *b*, journaled in the

Claim.—1. The combination, in a sewing-machine, of the stationary hollow arm *h*, having brackets *i*, that project down through the bed *a*, the links *g* and *g*, hinged together, the rock-shaft *m*, and feed-bar *n*, the block *r*, grooved hub *s*, arm *v*, and pivot *s'* in the bracket *i* for the hub *s*, substantially as set forth.

2. The combination, in a sewing-machine, of the shuttle-link *h'*, having supports for the shuttle, with the arm *h²*, pivoted at 3, the arm *h*, rock-shaft *g*, and mechanism for giving motion to the rock-shaft, substantially as set forth.

3. The combination, with the arm *h²*, rock-shaft *g*, and arm *h*, of a shuttle-link, *h'*, having fingers 5 and 7 to receive the nose of the shuttle, and the lever *l*, pivoted at 14, and recessed for receiving the heel of the shuttle, and a spring to retain the lever *l* in position, substantially as set forth.

4. The combination, with the needle-bar and needle in a sewing-machine, of a thread-tension, the take-up lever 12, having a positive movement, and the spring cushioning device *o*, the parts being arranged substantially as specified, so that the thread passes from the controller 12 over the cushioning device and then directly to the needle, for the purposes set forth.

255,297. BALING-PRESS. ISAAC VAN SANDT JONES, Salado Tex. Filed Jan. 3, 1882. (No model.)

Claim.—1. In a press, the combination, with the follower *b*, the right-and-left screw G, and nuts M, of the hinged levers O and the bars W, swiveled to the said levers, substantially as and for the purpose set forth.

2. In a press, the combination, with nuts M, having shoulders N, and the levers O, having forked upper ends, of the anti-friction wheels P, journaled in recesses in the rear of the shoulders of the nuts, with their faces projecting beyond the said shoulders, substantially as and for the purpose set forth.

3. In a press, the combination, with the follower *b*, the right-and-left screw G, the nuts M, and the hinged bars O, of the slotted bars W, the hinged socket *a*, and the swiveled arms Y, substantially as and for the purpose set forth.

4. In a press, the combination, with the hinged levers O and the follower-bars W, having slots X, of the curved and flattened swiveled arms Y, substantially as herein shown and described, whereby the lower ends of the said follower-bars can have a lateral movement, as set forth.

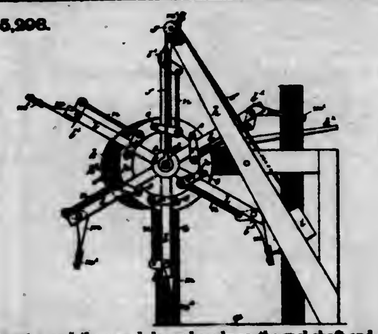
5. In a press, the combination, with the nuts M and the levers O, of the connecting rods or chains R, substantially as herein shown and described, whereby the said nuts in their outward movements are made to carry the said levers with them, as set forth.

255,298. JOINTED HARVESTER-REEL. FREDK. F. KASER, Waterville, Minn. Filed Jan. 12, 1882. (No model.)

Claim.—1. The combination, with the reel-shaft *b*, journaled in the reel-post *a*, and provided with the gudgeon *d* at its opposite end, and cam *h*, being loosely on the reel-shaft on the driver's side of the machine, of the metallic hook *d*, having an eye, *e*, cord *f*, having a weight, *i*, at its rear end, and inclined brace *h*, provided with a pulley, *g*, at its upper end, substantially as described, and for the purpose set forth.

2. The combination, with the reel-shaft *b*, journaled in the

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reel-post *a*, and the cam *h*, hung loosely on the reel-shaft and provided with a cam-groove, *h'*, on the driver's side of the machine, of the slotted reel-arms *i*, rings *p*, bell-crank levers *m*, jointed beaters *m'*, hooks *n*, and rock-shafts *o*, having arms *o' o²*, the former provided with rollers *o³*, operating in the cam-groove *h'*, substantially as described, and for the purpose set forth.

3. The combination, with the overhanging reel-shaft *b*, and cam *h*, hung loosely on said shaft and provided with the cam-groove *h'*, lever *h²*, and means for holding the cam when adjusted, arranged on the driver's side of the machine, of the slotted reel-arms *i*, rings *p*, bell-crank levers *m*, jointed beaters *m'*, hooks *n*, rock-shafts *o*, having arms *o' o²*, and rollers *o³*, substantially as described, and for the purpose set forth.

255,299. CANE, UMBRELLA-HANDLE, &c. THOMAS V. KEAN, Keam's Canyon, Ariz. Filed Feb. 20, 1882. (No model.)

Brief.—The cane has a reservoir for the reception of liquids. A suction-tube is secured to the neck by a stopper which is provided with vent-holes. The tube projects above the stopper, so that the liquid can be drawn without inverting the cane.



Claim.—1. A hollow cane or handle for the reception of liquids, provided with a suction-tube secured in the head of the cane or handle and provided with air-vents, substantially as set forth.

2. A hollow cane or handle provided with a suction-tube and air-vents, and a removable or spring cap having a rubber lining-piece, which closes and protects the suction-tube and vents when the cap is in its normal position.

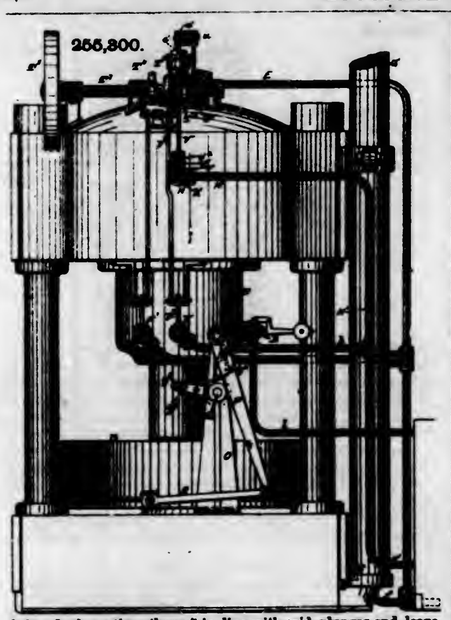
3. The combination, in a cane or reservoir, A, having the vents, a suction-tube, C, secured by the stopper D, and removable or spring cap B, having the rubber seat with opening *a*, whereby the suction-tube and vents are closed and protected and leakage of the liquid contents prevented when the cap B is in its normal position, substantially as set forth.

4. The combination of the hollow cane A, liquid-reservoir, suction-tube C, secured in the reservoir, and cap B, having the protecting-piece E seated therein, substantially as set forth.

255,300. AUTOMATIC HYDRAULIC PRESS. GEORGE A. LAWRENCE, New York, N. Y., and EDWARD J. FREEY, Philadelphia, Pa. Filed Oct. 15, 1881. (No model.)

Claim.—1. In a hydraulic press, the combination, with a suitably-arranged plunger and a platform having movement in a plane in the path of the plunger and at a right angle thereto, of automatically-operating valves for causing reciprocation of said plunger, and automatic devices for giving said platform an intermittent motion to bring fresh portions thereof successively directly in line with said plunger, substantially as described.

2. The combination, with the plunger of a hydraulic press arranged substantially as described, of a platform having movement in a plane in the path of the plunger and at right angles thereto, and automatic mechanism for shifting said platform to



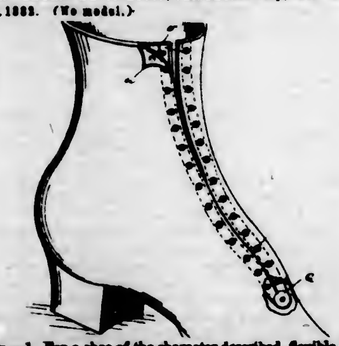
bring fresh portions thereof in line with said plunger and leave the same temporarily at rest while the plunger is performing its outward stroke.

3. In a hydraulic press, the combination, with the plunger and cylinder and the valves and water-pressure apparatus, constructed and arranged substantially as described, of the cams arranged to operate said valves, the platform provided with means for holding ore, and automatic mechanism for giving said platform an intermittent motion correlative with the action of said cams to bring and retain fresh portions of the ore successively into position to receive the plunger, substantially as described.

4. The hydraulic press composed of the cylinder provided with the shouldered plunger, the pipes leading into said cylinder above and below the shoulder of the plunger and controlled by suitable valves, the water-pressure apparatus connected with said pipes, the rotary platform carrying one or more mortars, the shaft T, carrying the series of cams for operating said valves through intermediate mechanism, and suitable devices connected with the plunger for communicating intermittent rotary motion to the platform, substantially as described.

5. The combination, with the plunger and rotary platform, of the suitably connected and supported arms q and q', the lever P, pitman R, arm S', and pawl T, substantially as described.

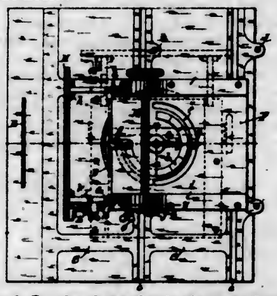
255,801. SHOE. DAVID LUBIN, Sacramento City, Cal. Filed Feb. 3, 1882. (No model.)



Claim.—1. For a shoe of the character described, flexible and elastic metal strips united to the flaps of the upper by means of a series of eyelets adapted to receive the lacing, substantially as described.

2. The combination, in a shoe, of the elastic metal strips perforated to receive the lacing, and united by tubular rivets or eyelets between the inclining portions *F a* of the flaps and connected together at their lower ends by a single flat joint, G, substantially as described.

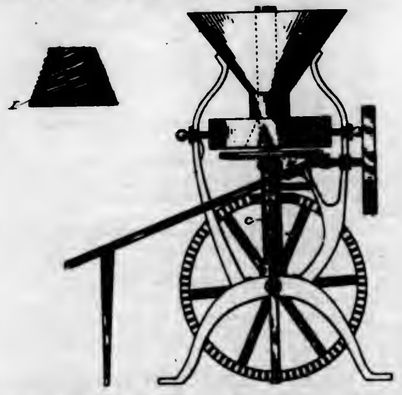
255,802. BEVEL SAW-TABLE GAGE. BENJAMIN S. LUTHER, Hebronville, Mass., assignor to Frank W. Sawyer, Providence, R. I., and Charles A. Sawyer, Malden, Mass. Filed Nov. 10, 1881. (No model.)



Claim.—1. In a bevel-gage for circular saws, the combination of the bed-piece C, provided with a groove, *c*, sliding plate D, pivoted plate F, gears J J, secured to the shaft K, racks G G, and pivoted guide-plate H, substantially as and for the purpose set forth.

2. In a bevel-gage for circular saws, the combination of the grooved bed-plate C, sliding plate D, and pivoted plate F with the clamp-pin N, provided with the hook *n*, and cam O, having unequal sides *r r'*, whereby the sliding plate D and pivoted plate F may be either immovably secured to the bed-plate C or secured to each other in sliding connection with the bed-plate C, substantially as described.

255,803. GRINDING-MILL. JOHANN MATZNER, Mount Pleasant, D. C. Filed Dec. 29, 1881. (No model.)



Claim.—1. The shell K, having the spiral ribs, each rib being provided with a series of notches, the notches in any two adjacent ribs being arranged alternately.

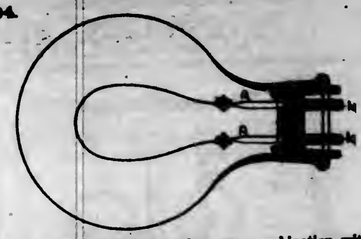
2. The cone I, having the spiral grooves, each of such grooves extending entirely around its circumference and decreasing both in diameter and pitch toward the base.

3. The combination of the stationary shell K, having the spiral ribs and notches, as described, with the spirally-grooved cone I, mounted on the shaft C, substantially as described.

255,804. ELECTRIC LAMP. HIRAM S. MAXIM, Brooklyn, assignor to the United States Electric Lighting Company, New York, N. Y. Filed Sept. 7, 1881. (No model.)

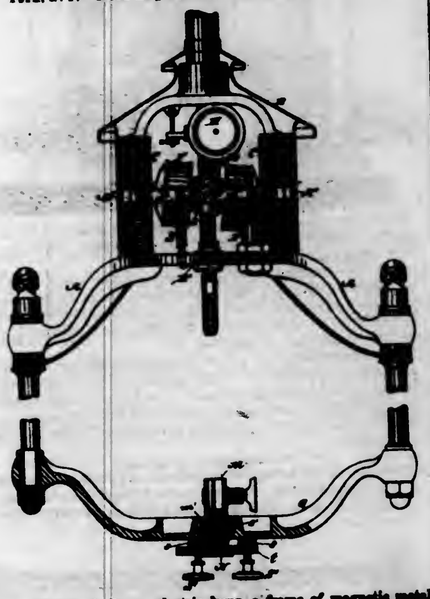
Claim.—1. In an incandescent electric lamp, the combination, with a plug or stopper, of metallic plugs B and conductors D, having conical enlargements or shoulders, as shown, and adapted to be screwed together in perforations having conical openings in the stopper for forming a tight joint between the metal and the glass, substantially as shown and described.

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2. In an incandescent electric lamp, the combination, with a perforated plug or stopper, of steel plugs B and copper conducting rods or wires D, having conical enlargements, as shown, and adapted to be screwed together in the perforations and clamped against the stopper on opposite sides, substantially as and for the purpose set forth.

255,805. ELECTRIC LAMP. HIRAM S. MAXIM, Brooklyn, assignor to the United States Electric Lighting Company, New York, N. Y. Filed Aug. 4, 1881. (No model.)



Claim.—1. In an electric lamp, a frame of magnetic metal supporting the feed-regulating mechanism, the sides of said frame being provided with pole-pieces and wound with an insulated conductor forming part of the lamp-circuit, substantially in the manner set forth, to form the feed-regulating magnets.

2. In an electric lamp, the combination, with the side rods and connecting-bar, of an upper supporting-frame of magnetic metal, cast in one piece, the sides of which are provided with pole-pieces, and wound with an insulated conductor forming a part of the lamp-circuit, substantially as and for the purpose set forth.

3. The combination of two electro-magnetic cores, having coils included in the main or arc circuit of an armature wound with coils forming part of a shunt-circuit of high resistance, and pivoted midway between the said cores, a gravitating carbon-holder, and mechanism connected with the pivoted armature and adapted to control the descent of the carbon-holder, substantially as set forth.

4. The combination, in an electric lamp, of parallel cores, having consequent poles A' A'' and coils C C' included in the main or arc circuit, armature B, pivoted between the said poles and having coils F, forming part of a shunt about the lamp-carbon-holding rod K, and mechanism connected with the pivoted armature and adapted to control the descent of the carbon-holder, as set forth.

5. The combination of pivoted armature B, link *a*, and frame G, having shafts carrying friction-wheels journaled therein, which are adapted to engage with the carbon-holder K, one of said shafts, *g''*, being provided with a friction-disk, H, whose rotation is controlled by a detent, *s*, carried by the armature B, substantially as set forth.

6. The combination of pivoted armature B, connecting-link *a*, and frame G of shafts journaled therein and carrying friction-disks which are adapted to engage with the carbon-carrier K when the frame G is tilted, friction-disk H, retarding mechanism I, and a spring-detent, *s*, carried by the armature B and arranged to bear on the periphery of said disk, substantially as set forth.

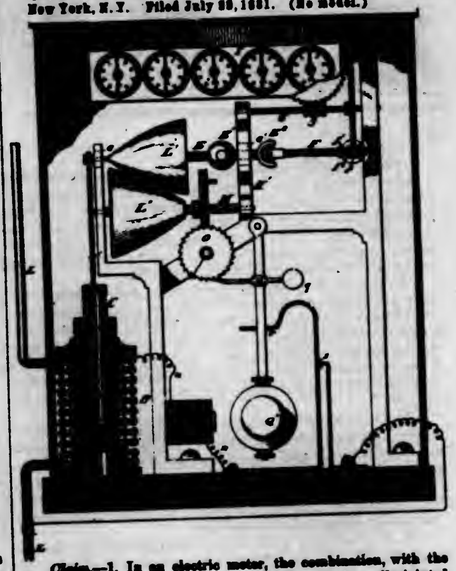
7. The combination, with carbon-holder and rotary feed mechanism connected therewith, of a disk fixed to a shaft engaging with the said carbon-holder, and two or more pivoted dash-pots, whose pistons are connected to the disk by the same crank-pin, as set forth.

8. The combination, in an electric lamp, with the carbon-holding rod K, of a cut-out or switch consisting of a pivoted contact-lever, V, insulated terminals T T', and a spiral spring, *v*, connected to the lever at a point directly above the fulcrum, as and for the purpose set forth.

9. The combination, with carbon-holding rod K, pivoted lever V, spring *v*, and insulated terminals T T', of a locking-lever, Y, adapted to be turned so as to prevent the tilting of lever V, as and for the purpose set forth.

10. In an electric lamp, the combination of a carbon-holder consisting of a stem, N, having a socket for the reception of the carbon-flanges *n'*, and a plate, *t*, carrying adjusting-screws, with the cross-bar O, provided with a stocket containing a spiral spring, *s'*, as described.

255,806. ELECTRICAL METER. HIRAM S. MAXIM, Brooklyn, assignor to the United States Electric Lighting Company, New York, N. Y. Filed July 28, 1881. (No model.)



Claim.—1. In an electric meter, the combination, with the axially-movable core of the magnet B, of the universally-jointed shaft E, connected thereto by an intermediate link, and also connected by intermediate gears with a registering apparatus, and carrying the conoid L', arranged to rock longitudinally upon the conoid L'', mounted upon a shaft journaled in fixed bearings and rotated by armature mechanism, substantially as described.

2. In an electric meter, the combination, with a registering apparatus, of a conoid, L', mounted upon a universally-jointed shaft in gear with said registering apparatus, a conoid, L'', mounted upon a shaft rotating in fixed bearings and supporting the first-named conoid upon its surface, suitable devices for varying the point of contact between said conoids by the influence of an electric current over the main line, and automatic mechanism for rotating said conoid L'' under the influence of a current derived from said main line, substantially as described.

3. The combination, with the registering apparatus and the electro-magnet B, arranged for connection with a main line and

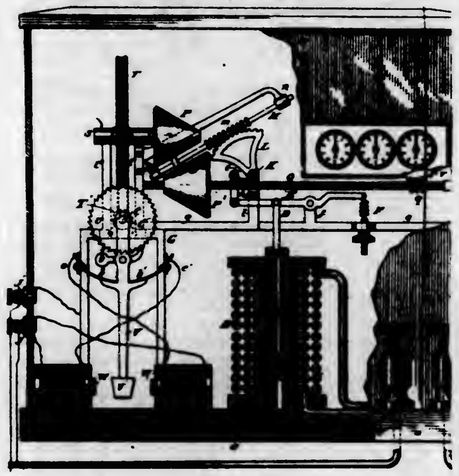
provided with an axially-movable armature, of the universally-

2. The strips for the manufacture of carbon conductors, com-

255,811. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. HIRAM S. MAXIM, Brooklyn, assignor to the United States

provided with an axially-movable armature, of the universally-jointed oscillating shaft E, in connection with said apparatus and carrying the conoid I/, a link connecting said shaft with said armature, the conoid I/', mounted upon shaft M, carrying a worm-wheel, the ratchet-wheel O, fixed upon a shaft carrying a worm meshing with said wheel, an electro-magnet in a circuit derived from the main line, a pendulum adapted to be oscillated thereby and provided with a pawl, *e*, substantially as described.

255,807. ELECTRICAL METER. HIRAM S. MAXIM, Brooklyn, assignor to the United States Electric Lighting Company, New York, N. Y. Filed July 20, 1881. (No model.)



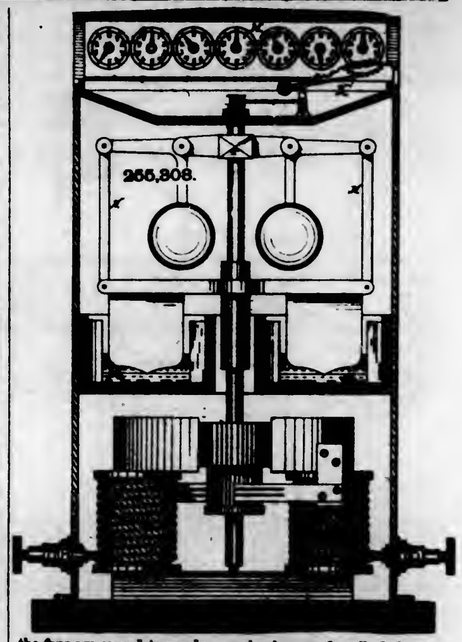
Claim.—1. The combination, with a single electric circuit, of a motor consisting of an electro-magnetic motive device having a constant rate of speed for different degrees of current strength, a registering apparatus impelled thereby, connecting-gear capable of varying the speed of movement transmitted, and an electro-magnet and armature, in conjunction with the said gearing and adapted to regulate its action, substantially as set forth.

2. In an electric motor, the combination, with an electro-magnet provided with axially-movable core, and a registering apparatus, of the cones P' and P, the former rotated by automatic mechanism, the friction-wheel O, arranged between said cones, suitable devices connected with the core of said magnet for shifting said wheel between said cores, and mechanism for transmitting motion from the cone P to the registering apparatus, substantially as described.

3. The combination, with the magnet E, arranged for connection with the main line and provided with the axially-movable core C, of the segmental gear L, connected with said core, the axially-movable shaft M, provided with the projections *m* and wheel O, the cone P, mounted upon the shaft Q, in gear with the registering apparatus, and the cone P, arranged for rotation by automatic mechanism, substantially as described.

4. In an electric meter, the combination, with the electro-magnets W W', the pendulum-bar V, arranged for vibration by the opposite attraction of said magnets and provided with pawl *e*, of the ratchet-wheel U, the worm mounted on the same shaft with the ratchet-wheel, the worm-wheel T, cone P', cone P, mounted on a shaft in gear with the registering apparatus, the friction-wheel O, arranged between said cones, and suitable devices arranged for operation to shift said wheel under the influence of an electrical current to be measured.

255,808. ELECTRICAL METER. HIRAM S. MAXIM, Brooklyn, assignor to the United States Electric Lighting Company, New York, N. Y. Filed Aug. 10, 1881. (No model.)



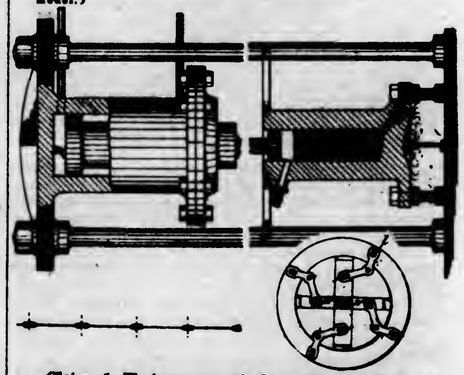
Claim.—1. The combination, with an electro-magnetic motor and registering mechanism, of retarding mechanism calibrated to cause the motor to revolve at a speed proportionate to the strength of the current energizing it, substantially as hereinbefore set forth.

2. The combination of an electro-magnetic motor, fans or blades driven thereby, a receptacle containing a liquid in which the fans are caused to revolve, mechanism, as described, for controlling the degree of immersion of the said fans or blades, and a registering apparatus, substantially as set forth.

3. The combination of an electro-magnetic motor, fans or blades driven thereby, a receptacle containing liquid, a centrifugal governor suitably connected with the said fans and adapted to control their degree of immersion in the liquid, and a registering apparatus, substantially as described.

4. The combination, with an electro-magnetic motor, of fans or blades L-shaped, as described, a system of levers, N, connecting the fans with a centrifugal governor, a tank or receptacle, M, containing liquid, and a registering apparatus, these parts being connected and arranged for operation substantially in the manner specified.

255,809. MANUFACTURE OF CARBON CONDUCTORS. HIRAM S. MAXIM, Brooklyn, assignor to the United States Electric Lighting Company, New York, N. Y. Filed Aug. 10, 1881. (No model.)

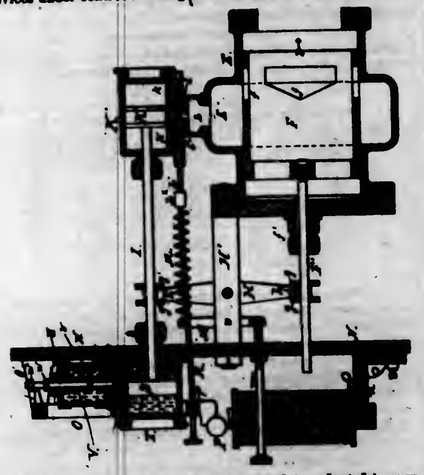


Claim.—1. The improvement in the art of manufacturing carbon conductors for incandescent lamps from plastic carbonizable substances, which consists in forming a continuous strip of alternately enlarged and slender sections, dividing the same into equal lengths, each having an enlargement at the ends, and carbonizing the lengths so formed, substantially as set forth.

2. The strips for the manufacture of carbon conductors, composed of a plastic carbonizable substance and formed with alternately enlarged and slender sections, as set forth.

255,810. SPEED-REGULATOR FOR DYNAMO-ELECTRIC MACHINES. HIRAM S. MAXIM, Brooklyn, assignor to the United States Electric Lighting Company, New York, N. Y. Filed July 26, 1881. (No model.)

Brief.—The main valve of the steam-engine is regulated by devices under control of a magnet in a branch of the main circuit.



Claim.—1. The combination, in a regulator adapted to regulate the speed of a steam-engine used for driving a dynamo-electric machine, of a steam-pipe, C, a valve for controlling the admission of steam, a stem for said valve, and mechanism, substantially as described, for shifting the same, an electro-magnet included in the circuit from the dynamo-electric machine driven or in a shunt branch thereof, and an armature connected with and controlling the shifting mechanism, whereby the flow of steam to the engine is regulated according to the varying attraction of the said magnet, as set forth.

2. The electric regulator consisting of the valve-chamber E, arranged for interposition in a steam-pipe and provided with the annular enlargement E', the hollow open valve F, arranged within said chamber and provided with the ports *f* and stem F', the cylinder K', connected with said annular enlargement by steam-passages controlled by suitable valves arranged to admit steam alternately to opposite end of said cylinder, the piston K, playing in said cylinder and provided with piston-rod I, the oscillating lever H, loosely connected with said piston-rod and the valve-stem F', and an electro-magnet and connections, as described, for controlling the positions of the valves governing the flow of steam from said annular enlargement E' to said cylinder K'.

3. The combination, with the valve-chamber E, having the annular enlargement E', and the valve F, provided with the ports *f* and stem F', of the cylinder K', connected with said annular enlargement by steam-passages controlled by valves for admitting steam alternately to opposite end of said cylinder, the piston K, having the piston-rod I, the oscillating lever H, connected to said piston-rod and stem of valve F, the electro-magnet, the pivoted armature-frame carrying armature P, the valve-stem L', the rod R, arranged between said armature-frame and said valve-stem, and the spring M, arranged substantially as described.

4. The combination, with piston-rod I, arranged for operation substantially as described, of the piston S of the dash-pot T, in which said piston plays, and means, as described, for regulating the flow of a liquid in said dash-pot from one side of the piston to the other, substantially as described.

5. The combination, with piston-rod I, arranged for operation substantially as described, of the piston S, the dash-pot T, in which said piston plays, an adjustable rod, U, for regulating the flow of a liquid in said dash-pot from one side to the other, and an electro-magnet and armature connected with the said rod U, and having a projection adapted to raise the same and permit a free passage to the liquid in the dash-pot when the armature has been depressed to its lowest point, substantially as and for the purpose set forth.

255,811. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. HIRAM S. MAXIM, Brooklyn, assignor to the United States Electric Lighting Company, New York, N. Y. Filed Aug. 5, 1881. (No model.)

Brief.—The regulation is effected by means of a switch, which first diverts the current from the coils of one pair of field-magnet cores and then reverses the current through the same coils.



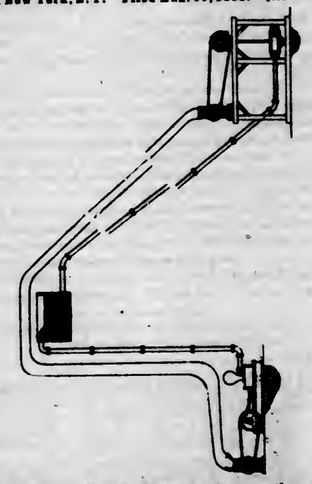
Claim.—1. The combination, with the field-magnet coils of a dynamo-electric machine, of a combined resistance-switch and current-reverser, substantially as set forth.

2. The method of regulating dynamo-electric machines, substantially as described, which consists in first diverting the current from a portion of the coils around the field-magnets and then reversing its direction in the same, as described.

3. The combination, with a dynamo-electric machine, of a rotary regulating device adapted to be moved by the main shaft of the machine, a pivoted magnetic bar placed in proximity to the lower portion of the main magnets, mechanism, substantially such as described, connecting the same with the regulating mechanism, for the purpose of controlling the extent and direction of movement of the latter.

4. The combination of rotary shaft F, carrying resistance devices, as described, ratchet-wheel H, oscillating pawl K, connected to a shaft, L, that is continuously revolved by the main shaft of the machine, and lever-connections M from the pawl to a pivoted magnetic bar, P, or its equivalent, substantially as described.

255,812. ELECTRICAL ENGINEERING. HIRAM S. MAXIM, Brooklyn, assignor to the United States Electric Lighting Company, New York, N. Y. Filed Aug. 10, 1881. (No model.)



Claim.—1. The method of draining mines or other excavations, which consists in converting the force of the water pumped up into an electric current when the same shall have fallen a distance greater than twice the vertical distance through which it was forced up, then reconverting the current into power and utilizing said power to work the pumps, substantially as described.

2. In a system of drainage substantially as hereinbefore described, the combination of an electro-magnetic motor, a force-pump, a turbine or other wheel located at a proper distance below the said force-pump, connected by suitable pipes therewith, a dynamo-electric generator, and wires connecting the same with the motor, these devices being arranged and combined for mutual operation substantially as set forth and described.

3. In a system of drainage substantially as hereinbefore described, the combination of an electro-magnetic motor, a force-pump, and a pipe for the water raised thereby, a reservoir or tank

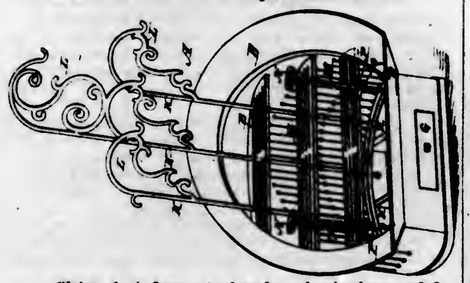
for receiving the water, an eduction-pipe from the reservoir, a water-wheel located at a proper distance below the same, a dynamo-electric machine, and line-wires connecting the said machine with the motor, these devices being arranged and combined for mutual operation substantially as shown and described.

255,313. BOX-FASTENER. HENRIC HAYER, Columbus, Ohio. Filed Jan. 27, 1882. (No model.)



Claim.—In a box-fastener, the plate A, having countersunk screw-holes *a* and threaded central aperture, B, secured to the front wall, C, of the box, as shown, and the headed and threaded bolt D, constructed and combined to serve with the hinged cover E, having countersunk aperture *d* and ring *d'*, adapted to receive sealing material, as and for the purposes set forth.

255,314. FLOWER-STAND. WILLIAM D. MCCALLUM, Truro, Nova Scotia, Canada. Filed Aug. 24, 1881. (Model.)



Claim.—1. A flower-stand made, as herein shown and described, with an outwardly-projecting beveled flange along its edges and with a series of shelves, hangers, and pedestals, as set forth.

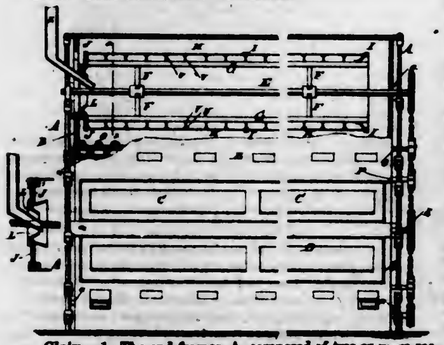
2. The combination, with the flower-stand A, of the outwardly-projecting flange D along the upper edges, substantially as shown and described, and for the purpose set forth.

3. In a flower-stand, the combination, with the shelves E, flange D, and pans G H, of the upright pivoted rods K, provided with hooks, and the ornamental braces L, substantially as shown and described.

4. In a flower-stand, the removable rods O and bearing-plates N, in combination with shelves E, substantially as described.

5. The combination, with the flower-stand A, of the pans or vessels H, and the pan or vessel G, provided with flanges J, overlapping the upper edges of the sides of the vessels H, substantially as herein shown and described, and for the purpose set forth.

255,315. FLOUR-BOLT. JOSIAH N. MCCONNELL, Lawrence, Kans. Filed Nov. 4, 1881. (No model.)

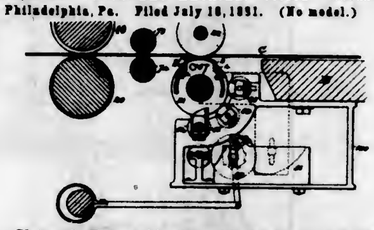


Claim.—1. The end frames, A, composed of two or more sections detachably connected together, in combination with the connecting boards or rods *a*, detachably secured to the said end frames, substantially as and for the purpose set forth.

2. In a flour-bolt, the combination, with the reel-shaft E, the radial arms F, the reel-ribs G, the bolting-cloth H, and the metal bands U, of the short studs V, having their ends bent at right angles and perforated, substantially as and for the purpose set forth.

3. In a flour-bolt, the combination, with the reel-shaft E, the radial arms F, the reel-ribs G, and the reel-head J, of the short studs V, having their ends bent at right angles and perforated, the metal bands U, secured to the outer ends of the said studs, the bolting-cloth H, secured at one end to the said head, and the wooden hoops I, placed upon the reel at the center and tail, substantially as and for the purpose set forth.

255,316. PAPER-BAG MACHINE. JOSEPH MCCULLOUGH, Philadelphia, Pa. Filed July 16, 1881. (No model.)



Claim.—1. The combination, with the former and rolls for advancing the paper, of an impression-roll, a type or form carrier, and eccentric toothed wheels geared to and driven from the feed-roll shaft, substantially as described.

2. The combination, in a bag-machine, of a former, rolls for advancing the paper or tube, a rotating striker for severing the tube into lengths, an impression-roll, and co-operating type or form carrier or roll, eccentric toothed wheels for actuating the latter, and gearing driving said eccentric toothed wheels and the striker, substantially as described.

3. The combination, in a bag-machine, with a slotted former, over which the paper is drawn, feeding-rolls for advancing the paper, and a striker or cutting apparatus for severing the paper into lengths, of an impression-roll and co-operating type or form carrier, eccentric toothed wheels for actuating the said carrier, the driven eccentric toothed wheel having means for adjusting it with relation to the type or form, and an interchangeable gear for concertedly driving the striker and type or form carrier, all substantially as described.

4. The combination, with the slotted former C, of rolls 10 20, roll 22, type-carrier 21, adjustable eccentric toothed wheels 27 28, wheel 30, swinging frame 63, striker 71, wheels 72 and 76, and interchangeable wheels 31, substantially as described.

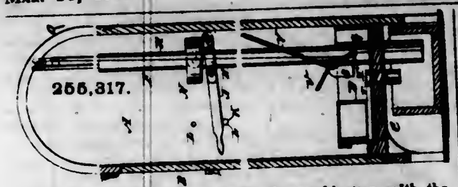
5. The combination, with the former and rolls for advancing the paper, of a type or form carrier and eccentric toothed wheels for driving said carrier, substantially as described.

255,317. WARDROBE SHOWER-BATH. EDGAR N. MCKINN, Lathrop, Mo., assignor to himself, James D. L. Parks, Cornelius E. Kelsey, and James T. Parshel, all of same place. Filed Nov. 26, 1881. (No model.)

Brief.—The base of this structure has two perforations. One serves to drain the interior, and is provided with a plug, I, when not in use. The other permits the pump-tube F to be lowered into a box, B, which is both a supply to the pump and a drain to the tub. The pump-tube, in its vertical movement, is operated by a lever, J, whose fulcrum is in the wall of the structure, whose operating end encircles the pump-tube and engages with a collar, N, thereon, and whose power end, when not operated, is held by a pin, K, in perforation L. The piston-rod is pivoted to a beam, P, centrally pivoted to the exterior upper end of the wall Q, the other end of the beam being pivoted to a rod, R, which is reciprocated by a crank, *s*, on the spindle T, which is operated axially by oscillating the rod V by hand or by alternately depressing one end of the piece *v* by the foot. The water is discharged from the pump into the rose N through pipe M and falls upon the person bathing and then into the box D. When the bather is an invalid the pump may be operated from the exterior by imparting motion to the beam P.

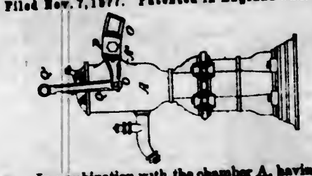
Claim.—1. The combination, with the wardrobe A B C, of the metallic tank D, having the sleeve G, the reservoir-vessel E, arranged under the casing, the pump-tube F, the hand H, the lever J, and the adjustable stud K, as shown and described.

2. In a wardrobe shower-bath, the combination, with the pump-tube F, provided with the rods O and R and the beam P, of the tank D, provided with a sleeve, G, for the pump-tube, substantially as herein shown and described, and for the purpose set forth.



3. In a wardrobe shower-bath, the combination, with the pump-tube F, of the collar H, surrounding and supporting it, the pivoted lever J, to which the collar H is attached, and the pin K, fitting in apertures L in the sides of the casing A, for the purpose of supporting the end of the lever J, substantially as herein shown and described, and for the purpose set forth.

255,318. PUMP. JOHN A. MCMARTIN, Montreal, Quebec, Canada. Filed Nov. 7, 1877. Patented in England Jan. 26, 1877.



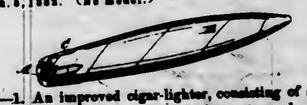
Claim.—In combination with the chamber A, having the lug A^4 cast integral therewith, the handle P, pivoted to the lug A^4, and having the arms O', adapted to partially encircle the casing, the pump-rod C, and the connecting-links Q, pivoted out of a vertical line to the pump-rod and to the arms O', substantially as described.

255,319. CHURN-DASHER. THOMAS A. HILLER, Grenola, Kans. Filed Oct. 20, 1881. (No model.)



Claim.—In a churn-dasher, the water-vessel A, having perforated depending rim B, divided off into air-chambers by wings *f*, in combination with the removable inverted pan C, having perforated bottom h, substantially as and for the purpose set forth.

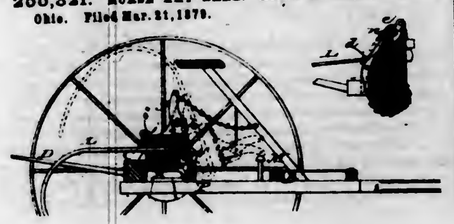
255,320. CIGAR-LIGHTER. ALFRED C. MOSS, Allentown, Pa. Filed Jan. 5, 1882. (No model.)



Claim.—1. An improved cigar-lighter, consisting of a cross having an inflammable wafer attached to its center and adapted to be secured to a cigar by having its wings bent over on the sides of cigar and connected thereto, substantially as and for the purpose set forth.

2. A cigar-lighter consisting of the central inflammable wafer, A, and radial wings C, provided with adhesive matter at their outer ends, the said wings being centered to the wafer while in a molten state, substantially as and for the purpose set forth.

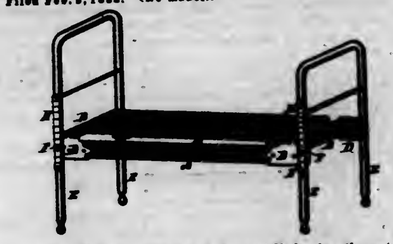
255,321. HORSE HAY-RAKE. HIRAM MYERS, Springfield, Ohio. Filed Mar. 21, 1870.



Claim.—1. The combination, with the rake-head or axle F, of the teeth L, formed with loops E, and the strip *e*, passing through said loops and bolted to the rake-head, substantially as shown and described.

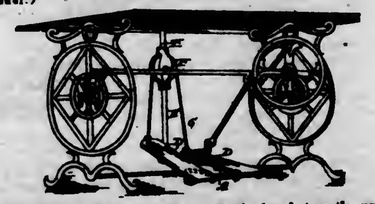
2. The combination of the rake-head or axle F with the pawls *d*, pivoted on the flanges *c*, the spiral springs *n n*, the oscillating rod H, having on its ends the pawls or levers *c c*, the lever *g*, and the spring pressing-plate *f*, substantially as shown and described.

255,322. BEDSTEAD. WILLIAM J. MYERS, Hartford, Conn. Filed Feb. 9, 1882. (No model.)



Claim.—The combination of the post E, having the notched bar H, the corner-plate D of a bed-frame, having the flange G, and the clamping-bolt F, substantially as described.

255,323. SEWING-MACHINE TREADLE. ISRAEL B. MYRICK, Cleveland, Ohio, assignor of two-thirds to Julius W. Brett and Edmund R. Whiting, same place. Filed Feb. 14, 1882. (No model.)



Claim.—1. The combination, with the bracket on the under side of the table, carrying the band-wheel or pulley, of the connecting rod or brace and base-plate, substantially as herein set forth.

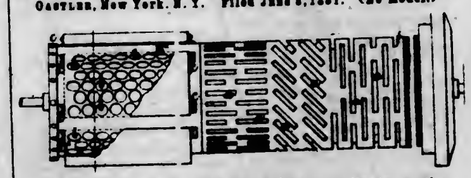
2. The combination, with the bracket E, carrying the band-wheel or pulley F, and having the perpendicular strengthening brace or rod H, the lower end of which is secured to the base-plate brace or rod H, the lower end of which is secured to the base-plate A, which straddles the cross-bar of the machine, of the treadles D and band or cord G, substantially as and for the purpose specified.

255,324. BELT-FASTENER. ALFRED E. NOBLE, New Milford, Conn. Filed Dec. 27, 1881. (No model.)



Claim.—The metallic belt-fastener composed of the open head or eye *b*, the tongue or shank *c*, and the lip *d* on the opposite side of the head or eye from said tongue or shank, and made less in width than said head or eye, so as to form angular notches at its juncture therewith, substantially as and for the purpose specified.

255,325. ROTARY SCREEN FOR STONE, &c. WILLIAM C. OASTLER, New York, N. Y. Filed June 8, 1881. (No model.)



Claim.—1. A rotary screen comprising a section or portion having in its periphery elongated holes or slots *a*, some of which extend transversely of the screen, others of which extend diagonally or obliquely of the screen, and still others of which extend longitudinally of the screen, substantially as specified.

2. A rotary screen comprising a portion or section having

elongated holes or slots which are so disposed that their lengths extend in various or different directions, and comprising a second portion surrounded or inclosed by an outer shield or casing which is imperforate opposite the holes or perforations in said second portion of the screen, substantially as specified.

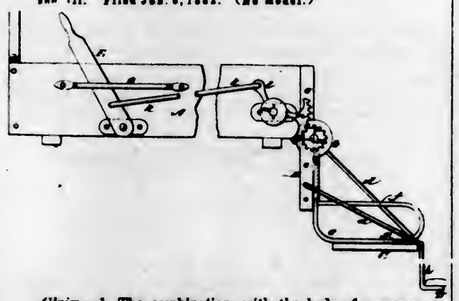
255,326. PROCESS OF TREATING HIDES OR ANIMAL MEMBRANES AND TISSUES. JOHN H. ORDWAY and GEORGE F. ORDWAY, Boston, assignors of one-fourth to Joseph A. Ordway, Worcester, Mass. Filed Aug. 8, 1881. (Specimens.)

Brief.—The object is to produce from hides, animal membranes, and tissues a material which, while it preserves the fibrous character, will be tough, flexible, and elastic and adapted to many uses in the arts and as a substitute for whalebone and hard rubber.

Claims.—1. The herein-described process for treating hides, animal membranes, and tissues, consisting essentially in impregnating them with a cold nearly-saturated solution containing chromic acid, and then exposing them to sunlight, substantially as and for the purpose set forth.

2. As a new article of manufacture, hides and membranes free from gelatine, having the contained collagen and fibrine chemically combined with chromic acid, substantially as set forth.

255,327. STEP FOR VEHICLES. ASA KENYON OWEN, Tennessee Ill. Filed Jan. 6, 1882. (No model.)



Claim.—1. The combination, with the body of a wagon or other vehicle and the end-gate B, hinged thereto, of the seat C and the frames *e f*, substantially as shown and described, whereby the seat is connected to the end-gate and adapted to be moved with the end-gate to form a seat or step, as set forth.

2. The combination, with the swinging seat C, connected with the lower rear end portion of the body of the vehicle to admit of its being inverted and turned down and back to form a step, of the supplementary step D, hinged or pivoted to said seat, essentially as herein set forth.

3. The rods or frames *e f*, in combination with the swinging seat C, made convertible into a step, as described, the cleats or projections *f' f'*, for supporting the ends of the seat, and the supplementary step D, hinged or pivoted to the seat and serving as an intermediate support to it, substantially as described.

4. The combination, with the body A of the vehicle, of the end-gate B, pivoted below to said body, the seat C, arranged at right angles in transverse relation to said gate, but parallel with it longitudinally, and connected with the gate so as to work from the same centers of motion, *a a*, and the supplementary step D, hinged or pivoted by a bent arm or leg, *h h*, to the seat for operation in relation with each other and with the body of the wagon, substantially as specified.

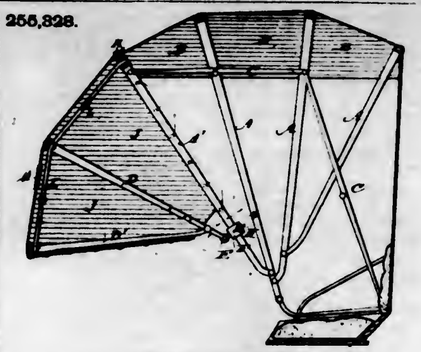
5. The combination of lever E, rod *k*, arm *l*, toothed sector *s*, and the pinion *r*, fixed to gate B, substantially as herein shown and described, whereby the step C and end-gate are operated by the driver from his seat, as set forth.

255,328. CARRIAGE-TOP. RICHARD J. PARRETT, Portland, Ind. Filed Jan. 17, 1882. (Model.)

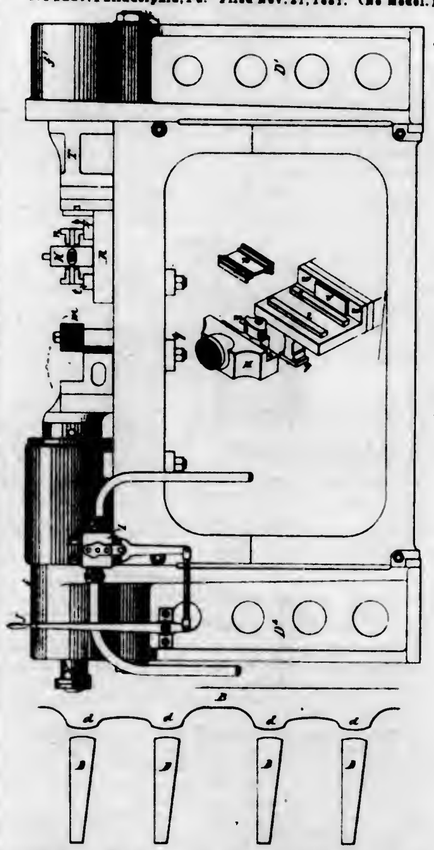
Claim.—1. In a carriage, the combination, with the bow A', having knobs K, of an auxiliary top consisting of the bows D D', hinged together near the bottom and there clamped detachably to the bow A', the cover J, extending rearwardly and buttoning on said knobs, and the jointed bar L, connecting detachably with carriage-bow A', whereby the auxiliary top will hang over in front of the ordinary top, and can be readily attached to or detached from the carriage-top, as described.

2. The combination, with bows D A', of the rubber-lined clamp E F, the bolt H, and the tube I, as and for the purpose specified.

255,328.



255,329. MANUFACTURE OF LOCOMOTIVE-FRAMES. CHAS. T. PARRY, Philadelphia, Pa. Filed Nov. 21, 1881. (No model.)



Claim.—1. The mode herein described of making the wrought-iron frames of locomotives, the said mode consisting in, first, forging projections *d d* on a bar, B, and preparing forgings D D; and, second, applying the bar to the forgings or the forgings to the bar under pressure while both are at a welding-heat at the points where the union has to be effected, all substantially as set forth.

2. The mode herein described of effecting a clean welding of the projections *d d* of the bar to the forgings D D, the said mode consisting in rounding the said projections and forgings and heating them to a welding-heat and applying the rounded ends of the projections while at a welding-heat to the welding-hot rounded ends of the forgings or the forgings to the projections under direct pressure, all substantially as set forth.

3. The within-described holder for the forgings D D, the same consisting of the yoke N, distance-piece *n*, and key *n'*, all being combined substantially as set forth.

4. The combination of the plate E, its flange *w*, and the abutment *f* of the frame with the recessed cross-head and its block *u* and mechanism for operating either the plate or the cross-head, substantially as set forth.

255,330. BREECH-LOADING FIRE-ARM. ROBERSON PEIRCE, New Bedford, Mass. Filed Sept. 24, 1881. (No model.)



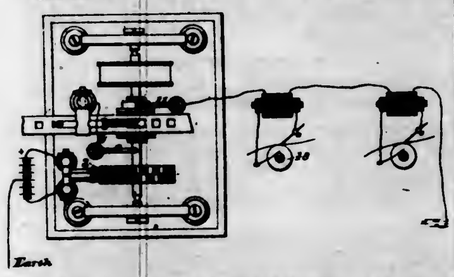
Claim.—A breech-loading shoulder-gun for killing whales, combining in its structure the tilting barrel having projecting lugs, the metal stock, the lock-chamber, and enlargements in advance of the breech-piece, having recesses formed in the enlargements for receiving the lugs upon the barrel, the mechanism for locking and releasing the barrel, embracing the slide for engaging the rear end of the barrel, and located to work below the cap-plate of the locking-chamber, the spring for throwing the locking-plate forward, the retractor for drawing the locking-plate back, and the spring-hammer for firing the gun, the locking and firing mechanism being boxed together within the locking-chamber of the stock, said parts being all constructed and arranged substantially as shown and described.

255,331. REMOVABLE BOOK-COVER. THOMAS D. PRICE, Carrollton, Ill. Filed Dec. 17, 1881. (No model.)



Claim.—The combination of the cover, the back of which is provided at its ends with interned hooks, the pad having a blotter attached by means of a flexible strip secured to the under side of the pad, as described, and the holding-strip I, substantially as and for the purpose herein set forth.

255,332. AUTOMATIC TELEGRAPH. CHARLES A. RANDALL, New York, N. Y. Filed Sept. 7, 1881. (No model.)

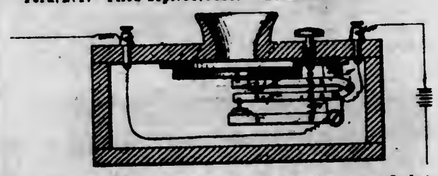


Claim.—1. The combination, substantially as hereinbefore set forth, of an inductorium, mechanism for producing a regular succession of alternate positive and negative electric impulses of equal duration in the primary circuit of said inductorium, and one or more telegraphic recording-instruments actuated by induced electrical impulses in the secondary circuit of said inductorium.

2. The combination, substantially as hereinbefore set forth, of an inductorium, mechanism for producing a regular succession of alternate positive and negative impulses in the primary circuit of said inductorium, an automatic circuit-controller for transmitting predetermined signals, and one or more telegraphic recording-instruments actuated by induced electrical impulses in the secondary circuit of said inductorium.

3. The combination, substantially as hereinbefore set forth, of two or more inductoriums having a common primary circuit and independent secondary circuits, mechanism for producing a regular succession of alternate positive and negative impulses in said primary circuit, an automatic circuit-controller for transmitting predetermined signals, and a telegraphic receiving-instrument included in each of said secondary circuits.

255,333. TELEPHONE-RELAY. CHARLES A. RANDALL, New York, N. Y. Filed Sept. 19, 1881. (No model.)



Claim.—1. The combination, in a telephonic system, of a battery main-line circuit, including a transmitter, with a magnet in said circuit, a tension-regulator operated by said magnet and included in a battery local circuit, which also includes the primary of an induction-coil, the secondary circuit of said coil including a receiver, whereby the main-battery currents are caused to traverse the main line, and the full electro-motive force of the local current is utilized for actuating the diaphragm of the receiver, substantially as and for the purpose specified.

2. The telephonic relay consisting of a compound lever composed of two arms pivoted together and fulcrumed, as more fully hereinbefore described, an electro-magnet in the main circuit for actuating the lever to transmit the vibrations produced by electric currents, waves, or pulsations over the main line, a contact-maker or tension-changer, to which said waves or vibrations are transmitted, the local-battery circuit, including the primary of an induction-coil, in which said contact-maker is placed, the secondary circuit of said induction-coil, and the receiving-telephone therein.

3. The combination of the electro-magnet F', the compound lever, the long arm of one member of which carries an armature arranged in front of the core of said magnet, while the short arm of the other member is connected with one member of a contact-maker, including a local circuit, in which is embraced the primary circuit of an induction-coil, the secondary circuit of which includes a telephonic receiver, substantially as described.

4. In a system of telephonic telegraphy, the combination of an electrically-closed main-line circuit, over which currents of varying electro-motive force are caused to flow in transmission, a telephonic receiver in a local circuit operated by intermittent, alternating currents, and a telephonic relay interposed between the said receiver in the local circuit and the transmitter, as set forth.

255,334. SIDE-SADDLE. LEWIS A. ENISTER, Chico, Cal. Filed Oct. 19, 1881. (No model.)



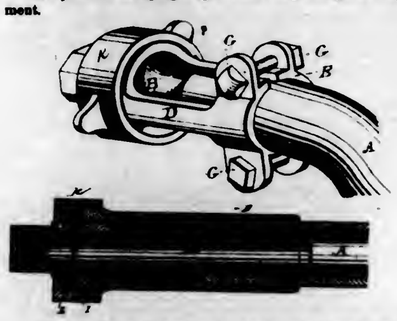
Claim.—1. A riding-saddle consisting of the steel fork A, leather body B, provided with the hand-hold C, and suitable attaching and foot-holding devices, all substantially as set forth.

2. In a saddle, the adjustable stirrup-strap E, arranged with the loosely-hung stirrup G, ring F, and crown-strap H, and the cur-cingle, substantially as and for the purpose herein described.

3. The metal tree A, consisting of three rigid points or prongs, as described, two of said prongs being made to rigidly fit the curve of the animal's back and the third prong to form the horn of the saddle, substantially as and for the purpose set forth.

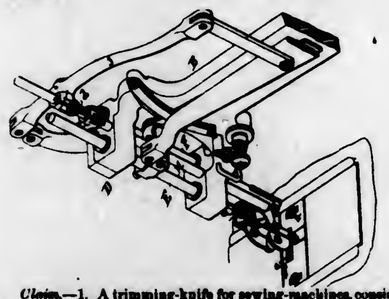
255,335. HOSE-COUPLING. EDWARD A. RIX, San Francisco, Cal. Filed Oct. 28, 1881. (No model.)

Brief.—The clamping-ring D holds the parts against displacement.



Claim.—The hose-coupling herein described, consisting of the tube B, fitting within section A of hose, and provided with a flange, against which abuts the flange L, in combination with the ring K, the clamp D, provided at one end with a male screw and at the other end with sectional ring E, having fastening-lugs F, and bolts G, all constructed and arranged as set forth.

255,336. TRIMMING ATTACHMENT FOR SEWING-MACHINES. THOMAS C. ROBINSON, Cambridge, Mass., assignor to himself and E. Baker Welch, same place. Filed Nov. 11, 1881. (No model.)



Claim.—1. A trimming-knife for sewing-machines, consisting of a flat blade having a horizontal cutting-edge, *x*, a finger, *i*, projecting downward at one edge thereof, and with a lateral shoulder arranged at the side opposite the cutting-edge and above the latter at a height sufficient to permit the work to be turned up against the rear edge of the knife, substantially as set forth.

2. The trimming-knife consisting of a blade sharpened to form a horizontal cutting-edge, *x*, provided with a finger, *i*, and an edge, *u*, constituting a prolongation of the side of the finger, and extended laterally from said edge *u* to form a shoulder, *m*, arranged substantially as set forth.

3. The combination, in a sewing-machine, with the needle and presser-bars, of a cutter-bar, H, appliances for reciprocating the same, and a knife having a horizontal cutting-edge and a finger, *i*, at the side opposite that toward which the fabric is fed, and connected to the cutter-bar and extending laterally to a position parallel and behind and adjacent to the needle, substantially as set forth.

4. The combination of the bar H, lever J, pivoted block *a*, and set-screw securing the bar adjustably in said block, substantially as set forth.

5. The combination, with the base-plate of a sewing-machine, and with a reciprocating flat knife arranged in close proximity to the needle, and having a horizontal cutting-edge, *x*, and a finger, *i*, at the side of said knife opposite that toward which the fabric is fed, of an adjustable cutter-plate, *h*, substantially as set forth.

6. The combination, in a sewing-machine, of the needle-bar, cutter-bar H, levers S and J, link W, pivoted to the lever J and to the arm B, and link *c*, as set forth.

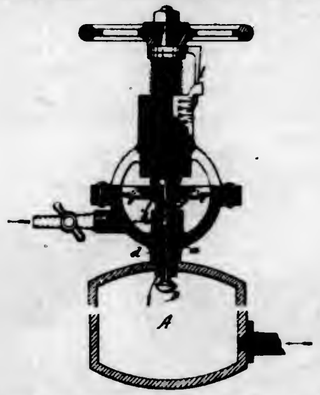
255,337. WIRE-STRETCHER. JOSEPH REED, Swede Point, Iowa. Filed Jan. 26, 1882. (No model.)



Claim.—1. In a machine for stretching wire, the combination of the lever C, provided with the slanting shoulder G, the lever D, pivoted to the side of the lever C and provided with a beveled end, and the supporting-frame B, substantially as described.

2. The combination of the supporting-bars, the frame A, the levers C D, and the brace, the brace being made adjustable back and forth at its lower end for the purpose of raising and lowering the levers, substantially as set forth.

255,338. PRESSURE-REGULATOR. ETIENNE SALOMON, Montreal, Quebec, Canada. Filed Apr. 26, 1881. (No model.)



Claim.—In a pressure-regulator, the combination of the vessel A, regulating-chamber C, securely attached thereto, said regulating-chamber being provided with diaphragm *e*, capable of yielding to an upward-and-downward pressure, the valve-stem *c*, one end of which is secured to the diaphragm and the other to a valve, D, within the vessel A, said stem having a groove or port, *d*, in its side, through which the fluids pass, and ports *a* and *b*, with the regulating mechanism, all arranged for operation in the manner set forth and described.

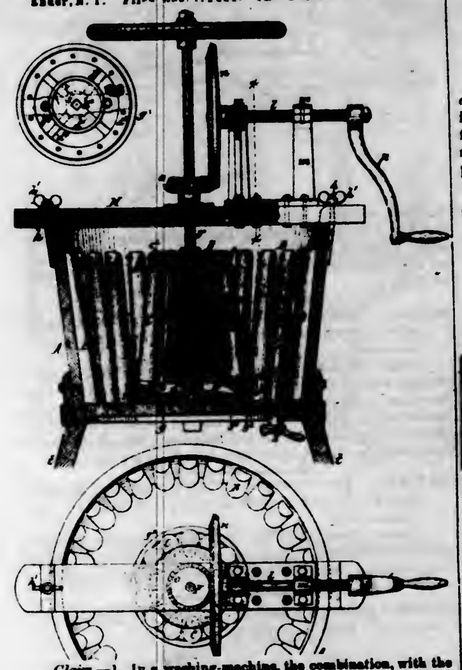
255,339. STOVE-PIPE SHELF. THEODORE SCHAPER, Harvard, Ill. Filed Jan. 30, 1882. (Model.)



Claim.—1. A ring or band to be applied to stove-pipes, composed of sections which are slotted, in combination with sliding supporting-pieces which are provided with suitable sockets to receive the ends of the supporting rods or arms, substantially as shown.

2. A ring or band to be applied to stove-pipes, which is formed in sections which are bolted together, which sections are slotted, in combination with the sliding supporting-pieces provided with tubular sockets and suitable means for fastening the ends together, so as to adjust the ring or band to different-sized pipes, substantially as set forth.

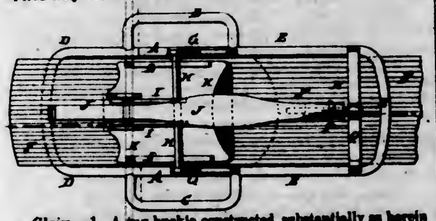
255,340. WASHING-MACHINE. CHARLES T. SHADDOLT, Alexander, N. Y. Filed Dec. 1, 1881. (No model.)



Claim.—1. In a washing-machine, the combination, with the tub A, provided with upright ribs B, of a series of upright rollers, C, horizontal disks D D', provided with sockets in which the roller-journals turn, a vertical shaft, F, to which both disks are secured, and a step-bearing, G, secured to the bottom of the tub and provided with a marginal guard-flange, *g*, substantially as set forth.

2. The combination, with the series of rollers C, of the vertical shaft F, the upper head, D, provided with a recess, *d*, and sockets in which the roller-journals turn, and a lower head, D', provided with a recess, *d'*, and sockets for the roller-journals, and a block, E, surrounding the shaft F and seated in the recesses *d d'* of the heads D D', substantially as set forth.

255,341. TUG-BUCKLE. HARRISON T. SHADDUCK, Shunk, Pa. Filed Aug. 26, 1881. (No model.)



Claim.—1. A tug-buckle constructed, substantially as herein shown and described, of the frame A, having loops B C D E and flanges G, the cross-rod H, the links I, the lever J, the plate K, having inclined flanges L and tongue M, and the spring-bolt O N and eye-bar Q, as set forth.

2. In a tug-buckle, the combination, with the frame A, provided with flanges G, connecting-rod H, and eye-bar Q, of the links I, the tongue-plate K, and the lever J, provided with the spring-bolt N, substantially as and for the purpose set forth.

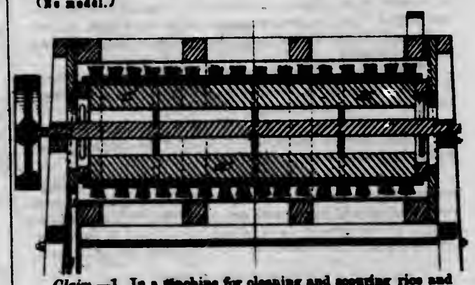
3. In a tug-buckle, the combination, with the frame A, provided with the flanges G and connecting-rod H, the links I, and the lever J, of the tongue-plate K, provided with the inclined flanges L, substantially as and for the purpose set forth.

255,342. FENCE. CLARENCE C. SHELDON, Urbana, Ill. Filed Nov. 14, 1881. (No model.)



Claim.—The combination, in a fence, of the hollow cylindrical tile posts A, having slots *a* and openings *b*, boards B, supported in the slots *a*, wires D, and angular fastenings *c*, the arms of said fastenings being passed through the openings *b* on different planes and their free ends twisted around the barbed wires, as and for the purpose specified.

255,343. MACHINE FOR CLEANING AND SCOURING RICE, &c. DAVID L. SHOEMAKER, Washington, D. C., assignor to John Hughes, New Berne, N. C., H. Maurice Talbott, Baltimore, Md., and Marie F. Sylvester, Boston, Mass. Filed Mar. 16, 1881. (No model.)



Claim.—1. In a machine for cleaning and scouring rice and other grain, the combination, substantially as described, of a horizontal outer cylindrical screen, a horizontal revolving cylinder armed with longitudinal brushes which project in close proximity to the outer cylindrical screen, and means for forcing currents or blasts of air from the inner revolving cylinder out through the outer screen.

2. In a machine for cleaning and scouring rice, the combination, substantially as described, of a horizontal outer cylindrical screen, an inner revolving cylinder between which and the outer screen the rice is fed, longitudinal brushes on the inner cylinder projecting in close proximity to the outer screen and operating to press the rice against said outer screen to scour it, and a fan arranged within the inner cylinder for forcing a blast or blasts of air outward through the rice and through the outer screen to remove the scoured-off particles, substantially as described.

3. In a machine for cleaning and scouring rice, the combination of a horizontal outer cylindrical screen, an inner cylinder provided with longitudinal brushes projecting in close proximity to the outer screen, and an air-forcing fan for supporting and rotating the inner cylinder and forcing air currents or blasts out through it laterally and through the outer screen, substantially as described.

4. In a machine for cleaning and scouring rice, the combination of an outer cylindrical screen, an inner cylinder consisting of alternate perforated and imperforate sections and open at one or both ends, brushes on the outside of the inner cylinder, and a fan within said cylinder, whereby the air is directed from the fan through the perforated section of the inner cylinder in the form of sharp blasts, substantially as described.

255,344. WIRE-SOLDER COATED WITH FLUX. EDWARD SMALL, Baltimore, Md. Filed Feb. 14, 1882. (No specimens.)

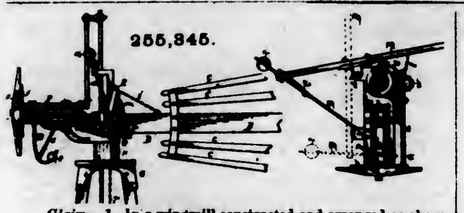
Claim.—1. The method herein described for providing wire-solder on its exterior with flux, consisting of first oiling the surface of the wire, then causing powdered resin to adhere to the oiled surface, then subjecting the wire to heat, which melts the resin, as set forth.

2. A new article of manufacture, flexible solder wire exteriorly provided with a non-friable flux, as set forth.

255,345. WINDMILL. EDWARD B. SMITH, Richland, assignor, by mesne assignments, to the Iosia Manufacturing Company, Iosia, Mich. Filed July 30, 1881. (No model.)

Brief.—The rudder B is eccentrically arranged, and has an elongated stem, with regulating-weight D *t*, employed in connection with rope *r*, curved lever E *s*, chain *i*, pulley *m*, brake *a*, and circular metallic brake-band *f*, for the purpose of throwing the edge of the wheel to the wind and stopping the rotary motion of the wheel when not desired to be used.

255,845.



Claim.—1. In a windmill constructed and arranged as above described, the combination of elongated rudder-stem B, pendulum-weight D *t*, connecting-rod C, bumper *y*, connecting-chain *t*, lever E *e*, brake *a*, circular brake-band *f*, rope or chain *r*, and pulley *m*, substantially as described, and for the purposes set forth.

2. The combination of the rudder-stem B, pivoted about its middle and projecting forward and to one side of the vertical axis of the wind-wheel, pendulous weight D *t*, constructed as described, and applied to the forward end of the stem, as set forth, and connecting-rod C, with the main supporting frame or casting, substantially as set forth.

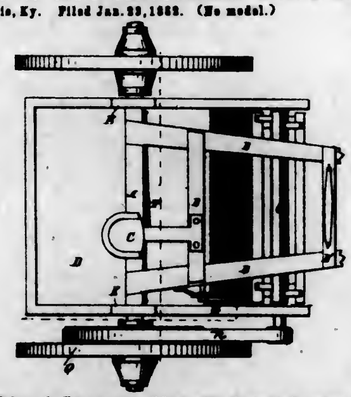
3. The combination of the rudder-stem B, pendulous weight D *t*, connecting-rod C, and bumper *y* with the main supporting frame or casting, substantially as set forth.

4. The combination of lever E *e*, pulley *m*, brake *a*, chain *r*, and metallic circular brake-band *f*, substantially as described, and for the purposes set forth.

5. The combination of the cap G, collar H, main casting I, rudder-stem B, pivoted about its middle and projecting forward and to one side of the vertical axis of the wind wheel, pendulous weight D *t*, constructed as described, and applied to the forward end of the stem and connecting-rod C, substantially as set forth.

255,846. WITHDRAWN

255,847. GRASS-SEED HARVESTER. HENRY H. SPEARS Paris, Ky. Filed Jan. 23, 1882. (No model.)



Claim.—1. In a grass-seed harvester, the tooth I, as described, having legs J' J', combined with the bar H and yoke J, substantially as set forth.

2. In a grass-seed harvester, the body D, suspended, as described, below the axle, combined with cross-levers F F, links F' F', and side lever, G, substantially as set forth.

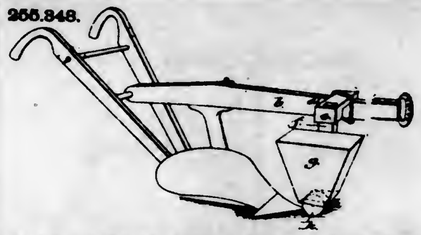
3. In a grass-seed harvester, the bar H, journaled in the arms M, and provided with the crank K, having the stop N, in combination with the lifting-lever and connecting-link, whereby the bar may be partially rotated and afterward raised by the motion of the same lever, substantially as set forth.

4. In a grass-seed harvester, the combination of the body D, having guides or arches E, the reel O', the transverse toothed bar H, journaled to the arms M, and having the crank K, the lever L, link L', the levers F F and G, the drive-wheels provided with the pulley Q, and the belt R, substantially as and for the purposes set forth.

255,848. SEEDING ATTACHMENT FOR PLOWS. HENRY H. SPENCER, Mound City, Ill. Filed July 30, 1881. (No model.)

Claim.—The combination of the following parts, to wit: a beam, *b*, having the arm *c* extending at right angles thereto past

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the share, and provided at its end with the vertical socket *a*, the seed-box *g*, having the stem *f*, fitting said socket, and the feed-wheel *h*, located in the seed-opening *h* in the bottom of the box, all constructed and arranged substantially as and for the purpose set forth.

255,849. DYEING BLUE COLORS UPON TEXTILE FABRICS. JAMES H. STEBBINS, Jr., New York, N. Y. Filed Feb. 1, 1882. (Specimens.)

Claim.—As a new article of manufacture, textile fiber, yarn, or cloth, whether knit or woven, having the herein-described color developed within or upon the same by the reaction in or upon the fiber of nitroso-diethylaniline chloride and the soda salt of alpha-napthol in the presence of an oxidizing agent, substantially as set forth, or by any other means which will produce a like result.

255,850. MANUFACTURE OF BLUE COLORING-MATTER. JAMES H. STEBBINS, Jr., New York, N. Y. Filed Feb. 1, 1882. (Specimens.)

Claim.—The blue dye-stuff produced by the action of diethyl-paraphenylendiamine chloride upon an alkaline solution of phenol in the presence of an oxidizing agent, substantially as set forth.

255,851. HOISTING APPARATUS. EDGAR L. STOCKING, Buffalo, N. Y. Filed Sept. 19, 1881. (No model.)



Claim.—1. The hoisting-standard A, provided with legs *a a*, terminating in rearwardly-projecting feet *a'*, arranged in the same horizontal plane, and adapted to enter between the boards of a pile of lumber, and a forwardly-projecting hook, *b*, to which the rope-pulley is attached, substantially as set forth.

2. The combination, with the hoisting-standard A, provided with feet *a'*, of the detachable shoe C, whereby the thickness of the base can be increased, substantially as set forth.

3. The hoisting-grapple F, composed of parallel jaws *f f*, a fulcrum-bar, *g*, levers *h h' i i'*, and bars *h h'*, having their upper ends connected with the hoisting-rope, substantially as set forth.

255,852. MANUFACTURE OF INK. ALBERT P. STODHART, Stoyd Park, Bristol, County of Bristol, England. Filed July 26, 1881. (No specimens.) Patented in England Feb. 21, 1881.

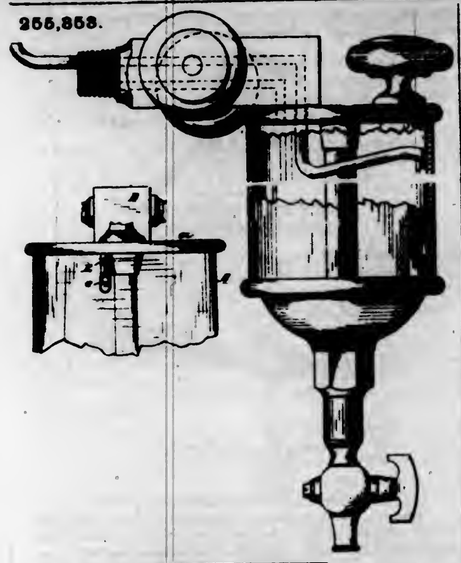
Claim.—The process described of manufacturing ink in the preparation of which gallic acid and thickening substances are obtained from spent tanning-liquor, said process consisting in reducing the liquor by boiling, drawing it off, adding green copperas, and boiling until the copperas is dissolved, and then drawing off and exposing to the atmosphere, substantially as set forth.

255,853. LUBRICATOR. ALLEN W. SWIFT, Elmira, N. Y. Filed Jan. 20, 1882. (Model.)

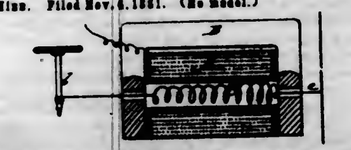
Claim.—1. A drip-tube of a lubricator, having its end highly polished to present a bright surface, and extended in close proximity to the transparent portion of the oil-cylinder, substantially as and for the purpose set forth.

2. A drip-tube of a lubricator having a plate with a polished surface at its end, and extending in close proximity to the transparent portion of the oil-cylinder, substantially as and for the purpose specified.

255,853.

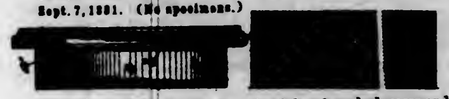


255,854. TELEPHONE. HARRY S. THORNBERRY, Winona, Miss. Filed Nov. 6, 1881. (No model.)



Claim.—The combination, with the permanent magnet B, of a magnet-coil in the line-circuit between the legs of magnet and parallel to its yoke, and a spiral core, C, of magnetic material, within said coil, said core being connected at one end by a cord or wire with the adjusting-screw *b* and rigidly connected at the other end with the diaphragm, substantially as and for the purpose specified.

255,855. PROCESS OF MANUFACTURING CELLULOID CLOCK-CASES. REUBEN T. TRIPLETT, New York, N. Y. Filed Sept. 7, 1881. (No specimens.)



Claim.—1. The described mode of forming clock-cases and their dials in one structure by first forming the dial separately from a plate of celluloid, then placing this dial in a mold with a space in said mold beyond or around the edges of said dial, and corresponding to the walls of the clock-case, and finally filling said molding-space with celluloid, so as to form the sides or walls of the case and unite with the said dial-plate at the same time, substantially as herein shown and described.

2. As a new article of manufacture, a clock-case formed of celluloid, as herein set forth.

3. A clock-case formed of an internal core or skeleton of suitable material and an external sheath or layer of celluloid, substantially as herein set forth.

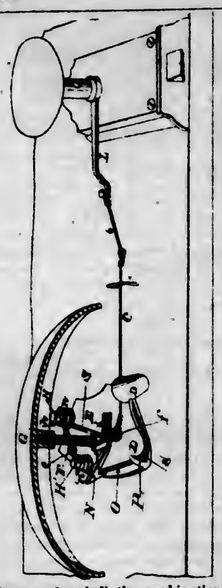
4. A clock-case formed of celluloid, with a dial-plate made separately therefrom, but united with the case in the act of molding the same, substantially as herein set forth.

5. A clock-case formed of an internal metallic core or skeleton and an external layer or sheath of celluloid, substantially as herein specified.

255,856. ALARM AND DOOR-BELL. MICHAEL TRUBY, Elkhart, Ind. Filed Dec. 8, 1881. (No model.)

Claim.—1. The combination of a striker, D, snap-catch N, and slide O, substantially as described and shown, and for the purpose set forth.

255,856.



2. In an alarm or door-bell, the combination of a continuous spring, S, having striker D, coils *u* and *u'*, snap-catch N, and slide O, with a plate, E, having studs H H', substantially as shown and described.

3. The combination of a plate, E, studs H H', screw-post F, gong G, and stop P with a continuous spring, S, having striker D, coils *u* and *u'*, loop *f*, snap-catch N, and slide O, substantially as shown and set forth.

255,857. FLEXIBLE HOSE OR PIPE. MAURICE J. WALSH, New York, N. Y. Filed Jan. 19, 1881. Renewed Feb. 3, 1882. (No model.)



Claim.—Flexible hose or pipe composed of a layer of india-rubber, leather, or like material, spirally-wound layers of a stout woven fabric—such as duck—surrounding said layer of india-rubber, leather, or like material, a second layer of india-rubber, leather, or like material inclosing the said spirally-wound layers, superposed layers of the stout woven fabric or other suitable material, and an external wrapping of flexible wire, preferably copper wire serving to strengthen and protect the hose or pipe, substantially as and for the purpose specified.

255,858. CUTTING-MACHINE. ALBIE WARTH, Stapleton, N. Y. Filed Feb. 10, 1882. (No model.)

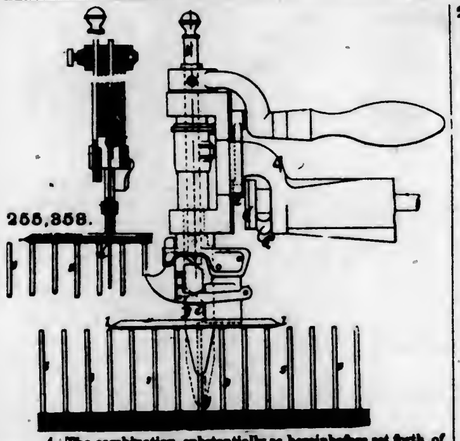
Brief.—The cloth-plate rests upon upright pins and forms a base for the knife and its connections. This plate passes beneath and forms a support for the material while being cut

Claim.—1. The combination, substantially as before set forth, of the base of the machine, the cutter-standard, the cutter having an inclined cutting-edge arranged to cut in an upward direction, and the knife-receiving socket arranged above said base, with a space between the two for the passage of cloth.

2. The combination, substantially as before set forth, of the base of the machine, the cutter-standard, the cutter having an inclined cutting-edge arranged to cut in an upward direction, the knife-receiving socket arranged with its mouth downward above said base, and the means of adjusting the relative position of said base and said knife-receiving socket.

3. The combination, substantially as hereinbefore set forth, of the base, the vertically-reciprocating knife, the knife-receiving socket arranged with its mouth downward and above the cloth plate to co-operate with the cutting-edge of the knife, and a bed for supporting the cloth-plate, having an opening to allow the movement of the knife.

255,858.



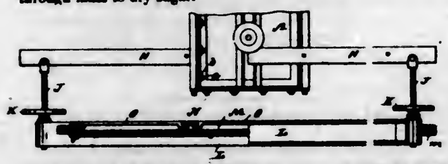
4. The combination, substantially as hereinbefore set forth, of the bed composed of upright elastic projections, the base movable on such bed beneath the material to be cut, the standard rising from the base and following the cut produced in the material, the vertically-reciprocating knife having an inclined edge arranged to cut on its upward stroke, and the knife-receiving socket arranged mouth downward above the base to co-operate with the cutting-edge of the knife.

5. The combination, substantially as hereinbefore set forth, of the base or cloth plate, the cutter-standard, the knife having an inclined cutting-edge adapted to cut in an upward direction, the knife-receiving socket arranged above the base with its mouth downward, and the swivel-arm.

6. The combination, substantially as before set forth, of the base, the cutter-standard, the knife having an inclined cutting-edge adapted to cut in an upward direction, the knife-receiving socket arranged above the base with its mouth downward, the swivel-arm, the secondary arm jointed to the swivel-arm, the track supporting the secondary arm, and the driving mechanism of the cutter.

255,859. METHOD OF AND APPARATUS FOR THE PRODUCTION OF REFINED SUGAR IN PLATES, STICKS, AND OTHER LIKE FORMS. HENRY WEINRICH, Vienna, Austria. Filed Jan. 21, 1882. (No model.)

Brief.—The pan M is connected with a suction-pump and is provided with transverse bars for supporting the sugar-receiving boxes A. The sugar is poured into the boxes, which are divided by partitions, and when it has hardened sufficiently the green sirup is pumped out. Hot air (112° to 144½° Fahrenheit) is pumped through mass to dry sugar.



Claim.—1. In a sugar-clarifying apparatus, the pan or sirup-receiver M, constructed, substantially as herein shown and described, with a series of transverse bars, N, and longitudinal bars O, as set forth.

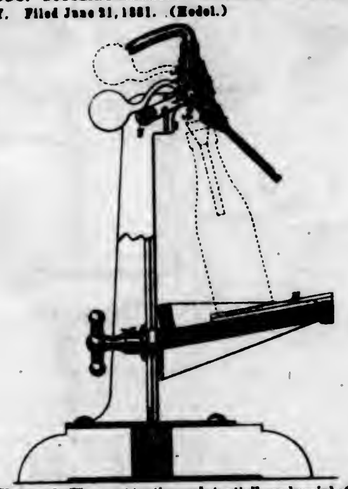
2. In a sugar-clarifying apparatus, the pan or sirup-receiver M, combined with a series of sugar-receiving boxes, A, fitting on the same, substantially as herein shown and described, and for the purpose set forth.

3. The combination, with the pan or sirup-receiver M, of the side bars, I, the transverse bars N, the longitudinal bars O, and one or more sugar-receiving boxes, A, fitting on the pan, substantially as herein shown and described, and for the purpose set forth.

4. The combination, with the pan or sirup-receiver M, of the side bars, I, the transverse bars N, the longitudinal bars O, the rails H, the screws J, and the hand wheels K, substantially as herein shown and described, and for the purpose set forth.

5. The combination, with the box A, of the partitions C, provided with studs or projections *d*, substantially as herein shown and described, and for the purpose set forth.

255,860. BOTTLING-MACHINE. ALBERT R. WEISS, Brooklyn, N.Y. Filed June 21, 1881. (Model.)



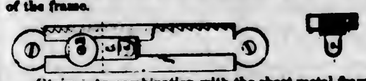
Claim.—1. The combination, substantially as hereinbefore set forth, of the supply tube or cock adapted to connect with the vessel containing the liquid to be bottled, and constructed with a series of lateral outlet-orifices, the filling-tubes constructed with valvular heads fitted on the supply-tube opposite to its outlet-orifices and adapted to rotate thereon for opening the outlet-orifices to the filling-tubes, or closing such orifices, and the weights or equivalent acting on the valvular heads of the filling-tubes for closing the outlet-orifices automatically, as set forth.

2. The combination, substantially as hereinbefore set forth, with the supply tube or cock, the filling-tubes, and their valvular heads, of the elastic bottle-stopping vent-rings fixed to the filling-tubes, and the valve-chambers communicating with the vents of the vent-rings and containing a float-valve closing in an outward direction, for the purpose specified.

3. The combination, substantially as hereinbefore set forth, of the tray or bottle-rest with the filling-tubes, the elastic bottle-stopping vent-rings fixed to the filling-tubes, and the valve-chambers communicating with the vents of the vent-rings and containing the float-valves closing in an outer direction, for the purpose specified.

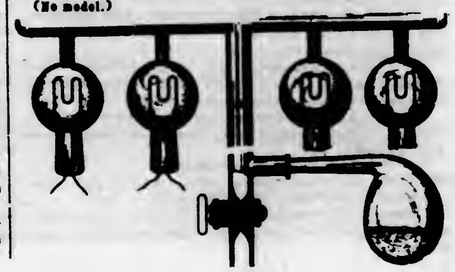
255,861. CURTAIN-CORD TIGHTENER. FRANCIS J. WEBSTER, Baltimore, Md. Filed July 22, 1881. (No model.)

Brief.—The frame is open at top and bottom and the sliding block which bears against the ratchet is grooved to fit the edges of the frame.



Claim.—In combination with the sheet-metal frame, open at top and bottom for the insertion of the slide, and having internal lateral ratchet, the block C, grooved to fit the edges of the frame and having the knob or pulley for the cord, as set forth.

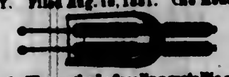
255,862. ABSORBENT FOR ELECTRIC LAMPS. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Oct. 17, 1881. (No model.)



Claim.—1. The improvement in the manufacture of incandescent electric lamps which consists in first exhausting mechanically the globes as perfectly as possible and then withdrawing the residual air by means of therion.

2. The combination, with an air-pump, of an exhaust-tube connected with one or more incandescent electric lamp-globes and a retort or suitable receptacle containing therion and connected with the exhaust-tube, as and for the purpose set forth.

255,863. ELECTRIC LAMP. EDWARD WESTON, Newark, N.J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Aug. 16, 1881. (No model.)



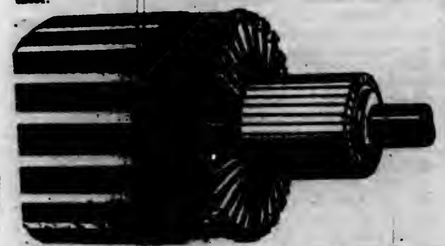
Claim.—1. The method of sealing metallic conductors in glass, which consists in forming between the said conductors and the glass a film or coating of conducting metal, fusing the same into the surface of the glass, and then forming a coating of metal thereon by electro-deposition, substantially as set forth.

2. The combination, in an electric lamp, of tubes or projections welded to the glass forming the globe with metallic conductors passing through and sealed to the said tubes by impervious films or coatings of metal incorporated with the glass, substantially such as described.

3. The combination, in an electric lamp, of tubes or projections welded to the glass forming the globe with metallic conductors passing through and sealed into the said tubes by connecting films of conducting material covered and strengthened by a coating of metal electro-deposited thereon, substantially as set forth.

255,864. DYNAMO-ELECTRIC MACHINE. EDWARD WESTON, Newark, N.J., assignor to the United States Electric Lighting Company, New York, N.Y. Filed Oct. 17, 1881. (No model.)

Brief.—The armature is wound with two or more independent endless wires, which are connected by loops to alternate segments of the commutator, to avoid short-circuiting at the commutator.



Claim.—1. In a magneto or dynamo electric machine, an armature containing two or more systems of independent conductors wound in sections thereon, so as to pass through the magnetic field at right angles to the lines of force, as described, in combination with a commutator to alternate segments of which adjacent sections of the armature-conductors are connected, substantially in the manner set forth.

2. In a magneto or dynamo electric machine, a cylindrical or annular armature wound with two or more systems of independent continuous conductors the adjacent sections of which are connected to alternate segments of the commutator, substantially as set forth.

3. In a magneto or dynamo electric machine, the combination of a cylindrical or annular armature having grooves or recesses for the reception of the coils or bobbins, two or more independent continuous conductors wound thereon, substantially in the manner described, and a commutator to the segments of which the said coils or bobbins are alternately connected, substantially as and for the purpose set forth.

255,865. ELECTRO-MAGNET. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Aug. 16, 1881. (No model.)

Claim.—1. The combination, with a hollow helix of insulated wire, of a movable armature composed of a central core extending entirely through the helix, and an inclosing-shell, of iron, of equal length therewith, substantially as set forth.

2. The combination, in an electric lamp, with the swinging lever or frame supporting the feed-regulating mechanism, of a hollow stationary helix composed of one or more coils of insulated wire, as described, and a movable armature consisting of a central core capable of extending entirely through the helix, and an inclosing-shell, of iron, of equal length therewith, substantially as shown and described.

255,866.



255,866. DYNAMO-ELECTRIC MACHINE. EDWARD WESTON, Newark, N.J., assignor to the United States Electric Lighting Company, New York, N.Y. Filed July 13, 1881. (No model.)

Brief.—The connections of the armature-coils with the commutator-plates are made by means of tips attached to the wires and fitted to eyes in radial extensions from the plates, the tips being held by clamping or binding screws.



Claim.—1. The combination, with the armature-coils of a dynamo-electric machine, of commutator-segments D, radial arms A, and metallic connecting-tips attached to the free ends of the wires composing the said coils, and fitted to eyes in the radial arms, and adapted for connection therewith by means of clamping or binding screws, substantially as described.

2. The combination of segments D, radial arms A, having eyes B at or near their ends, with connecting-pins C, attached to the free ends of the armature-coils, and fitted to and fastened in the eyes B by means of screws E, as and for the purpose set forth.

255,867. TREADLING TOY HORSE. ELIJAH J. B. WHITAKER, Belair, Md. Filed July 7, 1881. (No model.)



Claim.—1. A toy consisting of a device representing an animal provided with a push-tongue rigidly attached to the animal, an axle of a pair of wheels swiveled below and independent of the animal, and lines to turn the axle independent of the animal, as set forth.

2. The combination of the axle provided with an upright steering-post, a device representing an animal loosely swiveled on the steering-post, a cross-bar rigidly attached to the steering-post, above the back of the animal, and guide-lines connected to the cross-bar, as set forth.

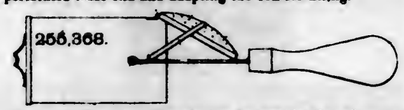
3. In a treadling toy, the combination of a pair of wheels, an axle connecting the wheels, provided with an upright steering-post, a device representing an animal loosely swiveled on the steering-post and having a hole through its mouth, a cross-bar rigidly attached to the steering-post, and guide-lines connected to the cross-bar and extending from one end thereof to and freely through the hole in the animal's mouth, and thence back to the other end of the cross-bar, as set forth

255,868. CLOTHES-SPRINKLER. ELIJAH J. B. WHITAKER, Belair, Md. Filed Sept. 13, 1881. (No model.)

Brief.—The cylindrical box has on diametrically-opposite sides trunnions, whereby the handle is capable of being transferred to the loose end of the cylinder, thereby throwing the rods hold-

ing it in position out of direct line with the bails, thus releasing the perforated loose end and adapting the box for filling.

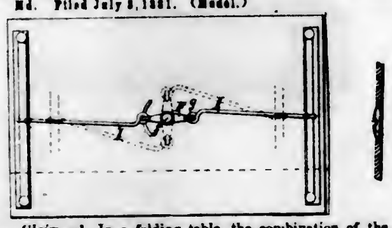
255,368.



Claim.—1. In a sprinkling device, the combination of a water-vessel provided on diametrically-opposite sides with a trunnion, a bail attached to the trunnions, whereby the vessel may be turned upside down within the bail, and a catch by which one end of the water-vessel is held by the bail, as set forth.

2. In a sprinkling device, the combination of a water-vessel having one end permanently closed and the other end provided with a perforated hinged cover, trunnions attached to the vessel on diametrically-opposite sides, a bail attached to the trunnions, and the hinged cover and bail connected on each side by a rod, substantially as set forth.

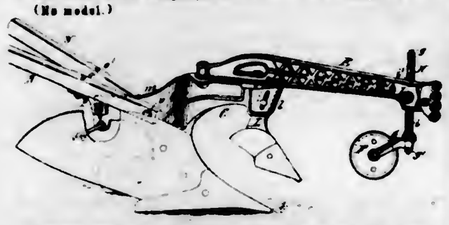
255,369. FOLDING TABLE. ELIJAH J. B. WHITAKER, Belair, Md. Filed July 8, 1881. (Model.)



Claim.—1. In a folding table, the combination of the legs hinged to the table-top, a bar pivoted to the table-top, and two rods, one end of each of which connects with and upon diametrically-opposite sides of the pivoted bar, while the other end of each rod connects with the hinged legs at either end of the table, whereby, upon a half-turn being given to the pivoted bar, the hinged legs may be extended to support the table or folded against the table-top, as set forth.

2. In a folding table, the combination, substantially as set forth, of the folding legs, a pivoted bar, a rod to connect the folding legs at either end with the pivoted bar, and a locking device.

255,370. PLOW. GARNER WILARD, Batavia, N. Y., assignor to the Wilard Plow Company, same place. Filed Aug. 24, 1881. (No model.)



Claim.—1. The combination, with a plow-beam, of a caster-wheel journaled in a bearing, G, provided with one or more stops, h, a pivot-bolt, g, a sleeve, H, surrounding the bolt g and secured to the beam, and one or more recesses, h', formed in the sleeve H, substantially as set forth.

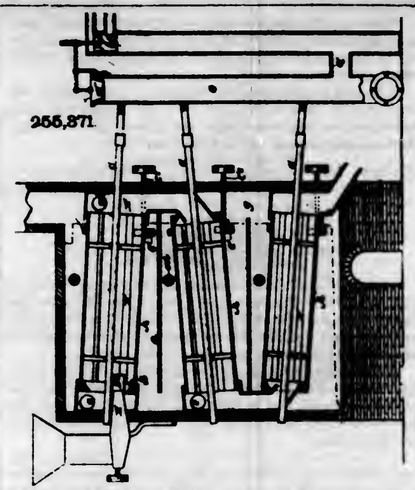
2. The combination, with a standard, C, constructed with a lateral bend or offset, m, whereby the rear portion of the standard is located nearer the mold-board than its front portion, of a beam, E, secured to the standard in front of the bend m, and handles N, secured to the standard in rear of the bend m, substantially as set forth.

255,371. APPARATUS FOR DRYING GRAIN. FREDERICK W WIEDENBOCK, New York, N. Y. Filed Jan. 24, 1882. (No model.)

Claim.—4. The combination, with the rotary inclined drying-cylinders A, arranged to deliver the grain from one to the other, of the stationary air-tubes C, supporting said cylinders, and provided along their under sides only with perforations, so as to discharge the air-currents for drying the grain into the lower portion of the cylinder, substantially as described.

2. The combination, with the rotary drying-cylinder, of the spiral conveyer located within the feed-spout to discharge the grain

255,371.



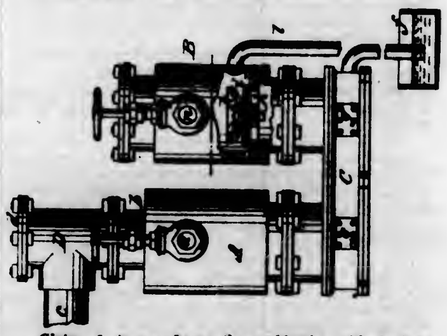
into the said cylinder, and the spring-valve detachably connected with the feed-spout and adapted to act, in conjunction with the spiral conveyer, to express the moisture from the grain before the latter has entered the drying-cylinder, substantially as described.

3. The combination, with the rotary drying-cylinder, of the hopper, the spiral conveyer located within a perforated feed-tube leading from the hopper and entering the rotary drying-cylinder, the spring-valve detachably applied to the shaft of the conveyer in position to normally close the discharge end of the perforated feed-spout, and the jacket surrounding the feed-spout, and provided with a drip-pipe, substantially as described.

4. The combination, with the rotary drying-cylinders mounted upon hollow perforated shafts, of the hot-blast pipe connected with the said hollow shafts, the regulator located in said pipe, and adapted to expand by the action of heat, and the valve connected with said regulator, and so located as to automatically open communication between a cold-air pipe and the hot-air pipe, or to close the same, substantially as described.

5. The combination, with the rotary drying-cylinders mounted upon hollow perforated shafts, of the hot-blast pipe connected with said hollow shafts, the cold-air pipe connected with the hot-blast pipe, the valve for automatically opening communication between these two pipes, and the regulator connected with the hot-blast pipe, and consisting of a metal casing having a flexible diaphragm connected with a pivoted lever that acts to open or close the aforesaid valve, substantially as described.

255,372. CONDENSER FOR STEAM-ENGINES. RICHARD E. WILLIAMS, Grass Valley, Cal. Filed Dec. 23, 1881. (No model.)

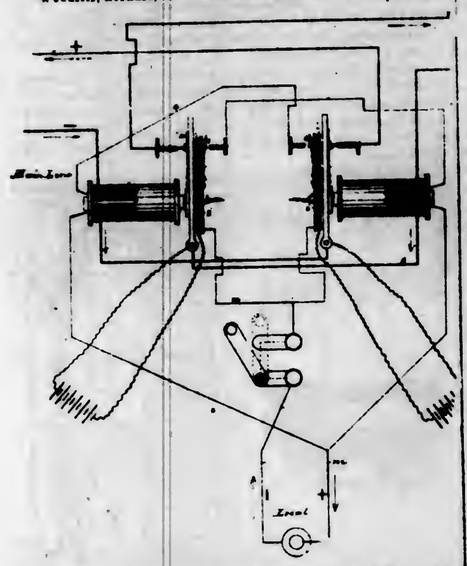


Claim.—1. In a condenser, the combination, with air-chamber B, provided with the valve i, of the pipe l, entering the chamber a little above the said valve, substantially as and for the purpose set forth.

2. The air-chamber B, provided with valve i and pipe l, in combination with base C and condensing-cylinder A, substantially as shown and described.

3. The condensing apparatus consisting of cylinder A, water supply pipe s, hollow base C, air-chamber B, provided with valve i, and discharge-pipe l, substantially as shown and described, combined for operation as set forth.

255,373. TELEGRAPH RELAY AND REPEATING-INSTRUMENT. JAMES M. WOODHILL, Aurora, assignor to John I. Woodfill, Nichols, Mo. Filed Oct. 27, 1881. (No model.)



Claim.—1. A repeating-instrument consisting of the combination of a magnet having separate inner and outer helices wound in the same direction throughout the length of the core, and an armature having front and back contacts, both of which are closed at one point in the movement of the armature, the inner helix of each instrument being connected to a local battery and its circuit broken through one of the contacts of the armature of the other instrument, and the outer helix of each instrument being connected with their separate main lines and their circuits broken by the other armature-contact on the opposite instrument, substantially as described, and for the purpose of repeating with a weak or single-cell battery.

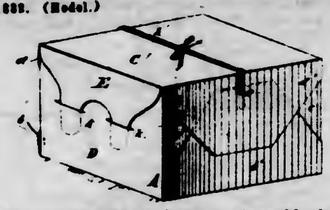
2. The combination, with two or more instruments having compound magnets B, formed of two separate helices wound in the same direction throughout the length of the core, and armature-lever contacts for making and breaking the circuits, as described, of a single local battery connected with the inner helix of each instrument and arranged to be thrown alternately through the said inner coils of the instruments in an automatic manner, as described, to avoid difference in tension, as set forth.

3. The combination, with the compound magnet B, having separate inner and outer coils, and its armature with contacts for repeating, as described, of a local battery connected with the inner coil of the magnet, and a switch arranged in the local-battery circuit, arranged to break the circuit of the inner coil, to avoid inductive effects when the instruments are worked separately as relays.

4. The combination, with two repeating-instruments having magnets with separate inner and outer helices for the main and local circuits, respectively, and a stationary front and back contact for each instrument, arranged respectively in one of the main-line circuits and the local circuit, of an armature vibrating between the two stationary contacts and having itself spring-contacts, arranged, as described, to temporarily hold both front and back stationary contacts closed, and finally to be backed up by the armature-lever for a solid bearing and positive unbroken closure of the contact, toward which the armature moves, as described.

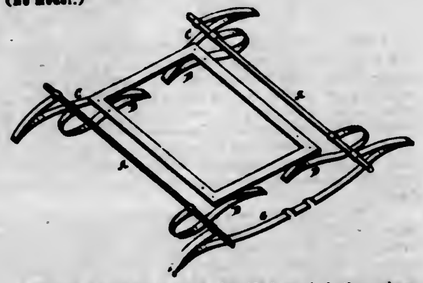
5. The combination, with an armature-lever having a hole through it, a tongue-spring contact on one side and an insulated plate, A, with pin A' on the other, the said pin A' being arranged to close a sounder-circuit through the tongue-spring by the pressure of the tongue-spring against a stop when the armature is drawn by a magnet controlled by a main circuit, as described.

255,374. PAPER BOX. CHARLES P. WOOLDRIDGE, New York, assignor to William H. H. Rogers, Brooklyn, N. Y. Filed Jan. 30, 1882. (Model.)



Claim.—A folding box formed in one piece, with a bottom, C, cover C', two fixed sides, D D', body-flaps a a', b b', c c', and perforated cover-flaps d d' E, the flap E locking in slots k of side D, the body being held in form and the cover being secured to body when in folded position by cords ', substantially as shown and described.

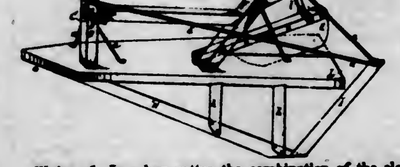
255,375. CARRIAGE-SPRING. JOHN E. BELL, Akron, assignor of one-half to William J. Bell, Toledo, Ohio. Filed Aug. 1, 1881. (No model.)



Claim.—In combination with the side bars, A A, the springs C C and D D, each having partial return-leaves, and constructed and arranged as shown, for the purpose specified.

255,376. BOG-CUTTER. SAMUEL W. BREWSTER and LYMAN BREWSTER, Southeast, N. Y.; said Sherwood assignor to Sarah Elizabeth Sherwood. Filed Nov. 23, 1881. (No model.)

Brief.—A bog-cutter formed of a base plate or bottom having an inclined horizontal cutting-blade attached to the side of its front beveled end, a vertical blade secured to the outer end of said inclined blade, and an adjustable guiding-blade working in a slot in the rear portion of said bottom. Elastic arms or braces connect the inclined blade with the base, and the vertical blade is braced by diagonal rods.

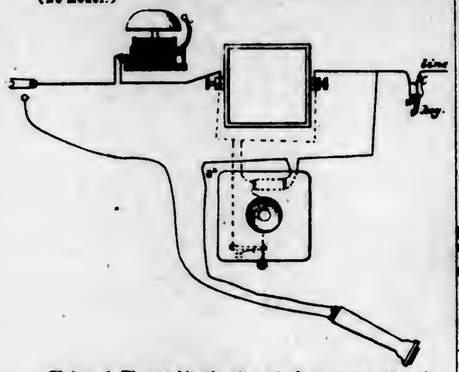


Claim.—1. In a bog-cutter, the combination of the slotted base or bottom A, the adjustable guiding-blade K, and the rearwardly-inclined cutting-blade H, substantially as shown and described.

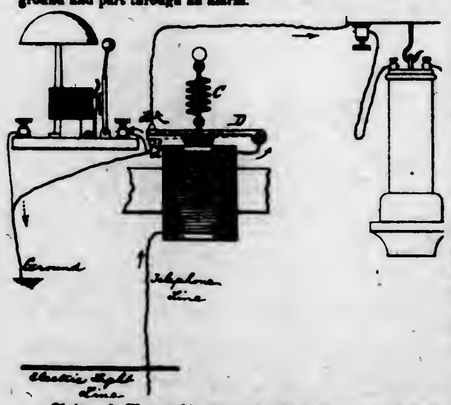
2. In a bog-cutter, the horizontal and upright cutting-blades mounted upon one side of the bottom piece, the draft-post, the guiding-blade, and the handles, all combined and arranged substantially as shown and described.

3. The herein-described improved bog-cutter, consisting of the bottom piece, the two cutting-blades, the draft-post, the adjustable clevis attachment, the handles, and the adjustable guiding-blade provided with lifting-lever and securing pin or bolt, all arranged to operate substantially as and for the purpose set forth.

265,877. MEANS FOR UTILIZING SECONDARY BATTERIES ON TELEPHONE-CIRCUITS. CHARLES E. BUELL, New Haven, Conn., assignor of two-thirds to James G. Smith, Hackensack, N. J., and George W. Coy, Milford, Conn. Filed Dec. 5, 1881. (No model.)



Brief.—An abnormal current causes magnet B to attract its armature when the current is divided, part passing directly to ground and part through an alarm.

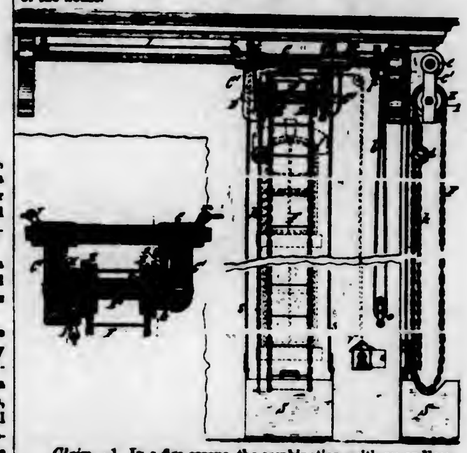


Claim.—1. The combination, with a device for protecting telephonic, telegraphic, and signaling instruments from injury by abnormal powerful currents of electricity, such device comprising means for changing normal line-circuit to ground, of an electric bell in the ground circuit or branch thereof, substantially as and for the purpose set forth.

2. The combination, with the electric magnet B and armature D, having front and back stops, d d', and spring C, of insulated attachment or tail-piece D', with front and back stops, d^2 d^3, and spring F, the latter being in normally-open circuit with front stop d^3, whereby when armature D is attracted a division of the working current is effected, part going through the magnet to maintain the energization of the latter and part going direct to ground, as set forth.

265,879. FIRE-ESCAPE. THOMAS DARBY, Buffalo, N. Y., assignor of one-half to Charles A. Gerlach, same place. Filed Aug. 1, 1881. (No model.)

Brief.—The endless ladder is prevented from moving, except in one direction, by a ratchet and spring-pawl on the shaft on which it turns, and a brake controls its speed. A basket gathers the ladder as it is being raised and is supported in an elevated position by a lever, which is operated by a rope passing down and outside of the house.



Claim.—1. In a fire-escape, the combination, with an endless ladder, F, of supporting wheels or pulleys E and a ratchet mechanism, G g, whereby the ladder is prevented from moving except in the proper direction, substantially as set forth.

2. In a fire-escape, the combination, with the endless ladder F, of the supporting-wheels E, brake mechanism H I, and ratchet mechanism G, all mounted in a traveling carriage, C, substantially as set forth.

3. The combination, with the endless ladder F, of the basket S and mechanism whereby the basket is elevated, the basket being adapted to gather the endless ladder as it is elevated, substantially as set forth.

4. The combination, with the endless ladder F and basket S, of the lever U, whereby the basket is supported in an elevated position, and mechanism whereby the lever U is released at desire and the basket and ladder permitted to drop, substantially as set forth.

265,880. BROILER. WILSON P. DOBSON, Philadelphia, Pa., assignor to F. Howard Eldridge, same place. Filed Feb. 14, 1881. (No model.)

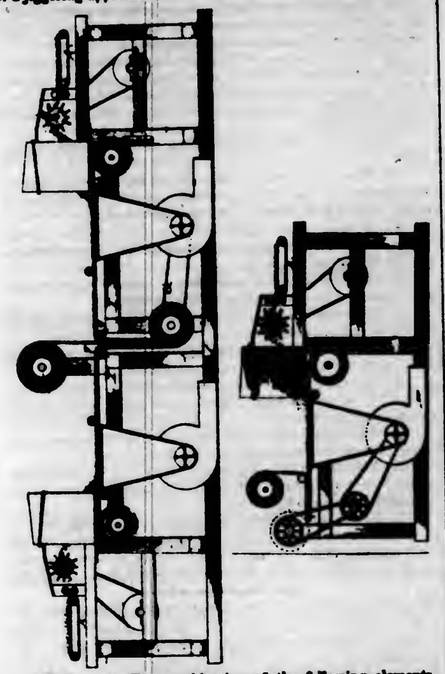


Claim.—1. A broiler consisting of two corrugated plates, in which are perforations in the upper part of the corrugations, substantially as and for the purpose set forth.

2. The corrugated plates A A, in which are perforations in the upper part of the corrugations, substantially as described, and for the purpose set forth.

265,881. MAKING FUR-FACED FABRICS. WILLIAM E. DOUBLEDAY, New York, N. Y., assignor to Ellen H. Doubleday, same place. Filed Jan. 26, 1882. (No model.)

Brief.—The fur fiber is blown upon a perforated plane former, over which travels some perforated material, as mosquito-netting or millinet, and is drawn upon this non-felting material by an air suction. It is then transferred automatically to a felting material unwound from a roll and subsequently stuck thereon by means of a of a jiggering apparatus.



Claim.—1. The combination of the following elements, namely: means adapted to move a continuous non-felting fabric over a perforated surface, means adapted to deposit fur upon said fabric, means for causing the fur to adhere to said fabric, and means for supplying a felting fabric to the layer of fur thus produced, substantially as set forth.

2. The combination of the following elements, namely: means adapted for moving a sheet of cloth, composed wholly or in part of felting fiber, in combination with mechanisms, substantially as described, adapted to apply to each side of the cloth a fur batt, substantially as described.

265,882. TRACE-CARRIER. GEORGE F. EBERHARD, Cleveland, Ohio, assignor to the Eberhard Manufacturing Company, same place. Filed July 20, 1881. (Model.)



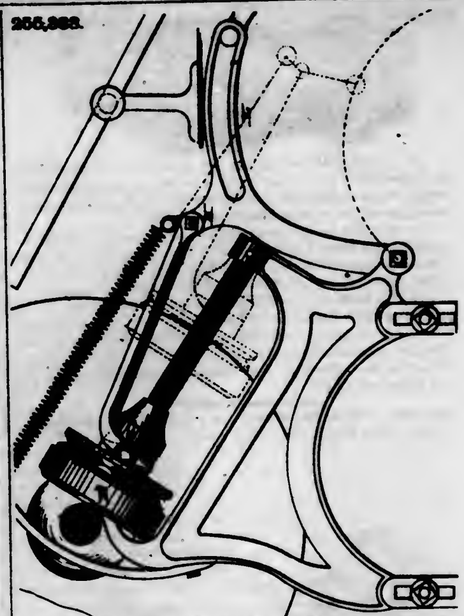
Claim.—In a trace-carrier, the combination, with the carrier-frame A, of the pivoted double hook B, provided immediately in front of its base-bar, and rising from the arms of the hook with the rounded vertical studs D D, whereby the double hook may be turned up to receive the cockeyes, substantially as specified.

265,883. POWER-TRANSMITTER FOR SEWING-MACHINES. CHARLES W. FOSTER, New Haven, Conn. Filed Jan. 6, 1882. (No model.)

Claim.—1. The combination of the main shaft having a fixed friction drive wheel or disk, the counter-shaft secured rigidly in its bearings, the friction-pulley mounted loosely upon said counter-shaft, mechanism for adjusting it upon said counter-shaft, and a suitably-arranged retracting-spring, substantially as set forth.

2. The combination of the loose pulley having an annularly-grooved hub, an adjusting-lever operated by a treadle, and a pivoted forked connecting-rod having pivoted bearing-lugs for the loose pulley, substantially as set forth.

265,883.



2. The combination, with the loose and adjustable friction-pulley, of a driving-disk provided near its center with a shallow annular recess, substantially as and for the purpose set forth.

4. The combination of the counter-shaft secured rigidly in suitable rests or brackets, the loose pulley adjustable upon said counter-shaft and having a recess to receive the bracket at one end of said counter-shaft, and a brake-block or cushion secured in the recess of said pulley, substantially as set forth.

5. The combination of the driving-disk having an annular recess, the counter-shaft secured in rests or brackets, and the loose adjustable friction-pulley having a recess provided with a brake-block or cushion adapted for contact with the rest at one end of the counter-shaft, substantially as set forth.

6. A friction driving wheel or disk provided, near its center with an annular recess to relieve it from contact at that point with the friction pulley or pulleys driven by said disk, substantially as set forth.

7. A friction-pulley having a central annular recess to receive a brake-block or cushion, as set forth.

8. A bracket or hanger supporting one end of a shaft and adapted to engage a brake-block or cushion placed in a central annular recess of a loose pulley moving upon said shaft, substantially as set forth.

9. A bracket or hanger supporting one end of a shaft and adapted to engage a brake-block or cushion placed in a central annular recess of a loose pulley moving upon said shaft, in combination with a retracting-spring adapted to hold said pulley automatically in contact with said bracket, substantially as set forth.

10. As an improvement in power-transmitters for sewing-machines, the combination of the main shaft carrying a driving-disk having a central annular recess, the counter-shaft mounted rigidly in brackets or rests, the loose friction-pulley having a recess provided with a brake-block or cushion adapted to engage one of the brackets supporting the counter-shaft, mechanism for adjusting the said pulley while in motion upon the counter-shaft, and a retracting-spring, arranged substantially as herein described, as and for the purpose set forth.

11. In a power-transmitter constructed substantially as herein described, the herein-described main frame, supporting the main and the counter shafts, and having vertically-adjustable legs or supports, as and for the purpose set forth.

265,884. CHUCK FOR HOLDING BOTTLES. WILLIAM FOX, Steubenville, Ohio, assignor to himself and Robert J. Beatty, same place. Filed Jan. 25, 1882. (No model.)

Claim.—1. A chuck for holding glass bottles, having on its inner wall one or more bands of felt, cloth, or equivalent soft elastic material, substantially as and for the purpose set forth.

255,384.

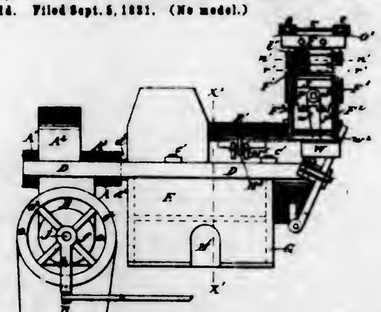


2. A chuck for holding glass bottles, having in its inner face or chamber wall one or more grooves, *c*, with a soft, elastic band seated therein, such band or bands having thickness in excess of the depth of groove, substantially as set forth.

3. A chuck, A, for holding glass bottles, having a comparatively narrow band, *c*, of soft elastic material, secured to its inner chamber wall near its inner end, substantially as described, whereby the bottle is held by uniform pressure applied near its base.

4. The chuck A, for holding glass bottles, having chamber *a* therein equal in length to the desired length of finished article, with a rest or stop, *a'*, at the inner end of such chamber and one or more comparatively narrow bands, *c c'*, of soft elastic material, secured to the side wall of such chamber, substantially as and for the purposes set forth.

255,385. BRICK-MACHINE. WALTER E. GARD, Baltimore, Md. Filed Sept. 5, 1881. (No model.)



Claim.—1. The combination of the oil-case B, horizontal shaft J', worm-pinion K, worm-gear R, and pug-mill shaft I or I', constructed and operated substantially as and for the purpose described.

2. A pug-mill shaft with a friction-surface, *i*, firmly attached, friction-rollers *h*, operating between it and friction-plate *w*, all combined, substantially as and for the purpose herein specified.

3. The combination of oil-case B, worm-gear R, friction-plates *w i*, and rollers *h*, as set forth.

4. The oil-case covering A^2, with caps A' and A^3 attached, substantially as specified.

5. The combination of cross-head J, flange D, and pug-mill E, when constructed and cast in one single piece, as herein specified.

6. The cross-head J, oil-case B, flange D, pug-mill E, and supports G, constructed and arranged substantially as shown and described.

7. The bearing A, case B, opening *d*, opening *d'*, and space d^2, as arranged and constructed as to prevent clay from working into the bearing A, as set forth.

8. A shoulder, *w'*, on pug-mill shaft I or I', adapted to fit against a master-wheel, R, for the purpose of keeping the shaft from being forced through the wheel by the back-pressure of the clay, as specified.

9. A tempering-blade, M, without a hub or shank, in combination with a bolt, d^2, or its equivalent, used to attach the blade M to a projection, L or M', on mud-shaft I or I', substantially as specified.

10. A pug-mill shaft with spiral thread L, in combination with a detachable tempering-blade M, substantially as described.

11. An expressing-screw wing, N, without a hub, made in one piece with it, in combination with bolts d^2 and projection L or M' of mud-shaft I or I', as specified.

12. A pug-mill shaft with a continuous spiral thread, L, in combination with a detachable expressing-screw wing, N, constructed as described.

13. A tempering-blade, M, without a hub or shank, in combination with an expressing-screw wing, N, without a hub, as specified.

14. The projection M' of a pug-mill shaft, I', so made that it performs the office of a hub or shank for a tempering-blade, M, which is attached to it by a bolt, d^2, or its equivalent, as specified.

15. The safety-plate R', with hinge H^2, arranged as and operating in the manner herein set forth.

16. The die U, constructed and arranged to guide a bar of clay so that it will take an upward or ascending direction as it issues from said die, substantially as described.

17. The die U, to guide a bar of clay so that it will take an ascending or upward direction, in combination with a receptacle, S, filled with sand and placed on top of said die U, which causes the sand to adhere to the ascending bar of clay without the use of rollers, as specified.

18. The die U, in combination with swinging bolts *s'*, as set forth.

19. The sand-receptacle S, so arranged that the material to be sanded enters at the bottom or under side of the receptacle and passes upward to be sanded, in the manner described.

20. A sand-receptacle, S, with hollow sides S^2, in which steam or hot fluids can circulate to keep the sand dry, substantially as and for the purpose set forth.

21. The application of heated sand to a bar of clay in its passage through a sand-receptacle, as herein specified.

22. The slots *s'* in form V, through which a severing device may be passed, as specified.

23. The links V V', in combination with eccentric-shaft *m* *m'* m^2, or its equivalent, for the purpose described.

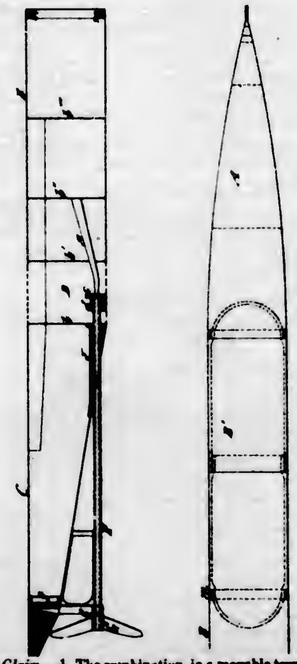
24. The rods *r*, bell-crank *e*, eccentric-shaft *m* *m'* m^2, and links V V V' V', all arranged and operated substantially as and for the purpose herein stated.

25. The counterweighted carriage F F' F^2 F^3 W, substantially as herein described, for the purpose set forth.

26. The die U, sand-receptacle S, press V V V' V', and guide-rollers X, when combined and operated as herein shown and described, for the purpose set forth.

27. The sand-receptacle S, so constructed and arranged that it will sand a bar of clay while it is passing through it in an upward and ascending direction without the use of rollers or other means to cause the sand to adhere to the bar of clay, as specified.

255,386. SUBMARINE TORPEDO. MARTIN HEDER, Bayonne, N. J., and MARCUS A. HANDY, Newport, R. I., assignors to Frederic H. Snyder, Jersey City, N. J. Filed July 21, 1881. (No model.)



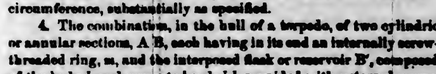
Claim.—1. The combination, in a movable torpedo, of a water-compartment for an engine, having openings for the admission of water to it, a screw-shaft extending therefrom, and a tube leading aft from said compartment to the exterior of the hull and loosely surrounding said screw-shaft, substantially as specified.

2. The combination of the middle section, B, comprising a water-compartment, D, for an engine, the conical after or stern section C, arranged with its upper side in line with the upper side of the section B, the screw-shaft F, and the tube J, affording provision for the circulation of water from said compartment D around the screw-shaft, substantially as specified.

3. The combination, in the hull of a movable torpedo, of two cylindric or annular sections and an interposed flask or reservoir having bands made separate from its body and inserted into its body, the said bands being also inserted into the sections between which the flask or reservoir is placed and secured therein at the circumference, substantially as specified.

4. The combination, in the hull of a torpedo, of two cylindric or annular sections, A B, each having in its end an internally screw-threaded ring, *m*, and the interposed flask or reservoir E', composed of the body *h* and separate bands *l l*, provided with external screw-threads for engaging with the internally screw-threaded rings *m*, substantially as specified.

255,387. CUTTER-BAR FOR MOWERS AND REAPERS. ANDREW H. LACKEY, Brownsburg, Va., assignor to James A. Porter and James H. Chambers, Mace, Ind. Filed May 17, 1881. (No model.)



Claim.—The combination of the sickle-sections having notched dovetail shanks, the notches E being beveled at *e*, the bar G, having beveled blocks F, adapted to ride up on bevels *e*, and the adjusting-nut H, substantially as described.

255,388. HANDLE FOR GLASS COVERS. DANIEL E. LADD, Baltimore, assignor of one-half to Elijah J. B. Whittaker, Belair, Md. Filed Jan. 30, 1882. (No model.)



Claim.—1. A blown-glass shade or cover provided with a detachable handle secured by means substantially as described, as set forth.

2. A glass shade or cover provided with a detachable handle secured by means of a circular metal plate, D, upon the top of the glass cover, and a circular plate, E, within the glass cover, so arranged that the rims or edges of the two plates coincide or are directly opposite, and a bolt one end of which is attached to the handle to secure the two plates firmly in said position, as set forth.

3. A glass shade or cover provided with a detachable handle secured by means of a circular concavo-convex metal plate, D, upon the top of the glass cover, and a circular saucer-shaped plate, E, within the glass cover, a rubber washer against the glass, a filling in each plate of plaster-of-paris, the latter covering the rubber washer, and a bolt one end of which is attached to the handle to secure the two plates firmly in position, as set forth.

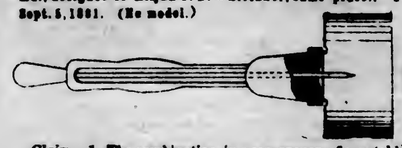
255,389. FRICTION RATCHET-MOTOR. ALFRED LEE, Paulding, Ohio, assignor of one-half to Francis B. De Witt, same place. Filed Jan. 24, 1882. (No model.)



Claim.—1. The combination of section C and straps E and G with means for operating the same in opposite directions with section B, and means contained within the limits of said sections and yieldingly held away from the shaft A by an intermediately-arranged spring, for operating said shaft, all substantially as shown and described.

2. The combination of shaft A, sections B and C, ratchet-bar D, spring *d'*, straps E and G, spring H, and treadle F, substantially as shown and described.

255,390. CAN-OPENER. WILLIAM B. MONTGOMERY, Belair, Md., assignor to Elijah J. B. Whittaker, same place. Filed Sept. 5, 1881. (No model.)



Claim.—1. The combination, in a can-opener, of a metal block to fuse the solder about the can-cap and a piercer-rod to penetrate the cap and remove it, as set forth.

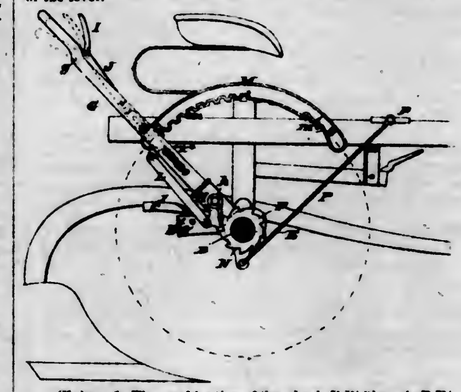
2. The combination, in a can-opener, of a metal block to fuse the solder and a rod passing freely vertically through the block, having its extremity pointed to penetrate the can-cap, as set forth.

3. The combination, in a can-opener, of a metal block to fuse the solder, a pointed rod to penetrate the can-cap, and a handle attached to the metal block, as set forth.

4. The combination, in a can-opener, of a metal block to fuse the solder about the can-cap, means to remove the cap, and a detachable handle, as set forth.

255,391. SULKY-PLOW. GILPIN MOORE, Molino, Ill., assignor to Deere & Co., same place. Filed Nov. 4, 1881. (No model.)

Brief.—Devices for locking the wheel to lift the plow by the draft and for automatically unlocking it. The finger-latch is divided from the pawl-engaging devices, the latter being thrown out of contact by a spring. The rack-holding teeth is released by the same movement that engages the pawl to the wheel-ratchet. A slighter movement of the finger-lever will only release the lever from the rack for hand-lifting. For these two uses a double finger-latch may be used, one arranged to throw farther when grasped than the other. An unlocking-cam arranged upon a hollow stud of the lever.



Claim.—1. The combination of the wheels B B', the axle D D', the plow-beam *c'*, and ratchet F with the lever G, pawl H, lever I, rod J, part K, rod L, and spring O, substantially as set forth.

2. The combination of the wheels B B', axle D D', and ratchet F with the lever G, the part K, tooth k^4, the segment M, and spring O, substantially as set forth.

3. In a wheel-plow, as described, the combination of the axle D D', levers G and I, and rod J with part K, tooth k^4, rod L, spring O, and segment M, substantially as described.

4. The combination of the axle D, the lever G, having the boss g^3, the cam N, and the pawl H, substantially as described.

5. The combination of the axle D, the lever G, the wheel B, the ratchet F, the pawl H, the cam N, the segment M, the part K, and tooth k^4, substantially as described.

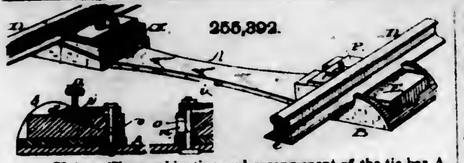
6. The combination of the axle D, the wheel B, the ratchet F, the lever G, the boss g^3, the cam N, and means for keeping the cam from turning on the boss.

7. The combination of the loose cam N and the rod P, substantially as and for the purpose described.

255,392. RAILROAD-TIE. PHILIP PENDLETON, Bath, W. Va., assignor of one-half to James W. Denver, Wilmington, Ohio. Filed July 14, 1881. (No model.)

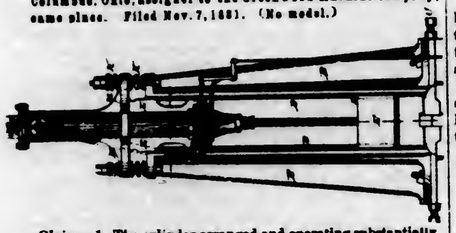
Brief.—A tie-bar connects removable boxes, in which are inserted blocks, on which rest the rails, which are secured by means of binding-plates and bolts.

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Claim.—The combination and arrangement of the tie-bar A, removable boxes B B, blocks E, binding-plates P P, bolts *o*, and rails D, substantially as and for the purpose set forth.

255,393. STEAM DROP-HAMMER. JULIUS C. RICHARDSON, Columbus, Ohio, assignor to the Greenwood Machine Company, same place. Filed Nov. 7, 1881. (No model.)



Claim.—1. The cylinder arranged and operating substantially as described, and provided with grooved flanges parallel to its bore, by means of which it is fitted between vertical uprights, so as to be capable of moving longitudinally when the hammer is operated, as set forth.

2. In a steam drop-hammer, the cylinder fitted between and supported upon vertical guides, cushion-springs being interposed, as described, for the purpose set forth.

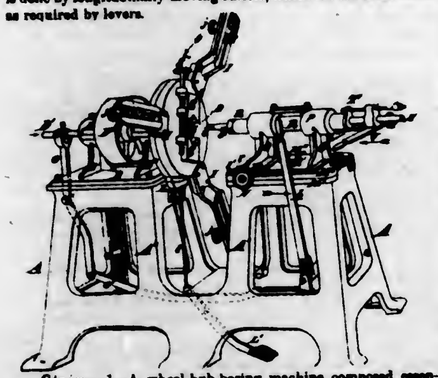
3. In a steam drop-hammer, the cylinder fitted between and supported upon vertical guides, cushion-springs being interposed and superimposed, as described, for the purpose set forth.

4. In a steam drop-hammer, the cylinder having the interior cushion-spring, K, vertically adjustable above the piston, said cylinder being supported upon the vertical guides B between two sets of cushion-springs, K K, substantially as and for the purpose set forth.

5. In a steam drop-hammer, the combination of the cylinder, the steam-chest, the port W, the slide-valve S, the pipe Z, and the exhaust-pipe A', having valve B', with mechanism for operating the valves S and B' simultaneously, substantially as herein described, for the purpose shown and specified.

255,394. WHEEL-HUB-BORING MACHINE. JOHN T. RICHMOND and HENRY J. CORNEGMAN, Jr., Cincinnati, Ohio, assignors to Cordesman, Egan & Co., same place. Filed Apr. 8, 1881. (No model.)

Brief.—The wheel is held in a revolving chuck having adjustable clamping-pieces for the hub part and rim. The cutting is done by longitudinally-moving cutters, which are fed to the work as required by levers.



Claim.—1. A wheel-hub-boring machine composed essentially of a duplex bed or table, A' A'', a revolving wheel-chuck mounted on a hollow revolving shaft supported in bearings on one of the said tables and revolving in an open space between the tables, a longitudinally-moving non-revolving shaft supported within said revolving shaft and armed with a cutter, and a second longitudinally-moving non-revolving shaft and cutter mounted upon the opposite table, both of said cutter-shafts being operated endwise by suitable actuating-levers at one end of the machine, whereby the revolving hub is adapted to be bored from its opposite sides by the longitudinally-moving knives, substantially as described.

2. The combination, with the cutting-knife, of the rotary wheel-chuck consisting of the wheel carrying the hub-clamps adjusted by a right-and-left screw, and the bent radial arms I with the adjustable clamps, substantially as described.

3. The combination, in a wheel-hub-boring machine, of the wheel-chuck mounted upon a hollow rotary shaft, the cutter-shaft IV, arranged to be moved through the said hollow shaft, and the levers *e e'* and hand-lever A, all arranged to effect such movement of the knife-shaft, substantially as described.

4. The combination of the shaft S and the knife *s* with the hollow shaft R, the lever V, connected with a block secured upon the said shaft carrying the knife, and an adjustable connection between said block and the tubular shaft, the lever being pivoted to a bar secured to one of the bearings, *p*, substantially as described.

5. The combination of the hollow shaft R and its contained shaft S, carrying cutters *s s'*, with the adjusting devices T and lever V, for the simultaneous operation of the cutters *s s'*, substantially as herein set forth.

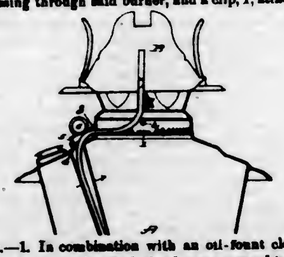
255,395. HALTER. HENRY HORNBECK, Parma, N. Y., assignor of two-thirds to Charles S. Upton and Charles H. Coates, both of Spencerport, N. Y. Filed Feb. 10, 1882. (No model.)



Claim.—In a halter, the combination, with the leather head-piece A and nose-piece B, of the rope or strap C, provided with the two bights or branches C' C', said bights being permanently attached to the ends of the nose-piece, thence extending upward and passing loosely through the loops on the ends of the head-piece, thence extending downward, joining together, and having a loop at the bottom, through which the main end of the rope passes, thus forming a noose, as shown and described, and for the purpose specified.

255,396. LAMP. ANDREW ROSENBUSCH, Quincy, Ill., assignor to himself and Adolph F. Roth, same place. Filed Jan. 6, 1882. (No model.)

Brief.—The burner is attached to the lamp-body by means of a pin, 2, passing through said burner, and a clip, 1, attached to the lamp-body.



Claim.—1. In combination with an oil-fount closed at the point where the burner is attached, a burner secured to such fount by a clip, substantially as described.

2. In combination with the oil-fount A and burner B, a wick-tube extending partly to the bottom of said fount and entering the burner from the outside both of the burner and fount.

3. The combination of the burner having central wick-tube, a raising and lowering device, and a slot, 3, and an oil-fount having an opening, 4, beyond the circumference of the burner, substantially for the purpose set forth.

4. In combination, the oil-reservoir, the burner, the exterior wick-passage, 5, connecting said reservoir and burner, and the removable cover 6.

255,397. SELF-LEVELING BERTH. GERARD SICKELS, Boston, Mass., assignor to Harry B. Wood, same place. Filed Jan. 9, 1882. (No model.)

Claim.—1. The combination, with the berth and its supporting-platform pivoted to tilt in any vertical plane, as described, of the rod *m*, pivoted to the berth at the upper end, to the deck at the lower end, and having midway a bearing in the tilting platform, below the pivots thereof, substantially as and for the purpose specified.

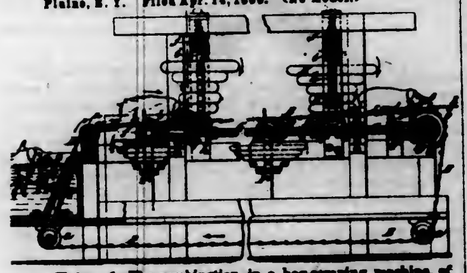
255,397.



2. The combination of a platform or support pivoted so as to tilt in any vertical plane, a berth or other structure adapted to slide laterally and longitudinally on said support, and a bar or rod pivoted at one end to a fixed part of the vessel below the berth, and having at its upper end a bearing in the berth and at its central portion an intermediate bearing in the tilting frame, below the pivots thereof, said parts co-operating to keep the berth or structure in a level position, as set forth.

3. The combination, with a berth or other structure for use on navigable vessels, of a frame or support on which the berth is adapted to slide longitudinally, and adapted to slide laterally with the berth, a platform supporting said frame and berth and adapted to tilt or oscillate in any direction, and a rod pivoted at one end to the deck or other fixed part of the vessel below the berth, and having a bearing at its other end in the center of the berth, and an intermediate bearing in the tilting platform, as set forth.

255,398. HOG-SCRAPING MACHINE. REINELANDER C. TOMPKINS, New York, assignor of one-half to Amasa Spring, White Plains, N. Y. Filed Apr. 14, 1880. (No model.)



Claim.—1. The combination, in a hog-scraping machine, of scraping devices, an endless chain or carrier for drawing the carcasses through, over, or in contact with said scraping devices, a scalding-tub arranged in proximity to an ascending portion of said chain or carrier, and means for attaching the carcasses while in the tub to said portion of said chain or carrier, whereby they may be taken directly from the tub, drawn upward therefrom, and carried to the scraping devices, substantially as specified.

2. The combination, with a tub or vessel and a trunk or tube, A', of a series of scraping devices and an endless chain or carrier passing up through said trunk or tube for the purpose of taking the carcasses from the tub or vessel and presenting them to the scraping devices, substantially as specified.

3. The combination, with the scalding tub or vessel and an endless chain or carrier passing through or arranged in close proximity to said tub or vessel, so as to draw the carcass directly therefrom, of a scraper or scraping device, which is arranged within said tub or vessel, and over which the carcass passes as it is drawn from said tub or vessel, substantially as specified.

4. The combination, with a scalding tub or vessel, an endless chain or carrier passing through or arranged in close proximity to said tub or vessel, so as to draw the carcass directly therefrom, and scraping devices past which the carcass is drawn by said chain or carrier after leaving said tub or vessel, of a scraper or scraping device, which is arranged within said tub or vessel, and over which the carcass passes as it is drawn from said tub or vessel, substantially as specified.

5. The combination of the tub or vessel A, the chain or carrier B, and the rotary scraping device I, arranged in, said tub or vessel, substantially as specified.

6. In a hog-scraping machine, the combination, with a rotary shaft or shafts, of a series of scrapers or scraping devices made of elastic material or having an elastic connection with said shaft or shafts and having salient rounded edges or faces, substantially as specified.

7. The combination, with an endless chain or carrier, of the hooks D, provided with downwardly-projecting prongs or arms *c*, for engaging with the links of said chain or carrier, substantially as specified.

8. The combination of the endless chain or carrier, the delivery-table, under which the chain or carrier passes, provided with an incline over which the chain or carrier passes, and the hook provided with the prong or arm *c*, which rides upon said incline and disengages said hook from said chain or carrier, substantially as specified.

9. The combination of the chain or carrier B, the delivery-table K, provided with inclines *n* and *o*, and the hook D, provided with the prong or arm *c*, and side wings or arms, *p*, all substantially as specified.

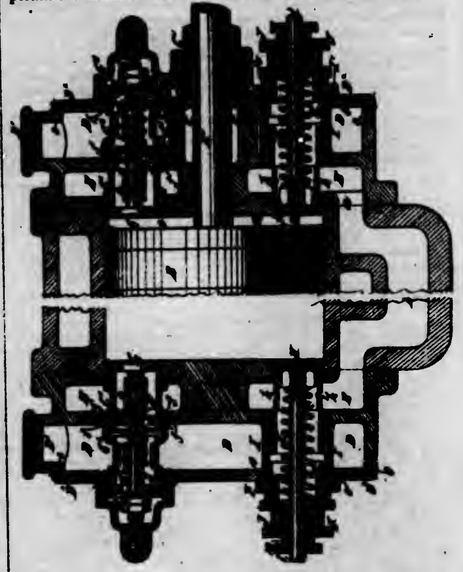
255,399. BARBED FENCE. ANDREW J. UPHAM, Sterling, Ill., assignor to the Washburn & Moen Manufacturing Company, Worcester, Mass. Filed Sept. 16, 1881. (No model.)



Claim.—The process of manufacturing barbed-fence material which consists in taking a metallic strip, A, about seven-sixteenths of an inch in width and of any suitable thickness, and passing the same flatwise between a stamp and a die having conformed faces, so as to produce the punctures *x x* in and conformation of the strip A shown in Fig. 2, then passing the barb B transversely any desired distance through the punctures *x x* and covering each barb diagonally the desired length, and finally passing each strip A, thus furnished with the barb B, between two horizontal rollers having flat faces, by means whereof the strip A and barb B are pressed into nearly the same plane, thus slightly bending the barb B at the punctures *x x* aforesaid and firmly seating each barb, substantially as herein described.

255,400. AIR-COMPRESSOR. JOHN B. WARING, New York, N. Y., assignor of one-half to Milan C. Bullock, Chicago, Ill. Filed Sept. 14, 1880. Renewed Jan. 26, 1882. (No model.)

Brief.—The valves in the ends of the cylinder are adapted to permit the entrance and exit of air at each stroke of the piston.



Claim.—1. The combination, with the cylinder and piston of an air-compressor, of a discharge-valve provided with means for balancing it when working under a pressure not materially in excess of that desired, but which will have an excess of pressure upon its face and remain open when the desired pressure is exceeded, substantially as and for the purpose specified.

2. The combination, with an air-compressor cylinder and a

discharge-chest, of a discharge-valve which is subjected to the action of compressed air upon both sides, a valve-stem therefor, the end of which is exposed to the atmosphere, a spring for acting upon the back of said valve, and means for adjusting the tension of said spring to suit different pressures, substantially as and for the purpose specified.

3. The combination, with the hollow cylindrical valve H, provided with openings *h*, for admitting air to the back of the valve, of the stem, *l*, the end of which is exposed to the atmosphere, and the spring K, contained within the valve, substantially as and for the purpose specified.

4. The combination of the socket I, the packing-nut I', the packing *o*, the valve H, having in its cylindrical portion holes *h*, the stem *l*, the plug or nut J, and the spring K, all substantially as specified.

5. The combination, with an air-compressor cylinder and a hollow head therefor, of a removable cover for said hollow head, a valve-casing secured in said hollow head and projecting through said cover, and a screw-threaded nut applied to said casing outside said cover and serving as the means whereby the latter is held in place, substantially as specified.

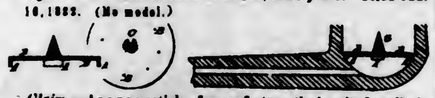
6. The combination, with an air-compressor cylinder and a hollow head therefor, of a removable cover for said hollow head, a valve-casing secured in said hollow head and projecting through said cover, and a closed screw-threaded cap secured to said casing outside said cover and serving as the means whereby the latter is secured in place, substantially as specified.

7. The combination, with the hollow head of an air-compressor cylinder the outer wall of which is provided with a cylindrical hole, of a valve-casing comprising a cylindrical portion fitting said hole, a packing-ring placed upon the joint between the hole and the casing, and a cap for clamping said packing-ring upon said joint, the said packing forming a joint between said head and said casing, and also between said head and casing and said cap, substantially as specified.

8. The combination of the hollow head D, the removable cover D^2 therefor, the valve-casing composed of the detachable parts G' G^2, comprising a bearing or bearings for the stem of the valve, and screwed together, and the detachable cap G^3, screwed upon the part G^2 and serving to secure the removable cover in place, substantially as specified.

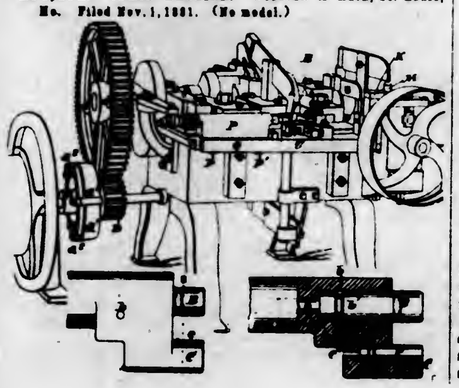
9. The combination, with the head of an air-compressor cylinder constructed with the two chambers or chests D E and the hole or aperture *f*, leading from one to the other, of the valve-casing composed of the parts G' G^2, connected by a screw-thread, and the packing *f'*, interposed between them and serving to prevent leakage through the hole or aperture *f*, substantially as specified.

265,401. TOBACCO-PIPE. JOHN J. WEBER, St. Clair, Pa., assignor of one-half to John B. Evans, same place. Filed Jan. 16, 1882. (No model.)



Claim.—As a new article of manufacture, the herein-described pipe-strainer, having the legs A A A A, the perforations B B B B, and the projection C, all constructed and arranged as and for the object set forth.

265,402. CHAIN-MACHINE. WILLIAM A. RUIN, St. Louis, Mo. Filed Nov. 1, 1881. (No model.)



Claim.—1. In a chain-machine, the bifurcated finger one fork of which consists of a cylindrical pin, B, secured in a bore of the finger by means of groove *b'* and pin *b*, and the other fork of which consists of a projection, C, nearly inclosing the roller *c*, which is held in place by means of groove c^2 and pin *c'*, so as to turn freely, all substantially as set forth.

2. In a chain-machine, the clutch-driving device consisting of a tight collar, H, with flange *h'*, loose pinion D, with flange *d*, dogs d^2, jam-bolts d^3, and ring d^4, all made substantially as and for the purpose set forth.

3. The combination, in a chain-machine, of the shaft G, loose pinion D, with flanges *d d'*, dogs d^2, jam-bolts d^3, ring d^4, and tight collar H, with flanges *h' h²*, all substantially as and for the purpose set forth.

4. In a chain-machine, the combination of frame K, adjustable boxes *k*, adjusting-screw *k'*, adjustable bolt N, with head N', having ribs *n* of different heights, and loose plug M, having grooves *m* of different depths, as and for the purpose set forth.

5. In a chain-machine, the combination of bracket P and support Q, the bracket being hinged to its support at one end and adjustable at its other end, and having suitable means for locking it to its adjustment, as set forth.

REISSUES.

10,064. OIL-HOLE COVER FOR JOURNALS. SMITH A. STINNER, Hoosick Falls, N. Y. Filed Feb. 1, 1882. Original No. 134,082, dated Feb. 27, 1873.



Claim.—The hereinbefore-described improvement in the apparatus for facilitating the lubrication of journals running in boxes, and the means connected therewith for excluding foreign substances from the oil-duct leading to the journal in such apparatus, consisting of the following arrangement of parts, viz: a chamber for the inclosure of the duct-closing devices constructed in the substance of the journal-box itself, having communication from its bottom part by an opening with the journal itself, the walls of which chamber constitute a guide for the movement of the plug and spring which operates the same to close the external port of such chamber, and provided at its upper part with provisions, substantially as shown, for retaining in position over the top of the plug a centrally-perforated plate, in combination with a plug having a conical head fitted to co-operate with and close the perforation of said plate on its under side, actuated by a spring beneath said head, both spring and plug being confined within said chamber substantially as described, and for the purposes set forth.

10,065. FOLDING SEAT AND TABLE. WILLIAM TUTLEY, Pana, Ill., assignor, by mesne assignments, to Edward F. Underhill, New York, N. Y. Filed Jan. 31, 1882. Original No. 155,901, dated Oct. 19, 1874.



Claim.—1. A recessed floor, in combination with a folding seat or table secured to said floor and adapted to be folded into a recess therein.

2. A recessed floor, in combination with a folding seat hinged thereto, and provided with folding legs or supports and a folding back, adapted to be folded with the seat into a recess in said floor.

3. The combination, with a recessed floor and a folding seat hinged thereto and adapted to be folded into a recess in said floor, of a cover folding into the recess and covering said seat and recess, and forming a part of the floor when thus folded.

4. The combination, with a seat adapted to fold into a recess in the floor, of a cover to said recess, forming a part of the floor when folded into said recess and a part of the seat when the latter is raised into position for use.

5. The combination, with the recessed floor, of the hinged cover B, hinged back E, and seat C, said cover being adapted to support the back when the latter is elevated for use, substantially as described.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Northern District of New York.

LOERCHER *et al v.* CRANDAL.

Decided December 13, 1881.

1. REISSUE NO. 7,129—REISSUE VALID AGAINST DEFENDANT.

Reissue Letters Patent No. 7,129 to Charles Schuessler, for an improvement in buckle-fastenings, held not to be open to objection as to their validity so far as any question affecting the defendant's structures is concerned.

2. RELEASE IN PRESENTI—SUBSEQUENT INFRINGEMENT.

When an infringer, by agreement with the owners of a patent agrees not to make any articles infringing a certain reissued patent, and that engagement, in conjunction with his contract to pay royalty for certain infringing articles before made, formed the consideration for his release from liability for the making and selling of those articles, it appearing that the release was an absolute release *in presenti*, *Held* that such release, until set aside, relieves from all accountability for subsequent infringement by the making and selling of articles like those specified in the release.

3. BUCKLE-FASTENERS—INFRINGEMENT—COLORABLE CHANGES—MECHANICAL SKILL.

Attaching the buckle to a separate plate which is itself attached to the bottom plate of the case, instead of attaching the buckle directly to the bottom plate, does not change the nature of the invention. The plate which carries the buckle, being an additional separate plate, must be fastened in some way to the bottom plate of the case. The severance makes the reunion necessary and promotes no useful result. It is a mere mechanical change within the scope of the invention.

4. SAME—SAME.

The fact that the fastening-pins are integral with a longitudinal piece of metal on the other side of the fabric, instead of with the bottom plate of the case, does not alter the invention, the operation being substantially the same.

5. LIABILITY OF MERE IMPROVERS.

Features of construction may well be and are often equivalents of prior patented features because involving their construction and mode of operation, though going further and containing their own patentable features; and for that very reason, when the question of the novelty and patentability of such further features comes up, the prior existence of such prior patented features does not make them the equivalents of the further features so subsequently patented in such sense as to anticipate the latter, but such subsequent patentee will be held liable for infringement so far as he uses the prior invention.

Mr. A. v. Briesen for the plaintiffs.

Mr. Neri Pise and *Mr. C. M. Stone* for the defendant.

BLATCHFORD, *J.*:

This suit is brought on Reissued Letters Patent No. 7,129, granted to Charles Schuessler, May 23, 1876, for an improvement in buckle-fastenings, the original Patent No. 61,038 having been granted to Robert Meyer, as inventor, January 29, 1867, for seventeen years from January 29, 1867. The specifications of the reissue and of the original are so variant from each other in language that it is impossible to follow the one in the other. They are as follows:

Reissue.

Figure 1 is a plan view of my improved fastening, showing it applied to the back curtain and back stay of a carriage. Fig. 2 is a longitudinal central section thereof. Fig. 3 is an inverted plan view of the shell or case to which the strap is secured; Fig. 4, an inverted plan view of the shell or case to which the buckle is secured.

Similar letters of reference indicate corresponding parts in all the figures.

This invention consists in the employment, in connection with a strap and buckle, of two hollow cases or shells, to which said strap and buckle are respectively secured. That one of the two cases to which the buckle is secured has a bottom plate, to which the buckle is attached by a joint.

In the drawings, the letters A and B represent two pieces of fabric or pieces of the back stay and back curtain of a carriage, to which my invention is applied. C is the strap, and D is the buckle, by which strap and buckle the pieces A and B are to be held together. E is a case or shell, made of sheet metal or other suitable material, in form of an elongated inverted cup open at one end and at the bottom. This case or shell is provided with downwardly-projecting pins *a b*, which, when they are passed through the fabric or piece A, serve to fasten the case or shell in place on said fabric. One end of the strap C is inserted in the shell E, and secured thereto by means of the pins *a b* in the manner clearly shown in the drawings. F is another case or shell, also made of sheet metal or other suitable material, but provided at the bottom with a plate, *d*, which forms part of said case or shell F. At the open end of the case or shell F the buckle D is attached by a joint to the plate D, as shown. By means of downwardly-projecting pins *c c*, with which the case or shell F is provided, the same is fastened to the fabric or piece B in line with the case or shell E, as shown, so that the strap C can be readily buckled, and its loose end then confined in the case F, as clearly shown in Fig. 2.

If desired, the outer end of the case F may also be left open, so that the strap may be passed through when buckled.

The cases or shells E and F may be made of suitable sizes and stamped in dies of any ornamental shape or form desired, and can be used on all kinds of straps and buckles.

In place of the pins hereinabove specified, equivalent fastening means may be provided.

I claim as my invention—

1. The case or shell E, made with an open bottom and provided with the pins *a b*, adapted to pass through the strap and

Original.

The nature of my invention consists in the employment of two metallic cases, one of which acts as a covering for the end of the strap, which passes into the buckle, and is provided with pins, which pass through the leather or straps to which it is fastened, and through two perforated plates, to one of which the buckle is attached by a joint, the other being used as a plate to hold the several parts together when the ends of the pins are riveted to it, the other case being provided with pins, which pass through the leather and strap to which it is fastened, and through one metallic plate, upon which the ends of the pins are riveted.

* * *

I construct my buckle-fastening of the usual description, such as iron, copper, or brass; but sheet-iron or tin-plate, I think, would be the cheapest and best.

In said drawings, Figure 1 represents a plan view of the fastening with the strap and buckle in place. It is represented in the position it would occupy if attached to the back curtain and back stay of a carriage. Fig. 2 is a back view of the case to which the buckle is attached. Fig. 4 is a vertical section through the center of Fig. 1.

The same letters in the several drawings represent similar parts in each.

A and B represent either two straps or a piece of the back stay and back curtain of a carriage. C is the case, which fastens and holds the straps E firmly to the piece A by means of the pins F G and plate M, as shown in the section, Fig. 4. D represents the case to which the buckle is attached, and into which the end of the strap E is slipped after being buckled. K is the buckle. H H, I, and J in Fig. 3 are the pins which fasten it to the piece B by means of plate N, as shown in section in Fig. 4, to which the ends of said pins are riveted when it is desired to fasten them in place. R is a plate to which the buckle is jointed. The case C is also riveted in the same way to the plate M, which holds them more firmly in place than by the old and tedious way of sewing, and at the same time it is a plain and more pleasing ornament to the carriage.

If desired, the end of the case D may be left open, so that the strap may be passed through when buckled.

They may be made of various sizes, from the half-inch size up to two inches, and stamped in dies of any ornamental shape or form desired. They may also be used on straps of any kind, as

firmly hold it in place, substantially as and for the purpose herein shown and described.

2. The case or shell F, made with the bottom plate, *d*, and combined with the buckle D, which is attached to said plate, substantially as specified.

3. The case or shell F, made with the bottom plate, *d*, and with the projecting pins *e e*, substantially as herein shown and described.

4. The combination of the case E and strap C with the case F and buckle D, substantially as herein shown and described.

well as for harness or carriage trimmings.

I do not claim the case D alone, but

What I do claim is—

1. The combination therewith of the pins H H, I, J, or the equivalent thereof, and the plates R and N, as herein substantially described.

2. The case C, the pins F G, and plate M, for fastening the end of the strap in place, as described.

The plaintiffs claim that the defendant has infringed claims 2, 3, and 4 of the reissue. Prior to June 17, 1878, the defendant made and sold articles like Exhibit No. 1. Since that date he has not made or sold any of them. By and under the agreement of that date he settled and paid for all those articles. Although by that agreement he agreed not to make any buckle-loops infringing upon said reissue, and although that engagement, in conjunction with his contract to pay royalty for the articles before made, formed the "consideration" for his release from liability for the making and selling of those articles, yet the release was an absolute release *in præsenti*; and even though he may subsequently have infringed, the release must stand till formally set aside, and operates to exclude from this suit all further accountability for articles like Exhibit No. 1, such release being set up in the answer.

The defendant admits the making and selling after August 1, 1878, of articles like Exhibit No. 2. The sale of articles like Exhibit No. 3 since the release is not proved. No. 2 and No. 4 being the only structures involved, the only claims of the reissue which need be considered are claims 2 and 3.

Claim 2 requires that there shall be a case or shell like the case or shell F; that it shall have a bottom plate like the bottom plate *d*; that such case or shell having such bottom plate shall be combined with a buckle like the buckle D, and that such buckle shall be attached to such plate. The projecting pins for attaching the case or shell to a fabric do not appear to be an element in claim 2. The specification describes the case or shell F as hollow, as made of sheet metal or other suitable material, and as provided at the bottom with a plate, *d*, which forms a part of the case or shell. One end of the case or shell is open, and the buckle D is attached to the bottom plate at that end by a joint, so as to project outwardly. The other end of the case or shell is either open or closed. The case or shell is provided with downwardly-projecting pins, which start from the bottom plate and pass through the fabric to which the shell or case is to be attached, and serve to attach the shell or case to the fabric. Equivalent fastening means may be used in place of the downwardly-projecting pins. Claim 3 combines the case or shell F, the bottom plate, and the pins, omitting the buckle.

No. 2 has a hollow case or shell like F, made of sheet metal, and provided at the bottom with a plate which forms a part of the case or shell. One end of the case is open and the other is closed. There is a buckle at the open end, but it is not attached to the bottom plate by a joint. It is attached by a joint to a short piece of flat sheet metal, so as to project outwardly. This short piece carrying the buckle is of two thicknesses, the metal being bent to form the joint for the buckle, and is beneath and close up against the lower surface of the bottom plate. In order to secure it to the bottom plate there is a third flat piece of metal lying longitudinally underneath, which has at its extreme end farthest from the buckle an integral upwardly-projecting pin or fin, which enters a hole in the bottom plate and is intended to be bent over and down and clinched inside the shell against the upper surface of the bottom plate. The other end of such third longitudinal piece has at its extreme end nearest the buckle two integral upwardly-projecting pins or fins lying in line, side by side, one each side of the center of its width, and extending each from near such center to the outer edge, each of which enters and passes through a separate hole for it through each of the two thicknesses of the short piece which carries the buckle, (the two holes for each pin or fin being coincident,) and then enters a separate hole for it in the bottom plate, and is intended to be bent over and down and clinched inside the shell against the upper surface of the bottom plate. Thus, when the pins or fins are in place and clinched, the buckle is held firmly and the structure becomes a unit.

No. 4 has a hollow case or shell made of sheet metal, and provided at the bottom with a plate, which forms a part of the case or shell. Both ends of the case are open. There is a buckle at each end not attached to the bottom plate by a joint. A buckle is attached by a joint to each end of a separate longitudinal plate, which is longer than the bottom plate. Each buckle projects outwardly. Such separate plate is for a distance at each end of it two thicknesses, the metal being bent to form the joint for the buckle, and is beneath and close up against the lower surface of the bottom plate. In order to secure it to the bottom plate there is a third flat piece of metal lying longitudinally underneath, and somewhat shorter in length than either such separate plate or the bottom plate, which has at each extreme end of it two integral upwardly-projecting pins or fins lying in line, side by side, one on each side of the center of its width and extending each to the outer edge, each of which enters and passes through a separate hole for it through each of the two thicknesses of such separate plate which carries the two buckles, (the two holes for each pin or fin being coincident,) and then enters a separate hole for it in the bottom plate, and is intended to be bent over and down and clinched inside the shell against the upper surface of the bottom plate, there thus being four of such pins or fins. So, when the pins or fins are in place and clinched, the buckles are held firmly and the structure becomes a unit.

It is manifest that there is involved in claims 2 and 3 of the reissued patent the idea of a hollow case with a top, two longitudinal side plates, and a bottom plate, all forming a unit and a case, the case having such bottom plate being in claim 2 combined with a buckle attached to the bottom plate and having in claim 3 the downwardly-projecting pins. The buckle is secured to the case, and it is so secured by being attached to the bottom plate. The strength of the structure as a whole, composed of top sides and bottom plate united in one is availed of to hold firmly the buckle through the attachment of the buckle to the bottom plate.

The combination in claim 2 of the case, of which the bottom plate forms a part with the buckle, is effected by attaching or jointing the buckle directly to the end of the bottom plate. A pull on the buckle cannot result in displacing anything, if the buckle does not break, without displacing the structure as a whole.

In claim 3 the case, of which the bottom plate forms a part, has the downwardly-projecting pins, and when, by means of them, the structure is fastened to a fabric, no pull on the pins against the structure can displace any part of it without displacing the whole of it. In both claims the fact that the bottom plate forms an integral part of the case is a leading feature.

In the light of the foregoing suggestions, an examination of No. 2 and No. 4 shows a hollow case with a top, two longitudinal side plates, and a bottom plate, all forming a unit and a case. The case having such bottom plate is combined with a buckle. The buckle has for all practical purposes the same relation to the bottom plate as if it were attached to it. The combination of the case with the buckle is effected by means of the plate carrying the buckle and of the lower flat piece of metal and the pins or fins on the latter. The plate which carries the buckle, being an additional separate plate, must be fastened in some way to the bottom plate of the case. The severance makes the reunion necessary and promotes no useful result. It is a mere mechanical change, within the scope of the principle of the Meyer structure. When the parts are put together and the pins or fins are clinched the case or shell made with the bottom plate is combined with the buckle, and the buckle is as much attached to the plate for all the practical purposes of the structure as is the buckle in the Meyer structure. The strength of the case as a whole, composed of top, sides, and bottom plate united in one, is availed of to hold firmly the buckle through such combination of the case with the buckle. A pull on the buckle cannot result in displacing anything, if the buckle does not break, without displacing the structure as a whole. When the pins or fins are clinched the case, of which the bottom plate forms a part, is provided with downwardly-projecting pins, which start from the bottom plate, and after passing through the buckle-plate pass through the fabric to which the shell or case is to be attached, and serve to attach the shell or case to the fabric. The fact that the pins are integral with a longitudinal piece of metal on the other side of the fabric makes no difference. They are the projecting pins of Meyer in that when clinched they project from the bottom plates toward and through the fabric and fasten the combined case and buckle to the fabric. When the structure is fastened to a fabric no pull on the pins against the structure can displace any part of it without displacing the whole of it. The same results follow as in the Meyer structure, from the fact that the bottom plate forms an integral part of the case.

The defendant has a patent, granted to him July 23, 1878, No. 206,298, under which he claims the right to make No. 2 and No. 4. They are described in that patent. That patent claims (1) the third flat piece of metal, with its integral pins or fins, in combination with the separate buckle-plate having holes in it corresponding with the pins or fins, for the purpose of securing the buckle in proper relation to the case; (2) the combination, with the third flat piece of metal having its integral pins or fins, of the separate buckle-plate and the case with its bottom plate, both of the latter having holes in them coincident with said pins or fins when secured to a curtain by means of such interior clinching of the pins or fins.

It may be that these claims may be sustainable for their specialties, notwithstanding prior structures; but still No. 2 and No. 4 embrace points of construction which are the equivalent of the points of construction claimed in claims 2 and 3 of Reissue No. 7,129. Beyond that what is patented by No. 206,298 is only an improvement still involving the principle of what is claimed in said claims 2 and 3.

On the question of infringement, features of construction may well be and are often equivalents of prior patented features, because involving their construction and mode of operation, though going further and containing their own patentable features; and for that very reason, when the question of the novelty and patentability of such further features comes up, the prior existence of such prior patented features does not make them the equivalents of the further features so subsequently patented in such sense as to anticipate the latter. An illustration of this is found in the case of *Crandal* v. *Walters*, a suit brought on the Davis patent, decided herewith.

The validity of the reissued patent is attacked. The drawings of the original and the reissue are structurally the same, although the lettering is changed and figures 2, 3, and 4 are differently numbered in the two. Criticism is made on the facts that the original speaks of "metallic" cases and the reissue of "hollow" cases; that the original speaks only of "metallic materials" while the reissue speaks of "sheet metal or other suitable material"; that in the original the pins are said to be riveted to the lower plate, N, after they have passed through the curtain and through the plate N, so as to fasten the buckle-plate R to the curtain, and claim 1 of the original is for the combination of the case and the pins, or their equivalents, and the plates R and N, while in the reissue the plate N is not lettered in the drawings and is not mentioned in the text or in claims, and the statement in the reissue is that the case is provided with downwardly-projecting pins which, when they are passed through the fabric, serve to fasten the case in place on the fabric.

Assuming that Meyer was the first to make a case with a bottom plate forming part of it combined with a buckle attached and jointed to said plate and furnished with pins capable of attaching the structure as a whole to a curtain, it is immaterial whether the plate N is used or not, or whether the pins are clinched on that plate or on the curtain, or whether the pins are of such large dimensions that they have to be clinched by hammering their ends, or of such small dimensions that they can be clinched by bending them over, even with the fingers, so long as the pins project downward from the bottom plate of the case and go through the fabric and are clinched on the other side of it. This Reissue No. 7,129, was before Judge Wallace in this court in the case of *Schussler* v. *Davis*, (13 O. G., 1011.) He there says:

> The description as well as the drawings and model accompanying the original patent clearly point out the invention claimed in the reissue. The improvement consists in a compact device embodying a loop bottom plate and buckle to be attached to a strap by rivets or an equivalent fastening. In my view the valuable feature of the improvement does not consists in the method by which the case is fastened to the strap, but in the case itself, as forming a loop and buckle combined, and its adaptability to being fastened by various methods to the strap. In the original patent the claim did not cover the combination of the buckle with the case, or, speaking more accurately, with the bottom plate of the

shell of the case, but was limited to a combination of the pins or rivets with the case. It was the object and the proper office of the reissue to correct this omission, so as to protect the patentee to the full extent of his invention.

The defendant's structure in that case was not the same as the defendant's structure in this case, but consisted of a metallic case with fins or lugs integral with it and projecting down from it, and of a plate underneath with a buckle jointed to each end of it and projecting beyond the end of the case, the fins passing through slits in the plate and then through the curtain, and being clinched by bending them over on the other face of the curtain. Such a structure was held to infringe claim 2 of the reissue.

I do no not think the reissue is open to objection so far as any question affecting the defendant's structures No. 2 and No. 4 is concerned.

On the question of novelty several prior patents are set up in the answer. Only one of them is introduced—No. 49,309, to Cyrus W. Saladee, August 8, 1865. In that there are two modifications. In one the buckle is not connected to the plate. In the other the connection between the buckle and the plate is rigid and without a joint. In the Meyer structure the buckle is attached to the plate by a joint.

Five other prior patents were introduced by the defendant. None of them are set up in the answer. They are as follows: No. 26,013, to Lucius C. Chase, November 8, 1859; No. 39,217, to Frank Douglas, July 14, 1863; No. 44,554, to George Purple, October 4, 1864; No. 47,574, to Cyrus W. Saladee, May 2, 1865, and No. 47,765, to Ebenezer Brown, May 16, 1865. In Chase the buckle-frame is rigidly secured and not jointed. In Douglas the buckle-frame is not connected with the loop by the bottom plate. In Purple the buckle-frame carrying the tongue is not jointed, but the tongue has a rigid fastening. In Saladee of May, 1865, the Meyer structure is not found, nor is it found in Brown. Besides the features above mentioned as to Chase, Douglas, and Purple, the structures in them would not suggest the structure of Meyer.

As to the parol testimony in regard to prior structures by Moore and Davis and the defendant, it must be held that, in view of the construction given to claims 2 and 3 of Reissue No. 7,129 and of what the invention of Meyer has been defined to be, nothing is shown making out a satisfactory anticipation of said claims.

I think the suit is properly maintainable in the names of the plaintiffs as surviving members of the firm composed of themselves and Schuessler, and that a decree should be entered for the plaintiffs as to claims 2 and 3 for an account and a perpetual injunction, with costs.

U.S. Circuit Court—Southern District of New York.

PRATT *et al. v.* ROSENFELD *et al.*

Decided June 14, 1880.

1. DESIGN PATENT NO. 7,914—PEARL BUTTONS ARRANGED BY DOZENS, ON CARDS, IN THREE ROWS OF FOUR—REVISED STATUTES, SECTION 4929.

   A design for a card of buttons divided into spaces covered with foil by narrow bands, with a dozen of pearl buttons in rows of three by four to each space, is not a "new, useful, and original shape or configuration of an article of manufacture" within the meaning of section 4929 of the Revised Statutes, relating to the granting of patents.

2. SAME—SAME—INVENTION.

   Cards for buttons, faced with foil and divided into spaces by bands, were well known and in common use prior to such design, and there was therefore nothing in this arrangement rising to the level of inventive skill.

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Mr. George C. Lay, Jr., for the plaintiffs.
Mr. Edmund Wetmore for the defendants.

WHEELER, *J.*:

This suit is brought upon Design Patent No. 7,914 for a design for a card of buttons divided into spaces covered with foil by narrow bands, with a dozen of pearl buttons in rows of three by four to each space. The statute (Rev. Stats., sec. 4929) authorizes the grant of a patent to any person who, by his own industry, genius, efforts, and expense, has invented and produced any new and original design for a manufacture, bust, statue, alto-relievo, or bas-relief; any new design for the printing of woolen, silk, cotton, or other fabrics; any new and original impression, ornament, print, or picture to be printed, painted, cast, or otherwise placed on or worked into any article of manufacture; or any new, useful, and original shape or configuration of any article of manufacture, the same not having been known or used by others before his invention or production thereof.

The subject of this patent is not covered by this statute, unless it is included in the term "manufacture." The buttons are however the principal thing, and they are not changed at all, either in form or appearance, by the patented invention. It affects nothing but the card, and that is not a card for buttons to be used for successive sets, but a card of buttons, which constitutes a mere method of putting them up for sale to attract customers, not on account of anything at all about the thing sold, but wholly on account of the manner of arranging it for sale.

In *Langdon* v. *De Groat* (1 Paine, C. C. Reps., 203) the invention was for folding thread and floss cotton in a manner different from the ordinary mode, whereby it would sell quicker and higher. The court said:

> The article itself undergoes no change, and the whole of the improvement—for it is a patent for an improvement—consists in putting up skeins of it, perhaps of the same size in which they are imported, decorated with a label and wrapper, thus rendering their appearance somewhat more attractive and inducing the unwary not only to give it a preference to other cotton of the same fabric, quality, and texture, but to pay an extravagant premium for it.
>
> Now that such contrivance—for with what propriety can it be termed a "useful art" under the Constitution—may be beneficial to a patentee if he can exclude from the market all other retailers of the very same article will not be denied, and if to protect the interest of the patentee, however frivolous, useless, or deceptive his invention may be, were the sole object of the law, it must be admitted that the plaintiff has made out a satisfactory title to his patent; but if the utility of an invention is to be tested by the advantages which the public are to derive from it, it will not be perceived how this part of his title is in any way whatever established. It is said that many ornamental things are bought of no intrinsic value to gratify the whim, taste or extravagance of a purchaser, and that for many of these articles patents are obtained. This may be so, but in such cases there is no deception, no false appearance, and the article is bought to be used with all its decorations and ornaments, which may have been the principal inducements to the purchase, and which will last as long as the article itself.

In this case the buttons are to be used by the purchaser, but the card is not, either with them or by itself. The design does not apply to the manufacture proper, but only to the arrangement of it for sale. Putting an article into a more convenient form for sale, without changing its qualities or properties, is not patentable as an improvement in the article. (*Glue Company* v. *Upton*, 97 U. S., 3.) So, merely changing the mode of keeping and presenting an article for sale, without changing its form or appearance, will not support a patent for a design. There should be something affecting the article itself. Further, cards for buttons, faced with foil and divided into spaces by bands, were well known and in common use. Those for pearl buttons may not have been divided into dozens, in rows of three by four, but they were divided so that dozens could be readily cut from the card, in two rows of six and one of twelve; and there were cards divided into spaces for several dozens by such bands as the patent described, and cards of cloth buttons spaced for dozens in rows of three by four. With these things known, there was nothing rising to the level of inventive skill in arranging pearl buttons by dozens, on cards, in three rows of four.

Let a decree be entered, dismissing the bill of complaint, with costs.

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[*BY AUTHORITY OF CONGRESS.*]

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Subscriptions for 1882.

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Issue of March 28, 1882.

Patents	349	No. 255,403 to No. 255,751, inclusive.
Designs	8	No. 12,834 to No. 12,841, inclusive.
Trade-Marks	19	No. 9,234 to No. 9,252, inclusive.
Labels	4	No. 2,653 to No. 2,656, inclusive.
Reissues of patents	2	No. 10,066 to No. 10,067, inclusive.
Total issue	382	

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Connecticut	17		New York	76	9
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Louisiana	1		West Virginia		
Maine	3	2	Wisconsin	10	
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Massachusetts	26	2	United States Army		
Michigan	15		United States Navy		
Minnesota	4	1			
Mississippi	3		Total to citizens of the United States	333	20
Missouri	8				
Montana Territory					

TO CITIZENS OF FOREIGN COUNTRIES.

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Australia			England	8	2
Austria	1		France	4	1
Barbadoes			Germany	2	
Belgium	1		Italy		
Bermuda			New Zealand		
Brazil			Russia	1	
Canada	6		Spain		
Chili			Sweden		
Colombia, U. S. of			Switzerland	1	
Cuba					
Denmark			Total to citizens of foreign countries	24	3
Ecuador					

DESIGNS.

12,834.—BRACKET.—*George S. Barkentin*, Oceanus, N. Y., assignor to *P. & F. Corbin*, New Britain, Conn. Application filed July 1, 1881. Term of patent 14 years.

12,835 and 12,836.—STOVE.—*George O. Bergstrom*, Neenah, Wis., assignor to *Bergstrom Brothers & Co.*, same place. Applications filed October 15, 1881. Term of patents 14 years.

12,837.—CORSET.—*Morris P. Bray*, Worcester, assignor to *Theodore C. Bates*, North Brookfield, Mass. Application filed January 23, 1882. Term of patent 7 years.

12,838.—CARPET.—*Henry Horan*, East Orange, N. J., assignor to *The Hartford Carpet Company*, Hartford, Conn. Application filed February 11, 1882. Term of patent 3½ years.

12,839.—UPRIGHT DRILLING MACHINE.—*Vernon F. Prentice*, Worcester, Mass. Application filed January 23, 1882. Term of patent 14 years.

12,840.—SPOON OR FORK HANDLE.—*Frederick Waterhouse*, Wallingford, Conn., assignor to *The Racine Silver Plate Company*, Racine, Wis. Application filed February 13, 1882. Term of patent 3½ years.

12,841.—SPOON OR FORK HANDLE.—*Frederick Waterhouse*, Wallingford, Conn., assignor to *Hall, Elton & Co.*, same place. Application filed February 13, 1882. Term of patent 3½ years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

9,234.—ALPACA BRAID.—*Edward W. Bedell*, New York, N. Y. Application filed February 25, 1882.
"The arbitrarily-selected word 'WINDSOR.'"

9,235.—WRITING-INKS.—*Brentano's Literary Emporium*, New York, N. Y. Application filed February 13, 1882.
"The word 'EXCHEQUER.'"

9,236.—MEDICINAL PREPARATION.—*Ambrose L. Clum*, Red Wing, Minn. Application filed March 2, 1882.
"The letters 'A L C' arranged within the three exposed sides of a cube."

9,237.—CORSETS.—*Crotty & Lindauer*, New York, N. Y. Application filed December 29, 1881.
"The words 'THE VERY.'"

9,238.—WRITING-INKS.—*Fountain Ink Company*, New York, N. Y. Application filed November 30, 1881.
"The word 'FOUNTAIN.'"

9,239.—CARBONATE OF SODA.—*Gaskell, Deacon & Co.*, Widnes, county of Lancaster, England. Application filed February 17, 1882.
"The arbitrarily-selected word 'CRYSTAL.'"

9,240.—CHAMPAGNE-WINE.—*Louise H. L. R. Olry*, Rheims, France. Application filed January 25, 1882.
"The title 'L. RODERER' printed in a circle."

9,241.—WHISKIES.—*Henry Rosenheim*, Baltimore, Md. Application filed February 21, 1882.
"The word-symbol 'SPRING DALE.'"

9,242.—WHISKY.—*Adams, Taylor & Co.*, Boston, Mass. Application filed February 20, 1882.
"Two barrels placed as shown—viz., one lying on its side and the other tipped on an edge of its end and supported at an angle by the reclining barrel."

9,243.—LEATHER-DRESSING.—*Joseph H. Dwyer*, Lynn, Mass. Application filed February 17, 1882.
"The words 'SUN SHINE.'"

9,244.—MEATS, BACON, AND LARD.—*J. C. Ferguson & Co.*, Chicago, Ill. Application filed February 14, 1882.
"The words 'UNITY BRAND' and the symbols described—namely, the four shamrock-leaves, the rose with buds and leaves, and the thistle-blossom with leaves."

9,245.—PLUMBAGO CRUCIBLES AND OTHER PLUMBAGO CHEMICAL WARE.—*Patent Plumbago Crucible Company*, Battersea, county of Surrey, England. Application filed November 7, 1881.
"The arbitrary word 'SALAMANDER.'"

9,246.—MEDICINE FOR THE CURE OF NEURALGIA.—*G. R. Traver*, Perry, N. Y. Application filed December 5, 1881.
"The fanciful term 'NEURALGIA KING' and pictorial representation of a shield with the American flag on one side and the British flag on the other, over which is a crown."

9,247.—WHISKY.—*Alonzo W. Balch*, New York, N. Y. Application filed March 7, 1882.
"The arbitrarily-selected words 'RIP VAN WINKLE.'"

9,248.—CANNED CORN.—*James P. Baxter*, Portland, Me. Application filed March 7, 1882.
"The word 'YARMOUTH.'"

9,249.—LINIMENT.—*Richard English*, New York, N. Y. Application filed March 7, 1882.
"The word-symbol 'KNOCK.'"

9,250.—RUBBER BANDS.—*Parker, Jones & Co.*, New York, N. Y. Application filed March 6, 1882.
"The word 'JET.'"

9,251.—CANNED PROVISIONS.—*Portland Packing Company*, Portland, Me. Application filed March 7, 1882.
"The figure of a star."

9,252.—LEAF-TOBACCO.—*Sartorius & Co.*, New York, N. Y. Application filed March 7, 1882.
"The representation of the three-leaved clover."

LABELS.

2,653.—Title: "BANCROFT'S LINIMENT."—*Atha B. Crooks*, Newark, N. J. Application filed March 9, 1881.

2,654.—Title: "BANCROFT'S OINTMENT."—*Atha B. Crooks*, Newark, N. J. Application filed March 9, 1881.

2,655.—Title: MAULICK'S DYES."—*William F. Maulick*, Columbia, Pa. Application filed February 24, 1882.

2,656.—Title: "SUGAR VALLEY WHISKEY."—*Sulzberger & Co.*, Philadelphia, Pa. Application filed January 25, 1882.

DISCLAIMERS.

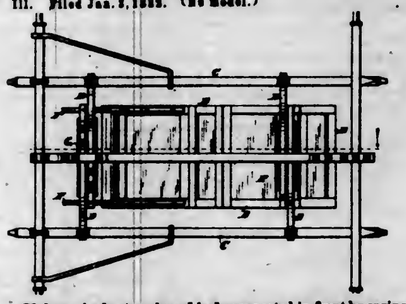
9,572, (Reissue.)—*Clark P. Tillinghast*, Providence, R. I., dated February 15, 1881. IMPROVEMENT IN RAILROAD-CAR VENTILATORS. Disclaimer filed March 23, 1882.

Enters his disclaimer "to that part of the specification which is in the following words, to wit: 'It is evident that a close round hinge attached to the inner edge of the deflector would in a measure serve a similar purpose and yet be within the scope of my invention, which consists in providing the deflectors with such a means of close connection with the car as will direct the current of air past the joint of junction with the car when the leaf is extended outward and in use;'" further, "to any broad claim to a freely-swinging pivoted shield having a flange at its inner or pivoted edge that rests against the side of a car when the shield stands at right angles to the same. And your petitioner desires to explain that his claims are intended to cover hinged deflectors or dust-guards having their hinged edges shielded by a strip on the car or by a projecting part of the car-frame in such manner as to form a 'break-joint,' so that the entrance of dust, cinders, &c., at the pivoted edges of the deflectors or guards is effectually prevented."

PATENTS

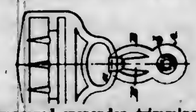
GRANTED MARCH 28, 1882.

255,403. VEHICLE-SPRING. ARTHUR A. ABBOTT, Chicago, Ill. Filed Jan. 3, 1882. (No model.)



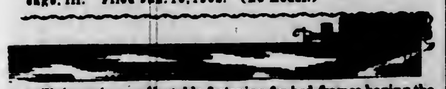
Claim.—A phaeton-shaped body supported in front by springs D D, steadied by the independent transverse bar E, and at the rear by the brackets F, transverse bar G, and springs D D, attached to said bar G and to the side bars, C C, all constructed and arranged as described and shown.

255,404. SUSPENDER-TRIMMING. MORITZ ALTMANN, Camden, N. J. Filed Jan. 25, 1882. (No model.)



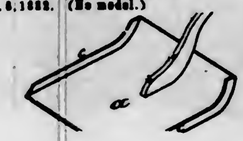
Claim.—The improved suspender-trimming formed of the plate A, provided with the hook B, the pivot and fastening b, and the spring-tongue E, and the tabs D D, said pivot and fastening b being common to both tabs, the parts being constructed, combined, and operating substantially as and for the purpose set forth.

255,405. ADJUSTABLE CONNECTION FOR WOVEN-WIRE BED-FRAMES. CHARLES L. ARMS and ABEL E. FROST, Chicago, Ill. Filed Jan. 16, 1882. (No model.)



Claim.—As an adjustable fastening for bed-frames having the fabric stretched from end to end, the dovetailed plates C and D, having countersunk bolt-holes in their meeting faces, and the recessed plate C, having the end lug, C', and screw C², threaded through said lug, and arranged to bear against the end of the plate D, substantially as described.

255,406. SNOW-SHOVEL. CHESTER ARMS, Oswego, N. Y. Filed Feb. 6, 1882. (No model.)



Claim.—The improved snow-shovel blade consisting of the rectangular blade a, formed with right-angled side flanges, c c, and devoid of cross bands or ribs at its rear end, substantially as described and shown.

255,407. MESHED OR NETTED FABRIC. AUGUSTUS BEALS, North Weymouth, Mass. Filed Jan. 3, 1882. (No model.)

Brief.—The fabric is chiefly intended to be used in forming the middle portion or main part of the body of a hammock.



Claim.—The meshed or open fabric, substantially as described, consisting of a series of pairs of strands, *a b*, arranged and interlooped, as set forth, the two strands of each pair being zigzagged in opposite directions and interlooped with each other at regular intervals, and at medium distances between their own interloopings interlooped with the next adjacent strands of the two second pairs of planking strands, all being essentially as shown and explained.

255,408. FRICTION-CLUTCH. JAMES E. ELDRIDGE, Albany, and RALPH E. OSGOOD, Troy, N. Y. Filed Jan. 12, 1882. (No model.)

Claim.—1. In a friction-clutch, a pressure-cylinder mounted upon and turning with the driving-shaft, said cylinder carrying a piston driven by fluid-pressure and connected with the friction-band, substantially as and for the purposes set forth

2. The conduit for the fluid under pressure, the same entering the axis of the shaft, passing out at an angle with the same, and leading to the bottom of the pressure-cylinder, said cylinder being made to turn with the shaft, substantially as and for the purposes set forth.

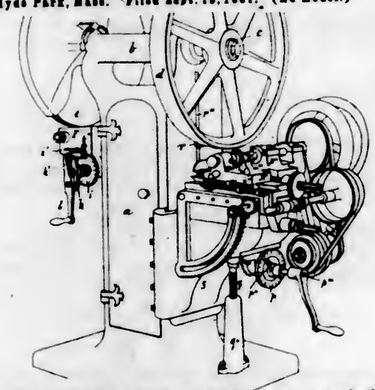
3. The pressure-cylinder, made to turn with the shaft, the piston thereof, connected with the arm which regulates tension on the friction-band, and the fluid-pipe containing a constant supply of fluid and connecting the pump and cylinder, the several parts combined substantially as shown and described.

4. The combination of the pressure-cylinder, the piston therein, connected with the arm which moves the clutch-band, and the retracting-spring applied to said arm, these several parts being mounted and arranged to turn with the shaft, substantially as shown and described.

5. In combination with the fluid-conduit connecting the pressure-pump and the pressure-cylinder, mounted upon and turning with the axle, the air-cocks, arranged, substantially as shown, so as to relieve the pipe or conduit, in the manner and for the purposes set forth.

6. The combination of the arm or lever connected with the friction-band, the pressure-cylinder and its piston, the coupling-rod, the retracting-spring, the supply pipe or conduit leading through the shaft of the drum to the bottom of the pressure-cylinder, and the pressure-pump, all combined and arranged to operate substantially as herein shown and described.

255,409. GEAR-CUTTING MACHINE. Amos H. Brainard, Hyde Park, Mass. Filed Sept. 19, 1881. (No model.)



Claim.—1. In a gear-cutting machine, the worm-wheel *e*, in combination with the vertically-adjustable worm-carrying bracket F, adapted to be adjusted on the standard a by means of set-screw *a'*, and having fastening-screws *g g*, as and for the purpose set forth.

2. In a gear-cutting machine, the dividing-shaft *f''*, its toothed wheel *i*, recessed plate *m''*, crank-lever *k k'*, pawl *m m'*, hinged crank *l*, latch *i'*, and button *i''*, all combined and arranged to operate as and for the purpose described.

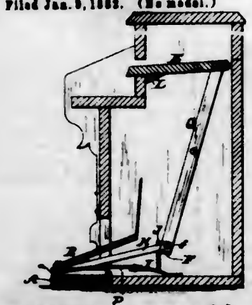
3. In a gear-cutting machine, the cutter-arbor *n* and cutter *n'*, in combination with the extensible collar *n'' n'''* and fastening-nut *n''*, as and for the purpose set forth.

4. The herein-described centering device for centering the cutter *n'* with the arbor *e*, consisting of the rod *o*, set-screw *o'*, adjustable pointed strip *o''*, collar *o'''*, and shank *o''*, adapted to be inserted in a hole or slot in the bearing N' for the cutter-arbor, as set forth.

5. In a gear-cutting machine, the combination, with the crank-shaft *p'''* and intermediate mechanism for raising or lowering the carriage S, of the stationary and graduated dial *p* and adjustable index or pointer *p''*, as and for the purpose set forth.

6. In a gear-cutting machine, the vertically and laterally adjustable rim-rest *r r' r''*, adapted to be secured to the front of the standard *a*, and having its set-screw *r'* arranged to support the rim of the wheel *d* that is to be cut, as set forth.

255,410. ORGAN CASE AND PEDAL. Silas B. J. Bryant, Atlantic, Iowa. Filed Jan. 9, 1882. (No model.)



Claim.—1. The combination, in an organ or melodeon case, of the compound lever consisting of the cross-bar F and upright arms G, attached to the sides of the case, with the bar I, provided with the pin J, the rod P, and the lever H, as shown and described.

2. In an organ or melodeon, the combination of the lid or cover E and the lever consisting of the cross-bar F and the upright arms G with the bar I, pedals B, and door A, as shown and described.

3. The adjustable pedals B, having the projections C, in combination with the hinged door A of an organ or melodeon having slots or guides, as set forth.

4. The combination of the cover or lid E, having the stop L, with the stop-board to prevent the lid closing when the pedals are used in pumping.

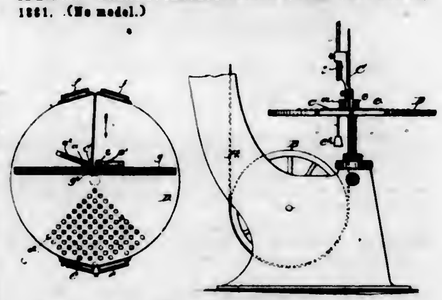
5. The combination of the pedals B, provided with the projections C, working in the grooves or guides *a* in the door A, with the levers H and P, bar I, and lever F G, all as described, and for the purpose specified.

255,411. BREAD-MAKING MACHINE. Peter F. Beyer, Indianapolis, Ind. Filed Mar. 8, 1881. (No model.)



Claim.—In a machine for forming loaves of bread, the combination of a vertically-reciprocating head carrying loaf-separating knives, the lower ends of which are rounded for the purpose of separating the loaves, a bed for the dough to rest upon, guides for the reciprocating head to move upon, and a series of clearers for removing the loaves from the head, all substantially as described.

255,412. MECHANISM FOR AND METHOD OF FORMING HOOP-SPLINTS. Henry F. Campbell, Concord, N. H. Filed Dec. 12, 1881. (No model.)



Claim.—1. The table or bed to support the hoop-pole and a band-saw to cut the hoops, combined with an elastic-surfaced roller in which to embed the knots, warts, and short crooks of the hoop-pole, and with a suitable presser to keep the hoop-pole pressed against the said elastic-surfaced roller, substantially as described.

2. The table D, the anti-friction balls *d*, arranged therein, the edge-rollers *e f*, and the roller *g g'*, combined and arranged substantially as shown and described.

3. The herein-described method or process of producing hoop-splints which are to retain the natural bark, which consists in embedding the knots, warts, and short crooks of that part of the hoop-pole to be contained in the splint then being produced into the substance of an elastic roller, against which the hoop-pole is pressed, and sawing the said splint from the pole parallel with the center of the pole whatever may be its curvature, substantially as described.

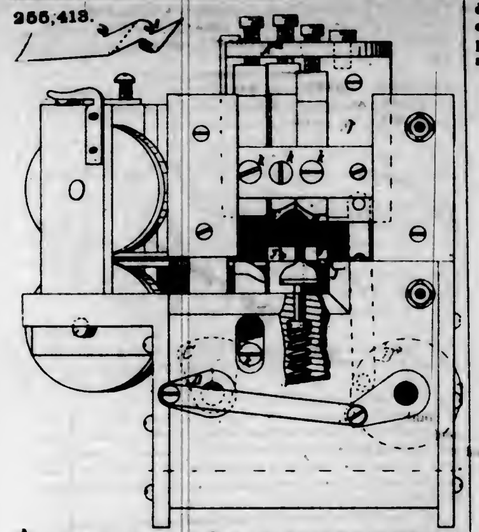
255,413. MACHINE FOR MAKING PRONG-BARBS. Edwin Childers and Arthur S. Childers, East Dubuque, Ill. Filed Oct. 26, 1881. (Model.)

Claim.—1. In a machine for cutting and forming sheet-metal barbs from an intermittently-fed strip of metal, the combination of two sets of slitting and forming knives operating upon a bar of material, a set of severing and forming knives, and a forming device for forming the prong, substantially as specified.

2. In a machine for cutting and forming sheet-metal barbs from an intermittently-fed strip of metal, the combination, with the barb cutting and forming knives, of the yielding support for assisting in the forming operation and returning the completed barb to the level of the feed, substantially as specified.

3. The combination of two pairs of slitting and forming knives, and a pair of severing-knives, which also form one of the prongs, substantially as specified.

255,413.



4. The combination, with the slitting and forming knives, of the forming devices *e'* and *f'*, accompanying the moving halves thereof, substantially as and for the purpose set forth.

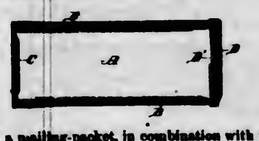
5. The combination, with the devices for severing and completing the barb, of the spring-guide J', substantially as set forth.

255,414. MAILING-PACKET. Arthur Christy, Buffalo, N. Y. Filed Apr. 28, 1881. (No model.)



Claim.—In a mailing-packet, the band *d*, secured to the body A on each side, and flap E, secured to the body at one side and folded over the band *d'* at the other, adapted to receive the folded-down end of the envelope, substantially as set forth.

255,415. MAILING-PACKAGE. Arthur Christy, Buffalo, N. Y. Filed Dec. 21, 1881. (Model.)



Claim.—In a mailing-packet, in combination with the box A and envelope B B', the extra cover D, made larger, so as to fit over the paper envelope and box at the opening end, all substantially as specified.

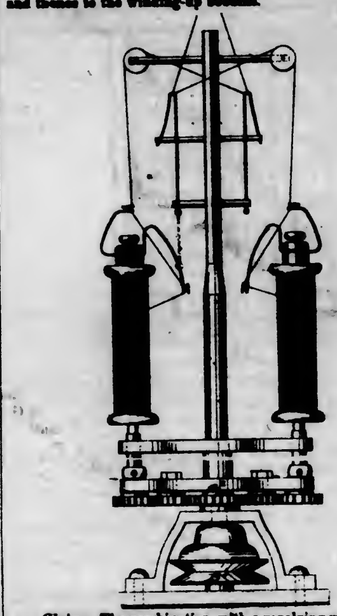
255,416. HARNESS-FASTENER. Myron Clark, Rockford, N. Y. Filed Jan. 30, 1882. (No model.)



Claim.—The strap-fastener A, consisting of a narrow piece of metal bent at the top to form the hook *a*, and provided with a longitudinal base, *b*, the straight downwardly-bent portion *b'*, and the supplemental longitudinal base *c*, in combination with the loop C, and adapted for use with the strap, substantially as specified.

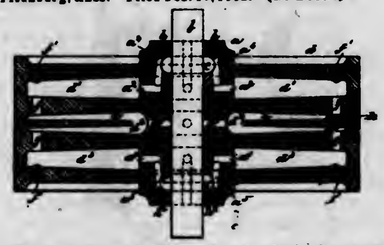
255,417. SPINNING, DOUBLING, AND TWISTING MACHINE. William J. Conlon and Henry B. King, Paterson, N. J. Filed July 18, 1881. (No model.)

Brief.—The revolving main spindle carries fixed arms for the bearings of the auxiliary spindles, which are rotated by transmitting-gearing from a central gear-wheel fixed on the bolster as they are revolved with the main spindle. A flier is used with each bobbin, and is stopped by means of a weighted drop-tension device that is guided in fixed arms at the upper part of the main spindle, which causes the breakage of the remaining threads when one is broken. The thread from each bobbin passes over guide-pulleys at the upper part of the main spindle to the drop-tension, and thence to the winding-up bobbins.



Claim.—The combination, with a revolving main spindle and frame carrying two or more axially-revolving auxiliary bobbin-spindles, of thread-guiding devices and vertically-guided and weighted drop-tensions arranged at the upper part of the main spindle, substantially as specified.

255,418. SELF-OILING PULLEY. Charles H. Cowdrey, Fitchburg, Mass. Filed Feb. 17, 1882. (No model.)



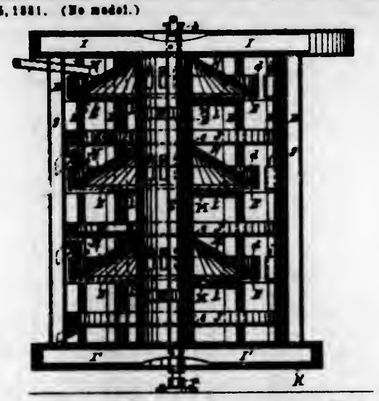
Claim.—1. In a self-oiling pulley, the rim having communicating annular chambers d' d^2 d^3, combined with the hub provided with oil-passages a', leading from the chamber d^3 to the shaft on which the pulley runs, and with other passages, substantially as described, to convey the oil from the ends of the hub into the chambers d' d^3, as and for the purpose set forth.

2. The hub provided with oil-passages a' and e d', the latter being located nearer the end of the hub than the chambers d' d^3 of the rim, and with passages a^2 a^3 a^4 a^5, combined with the rim *d*, having communicating chambers d' d^2 d^3, substantially as and for the purpose described.

3. In a self-oiling pulley, the cast-metal rim provided with the chamber d^3, and the prongs and fingers *e*, located therein, as set forth, combined with the hub *a*, provided with oil-passages *a'*, substantially as shown, and for the purpose described.

4. As an improved article of manufacture, a cast-metal pulley composed of a chambered rim and a hub provided with oil-passages to permit the circulation of oil introduced into a chamber of the rim through the hub to the shaft, along the shaft, and back into the chambers of the rim, as set forth, the said chambered rim being driven or shrunk upon the said hub, substantially as described, to form an oil-tight joint between them.

255,419 MACHINE FOR BOLTING AND PURIFYING FLOUR AND MIDDLINGS. JAMES CRAIK, Rawley, Minn. Filed Dec. 5, 1881. (No model.)



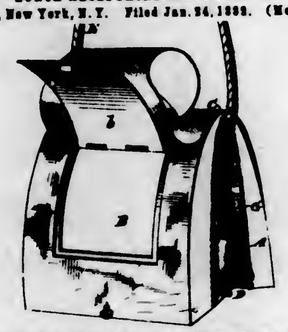
Claim.—1. The combination of the central tube, D, sieves E, mounted thereon, shaft C, arranged within said tube, and eccentrics upon the shaft, substantially in the manner and for the purpose set forth.

2. The combination of the tube D and sieves E with the driving-shaft C, eccentrics or cams N N, and the track formed of stops i at suitable distances apart, substantially in the manner and for the purpose set forth.

3. The combination, with the columns B, formed with bores g, fans I and I', and sieves E, of the air-tubes M, for injecting currents of air upon the lower surfaces of the sieves, substantially in the manner and for the purpose set forth.

4. The combination of the stationary brushes L, air-tubes M, bores g, and fan I' with the sieves E, substantially as and for the purpose set forth.

255,420. LUNCH-RECEPTACLE AND MUFF. SARAH A. CUSHINGHAM, New York, N. Y. Filed Jan. 24, 1882. (Model.)



Claim.—1. A lunch-receptacle consisting of two covered receptacles joined at their upper and lower extremities, leaving an intermediate space, thus adapting the device for use as a lunch-box and muff, substantially as specified.

2. A combined lunch-receptacle and muff consisting of a lunch-receptacle in one portion and a water-tight vessel in the other portion, connected at their upper and lower extremities, and provided with an intermediate space for the hands, the whole adapted to serve as and for the purpose set forth.

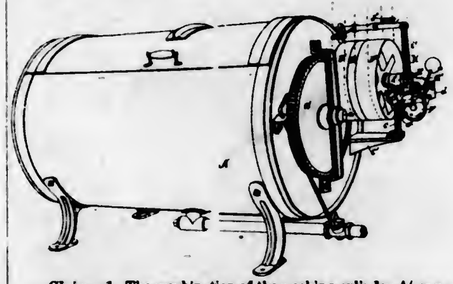
3. The vessel A a and receptacle B b, combined with the muff C G, portion D, and cord E, as set forth.

255,421. GILDING METALS. PAUL A. DODÉ, Rheims, assignor to the Société Française D'Inoxydation et de Platinage, Paris, France. Filed Apr. 6, 1880. (Specimens.) Patented in France May 21, 1879.

Claim.—1. The process of bright or mat gilding wrought and cast iron and other metals by first covering the said metals with a preparatory enamel, and then with a mixture of gold, muriatic acid, nitric acid, tin, arsenious acid turpentine, balsam of sulphur turpentine, and essential oil, substantially as specified.

2. The composition herein described for surface-coating metals preparatory to gilding them, consisting of a mixture of glass, boracic acid, and red lead combined with a calcined mixture of alum, ammonia, nitric acid, and carbonate of cobalt, substantially as specified.

255,422. REVERSING MECHANISM FOR WASHING-MACHINES. ALEXANDER M. DELPH, Cincinnati, Ohio. Filed Nov. 17, 1881. (No model.)



Claim.—1. The combination of the washing-cylinder A', provided with gear-wheel a, pinion B, shaft B', pulley D, pinions b b', shaft E, provided with worm d, gear-wheel F, provided with stud d^2, rock-shaft G, provided with arms e e', lever H, and sliding bar H', substantially as described.

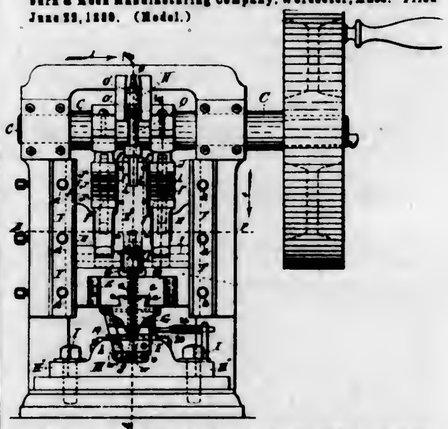
2. The combination of the shaft E and operating mechanism, said shaft being provided with worm d, gear-wheel F, provided with stud d^2, rock-shaft G, provided with collar h and arms e e', said arms having lugs f f', lever H, pivoted at h', and the sliding bar H', said bar being provided with looped rods J J', substantially as described.

3. The gear-wheel F, provided with means to cause it to revolve, and having on its face the stud d^2, in combination with the rock-shaft G, provided with arms e e', weighted lever G', and collar h, and the pivoted lever H and sliding bar H', provided with the looped rods J J', substantially as and for the purpose specified.

4. The rock-shaft G, constructed substantially as described, and adapted to be moved laterally by appropriate mechanism, in combination with the pivoted lever H, sliding bar H', provided with looped rods J J', and the pulleys D D' D^2, substantially as and for the purposes specified.

5. The rock-shaft G, provided with collar h, weighted lever G', and arms e e', said arms being provided with the lugs f g and f' g', in combination with the bracket E' and upright C, and the pivoted lever H and sliding bar H', substantially as described.

255,423. MACHINE FOR MAKING METAL FENCE-BARBS. THOMAS B. DOOLITTLE, Bridgeport, Conn., assignor to the Washburn & Moen Manufacturing Company, Worcester, Mass. Filed June 23, 1880. (Model.)



Claim.—1. The combination, with sliding frame E and eccentric-shaft C, of the adjustable composite eccentric-rods and nuts J, K, J', and J'', said nuts having their top and bottom surfaces parallel, substantially as and for the purposes set forth.

2. The combination, with sliding frame E and adjustable block G, of the two sets of dies or cutters d d thereon, and block H, having cutters d' d', the sets arranged to cut at different angles, substantially as and for the purposes set forth.

3. The combination, with sliding frame E, provided with block G and dies or cutters d, of plunger M and punches i, h, and h', with block H, having cutters and openings relatively arranged, substantially as and for the purposes set forth.

4. The combination, with plunger M and punches i, h, and h', of the hollow piece Q, screw P, and lock nut or wheel R, substantially as and for the purposes set forth.

5. The combination of the block H, provided with cutters and openings, as described, with the slotted block G, having openings for the passage of punches i, h, and h', and the plates m and n, substantially as and for the purposes set forth.

6. The combination of the block G and piece Q, provided with punches i, h, and h', with the slotted or grooved block H, the blocks o, q, r, and s, and plates s' and p, substantially as and for the purposes set forth.

7. The combination of the cutters d, arranged as described, with the cutters d', the bars u, and angular pieces v, substantially as and for the purposes set forth.

8. The combination of a series of cutters, d', arranged in two sets and inclined to each other at an acute angle, with blocks u and the cam-rod w, substantially as and for the purposes set forth.

9. The combination, with cam-rod w and block G, of the joint-lever w', substantially as and for the purposes set forth.

10. The combination, with blocks or holding-surfaces 4 4 and 5 5, of punch i, substantially as and for the purposes set forth.

11. The combination of punches h h' with the blocks r r', having flanges r' and slots 7, substantially as and for the purposes set forth.

12. The combination of blocks r r, having flanges r' and slots 7, with the hinged barb guard or tongue 11, substantially as and for the purposes set forth.

13. The combination, with blocks G and H, of the barb-guard 11, spring 16, and tongue-depressing part 15, for the purposes stated.

14. The combination, with block H, guides 19 and 20, and cutters d' between these, of the adjusting-spring and its rod 22, substantially as and for the purposes set forth.

255,424. DEVICE FOR CHECKING THE DRAFT IN FIRES. J. H. DRAKE, Warren, Ohio. Filed Jan. 18, 1882. (No model.)



Claim.—A fire-check adapted for use with grates or other open heaters, consisting of a plate provided with a hook to engage with the grate or heater, a damper, and vertical slots, the latter being adapted to fit over the sides of the ash-pan of the heater, substantially as set forth.

255,425. SEWING-MACHINE TAKE-UP. J. V. D. ELDRIDGE, Detroit, Mich. Filed July 8, 1881. (No model.)



Claim.—The take-up lever D, pivoted to the interior of the face-plate A, as described, in combination with the link E, pivoted to said lever, the needle-bar B, provided with holes for receiving the inner pivotal screw of the link E, and the face-plate A, having a slot, b, to allow the passage and movement of the lower end of the take-up lever, as and for the purpose specified.

255,426. ANTI-FRICTIONAL BEARING. THOMAS E. FRENALL, Boston, Mass. Filed Feb. 6, 1882. (No model.)



Claim.—In an anti-frictional bearing, the combination of central sleeve-bearing, a, its lubricator-channel a'' a''', flanges a^{iv} a^{iv}, rollers b b b, the regulators d d, with their radial projections d' d', and the ring-casing c, or its equivalent, and the annular plates e e, or their described equivalents, as set forth.

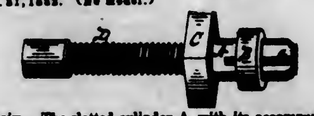
255,427. PIPE-JOINT. WILLIAM FORMAN, Bradford, Pa. Filed June 23, 1881. (No model.)

Brief.—The sections A and B are adapted to turn in any direction, so that connections may be made with pipes coming from any point.



Claim.—The combination, with the branched section A, having an annular flanged rim, E, of the branched section B, fitting within said rim, and the screw-bolt G, having an enlargement fitting a socket in a lug on the section A and bearing on a packing, H, in said socket, as set forth.

255,428. NUT-LOCK. JAMES GRAHAM, Detroit, Mich. Filed Jan. 21, 1882. (No model.)



Claim.—The slotted cylinder A, with its accompanying ring B, in combination with the nut C and bolt D, substantially as described, and for the purposes set forth.

255,429. FEED-CUTTER. WILLIAM H. HALLOCK and ALONZO H. SMITH, Racine, Wis. Filed Dec. 7, 1881. (No model.)



Claim.—1. In a feed-cutter, the combination of the guiding and cutting bars B B' B with the knife C, having the blades C' C' sharpened to a bevel on opposite sides to form shear-edges in conjunction with the center bar, B', as shown and described.

2. In a feed-cutter, the combination of the box or body A A', guiding and cutting bars B B' B, and knife C C' C' with the hinged gage-board D, having incline D', and the spring i, as shown and described, and for the purpose set forth.

255,430. STAND HOSE-PIPE. BENJAMIN HOLLAND, Jr., Newport, R. I., assignor to Thomas S. Howell, Trustee, Boston, Mass. Filed Feb. 6, 1882. (No model.)

Brief.—The nozzle is adapted to have two or more lines of hose connected to its lower part or base, a division-plate, c, directing the stream upwardly. The stream may be turned in the desired direction by turning the pipe on the segmental guide M or by manipulating worm-wheel H.

Claim.—1. The combination of the bifurcated hose-pipe G, the three-way section D D', the stationary base A, provided with two inlet-passages, and means of coupling thereto two or more lines of hose, and means of securing the base and three-way sections together and permitting the latter to be revolved upon the former, substantially as and for the purposes described.

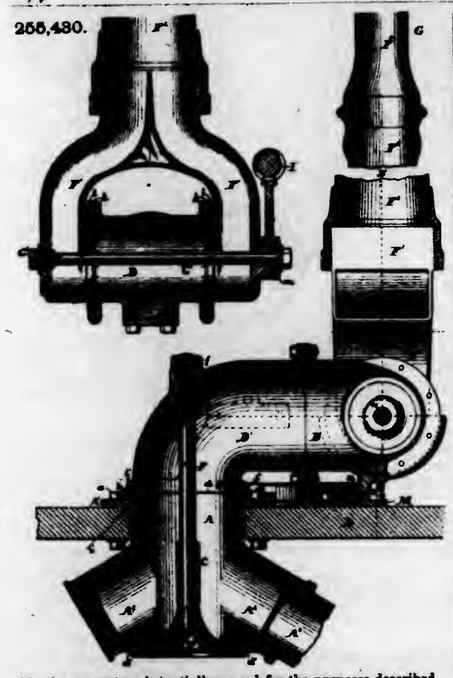
2. The base A, provided with two inlet-passages, A', and the two annular shoulders d and d', in combination with a three-way section connected to said base by virtue of bearings upon said shoulders d and d', and adapted to be revolved thereon, substantially as and for the purposes described.

3. The combination of the base A, provided with the annular shoulders d and d', and two inlet-passages communicating with two or more lines of hose, the three-way section D D', the curved disk or head E, the packing-rings g and h', and the bolt F and nuts f and f', all arranged and adapted to operate substantially as and for the purposes described.

4. The stationary base A, provided with the annular groove h, the packing-ring h', secured in said groove, the three-way section D D', fitted to and having a bearing upon the upper portion of said base, and provided with the annular groove d', to receive the upper edge of said packing, all constructed, arranged, and com-

provisions being also available to adjust or regulate its level and screws F^2 F^2 beneath the boards leading to the same discharge, the

255,480.



bined to operate substantially as and for the purposes described.

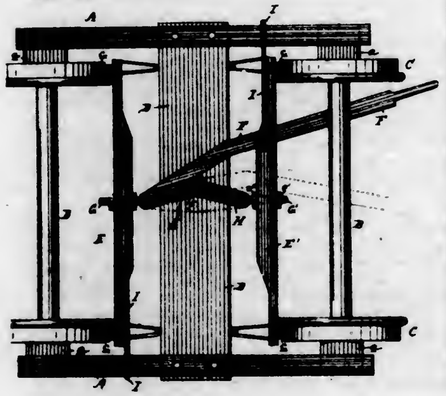
5. The combination of the base A, three-way section D D', the bifurcated pipe G, the worm-wheel segment H, and the worm I, all arranged and adapted to operate substantially as and for the purposes described.

6. The base A, provided with two inlet-passages communicating with two or more lines of hose, and the partition *c*, in combination with the three-way pipe-section D D', the curved disk or head E, the bolt F, and the nuts *f* and *f'*, all constructed, arranged, and adapted to operate substantially as described.

7. The combination of the stationary base A, the three-way section D D', provided with a quarter turn or bend, as set forth, and the bifurcated discharge-pipe G, all arranged and adapted to operate substantially as described.

8. The combination of the platform B, the base A, and segmental guide M, secured thereon, the three-way section D D', provided with a quarter turn or bend, the bifurcated pipe G, and the supporting and guiding lip *o*, all arranged and adapted to operate substantially as described.

255,481. CAR-BRAKE. ALPHEUS J. KELLY, Soto, Mich. Filed Jan. 31, 1879.



Claim.—1. In combination with the brake-bars E E', the lever F, the projection *f* of said lever, the link H, pivoted to the projection *f*, and suitable connections between the lever and link and the brake-bars, substantially as and for the purpose specified.

2. The lever F and the projection *f* of said lever, in combination with the link H, the eyebolts G G', and the nuts *d d'*, substantially as and for the purpose specified.

3. In combination with the side frames, A, the brake-bars E E', and the toggle-joint F H, the stays I I, connecting with the brake-bars and the side frames at opposite sides of the car, substantially as and for the purpose specified.

255,482. WIND-WHEEL. BENJAMIN H. KLEIN, Delaware, Ohio. Filed Feb. 16, 1881. (Model.)



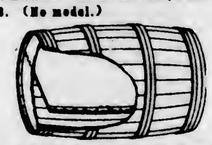
Claim.—1. In a wind-wheel, the combination, with pivoted sails and with the ordinary wheel-rims, of an auxiliary inner and outer rim supported by said sails, as and for the purpose set forth.

2. In a wind-wheel, the combination, with the ordinary wheel-rims and with the pivoted sails, of the auxiliary outer rim and inner rim, with the springs for operating said auxiliary rims to automatically swing the sails into the wind.

3. The combination, with the stationary inner rim and outer rim, and with the movable inner rim and outer rim, of a series of sails provided with angular flanges and pivoted to said stationary and movable rims.

4. In a wind-wheel, the combination, with the hub, the spokes, the stationary inner rim, and outer rim secured to said spokes, of the movable rims *i* and *i'*, the sails F, pivoted as shown, and a spring connecting the spokes with the pivot *h* or with the rim *i*.

255,483. BARREL. HALE KNIGHT, Newbury, Mass. Filed Jan. 14, 1882. (No model.)

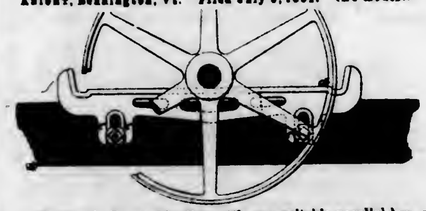


Claim.—1. A barrel having a longitudinal partition of thin flexible material fitting the interior bilge of the barrel, substantially as specified.

2. In combination with a bilged barrel, a longitudinal collapsible partition conformed to the interior bilge of the barrel, and adapted to be inserted in and withdrawn from the barrel, as and for the purpose specified.

3. In combination with a barrel, a longitudinal partition formed to conform to the interior bilge of the barrel, and having strips *a* of thinner material along its edges, substantially as described.

255,484. APPARATUS FOR BALANCING PULLEYS. LUTHER KNIGHT, Bennington, Vt. Filed July 8, 1881. (No model.)

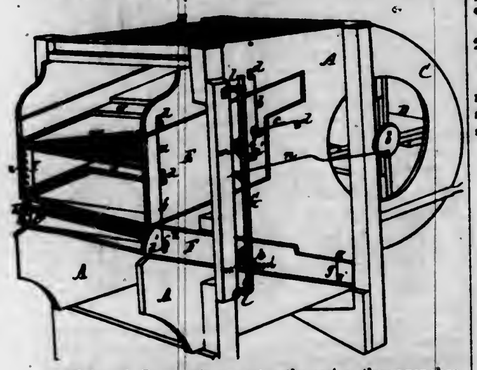


Claim.—1. In combination with any suitable parallel bar, a bar having a straight upper edge on which the mandrel can roll, and an upwardly-projecting or other suitable end stop at each end of said straight upper edge, provided with means for attachment to a horse or bench and for horizontal or level adjustment, substantially as described, and for the purpose set forth.

2. A parallel bar for balancing pulleys, provided with an upper straight edge having an end stop at each terminus thereof, a central perforation through its body for purposes of handling, and provisions for its attachment to a bench or horse, said last-named

provisions being also available to adjust or regulate its level and parallelism with its companion bar, substantially as described and set forth.

255,485. GRAIN-SEPARATOR. JOHN A. KRAUS, Buffalo, N. Y., assignor to WM. P. MILLER, same place. Filed June 18, 1881. (No model.)



Claim.—1. In a grain-separator, the casing, the upper shoe, vertical hangers therefor, and a rock-shaft connected with such shoe, whereby vertical and lateral vibrations are imparted to it, combined with links *b*, arranged longitudinally of said shoe to cause a longitudinal motion thereof, substantially as shown and described.

2. In a grain-separator, the combination, substantially as shown and described, of the lower shoe, F, its suspension-rods *f g*, the rock-shaft, and connecting and operating mechanisms with the horizontal links *h h* and their pivotal points *i i'*, whereby said shoe receives transverse vertical and longitudinal movements.

3. In a grain-separator, the combination, substantially as shown and described, of the lower shoe, the suspension-links *f*, the slotted bearings *d'* for said links, the links *g*, a jolter, *j*, and operating mechanism, as specified.

4. The combination, substantially as shown and described, of the casing A, the upper shoe, E, and the hangers *a* and *b*, to suspend said shoe in said casing, the lower shoe, F, the hanger *f*, for connecting the two shoes independently of the freedom of motion of the hanger *a*, and the hanger *g*, connecting the lower shoe to the casing, the said hangers *a b* and *f g* permitting independent motions to be imparted to the shoes, substantially as specified.

5. In a grain-separator, the combination, with the casing, of the two shoes E F and hangers *a b f g*, the rear of the lower shoe being suspended from the rear of the upper shoe, the upper shoe being connected with the sides of the mill by pivoted side links, *e e*, and the lower shoe being connected with the sides of the mill by pivoted links *h h*, as shown and described, and for the purpose specified.

6. In a grain-separator, the combination, with the suspended shoes E F, of right-angled crank-arms *m m'*, the rock-shaft G, and the hanging-blocks H H, attached to the sides of the shoes, and having lugs *r r'* for connecting links opposite the respective crank-arms, whereby motion may be communicated to the shoes by either crank-arm when its link is connected, as herein shown and described.

7. In a grain-separator, the combination, with the shoes, of a rock-shaft, G, the crank-arms *m m'*, attached to the rock-shaft, one arm standing at right angles to and the other parallel with the sides of the shoes, and blocks H H, attached to the shoes, provided with lugs, one at right angles to and the other parallel with the sides of the shoes corresponding with the crank-arms, the crank-arms and lugs being provided with holes or sockets for the attachment of connecting-links, as herein shown and described.

8. In a grain-separator, the combination, with the screen *w* and toothed straps I I, of the deflector K, provided with pins *c' c'*, resting in the teeth of the straps and adjustable to different angles by raising or lowering in the teeth, as herein shown and described.

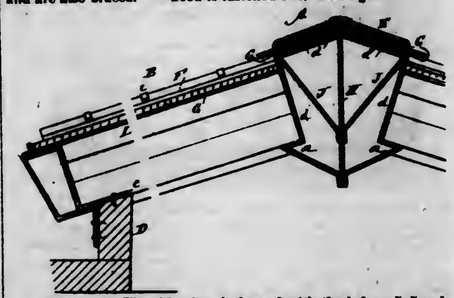
9. In a grain-separator, the combination of the stationary discharge-board f^3, the adjustable dividing-board f^4, and the dividing-bar h^3, set in an angular position across the dividing-board, the dividing-board moving freely under the bar, and the bar serving to divide and run off the heavy grain, as shown and described.

10. In a grain-separator, the combination of the discharge-board f^3, the dividing-board f^4, the dividing-bar h^3, and the two screens h^4 f^5 beneath the boards leading to the same discharge, the abutting ends of the screens being held in close contact, as herein shown and described.

11. In a grain-separator, the combination, in the lower shoe, of the two abutting screens h^4 f^5, the rear one set at an upward angle, side pins therefor, and hooked side straps, L, to receive said pins, whereby the two abutting ends of the screens are kept in close contact, as herein shown and described.

255,486. SKYLIGHT. FREDERICK H. LEADLEY, St. Louis, Mo. Filed July 11, 1881. (No model.)

Brief.—The ridge-bar is formed of side plates bent to form ridges to hold the glass and offsets to hold the rafter-bars. These side plates are secured at top and bottom to a center vertical plate, and are also braced. A hood is fastened over the ridge.



Claim.—1. The ridge-bar A, formed with the ledges *d' d'* and the offsets *a a*, in combination with the rafter-bars B and the curb C, substantially as and for the purposes set forth.

2. The ridge-bar A for skylights, formed of the plates *d d*, secured upon the center plate, H, with or without the braces J J, the plates *d d* being bent to form the ledges *d' d'* and the offsets *a a*, substantially as and for the purposes set forth.

3. The ridge-bar A, formed of the side pieces, *d d*, secured upon the center plate, H, the plates being bent to form the ledges *d' d'* and the offsets *a a*, in combination with the hood E and the braces J J, substantially as described.

4. The ridge-bar A and the rafter-bars B B and curb C, in combination with the plates of glass L and the plates L', placed over the glass L, substantially as and for the purposes set forth.

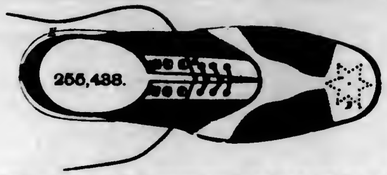
255,487. PAPER-HANGING OR WALL-PAPER. EDGARD LEIGNIER, New York, N. Y. Filed Feb. 16, 1882. (No model.)



Claim.—1. The embossed wall-paper A, combined with the filling C of cement, which is in the cavities of the back, and with the outermost lining, D, substantially as described.

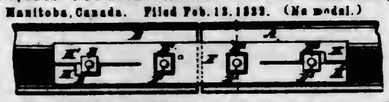
2. The embossed wall-paper A, lined at its back with the embossed sheet B, and combined with the filling of cement C and outer lining, D, substantially as herein shown and described.

255,488. SHOE. WILLARD LISCOTT, West Auburn, Me. Filed Jan. 16, 1882. (No model.)



Claim.—The described improvement in the manufacture of shoes having cloth uppers, such improvement consisting in the combination, with the cloth upper provided with the toe and heel re-enforces, as set forth, of the furcated or branched re-enforce or stay I, arranged to extend across the upper from the lower part of the instep or instep-opening to opposite parts of the sole, and also from said lower part of the instep or instep-opening to the toe re-enforce, all as set forth.

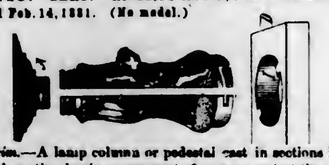
255,439. NUT-LOCK. ALEXANDER F. MACDONALD, Winnipeg, Manitoba, Canada. Filed Feb. 13, 1882. (No model.)



Claim.—1. The locking-plate F, having nut-apertures G G, bolt-holes H H', and tongues K K' cut longitudinally, commencing from the middle of the plate at the ends, thence half-way around the space to be occupied by the nuts of the bolts which pass through the holes H H', and thence in a longitudinal direction toward apertures G G, whereby spring-tongues K K' are formed, each tongue having a recess in which one corner of the nut impinges, said tongue offering an endwise resistance to the nut, and by depression permits the nut to be removed without injury to the plate, after the tongue has locked the nut, by being slightly sprung up, as set forth.

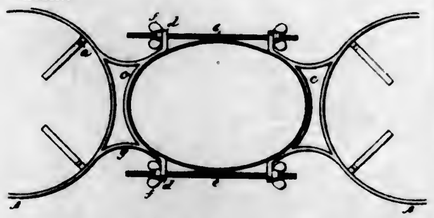
2. In combination with rails A B, fish-plate C, bolts D D' D² D³, and nuts E E' E² E³, the locking-plate F, having apertures G G, receiving the nuts E' E², holes H H', and longitudinally-cut tongues K K', with a recess encompassing a portion of nuts E' E², whereby the tongues offer an endwise resistance to said nuts when slightly sprung outward, and capable of depression for the removal of the nuts, as set forth and described.

255,440. LAMP. RIVERIUS MAASS, New Brunswick, N. J. Filed Feb. 14, 1881. (No model.)



Claim.—A lamp column or pedestal cast in sections lengthwise, each section having a segment of a screw cast at the ends, in combination with the base D and lamp-rest A, substantially as shown and described.

255,441. STOVE-PIPE SHELF AND STOVE-LID HOLDER. GEORGE MCADAMS, Winchester, Ind. Filed Nov. 5, 1881. (No model.)

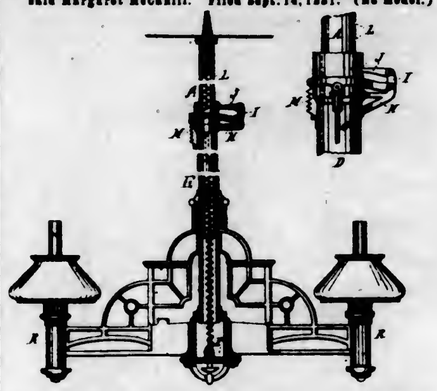


Claim.—1. The combination, in a stove-pipe shelf and lid-holder, of the hoop A with supports *b b b b*, having recesses *a a a a*, substantially as described.

2. In a stove-pipe shelf and stove-lid holder, the combination of the hoop A, having supports *b b b b* and recesses *a a a a*, with segmental parts *c c*, provided with lugs *d d d d*, threaded rods *e e*, and thumb-nuts *f f f f*, for the purpose specified.

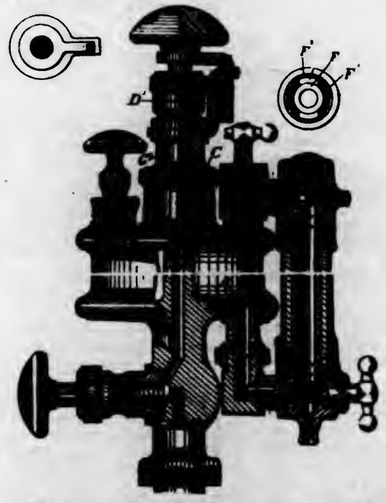
3. The combination of the hoop A, having supports *b b b b* with braces *g g* and adjustable collar, as set forth.

255,442. ADJUSTABLE CHANDELIER-HANGER. MARGARET MCCAHILL and JOHN K. MCCAHILL, Detroit, Mich., assignors to said Margaret McCahill. Filed Sept. 14, 1881. (No model.)



Claim.—In a chandelier, the stationary pipe A, provided with notches L, having downwardly-inclined lower sides, the pipe D, sliding on said pipe and provided at one end with the bracket H and at the other end with the burner-branches, and the spring E, contained within the two tubes and connected to their opposite ends, in combination with the lever I, connected to the bracket H at one side of the tube and with a spring, M, on the other side, the dog J, pivoted to the upper end of the lever and engaging with notches L, inclined, as described, in the stationary tube, and the rod O, pivoted to the lever near the center of the same and extending downward close to the side of the pipe D, as and for the purpose specified.

255,443. LUBRICATOR. ELIJAH MCCOY, Detroit, Mich., assignor to Henry C. Hodges and Charles C. Hodges, same place. Filed Oct. 21, 1881. (No model.)



Claim.—1. In a lubricator, the combination, with the main oil-chamber and a discharge-tube projecting therein, of the plunger separating an upper extension of said oil-chamber above the discharge-pipe from the lower portion of said chamber and means for adjusting said plunger from the exterior of the lubricator, substantially as described.

2. In a lubricator, the combination, with the oil-chamber, the central discharge-tube, and the adjustable plunger arranged above said tube, of an adjustable exterior indicator connected with said adjustable plunger, substantially as and for the purpose set forth.

3. In a lubricator, the combination, with the glass indicator-tube and a slotted stationary metallic casing surrounding said tube, of a similarly slotted movable metallic casing surrounding said stationary casing and arranged to partially rotate thereon, substantially as described.

4. The combination, with the glass indicator-tube F, properly seated and packed at its lower end, of the packing-ring at its upper end, the follower resting upon said packing-ring, the spring having its lower end bearing upon said follower, the casing inclosing said spring, and screw-plug screwed into said casing and bearing upon the upper end of said spring, substantially as described.

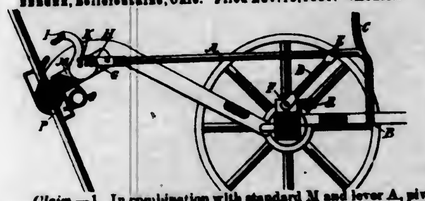
5. The combination, with a main oil-chamber, A, and tee discharge and steam tube B extending therein, of the condensing-chamber C, the plunger D, fitting closely and sliding in said chamber C, and the adjustable stem D', attached to said plunger and projecting outside the casing, substantially as described.

255,444. VEHICLE-WHEEL SCRAPER. FREDK. C. HERCHE, Winnipeg, Manitoba, Canada. Filed Jan. 13, 1882. (Model.)



Claim.—A mud or clay scraper for vehicle-wheels, composed of the segmental and rectangular-shaped channel A, having the opening *a*, the shank B, having formed in it the slot *b*, the set-screw *c*, and the sustaining-bar C, substantially as shown and described, and for the purpose set forth.

255,445. REVOLVING SULKY HAY-RAKE. THOMAS HILTENBRAND, Bellefontaine, Ohio. Filed Nov. 15, 1881. (Model.)

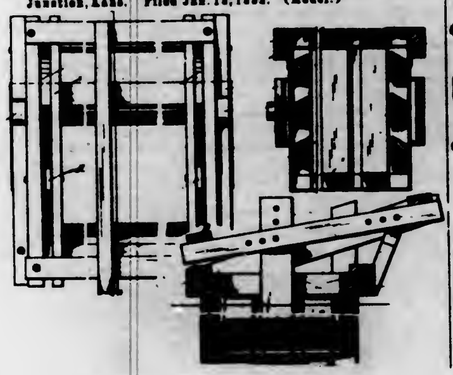


Claim.—1. In combination with standard M and lever A, pivoted thereto, trip-lever I, having a curved slot, H, in the upper portion of its disk, through which plays a pin, G, in the rear end of lever A, and pivoted near its center to oscillating standard M, substantially as set forth.

2. In combination with the lever A and standard M, pivoted thereto, carrying spring-trips O, the trip-lever I, pivoted near its center to oscillating standard M, and having a curved slot, H, in the upper portion of its disk, through which plays a pin, G, in the rear end of lever A, substantially as described.

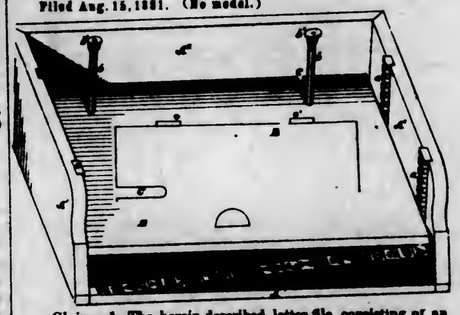
3. In combination with the revolving axle of the rake, provided with lugs P Q, the lever A and standard M, pivoted thereto, carrying spring-trip O, the trip-lever I, pivoted near its center to oscillating standard M, and having a curved slot, H, in the upper portion of its disk, through which plays a pin, G, in the rear end of lever A, substantially as set forth.

255,446. WASHING-MACHINE. NUTTER W. MURPHY, Cedar Junction, Kans. Filed Jan. 18, 1882. (Model.)



Claim.—In a washing-machine, the lining composed of spaced bottom slats and spaced vertical end and side slats detachably secured to a surrounding upper frame, all adapted to fit into and conform to the inside of the tub, in combination with the plunger adapted to operate therein, its operating devices, and the tub or vessel adapted to be used either on or off of the stove, as and for the purpose set forth.

255,447. LETTER-FILE. GEORGE V. MAUBETH, Dayton, Ohio. Filed Aug. 15, 1881. (No model.)



Claim.—1. The herein-described letter-file, consisting of an outer case, provided with the racks *a* and the pins *b*, and the cover B, provided with the lugs *c c'* and notches C, substantially as and for the purposes specified.

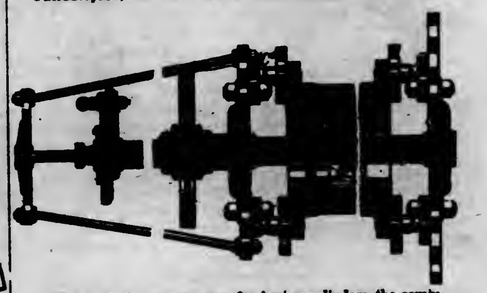
2. A letter-file consisting of an outer case, provided with racks *a*, and the cover B, provided with lugs *c c'*, fixedly attached to the cover and arranged in such a manner that the cover and lugs are attached to and detached from the racks by sliding the cover horizontally, substantially as and for the purposes specified.

255,448. COMBINED MOP HOLDER AND WRINGER. JOSEPH M. OHO, Bloomfield, Mich. Filed Sept. 10, 1881. (No model.)



Claim.—In a combined mop holder and wringer, the combination of the handle A, having hinged loop C D, with the sliding sleeve F, having bail P, the end of which is flattened at G, and provided with a ring, H, adapted to encircle the end of the handle, as described, for the purpose set forth.

255,449. METAL-BORING MACHINE. DANIEL W. PRESCOTT, Philadelphia, Pa. Filed Dec. 30, 1881. (No model.)

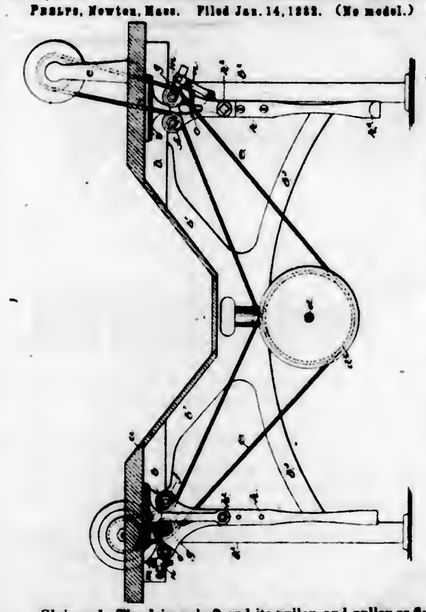


Claim.—1. In an apparatus for boring cylinders, the combination, substantially as set forth, of a boring-plate having a central opening for the passage of a boring-bar, a bearing or thrust plate having a central socket for the reception of a feed-screw, and coupling-rods by which said plates are connected one with the other.

2. In an apparatus for boring cylinders, the combination, substantially as set forth, of a boring-bar, a feed-screw concentric therewith, a gear journaled upon a casing which is fitted to move with

the boring-bar longitudinally on the feed-screw without rotating with the boring-bar, a sectional or divided nut pivoted to said gear, and a clamp by which said nut may be made to either engage with or be removed from contact with the feed-screw.

255,450. BELT-CONTROLLING MECHANISM. GEORGE H PHELPS, Newton, Mass. Filed Jan. 14, 1882. (No model.)

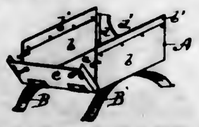


Claim.—1. The driver-shaft and its pulley, and pulley or fly-wheel W, and belt *e*, extended over them, combined with a lever, A, having two sheaves adapted to be pressed against and tighten the said belt when it is desired to drive the pulley or fly-wheel, substantially as described.

2. The pulley or fly-wheel, the continuously-driven pulley *d*, the belt *e*, extended over them, and the lever having the two sheaves to press against the said belt to tighten it only when the fly-wheel is to be driven by the belt, combined with a brake, *m*, actuated by the said lever to assist in stopping the fly-wheel quickly when the pressure of the sheaves against the belt *e* is released, substantially as described.

3. In a bench for sewing and other machines, the metallic cross beams or girders *b b'*, shaped as shown and described, combined with the legs *b²*, to support them, as set forth.

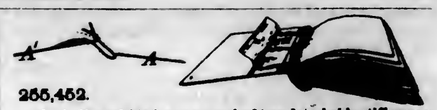
255,451. CAR-AXLE BOX. THOS. S. PHILLIPS, Buffalo, N. Y., assignor of one-half to George D. Briggs, same place. Filed Jan. 20, 1882. (No model.)



Claim.—In combination with an inclosed journal, E, and a railroad journal-box, D *f*, the rectangular follower A, for holding the lubricant C in contact with the journal, consisting of the flat bottom *a*, vertical metal sides *b b*, extension leather sides *b' b'*, leather end *d d'*, hinged front *c*, and springs B B, all constructed and operating substantially as specified.

255,452. TEMPORARY BINDER. JOHN B. PITT, Brooklyn, N. Y. Filed June 1, 1881. (Model.)

Claim.—1. A file and binder composed of two detachable stiff covers, one of said covers being provided at its inner edge with a hinged binding-strip which unites with and forms a part of said cover, the other of said covers being provided with a clamping-plate hinged thereto, and means for detachably uniting said covers and holding the papers or pamphlets between them, substantially as described.



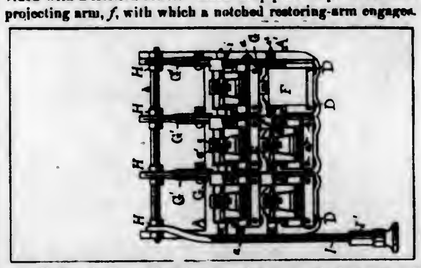
255,452.

2. A file and binder composed of two detachable stiff covers, one of said covers being provided at its inner edge with a hinged binding-strip which unites with and forms a part of said cover, and with binding-wires attached to said hinged strip, the other of said covers being provided with a perforated clamping-plate hinged to and projecting from the inner edge thereof, forming a slot between the cover and clamping-plate, a flexible back piece united to the cover having the hinged strip, and adapted to pass through the slot of the cover having the clamping-plate, and fastening devices whereby said flexible back piece is detachably and adjustably connected to the latter cover, substantially as described.

3. A file and binder composed of two detachable stiff covers, one of said covers being provided at its inner edge with a hinged binding-strip which unites with and forms a part of said cover, and with binding-wires attached to said hinged strip, the other of said covers being provided with a perforated clamping-plate hinged to and projecting from the inner edge thereof, forming a slot between the cover and clamping-plate, said clamping-plate being provided with grooved lugs for retaining the ends of the binding-wires, and a flexible back piece rigidly connected to one of said covers and detachably connected to the other, substantially as described.

255,453. ELECTRIC ANNUNCIATOR. HENRY B. PENFIELD, Chicago, Ill. Filed Oct. 6, 1881. (Model.)

Brief.—An improvement on Letters Patent No. 214,261. The supporting-frame is cast in one piece with sockets for the magnet. The arm on the armature that supports the drop-plate is provided with a friction-roller. Each drop-plate is provided with a projecting arm, *f*, with which a notched restoring-arm engages.



Claim.—1. In an electric annunciator, a vertical armature, E, having its central arm nearly twice the length of its outer arms, and provided with a pulley, *e*, at the tip, in combination with a helix with both ends of its core exposed at points opposite to the ends of the outer arms of the armature, substantially as shown.

2. In an electric annunciator, curtains F, hinged at the top edge to wires *c'*, so as to turn thereon, and provided with lips *f*, projecting radially from the hinge and transversely from and outside of the path of the curtain, as shown.

3. In an electric annunciator, vertical notched bar G, pivotal bar G', pivotal arm H, and push-rod I, in combination with hinged curtains F, having lips *f* projecting radially from the hinge and transversely out of the path of the curtain, all operating as shown.

4. In an electric annunciator, an armature, E, whose central arm is considerably longer than the outer arm, and provided at its tip with a pulley, *e*, such armature being loosely secured at the bottom in a vertical position, in combination with a curtain, F, operating together, as shown.

5. In an electric annunciator, a helix, B, recessed in the frame and secured by a helix-holder, C, having an opening in the center for the central arm of the armature to play back and forth in.

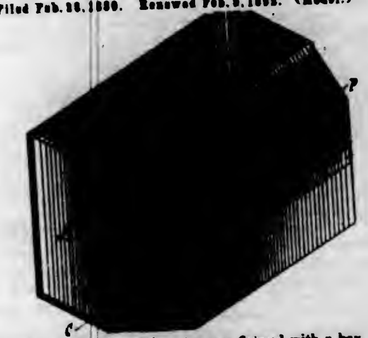
6. In an electric annunciator, a metal frame provided with numerous concave recesses, *b*, openings D, and slotted arms *d'*, cast in one piece, as shown.

255,454. EXTENSION-TABLE. JOHN A. PRUYT, Stringtown, Mo. Filed Sept. 24, 1881. (Model.)



Claim.—The combination, with a table-frame having the brace H, provided with slots K' and rollers G, arranged as herein shown, of the main leaf I, having studs K projecting downward through the slots K', and the extension-leaves L, having arms M, provided with wedges O, extending under and adapted to bear against the studs K of the main leaf, as herein shown and specified.

255,455. REFRIGERATOR. ALVIN D. PUFFER, Boston, Mass. Filed Feb. 16, 1880. Renewed Feb. 9, 1882. (Model.)



Claim.—1. The refrigerator-case formed with a bay, as described, in combination with the main door or doors closing the bottom of the bay and the adjoining face of the refrigerator-case, and the vessel or bottle guides or supports attached to and carried by said door or doors, substantially as herein before set forth.

2. The refrigerator-case formed with a bay, as described, in combination with one or more main doors closing the bottom of the bay and the adjoining face of the case, vessel or bottle supports or guides carried by said doors, and auxiliary doors, one in each main door, substantially as herein before set forth.

3. In combination with the bayed refrigerator-case, and the door or doors closing the bay and adjoining face of the same, the bottle or vessel guide-tubes or supports carried by the doors and provided with removable bottoms, substantially as hereinbefore set forth.

4. In combination with the guides *l*, the removable cups or supports adapted to be reversed in position, and in so doing vary the height of their bottom with respect to the ice chamber or tank below, substantially as described.

5. The double door H J, in combination with the case A and its bay D, partition F, and apertures *g g*, substantially as and for the purposes set forth.

6. The combination, with the double door and the bayed refrigerator-case having communicating openings in the wall or partition between its ice-chamber and the space inclosed by the double door, of means, substantially as described, adapted to be controlled by the auxiliary door for automatically opening and closing said openings, substantially as hereinbefore set forth.

7. The waste-water valve composed of the tube *a*, opening communication with the ice-water tank, and the plug *a'*, provided with its apertures *g'*, the tube *c'* screwing into the tube *a*, and the holes serving to open communication between the tube *a* and ice-water tank, while the screwing of the tube *c'* down to its seat shuts off such communication, essentially as explained.

255,456. REFRIGERATOR. ALVIN D. PUFFER, Boston, Mass. Filed Mar. 13, 1880. Renewed Feb. 9, 1882. (No model.)

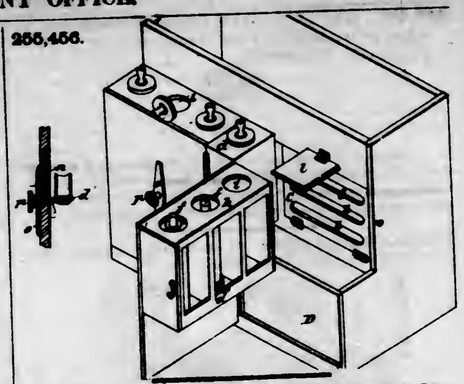
Claim.—1. The combination, with the refrigerating-box A, provided with bay D, of one or more doors containing coils provided with removable covers, as described, said coils, when the door is closed, fitting over the top of the bay D and up against the body of the refrigerator, substantially as hereinbefore set forth.

2. In combination with the refrigerator-box and the door provided with coils, the cover or covers *l*, hinged to the box in position to drop over and cover the coil-openings when the door is closed, substantially as hereinbefore set forth.

3. In combination with the refrigerator and door for closing the same, one or more coils upon the interior of the door, provided with a vertically-movable interior bottom or support, and means, substantially as described, for adjusting and holding said bottom or support, substantially as hereinbefore set forth.

4. The combination of the bottom *d'* and springs *a a*, united by the button *p*, for the purpose of raising and sustaining the bottom in any position, substantially as stated.

255,456.



255,457. COOLER FOR AERATED WATERS. ALVIN D. PUFFER, Boston, Mass. Filed Apr. 14, 1880. Renewed Feb. 8, 1882. (No model.)

Brief.—The object of the device is to reduce the temperature of aerated waters. The water, after passing through the ice-chamber, flows into a close vessel, which is adapted to contain above the aerated water the free gas. The escape from the device is thus rendered smooth.



Claim.—1. In receivers or vessels for dispensing liquids under pressure, a supply-pipe considerably enlarged from its original area as it enters the vessel, substantially as herein set forth.

2. In receivers or vessels for dispensing liquids under pressure, a supply-pipe enlarged at its discharge end from its original area and discharging the liquid into the upper part of the vessel, and a second and smaller pipe open at bottom for escape of the liquid, and to prevent escape of gas until it accumulates sufficiently to displace a greater part of the liquid in the chamber, substantially as described.

3. The pipe D, provided with the opening or slit *b*, of attenuated tapering form and vanishing at top in the substance of the pipe and at bottom merging in the larger opening or mouth of such pipe, substantially as and for the purposes described.

4. In combination, the vessel A and pipe B', discharging at top of said vessel, and the pipe D, receiving liquid at the lower part of the vessel, and having the attenuated gradually-diminishing aperture *b*, substantially as and for the purposes set forth.

255,458. KNOCKDOWN-PACKING-BOX. FRED C. ROCKWELL, Hartford, Conn. Filed Sept. 19, 1881. (Model.)



Claim.—1. In a knockdown box, the sections forming the sides and ends thereof, having respectively suitable openings containing wedges and slitted pins adapted to enter the openings, substantially as and for the purpose set forth.

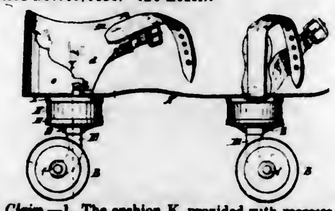
2. A knockdown box consisting of the sections A, having perpendicular grooves *b*, and the openings *c*, with wedges *f*, in combination with the sections B, having perpendicular tongues *a* and slitted pins *g*, substantially as and for the purpose set forth.

255,459. SCREW. CHARLES D. ROGERS, Providence, R. I., assignor to the American Screw Company, same place. Filed Oct. 12, 1881. (No model.)



Claim.—As an improved article of manufacture, a screw or similar article having a countersunk head, a continuous rim surrounding said countersunk portion, and one or more bars crossing said portion and joining the rim, substantially as set forth.

255,460. ROLLER-SKATE. JAMES K. ROSS, Springfield, Ohio. Filed Nov. 10, 1881. (No model.)



Claim.—1. The cushion K, provided with recesses, in combination with plate H, provided with projections S, flange *m*, and foot-plate, the cushion supporting the latter, substantially as and for the purposes specified.

2. The cushion K, provided with recesses, in combination with plate H, provided with projections S, and spider L, provided with projections *n* and the foot-plate, substantially as and for the purpose specified.

3. The cushion K, provided with recesses, in combination with plate H, provided with projections S and flange *m*, and spider L, provided with projections *n* and the foot-plate, substantially as and for the purposes specified.

4. The cushion K, provided with recesses, in combination with plate H, provided with projections S, and spider L, provided with projections *n* and flange *t*, substantially as and for the purposes specified.

5. The cushion K, provided with recesses, in combination with plate H, projections S, and flange *m*, and spider L, provided with projections *n* and flange *t*, substantially as and for the purposes specified.

6. The combination of the cushion K and roller-gear, plate H, cushion K, and foot-plate, and central connecting-rod W, the orifices in the cushion and plate H being made of greater diameter than that of the rod, substantially as and for the purposes specified.

7. The combination of the cushion K and roller-gear, plate H, cushion K, and spider L and foot-plate, and central connecting-rod W, the orifices in plates L and H and in cushion K being of greater diameter than that of the central connecting-rod, substantially as and for the purposes specified.

8. In combination with the rollers B, axle C, yoke E, adapted to receive a roller, and provided with a supporting-plate, the cushion K and foot-plate, and connecting devices, and devices for preventing undue rotation of the roller-gear, substantially as and for the purposes specified.

9. In combination, with the rollers B, axle C, yoke E, adapted to receive a roller, and provided with a supporting-plate, H, the cushion K, provided with recesses and the foot-plate, and projections entering said recesses, substantially as and for the purposes specified.

10. In combination, roller or rollers B, axle C, yoke E, plate H, having projections S and flange *m*, cushion K, formed with recesses *o*, foot-plate A, and central connecting-rod, W, the orifices of plate H and cushion K being of greater diameter than that of rod W, substantially as and for the purposes specified.

11. In combination, the roller or rollers B, axle C, yoke E, plate H, having projections S and flange *m*, cushion K, formed with recesses *o*, plate H, provided with recesses *o*, foot-plate A, and central connecting-rod, W, the orifices of plate H and cushion K being of greater diameter than that of rod W, substantially as and for the purposes specified.

12. The combination of the disk 2, rod 3, shouldered at 4, and angular plate 7, and the elastic resilient disk 6, substantially as and for the purposes specified.

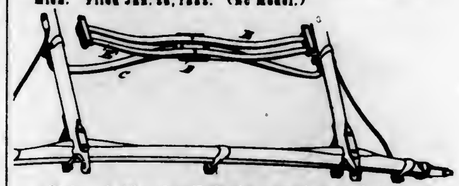
13. The combination of the disk 2, rod 3, shouldered at 4, extension 5, and annular plate 7, having its orifice enlarged outwardly, and the elastic resilient disk 6, substantially as and for the purposes specified.

14. The combination of disk 2, washer 9, shank 3, and disk 6, and washer 9 and plate 7, secured together, substantially as and for the purposes specified.

15. The combination of the disk 2, washer 9, shank 3, and disk 6, and washer 9 and plate 7, screwed onto shank 3, substantially as and for the purposes specified.

16. The combination of the shank and disk 6, compressed between compressing plates or disks or washers having peripheral rounded and curved edges, substantially as and for the purposes specified.

255,461. VEHICLE-SPRING. WILLIAM D. RUMSEY, Detroit, Mich. Filed Jan. 26, 1882. (No model.)



Claim.—1. The plate D, having central recess, *b*, formed by the flanges *a* upon its lower surface, and the side wings, *c*, having recesses formed by the outer flanges and raised central portion, adapted to serve with a single lower spring and duplex upper springs, as and for the purpose specified.

2. The plate D, having recess *b* and recessed wings *c*, flanges *a*, side flanges, and raised center, combined with the upper spring, E and E', the lower springs, C, and securing means, substantially as set forth.

255,462. COMBINED PORTABLE FURNACE AND BOILER. BENJAMIN L. BYRON, Chambersburg, Pa. Filed Dec. 17, 1880. (No model.)



Claim.—1. In a combined portable furnace and boiler having the same sheet of metal forming the top of the furnace and bottom of the boiler, the removable supporting-bars O, secured to the sides or box of the boiler by means of wood-screws, for the purpose of holding in place the bottom of the boiler or top of the furnace, and also holding the wings or sheet metal forming the sides of the furnace, substantially as and for the purposes set forth.

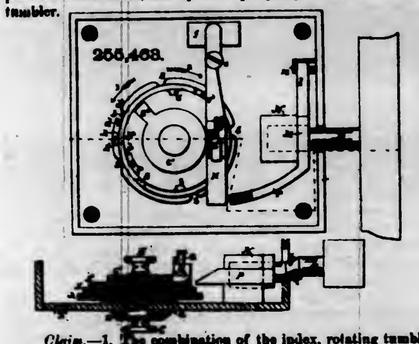
2. In a combined portable furnace and boiler having the same sheet of metal forming the top of the furnace and bottom of the boiler, and the removable supporting-bars O, secured to the sides or box of the boiler by means of wood-screws, for the purpose of holding in place the bottom of the boiler or top of the furnace, and also for holding the wings or sheet metal forming the sides of the furnace, the said sides of the furnace made internally convex and expanding outwardly, whereby the products of combustion are made to pass in a thin sheet under the sides of the boiler, substantially as set forth.

3. In a combined portable furnace and boiler having the same sheet of metal forming the top of the furnace and bottom of the boiler, and the removable supporting-bars O, secured to the sides or box of the boiler by means of wood-screws, for the purpose of holding in place the bottom of the boiler or top of the furnace, and also for holding the wings or sheet metal forming the sides of the furnace, a removable crib having a slat bottom and woven-wire sides, the same being fitted to each end of the two-compartment boiler, substantially in the manner and for the purposes set forth.

255,463. PERMUTATION-LOCK. CHARLES SEYBOLD, Cincinnati, Ohio. Filed May 6, 1881. (Model.)

Brief.—The tumblers rest directly on the arbor and are rigidly secured thereto after the combination is set. The diameters

of the tumblers diminish inward and each is provided with a notch having an inclined face, which allows the pin to mount the incline, pass out of the notch, and upon the periphery of the next smaller tumbler.



Claim.—1. The combination of the index, rotating tumblers provided with notches *b*, each having a side, *d*, beveled obliquely to the plane of the tumbler, and a locking-pin, G, pressed forward by mechanism, substantially as and for the purposes specified.

2. The combination of the index, rotating tumblers provided with notches *b*, each notch having a side, *d*, inclined obliquely to the plane of the tumbler, and swinging piece H, having movable pin G, pressed forward by a suitable device, substantially as and for the purposes specified.

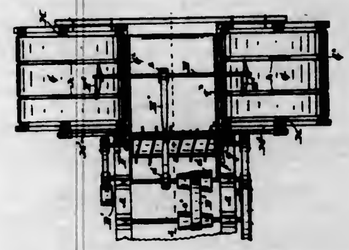
3. The combination of the index, rotating tumblers provided with notches *b*, each having a side, *d*, inclined obliquely to the plane of the tumbler, piece C', and the swinging piece H, having movable pin G, pressed forward by a suitable device, substantially as and for the purposes specified.

4. The combination of the index, arbor B, thumb-knob C, disk *a*, tumblers provided with notches, each having a side, *d*, inclined obliquely to the plane of the tumbler, piece C', swinging piece H, and pin G, actuated by weight G', substantially as and for the purposes set forth.

5. The combination of piece L, swinging lever M, provided with tail-piece *p*, and the swinging piece H, and operating mechanism, substantially as and for the purposes specified.

6. The combination of the tumblers and driving-arbor, the said tumblers resting directly on said arbor and fixed rigidly thereon, substantially as and for the purposes set forth.

255,464. BAND-CUTTING AND FEEDING ATTACHMENT FOR THRASHING-MACHINES. GEORGE W. SHARP, Crawfordsville, Ind. Filed Sept. 27, 1881. (No model.)



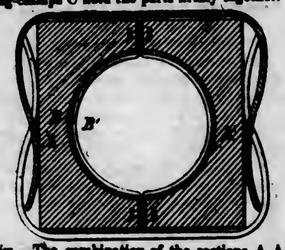
Claim.—1. In a band-cutting attachment for thrashing-machines, the combination, with the table or carrier over which the sheaves pass, of a rotary cutter the head or knife of which runs transversely to the course of the carrier and is spiral in form, whereby its edge is caused to advance to correspond with the advance of the sheave, and mechanism for operating the same, substantially as shown and described, and for the purpose set forth.

2. In a band-cutting attachment for thrashing-machines, a cutter head or knife, E', the cutting-edge of which extends entirely around its shaft and is of gradually-increasing radius, substantially as shown and described, and for the purposes specified.

3. The combination of the grain-carriers G, mechanism for operating the same, the shafts H, which run at a greater speed than said carriers, and fingers *h* on said shafts, which act as crowders and force the sheaves forward on said carrier, substantially as shown and described, and for the purposes specified.

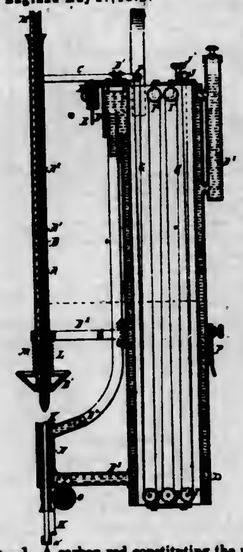
255,465. HOSE-CLAMP. JOHN SHEPHERD and JULIUS V. HELLER, Mason City, Ills. Filed Dec. 13, 1881. (No model.)

Brief.—Two sections, A A', form interiorly a cylindrical orifice adapted to encircle the hose, and exteriorly a rectangle. A gutta-percha or other water-proof lining is fastened to the inner sides of the sections. The rings E, at each end, are intended to form a closer joint there than at the middle or adjacent portions. The spring-clamps C hold the parts firmly together.



Claim.—The combination of the sections A A', linings B', having longitudinal ends *b b* and annular projections E E, and spring-clamps C, substantially as shown, and for the purpose described.

255,466. ELECTRIC LAMP. CHARLES W. SIEMENS, Queen Anne's Gate, Westminster, England. Filed Sept. 16, 1879. Patented in England May 27, 1879.



Claim.—1. A carbon rod constituting the pole of an electric lamp provided at its rear end with a bead of gum or saccharine matter, which becomes carbonized by the heat of the electric arc, so as to form a carbonaceous joint between the end of the rod and the contiguous end of the next one.

2. An iron or steel rod constituting the negative pole of an electric lamp, in combination with a holder containing a cooling-liquid and a spring, combined, as described, with said rod for the purpose of feeding it forward, as and for the purpose described.

3. In an electric lamp, the combination of the carbon pole A, holder B, lever C, thin metal strip or wire G, stretched over insulating-rollers F I, one end of the said wire or metal strip being in electrical connection with the one circuit-terminal, E, and the other end in connection with the other circuit-terminal, P, of the lamp, substantially as herein described with reference to the accompanying drawings.

4. In an electric lamp, the combination of the iron or steel negative pole K, tubular holder N, containing a cooling-liquid, tubular arms D^2 D^4, and lamp-casing D, constituting a water-reservoir, with extended heat-radiating surfaces, operating substantially as herein described.

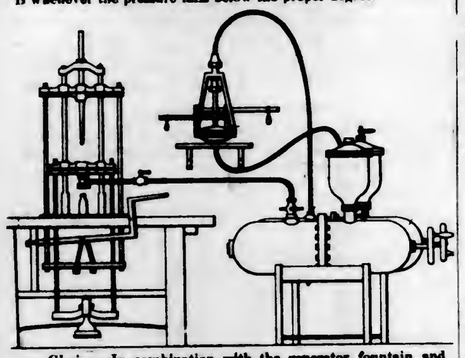
5. In an electric lamp, the combination of the tubular water-

reservoir containing within it the stretched thin metal strip or wire G, constituting a by-pass for the electric current, so that such metal strip or wire is protected from sudden changes of temperature of the surrounding atmosphere.

6. A reciprocating carbon-holder open at the upper end to permit the insertion of additional carbons to follow up the preceding one, in combination with a carbon rod provided at its rear end with matter which becomes carbonized by the heat of the electric arc, whereby the carbon is rendered continuous without interrupting the light.

255,467. PRESSURE-REGULATOR FOR SODA-WATER. GEORGE S. SLOCUM, Newport, R. I., assignor to Alvin D. Puffer & Sons, Boston, Mass. Filed Nov. 6, 1880. Renewed Feb. 9, 1882. (No model.)

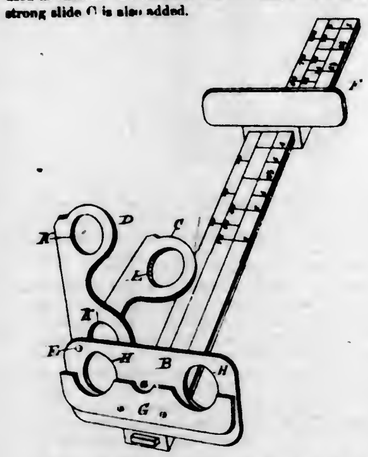
Brief.—B is a closed vessel which contains the water aerated by the gas from the generator A. Between B and A is located the pressure-regulator valve C, automatic in its operation, which opens for the influx of more gas into the closed vessel or fountain B whenever the pressure falls below the proper degree.



Claim.—In combination with the generator, fountain, and connecting-pipe of an aerated-water apparatus, a valve arranged in said pipe and operated by the pressure in said fountain to open and admit a fresh supply of gas when the pressure in said fountain falls below the proper point.

255,468. FOCI-METER. ANDREW L. SMITH, Geneva, N. Y. Filed Aug. 8, 1881. (No model.)

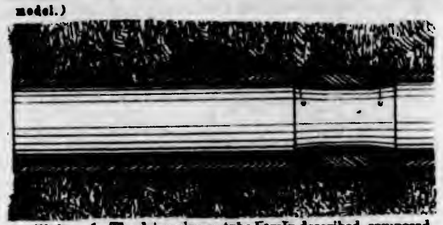
Brief.—To measure the focus of convex lens, the instrument is used as shown. To measure concave lens, slide D is used, and if strong slide C is also added.



Claim.—1. In an instrument for measuring lenses, the combination of the head B, having convex lenses H H, gage A, target F, and holder G, substantially as shown and described.

2. The combination of the head B, gage A, target F, and holder G with the slide-plates C and D, having lenses K L, substantially as shown and described.

255,469. DRIVE-PIPE AND COUPLING FOR OIL AND OTHER WELLS. LEVI SMITH, Titusville, Pa. Filed June 14, 1881. (No model.)



Claim.—1. The drive pipe or tube herein described, composed of screw-threaded sections a a, said sections being strengthened at their ends by bands or rings set into said sections, over the screw-threads cut thereon, as shown and described, so as to be flush or of about the same external diameter as the sections.

2. The drive pipe or tube herein described for sinking oil and other wells, the same consisting of the tube-sections provided with tapering or reduced ends having square screw-threads cut thereon, and the coupling-sections provided with like screw-threads, as set forth.

3. A drive-pipe for sinking oil and other wells, the sections of which are connected by couplings having square screw-threads cut therein, as set forth.

255,470. WATCH-MAKER'S CHUCK. JOHN SPICKERMAN, Jefferson, N. Y. Filed Jan. 13, 1882. (No model.)

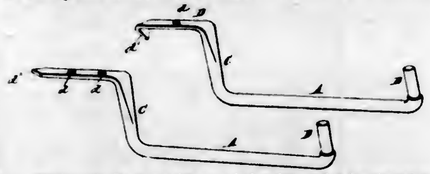


Claim.—1. A chuck for jewelers' lathes, composed of the holder A and clamp B C, arranged and operating substantially as and for the purpose herein specified.

2. The watch-wheel clamp composed of the parts B C, constructed and operating substantially as and for the purpose herein specified.

255,471. CORNICE HOOK OR BRACKET. CHARLES D. STOSS, Brooklyn, N. Y. Filed Jan. 16, 1882. (No model.)

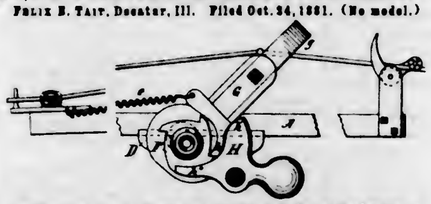
Brief.—The cornice hook or bracket is formed at the upper end into a barb or sharpened hook, and is adapted to be fastened on the top level of the window-frame.



Claim.—1. In a cornice or pole bracket, a flat bearing-plate having a sharpened lug or hook and perforated to receive suitable securing means, adapted to rest upon and be secured to the upper level surface of a window or door frame, as set forth.

2. The cornice-bracket herein described, consisting of the single piece of metal bent to form the body A, hook B, bearing portion C, and the securing-plate D, having hole *d* and pointed lug *d'*, as and for the purposes specified.

255,472. CHECK-ROW ATTACHMENT FOR CORN-PLANTERS. FELIX B. TAIT, Decatur, Ill. Filed Oct. 24, 1881. (No model.)



Claim.—1. In a check-row attachment for corn-planters, a transverse shaft, a four-tooth ratchet-wheel, and weighted locking-pawl in combination with the oscillating arm G, having a tooth

or spur, h, cast onto one of its sides to engage with the teeth of the ratchet-wheel, and the oblong hole i, adapted to pass onto the transverse shaft C, as shown, and for the purpose specified.

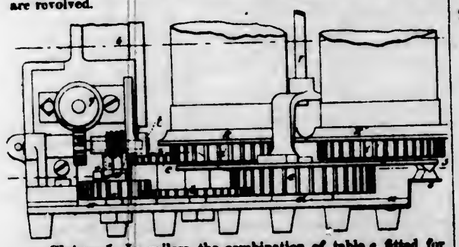
2. The combination, with the transverse shaft C, having the four-tooth ratchet F and oscillating arm G, the weighted locking-pawl H, and bevel-gear I, of the lateral shaft J, supported by and adapted to revolve within the journals *f' f'* of the clip-journal E, and provided with bevel-gear K and crank-disk L, which actuates the seed-slide, substantially as set forth.

3. In a check-row attachment, the combination, with a transverse shaft and mechanism for imparting an intermittent rotary motion thereto, of a clip-journal centrally located on the transverse beam B, having a laterally-projecting arm, E', for the purpose of affording a central bearing and support to the shaft C, and provided with a cap, *g''*, which forms a part of the journal and extends along the top of said arm to the clip, to which it is secured in the manner and for the purpose specified.

4. In a check-row attachment, the combination, with the transverse beam and shaft, of the clip-journal E, having lower projections, *f f*, which pass down on either side of the beam B, and provided with holes or journals *g' g'*, which support the lateral shaft J, substantially in the manner shown, and for the purpose described.

255,473. COILER FOR RAILWAY-HEADS, CARDING-MACHINES, &c. ROGER TATHAM, Rochdale, County of Lancaster, England. Filed Nov. 5, 1880. (No model.) Patented in England Apr. 12, 1879.

Brief.—Two cans are alternately and automatically presented to the machine to receive the sliver as it is delivered therefrom. When brought into proper position to receive such sliver the cans are revolved.



Claim.—1. In coilers, the combination of table c, fitted for rotation on a center, disks *k k'*, provided with gear-wheels *i i'* and driving gear-wheel *h*, and mechanism fitted for giving periodical rotation to table c, whereby the gears of the disks are brought alternately in mesh with the driving-gear, substantially as shown and described, for the purposes specified.

2. In coilers, the combination, with table c, of the mutilated gear u, provided with stud v, continuously-driven gear-wheel t, provided with pin u, driving-wheel o, placed for connection with the mutilated wheel, and gearing connecting the axis of table c with the axis of the mutilated wheel, substantially as shown and described, for operation as specified.

255,474. WELTING BOOTS AND SHOES. ROLLIN D. TUCKER and JOSEPH H. ANTHOINE, Boston, assignors to Sylvester C. Fay, Southborough, Mass. Filed Jan. 23, 1882. (No model.)

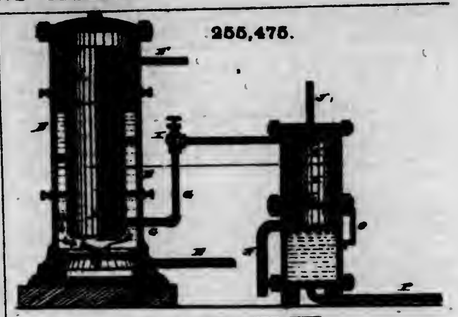


Claim.—The welt C, arranged and combined with the pieces A B substantially in the manner as set forth, such welt being folded and placed between the said pieces and connected thereto by a row of stitches, a, extending through them, the said pieces, and the two laps of the welt, and such laps being subsequently folded over the next adjacent ends of and against the said pieces, and further connected to such pieces by rows of stitches *b b*, arranged with and going through them and the laps, as represented.

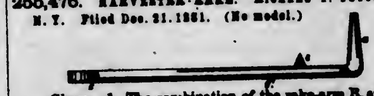
255,475. FEED-WATER HEATER. JOHN H. TURNER, Fort Wayne, Ind. Filed Dec. 22, 1881. (No model.)

Claim.—As an improvement in feed-water heaters and condensers, the combination of the cylindrical tank A, surrounding shell B, tee pipe C E F G, the condensing-tank H, having spray-plate K, and diaphragm L, provided with V-shaped perforations, the overflow-pipe N, and pipe P, all constructed and arranged substantially as set forth.

255,476.



255,476. HARVESTER-RAKE. RICHARD T. TUTTLE, Perry, N. Y. Filed Dec. 21, 1881. (No model.)



Claim.—1. The combination of the rake-arm B, sweep-board A, teeth A, and malleable fastening C, provided with arms *a a*, adapted to be bent around the teeth, substantially as and for the purposes set forth.

2. The combination of the rake-arm B, sweep-board A, teeth A, and malleable fastening C, provided with arms *a a* and spur *c*, substantially as and for the purposes set forth.

255,477. APPARATUS FOR COOLING ROASTED COFFEE. L. A. VERRIER, Chicago, Ill. Filed Feb. 6, 1882. (No model.)

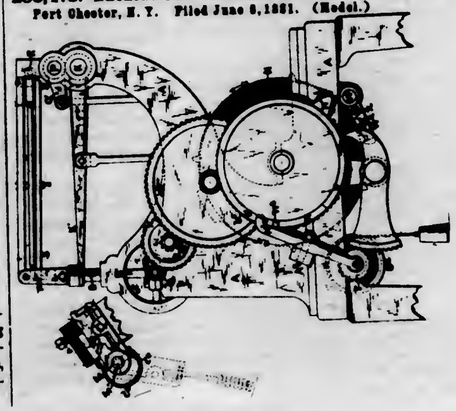


Claim.—1. The combination, in a coffee-cooler, of the rotary wire-gauze cylinder H, removable perforated tube K, provided with hopper K', and having a pin, *e*, and head A, provided with an opening, *d*, substantially as shown and described.

2. The combination, in a coffee-cooler, of the rotary wire-gauze cylinder H, the pan L, inclosing a portion of the said cylinder, and an exhaust-fan having an air-induction tube entering the said pan, substantially as and for the purposes specified.

3. The combination, in a coffee-cooler, of the rotary wire-gauze cylinder H, the pan L, inclosing the lower part of the said cylinder, the perforated feed-tube K, entering the said cylinder, and an exhaust-fan having an induction-pipe entering the pan, substantially as and for the purposes specified.

255,478. MACHINE FOR TAPPING NUTS. WILLIAM B. WARD, Port Chester, N. Y. Filed June 6, 1881. (Model.)



Claim.—1. The combination, as before set forth, of a receiver adapted to hold nut-blanks, one by one in succession, a tap secured to a revolving holder by clamping-jaws while it is threading a series of blanks, one after the other, mechanism for releasing the tap from its revolving holder while the last blank in the series is being threaded, mechanism for clamping such last-named blank with the tap engaged therewith to the receiver, and mechanism for partially rotating the receiver and tap held therein, to enable the fully-threaded nuts to be discharged from the shank end of the tap by gravity.

2. The combination, as before set forth, of the nut-blank receiver, mechanism for partially rotating the same to permit the finished nuts to be discharged from the shank end of the tap while the screw end of the tap is held in said receiver, and mechanism, substantially as described, for returning the receiver and the tap to their normal positions.

3. The combination, as before set forth, of the rotating and longitudinally-reciprocating tap-holder, the nut-blank receiver, and mechanism, substantially as described, for partially rotating said receiver in opposite directions, or vibrating the same at stated periods relatively to the movement of the tap-holder.

4. The combination, as before set forth, of the revolving tap-holder, the partially-rotating nut-blank receiver, and centering-fingers for putting the tap into alignment with said tap-holder when the tap is to be restored to the control of its holding-jaws.

5. The combination, with the nut-blank receiver provided with the jaw L′, of the rod M′, having a cam, *n*, the spring *m*′, for moving said rod in one direction, and the cam N and lever N′, for moving it in the opposite direction, substantially as set forth.

6. The combination, with the sleeve C′, and the tap-spindle D, splined thereto and provided with clamping-jaws to hold a tap, of the axial rod G, having a cam, *g*, the spring *g*′, and the bars Q R S, substantially as and for the purposes specified.

255,479. FIRE-GRATE. FREDERICK W. WEAVER and DANIEL HORTON, Troy, N. Y. Filed Aug. 3, 1881. (No model.)



Claim.—1. In a grate of the character herein specified for use in any form of stove or heater, the section C, having bars *h* located between those of section B and on substantially the same level, the said section C being made movable in the direction of the axis of the grate to vary the width of the openings through the grate, and capable of being rocked either independently of said section B or together therewith, substantially as and for the purposes set forth.

2. In a grate composed of the two movable or operating sections, as specified, the combination, with the shaft of the shaking-section, of the locking-stud *h*, for engagement with the walls of the lower opening in the hollow axle G for the purpose of keying the two sections together, substantially as and for the purpose specified.

3. The combination, with the shaft of the shaking section C, of the lug *b* at one end thereof, for bearing against the walls of a corresponding groove or race formed in the bed-plate, whereby the section C is maintained in its proper place, substantially as shown and described.

4. In a grate composed of two movable sections, having grate-bars located as explained, the combination, with the shaft of the grate, of two lugs, *l l*, forming bearings for the shaking implement, by the use of which the shaking-section can be forced in the direction of the greatest length of the grate for the purpose of varying the width of the openings between the bars of the two parts of the grate, substantially as shown and described.

5. The herein-described shaking and dumping grate, composed of the two principal sections B and C, the bars *g* and *h* of which form the fire-bed, section C being adjustable longitudinally with respect to section B, both sections being capable of being revolved together, and the axle being provided with locking and guiding studs *b* and *h*, substantially as shown and described, and for the purposes set forth.

6. In a fire-grate composed of the two sections, as set forth, the combination, with the shaking-section, of a lug or stop applied thereon for the purpose of limiting the movement of the said shaking-section in one direction, substantially as explained, so that its bars will close up against the bars of the other section on one side only, as set forth.

7. The projection or half-ring applied on the bed-plate and overlapping the axle of the double grate at one end, the parts being arranged and combined substantially as shown.

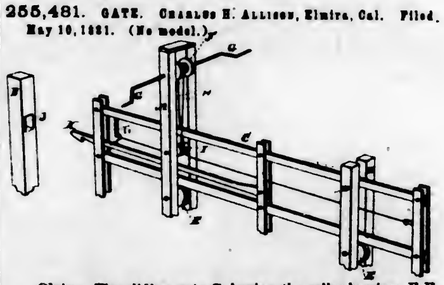
8. The projecting end of the bed-plate, recessed, substantially as shown, to receive the projecting jaws of the shaking implement and to accommodate the side of said implement when turned down for dumping the grate, all substantially as shown and described.

255,480. DEVICE FOR CONNECTING BOOTS OR SHOES. WILLIAM E. WEBB, North Bridgeton, Me. Filed Jan. 16, 1882. (No model.)



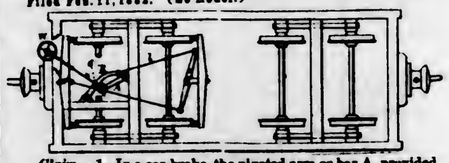
Claim.—A device for connecting a pair of shoes, consisting of a cord or string provided at each end with a bar, *a*, which is tubular a portion of its length and semi-tubular the remainder, and having the cord or string secured to said bars, and adapted to be used substantially as set forth.

255,481. GATE. CHARLES H. ALLISON, Elmira, Cal. Filed May 10, 1881. (No model.)



Claim.—The sliding gate C, having the roller-bearings E E and a latch, K, operating substantially as described, the crank-shaft G, carrying the winding-drum F, and arranged above the gate, the pulleys I I, and the cords H H, passing over the drum F and pulleys I, the one rope connecting with the rear of the gate, and the other with the latch K through an eye or equivalent on the projection L, the whole constructed so as to act in combination, whereby upon opening the gate the latch may first be lifted by the cord before a direct pull is exerted upon the gate.

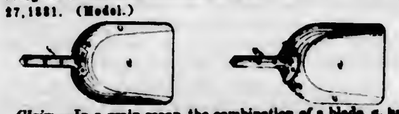
255,482. CAR-BRAKE. ALANSON BAILEY, Toledo, Ohio. Filed Feb. 11, 1882. (No model.)



Claim.—1. In a car-brake, the pivoted arm or bar A, provided with sheave *s* and guide *g*, substantially as shown, for the purposes specified.

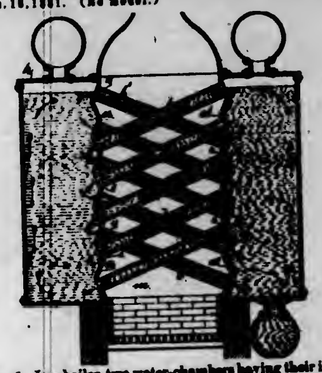
2. In a car-brake, the lever B, in combination with the bar A, sheave *s*, windlass W, and rod and chain *w*, substantially as shown and described, for the purposes specified.

255,483. GRAIN-SCOOP. THOMAS J. BLAKE, Pittsburg, Pa., assignor of one-half to John Rath, same place. Filed Sept. 27, 1881. (Model.)



Claim.—In a grain-scoop, the combination of a blade, *a*, having the high curved back *b*, front strap, *f*, corrugated at *e* and extended laterally to fit the curvature of back *b*, back strap, *g*, corrugated at *i*, fitting the back *b* laterally, and extending only to a point on the back *b* above its junction with blade *a*, said straps *f* and *g* being secured to the scoop by rivets passing through them and the back *b*, and a handle, A, attached to the said straps, substantially as described.

255,484. STEAM-BOILER. JOHN L. ROGERS, Flushing, N. Y. Filed Dec. 16, 1881. (No model.)

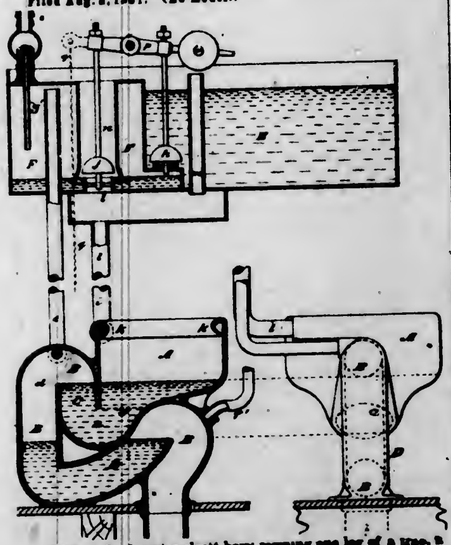


Claim.—1. In a boiler, two water-chambers having their inner plates corrugated, in combination with ranges of tubes inclined in opposite directions, the ends of such tubes passing through the plates at right angles to the surfaces, substantially as set forth.

2. In a boiler, the combination, with two semicircular shells, of the corrugated tube-sheets and the ranges of tubes inclined in opposite directions, with their ends passing through the tube-sheets and being at right angles to the surfaces where such tubes pass through, so as to connect the water-chambers, substantially as set forth.

3. In a boiler, the semi-cylindrical shells and corrugated plates, in combination with the ranges of tubes inclined in opposite directions, and the connecting-plates *f*, substantially as specified.

255,485. WATER-CLOSET. JAMES E. BOYLE, Brooklyn, N. Y. Filed Aug. 8, 1881. (No model.)



Claim.—1. A water-closet bowl forming one leg of a trap, a second trap below the first, an exhaust-pipe leading from the air-space between the two traps and terminating near the top of a flushing-chamber, the said chamber provided with inlet and outlet valves, and a flushing-pipe leading from the outlet-valve thereof to the bowl, all in combination, with suitable means, substantially as hereinbefore set forth, for preventing further retardation of the flow of flushing-water after the bowl has been siphoned by the partial vacuum formed by the descent of water in the flushing-chamber, thereby augmenting the after-wash and insuring the final filling of the bowl.

2. A water-closet bowl formed as one leg of a trap, a second trap below the first, an exhaust-pipe leading from the air-space between the two traps to the upper part of a flushing-chamber, the said chamber provided with inlet and outlet valves, and a flushing-pipe leading from the outlet-valve thereof to the bowl, all in combination with an air-pipe entering said flushing-chamber and opening therein in the lower portion thereof, substantially as and for the purposes set forth.

3. A water-closet bowl formed as one leg of a trap, a second trap below the first, an exhaust-pipe leading from the air-space between the two traps to the upper part of a flushing-chamber, the said chamber provided with inlet and outlet valves, and a flushing-pipe leading from the outlet-valve thereof to the bowl, all in combination with a check-valve opening outwardly from the top of the flushing-chamber, and an air-tube extending into the latter and opening therein about midway of its height, substantially as set forth.

4. A water-closet bowl formed as one leg of a trap, a second trap below the first, an exhaust-pipe leading from the air-space between the two traps to the upper part of a flushing-chamber, the said chamber provided with inlet and outlet valves, and a flushing-pipe leading from the outlet-valve thereof to the bowl, all in combination with a check-valve opening outwardly from the top of the flushing-chamber, and an air-tube extending into the latter and opening therein about midway of its height, substantially as set forth.

5. The combination of bowl A, traps C and D, air-space *d*, pipe *e*, chamber F, pipe *n*, depending into said chamber, valve-seat *i*, projecting up inside the pipe *n*, valve *j*, normally unseated, pipe *l*, leading from said seat *i* to the bowl A, a normally-closed inlet-valve for the chamber F, and means for opening said inlet-valve and closing the valve *j* upon the depression of the water-closet seat, substantially as and for the purposes set forth.

6. The combination of bowl A, traps C and D, air-space *d*, pipe *e*, chamber F, inlet and outlet valves therefor, service-box G, into which said outlet-valve opens, air-pipe *m*, and flushing-pipe *l*, substantially as set forth.

7. The combination of bowl A and traps C and D, molded in one piece, with the belly of the trap C arranged to depend between the two legs of the trap D, and the crown of the latter arranged to one side of the belly of the trap C and close underneath the bowl A, substantially as set forth.

255,486. SEED-COTTON CLEANER. GEORGE E. BRADLEY, Atlanta, Ga., assignor of five-sixths to J. W. Goldsmith, R. J. Lowry, J. H. Goldsmith, T. D. Meador, and C. D. Meador, same place. Filed Jan. 26, 1882. (Model.)



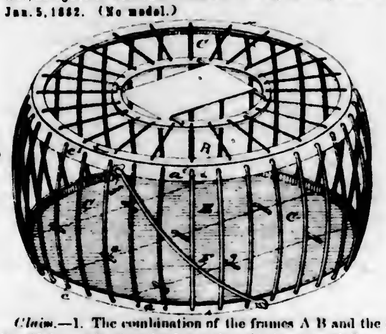
Claim.—In a seed-cotton cleaner, the combination of a beating-chamber having a smooth inner surface and whipping means, a fan-chamber having a suction-fan, and the connecting-flues, substantially as described, and for the purposes set forth.

255,487. MEANS FOR ATTACHING CAPS TO BOTTLES. HENRY BROOKS, New York, N. Y. Filed June 6, 1881. (No model.)



Claim.—The bottle A, provided with recesses below its neck for receiving the ends of the bar B, in combination with said bar, the chain C, and the perforated cap B, substantially as and for the purpose described.

255,488. POLDING COOP. WILLIAM S. BURROUGHS, St. Louis, Mo., assignor of one-half to Amos E. Colby, same place. Filed Jan. 5, 1882. (No model.)



Claim.—1. The combination of the frames A B and the rods C C, said frames having the depressions *a' a'*, substantially as and for the purpose described.

2. The combination of the frames A B, the rods C C, and the brace F, substantially as described.

3. The combination of the frames A B, the rods C C, and the brace F, said frames having the depressions *a a'*, substantially as described.

4. A folding coop, box, cage, or other receptacle consisting of a top and a bottom frame united by a series of rods or bars which, when the receptacle is opened, form the side wall thereof, but which are jointed to the top and bottom frames for the purpose of enabling the receptacle to be closed into a compact form by moving in a spiral direction one frame toward the other until the two frames are closed together.

255,489. ICE-FLOOR FOR COLD STORAGE-HOUSES. HOMER C. CAIN, Cleveland, Ohio. Filed Dec. 22, 1881. (No model.)



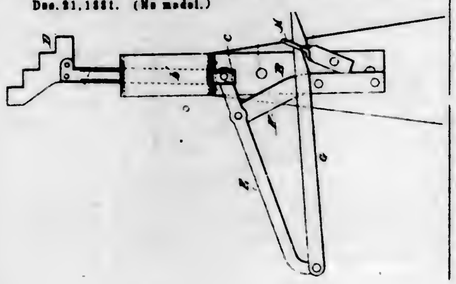
Claim.—1. An ice-floor for cold storage-houses, consisting of plates of metal secured at one edge at or near the lower edge of one joint, and extending diagonally across to the top of the next joist, to which its opposite edge is secured, substantially as set forth.

2. An ice-floor for cold storage-houses, consisting of plates of metal secured at one edge at or near the lower edge of one joist, and then extending diagonally up and over the top of the next one, and then downwardly, and secured at or near the lower edge of the latter, substantially as set forth.

3. An ice-floor for cold storage-houses, consisting of plates of metal secured at or near the lower edge of one joist, and then extending diagonally up and over the next one, and down again till at or near the lower edge of this joist, where they are turned up to form a trough, substantially as and for the purpose shown and described.

4. In an ice-floor for cold storage-houses, the combination of the joist provided with metal bars on the upper edge and the metal plate, substantially as and for the purpose shown and described.

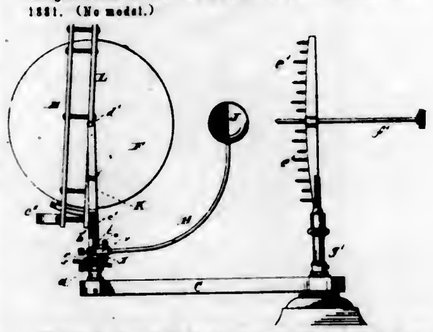
255,490. WAGON-JACK. JAMES CLARK, Cleburne, Tex. Filed Dec. 21, 1881. (No model.)



Claim.—1. In a wagon-jack, the combination, with a standard, of a metallic strip bent to form horizontal guides, the latter being perforated, as described, a stepped plate and shank passing through said guides, and a lever pivoted to the lower end of said shank and provided with a suitable catch device for locking it in position, substantially as described.

2. In a wagon-jack, the combination, with a standard, of a strip, B, bent to form guides *b b'*, the plate D, and shank C, the lever E, fulcrumed on the arm F, and catch H, substantially as described.

255,491. TELLURIAN. THOMAS H. COSTELLO, Chicago, Ill., assignor to A. H. Andrews & Co., same place. Filed Mar. 14, 1881. (No model.)



Claim.—1. A curved wire or rod, *s*, carrying a ball, J, to represent the moon, and provided with a bevel-wheel, I, in combination with a bevel-gear, *r*, supported beneath the globe, for the purpose of keeping the illuminated side of the moon constantly toward the sun, substantially as specified.

2. A curved wire or rod, *s*, carrying a ball to represent the moon, and provided with a cog-wheel, I, a yoke, *r*, and collar *t*, in combination with a bevel-gear, *r*, and sleeve *o*, substantially as and for the purpose specified.

3. The yoke or support K, having its ends slotted and provided with a socket, by which it can be mounted on a fixed standard, within which the shaft which supports the earth rotates, in combination with a horizon-circle, L, provided with pins *d'*, to enter the slots in the ends of the yoke K, substantially as and for the purposes specified.

4. The yoke or support K, provided with slots at its ends, a socket, *b'*, for connecting the same to its standard, and pins *c'*, for the purpose of receiving and holding in position the horizon-circle L, substantially as specified.

5. The sleeve *k*, provided with a plate having a flange, *m*, to receive a screw or pin for the purpose of holding such sleeve in a fixed position, in combination with an arm, C, and shaft D, to receive the globe F, substantially as specified.

6. The reciprocating bar B, supported by a screw or bolt, *f*, passing through a slot, *e*, in the bar, in combination with a wheel provided with a slot, *h*, to receive a pin on such bar B, substantially as and for the purpose specified.

255,492. BARGE-PUMP. JACKSON D. COWAN and ROBERT E. LEE, McKeesport, Pa. Filed May 23, 1881. (No model.)



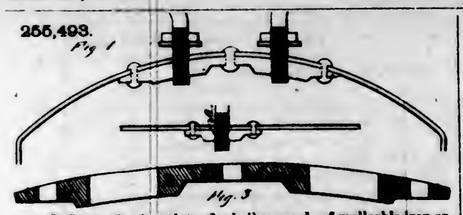
Claim.—1. In a barge-pump, a cylindrical barrel consisting of seamless wrought-iron tubing, in combination with a detachable cast-iron head and wooden spout, substantially as described.

2. The combination specifically of the cylindrical barrel A of iron tubing, the casting B, wooden jaws *b b*, back *c*, and apron *d*, substantially as described.

255,493. BOILER. ALLEN P. CHEQUE, New York, N. Y. Filed Feb. 3, 1882. (No model.)

Claim.—1. A boiler provided at its aperture or apertures with strengthening-plates made of malleable iron or other equivalent ductile material riveted to the boiler-shell, substantially as shown and described.

255,493.



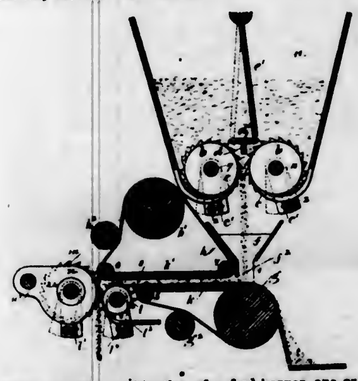
2. Strengthening-plates for boilers, made of malleable iron or other equivalent ductile material, and consisting of a flange surrounding the aperture, and ears or projections provided with riveting-holes, substantially as described.

3. A strengthening-plate for the apertures of boilers, of malleable iron or other equivalent ductile material, having flanges surrounding the apertures, and ears or projections provided with rivet-holes, said ears or projections being of less thickness than the strengthening-flanges.

4. A strengthening-plate for the apertures of boilers, formed of malleable iron or other equivalent ductile material, and provided with ears or projections for rivet-holes, said ears or projections having a horizontal surface on one of their sides, the other side of the plate being curved to conform to the boiler.

5. A boiler-head having the holes for pipe-connections pierced at equal distances from the center thereof and strengthened by a plate of malleable iron or other equivalent ductile material riveted thereto, substantially as described.

255,494. MACHINE FOR OPENING AND FEEDING TOBACCO. CHARLES L. CURTIS and BENJAMIN ADRIANCE, Brooklyn, N. Y. Filed May 18, 1881. (No model.)



Claim.—1. The combination of a feed-hopper, one or more toothed feed-cylinders, stripper-fingers, and vibrators, substantially as set forth.

2. The combination, with the hopper and toothed feed-rollers, of the stationary cutter-fingers and reciprocating cutter-bar, substantially as set forth.

3. The combination, with the hopper, feeding-cylinders, and stationary and vibrating cutters, of the swinging plate *e'*, substantially as set forth.

4. The combination, with the hopper and toothed feeding-cylinder, of the fingers *d* and swinging plate *e'*, substantially as set forth.

5. The combination, in a tobacco-feeding machine, of the hopper, toothed feed-rollers, separating-hopper *f*, with a mouth at one side, and the roller or belt *g*, substantially as set forth.

6. An endless belt, *g*, in combination with the graduating-roller *l*, having pins upon its periphery, substantially as set forth.

7. The endless belts *g* and *h* and their respective rollers and belt-tables, in combination with the graduating-roller *l*, having pins or teeth on its surface, substantially as set forth.

8. The endless belts *g* and *h* and their respective rollers and belt-tables, in combination with the graduating-roller *l*, having pins or teeth on its surface, and the guide-fingers between the belts, substantially as set forth.

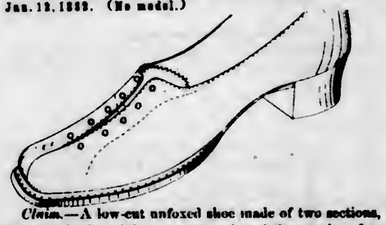
9. The combination, with the belts *g* and *h*, of the graduating-roller *l*, having pins or teeth in its surface, and the notched bridge 8 between the belt *g* and the graduating-roller *l*, substantially as set forth.

10. The combination, with the belts *g* and *h* and baffle-plate *f'*, of the graduating-roller having pins or teeth in its surface, substantially as set forth.

11. The combination, with the belts *g* and *h* and graduating-roller, of the strippers *f'* and vibrator *f'*, substantially as set forth.

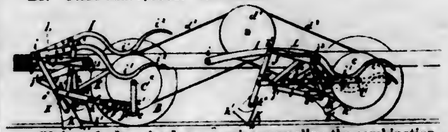
12. The combination, with the graduating-roller, of the serrated or toothed cylinder *m* and eccentric strippers and vibrator, substantially as set forth.

255,495. SHOE. CHAS. B. DANIELS, Haverhill, Mass. Filed Jan. 13, 1882. (No model.)



Claim.—A low-cut unfoxed shoe made of two sections, A B, having the back and front seams, *c c'*, and the opening *c²* over the ball and waist portion of the sole between the toe and the lower part of the instep, all substantially as described.

255,496. CAR-PROPELLER. HENRIAH E. DEPP, Sedalia, Mo. Filed Jan. 7, 1882. (No model.)



Claim.—1. In a land or a marine propeller, the combination of the axles C, having a crank, *c'*, connecting-rod E, knee-joint lever J, lifting-lever I, and link *h*, substantially as and for the purpose set forth.

2. The combination of the connecting-rod E, knee-joint lever J, and a clasp, F, substantially as and for the purpose set forth.

3. The combination, with a wheeled vehicle provided with power-transmitting mechanism, of the axles C, having cranks *c'*, connecting-rods E, knee-joint levers J, and lifting-levers I, links *h*, and feet K, substantially as and for the purpose set forth.

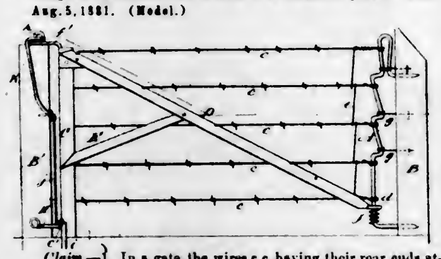
255,497. INCANDESCENT ELECTRIC LAMP. PHILIP DIEHL, Elizabeth, N. J. Filed Jan. 10, 1882. (No model.)



Claim.—1. An electric lamp consisting of a hermetically-closed glass globe, a light-giving part inside of the globe, a secondary coil supported within the globe and placed in circuit with the light-giving part, and a primary coil arranged exterior to said globe and in inductive relation to the secondary coil, substantially as set forth.

2. The combination of a glass globe containing the light-giving part, an extension made integral therewith, and secondary coil supported at the interior of the extension and placed in circuit with the light-giving part, and of a primary coil arranged exterior to the globe and in inductive relation to the secondary coil, substantially as specified.

255,498. GATE. SAMUEL S. DUNNON, Junction City, Kans., assignor to himself and Walter A. Piers, same place. Filed Aug. 5, 1881. (Model.)



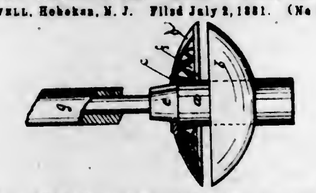
Claim.—1. In a gate, the wires c c, having their rear ends attached to the bent rod A, which is secured to the post B, whereby the wires are self-tightening, substantially as described.

2. The gate herein shown and described, consisting of the wires c c, the bent rod A, the upright C, and the braces D and E, the brace D being supported upon the spring *f*, substantially as and for the purposes set forth.

3. The upright C, provided with the loop *f*, and the projection c', in combination with the yoke H and levers J and K, the short arms of the levers being connected together and to the yoke, substantially as and for the purposes set forth.

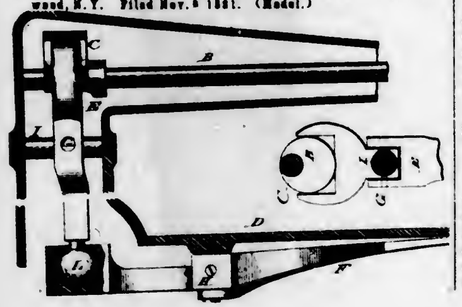
4. The lever K, pivoted to the face of the post B', and having its upper end bent into a hook and adapted to enter the loop *h*, for locking the gate, in combination with hand-lever J, secured to the side of the post, the short arms of the said levers being connected together for opening and locking the gate from either side, substantially as set forth.

255,499. INSECT-GUARD. HARRY W. FLOOD and HENRY KRENWELL, Hoboken, N. J. Filed July 2, 1881. (No model.)



Claim.—An insect guard or protector consisting of the standard *a*, provided with the eccentric portion c and shoulder c, in combination with the vessel *b* and perforated cover *d*, all arranged and operating substantially as shown and described.

255,500. SEWING-MACHINE. CHARLES H. GIFFORD, Norwood, N. Y. Filed Nov. 9 1881. (Model.)



Claim.—1. In a sewing-machine, the vibratory shuttle-lever driver E, having a hinge, G, substantially as herein set forth.

2. In a sewing-machine, the shuttle-lever F, having a hinge, H, substantially as herein set forth.

3. In combination with th shaft B and the cam C in a sewing-machine, the combination of the hinged lever E and hinged lever F with the ball-joint L, substantially as herein set forth.

255,501. CHENILLE FRINGE. JOHN C. GRAHAM, Philadelphia, Pa. Filed Mar. 19, 1881. (Model.)

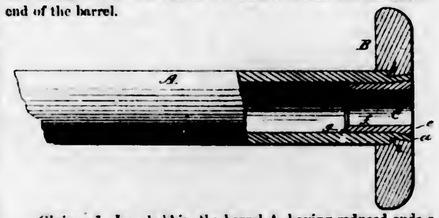
Brief.—A tuft or ball is formed directly upon the free end of each pendant. The fringe-web is woven with a series of warp-threads along one edge which are more tightly or closely woven than the body of the web, and when the web is cut the protrusion of these threads beyond the others forms a tuft, swell, or enlargement upon the end of each pendant.



Claim.—As a new article of manufacture, a fringe composed of a heading and a series of pendants, each pendant having loosely-woven body-threads, and a tuft, swell, or enlargement formed of closely-woven end threads, the body and end threads being woven upon a group of the filling-threads of the heading, substantially as set forth.

255,502. BOBBIN. DAVID HAMBLETON, Nashua, N. H. Filed Jan. 20, 1881. (No model.)

Brief.—An annular shoulder is formed near the end of the barrel of the bobbin and an annular seat in the head thereof. From this seat to the outer face of said head a flaring opening is formed. To adjust the parts the barrel is inserted through the opening in the head, and a bushing having a flaring head of the same contour as the flare of the hole in the head is driven into the hollow end of the barrel.



Claim.—1. In a bobbin, the barrel A, having reduced ends *a* and annular shoulders *b*, in combination with the heads B, formed with annular seats *c* and flaring openings *d*, the greater diameter of the barrel entering the head, so that the shoulders will abut against the seat between the sides of the head, and the bushing C, driven into the ends of the barrel to expand and force the ends thereof against the sides of the flaring openings, substantially as and for the purpose set forth.

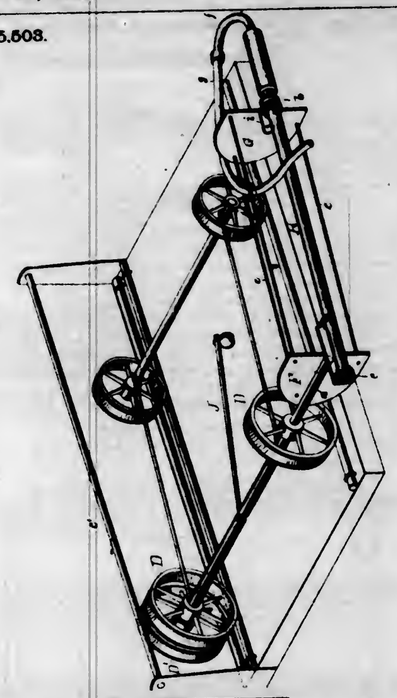
2. The barrel A, having reduced ends *a* and shoulders *b*, in combination with the heads B, formed with seats c and flaring openings *d*, and the bushings C, having flaring head *e*, shank *f*, and bevel *g*, substantially as and for the purpose specified.

3. The combination, with the barrel A, having reduced ends *a* and shoulders *b*, and the bushings C, formed with flaring heads *e*, of the heads B, formed with annular seats c and flaring openings *d*, said openings increasing in diameter from the seats to the outer face or side of the head, substantially as shown, and for the purpose set forth.

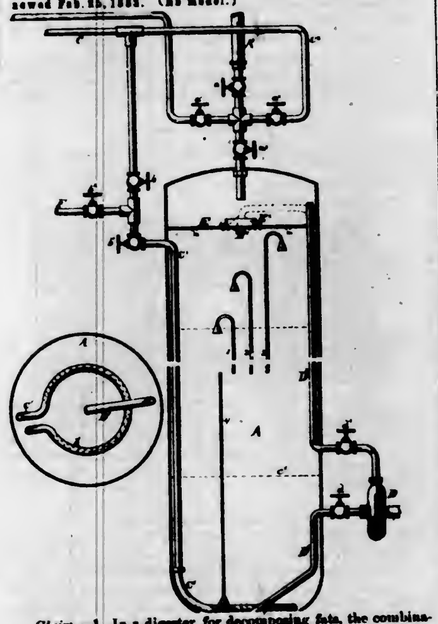
255,503. MACHINE FOR BLOWING WINDOW-GLASS. HENRY HARDS, JOHN PHILLIPS, and EDWARD PHILLIPS, Ottawa, Ill. Filed July 5, 1881. (Model.)

Claim.—In an apparatus for blowing glass, the combination, with a truck having a hollow axle and adapted to move on a track, of an auxiliary wheel, D', and rod *e'*, a rod, *a*, passing through the hollow axle, a weighted lever, J, secured to the rod *a*, plates F G, connected by rods *e* and secured to the rod *a*, blow-pipe having the collars *b* and secured to the plates by clasp c, and hook *i*, substantially as and for the purpose set forth.

255,503.



255,504. APPARATUS FOR DECOMPOSING FATS AND OILS. HENRY HECKEL, Cincinnati, Ohio. Filed May 15, 1880. Reissued Feb. 28, 1882. (No model.)

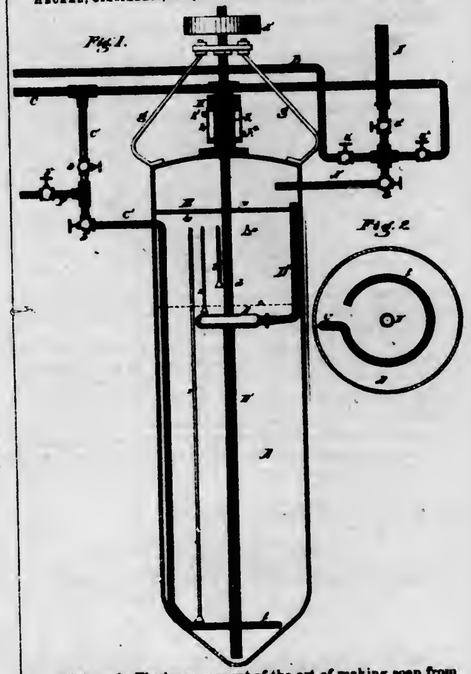


Claim.—1. In a digester for decomposing fats, the combination of a broad flat perforated diaphragm located and operated in the steam-space and above the fat and water line, and the pipes D' D', pump D, perforated steam-pipe C', by which the steam is directed in jets into and caused to flow up through the mass, substantially as before set forth.

2. In combination with a digester for decomposing fats, the pipes A' B C C', valves *a a' a² a²*, pipes C' F, valves *b b' b²*, pump D, and pipes D' D', provided with suitable valves, *d d'*, substantially as and for the purposes set forth.

3. In combination with a digester for decomposing fats, the pipes A' B C C', valves *a a' a² a²*, pipes C' F, valves *b b' b²*, pump D, pipes D' D', provided with suitable valves, and a perforated diaphragm, the latter being located and operating in the steam-space and above the fat and water line, substantially as and for the purposes set forth.

255,505. ART OF MAKING SOAP FROM FATS. HENRY HECKEL, Cincinnati, Ohio. Filed Nov. 17, 1881. (No model.)

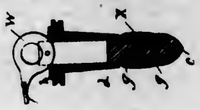


Claim.—1. The improvement of the art of making soap from fats, which consists of first extracting the glycerine from such fats in their neutral condition by the direct action of steam and water under a pressure of about one hundred and fifty pounds, (so that the use of any chemicals is not necessary,) and then saponifying the resultant stock, substantially as before set forth.

2. The improvement of the art of separating glycerine from fats, which consists in heating the fat in admixture with water by the direct action of steam under a pressure of about one hundred and fifty pounds, and showering the heated admixture through a confined volume of steam under pressure, substantially as before set forth.

3. In a digester for decomposing fats, the combination of a perforated diaphragm located and operated in the steam-space and above the fat and water line of the digester, the circulating-pump D, with its suction-pipe D' and discharge-pipe D², all within the digester, and perforated steam-pipe C', by which the steam is directed in jets into and caused to flow up through the mass, substantially as before set forth.

255,506. BOTTLE-STOPPER FASTENER. GEORGE F. HOUPER, Chicago, Ill. Filed Jan. 19, 1882. (No model.)



Claim.—1. The shouldered tapering concaved spool, with central perforation, *a b*, and constructed of one piece, substantially as shown, and for the purpose set forth.

2. The piston composed of shank *e e*, double-shouldered stem *g g*, and button *c*, the shank having a horizontal pin or axis passage, *f f*, and a vertical slot, *d d*, substantially as shown and described.

3. The barrel-shaped hollow centrally-perforated elastic stopper X, substantially as shown and described.

4. The combination of the shouldered tapering perforated spool with the piston provided with the vertical slot *d d* and horizontal pin or axis passage *f f*, stem with concaved button *c*, the one-armed perforated circular lever W, the circular concaved perforated metal plate, and the barrel-shaped hollow perforated rubber stopper X, substantially as and for the purpose stated.

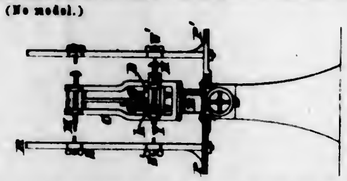
255,507. GRAIN-BIN. EBENEZER HOLMES, Chicago, Ill., assignor of one-half to Edward Baumann and William H. Lotz same place. Filed Jan. 31, 1882. (No model.)



Claim.—1. In grain-bins, and in combination therewith, the ring-shaped step-frames built into the partitions between four adjacent bins, substantially in the manner set forth.

2. In grain-bins, and in combination therewith, the ring-shaped frames *d*, placed in notches between the planks that form the partitions for four adjacent bins in such a manner that each ring forms steps in the corners of the four bins, substantially as set forth.

255,508. MACHINE FOR COPYING SCULPTURE, STATUARY, &c. AUGUSTUS B. HOLSTEIN, Cincinnati, Ohio. Filed Jan. 16, 1882. (No model.)

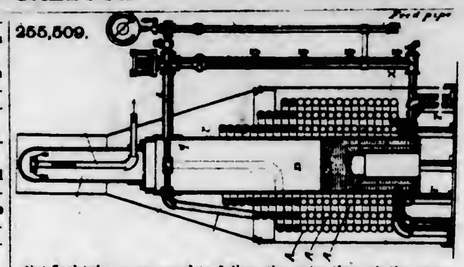


Claim.—1. The combination, in a machine for copying sculpture, of a swivel-frame carrying a pair of coupled vibrating beams armed with a tracer and three cutting-drills, and a pair of standards capable of being simultaneously advanced and retracted, and provided with devices for holding the pattern and copy-blocks, said coupled vibrating beams being disposed one above the other, substantially as herein described.

2. The combination of swivel-frame C *c*, primary swinging beam, D *d*, secondary swinging beam, E *e*, three-part pulley F G G', bands *g g'* J, drill-shafts H H' K, pulleys *h h' h'' h*, tracer M, and coupling-links N N', substantially as herein described.

3. The slide P, carrying a standard, R, slotted vertically at *r* and horizontally at *r'*, and provided with screws S S', for retaining the blocks to said standard, substantially as herein described.

255,509. STEAM-GENERATOR. WILLIAM D. HOSKINS, Oakland, Cal. Filed June 16, 1881. (No model.)

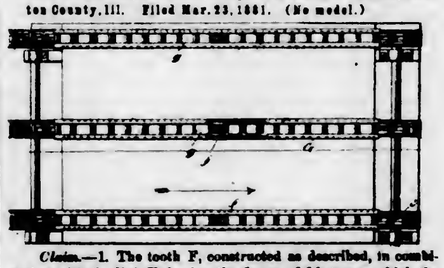


Claim.—1. The upright boiler or cylinder D, surrounded by one or more coils of pipe, A, and having the introverted heat and flame chamber E formed in its lower end and extending up into the body of water, said boiler being supported on water-legs F F, which extend down into the fire, substantially as described.

2. The upright boiler or cylinder D, with its superposed dome or extension J, said boiler having an annular water-space formed in its lower end around an introverted flame and heat chamber, and having one or more coils, A A, surrounding it, said coils being connected at their lower ends with the annular water-space at the lower end of the boilers and at their upper ends with the top of the boiler, in combination with the feed-water pipe *p*, with its radial feed-tubes *r*, arranged to deliver the water through the upper ends of the coils, substantially as described.

3. The method of feeding water to circulating coil-boilers, consisting in conducting the feed-water in a solid stream into the coils through internal imperforate pipes or tubes coiled around the exterior of the boiler, and delivering it at or near the water-level, whereby a circulation is established up through the boiler, while the incoming solid stream forms a counter-current downward in the lower part of the coil, substantially as above described.

255,510. RAKING MECHANISM FOR HARVESTERS. HARMON M. HOOVER, Centralia, assignor to SUSAN A. HOOVER, Clinton County, Ill. Filed Mar. 23, 1881. (No model.)



Claim.—1. The tooth F, constructed as described, in combination with the link E, having the flanges *f f*, between which the tooth is pivoted, said flanges extending both above and below the body of the link and serving to strengthen the same and also to support the tooth laterally, substantially as described.

2. The combination, with the link E, of the tooth F, pivoted to said link, as described, and having its shorter arm curved, so as to fit the bar of the adjoining link when the tooth is in raised position, substantially as described.

255,511. ILLUMINATING-GRATING. THADDEUS HYATT, Brooklyn, N. Y., assignor to Elizabeth A. L. Hyatt, Hyattsville, Md. Filed Mar. 1, 1862. (No model.) Patented in England Aug. 30, 1878.



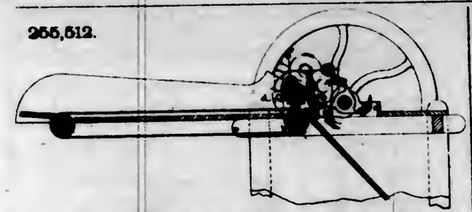
Claim.—1. Concreted illuminating-gratings made by combining soft metal with the concrete and glasses as a foot-surface, substantially as and for the purposes herein set forth and illustrated.

2. Concreted illuminating-gratings made by combining soft-metal ornaments with the concrete and glasses as a foot-surface, substantially as and for the purposes herein set forth and illustrated.

255,512. TOBACCO-SCRAP CUTTER. ANNE INGRAM, Philadelphia, Pa., assignor of one-half to Joseph B. DeYoung, same place. Filed Dec. 17, 1881. (No model.)

Claim.—1. In a tobacco-scrap-cutting machine, a bed-knife having a flat top, in combination with a weighted vertically-movable compressing-roller, which bears thereon to press the tobacco between them, a pair of feed-rollers for supplying the tobacco to said compressing-roller and knife, and a rotary cutter, which finally acts on the tobacco, substantially as and for the purpose set forth.

255,512.



2. An independently-weighted upper feed-roller, a lower feed-roller, and an independently-weighted compressing-roller, in combination with the stationary and rotating cutters, substantially as and for the purpose set forth.

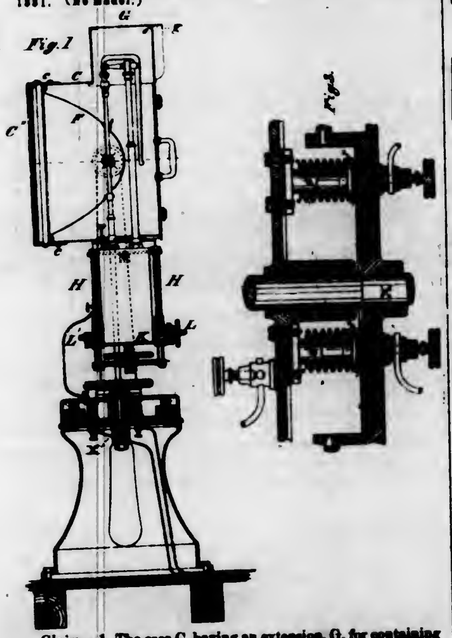
3. In a tobacco-cutting machine, an upper feed-roller, a lower feed-roller, an endless apron, a driving-shaft, two independent sets of gearing, an independently-weighted compressing-roller, and the rotary cutter and bed-knife, combined and operating substantially as and for the purpose set forth.

255,513. COMBINED TOOL. THOMAS D. ISDELL, Bentonville Ark. Filed Feb. 14, 1882. (No model.)



Claim.—In a combined tool, the blade A and pick B, having a common eye, and provided with the projection D, in combination with the handle E, provided with the jaws *e e* and the ring F, all constructed to operate substantially as and for the purpose set forth.

255,514. ADJUSTABLE REFLECTOR FOR ELECTRIC LAMPS. JAMES R. F. KELLY, Brooklyn, assignor to the United States Electric Lighting Company, New York, N. Y. Filed Mar. 6, 1881. (No model.)



Claim.—1. The case C, having an extension, G, for containing the upper portion of an electric-lamp frame, open at the back and provided with a door which leaves, when closed, a space, *g*, for the escape of the heated air from within the case.

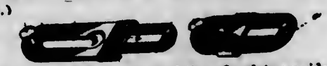
2. The combination of a sheet-metal case, C, and a strengthening-band, *c*, having an internal flange, *f*, to which is attached the rim of a parabolic reflector, F, as shown.

3. The hollow trunnion M, having a translucent indexed plate, in combination with a pin-hole, *n*, in the reflector F, for adjusting the position of the arc, substantially in the manner described.

4. The combination, with case C, of an electric lamp and a frame for supporting the same, provided with stationary base and vertically-adjustable plate for raising and lowering the lamp, as and for the purpose set forth.

5. The combination, with the stationary base and vertically-adjustable plate of the lamp-supporting frame H, of the plate K' and horizontal adjusting mechanism L L', substantially as described.

255,515. CUFF-FASTENER. ROLLIN E. KELSEY and CHARLES H. SHUTTLEWORTH, Corunna, Mich. Filed Aug. 26, 1881. (No model.)



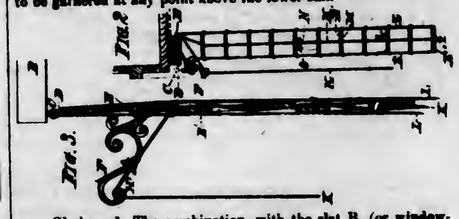
Claim.—1. A cuff-fastener consisting of a plate provided with a stem and stud, and having a slotted eye to engage a shirt-sleeve button or stud, and in connection therewith a slotted spring latch-plate adapted to be closed in over the eye, substantially as described.

2. A cuff-fastener consisting of a plate provided with a slotted eye to engage a shirt-sleeve button or stud, and having a stem provided with a rigidly-attached stud or button elongated in the direction of the length of said slotted eye, and a latch-plate sliding upon said eye-plate and arranged to prevent the disengagement of the sleeve-button therefrom, substantially as described.

3. A cuff-fastener consisting of a plate having a stem and a stud and a slotted eye, in combination with a sliding slotted spring latch-plate and a retaining-flange, *a*, substantially as described.

255,516. INSIDE BLIND. JOHN KRIEBEL, Lockport, N. Y. Filed Jan. 13, 1882. (No model.)

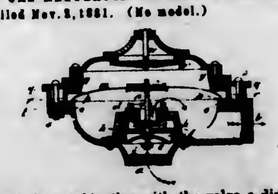
Brief.—The upper slat is hung by the inner edge to the window-frame, and is provided with screw-eyes near each end and a bracket in the center, through and over which the operating-cords pass. Loops in the cords for the insertion of a pin enables the slats to be gathered at any point above the lower slat.



Claim.—1. The combination, with the slat B, (or window-frame,) having the screw-eyes C, of the slat E, having the screw-eyes D and I I', bracket F, with rollers G G' H H', slats E', tapes L L', and cords M, K, and K', the whole being constructed for operation substantially as and for the object specified.

2. In Venetian blinds, the combination, with the slats E', of the cords K K', said cords being provided with loops N, adapted for reception of pins or analogous means, O, substantially as described, whereby the said slats may be gathered at any point above the lower slat, as and for the object stated.

255,517. GAS-REGULATOR. GRIFFIN B. LACEY, New York, N. Y. Filed Nov. 2, 1881. (No model.)



Claim.—1. In combination with the valve *c*, diaphragm *m*, inlet *a*, and outlet *b*, each constructed as described, the auxiliary valve *e* and its valve-seat *f*, said valve *e* being arranged to slide vertically upon the rod *i*, and its valve-seat *f* being provided with the perforations *h*, as and for the purpose set forth.

2. The combination of the lodge *o*, ring *p*, and annular plate *q*, provided with the projections *r*, for the purpose of clamping the diaphragm, as shown and described.

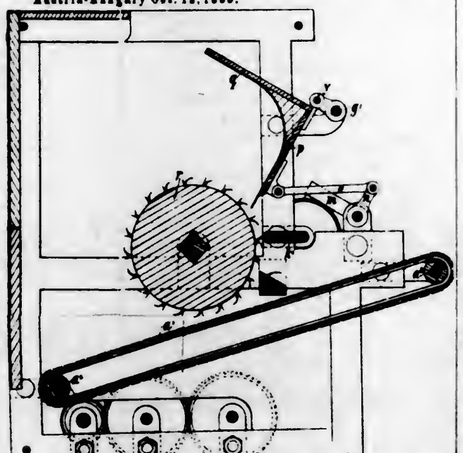
255,518. SPINDLE-STEP RAIL FOR SPINNING-FRAMES. FRANCIS LECLERC, Philadelphia, Pa. Filed Dec. 21, 1881. (No model.)

Brief.—The step-rail is provided with yielding spring bearings, which, when in engagement with a set-screw, clasp the step rigidly, thus permitting the vertical adjustment of said step.



Claim.—A spindle-step rail, A, provided with a clasping-bearing, B, which is cast with the rail, said bearing having a rigid connection with the rail, as at *c*, and being free from said rail at all other points, substantially as and for the purpose described.

255,519. FEEDING DEVICE FOR CARDING-ENGINES. JEAN TH. LEMAIRE, Hodimont-Verviers, Belgium. Filed Oct. 3, 1880. (Model.) Patented in Belgium June 9, 1879, in France Aug. 28, 1879, and Aug. 12, 1880, in Germany June 3, 1880, and in Austria-Hungary Oct. 13, 1880.



Claim.—1. The collecting-cylinder *r*, provided with straight and crooked hooks or teeth, gear-wheel *u*, worm *t'*, shaft *t*, bevel-gear wheels *t* and *s*, and shaft *d*, and driving-shaft *a*, in combination with the combing apparatus *p q*, with drawing-comb *k'* and endless band *a'*, and means for operating the same, the whole arranged to operate substantially in the manner and for the purpose herein described.

2. The combing apparatus *p q*, in combination with levers *y* and *x*, connecting-rod *w*, and wheel *v*, shaft *g*, the rod *o*, levers *m* and *n*, connecting-rod *l*, gear-wheels *f*, *e*, and *c*, and driving-shaft *a*, the whole being arranged and combined to operate in the manner and for the purpose substantially as set forth.

3. In combination with the withdrawing-comb *k'*, the gear-wheels *h* and *i*, the connecting-rod *h*, and gear-wheels *e* and *c*, shaft *d*, and driving-shaft *a*, substantially in the manner and for the purpose described.

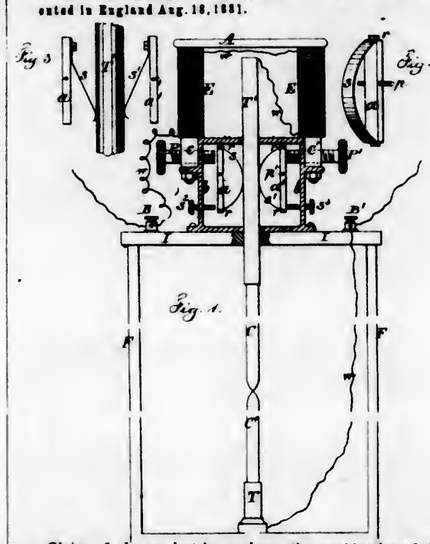
255,520. TOP-PROP FOR VEHICLES. WILLIAM LEPPER, Cleveland, Ohio. Filed Jan. 4, 1882. (No model.)



Claim.—1. In a vehicle-top support, the shell B, having flange *f'* and the removable cap C, provided with slots *c'*, whereby the cushion may be secured to the shell, as shown and described.

2. In a support for vehicle-tops, the combination, with the cushion D, arm A, and shell B, having flange *b'*, of the removable cap C, having slots *c'*, flange *c'*, and groove *b* and lugs *b'*, as shown and described.

255,521. ELECTRIC LAMP. CHARLES LEVER, Bowdon, County of Chester, England. Filed Aug. 18, 1881. (No model.) Patented in England Aug. 18, 1881.



Claim.—1. In an electric-arc lamp, the combination of the eccentrically-pivoted armatures *a a'*, the springs *s s'*, and the electro-magnet E E, and circuit-connections to the carbon points, substantially as and for the purposes set forth.

2. In an electric-arc lamp, the electro-magnet in circuit with the carbons and the polarized adjustable stop-screws P P', inserted through the poles, in combination with armatures and with means for moving the carbon rod to adjust and regulate the distance between the carbon points, substantially as set forth.

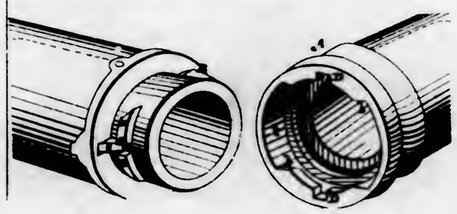
3. In an electric-arc lamp, the electro-magnet E E, the eccentrically-pivoted armatures *a a'*, the springs *s s'*, and the polarized screws P P', substantially as and for the purposes specified.

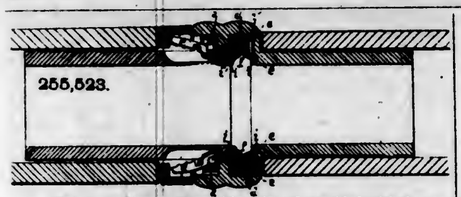
255,522. VALVE FOR OIL AND WATER WELLS. ALDEN J. LEWIS, Bradford, Pa. Filed July 6, 1881. (Model.)



Claim.—In a valve, the combination, with a pipe or tube having a series of perforations in its sides and arranged to constitute the body of the valve and the conduit for the upward flow of water, of an expansible tube encircling the perforated tube or pipe, and packing material encircling the expansible tube, substantially as set forth.

255,523. PIPE-COUPLING. STAFFORD LIGHTBURN, Jr., San Francisco, Cal., assignor of one-half to J. R. McKenzie, same place. Filed June 27, 1881. (Model.)





Claim.—1. The elastic packing-ring *f*, provided with flanges *i i* and *i' i'*, in combination with the coupling A, provided with recesses *c c*, substantially as described, and for the purpose set forth.

2. In combination with a coupling having the male portion provided with lugs B and locking latches or levers C, and a female portion having the corresponding groove or channel, *a*, and the notches D, the device E, having the tapering ends for compressing the latches simultaneously and releasing them from the notches, substantially as herein described.

3. The cap J, with the lugs Q, and spring-latches *r* to fit the groove *a* and the notches D of the coupling A, in combination with the cap M, fitting over the cap J and having the inclined grooves *o*, into which the ends of the levers *r* enter, and the stem or spindle I, provided with the springs *s*, by which it and the cap M are held or returned to a position which will allow the latches *r* to operate, substantially as herein described.

4. The end A of a hose or a pipe coupling having the groove or channel *a*, with projections *b*, beveled at each end, and the notches D, as shown, in combination with the main portion of the coupling, having the lugs B, with the triangular or inclined ends, and the spring locking-levers C, substantially as and for the purpose set forth.

255,524. ELECTRIC GAS-LIGHTER. ALEXANDER MASON and WILLIAM J. GARDS, Washington, D. C. Filed Feb. 20, 1882. (No model.)



Claim.—1. In an electric gas-lighter, the combination of two movable electrodes and a cock, whereby both electrodes are moved positively in relation to each other.

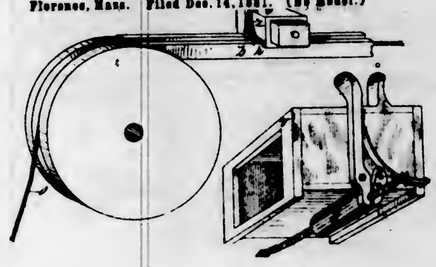
2. In an electric gas-lighter, the combination of a burner and two movable electrodes arranged, substantially as described, to pass each other in opposite directions in the gas-jet and then fall back on opposite sides of the burner, away from the flame.

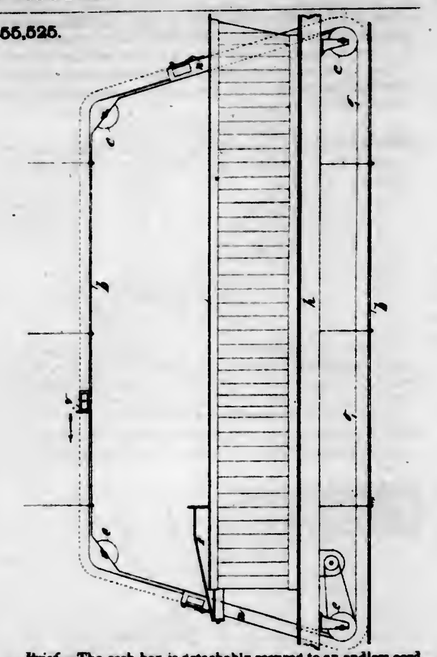
3. In an electric gas-lighter, the combination of a burner and two electrodes arranged to pass each other in opposite directions and fall back on opposite sides of the burner.

4. In an electric gas-lighter, the combination of two electrodes and connecting devices, substantially as shown, whereby the electrodes are moved positively in opposite directions in respect to each other.

5. The combination of the burner, the cock, the electrode attached rigidly to the cock, and the second electrode, sustained independently of the cock and connected therewith, substantially as shown, to turn in the opposite direction.

255,525. AUTOMATIC CASH-BOX SYSTEM. JOSEPH C. MARTIN, Burlington, Vt., assignor of one-half to Luther A. Martin, Florence, Mass. Filed Dec. 14, 1881. (No model.)



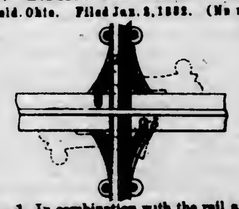


Brief.—The cash-box is detachably secured to an endless cord by a spring-actuated clamping-lever. The box rests on a grooved track, and is stopped by coming in contact with projections on the under side of a cover of a trough fixed to the track, into which the cash-box enters. The box is unclamped from the endless cord by the upper end of the clamping-lever and a projection on the box bearing against two spring-guides on the under side of the trough-cover. Raising the cover of the trough removes the spring-guides and the stops on the trough-cover from the cash-box, which is then engaged with and carried forward by the endless cord.

Claim.—1. In an automatic cash-box system, the track *b*, the endless cord *o*, the cash-box *v*, and appliances, substantially as described, for attaching said box to said endless cord and for automatically detaching said box therefrom, and a suitable motor to give a motion to said cord, all combined and operating substantially as set forth.

2. In combination, the grooved track *b*, the endless cord *o*, the hinged cover *e*, having the curved guards *w*, and the stops *f* thereon, the cash-box *v*, having the arm *r*, and the spring-actuated clamping-lever thereon, and a suitable motor, substantially as set forth.

255,526. ROSETTE FOR FENCES. SAMUEL W. MARTIN, Springfield, Ohio. Filed Jan. 3, 1882. (No model.)



Claim.—1. In combination with the rail and the picket sustained directly thereby, the detachable rosette provided with the oppositely-arranged lips to engage with the rail, and with the open recesses to receive the picket.

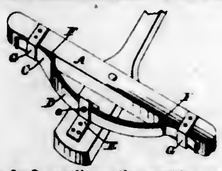
2. As a new article of manufacture, a rosette having its ends provided with open recesses in the rear side and its edges provided with two lips extending upward and downward, respectively.

3. A rosette for fences, provided on the back at opposite sides with two lips, one extended upward and the other downward, as described, whereby the rosette is adapted for attachment to the rail by a rotary movement.

4. The rosette provided with the lips *a* and *b*, as described, and also with the supplemental malleable lip *c*, whereby the device may be locked fast after being secured by the lips *a* and *b*.

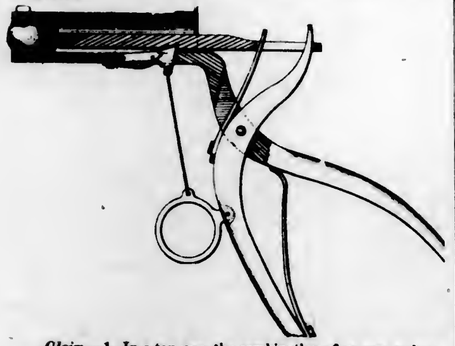
5. A rosette provided with locking-lips, substantially such as described and shown, adapted to engage with the fence-rail by a rotary motion of the rosette.

255,527. DRAFT-EQUALIZER. STEPHEN MARVIN and WILLIAM T. MARVIN, Burnettsville, Ind. Filed Dec. 9, 1881. (No model.)



Claim.—In draft-equalizers, the combination of the double-tree A, stay-spring C, re-enforcing spring D, center plate, E, bearings F F, and staples G G, substantially as and for the purposes described.

255,528. TOY GUN. CHRISTOPHER C. P. MCCORD and CHARLES D. CHURCHILL, Walnut Grove, Ark. Filed Jan. 11, 1882. (No model.)



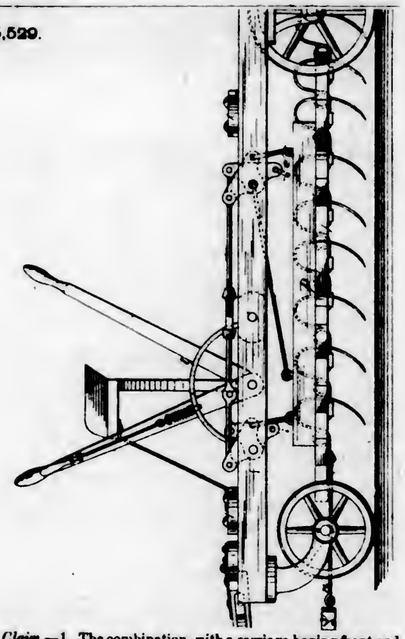
Claim.—1. In a toy gun, the combination of an arm or handle carrying at its upper end a cylinder or barrel, a follower sliding in said barrel and having at its rear end a longitudinal slot, a lever pivoted to said arm or handle and having its upper end adjusted in said longitudinal slot, and a spring attached to said lever and bearing with a forward pressure against said follower, substantially as set forth.

2. In a toy gun, the combination of an arm or handle carrying at its upper end a cylinder or barrel, a follower sliding in said barrel and having at its rear end a longitudinal slot, a lever pivoted to said arm or handle and having its upper end adjusted in said longitudinal slot, a spring attached to said lever and bearing with a forward pressure against said follower, and a spring suitably arranged to force the ends of said arm or handle and said lever automatically apart, substantially as set forth.

3. In a toy gun, the combination of an arm or handle carrying at its upper end a cylinder or barrel, a follower sliding in said barrel and having at its rear end a longitudinal slot, a lever pivoted to said arm or handle and having its upper end adjusted in said longitudinal slot, a spring attached to said lever and bearing with a forward pressure against said follower, a pivoted latch adapted to engage a notch in said follower, and mechanism for operating said latch, substantially as set forth.

4. In a toy gun, the combination of an arm or handle carrying at its upper end a cylinder or barrel, a follower sliding in said barrel and having at its rear end a longitudinal slot, a lever pivoted to said arm or handle and having its upper end adjusted in said longitudinal slot, a spring attached to said lever and bearing with a forward pressure against said follower, a pivoted latch adapted to engage a notch in said follower, mechanism for operating said latch, and a spring suitably arranged to force the ends of said arm or handle and said lever automatically apart, substantially as set forth.

255,529. MOUNTED HARROW. AARON J. MELLIN, Pittsburg, Pa. Filed Oct. 31, 1881. (No model.)

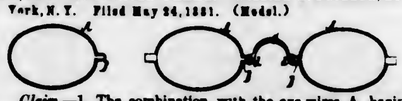


Claim.—1. The combination, with a carriage having front and rear wheels, of a sectional floating harrow arranged between the wheels thereof and suspended entirely by loose link-connections, whereby the harrow may vibrate in all directions independently of the carriage, draft-bars attached directly to the floating harrow, and an independent guide-tongue attached to the carriage above and independently of the draft-bar, substantially as and for the purpose specified.

2. The combination of a carriage and a flexible or sectional floating harrow arranged between the wheels thereof and suspended therefrom entirely by loose link-connections, and pull-links or link-rods, which extend from the harrow in front of its transverse center to points on the carriage in rear of the transverse center thereof, substantially as and for the purpose specified.

3. The combination, with the carriage and floating flexible harrow arranged between the wheels thereof and suspended by loose connections or links *s*, of the elbow-levers pivoted on the carriage, the buckle-rod E, for coupling the elbow-levers, and the pull-link or link-rods M, for transmitting power from the floating harrow to the carriage, the elements relatively arranged and adapted to operate substantially as and for the purpose specified.

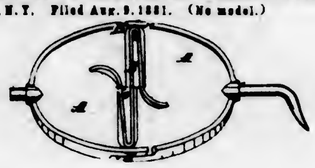
255,530. SPECTACLE-FRAME. WILLIAM H. PECKHAM, New York, N. Y. Filed May 24, 1881. (Model.)



Claim.—1. The combination, with the eye-wires A, having the spring-loops B, of the nose-piece C, attached directly to the spring-loops at its opposite ends in such a manner as to clamp the eye-wires to the lenses, substantially as described.

2. The combination, with the eye-wires A, having the spring-loops B, of the nose-piece formed with the sockets *d* at its opposite ends, whereby it is attached to the spring-loops, substantially as and for the purpose described.

255,531. STOVE-PIPE DAMPER. CHARLES W. PIERCE, Oak Hill, N. Y. Filed Aug. 9, 1881. (No model.)

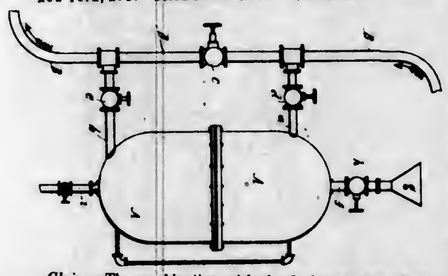


Brief.—The damper-plate is bisected and the halves are connected by a spring, which presses them against the pipe when the damper is in position.

Claim.—1. The improved damper herein described, the plate of which is made in two separate parts, A, and united by the spring B, having its ends connected to said plates, respectively, substantially as described.

2. The combination of the circumferential overlapping lugs E with the plate of a stove-pipe damper, made in two separate parts, A, and united by a spring, B, having its ends, respectively, connected to said parts, substantially as described.

255,532. APPARATUS FOR FEEDING SCALING COMPOUNDS TO STEAM-BOILERS. HENRY PINDAR and GEORGE W. CLARK, New York, N. Y. Filed Jan. 18, 1882. (No model.)



Claim.—The combination, with the feed-water pipe B of a steam-boiler and a device for forcing the water through it, of the chambered cylinder A, provided with funnel *g* and cut-off valve A, and inlet-pipe *c*, having valve *d*, and outlet-pipe *b*, having valve *e*, attached to feed-pipe B, all arranged, applied, and operating substantially as and for the purposes as herein shown and set forth.

255,533. PICK. REINHARD R. RAY, Modio, Cal. Filed Dec. 7, 1881. (No model.)



Claim.—1. The pick-stock A, the ends of which have the tongues *a* and the under sides, *m*, inclined, terminating in grooves *b*, with lips *c*, in combination with the points C, having sockets *h* and shoulders *g*, inclined upper sides, *n*, tongue *e*, and shoulders *f*, said stock and points being fitted together and secured by screw-bolts E E, substantially as and for the purpose herein described.

2. In a pick the points of which are independent of the stock and adapted to be secured thereto by screw-bolts E E, as herein described, the groove F, formed in the sides of said points, whereby said points may be used as wrenches to remove said screw-bolts, substantially as and for the purpose herein described.

255,534. ARTIFICIAL OR TOY EASTER EGG. ADDISON A. REEVE, Boston, Mass. Filed Feb. 4, 1882. (No model.)



Claim.—1. As a new article of manufacture, an artificial Easter-egg composed of the frame or shell A and covering B, substantially as specified.

2. In a toy Easter-egg, the combination of the frame or shell A, covering B, and bird C, substantially as shown and described.

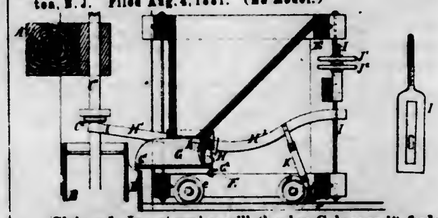
255,535. HEATING BATH-TUBS BY STEAM. JAMES REILLY, Brooklyn, N. Y. Filed Nov. 3, 1881. (No model.)



Brief.—The water is heated by contact with the steam-heater D, located within the tub. The tube E enables the water to circulate through the heater.

Claim.—The combination, with a bath-tub, of surface steam-heating pipes placed within the tub, arranged and operating substantially as herein set forth.

255,536. STAMPING-MILL. HERMANN O. REINHARDT, Arlington, N. J. Filed Aug. 4, 1881. (No model.)



Claim.—1. In a stamping-mill, the shoe G, hopper K', feeder H, spring K, and the stamper-rod C', provided with the collar C', combined and arranged as and for the purposes herein specified.

2. In a stamping-mill, a reciprocating feeder, in combination with the shoe G, having a beveled rise, G', at the front, as herein specified.

3. In a stamping-mill, a reciprocating feeder, H, mechanism C', to actuate it in one direction, and a spring or analogous gentle force to actuate it in the other direction, in combination with the movable rod I, provided with suitable adjusting means, J' J', arranged to allow the adjustment of the feed, as herein specified.

4. The combination, with a suitable mortar, of one or more stampers and operating means therefor, a reciprocating feeder, means for actuating the feeder backward by the mechanism and forward by a spring or analogous gentle force, means for limiting the travel of the feeder forward, and means for automatically limiting the travel of the feeder backward by the quantity of material in the mortar, all substantially as and for the purposes herein specified.

255,537. APPARATUS FOR ROASTING ORES. HERMANN O. REINHARDT, Arlington, N. J. Filed Aug. 4, 1881. (No model.)

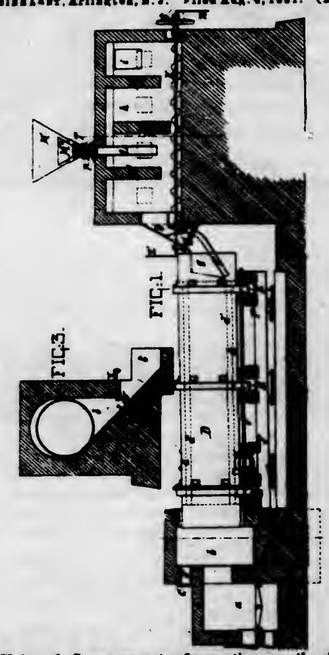


FIG. 1.

FIG. 3.

Claim.—1. In an apparatus for roasting ores, the chamber A having partial partitions H' H', and means for supplying fresh ore and allowing the escape of the gases from the roaster, mounted

higher than the roaster and connected by one or more inclined passages, in combination with the revolving roaster D, furnace *a*, and stack J, as herein specified.

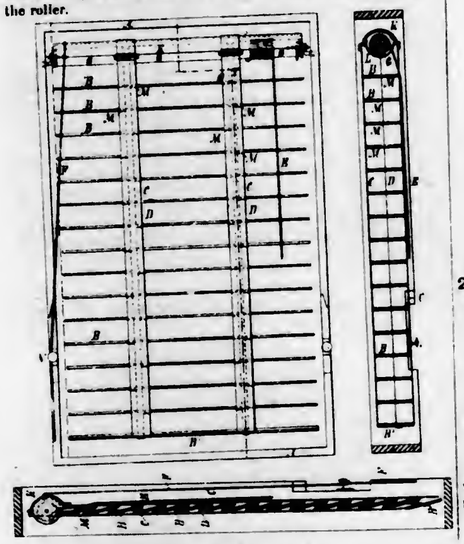
2. In an apparatus for roasting ores, the chamber A, having the partial partitions H' H², with liberal spaces to allow the settling of the dust, in combination with the feeding means K, arranged in the contracted base thereof, and with the duplex inclined passage *g g'*, revolving roaster D, furnace *a*, and stack J, as herein specified.

3. The transverse feeding-screw P and its inclosing pipe M and one or more feed-hoppers thereon, in combination with the dust-chamber A, having partial partitions H' H², and with the feeding-screw K in the base of said chamber, as herein specified.

4. The descending pipe L, in combination with the dust-chamber A, having partial partitions H' H², bottom screw, K, top screw, P', connections G, and revolving roaster D, as herein specified.

255,538. INSIDE BLIND. FRANZ RUHR, Teplitz, Austria. Filed Sept. 3, 1881. (No model.) Patented in Belgium Aug. 31, 1881, in Italy Aug. 31, 1881, and in Germany Oct. 13, 1881.

Brief.—The cover to the roller is fulcrumed eccentrically, and the bands to which the edges of the slats are fastened are attached to the cover, while the central band is attached to and winds upon the roller.



Claim.—1. In a Venetian blind, the oscillating cover K, the edges of which are of unequal distance from the fulcrum, in combination with the broad bands C C, attached to the edges of said cover K, and connected by strings M M, supporting the slats B, and the slats B B, in the manner and for the purpose described.

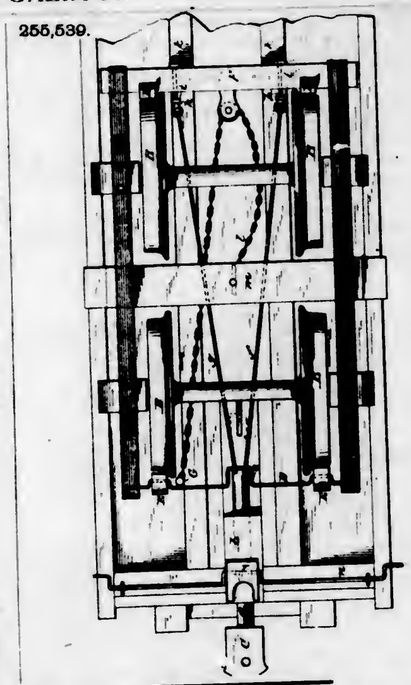
2. The combination, in a Venetian blind, of the arbor G, with bands D D, passing through the slats and attached to the last slat, B', the oscillating cover K, with broad bands C C and strings M M, supporting the slats B, and the cords F and E, the whole being arranged to operate in the manner and for the purpose set forth.

255,539. CAR-BRAKE. JOHN G. SCHILLER, Youngstown, Ohio. Filed Feb. 14, 1882. (No model.)

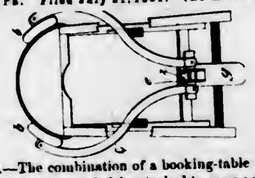
Claim.—1. The draw-head C and crank-rod D, having connected thereto the brake-shoes E, in combination with the timber F, brake-shoes H, and the rods *g f*, connected to said timber, substantially as and for the purpose specified.

2. The combination, with the timber F, carrying brake-shoes H, the chain *l*, and rods *f g*, of the draw-head C, crank-rod D, and the rod *n*, carrying yoke I, combined and arranged to operate substantially as and for the purpose specified.

3. The draw-head C, crank-rod D, carrying brake-shoes E, and the yoke I, in combination with the timber F, brake-shoes H, and rods *f g*, said rods being connected to said timber by eyebolts *k* and the gage-nuts *i k*, substantially as and for the purpose specified.

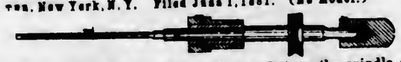


255,540. TOBACCO-BOOKING TABLE. CHARLES SEBL, Philadelphia, Pa. Filed July 21, 1881. (No model.)



Claim.—The combination of a booking-table for leaf-tobacco with movable holding-pads *b b*, attached to arms *c c*, and these connecting with a treadle, *g*, all substantially as set forth.

255,541. BEARING FOR MILL-SPINDLES. GEORGE F. SWAIN, New York, N.Y. Filed June 1, 1881. (No model.)



Claim.—1. As a new article of manufacture, the spindle or journal bearing B C, formed of rough metallic castings and lined with the anti-friction bushing D, said bushing being formed of a mixture of about one part of ground or crushed mica, one part of ground plumbago, and two parts of a fibrous binding material such as described, together with liquid silicate of soda or silicate of potash sufficient to form the mass into a stiff paste, of which the said bushing D is formed, as described and set forth.

2. The bushing D of a spindle or journal bearing, formed of the plastic anti-friction material, as described, indurated in the surrounding casing B C and provided with air grooves or passages *d*, so as to permit a current of air to flow continuously through the bearing by the side of the journal or spindle, substantially as described and set forth.

3. A journal-bearing or bushing material formed of a mixture of about one part of ground or crushed mica, one part of ground plumbago, and two parts of a fibrous binding material such as described, together with liquid silicate of soda or silicate of potash sufficient to form the mass into a stiff paste, of which the said bearing or bushing is formed, as described and set forth.

255,542. CARTRIDGE. THOMAS SHAW, Philadelphia, Pa. Filed Nov. 29, 1881. (No model.)

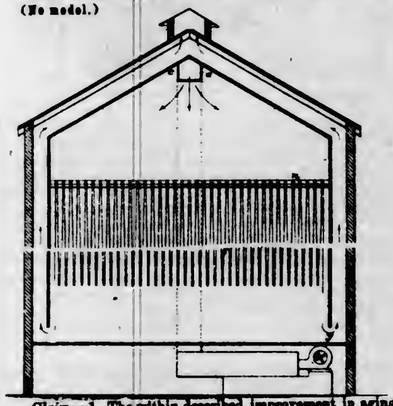
255,542



Claim.—1. The combination, with the ball or other projectile, of a cartridge equal in diameter to the ball, divided by partitions into a series of closed chambers each containing an explosive, and a coiled wire or its equivalent extending through the chambers for successively exposing each charge to the ignition caused by the explosion of the preceding one, substantially as set forth.

2. The combination, with a cartridge having a series of closed chambers each containing an explosive, of a wire secured to the ball and coiled through the chambers, and a central passage extending from the rear of the cartridge to the front chamber, and a supplemental cartridge, *c*, adapted to the end of a tube or passage, substantially as and for the purpose set forth.

255,543. PROCESS OF AND APPARATUS FOR AGING FABRICS. THOS. SIMPSON, Philadelphia, Pa. Filed Jan. 17, 1882. (No model.)

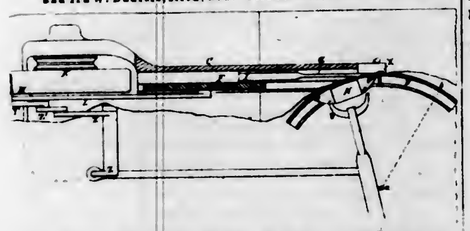


Claim.—1. The within-described improvement in aging fabrics, the same consisting in subjecting the fabrics properly prepared to the action of currents of moist, heated air directed downward over the suspended fabrics, substantially as set forth.

2. In an apparatus for aging fabrics, the combination, with a case or house and with devices for suspending the fabrics therein, of an inlet-opening at the top, an outlet at the bottom, and appliances whereby currents of heated, moist air are passed into and out of the suspension-chamber from the top downward, substantially as specified.

3. The combination of the outer walls provided with openings at the top, the inner lining with openings at the bottom, an inlet air-pipe, and appliances for passing warm, moist air to said pipe, whereby currents of the warm, moist air are forced downward within the inner chamber and upward between the inner and outer walls, substantially as set forth.

255,544. SEWING-MACHINE. FRANKLIN R. SMITH, Syracuse, N. Y., assignor of two-thirds to Willis S. Barnum, same place, and Ira W. Daniels, Ilion, N.Y. Filed Nov. 3, 1881. (No model.)



Claim.—1. The shuttle-race having angular or V shaped face and the shuttle having the reverse form, and being pressed therein by an extensible spring-pressed horned arm of the shuttle-driver, substantially as described.

2. The shuttle-driver S, having extensible spring-pressed horns U, and being arranged on a larger radius than that of the shuttle-race, substantially as described.

3. The combination, with a shuttle passing through a loop each way of its traverse, of the horned driver S U, arranged on a larger radius than that of the shuttle-race, substantially as described.

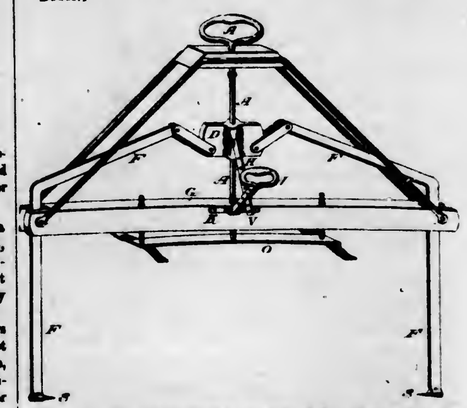
4. The combination of the reciprocating plate F, having a duplex cam-groove, as described, lever G, and connecting-rod L with the driving-shaft and needle-bar of a sewing-machine, substantially as described.

255,545. CLIP FOR HOLDING BOOKS OPEN. MILAN STEDWELL, Watertown, Dak. Filed Nov. 28, 1881. (No model.)



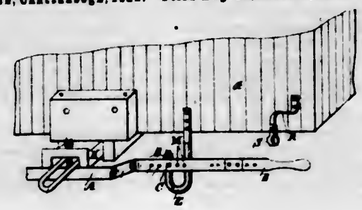
Claim.—As an improved article of manufacture, the plate C, having slotted ears J J, rivet *f*, rod H, having a flat rear end with rounded under corner, and a thumb-piece, *g*, and the cross-bar E, all adapted to be applied to a book in the manner and for the purposes set forth.

255,546. BARREL ROLLING AND HANDLING MACHINE. GEORGE W. STEPHENS, Milford, Mich. Filed Aug. 4, 1881. (No model.)



Claim.—The combination of the arms F F, with the points or spurs S S, the box D, lever H, and handle I, operating the arms F F, with points S S, the gage O, and handle A, working the gage and equalizing the draft of the whole machine for moving barrels by revolving on points or spurs in the center of the head of the barrel, all substantially as set forth.

255,547. CAR-COUPLING ATTACHMENT. THOMAS C. STRAWN, Chattanooga, Tenn. Filed Aug. 24, 1881. (No model.)



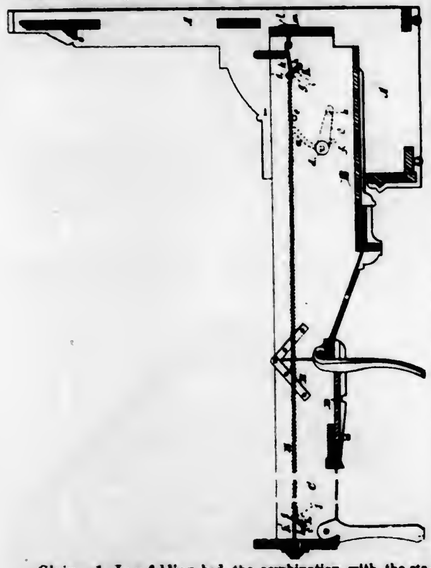
Claim.—1. The combination, with the draw-head K, of the lever A, the bracket-arm E, and the loose collar D on the bracket-arm E, substantially as herein shown and described, and for the purpose set forth.

2. The combination, with the draw-head K, of the lever A, the bracket-arm E, provided with a shoulder, N, at its outer end, and the loose collar D, to which the lever A is pivoted, substantially as herein shown and described, and for the purpose set forth.

3. The combination, with the draw-head K, of the lever A, the bracket-arm E, provided with a shoulder, N, at its outer end, the loose collar D, and the pintle C, provided with a fixed collar or enlargement, Q, substantially as herein shown and described, and for the purpose set forth.

4. The combination, with the lever A, pivoted to an arm or bracket at the end of a car, of a spring-clamp, S, attached to an arm or bar, R, attached to the end of the car, substantially as herein shown and described, and for the purpose of holding the lever A when the same is not in use.

255,548. WARDROBE OR FOLDING BED. ALEXANDER W. STEWART, Chicago, Ill. Filed Sept. 5, 1881. (No model.)



Claim.—1. In a folding bed, the combination, with the stationary part A, provided with the groove *a* and stop *f*, of the swinging part B and the link *c*, pivoted at or near one end to the part A by a fixed pivot, *b*, and having at its other end a pivot, *d*, arranged to travel in the groove *a*, substantially in the manner and for the purpose described.

2. In a folding bed, the combination, with the stationary part A, provided with the curved groove *a* and stop *f*, of the swinging part B, having the stop *e* and the link *c*, pivoted near one end to the part A by a fixed pivot, *b*, to form a rearward extension to said link, and having at its other end a pivot, *d*, arranged to travel in the groove *a*, said stop *e* on the part B being adapted to strike the extension of the said link, all substantially in the manner and for the purpose described.

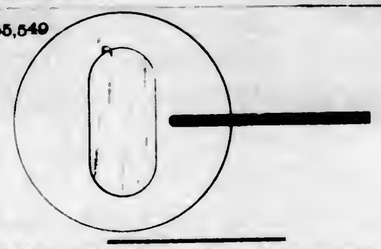
3. The top or cover D, having eccentric hinges *a*, with the stop or projection *e* for forming a lock, substantially as set forth.

4. In combination with the folding sections B and C and an elastic or spring mattress, E, a series of rigid hooks, *h h'*, arranged at each end of the mattress, and having a pivotal connection at one end with each mattress and at the other end with the head and foot boards, respectively, of the folding sections, substantially as and for the purpose hereinbefore set forth.

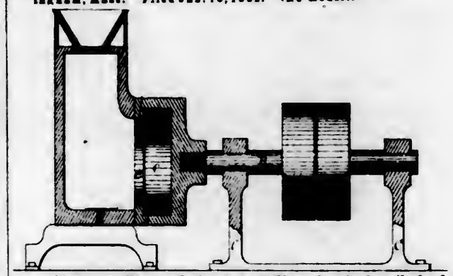
255,549. FAN. JOHN C. ST. JOHN, New York, N. Y. Filed July 11, 1881. (No model.)

Claim.—A fan the body of which is constructed of two united layers of paper or other similar opaque material, and with an opening or openings having inserted therein between said two layers a sheet or piece of mica or other transparent material, substantially as and for the purpose described.

255,549



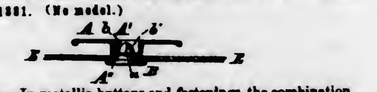
255,550. ATTRITION-MILL. THOMAS L. STURTEVANT, Framingham, Mass. Filed Jan. 16, 1883. (No model.)



Claim.—1. The method, substantially as herein described, of grinding various substances, which consists in compelling one portion of the mass of material to be ground to remain in a passive state, while another portion revolves in a compact or coherent body upon it, the intermediate shifting portion being ground by friction or attrition between its own particles, the entire mass itself thus providing not only the grinding-surface, but the material to be ground, and the supply being continuously furnished to the hopper.

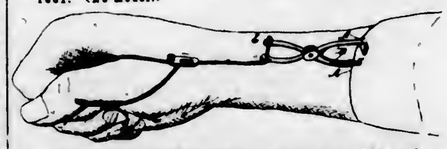
2. The mill herein described, consisting of, the rotary chambered head, in combination with the hopper arranged to communicate with and supply the chamber of such head, substantially as set forth

255,551. BUTTON. DAVID M. J. WALL, Buffalo, N. Y. Filed July 8, 1881. (No model.)



Claim.—In metallic buttons and fastenings, the combination, with the button A, having the depression A' and a cross-bar, *a*, of a fastening consisting of a disk, B, having centrally a slotted stud, *b b'*, provided with a transverse aperture, *b''*, said fastening being adapted for passage through the cloth or garment E, as described, and to hook onto the cross-bar *a*, substantially in the manner, as and for the object stated.

255,552. LADY'S SLEEVE-GRIPE. LOUISIANA P. WEBSTER, Washington, D. C., assignor of two-thirds to Douglas Pendleton and Michael Newmyer, both of same place. Filed Dec. 7, 1881. (No model.)



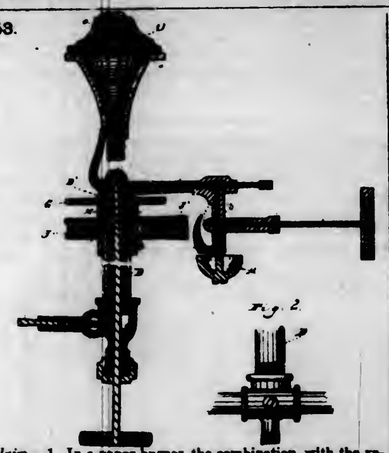
Claim.—1. The combination, in a sleeve-gripe, of the spring-actuated jaws and a draw-cord for closing the same, having a thumb-loop formed on it, substantially as described.

2. The spring-actuated griping-jaws, the draw-cord, and the adjustable loop of the cord, substantially as described.

3. The combination of the griping-jaws A A, the pivoted levers B B, the eyes *b b'*, the draw-cord, the loop, and a griping-slide therefor, substantially as described.

255,553. VAPOR-BURNER. JOSEPH WHITTINGHAM and FORREST A. LYMAN, Cleveland, Ohio. Filed Jan. 2, 1882. (No model.)

255,553.



Claim.—1. In a vapor-burner, the combination, with the vaporizing-chamber and tube D, for conducting the gasoline thereto, of a T-joint secured to the lower end of the tube and having a stuffing-box secured to its lower end, through which passes the screw-shaft of a needle-valve, said T-joint being connected with the supply-pipe, and a valve for governing the flow of gasoline from the supply-pipe to the tube D, substantially as set forth.

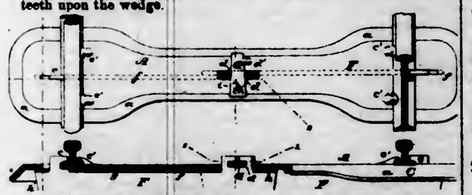
2. In a vapor-burner, the combination of a needle-valve with a screw-shaft and a jam-nut and a depending tube arranged within the upper end of the tube that supports said screw-shaft, said jam-nut being adapted to rest against the depending tube when the valve is closed to prevent the enlargement of the jet-orifice, substantially as set forth.

3. In a vapor-burner, the combination, with the tube D, of the adjustable commingling-chambers O and J, the latter surrounding and being supported upon said tube, substantially as set forth.

4. In a vapor-burner, the combination, with the tube supporting the screw-shaft which controls the needle-valve, of the commingling-chamber supported upon said tube, a heater-plate also supported therein, and a perforated chamber interposed between said commingling-chamber and heater-plate, whereby flame from the perforated chamber will impinge upon said plate, substantially as set forth.

255,554. METALLIC RAILWAY TIE AND FASTENING. FRANCIS A. WILLIAMS, New York, N. Y., assignor of one-fourth to John A. Burke, same place. Filed Dec. 27, 1880. Renewed Aug. 30, 1881. (No model.)

Brief.—A tie consisting of a flat plate, upon which are clamps arranged longitudinally of the tie, with their body portions beneath the same, and provided with a nose projecting above the plate to engage the rail, and with a shoulder to engage a wedge which rests upon the upper surface of the plate. Adjacent to the shoulder is an overhanging lip, which extends over the wedge. The body portions of the clamps have an extended bearing-surface, and are provided with elongated ends extending downwardly with laterally-projecting flanges. To prevent the displacement of the wedge a fixed lug is provided upon the tie to engage with ratchet-shaped teeth upon the wedge.



Claim.—1. A metallic railway-tie consisting essentially of a substantially flat plate extending from rail to rail, and provided with stationary stops for engaging the base of each rail on one side, in combination with clamps arranged longitudinally of the tie, with their body portions beneath the same extending downward therefrom in the form of substantially flat blades or ribs, capable of engaging the earth or ballast beneath the tie, and each provided with a nose extending up through the tie and engaging the base of the rail upon the opposite side from said stationary stop, and with a shoulder opposed to said nose and adapted to be engaged by a wedge, in combination with said wedge adapted to force said nose against the rail, substantially as and for the purpose set forth.

2. A metallic railway-tie, A, consisting essentially of a substantially flat plate extending from rail to rail, and forming a seat therefor, and provided with stationary stops *c' c'* to engage one side of the base of each rail, in combination with clamps F F, arranged beneath the tie, each having a nose, *e*, projecting up through the tie and engaging the base of the rail on the opposite side, a shoulder, *d*, to engage a wedge, and projecting ends *h*, extending beneath the tie beyond said shoulders, in contact with the under surface of the tie, substantially as and for the purpose set forth.

3. A railway-tie, A, consisting essentially of a flat plate of metal extending from rail to rail and forming a seat therefor, in combination with clamps F F, each arranged beneath the tie with an upward bearing against the under side thereof, provided with a nose, *e*, projecting up through the tie and engaging the base of the rail, and with an upward projection bearing shoulders *d* and *e* to engage the wedge G, and the said wedge arranged on the top surface of the tie and adapted when driven to force the toe *e* against the rail, substantially as set forth.

4. A metallic tie, A, provided with a rail-fastening consisting of clamps F F, arranged to be forced into engagement with the rails by a wedge or wedges, and arranged beneath the tie, longitudinally thereof, extending downward therefrom in the form of substantially flat blades or ribs, and provided with flanges *g g*, arranged to bear against the under surface of the tie, substantially as set forth.

5. The combination of the tie A, the fixed lugs *c' c'*, the clamps F F, having noses *e e* and shoulders *d d* and *e e*, and the single wedge G, engaging both clamps, substantially as set forth.

6. In a rail-fastening for metallic ties, the combination of a clamp to engage the base of the rail, a wedge to force said clamp against the rail, and the ratchet-projection *i* and notch or notches *h h*, arranged beneath the wedge, so as to be concealed thereby, substantially as and for the purposes set forth.

7. In a rail-fastening for metallic ties, the combination of the clamp F, adapted to engage the rail, the wedge G, formed of slightly-elastic material, and provided with ratchet-notches *h h* on its under side, and the fixed teeth or projection *i* on the tie, adapted to engage one of said notches when the wedge is driven and to be concealed thereby, substantially as set forth.

255,555. WASH-BOARD. CHARLES H. WILLIAMS, Cleveland, Ohio. Filed Feb. 10, 1882. (Model.)



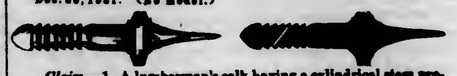
Claim.—1. A wash-board provided with a cross-piece, B, in combination with a removable protector-piece, F, and a locking device, whereby the protector and cross-piece may be brought together edge to edge and locked to form one continuous supporting-surface, as set forth.

2. A wash-board provided with a cross-piece, B, in combination with a removable protector-piece, F, the cross-piece or protector having interlocking devices on their adjacent edges, whereby the protector may be locked to the cross-piece and the two form one continuous surface, as and for the purpose set forth.

3. In combination with the cross-piece B of a wash-board, a removable protector, F, locking devices, substantially as described, for retaining the protector in line with the cross-piece, and the pivoted and slotted arms E E, as set forth.

4. The combination, with the cross-piece B, provided with a groove, *b*, of the protector F, provided with a tongue, *c*, and the slotted and pivoted arms E E, as set forth.

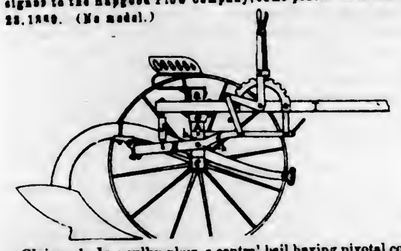
255,556. CALK. EPHRAIM WITHAM, Carrituck, No. Filed Dec. 26, 1881. (No model.)



Claim.—1. A lumberman's calk having a cylindrical stem provided at its upper end for about two-thirds of its length with annular grooves the lower sides of which are horizontal while the upper sides are beveled upwardly and inwardly, as herein described for the purpose set forth.

2. A lumberman's calk having a cylindrical shank or stem provided at its upper end for a portion of its length, with annular grooves, a beveled or gradually-tapering point, and an intermediate disk or enlargement having beveled or concave shoulders on its upper and under sides, substantially as described, for the purpose set forth.

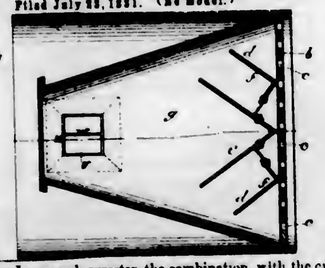
255,557. SULKY-PLOW. WILLIAM B. YOUNG, Alton, Ill., assignor to the Hapgood Plow Company, same place. Filed Dec. 23, 1880. (No model.)



Claim.—1. In a sulky-plow, a central bail having pivotal connection with the axle, and an arm extending connecting by a link with the operating-lever, a plow mounted loosely upon said bail, and a spring acting upon the said bail in rear of the axle to elevate the plow, substantially as shown.

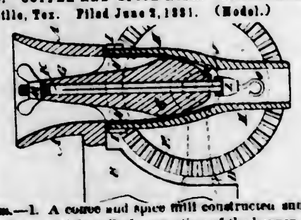
2. In a sulky-plow, the combination of an axle elevated in the center, with perpendicular sides and horizontal arms, one arm extending and having the wheel rotating thereon, a central bail having pivotal connection with the axle, and an arm extending connecting by a link with the operating-lever, a plow mounted loosely upon said bail, a spring having one end connected to the bail in rear of the axle and the other end connected above to the frame or tongue, and the spring acting upon the bail to elevate the plow, substantially as and for the purpose set forth.

255,558. SPARK-ARRESTER. JAMES D. ALLEY, Allegheny City, Pa. Filed July 23, 1881. (No model.)



Claim.—In a spark-arrester, the combination, with the cylinder *a*, flue-sheet *b*, and smoke-stack *p*, having the inverted funnel *r* at its lower end, of the flaring chamber *g*, the funnel *u*, and the vertical angle-plates *d d* and *e*, constructed and operating substantially as and for the purposes set forth.

255,559. COFFEE AND SPICE MILL. THOMAS A. ANDREWS, Beageville, Tex. Filed June 2, 1881. (Model.)



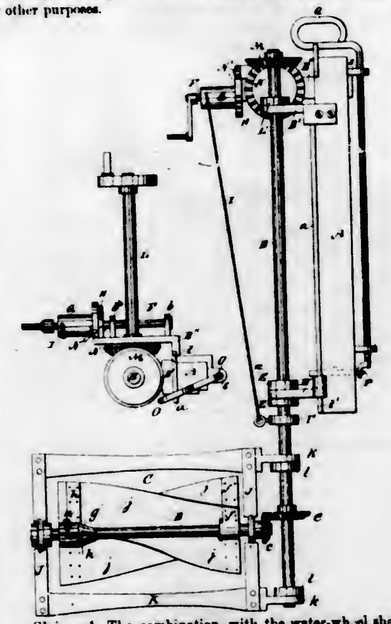
Claim.—1. A coffee and spice mill constructed substantially as herein shown and described, consisting of the hopper A, having arms B C D cast upon it, the inner stationary burr, G, the outer rotary burr, H, the supporting-rod K, the gear-wheels I E, and the crank F, as set forth.

2. In a coffee and spice mill, the combination, with the hopper A, provided with the stationary inner burr, G, of the rotating outer burr, H, cross-bar J, and the suspending-rod K, substantially as herein shown and described, whereby the outer burr is supported from and swiveled to the inner burr, as set forth.

3. In a coffee and spice mill, the combination, with the hopper A, provided with the stationary inner burr, G, having a central orifice, of the outer rotating burr, H, having cross-bar J, rod K, having shoulder L, and screw-threaded at its upper end, thumb-nut M, and hook O, substantially as described, and for the purposes set forth.

255,560. AUXILIARY POWER-WHEEL FOR SHIPS. KITTIL ANDERS, Winchester, Wis. Filed Jan. 16, 1882. (Model.)

Brief.—A wheel something like a screw-propeller hangs over the side of the vessel in such manner as to be raised and lowered. When the wheel is in the water the motion of the ship causes it to rotate, and the power thus obtained may be used for pumping or other purposes.



Claim.—1. The combination, with the water-wheel shaft D, gear *c e*, and shaft B, provided with collars E L', of the bar A, having plate *a*, the bracket-bearing B', fixed to said bar, and the sliding bracket D', as and for the purpose specified.

2. The combination, with the water-wheel shaft and shaft B, having collars *l l*, of the vertical cross-pieces J J, the horizontal arms K K, having perforated heads *k k*, and the cog-wheels *c e*, as and for the purpose specified.

3. The combination, with the shaft B, connected by bevel-gear with the water-wheel shaft, and having collars E, the brackets B' D', and the bar A, having plate *a*, of the detachable pin P, projecting through the bar and plate and over the bracket D', for the purpose specified.

4. The combination, with the shaft B and water-wheel C, of the shaft F, drum G, rope I, and cramp-collar I', substantially as and for the purposes set forth.

5. The bar A, faced with the plate *a* and provided with the bracket B', in combination with the sliding bracket D', shaft B, wheel C, and means for raising and lowering the shaft and wheel, substantially as described.

6. The combination, with an eyebolt or pin, P, movable in its socket, of the rod O, having crank *q*, the bar A, having projections *s s*, and the plate *a*, having notches *t*, as and for the purpose specified.

7. The water-wheel formed of the shaft D, having the fixed arms *f*, the collar *g*, having the arms *h*, and of the blades *j*, the collar being adapted to be turned upon the shaft, as and for the purposes set forth.

255,561. SPONGE-FISHING NET. EDWARD ARAPIAN, New York, N. Y., assignor to himself and Rezillos Kirilake Mesopolos, same place. Filed Feb. 14, 1882. (No model.)

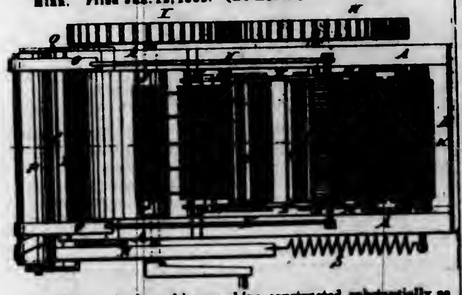
Claim.—A net of bag shape for fishing sponges or the like, having attached to the mouth thereof a frame one portion of which

255,561.



is composed of metal or other weighty material and the remainder of wood or other buoyant material, substantially as and for the purpose described.

255,562. WASHING-MACHINE. JOHN H. ATWATER, Medford, Minn. Filed Jan. 18, 1882. (No model.)



Claim.—1. A washing-machine constructed substantially as herein shown and described, and consisting of the tub A B, the cylinder of corrugated rollers G, the flexible chain of rollers L, the endless apron K, and a driving mechanism, as set forth.

2. In a washing-machine, the combination of the tub A B, of the cylinder of corrugated rollers G, the flexible chain of rollers L, the endless apron K, and the crank-shaft J and gear-wheels I H, substantially as herein shown and described, whereby the clothes will be carried between the said rollers and cylinder by the said endless apron and quickly and thoroughly washed, as set forth.

3. The hook-rods N, attached to the flexible chain of rollers L, the straps O, the shaft P, the strap R, and the spiral spring S, combined in a washing-machine, as shown and described.

255,563. COMBINED FOOT-RAIL AND DASH ATTACHMENT. FRANK C. ATHA, Columbus, Ohio. Filed Jan. 16, 1882. (No model.)



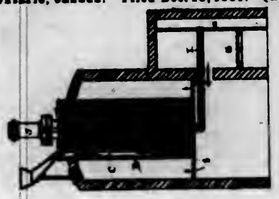
Claim.—1. The combination of the dash-frame with dash-foot constructed and applied to connect said dash-frame to the vehicle-body and to the foot-rail, substantially as set forth.

2. A dash attachment for vehicles, consisting of the foot having each a dash-clamping part, *a'*, a body-fastening part, *a*, and an elevated part, *c*, for the foot-rail, *d*, substantially as described.

3. The dash-attaching device herein described, consisting of the dash-foot bent or raised at each end, the foot-rail having a middle support, and the clamping screw-bolt, substantially as and for the purpose specified.

4. As a new manufacture, a foot-rail including provision by which it is attached to and forms a support for the dash-frame of the vehicle, substantially as described.

255,564. APPARATUS FOR DRYING GRAIN. JOS. RADCLAY, Toronto, Ontario, Canada. Filed Dec. 15, 1881. (No model.)



Claim.—1. The combination, with two perforated cylinders placed one within the other and adapted to hold grain between them, of a furnace, means for supplying heated air under pressure, and passages for conveying the products of combustion from the furnace to one side of the cylinders and heated air under pressure to the other side of said cylinders, substantially as and for the purpose specified.

2. The combination, with two revolving perforated cylinders adapted to hold grain between them, of a furnace and a pressure-fan, said furnace discharging its products of combustion into a chamber surrounding the cylinders, and the pressure-fan forcing air through said furnace to the interior of the cylinder and through the sides of the same, substantially as described, and for the purpose specified.

3. In a machine for drying oats and other grain through the application of artificial heat, and in which the grain is contained between two revolving perforated cylinders, the one being placed within the other, the top of the inner cylinder being closed and its bottom connected to a blast-pipe leading from a pressure-fan, vertical partitions arranged to divide the space between the two cylinders into compartments, in combination with a floor placed below the revolving cylinder and provided with a hole communicating with a spout, through which the grain is discharged, substantially as specified.

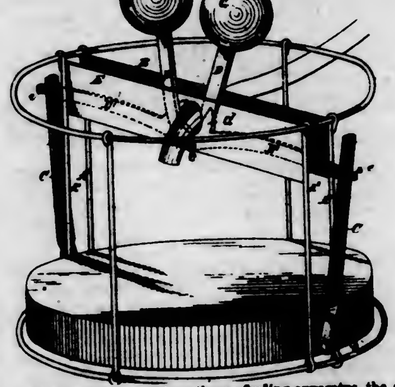
4. The combination, with a receptacle for holding grain and a chamber surrounding the same, of a furnace adapted to discharge its products of combustion into said chamber, an air-passage leading through said furnace from an air-space close to the latter and adapted to discharge heated air within the space inclosed by the grain-receptacle, substantially as and for the purpose specified.

5. The combination, with a receptacle for holding grain, of a furnace, and means, substantially as described, for separately conducting the products of combustion of said furnace and the air heated by the same to the grain-receptacle, whereby the air acting against one face thereof will prevent the smoke and gases from passing through the opposite face to the grain, as set forth.

6. The combination, with the perforated revolving cylinders B C, of the chamber surrounding said cylinders, the furnace G, the air-passage I, passing through said furnace, and the perforated plate *b* at the base of the cylinders, substantially as and for the purpose specified.

7. The combination, with the revolving cylinders B C, of the furnace G and pipes I, the former discharging at the exterior of the cylinders and the pipes at the interior of the same, and means, substantially as described, for gradually discharging the grain from the space between the cylinders, as and for the purpose specified.

255,565. AUTOMATIC SAP-FEEDING APPARATUS. HERBERT C. BARBER, Pawlet, Vt. Filed Oct. 18, 1881. (No model.)



Claim.—1. In an automatic sap-feeding apparatus, the combination, with a float, *d*, pivoted arms adjustably connected with said float and a supply-tube leading from a reservoir and passing between said pivoted arms, said tube being constructed wholly or in part of elastic material and adapted to be opened by the descent of the float and closed by its ascent, substantially in the manner, and for the purposes set forth.

2. In an automatic sap-feeding apparatus, the combination, with a rising-and-falling float, of two lever-arms pivoted upon the same bolt, each having formed thereon a spur or projection, be-

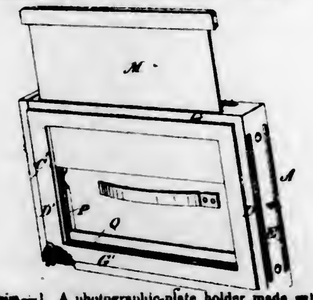
tween which the supply-pipe passes, and arms pivoted to said float and adapted to engage adjustably with the extremities of the said lever-arms, all substantially as and for the purposes set forth.

3. The combination, with a suitable frame having transverse supports E, of the lever-arms D D, having each a long arm, D', said lever-arms being pivoted at a common point, e, and the pivoted arms C, substantially as and for the purposes set forth.

4. As a new article of manufacture, an automatic sap-feeding apparatus consisting of a suitable supporting-frame having transverse plates E E, two bell-crank levers D D D' D', pivoted to a common point between said plates E E, and having spurs or projections *d*, a supply-tube passing through the plates E and between the spurs or projections *d d*, and arms C, having apertures *a a a*, adapted to engage with the extremities of the lever-arms, the latter being provided with weights G G, substantially as and for the purposes set forth.

5. The combination, in an automatic sap-feeding apparatus, of pivoted compressing-arms, an elastic supply-tube, and a rising-and-falling float, whereby said arms are operated, substantially as and for the purposes set forth.

255,566. PHOTOGRAPHIC-PLATE HOLDER. ERASTUS B. BARKER, New York, N. Y., assignor to E. & H. T. Anthony & Co., same place. Filed Dec. 31, 1881. (Model.)



Claim.—1. A photographic-plate holder made, substantially as herein shown and described, with slide apertures or slots both at the sides and ends, whereby a slide may be used either at the side or end of the plate-holder, as described, and as set forth.

2. The frame of the plate-holder A, constructed with end apertures or slots, E, and grooves Q, for the reception of an end slide, K, and with side apertures or slots, H, and grooves P, for the reception of a side slide, M, substantially as herein shown and described, and for the purpose set forth.

3. The combination, in a photographic-plate holder, of an end cut-off and slide and a side cut-off and slide, substantially as herein shown and described, and for the purpose set forth.

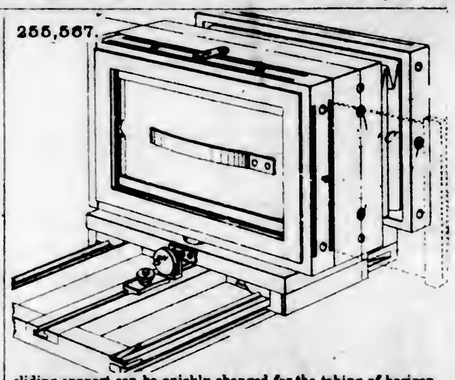
4. The combination, with a photographic-plate holder provided with a slide-receiving slot which contains a cut-off in one of the edges, of a cut-off at right-angles to the slotted edge and parallel with the direction of the movement of the slide, whereby the slide will be guided by this cut-off parallel with the direction of the movement of the slide, substantially as herein shown and described, and for the purpose set forth.

5. In a photographic-plate holder, the combination of the following elements, namely: a grooved and slotted frame with cut-offs and slides adapted to permit the insertion of a vertically-movable slide and a horizontally-movable slide, substantially as herein shown and described, and for the purpose set forth.

6. In a photographic-plate holder, the combination of the following elements, namely: a grooved and slotted frame with cut-offs and slides adapted to admit the insertion of two vertically-movable slides and two laterally-movable slides, substantially as herein shown and described, and for the purpose set forth.

7. In a photographic-plate holder, the combination of the following elements, namely: a plate-holding septum, a grooved and slotted frame with cut-offs and slides adapted to permit the insertion of a vertically-movable and a horizontally-movable slide, substantially as herein shown and described, and for the purpose set forth.

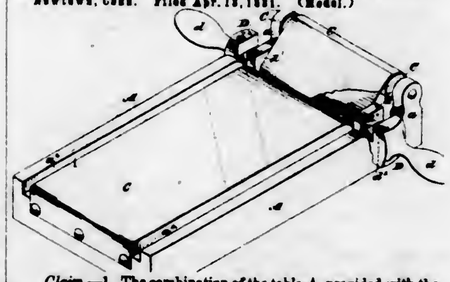
255,567. CAMERA-BOX. ERASTUS B. BARKER, New York, N. Y., assignor to E. & H. T. Anthony & Co., same place. Filed Dec. 31, 1881. (Model.)



Claim.—1. A reversible camera-box made, substantially as herein shown and described, with adjusting attachments for securing the box in different positions upon the under frame and sliding support, whereby the position of the box upon the frame and sliding support can be quickly changed for the taking of horizontal or vertical pictures without altering or affecting the operations of the sliding support and focusing-screws, as set forth.

2. The combination, with the camera-box, under frame, and sliding support, of the adjusting devices adapted to secure said box in a vertical or horizontal position, as shown and described, for the purpose set forth.

255,568. CIGARETTE-MACHINE. FERDINAND S. BARTRAM, Newtown, Conn. Filed Apr. 18, 1881. (Model.)

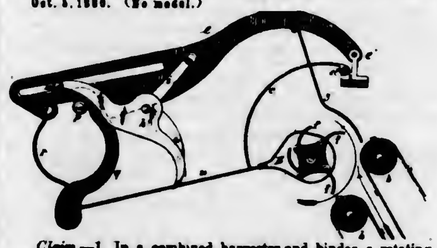


Claim.—1. The combination of the table A, provided with the grooves a^3, with the shaper D, having the lugs d' and d^3, substantially as and for the purpose shown.

2. In combination with the flexible apron C, the shaper D, provided within one side with a recess, d^3, substantially as and for the purpose set forth.

3. The herein-before-described apparatus for making cigarettes, consisting of the table A, provided with the recess a', grooves a^3, and roller B, the apron C, secured upon said table and roller, and the combined shaper and gage D, having the lugs d' and d^3 and recess d^3, said parts being combined to operate in the manner and for the purpose specified.

255,569. GRAIN-PACKER. WILLIAM BAYLEY, Springfield, Ohio, assignor to Whitsley, Fassler & Kelly, same place. Filed Oct. 5, 1880. (No model.)

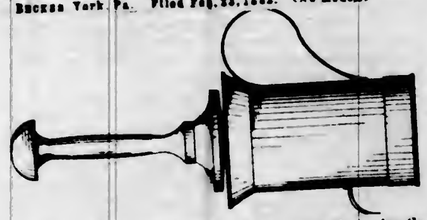


Claim.—1. In a combined harvester and binder, a rotating grain-packer provided with shafts *a*, having partial revolutions in bearings in the revolving brackets P, and provided with rake-teeth *f*, and levers *g n*, operated by the stationary cam C', combined with the slotted inclosing-case E, united at its back to and supported by the table *a*, and the deflector *c*, whereby the operative mechanism is set in motion, the gatherer *h*, band-carrier, and compressor *q*, substantially as set forth.

2. In a combined harvester and binder, a rotating grain-packer provided with shafts *a*, levers *g n*, and cams C' and C'', in combination with inclosing-case C, whereby the cams and levers are covered and protected, as and for the purpose set forth.

3. In a combined harvester and binder or combined gleaner and binder, a rotating grain-packer having shafts *a* and S and levers *g n*, combined with cams C' and C'', attached to the inner surface of the inclosing-case C, substantially as and for the purpose specified.

255,570. VEGETABLE MASHER AND STRAINER. LEANDER BECKER, York, Pa. Filed Feb. 23, 1882. (No model.)



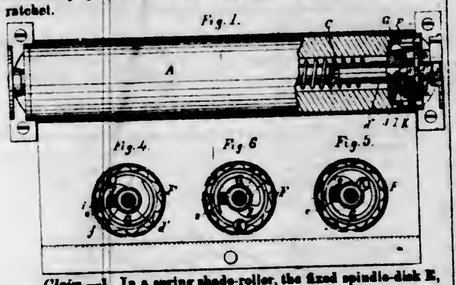
Claim.—1. The combination, with the receptacle having the handle and the sleeve-bottom, of the plunger having the handle and the head adapted to fit within the receptacle.

2. The receptacle having the projection for resting upon the vessel into which the contents of the receptacle are to be discharged.

3. The combination of the receptacle having the handle, the sleeve-bottom, and the projection for resting on the edge of the receiving-vessel, with the plunger having the handle and head, the whole arranged and operated substantially as described.

255,571. SPRING CURTAIN-ROLLER. GREGOR T. BOTTENCURT, Providence, R. I. Filed Jan. 20, 1882. (No model.)

Brief.—Upon a slight downward pull of the shade the locking-ball is held between the polygonal hub of the annular ratchet and the annular scrolled disk, keeping it from engagement with the ratchet while the shade is ascending at any speed. To lock the roller the shade is drawn down, revolving the disk far enough to allow a projection on the spindle to strike the ball, when it falls to the bottom of the ratchet, when letting go the shade causes the ratchet by its centrifugal force to carry the ball up against the cammed projection on the disk and holds it between it and the ratchet.



Claim.—1. In a spring shade-roller, the fixed spindle-disk E, provided with the stop *e* and pocket *d'*, the annular scrolled band G, stationary friction-washer J, spring J, locking-roll K, and the polygonal hubbed annular ratchet F, all combined and operating substantially as described.

2. In combination with a spring shade-roller, an oscillating scrolled disk, G, frictionally associated with the roller and having a limited motion therewith, a ratchet, and locking roll or ball K, all arranged to operate substantially as described and set forth.

3. In a spring shade-roller having a locking roll or ball and an internal ratchet, the combination therewith of an oscillating annular scrolled disk operating, substantially as described, to prevent engagement between said locking-roll and ratchet when the shade is ascending at any speed, as set forth.

4. In combination with a shade-roller provided with a spiral spring for rolling up the shade, a locking-roll, an annular internal ratchet, and an annular scrolled disk adapted to change its position with relation to the spindle and ratchet, all so arranged that in one operation the roll will engage with the ratchet on drawing down and releasing the shade and in another operation the roll will not so engage the ratchet when the shade is ascending at any speed, substantially as described.

5. In combination with a shade-roller provided with a spiral spring for winding up the shade, a ratchet, a locking-roll, and an oscillating scrolled disk hung upon the circular portion of the polygonal hubbed annular ratchet, which is secured to the shade-roller and moves therewith, said parts being arranged, substantially as described, so that in one operation the locking-roll, on the descent of the shade at any speed, will automatically assume such position that it will engage with the ratchet and lock the shade-roller on letting go of the shade without any manipulation, and in another operation, when the shade is ensued to ascend at any speed, will not engage with said ratchet, as set forth.

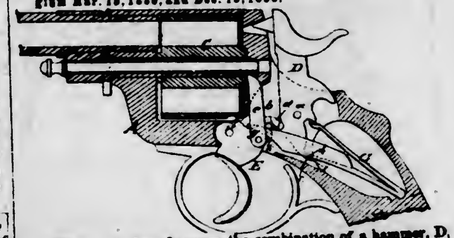
255,572. RULING-MACHINE. EDWARD W. BLACKBALL, Toronto, Ontario, Canada. Filed Oct. 6, 1881. (No model.)



Claim.—1. A pen for ruling-machines, consisting of a thick metal plate having grooves cut in its face and having its lower edge beveled and its upper end provided with a spring-plate, substantially as and for the purpose specified.

2. As a pen for a ruling-machine, a sheet-metal plate having longitudinal grooves or lines cut in its face, and being of sufficient width to leave a metal support on each side of the said lines, the said plate being flexibly connected to the pen-clamp, substantially as and for the purpose specified.

255,573. LOCK FOR FIRE-ARMS. HENNARD BLEE, Paris, France. Filed Jan. 20, 1882. (No model.) Patented in Belgium Mar. 15, 1880, and Dec. 15, 1880.



Claim.—1. In a fire-arm, the combination of a hammer, D, having front catch, *b*, near the lower end, the spring G, having upper and lower branches, and the trigger E, having an upper back projection, *d*, with notch in its end, and a lower rear projection, *h*, as and for the purpose specified.

2. The combination, with a spring having the beveled flattened portion *h* and the hammer having the back lower projection, *e*, of the secondary spring, *i*, rounded in front, whereby the projection *e* is pressed away from portion *h* of the mainspring and a slight back motion allowed to the hammer, for the purpose specified.

3. The combination, with the hammer D and the trigger E, constructed and arranged for operation with each other as described, of the mainspring G, having upper and lower branches, and having its lower branch constructed with a flattened portion, *h*, and with a secondary spring, *i*, for operation on the hammer, essentially as set forth.

255,574. HITCHING-STRAP. FRANK BONELLI, Vicksburg, Miss. Filed Jan. 5, 1882. (Model.)

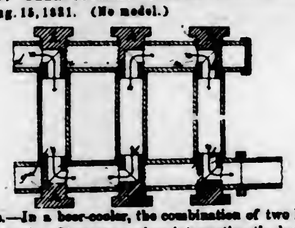


Claim.—1. A latch for a hitching-strap, which consists of the plates *b* and *c*, slotted at one end, and having pivoted between them the spring-hook *d*, the whole being adapted by means of staples *f* for attachment to a hitching-strap, substantially as specified.

2. In combination with the strap A, the latch C, having staples *f* for its attachment to the said strap, and the spring *g*, to retard the sliding movement of the latch longitudinally of the strap, substantially as and for the purpose specified.

3. In combination with the plates *b* and *c*, the former having projections to separate them, the spring-hook *d* and means for its attachment to a strap, substantially as specified.

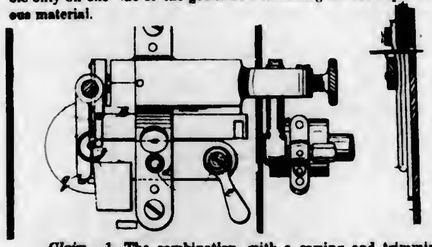
255,575. BEER-COOLER. CHARLES J. BOPP, Boston, Mass. Filed Aug. 15, 1881. (No model.)



Claim.—In a beer-cooler, the combination of two longitudinal pipes, a series of transverse pipes intersecting the longitudinal pipes at points between the ends of the latter, and a series of removable plugs extending transversely through the longitudinal pipes at points opposite the ends of the transverse pipes, and constructed to direct the flow of beer from the longitudinal into the transverse pipes, all substantially in the manner and for the purposes set forth.

255,576. MACHINE FOR SEWING WELTS OR HEMS ON FABRICS. STOCKTON BEATON, Philadelphia, Pa., and CHARLES H. WILLCOX, New York, N. Y., assignors to the Willcox & Gibbs Sewing Machine Company, New York, N. Y. Filed July 8, 1881. (Model.)

Brief.—For sewing a welt or hem with a seam which is visible only on one side of the goods and trimming off the superfluous material.



Claim.—1. The combination, with a sewing and trimming machine, of a guide having its guiding-edge between the line of stitching and the line of trimming, substantially as described.

2. The combination, with a sewing and trimming machine, of an adjustable edge-guide capable of adjustment toward and away from the needle between it and the line of trimming, substantially as described.

3. An edge-guide for sewing-machines, notched for the passage of the needle, and having the guiding-edge in advance of the needle oblique to the line of feed, substantially as described.

4. An edge-guide for sewing-machines, having the guiding-edge in advance of the needle oblique to the line of feed, in combination with a presser-foot cut away opposite the guiding-edge to allow it to act in close proximity to the needle, substantially as described.

5. The combination, with the cutters of a sewing-machine trimmer and an edge-guide, of a presser-foot cut away to the right of the needle-hole to allow said cutters and guide to act in close proximity to the needle, substantially as described.

6. The combination of an adjustable edge-guide secured to the cloth-plate of a sewing-machine, with its guiding-edge in advance of the needle oblique to the line of feed, and a presser-foot cut away opposite the guiding-edge of said guide to permit its adjustment close to the needle-hole, substantially as described.

7. The combination of an edge-guide secured to the cloth-plate, a presser-foot, and a projection from the said foot extending laterally over said guide, substantially as described.

8. The combination of the edge-guide, the presser-foot cut away to the right of the needle-hole opposite the said guide, and the projection of the presser-foot partly surrounding the needle-hole and extending laterally over said guide, substantially as described.

9. An edge-guide for attachment to the cloth-plate of a machine, having the guiding-edge of greater depth opposite the toe of the presser-foot than opposite the needle-hole, substantially as described.

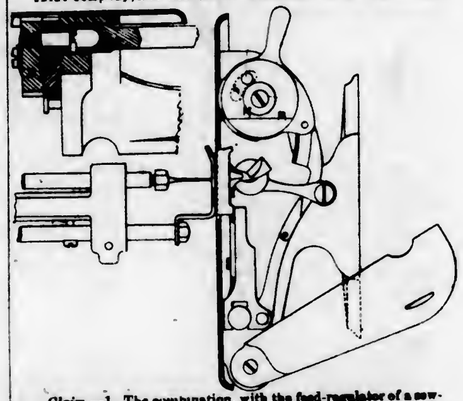
10. A holding-finger adjustably connected with the presser-bar of a sewing-machine, substantially as described.

11. The combination of the cutters of a sewing-machine trimmer, a holding-finger, presser-foot, and edge-guide, substantially as described.

12. The method of hemming or welting fabrics by folding the fabric, automatically guiding the folded fabric to sewing mechanism, and simultaneously sewing and trimming the welt or hem, substantially as described.

13. In a sewing-machine, the combination, with means for guiding a fold of material to the stitch-forming mechanism, so that the needle will pass through the said fold, of a trimming mechanism for trimming off the edge of the surplus material extending beyond the fold simultaneously with the sewing, substantially as described.

255,577. FEED MECHANISM FOR SEWING-MACHINES. STOCKTON BEATON, Philadelphia, Pa., and CHARLES H. WILLCOX, New York, N. Y., assignors to the Willcox & Gibbs Sewing Machine Company, New York, N. Y. Filed Dec. 26, 1881. (Model.)



Claim.—1. The combination, with the feed-regulator of a sewing-machine, of a locking device for preventing alteration of the feed by the operator, substantially as described.

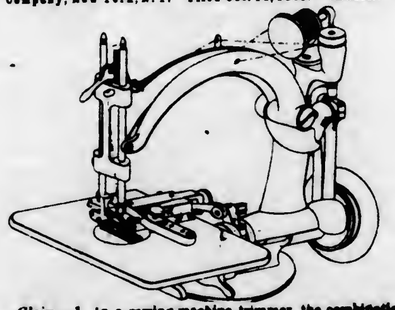
2. The combination of a feed-regulator, clamping-plate, and locking-bolt, substantially as described.

3. A locking screw-bolt, in combination with a slotted feed-regulating cam and clamping-plate, substantially as described.

4. The combination of the slotted feed-regulating cam, its supporting-pin, the clamping-plate, the spring-washer, and the locking-bolt, substantially as described.

5. The combination, with the adjustable feed of a sewing-machine, of locking mechanism for preventing alteration in the feed-movement, except by a special key or device for that purpose, substantially as described.

255,578. TRIMMER FOR SEWING-MACHINES. STOCKTON BEATON, Philadelphia, Pa., and CHARLES H. WILLCOX, New York, N. Y., assignors to the Willcox & Gibbs Sewing Machine Company, New York, N. Y. Filed Oct. 14, 1880. (Model.)



Claim.—1. In a sewing-machine trimmer, the combination, with the cutting-shears, of means, as indicated, for clamping and thus holding stationary the fabric on opposite sides of the line of cutting during the operation of the shears, substantially as described.

2. In combination with the presser-foot, feed, and stitch-forming mechanism of a sewing-machine of ordinary or suitable construction, a stationary cutter, a vibratory cutter, and a holding finger or device, said presser-foot and holding finger or device being

arranged to clamp the fabric during the cutting operation, the one upon the stationary cutter and the other upon a surface on the opposite side of the line of cutting, substantially as described.

3. In combination with automatic shears, a holding finger or device roughened or provided with teeth and operating substantially as described.

4. In combination with a sewing-machine, a trimming attachment comprising a movable cutter, a stationary cutter formed of a bar or plate arranged substantially at right angles to the plane of movement of said movable cutter and adjustable independently thereof, and mechanism for operating said movable cutter so that the edges of the two cutters do not entirely separate but cross each other at all times in operation, substantially as described.

5. In a sewing-machine trimmer, the combination, with a stationary cutter formed of a bar or plate and a vibratory cutter, of a holding finger or device arranged to clamp the material to be sewed and trimmed between itself and said plate or bar, substantially as described.

6. In combination with the cloth-plate, presser-foot, feed, and stitch-forming mechanism of a sewing-machine, a vibratory cutter, a stationary cutter formed of a plate or bar, and a holding finger or device arranged above said plate or bar, and connected with means for relieving its pressure intermittently, substantially as described.

7. The combination, with the eye-pointed needle and other elements of a sewing-machine, and a trimming attachment for trimming goods as sewed by said machines, of a presser-foot and an upright projection or shield in front of the needle's path, substantially as described.

8. A presser-foot cut away at the front to form a toe, and provided with an upright projection in front of the needle-hole, substantially as described.

9. A presser-foot having a portion cut away close to the needle-hole on one side and provided with an upright projection in front of the needle-hole, substantially as described.

10. In a shearing device, the combination, with a stationary cutter or blade and a vibratory cutter or blade, arranged to operate in connection with each other, and one being capable in operation of a line-movement substantially at right angles to the cutting-edges, of a spring arranged to act upon the blade capable of the aforesaid movement and press said edges into contact with each other, substantially as described.

11. The combination of a rock-shaft capable in operation of endwise movement, a spring connected with said shaft, a vibratory cutter or blade attached to said shaft, and a bar or plate having a cutting-edge and capable of adjustment, substantially as described.

12. A pair of shear-blades or cutters having cutting-edges slightly oblique to each other, and one of said cutters or blades being capable in operation of a line-movement approximately at right angles to the cutting-edges, in combination with a spring arranged to act upon the blade capable of the aforesaid movement and hold said cutting-edges in contact, substantially as described.

13. The combination of a rock-shaft capable of endwise movement, cutter or shear-blade attached to said shaft, stationary cutter or blade with oblique cutting-edge, and spring arranged to force said shaft and cutter attached thereto in the direction to maintain the cutting-edges of the two cutters in contact with each other, substantially as described.

14. The combination, with a cutter or blade stationary during its operation but capable of adjustment, of a vibratory cutter or blade, rock-shaft carrying said cutter, spring, and adjustable back stop for said shaft.

15. The combination, with a stationary and a vibratory cutter or blade having cutting-edges slightly oblique to each other, of a rock-shaft carrying said vibratory blade or cutter, a spring, and an adjustable back stop for said shaft, substantially as described.

16. The combination of the rock-shaft, spring, adjustable back stop, vibratory cutter or blade, bar, or plate, with cutting-edge at one end, and means for securing said bar or plate in position and for permitting its adjustment at, or approximately at, right angles to the cutting-edge.

17. The combination, with the stitch-forming and feed mechanism of a sewing-machine of ordinary or suitable construction, of a rock-shaft connected with and operated by a suitable moving part of said machine, a vibratory cutter or blade attached to said shaft, means for adjusting the position of the said shaft and cutter nearer to or further from the needle-hole of the sewing-machine, and a second cutter or blade stationary during its operation and also adjustable, substantially as described.

18. In a sewing-machine trimmer, a rock-shaft, and vibratory cutter or blade attached to and carried by said shaft, combined with a stationary cutter or blade, as described, said shaft being arranged below the line of the cutting-edge of the stationary cutter or blade, so that in operation the severed portion of the goods may pass over said shaft.

19. In a sewing-machine trimmer, a cutter or blade formed of a plate or bar with the cutting-edge at the end thereof, in combination with a rock-shaft arranged below the plane of the upper surface of said bar or plate, so that said surface if extended would pass over said shaft, and a vibratory cutter or blade attached to said rock-shaft, substantially as described.

20. An automatic trimmer for operation in connection with a sewing-machine of ordinary or suitable construction, comprising the following elements: a stationary bar or plate with oblique cutting-edge at the end thereof, means for adjusting said bar or plate, a finger or device for holding stationary the work, or a portion thereof, while cutting, a vibratory blade or cutter, a rock-shaft, spring, and adjustable back stop, substantially as described.

21. The combination, with a sewing-machine and a shearing attachment, of adjusting mechanism, as described, comprising a thumb or set screw adapted to regulate mechanically—that is, by its own proper motion—the position of the cutting device forming part of said attachment relative to the stitching devices of the sewing-machine, substantially as described.

22. In a sewing-machine trimmer, a flat cutter bar or plate held between fixed guides in or on the cloth-plate, and a clamping device arranged to bear against said bar or plate, so that the latter can be withdrawn by loosening without removing said clamping device, substantially as described.

23. In a sewing-machine with trimming attachment, the flat blade held against the end of the rock-shaft by a screw and prevented from turning on said screw by a suitable projection, such as a steady-pin, substantially as described.

24. In a sewing-machine with trimming attachment, the rock-shaft carrying the vibratory cutter, and supported, as described, on the cloth-plate, so that the trimmed-off strip will pass over the shaft, substantially as described.

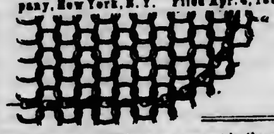
25. In a sewing-machine with trimming attachment, the combination, with the rock-shaft supported in bearings on the cloth-plate and cutter attached to said shaft, of an inclined plate located in front of the rock-shaft, substantially as described.

26. The combination, with a sewing-machine having a looper-shaft below the cloth-plate, of a rock-shaft supported back of the presser-foot and looper-shaft and extending from a point close to the presser-foot over the edge of the cloth-plate, a cutter secured to the end of said rock-shaft adjacent to the presser-foot, so as to project toward the needle of the sewing-machine, substantially at right angles to said shaft, and an operating-arm attached to the overhanging end of the rock-shaft aforesaid and connected with an eccentric on the looper-shaft, as set forth.

27. In a sewing-machine with trimming attachment, the combination, with the presser-foot, finger, and vibratory cutter working between said foot and finger, of an elongated bar or plate adjustably supported in guides on the cloth-plate and projecting under the said finger, so as to co-operate with said vibratory cutter to trim the fabric as it is sewed, substantially as described.

28. The combination, with the cloth-plate, presser-foot, and looper-shaft of the sewing-machine, of the frame carried by said cloth-plate, the rock-shaft supported in bearings in said frame and extending from a point close to the presser-foot beyond the edge of the cloth-plate, an eccentric on the looper-shaft, connections between the projecting end of the rock-shaft and said eccentric, a vibratory cutter attached to the opposite end of the rock-shaft, and an elongated bar or plate supported parallel with said cloth-plate and adapted to co-operate with said vibratory cutter, substantially as described.

255,579. ART OF MANUFACTURING HOSIERY. STOCKTON BEATON, Philadelphia, Pa., and CHARLES H. WILLCOX, New York, N. Y., assignors to the Willcox & Gibbs Sewing Machine Company, New York, N. Y. Filed Apr. 4, 1881. (No model.)

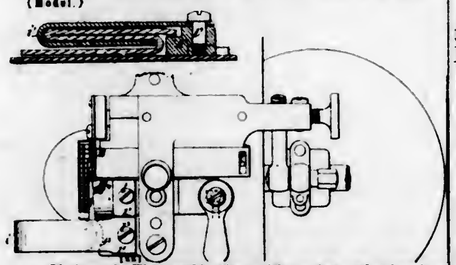


Claim.—1. The improvement in the art of manufacturing hosiery, consisting in sewing the seam or seams with straight-ahead stitches equal, or approximately equal, in length to the gage of the fabric, substantially as described.

2. The method of uniting hosiery so as to form with rapidity and economy strong closely-trimmed seams by running on a sewing-machine straight-ahead seams of stitches equal, or approximately equal, in length to the gage of the fabric, and simultaneously with

the sewing operation trimming off the excess of material beyond the seam in a continuous manner, substantially as described.

255,580. MACHINE FOR SEWING WELTS OR HEMS ON FABRICS. STOCKTON HORTON, Philadelphia, Pa., and CHARLES H. WILLCOX, New York, N. Y., assignors to the Willcox & Gibbs Sewing Machine Company, New York, N. Y. Filed Jan. 10, 1882. (Model.)



Claim.—1. The combination, with sewing and trimming mechanism, of an overhanging guide adapted to enter the fold of a welt or hem and arranged with respect to said sewing and trimming mechanism substantially as described.

2. The combination, with sewing and trimming mechanism and a folded-edge guide, of an overhanging guide adapted to enter the fold guided by the aforesaid folded-edge guide, substantially as described.

3. The combination, with sewing and trimming mechanism, of means for controlling the width of a welt or hem folded as described, and for guiding said welt or hem to the aforesaid mechanism, substantially as set forth.

4. The combination, with an edge-guide having its guiding-edge arranged relatively to the stitching mechanism of a sewing-machine as described, of an overhanging guide adapted to enter a fold and having its guiding-edge in front of the guiding-edge of said edge-guide and substantially in line therewith, so as to crowd the fold against the latter, substantially as described.

5. The combination, in a machine for sewing welts or hems on fabrics, of the folded-edge guide and the overhanging horizontal arm adapted to form a guide within the fold guided by the aforesaid folded-edge guide, and also by guiding or supporting the welt or hem itself to control the width thereof, substantially as described.

6. The combination, with a guide formed by an overhanging arm adapted to enter a fold, of a guide recessed opposite the end of said arm, substantially as described.

7. The combination, with a guide formed by an overhanging arm adapted to enter a fold, of an edge-guide recessed opposite the end of the arm and provided with a guiding-edge in line or approximately in line with said end, substantially as described.

8. The combination, with a presser-foot having a turned-up toe, of an edge-guide alongside of said foot with its upper surface curved upward corresponding with said toe, substantially as described.

9. A sewing-machine guide adapted to guide the outer edge of a fold and located adjacent to and alongside of the presser-foot, and having a guiding-edge entirely in front of and in close proximity to the needle and slightly oblique to the line of stitching, substantially as described.

10. A set of guides for welting or hemming fabric, and comprising, in combination, a folded-edge guide and an overhanging guide attached to an elevation on the folded-edge guide back from the guiding-edge, the said edge being recessed or cut away opposite said overhanging guide, substantially as described.

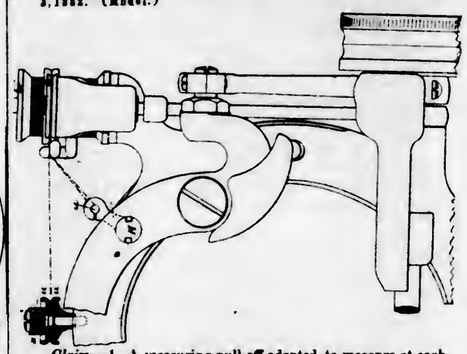
11. A presser-foot having an upright projection in front of needle-hole, with lateral extension flush, or nearly flush, at its lower edge with the bottom of the presser-foot, substantially as described.

12. The combination, with a presser-foot having a lateral extension, of the folded-edge guide cut away or grooved, as described, beneath said extension, as set forth.

13. The combination, with a presser-foot such as described, of a folded-edge guide adapted to guide the outer edge of the fold and located adjacent to and alongside of said presser-foot, and an overhanging guide supported in front of the presser-foot and adapted to enter the fold guided by the aforesaid edge-guide, substantially as described.

14. The combination, with an overhanging guide, of a folded-edge guide having its guiding-edge of considerable depth opposite the said overhanging guide and diminishing in depth beyond the same, substantially as described.

255,581. THREAD-CONTROLLING APPARATUS FOR SEWING-MACHINES. STOCKTON HORTON, Philadelphia, Pa., and CHARLES H. WILLCOX, New York, N. Y., assignors to the Willcox & Gibbs Sewing Machine Company, New York, N. Y. Filed Jan. 3, 1882. (Model.)



Claim.—1. A measuring pull-off adapted to measure at each stitch the amount of thread therefor, in combination with an automatic or intermittent tension between said pull-off and the stitching mechanism, and a tension between the spool or supply of thread and the pull-off, substantially as described.

2. The combination, with an adjustable pull-off, of an intermittent clamping-tension and a resisting-tension, substantially as described.

3. The combination of an automatic or intermittent tension, a constant tension, and a measuring pull-off arranged to act upon the thread between the two, substantially as described.

4. The combination, with an intermittent tension and a constant tension, of an adjustable pull-off arranged to act on the thread between the two, substantially as described.

5. The combination of the measuring pull-off and the intermittent clamping-tension between itself and the stitching mechanism, substantially as described.

6. The combination of an adjustable pull-off and an intermittent clamping-tension between itself and the stitch-forming mechanism, substantially as described.

7. The combination of the measuring pull-off, the intermittent clamping-tension, the check-tension, and the resisting-tension, substantially as described.

8. The combination of the needle-lever, pull-off, and adjustable connection, substantially as described.

9. The combination, with a vibratory part of the sewing-machine, such as the needle-lever, of a pull-off rigidly attached to and carried by said part, so that the eye or portion of the pull-off which acts upon the thread moves in a circular arc with the fulcrum of said vibratory part as the center, said pull-off being adjustable to bring said eye or operating portion of the pull-off nearer to or farther from the said fulcrum, substantially as described.

10. The combination, with a moving part of a sewing-machine, such as the needle-lever, of a pull-off rigidly attached and pivoted thereto, so as to be carried thereby and adjustable on its pivot as a center, so as to alter its action upon the thread, substantially as described.

11. The combination, with an adjustable pull-off, of means, as explained, for locking it in position, requiring a special key for releasing the same, substantially as described.

12. The combination of the adjustable pull-off, needle-lever, and holding-screw, substantially as described.

13. The combination of the needle-lever, pull-off, holding-screw, and spring-washer, substantially as described.

14. In an automatic or intermittent tension, the combination, with the eccentric-rod, of an independent clamp-stud and a tension-disk fixed thereto, substantially as described.

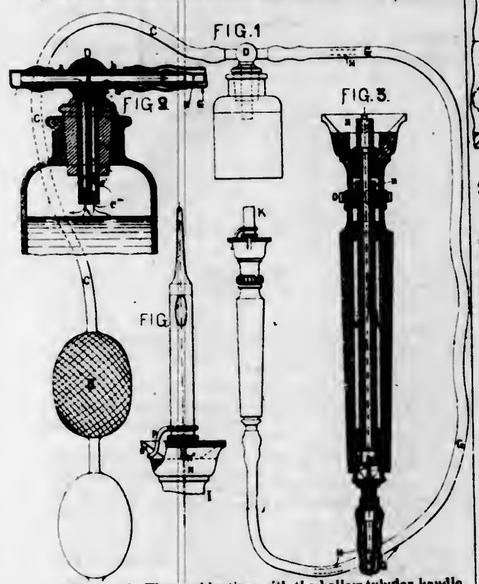
15. In a sewing-machine forming stitches by means of a looper, a measuring pull-off, and intermittent clamping-tension, combined with operating mechanism, and timed, as explained, so as to deliver the measured thread gradually during the ascent of the needle-bar, substantially as described.

16. The check-tension formed by an annular washer, combined with a stationary disk, supporting-pins, and independent tension-springs for holding said washer against said disk, substantially as described.

17. The combination, with an intermittent tension, of an annular spring-check tension surrounding a disk of the intermittent tension, substantially as described.

255,582. CAUTERIZING APPARATUS. EDME THEODORE BERSOT, Paris, France. Filed Mar. 1, 1882. (No model.) Patented in France Feb. 18, 1881.

Brief.—The supply of fuel is regulated by a valve manipulated at the base of the handle, and the supply-tube is double, carrying both air and fuel in separate compartments.



Claim.—1. The combination, with the hollow tubular handle of the cauterizing-iron, of means, as indicated, for controlling the supply of fuel, adapted to be operated by the hand which grasps said handle by means of a thumb-nut or its equivalent, substantially as described.

2. The combination, with the cauterizing-iron and its handle, of the two tubes for conveying air and carbureted air or other suitable fuel to the handle, wherein they mix, substantially as described.

3. The combination, with the carbureting-vessel and stopper, of the connection-piece having inlet and outlet passages and two or more openings into the outlet-passage, and adapted to be moved in and out, so as to cover or uncover one or more of said openings, and thus regulate the flow of the carbureted air, substantially as described.

4. The combination of the air-forcing bulb, the carburetor, the hollow handle, the tube leading from the air-forcing bulb to the carburetor, the two tubes leading from the latter to the hollow handle, and the valve apparatus connected with said handle, substantially as described.

5. The combination, with the cauterizing-iron, its sheath and handle, of a movable piece adapted to engage the said iron and its sheath so that they can be turned without burning the operator's fingers, substantially as described.

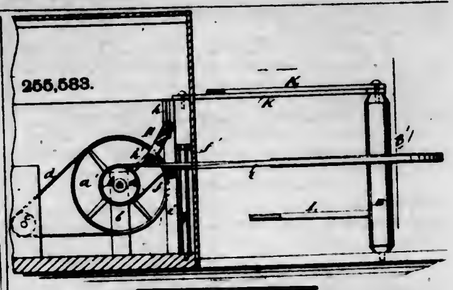
6. The combination, with the handle and its valve apparatus, of the carburetor, the movable connection-piece, with inlet and outlet passages, and two or more openings into the outlet-passage, and the two tubes connecting the handle with said connection-piece, substantially as described.

7. The combination, with the handle and its valve apparatus, of the two concentric tubes, one inside the other, for conveying air and carbureted air or other gaseous fuel into said handle, substantially as described.

255,583. HORSE-POWER. THOMAS A. BROWN, Oliver, Ga. Filed Sept. 24, 1881. (No model.)

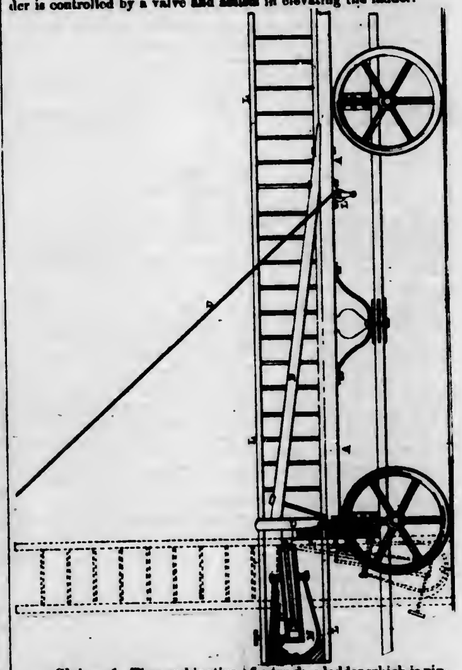
Claim.—1. The shaft A, carrying the small pulley *a* and the larger pulley *a'*, in combination with the main power-wheel B', the vertical belt-guides *g g*, the horizontal guide or roller *f*, the swinging tightener H, and the belts *e* and *d*, substantially as and for the purposes set forth.

2. The horizontal roller *f* and the vertical guide-rollers *g g*, in combination with the belt-tightener H, pulley *a*, power-wheel B', and the belt *e*, substantially as and for the purposes set forth.



255,584. FIRE-ESCAPE LADDER. RICHARD F. BRIDEWELL, San Francisco, Cal. Filed Dec. 19, 1881. (No model.)

Brief.—The ladder is pivoted to the journal of the wheel for adjusting the angle of the ladder, which has an opening through it for the ladder to pass through sidewise. A chamber containing compressed air is secured to the lower part of the ladder, and contains also a cylinder and piston. The flow of air into the cylinder is controlled by a valve and assists in elevating the ladder.



Claim.—1. The combination of a truck, a ladder which is pivoted or hinged to a swiveled pivot, and a mechanism, substantially as shown, for inclining the ladder after it has been raised to a vertical position, substantially as described.

2. The combination of a truck, a ladder which is pivoted or hinged to a swiveled pivot, a wheel on said pivot having an opening through its top for the ladder to pass through, and a pinion for turning the wheel, whereby the ladder can be inclined toward either side of the truck by turning the pinion, substantially as set forth.

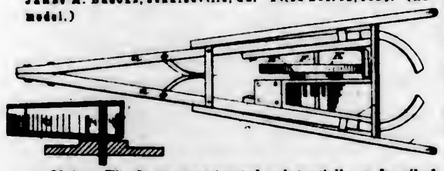
3. The combination of a truck, a ladder which is pivoted to a swiveled pivot, a mechanism for inclining the ladder, and mechanism, substantially as herein described, which is secured to the end of the ladder for assisting to raise the ladder into position, substantially as specified.

4. The combination of a truck, a mechanism, substantially as herein shown, for inclining the ladder after it is raised, a ladder which is pivoted so as to be raised from a horizontal to a vertical position, a chamber containing compressed air and having a cylinder placed inside of it, a piston which is placed inside of the

cylinder, and a valve for controlling the flow of the air to the piston, substantially as shown.

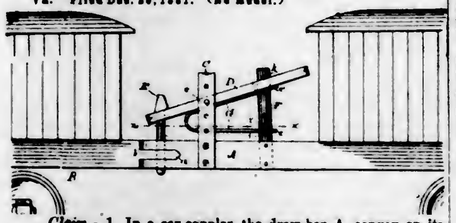
5. The combination of the truck, a ladder which is pivoted to a swiveled pivot, a mechanism, substantially as described, for inclining the ladder after it has been raised to a vertical position, the air-chamber secured between the ends of the ladder, the cylinder placed in the air-chamber, and the piston which has its outer end pivoted to the wheel, by means of which the ladder is inclined, and a suitable mechanism for lowering the ladder after it has been raised, substantially as described.

255,585. COTTON-SEED PLANTER. ENOCH M. BROOKS and JAMES M. BROOKS, Jenkinsville, Ga. Filed Dec. 13, 1881. (No model.)



Claim.—The hopper constructed, substantially as described, with the forward end wider at the bottom than the top, the rear end wider than the forward end, but having a uniform width from top to bottom, in combination with V-shaped frame and the distributing mechanism, substantially as specified.

255,586. CAR-COUPLING. MATTHEW W. BRUCE, White Stone, Va. Filed Dec. 20, 1881. (No model.)

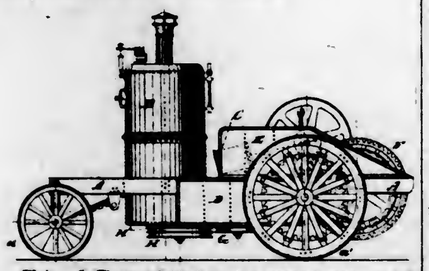


Claim.—1. In a car-coupler, the draw-bar A, convex on its end, and the draw-bar B, correspondingly concaved to receive the end of the bar A, in combination with the pin E and operating-lever D, substantially as shown and described.

2. In a car-coupler, the draw-bar A, having the recess *a*, and the draw-bar B, having the tenon *b*, in combination with the pin E and operating-lever D, substantially as shown and described.

3. The combination, in a car-coupler, of the draw-bars A and B, constructed substantially as described, and the yoke C, standard F, spring G, operating-lever D, and pin E, substantially as shown and described.

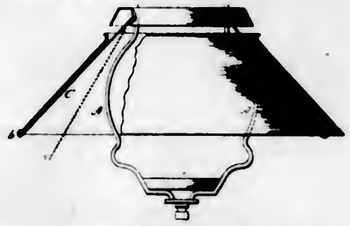
255,587. STEAM-PLOWING. FRITZ BAUTSCHKE, Berlin, Germany. Filed July 9, 1881. (No model.)



Claim.—1. The snatch-block carriage mounted upon swiveled wheels I I′, and composed of a frame, Q Q′, sheave P, having pinion *b*, cog-wheel *a*, having concentric pulley *c′*, band *d*, shaft *e*, sheave or pulley R, keyed upon said shaft, and provided with the clutch *f*, band-drum S, vertically adjustable upon shaft *e*, means for adjusting said drum, clutch *f′*, fixed in the bottom plate, Q′, of the carriage-frame, and band V, having the link or eye W at its free end, constructed and combined substantially as and for the purpose herein shown and specified.

2. The combination, with a fixed pair of anchors, Z Z′, of a snatch-block carriage, engine, and chains connecting the snatch-block with the engine, as described, so that after the band which connects the snatch-block carriage with anchor Z has been shifted to and coupled with the next anchor, Z′, the snatch-block carriage may be drawn into its operative position in a line with anchor Z′ and the engine by the operation of the latter and the chains which connect it with the snatch-block, substantially as and for the purpose herein shown and set forth.

255,588. SHADE-HOLDER. EDSON L. BUTLER, Ansonia, Conn., assignor of one-half to Wallace & Sons, same place. Filed Feb. 1, 1882. (No model.)

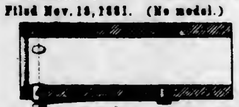


Claim.—1. In a lamp-fixture, the rigid hangers C, hinged at their upper ends and hooked below to engage the lower edge of the shade, substantially as described.

2. In a lamp-fixture, the combination of the ring B, attached to the lamp-supports, with the rigid hangers C, hinged thereto, extending downward, and hooked at their lower ends to engage the lower edge of the shade, substantially as described.

3. In a lamp-fixture, the combination of the ring B, made adjustable vertically on the lamp-supports, the rigid hangers C, hinged to said ring and vertically adjustable therewith, their lower ends hooked to engage the lower edge of the shade, substantially as described.

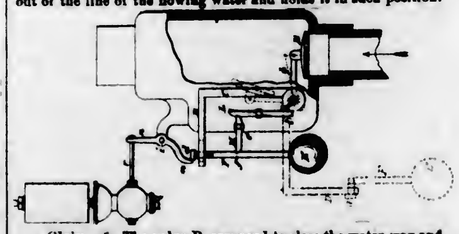
255,589. MILLING-TOOL. WILLIAM M. BUCKLEY, Meriden, Conn. Filed Nov. 18, 1881. (No model.)



Claim.—The herein-described turning, polishing, or burnishing tool, consisting of the hollow tool presenting a cutting device at its mouth, combined with one or more burnishers arranged in rear of the cutting portion and movable radially in the tool, with a spring to apply inward pressure to the said burnisher or burnishers, substantially as described.

255,590. VALVE FOR FIRE-EXTINGUISHERS. ALBERT M. BURRITT, Waterbury, Conn., assignor to the A. Burritt Hardware Company, same place. Filed Dec. 24, 1881. (No model.)

Brief.—When released the weight causes the valve to swing out of the line of the flowing water and holds it in such position.

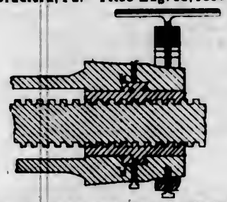


Claim.—1. The valve B, arranged to close the water-way and hung at one side of the water-way, combined with mechanism, substantially such as described, whereby after said valve is permitted to leave its seat it will be automatically turned out of line of the flowing water, substantially as described.

2. The valve B, arranged to close the water-way and hung upon a rock-shaft at one side of the water-way, combined with a lever extending from said rock-shaft, a weight suspended by a trip, a latch to hold the said trip, a cam on the said rock-shaft to operate said latch, whereby the first part of the movement of said valve will release the said weight and cause it to turn said rock-shaft and throw the valve out of the line of the water-way, substantially as described.

3. The valve B, arranged to close the water-way and hung at one side of the water-way, combined with mechanism, substantially such as described, whereby after said valve leaves its seat it will be automatically turned out of line of the flowing water, and with an alarm engaged with said mechanism, so that by the said movement of the valve the alarm will be sounded, substantially as described.

255,591. TEMPER-SCREW BOX FOR OIL-WELLS. JOHN D. CAMERON, Bradford, Pa. Filed Aug. 22, 1881. (No model.)



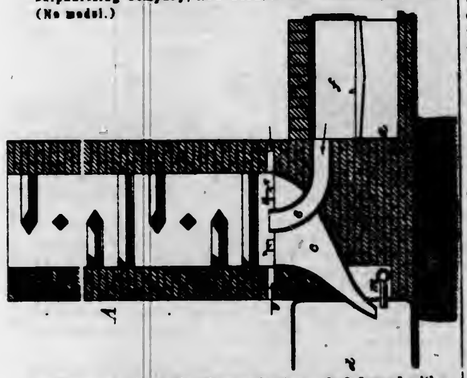
Claim.—1. A temper-screw box of cylindrical shape, having removable semi-cylindrical screw-boxes supported by means of a flange or half-collar projecting from their bodies, substantially as described, and in the manner set forth.

2. A temper-screw having a box provided with removable screw-boxes attached by means of dovetails, substantially in the manner described.

3. A temper-screw having a box provided with dovetail grooves, in combination with removable screw-boxes having dovetails, substantially as described.

4. A temper-screw box having removable dovetailed screw-boxes fitting within dovetailed grooves, and hand-screws for holding the screw-boxes in place.

255,592. ROASTING OR REVIVIFYING FURNACE. JOHN CAMPBELL, Allegheny City, Pa., assignor to the Campbell Desulphurizing Company, New York, N. Y. Filed May 5, 1881. (No model.)

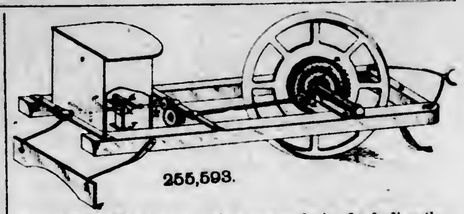


Claim.—1. A roasting furnace having a shaft formed with a series of bars extending across its passage, with their sides inclined to the axis of the shaft and arranged one above the other at various angles in spiral order, substantially as and for the purpose set forth.

2. In a roasting-furnace, a shaft provided with a series of hollow bars permanently built into it, said hollow bars having inclined upper and lower surfaces and arranged one above the other in spiral order, substantially as and for the purpose specified.

3. The combination, with the shaft A, provided with air-passages *e*, the furnace *f*, and the receptacle *d*, located at opposite sides of said shaft, of the chute C, having its upper end of substantially the same size as the interior of the shaft, and the blast-pipe *c*, extending into the shaft through the center of the chute C, the lower ends of the pipe *c* and chute C extending through opposite walls of the shaft and entering respectively the furnace *f* and the receptacle *d*, substantially as shown and described.

255,593. COTTON-SEED DROPPER. RAINSFORD CANTELOU, Edgefield, S. C. Filed Jan. 12, 1882. (No model.)



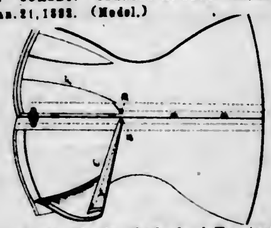
255,593.

Claim.—1. In a cotton-seed dropper, the combination of the following elements, viz: a plunger or seed-expeller, a hopper having a discharge-aperture, a cut-off or wire carried by the plunger and pivoted to the hopper, and an arm or device for feeding the seed into the discharge-opening of the hopper, substantially as herein set forth.

2. The combination of the crank-shaft having spirally-arranged feed-fingers and a vertically-operating plunger with a hopper having an apertured bottom, as and for the purpose set forth.

3. The combination of the radial feed-finger having an obliquely-bent horizontal part provided with a beveled end face with the crank-shaft, the plunger, and the apertured hopper-bottom, as and for the purpose set forth.

255,594. CORSET. CHARLES N. CHADWICK, Brooklyn, N. Y. Filed Jan. 21, 1882. (Model.)



Claim.—A corset having the busks A B, extending from the top to the bottom of the corset, secured in the front meeting edges, combined with arms C C, pivoted to the busks, the front edge of the breast portion of the corset attached to said arms, and so as to turn with the said arm upon its pivot away from and so as to expose the breast, with the band G, extending from the side above the breast-opening at the top to the back, substantially as described.

255,595. CONSTRUCTION OF BUILDINGS. ANDREW J. CHASE, Boston, Mass. Filed Feb. 7, 1882. (No model.)

Brief.—Wall consists of a frame composed of studding with outer layers of paper, boarding, furring, boarding, and clapboarding. Vertical and horizontal rails divide the spaces between the studding into panels.

Claim.—1. The wall consisting of a frame composed of studding with the outer layers of paper, boarding, furring, ordinary boarding, and clapboarding, arranged substantially in the order described.

2. In a wall for a house, the frame of studding with an outer covering of paper, and the vertical and horizontal rails dividing the spaces between the studding into panels, substantially as described.

3. A wall composed of a frame of studding with an outer covering of paper, the rails dividing the spaces between the studding into panels, and the layers outside of the paper, consisting of wood, furring, and paper, and clapboarding, substantially as described.

4. A wall made substantially as described, in which the studding and the hard-rolled paper or wood-pulp board becomes a part of the inner finish.

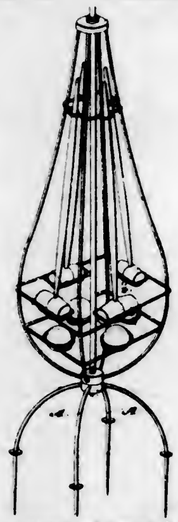
255,596. CROQUET-STAND. HERBERT C. CHESTER, Meriden, Conn. Filed Jan. 3, 1882. (No model.)

Claim.—1. A combined croquet-stand and center wicket, substantially as and for the purpose specified.

2. A stand for supporting croquet mallets and balls, secured to or upon the upper end of a center wicket, substantially as and for the purpose shown.

3. A croquet-stand provided with a series of pockets for the reception of balls arranged horizontally around an axial center, a series of pockets for the reception of the heads of mallets similarly arranged at a point above said ball-pockets, and a series of sockets

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or recesses adapted to receive and contain the upper ends of the handles of said mallets, substantially as and for the purpose set forth.

255,597. GALVANIC BATTERY. WILLIAM A. CHILDS, Englewood, N. J., and FRANK SHAW, New York, N. Y. Filed May 10, 1881. (No model.)

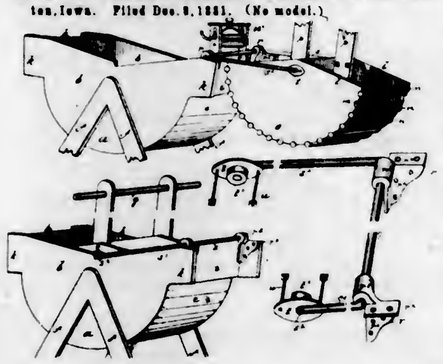


Claim.—1. The combination of the non-conducting cover, the detachable zinc electrode passing through the aperture in the cover and provided with the flange or enlargement above the cover, and a washer between said flange and cover, substantially as and for the purpose herein set forth.

2. The compound carbon element constructed, substantially as herein set forth, of two or more plates of carbon clamped at their upper ends to a conducting and supporting plate of carbon impregnated with paraffine or other like substance.

3. The combination, substantially as hereinbefore set forth, of the jar, the non-conducting cover, and the carbon electrode inserted in the aperture of the cover, and composed of the impregnated central or supporting plate, and the plates connected thereto by the hard-rubber rivet.

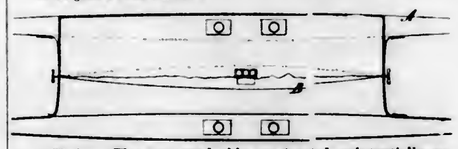
255,598. WASHING-MACHINE. BENJAMIN F. COKELY, Vinton, Iowa. Filed Dec. 9, 1881. (No model.)



Claim.—1. The combination, with the semicircular box *a*, having end boards, *i h*, of the brackets *r r*, secured to the end board *i*, having bearings r^2 and flanges r^3, rod *s*, passing through the eyes of the bearings and bent so as to form the angular parts *s' s'* of the rods, plates *t t*, each having a tubular projection, *t'*, adapted to receive the bent end s^2 of the rod *s*, and rubber *o*, swiveled to the bent ends of the rod *s*, as set forth, whereby the rubber can be oscillated back and forth to wash the clothes or raised out of the box and swung over in line therewith, substantially as described.

2. The combination of the box *a*, constructed as set forth, brackets *r*, having bearings r^2, flanges r^3, rod *s s' s²*, plates *t*, each having a tubular projection, *t'*, rubber *o*, constructed as set forth, and wringer *w*, clamped to the end board *i* between the ends of the box and rubber, substantially as described.

255,599. CONSTRUCTION OF VESSELS. WILLIAM COPPIN, London, England. Filed Feb. 8, 1882. (No model.) Patented in England June 16, 1879.



Claim.—The compound ship constructed, substantially as shown and described, of three hulls of narrow beam, the two outer hulls being longer than the central hull, and the whole decked over and combined as one vessel.

255,600. MANUFACTURE AND TREATMENT OF LINE, CORD, ROPES, CABLES, AND OAKUM. JNO. CODLSON, St. Petersburg, Russia. Filed Sept. 2, 1881. (No specimens.) Patented in England Apr. 7, 1881.

Claim.—The preservative compound for treating fibrous materials and articles made therefrom, composed of fir-tar and naphtha, in about the proportions and in the manner herein set forth.

255,601. CAR-COUPLING. LUCIDAS J. CHALLE, Santa Rosa, Cal. Filed Feb. 10, 1882. (No model.)



Claim.—1. The draw-head A, open at the top and front, provided with inwardly-projecting lugs *a a* upon its upper edges, and adapted to receive the coupling hook and link, substantially as shown and described.

2. In a car-coupler, the coupling-hook B, pivoted to the forward portion of the draw-head, and provided with upwardly-projecting hooks *b b* upon its front end, and an arm, *b'*, all arranged to operate as set forth.

3. In a car-coupler, the coupling-hook B, provided on its forward end with the upwardly-projecting hooks *b b*, and with the arm *b'*, pivoted in the forward portion of and in combination with the draw-head A, substantially as shown and set forth.

4. The shaft C, provided with downwardly-projecting arms *c c²*, the arm *c* being adapted to operate the coupling and the arm c^2 to lock the said coupler when the link is within it, substantially as shown and described.

5. The L-shaped lever D, pivoted to the draw-head A, attached to the arm *c* by the lever *c'*, and provided with an arm, *d*, by which it is pivoted by the lever *d'* to the coupler-arm *b'*, and adapted to elevate or depress the coupling-hook B, substantially as shown and described.

6. The combination of the shaft C, its arms *c c²*, rod *c'*, lever D, and rod *d'* with the coupling-hook B and draw-head, all arranged to operate substantially as shown and described.

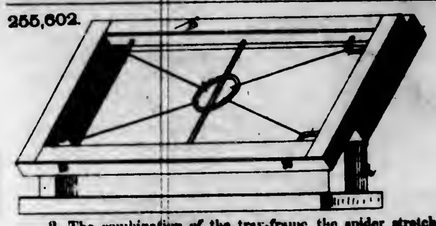
7. The combination of the coupler-hook B with the shaft C, its arm *c*, and arm c^2, provided with a keeper, c^4, arranged to operate substantially as shown and described.

8. In combination with the coupler-hook B, the keeper c^4, pivoted to the arm c^2 of the shaft C, and retained in position on the draw-head by the link c^3, substantially as and for the purpose shown and described.

255,602. FRUIT-DRIER. CHARLES A. CURRAN, Albany, Oreg. Filed Jan. 21, 1882. (No model.)

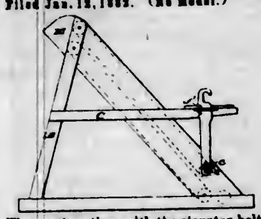
Claim.—1. The combination of the sectional hinged frame D and the door *i* applied to this frame, for the purpose specified.

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2. The combination of the tray-frame, the spider stretched therein, the angular corner-pieces, and the tightening-nuts, substantially as described.

255,603. HARVESTER-ELEVATOR. JAMES H. CURVIE, St. Paul, Minn. Filed Jan. 12, 1882. (No model.)



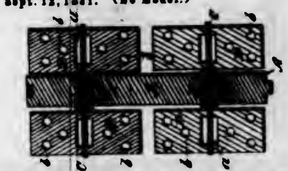
Claim.—1. The combination, with the elevator-belt, the cover formed of flexible fabric and situated above said belt, and a frame which holds the lower end of said flexible cover fixed relatively to its upper end, of the bar F, loosely connected to said frame, and the pivot *f'*, which prevents the bar and frame from swinging toward the elevator and permits them both to swing away therefrom, substantially as set forth.

2. The combination, with the lower revolving elevator, the upper elevator revolving upon the lower roller, G, and the upper roller, G', and the bars $F' E^2$, carrying said lower roller and swinging around the axis of the upper roller, of the vertically-adjustable bar F, which supports vertically the lower roller of the upper elevator and the frame E^2, substantially as set forth.

3. The combination, with the lower elevator, the bars E^2, the upper elevator having the gudgeons or shaft of its lower roller projecting through said bars and through the elevator-frame, of the vertically-adjustable bars F F', arranged to support said gudgeons or shaft outside of the elevator-frame, substantially as set forth.

4. The combination, with the lower elevator-belt and the upper elevator-belt arranged to swing at the lower end, of the supporting-bars F F', engaging with the journals of the swinging roller by the slots *e*, whereby said supporting-bars are adapted to permit said roller to swing outwardly and to prevent it from swinging inwardly, substantially as set forth.

255,604. CHURN-DASHER. DAVID E. DAVIS, Marion, Va. Filed Sept. 12, 1881. (No model.)



Claim.—The combination of the dasher-staff A, having transverse thimbles B, projecting on both sides thereof, arms C, inserted loosely through said thimbles, and S-shaped wings D, secured upon arms C, and having the apertures *a b*, substantially as and for the purpose herein shown and specified.

255,605. MATCH-IGNITER. JAMES R. DONNELLY, New York N. Y. Filed Dec. 31, 1881. (No model.)

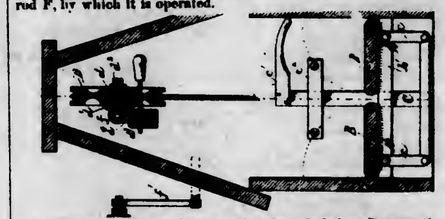


Claim.—1. In a match-igniter, the combination of the igniting-surface A and the spot or surface B, having luminiferous coating *a* arranged upon the back of a glass plate, D, in the opening *f* of the igniter-body E, as shown and described.

2. As an article of manufacture, the match-igniter made substantially as herein shown and described, consisting of the base E, igniting-surface A, glass D, a coating of some luminous substance, *a*, and the backing *b*, as set forth.

255,606. WELL-CURB AND WATER-DRAWER. LINDLEY H. DUNNA, Chester Hill, Ohio. Filed Dec. 22, 1881. (No model.)

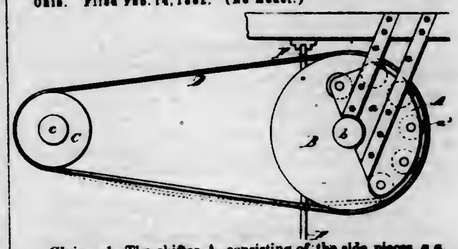
Brief.—B B are trap-doors that cover the well, and are raised either by lever C or by the bucket in passing up from the well. The wheel D is beveled on one side at *d'*, where it gears with *f* on rod F, by which it is operated.



Claim.—1. In a well-house, the pivoted shelves B, operating in combination with the T-lever C and connecting-rods *c*, substantially as and for the purposes specified.

2. The pulley D, its axle-box *d*, and gear *d'*, operating in combination with the axle d^3, bracket d^2, lug d^4, crank-shaft F, and gear *f*, substantially as shown and described.

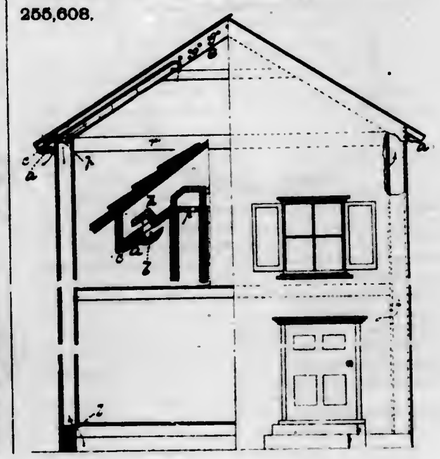
255,607. BELT-SHIFTER. EDWIN C. DURAND, Greenwich, Ohio. Filed Feb. 14, 1882. (No model.)



Claim.—1. The shifter A, consisting of the side pieces, *a a*, formed as shown, secured together by the strips a^2 a^3, and having journaled between them the pulleys a^4, and adapted to be secured to the joist E by the braces *c c*, substantially as shown and described.

2. The shifter A and its pulleys a^4, in combination with the pulley B and shifting-bar F, all arranged to operate as set forth.

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255,608. CONSTRUCTION OF HOUSES FOR PURPOSES OF VENTILATION, &c. PRESCRIBE G. EATON, Springville, N. Y. Filed Feb. 9, 1882. (No model.)

Brief.—The plancher and end rafters are perforated to permit a draft of cold air under the roof. The sills are beveled to allow the air from the cellar to pass up between the lath and plaster and the siding of the house to join the current under the roof. A guard-molding protects the perforations in the plancher.

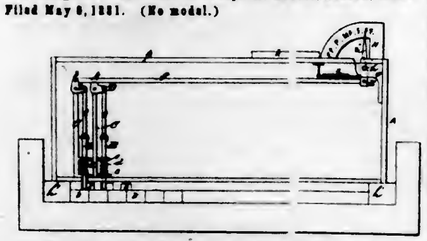
Claim.—1. The plancher *a*, having the aperture or perforations *b* and the perforated end rafters, *c*, combined substantially as specified.

2. The plancher *a*, having the aperture or perforations *b* and the rabbeted guard-molding *e*, combined substantially as specified.

3. The combination, with the perforated plancher *a* and the perforated end rafters, *c*, of the air-passages *l* in the sills and the opening *p* in the top of the wall, substantially as specified.

4. The combination, with the perforated plancher and the perforated end rafters, of the air-passages in the sills, the side-wall air-passages, and the air box or conduit leading from the top of the side-wall air-passages to the end rafter, as specified.

255,609. KEY-BOARD ATTACHMENT FOR MUSICAL INSTRUMENTS. GILBERT R. ELLIOTT, Moncton, New Brunswick, Canada, assignor of one-half to Joseph A. Harris, Boston, Mass. Filed May 6, 1881. (No model.)



Claim.—1. In a key-board attachment for a piano, organ, or like musical instrument, a series of pins or hammers, B B B, with spirals *d d*, arranged in a position oblique or diagonal to the length of said key-board, substantially as and for the purpose described.

2. In a key-board attachment for a piano, organ, or like musical instrument, the series of posts C C C, to which the knee-levers and hammers are attached, arranged in a position oblique or diagonal to the length of said key-board, substantially as and for the purpose described.

3. In a key-board attachment for a piano, organ, or like musical instrument, the series of knee-levers D D D, fulcrumed on the posts C C C, arranged in a position oblique or diagonal to the length of said key-board, substantially as and for the purpose described.

255,610. BRACELET. CHARLES A. PAAS, Brooklyn, assignor to himself and George A. Eaton, New York, N. Y. Filed Jan. 30, 1882. (No model.)

Brief.—The bracelet is made in two sections with slip-joints at the ends, and is provided with helical springs within the sections, through which the wires pass.

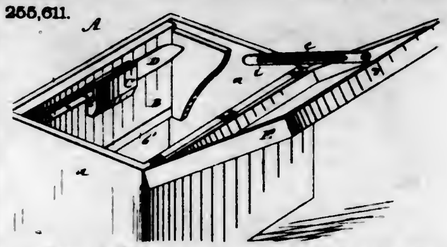


Claim.—1. The combination, in a bracelet, of two or more hollow sections, chains, or wires passing from one section into the other at both ends of the sections, and helical springs within the sections, through which the wires or chains pass, and to which they are attached at the inner ends, as set forth.

2. The combination, in a bracelet, of two or more sections, couplings at the respective ends of the sections, springs within the sections, a wire or chain passing from one section into the other at each end of the section, and abutments for the ends of the springs, through which abutments and springs the wires or chains pass and are attached, substantially as set forth.

255,611. BREAD-BOX. JOSEPH FOURNIER, Jr., New York, N. Y. Filed Mar. 1, 1882. (No model.)

255,611.



Claim.—1. The bread-box A, provided with the loaf-supporting board B, adapted to be held inside of the box when not in use, substantially as described.

2. The box A, provided upon the inside with the cleats *b* and *b'*, in combination with the board B, substantially as described.

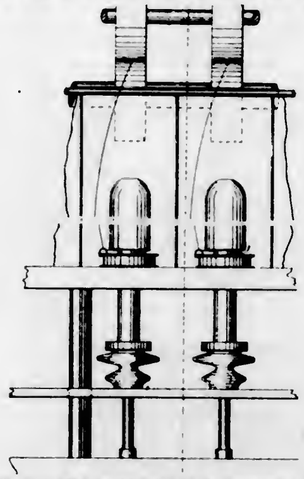
3. The board B, having the slotted block C secured to it for holding the bread-knife, substantially as described.

4. The board B, rounded at its ends, in combination with the box A, provided upon the inside with the cleats *b* and *b'*, substantially as described.

5. The combination, with the box A, provided upon the inside with the cleats *b* and *b'*, of the board B, rounded at its ends and provided with the slotted block C, substantially as described.

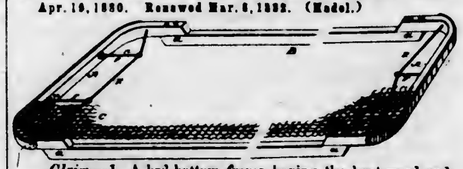
255,612. DRAWING, SPINNING, AND TWISTING APPARATUS. FREDERICK WILLIAM FOX, Windhill, County of York, England. Filed Jan. 12, 1882. (No model.) Patented in England Nov. 29, 1881.

Brief.—Stationary caps are secured to the tops of the spindles. In operation the top of the traveler is slightly above the level of the bottom edge of the cap, so that the yarn as it is wound upon the bobbin is brought in contact with said bottom edge, thereby wrapping the loose or projecting fibers around the body of the yarn.



Claim.—The combination of the spindles, caps, whirls, and operating devices of a cop-spinning machine with a ring-rail, rings, and travelers, all substantially as set forth.

255,613. BED-BOTTOM. ABEL H. PEASE, Chicago, Ill. Filed Apr. 16, 1880. Renewed Mar. 6, 1882. (Model.)



Claim.—1. A bed-bottom frame having the bent-wood end rails and straight side rails joined in the vertical planes of the side rails, substantially as described.

2. Combined with the side rails, B, the end rails, A, of bent wood, secured to the upper edges of the side rails, substantially as and for the purposes set forth.

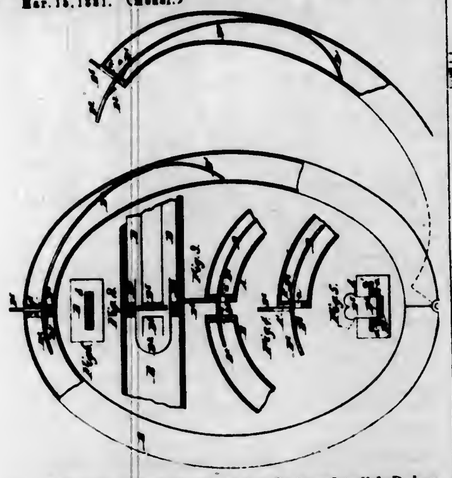
3. A removable bed-bottom frame having end rails of bent wood, forming round corners, secured to the upper edges of the side rails, substantially as described, and for the purposes set forth.

4. The combination, with the bent-wood end rails, of the rod E and strut or struts F, arranged to flex the end rails by pressure supported by the side rails, substantially as described.

5. In combination with an extensible fabric, C, the bed-bottom frame having its ends of bent wood and adjustably trussed to secure central relative elongation of the frame, substantially as and for the purpose described.

6. The combination with a bed-bottom frame having bent-wood rounded corners, of the transverse rods E, adapted to contract the frame laterally, and thereby to longitudinally extend the same, substantially as described.

255,614. BRACELET. ISAAC L. GARSIDE, Paterson, N. J. Filed Mar. 15, 1881. (Model.)



Claim.—1. The spring composing the bracelet-click D, having the root D', body D², and shoulders D³, adapted to be engaged and retained in the part *a a'* of a bracelet by its own elasticity, as herein specified.

2. The click described, having the shoulder D³ and the shoulder or shoulders D³, in combination with a bracelet having hollow parts, one part, A, having a mortised end adapted to receive the main body of the click and to permanently retain it by reason of the shoulders D³, and the other part, B, having a mortised end adapted to engage and release the shoulder D³ at will, as herein specified.

3. The click D, bearing inward or toward the arm of the wearer at the catch end, in combination with a bracelet and with the knob D⁴, arranged to release the click by a tensile strain, as herein set forth.

4. The knob D⁴, formed integral with the body D² and arranged to serve as the operating means for disconnecting by a tensile strain, and also to serve with the shoulders D³ to hold the click against being forced inward, as herein specified.

255,615. WATERPROOFING COMPOUND. JAS. E. GILLESPIE, Warwick, N. Y. Filed Nov. 19, 1881. (No specimens.)

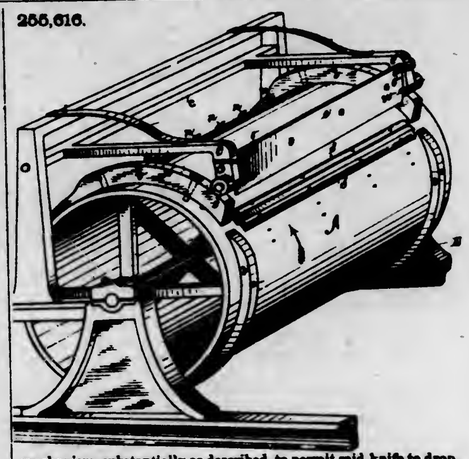
Claim.—A waterproofing compound composed of vulcanized india-rubber, paraffine-wax, and oil in about the proportions herein set forth.

255,616. PAPER-CUTTING DEVICE FOR PRINTING-PRESSES. SIDNEY A. GRANT, Malden, Mass. Filed Sept. 3, 1881. (No model.)

Claim.—1. The combination, with the printing-press cylinder A, provided with the nippers *n*, of the adjustable strips *s s*, the adjustable cams *v v*, the pivoted knife-frame *c*, and the knife *e*, pivoted to oscillate in said frame, substantially as set forth.

2. The combination, in paper-cutting devices for printing-presses, of the cylinder A, having a grooved knife-bed adjustable to different positions upon its periphery, the oscillatory knife *e*, and

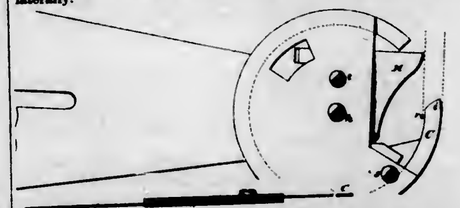
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mechanism, substantially as described, to permit said knife to drop upon said knife-bed and to lift said knife therefrom as said bed passes under said knife, substantially as set forth.

255,617. SEWING-MACHINE GUIDE. JAMES F. J. GUNNING, New Haven, Conn. Filed Jan. 25, 1882. (No model.)

Brief.—To provide for forming pockets of different sizes the segmental guide which is interposed between the fabric being united is adjustable circumferentially and the guide co-operating therewith on the opposite side of the line of sewing is adjustable laterally.



Claim.—1. The herein-described sewing-machine guide, consisting of the segment-shaped tongue C, arranged upon its holder so as to be rotated thereon, with its end *i* to lie between the thicknesses of fabric to be stitched together, substantially as described.

2. The herein-described sewing-machine guide, consisting of the segment-shaped tongue C, arranged upon its holder so as to be rotated thereon, with its end *i* to lie between the thicknesses of fabric to be stitched together, combined with an adjustable tongue, H, substantially as described.

3. In a sewing-machine guide, the combination of a tongue arranged to lie between the two thicknesses of fabric to be stitched together, and an adjustable tongue arranged to bear between the fabrics against the line of stitches being made, while the other tongue lies upon the opposite side of said line of stitches, substantially as described.

255,618. DRILLING-MACHINE. HENRY HAGUE, Elizabeth, N. J. Filed Jan. 11, 1882. (No model.)

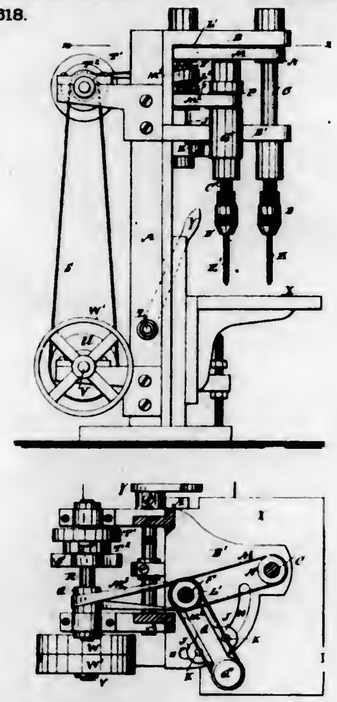
Claim.—1. A drilling-machine made, substantially as herein shown and described, with a fixed drill-shaft and a circularly moving or swinging drill-shaft, as set forth.

2. In a drilling-machine, the combination, with a suitable supporting-frame, of a fixed drill-shaft and a circularly movable drill-shaft, and devices for rotating both shafts simultaneously, substantially as herein shown and described, and for the purpose set forth.

3. In a drilling-machine, the combination, with the fixed drill-shaft C and the circularly-movable drill-shaft C', of the intermediate pulley-shaft F, and belts for transmitting the motion from the shaft F to the shafts C C', substantially as herein shown and described, and for the purpose set forth.

4. In a drilling-machine, the combination, with the shafts C, C', and F, of the swinging arm G and the plate B', provided with a guide-slot, H, substantially as herein shown and described, and for the purpose set forth.

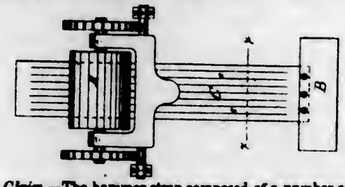
255,618.



5. In a drilling-machine, the combination, with the shafts C, C', and F, of the swinging arm G, the plate B', provided with a guide-slot, H, and of devices for locking the arm G in any desired position on the plate B', substantially as herein shown and described, and for the purpose set forth.

6. In a drilling-machine, the combination, with the shafts C, C', and F, of the swinging arm G, the plate B', provided with a guide-slot, H, and the screws K, passing though the slot H into lugs J of the arm G, substantially as herein shown and described, and for the purpose set forth.

255,619. DROP-HAMMER. CHARLES A. HAGUE, Chicago, Ill. Filed Dec. 16, 1881. (No model.)



Claim.—The hammer-strap composed of a number of narrow strips united at their ends, substantially as specified.

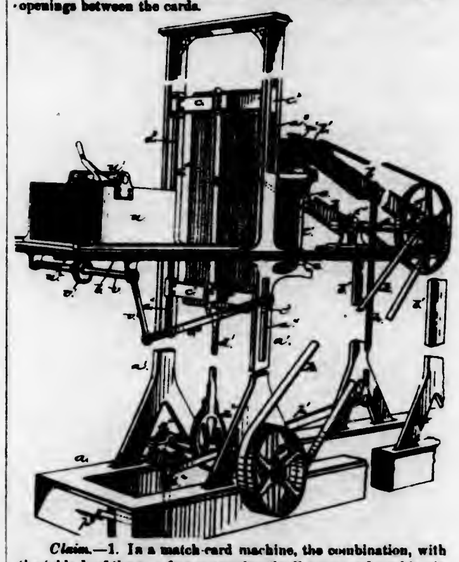
255,620. CLASP. D. FRANK HALE, Springfield, Mass. Filed Mar. 17, 1881. (No model.)



Claim.—As an improved article of manufacture, a combined hook and clasp made of one piece of sheet metal bent at its upper end so as to form the hook with two thicknesses of metal, and overlapping spring-jaws, each jaw being provided with projections or elevations, which elevations of the metal are located near the upper part of one of the spring-jaws, and the other near the clamping portion of the other jaw, the same being provided with a slide which is adapted to move over the elevation near the clamping-jaws, but which will be retained upon the clasp by the projection in the upper part of the other jaw and overlapping portion of the clasp, substantially as shown and described.

255,621. MATCH-CARD MACHINE. GEORGE HARGRAVES, Detroit, Mich. Filed July 30, 1881. (No model.)

Brief.—The blank is sawed into cards, and the cutters behind the saws descend through the end of the saw-kerfs to enlarge the openings between the cards.



Claim.—1. In a match-card machine, the combination, with the table *b*, of the saw-frame carrying the jig-saws and working in the slotted standards *a'*, the sliding carriage *u*, having clamp *u'* and rack u^2, the shaft *v*, carrying pinion *v'*, arms v^3 v^3, the latter connected to the saw-frame, and the loosely-pivoted arms *l*, carrying the rotary cutters *n* and the rods *p p' p²* and treadle p^3, substantially as specified.

2. In a match-card machine, a saw-frame carrying jig-saws placed side by side, the central saw, *d*, being arranged to project slightly in advance of the others, substantially as and for the purposes specified.

3. In a match-card machine, the combination, with the jig-saws supported in a saw-frame working in the slotted standards *a'*, of the aligned separators *c'* and the aligned rotary cutters *n*, supported in bearings in the arms *l*, loosely pivoted on the shaft *f* and operated by rods *p p' p²* and treadle p^3, substantially as specified.

4. In a match-card machine, the combination, with the jig-saws, the aligned separators *c'* in rear thereof, and the aligned rotary cutters *n*, supported in bearings in the pivoted arms *l*, working on the shaft *f* and operated by rods *p p' p²* and treadle p^3, of the presser-rolls *s e*, substantially as specified.

5. In a match-card machine, the combination of the cutter-shaft *m*, the arms *l*, and the vertically-sliding bearings *t* on the guides *t'* with the blocks *q*, supported on the arms *r* by springs *r'*, whereby a vertical motion is given to the shaft *f* when the arms *l* are operated, substantially as specified.

255,622. BUTTON-HOLE ATTACHMENT FOR SEWING-MACHINES. JOHN K. HARRIS, Springfield, Ohio. Filed Oct. 31, 1881. (Model.)

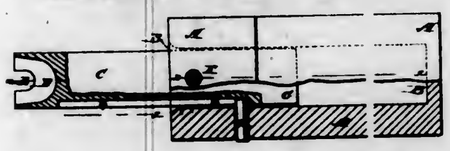
Brief.—The device is so constructed that the feed will be reversed at the middle of the ship-over movement, so that when one side of the button-hole has been completed the end may be strongly barred, or an eyelet may be worked by proper manipulation of the lever, which reverses the feed and shifts the work for the purpose of bringing the opposite side of the button-hole in position to receive the action of the stitch-forming mechanism of the sewing-machine.



Claim.—1. The combination, with a base-plate, a ship-over slide carrying an oscillating cloth-clamp, and a feeding device for said cloth-clamp arranged to be adjusted with said ship-over slide, of a device connected to the base-plate, ship-over slide, and feeding device, and constructed, as described, to effect the reversal of the feed in the middle of the ship-over movement, as and for the purpose described.

2. The combination, with the feed-clutch I for the cloth-clamp, having pin *p* and the ship-over slide J, of a lever, H, having a cam for working the said slide, and a groove or slot, *n*, having its end sections described about different radii and running into each other in the middle, substantially as and for the purpose set forth.

255,623. CAR-COUPLING. SAMUEL A. V. HARTWELL, Valley Centre, Kans. Filed Dec. 8, 1881. (Model.)

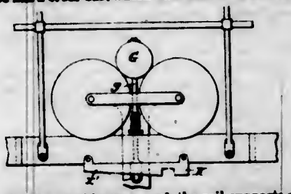


Claim.—1. In a car-coupling, the combination, with a longitudinally-perforated bumper and a coupling-pin, of a sliding centre-bar having its outer end recessed and adapted to be partly withdrawn from the said bumper, substantially as and for the purpose set forth.

2. In a car-coupling, the combination, with the bumper A, provided with the longitudinal perforation B and the stop-pin H, and the coupling-pin F, of the sliding center bar, C, provided with the recess D, the slot E, and the longitudinal groove G, substantially as and for the purpose set forth.

255,624. STORE-SERVICE APPLIANCE. HARRIS H. HAYDEN, New York, N. Y. Filed Mar. 8, 1881. (No model.)

Brief.—The rail consists of a thin metal shell stiffened by a filling. The rail-supports consist of adjustable lateral arms, constructed to carry both rails on the same side of the hanger. The receptacle has a curved bottom to direct its contents under the rail. A pivoted retaining-hook on the carrier, adapted to inclose the rail, is locked in place by a pivoted crank-arm having a pivoted handle depending by the receptacle. The handle is operated by a socketed pole. A spring-actuated brake on the carrier consists of a depending rod having a pad at its upper end bearing on the wheels and lateral pins at its lower end which engage a notched incline on the rail. The receptacle is open at one end, which has an adjustable elastic retaining-band carrying a weighted bumper. The carrier-wheels are formed with a metallic body and grooved periphery of material molded upon the body. A counterbalanced laterally-sliding frame carrying switch-rail sections is held by a retaining-lever released by the carrier and shifts to a siding. The shifting-frame has a cross-bar, which bars the main line in shifting.



Claim.—1. The combination, with the rail-supports of a cash-service system, of a rail consisting of a thin metal shell stiffened by a filling, substantially as set forth.

2. The combination, with the hanger or standard, of brackets constructed, substantially as set forth, to carry both rails on the same side, for the purpose specified.

3. The combination, with the supporting-bar and rails, of lateral arms in sections, each supporting a rail, and adjustable in respect to the bar and independently of the other arm, as set forth.

4. A carrier for a store-service system, provided at one side with a handle attached thereto and extending downward to a point below the frame, as specified.

5. The socketed pole N, adapted to the handle F of the carrier, provided with locking device, as and for the purpose set forth.

6. The combination, in a carrier, of a retainer, locking device and handle extending below the frame, connected to the locking device and constructed to release the latter when the weight of the carrier is on the handle, as set forth.

7. The combination, in a carrier, of the retainer D, crank E, and handle F, substantially as and for the purpose specified.

8. The combination, with the carrier, of a brake device and appliances arranged on or adjacent to the rail, to apply the brake to the wheel, substantially as set forth.

9. The combination of the brake G, arranged to bear on the wheels *n n*, brake-frame *g*, and stop having an inclined edge, *x'*, and notch *i*, adapted to receive a pin on the brake-frame, substantially as set forth.

10. The combination, with a carrier-frame, of a receptacle extending at both sides of the frame, with a bottom inclined toward the central line of the rail, substantially as described.

11. The receptacle open at one end and provided with a retaining-band, as set forth.

12. The combination of the receptacle, band, and adjustable attachments, as specified.

13. The combination, with the band, of a weight, as set forth.

14. The combination, with the retaining-band, of an elastic bumper, as specified.

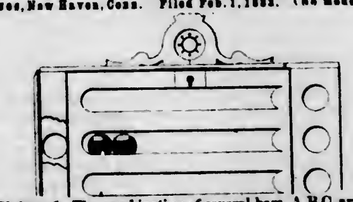
15. The carrier provided with wheels having metallic bodies and grooved peripheries of material molded upon the bodies, substantially as set forth.

16. In a store-service system, the combination, with the rail extending between the counters and desk, of a siding and appliances, substantially as described, for transferring the car from one to the other, substantially as set forth.

17. The combination, with the main track extending between the desk and counters, of a track-section, E', siding, and appliances, substantially as described, whereby the said section may be brought to connect with the main track or siding.

18. The combination of the main and siding rails, frame counterbalanced and carrying a switch-section and retaining device, and appliances, substantially as described, arranged to be struck by the car to release the frame when a carrier is upon the switch-section, substantially as set forth.

255,625. POOL-RACK. ALFRED S. HUGG and GEORGE H. JUDSON, New Haven, Conn. Filed Feb. 1, 1882. (No model.)



Claim.—1. The combination of several bars, A B C, arranged in the form of a rack and in a case, within which it is made longitudinally movable, corresponding openings in the case for the insertion of the balls to the respective pockets or bars of the rack, the longitudinal movement of the rack within the case opening the several pockets for the removal of the balls, substantially as described.

2. The combination of several bars, A B C, arranged in the form of a rack and in a case, within which it is made longitudinally movable, corresponding openings in the case for the insertion of the balls to the respective pockets or bars of the rack, the longitudinal movement of the rack within the case opening the several pockets for the removal of the balls, and a stop to prevent the return of the balls from the rack to the mouth through which they are inserted, substantially as described.

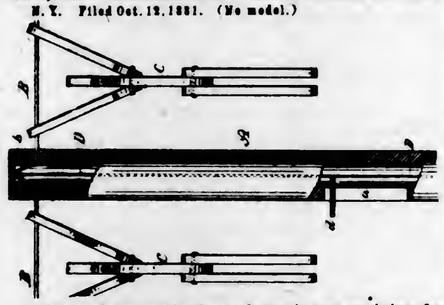
3. The combination of several bars, A B C, arranged in the form of a rack and in a case, within which it is made longitudinally movable, corresponding openings in the case for the insertion of the balls to the respective pockets or bars of the rack, the longitudinal movement of the rack within the case opening the several pockets for the removal of the balls, and a stop to arrest the balls on the rack and prevent their passing to the discharge-openings, with a trip on the rack to remove the said stop when the rack is moved for the discharge of the balls, substantially as described.

4. The combination of several bars, A B C, arranged in the form of a rack and in a case, within which it is made longitudinally movable, corresponding openings in the case for the insertion of the balls to the respective pockets or bars of the rack, the longitudinal movement of the rack within the case opening the several pockets for the removal of the balls, and a stop, *n*, arranged to permit the balls to pass out from the pockets when opened, but prevent their return, substantially as described.

5. The combination of several bars, A B C, arranged in the form of a rack and in a case, within which it is made longitudi-

nally movable, corresponding openings in the case for the insertion of the balls to the respective pockets or bars of the rack, the longitudinal movement of the rack within the case opening the several pockets for the removal of the balls, and a registering mechanism, substantially such as described, to record each longitudinal movement of the rack, substantially as described.

255,626. ACROBATIC TOY. JOHN H. HOLMES, Glens Falls, N. Y. Filed Oct. 12, 1881. (No model.)



Claim.—A new article of manufacture in toys, consisting of a hollow handle, A, provided with a slot, *a*, in combination with the bar B, provided with a crank, *b*, puppets C C, actuating-rod D, and its pin *d*, operating in the slot *a*, substantially as and for the purposes specified.

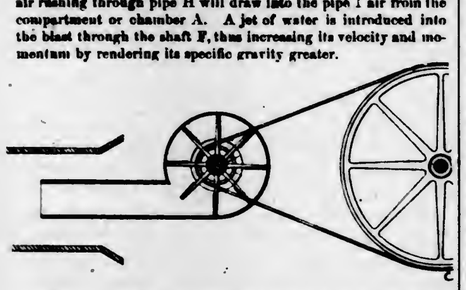
255,627. BOTTLE-STOPPER. JOHN Q. HOUTS and OSCAR ERICSSON, Sioux Falls, Dak., assignors of two-thirds to said John Q. Houts. Filed Aug. 10, 1881. (Model.)



Claim.—An improved bottle-stopper made substantially as herein shown and described, consisting of cork A, central flanged tube, B, provided with cross-bar *f*, exterior tube, C, provided with cap C', valve-rod D, and spiral spring E, arranged as set forth.

255,628. VENTILATING APPARATUS. SAMUEL W. HUDSON, Hudsondale, Pa. Filed Dec. 7, 1881. (No model.)

Brief.—A driving-pulley, C, operates a blast or blower located in a closed chamber at the top of a mine. The blast-pipe H extends into a larger pipe, which leads from the chamber, so that air rushing through pipe H will draw into the pipe I air from the compartment or chamber A. A jet of water is introduced into the blast through the shaft F, thus increasing its velocity and momentum by rendering its specific gravity greater.

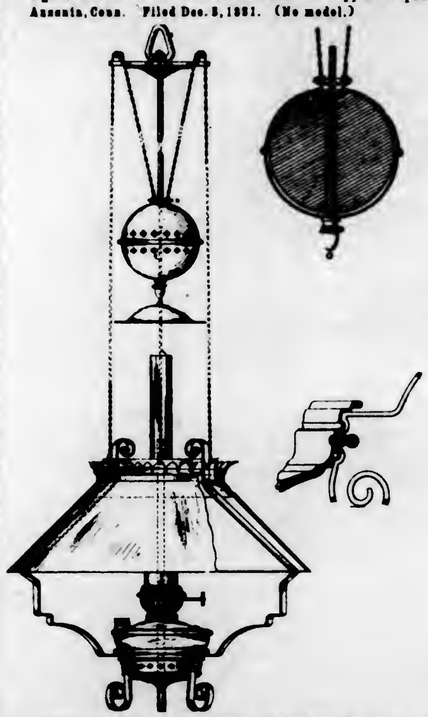


Claim.—1. The combination of the ventilating-shaft of a mine, the closed chamber placed over or in communication with the shaft, a blast apparatus situated within the chamber, its blast-pipe, and the pipe or opening into which it projects, the parts being arranged substantially as and for the purpose set forth.

2. The combination of the blast apparatus, its blast-pipe, a pipe, I, into which the blast-pipe projects, and a water-inlet within the blast apparatus, substantially as set forth.

3. The combination of the ventilating-shaft, the closed chamber, the blast apparatus, its blast-pipe, the pipe into which the blast-pipe projects, the hollow perforated shaft of the blast apparatus, and mechanism for driving the blast, substantially as set forth.

255,629. LAMP. WOLCOTT A. HULL, New York, N. Y., assignor of one-half to the Ansonia Brass and Copper Company, Ansonia, Conn. Filed Dec. 5, 1881. (No model.)



Claim.—1. The combination of a sheet-metal shade-ring consisting of a cylindric portion and a lower flange-like portion, chains supporting the shade-ring from the cylindric portion, but leaving the flange-like portion free, arms extending from the cylindric portion, and a lamp-holder supported by said arms, substantially as specified.

2. The combination of a sheet-metal shade-ring consisting of a cylindric portion and a lower flange-like portion, chains supporting the shade-ring from the cylindric portion, but leaving the flange-like portion free, a lamp-holder, and arms extending from the cylindric portion of the shade-ring to the lamp-holder, but made of separate pieces from both the shade-ring and the lamp-holder, substantially as specified.

3. The combination of a lamp holder or support having circumferential ribs, a shade-support, arms extending from the lamp holder or support to the shade-support and having their inner surfaces bent to grasp the ribs of the lamp holder or support, and a single screw for securing each arm to said holder or support, substantially as specified.

4. In a lamp or other illuminating apparatus, the combination, with a shade, of a ring supporting the shade when the latter is placed outside it, and an ornamental crown independent of the means whereby the shade-ring is supported and fitting loosely outside the upper part of the shade, substantially as specified.

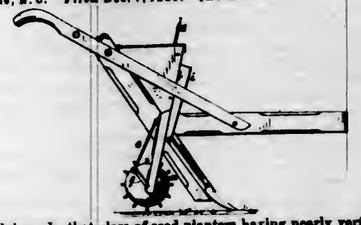
5. The combination of a lamp-reservoir holder composed of an outer part of ornamental metal and an inner part of cheap strong metal fitting closely to it, a shade-support, and arms fastened to both of the component parts of the reservoir-holder and fastened to the shade-support, substantially as specified.

6. In a lamp, the combination, with a rod or like device and a counterbalance-weight fitting the same, of washers of leather or like material affixed to the interior of the counter-balance and fitting the rod or like device, whereby the scratching of the latter by the weight is obviated, substantially as specified.

7. In a lamp, the combination, with a guide-rod for a counterbalance-weight and an ornamental tip provided with a screw-socket for fastening it to the end of the rod, and with a smaller socket extending from the screw-socket downward, of a hook for a smoke-bell inserted in the last said socket and extending through the lower end of the said tip, substantially as specified.

8. In a lamp, a counterbalance-weight consisting of a heavy body, an ornamental exterior shell made in two parts, united together, the upper having formed on it by spinning or otherwise a neck, to which may be conveniently attached the chains or like devices, whereby the weight is sustained, substantially as specified.

255,630. CORN-PLANTER. WILLIAM L. HUTSON, St. Lawrence, N. C. Filed Dec. 7, 1881. (No model.)



Claim.—In that class of seed-planters having nearly vertical reciprocating seed-slides moving in grooved ways, the hopper having inclined apertures *h*, slides or elevators *e*, having inclined apertures *g*, working in separate divisions of the hopper, in combination with the double-cranked axle, on which the spiked operating-wheel is secured to revolve, thus imparting motion to the seed-slides, substantially as shown and described.

255,631. PANTALOONS. WILLIAM HYAMS, New York, N. Y. Filed Jan. 25, 1882. (No model.)



Claim.—1. In pants, the combination of a rear piece, A, having the tongue *b*, and two front pieces, B, having each a flap, *d*, as and for the purpose specified.

2. In a pair of pants, the combination, with the rear and front leg portions, *a* and *f*, of the lower leg-pieces, C, provided at the upper edge with a raised part, *g*, the upper ends of the leg-pieces C being overlapped by the lower ends of the leg portions *a* and *f*, substantially as herein shown and described, whereby the pants will have a double thickness of material at the knees, which double part is largest over the knee-pan, as set forth.

255,632. MACHINE FOR CUTTING AND SCORING PASTEBOARD, &c. GUSTAV L. JAEGER, New York, N. Y. Filed Aug. 15, 1881. (No model.)

Claim.—1. In a machine for cutting and scoring pasteboard and other materials, the combination of mechanism, such substantially as described, operating to continuously and uninterruptedly feed the material forward, with a cutter-cylinder revolving in stationary bearings and a cutter-stock automatically moved toward and from the cutter-cylinder during the operation of the machine for successively cutting and scoring the material without changing the plane of its movement between the cutter-cylinder and cutter, the said combination being and acting essentially as and for the purposes set forth.

2. In a machine for cutting and scoring pasteboard and other material, the combination of mechanism, such substantially as described, operating to continuously or uninterruptedly feed the material forward, with a cutter-cylinder revolving in stationary bearings, a cutter-stock arranged adjacent to the cutter-cylinder and carrying a cutter, and mechanism, substantially such as set forth, connected with the cutter-stock and acting to automatically move the same toward and from the revolving cutter-cylinder, whereby the pasteboard or other material can be successively cut and scored without changing its plane of movement between the cylinder and the cutter.

3. The combination of a continuously-operating feeding mechanism operating to feed the material uninterruptedly, with a cutter-cylinder revolving in stationary bearings, a cutter-stock arranged adjacent to the surface of said cylinder and carrying a cutter, a rock-shaft, and a tappet thereon acting on the cutter-stock for imparting motion thereto, substantially as and for the purposes described.

4. In a machine for cutting and scoring pasteboard and other materials, the combination of mechanism, such substantially as described, operating to continuously and uninterruptedly feed the material forward, with a cutter-cylinder revolving in fixed bearings, a cutter-stock carrying a cutter arranged adjacent to the surface of the cylinder, a rock-shaft, a tappet mounted on said rock-shaft and acting on the cutter-stock to move it in one direction, and a spring arranged to move the cutter-stock in the opposite direction, substantially as and for the purpose described.

5. In a machine for cutting and scoring pasteboard and other materials, the combination of mechanism, such substantially as described, operating to continuously and uninterruptedly feed the material forward, with the cutter-cylinder revolving in fixed bearings, the cutter-stock arranged adjacent to the surface of the cylinder, the rock-shaft, the tappet arranged on said rock-shaft and acting on the cutter-stock to move it in one direction, a spring arranged to move the cutter-stock in the opposite direction, the vibrating arm fixed to the rock-shaft, and the cam for actuating the vibrating arm, substantially as described, for the purposes set forth.

6. In a machine for cutting and scoring pasteboard and other materials, the combination of mechanism, such substantially as described, operating to continuously and uninterruptedly feed the material forward, with a cutter-cylinder revolving in stationary bearings, a stationary cross-head above the same, a bracket arranged thereon, and a cutter-stock automatically moved upon said bracket toward and from the revolving cutter-cylinder to successively cut and score the pasteboard or other material supported by the said cylinder.

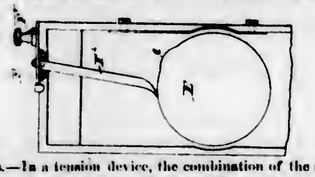
7. In a machine for cutting and scoring pasteboard and other materials, the combination of mechanism, such substantially as described, operating to continuously and uninterruptedly feed the material forward, with a cutter-cylinder revolving in stationary bearings, a stationary cross-head arranged above the same, a series of laterally-adjustable brackets arranged thereon, a series of cutter-stocks supported on said brackets, and mechanism, substantially such as set forth, automatically moving the cutter-stocks on the said brackets toward and from the cutter-cylinder for successively cutting and scoring the pasteboard or other material.

255,633. SEWING-MACHINE. DAVID L. KELLER, Grand Rapids, Mich. Filed July 11, 1881. (No model.)

Claim.—1. The combination, with the feed-shaft having crank D^2 and the shuttle-lever provided with the slotted tubular projection E^3, of the journal-box E^2, embracing said crank and having a sliding movement thereon, and fitted to slide vertically in said tubular projection and to permit the same to rock upon it, substantially as described.

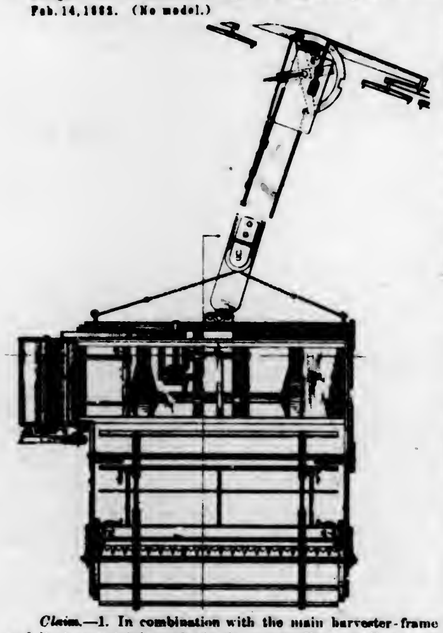
2. The combination, with the feed-bar F, carrying the feed-dog F', of the arm F^3, pivoted to said feed-bar, the rod F^4, jointed to said arm F^3 at one end, and having its other end adjustably secured, the cam D^4, fixed upon the shaft D, and a suitable spring for returning the feed-bar after its forward stroke, all constructed and arranged to operate substantially as described.

255,634. TENSION FOR SEWING-MACHINES. DAVID L. KNELER, Grand Rapids, Mich. Filed July 11, 1881. (No model.)



Claim.—In a tension device, the combination of the spring-plate F, secured at one end upon the top of the machine-head, the arm F^a, projecting downward from said spring-plate, and the disk E, fixed upon the driving-shaft, connected by a wrist-pin and cam-plate with the needle-bar, and having the bulge or cam e upon its periphery arranged to force arm F^a upward, and thereby lift the spring-plate to release the thread, substantially as described.

255,635. HARVESTING-MACHINE. JOHN KUVA, Beloit, Kans., assignor of one-half to George W. Port, same place. Filed Feb. 14, 1882. (No model.)



Claim.—1. In combination with the main harvester-frame and its two sustaining-wheels, the rearwardly-extending vertically-pivoted tongue, the swiveled steering-wheel mounted on the tongue, and the chains extending from the main frame backward and connected with the steering-wheel, substantially as shown.

2. The main frame, its wheels, and the levers supporting said wheels, in combination with the jointed rearwardly-extended tongue, its sustaining-wheel, the lever mounted on the tongue, and the chains extending from said lever to the wheel-sustaining levers, substantially as shown, whereby the frame may be adjusted in height at will and maintained in a substantially horizontal position.

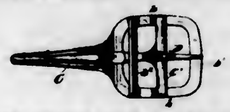
3. The revolving receiver having its shaft arranged to slide laterally, in combination with the notched disk and locking-stud, whereby the receiver is held in position until unlocked by the pressure of the accumulated grain.

4. In combination with the rotary receiver arranged to yield laterally, the pinion thereon and the stationary driving-pinion arranged, as described, to engage with the receiver-pinion only when the latter is moved outward.

5. In combination with the rotary side moving receiver and its pinion and notched disk, the locking-stud and the stationary driving-pinion, as shown and described.

6. In combination with the rotary side moving receiver and its locking devices, the grain-packing devices, substantially as shown, whereby the receiver is caused to move sidewise and unlock whenever a predetermined amount of grain has accumulated therein.

255,636. COMBINED BUCKLE AND SNAP-HOOK. FREDERICK KIENKNAPP, Faribault, Minn. Filed Jan. 27, 1882. (No model.)



Claim.—The combined buckle and snap-hook consisting of the metal frame having the curved hook, the side bars, the end bar b', the raised cross-bar b^2, and the pivoted jaw C, extended beyond its pivot, and having the cross-bar C', carrying the movable tongue D, the whole adapted to co-operate with a strap in the manner set set forth.

255,637. CARRIAGE-WRENCH. PRESCOTT B. KINSMAN and JOSIAH MERRILL, Great Falls, N. H. Filed Jan. 10, 1882. (Model.)

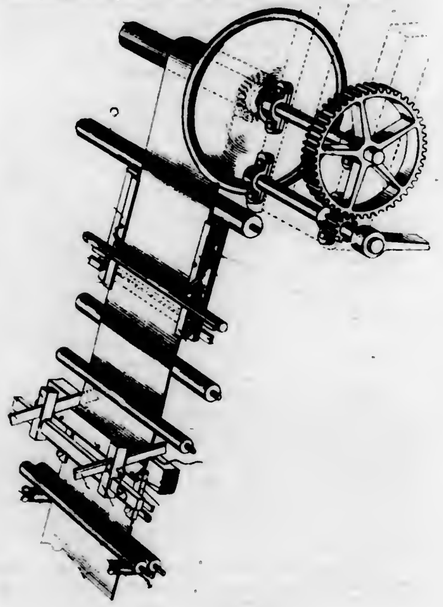


Claim.—1. The combination, with the stock A, having a fixed end jaw, B, and opening b, the slot c, extending between said opening and fixed jaw, and the ribs d d, arranged in said slot, of the screw C, swiveled in said fixed end jaw and adapted to receive the movable jaw B' from the opening b, as described.

2. A carriage-wrench having the jaws and the oiler D arranged on the same side of its stock and at right angles thereto, said oiler being placed between the handle and jaws, whereby the thumb of the same hand which holds the wrench can operate the oiler without reversing the wrench, as described.

3. The combination of the stock A, having an opening, b, and longitudinal slot c, communicating with opening b, the oiler D, movable jaw B', the fixed jaw B, and the operating-screw C, arranged to pass through the head or fixed jaw end portion of the wrench, substantially as shown and described.

255,638. BELT-TRIMMING MACHINE. AUGUST C. KRUEGER, Chicago, Ill., assignor to the Chicago Rawhide Manufacturing Company, same place. Filed June 13, 1881. (No model.)



Claim.—1. In a machine for trimming belting, one or more obliquely-arranged straight-cutting blades, one or more concave-trimming blades, arranged relative to each other, as and for the purpose described, and means for guiding and conducting the belting to said blades.

2. The combination, with the adjustable and straight-cutting blades, having their cutting-edges at an oblique angle, as described, of the laterally-adjustable blocks carrying said blades.

3. The combination, with the straight-cutting blade, of guide-plates arranged in front of said blades and adapted to embrace the edges of and direct the belting in a straight line to said blades.

4. In combination with the straight-cutting blades, vertical guide-rollers and a horizontal pressure-roller intermediate the vertical roller and the cutting-blades.

5. The combination, with the pressure-rollers and with mechanism for drawing the belting through the machine, of a tension clamping-plate and a base-support for the same, arranged between said mechanism and roller, for the purpose described.

6. The combination, with the pressure-rollers and with the actuating mechanism, of an adjustable and swinging tension-plate, arranged substantially as and for the purpose described.

7. In combination with the straight-cutting blades, a tension-plate arranged below and just in front of said blades, as and for the purpose described.

8. In combination with the cutting-blades and with the swinging tension-plate, guides arranged in the rear of said blades and adapted to embrace the edges of the belting, as set forth.

9. The vertical guide-rollers, pressure-rollers, guide-plates C C, and tension-plate, in combination with the cutter-blades, all arranged and operating substantially as described.

10. The tension-plate and pressure tension-roller H, in combination with the obliquely-arranged cutting-blades between said plate and roller.

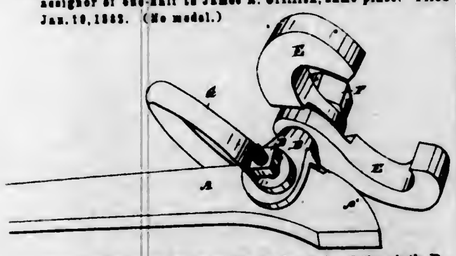
11. In a machine for trimming belting, the combination, with the guides, of one or more concave blades simultaneously adjustable laterally, as described.

12. The combination, with the concave guides and one or more corresponding trimming-blades, of a coiling-drum and an anti-friction roller intermediate said blades and drum and arranged in a plane above the drum, as and for the purpose described.

13. The combination, with a revolving shaft, of a winding-drum removably sleeved upon said shaft and provided with means, substantially as described, to prevent its rotation with the shaft.

14. The combination, with a revolving shaft having a projection T-shaped in cross-section, of a two-part hinged drum having a corresponding groove and means for detachably securing said drum to the shaft, as and for the purpose described.

255,639. CAR-MOVER. JAMES D. LAWRENCE, Carroll, Iowa, assignor of one-half to James E. Griffith, same place. Filed Jan. 19, 1882. (No model.)



Claim.—The combination, with the lever A, of the pintle B, pivoted thereon, the jaws E, pivoted on this pintle, and the clevis G, loosely mounted on the bolt of the pintle B, substantially as herein shown and described, and for the purpose of automatically closing the jaws, as set forth.

255,640. BUTTON. MARCUS LOEWENTHAL, New York, N. Y. Filed Jan. 19, 1882. (No model.)

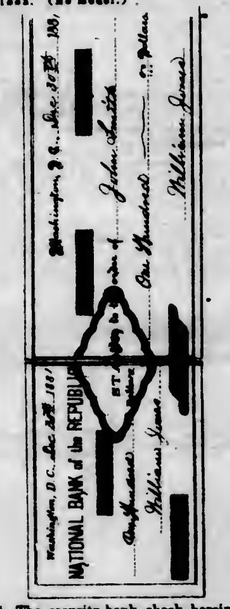


Claim.—1. The combination, in a button, of a back piece, a front piece, a tubular post on the one having a shoulder at the rear end, a rigid shank on the other adapted to enter the said post, and a spring or springs attached to said shank at the outer end, diverging from said shank rearwardly, and adapted to engage with the shoulder of the post, substantially as specified.

2. The combination, in a button, of a back piece, a front piece, a tubular post on the one having a shoulder at the rear end, a rigid sharp-pointed shank on the other adapted to enter said post, and a spring or springs attached to said shank at the point, diverging from the shank rearwardly, and adapted to engage with the shoulder of the post, substantially as specified.

3. The combination, in a button, of a back piece, a front piece, a tubular post on the one having a shoulder at the end, a shank on the other adapted to enter the said post, and a spring inserted in a hole in the shank and folded over to form two barbs adapted to engage with the shoulder of the post, substantially as specified.

255,641. BANK-CHECK. EDWIN S. LOOMIS, Washington, D. C. Filed Jan. 6, 1882. (No model.)



Claim.—1. The security bank-check herein described, consisting of two separable parts, one of which bears the name of the bank and the figures identifying the check, and the other of which parts has the name of the person in whose favor it is drawn and the amount, without the name of the bank, and both of which are to be signed by the drawer, as and for the purpose described.

2. The security bank-check consisting of the bank-notice A and the pay-order B, both printed on the same piece of paper, and having the revenue-stamp bisected by the line dividing the said bank-notice from the pay-order, as and for the purpose described.

255,642. BOTTLE AND BOTTLE ATTACHMENT. DAVID LUBIN, Sacramento, Cal. Filed Feb. 1, 1882. (No model.)



Claim.—1. The combination of the cup or funnel with the neck B, provided with passages b, substantially as described.

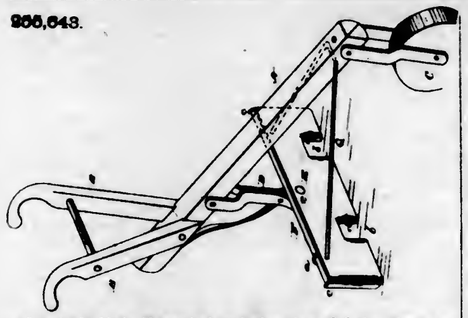
2. The combination of the cup or funnel, the graduated marks thereon, the neck B, and passages transversely through this neck, substantially as described.

3. The combination of a neck, B, provided with perforations b, the stopple C, and a cup or funnel formed on said neck, substantially as described.

255,643. COTTON-CHOPPER. DANIEL W. MASSEE, Marshallsville, Ga. Filed Jan. 3, 1882. (No model.)

Claim.—The combination, with the beam A and standard D,

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of a single blade, E, notched at *b*, the wings *d d*, the wings *c c*, formed on said blade, and the stiffening-bar F, secured to said blade at the back thereof by means of a bolt, *e*, and the eyes *a a* on the braces (f f), substantially as described.

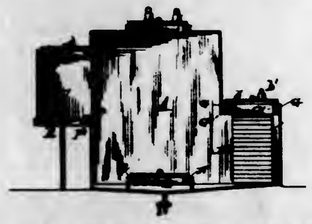
255,644. BEARING FOR SPINDLES OF SPINNING AND TWISTING MACHINES. THOS. MAYON, Providence, R. I. Filed May 9, 1881. (No model.)

Brief.—The invention is an improvement on that disclosed by Letters Patent No. 215,142. Bent-wire springs are interposed between the bolster and bolster-case, so as to form a yielding resistance to the oscillation of the bolster on the ball-and-socket support.



Claim.—The combination, with the spindle A, the sleeve-whirl B, and bolster-case C, of the bolster D, provided with the ball *d*, and the wire springs *e e*, secured to the ball *d* and resting in notches in the bolster end, constructed to limit the oscillation of the bolster, as and for the purpose set forth.

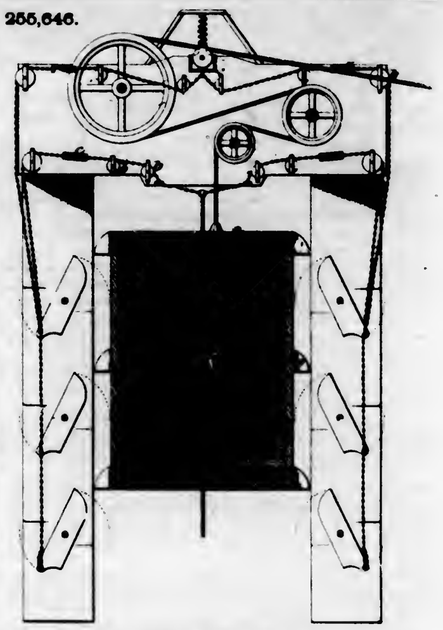
255,645. PROVISION-PRESERVING ROOM. EDWIN E. MCCALL, Lockport, N. Y. Filed Dec. 23, 1881. (No model.)



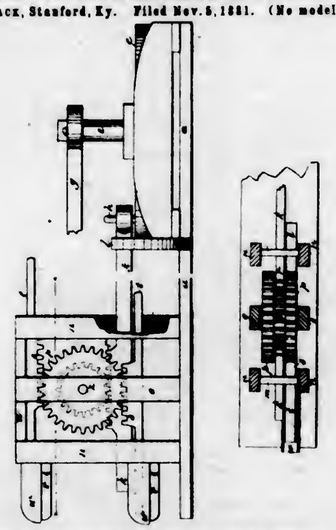
Claim.—1. In a food-preserving room, the combination of inspection-chamber C, preserving-room A, having ventilators M and M', and door *b*, having recess G, and flange G'.

2. The combination of inspection-chamber C, having cover *h*, and bottom E, and room A, substantially as shown, and for the purpose described.

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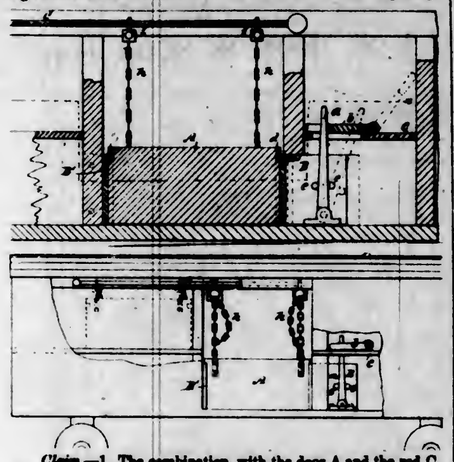
255,647. STAVE-DRESSING MACHINE. WILLIAM C. MCCORMACK, Stanford, Ky. Filed Nov. 5, 1881. (No model.)



Claim.—The combination of the cam-wheel *c*, cam-rod *k*, provided with the rack *r*, cog-gears *p p q*, plungers *t t*, having racks *s s*, and stave-boxes *w*, provided with stationary knives, said plungers operating to force the staves past the knives, all substantially as described, and for the purpose set forth.

255,648. FREIGHT-CAR DOOR. THOMAS MCNALLY and WILLIAM H. GLASGOW, St. Louis, Mo. Filed Oct. 11, 1881. (No model.)

Brief.—A door narrower than the opening has one end resting in the groove of a fixed plate and the other in the groove of a sliding plate. Projections in the plates engage notches in the door. The movable plate is operated by a lever pivoted to the floor and passing up between two pins on the plate and through a slotted fixed piece. The lever is locked by a pivoted latch. The door is provided with hooking-chains passing through blocks sliding on a horizontal rod above and at one side of the door-opening.



Claim.—1. The combination, with the door A and the rod C, of the chains h and the sliding blocks *i*, substantially as shown and described, whereby the door is adapted to be elevated and removed out of the doorway, as set forth.

2. The combination, with the door A, of the laterally-sliding cleat B and the lever *a*, hinged to the bottom of the car and engaging with the said cleat, substantially as and for the purpose set forth.

3. The combination, with the door A, of the laterally-sliding cleat B, provided with the pins *c* and the lever *a*, substantially as and for the purpose set forth.

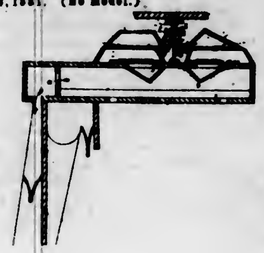
4. The combination, with the sliding cleat B and the lever *a*, of the hinged locking-plate *b*, substantially as and for the purpose set forth.

255,649. MUSIC-HOLDER. ARTHUR H. MERRILL, Cromwell, Conn. Filed Nov. 16, 1881. (No model.)



Claim.—As an article of manufacture, the herein-described book-holder, consisting of the slotted plate A, recessed upon its back and fitted for attachment to the rack, combined with the stud *f*, constructed with a head to take a bearing upon the inside of the rack, the stud extending outward through the slot in the plate, and a finger arranged upon said stud outside the plate and so as to bear on the plate, with a clamping device on said stud outside the finger, whereby the stud and finger are made adjustable in the slot in the plate and secured at any desired position, substantially as described.

255,650. ORGAN. WILLIAM L. HARRIS, Fredericktown, Ohio. Filed Apr. 19, 1881. (No model.)



Claim.—1. In an organ, the pivoted valves and valve-operating rods provided with feet to engage the said valves, combined with mechanism, substantially as described, under control of the operator, to change the position of the said feet and vary their action upon the valves, as and for the purpose set forth.

2. The valve and valve-operating rods provided with feet to engage the said valves and having pinions connected therewith, combined with a rack-bar meshing with the said pinion and means to move it longitudinally, whereby the operator is enabled to rotate all the said rods simultaneously to control their operation on the valves, substantially as described.

3. In an organ, two series of reeds and valves therefor, combined with a series of valve-operating rods, each provided with feet arranged and adapted to engage and operate a valve of each series simultaneously or to engage a valve of either series, as desired, independently of the other series, substantially as described.

4. The wind-chest and reeds mounted thereon, combined with the sound-re-enforcing device in the said wind-chest and the independent chamber below the reeds in the wind-chest, provided with an orifice or aperture above the said re-enforcing device, substantially as and for the purpose set forth.

5. The wind-chest and reeds, combined with the chamber common to a series of the said reeds, and having one or more of its sides mounted on hinges or pivoted and provided with means to move it thereon, whereby the form and size of the said chamber may be varied to modify the quality of the sound produced, substantially as described.

6. The combination, with the key and rod operated thereby, of the spring to maintain the rod in engagement with the said key, it consisting of the elastic arms and the spiral portion connecting them, substantially as and for the purpose described.

7. The reed-tongue consisting of a plane portion of usual form, provided with a stiffening-flange at one edge only, whereby a peculiar vibrational movement and novel quality of sound are produced, substantially as described.

255,651. ORE-SEPARATOR. GEORGE A. HUTCALF, Malden, Mass. Filed July 16, 1881. (No model.)



Claim.—The tank A, having the perforated diaphragm B and water-space beneath it, as described, and provided with a gate for the discharge of the heavier metal above the diaphragm, and a gate or overflow in a higher plane for the escape of the lighter material, in combination with a rotary agitator adapted to act simultaneously on all portions of the mass, for the purpose set forth.

255,652. COMBINED SLATE-CLEANER AND PENCIL-HOLDER. WILLIAM H. HUTCALF, Brooklyn, N. Y. Filed July 18, 1881. (Model.)



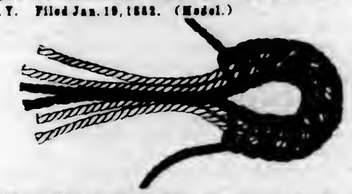
Claim.—The slate-cleaner and pencil-holder consisting of apertured water-receptacle *a*, cork *d*, sponge *c*, and pencil-clamp *b*, combined for use substantially as shown and described.

255,653. BRAKE FOR COAL-CARS. JAMES A. HILLHOLLAND, Cumberland, Md. Filed Feb. 28, 1882. (No model.)



Claim.—The combination, in a compartment-car, of a cranked brake-beam having shoes adapted to the wheels C C, a brake-beam, D, having shoes adapted to the wheels B B, and connecting devices, substantially as described.

255,654. SUSPENDER-STRAP. AUGUSTA METZNER, New York, N. Y. Filed Jan. 19, 1882. (Model.)



Claim.—The described improvement in the art of making a suspender-strap, which consists in first forming its loop of two core-cords, then surrounding these at the middle by two wrapped cords knotted at each wrap, then doubling both the wrapped and knotted cords, and finally forming the body of six core-strands, surrounded by two of the wrap-strands knotted at each wrap, as shown and described.

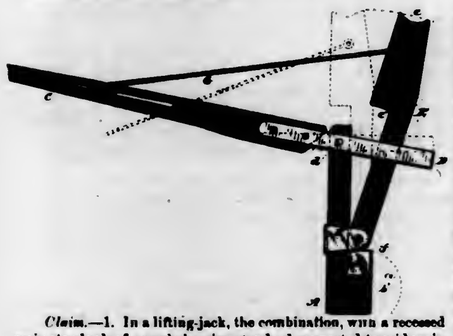
255,655. BOTTLE-STOPPER OF CELLULOID OR ANALOGOUS MATERIAL. STEPHEN S. NEWTON, Binghamton N. Y. Filed Dec. 9, 1881. (No model.)



Claim.—1. As a new article of manufacture, a bottle-stopper the discharge-tube of which is made of celluloid, substantially as set forth.

2. A bottle-stopper having a discharge-tube made of celluloid and a hood or cap made of vulcanized rubber, substantially as set forth.

255,656. LIFTING-JACK. JACOB NIXON, Winfield, Kans. Filed Feb. 8, 1882. (No model.)



Claim.—1. In a lifting-jack, the combination, with a recessed main standard, of an axle-bearing standard connected to said main standard by a pivot and loop-guide, an operating-lever provided with a metallic loop pivoted to the main standard, and a connecting-rod secured at one end to the operating-lever and at its opposite end to the axle-bearing standard, substantially as set forth.

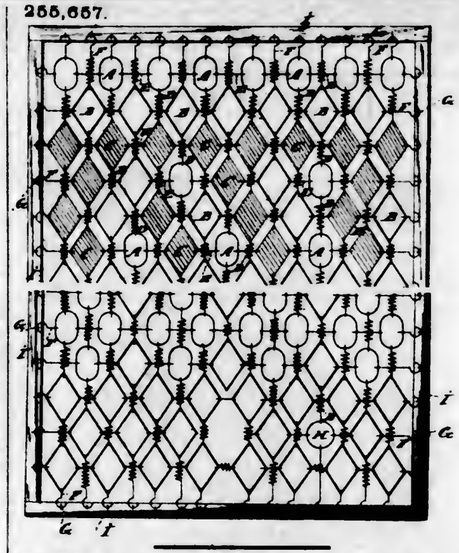
2. In a lifting-jack, the combination, with a standard provided with a slotted step, of a bearing-block pivoted to the standard and adapted to rest on said step or be turned away from the latter, substantially as set forth.

3. The combination, with the recessed standard A, having the slotted step *a*, of the pivoted block B, the recessed standard E, connected to the standard A by the loop-guide F and pivot *f*, the operating-lever C, connected to the standard A by the metallic loop D and pivot *d*, and the connecting-rod G, substantially as set forth.

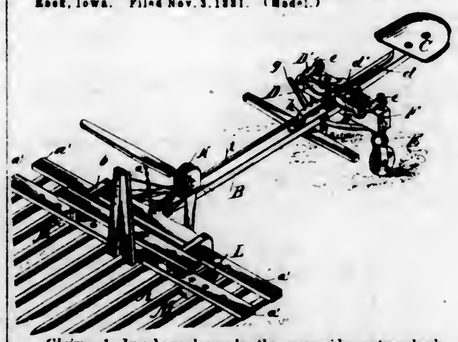
255,657. BED-BOTTOM. JOHN B. NORTON, Madison, Wis. Filed Jan. 23, 1882. (No model.)

Claim.—The combination, in a spring bed-bottom, of the frame I, having staples G, staple-hooks F, double-looked coupling-wires E, double-hooked spiral springs D, flat springs A B H, and rhombic plates C', as set forth.

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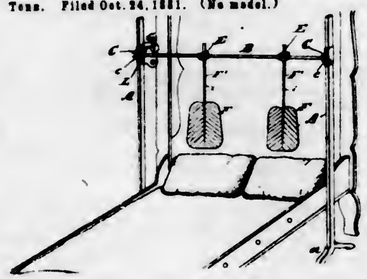
255,658. HORSE HAY-RAKE. ASHBEL A. MOYER, Steamboat Rock, Iowa. Filed Nov. 3, 1881. (Model.)



Claim.—1. In a horse hay-rake, the rear guide, caster-wheels E, each having a shank, *e*, passing directly up through the outer end of the beam F, which is fixed to the pole B, near the seat C, and the double levers D D', connected with the heads of said shanks and operated by means of the handle *d*, pivoted to pole B, substantially as described.

2. The rake A, pivoted to the end of pole B, and having on each side of its head the frame M, fixed to the parallel bars *a' a'* of said rake and carrying the wheel or roller L, which does not project above said bars so as to interfere with the hay, and only sufficiently far below to give a bearing for the rake when it is moving on the ground, substantially as set forth.

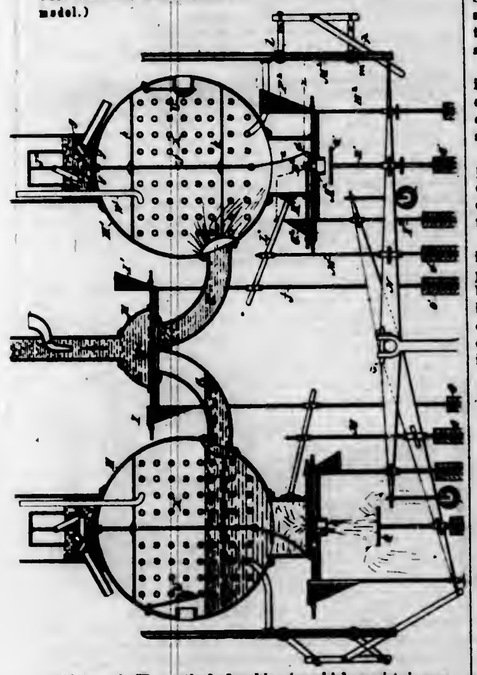
255,659. AUTOMATIC FAN. GEORGE W. OVERALL, Memphis, Tenn. Filed Oct. 24, 1881. (No model.)



Claim.—1. The combination of the standards A A, having bottom supports, *a a*, adjustable sleeves C C, having cam *c c* and set-screws D D, rock-shaft B, perforated at one end, screw-bolt M, inserted through the perforated rock-shaft, and provided with the adjusting-nuts *m m*, motor H, incased in a box contiguous to and forming part of one of the adjustable sleeves C, disk I, having adjustable wrist-pin K, and pitman L, connecting said wrist-pin and the screw-bolt M, all constructed and combined to operate substantially as and for the purpose herein shown and set forth.

2. The combination of the oscillating fan-shaft B, sleeves E, each having a socket, E', and pair of set-screws, *e* and *f*, and fans F, having shafts or handles F', provided with universal joints *i*, having set-screws *h*, substantially as and for the purpose herein shown and specified.

255,660. METHOD OF AND APPARATUS FOR MAKING ICE. OLIN PARKER, Washington, D. C. Filed July 30, 1881. (No model.)



Claim.—1. The method of making ice which consists in compressing air by the direct contact, hydrostatic pressure, and dynamic force, of running water, and simultaneously eliminating the heat thus generated by the said passing current of water, and subsequently allowing the air to expand to effect the reduction in temperature, substantially as described.

2. The method of reducing the temperature of compressed air which consists in allowing a portion of said compressed air to expand in the immediate presence of the rest of the compressed air, and then be dissipated or allowed to escape as waste, substantially as described.

3. The method of compressing air in a hydraulic ice-machine which consists in introducing a quantity of air with a head of water and utilizing this head of water to displace and compress another body of air in a closed chamber, while the induced portion of air is at the same time being eliminated from the air in said chamber to augment the quantity of compressed air, as described.

4. The method of making ice which consists in expanding a portion of compressed air to reduce the temperature of the remaining compressed air, then using this compressed air of reduced temperature by expansion in a freezing-room to freeze the water, and utilizing the air escaping from the freezing-room to chill the water before being admitted to the pans, as described.

5. A receptacle for compressing air by displacement with water, combined with a conduit or coil for the compressed air, located within the receptacle and opening in the top of the same, whereby the heat is eliminated in the same receptacle in which it was generated, as described.

6. The combination of a receptacle for compressing air by the direct displacement of water, a dome provided with valves opening into the same, and a float arranged in the dome and connected with the water-discharge valve of the main receptacle, as described.

7. The combination, with the dome V', the receiver H', and valves *f*, of the float J' and rod *j*, and the plug-valve *g*, rod *i*, and arm *h*, as and for the purpose described.

8. The combination, with the receivers H', of the air-inlet valve U', hinged directly above and at a point remote from its seat, as and for the purpose described.

9. The combination, with two receivers, H H', with floats and valves, and a valve, F, directing the flow alternately to the receiver, as described, of one or more walking-beams provided with tables Q', to receive the impact of the discharged water and operate the valves, substantially as described.

10. The combination, with the air-eduction pipe from the receivers, of the water-trap composed of leg M', having valves *l* and *m*, and a connection with the walking-beam, arranged, as described, to keep one of these valves open and the other shut alternately, as described.

11. The combination, with the receiver, its float, and the walking-beam, of the compound outlet-valve consisting of a main valve connected to and operated by the walking-beam and a supplemental or initial valve connected with and operated by the float, as described.

12. A tank for cooling compressed air, having several compartments, combined with a series of coils connected for continuous circulation, each of said coils having an escape-vent for successive cooling by expansion of the air in the said coils, as and for the purpose described.

13. The combination of the water-tank D, provided with cooling-coil O', opening into the freezing-room, the freezing-room C, placed just beneath it, and a compressed-air-cooling device located beneath the freezing-room, having a compressed-air pipe opening into an expansion-chamber through a pressure-valve, and another compressed-air pipe arranged in proximity to the said expansion-chamber, and then opening through a pressure-valve into the freezing-room, substantially as described.

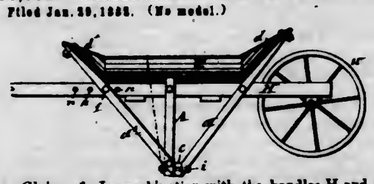
255,661. DEVICE FOR CONNECTING WIRES IN ELECTRICAL APPARATUS. WILLIAM PAUL, Ansonia, Conn., assignor to Wallace & Sons, same place. Filed Jan. 25, 1882. (No model.)



Claim.—1. The herein-described device for connecting wires in electrical apparatus, consisting in the cylindrical bearing-piece arranged in a correspondingly-shaped opening parallel with the wire-aperture, a portion of the wire-aperture being formed in the said cylindrical bearing-piece, and mechanism, substantially such as described, to clamp the said bearing-piece upon the wire, substantially as described.

2. The herein-described device for connecting wires in electrical apparatus, consisting in the cylindrical bearing-piece arranged in a correspondingly-shaped opening parallel with the wire-aperture, a portion of the wire-aperture being formed in the said cylindrical bearing-piece, with a set-screw, its end resting in a cavity in the surface of the bearing-piece, substantially as and for the purpose described.

255,662. WHEELBARROW. ABNER D. PAGE, Jordan, N. Y. Filed Jan. 20, 1882. (No model.)



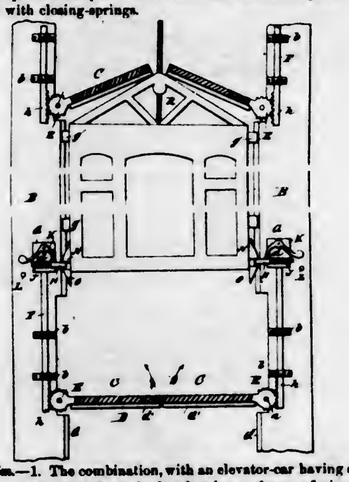
Claim.—1. In combination with the handles H and tray T, mounted thereon, the leg A, disposed at right angles from the handle and shouldered against the under side thereof and bolted on the side of the same, the cross-bar *c*, applied to the front of the foot of the legs, the brace *a*, bolted onto the side of the handle, and having its upper extremity bearing against and bolted to the front end board, *d*, and its lower extremity resting against and secured to the cross-bar *c* by the bolt *e*, passing through the said parts and through the leg A, and the brace *a'*, bolted to the side of the leg A

and having its upper end bolted to the side of the handle H and to the rear end board, *d'*, substantially as described and shown.

2. The combination, with the handles H, tray T, leg A, cross-bar *c*, and brace *a*, arranged as described, of the brace *a'*, bolted to the side of the foot of the leg A, and having its upper end resting against the rear end board, *d'*, and adjustably connected to the handle H by a bolt, *f*, passing through said brace and through one of a series of holes, *a a*, in the handle, all substantially as described and shown.

255,663. AUTOMATIC HATCHWAY-DOOR OPERATOR. JOHN L. PETERS, New York, N. Y. Filed Jan. 23, 1882. (No model.)

Brief.—Circular racks on the inner corners of swinging horizontal doors engage racks on vertically-sliding rods on the posts. Boxes on the upper ends of the rods carry spring-bolts, which engage notched inclines on the lower corners of the car in its descent. The bolts are withdrawn by an angular latch-lever in each box striking a pin on the post. The doors are counterweighted and provided with closing-springs.



Claim.—1. The combination, with an elevator-car having side projections, and with the swinging hatchway-doors, of circular racks attached to the pivoted ends of the doors, and of vertically-sliding rack-bars engaging with the circular racks on the doors and carrying boxes at the upper ends, which boxes contain bolts and latch-levers for withdrawing these bolts, substantially as herein shown and described, and for the purpose set forth.

2. The combination, with the elevator-car A, having side projections, N, at the bottom, and with the swinging hatchway-doors C, each provided with a circular rack, E, of the sliding bars F, provided with racks *h* at the lower ends, the sliding bolts H, the pivoted angular latch-levers K, and the studs L, substantially as herein shown and described, and for the purpose set forth.

3. The combination, with the elevator-car, A, having side projections, N, at the bottom, and with the swinging hatchway-doors C, provided with circular racks E, of the sliding spring-bolts H, provided with projections *d*, the pivoted angular latch-levers K, and the studs L, projecting from the standards B, substantially as herein shown and described, and for the purpose set forth.

4. The combination, with the elevator-car A, provided with the side projections, N, and the beveled bottom projections, O, and the swinging hatchway-doors C, provided with circular racks E, of the sliding rack-bars F, the bolts H, the latch-levers K, and the studs L, substantially as herein shown and described, and for the purpose set forth.

5. The combination, with the standards B, the elevator-car A, and the swinging hatchway-doors C, of the counterbalance-weights S, the closing-springs T, and of devices for automatically opening the hatchway-doors, substantially as herein shown and described, and for the purpose set forth.

255,664. CEMENT-PIPE WELL. GEORGE D. PETTINGILL, Asbury Park, N. J. Filed Sept. 27, 1881. (No model.)

Brief.—The sections are inserted at the top in an opening bored for a short distance by a large auger; then, by boring with a smaller auger and removing the earth from under the tubing, the latter settles to place, and sections are added at the top as the depth of the well may require. The sections are provided with conical rabbet-joints cemented together.

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Claim.—1. The herein-described method of forming a well, which consists in first boring with an auger into the ground a given depth to form an opening, then inserting, joint by joint, sections of curbing of the form described, and thereafter sinking the sections so inserted by boring with a smaller auger and removing the earth beneath and adding joints from the mouth of the well, as and for the purpose set forth.

2. The curbing for wells, formed with conical corresponding joints B B', in combination with the cement filling or packing for said joints, as and for the purpose specified.

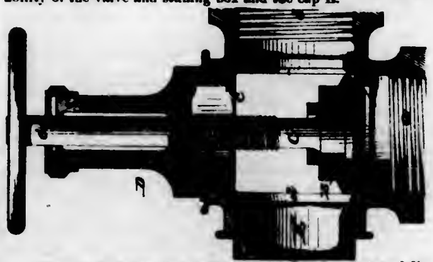
255,665. SIGNAL-FLAG. THOMAS H. PETTY, Oswego, N. Y. Filed Jan. 20, 1882. (No model.)



Claim.—A signal-flag holder consisting of a cylinder provided with a slot through its side for each one of the flags used, and two or more rollers, around which the flags are rolled, each one of the rollers being provided with a head or projection, by means of which the flag can be wrapped around the roller, substantially as shown.

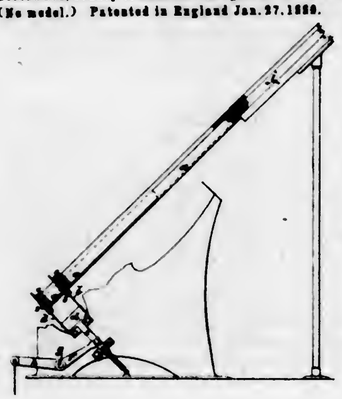
255,666. VALVE. JULIUS P. PFAU, Lansingburg, N. Y. Filed Jan. 14, 1882. (No model.)

Brief.—The construction is such that the inlet for the fluid may be changed from one branch to the other by the interchangeability of the valve and stuffing box and the cap E.



Claim.—A globe-valve shell unprovided with an internal diaphragm or division-wall, and having its inlet and outlet branches, which are provided with internal valve-seats at right angles to each other, in combination with cap E and stuffing-box D, adapted to be interchangeably screwed upon the other two branches of the valve-shell, and the valve B, as and for the purpose set forth.

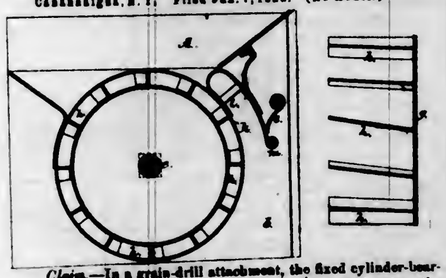
255,667. TYPE-SETTING MACHINE. THOMAS J. PORTER, Fleetwood, County of Lancaster, England. Filed Oct. 25, 1881. (No model.) Patented in England Jan. 27, 1880.



Claim.—1. In a type-setting machine, the combination, with the reciprocating punches *d'*, and means, substantially as described, for operating them, of the series of inclined troughs *a*, alternating in length and provided with the stop-plates *b* and the guard-plate *c*, as and for the purpose set forth.

2. In a type-setting machine, the combination, with the inclined troughs *a*, alternating in length, and provided with the stop-plates *b* and guard-plates *c*, of the bar *d*, the punches *d'*, the sliding rod *e*, provided with studs, the levers *f*, having forked or slotted ends, the rock-shaft *g*, and lever *h*, connected to a treadle, substantially as and for the purpose set forth.

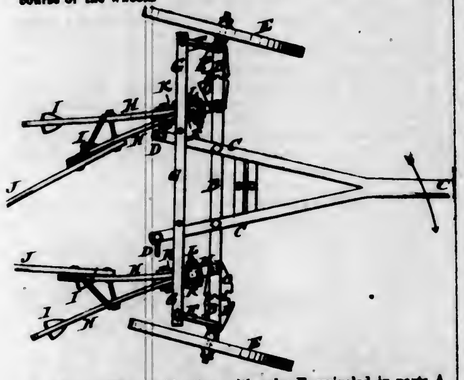
255,668. GRAIN-DRILL ATTACHMENT. HENRY C. PRATT, Canandaigua, N. Y. Filed Jan. 7, 1882. (No model.)



Claim.—In a grain-drill attachment, the fixed cylinder-bearing *c*, the opening *d* in the hopper-wall opposite said bearing, the lateral rotary disk *g*, having the obliques distributing-arms *h* passing around the cylinder-bearing, and the automatic throat-plate *l*, substantially as specified.

255,669. CULTIVATOR. THOS. A. PURNELL, Charleston, Kans. Filed Mar. 24, 1881. (No model.)

Brief.—The wheel-spindles are vertically swiveled, and have on them sectors which mesh with similar sectors, upon the front ends of the drag-bars, so that swinging the drag-bars changes the course of the wheels.



Claim.—The combination, with axles F, swiveled in parts A B G substantially as described, of the gears P, rigidly attached to said axles, and the gears O, connected with a pivoted beam-coupling, as shown and described.

255,670. HUB-BLOCK-BORING MACHINE. JOHN G. REID, Muncie, Ind. Filed Jan. 11, 1882. (No model.)

Brief.—The block is centered on the pith-points, then swung to the clamping-dogs in line with the auger.

Claim.—1. In a boring-machine, the combination, with a clamping frame or carriage, of a swing-frame provided with pith-points adapted to be forced into pith in the ends of the blocks to be bored, substantially as herein shown and described, whereby provision is made for so adjusting the block that the auger will bore through the pith-line of the said block, as set forth.

2. In a boring-machine, the combination, with the frame A, carrying the sliding block-clamping frame D, of the swinging block-adjusting frame W, substantially as herein shown and described, and for the purpose set forth.

3. In a boring-machine, the combination, with the frame A, carrying sliding frames D' D', provided with dogs G, of the arms J' J', adapted to slide on each other, and of the handle L, attached to the end of the arm J', substantially as herein shown and described, and for the purpose set forth.

4. In a boring-machine, the combination, with the frame A, carrying the sliding frames D' D', provided with dogs G, the arms J' J', adapted to slide on each other, and the handle L on the end of the arm J', of the guide-standard K for guiding the arm J', substantially as herein shown and described, and for the purpose set forth.

5. In a boring-machine, the combination, with the frame A, carrying a sliding block-holder, of the standards O, the swinging frame W, and the strip or rail T', upon which the frame W rests when inclined downward, whereby the pith-points Q' at the end of the frame W will be on a line with the center of the auger M when the frame W is inclined downward as far as the rail or strip T' permits, substantially as herein shown and described.

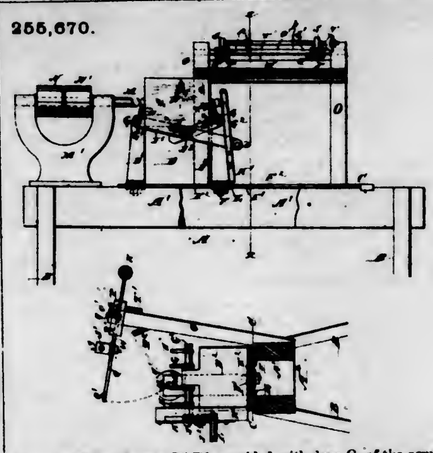
6. In a boring-machine, the combination, with the frame A, carrying a sliding block-holder, D, of the standards O, the swinging frame W, the strips or slats T' T', and the weights R, substantially as herein shown and described, and for the purpose set forth.

7. In a boring-machine, the combination, with the frame A, carrying a sliding block-holder, D, of the standards O, the shaft O', the loose blocks P, and the arms Q, passing into these blocks and provided at the ends with pith-points Q', substantially as herein shown and described, and for the purpose set forth.

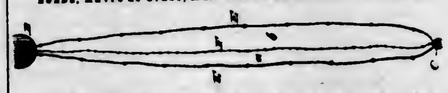
8. In a boring-machine, the combination, with the frame A, carrying a sliding block-holder, D, of the standards O, the shaft O', the blocks P, the rods Q, provided at the ends with pith-points Q', the nuts S on the rod S', and the rod S', provided with opposite screw-threads at the ends, substantially as herein shown and described, and for the purpose set forth.

9. In a boring-machine, the combination, with the frame A, carrying a sliding block-holder, D, of the standards O, the shaft O', and the pith-arms Q, being in length from the shaft O' to the pith-points Q' equal to the distance from the shaft O' to the longitudinal axis of the auger, substantially as herein shown and described, and for the purpose set forth.

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255,671. GILL-NET. MATTHEW REYNOLDS and THOMAS REYNOLDS, Havre de Grace, Md. Filed Oct. 21, 1881. (No model.)

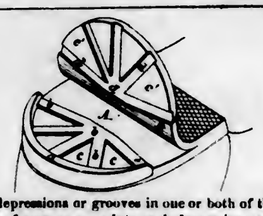


Claim.—The improved gill-net herein shown and described, composed of a middle net, F, or gill-net proper, placed between two nets, E and E, to form the pockets *a* and *b*, the inner net being of finer mesh than the two side nets between which it is placed, substantially as set forth.

255,672. PROCESS OF SECURING METAL WEARING-SURFACES TO RUBBER BOOTS AND SHOES. FREDERICK RICHARDSON, Providence, R. I. Filed Dec. 22, 1881. (No specimens.)

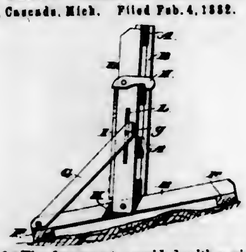
Claim.—The process herein described for securing metal wearing-surfaces or guards to rubber boots or shoes, the same consist-

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ing in forming depressions or grooves in one or both of the sheets, placing the plate, frame, or arms into such depressions, and securing the two sheets together by cementation, as described.

255,673. FENCE. ALBERT D. ROBINSON and HERBERT W. THOMPSON, Cascade, Mich. Filed Feb. 4, 1882. (No model.)



Claim.—1. The fence-post provided with a pivoted latch for engaging the rail of a fence, and with a spring adapted to maintain the latch in its engagement with the fence-rail, substantially as described.

2. The fence-post pivoted to a base, E, and provided with means for connecting it with the fence, in combination with the inclined brace, pivoted at one end to the base and at its other end carrying a stud or pin working in a slot in the post, substantially as described.

255,674. HAT. SAMUEL D. ROBINSON, Foxborough, Mass. Filed Feb. 11, 1882. (Model.)

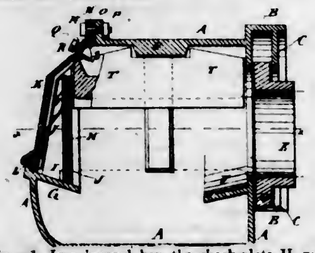


Claim.—1. As a new article of manufacture, a hat or other head-covering for ladies and children, made of cloth composed in part of cotton and in part of wool, the latter having a longer staple than the cotton, a nap or pile being raised upon the surface of said cloth of substantially the composition herein described.

2. A hat or other head-covering for ladies and children, composed of two pieces of cloth of the kind described, fastened together with the nap or face side exposed.

3. A hat for the purposes specified, composed of the cloth described, having a nap upon its upper surface of the composition described, and an under lining of silk or other ornamental character.

255,675. CAR-AXLE BOX. HENRY ROTH, New York, N. Y., assignor of one-half to Lena R. Rose, New Orleans, La. Filed Oct. 22, 1881. (No model.)



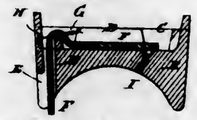
Claim.—1. In a journal-box, the check-plate H, made with beveled recesses J in the upper part of its outer side and the lower part of its inner side, substantially as herein shown and described, whereby the said check-plate can be reversed when worn, as set forth.

2. In a journal-box, the combination, with the check-plate H and the cap K, of the spring V, substantially as herein shown and described, whereby the said check-plate is held from rattling, as set forth.

3. In a journal-box, the combination, with the cap K, having oil-hole Q, of the spout S, substantially as herein shown and described, whereby the oil is conducted into the interior of the brass, as set forth.

4. In a journal-box, the washer D and guard-tube E, made of rubber and in one piece, substantially as herein shown and described, whereby the said washer can be placed upon axles varying in size, as set forth.

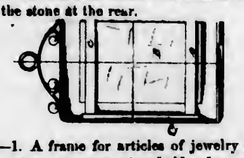
255,676. CAR-AXLE BOX. HENRY ROTH, New York, N. Y., assignor to himself and Joseph G. Fountain, New Orleans, La. Filed Oct. 22, 1881. (No model.)



Claim.—The combination of the journal-box having the central projection, D, the brass having recess C, apertures E I, and holes H, and the wicks F, secured to brass by bent wires G, and having their ends twisted together as shown and described.

255,677. LOCKET. JAMES ROTHSCHILD, Newark, N. J. Filed Jan. 31, 1882. (No model.)

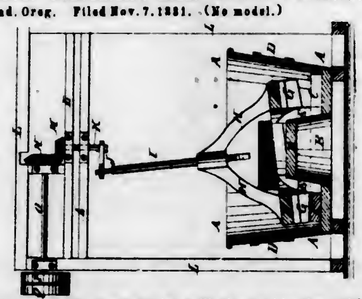
Brief.—The central opening is slightly beveled to hold the setting in front. Narrow strips are soldered against the longer inner sides of the frame to receive the ends of cross-bars, which firmly hold the stone at the rear.



Claim.—1. A frame for articles of jewelry having a central opening for a stone or ornament and side edges at right angles to each other, in combination with interior side bars, C C, and cross-bars c c, substantially as described.

2. In a locket or analogous article, the hollow frame A, having face a and rim a' at right angles to each other, having within the inner surfaces of its longer sides strips C C, in combination with cross-bars c c, all arranged as described, adapted to hold the setting B firmly in position within said frame A, as and for the purpose intended, substantially as described.

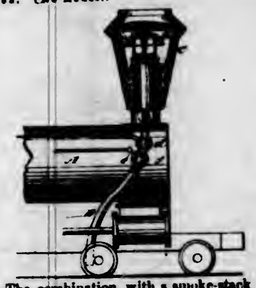
255,678. PULVERIZING-MILL. WILLIAM C. SALMON, Portland, Oreg. Filed Nov. 7, 1881. (No model.)



Claim.—1. In a pulverizing-mill, the combination, with the ring-shaped pulverizer F, provided with radial dies G and means for giving a wabbling movement thereto, of the vessel A, provided with the central projection, B, having curved blocks E attached to its sides, and the die C in the bottom of the said vessel, substantially as and for the purpose set forth.

2. In a pulverizing-mill, the combination, with the ring-shaped pulverizer F, provided with the radial removable dies G, the spider H, the shaft I, the crank J, and the driving mechanism of the vessel A, having screen-covered openings in its sides, and provided with the central inclined projection, B, having curved blocks E attached to its sides, and the ring-shaped die C in its bottom, substantially as and for the purpose set forth.

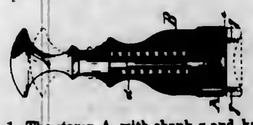
255,679. SPARK EXTINGUISHING AND DISCHARGING DEVICE. WILLIAM E. SCHENNERHORN, Schenectady, N. Y. Filed Jan. 11, 1882. (No model.)



Claim.—The combination, with a smoke-stack and spark-arrester substantially as described, of the discharge-pipe provided with two valves arranged as shown and described, whereby an injector may operate upon the solid products of combustion in the pipe, as described.

255,680. APPARATUS FOR FILLING CAPSULES. JOHANN SCHMIDT, Nuremberg, Bavaria, Germany, assignor to Verghe, Ruhling & Co., Chicago, Ill. Filed Sept. 23, 1881. (No model.)

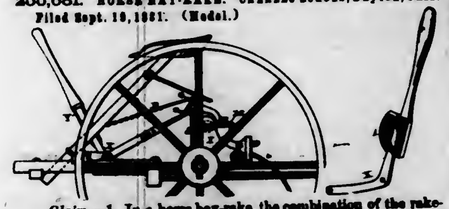
Brief.—The stamp is pressed upon the upper half of a wafer, which is retained on points *g*, and is moistened by pressure upon the absorbent pad, then pressed upon the lower half containing the medicament and the sleeve B allowed to ascend, thus disengaging the points, when the edges of the two wafers will stick together.



Claim.—1. The stamp A, with shank *a* and knob *b*, in combination with the sleeve B, spring *d*, and points *g*, all substantially as and for the purpose set forth.

2. The stamp A, with shank *a* and knob *b*, and the sleeve B, with spring *d* and points *g*, in combination with the rubber plate D, having perforations *f*, all substantially as and for the purpose described and shown.

255,681. HORSE HAY-RAKE. CHARLES SCHOLS, Dayton, Ohio. Filed Sept. 19, 1881. (Model.)



Claim.—1. In a horse hay-rake, the combination of the rake-head A, the castings C, secured to its ends and extending backward, the locking-plates I, pivoted at their rear ends upon these castings and extending forward, the driving-wheels having notches in the inner ends of their hubs, and an operating mechanism, the lower ends of the locking-plates being provided with flanges for catching in the notches in the hubs, substantially as shown.

2. The combination of the rake-head, the castings C, secured thereto, the locking-plates I, pivoted at their rear ends upon these castings, and having flanges upon their lower ends to engage with the hubs of the driving-wheels, the bar or rod L, journaled upon the rake-head and pivoted eccentrically to the locking-plates, and the driving-wheels having notches made in the inner ends of their hubs, substantially as described.

3. The combination of the rake-head A, the driving-wheels having notches J in the inner ends of their hubs, the pivoted locking-plates I, provided with flanges I', and the rod or bar L, eccentrically pivoted to the locking-plates, by means of which the said locking-plates are operated, substantially as set forth.

4. The combination of the pivoted locking-plates I, the rake-head A, and the driving-wheels provided with hubs having notches J in their inner ends, the rod or bar L, eccentrically pivoted to the locking-plates, an arm, M, which is attached to the rod or bar L, and a spring for drawing the rod or bar back into position, and thereby releasing the wheels from the locking-plates, substantially as specified.

5. The combination of the locking-plates I, the driving-wheels provided with notches in the inner ends of their hubs, the rod or bar L, eccentrically pivoted to the locking-plates, an arm, M, which is secured to the rod or bar L, and which has a spring attached to its rear end, and which is adapted to engage with the loop 3 at its front end, substantially as shown.

6. The combination of the rake-head A, which is hinged to the tongue-frame, the loop 3, which is pivoted to the rake-head, and an arm, M, which is secured to the rod L, which is eccentrically pivoted to and operates the locking-plates I, the upper end of the loop being made to strike against the tongue-frame when the rake-head tilts forward, substantially as described.

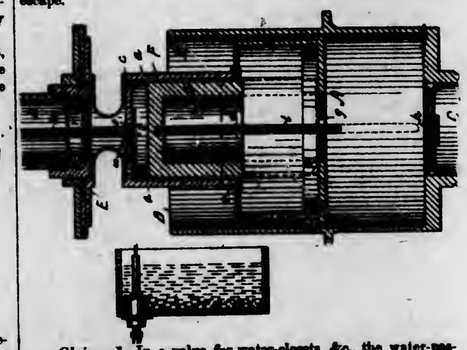
7. The combination of the rod or bar L, provided with an arm which extends beyond it on both sides, and which arm has a spring secured to its rear end and a chain to its front end, and is provided with a notch, with a pivoted loop that is carried by the rake-head in its tilting movement, the eccentric points or projections on the rod or bar, the locking-plates, and the driving-wheels provided with notches on the inner ends of their hubs, the parts being arranged to operate substantially as specified.

8. In a horse hay-rake, the combination of the cranked or bent lever X, for dumping the rake, and a handle which is pivoted to the lever so that it can be turned back out of the way, substantially as shown.

9. In a horse hay-rake, the combination of the cranked or bent lever X, for dumping the rake, and a handle which is pivoted to the lever so that it can be turned back out of the way, and provided with a suitable guide for controlling its movement, substantially as described.

255,682. VALVE FOR WATER-CLOSETS. WILLIAM SCOTT, Malden, Mass. Filed Nov. 25, 1881. (No model.)

Brief.—The case A has an induction, B, and eduction C. E is the valve proper and F is to allow the after-wash, which it does by *b* falling first after the main flow and seating on *f*. The flow is thus stopped until rod *l* rests on A, when, as *a* descends, *b* rises from the seat *f* and allows the water contained above said seat to escape.



Claim.—1. In a valve for water-closets, &c., the water-passage A, having an inlet-port, B, and an outlet-port, C, valves E and F, attached to a common stem, and the one, F, made in two parts arranged to move upon each other, and separate seats for the two valves, all constructed, arranged, and combined together to secure in one operation of the valve the simultaneous opening of the inlet and outlet ports, a then separate and independent closing of the outlet-port, and an after opening of the outlet-port as and while the inlet-port is closing, substantially as described, for the purposes specified.

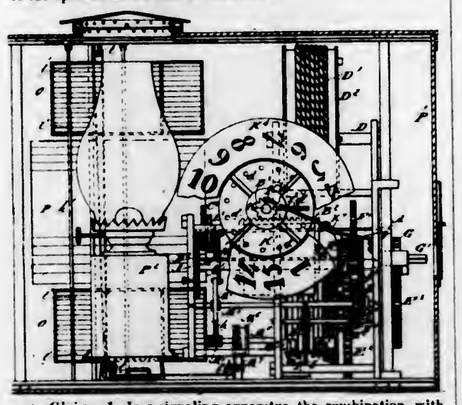
2. In a valve for water-closets, &c., the water-passage, A, having an inlet-port, B, and an outlet-port; C, valves E and F, attached to a common stem, and the one, F, made in two parts arranged to move upon each other and having a passage in outer part, *a*, opening to the inner part, *b*, and separate seats for the two valves, all constructed, arranged, and combined together to secure in one operation of the valve the simultaneous opening of the inlet and outlet ports, a then separate and independent closing of the outlet-port, and an after opening of the outlet-port as and while the inlet-port is closing, substantially as described, for the purposes specified.

3. In a valve for water-closets, &c., the water-passage A, having an inlet-port, B, and an outlet-port, C, valves E and F, attached

to a common stem, and the one, F, made in two parts arranged to move upon each other, separate seats for the two valves, and an open passage, D, through the valve E, all constructed, arranged, and combined together to secure in one operation of the valve the simultaneous opening of the inlet and outlet ports, a then separate and independent closing of the outlet-port, and an after opening of the outlet-port as and while the inlet-port is closing, substantially as described, for the purposes specified.

255,683. SIGNALING APPARATUS. WILLIAM C. SHATON, Quebec, Quebec, Canada. Filed July 30, 1881. (No model.)

Brief.—The invention consists of a lantern provided with eclipsing-screens and mechanical devices by which flash-signals of any desired combination, duration, and frequency may be made, and with means by which the character of the signals is indicated to the operator at the rear of the lantern.



Claim.—1. In a signaling apparatus, the combination, with the transmitting-wheel C, the cogged signal-cylinder B, and the driving mechanism, of the eclipsing-train consisting of the cog-wheel C^2, the pinion I_4, the face-plate M, link M', cogged crank M^3, and pinion M^4, substantially as and for the purpose set forth.

2. In a signaling apparatus, the combination, with the driving mechanism and the governor-shaft I, of the signal-cylinder B, the cog-wheels A^2 H^3, pinions H H^4, and worm-wheel H^5, substantially as and for the purpose set forth.

3. In a signaling apparatus, the combination, with the guide-rods *k*, the pulleys *l l'*, the drive-pulley M^4, and the cord M^7, of the screens O, provided with eyes or lugs *l'*, substantially as and for the purpose set forth.

4. In a signaling apparatus, the combination, with the signal-shaft A', provided with the cog-wheel A^2, the eclipsing-train, and the regulating-gear, of the wheel H^2, loosely mounted upon the said signal-shaft, substantially as and for the purpose set forth.

5. In a flash-light signaling apparatus, the combination, with the transmitting wheel and shaft C C' and cog-wheel C^2, of the pinion I_4, face-plate M, link and cogged crank M' M^3, pinion M^4, and pulley M^4, substantially as herein shown and described, whereby intermittent motion is transmitted through suitable cords or chains to the eclipsing-screens, as set forth.

6. In a flash-light signaling apparatus, the combination, with the signal shaft and cylinder A' B, of the arms B' B', rack B^3, pinion B^2, and shaft K, substantially as herein shown and described, whereby said signal-cylinder may be moved laterally, as set forth.

7. In a signaling apparatus, the combination, with the shaft K, provided with spline *f*, of the perforated disk K', button K^2, arms *f'*, grooved sliding collar K^3, arm *f''*, and regulating-wheel K^4, substantially as and for the purpose described.

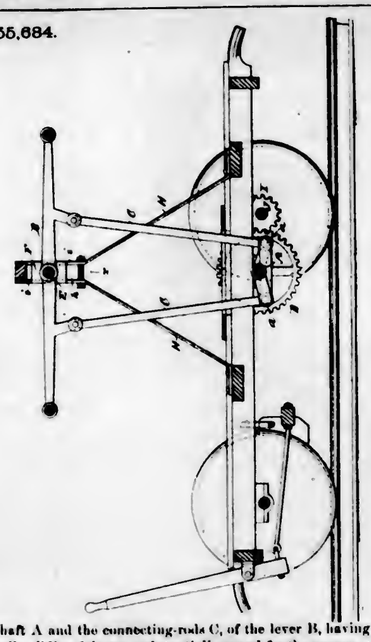
8. The combination, with the shaft K, arms *f' f'*, disk K', button K^2, and sliding collar K^3, of the pivoted dog K^5, substantially as and for the purpose described.

9. In a signaling apparatus, the combination, with the lantern provided with two colored lights and an eclipsing-screen, of the revolving disk R', provided with glass of two colors, and fixed at the rear of the lantern so as to be rotated synchronously with the operation of eclipsing-screen, substantially as herein shown and described, whereby the color displayed by the lantern is indicated inboard, as set forth.

255,684. HAND-CAR. HENRY H. SESSIONS, Palestine, Tex. Filed Jan. 4, 1882. (No model.)

Claim.—1. In a hand-car, the combination, with the crank-

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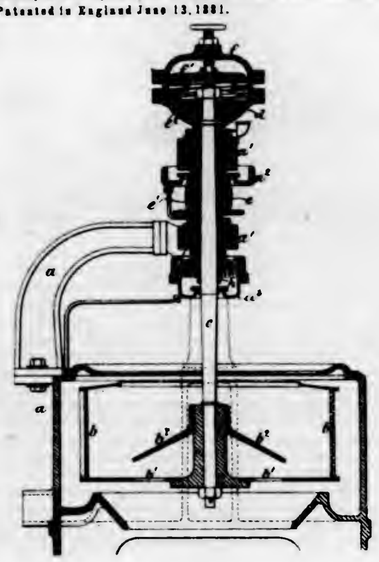
shaft A and the connecting-rods C, of the lever B, having a vertically-sliding fulcrum, substantially as and for the purpose set forth.

2. In a hand-car, the combination, with the bars H, having parallel portions *i*, forming ways *h*, of the lever B, the spindle E, and the sliding blocks F, substantially as and for the purpose set forth.

3. In combination with the crank-shaft having the diagonal cranks *a a*, the lever B, having a movable fulcrum, as and for the purposes set forth.

4. The crank-shaft A, having the diagonal cranks *a a* and carrying the cog-wheel D, the lever B, and the blocks F F, adapted to move in the ways *h h*, substantially as and for the purposes set forth.

255,685. CENTRIFUGAL MACHINE. WM. SHRAND, Bankside, County of Surrey, England. Filed Jan. 3, 1882. (No model.) Patented in England June 13, 1881.



Claim.—1. The combination of the framing, the tubular axis supported by and revolving in the bearings of the framing, the basket, the inner axis by which the basket is suspended, the cup or enlargement at the upper end of the tubular axis, and the spring-controlled block secured to the upper end of the inner axle and received by the cup of the tubular axis, substantially as and for the purpose hereinbefore set forth.

2. The combination of the basket, its suspending-axis, the tubular axis, the cup or enlargement of the tubular axis, the block by which the suspending-axis is supported in said cup, and the spring in the cup acting upon said block, substantially as and for the purpose hereinbefore set forth.

3. The combination of the basket, its suspending-axis, the tubular axis, the cup or enlargement of the tubular axis, the block by which the suspending-axis is supported in said cup, and the springs in said cup above and below the supporting-block of the suspending-axis, substantially as and for the purpose hereinbefore set forth.

4. The combination of the basket, its suspending-axis, the driven tubular axis, the cup thereof, the block by which the suspending-axis is supported in said cup, and the clutch-connection between said block and cup, substantially as and for the purpose hereinbefore set forth.

5. The combination of the basket, its suspending-axis, the driven tubular axis, the cup thereof, the cup-cover, the adjustable plate, the block by which the suspending-axis is supported in said cup, and the spring interposed between said plate and block, substantially as and for the purpose hereinbefore set forth.

6. The combination of the basket provided with the apertures in its bottom, the suspending-axis with which the basket revolves, and the shield fixed to the basket-hub and overhanging the apertures, substantially as and for the purpose hereinbefore set forth.

255,686. SHOW-CASE. GEORGE W. SIMONS and JOHN F. SIMONS, Philadelphia, Pa. Filed Jan. 13, 1882. (No model.)



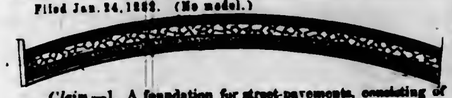
Claim.—1. The combination, in a show-case, of the body A, constructed for the reception of canes or umbrellas, with the glazed frame G, surmounting the same, and with a perforated partition, D, all substantially as described.

2. The combination of the body A, having steps *b b'* on its base, and a perforated conical top, D, with the glazed frame G, substantially as specified.

3. The combination of the body A, adapted for the reception of canes or umbrellas, with the glazed frame G, surmounting the body and having a glazed lid, H, as specified.

4. The combination of the body A with the glazed frame comprising the ring *e*, ribs *f*, glass segments *m*, and screw-bolts *h*, as set forth.

255,687. PAVEMENT. CHARLES A. SNYDER, New Orleans, La. Filed Jan. 14, 1882. (No model.)



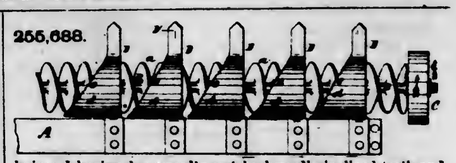
Claim.—1. A foundation for street-pavements, consisting of planks arched transversely across the street, and connected by longitudinal wooden strips secured at intervals across said planks in a direction parallel with the sides of the street, and a top covering of earth, substantially as shown and described.

2. A street-pavement consisting of planks arranged transversely across the street, and connected at intervals by longitudinal wooden strips secured to said planks, a layer of dirt resting on the foundation, a layer of broken stones or shells placed above the dirt, and a top dressing of fine gravel, substantially as shown and described.

255,688. SICKLE-BAR FOR MOWING AND REAPING MACHINES. EDMUND T. SPOTTSWOOD, Perryville, Ind. Filed Sept. 8, 1881. (No model.)

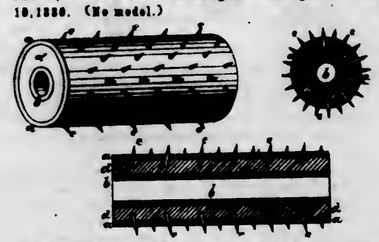
Claim.—The combination, with the main bar A and the rotary sickle-bar B, provided with spiral cutting-edges, of the circular guards D, provided with the diagonal and upwardly-curved

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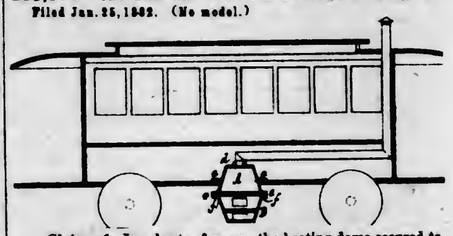
knives *d*, having downwardly and backwardly inclined teeth and extending from the forward edge of the said bar to the horizontal diameter of the revolving sickle-bar, substantially as and for the purpose set forth.

255,689. ROLLER FOR LOOM-TEMPLES. JOHN B. STANCOUR, Philadelphia, Pa., assignor of one-half to Thos. Cunningham, Horatio B. Lincoln, Frank P. Pendleton, George Brown, Lucian Brown, and Herman E. Cunningham, same place. Filed May 10, 1880. (No model.)



Claim.—A temple-roller having a core or body of vulcanized fiber, into openings in which the pins are driven, and by which said pins are retained, as set forth.

255,690. CAR-HEATER. JOSEPH E. STRONG, New York, N. Y. Filed Jan. 25, 1882. (No model.)



Claim.—1. In a heater for cars, the heating-dome secured to the bottom of the car and connected at its upper portion with a smoke-pipe, in combination with a fire-box detachably connected with the bottom portion of the heating-dome, and provided with a grate and means for feeding the fuel onto the grate, substantially as described.

2. In a heater for cars, a heating-dome provided with flanges supported by the bottom of the car, and provided with a device at its upper portion which is attached to a smoke pipe or flue, in combination with the fire-box detachably connected with the bottom portion of the heating-dome, and provided with a grate and an inclined feeding-chute, substantially as described.

3. A heater for cars combining in its structure a heating-dome secured to the bottom of the car and provided with grooves *e e* in its lower side portions, and a fire-box provided with flanges *f f*, adapted to slide horizontally in said grooves, substantially as described.

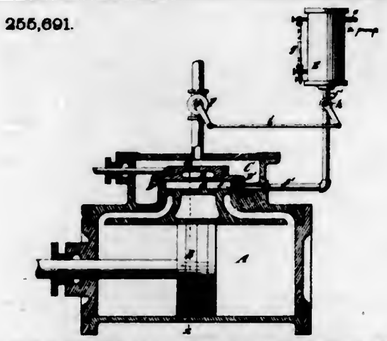
4. The combination, in a car-heater, of the heating-dome having flanges *e*, supported by the bottom of the car, and provided at its lower side portions with longitudinal grooves *e*, with a fire-pot having flanges *f*, adapted to slide in said grooves in the heating-dome, and provided with a grate and an inclined fuel-feeding chute, *i*, substantially as described.

255,691. BALANCING SLIDE-VALVES. ALEXANDER H. SULLIVAN, New York, N. Y., Administrator of John James, deceased. Filed Jan. 17, 1882. (No model.)

Claim.—1. The method of balancing and lubricating a slide-valve, consisting in exposing the face of the valve to the action of the pressure of lubricating material which is contained under pressure in a reservoir or supply-vessel, substantially as herein described.

2. The method of balancing a slide-valve, consisting in exposing the face of the valve to the action of the pressure of a liquid

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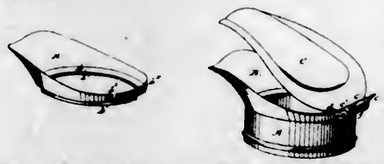
which is contained in a reservoir or supply-vessel separate from the boiler or source of supply of the motive agent which acts upon the back of the valve, substantially as herein described.

3. The combination of a valve-seat and a slide-valve having a cavity between them, and a pipe or passage for supplying liquid under pressure to said cavity, substantially as and for the purpose herein described.

4. The combination of a valve-seat and a slide-valve having a cavity between them, a pipe or passage for supplying liquid to said cavity, and a reservoir or supply-chamber in which a constant pressure is to be maintained, communicating with said pipe or passage, substantially as and for the purpose herein described.

5. The combination, with an engine-cylinder and a slide-valve having a cavity between the valve face and seat, and a pipe or passage for supplying liquid under pressure to said cavity from a reservoir distinct and separate from the boiler or source of supply of the motive agent, of a throttle-valve for controlling the admission of the motive agent to the valve-chest, a valve for controlling the admission of liquid to said cavity, and devices connecting said valves so that they may be operated simultaneously, substantially as and for the purpose herein described.

255,692. TOP FOR SIRUP-PITCHERS. CHARLES H. TALLMAN and BENJAMIN F. DAY, Bellaire, Ohio. Filed Mar. 5, 1881. (No model.)



Claim.—1. The neck or nose piece B, with flanges *b b'*, stamped in one piece out of sheet metal, substantially as described.

2. The combination of the neck or nose piece B, with flanges *b b'*, and the body A, with flange *a* and circular opening *a'*, the flange *b'* of the neck or nose piece B being designed and adapted to fit into the circular opening of the body A, substantially as described.

3. The lower hinge-plate, D, with hinge-ears *d d*, in combination with the neck or nose piece B, having the slits *b² b²*, substantially as and for the purposes set forth.

4. The combination, with the cover C, of the neck or nose piece B and lower hinge-plate, D, substantially as described.

5. The combination of the cover C, the neck or nose piece B, the lower hinge-plate, D, and the hinge-pin *e* and spiral spring *f*, substantially as described.

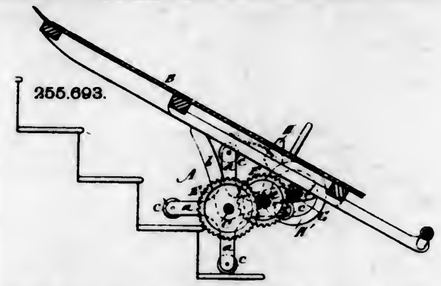
255,693. STAIR-TRUCK. JOHANN C. TAUBER, Plain City, Ohio. Filed Aug. 15, 1881. (Model.)

Claim.—1. A stair-truck having a shaft, C, provided with radial arms *a* at each end, and mechanism by which said shaft may be rotated, as described.

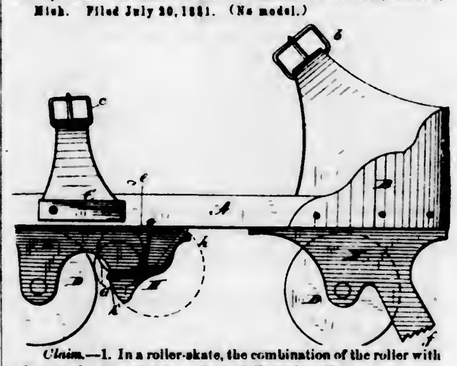
2. The armed wheels A, secured upon the axle C, in combination with the gear-wheels E F, and the pinions *e f*, and the crank-shaft G, substantially as and for the purposes set forth.

3. The stair-truck herein shown and described, consisting of the platform B, armed wheels A A, secured upon the shaft C, and the crank-shaft G, and the gear-wheels E and F, and the pinions *e* and *f*, the side of the truck being provided with the brake H, substantially as described.

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255,694. ROLLER-SKATE. ELMORE W. TAYLOR, Detroit, Mich. Filed July 30, 1881. (No model.)



Claim.—1. In a roller-skate, the combination of the roller with a loose and automatic stop, substantially as described.

2. In a roller-skate, a frame for the roller having a chamber for a loose friction-roller, substantially as shown and described.

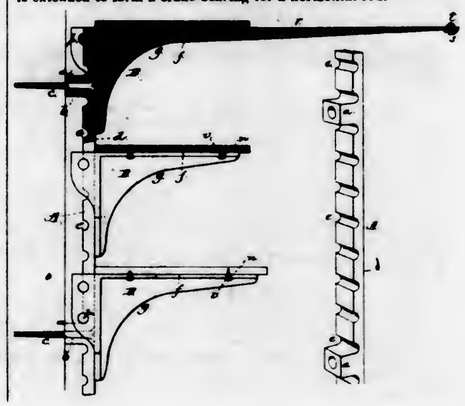
3. The frame E, having partition *e*, combined with roller D and spring H, substantially as set forth.

4. The rear frame, F, in which are mounted the rollers D', provided with a serrated lower edge, *f*, substantially as set forth.

5. In a roller-skate, and in combination with the rollers, an automatic stop which is capable of being moved out of contact with the rollers when desired, substantially as described.

255,695. BRACKET AND SHELVING SUPPORT. FRANCIS M. TAYLOR, Mason City, Ills. Filed Jan. 28, 1882. (No model.)

Brief.—The shelf-brackets, adjustable on an upright, have rear extensions, which embrace the upright, and are secured by transverse pins engaging pin-seats in the rear of the upright. The edges of the horizontal part of the brackets have notches, in which the shelf-screws are seated. The bracing-rib of the uppermost bracket is extended to form a crane-bearing for a horizontal rod.

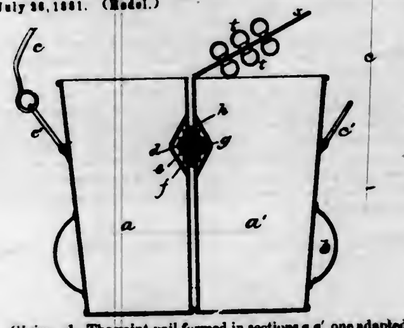


Claim.—1. The wall-upright having the rib-support A in front of the wall-bearings *a*, transverse pin-seats *c* in rear of the front edge, *d*, of the rib-support, and the bracket B, having the rear bearing, *h*, provided with perforated cheek-flanges *k*, in combination with the transverse holding-pins *p*, substantially as specified.

2. The bracket B, having the horizontal bearing *f*, notched at *s*, the under rib, *g*, the vertical rear bearing, *h*, and the perforated cheek-flanges *k*, substantially as specified.

3. The shelf-bracket having the bracing under rib, *g*, extended in front to form a crane-bearing, *r s*, for the display of goods over a counter, substantially as specified.

255,696. PAINT-PAIL. JAMES THOMAS, Newark, N.J. Filed July 26, 1881. (Model.)



Claim.—1. The paint-pail formed in sections *a a'*, one adapted to be emptied independently, having a single cover adapted to engage alternately with either of the sections, substantially as and for the purposes set forth and shown.

2. A paint-pail adapted to hold two colors or varieties of liquid paint, formed in sections *a a'*, pivoted together substantially as and for the purposes herein set forth and shown.

3. The combinations of the sections *a a'*, pivoted together substantially as described, the cover having the brush-receptacles thereon, the bail *c*, and handles *b*, arranged and operating substantially as and for the purposes set forth and shown.

4. In a paint-pail having the pivotal sections *a a'*, the cover secured to one of said sections and adapted to engage alternately with either, and carrying upon each side thereof the brush-receptacles, substantially as and for the purposes set forth and shown.

5. In a paint-pail having sections pivoted together, caps *g* adapted to prevent the escape of paint, arranged and operating substantially as and for the purposes set forth and shown.

6. In a paint-pail, the pivoted sections *a a'*, the pivotal bolt *d*, and the washers, all arranged and operating substantially as and for the purposes set forth and shown.

255,697. COFFEE-POT. HUNTON THOMAS, Elmsford, N. Y. Filed Aug. 25, 1881. (No model.)



Claim.—1. The sliding rod *h*, provided with loops *i' i² i³* at its upper extremity, in combination with the cup *x* and the arms *d e f*, so that by sliding the rod up or down the apparatus may be used in pots of different depths, substantially as shown.

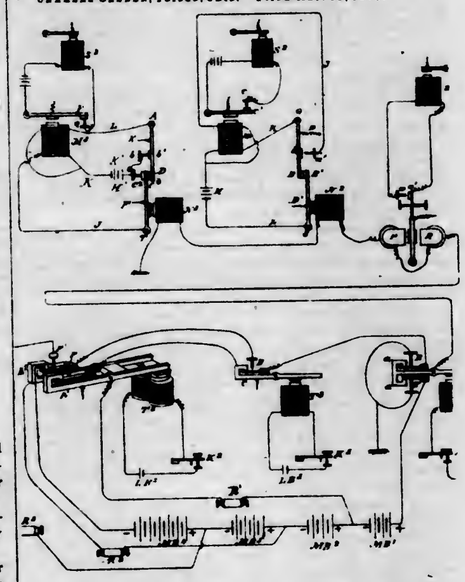
2. The flexible wire rods *d e f*, curved at the upper part, at *m*, to admit of extension and contraction, in combination with the slotted band-holders *g h i* and with the loops *i' i² i³* of the sliding rod *h*, substantially as and for the purpose described.

3. The band-holders *g h i*, each provided with slots *o p o' p'*, for holding the coils of the circular band *r*, in combination with the projections or rests *a b c*, resting upon the upper edge of the pot, and with the arms *d e f*, for holding the coils of the circular band, as and for the purpose substantially as set forth.

4. The annular band *r*, arranged in coils and passing through the slots *o p* of the band-supporters *g h i*, in combination with the band-supporters, arranged, as described, so as to be held in circles of different sizes in order that it may hold in its turn the rests *a b c* in positions to fit pots of different diameters, substantially as shown and described.

5. In a coffee-pot, the combination of the receptacle *x* and its sliding rod *h*, loops *i' i² i³*, flexible arms *d e f*, band-supporters *g h i*, slots *o p*, band *r*, and spring-catch *z*, all arranged to operate as above shown and described.

255,698. MULTIPLE TELEGRAPH. BENJAMIN THOMPSON and CHARLES SHLDEN, Toledo, Ohio. Filed Mar. 10, 1879.



Claim.—1. A differential repeating-sounder, a local battery, supplemental contact-lever, and a conducting-stop therefor, in combination with an armature-lever which, when fully attracted, breaks the circuit of the local battery through both coils of the differential sounder, substantially as described.

2. A receiving electro-magnet, an armature-lever therefor, and a supplemental contact-lever, in combination with a repeating-sounder and a reading-sounder, the whole so arranged that the local of the reading-sounder will be broken when the armature-lever of the receiving-relay is against its back stop, but closed when said armature-lever is either in an intermediate position or against its front stop.

3. A differential electro-magnet and a local battery, one pole of which is connected directly to the relay-armature, the other pole being connected to one end of both coils of the differential electro-magnet, in combination with a supplemental contact-lever connected to the other end of one of the differential coils.

4. A differential electro-magnet and a local battery connected directly to the relay armature-lever, in combination with a supplemental contact-lever connected to one of the differential coils and arranged to make contact with the relay armature-lever on the side opposite the relay electro-magnet.

5. A differential electro-magnet, a local-circuit battery connected thereto, and a relay armature-lever connected directly with one pole of said battery, in combination with a supplemental contact-lever connected to one of the differential coils and making contact on one and the same side with the relay armature-lever, and with a stop connected to the other of the differential coils.

6. The combination of a differential electro-magnet, a local battery therefor, a relay armature-lever connected directly to one pole of the local battery, a supplemental contact lever and stop connected to the differential coils, and springs so applied to said levers as to oppose one another's action when the levers are in contact with one another.

7. A relay armature-lever connected directly with one pole of local battery, whose other pole is connected to a differential electro-magnet, and a supplemental contact-lever with stops and connections, substantially as described, in combination with retractile springs so applied to said levers as to oppose one another's action, and so adjusted that the armature-lever shall overcome the spring of the supplemental lever.

8. The combination of a differential electro-magnet, a local

battery therefor, a relay armature-lever, and a supplemental contact-lever in circuit with one coil of the differential electro-magnet when against its stop, and so arranged with relation to the relay armature-lever as to be removed from said stop when the armature is carried forward against the stress of its retracting-spring.

9. The combination of a differential electro-magnet, a local battery, a relay armature-lever, an electrical back contact therefor, and a supplemental lever and electrical back contact for the latter, and connections, substantially as described, so that both differential coils will be closed when the relay armature-lever is against its back contact.

10. The combination of a differential electro-magnet, a local-circuit battery, a relay armature-lever, an electrical back contact therefor, connected directly with one pole of the local battery, and a supplemental contact-lever whose stop is connected with the same pole of the local battery, so that when the armature-lever is fully attracted both coils of the differential electro-magnet are out of circuit, but when partially drawn forward the local-battery circuit through one of said coils is closed.

11. The combination of an armature-lever provided with a back contact-stop, and a supplemental lever having a contact-stop upon the same side as the armature-lever, so that the latter, when moved forward to break its own circuit, may also break the circuit formed by the supplemental lever.

12. The combination of an armature-lever provided with a back contact-stop, a supplemental contact-lever provided with an independent contact-stop upon the same side as that of the armature-lever, and retracting-springs so applied to both levers as to oppose the action of the relay electro-magnet.

13. The combination of an armature-lever provided with a back contact-stop, and a supplemental lever, also having a contact-stop, and insulated from said armature-lever, in combination with retractile springs acting upon said levers in the same direction, the spring for the supplemental lever being adjusted to higher tension than that of the armature-lever.

14. In combination in a multiple telegraph, a main-line magnet, N^3, with armature-lever S, point B', and tension-spring D', and swinging supplemental contact-lever G, points B a' a'', and tension-spring D, local battery H, one pole of which is connected directly to the main armature-lever S, and differentially-wound local upstroke electro-magnet M^3, with its connecting-wires J, K, and L, substantially as and for the purpose set forth.

15. In a multiple telegraph, the main-line magnet N^3, with armature-lever T, tension-spring F, points c^3 a^3, swinging supplemental contact-lever A, insulated at its extremity at a point on the opposite side of lever T from contact a^3, points b and b', and tension-spring E, substantially as and for the purpose set forth.

16. In a multiple telegraph, the main-line magnet N^3, in combination with levers A and T, provided with independent electrical contact-stops electrically connected together and to the same pole of the local battery, and tension-springs acting on said levers in the same direction, but with unequal strength.

17. In a multiple telegraph, the main-line electro-magnet N^3, in combination with armature-lever T, tension-spring F, points c^3 a^3, swinging supplemental lever A, and points b b' and D^3, spring E, local battery H', differentially-wound local magnet M^3, and its armature and points P Q, with connecting-wires J, K, K', and L, substantially as and for the purpose set forth.

18. In a multiple telegraph, main battery M B' M B^2 M B^3 M B', in combination with the transmitters T P C', T^2, and T^3, local batteries L B' L B^2 L B^3, and keys K', K^2, and K^3, and their connecting wires and points, substantially as shown and described.

19. In a multiple telegraph, the transmitters T P C', T^2, and T^3, in combination with main battery M B' M B^2 M B^3 M B' and inserted resistances R' R^2 R^3, connected substantially as shown and described, and for the purpose set forth.

20. In a multiple telegraph, the transmitter T P C', with its circuit-connections, as described, whereby it acts as a pole-changer irrespective of the position of the transmitters T^2 T^3, in combination with said transmitters T^2 T^3 and circuit connections and points, as described, whereby the latter of said transmitters, when operated alone, places main-line battery M B' M B^2 M B^3 M B' to line, and when operated simultaneously with T^3 places main battery M B' M B^2 M B^3 to line, for the purpose herein set forth.

21. The combination of a double-point tension key or transmitter, T^3, batteries M B^3, M B^2, and M B^3, connected in the manner described to said key, and a single-point key or transmitter, T^2, whose spring is connected to a pole-changer, substantially as described.

22. The combination, substantially as described, of two receiving-relays for responding to changes of tension in the main-line circuit irrespective of polarity, independent local circuits for said relays, and two tension-transmitters for sending two messages over the same wire by variations of tension without reversal of polarity.

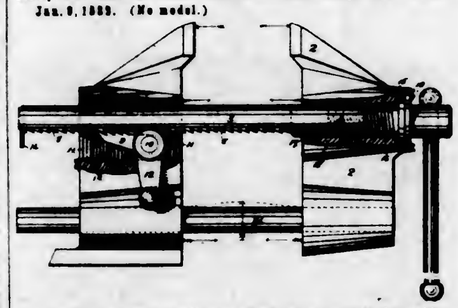
23. The combination, substantially as described, of two intensity-transmitters at the transmitting-station of a telegraph-line and two locally-independent neutral relays in the main line at the receiving-station.

255,699. BLIND-SLAT HOLDER. JOHN S. THOMPSON, Brooklyn, N. Y. Filed May 5, 1881. (No model.)



Claim.—The blind-slat holding-spring herein described, adapted to lie between the end of the slat and the shutter-frame and to move in a circle concentric with the slat-pivot, composed of a single piece of spring metal bent, as shown, to form a loop, *a*, adapted to be sprung upon the end of the slat, a spring-tongue, *b*, adapted to have frictional contact with the inner surface of the shutter-frame, and an inwardly-extending arm, *c*, extending over the clamp *a*, upon which arm the impinging end of the slat while being raised will strike, and thereby lift the spring-arm and free it from the frame in case it binds, substantially as and for the purpose specified.

255,700. BENCH-VISE. JOHN THOMSON, Brooklyn, N. Y. Filed Jan. 9, 1882. (No model.)



Claim.—1. The combination of the jaws, as 1 2, the guide-rods 20 21, rigidly attached to one of the jaws and sliding in the other jaw, the sliding rod, as 5, having bearings in both jaws, and provided with the nut, as 4, and ratchet, as 8, with the pawl, as 9, and screw, as 3, and means for operating said pawl and screw, substantially as described.

2. The combination of the jaws, as 1 2, a guide-rod rigidly secured to one jaw and sliding in the other, a sliding rod, as 5, having bearings in both jaws, a mechanism for locking said rod 5 in different positions in one of the jaws, and a screw and nut, as 3 4, and means for operating said screw and nut, substantially as described.

3. The combination of the jaws, as 1 2, a guide-rod rigidly secured to one jaw and sliding in the other, a round sliding rod, as 5, having bearings in both jaws and provided with a feather, as 17, for holding it in position, a mechanism for locking said rod 5 in different positions in one of the jaws, a screw and nut, as 3 4, and means for operating said screw and nut, substantially as described.

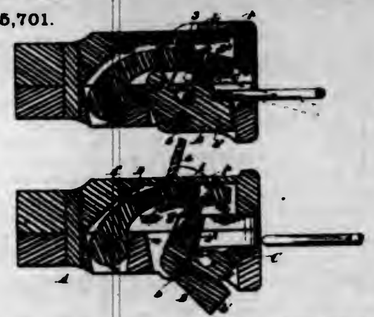
4. The combination of the jaws, as 1 2, a guide-rod rigidly secured to one jaw and sliding in the other, the sliding rod, as 5, having bearings in both jaws, and provided with the nut, as 4, with the screw, as 3, having shoulder 15, and the cap, as 19, substantially as described.

255,701. CAR-COUPLING. HILTON E. THURBER, Scranton, Pa., assignor of one-half to James E. Carmalt, same place. Filed Jan. 6, 1882. (No model.)

Claim.—1. The combination, with the draw-head having the perforation *p* for the passage of an ordinary coupling-pin and the elongated openings S in its sides, of the cam-lever L and the cross-bolt *c* and latch D, the top of said cam-lever operating to close the pin-perforation when the latch is down, so as to entirely prevent the passage of snow, rain, &c., into the draw-head through said perforation, substantially as described.

2. The combination, with the draw-head having the elongated openings in its sides and the latch and angular lever carrying the pin, of the cross-bolt *c*, the cam-lever and its cams, and the stops on the sides of the draw-head, substantially as described.

255,701.



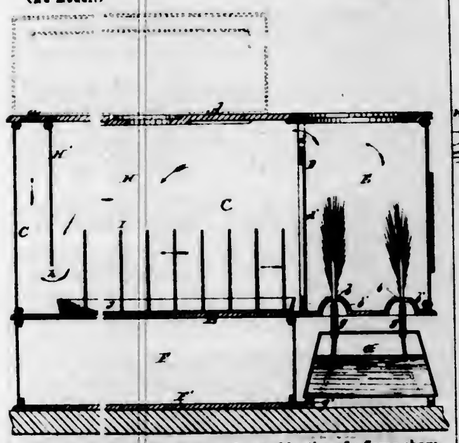
3. The pin C on the angular lever B, having the projection *c'* on its rear side, forming a positive angular shoulder for holding the link in horizontal position, substantially as described.

255,702. MILKING-PAIL. ANNA C. TRACY, Lone Rock, Wis. Filed Aug. 29, 1881. (No model.)



Claim.—A combination wire and cloth strainer arranged within the flanges *b* and *c* of a milk-pail cover, and operating substantially as and for the purposes set forth.

255,703. LAMP-STOVE. DAVID P. TROFRY, Chicago, Ill., assignor to Sarah E. Trofry, same place. Filed Oct. 17, 1881. (No model.)



Claim.—1. In a lamp-stove, the combination of a flame-chamber and a cooking-chamber arranged side by side, substantially as shown, a mica partition dividing said chambers opposite the flame, a passage connecting the flame and cooking chambers, and a suitable outlet from the latter, substantially as and for the purposes set forth.

2. In combination with the flame and cooking chambers arranged side by side, divided by mica opposite the flame, and having a connecting-passage for the products of combustion, the elevated open shelf I, arranged to support the article being cooked horizontally opposite or above the flame, substantially as and for the purposes set forth.

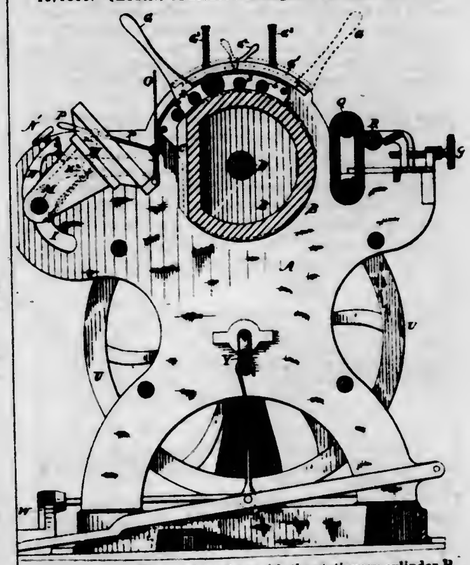
3. The combination, in a lamp-stove, of the chambers E and H, arranged side by side, as shown, the mica partition D, the passages *d* and A, relatively arranged, as indicated, and the open shelf I, horizontally opposite the flame in the chamber E, substantially as and for the purposes set forth.

4. The lamp-stove herein described, composed of the flame-chamber, roasting-chamber, and warming-chamber, said flame and roasting chambers being arranged side by side and supported by the warming-chamber, said warming-chamber extending only beneath the roasting-chamber, thereby leaving a space beneath the flame-chamber for the lamp, as described.

5. In a lamp-stove having flame and cooking chambers arranged side by side and communicating by a passage leading from the upper part of the flame-chamber, a pot-hole in the top of the cooking-chamber, substantially as described.

6. The front edge of the base F', notched to admit the legs or base of the lamp-reservoir G, whereby the tubes *g* are brought in proper relation to the apertures *b*, substantially as and for the purpose set forth.

255,704. PRINTING-PRESS. HENRY P. TRUEMAN and JOHN G. NEW, Birmingham, County of Warwick, England. Filed Oct. 13, 1880. (Model.) Patented in England Nov. 8, 1879.



Claim.—1. The combination, with the stationary cylinder B, rotary shaft D, the vertically-arranged apron Q, and roller R, of the series of rollers 1 2 3 4 5, one of which is spirally grooved, and the roller-gates E E, one of which is fast on said shaft, so that the rollers are carried around between the apron and cylinder, as shown and described.

2. The combination, with the cylinder B, having a type-bed C, and mounted loose on its supporting-shaft, of the lever G for adjusting said cylinder and the spring-pressed plate for locking the lever, as shown and described.

3. The combination of the rod or lever P with the frisket-arms O and a platen, H, said lever being adapted for attachment to the frame at a fixed point, as shown and described, for the purpose specified.

255,705. WHIFFLETREE-IRONS. OLIVER VANDEMAN, Racine, Wis. Filed Jan. 29, 1881. (Model.)

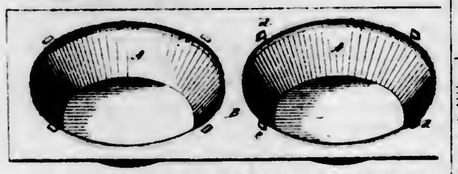


Claim.—1. The combination, with the single and double trees, of the two castings C and H and the bolt Q, the parts being arranged to operate substantially as shown.

2. The combination, with the single and double trees, of the casting C, having the part D to catch under the double-tree, and the part F, provided with a circular flange to catch upon its top, and the part G to extend up over the top of the whiffletree, with

the casting H, which is held in position by the flange upon the part F, and the bolt Q, which passes down through all of the parts, substantially as set forth.

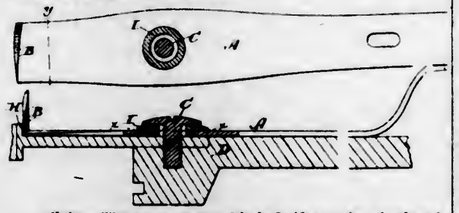
255,706. PATTY-PAN. AIMÉ VUILLIER, Portland, Conn., assignor to the United States Stamping Company, same place. Filed Feb. 16, 1882. (No model.)



Claim.—The herein-described improvement in patty-pans, consisting in the plate constructed with openings corresponding to but of less diameter than the pans, combined with the pans, the one constructed with tongues to pass through corresponding perforations in the other, the edge of the plate around the openings being struck down into the pans and the tongues being turned down to secure the two together, substantially as described.

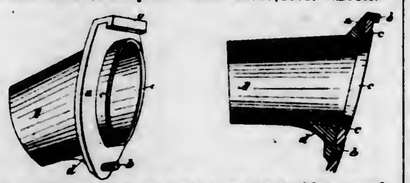
255,707. SEWING-MACHINE TRIMMER. ALONZO WARREN, Boston, Mass. Filed Jan. 24, 1882. (No model.)

Brief.—A bushing is interposed between the pivot-screw and the vibratory knife-carrying shank to prevent said pivot-screw from working loose and to enable the shank to be adjusted longitudinally to insure the proper relation of the knife to the raised throat-plate, against which it bears.



Claim.—The combination, with the knife-carrying shank and its pivot, of the interposed bushing, substantially as and for the purposes set forth.

255,708. HOE. ULRICH WAGENER, Cincinnati, Ohio, assignor to Martin Baro, same place. Filed Oct. 27, 1881. (Model.)

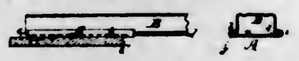


Claim.—1. In a hoe, the shank A, provided with surrounding flange *a*, annular flange *c*, ears *d*, and one or more rivets, *b*, all formed of one piece, in combination with the blade of a hoe, substantially as described.

2. The hollow shank or eye A, provided with annular flange *c* and surrounding flange *a*, having one or more rivets *b* and guard *b'*, all formed in one piece, in combination with the blade of a hoe, substantially as described.

3. In combination with the blade of a hoe, the eye A, having annular flange *c*, ears *a'*, rivets *b*, and braces *d*, formed in one piece, substantially as described.

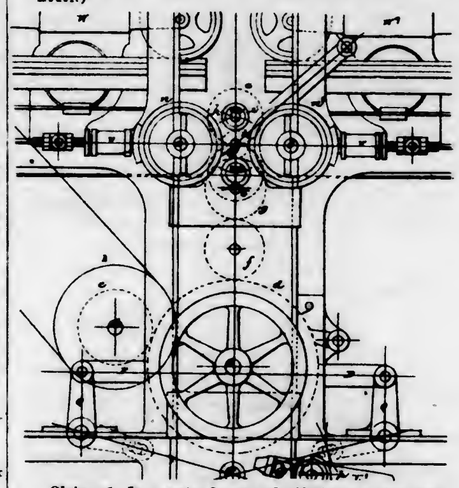
255,709. METALLIC HARNESS AND BRIDLE LOOP. JOHN WATTERS, New York, N. Y. Filed Dec. 29, 1881. (No model.)



Claim.—1. The combination of the box-loop B, having outwardly-projecting flanges *d*, with the bottom plate, A, having flanges *b*, forming grooves *a*, adapted to receive the flanges *d*, said bottom plate being made longer than the loop B to allow the flanges *b* to be crushed and bent down and form obstructions *c* against the ends of the flanges *d*, substantially as specified.

2. The plate A, having holes *a* and grooved flanges *b*, in combination with the loop B, having outwardly-projecting ungrooved flanges *d*, as set forth.

255,710. MOTOR FOR EMBROIDERING-MACHINES. CARL WEGMANN, St. Gallen, Switzerland. Filed July 19, 1881. (No model.)



Claim.—1. In a motor for an embroidering-machine, gear-wheels *d e f g h i' o o'* and friction-wheels *m m'*, the axis *a*, and driving-shaft pulleys *b b'*, in combination with friction-wheels *n n' o o'* and needle-carriages driven thereby, substantially as shown and described.

2. The shaft *e* and spring *s*, gear-wheel *d*, friction-wheel B, eccentrics U D, disk E, provided with notches F F', the pins *i i'*, latches L M, and disk K, provided with offset G, substantially as shown and described.

3. The eccentric U, levers S, and three-armed hand-lever R provided with friction-wheels *m m'*, substantially as shown and described.

4. The eccentric U, lever S, and lever R, provided with friction-wheels *m m'*, in combination with the friction-wheels *n n'*, shafts *o o'*, and needle-carriage W W', substantially as shown and described.

5. The friction-wheels *n n'*, in combination with the brakes *v v'*, as shown, and means for alternately releasing the wheels *n n'*, as shown and described.

6. The lever R, provided with the plates X X, in combination with the wheels *n n'*, brakes *v v'*, arms *w w'*, and plates *y y'*, as shown and described.

7. The loop P of the lever S, having the arms P^2 P^4, the angle-levers Q Q', the double lever S^2, pivot T, and the eccentric D, for operation as described.

8. The latch-tripping mechanism consisting essentially of the pedal L', provided with pawl Z, ratchet Y Y', shaft *p*, and rod S^3, provided with shoulder E', substantially as shown and described.

9. The spring-pressed latches L M and stud N, in combination with the disk E, having notches F F', and mechanism for releasing said latches from disk E, substantially as shown and described.

10. The combination, with the disk E, provided with notches F F', and latches L and M, of the rod S^3, provided with shoulder E', ratchets Y Y', shaft P, and pedal L', having pawl Z, substantially as shown and described.

11. The combination of the geared friction-wheel *d*, spring A, friction-wheel B, eccentrics U and D, and disk E with the pins *i i'* and the disk K, provided with the offset G, substantially as shown and described.

12. The combination, with the pins *i i'*, of the wheels *d* and B, latches L M, and spring A, whereby eccentrics U D are at each half-turn released from the action of wheel *d* and momentarily stopped, substantially as shown and described.

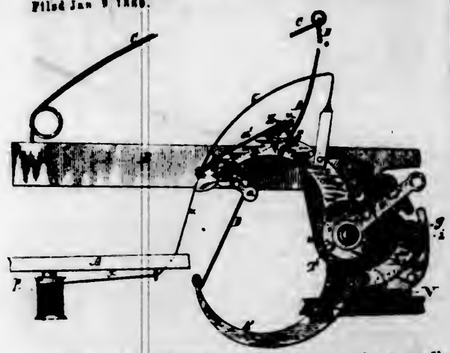
255,711. AX. WILLIAM ANDREWS, Haddon, assignor of one-half to Zachariah H. Williams, Beach Springs, Miss. Filed Nov. 15, 1881. (No model.)

255,711.



Claim.—An ax constructed with a solid head or poll, C, and a detachable bit, B, said poll having formed through its lower portion the rectangular slot *d'*, which has projecting into it the projections *c c*, provided with square shoulders *c' c'*, and the detachable bit B, having in its upper portion the grooves *b b*, and terminating in a rectangular head, *b'*, having square shoulders *b' b'*, said shoulders *b'* forming square dovetail joints with the shoulders *c' c'* when the bit is placed in the ax, and the whole secured together by the screws *d*, placed through the lower portion of the head and the bit, substantially as shown and described.

255,712. GRAIN-BINDER. JOHN F. APPLEBY, Beloit, Wis., assignor to the Minneapolis Harvester Works, of Minnesota. Filed Jan. 9, 1882.



Claim.—1. In combination with the wire-carrying or needle arm G and the band-twisting or band-fastening mechanism, carried wholly on said arm, the movable device or mechanism which operates when at rest to effect the periodical movements of the band-twisting mechanism, and which is itself operated from the arm G, all substantially as set forth.

2. In combination with the arms G and E, the connecting links or arms K and L, pivoted thereto, as described, and to each other by a pin, *g*, and the means for controlling the direction of movement of the pin *g*, in the manner and for the purpose set forth.

3. The fixed and swinging cams M and N, constructed to operate as specified, in combination with the arms K and L, pin *g*, arms G and E, and heel-piece *q*, whereby all the necessary motions of the arm E are derived from that of the arm G, as set forth.

4. The intermittingly-rotating rack-wheel T, provided with a series of alternately-arranged racks *w* and plane surfaces *y*, and actuated by the agency of the arm G, in combination with the pinion *v*, delay-shoe *x*, and shaft S, mounted on said arm, and means for holding said rack-wheel still during the descent of the arm G, as set forth.

5. In combination with the gear-wheel *n* of the band-twisting mechanism, the band-severing knife W, the connecting-rod *a'*, and crank-pin Z, all arranged and operating substantially in the manner and for the purpose set forth.

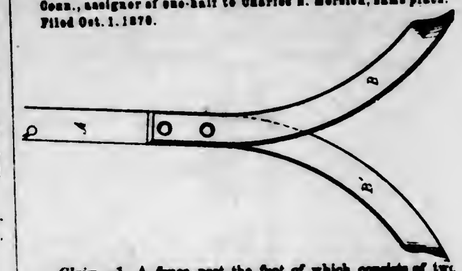
255,713. WAX-THREAD SEWING-MACHINE. FRANK BEAN and EDWIN E. BEAN, Boston, Mass., assignors to the National Sewing Machine Company, of Connecticut. Filed June 26, 1880. (No model.)



Claim.—1. In a waxed-thread sewing-machine, the combination, substantially as hereinbefore set forth, of the thread-carrier *a*, awl *d*, and a hooked needle, the axes of all three being in substantially the same vertical plane.

2. In a waxed-thread sewing-machine, the combination, substantially as hereinbefore set forth, of the tube A, thread-carrier *a*, and guide d^3, awl *d*, awl-carrier D, and a hooked needle, for the purposes specified.

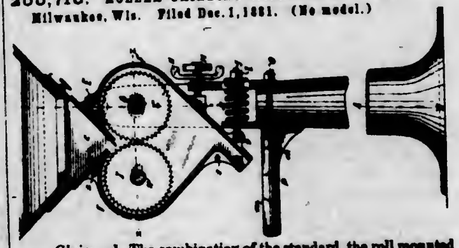
255,714. FENCE-POST. HENRY H. BENEDICT, New Haven, Conn., assignor of one-half to Charles B. Mersick, same place. Filed Oct. 1, 1870.



Claim.—1. A fence-post the foot of which consists of two curved pieces of angle-iron standing in opposite directions, with the corners of the angles facing each other, the parallel flanges of said two pieces being placed one upon the other at their junction and secured together, substantially as described, and for the purpose specified.

2. In a fence-post, the foot formed of curved angle-iron and having a portion of one of its flanges turned over into substantially the same plane as its fellow flange, substantially as described, and for the purpose specified.

255,715. ROLLER GRINDING-MILL. RICHARD BIRKHOLZ, Milwaukee, Wis. Filed Dec. 1, 1881. (No model.)



Claim.—1. The combination of the standard, the roll mounted in fixed bearings in the standard, the hopper-frame pivoted to the standard, and the movable roll journaled in and supported by the hopper-frame, as described and shown, whereby a proper relation is maintained between the hopper and rolls and the weight of the hopper applied to aid in forcing the rolls together.

2. The combination of the standard, the roll mounted in fixed bearings thereon, the swinging hopper-frame, the movable rolls sustained by the hopper-frame, and a spring applied, substantially as described, to urge the hopper downward.

3. The combination of the standard, the fixed roll, the swinging hopper-frame, a second roll sustained by the hopper-frame, and a stop device, substantially such as shown, to limit the swinging motion of the hopper-frame.

4. The combination of the standard, the roll mounted in fixed bearings therein, the hopper-supporting frame having a pivotal connection with the standard, the second roll sustained by the hopper-frame, the spring tending to swing the hopper-frame downward, and an adjustable device, substantially as shown, to limit the movement of the hopper under the action of the spring.

5. In combination with the standard, the stationary roll mounted therein, and the movable roll, the swinging hopper frame or casing adapted to inclose the two rolls and pivoted to the standard at a point above the axes of the rolls.

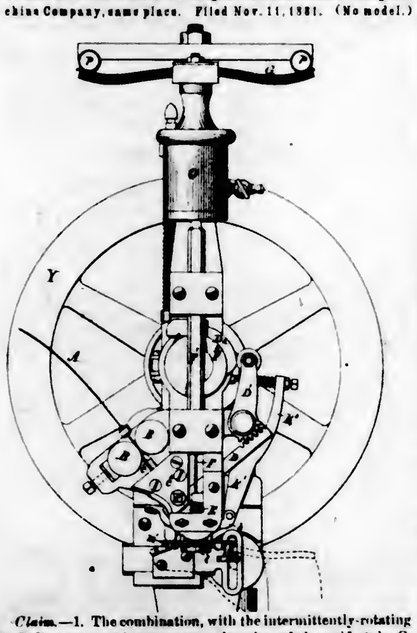
6. The combination of the forked standard, the roller-casing pivoted to and within said standard, and the two grinding-rolls mounted within the casing and supported one by the standard and the other by the casing, substantially as described and shown.

7. In combination with the grinding-roll mounted in fixed bearings, the second roll mounted in a support which swings from the center above the axis of the stationary roll, and pinions connecting the two rolls, as shown, whereby motion is imparted from the first roll to the second and the strain of the driving-pinion caused to assist in urging the movable roll downward.

8. The combination of the standard, the fixed roll, the movable roll, the swinging roll-supporting frame encircling the shaft of the stationary roll, and the frame-supporting belt E, proportioned in

relation to the other parts to break or give way when the mill is subjected to excessive strain.

255,716. BOOT AND SHOE NAILING MACHINE. WILLIAM G. BUNLOSH, Providence, R. I., assignor to the Eureka Nailing Machine Company, same place. Filed Nov. 11, 1881. (No model.)



Claim.—1. The combination, with the intermittently-rotating rolls B B, constructed to corrugate the wire, of the guide-tube C, provided with a tapering end extending between the rolls and arranged to conduct the wire to the cutter, as described.

2. In a boot and shoe nailing machine, the detachable plate C^3, secured to the frame and constructed to support the tube C and die-tube C', substantially as before set forth.

3. The combination, with the cutter D and the die-tube C', of the removable plate C^3, provided with locking-screw C^4 and channeled at its lower end to allow the cutter to reciprocate, as described.

4. The combination, substantially as before set forth, of the reciprocating driver, the oscillating carrier, the reciprocating cutter-bar provided with a triangular cutter, and the fixed die-tube for supporting the wire in cutting pointed nails therefrom.

5. The combination, with the driver and the carrier E of a boot and shoe nailing machine, of the work-feeding device consisting of the arm *h*, provided with a roughened face held to the work by the stop h^2, and hinged to a bell-crank lever operated by an eccentric on the main driving-shaft, as described.

6. The combination, in a boot and shoe nailing machine, with the driver and the nail-forming devices, of the carrier E, secured to the end of the shaft E', and means for partially rotating the shaft and locking the same, as described.

7. The combination, with the cam H, of the rack *h* and pinion *h'*, constructed to impart oscillating motion to the carrier E, as described.

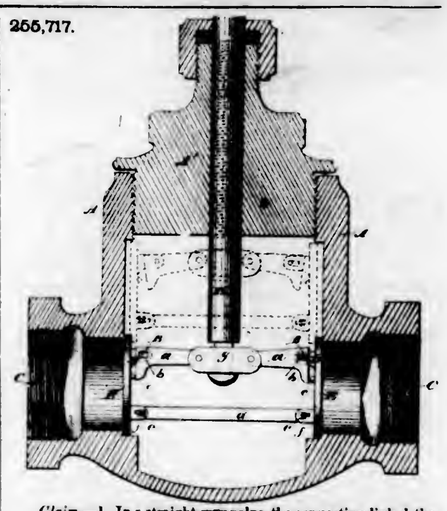
8. The combination, with the device for feeding and indenting the wire, of the cutter D, provided with a rack, the arm D', provided with a pinion, and the cam D^2, constructed to separate the nail from the wire, as described.

9. In a boot and shoe nailing machine, the sole-edge guide consisting of the disk *i*, slide *i'*, and the recessed bolt *w'*, constructed to regulate the distance of the nails from the edge of the sole, as described.

255,717. STRAIGHT-WAY VALVE. DANIEL R. BURNS, Dayton, Ohio, assignor of one-half to Francis J. McCormick, same place. Filed Dec. 30, 1881. (No model.)

Brief.—The lower movement of the gates is regulated by the projections *f*. The angular levers, pivoted as shown, press the gates to their seats, and the link *d* prevents them from swinging inward on opening the water-ways.

255,717.



Claim.—1. In a straight-way valve, the connecting-link *d*, the valve-disks E E, having attaching-lugs, and the angular levers *a a*, connected to and operated by a valve-stem, arranged substantially as shown, and for the purpose set forth.

2. In a straight-way valve, the combination of the angular levers *a a*, the disks E, having bearing-points *e e*, and the connecting-link *d*, attached to the lower sides of said valve-disks, all arranged for operation substantially as set forth.

3. In a straight-way valve, the combination of the angular levers *a a*, pivoted to a swivel, *g*, on the valve-stem, and having slots *b*, with the valve-disks E, having bearing-points *e e*, and the connecting-link *d*, attached to slotted lugs *e e*, all arranged for operation substantially as specified.

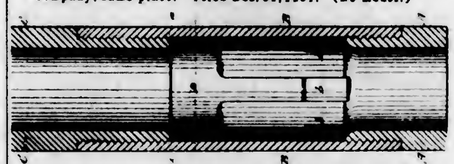
4. The valve herein described, consisting of a shell, A, having openings C C and projections *f f*, the stem H, cross-head or swivel *g*, angular levers *a a*, the disks E E, having bearing-points *e e*, and the connecting-link *d*, attached as shown, and all constructed and arranged for operation substantially as shown and specified.

255,718. MOWING-MACHINE. JEAN ANNE CARLES, Toulouse, France. Filed July 31, 1881. (No model.)



Claim.—The combination, in a mowing-machine, of a rotary cutter-disk, a supporting-frame therefor, a rotary guide-shell above the disk, and a deflector, I, at the discharge side of the machine, substantially as described.

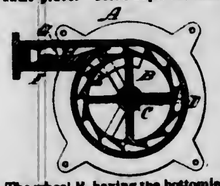
255,719. CORE-LIFTER FOR ANNULAR ROCK-DRILLS. GEO. F. CASS, Claremont, N. H., assignor to the Sullivan Machine Company, same place. Filed Dec. 31, 1881. (No model.)



Claim.—In a core-lifter, the combination, with the drill-rod and its head, curved or rounded at its upper end, substantially as

described and shown, of the metallic ring or band D, provided with the depending prongs or springs *b*, enlarged and made wedge shape at their lower ends, substantially as described, shown, and for the purpose set forth.

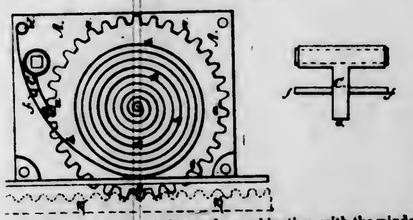
255,720. WATER-WHEEL. WILLIAM T. CHRISTY and EDWARD C. SHERIDAN, Newark, N. J.; said Sheridan assignor to said Christy; said Christy assignor of one-third to William J. Greason, Jr., same place. Filed Sept. 20, 1881. (No model.)



Claim.—1. The wheel B, having the bottomless buckets D and working in the case A, in combination with the plate or table E and chute F, substantially as and for the purpose specified.

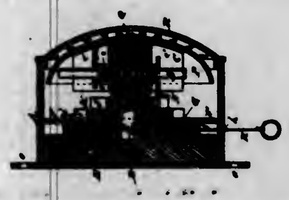
2. The combination of the case A, wheel B, buckets D, table E, chute F, and gate G, substantially as and for the purpose set forth.

255,721. SASH-BALANCE. FREDERIC B. COCHRAN, Boston, Mass. Filed Dec. 28, 1881. (No model.)



Claim.—In a sash-balance, the combination, with the window sash provided with the rack B, of the cog-wheel *a*, adapted to engage said rack, coiled springs *b*, connected at one end to the journal of said cog-wheel, and pawl C, having operating-knob D and projecting arms *f*, over which said springs pass and bear thereon, substantially in the manner, as and for the purpose herein shown and described.

255,722. BURGLAR-ALARM. GEORGE P. COSART, Geneva, assignor of two-thirds to Albert E. Lytle, Geneva Lake, Wis., and Carlos A. Cook, Chicago, Ill. Filed July 28, 1881. (Model.)



Claim.—1. In an alarm or signal, a cord or its equivalent, in combination with a drum, a bell, and intervening mechanism, whereby a series of intermittent sounds are emitted from the bell by striking of the hammer upon pulling out the cord, when arranged with said hammer, and a pawl-and-ratchet device to free the hammer and prevent its striking upon the cord being wound up again, substantially as and for the purpose specified.

2. In an alarm or signal, a wheel and a cord adapted to be wound upon said wheel, in combination with a bell, a reciprocating hammer, and intermediate ratchet devices, whereby a single pull upon the cord produces a series of intermittent rings from the bell, substantially as and for the purpose specified.

3. In an alarm or signal, a wheel and a cord adapted to be wound upon said wheel by a spring, in combination with a bell, a reciprocating hammer, a spring adapted to impart both the striking momentum and recoil to the hammer, and connecting devices, whereby a single pull upon the cord produces a series of intermittent rings from the bell, substantially as and for the purpose specified.

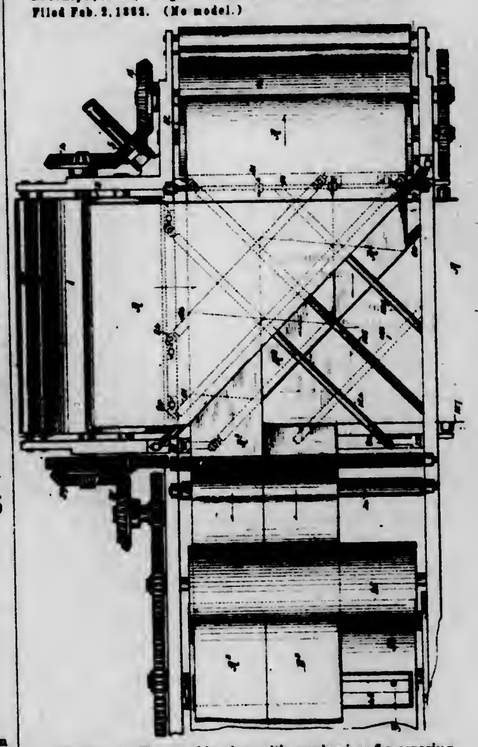
4. In an alarm or signal, a hammer to strike the bell, provided with two pins or stops, in combination with a spring, said spring alternately pressing against each of said stops to impart the striking momentum to the hammer, and also produce the recoil, substantially as and for the purpose specified.

5. In an alarm or signal, the combination of case A, stud B, provided with head C, wheel F, spring G, cord H, wheel K, provided with ratchet-teeth I and J, pawl L, hammer S, spring O, pins M and N, bell P, and cap R, substantially as and for the purpose specified.

6. In an alarm or signal, the ratchet-teeth J, in combination with stud B, provided with head C, hammer S, spring O, adapted to produce both the striking momentum and recoil to the hammer, and bell P, substantially as and for the purpose specified.

7. A hammer device for an alarm or signal, consisting of the head C, provided with slots *c* and *c'*, hammer S, provided with pins M and N, and spring O, adapted to produce both the striking momentum and recoil to the hammer, all constructed substantially as and for the purpose specified.

255,723. WEB-PRINTING MECHANISM. LUTHER C. CROWELL, Brooklyn, N. Y., assignor to R. Hoe & Co., New York, N. Y. Filed Feb. 2, 1881. (No model.)



Claim.—1. The combination, with mechanism for severing two webs into sheets, of mechanism for associating alternate sheets severed from one web with the sheets severed from the other, all substantially as described.

2. The combination, with mechanism for severing three webs into sheets, of mechanism for associating alternate sheets severed from one web with the sheets severed from the other two, all substantially as described.

3. The combination, with mechanism for severing three sets of webs into sheets, of mechanism for associating alternate sheets severed from one set with the sheets severed from the other two, all substantially as described.

4. The combination, with web-turners arranged to transfer two webs laterally over or under a third web, of mechanism for associating alternate sheets severed from the middle web with those severed from top and bottom webs, all substantially as described.

5. The combination, with two sets of web-turners, each arranged to transfer two webs laterally over or under third webs, of

mechanism for severing the six webs into sheets and mechanism for associating alternate sheets severed from the middle webs with those severed from the top and bottom webs, all substantially as described.

6. The combination, with two web-turners arranged to transfer two webs laterally over or under two other webs, of a transverse cutting mechanism adapted to operate upon both sets of associated webs, all substantially as described.

7. The combination, with two web-turners arranged to transfer two webs laterally over or under two other webs, of transverse cutting and folding mechanisms adapted to operate upon both sets of webs, all substantially as described.

8. The combination, with web-turners arranged to transfer four webs laterally over or under a fifth web, of mechanism for severing the five webs into sheets and mechanisms for associating alternate sheets severed from the middle web with the pairs of sheets severed from the top and bottom pairs of webs, all substantially as described.

9. The combination, with two sets of web-turners, each arranged to transfer two webs laterally over or under other webs, of transverse cutting mechanism adapted to operate upon both sets of webs, all substantially as described.

10. The combination, with two sets of web-turners, each arranged to transfer two webs laterally over or under other webs, of transverse cutting and folding mechanism adapted to operate upon both sets of webs, all substantially as described.

11. The combination, with mechanism for severing three webs into sheets, the sheets from one web being one-half the length of the sheets from the others, of mechanism for associating alternate short sheets with the longer sheets severed from the other two webs, all substantially as described.

12. The combination, with web-turners arranged to transfer two webs laterally over or under another web, of mechanism for severing the webs into sheets, the sheets from the middle web being of one-half the length of the sheets from the other two, and mechanism for associating alternate short sheets with the longer sheets from the upper and lower webs, all substantially as described.

13. The combination, with mechanism for severing two webs into sheets and mechanism for folding said sheets, of mechanism for severing a third web into sheets and mechanism for associating alternate sheets from the said third web with the sheets severed from the other two, all substantially as described.

14. The combination, with mechanism for severing two webs into sheets and mechanism for folding said sheets, of mechanism for severing a third web into sheets of one-half the length of the sheets severed from the other webs and mechanism for associating alternate sheets from said third web with the longer sheets from the other two, all substantially as described.

15. The combination, with mechanism for severing two sets of webs into sheets and mechanism for folding the same, of mechanism for severing a third set of webs into sheets of one-half the length of the sheets severed from the other sets and mechanism for associating alternate sheets from said third set with the longer sheets from the other two sets, all substantially as described.

16. The combination, with mechanism for severing three webs, of mechanism for associating alternate sheets from one of the webs with the sheets from the other two and mechanism for folding the sheets so that the said alternate sheets shall be inset, all substantially as described.

17. The combination, with mechanism for severing three sets of webs into sheets, of mechanism for associating alternate sheets from one set with the sheets from the other two sets and mechanism for folding the sheets so that the said alternate sheets shall be inset, all substantially as described.

18. The combination, with mechanism for severing two sets of webs into sheets and mechanism for severing a single web into sheets, of mechanism for associating alternate sheets from said single web with the sheets severed from said sets and mechanism for folding said sheets so that the sheets from said single web shall be inset, all substantially as described.

19. The combination, with two rotary sheet-carrying mechanisms, of a third rotary sheet-carrying mechanism adapted to associate the sheets carried by it alternately with those carried by the other two, all substantially as described.

20. The combination, with two rotary cutting and sheet-carrying mechanisms, of a third cutting and sheet-carrying mechanism adapted to associate the sheets carried by it alternately with those carried by the other two, all substantially as described.

21. The combination, with two rotary cutting and sheet-carrying mechanisms, of a third sheet cutting and carrying mechanism adapted to associate the sheets carried by it alternately with those carried by the other two, and rotary folding mechanisms adapted to fold the sheets so that the said alternate sheets shall be inset, all substantially as described.

22. The sheet-holding pins, as 77, in combination with means for protruding them to such a position that they will pass in contact with a sheet or web without impaling it, all substantially as described.

23. The pins 77, in combination with cylinder 50 and cam 108, said cam being so shaped as to protrude the pins to impale the web or sheet and then carry their points forward, so as to be out of contact with a passing web or sheet, substantially as described.

24. A sheet-carrying cylinder, as 50, provided with two sets of sheet-holding pins, in combination with means for protruding said pins to impale a sheet or web at the same point, a second means acting on one set of the pins to protrude them still farther, and means for retracting the sets at different points, all substantially as described.

25. The combination, with the cylinder, as 51, of the cylinder, as 50, provided with two sets of sheet-holding pins and means for protruding one set of said pins to such a position that they will pass in contact with the sheet or web upon the former cylinder without impaling it, all substantially as described.

26. The combination of cylinder 50, pins 74 77, bell-cranks 99 100, and cams 107 108, said cam 108 being so shaped as to give two outward movements to pins 77, substantially as described.

27. A folding-blade, as 55, provided with a reversible operating-arm, as 116, in combination with a folding-cylinder having devices for locking said arm when reversed, all substantially as described.

28. The combination, with the cylinder, as 63, carrying one member of a cutting mechanism, and the cylinder, as 50, carrying the other member of a cutting mechanism, and mechanism for retaining sheets upon its surface, of the sheet-carrying cylinders, as 36, 51, and 78, all substantially as described.

29. The combination of the sheet-carrying cylinders, as 50 51, the two being so timed that the leading ends of the sheets transferred from the former to the latter will fall slightly in the rear of the sheets carried by the latter, substantially as described

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255,724. PULLEY-SHEAVE. CHARLES H. DABOLL, New London, Conn. Filed Oct. 3, 1881. (No model.)



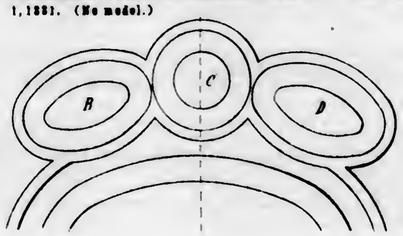
Claim.—A pulley-sheave having anti-friction rollers I and the surfaces L Q on which they roll, as also the rings K and pivots K', made and finished in soft cast-iron and subsequently treated at a high temperature with the solution described, so as to both harden and preserve from oxidizing influences, substantially as herein specified.

255,725. HARDENING METALS. CHARLES H. DABOLL, New London, Conn. Filed Aug. 26, 1881. (No specimens.)

Brief.—Sheave, roller, bushing-shell, and rings are cast of ordinary cast-iron in sand molds. The parts are turned to shape and size in an ordinary lathe. All the parts are heated separately and plunged vertically in the bath, are hardened clear through, and are allowed to remain in bath until they acquire a blue-black oxide coating. On removal from bath the articles are soaked in lime-water to neutralize the acid in the pores.

Claim.—The hardening solution described, composed of water, sulphuric acid, salt, saltpeter, and cyanide of potassium, combined in about the proportions herein specified.

255,726. DINNER-PLATE. JACOB DAVIS, Brooklyn, assignor of one-half to William E. Johnson, New York, N. Y. Filed Aug. 1, 1881. (No model.)



Claim.—In a compartment dinner-plate, a horizontal rim carried around and between each section in such a manner that the compartments are divided and separated from each other in such a manner as to be in effect two or more plates attached to each other by a horizontal rim, and leaving a space between each section, compartment, or plate in such a manner that plates of the same size will fit into each other and nest when piled on top of each other, as shown and described.

255,727. BUTTON. WELLINGTON P. DOLLOFF, Providence, R. I., assignor to Voss & Southwick, same place. Filed Dec. 27, 1881. (No model.)



Claim.—1. In a button, the combination of the post B, having its angular cross-bar *b* offset to one side of the center of the post, retaining-plate D, provided with the lips *e* and *f*, made one longer than the other, and spring C, all arranged and operating substantially as described.

2. In a button, the spring-plate C, provided with the spring-tongue *c*, shortened, as described, and acting at its end upon the pivot-bar of the post, and having its flexibility increased by the shear-cut splits *a a*, made to extend beyond the slots *d d* at each side of the tongue, substantially as and for the purpose specified.

255,728. BARBED FENCE-WIRE. LEMUEL E. EVANS, East Orange, N. J., assignor to the Washburn & Moen Manufacturing Company, Worcester, Mass., and Isaac L. Ellwood, De Kalb, Ill. Filed Nov. 1, 1881. (Model.)



Claim.—A barbed fence-wire consisting of sections or links interlocked by inserting the end of each section or link into a twisted eye formed upon and standing across the adjacent link or section, and by afterward bending said ends at, or nearly at, right angles outward to complete the fastening and form barbs, substantially as described.

255,729. PACKING FOR PUMP-PISTONS, &c. BENJAMIN HOLLAND, Jr., Newport, R. I., assignor to Thomas S. Howell, Trustee, Boston, Mass. Filed Nov. 11, 1881. (No model.)

Brief.—The cup-shaped flexible ring *a* is held in place by the perforated metal ring *b*, through which perforations the water enters and holds the flexible cup closely against the cylinder or joint to be packed.



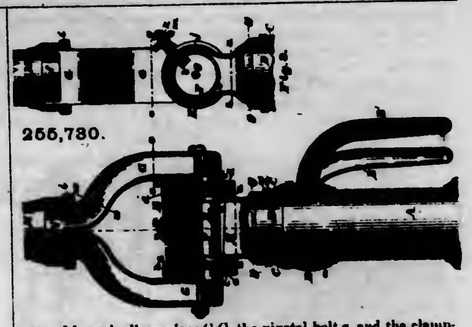
Claim.—1. As a means of packing joints water-tight, the combination of a cupped ring of leather or other flexible material, and a metal ring placed within said cup and provided with the annular grooves *b'* and *b²* and the orifices *c* and *c'*, substantially as and for the purposes described.

2. As a means of packing joints to render them water-tight, the combination of the cupped packing-ring *a* and the metal ring *b*, provided with the annular grooves *b'* and *b²* and the orifices *c* and *c'*, and divided upon one side, substantially as and for the purposes described.

255,730. HOSE-PIPE. BENJAMIN HOLLAND, Jr., Newport, R. I., assignor to Thomas S. Howell, Trustee, Boston, Mass. Filed Aug. 11, 1881. (No model.)

Claim.—1. In combination with a hose or other pipe, the T-shaped section E, provided with a screw-thread for securing it to the hose or other pipe, and an inwardly-projecting annular lip or flange in each end, the two curved branch elbow-pipes G G, the axial pivot-bolt *g*, and the clamping-nut *i*, all constructed, arranged, and adapted to operate substantially as described.

2. The combination of the pipe or coupling section A, the T-section E, the frusto-conical coupling-rings C and D, the two



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curved branch elbow-pipes G G, the pivotal bolt *g*, and the clamping ring-nut *i*, all constructed, arranged, and adapted to operate substantially as and for the purposes described.

3. The combination of the pipe or coupling section A, the frusto-conical rings C and D, the T-shaped pipe-section E, the hollow frusto-conical valve F, the two curved elbow-pipes G G, the clamping pivot-bolt *g*, and the ring-nut *i*, all arranged and adapted to operate substantially as described.

4. The combination of the pipe or coupling A, the T-shaped pipe-section E, provided with the circumferential slot *j*, the frusto-conical valve F, the curved elbow-pipes G G, the ring-nut *i*, the screw-handle *k*, and the thumb-nut *m*, substantially as described.

5. In combination with a hose pipe or butt, the hook-shaped horns B', attached permanently thereto, substantially as and for the purposes described.

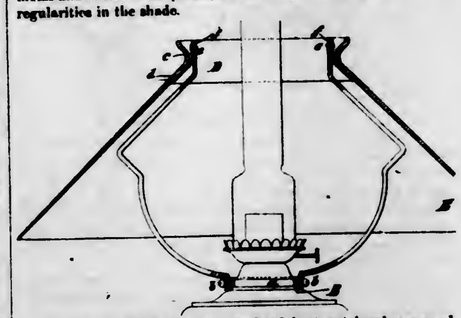
6. In combination with a hose pipe or butt, the swiveling-ring B, provided with one or more hook-shaped horns, B', all arranged and adapted to operate substantially as and for the purposes described.

7. The combination of the pipe or coupling section A, the swiveling-ring B, provided with one or more hook-shaped horns, B', the frusto-conical coupling-rings C and D, the T-shaped pipe-section E, the curved elbow-pipes G G, the pivot-bolt *g*, and the ring-nut *i*, all arranged and adapted to operate substantially as described.

8. The combination of the pipe or coupling section A, the swiveling-ring B, provided with one or more hook-shaped horns, B', the frusto-conical rings C and D, the T-shaped pipe-section E, provided with the slot *j*, the frusto-conical valve F, the two curved elbow branch pipes G G, the pivotal binding-bolt *g*, the ring-nut *i*, the valve-screw handle *k*, and the thumb-nut *m*, all arranged and adapted to operate substantially as and for the purposes described.

255,731. SHADE-HOLDER FOR LAMPS. WOLCOTT A. HULL, New York, N. Y., assignor of one-half to the Ansonia Brass and Copper Company, same place and Ansonia, Conn. Filed Jan. 30, 1882. (No model.)

Brief.—The flange which supports the shade is made of sheet metal and is free at all points, so as to adapt itself readily to all irregularities in the shade.



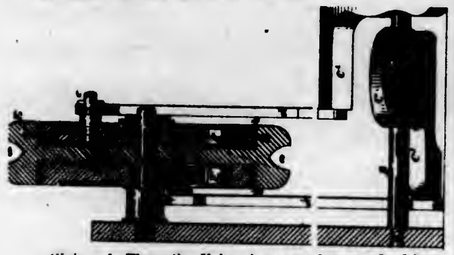
Claim.—1. A shade-holder made of sheet metal and composed of a cylindric portion and a lower flange-like portion adapted to yield and accommodate itself to a shade placed on it, substantially as specified.

2. The combination, with a shade-holder made of sheet metal composed of a cylindric portion and a lower flange-like portion, of supports therefor connected to the upper part of the cylindric por-

tion and leaving the flange-like portion free to yield and accommodate itself to a shade, substantially as specified.

3. The combination of the shade-holder D, the ring B, and the arms C, made separate from the holder and ring and secured thereto, substantially as specified.

255,732. TREADLE MECHANISM. ROBERT S. MANN, Brockton, Mass. Filed Nov. 7, 1881. (No model.)

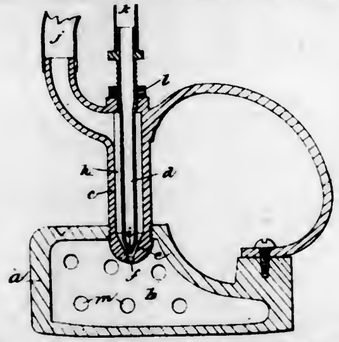


Claim.—1. The pulley E, loosely mounted upon a fixed bearing, and provided with an annular recess in its opposite radial sides and adapted to carry and impart motion to a belt, the two disks F and F', each provided with a pocket, *e*, a ball in each of said pockets, and mechanism for imparting to each of said disks alternately an intermittent oscillating motion about its axis, substantially as described.

2. In combination with two treadles, the pulley E, provided with recesses upon its opposite sides and adapted to carry a driving-belt upon its periphery, mounted loosely upon a fixed bearing, the two disks F and F', each provided with a crank-pin and having formed in its periphery a recess or pocket, *e*, the two balls *f*, and two connecting-rods, all arranged and adapted to operate substantially as and for the purposes described.

3. The combination of the treadles C and C', provided with the offsets C² and C², respectively, the connecting-rods *d* and *d'*, disks F and F', each provided with a crank-pin and a pocket, *e*, the two balls *f f*, and the pulley E, all constructed, arranged, and adapted to operate substantially as and for the purpose described.

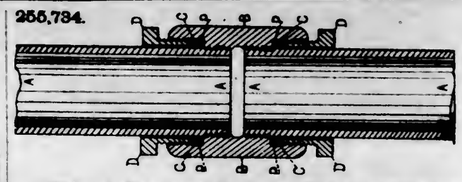
255,733. SAD-IRON. ALBION L. F. MITCHELL and W. FRED DANA, Lawrence, Mass., assignors to themselves and Milton B. Townsend, same place. Filed June 2, 1881. (No model.)



Claim.—1. The combination of the chambered iron *a* and the burner entering the upper portion of said iron, said burner being composed of the air-pipe *c*, adapted to be connected to suitable air-forcing apparatus, and having the central outlet, *f*, and the gas-pipe *d*, having its end located above and close to the outlet *f*, whereby a stream of gas and a surrounding stream of air under pressure are directed upon the bottom of the iron, substantially as and for the purpose set forth.

2. The combination of the chambered iron *a* and the burner composed of the air-pipe *c*, adapted to be connected to suitable air-forcing apparatus, and having the contracted outlet *f* and valve-seat *e*, and the adjustable gas-pipe *d*, having the tapered end *i*, located over the valve-seat, whereby the supply of air and the heat of the flame can be regulated, as set forth.

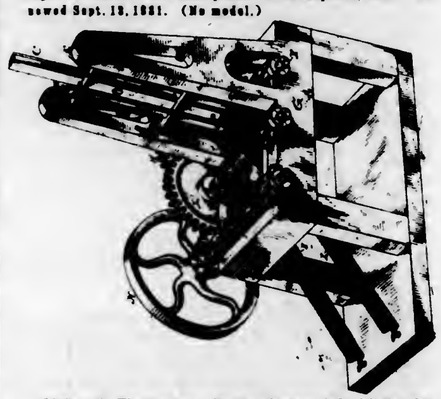
255,734. JOINT FOR PIPES AND FITTINGS. JOHN R. HOOKS, Brooklyn, N. Y., assignor to Joseph Annis, same place. Filed Aug. 20, 1881. (No model.)



Claim.—1. The coupling B, of greater internal diameter at its ends, and screw-threaded internally, as shown, in combination with the pipe-sections A, screw-threaded at their ends, the screw-threaded gland D, packings P, and washers C.

2. The combination of the screw-threaded section A with the screw-threaded coupling B, the packing P, the washer C, and the packing-gland D, all substantially as shown and described.

255,735. DEVICE FOR CONVERTING RECIPROCATING INTO ROTARY MOTION. WILLIAM H. RUTHER, Somonauk, Ill., assignor to Clark & Co., same place. Filed Sept. 23, 1880. Renewed Sept. 13, 1881. (No model.)



Claim.—1. The reciprocating bar C, provided with the clips *b b*, combined with the bars E E, each provided with the dogs D D, springs *g* and *i*, chain or cords *d*, and drums H, as set forth.

2. The reciprocating bar C, provided with clips *b b*, combined with the reciprocating bars E E, provided with dogs D D, weighted at the back, so as to fall out of engagement, and spring *g*, near the bottom of the reciprocation, to push said dogs into position for engagement, as set forth.

3. A device for converting motion, to be placed intermediately between the prime mover and the machine to be driven, provided with springs or weights whereby the machinery may be driven, and winding-drum actuated by the reciprocation of the prime mover, whereby the motion imparted to the driver-machine is not made irregular by fluctuations of speed of the prime mover.

4. A motor actuated by springs or weights combined with mechanism driven by a reciprocating pitman, whereby during the operation of said motor said springs or weights are being constantly wound up and their tension renewed.

5. The reciprocating bars E E and the dogs D D, combined with the reciprocating bar C, provided with clips *b b*, and the intermediate swinging gate, P, for the purpose set forth.

6. A reciprocating bar or pitman, C, combined with two parallel alternately-reciprocating bars, E E, provided with mechanism, whereby said bars will be alternately engaged with said pitman to be actuated thereby, and connected with said bar E rotary reciprocating drums mounted upon a revolving shaft, with automatic clutches and retracting springs or weights, whereby the alternating reciprocation of said bars E E and their connected drums is converted into a continuous rotation of said shaft, as set forth.

7. The reciprocating bar C, provided with the clips *b b*, combined with the bars E E, each provided with the dogs D D, springs *g g* and *i i*, chains or cords *d d*, and drums H H, as and for the purpose set forth.

255,736. VEHICLE-BOLSTER. DYAS SHELTON, Santa Rosa, Cal. Filed Jan. 3, 1882. (No model.)

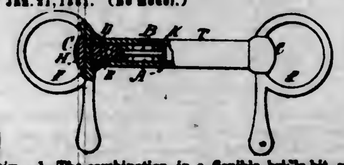
Claim.—In a vehicle, the sand-board D, having plate C connected thereto by means of screws *f f*, said plate having lugs E E, in combination with elliptical plate B, which is attached to ellip-

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tical shank of bolster A', said bolster having tapering arms A A, the whole being secured by the king-bolt F in the manner and for the purposes set forth.

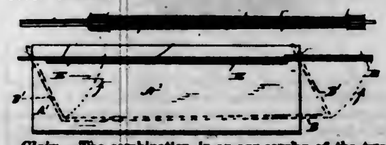
255,737. BRIDLE-BIT. BURGESS S. SQUIRE, Newark, N. J. Filed Jan. 21, 1881. (No model.)



Claim.—1. The combination, in a flexible bridle-bit, of the bead or bulb C, having the recess D and the tongue or shank E, to which the end of the flexible core K is riveted, and the flexible covering T, substantially as and for the purpose specified.

2. A bridle-bit having the bead or bulb C, constructed and arranged substantially as described and shown, in combination with a flexible covering, T, said covering being provided with the section I, substantially as and for the purpose set forth.

255,738. EGG-CASE. JOHN E. STEVENS, Chicago, Ill., assignor, by direct and mesne assignments, to George A. Smith and Edward Hempstead, both of same place. Filed Dec. 13, 1881. (Model.)



Claim.—The combination, in an egg-carrier, of the two rectangular blanks secured transversely near their ends and placed one across the other, the ends being secured by means of a string or wire passing through apertures in the flaps in such manner that the parts may be set up in the form of a rectangular box or folded flat without detaching such parts, substantially as specified.

255,739. STOP-MOTION FOR WINDING AND TWISTING MACHINES. JAS. S. WYLEY, Pawtucket, R. I. Filed Oct. 27, 1881. (No model.)

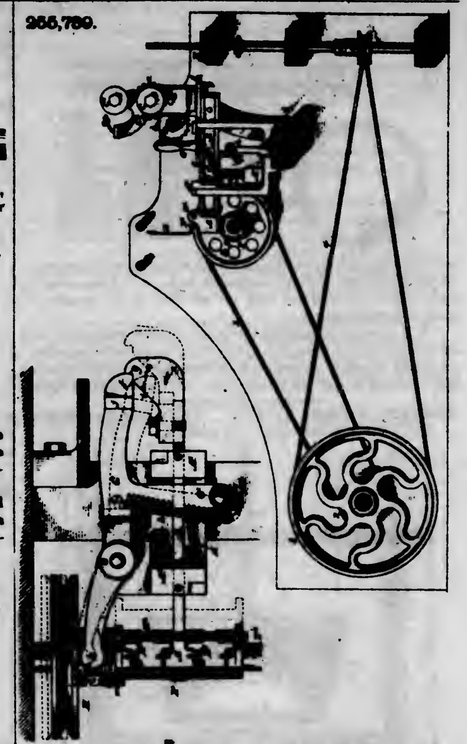
Brief.—The movable drop-wire head, when in operative position, serves to hold in place a horizontal shipping-lever, which is connected to the spindle-driving and feed mechanisms. When a thread breaks the drop-wire head is moved by a cam, and thereby releases the shipping-lever, which is acted upon by a spring, and forces the drop-wire head out of range of the cam, and also stops the spindle and feed-rolls.

Claim.—1. In combination with the spindle-driving and feed mechanisms, the pivoted spring-controlled shipping-lever engaging at one end the clutch of the spindle-driving mechanism and provided with an incline at its other end to act on the feed-roll stand, and the movable drop-wire head acting when in operative position to latch the lever in a position in which both spindle and feed are in gear with their drivers, substantially as and for the purposes hereinbefore set forth.

2. The spindle-driving and the feed mechanism and the spring-controlled shipping-lever provided with a handle and engaging said spindle-driving and feed mechanisms, substantially as described, in combination with the revolving stop-motion cam, the drop-wires, and the movable drop-wire head formed to engage and latch the lever and provided with a spring to move it in a direction opposite to that in which it is moved by the revolving cam, substantially as and for the purposes hereinbefore set forth.

3. The combination, with the spindle-driving and feed mechanisms, the drop-wire head, drop-wires, and stop-motion cam, of the horizontal spring-controlled shipping-lever engaging with one end the clutch of the spindle-driving mechanism and with the other the feed mechanism, and when released operating internally

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upon the drop-wire head to force the same out of range of the stop-motion cam, substantially as hereinbefore shown and described.

255,740. FEED-BAG FOR HORSES. FRANK WEBSTER, Brooklyn, N. Y. Filed Jan. 30, 1882. (No model.)



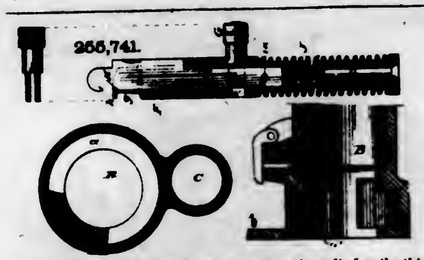
Claim.—The headstall A, provided with the nose-band B, the rings C at its ends, and the protecting-disks D, secured to the said ends under the rings, in combination with the feed-bag F, provided with the slots H and the rings E, and the strap G, secured to the rings E, passing through the slots H and the rings C to and around the upper ends of the bands, substantially as and for the purpose set forth.

255,741. CORD-KNOTTER FOR GRAIN-BINDERS. WILLIAM H. WHITELEY, WILLIAM BAYLEY, and ASA HUBB, Springfield, Ohio, assignors to Whiteley, Fassler & Kelly, same place. Filed Oct. 5, 1880. (No model.)

Claim.—1. A knotter-case or outer cylinder, B, with a flange, A, and an interior groove, *a*, as described, and a cylindrical shell, C, for the outside griper and cutter, both cast in a single piece, as described.

2. The combination of the cylinder F with a thimble jointed

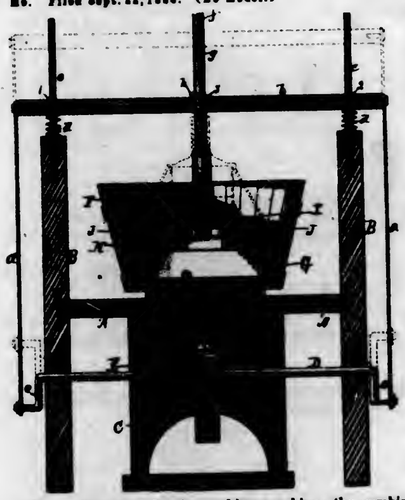
255,741.



to the looping-hook and sliding therewith in the cylinder, the thimble provided at the end with a shoulder, and a part of the cylinder made smaller, so as to act with the shoulder on the thimble to guide and hold a spring.

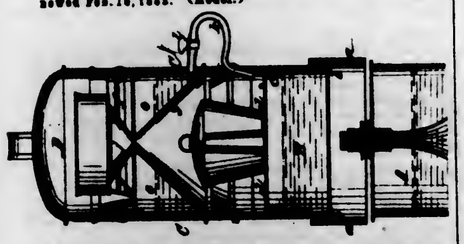
2. A cylinder, D, combined with an inclosing stationary knotter-case cast in one piece, and having the groove *a* and a laterally-projecting flange, *b*, whereby said knotter may be bolted directly to the vertical side of the bridge-frame, substantially as set forth.

255,742. WASHING-MACHINE. ELIZA J. WHITLOW, Mexico, Mo. Filed Sept. 22, 1880. (No model.)



Claim.—In a pounder for washing-machines, the combination of the plunger-rod and plunger with the cone or truncated body G, provided on its interior with the cylindrical-shaped body H, which extends midway between its top and lower edge, as and for the purposes set forth.

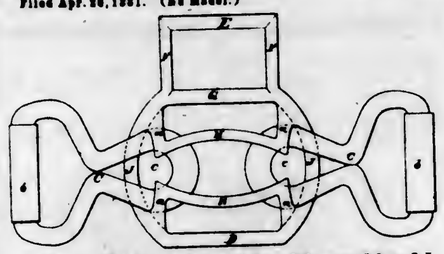
256,743. COMBINED COOKING-VESSEL AND CONDENSER. SOLOMON S. WHITMORE, Waverly, Md. Filed May 26, 1877. Renewed Mar. 24, 1879. Again renewed Apr. 5, 1881. Again renewed Feb. 16, 1882. (Model.)



Claim.—1. In a portable cooking apparatus, the boiler B, with the steamer-partition *d* and the condenser *g* above it, whereby the cooking of the articles and the condensation of the steam are effected in the same chamber from which the condensed steam is collected, as set forth.

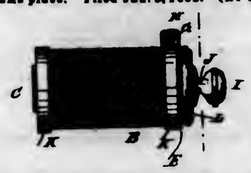
2. In a portable cooking apparatus and condenser, the outside pipe, *h*, provided with the cock *l*, said pipe connecting the upper water-chamber, *c*, with the boiler B, as and for the purpose set forth.

255,744. TRACE-CARRIER. ADAM B. WILHELM, Quincy, Ill. Filed Apr. 26, 1881. (No model.)



Claim.—A trace-carrier consisting of the curved bars J J, cross-bars D G, and curved arms *a a*, arranged in pairs opposite each other and connected by the curved braces H H, the said carrier provided with the proper connections for the harness, as shown and described.

255,745. THREAD HOLDER AND CUTTER. PARR S. WILLIAMS, New York, N. Y., assignor to himself and Cornelius V. Shaddle, same place. Filed Jan. 3, 1882. (No model.)



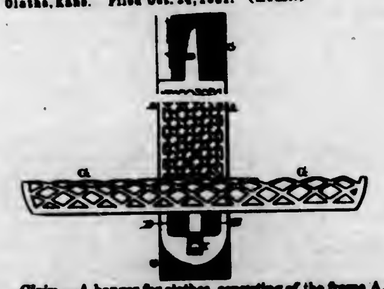
Claim.—1. The rod A, having the head I at one end and threaded aperture at the other, in combination with a plate, C, having a threaded stem, D, adapted to screw into the aperture end of rod A, whereby the device may be used in connection with a spool, as described.

2. In a thread holder and cutter, the combination, with the button or head I, provided with a knife or blade, J, of the slotted plate E, provided at one end with a hook, G, and a thread-clamp H, substantially as herein shown and described, and for the purpose set forth.

3. The combination, with a rod fitting into a spool and a threaded stem adapted to be screwed into the inner end of the rod, of a thread-holding device held on the spool by the head of the rod, substantially as herein shown and described, and for the purpose set forth.

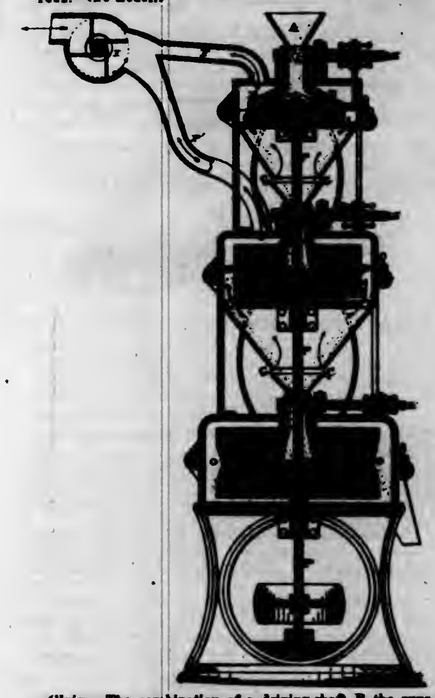
4. The combination, with the rod A, provided with a button or head, I, of the stem D, projecting from a plate, C, and the friction-plate N, substantially as herein shown and described, and for the purpose set forth.

255,746. HANGER FOR CLOTHES. THEODORE L. WIDWELL, Olathe, Kans. Filed Oct. 24, 1881. (Model.)



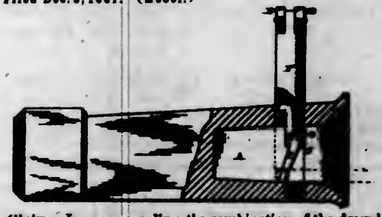
Claim.—A hanger for clothes, consisting of the frame A, having the supports B, and provided with a hook, D, at its upper end, the arm G, projecting at right angles to the frame, and a hook, I, at the lower end of the frame, as shown and described.

255,747. FLOUR-MILL. ABRAHAM H. WOLF, Allentown, Pa., assignor of one-half to Jos. Barber, same place. Filed Jan. 20, 1882. (No model.)



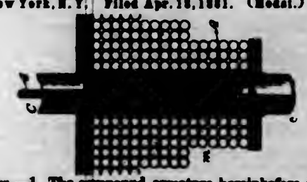
Claim.—The combination of a driving-shaft, F, the runs of stones B D C, placed one above the other, the upper stone of each run being provided with an adjusting-lever, E, a suction-fan, I, suitable connecting-pipes, F F, and an inclosing-frame for the stones, which has an opening, C, made through it below each run of stones for the upward draft of air, substantially as shown.

255,748. CAR-COUPLING. OLIVER P. WOOD, Baldwyn, Miss. Filed Dec. 5, 1881. (Model.)



Claim.—In a car-coupling, the combination of the draw-head A, extension B, standard C, lever D, pin F, and rod I, the pin and rod being provided with shoulders O J to prevent the rod from falling too far forward, substantially as shown.

255,749. ARMATURE FOR ELECTRO-MAGNETS. ORESCO C. WOOLSON, Newark, N. J., assignor to Chas. A. Cheever, Trustee, New York, N. Y. Filed Apr. 18, 1881. (Model.)



Claim.—1. The compound armature hereinbefore described, consisting of disconnected sections lying parallel with each other and with their energizing-coil and movable laterally parallel therewith, substantially as herein set forth.

2. The combination, substantially as hereinbefore set forth, of the energizing-coil and the expanding armature-sections inclosed and movable laterally therein parallel, or substantially parallel, with its axis.

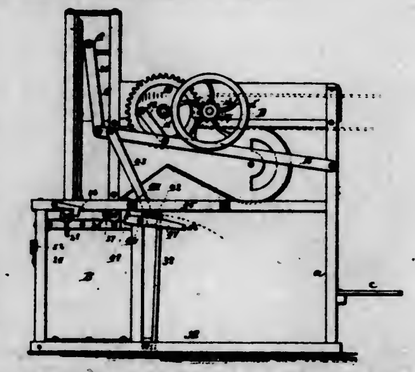
3. The combination, substantially as hereinbefore set forth, of the energizing-coil, the expanding laterally-movable armature-sections inclosed therein, and the interposed supporting-frame of non-magnetic metal.

4. The combination, substantially as herein before set forth, of the energizing-coil, the armature-sections movable laterally therein, and its longitudinally-adjustable supporting-cage.

5. The combination, substantially as herein set forth, of a coil or helix, a supporting frame or tube movable therein, a cage or carriage movable in the supporting-frame, and an expanding armature movable in the cage.

6. The combination, substantially as herein set forth, of a coil or helix, a supporting frame or tube of non-magnetic metal movable therein, a cage or carriage movable in the supporting-frame, and a series of independent armatures movable laterally in and with the cage.

255,750. HAY-BALING MACHINE. PARVIS WRIGHT, Granite, Colo. Filed Mar. 4, 1882. (No model.)



Claim.—1. The process of baling cut hay, which consists in cutting the hay, then removing foreign matter, and finally compressing the clean cut hay into bales or stacks, substantially as set forth.

2. The process of putting up cut hay into sacks, which consists in cutting the hay, then compressing it into the sack, then closing the mouth of the sack, and finally uniting the seam while in the machine, substantially as set forth.

3. The combination, with a baling-machine, of a cutting-machine, whereby the hay may be cut and baled simultaneously, as and for the purpose set forth.

4. The combination, with a baling-machine and a cutting device, of a fan or blower, whereby the hay is cut, the foreign matter removed by the fan, and the cut hay compressed into bales, substantially as and for the purpose set forth.

5. The combination, with a baling-chamber, a cutting device, and a compressing means, of devices for closing the mouth of a sack or its equivalent, substantially as described.

6. In a baling-press, the combination of a cutting device, pressing means, and means for holding a sack or its equivalent under the pressing device, substantially as described.

7. In a baling-press, the combination of two movable rollers and positive means for bringing them together so as to close the mouth of the sack or its equivalent, attached to the rollers, substantially as described.

8. In a baling apparatus, the two rollers 27 and 28, arranged at the receiving end of a baling-chamber, said rollers being corrugated and grooved, substantially as described.

9. In a baling apparatus, the combination, with a blower or its equivalent, of a reciprocating traverser, which is perforated for the passage of foreign matter separated from the cut hay, substantially as described.

10. In a baling-press, the combination, with a baling-chamber and a reciprocating traverser, of actuated means for retaining the partially-compressed bale while an additional charge is being inserted, substantially as described.

11. In a baling-press, the combination, with a bale-chamber and a reciprocating traverser, of automatically-actuated means for retaining the partially-compressed bale while an additional charge is being inserted, and trip mechanism, substantially as described.

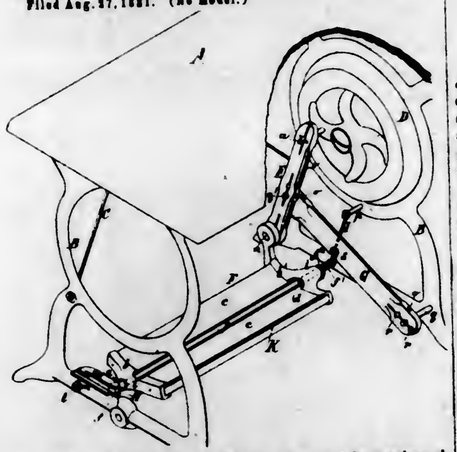
12. In a baling-press, the combination, with the traverser 20, of the frame 38 and teeth 40, automatically operated by the traverser in its forward motion, as and for the purpose set forth.

13. The bale-chamber B, provided with the serrated racks 25 and 26, in combination with the rollers 27 and 28, substantially as and for the purpose set forth.

14. The bale-chamber B, in combination with the traverser 20, having transverse orifice 53, screen 51, and the stationary screen 54, substantially as and for the purpose set forth.

15. The combination of the hay-cutting device with the fan or its equivalent, whereby the hay may be cut and the foreign matter extracted prior to the baling operation, substantially as and for the purpose set forth.

255,751. TREADLE. GEORGE W. ZIEGLER, Tecumseh, Mich. Filed Aug. 27, 1881. (No model.)



Claim.—1. A foot-board, F, hung at one end by a universal or double-acting joint, as at H, and suspended at its other end by a swinging rod, I, and also connected to a pitman, E, provided with a bar, G, which swings and rocks it over the dead-center, substantially as and for the purpose set forth.

2. An adjustable bar, G, provided with a stop-notch, *s*, in combination with a fixed supporting-pin, *g*, of the frame, and with an oscillating foot-board, F, which has a hinge at one end and a suspending swinging rod at the other, substantially as described.

3. The socket-bearing H for the ball, made with a slot, *j*, and provided with an adjusting clamp-bolt, *l*, and nut *m*, in combination with the foot-board, pitman E, and pitman-bar G, provided with adjusting-holes *r*, substantially as and for the purpose described.

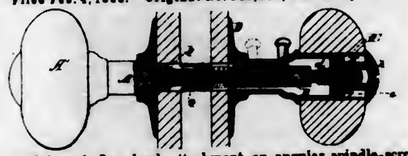
4. The foot-board comprising metal end pieces, *b b'*, which are grooved and perforated or slotted, as at *d*, wooden pieces *c c*, and a rocking rod, J, which is provided with a shoulder, *e*, screw-thread *f'*, and clamping-nut, substantially as and for the purpose described.

5. The grooved end pieces of the foot-board proper, provided with adjusting-slots *d*, substantially as and for the purpose described.

6. The bar G, having one of its ends hinged on a fixed pin of the frame and its other end hinged upon a pin of the pitman at a point between the ends of the pitman, in combination with an oscillating foot-board, substantially as and for the purpose described.

REISSUES.

10,066. KNOB ATTACHMENT. HOWARD L. PHIPPS, Milford, Mich., assignor to the Milford Door Knob Company, same place. Filed Feb. 4, 1882. Original No. 241,659, dated May 3, 1881.



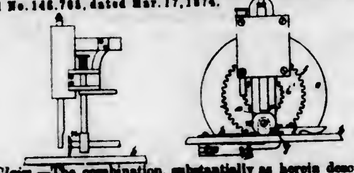
Claim.—1. In a knob attachment, an angular spindle-screw cut upon its corners, an angular sleeve-screw tapped to engage said spindle, a locking-washer adapted to slip longitudinally over the spindle and simultaneously engage the angular part of the sleeve and the angular part of the spindle, and thereby lock them together, and means for holding said washer in place upon the spindle, substantially as described.

2. In combination with a knob interiorly threaded, and with an interiorly-threaded spindle which is squared at the engaging end, as described, a rectangular recess in the outer face of said knob and a similarly-shaped washer, substantially as set forth.

3. In combination with the knob C, provided with a rectangular recess, *c*, and with a spindle and rectangular washer, as described, the flanged nut E', substantially as and for the purposes specified.

4. In combination with the spindle A, constructed so that it will freely turn within the hub of the lock through which it passes, and made partly round and partly square, as shown, a slide, B, upon said spindle, which engages with the hub of the lock, substantially as and for the purposes described.

10,067. CUTTING AND TRIMMING ATTACHMENT FOR SEWING-MACHINES. SAMUEL W. SHEARY, Boston, Mass., assignor, by mesne assignments, to Willcox & Gibbs Sewing Machine Company, New York, N. Y., and National Sewing Machine Company, (Limited,) Philadelphia, Pa. Filed Feb. 3, 1882. Original No. 146,705, dated Mar. 17, 1874.



Claim.—The combination, substantially as herein described, with stitch-forming mechanism, of a rotary cutter having its cutting edge or edges eccentric.

ELIOTYPE PRINTING CO BOSTON

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Southern District of New York.

CRANDAL *v.* WALTERS *et al.*

Decided December 13, 1881.

1. REISSUE—NEW MATTER—CLAIM—ADJUNCT.

When the real invention was a box-loop for carriage-tops of a particular construction and the claim of the original patent was limited to the use of the box-loop in connection with an adjunct—a new strengthening or stiffening plate—*Held* that the patent might be reissued for the purpose of inserting a claim for the loop itself, without reference to the strengthening-plate.

2. SAME—EXPANSION OF CLAIM.

The patentee having described and claimed a box-loop with an open frame or bottom, from the edges of which lugs project through the material to be clinched on the other side, it is an immaterial variation to employ a closed bottom and make the lugs project from it, and it is not a departure from the original patent to claim upon reissue a box-loop with lugs projecting from it.

3. REISSUE NO. 6,974 SUSTAINED IN VIEW OF PRIOR PATENTS—VARIOUS ANTICIPATIONS—PATENTS EXAMINED.

It appearing that it required ingenuity and invention to pass from the prior devices to the box-loop of the patentee, the validity of the patent is sustained.

Mr. Neri Pine and *Mr. Charles M. Stone* for the plaintiff.

Mr. A. v. Briesen for the defendants.

BLATCHFORD, *J.*:

This suit is brought on Reissue Letters Patent No. 6,974, granted to Charles H. Davis, March 7, 1876, for an improvement in box-loops for carriage-tops, the Original Patent No. 95,004 having been granted to him September 21, 1869.

The specification of the reissue is as follows, reading what is outside of brackets and what is inside of brackets, and omitting what is in italics:

Figure 1 is a perspective view of the loop with straps and buckles complete attached to a piece of leather or section of a carriage-top, B. Fig. 2 is a perspective view of the loop ready for use. Fig. 3 is a plate or cap used on the back or inside of the top B, for securing the loop A. Fig. 4 is a cross-sectional view of the whole complete.

Similar letters of reference indicate corresponding parts.

My invention has for its object [an improvement in] *to improve* the construction of box-loops for carriage [tops,] trimmings, [&c.] *and it* [it] consists in forming the loops [in] *from one piece of* metal, either cast or struck up [into form from one single piece of plate or sheet metal] with a series of [spurs or] lugs [projecting from the] *upon its lower* edges *or corners next the surface to which they are to be affixed*, which [spurs or lugs] *lugs or spurs* [pass] *are passed* through *openings formed in* the carriage top [or curtain] and [are clinched down tight upon it; and I introduce] *through openings in* a metal *stiffening*-plate [on the opposite side] *placed upon the under surface* of the *leather*, [leather, as a stiffening-plate, through which the spurs pass before they are clinched, as a further security in the fastening, by which form and construction I securely affix the box-loop to the curtain, &c.,] *The lugs are then bent down or clinched upon the metal plate, thereby securely fastening the box-loop in place* without the employment of rivets or screws.

Box-loops, as usually constructed, are made of leather, and either sewed or riveted in [place] place, *and* [They] are liable to be bent out of shape and torn from [their fastenings;] *the rivets.* [and this] *This method* [mode of construction and application] is [slow and] expensive, requiring the labor of skilled workmen; while by my improvement the box [loop can be] *is* easily applied [by anyone,] and [is] not liable to get out of order.

In the accompanying drawings, [which form a part of this description, Fig. 1 is a perspective view of the loop, either cast or struck up from thin metal, affixed in place with buckles complete. Fig. 2 is a perspective view of the loop detached. Fig. 3 is the stiffening-plate C.]

A is a metal loop, either cast or struck up from [thin] *sheet* metal, preferably the latter, [latter, which] *When formed of sheet metal the blanks* are cut out by suitable dies [with] *having spurs or lugs* [lugs or spurs formed at] H H upon [the] two [sides] *opposite edges*. [The loop is then] *They are* bent into *the* form [and stamped or embossed, as in Figs. 1, 2, or otherwise, which completes the manufacture of the loop, which is then ready to be affixed in its place B, Fig. 1. To apply this loop to a carriage-top or elsewhere the spurs or lugs H H H are thrust through holes or slits made therefor in the leather, and the ends are bent and clinched down upon the other side. Buckles may be affixed to their place on B, as in Fig. 1, in any convenient way, and the loop put over them and affixed to B. As an additional security, plates C (see Fig. 3) are employed on the opposite side of the curtain to stiffen and support the fastenings or supports H, which are clinched down on them after passing through openings therein for the purpose.] *shown in Fig. 2 to produce the loop.*

D is a strap or straps, each end passing around and through the buckle E, and secured in any proper manner to the piece B of the carriage-top. The piece B is provided with a series of holes upon each side of the strap D corresponding in number and position to the spurs H upon the loop. The loop is applied to the piece B by passing the spurs through these holes, as shown in the drawing, and through holes X X, formed in the metal plate C, laid against the inner surface of the piece B. The lugs are then bent down or clinched upon the surface of this plate, thereby firmly securing the loop in place without the aid of rivets.

Reading in the foregoing what is outside of brackets, including what is in italics, and omitting what is inside of brackets, we have the specification of the original patent.

The claim of the reissue is as follows:

The box-loop A, formed out of thin plate metal, as described, with the lugs or spurs H projecting therefrom to affix it to a carriage-top, either with or without the plate C, substantially as and for the purposes specified.

The claim of the original patent was this:

The box-loop A, when formed as described, with the lugs or spurs H upon its edges, and applied to a carriage-top by passing said lugs through the same and through the metal plate C, and then bending them down upon the surface of said plate, substantially as described, for the purpose specified.

It is apparent that the article specified in the claim of the reissue is to be (1) a box-loop (2) made of metal, (3) the metal so thin that the article can, if desired, be struck-up from it; (4) the metal of the loop to be a single piece bent into shape; (5) the lugs to project from the loop toward the surface of the material to which the loop is to be affixed; (6) the loop to be capable of being affixed by passing the lugs through the material and clinching them down tight upon the other side, the clinching being done by bending them at right angles, and no rivets or screws being employed. These characteristics are all found in the specification of the reissue in connection with its claim. They are all found in the specification of the original patent. The drawings of the two patents are the same. The model filed with the application for the original patent shows all the foregoing characteristics. The claim of the original patent was so framed as to seem to require that the loop should be actually applied to a carriage-top in order to infringe. It also required that the metal plate C should be used in such application. Makers of loops were not makers of carriages, and it was obvious that

the invention was really of the loop ready to be affixed, and that the inventor was entitled to have a claim which would reach the maker of the loop. Besides, even if the claim of the original would have extended to the maker of the loop, it might have been questioned whether it would reach him when he made a loop without the plate C. And it was plain that that was only a stiffening or strengthening plate—an adjunct—making the article better, perhaps, but yet not of the essence of the invention. The case was therefore one for a reissue.

It is objected that the specification of the original patent says that the series of lugs is on the lower edges of the loop—that is, projecting from the lower edges of the long parallel sides of the loop and in the same plane with such sides. The drawings and model show such a construction. The reissue says that the lugs project from the edges or corners next the surface to which they are to be affixed. The plaintiff's loop has an open bottom, the metal being only on the top and the sides. The defendants make one form of loop with a closed bottom, and with lugs punched out of the bottom at three sides of the lug and bent down at the fourth side, ready for use, and standing at right angles to the sides of the loop and in the same plane with each other.

To maintain non-infringement, and yet enable themselves to appropriate the real invention, they contend that the claim of the reissue is a departure from the invention shown in the original (1) in making it necessary only that the lugs should project from the loop, without limiting them to being arranged, as in the drawings, on the lower edges of the sides; (2) in making it necessary only that the lugs should be used to affix the loop, without it being necessary to use them by putting them through the carriage-top; (3) in making it optional to use the plate C.

It is clearly a mere formal alteration, and within the invention, to put on the closed bottom and make the lugs project from it, instead of making them project from the edges of the sides. The closed bottom or fourth side is a useless expenditure of labor and material so far as the real invention and the employment of it are concerned. The defendants' lugs project in a manner entirely equivalent, and if the claim of the reissue had said, as did the claim of the original, that the loop had lugs on its edges, it would have been proper to say that for all practical purposes the defendants' lugs were upon the edges, the variation being immaterial.

The claim of the reissue is not capable of the construction, that the lugs are to be used without putting them through the carriage-top. It was no departure and no new matter to make the use of the plate C optional. To say that the lugs of the patent project from the edges or corners next the surface to which they are to be affixed is just as accurate a description of them as to say that they are upon the lower edges of the loop. It is from the edges next the surface to which the lugs are to be affixed that the lugs project. There is no statement in the reissue that the lugs are not to project from the edges, and calling the edges corners does not alter their location. It is plain that the forms of loop shown in Complainant's Exhibit 2 and in Complainant's Exhibit 3 infringe the claim of the reissue, and that the reissue is not open to the objection that it is not warranted by the original patent.

The remaining question is that of novelty. Various old devices are introduced, wherein sheet-metal prongs or lugs projecting through a material, such as leather or paper, and clinched by bending them, hold and secured the metal or other article to which they were attached on the other side of the material. This idea was old, and was embodied and used by Davis; but, no article like the plaintiff's, capable of being taken and used for the purposes for which the plaintiff's can be used, without alteration and adaptation requiring invention, existed before. Almost all inventions at this day that become the subjects of patents are the embodiment and adaptation of mechanical appliances that are old. In that consists the invention. When the thing appears it is new and useful. No one saw it before, no one produced it before, it supplies a need, it is at once adopted, all in the trade desire to make and use it, yet it is said to have been perfectly obvious and not to have been patentable. Where an article exists in a given form and applied to a given use, and is taken in substantially the same form and applied to an analogous use, so as to make a case of merely double use, there is no invention. But it is very rarely that a thing of that kind secures a patent.

A patent to Joseph E. Ball, No. 20,246, granted May 18, 1858, for a mode of attaching the traces of harness for horses to the draft plates or straps, is adduced. Ball's apparatus could never be used as a loop for a carriage-top. The metal was not so thin that it could be practically struck up from a single piece and be bent into shape. The lugs could not be practically clinched by bending them, but were secured as rivets by a process entirely inapplicable to the use of a loop on a carriage-top.

A patent granted to Robert Meyer, No. 61,628, January 29, 1867, for a buckle-fastening, is relied on. That does not show lugs clinched by bending, but shows only pins secured by riveting. For some purposes, in considering questions arising on letters patent, bent lugs and riveted pins may be the equivalents of each other; but in considering the question of the novelty of the plaintiff's loop, riveted pins are not the equivalents of the bent lugs. The Meyer device could not be used in place of the Davis device without adaptation requiring invention.

The defendants also introduce a patent granted to Charles H. Littlefield, No. 67,322, July 30, 1867, for an improvement in breast-plates for harnesses. It is a piece of metal bent into a loop at one end to hold a buckle, and to allow the tongue of the buckle to pass through a slot made in such bent end, and having wings or projecting pieces turned over so as to overlap a harness-strap. This could not be used as a substitute for the plaintiff's loop without invention. It is easy after the desired thing is obtained to see how an old thing could have been adapted or altered.

The Ball, the Meyer, and the Littlefield patents were all of them considered by the Patent Office in granting the original Davis patent, and the Ball patent was again considered by it in granting the reissue, as appears by the record.

The defendants also adduce English Patent No. 1,204, dated May 13, 1859, to William S. Thomson for improvements in the manufacture of hooped skirts. Their expert, with the Davis device and the Thomson device before him, has cut away parts of the former and claims to have converted it into the latter. It may not be difficult for ingenuity, with both articles in view and with the problem given to convert the later one into the earlier one, to do so; but the inventor of the earlier one had only that one and did not produce the later one. There is nothing in the Thomson device to suggest the Davis box-loop. It required adaptation and invention to convert it into the box-loop. An exact reproduction in a model of figure 8 of the drawings of the Thomson patent shows that there is no identity between it and the Davis structure.

The French patent to Franeson, No. 25,417, granted November 15, 1855, for a clinched fastening for gloves, may also be dismissed. It contains several features which are availed of in the Davis loop, yet, to pass from it to that required adaptation beyond that existing in a mere double use.

It is not necessary to allude to the numerous other old patents introduced by the defendants. The foregoing remarks apply to all of them, and also to the alleged prior structures respecting which oral testimony is given.

Attention is directed by the defendants to an exhibit of theirs, marked "Bolt guide and catch," alleged to represent a prior structure. The exhibit is not claimed to be a structure which was actually made before Davis's invention, but only to represent one. It is a bolt-guide consisting of a metal plate, with two three-sided metal loops on it, each loop open at its two ends, which open ends are lengthwise of the plate, this plate being intended to be placed on one article, and of another metal plate, with one three-sided metal loop on it, open at its two ends, which open ends are lengthwise of the plate, this plate being intended to be placed on an adjoining article. Each loop has on it, projecting downward from the lower edge of each vertical side of it, a spur or lug integral with it, and passing through a slot in the metal plate and bent over and clinched down on the opposite side of the plate. The exhibit in question is introduced by a witness, who states that it is "a guide for a sliding bolt and a catch, into which the bolt would slide when the article is put in use," and that he has known articles similar to it to have been in public use and on sale in the United States for nine and a half years before January 15, 1881. This would carry it back to July 15, 1871. The application for the original Davis patent was filed April 22, 1868. Moreover, the attention of the witness was not directed to the feature of the bending over of the lugs to clinch them as distinct from riveting them. It does not appear that the metal used prior to Davis's invention in making any such bolt guide and catch was so thin that the article could be or was struck up from a single piece of metal.

Another witness states that to his knowledge bolt-guides were made on the plan of said exhibit, but larger, nearly twenty years before January, 1881, the loops being fastened to the bottom plate twenty years ago the same as in the exhibit, "clinched to the back of the plate." On cross-examination he says that they were made of heavier metal, some of them. He then testifies:

Cross-Q. 10. Were not the ends of the hasp or staple headed down on the plate by a blow of the hammer, as in riveting, instead of being bent over or clinched, as in defendants' exhibit, "Bolt guide and catch"? A. As a general thing they were made in that way, riveted with a hammer to form a clinch. They were not riveted to form a head like a boiler-rivet, but were bent over like the exhibit.

Again, he says that they were mostly made for heavier purposes than the exhibit.

The defendants' expert says that the exhibit could be attached to a carriage-curtain.

The plaintiff in his testimony as a witness gives evidence throwing doubt on the view that the lugs in any bolt-guide were not headed down by riveting.

On the whole evidence it must be held that the prior existence of the bolt-guide made of metal so thin that the article could be struck up from a single piece of it, and with lugs clinched by bending and not riveting is not satisfactorily shown. Besides all this it is plain that the bolt-guide never did and never would suggest Davis's box-loop.

There must be a decree for the plaintiff for an account of profits and damages, and a perpetual injunction, with costs.

U. S. Circuit Court—District of Kentucky.

MILLER *et al. v.* FOREE *et al.*

Decided January 2, 1882.

1. REISSUE NO. 8,060—MARKING PLUG-TOBACCO—ANTICIPATION.
Reissue Letters Patent No. 8,060, for a process of marking plug-tobacco with an ineffaceable identifying-impression by one and the same pressure by means of compress-plates with draws in relief, *Held* to be anticipated by the invention of Ed. F. Smith.

2. IMPEACHING WITNESSES—GENERAL CHARACTER—ADMISSIBILITY.
A successful assault upon the general character of a witness does not necessarily exclude his testimony from consideration. The law recognizes the possibility of a witness of general bad character telling the truth, and thereupon permits such witnesses to testify, their evidence to be received for whatever, under the circumstances of the particular case, the tribunal charged with the duty of passing on and deciding the facts may deem it worth.

Messrs. Sterm & Peck, Messrs. Beattie & Winchester, and *Mr. Geo. Harding* for the complainants.

Mr. S. S. Boyd for the defendants.

BAXTER, *J.:*

Complainants sue for an alleged infringement of Reissue Letters Patent No. 8,060, issued to them on the 29th of January, 1878. The invention claimed consists of a process for finishing and marking tobacco plugs with an ineffaceable identifying-impression by one and the same pressure, by means of compress-plates with draws in relief, whereby the tobacco takes a permanent set with the impression in it and in a finished state, the tobacco having been previously prepared by a forming pressure in the molds.

The patent contains two claims.

1. The described process of marking plug-tobacco, which consists in impressing letters or other marks directly into the side of the plug during the process of manufacture, and by the pressure employed in making the plug, substantially as described.
2. A tobacco plug marked with an impression, substantially as described.

The defendants, among other defenses, allege that Miller and Worley, the parties named in the original patent as the first and original discoverers of the patented process, are not the original discoverers thereof, and aver that said process was understood and applied by the several parties named in the answer before its discovery and use by Miller and Worley.

The case, as it was then presented, was heard by me more than a year ago, when a decree was entered sustaining the first claim of the patent, adjudging defendants guilty of infringement, granting an injunction, and ordering an account of profits, &c. But before the account was taken I granted a rehearing to enable defendants to put in additional and newly-discovered evidence to sustain this defense of prior discovery and use of the process secured by complainants' patent. Further evidence was accordingly adduced by both

parties bearing on this issue, the most important of which is found in the depositions of Ed. F. Smith and Robert E. Lee.

The object of these depositions is to show that the patented process had been discovered, matured, and successfully used by Smith before it was discovered by the patentees. If the depositions of Smith and Lee, his foreman, are true, the defense of prior discovery and use is well sustained. But are these depositions reliable? The witnesses have been severely attacked and successfully impeached in so far as evidence assailing the general character of a witness can discredit their testimony; but this successful assault upon the general character of these two witnesses does not necessarily exclude their testimony from consideration. The law recognizes the possibility of a witness of general bad character telling the truth, and therefore permits such witnesses to testify, their evidence to be received for whatever, under the circumstances of the particular case, the tribunal charged with the duty of passing on and deciding the facts may deem it worth. It therefore becomes our duty to consider and decide how much weight ought to be given to the testimony of these witnesses as against the *prima facie* case made by the patent itself. The patent is evidence of its own validity, and hence the burden of proof to invalidate it rests upon the defendants. Every reasonable doubt ought to be resolved against them, and if, proceeding on this hypothesis, it shall be found that Smith's alleged discovery, &c., was incomplete and resting on speculation and experiment only, or that the evidence on this point is evenly balanced, it cannot avail to defeat complainants' patent. Let us now examine the testimony and see how the fact in this regard is.

As preliminary to the main question it is perhaps proper to remark that the defendants on the former hearing contended that complainants' patent had been anticipated by English and American patents issued to other parties; but this defense was rejected as untenable. I still adhere to the opinion then expressed. Although said several anticipating inventions had been successfully used in marking soap, tobacco, and other substances with the names of the manufacturers or with such other trade-mark or identifying-mark as the manufacturers chose to impress on the product of their labors, neither of such inventors had conceived or clearly developed the precise process which constitutes complainants' discovery; but these prior discoveries reflected more or less light upon this general subject, if they did not distinctly suggest the identical idea which constitutes complainants' invention. The surprise is therefore not that Smith should have blundered upon the same thought, but that the thing patented had not occurred to some one at an earlier date.

Smith says that he did conceive the idea, and proceeds to detail the different steps taken to develop it. He was a manufacturer, in a small way, at a remote place in Arkansas, of plug-tobacco. Both his means and facilities for carrying on his business were exceedingly limited. He used wooden molds, and finding that the faces of his molds were such as to leave the tobacco with a rough finish, he made an effort to remedy the matter by plating the molds with metal plates fastened on by screws, and, discovering that when the molds thus plated were used the screw-heads made an impression upon the finished tobacco, he conceived the idea of marking the tobacco with his name, and began at once a course of experiments to mature and develop the thought and apply it to practical use. But he found difficulty in giving a satisfactory finish to the tobacco and making the impression permanent. At this point Lee, his foreman, came to his assistance and advised him to buy a finisher. Thereupon Smith ordered a finisher from a firm in Louisville, whose name is given, and after further consultation with Lee and one G. W. Davidson, a jeweler, he employed the latter to make him two zinc plates with the letters of his name raised thereon, which he occasionally used in marking two tobacco plugs out of the one hundred and eighty plugs in each finishing process, at intervals, from August, 1875, to April, 1876, at which last-named period his factory was seized by the Government and his business suspended. Now if, as has been stated, Smith's evidence is true, the process so discovered and applied by him is a clear anticipation of complainants' discovery. The explanation and the manner in which it has been told is well calculated to impress one with confidence in its truth. Besides, he is confirmed in every material particular by Lee.

But complainants have examined quite a number of witnesses, who, in addition to testimony impeaching the general character of both Smith and Lee, testify that they bought and sold tobacco manufactured by Smith during the period mentioned, and that they had no recollection of having seen any plug of tobacco marked with Smith's name. This evidence is, notwithstanding its negative character, entitled to a good deal of weight.

But defendants rejoin, first by argument and then by evidence. Their argument is, that Smith being a manufacturer in but a very small way, using his plates for marking only at intervals, and then only marking, say, one or two plugs out of one hundred and eighty in each finishing process, it is not unreasonable to suppose that Smith may have marked tobacco in the manner and by the process described by him and that none of the witnesses examined by complainants should have noticed any of the marked plugs. And, by way of further rejoinder, the defendants have adduced other and corroborating evidence that has not been questioned. Davidson, who made the marking-plates for Smith, and who is shown to be a reputable man, has been examined by defendants, and on his examination testified that he had, at or about the time alleged, at Smith's instance and request, made such plates for Smith as herein previously described; and his testimony is confirmed by the production of one of said plates, which bears every indication of genuineness, and is identified by Smith, Lee, and Davidson as one of the plates made by the latter and used by Smith in his business. There is, in fact, no ground on which to doubt the truth of this part of the evidence. If, then, said plate was made at the time and for the purpose mentioned, it follows, as the night follows the day, beyond all reasonable doubt, that it was so used.

But this is not all. The conclusions reached and authorized in the preceding paragraph are confirmed by the positive testimony of other witnesses. Thomas Y. Huddleston, who was at the time of his examination and for nearly eight years prior thereto sheriff of his county, and who, so far as this record discloses, notwithstanding the attempt to impeach his credibility, is a reputable citizen, testifies that he had purchased plug-tobacco from Smith about that time with Smith's name impressed upon it; and he is confirmed by M. W. Wright, one of complainants' witnesses, who, on cross-examination, says that Smith showed him two plugs of tobacco so marked, which Smith at the time represented to be his work. This evidence, supplementing, as it does, the testimony of Smith, Lee, and Davidson, makes a clear case of anticipation. Yet complainants contend that Smith never perfected and reduced his alleged discovery to any practical use, that it was merely experimental and incomplete, and in support of this theory they further insist that Smith could not, and did not, impart as fine a finish to his tobacco as was given to the tobacco finished under complainants' process, and that for this and other insuperable difficulties in his way he abandoned the invention in an uncompleted condition.

I cannot, however, concur in this view of the facts. Smith discovered the "process." This he seemed thoroughly to understand, and having applied it successfully to one or two plugs, it required no inventive genius to apply it to others. It is not important that he did not do this. He did not have the necessary facilities nor the means with which to obtain them. Besides, the seizure of his factory by the Government some eight months after his first experiment was made constrained him to abandon the prosecution of the idea. But he did not so abandon it until he had fully developed the process and until it was understood by himself, Lee, and Davidson, and this, we think, is enough, under the authority of *Coffin* v. *Ogden*, (18 Wallace, 120,) to supersede and overthrow complainant's patent.

A decree will be entered, dismissing complainant's bill, with costs.

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THE OFFICIAL GAZETTE OF THE United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 21—NO. 14. TUESDAY, APRIL 4, 1882. PRICE—$5 per year

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Subscriptions for 1882.

The OFFICIAL GAZETTE is published every Tuesday, two volumes a year, commencing in January and July. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound volumes, $3.50 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Erratum.

OFFICIAL GAZETTE, April 4, 1882, Volume 21, page 924, Patent No. 255,917, in title, second line, for "filed July 19, 1882," read *filed July 19, 1881.*

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., February 25, 1882.

SIR: I am directed by the Secretary to inform you that he has ordered that William U. Saunders, of New Orleans, Louisiana, be not recognized from and after this date as an attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,

GEO. M. LOCKWOOD,
Chief Clerk.

The Commissioner of Patents.

Issue of April 4, 1882.

Patents	356	No. 255,752 to No. 256,109,	inclusive.
Designs	13	No. 12,842 to No. 12,854,	inclusive.
Trade-Marks	19	No. 9,253 to No. 9,271,	inclusive.
Labels	4	No. 2,657 to No. 2,660,	inclusive.
Reissues of patents	11	No. 10,068 to No. 10,078,	inclusive.
Total issue	405		

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama			Nebraska	2	
Arizona Territory			Nevada		
Arkansas	1		New Hampshire	2	
California	13		New Jersey	9	
Colorado	5	1	New Mexico Territ'y	1	
Connecticut	18		New York	72	15
Dakota Territory			North Carolina		1
Delaware	1		Ohio	27	
District of Columbia	2	1	Oregon	1	
Florida			Pennsylvania	42	1
Georgia	3		Rhode Island	4	
Idaho Territory			South Carolina	1	
Illinois	35	1	Tennessee	3	
Indiana	8	1	Texas	1	
Indian Territory			Utah Territory	1	
Iowa	7		Vermont	2	
Kansas	4		Virginia	2	2
Kentucky	7		Washington Territ'y	1	
Louisiana	1		West Virginia	1	
Maine	3		Wisconsin	3	
Maryland	7		Wyoming Territory		
Massachusetts	26		United States Army		
Michigan	17		United States Navy		
Minnesota	1		Total to citizens of the United States	344	23
Mississippi					
Missouri	10				
Montana Territory					

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia			England	15	
Austria			France	2	
Barbadoes			Germany	5	
Belgium			Italy		
Bermuda			New Zealand		
Brazil			Russia		
Canada	5		Spain		
Chili			Sweden		
Colombia, U. S. of			Switzerland		
Cuba			Total to citizens of foreign countries	27	
Denmark					
Ecuador					

DESIGNS.

12,842.—WALL-PAPER.—*Caroline Townsend*, Albany, assignor to *Warren, Fuller & Co.*, New York, N. Y. Application filed February 3, 1882. Term of patent 3½ years.

12,843.—CARPET.—*Edwin Fisher*, Boston, assignor to *Lowell Manufacturing Company*, Lowell, Mass. Application filed February 20, 1882. Term of patent 3½ years.

12,844.—PICKLE-BOTTLE.—*Henry J. Heinz*, Pittsburg, Pa. Application filed January 27, 1882. Term of patent 14 years.

12,845.—FRINGE.—*George S. Hensel*, Philadelphia, Pa. Application filed February 21, 1882. Term of patent 3½ years.

12,846.—CARPET.—*Arthur L. Halliday*, New York, N. Y., assignor to *The Bigelow Carpet Company*, Clinton, Mass. Application filed January 26, 1882. Term of patent 3½ years.

12,847.—FRINGE.—*Henry A. Kehrenberg*, Philadelphia, Pa., assignor to *The Fair Hill Manufacturing Company*, same place. Application filed February 21, 1882. Term of patent 3½ years.

12,848.—TOY MONEY-BOX.—*Louis Kyser* and *Alfred C. Rex*, Philadelphia, Pa. Application filed February 13, 1882. Term of patent 3½ years.

12,849.—STOVE.—*Isaac T. Montross*, Peekskill, N. Y. Application filed February 13, 1882. Term of patent 7 years.

12,850.—TOILET-CASE.—*Henry Pattberg*, Jersey City, N. J. Application filed December 1, 1881. Term of patent 3½ years.

12,851 to 12,853, inclusive.—CARPET.—*Edward Perrin*, Kidderminster, county of Worcester, England, assignor to *Horner Brothers*, Philadelphia, Pa. Applications filed March 2, 1882. Term of patents 3½ years.

12,854.—CARPET.—*Edward Perrin*, Kidderminster, county of Worcester, England, assignor to *Horner Brothers*, Philadelphia, Pa. Application filed March 2, 1882. Term of patent 3½ years. Registered in England October 26, 1881.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

9,253.—MEDICAL COMPOUND.—*Charles O. Brooks*, Waverly, N. Y. Application filed February 10, 1882.
"The pictorial representation of the Good Samaritan."

9,254.—THRASHING-MACHINES.—*Gaar, Scott & Company*, Richmond, Ind. Application filed March 8, 1882.
"The word-symbol 'FEARLESS.'"

9,255.—PLUG AND TWIST TOBACCO.—*Inge & Mahone*, Petersburg, Va. Application filed March 8, 1882.
"The words 'SOUTHERN CHOICE.'"

9,256.—PLUG AND TWIST TOBACCO.—*Inge & Mahone*, Petersburg, Va. Application filed March 8, 1882.
"The words 'NAVY KING.'"

9,257.—AXLE-GREASE.—*A. Judson Wise*, Chicago, Ill. Application filed August 4, 1881.
"The arbitrary letters 'C. & W.'"

9,258.—RAZORS.—*William H. De Pew*, New York, N. Y. Application filed February 14, 1882.
"The triangles △ and the letter 🅿, in combination with the word 'PERFECT.'"

9,259.—CIGARETTES.—*Teuscher & Gernsheimer*, New York, N. Y. Application filed March 7, 1882.
"The arbitrary word 'HORATIO.'"

9,260.—SEWING-NEEDLES.—*John Thornton, Jr.*, Brooklyn, N. Y. Application filed March 11, 1882.
"The arbitrarily-selected word 'CLEOPATRA.'"

9,261.—SEWING-NEEDLES.—*John Thornton, Jr.*, Brooklyn, N. Y. Applications filed March 11, 1882.
"The representation of an obelisk."

9,262.—PLUG AND TWIST CHEWING-TOBACCO.—*Brown & Brother*, Winston, N. C. Application filed March 10, 1882.
"The compound word 'HAZEL-KIRKE.'"

9,263.—PERFUMERY.—*Young, Ladd & Coffin*, New York, N. Y. Application filed March 11, 1882.
"The words 'CALIFORNIA WATER.'"

9,264.—ESSENTIAL OILS FOR TOILET ARTICLES.—*Young, Ladd & Coffin*, New York, N. Y. Application filed March 11, 1882.
"The arbitrarily-selected words 'OIL OF COLOGNE.'"

9,265.—PERFUMERY.—*Young, Ladd & Coffin*, New York, N. Y. Application filed March 11, 1882.
"The word 'FASCINATION.'"

9,266.—ATOMIZERS.—*Young, Ladd & Coffin*, New York, N. Y. Application filed March 11, 1882.
"The arbitrarily-selected word 'CENTENNIAL.'"

9,267.—PERFUMERY.—*Young, Ladd & Coffin*, New York, N. Y. Application filed March 11, 1882.
"The monogram of the letters and figure 'Y L & C.'"

9,268.—PERFUMERY.—*Young, Ladd & Coffin*, New York, N. Y. Application filed March 11, 1882.
"The arbitrarily-selected word 'CRITERION.'"

9,269.—PERFUMERY.—*Young, Ladd & Coffin*, New York, N. Y. Application filed March 11, 1882.
"The arbitrarily-selected words 'TALLY HO.'"

9,270.—PERFUMERY.—*Young, Ladd & Coffin*, New York, N. Y. Application filed March 11, 1882.
"The fancifully-selected word-symbol 'EDENIA.'"

9,271.—PERFUMERY.—*Young, Ladd & Coffin*, New York, N. Y. Applications filed March 11, 1882.
"The representation of a three-leaved clover."

LABELS.

2,657.—Title: "GERMAN-AMERICAN COLOGNE."—*Adrian M. Kloczewski*, Washington, D. C. Application filed March 8, 1882.

2,658.—Title: "RYE BALSAM."—*Earle & Pedley*, Canon, Colo. Application filed March 14, 1882.

2,659.—Title: "IMPROVED DETERGENT."—*C. Tiers Myers & Co.*, Philadelphia, Pa. Application filed February 18, 1882.

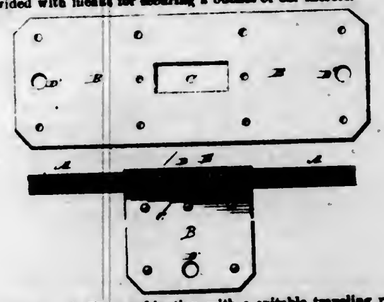
2,660.—Title: "BURDOCK LIVER ELIXIR."—*Perry Van Kleeck*, Seneca Falls, N. Y. Application filed March 8, 1882.

PATENTS

GRANTED APRIL 4, 1882.

255,752. CLIP FOR ROPE TRAMWAYS. CHARLES H. ABBOTT and ALBERT W. HARRINGTON, Chaffee, Colo. Filed Dec. 24, 1881. (No model.)

Brief.—On a traveling rope is loosely secured a clip by means of one or more collars firmly secured to said rope. Said clip is provided with means for securing a bucket or car thereto.

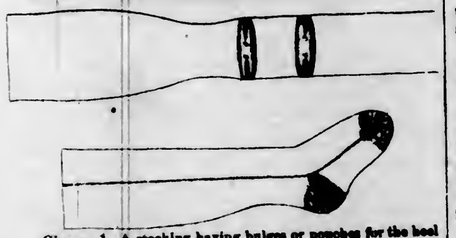


Claim.—1. The combination, with a suitable traveling rope, of a metallic clip bent in the form shown and adapted to be loosely secured to the said traveling rope by one or more collars, substantially as shown.

2. The combination, with a suitable traveling rope, of a metallic clip provided with a rectangular opening and bent in the form shown and a collar firmly secured to the said rope and adapted to occupy the said rectangular opening in the clip and hold it against displacement, substantially as set forth.

3. The combination, with the rope A, of the clip B, bent in the form shown, and having the opening C formed therein, and provided with means for securing a bucket or car thereto, and the collar D, rigidly secured to the said rope and adapted to occupy the opening C of the clip B, substantially as set forth.

255,753. STOCKING AND METHOD OF MANUFACTURING THE SAME. WALTER AIKEN, Franklin, N. H. Filed Jan. 14, 1882. (No model.)

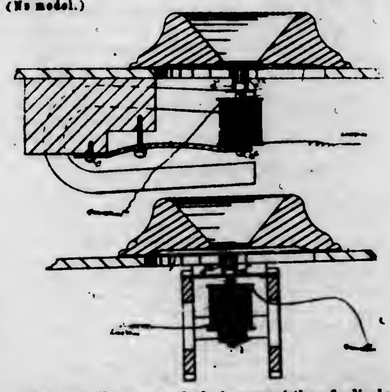


Claim.—1. A stocking having bulges or pouches for the heel and toe and having seams from the toe bulge along each side of the foot and leg to the top of the leg, substantially as described.

2. The herein-described method of making stockings, which consists in knitting a long narrow web containing pouches or bulges suitable for the toe and heel and of sufficient length for the foot and front and back of the leg, then turning the said web back on itself at the toe-pouch and uniting the same together at its edges from the toe-pouch along each side of the foot and heel to the top of the stocking, as shown and described.

3. A stocking having bulges or pouches to form a heel and toe and fashioned in the leg as described, and having seams from the toe bulge along each side the foot and leg to the top of the leg, substantially as described.

255,754. TELEPHONE. EDWARD H. AMET, La Grange, and WILLIAM S. D. HUNT, Irving Park, Ill. Filed July 19, 1881. (No model.)



Claim.—1. The improved telephone consisting of a diaphragm and a thin strip made of some magnetic substance connected with one or more magnets and vibrating in unison with the diaphragm in front of a helix the core of which has no magnetic connection or magnetism of its own, substantially as specified.

2. The combination, with two magnets having their like poles connected together by a thin strip of magnetic metal, of a connecting medium by which said strip is made to vibrate in unison with the diaphragm, and a helix the core of which has no magnetic connection or magnetism of its own, substantially as specified.

3. In a telephone, the combination of a helix the core of which has no magnetic connection or magnetism of its own with a vibratory magnetic strip connected to the pole of a magnet, substantially as specified.

4. The combination, with a helix having a soft-iron core, of a vibratory magnetic bar or strip connecting the like poles of two magnets, substantially as specified.

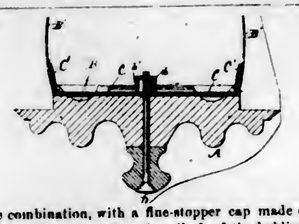
5. The combination, with the diaphragm of a telephone, of a vibratory soft-iron strip connected with like poles of two magnets, and a cushion made of felt, rubber, or other like material, placed between said diaphragm and strip, whereby said strip and diaphragm are made to vibrate in unison with each other, substantially as specified.

255,755. FLUE-STOPPER. FRANCIS G. ARTHS, Lima, Ohio, assignor of one-half to George Hall, same place. Filed Nov. 28, 1881. (No model.)

Claim.—1. The combination, with a flue-stopper cap made of porcelain, having a transverse groove across its inner face, of a holding-spring consisting of two parallel metallic pieces, B C, the arms B' C' of said pieces being of unequal lengths, substantially as shown and described, and for the purpose set forth.

2. A holding-spring for flue-stoppers, consisting of two parallel metallic pieces adapted to fit a transverse groove in the inside face of the stopper-cap, and having arms B' C' of unequal lengths, substantially as described, and for the purpose set forth.

255,755.



3. The combination, with a fine-stopper cap made of porcelain, grooved and perforated as described, of the holding spring-pieces B C and thimble *b'*, substantially as described, and for the purpose set forth.

255,756. SPECULUM. WILLIAM AUTENRIETH, Cincinnati, Ohio, and JOSEPH M. THORNTON, Hagerstown, Ind. Filed Dec. 12, 1881. (Model.)

Brief.—A slide working in a longitudinal opening can be adjusted sidewise or partially withdrawn to uncover parts of said opening.

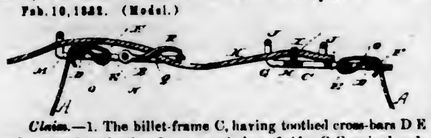


Claim.—1. A rectum-speculum having its inserting end closed and rounded and having its outer end flaring, and provided with longitudinal openings or fenestræ, combined with interior slides capable of both lateral and longitudinal adjustment to cover and uncover said openings, substantially as described.

2. In a rectum-speculum consisting of a tapering or straight tube with a smooth, rounded, inserting end, and with longitudinal fenestræ or openings, the plug C, constructed as described and arranged within the tube at the upper end, whereby a guide for laterally-adjustable slides is obtained, and also a means for the painless extraction of the speculum secured, substantially as described.

3. The slides D, having their rear portion turned so as to conform with the flare of the tube, and having guide-pins *p*, working in slots, together with the lips that embrace the end of the tube, and set-screws *t*, as and for the purpose set forth.

255,757. SURCINGLE. EDWARD BARNARD, Rome, N. Y. Filed Feb. 10, 1882. (Model.)



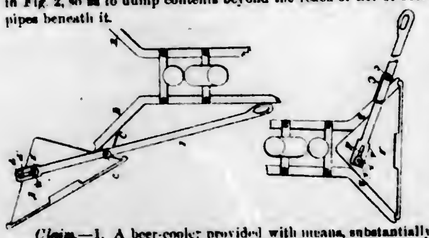
Claim.—1. The billet-frame C, having toothed cross-bars D E and outward projecting frame consisting of sides G G, raised ends or loops J J, and cross-bar H, having stud I, as set forth.

2. The buckle-frame B, having toothed cross-bars D E, outward-projecting loop or bail Q, and tongue R, hinged centrally upon the outer frame-bar, as set forth.

3. As an improvement in surcingles, the girth or band A, in combination with the buckle-frame B, billet-frame C, and billet K, constructed, arranged, and operating substantially as set forth.

255,758. BEER-COOLER. LEMEN J. BINGLER, Cincinnati, Ohio, assignor to the firm of F. C. Dechebach, same place. Filed Dec. 6 1881. (No model.)

Brief.—One side of trough A is pivoted at *c*, on which it turns, by lever D, from horizontal position shown in Fig. 1 to that shown in Fig. 2, so as to dump contents beyond the reach of tier of beer-pipes beneath it.



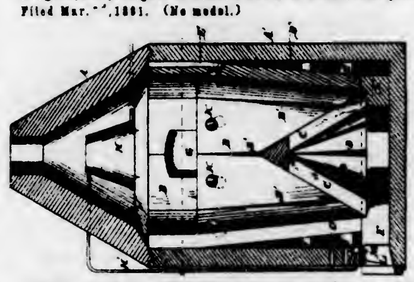
Claim.—1. A beer-cooler provided with means, substantially as described, for lifting and tilting the beer-trough in such a manner that the washings from the trough will not fall on the pipes below it, substantially as described.

2. A beer-cooler provided with apparatus for lifting the beer-trough to one side of the pipes and tilting and allowing it to fall back in position over the pipes, substantially as and for the purposes specified.

3. The combination of arms B, lever D, provided with slot *d*, and trough A, provided with pin *a*, substantially as and for the purposes specified.

4. The combination of connecting fulcrum-rod *c* and the apparatus at each end of the beer-trough, consisting of the arms B and lever D, provided with slot *d* and pin *a*, substantially as and for the purposes specified.

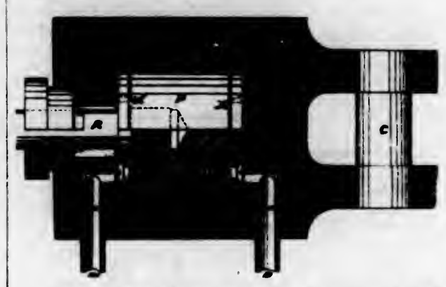
255,759. SMELTING-FURNACE. CHARLES W. BLISS, Wilmington, Del., assignor to himself and E. A. Blake, same place. Filed Mar. [illegible], 1881. (No model.)



Claim.—1. In combination with the exterior walls of the furnace, an interior brick lining, B, set away from the outer wall, whereby an annular chamber, B'', is left between the lining B and said exterior wall, and openings B', extending from the bottom to near the top of the lining B, substantially as described.

2. In combination with the exterior walls of the furnace, an interior brick lining provided with gradually-decreasing openings extending from the bottom to near the top, substantially as specified.

255,760. ENGINE-GOVERNOR. REGINALD P. BOLTON, Cambridgeport, Mass. Filed Sept. 3, 1881. (No model.)



Claim.—1. The interposition between the piston and crank of any steam, air, gas, or water engine of a hydraulic cushion in which the pressures set up by variations in the load are used to actuate the motive supply, substantially in the manner as shown and described.

2. A cross-head or sliding block bored out as a cylinder and used for a governor, substantially in the manner as shown and described.

3. In an engine-governor, the combination of the piston-rod and the plunger P with the cylinder cross-head A B and hydraulic cushion, substantially as shown and described.

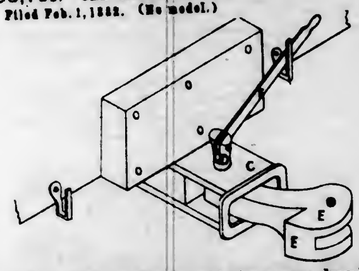
4. In an engine-governor, the combination of the rams E and E', the links S, and the cranks T and T', said cranks being free of each other's motion by a slotted keyway, substantially as shown and described.

5. In an engine-governor, the combination of a dash-pot, G, with the rams E and E', substantially as shown and described.

6. In an engine-governor, the combinations of the rams E and E', and the springs M and M', and the roller Q with the cross Y and wheel Z, for the purpose of proportionately increasing the load on the lever L, substantially as shown and described.

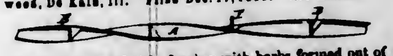
7. In an engine-governor, the combination of the rams E and E' and the cross-head A B with the parallel bar H and the wheel and bell-crank lever W O, whereby the throttle-valve or cut-off gear may be actuated, substantially as shown and described.

255,761. CAR-COUPLING. SANFORD BRAY, Boston, Mass. Filed Feb. 1, 1882. (No model.)



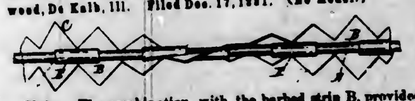
Claim.—The combination, with the common draw-bar, C, of the short coupling-hook E, rigidly secured to the pivot D, which extends upward through said draw-bar, and having pivoted to the upper end thereof the operating spring-bar F, by which the said hook may be turned to either side of the draw-bar mouth and be held in position to couple or not, as desired, substantially as shown and described.

255,762. BARBED METAL FENCING-STRIP. WILLIAM E. BROCK, New York, N. Y., assignor to the Washburn & Moen Manufacturing Company, Worcester, Mass., and ISAAC L. ELLWOOD, De Kalb, Ill. Filed Dec. 17, 1881. (No model.)



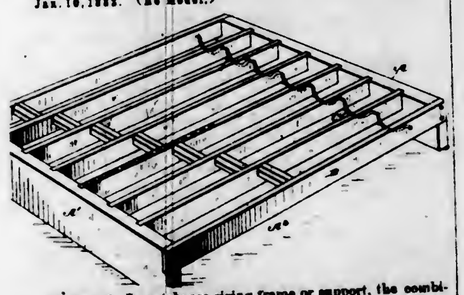
Claim.—A metal-strip fencing with barbs formed out of one of the edges of said strip, the strip being folded together so that the edges E and D lap each other, substantially as shown and described, and for the purpose set forth.

255,763. BARBED METAL FENCING-STRIP. WILLIAM E. BROCK, New York, N. Y., assignor to the Washburn & Moen Manufacturing Company, Worcester, Mass., and ISAAC L. ELLWOOD, De Kalb, Ill. Filed Dec. 17, 1881. (No model.)



Claim.—The combination, with the barbed strip B, provided with loops E and F, of the central supporting fence-wire, A, substantially as described, and for the purpose set forth.

255,764. DEVICE FOR SIZING TOBACCO-LEAVES. JOHN D. BRUBAKER, Manor Township, Lancaster County, Pa. Filed Jan. 10, 1882. (No model.)



Claim.—1. In a tobacco-sizing frame or support, the combination of end bars, longitudinal slats, a stalk-support, and movable stops or head-blocks.

2. In a tobacco-sizing frame or support, the combination of stops or head-blocks having pins in their ends with elastic slats which close on the same, end bars, and a stalk-support.

3. In a tobacco-sizing frame, a rod or wire forming a series of undulations for the reception of the stalks or butt-ends of the leaves, in combination with slats through which it passes, end bars, and stops or head-blocks, substantially as described.

4. In a frame for sizing tobacco-leaves, the end pieces, in combination with the longitudinal slats, cross-supports for the butts of the leaves, and cross-supports for the tips of the leaves arranged at different distances from the end pieces, A', and at such heights as to allow sagging, substantially as set forth.

255,765. DEVICE FOR FASTENING HORSESHOES. GIDEON BRYDEN, Hartford, Conn. Filed July 23, 1881. (No model.)



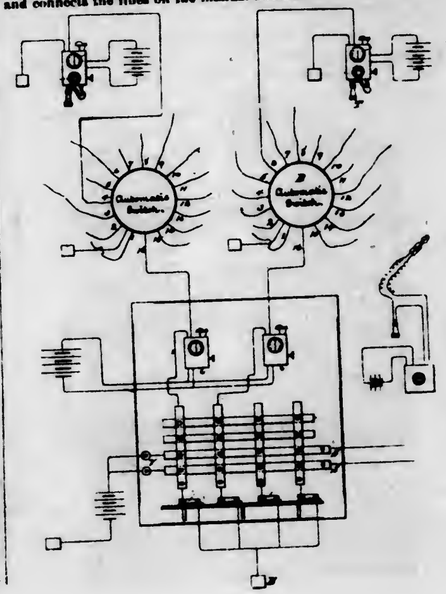
Claim.—1. The within-described horseshoe-fastening A, constructed with a long flat body substantially rectangular in cross-section, and with a cylindrical head projecting at an angle at its upper end, substantially as shown, as a new article of manufacture.

2. The combination, substantially as herein described, of a primary fastening, A, having a head at its upper end to fit a hole in the skoll of the heel, and a body or tang to occupy a nail-hole in a horseshoe, and a secondary fastening, B, having a clip-head at its upper end, and a pointed body or tang, adapted to be driven tightly into said nail-hole outside of said primary fastening, the bodies or tangs of both fastenings being roughened to adapt them to interlock with each other and with the shoe, as set forth.

3. The within-described method of fastening shoes to the hoofs of horses and mules, consisting in providing the shoes with a sufficient number of nail-holes and cutting nicks in the edges of the heels to receive the fastenings, inserting primary fastenings loosely into said nicks and nail-holes, and driving their heads into said holes in the hoofs, then drawing said primary fastenings tight and driving secondary fastenings into said nail-holes outside of said primary fastenings and cutting off the extremities which protrude through the shoes, the lower end of each fastening being secured within or beneath the shoe, substantially as herein specified, for the purposes set forth.

255,766. TELEPHONE-EXCHANGE APPARATUS. CHARLES E. BUELL, New Haven, Conn., assignor of two-thirds to James S. Smith, Hackensack, N. J., and George W. Coy, Milford, Conn. Filed Dec. 12, 1881. (No model.)

Brief.—A number of automatic switches from which subscribers' lines radiate are connected with a manual switch by one or more lines from each automatic switch, whereby a subscriber desiring communication with another subscriber at another automatic switch may put himself in communication with the operator at the manual switch who effects the required connection by operating the automatic switch with which the called subscriber is connected and connects the lines on the manual switch.

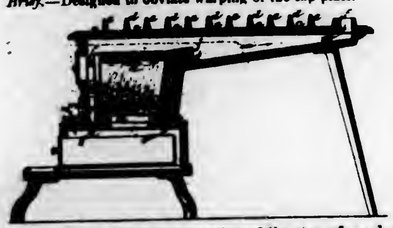


Claim.—1. The combination of two or more automatic switches substantially such as described, located at a central office, circuit-connections from each automatic switch to a manual switch, and apparatus in such circuit-connections for operating the automatic switches, substantially as and for the purposes set forth.

2. The combination of two or more automatic switches, each constructed to allow any subscriber connected thereto to automatically connect his line with any other line upon the same automatic switch and a line or lines from each automatic switch to a common manual switch, and apparatus at the manual switch for operating the automatic switches, as set forth, whereby any subscriber may connect his line either to any other subscriber's line of his automatic section or to a line leading to the manual switch for connecting the subscriber's line with any other line-connection upon the manual switch.

255,767. TAILOR'S STOVE. JAMES R. BURCHFIELD, Sharon, Pa. Filed Sept. 27, 1881. (No model.)

Brief.—Designed to obviate warping of the top plate.

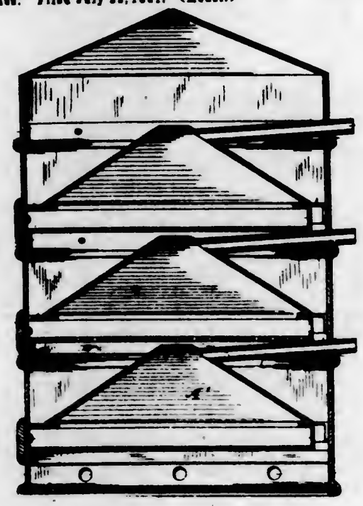


Claim.—1. The top heating-surface of the stove, formed of thin plates or holders for the irons, lap-joined and provided with top bridge-ribs, one of which extends vertically along the lapped edge of said plate, substantially as described, for the purpose specified.

2. In a stove for heating tailors' irons, the top heating-surface formed of thin lap-joined plates or holders, the lap of one edge of each plate being under and the lap of the other edge being over correspondingly-formed edges of the contiguous plates, each plate having a bridge-rib extending vertically along the top surface of that edge which underlaps, and a similar middle top longitudinal rib, substantially as described, for the purpose specified.

3. The fire-box formed with the vertical ribs *g* and the fire-bridge *j*, in combination with the ash-chamber box *b* and the combustion-chamber, the said fire-box being supported upon the ash-chamber box, and forming a surrounding air-space, *h*, opening into the latter and into the combustion-chamber around the top and beneath the bridge of said fire-box, substantially as described, for the purpose specified.

255,768. FRUIT-DRIER. JOHN H. BURKHARDT, Stockbridge, Mass. Filed July 28, 1881. (Model.)



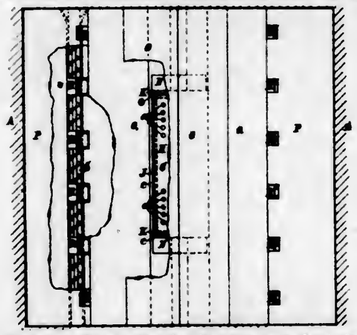
Claim.—1. The combination, with the trays arranged one above the other, of a hood supported above each tray by flanges or projections within the casing, as described, and provided with an exit-pipe extending through the casing, substantially as set forth.

2. The combination, with a fruit-drier formed of sections fitted one upon another and each provided with a tray, of a hood having inclined sides and an exit-pipe, and supported within the sections above the trays upon corner projections or flanges, substantially as set forth.

3. The combination, with the sections, each provided with a shoulder and flange for the attachment of the section next above it, of the trays and the hoods, having inclined sides, and exit-pipes extending through the sides of the sections, substantially as set forth.

4. The combination, with the sections and trays, of hoods supported above the trays, and exit-pipes passing through cut-away portions of the section-joints, substantially as set forth.

255,769. APPARATUS FOR DRYING MALT. GOTTLIEB F. BURKHARDT, Boston, Mass. Filed Dec. 13, 1881. (No model.)

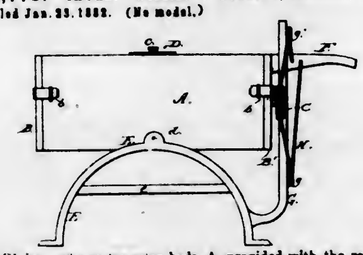


Claim.—1. The combination, in an apparatus for drying malt, of the deflectors O, inclined plates P and Q, and troughs S, having the screw-conveyers, substantially as specified.

2. The combination of the perforated drying-floor D, having pivoted or hinged sections, deflectors O, inclined plates P and Q, and troughs S, substantially as described.

3. In an apparatus for drying malt, and in combination with the deflectors O and inclined plates P and Q, a furnace embodying a combination of these elements, namely: a combustion-chamber, F, one or more flues, I, having vertical tubes *e*, top plate, H, one or more plates, L, openings M, and the double walls G, J, and K, having the air-spaces *c*, substantially as and for the purposes set forth.

255,770. CHURN. WILLIAM O. BURROWS, Stockton, N. Y. Filed Jan. 23, 1882. (No model.)



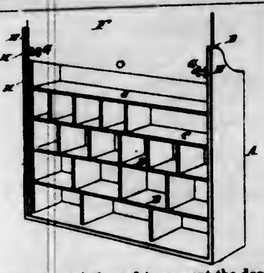
Claim.—The rectangular body A, provided with the removable heads B B', cover D, handle or lever F, and wheel C, carrying the dash, in combination with the frame E, upright G, pulleys *g g'*, and belt H, substantially as and for the purpose specified.

255,771. SEED-CASE. ROBERT P. CARPENTER, Philadelphia, Pa. Filed Sept. 19, 1881. (No model.)

Brief.—A vertical shallow seed-case provided with shelves has a vertically-sliding door with catches to support it above any shelf desired. The grooved guides for the door are extended above the top of the case.

Claim.—1. A shallow seed-case adapted to stand vertically and provided with a series of shelves, in combination with a vertically-sliding door, a guide extending above the sides of the case

255,771.



and arranged on each side thereof to prevent the door tumbling over when raised above the case, and bolts or their equivalent secured to and moving with the sliding door to support the same in position above any shelf desired, substantially as and for the purpose specified.

2. In a seed-case, a shallow box, A, provided with compartments B C, in combination with a sliding door, F, arranged to slide vertically, guides E, arranged above the box and adapted to prevent the door tumbling over when raised to its highest limit, and means, substantially as described, to support the door at any desired height to expose the required compartment, substantially as shown and specified.

3. In a seed-case, a shallow box of wood provided with shelves, in combination with a vertically-sliding door, means extending above the box or case to guide said door and prevent it tumbling over, and means to support said door entirely above the upper shelf or compartment to expose the entire contents of said case, substantially as and for the purpose specified.

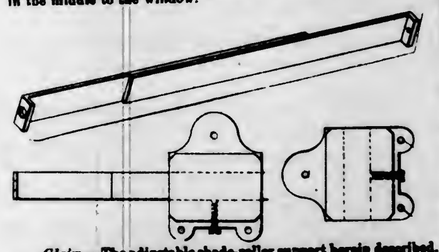
255,772. GRINDING-MILL. JOHN J. CLARK and BYRON CLARK, Elgin, Ill. Filed July 27, 1881. (No model.)



Claim.—The combination, with the stones A A', of the hub-shaped castings B, fitted within the stones, and having the annular grooves *b*, the castings C, carrying the metal grinding-rings and working within the grooves in the castings B, and the adjusting-screws E, substantially as described.

255,773. CURTAIN-BRACKET. HORATIO C. CLEMENT, Albany, Oreg. Filed Aug. 8, 1881. (No model.)

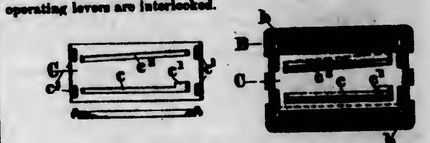
Brief.—The cornice for holding the curtain-roller is secured in the middle to the window.



Claim.—The adjustable shade-roller support herein described, consisting of the single supporting-block adapted to be secured to the casing, and the lapping arms adjustably supported and held in or upon said block and having at their outwardly-turned ends means for supporting the roller, substantially as described.

255,774. INTERLOCKING LEVER. HENRY F. COX, Altoona, Pa. Filed July 8, 1881. (No model.)

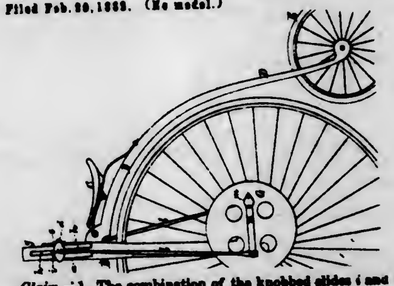
Brief.—Upon transverse ribs on a fixed plate having parallel lever-slots is supported a sliding plate having a diagonal lever-slot and a straight notched lever-slot, whereby the switch and signal operating levers are interlocked.



Claim.—1. In combination with the body A, the cap-plate B, having the transverse ribs *b b* and the straight slots *b' b''*, the locking-plate C, having the straight-sided slot *c*, with recess *c'* and slot *c''*, with inclined sides and the elongated openings *c' c''*, and the levers D and E, as described.

2. In combination with the cap-plate B, the locking-plate C, with slots *c*, *c'*, and *c''*, and the levers D E, the lines of connection *a' a''* actuating the switch, the line *a''* actuating the signal *s''*, and the line of connection *y* actuating the signal *y'*, as described.

255,775. BICYCLE. ANDREW F. CURTIS, Medford, Mass. Filed Feb. 20, 1882. (No model.)



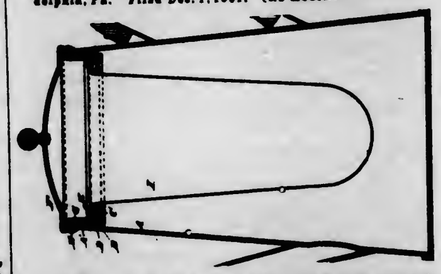
Claim.—1. The combination of the knobbed slides *i* and the connection-rods *l* with the front fork, B, the driving-wheel A, and its foot-cranks *n*, all being substantially as set forth.

2. The combination of the auxiliary cranks *a* with the driving-wheel A and its foot-cranks *n*, the front fork, B, the connection-rods *l*, and knobbed slides *i*, all being arranged and to operate substantially as set forth.

3. The combination of the handles F, provided with the tubular heads *g*, and adapted to the front fork, B, so as to be adjustable therein, as explained, with the knobbed slides *i* and connecting-rods *l*, and with the foot-crank sustaining internal gears, G, adapted to the front fork, so as to be adjustable therewith, as specified, all being substantially and to operate as explained.

4. The combination of the internal gears, G, and the lantern-pinion I, provided with friction-wheels, as described, with the front fork, B, the driving-wheel A, the knobbed slides *i*, and their connecting-rods *l*, adapted to the handles and the foot-cranks, as explained, the said foot-cranks being projected from the internal gears, as shown and described.

255,776. TEA AND COFFEE POT. JOHNSON B. DANIEL, Philadelphia, Pa. Filed Dec. 1, 1881. (No model.)



Claim.—1. A tea or coffee pot provided with an annular ledge to support the ring of a strainer-bag, located a short distance from the top, said ledge being inclined upward, having a smaller diame-

ter at the top than at the bottom, in combination with a strainer-bag and its ring, said ledge tending to expand said ring and prevent all possibility of its falling into the pot, substantially as and for the purpose specified.

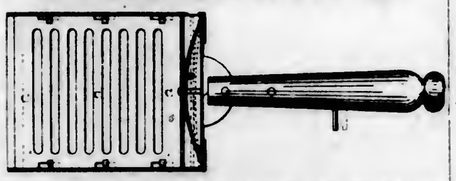
2. A conical tea or coffee pot having the body A, provided at the top with a ring-piece, A', having its bottom bent inward to form an annular groove opening upward, in combination with a cover, F, whose rim, G, fits down into said groove, substantially as and for the purpose specified.

3. A conical tea or coffee pot having the body A, provided at the top with a ring-piece, A', having its bottom bent inward to form an annular groove opening upward, in combination with a cover, F, whose rim G fits down into said groove, ring H, and bag I, substantially as and for the purpose specified.

4. A tea or coffee pot having its body creased near its upper edge to form a bead or flange on the inside, said bead forming an annular groove upon its upper side, in combination with a lid or cover provided with a rim which extends down into said groove to form a liquid seal, a straining-bag and its ring, said ring being supported in said annular groove, substantially as and for the purpose specified.

5. A vessel in which to make coffee or tea, provided with a covered inlet at the top and an open-spout outlet from or near the bottom, both of said openings being water-sealed against the escape of the aroma when making coffee or tea, substantially as and for the purpose specified.

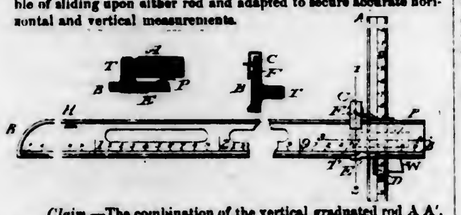
255,777. SHOVEL FOR LIFTING AND SIFTING ASHES. WM. ENTICOTT, Allegheny, Pa. Filed Sept. 10, 1881. (Model.)



Claim.—A shovel for lifting and sifting ashes, provided with a fixed and a movable bottom, the latter sliding on top of the former and acted upon by a spring at its rear end, substantially as described.

255,778. CROSS-SECTION ROD. S. BROWNLEE FISHER, Pittsburg, Pa. Filed June 20, 1881. (Model.)

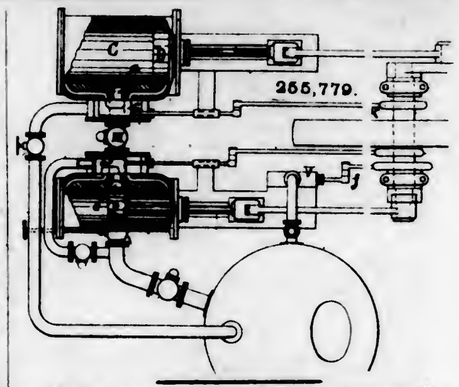
Brief.—Two graduated rods connected by a spindle-joint arranged to revolve about each other and to be set at right angles when in use and folded when out of use. The clamp-joint capable of sliding upon either rod and adapted to secure accurate horizontal and vertical measurements.



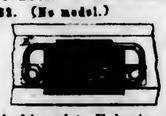
Claim.—The combination of the vertical graduated rod A A', provided with a level-bulb, L, with the horizontal graduated or measuring rod B B', provided with a level-bulb, H, by means of the stirrup P, provided with a graduated limb, D, the stirrup P, sliding along and capable of being clamped to the rod A A', and the stirrup F, provided with a graduated limb, E, sliding along and capable of being clamped to the rod B B', the two stirrups P and E being connected together by the spindle-joint T, so as to form a single instrument for the purpose of taking cross-sections on rough, rocky, steep, and bushy ground, as herein set forth.

255,779. STEAM AND HOT-AIR ENGINE. ERIK G. PAYERSEN, Newark, N. J. Filed July 1, 1881. (No model.)

Claim.—The combination, with the hot-air motor operating expansively and forcing the contents of the motor-cylinder back into the generator either by means of a separate compressing-pump or by the back-stroke of the motor-cylinder piston, of a suitable generator for heating the hot air or a mixture of hot air and gas or vapor, and a pump for providing the generator with compressed air or gases before starting the engine and for restoring such amount of air or gases as may be lost by leakage or otherwise, substantially as and for the purposes set forth.

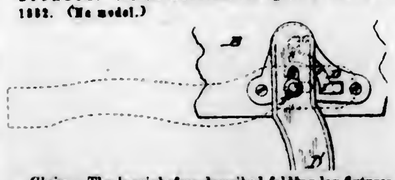


255,780. NUT-LOCK. SAMUEL GISSINGER, Pittsburg, Pa. Filed Feb. 7, 1882. (No model.)



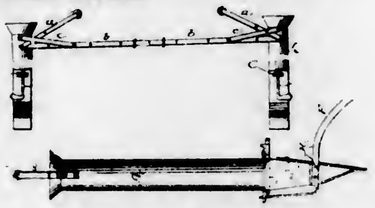
Claim.—The locking-plate F, having spring G, and hinged on the rod or pintle E, in combination with the fish-bar B, bolt or bolts C, and nut or nuts D, substantially as herein described, and for the purpose set forth.

255,781. FOLDING LEG-FIXTURE FOR EXTENSION-LOUNGES. JOSEPH GRAZER, Chicago, Ill. Filed Feb. 11, 1882. (No model.)



Claim.—The hereinbefore-described folding leg-fixtures, consisting of the plate D, having therein the slots H and I, arranged rectangularly therein and connected by the slot or opening J, in combination with the leg D', containing the slot E, and having thereon the pin or stud G, and with the connecting-pin F, substantially as specified.

255,782. CORN-PLANTER. MILO HARRIS, Jamestown, N. Y., assignor of one-half to Wm. H. Truesdale, same place. Filed Nov. 25, 1881. (No model.)

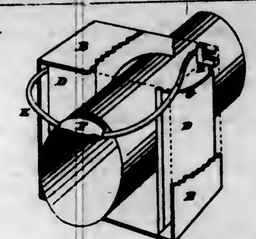


Claim.—1. In combination with seed-planters that are constructed with spring steel jaws rigidly attached at their top to the main tube or body of the planter, a projecting step hinged near the lower end of the planter, having an arm extending upward to operate the seed-slide, and an arm or plates extending downward between the jaws to open them, substantially as shown and described, and for the purpose set forth.

2. In combination with hand seed-planters, the rods *b b*, braces *c c*, and folding handles *a a*, all arranged to operate in the manner shown and described, and for the purpose set forth.

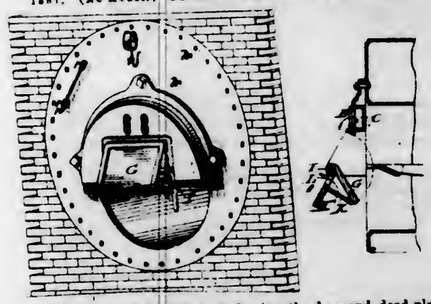
255,783. FLUE-CAP FOR STOVE-PIPES. FREDERICK E. HUDDE, Louisville, Ky. Filed Mar. 31, 1881. Renewed Jan 13, 1882. (No model.)

255,783.



Claim.—The combination of the doors D D, ball E, with its weight F, and cap-frame B, as above described, when arranged, constructed, and operated substantially as herein described, and for the purpose set forth.

255,784. FURNACE FRONT AND DOOR. THOMAS HENDERSON, Birkenhead, County of Chester, England. Filed Dec. 20, 1881. (No model.) Patented in England Feb. 24, 1880.



Claim.—1. A furnace-front having the door and dead-plate or a continuation of the dead-plate constructed in one piece and arranged substantially as described, whereby said parts are adapted to be rotated upon an axis, substantially as and for the purposes described.

2. In a furnace-front, the combination of a door and a dead-plate or continuation thereof, the top of the door and the end of the dead-plate or continuation being equidistant from a common axis about which they rotate when required, substantially as shown and described.

3. In a furnace-front, a counterbalanced door, G, mounted upon a shaft, I, on a level with the furnace-bottom, whereby said door may be brought to a level with the bars and caused to open the entire door-space.

4. In a furnace-front, the combination of a fire-door, G, supporting-shaft F at the lower edge of said door, and cheek-pieces E, carrying said shaft, the parts being arranged substantially as shown and described, whereby the door is adapted to hang down and act as a shield against the heat of clinker, &c., in the ash-pit and to leave an unobstructed charge-opening, as explained.

5. In a furnace-front, a door mounted and adapted to swing upon a horizontal axis, substantially as explained, and thereby to open a passage for the discharge of clinker to the ash-pit, and another for the return of the gases, &c., into the furnace.

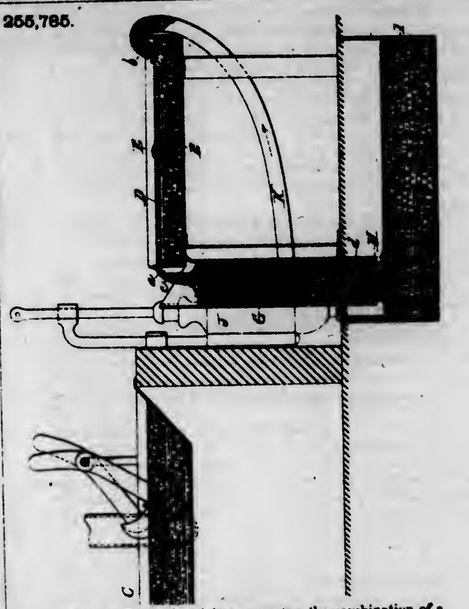
6. In combination with the door G, the supporting shaft or axis F at the lower edge or side of the door, whereby the latter is supported and adapted to fall below the charge-opening, as explained, and the counterbalanced spring J, applied as shown and described, to hold the door as adjusted.

7. The combination of the plain unperforated door G, dead-plate or continuation of the dead-plate, having orifices L, and vertical perforated plate K, inclosing an air-space from which the air is brought from the ash-pit over heated surfaces into the furnace, substantially as described.

8. The dead-plate formed in two parts, one stationary and like an ordinary dead-plate and the other, H, projecting beyond the internal face of the furnace and fixed to the door, so that as the door opens the portion of the dead-plate H nearest to it moves with it, and thus leaves a vacant space for clinkers to be thrown down.

255,785. APPARATUS FOR GALVANIZING WIRE. EDWIN H. HILL, Worcester, Mass., assignor to the Washburn & Moen Manufacturing Company, same place. Filed Apr. 1, 1881. (No model.)

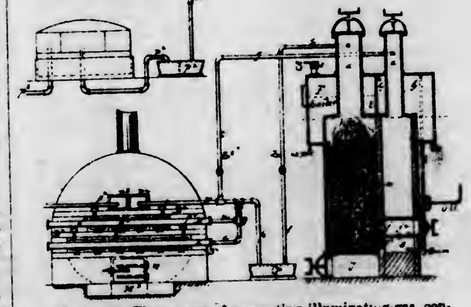
255,785.



Claim.—1. In a galvanizing apparatus, the combination of a zinc bath, F, an acid bath, D, having an opening, *a*, at one end thereof, and the cooling-reservoir I, with the filtering-chamber G, containing filtering material, substantially as described, pump J, and pipe K, to return the acid in the opposite end of the acid-tank from which it escapes, substantially as and for the purpose described.

2. The combination of the acid bath D, having an overflow-opening, *a*, at one end and a return-pipe, K, with its opening at the opposite end, with filtering-chamber G, cooling-reservoir I, and the pump J, connected with the reservoir I and pipe K, substantially as and for the purposes described.

255,786. PROCESS OF AND APPARATUS FOR MANUFACTURING GAS. JAMES W. HOUGHS, New York, N. Y., assignor to the International Gas Company, same place. Filed Mar. 15, 1881. (No model.)



Claim.—1. The process of generating illuminating-gas, consisting in decomposing water or steam in contact with fuel in a state of ignition in one furnace and decomposing in a similar manner, though at a different temperature, a hydrocarbon oil in contact with ignited fuel in another and separate furnace, as described, then mixing the gases so produced before washing or purifying the gas derived from the oil, and then subjecting said mixture, previous to storage for consumption, to such purifying, superheating, and cooling as may be required, as described, all substantially as set forth.

2. A cupola or generator, preferably of cylindrical form, for the production of gas by the decomposition of oil and water, divided into two decomposing-furnaces provided each with separate

fuel-grates, charging-doors, and ash-pits, and one of said furnaces with a pipe for conducting oil alone into contact with ignited fuel therein, and the other with a pipe for conducting water or steam alone into contact with ignited fuel therein, and each of said furnaces with a pipe for discharging therefrom its respective gaseous products of the decomposed steam and oil, as described, whereby the relative temperatures of the furnaces in which the respective gases are generated and the respective quantities of said gases therein generated are regulated and controlled previous to admixture for use, and the quality of their mixture likewise regulated, substantially as set forth.

3. In combination with and secured to the top of a cupola or generator, an annular water-jacket or evaporator connected with a furnace within said cupola through an intermediate superheating-chamber situated below said furnace, whereby the vapor of water is first superheated and then decomposed, substantially as and for the purposes set forth.

4. In a cupola or generator provided with separate decomposing-furnaces for steam and hydrocarbons, a steam-superheating chamber heated by the walls of the steam-decomposing furnace and open to the fuel therein, below the bed of fuel, in the hydrocarbon-decomposing furnace, substantially as and, for the purposes set forth.

5. In a cupola or generator provided with separate decomposing-furnaces for steam and hydrocarbons, a steam-superheating chamber heated by the walls of the steam-decomposing furnace and open to the bed of fuel therein, below the bed of fuel in the hydrocarbon-decomposing furnace, and provided with means for uniting said furnaces through said chamber when desired, substantially as and for the purposes set forth.

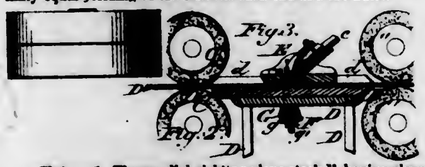
6. In combination with a cupola or generator provided with separate furnaces for decomposing steam and hydrocarbons at high temperatures, a superheating retort or retorts and an interposed purifying box or chamber, all suitably connected by pipes, as described, whereby the hydrogen of decomposed steam is first purified and then brought in contact in said retorts with the nascent or unwashed gases of a hydrocarbon previously decomposed at a high temperature, said gases being therein permanently fixed, substantially as set forth.

7. In combination with a cupola or generator provided with separate furnaces for decomposing steam and hydrocarbons at high temperatures, a series of superheating-retorts for generating carbureted-hydrogen gas, arranged with furnace for heating the same in bench, and connected by suitable pipes to said cupola, whereby the respective temperatures necessary for decomposing the steam and hydrocarbon employed can be accurately regulated at will, and the relative proportions of their resultant gases, as desired for mixture, also varied at will, substantially as set forth.

8. In a bench of retorts for the generation of illuminating or heating gas, a series of retorts having square ends and a circular mid-section, as described, set in brick-work, with flat horizontal bars of iron or other suitable refractory material interposed at each end, between the top and bottom of each retort, and between the retorts and the courses of brick, whereby the retorts may be removed and reset or renewed with but little or no disturbance of the brick-work, substantially as set forth.

255,787. PLANING-MACHINE FOR PLANING THIN PIECES OF WOOD. WALLACE S. HOLLAND, Burlington, Vt. Filed Aug. 31, 1881. (No model.)

Brief.—The plane-stock is pivoted to a yoke which is borne against by a spring underneath the table, thus causing a substantially equal yielding of the stock at each end and the knife.



Claim.—1. The parallel yielding plane-stock E, having plane-bit *e*, the yoke F, pivoted to the plane-stock having temper-screw *f'*, and spring G, in combination with the bed-plate or platen D' of a planing-machine constructed to operate in the manner substantially as described.

2. In a planing-machine such as above described, the combination of a parallel yielding plane-stock, E, having a plane-bit, *e*, and a parallel yielding edge-plane stock, H, having the edge-rounding bit *h* constructed and operating in the manner substantially as described.

3. In a planing-machine such as above described, the parallel yielding plane-stock E, as a plane-bit holder, and a presser-bar to hold the stuff being planed firmly upon the bed-plate, when combined in a single part and operated by mechanism substantially as described.

255,788. DOOR. GEORGE W. HOWELL, Covington, Ky. Filed Oct. 1, 1881. (No model.)

Brief.—The doors, counterweighted, are pivoted at the angle of depending portions, so as to form a rear extension to the hinges. A weighted latch on each door provided with an external handle engages a projection on the side of the door-opening and is locked by a bolt from the adjacent building.



Claim.—1. In a sidewalk-doorway, the combination of frame A, skeleton L, plates C, pivot F, located as set forth, stud D, latchment H, and handle G, substantially as and for the purpose set forth.

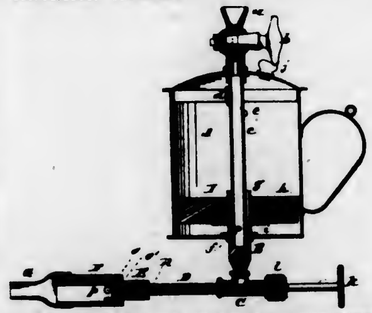
2. In a sidewalk-door latchment, the combination of weighted lever I, having hook H, stud D, and handle G, substantially as and for the purpose set forth.

3. In a sidewalk-door latchment, the combination of stud D, pivoted latch H I J, and sliding bolt E, substantially as and for the purpose set forth.

4. In a sidewalk-door, the combination of door-sheet C, skeleton L, attached to the door-sheet, as shown, and the pivot-receiving bend M, formed by an angular departure of a portion of the skeleton from the door-sheet, substantially as and for the purpose set forth.

5. In a sidewalk-door contiguous to a building, the combination of doors B C, wall N, and bolt passing through said wall, and having end O projecting from the side of said wall opposite the side from which projects the bolt end E proper, substantially as and for the purpose set forth.

255,789. PAINT-BURNER. JOS. IRVING, Chicago, Ill. Filed Oct. 14, 1880. (No model.)



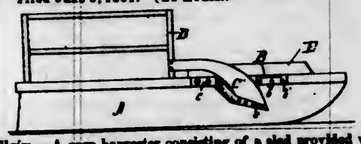
Claim.—1. An apparatus for burning paint, combining in its structure the can A, provided at its bottom with the projecting tube B, the tube *c*, extending through said can and connecting with the tube at the bottom of the can, and the mouth or extension *a* at the top of the can, connecting with the upper end of the tube *c*, and provided with a stop-cock, *b*, all substantially as and for the purpose described.

2. The combination of the can A and float I, having the tube *g*, with the tube *c*, having the stop *c*, substantially as described.

3. The combination, with the can A, of the tube *c*, having the holes *f*, the valve *d*, mouth-extension *a*, and stop-cock *b*, substantially as and for the purpose set forth.

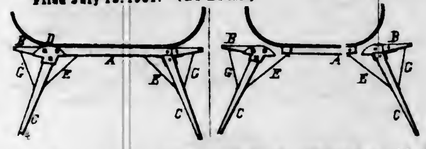
4. The combination of the can A, having the vent *j*, with the tube *a c* B and float I, all constructed and operating substantially as specified.

255,790. CORN-HARVESTER. GEORGE W. IRWIN, Ottawa, Kans., assignor to himself and EDWARD H. Crandal, Chicago, Ill. Filed June 2, 1881. (No model.)



Claim.—A corn-harvester consisting of a sled provided with cutting-blades B and C, risers E, and shocking-frame D, the whole combined, arranged, and adapted to operate substantially as set forth.

255,791. SLEIGH. JESSE JACKSON, Fort Atkinson, Wis. Filed July 15, 1881. (No model.)

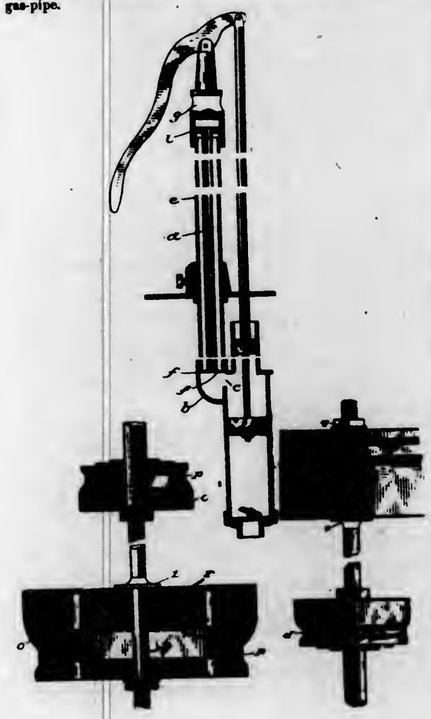


Claim.—1. In a sleigh or cutter, the combination, with the beam A, knee-post C, and fender-stud B, of the angle-plate D, having flanges or sockets for said parts A C B, and bolts for separately securing the parts in said angle-plate, as and for the purpose herein shown and described.

2. In a sleigh or cutter, the combination, with the beam A, knee-post C, and fender-stud B, of the angle-plate D, having flanges or sockets for said parts A C B, bolts for separately securing said parts in said angle-plate, and the braces E G, the several parts constructed and arranged relatively to each other, substantially as and for the purpose herein shown and described.

255,792. PUMP. DANIEL JOHNSON, JASON P. GOWAN, and FRANK GOWAN, Ashland, Ohio. Filed Feb. 17, 1882. (No model.)

Brief.—The discharge and air tubes may be made of ordinary gas-pipe.



Claim.—1. A forcing-pump consisting of the cylindrical compression-chamber provided with an offset, *b*, the pipe *c*, connected to said offset, the pipe *d*, arranged within the pipe *c*, opening into said offset and connected at its upper end with the spout *h*, the casting *g*, connected to the pipe *c*, and the piston-rod outside of said pipes provided with pistons, the parts being combined and adapted to operate as shown and described.

2. A pump-piston consisting of the two tapering-blocks, the packing, the ring, and the spindle, with means, substantially as described, for pressing the blocks together, as set forth.

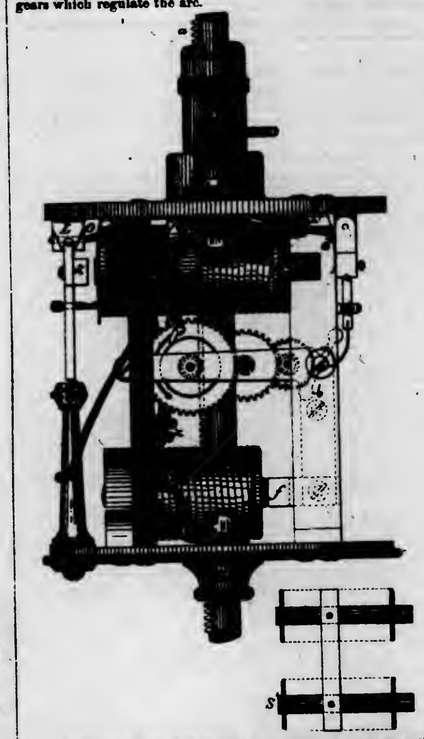
255,793. LABEL FOR ANIMALS. PHILIP PRESTON JOHNSTON, Lexington, Ky. Filed Dec. 29, 1881. (No model.)



Claim.—In metallic ear-labels for live stock, the combination of the U-shaped strip A, with holes *a* and *a'*, and the bolt B, with solid head *b* and split point *b'*, all substantially as and for the purpose described.

255,794. ELECTRIC LAMP. NATHANIEL S. KEITH, New York N. Y. Filed Mar. 3, 1881. (No model.)

Brief.—In circuit with the carbons is a main magnet, which tilts a lever carrying a train of gears, and thereby establishes the arc. A second magnet in the same circuit holds the train normally locked. A shunt around the second magnet is automatically closed and opened by a magnet in a high-resistance branch around the arc, whereby said second magnet releases and locks the train of gears which regulate the arc.



Claim.—1. In an electric-light regulator, the combination of a feeding-train, detent mechanism therefor, an electro-magnet controlling the detent mechanism, a shunt-circuit to the electro-magnet, and devices to automatically open and close said circuit to regulate the feed.

2. In an electric-light regulator, a main-circuit electro-magnet acting upon mechanism to separate the carbons for the purpose of forming the arc, in combination with a second electro-magnet provided with an automatically-controlled shunt or derived

circuit, and acting upon the detent mechanism of the feeding-train in the main or light circuit with the carbons, in combination with

255,797. *Claim.*—1. The combination, in a mutilating canceling-stamp,

circuit, and acting upon the detent mechanism of the feeding-train, substantially as described.

3. The combination, in an electric-light regulator, of an electro-magnet in circuit with the carbons and acting upon mechanism to separate the carbons and form the arc, an electro-magnet controlling the detent mechanism of the feeding-train, a shunt-circuit around the detent electro-magnet, and a third electro-magnet in a derived circuit controlling the shunt, substantially as described.

4. In an electric-light regulator, the combination of a feeding-train, detent mechanism therefor controlled by an electro-magnet in the main circuit, and a shunt-circuit around said electro-magnet, which is opened and closed by a second electro-magnet, whose magnetic strength is varied by fluctuations in the length of arc.

5. In an electric-light regulator, the combination of a releasing or feed mechanism, detent devices for said mechanism, an electro-magnet in the main circuit controlling said detent devices and provided with a shunt-circuit, and an electro-magnet in a derived circuit of comparatively high resistance around the arc, serving to open and close said shunt-circuit, substantially as described.

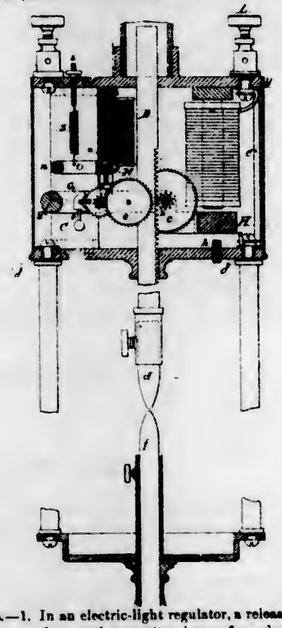
6. In an electric-light regulator, the combination of an electro-magnet in the main or light circuit, acting upon mechanism to separate the carbons and form the arc, a second electro-magnet in the same circuit, controlling the detent mechanism of the feeding-train, a shunt-circuit to said second electro-magnet in a derived circuit around the two first-named electro-magnets and the arc, and acting through suitable switch devices to make and break the shunt-circuit around the second electro-magnet, substantially as described.

7. In an electric-light regulator, the combination of a detent electro-magnet, a derived-circuit electro-magnet, and intermediate switch devices serving to control the flow of current through said detent electro-magnets.

8. In an electric-light regulator, the combination of a releasing-train carried by the armature-lever of an electro-magnet in the main or light circuit, and a detent device operated by a second electro-magnet, which is provided with a shunt-circuit automatically opened and closed to regulate the feed.

9. The combination of electro-magnet H K, constructed in H form, as described, and provided at each end with two free polar extensions, armatures acted upon by said extensions, and regulating devices of an electric lamp.

255,795. ELECTRIC-LIGHT REGULATOR. NATHANIEL S. KEITH, New York, N. Y., assignor to the Fuller Electrical Company, same place. Filed Feb. 28, 1880.



Claim.—1. In an electric-light regulator, a releasing or feeding train mounted upon the armature-lever of an electro-magnet in the main or light circuit with the carbons, in combination with a detent controlled by an electro-magnet in a derived circuit to the carbons, substantially as described.

2. In an electric lamp or light regulator, the combination of an electro-magnet in the main circuit, having an armature, H, attached to a swinging frame, G, carrying a train of gears, c, and a carbon-carrier, D, with its attachments, for the purpose of making the arc and holding it while the lamp is in operation, and an electro-magnet in a derived circuit, having an armature, N, attached to a swinging frame, and carrying a yielding or spring detent, P, and the screws e and s, and spring S, so arranged that it can be adjusted to the desired current of electricity and limited in its movements by the slotted bar p, all so arranged as to automatically regulate the feeding of the carbons to supply the demand caused by the combustion of the carbon at the light-arc, substantially as herein described and shown.

3. The combination, with a vertically-moving gear-train and escapement-wheel carried by the armature-lever of an electro-magnet in the main or light circuit, of a vertically-moving detent controlled by an electro-magnet in a derived circuit, substantially as described.

255,796. ARTIFICIAL ARM. HEDWIG M. KOLBE, Philadelphia, Pa., Executrix of Dietrich W. Kolbe, deceased. Filed Jan. 14, 1882. (No model.)



Claim.—1. Hand mechanism provided with a bar, J, in combination with the socket, the jointed bar D, and the swivel-eye C, substantially as and for the purpose set forth.

2. The perforated wrist-plate L and the wrist-plate L′, with the pin M, having neck *g*, in combination with the perforated pivoted spring-catch N, substantially as and for the purpose set forth.

3. The sliding bar of the socket and the sliding bar of the hand mechanism, in combination with the sliding tubular piece F, having a spring-nose, *e*, and operating-button, substantially as and for the purpose set forth.

4. The thumb and finger levers V V′, in combination with the hinged plate T, the elbow-lever S, the arm R, the link S′, the arm J′, the sliding bar J, and the springs T′, substantially as and for the purpose set forth.

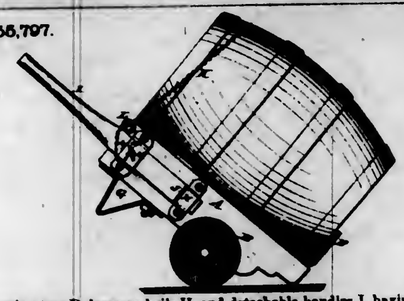
5. The palm and the third joints, with the pivoted levers V, in combination with the second joints, the pivoted levers X, and the crank-pieces Y Z, substantially as and for the purpose set forth.

255,797. BARREL-TRUCK. JENS KNUDSEN, Dwight, Ill. Filed Jan. 23, 1882. (Model.)

Claim.—1. The combination, with a suitably-constructed truck-frame having loops or bails H and perforations N, of the detachable handles I, having chains K, the short ends of which carry keys or pins M, while their long ends are adapted to be hooked together or otherwise connected, substantially as set forth.

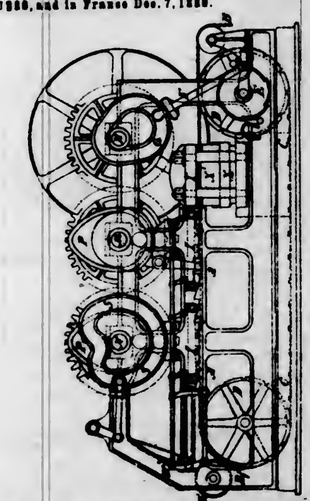
2. The herein-described improved barrel truck and platform, consisting of a frame, A, supported upon wheels or casters, and

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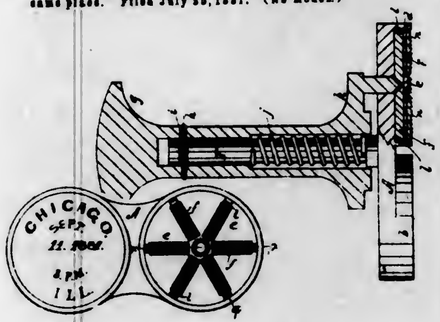
having toes D, loops or bails H, and detachable handles I, having chains K and keys or pins M for securing said handles to the frame, substantially as and for the purpose set forth.

255,798. MANUFACTURE OF FLOOR-CLOTH. CHARLES F. LEAKE, Hale Street, Staines, County of Middlesex, England. Filed Jan. 18, 1881. (No model.) Patented in England June 4, 1880, and in France Dec. 7, 1880.



Claim.—The manufacture of floor-cloth with colored patterns produced from compounds composed of oxidized oil with other materials and colored to varied colors in the manner hereinbefore described—that is to say, by the colored compounds being first reduced to a granulated form, then built up separate the one from the other into colored patterns or devices by the means substantially as hereinbefore described, and afterward consolidated together and to a base-cloth by the application of heat and pressure.

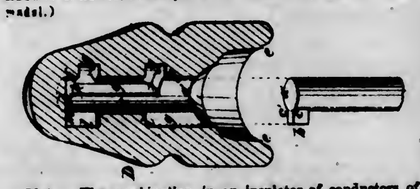
255,799. CANCELING AND DATING STAMP. GEORGE W. LEVIN, Chicago, Ill., assignor of one-third to W. H. A. Brown, same place. Filed July 25, 1881. (No model.)



Claim.—1. The combination, in a mutilating canceling-stamp, of the head C, provided with radial slots *a*, plate *e*, provided with slots *g*, ring *d*, feet *f*, provided with teeth *n*, spring *l*, and plunger *k*, substantially as described.

2. The combination, in a mutilating canceling and dating stamp, of the canceler-head C, mutilating-feet *f*, provided with teeth *n*, and moving reciprocally in suitable radial bearings, ring *d*, plate *e*, plunger *k*, handle *g*, standard T, spring *j*, and spring *l*, in conjunction with the dater *b*, substantially as described.

255,800. INSULATOR FOR ELECTRICAL CONDUCTORS. ALBERT C. LEWIS, Brooklyn, N. Y. Filed July 2, 1881. (No model.)



Claim.—The combination, in an insulator of conductors of electricity, of a metal support capable of being forced into stone or brick work or wood, having that part of the shank next to the head, as from *a* to *a′*, cylindrical in form, the head being formed by the end of the cylinder *a′*, and an arm, *b*, projecting outward therefrom, with a movable or independent insulating-cap, D D, having internally an open dome-like base, *e e′*, and a cylindrical opening, *f*, and slot *g*, extending from *e′* to *h* and *m*, to receive the shank and arm of the support, all substantially as set forth.

255,801. NUT-LOCK. ALBERT L. LINCOLN, Bethel, Vt. Filed July 2, 1881. (Model.)



Claim.—For the purpose hereinbefore set forth, the locking-plate D, having slight protuberances on one of its surfaces, formed by indenting the plate upon the opposite surface, substantially as herein specified.

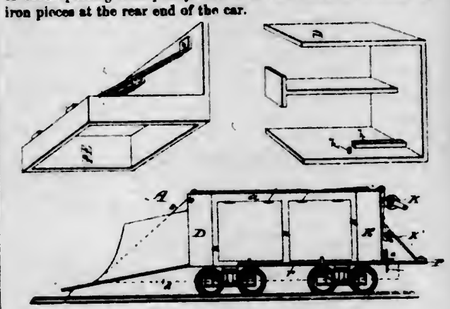
255,802. NUT AND BOLT LOCK. BERNHARD MARKS, Fresno, Cal., assignor, by direct and mesne assignments, to Alphonso B. Smith, New York, N. Y. Filed July 28, 1881. (No model.)



Claim.—The combination, with a double screw-threaded bolt, of a pair of double screw-threaded nuts capable of being placed either way upon the bolt, substantially as set forth.

255,803. SNOW-PLOW. RICHARD H. MITCHELL, Chicago, Ill. Filed Dec. 13, 1881. (No model.)

Brief.—Attached to iron pieces at the forward end of a car is a plow, which may be raised up from or swung down upon an immovable tongue or plate, and is adapted to be adjusted by means of cords passing over pulleys attached to a windlass secured to iron pieces at the rear end of the car.



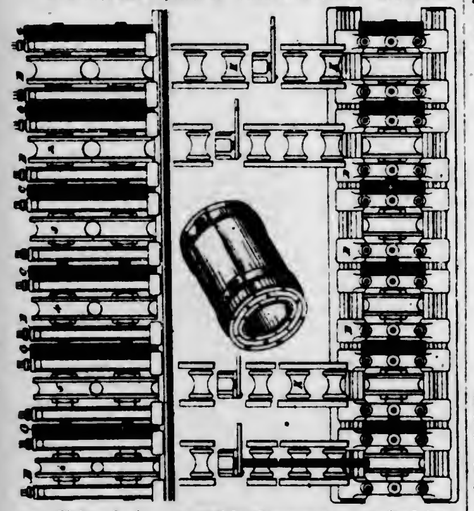
Claim.—1. A snow-plow adapted to be adjusted upon the forward end of a car or truck, as shown.

2. The adjustable plow, in combination with the immovable tongue.

3. The iron piece D, formed substantially as shown, and for the purpose described.

4. The iron piece P E, formed substantially as shown, and for the purpose described.

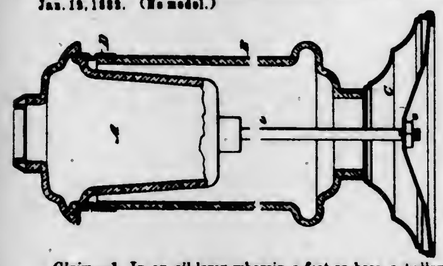
255,804. MANUFACTURE OF METAL TUBING. ALBERT L. MURPHY, Philadelphia, Pa. Filed Oct. 13, 1880. (No model.)



Claim.—1. As a new article of manufacture, a refined-iron tube the outer substance or portion of which consists of refined iron and the inner portion or bore of which consists of re-refined iron, or iron of a degree of refinement superior to that of the iron constituting the outer substance of the tube.

2. As a new article of manufacture, a pile for the manufacture of tubing, consisting of pieces of unrefined puddled or muck iron arranged and secured upon or about a hollow core of refined iron, substantially as and for the purposes set forth.

255,805. LAMP. WILLIAM T. MURPHY, New York, N. Y. Filed Jan. 13, 1882. (No model.)



Claim.—1. In an oil-lamp wherein a foot or base, a hollow cylinder, and an oil-receiver of glass suspended in the said cylinder are employed and all secured firmly together, the combination, with the said base, cylinder, and receiver, of a metal ring or band, D, arranged exteriorly around parts of the said receiver and cylinder and clamped between projecting parts of the same, substantially as set forth.

2. In an oil-lamp, the combination of the glass receiver A, the hollow cylinder B, the band or ring D, provided with an internal bead, *e*, arranged between the receiver and cylinder, the lamp-base, and means for securing the parts firmly together, as set forth.

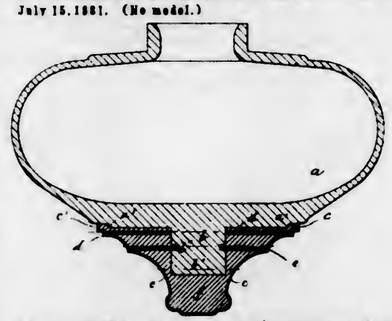
255,806. LACING FOR WEARING-APPAREL, BAGS, AND OTHER ARTICLES. JOSEPH NATHAN, New York, N. Y., assignor of one-third to Adolph Cohen, same place. Filed Dec. 24, 1881. (Model.)

255,806.



Claim.—A lace, string, or cord for corsets, jackets, shirts, gloves, shoes, bags, and other articles consisting of a suitable cord provided with stiffening-pieces attached to its ends, and having fringes or tassels surrounding such stiffening-pieces and dependent from or near the upper ends thereof, concealing them from sight, all substantially as set forth.

255,807. MEANS FOR CENTERING AND ATTACHING SOCKETS TO LAMP-BOWLS. ANDREW G. PAUL, Boston, Mass. Filed July 15, 1881. (No model.)



Claim.—1. The combination, with the socket *c* and the bowl, having a peg, *b*, of the centering disk or washer *d*, centrally perforated and engaging the peg of the bowl and resting at its outer edge against the socket, substantially as described.

2. In combination with the peg or projection *b b' b''* on a lamp-bowl, the socket *c*, centering-washer *d d'*, and fastening-washer *e e'*, as and for the purpose set forth.

255,808. MANUFACTURE OF KNITTING-MACHINE NEEDLES. SAML. PEBBLY, Philadelphia, Pa., assignor, by direct and mesne assignments, to the Pebbly Latch Needle Company, of New Jersey. Filed May 24, 1881. (No model.)



Claim.—1. The needle A, having integral therewith the pin or pivot C, and the beat-up jaws B B', jointly with the latch D, substantially as set forth.

2. The process of forming a knitting-machine needle by striking up the pivot C upon the inner face of the flap or jaw B', inserting the pivot through the eye or hole in the heel of the latch, and bending up the flaps or jaws B B' to hold the latch in place between them, whereby the end of the latch-pivot is protected from outside friction, substantially as described.

255,809. HINGE. CHARLES PFAUNTZ and HENRY FRANCK, St. Louis, Mo. Filed Dec. 10, 1881. (No model.)

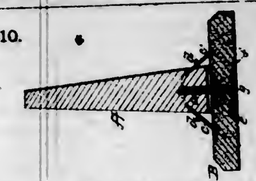


Claim.—The combination, in a non-projecting hinge, of the attaching-leaves A A', having pivot-eyes *a a'* and projecting lugs a^2 a^3, with the connecting-link B, having pivot-eyes *b b'* and square corners or shoulders b^2 b^3, all arranged substantially as herein described, and for the purpose set forth.

255,810. FENCE-POST. E. P. PHILLIPS, Findlay, Ohio. Filed Jan. 23, 1882. (No model.)

Claim.—1. A fence-post formed with a bolt-hole in the center of the base, provided with base studs or rests and slanting side braces, with staples driven in the post over the side braces, in combination with a foundation or base stone formed with central top countersunk and bolt-hole and a connecting-bolt.

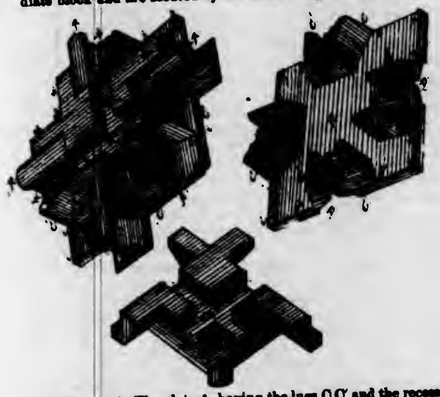
255,810.



2. The fence-post herein described, consisting essentially of the post A, base-studs *b*, braces *c*, staples *d*, foundation or base block B, and connecting-bolt *g*, substantially as and for the purposes set forth.

255,811. RAILWAY-CROSSING. DENISÉ C. PIRACH, Chicago, Ill. Filed Aug. 2, 1881. (No model.)

Brief.—A crossing-plate has lugs and recesses for the reception and attachment of the rails, which abut against an intermediate block and are secured by ratcheted wedges and pins.



Claim.—1. The plate A, having the lugs C C' and the recesses D for the reception and attachment of the rails, as set forth.

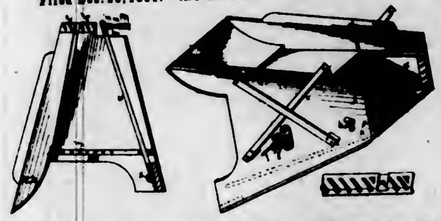
2. The combination, with the plate A, of the block B, constructed as described, and operating in the manner and for the purpose stated.

3. The combination of the plate A, block B, wedges W, and rails R, in the manner and for the purpose specified.

4. The combination, with the lugs C, provided with the ratchet-notches *r*, of the wedges W and pins P, all as and for the purpose described.

5. A corner-plate for a railway-crossing in which the rails abut against a central block and are supported and held between lugs by ratcheted wedges, substantially in the manner set forth and shown.

255,812. FANNING-MILL. PERRY POTTER, Kalamazoo, Mich. Filed Dec. 23, 1881. (No model.)



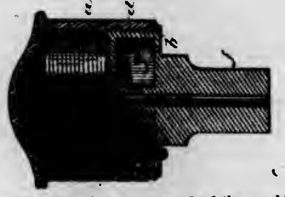
Claim.—1. In a fanning-mill, a laterally-shaking shoe provided with a screen loosely located therein, said screen provided with the semicircular projections, in combination with an adjustable bar provided with a similar projection and supporting the rear end of said screen, all substantially as described.

2. A fanning-mill shoe, the adjustable joint having pin-holes, and a pin for locking it in different positions, said joint and shoe being pivotally connected, all in combination with the bell-crank and connecting-link, substantially as described and shown.

3. The mill-frame, bell-crank, shoe, elastic metal bars, the adjustable joint pivoted to the shoe, means for connecting said joint with the bell-crank, and means for locking said parts in different positions, all constructed and combined substantially as described, for the object set forth.

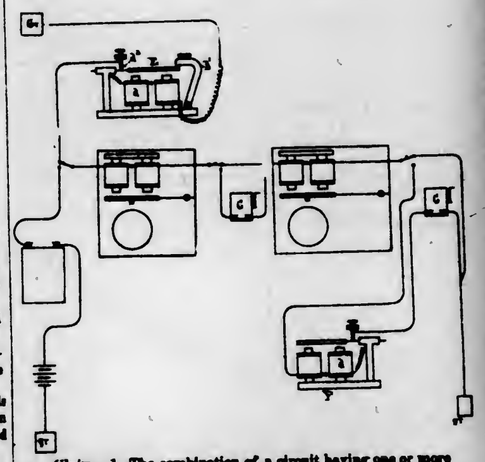
4. The combination of a shoe the top of which forms a hopper, provided with the grooves in the sides beneath the hopper-spout, with a screen provided with studs for detachably securing it on the shoe-hopper, substantially as described.

255,813. LUBRICATOR. WILLIAM K. RHODES, Portland, Me. Filed Dec. 7, 1881. (No model.)



Claim.—A lubricating-cup composed of the combination of the cup *a*, bage *b*, having chamber *g* and duct *e*, and the stock or shank *f*, as herein set forth.

255,814. SIGNALING ON ELECTRIC CIRCUITS. DAVID HALL RICE and LUPINE C. RICE, Lowell, Mass., assignors to the Carrier Telephone Bell Company, of Massachusetts. Filed Nov. 14, 1881. (No model.)



Claim.—1. The combination of a circuit having one or more call-bells provided with vibrating strikers having different periods of vibration with a vibrating circuit-breaker which automatically makes and breaks the electric current passing over the circuit in an interval of time substantially different from that of any vibrating striker upon the line.

2. The combination of an electric or magnetic circuit having a magnetic generator placed at one station thereon and a magnet and vibrating striker placed at another station thereon with an automatic vibrator which makes and breaks the current with each vibration and vibrates in a period of time different from that of the striker, substantially as described.

255,815. COFFIN. WILLIAM A. RICHEY, Indianola, Iowa. Filed Feb. 28, 1882. (Model.)

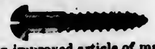


Claim.—1. The herein-described improved corner-clamp for coffins, consisting of the flanged bar E, having cap-plate H, provided with downward-projecting studs J J, and bracket L, having downward-projecting bolt N, substantially as set forth.

2. The combination of the side A and end B, having beveled edges G and recesses I K, and the bottom C, having recess M, with

the corner-clamp consisting of the flanged bar E, having cap-plate H, provided with studs J, and bracket L, having bolt or screw N, substantially as set forth.

255,816. SCREW. CHARLES D. ROGERS, Providence, R. I., assignor to the American Screw Company, same place. Filed Dec. 28, 1881. (No model.)



Claim.—As an improved article of manufacture, a screw having a steel core and a surrounding iron shell welded to the core, substantially as set forth.

255,817. THREADING-DIE. CHARLES D. ROGERS, Providence, R. I., assignor to the American Screw Company, same place. Filed Oct. 12, 1881. (No model.)

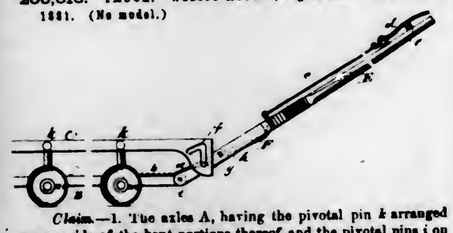


Claim.—1. A threading-die composed of a threaded hub having radial grooves, constructed as described, on its face or extreme end, cutters mounted in said grooves and retained therein against movement lengthwise of the hub, and a single screw-sleeve which engages the threaded portion of the hub and has a beveled mouth which engages the beveled rear ends of the cutters, substantially as set forth.

2. As an improved article of manufacture, a threading-die having an interior chamber and ducts leading outward therefrom, whereby the chips, &c., which would tend to clog the die may be discharged, substantially as set forth.

3. As an improved article of manufacture, a threading-die composed of a chambered hub having dovetail grooves in its face for the reception of cutters, cutters mounted in said grooves, a sleeve mounted on said hub and adapted to adjust and hold the cutters to gage, means for securing said sleeve in position, and ducts leading outward from the chamber in the hub, substantially as and for the purposes specified.

255,818. TRUCK. NELSON ROGERS, Elgin, Ill. Filed July 2, 1881. (No model.)



Claim.—1. The axles A, having the pivotal pin *k* arranged on one side of the bent portions thereof and the pivotal pins *i* on the opposite side, substantially as described.

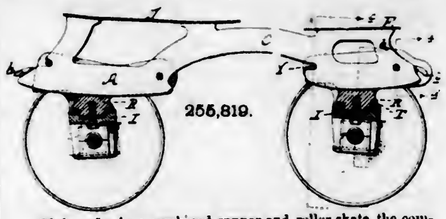
2. The combination, in a cranked truck, of the slots or cams *f* and pins *g* with a hinged tongue or handle, substantially as set forth.

3. The combination of the tongue or handle E, having the pins *g*, with the bars C, having slots or cams *f*, bars D, and crank-axles A, substantially as specified.

4. In a cranked truck, the combination, with the lower rails or frame, D, and the upper rising and falling platform supported by the axles of the truck, of the ratchet-teeth *b* on the lower rails or frame, the tongue or handle E, hinged to the latter and connected with the rising and falling platform, and the ratchet-bar F on the tongue or handle, said members being arranged to raise, lower, and hold the platform in its adjusted position, whereby it may be pushed or pulled at any partial or complete elevation, substantially as described.

5. In a cranked truck, the combination, with the lower rails or frame, D, the rising and falling rails or platform C, and the tongue or handle E, hinged to the lower rails or frame, of a connection between the tongue or handle and the rising and falling rails or platform, which connection is caused to descend toward the lower rails or frame as the platform is elevated by the movement of the tongue or handle, substantially as described.

255,819. COMBINED ROLLER AND RUNNER SKATE. WILLIAM H. ROSEWORTH, Camden, N. J. Filed Feb. 26, 1881. Renewed Oct. 18, 1881. (No model.)



255,819.

Claim.—1. As a combined runner and roller skate, the combination of a double ice-runner, A B, united by a bridge-piece, C, which establishes a fixed relation between its respective runners, with two separate roller-trucks removably applied to the runners, substantially as set forth.

2. In combination with a runner-skate, two separate roller-trucks removably applied thereto, and each having an independent vibratory and rotary motion with respect to the plane of the foot-pieces of the runner-skate, substantially as set forth.

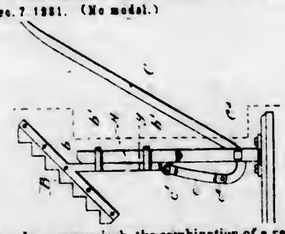
3. As a means of attaching the foot-plates and the runner of a skate to two separate roller-trucks, the clamp-plates S, being a part of the trucks, and being adapted to embrace the runner by means of cross-studs connected with the clamp-plates and engaging with notches in the runners, and by means of thumb-screws adapted to unite both clamp-plates and runners, substantially in the manner set forth.

4. In combination with a runner-skate, two separate roller-trucks removably applied thereto by means of clamp-plates in the manner described, and each connected with the runners in such manner as to each be capable of independent vibratory and oscillatory motion with respect thereto, substantially as set forth.

5. The oil-chamber V, formed in the bed-plate I at the base of the trunnion R and about the connecting-screw U, as and for the purpose specified.

6. As a device for securing the axles of roller-trucks, the combination of the journal-box casings A, upper and lower packings, L, packing-pin O, and sliding lock-piece P, substantially as set forth.

255,820. CARRIAGE-JACK. WILLIAM J. SCOTT, Boston, Mass. Filed Dec. 7 1881. (No model.)



Claim.—In a wagon-jack, the combination of a vertical metal support, A, the notched rest B, its vertical arm *b*, the straps *b'*, holding the arm to one side or surface of the support and fastened permanently to either the arm or support, the lever C, shaped as described, pivoted at the base of the standard, and the link *c*, all substantially as and for the purposes set forth.

255,821. BOTTLE-STOPPER. CHARLES SEDGWICK, New York, N. Y., assignor to Henry W. Putnam, Bennington, Vt. Filed Feb. 3, 1881. (No model.)



Claim.—1. A bottle-stopper provided with rigidly-projecting arms B, which unite it to the operating-lever fulcrumed at one side of the neck of the bottle at a point midway between the connection of the lever with the neckband and the handle of the lever, substantially as and for the purpose described.

2. The neckband F, provided with eyes or fulcrum-pieces E E, which are both arranged on one side of the bottle and combined with a lever, C, that is hung in said fulcrum-pieces, and with the arms B of the stopper A, that straddle the bottle diametrically and connect directly with said lever C, substantially as described.

3. The neckband F, provided with the downwardly-extending stop-catch G, and combined with the actuating-lever C, that is pivoted to the same neckband F, and with the arms B and stopper A, substantially as specified.

4. The combination of the neckband F, having the fulcrum-pieces E E on one side of the bottle and the stop-catch G on the other side, with the lever C, arms B, and stopper A, substantially as specified.

255,822. PRIMER FOR CARTRIDGES. WILLIAM S. SHOUP, Ilion, N. Y., assignor of one-half to E. Remington & Sons, same place. Filed Feb. 11, 1882. (Model.)



Claim.—1. An anvil constructed of thin sheet metal, and having a continuous outer flange and an inwardly struck-up cone-shaped bottom with an aperture at the apex.

2. As a new article of manufacture, a primer for cartridges composed of an anvil constructed of thin sheet metal and having a continuous outer flange and an inwardly struck-up cone-shaped bottom with an aperture at the apex, an outer cap, and interposed fulminate.

255,823. CARPET-SWEEPER. ROBT. BOYDE, Detroit, Mich., assignor to the Automatic Carpet Sweeper Company, same place. Filed May 17, 1881. (Model.)



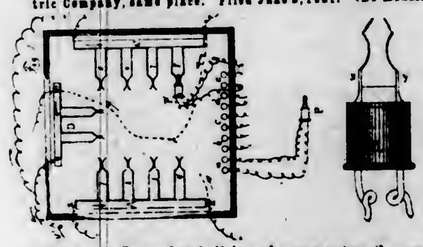
Claim.—1. In a carpet-sweeper, the combination, with the pivoted dust-pans having the slots formed in their end walls, of the dumping-bar E, having the downwardly-bent ends provided with pins projecting into said slots, and said bar being also provided with an arm projecting upward through a slot in the top of the case, the pans being relatively so connected with the bar that as said bar is moved vertically the pans are both dumped outward simultaneously.

2. The combination, with the vertically-moving dumping-bar, of a spiral spring housed within its stem and acting to draw it back and lock the pans shut when in use, substantially as described.

3. In a carpet-sweeper, friction mechanism consisting of frames for supporting the friction-wheels, said frames pivoted above the wheel-axles, and each frame provided with a projection at the side of its pivotal point, and in connection therewith a spring secured at its middle point, extending across the case, with its ends bearing downward against the said projections, whereby the wheels are forced together against the brush-roller, substantially as described.

4. The handle connecting and supporting mechanism consisting of the two perforated prongs at the end of the handle, one of said prongs being provided with a detent, and the ear-pieces or standards *g*, provided with pins to enter the perforations of the prongs, one of said pins being provided with an encircling-spring, *g'*, and the opposite standard having in its upper end a slot, *g''*, to engage the detent, substantially as described.

255,824. SYSTEM OF ELECTRICAL DISTRIBUTION. ELIHU THOMSON, New Britain, Conn., assignor to the American Electric Company, same place. Filed June 8, 1881. (No model.)



Claim.—1. In an electric light and power system, the combination, with [illegible] electric generators, local circuit, and two or more pairs of circuit-closing springs, such as described, arranged in series in said circuit, of a number of working light or power circuits, the two terminals of each of which are kept insulated from one another and formed into a plug for insertion between any pair of springs, whereby the working circuits may be included in series and in any desired combination in the same generator-circuit.

2. In an electric light and power system, the combination, with an electric generator, of two or more switch-points or circuit-closers arranged in series, a number of light or power circuits, the two terminals of each of which are brought into suitable proximity with the generator-circuit, and means, as described, whereby the light or power circuit may be interposed in series and in any desired combination or relation in the same generator-circuit.

3. In an electric lighting and distributing system, the combination of two or more electric generators, two or more pairs of springs for each generator, through the opposed surfaces of which the circuit of a generator is closed in series, a series of lighting or distributing circuits, and a set of plugs forming the terminals of said circuits, whereby said circuits may be inserted as a part of or removed from the circuits of said generators in any desired combination or may be changed from one generator to another.

4. A switch plug or plugs, P, provided with a symbol for indicating the direction of the current when inserted between the switching-surfaces, in combination with the switch-board or spring having corresponding symbol.

5. The combination, substantially as described, of two or more generators, a pair of circuit-closing springs in each generator-circuit, and two switch-plugs, constructed as described, and joined by two insulated conductors.

6. In an electric lighting and distributing system, the combination of two or more electric generators, each provided with a circuit containing a lamp or lamps operated by said generators independently, with a partial circuit common to the generators, and containing lamps or equivalent resistances in which the energy given out as useful work is due to the combined current strengths of the said generators or the differences thereof according to the respective directions of their individual currents.

7. The combination of two or more electric circuits, each containing one or more electric lamps, with a partial single circuit common to both, and in which partial-circuit lamps of greater or less lighting power than those used upon the other parts of the circuits are placed and operated, substantially as described.

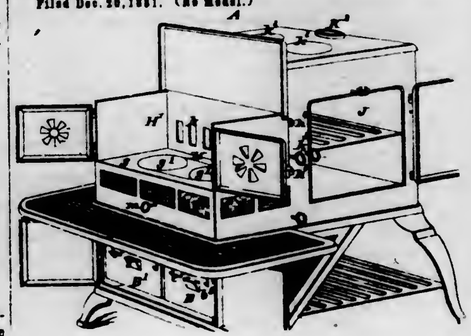
255,825. CENTER FOR COOKING-STOVES. ALBERT TROLLOPE, Detroit, Mich. Filed Jan. 9, 1882. (No model.)



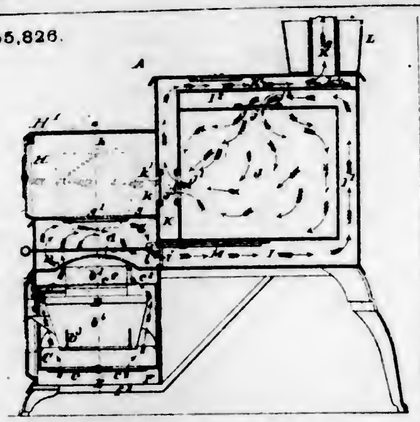
Claim.—1. In a stove-center, the part A, provided with shoulders 1 and 2, in combination with the parts B, provided with engaging-lips 4, substantially as and for the purposes described.

2. In a stove-center, the part A, provided with shoulders 1 and 2 and ridges or lugs *r*, in combination with the parts B, provided with the engaging-lips having concavities to embrace said ridges or lugs, substantially as described.

255,826. COOK-STOVE. WILLIAM H. VIRINS, Southwick, Mass., and EDWARD A. QUESNEL, St. Louis, Mo., assignors to the American Stove Manufacturing Company, Belleville, Ill. Filed Dec. 28, 1881. (No model.)



255,826.



Claim.—1. The combination of the burner B, the casing C, and the chamber F, substantially as described.

2. The combination of the chamber F, the ledges $f' f'$, the casing C, the projections $c' c'$, the hook c^3, and eye f^3, substantially as described.

3. In the stove A, the combination of the chamber F, the burners or burner B, the chamber G, the oven J, and the chamber H, substantially as described.

4. The combination of the chamber F, the casing or casings C C', and the register or registers E E, substantially as described.

5. The combination of the chamber G, the flue I I' I'', and the oven J, substantially as described.

6. The combination of the oven J, having the openings $j j'$, the flue I', and the flue K, substantially as described.

7. The combination, in an oil or gas stove, of the chamber G, the oven J, and the chamber H, the heated currents passing from the chamber G to without the stove via either or both of the apartments J H, as desired.

8. The stove A, having the detachable casing H', and the chamber G and oven J, substantially as and for the purpose described.

9. In the stove A, the movable rest M, substantially as and for the purpose specified.

255,827. GRIPPING-PULLEY. DANIEL W. WARREN, New York, N. Y., assignor to himself and John H. Blaisdell, same place. Filed Aug. 29, 1881. (No model.)



Claim.—1. A pulley constructed substantially as herein shown and described, consisting of flanged annular sections or rings A A', compression-levers B, and central disks, C, provided with inclined planes, as set forth.

2. In a pulley, as a means for supporting the rope in position, the flanged annular sections A A', substantially as herein shown and described.

3. In a pulley, as a means for compressing and holding the pulley-rope, the compression-levers B, substantially as herein shown and described.

4. In a pulley provided with compression-levers B, the supporting-disks C, having inclined faces, substantially as herein shown and described, whereby said levers are operated, as set forth.

5. The combination, with the flanged annular pulley-sections A A', provided with sockets *f*, of the pivoted compression-levers B and disks and arbor C E, the said disks forming an annular groove, substantially as herein shown and described.

6. In a pulley, as a means for compressing and holding the rope, the combination of compressing-levers and inclined planes moving relatively to each other as set forth.

255,828. COOLER FOR BONE-BLACK-REVIVIFYING KILNS. FRANCIS WARTON, Philadelphia, Pa. Filed Feb. 23, 1882. (No model.)

Claim.—The combination, with the socket or box into which a retort of a bone-black-revivifying kiln delivers, of a series of

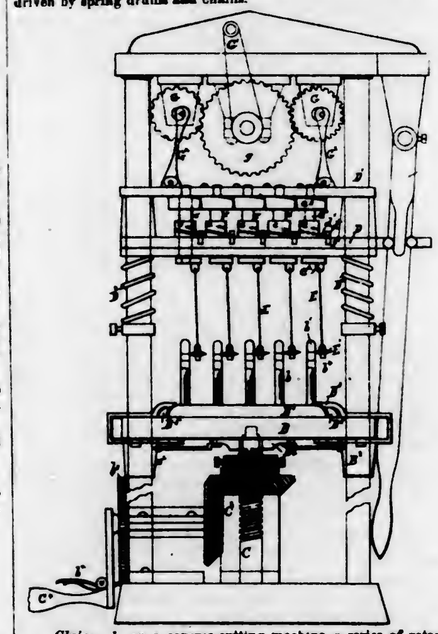
255,828.



tubes communicating with the said socket or box and adapted to receive the hot black from the same and to conduct it away, the said tubes being each, or all of them but one, provided with a suitable opening and closing device, by which one or more of the tubes may be closed to the passage of the black and the cooling effects of the system be varied as desired, substantially as specified.

255,829. MACHINE FOR CUTTING OFF CAPSULES. LOUIS J. WOEHLICH and RICHARD J. SCHOLES, Detroit, Mich., assignors to said Scholes, William McFarland, and Andrew McFarland, all of same place. Filed Jan. 22, 1882. (No model.)

Brief.—The rotary cutter-arms are suspended from wrist-pins driven by spring drums and chains.



Claim.—1. In a capsule-cutting machine, a series of rotary cutters mounted on spring-arms depending from vertical rotary shafts provided with drums driven in one direction by the uncoiling of chains or bands and retracted by springs, substantially as described.

2. The combination, with a series of drums fixed upon the cutter-shafts, of the bands, each having one end attached to the outside of one of the drums, one or more slides connected with the opposite ends of said bands, and means for operating said slides, the whole being arranged to operate essentially as set forth.

3. The combination, with the rotary shaft and drum to which any cutter is attached, of a spring, one end of which engages the shaft and the other end is attached to an adjustable drum-case, and pins or screws by which said drum-case may be given any desired rotary adjustment for varying the tension of the spring, substantially as described.

4. The combination, with a platform supporting the rotary cutters, of one or more supporting-arms, connected at their upper ends eccentrically with corresponding pinions, and a crank and pinion for rotating the same and imparting a jigging motion to the cutters, substantially as described.

5. In a capsule-machine, the combination, with the mold-plate-supporting platform, of the two clamps B^3 B^3, the lever B', and connecting-links, whereby said clamps are operated simultaneously, substantially as described.

6. In a capsule-cutting machine, the combination, with the rotary cutter supporting-platform and jigging mechanism, of springs located beneath the platform, serving as cushions, substantially as and for the purposes described.

255,830. TREATMENT OF SACCHARINE JUICES. CHARLES U. YATES, Barton, near Manchester, County of Lancaster, England, and PAUL DEGENER, Brunswick, Germany; said Yates assignor to said Degener. Filed Dec. 30, 1881. (No specimens.)

Claim.—For the purpose of preventing the formation of an excessive quantity of molasses by the concentration of saccharine juice and the boiling of the syrup, the execution of these operations in a vacuum corresponding to a boiling-temperature of the liquor which does not exceed 57.5° centigrade, and, in case the evacuating apparatus should not be powerful enough to create the degree of rarefaction of air, the use of hygroscopic substances for the absorption of the vapors generated in the concentrating or boiling pans, and which are not condensed by the ordinary means, substantially as and for the purpose described.

255,831. DRAW-BRIDGE. MAX A. SCHENER, Chicago, Ill. Filed Jan. 14, 1882. (No model.)

Brief.—Each truss spanning an opening is hinged at its inner end to the turn-table. Flexible connections of the inner ends of the upper chords are deflected at their middle part from a right line, thereby causing said upper chords to approach each other, as lifting the outer ends of the bridge. Such deflection is effected by a right-and-left-hand screw.



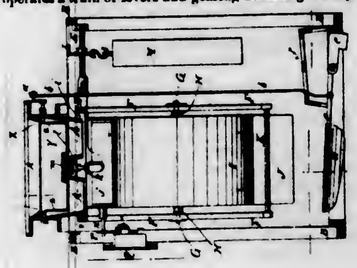
Claim.—1. In a draw-bridge, the combination, with the center pier, swinging mechanism, and abutments, of two spans, one crossing each opening and hinged or pivoted in place at its inner end, and mechanism at the center of the bridge for raising the outer end of each span from its abutment and lowering it thereon, substantially as described.

2. In combination with the center pier, abutments, and turn-table of a draw-bridge, the two spans D, each pivoted at its inner end, as described, pivoted rods or members *r* and *r'*, connecting the inner ends of the upper chords of the spans and forming a double knuckle-joint, as shown, and mechanism for removing the linked inner ends of the rods or members to or from each other at will to raise or lower the outer ends of the spans, as set forth.

3. In combination with the center pier, abutments, and turn-table of a draw-bridge, the two spans D, pivoted at their inner ends, as described, pivoted rods or members *r* and *r'*, connecting the upper chords of the span, nuts *s* and *s'*, right-and-left-hand screw E, passing through the nuts and braced in a suitable standard, and mechanism for turning the screw either way, substantially as described.

255,832. GRAIN WEIGHING AND REGISTERING MACHINE. WILLIAM H. ALLEN, New York, N. Y. Filed July 30, 1881. (No model.)

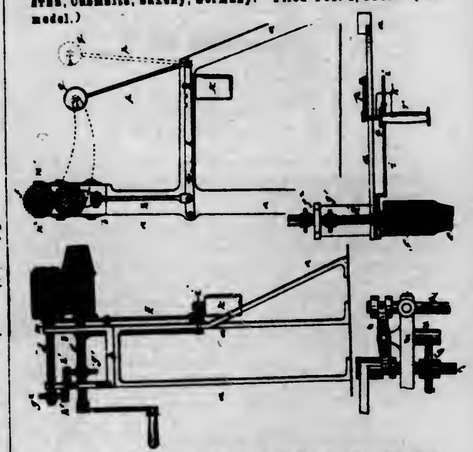
Brief.—The cut-off valve of the hopper carries a crank connected to a weighted and balanced plate, upon which the discharge of grain falls from one compartment of the weighing-box and closes the valve and the flow of grain from the hopper until the weighed grain has been fed to the stone or receptacle and the plate again rises, opening the inflow-valve. The oscillation of the weighing-box operates a train of levers and gearing actuating the register.



Claim.—1. In an automatic grain weighing and registering machine, the combination, with the spout A, having shoulder X, and the weighing-box I, of the cut-off valve Y, having flange Z, the crank *a*, the connecting-rod *b*, and the weighted lever *c e*, having plate *d* upon its forward end, substantially as herein shown and described, whereby the admission of grain to the weighing-box is regulated automatically, as set forth.

2. In an automatic grain weighing and registering machine, the combination, with the vibrating weighing-box I, having pin N, and the register Q, having saw-toothed ratchet-wheel W, of the lever P, having straight slot O and double-inclined slot R, and the bent lever T U V, substantially as herein shown and described, whereby each vibration of the said weighing-box will vibrate the said bent lever twice and move the said saw-toothed ratchet-wheel through the space of one tooth, as set forth.

255,833. SOFTENING YARNS AFTER DYEING. JOSEPH HALSTEN, Chemnitz, Saxony, Germany. Filed Feb. 4, 1882. (No model.)



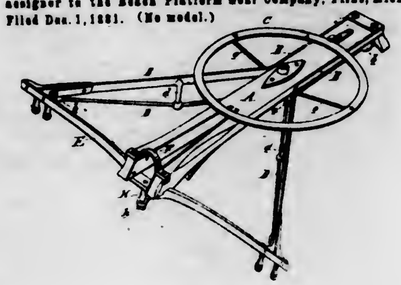
Claim.—1. The process herein described for softening hard yarn, which process consists in passing the yarn between rubbing-surfaces to which simultaneously longitudinally-reciprocating and rotating motion is imparted and removing the dust from the yarn by quickly stretching the hanks while they are operated upon by the rubbing-surfaces, substantially as set forth.

2. The combination of the revolving rollers *e f*, supporting-standards *b b*, carrying the shafts *c d*, the bearing of the upper shaft, *d*, being pivoted to the outer standard, means for longitudinally reciprocating the rollers, and a weighted lever connected to the bearing of the upper shaft on the standard adjoining the rollers, whereby the upper roller is pressed down upon the lower roller, substantially as specified.

3. The combination of the revolving and longitudinally-reciprocating rollers *e f* with a pivoted stretching-lever, *p*, carrying the spool *r* for the hanks, substantially as set forth.

4. The combination of the revolving and longitudinally-reciprocating rollers *e f*, the lower of which has a conical extension, *e*, while the upper one is weighted, with a pivoted stretching-lever *p*, carrying the guide-spool *r* for the hanks, substantially as specified.

255,834. PLATFORM-GEAR. ALEXANDER H. BEACH, Linden, assignor to the Beach Platform Gear Company, Flint, Mich. Filed Dec. 1, 1881. (No model.)

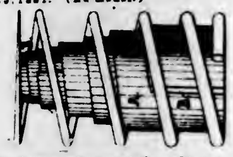


Claim.—1. A fifth-wheel platform consisting of a central bar, A, cross-bar E, and futchells B B, secured at their ends to said central bar and cross-bar, in combination with the tie truss-rods D, the brackets *b*, and the struts *d*, substantially as and for the purpose specified.

2. In a fifth-wheel platform, the combination, with the central bar, A, the cross-bar E, the futchells B, and the tie truss-rods D, of the strut *d'*, secured to the central bar, A, and provided with hooks *c*, the struts *d*, and the brackets *b*, substantially as and for the purpose specified.

3. In a fifth-wheel platform, the combination, with the central bar, A, cross-bar E, futchells B, brace-rods D, struts *d d'*, and the brackets *b*, of the circle C and the brace-rods *e*, secured to said circle and to the strut *d'*, substantially as and for the purpose specified.

255,835. CAR-SPRING. JOHN E. M. BERRY, Baltimore, Md. Filed Dec. 15, 1881. (No model.)

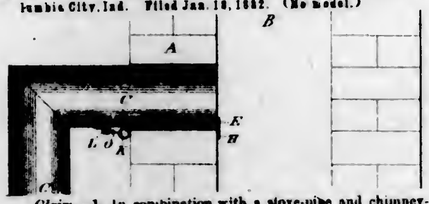


Claim.—1. A car-spring consisting of two or more volute spiral members, each of uniform thickness throughout its length and having an edgewise taper, the said members being of different lengths, as and for the purpose set forth.

2. A car-spring consisting of two or more volute spiral members, each of uniform thickness throughout its length and having an edgewise taper and an inclosing cylindro-spiral adapted to sustain a covering, as and for the purpose set forth.

3. A car-spring consisting of two or more volute spiral members, each of uniform thickness and having an edge taper, the said members being concentrically coiled and unconnected with each other, as set forth.

255,836. STOVE-PIPE RETAINER. ALFRED O. RIGGS, Columbia City, Ind. Filed Jan. 18, 1882. (No model.)



Claim.—1. In combination with a stove-pipe and chimney-flue, the retainer, as described, having upper flange, E, lower flange, H, and loop K, substantially as set forth.

2. The combination of pipe C and loop L, wire O, loop K, flange E, and flange H with flue-wall A, all substantially as described, and for the purposes specified.

255,837. SPRING BED-BOTTOM. THEODORE BURDICK, Grand Haven, Mich. Filed Dec. 5, 1881. (No model.)



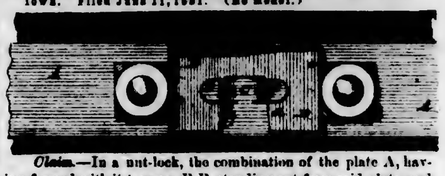
Claim.—The combination, in woven-wire spring bed-bottoms, of two fabrics of woven wire, A A, attached to cross-cleats D D, supported by longitudinal slats C C, with two sets of spiral springs, B B, one spring B being placed upon the upper sheet of woven-wire fabric A, and one spring B being placed upon the under side of each slat C and extending to and supporting the lower fabric, A, as represented in Figs. 1 and 3 by letters A A, B B, and C C.

255,838. BUCKLE. ALEXANDER CARWELL, Petaluma, Cal. Filed Nov. 30, 1881. (No model.)



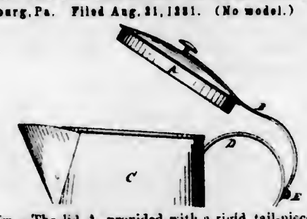
Claim.—A buckle, A, having a frame, *a*, with a hole, *c*, in its end, and a tongue, *b*, with an inwardly curved or turned point, *b'*, adapted to fit within the hole *c* when said tongue is closed, substantially as and for the purpose herein described.

255,839. NUT-LOCK. SAMUEL H. CHURCHILL, State Centre, Iowa. Filed June 11, 1881. (No model.)



Claim.—In a nut-lock, the combination of the plate A, having formed with it tongues B B, standing out from said plate, and providing spaces between them and the plate A, and the angular plate D, having an open slot, as at *d*, to permit its legs to fit or be inserted between the tongues B and the plate A, substantially as and for the purpose set forth.

255,840. LID FOR TEA OR COFFEE POTS. JOHN B. CLARKE, Pittsburg, Pa. Filed Aug. 31, 1881. (No model.)



Claim.—The lid A, provided with a rigid tail-piece, B, constructed, as described, so as to curve around upon and extend down the back of the handle D to a point most remote from its connection with the body of the pot C, and hinged or pivoted to the handle in the manner shown, for the purposes set forth.

255,841. COMBINED LABEL-HOLDER AND HANDLE FOR BOXES. JAMES CROAK and EDWARD J. MORAN, Davenport, Iowa. Filed Jan. 11, 1882. (No model.)

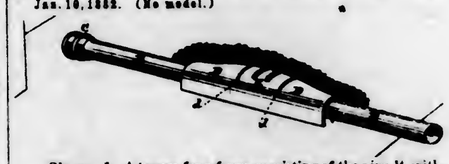


Claim.—1. The metallic handle B for boxes, having the under-folded sides *d*, terminating in fastening-prongs *e*, adapted to pass through the wall and be turned down on the inside of the box, and the bearing *l* to fit against the outside of the box, substantially as specified and shown.

2. In combination with a box, the metallic handle B, having the under-folded sides *d*, end bearings, *l*, offsets *k*, forming recesses with the box at the ends of the handle-loops *h*, and terminal fastening-prongs *e*, substantially as specified.

3. In combination with a box, the metallic box-handle B, having the shallow offsets *k*, forming recesses with the box at the ends of the handle-loop *h*, the said recesses being adapted to receive and hold a trapezoidal label or card, L, the handle having the end bearings, *l*, and the terminal prong-fastenings *e*, substantially as shown and described.

255,842. TUYERE. JEREMIAH E. DAY, San Francisco, Cal., assignor of one-half to James C. Aitken, same place. Filed Jan. 10, 1882. (No model.)



Claim.—1. A tuyere for a forge, consisting of the pipe B, with its closed end and aperture *b*, and the removable casting D, fitting over said pipe and having a convex upper surface and a grate-opening, *d*, and the removable grate E, fitting the opening *d*, substantially as herein described.

2. A tuyere for a forge, consisting of the pipe B, having an opening, *b*, and extending beyond the fire and closed by a screw-cap, C, for the purpose specified, the removable casting D, with its convex surface and grate-opening *d*, and the removable grate E, substantially as herein described.

255,843. KEY FOR BOLTS, &c. BOLTON W. DU COURCY, Winchester, assignor of one-half to James C. Brant, Covington, Ky. Filed Dec. 27, 1881. (No model.)



Claim.—1. A bolt-key which performs the functions of a nut and nut-lock.

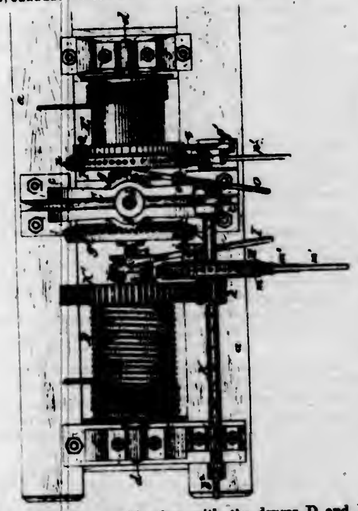
2. A key consisting of body C and legs A and B, constructed substantially as described.

3. A key whose faces *a a'* are beveled toward the point, and whose edges are beveled toward the head and provided with spring-legs A B, substantially as and for the purposes specified.

4. A key consisting of a head or solid end and spring-legs A B, and whose faces *a a'* are beveled toward the points of the legs, and whose edges are beveled toward the head, excepting the edge of leg A, from the line *a* to the point of said leg, which latter edge is beveled toward the said point, substantially as and for the purposes specified.

5. In combination with a key having beveled faces, as *a a'*, and beveled edges, substantially as described, and spring-legs A B, the bolt having a slot of such a size and having sides so beveled as to receive the key and allow the faces *a a'* of the latter to snugly fit against said sides after the widest portion of the key has passed through said slot, substantially as and for the purposes set forth.

255,844. HOISTING-MACHINE. ARCHIBALD DOBBIN, Thorold, Ontario, Canada. Filed Dec. 29, 1881. (No model.)

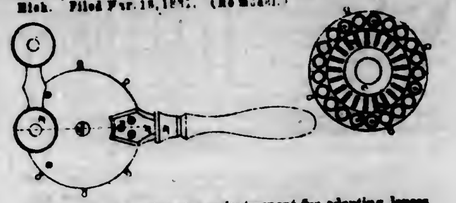


Claim.—1. The combination, with the drums D and E, mounted loosely upon a shaft, *d*, of the driving-shaft *h*, gear-wheels *g g'*, clutch-couplings H M, counter-shaft K, pinion *k*, and brakes M *m* and P *p*, substantially as set forth.

2. The combination, with the drum D, mounted loosely on the shaft *d* and provided with gear-wheel K', clutch H, driving-shaft *h*, and gear-wheels *g g'*, of the counter-shaft K, provided with pinions *k* and hand-crank *P*, substantially as set forth.

3. The combination, with the drums D E and shafts *b d*, of the arched standard C, provided with bearings *b' f' f''*, arranged between the drums and end bearings, *f*, substantially as set forth.

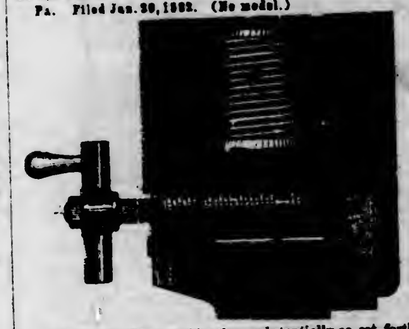
255,845. OPTOMETER. GEORGE D. ROBINSON, Detroit, Mich. Filed Nov. 18, 1881. (No model.)



Claim.—1. An optometer or instrument for adapting lenses to the sight, consisting of a series of rotary frames pivoted face to face and carrying at intervals lenses of different powers, an eye-piece or rest, and a stationary lens-support, substantially as described, whereby any lens or combination of lenses may be brought in line with the eye or another lens, substantially as described.

2. In an optometer, the outside shell consisting of two plates, between which the series of frames are pivoted face to face, said plates being provided with orifices for the reception of an eye-piece or rest through which any lens or combination of lenses may be brought into juxtaposition with the eye or another lens, substantially as and for the purpose set forth.

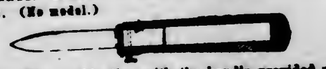
255,846. BORING-BAR. LUTHER B. FAUGHT, Philadelphia, Pa. Filed Jan. 30, 1882. (No model.)



Claim.—1. The combination, substantially as set forth, of a boring-bar having a transversely-slotted head or enlargement and a segmental female screw-thread formed on one side of its slot or opening, a block or tool-holder adapted to receive a shouldering or facing tool and fitting in a recess in the head of the bar, a feed-screw fitting in a recess in the tool-holder and engaging the female thread of the boring-bar, and a stem or stock fitting a socket in the feed-screw and serving to impart rotation thereto.

2. A tool-holder for boring-bars having a tool-slot adjacent to one of its ends, a semi-cylindrical recess at right angles to said slot for the reception of a feed-screw, and a collar projecting into said recess to retain the feed-screw in position longitudinally, substantially as set forth.

255,847. HANDLE FOR POCKET-KNIVES AND OTHER IMPLEMENTS. BRADLEY A. FISKE, New York, N. Y. Filed July 8, 1881. (No model.)



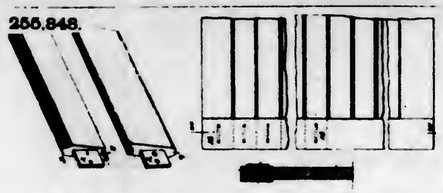
Claim.—The combination, with the handle provided with a plate-spring having a detent and a yoke or staple, constructed and arranged as shown and described, of the notched longitudinally sliding or moving tool, substantially as and for the purpose set forth.

255,848. WINDOW-SHUTTER. CALEB E. GARRY, New York, N. Y. Filed Sept. 7, 1881. (No model.)

Brief.—The flexible shutter consists of top and bottom rails and intervening slats, the meeting edges thereof formed with knuckle-joints and the rails and slats being secured to side rails divided transversely and connected together by means of flexible metallic strips. The shutter moves in curved guideways.

Claim.—1. A flexible window-shutter consisting of top and bottom rails and intervening slats united together by stiles that are divided so as to render the whole or a portion of the slats capable of an oscillating movement, said divided portions being connected by flexible metallic strips, substantially as described.

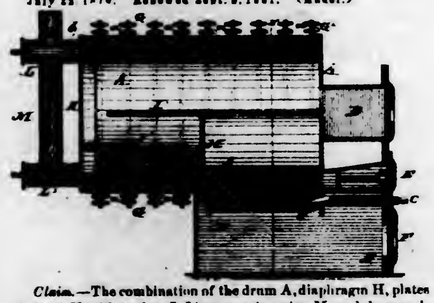
255,848.



2. The combination of a window-shutter having divided stiles connected by flexible strips with a frame-work provided with curved guideways, substantially as described.

3. A flexible window-shutter consisting of top and bottom rails and intervening slats, the meeting edges whereof are provided with knuckle-joints, which rails and slats are secured to stiles that are divided transversely and connected together by means of flexible metallic strips, substantially as described.

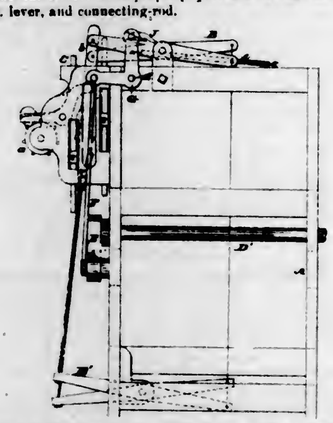
255,849. HEATER. EDWARD E. GOLD, New York, N. Y. Filed July 23, 1870. Renewed Sept. 5, 1881. (Model.)



Claim.—The combination of the drum A, diaphragm H, plates I J, head K with outlets L L', connecting-pipe M, and damper *b*, substantially as and for the purposes herein set forth.

255,850. SHEDDING MECHANISM FOR LOOMS. ROBERT S. GOODYEAR, Philadelphia, assignor of one-half to Wolfenden, Shore & Co., Cardington, Pa. Filed July 26, 1880. (No model.)

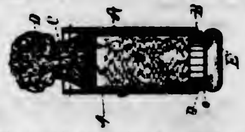
Brief—The upper harness-levers are formed with projections or noses on their upper sides, and after having been moved to open the shed are held from changing their positions by means of the locking-bar. The latter is drawn forward by a spring, which may yield if the bar strikes an improperly-placed nose and retracted by a cam, lever, and connecting-rod.



Claim.—1. The combination, with the levers B, having noses J and mechanism for operating them, a locking-bar transversely arranged to said lever, and mechanism for positively returning said bar from the noses, of a spring for advancing said bar, substantially as and for the purpose set forth.

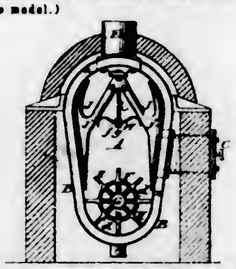
2. The combination of harness-levers B, having noses J, with locking-bar H, bell-crank lever G, shaft *d*, arm G', spring *e*, driving-shaft D', cam D, bell-crank lever E, and connecting-rod F, substantially as set forth.

255,851. SLATH-WASHER. WALTER R. GROSS and JOHN B. GROSS, Bridgeport, Conn. Filed Aug. 26, 1881. (No model.)



Claim.—The combination, with the shell B, having tapering end C, sponge D, disk *c*, reservoir *g*, stopper E, and pin *d*, of the sliding shell A, having slots *a* and *b*, substantially as described, and for the purpose set forth.

255,852. APPARATUS FOR DRYING AND PULVERIZING OFFAL, &c. JOHN F. GROSING, Chicago, Ill. Filed Jan. 30, 1882. (No model.)



Claim.—1. An apparatus for drying and pulverizing refuse matter, consisting of a steam-jacketed cylinder and a rotary shaft composed of concentric pipes and intermediate trussing, provided with broad teeth or fingers located in the lower part of the chamber, and adapted to be rotated at a high speed, whereby it is caused to throw or project the material in a separated condition through the open interior of the chamber, as explained.

2. The herein-described drying apparatus, consisting of the steam-jacketed cylinder A, shaft F, located in the lower part thereof and armed with teeth or blades, scrapers J, and mechanism, substantially such as shown and described, for imparting a traveling motion to the scrapers, as set forth.

3. In a drying apparatus, a beater or agitator shaft composed of two concentric pipes, F G, and intermediate braces or trussing, substantially as shown and described.

4. The agitator-shaft consisting of concentric pipes F G, braces or trussing *d*, and end pieces, *e*, substantially as shown and set forth.

5. In a drier, a yielding or elastic reciprocating scraper, substantially such as described, provided with a rack, in combination with a pinion, and means for rotating the pinion alternately in reverse directions.

6. In combination with the rack-bar K and the scraper connected therewith, the pinion L, pulleys O, O', and P, belts Q R, and fingers S S' S'', arranged substantially as described and shown, whereby the belts are alternately passed upon pulley P, as and for the purpose specified.

7. The scraper J, consisting of arms pivoted to an intermediate support and separated and pressed outward by a spring, W, substantially as shown.

8. In combination with the pivoted scraper-arms J, the intermediate threaded stem, *h*, and nuts *f g*, as and for the purpose described.

9. In a drier substantially such as described, a shaft composed of concentric pipes and intermediate trusses, as shown, and armed with broad teeth or arms, whereby the shaft is adapted to be rotated at high speed, and thereby to cause the material to be projected from the shaft into the open space of the containing-chamber, as explained.

10. The scraper J, provided with adjustable steel plates J.

11. The herein-described drier, consisting of steam-jacketed chamber A, provided with feed and discharge openings, shaft B, having teeth H spirally arranged thereon, scrapers J, and means, substantially such as shown and described, for imparting a traveling motion to the scrapers, as set forth.

255,853. WRENCH. JOHN C. GUNN, Knoxville, Tenn. Filed Feb. 23, 1882. (Model.)

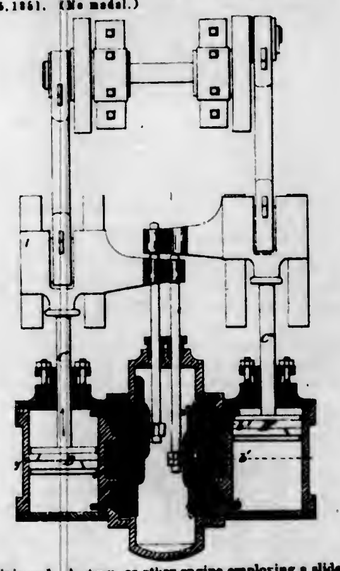
Claim.—1. The combination of the handle A, having grooved hook B, the adjustable slide C, having grooved recess D, and spring-pawl S, and the die E, having opening O and ratchet-flange P, as set forth.



255,853.

2. The combination, with the stock or handle A, having hook or jaw B, and slot G, of the slide C, having lugs H and screw F, the block *d*, having opening K, and the lugs L and the nut N, substantially as set forth.

255,854. STEAM-ENGINE. MILAS W. HALL, Plainfield, N. J., assignor of one-half to Albert E. Hall, same place. Filed Feb. 5, 1881. (No model.)

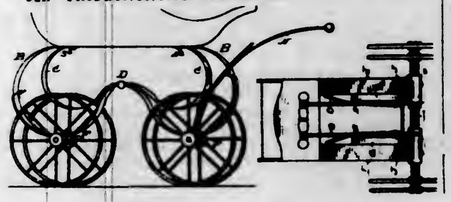


Claim.—1. A steam or other engine employing a slide-valve and the usual inlet and exhaust ports, in which the valve has a stroke equal in length to the piston, and the longest axis of the port-opening under the valve is in the plane of travel of the valve, substantially as set forth.

2. The combination, with the two cylinders and their pistons, rods, cranks, common shaft, and valves, actuated as shown, of the two port-plates L L', yoked together and arranged to be shifted simultaneously, said port-plates being provided with one set of plain and one set of crossed ports, arranged inversely in the two plates, whereby when the plates are shifted the crossed ports of one plate will be brought into play and those of the other plate thrown out, substantially as and for the purposes set forth.

3. In a duplex engine, the combination of two steam-cylinders, one provided with direct steam-ports and the other with crossed steam-ports, two slide-valves controlling said ports, two piston-rods, and mechanism connecting the piston-rod of each engine with the valve of the opposite engine, for moving said valves in the same direction as said piston-rods, substantially as specified.

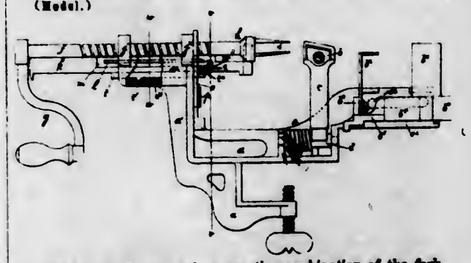
255,855. CHILD'S CARRIAGE. ADAM HEIM, San Francisco, Cal. Filed Nov. 25, 1881. (No model.)



Claim.—1. The springs B and C, connected by the clamps D, attached to the spring C, and the spring-supports G, attached to the axles and supporting the springs B, as set forth, the whole being combined and operated substantially as and for the purposes set forth.

2. The handles or shafts N, having the spring T attached, and the spring catch or stops R, and the rest-hooks P, to form the bearing of the spring-supports G, in combination with the spring-supports G, the whole being constructed and operated as and for the purposes set forth.

255,856. APPLE PARER, CORER, SLICER, AND QUARTERER. C. RAYMOND HEISMANN, Reading, Pa., assignor to the Penn Hardware Company, same place. Filed Dec. 23, 1881. (Model.)



Claim.—1. In an apple-parer, the combination of the fork-shaft *f*, the crank *g*, the track-bar *k*, having a track, *l*, the supporting-bar *t*, and the engaging-bolt *o*, for the purpose of effecting engagement between the said bolt *o* and the said shaft *f*, substantially as set forth.

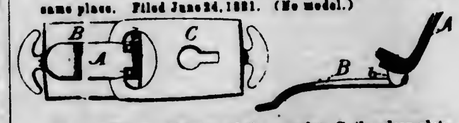
2. The combination of the fork-shaft *f*, crank *g*, the track-bar *k*, having a track, *l*, and the engaging-bolt *o*, for the purpose of effecting disengagement between said bolt *o* and said shaft *f*, substantially as set forth.

3. The combination of the corer and slicer b^2 with the corer and dividers b^2 b', forming one reversible piece adjustably attached to the frame, whereby the machine is adapted at will for slicing apples crosswise or dividing them lengthwise while coring them, all substantially as set forth.

4. In an apple-parer, the apple-bearing shaft, its crank and fork-head, and a track-bar located as above described, in combination with a rack, nut, trigger, or equivalent device, carrying a screw-thread or segment for the purpose of throwing such screw-thread or segment into or out of engagement with the screw-thread of said apple-bearing shaft, substantially as set forth.

5. In an apple-parer, the combination of the shaft *f*, its fork, the crank *g*, track-bar *k*, base *q*, and supplementary paring-knife *q'* for paring the rear portion of an apple, substantially as set forth.

255,857. CLASP FOR GLOVES OR SHOES. FRANK J. HENRICK, New Britain, Conn., assignor of one-half to H. C. Noble, same place. Filed June 24, 1881. (No model.)



Claim.—The combination of the eye-plate C, the clasp-plate B, and the peculiar lever A, pivoted by a pin which passes through the short arm near the middle of its length, and having the straight inner face, which extends beyond two opposite sides of said pivot-pin, and which face slants backward with reference to the plane of the clasp-plate when the lever is closed, substantially as described, and for the purpose specified.

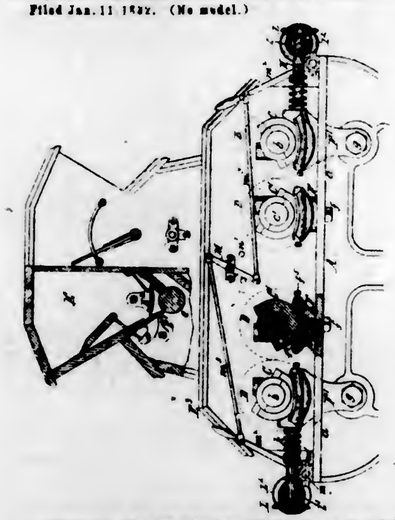
255,858. KNOB ATTACHMENT. OLIVER M. KIDDER, Detroit, Mich., assignor to himself, George Watkins, and Frank M. Blackman, same place. Filed Feb. 4, 1882. (No model.)



Claim.—1. In a door-knob, the serrated spindle A, in combination with the serrated yoke B and the shank E, having a socket adapted to receive the yoke and close the same upon the spindle, substantially as described.

2. The combination, with the serrated spindle A, serrated yoke B, and the shank E, constructed substantially as described, of the screw F, adapted to draw the yoke within the shank, as and for the purpose specified.

255,859. ROLLER-MILL. NOAH W. HOLT, Buffalo, N. Y. Filed Jan. 11, 1882. (No model.)



Claim.—1. The combination, with the frame A and journal-boxes C, having each a projection, f^3, and socket f', of base-pieces F, supporting said boxes, and provided with a socket, f^3, and horizontal bolt f^4, and a vertical pivot-bolt, f, whereby each base-piece F is attached to the frame A, substantially as set forth.

2. The combination, with the frame A and journal-boxes C, each provided on its under side with a transverse rib, of base-pieces F, each provided with a transverse recess, f', in which the rib of the journal-box plays, and whereby the play of the journal-box is limited, and a projection, f^3, and bolt f^4, constituting horizontal pivots on which the journal-box can rock, substantially as set forth.

3. The combination, with the rollers B D and journal-boxes C C, provided each with a projection, f^3, and a recess, f', of supporting base-pieces provided each with a recess, f^3, and screw-bolt f^4, substantially as set forth.

4. The combination, with the movable roller B and its journal-boxes, of the pivoted supporting-arms F, adjusting-bolts h, sleeves H, in which the bolts h are supported, and mechanism whereby the sleeves H are simultaneously moved toward or from the stationary roller, substantially as set forth.

5. The combination, with the movable roller B and its journal-boxes, of the pivoted supporting-arms F, adjusting-bolts h, and mechanism whereby the same are simultaneously adjusted, sleeves H, in which the bolts h are supported, and mechanism whereby the sleeves H are simultaneously moved toward or from the stationary roller, substantially as set forth.

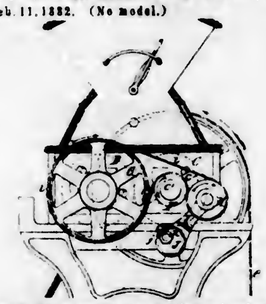
6. The combination, with the movable roller B and its journal-boxes, of the pivoted supporting-arms F, adjusting-bolts h, sleeves H, in which the bolts h are supported, eccentrics i, and shaft m, and mechanism whereby the movement of the eccentrics is limited, substantially as set forth.

7. The combination, with the movable roller B and its journal-boxes, of the pivoted supporting-arms F, adjusting-bolts h, sleeves H, in which the bolts h are supported, mechanism whereby the sleeves H are moved simultaneously, gear-wheels L, secured to the bolts h, shaft l, supported on the sleeve H, and gear-wheels L', substantially as set forth.

8. The combination, with the movable rollers B B and their journal-boxes, of the pivoted supporting-arms F, adjusting-bolts h, sleeves H, in which the bolts h are supported, eccentrics i, shafts m, arms m^2, rods m^3, lever M, and stops n n', substantially as set forth.

9. The combination, with the stationary roller-bearings C C' and movable roller-bearings C C, of the springs k and adjusting-screws k, whereby the movable roller-bearings are adjusted, sleeves H, eccentrics i, whereby the sleeves H are moved toward and from the stationary roller-bearings, and mechanism whereby both eccentrics are connected and turned simultaneously, substantially as set forth.

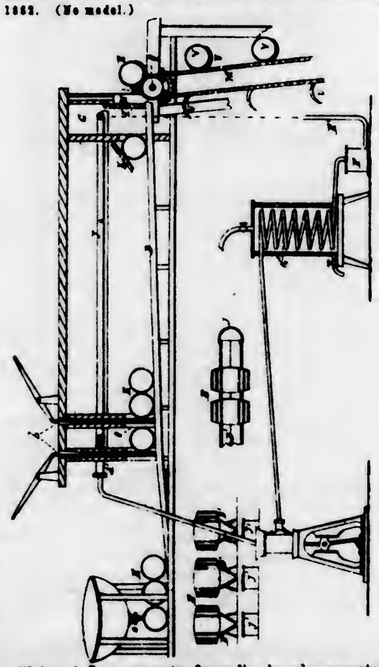
255,860. ROLLER-MILL. NOAH W. HOLT, Buffalo, N. Y. Filed Feb. 11, 1882. (No model.)



Claim.—1. The combination, with a pair of rollers, C D, of the pulleys F and G, mounted on the shafts of said rollers, a friction-pulley, H, and an endless driving-belt, i, which passes around the pulleys F G H, and which is clamped between the friction-pulley and the adjacent roller-pulley.

2. The combination, with an endless driving-belt, i, of a pulley, G, arranged within the driving-belt, a pulley, F, arranged outside of the driving-belt, a friction-pulley, H, arranged within the driving-belt, and means whereby the driving-belt is clamped between the pulleys F and H, substantially as set forth.

255,861. METHOD OF AND APPARATUS FOR GLUING BARRELS. GEORGE H. HOPPER, Unionville, Ohio. Filed Feb. 10, 1882. (No model.)



Claim.—1. In an apparatus for cooling barrels preparatory to their being glued, the arrangement and combination of the frigid chamber A and sub-chambers F and G, with their respective downs and cooling-pipes Y, in combination with an ammoniacal-gas pump, condenser, and receiver, with their several connecting-pipes, substantially as described, and for the purpose set forth.

2. Arranged in relation to and in combination with the frigid chamber A, an inclined trunk, glue-tub, and elevator, operating conjointly in the manner set forth, and for the purpose specified.

3. As a preparatory step in the process of gluing barrels, the cooling of said barrels to a low degree of temperature by passing them through a refrigerating apparatus that the glue, when applied to the interior of the barrel, may chill and set quickly, for the purpose specified.

255,862. MACHINERY FOR CRUSHING ORES, &c. FREDERICK J. HOYT, New York, N. Y., and WILLIAM H. HOYT, Jersey City, N. J. Filed May 14, 1881. (No model.)

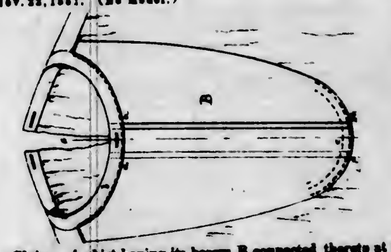


Claim.—The combination, with the vertical rotary shaft, of the disk C, secured thereon, and provided with hammers D, the cylinder B, and the lugs or anvils secured in the cylinder, the said disks successively increasing in diameter from the top to the bottom of the series, and the lugs being graded so as to successively extend farther toward the cylinder from the bottom to the top of the series, substantially as described.

255,863. EXTRACTION OF ANIMAL FAT FROM SLAUGHTER-HOUSE SCRAPS, &c. ALFRED J. HUNT, Paris, France. Filed Feb. 28, 1882. (No specimens.)

Claim.—The method herein described of extracting animal fats, comprising essentially, first, the treatment with aluminium chloride prepared by acting upon natural rocks or in other suitable way; and, second, the expression of the fat and gelatine at an elevated temperature by means of hot plates, centrifugal machines, or other suitable apparatus.

255,864. SHIRT. GEORGE D. HULL, Poughkeepsie, N. Y. Filed Nov. 22, 1881. (No model.)



Claim.—A shirt having its bosom B connected thereto at its upper end to the collar-band and yoke and at its lower end to the body of the shirt, and unattached elsewhere throughout its entire area, substantially as shown and described.

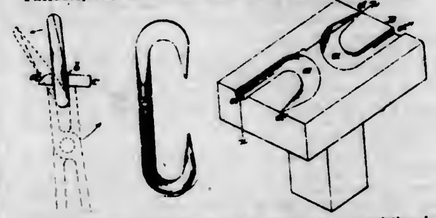
255,865. OVEN. MARTIN L. HULL, Cleveland, Ohio. Filed Nov. 14, 1881. (No model.)



Claim.—1. In an oven having two walls with an air-space between them, the combination, with the outer wall provided with openings to the outer air which are located near the base of the oven, of the inner wall provided with openings to the air-space between the two walls, said openings being located at the top of the inner wall, and tubular openings connecting the inner and outer walls and located near the base of the oven, substantially as set forth.

2. In an oven having an inner and an outer wall connected by inlets F, and having exits G and H, the combination, with a burner or other source of heat, A, of a dispersing-plate, E, and foraminating plate or floor E', substantially as set forth.

255,866. MANUFACTURE OF OPEN LINKS. DAVID HULTS, Philadelphia, Pa. Filed Sept. 6, 1881. (No model.)



Claim.—1. The method of making open links, consisting in pointing the ends of a piece of metal, bending the pointed ends into hook shape, placing the hooked portions in a die and flattening one face of each of said portions, then bending the double-hooked piece into link form, and finally spreading apart the link at the flattened ends, substantially as and for the purpose set forth.

2. The flat-faced die B', in combination with the die B, having a depression, a, which is shallow and elliptical and of the form of a pointed hook, whereby one face of the hook or head of the link is shaped, smoothed, and finished, and the other face flattened, substantially as and for the purpose set forth.

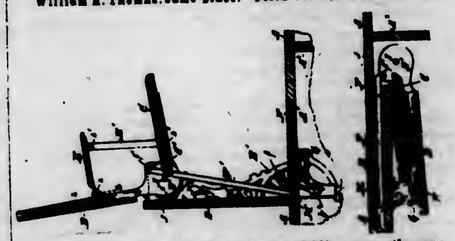
3. The shank provided with a notch, b, and cut away, as at d, substantially as and for the purpose set forth.

255,867. ADJUSTABLE DANDY-ROLL STAND. ROBERT HUTTON, Holyoke, Mass. Filed Feb. 20, 1882. (No model.)



Claim.—The combination of the coarse and fine cut screw by which the perfect adjustable movement of the support E is effected, and thereby the absolutely required position of the dandy-roll is secured.

255,868. OPERA-CHAIR. SIDNEY M. JOHNSON and AUGUSTUS M. DE SOUSSURE, Indianapolis, Ind., assignors of one-third to William H. Thomas, same place. Filed Oct. 6, 1880. (Model.)



Claim.—1. In an opera-chair having folding arms, the combination with the said arms and the back of the chair, of joints or hinges c, the contact portions of which are constructed at an angle, as shown, whereby said arms are caused to spread apart from each other when in position for use, but by which they are brought into substantially parallel relation when folded up, substantially as set forth.

2. The combination of the seat C, back D, arms E, hinges c, and rods or strips E', all constructed, arranged, and operating substantially as and for the purposes set forth.

3. The combination of the part B, having part B', provided with the projecting stud b', the seat C, having part C', having groove c^2 on its inner face and groove c' on its outer face, and the back D, having part D', provided with the stud d', said several parts B' C' D' being connected by a common pivot or rod, substantially as set forth.

4. The combination, substantially as described, of a folding

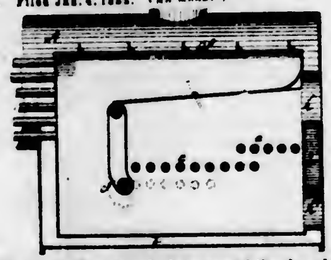
chair, the floor having an opening into which the chair is adapted to fold, and on the edges of which the chair-standard is pivoted, an independent floor-section, and the rods F F', connecting said floor-section with the folding chair, whereby said section, which fills the opening when the chair is in use, is folded up by the folding of the chair to permit the chair to drop into the opening, substantially as set forth.

5. The combination of the temporary floor-section F, the rods F F', the folding back D, and the standard B, all substantially as and for the purposes set forth.

6. The combination, with the main portion B of a folding opera-chair which moves on pivots H, of locks G, which are operated by means, substantially as described, to move sidewise at the proper point and engage with the adjacent floor or frame-work, thereby securing said portion of the chair in upright position, substantially as set forth.

7. The combination, with a folding opera-chair adapted to be folded into an opening in the floor, of locks G, attached to the sustaining portion of said chair, as shown, and provided with projections with which the folding back shall come in contact as it is folded or unfolded, and thereby force said lock out of or into engagement with the notch in the side of the floor-opening provided to receive it, substantially as and for the purposes set forth.

255,869. FIRE-BOX FOR LOCOMOTIVES. MICHAEL KNARR, North Springfield, and MELVILLE C. HAWLEY, St. Louis, Mo. Filed Jan. 6, 1882. (No model.)



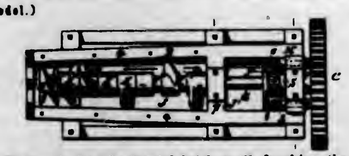
Claim.—1. In a downdraft-furnace of the class shown, the combination, with a tubular water-grate composed of two or more lines of transverse tubular bars and a water-space which forms the bottom of the ash-pit, said water-space communicating with the boiler, of a pendent partition, which forms the front wall of the fuel-chamber, projects below the grate, and causes the flame and products of combustion to impinge on the water-space, substantially as and for the purpose specified.

2. The combination, with a grate, of a pendent partition, which projects below the grate and is inclined or bent at a point below the grate to increase the deflection of the flame and products of combustion, substantially as and for the purpose specified.

3. The combination of a grate composed of two or more broken lines of transverse bars, with a vertical partition, which projects below the bars and is inclined or bent to increase the deflection of the flame and products of combustion, substantially as and for the purpose specified.

4. The combination of the grate composed of two or more broken lines of transverse tubular bars with the pendent water-partition, which projects below the bars, the water-partition and the bars communicating with the water-legs of the boiler, substantially as and for the purpose specified.

255,870. BRICK-MACHINE. PHILIP H. KELLS, ABRAM KELLS, and JACOB H. KELLS, Adrain, Mich. Filed Jan. 4, 1882. (No model.)



Claim.—1. In a horizontal brick or tile machine, the grinding-shaft provided with a flanged collar, in combination with the friction-wheels and their bearings, substantially as and for the purposes specified.

2. The shaft G, having spiral leaves N and annular flange, the tab B, master-wheel C, and washer S, combined with the bearings R and friction-wheels *e*, as set forth.

3. In a brick-machine, the lower semi-cylindrical casting having end bearings for the operating-shaft, a diaphragm for dividing the mud-box and to form a recess for receiving mechanism for modifying friction, and bearings for the attachment of a die-plate, as set forth.

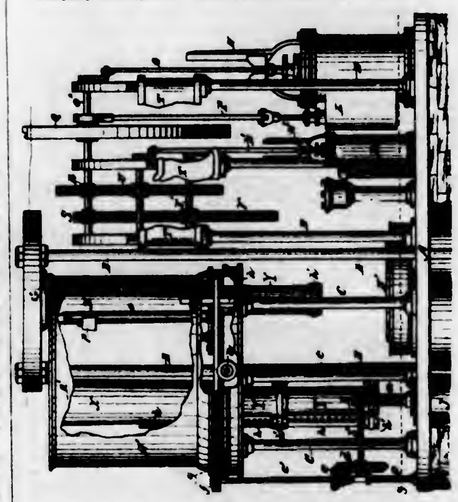
4. In a brick-machine, the lower semi-cylindrical casting, B, having bearings for the shaft G and die-plate E, and the diaphragm I, cast in one piece and adapted to serve with operating mechanism, a die-plate, and semi-cylindrical cap K, as and for the purposes set forth.

255,871. SPRING-HEEL FOR BOOTS AND SHOES. MICHAEL B. KERR, New York, N. Y. Filed Mar. 24, 1880. (No model.)



Claim.—The combination, with the heel A, provided with the tapering bore or passage B, of the tapering chambered block E, loosely arranged in the lower end of the said bore or passage and adapted to freely move vertically therein, a coiled spring, C, bearing at its lower end upon the block, and the screw D, secured in the said block and having its head confining the lower end of the spring in position, substantially as described.

255,872. HYDRAULIC PRESS. CORNELIUS KIMPLER, Chicago, Ill., assignor to himself and the Northwestern Fertilizing Company, same place. Filed July 27, 1881. (No model.)



Claim.—1. In a hydraulic press, the combination of two or more bark-receiving cylinders with a cap carrying two or more pistons or plungers operating within the cylinders, and a pressure cap or plate located at the discharge end of the cylinders and coacting with each of the latter, substantially as and for the purpose described.

2. The hydraulic cylinder I, having a rack, *a*, on the piston-stem, in combination with the pinion *b*, and gears *d*, *e*, and *f*, for operating the turn-table, substantially as specified.

3. The pinion *l*, in combination with the rack *m*, pinion *i*, and racks *h*, for lowering the plungers Y, substantially as set forth.

4. The combination of the turn-table carrying the fixed cylinders X with the pressure-plate G and cap E', said turn-table being arranged to rotate the cylinders alternately between the plate and cap and out, substantially as set forth.

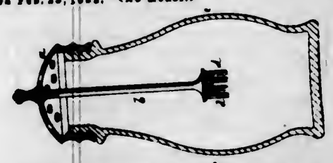
5. The combination of the turn-table with the fixed cylinders X and the plungers Y, supported and carried by the turn-table, substantially as specified.

6. The combination of the turn-table, the cylinders X, supported thereon, and the plungers Y with the hydraulic press E E' and hydraulic cylinders I and J, said members being arranged for operation substantially as and for the purpose described.

7. The combination of the pumps K, press E E', and hydraulic cylinders I J with the cylinders X and plungers Y, constructed and operating substantially as specified.

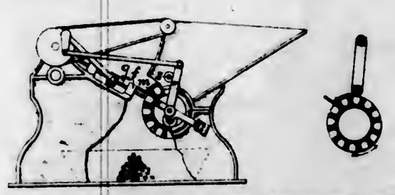
8. The discharging-piston J' and cylinder J, in combination with a cylinder, X, having a piston or plunger, Y, substantially as and for the purpose specified.

255,873. SALT-CASTER. JOSEPH J. KITTEL, Brooklyn, N. Y. Filed Feb. 23, 1882. (No model.)



Claim.—The combination of the bottle A, having bulged portion *c*, with the perforated cap *a*, to which is attached stem *b*, having downwardly-extending prongs *d d*, all being so arranged that said prongs are opposite the bulge *c*, substantially as and for the purpose specified.

255,874. CHERRY-SEEDING MACHINE. GEORGE W. KNAPP, Baltimore, Md. Filed Nov 3 1881. (Model.)

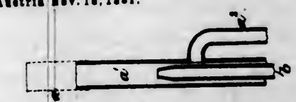


Claim.—1. In a cherry-seeder, the combination of a cylinder adapted to revolve and having sockets, each of which are to receive a cherry, a hopper from which the cherries are fed to the cylinder, and an endless belt or apron mounted in the hopper in proximity to the cylinder and constituting one of the walls of the hopper, as and for the purpose set forth.

2. In a cherry-seeder, the combination of a hollow cylinder adapted to revolve and provided with sockets to receive cherries, punches to reciprocate and arranged for the end of each punch to enter a socket, and two wires stretched through the cylinder and arranged to permit the ends of the punches to enter between the wires, as set forth.

3. In a machine for seeding cherries, the construction herein set forth, consisting of a hollow cylinder provided with holes leading into the cylinder for the passage thereinto of the seeds, and a shaft extending through the cylinder, having a spiral flange arranged to revolve in contact with the interior surface of the cylinder at its bottom, whereby the spiral flange serves both as a scraper and a seed-remover, as set forth.

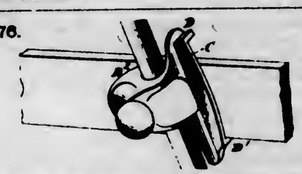
255,875. COMBINED AIR AND GAS BURNER. JAMES LEWIS, Safe Harbour, Arbor Square, County of Middlesex, England. Filed Dec. 28, 1881. (No model.) Patented in England Apr. 14, 1881, in France Oct. 14, 1881, in Germany Oct. 14, 1881, and in Austria Nov. 16, 1881.



Claim.—The improved burner described, consisting of tube *a'*, surmounted by the described cap *a*, and arranged and adapted for having a current forced into it under pressure, the tube *b* within the same, also adapted for a forced current under pressure, and the lateral tube or pipe a^2, entering tube *a'* at a point below the tip or exit end of tube *b*, and adapted for an induced current, these parts being combined and arranged for operation as shown, and described.

255,876. HARROW. LUPPS LUPPEN, Pekin, Ill. Filed Nov. 21, 1881. (No model.)

Claim.—1. The clip C, constructed substantially as shown and described, it having its pivotal point in a lug projecting from

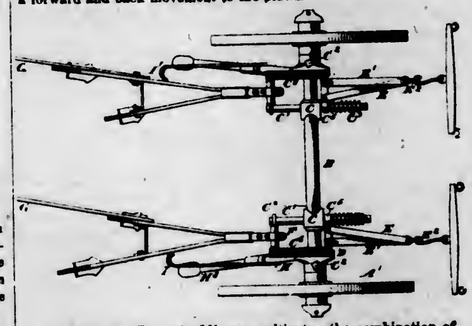


one side thereof, and being provided with a groove for the reception of the harrow-teeth, and with projections D and D' for determining the positions of the teeth, as set forth.

2. The combination of the clips C, having in it a groove for the reception of the tooth of a harrow, a pivotal point in a projection formed on one of its sides, and projecting lugs for determining the positions of the teeth, and a clamping-bolt for securing the clip to the beam of a harrow, the parts being constructed and arranged substantially as shown and described.

255,877. CULTIVATOR. LUPPS LUPPEN, Pekin, Ill. Filed Oct. 18, 1881. (No model.)

Brief.—A tongueless cultivator with jointed runners or foot, which carry the beam-supporting hooks. The draft-bars have lateral vibration at the front, and their rear ends are attached to frames arranged to slide back and forth on the axle, and thus give a forward and back movement to the plows.

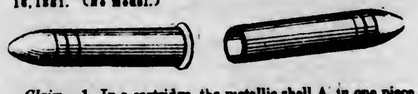


Claim.—1. In a straddle-row cultivator, the combination of an arched axle, a sliding frame, to which the forward ends of the beams are connected, and a draw-bar connected to the forward end of said frame, which is capable of lateral play at the draft end, substantially as and for the purpose set forth.

2. The sliding frame composed of rod or bar C', one end of which is provided with a spring, substantially as shown, the cross-bars C^1 and C^2, and flat grooved guide-bar C^3, the parts being constructed and arranged to operate substantially as and for the purpose set forth.

3. The combination, with the axle B, of the sliding frame, the draw-bars E E', the forward ends of which vibrate laterally, and the pivoted clevis E^2, substantially as and for the purpose set forth.

255,878. CARTRIDGE. HENRY MCGEE, Norwich, Conn., assignor of one-half to Thomas E. Ryan, same place. Filed Sept. 16, 1881. (No model.)



Claim.—1. In a cartridge, the metallic shell A, in one piece, having the weakened portion *a'* immediately joining its head and being firmly secured to the ball at its other end, substantially as and for the purpose set forth.

2. The metallic shell in one piece, having the weakened portion *a*, formed by cutting or molding a circular incision or groove around it, in combination with the ball, having a portion of itself turned upon the inbent edge of the shell, substantially as and for the purpose set forth.

255,879. SPUR. ALONZO MCMAHUS, New Britain, Conn. Filed July 18, 1881. (No model.)

Claim.—1. In a spur, the rim or heel-band clasp consisting of a single piece of metal, having the lugs which form the rowel-arms turned up therefrom and formed integral therewith, substantially as described, and for the purpose specified.

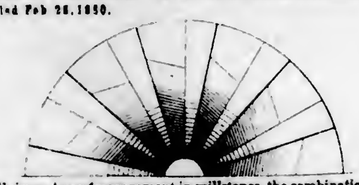
2. In a spur, the rim or heel-band clasp A, having the lugs

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which form the rowel-arms *a a* cut out and turned back from the body of the rim at the perforations and formed integral with said rim, substantially as described, and for the purpose specified.

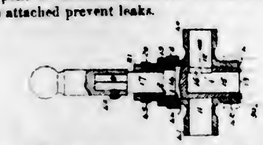
255,880. MILLSTONE. RUFUS MOODY, North Monmouth, Me. Filed Feb 28, 1880.



Claim.—As an improvement in millstones, the combination of the plane or level bed-stone with the runner, having slanting radial furrows, and intermediate ridges, having level or plane skirts and slanting tangentially-furrowed facets, as herein shown and specified.

255,881 FAUCET DAVID MORRISON, New York, N. Y. Filed Jan. 12, 1882. (No model.)

Brief.—The packing around the stem of the plug and the packing at the point of connection between the faucet and the pipe to which it is attached prevent leaks.

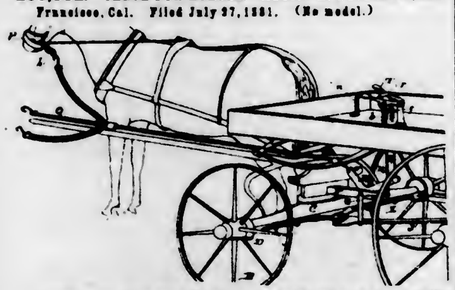


Claim.—1. The combination of the shell, the plug, the packing 4, covering the joint between the lower end of the plug and the shell, means for holding said packing in place, and the packing 45, surrounding the stem of the plug and held in place by a screw-cap, substantially as described.

2. The combination of the shell, the plug, the spring 3, held in place by a screw-cap, and the packing 45, surrounding the stem of the plug, and also secured in place by a screw-cap, substantially as described.

3. The combination of the shell, the plug having the shoulders 1 and 2, the spring seated on shoulder 1, the cap 19, holding the spring in place, the packing 45, surrounding the spindle 17, and the cap 21, holding the packing in place, all substantially as described.

255,882. CHECK FOR HORSES. MARTIN M. NATHANSON, San Francisco, Cal. Filed July 27, 1881. (No model.)



Claim.—1. The strap P, adapted to be placed over the nostrils of a horse, with means, substantially as described, for operating the same, as set forth.

2. The strap P, adapted to be placed over the nostrils of a horse, having pads *m* for the purposes described, with means, substantially as described, for operating the same, in the manner set forth.

3. The combination of strap P, adapted to be placed over the nostrils of a horse, strap Q, lever R, rod S, and lever T, for the purposes set forth.

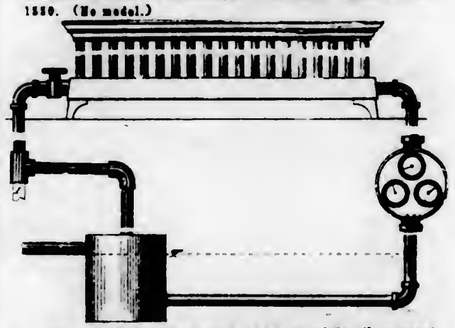
4. The means for checking horses, consisting of the strap P, with its pads *m* and springs *o*, or equivalent device, fitting over the nostrils of the horse and adapted to be tightened or drawn by the strap Q, bell-crank lever R, rod S, spring *f*, and foot-lever T, substantially as herein described.

255,883. INSECTICIDE COMPOUND. WILLIAM B. NEVILL, Steward's Mills, Tex. Filed Jan. 30, 1882. (No specimens.)

Brief.—Water is poured into the holes where the ants or other insects are, followed by one-half to one pint of the fluid, and a lighted match is then applied.

Claim.—The herein-described insecticide compound for the extermination of insects, consisting of bisulphide of carbon, sulphur, and sulphydric acid, in about the proportions specified.

255,884. METHOD OF MEASURING HEAT SUPPLIED FROM STEAM. EUGENE F. OSBORNE, St. Paul, Minn. Filed Oct. 20, 1880. (No model.)



Claim.—1. The method described of determining the amount of heat imparted by steam in a steam-heating apparatus, which consists in measuring or weighing the water condensed in said apparatus, and therefrom estimating the correlative amount of heat due to the condensation, reference being had to the pressure or temperature at which the steam is supplied to the apparatus, as set forth.

2. The method described of determining the amount of heat imparted by steam in a steam-heating apparatus, which consists in first supplying the steam at a known pressure or temperature to said heating apparatus; second, condensing the steam within said apparatus; and, third, measuring or weighing the water so condensed as a basis of estimate in calculating the quantity of heat supplied, as set forth.

3. In combination with steam-heating apparatus, means whereby the water condensed in such apparatus may be automatically weighed or measured and the quantity of such water registered, as and for the purpose stated.

255,885. THERMO-ELECTRIC BATTERY. ANDREW PATTERSON, Idlewood, Pa. Filed Jan. 9, 1882. (No model.)



Claim.—1. The combination of the members of a thermo-electric couple with a mass of refractory insulating materials in which they are embedded, whereby fusible or oxidable materials may be used for the couple without injury from fusion or oxidation, substantially as described and set forth.

2. A mass of refractory insulating material having embedded therein one or more thermo-electric couples, consisting of fusible and infusible elements, the fusible element of each pair being placed below the infusible one, as and for the purpose specified.

3. A mass of refractory insulating material having embedded therein one or more thermo-electric couples, consisting of two fusible elements, the member or element of greater specific gravity being placed below the one of less specific gravity, as and for the purpose specified.

4. As a new article of manufacture, a thermo-electric brick consisting of a mass of refractory insulating material enveloping one or more thermo-electric couples, substantially as described and shown.

255,886. MECHANICAL TOY. JOEL W. PERKINS, East Hampton, Conn. Filed Feb. 16, 1882. (No model.)

Claim.—1. In a mechanical toy, a screw bearing a ball and

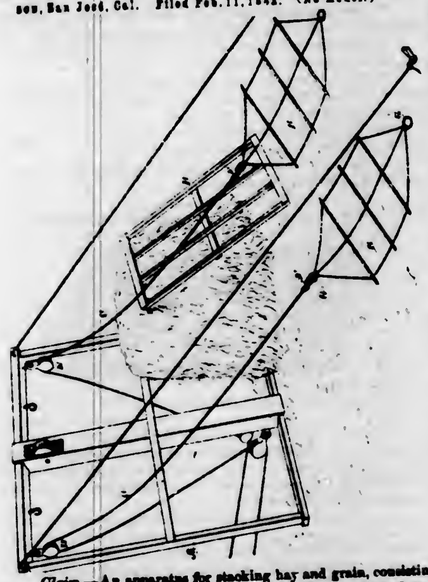
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pivoted to a wheeled frame and attached to the axle by intermediate mechanism, whereby the revolutions of the wheel and axle operate the device, all substantially as described.

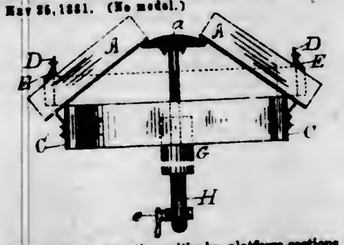
2. In a mechanical toy, in combination, a frame, *a*, wheels *b* and *c*, axle *d*, crank *e*, pitman *f*, sceesw *g*, and bell *h*, all substantially as described.

255,887. HAY-STACKING APPARATUS. GAMOR RICHARDSON, San José, Cal. Filed Feb. 11, 1882. (No model.)



Claim.—An apparatus for stacking hay and grain, consisting of the frame A, with its direction-pulleys D E, rope C, and nets B, in combination with the inclines H, substantially as and for the purpose herein described.

255,888. DUMPING-CAR. ISAIAH B. ROBBINS, Stockton, Cal., assignor of one-half to Joseph B. Morgan, Brooklyn, N. Y. Filed May 26, 1881. (No model.)



Claim.—1. In combination with the platform-sections A A, hinged to the frame sides C C, the cylinders G G, the piston-rods of which are provided with oval heads *a*, attached beneath and at the circular openings of the transverse timbers F F of the car-frame and connected together by an air-pipe, H, having a stop-cock, *c*, in each end, the said air-pipe H being connected to that of the other cars, and the entire series being connected with and supplied with compressed air from any style of air-compressing apparatus, all substantially as herein described and set forth.

2. In a dumping-car, the platform constructed in two longitudinal sections, each section hinged to its respective frame side, in combination with air-cylinders attached beneath the said platform-sections to transverse timbers of the car-frame, the pistons of said cylinders having oval heads and moving upward to tilt the platform-sections in response to pressure of compressed air forced through pipe connecting the cylinders, said pipe having stop-cocks in each end adapted to shut off or admit the supply of air so as to unload one car only or several simultaneously, as herein shown and described.

3. In a dumping-car, the combination of a platform made in two center-opening longitudinal sections and tilting right and left, the air-cylinders, and devices tilting the platform-sections by pressure of compressed atmospheric air, substantially as described.

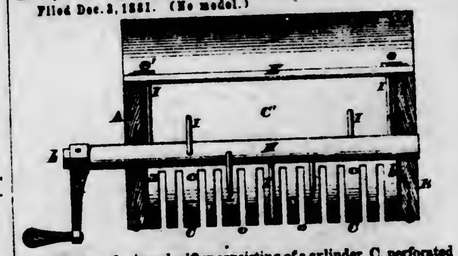
4. In a dumping-car, a platform composed of longitudinal sections A, hinged to the frame sides C, said frame sides C having bolted thereto standards D, provided with slots carrying side boards, E, which latter are loosely bolted in the slots of standards D, so as to permit of the free escape of the load when the platform-sections A are tilted for that purpose, all as herein shown and described.

5. In a dumping-car, as a means of unloading the same, the combination of a platform made in two longitudinal sections which are hinged each to its respective side of the car-frame, air-cylinders attached beneath transverse timbers of car-frame, provided with pistons having oval heads working upward through openings in said transverse timbers, and an air-pipe connecting the air-cylinders together and having a stop-cock in each end, which air-pipe, being connected to any suitable compressed-air apparatus, permits by a proper adjustment of the stop-cocks a flow of compressed air into the cylinders, the pistons of which, responding to the pressure, permit the oval heads to raise the platform-sections and discharge their loads to right and left, substantially as herein described.

6. In combination with a railroad or similar car, a platform made in two longitudinal sections, A, hinged each to its respective sides C of the car-frame, and having applied thereto power by means of compressed atmospheric air supplied from any air-compressing apparatus through air-pipe H to air-cylinders G, attached to and beneath transverse timbers F of car-frame, as and for the purposes specified.

7. The air-cylinders G G, attached beneath the transverse timbers F F, arranged in relation to platform-sections A A and air-pipe H, the latter being provided with stop-cocks *c c* and connected with any air-compressing apparatus, so that air may be forced through said pipe H and air-cylinders C C to raise platform-sections A A by its pressure, all substantially as and for the purposes herein set forth.

255,889. ASH-SIFTER. ANDREW SCHISLER, Newport, Ky. Filed Dec. 3, 1881. (No model.)



Claim.—1. An ash-sifter consisting of a cylinder, C, perforated at the bottom *c*, and terminating at the rear with an inclined chute, D, said cylinder being traversed with a revolving shaft, H, armed with projections I, for the purpose specified.

2. An ash-sifter provided with loops G G′, that perform the twofold purpose of handles and bearings for the implement, as herein described.

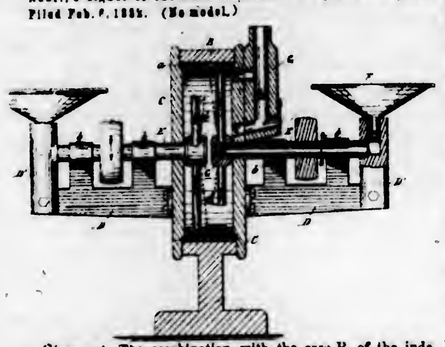
3. The ash-sifter C D H I, supported in front by the loops G G′, or their equivalents, and at rear by the lower edge of the inclined chute D, as herein described.

4. The combination, in an ash-sifter, of a slotted or perforated cylinder and a revolving shaft armed with pins, which latter are in the same plane with the spaces between said slots, for the purpose specified.

5. The sheet-metal linings *a b*, applied respectively to the inner surfaces of the wooden heads A B of an ash-sifter, for the purpose specified.

6. An improved ash-sifter, consisting of the heads A B, perforated cylinder C *c*, inclined chute D, rail E, hinged flap *e f* F, bearings G G′, and agitator H I, as and for the purpose specified.

255,890. PULVERIZER. WILLIAM S. SCARFFNECK, Blair, Nebr., assignor of one-half to Alexander Majors, same place. Filed Feb. 6, 1882. (No model.)



Claim.—1. The combination, with the case B, of the independent sets of hollow arms revolving therein in opposite directions, and means, substantially as described, for supplying the material to said arms, as and for the purpose specified.

2. The combination, with the case B and the hollow arms revolving therein, of the hollow shafts communicating with and carrying said arms, and suitable feeding devices, substantially as and for the purpose specified.

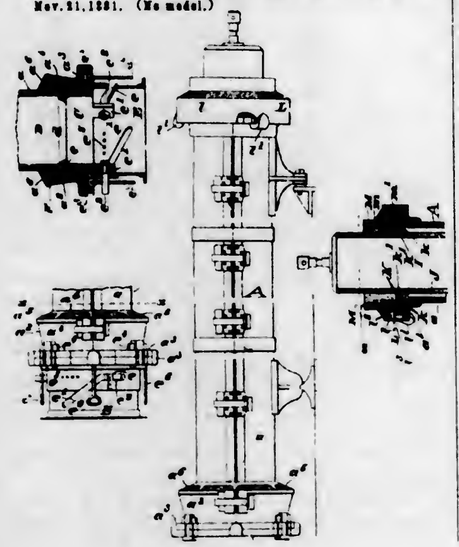
3. The combination, with the case B, of hollow arms secured at an angle to their operating shafts and revolving within the case in opposite directions, and suitable feeding devices, substantially as and for the purpose specified.

4. The combination, in a pulverizer, of an outer case, suitable feeding devices, and a hollow revolving shaft with a revolving instrument mounted upon said shaft and provided with passages running from the passage through the hollow shaft toward the periphery of the case, substantially as described, and for the purpose specified.

5. The combination, with the case B, the hollow arms revolving therein, and the shafts E, of the brackets D, provided with the boxes *b b*, and hollow castings D', substantially as and for the purpose specified.

6. The combination, with the case B, of the hollow arms *d*, the shafts E, the outlet G, and suitable means for feeding material and for regulating the amount of air admitted to the case, as and for the purpose specified.

255,891. PIPE MOLDING AND CASTING APPARATUS. FREDERICK SHICKLE, St. Louis, Mo., assignor of two-thirds to John W. Harrison and Thomas Howard, both of same place. Filed Nov. 21, 1881. (No model.)



Claim.—1. In a pipe-molding apparatus, the bottom C, said bottom being rotatable horizontally and movable vertically in its support, for the purposes described.

2. In a pipe-molding apparatus, the bottom C, said bottom being rotatable horizontally in its support, for the purpose described.

3. In a pipe-molding apparatus, the bottom C, said bottom being movable vertically in its support, for the purpose described.

4. The combination of the bottom C, having the lugs *c'* and studs *c²*, and the stand E, having the slots *e e'*, substantially as described.

5. The flask A, having the part *a²*, having openings *a³*, for the purpose described.

6. The flask A, having the openings *a⁴*, and the bottom C, for the purpose described.

7. A pipe-molding flask for molding pipes the bell end downward, having openings, such as *a³*, for the purpose described.

8. The combination of the flask A, having the openings *a⁴*, the bottom C, and the stand E, substantially as described.

9. The combination of the bottom C, lugs *c'*, studs *c²*, and the slotted stand E, having the perforations *e²*, substantially as described.

10. The combination of the flask A, pattern D, and ring G, having the wings *g*, and bead *g'*, substantially as described.

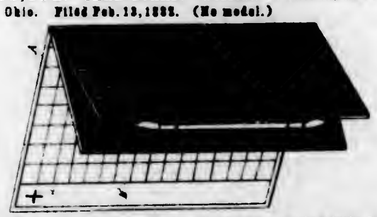
11. The combination of the flask A, having the flange *a'*, the ring K, and the clamp L, substantially as described.

12. The combination of the flask A, flange *a'*, having the openings *a⁵*, the clamp L, having the band *l*, hooks *l'*, and projections *l²*, and the ring K, substantially as described.

13. The combination of the flask A, the ring K, the clamp L and the ring M, substantially as described.

14. The combination of the flask A, the ring M, the band *l* and the sand *m'*, substantially as described.

255,892. GAME-BOARD. WILLIAM B. SILVIS, Cleveland Ohio. Filed Feb. 13, 1882. (No model.)



Claim.—1. A diagram for playing a game indelibly formed on a slate, said diagram having spaces which are adapted to be marked on by a slate or lead pencil, substantially as and for the purpose shown and described.

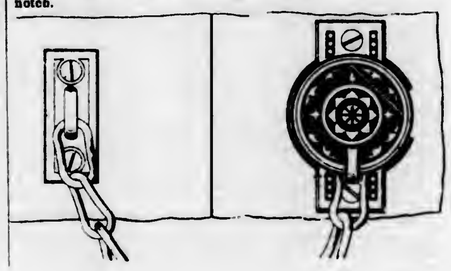
2. A diagram for playing a game indelibly formed on a slate, said diagram consisting of lines crossing each other at right angles, substantially as and for the purpose shown and described.

3. The combination, with the slate A, having an indelible diagram formed thereon, of the characters *a b*, substantially as and for the purpose shown and described.

4. The combination, with the slate A, having an indelible diagram formed thereon, of the pencil-holder adapted to hold two pencils, substantially as and for the purpose shown and described.

255,893. DOOR-CHECK. WILLIAM E. SPARKS, New Britain, Conn., assignor to P. & F. Corbin, same place. Filed Feb. 16, 1882. (No model.)

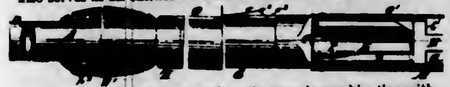
Brief.—A rotating button provided with a rib formed by two recesses, into which the link is inserted, is pivoted upon a base having a notch in its side, whereby the link can be disengaged from the rib only when the recesses of the button are brought opposite the notch.



Claim.—In a chain-fastener, the combination of the base having the notch *a* at one edge and the rotating button pivoted thereto having the link-receiving recesses and holding-rib, substantially as described, and for the purpose specified.

255,894. MAGAZINE FIRE-ARM. CHRISTOPHER H. SPENCER, Hartford, Conn., and SYLVESTER H. ROPER, Boston, Mass. Filed Jan. 9, 1882. (No model.)

Brief.—A breech-block and carrier, formed in a single piece, is pivoted in the frame, and is moved to receive a cartridge from the magazine and to carry it to the barrel by a sliding rod, a stud on which engages with a cam and pivoted switch-plate on the side of the block. Another arm on the opposite side carries a pivoted catch, which engages the flange of the feeding-cartridge, forces it into the carrier, afterward from the carrier into the barrel, and also serves as an extractor to remove the shell from the barrel.



Claim.—1. In a breech-loading shotgun, in combination with a movable breech-block, substantially such as described, a forked slide provided with a handle adapted to be reciprocated in a path parallel with the axial line of the barrel, the two arms or branches of such slide being provided the one with a cam-pin and the other with an extractor and inserter.

2. The cam-pin *g* and means for reciprocating the same across the wall of the receiver in a path substantially parallel to the axis of the barrel of the gun, in combination with the switch-cam *e*, pivoted to the recessed side wall of the oscillating breech-block C, and the mainspring F of the lock, substantially as set forth.

3. In combination with a movable breech-block, substantially such as described, the reciprocating yoke H, carrying the arms for operating the breech-block and the extractor and inserter, and provided with the hollow handle H', and means for guiding the same in a path parallel with and beneath the barrel of the gun, as set forth.

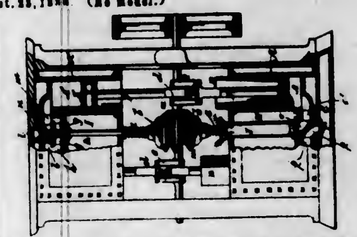
4. The hollow handle H' of the reciprocating yoke H, carrying the arms for operating the breech-block and the extractor and inserter, supported upon and guided by the magazine D, substantially as set forth.

5. The reciprocating yoke H, carrying the arms for operating the breech-block and the extractor and inserter, in combination with the spring-latch *h'* and a slot or shoulder, *d'*, for engaging the nose of the latch and stopping the backward movement of the yoke when fully extended forward.

6. The movable breech-block containing the carrier-coil I, and the reciprocating arm O, carrying the extractor and inserter, or catch *o*, provided with the notch *o²*, in combination with means, substantially such as described, for moving the breech-block and for reciprocating the arm O and catch *o*, substantially in the manner set forth, whereby one side of the notch *o'* catches upon and extracts the shell from the chamber of the gun during the backward excursion of the arm O, and the opposite side of the notch *o²* engages the base of the cartridge in the carrier-coil, when, by the movement of the breech-block, the carrier-coil is brought into alignment with the chamber, and during the forward excursion of the arm O inserts the cartridge into the chamber, substantially as described.

7. The top of the breech-block, provided upon one side with the upwardly and inwardly curved side wall, *p*, for the purpose of giving a sidewise direction to the shell when being thrown out of the cavity P by the upward movement of the breech-block, substantially as described.

255,895. COLD-AIR MACHINE. HENRY F. STARBUCK, Chicago, Ill., assignor to William A. Reynolds, same place. Filed Oct. 28, 1880. (No model.)



Claim.—1. A main receiving-chamber or reservoir for compressed air, in combination with compressing-cylinders A and rotary valve B, having its body provided with ports *o p*, and located in a casing or chamber provided with ports *o' p'*, leading to the cylinders for alternately charging and discharging the cylinders, substantially as specified.

2. A main receiving-chamber or reservoir for compressed air, in combination with expanding-cylinders A' and a rotary valve having its body provided with chambers *g n*, and located in a casing or chamber provided with passages *h*, ports *m*, inlet-port *f*, and exhaust-port *o*, for supplying air to the cylinders and withdrawing it therefrom, substantially as and for the purposes specified.

3. A main receiving-chamber or reservoir for compressed air, in combination with compressing-cylinders A, rotary valve B, having ports or openings *o p*, and located in a casing or chamber having ports *o' p'* leading to the compressing-cylinders, and discharge-port *r*, expanding-cylinders A', and rotary valve B', having chambers *g n*, and located in a casing or chamber provided with inlet-port *f* and outlet-port *o*, and with openings or passages *h* and ports *m*, leading to the expanding-cylinders, for forcing air into the receiving-chamber or reservoir and withdrawing it therefrom, substantially as specified.

4. The air-supply pipe J, and rotary valve B, having openings or ports *o p* through its body, and located in a casing or chamber having ports *o' p'*, in combination with the compressing-cylinders A and a main receiving-chamber or reservoir for supplying air under pressure to the chamber or reservoir, substantially as specified.

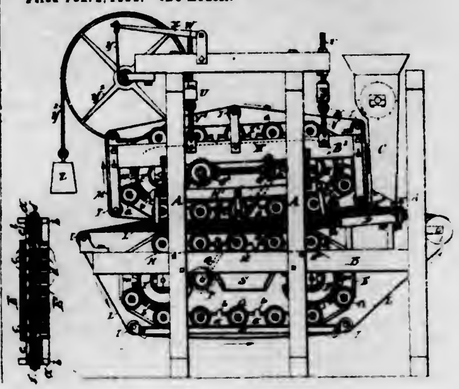
5. A rotary valve for supplying air, having its body provided with openings or ports *o* and *p*, leading respectively from the top of the valve to the side thereof and from the bottom of the valve to the side thereof, in combination with a casing or chamber adapted to receive the valve, and having ports *o' p'*, in communication with which the ports *o p* are alternately brought by the rotation of the valve, and receiving and discharging cylinders communicating with the chamber or casing through the ports *o' p'* for supplying air to one cylinder while the other is being discharged, substantially as specified.

6. A rotary valve, B', having on opposite sides of its exterior chambers, *g n*, located one above the other, in combination with a casing or chamber adapted to receive the valve, and having inlet-port *f*, which communicates with the chambers *g*, air passages or openings *h*, receiving and discharging ports *m*, and exhaust-port *o*, communicating with the chambers *n*, and expanding-cylinders communicating with the chamber or casing through the ports *m*, for supplying air to the cylinders and discharging it therefrom, substantially as specified.

7. In a refrigerating-machine, the combination of two compression-cylinders, A, rotary valve B, having ports *o p*, and located in a chamber or casing having ports *o' p'*, leading to the cylinders, with a compressed-air reservoir or chamber, C, connecting-pipes C', and cooling-tanks H, for supplying air to the cylinders and educting it therefrom, and keeping the cylinders and valve cool and at the proper temperature for use, substantially as specified.

8. In a refrigerating-machine, the combination of two expanding-cylinders, A', and a valve, B', constructed as described, and located in a chamber or casing formed as described, with a cooling-chamber in which the cylinders are located, and a main receiving chamber or reservoir for compressed air for keeping the cylinders and valve cool and forming a cooling-chamber and ice-box, substantially as and for the purposes specified.

255,896. CIDER-PRESS. JOHN STEVENS, Saranac, N. Y. Filed Feb. 2, 1882. (No model.)



Claim.—1. The within-described movable endless press-bed, consisting of a series of wooden blocks flexibly connected to each other, and having a vertically-perforated center portion, and recesses *c c* at the sides of their upper face, with channels *l* divergent from the edges of the block, substantially as shown.

2. The press-bed section composed of the block E', provided with perforations *d*, made flaring at the upper end, and the plate E, removably secured to the top of the block E', and having the perforations *c c* over the flared perforations of the said block, substantially as described and shown.

3. The combination of the block E, having the flared perforations *d d* and recesses *c c*, with channels *l*, convergent toward the center, and the plate E, having perforations *c c*, over the flared ends of the perforations of the block E', substantially as described and shown.

4. The within-described press-bed section, formed of the wooden block E', made convex and concave, respectively, at opposite ends, and having flared perforations *d d* and recesses *c c*, with convergent channels *l*, the plate E, secured to the top of the block E' and provided with the perforations *c c*, the clamps *a*, provided with ears *g*, and the rod *f*, passing horizontally through the solid portion of the block E', between two rows of the perforations thereof, substantially as and for the purpose specified.

5. In combination with the clamps *a*, the wooden block E', having the side rabbets, *n*, and its central portion projecting below the base of the clamps, substantially as and for the purpose set forth.

6. In combination with the perforated block E' and its clamps *a*, the perforated plate E, provided with concavo-convex projections *h h* at the sides of its edge adjacent to the companion press-bed section, substantially as described and shown, for the purpose set forth.

7. The perforated block E', the clamps *a*, provided with ears *g g* and with cog *b*, the shafts *g' g'*, and rollers G G, in combination with the carrying-wheels F, provided with interstices *m*, substantially as shown and set forth.

8. In combination with the movable endless pressing-surfaces and upper endless apron, M, the lower apron, L, having doubled side portions, *p*, and the rollers K, pivoted in a vertical position at opposite edges of the apron L, substantially in the manner described and shown, for the purpose set forth.

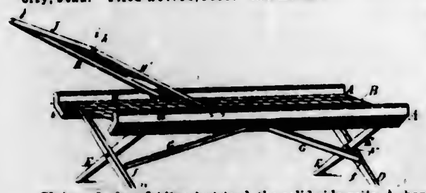
9. In combination with the movable endless pressing-surfaces and upper endless apron, M, the lower apron, L, having doubled side portions, *p*, the rollers K, pivoted in a vertical position at opposite sides of the apron L, and the trough D and spout T, all combined and operating substantially in the manner shown and set forth.

10. The apron L, provided with the projection *i*, in combination with the trough-lining provided with the guide *k*, as and for the purpose set forth.

11. In combination with the movable endless pressing-surfaces and the chute C, the endless apron L, having the doubled side portions, *p*, and projections *i*, the vertical rollers K, trough E, its lining J, provided with guide *k*, the spout T, and endless apron M, all as shown and set forth.

12. In combination with the upper endless pressing-surface, composed of a series of blocks hinged together and carried by wheels F, as described, the frame B', having journaled thereon the wheels F F, the suspension-rod V, connected to one end of said frame and supported adjustably by the screw-rod *r*, the rods V', connected to the opposite end of the frame B', and to a cross-bar, U, the post W, lever X, windlass Y, ropes *y y'*, and weight Z, all combined and arranged to operate substantially in the manner described and shown.

255,897. FOLDING COT-BED. CARL J. SUNDBECK, Salt Lake City, Utah. Filed Nov. 11, 1881. (No model.)



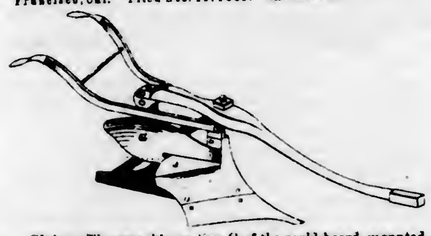
Claim.—1. In a folding bedstead, the solid side rails, A, having concave inner sides, as described, in combination with a flexible bed-bottom, B, and folding legs D E, pivoted to the said solid rails, substantially as and for the purpose specified.

2. In combination with the solid angular side rails, A, as described, and the flexible bed-bottom B, secured thereto, the legs D E differing from each other in length above and below their pivoted connection F, and pivoted to the inside of the said rails at different elevations and at lateral distance apart, substantially as and for the purpose described.

3. The combination of the solid angular side rails, A, having hook-braces G pivoted to the outside of the lower portion, *b*, of one or both of them, with the flexible bed-bottom B and the folding legs D E, pivoted to the said side rails and provided with staples *f* or their equivalents, substantially as specified.

4. In combination with the side rails, A, of a folding bedstead, the adjustable head-rest pivoted to the inside of the upper rail portions, *a*, and consisting of the side bars, H H', connected by the flexible sheet I, and the brace J, hinged with one end to one of the said bars, H, and interlocking at its other end with the other bar, H', substantially as specified.

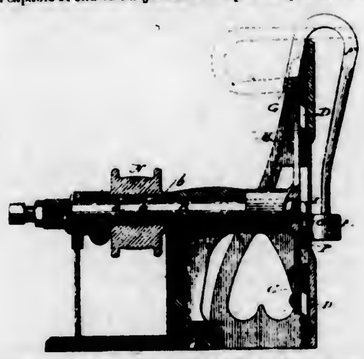
255,898. VINEYARD-PLOW. AUGUSTUS C. TAYLOR, San Francisco, Cal. Filed Dec. 19, 1881. (No model.)



Claim.—The movable portion G of the mold-board, mounted on a vertical pivot and moving in a horizontal arc, in combination with the lower fixed portion, F, and brace I, all constructed, arranged, and operated as set forth.

255,899. MACHINE FOR TRIMMING HEMS AND SEAMS OF SEWED FABRICS, &c. JOHN F. THOMAS, Ilion, N. Y. Filed Jan. 18, 1882. (No model.)

Brief.—The movable reversible cutters are provided with separate cutting-edges; the reversible stationary cutter with two. The shaft is capable of endwise adjustment independently of the pulley



Claim.—1. The cutter D, provided with the four separate edges and so made that it can be reversed end for end and face for face, substantially as described.

2. The stationary holding and cutter plates R, provided with the right-angled edges and with the holes or means of securing them in place, arranged substantially as shown, whereby they can be reversed, and thus bring their different edges into operation successively at will, as set forth.

3. The adjustable shaft B, having the pulley N secured thereon, so as to turn with the shaft, but allow the latter to move endwise independently of the pulley, in combination with the frame A, constructed to form end bearings for the pulley, the adjusting-screw K, and bearing-stud I, all arranged to operate substantially as and for the purpose set forth.

4. In combination with the adjustable shaft B, having the cutters D attached at right angles thereto, as shown, the spring arm or plate O, provided with the stud I, arranged to bear against the end of the shaft B, substantially as shown and described.

5. The combination, in a seam or cloth trimming machine, of the reversible moving cutters and the stationary reversible cutter or holding plates, substantially as shown and described.

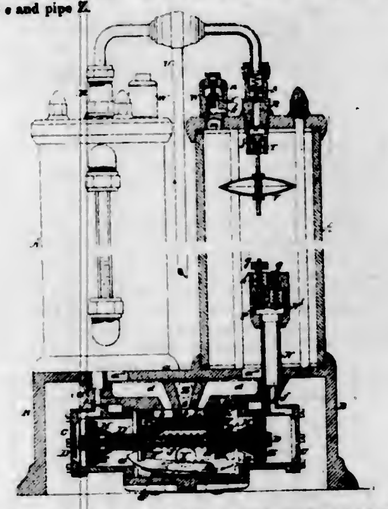
255,900. CUSHION-PROTECTOR FOR BOTTLES. JAMES H. THORPE, San José, Cal., assignor of one-half to Joseph A. Bolleli, same place. Filed Dec. 8, 1881. (No model.)



Claim.—A friable vessel provided with two sets or series of grooves, *a a'*, in combination with adjustable elastic rings *b b'*, fitting in said grooves, as and for the purpose set forth.

255,901. AIR-COMPRESSOR. WILLIAM WADE, Philadelphia, Pa. Filed Dec. 7, 1881. (No model.)

Brief.—Water is admitted into cylinder C through pipe Y and enters cylinder A through ports *e b d a''*. When the air is forced from A into the storage-tank the pressure of the water opens valve P, which admits it to the rear of piston E. As the piston moves the collar D' compresses spring J and the conical head H strikes and presses down the dog G, thereby relieving the saddle F, which is forced either to the right or the left by the spring J, carrying with it the plate L and valve K, which govern the ports *e b d*. In the head N' is a valve, Q, through which any water that may have remained between the head of cylinder C and piston E may be forced into cylinder A. The exhaust takes place through ports *a'' d b e* and pipe Z.



Claim.—1. The water-supplying cylinder C and its piston-rod and pistons reciprocating longitudinally therein, in combination with chest M, which is formed with ports *d d* and exhaust-port *e*, and the air-compressing cylinders A A, each of which has communication with one of said cylinders A A, said cylinders being provided with suitable valves to allow the air to be compressed within them by the influx of the water and afterward expelled thereby, substantially as set forth.

2. The water-supply cylinder C and water and air receiving cylinders A A, in combination with the pipes N, having valves substantially as described, the plate *a*, with openings *a''*, and the chest M, whereby said cylinders A communicate both with said chest M and the ends of said supply-cylinder C, for the purpose set forth.

3. The valve K, seat-plate L, and chest M, in combination with the piston-rod with heads H, the saddle F, and dogs G, substantially as and for the purpose set forth.

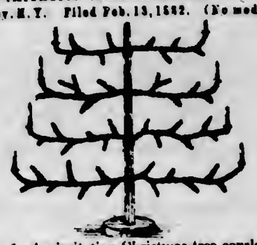
4. The piston-rod having at each end a piston and an encircling sleeve, in combination with the sliding saddle and valve, the loose collars, and the spring between them, the chest and the water and air receiving cylinders A A, and the water-supply cylinder C, substantially as and for the purpose set forth.

5. The water-supply cylinder C and water and air receiving cylinders A A, in combination with the pipes N, each having an adjustable valve, P, substantially as and for the purpose set forth.

6. The cylinder C and a cylinder, A, in combination with the pipe N, having an upwardly-opening valve, Q, and downwardly-opening valve, P, and the chest M, having a port, *f*, through which water passes from said pipe to cylinder C, a port, *d*, through which water passes to cylinder A, and a discharge-port Z, all substantially as set forth.

7. In combination with the air-compressing cylinders A A and the water-supplying cylinder, pistons, and piston-rod, the pipes N, provided with downwardly-opening valves P and upwardly-opening valves Q, substantially as set forth.

255,902. IMITATION CHRISTMAS-TREE. AUGUST WENGERNOTH, Troy, N. Y. Filed Feb. 13, 1882. (No model.)



Claim.—1. An imitation Christmas-tree consisting of an upright trunk, detachable covered wire branches, and means whereby the branches are attached to the trunk, substantially as set forth.

2. An imitation Christmas-tree consisting of a trunk, detachable branches, a detachable top section, and means for attaching the branches and top section to the trunk, substantially as set forth.

3. In an imitation Christmas-tree, the combination of a trunk having longitudinal grooves, and eyes secured into the grooves, with covered wire branches having bent inner ends, which are inserted into the eyes of the trunk, substantially as set forth.

4. In an imitation Christmas-tree, a branch made of wire covered with chenille, as set forth.

5. In an imitation Christmas-tree, the combination of a covered wire branch or twig with a spirally-bent terminal and a drip-cup below the same for the candle, as specified.

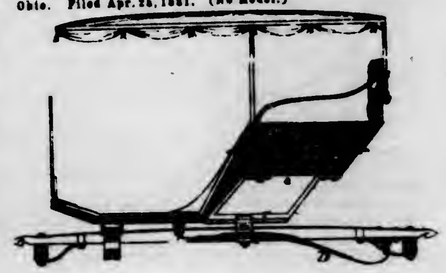
6. In an imitation Christmas-tree, the combination of a trunk, a detachable top section, detachable branches, means for attaching the top section and branches to the trunk, and means arranged at the ends of the top section and the branches for holding the candles, substantially as specified.

255,903. SPRING FOR VEHICLES. WILLIAM WOICHESKI, Atlanta, Ill. Filed Jan. 3, 1882. (No model.)



Claim.—A half-spring for vehicles, consisting of a series of lapped leaves, the under one of which is bent outwardly at one end and adapted to be secured to a side bar of a vehicle, while its inner end is bent upwardly, covering the ends of the upper leaves, and then bent inwardly to adapt it to be secured to the gear of a vehicle, substantially as set forth.

255,904. VEHICLE-SPRING. HORRIS WOODHULL, Dayton, Ohio. Filed Apr. 25, 1881. (No model.)

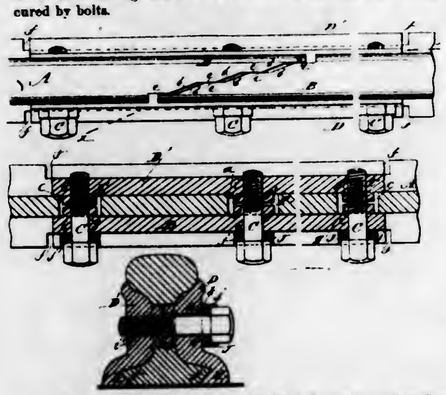


Claim.—1. The combination, with the springs of a vehicle, of a fulcrum adjustably bolted to said springs and provided with engaging-ribs adapted to slip over and be connected with a rigid support attached to the carriage-body, substantially as described, and for the purpose specified.

2. In a phaeton-buggy, the combination of half side springs running lengthwise of the rear half of the phaeton-body, the forward ends of which are bolted or hinged to the body and the rear ends of which are suitably connected to the rear axle or other support contiguous to said axle, in combination with a supporting or bridging iron connected to the body, and an adjustable or stationary connecting device for uniting said springs and supports, whereby a strong, elastic, and leveling support is obtained for the rear part of the vehicle, substantially as set forth.

255,905. JOINT FOR RAILROAD-RAILS. JAMES MORRON ADAMS, Stanberry, Mo. Filed Dec. 26, 1881. (No model.)

Brief.—The rail ends are scalloped to form straight and diagonal portions, and have their lower flanges cut to form lips. Fish-plates having claws adapted to fit in said lips are provided with tenons fitting into mortises formed in the rails, and are secured by bolts.

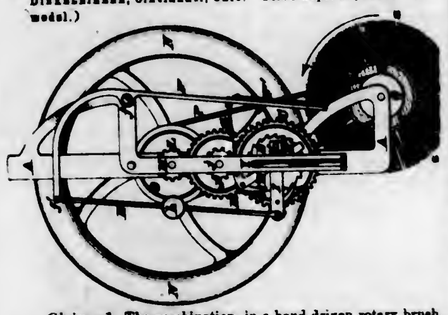


Claim.—1. The laps or splices B B of the rails, scalloped so as to form the straight portions *a e* and the diagonal portions *b b*, substantially as and for the purposes set forth.

2. The fish-plates D D', formed with the claws *d*, in combination with the rails formed with the lips *f f*, substantially as described.

3. The rails formed with the laps B B, the mortises *c*, and slots or cut-away places *e*, and the lips *f*, in combination with the fish-plates formed with claws *d* and the tenons *g* and *g'*, substantially as and for the purposes described.

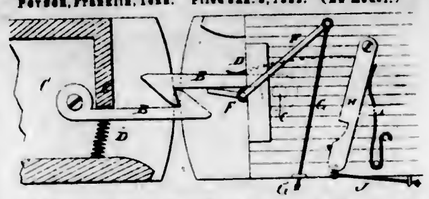
255,906. ROTARY BRUSH. CHARLES ALBERT and JOHN G. DIENELBIELER, Cincinnati, Ohio. Filed Sept. 27, 1881. (No model.)



Claim.—1. The combination, in a hand-driven rotary brush, of frame A, fixed handle X, and loops Y F', said loop F' being attached to the lever F, that actuates the gearing journaled in said frame, substantially as herein described.

2. The combination, in a hand-driven rotary brush, of ratchet-wheel D, levers E E' I, pawls *e i*, actuating-rods G H, and pin *i'*, which pin projects from the heel of lever I and serves as a stop for the heel E' of the other lever, E, as herein described.

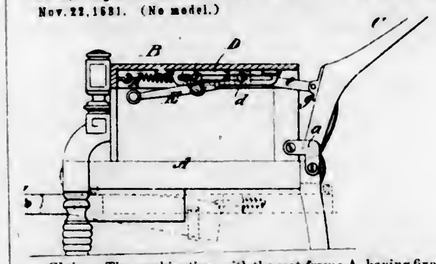
255,907. CAR-COUPLING. JOHN W. ALLEN and ASHLEY B PEYSON, Franklin, Texas. Filed Jan. 3, 1882. (No model.)



Claim.—1. In a car-coupling, the combination, with the spring-pressed coupling-hooks B, of the lever F, pivoted to the end of the car and having its upper end extending over the top of the car, and the rope G, secured to the said lever and passing down to the sides of the car, substantially as and for the purpose set forth.

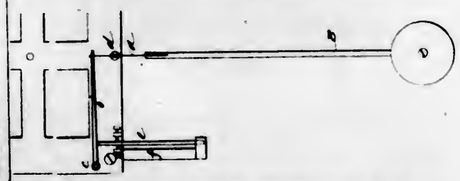
2. In a car-coupling, the combination, with the spring-pressed coupling-hook B and the crank-lever F, having its upper end extending over the top of the car, of the notched catch-bar H, pivoted to the top of the car, the spring I, and the rope J, substantially as and for the purpose set forth.

255,908. RECLINING-CHAIR. MORRIS S. ALLEN, Brooklyn, N. Y., assignor to himself and John S. Sisey, same place. Filed Nov. 22, 1881. (No model.)



Claim.—The combination, with the seat-frame A, having fixed side arms, B, grooved on the under side, and the back C, hinged to said frame at *a*, of the plates D, having longitudinal slot *b*, the rack-bar *c*, passing through slot *b*, the rod *e*, pivoted at one end to said rack and knuckle-jointed to a plate, *g*, on back C, the spring *h*, attached to arm B and connected with rack-bar *c* at the end opposite the connection of bar *c*, and the end-bent pawl-lever E, pivoted on plate D, for the purpose specified.

255,909. COMPENSATING PENDULUM. JAMES ASHER, Fort Erie, Ontario, Canada. Filed Jan. 13, 1882. (No model.)



Claim.—1. A clock-pendulum suspended from a lever above the center on which it swings, the lever being sustained on a compensation-rod, substantially as shown and described.

2. The combination of rod *c*, lever *b*, split stud *d*, and pendulum B, substantially as shown and described, for the purposes specified.

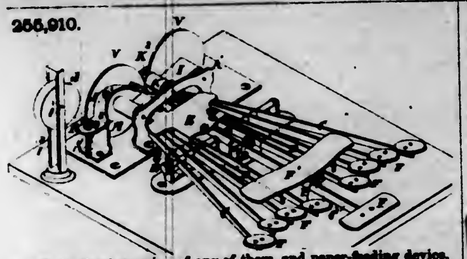
3. The combination, with a pendulum, of a compensating-rod and a multiplying-lever connected for supporting the pendulum at a point above its center of oscillation, substantially as shown and described.

255,910. STENOGRAPHIC MACHINE. MILES M. BARTHOLOMEW, Belleville, Ill. Filed Mar. 8, 1881. (Model.)

Claim.—1. The combination, with a plurality of keys pivoted on a fixed fulcrum, and a feed-plate so arranged as to be actuated by the depression of any key, of spacing-key D D F and pad P, vertically adjustable to govern the amplitude of play of the spacing-key, for the purpose set forth.

2. In combination with keys C, pivoted on a fixed fulcrum, feed-plate E, in proximity to said keys, adapted to be actuated di-

255,910.

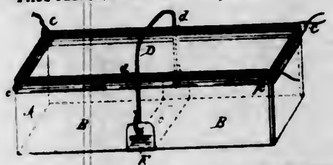


rectly by the depression of any of them, and paper-feeding device, substantially as described, the feed-key D D F, so arranged as to move the feed-plate E further, and so give a greater feed movement to the paper at each motion than the marking-keys, substantially as and for the purpose set forth.

3. The keys C, composed of a bent bar with a finger-piece, F, for each hand, at each extremity of same, substantially as and for the purpose set forth.

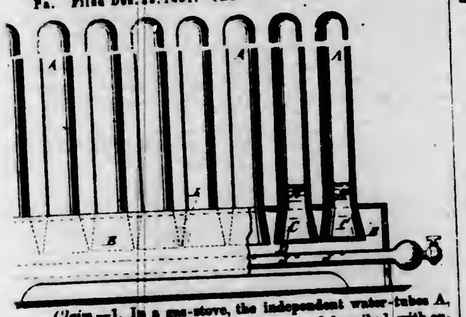
4. The ink-ribbon-feeding mechanism consisting of the reels T T, turning on adjustable arbors *u* on sliding plate U, and wheels V V and arbor K', substantially as set forth.

255,911. FRUIT-BASKET. CHARLES E. BARTRAM, Fredonia, N. Y. Filed Jan. 16, 1882. (No model.)



Claim.—In a knockdown fruit-basket, the combination of the veneers A B, crossed and fastened together at the bottom, the upper edges bound with tin strips *b b*, and with holes *b'* in each corner, with wire or string *a* twisted therein to hold said corners together, and the bottom piece, E, and attached or connecting wire handle D, all arranged substantially as and for the purpose specified.

255,912. GAS-STOVE. JOHN H. BAUMGARDNER, Lancaster, Pa. Filed Dec. 29, 1881. (No model.)

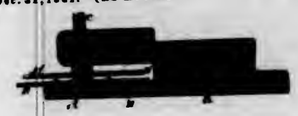


Claim.—1. In a gas-stove, the independent water-tubes A, constructed, substantially as herein shown and described, with enlargements C at the lower end, as set forth.

2. The combination, with the casing or base B, of the independent water-tubes A, provided with enlargements C at the lower ends, and of the burner D, substantially as herein shown and described, and for the purpose set forth.

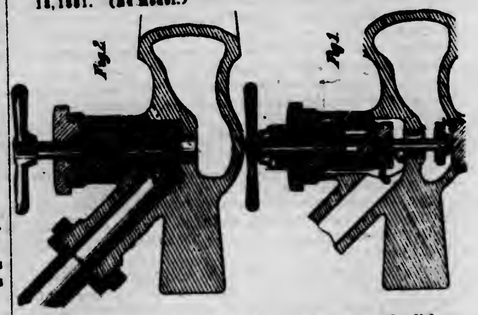
3. The combination, with the casing or base B, of the independent vacuum and water tubes A and the burner D, substantially as herein shown and described.

255,913. GRASS-MOWER. EDWIN BECKWITH, Butler, Pa. Filed Dec. 31, 1881. (No model.)



Claim.—In a grass-mower, the carrier A, composed of the two pieces *a b*, the part *a* having its front end formed into a circular disk, *d*, which forms a support for the non-rotating blade B, and the part *b*, having the quadrant *e* formed upon it, substantially as shown.

255,914. FAUCET. LOUIS BERGER, New York, N. Y. Filed May 18, 1881. (No model.)

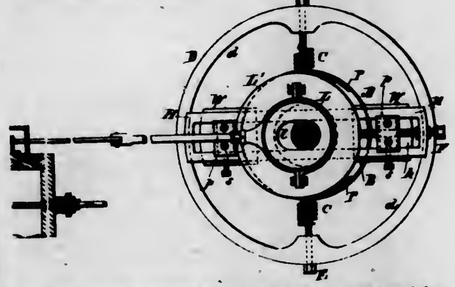


Claim.—1. The combination, in a faucet or cock, of a disk, a valve carried by said disk and so connected therewith that the passage of liquid from the under to the upper side of said disk is effectually precluded, a screw for adjusting said disk to shift the valve into or out of contact with its seat, and having a swiveling connection with said disk, a removable cap or plug in which said screw works, and an elastic or flexible sleeve of packing material loosely surrounding said screw and fitting outside the adjacent edges of said disk and said cap or plug, whereby leakage through said cap or plug is effectually prevented, substantially as specified.

2. The combination, in a faucet or cock, of a disk carrying a valve, a screw for shifting the disk to move the valve to and from its seat and receiving the stem of the disk within it, a removable cap or plug in which said screw works, and an elastic or flexible sleeve of packing material fitting outside the adjacent edges of said cap or plug and of said disk, substantially as specified.

3. The combination, in a faucet or cock, of a valve, and a screw for operating the valve, the said valve having a stem extended up into the said screw and swiveled therein, substantially as specified.

255,915. VALVE-GEAR. HENRY L. BERGER, St. James, La., assignor of one-half to Arthur J. Dillon, same place. Filed Dec. 16, 1881. (No model.)



Claim.—1. The combination, with the driving-shaft S and the eccentric L, that operates the valve-rod, said eccentric being provided with an elongated slot, through which the shaft passes, of two weights arranged upon opposite sides of the driving-shaft and appliances to connect either one of said weights to the eccentric, whereby the varying centrifugal force of the shaft through the medium of the connected weight is made to move the eccentric into position to lengthen or shorten the travel of the valve whatever may be the direction of rotation of the driving-shaft, substantially as and for the purpose specified.

2. The combination, with the driving-shaft S, the slotted eccentric L, and the two weights W, arranged on opposite sides of said shaft, of a spring-support, to which said weights are directly attached, suitable bearings for said spring-support rigidly connected with the driving-shaft, and means to connect one or the other weight with the eccentric, substantially as and for the purpose specified.

3. The combination, with the driving-shaft S, the slotted eccentric L, and the two weights arranged on opposite sides of said shaft, of a spring-support the tension of which is made adjustable, and to which said weights are directly attached, suitable bearings for said spring-support rigidly connected with the driving-shaft, and means whereby one or the other weight may be connected with the eccentric, substantially as and for the purpose specified.

4. The combination, with the driving-shaft S and the eccentric L, that operates the valve-rod, said eccentric being provided with an elongated slot, *l*, through which the shaft passes, of means for setting the eccentric to the travel of the valve, which consist of a slide, H, rigidly attached to the shaft, and an adjusting screw or screws, F, adapted to move the eccentric on said slide and secure it in position when adjusted, substantially as and for the purpose specified.

5. The combination of the driving-shaft S, the slotted eccentric L, the slide H, set screw or screws F, and the disk D, all arranged and constructed for operation substantially as and for the purpose specified.

6. The comonation of the driving-shaft S, the slotted eccentric L, the disk D, the slide H, the weights W W, and the set-screws *s*, all arranged and constructed for operation substantially as and for the purpose specified.

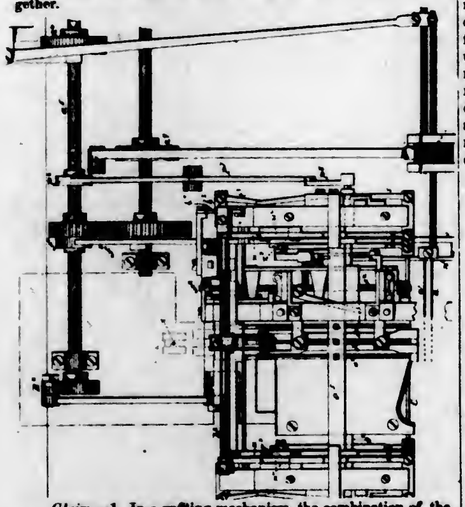
7. The combination of the disk D, the bearing-blocks B B, and the weights W W, of the annular spring-band A and appliances to regulate the tension of said band, all arranged for operation substantially as and for the purpose specified.

8. The combination of the disk D, having flange *d* and bearing-blocks B B, the spring-band A, the adjusting-screws E E, and the coiled springs C C, all arranged for operation substantially as and for the purpose specified.

9. The combination of the disk D, having flange *d* and bearing-blocks B B, the adjusting-screws E E, the coiled springs C C, the supporting-plates P P, and the spring-band A, all constructed and arranged for operation substantially as and for the purpose specified.

255,916. RUFFLING-MACHINE. WILLIAM BRUCKER, New Haven, Conn. Filed Oct. 10, 1881. (Model.)

Brief.—The invention relates to mechanism by means of which several strips of fabric may be simultaneously ruffled or plaited and then delivered one upon the other to the stitch-forming mechanism of a sewing-machine, so that the same stitches which secure the ruffles or plaits also secure the several strips together.



Claim.—1. In a ruffling mechanism, the combination of the following elements: first, two or more mechanisms, substantially such as described, to ruffle the strips respectively given to the said mechanism; second, two or more feeds arranged each to receive one of the ruffled strips from the said ruffling mechanisms, and together deliver the several ruffled strips through one common delivery, laid one upon the other, to, third, a stitch-making mechanism, substantially such as described, arranged relatively to the said place of delivery to run a line or lines of stitches through the said several strips as delivered to the said stitch-making mechanism, substantially as described.

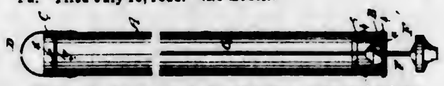
2. In ruffling mechanism, the combination of the following elements: first, two or more mechanisms, substantially such as described, to ruffle the strips respectively given to the said mechanisms; second, two or more principal feeds to receive the strips, respectively, from the said ruffling mechanisms; third, auxiliary feeds acting in conjunction with the said principal feeds to bring the several strips passing through said principal feed to one common delivery, one upon the other, to, fourth, a stitch-making mechanism, substantially such as described, to run a line or lines of stitches through the said several strips as delivered to the said stitch-making mechanism, substantially as described.

3. In a ruffling mechanism, the combination of the following elements: first, two or more mechanisms, substantially such as described, to ruffle the strips respectively given to the said mechanisms; second, two or more principal feeds to receive the strips, respectively, from the said ruffling mechanisms; third, auxiliary feeds acting in conjunction with the said principal feeds to bring the several strips passing through said principal feeds to one common delivery, one upon the other, to, fourth, a stitch-making mechanism, substantially such as described, to run a line or lines of stitches through the said several strips as delivered to the said stitch-making mechanism; and, fifth, a feed in connection with said stitch-making mechanism independent of the principal and auxiliary feeds which deliver the strips, substantially as described.

4. In a ruffling mechanism, the combination of the following elements: first, two or more mechanisms, substantially such as described, to ruffle the strips respectively delivered to the said mechanisms; second, two or more feeds arranged to respectively take the ruffled strip from said ruffling mechanisms arranged upon a carriage common to all, to which an intermittently-reciprocating movement is imparted; third, mechanism, substantially such as described, to simultaneously open and close said feeds, the said feeds being arranged to deliver their respective strips together, one upon the other, through one common delivery, to, fourth, a stitch-making mechanism, substantially such as described, arranged to run a line of stitches through the said several strips as they are delivered one upon the other to the stitch-making mechanism, substantially as described.

5. In a ruffling mechanism, the combination of the following elements: first, two or more mechanisms, substantially such as described, to ruffle the strips respectively delivered to the said mechanisms; second, two or more feeds arranged to respectively take the ruffled strip from said ruffling mechanisms arranged upon a carriage common to all, to which an intermittently-reciprocating movement is imparted; third, mechanism, substantially such as described, to simultaneously open and close said feeds, the said feeds being arranged to deliver their respective strips together, one upon the other, through one common delivery, to, fourth, a stitch-making mechanism, substantially such as described, arranged to run a line of stitches through the said several strips as they are delivered one upon the other to the said stitch-making mechanism; and, fifth, a presser-foot for said feeds, arranged to be simultaneously raised from and lowered upon the work, substantially as described.

255,917. OIL-WELL BAILER. WILLIAM H. BIRCH, Franklin, Pa. Filed July 19, 1882. (No model.)



Claim.—1. An improved oil-well bailer constructed substantially as herein shown and described, consisting of tubular body A, provided with re-enforced valve-seat B, perforated valved diaphragm C, and weighted valve E, arranged as set forth.

2. In an oil-well bailer, the combination, with the body A, provided with re-enforced valve-seat B and the apertured valved diaphragm C, of the valve E, provided with the head F and the bar G, substantially as and for the purpose set forth.

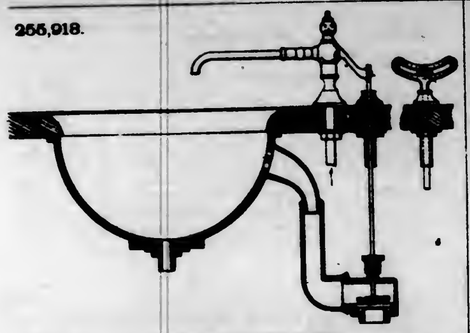
3. In an oil-well bailer, the combination, with the body A, of the apertured diaphragm C, provided with the rigid inclined plate *h*, substantially as and for the purpose set forth.

255,918. FAUCET FOR REGULATING THE OVERFLOW FROM BASINS. FRANCIS A. BISHOP, San Francisco, Cal. Filed May 4, 1881. (No model.)

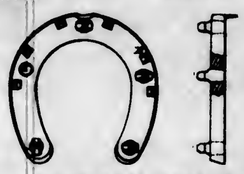
Claim.—1. The bifurcated lever P, combined with the supply cocks or faucets, and with a vertically-movable valve arranged in the overflow-pipe of the basin or bowl, substantially as described.

2. In combination with the horizontally-vibrating supply-cock and its rear extension, the loop, the valve-rod, the vertically-movable valve, valve-chest, and the overflow-pipe, substantially as described.

255,918.



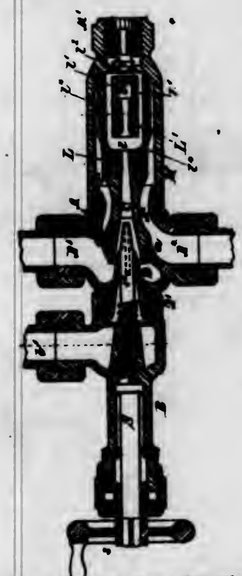
255,919. HORSESHOE. HENRY BLAND, Luton, County of Bedford, assignor to William Brown Lacesell, London, England. Filed Nov. 26, 1881. (No model.) Patented in England Jan. 18, 1881.



Claim.—1. A horseshoe having a number of smooth round tapering cogs set therein, said cogs having their sides flattened toward their lower or projecting ends, so as to admit of removal by a suitable key or wrench, substantially as described.

2. The combination, with a horseshoe, of round tapering cogs or roughs, flattened at their lower ends, and set vertically in holes of corresponding shape made directly in the shoe-plate itself, so that when said roughs or cogs are removed the shoe is left plain and flat, as set forth.

255,920. INJECTOR FOR STEAM-ENGINES. SAVARIN BERLAND, Manchester, County of Lancaster, England. Filed Aug. 30, 1881. (Model.) Patented in England June 21, 1880, in France Nov. 16, 1880, in Belgium Nov. 16, 1880, and in Germany Nov. 16, 1880.



Claim.—1. In an injector for steam-engines, a junction-branch for the steam-supply pipe capable of being rotated around the injector, as described, for the purpose specified.

2. In an injector for steam-engines, a casting or junction piece having a feed-water branch, A', and a delivery-branch, A^4, at the opposite extremities of its transverse axis, and an interior partition arranged to form a tubular bearing on a line with its longitudinal axis, in which bearing is seated the combining-cone, said partition serving also to cut off direct communication between the feed-water branch and the delivery-branch, as specified.

3. In an injector for steam-engines, the casting A, having the branches A' A^1 A^2 A^4, arranged at right angles to each other, and an interior tubular partition, *a*, in combination with the steam and combining cones, arranged as set forth, whereby direct communication between the branches A' A^2 A^4 is intercepted, substantially as and for the purpose specified.

4. In an injector for steam-engines, a junction or union piece or casting, A, having the branch A' screw-threaded exteriorly, in combination with the steam-cone D, seated upon said branch A', the spindle S, and its casing B, carrying the steam-branch, and arranged to hold the steam-cone to its seat when said casing is connected with the said branch A', substantially as set forth.

5. The combination of the junction or union piece A, its branch A', the spindle-casing B, and its coupling F with the sleeve E, substantially as and for the purpose specified.

6. The combination of the junction or union piece A, its branch A', the steam-cone D, and the coupling-sleeve E with the spindle-casing B, its coupling F, and the steam-branch *b*, all arranged, constructed, and operating substantially as and for the purpose specified.

7. The receiving, discharging, and overflow cone consisting of the casing L, within which is formed the receiving and discharging cone, so as to leave an overflow-passage, *l l'*, between said cone and casing, all constructed of one piece, substantially as and for the purpose specified.

8. The receiving, discharging, and overflow cone consisting of an outer casing, L, arranged to receive the discharge end of the combining-cone and having lateral passages P, the interior cone, L', arranged to form the overflow-passages *l l'* between it and said casing L, and which cone is in direct communication with said lateral passages, substantially as and for the purpose specified.

9. In an injector for steam-engines, the combination, with the steam and combining cones, of a receiving, discharging, and overflow cone, L L', arranged relatively to said steam and combining cone in such manner that both the combined steam and water and the overflow will be discharged at the same end of said cone L L', substantially as described.

10. The combination, with the union or junction piece A and its branches A' A^2, of the steam-cone D, combining-cone C, and the receiving, discharging, and overflow cone L L', of the cap M, removably connected with the branch A', all arranged and operating substantially as and for the purpose specified.

11. The combination of the cap M and the check-valve V with the receiving, discharging, and overflow cone L L', constructed, arranged, and operating substantially as and for the purpose specified.

12. The junction or union piece A, having branches A^2 A^4, the cap M, the steam and combining cones, in combination with the receiving and discharging cone having passages P, and arranged within the cap M to form the annular passage P', that communicates with the delivery-branch A^4, all constructed, arranged, and operating substantially as and for the purpose specified.

13. The junction or union piece A, having branch A', screw-threaded exteriorly, and an interior tubular bearing, *a*, the combining-cone C, seated within said bearing, and the steam-cone D, seated upon the branch A' and having the valve-seat *d'*, in combination with the casing B, carrying the steam-branch and connected with branch A' to hold the steam-cone to its seat, and the screw-spindle S, provided with the valve-face *s'*, all arranged, constructed, and operating substantially as and for the purposes specified.

255,921. MACHINE FOR COLORING AND FLAVORING CIGARS. CHARLES BOWMAN and FRANKLIN W. TREGO, Hanover, Pa. Filed Feb. 10, 1882. (No model.)



Claim.—1. In a machine for coloring and flavoring cigars, a rotary drum adapted to receive and discharge the cigars, and ar-

ranged to rotate about a stationary cylinder having its surface adapted to be saturated with the liquid, substantially as described.

2. In a machine for coloring and flavoring cigars, the combination, with the inner stationary sponge-cylinder, of the rotary drum having its inner face lined with a soft padding, H, substantially as and for the purpose described.

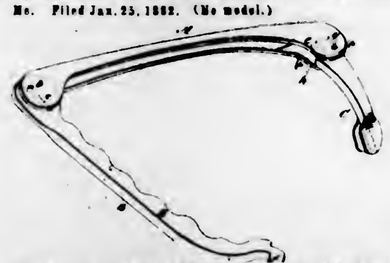
3. The combination, with the stationary sponge-cylinder, of the rotary drum provided with an opening for receiving and discharging the cigars, and adapted to leave a space for the cigars between its inner face and the sponge-cylinder, substantially as described.

4. The combination, in a machine for coloring and flavoring cigars, of the stationary sponge-cylinder, the rotary drum, the grooved feed-roll adapted to receive the cigars to be fed forward in its grooves, and mechanism timed for turning the feed roll intermittently, so as to feed one cigar into the drum at each revolution of the latter, substantially as described.

5. The combination, with the stationary sponge-cylinder, of the rotary drum provided with hollow journals, the shaft passing through the core of the sponge-cylinder, and devices for rigidly connecting said shaft with one of the standards of the machine, substantially as described.

6. The combination, with the stationary sponge-cylinder and the rotary drum, of the grooved feed-roller, the ratchet upon said roller, the pawl, the swinging and reciprocating bars, and the stud upon one end of the rotary drum, as specified.

255,922. BAG-FASTENER. CHARLES W. BRADFORD, Belfast, Me. Filed Jan. 25, 1882. (No model.)



Claim.—1. An improved bag-fastener, consisting of two jaws having a longitudinal sliding and pivoted attachment at one end and provided at their free ends with a locking-catch, substantially as and for the purpose set forth.

2. The arms or jaws A B, having a longitudinally-sliding and pivoted attachment with each other at their one end and fitted to enter one within the other at their free ends when closed, in combination with a locking catch or lever for holding said jaws closed, essentially as herein set forth.

3. The arms or jaws A B, having a longitudinally-sliding and pivoted attachment with each other at their one end, in combination with the locking-lever C, pivoted to the jaw A, and constructed with a locking-tooth, *h*, for engagement with the jaw B in rear of a projection, *f*, at the free end of said jaw, whereby on closing said lever the fastening is drawn up and secured, substantially as specified.

4. The combination, with the jaw A, provided at its free end with the jaws *e*, and the pivoted locking-lever C, provided with the tooth *h*, of the jaw B, connected to the jaw A by a longitudinally-sliding and pivoted attachment, and provided with the projection *f* at its free end, substantially as and for the purpose set forth.

255,923. GROCER'S SCOOP. JOHN J. BRADBURN, Findlay, Ohio. Filed Feb. 28, 1882. (No model.)



Claim.—In a wooden scoop, the blade A, provided with the tenon *a* and rear edge, *c*, in combination with the head B, provided with the recess *b*, constructed and arranged substantially as and for the purpose set forth.

255,924. CORSET. MORRIS P. BRAY, New Haven, assignor to Isaac W. Birdseye, Bridgeport, Conn. Filed Apr. 23, 1881. (Model.)

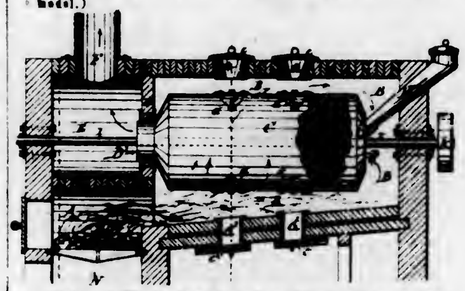
Brief.—The springs composing the stay may have both a paper and a fabric covering.

255,924. [illegible]



Claim.—The herein-described improvement in corsets, consisting of the stay composed of the two springs *a a*, inclosed by a covering having a space between the two springs of the stay, which is arranged in a pocket at the rear edge of the corset, and combined with eyelets introduced through the fabric of the pocket and the covering of the stay in the space between the two springs, substantially as described.

255,925. APPARATUS FOR DESICCATING ANIMAL MATTER FOR FERTILIZERS. HENRY BREER, De Witt Centre, assignor to Caroline H. Breer, Syracuse, N. Y. Filed Feb. 4, 1882. (No model.)

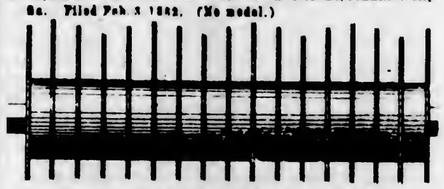


Claim.—1. The horizontal revolving cylinder C, having end openings, D D', and provided with the ports *a* and covers *b* over said ports, in combination with the furnace A, combustion-chamber B, smoke box and stack E F, and openings G, provided with covers *c*, substantially as described and shown.

2. In combination with the furnace A, combustion-chamber B, and smoke-box E, the longitudinal revolving cylinder C, provided with ports *a* and covers *b*, the spout H, discharge-openings G', and covers *c'*, as described and shown.

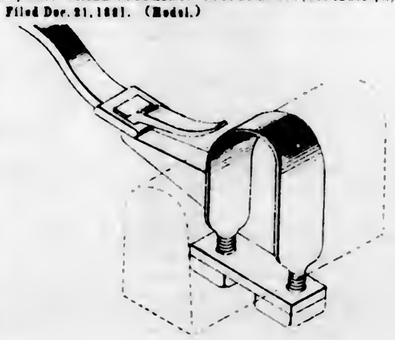
3. In combination with the furnace A, combustion-chamber, B, and smoke-box E, arranged as shown, the horizontal shaft I, provided with pulley or gear K, the spiders L, fixed to said shaft, the cylinder C, secured to the spiders and having end openings, D D', and ports *a*, with covers *b*, the rods *r*, radial wire-netting *s*, secured to said rods, and openings G G', with covers *c c'* in the combustion-chamber, all arranged as described and shown.

255,926. COTTON-GIN. RUDOLPH H. BROOKS, Jenkinsville, Ga. Filed Feb. 3, 1882. (No model.)



Claim.—The combination, with the grid-bars, of the gin saws, arranged eccentrically on their mandrel, substantially in the manner and for the purposes specified.

255,927. THILL-COUPLING. ALBERT BROWN, Schenectady, N. Y. Filed Dec. 21, 1881. (Model.)



Claim.—In combination with the clip having a hook on the forward side thereof, a thill-iron formed with a rectangular eye, provided with a projecting leg and an interposed rubber cushion, the said leg serving to retain the cushion in place within the eye, substantially as shown and described.

255,928. MINING-PUMP. DAVID W. BUSSTON, Leadville, Colo. Filed Oct. 31, 1881. (No model.)

Brief.—The telescopic section *a* carries the valve *l* and the strainer *m*, so that whether the pump is elevated or lowered the distance between the valve and strainer is uniform. The strainer *m* is so constructed as to obtain a large straining area with perforations at an angle to allow of the escape of débris. A compensating-tube, *f*, receives the water displaced by valve-stem S.



Claim.—1. In a mining-pump, the telescopic extensible section *a*, in combination with and carrying at its lower end a conical strainer, *m*, of greater diameter than said pipe *a*, and provided with perforations opening downwardly, substantially as set forth.

2. In a mining-pump, the working-barrel S, provided with the reciprocating rod and bucket-valve J, in combination with the exterior telescopic slide, *a*, carrying valve *l* and strainer *m*, substantially as specified.

3. In a mining-pump mechanism, the force-pump *b c* and a lift-pump below said force-pump, in combination with the connecting-pipe O and compensating-pipe *f*, all constructed, arranged, and operated as set forth.

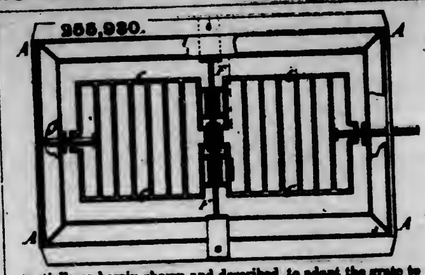
255,929. LAMP-BURNER. ROSES L. BUTLER, Ansonia, Conn., assignor to Wallace & Sons, same place. Filed June 29, 1881. (No model.)



Claim.—In a lamp-burner substantially such as described, the combination of the base A, provided with arms C, extending radially outward therefrom, said arms constructed with an opening, *h*, near their outer end, a chimney-rest, B, bearing on said arms outside the opening *h*, and springs D, extending up to support the chimney, their lower end turned inward beneath the end of the arms, thence upward through the opening *h* in the arms to a position between the chimney-rest and arms, and there secured by rivets through the said springs and arms in rear of the opening *h*, substantially as described.

255,930. STOVE. GIDEON H. BULL, New Baltimore, N. Y. Filed Feb. 9, 1882. (Model.)

Claim.—1. A stove-grate made in two parts provided with offsets at their middle parts, and connected only by a pivot, substantially as herein shown and described, to adapt the grate to receive a division-plate for confining the fire to one part of the fire-box, as set forth.

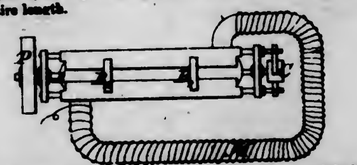


2. In a stove, the combination, with the fire-box A and the grate C, made in two parts connected by a pivot, of a division-plate, F, having a slot, G, in its lower part, substantially as herein shown and described, whereby the fire can be confined to one part of the fire-box, as set forth.

3. In a stove, the combination, with the fire-box A, the grate C, made in two parts connected by a pivot, and the division-plate F, having slots in its lower and upper parts, of a second grate, C', made in two parts connected by a pivot, substantially as herein shown and described, whereby a small fire can be made close to the top of the stove, as set forth.

255,931. ELECTRIC GENERATOR AND MOTOR. JESSE H. BURNELL, Brooklyn, N. Y. Filed Aug. 3, 1881. (No model.)

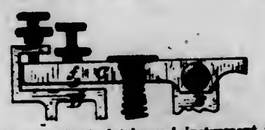
Brief.—The elongated polar extensions are connected with the core of the field-magnet at opposite ends, as clearly illustrated in Figure 1, thereby forming a field of equal intensity throughout its entire length.



Claim.—1. The combination, substantially as hereinbefore set forth, of a rotating armature, pole-pieces of magnetic metal lying parallel with the axis of said armature in the direction of its length, and facing each other upon opposite sides thereof, and a field-magnet having each of its magnetic poles in contact with one of said pole-pieces at points adjacent to opposite ends of said armature respectively.

2. The combination, substantially as hereinbefore set forth, of a field-magnet constituting a closed magnetic circuit, pole-pieces extending parallel to each other in opposite directions from the respective magnetic poles of said field-magnet, and a cylindrical armature mounted between said polar extensions and parallel thereto.

255,932. MECHANICAL TELEGRAPH-SOUNDER. JESSE H. RUSSELL, New York, N. Y. Filed Jan. 4, 1882. (No model.)



Claim.—1. In a mechanical telegraph-instrument, the combination, substantially as hereinbefore set forth, of a lever pivoted at one extremity and vibrating between fixed stops at the other, a spring holding said lever normally against its upper fixed stop, and a finger-knob for depressing said lever permanently secured thereto at a point between the axis and the free end.

2. In a mechanical telegraph-instrument, the combination, substantially as hereinbefore set forth, of a resonant base, a metallic bridge mounted upon said base, a lever pivoted at one extremity and free to vibrate at the other, a projection from said lever at its center of percussion, which is adapted to impinge upon said bridge, and a finger-knob for actuating said lever affixed thereto at a point between its center of motion and center of percussion.

3. In a mechanical telegraph-instrument, the combination, substantially as hereinbefore set forth, of a lever pivoted at one extremity and vibrating between fixed stops at the other, a heri-

zontal projection from said lever at a point between its center of motion and its free end, and a finger-knob mounted upon said horizontal projection.

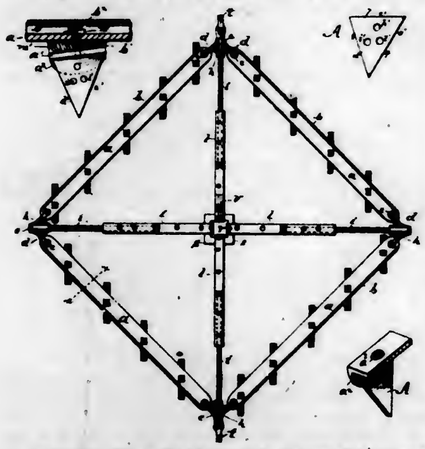
255,933. WATER-CLOSET. William Bunting, Jr., Boston, Mass., assignor to Henry C. Meyer & Co., New York, N. Y. Filed Dec. 17, 1881. (No model.)

Brief.—The seat bears on two points, e, and their motion is conveyed to the valve-operating parts *f g* through the equalizing-lever m.



Claim.—The combination, with the seat C, the supporting-fingers *e e*, and suitable mechanism for imparting their descending movement to the valve of the closet, of means for rendering said fingers *e e* self-adjusting to any inequality in or changes of the plane of the said seat, substantially as set forth.

255,934. HARROW. Henry R. Burden and Joseph B. Simpson, Pinesville, Va. Filed Jan. 31, 1882. (No model.)



Claim.—1. The combination, with the harrow-beams *a*, provided with triangular teeth A, and blocks A, provided with hooks *d* and sockets *e*, of the metallic plates *l*, having perforated flanges *o*, adjusting-holes *m*, and hooked inner end, *q*, block *s*, having a central orifice, *r*, and adjustable rods *i*, substantially as described, and for the purpose set forth.

2. As an improved article of manufacture, the scalene triangular harrow-tooth A, having its sides *c' c'' c'''* of different lengths and its angles different, and provided with the holes *h' i' l'* above the middle of each side of the teeth, as set forth.

3. The combination, with the triangular harrow-tooth A, constructed as set forth, of the tooth-holder *a'*, with hole a^2, and downwardly-projecting flange a^3, with hole a^4, to which the tooth is secured, and bolt *b'*, by which the holder is secured to the harrow-beam, substantially as described, and for the purpose set forth.

4. The combination, with the triangular harrow-tooth A, tooth-holder *a'*, both constructed as set forth, and beam *a*, of the wedge *n'*, wedge-shaped washer *n'*, bolt *b'*, and nut b^2, substantially as described, and for the purpose set forth.

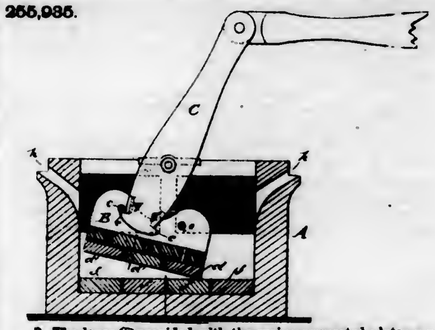
5. The combination of the harrow-beam *a*, triangular harrow-tooth A, having its sides of unequal length and provided with holes *i' h' l'*, tooth-holder *a'*, having flange a^3 and holes a^3 a^4, bolt *b'*, and nut b^2, substantially as described, and for the purpose set forth.

255,935. Ore-Crusher. Angus M. Cameron, Greenville Cal. Filed Jan. 23, 1882. (No model.)

Claim.—1. The combination, with the ore-box A and rocking lever C, of the stamp-head B, adapted to be moved from end to end of the ore-box and to have its ends alternately raised and dropped by the rocking motion of the said lever, as and for the purpose set forth.

2. The stamp head or block B, provided with the cross-pieces or rods *c c*, in combination with the box A and the lever C, provided with the projections *e e*, substantially as and for the purposes set forth.

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3. The lever C, provided with the spring-supported plates *g g* and the projections *e e*, in combination with the box A and the stamp head or block B, provided with the cross pieces or rods *c c*, substantially as and for the purposes set forth.

4. The ore-box A, formed with the openings *h h* and provided with the plates *f f*, and the stamp head or block B, formed with the cross-pieces *c c* and provided with the plates *d d*, in combination with the lever C, formed with the projections *e e* and provided with the spring-supported plates *g g*, substantially as and for the purposes set forth.

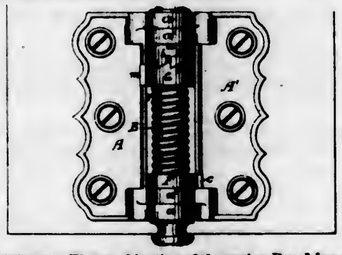
255,936. Artificial Stone. George W. Chamberlin and Andrew S. Comrade, Sterling, Ill. Filed Feb. 17, 1882. (No specimens.)

Claim.—A compound for artificial stone, consisting of three and one-half parts of clean sand to one part of Portland cement, mixed thoroughly, and combined, in a working consistency, with a composition consisting on the one part of five gallons of water and on the other part of one gallon of the mixture made of the following ingredients and in the following proportions, to wit: one gallon of silicate of soda, one pound of carbonate of iron, one and one-half pound of graphite, two pounds of raw umber, and two gallons of rain-water at the boiling temperature, all thoroughly mixed, substantially as described, and for the purpose specified.

255,937. Plastic Material. Melvin B. Chunes, Grand Rapids, Mich. Filed Feb. 7, 1882. (No specimens.)

Claim.—The described compound, consisting of pulverized calcined gypsum, glue, and sulphate of zinc or its equivalent, in substantially the proportions specified.

255,938. Spring-Hinge. Charles B. Clark, Philadelphia, Pa. Filed Dec. 22, 1881. (No model.)



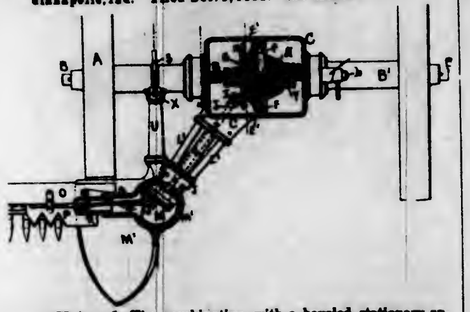
Claim.—1. The combination of the spring B and leaves A A' of the hinge with a cap, E, carried by the spring, and a retaining-ring, G, fitting around the coils of the spring and adapted to engage with and to be disengaged from the cap E and prevented from turning under the action of the spring B, as set forth.

2. The combination of the spring and leaves of the hinge with the cap E, carried by the spring and adapted to engage with a retaining-ring, G, the latter embracing the coils of the spring and being capable of a limited turning and vertical movement, and having a lug, *m*, adapted to a shoulder, *n*, on one of the leaves of the hinge, as set forth.

3. The combination of the spring and leaves of the hinge, the cap E, the retaining-ring G, and a projection, *p*, on the leaf A of the hinge, to limit the vertical movement of the ring, as set forth.

4. The combination of the spring of the hinge, the cap E, the retaining-ring G, having lugs *m* and *s*, and the leaf A, having a shoulder, *n*, and a reduced portion, *t*, as set forth.

255,939. Mowing-Machine. William F. Cochrane, Indianapolis, Ind. Filed Dec. 8, 1881. (No model.)



Claim.—1. The combination, with a beveled stationary annular gear, F, fixed to encircle the main driving shaft or axle B, of a conical bifurcated sleeve or spider, E, placed upon said shaft to rotate therewith, and carrying upon its diverging arms beveled pinions or planet-wheels E' E', adapted to engage said annular gear and to mesh centrally into a pinion upon the hub of a gear-wheel H, rotating upon the main shaft B, substantially in the manner and for the purpose herein set forth.

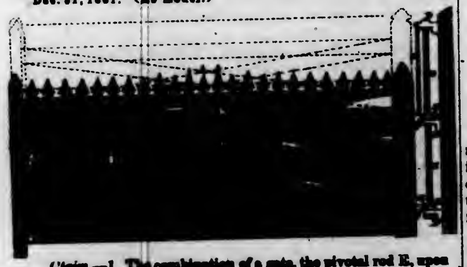
2. The combination of the inverted bevel-wheel H, turning loosely upon the main shaft B, with the beveled pinion I upon the crank-shaft J on one side and with planet-wheels E' E' engaging a pinion upon its hub on the other, substantially in the manner and for the purpose herein set forth.

3. The combination, with the shoe M' and its spherical joint M N, of an arm, U, extending radially from said joint, a slotted guide, X, upon the casing C, and a lever, S, pivoted to said casing for the purpose of elevating or depressing the shoe and its cutter-bar, substantially as herein set forth.

4. The combination, with the spherically-jointed shoe and the finger-bar carried thereby, of a pivoted arm, S, upon the main frame, actuated by an independent lever, 6, and dog 10, engaging a notched disk upon the axis of said arm S, and controlled by a spring-actuated catch-lever 12, substantially as and for the purpose herein set forth.

5. In combination with the finger-bar O, the cutter-bar P, adapted to be withdrawn endwise from the same, and provided with lugs on its inner end, the pitman-head R, having recesses adapted to receive said lugs, and means for securing the cutter-bar and pitman-head together, whereby an interlocking-joint is formed which will admit of a ready release and withdrawal of the cutter-bar, substantially as and for the purpose set forth.

255,940. Gate. Robert J. Colvin, Lancaster, Pa. Filed Dec. 31, 1881. (No model.)



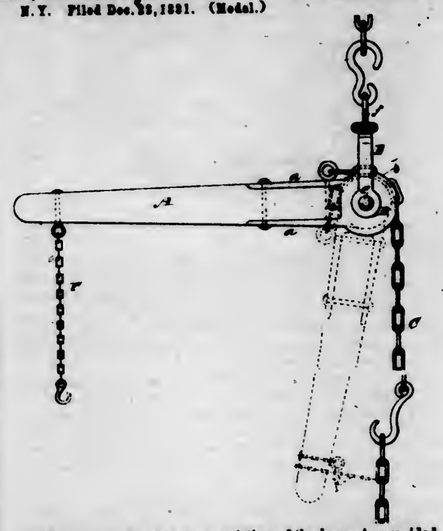
Claim.—1. The combination of a gate, the pivotal rod E, upon which the gate swings and is raised and lowered, the chain I, wheel J, braces P, and clamping-bolt H, substantially as shown.

2. The combination of a gate which can be adjusted diagonally from its corners with a series of uprights having rabbeted edges, whereby the uprights are made to form a closed gate, substantially as described.

3. The combination of the gate, the two braces which are applied to opposite sides of the gate and extend in diagonal opposite directions, a clamping-bolt and shift-wheel, the chain, and a vertical rod, upon which the gate moves, substantially as specified.

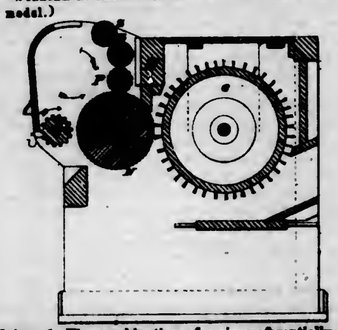
4. The combination of the gate, the upper hinge having a vertical opening for the passage of the chain and provided with a friction-roller, with the shift-wheel, the clamp, the diagonal braces, and the chain, substantially as described.

255,941. Load-Binder. Stephen S. Conkling, Middletown, N. Y. Filed Dec. 23, 1881. (Model.)



Claim.—In a load-binder consisting of the lever A, provided with the chain F at its outer end, and the head B, having cheeks *b* and arms *a*, the yoke D, pivoted to the said head and provided with the swiveled eye or link *f*, and the chain C, secured to the head and passing through the links over the head, the said swiveled eye or link and chain being adapted to be connected to the ends of a binding-chain, substantially as herein shown and described.

255,942. Machine for Hulling and Sinning Cotton, &c. William L. Crowson, St. Louis, Mo. Filed May 7, 1881. (No model.)



Claim.—1. The combination of a circumferentially-grooved roller, P, mounted in adjustable bearings, and a saw-cylinder having claw-teeth, the said roller being adapted to receive the teeth of the saw within its grooves and to be adjusted with reference to the saws to adapt the device for ginning, linting, or hulling, as set forth.

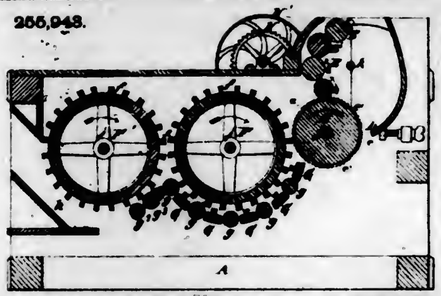
2. The combination, with a saw-cylinder, of the rollers P and Z, made adjustable in distance from the saw-cylinder, for the purpose set forth.

3. The adjustable rotating fluted roller Q, in combination with a saw-cylinder, M, and cotton-box of a cotton-gin, substantially as and for the purpose set forth.

255,943. Cotton-Gin. William L. Crowson, St. Louis, Mo. Filed June 23, 1880. (No model.)

Claim.—1. The combination of the saw-cylinder C, having saws *c c'*, and the retarding-cylinder D, having circumferential grooves d^3, forming ribs *d*, the retarding-cylinder being mounted to receive only the teeth *c'* in its grooves, leaving spaces d^3 on each side of the teeth *c'*, and the bodies *c* of the saws, and the periphery of the saw-cylinder forming ⊔-shaped channels in connection with the ribs through which the cotton is drawn while the seeds are kept from passing, as set forth.

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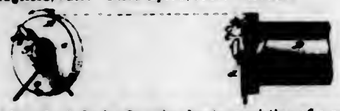


2. The saw-cylinder C, having saws *c c'*, and retarding-cylinder D, having circumferential grooves d^3, forming ribs *d*, provided with small recesses d', the said cylinders being so arranged that the teeth only of the saws can work within the grooves, and thus provide U-formed channels for the cotton removed from the seeds to pass through, as set forth.

3. The combination of the saw-cylinder C, brush-cylinder F, fixed brush-strips G, and rollers *g*, substantially as set forth.

4. The combination, with the brush-cylinder F, fixed brush-strips G, and rollers *g*, of the additional cylinder, F', and moving rollers g^3 g^3, the said additional cylinder being provided with means for giving it faster rotation than the first brush-cylinder, as set forth.

255,944. CORD-TYER FOR GRAIN-BINDERS. J. HENRY DEAN, Kalamazoo, Mich., assignor to Whiteley, Fassler & Kelly, Springfield, Ohio. Filed Apr. 6, 1880. (Model.)



Claim.—1. A device for tying knots, consisting of a rotating holder to seize and hold the ends of the band when the same has been severed from the band material and carry the same around a central neck having a lip or flange on one side, mechanism which causes said neck to retreat within a coil so as to confine the cord on one side, a central holding-hook, and mechanism by which said hook is caused to seize and hold the ends while the loop which forms the knot is cast off over said held portion, whereby the cord which forms the knot is held and controlled positively during each step of the process of tying the knot.

2. The looper D, provided with a neck to receive the turns of the cord, and a laterally-projecting lip or flange, *c*, on one side, forming a detent to hold the cord on the neck, combined with an axially-reciprocating hook, whereby the outer part is held in position and carried across the end of said neck into the looping hook or jaw, whereby the ends are then seized and held while the loops are being cast off to form the knot.

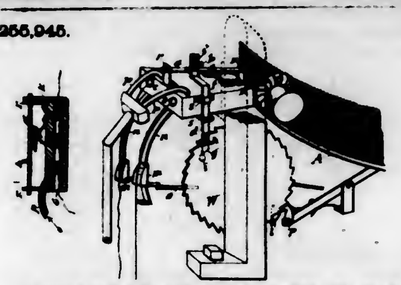
255,945. KNITTING-MACHINE. JAMES DEUTOS, Amsterdam, N. Y., assignor of one-fourth to John K. Warnick, same place. Filed Jan. 14, 1882. (No model.)

Brief.—The invention is adapted to the knitting of single-threaded figured fabrics. Blow-pipes are connected with the tubular thread-guides, and when it is desired to feed a particular kind or color of yarn to the knitting-burr the end of said yarn is propelled forward through the tubular guide by pressure of air, aided by the thread-lifting devices in the rear of the guides. Simultaneous with the feeding of one thread to the needles the one being knitted in is severed by a double-bladed knife, adapted to oscillate across the ends of the tubular guides, and serving at the same time as a valve to open and close the ends of said tubular guides. Novel devices are provided for operating the combined knife and valve and thread-lifters.

Claim.—1. In combination with the needle-cylinder and burr or loop-wheel of a knitting-machine, a tubular thread-guide arranged to deliver the thread to the burr, and a blow-pipe communicating with the interior of said thread-guide and arranged to propel, by pressure of air or other analogous fluid or gas, the thread introduced in said thread-guide, substantially as set forth.

2. In combination with the needle-cylinder and burr or loop-wheel of a knitting-machine, two tubular thread-guides, two blow-pipes arranged to force currents of air through said thread-guides, and a combined knife and valve for severing the thread and controlling said air-currents, as set forth

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3. The combination, with the needle-cylinder and needles, of two tubular thread-guides arranged to feed separate threads to said needles, blow-pipes for forcing currents of air through said thread-guides, a knife arranged to oscillate across the paths of the two threads, and mechanism for transmitting motion from the cylinder to the oscillating knife, all as specified.

4. The combination, with the needle-cylinder and the thread-guides *c c*, of the blow-pipes *p p* and the combined knife and valve K, arranged to alternately open and close the thread-guides, and mechanism for transmitting motion from the cylinder to said combined knife and valve, substantially as described and shown.

5. The combination, with the thread-guides *c c*, of the rock-shaft *a*, provided with the knife K and with the arm *b*, the pitman *d*, engaging the arm *b*, and suitable mechanism for imparting an intermittent reciprocating motion to the pitman, as and for the purpose set forth.

6. In combination with the thread-guides *c c*, the rock-shaft *a*, provided with the knife K and with the arm *b* and cam *e*, the pitman *d*, having the slot *e*, engaged with arm *b*, the spring *f*, engaging with cam *e*, and mechanism for operating said pitman, as described.

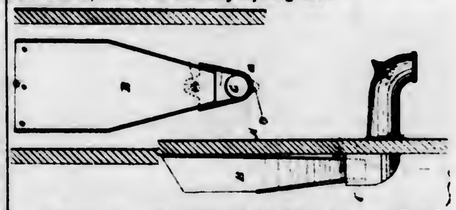
7. In combination with the thread-guides *c c*, the rock-shaft *a*, provided with the knife K, arm *b*, and cam *e*, the spring *f*, engaging said cam, the pitman *d*, engaging the arm *b*, and provided with the beveled foot-piece *g* and with the lug *h*, the ratchet-wheel W, provided with the lug *i* and beveled shoulder *l*, the pawl P, lever L, needle-cylinder A, and a cam or ratchet connected with said cylinder or its spindle, substantially as shown and set forth.

8. The combination of the tubular thread-guide *c*, the blow-pipe *p*, combined knife and valve K, thread-lifter *m*, and mechanism for imparting an intermittent movement to said thread-lifter and knife, as specified and shown.

9. The combination of the thread-guide *c*, blow-pipe *p*, combined knife and valve K, and mechanism for operating the same, curved bar *a*, sliding block *m*, the wheel W, provided with the arm *e*, and mechanism for imparting motion to the wheel W, substantially as described and shown.

255,946. WATER-ELEVATOR. HENRY DICKINSON, Lowell, assignor to Louisa C. Warner, Crown Point, Ind. Filed Oct. 28, 1881. (No model.)

Brief.—The spout C is made of cast metal and separate from the receiver, which has uniformly-tapering sides.

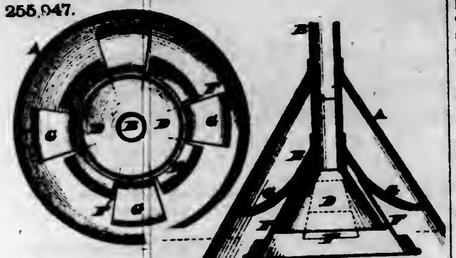


Claim.—In a water-elevator, the casing *a*, cast spout C, and uniformly-tapering sheet-metal receiver-funnel B', all combined and operating substantially as set forth.

255,947. WASHING-MACHINE. JOHN C. DIENELSHELDER, Cincinnati, Ohio. Filed Jan. 26, 1882. (No model.)

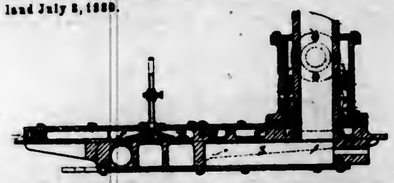


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Claim.—A clothes-washer consisting of the imperforate conical shells A D and an intermediate slotted cone, E F, which latter has deflecting-plates G, the free ends of which are secured to the inner surface of the cone A, said shells A D E being attached to a common axial support, B, substantially as herein described.

255,948. PROCESS OF AND APPARATUS FOR CARBURETING AIR. HARDLEY LOUIS CHARLES, Comte D'Ivernois, Paris, France. Filed Aug. 25, 1881. (No model.) Patented in England July 8, 1880.



Claim.—1. The method of carbureting air for gas-engines and utilizing the waste gases from said engines by vaporizing the hydrocarburet, mixing the vapor with air, conducting the mixture to the cylinder of the gas-engine, where it is exploded, and conducting the hot products of explosion into the carbureting apparatus to heat the same, substantially as described.

2. The combination of the carbureting-chamber provided with a vaporizing-plate and air inlets or passages with a pipe for delivering the hydrocarbon terminating in a series of small tubes above said plate and extending to different portions thereof, substantially as described.

3. The combination, with a carbureting-chamber provided with a vaporizing-plate and a pipe for delivering the hydrocarbon, of a series of air-inlet openings extending the width of said plate and a common valve for regulating the flow of air through said openings, substantially as described.

4. The combination of a delivery-pipe for the hydrocarbon and the carbureting-chamber provided with a vaporizing-plate adapted to be heated, and also with inlet and outlet openings just above the level of said vaporizing-plate, on opposite sides of the same, so that the air sweeps in a broad belt over the surface of said plate and carries off the hydrocarbon as it volatilizes, substantially as described.

5. The combination, with the volatilizing-chamber provided with air-inlets and a vaporizing plate or body, of a mixing-chamber having a series of perforated diaphragms for securing the thorough mixture of the air with the hydrocarbon vapors as they pass through said chamber, substantially as described.

6. The combination of the corrugated or roughened plate, passages for admitting air in contact therewith, and a pipe terminating above said plate for dropping hydrocarbon thereon, substantially as described.

7. The combination, with the pipe for delivering hydrocarbon and the volatilizing-chamber having inlet for air and outlet for the mixture of air and hydrocarbon vapor, of an S-shaped flue beneath said chamber, substantially as described.

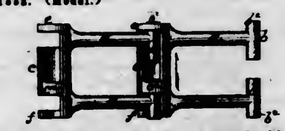
8. The combination, with the vaporizing-chamber, of a mixing-chamber connected with the vaporizing-chamber and a flue communicating with the space under the latter and passing through the mixing-chamber for maintaining the temperature thereof, substantially as described.

9. The combination, with the vaporizing-chamber provided with inlets for the air and outlets for the mixture of air and vapor, of the mixing-chamber communicating with the latter and having a check, perforated plates, and wire-gauze therein, substantially as described.

10. In an apparatus for carbureting air, a vaporizing-chamber the bottom of which is formed by the plate by which the vaporization of the hydrocarbon is effected, and two opposite sides of which contain the one air-inlets and the other outlets for the air and vapor, the air in passing through said chamber sweeping over the top of said plate, substantially as described.

11. In an apparatus for carbureting air, a volatilizing-chamber provided with a plate adapted to be heated for effecting the volatilization of the hydrocarburet liquid, means for admitting the latter into contact with said plate in regulated quantities, inlets or passages for admitting external air into said chamber, a flue or passage beneath said plate adapted to convey heat thereto, and devices for effecting the thorough admixture of the air and hydrocarbon vapor, substantially as described.

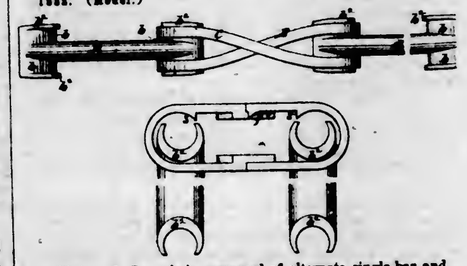
255,949. DRIVE-CHAIN. JAS. H. DODGE, Chicago, Ill. Filed Jan. 26, 1882. (Model.)



Claim.—1. A chain-link formed at one end with a divided end bar and lateral extensions b^3 thereof, and provided at the other end with a main coupler device, *c c'*, partially open and partially closed, as specified, and two auxiliary coupler devices, one at either side of the link, and the two in line with the main coupler.

2. A detachable chain composed of duplicate parts, each of which is a link having a divided end bar at one end and three coupler devices *d c'*, *e*, and *f*, at the other end, substantially as set forth.

255,950. CHAIN. JAS. H. DODGE, Chicago, Ill. Filed Jan. 26, 1882. (Model.)

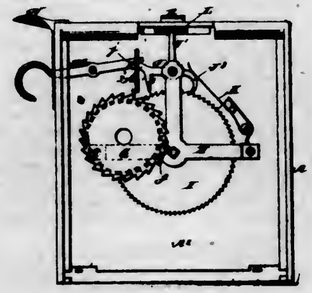


Claim.—1. In a chain composed of alternate single-bar and double-bar links, a link composed of two open bars or devices, B and C, adapted for arrangement crosswise of each other, and operating, when so arranged, to accommodate within their adjacent ends the pintle-like devices of the single-bar links, substantially as set forth.

2. In combination with a double-bar link having loop-like ends to form the female members of articulation, a single-bar link having at its end a pintle-like device, *b*, provided with a retaining-flange, b^2, the whole constructed to operate substantially as set forth.

3. In combination with a link composed of two parts, B and C, and a link having a pintle-like device, *b*, the enlargements or projections *e* of the two-part or double-bar link, for the purpose of preventing the backing out from its bearings in the ends of the two-part link of the pintle of the single-bar link.

255,951. BALLOT-BOX. THOMAS F. DODGE, Lawton, Mich. Filed July 18, 1881. (No model.)



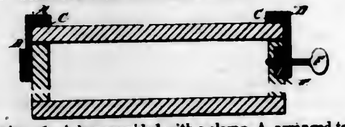
Claim.—1. In a registering ballot-box, the pivoted verge J, provided with a horn, J', an arm, J², an impulse-pallet, and a detent-pallet, in combination with ballot-hole slide L, engaged by said horn, lever M, which operates on said arm, and ratchet-wheel I, which is advanced by said impulse-pallet, and also slightly advanced at each engagement of said detent-pallet, for the purpose set forth.

2. Dial-casing C, provided with fastening-hooks, and lock C', in combination with slotted partition A³ and recessed sliding bottom A', substantially as set forth.

3. In a ballot-box, the combination of a ratchet-wheel forming part of the registering mechanism, and an operating-lever with a verge actuated by said lever, and provided with two pallets, both of which bear on the inclined faces of said teeth, substantially as and for the purposes set forth.

4. In a ballot-box, the combination of a ratchet-wheel forming part of the registering mechanism, and an operating-lever, with a verge having a detent-pallet which acts against the inclined faces of the teeth of said wheel, so as to operate to some extent as an impulse-pallet also, for the purpose set forth.

255,952. BOX-FASTENER. WILLIAM H. DUCKER, Brooklyn, N. Y. Filed Dec. 14, 1881. (No model.)



Claim.—1. A box provided with a clamp, A, arranged to slide in a recessed plate fastened to one side of the box, in combination with a screw-clamp, D, on another side of the box, such clamp D attached to the side of the box by a suitable screw to fasten the same to the box, which screw acts also as a pivot on which to turn the clamp D out of the way when not in use, such clamps having shoulders to catch over the lid and fasten the same to the box, substantially as described and shown.

2. A box having a clamp, A, provided with a shoulder to catch over the edge of the lid, in combination with a recessed plate, B, on the side of the box, within which the clamp slides up, to permit the lid to be fastened under its shoulder and slides down and out of the way when the lid is withdrawn, substantially as described and shown.

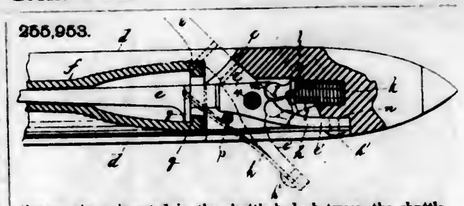
3. The combination, with a box, of a clamp, D, provided with a shoulder to catch over the edge of the lid, such clamp D fastened to the side of the box by a suitable screw, which screw also acts as a pivot on which to turn the clamp out of the way, substantially as shown, and for the purposes described.

4. The combination, with a box provided with clamps to hold the lid to the box, of the saddles C, having shoulders fitted to receive the holding-lips of the clamps and prevent the lid from moving sidewise, whereby the bearing part of the lid is strengthened and cleats to hold the lid in position are dispensed with, substantially as described and shown.

5. The combination, with a box and a clamp provided with a shoulder to catch over the edge of the lid, of a re-enforce plate for the side of the box, each clamp and plate provided with coincident recesses and projections to interlock when the parts are adjusted to hold the lid and with a screw to fasten the same, substantially as shown, and for the purposes described.

6. The combination, with a box and a clamp with a shoulder to hold the lid to the box, of the screw F, having a part of its shank at the head and at the point provided with threads, and an intermediate part of a smaller diameter without threads to hold the clamp in position, substantially as shown, and for the purposes described.

255,953.

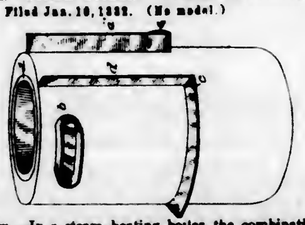


tionary pin *p*, inserted in the shuttle-body between the shuttle-spindle and its spring, substantially as and for the purposes set forth.

2. The combination of a bobbin pressing and binding spring, *b*, constructed to bear against the outside of a bobbin, and the shuttle-spindle *c*, provided with the bobbin-holding shoulder *g*, and curved recess *m*, with spring *b* and knuckle *l l'*, substantially as and for the purposes set forth.

3. The combination of a shuttle-spindle provided with a shoulder, *g*, and a bobbin-holding spring adapted to press against the outside of a bobbin provided with an internal shoulder and hold the same in engagement with the shoulder *g* upon the spindle, with means for relieving the pressure of the spring, substantially as set forth.

255,954. STEAM-BOILER. WILLIAM B. DENNING, Geneva, N. Y. Filed Jan. 10, 1882. (No model.)



Claim.—In a steam-heating boiler, the combination of the annular boiler, the inner and outer smoke-chambers, the tubes *b*, near the upper end of the boiler, connecting such inner and outer smoke-spaces, partitions *d d*, forming a vertical flue and the horizontal partitions *e e*, extending from the said vertical partitions partially around the boiler, whereby the products of combustion are caused to circulate around the boiler, first above and then below the horizontal partitions, to the flue or passage formed by the vertical partitions.

255,955. DENTAL PLUGGER. EDWARD ENU, Cedar Rapids, Iowa. Filed Aug. 31, 1881. (Model.)

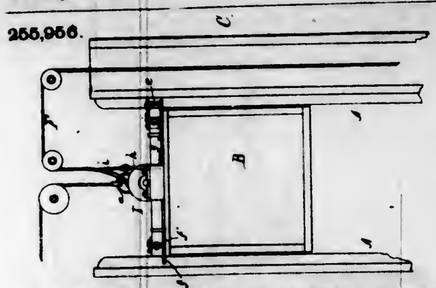


Claim.—1. The combination, with the casing E and the operating mechanism, of the casing B and the plunger A, held loosely within the said casing, substantially as and for the purpose set forth.

2. The combination, with the casing E and the operating mechanism, of the casing B, the plunger A, held loose in said casing, and the spring D, interposed between the top of the plunger and casing, substantially as and for the purpose set forth.

3. The combination, with the dental-engine hand-piece G, of the shaft M, the crank-shaft H, the bevel-gear wheels K and L, the connecting-rod J, the casing B, the spring D, and the plunger A, contained in the casing B, substantially as herein shown and described, and for the purpose set forth.

255,956. CONSTRUCTION OF CORD-ELEVATORS. ANSON M. ENGLISH, Providence, R. I., assignor of one-fourth to Clarence E. Chandler, Meriden, Conn. Filed Jan. 23, 1882. (No model.)

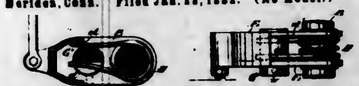


5. The combination of the cord F, spool I, separating-cord *i*, and screw-shaft H with the traveling nuts *d*, levers *b*, and clamping guide-shoes *e*, substantially as described.

6. The combination of the springs *c* with the levers *b*, shoes *e*, screw-shaft H, traveling nuts *d*, and guideways A, on which the shoes act, substantially as described.

7. The combination of the elevator-cage, the screw-shaft H, and cord F with the air-tube C, weight or plunger D, and a tripping device between the elevator-cage and the said cord, substantially as described.

255,957. FRICTION-CLUTCH. ANSON M. ENGLISH, Providence, R. I., assignor of one-fourth to Clarence E. Chandler, Meriden, Conn. Filed Jan. 23, 1882. (No model.)

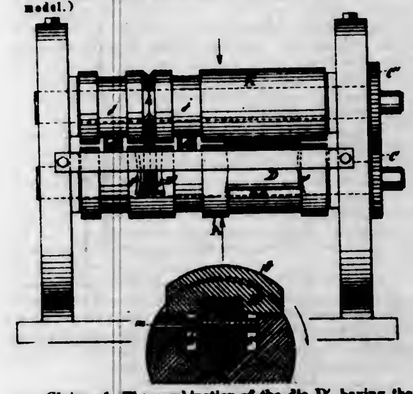


Claim.—1. An improved friction-clutch consisting of a band or wire coiled around a shaft and having its end or ends projecting from the shaft for receiving the power, substantially as shown and described, whereby when the said end or ends are turned the coil is tightened upon the shaft and both coil and shaft are turned together, as set forth.

2. In a friction-clutch, the combination, with a band or wire coiled around a shaft and having its ends projecting from the shaft, of a shifter or device for holding either of the ends of this wire or band, substantially as herein shown and described, and for the purpose of adjusting the clutch to operate in either direction of rotation, as set forth.

3. In a friction-clutch, the combination, with the wire or band D, coiled around a shaft, and having its ends *d d'* projecting from the shaft, of the casing E, loosely mounted on the shaft, and of a shifter or cam-shaft, G G', in this casing, substantially as herein shown and described, and for the purpose of adjusting the clutch to operate in either direction of rotation, as set forth.

255,958. ROLLING-MILL FOR TAPERING SPRING-POINTS. WILLIAM EVANS, Philadelphia, Pa. Filed Oct. 26, 1881. (No model.)

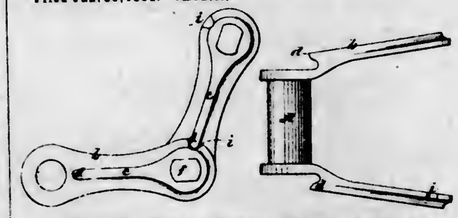


Claim.—1. The combination of the die D', having the circumferential annular rib *g* and flat marginal surfaces *i i*, block *b'*, adjusting-screw E', and roller A, with the roller A', having an annular groove, *h*, for ribbing the tapered ends of the springs, the die being held in its adjusted position by means of the key *f'*, substantially as described.

2. The combination of the roller A, provided with dies D and D', with the roller A', having an annular groove, *h*, and gear-wheels C and C', with unequal numbers of teeth, this combination being such that the surfaces which come in contact with the springs shall vary in their relative positions, substantially as and for the purpose set forth.

3. The combination of the segmental dies D and D', having blocks *b* and *b'*, the screws E and E', and keys *f* and *f'*, with the roller A, having recesses *e* and *e'*, substantially as and for the purpose set forth.

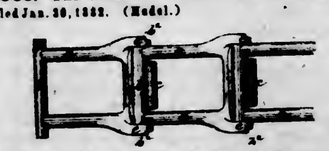
255,959. DRIVE-CHAIN. WILLIAM D. EWART, Chicago, Ill. Filed Jan. 30, 1882. (Model.)



Claim.—1. A chain-link composed of one tubular end bar and two side bars, said side bars being provided with keepers *d d* and a notch or cut-out, *i*, and formed either parallel with each other or otherwise, substantially as and for the purpose specified.

2. A chain composed of duplicate links each formed with one end bar and two side bars, as specified, and provided with keepers *d d* and a notch, *i*, the said links being hinged together by a suitable pintle.

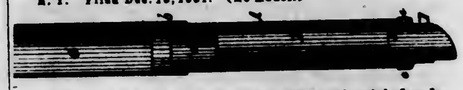
255,960. DRIVE-CHAIN. WILLIAM D. EWART, Chicago, Ill. Filed Jan. 30, 1882. (Model.)



Claim.—1. A chain-link having the projections or extensions b^2 b^2 at one end and provided with an open coupler-hook, *c*, and prongs or keeper devices *e e* at the other end, the whole constructed and adapted to operate as described.

2. A drive-chain composed of links each of which has the projections b^2 b^2 at one end and the open hook *c* and keeper devices *e e* at the other end, and all of which are coupled and held together by the insertion of the end bar, *b*, within the coupler-hooks *c*, and the partial encirclement of the projections b^2 b^2 by the keepers *e e*, as set forth.

255,961. PEN-HOLDER. EBERHARD FABER, Port Richmond, N. Y. Filed Dec. 15, 1881. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, of the anti-nervous material A, the internal tubular support, B, for the same, the staff or handle C, having a projecting part extending over and surrounding the upper end of the anti-nervous material to conceal and protect the edge thereof, and a flange on the tip D surrounding the lower edge of the anti-nervous material, as set forth.

2. The combination, substantially as hereinbefore described, of the anti-nervous material, the tubular support, the handle, the pin formed on said handle and fitting the interior of the tubular support, the ferrule secured to the handle and projecting over the inner edge of the anti-nervous material and the tip.

3. The combination, substantially as hereinbefore described, of the anti-nervous material, the tubular support, the handle connected to the tubular support, the tip D, and the cap *c*, formed on said tip and constructed to conceal and protect the outer edge of the anti-nervous material.

255,962. CORN-PLANTER. JOHN FELDMEIR, Oskaloosa, Kans. Filed Sept. 10, 1881. (Model.)

255,958. LOOM-SHUTTLE. SUMNER A. DUDLEY, Wilkinsonville, Mass. Filed June 27, 1881. (No model.)

Brief.—The shuttle-spindle is formed with a shoulder upon one side, which engages with a shoulder upon the interior of a bobbin placed thereon. A spring secured to the heel of the spindle presses against the outside of the bobbin, when the spindle is depressed into the shuttle-body and holds the bobbin thereon. A pin in the shuttle-body holds back the spring as the spindle is elevated to release its pressure upon the bobbin. A spring-pressed block or knuckle having a rounded head bearing in a notch formed in the spindle-heel acts to maintain the spindle in its elevated or depressed position.

Claim.—1. The combination, with shuttle-body *d*, of shuttle-spindle *c*, provided with shoulder *g* on one side thereof, spring *b*, adapted to press upon the outer periphery of a bobbin, and sta-

255,956. CONSTRUCTION OF CORD-ELEVATORS. ANSON M. ENGLISH, Providence, R. I., assignor of one-fourth to Clarence E. Chandler, Meriden, Conn. Filed Jan. 23, 1882. (No model.)

5. The combination of the cord F, spool I, separating-cord *i*, and screw-shaft H with the traveling nuts *d*, levers *b*, and clamping guide-shoes *e*, substantially as described.

6. The combination of the springs *c* with the levers *b*, shoes *e*, screw-shaft H, traveling nuts *d*, and guideways A, on which the shoes act, substantially as described.

7. The combination of the elevator-cage, the screw-shaft H, and cord F with the air-tube C, weight or plunger D, and a tripping device between the elevator-cage and the said cord, substantially as described.

255,957. FRICTION-CLUTCH. ANSON M. ENGLISH, Providence, R. I., assignor of one-fourth to Clarence E. Chandler, Meriden, Conn. Filed Jan. 23, 1882. (No model.)

Claim.—1. An improved friction-clutch consisting of a band or wire coiled around a shaft and having its end or ends projecting from the shaft for receiving the power, substantially as shown and described, whereby when the said end or ends are turned the coil is tightened upon the shaft and both coil and shaft are turned together, as set forth.

2. In a friction-clutch, the combination, with a band or wire coiled around a shaft and having its ends projecting from the shaft, of a shifter or device for holding either of the ends of this wire or band, substantially as herein shown and described, and for the purpose of adjusting the clutch to operate in either direction of rotation, as set forth.

3. In a friction-clutch, the combination, with the wire or band D, coiled around a shaft, and having its ends *d d'* projecting from the shaft, of the casing E, loosely mounted on the shaft, and of a shifter or cam-shaft, G G', in this casing, substantially as herein shown and described, and for the purpose of adjusting the clutch to operate in either direction of rotation, as set forth.

255,958. ROLLING-MILL FOR TAPERING SPRING-POINTS. WILLIAM EVANS, Philadelphia, Pa. Filed Oct. 26, 1881. (No model.)

Claim.—1. The combination of the die D', having the circumferential annular rib *g* and flat marginal surfaces *i i*, block *b'*, adjusting-screw E', and roller A, with the roller A', having an annular groove, *h*, for ribbing the tapered ends of the springs, the die being held in its adjusted position by means of the key *f'*, substantially as described.

2. The combination of the roller A, provided with dies D and D', with the roller A', having an annular groove, *h*, and gear-wheels C and C', with unequal numbers of teeth, this combination being such that the surfaces which come in contact with the springs shall vary in their relative positions, substantially as and for the purpose set forth.

3. The combination of the segmental dies D and D', having blocks *b* and *b'*, the screws E and E', and keys *f* and *f'*, with the roller A, having recesses *e* and *e'*, substantially as and for the purpose set forth.

255,959. DRIVE-CHAIN. WILLIAM D. EWART, Chicago, Ill. Filed Jan. 30, 1882. (Model.)

Claim.—1. A chain-link composed of one tubular end bar and two side bars, said side bars being provided with keepers *d d* and a notch or cut-out, *i*, and formed either parallel with each other or otherwise, substantially as and for the purpose specified.

2. A chain composed of duplicate links each formed with one end bar and two side bars, as specified, and provided with keepers *d d* and a notch, *i*, the said links being hinged together by a suitable pintle.

255,960. DRIVE-CHAIN. WILLIAM D. EWART, Chicago, Ill. Filed Jan. 30, 1882. (Model.)

Claim.—1. A chain-link having the projections or extensions b^2 b^2 at one end and provided with an open coupler-hook, *c*, and prongs or keeper devices *e e* at the other end, the whole constructed and adapted to operate as described.

2. A drive-chain composed of links each of which has the projections b^2 b^2 at one end and the open hook *c* and keeper devices *e e* at the other end, and all of which are coupled and held together by the insertion of the end bar, *b*, within the coupler-hooks *c*, and the partial encirclement of the projections b^2 b^2 by the keepers *e e*, as set forth.

255,961. PEN-HOLDER. EBERHARD FABER, Port Richmond, N. Y. Filed Dec. 15, 1881. (No model.)

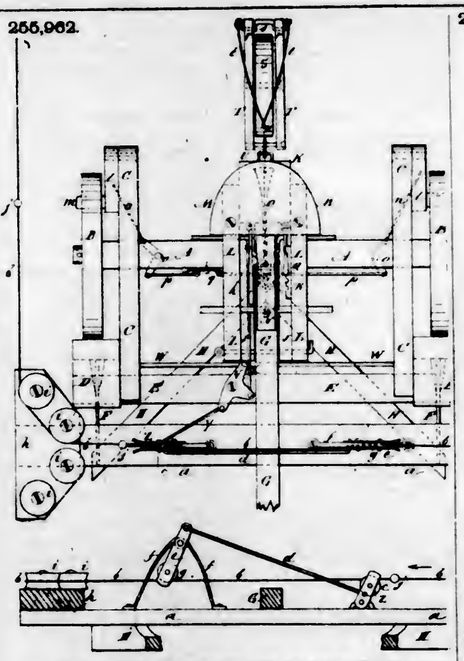
Claim.—1. The combination, substantially as hereinbefore described, of the anti-nervous material A, the internal tubular support, B, for the same, the staff or handle C, having a projecting part extending over and surrounding the upper end of the anti-nervous material to conceal and protect the edge thereof, and a flange on the tip D surrounding the lower edge of the anti-nervous material, as set forth.

2. The combination, substantially as hereinbefore described, of the anti-nervous material, the tubular support, the handle, the pin formed on said handle and fitting the interior of the tubular support, the ferrule secured to the handle and projecting over the inner edge of the anti-nervous material and the tip.

3. The combination, substantially as hereinbefore described, of the anti-nervous material, the tubular support, the handle connected to the tubular support, the tip D, and the cap *c*, formed on said tip and constructed to conceal and protect the outer edge of the anti-nervous material.

255,962. CORN-PLANTER. JOHN FELDMEIR, Oskaloosa, Kans. Filed Sept. 10, 1881. (Model.)

255,962.



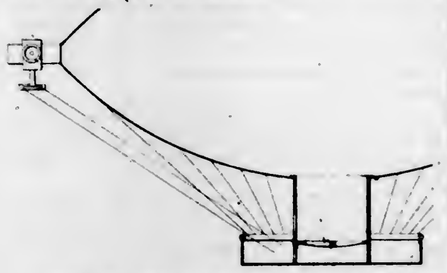
Claim.—1. The combination, with the tongue G, of the parallel pivoted bars J, passing under the axle A and carrying at their rear ends the central hopper K, as shown and described.

2. The lever N, combined with the bars J, hoppers D K, runners F O, tongue G, and braces H, whereby the hopper K and runner O will be lifted as the hoppers D and runners F are depressed, for the purpose set forth.

3. The combination, with the three-armed lever V, which operates the seed-slides, of the lever Z, the rod Y, pivoted to levers V Z, the forked and hinged cross-bar *a*, the cheek-rods *b*, having knobs *f* and carrying pivoted pulley *c*, the hinged and forked lever *e*, carrying pivoted pulley *g*, the rod *d*, pivoted to levers *e* Z, and the pulleys *i* on the cross-heads *h* of bar *a*, as and for the purpose set forth.

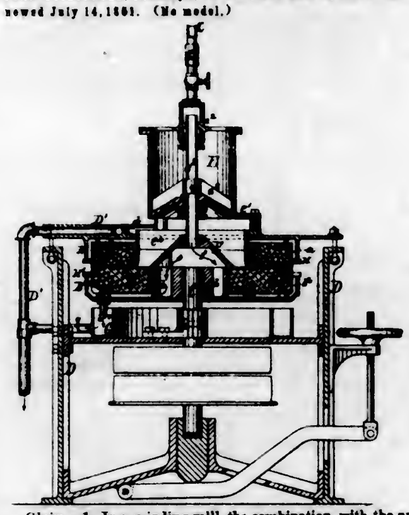
255,963. BALLOON. CHARLES P. PEET, Philadelphia, Pa. Filed Oct. 10, 1881. (No model.)

Brief.—The same medium which inflates the balloon also serves for its propulsion and guidance. To this end a valve, *i*, controllable from the gallery D, is provided with ports *n*, adapted to register with corresponding ports in the branches *g g'* *h*, but no two of which can at the same time communicate with the port *m* of the supply-branch *d*. The rear branch propels, the side branches vary the course, and all three of them are grooved to increase the impact of the gas upon the atmosphere.



Claim.—The within-described steering device for aerial vessels, the said device comprising a valve, *i*, and a valve-chest having discharge-branches with spiral grooves, as set forth.

255,964. COOLING MECHANISM FOR GRINDING-MILLS. JOHN FITZGERALD, Brooklyn, N. Y. Filed Dec. 4, 1880. Renewed July 14, 1881. (No model.)



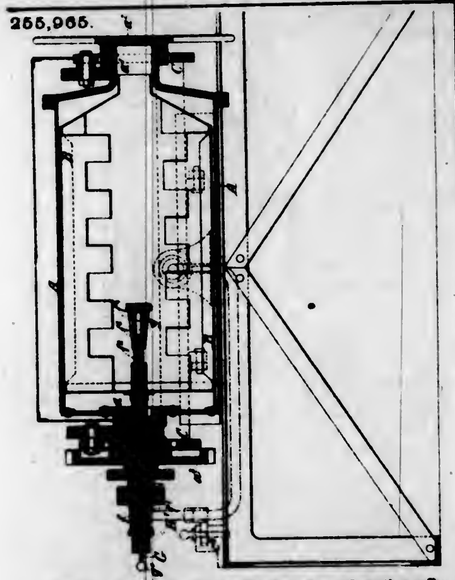
Claim.—1. In a grinding-mill, the combination, with the upper or stationary grinding-stone, A, of the casing A' and ring H, said casing being of greater diameter than the stone, and having the circular projection *a'* upon its inner face, as described, thus constituting a circumferential chamber, *a*, about the periphery and a chamber upon the back of the stone, said circumferential chamber being divided by radial partitions into chambers more or less in number, each subdivision being provided with an inlet-pipe about midway between the ends thereof, and with a gate at each end thereof opening into one of each of the chambers into which the aforesaid chamber on the back of the stone is divided by means of radial partitions, as shown, and which subdivisions are of such a number and arrangement relatively to the subdivisions of the circumferential chamber as to be in pairs, as specified, each pair being provided with a common outlet-pipe, all as described, and for the purpose set forth.

2. In a grinding-mill, the combination, with the lower or moving stone, B, of the casing B' and ring H', said casing being of greater diameter than the stone, and having the circular projection *b'* upon its inner face, as described, thus constituting a circumferential chamber, b^9, about the periphery of the stone and a chamber upon the back of the stone, said chamber on the back of the stone being divided by radial partitions into chambers more or less in number, each subdivision having an inlet-gate, b^{13}, leading into it from a chamber, *b*, about the hub or center of the stone, and a gate, b^{14}, leading from it at a point in its opposite wall most remote from said inlet-gate into a subdivision of the aforesaid circumferential chamber on the periphery of the stone, which subdivision is provided with a discharge-opening, b^{17}, at a point in the wall thereof most remote from the gate b^{14}, as described, and for the purpose specified.

3. In a grinding-mill, the combination, with the lower or moving stone, B, of the casing B' and ring H', said casing being of greater diameter than the stone, and having the circular projection *b'* upon its inner face, as described, thus constituting a circumferential chamber, b^9, about the periphery of the stone and a chamber upon the back of the stone, said chamber on the back of the stone being divided by radial partitions into chambers more or less in number, each subdivision having an inlet-gate, b^{13}, leading into it from a chamber, *b*, about the hub or center of the stone, and a gate, b^{14}, leading from it at a point in its opposite wall most remote from said inlet-gate into a subdivision of the aforesaid circumferential chamber on the periphery of the stone, which subdivision is provided with a discharge-opening, b^{17}, and pipe b^{18} at a point in the wall thereof most remote from the gate b^{14}, together with the trough O, as described, and for the purpose specified.

255,965. PROCESS OF AND APPARATUS FOR ROASTING COFFEE. FRANCIS G. FLEURY and EDWARD D. BARBER, London, England, assignors of one-third to Thomas Davies, same place. Filed Apr. 6, 1881. (No model.) Patented in England June 24, 1880, and in France Dec. 24, 1880.

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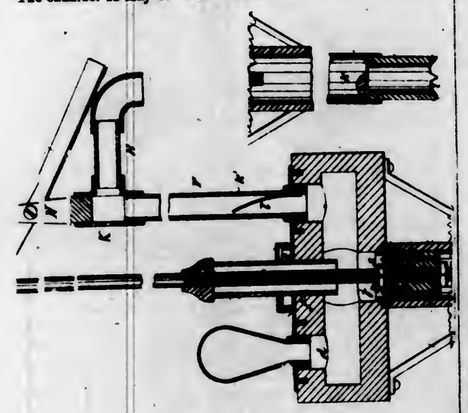


Claim.—1. The improvement in the process of roasting coffee, consisting in charging the roasting-cylinder with compressed air or gas under a pressure in excess of the atmospheric pressure before the roasting commences, whereby the volatile liquids and essential oils contained in the coffee and ordinarily vaporized and expelled by the roasting-heat will be retained in great part in the berry itself, substantially as herein described.

2. The air-tight rotating roasting cylinder or vessel A B, provided with hollow journals *a a'* for respectively admitting and discharging the coffee-berries and the compressed air or gas used to retain the volatile liquids and essential oils contained in the berries, such cylinder being mounted in the skeleton-frame C, provided with hollow trunnions *c c'* for the passage through them of the air-pipes H H', such cylinder being, moreover, furnished with a tube, *f'*, closed at its inner end by a laterally-slotted conical shell, *f''*, into which fits a similarly-slotted plug, *f'''*, bored to admit the receiver *g*, attached to the test-rod G, which rod serves to withdraw samples from time to time during the roasting operation, as set forth.

255,966. PUMP. MOSES GAYMAN, Canal Winchester, Ohio, assignor to himself and O. P. Gayman, same place. Filed Nov. 19, 1881. (No model.)

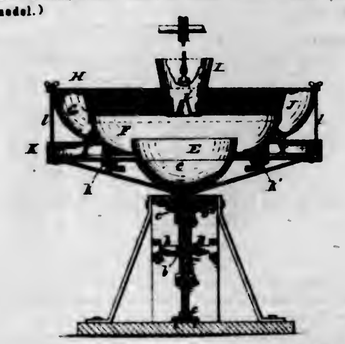
Brief.—The air-chamber E is adjustable on the piston-rod D. The chamber A may be wood or iron.



Claim.—1. The combination, with the externally end-threaded pipes F H and fulcrum-post N, of the three-way joint K, internally screw-threaded at each of its openings, as and for the purpose specified.

2. The combination, with the discharge-pipe F, having waste-hole *h'*, of the plate-spring fastened at bottom, arranged to cover the hole when the pump is in operation and to spring away from the hole as soon as the pump ceases to work, as shown and described.

255,967. CENTRIFUGAL MACHINE FOR SEPARATING ORES. GILBERT GLASS, White Oaks, N. Mex. Filed July 30, 1881. (No model.)



Claim.—1. In a centrifugal machine, receptacle F, provided with filter J, and concave receptacle E, combined and operating substantially as set forth.

2. In a centrifugal machine, receptacle F, provided with filter J and cover H, and concave receptacle E, combined and operating substantially as set forth.

3. In a centrifugal machine, receptacle F, provided with filter J, and amalgamated receptacle E, combined and operating substantially as set forth.

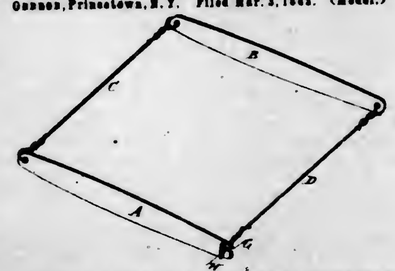
4. In a centrifugal machine, receptacle F, provided with filter J and cover H, and amalgamated receptacle E, combined and operating substantially as set forth.

5. A centrifugal machine consisting of the receptacles E, F, and G, filter J, cover H, and suitable revolving mechanism, all combined and operating substantially as and for the purpose set forth.

6. A centrifugal machine consisting of receptacles E, F, and G, filter J, cover H, reservoir K, and suitable revolving mechanism, substantially as described.

7. In a centrifugal machine, a revolving cover, H, having hooks *m*, and ropes having hooks *m'*, combined and operating substantially as set forth.

255,968. HAY AND COTTON BALING BAND. WILLIAM S. GORDON, Princetown, N. Y. Filed Mar. 3, 1881. (Model.)



Claim.—1. A baling-band made substantially as herein shown and described, and consisting of two bars or slats united by two wires or chains, one of which is provided with a hook or key for locking its end to the end of one of the bars, as set forth.

2. In a baling-band, the combination, with two bars or slats, of two transverse connecting-pieces, one of which is provided with a T-shaped key for locking its end to the end of one of the bars, substantially as herein shown and described, and for the purpose set forth.

3. In a baling-band, the combination, with the bar or slat B and the bar or slat A, provided at one end with a transverse slot, E, and a slot or recess, G, at right angles to the slot E, and extending from this groove to the end of the bar A, of the wires C and D, the latter provided with a T-shaped key, H, substantially as herein shown and described, and for the purpose set forth.

4. In a baling-band, the combination, with the bar or slat B and a bar or slat, A, provided at one end with a transverse slot, E, transverse grooves F in the outer surface, and a slot or recess, G, of the wires C and D, the latter provided with a T-shaped key, H, substantially as herein shown and described, and for the purpose set forth.

255,969. STATION-INDICATOR. SOCRATES E. GRAVES and DAVID J. EIKEMAN, Winchester, Ill. Filed Jan. 27, 1882. (No model.)

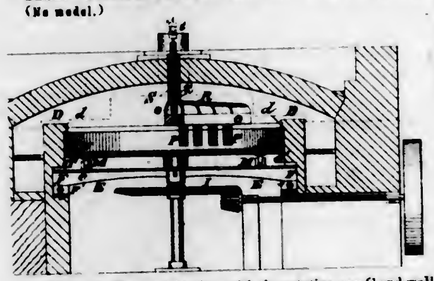


Claim.—1. The combination of a series of station-indicators, each one of which is provided with a grooved wheel, with the bell-rope, which passes through the groove in the wheel, the rope being provided with a series of projections for the purpose of operating the wheels when the rope is pulled toward the front of the train, substantially as shown.

2. In a station-indicator, the combination of the frame A, provided with a station-indicating mechanism, the wheel L, having a grooved edge and hooked corners, with the rope P, having the projections O, and a spring for taking up the slack of the rope, substantially as set forth.

3. In a station-indicator, the combination of the frame A, provided with the wheel L, which has the hollow hub J projecting through the frame, the removable frame H, rollers D, having the square shafts I, the rope P, and stops O, substantially as described.

255,970. APPARATUS FOR THE MANUFACTURE OF RED LEAD. NORRIS B. GREGG, St. Louis, Mo. Filed Dec. 20, 1880. (No model.)



Claim.—1. The combination, with the rotating pan C and wall D *d*, the sides of the pan and the wall being so constructed relatively to each other as to form an annular air-passage, *d'*, of the adjustable spider E, for regulating the flow of air through the passage *d'*, and the supporting-wheels M, substantially as set forth.

2. The combination, with the fixed stirrer-bar O, of the semi-cylindrical covering-tiles R, vertical flue R', and induction air-tube S, as and for the purposes set forth.

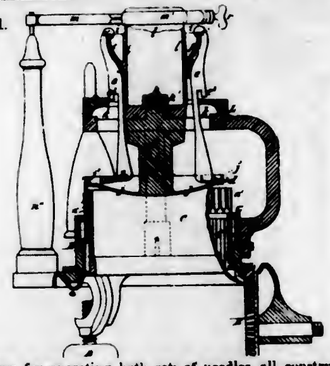
255,971. KNITTING-MACHINE. HENRY J. ORISWOLD, London, County of Middlesex, England. Filed July 15, 1879. Patented in England Oct. 8, 1873, and in France Apr. 8, 1874.

Brief.—The machine is adapted to knit either a flat or tubular web, ribbed or plain. The needles may be adjusted or thrown out of action without removing the loops from the same. The claims fully define the invention.

Claim.—1. The combination, with the suspended jacks carrying needles and having lips *c*², of the revolving ring L, adjustable flanged cams *g h*, and plain cam *a*, carried by said ring, as set forth.

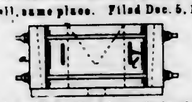
2. The combination, in a knitting-machine, of the cylinder provided with needles, a ribbing attachment carrying radial needles, cams for operating both sets of needles, all constructed to permit the knitting to be effected by revolving the cylinder in either direction, and appliances whereby the attachment may be adjusted and secured relatively to the cylinder with its needles, either opposite or between those of the cylinder, substantially as set forth.

255,971.



3. The within-described improvement in the art of manufacturing stockings, the same consisting in first forming the ribs with the ribbing-needles opposite the posts between the cylinder-needles, successively removing cylinder-needles adjacent to the ribbing-needles, putting the stitches over the adjoining needles, and, when a number of needles equal to the ribbing-needles are removed, then adjusting the ribbing device to bring the needles opposite the grooves of the needles removed, substantially as specified.

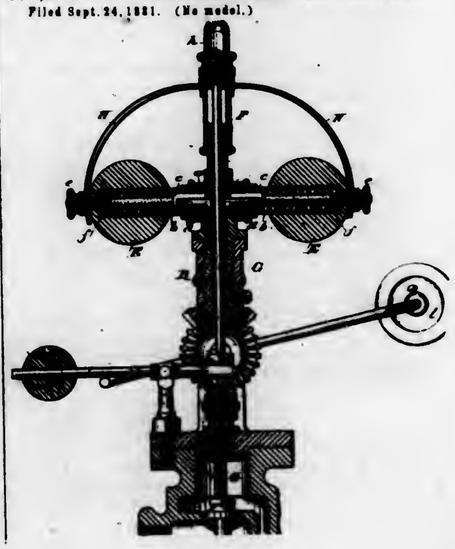
255,972. MOLD FOR MAKING TUBULAR BRICKS. ADAM HANN, Keystone Junction, Pa., assignor of one-half to James Jacob Hoblitzell, same place. Filed Dec. 5, 1881. (No model.)



Claim.—1. A mold for forming tubular bricks, having a hollow core or cores provided with an upper cutting-edge, substantially as and for the purposes described.

2. A mold for forming tubular bricks, having a hollow core or cores provided with an upper cutting-edge, and removable side or end pieces, substantially as and for the purpose described.

255,973. STEAM-GOVERNOR. JOSEPH J. HAHN, Canton, Ohio. Filed Sept. 24, 1881. (No model.)

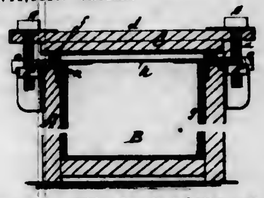


Claim.—1. In a steam-governor, the hollow arms *b b* on which the governor-balls are supported and are free to move thereon toward and from the center of motion, as set forth.

2. In a steam-governor, the hollow arms *b b*, with the balls E E mounted thereon, in combination with the spiral springs *f f* and plungers *c c*, located therein, and set-screws *e e*, whereby the springs are kept from direct contact with the balls, and a more perfect working of the balls toward and from the center of motion is secured, and the amount of force necessary to move the balls is regulated or adjusted, as set forth.

3. In a steam-governor, the driving-shaft B, provided with the hollow arms *b b*, in combination with the spiral springs *f f* and plungers *c c*, located within said hollow arms *b b*, balls E E, elliptical spring H, set-screws *e e*, sleeve F, and valve-stem G, as set forth.

255,974. BUTTER-CASE. JOHN E. HAMLIN, Philadelphia, Pa. Filed Apr. 18, 1881. (Model.)

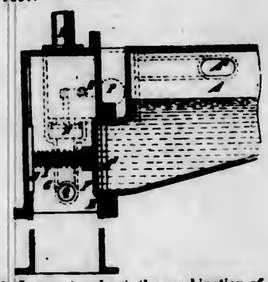


Claim.—1. The within-described butter-case, consisting of casing A, lining B, cover C, paraffine-coated rubber strips *f*, slides *g*, faced with borax-covered muslin, and means for securing the top, substantially as and for the purposes specified.

2. The combination, with a butter-case, of the slides *g*, coated with paraffine, and covered with muslin saturated with a solution of borax, substantially as described, whereby the slides are prevented from rusting, and the moisture and buttermilk absorbed, as set forth.

3. The cast or malleable iron rim *a*, combined with the box A, and its metal lining, substantially as and for the purposes described.

255,975. WATER-CLOSET. THOMAS HANSON, New York, N. Y. Filed July 7, 1881. (No model.)



Claim.—1. In a water-closet, the combination of a basin, a valve-chamber connected thereto, a vertically-arranged valve-seat at the juncture of the basin and chamber, a slide-valve operating in conjunction with said seat to control the escape of the contents of the basin, a guide for said valve, and a guideway parallel with said valve-seat, upon which said guide works, substantially as specified.

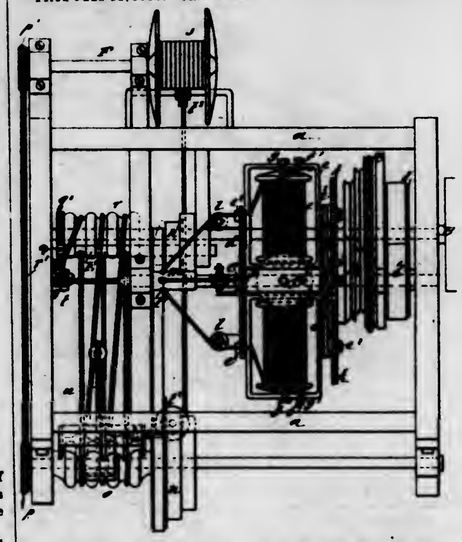
2. In a water-closet, the combination of a basin, a valve-chamber connected thereto, a vertically-arranged valve-seat and slide-valve for controlling the escape of the contents of the basin, a resistance-piece having a sliding connection with the stem of said valve, and a spring arranged between said resistance-piece and valve, substantially as specified.

3. In a water-closet, the combination of the basin A, valve-chamber G, slide-valve F, arm K, rock-shaft D, and pull-rod B, substantially as specified.

4. In a water-closet, the combination of the basin A, valve-chamber G, slide-valve F, with its tubular stem, the resistance-piece J, with its stem fitting in the tubular stem of the valve, and the spring I, substantially as specified.

5. In a water-closet, the combination of the basin A, valve-chamber G, slide-valve F, resistance-piece J, spring I, overflow-outlet A^2, conduit L, overflow-chamber M, valve N, lever O, and float P, all substantially as specified.

255,976. ROPE-MACHINE. JOHN HARRIS, Columbus, Nebr. Filed June 30, 1881. (No model.)

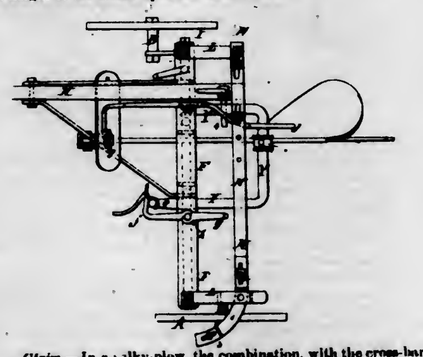


Claim.—1. The combination, with the shaft B, pulleys *b b'*, the belt connecting said pulleys, the pulleys *c b*, and the belt connecting them, the laying-shaft C, the spider *d*, the flier *e*, provided with gudgeons e^2, and spindle *g*, of the gear-wheels *i k*, whereby the fliers and spiders are given opposite motions, as described.

2. The shafts B C, pulleys *c b*, gears *i k*, spiders *d*, gudgeons e^2, fliers *e*, spindles *g*, tension-plates *l*, tubular journal *m*, pulleys *t t' t² t³*, rollers *o r*, shaft E, gear *q q'*, pulleys *p p'*, shaft F, and connecting-straps, as set forth, and combined for operation, as described.

255,977. SULKY-PLOW. THOMAS T. HARRISON, Ambroy, Kans. Filed Oct. 27, 1881. (Model.)

Brief.—Land-wheel attached to a swiveled post to aid turning short with the plow in the ground. A crank-screw adjusts the height of the frame upon the furrow-wheel.

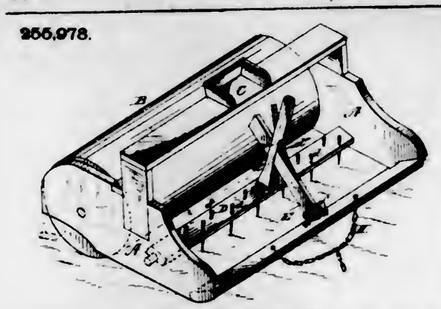


Claim.—In a sulky-plow, the combination, with the cross-bar M, having curved extension 1 upon its landside end, and the bar L, attached to the upper end of the landside axle D, of the keeper 2 and the stops 3, substantially as herein shown and described, whereby the machine can be turned at a right angle without raising the plow from the ground, as set forth.

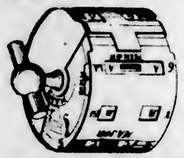
255,978. COMBINED HARROW AND ROLLER. JOHN HARVEY, Woody's Corner, Ind. Filed Aug. 8, 1879.

Claim.—The harrow-frame A, provided with roller B and seat C, and having the rocking bar D, in which are set the teeth *d*, and the centrally-fixed and upwardly-projecting arm *d'*, slotted at *d''*, combined with the spring *g*, hinged and notched stay-arm E, and crusher-board F, substantially as set forth.

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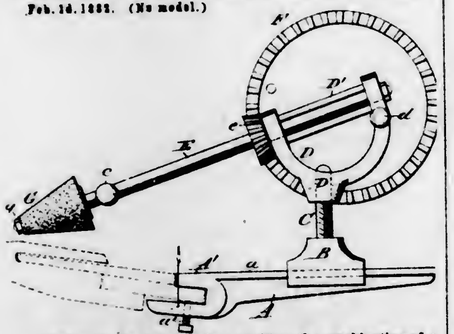


255,979. MUSIC SCALE AND CHORD INDICATOR. CHAS. H. HAUSCHEL, New York, N. Y. Filed Sept. 16, 1881. (No model.)



Claim.—The combination, in a scale and chord indicator, of an interior reed-cylinder, arranged substantially as described, with an exterior cylindrical casing provided with transverse slots for the egress of the air, recessed heads for exposing the entire scale, and mechanism for indicating at pleasure the major and its relative minor chord, all substantially as described.

255,980. MACHINE FOR SHARPENING MOWER AND REAPER KNIVES. CHAS. W. HERSHAW, Middleway, W. Va. Filed Feb. 14, 1882. (No model.)



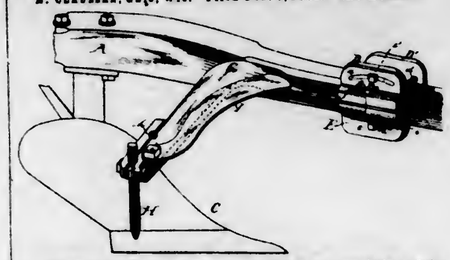
Claim.—1. In a sharpening-machine, the combination of a flanged clamping-bar, a recessed block adapted to slide thereon, a threaded standard secured to said block and adapted to be inclined forward and back, a bearing adjustable upon said standard and carrying a gear-wheel, and a shaft having a pinion meshing with said wheel and a grinding-cone secured to the end of said shaft, substantially as shown and described.

2. In a sharpening-machine, the combination, with the flanged bar A, having clamp A', of the recessed block B, adjustable upon said bar, the threaded standard C, secured thereto, and the set-screw *b*, for adjusting the inclination of said standard, substantially as shown and described.

3. In a sharpening-machine, the combination, with the bar A, block B, and threaded standard C, of the adjustable bearings D D', gear-wheel F, and shaft E, having pinion *e* and grinding-cone G, substantially as shown and described.

4. In a sharpening-machine, the combination of the bar A, having flange *a* and clamp A', the recessed block B, adjustable thereon, and provided with threaded standard C and set-screw *b*, for adjusting the inclination of said standard, the adjustable bearings D D', attached to said standard and provided with handle *d*, gear-wheel F, journaled in bearing D' and having handle *f*, and the shaft E, journaled in bearing D and provided with pinion *e*, loose-fitting handle *c*, and grinding-cone G, substantially as shown and described.

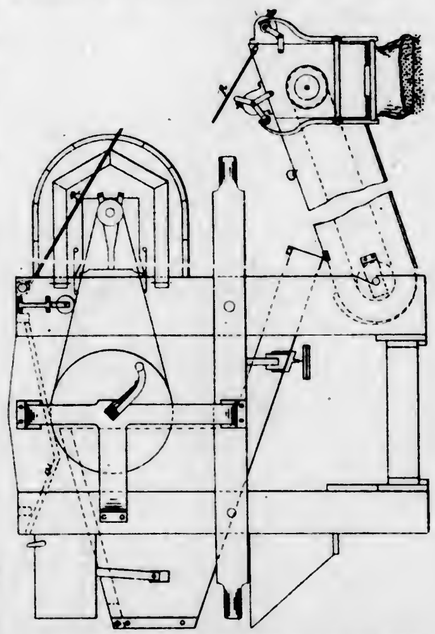
255,981. PLOW ATTACHMENT. PAUL P. HERRERS and PETER H. CLAUSSEN, Gale, Wis. Filed Feb. 6, 1882. (No model.)



Claim.—1. The attachment to a plow-beam, consisting of the clamp-plates D D' and adjustable plate E, with clamp-socket *b f*, in combination with arm G, pin H, and plate I, all constructed and arranged substantially as described and shown.

2. The attachment to a plow-beam, consisting of clamp D and adjustable plate E, with clamp-socket *b f*, in combination with arm G, having clamp-plate *h*, for holding pin H, and plate I, secured by bolt *i*, all arranged substantially as shown and described.

255,982. GRAIN-SEPARATOR. PAUL P. HERRERS and PETER H. CLAUSSEN, Gale, Wis. Filed June 17, 1881. (No model.)



Claim.—The combination, with a grain-separator and a grain-elevator provided with a sack-holder, of the ropes R, roller S, ratchet-wheel *s*, and pawl *j'*, for adjustably suspending the elevator-head, substantially as set forth.

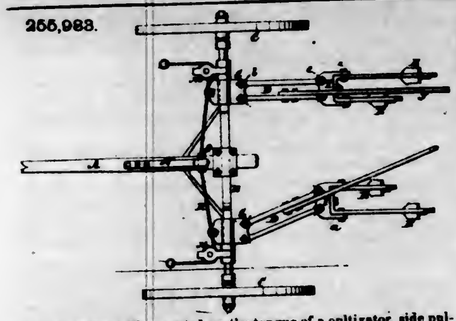
255,983. CULTIVATOR. LESLIE P. HIATT, Peru, Iowa. Filed Dec. 20, 1881. (No model.)

Brief.—Draft-equalizer pulley upon a spring-support, double-beams with two pivotal points keeping the shovels always at right angles to the line of draft.

Claim.—1. In a cultivator, the combination, with the axle B and the coupling G, of the coupling I, provided with the arms *a*, the shovel-shanks E, formed of a single piece and secured between the said arms, and the divided beam D, pivoted at each end to the said couplings, substantially as and for the purpose set forth.

2. The hitching device composed of a puller, O, carried by a spring-support, N, mounted on the tongue of a cultivator, side pulleys, M M, connected with the axle, and the rope or chain R, substantially as shown and described.

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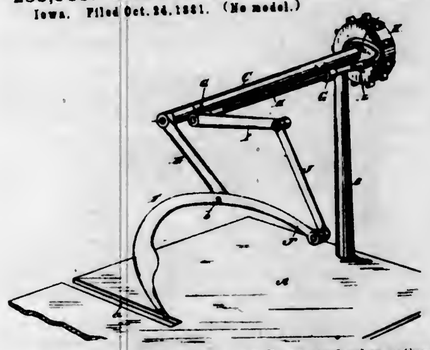


255,984. CAR-COUPLING. THOMAS J. HILLIARD, Conway, Ark. Filed Jan. 16, 1882. (Model.)



Claim.—The curved gravitating coupling-hooks having pointed or double-beveled self-coupling hooked ends and hooked shoulders on their backs, in combination with beveled hooks formed on the free ends of the buffer-bars, to which said coupling-hooks are pivoted, substantially as described.

255,985. GRAIN-BINDER. PLINY F. HOBBS, Davenport, Iowa. Filed Oct. 24, 1881. (No model.)



Claim.—1. The oscillating arm I and mechanism acting to positively oscillate the same, in combination with the crank-arm E, the binding-arm F, and the link J, connecting the oscillating arm with the extension J' of the binding-arm, for arresting the rearward sweep of the latter and positively raising it, substantially as described.

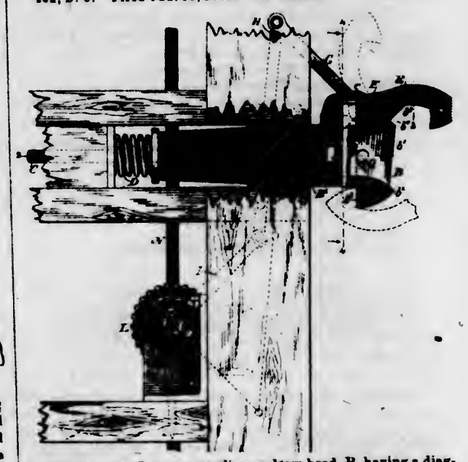
2. The rock-shaft H, oscillating arm I, connected therewith, and mechanism acting to rock said shaft and oscillate the arm in a positive manner, in combination with the crank-arm E, the binding-arm F, and the link J, connecting the oscillating arm to the extension J' of the binding-arm, substantially as described.

255,986. SHOE-HOLDER. WILLIAM P. HOLLIDAY, Detroit, Mich. Filed Feb. 21, 1881. (Model.)



Claim.—In a shoe-holder, the combination of the bed-piece composed of the broad plate B, provided with screw-holes *a a*, and cheek-piece A', having lug *b*, and a stud, C, having a pivot-pin, D, projecting therefrom, of the jaw-piece E, provided with the knob, and a cheek-piece, E', which is pivoted upon said pivot-pin, and the spring C', coiled around said stud C, and having one end bearing upon the upper side of the lug *b* and the other end bearing against the under side of the jaw-piece in the rear of its pivotal point, as described.

255,987. CAR-COUPLING. GEORGE H. HOLLISTER, Washington, D. C. Filed Jan. 16, 1882. (No model.)



Claim.—1. In a car-coupling or draw-head, B, having a diagonal face, *b'*, a V-shaped recess, *b'*, and pointed projections *b' b'*, substantially as described and shown.

2. In a car-coupling, the combination, with a draw-head, B, having a diagonal face, a V-shaped recess, and pointed projections, as described, of a pivoted hook, E, as set forth.

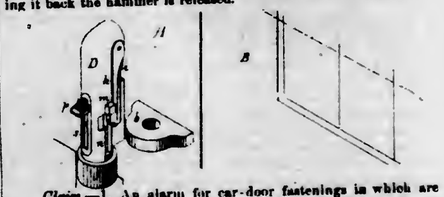
3. The draw-head B, having the draw-bar B', provided with a recess extending its entire length and flaring from its front to its rear end, as shown and described, combined with the draw-rod C, having its head arranged in the draw-head as a pivotal point for said draw-bar and extending throughout the recessed draw-bar, substantially as specified.

4. In a car-coupling, the draw-head B, having a transverse recess or slot, combined with the coupling-hook E, having the cam or projection *e*, and the sliding bolt P, fitting in said transverse recess and adapted to be operated by said cam or projection *e* on the backward movement of the hook E, whereby the said bolt P will be positively thrown outward, and thereby disengage the hook of the opposite coupling, as set forth.

5. The combination, with the draw-head B, of the pivoted hook E, arm G, link H, arm I, shaft J, gear-wheels L and M, and shaft N, having levers O on its opposite ends, substantially as set forth.

255,988. CAR-DOOR BURGLAR-ALARM. JAS. D. HOLLISTER, Savannah, Ga., assignor of one-half to the Hooke Smelting Company, Philadelphia, Pa. Filed Feb. 6, 1882. (No model.)

Brief.—The reciprocating hammer having a lug upon it is supported by a trigger when the hasp is out of locking position, but when in locking position a lug on the hasp throws the trigger out of engagement with the hammer-lug, and said hammer is supported by the hasp-lug, so that upon unlocking the hasp and throwing it back the hammer is released.



Claim.—1. An alarm for car-door fastenings in which are combined the following elements, namely: a casing, D, on the car,

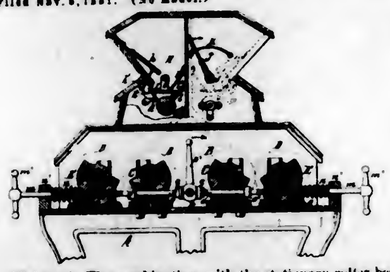
a hammer adapted thereto, means for supporting said hammer, and a hasp, *n*, having a lug or shoulder, whereby on closing the hasp the hammer is tripped and supported by said lug or shoulder and is released on opening the hasp, as set forth.

2. The combination of the car A, having the casing D, with hammer and hammer-support, and the door B, with a hasp, *n*, having a hood or plate, F, adapted to fit closely to the casing D, and having a hammer tripping, supporting, and releasing lug or shoulder, *w*, as set forth.

3. The combination of the casing D, its trigger *h*, and hammer *d*, with lug *w*, and the hasp *n*, having a hood, F, with lug *w*, as set forth.

4. The combination of the casing D, the hammer *d*, and nipple *g* with a percussion-cap, *x*, having a sealing-ring adapted to embrace the nipple and free to slide thereon, as specified.

255,989. ROLLER-MILL. NOAH W. HOLT, Buffalo, N. Y., assignor to Richard K. Noye and E. Hayward Noye, same place. Filed Nov. 8, 1881. (No model.)

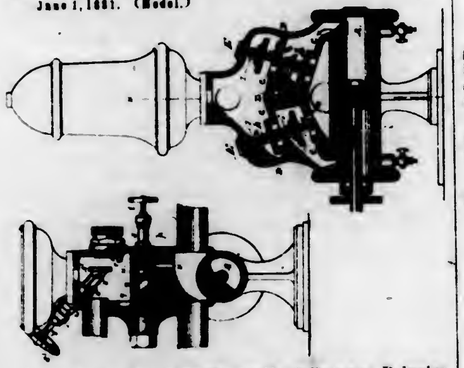


Claim.—1. The combination, with the stationary roller-bearings C and sliding roller-bearings E, of adjusting-screws whereby the sliding bearings are adjusted toward and from the stationary bearings, sliding bolts and eccentrics whereby the sliding bearings are separated from the stationary bearings without disturbing the adjustment, and springs whereby the sliding bearings are automatically returned to their former position when released, substantially as set forth.

2. The combination, with the fixed roller-bearings C, sliding roller-bearings E, and frame A, having lugs *a'*, of the adjusting-screws *m*, springs *s*, sliding bolts *o*, and eccentrics *p*, substantially as set forth.

3. The combination, with the fixed roller-bearings C and movable roller-bearings E, of eccentrics *p*, sliding bolts *o*, provided with adjustable heads *q*, and screw-bolts *m*, whereby motion is transmitted from the sliding bolts to the movable bearings, substantially as set forth.

255,990. PUMP. WILLIAM D. HOOKER, Oakland, Cal. Filed June 1, 1881. (Model.)



Claim.—1. In a pump, the outside shell or case, B, having the central upright partition, D, and the inclined partitions C C, that separate the induction and eduction chambers at each end of the pump, said partitions C C, being so arranged that while they incline toward the said central partition, D, they are also parallel with each other, in combination with the passages E in the top of the shell, directly over and in line with the valve-seats in the partitions C C, substantially as described and set forth.

2. The improvement in mounting valves upon valve-seats, consisting in connecting the upper ends of their guide-spindles to a transverse rod, I, the ends of which are supported by bearings in the sides of the case, substantially as described.

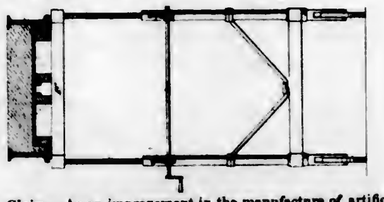
3. The rod I, having the guide-spindle *f* attached to it, in combination with the socket *j* on the case or shell B and the removable cover K, with its sockets *e*, substantially as and for the purpose described.

4. In a pump, the transverse passage or orifice *p*, connected by the vertical passage *q* with the discharge-chamber of the pump, and also connected by another and independent vertical passage, *r*, with the suction-chamber of the pump, in combination with the valve or piston *u*, arranged to move in the horizontal passage and open or close communication between the vertical passages, substantially as specified.

5. The plug-valve arrangement for closing the discharge-opening, consisting of the valve A', attached loosely to the screw-rod V, said screw-rod passing diagonally through a stuffing-box, *x*, in the side of the case and connected by a rod, *n'*, with the sleeve of the stuffing-box, in combination with the lug or bead *z* around the discharge-opening, substantially as described.

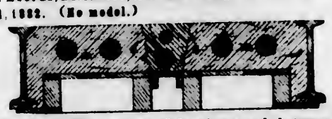
6. The cover K, having the steady-pins *a*, provided with a threaded portion near their bases which screw into threaded holes in the cover, while the projecting portion or pin is plain, for the purpose specified.

255,991. MANUFACTURE OF ARTIFICIAL STONE. WILLIAM H. HOOPES, Baltimore, Md. Filed Aug. 12, 1881. Renewed Mar. 14, 1882. (No model.)



Claim.—As an improvement in the manufacture of artificial stone, a rolling support adapted to be placed beneath and adjusted vertically to position with reference to the space to be filled and to sustain the plastic stone while hardening, substantially as and for the purpose specified.

255,992. MANUFACTURE OF ARTIFICIAL STONE. WILLIAM H. HOOPES, Baltimore, Md. Filed Aug. 12, 1881. Renewed Mar. 14, 1882. (No model.)



Claim.—1. The method of forming panels between beams or girders by placing in position a central block or keystone and filling the space between the same and each girder with artificial stone in a plastic state, substantially as and for the purpose specified.

2. A keystone or key-block provided upon its sides with grooves or ribs for engagement with the adjacent material, substantially as and for the purpose shown.

255,993. HAT-SWEAT AND OTHER CORDED-EDGED FABRICS. JAMES S. HOOMER and PHILETUS C. LAVEROP, Gloversville, N. Y., assignors to said Hoomer. Filed Mar. 9, 1881. (No model.)



Claim.—As a new manufacture, a sweat for hats or other cord edged fabric, in which the sweat-leather or other fabric has attached to its edge a reed, cord, or wire (either covered or uncovered) by means of a single thread, constituting a stitch, formed by successively drawing the loop formed by the thread on the needle below the fabric up over the edge of the fabric and locking said loop by the next descent of the needle, as and for the purpose specified.

255,994. DRIVE-CHAIN. EUGENE L. HOWE, Chicago, Ill. Filed Jan. 30, 1882. (Model.)

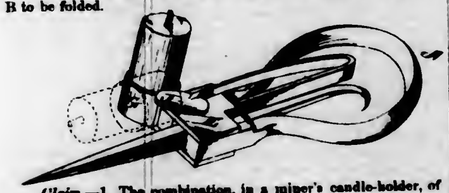


Claim.—1. A chain-link having plain side and end bars and formed with an open coupler-hook at one end, the throat of which is slightly wider throughout its length than the bar at the opposite end of the link is thick, and the lip of which has extensions *f f*, adapted to overlap the side bars of a link engaged with said coupler, all substantially as and for the purpose set forth.

2. A chain composed of duplicate links, each of which has a plain bar at one end and an open coupler-hook, *a*, at the other, the said coupler-hook being formed with projections at *f f'* and the links being combined and operating in the manner described.

255,995. MINER'S CANDLESTICK. JOHN C. HUME and THOMAS A. TATE, Leadville, Colo. Filed Feb. 10, 1882. (No model.)

Brief.—The clasp E can be swung around to allow the spike B to be folded.



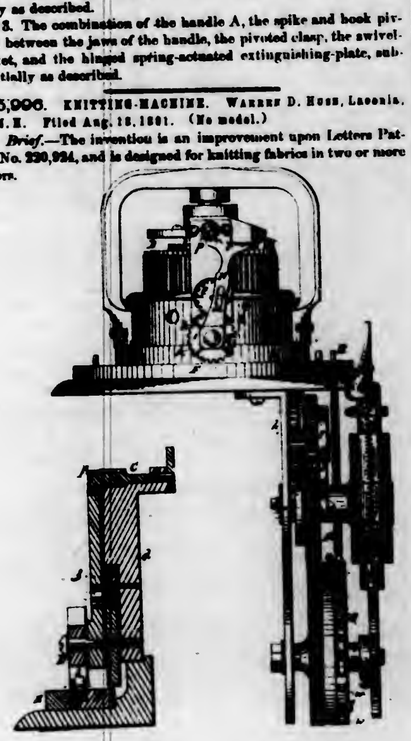
Claim.—1. The combination, in a miner's candle-holder, of the handle A, the hook and spike, one or both, pivoted between the jaws of said handle, the pivoted clasp E, and the socket applied to this clasp, substantially as described.

2. The combination of the clasp E, pivoted to the handle A, and the socket G, connected by a swivel, *b*, to the clasp, substantially as described.

3. The combination of the handle A, the spike and hook pivoted between the jaws of the handle, the pivoted clasp, the swivel-socket, and the hinged spring-actuated extinguishing-plate, substantially as described.

255,996. KNITTING-MACHINE. WARREN D. HOSS, Laconia, N. H. Filed Aug. 18, 1881. (No model.)

Brief.—The invention is an improvement upon Letters Patent No. 220,934, and is designed for knitting fabrics in two or more colors.



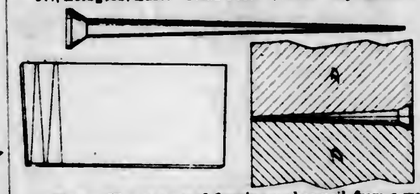
Claim.—1. The combination of the thread-guide C, rack-bar N, crank-pinion *f*, pinions *p* and *e*, tappet-disk D, and means for operating the said disk, substantially as and for the purpose herein specified.

2. The cam-plate I' and means for reciprocating the same, in combination with the rings E F and means for connecting the cam-plate and rings, substantially as and for the purpose herein specified.

3. The two tappet-rings E F, provided with pins *i i*, in combination with the cam-plate I', means for operating the same and connecting it with the rings, the tappet-disk D, and needle-cylinder, substantially as and for the purpose herein specified.

4. The combination of the rings E F, rod R, adapted to ascend between the two rings, sprocket-wheel S, Jacquard chain Q, tappet-disk D, and the needle-cylinder, substantially as and for the purpose herein specified.

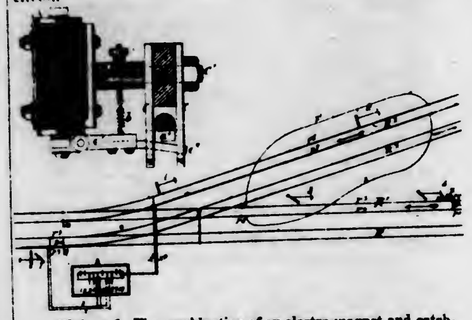
255,997. METHOD OF MAKING SHOE-NAILS. JOHN HYSLOP, Jr., Abington, Mass. Filed Feb. 17, 1881. (Specimens.)



Claim.—The process of forming a shoe-nail from a wedge-shaped blank, which consists in compressing the metal along the whole length of the opposite edges toward the center and condensing it until the body below the head is cylindrical in cross-section, of a continuous taper, and adapted to clinch properly, no matter in what direction the point is turned, as set forth.

255,998. RAILWAY SWITCH AND SIGNAL LOCKING APPARATUS. CALEB H. JACKSON, Allegheny, Pa. Filed Jan. 3, 1882. (No model.)

Brief.—The catch-rod of a switch, signal, or lock-bar lever is locked by the armature of an electro-magnet in a normally-closed track-circuit, whereby when a train has entered such circuit the current is short-circuited, and the control of the lever is thereby taken from the signalman until the train has passed off of such circuit.



Claim.—1. The combination of an electro-magnet and catch-rod of a railway switch, signal, or lock-bolt lever with reference to the locking and unlocking of the latter by the former, substantially as set forth.

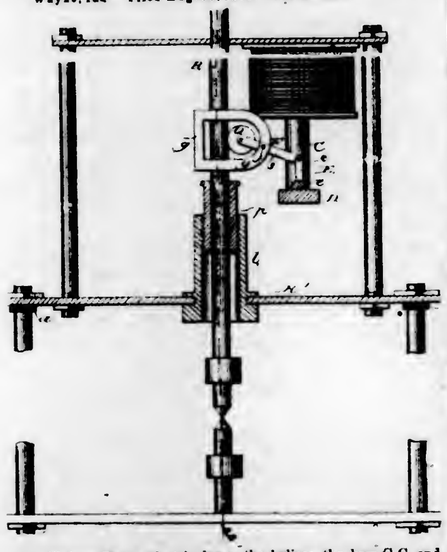
2. The combination of a track-circuit, a switch, signal, or bolt moving lever, a catch-rod, and an electro-magnet arranged to lock and unlock the catch-rod, substantially as set forth.

3. In combination with the signal-moving lever of an interlocking-machine, a normally-closed track-circuit and an interposed electrically-actuated lock suitably arranged for the locking of the lever on the short-circuiting of the track-circuit, substantially as set forth.

4. In combination with a switch-shifting lever, 10, an electro-magnet and lock, and a combined track and wire circuit, R' R² *x x'*, which shall include sections of two tracks, substantially as set forth.

5. In combination with a closed track-circuit, a home and distant signal, the levers for operating them, and an electrically-actuated lock on each lever, when the electro-magnets of both locks are actuated at the same time by the same battery, substantially as set forth.

256,999. ELECTRIC LAMP. CHARLES D. JENNEY, South Bend, assignor to the Fort Wayne Electric Light Company, Fort Wayne, Ind. Filed Aug. 30, 1881. (No model.)



Claim.—In an electric lamp, the helices, the bars C C, and fixed armature D, in combination with the candle-supporting rod R, surrounding yoke *g*, cam-clutch F, provided with roller Q, and adjusting thimble or collar *p*, moving in nut *l*, all constructed, arranged, and operated as set forth.

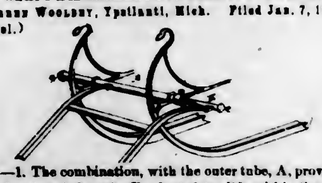
256,000. MANUFACTURE OF ARTIFICIAL STONE AND MARBLE. THOMAS JEWELL, Alexandria County, Va. Filed Feb. 24, 1882. (No specimens.)

Claim.—1. The compound herein described, consisting of water, feldspar saturated with fluoric acid, marble-dust saturated with acetic acid, iron filings saturated with sulphuric acid, powdered porcelain saturated with fluoric acid, protoxide of lead, alum, wood-ashes, and common salt, combined with the agglutinants described, as gum-mastic, gum-ammoniac, marine glue, gelatine, and dextrine dissolved in their proper solvents, substantially as set forth.

2. Artificial stones composed of Portland or other hydraulic cement and sand dampened with the above-described chemical compound and agglutinants and pressed compactly into suitable molds to secure the desired forms and patterns, as set forth.

3. A composition in imitation of natural marble, consisting of Keen's cement suitably colored, and united and solidified by dampening with the above-described chemical compound and agglutinants, and pressed into form, as fully set forth.

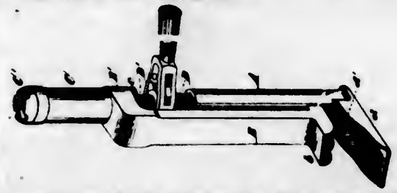
256,001. SHAFT ATTACHMENT FOR SLEIGHS. FRANK JOHNS and WARREN WOOLDEY, Ypsilanti, Mich. Filed Jan. 7, 1882. (No model.)



Claim.—1. The combination, with the outer tube, A, provided with a slitted end, and the tube E, adapted to slide within the tube A, of a collar adapted to surround the slitted end of the tube A, and a thumb-screw for decreasing the diameter of the said tube at this point.

2. The combination, with the tube A, secured to the sleigh or vehicle in any suitable manner, and provided with the openings or holes *a b* for the reception of a shank of a thill-coupling, and a slitted end, a collar surrounding the said slitted end, and a thumb-screw for decreasing the diameter of the said slitted end, of a smaller tube, E, provided with the openings *d* for the reception of a shank of a thill-coupling, and adapted to slide within the tube A, substantially as set forth.

256,002. LIFTING-JACK. JACOB O JOYCE, Dayton, Ohio. Filed Feb. 13, 1882. (No model.)



Claim.—1. A lifting-jack combining in its structure a tubular base, A, having an interior screw-thread, a hollow platen, C, internally threaded in a direction opposite to the threads in the tubular base, an arm, B, connected with the said platen and projecting downward therefrom, and having a foot-piece, *b*, a right-and-left-hand screw, D D', arranged in the threaded tubular base and hollow platen, and a screw-head, *d*, secured to the said right-and-left-hand screw, substantially as described.

2. A lifting-jack combining in its structure a tubular base, A, having an interior screw-thread, a hollow platen, C, internally threaded in a direction opposite to the threads in the tubular base an arm, B, connected with the said platen and projecting downward therefrom, and having a foot-piece, *b*, a right-and-left-hand screw, D D', arranged in the threaded tubular base and hollow platen, and a screw-head, *d*, secured to the said right-and-left-hand screw, and constructed with the annular groove *e* and sockets *f*, for receiving the arms H and lug I of a wrench, F, substantially as described.

3. In combination with the right-and-left-hand screw-jack, the downwardly-projecting arm B and foot *b*, suspended upon the screw-platen C, and having the guides *a'* and *b'* formed upon the base A and arm B, substantially as herein set forth.

256,003. OVERSHOE-FASTENING. JOSEPH L. JOYCE, New Haven, Conn. Filed Feb. 27, 1882. (No model.)



Claim.—1. The herein-described improvement in fastenings for arctic overshoes, consisting in the strap extending from the quarter at one side over the instep, provided with a button, combined with a cord attached by one end to the other quarter, and the hook with which the said cord may be engaged after having been passed around the button to draw the quarters together, substantially as described.

2. The herein-described improvement in fastenings for arctic overshoes, consisting in the strap extending from the quarter at one side over the instep, provided with a button upon both the out and in sides of the strap, combined with a cord attached by one end to the other quarter, and the hook with which the said cord may be engaged after having been passed around the button to draw the quarters together, substantially as described.

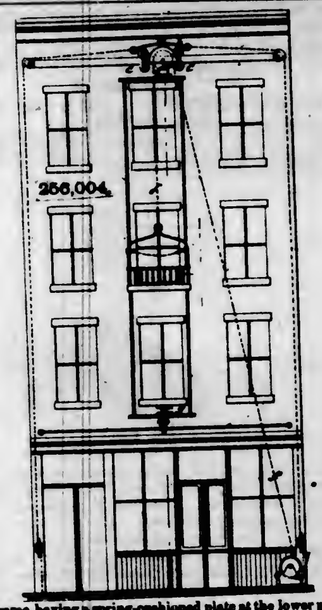
3. The herein-described improvement in fastenings for arctic overshoes, consisting in the strap extending from the quarter at one side over the instep, provided with a button, combined with a hook attached to the other quarter, and a cord one end of which is secured to the quarter through the shank of the hook, the other provided with a stop to engage with the hook after the cord has been passed around the button on the strap, substantially as described.

256,004. FIRE-ESCAPE. JOSEPH KELLNER, Jersey City, N. J., assignor to himself, Henry Stedentop, and Peter Micclay, same place. Filed Jan. 27, 1882. (No model.)

Brief.—The guide-frame for the hoist moves on fixed guide-rails at the top and bottom, and is provided with a spring-cushioned plate at the bottom to break the fall of the hoist.

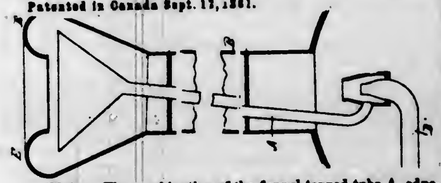
Claim.—1. In a fire-escape, the combination of fixed top and bottom guide-rails, a traversing guide-frame, means for moving the same in either direction on the guide-rails, a vertically-movable safety-basket guided on the traversing-frame, and means for hoisting or lowering the basket, substantially as described.

2. In a fire-escape, the combination of a vertical traversing



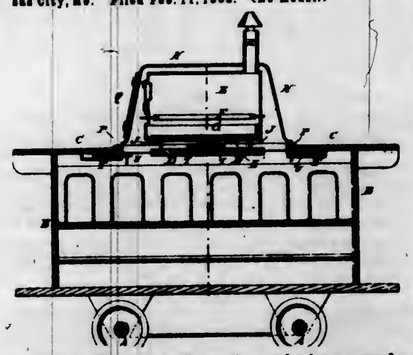
guide-frame, having a spring-cushioned plate at the lower part, with a vertically-movable safety-basket and means for hoisting or lowering the same, substantially as set forth.

256,005. SPARK-ARRESTER. ALEXANDER M. KERR, Westminster, Ontario, Canada. Filed Aug. 15, 1881. (No model.) Patented in Canada Sept. 17, 1881.



Claim.—The combination of the funnel-topped tube A, ebullition-chamber F, and jet-pipe D with the stack B, having an inturned marginal flange, E, substantially as and for the purposes set forth.

256,006. HEATER FOR CARS. DAVID M. KIRKPATRICK, Kansas City, Mo. Filed Feb. 11, 1882. (No model.)



Claim.—1. The combination, with a car having a covered recess or chamber in the roof, of a stove arranged in said chamber, and provided with a bed-plate recessed at the ends and sides, whereby the heat may be carried from the stove to the inside of the car, as described.

2. A car-stove having the bottom pivot, H, with double incline on its lower surface and the studs J J on the front and rear of bottom, in combination with a bed-plate having a seat with a double incline corresponding to that of the pivot and the inclined arc-grooves L K, whereby the stove can turn only a half-revolution and always be brought into position to suit the direction into which the car is to travel, as described.

3. In a car-heater, the combination, with the apertured roof C, of the bed-plate D, having inclined and recessed grooves K, the stove E, having conical pivot H and studs J, and the collar I, substantially as herein shown and described, whereby the stove will be securely supported and can be readily reversed, as set forth.

4. In a heater for railway-cars, the combination, with the apertured roof C and the ends of the bed-plate D, of the aprons U, substantially as herein shown and described, whereby the space below the forward end of the heater can be readily closed, as set forth.

5. In a heater for railway-cars, the bed-plate D, constructed with curved grooves K, having inclines and recesses in their bottoms, and provided with the double-inclined pivot-seat, and the collar I, substantially as herein shown and described.

6. In a heater for railway-cars, the stove-plate E', provided with central pivot, H, in combination with the bed-plate D and the collar I, substantially as herein shown, whereby the heater can be readily turned and will be securely held, as set forth.

7. In a car, the combination, with the apertured roof C and the pivoted stove E, of the cross-bars O and the cover N, substantially as herein shown and described, whereby the said cover is supported from and carried around by and with the said stove, as set forth.

256,007. APPARATUS FOR PRODUCING ILLUSORY DRAMATIC EFFECTS. JAS. W. KNELL, Boston, Mass. Filed Mar. 22, 1880. Renewed Mar. 8, 1882. (No model.)

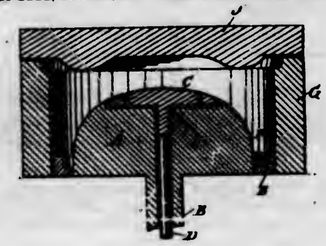


Claim.—1. The combination of the panoramic scene *a* and the endless path *d*, substantially as described, and for the purpose set forth.

2. The combination of the panoramic scene *a*, the endless path *d*, and the screen *f*, substantially as described, and for the purpose set forth.

3. The combination of the panoramic scene *a*, endless path *d*, vehicle *h*, and stay *i*, substantially as described, and for the purpose set forth.

256,008. MAKING PORCELAIN AND CHINA PASTE-BOXES. ELIAS LEAK, Trenton, N. J. Filed Oct. 18, 1881. (No model.)



Claim.—1. The combination, with the mandrel A, having a rounded upper surface and a tubular handle, of a removable plate, C, having a roundel surface flush with that of the mandrel, and provided with a rod, D, projecting from its lower surface through said tubular handle, as shown and described.

2. The combination, with the molding-mandrel A, of the plate C in its roundel or molding surface, and of the handle-rod D, attached to this plate, substantially as herein shown and described, and for the purpose set forth.

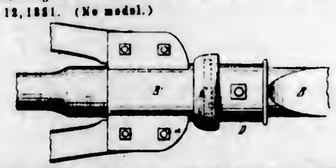
3. The combination, with the molding-mandrel A, of the plate C, the handle-rod D, and the tubular handle B, substantially as herein shown and described, and for the purpose set forth.

4. The combination, with the molding-mandrel A, of the loose grooved or annularly-recessed ring E, substantially as herein shown and described, and for the purpose set forth.

5. The combination, with the molding-mandrel A, provided with a removable plate, C, of the outer die, G, and the top die, J, substantially as herein shown and described, and for the purpose set forth.

6. The combination, with the molding-mandrel A, of the outer die, G, the top die, J, and the loose grooved ring E, interposed between the mandrel A and the die G, substantially as herein shown and described, and for the purpose set forth.

256,009. VEHICLE-REACH. JOSEPH LE ROY, Belleville, Mich., assignor of one-half to C. S. Whipple, same place. Filed Dec. 12, 1881. (No model.)



Claim.—1. In combination, with the bound-plates B', made in two detachable sections, each having a semi-cylindrical groove or channel, the sleeve D, provided with a flange to fit in the channels in the bound-plates, substantially as and for the purpose specified.

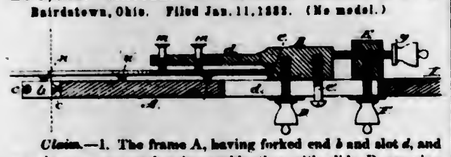
2. In combination, with the separate bound-plates B' B', provided with the channels *b*, the sleeve D, provided with a flange, *c*, to fit in said channels *b*, both the bound-plates and the sleeve being provided with an unobstructed opening to allow the free passage through them of the reach, substantially as and for the purpose specified.

256,010. TOY. SAMUEL LEWIS, Louisville, Ky., assignor of one-half to A. W. Hamaker, same place. Filed Feb. 13, 1882. (No model.)



Claim.—The balancing toy herein shown and described, composed of the base A, having needle-pointed standard or pivot B C, balance-figure D, having pin E, and detachable weighted pins F F' F F', pointed to admit of their insertion into the substance of the figure D, as set forth.

256,011. CIRCULAR-SAW JOINTER. ALEXANDER LONG, Bairdstown, Ohio. Filed Jan. 11, 1882. (No model.)

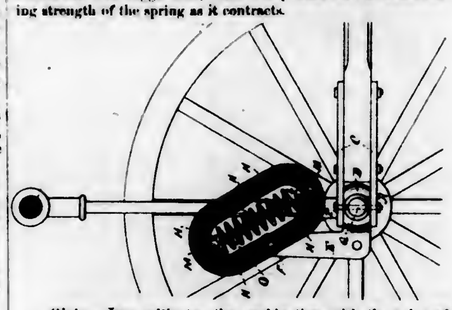


Claim.—1. The frame A, having forked end *b* and slot *d*, and carrying screws *c* and *a*, in combination with slide B, carrying screw *m*, guide-bolt *c'*, thumb-screw D, and plate H, all substantially as and for the purposes specified.

2. In a circular-saw-filing machine, the frame A, constructed as described, carrying screws *c* and *a*, in combination with the slide B, carrying screw *m*, the screw D, bolt *c'*, screw F, and stud E, carrying screw G, all substantially as and for the purposes specified.

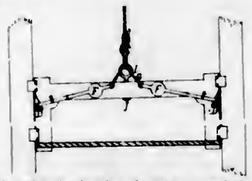
256,012. CULTIVATOR-SPRING. JOHN M. LONG, Hamilton, Ohio. Filed Jan. 27, 1882. (No model.)

Brief.—The springs for raising the drag-bars are placed in connection with toggle-bars, which compensate for the diminishing strength of the spring as it contracts.



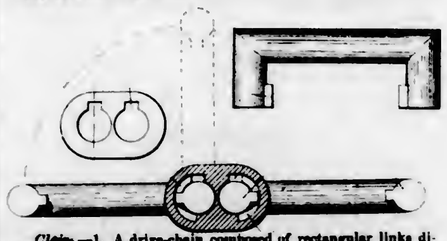
Claim.—In a cultivator, the combination, with the axle and frame, of pivoted beam B, arm or housing E, toggle system H, fixed pivot N, moving pivot F, and spring O, substantially as and for the purpose set forth.

256,013. AUTOMATIC SAFETY-BRAKE FOR ELEVATORS. CHRISTOPHER S. LONGSTREET, New York, N. Y. Filed Feb. 11, 1882. (No model.)



Claim.—A safety-brake for elevators, consisting of a movable wedge automatically, upon detachment of the hoisting-cable, brought by a weighted lever into action between the adjacent sides of the elevator and its guide to stop the falling elevator.

256,014. DRIVE-CHAIN. CHARLES H. LOW, Sandwich, Ill., assignor of one-half to J. Phelps Adams, same place. Filed Dec. 22, 1881. (No model.)



Claim.—1. A drive-chain composed of rectangular links divided lengthwise, provided with lugs or enlargements on the end bars of the link-sections, and couplers provided with end openings corresponding with the end bars and adapted to receive them when in an unusual relative position, whereby these parts may be coupled and uncoupled by bringing them into a position different from their working position, substantially as described.

2. The link-sections having end bars provided with lugs, in combination with short couplers having end openings corresponding therewith, and an interior recess within which the said end bars and lugs may turn freely when coupled, substantially as described.

256,015. CUFF-BUTTON. DAVID LUBIN, Sacramento City, Cal. Filed Jan. 31, 1882. (No model.)

Claim.—1. The combination, in a cuff or collar button, of a face-piece having a screw-threaded pin rounded at its outer end,

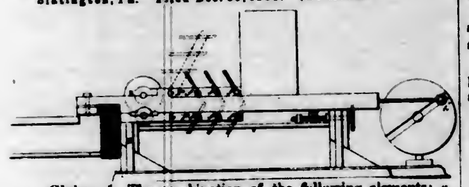
256,015.



with a back piece consisting of a disk, a shank internally bored and threaded, as shown, and an approximately elliptical head, substantially as shown and described.

2. In a cuff or collar button, a back piece consisting of a disk, a shank of a triangular or square form in cross-section, provided with a flaring threaded bore, and an approximately elliptical head, for the purposes herein set forth.

256,016. SLATE-DRESSING MACHINE. FRANCIS W. HALLETT, Slatington, Pa. Filed Dec. 30, 1881. (No model.)



Claim.—1. The combination of the following elements: a wheel having its rim provided with a grinding-surface in a plane substantially parallel with the plane of the wheel, the said rim having a space within it, into which the blanks will pass after having been operated upon by the grinding-surface, guides to receive and conduct the blanks in a plane parallel with the grinding-surface of the said wheel, and a feeding device, substantially such as described, outside the grinding-wheel, to force the blanks successively through the guides radially over the grinding-surface, substantially as described.

2. The combination of the following elements: a wheel having its rim provided with a grinding-surface in a plane substantially parallel with the plane of the wheel, guides to receive and conduct the blanks in a plane parallel with the grinding-surface of the said wheel, and a feeding device, substantially such as described, to force the blanks successively through the guides over the grinding-surface, with stationary cutters arranged at opposite edges of the slate, substantially as and for the purpose described.

3. The combination of the following elements: a wheel having its rim provided with a grinding-surface in a plane substantially parallel with the plane of the wheel, guides to receive and conduct the blanks in a plane parallel with the grinding-surface of the said wheel, and a feeding device, substantially such as described, to force the blanks successively through the guides over the grinding-surface, and an adjusting device, substantially such as described, to adjust the guide and feeding mechanism relatively to the grinding-surface, substantially as described.

4. The combination of the following elements: a wheel having its rim provided with a grinding-surface in a plane substantially parallel with the plane of the wheel, guides to receive and conduct the blanks in a plane parallel with the grinding-surface of the said wheel, and a feeding device, substantially such as described, to force the blanks successively through the guides over the grinding-surface, a receiver for the blanks to be ground, and a reciprocating follower moving through slots in the said receiver at the bottom to successively take the blanks from the bottom and deliver them to said guides, substantially as described.

5. The combination of the following elements: a wheel having its rim provided with a grinding-surface in a plane substantially parallel with the plane of the wheel, a follower to which a reciprocating movement is imparted in a plane parallel with the surface of the grinding-wheel, guides to receive the blank to be ground, extending over the grinding-surface, and feed-rolls to force said blanks over the grinding-surface of the wheel, substantially as described.

256,017. CAR-BRAKE. JOHN F. HALLINCKRODT, Denver, Colo., assignor of one fifty-second to P. H. Van Diest, same place. Filed Sept. 13, 1881. (No model.)



Claim.—1. In a car-brake, the combination, with a vertically-movable bolster and spring-board, the latter provided with equalizing-bars, of bell-crank brake-levers and stirrups connected at their upper ends with the short arms of the brake-levers and at their lower ends with the opposite ends of the equalizing-bars, substantially as set forth.

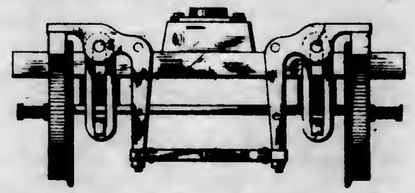
2. The combination, with the vertically-movable and swinging bolster, of bell-crank brake-levers pivoted upon rods or journals, the outer ends of said rods being secured to the side beams of the truck-frame and their inner ends supported in bars attached to the cross-beams of the truck, substantially as set forth.

3. The combination, with the swinging bolster having recesses formed near its ends, of the brake-lever-supporting bars secured to the cross-beams of the truck, said bars serving as stops to limit the endwise movement of the bolster, substantially as set forth.

4. The combination, with the bell-crank brake-levers having studs on their lower ends, of brake-beams removably secured to said studs, substantially as set forth.

5. The combination, with the brake-levers, of adjustable stop-plates interposed between the cross-beams and brake-levers, substantially as set forth.

256,018. CAR-BRAKE. JOHN F. HALLINCKRODT, Denver, Colo., assignor of one fifty-second to P. H. Van Diest, same place. Filed Sept. 13, 1881. (Model.)



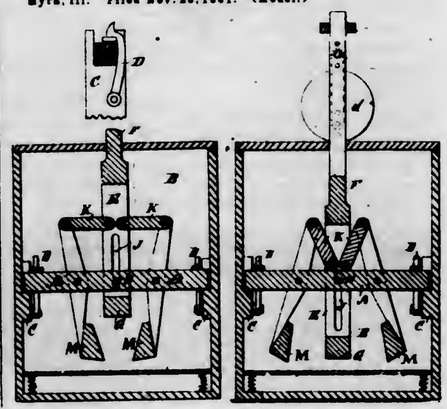
Claim.—1. The combination, with a vertically-movable bolster and spring-board connected therewith, of brake-levers and stirrups connecting the brake-levers and spring-board, and toggle-arms for actuating the brake-levers, substantially as set forth.

2. The combination, with a vertically-movable bolster, spring-board connected therewith, and springs interposed between the bolster and spring-board, of two pairs of brake-levers, each pair having their outer ends connected by a brake-bar and their inner or lower ends connected by a brake-beam, and stirrups connected with the brake-levers and spring-board, substantially as set forth.

3. The combination, with a vertically-movable bolster having a spring-board connected therewith, and cross-beams located on opposite sides of the bolster, of brake-levers and stirrups connecting the brake-levers and spring-board, said stirrups being located between the bolster and cross-beams, substantially as set forth.

4. The combination, with two pairs of brake-levers and a vertically-movable bolster suspended therefrom by stirrups, of brake-beams connecting the lower ends of the brake-levers, and toggle-arms and brake-rod for releasing the brakes, substantially as set forth.

256,019. WASHING-MACHINE. MICAJAH C. HALDEN, Palmyra, Ill. Filed Nov. 28, 1881. (Model.)

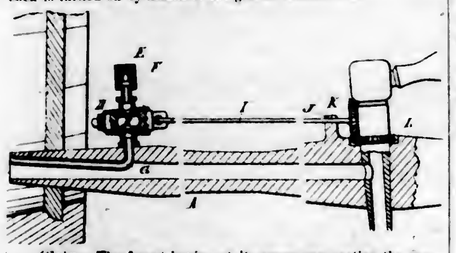


Claim.—1. In a washing-machine, the combination, with the bar A, carrying the reciprocating and swinging pounders, of the box B, provided with the recessed brackets C and the pivoted hooks D, substantially as and for the purpose set forth.

2. In a washing-machine, the combination, with the box B, the bar A, provided with the pins H and the operating mechanism, of the forked dasher-rod F, provided with the block G and the slots J, the arms K, pivoted to the dasher-rod, and the levers I, provided with the blocks M, and pivoted to the said bar and to the arms K, substantially as and for the purpose set forth.

256,020. BEER-FAUCET. JOHN MAPPES, Cincinnati, Ohio. Filed Jan. 14, 1882. (No model.)

Brief.—The valve-guarded inlet G is opened when the faucet-cock is turned on by means of the geared connections.



Claim.—The faucet having at its upper rear portion the supplementary cock D, provided with the valve-guarded inlet E F G, and the geared connection I K L, with the spigot, substantially as set forth.

256,021. VENTILATOR FOR BUILDINGS. JOHN MCDONOUGH, Philadelphia, Pa. Filed Oct. 25, 1881. (No model.)

Brief.—Utilizes the hollow supporting-columns of galleries, &c., for distributing refrigerated air through them to interior of halls, &c.



Claim.—In a ventilating apparatus for buildings, the combination, with the forcing apparatus, the main pipe, and the distributing-pipes, of the hollow slotted columns located within the room to be cooled, substantially as specified.

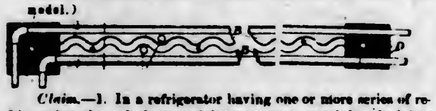
256,022. BOOK-BINDING. ANDREW J. MEGEE, Philadelphia, Pa., assignor of one-half to Francis H. Miller, same place. Filed Dec. 5, 1881. (No model.)



Claim.—1. An album or like book composed of leaves having two hinges, *x*, between the back of the book and the main sheet A of the leaf, as set forth.

2. A leaf for albums or like books, said leaf having two ribs or guards, *a a'*, with flexible connections *x'*, as set forth.

256,023. REFRIGERATOR COOLED BY AMMONIA AND OTHER VOLATILE LIQUIDS. REUBEN A. MESSENGER, Medford, assignor of one-half to John H. Watson, Brookline, and Samuel W. Johnson, Medford, Mass. Filed Jan. 31, 1882. (No model.)



Claim.—1. In a refrigerator having one or more series of refrigerating-pipes, the boxes or joint-protectors containing the joints of said pipes, said boxes being entirely disconnected from the interior of the preserving-chamber and adapted to protect the joints of the pipes from contact with the external air, as set forth.

2. The boxes or joint-protectors containing the joints of the refrigerating-pipes and provided with pipes for the escape of leaking gas, as set forth.

3. The boxes or joint-protectors containing the joints of the refrigerating-pipes and provided with a packing of asbestus or other suitable material around said joints, as set forth.

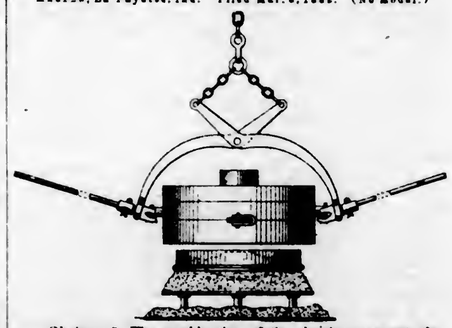
4. In a refrigerator, the combination of a preserving-chamber, refrigerating-pipes arranged along the walls thereof, practically air-tight casings inclosing the pipes and shutting them off from contact with the air in the chamber, and air-passages passing through said casings and communicating with the upper and lower portions of the chamber, whereby direct contact between the air in the chamber and the pipes is prevented, as set forth.

5. The combination of the preserving-chamber, the double series of refrigerating-pipes, and the divided casings containing said pipes, the proximate sides of the divisions of the casings being corrugated and forming air-passages communicating with the upper and lower portions of the preserving-chamber, as set forth.

6. The casings B, inclosing the refrigerating-pipes and provided with outlets extending outside of the chamber for the escape of leaking gas, as set forth.

7. The combination of the refrigerating-pipes, the casings B, surrounding said pipes, and a filling of rock-salt or other solid conductor of heat, as set forth.

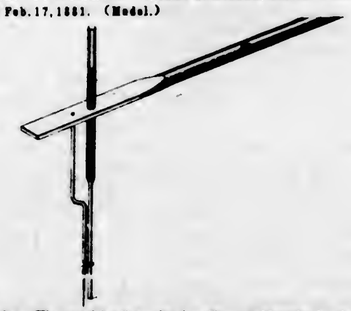
256,024. GRAPPLING-IRON. MUNSON MICHAEL and PHILO W. MASTEN, La Fayette, Ind. Filed Mar. 8, 1882. (No model.)



Claim.—1. The combination of the clasping-segment, the hook, the trunnion, and the tenon formed thereon, substantially in the manner and for the purposes described.

2. The combination of hoisting-tongs having hooks or eyes A A, the clasping-segments, the hooks formed with lips, the flanged trunnions, and means for attaching turning-handles thereto, substantially in the manner and for purposes described.

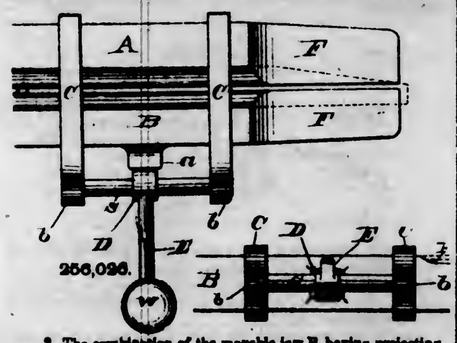
256,025. PIVOT-GAGE. THOMAS S. MILLER, Carlinville, Ill. Filed Feb. 17, 1881. (Model.)



Claim.—The combination of a handle, a guide-wire having a curl or eye and rigidly secured to the handle, a wire parallel to the guide-wire and sliding in the curl, and provided with a screw passing through a threaded opening in the handle, substantially as and for the purpose set forth.

256,026. CLAMP FOR HOLDING RAILROAD-RAILS. WILLIAM J. MORGAN, Chicago, Ill. Filed Dec. 31, 1881. (No model.)

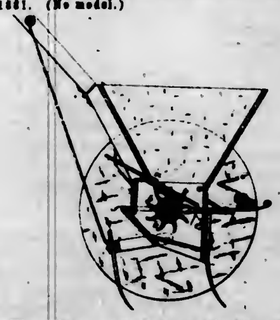
Claim.—1. In a railroad-iron-clamping device, the jaws A and B, forming opening O, and beveled off at F, substantially as and for the purpose set forth.



256,026.

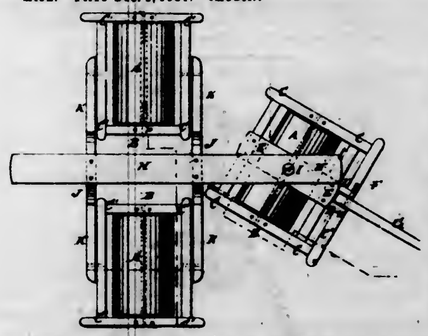
2. The combination of the movable jaw B, having projecting piece *a*, and the stationary jaw A, said jaws beveled at F and cast so as to form the opening O, with the yokes C C, having bearings *b b*, shaft S, cam D, lever E, and weight W, substantially as and for the purpose described and shown.

256,027. COTTON-PLANTER AND GUANO-DISTRIBUTER COMBINED. BENJAMIN F. MORGAN, Greenville, S. C. Filed Nov. 17, 1881. (No model.)



Claim.—The agitator-plate E, in combination with the adjustable extensible side-plate F, substantially as described.

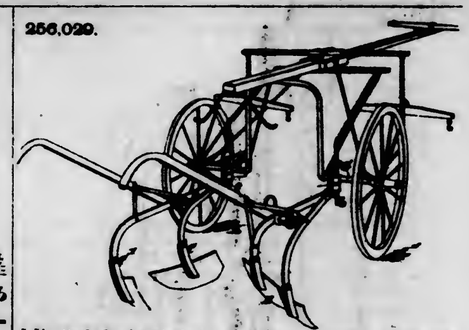
256,028. FIELD-ROLLER. ANDREW E. MOORE, Charlotte, Mich. Filed Dec. 6, 1881. (Model.)



Claim.—The combination, with the frame C, provided with the plank E, of the rear frames, C', the cross-bars K, between which the rear frames are pivoted, the standards J, and the plank H, pivoted to the plank E and rigidly secured to the standards J and projecting in the rear of the said frames C', substantially as and for the purpose set forth.

256,029. CULTIVATOR. GIDEON MOORE, Moline, Ill., assignor to Deere and Company, same place. Filed Nov. 6, 1881. (No model.)

Claim.—1. In a cultivator, and in combination with the pivoted shovel-beams, the brackets H H', having slotted face-plates



256,029.

A A', attached respectively to said beams and adjustable on each other by means of slot, bolt, and nut, substantially as set forth.

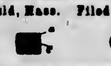
2. In a cultivator, the bracket H H', consisting of two parts having respectively faces *h h'*, slotted at h^3, and adjustable by bolt h^3 and nut h^4, and adapted to be secured on the shovel-beams, all substantially as set forth.

256,030. METALLIC COUNTER-SUPPORT FOR BOOTS AND SHOES. VREA B. MORTON, Louisville, Ky. Filed Oct. 24, 1881. (No model.)



Claim.—The counter-stiffener herein described, consisting of the body B, having duplex fingers *b* turned inward at b^2 and provided with cross-heads *c*, arranged parallel with the longitudinal plane of the sole, and having back finger, *a*, turned inward and provided with cross-head *c*, arranged transversely, and the whole, adapted to serve without screws or other fasteners, as specified.

256,031. WHIP-CORE. HENRY HOLLIS and JAMES HOGLE, Jr., Westfield, Mass. Filed Dec. 14, 1881. (No model.)



Claim.—The within-described whip-core, consisting of a core of rawhide folded upon itself and having its folds solidly united by the interposition of suitable cement, substantially as set forth.

256,032. LATHE FOR TURNING IRREGULAR FORMS. EDWARD HYNES, Cincinnati, Ohio, assignor to the Lane & Bodley Company, same place. Filed Feb. 16, 1881. (No model.)

Brief.—The work-carrying frame may be swung back from the cutter by cams on a rock-shaft working against the frame. The clutch mechanism operating the winding-shaft (by which the cutter-frame is drawn from end to end of the work) is uncoupled by a pin on the frame moving back a spring-bolt. The same pin actuates the mechanism which swings back the work-frame.

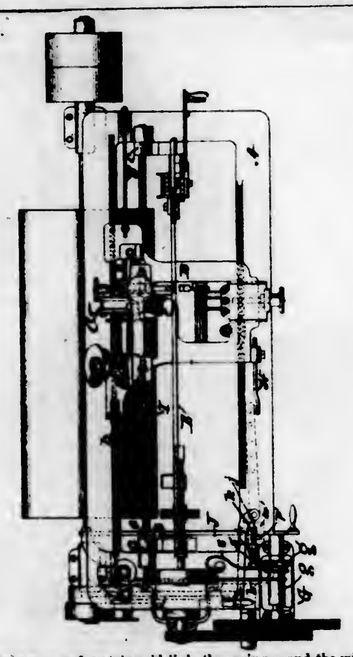
Claim.—1. The combination, with the vertical work-carrying frame E, arranged independently of the driving mechanism of the lathe, of a rock-shaft arranged at one side of said frame and provided with cams *c c* and lever mechanism, such substantially as described, connected with the rock-shaft and under control of the operator, whereby the rock-shaft can be rotated and the cams caused to move and retain the work-carrying frame away from the cutters at any stage of the cutting operation, substantially as described.

2. The combination, with the vibratory work-carrying frame E and the horizontal rock-shaft I, provided with the cams *c c* and crank *c*, of the lever J, pivoted at one end to the frame A, the pivoted link *d*, connected with the lever and with the crank of the shaft I, and the weight *w'*, arranged to draw the lever downward, substantially as described.

3. The combination, with the vibratory frame E and the cam-shaft I, of the lever J, the vertical link K, connected with the lever, the push-pin *p*, arranged to engage the link and sustain the same, the springs S S', and the traveling carriage connected with the winding-drum and clutch mechanism, substantially as described.

4. The link K, connected with the lever J and having the wedge-shaped upper end, in combination with the push-pin *p*, ar-

256,032.

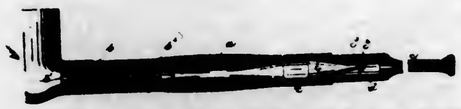


ranged to engage and sustain said link, the spring *s*, and the winding-shaft G, provided with the loose arm *g* and clutch *g'*, all substantially as described.

5. The independent spring *s*, encircling the push-pin *p*, in combination with the link K, connected with the lever J, the winding-shaft G, provided with the loose drum *g* and clutch *g'*, and the spring *s*, arranged to act on the clutch, all substantially as described.

6. The link K, connected with the lever J, and the spring-actuated push-pin *p*, arranged to engage and sustain the link, in combination with the hand-lever *j*, arranged to disengage the push-pin from the link, substantially as described.

256,033. COMBINED PIPE-STEM AND CIGAR-HOLDER. JAMES MAUGHTER, Dayton, Ohio. Filed Jan. 12, 1882. (No model.)



Claim.—In a pipe, the combination, with the stem *a*, having the outer portions of its bore expanded, of the shell *b*, having tube *b'*, and the cone *c'* and its cap *c''*, arranged within the nipple *c*, which fits over the end of the stem *a*, substantially as and for the purposes set forth.

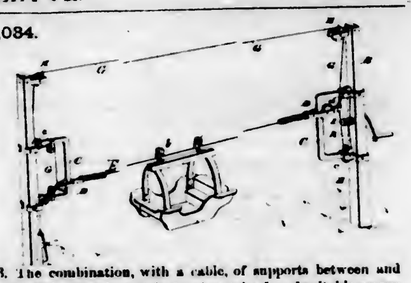
256,034. ELEVATED WAY. NELSON NEWMAN, Springfield, Ill. Filed Jan. 3, 1882. (No model.)

Brief.—A cable on which is suspended a car is stretched between suitable supports and secured by means of a strap provided with rollers adapted to travel on a frame secured to the supports. The cable is raised and lowered by means of a cord passing over a system of pulleys and attached to the straps, and having at one end a weight and at the other a shaft adapted to operate the device.

Claim.—1. A cable stretched between suitable supports, in combination with a suspended car and automatically co-operating mechanism to simultaneously change the relative vertical positions of its ends, so as to cause said car, by the action of gravity, to automatically pass from one end to the opposite end of said cable, substantially as and for the purpose specified.

2. A cable stretched between suitable supports, in combination with means, substantially such as described, whereby its ends may be simultaneously moved in vertically-opposite directions, so as to give to said cable an inclination in either direction, substantially as and for the purpose shown.

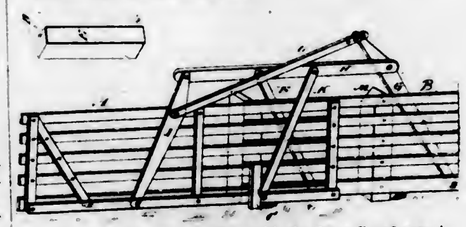
256,034.



3. The combination, with a cable, of supports between and upon which the same is stretched and sustained, and suitable means whereby its ends may, from one of said supports, be simultaneously moved vertically in opposite directions, substantially as and for the purpose set forth.

4. In combination with the cable E, the frames C, the rolling supports *d* D, the cord G, the guide-rollers H, and means whereby said rolling supports may be raised or lowered, substantially as and for the purpose shown and described.

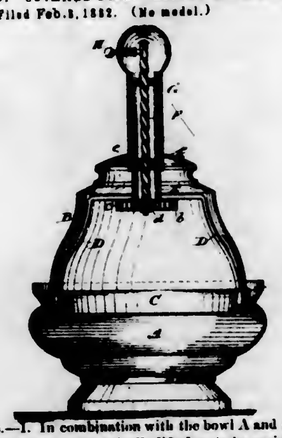
256,035. SLIDING GATE. ALEXANDER NICOL, Ayton, Ontario, assignor to William J. Watson, same place, and James Nicol, Owen Sound, Canada. Filed Dec. 5, 1881. (Model.) Patented in Canada Jan. 22, 1880.



Claim.—1. The combination, with the fence B and gate A, of the bars F and G, pivoted to the bottom of the fence, the bars J and K, pivoted to the bottom of the gate, the bar H, pivoted to the bars F, G, J, and K, and the diagonal bar L, pivoted to the end bars, J and G, substantially as herein shown and described, and for the purpose set forth.

2. The combination, with the gate and the fence B, provided with posts M, having beveled tops, of the bars F G, pivoted to the bottom of the fence, the bars J K, pivoted to the bottom of the gate, the bar H, pivoted to the bars F G J K, and of the diagonal bar L, pivoted to the top of the bar G, and to the bar J, a short distance from the top of the same, substantially as herein shown and described, and for the purpose set forth.

256,036. COVERED DISH. EDMUND A. PARKER, Meriden, Conn. Filed Feb. 3, 1882. (No model.)



Claim.—1. In combination with the bowl A and cover B, the latter adapted to be automatically lifted or to be positively locked in a closed position, a tubular handle, G, the vertical movement

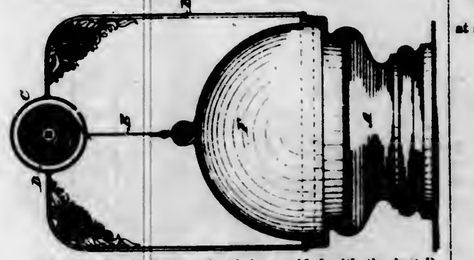
of which causes the interior worm-shaft to be rotated, and which also serves as a means for carrying the bowl, substantially as described.

2. The bowl A, provided with a seat for a cover, and having a bail, J, provided at its top with a tube, E, having slots *f f*, spring *e*, and worm-shaft F, in combination with the cover B, terminating at its top in a tubular handle, G, provided with inwardly-projecting wings *e e* and a suitable lock or latch, H, substantially as and for the purpose set forth.

3. In combination with the bowl A, adapted to vertical movement upon the frame I, and provided with a bail, J, spring *e*, and worm-shaft F, the cover B, rigidly secured to the frame I, and provided with the tubular handle G, slotted or indented at *f*, and having wings *e e* and the guide-tenons *i i* on the frame, all substantially as and for the purpose set forth.

4. The bowl A, provided with a frame or bail, D, arranged underneath the cover B, the latter adapted to the passage centrally through the same of the bail D or an extension thereof, substantially as and for the purpose set forth.

256,037. COVERED DISH. EDMUND A. PARKER, Meriden, Conn. Filed Feb. 3, 1882. (No model.)

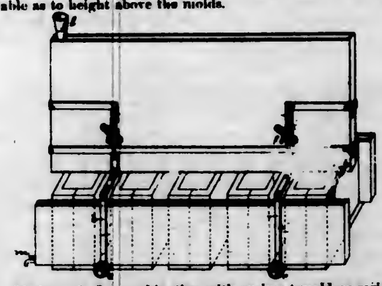


Claim.—1. The dish or bowl A, provided with the bail B, spring-case C, and spring D, in combination with the cover F, flexible connecting band or chain E, and suitable latch, F', substantially as and for the purpose described.

2. The dish or bowl A, provided with the bail B, spring-case C, and spring D, in combination with the flexible band or chain E, adapted for securement to the cover F, substantially as hereinbefore set forth.

256,038. INGOT-MOLD SHIELD. JOHN PARDEE, Pittsburg, Pa. Filed Feb. 27, 1882. (No model.)

Brief.—Shields are arranged above the molds between the melters; also on the sides of the molds. The upper shield is adjustable as to height above the molds.



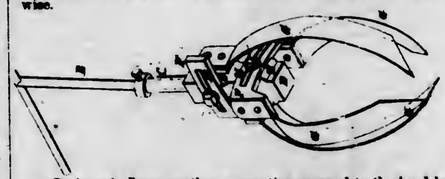
Claim.—1. In combination with an ingot-mold or series of molds, a shield adapted to fit over the mold or molds and protect each melter from the heat of the crucible teemed by the opposite melter, substantially as set forth.

2. A shield for ingot-molds, formed of a top shield adapted to fit over the top of the mold or molds, and one or more lower shields adapted to fit along the sides of the molds, substantially as and for the purposes set forth.

3. In ingot-mold shields, the combination of the frame-work or carriage with the top shield fitting over the mold or series of molds and vertically adjustable in the carriage, substantially as and for the purposes set forth.

256,039. EARTH-AUGER. CARL A. F. PETERS, St. Louis, Mo. Filed Feb. 23, 1882. (No model.)

Brief.—The cutting-blades are adjusted through curved slotted arms at their upper ends, said arms moving between curved guides, and being secured by bolts passing through the curved slots and into the head-piece. The operating-stem is adjustable lengthwise.



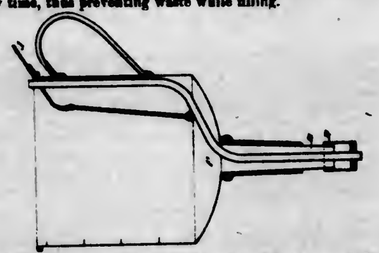
Claim.—1. In an earth-auger, cutters secured to the head by bolts and lugs with curved slots, substantially as set forth.

2. In an earth-auger, the combination of curved cutters G and curved legs F, projecting from the cutters and adjustable upon bolts passing through the legs and into or through the head.

3. In an earth-auger, an adjustable stem, B C, substantially as and for the purpose set forth.

256,040. FUNNEL. OSCAR T. PETZOLD, Schmitz, Saxony, Germany. Filed Sept. 19, 1881. (No model.)

Brief.—The flow of the liquid may be interrupted immediately at any time, thus preventing waste while filling.



Claim.—The combination, with a funnel having neck B, of the side-apertured cap D, fitting over the end of said neck, the tube F, passing through and made fast to the bottom of said cap, extending up to the top of funnel and bent about the middle, and the lever J, connected by a pivoted rod with the tube and slotted at H to receive the upper end of tube, as and for the purpose specified.

256,041. BREECH-LOADING BOMB-GUN. EBENEZER PIERCE, New Bedford, Mass. Filed Mar. 11, 1881. (No model.)



Claim.—1. In a breech-loading bomb-gun, the combination of a hinged barrel with the breech-piece carrying firing devices, a sliding rod adapted to connect with and actuate the firing devices by impact, as described, said rod being arranged in guides on the hinged barrel to move therewith during the act of inserting a cartridge or charge in the barrel of the gun when it is turned on its hinge, as and for the purpose set forth.

2. The combination, with a breech-loading bomb-gun, of the divided sliding rod, which operates the mechanism employed for firing the charge by impact, one portion of said rod being supported by a guide upon the breech-piece and the remaining part of the rod being supported by guides upon the barrel, whereby the barrel can be turned back on its hinge without disconnecting either of the rods, substantially as described.

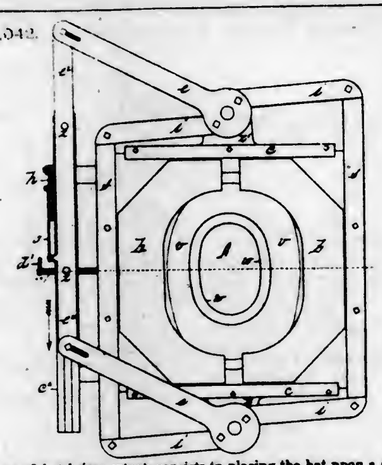
256,042. HAT-PLANKING MACHINE. LAUREN S. PLUMB and GEORGE W. HARCHANT, Palmer, Mass.; said Harchant assignor to Robert L. Goddard, same place. Filed July 28, 1881. (No model.)

Claim.—1. The hollow steam-table A, the brim-clamps *b b*, having their under faces curved to conform to the brim-flange form on the sides of the die *v*, the levers *c c*, the connecting-bars *d*, bar *c'*, lever *b*, and the dies *x* and *v*, all combined and operating substantially as set forth.

2. The combination, with the steam-table A, the brim-clamps *b b*, and the dies *x* and *w*, of the posts *x'*, the base *x*, cam *d''*, shaft *d*, and lever *d'*, substantially as set forth.

3. The within-described improved process for shaping the

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flanges of hat-brims, which consists in placing the hat upon a die having a border conforming to the shape of the hat-brim, placing a second die upon the upper side of the hat-brim, having a border upon which to form the said brim-flanges extending partially under said flanges, then heating said dies and hat and moving the clamps *b b* under pressure over the surfaces of said flanges from the outer edges of the brim toward the hat-body, and by mechanism substantially as described lifting and forcing said flanges against the under side of said clamps, substantially as set forth.

256,043. MOLDING ARTICLES OF INDIA-RUBBER AND OTHER VULCANIZABLE GUMS. CONRAD POPPENBURG, Hamburg, Germany. Filed Dec. 14, 1881. (No specimens.) Patented in Germany Jan. 11, 1881.

Claim.—1. The method of molding articles of india-rubber or other vulcanizable gum, consisting in filling the mold with liquid to exclude all air therefrom and displacing the liquid by pressing the compound into the mold so filled, substantially as and for the purpose herein described.

2. The method of molding articles of india-rubber or other vulcanizable gum, consisting in filling the mold with linseed-oil to exclude all air therefrom and displacing the liquid by pressing the compound into the mold so filled, substantially as described.

256,044. CULTIVATOR. CHARLES W. POST, Springfield, Ill. Filed Nov. 16, 1881. (No model.)

Brief.—The drag-bars are secured to a cross-shaft, which is journaled in blocks that reciprocate in oblique brackets keyed upon the axle. Springs retain these bearings in their normal position, while a heavy strain, as of hard earth, will cause the front end of the drag-bars to descend, and thus bring the shovels nearer a vertical position.

Claim.—1. In a cultivator, the combination of the drag-bar with the axle or frame by means of a yielding or movable coupling adapted to permit the front end of the drag-bar to fall or rise as the shovels or teeth encounter a greater or less resistance from the soil, thereby causing the shovels to stand more or less vertical to the ground, substantially as described.

2. In a cultivator, the combination, with the drag-bars, of yielding or movable couplings connecting the drag-bars with the axle, and adapted to permit the forward ends of said drag-bars to fall and the shovels to automatically adjust themselves toward a vertical position as the resistance of the soil increases independently of the hitch of the team, substantially as described.

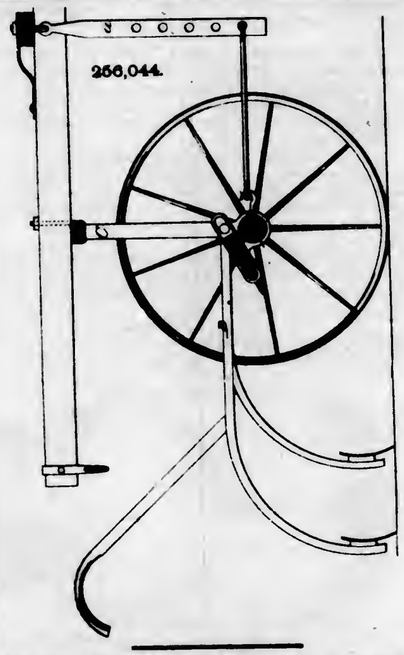
3. The combination, in a wheel-cultivator, of the beam or drag-bar and a movable coupling at its front end, the bearing of which reciprocates at an angle of approximately forty-five degrees, substantially as described.

4. The combination, with the axle of a cultivator and the oblique guide-bracket, of the shovel-beam, and the shaft to sustain the same in said bracket, substantially as described.

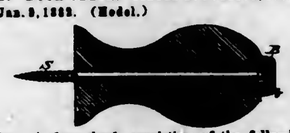
5. The combination, with the shaft supporting the beam and with the oblique guide-bracket, of a spring-seated reciprocating block forming a bearing for said shaft, substantially as described.

6. The shaft supporting the beam and the slotted oblique guide-bracket, in combination with the reciprocating bearing-block, the guide-rod, and the coiled expansion-spring, substantially as described.

256,044.

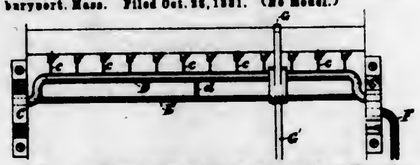


256,045. DOOR-CHECK. ISRAEL P. POULSON, Greenfield, Ind. Filed Jan. 9, 1882. (Model.)



Claim.—A door-check consisting of the following parts, to wit: a stud, P, made longer than an ordinary door-knob, and having the bore *p'* and enlargement *a*, provided with a sharp corner, *c*, at the bottom, the rubber cup B, made of a size to snugly fit the enlargement or recess *a*, and the bolt S, passing through the cup and stud and having a screw-thread for securing the device in place, all as set forth.

256,046. LIGHTNING-ARRESTER. ALMON B. PRESCOTT, Newburyport, Mass. Filed Oct. 26, 1881. (No model.)



Claim.—1. The swinging rod D, in combination with a wire or series of wires, *c*, of a telegraphic or telephone line and the ground-connection F, and adapted to be operated as and for the purpose specified.

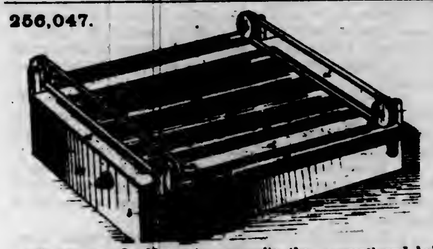
2. The combination of the swinging rod D, provided with the arms G G', the wires *c c*, the bracket C, and the conducting-rod F, substantially as and for the purpose set forth.

256,047. ROLL SUCTION-BOX FOR PAPER-MAKING MACHINES. JAS. RANDALL, Norwich, Conn. Filed Feb. 18, 1882. (No model.)

Claim.—1. The combination, in a suction-box, of the perforated metal rolls, journaled in its sides, and the solid exterior rolls, A A, for supporting the wire-cloth of a paper-machine, all as and for the purposes set forth.

2. The combination of felt packing upon the edges of the suction-box and the endless rubber belts passing over band-pulleys

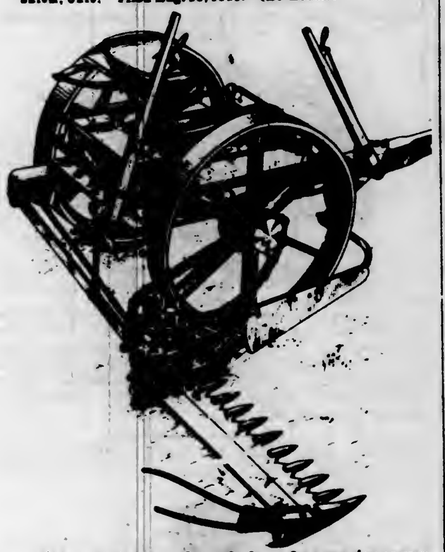
256,047.



at the corners of said box to move with the wire-cloth and hold it down, all substantially as herein set forth.

3. In combination with the hollow perforated rolls of a suction-box, the loose perforated sleeves for adapting the same length of rolls to be used with varying widths of paper, all substantially as described.

256,048. MOWING AND REAPING MACHINE. AMOS RANK, Salem, Ohio. Filed Aug. 26, 1880. (No model.)



Claim.—1. A rectangular main frame for a mowing or reaping machine, made wholly of wrought metal and the ends of the side bars projecting as described, to wit: the rear end of the left-hand side piece projecting outward and downward, the rear end of the right-hand side piece projecting outward and upward, and the front end of the right-hand side piece projecting outward and downward, substantially as and for the purpose shown and described.

2. In a two-wheeled hinge-joint mowing or reaping machine, a vibrating drag-bar constructed of an iron rod having a rectangular cross-section, combined with the adjustable and removable grain-board, substantially as shown and described.

3. The combination, in a two-wheeled hinge-joint mowing or reaping machine, of a vibrating drag-bar constructed of square-shaped iron, with the adjustable and removable spring chain-guide mounted on said drag-bar, substantially as shown and described.

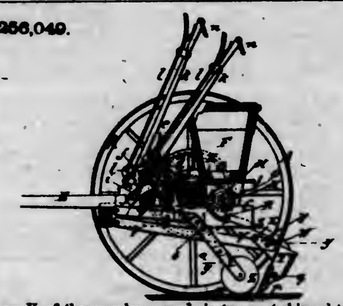
256,049. WHEAT-DRILL. ADRIAN L. REESE, Chase, Kans. Filed Nov. 26, 1881. (Model.)

Claim.—1. The combination, with the draw-bar V and pins H W, of the pivoted standard T, having slotted arm U, and the slotted draw-bars Y, having pins *a b*, as and for the purpose specified.

2. The combination, with a cross-bar, *c*, made in two parts hinged together, of the hinged connecting-rod *d*, the shaft *f*, having arm *e*, the rods *g*, and the shaft *i*, having arms *h*, as and for the purpose specified.

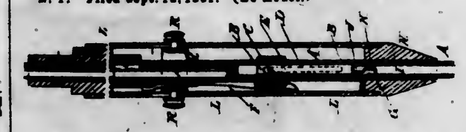
3. In a wheat-drill, the combination, with the colter draw-

256,049.



bars Y, of the cross-bar *c*, made in two parts hinged to each other, the connecting-rods *d g*, the arms *e h*, the shafts *f i*, and the levers *h h*, substantially as herein shown and described, whereby the plows and colters can be adjusted to uneven ground, and can be raised from the ground, as set forth.

256,050. DENTAL DRILL. CASSIUS M. RICHARDS, New York, N. Y. Filed Sept. 15, 1881. (No model.)



Claim.—1. The combination, with the slotted hollow rod A, of the stem B, having its forward end halved or rabbeted and a groove across the inner part of the rabbet, the pin C, the ring E, and the spring-catch F, substantially as herein shown and described, whereby a tool can be readily attached and detached and will be securely held, as set forth.

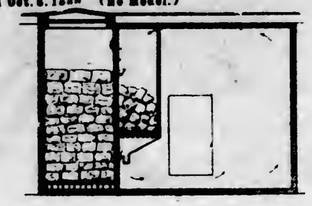
2. The combination, with the tool-holding rod A and the spring-catch F, of the hand-piece L M N, the interior ring, Q, and the pins R, substantially as herein shown and described, whereby the tool-holding rod can be conveniently handled and the tool readily attached and detached, as set forth.

256,051. BOILER-FURNACE. GERARD E. RICKETTS, Proctorville, Ohio. Filed Oct. 19, 1881. (No model.)



Claim.—The combination, with the boiler A, having tubes *a*, opening into the uptake *c*, and the dampers *b b*, of the fire-box B, connected by a flue, *d*, controlled by said dampers, with a smoke flue, *h*, communicating with tubes *a*, and the outer shell having a flue, C, open at the rear and connecting at front with the ash-pit *g*, whereby the air enters flue C, is heated from the shell of furnace to thoroughly ignite the fuel in the fire-box, and then passes with the products of combustion through flue *d*, smoke-flue *b*, and tubes *a* to the uptake *c*, as shown and described.

256,052. REFRIGERATING-ROOM. HENRY A. ROBERTS, Detroit, Mich., assignor to Gustavus F. Swift, Chicago, Ill. Filed Oct. 6, 1880. (No model.)



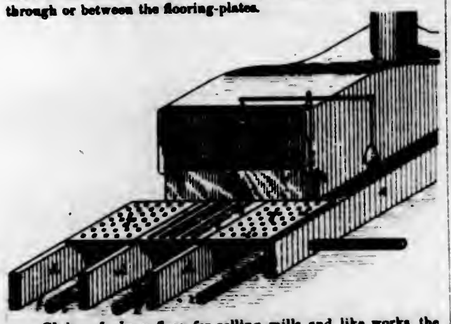
Claim.—1. In combination with the preserving-compartment (one or more) of a refrigerator and a receptacle (one or more) for the refrigerant, a compartment (one or more) for the storage of surplus ice, arranged with relation to each other substantially as described.

2. An inclosed chamber divided into vertical preserving or refrigerating compartments having receptacles for the ice or other refrigerant, and vertical ice-storage compartments adjoining such preserving-compartments, all of such compartments being disconnected and having independent doors, substantially as and for the purpose set forth.

3. In combination, vertical preserving-compartments, vertical compartments for the storage of surplus ice adjoining such preserving-compartments and not connected therewith, and receptacles for the refrigerant opening into such storage-compartments, substantially as described and shown.

256,053. FLOOR FOR ROLLING-MILLS, GLASS-HOUSES, &c. WILLIAM ROGERS, Lenshurg, Pa., assignor to himself and William H. Rogers, same place. Filed Jan. 14, 1882. (No model.)

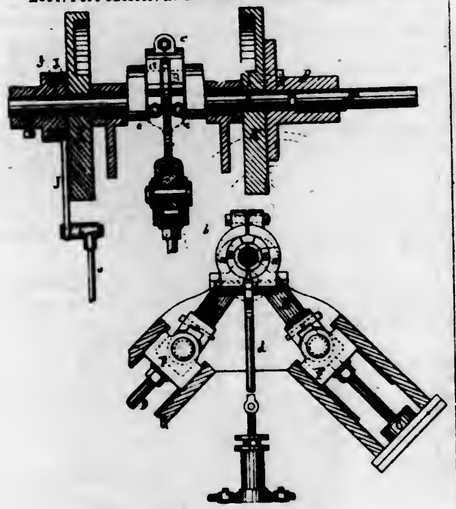
Brief.—The floor is kept cool by air introduced through pipes into air-chambers under it, the air being discharged into the works through or between the flooring-plates.



Claim.—1. In a floor for rolling-mills and like works, the combination of metal plates supported above an air space or chamber and air pipe or pipes in said air-chamber adapted to discharge air in such manner as to rise through or between said plates, substantially as and for the purposes set forth.

2. In a floor for rolling-mills and like works, the combination of metal plates supported above an air space or chamber and air-discharging pipe or pipes in said air-chamber, the metal plates having perforations or openings for the escape of air from the air-chamber, substantially as and for the purposes set forth.

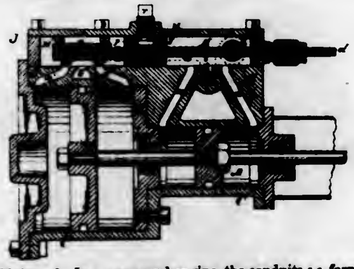
256,054. DOUBLE-CYLINDER STEAM-ENGINE. JOHN B. ROOT, Port Chester, N. Y. Filed Jan. 31, 1881. (No model.)



Claim.—1. In a compound engine, the conduits *e e*, formed in the walls of the steam-chest, in combination with the exhaust-port *b* of the cylinder A, substantially as and for the purpose set forth.

2. In combination with the steam-chests of a compound engine, an aperture partly surrounding the valve-rod *d* and adapted to receive steam-packing, a plate, *p*, and screw *r*, substantially as and for the purpose set forth.

256,055. COMPOUND ENGINE. JOHN B. ROOT, Port Chester, N. Y. Filed Oct. 9, 1880. (No model.)



Claim.—1. In combination with a friction-bushing on the crank of an engine having two double-acting cylinders placed at right angles to each other, two pitmen whose crank ends are semicircular, and binding-straps, substantially as and for the purpose set forth.

2. In combination with the eccentric of an engine having two double-acting cylinders placed at right angles with each other, eccentric-rods J J, whose connecting ends are semicircular, and a binding-ring, *f*, substantially as and for the purpose set forth.

3. In combination with binding-straps, by which the ends of the pitmen are secured to the crank of an engine, an auxiliary pitman, *d*, whereby the straps are held in position, substantially as described.

4. In combination with the crank-shaft of an engine having two double-acting cylinders at right angles with each other, two counterbalance-wheels whose combined counter-weight is equal to the weight of the reciprocating parts of one of the engines, substantially as and for the purpose described.

5. In combination with a yoke pivoted in the sleeve M and provided with levers A A, a rod, *j*, and swivel-link *p*, by which the yoke is connected with the lever N, as means for adjusting the eccentric, substantially as set forth.

256,056. BUTTON. EDWARD H. ROYCE, FREDERICK W. ALLEN, and MYRON H. FULLER, Providence, R. I. Filed Feb. 28, 1882. (No model.)



Claim.—1. As an improvement in the art of making buttons from sheet metal, first coating the formed button with a layer of contrasting composition, and then producing a design composed of characters or figures by the removal of a portion of composition to expose the metal underneath, leaving the design surrounded and protected and producing immediate contrast, substantially as hereinbefore set forth.

2. As an improvement in the art of making sheet-metal buttons, first coating the formed button with a layer of contrasting composition and then ornamenting the same by cutting away a portion of the composition and slightly into the metal underneath, substantially as and for the purposes hereinbefore set forth.

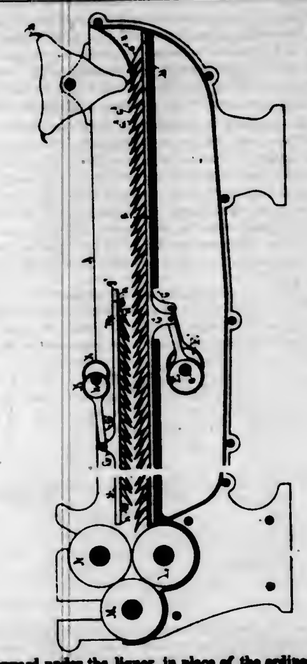
3. As a new article of manufacture, a sheet-metal button coated with a layer of composition of contrasting color, a portion of the composition and of the underlying metal being removed to form a design substantially as hereinbefore set forth.

256,057. WOOL-WASHER. FREDERICK G. SARGENT and ALLAN G. SARGENT, Graniteville, Mass. Filed June 18, 1881. (No model.)

Claim.—1. The combination of the bowl A and squeeze-rolls M N with the submerged conveyors C C', placed horizontally in the bottom of the washing-space of the bowl, substantially as described.

2. The combination of the trough of a wool-washing machine with a series of reciprocating toothed bars, placed substantially horizontal in the bottom of the washing-space and adapted to feed

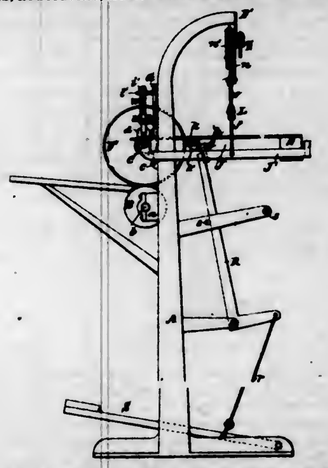
256,057.



the fiber forward under the liquor, in place of the ordinary over-head-rakes, all substantially as and for the purpose set forth.

3. The combination of the bowl A, squeeze-rolls M N, plunger B, conveyors C, and conveyors G, substantially as described.

256,058. LEATHER-MEASURING MACHINE. WILLIAM A. SAWYER, Dansversport, assignor of two-fifths to Arthur B. Claflin, Newtonville, Mass. Filed Aug. 27, 1881. (No model.)



Claim.—1. A machine for measuring sides of leather and similar surfaces, consisting of a suitable registering device, a series of weights, and a series of wheels or rollers, the wheels or rollers being adapted to automatically move the weights while the surfaces to be measured are being passed under them, substantially as described.

2. The roller B and the series of wheels or rollers F, placed loosely upon the rod or shaft C, in combination with the series of weights H, the registering device N, and connecting mechanisms substantially as and for the purposes set forth.

3. The combination, with the rods A and the sliding weights carried by suspended frame J, of the series of rollers or wheels F and the main roller B, as and for the purpose described.

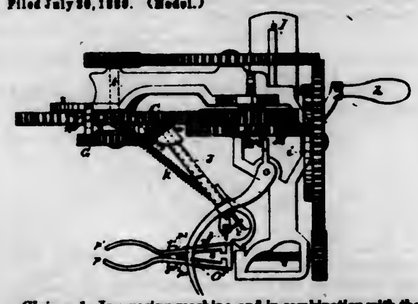
4. The series of wheels or rollers F, formed with the grooved hubs *e*, and placed loosely upon the rod or shaft C, in combination with the series of wheels *d* and the series of weights H, provided with arms *h*, substantially as and for the purposes set forth.

5. The combination, with a registering device, substantially as described, of the suspended frame J, weights H, rods A, wheels *d*, vertically-movable rollers F, having hubs *e*, and the main roller B, as and for the purpose specified.

6. The vertically-movable rollers F, formed with the grooved hubs *e*, in combination with the corresponding spring-pressed grooved rollers *d* and the weights H, formed with the rods A, substantially as and for the purposes set forth.

7. The arms T, provided with the steps *s s*, in combination with the levers R, foot-lever S, suspended frame J, and the weights H, the upper ends of the levers R being provided with the cross-piece *q*, substantially as and for the purposes set forth.

256,059. APPLE-PARER. ROBERT P. SCOTT, Newark, N. J. Filed July 30, 1880. (Model.)



Claim.—1. In a paring-machine, and in combination with the mechanism thereof, a paring-knife having a backward-and-forward movement, substantially as and for the purpose set forth.

2. The table-wheel C, in combination with the worm-wheels M, spur-wheels *h h'*, spur-wheel G, with teeth *e*, knife-arm J, with foot *l*, arm *o*, lever *n*, and cam *g*, substantially as and for the purpose set forth.

3. In a paring-machine, the combination, with the paring-knife, of mechanism, substantially such as described, for oscillating said knife, as set forth.

256,060. CONSTRUCTION OF WOODEN PIPES. JOHN B. SHAGRAW and FRANK W. LEWIS, Worcester, Mass. Filed Aug. 16, 1881. (No model.)

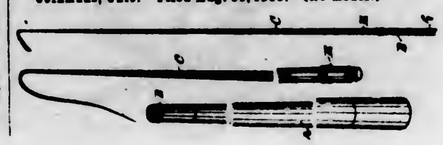
Brief.—A wooden pipe composed of two or more segmental sections is provided at each end of the section with a longitudinal rib and groove adapted to slide into a corresponding rib and groove of the contiguous section and form an interlocking joint, thereby obviating displacement by lateral strain.



Claim.—1. The pipe consisting of section B, provided with rib *d* and groove *c*, and section C, provided with rib *a* and groove *a*, combined and united as shown.

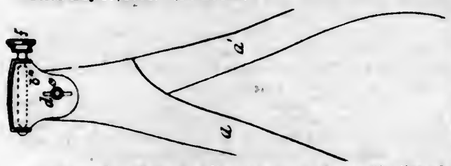
2. As an article of manufacture, a wooden pipe composed of segmental sections, each provided with longitudinal rib on each edge, said ribs being interlocked, substantially as set forth.

256,061. COMBINED WHIP AND CANE. LOUIS C. SELTZER, Columbus, Ohio. Filed Aug. 31, 1881. (No model.)



Claim.—A combined whip and cane consisting of the hollow stock A and tip C, the latter provided on its larger end with a ferrule, E, externally threaded to screw into a ferrule, B, of the stock, whether said tip is jointed to the stock to form a whip or placed in a reverse position in the stock to form a cane, as shown and described, whereby the use of detachable plugs, caps, or ferrules is rendered unnecessary.

256,062. CALIPERS. EDWARD C. SMITH, Brooklyn, N. Y. Filed May 19, 1881. (No model.)



Claim.—In calipers or caliper-compasses, the combination of the head-piece *b*, legs *a a'*, rod *f*, adjustable plate *b''*, pin *e*, and thumb-nut *d*, all arranged and operating substantially in the manner and for the purpose set forth.

256,063. JEWELRY-SETTING. HARRISON B. SMITH, New York, N. Y. Filed Jan. 25, 1882. (No model.)

Brief.—The stone is set in a narrow band, through which it projects to show the back as well as the front.



Claim.—An improved jewelry-setting consisting of the narrow beveled band or ring B, adapted to receive and fit upon the edge of the stone, and provided with the cramps *a*, for securing it to the same, and with the eye *b* between two of the said cramps, for receiving the ear-wire, substantially as herein shown and described, whereby both the front and back of the stone project through the band and the stone is displayed to the best advantage, as set forth.

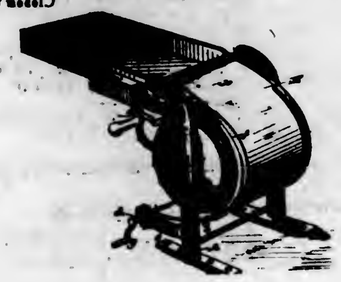
256,064. WRAPPER AND PACKAGE FOR BUTTER, &c. SETH H. SMITH, Delta, Ohio, assignor to the Smith Manufacturing Company, same place. Filed Jan. 13, 1882. (Model.)



Claim.—1. The wrapping or packing sheet A, scored at B E, as and for the purpose set forth.

2. A wrapper or package composed of the sheet A, scored at B E, and folded as as to form a box-like package, the ends of which are formed by the parts F of said sheet embraced by the scoring B E, said parts being turned upward and inward to form ends or braces, as set forth.

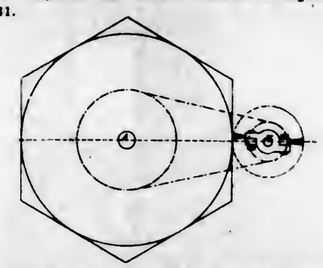
256,065. MACHINE FOR COLORING AND FLAVORING CIGARS. LEWIS SPINDLER, Cumberland, Md. Filed Jan. 30, 1882. (No model.)



Claim.—1. In a machine for coloring and flavoring cigars and tobacco, the combination of the rotary cylinder having a facing of yielding and absorbent material, the concave composed of flexible material and rendered more or less yielding to the cigars as they are carried around by the cylinder, and means for increasing and diminishing the tension of the concave, substantially as described.

2. In a machine for coloring and flavoring cigars, the combination of the rotary cylinder having a facing of absorbent material with the flexible concave E, having a sliding connection with the curved rods *b*, and secured at one end to a roller-shaft, *d*, adapted to be turned so as to wind the material forming the concave upon it, so as to render the concave less yielding or to be turned so as to unwind the said material, and thereby render the concave more yielding to the cigars carried around by the cylinder, and suitable devices for checking the rotation of said roller-shaft, substantially as described.

256,066. APPARATUS FOR BRUSHING POLYGONAL BOLTS. FREDERIC STANSFIELD, Bradford, County of York, England. Filed Nov. 21, 1881. (No model.) Patented in England Oct. 13, 1881.

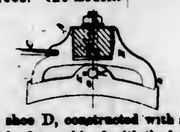


Claim.—1. The combination, with a rotary polygonal bolting or dressing frame, of a brush fixed upon a spindle arranged parallel to the axis of the said frame, and revolving in the same direction therewith at a speed proportioned to that of the frame in the manner described, to cause the points of the brush to travel over and rub the surface of the frame at a substantially uniform pressure, as and for the purpose set forth.

2. The combination, with a rotary polygonal bolting or dressing frame, of a brush fixed upon a spindle arranged parallel to the axis of the said frame, and mechanism for revolving the brush in the same direction as the said frame at a speed proportioned to that of the frame in the manner described, to cause the points of the brush to travel over and rub the surface of the frame at a substantially uniform pressure, as and for the purpose set forth.

3. The combination, with the rotary polygonal bolting or dressing frame, of a brush fixed upon a spindle arranged parallel to the axis of said frame, and connecting mechanism, such as described, between the frame and the brush-spindle, for revolving the brush in the same direction as the frame at a speed proportioned thereto in the manner described, to cause the points of the brush to travel over and rub the surface of the frame at a substantially uniform pressure, as and for the purpose set forth.

256,067. BRAKE-SHOE. HENRY STEBBINS, New York, N. Y. Filed Feb. 18, 1882. (No model.)

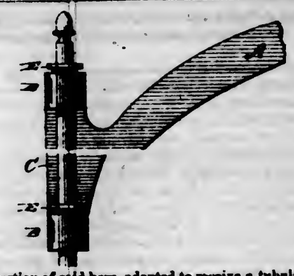


Claim.—The shoe D, constructed with a transversely-perforated ear, E, on its back, combined with the holder B, the two constructed with recesses and projections on the bearing-points between them to prevent transverse movement of the shoe upon its holder, and the L-shaped bolt F, one arm of which extends through the holder, the other arm through the perforation in the ear E, whereby the said shoe is clamped upon its bearings on the holder, substantially as described.

256,068. DEVICE FOR THE COMPENSATION OF WEAR IN NEEDLE-BARS. ROSWELL H. ST. JOHN, Toledo, Ohio, assignor to the Union Manufacturing Company, same place. Filed Jan. 21, 1882. (No model.)

Claim.—1. In a sewing-machine, the combination of an arm, A, a bearing, B, a concave seat, *c*, formed at the lower end of the bore through this bearing, and a female screw-thread formed at

256,068.



the upper portion of said bore, adapted to receive a tubular nut for compressing a double beveled longitudinally-split bushing, substantially in the manner and for the purposes explained.

2. The combination of the bearing B, formed on the arm of a sewing-machine, the needle-bar C, playing vertically through said bearing, the beveled seat *c*, formed on the bearing, the longitudinally-split bushing D, having beveled ends, and the tubular nut E, having a countersunk end and tapped centrally into the said bearing for the purpose of acting directly on the bushing and contracting the same about the needle-bar, all constructed and arranged to operate substantially as described.

256,069. COMBINED HAND SEED-PLANTER AND FERTILIZER-DISTRIBUTER. OWEN STODDARD, Busti, N. Y. Filed Oct. 8, 1881. (No model.)

Brief.—The boxes are detachably connected, and each has a seed or fertilizer cylinder with attached gear-wheel to engage a rack upon its operating-slide. Stop-blocks upon the slides are connected by a pin, so that the slides will move together. The boxes may be disconnected and used separately.

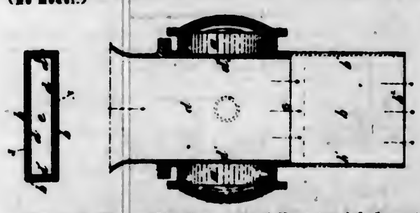


Claim.—In a combined hand seed-planter and fertilizer-distributer, the combination, with the boxes A B, having slotted inner walls, and provided with the flanged plates C and the spring-plates E E, of the dropping-cylinders I, the gear-wheels P, and the slides R, provided with the racks Q, and the sliding blocks S, connected by the dowel-pin *a*, substantially as and for the purpose set forth.

256,070. SECONDARY VOLTAIC CELLS. JOSEPH WILSON SWAN, Newcastle-upon-Tyne, County of Northumberland, England. Filed Jan. 19, 1882. (No specimens.) Patented in England Dec. 15, 1881.

Claim.—The method of preparing lead plates for use in secondary voltaic cells by subjecting the same to the combined action of acetic acid and atmospheric air, and subsequently reducing the carbonate of lead formed to metallic lead, substantially as described.

256,071. APPARATUS FOR PULVERISING GRAIN, ORES, &c. FRANCIS TABOADY, Brooklyn, N. Y. Filed Feb. 15, 1882. (No model.)



Claim.—1. The combination substantially as hereinbefore set forth of the tube *d*, having at the end an orifice, *c*, that is long and narrow, a chamber for compressed air, and a jet-mouth adjacent to the end or orifice of said tube, with a tube, *b*, having at the end an orifice, *b'*, that is long and narrow, and an abutment or surface of resistance, for the purpose specified.

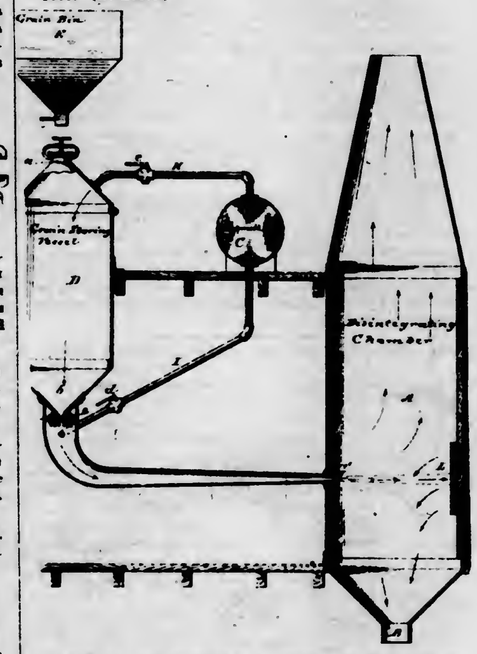
2. The combination, in apparatus for disintegrating or comminuting frangible substances and collecting the product, of a chamber for compressed air, with an ejector having separate and distinct long and narrow jet orifices or mouths *c c*, a tube, *d*, having an elongated orifice, *c*, a tube, *b*, of corresponding form, and an abutment, *a*, the nozzle end of said tube *d* being joined at its narrowest sides, *b'*, with the corresponding sides of the tube *b*, whereby to form the said separate and distinct ejector-orifices, for the purpose specified.

3. In an apparatus for disintegrating or comminuting grain and frangible substances and collecting the product, the combination substantially herein set forth of an ejector adapted to deliver air in separate and distinct thin wide sheets, a tube, *d*, adapted to deliver the substance or granules in a thin wide sheet, a chamber adapted to deliver air under pressure in thin wide sheets, and a tube, *b*, adapted to deliver the separate air-jets in thin wide sheets, with an abutment, for the purpose specified.

4. In an apparatus for impelling substances through a tube by the action of air or other aeriform fluid, the combination, with the tube *d*, having the flattened orifice *c* of the tube *b*, forming with said orifice *c* the independent ejector-orifices *c c* on opposite sides of the said tube *d*, substantially as described, for the purpose specified.

5. In an air-ejector, the combination of exterior and interior tubes, *b* and *d*, wider in one direction than in the other, joined together at the narrow sides *b' b'*, substantially as herein described, for the purpose specified.

256,072. MACHINE FOR DISINTEGRATING GRAIN AND OTHER SUBSTANCES. FRANCIS TABOADY, Brooklyn, N. Y., assignor to Charles R. Knickerbocker, Trustee. Filed May 25, 1880. (No model.)

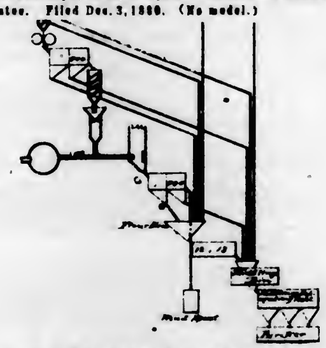


Claim.—1. The combination, in apparatus for pulverizing or reducing grain and other frangible substances, with an ejector, a hard abutment, and a chamber inclosing said abutment and ejector-orifice, of an air-tight storing and supplying vessel, a positively-moving feed, and a chamber filled with air under high compression communicating with said air-tight vessel above the substance, and with the ejector-pipe under said positively-moving feed, substantially as set forth.

2. In apparatus for reducing or pulverizing grain and other frangible substances, the combination with an air-tight storing and supplying vessel, a chamber within which compressed air is stored, an ejector, a hard abutment, and a chamber inclosing said abutment and ejector-orifice, of feed-rolls arranged to deliver the substance under pressure in regulated quantities from said air-tight supplying-vessel, substantially as described.

3. In apparatus for disintegrating grain and other frangible substances, the combination, with an air-tight storing and supplying chamber, D, of a chamber, A, open at top and bottom, a chamber, C, for compressed air, an ejector, G', a hard abutment, L, a positively-moving feed device, e e, arranged within the ejector-pipe, tapering from its junction with the storing-vessel to and forming the ejector-orifice G', and the valved pipes H I, substantially as described.

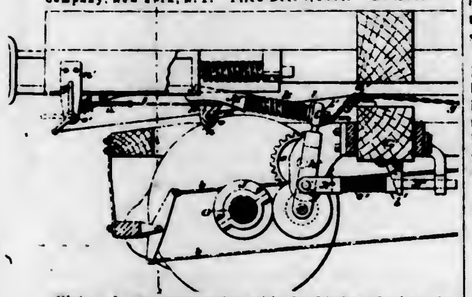
256,073. ART OF MANUFACTURING FLOUR. FRANCIS TAGGART, Brooklyn, N. Y., assignor to Charles R. Knickerbocker, Trustee. Filed Dec. 3, 1880. (No model.)



Claim.—1. The process of manufacturing flour which consists in reducing the grains or particles of grain by projecting them with force against a solid abutment or obstacle by means of a current of compressed air or other aeriform fluid escaping in a continuous stream from a storing-chamber, then collecting the broken particles while the spent air or other aeriform fluid is permitted to escape, then separating the particles so collected, and again subjecting the coarser particles to further similar reduction and separations, and so on by successive operations of reduction and separation until the necessary degree of reduction has been obtained, substantially as set forth.

2. The process of manufacturing flour which consists in first breaking up the organization of the grains by passing them between rollers, and then reducing by blowing the same by means of a continuously-flowing current of air or other aeriform fluid against a solid abutment, and then separating the particles produced thereby and subjecting the coarser to further breaking by blowing and successive separations and breakings, if necessary, until sufficiently reduced, substantially as set forth.

256,074. AUTOMATIC CAR-BRAKE. STEPHEN P. TALLMAN, Dunellen, N. J., assignor to the Tallman Automatic Car Brake Company, New York, N. Y. Filed Dec. 9, 1881. (No model.)



Claim.—1. The combination, with the friction-wheel on the car-axle and the swinging friction-wheel, of the operating-lever, mounted as shown, the operating-bar, the cushion-spring on the said bar, the draw-bar, and suitable lifting mechanism for raising the free end of the operating-bar, all arranged to operate substantially as set forth.

2. The operating-lever *h*, provided with the eye *i*, mounted in a socket in the end of said lever, substantially as set forth.

3. In an automatic brake for cars, the combination of the operating-lever *h*, the eye *i*, operating-bar M, cushion-spring *k*, shaft *o*, and lifter *p*, all arranged to operate substantially as set forth.

4. In an automatic brake for cars, the combination, with the draw-bar, the operating-bar, the operating-lever, and cushion-spring, of the lifter *p*, shaft *o* and *o'*, provided with arms *r r'*, the connecting-rod *s*, and its spring *u*, all arranged to operate substantially as set forth.

5. The combination of the shaft *o*, provided with an arm, *r*, and lifter *p*, the shaft *o'*, provided with an arm, *r'*, a cam, *v*, and an operating-handle, *q*, the eye *i*, connecting-rod *s*, and spring *u*, with the draw-bar, the operating-bar, and the operating-lever, and the spring *w*, all arranged to operate as set forth.

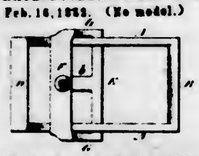
6. The combination, in an automatic car-brake having two sets of braking mechanism operated independently by the draw-bars at opposite ends of the car, of the operating-shafts *o' o'*, provided with oppositely-set arms *x x* and *x' x'* and handles *q*, and the flexible connectors *y y'*, all arranged substantially as shown.

7. The combination, in an automatic car-brake having two sets of braking mechanism at opposite ends of the car and actuated from the draw-bars, of the operating-shafts *o' o'*, each provided with a cam, *v*, having faces 1 2, two arms, *x x'*, set oppositely, and a handle, *q*, the connectors *y y'*, and the spring *w*, all constructed and arranged substantially as set forth.

8. In an automatic car-brake employing an operating-lever actuated from the draw-bar to force together the friction-wheels for setting the brakes, the said operating-lever provided with an elastically-yielding fulcrum, and mechanism, substantially as shown, for increasing the resistance to the movement of said fulcrum in direct proportion to the weight of the car-body and its load, for the purposes set forth.

9. The combination of the following coactive elements, viz: the operating-lever mounted or fulcrumed in a slotted bearing in the bracket, the pressure-rod arranged to press against the fulcrum-stud on which the lever is mounted, the sliding block and spring mounted in the pressure-rod, and the wedge mounted on the bolster or car-body and arranged to compress the spring on the pressure-rod when the bolster descends, whereby the braking-pressure is regulated in proportion to the weight of the load on the car, as set forth.

256,075. TRACE-BUCKLE. JOHN THOMAS, Cedar Rapids, Iowa. Filed Feb. 16, 1882. (No model.)



Claim.—1. The herein-described buckle, consisting of the frame A A B D, the sides curved outward at their rear end, combined with the loop E F G G, arranged transversely around the frame, the frame introduced through the loop, bringing one bar, E, of the loop upon the back of the frame, the other bar, F, upon the front of the frame, the loop deeper than the thickness of the frame, the depth of the loop permitting it to turn forward for the insertion of the trace, the said bar F provided with a stationary stud, *a*, and the tongue *b* on the inner bar extending toward the outer bar, substantially as described.

2. The herein-described buckle, consisting of the frame A A B D, the sides curved outward at their rear end, combined with the loop E F G G, arranged transversely around the frame, the frame introduced through the loop, bringing one bar, E, of the loop upon the back of the frame, the other bar, F, in front of the frame, the loop deeper than the thickness of the frame, the depth of the loop permitting it to turn forward for the insertion of the trace, the said bar F provided with a stationary stud, *a*, substantially as described.

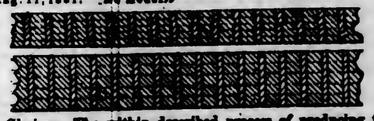
256,076. REVOLVING HEEL-PLATE. JUDSON L. THOMSON, Syracuse, N. Y., assignor of one-half to Samuel S. Hartwell, Wantage, N. J. Filed Aug. 25, 1881. (No model.)



Claim.—1. The combination, with a revolving boot or shoe heel plate, of the metal plate *r*, secured to said heel-plate by the tubular stud *s*, attached to the metal plate and expanded within a tapering countersink in the opposite side of the revolving heel-plate, substantially as described and shown.

2. The combination, with a revolving boot or shoe heel plate, of the metal plate *r*, countersunk in said heel-plate, and prevented from turning by spurs *c* on the face of the metal plate, and secured to the revolving heel-plate by the tubular stud *s*, which is attached to the plate *r*, and expanded within a tapering countersink in the opposite side of the revolving heel-plate, substantially in the manner described and shown.

256,077. MANUFACTURE OF SOLES, TAPS, AND HEELS FOR BOOTS AND SHOES. JUDSON L. THOMSON, Syracuse, N. Y., assignor of one-half to Samuel S. Hartwell, Wantage, N. J. Filed Aug. 11, 1881. (No model.)



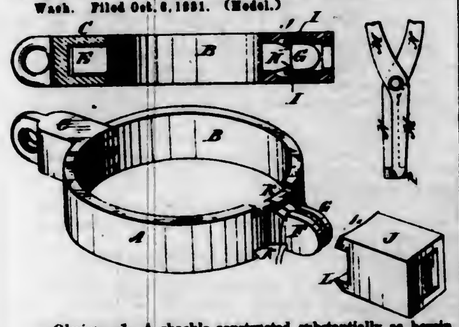
Claim.—The within-described process of producing from scrap and inferior parts of leather soles, taps, and heels for boots and shoes, the same consisting in first moistening the said inferior material, then trimming off the fleshy and uneven side thereof, then passing it through heavy press-rollers, then dieing out from its soles, taps, or heels, then again moistening said soles, taps, or heels with a water-proof glutinous liquid, then driving into the same numerous wooden pegs close together, then trimming off the protruding ends of said pegs and planing or otherwise smoothing the sides of the said soles, taps, or heels, and, finally, while the same are still moist, subjecting them to heavy pressure against opposite sides, so as to split and distort the pegs inside of the leather, substantially in the manner herein described.

256,078. DRILL-HOLDING DEVICE. JOHN C. TITUS, Marion, Ohio. Filed Dec. 12, 1881. (Model.)



Claim.—The spindle-collet A, having a cylindrical hole in it to receive the round shank of the drill and an enlarged hole to receive the driver or bushing E, in combination with this driver or bushing, the square centrally-arranged socket in this driver, and the square tenon C at the base of the drill-shank, substantially as described.

256,079. SHACKLE. JAMES H. TRACKWELL, Skookumchuck, Wash. Filed Oct. 6, 1881. (Model.)



Claim.—1. A shackle constructed substantially as herein shown and described, and consisting of the half-ring parts A B, having socket C and lug E at one end and notched lugs F G at the other end, and the lock J, having interior spring-catches, I, as set forth.

2. In a shackle, the combination, with the ends of the half-ring parts A B, having notched parallel lugs F G, of the lock J, having end apertures and interior spring-catches, I, substantially as herein shown and described, whereby the said parts are secured against lateral and longitudinal separation, as set forth.

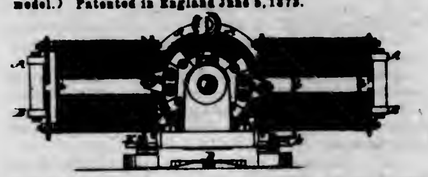
3. In a shackle, the combination, with the lock having spring-catches I I, of the cross-pivoted levers M N, having the reverse hooks O P at their ends, whereby these hooks may be pressed apart and upwardly against the catches, for the purpose specified.

256,080. FEED-WATER HEATER. RICHARD P. VALENTINE, Boston, Mass., assignor of one-half to Peter Collamore. Filed Dec. 16, 1881. (No model.)



Claim.—In a feed-water heater, the combination, with the jacket B, provided with the heads *b* and the steam-exit pipe *i*, the inlet water-pipe *d*, and the outlet water-pipe *e*, of the water-chamber A, provided with the heads *a*, the feet *c*, and the U-shaped pipes C, having their ends received in the lower head of the said water-chamber, and the exhaust-pipe *f*, passing through the head of the jacket and coupled by a slip-joint to the head of the said water-cylinder directly under the end of the said tubes, substantially as and for the purpose set forth.

256,081. DYNAMO-ELECTRIC MACHINE. FRIEDRICH VON HEFNER-ALTENECK, Berlin, Germany. Filed Jan. 14, 1882. (No model.) Patented in England June 5, 1879.



Claim.—1. The curved bars A and B, with coils *a a* and *b b* arranged on each side of the central pole constituting the electro-magnets of a dynamo-electric machine, as and for the purposes described.

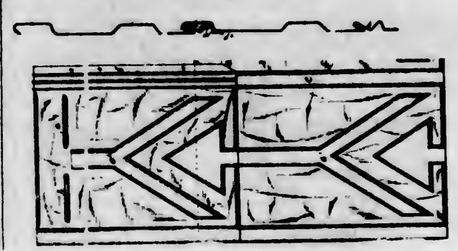
2. The curved bars A and B, with coils *a a* and *b b* arranged on each side of the central pole constituting the electro-magnets of a dynamo-electric machine, in combination with an armature capable of revolving within the cylindrical space between the magnets, whereby a circulation of air is caused between the revolving armature and the magnets and cross-currents are prevented.

256,082. PREPARING TABLETS OF COFFEE. ADALBERT VON HOFMANN, Augsburg, Bavaria, Germany. Filed Dec. 21, 1880. (No specimens.) Patented in Germany Sept. 20, 1880, in Italy Dec. 15, 1880, in England Jan. 20, 1881, in France Feb. 9, 1881, in Belgium Feb. 14, 1881, in Spain July 14, 1881, in Austria Sept. 14, 1881, in Portugal Oct. 19, 1881, and in Denmark Dec. 14, 1881.

Claim.—The method of preserving ground coffee by mixing the roasted coffee with a fat or oil which is tasteless, tasteless, and free from acid; moreover, by adding to the coffee monocarbonate or bicarbonate of soda or of potassa or any other equivalent alkaline carbonate, and finally by compressing the so prepared coffee-powder into blocks or tablets by means of a suitable press, substantially as and for the purpose described.

256,083. METAL ROOFING-PLATE. JOHN WALKER, Nashville, Tenn., assignor to himself and Charles R. Cooper, same place. Filed Dec. 29, 1881. (No model.)

Brief.—The peculiar-shaped corrugations direct the water to the lower sides of the plates and a transverse seam is formed by lapping the plates, leaving a space between them to prevent capillary attraction. The side edges of the plates are made so that when joined they form a covered gutter.



Claim.—1. The combination of two sheet-metal roofing-plates adapted to be arranged with other similar plates in horizontal overlapping layers, and formed at their lapping horizontal edges substantially as shown, to constitute a transverse anti-capillary seam, and provided with central longitudinal corrugations fitting one upon the other across the transverse seam at right angles, and formed to divert the water and direct it toward the side edges of the plate, substantially as shown and described.

2. A sheet-metal roofing-plate having one of its lateral edges formed with two parallel corrugations to form a gutter, and the other lateral edge formed with a broad corrugation adapted to make a seam with the corrugations and a cap for the gutter of a corresponding plate, substantially as shown and described.

3. A sheet-metal roofing-plate having a gutter formed by corrugations at one side and a perforated flange at the side of the gutter, whereby it shall be nailed to the roof of a house, and a broad corrugation at the other side adapted to form a seam with the adjacent edge of a corresponding plate, substantially as shown and described.

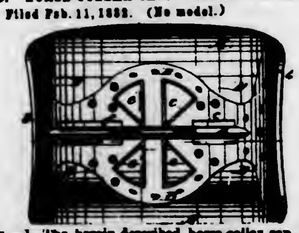
4. The combination of two sheet-metal roofing-plates, each having corrugations shaped like an inverted Y and an arrow-head, and so arranged that the arrow-head corrugation of one plate shall form a continuation of the Y-shaped corrugation of the other, substantially as shown and described.

256,084. METHOD OF PRESERVING FOOD. ALEXANDER WARNER, New York, N. Y. Filed Feb. 23, 1881. (No specimens.)

Brief.—Applies a wrapping of fabric or paper and covers with a paste composed of one hundred pounds of paper-pulp and twenty-five pounds of mucilage of gum-tragacanth or gum-arabic. The articles may be dipped twice or more until the coating is of the desired thickness.

Claim.—The method, substantially as herein described, of preserving hams and other articles of food, consisting in coating their exteriors with paper-pulp and a vegetable gum which is rendered adhesive by the addition of water, such coating when dried forming an air-tight seamless integument, as herein set forth.

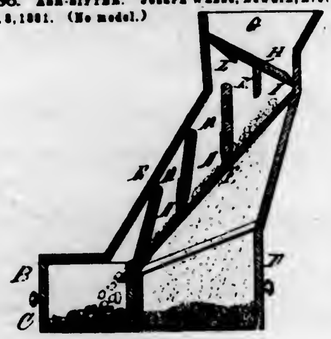
256,085. HORSE-COLLAR CAP. ANDREW WAUGH, Carthage, N. Y. Filed Feb. 11, 1882. (No model.)



Claim.—1. The herein-described horse-collar cap, consisting of the flexible cap A, and the metal brace-plate B, having narrow neck portions D and widened end portions and provided with the loops or eyes C, substantially as set forth.

2. In horse-collar caps, the cap A, having secured thereto a re-enforcing brace-plate, B, constructed with narrow neck portions between its central enlargement and its widened end parts, substantially as herein shown and described, whereby the central end portions, D, of the cap A are rendered sufficiently flexible and the cap held to shape, as set forth.

256,086. ASH-SIFTER. JOSEPH WELLS, Newark, N. J. Filed Sept. 8, 1881. (No model.)



Claim.—1. In combination with the frame E and screen F, the swing-valves M, substantially as and for the purpose set forth.

2. The combination of the frame E, screen F, valves M, and the apron N, substantially as and for the purpose named.

3. In combination with the inclined screen F, the hopper G, having a valve-cover, I, hung centrally and provided with the projection K, substantially as and for the purpose specified.

4. In combination with the hopper G, valve-cover I, and projection K, the bar L, substantially as and for the purpose named.

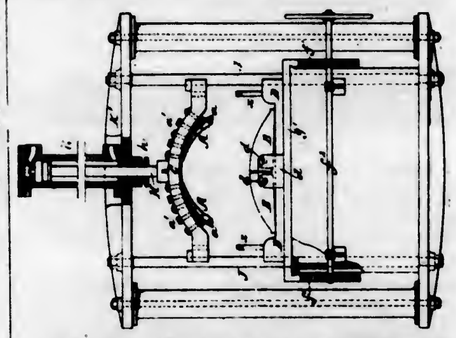
5. The combination of the base B, frame E, screen F, valves M, hopper G, and boxes C and D, substantially as and for the purpose specified.

256,087. HARNESS. CHARLES F. WINDEMEYER, Springfield, Ill. Filed Feb. 10, 1882. (No model.)



Claim.—The hereinbefore-described device, in which the housing A, provided with the tongue a, the latch B, having the lug *b* and hooked end *b'*, the spring C, and the bar D, provided with the notch *d'* and tongue *d*, are constructed and combined to operate in the manner and for the purpose substantially as shown.

256,088. MACHINE FOR MAKING SPRINGS. GEORGE W. WILLFORD, Sheffield, County of York, England. Filed July 5, 1881. (No model.) Patented in England Mar. 23, 1879.



Claim.—1. In a spring-bending machine, the combination of two dies with devices, substantially as described, for moving one of the dies toward or from the other at the center while keeping the ends of the dies in substantially the same relation, as and for the purpose set forth.

2. In a bending-machine, the combination of the upper dies with a plate, D, and die B, made in two parts, and provided with devices for raising and lowering the two parts in the center, substantially as specified.

3. The combination of a die, B, with dies A, spring-plate carrying the latter, cross-head, and devices, substantially as described, for adjusting the spring-plate.

4. The combination of movable dies A B and plate D with movable table *g g'*.

5. The combination of the guides J, cross-head C, plate D, and dies with movable table *g g'*.

6. The combination of the dies, cross-head C, plate D, and fastening devices *z* with movable supports for said plate D.

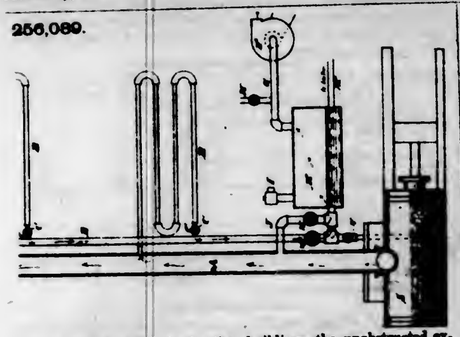
7. The combination of dies and support D with two-part table *g g'*, having racks at the end, and gear-wheels *f f'*, all substantially as set forth.

256,089. HEATING APPARATUS. NAPOLEON W. WILLIAMS, Philadelphia, Pa. Filed Dec. 31, 1881. (No model.)

Claim.—1. In apparatus for heating buildings, the unobstructed exhaust-pipe and heating-coils opening from it, in combination with a bleeder-pipe connecting with said coils and opening at the bottom into a hot-well in which a partial vacuum is maintained, substantially as and for the purpose specified.

2. In apparatus for heating buildings, the unobstructed exhaust-pipe and heating-coils opening into it, in combination with a bleeder-pipe connecting with said coils and means to create a suction in said bleeder-pipe, substantially as and for the purpose specified.

256,089.



3. In apparatus for heating buildings, the unobstructed exhaust-pipe A, heating-coils B, bleeder-main D, hot-well E, suction or exhaust fan F, and feed-water pipe N, substantially as and for the purpose specified.

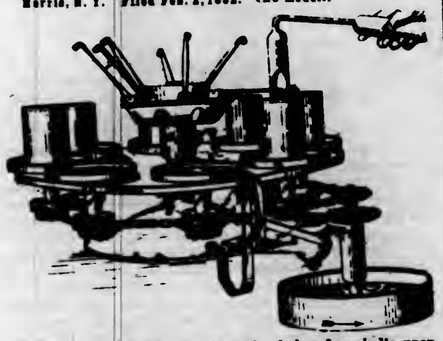
4. In apparatus for heating buildings, the combination of an exhaust-pipe with heating-coils B or their equivalent, bleeder pipe or main D, provided with valve I, hot-well E, pipe J, with its valve K, exhaust-fan F and its pipe G, and feed-water pipe N, substantially as and for the purpose specified.

5. In apparatus for heating buildings, an exhaust-pipe and steam-heating apparatus, in combination with means to suck steam from said exhaust into or through said heating apparatus, substantially as and for the purpose specified.

6. The combination of exhaust-pipe A, heaters B, bleeder-main D, hot-well E, vacuum-valve I, and vacuum-pump F, substantially as and for the purpose specified.

7. In apparatus for heating buildings, a steam-main into which steam is fed, in combination with steam-heating apparatus and means to create a suction through said heating apparatus to draw steam from the main into said heating apparatus.

256,090. CAN-CAPPING MACHINE. JOHN C. WISTERT, Mount Morris, N. Y. Filed Feb. 2, 1882. (No model.)



Claim.—1. A table provided with a hub and a spindle upon which it is supported, can-holders arranged upon spindles in said table, loose pulleys upon said last-named spindles, a driving-wheel, and an endless chain driven therefrom and inclosing the loose pulleys, combined substantially as shown and described, whereby a positive rotation is imparted to said table without affecting the can-holders.

2. A table provided with a hub and a spindle upon which it is supported, can-holders and their spindles, having their bearings in said table, said loose pulleys and fast gears upon such last-named spindles, combined with an endless chain band on said pulleys, a driving-wheel for said chain to rotate the table, and gearing to successively engage the pinions of the can-holder spindles to rotate said can-holders as they are brought into mesh with such gearing, substantially as described.

3. A table provided with a hub and a spindle upon which it is supported, can-holders and their spindles, having bearings in said table, and loose pulleys and fast pinions on said last-named spindles, combined with an endless chain band on said pulleys, a driving-wheel to move said chain positively to rotate the table, a stopping device to arrest the rotation of the table as each can-holder is brought to a given point, and gearing driven from the shaft of the driving-wheel to engage the pinion of and thus rotate the can-holder at the point of stoppage of the table substantially as described.

4. A can-capping-machine table, a spindle upon which it is rotatable, can-holders and their spindles, having bearings in said table, loose pulleys on said can-holder spindles, and an endless band supported on said pulleys to rotate the said table, combined with a driving-wheel for said band, and a pivoted support for such wheel, movable to adjust the band-driving wheel in the arc of a circle to take up the slack of the band, substantially as shown and described.

5. A can-capping-machine table, a spindle upon which it is rotatable, can-holders and their spindles, having bearings in said table, loose pulleys and fast pinions on said can-holder spindles, a driving-band supported on said pulleys, and a driving-wheel for said band, combined with a support for such driving-wheel, a pivot for such support, and gearing on the said support to transmit motion from the driving-wheel to the fast pinions on the can-holder spindles to rotate said can-holders, whereby said driving-wheel can be so moved as to serve as a belt-tightener for the driving-band without interfering with the rotation of the table or the can-holders, substantially as shown and described.

6. A can-capping-machine table and means to rotate the same, and independently-rotated can-holders thereon, combined with pivoted can-cap hold-downs fast upon and revolving with said table, and a stationary cam engaging the ends of all of said hold-downs simultaneously to positively operate the same to hold and release the cans at given intervals, substantially as described.

7. A can-capping-machine table provided with a hub, can-holders in the table, and means to rotate the table and can-holders, combined with a head fast to but rotating with said hub, levers or arms pivoted in said head, and a stationary cam automatically acting in succession upon each of said levers to positively raise and lower said levers at given intervals, substantially as and for the purpose described.

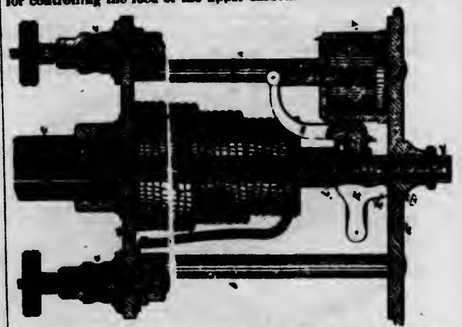
8. A can-capping-machine table, can-holders thereon, means to rotate and stop said table, and connected means to independently and intermittently rotate the can-holders, combined with a head fast to but rotating with said table, can-cap hold-downs pivoted in said head and arranged to register with the can-holders, and a stationary cam in constant engagement with all of said hold-downs to automatically and positively depress and hold said hold-downs over cans being operated upon, and similarly to raise and retain in elevation said hold-downs after the soldering of the cans, substantially as described.

9. A can-capping-machine table having a hub and a spindle upon which it is rotated, and can-holders in said table, combined with can-cap hold-downs, a head in which all of said hold-downs are pivoted, means to adjustably secure said head upon the table-hub, and a cam adjustable on the table-spindle for raising and depressing such hold-downs, whereby the machine is adapted for operation upon cans of different heights, substantially as described.

10. The combination of a can-capping-machine table, loose pulleys thereon, a driving-band sustained by said pulleys to rotate the table, a driving-wheel for said band, and a pivoted support for such driving-wheel movable to take up slack in said band, substantially as set forth.

256,091. ELECTRIC LAMP. JAMES J. WOOD, Brooklyn, N. Y. Filed Jan. 14, 1881. (No model.)

Brief.—A single current regulator with clutch and dash-pot for controlling the feed of the upper carbon.

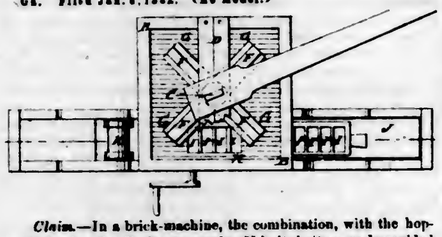


Claim.—1. An electric lamp constructed with two fixed frame heads, *a a'*, in combination with a carbon-holder moving through the same, and a depending solenoid, *f f*, fixed to the upper head,

and with gravitating cores n s, guided in the tubes of the solenoid parallel with the carbon-holder, and joined by a cross-bar, g, which approaches the lower head, with a clutch-pawl, k, pivoted on said cross-bar to engage the carbon-holder by an upward movement, and adapted to seat directly against the lower head when retracted to release the holder, substantially as herein shown and described.

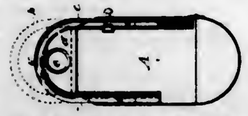
2. The combination, with the carbon-holder d and solenoids f f, with the cores n s and connecting cross-bar g, embracing the carbon-holder and provided with the clutch-pawl k, of the dash-pot n and curved overhanging arm m, connecting the dash-piston with the clutch and core-bar g, substantially as and for the purpose set forth.

256,092. BRICK-MACHINE. MILTON WRIGHT, Fort Valley, Ga. Filed Jan. 6, 1882. (No model.)



Claim.—In a brick-machine, the combination, with the hopper H, having the discharge-opening H in its bottom, and provided with radial stirrers F and inclined paddles G, of the mold-carrying platform J, having the upper surface of its middle part flush with the top of the molds, and provided with the rack-bar L, secured to its under side, the gear-wheel M and the rollers K, journaled to the base under the rack-bar and provided with an annular groove around their middle parts to receive the said rack-bar and guide the platform, substantially as and for the purpose set forth.

256,093. COMBINED POCKET-CASE AND CIGAR-CLIPPER. ARTHUR P. YATES, Syracuse, N. Y. Filed Jan. 18, 1882. (No model.)



Claim.—1. The improved match-safe and cigar-clipper combined, consisting of a pocket match-safe having projecting outward from its end a fixed blade provided with an aperture for the reception of the end of the cigar to be clipped, and a cutting-blade, also connected to the end of said match-safe, and adapted to slide rectilinearly over the fixed blade, all constructed and arranged to operate on the end of the match-safe and exclude from the interior thereof the cigar-clippings, substantially as shown and specified.

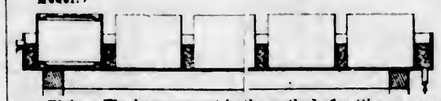
2. The combination, with the pocket-case A, of the blade a, fixed to the end thereof and provided with the eye e, the combined guard and guide-rods c, having a cross bar or bow, r, over the end of the fixed blade, the blade b, attached to the guide-rods c, and the spring s, applied to the end of said rods, all substantially as described and shown, for the purpose set forth.

256,094. BLANK FOR POCKET-BOOKS. ADOLPHUS Y. ARBUCKLE and HENRY RUAN, Philadelphia, Pa., assignors to the Bark Manufacturing Company, (Limited,) same place. Filed Feb. 20, 1882. (No model.)



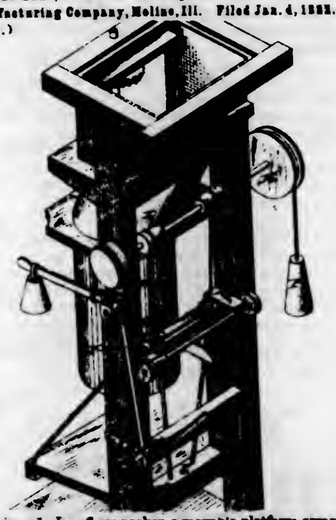
Claim.—As a new article of manufacture, the within-described ready-skived blank of morocco or thin leather, the said blank having a defined portion or portions reduced uniformly in thickness, and the reduced portion or portions presenting a downy or plush-like surface, as set forth.

256,095. METHOD OF PUTTING UP CAUSTIC ALKALI. BENJAMIN T. BABBITT, New York, N. Y. Filed Jan. 17, 1882. (No model.)



Claim.—The improvement in the method of putting up caustic alkali in cans or canisters, consisting in subjecting the cans or canisters to artificial cooling during the operation of filling them by pouring in the alkali in a molten state, substantially as and for the purpose herein described.

256,096. FLOUR-PACKER. HERMAN A. BARNARD, Moline, and J. SILAS LEAS, Rock Island, assignors to the Barnard & Leas Manufacturing Company, Moline, Ill. Filed Jan. 4, 1882. (No model.)



Claim.—1. In a flour-packer, a movable platform arranged to travel upon friction-rollers, substantially as specified.

2. The combination, with the uprights of a flour-packer and the movable platform, of the friction-rollers arranged in front and at the rear of said platform, and adapted to travel vertically upon the uprights, substantially as specified.

3. In combination with the movable platform of a flour-packer, the grooved pulleys mounted on said platform, the chain passing around the same, the cone-pulleys to which the ends of said chain are attached, and the shaft upon which said cone-pulleys are mounted, the whole arranged to operate substantially as set forth.

4. In combination with the movable platform, the grooved pulleys, the chain and cone pulleys, and the shaft provided with a counterbalance-pulley and a friction-pulley, and mechanism, as described, for automatically operating the friction-pulley, substantially as specified.

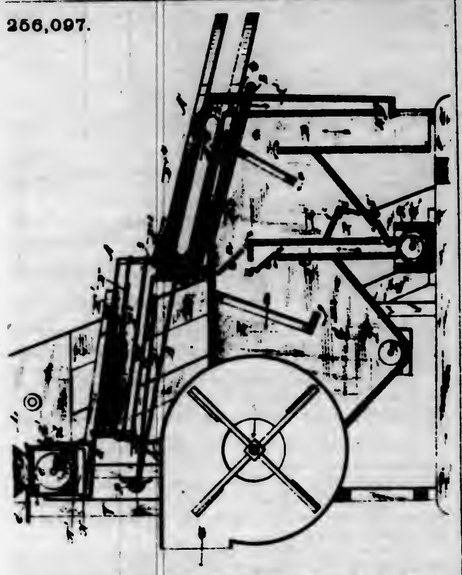
5. In a flour-packer, a movable platform and mechanism, as described, for automatically lowering the barrel away from the stationary packing-tube, substantially as specified.

6. In combination with the movable platform and the mechanism for elevating and lowering the same, the friction-pulley and its strap, the weighted lever and bar connecting the same with the bent lever, the bracket having an inclined face, and the trip for moving the bent lever, the whole arranged to operate to automatically lower the barrel when packed, substantially as specified.

7. In combination with the movable platform of a flour-packer, the grooved pulleys mounted on said platform, the chain passing around the same, and the shaft, the whole arranged to operate substantially as set forth.

256,097. GRAIN-SEPARATOR. HERMAN A. BARNARD and JOHN B. CORNWALL, Moline, and J. SILAS LEAS, Rock Island, assignors to the Barnard & Leas Manufacturing Company, Moline, Ill. Filed Nov. 21, 1881. (No model.)

256,097.



Claim.—1. The combination of the screenings-box E, the separating-trunk F', the division e', and valve i, forming a chamber, R, which communicates with the lower part of said trunk, the air-inlets o', and a conveyer, substantially as described.

2. The combination, with the separating-trunk F' and the screw-conveyer at the lower end thereof, of the elevator L and the feed-conveyer box e' and screw-conveyer therein, substantially as described.

3. The combination of the feed-conveyer, the screenings-box G, the fans and air-passages V, leading from the said screenings-box to the feed-conveyer box, substantially as described.

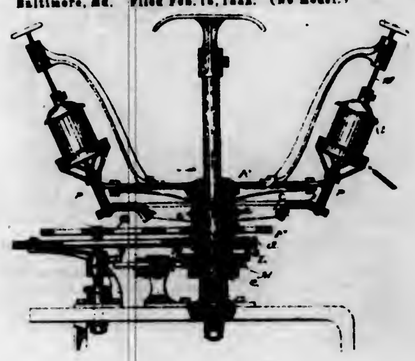
4. The combination of the feed-conveyer, the adjustable feeders thereof, the shakers A A', the down-passage C, the trunk D, screenings-box E, trunk F', conveyer J, and the elevator leading up to the said feed-conveyer, substantially as described.

5. The combination of the feed-conveyer having the chutes N', the adjustable pivoted feeders N, attached thereto, and reciprocating shakers or screen-boxes, substantially as described.

6. The combination of the screenings-boxes E G, the down-flow-passage C, the bottomless trunk D, the separating-trunk F', having a passage near its lower open end, the chamber R, the valves a b, and a fan, substantially as described.

7. The combination of a feed-conveyer, two alternately-reciprocating screen-boxes or shakers provided with laterally-discharging chutes and arranged in close relation to each other, an elevator, the means for supplying the material to this elevator, a down-flow-passage, a bottomless trunk, two screenings-boxes, a separating-trunk, and one or more fans, substantially as described.

256,098. CAN-SOLDERING MACHINE. WILLIAM D. BROOKS, Baltimore, Md. Filed Feb. 16, 1882. (No model.)



Claim.—1. In a can-soldering apparatus, the combination, with the table and the supporting-post, of the revolving table E, carrying the can-holders, suitable mechanism for imparting step-by-step motion to the same, rotary can-holders having pinions upon the lower end of the spindles thereof, and wheel C, adapted to mesh into said pinions, and provided with teeth gearing directly into a pinion upon the main driving-shaft, substantially as described.

2. In a can-soldering apparatus, the combination of the revolving table E, carrying the revolving can-holders, and provided with a sleeve, c, a ratchet fixed thereto, a wheel, C, driven directly from the main shaft and driving the pinions of the can-holders, and gear-wheel F, connected with said wheel C, and through intermediate mechanism, as described, operating the moving pawl of the ratchet-wheel, whereby the table E receives intermittent motion from the wheel C, substantially as described.

3. The combination, in a can-soldering machine of substantially the form described, of the pinions F G, receiving motion from the wheel C, the lever K, provided with a cam-loop, the shaft g, and the arm h, the spring-pawl, and ratchet-wheel, whereby step-by-step motion is imparted to the table E, all substantially as described.

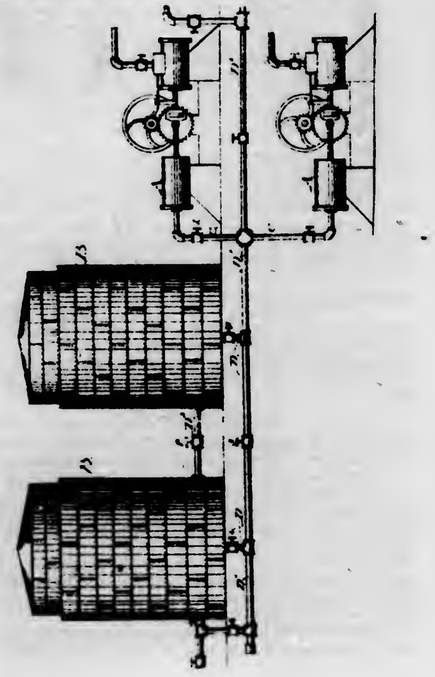
4. In combination with the table E in the described machine and the sleeve c, the ratchet I, the lever K, with its spring-pawl engaging with said ratchet, the wheel M, fixed to said ratchet, pawl m, and spur 9 upon the shaft g, the parts being constructed and operating substantially as described.

5. The combination, in a can-soldering apparatus, of the outer shell, P, provided with braces 13, connected rigidly to the sleeve p, the annular plates Q and R, supported upon and in combination with the spindle 17, said spindle being connected to the rotating mechanism, substantially as described.

6. In combination with the revolving table and rotating can-seats, the lever 24, pivoted upon the bracket 25, and connected to the lever K, substantially as described.

256,099. PNEUMATIC ELEVATOR. CHARLES E. BUELL, New Haven, Conn. Filed Dec. 16, 1881. (No model.)

Brief.—The air-holders B are extensible and compressible. Air from the compressors at a suitable operating-pressure is forced through pipes c and D' into the air-holders B, expanding the latter, and into the main D², through which it is conveyed to the several stations to operate the elevating machinery. The pipe c permits air, on the downward movement of the elevator, to escape and this escape may be used for ventilating purposes, &c.

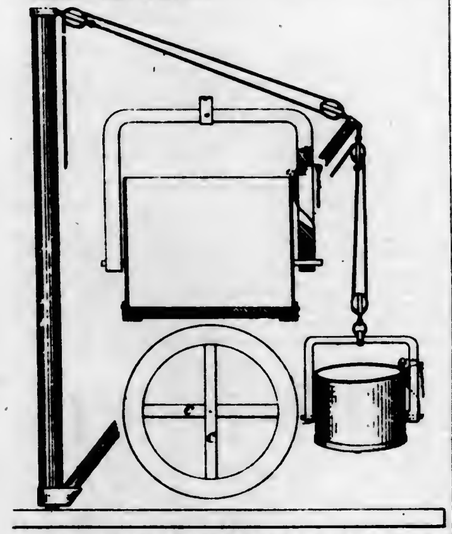


Claim.—1. The combination, in a pneumatic-elevator system, of a central station having located thereat an air-compressing apparatus, one or more extensible and compressible air-holders to receive and hold the compressed air, suitable air-pipes to convey air from said compressors to said air-holders, and a main air-pipe to convey the air away from said central station, with one or more outlying elevator-stations at a distance from said central station, each provided with a pneumatic-elevator motor connected with said main air-pipe, and with appliances, substantially as described, for governing the flow of compressed air from said main pipe to said elevator-motor, substantially as described.

2. In a pneumatic-elevator system, the combination, with air-compressing machinery and an elevator-motor substantially as described, of air-pipes connecting said compressing machinery and elevator-motor, and of one or more expansible and compressible air-holders connected in said air-pipes, substantially as set forth.

3. The combination, with the compressed-air main D[2] and the tank *s*, and with appliances, substantially as described, for admitting air to and from said tank, of the escape-pipe *c*, substantially as set forth.

256,100. ELEVATOR-BUCKET. GEORGE W. CALKINS and JOHN WOODHILL, Cleveland, Ohio; said Woodhill assignor to said Calkins. Filed Oct. 8, 1879.



Claim.—1. A hoisting-bucket suspended upon pivots located so as to be above the center of gravity of the empty bucket and below the center of gravity of the loaded bucket, whereby the loaded bucket, when released from its latching devices, will automatically dump and empty itself at either side, and when emptied the bucket will automatically return to and latch itself in an upright position, substantially as and for the purposes described.

2. The combination of a pivoted bucket having a notched catch with a bail provided with a recess or slot, and having a spring-latch arranged in the recess or slot, the devices and combination operating in the manner described, whereby rapid charging and discharging of the bucket is accomplished, substantially as set forth.

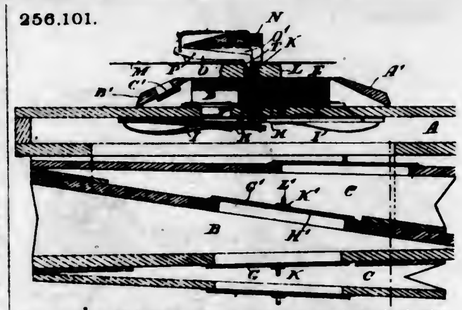
256,101. MECHANICAL MUSICAL INSTRUMENT. JOSEPH HERBERT CHASE, Montreal, Quebec, Canada, assignor to Walter F. Abbot, New York, N. Y. Filed Aug. 15, 1881. (No model.)

Claim.—1. In combination with a perforated sheet of paper, &c., the reeds of a treble clef, D, set opposite to and intermediate with the reeds of a bass clef, E, substantially as and for the purpose set forth.

2. In combination with a perforated sheet of paper, &c., the reeds of a treble clef, D, set opposite to and intermediately with the reeds of a bass clef, E, provided with swell-boards A' and B', substantially as and for the purposes set forth.

3. The combination, in a mechanical musical instrument, of the perforated music-sheet M, finger O, push-pin K, valve H, and

256,101.



reed-chamber F, having reduced air-passage and provided with reed, the whole constructed, arranged, and operating as described, for the purposes set forth.

4. In a mechanical musical instrument, the combination of the pivoted finger O, provided with incline T, link R, spring S, and perforated paper M, substantially as and for the purposes set forth.

5. The combination, with a mechanical musical instrument constructed as described, of a perforated music-sheet having the treble notes placed in rows on said sheet, with the bass notes placed in rows on said sheet, and said rows being furthermore alternately the one a bass and the next a treble row, substantially as and for the purposes described.

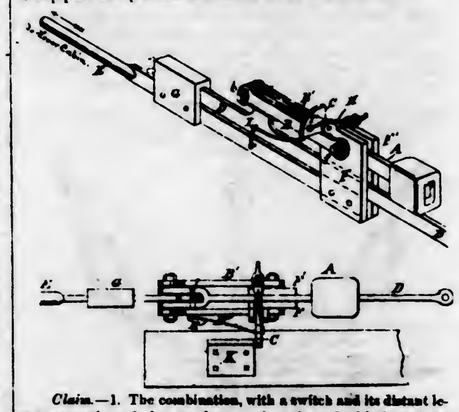
6. In the construction of valves to feeders and bellows, the combination, with the opening E', of the sheet of flexible material H', board G', and knee L', the whole constructed, arranged, and operating substantially as described.

7. In combination with a perforated sheet of paper, &c., the reeds of a treble clef, D, set opposite to and intermediate with the reeds of a bass clef, E, provided with swell-board A' and swell-board B', having tremulant C', substantially as and for the purposes set forth.

8. In the construction of valves to feeders and bellows, the combination, with an opening, E', of a sheet of flexible material, H', and board G', governed in their lift substantially as described.

256,102. SWITCH-OPERATING DEVICE. ALBERT G. CUMMINGS, Harrisburg, Pa., assignor to the Pennsylvania Steel Company, of Pennsylvania. Filed June 23, 1881. (No model.)

Brief.—The switch-operating rod extending to the distant lever carries guides, through which slides the switch-operating bar, a hand-lever being pivoted to the bar and to links secured to the guides, whereby the switch may be actuated independently of the distant lever. To prevent restoring the connection when the switch is wrongly set a chain with the securing-padlock is employed. When being operated by hand the weighted hasp falls in front of a stop-plate and prevents movement by the distant lever.



Claim.—1. The combination, with a switch and its distant lever-connection, of a lever and connections thereof, with the switch-bar adapted to operate the switch independently of and without operating the distant lever-connection, substantially as and for the purposes set forth.

2. The combination of the hand-lever and distant lever-connection with a locking device so constructed and arranged, that when the hand-lever is locked the distant lever-connection is free to operate, and when the hand-lever is released the distant lever-connection is retained in a fixed position.

3. The combination of bar E, connected with a distant lever, housings F, F', and G, bar D, hand-lever A, and bars B B', connected with lever A and housings F F', substantially as and for the purposes set forth.

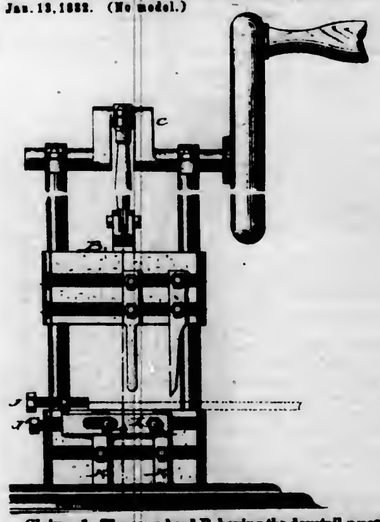
4. In a switch-operating device, a weighted-lever hasp pivoted to housing F, in combination with a fixed angle-iron or stop, K, substantially as and for the purpose set forth.

5. The chain H, in combination with bars D and E and weighted-lever hasp G, substantially as and for the purposes set forth.

256,103. MANUFACTURE OF ARTIFICIAL STONE. VICTOR EIPAUER, Baltimore, Md., assignor to the Neopes Artificial Stone, Cement, and Paint Company, same place. Filed Aug. 16, 1881. Renewed Mar. 14, 1882. (No specimens.)

Claim.—An artificial stone composed of carbonate of soda, carbonate of potash, calcined quartz-sand, oxide of calcium, oxide of magnesium, clay, and siliceous sand, combined in the manner and proportions substantially as and for the purpose specified.

256,104. MACHINE FOR BENDING METAL LINKS. ROBLEY D. EVANS and RICHARD H. GREEN, Washington, D. C. Filed Jan. 13, 1882. (No model.)



Claim.—1. The cam-head B, having the dovetail grooves and the independent adjustable cutter and bender attached thereto by bolts having correspondingly-dovetailed heads, in combination with similarly-grooved die-block, and the standards carrying anti-friction rolls attached thereto and independently adjustable in a similar manner, substantially as described.

2. The combination, with the standards and the anti-friction rolls attached thereto, of the slotted plate I and the screws J J', substantially as described.

256,105. SPELTER RETORT-FURNACE. DIEDERICH W. JANSEN, Joplin, Mo., assignor of one-half to Gottlieb Schmierer, same place. Filed Nov. 19, 1881. (No model.)



Claim.—In a spelter retort-furnace, the flue C, having the opening *d* at its lower end, and the arched receptacle B, provided with the discharge-opening *e*, in combination with the flue *l*, connecting the flue C and furnace F, and the inclined retort D, within the flue C, having the obliquely-cut lower end, and the tapering removable condenser G, fitted thereto, substantially as specified.

256,106. COMPOUND FOR TREATING GOODS, &c., TO RENDER THEM WATER AND MOTH REPELLENT. DANIEL H. LAMB, New York, N. Y. Filed Dec. 28, 1880. Renewed Mar. 7, 1882. (No specimens.)

Brief.—Improvement on Letters Patent No. 224,297, dated February 10, 1880.

Claim.—1. The process of preparing a waterproofing compound, consisting in first dissolving paraffine and a hydrocarbon gum in a light hydrocarbon solvent, then subjecting the solution so formed for a period of from three to ten days to the action of gas formed by the union of sulphuric acid and chloride of sodium in the proportion of about one pound of each ingredient to each gallon of the solution, then subjecting the solution to a powerful agitation of a current of air, and then washing said solution with water and an alkaline solution, substantially as described.

2. A waterproofing solution formed by dissolving paraffine and a hydrocarbon gum in any suitable light hydrocarbon solvent, then subjecting the solution so formed for a period of from three to ten days to the action of gas formed by the union, in the proportions mentioned, of sulphuric acid and chloride of sodium, and then subjecting the solution to the action of air and a washing process, substantially as described.

3. A fabric having an invisible water-proof coating composed of the solution of paraffine and a hydrocarbon gum, treated as herein described, fixed thereto by heat, substantially as described.

256,107. COMPOUND FOR TREATING GOODS, &c., TO RENDER THEM WATER AND MOTH REPELLENT. DANIEL H. LAMB, New York, N. Y. Filed Dec. 28, 1880. Renewed Mar. 7, 1882. (No specimens.)

Brief.—Improvement on Letters Patent No. 224,296, dated February 10, 1880.

Claim.—1. The process of preparing a waterproofing compound, consisting in first dissolving a hydrocarbon gum in a light hydrocarbon solvent, then subjecting the solution so formed for a period of from three to ten days to the action of a gas formed by the union of sulphuric acid and chloride of sodium in the proportion of about one pound of each ingredient to each gallon of the solution, then subjecting the solution to a powerful agitation of a current of air, and then washing said solution with water and an alkaline solution, substantially as described.

2. A waterproofing solution formed by dissolving a hydrocarbon gum in any suitable light hydrocarbon solvent, then subjecting the solution so formed for a period of from three to ten days to the action of gas formed by the union of sulphuric acid and chloride of sodium in the proportions mentioned, and then subjecting the solution to the action of air and a washing process, substantially as described.

3. A fabric having an invisible water-proof coating composed of the solution of hydrocarbon gum treated as herein described, fixed thereto by heat, substantially as described.

256,108. COMPOUND FOR TREATING GOODS TO RENDER THEM WATER-REPELLENT. DANIEL H. LAMB, New York, N. Y. Filed Dec. 28, 1880. Renewed Mar. 7, 1882. (No specimens.)

Brief.—Improvement on Letters Patent No. 224,295, dated February 10, 1880.

Claim.—1. The process of preparing a waterproofing compound, consisting in first dissolving paraffine in naphtha or other light hydrocarbon solvent, then subjecting the solution so formed for a period of from three to ten days to the action of a gas formed by the union of sulphuric acid and chloride of sodium, in the proportion of about one pound of each ingredient to each gallon of the solution, then subjecting the solution to a powerful agitation of a current of air, and then washing said solution with water and an alkaline solution, substantially as described.

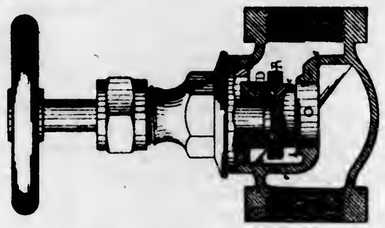
2. A waterproofing solution formed by dissolving paraffine in any suitable light hydrocarbon solvent, then subjecting the solution so formed for a period of from three to ten days to the action of gas formed by the union of sulphuric acid and chloride of sodium in the proportions mentioned, and then subjecting the solution to the action of air and a washing process, substantially as described.

3. As a new article of manufacture, a fabric having an invisible water-proof coating composed of the solution of paraffine treated as herein described, fixed thereto by heat, substantially as described.

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256,109. STEAM GLOBE-VALVE. NATHANIEL C. LOCKE, Salem, Mass. Filed Dec. 10, 1881. (No model.)

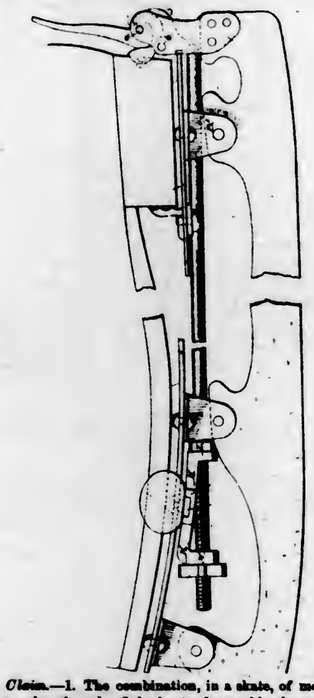
Brief.—When the valve is seated the soft metal ring rests upon the raised seat *b* and the depending portion *c* of the valve projects into the valve-port.



Claim.—In a globe-valve having a raised seat, the valve-disk D, provided with a depending central portion, *c*, and with a soft metallic ring, E, which ring is adapted to close upon the raised seat, substantially as set forth.

REISSUES.

10,068. SKATE. ALPHEUS S. HEUTER, Newburg, N. Y., assignor to Everett H. Barney and Robert Gibson. Filed Feb. 23, 1882. Original No. 91,539, dated June 22, 1869; antedated June 19, 1869.



Claim.—1. The combination, in a skate, of movable clamps for grasping the sole of the boot, of movable clamps for grasping the heel at the back part thereof, a spur or abutment for the breast of the heel, a pivoted hand-lever adapted to operate both sets of clamps simultaneously, and a regulating-screw independent of said lever for adjusting the same, substantially as set forth.

2. In a skate, the combination of movable clamps for grasping the sole of the boot, movable clamps for grasping the heel at the back part thereof, a spur or abutment for the breast of the heel, and a pivoted vibratory hand-lever adapted to operate the same, substantially as set forth.

3. The combination, in a skate, of movable clamps for grasping the sole of a boot, movable clamps for grasping the heel at the back part thereof, a pivoted hand-lever adapted to operate both sets of clamps, and a regulating-screw independent of said lever for adjusting the same, substantially as set forth.

10,069. BOTTLE-WRAPPER. HENRY J. MARK and WILLIAM F. MARTINEK, St. Louis, Mo., assignors to Mark and Martinek Manufacturing Company, same place. Filed Feb. 3, 1880. Original No. 230,710, dated Aug. 3, 1880.



Claim.—1. A wrapper for bottles, &c., made of a veneer of wood having corrugations cut across the grain of the wood, substantially as described.

2. A wrapper for bottles, &c., having spiral or diagonally-arranged corrugations, substantially as described.

10,070. GASALIER. JOHN H. BRAHAM, Brooklyn, N. Y. Filed Feb. 13, 1882. Original No. 116,268, dated June 27, 1871.



Claim.—1. In a chandelier, the combination of an upper stationary tube, a lower sliding burner-support, means adapted to prevent the rotation of the burner-support relative to the stationary tube-section, a spring-barrel, and a cord connected with the spring-barrel and with the sliding burner-support, substantially as set forth.

2. In a chandelier, the combination of an upper stationary tube, a lower sliding burner-support, means adapted to prevent the rotation of the burner-support relative to the stationary tube-section, a spring-barrel, and a cord passing through the upper stationary tube and connected with the spring-barrel and the lower sliding burner-support, substantially as set forth.

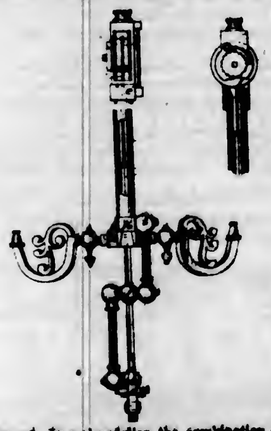
3. The combination, in a chandelier, with a sliding burner-support and a hollow fixed guide, which are arranged to always overlap each other, of the spring-barrel and cord connection, substantially as set forth.

4. In combination with a fixed guide projecting downward from the fixed part of the chandelier, a sliding stem to which the branches are connected, and which has within it an internal sheath or guide cut off from the gasway of the stem and open at the top to receive the fixed guide, substantially as hereinbefore described.

5. In combination with the fixed guide and the sliding stem with its internal guide, the folding gas-pipe, which connects the gasway of the stem with that of the fixed part connected with the source of supply, substantially as described.

6. The combination, with the sliding pipe and the guide therefor, of the folding pipe-connection having a single middle joint and pivoted to the sliding part and the fixed part substantially as set forth, to have the axis of its pivotal connection with the sliding part in a vertical plane other than that of the axis of its pivotal connection with the fixed part, whereby the pipe-connection can be folded close to the stem.

10,071. GASALIER. JOHN H. BRAHAM, Brooklyn, N. Y. Filed Feb. 13, 1882. Original No. 116,269, dated June 27, 1871.



Claim.—1. In a chandelier, the combination of a stationary tube-section, a burner-support adapted to slide relatively thereto and arranged to always overlap the same, a spring-barrel, a cord, which passes through the stationary tube-section and connects the spring-barrel with the burner-support, and a guiding-pulley adapted to direct the cord from the spring-barrel to the tube-section, substantially as set forth.

2. In a chandelier, the combination, with the stationary tube-section, the sliding burner-support, the spring-barrel, and cord, of a ratchet and pawl arranged, substantially as set forth, to hold the spring at different tensions and to permit the tension thereof to be adjusted independently of the burner-support.

3. In combination with a pendant or chandelier for burning gas, a movable branch pipe, a sliding guide-rod attached to said movable pipe, and a stationary stem having an internal guideway for said rod cut off from the gasway, substantially as set forth.

4. In combination with the movable branch, sliding rod, and a stem with an internal guide cut off from the gasway, the folding gas-pipe, whereby an extensible metallic gasway is obtained between the gas center and the movable branch, substantially as described.

5. The spring-barrel and cord, arranged substantially as shown, in combination with the stem, the guideway within the stem, and the sliding rod which supports the movable part of the chandelier.

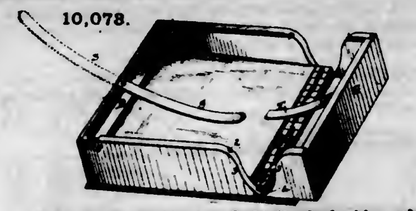
10,072. HAY-KNIFE. SPENCER F. WEYMOUTH, Dresden, assignor to Hiram Holt, Farmington, Me. Filed Nov. 10, 1881. Original No. 112,609, dated Mar. 7, 1871.



Claim.—A hay-knife the blade whereof is provided with suitable handles and has an outwardly-curved edge provided with serrations integral with the blade and sharpened on their edges near-est the blade-point, substantially as set forth.

10,073. TEMPORARY BINDER. BLOOMFIELD BREWER, New York, and JOHN P. ADAMS, Irvington, N. Y.; said Adams assignor to said Brewer. Filed Sept. 26, 1881. Original No. 193,169, dated June 19, 1877. Reissue No. 8,277, dated June 11, 1878.

10,078.



Claim.—1. The combination of a binding-back with a series of adjustable index-leaves, and with a box formed with a bottom, two sides, and a back, provided with grooves to receive and retain the said binding-back in said box, and from which it can be removed vertically, substantially as described.

2. A removable binding-back formed with plates *a*, connected together, combined with a series of adjustable index-leaves, each having affixed to its back edge a plate or rod having projections 1, operating in connection with said plates *a*, substantially as described.

3. The combination of a binding-back provided with plates *a*, connected together, with a series of index-leaves, each having affixed to its back edge a plate or rod having projections 1, operating in connection with said plates *a*, with a box having a bottom, two sides, and a back, and provided with grooves for the reception and retention of said binding-back, substantially as described.

4. The combination of a binding-back with a series of adjustable index-leaves, and with a box having a bottom, two sides, and a back, provided with grooves to receive and retain the said binding-back in said box, and from which it can be removed vertically, and with a swinging spring, S, attached to said box so as to bear upon the free ends of said index-leaves to hold them or swing away to release them, substantially as described.

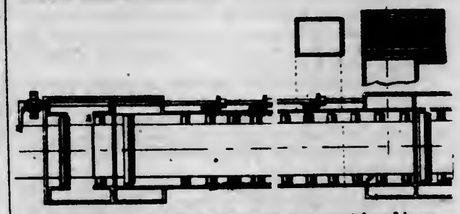
5. The combination, with a box having a bottom, two sides, and a back, of a series of adjustable index-leaves held therein at one end, and a swinging spring, S, constructed so as to bear upon the free ends of said index-leaves to hold them or swing away to release them, substantially as described.

6. The combination of a pivoted spring, T, with the cover, the box A, and a series of index-leaves, substantially as described.

7. A series of index-leaves the outside leaf of which is provided with a binding cord or band, *c*, the free ends of which are temporarily attached thereto and adapted for operation substantially as described.

8. The combination of a cover having a spring, E, attached thereto, with a series of adjustable index-leaves, and a box having a bottom, two sides, and a back, substantially as described.

10,074. METHOD OF AND APPARATUS FOR MANUFACTURING PAPER AND PASTEBOARD. NIKOLAUS KAISER, Grellingen, Switzerland, assignor to Society for the Manufacture of Wood Pulp, same place. Filed Mar. 1, 1882. Original No. 232,919, dated Jan. 27, 1880.



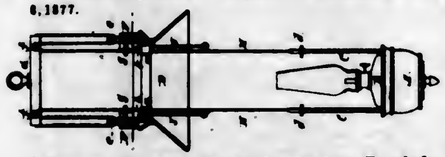
Claim.—1. The method of drying paper or pasteboard in continuous sheets by subjecting it to the direct action of hot air or other gases without any essential draft or stretch which could prevent the free shrinkage of the paper while drying.

2. The apparatus for drying paper or pasteboard in continuous sheets, consisting of a closed chamber in which hot air or gases are introduced, or in which air is heated by any apparatus, in combination with an apparatus by which paper or pasteboard in continuous sheets is led through the said chamber without subjecting the paper or pasteboard to any essential drawing or stretching action.

3. In an apparatus for drying paper or pasteboard in continuous sheets, a number of rotating rollers over and by means of which the paper or pasteboard is not so much drawn forward but pushed forward, so as not to be subjected to any essential drawing or stretching action.

4. In an apparatus for drying paper or pasteboard in continuous sheets, the plates *i*, combined with the carrying-rollers *g*, all as and for the purpose set forth.

10,075. HANGING LAMP. ELIJAH C. LAWRENCE, Boston, Mass. Filed Aug. 20, 1881. Original No. 188,938, dated Feb. 6, 1877.



Claim.—1. The combination of a hanging lamp, B, a shade, D, supported at a suitable distance above the lamp and adapted to move up and down with the same, cords or chains H, having their upper ends secured at a suitable distance above the lamp, and at their lower ends connected with the latter, sheaves *f*, and a counterbalancing-weight provided with sheaves *e*, substantially as and for the purpose described.

2. In a hanging lamp provided with means for raising and lowering the same, the combination of a lamp, a counterbalancing weighted rim, E, a shade, D, a locking device between the rim and the shade for connecting and disconnecting them, and means for supporting the shade when detached, whereby the shade may be caused to move with the lamp or with the rim, substantially as and for the purpose described.

3. In a hanging lamp, the combination, with the lamp B, of the cross-bar G, cords H H, weighted rim E, shade D, and locking-shafts *J J*, whereby the said weighted rim can be elevated with or without the shade, substantially as specified.

10,076. CULTIVATOR-TOOTH. JOHN S. ROWELL, Beaver Dam, Wis. Filed Oct. 27, 1881. Original No. 232,850, dated Oct. 5, 1880.



Claim.—1. The double-pointed reversible tooth described, consisting of the tooled shank S, having fixed similarly-curved shovel-points T at its opposite ends, the whole constituting a unitary structure of substantially the usual length of seeder-teeth, combined with a slipping plate adapted to hold the teeth by clamping near its upper point, substantially as described.

2. In combination with a beam and with a plate having a slipping connection with the beam, a double-bladed tooth, S T, detachably and reversibly secured to the slipping plate by a fastening independent of the fastening which secures the plate to the beam, whereby the teeth may be reversed without disturbing the plate, substantially as described.

3. The combination of the cleft-beam A, slipping plate B, clamped within and extending out of the beam-cleft, the double-pointed reversible teeth S T, fitted to the protruding portion of the slipping plate, and mechanism for detachably securing the teeth to the exposed part of the plate, substantially as and for the purpose specified.

4. In combination with a cultivator-beam and with a double shovel-pointed reversible tooth, S T, an intermediate plate having a slipping connection with the beam, a fastening for rigidly but detachably securing the teeth to the plate, and means for guarding the upper teeth-point, substantially as set forth.

5. In combination with the beam and with a double-pointed reversible teeth, S T, having similar curved shovel-points, a plate having a slipping attachment with the beam, and a fastening for holding the teeth by its upper end to the plate, said slipping plate being extended to afford a guard to the unused teeth-point.

6. In combination with a beam and with a double shovel-pointed reversible teeth, S T, a plate having a slipping connection with the beam and rigid detachable connection with the teeth, said plate being extended and arranged to hold the teeth at the rear of the beam, substantially as described.

7. The slotted beam A, the pivoted slipping plate B, slotted to receive the binding-bolt *b* and provided with the clamping-bolt C, and shoulders outside of the beam, combined with the adjustable or reversible teeth S T, rigidly but removably secured thereto, substantially as described.

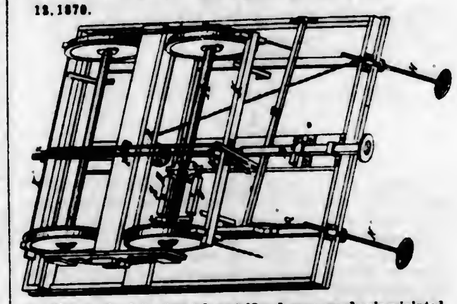
8. The slipping plate B, adapted to be pivoted at its front end by bolt *p* and provided with slot *i*, whereby the clamping-bolt *b* may pass through said plate, combined with a hooking-shoulder, P', and hook-headed clamp-bolt C, whereby the shank S may be firmly but detachably held, substantially as described.

9. Combined with the reversible tooth S T, a slipping plate, B, adapted to be located in a cleft in the beam A and provided with a hooking-shoulder, P, offset laterally from said plate, and the clamp-bolt C, whereby the shank S will be held in line with said plate, but capable of adjustment up and down thereon, as shown.

10. Combined with the reversible tooth S T, the slipping plate B, constructed with laterally-projecting flanges along its rear edge, whereby the unused tooth is guarded while the machine is in operation.

11. A slipping plate, B, pivoted and clamped within a cleft in the beam A by separate bolts and provided with a holding-shoulder, P, and clamp-bolt C, in combination with the reversible tooth S T, as set forth.

10,077. RAILWAY-CAR BRAKE. EDWARD P. VIVIAN, Omaha, Nebr. Filed Mar. 6, 1882. Original No. 101,791, dated Apr. 12, 1870.



Claim.—1. A horizontal centrifugal governor having jointed arms, weights, and a spring arranged on the axle of a car, in combination with the draw-bar of the car and with an interposed stop or detent arranged to be actuated by the governor, substantially as and for the purpose above set forth.

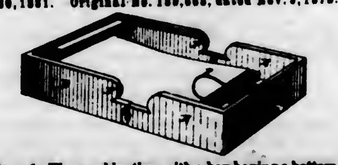
2. The arrangement of the governor G, the grooved wheel W, the collar U, forked lever C, and the lever L, in such manner as to force the front end of the lever L outwardly when the train is in rapid motion, allowing the bar B to be pressed back upon the lever M, as above set forth, thus applying the brakes to the wheels of the car.

3. The construction and arrangement of the bar B, in combination with the lever M, brakes K and K', rod R, and draw-bar D, when used and operated substantially as above described.

4. The arrangement of the rods R P and levers M N, in combination with bar B, to operate the brake either by hand or automatically, substantially as herein described.

5. The arrangement of the brake-stand H' and chain Q, in connection with the bar B, as above set forth, for the purpose of preventing the operation of the automatic brake when desired.

10,078. PERMANENT LETTER-FILE. JOHN F. ADAMS, Irvington, assignor to Bloomfield Brewer, New York, N. Y. Filed Sept. 20, 1881. Original No. 189,665, dated Nov. 9, 1875.



Claim.—1. The combination, with a box having a bottom, two sides, and a back, and provided with a vertical groove or grooves, of a series of adjustable sheets, made of card-board or suitable stiff paper, each sheet being attached to a piece of stiff material having a projection or projections fitting into said groove or grooves, substantially as and for the purpose described.

2. The combination of the cover provided with a spring, P, with a box having a bottom, two sides, and a back, and the series of adjustable sheets K, substantially as shown and described.

THE HELIOTYPE PRINTING CO 211 TREMONT ST BOSTON

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—District of Connecticut.

Decided December 3, 1881.

STROBRIDGE *v.* LANDERS *et al.*

1. REISSUE NO. 7,583—STROBRIDGE v. LINDSAY (2 FED. REP.) FOLLOWED.

The conclusions of the court in *Strobridge* v. *Lindsay* (2 Fed. Rep., 692) upon the questions of novelty and patentability adopted, it appearing that the same facts exist in this case as in that.

2. SAME—COMBINATION—AGGREGATION.

It appearing that some of the elements of the combination claim formed a new combination of parts to secure a useful result, it became immaterial to inquire whether all the elements of the claim are strictly in combination and not merely aggregated.

Messrs. Bakewell & Kerr for the plaintiff.

Mr. B. F. Thurston and *Mr. C. E. Mitchell* for the defendant.

BLATCHFORD, *J.*:

This suit is brought on Reissue Letters Patent No. 7,583, granted to the plaintiff March 27, 1877, the original Patent No. 159,467 having been granted to him as inventor February 2, 1875, and reissued to him (No. 7,174) June 13, 1876. The drawings of the original and of No. 7,583 are the same.

The following is the specification of No. 7,583, reading what is outside of brackets and what is inside of brackets and omitting what is in italics:

Figure 1 is a vertical section of a coffee-mill embodying my invention. Fig. 2 is an under view of the cover, and Fig. 3 is a perspective view of the hopper.

Like letters refer to like parts wherever they occur.

My invention relates to the construction of coffee [and] or spice [mills in such manner that the hopper is inclosed in the box, and may be closed in turn by a sliding gate or cover, whereby a compact and neat mill is obtained.] *grinders; and it consists in suspending the hopper by means of the top of the box and securing it in position by means of screws, which pass through the cover and through lugs or a projecting flange upon the hopper, whereby a covered hopper is obtained and the construction and attachment of the device simplified; also, in providing the covered hopper with a sliding or movable gate, centered with the shank of the grinding-nut and sliding upon the periphery or flange of the hopper, whereby hinges, springs, or catches are dispensed with, and the gate slides aside, leaving an unobstructed opening for the admission of the article to be ground, and also in providing the hopper with projections or points which bite into the cover of the box and prevent the slipping or turning of the hopper, in connection with a cover projecting so as to rest upon the top of the box, and bind upon the upper edge of the hopper.*

* * * * * * *

A indicates the box, with its drawer B, of any suitable construction. The top C of the box is cut away, [so that] *for the admission of the hopper* [may be suspended therein,] *which I introduce from above, suspending it* by means of a projecting flange or lugs on the [hopper.] *hopper, and to* [To] facilitate the suspension of the hopper I preferably bevel the opening in top C to correspond with the curve of the hopper, as shown at [*c*.] *c, which.* [This,] also, will diminish the liability of the splitting of the wood when the screws which secure the cover are [introduced] *introduced. (when a cover is used and secured as shown.)*

D represents the hopper or grinding-shell provided with a flange or lugs, *d*, by which it is suspended [in] *upon the top C of* the box [A. The hopper is fastened down, and also prevented from turning, by the screws *g*.] *A, and through which pass the screws g, which hold the hopper down and prevent it from turning.* The hopper has the usual grinding-face, *d'*, and a series of projections or points, *e*, which I provide for the purpose of taking hold upon the beveled edge c of the top C, to assist in preventing any movement of the hopper. These points, if sufficiently numerous, will of themselves prevent a change of position of the [hopper, so that screws may be omitted. This will be found the cheapest and most convenient way of suspending the] hopper. E is the cover, having a central opening for the passage of the shank of the grinding-nut, and a sunken or recessed rim for the accommodation of the lugs *d* or the flange of the hopper, so that the lower edge of the cover rests evenly upon the top C, and at the same time binds upon the hopper. This cover E is provided with a sliding gate or door, F, which is pierced as at *f* for the passage of, or made to rest against, the shank of the grinding-nut, upon which it turns or bears, said gate F resting, by its lower edge, upon the upper edge of the hopper, and sliding or moving within or without the cover E, so as to be out of the way when the opening in the cover is unclosed.

G represents the grinding-nut, having a tapering shank, H, which passes through the cover, projecting portion of gate F, and the crank, and is secured above by the usual tightening-nut I.

The devices are put together as follows: The cover and gate are placed upon the hopper, the shank of the grinding-nut passed through the hopper, cover, and crank, and secured by the tightening-nut. The lugs or screw-openings in the flange of the hopper are made to register with those in the cover, after which the operative parts are dropped into the opening in the top of the box, and screwed by a single set of screws, which pass through the cover and lugs or flange of the hopper. The projecting points on the outside of the hopper will bite into the top of the box, and as the cover binds upon the upper edge of the hopper, these will of themselves, if sufficiently numerous, be sufficient to prevent any movement of the hopper, so that, if desired, the screws need not pass through the flange of the hopper.

The hopper may be suspended, as shown, and the cover replaced by a bridge, to support the shank of the grinding-nut. The grinding shell or hopper and the cover may be secured by a separate set of screws. The lower part of the grinding-shell may be formed with lugs or projections, to guide and steady the grinding-nut.

Among the advantages of my invention are the simplicity of construction and the readiness with which the several parts and the box may be adjusted or set up, whereby time and labor are saved and a serviceable article produced.

Reading in the foregoing what is outside of brackets, including what is in italics, and omitting what is inside of brackets, gives the text of the original specification.

There are eight claims in No. 7,583. Only claim 1 is involved in this suit. It is as follows:

1. A coffee or similar mill having a detachable hopper and grinding shell formed in a single piece and suspended within the box by the upper part of the hopper or a flange thereon, substantially as and for the purpose specified.

The original patent had four claims, as follows:

1. The hopper and grinding-shell D, provided with points or projections *e* on its outer surface, in combination with cover E, projecting so as to rest upon the top of the box and bind upon the upper edge of the hopper, substantially as and for the purpose specified.

2. In coffee or spice mills, the combination of box A, having a top, C, with the hopper D, suspended within the box by means of lugs or projections, which rest upon or take into top C, and a cover, substantially as specified.

3. The combination of the hopper and grinding-shell D, grinding-nut G, having shank H, and cover E, having a sliding gate or door F, substantially as and for the purpose specified.

4. The combination of cover E and grinding-shell or hopper D, the latter provided with lugs or a flange, so that the two parts may be secured to the box by a single set of screws, substantially as specified.

So far as can be discerned in the drawings of the original and the reissue the hopper and the grinding-shell are represented as a single piece, without any indication of ever having been in two pieces. It is not stated in the reissue that they are cast in one piece. The text

says that D is the hopper or grinding-shell, and that it has the usual grinding-face, *d'*. That grinding-face is shown in the drawings as extending down from the lower part of the hopper part proper and as having the grinding-nut revolving within it. The grinding-face is the inner face of the grinding-shell. There is nothing else on the point till we come to claim 1, where it is said that "the hopper and grinding-shell" are "formed in a single piece."

The elements which appear to be necessary in claim 1 are: (1) A mill in the form of a box; (2) a hopper and grinding-shell formed in a single piece; (3) the combined hopper and grinding-shell detachable; (4) such hopper and grinding-shell suspended in the box by the upper part of the hopper or a flange thereon; (5) an arrangement of these features substantially as and for the purpose specified.

The defendant's structure, which is claimed to infringe claim 1 of the reissue, is constructed in accordance with the description and drawings of a patent granted to Rodolphus L. Webb, No. 204,865, June 11, 1878, so far as anything involved in this case is concerned. That patent shows a box-mill with a cast-metal top projecting as a lateral flange horizontally from the top edge of the hopper on all four sides and extending outwardly beyond the tops of the sides. The top is of one piece with the hopper proper, and the latter is of one piece with the grinding-shell, as shown in the drawings, and this is the construction in the article put in evidence as infringing. The hopper and grinding-shell are sunk in the box, so that there are covers which, when closed, rest on the upper face of the metal top. The patent states that the grinding-shell may be cast as a part of the hopper or may be attached thereto. The patent claims merely an arrangement for adjusting the grinding-nut up and down, so as to make it run nearer to or farther from the grinding-shell, and thus vary the quality of the grinding. This arrangement does not appear to be embodied in the mills produced and put in evidence as specimens of those made by the defendant.

The defendant's article is a mill in the form of a box. It has a hopper and a grinding-shell formed in a single piece, they being cast in one piece. The combined hopper and grinding-shell and top are detachable from the box by unscrewing screws which go through the sides of the box into lugs depending on the inside of the box from the under side of the top. The hopper and the grinding-shell, through their connection with the metal top, are suspended in the box. Every point of advantage resulting from the combination of the features in claim 1 of No. 7,583 exists in the defendant's article.

Some question is made as to what is meant by the word "detachable" in claim 1. It is not used in the descriptive part of the specification; but screws are shown and described which go through the lugs or flange on the hopper and into the wood of the box on top, and thus fasten the hopper to the box. Of course these are wood-screws, and removable at will, and so the hopper and shell are detachable. The defendant's hopper and shell and top are detachable in the same way, being attached in the same way. The defendant urges that its structure does not infringe because the hopper is not detachable from the top of the box. All that the defendant has done is to enlarge the size of the flange on the hopper. The sides of the box support the top of the box. When the flange is smaller than the top it hangs in the top. When it is so large as to itself form a top and overlap the sides the sides support the whole—that is, the flange-top, the hopper, and the grinding-shell. The change is merely formal, and does not avoid infringement. The flange on the hopper may be gradually enlarged and the top of the box be gradually cut away until the wood of the top is all gone, and the flange replaces it, without in any manner affecting the principle of the Strobridge invention embodied in claim 1. This is all that the defendant has done.

The answer sets up that the reissue is not for the same invention as that described in the original, and that the reissue contains new matter not found, suggested, or described in the original. This objection is not tenable. The statement in the reissue of that to which the invention relates is true, and is found in substance in the original. There is no statement in the reissue of what the invention consists in. The statement in the original as to what the invention consists in is omitted in the reissue. It was narrower than the real invention. The drawings of the reissue and the original are the same. There is no new matter introduced into the reissue. The reissue truly describes the article and its parts. To say that the hopper is suspended in the box, when the original says that it is suspended from the top of the box, is not new matter within the meaning of section 4,916 of the Revised Statutes.

The answer also sets up that in view of the previous state of the art, as shown in various patents set forth in the answer, the reissue shows no novelty and discloses no patentable subject of invention, and that the reissue is invalid for want of patentable quality.

This reissued patent was adjudicated upon in the suit of *Strobridge* v. *Lindsay*, (2 Fed. Rep., 692,) in the Circuit Court for the Western District of Pennsylvania, by Judge Acheson. The defendant's mill in that case was of the same construction as the mill of the defendant in this case. The defenses there insisted on were non-infringement and want of patentable invention. The mill was held to infringe claim 1 of the reissue. The question of the extension of the flange on the hopper was fully considered. Everything that is introduced into this case by the defendant on the questions of novelty and patentability was in the Lindsay case, except a mill called "Domestic Coffee-Mill." In this the hopper is elevated and not sunk in the box. There is a cast-metal cover covering the box and forming its top. The hopper is not of one piece with the cover, but rests on it, and is secured to it by rivets. The grinding-shell is loose, and has a flange at its upper edge, and is dropped into a depression surrounding the central hole in the cover, and has the hopper above it. Lugs on it fitting into corresponding recesses in the cover prevent it from turning. The grinding-shell is supported against lateral strain or displacement by the cover. This structure has not a hopper suspended in the box, nor a grinding-shell and hopper formed in a single piece, and neither meets claim 1 nor shows the defendant's arrangement.

The question of novelty and patentability was fully considered by Judge Acheson, especially in regard to the French mill and the elevated-hopper mill. Box coffee-mills existed—such as the elevated-hopper mill, the Livingston and Adam's mill, and the Brown mill—in which the hopper and the grinding-shell were formed in one and the same piece, and box coffee-mills existed—

such as the French mill, the Hartz mill, and the Clark mill—in which the hopper was suspended in the box; and in the Domestic coffee-mill the metal top, which carried the hopper and the grinding-shell, was attached to the box by wood-screws; but no coffee-mill existed combining all the features embodied in claim 1 of No. 7,583. It was, however, urged in the Lindsay suit that it did not, in view of the prior structures, require invention to pass to a structure with the combined features of claim 1 of No. 7,583. Judge Acheson held that it did. The entire record in the Lindsay suit is in evidence in this suit.

There is nothing new in this suit as to the matters considered and passed upon in the other suit in regard to patentability and novelty, and the Domestic coffee-mill presents no features in regard to forming the hopper and grinding-shell in a single piece and in regard to a hopper suspended in the box which were not presented by structures among those which were before Judge Acheson.

Under these circumstances it would be proper, as it is usual, to follow the former decision on final hearing in another circuit court; but, irrespective of this, I entirely concur in the views of Judge Acheson.

It is strongly urged that claim 1 of No. 7,583 cannot be sustained, because the old devices aggregated in it do not by their combination produce a novel result which is the fruit of the combination. It is a sufficient answer to this view to say that a hopper and grinding-shell formed in a single piece and suspended in the box by the upper part of the hopper or a flange thereon did not exist before combined in a mill. The evidence shows that the suspension in the box requires, in order to dispense with the yoke or bridge which is below the grinding-shell in the French mill, that the grinding-shell and the hopper should be formed in a single piece, because when the hopper is sunken the grinding-shell no longer has the lateral support of the box-cover. Hence the combination of those features does produce a novel result as the fruit of the combination. If that combination had existed before, the question whether adding to that the feature of detachability made another patentable combination might arise; but it does not arise now. The defendant, down to 1877, was not making a mill with a sunken hopper. In that year Webb, who was in its employ, having before him the French mill and a mill made by the Charles Parker Company in accordance with the Strobridge patent, entered into the manufacture of the infringing mill. It desired to make a mill with a sunken hopper which should be a cheaper mill than the French mill. It substantially copied the Charles Parker mill, merely extending the flange of the hopper. It formed the hopper and the grinding-shell in one piece and got rid of the lower supporting-yoke of the French mill. In the Strobridge mill the only lateral support of the grinding-shell is the hopper. Therefore there must be a strong, unyielding union between the grinding-shell and the hopper. Where the hopper is elevated the grinding-shell is sustained laterally against the strain of grinding by the top of the box. The advantages thus resulting from Strobridge's arrangement have been availed of by the defendant by the use of what is covered by claim 1 of No. 7,583.

There must be a decree for the plaintiff for an account of profits and damages, and a perpetual injunction, with costs.

U. S. Circuit Court—District of Maryland.

THE AMERICAN BALLAST LOG COMPANY OF NEW YORK *v.* BARNES *et al.*

Decided December 3, 1881.

1. PATENT NO. 126,938—BALLAST LOGS—PATENT CONSTRUED.
The complainants' device is essentially a combination of two counterbalance-weights, and cannot be construed to cover all methods by which vessels may be kept in an upright position while in port, by means of contrivances fastened on the outside and floating in the water, but only such as are substantially identical with the device described in a patent in construction, form, and principle of operation.

2. SAME—SAME—COMBINATION—SUBSTITUTING NEW ELEMENT.
Defendant having dispensed with one of the essential elements of the combination, and having substituted therefor a new mode of accomplishing the same object, not a mechanical equivalent, and not similar in principle of operation, there is no infringement.

IN EQUITY—BEFORE JUDGES BOND AND MORRIS.

Mr. J. Nevett Steele and *Mr. Sebastian Brown* for the complainant.

Hon. Wm. Pinkney Whyte, Mr. J. H. Barnes, and *Mr. R. D. Williams* for the respondents.

By the COURT:

This bill of complaint is filed for an alleged infringement of Patent No. 126,938, granted May 21, 1872, to Demartini and Chertizza, for improvement in methods of ballasting vessels in port, which has been assigned to the complainant.

The patentee's specification states that—

Under the [then] present practice, when a vessel arrives in port and discharges her cargo, ballast must be immediately taken in to prevent careening and consequent injury to herself and other craft, as well as to facilitate repairs and other operations incident to preparation for a new voyage. To avoid the loss of time and the expense, &c., attending this course, we employ ballast-logs connected with the vessel by ropes or chains, that lie alongside thereof, and yet float in the water, as hereinafter described.

The specification then describes the logs as single pieces of timber, or several smaller sticks bolted to each other, made proportioned to the size and weight of the vessel, and, if necessary, weighted with lead or iron.

The logs are in all cases designed to float or be self-sustaining in the water, and thus made capable of being towed from place to place or vessel to vessel. They are attached to the vessel by ropes or chains passing through eyebolts B or other convenient devices and over the deck or around any suitable part of the frame-work, or otherwise secured as found practicable or convenient.

The logs are not intended to hold the vessel down in the water, but merely to act as counter or balance weights when she attempts to keel over from any cause, either when being towed or lying alongside a wharf; and it is evident the chains on one side will be taut only when those on the other are slack, and vice versa, the tendency being to raise the log upon the rising side out of the water. The weight of the log will always prevent this being done, and consequently the vessel will be held in an upright position.

The claim is:

The method of ballasting vessels by means of floating logs of suitable size, weight, and construction attached to said vessels by ropes or chains and arranged alongside thereof, substantially as specified.

The device described in this patent has been introduced by the complainant into very general use in the ports of Boston, New York, Philadelphia, and Baltimore among vessels requiring ballast to keep them upright in port when empty, and particularly among grain vessels, which are required to be completely emptied and sealed before receiving cargo.

The defendants deny in their answer that the device used by them is an infringement, and also charge that the complainant's patent is invalid by reason of long prior knowledge and public use. The device used by the defendants is one for which a patent has been granted to them, No. 232,425, dated September 21, 1880,

for harbor-ballast for ships. It is also to be attached to the outside of the ship, but on one side only. It consists of a floating water-tight box or ponton divided into an upper and a lower compartment, the lower being filled with water and the upper one is air-tight and empty. It is attached to one side of the ship by means of chains or ropes, one fastened to the ship's deck and the other carried under her keel and up the other side. If the ship careens away from the side on which it is attached, the weight of the box and of the water in the lower compartment pulls the ship back to an upright position. If the ship careens toward the side on which it is attached, the buoyant power of the empty air-tight compartment is sufficient to check the tendency of the ship to overturn toward that side.

The conclusion to which we have arrived is that there is no infringement. The device of the complainant's is a combination of two counterbalance-weights. That the weights float in the water is only an incident of their usefulness and has nothing to do with the essential principle of their action. As stated in the specification of the patent, it is only the resistance of the weight of the log when the vessel in keeling over attempts to lift it from the water, which produces the result intended. It is the two counterbalance-weights which the inventor relied upon, and one without the other would be useless.

The defendants' device makes use of but one weight, and the counter-balance is produced by the buoyant power of the air-tight chamber of the ponton. This is made efficient by having the ponton not loosely floating by the side of the ship, as is the case with the ballast-logs, but so secured to the ship that it cannot remain floating in the water when the ship careens toward it, but is carried down and submerged until its buoyant power checks the ship and returns her to an upright position. This, it seems to us, is a different invention from that described and claimed in complainant's patent. It may have been the result of a study of the complainant's device, stimulated by its success; but the defendants have rejected one of the essential elements of complainant's combination and substituted in its place a new mode of accomplishing the same object, which, in our judgment, is not a mechanical equivalent, and is not similar in principle or operation. The buoyancy of the air-chamber on one side of the ship does not perform the same function as was performed by the weight which is dispensed with on the other side. The function of the weight was to drag down the side of the ship by which it was being lifted from the water. The function of the air-chamber is to resist the tendency of the ship in careening to bury it under the water. The quality of buoyancy is not called into action at all in complainant's device. It is useful to that device only so far as it renders the logs easy of transportation to the ship and so far as it renders the logs inactive when the vessel is in an upright position. Its use in any other way or for any other purpose is not suggested in complainant's specification or claim.

Complainant's patent cannot be construed to cover all methods by which vessels may be kept in an upright position while in port by means of contrivances fastened on the outside and floating in the water, but only such as are substantially identical with the device described in the patent in construction, form, and principle of operation. (*Case* v. *Brown*, 2 Wall., 320.)

Being clearly of opinion that the charge of infringement is not sustained, and that there can be no decree in favor of the complainant, it is not necessary for us to consider the defense of want of novelty set up by the answer.

Bill dismissed.

U. S. Circuit Court—Eastern District of Pennsylvania.

THE AMERICAN BALLAST LOG COMPANY *v.* COTTER.

PATENT NO. 126,938 FOR BALLAST-LOGS SUSTAINED.

The conclusions of the Circuit Court for the Eastern District of New York and the Circuit Court for the District of Maryland, with respect to the patentability of the invention, adopted, and the validity of the patent sustained, notwithstanding certain testimony offered to show the prior use of the invention.

Mr. J. Warren Coulston and *Mr. Henry Baldwin, Jr.*, for the complainant.

Mr. Thomas J. Diehl for the defendant.

BUTLER, *J.*, MCKENNAN, *J.*, concurring.

Very little need be said in disposing of this case. Two only of the several grounds of defense set up in the answer were pressed on the argument—first, want of patentability in the invention, and, second, anticipation. The first of these points was passed upon and decided in favor of the patent by the Circuit Court for the Eastern District of New York in the suit of *Demartini et al.* v. *Abramovic et al.* in 1879, and again by the Circuit Court for the District of Maryland in a suit by the plaintiffs here against Barnes and Gatto. The respect due to these judgments and the importance of consistency and uniformity of decision in courts of co-ordinate jurisdiction, where the same subject-matter is involved, requires this court to adopt the judgments referred to. The second question alone, therefore, is open for consideration. A large amount of testimony bearing upon this was taken and is produced by each of the parties. A written analysis of this testimony here would serve no useful purpose. It is sufficient to say that while the general statements of the defendant's witnesses on examination in chief, considered alone, would be fully sufficient to overcome the presumption of novelty arising out of the patent, they are so shaken by the cross-examination in some instances, and generally by the rebutting testimony produced by the plaintiffs, that they cannot justly be accorded such weight. While it is true that the plaintiffs' testimony principally is negative in character, the circumstances are such that it is little if any less valuable than the direct testimony of the other side. Considering the occupations and experiences of the plaintiffs' witnesses it seems virtually impossible that the prior use alleged could have existed without their knowledge.

For the reasons stated a decree will be entered for the plaintiffs.

THE

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Subscriptions for 1882.

The OFFICIAL GAZETTE is published every Tuesday, two volumes a year, commencing in January and July. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound volumes, $3.50 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Issue of April 11, 1882.

Patents	341	No. 256,119 to No. 256,459, inclusive.
Designs	32	No. 12,855 to No. 12,886, inclusive.
Trade-Marks	12	No. 9,272 to No. 9,283, inclusive.
Labels	4	No. 2,661 to No. 2,664, inclusive.
Reissues of patents	9	No. 10,079 to No. 10,087, inclusive.
Total issue	408	

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Maryland	3	.....	Wyoming Territory	.....	.....
Massachusetts	44	1	United States Army	.....	.....
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Barbadoes	.....	.....	Germany	11	.....
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Bermuda	.....	.....	New Zealand	.....	.....
Brazil	.....	.....	Russia	1	.....
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Colombia, U. S. of	.....	.....	Switzerland	3	.....
Cuba	.....	.....	Total to citizens of foreign countries	29	2
Denmark	2	.....			
Ecuador	.....	.....			

DESIGNS.

12,855.—ORNAMENTAL PANELS OR ARTICLES OF BUILDERS' HARDWARE.—*George S. Barbastie*, New Britain, Conn., assignor to *P. & F. Corbin*, same place. Application filed February 23, 1882. Term of patent 7 years.

12,856.—CHARM AND PENCIL-CASE.—*Le Roy W. Fairchild*, New York, N. Y. Application filed April 5, 1881. Renewed March 18, 1882. Term of patent 7 years.

12,857 and 12,858.—CARPET.—*Arthur L. Halliday*, New York, N. Y., assignor to *The Bigelow Carpet Company*, Clinton, Mass. Applications filed March 8, 1882. Term of patents 3½ years.

12,859.—HARNESS-TRIMMINGS.—*John J. Kelly*, Newark, N. J. Application filed January 10, 1882. Term of patent 7 years.

12,860.—TOY MONEY-BOX.—*Louis Kyser* and *Alfred C. Rex*, Philadelphia, Pa. Application filed February 13, 1882. Term of patent 3½ years.

12,861.—BOTTLE.—*Moses G. Landsberg*, Chicago, Ill. Application filed February 16, 1882. Term of patent 3½ years.

12,862.—FONT OF PRINTING-TYPE.—*Carl Müller*, Chicago, Ill., assignor to *Marder, Luse & Co.*, same place. Application filed November 18, 1881. Term of patent 7 years.

12,863.—CARPET.—*Thomas Onslow*, Philadelphia, Pa., assignor to *Horner Brothers*, same place. Application filed March 8, 1882. Term of patent 3½ years.

12,864 and 12,865.—CARPET.—*Julius Peyel*, New York, N. Y., assignor to *The Hartford Carpet Company*, Hartford, Conn. Applications filed February 23, 1882. Term of patents 3½ years.

12,866 to 12,868, inclusive.—FINGER-RING.—*Nathaniel L. Ripley*, Boston, Mass. Applications filed March 2, 1882. Term of patents 3½ years.

12,869.—PRINTING-TYPE.—*John K. Rogers*, Brookline, Mass. Application filed April 28, 1881. Term of patent 3½ years.

12,870.—FINGER-RING.—*Nathaniel L. Ripley*, Boston, Mass. Application filed March 2, 1882. Term of patent 3½ years.

12,871.—FIRE-PLACE-LINING PLATE.—*Joseph A. Read*, Philadelphia, Pa., assignor to *Gilbert Combs* and *John Bowden*, both of Freehold, N. J. Application filed March 6, 1882. Term of patent 7 years.

12,872.—WALL-PAPER.—*Ida F. Clark*, Albany, assignor to *Warren, Fuller & Co.*, New York, N. Y. Application filed February 13, 1882. Term of patent 3½ years.

12,873.—HANDKERCHIEF.—*Henry Doherty* and *Joseph Wadsworth*, Paterson, N. J. Application filed March 11, 1882. Term of patent 3½ years.

12,874.—GATE.—*Henry Feller*, Middle Village, assignor to *John Timmes*, Brooklyn, N. Y. Application filed February 24, 1882. Term of patent 7 years.

12,875.—LAMP-SHADE.—*Marshall W. Gleason*, Brooklyn, N. Y. Application filed January 25, 1882. Term of patent 7 years.

12,876.—[Withdrawn.]

12,877.—CARPET.—*Julius Pegel*, New York, N. Y., assignor to *The Hartford Carpet Company*, Hartford, Conn. Application filed February 23, 1882. Term of patent 3½ years.

12,878.—WALL-PAPER.—*Candace Wheeler*, New York, N. Y., assignor to *Warren, Fuller & Co.*, same place. Application filed February 13, 1882. Term of patent 3½ years.

12,879.—[Withdrawn.]

12,880.—CASKET OR BURIAL-CASE.—*George Ferguson*, Moravia, N. Y. Application filed March 2, 1882. Term of patent 14 years.

12,881 to 12,886, inclusive.—OIL-CLOTH.—*Charles T. Meyer* and *Victor E. Meyer*, Bergen, N. J., assignors to *Edward O. Sampson*, New York, N. Y. Applications filed March 11, 1882. Term of patents 3½ years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

9,272.—ANILINE CHEMICAL DYES.—*Albany Aniline & Chemical Works*, Albany, N. Y. Application filed March 9, 1882.
"The words 'JAMES HENDRICK,' arranged as an autograph."

9,273.—CIGARS.—*Juan Custo y Ca.*, New York, N. Y. Application filed March 17, 1882.
"The words 'LA FLOR DE NAVES.'"

9,274.—CIGARS, CIGARETTES, AND CUT TOBACCO.—*F. P. del Rio y Ca.*, New York, N. Y. Application filed March 17, 1882.
"LA LEGITIMIDAD."

9,275.—TOILET PREPARATIONS.—*E. Brantley Dupree*, Cincinnati, Ohio. Application filed March 18, 1882.
"The arbitrarily-chosen words 'OIL OF BEAUTY.'"

9,276.—CIGARS.—*Estanillo y Ca.*, New York, N. Y. Application filed March 17, 1882.
"LA OPORTUNA."

9,277.—WHISKY.—*W. A. Gaines & Co.*, Frankfort, Ky. Application filed January 9, 1882.
"The word 'HERMITAGE.'"

9,278.—WHISKY.—*W. A. Gaines & Co.*, Frankfort, Ky. Application filed January 9, 1882.
"The words 'OLD CROW.'"

9,279.—CIGARS.—*Garcia y Montero*, New York, N. Y. Application filed March 17, 1882.
"The words 'FLOR DE JOAQUIN ORTIZ.'"

9,280.—CIGARETTES.—*S. Jacoby & Co.*, New York, N. Y. Application filed March 15, 1882.
"The arbitrary word 'MATCH-LESS.'"

9,281.—WATCHMEN'S TIME-DETECTORS.—*Elias Imhauser*, New York, N. Y. Application filed March 17, 1882.
"Three squares erected on the sides of a right-angled triangle."

9,282.—CIGARS.—*Lopez, Fernandez y Ca.*, New Orleans, La. Application filed March 17, 1882.
"The term 'FLOR DE MANUEL LOPEZ Y CA.'"

9,283.—CIGARETTE-PAPER OF ALL KINDS.—*May Brothers*, New York, N. Y. Application filed March 14, 1882.
"The arbitrary word 'JOB.'"

9,284.—CIGARS.—*Louis Marx*, New York, N. Y. Application filed March 17, 1882.
"The arbitrarily-selected word 'CALIOPE.'"

9,285.—COOKING-OIL.—*J. J. Powers & Co.*, St. Louis, Mo. Application filed March 15, 1882.
"The representation of a cotton-plant."

9,286.—SOAP.—*Warren Provost*, Brooklyn, N. Y. Application filed March 17, 1882.
"The word 'CREAM.'"

9,287.—SILK AND MOHAIR BRAIDS.—*S. Rosenberg & Co.*, New York, N. Y. Application filed March 4, 1882.
"The symbol of the crown, cross, and eagle."

9,288.—CEMENT, LIME, LAND-PLASTER, AND CALCINED PLASTER.—*Sherman, Weeks & Co.*, New York and Kingston, N. Y. Application filed March 6, 1882.
"The representation of an arrow."

9,289.—CEMENT, LIME, LAND-PLASTER, AND CALCINED PLASTER.—*Sherman, Weeks & Co.*, New York and Kingston, N. Y. Application filed March 6, 1882.
"The arbitrarily-selected word-symbol 'ROSENDALE.'"

9,290.—CIGARS, CIGARETTES, AND SMOKING-TOBACCO.—*G. Schlueter & Mendez*, Brooklyn, N. Y. Application filed March 20, 1882.
"The words 'LOS DOS AMIGOS' and a translation—the words 'THE TWO FRIENDS'—and the three letters 'L D A.'"

9,291.—WRITING-PAPER AND ENVELOPES.—*John Walker & Co.*, London, England. Application filed March 11, 1882.
"The arbitrarily-selected words 'MOROCCO LEATHER.'"

9,292.—LEAF-TOBACCO.—*Weiss, Eller & Kaeppel*, New York, N. Y. Application filed March 31, 1881.
"The representation of a rose with a single leaf upon each side of the stem."

9,293.—BACON.—*John White & Company*, Bristol, England, and New York, N. Y. Application filed March 20, 1882.
"The arbitrary word 'VICTORIA.'"

LABELS.

2,661.—Title: "ROCHESTER BLOOD AND BONE GUANO."—*William H. Battelle*, Rochester, N. Y. Application filed March 11, 1882.

2,662.—Title: "KENDALL'S BLISTER."—*B. J. Kendall & Co.*, Enosburg Falls, Vt. Application filed March 17, 1882.

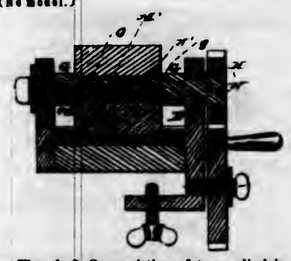
2,663.—Title: "THE SALEM MANILA CIGAR."—*C. H. & J. Price*, Salem, Mass. Application filed March 8, 1882.

2,664.—Title: "OLD DR. HAGAN'S OIL LINIMENT, THE GREATEST REMEDY IN THE WORLD FOR RHEUMATISM."—*Joseph Purcell*, Martin's Ferry, Ohio. Application filed December 31, 1881.

PATENTS

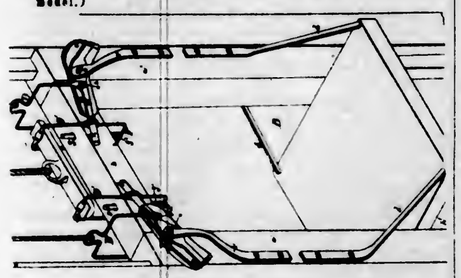
GRANTED APRIL 11, 1882.

256,110. ADJUSTABLE SHAFT FOR GRINDSTONES AND THE LIKE. WILLIAM J. ARNDT, Detroit, Mich. Filed Feb. 18, 1882. (No model.)



Claim.—The shaft G, consisting of two cylindrical sections having square portions M' N' and longitudinal openings or recesses O Q, the latter of which is screw-threaded, in combination with the set or adjusting screw P, working in the latter and serving to hold the two sections together, substantially as herein shown and specified.

256,111. ELEVATOR. JOHN B. ATWATER, Chicago, Ill., assignor to Peter J. Sipper, same place. Filed Feb. 15, 1882. (No model.)



Claim.—1. An elevator having mechanism, as described, for arresting the sudden descent of its cab, constructed to work in connection either with one cable or with two cables, substantially as described.

2. In combination with the power-spring mechanism, as at *g'*, the jawed levers E, provided with a handle, *h*, extended beyond their axis of articulation, whereby either two cables or a single cable can be used, substantially as described.

3. The jawed lever E, applied to the cab B, and having longitudinal and transverse wedging or tapered bearing-surfaces, in combination with one or more cables and a power-spring mechanism, substantially as and for the purpose set forth.

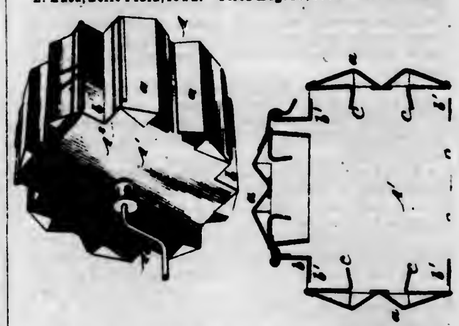
256,112. BOOT-STRAP. JOHN H. BALCOM, Charlotte, Mich. Filed Feb. 8, 1882. (No model.)

Claim.—The boot-strap consisting of the double loop A A, attaching-strap D, and diagonal stays B B, constructed as described, and adapted to be applied to a boot-leg in the manner set forth.

256,112.



256,113. WASHING-MACHINE. ASEL H. BELL and WILLIAM L. HESS, Belle Plain, Iowa. Filed Aug. 18, 1881. (No model.)



Claim.—In a washing-machine, the cylinder A, consisting of the ends A', having each an angular recess, A^2, at each corner, and connected together thereat by the angular bars *b*, having their apices arranged between the inwardly-projecting plates *c* and within the chambers *b'*, the plates secured to the inner sides of the cylinder and curved or bent one toward the plate next to it on the adjoining side, and the buckets *a*, substantially as and for the purpose set forth.

256,114. BILLIARD-TABLE. MOSES BENSINGER, Chicago, Ill. Filed Feb. 13, 1882. (No model.)



Claim.—1. The base for a billiard-table, consisting of four legs, F, each having a lateral brace, *f*, which braces connect with a central column composed of sections G, L, and M, the whole to be constructed and arranged substantially in the manner set forth.

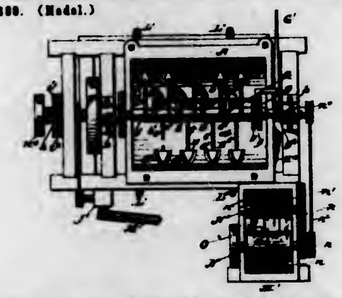
2. The central column for a billiard-table base, consisting of frame G, to which are connected the foot-brace extensions *f* of the cap L, having bowel *l*, and of the foot M, having screw *m*, all of which to be constructed and arranged substantially as described and shown.

3. The legs F, having brace-extensions *f*, secured to the central frame, G, by tenons *g*, with wedges *h*, and by bolts H, substantially as and in the manner set forth.

4. The base for a billiard-table, composed of the legs F, hav-

ing extensions *f*, secured to frame G by means of tenons *g*, with wedges *h*, and by bolts H, in combination with the cap I, having dowel *l*, and fork M, having set-screw *m*, the whole of which to be constructed and arranged substantially in the manner set forth.

256,115. REDUCING AND MIXING MACHINE FOR FERTILIZERS. Stephen B. Burrell, Abington, Pa. Filed Oct. 16, 1880. (Model.)



Claim.—1. In a reducing and mixing machine, the arms *d'*, formed upon or attached to the ends of the shanks or handles *c* of the mixing-spades E, the said arms *d'* projecting from said shanks *c* at right angles to the axis of said shanks, and also at right angles to the plane of the spade-blades, substantially as described.

2. In a reducing and mixing machine, the combination of the shaft B, having eyes or sockets *b'*, with the shanks or handles *c* of the mixing-spades E, said shanks *c* being loosely pivoted in the eyes or sockets *b*, and provided with arms *d* at right angles to the axis of said shanks, substantially as described, for the purpose specified.

3. In a reducing and mixing machine, the sliding collar F, situate upon the shaft B, within the drum A', and provided with the peripheral groove *f*, and having connecting rods or bars F' connected thereto, substantially as described, for the purpose specified.

4. In a reducing and mixing machine, the combination of the mixing-spades E, having shanks *c*, provided with the arms *d'*, with the connecting-bars F', sliding collar F, and shaft B, having eyes or sockets *b'*, substantially as described.

5. In a reducing and mixing machine, the combination of the sliding collar F, having the peripheral groove *f* and situate upon the shaft B, with the shipper G, having the bifurcated end *g*, said shipper passing through the end of the mixing-drum and attached to and operated by the lever G, substantially as described, for the purpose specified.

6. In a reducing and mixing machine, the combination of the mixing-drum A', having outlet *a'* and provided with the adjustable mixing-spades E, with the conical rotating screen I, provided upon its outside with the adjustable metallic brushes L and upon its inside with the brush K, attached to the frame K', pendent upon the shaft I', substantially as described, for the purpose specified.

7. In a reducing and mixing machine, the combination of the mixing-drum A', having adjustable mixing-spades E, with the conical rotating screen I, having adjustable brushes L and brush K, chutes or spouts J, O, and M, elevator J', and reducing-drum M', having cylinders N N', provided with teeth *n n'*, substantially as described, for the purpose specified.

256,116. PROCESS OF MAKING LACING-STUDS. Hellen Bray, Newton, Mass. Filed Dec. 16, 1881. (No model.)



Claim.—The process of forming lacing studs or hooks which consists in cutting a cylindrical blank from a wire of a diameter about equal to the desired diameter of the shank of the stud or hook to be made, bending one portion of said blank at right angles to the other portion, and embossing or swaging said bent-over portion by means of suitable dies to give contour to the parts which are to constitute the neck and the outer or button head, bending the neck to bring the button-head over the shank and inner head, and then drilling out the center of the shank, substantially as and for the purposes described.

256,117. MANUFACTURE OF TUBULAR RIVETS. Hellen M. Bray, Boston, Mass. Filed Feb. 13, 1882. (No model.)

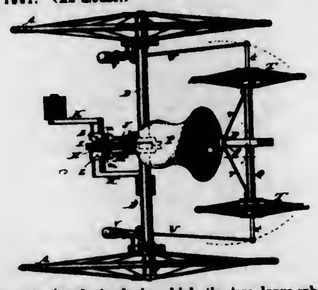


256,117.

Claim.—1. The blank A, cut in the form shown, and provided with the slits or incisions *a*, *b*, and *c*, from which to form a tubular capped headed rivet, substantially as described.

2. The process of forming tubular rivets from sheet metal by first cutting a blank to the form shown in Fig. 1, and forming therein the slits or incisions *a*, *b*, and *c*, bending or rolling one section or portion of said blank into the form of a tube, turning or bending the other section or portion of said blank and a portion of the end of the rolled-up or tubular section outward at right angles, or nearly so, to the axis of the tube, swaging the section so turned outward into a concavo-convex form, bending said concavo-convex section over upon the flanged end of the tubular section to form a cap thereto, and turning the outer edge of said cap-section down around the edge of the flange of the tube and then under said flange, substantially as and for the purposes described.

256,118. VELOCIPEDE. James O. Brown, Bangor, Me. Filed Oct. 5, 1881. (No model.)



Claim.—1. A velocipede in which the two large wheels are secured upon independent axles, and one of said wheels alone acts as the propeller to the vehicle, substantially as and for the purpose specified.

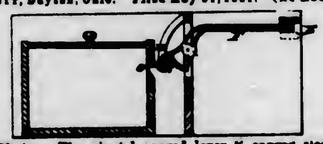
2. A velocipede in which the two large wheels are secured upon independent axles, and one of said axles arranged and combined with means wherewith it can be rotated to propel the velocipede, substantially as and for the purpose specified.

3. In a velocipede, the axle-frame consisting of the two bearings D D, joined in the middle by a yoke or frame, C, one side of which is split, in combination with a bolt, whereby said bearings may be set at various angles, substantially as and for the purpose specified.

4. In a velocipede, the combination of frame D C, wheels A A, one of which is upon a shaft, E, and the other upon shaft F, provided on its inner end with a wheel, G, seat P, frames B M N, or their equivalent, crank-axle H, cranks K, adjustable bearings L, wheel I, and chain J, or its equivalent, steering-levers V, rod U, axle Q, arms *t*, steering-wheels T, projection R from axle Q, and pivot S, substantially as and for the purpose specified.

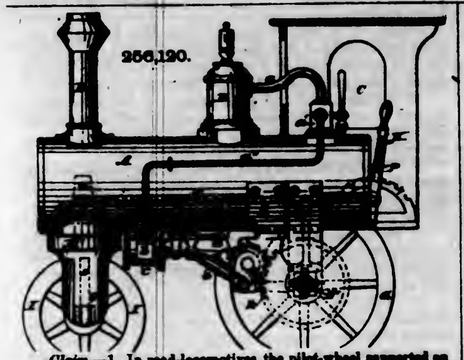
5. In a velocipede, the wheels A upon independent axles and provided with brake-wheels X, in combination with brake-levers W, frame D, with its lug *y*, and brake-strap Y, substantially as and for the purpose specified.

256,119. MECHANISM FOR AUTOMATICALLY FASTENING OR LOCKING A SERIES OF DRAWERS. Alexander B. Barnhart, Dayton, Ohio. Filed May 31, 1881. (No model.)



Claim.—The pivotal cogged lever F, cogged sleeve S, and shaft C, with projections *c*, in combination with cabinet-drawers and sliding top provided with block E, substantially as set forth.

256,120. ROAD-LOCOMOTIVE. Ryan P. Bayers, Burnt Chimney, assignor of one-half to C. B. Young, C. B. Horn, and Matt McBrayer, all of Rutherford County, N. C. Filed Mar. 6, 1882. (No model.)



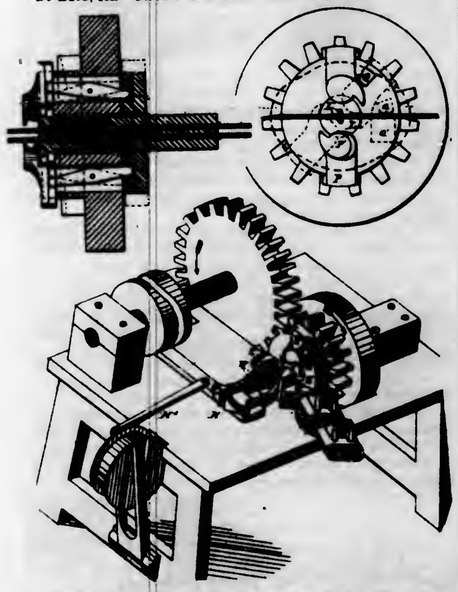
256,120.

Claim.—1. In road-locomotives, the pilot-wheel supported on a saddle, M, recessed on its edge and fitting into a ring, *r*, secured to the boiler, and operated by mechanism from the cab, substantially as set forth.

2. In road-locomotives, the pilot-wheel I, supported on a saddle, M, recessed on its edge to fit into a ring, *r*, secured to the boiler, and provided with a pivot, *m*, to which the arm *n* is attached, and connected to a rod, *o*, operated by a lever, K, all substantially as specified.

3. The traction-engine herein described, consisting of the boiler A, supported upon the front pilot-wheel, I, and rear driving-wheels, G, the cylinders *c*, and engine-shaft having pinions *i* meshing with gears K on the drive-wheels, said cylinders and engine-shaft being secured to the under side of the boilers, and all arranged as set forth.

256,121. MACHINE FOR BARBING FENCE-WIRES. Frank P. Capy, Cleveland, Ohio, assignor to the Washburn & Moen Manufacturing Company, Worcester, Mass., and Isaac L. Ellwood, De Kalb, Ill. Filed Jan. 9, 1882. (No model.)



Claim.—1. The combination, with the barb-wire-feeding apparatus and the strand-wire-feeding apparatus, *of* an operating-lever common to and connected with both said apparatus, substantially as described.

2. In a machine for barbing fence-wires, the strand-wire clamps H and means for imparting thereto an intermittent reciprocating motion, in combination with slots or guides *h*, that shall close said clamps as they move forward and open them as they recede, substantially as and for the purposes shown.

3. In a wire-barbing machine, the combination, with the strand-wire clamps H, of the abutments or bosses *h'*, substantially as and for the purposes shown.

4. In a wire-barbing machine, the combination, with a barb-wire-feeding device, a strand-wire clamp, and a strand-wire-feeding apparatus, of a lever and means for connecting it with the aforesaid barb-wire-feeding device, strand-wire clamp, and strand-wire-feeding apparatus, substantially as and for the purposes shown.

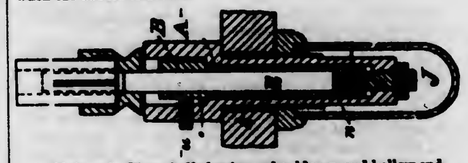
5. The combination, with the barb-wire-feeding apparatus and an operating-lever, of devices for connecting the said apparatus with said lever, and for adjusting the point of connection nearer to or farther from the fulcrum of said lever to alter the feed of said apparatus, substantially as described.

6. The combination of the barbing-head and bending-fingers carried by the said head with levers pivoted to said head, so as to vibrate in planes parallel with the axis thereof, and a cam for operating said levers, substantially as described.

7. The combination of the barbing-head, the bending-fingers carried thereby, the stationary cam at the rear of said head, the levers pivoted inside the head and engaging at their front ends with said bending-fingers and at the rear end with said cam, substantially as described.

256,122. SPINDLE AND BEARING THEREFOR. William T. Carroll, Worcester, Mass., assignor, by direct and mesne assignments, to Henry W. Mason, same place, and William P. Draper, Hopedale, Mass. Filed May 7, 1881. (No model.)

Brief.—The bolster is tapered externally and fits its supporter snugly at its lower end, and is adjusted at the upper end by set-screws, whereby the spindle can be plumbed. A shoulder is formed upon the lower end of the spindle, which, when the bobbin is being doffed, prevents its removal by abutting against the lower end of the bolster, said bolster being also shouldered at its head, which shoulders engage with the set-screws, thus preventing its removal when the bobbin is doffed.



Claim.—1. The spindle having a shoulder, *n*, and hollow end, in combination with a bolster having a bearing for the shoulder *n*, and an adjustable screw, J, on which the hollow end of the spindle rests, as above described.

2. The combination of the supporter A with the tapering bolster B, whose lower end fits the interior of the supporter A, and whose upper end is capable of adjustment therein, and the screws *a a a*, in the manner and for the purposes substantially as set forth.

3. The spindle having a shoulder, *n*, and the bolster B, having shoulders *o o o*, in combination with the screws *a a a* and the supporter A, substantially as above described.

256,123. PAPER-BAG MACHINE. Clarence A. Chandler, East Bridgewater, Mass., assignor to the Eastern Paper Bag Company, Hartford, Conn. Filed Feb. 23, 1882. (No model.)

Claim.—1. The finger or nose *n*, extended backward and fixed to the cross-bar *d'*, combined with the folding-rolls *j*, *h*, and *l* and the two folding-blades, the said finger being extended between the rollers *j h* and over past the center of the roller *l*, substantially as described.

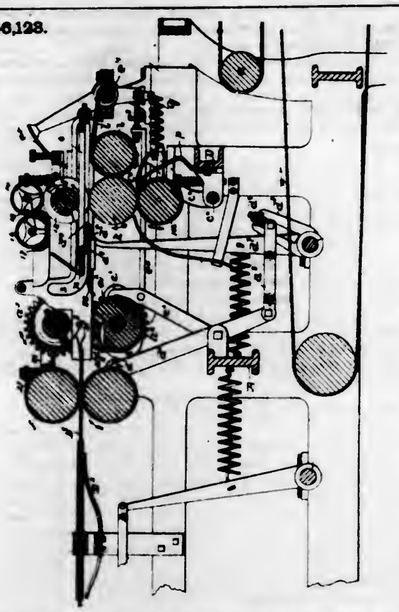
2. The finger or nose *n*, extended backward, and a cross-bar to which it is attached, combined with the rolls *h l*, located below the said finger, and with the folding-blade *d'*, slotted at its edge to pass below the said finger and back the paper bag between the said rolls to cross-fold the diamond fold, substantially as described.

3. The finger or nose to enter the tube and lay back one ply thereof in the formation of the diamond fold, and the roller *h* below the said finger, combined with the roller *j*, slotted to permit the said finger to be extended back between them, and with the diamond-fold pusher 10 12, connected with the said roller *j*, substantially as described.

4. The roll *h*, combined with the roll *j*, having part of its periphery cut away to permit the leading end of the diamond fold to be projected well under it before the diamond fold is caught between the said rolls to be drawn thereby under the said finger or nose, substantially as described.

5. The rollers *j h*, the finger or nose extended between them, and the movable tucking-blade, combined with the two rolls *l m*,

256,123.



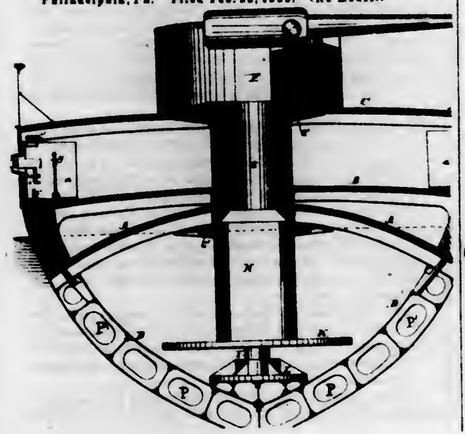
arranged next the roller *k*, and with the two folding-blades c^3 c^4, substantially as and for the purpose described.

6. The rocker-shaft c^2, its arms, folding-blade, and adjustable head, in which the said rocker-shaft has its bearings, combined with the adjustable connecting-rod, the lever c^5, and cam to move it, substantially as described.

7. The roller *k* and its attached gear 31, the adjustable head D and its stud 40, and the gear 23 on the shaft of the tube-feeding roller, combined with the slotted lever 38 and its attached idle-gears, to operate substantially as described.

8. The roller *l*, having an annular central groove to prevent improper spreading of the paste applied to the diamond-folded part of the bag, combined with the metal plate *l'*, extended across the said roller, and between it and the roller *k*, and slotted at its ends, as described, to avoid coming in contact with the lines of paste on the rearmost end of the diamond fold, the said plate filling the said annular groove at the top of the said roller, thus furnishing a smooth surface over which the leading end of the diamond fold is fed before it receives its first cross-fold, substantially as described.

256,124. SHIELD FOR SHIP'S GUNS. NATHAN B. CLARK, Philadelphia, Pa. Filed Feb. 28, 1882. (No model.)



Claim.—1. A rotating turret for heavy guns, having the side in the rear of the gun of a semi-cylindrical form, as shown, and the front portion, through or over which the muzzle of the gun passes, of nearly a wedge or V shape, as shown and described.

2. A rotating turret for guns, having the side in the rear of the guns of a semi-cylindrical form, as shown, and the front portion, through which the muzzles of the guns pass, sloping or curving downward, substantially as shown and described.

3. A rotating shield for a gun, having its front portion, through which the gun passes, of the rounded wedge shape described, its rear open, and being pivoted to swing about a fixed point, as described.

4. The V-shaped shield, of substantially the form described, in combination with the pipe *e*, through which ammunition may be passed when said shield is made to pivot on said pipe, substantially as set forth.

5. The pivoted V-shaped shield carrying a gun, as described, in combination with the side of the vessel pierced with port-holes, through which the muzzles of the guns may pass, as set forth.

6. The V-shaped shield described, pivoted below on a tube passing downward through the deck, and having its upper pivot in the deck or framing above, substantially as described.

7. The V-shaped shield described, combined with the pinion *f*, fixed to the tube *e*, for rotating the shield by means of the shaft *s* and worm *d*, as set forth.

8. The V-shield described, in combination with shaft *s*, having its bearings in the sides of the shield, the worm *d*, pinion *f*, tube *e*, and operating-lever *g*, all the parts being constructed and relatively arranged substantially in the manner herein described and shown.

256,125. PUMP ATTACHMENT. HENRY CLAYTON, Dayton, Ohio, assignor of one-half to William O. McCabe, same place. Filed Jan. 18, 1882. (No model.)

Brief.—To permit the removal of any sediment which may collect within the spout or behind the strainer the band is furnished with an outlet, D, normally held closed by a spring, *g*.



Claim.—1. The herein-described attachment for pump-spouts, consisting of the band B, provided with lugs or projections, and the cap C, having a strainer, *a*, and notched, as explained.

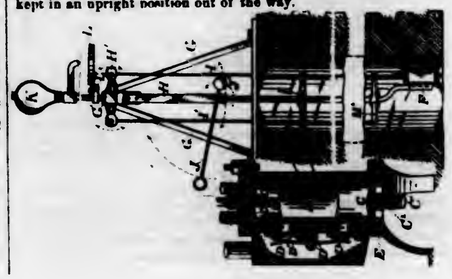
2. In combination, the spout A, the band E, constructed substantially as shown and described, whereby it is adapted to encircle the end of the spout, and strainer-cap C, applied substantially as shown and described.

3. In combination with a pump-spout and a strainer applied thereto, an outlet-valve in rear of the strainer, whereby the sediment can be discharged without removing the strainer.

4. In combination with a pump-spout, a strainer attachment consisting of band or ring B, provided with valve D, and strainer-cap C, all constructed and arranged substantially as shown and described.

256,126. PUMP. WILLIAM H. CLOUD, Detroit, Mich., assignor, by mesne assignments, to the Cloud Manufacturing Company, of Michigan. Filed Aug. 17, 1881. (No model.)

Brief.—Pivotal cross-bars H' and H², one end of each being connected to the plunger-rod I and the other ends being united by bar I', are actuated by a pendulum-lever, J, having a weight, J', at one end, by means of which the lever, when not in use, is kept in an upright position out of the way.



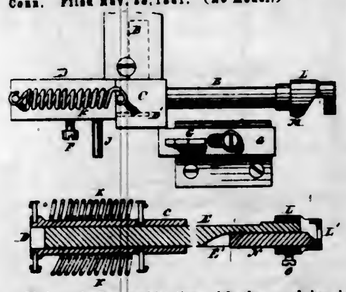
Claim.—1. The combination, with the plunger-rod of a double-acting pump, of the upper pivoted cross-bar having the pendulum-lever rigidly secured to its pivotal portion, the lower pivoted cross-bar having one end connected with the plunger-rod, and the rods connecting the ends of said pivoted cross-bars, substantially as described.

2. The combination, with the pendulum-lever, of a handle pivoted to its lower end and provided with a counterpoise-weight for causing the handle to stand vertical when not in use, substantially as described.

3. The combination, with the two outlet-valves, of the single strip-spring confined at its middle portion, and having its opposite ends bearings upon said valves, respectively, to hold them closed, substantially as described.

4. The combination, with the two outlet-valves of a double-acting pump and the intermediate bridge, D', of the flat strip-spring D^2, having its middle portion secured to said bridge and its opposite ends bearing upon said valves to hold them normally closed, substantially as described.

256,127. WOOD-SCREW MACHINE. ASA S. COOK, Hartford, Conn. Filed Nov. 25, 1881. (No model.)



Claim.—1. In combination with the revolving jaws A and the reciprocating arm B of a screw-threading machine, the longitudinally-moving bar E, provided with the head L, and the cutter N, constructed and arranged to push the blank into the jaws and to turn the point as the jaws revolve, substantially as described.

2. The combination of the block C, the yielding block D, the springs K, the bar E, the head L, and the cutting-tool N, the whole forming an inserting and pointing device, substantially as described.

3. The adjusting-gage G, in combination with the yielding block D, having a stop, J, the bar E, the head L, carrying the pointing-tool, and the frame H of the machine, substantially as described.

256,128. CAR-COUPLING. FOUNTAIN F. DUARING, Bellbuckle, Tenn. Filed Feb. 24, 1882. (No model.)



Claim.—The combination, with the draw-head having the longitudinal slot or recess B, having shoulders C F, forming respectively a guide-groove, D, in the top of the draw-head and a shallow recess, G, in the bottom thereof, of the slide arranged to work in recess or chamber B, and having a head, J, forming shoulders K L, the front edge of its head being so curved as to guide the coupling-link to the bottom of the draw-head, substantially as and for the purpose shown and specified.

256,129. TONIC BEVERAGE. JACOB W. DECASTRO, Mahwah, N. J. Filed Aug. 16, 1881. (No specimens.)

Brief.—A process of preparing beverages by which milk may be preserved in a normal condition or without immediate separation of its constituents.

Claim.—1. The process of manufacturing an aerated beverage of milk or containing milk which shall keep for a long time, which shall be free from odors foreign to the beverage, which shall not permanently separate, and which shall be free from objectionable foaming when drawn by supplying the milk in the form of condensed milk and then charging with carbonic acid and keeping under pressure, substantially as described.

2. The process of making an aerated self-preservative tonic beverage by mixing together a suitable spirituous, vinous, or other alcoholic liquor or essence, saccharine matter, and condensed milk, and charging the same with carbonic acid under pressure, whereby, the milk being supplied in the form of condensed milk, the usual and objectionable effects of carbonic acid upon milk are obviated, as set forth.

3. An aerated and self-preservative tonic beverage consisting of non-alkaline water, a suitable spirituous, vinous, or other alcoholic liquor or essence, saccharine matter, and condensed milk, the beverage containing carbonic acid being under pressure, the condensed milk being substituted for ordinary milk to obviate the objectionable effects of carbonic acid upon ordinary milk when the two are kept together for more than a very short time, and the ingredients being in suitable proportions, as described.

256,130. ADJUSTABLE STOVE-GRATE. FRANK H. DE GUERRE and WILLIS W. DE LANO, San Francisco, Cal. Filed Nov. 17, 1881. (Model.)

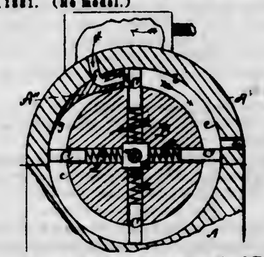


Claim.—1. The combination, with the bed-frame, the pivoted rod supported therein, and the rods L M, of the pivoted grate and the curved operating-lever having a stop, substantially as described.

2. The combination of the adjustable grate, the curved lever D, having a series of notches, and the ring H on the bed-frame, substantially as described.

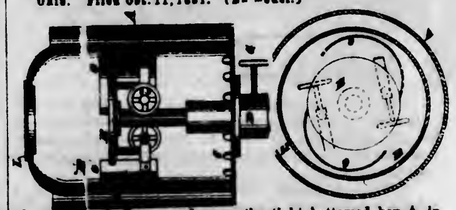
3. The described adjustable grate, mounted on pivoted supports, in combination with an operating-lever and a series of locking-stops.

256,131. ROTARY ENGINE. THOMAS H. DENISON, Newfane, assignor of one-half to Reuves Corwin, Coomar, N. Y. Filed July 11, 1881. (No model.)



Claim.—In a rotary engine, the power-wheel B, having a central square portion, *a'*, and flanges *b*, formed on its periphery, and provided with the openings *d*, extending from the periphery between the flanges down to the central portion, *a'*, for the reception of the springs *e* and valves C, in combination with said valves and with the casing A A', provided with the abutment A'', having the channel *f h*, as set forth.

256,132. GAS-FURNACE. FERDINAND DIECKMANN, Cincinnati, Ohio. Filed Oct. 11, 1881. (No model.)



Claim.—1. In a gas-furnace, the tight-bottomed box A, in combination with the sliding socket D, set-screw G, and perforated cover L, as and for the purpose set forth.

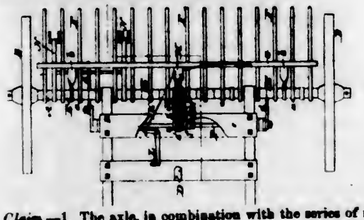
2. The gas-furnace described, consisting of the tight-bottomed box A, inner box, B, air-space H, air holes or indentations C, sliding socket D, set-screw G, perforated cover L, curved plates O O, and gas-burner E, substantially as and for the purpose described

256,133. BURNER FOR LIQUID HYDROCARBONS. SILAS H. DOUGLAS, Ann Arbor, Mich. Filed Nov. 26, 1881. (No model.)



Claim.—A hydrocarbon-burner consisting of the casing having the steam and hydrocarbon chambers separated by a partition, the hydrocarbon-delivery pipe E', inclosed in the steam-chamber, opening through said partition and projecting through the opposite end of said steam-chamber, the steam-nozzle C', projecting from the steam-chamber and surrounding the end of said pipe, the valve B', arranged to close the inner end of said pipe, and the induction-conduits leading into the steam and hydrocarbon chambers, respectively, substantially as described.

256,134. HAY RAKE AND TEDDER. ALBURTIS EAGLE, Newtown, Pa. Filed Dec. 17, 1881. (No model.)



Claim.—1. The axle, in combination with the series of rake-teeth and separate series of tedder-arms hung on said axle, substantially as and for the purpose set forth.

2. The axle, in combination with the series of rake-teeth, the separate series of tedder-arms, and the rigid spur-wheel, all on said axle, substantially as and for the purpose set forth.

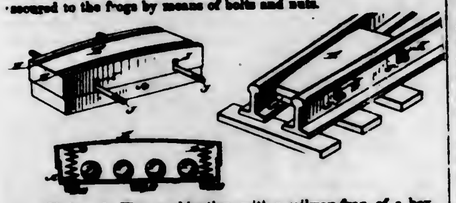
3. The axle, the rake-teeth, and the lifting-bar, in combination with the spring-catch H, the spur-wheel J, and arm M, said spur-wheel being fixed to the axle, the throw-off arm extending outward at the side of the spur-wheel, and the spring-catch being pivoted to the lifting-bar, overhanging the spur-wheel, and extended beyond the side of said wheel, substantially as and for the purpose set forth.

4. The rake-teeth, spur-wheel, and catch H, in combination with the arm M, having a notch, *d''*, substantially as and for the purpose set forth.

5. The axle A, rake-teeth F, the spur-wheel J, gearing *e*, straps *e'*, crank-shaft P, arms *d*, and tedder-arms N, combined and operating substantially as and for the purpose set forth.

256,135. SAFETY ATTACHMENT TO RAILWAY-FROGS. ELFORD S. EVELEIGH, Hamilton, Ontario, Canada. Filed June 29, 1881. (No model.)

Brief.—A box in which are placed springs and hollow elastic balls, and having a movable flanged cover provided with slots and secured to the frogs by means of bolts and nuts.

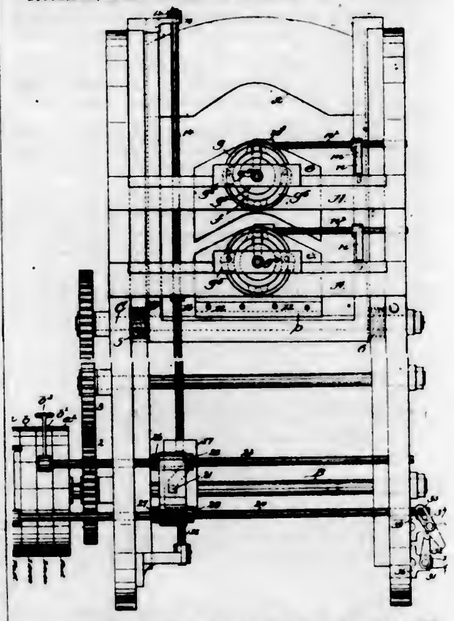


Claim.—1. The combination, with a railway-frog, of a box, A, secured to the rails, a movable cover, E, arranged over said box, and springs inclosed within the box and acting to normally retain the movable cover in an elevated position, substantially as described.

2. The combination, with a railway-frog, of a box, A, a flanged movable cover, E, arranged upon the same, springs inclosed within the box, and hollow elastic balls F, interposed between the cover and the box, substantially as and for the purpose described.

3. The combination of the box A, a movable flanged cover, E, arranged thereon, and provided with slots I, springs inclosed within the box, and transverse bolts J, for securing the parts in position, substantially as described.

256,136. CRIMPING-MACHINE. JOHN W. D. FIFIELD, North Brookfield, Mass. Filed Feb. 20, 1882. (No model.)



Claim.—1. The yielding jaws *e e'*, their carrying-pistons *f f'*, and springs, and devices to adjust the springs and control the forward movement of the pistons and jaws, combined with the vertically-reciprocating form, substantially as described.

2. The yielding jaws *e e'*, the pistons *f f'*, with which they are adjustably connected, their springs, and devices to limit the forward positions of the pistons, and the reciprocating form, combined with the wedge *m*, adapted to be reciprocated with the rack-bar, and with the rock-shafts *n'* and their arms, to separate the jaws as the form enters the upper thereon between the jaws, substantially as described.

3. The reciprocating form, and the lug 13, raised and lowered in unison with it, the rod 14, its collars, the cam-slide, pin 21, and block 22, combined with the two belt shippers or forks, and their rods 23 24, provided with collars, whereby the belt-shipper forks are automatically moved to place the driving-belts of the machine on the fast and loose pulleys in their proper order, to automatically reverse the direction of movement of the form at each end of its stroke, substantially as described.

4. The fast and loose pulleys, the shipper-rod 24, its fork, and one fast collar, and the shipper-rod 23, its fork, and two collars on the said rod, combined with the cam-slide having a reciprocating motion, and with the block 22, operated thereby, whereby the said block in its movement in one direction carries with it both rods and in the other direction but one rod, substantially as and for the purpose described.

5. The reciprocating cam-slide, the block 22, moved by it, the shipper-rod 23, its two collars, shipper-rod 24, and its single fixed collar, the fast and loose pulleys, and shipper-forks, combined with a lever to move the rod 24 in one direction to effect the reversal of shaft B, to depress the form, as set forth.

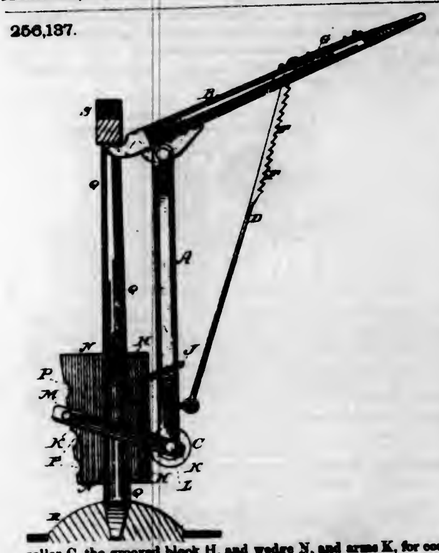
6. The jaws, and reciprocating form *d*, to carry the upper between them, combined with the yielding detachers adapted to come into position between the upper and form and detach the upper therefrom as the form rises, substantially as set forth.

256,137. TIRE-TIGHTENER. ALBERT P. GAYNIGHT and ANTHONY W. POTTS, Cooper, Ga. Filed Jan. 23, 1882. (No model.)

Claim.—1. In a tire-tightener, the combination of the forked rod A, having roller C and pivoted arms K, connected by a pin, M, the block H, having groove I, and the wedge N, having vertical groove O and transverse groove P, substantially as and for the purpose set forth.

2. The combination of the forked rod A, having lever B and

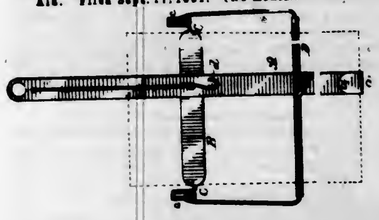
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roller C, the grooved block H, and wedge N, and arms K, for connecting said block and wedge to the rod A, substantially as set forth.

3. As an improvement in tire-tighteners, the combination of the forked rod A, having roller C, pivoted arms K, connected by pin M, and ratchet-bar D, the forked lever B, having slot E and latch G, the vertically-grooved block H, having staple J, by which it is attached to rod A, and the wedge N, having vertical groove O and transverse grooves P, all arranged and operating, substantially as and for the purpose set forth.

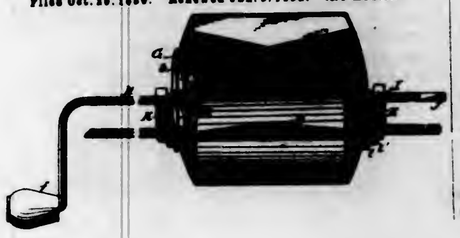
256,138. PAPER-BAG HOLDER. THOMAS J. GRAHAM, Mobile, Ala. Filed Sept. 17, 1881. (No model.)



Claim.—1. In a paper-bag holder, the rod A, having formed upon its bottom the support *a* and its projection *a'*, and having secured across it the arms B, to which are attached the spring C, around the horizontal portion of which is the roller D, all arranged to operate as described.

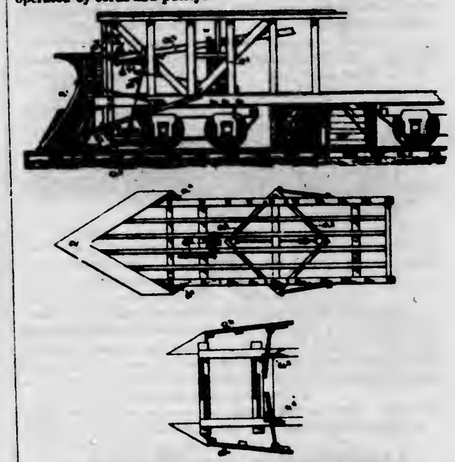
2. In a paper-bag holder consisting of the rod A, the support *a*, and its projection *a'*, and hook *d*, operating in combination with the spring C and roller D, adapted to retain the bags securely within the holder and to enable them to be easily withdrawn in desired quantities, as set forth.

256,139. COFFEE-ROASTER. NOAH HARRIS, Vincennes, Ind. Filed Oct. 26, 1880. Renewed Jan. 9, 1882. (No model.)



256,140. TRACK-CLEARING CAR. CHARLES L. HEYWOOD, Boston, Mass. Filed Oct. 31, 1881. (No model.)

Brief.—A plow is built on the forward part of a car and is provided with shoes on its lower timbers to ride upon the track and on each rear side edge with deflecting-boards. Between the trucks and beneath the car is secured an auxiliary plow adapted to work in both directions. The car is also provided with adjustable wings to widen the channel. A scraper is secured between the plow and forward truck, and is raised and lowered by a lever operated by cords and pulleys.

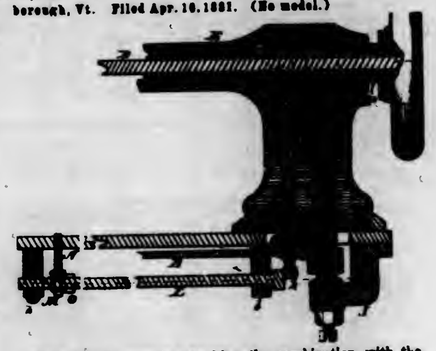


Claim.—1. In a track-clearing car, in combination with the truck and body of the car, the auxiliary plow *a'*, made substantially as described, for the purpose set forth.

2. In a track-clearing car having a snow-plow built on its forward part, the deflecting-board *a'*, made as described, in combination with the snow-plow and running-gear, as set forth.

3. A track-clearing car having a snow-plow at the front, an auxiliary plow beneath, and a wing on each side, as set forth.

256,141. SEWING-MACHINE. LUTHER H. HIGBY, Brattleborough, Vt. Filed Apr. 16, 1881. (No model.)



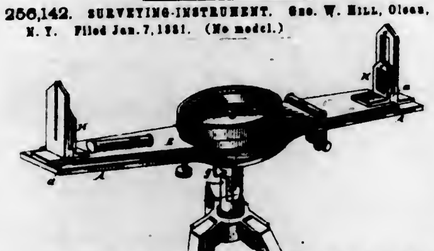
Claim.—1. In a sewing-machine, the combination, with the shuttle-lever B, rigidly secured to the shuttle-lever shaft, of said shuttle-lever shaft actuated to a lateral reciprocating pivotal action

in the bearings I J by the connecting-rod G, and having arms F projecting therefrom, the lower arm passing through and working with said shuttle-lever, all said parts being constructed, arranged, and operating substantially as set forth and shown, for the purposes specified.

2. The combination, in a sewing-machine, with the driving-shaft D, of the rod G, connecting the eccentric G and crank upon the extremity of the feed-shaft L, and passing through arms projecting from a shuttle-lever shaft, the said shuttle-lever shaft working in the bearing I, hanging from the driving-shaft, and bearing J upon the bed-plate, and having the lower arm F, passing through the shuttle-lever, the shuttle-lever secured rigidly to the shuttle-lever shaft and actuated thereby, and the feed-shaft, all arranged and operating substantially as and for the purposes set forth and shown.

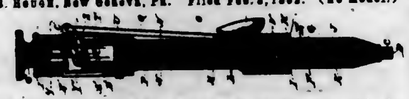
3. In a sewing-machine, the combination, with the driving-shaft D and shuttle-lever shaft A, having a lateral reciprocating oscillatory motion, of the bearing J, receiving the lower extremity of said shuttle-lever shaft, and the box I, suspended from said driving-shaft and supported thereby, and having a socketed bearing directly beneath said driving-shaft adapted to receive and receiving the upper extremity of said shuttle-lever shaft, the whole being arranged and operating substantially as and for the purposes herein set forth and shown.

256,142. SURVEYING-INSTRUMENT. GEO. W. HILL, Olean, N. Y. Filed Jan. 7, 1881. (No model.)



Claim.—In an instrument for measuring angles, the combination of the long plate A, having a graduated central circle and outer pair of sights, B, pivoted with rear lugs, *a*, and the short plate E, carrying an outer pair of sights, H, and a central compass and vernier, as and for the purpose set forth.

256,143. DENTAL PLUGGER. ALFRED JOHNSON and GUERSON B. HOUGH, New Geneva, Pa. Filed Feb. 8, 1882. (No model.)



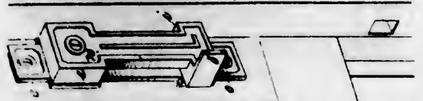
Claim.—1. In a dental plugger, the combination, with the tubular casing having a transverse slot, of the tool or point holder provided with a wheel or disk having a milled edge projecting through said slot, so as to be capable of being rotated independently of handle of instrument, as set forth.

2. In a dental plugger, the herein-described mallet, consisting of a tube closed at its lower end and inclosing a spring, and provided near its upper end with vertical slots for the passage of a pin, which also passes through the sides of the casing, as set forth.

3. The combination of the handle or casing, the tool or point holder, the mallet having arm D', provided with notch E', the pin R, having lever S, the dog Y, having arm Z, the connecting-rod U, and slide V, and mechanism for tripping the dog at any desired point, as set forth.

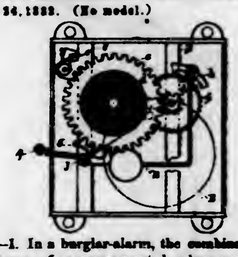
4. In a dental plugger, the combination, with the mallet and its operating mechanism arranged as herein described, of the cap F', swiveled head G', and screw I, having lug J', working in a groove in the upper end of the handle, as and for the purpose set forth.

256,144. SASH-FASTENER. ALONZO JOHNSON, Springfield, Mass. Filed Sept. 23, 1881. (No model.)



Claim.—The within-described improved window-stop, consisting of the base plate *c*, having the broken ring *x* thereon, the latch *e*, having the circular notched socket e^2 and the arm *f* thereon, and the spring *h*, all combined substantially as set forth.

256,145. BURGLAR-ALARM. JOSEPH V. KNIGHT, Lynn, Mass. Filed Jan. 24, 1882. (No model.)



Claim.—1. In a burglar-alarm, the combination of a clock-spring, gearing *e a f*, an escapement, *h*, a hammer and a bell with a pivoted spring-pawl, 3, and a stop or button, 4, all constructed and adapted to be operated substantially as described.

2. In a burglar-alarm, the combination of the pinion *e*, the spring, gearing *e a f*, escapement *h*, hammer, and bell with the spring-pawl 3, the button 4, and the locking-pawl 1, substantially as described.

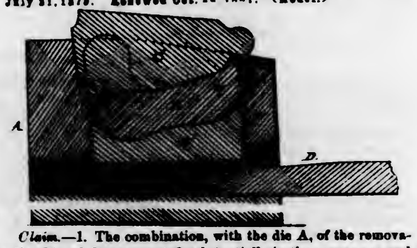
256,146. BALANCED SLIDE-VALVE. HENRY C. KRIEBEL, Chicago, Ill. Filed Dec. 14, 1881. (No model.)



Claim.—1. The valve B, having a circular top, *g*, provided with an inner annular flange, *h*, and exterior annular or guard flange, *i*, in combination with the solid conical ring *j*, split conical ring *k*, the segmental wedge-block *l*, and the coiled springs *m*, for supporting said ring *k* and block *l*, substantially as and for the purpose described and shown.

2. The valve B, valve-plate *g*, having annular flanges *h i*, sockets *n* between said flanges, solid conical exterior ring, *j*, having its bread face resting against the under surface of the steam-chest cover D, the inner annular conical split ring, *k*, coiled springs *m*, resting within said sockets *n*, and operating to support and press upward said ring *k*, and the wedge-block *l*, also supported and pressed upward by a spiral spring, *m*, substantially as and for the purpose set forth.

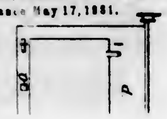
256,147. DIE FOR MANUFACTURING THE TONGUES OF CAR-COUPLINGS. WARLLIM C. KROESSER, Allegheny, Pa. Filed July 21, 1879. Renewed Oct. 26 1881. (Model.)



Claim.—1. The combination, with the die A, of the removable dies B' and C, constructed substantially in the manner as and for the purpose herein shown and described.

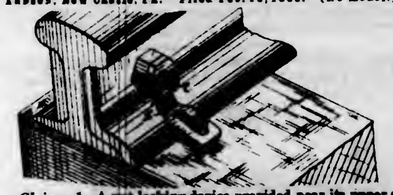
2. The combination of the die A, provided with a key, D, with dies B' and C, substantially as herein described, and for the purpose set forth.

256,148. COMBINED BATH AND CAMERA. JOSEPH LEFEUVRIER, Mordrignac, France. Filed Oct. 17, 1881. (No model.) Patented in France May 17, 1881.



Claim.—The exposure-frame I', with its holders G, combined with and placed between the shutters A and B, together with the outer or bath chamber for holding baths, all substantially as described and illustrated, and for the purposes set forth.

256,149. NUT-LOCK. LEMUEL LOCK and EUGENE H. RICHARDSON, New Castle, Pa. Filed Feb. 15, 1882. (No model.)



Claim.—1. A nut-locking device provided near its upper end with an aperture adapted to pass over the bolt, and having its lower end extended outward and adapted to be secured to the sleeper, substantially as and for the purpose specified.

2. The nut E, provided with a threaded aperture and with a slotted projecting arm, substantially as and for the purpose specified.

256,150. SCOOP FOR GRAIN, SUGAR, &c. ALFRED B. MATTOON, Owasco, N. Y., assignor of one-half to Dorr Heald, same place. Filed Mar. 3, 1882. (No model.)



Claim.—1. The scoop formed of a single piece of sheet metal, with bottom B, rear end or back, D, and sides C C, the front edge of the latter being beveled and turned outwardly, as and for the purposes set forth.

2. The scoop having its upper edges turned or bent over and provided with the strengthening rim-wire fitting under these turned edges, consisting of but one piece, and so continued outwardly and inwardly as to form one or more loops or handles at the end of the scoop, as set forth.

3. The scoop having its upper edges turned or bent over, the strengthening rim-wire fitting under these turned edges, and provided with the bail, the ends of which are adjusted through openings in the sides of the scoop under the rim-wire, substantially as and for the purpose specified.

4. The scoop having its upper edges turned or bent over, the strengthening rim-wire fitting under these turned edges, and so continued outwardly and inwardly as to form a loop or handle at the rear of the scoop, and provided with the bail having its ends hooked or adjusted in openings in the sides of the scoop, near the front end thereof and under the rim-wire, as and for the purpose specified.

5. The combination of the scoop A B C C D, formed of a single piece of sheet metal, and having the front edges of its sides C C beveled and turned outwardly, and its upper edges turned or bent over, the single rim-wire forming loop or handle F, and the bail G, the ends of which are hooked in openings in the sides C C under the rim-wire, as set forth.

256,151. HARVESTING-MACHINE. DAVID MAXWELL, Paris, Ontario, Canada. Filed Aug. 29, 1881. (No model.)



Claim.—1. In a harvesting-machine, the combination, with the finger-beam, of a bar or rod connected at one end to the finger-beam, near the post or inner end of the beam, and at its other end to a bracket situated upon and attached to the finger-beam at a point outside of the rake-standard, and provided with means, substantially as described, to exert a pushing strain on said bar, as and for the purpose specified.

2. In a harvesting-machine, a bar or rod connected at one end to the finger-beam, at or near the inner end thereof, and extending obliquely in an upward direction to a point above the finger-beam and near the rake-standard, at which point it is adjustably connected to the finger-beam, in combination with means, substantially as described, by which a pushing strain can be exerted through the rod upon the two points connecting it to the finger-beam for the purpose of bracing the latter at the point where the rake-standard is carried.

3. In a harvesting-machine, in combination with the finger-beam, a bar or rod secured above said finger-beam, and means, substantially as described, for exerting a pushing strain on said bar or rod for the purpose of bracing the finger-beam, substantially as specified.

4. In a harvesting-machine, a bar or rod rigidly attached to the inner end of the finger-beam, and extending therefrom to a bracket attached to the finger-beam outside of the rake-standard, in combination with nuts I and I', screwed upon the rod and arranged to jam against the bracket F, substantially as and for the purpose specified.

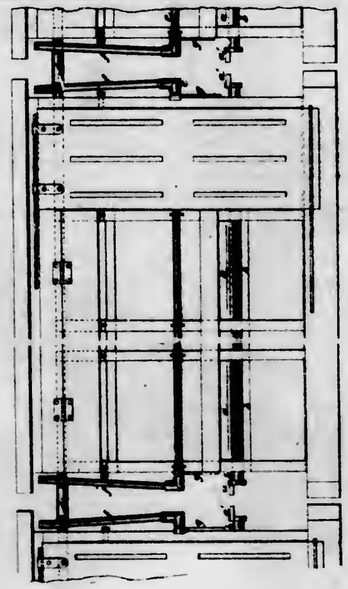
256,152. CAR-COUPLING. CHARLES D. MCCORMACK, Batesville, Ark. Filed Feb. 8, 1882. (No model.)



Claim.—1. In a car-coupler, the lever C, journaled in the under side of the car-frame, and passing above the draw-bar and provided with a central pin, E, adapted to enter and move in slots in the draw-bar, said lever extending from side to side of the car, substantially as shown, and for the purpose set forth.

2. In a car-coupler, the combination, with a hollow draw-bar having the slots *f f* in rear of the draw-head, of a lever, C, extending from side to side of the car above the draw-bar, in rear of the draw-head, and journaled in the car-frame, and provided with a central holding-pin, E, and pivoted rod H, substantially as shown, and for the purpose set forth.

256,153. STOCK-CAR. JOHN R. MCPHERSON, Seabright, N. J. Filed Oct. 17, 1881. (No model.)



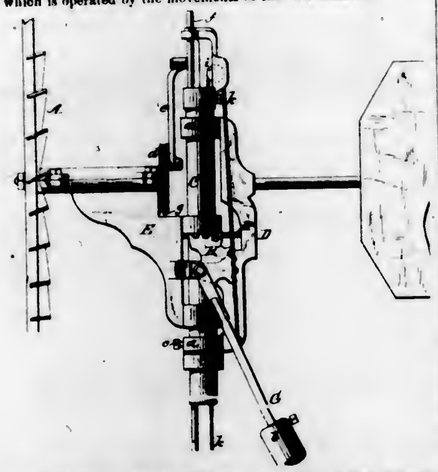
Claim.—1. As an improvement in means for supplying water to stock in transit in cars, the top supply-pipe, *c*, coupled throughout the train and having the distributing-pipe connections *f* of each car at the upper side or top part of said supply-pipe, substantially as described, for the purpose specified.

2. In railway-cars for the transportation of live stock, the means, substantially as herein described, for supplying water to the stock, consisting of the top supply-pipe, *c*, coupled throughout the train, the perforated side distributing-pipes, and the pipes *f f*, the latter connecting alternately one end of each distributing-pipe of each car with said supply-pipe at the upper side or top part thereof, substantially as described, for the purpose specified.

3. The combination, in a stock-car having side doors arranged alternately at each end, of the top coupled supply-pipe, *c*, the side distributing-pipe, and the pipes *f f*, arranged to connect one end of each distributing-pipe of each car with one end of said supply-pipe at its top part or upper surface, the said distributing-pipes having the relation to the doors substantially as described, for the purpose specified.

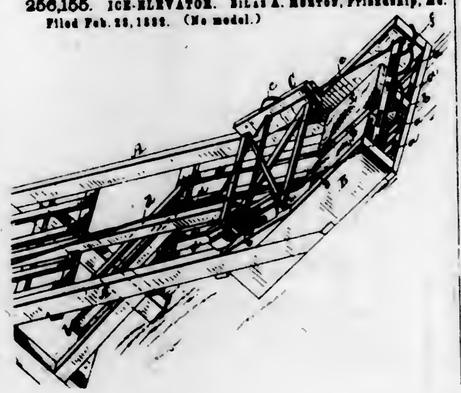
256,154. WINDMILL. GEORGE W. MILLER, Waterloo, Iowa. Filed Sept. 28, 1881. (Model.)

Brief.—A spring-brake, *g*, passes around a groove in the periphery of the disk *d* and is connected to a lever, *h*, the latter being pivoted to the turn-table E, so that the brake *g* is tightened around the periphery of the disk *d* by the action of the lever *h*, which is operated by the movements of the turn-table E.



Claim.—The turn-table E, supporting-wheel A, disk *d*, brake *g*, pivoted lever *h*, and the rack I, in combination with the bracket D, pivoted lever G, rack H, and cord or rope *k*, substantially as and for the purpose set forth.

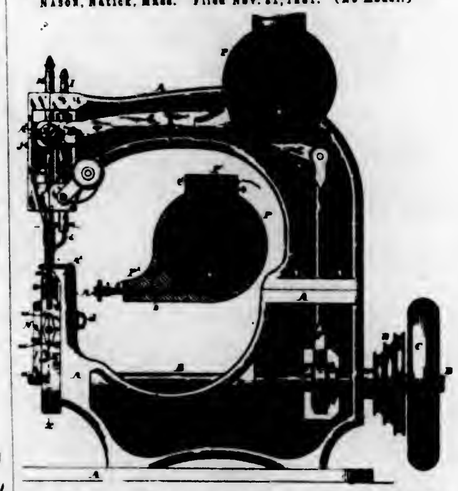
256,155. ICE-ELEVATOR. SILAS A. MORTON, Friendship, Me. Filed Feb. 28, 1882. (No model.)



Claim.—1. In an ice-elevator having the usual inclined tracks and bed for supporting the cakes of ice, the combination, with the truck C, of the swinging arms *e* and cross-beam or head D, carrying the curved rods *f*, substantially as and for the purpose set forth.

2. The combination, with the inclined tracks A, horizontal trough B, strips *a*, and timbers *b*, of the truck C, having pivoted thereto arms *e*, carrying cross-beam or head D, curved rods *f*, and spurs *g*, substantially as and for the purpose specified.

256,156. WAX-THREAD SEWING-MACHINE. HORACE P. NASON, Natick, Mass. Filed Nov. 21, 1881. (No model.)



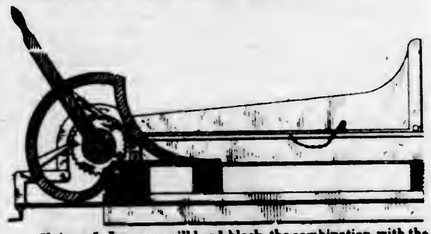
Claim.—1. The combination, in a wax-thread sewing-machine, of the fixed post A', carrying the work-supporting plate A², the driving-shaft B, carrying the disk *a* and eccentric *c*, and the feed-bar E, provided with the recess *b* and rolls *c'* and *c²*, and adjustably pivoted at or near the middle of its length to said post A', and carrying the needle-bar M and cast-off bar O, all arranged and adapted to operate substantially as described.

2. The combination of the feed-bar E, pivoted at or near the middle of its length to the post A', and provided with the recess *b* and the rolls *c'* and *c²*, the shaft B, the crank *a a'*, the eccentric *c*, the needle-bar M, the connecting-rod N, provided with the slot *e*, the blocks *o' o'*, fitted within the slot *e* and adjustable therein by the screws *p p*, and the cast-off bar O, provided with the pin *n*, all arranged and adapted to operate substantially as and for the purposes described.

3. The looper *i*, having its main portion inclined obliquely downward, as from *q* to *q'*, and its extreme lower portion bent to a perpendicular, or nearly perpendicular, position, substantially as and for the purposes described.

4. The wax-tank P, provided with the covering-plug P', the orifice *t*, for the entrance of the thread, the nose P², the rubber tube *s*, and the screw-tube *s'*, all arranged, combined, and adapted to operate substantially as described.

256,157. SAW-MILL HEAD-BLOCK. EZRA PARKER and ISAAC D. PARKER, Plainfield, assignors to H. & F. J. L. Handy, Zanesville, Ohio. Filed Dec. 17, 1881. (No model.)



Claim.—1. In a saw-mill head-block, the combination, with the lever and its quadrant for adjusting the head-block, of two independent quadrants hinged upon the carriage, one on either side of the lever, and provided with bell-crank levers and adapted to raise the pawls that operate the ratchets which regulate the adjustment of the knees, substantially as set forth.

2. In a saw-mill head-block, the combination, with the lever and its quadrant, of two hinged quadrants adapted to raise the pawls that operate the ratchets, and connected by suitable devices to operating-rods, which latter pass through the carriage to the sawyer's position, substantially as set forth.

256,158. MANUFACTURE OF LAMP OR LANTERN GLOBES, CHIMNEYS, &c. ARCHIBALD W. PAULL, Wheeling, W. Va., and JOHN P. MILLER, Martin's Ferry, Ohio. Filed Jan. 19, 1882. (No model.)



Claim.—1. As a new article of manufacture, a lamp chimney or globe composed of glass and formed with a united lens which is of a greater thickness than the glass composing the body of the globe, substantially as herein described.

2. A sectional mold for the manufacture of lamp-chimneys or like articles, having the outlines of the chimney to be formed and provided with a recess, *a*, in each section of such construction for receiving and retaining the lens to be united, and a space around the lens for the admission of the molten glass to the lens in the process of forming the chimney, as set forth.

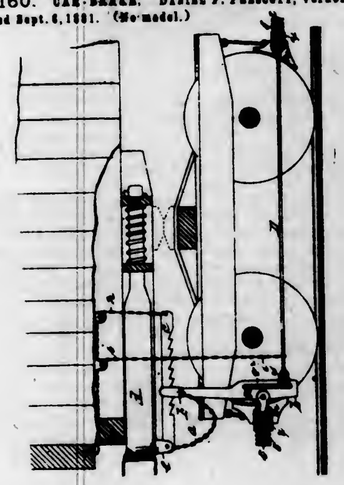
256,159. PADLOCK. ELIAS L. PERKINS, Geneva, Ohio. Filed Nov. 8, 1880. (Model.)



Claim.—1. The combination, with the shackle having two catches on opposite sides of its locking end, of two pivoted dogs, one provided with a lug which bears in a slot in the other dog, said dogs being adapted to simultaneously engage the catches of the shackle, suitable tumblers to engage the dogs, and a slotted plate-lever adapted to operate said dogs, substantially as set forth.

2. The combination, with the shackle and the hooked dogs D and C, the latter provided with the stud *f'* and lug *i*, of suitable tumblers arranged to govern said dogs, and a slotted plate-lever, G, provided with a passage for the key, substantially as set forth.

256,160. CAR-BRAKE. DANIEL P. PRESCOTT, Vernon, Vt. Filed Sept. 6, 1881. (No model.)



Claim.—1. In a car-brake, the combination, with the draw-bar *d* and the brake-beams *x x*, of the serrated arm *c*, pivoted to said draw-bar, the brake-lever *b*, and the brake-rod D, and appliances substantially as described, whereby said brake-beams may be moved toward or from the car-wheels by the movement of the long arm of said brake-lever in one direction, substantially as set forth.

2. The combination, with the brake-lever *b* and the serrated arm *c*, of the chain *a*, substantially as set forth.

3. In combination, the brake-beams *x x*, the brake-rod D, having one end connected to the edge c^3 of the brake-lever and movable thereon to either side of the bolt *t*, brake-lever *b*, chain *a*, and the draw-bar *d*, substantially as set forth.

4. The combination, with the brake-beams *x x*, of the brake-lever *b*, having the partially-separated edge c^3, and the brake-rod D, having one end connected to said edge c^3 and movable thereon to either side of the bolt *t*, by which said lever is pivoted to the brake-beam, substantially as set forth.

5. In combination, the brake-beams *x x*, the brake-rod D, the brake-lever *b*, and chain *i*, substantially as set forth.

256,161. VEHICLE-SPRING. JORAM PRIEST, Detroit, Mich., assignor to Appleton S. Bridges, St. Louis, Mo. Filed Dec. 26, 1881. (No model.)

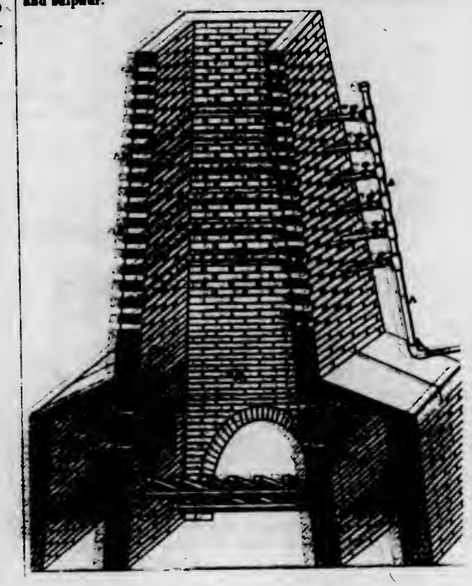


Claim.—1. In a vehicle, two springs arranged parallel to each other and projecting in opposite directions, in combination with the body having a T-bolt, which holds both springs against the body, and at the same time allows them to automatically adjust themselves, for the purpose set forth.

2. In a vehicle, the combination, with the body and frame, of curved springs arranged in pairs, projecting in opposite directions, and having their respective ends attached to the body and frame and their curve loosely attached to the center of the bottom of the body, forming a movable fulcrum, which automatically adjusts itself to the variant conditions of the body.

256,162. CALCINING-FURNACE. FERDINAND PROTZMAN, Allegheny, Pa., CHARLES ADAMS, St. Louis, Mo., and ALFRED LONGMORE, Allegheny, Pa. Filed Apr. 26, 1881. (No model.)

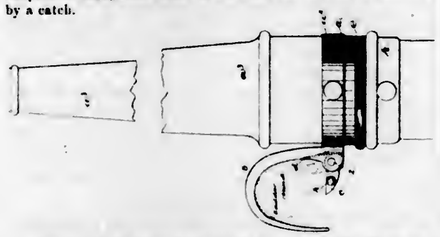
Brief.—Green or moist wood is piled alternately with layers of ore in a calcining-furnace. The temperature being kept below 400° Fahrenheit and salt being mixed with the charge, steam admitted at different heights in the furnace carries off phosphorus and sulphur.



Claim.—The combination of a stack provided with the perforations B in its upper portion with the side furnace or furnaces, D, flues C, and the perforated pipes A, arranged at different elevations inside of the stack, substantially as shown.

256,163. HOSE COUPLING AND SUPPORT. JOHN W. REGAN, Boston, Mass. Filed Jan. 7, 1882. (No model.)

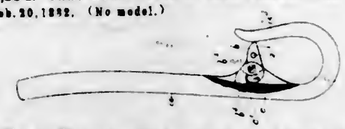
Brief.—The hook is secured to a screw-threaded ring, and is adapted to engage the round of a ladder, and is held in position by a catch.



Claim.—1. The ring *a*, adapted to be secured to the discharge-pipe and to a hose-coupling, combined with the supporting-hook adapted to engage the round of a ladder, substantially as and for the purpose set forth.

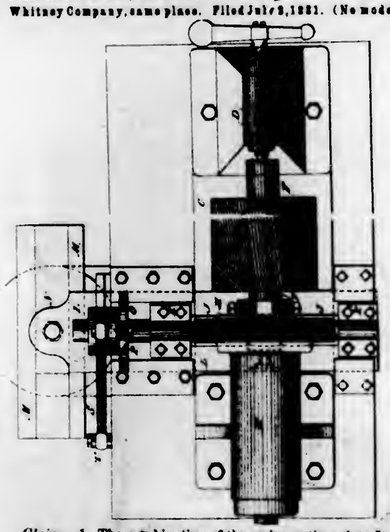
2. The combination, with the threaded ring *a* and the hook thereon, of a fastening-catch adapted to extend across the opening of the hook to prevent its accidental disengagement from its support, substantially as described.

256,164. SNAP-HOOK. JOHN W. REGAN, Boston, Mass. Filed Feb. 20, 1882. (No model.)



Claim.—The combination, with the body of the snap-hook, of the pivoted tongue *b*, having the heel *b'* and curved surface 3, and the spring *c*, connected at one end with the tongue near its pivot and adapted to be wound about the curved part 3 of the tongue and its pivot, all substantially as described.

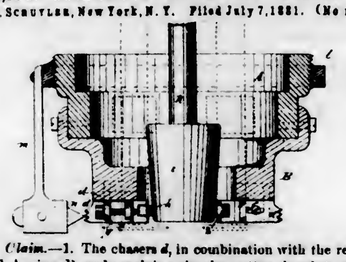
256,165. MACHINE FOR CUTTING GROOVES IN ROLLS. JOHN R. REYNOLDS, Hartford, Conn., assignor to the Pratt & Whitney Company, same place. Filed July 3, 1881. (No model.)



Claim.—1. The combination of the reciprocating plate I, the guide M, the worm J, and the wheel H with the fixed frame and bed-plate of a planing-machine, whereby the said worm is made to act as a rack to turn the wheel H, substantially as described.

2. The combination of the sliding plate and worm I J upon the moving bed-plate B with the ratchet and pawl O P, the connecting-levers S T, and the incline U upon the fixed frame A, substantially as described.

256,166. MACHINE FOR CUTTING SCREW-THREADS. ISAAC S. SCHUYLER, New York, N. Y. Filed July 7, 1881. (No model.)

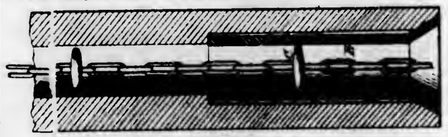


Claim.—1. The chasers *d*, in combination with the revolving head A, ring B, and revolving circular cutters *b*, substantially as and for the purposes set forth.

2. The slides *c*, chasers *d*, and adjusting-screws *g*, in combination with the grooved ring B, revolving head A, and circular cutters *b*, substantially as and for the purposes set forth.

3. The screw-ring *l*, arm *m*, and finger *n*, combined with head A and adjustable chasers *d*, substantially as and for the purposes set forth.

256,167. CHAIN-PUMP. DAVID E. SHAW, Chatsworth, Ill. Filed May 14, 1881. (No model.)



Claim.—A chain-pump tube having the usual cylindrical bore, provided with a lining of rubber or other elastic or flexible material, and a closed or water-tight space interposed between the lining and pump-tube to allow said lining to adjust itself to the unevenness of the buckets, substantially as and for the purpose specified.

256,168. LAST FOR BOOTS AND SHOES. CYRUS P. SHERMAN, South Weymouth, Mass., assignor to the Dion Last Company, Nashua, N. H. Filed Nov. 3, 1881. (No model.)



Claim.—1. A last for a boot or shoe, containing two parallel grooves near the edge of its sole-surface, such grooves being separated from each other by a wall or partition of rubber or similar elastic material, substantially as shown and described.

2. A last for a boot or shoe, having upright spurs or points projecting from its sole-surface, such spurs or points being held in an upright position by an elastic support, substantially as and for the purpose herein set forth.

3. A last for a boot or shoe, having spurs *m n* projecting from its sole-surface, such spurs being enlarged between their points and the surface of the last, substantially as herein specified.

4. The last A, containing the elastic plug *i*, with the spur *m n*, having the head *m*, substantially as herein shown and described.

5. The last A, having the grooves *a a'*, the elastic plugs *i i*, and the spurs *m n*, substantially as shown and described.

256,169. NUT-LOCK. JOHN SHERMAN, Cleveland, Ohio. Filed Feb. 8, 1882. (No model.)



Claim.—In a nut-lock, the combination, with the nut D, having a shallow rabbet, *b*, of the spring pawl or dog C, consisting of a single coil of wire extending partially around the rabbet, sharpened at one end and fastened at the other end in a slot, *a*, the latter extending from the bolt-hole to the outer edge of the nut.

256,170. BOOT OR SHOE. CHARLES W. SHIPPEN, Milford, Mass. Filed Dec. 16, 1881. (No model.)



Claim.—A boot or shoe having the insole extended between the upper or vamp and the outer sole to their edges, and secured to the said upper or vamp by a row of stitching or fastenings going through it and each insole, and also by a second row of stitches or fastenings aside of the first row and going through the upper or vamp, insole, and on' *x* sole, all being substantially as set forth.

256,171. TREADLE FOR SEWING-MACHINES. JOHN STEWART, Jr., Chicago, Ill. Filed Aug. 3, 1881. (No model.)



Claim.—The combination, with the support B, provided with the end lugs, *b*, of the tie-rod passing through the said lugs, and the treadle A, journaled between the lugs of the support by the journal-pins *c c'*, passing through the lugs above the tie-rod, one of said pins being fixed and the other adapted to work through a screw-threaded opening in the lug, a jam-nut being fitted upon the outer end of the screw-threaded pin, and the support being held by set-screws upon the tie-rod, substantially as described.

256,172. METALLIC PAD FOR HORSE-COLLARS. ASA C. STAPLES, West Branch, Iowa. Filed Sept. 30, 1880. Renewed Mar. 6, 1882. (Model.)



Claim.—1. The hinge-leaf C, attached to the collar, in combination with the slide D and hinge-pivots B', attached to the pad, substantially as set forth.

2. In combination with the hinge-pivots B', attached to the pad, the hinge-leaf C and the slide D, provided with the hooks *h h*, substantially as set forth.

3. In combination with the hinge-leaf C and hinge-pivots B', attached to the pad, the slide D, provided with the slots *i i* and hooks *h h*, substantially as set forth.

4. In combination with the pad A, provided with the hinge-pivots B, the hinge-leaf C, provided with the recess C' and hooks *l l*, for the purpose specified.

5. The pad A, provided with the rib J, and the hinge-pivots B B', cast as integral parts of the pad, substantially as set forth.

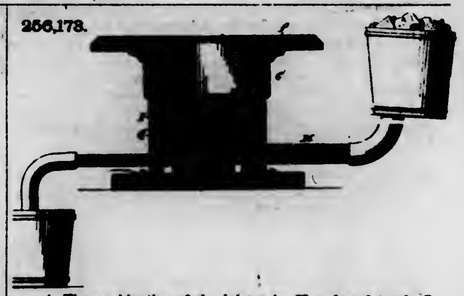
256,173. FREEZING-MICROTOME. THOMAS TAYLOR, Washington, D. C. Filed Oct. 18, 1881. (No model.)

Claim.—1. In a freezing-microtome, the combination of a stationary freezing-chamber or cylinder and a vertically-adjustable plate surrounding the same with a suitable base or support, and means for conducting a freezing medium into and out of the freezing-chamber, substantially as herein set forth.

2. In a freezing-microtome, the combination of a stationary non-conducting plug and a freezing-chamber supported thereon, with a base-plate and vertically-adjustable plate surrounding the freezing-chamber, substantially as and for the purpose set forth.

3. The combination of the vertical shell or cylinder having an external screw-thread and the internally-threaded sleeve or collar having a top plate or disk adjustably fitted on said shell with the freezing-chamber surrounded by said top plate, as and for the purpose set forth.

256,173.

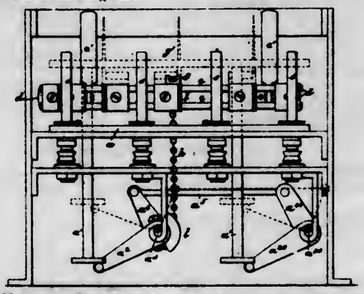


4. The combination of the inlet-tube H and outlet-tube I, having an upwardly-turned end terminating above the inlet-tube, with the freezing-chamber of a microtome, as and for the purpose set forth.

5. The method of producing cold in a microtome by admitting a freezing-solution of salt and water into the same, as and for the purpose set forth.

256,174. YARN-SEPARATOR FOR SPINNING-MACHINES. CHARLES R. THOMAS and JOHN P. WORRALL, Woonsocket, R. I. Filed Nov. 28, 1881. (No model.)

Brief.—The separator is operated simultaneously with, but independent of the ring-rail.



Claim.—1. The series of spindles, the separators *b*, extended centrally between adjacent spindles, the rocker-shaft with which the separators are attached, bearings to hold the rocker-shaft, and the connection A, combined with the hub *l*, and with means to rotate the same to wind and unwind the connection A, turn the rocker-shaft, and raise and lower the separators, substantially as described.

2. The rock-shaft, its collar and finger, the loose sleeve F, its finger 3 and hub *l*, and chain or connection A, combined with the separators, their holding rods or shaft, and the arm projecting therefrom, to which the said chain is joined, substantially as described.

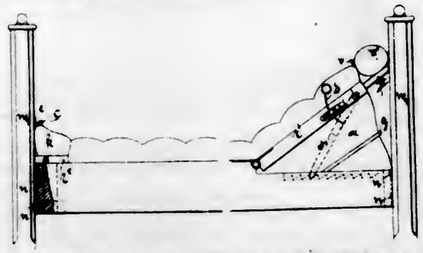
256,175. MAGAZINE FIRE-ARM. WILLIAM TRABUE, Louisville, Ky. Filed Dec. 9, 1881. (No model.)



Claim.—1. The bore of the breech B, provided with a notch, *a*, in the upper interior surface to catch the rim of the shell as it is forced up from the magazine, in combination with the incline I and extension J, substantially as and for the purpose set forth.

2. The extractor-hook K, pivoted to the head O of the bolt E, back of the longitudinal center of said hook, and having its rear end adapted to come in contact with the cam M, in combination with the bolt E, provided with the cam M, whereby the hook is held against or released from contact with the shell.

256,176. INVALID-BED. CARL MORITZ TURK, Chemnitz, Saxony, Germany, assignor to Paul Matthäe Herfurth, same place. Filed Jan. 10, 1882. (No model.)

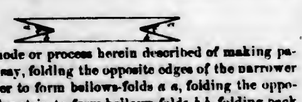


Claim.—1. In a mattress which is definitely united to side boards, *r*, which are provided with ratchet-teeth, the combination of said side boards with the hinged frame r', hinged supports *s*, and adjusting string or wire *d*, substantially as described.

2. The combination of the frame *r*, hinged frame r', supports *s*, and string or wire *d* with the bagging-cloth *a* and elastic strap *g*, substantially as described.

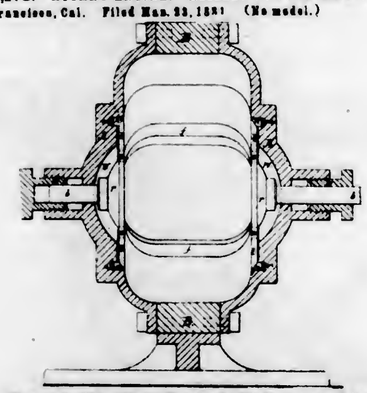
3. The frame *r*, combined with vertically-movable board r^2, having legs *l*, and with the cushion *k*, straps *h*, braces *x*, and cords *c*, for operation substantially as specified.

256,177. METHOD OF MAKING PAPER BAGS. CASPER VAN HOESEN, New York, N. Y. Filed Oct. 13, 1881. (No model.)



Claim.—The mode or process herein described of making paper bags—that is to say, folding the opposite edges of the narrower of two strips of paper to form bellows-folds *a a*, folding the opposite edges of the wider strip to form bellows-folds *b b*, folding back the edges of the folds *b b* to form the lap-folds *c c*, pasting down the lap-folds onto the folds *a a*, and folding over and pasting one end of the united strips to form the bottom of the bag, as set forth.

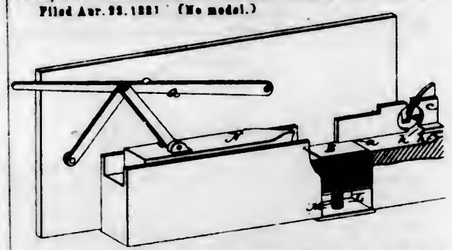
256,178. ROTARY ENGINE. ALBERT W. VON SCHMIDT, San Francisco, Cal. Filed Mar. 23, 1881. (No model.)



Claim.—1. The cylinder B, formed with the grooves *p*, in combination with the side plates, *l*, and ring *n*, whereby steam, &c., is freely admitted and discharged, substantially as hereinbefore set forth.

2. In combination with the side-plates, *l*, having a beveled edge, *e*, the bearing *m*, and packing-ring *n*, the plates serving also as guides for the sliding valves, as hereinbefore set forth.

256,179. GRAIN-BINDER. JOS. L. WARD, Pine Island, Minn. Filed Apr. 22, 1881. (No model.)



Claim.—1. A grain-band fastening consisting of a sheet of metal coiled into a tubular form around the two ends of the band and compressed or flattened thereon at the middle only.

2. The band-fastening consisting of the coiled sheet metal compressed and bent at the middle in the manner substantially as shown and described.

3. A grain-band fastening consisting of sheet metal coiled into tubular form around the ends of the band and compressed thereon at the middle, and provided with a central indentation, as shown.

4. The sheet-metal band-fastening encircling the band and bent or curved longitudinally.

5. In a band-fastening mechanism, the combination of means for retaining the ends of the applied band in position and two curved cheeks constructed to encircle the ends of the band and engage with the two edges of a sheet-metal blank, substantially as shown, whereby the blank is caused to completely encircle the band.

6. In a grain-binding machine, circular cheeks adapted to substantially encircle the ends of the applied band, in combination with means for forcing a sheet-metal blank against and around the interior of said cheeks to the form of a complete tube.

7. In combination with the anvil having circular cheek-plates which substantially encircle the ends of the applied band, a reciprocating slide arranged to pass between said cheek-plates, substantially as described, whereby a sheet-metal blank may be coiled into a complete tubular form around the ends of the applied band.

8. The anvil provided with the curved cheeks *c* and notches *d*, in combination with a slide, N.

9. In a grain-binder, the combination of the circular cheeks, adapted and arranged to encircle the ends of the applied band, the magazine, and the slide, arranged to carry the blanks from the magazine and force them endwise around the interior of the cheeks, substantially as shown.

10. In combination with the anvil having curved cheeks *c*, the slide N, having the concave end and the extended lip or nose at the lower side.

11. In a grain-binder, the combination of two circular cheeks, arranged to encircle the ends of the applied band and engage with the edges of a sheet-metal blank, and a reciprocating carrier arranged to force the blank endwise within the cheeks and continue its movement until the tube thus formed is bent and driven from between the cheeks.

12. In a grain-binding machine, the combination of an anvil having two curved cheeks to curl a metal blank around a grain-band and the forked perforated binder-arm, substantially as described, adapted to compressing and holding the end of the band in position during the time that the band is being curled around the cord.

13. In a grain-binder, an anvil for carrying sheet-metal blanks around the applied band, provided with two curved cheek-plates adapted to engage with the extreme edges of the band.

256,180. MANUFACTURE OF CORSETS. I. DE VAR WARNER, Bridgeport, Conn. Filed Jan. 28, 1881. (Specimens.)

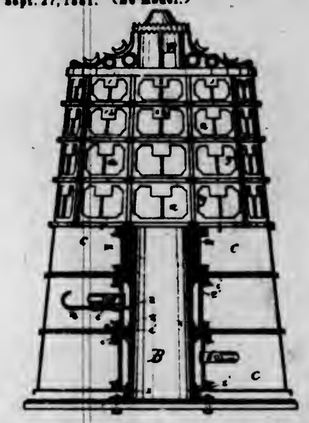


Claim.—1. The within-described improvement in the manufacture of corsets, the same consisting in boning the corset by placing the supporting bones or ribs between the outer and inner sheets of fabric, and then sewing the latter together close to the edges of the ribs, thereby securing the ribs in the pockets as the same are made, substantially as set forth.

2. The mode of boning corset-sections herein set forth, the same consisting in inserting the end portion of a continuous stiff supporting strip or rib between the outer and inner faces of the section, sewing the same together along the edge of the rib, and then sewing the rib prior to again inserting and sewing it in place, substantially as set forth.

3. In the manufacture of corsets the mode of finishing described, consisting in inserting the bones in pockets in the separate sections, pressing the same, and then sewing them into the corset, substantially as set forth.

256,181. REVOLVING SHOW-CASE. HENRY WESTPHAL, Chicago, assignor to himself and Andrew Dillman, Joliet, Ill. Filed Sept. 27, 1881. (No model.)



Claim.—1. In the revolving case described, the combination of the central column, B, having the concentric offsets or steps *a*, rings *i*, and radial partitions *c*, hinged therein and provided with the floor *f* and ends *g*, all arranged to operate in the manner and for the purpose set forth.

2. In the revolving case described, the central column, B, provided with the perpendicular row of holes *z*, in combination with the radial partitions *c* and spring-bolt *u*, for the purpose of locking the sections, in the manner and for the purpose set forth.

3. In the revolving case described, the combination of the radial partitions *c*, having the floors *f* and ends *g*, rings *i*, and set-bolt and nut S, held in place by the sockets S′ in the legs on the sides of the partitions *c*, for the purpose of holding the said partitions in place, as set forth.

4. In the revolving case described, the revolving sections described, consisting of the two concentric rings *i*, hinged radial partitions *c*, floor *f*, ends *g*, and bolts *o* and S, all combined and arranged to operate in the manner and for the purpose set forth.

256,182. DYNAMO-ELECTRIC MACHINE. WM. WORDELL, Concord, Mass. Filed May 23, 1881. (No model.)



Claim.—1. In a dynamo-electric machine or motor, the combination of the annular armature A and two or more coils, B B′, passing through it, with the frame C, having the conical or cylindrical parts x' x', substantially as set forth.

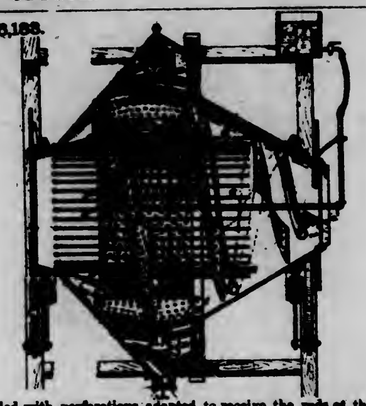
2. In a dynamo-electric machine or motor, the annular armature A, provided and fitted with the fixed journal-box *a a*, substantially as set forth.

3. In a dynamo-electric machine or motor, the annular armature A, having the fixed journal-box *a a* and driving-tire F, in combination with the coils B B′ and frame C, all being substantially as set forth.

256,183. ORE-SEPARATOR. JOHN H. WILHELM, Denver, Colo. Filed Oct. 24, 1881. (No model.)

Claim.—1. In a mineral-separator, the combination, with a circular chamber, of a cage of rods extending horizontally through it, and a conveyer winding spirally through the chamber and provided with perforations adapted to receive the rods of the cage and hold them in position, substantially as set forth.

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2. In a mineral-separator, the combination, with a circular chamber consisting of two conical shells, of a conveyer consisting of a flat metallic plate coiled to form a conical structure, which is placed with its base adjacent to one of said shells, substantially as set forth.

3. In a mineral-separator, the combination, with a circular chamber consisting of two conical shells, of a conveyer consisting of a perforated metallic plate coiled to form a conical structure, having an open cylindrical aperture extending axially through it, said structure being placed with its base adjacent to one of said shells, substantially as set forth.

4. In a mineral-separator, the combination, with a circular chamber consisting of two conical shells, of a mineral-receptacle located between said shells, and a screen adapted to isolate the circular chamber from the mineral-receptacle, and consisting in a perforated concaved annular plate provided with elongated slots extending from its central portion toward each edge, substantially as set forth.

5. In a mineral-separator, the combination, with a circular chamber consisting of two conical shells, of a concaved screen joining said shells and a series of horizontal dashers located within the screen, substantially as set forth.

6. In a mineral-separator, the combination, with a circular chamber consisting of two conical shells, of a mineral-receptacle located between said shells, an annular plate dividing the said receptacle into two chambers, a screen consisting of a perforated annular plate provided with elongated slots and adapted to isolate the mineral-receptacle and circular chamber, and elevators consisting of plates secured to the outer peripheral face of the said screen, substantially as set forth.

7. In a mineral-separator, the combination, with a mineral-receptacle, of a plate dividing it into two chambers, conical pipes inserted in said plate and adapted to admit mineral and débris from the apparatus into the mineral-receptacle and to return débris only into the apparatus, and an inclined plate located below said cones, substantially as set forth.

8. In a mineral-separator, the combination, with a mineral-receptacle, of an annular plate secured to one wall of the said receptacle and extending in downward inclination toward the opposite wall thereof, substantially as set forth.

9. In a mineral-separator, the combination, with a mineral-receptacle, of an annular plate secured to one wall of the said receptacle and extending in downward inclination toward the opposite wall thereof, and a series of flanges secured to the under face of said plate, substantially as set forth.

10. In a mineral-separator, the combination, with a mineral-receptacle, of an annular plate secured to one wall of the said receptacle and extending in downward inclination toward the opposite wall thereof, and alternating perforated flanges and stirrers secured to the under face of said plate, substantially as set forth.

11. In a mineral-separator, the combination, with a circular chamber consisting of two conical shells, of a water-chamber located adjacent to one of said shells, substantially as set forth.

12. In a mineral-separator, the combination, with two cones having their bases joined together, of a receiving-cone located within the smaller end of one of the said cones, and a screen adapted to form a water-chamber with the inner end of the receiving-cone and the wall of the cone in which the same is located, substantially as set forth.

13. In a mineral-separator, the combination, with a circular chamber consisting of two conical shells, of a water-chamber located adjacent to one of said shells, a screen forming the front wall of said water-chamber, and dashers attached to the outer face of the screen, substantially as set forth.

14. In a mineral-separator, the combination, with a circular chamber consisting of two conical shells, of a water-conduit consisting of a pipe coiled into the form of a cone the base of which is placed adjacent to one of said shells, substantially as set forth.

15. In a mineral-separator, the combination, with a circular chamber consisting of two conical shells, of a water-chamber located adjacent to one of said shells and a water-conduit consisting of a pipe coiled into the form of a cone, that end of the pipe which terminates at the base thereof being inserted in the water-chamber, substantially as set forth.

16. In a mineral-separator, the combination, with a circular chamber consisting of two conical shells, of a conveyer consisting in a perforated plate coiled to form a conical structure, the base of which is placed adjacent to one of said shells, and a water-conduit consisting of a pipe coiled to follow the path of the conveyer, substantially as set forth.

17. In a mineral-separator, the combination, with a circular chamber, of a cage of rods, a conveyer consisting of a coiled metallic plate centrally pierced to receive the said rods, and a water-conduit consisting of a pipe coiled around the said cage of rods, substantially as set forth.

18. In a mineral-separator, the combination, with two truncated cones having their bases joined together, of a ledge located just within the end of the cone which constitutes the discharge end of the apparatus, and an ejector mounted in said ledge and having its lower edge cut away, substantially as shown and described.

19. In a mineral-separator, the combination, with semicircular bearings provided with horizontal arms, of brackets to receive the latter, secured to the frame-work in which the apparatus is mounted, a shaft journaled in the outer ends of the said arms, and an eccentric and strap, or the equivalent thereof, connecting said shaft and brackets, substantially as set forth.

256,184. ORE SEPARATOR AND CONCENTRATOR. JOHN H. WILHELM, Denver, Colo. Filed June 24, 1881. (No model.)

Claim.—1. In a mineral-separator, two cylinders arranged to have their inclined planes converge, and having a chamber of greater diameter than themselves interposed between them, substantially as set forth.

2. In a mineral-separator, two cylinders having their flaring inner ends united to form an interposing chamber of greater diameter than themselves, substantially as set forth.

3. In a mineral-separator, the combination, with a series of cylinders having a descending and an ascending plane, of a receiver attached to the cylinder or cylinders of the descending plane, and guides parallel with each other, but inclined to the axis of the receiver's rotation, secured to its inner periphery, substantially as set forth.

4. In a mineral-separator, the combination, with a series of cylinders having a descending and an ascending plane, of a series of rods located within the cylinder or cylinders of the descending plane and arranged to divide it into two chambers, substantially as set forth.

5. In a mineral-separator, the combination, with a series of cylinders having a descending and an ascending plane, of a series of rods located within the cylinder or cylinders of the descending plane and adapted to divide it into two chambers, and dashers arranged to extend into the inner of said chambers, substantially as set forth.

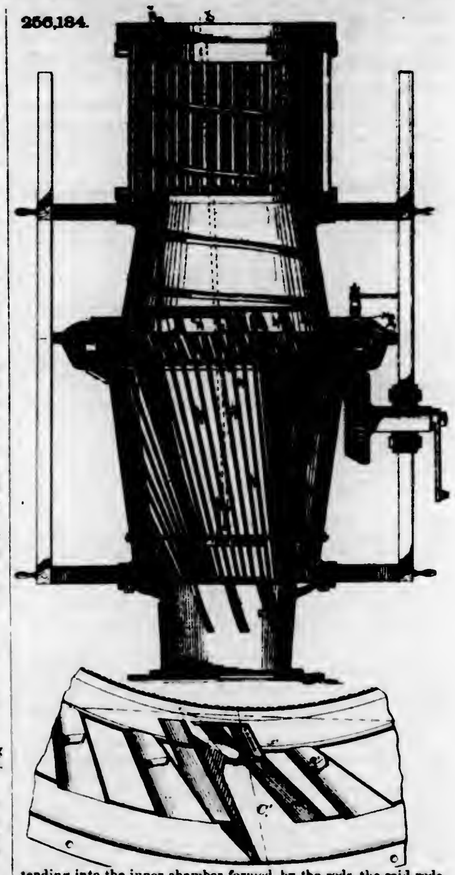
6. In a mineral-separator, the combination, with a cylinder, of dashers having their concaved inner portions extending toward the center thereof, substantially as set forth.

7. In a mineral-separator, the combination, with a cylinder, of a series of rods arranged to divide it into two concentric chambers, and imperforate dashers interposed between said rods and having their lower edges cut away, and their inner portions, which extend into the central chamber, concaved, substantially as set forth.

8. In a mineral-separator, the combination, with a series of cylinders having a descending and an ascending plane, of a series of rods located within the cylinder or cylinders of the descending plane and arranged to divide it into two chambers, concaved dashers extending into the inner of said chambers, and frames arranged to act in concert with said dashers in forwarding the ore being treated toward the ascending plane of the cylinders, substantially as set forth.

9. In a mineral-separator, the combination, with a cylinder, of a series of rods arranged to divide it into two chambers, and concaved dashers and frames interposed between said rods and extending into the inner chamber formed by the rods, the said rods and dashers being arranged to form a space between them wider than the space between any two rods to allow débris to pass from the outer chamber and be received on the concaved portions of the dashers, substantially as set forth.

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10. In a mineral-separator, the combination, with a cylinder, of a disk located therein and adapted to deflect throughout it the débris from the receiver, and a ring attached to the rear face of the said disk and adapted to support a steam or water pipe, substantially as set forth.

11. In a mineral-separator, the combination, with two cylinders the descending and ascending planes of which are arranged to converge, and having their flaring inner ends united to form a chamber or mineral-receptacle therein, of a screen adapted to separate the said mineral-chamber from the said cylinders between which it is interposed, substantially as set forth.

12. In a mineral-separator, the combination, with a mineral-receptacle, of two concentric plates dividing the receptacle into three compartments, and a series of conical passages interposed between the two plates and providing communication between the outer and inner of said compartments, substantially as set forth.

13. In a mineral-separator, the combination, with a mineral-receptacle, of two concentric plates dividing the receptacle into three compartments, said plates being transversely cut away to form passages between the inner and outer of the compartments, substantially as set forth.

14. In a mineral-separator, the combination, with a mineral-receptacle divided into two or more concentric compartments, of conical passages providing communication between said compartments, inclined annular rims located within and having their smaller ends contiguous to the larger ends of the said passages, balls adapted to engage with the smaller ends of the rims, and wires to retain the said balls within the conical passages, substantially as set forth.

15. In a mineral-separator, the combination, with a mineral-receptacle divided into two or more concentric compartments, of conical passages providing communication between said compartments, inclined annular rims located within and having their smaller ends contiguous to the larger ends of the said passages, balls adapted to engage with the smaller ends of the rims, and wires to retain the said balls within the conical passages, substantially as set forth.

16. In a mineral-separator, the combination, with a mineral-receptacle divided into two or more compartments by concentric plates, said plates being transversely cut away to form passages between the inner and outer compartments, of slides adapted to be reciprocated in said passages by the rotary motion of the separator, substantially as set forth.

17. In a mineral-separator, the combination, with a mineral-receptacle divided into compartments by concentric plates, said plates being cut away transversely to form passages connecting the inner and outer of said compartments, of screens covering spouts adapted to discharge water into the said passages, substantially as set forth.

18. In a mineral-separator, the combination, with a mineral-receptacle divided into compartments by concentric plates, said plates being cut away transversely to form passages, of slides adapted to reciprocate in said passages, and screens covering spouts adapted to discharge water into the passages, substantially as set forth.

19. In a mineral-separator, the combination, with a mineral-receptacle divided by plates into compartments which are connected by conical passages and transverse passages, of wings or agitators located in the inner of the compartments to agitate and direct its contents toward the said conical and transverse passages, substantially as set forth.

20. In a mineral-separator, the combination, with a mineral-receptacle consisting of a cylindrical chamber interposed between two chambers of lesser diameter, of a screen separating it from the chambers aforesaid, concentric plates dividing it into compartments, said plates being cut transversely to form passages in which slides are adapted to reciprocate, conical passages connecting the compartments, inclined annular rims located within and having their smaller ends contiguous to the larger ends of the said conical passages, and balls adapted to close the smaller ends of the rims and to be retained within the wings or agitators located in the inner compartment of the receptacle, substantially as set forth.

21. In a mineral-separator, the combination, with a mineral-receptacle divided by concentric plates into compartments which are connected by transverse passages cut in the said plates, of slides adapted to be reciprocated in said passages and having their lower ends cut away in order not to break the continuity of the outer compartment, substantially as set forth.

22. In a mineral-separator, the combination, with a mineral-receptacle consisting of a cylindrical chamber interposed between two cylinders of lesser diameter, of doors located in the sides of the receptacle, allowing the collected mineral to be withdrawn therefrom, substantially as set forth.

23. In a mineral-separator, the combination, with a cylinder forming the ascending plane of the separator, of guides parallel with each other, but inclined to the axis of the said cylinder's rotation, attached to its inner face and near its inner end, substantially as set forth.

24. In a mineral-separator, the combination, with a cylinder forming the ascending plane of the separator, of guides attached to its inner face and near its inner end, and a ledge encircling the cylinder at a point near the outer ends of the said guides, substantially as set forth.

25. In a mineral-separator, the combination, with a cylinder forming the ascending plane of the separator and having an inclined plane extending from its outer end to the top of a ledge encircling its inner peripheral face, of guides parallel with each other, but inclined to the axis of the cylinder's rotation and located between the inner end of the cylinder and the ledge aforesaid, substantially as set forth.

26. In a mineral-separator, the combination, with a cylinder forming the ascending plane of the separator, of a worm to carry débris forward up the ascending plane of the cylinder, said worm being adapted to allow fine particles of mineral to pass between it and the inner face of the cylinder to which it is attached.

27. In a mineral-separator, the combination, with a series of cylinders having their inclined planes converged and having a cylinder of greater diameter interposed between them, of a water-pipe inserted into the cylinders and adapted to project water into the ascending side of the interposing cylinder, substantially as set forth.

28. In a mineral-separator, the combination, with a series of cylinders having their inclined planes converged and having a cylinder of greater diameter interposed between them, of a water-pipe inserted into the cylinder to project water into the cylinder of the ascending plane, substantially as set forth.

29. In a mineral-separator, the combination, with a series of cylinders having their inclined planes converged and having a cylinder of greater diameter interposed between them, of a water-pipe provided with two spraying-arms and adapted to spray jets of water into the ascending side of the interposed cylinder and into the cylinder of the ascending plane, substantially as set forth.

30. In a mineral-separator, the combination, with a series of cylinders having their inclined planes converged and having a cylinder of greater diameter interposed between them, of a steam-pipe inserted into the cylinder, substantially as set forth.

31. In a mineral-separator, a cylindrical screen consisting of alternating fixed and radially-reciprocating rods, substantially as set forth.

32. In a mineral-separator, the combination, with a series of fixed rods, of a series of reciprocating rods interposed between them, and loops secured to the opposite ends of the screen-frame to support the ends of the reciprocating rods, substantially as set forth.

33. In a mineral-separator, the combination, with a series of alternating, fixed, and radially-reciprocating rods, of a hand or rod extending over the top of the screen and forcing the reciprocating rods down when they fail to fall of their own gravity, substantially as set forth.

34. In a mineral-separator, a screen consisting of a series of alternating, fixed, and radially-reciprocating rods and a trough to supply water to it, substantially as set forth.

35. In a mineral-separator, the combination, with a screen consisting of a series of alternating, fixed, and radially-reciprocating rods, of a worm to carry débris through and to discharge it from the said cylinder, substantially as set forth.

36. In a mineral-separator, the combination, with a screen consisting of a series of alternating, fixed, and radially-reciprocating rods, of deflectors located under the screen and a sluice into which they converge, substantially as set forth.

37. In a mineral-separator, the combination, with a screen consisting of a series of alternating, fixed, and radially-reciprocating rods, of deflectors, a sluice, and a feeder, substantially as set forth.

38. In a mineral-separator, the combination, with a series of cylinders arranged to form a descending and ascending plane for the débris, of a series of face-teeth encircling one of the said cylinders and a spring-pressed pounder adapted to be actuated by the teeth as the cylinder revolves, substantially as set forth.

256,185. STOCK-CAR. HORACE S. WOLFE, Kalamazoo, Mich., assignor of two-thirds to Frank W. Cornell and Chester Kellogg, both of same place. Filed Feb. 23, 1881. (No model.)



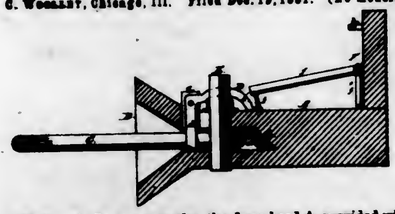
Claim.—1. In a stock-car, the gate provided with the rest-plate at the base of the hinging-eye, the hinging-rod, the support-plate secured to the car in position to coact with said rest-plate in supporting the gate, and the channel and batten secured to the opposite side of the car to guide and receive the gate, all constructed and adapted to operate in combination, substantially as described.

2. In a stock-car, measuring grain-spouts provided with gates adapted to open and close the measures, and with means, substantially as shown, for operating said gates, the combination of said parts with a spring connected with the car and gates and adapted to automatically adjust and to hold the gates, all substantially as specified.

3. In a stock-car provided with measuring grain-spouts and

gates adapted for opening and closing the measures, a spout provided with the partition between the gates, and having either end located closely to said gates, yet detached therefrom, said spout also provided with a base having the hollow channels on each inclined side, and the thin partition terminating the converging inclines, and located as set forth, all substantially as described and shown.

256,186. CAR-COUPLING. EDWARD W. WOOLLEY and STARR C. WOOLLEY, Chicago, Ill. Filed Dec. 19, 1881. (No model.)



Claim.—1. In a car-coupler, the draw-head A, provided with the <-shaped recess *a*, rubber buffer *b*, and mouth-piece B, in combination with the link C, lever D, having its bearing in the uprights *c c*, and coupling-pin E, provided with slot *g*, all the parts constructed and operating substantially as described.

2. In a device for uncoupling cars, a spring-catch, A, and bar F, said bar provided with handles *f' f''* and arm *f*, in combination with chain *f*, lever D, and pin E, the parts constructed and operating substantially as described.

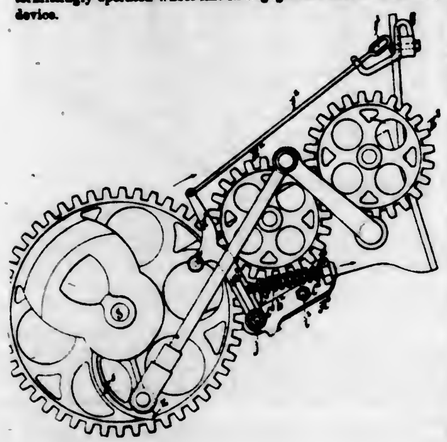
256,187. AXLE-LUBRICATOR. OSCAR B. YOUNG, Shreve, Ohio. Filed Aug. 18, 1879.



Claim.—As an improvement in axle-lubricators, the receptacle or chamber D and independent receptacle or chamber C, parallel to each other and situated on top the axle, each having a separate and independent groove, E G, for conducting the oil to the spindle, substantially as and for the purpose herein shown and specified.

256,188. GRAIN-BINDER. JOHN F. APPLEBY, Minneapolis, Minn., assignor to the Minneapolis Harvester Works, of Minnesota. Filed Jan. 31, 1882. (No model.)

Brief.—This invention comprises means for moving the intermittingly-operated wheel a little farther than it would be by the continuously-running driving device, thus preventing noise and wear of parts otherwise occurring by reason of the continuously-running driving device coming in contact with that part of the intermittingly-operated wheel last in engagement with said driving device.

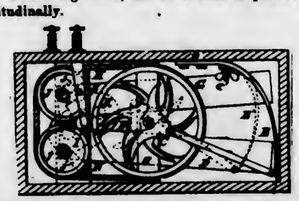


Claim.—1. In combination with the intermittingly-moving mechanism of the binder and the continuously-running and automatically-unclutching driver devices thereof, means, substantially as described, for causing a slight further movement of said mechanism after its release from the influence of the said driver devices, as set forth.

2. In combination with the automatic mechanism for causing the binder mechanism to move on after its release from the influence of the driver devices of the machine, a rod, *f''*, provided with an eye, *f'*, and two stationary eyes, *g*, the whole arranged to operate substantially as and for the purposes set forth.

256,189. MAGNETO-ELECTRIC GENERATOR FOR SIGNALING PURPOSES. JAMES G. ARNOLD, Worcester, Mass. Filed July 11, 1881. (Model.)

Brief.—A pin projecting from the crank-wheel engages with a spring-tumbler, which in its turn engages with a pin on the driving-wheel of the machine, the whole being so arranged that upon the tumbler being carried around a certain distance by the crank it is carried forward by its spring and gives a definite velocity of rotation to the armature of the generator. One end of the armature-shaft is so mounted between three grooved wheels, one of which is the driving-wheel, that it is held in position laterally and longitudinally.



Claim.—1. In a magneto-electric generator, the combination of a coil or coils with their frame or carrier, constructed substantially as described, whereby the coils may be brought close to their center of motion, or a single coil made to approximately coincide with its center of motion.

2. In a magneto-electric machine, the combination of the driven pulley I with the three grooved driving-wheels and their belt, whereby it is held against displacement both laterally and longitudinally, substantially as set forth.

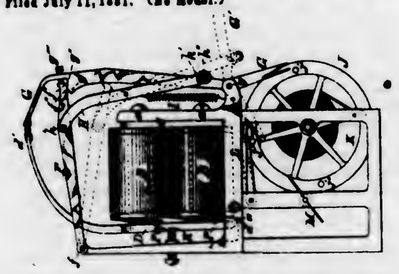
3. The combination of a magneto-electric machine with the adjustable spring E, connected tilting piece C, operating on pin F of driving-wheel G, constituting a driving mechanism capable of adjustment to give definite velocity to the machine irrespective of the rapidity of the operator's action, and the operating-plate B, having a pin, B', whereby the said mechanism can be brought into action, substantially as and for the purposes described.

4. The combination of the adjustable spring E and connected tilting piece C with the magneto-electric or other machine for giving repeated movements of the same force, substantially as set forth.

5. The combination of spring E, connected piece C, and the operating-plate B or its equivalent, substantially as and for the purposes described.

6. In a magneto-electric machine, the combination of the partially-revolving plate B with the automatic indicator, substantially as above set forth.

256,190. ANNUNCIATOR. JAS. G. ARNOLD, Worcester, Mass. Filed July 11, 1881. (No model.)



Claim.—1. The combination of the armature D, the supporting-ledges *a a*, and the cavity E, or its equivalent, securing the end of the screw F, substantially as and for the purposes set forth.

2. The combination of the drop G, having a pin, *h''*, the connection H, lever F, or its equivalent, and the spring I, substantially as set forth.

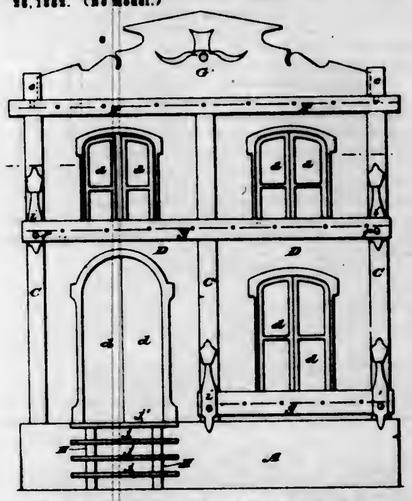
3. The combination of the drop G, having pin *h''* and incline *f'*, the slotted connection H, spring I, and the lever F, having incline *f''*, operating with *f'*, substantially as and for the purpose above described.

4. The combination of the drop G, having pin *h''*, incline *f'*, and holding-surface *f'*, slotted connection H, spring I, and lever F, having incline *f''* and holding-surface *f'''*, substantially as and for the purposes set forth.

5. The combination of an electric annunciator with an automatic resetting mechanism, consisting of the spring-wheel and fly and escape-catch and means for releasing said catch, as and for the purposes described.

6. The combination, with the poles of an electro-magnet and the armature D, of the spring-plates P P between said armature and each pole of the magnet, substantially as and for the purposes above set forth.

256,191. TOY OR DOLL HOUSE. WESLEY W. BARNES, New York, N. Y., assignor to Stirn & Lyon, same place. Filed Jan. 26, 1882. (No model.)



Claim.—1. The sides of a toy house, constructed of panels arranged to slide in grooves in the posts, as shown, and provided with doors and windows cut in the said panels, and the pieces *d*, cut therefrom, provided with flexible hinges *e*, and hinged to said panels at the margins of the openings, substantially as shown.

2. The combination of the box having holes or sockets in its bottom to receive the tenons on the posts, the grooved posts with tenon-pins on their ends, the cover of the box having holes or sockets to receive the tenons on the upper ends of the posts and the panels arranged to slide into the grooves in the posts and provided with windows and doors cut from them and hinged substantially as shown, all arranged substantially as set forth.

3. The cornice of a toy house, constructed of the grooved pieces F, posts C, and frontispiece G, in combination with the roof B, all arranged substantially as set forth.

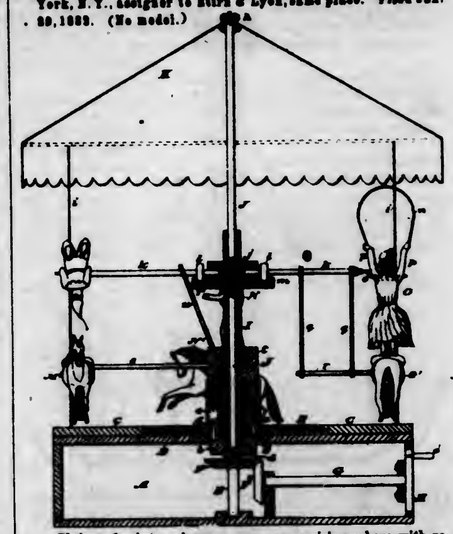
4. The combination, with a toy house, of the balcony constructed of the pins *f*, floor *h*, and ornamented with strip *g*, all arranged substantially as set forth.

5. The combination, with a toy house, of the steps comprising the horses H, provided with pins *i'* and recesses *h*, and the steps *j*, all arranged substantially as set forth.

6. The combination, with the elements of the superstructure of a toy house—namely, the tenoned and grooved posts and the panels—of the box A, constructed to serve as a basement for the same, and the cover B, constructed to serve as a roof for the same, substantially as set forth.

7. The combination, to form a toy house, of the inverted box A, provided with holes in its bottom to receive the tenons on the posts, and holes in its side to receive the pins on the horses of the steps, of the tenoned and grooved posts C C', the box-cover B, the panels D D' D², the cornice, the balcony, and the steps, all constructed substantially as set forth.

256,192. TOY CIRCUS OR ARENA. WESLEY W. BARNES, New York, N. Y., assignor to Stirn & Lyon, same place. Filed Jan. 26, 1882. (No model.)



Claim.—1. A toy circus or arena comprising a base with rotative driving-gear, a vertical rotative shaft, a non-rotative standard bearing a track-disk, a radial shaft having a bearing in the base on the vertical shaft and bearing a wheel arranged to roll over the track-disk, and a figure fixed or mounted on the end of said radial shaft, all constructed and arranged to operate substantially as set forth.

2. In a toy circus or arena, the box in which the toy is packed, provided with a cover mounted on a pintle at its center, and arranged to turn horizontally on the box, as shown, and with two sides hinged to the cover, all as set forth, whereby an extended platform is formed from the materials of the box, substantially as and for the purposes set forth.

3. In a toy circus or arena, the combination, with a vertical rotative shaft and a non-rotative track-disk around the same, of a shaft, *k*, provided with a track-wheel, *l*, and crank *o*, and a figure, O, hung on said crank, and having its arms *p* fixed on said crank, all arranged to operate substantially as set forth.

4. In a toy circus or arena, the combination, with a vertical rotative shaft and a track-disk surrounding same, of a radial shaft, *k*, provided with a track-wheel to roll on the track-disk, a figure fixed on the end of said shaft *k*, suspenders *q*, hung on the said shaft *k*, and bearing a rod, *r*, the said rod *r*, and the figure of a horse or other animal fixed on the end of said rod *r*, all arranged to operate substantially as set forth.

5. The box A, arranged to form a base and receptacle for a toy circus or arena, in combination with the main driving-shaft, the vertical shaft, the bevel-gears, the recessed crank-wheel H, and the removable crank-pin *e*, all arranged substantially as set forth.

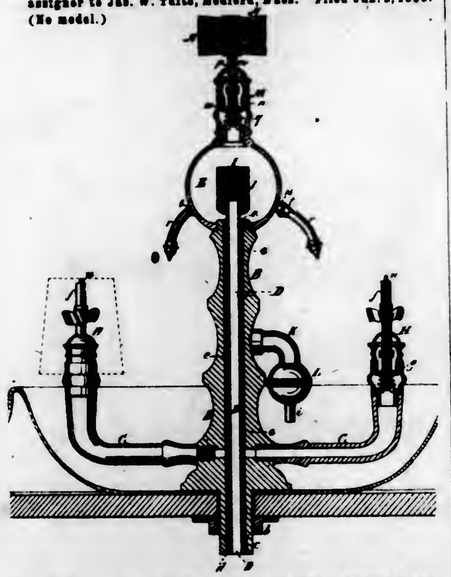
6. The combination, with the box A, provided with the bar D, and the pivoted cover B, of the tubular standard I, provided with a dowel or dowels, *g*, arranged to pass through the cover B and into sockets in the bar D when the cover is turned crosswise, whereby the standard is held in place and the cover prevented from turning, as set forth.

7. The combination, with the box and its pivoted cover and hinged sides, of the internal driving-gear, the doweled standard provided with a track-disk, *f*, the shaft J, having a forked end to take in a socket in the shaft E, the shafts *k k*, provided with wheels *l l*, and the vaulting figure fixed on the ends of the shafts *k*, all arranged to operate substantially as set forth.

8. In a toy circus or arena, the combination, with a horse or other animal borne around in a ring, of a vaulting figure with loosely-hinged legs mounted on the end of a radial rotating frictionally-driven shaft and borne around the ring over the horse, whereby the figure is caused to touch the horse with its feet at each vault, substantially as and for the purposes set forth.

9. The combination, with the shaft J, of the tent K, provided with a flexible elastic distending hoop and cords *i*, the box A, the pivoted box-cover B, and the hinged sides C, provided with slits to receive the tent-cords, substantially as set forth.

256,193. TUMBLER-WASHER. WALLACE E. BATE, Boston, assignor to Jas. W. Tufts, Medford, Mass. Filed Jan. 3, 1882. (No model.)



Claim.—1. In a tumbler-washer, the hollow standard B, provided at its upper end with a water chamber or receptacle, E, and the supply-pipe D, extending up through the standard, with a water-space, *e*, between them, communicating with the branch pipes G of the tumbler-washing devices, in combination with the strainer or filter I, secured to the upper end of the supply-pipe D and located within the chamber E, all constructed to operate substantially in the manner and for the purpose set forth.

2. In a tumbler-washer, the combination, with the standard B and chamber E, adapted to contain the water flowing from the supply-pipe, of a strainer or filter, I, secured to the supply-pipe and located within the chamber E, operating substantially in the manner and for the purpose set forth.

3. The combination, with a tumbler-washer provided with a series of tumbler washing and supporting devices, of a relief-valve adapted to prevent an increased pressure of the water upon the valves of the tumbler-washing devices when one or more tumblers are removed from their supports and the valves of their washing devices automatically closed, substantially as and for the purpose described.

4. In a tumbler-washer, the combination, with the pipe K, communicating with the water-supply, of the case or chamber L and the relief-valve A, contained therein, held against its seat by a spring, *l*, the pressure of which is regulated or adjusted by screwing the case L in or out upon the end of the pipe K, substantially as and for the purpose set forth.

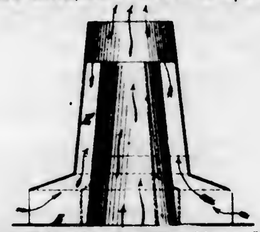
5. In a tumbler-washer having a series of branch pipes, G, provided with tumbler washing and supporting devices, the combination, with the shell or casing M, with its valve 10, spring *g*, spindle *n*, and discharge-aperture for the water, of the brush N, applied to the valve-spindle *n* and adapted to fit the interior of the tumbler, whereby the valve is depressed to permit the flow of the water by the act of placing the tumbler over the brush, substantially as set forth.

6. In a tumbler-washer, the combination, with the pipe *r*, screwed into the aperture *s*, of the screw collar or nut *t*, provided with a conical end, 15, adapted to fit tightly into a correspondingly-shaped recess or countersink, 12, formed around the edge of the aperture *s*, whereby the pipe can be readily clamped at any desired angle with a water-tight joint, substantially as described.

7. In a tumbler-washer, the combination, with the valve-spindle *f* of the washing device, made hollow at its upper end, of a removable sliding supporting-pin, *u*, for the tumbler to rest upon, adapted to fit within the hollow end of the valve-spindle, substantially in the manner and for the purpose set forth.

256,194. CAP FOR CHIMNEY-FLUES. HERMANN BLACKMAN, Brooklyn, N. Y. Filed Dec. 28, 1881. (No model.)

Brief.—The invention is designed not only to prevent the wind from interfering with the proper operation of chimneys, flues, stacks, and like devices, but to utilize it in stimulating their action.



Claim.—1. The combination, with a chimney, flue, or like device, of a pipe surrounding the same, flanges or ledges extending laterally one from the chimney, flue, or like device and the other from the surrounding pipe, and affording provision for the entrance of air between them around their entire circumference, partitions dividing the space between the chimney, flue, or like device and the surrounding pipe, and also between the flanges or ledges, into a number of uninterrupted passages having funnel-shaped mouths which include the whole space between said flanges or ledges around their circumference, substantially as herein specified.

2. A pipe adapted to form the continuation of a chimney, flue, or like device, a pipe surrounding the same, flanges or ledges extending laterally from adjacent portions of said pipes and affording provision for the entrance of air between them around their entire circumference, and partitions dividing the spaces between said pipes and flanges or ledges into a number of uninterrupted passages having funnel-shaped mouths which include the entire space between the flanges or ledges at their circumference, all being so combined as to form one structure, which may be applied to an existing chimney, flue, or like device, substantially as herein specified.

256,195. COTTON-GIN. THOMAS BOATWRIGHT, Bryan, Tex. Filed Feb. 10, 1882. (No model.)



Claim.—1. In a cotton-gin, a swinging front carrying a series of rollers, as set forth.

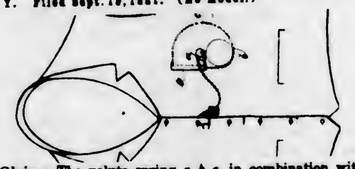
2. In combination with the gin-casing having lateral heads, the swinging front pivoted thereto and having a series of rollers, *c'*, as set forth.

3. In combination with the gin-casing having swinging front and rollers *c'*, pivoted therein, the driving-belts *d* and *f* and pulleys, as set forth.

4. In combination with the heads B, having slots *i'*, the rear rollers, *c''*, and side pieces, *l*, in which the rollers are journaled, as set forth.

5. In combination with the heads B, having studs *o* and the slots *i*, curved in the arc of a circle described about *c*, the swinging front and rollers *c'*, as set forth.

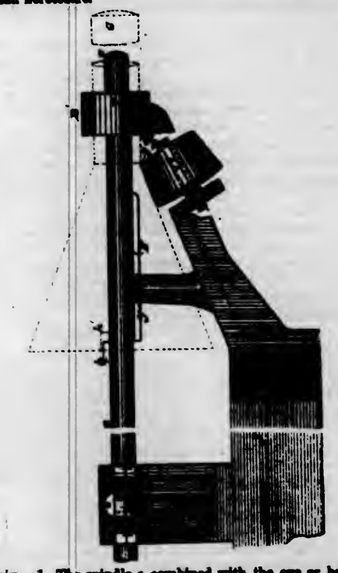
256,196. SAFETY-POCKET. SAMUEL E. BUSHNELL, Brooklyn, N. Y. Filed Sept. 19, 1881. (No model.)



Claim.—The volute spring *a b c*, in combination with the pocket for watches, having a vertical, or nearly vertical, opening or flap, the parts being constructed and applied substantially as set forth.

256,197. MACHINE FOR WINDING BOBBINS. GEORGE CAMPBELL and JOHN CLUTE, Cohoes, N. Y. Filed Feb. 23, 1881. (No model.)

Brief.—The bracket is provided with shaping-plates and a conical roller. The latter is supported at a slight angle from a vertical plane passing through the axis of rotation of the spindle. The said plates and roller press against the conical portion of the bobbin while it is being wound, and thereby cause the inner portion of the yarn next to the barrel of the bobbin to be wound more tightly than heretofore.



Claim.—1. The spindle *c*, combined with the eye or bearing B', conical roller C, and shaping-plates F, substantially as set forth and described.

2. A spindle, C, combined with a bracket, B, provided with a conical roller, and a shaping plate or plates to press against the conical portion of the bobbin while being wound, and a bearing adapted to receive the barrel of the bobbin and permit the same to revolve therein, as set forth.

256,198. GLOVE OR SHOE FASTENER. WILLIAM B. CARPENTER, Newark, N. J. Filed Feb. 16, 1882. (No model.)



Claim.—1. An improved button or hook provided with a shank of soluble celluloid, substantially as shown and described.

2. A button or hook having a shank of soluble celluloid and provided with perforations or corrugations, as shown and described, for the purpose set forth.

3. As an improved manufacture, a strip of fabric provided with a series of buttons or hooks having shanks composed of soluble celluloid attached to the fabric by a solution of celluloid, adapted for use as described.

256,199. RAILROAD-TIE. JOSEPH CLARK, Green Point, N. Y. Filed Dec. 13, 1881. (No model.)

Brief.—The metallic tie consists of a flanged base-plate and semicircular adjustable bearing-plates resting therein and having depressed chairs. The bearing-plates are adjustably secured in the base-plates. A clamp extends around the bottom of the chair and over the base of the rails. Angular fish-plates recessed to form tongues at their outwardly-projecting parts are adapted to be sprung into the bearing-plates, and thereby secure the rails.

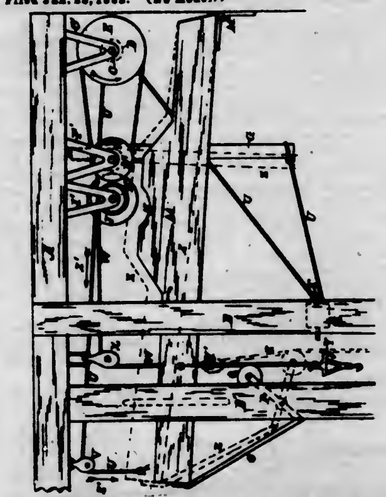


Claim.—1. In a metallic railroad-tie, the combination of the flanged base-plate A and of two separate arched bearing-plates, B B, with means whereby the latter are adjustably connected to the flanges of the base-plate, so as to be capable of lateral adjustment for setting the rails to the normal width of the track, substantially as specified.

2. In a metallic railroad-tie, the combination, with a flanged base-plate, A, and an arched bearing-plate, B, having a depressed chair, *d*, of a clamp, C, extending around the bottom of the chair and over the base of the rails at both sides of the same, substantially as set forth.

3. In a metallic railroad-tie, the combination of the flanged base-plate A and an arched bearing-plate, B, having a depressed chair, *d*, formed in one piece therewith, with a rail-joint having angular fish-plates D, which are recessed at the middle portions of their outwardly-projecting parts, so as to form tongues *e*, which are sprung into the arched bearing-plate, substantially as set forth.

256,200. HOG-HOIST. JOHN CUNNINGHAM, Cincinnati, Ohio. Filed Jan. 20, 1882. (No model.)

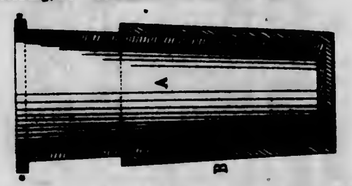


Claim.—1. In an animal-hoist, the hinged beam M, adapted to check the friction-pulley J, in combination with the friction-pulley J, rope W, having the animal-hook Y, and provided with the knot or stop Y', for raising the beam M, substantially as herein set forth.

2. In an animal-hoist, the shaft C, having the pulley E and spool D, in combination with shaft F, having the pulley H and journaled to the swinging lever G, and with rope or belt L and rope U, substantially as and for the purpose set forth.

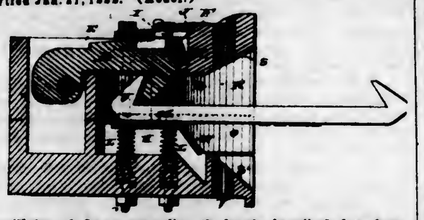
3. In an animal-hoist, the hinged beam M, having the arm O, and hinged lever P, in combination with the shaft C, having the spool D and pulley E, with shaft F, having pulley H, friction-pulley H', and swinging lever G, with the shaft I, having drum K and friction-pulley J, and with the belt L, rope U, and rope W, having the hook Y and knot or stop Y', substantially as herein specified.

256,201. EDGE-TOOL-TEMPERING POT. CHARLES E. DIXON, Pittsburg, Pa. Filed Feb. 28, 1882. (Model.)



Claim.—The wrought-iron tempering-pot A, tightly inclosed within the wrought-iron protecting-shell B, and having the wrought-iron band *s* tightly forged around its upper end, all constructed and combined as and for the purpose herein specified.

256,202. CAR-COUPLING. JOHN H. DOLAN, Butte City, Mont. Filed Jan. 21, 1882. (Model.)



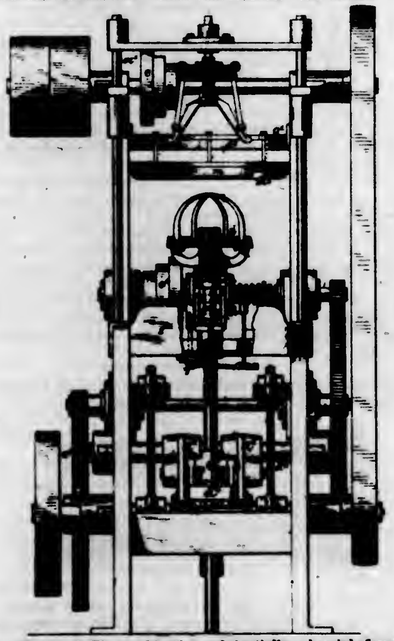
Claim.—1. In a car-coupling, the herein-described plate, forming the floor of the draw-head, and having its front edge turned downwardly and outwardly, the whole capable of being depressed by the coupling-link or bar as it enters the draw-head, springs being interposed under the plate to force it to its normal position after passage of the link or bar, substantially as herein shown and specified.

2. The combination, with the coupling-hook pivoted in the top of the draw-head and adapted to be held rigidly in place by a spring-latch or other suitable means, of the plate arranged underneath the same and capable of being depressed and returned to its normal position by suitable springs arranged under the same, substantially as and for the purpose herein specified.

3. The combination, with the coupling-hook D, pivoted at the rear of the draw-head and working in a longitudinal slot, E, in the top thereof, and provided with a spring-latch, I, and shoulder H, adapted to engage respectively a notch or recess, J, and shoulder G in the front wall of slot E, of the plate M, having its front edge, N, turned downwardly and outwardly and held in its position under the hook D by wedges or securing pieces or strips O, the plate M being capable of depression and return to its normal position by action of springs L, interposed in a recess under the same, all arranged and operating substantially as and for the purpose herein shown and specified.

4. The combination, with the plate M, wedges or strips O, and springs L, of the vertical bolts Q, passing through perforations in the same to hold or secure them in position, as set forth.

256,203. HAT-STRETCHING MACHINE. RUDOLF EICKEMEYER, Yonkers, N.Y. Filed Jan. 16, 1882. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, of rapidly-reciprocated stretching-fingers and a ribbed support for a hat-body, automatically placed into and out of working relations with each other and caused to gradually approach each other automatically during the stretching operation.

2. The combination, substantially as hereinbefore described, of rapidly-reciprocating stretching-fingers and a ribbed former which is automatically raised, with a hat-body thereon, to the stretching-fingers, gradually lifted after said fingers commence their stretching action, and then lowered for the removal of a stretched hat-body.

3. The combination, substantially as hereinbefore described, of rapidly-reciprocated stretching-fingers, and a ribbed support for a hat-body, automatically placed into and out of working relations with each other, and a stop-motion for maintaining them out of working relations after each stretching operation for the ready insertion and removal of a hat-body.

4. The combination, substantially as hereinbefore described, of stretching-fingers, a former which is automatically lifted to and lowered from the stretching-fingers, and a stop-motion which causes the former to rest in its lowest position after each reciprocation.

5. The combination, substantially as hereinbefore described, of tip-stretching fingers, a former, and clamping-rings by which a hat-body may be readily rotated during the stretching operation.

6. The combination, substantially as hereinbefore described, of tip-stretching fingers, a former, and weighted clamping-rings by which a hat-body may be readily rotated and stretched by the downward pull of the weighted rings.

7. The combination, substantially as hereinbefore described, of tip-stretching fingers, a former, and a clamping-ring mechanically rotated.

8. The combination, substantially as hereinbefore described, of tip-stretching fingers, a former, and weighted clamping-rings which are adjustable for varying the downward pull on a hat-body.

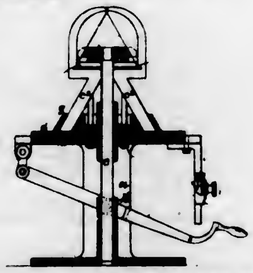
9. The combination of the tip-stretching fingers, the former and its spindle, the clamping-rings, the upper clamping-weight, and the adjustable weight and its lever connected with the lower clamping-ring, substantially as described.

10. The combination of the rapidly-reciprocating stretching-fingers, the ribbed former, its spindle, the levers, and the cam for reciprocating the former, substantially as described.

11. The combination of the hat-stretching fingers and former and a friction-clutch automatically controlled by the former-spindle for causing the latter to rest when at its lowest position, substantially as described.

12. The combination, with the tip-stretching devices, of clamping-rings readily attached and removed, substantially as described, for enabling adjustment of the machine to operate on hats of various diameters, as set forth.

256,204. RIBBED FORMER FOR HAT-STRETCHING MACHINES. RUDOLF EICKEMEYER, Yonkers, N.Y. Filed Jan. 16, 1882. (No model.)



Claim.—1. In a tip-stretching ribbed former for co-operating with hat-tip-stretching fingers, the combination, substantially as hereinbefore described, of tip-supporting ribs which are movable in radial lines, an expanding-spindle which is lifted and lowered independently of the ribs, and a lock for maintaining the ribs in an expanded condition.

2. In a tip-stretching ribbed former for co-operating with tip-stretching fingers, the combination, substantially as hereinbefore described, of radially-movable tip-supporting ribs, one or more conical blocks for expanding said ribs, and a lock for maintaining them in an expanded condition.

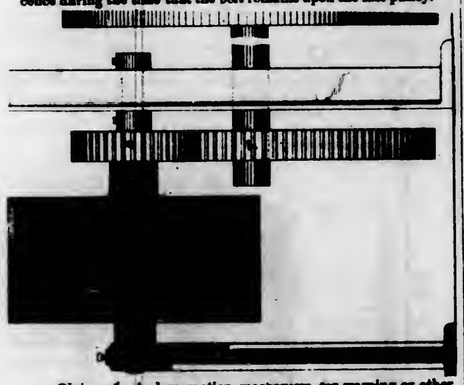
3. In a tip-stretching ribbed former for co-operating with tip-stretching fingers, the combination, substantially as described, of a series of tip-supporting ribs radially movable with a double-acting conical block or plate which not only expands but contracts said ribs.

4. In a tip-stretching ribbed former, the combination, substantially as hereinbefore described, of movable tip-supporting ribs, an expanding-spindle, the lever, and the lock by which the ribs are maintained in an expanded condition.

5. In a tip-stretching ribbed former, the combination, substantially as hereinbefore described, of the movable tip-supporting ribs, mechanism, substantially as described, for expanding said ribs, and a gage for determining the degree of expansion.

256,205. WARPER. THOMAS C. ENTWISTLE, Lowell, Mass., assignor to Phenix Machine Company, same place. Filed Dec. 8, 1881. (No model.)

Brief.—Improvement upon Letters Patent No. 242,617, dated June 7, 1881. When the driving-belt is shifted from the slow to the fast pulley the slow-motion mechanism in its entirety will be automatically arrested and caused to remain in a state of quiescence during the time that the belt remains upon the fast pulley.



Claim.—1. A slow-motion mechanism for warping or other machines, constructed, arranged, and operating substantially as hereinbefore set forth, so that when the power is transferred from the slow-motion mechanism to the device by which the machine is driven at its normal or fast speed said slow-motion mechanism in its entirety will automatically be brought to rest.

2. The combination, with the slow-motion pulley and fast or driving pulley, of intermediate slow-motion-transmitting mechanism actuated by the slow-motion pulley and connected with the fast pulley substantially in the manner hereinbefore set forth, so that when the belt is shifted from the slow to the fast pulley the said mechanism will automatically be thrown out of engagement with said fast pulley.

3. The combination, with the fast and the slow motion pulleys, of intermediate slow-motion-transmitting mechanism, connected with the fast pulley by a pawl-and-ratchet connection, substantially as and for the purposes hereinbefore set forth.

4. The combination, substantially as hereinbefore set forth, of the fast and slow motion pulleys, provided respectively with ratchet and pinion, as described, the stationary internal gear, the shaft, the slow-motion cross-head fixed to said shaft and carrying two gear-wheels, meshing one with the slow-motion pulley-pinion and the other with the internal gear, the pawl-carrying cross-head, fixed also on said shaft, and the pawl.

256,206. FOUNTAIN-PEN. PARKS P. PLOUNSBY, Bethesda, Md. Filed Apr. 11, 1881. (Model.)



Claim.—1. A fountain pen-holder having an ink-regulator consisting of a bar, E, spring *d*, pad *e*, and pin *d'*, attached to the feeder, all substantially as shown and described.

2. The combination, in a fountain pen-holder, of the ink-stop consisting of two plugs fitted air-tight, one near and the other in upper end of cylinder, both centrally bored, the one in upper end or top having a tube with internal and external projections, the two plugs inclosing between them an air-chamber with a feeder closed air-tight by the continued pressure of a spring, all substantially as shown and described.

256,207. FIRE-ESCAPE. GEORGE W. GIBBS, Salem, Ohio. Filed Feb. 18, 1882. (No model.)

Brief.—Loops are placed alternately on the sides of the rod, and may be braced by flanged rings placed therein.



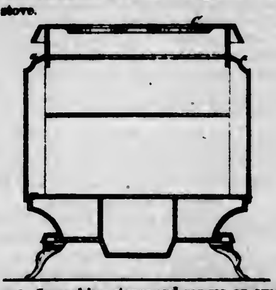
Claim.—1. A fire-escape ladder consisting of a metallic rod or wire having loops formed alternately on opposite sides thereof, as set forth.

2. The rod or wire B, having loops C, formed alternately on opposite sides, the upper sides of said loops being straight and their under sides curved, as set forth.

3. The combination, with the metallic rod or wire having loops C, of the flanged rings F, placed in said loops, as set forth.

256,208. STOVE. JAS. L. GORRILL, Cleveland, Ohio. Filed Jan. 19, 1882. (No model.)

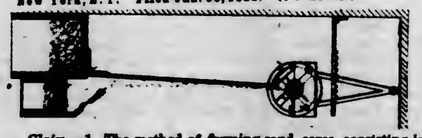
Brief.—The bottom of the oven is of greater width than the body of the stove.



Claim.—1. In cooking stoves and ranges, an oven having the bottom thereof extended beyond one or both sides of the stove, and provided with a door adapted to cover the said extension and the doorway of the oven, substantially as described, and for the purpose specified.

2. In cooking stoves and ranges, an oven having the bottom plate thereof extended beyond the doorway of said oven, thereby adding to the transverse length of the oven-bottom, substantially as set forth, and for the purpose specified.

256,209. MAKING CORES FOR CASTINGS. LEWIS G. GOLDSMITH, Port Chester, assignor to the J. L. Mott Iron Works, New York, N.Y. Filed Jan. 30, 1882. (No model.)



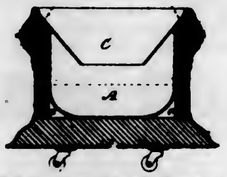
Claim.—1. The method of forming sand cores, consisting in causing the sand to fall from the proper height upon the core-bar to cause it to adhere thereto and pack, revolving such core-bar during the fall of the sand, and then removing the surplus sand by a knife or cutter, substantially as set forth.

2. The combination, with the revolving core-bar and stationary cutter, of the elevated sand-screen and the swinging deflector, substantially as set forth.

256,210. SPITTOON. RUDOLPH T. GOSSELIN, Boston, Mass., assignor to himself and Charles H. Case, same place. Filed Feb. 6, 1882. (No model.)

Claim.—1. A spittoon composed of sheet metal and having a double shell, with the space or spaces between the inner and outer thicknesses of metal filled or partially filled with wood, papier-maché, or other similar light solid material, substantially as and for the purpose set forth.

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2. The combination, with the body A, composed of a double shell of sheet metal, of a filling of wood, papier-maché, or other similar light solid material, so arranged or disposed as to form chambers or spaces as for containing sand or other heavy substance, whereby the stability of the spittoon is increased, substantially as described.

3. The sheet-metal cap B, having its sides made double, and provided with a filling of wood, papier-maché, or other similar light solid material, substantially as and for the purpose set forth.

256,211. BUTTON OR STUD. ALBERT G. ORNEGG, Providence, R. I.; (William B. Wightman, Administrator of said Ornegg, deceased.) Filed Aug. 11, 1881. (Model.)

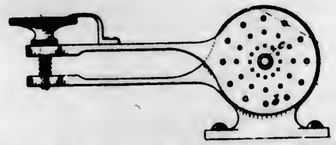


Claim.—1. The combination, in a button, of a head, A, a flat post provided with a bead longer in its cross-section than the body of the post, the back plate, *a'*, provided with a central orifice, *a*, and lugs *c c*, and pin-holes *d' d'*, contained partly in the lugs and partly in said back plate, a journal, *e*, flat spring, and outer plate, *e*, all arranged as shown, and operating as described.

2. In a button, the flat post *p*, consisting of a flat strip of metal bent upon itself in the middle of its length and provided with a journal-orifice, *d'*, near one end, swaged partly out of each side of said bent-up strip, and with the ends of said strip adjacent and exterior to said orifice bent outwardly in opposite directions to form a post-head longer in its cross-section than the body of the post.

256,212. DRAW-PLATE FOR PREPARING FIBROUS FILAMENTS FOR ELECTRICAL CARBONS. JOHN H. GUNDT, Brooklyn, N. Y. Filed Sept. 24, 1881. (No model.)

Brief.—Two perforated plates having suitable cutting-edges at the perforations are adjustable upon one another, so as to make the perforations coincide wholly or partially. The sizes of the holes through which the filaments are drawn are thus made adjustable. The adjusting-screw has a graduated head.



Claim.—1. A drawing plate or tool formed with two plates fitted closely against each other, and adjustable upon each other in such manner that the aperture or effective caliber of the draw-holes is reduced by the movement of one plate over the other, and provided with a means for so adjusting the plates and retaining them firmly at the desired adjustment, substantially as herein shown and described.

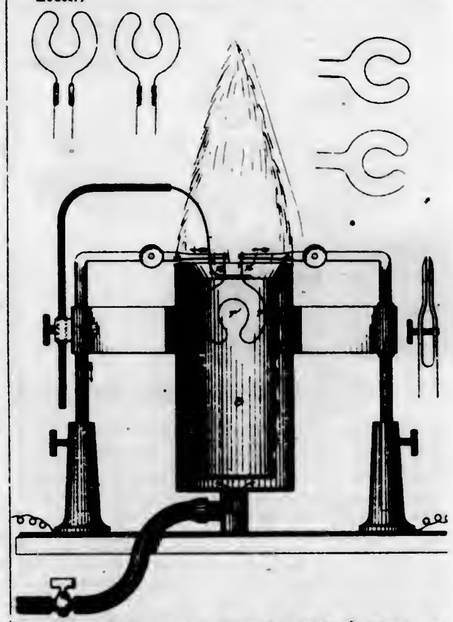
2. A draw plate or tool formed with two overlying plates, perforated with a coinciding set of draw-holes, and with means of moving or adjusting the plates over or upon each other, and of holding them firmly at each adjustment, so as to bring the holes out of coincidence more or less, and so retain them, substantially as and for the purpose set forth.

3. A draw-tool formed with two overlying plates fitted closely against each other, and each perforated with a coinciding series of draw-holes having a flaring or tapering form, arranged with their narrow ends meeting at the meeting faces of the plates, and with means for moving or adjusting the two plates upon each other, so as to bring the tapering holes out of coincidence more or less, substantially as herein shown and described.

4. A draw-tool constructed with two plates fitted against and pivoted or jointed to each other, with an adjusting-screw connecting the two plates, whereby the turning of said screw moves the plates upon each other and causes the draw-holes to be partly obstructed or contracted by the movement of one plate over the holes of the other, and at the same time enables the plates to be held at each adjustment, substantially as and for the purpose herein set forth.

5. The combination, with a draw-tool formed with two oversliding plates, in which the draw-holes are contracted or obstructed by the movement of one plate on the other, of an adjusting-screw connecting with and serving to converge or diverge the plates, and a series of graduations on said screw with an index-point affixed to one of the plates, substantially as and for the purpose set forth.

256,213. FORMING AND TREATING ELECTRICAL CARBONS. JOHN H. GUNDT, Brooklyn, N. Y. Filed Sept. 7, 1881. (No model.)



Claim.—1. An apparatus for treating electrical carbons, consisting of a burner adapted to emit a hollow flame, and means for holding a carbon within the hollow or the gases of the flame, and means for passing an electric current through said carbon or rendering it incandescent in the gases of said flame, substantially as herein set forth.

2. An apparatus for treating electrical carbons, consisting of a burner of Argand or tubular form adapted to emit a hollow or tubular flame, with a space or receptacle within the tubular burner freely open at the top to admit and inclose the carbon loop and permit observation of the same while under treatment, with electric-circuit connections and clamping devices external to said burner to hold the carbon within said receptacle and to include the same in an electric circuit, substantially as herein shown and described.

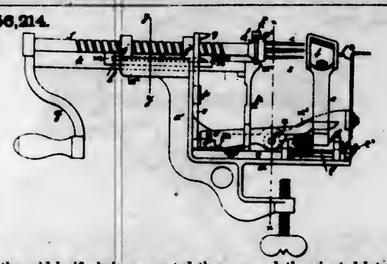
3. An apparatus for treating electrical carbons or carbon loops, consisting of a burner adapted to emit a hollow carbonaceous flame, in combination with adjustable forceps mutually insulated and adapted to respectively seize each end of the carbon and hold it in the hollow or gases of the flame, and means for including said forceps and the carbon held thereby in an electrical circuit, substantially as herein set forth.

256,214. APPLE PARER, CORER, AND SLICER. C. RAYMOND REINHARD, Reading, Pa., assignor to the Penn Hardware Company, same place. Filed Jan. 4, 1882. (Model.)

Claim.—1. In an apple-parer, the combination of the fork-shaft *f*, the crank *g*, the track-bar *h*, provided with a track, *l*, the paring-knife slide *i*, and engaging-bolt *o*, for the purpose of effecting engagement between the said bolt *o* and shaft *f*, substantially as set forth.

2. The combination of the fork-shaft *f*, the track-bar *h*, with its downward projection h^2, the spring-actuated paring-knife slide

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i, the said knife being mounted thereon, and the pivoted latch *u*, for giving to the paring-knife a following pressure on the apple, and thus more completely paring the rear part of the apple, substantially as set forth.

3. The combination of the fork-shaft *f*, the fork with its beveled head *h*, the track-bar *h*, provided with a track, *l*, the bolt *o*, and the sliding core-expeller *a²*, for the purpose of clearing the apple-core from the fork, substantially as set forth.

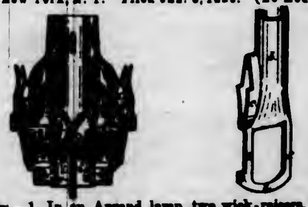
256,215. SEWING-MACHINE HOOK. CHARLES H. HIRE, St. Louis, Mo., assignor to Judson H. Bemis, Boston, Mass., and Stephen A. Bemis, St. Louis, Mo. Filed Nov. 21, 1881. (Model.)



Claim.—1. The herein-described sewing-machine hook, having the curved prongs *a' a²*, projection *a³*, and the flat *a* or rounded shank *a⁴*, substantially as described.

2. As a new manufacture, the blank A, having the shank *a*, the prongs *a'* and *a²*, and the swell or projection *a³*, substantially as described.

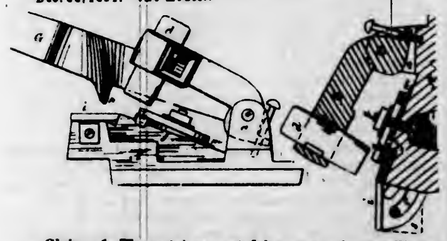
256,216. ARGAND BURNER FOR LAMPS. THOMAS HIPWELL, New Brunswick, N. J., assignor to the Manhattan Brass Company, New York, N. Y. Filed Jan. 3, 1882. (No model.)



Claim.—1. In an Argand lamp, two wick-raisers, between which the wick passes in a folded condition, in combination with the air-tube of an Argand lamp, the metal of which is pressed together at the lower part and provided with an opening in the metal adjacent to the wick-raisers, so that the folds of the wick will be in contact at the wick-raisers, substantially as set forth.

2. In an Argand lamp, the combination, with the wick-raisers that act upon each side of the wick in a folded condition, of an air-tube above the wick-tube, the lower end of which is closed, and a rib or piece of metal extending from the air-tube across beneath the wick-raisers, for the purposes set forth.

256,217. SAW-SET. HIRAM E. HITCHCOCK, Ionia, Mich. Filed Dec. 26, 1881. (No model.)



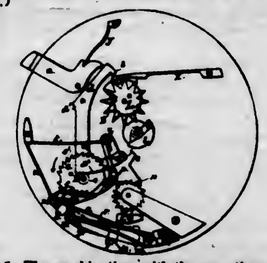
Claim.—1. The rest *i*, connected by means of a curvilinear slot, *r*, and bolt *o* to the stock A, in combination with the fixed inclined portion *f* of the bed A, substantially as described.

2. The steel disk of uneven thickness, in combination with the inclined surfaces *f* and *i* of the bed A, as and for the purpose specified.

3. The reversible die *d*, in combination with the inclined surfaces *f* and *i* of the bed A, and disk *n*, as and for the purpose specified.

4. The lever G, provided with an elongated hole for the fulcrum-pin, and having the clamping-lip *u*, in combination with the inclined surface *i*, as shown and described.

256,218. REPEATING-MOVEMENT FOR WATCHES. WILLIAMS E. HUGUENIN, Locle, Switzerland. Filed Aug. 27, 1881. (No model.)



Claim.—1. The combination, with the repeating mechanism, of the sliding bolt *b*, within the ring *w*, and guided by said ring and by the pins *d' d'*, and provided with a finger-piece projecting through a slot in the ring *w*, and with a notch to receive the end of a lever, substantially as and for the purposes set forth.

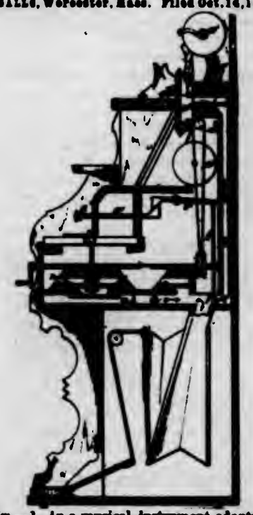
2. In a repeating-watch, the toothed lever *d*, pinion *c*, spring-barrel B, and disk *c*, in combination with the hour-snail L and hammer for striking the hour, substantially as and for the purpose specified.

3. The toothed lever *d*, hour-snail L, pinion *c*, spring-barrel B, disk *c*, and pin *f*, in combination with the quarters-piece *p*, notched lever *g*, and quarters-snail *l*, substantially as and for the purposes specified.

4. In a repeating-watch, the combination of the toothed lever *d*, hour-snail L, spring-barrel, and pinion *c*, substantially as and for the purposes specified.

5. In a repeating-watch, in combination with the star-wheel E and quarters-snail *l*, the surprise, made as a plate, *s*, upon a sleeve surrounding the cannon of the quarters-snail, and with a finger extending from said sleeve for acting upon the star-wheel of the hour-snail, and with a pin upon the snail entering a slot in *s*, substantially as specified.

256,219. MECHANICAL MUSICAL INSTRUMENT. GUSTAVUS W. ISBALLS, Worcester, Mass. Filed Oct. 14, 1881. (No model.)



Claim.—1. In a musical instrument adapted to be operated at will either by a key-board or a music-sheet, a pair of brackets

attached to the back of the instrument, on the front face of the upper part thereof, in combination with a music-sheet and its winding-rolls supported by said brackets.

2. In a musical instrument adapted to be operated at will either by a key-board or a music-sheet, a pair of brackets attached to the back of the instrument, on the front face of the upper part thereof, in combination with a music-sheet and its winding-rolls supported by said brackets, a reed-board governed by said music-sheet, and a vertical passage leading from the bellows to the said reed-board, said passage being arranged against the back wall of the casing, substantially as set forth.

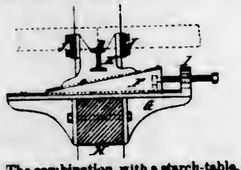
3. In a musical instrument adapted to be operated at will either by a key-board or a music-sheet, the vertical music-sheet, in combination with the casing and means for supporting said music outside of said casing, but in proximity to the back wall thereof, substantially as set forth.

4. In combination with a music-sheet and the casing and operative parts of a duplex instrument, means for supporting said sheet outside of the casing, the said means being attached to the back wall thereof.

256,220. METHOD OF TREATING MINERAL OILS, &c. ROBERT LAVEN, Royston Granton, County of Mid-Lothian, Scotland. Filed Jan. 5, 1882. (No specimens.)

Claim.—The employment, in conjunction with mineral oil or oils used for illuminating purposes, mineral naphtha or naphthas and soap or saponaceous matter or matters in a dry or anhydrous state in order to obtain compounds in a semi-solid or solid state or condition, substantially as and for the purposes herein described.

256,221. STARCH-TABLE. THOMAS A. JUBB and WILLIAM T. JUBB, Buffalo, N. Y. Filed Jan. 20, 1881. (No model.)



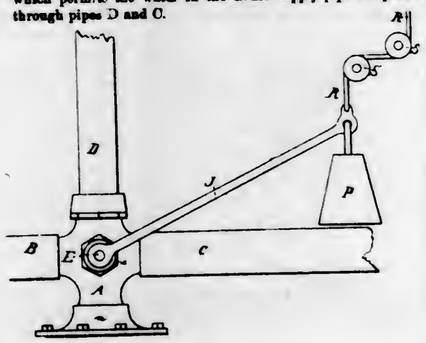
Claim.—1. The combination, with a starch-table, of wedges F, resting on supports or ways G and engaging under plates or shoes E, and guides whereby the parts resting on the wedges are held against lateral displacement, but permitted to move vertically, substantially as set forth.

2. The combination, with a starch-table, of wedges F, resting on supports or ways G and engaging under plates or shoes E, guides whereby the parts resting on the wedges are held against lateral displacement, but permitted to move vertically, and screws whereby the wedges are adjusted, substantially as set forth.

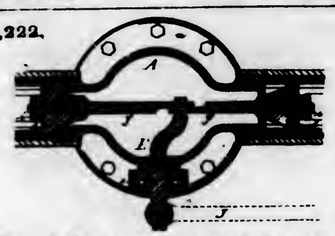
3. The combination, with one or more starch-tables, of cross-sills B, provided with shoes E, wedges F, horizontal ways G, secured to the beams H, and vertical guides J, between which the shoes E slide, substantially as set forth.

256,222. STOP AND WASTE COCK. JOHN KELLY, Chicago, Ill., assignor of two-thirds to Thomas Kelly and James Kelly, same place. Filed Jan. 9, 1882. (No model.)

Brief.—The object of the device is to relieve the pipes of a building of water when desired. The weight is held up by a cord, in which position water flows through to the house supply-pipes. When the weight is released valve F closes and valve G opens, which permits the water in the house supply-pipes to pass out through pipes D and C.



256,222.



Claim.—1. The stop-cock herein described, consisting of casing A, that forms a connection between the pipes B, C, and D, in combination with crank E, reciprocating the conical elastic valves F and G, all being constructed and arranged substantially as set forth.

2. The combination, with the casing A, having base *a*, screw-necks for coupling pipes B, C, and D, and stuffing-box *e*, of crank E, valve-rods *f* and *g*, and elastic conical valves F and G, the whole being constructed and arranged substantially as described and shown.

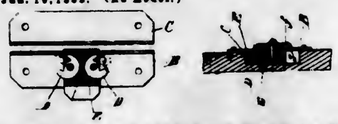
3. The combination, with the casing A, valves F and G, and crank E, of lever J, weight P, and cord R, the whole being arranged to operate substantially as shown and specified.

256,223. LEAD AND CRAYON HOLDER. GUSTAV KÜSTERMANN, Green Bay, Wis. Filed Nov. 23, 1881. (No model.)



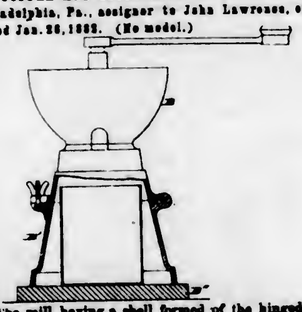
Claim.—A lead or crayon holder composed of the tubular handle A, having jaws *b* and stops *c*, all formed of a single piece of metal, said stops being formed by punching out a portion of each side of the handle, as described, in combination with the tube B, having conical collar *d* and cap *e*, the whole of which being constructed and arranged substantially as set forth.

256,224. BOX-FASTENER. WILLIAM LANG, Brooklyn, N. Y. Filed Jan. 19, 1882. (No model.)



Claim.—The combination of the slotted flanged plate B, attached to the body A, the recessed flanged plate C, attached to the lid, the interior slide-plate, E, the segmental locking-bolts D, pivoted thereto, and the actuating slide-plate *f*, which is connected to the interior slide-plate, whereby the upward or downward movement of the actuating-plate opens or closes the lock without the use of a key, substantially as described.

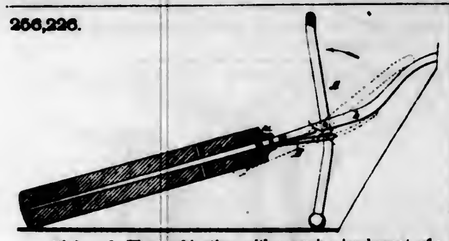
256,225. COFFEE AND SPICE MILL. J. FRANKLIN LAWRENSON, Philadelphia, Pa., assignor to John Lawrence, same place. Filed Jan. 26, 1882. (No model.)



Claim.—The mill having a shell formed of the hinged top part, B, and hollow base B', with the closing bottom B'', and a removable cup which is loosely fitted in said base B' and rested on said bottom B'', substantially as and for the purpose set forth.

256,226. GUARD FOR CARVING-FORKS. JOHN B. H. LUCAS, Glastenbury, Conn., assignor to the Williams Brothers Manufacturing Company, same place. Filed Nov. 26, 1881. (Model.)

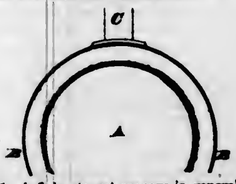
256,226.



Claim.—1. The combination, with a carving implement, of a pivoted piece, A, having pin *i*, and a spring, B, arranged on the lower side of the shank, and having a terminal lip or shoulder, substantially as set forth.

2. The combination of the shank, the piece A, pivoted thereto, spring B, and ferrule *p*, arranged to confine the spring to the shank, substantially as set forth.

256,227. FLYING TARGET. GEORGE LIGOWSKY, Cincinnati, Ohio, assignor to the Ligowsky Clay Pigeon Company, same place. Filed Feb. 21, 1882. (No model.)



Claim.—1. A flying target concave in general form, as at A, but having the edge or rim turned in at B, to insure a rapid and stable axial rotation when thrown in the inverted position herein described, whereby a gradual descent of said target is caused by the imprisonment of air within its concavity, substantially as set forth.

2. A flying target composed of a fragile material that will readily shatter or break when struck with shot, said target being concave in general contour, but having its edge or rim turned in at B, to insure a rapid and stable axial rotation when thrown in the inverted position herein described, whereby a gradual descent of the target is caused by the imprisonment of air within its concavity, substantially as set forth.

3. A flying target concave in general form, as at A, but having the edge or rim turned in at B, to insure a rapid and stable axial rotation when thrown in the inverted position herein described, said rim being provided with a peripheral projection, C, for the purpose stated.

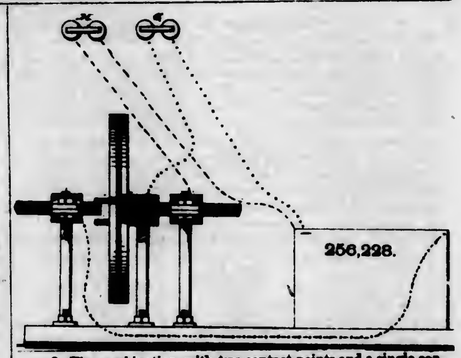
4. A flying target consisting of a concave body, A, united to the inturned rim B by an intermediate member, D, which latter is curved reversely with reference to said rim, for the purpose herein described.

5. A flying target consisting of the body A D, having an inturned rim, B, which latter is provided with a projecting lug or tongue, C, for the purpose described.

256,228. ELECTRICAL GOVERNOR. HARVEY LISTON, Allegheny, Pa. Filed Oct. 1, 1881. (No model.)

Brief.—A disk having two insulated contact-points is revolved at a determined rate by a standard-motor. These contact-points are both connected with one pole of the battery by separate circuit-wires, each of which circuits contains a magnet. In line with the shaft of said disk, but disconnected therefrom, is a shaft of the motor to be regulated. Projecting radially from said second shaft and revolved thereby is an arm electrically connected with the opposite pole of the battery. The said arm extends between the two points on the face of the disk, and as long as the motor to be regulated, which revolves the arm, rotates synchronously with the standard-motor which drives the disk the said arm is in contact with neither of the two points on the disk; but when the regulated motor gains or looses in speed it comes in contact with one point or the other and closes the circuit to decrease or increase the supply of motive force.

Claim.—1. The combination, with two contact-points, of a single contact-point located between them, the said points and point being revolved respectively by independent mechanism and by the motor governed, and devices in circuit with said points and point and adapted to regulate the amount of motive force supplied to the motor, substantially as set forth.



2. The combination, with two contact-points and a single contact-point which is located between them, the said points and point being revolved respectively by the independent mechanism and by the motor governed, of magnets in circuit with the points and point, and devices operated by the said magnets to regulate the amount of motive force supplied to the motor, substantially as set forth.

3. The combination, with two insulated disks rotated by independent mechanism and provided each with a contact-point, and a rod or contact-point rotated by the motor governed, of magnets in circuit with the points and point, and devices operated by the said magnets to regulate the amount of motive force supplied to the motor, substantially as set forth.

4. The combination, with two insulated disks rotated by independent mechanism and provided each with a contact-point, of a contact-point rotated by the motor governed, and adapted when the speed thereof fluctuates to engage with one of said points, according as the fluctuation in speed is due to an accelerated or retarded condition of the motor, and thus close a circuit embracing a magnet, and devices adapted to be operated by said magnet to regulate the motive force supplied to the motor, substantially as set forth.

5. The combination, with two insulated disks rotated by independent mechanism and provided each with a contact-point, the point of the inner disk, which projects through the outer disk, being insulated from it, of a point rotated by the motor governed and located between the points of the said disks, of magnets located in circuits closed by the engagement of said point with the points between which it is located, and devices actuated by said magnets to regulate the amount of motive force supplied to the motor, substantially as set forth.

6. The combination, with, two contact-points, and a contact-point adapted when the speed of the motor fluctuates to engage with one of said points and close a circuit embracing a magnet, of weights released by the magnets and adapted to regulate the amount of motive force supplied to the motor, and devices to restore the said weights to their normal positions, substantially as set forth.

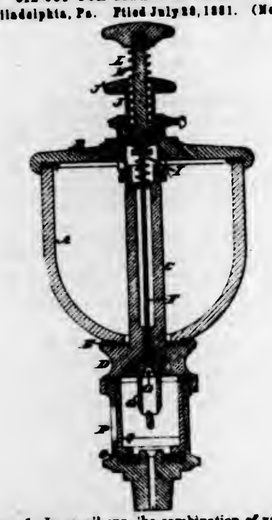
7. The combination, with magnets located in circuits closed by a contact-point oscillated by fluctuations in the speed of the motor governed, of a pair of weights normally elevated and adapted to be released when the magnets are energized, a device isolated from but adapted to be moved by either of said weights acting alone to regulate the amount of motive force supplied to the motor, and devices adapted to restore the weights to their normal positions, substantially as set forth.

8. The combination, with magnets located in circuits closed by a contact-point oscillated by fluctuations in the speed of the motor governed, of levers, weights supported by said levers when the same are not attracted by the magnets, and adapted when released by the closing of a circuit to regulate the amount of motive force supplied to the motor, and devices arranged to restore the weights to their normal positions when the circuits are broken, substantially as set forth.

9. The combination, with magnets located in circuits closed by a contact-point oscillated by fluctuations in the speed of the motor, of levers attracted by said magnets, disks supported in position by said levers, weights normally elevated, and adapted when falling to rotate said disks in opposite directions, devices arranged to engage said disks the instant they cease to be supported by the levers, with a central disk adapted to vary the amount of motive force supplied to the motor, and devices adapted to restore the weighted disks to the positions occupied by them before falling, substantially as set forth.

10. In an electrical governor, the combination, with a central disk provided with a rack engaging with valve mechanism and having ratchets on its opposite faces, of disks located on each side of the central disk, weights secured to and adapted to turn the said disks in opposite directions, a pair of levers actuated by magnets, lever systems mounted in said disks and adapted to be engaged by said levers and to operate pawls which engage with the ratchets on the central disk, and devices to connect the said disks with other disks revolving in opposite directions at the moment they have been sufficiently turned by their weights, and to release them from said revolving disks as soon as they have been elevated to the positions occupied by them before falling, substantially as set forth.

256,229. OIL-CUP FOR STEAM-ENGINES. JOHN E. LOWRAS, Philadelphia, Pa. Filed July 20, 1881. (No model.)

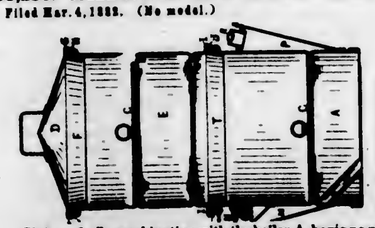


Claim.—1. In an oil-cup, the combination of valve G, rod F, spring I, and screw-plug J, the latter being provided with a locking device, T, set thereupon, said plug causing plunger K to impinge below upon the top of the valve-rod F, whereby the flow of oil can be regulated and set, substantially as and for the purposes described.

2. In an oil-cup, the combination of valve G, loose rod F, spring I, the latter resting upon a bearing, plunger K, and spring L, resting upon a base or support, J, whereby a sudden blow upon said plunger will momentarily increase the flow of oil beyond the regular flow, substantially as and for the purposes described.

3. In an oil-cup, the combination of screw-plug J, lock-nut T, forming a regulating device with the stem and valve, and situated above the cap of the oil-cup, with the transparent or open chamber I', situated below the oil-cup, whereby the feed can be observed in the lower chamber and instantly regulated or altered from above without taking any of the devices apart, substantially as and for the purposes described.

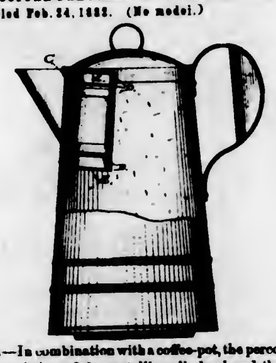
256,230. STEAM-COOKER. ALONZO M. MACE, Needham, Mass. Filed Mar. 4, 1882. (No model.)



Claim.—1. In combination with the boiler A, having a packed steam-tight cover, D, the weighted automatic valve K, arranged within the chamber L, and the hinged alarm or whistle N, inclosed within the steam-escape tube M, substantially as described, as and for the purposes set forth.

2. In combination with the boiler A, having a cover, D, and provided with a steam-escape tube, M, the alarm or whistle N, arranged within the steam-exit passage, substantially as described, as and for the purposes set forth.

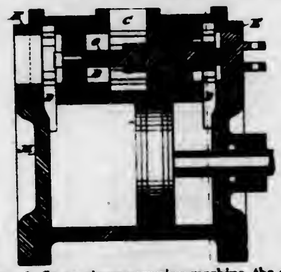
256,231. COFFEE-PERCOLATOR. JOHN C. MACKEY, New York, N. Y. Filed Feb. 24, 1882. (No model.)



Claim.—In combination with a coffee-pot, the percolator herein described, consisting of the metallic cylinder *b* and the removable cups D, the latter being each composed of a strainer, *d*, held between an inner ring and an outer ring, *a*, the percolator being adapted to be suspended wholly above the mid-height of the pot, substantially as set forth.

256,232. AIR-COMPRESSOR. HANS S. HANSING, Jr., Brooklyn, N. Y. Filed Dec. 21, 1881. (No model.)

Brief.—The valve-chest has open ends, by which air is directly admitted to the compressing-cylinder through ports D D. The linings E E project, serving as guides for the piston-valve G. The loose piston H is actuated by the compressed air in the cylinder A, and moves to the right or to the left when the pressure from A exceeds that from the pipe C, leading to the compressed-air receiver.



Claim.—1. In an air-compressing machine, the combination of the piston-valve G, composed of three pistons, the center piston being self-acting and free to move on its stem, with the circular valve-chest B open at both ends, such open ends acting as inlet-ports for the air to be compressed, substantially as described.

2. In an air-compressing machine, the combination of the piston-valve G, composed of two or more pistons, a circular valve-chest, B, open at both ends, the projecting linings E E, and the air-compressing cylinder A, connected with the valve-chest G by the ports D D, all substantially as shown and described, and operating in the manner and for the purposes herein set forth.

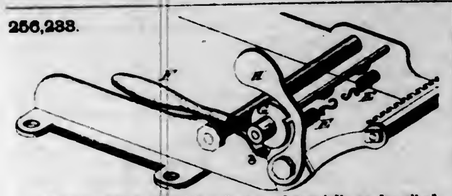
3. The linings E E of the circular open-ended valve-chest B, projecting beyond the face of the valve-chest and serving to give a suitable bearing to the valve G, substantially as described.

256,233. MACHINERY FOR SEWING THE MOUTHS OF BAGS. WILLIAM H. MARTIN, Brooklyn, N. Y. Filed Oct. 31, 1881. (No model.)

Brief.—Invention consists in the frame having a rock-shaft with hooks along its length and operated by a handle and catch for raising the bag-mouth previously placed on said hooks, and in spring-hooks at each end of frame for distending the bag-mouth lengthwise. Suitable sewing mechanism serves to unite the edge by being fed along on the bars of the frame.

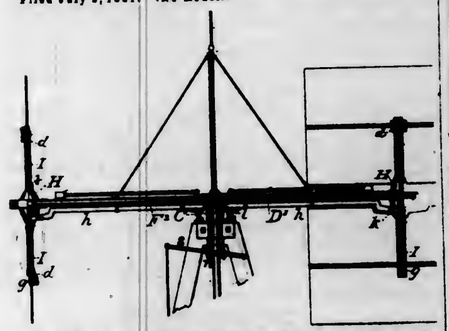
Claim.—1. In a frame for holding the mouths of bags intended to be sewed by machinery, the combination of a rod, D, provided with spurs *f*, for catching the bag, the handle F, for tightening the same, and the cam and lock G H, for holding the same fixed in position, substantially as and for the purposes described.

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2. In combination with a frame, substantially as described, for holding the mouths of bags to be sewed by machinery, the spring-hooks E, substantially as and for the purposes described, for distending and closing the mouths of the bags.

256,234. WIND-ENGINE. FRANK MCCLINTOCK, West Union, Iowa, assignor of one-half to William McClintock, same place. Filed July 9, 1881. (No model.)



Claim.—1. In a horizontal wind-engine, the combination, with sails attached to vertical sail-shafts which revolve with one-half the velocity of the engine, of a frame consisting of a central box or hub and horizontal arms with boxes on their outer extremities having bearings in which the sail-shafts revolve, the boxes being joined by diagonal tie rods or tubes, and with the arms securely trussed by means of diagonal rods extending to the upper end of a vertical tube rising from the center, in which the vane-shaft revolves, substantially as shown and described.

2. A horizontal wind-engine with sails hinged in sections to horizontal cross-pieces on vertical sail-shafts which revolve in boxes attached to horizontal arms, said sail-shafts being geared so as to make one-half of a revolution for each revolution of the engine, in combination with trip-levers *d*, links *f*, slide-rods *g*, sliding collars *i*, levers A, sliding collars *l* and *n*, guide-rods *m*, and a centrifugal governor, substantially as and for the purpose specified.

3. In a horizontal wind-engine, the combination, with sails attached to vertical shafts which revolve at the rate of one-half a revolution for each revolution of the engine in boxes attached to horizontal arms, of tubing D', D², K', K', K², and K', covered boxes H, and hollow sail-shafts I, for the purpose of protecting the working parts of the engine from the weather, substantially as specified.

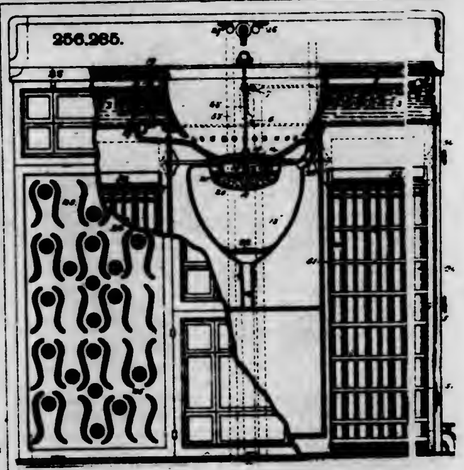
4. In a horizontal wind-engine, the combination, with sails attached to vertical shafts which are geared to make one-half of a revolution for each revolution of the engine, of sails attached or hinged to sail-shafts in sections, half of the area of the sail above and half below the plane of said horizontal arms, and the sections arranged to turn on their horizontal axes in alternately opposite directions, substantially as and for the purpose specified.

256,235. WASH-BOWL. L. HAMILTON MCCORMICK, Chicago, Ill. Filed Dec. 8, 1881. (No model.)

Brief.—The arrangement of the wash-bowl and water-tank is such that the height of the water in the tank governs the height of the water in the bowl, and thus prevents overflow. The waste water accumulated in the chamber 13, as the outlet from the bowl is larger than the outlet from the chamber 13.

Claim.—1. A wash-bowl having in its sides, near its bottom, an annular chamber provided with an inward opening which is inclined toward the bottom of the bowl, into which the water for filling the bowl is introduced, substantially as described.

2. The combination of a bowl, as 1, a supply-pipe, as 6, a tank, as 3, adapted to hold a supply of water for immediate use, so positioned that the height of the water in the tank governs the height to which it will rise in the bowl to prevent overflow, and



communicating with the bowl by a large pipe, as 4, and an automatically-operated cock, as 7, by which the flow of water into the tank is stopped when a certain height is reached, substantially as described.

3. The combination of the tank adapted to contain a supply of water for immediate use, and so located that the height of the water in the tank governs the height to which it will rise in the bowl and prevent overflow, the pipe of large size connecting the tank with the bowl, the entrance to which is controlled by a valve or plug, and the bowl having its walls provided with the annular chamber with its opening inclined toward the bottom of the bowl, all substantially as described.

4. The combination of the bowl, the tank situated in close proximity thereto and adapted to hold a small supply of water, as described, and the connecting-pipe, as 4, having its receiving end projecting above the bottom of the tank, to prevent the drawing out of sediment and to form a seat for the valve 5, substantially as described.

5. The combination, with the waste-pipe, as 12, provided with the enlargement or chamber 13 just below the bowl, of the bowl provided with an outlet-opening larger than the waste-pipe, whereby the water will pass so rapidly from the bowl as to accumulate in the said chamber, substantially as described.

6. The combination of the bowl, the waste-pipe having the chamber for the accumulation of the water, and the water-seal located between the bowl and chamber, substantially as described.

7. The combination of the bowl having the outlet-opening in its bottom, a valve, as 14, a stem, as 16, provided with a nut or head, as 18, and a bar, as 17, through which the valve-stem extends and by which its removal is prevented, all substantially as described.

8. The combination of the bowl having in its sides the annular chamber with the inward opening inclined toward the bottom of the bowl, and having the larger outlet for waste water in its bottom, the tank adapted to contain a supply of water for immediate use, located in close proximity thereto, and communicating with said chamber by the large pipe, as 4, and the waste-pipe provided with the chamber 13, for the accumulation of the outflowing water, all substantially as described.

9. The combination of the stand, the bowl, the tank arranged beneath the slab or top of the stand, and the steam-pipes located within the casing of the stand, beneath the tank, substantially as described.

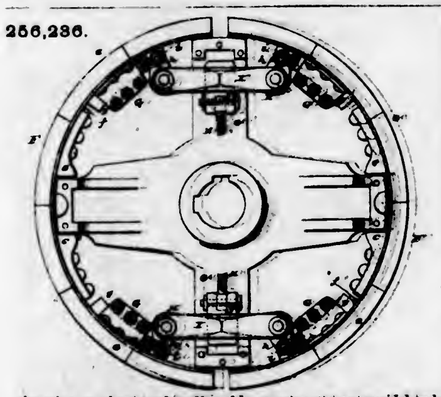
10. The combination of the stand, the bowl, the tank located beneath the slab or top of the stand, the steam-pipes arranged within the casing of the stand, beneath the tank, and the register 53, for controlling the heating of the water in the tank, substantially as described.

11. The combination of the stand, the tank, the steam-pipes located within the stand, and the registers 53 and 51, substantially as described.

256,236. EXPANDING AND CONTRACTING DEVICE FOR FRICTION-CLUTCHES. DANIEL H. MERRITT, Marquette, Mich. Filed Feb. 20, 1882. (No model.)

Claim.—1. The combination, with the friction-rim and clutch-band adapted to engage therewith, of the hinged or pivoted bars *g g*,

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clamping mechanism for adjustably securing them to said band, pivoted bell-cranks *H H*, having long and short arm, sliding block J, and bars I I and toggle K, for connecting said block J with the sliding sleeve L, substantially as and for the purpose specified.

2. The combination, with the friction-rim and clutch-band adapted to engage therewith, and formed in semicircular sections, of the hinged or pivoted bars *g*, clamping mechanism for adjustably securing them to the band, pivoted bell-crank bars I I, sliding blocks J J, and toggles K K, for connecting said blocks with the sliding sleeve L, substantially as and for the purpose specified.

3. The combination, with the clutch-band, of the hinged or pivoted bars *g* and clamping-plates G G, bell-cranks H H, having short arms *h h*, pivotally connected to said bars *g*, sliding block J, having a slot or opening for the ends of the long arms *h' h'*, grooved bars I I, for the reception of the sliding block, and to which the bell-cranks are pivotally connected, and a toggle for connecting said sliding block with operating mechanism, substantially as and for the purpose specified.

4. The combination, with a clutch-band and a lever for operating it, of the intermediate connecting mechanism consisting of hinged or pivoted and adjustable bars *g*, pivoted bell-cranks H H, grooved bars I I, sliding and slotted blocks J J, sliding sleeve L, and connecting rods or toggles, substantially as and for the purpose specified.

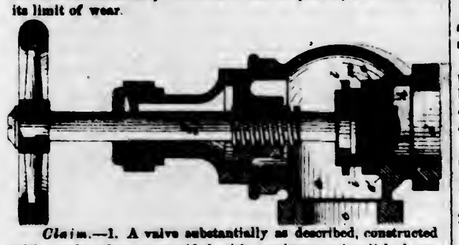
5. The combination, with a clutch-band, sliding sleeve L, and intermediate connecting mechanism, and a lever, *m*, for operating said sleeve, of the hand wheel or shaft having the crank-pin *n*, the bracket *p*, and connection or rod *o*, intermediate of and connecting the crank-pin *n* with lever *m*, substantially as and for the purpose specified.

6. The combination, with a clutch-band, sliding sleeve, and intermediate connecting mechanism, and a lever for operating said sleeve, of the hand wheel or shaft having the crank-pin *n*, the bracket *p*, and adjustable connection or rod *m'*, substantially as and for the purpose specified.

7. The combination, with a clutch-band, of hinged bars *g*, adjustably connected thereto, sliding sleeve, and means, substantially as described, for connecting said bars *g* with said sleeve, the pivoted lever *m*, for operating said sleeve, adjustable connection or rod *m'*, hand wheel and shaft having a crank-pin, *n*, and the bracket *p*, substantially as and for the purpose specified.

256,237. VALVE. MATTHEW HICKENBOTHOM, Brooklyn, N. Y. Filed Nov. 23, 1881. (No model.)

Brief.—The primary valve-disk A is exposed around its sides, and is adapted to fit into a deep cavity, *c*. The seat *m* is intended to receive the secondary valve-rim *l* when the primary valve reaches its limit of wear.



Claim.—1. A valve substantially as described, constructed with a valve-plunger provided with a primary valve-disk, A, exposed around its sides, and having a definite depth and range of wear, in combination with a valve-seat having a deep depressed cavity or socket to receive and envelop the said disk, and with a secondary seat around the edge of said socket to meet with a secondary valve-rim on the holder of said disk when the latter reaches the limit of its wear in the primary seat, substantially as herein shown and described.

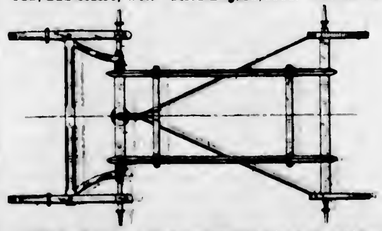
2. The combination, in a valve of substantially the described kind, of a valve-seat formed with a deep depressed seat or socket, *c*, forming a primary valve-seat and a raised secondary annular seat, *m*, around the edge of said socket, with a valve-plunger provided with a deep exposed disk, *h*, to enter said socket and a secondary valve-rim, *l*, to meet with the raised and isolated seat *m* when the primary disk reaches the limit of its wear in the primary seat or socket, substantially as and for the purpose set forth.

3. The combination, in a valve of substantially the described kind, with a flexible or wearable disk having a definite depth and range of wear, and with a corresponding deep seat or socket therefor, of a disk holder or follower, to which said disk is attached, adapted to enter said socket as wear takes place, with the secondary valve-rim *l* upon said follower, and a corresponding lip or seat, *m*, on said socket, adapted to meet together and form a tight joint when the primary disk reaches the limit of its wear, substantially as herein shown and described.

4. A valve of substantially the described kind, constructed with a flexible non-metallic wearable disk of straight cylindrical form with its lower corner or seating base rounded and with a seat or socket of corresponding form, substantially as and for the purpose set forth.

5. The combination, in a valve of substantially the described kind, of a flexible or non-metallic valve-disk of cylindrical form having a rounded base with a corresponding seat or socket, with a disk holder or follower having a cylindrical form corresponding to the straight portion of said disk and socket and of a length equal to the straight portion of the disk and socket, or nearly so, substantially as and for the purpose set forth.

256,238. RUNNING-GEAR FOR VEHICLES. HENRY G. HOUSE, Eau Claire, Wis. Filed Aug. 19, 1881. (No model.)



Claim.—In a running-gear for vehicles, the combination of the front axle, the thills rigidly attached thereto, the longitudinal rearwardly-extending springs attached to the thills and terminating over the front axle, the transverse spring connected with the rear ends of the longitudinal springs, the rear axle having bowed springs, and the vehicle-body resting and turning upon the front springs and suspended from the rear springs, as and for the purpose set forth.

256,239. SELF-LEVELING BERTH. LORENZO D. HOWELL, Providence, R. I. Filed July 26, 1881. (No model.)



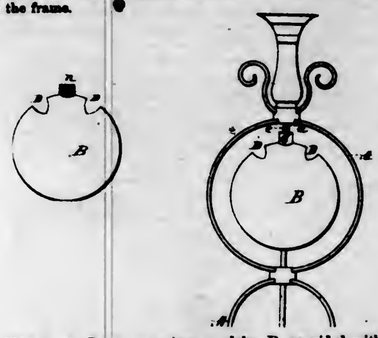
Claim.—1. In combination with a self-leveling berth for vessels, the curved T-shaped strips G and grooved journals E, substantially as shown and described.

2. In a self-leveling berth for vessels, the combination of the toothed counter-weight K with the pinion *k'* and shaft *k*, said shaft being adapted to receive a removable wrench, and arranged to be operated by the occupant of the berth, substantially as shown and described.

3. In a self-leveling berth for vessels, the combination of the swinging frame B, the ends C thereof having inwardly-projecting grooved journals E, with the sliding bearing D' and stationary bearing D, substantially as shown and described.

256,240. AQUARIUM. CHARLES N. OSGOOD, New York, N. Y., assignor to the E. P. Gleason Manufacturing Company, same place. Filed Dec. 19, 1881. (No model.)

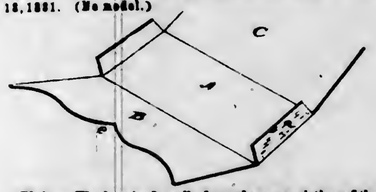
Brief.—A globe B, provided with oval openings D, for aerating the water therein, has a nipple *a*, adapted to engage with a screw-thread in the thimble C, by the eye *e* of which it is suspended from the hook *a* in the frame. A flower-pot, E, may rest upon the frame.



Claim.—1. In an aquarium, a globe, B, provided with a threaded nipple, and with small openings D, in combination with a thimble, C, substantially as set forth.

2. In an aquarium, the combination, with a stand, A, provided with a hook, *a*, of the globe B, having the thimble C and eye *e*, and the oval openings D, substantially as and for the purposes set forth.

256,241. ENVELOPE. ELIOTT H. PERRICK, Hudson, Mass., assignor of one-half to Cyrus D. Munson, same place. Filed Oct. 18, 1881. (No model.)



Claim.—The herein-described envelope, consisting of the middle portion, A, having the short end flaps, *a a*, which are folded inward and provided with adhesive material on their outer faces, an inner flap, B, having the cut-away portion *c*, and folded down upon the middle portion, A, so as to cover nearly the entire face of the same, and secured to the end flaps, and an outer flap, C, folded down upon the inner flap and extending flush with the edges of the inner portion, A, the said construction producing an article having three unbroken plies of uniform thickness, except where the side flaps and cut-away portion *c* are located, and affording a smooth, unbroken body of uniform thickness, upon either side of which a clear and regular impression can be made by a printing-press, as set forth.

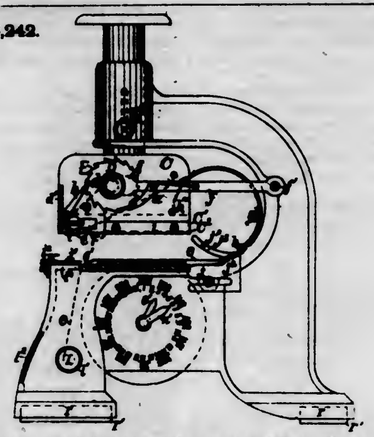
256,242. HAND-STAMP. WILLIAM H. POOLE, Chicago, Ill. Filed Feb. 24, 1881. (No model.)

Claim.—1. In a hand-stamp, a base provided with a platen, removable die, and a fixed arm carrying a vertically-reciprocating plunger provided with a removable die, platen, and automatically-turning drum for the purpose of winding the inking-ribbon thereon, all arranged to operate substantially as and for the purpose specified.

2. A hand-stamp the base of which is provided with a platen, removable die, and drum carrying an inking-ribbon, and a fixed arm carrying a vertically-reciprocating plunger provided with a removable die, platen, and automatically-turning drum upon which the inking-ribbon is wound, all arranged to operate substantially as and for the purpose specified.

3. In a hand-stamp, a base provided with a platen, removable die, series of dating-wheels, and drum carrying an inking-ribbon, and a fixed arm provided with a vertically-reciprocating plunger having a platen, removable die, and an automatically-turning drum upon which the inking-ribbon is wound, and which is actuated by means of a lever attached to said drum and pivoted to the fixed arm, and provided with a pawl, all arranged to operate substantially as and for the purpose specified.

4. In a hand-stamp, a base provided with a platen, removable die, and drum carrying an inking-ribbon, and a fixed arm carrying a plunger provided with a die, platen, and automatically-turning drum to wind the inking-ribbon, in combination with a spring *g*, all constructed to operate substantially as and for the purpose specified.

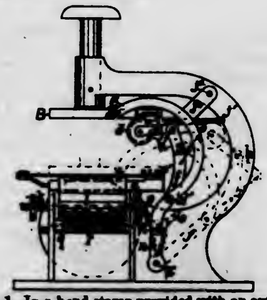


5. In a hand-stamp provided with drums on which an inking-ribbon is worked from one to the other of said drums, an inking-ribbon provided with a white or blank end, constructed and arranged to operate substantially as and for the purpose specified.

6. In a hand-stamp provided with a reciprocating plunger, a drum, D, provided with a ratchet-wheel, E, and longitudinally-slotted lever *f*, attached to and pivoted at *f'*, and provided with a pawl, *e*, and spring *e*, all combined and arranged to turn the drum D, substantially as and for the purpose specified.

7. The clamp *f'*, provided with a fixed hook, *f''*, in combination with the notched plate *f'*, united by a bar, *f*, so as to form an adjustable ticket-gage for a hand-stamp, all constructed and arranged to operate substantially as herein shown and described.

256,243. HAND-STAMP. WILLIAM H. POOLE, Chicago, Ill. Filed Aug. 18, 1881. (No model.)



Claim.—1. In a hand-stamp provided with an automatically-adjustable inking-ribbon, plunger, and roller inking apparatus, the combination of the ribbon, the plunger, and base, oscillating levers *f*, attached to the base behind and below the inking-ribbon, and mechanism, as described, to actuate said levers and ribbon, said levers carrying at their free ends an automatically-adjustable inking-roller, substantially as specified.

2. In a hand-stamp provided with an automatically-adjustable inking-ribbon, plunger, printing-surfaces both upon its bed and plunger, and inking-plate, the combination of the oscillating levers *f*, attached to the base behind and below the drums *k*, and provided with an automatically-adjustable inking-roller and mechanism, substantially as described, whereby said levers, roller, and drums are actuated, substantially as specified.

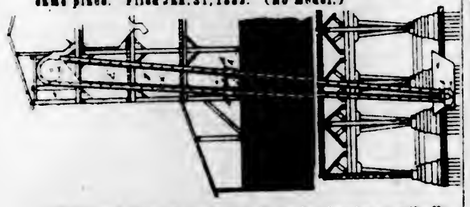
3. In a hand-stamp provided with drums *k*, one on each side of its base, printing-surfaces on both its base and plunger, and inking-plate *f'*, the combination of the levers *f*, pivoted to the base and carrying at their free ends an automatically-adjustable inking-roller, with the base and plunger, pawls *e*, and mechanism, substantially as described, connecting the plunger and levers *f*, constructed to operate substantially as specified.

4. In a hand-stamp provided with printing-surfaces both upon

its bed and plunger, the combination of the base *c* and plunger B, ribbon *l*, and drums *k* on each side of the base, provided with ratchet-wheels *t*, inking-plate *f*, with the levers *f*, carrying the automatically-adjustable roller *j*, pawls *o*, and bars *e*, substantially as specified.

5. In a head-stamp provided with printing-surfaces upon its bed and plunger, the ribbon *l*, drums *k* on each side of its base, provided with ratchet-wheels *t*, in combination with the levers *f*, bars *h*, pivoted at *h'*, and carrying roller *j*, spring *h²*, bars *e*, pawl *o*, spring *n*, and base *c* and plunger B, constructed to operate substantially as specified.

256,244. GRAIN-ELEVATOR. ELIAS ROBERTS, Chicago, Ill., assignor of one-half to Edward Baumann and William H. Lotz, same place. Filed Jan. 31, 1882. (No model.)



Claim.—1. The elevator-legs in grain-elevators, vertically composed of sections *i* and *j*, and connected by sleeves *k*, in which the leg-sections will slide to accommodate themselves to the shrinkage and settling of the building, all substantially as and in the manner described and shown.

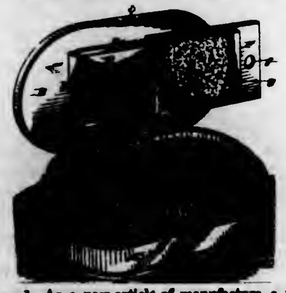
2. In a grain-elevator, and in combination therewith, of the elevator-legs composed of the upper sections, *i*, and the lower sections, *j*, both connected by a box or sleeve, *k*, that is made rigid with sections *j* and will form a guide for section *i*, all substantially as and for the purpose described and shown.

256,245. SPRING-BACK FOR BOOKS. FRIEDRICH SCHUBERT, Zurich, Switzerland. Filed Jan. 16, 1882. (No model.)



Claim.—A spring-back for books, consisting of a resilient inner part, *b*, exterior longitudinal strips, *a a*, and a covering, *d*, stitched intermediately between the strips to the inner part, substantially as set forth.

256,246. COMBINED TOBACCO AND MATCH BOX. SAMUEL E. SCOTT, Sandy Hill, N. Y. Filed Oct. 22, 1881. (No model.)



Claim.—1. As a new article of manufacture, a tobacco-box provided with a match safe or compartment rigidly secured to the under side of the lid or cover thereof, the said match-compartment being provided with a cover having suitable material removably secured thereto for striking the match.

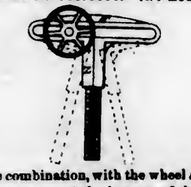
2. The combination, with a box provided with a suitable hinged lid, of a match-compartment rigidly secured to the inside of the said lid, a sliding cover adapted to close the said match-compartment, and suitable material removably secured to the top of the said sliding cover for igniting the matches, substantially as set forth.

3. The combination, with a box provided with a hinged cover or lid, the said box and cover being constructed substantially as described, of a match-compartment rigidly secured to the under concave side of the cover, a sliding cover adapted to close the match-compartment and provided with suitable flanges for holding sand-paper for igniting the matches, substantially as set forth.

4. The combination, with the box A and cover B, of the compartment E, having sides *a*, ends *b* and *b'*, and bottom *c*, and the sliding cover F, provided with the turned edges *d*, depending lug *e*, raised projection *f*, flanges *g*, and removable sand-paper *h*, all of the said parts being constructed substantially as described.

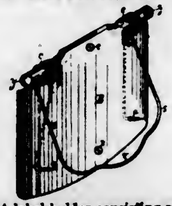
5. In a combined tobacco and match box, the combination, with a tobacco-box provided with a suitable hinged lid, of a match-compartment rigidly secured to the inside of the said lid and provided with a sliding cover adapted to be presented upward when the hinged lid is thrown open, the said sliding cover being provided with suitable means for striking the match.

256,247. PARLOR-DOOR HANGER. SAMUEL SHEEFFLER, Jr. Joliet, Ill. Filed Nov. 28, 1881. (No model.)



Claim.—The combination, with the wheel *s*, having two treads, and a central axle to support the hanger, of the hanger consisting of the slotted upper end, *w'*, and split shank *x* and nut *n*, to support the door B, in the manner and for the purpose set forth.

256,248. CAR-LABEL HOLDER. GEORGE J. SLAYTER, Grand Junction, Mich. Filed Dec. 29, 1881. (No model.)



Claim.—1. A label-holder consisting of a plate provided with arms for supporting a clamp, a clamp coiling around each of said arms, forming springs, and extended vertically therefrom and passed through the plate, terminating in spurs adapted to receive the label on the front face of said plate, where it is held by the clamp-arms, all substantially as described, for the purpose set forth.

2. The combination, substantially as set forth, of the plate with its arms and rear grooves and holes for the spurs, and the clamp having the handle, the bellows, and the extended ends with the spurs, all adapted for the purposes set forth.

256,249. FERTILIZER-DISTRIBUTER AND SEEDER. JACOB W. SPANGLER, York, Pa. Filed Dec. 14, 1880. (Model.)

Claim.—1. The combination of the rotating toothed feed-wheel *a*, provided with an axial gudgeon, *b'*, a bed-plate, *c*, provided with a bearing to receive said gudgeon, and a connecting-bolt, *d*, washers *d' d²* thereon, and a nut, *d³*, substantially as described.

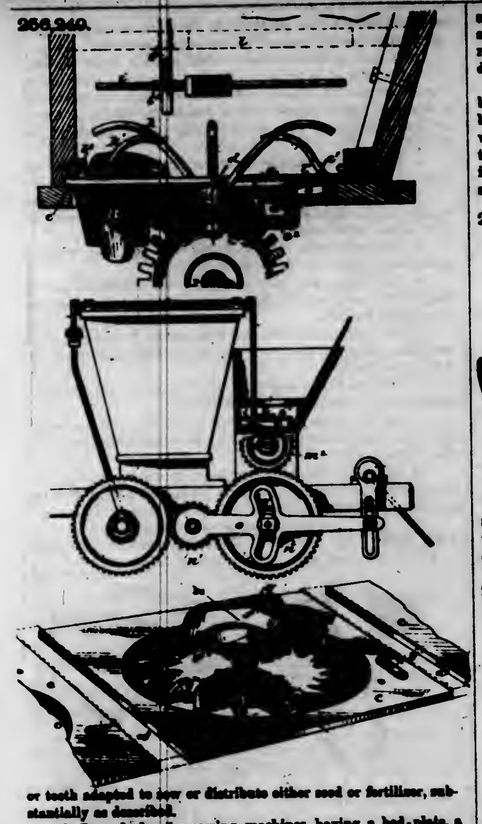
2. The combination, with a bed-plate having a discharge-orifice and a horizontally-rotating toothed feed-wheel to advance the substance to be distributed to said orifice, of the cap *f'*, arranged over said wheel above the orifice, and having the plow or point *f²* carved as shown and edged tangentially to the feed-wheel, substantially as and for the purpose described.

3. In a feeder having a bed-plate and means therein for distributing fertiliser or seed, a cap to cover the discharge-orifice, hung in said opening as upon an axis, and provided with a rearwardly-extended tongue projecting downwardly through an opening in said plate and engaged by a spring, substantially as and for the purpose described.

4. In a sowing-machine feeder, a bed-plate having a cavity or trough to receive a feed-wheel, and provided with a rib or flange, in combination with said feed-wheel, having a groove in its under face to receive said rib or flange to prevent the escape of the material to be sown, substantially as described.

5. A force-feed wheel for sowing-machines, provided with alternating series of closed or covered cups or teeth, and open cups

256,249.



or teeth adapted to sow or distribute either seed or fertilizer, substantially as described.

6. In a feeder for sowing-machines, having a bed-plate, a toothed or cupped feed-wheel, and a cap, *f*, over the discharge-orifice, a covering-plate, *m*, arranged, as shown, over a number of such teeth or cups of the feed-wheel, so as to expose less than all of such teeth or cups at any one time to receive the material to be distributed, whereby clogging and burdening of such teeth and wheel are prevented, substantially as described.

7. In a feeder for sowing-machines, having a cap, *f*, over the discharge-orifice, the combination of a toothed or cupped feed-wheel, a covering-plate, *m*, to cover two or more of its teeth or cups, as shown, and a bed-plate to receive said wheel and plate, and having an open bottom beneath the covering-plate, substantially as described.

8. In a feeder for sowing-machines, having a bed-plate, a toothed or cupped feed-wheel, and a cap, *f'*, over the discharge-orifice, a covering-plate, *m*, arranged over a number of the teeth or cups of the feed-wheel, as shown, so as to expose less than all of such teeth or cups at any one time to receive the material to be distributed, as described, and provided with a flange or lip, *m'*, overhanging the teeth or cups at their inner ends, to make a close joint with the wheel, substantially as and for the purpose described.

9. The within-described feeder, composed of a bed-plate having a discharge-throat, a force-feed wheel having oblique teeth lying in the same horizontal plane therewith in said bed-plate, a yielding thrust-cap overlying the discharge-throat and secured to the bed-plate, and a spur-wheel or clearer the teeth whereof are adapted to project into the teeth of the feed-wheel, substantially as described.

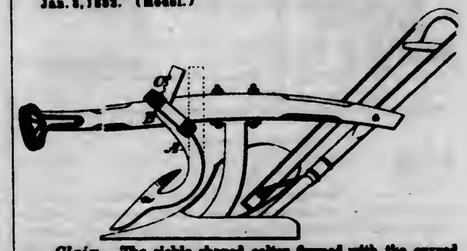
10. In a feeder for sowing-machines, the combination of a rotatable feed-wheel and stirrers carried thereby with stationary, intersecting, or crossing stirrers overhanging that portion of the feed-wheel by which the material is fed, substantially as described.

11. The spur-wheel or clearer provided with teeth or spurs of diamond shape in cross-section, and adapted to mesh with the teeth of the feed-wheel, substantially as and for the purpose described.

12. A feed-wheel having oblique teeth, the whole arranged and adapted to be rotated in a horizontal plane, combined with a spur-wheel the teeth or spurs whereof project between the teeth of said feed-wheel to clear said teeth, the said spur-wheel deriving rotary motion from said feed-wheel by its rotation, substantially as described.

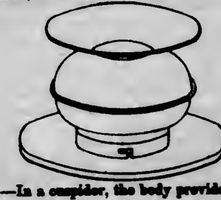
13. A feed-wheel having teeth projecting obliquely from its body in the plane of the body, the whole arranged and adapted to be rotated in a horizontal plane, combined with a clearer or spur-wheel arranged in a plane intersecting at a substantially right angle to the plane of rotation of the feed-wheel, the teeth of the two wheels intermeshing and the clearer deriving motion from the feed-wheel, substantially as and for the purpose described.

256,250. PLOW-COLTER. MORRIS A. SPINK, Grown Point, Ind., assignor of one-half to Jacob A. Weis, same place. Filed Jan. 3, 1882. (Model.)



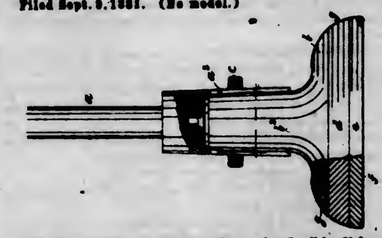
Claim.—The sickle-shaped colter formed with the curved standard A, the cutting-blade *a*, having its upper end curved to the landside, and the notched shank C, substantially as shown and described.

256,251. CUSPIDOR. GEORGE C. STERLING, New York, N. Y. Filed Jan. 28, 1882. (No model.)



Claim.—In a cuspidor, the body provided with a flange, and a base-plate, also provided with a flange adapted to fit into or surround the flange of the body, the one flange having connecting pins or projections and the other angular slots, in combination, substantially as and for the purpose set forth.

256,252. LEATHER-BUFFING MACHINE. JOHN E. STEVENS, Lynn, assignor to Freeman Winslow, Trustee, Salem, Mass. Filed Sept. 9, 1881. (No model.)



Claim.—1. In a buffing-machine, the flexible disk and connected flexible shank, combined with the washers or felt, substantially as described.

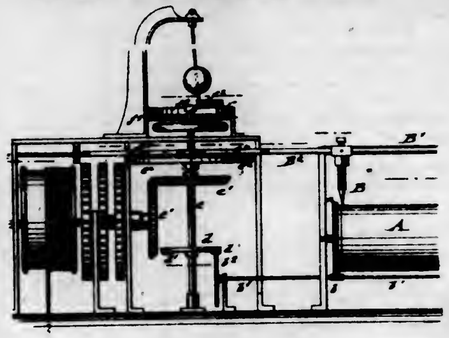
2. The spindle *a*, combined with and carrying the flexible disk, having the connected flexible shank, substantially as described.

3. The spindle provided with a split socket and the ring, combined with the disk *b* and its flexible shank *b'*, inserted in the said socket, substantially as described.

4. The pouch composed of the circular piece of material *f* and the india-rubber annulus stitched thereto, substantially as described.

5. The india-rubber disk and its flexible shank *b'* and the felt washers, combined with the abrasive pouch composed of the abrasive cloth and connected india-rubber annulus *g*, substantially as described.

256,253. CHEMICAL TELEGRAPH. WILHELM C. TAUCHE, New York, N. Y. Filed Aug. 26, 1881. (No model.)



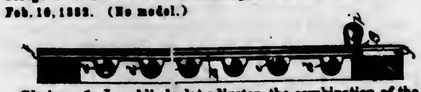
Claim.—1. The combination of a rapid reciprocatory stylus, a rotary cylinder, mechanism for imparting an intermittent motion to the cylinder between the strokes of the stylus, a motor, an intermediate vertical driving-shaft between the motor and cylinder, and a conical pendulum connected to the upper end of said vertical shaft, substantially as described.

2. The combination of a rotary cylinder, a rapid reciprocatory stylus, and means for raising the stylus out of contact with the cylinder at each end of its stroke, substantially as described.

3. The combination of a rotary cylinder, a rapid reciprocatory stylus, mechanism whereby the cylinder is rotated step by step between the strokes of the stylus, and means for raising the stylus out of contact with the cylinder at each end of its stroke, substantially as described.

4. The combination of the rotary cylinder A, gear *a*, shaft *b'*, pinion *b*, gear *b²*, disk *d*, with teeth *d'*, vertical shaft *e*, with balance-wheel and regulator, connecting-rod B², stylus B, and guide therefor, substantially as described.

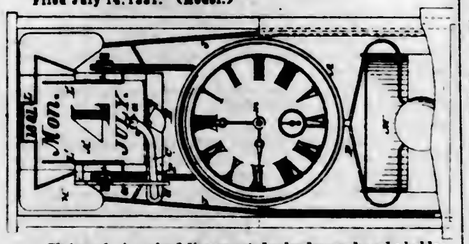
256,254. BLIND-ADJUSTER. ORVIL C. VELIE, Corning, N. Y., assignor of one-half to John H. Hungerford, same place. Filed Feb. 10, 1882. (No model.)



Claim.—1. In a blind-slat adjuster, the combination of the slats having grooved tenons at one end and a vertically-movable bar having a series of lugs or teeth adapted to engage said grooved tenons, whereby the slats may be simultaneously operated by the movement of said bar, substantially in the manner herein shown and described.

2. The combination of the blind-frame having mortises B and a recess, *f*, and slot A, the slats D, having tenons C, provided with groove *d* at one end, and a vertically-movable bar, E, having lugs or teeth *e*, adapted to engage said grooved tenons, and a projecting stud, *g*, provided with a knob, *f*, the several parts constructed and arranged relatively to each other substantially in the manner as and for the purpose herein shown and described.

256,255. CALENDAR-CLOCK. CARL VOTT, Philadelphia, Pa. Filed July 14, 1881. (Model.)



Claim.—1. A pack of disconnected calendar-cards and a holder therefor, in combination with a time-piece or motor, mechanism operated by said piece for removing the cards, and a chute whereby when the cards are removed from a holder they drop therefrom and are directed to and deposited by the chute in a separated receptacle, substantially as and for the purpose set forth.

2. A pack of disconnected calendar-cards, a holder therefor, and a time-piece or motor, in combination with a rotary and sliding finger provided with a downwardly-extending hook, *c*, substantially as described, whereby each card is grasped by the finger, drawn out from holder, and then caused to drop clear of the finger and the holder.

3. The card-holder, in combination with the finger C and deflector F, substantially as and for the purpose set forth.

4. The card-holder and the rotary reciprocating finger, the toggle, and gearing of the motor, combined and operating substantially as and for the purpose set forth.

5. The card-holder, in combination with the rotary wing E, substantially as and for the purpose set forth.

6. The cards, with openings *a*, and the covering-pieces *b*, adapted for operation with the finger C, substantially as and for the purpose set forth.

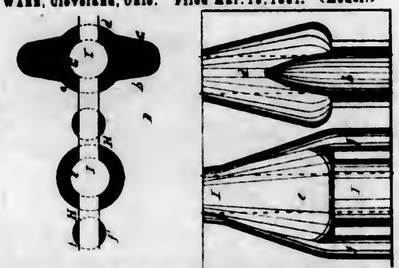
7. The card-holder provided with guides K, and the cards with channels *a*, combined and operating substantially as and for the purpose set forth.

8. The card-holder provided with the guard L and spring L', substantially as and for the purpose set forth.

9. The time-piece or motor, the card-holder, and operating-finger, in combination with the chute M, substantially as and for the purpose set forth.

10. In a calendar-clock provided with a delivery-chute for the purpose set forth, the pendulum having its arm of the form of a frame, as stated.

256,256. DIE FOR MAKING TURN-BUCKLES. WILLIAM WARD, Cleveland, Ohio. Filed Mar. 15, 1881. (Model.)

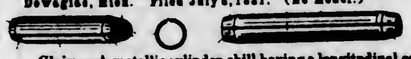


Claim.—1. In mechanism for making turn-buckles, the dies G G, having a cavity for the head of the article, with a recess on two sides for the reception of the bars or links, constructed and arranged to operate conjointly for welding the head and bars together by the action of the dies, substantially as set forth.

2. The pair of dies H H, provided with a cavity for the head of the article, with a concave on each side of the cavity and extending therefrom to receive the bars B B, constructed and arranged, as shown, to co-operate conjointly in welding and forging the head and bars of turn-buckles together, substantially as described.

3. In dies for forging turn-buckles, the pair of dies G G, formed to receive the head and bars of the article, arranged to operate jointly with the dies H H, shaped with a cavity for the head, concaves for the bars at the sides for welding the head and bars together and swaging the same at one continuous operation, substantially as herein set forth.

256,257. CHILL FOR CHILLING METAL. JASPER P. WARNER, Dowagiac, Mich. Filed July 6, 1881. (No model.)

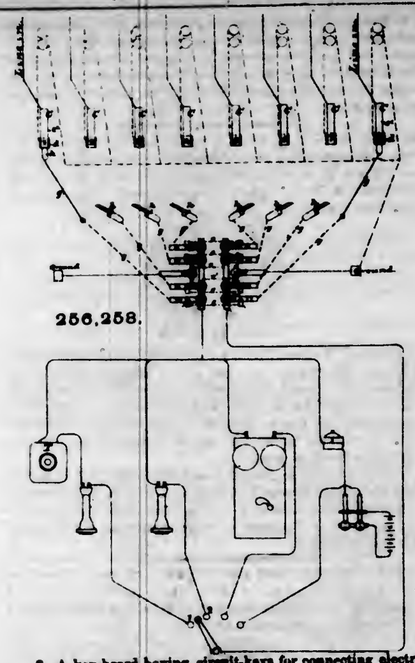


Claim.—A metallic cylinder-chill having a longitudinal opening and tapering end and a green-sand filling for forming and chilling holes in castings, substantially as shown and described, for the purpose set forth.

256,258. TELEPHONE-EXCHANGE SYSTEM. THOMAS A. WATSON, Everett, assignor to the American Bell Telephone Company, Boston, Mass. Filed Apr. 26, 1880. (No model.)

Brief.—A key-board is provided, by which the central-office instruments or generators may be connected either directly in subscribers' circuits or in a ground-branch.

Claim.—1. The combination, with a switch-board, of an independent key-board with spring-keys for manipulating circuits, and devices for temporarily connecting lines centering in said switch-board with the key-board, substantially as described.



256,258.

2. A key-board having circuit-keys for connecting electrical conductors in circuit with each other through their bridges or back contacts, and ground-keys connected with the anvils of said circuit-keys for grounding the same, substantially as described.

3. In an electric key-board, the combination of circuit-keys with their bridges or back contacts electrically connected in pairs, and ground-keys connected with the anvils of the circuit-keys for grounding the same, substantially as described.

4. The combination, with two or more pairs of circuit-keys, of a pair of ground-keys connected with the anvils of each pair of circuit-keys for grounding said anvils separately or together, substantially as described.

5. The combination, with circuit-keys for connecting electrical conductors or circuits with each other through their bridges or back contacts, of a local-instrument circuit connected with the anvils of said circuit-keys, substantially as described.

6. The combination of circuit-keys for connecting electrical conductors or circuits with each other through their bridges or back contacts, of a local-instrument circuit connected with the anvils of said circuit-keys, and ground-keys connected with said anvils for grounding the same, substantially as described.

7. The combination, with line-circuits emanating from a central office, of a series of spring-keys and a telephone circuit or branch connected with the anvils of the circuit-keys, and thus adapted to be brought into connection with the several lines by means of said keys, substantially as described.

8. A pair of circuit-keys having their back contacts connected with each other, combined with means for temporarily connecting said keys with line-circuits, substantially as described.

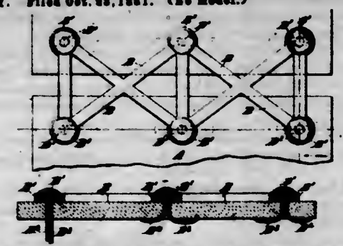
9. A pair of circuit-keys having their back contacts connected with each other, in combination with keys normally grounded having their anvils connected with those of the first-named keys, substantially as described.

10. The combination, with circuit-keys, of a local circuit provided with branches and connected with the anvils of said keys, and a switch for closing the local circuit through the required branch, substantially as described.

11. The combination of ground and circuit keys, local circuit provided with branches and connected with the anvils of said keys, and a switch for connecting in the required branch, substantially as described.

12. The combination, with a series of line-circuits emanating from a central office and a key-board, of a magneto-generator and battery located in separate branches, a switch, and electrical connections, substantially as described, whereby either of said sources of electricity can be connected temporarily with any of said lines through the key-board, as set forth.

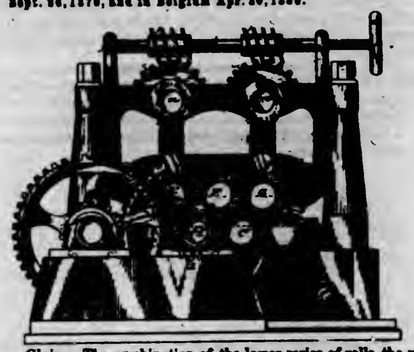
256,259. BELT-FASTENER. ARTHUR W. WEBB, Brooklyn, N. Y. Filed Oct. 28, 1881. (No model.)



Claim.—1. The open-work frame B and split pins D, combined and adapted to serve as herein specified.

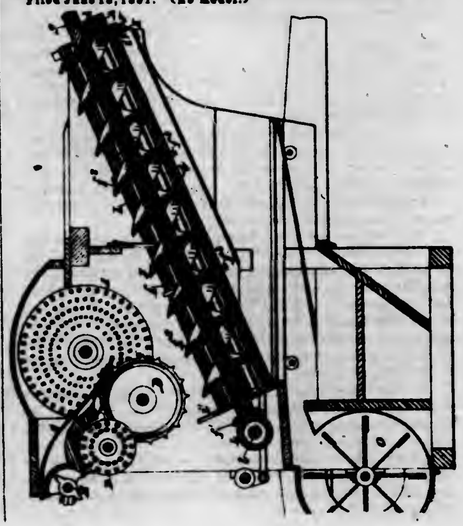
2. The combination of two abutting lengths of belting, open-work metallic frame having re-enforced holes, and removable split pins inserted through the frame and through the belt and secured by clinching, as specified.

256,260. MACHINE FOR BENDING AND STRAIGHTENING METAL. AUGUST WILKE, Brunswick, Germany. Filed Dec. 28, 1881. (No model.) Patented in Austria Dec. 16, 1876, in Germany July 14, 1877, in England July 26, 1877, in France Sept. 26, 1876, and in Belgium Apr. 20, 1880.



Claim.—The combination of the lower series of rolls, the upper series of rolls, the frame carrying such rolls and working in guides, as described, and the counter-shafts N N', having the eccentrics and operated by the shaft and worm, as described.

256,261. CORN-SHELLER. JOHN Q. ADAMS, Marseilles, Ill. Filed June 13, 1881. (No model.)



Claim.—1. In a corn-sheller, a separating mechanism composed of the screw-conveyer and a concave receptacle for the latter of skeleton construction, arranged to receive the delivery from the shelling mechanism, substantially as described.

2. In a corn-sheller, the shelling mechanism, in combination with the skeleton trough I and screw-conveyer F, arranged underneath the shelling mechanism and extending upward and rearward in an inclined position to the rear end of the machine, substantially as described.

3. The shelling mechanism, in combination with the screw-conveyer, skeleton receptacle, and corn-shoe, substantially as described.

4. The straight runners A, in combination with the bevel-runners B, rag-irons C, screw-conveyer F, and skeleton receptacle I, substantially as described.

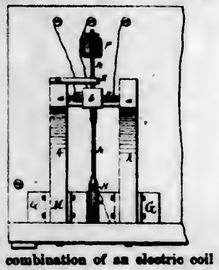
5. The screw-conveyer F, provided with projections f^3, arranged at distant intervals on the rear face of the blade, in combination with the skeleton receptacle, substantially as and for the purpose set forth.

6. The skeleton receptacle, in combination with the screw-conveyer provided with a straight section, H, at its upper end, and the shaft-supporting arm G, substantially as and for the purpose set forth.

7. The shelling mechanism, in combination with the screw-conveyer F, skeleton receptacle I, pinions f^4 and L, and rag-chain M, running from the main shaft to the counter-shaft l, substantially as described.

8. The conveyer-receptacle composed of the straight rods i, provided with hooks i^2 at one end, in combination with the fastening-plates J and K and the supporting-plate i^3, substantially as described.

256,262. ELECTRICAL RELAY. CLEMENT ADER, Paris, France. Filed Sept. 24, 1881. (No model.) Patented in France May 20, 1881, in England July 7, 1881, in Belgium July 8, 1881, in Italy Aug. 1, 1881, in Spain Oct. 7, 1881, and in Austria-Hungary Oct. 20, 1881.



Claim.—1. The combination of an electric coil having no core, delicately mounted and free to move in a direction at right angles, or substantially so, to its axis, with a magnetic pole arranged within attractive range of said coil and to one side of its path of motion, substantially as set forth.

2. The combination of an electric coil having no core, delicately mounted and free to move in a direction at substantially right angles to its axis, with two unlike magnetic poles arranged opposite to each other within attractive range of the coil and one on each side of its path of motion, whereby the coil when attracted to them will move between them, substantially as set forth.

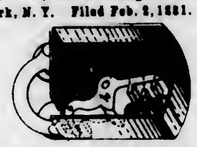
3. The combination of a delicately-mounted electric coil having no core and free to move in a direction substantially at right angles to its axis with two unlike magnetic poles arranged within attractive range of the coil, both on the same side of its path of motion, and the two on opposite sides of its normal or intermediate position, substantially as set forth.

4. The combination of a delicately-mounted electric coil having no core and free to move in a direction at substantially right angles to its axis with four magnetic poles arranged in two pairs, with like poles diagonally opposite to each other and unlike poles directly opposite to each other, the two unlike poles of each pair arranged on opposite sides of the path of movement of the coil, and the two pairs arranged one on each side of the normal or intermediate position of the coil and within attractive range thereof, substantially as set forth.

5. The combination, to form a relay, of a pendulously-hung stem or lever, an electric coil mounted upon one arm thereof, an adjustable counterpoise mounted on the opposite arm thereof, a contact-point borne by said stem or lever, a fixed contact-stop against which said point may impinge upon the movement of the coil from its normal position of rest, and one or more fixed magnetic poles arranged within attractive range of the coil, substantially as set forth.

6. The combination of a series of magnets, A A, arranged side by side, their pole-extensions G G, the blocks a a, mounted on the magnets, the pendulous stems h h, arranged one in each of the spaces between the magnets and hung from the blocks a a, the contact-pins T T, the contact-stops E E, and the coils H H, substantially as set forth.

256,263. LOCK. HARVEY C. ALDRICH, Norwich, Conn., assignor, by direct and mesne assignments, of eleven-twelfths to William H. Babcock, same place, George M. Aldrich and Richard V. D. Wood, both of Orangetown, and Henry C. Townsend, New York, N. Y. Filed Feb. 2, 1881. (Model.)



Claim.—1. The combination, substantially as described, of a tumbler provided with one or more lugs or projections and a key suitably slotted, recessed, perforated, or notched, and adapted to act upon or propel the tumbler in substantially the manner described, whereby the lugs or projections upon the latter, when said tumbler is propelled by the key, may be caused to pass into the notches or perforations in said key.

2. In locks, a single pivoted tumbler provided, first, with two or more projections adapted to pass into notches in its operating-key; second, with an arm or projection, with which said key engages; and, third, with a catch or locking-projection for engaging with a hasp or shackle.

256,264. WATER-GAGE AND ALARM. THOMAS AMPELETT, Kiev, Russia. Filed Nov. 2, 1881. (No model.) Patented in Germany May 27, 1880, in France Aug. 3, 1880, in Belgium Aug. 4, 1880, and in Austria Sept. 27, 1880.



Claim.—In water-gages, the combination, with a float, of a steam-tight case or cylinder fast upon and communicating with the boiler, a spindle, D, with hand E, a dial, J, a rod extending from the float and connected to the spindle D, two collars, E, mounted on this rod, ball-crank levers F, valves v, and whistles w, all for the purpose and substantially as described.

256,265. DEVICE FOR WAKING PERSONS FROM SLEEP. SAMUEL S. APPLEGATE, Camden, N. J. Filed Dec. 14, 1881. (No model.)



Claim.—1. As a means of waking persons from sleep, the combination of the light frame A, of the character described, a cord for suspending the same over the bed, and a device for retaining and for automatically releasing said cord, all substantially as specified.

2. The combination of the suspension-cord and a device for retaining and automatically releasing the same with a frame, A, having pendent cords d, as set forth.

3. The combination of the suspension-cord and a device for retaining and for automatically releasing the same with a frame having pendent cords d, with blocks e, as specified.

4. The combination of the suspension-cord B and the frame A with the retaining-cord n, as set forth.

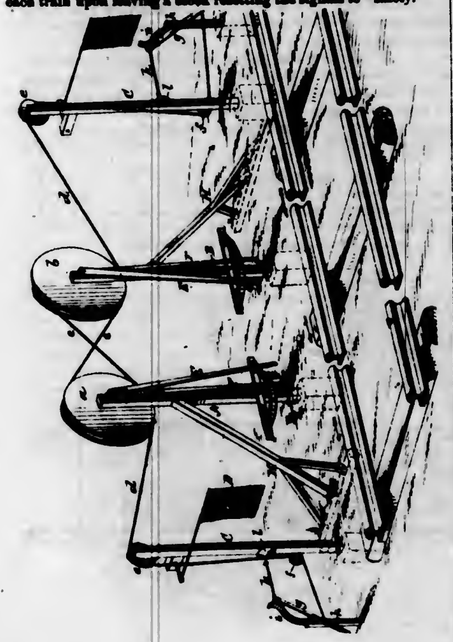
5. The combination of the frame A, the suspension-cord B, and a device for retaining and releasing the latter with a stop whereby the descent of the frame on the release of the cord is limited, as specified.

6. The combination of the bars b with the central bar, a, of the frame, said bar a being made in parts x x', hinged together, the parts x' carrying the bars and the part x having a turn-buckle, m, as set forth.

7. The combination of the frame A and the suspending-cord B, having a notched plate, h, with the winding-spindle i of the alarm mechanism of a clock, said spindle being flattened for the reception of the notched plate, as set forth.

256,266. RAILWAY SIGNALING APPARATUS. WILLIAM H. BACHTEL, Canton, Ohio, assignor of one-fourth to Hiram Serba, same place. Filed Dec. 9, 1881. (No model.)

Brief.—Vertical swinging spring-held levers carry pulleys on their pivots, around which pulleys pass reversely-wound cords, which operate the signal-flags. When set to "danger," alarm-levers are brought into position to be actuated by a following train in case it enters the "block" before a preceding one has left it, each train upon leaving a block resetting the signals to "safety."



Claim.—1. In a railway signaling apparatus, the flags D and cords or wires d, in combination with the levers B F and springs G, substantially as and for the purpose specified.

2. In a railway signaling apparatus, the signal-flags D and cords or wires d e, in combination with pulleys a b and levers E F, constructed and arranged to operate substantially as and for the purpose described.

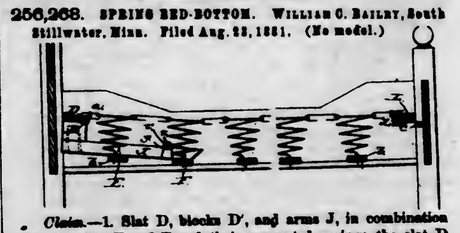
3. In a railway signaling apparatus, the combination, with the signal-flags D, wires or cords d, and levers E F, of the levers g, provided with a suitable alarm-sounding device, substantially as and for the purpose set forth.

256,267. COVERING FOR DEMIJOHNS. FREDERICK A. BAHR and DANIEL BAHR, Brooklyn, N. Y. Filed Mar. 8, 1882. (No model.)



Claim.—The combination, with a demijohn, of a bottom of wood or other equivalent material, radiating inclined channels extending from the edge of the wooden bottom in an upwardly-inclined direction, a series of strips extending through these radiating channels and up on the sides of the demijohn, and braiding-strips interlaced with the upright strips, substantially as and for the purpose shown and described.

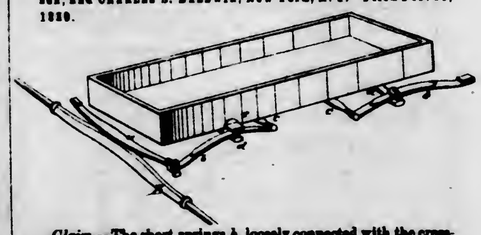
256,268. SPRING BED-BOTTOM. WILLIAM C. BAILEY, South Stillwater, Minn. Filed Aug. 23, 1881. (No model.)



Claim.—1. Slat D, blocks D', and arms J, in combination with the slats E and F and their supported springs, the slat D being on a level with tops of such springs, as set forth.

2. The bed-frame A and its screws c, in combination with the detachable double open hook-links d and the end slat, L, of the spring-frame, all constructed and arranged as set forth.

256,269. VEHICLE-SPRING. JOHN H. BALDWIN, Port Jefferson, and CHARLES S. BALDWIN, New York, N. Y. Filed Feb. 18, 1880.



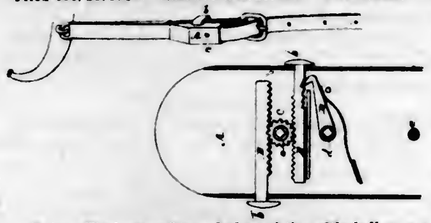
Claim.—The short springs b, loosely connected with the cross-springs and rigidly attached to the body-bars c d, as and for the purpose specified.

256,270. FLOAT-BALL FOR STEAM-TRAPS, &c. PETER BARKER, Ansonia, Conn. Filed Feb. 9, 1882. (No model.)



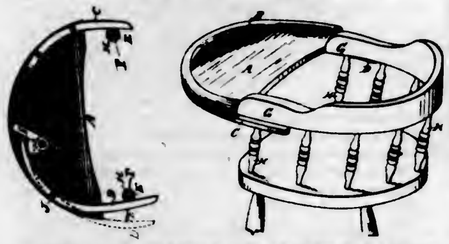
Claim.—A float-ball composed of an internal hollow foundation and an external seamless metallic shell or coating, substantially as set forth.

256,271. TRACE-LOCK. JAMES A. BASSETT, Windsor, Cal. Filed Oct. 28, 1880. Renewed Dec. 29, 1881. (No model.)



Claim.—The improved trace-lock consisting of the hollow case A, with its ratcheted bars B B, clasps *b b*, ratchet C, and spring-pawl D, with their spindles *c d*, said case being provided with the screw *e*, substantially as and for the purpose herein set forth.

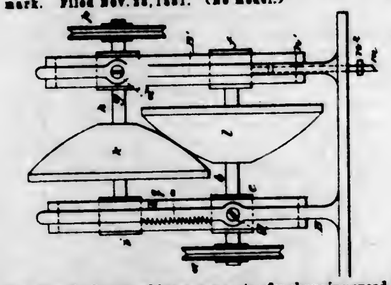
256,272. TRAY FOR CHILDREN'S CHAIRS. REUBEN L. BUNT, Gardner, Mass. Filed Mar. 14, 1881. (No model.)



Claim.—1. In combination with a chair having seat S, arms G, and spindles H, a removable tray or shelf having two horizontally-projecting bars, one fixed and one pivoted to said tray on a vertical axis, and both adapted to engage with the chair by means of pins and sockets, as described, and to be held in engagement by a locking device, substantially as and for the purpose set forth.

2. The combination, with a child's chair, of the tray A, bars C D, pins E, arms G, spindles H, having sockets F, and locking-piece I, substantially as set forth.

256,273. MACHINE FOR CHANGING SPEED. JOHAN JACOB BENOMARD and CARL EMIL HÜTTENMEIER, Copenhagen, Denmark. Filed Nov. 25, 1881. (No model.)

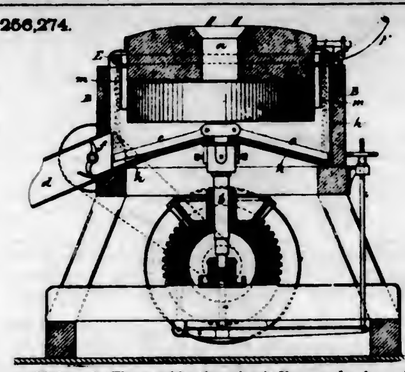


Claim.—1. In a machine or apparatus for changing speed, the combination of two cone-shaped disks having swelled or curvilinear frustums, mounted upon axles provided respectively with one pivoted and one sliding box, substantially in the manner and for the purpose herein shown and set forth.

2. The machine or apparatus for changing speed herein shown and described, composed of the base A, having slotted standards B B', pivoted journal-boxes *e h*, sliding journal-boxes *f i*, rod *m*, having stop-buttons *n'* and *n²*, spring *o*, and axles *b g*, provided respectively with the cone-disks *l k* and pulleys *a p*, the whole constructed and combined to operate substantially as and for the purpose herein shown and specified.

256,274. DEVICE FOR MIXING PULVERISED SUBSTANCES WITH LIQUIDS. CHARLES F. BISSER, Camden, N. J. Filed Dec. 5, 1881. (No model.)

256,274.



Claim.—1. The combination of grinding mechanism with a pipe or pipes, whereby liquid may be brought into intimate contact and mixed with the material after the latter is ground, substantially as set forth.

2. The combination of the millstones and the casing B with the annular pipe E, having perforations through which jets of liquid are discharged downward between the stones and casing, substantially as specified.

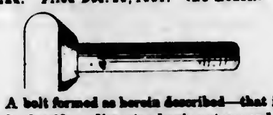
3. The combination of the millstones and their casing with the liquid-supplying pipe and the scraping and mixing arms *c*, as set forth.

4. The combination of the millstones, the liquid-supplying pipe, and the casing having a lining, A, as set forth.

5. The combination of the millstones, the casing, the liquid-supplying pipe E, and the hood *i*, as set forth.

6. The combination of the millstones, the casing, and the pipe E with the guard *m*, as specified.

256,275. BOLT FOR CHILLED PLOWS. THELUS M. BISSELL, South Bend, Ind. Filed Dec. 20, 1881. (No model.)

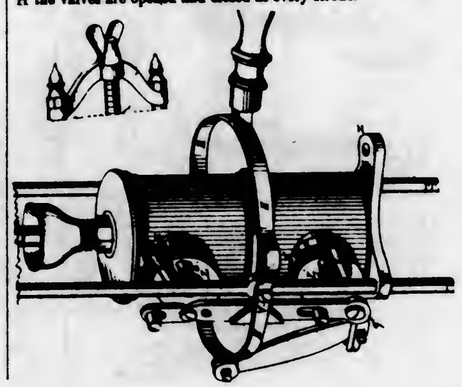


Claim.—1. A bolt formed as herein described—that is to say, with a round shaft of uniform diameter, having at one end a screw-thread and at the other a shouldered oblong conical head, all substantially as set forth.

2. The combination, with a chilled mold-board provided with oval apertures, of a bolt constructed with a shaft of uniform diameter, having a screw-thread at one end and a shouldered oblong conical head at the other, all as herein described and shown.

256,276. AIR-PUMP. NAPOLEON B. BLACKMER, Portage, Wis. Filed July 15, 1881. (Model.)

Brief.—By moving the handle H up and down air is alternately admitted and expelled from each end of the cylinder, air being admitted behind the piston through valves *i* as it is receding and expelled through exhausts *e*. By means of a lug, P, on lever H the valves are opened and closed at every stroke.

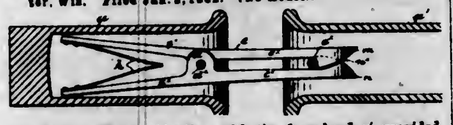


Claim.—1. The combination, with the piston and its rod, of the cross-head, guide-rods, lever, and link, substantially as and for the purposes herein specified.

2. The combination, with the flexible packing-ring, of the piston, rod, plate, sleeve, screw, cross-head, and nut, as set forth, substantially as and for the purposes specified.

3. In an air-pump, two sets of cut-off disks, each set being provided with holes adapted to register, as described, in combination with an operating-lever and a connecting-rod, whereby the sets are alternately worked, as set forth.

256,277. CAR-COUPLING. FERDINAND J. BLANKE, Whitewater, Wis. Filed Jan. 5, 1882. (No model.)



Claim.—The combination, with the draw-head *a'*, provided with the coupling-pin *d'*, of the draw-head *a*, arms *c' c'*, centrally pivoted together by the coupling-pin *c*, and provided with the half arrow-heads *m m*, the former having a projection, *m'*, and the latter a recess, *n'*, and the springs A, secured to the inner faces of the rear ends of the arms *c'*, and having their front ends bearing against each other, substantially as described, and for the purpose set forth.

256,278. MACHINE FOR SEWING BUTTONS TO FABRICS. ALBERT BERCHARDT, Weehawken, N. J. Filed Dec. 3, 1881. (Model.)

Brief.—A clamp adapted to hold a button by its edge and to be carried by the bed-plate or other laterally-moving part of a sewing-machine presses the button directly upon the fabric to which it is to be sewed, thus holding it in alignment with the needle.

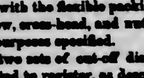


Claim.—1. The button-holder B, provided with means for holding a button by its edge, so that it may be lowered upon the fabric, in combination with means, substantially as described, for pressing the button directly upon the surface of the fabric to which it is to be sewed, as set forth.

2. The button-holder B, provided upon its under surface with a fixed bearing for a portion of the edge of the button, and with a movable jaw bearing with elastic pressure upon the edge of the button and serving to hold the button in place, in combination with means for pressing the button directly upon the surface of the fabric to which it is to be sewed, substantially as described.

3. The slotted plate A, in combination with the hinged plate C and the button-holder B, adapted to carry a button, substantially as and for the purpose set forth.

256,279. CUTTER-BAR FOR HARVESTERS. NIC. BOHNS, Jr., Hanbstadt, Ind. Filed Sept. 1, 1881. (No model.)



Claim.—As an improvement in cutter-bars for harvesters, the combination of the grooved or recessed bar A, having studs G G on both sides of the central longitudinal recess, B, the sliding bar C, having step D, threaded projection E, and studs H, the nut F, and the removable knives or cutters I, having notches K K L, and recesses J, formed in one side between the notches K K, as herein described, for the purpose shown and specified.

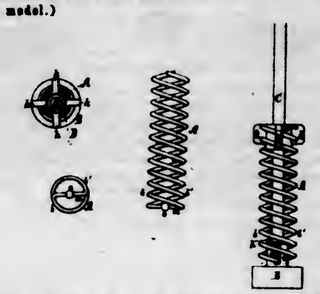
256,280. COUPLING. FELIX BROWN, New York, N. Y. Filed Dec. 21, 1881. (No model.)



Claim.—1. The combination, in a coupling, of a recessed body with the clamps B, located within the same, and the devices for tightening up the clamps, consisting each of a wedge having at one end a screw-threaded bolt adapted to receive the tightening-nut, substantially as described.

2. The combination, in a coupling, of the recessed body A with the clamps B, each having a portion of one of its sides resting against a shoulder within the said body, and the devices for tightening up the clamps, each consisting of a wedge applied against one side of the clamps and having at one end a screw-threaded bolt, whereon the tightening-nut is fitted, substantially as described.

256,281. SPRING-CONNECTION FOR INDICATOR-PISTONS. GILMAN W. BROWN, West Newbury, assignor to Crosby Steam Gage and Valve Company, Boston, Mass. Filed Oct. 8, 1881. (No model.)



Claim.—1. The wire spring as composed of the median straight portion, *a*, and the two spirals *b b'*, extended therefrom and arranged with each other substantially as represented.

2. The nut D, as having in each of its wings holes, as described, and the spring-coils extended into and through such holes, and where within such surrounded entirely by the metal or material of the wing, all being substantially as represented.

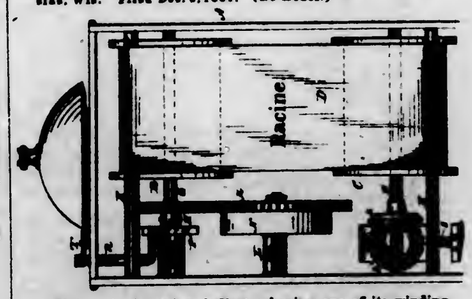
3. The piston-head B, provided with the tubular and slotted shank *c*, in combination with the piston-rod screwed into the said shank, and with the spring A, as composed of the median portion, *a*, and the two spirals *b b'*, arranged therewith and with each other substantially as set forth, the said median portion, *a*, being arranged within and across the said shank, and all being substantially as described.

4. The spring constructed of the median portion and two spirals and provided with the ball, all being substantially as represented.

5. The combination of the spring made and provided with the ball, substantially as described, with the piston head and rod connected and socketed to receive the ball, essentially as set forth.

6. The piston-head provided with the adjustable stop or socket-ed screw *d*, in combination with the piston-rod C, socketed at its lower end, as described, and with the spring A, provided with the ball *c*, and composed of the median part, *a*, and the two spirals *b b'*, arranged as set forth.

256,282. STATION-INDICATOR. JONATHAN S. BROWN, Racine, Wis. Filed Dec. 8, 1881. (No model.)



Claim.—1. A station-indicator having one of its winding-drums, C, secured to a shaft, *g*, provided with a bevel-wheel, *h*, meshing with a bevel-wheel, *h'*, on a shaft, *l*, having a cam, *m*, with peripheral projections *p* and concaves *n*, in combination with a drum, E, geared to a toothed wheel, K, carrying a spring, I, whereby the latter drum is turned in a direction to wind the strip D from the lower to the upper drum, substantially as specified.

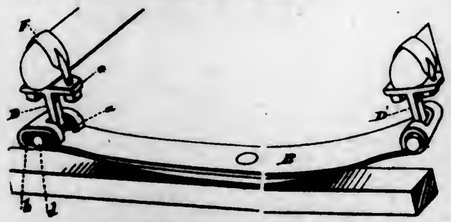
2. In a station-indicator, the combination, with the drum B on the shaft G, having the pinion H and trip-wheel I', the barrel-wheel K, having spring J, and the drum C on shaft g, having bevel-wheel h, shaft l, having cam m, with projections p, concaves n, and bevel-wheel K', and the spring-stop e, of the rollers E E and strip D, and the pest T, arm a, angle-lever b, bell-hammer c, spring e, and bell V, substantially as specified.

256,283. ANALGAMATOR. WILLIAM TRAVIS BROWNE, Stockton, Cal. Filed Aug. 30, 1881. (No model.)



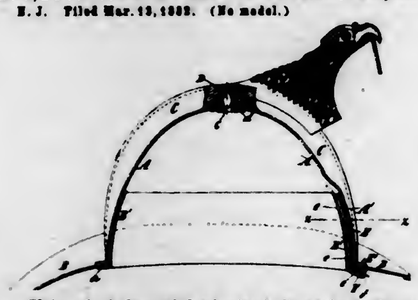
Claim.—The inner pan or distributor, C, with its central feed-pipe, D, and having the scraper E, in combination with the outer mercury-containing pan, A, within which it is pivoted, so as to be rotated with its bottom immersed in the mercury, said outer pan having its bottom formed with a series of depressions, substantially as and for the purpose herein described.

256,284. VEHICLE-SPRING. GEORGE O. BUCKLAND, Tulare, Cal. Filed Jan. 23, 1882. (No model.)



Claim.—In a vehicle, the spring B, having its end slotted and formed into an elongated journal-socket, b, in combination with the shackle D, having a cross-bar, d, working in the socket b, and having a slight play therein, said shackle having a cross-head, e, adapting it to be secured to the body or frame of the vehicle, substantially as and for the purpose herein described.

256,285. FIREMAN'S HAT. IRVING GAINES, Jersey City, N. J. Filed Mar. 13, 1882. (No model.)



Claim.—1. A fireman's hat having in its comb a cavity provided with one or more lateral openings leading through the side or face of the comb, and an opening or duct leading from said cavity to the interior of the skull, substantially as and for the purpose specified.

2. The combination, with the skull and comb of a fireman's hat, of a metallic air conductor or casing inclosed in the comb, and provided with lateral openings leading through the sides or face of the comb, and also provided with an opening or air-duct leading to the interior of the skull, substantially as and for the purpose specified.

3. The combination, with the comb C, provided with openings in its back and front, of the conductor or casing D, having the lateral openings b on both sides, and the tube C, extending into the skull, substantially as and for the purpose specified.

4. A fireman's hat having in the front, between the skull and lining, a passage or passages extending downward and thence forward under the brim, substantially as and for the purpose specified.

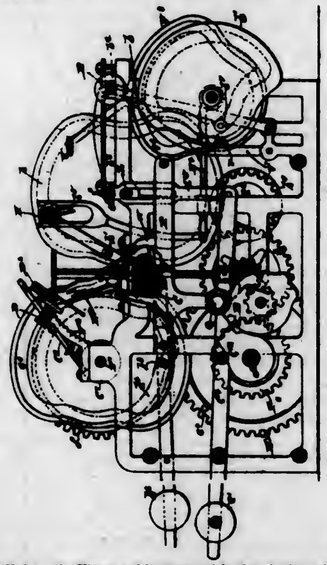
5. The combination, with the skull A, provided in its front with the recess or depression A', of the corrugated plate E and its flange E' and the cap-plate F, all substantially as and for the purpose specified.

256,286. PROCESS OF PRODUCING METALLIC PANELS WITH ARTISTIC DESIGNS. HENRY R. GASSER, New York, N. Y., assignor, by mesne assignments, to himself and Christian Hanfeld, Jr., same place. Filed May 24, 1880. (Specimens.)

Claim.—The method herein described of producing metallic panels with artistic designs, and which consists of the following successive steps: first obtaining the desired design on a metal sheet by means of photography and photo-engraving, then coating the engraved metal sheet with a colored varnish, japan, or other suitable enamel, then drying the enamel by suitable means, then removing the surplus of the enamel when thoroughly dry by grinding or other means until the relief-surface of the metal is laid bare and substantially made even with the surface of the enamel, and finally electroplating the metal sheet to form the background of the design, all as described, and for the purpose set forth.

256,287. MACHINE FOR MAKING FISH-NETS. JEAN CHARBINE, Lyons, France, assignor, by direct and mesne assignments, to Pierre J. Boris, Boston, Frank O. Kincaid, Somerville, and Osceola A. Whitmore, Malden, Mass. Filed Sept. 26, 1881. (No model.) Patented in France Oct. 26, 1880.

Brief.—The devices comprised in this machine are adapted to form nets or seins of the description known as the "diagonal mesh," automatically tying the threads or cords into knots known as the "fisherman's" or "double-bowline" knot, by which a net similar to that made by hand is produced. Mechanism is provided for forming the warp-threads into loops, and by a novel contrivance, termed a "brochour," having a peculiar operation, the weft-threads are carried, first, around the loops of the warp-threads, forming the first part of the knot, and next back through the spread loop of the warp-threads, completing the knot and drawing it tight over mold-bars, the size of which determines the size of the mesh.



Claim.—1. The combination, with the devices for forming the warp-threads into loops, of the brochours carrying the weft-threads, mechanism for causing said brochours first to form a half-hitch of the weft-threads around said loops and then for passing the weft-threads through the loops to complete the knot, devices for tightening the knots, and devices for shifting the thread-holder so as to move the warp-threads laterally, in order to form the diagonal mesh, substantially as described.

2. The brochour-frame, the brochour carrying a reel, and mechanism for causing said brochour to turn upon two centers upon the brochour-frame to engage the weft-thread with the warp-thread in the manner described, in combination with devices for manipulating and looping the warp-threads, whereby the brochour in turning upon one center will pass the weft-thread around a loop in the warp-thread, so as to form a half-hitch thereround, and in turning around the remaining center will pass the weft-thread through the loop formed in the warp-thread to form the second hitch and complete the knot, substantially as described.

3. The combination of the oscillatory brochour-frame carrying a series of pinions having heads upon their spindles and a rack-bar for actuating the said pinions with the brochour carrying a reel and adapted to engage and turn with the heads of the pinion-spindles, substantially in the manner and for the purpose specified.

4. The combination of the oscillatory brochour-frame provided with the fingers having hooks, the brochours supported by said frame and carrying reels for the weft-threads, the swinging thread-holder for the warp-threads, adjusted to be brought into position above the fingers of the brochour-frame, the thread-holder adapted to bring the warp-thread down to form a loop, and mechanism for imparting the movements specified to the thread-holder and thread-leader, substantially as and for the purpose described.

5. The oscillatory brochour-frame provided with a series of fingers having hooks, the rotary pinions d^2, having heads D^2 upon their spindles, and the brochours D, each carrying a reel and formed with two grooves capable of receiving the heads of the pinion-spindles, combined with mechanism for imparting the necessary oscillatory movement to the pinions d^2, substantially as described.

6. The combination of the mold-bars M M' with the swinging thread-leader, the thread-holder H, constructed and adjusted to engage the warp-thread and to coact with the thread-leader in forming the warp-thread into a loop above the mold-bars, the oscillatory brochour-frame d, the brochour D, carrying a reel for the weft-thread and movable on two centers, and a part revolution upon a second center, in the manner described, so as to carry the warp-thread through said loop, and mechanism for imparting the necessary movements to said devices, substantially as described.

7. The combination of the oscillatory brochour-frame, the brochours D, carrying reels for the weft-threads, the pinions having heads upon their axles for turning the brochours, the slidable rack-bar located to engage said pinions, and the star-wheels adjusted to act at different periods upon the rack-bar in order to reciprocate the same, and mechanism for imparting the necessary movements to the slidable rack-bars and star-wheels, substantially as described.

8. The combination, with the oscillatory brochour-frame d, of the brochours D, carrying reels for the warp-threads, the pinions d^2, carrying the brochours upon their spindles, the slidable rack-bar engaging said pinions, the segmental racks engaging said wheels upon the brochour-frame, the star-wheels, mechanism for intermittently actuating the star-wheels, and mechanism for operating the brochour-frame, whereby the segmental racks oscillate the brochour-frame, substantially as described.

9. The combination, with the swinging bar H', carrying the thread-holder H, of the thread-holder H, provided with devices for engaging the warp-threads, and mechanism timed for sliding the thread-holder upon its supporting-bar, substantially as described, and for the purpose set forth.

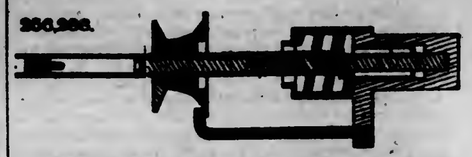
10. The combination, with the supporting-bar H', carrying the thread-holder H, of the vertically-movable bar I and devices timed to raise said vertically-movable bar in position to tilt the thread-holder so as to spread the loop, substantially as described.

256,288. SPINDLE AND DEVICE FOR LUBRICATING THE SAME. CHARLES E. CHAPMAN, Shirley, Mass., assignor to the Sawyer Spindle Company, of Massachusetts. Filed Mar. 13, 1881. (No model.)

Brief.—The invention is an improvement on Letters Patent No. 233,474, and is designed to lubricate the spindle by direct pressure on the oil. The flange on the lower end of the spindle, acting as a piston within the oil-reservoir, forces the lubricant up through the groove in the standard to the bearing-surfaces of the spindle when the latter returns to its normal position after being raised in the act of doffing the bobbin. Means are also provided for preventing the oil in the reservoir from working upward on the walls thereof and escaping over the top.



256,289.



Claim.—1. The combination, substantially as set forth, of a grooved standard, an oil-reservoir surrounding the base of the standard, and composed of a contracted annular portion and enlarged portions above and below the same, a bearing on said standard for the spindle, a spindle supported on said bearing movable longitudinally with relation to said standard, and provided at its lower end with a flange fitting closely in the contracted portion of the oil-reservoir, an air-space in the spindle above the standard, and a stop to limit the upward movement of the spindle on the standard.

2. The combination, with the rotary spindle, of the oil-reservoir surrounding the base of said spindle, and provided with a spiral inwardly-projecting flange separated from the spindle, and adapted to prevent the oil from working upwardly on the walls of the reservoir, as set forth.

256,289. BEDSTEAD-LOCK. CHARLES H. CLARK, Rochester, N. Y. Filed Mar. 13, 1882. (No model.)



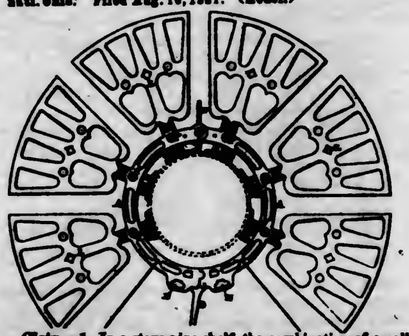
Claim.—1. In combination with the side rail and post of a bedstead, the plates F and G, each being provided with a longitudinal inclined locking-lip and channel parallel with said locking-lip, substantially as shown, the locking-lip of either plate being adapted to rest within the channel of the other when the two said plates are locked together, as described.

2. In combination with the side rail and post of a bedstead, the plates F and G, each being provided with a longitudinal inclined locking-lip and channel parallel with said locking-lip, substantially as shown, the locking-lip of either plate being adapted to rest within the channel of the other when the two said plates are locked together, means being provided to prevent said plates from sliding by each other and binding by friction on account of the tapering or wedge-shaped parts of the plates.

3. In combination with a post and side rail of a bedstead, the locking-plates F and G, substantially as shown and described, secured to the respective surfaces of the post and side rail—that is to say, secured to said post and side rail without being let into the timber of the same, substantially as set forth and shown.

4. In combination with the side rail and post of a bedstead, the plates F and G, each being provided with a locking-lip and channel, substantially as shown, the plate F being provided with the shoulder or guide-line g, substantially as and for the purpose set forth.

256,290. STOVE-PIPE SHELF. HERBERT CLAYTON, Cincinnati, Ohio. Filed Aug. 10, 1881. (Model.)



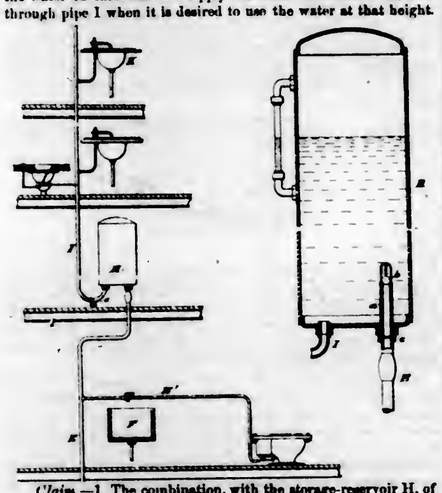
Claim.—1. In a stove-pipe shelf, the combination of a collar formed in two parts and fastened together substantially as shown, and provided with openings B for the attachment of the leaves directly to the collar, with adjustable clamps which hold the collar in position upon the stove-pipe and form supports for other leaves, substantially as described.

2. The combination of the two sections of the collar A, fastened together at one of their ends by means of the screw or bolt B, with a hook which has an eye formed upon its upper end, and which is secured to the collar by means of the bolt B, substantially as set forth.

3. The combination of the two sections A, the clamps G, having the grooves *b* made in their under sides, the nuts *a*, and the clamping-bolts F, the sections A being provided with the flanges I, to catch in the notches in the tops of the clamps, substantially as set forth

256,291. AUTOMATIC STORAGE PRESSURE RESERVOIR. RICHARD R. COGGIN, Brooklyn, N. Y., assignor of one-half to John A. Scallay, same place. Filed Dec. 24, 1881. (No model.)

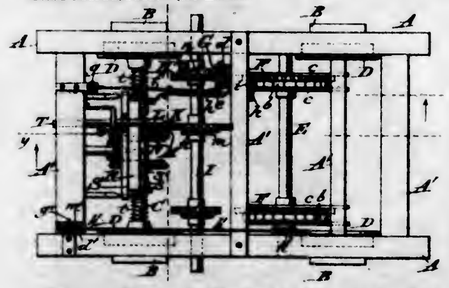
Brief.—Water rising in pipe E raises check *c* and compresses the air in tank H, so that there will be sufficient pressure above the water in said tank to supply the water to basins J K, &c., through pipe I when it is desired to use the water at that height.



Claim.—1. The combination, with the storage-reservoir H, of the main service-pipe E, arranged to admit water at its bottom, the check-valve *b*, arranged to control the inlet, as shown, and the auxiliary service-pipe I, arranged to supply water from the reservoir to cocks beyond, all arranged substantially as herein set forth.

2. The combination, with the reservoir, of the spud *a*, secured in its bottom and arranged to project upward into the same, the caged check-valve *b*, arranged to close the inner end of the spud, the tip *c*, and the auxiliary service-pipe I, all constructed and arranged substantially as and for the purposes set forth.

256,292. CAR-PROPELLER. JACOB H. COLE, Danville, Pa. Filed Feb. 23, 1882. (No model.)



Claim.—1. In a car-propeller, the combination, with the shaft E, having spur-wheels F, provided with ratchets *b* and springs *c*, and shaft I, having loose spur-wheels H and K, provided with spring-pawls *m*, and fixed ratchets *n*, of one or more spur-wheels, G, journaled upon an eccentric shaft or shafts supported in suitable brackets, a pawl, *i*, adapted to engage with the ratchet *b*, and a lever, *g*, and rods *f* and *h*, connecting with said pawl and with a crank, *d'*, on the eccentric-shaft *c*, substantially as shown and described.

2. In a car-propeller, the combination of the frame A and A', the shaft E, having spur-wheels F, provided with ratchets *b* and springs *c c*, the spur-gears G, journaled upon eccentric-shafts *c*, having crank-arms *d'*, the shaft I, having loose spur-gears H K, provided with spring-pawls *m m*, and fixed ratchet-wheels *n n*, keyed to said shaft, the axle C, having spring-clutches *e e*, gears L, M, N, and N', the gears L and N' being provided with clutch-jaws *e' e'*, the intermediate gear, P, connecting the gears N N', the sliding bar R, having arms Q Q, lever T, having pins *d'*, adapted to retract the pawl U from its engagement with the ratchet M, and the lever *g* and rods *f h*, for retracting the pawl *i* and raising the cog G out of gear, all substantially as shown and described.

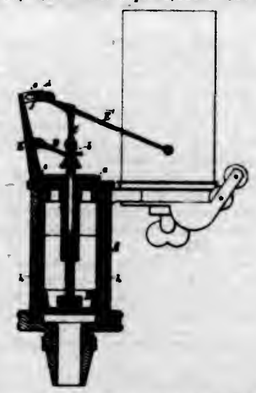
3. In a car-propeller, the combination, with the wheel F, having springs *c c* and pulley *h'*, of the standard B', having dial *n'*, the pulley *d'*, journaled in said standard, and having a shaft provided with an index, *g'*, and the band *h'*, connecting the pulleys *d'* and *h'*, whereby the expanded force of the springs is indicated upon the dial, substantially as described.

256,293. COUPLING-PIN FOR CONNECTING-RODS, &c. WILLIAM H. OSBURN, Dunkirk, N. Y., assignor of one-half to Henry K. Dow, same place. Filed Mar. 2, 1882. (No model.)



Claim.—The combination, with the parts A and B, of a slotted sleeve, E, and a tapering bolt, I, whereby the parts A and B are connected, substantially as set forth.

256,294. STEAM-ENGINE RECORDER. GEORGE H. CROSBY, Somerville, Mass. Filed Sept. 12, 1881. (No model.)



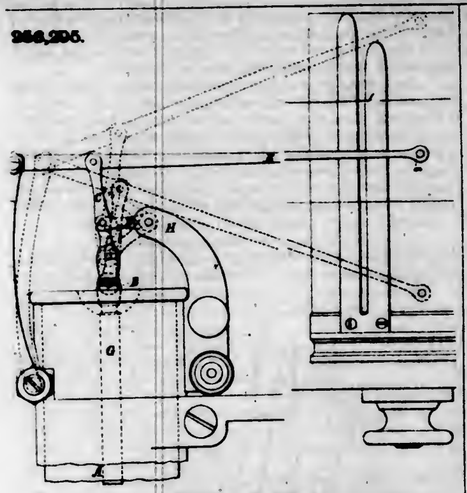
Claim.—1. The indicator-cylinder provided with the annular chamber *h*, arranged therein, and to open at its lower part into the bore of the cylinder, all being substantially and for the purpose as specified.

2. The post E and its projection *f*, slotted as described, arranged and combined as set forth, with the marker-lever E', connected with the piston by the lever C, having its shorter arm jointed to the said post by a link, D, all being substantially as specified and represented.

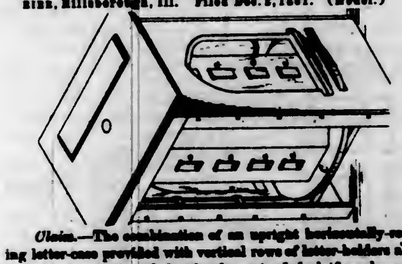
256,295. STEAM-ENGINE RECORDER. GEORGE H. CROSBY, Somerville, Mass. Filed Jan. 6, 1882. (No model.)

Claim.—In combination with the post H and the marker-lever E and its piston-rod and cylinder-sleeve, connecting-links C and F, arranged as described, the link D as jointed to the post H and to the link C, and with such post arranged under the lever E, all being substantially and to operate as set forth.

256,295.



256,296. REVOLVING LETTER-CASE. AUGUSTUS S. CURRIER, Hillsborough, Ill. Filed Dec. 8, 1881. (Model.)



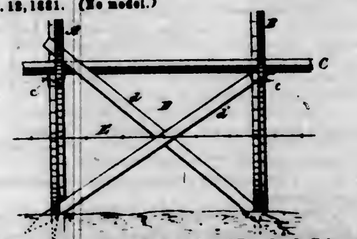
Claim.—The combination of an upright horizontally-revolving letter-case provided with vertical rows of letter-holders alphabetically arranged, and the circular extended platform-base, with a glass-faced inclosing-case open only inside of the office and provided with an aperture through which protrudes a portion of said platform, substantially as described.

256,297. INSTRUMENT FOR ATTACHING BUTTONS. JAMES W. DAVIS, Detroit, Mich., assignor to the Belle Patent Button Fastener Company, same place. Filed Jan. 26, 1882. (No model.)



Claim.—In an instrument for attaching buttons, the combination, with the jaws A B, the clinching-plate E, and the spring C, of the plate D, provided with lips *b b*, bent at an angle to the jaw to form a firm and flat base for supporting the button, substantially as set forth.

256,298. FENCE. HORATIO P. DAVIES, Fairfield, Tex. Filed Dec. 13, 1881. (No model.)



Claim.—1. In a fence, the bars A and B and pale C, in combination with the bars *d d'*, substantially as shown and described.

2. In a fence, the bars D, having their lower ends driven into the ground at the base of the bars A and B, the upper end of the bar *d* being placed in the crotch of the bars A in front of the pale C, and the bar *d'* crossing in front of the bar *d* and sprung behind both the bars B, substantially as and for the purposes set forth.

256,299. PROCESS OF REFRIGERATING AND PRESERVING MEAT AND OTHER ARTICLES. EDWARD H. DICKERSON, Jr., New York, N. Y. Filed Mar. 2, 1882. (No specimens.)

Brief.—The gas to be used may be prepared as described in Letters Patents No. 241,977, dated May 17, 1881, and No. 243,546, dated June 7, 1881, granted to C. F., A. W., and A. L. Lawton, and may be cooled as described in Letters Patent No. 256,261, dated April 6, 1882, granted to J. J. Coleman.

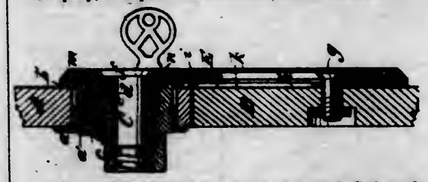
Claim.—1. The process of preserving putrescible bodies which consists in subjecting them to carbonic-oxide or similar decay-preventing gas artificially reduced to a low temperature, substantially as described.

2. The process of preserving putrescible bodies which consists in subjecting them to mechanically-produced currents of carbonic-oxide or similar decay-preventing gas, substantially as described.

3. The process of preserving putrescible bodies which consists in subjecting them to mechanically-produced currents of carbonic-oxide or similar decay-preventing gas artificially reduced to a low temperature, substantially as described.

4. The process of preserving putrescible bodies which consists in subjecting them to carbonic-oxide or similar decay-preventing gas at a greater pressure than the external barometric pressure, said gas being artificially reduced to a low temperature, substantially as described.

256,300. TRUNK-LOCK. THOMAS DONAHUE and GEORGE H. WATHERBURY, Terryville, Conn., assignors to the Eagle Lock Company, same place. Filed Jan. 6, 1882. (Model.)



Claim.—1. The combination of locking-bolt C, formed with a screw and an outer flange, *f*, cylindrical case *e*, provided with an internal screw and locking-pins and sliding loop E, having a slot, *l*, and recessed face, substantially as shown and described, for operation as specified.

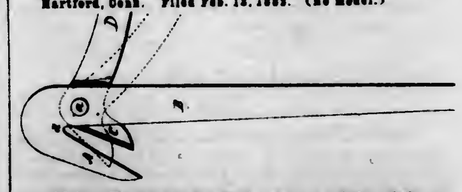
2. In trunk-locks, the cylindrical lock-case *b*, provided with flange *b'*, screw-collar *a*, and key *a'*, combined for connection to the trunk-cover, substantially as shown and described.

3. In a trunk-lock, the combination, with the locking-bolt C and the sliding loop E, provided with the slot *l* in its upper end, of the ring *a*, provided with the filling-piece *m*, and fitted loosely upon the bolt, substantially as herein shown and described, whereby it is adapted to accommodate itself to the loop and to fill out said loop above the bolt, as set forth.

4. In a trunk-lock, the combination, with the locking-bolt C, provided with the recesses *c c'*, cut away at one side, of the spring-pressed stop-pin *d*, engaging with the notches of the said bolt, substantially as and for the purpose set forth.

5. In a trunk-lock, the combination of loop E, having slot *k* and pin *i*, with bolt *g* and slotted plate *h*, substantially as shown and described.

256,301. BALE-BAND CUTTER. THOMAS C. DOOLITTLE, New Hartford, Conn. Filed Feb. 13, 1882. (No model.)

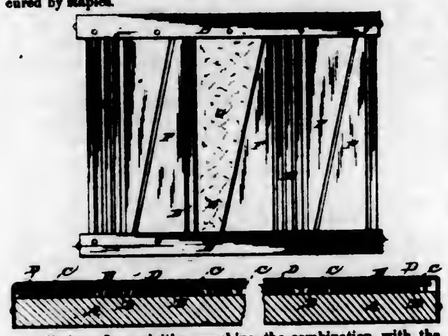


Claim.—The herein-described cutters, consisting of the one handle, B, provided with a hook-shape blade, A, for insertion beneath the band, combined with the second handle, D, provided with a blade, C, corresponding with the blade A, the two pivoted together at a point above the cutting-edge of both blades, the heel *d* of the blade A forming a bearing against which one edge of the

band rests, and whereby the cutting of the blades commences at their point ends and cuts from the opposite edge of the band toward the heel of the blades, substantially as described.

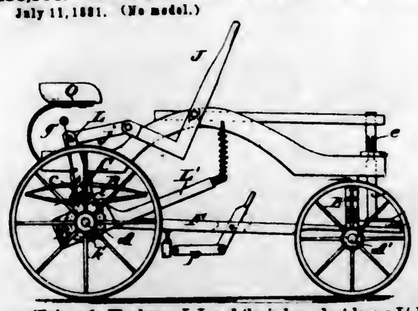
256,302. PLAITING-MACHINE. SAMUEL I. ECHOLS, Memphis, Tenn. Filed Jan. 30, 1882. (Model.)

Brief.—The strips and plates are held in place by wires secured by staples.



Claim.—In a plaiting-machine, the combination, with the sides A, of the transverse ribs and triangular plates connected to said sides by means of wires C, secured by staples D, and the sheet-metal binding E, substantially as and for the purpose herein set forth.

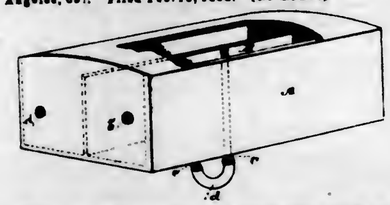
256,303. VELOCIPEDE. ELIAS EDWARDS, Romeo, Mich. Filed July 11, 1881. (No model.)



Claim.—1. The levers L L and the independent levers L' L', journaled upon the hubs, and the ratchet-wheels *h h*, secured upon the hubs, in combination with the angle-levers J J, links *j j*, and the cross-bar A, whereby the levers may be operated by the hands and feet of the rider, substantially as specified.

2. The annular ring G, formed with the cam-slots *g*, in combination with the sliding rods *b*, substantially as and for the purposes set forth.

256,304. HYDROCARBON-BURNER. EVAN A. EDWARDS, Los Angeles, Cal. Filed Feb. 18, 1882. (No model.)

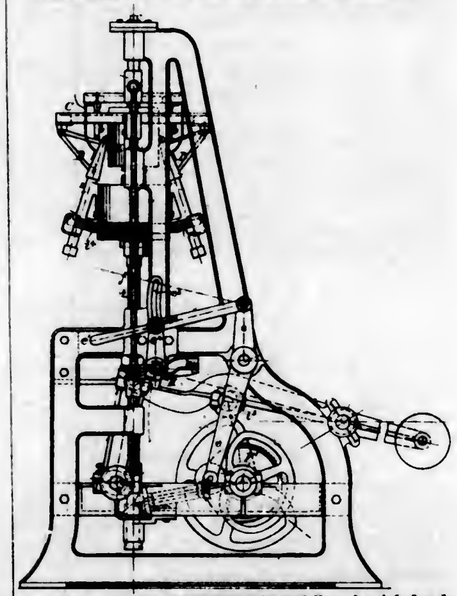


Claim.—1. A liquid-hydrocarbon burner consisting of the box or casing A, provided with a vertical longitudinal diaphragm, B, open above and dividing said box into separate compartments *a b*, connected above over the top of the diaphragm, and having separate entrance-apertures and a common exit or exits, substantially as herein described.

2. A liquid-hydrocarbon burner consisting of a box or casing, A, provided with a vertical longitudinal diaphragm, B, open above, dividing said box into separate compartments *a b*, connected above over the top of the diaphragm, and having separate entrance-apertures *a' b'*, and a common exit-pipe, C, opening from within the box near the top, and extending down under the box and turned upward, as shown, substantially as herein described.

3. A liquid-hydrocarbon burner consisting of a box or casing, A, provided with a vertical longitudinal diaphragm, B, open above, dividing said box into separate compartments *a b*, connected above over the top of the diaphragm, and having separate entrance-apertures *a' b'*, in combination with a common exit pipe or nipple, C, opening from within the box near the top and extending downward, and provided with a return-bend, *d*, the end of which extends upward under the box, and is closed with a plug, *e*, having a small opening, *e*, as shown, substantially as herein described.

256,305. HAT-STRETCHING MACHINE. RUDOLF BICKENBACH, Yonkers, N. Y. Filed Jan. 30, 1882. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, of a series of automatically reciprocated or vibrating brim-stretching fingers and fulcrum and finger plates, either of which is movable toward the other while the fingers are in motion, for varying the position of the working-faces of the fingers, as set forth.

2. The series of automatically reciprocated or vibrating brim-stretching fingers provided with variable fulcra, substantially as described.

3. The series of automatically reciprocated or vibrating brim-stretching fingers provided with automatically-variable fulcra, substantially as described.

4. The combination, substantially as hereinbefore described, of the reciprocating or vibrating brim-stretching fingers, the movable fulcrum-plate, the cam, levers, and links for automatically varying the position of the fulcrum-plate while the fingers are in motion, as set forth.

5. The combination, substantially as hereinbefore described, of the reciprocating or vibrating brim-stretching fingers and the movable fulcrum-plate with the cam for moving said plate, and adjustable connections between said cam and plate for varying the position of said plate, and thereby varying the positions of the working-faces of the finger, as set forth.

6. The combination, in a brim-stretching former, of ribs and a rotative supporting-shell, substantially as described.

7. The combination, with brim-stretching ribs, of a vertically-adjustable rotative shell, substantially as described.

8. In a brim-stretching former, axially-rotative ribs, substantially as described.

9. The combination, substantially as hereinbefore described, of the axially-rotating former-ribs and the mechanism by which said ribs are rotated.

10. The combination, with a series of rotating stretching-ribs and their rotating mechanism, of a stop-motion whereby the rotation of said ribs is controlled, substantially as described.

11. The combination, with the rotating ribs, of compressing-springs, substantially as described, for forcing the hat-body into good contact with said ribs.

12. The combination, with the rotating ribs, of the movable compressing-springs, substantially as described, whereby a hat-body is not only held in good contact with the ribs but forced downward thereon.

13. In a brim-stretching machine, the combination, substantially as hereinbefore described, of reciprocating or vibrating stretching-fingers and ribs co-operating therewith as stretching devices, and mechanism for automatically varying the working positions of the surfaces of the stretching devices during the stretching operation, as set forth.

14. The combination, substantially as hereinbefore described, of automatically reciprocated or vibrated brim-stretching fingers and a former co-operating therewith, which is automatically placed into and out of working relations with the fingers, as set forth.

15. The combination, substantially as hereinbefore described, of the reciprocating or vibrating brim-stretching fingers and a former which is automatically lifted into working relations with said fingers, then gradually lifted during the stretching operation, and then lowered from said fingers, as set forth.

16. The combination, substantially as hereinbefore described, of the reciprocating or vibrating brim-stretching fingers, the former, said fingers and former being automatically placed into and out of working relations, and a stop-motion for maintaining them in a separated condition, as set forth.

17. The combination, substantially as hereinbefore described, of the reciprocating or vibrating brim-stretching fingers, the former automatically lifted to and lowered from said fingers, and a stop-motion, which causes said former to rest at its lowest position, as set forth.

18. The combination, substantially as hereinbefore described, of reciprocating or vibrating brim-stretching fingers, a former, and means for rotating a hat-body on the former during the stretching operation, substantially as described.

19. The combination, substantially as hereinbefore described, of the reciprocating or vibrating brim-stretching fingers and a former having rotating ribs.

20. The combination, with the stretching-fingers and a former having a shell free to rotate, of a rotative stripper-weight, substantially as described.

21. The combination, with the former, its spindle, and levers, of the two-part cam-shaft and the differential gearing, substantially as described.

256,306. PARQUET-FLOOR. ROBERT W. HUTCHER, New York, N. Y. Filed Dec. 9, 1881. (No model.)

Brief.—A panel composed of sections of wood or stone united by exterior metallic bands and internal intervening metal strips.



Claim.—As a new article of manufacture, a tile or panel for parquet-flooring, composed of sections of wood or stone which are united with each other by internal lateral connecting devices and by exterior metallic bands, substantially as set forth.

256,307. INSTRUMENT FOR SETTING BUTTONS. FRANK H. FARNSWORTH, Detroit, Mich., assignor to the Bolle Patent Button Fastener Company, same place. Filed Jan. 26, 1882. (No model.)



Claim.—In an instrument for attaching buttons, and in combination with the jaws and spring F, the finished spring G, arranged and adapted to serve as and for the purposes specified.

256,308. UMBRELLA OR PARASOL SUPPORT. JOSEPH FORSTER, Vienna, Austria-Hungary. Filed Jan. 3, 1882. (No model.) Patented in Austria July 30, 1879, and Apr. 15, 1880, in Hungary July 30, 1879, and Apr. 12, 1880, in England June 11, 1880, in France Aug. 25, 1880, in Belgium Oct. 18, 1880, in Italy Oct. 16, 1880, and in Germany May 18, 1881.

Brief.—The umbrella-support is formed of four rods pivoted to each other at the ends, the top ends of the upper rods being pivoted to the middle of the umbrella-top frame, the lower ends of the lower rods being pivoted to each other at the handle end of the umbrella-support.



Claim.—1. An umbrella or parasol constructed, substantially as herein shown and described, with a support formed of a series of rods pivoted to each other and constituting a frame which forms two parallel rods when the umbrella is closed and an irregular quadrangle or lozenge when the umbrella is opened, whereby the head and hat of the person carrying the umbrella or parasol can be placed within the quadrangle, so as to be directly under the middle of the umbrella-top, as set forth.

2. The combination, with an umbrella-top, of a support formed of two rods provided with hinges between their ends, these rods being pivoted to each other at the lower or handle ends and at their upper ends at the middle of the umbrella-top frame, substantially as herein shown and described, and for the purpose set forth.

3. The combination, with the umbrella-top A', of the rods A, B, C, and D, forming the folding support for the umbrella-frame, of which rods C D are pivoted to each other at the middle of the umbrella-top frame, the upper end of the rod A being pivoted to the lower end of the rod C, the upper end of the rod B to the lower end of the rod D, and the lower ends of the rods A and B pivoted to each other, substantially as herein shown and described, and for the purpose set forth.

4. The combination, with the umbrella-top A', of the rods A, B, C, and D, pivoted to each other in the manner described, and of the brace-bars E, pivoted to one of the upper rods, C or D, and to a sleeve, *c*, sliding in the other upper rod, C or D, substantially as herein shown and described, and for the purpose set forth.

5. The combination, with the umbrella-top A', of the rods A, B, C, and D, pivoted to each other in the manner described, of the pivoted brace-bars E, the sliding sleeve *c*, and a locking device attached to this sleeve, substantially as herein shown and described, and for the purpose set forth.

6. The combination, with the umbrella-top A', of the rods A, B, C, and D, pivoted to each other in the manner described, of the brace-bars E, the sliding sleeve *c*, to which one end of the bars E is pivoted, the stud or catch *h'*, projecting from that upper rod, C or D, on which the sleeve *c* slides, and the latch *f* on the sleeve *c*, substantially as hereinbefore and described, and for the purpose set forth.

7. The combination, with the umbrella-top A', of the rods A, B, C, and D, pivoted to each other as described, the umbrella-point *c'*, and the brace-bars E, and devices for locking these brace-bars, substantially as herein shown and described, and for the purpose set forth.

8. The combination, with the umbrella-top A', of the rods A, B, C, and D, pivoted to each other as described, umbrella-point *c'*, the plates *a* and *b*, the brace-bars E, and devices for locking these brace-bars, substantially as herein shown and described, and for the purpose set forth.

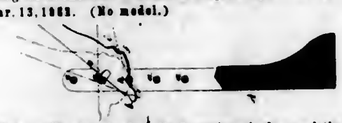
9. The combination, with the umbrella-top A', of the rods A, B, C, and D, pivoted to each other as described, the umbrella-point *c'*, the crown-plate *a*, to which the ribs *n* are pivoted, the cap *c'*, the brace-bars E, and of devices for locking these brace-bars, substantially as herein shown and described, and for the purpose set forth.

10. The combination, with the umbrella-top A', of the rods A, B, C, and D, pivoted to each other in the manner described, of the sleeves *l l*, adapted to slide on the lower rods, A and B, the

brace-rods *m*, pivoted to these sleeves and to the ribs *n*, and of devices for locking these sleeves *l l* in position, substantially as herein shown and described, and for the purpose set forth.

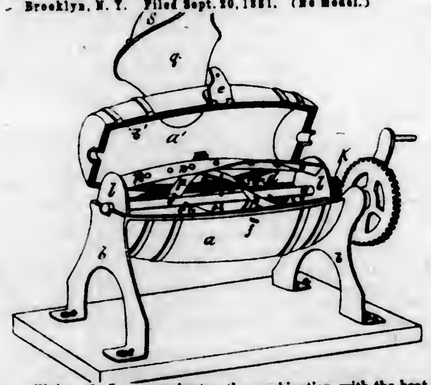
11. The combination, with the umbrella-top A', of the rods A, B, C, and D, pivoted to each other as described, the sleeves *l l*, provided with slots *o*, and adapted to slide on the lower rods, A and B, the brace-rods *m m*, pivoted to these sleeves *l l* and to the ribs *n*, and the locking-springs *k k* on the rods A and B, for locking the sleeves *l l* in position, substantially as herein shown and described, and for the purpose set forth.

256,309. CARRIAGE-JACK. WILLIAM A. FOSTER, Chester, assignor of one-half to S. H. Jennings, Deep River, Conn. Filed Mar. 13, 1881. (No model.)



Claim.—The herein-described carriage-jack, consisting of the base A, constructed with the vertical slot B and provided with bars *a* transversely across the said slot, combined with the lever C, one end fitted for a handle, the other as the lifting end, constructed with a notch, *e*, upon one side, the segment-shaped surface *f* and locking-shoulder *i* upon the opposite side, substantially as described

256,310. EGG BEATER AND MIXER. GEORGE B. FOWLER, Brooklyn, N. Y. Filed Sept. 20, 1881. (No model.)



Claim.—1. In an egg-beater, the combination, with the beating mechanism, of a vessel composed of two barrel-shaped sections hinged together, and having bearings for a central shaft formed in their meeting edges, substantially as set forth.

2. In an egg-beater, the combination, with a vessel consisting of two concavo-convex sections hinged together, of a shaft having its bearings in the ends of said vessel, and provided with disk-plates for supporting the beating-blades and with mechanism for driving said shaft, substantially as set forth.

3. The combination of the vessel *a*, rotary shaft *g*, disk-plates *l*, and beating or stirring blades *m*, attached to the periphery of said disk-plates, all arranged and operated in the manner set forth.

4. The combination, with the concavo-convex vessel *a* and driving-shaft *g*, having disk-plates *l* secured thereto, of the correspondingly-shaped twisted and perforated beating-blades *m*, substantially as and for the purpose set forth.

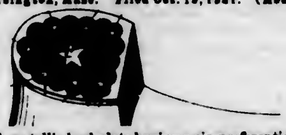
5. The combination, with an egg-beater having the beating mechanism arranged within the egg-holding vessel, of a driving-shaft provided with radial arms set at right angles thereto and to each other, and with twisted bars or blades secured to said arms in a spiral manner, substantially as herein shown and described.

6. In combination with the vessel *a*, the funnel-shaped receiver *q*, provided with a spout, *r*, and hinged cover *s*, substantially as set forth.

7. In an egg-beater, the stirring and beating device herein described, composed of perforated bars or blades secured to disk-plates arranged on the driving-shaft and shorter spiral bars arranged on arms projecting from said shaft and inclosed by the perforated bars, substantially as set forth.

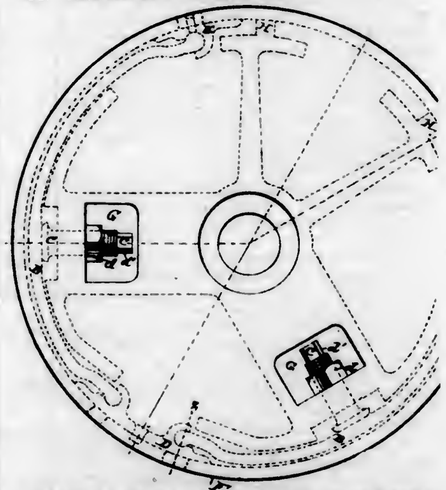
8. An egg-beater consisting of a vessel hinged together in two equal sections, the upper section being provided with a strip of rubber or other equivalent material, whereby a close joint is formed when the said sections are shut together, substantially as set forth.

256,311. HEEL-PLATE FOR BOOTS AND SHOES. EDWARD C. GARDNER, Abington, Mass. Filed Oct. 19, 1881. (Model.)



Claim.—A metallic heel-plate having a circumferential flange with a smooth outer or wearing surface and a depressed middle part, provided with studs at a little distance from the flange and parallel therewith, the depressed portion being filled with leather or other suitable material, as set forth.

256,312. PISTON-HEAD. HUGH D. GARRETT, Philadelphia, Pa. Filed June 24, 1881. (No model.)



Claim.—1. A piston-head provided with levers and supports, substantially as described, whereby the weight of the piston, through said levers, bears directly against the upper circumference of the packing-rings to expand the same in the upper part of the cylinder.

2. A solid piston-head provided with levers and supports, substantially as described, whereby the weight of the piston, through said levers, bears directly against the upper circumference of the packing-rings to expand the same in the upper part of the cylinder.

3. A piston-head provided with levers, supports, and centering device, substantially as described, whereby the piston is centered in the cylinder and the weight thereof utilized, through said levers, to bear directly against the upper circumference of the packing-rings to expand the same in the upper part of the cylinder.

4. A piston-head having a lever or levers fulcrumed in the lower portion of the piston and extending into the upper portion so as to rest against the packing at that point, with suitable bearings for the piston against the levers, whereby the weight of the piston is utilized to expand the packing, substantially as set forth.

5. In a solid piston-head, the combination of the levers B, bolts C, and openings G, substantially as and for the purpose specified.

6. The combination of levers B, bolts C, and blocks D E, substantially as described.

7. The combination of levers B, bolts C and their nuts *d*, and blocks D E, substantially as described.

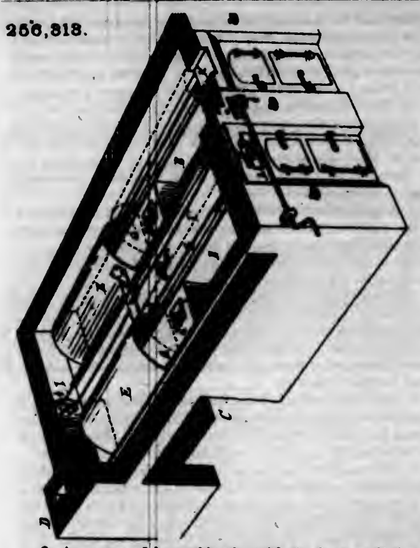
8. The combination of levers B, bolts C, having the extension-heads *d'*, nuts *d*, and blocks D E, substantially as described.

256,313. ATTACHMENT TO BAKERS' OVENS. HENRY R. GORDON, Detroit, Mich. Filed Oct. 26, 1881. (No model.)

Claim.—1. A baker's oven the furnaces of which are provided with adjustable sliding arches E, substantially as and for the purposes set forth.

2. An oven, and in combination with the furnaces B thereof, provided with adjustable sliding arches E, the draft-openings K, and outlets *a*, substantially as and for the purposes specified.

256,313.



3. An oven, and in combination with the furnaces B thereof, the sliding arches E, adapted to be operated by the chain I, pulleys *b*, and crank-shaft J, substantially as described.

4. In a baker's oven, and in combination with the furnace B thereof, having a draft-opening, K, and outlet *a*, the arch E, provided with one open and one closed end, and adapted to be moved to cover or partly cover the furnace, substantially as described.

256,314. DETACHABLE CLASP-HOOK FOR SHIRT-COLLARS. SIDNEY S. GRANNIS, Red Wing, Minn. Filed Feb. 23, 1882. (No model.)



Claim.—The collar clasp-hook formed of a single piece, having the hook part *a*, the middle clasp part, *c*, and the back part, *e*, terminating in an eye or plate, *g*, for the purpose of securing and holding the collar to the shirt-band, substantially as herein set forth.

256,315. STARCH-SEPARATOR. GILBERT S. GRAVES, Buffalo, N. Y., and JACOB KNUDE, Peoria, Ill. Filed Nov. 4, 1881. (No model.)



Claim.—1. In a starch-separator, a sieve provided with transverse strips arranged underneath the water-pipes and adapted to receive the impact of the falling water, substantially as set forth.

2. In a starch-separator, a sieve composed of two or more sections of bolting-cloth and one or more intermediate troughs, in which the tailings of the first section are received and commingled, and from which the material is delivered on the head of the next following section, substantially as set forth.

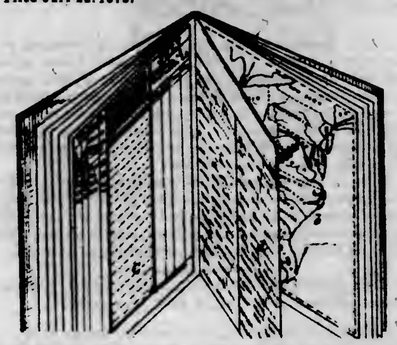
3. In a starch-separator, the combination, with the sieve composed of two or more sections of bolting-cloth and one or more intermediate troughs or gutters, C, of spray-pipes F, arranged over the troughs C, substantially as and for the purpose set forth.

4. In a starch-separator, a sieve provided with one or more transverse troughs, C, made angular in cross-section, substantially as set forth.

5. In a starch-separator, a sieve provided with one or more transverse strips or troughs, C, and two or more sections of bolting-cloth secured to the under side of the sieve-frame A and to the edges of the transverse strips, whereby a separate section of bolting-cloth can be removed without removing the remaining sections, substantially as set forth.

6. The combination, with the sieve-frame A and the trough or gutters C, secured to the under side thereof, of sections B of bolting-cloth, secured to the under side of the sieve-frame and the upper edges of the troughs C, substantially as set forth.

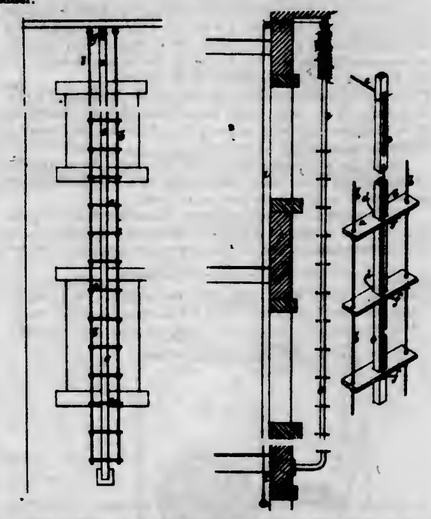
256,316. ALMANAC. GEORGE G. GREEN, Woodbury, N. J. Filed July 28, 1879.



Claim.—In an almanac in which are indicated the days of the month and week in columns on one side of a page, the rising and setting of the sun and moon on the other side, and blank memorandum-lines between them, one for each day, the days of the year arranged in continuous number, each coming on a line with its appropriate day of the month and week, as set forth.

256,317. FIRE-ESCAPE. JOHN HARRISON and MICHAEL FOLLIARD, Brooklyn, N. Y. Filed Feb. 21, 1882. (No model.)

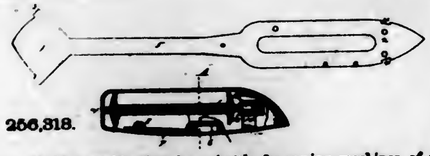
Brief.—The ladder is guided and held by a fixed rod, which passes through openings in the steps. The rungs or steps may be slid up under the cornice upon said rod by a suspending-cord, which may be severed upon any floor of the building to lower the ladder.



Claim.—The combination, as hereinbefore described, of the rod secured to the outside wall of a building, the steps or rounds fitted on and guided by said rod, the chains or ropes connecting said steps, and the cord or chain for controlling the position of the steps.

256,318. SEWING-MACHINE SHUTTLE. FRANK H. NATHAWAY and CHARLES A. LOCKE, Springfield, Mass. Filed Feb. 3, 1882. (No model.)

Claim.—1. An improved shuttle for sewing-machines, made of a blank punched in a single piece from sheet metal and bent into form and its ends secured together, substantially as described.

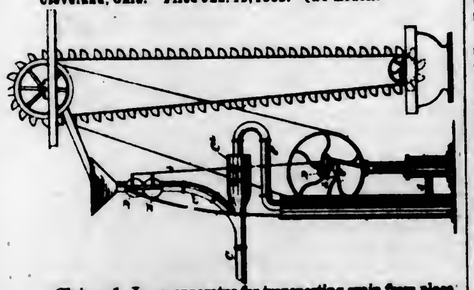


256,318.

2. The combination, in a shuttle for sewing-machines, of a tension-spring, as 7, provided with a thread-notch, 9, and pivoted at one end to swing outward, and adapted to be adjusted against the inside of the face-plate with more or less pressure, an adjusting-screw, 8, for adjusting the said spring, and a bobbin-holder and spring secured to the face-plate of the shuttle at the pointed end, and a distributing-bar, as 6, secured at both ends to the face-plate of the shuttle, substantially as described.

3. In an improved shuttle for sewing-machines, a bobbin-spring holder formed up from a thin sheet-metal blank in a single piece and secured to the face-plate, and provided with a cylinder adapted to contain a spring, and a plug to receive the end of the bobbin and hold the latter in place, substantially as described.

256,319. GRAIN-TRANSPORTING DEVICE. THOS. F. HOARE, Cleveland, Ohio. Filed Jan. 13, 1882. (No model.)



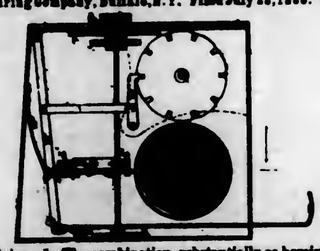
Claim.—1. In an apparatus for transporting grain from place to place, the combination, with a suitable conducting-pipe having an enlarged end, of a plug or driver, and devices for feeding grain to the conveyor-pipe and for forcing a blast of air through said pipe to move the grain, substantially as set forth.

2. In a grain-transporting device, the combination of a conveyor-pipe, an air-blast pump, and a grain-charging device, the latter being provided with valves B B' and rods *b b'*, for operating the latter, substantially as set forth.

3. In a grain-transporting device, the combination, with the conveying-pipe C and an air-blast device, of a plug or driver, H, substantially as and for the purpose set forth.

4. In a grain-transporting device, the combination of a grain-receiving bin or hopper, *a*, and the alternately-operating valves B B', substantially as and for the purpose set forth.

256,320. FARE REGISTER AND RECORDER. WILLIAM H. HOBBIE, New York, assignor to the Railway Register Manufacturing Company, Buffalo, N. Y. Filed July 28, 1880. (Model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of the passenger-register, the actuating gearing and handle of said register, the notched wheel of said register, the detent-pawl to engage said wheel to lock it, and the trigger or push-bar, independent of the actuating-handle of the register, to release said detent to permit the register to be moved.

2. The combination, substantially as hereinbefore set forth, of the passenger-register, the actuating-handle of said register, the permanent register-roller carrying a recording-slip to be marked or punctured, the marking device moved by the actuating-handle of the passenger-register over said recording-slip simultaneously with the operation of the passenger-register, and the device acting upon said marker to cause it to mark or puncture the recording-slip to make a record of the indications of the passenger-register.

3. The combination, substantially as hereinbefore set forth, of the passenger-register, the permanent register-roller covered with its recording-slip extending lengthwise of the machine, the turning-shaft to actuate said passenger-register, and the marking device moved by said shaft along the roller to make an impression upon the recording-slip.

4. The combination, substantially as hereinbefore set forth, of a roller provided with a recording-slip, mechanism, substantially as described, operated by hand to impart a partial or step-by-step rotation to said roller, and a marker traveling lengthwise of said roller to make a mark upon said slip.

5. The combination, substantially as hereinbefore set forth, of the permanent register-roller, the shaft of said roller from which the roller may be readily removed, and bearings for said shaft, one of which is attached to a removable part of the inclosing-case, and capable of separation from said shaft to permit the roller to be removed endwise therefrom.

6. The combination, substantially as hereinbefore set forth, of the permanent register-roller, its shaft, and a locking-connection between the roller and shaft to secure the two together in operation while permitting of their ready separation when required.

7. The combination, substantially as hereinbefore set forth, of the permanent register-roller, the shaft of said roller having bearings at its opposite ends, the locking-connection between said roller and shaft, and the hinged door carrying one of the bearings of said shaft, whereby when said door is opened the bearing carried by it is swung away from the shaft and access afforded to the locking-connection, so that it may be disengaged and the roller removed from the machine.

8. The combination, substantially as hereinbefore set forth, of the passenger-register, its actuating-handle, the detent mechanism to normally lock said register from operation, the trigger to operate the detent mechanism to release the register, and a registering device independent of the passenger-register to indicate the number of times said trigger is operated.

9. The combination, substantially as hereinbefore set forth, of the direction-indicator, its shaft, the actuating-handle of said shaft, and the marker actuated by said shaft to register the shifting or changing movements of said indicator.

10. The combination, substantially as hereinbefore set forth, of a passenger-register, a direction-indicator, and detent mechanism; substantially as described, for normally locking and simultaneously releasing said register and said indicator.

11. The combination, substantially as hereinbefore set forth, of a passenger-register, a direction-indicator, an alarm apparatus, and mechanism, substantially as described, for normally locking said register, indicator, and alarm apparatus, and for releasing them, whereby the indicator can only be shifted or changed and the alarm sounded when the register is free to be moved to make a count or tally.

12. The combination, substantially as hereinbefore set forth, with a passenger-register and mechanism, substantially as described, for indicating the resetting movements of said register, of a direction-indicator and mechanism, substantially as described, for indicating the shifting movements of said indicator.

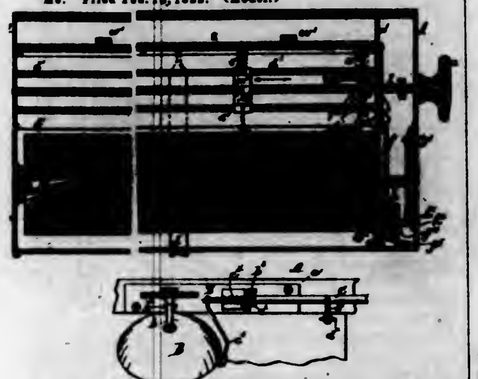
13. The combination, substantially as hereinbefore set forth, of a passenger-register, an actuating-handle therefor, mechanism, substantially as described, to record the resetting or changing movements of said register, a direction-indicator, the operating mechanism of said indicator, mechanism, substantially as described, to record the shifting movements of said indicator, and devices to normally lock said register and said indicator.

14. The combination, substantially as hereinbefore set forth, of a temporary passenger-register, a permanent register, an actuator to actuate said registers, mechanism, substantially as described, to normally lock said registers from being moved, and mechanism, substantially as described, to register the movements of said locking mechanism, which release the registers and enable them to be operated to change their indications.

15. The combination, substantially as hereinbefore set forth, of a temporary passenger-register, a permanent register, an actuator to actuate said registers, a direction-indicator and its actuating device, and mechanism, substantially as described, to normally lock said registers and indicator, so that when operated to release the registers said mechanism also releases the indicator to permit it to be shifted.

16. The combination, substantially as hereinbefore set forth, of the passenger-register, the permanent register, the actuating-handle of said registers, the direction-indicator and its actuating device, the alarm apparatus, and mechanism, substantially as described, which normally locks said registers, indicator, and alarm from operation, while when released it permits the registers to be moved, the indicator to be shifted, and the alarm to be sounded.

256,321. BURGLAR-ALARM. WILLIAM B. HOWELL, Albany, No. Filed Feb. 13, 1882. (Model.)

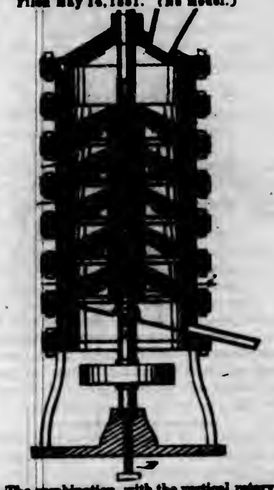


Claim.—1. In a burglar-alarm, the combination of the shaft C, its latches *c'*, stop-leg *c²*, clapper *c³*, with the gong B and spring *c⁴*, substantially as shown and described.

2. In a burglar-alarm, the combination of the shaft C, its latches *c'*, stop-leg *c²*, and clapper *c³* and spring *c⁴*, with the plate *b'*, arm *b*, and gong B, all arranged to operate substantially as shown and described.

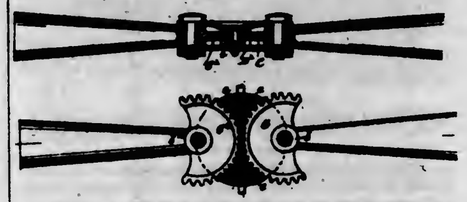
3. The combination of the latches *c²* and knuckles *c'* with the shaft C and its latches *c'*, and clapper *c³*, with the gong B, all arranged to operate substantially as shown and described.

256,322. MACHINERY FOR PULVERIZING ORE, &c. FREDERICK J. HOYT, New York, N. Y., and WILLIAM H. HOYT, Jersey City, N. J. Filed May 14, 1881. (No model.)



Claim.—The combination, with the vertical rotary spindle, of the grinding-disks B, secured thereon and formed with smooth beveled edges, and the shell having the smooth beveled inner faces, *i*, said grinding-disks successively increasing in diameter from the top to the bottom of the series, substantially as described.

256,323. CAR-LOCK. SAMUEL IRWIN, Lindsay, Ontario, Canada. Filed Jan. 6, 1882. (No model.)



Claim.—1. The toothed segments C C', having fulcrum-hubs of greater length than the width of their teeth, in combination with the fulcrum-pins, and the fulcrum-box cast in one piece with posts *c c*, and arranged, as described, with a bearing against the upper edge of the teeth of the segments and out of contact with the lower edge of the same, as and for the purpose described.

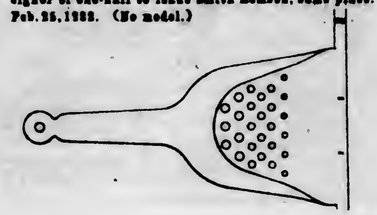
2. The gunwale-plate *f*, having lugs *c d'*, one of which is open-slotted, and provided with spring-slide *g*, as and for the purpose described.

256,324. CAR-LOCK. SAMUEL IRWIN, Lindsay, Ontario, Canada. Filed Jan. 6, 1882. (No model.)

Claim.—1. The toothed segments C C', having fulcrum-hubs of greater length than the width of these teeth, in combination with the fulcrum-pins, and the fulcrum-box cast in one piece with posts *c c*, and arranged, as described, with a bearing against the upper edge of the teeth of the segments and out of contact with the lower edge of the same, as and for the purpose described.

2. The gunwale-plate *f*, having lugs *c d'*, one of which is open-slotted, and provided with spring-slide *g*, as and for the purpose described.

256,325. SHOVEL. JACOB A. JOHNSEY, Brooklyn, N. Y., assignor of one-half to Isaac Smith Romson, same place. Filed Feb. 25, 1882. (No model.)



256,328. COUNTER-BALANCE FOR EXTENSION-CHANDELIERS. WOLCOTT A. HULL, New York, N. Y., assignor of one-half to the Antonia Brass and Copper Company, same place. Filed Jan. 28, 1882. (No model.)

Claim.—1. A counterbalancing-weight consisting of cast-metal sections provided with cavities which, when the sections are put together, form a hole for surrounding a guide-rod, substantially as specified.

2. A counterbalancing-weight consisting of sections of cast metal provided with cavities which, when put together, form a hole for surrounding a guide-rod, of a shell inclosing said sections, substantially as specified.

3. The combination, with a counterbalancing-weight consisting of sections of cast metal provided with cavities which, when put together, form a hole for surrounding a guide-rod, of a shell inclosing said sections, substantially as specified.

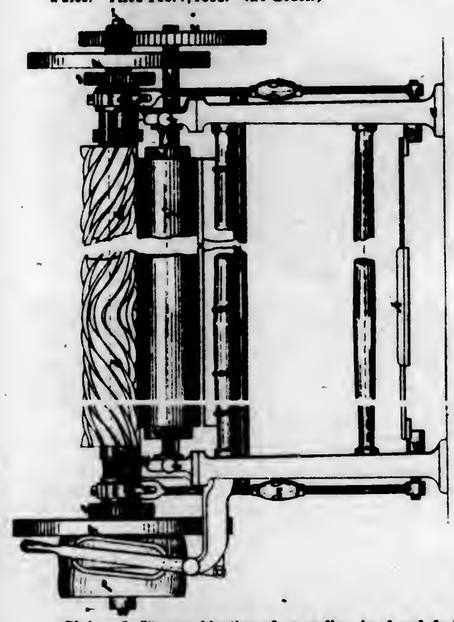
4. The combination, with a counterbalancing-weight consisting of sections of cast metal provided with cavities which, when put together, form a hole for surrounding a guide-rod, of a shell inclosing the same and formed of two parts, which are connected transversely to the meeting or opposite faces of the sections of the weight, substantially as specified.

5. The combination, with a counterbalancing-weight consisting of sections of cast metal provided with cavities which, when put together, form a hole for surrounding a guide-rod, of a shell inclosing the same and having its upper and lower edges turned inward to fit the guide-rod, substantially as specified.

Claim.—1. In combination with the edge of a shovel, a strip of india-rubber, B, projecting a short distance over the edge of the shovel, substantially in the manner and for the purpose described.

2. A shovel-blank provided with projecting strips m m at the sides at its end, substantially for the purpose specified.

256,326. MACHINE FOR TREATING HIDES AND SKINS. JOHN MEREDITH JONES, Wrexham, County of Denbigh, North Wales. Filed Feb. 7, 1882. (No model.)



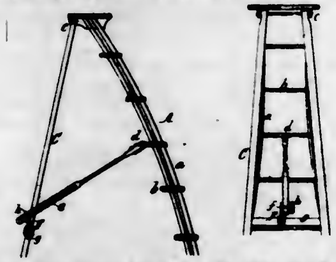
Claim.—1. The combination of an endless band and feed-rollers with a spiral-faced roller, movable arms m, carrying bearings for said spiral-faced roller, and a treadle or lever controlling the movement of said arms, all substantially as set forth.

2. The combination of an endless band and feed-rollers with a weighted lever, *t*, carrying a scraper.

3. The combination of the endless revolving band of a skin or leather treating machine with a water-pipe provided with jets for lubricating the band.

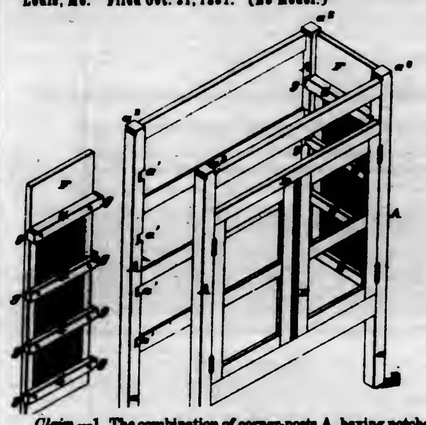
256,327. STEP-LADDER. RUSSELL F. JONES, Forestville, N. Y., assignor of one-half to William E. Powers, same place. Filed Jan. 16, 1882. (No model.)

Brief.—A belt on the bracket, which is secured to the cross-piece of the hinged brace-legs, passes through a slot in the brace and is held in position by a thumb-nut thereon.



Claim.—In a step-ladder, the combination, with the body A and hinged standard C, of a brace connecting the body A and standard C, hinged at one end, and provided at its opposite end with a longitudinal slot, *e*, a bracket, F, provided with a horizontal bolt, *f*, upon which the slotted end of the hinged brace slides, and a thumb-nut, A, whereby the brace is secured in place, substantially as set forth.

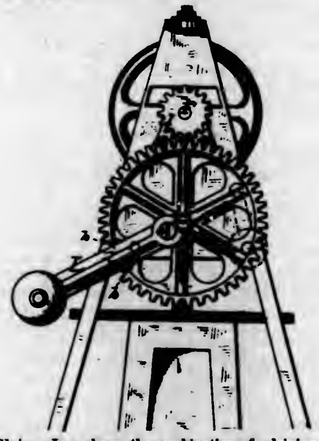
256,328. SECTIONAL KITCHEN-SAFE. CHARLES KAHN, St. Louis, Mo. Filed Oct. 31, 1881. (No model.)



Claim.—1. The combination of corner-posts A, having notches *a'* on their inner sides, and end pieces, F, provided with strips G, having tenons *g* occupying said notches and securing the ends to the posts, as set forth.

2. The combination of posts A with tenons *a²* at their tops and top board, H, grooved for the reception of the tenons, substantially as set forth.

256,329. CHURN. ROBERT H. G. KENNAN, Chillicothe, Mo. Filed Sept. 19, 1881. (No model.)



Claim.—In a churn, the combination of a driving gear-wheel provided with a plurality of adjusting-holes and steady-lugs *b b*, and an adjustable crank-lever arranged between the steady-lugs and made fast to the said wheel by means of set-screws, substantially as described, and for the purpose set forth.

256,330. PROCESS OF TREATING CERTAIN DERIVATIVES OF COAL-TAR COLORS. EDWARD D. KENDALL, Brooklyn, N. Y. Filed Dec. 16, 1881. (No model.)

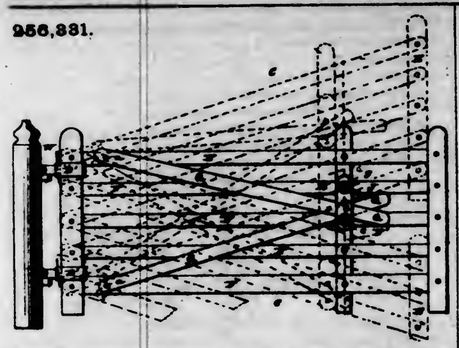
Claim.—1. The method or process of producing aniline or toluine from their corresponding nitro derivatives of coal-tar hydrocarbons by means of the voltaic current through the cathode in the presence of acidulated water, as hereinbefore set forth.

2. The method of producing a color-yielding product or oxidized compound of aniline or toluine, or a mixture of both, by subjecting aniline or toluine, or a combination of both, to the action of the voltaic current through the anode in the presence of acidulated water, as hereinbefore set forth.

256,331. SWINGING GATE. ISRAEL L. LANDIS, Lancaster, Pa. Filed Dec. 16, 1881. (Model.)

Claim.—1. The combination of the end battens and the intermediate batten pivoted to the gate-rails, the diagonal endwise

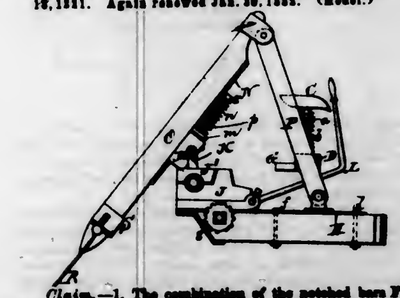
256,331.



movable braces, also pivoted to the gate-rails and crossed, the stud *b* and bolt *c*, between which said crossed portions of the braces play, the flexible clamp or grip H, and means, substantially as described, for binding the parts rigidly together.

2. In a vertically-adjustable gate having diagonal crossed braces guided by the stud *b* and bolt *c*, the combination of the pivotal through-bolt, the clamp or grip H, the bolt *g*, and a hand-crank, J, substantially as described.

256,332. COMBINED HAY TEDDER AND RAKE. ISRAEL L. LANDIS, Lancaster, Pa. Filed Apr. 26, 1880. Renewed Jan. 17, 1881. Again renewed Jan. 30, 1882. (Model.)

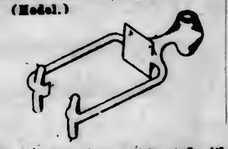


Claim.—1. The combination of the notched bars F F and cross-bar D with the seat C, rod *a*, and spring *b*, substantially as herein set forth.

2. The tedder-frame composed of the slotted plates H, having curved projections *c*, and connected by the plate L, in combination with the hinged beams J J' and the rod K', provided with the lever L, and forming the pins for the hinges, and having the beams secured thereto, substantially as herein set forth.

3. The combination of the fork-handle O, hollow pin *i*, the coiled tines E E, notched plate or casting S, bolt *c*, and nut *n*, substantially as and for the purposes herein set forth.

256,333. GATE-HINGE. ISRAEL L. LANDIS, Lancaster, Pa. Filed Feb. 21, 1882. (Model.)

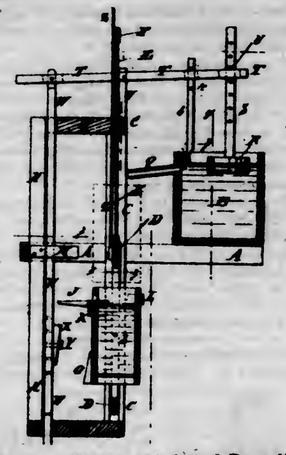


Claim.—A hinge having the wings constructed with a bevel bearing, and with arms having the ends bent inwardly, and provided with elongated bearings and slips, and adapted to be applied and secured to the gate or post by means of a wedge, substantially as and for the purposes specified.

256,334. WINDMILL-REGULATOR. JOHN LAMOTT and HUGH WHITE, Abingdon, Ill. Filed Nov. 21, 1881. (No model.)

Brief.—As the water is withdrawn from tank B the float E descends, operating the lever T, which raises the sliding bar W. The block X raises the latch J, allowing the bucket I, which is weighted at L, to discharge its contents, when the frame D and the empty bucket will be drawn upward by the weight H and the windmill will be thrown into gear and will force water into tank B.

256,334.



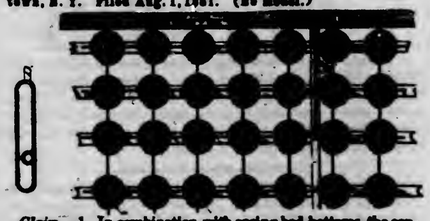
Claim.—1. The combination, with the tank B, provided with an overflow-spout, and the windmill trip-rod E, of the counterbalanced sliding frame D, the bucket I, the float R, and the connecting and tripping devices, substantially as and for the purpose set forth.

2. The combination, with the tank B, provided with the overflow-spout 2, and the windmill trip-rod E, of the counterbalanced sliding frame D, provided with the latch J, the bucket I, the float R, the bar S, the lever T, and the sliding bar W, provided with the block X, substantially as and for the purpose set forth.

3. The combination, with the tank B, provided with the overflow-pipe Q, and the windmill trip-rod E, of the counterbalanced sliding frame D, the pivoted bucket I, provided with the latch J, the arm M, the float R, the bar S, the lever T, and the sliding bar W, provided with the block X, substantially as and for the purpose set forth.

4. The combination, with the tank B, provided with the overflow-spout Q, the float R, and the lever T, of the valve *a*, the bar *b*, and pins *c*, substantially as and for the purpose set forth.

256,335. SPRING BED-BOTTOM. A. JESSE LANDON, Jamestown, N. Y. Filed Aug. 1, 1881. (No model.)

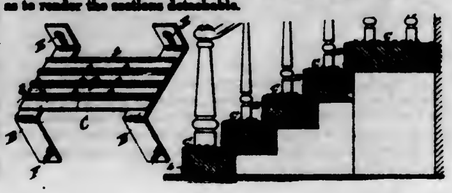


Claim.—1. In combination with spring bed-bottoms, the connecting-link having a loop near one end of suitable size to prevent the link from changing ends on the coil, substantially as shown and described, and for the purpose set forth.

2. In combination with spring bed-bottoms having cross-bar and side rail, substantially as shown, the spring-brace B, having turns *j* and *n* at end, as shown and described, and for the purpose set forth.

256,336. STEP-COVER. WILLIAM E. LAWRENCE, New York, N. Y. Filed Nov. 2, 1881. (No model.)

Brief.—The sections consist of U-shaped slats secured together and to side straps. The ends of the straps are so connected as to render the sections detachable.



Claim.—1. A step-covering consisting of treads D and connecting devices, constructed substantially as described, for detachably uniting the treads, as specified.

2. The combination, with the platform D of a step-cover, of straps extending upward from one edge and downward from the other, and devices whereby said straps may be detachably connected to those of the adjacent platforms, substantially as set forth.

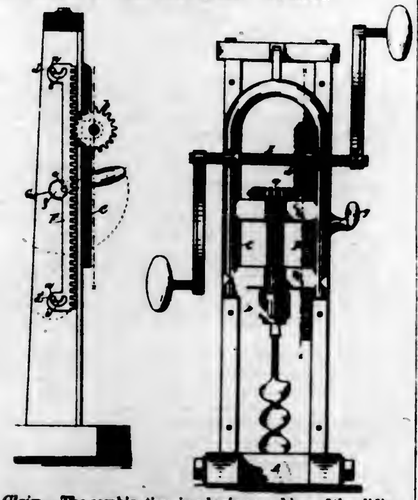
3. A step-covering composed of platforms D and straps B B, riveted or bolted to the platforms; forming sections C, which sections are provided with devices for attaching them detachably together, substantially as set forth.

4. The combination, in a step-covering, of the platform D, metal straps B B, bent to the shape shown, and provided with slots E, and studs F, substantially as set forth.

5. A step-cover tread consisting of a series of metal slats, each having edge flanges and connected substantially as set forth.

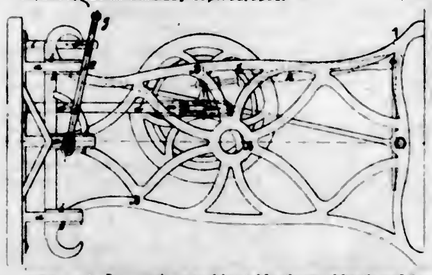
6. The within-described covering or tread, consisting of strips of metal having upright side flanges arranged side by side and connected together, substantially as set forth.

256,337. WOOD-BORING MACHINE. WILLIAM E. LAWRENCE, New York, N. Y. Filed Jan. 27, 1882. (No model.)



Claim.—The combination, in a boring-machine, of the sliding frame carrying the geared boring-bar and driving-shaft provided with a fixed pinion, *b*, and a rack-bar, F, having curved slots *i*, receiving pins *n*, projecting from the side piece, and a rocking cylinder, G, provided with a handle, and with a pin, *c*, fitting a socket in the rack-bar, substantially as set forth.

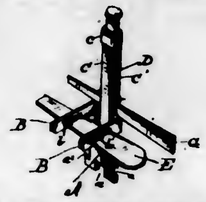
256,338. ADJUSTABLE TABLE AND DRIVING MECHANISM FOR SEWING-MACHINES. RUDOLPH LUY, Arnstadt, Germany. Filed Oct. 15, 1880. (No model.) Patented in Austria July 22, 1880, and in Germany Sept. 14, 1880.



Claim.—1. In a sewing-machine table, the combination of the pivoted lever-frame comprising the lateral arms *c* and transverse bar *l*, carrying a locking device, with the vertically-adjustable table-top provided with guide-tongues *a* and a retaining-arm, *i*, for the lever-frame, and the sewing-machine frame having grooved ways or guides *h*, as and for the purpose set forth.

2. In a sewing-machine table, the combination of a vertically-adjustable table-top having a pendent arm, *d*, carrying the driving or hand pulley, and the sewing-machine frame provided with a guide-piece, *m*, for receiving said arm, and the treadle having an extensible pitman, *k*, as and for the purpose set forth.

256,339. TIRE-TIGHTENER. HEZEKIAH H. LINDLER, Pine Ridge, S. C. Filed Dec. 23, 1881. (No model.)



Claim.—In a tire-tightener and lifting-jack combined, the base A, having the parallel ears B B', provided with slots *b b'*, and wedge E, in combination with the standards C C', sliding bar D, and wedge G, constructed substantially as set forth.

256,340. CLOCK-CASE. JOHN R. LOMAS, West Haven, Conn. Filed Dec. 3, 1881. (No model.)

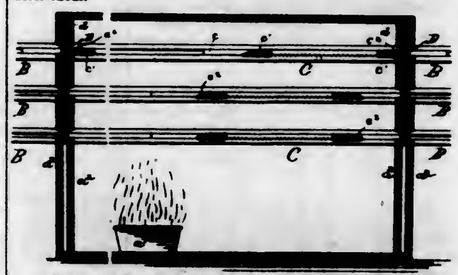


Claim.—1. A cover for clocks, consisting of the two parts B B', hinged to the clock-case, and so as to divide and swing therefrom in a plane at substantially right angles to the axis of the clock to expose the clock, or brought together to inclose the clock, substantially as described.

2. A cover for clocks, consisting of the two parts B B', hinged to the clock-case, and so as to divide and swing therefrom in a plane at substantially right angles to the axis of the clock to expose the clock, or brought together to inclose the clock, the said parts arranged to be turned beneath the clock to form a base or support for the clock, substantially as described.

256,341. APPARATUS FOR BLEACHING FRUIT. SETH W. LOWELL, Nunda, N. Y., and FRANK A HOOKER, Charlotte, Mich., assignors to the Steam Heat Evaporator Company, Charlotte, Mich. Filed Jan. 19, 1882. (No model.)

Brief—The fruit is placed upon trays having beveled ends adapted to elevate the sliding vertical doors by simply being pushed forward. The trays are caused to emerge by pushing other trays after them.



Claim.—1. In a fruit-bleacher, the combination of the doors D, arranged to slide vertically within the ends of the bleacher, with the frames C, the guide-bars of which project beyond the transverse bars *c'*, and have beveled ends *c²*, substantially as and for the purposes set forth.

2. A fruit-bleacher provided with ways B, the extremities of which project from the ends of the bleacher, with frames C, sliding on said ways, and with doors D, arranged to slide vertically within the ends of the bleacher, the frames C being provided with guides *c'*,

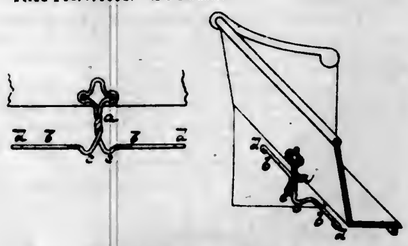
3. A fruit-bleacher provided with ways B, vertically-acting doors D, and frames C, consisting of the guides *c* and transverse bars *c'*, having their outer edges beveled at *c²*, said guides projecting beyond the bars *c'*, and provided with beveled ends *c³*, adapted to be inserted under the lugs *d²* and elevate the doors, the beveled edges *c³* adapted to assist the operation by pressing under the bottom edges of the doors, substantially as shown and described.

256,342. PIN-TICKET. ALBERTO T. LUNDQVIST, New York, N. Y. Filed Feb. 13, 1882. (No model.)



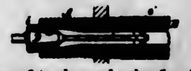
Claim.—The improved pin tag or ticket for marking goods herein shown and described, the same consisting of a marking-card, A, of suitable size and shape, a sheet-metal back plate, B, provided with suitable means for the attachment of the card and having the hinge-loops *a a*, and double-pronged hinged pin C, constructed and combined substantially as and for the purpose shown and set forth.

256,343. HAT-HOLDER. CHARLES C. LYON, Altoona, Pa. Filed Feb. 7, 1882. (No model.)



Claim.—The coat hook or support herein described, consisting of the vertical body portion *a*, designed to be secured to the back of the seat, the forward and outward curved concave branches *c*, forming an umbrella-holder, and the laterally-diverging horizontal ends *d*, forming hat-supports, substantially as specified.

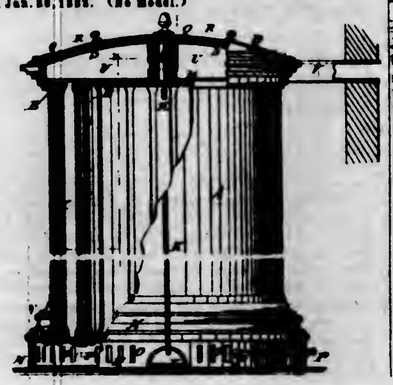
256,344. SAFETY PLUG AND VALVE FOR BOILER-FITTINGS. JOHN J. MACKNDER, Omaha, Nebr. Filed Aug. 5, 1881. (Model.)



Claim.—1. The safety plug and valve for steam-fittings, consisting of plug A, valve B, wire *d*, and cross-pin *c*, combined for operation substantially as shown and described.

2. The guide *b* and ring *c*, combined with valve B and plug A, substantially as and for the purposes set forth.

256,345. HEATER. JAMES H. MACKINTOSH, Paterson, N. J. Filed Jan. 30, 1882. (No model.)



Claim.—1. In a heater, the air-heating flues C, provided with the projections E on their inner surfaces projecting alternately from the opposite sides and extending beyond each other, substantially as and for the purpose set forth.

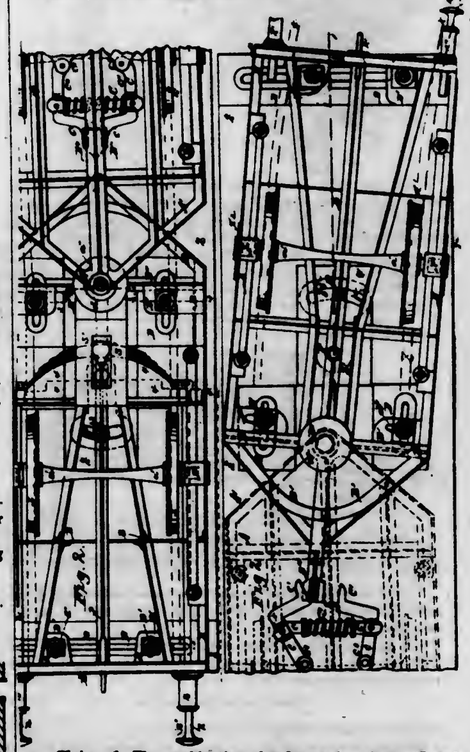
2. In a heater, the air-heating flues C, longitudinal slots H formed through them, and provided with the projections E on their inner surfaces and the projections E' on their external surfaces, substantially as and for the purpose set forth.

3. In a heater, the combination, with the heating-flues C, provided with the projections E' on their external surfaces, of the inclosing-case provided with the projections E' on its inner surface, substantially as and for the purpose set forth.

4. In a heater, the combination, with the case A, top and bottom plates, B, and air-heating flues C, of the pipe K, having stop-cock L, substantially as herein shown and described, whereby the air that collects in the upper part of the water-space can be readily drawn off, as set forth.

5. In a heater, the combination, with the top plate B and the perforated cover Q, having dampers S, of the hinged radial partitions U, and one or more pipes, V, substantially as herein shown and described, whereby a part or all of the heated air can be used for heating other rooms, as set forth.

256,346. RAILWAY-CAR. JOHN MACLACHLAN, New Orleans, La. Filed May 14, 1881. (No model.) Patented in England June 1, 1878, and Feb. 4, 1880.



Claim.—1. The combination of under carriage-frame, Z, and the three lower carrying-frames, with their oscillating connecting-joints arranged on their central longitudinal line, the resting springs *a a'* and levers C C', and the subsidiary slotted attachments and sliding bushes, all constructed and operating substantially as and for the purpose set forth.

2. The combination of carriage-frame Z with the oscillating under frames jointed at *b b*, between the central and outer axles, an oscillating joint, *b' b'*, and connecting-frame E to said under frames, and differential slotted cam traction-joints *b² b²*, all substantially as and for the purpose set forth.

3. The combination of carrying-frames A B C and the under frames with the actuating-levers B' B'', and the joints or connec-

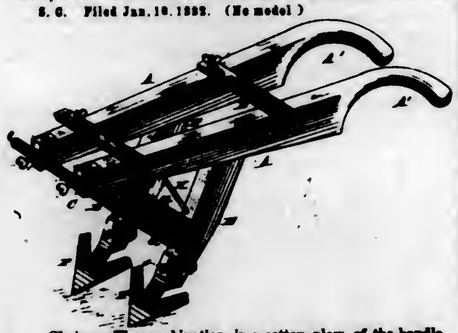
tions for allowing the axles and wheels to oscillate to suit the curves of a railway-track, substantially as set forth.

4. The combination of coupling-levers B' B'' B''' with the under carrying-frames, A B C, said parts being swiveled together to allow the wheels and axles to conform to the curvature of the line of railway over which the cars are passing.

256,347. COMPOSITION FOR USE IN SMELTING IRON AND OTHER ORES. WILLIAM G. HASTIN, Oswego, N. Y. Filed Jan. 21, 1882. (No specimens.)

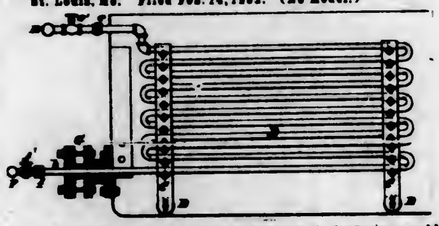
Claim.—A composition for use in the process of smelting metallic ores, consisting of the following ingredients in the proportions stated: caustic soda, one pound; limestone, two pounds; sodaash, three-fourths of a pound, and charcoal, one-fourth of a pound.

256,348. COTTON-PLOW. DANIEL R. HATHERN, Blackville, S. C. Filed Jan. 10, 1882. (No model.)



Claim.—The combination, in a cotton-plow, of the handle-beams A A', the standards E, the one-sided whiffletree D, adjustable on the beams, the slotted cross-bars B B, and the adjusting cross-bar and cutter G, substantially as shown and described.

256,349. REMOVABLE PIPE-SECTION FOR TANKS. CHAS. G. HAYES, Harvey, Ill., assignor of one-half to Leo Rassieur, St. Louis, Mo. Filed Feb. 14, 1882. (No model.)

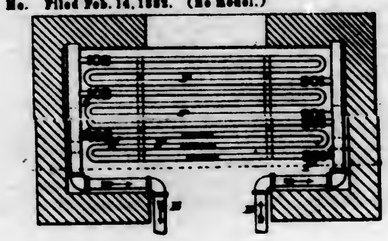


Claim.—1. In combination with the tank A, the removable section B, supported on frames C on rollers D, substantially as set forth.

2. In combination with tank A and removable section B, the guide H, secured to the side of the tank, substantially as and for the purpose set forth.

3. In combination with tank A and removable section B and stuffing-box G, the plug I, arranged to close the opening in the box, for the purpose set forth.

256,350. REFRIGERATING APPARATUS. CHAS. G. HAYES, Harvey, Ill., assignor of one-half to Leo Rassieur, St. Louis, Mo. Filed Feb. 14, 1882. (No model.)



Claim.—1. In combination with main pipes D and E, the connecting-sections F, arranged substantially as and for the purpose set forth.

2. In combination with main pipes D and E, the sections F, removably connected to the lengths *f* by couplings *f'*, which are provided with cocks *f''*, substantially as and for the purpose set forth.

256,351. RATCHET-MONKEY-WRENCH. WILLIAM F. MCGREGOR, Chicago, Ill., assignor to John C. MacGregor, same place. Filed Aug. 10, 1881. (No model.)



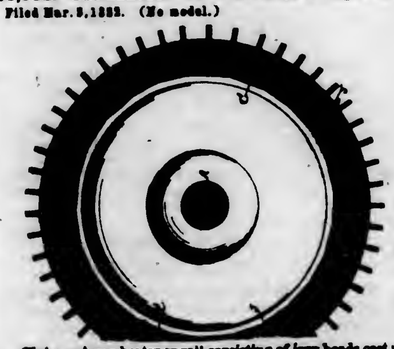
Claim.—1. In a ratchet monkey-wrench, the combination of the jaws A, the double-threaded screw *a*, with the thumb-wheel *a'*, the disks B B', and the plate or guide A', constructed and arranged as herein described and shown.

2. The disks B B', with notches in their outer circumferences, (the disk B having ridge B'', the disk B' having slot E,) the screw *a a'*, the jaws A, and the guide A', as described and shown, in combination with the frame C and pawl D, substantially as and for the purpose specified.

3. The frame C, hollow at its center, pawl D, thumb-wheel D', and spiral spring *d*, in combination with the disks B B', provided with notches, jaws A, with double-threaded screw *a*, and guide A', substantially as and for the purpose specified.

4. A ratchet monkey-wrench having jaws A, a plate or guide, A', disks B B', frame C, pawl D, with thumb-wheel D' and spiral spring *d*, double-threaded screw *a*, with thumb-wheel *a'*, all arranged and operating substantially as herein shown and described.

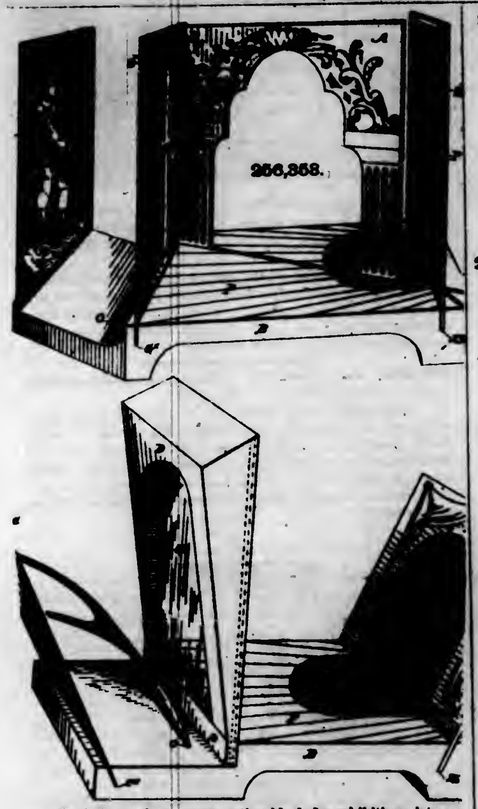
256,352. RAG-BEATER. GUYOT HILLER, Downingtown, Pa. Filed Mar. 3, 1882. (No model.)



Claim.—A rag-beater or roll consisting of iron heads cast with mortises or other depressions for the reception of the wood filling C, the wood filling constructed with tenons adapted to fit into said mortises, and the bolts for clamping the whole firmly together, substantially in the manner and for the purposes described.

256,353. METHOD OF AND DEVICE FOR EXHIBITING PICTURES. FRANCIS E. HILLS, Pittsburg, Pa., assignor of one-half to William McMahon, same place. Filed Jan. 19, 1882. (Model.)

Claim.—1. The method of setting, arranging, or exhibiting pictures which consists essentially in placing the picture on a black ground behind, but away from, a glass having a transparent center and opaque margins, and placing still farther away from, but in front or obliquely in front of, this glass a screen having a blackened or cut-away center with luminous borders, or luminous figures between the borders of the screen and the glass, the picture, the glass, and the screen being arranged at such distances from and at such angles with each other, respectively, that when the light falls obliquely upon the picture and it is viewed from a direction at right angles with its plane the paper or card on which the picture is taken will become invisible, while images of the luminous objects upon the screen will be seen by reflection projected beyond or around the picture, substantially as herein shown and described.



2. A frame, box, or supporting-block for exhibiting pictures, containing a device or devices for holding a transparent glass with opaque margins or diaphragm between a picture on a black ground and a screen having a blackened or cut-away center, substantially as and for the purpose set forth.

3. A frame, box, or supporting-block for exhibiting pictures, containing a device or devices for holding a card-picture, a glass, and a screen in substantially the relative positions described, whereby to a person looking through the glass by the aid of a light falling obliquely upon the picture the black card will be apparently invisible and an image of the screen will be projected beyond or around the picture, as specified.

4. In combination with a device or devices for holding the card, glass, and screen in the relative positions herein described, a floor or ground, F, represented in reverse perspective, substantially as shown and described.

5. In combination with devices for holding the card and the glass in the relative positions described, the arch A, held in a stationary device, or hinged, substantially as and for the purpose herein set forth.

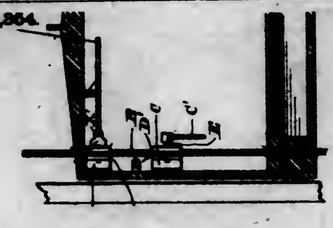
6. The block B, provided with means for holding the card, the glass, the screen, and the arch in their relative positions, substantially as and for the purpose described.

7. The block B, having means for holding the card, glass, and screen, and the slot O, for holding a blackened counter-screen behind the glass, substantially as and for the purpose described.

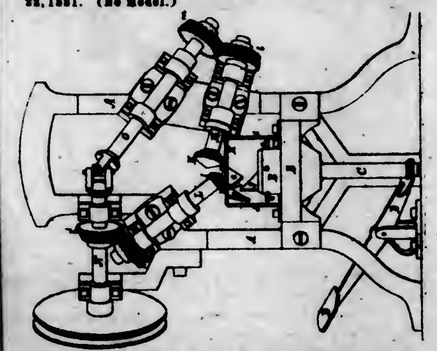
8. A frame, box, or case for holding pictures, containing a screen with a blackened or cut-away center, a glass with an opaque margin or diaphragm, and a device for holding a picture behind the glass, substantially as and for the purpose set forth.

256,354. SAFETY ATTACHMENT FOR ELEVATORS. CHAS. B. HOBEAR, Oakland, Cal. Filed Aug. 24, 1881. (No model.)

Claim.—In combination with an elevator tub or cage and the fixed arresting cable or rod B, the clamping-heads D D', vise-screw E, and operating-lever C', located within easy reach of the attendant, substantially as shown and described.



256,355. MACHINERY FOR BEVELING WATCH-GEAR. JOSEPH A. HORIS, St. Hyacinthe, Quebec, Canada. Filed Dec. 22, 1881. (No model.)



Claim.—The combination of the revolvable and reversed vertically-reciprocating carrying-head B, having the series of arms *a*, as set forth, with the stationary ring H, and cams *e*, *f*, and *g*, and with the cutters I and K, provided with mechanism for revolving them, all being substantially and to operate and for the purpose as specified.

256,356. CULTIVATOR-TOOTH. JOHN HORTON, Bloomingburg, Ohio. Filed Dec. 19, 1881. (Model.)



Claim.—The combination of the beam A, the pivoted tooth-holder B, the supports E, which project beyond the front edge of the beam, the angular lever G, which bears against the upper end of the tooth-holder spring O, and set-screw V, substantially as shown.

256,357. GRAIN-BINDER. GEORGE B. HORTON, Chicago, Ill., assignor of one-third to Thomas H. Arnold, Memphis, and said Horton and Arnold assignors of one-fourth to E. G. De Pass, Memphis, Tenn. Filed July 26, 1881. (Model.)

Claim.—1. In a grain-binder, a gathering and packing arm or arms constructed and arranged to yield bodily as the bundle is gathered and formed, substantially as described.

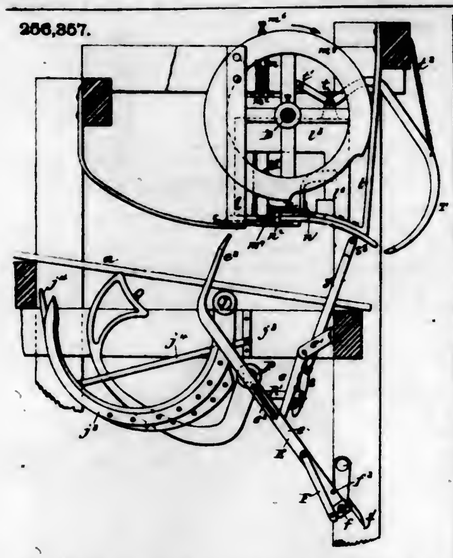
2. In a grain-binder, a yielding packer or packers, in combination with an adjustable tension device, whereby the size of the bundles may be regulated, substantially as described.

3. In a grain-binder, a packer or packers constructed and arranged to yield the bundle, in combination with a tripping mechanism, whereby the binder is thrown into operation by the yielding of the packers, substantially as described.

4. In a grain-binder, the yielding, gathering, and packing arms F F', in combination with the cranks to which they are attached at one end, and pivoted swinging links connected to the said arms between the cranks and the packing-ends, whereby a three-motion curvilinear movement is given to the said packing-ends, substantially as described.

5. The packer-arm, in combination with a pin or guide-bar to which the packer-arm is loosely connected at its inner end, the crank-arm to which the pin is pivoted, and the spring between the

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pin and packer, whereby the latter is permitted to yield lengthwise on the former, substantially as described.

6. The packer E, in combination with the pin e^3, connected to the crank d^3, spring e^7, connecting-rod F, rocking-lever f, and tripping-finger f', arranged to operate the trip-crank as the lever is rocked by the yielding of the packer, substantially as described.

7. The yielding packer, in combination with the connecting-rod F, rocking-lever f, provided with trip-finger f', trip-crank g', on the rock-shaft G, pitman g^2, spring-pin g^3, and spring-clutch H, substantially as described.

8. A compresser-arm supported upon a slotted lever beneath the grain-receiver, in combination with a crank concentric with and operated by the shaft of the discharging-arm, whereby the compresser is withdrawn simultaneously with the movement of the bundle-discharger, substantially as described.

9. The compresser-arm, in combination with a vibrating lever, T, and a cam on the main shaft arranged to vibrate the lever when the shaft is revolved, substantially as and for the purpose set forth.

10. The yielding packer, in combination with the arms s' and the vibrating compresser-arm, substantially as described.

11. The tubular shaft m, carrying at its lower end one member of the knotting-hook, in combination with the shaft m^1, carrying the upper member of the tying-hook and provided with a pin, m^2, the cam m^3, the spring m^4, and the adjusting-screw m^5, substantially as described.

12. The tubular shaft m, carrying at its lower end one member of the knotting-hook, in combination with the shaft m^1, carrying the other member of said hook and provided with a pin, m^2, the cam m^3, the spring m^4, the adjusting-screw m^5, and the stripper, substantially as described.

13. The tubular shaft m, carrying at its lower end one member of the knotting-hook, in combination with the shaft m^1, carrying the other member of said hook, and provided with the pin m^2, the cam m^3, the spring m^4, the adjusting-screw m^5, the stripper n^1, and the cutter n^2, substantially as described.

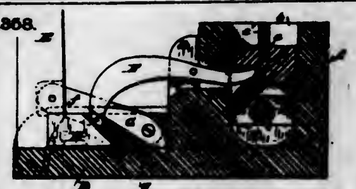
256,358. CAR-COUPLING. WILLIAM L. MOONEY, Wells' Tannery, and DANIEL GREEN, Bedford, Pa. Filed Mar. 10, 1882. (No model.)

Claim.—1. In car-couplings, the locking-piece O and finger A, operated by mechanism, substantially as described, to lock a coupling-bar, B, at the upper and lower sides of its head, substantially as specified.

2. In car-couplings, the pivoted trigger F, catch-piece G, pivoted to the finger-bar H, and operated by a link, f, and lever E, arranged for operation substantially as specified, and for the purpose set forth.

3. In car-couplings, the catch-piece G, held in locked position by a curved projection, g, and a recessed part, i, in combination with a pivoted trigger, F, having projection e, and operated by suitable connecting mechanism, substantially as specified.

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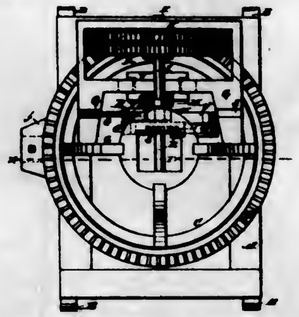


4. The combination of the weighted locking-piece C and finger-bar H with a pivoted trigger, F, having projection e, a pivoted catch-piece, G, the link f, and lever E, all arranged substantially as specified.

5. The combination of the bumper A, having projection D, cavities a A, and weighted locking-piece C, with the pivoted trigger F, catch-piece G, pivoted to the sliding bar H, having finger A, connecting-link f, and lever E, all constructed and arranged substantially as shown and herein set forth.

256,359. WEDGE-DRIVER. OTTO HEUSSENSTAMM, Guttenberg, N. J. Filed Dec. 15, 1881. (No model.)

Brief.—The hammer is caused to reciprocate through adjustable connecting-rods and cranks and a clutch carried by a collar loosely mounted on a shaft having a fixed cog-wheel, with which said clutch automatically engages, said shaft being rotated through a train of gear-wheels and a circular rack. An adjustable drill-rod guide can be secured to the lower end of the hammer-guides, when desired.



Claim.—1. In a wedge-driver, the combination, with a shaft rotated by means of a circular rack and a train of gear-wheels, of a cog-wheel mounted rigidly on this shaft, a collar mounted loosely on this shaft, and connected by connecting-rods and crank-bars with a vertically-reciprocating hammer, and of a clutch device for engaging the loose collar automatically with the cog-wheel on the shaft, substantially as herein shown and described, and for the purpose set forth.

2. In a wedge-driver, the combination, with the revolving shaft L, of the cog-wheel M, mounted thereon, the loose collar N, the hook Y, the vertically-reciprocating hammer V, and devices for connecting the collar N and the hammer V, substantially as herein shown and described, and for the purpose set forth.

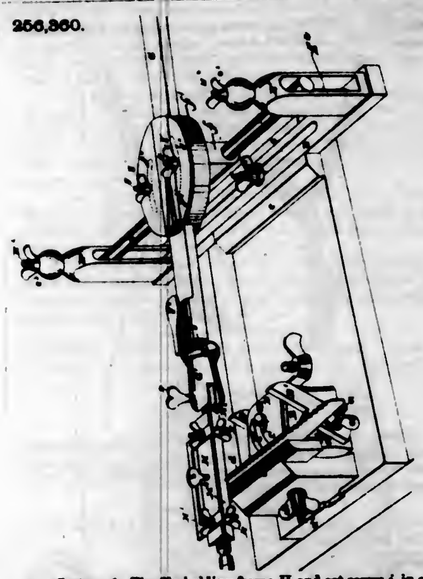
3. In a wedge-driver, the combination, with the revolving shaft L, of the fixed cog-wheel M, the loose collar N, the hook Y, the rod O, the connecting-bar Q, provided at one end with a loose collar, P, and at the other end with an apertured flange, R, the rod S, the crank-bar c, pivoted to the hammer V, and provided with a loose collar, T, substantially as herein shown and described, and for the purpose set forth.

4. In a wedge-driver, the combination, with a rotating shaft, of a fixed cog-wheel and a loose collar thereon, an adjustable connecting-bar for connecting the loose collar and the pivoted crank-bar of a reciprocating hammer, and a clutch device for automatically connecting the fixed cog-wheel and loose collar for the purpose of raising the hammer, substantially as herein shown and described.

5. The combination, with the hammer-guides W and the reciprocating hammer V, of the frame c, fitting on the lower ends of the hammer-guides and adapted to hold a drill, d, substantially as herein shown and described.

256,360. MACHINE FOR FILING SAWS. THOMAS HUNGARTEN, Newark, Ohio, assignor of one-half to William Albert Whipple, Alleghany, Pa. Filed June 13, 1881. (Model.)

256,360.

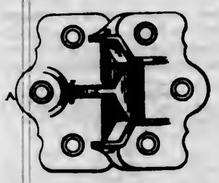


Claim.—1. The file-holding frame H and set-screw i, in combination with a slotted laterally-adjustable frame, H', having secured thereto the adjustable gage-plate H', substantially as shown and described.

2. The cross-rod F, block f, disk f', having curved slots f'', disk f''', and notched screws g g', fixed with relation to the disks, in combination with the file-holder bar G, substantially as and for the purpose set forth.

3. The combination, in a saw-filing machine, of the base A, cross-bar B, uprights E', thumb-piece e', screws E', block f, cross-rod F, and disks f' f''', for receiving the sliding bar G, substantially as shown and described.

256,361. LOCK-RINGS. SIGMUNDUS HEBBELN, Sedalia, Mo., assignor of one-half to David H. Smith, same place. Filed Feb. 16, 1882. (Model.)



Claim.—1. A hinge composed of the two parts A B, the part A being provided with the two projections E and the part B with the flat pintle-eye, which passes in between the inner ends of the projections, substantially as shown.

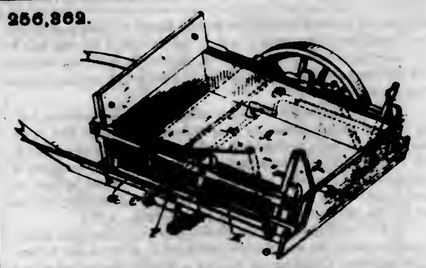
2. A hinge composed of the two parts A B, the part A being provided with the two projections, which are placed in line with each other and have their ends separated but a slight distance, the part B being provided with the flat central pintle-eye, I, which has suitable inclines formed upon it, substantially as described.

3. A hinge composed of the two parts A B, the part A being provided with the two projections placed in line with each other, and the part B having a pintle-eye projecting outward from its center, which is grooved upon opposite sides, substantially as specified.

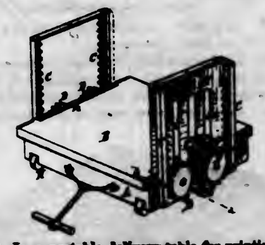
256,362. DUMPING-CART. ISAIAH R. NICHOLS, Newberry Township, York County, Pa. Filed July 7, 1881. (No model.)

Claim.—In a dump-cart, the body A, in combination with levers G, connected by rock-shaft H, and provided with hooks i i, pivoted latch-levers E, connected with levers G, and the tail-board swinging on a pivot and provided with extensions e e, over which the latch-levers catch, all arranged for operation substantially as described.

256,362.



256,363. DELIVERY-TABLE FOR PRINTING-MACHINES. THEODORE HOUSEL, Detroit, Mich. Filed Nov. 19, 1881. (No model.)



Claim.—1. In a portable delivery-table for printing-presses, the combination, with the frame or base A and the rigid vertical rack-bars C C of said frame, of the table B, adapted to slide between said rack-bars, the gear-wheels D, secured at opposite ends of the table and constructed to engage with the rack-bars, and the worm E, for operating said gear-wheels, substantially as and for the purpose specified.

2. The table B, having friction-collars b, adapted to traverse the outside of the rack-frame C, combined with said rack-frame, duplex gears, and an operating-worm, as set forth.

3. In a portable delivery-table for printing-presses, the table B, having friction-rolls b, arranged to traverse the outer surface of the rack-frame C, opposite the gears D, combined with said gears and rack, and with worm E, arranged between the gears, the parts b D E being in an approximately horizontal line, and adapted to prevent strain, as set forth.

4. The combination, with the base A, table B, racks C, and gears D E, of the apron I, secured to the rack-bars and to the base and passing through openings in the table, substantially as described.

256,364. WHIFFLETREE-COUPLING. JAMES PENDERGAST, New Haven, Conn. Filed Jan. 16, 1882. (No model.)



Claim.—The herein-described coupling, consisting of the sleeve A to receive the whiffletree, constructed with ears upon the rear side, with a recess, h, between the said ears and forward of the pivot, combined with the head b, secured between said ears by the pintle f, and an elastic block, i, arranged in said recess to bear against the sleeve in one direction and the head in the opposite direction, substantially as described.

256,365. CENTRIFUGAL CREAMER. CARL PETERSEN and LARS C. NIELSEN, Roskilde, assignors to the Burmeister and Wain's Maskin and Skibsbyggeri, Copenhagen, Denmark. Filed Oct. 24, 1881. (No model.) Patented in England July 1, 1881.



Claim.—1. In a centrifugal machine of the described class, the annular plate c, located a short distance below the annular top plate or cover, g, of the centrifugal vessel or receiver a, and pro-

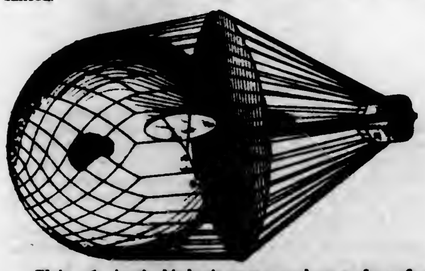
vided on its under side with the curved flange or collar *j*, whereby two ring-formed chambers, *i* and *f*, are formed in the top part of the centrifugal vessel or receiver *a*, concentric with one another and with said receiver, substantially as and for the purpose herein shown and specified.

2. The combination of the centrifugal vessel or receiver *a*, having the horizontal concentric ring-formed chambers *i* and *f*, arranged substantially as described, and stationary discharge-pipes *f'* and *f''*, adjustable in the direction of their length, and curved at their inner ends to form tapering mouth-pieces, which project respectively into the ring-formed chambers *i* and *f*, substantially as and for the purpose herein shown and set forth.

3. The combination of the discharge-pipe *f'*, having a screw-threaded section, *m*, and flanged bed-plate *h*, grooved nut *n*, having thumb-disk *t*, nut box or bearing *g*, having stop-screw *v*, and fixed bed-piece *l*, provided with parallel grooves for the reception of the adjustable plate *h*, substantially as and for the purpose herein shown and described.

256,866. AIR-SHIP. CARL W. PETERSEN, San Francisco, Cal. Filed Nov. 11, 1881. (No model.)

Brief.—The balloon-body A is made readable, so that its lifting capacity will be variable. A horizontal sail, C, is adjustably fixed below the balloon, so that it may be presented to the wind at any angle. Automatic valves regulate the quantity of gas in the balloon.



Claim.—1. An air-ship having a gas-vessel, means for rarefying said vessel, and a guiding-sail whereby the ship may beat or tack regularly in the air in vertical inclinations, substantially as described.

2. The combination of a readable balloon and a guiding-sail adjustable from a horizontal position to various inclinations, substantially as described.

3. The combination, with a balloon and its car, of a tank or tanks for containing volatile liquid and a retort for converting said liquid into gas, substantially as described.

4. An air-ship-lifting vessel having a vertical circular rudder pivotally connected to the frame of the sail, said rudder being provided with a brace and steering-lines extending from the ends of said brace to the car, substantially as described.

256,867. CHURN-DASHER. FRANCIS T. PISTER, Schulenburg, Tex. Filed Oct. 24, 1881. (No model.)



Claim.—1. In a churn-dasher, the combination of the rod A, the dasher B, pivoted upon the lower end of the rod and having both a vertical and a rotary movement, and the weighted arms D, which are applied to opposite sides of the dasher, substantially as shown.

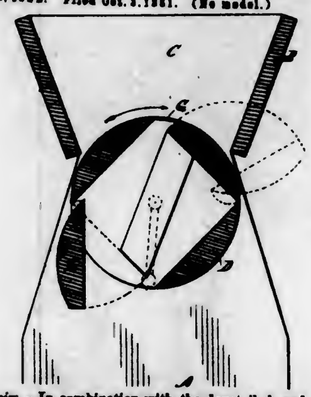
2. A churn-dasher having both a vertical and a rotary motion, and having weighted arms applied directly to it, substantially as set forth.

256,868. ROOFING COMPOSITION. GUSTAV H. PÖHERL, Union Hill, N. J. Filed Feb. 27, 1882. (Specimens.)

Claim.—1. A roofing composition made of a mixture of chalk, sulphur, asphalt, tar, and pitch, substantially in the manner herein described.

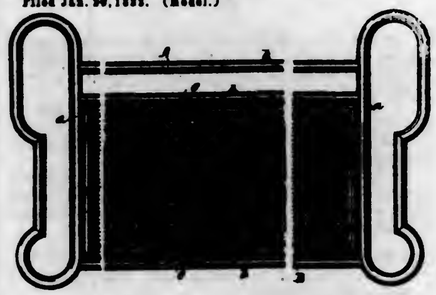
2. A compound roofing made of layers of paper alternating with layers of a mixture of chalk, sulphur, asphalt, tar, and pitch, substantially as set forth.

256,869. VEGETABLE-CUTTER. CONSTANTIN RAIBLE, Oskaloosa, Iowa. Filed Oct. 3, 1881. (No model.)



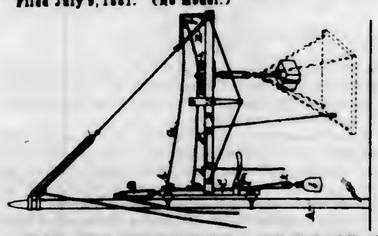
Claim.—In combination with the dovetail-shaped standards A and hopper C, the hollow rotating cylinder D, provided with knives G, and having automatically-acting hinged flaps E, all arranged and operating as described.

256,870. DASH-BOARD. EMIL BATTEY, New York, N. Y. Filed Jan. 20, 1882. (Model.)



Claim.—As an improved article of manufacture, a dash-board consisting of the outer frame, A, the inner frame, B, composed of slotted tubing *c*, and the wire-netting *d*, fitted in the slotted tubing of the said inner frame, substantially as herein shown and described.

256,871. DERRICK. ISRAEL S. REEVES, New Orleans, La. Filed July 9, 1881. (No model.)



Claim.—The crane or derrick composed of the following organizations: a standard, a vertical side with block and tackle, horizontal beam with block and tackle, a traveling car or carriage with block and tackle, and a friction-brake, substantially as described.

256,872. LEMON-SQUEEZER. ALFRED C. REE, Philadelphia, Pa. Filed Feb. 16, 1882. (No model.)



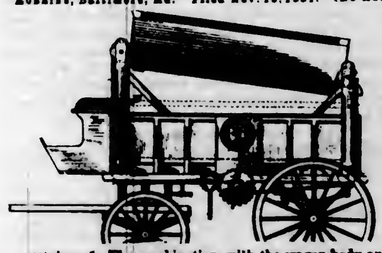
Claim.—1. In a lemon-squeezer, the frame A, provided with the aperture B and slots or recesses B', in combination with the cup C, having flange D and lugs F, and elastic ring G, substantially as and for the purpose specified.

2. In a lemon-squeezer, the frame A, provided with handle A', aperture B, and slots or recesses B', in combination with glass cup C, having flange D and lugs F, elastic band G, lever I, provided with handle I', and hollow surface J, covered with sheet metal K, not corrodible by citric acid, substantially as and for the purpose specified.

3. In a lemon-squeezer, the combination of cup C, having flange D at the top and lugs F at the bottom, with frame A, provided with aperture having slots B' and inclined faces or rims *f*, substantially as and for the purpose specified.

4. In a lemon-squeezer, a pressure-lever provided with an inverted cup or hollow part having a flat rim, in combination with a non-corrosive sheet-metal cover pressed into said hollow part and clamped around the rim, as shown.

256,873. WEIGHING AND DUMPING WAGON. HENRY R. ROBBINS, Baltimore, Md. Filed Nov. 15, 1881. (No model.)



Claim.—1. The combination, with the wagon-body and a set of weighing devices, of an internal shell made adjustable, as described, so as to be thrown off or on the scales, and means for raising and inclining said shell for dumping the contents, as set forth.

2. The combination, with a wagon-body having standards at its corners, of an internal shell and a set of pulleys and ropes carried by said standards for raising the shell, as described.

3. The combination, with a wagon-body having standards at its four corners carrying pulleys, of a set of ropes passing over said pulleys, and a differential windlass having its larger drums connected with and arranged to wind up the front ropes, and its smaller drums connected with and arranged to wind up the rear ropes, substantially as described, and for the purpose of imparting an inclination to the shell contemporaneously with its elevation.

4. The combination, with a wagon-body having standards at its four corners with pulleys thereon, as described, of an adjustable shell fitting within the wagon-body and suspended upon cords passing over said pulleys, so as to be raised, and a set of weighing devices for weighing the shell in one of its positions and affording a solid bearing in the other, as described.

5. The combination, with a wagon-body having elevated corner standards and a set of weighing devices beneath the same, of a shell fitting in the wagon-body, a set of ropes attached to the shell, a set of pulleys arranged in the standards and carrying the ropes, and a set of slides carrying these pulleys and extending through the wagon-body and supported upon the weighing devices, as and for the purpose described.

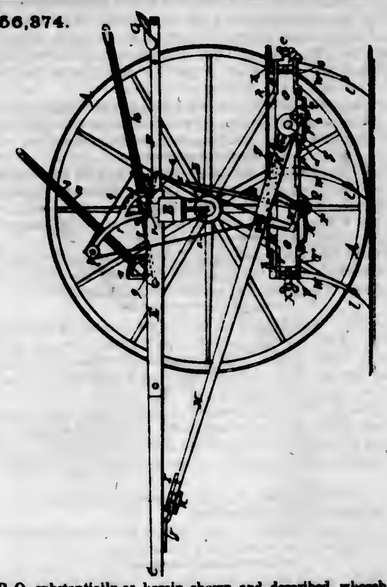
256,874. CULTIVATOR. HENRY A. ROBERTSON, Hocking, Ohio. Filed Aug. 31, 1881. (Model.)

Brief.—The arms of the rock-shaft are set at any elevation by a lever. From them the lifting-chains pass to the drag-bars, and thence over pulleys to levers. The standards are swiveled to the beams, and have cranks and a connecting-bar to set the shovels uniformly to throw in any direction. An arched cross-bar connects the draft-bars and sustains the strain of the shovel-beams, which, by keepers and blocks, have a longitudinal play. An elbow-crank at the rear divides the strain with the arch and regulates the pitch of the beam. The draft-bars connect with the tongue by a ball-and-socket joint.

Claim.—1. The combination of the perforated and grooved bearing-plates T V, provided with forwardly-projecting ends, the standard W, the eyebolt X, and the ribbed recessed block Y, whereby the standard W may be readily adjusted, as specified.

2. In a cultivator, the combination, with the inclined draw-bars H and the plow-beams O, of the arched bar L, the hangers M, the slotted keepers N, and the clamping eyebolts and blocks

256,874.



P Q, substantially as herein shown and described, whereby the plow-beams are adjustably connected with the inclined draw-bars, as set forth.

3. In a cultivator, the combination, with the beams O and the plow-standards W, of the cranks *h* and the connecting-bars *k*, substantially as herein shown and described, whereby the plow-standards and plows of each beam will be held in corresponding positions and can be adjusted at the same time, as set forth.

4. In a cultivator, the combination, with the inclined bars H and the plow-beams O, of the bearing-plates *m*, the cranks *p*, the keepers *s*, and the clamping eyebolts and blocks *s t*, substantially as herein shown and described, whereby the plow-beams can be readily leveled, as set forth.

5. In a cultivator, the combination, with the axle B, the tongue C, and the inclined draw-bars H, of the bearing-brackets *u*, having arms 1, the rod *v*, having arms *w w* 6, the levers 2 2, the connecting-rod 7 and lever 8, and the cords *x*, substantially as herein shown and described, whereby the inclined draw-bars and their plow-beams and plows can be raised together or separately, as set forth.

256,875. DYE-STUFF OR COLORING-MATTER. CARL RUMPFF, Aprath, near Elberfeld, Prussia, Germany. Filed Jan. 9, 1882. (No specimens.)

Claim.—As a new product, the dye-stuff or coloring-matter which results from the reaction of diazoazo-toluol-monosulphonic acid with the sodium salt of the alpha-monosulphonic acid of beta-naphthol, substantially as described.

256,876. MANUFACTURE OF DYE-STUFF OR COLORING-MATTER. CARL RUMPFF, Aprath, near Elberfeld, Prussia, Germany. Filed Jan. 9, 1882. (No specimens.)

Claim.—As a new product, the dye-stuff or coloring-matter which results from the reaction of diazo-alpha-naphthaline-monosulphonic acid with the solution of sodium salt of the alpha-monosulphonic acid of beta-naphthol, substantially as described.

256,877. MANUFACTURE OF DYE-STUFF OR COLORING-MATTER. CARL RUMPFF, Aprath, near Elberfeld, Prussia, Germany. Filed Jan. 9, 1882. (No specimens.)

Claim.—As a new product, the dye-stuff or coloring-matter which results from the reaction of diazo-beta-naphthaline-monosulphonic acid with the sodium salt of the alpha-monosulphonic acid of beta-naphthol, substantially as described.

256,878. MANUFACTURE OF DYE-STUFF OR COLORING-MATTER. CARL RUMPFF, Aprath, near Elberfeld, Prussia, Germany. Filed Jan. 9, 1882. (No specimens.)

Claim.—As a new product, the dye-stuff or coloring-matter which results from the reaction of diazoazo-xylol-monosulphonic acid with the sodium salt of the alpha-monosulphonic acid of beta-naphthol, substantially as described.

256,379. MANUFACTURE OF DYE-STUFF OR COLORING-MATTER. CARL RUMPFF, Aprath, near Elberfeld, Prussia, Germany. Filed Jan. 18, 1882. (No specimens.) Patented in England Mar. 31, 1881, in France Mar. 31, 1881, in Belgium Apr. 15, 1881, and in Germany Oct. 11, 1881.

Claim.—As a new product, the yellow dye-stuff which results from the reaction of the nitro-alpha-monosulphonic acid with carbonate of potash or its equivalent, substantially as described.

256,380. MANUFACTURE OF DYE-STUFF OR COLORING-MATTER. CARL RUMPFF, Aprath, near Elberfeld, Prussia, Germany. Filed Jan. 18, 1882. (No specimens.) Patented in England Mar. 31, 1881, in France Mar. 31, 1881, in Belgium Apr. 15, 1881, and in Germany Oct. 11, 1881.

Claim.—As a new product, the new scarlet dye-stuff which results from the reaction of diazoso-benzole with alpha-monosulphonic acid of beta-naphthol, substantially as described.

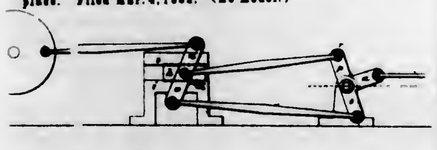
256,381. MANUFACTURE OF A NEW COLOR-PRODUCING ACID. CARL RUMPFF, Aprath, near Elberfeld, Prussia, Germany. Filed Apr. 8, 1881. (Specimens.) Patented in England Mar. 31, 1881, in France Mar. 31, 1881, in Belgium Apr. 15, 1881, and in Germany Oct. 11, 1881.

Claim.—1. The mode described of producing the alpha-monosulphonic acid of beta-naphthol, which consists in treating beta-naphthol with commercial sulphuric acid of the strength and at the temperature and in the proportions substantially as herein set forth.

2. As a new product, the alpha-monosulphonic acid of beta-naphthol, substantially as described.

3. As a new product, the soda salt of alpha-monosulphonic acid of beta-naphthol, substantially as described.

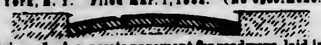
256,382. MECHANICAL MOVEMENT. ARTHUR E. RUST, Pine Meadow, Conn., assignor of one-half to Selon R. Rust, same place. Filed Mar. 4, 1882. (No model.)



Claim.—1. The herein-described mechanical movement, consisting of a rock-shaft to which a vibratory movement is imparted from a reciprocating power, a crank arranged for full revolution, a slide between said crank and rock-shaft carrying an arm hung thereto, so as to vibrate in a plane parallel with the plane in which the crank swings, with a connecting-rod from the said crank to one end of said arm, and a connecting-rod from the opposite end of said arm to an arm extending from said rock-shaft, and a connecting-rod from an arm extending in the opposite direction from said rock-shaft to the center of motion of the arm to which the crank connecting rod is attached, substantially as described.

2. The herein-described method for converting reciprocating into rotary motion, consisting of a rock-shaft to which a reciprocating movement imparts oscillation less than half of a full revolution, with a shaft having a crank thereon arranged for full revolution, and intermediate mechanism, substantially such as described, whereby the rotation or oscillation of the rock-shaft in one direction imparts a full revolution to the crank and on its return imparts a second revolution to the crank, substantially as described.

256,383. CONCRETE PAVEMENT. JOHN J. SCHILLINGER, New York, N. Y. Filed Mar. 1, 1882. (No specimens.)



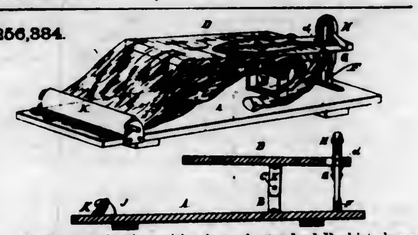
Claim.—1. A concrete pavement for roadways, laid in sections and provided with grooves extending transversely across the roadway from curb to curb, substantially as shown and described.

2. A concrete pavement for roadways, laid in sections on a convex bed or foundation and extending from curb to curb, substantially as set forth.

256,384. BOSOM-STRETCHER. RUDOLF SCHMIDT, Cincinnati, Ohio. Filed Dec. 1, 1881. (Model.)

Claim.—1. A bosom-stretcher board, D, hinged to a standard and adapted to be rocked thereon, in combination with a clamp for gripping the skirt of the garment and a device for depressing the head of the board and elevating the foot thereof, as set forth.

256,384.



2. The combination, with a base, A, standard B, skirt-clamping device K, board or rest D, having arm E, hinged to the standard, and a tipping device adapted to depress the head and elevate the foot of the board or rest, as set forth.

3. The combination, with base A, provided with standard B and skirt-gripping and board-tipping devices, of the tipping or rocking board or rest D, having the arm E, hinged to the standard B, substantially as set forth.

4. In combination with the rocking board or rest D E, standard B, base A, and a rest-depressing device, the removable jaw or clamp K and open-notched bearings J J', substantially as set forth.

5. In combination with the rocking board or rest D E, standard B, and base A and skirt-clamp, the rest-depressing cam-lever H, fulcrumed in hinged post G, that occupies a notch, *d*, in the said rest and is removable therefrom, substantially as set forth.

256,385. SNATH-FASTENER. AUGUST SCHULTZE, Galveston, Tex. Filed Feb. 13, 1882. (Model.)

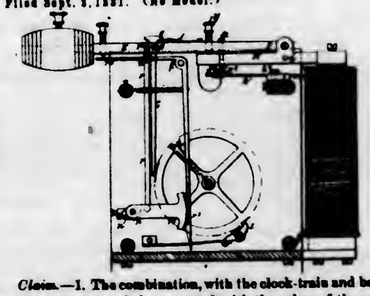


Claim.—1. In a device for attaching scythe-blades to handles, the plate A, having bracket B and studs D D, in combination with a hinged adjustable plate, F, having means for attaching the blade thereto, substantially as set forth.

2. The combination of the plate A, the hinged plate F, having slots H I J and hooked bolts K M, and mechanism for adjusting the two plates in relation to each other, substantially as set forth.

3. The combination of the plate A, having teeth T, bracket-S, connected by cross-piece U and set-screw V with the hinged plate F, having slots H I J, hooked bolts K M, and hinged segmental rack Q, provided upon its inner side with teeth or recesses W, all arranged and operating substantially as and for the purpose set forth.

256,386. ELECTRIC CLOCK. JAKOB SCHWEIZER, Soleure, Switzerland, assignor to Cornelius Roosevelt, New York, N. Y. Filed Sept. 3, 1881. (No model.)



Claim.—1. The combination, with the clock-train and balance-wheel and a ratchet-disk connected with the arbor of the minute-hand in said train through an elastic bar or spring, of a weight heavy enough to operate the said train, a device for conveying

power, such as a lever connected with said weight, an impulse-pawl between said device and the ratchet-disk, and an electro-magnet, said parts being constructed and arranged as described, so that the said weight, serving as the motive power of the clock, descends gradually, and in its descent operates the clock-train through the said impulse-pawl and ratchet-disk, and at the end of its fall is instantaneously raised by the said electro-magnet independent of said clock-train, substantially as set forth.

2. The combination, with an electro-magnet and a weighted lever provided with an impulse-pawl, of an arbor, a ratchet-disk mounted loosely on said arbor and adapted to be advanced by said pawl, an elastic bar or spring having sufficient stiffness after a slight yielding to resist the pressure of the weight, and revolving with the ratchet-disk and arbor, to convey gradually to the said arbor the power of the descending weight applied to the ratchet-disk through the pawl, and electric contacts for closing a circuit through the electro-magnet as said lever descends and for breaking the circuit when it is raised, so that said weight serves as the motive power for revolving the arbor, and the said elastic bar or spring acts simply to maintain the power during the instant required to restore the weighted lever, substantially as described.

3. In an electric clock, the combination, with the weighted lever, pawl and ratchet, electro-magnet, armature, and contacts for automatically closing the circuit through the electro-magnet as the lever descends, of means, as indicated, for regulating or varying the point in the descent of said lever at which the circuit is closed, and thus regulating or varying the play of the armature and the effective stroke of the said pawl, substantially as described.

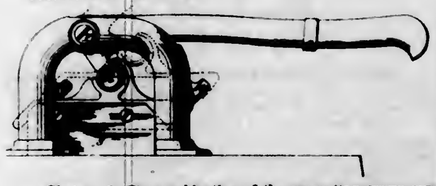
4. The combination, with a weighted lever, an electro-magnet, its armature, and contacts for automatically closing and breaking the circuit through the electro-magnet as the weight alternately descends and is raised, of an auxiliary circuit-breaker arranged, as described, for automatically breaking the circuit when the armature is no longer drawn to the electro-magnet on closing the circuit through the latter, substantially as described.

5. The combination of a shaft, contact-spring, disk mounted on said shaft for making contact with the spring, insulated disk provided with pins or projections for breaking the contact, and an additional spring for holding said contact-spring away from the disk until it is itself withdrawn, substantially as described.

6. The combination of a commutator for making and breaking an electric circuit, means, such as an unbalanced arm, for shifting said commutator when released, a trip-pawl for retaining said arm in place, a vibratory lever operating a ratchet through an impulse-pawl, an electro-magnet in the circuit of commutator, and devices connected with said lever for alternately tripping the said trip-pawl to allow the commutator to be shifted by the aforesaid unbalanced arm, and for restoring the commutator, substantially as described.

7. An electric clock comprising a clock-train with balance-wheel, an elastic bar or spring, a ratchet-disk, a click, an impulse-pawl, a weighted lever, an electro-magnet, and a commutator, constructed, combined, and arranged substantially as described, so that said weighted lever is raised by said electro-magnet independently of the clock-train and operates in its ascent the commutator to break the circuit of the electro-magnet, and then gradually descends by gravity, operating the clock by means of the impulse-pawl and ratchet through the elastic bar or spring, and at the end of its fall operates the commutator to restore the circuit through the electro-magnet, said elastic bar or spring being sufficiently elastic and yielding to keep the clock going while the weighted lever is lifted and of sufficient stiffness to resist the pressure of the weight and cause the weight to descend gradually as the said spring with the arbor of the clock-train is revolved, as set forth.

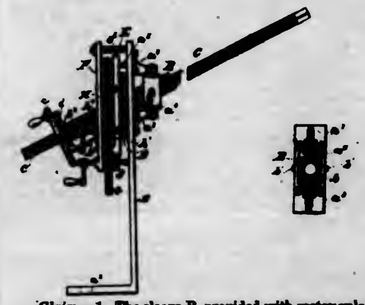
256,387. TOBACCO-CUTTER. WORTHINGTON SCRANTON, New Haven, Conn., assignor to Sargent & Co., same place. Filed Jan. 21, 1882. (No model.)



Claim.—1. The combination of the supporting-frame constructed with parallel inclined guides, and a cutter-stock carrying the knife, and arranged to move up and down in a diagonal path on said inclined guides, with a lever hung in the frame above, the said lever provided with an arm extending downward and working loosely in a seat provided for it in the cutter-holder, whereby the said cutter is permitted to move in a diagonal path, while the arm of the lever moves in the arc of a circle, substantially as described.

2. The inverted-U-shaped frame, divided longitudinally and constructed with parallel inclined guides, combined with the cutter arranged to move in a diagonal path on said inclined guides within said frame, and the lever, also hung within said frame, and constructed with an arm extending into a seat in the cutter-stock and working loosely therein, the said two parts of the frame secured together to hold the cutter and lever in place, substantially as described.

256,388. DEVICE FOR SUSPENDING PERSONS IN MID-AIR WITHOUT VISIBLE SUPPORT. ERNST H. J. SEEMAN, Berlin, Germany. Filed Jan. 26, 1882. (No model.)



Claim.—1. The sleeve B, provided with rectangular shoulders *b* upon its forward portion and a ratchet-wheel, b^3, upon its rear portion, and journaled within the pivotal frame a^4, substantially as shown and described.

2. The standards a a, bars a^7 a^7, and brackets a^5 a^5, in combination with the pivotal frame a^4 and sleeve B, all arranged to operate substantially as shown and described.

3. The pole C, provided with a wheel, *c*, and pawl c^1, which is controlled by the ratchet b^3, and adapted to rotate the pole within the sleeve, substantially as shown and described.

4. The pole C, sleeve B, pivoted frame a^7, and brackets a^5, in combination with the plates D and E, all arranged and operating substantially as shown and described.

5. The plate D, having formed in it a horizontal slot, *d*, vertical guide-slots d^7, recesses d^8, and provided with a rack, d^9, adapted to be raised up or down by the gear H and its pinion h, substantially as shown and described.

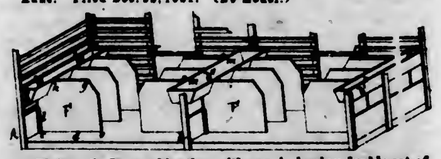
6. The plate E, having formed in it a vertical slot, *e*, guide-slots e^7 e^7, and a rack, e^8, upon its lower edge, which is engaged by the actuating mechanism consisting of the gear G, and pinions g g^1, all arranged to operate substantially as shown and described.

7. The combination of the plates D E and their actuating mechanism herein before set forth with the standards a a and pole C, all arranged and operating substantially as shown and described.

8. The combination of the pole C with the plate E, said plate being adapted to impart to the pole a vertical movement, substantially as shown and described.

9. The combination of the pole C with the plate D, said plate being adapted to impart to the pole a lateral movement, substantially as shown and described.

256,389. STOCK-CAR. JACOB H. SHELLABARGER, Topeka, Kans. Filed Dec. 23, 1881. (No model.)

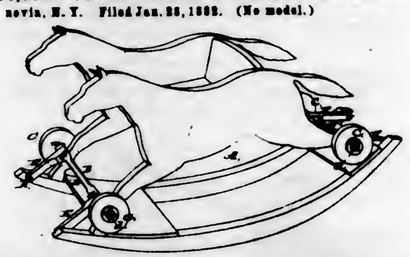


Claim.—1. In combination with car A, having double set of doors S, arranged opposite each other, the adjustable longitudinally-arranged stall-partitions F, and troughs b' b'', secured at each end and center of the car, thereby forming aisles across the car from door to door, through which the cattle enter the stalls, as shown and described.

2. The stalls or removable partitions F, bound on their edges with metal, and formed with notches *b b* and provided with pins *d e*, in combination with cross-piece *b*, stationary cleats *a'*, and cleats *e*, as and for the purpose specified.

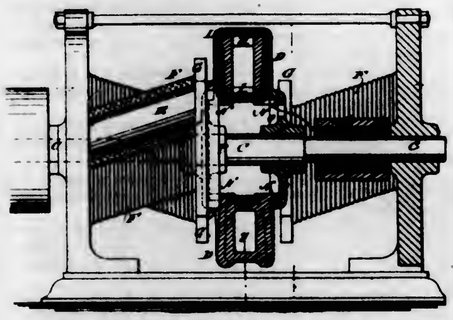
3. In combination with car A, having double set of doors S and provided with stationary cleats *a'*, the cross-piece *r*, removable and interchangeable stall-partitions F, troughs *b' b''*, and cross-bar *p*, all arranged for operation substantially as shown and described.

256,390. ROCKING-HORSE. CORNELIUS SHEPARDSON, Canovia, N. Y. Filed Jan. 28, 1882. (No model.)



Claim.—The combination, with a side-frame rocker, of the swinging adjustable axles B, extending entirely across the frame, carrying a wheel, C, at each end, and having the arms E E at right angles to said axle pivoted to the ends of the rockers and braced in contact with the rocker-faces by the intermediate portion, D, of the axle, substantially as specified.

256,391. DYNAMO-ELECTRIC MACHINE. HENRY B. SHERIDAN, Cleveland, Ohio. Filed July 19, 1881. (No model.)



Claim.—1. In a dynamo-electric machine, the armature-core D, constructed, substantially as herein shown and described, of a hollow iron ring nearly rectangular in its cross-section and with sides converging or inclined inward from the convex side toward the concave side, as set forth.

2. In a dynamo-electric machine, the armature-core D, constructed, substantially as herein shown and described, of a hollow iron ring having corresponding openings, H I, in its convex and concave sides and projections forming channels of uniform width upon its inclined or converging sides, as set forth.

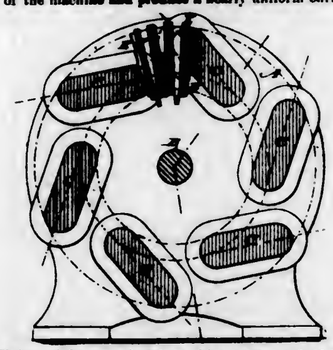
3. In a dynamo-electric machine, the armature-core D, constructed, substantially as herein shown and described, of a hollow iron ring having upon its sides projections J K of different thicknesses, alternating with each other and projecting beyond the concave side of the core, the projections J being made V-shaped or with sides converging to an edge, and the projections K being made with slightly inclined or converging sides and V-shaped ends, whereby channels or grooves of uniform width are formed to receive the helix-coils, as set forth.

4. In a dynamo-electric machine, the combination, with the armature-core D, having lugs N, and the armature-shaft C, of the hubs P, having flanges O, substantially as herein shown and described, whereby the said armature will be firmly connected with the said shaft, as set forth.

5. In a dynamo-electric machine, the combination, with the armature and the armature-shaft C, of the stationary magnet-cores E and the bobbins F, substantially as herein shown and described, the said cores being placed spirally around the armature-shaft and at an inclination with the said armature-shaft, and the said helices being wound with their coils parallel with the magnetic field of force, as set forth.

256,392. DYNAMO-ELECTRIC MACHINE. HENRY B. SHERIDAN, Cleveland, Ohio. Filed Aug. 22, 1881. (No model.)

Brief.—The construction is clearly indicated in the drawing and claim. The purpose is to avoid wide breaks in the inductive action of the machine and produce a nearly uniform current.



Claim.—A dynamo-electric machine constructed substantially as herein shown and described, with its magnets C made oblong in cross-section and arranged around the armature-shaft B, with the side of each magnet in the series nearly overlapping the edge of the adjacent magnet, substantially as herein specified.

256,393. SPECTACLE-HOLDER. JOSEPH A. SHORB, Salem, Ohio. Filed Aug. 15, 1881. (No model.)



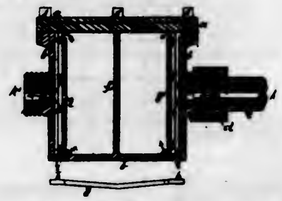
Claim.—1. As an improved article of manufacture, a spectacle-holder made substantially as herein shown and described, and consisting of a clip, E, to which is pivoted a strip, D, carrying the spectacles C', as set forth.

2. The combination, with the shade G, of the clip E, the strip D, and the spectacles C', substantially as herein shown and described, and for the purpose set forth.

3. The combination, with the clip E, of the strip D, the strip A, the spectacles C', and the binding-springs L and M, substantially as herein shown and described, and for the purpose set forth.

256,394. BELL-STOP. L. HYDE SLADE, Bridgeport, Conn. Filed Nov. 10, 1881. (No model.)

Brief.—Water entering the pipe *e* strikes against plate *g* and escapes around its edges, which are so narrowed as to prevent eels or other fish from passing. Plates *f f* project from the sides of the case and prevent the deposit of sediment.



Claim.—1. The combination of the case *h*, having the internal grooves, *i i*, hubs *c c*, threaded to receive the service-pipes *h h'*, and the center plate, *f*, all cast in one piece, substantially as set forth.

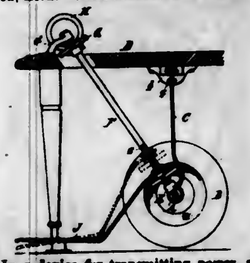
2. The case *h*, combined with the stop-plates *g g*, set therein opposite, transverse, and close to the orifice of the service-pipes *h h'*, substantially as and for the purpose set forth.

3. The angular stop-plates *g g*, provided with the ears *h h*, combined with the case *h*, as described and set forth.

4. The combination of the case *h*, provided with hubs *c c* for connection with the service-pipes, and the angular plates *g g*, set transversely to the orifice of said hubs with the re-entrant sides of said plates presented to said orifices, as set forth.

5. The combination of the case *h*, having the grooves *i i*, and the inlet *k* and outlet *k'*, with the angular plates *g g*, central diaphragm, *f*, and cover *a*, secured by the screws *j j*, all arranged substantially as described and shown.

256,395. DEVICE FOR TRANSMITTING MOTION. ENNIS L. SMITH, Jackson, Mich. Filed Jan. 26, 1882. (No model.)



Claim.—1. In a device for transmitting power, a revolving friction-wheel combined with a power-disk having a bearing-face upon which said wheel traverses radially to transmit different rates of speed, and central recess in which said wheel is forced to break the connection, as specified.

2. In a device for transmitting power, a revolving wheel combined with a power-disk having bearing-surface for said wheel, and a central recess in which the wheel is forced to break connections, and with means, substantially as described, for breaking the speed of said wheel when disconnected, as specified.

3. The combination of the power-disk B, having a bearing-surface and central recess, with the friction-wheel I and the treadle J, substantially as set forth.

4. The combination of the power-disk B, having bearing-surface and central recess, and the hanger C with the reciprocating friction-wheel I and the treadle J, as set forth, and for the purpose specified.

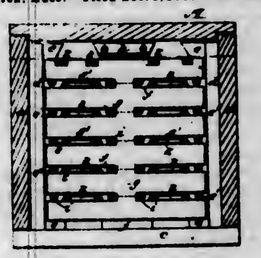
5. The combination, with the main shaft A, of the disk B, hanger C, step E, shaft F, friction-wheels G I, and treadle J, the parts being constructed, arranged, and operating substantially as and for the purposes set forth.

256,396. CALENDAR-INKSTAND. JAMES G. SMITH, Cleveland, Ohio. Filed June 11, 1881. (No model.)



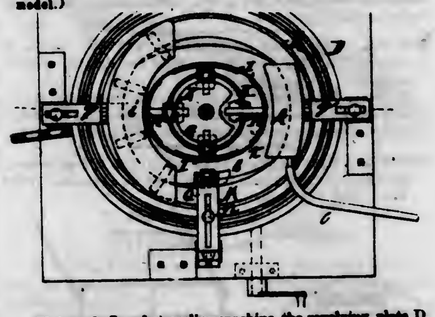
Claim.—In a calendar-inkstand, the combination, with the inkstand having the base-bearing *d*, carrying the names of the months, of the cover-band K, sprung upon said bearing and having an opening for disclosing a single month at a time, as set forth.

256,397. UNDERGROUND-TELEGRAPH LINE. WARREN D'E. SMITH, Boston, Mass. Filed Dec. 5, 1881. (No model.)



Claim.—The clamping-plate *g*, provided with slots *g'*, in combination with the box A and slotted wire-holders *e f*, substantially as shown and described.

256,398. HAT-CURLING MACHINE. WILLIAM T. SMITH and CHARLES E. HALL, Bloomfield, N. J. Filed Dec. 5, 1881. (No model.)



Claim.—1. In a hat-curling machine, the revolving plate D, having in its face the grooves I, substantially as described, and carrying a curling mechanism, in combination with means for revolving said plate, substantially as and for the purposes specified.

2. The plate D, substantially as above described, in combination with central mechanism for holding a hat, substantially as set forth.

3. The combination of plate D, substantially as set forth, the mechanism for holding hats, and the crank *f* and screw-wheel connection for turning said plate, substantially as set forth.

4. The plate D, substantially as set forth, fixed on the hollow shaft C, the band-wheel F, and shaft F, carrying the bevel-gear G, in combination with pinion K, rods H, and head-sections I, substantially as and for the purpose specified.

5. The bevel-gears G and K, the adjustable screw-rods H, and sections I, in combination with mechanism for revolving said gears, substantially as and for the purpose set forth.

6. The combination of the plate D, curling mechanism M, arranged to and operating on the face of the plate, with the device for attaching it, and the stops *p*, substantially as named.

7. The curling mechanism M, embracing the strip N, having the tongue O, the strip O', strip Q, carrying the shaft R, and foot S, in combination with plate D, substantially as and for the purpose specified.

8. The foot S, with the shaft R, hung to the pin *b*, and the lever *c*, substantially as and for the purpose named.

9. The combination of the plate D and foot S, substantially as set forth, and rollers *e*, for the purpose specified.

10. The combination of the plate D, curling mechanism M, all substantially as set forth, and weight *i*, substantially as and for the purpose named.

11. The combination of plate D, curling mechanism M, and weight *i*, all substantially as described, and iron *h*, for the purpose set forth.

12. The combination of the plate D and curling mechanism M, substantially as described, and devices for holding a hat, substantially as specified.

256,399. PADLOCK. GEORGE D. SPILMAN, Lancaster, Ohio. Filed July 26, 1881. (Model.)



Claim.—In a padlock, the combination, with the casing C, provided with the stationary jaw O, having stud P, the pivot G, the tumblers H, and springs I, of the jaw A, provided with the recess B in the under side of its outer end, and the recesses D E on its inner end, and the spring F, wound around the said pivot, substantially as and for the purpose set forth.

256,400. PRODUCTION OF NAPHTHYL-SULPHATE SODA SALT. JAMES H. STEBBINS, Jr., New York, N. Y. Filed Jan. 27, 1882. (Specimens.)

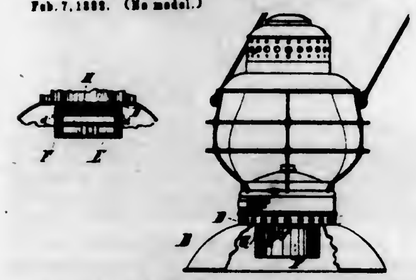
Brief.—The acid of this salt is produced by the reaction of commercial sulphuric acid upon beta-naphthol at moderate temperatures.

Claim.—The soda salt of naphthyl-sulphate produced by treating beta-naphthol with sulphuric acid and separated from other matters by the action of hot alcohol, substantially in the manner herein set forth.

256,401. DYE-STUFF OR COLORING-MATTER. JAMES H. STEBBINS, Jr., New York, N. Y. Filed Feb. 6, 1882. (Specimens.)

Claim.—The dye-stuff or coloring-matter produced by the action of diazoazo-benzole-monosulpho-acid upon the soda salt of naphthyl-sulphate, substantially in the manner herein set forth.

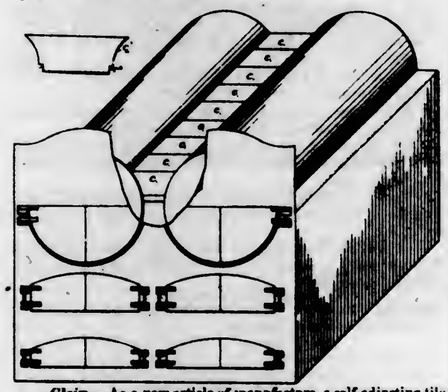
256,402. RAILWAY-LANTERN. WILLIAM O. STEPHENSON, Cincinnati, Ohio, assignor to H. H. Buck, St. Louis, Mo. Filed Feb. 7, 1882. (No model.)



Claim.—1. A railway lamp or lantern whose foot or base contains a holder or receptacle, D, a cap, F, and a spring catch or fastening, G, substantially as set forth.

2. The torpedo-holding attachment for railway-lanterns, consisting of receptacle D, cap F, fastening G, and anti-rattling spring H, substantially as set forth.

256,403. TILE FOR STEAM-BOILERS. JOHN C. STEVENS, Pittsburg, Pa. Filed Jan. 18, 1882. (No model.)

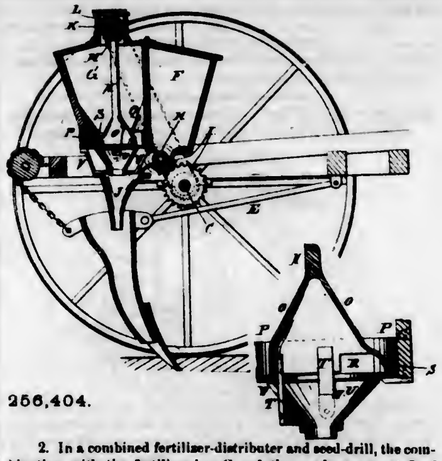


Claim.—As a new article of manufacture, a self-adjusting tile for steam-boilers, having the concave sides *c' c'* and cut-out *c² c²* substantially as described and shown.

256,404. COMBINED FERTILIZER-DISTRIBUTER AND SEED-DRILL. CHARLES R. STRAHORN, Centreville, Md. Filed Jan. 26, 1882. (No model.)

Brief.—A hollow feeding-cone having a scoop-like mouth is rotated in a depressed bottom or cup in the hopper. To this cone by suitable straps is attached an inverted truncated cone for guiding the material being fed to the drill-boots.

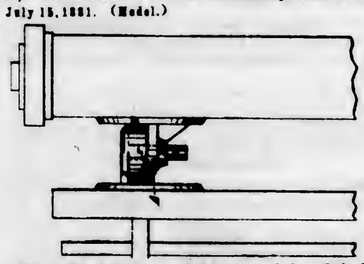
Claim.—1. In a combined fertilizer-distributer and seed-drill, the fertilizer-feed constructed substantially as herein shown and described, and consisting of the rotating hollow cone O, having side opening, R, and scoop-projection S, the stationary cup or recess P, having a central opening in its bottom, the connecting-bars T, and the inverted hollow truncated cone U, as set forth.



256,404.

2. In a combined fertilizer-distributer and seed-drill, the combination, with the fertilizer-box G and the conductor-spout J, of the shaft K, the gear-wheels L M, the shaft N, the hollow cone O, having side opening, R, and scoop-projection S, the cap or recess P, having center opening, the connecting-bars T, and the inverted hollow truncated cone U, substantially as herein shown and described, whereby the fertilizer is discharged with a positive force, as set forth.

256,405. HINGE. ALVAN SWEETLAND, Syracuse, N. Y. Filed July 15, 1881. (Model.)



Claim.—The improved gate-hinge, consisting of the bracket B, having the socket *b*, provided on the side farthest from the attaching-plate with a rigid journal, the roller *c*, mounted on said journal and provided with a peripheral flange on the side adjacent to the bracket B, the bracket A, having a solid plate, *e*, covering the socket *b*, and provided with the rigid downward-projecting pintle *a* and the concentric double-inclined rim *r*, the latter riding on the roller *c* and engaging with its inner edge the flange of said roller, all constructed substantially in the manner described and shown.

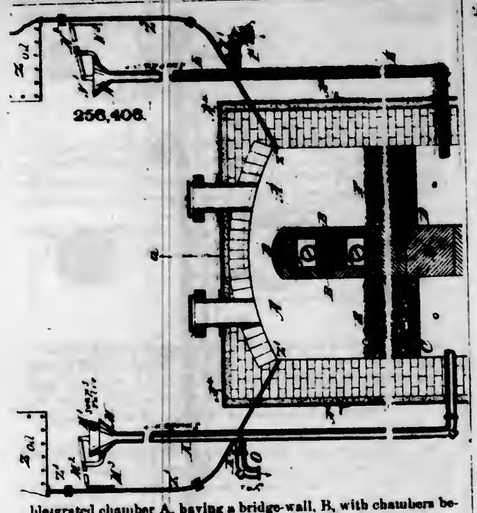
256,406. APPARATUS FOR MAKING CARBURETED-HYDROGEN GAS. WILLIAM H. TAYLOR, New York, N. Y., assignor to ENOS BARNES, same place. Filed Dec. 17, 1881. (No model.)

Claim.—1. In a gas-generating apparatus, the combination of a double-grated chamber adapted for holding two masses of coal separated by a bridge-wall, with a smoke-stack or flue connected to a chamber under each grate and provided with dampers at their outer ends, whereby the products of combustion may be conducted from both grates alternately, as hereinbefore set forth.

2. In a gas-generating apparatus, the combination of a double-grated chamber having a bridge-wall between the grates and two smoke-flues, one connected to the space under each grate, and provided with a damper or valve at their outer ends, with the branches O and P, for conducting the gas from the grates alternately, as hereinbefore set forth.

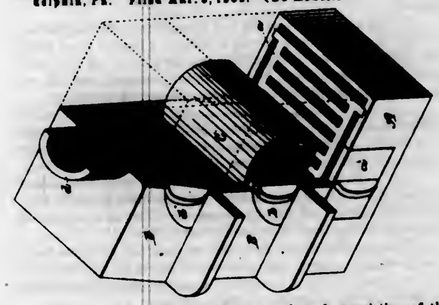
3. In a gas-generating apparatus, the combination of the double-grated chamber A, bridge-wall B, smoke-flues K and L, dampers M' and N', branches O and P, and inlet-pipes Z' and Z², whereby the operation of producing the carbureted gas may be conducted alternately, as hereinbefore set forth.

4. In a gas-generating apparatus, the combination of the double-grated chamber A, having a bridge-wall, B, with chambers below the grates, in combination with the steam, air, and smoke pipes for each grate, as hereinbefore set forth.



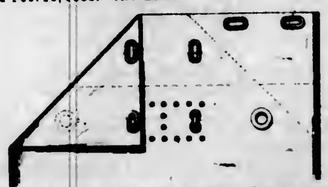
256,406.

256,407. KILN FOR ENAMEL WORK. AMELIA THEIL, Philadelphia, Pa. Filed Mar. 8, 1882. (No model.)



Claim.—A portable kiln for enamel work, consisting of the base A, having grate *a* and door *a'*, the muffle-chamber B, provided with muffle C, having door *b*, and the roof-section D, having the fuel-feeding door *d'*, constructed and operating substantially as and for the purpose set forth.

256,408. MAIL-BAG. ELISHA P. TURNER, Alliance, Ohio. Filed Feb. 23, 1882. (No model.)

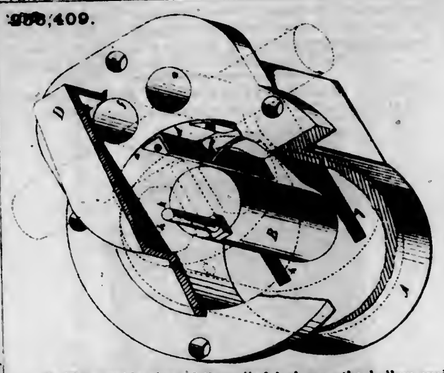


Claim.—A mail-bag the sides of which are of the same length, one side being provided with four horizontal and with two vertical slots, and with two staples which are secured to its outer face and located respectively below the said slots, the other side of the bag being provided with the same number of horizontal and vertical slots, substantially as set forth.

256,409. ROTARY WATER-METER. EDWARD C. TERRY, Hartford, Conn. Filed Oct. 24, 1881. (Model.)

Claim.—1. In a water-meter, the combination of a cylindrical case having an enlargement at one side with an oval float having both a longitudinal and rotary movement within said case, substantially as described, and for the purpose specified.

256,409.



2. The combination of the cylindrical case, the hollow oval float, the post B, and the cut-off *d*, substantially as described, and for the purpose specified.

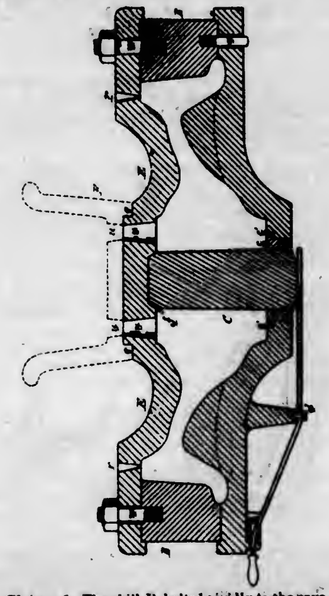
3. The combination of the cylindrical case having the enlargement *a*, the float C, post B, cut-off *d*, and guide *m*, substantially as described, and for the purpose specified.

4. The combination of the case A, oval float C, slotted cross-piece *b*, shaft *k*, and post B, substantially as described, and for the purpose specified.

5. The combination of the case A, oval and hollow float C, post B, and outlet and inlet channels *g h*, located with reference to the end of the float substantially as described, and for the purpose specified.

6. In a water-meter, the passages *e f*, with the transverse inlet and outlet channels at both ends thereof leading to and from the interior of the case, substantially as described, and for the purpose specified.

256,410. MOLD FOR CASTING CAR-WHEELS. JAS. THIERRY, Detroit, Mich. Filed Jan. 11, 1882. (No model.)



Claim.—1. The chill B, bolted rigidly to the cope E, and provided with steady-pins *a*, to enter holes in the lower section, in combination with said cope and lower section, the flanged collar *c*, the core C, and the basin F, the cope being provided with a flange to fit into the basin, and with a tapering recess to receive the upper beveled end of the core, substantially as set forth.

2. The cope E, provided with a projecting portion, O, to en-

ter a recess in the basin F, in combination with said basin, both the cope and the basin being provided with conical coincident openings, having their smallest openings at the adjoining faces of the cope and basin, substantially as and for the purpose specified.

256,411. PARLOR HEATING-STOVE. GEORGE O. THOMAS, Philadelphia, Pa. Filed Feb. 13, 1882. (No model.)



Claim.—1. The combination of the combustion-chamber F and the heating-chamber M in the rear of the same with a magazine and a partition, J, separating the said chambers, both magazine and partition being exposed at the front to the products of combustion and at the rear to the air to be heated, as set forth.

2. The combination of the combustion-chamber F, the hot-air chamber M, the partition J, and magazine G, separating the two chambers, and the ascending and descending flues a' a^4 in the rear of said chamber M, as set forth.

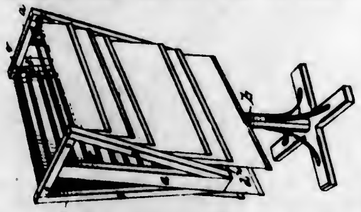
3. The combination of the combustion-chamber F, the hot-air chamber M, the partition J, and magazine G, separating the two chambers, the ascending and descending flues a' a^4 in the chamber M, and the connecting-flues a^2 a^3 in the hollow base of the stove, as set forth.

4. The combination of the combustion-chamber F and the heating-chamber M in the rear of the same with the magazine G and partition J, separating the said chambers, said magazine projecting partly into the combustion-chamber and partly into the heating-chamber, as set forth.

5. The combination of the stove having the heating-chamber M and rear and base flues, as described, with the partition *g* and door *i*, forming an oven, A, in the said chamber M, as set forth.

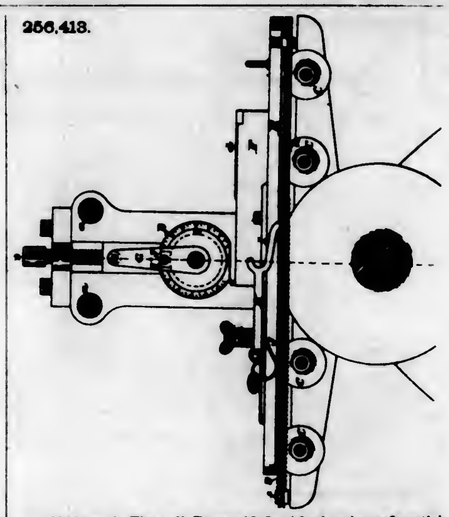
6. The combination of the stove having the heating-chamber M and rear and base flues, as described, with the door *i* and the partition *g*, having a damper, *k*, as set forth.

256,412. WINDOW-SHADE EXHIBITOR. FRANCIS H. TINKHAM, Springfield, Mass. Filed Feb. 7, 1882. (No model.)



Claim.—The within-described window-shade exhibitor, consisting of the frame *a*, having two outwardly-inclined shade-supporting posts, *x x*, upon opposite sides thereof, the tie-rods *v v*, the horizontal bar *u*, and the stand *b*, to which said frame is pivotally attached, combined and operating substantially as set forth.

256,413. PLATE-PRINTING PRESS. JAMES TREGURTHA, Boston, assignor to William C. Domain, Jr., Medford, Mass. Filed Nov. 16, 1881. (No model.)



Claim.—1. The roll D, provided with the circumferential groove *i* and flange or lip *i'*, in combination with the arm G, provided with the lug *k* and stud *l* and loosely mounted upon the shaft of the roll D, and the bolt *j* and nut *j'*, all constructed, arranged, and adapted to operate substantially as and for the purposes described.

2. The combination of the roll D, provided with the groove *i*, the arm G, provided with the lug *k* and stud *l*, the bolt *j* and nut *j'*, the plank E, the bar I, adjustably secured to said bed, the hook-arm H, and the spring J, all constructed, arranged, and adapted to operate substantially as and for the purposes described.

256,414. COMPOUND FOR DESTROYING CARPET BUGS AND WORMS. JACOB S. VANDENBURGH, Canandaigua, N.Y. Filed Sept. 10, 1881. (No specimens.)

Brief.—To make the tobacco extract, one and a half pound of tobacco is boiled in six quarts of water, and one quart of alcohol is then added. Of this six ounces are added to one ounce of the potash mixture and one ounce of turpentine.

Claim.—The herein-described composition of matter to be used to destroy carpet bugs and worms, consisting of extract of tobacco, potassium oxide, muriate of ammonia, salts of tartar, and turpentine, in the proportions stated.

256,415. TILE OF GLASS, PORCELAIN, &c., FOR DECORATING WALLS. ELIAS VERBEN, New York, N. Y. Filed Dec. 19, 1881. (No model.)



Claim.—1. A tile having various configurations on its surface formed in one piece, with depressions corresponding to the figures represented, and adapted to receive a corresponding design of metal, as herein before set forth.

2. A panel consisting of a tile formed with depressions corresponding to the figures to be represented, and filled with a design of metal, whereby the forms of the figures appear through the metal, representing inlaid work, as herein before set forth.

256,416. PLIERS FOR ATTACHING BUTTONS. WILLIAM H. WARD, Topeka, Kans. Filed Jan. 21, 1882. (No model.)

Claim.—1. A pair of pliers having suitable means for holding a button in the upper jaw and a die in the lower jaw, having a groove surrounding a raised portion for bending the prongs of a button-clasp inward, substantially as shown and described.

2. The combination, with the recessed upper jaw of the pliers

256,416.



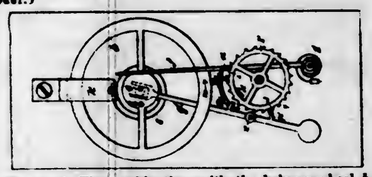
A, of the die *c'*, secured to the lower jaw, having a circular groove or recess, *d*, surrounding a raised portion, *e*, and provided with small radial grooves *e'*, extending to the bottom of the recess *d* and up the outer side thereof, substantially as shown and described.

256,417. BUTTON. WILLIAM H. WARD, Topeka, Kans. Filed Feb. 18, 1882. (No model.)



Claim.—The combination, in a button, of a rotary eyelet secured within the back of the button, so as to form a shank, a fastening having its cylindrical end secured within the eyelet, and a face having a depression fitting within the spread ends of the fastening and eyelet, substantially as shown and described.

256,418. ESCAPEMENT FOR CLOCKS AND WATCHES. EDUARD WERSCH, Vienna, Austria-Hungary, assignor of one-half to John James Hanhart, same place. Filed Dec. 12, 1881. (No model.)



Claim.—1. The combination, with the balance-wheel *b* and the escapement-wheel *r*, of the pivoted lever *f*, provided with a projection, *a*, and means for pressing it toward the escapement-wheel, the pin *i*, the pivoted rod *g*, provided with teeth *p p'*, and an arm, *n*, substantially as herein shown and described, and for the purpose set forth.

2. The combination, with the balance-wheel *b*, having an eccentric pin, *i*, and with the escapement-wheel *r*, of the eccentric *s* on the shaft of the balance-wheel, the pivoted rod *g*, provided with a fork and with teeth *p p'*, and an arm, *n*, and of the pivoted lever *f*, provided with a projection, *a*, substantially as herein shown and described, and for the purpose set forth.

256,419. PROCESS OF AND APPARATUS FOR MAKING PILLS. JAMES A. WHITNEY, Dobbs Ferry, N. Y. Filed June 23, 1880. Renewed June 8, 1881. Again renewed Feb. 24, 1882. (No model.)

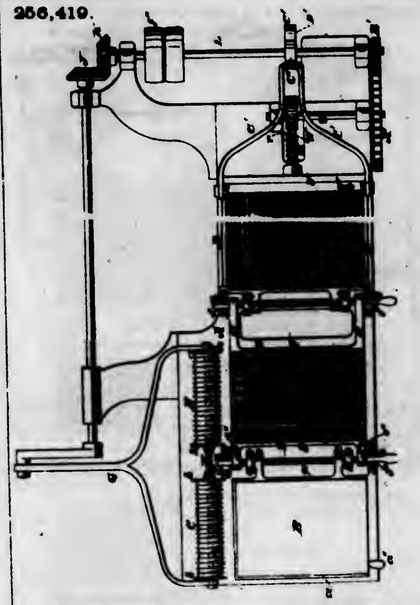
Claim.—1. The herein-described method of making strips of mass for the manufacture of pills by forming the sheet of mass with parallel divisions extending through more than one-half of the thickness of the sheet, then inverting the sheet, and completing the separation of the strips by coincident divisions on the opposite side of said sheet, substantially as and for the purposes herein set forth.

2. The herein-described method of preventing the adhesion of the cylindrical strips of mass to the mechanism whereby they are formed by providing the sheet of mass with parallel divisions extending through more than one-half the thickness thereof, then inverting the partially-divided sheet into the grooves of a plate, D, the sharp edges between the grooves of which extend through only substantially one-half of the thickness of the sheet, and then separating the strips by parallel divisions coincident with those on the opposite or under side of the sheet, substantially as and for the purposes herein set forth.

3. The method herein described of insuring the separation of the cylindrical strips of mass by first forming the sheet of mass with parallel divisions extending through more than one-half of the thickness of the sheet, then filling to a greater or less degree the said divisions with powdered chalk, resin, or similar material, then inverting the said sheet and completing the formation of the strips by coincident divisions on the opposite side of the sheet, substantially as and for the purposes herein set forth.

4. The combination, in a pill machine, of the following elements, namely: a substantially plain-faced plate, B, for receiving

256,419.



a sheet or quantity of mass, a mechanical device for forming parallel divisions in the mass to a depth greater than one-half of the thickness of said mass, a plate, D, having grooves of a contour substantially correspondent with the divided surface of the mass to be operated upon, and a mechanical device for dividing the opposite surface of the mass coincident with the divisions first made therein, the whole provided for joint use and operation, substantially as and for the purposes herein set forth.

5. The combination, in a machine for making pills, of a grooved plate, N, a coincidentally-grooved plate, E, and mechanism, substantially as described, for imparting a simultaneous downward and reciprocating movement to the plate E', with reference to the plate N, substantially as and for the purposes herein set forth.

6. The combination of the substantially plain-faced plate B, grooved plate D, and grooved rollers C and E, substantially as and for the purposes herein set forth.

7. The grooved plate D, constructed and arranged to be tilted or turned in opposite directions, in combination with the plates B and N, and mechanism, substantially as described, for forming divisions in the mass on the plate B, for completing the division of the mass into cylindrical strips on the plate D, and for dividing and shaping the strips into pills on the plate N, substantially as and for the purposes herein set forth.

8. The combination of the inclined planes R, the slides S, the reciprocating plate E', and mechanism, substantially as described, for giving a longitudinal movement to the slides S, substantially as and for the purposes herein set forth.

9. The combination of the frame T, the grooved plate E', and grooved plate N, substantially as and for the purposes herein set forth.

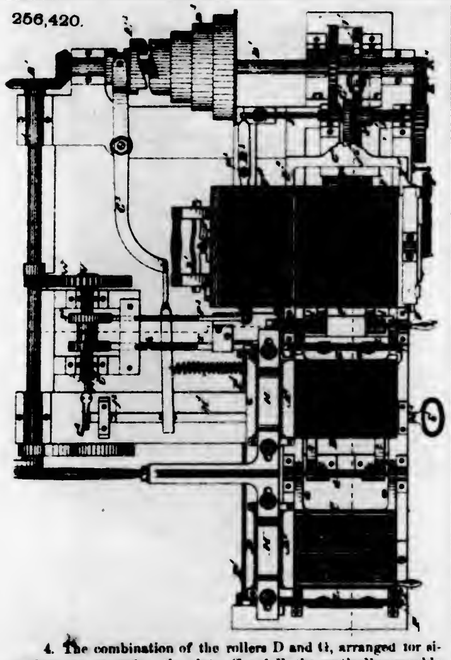
256,420. MACHINE FOR MANUFACTURING PILLS, &c. JAS. A. WHITNEY, Dobbs Ferry, N. Y. Filed Sept. 16, 1881. (No model.)

Claim.—1. The combination, with the grooved roller D, of the plate C, constructed with shallow grooves or depressions in its upper surface to prevent casual lateral displacement of the mass during the operation of the grooved roller thereon, substantially as herein set forth.

2. The combination, with the grooved roller D and plate C, of means, substantially as described, for graduating the descent of the roller upon the plate during the operation of grooving and corrugating the mass thereon, substantially as herein set forth.

3. The combination, with the roller D and plate C, of vertically-movable rails L and means, substantially as described, for raising and lowering said rails to graduate the distance between the said roller and plate, substantially as and for the purpose herein set forth

256,420.

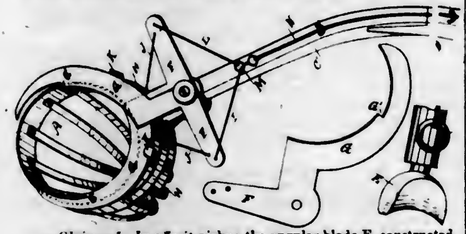


4. The combination of the rollers D and G, arranged for simultaneous operation, the plates C and E, the vertically-movable rails L, arranged to receive the weight of the rollers, and means, substantially as described, for graduating the vertical movement of the rails to graduate the distances of the said rollers from the said plates, substantially as herein set forth.

5. The combination, with the rollers D G and the plates C E, of mechanism, substantially as described, for automatically stopping the movement of said rollers at intervals to permit the manipulation of the plates, substantially as and for the purpose herein set forth.

6. The combination, with the plates F F², inclined planes F' F'', and cam G', of mechanism, substantially as described, for stopping the motion of the cam to permit continued motion of the plate F² after the same has descended to the plate F, substantially as herein set forth.

256,421. FRUIT-PICKER. JAMES R. WILLIAMSON and JOSEPH A. WILLIAMSON, Brunswick, Ga. Filed Oct. 10, 1881. (Model.)



Claim.—1. In a fruit-picker, the angular blade F, constructed substantially as herein shown and described, with a curved cutting-edge, G, having an offset or shoulder, G', as set forth.

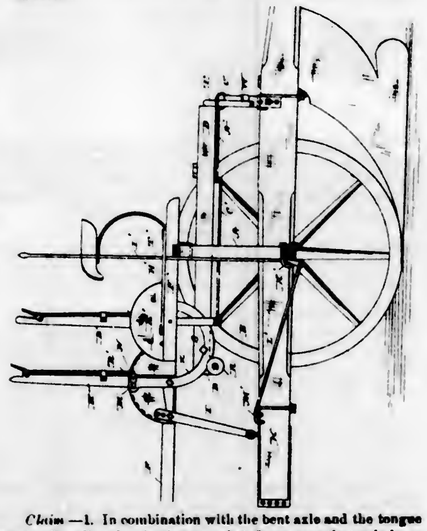
2. In a fruit-picker, the combination, with the basket A and the handle D, of the angular blades F, having curved cutting-edges and pivoted to the said handle, and the springs H, having one end secured to the basket and the other connected to the blades by cords J, substantially as shown and described, whereby the said blades will be held open, as set forth.

3. In a fruit-picker, the combination, with the basket A, the handle D, and the angular blades F, pivoted to the said handle, of the springs H, having one end secured to the basket and their free ends connected to the blades by cords J, the cords L, and the cord M, substantially as and for the purpose set forth.

4. In a fruit-picker, the combination, with the handle D and the basket A, provided with the clips K and the springs H, of the angular pivoted blades F, the cords J, connecting the said springs and blades together, and the cords L N, substantially as and for the purpose set forth.

5. In a fruit-picker, the combination, with the handle D, of the removable knee-piece E, substantially as and for the purpose set forth.

256,422. SULKY-PLOW. MYRON G. WOOD, Church's Corners, and WALTER C. PRATT, Hudson, Mich. Filed Mar. 9, 1882. (Model.)

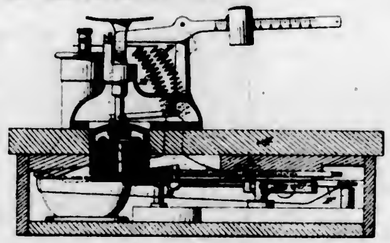


Claim.—1. In combination with the bent axle and the tongue or pole of a sulky-plow having a ratcheted segment, the angle-lever fulcrumed to the segment and loosely connected to the forward part of the plow-beam, the curved lever fulcrumed to said segment and provided with a slotted head adapted to play upon a bolt upon the angle-lever, and the pivoted frame D, provided with a friction-roller and pin between which the curved lever plays, substantially as and for the purpose specified.

2. In combination with the frame D, pivoted to the bent axle, and the segment T at the rear thereof, the plow-beam provided with the yoke U V Y, the bell-crank, connecting-rods, and the lever D' for operating the plow to wing the same, substantially as and for the purposes set forth.

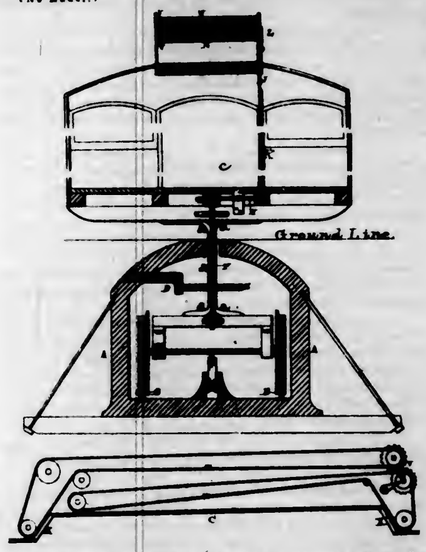
3. In combination with the bent axle and plow-beam, the angle-lever I', fulcrumed to the axle, the connecting-rods L' N', and the beam-clamp M', whereby the width of the furrow may be regulated, substantially as specified.

256,423. WEIGHING-SCALES. WALTER W. WRIGHT, Cairo, Ill. Filed Oct. 21, 1881. (Model.)



Claim.—As an improvement in weighing-scales, an electric alarm which is set in operation by means of a circuit-closer that is adapted to be operated by the arm of the scale-beam which receives the article to be weighed, and a wedge adapted to be moved longitudinally, so as to vary the position of said circuit-closer with relation to the said arm, substantially as and for the purpose specified.

256,424. ADVERTISING DEVICE FOR STREET-CARS. RICHARD F. BRINKWELL, San Francisco, Cal. Filed Jan. 30, 1882. (No model.)



Claim.—1. The combination, with a street-car, of an advertising device consisting of a rack, D, placed in the road-bed, a vertical shaft, F, provided with a toothed wheel, E, to engage with the rack, and having an operating-cam, G, secured to its upper end, with a mechanism for operating one or more endless belts, substantially as shown.

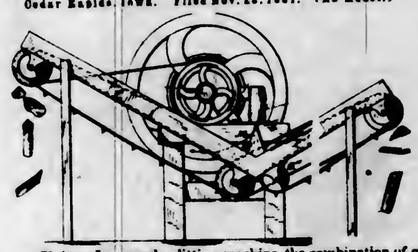
2. The combination of the pivoted lever H, an operating mechanism for moving the lever, and a connecting cord, wire, or chain, J, a loose pulley, L, provided with dogs P, a ratchet, R, a roller, N, spar-wheels V, and belts W, substantially as described.

3. The combination of a car having an opening, X, through each end, with the belts W, arranged as shown, and mechanism for operating the belts, whereby the names of the streets and the advertisements will be alternately exposed to view at both ends of the car at the same time, substantially as set forth.

4. The combination, in a street-car, of belts W, a mechanism for operating them, an alarm mechanism to attract the attention of the passengers, a connecting rod, cord, or wire, J, a pivoted lever, H, a grooved cam, G, for operating the lever, a vertical shaft, F, and a toothed wheel, E, and rack D, substantially as specified.

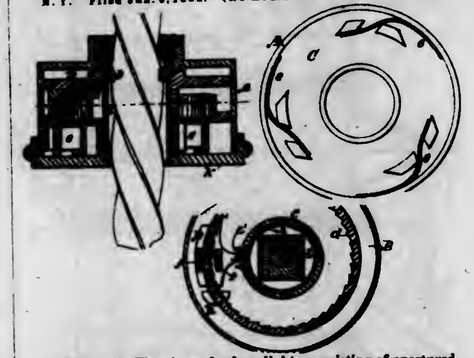
5. The combination of an operating mechanism for advertising in a street-car, consisting of a pivoted lever, H, a connecting wire, cord, or rope, J, the loose pulley L, placed upon the end of the roller N, adapted to operate the belts W, a weight, Q, secured to the pulley L, the dogs P, the ratchet O, the projections R, and an alarm mechanism adapted to call the attention of the passengers to movement of the belts in front of the openings X, substantially as shown and described.

256,425. WOOD-SPLITTING MACHINE. ROBERT G. BROCK, Cedar Rapids, Iowa. Filed Nov. 28, 1881. (No model.)



Claim.—In a wood-splitting machine, the combination of carrier F, partition M, and carrier F', substantially as and for the purpose set forth.

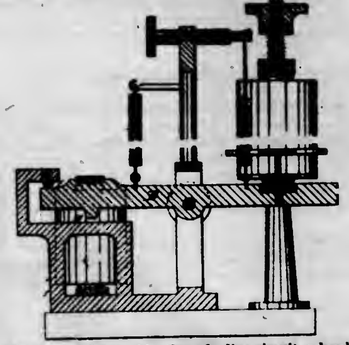
256,426. CLAMP FOR EXTENSION GAS-FIXTURES. JOHN F. BROWN, Brooklyn, assignor to Oxley & Giddings, New York, N. Y. Filed Jan. 3, 1882. (No model.)



Claim.—1. The clamp for drop-lights, consisting of apertured disk B, provided with slotted hub e and stud A, disk C, having flange d, spring-arms e, and dog D, provided with lugs f g, substantially as shown and described, combined with case A, for operation as specified.

2. In clamps for drop-lights, the loose clamping-dog D, in combination with the revolving disk B and friction-disk C, substantially as shown and described.

256,427. RELAY AND SOUNDER. CHARLES S. RUSSELL, New York, N. Y. Filed Jan. 18, 1882. (No model.)



Claim.—1. The combination of a line-circuit, a local circuit, an electro-magnet having independent coils wound in the same direction, one coil being in the line and the other in the local circuit, an adjustable spring assisting said magnet, an armature-lever, and a retracting-magnet in local circuit, substantially as described.

2. The combination of an overlying and underlying magnet having two sets of independent coils wound in the same direction, an armature-lever, a local circuit, a controllable resistant in said local circuit modifying the power of the local battery continuously energizing one set of coils in said magnets, a retracting-spring of fixed tension, a retracting-magnet, and an adjusting-spring acting in the line of attraction, for operation substantially as described.

256,428. COFFEE AND PEANUT ROASTER. CHARLES L. COLE, Bucknell, Ill., assignor of one-half to James R. Kay, same place. Filed Sept. 12, 1881. (Model.)

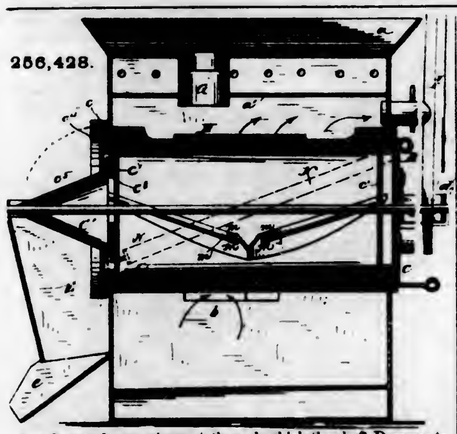
Claim.—1. In a coffee-roasting cylinder, the double-inclined plane M, one or more, set at right angles to the inside periphery, and having the bent edges m m', substantially as described.

2. In a roasting-cylinder, the combination of the double-inclined plane M, having edges m m', with the single inclines N, extending from end to end of the cylinder, substantially as described.

3. The cylinder C, having at one end the cone C', in which is opening c' and annular door c', and at the other the doors c'', having valved openings, substantially as described.

4. In combination with furnace B, having the strap d at one end and the hopper E at the other, the cylinder C, larger at one end than at the other, and provided with annular door and in-

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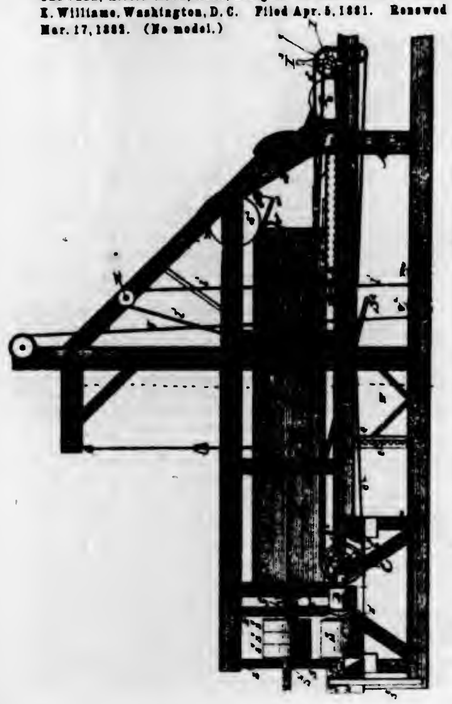
ternal central cross-pieces, *c'*, through which the shaft D passes to its bearings in parts *d* and E, all substantially as set forth.

5. The exhibitor K, having water-chamber k^2 and its connecting-pipes, steam-pipe *p*, door *k*, and glazed openings *k'*, combined with fine L, passage-way *b*, damper *i'*, and furnace B, substantially as described.

6. In combination with exhibitor K, the hot-water chamber k^2, having pit k^3, and which not only forms its entire bottom, but extends up and around its lower sides, and is provided with pipe k^4 and steam-escape pipe *p*, all substantially as described.

7. The cylinder C, slightly larger at one end than at the other, and having an annular discharge-door, *c'*, at the larger end, in combination with cone C', fixed in said larger end, substantially as set forth.

256,429. COMBINED COTTON GIN AND PRESS. PEARL K. CROWELL, Little Rock, Ark., assignor of one-fourth to Elisa K. Williams, Washington, D. C. Filed Apr. 5, 1881. Renewed Mar. 17, 1882. (No model.)



Claim.—1. In a combined cotton gin and press, the packer F, connected with a reciprocating rack-frame, and composed of vertical and horizontal bars secured to a base-plate, substantially as described.

2. The combination, with the packer F, of the rack-frame G, provided with two internal sets of teeth, a pinion arranged to be raised or lowered within the rack-frame to engage the teeth of either set, and devices for raising and lowering the said pinion, whereby the rack-frame and the packer can be moved back and forth by the rotation of the pinion in one direction, substantially as described.

3. The combination, with the movable packer F, arranged within the lint-box, of the trap-door *e'*, arranged to be raised by the forward movement of the packer, and the weighted arm *e²*, arranged to be raised by the spring *e³* during the backward movement of the packer, substantially as described.

4. In a combined cotton gin and press, the bale-holder K, consisting of vertical bars *k*, forming one section thereof, and the triangular-shaped plates L, secured to a plate, L', and constituting the remaining section of the same, said sections being connected by eyebolts, substantially as described.

5. The combination, with the packer F, provided with a series of vertical bars, of the vertically-movable bale-holder K, provided with vertical bars, and triangular-shaped plates arranged to admit of the passage of the vertical bars of the packer between them in the manner set forth, said bale-holder being adapted to be raised by pressure of the lint wedged under its triangular-shaped plates by the packer, substantially as described.

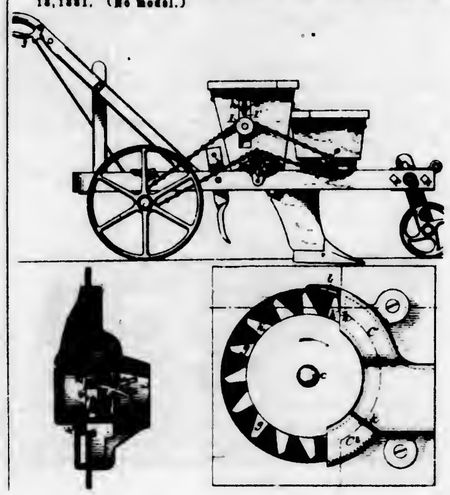
6. The tie-holder T, comprising vertical sheaths for the ties and pinions, and rack-bars for raising the same, substantially as described.

7. The combination, with the vertical sheaths *t* for the ties, of the crank-wheel *t'*, the pinion t^2 upon the shaft of the crank-wheel, the pinion t^3, connected with the crank-wheel by a connecting-rod, and the rack-bars t^4, with which the pinions engage, whereby by operating the crank-wheel the tie-holder can be raised into the bale-box, substantially as set forth.

8. The combination, with the head-block Q, of the follower-blocks O O', the latter provided with pins passing through slots P, the screw acting upon the block O, the fast and loose pulleys *s'*, and mechanism for driving the fast pulley in different directions, substantially as described.

9. The combination, with the gin-saws, the rotary brush, and a flue leading from the brush to the condenser, of a movable packer arranged to travel back and forth in the lint-chamber below the condenser, a vertically-moving bale-holder arranged in front of the packer, the head-block arranged to be lowered at one side of the bale, the follower and screw of the press, and the vertically-moving tie-holder, substantially as described.

256,430. FERTILIZER-DISTRIBUTER AND PLANTER. ARTHUR B. FARQUHAR, JOHN A. JONES, and HENRY W. EISENHART, York, Pa., assignors to said Farquhar and Jones. Filed July 18, 1881. (No model.)



Claim.—1. The combination, with the fertilizer hopper or box and the horizontal rotating feed-wheel provided with teeth formed with cutting-edges, of a scraper secured within the box above the feed-wheel, and provided with a cutting-edge arranged with respect to and adapted to co-operate with the teeth of the feed-wheel successively passing beneath it, substantially as hereinbefore set forth.

2. The obliquely-toothed horizontal feed-wheel and the box or hopper in which the same is mounted, in combination with a scraper provided with a cutting-edge arranged with respect to and adapted to co-operate with the teeth of the feed-wheel, substantially as hereinbefore set forth.

3. The combination of the hopper provided with a bottom having a feed-wheel-receiving recess, as described, the horizontal rotating toothed feed-wheel mounted in said recess, and the scraper formed with a cutting-edge to co-operate with the teeth of the feed-wheel, substantially as and for the purposes hereinbefore set forth.

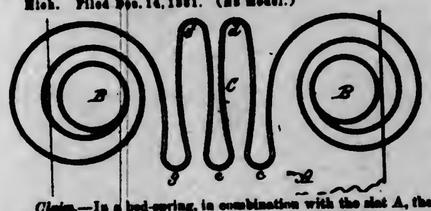
4. The scraper formed with a cutting-edge to co-operate with the feed-wheel teeth, and arranged, substantially as herein described, so as to cover the discharge-opening and part of the feed-wheel, in combination with the hopper or box and the horizontal rotating toothed feed-wheel, substantially as set forth.

5. In combination with the hopper and the horizontal rotating toothed feed-wheel, the scraper formed and arranged to cover the discharge-opening and part of the feed-wheel, and provided with two cutting-edges, one in front and one in rear (relatively to the direction of rotation of the feed-wheel) of the discharge-orifice, adapted to co-operate with the teeth of the feed-wheel, substantially as hereinbefore set forth.

6. The combination of the fertilizer and seed hoppers, the feed-shaft, the pinions or chain-wheels, the chain, and the adjustable tightening pulley or wheel, under the arrangement and for operation as hereinbefore set forth.

7. The teeth-covering wheel formed with teeth inclined both laterally and in the plane of revolution of the wheel, substantially as and for the purposes hereinbefore described, and illustrated in Figs. 9 and 10 of the accompanying drawings.

256,431. BED-SPRING. HENRY FOSBURGH, Howard City, Mich. Filed Dec. 14, 1881. (No model.)



Claim.—In a bed-spring, in combination with the slat A, the twin springs B B, having formed between them the wire plate C, consisting of the central tongue, *e*, and supporting-wires *c d* and *f g*, said springs being further provided with clamping-arms *b b* upon their lower ends, adapted to embrace the slat and secure the springs thereto, substantially as shown and described.

256,432. TELEPHONE-EXCHANGE SYSTEM. LEWIS T. GANSFIELD, Brooklyn, N. Y., assignor of one-half to the Holmes Burglar Alarm Telegraph Company, of New York. Filed Apr. 21, 1880. (No model.)

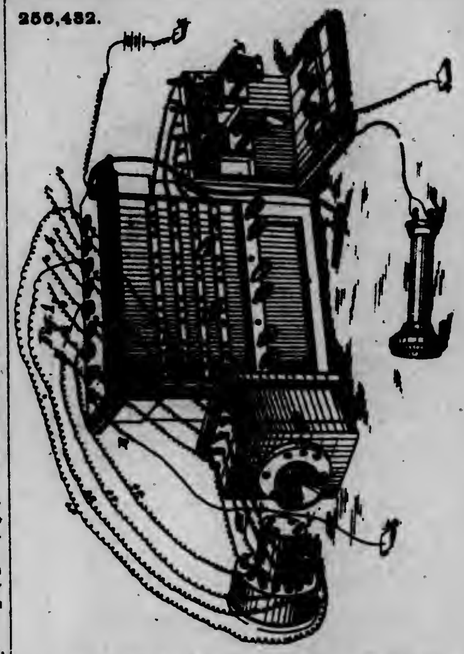
Brief.—The subscribers' lines are connected in pairs through the switch-board and multiple transmitter and receiver, so that each line has some other line as its ground-connection. When a pair of lines is separated the unemployed line takes a local ground. Branch lines from the switch-board lead to the listening operator's apparatus.

Claim.—1. The combination, in a telephone-exchange system, of a plurality of service-lines with multiple receiving and transmitting instruments at the central station, each line being connected through the instrument with another line of the system, whereby each line normally or in a state of rest is grounded through each other line.

2. The combination, in a telephone-exchange system of a plurality of service-lines arranged in groups, so that in their normal condition or a state of rest each has as its ground the ground of some one of the other lines, a switch-board, and a local ground at the central station, arranged substantially as set forth, whereby any line cut off from its normal ground may take the local ground of the central station.

3. The combination, in a telephone-exchange apparatus, of a switch-board, a multiple receiver, and a plurality of service-lines leading through the switch-board to each receiver.

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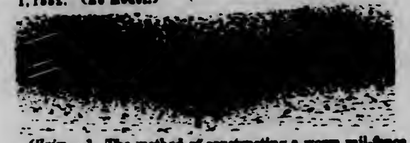
4. The combination, in a telephone-exchange apparatus, of a switch-board, a multiple transmitter, and a plurality of service-lines leading from each transmitter to the switch-board, and thence to the customers.

5. The combination, in a telephone-exchange system, of two service-lines and a single coil in each of the instruments (the receiver and the transmitter) of the central station, each line being connected through such coils with the other line, whereby each line normally or in a state of rest is grounded through the other line.

6. In combination with the key-board of the listening-off apparatus, a series of automatic drops arranged and connected to be operated at the time of placing the customers in communication, substantially as described.

7. In combination with the union-strips of the switch-board of a central telephone-station, a series of automatic drops arranged to be operated by the same current with which the switchman signals the customers, substantially as set forth.

256,433. FENCE. GIDEON A. HOBB, Newark, N. Y. Filed Mar. 1, 1882. (No model.)



Claim.—1. The method of constructing a worm rail-fence by securing one end of a piece of wire or cable to the top rail of a panel near the point of intersection of said rail and the top rail of the adjacent panel, then carrying said wire or cable down under the end of one of the lower rails of said panels, bringing it upward and attaching it to the top rail of said adjacent panel while lying in an inclined position, substantially as shown, and finally raising the free end of said inclined rail to its place upon the fence, so that it will act as a lever in straining said wire or cable, substantially as set forth.

2. A worm rail-fence of common construction, having the two ends of a piece of wire or cable secured to the respective top rails of adjacent panels near the point of intersection of said rails, said wire or cable extending under the ends of the rails of said panels, as shown, the rails of the fence contained within the circuit of the wire being held firmly together by the same.

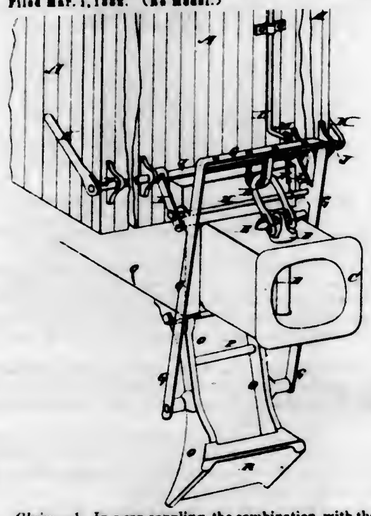
256,434. HARVESTING-MACHINE. ASA NYER, Springfield, Ohio, assignor to William H. Whiteley, same place. Filed Mar. 22, 1880. (Model.)



Claim.—1. The combination of the rotating gear-wheel, the oscillating gear-wheel working on a ball-and-socket joint, the vibrating arm and connections, and the suspension-rod, said rod being sustained at one end by a support placed above and connected to the frame of machine and connected at the opposite end to the vibrating arm, substantially as and for the purpose described.

2. A gear which rotates with the main axle and in mesh therewith, an oscillating gear upon a ball-and-socket joint, and an arm for driving the knife fastened rigidly to said oscillating gear, combined with a support for said arm adapted to prevent rotation of said oscillating gear, but to permit free reciprocation of said arm.

256,435. CAR-COUPLING. LEANDER KIRK, Georgetown, Ohio. Filed Mar. 1, 1882. (No model.)



Claim.—1. In a car-coupling, the combination, with the coupling-pin D and the rod J, working in bearings attached to the end of the car, and provided with the arms I and handles K, of the stirrup G, pivoted to the said arms, the clevis F, and pin E, substantially as and for the purpose set forth.

2. In a car-coupling, the combination, with the coupling-pin D, the rod J, provided with the arms I and handles K, and the hinged bars O, carrying the inclined apron R, of the stirrup G, pivoted to the said arms and bars, the clevis F, and the pin E, substantially as and for the purpose set forth.

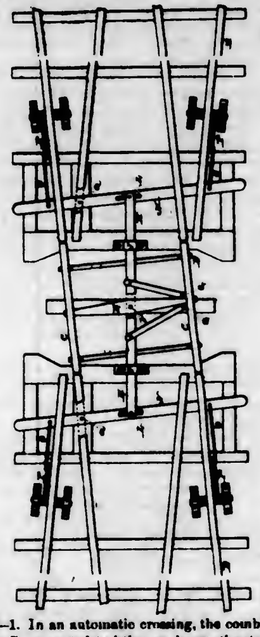
3. In a car-coupling, the combination, with the stirrup G and the coupling-pin D, having a diamond-shaped hole in its upper end, of the clevis F, having diamond-shaped holes in the ends of its arms, and the diamond-shaped clevis-pin E, having rounded parts or journals, substantially as herein shown and described, whereby the clevis-pin is made self-locking, as set forth.

256,436. METHOD OF TREATING FIBROUS MATERIALS FOR PAPER-STOCK, &c. JOSEPH O. ELINGER, Vienna, Austria-Hungary, assignor to the Society for the Manufacture of Wood Pulp, at Grallingen. Filed Feb. 24, 1882. (No specimens.)

Claim.—The process of freeing fibrous materials of any kind from its incrustating and other foreign substances by boiling them with a watery solution of ammonia in a closed vessel with or without pressure, substantially as herein described.

256,437. AUTOMATIC RAILROAD-CROSSING. DAVID LEE, Jr., Birmingham, assignor of one-half to C. A. SMITH, Fort Deposit, Ala. Filed Feb. 14, 1882. (No model.)

Brief.—The movable rails are vibrated upon their central pivot by tread-levers secured to vibrating levers, which give an endwise movement to a sliding rod to which is secured radial rods extending from a point on one of the movable rails opposite the pivot, the diverging ends of said rods being secured to the sliding rod.

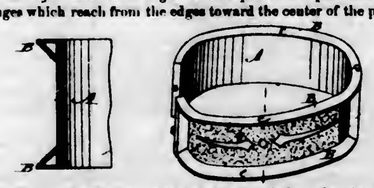


Claim.—1. In an automatic crossing, the combination of the crossing-rails C, connected together as shown, the stops G, the connecting-rods I, pivoted thereto, the bar E, the endwise-moving connecting-rod, the slotted pivoted levers, and the pivoted levers I', which extend above the track, substantially as set forth.

2. The combination of the pivoted slotted levers N, the levers P, which extend above the tops of the tracks in pairs, so as to be struck by the wheels of the advancing car, connecting-rod H for uniting the two levers together, suitable devices for connecting the crossing-rail to rod H, and the crossing-rails, the parts being arranged and combined to operate substantially as specified.

256,438. BRACELET. WILLIAM LISK, Newark, assignor to himself and Addison Conkling, Elizabeth, N. J. Filed Feb. 8, 1882. (No model.)

Brief.—The outer edges of the plates are provided with flanges which reach from the edges toward the center of the plates.



Claim.—1. The bracelet made substantially as herein shown and described, formed of the main plates A A and the hollow reenforcing flanges or ribs B B, secured upon the outer surface of the plates at their edges, as set forth.

2. The flanges B B, formed of the straight portion a, and the diagonal or inclined portion c, and adapted to be secured upon the outside and at the edges of the plates A, substantially as and for the purposes set forth.

3. The method of forming the ribs or flanges B B, which consists in stamping or otherwise bending a plate of metal into double acute angles and then cutting the bent plate longitudinally in the center, substantially as described.

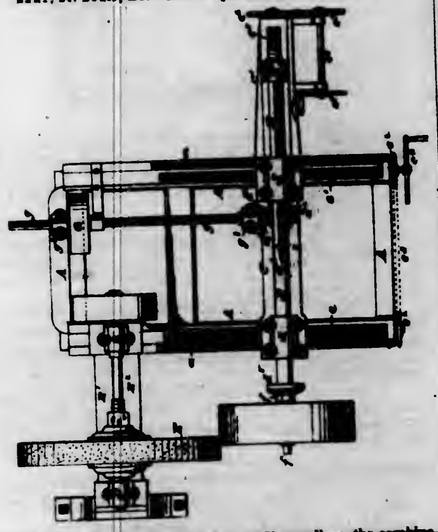
256,439. DESTRUCTIBLE SHUTTER-FASTENING. FRANK O. MATTHIESSEN, Irvington, N. Y. Filed Mar. 16, 1882. (No model.)

Brief.—Some part of the fastener which retains an automatically-closing shutter in an open position is of fusible alloy and melts off and allows the shutter to close and protect the window-frame in case of fire.



Claim.—In combination with self-closing shutters for windows or other openings, destructible fastenings for holding such shutters open, composed in whole or in part of a fusible compound which melts at a temperature below that at which wood ignites, and thereby breaks the fastenings and releases the shutters to the action of the springs or other mechanism by which they are made to shut over the window or other opening which they are designed to shield, substantially as set forth.

256,440. MACHINE FOR GRINDING PULLEYS. PHILIP MEHART, St. Louis, Mo. Filed Sept. 5, 1881. (No model.)



Claim.—1. In a machine for grinding pulleys, the combination of a pulley-carrying arbor having its end to which the pulley is attached overhanging the main frame, a grinding-wheel arranged to one side of the main frame, with its axis on a line parallel with the axis of the pulley-carrying arbor, and means for feeding the pulley across the face of the grinding-wheel, substantially as described.

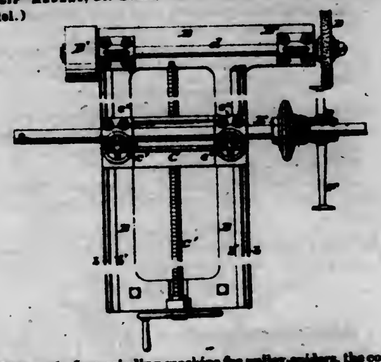
2. In a machine for grinding pulleys, the arbor-carriage C, provided with an overhanging or extension part, C', in combination with the carrying-arbor D, box D', and feed-screw c^4, substantially as herein described, and for the purpose set forth.

3. In a machine for grinding pulleys, the combination of a pulley-carrying arbor having its pulley-carrying head overhanging the main frame, a grinding-wheel arranged to one side of said frame with its axis on a line parallel with the axis of the pulley-carrying arbor, an arbor-carriage, C, and duplicate operating-screws c c, arranged at the sides of the main frame, and connected together so as to operate in unison, for the purpose set forth.

4. A machine for grinding pulleys, consisting of a bed or sheers, A, arbor D, feed-screws $c c'$, and grinding-wheel E, in combination with the traveling shaft g, driving-pulley G, gears d^3 d^4, box D', and feed-screw c^4, all arranged substantially as described, and for the purpose set forth.

5. A machine for grinding pulleys, consisting of a bed or sheers, A, grinding-wheel E, carriage C, feed-screws $c c'$, chain-wheels c^5, chain c^7, hand-wheel c^6, arbor D, box D', feed-screw c^4, gears c^8 c^9, counter-shaft c^{10}, hand-wheel c^6, gears d^3 d^4, traveling shaft g, and driving-pulley G, all arranged substantially as herein described, and for the purpose set forth.

256,441. MACHINE FOR GRINDING PULLEY-SPIDERS. PHILIP MEHART, St. Louis, Mo. Filed Sept. 5, 1881. (No model.)



Claim.—1. In a grinding-machine for pulley-spiders, the combination of a spider-carrying arbor having its carrying-head overhanging the side of the main bed or sheers and supported in suitable bearings, so that it can be moved endwise and rotated by hand, with a grinding-wheel the axis of which is in a parallel line with the axis of the carrying-arbor, substantially as described.

2. In a grinding-machine for pulley-spiders, the combination of an adjustable carriage, having beveled legs a, the bed or sheers B, having corresponding guides or lips, b, and hand-screws $d d'$, the ends of which have bearing against the bed B, substantially as described, and for the purpose set forth.

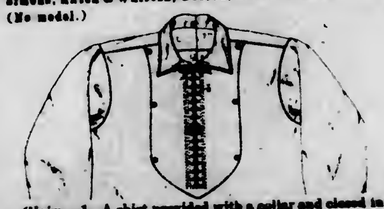
3. In a grinding-machine for pulley-spiders, the combination of a spider-carrying arbor having its carrying-head overhanging the side of the main bed or frame and supported in suitable bearings, so that it can be rotated and moved endwise by hand, and a bed or frame having a side extension, B', supporting an emery-wheel at its outer end, the axis of which is in a parallel line with the axis of the carrying-arbor, substantially as described.

256,442. SHOE OR GLOVE FASTENER. SIMEON HEBBLE, Sedalia, Mo. Filed Nov. 14, 1881. (Model.)



Claim.—In a glove and shoe fastener, the combination of the hook, having a stop formed on one end, and the staple, by means of which the hook is secured in place, the hook having an endwise sliding movement through the staple, substantially as described.

256,443. SHIRT. ALBERT R. PERKINS, Newton, assignor to Simons, Hatch & Whittan, Boston, Mass. Filed Feb. 27, 1882. (No model.)



Claim.—1. A shirt provided with a collar and closed in front and open down the back and through the back of the collar, and having to the lips of the openings buttons and button-holes or other proper separable fastenings, all being substantially as described.

2. A shirt provided with a collar and closed in front, and there provided with a lacing and lacing-holes, as described, and also open in the back of the collar, and from thence down in the back of the body, and having the lips of the cloth at such openings provided with buttons and button-holes or other proper separable fastenings, all being substantially as set forth.

3. A shirt having a collar and a breast-shield and a lacing and lacing-holes in the latter, and also constructed with an opening down through the collar at its rear, and one in continuation down into the back of the shirt-body, such body and collar having buttons and button-holes for closing their said openings, all being substantially as described and represented.

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10,000. PLATE-PRINTING PRESS. THOMAS S. BATES, Bos-

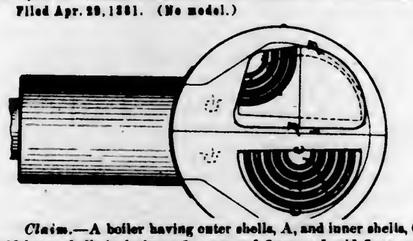
256,444. SALICYLATE OF CHINOLINE. WILHELM PICKHARDT, New York, and HERMANN HERRMANN, Brooklyn, assignors to said Pickhardt and Adolf Kuttroff, New York, N. Y. Filed Feb. 24, 1882. (Specimens.)

Claim.—As a new article of manufacture, the salicylate of chinoline herein described, and having the characteristics above set forth.

256,445. BENZOATE OF CHINOLINE. WILHELM PICKHARDT, New York, and HERMANN HERRMANN, Brooklyn, assignors to said Pickhardt and Adolf Kuttroff, New York, N. Y. Filed Feb. 24, 1882. (Specimens.)

Claim.—As a new article of manufacture, the benzoate of chinoline herein described, and having the characteristics above set forth.

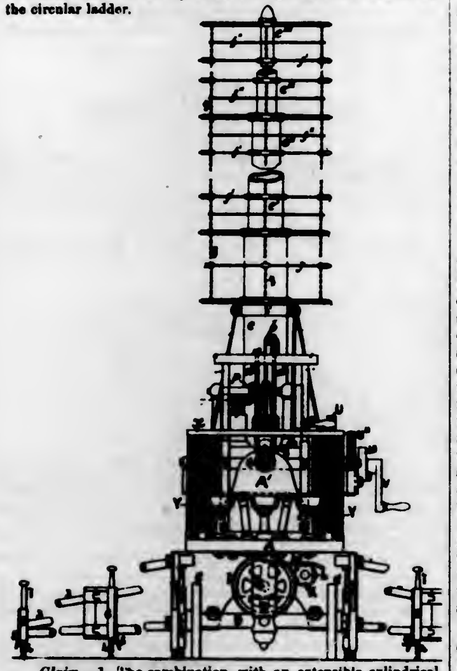
256,446. STEAM-BOILER. DAVID RENSHAW, Cohasset, Mass. Filed Apr. 29, 1881. (No model.)



Claim.—A boiler having outer shells, A, and inner shells, C, said inner shells inclosing a furnace and flues, and said flues containing within them bent water-tubes *d*, emerging from and entering a central water-body, *e*, substantially as described.

256,447. FIRE-ESCAPE LADDER. LORENZO D. B. SHAW, Revere, Mass. Filed Aug. 29, 1881. (No model.)

Brief.—Coiled springs in the front and rear of the frame, and connected by ropes to the frame and ladder, steady and counterbalance the ladder when elevated and at an inclination. A hose is connected to the top of the telescopic tubes which carry up the circular ladder.

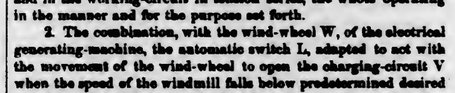


Claim.—1. The combination, with an extensible cylindrical ladder, of a hose adapted to be elevated and lowered simultaneously with said ladder, substantially as set forth.

2. The combination, with a tilting table, S, of a series of springs, Y, attached to the frame A, and operating in connection with a chain, *d*, substantially as and for the purpose set forth.

3. The combination, with the tilting frame F, of springs P, connected to a bar, N, at the rear of the apparatus, and operating in connection with a chain, Q, attached to the lower portion of frame F, as and for the purpose specified.

256,448. DIE-STOCK. ALFRED J. STEVEN, Elkhart, Ind., assignor of one-half to Fredrick L. Collins, same place. Filed June 28, 1881. (Model.)



Claim.—In a die-stock, the frame A, open at one end, and having pivoted in this open end a lever, H, which has the cam J and stop L formed upon its inner end, in combination with the screw-threaded handle and dies, substantially as shown.

256,449. FOLDING CABINET-BEDSTEAD. FREDERICK STEINBRENNER, Buffalo, N. Y., assignor to Wilhelmina Steinbrenner, same place. Filed Dec. 22, 1881. (No model.)



Claim.—1. The combination, with the case or frame A and the bed-frame B, pivoted thereto, of a spring, D, an adjustable cross-piece, E, to which the spring is secured, and means, substantially as described, whereby the spring is connected with the bed-frame, substantially as set forth.

2. The combination, with the case or frame A and the bed-frame B, pivoted thereto, of a spring, D, a cross-piece, E, supporting the spring, and having teeth m at its ends, and serrated plates N, secured to the frame A, whereby the cross-piece E can be adjusted, substantially as set forth.

3. The combination, with the frame A, provided with a head-board, A', and pivoted bed-frame B, of a spring, D, cross-pieces E, F, and P, and guide-bars O, whereby the spring and the cross-piece attached thereto are maintained in their proper position, substantially as set forth.

4. The combination, with the frame A, provided with a head-board, A', and pivoted bed-frame B, of the spring D, provided with cross-piece F, adjustable cross-piece E, cross-piece P, and slotted guide-bars O, substantially as set forth.

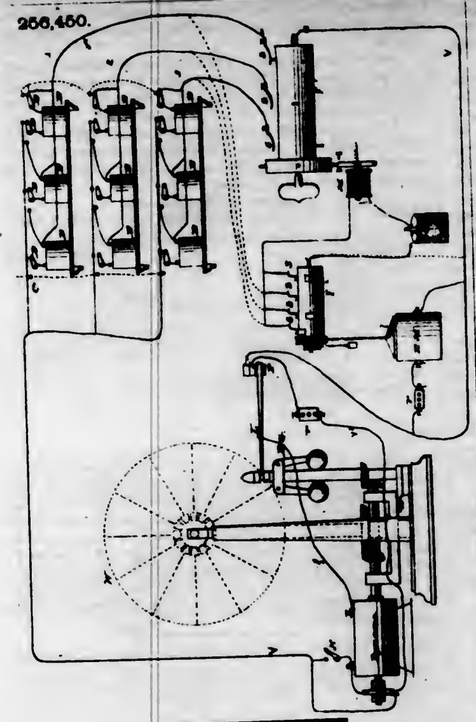
256,450. DEVICE FOR CHARGING AND DISCHARGING SECONDARY BATTERIES. CHARLES E. BUELL, New Haven, Conn. Filed Nov. 4, 1881. (No model.)

Claim.—1. The combination of the following elements, namely: an electrical generating-machine, a developing-circuit, a charging-circuit, two series of secondary batteries, and a working or discharging circuit with devices, substantially as described, for placing said machine charged into the charging-circuit, with one or more of said secondary batteries, and for withdrawing said machine from said charging-circuit, and leaving the charging-circuit open, with circuit-controlling devices, substantially as described, made operative by the action of said machine to switch the charging-circuit from one of said series of secondary batteries and connect said charging-circuit with another of said series of secondary batteries after a predetermined flow of current from said generating-machine has taken place, with means, substantially as described, for placing the secondary batteries alternately in the charging-circuit, as described, and in the working-circuit in tension series, the whole operating in the manner and for the purpose set forth.

2. The combination, with the wind-wheel W, of the electrical generating-machine, the automatic switch L, adapted to act with the movement of the wind-wheel to open the charging-circuit V when the speed of the windmill falls below predetermined desired velocity, and switch devices for changing the charging-circuit after a given action of the machine has taken place.

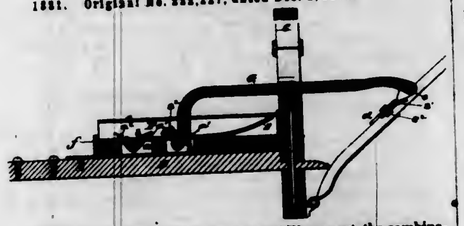
3. The combination, with an electrical generating-machine, of the wind-wheel W, the pump Z', the pipe n, the reservoir or tank, the siphon n', and the water-wheel O', the automatic switch devices, as described, with suitable circuits, and means, as shown, for charging secondary batteries, the whole operating in the manner and for the purpose set forth.

256,450.



REISSUES.

10,079. SHAFT-PROP FOR BUGGIES. JAMES T. BAKER, Fairfield, assignor to Martin Conrad, Chicago, Ill. Filed Dec. 3, 1881. Original No. 232,227, dated Dec. 2, 1879.



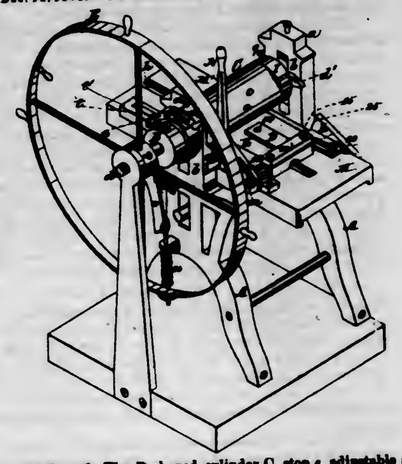
Claim.—1. In a wagon tongue or thill support, the combination, with the tongue or thills and relatively stationary gear, of a part, F, provided with a shoulder, a', a part, G, adapted to engage said shoulder, and a movable part, b, arranged to carry the part G over the shoulder a' by an upward and downward movement of the tongue or thills, substantially as described.

2. In a wagon tongue or thill support, the combination, with the vertically-movable thills or tongue and relatively stationary gear of the wagon, of a part, F, provided with a shoulder, a', and a movable piece, b, arranged to bridge said shoulder, a part, G, adapted to engage said shoulders and also to ride said bridging-piece, whereby the locking parts may be automatically engaged and disengaged by a vertical movement of the tongue, substantially as described.

3. In a tongue or thill support, the combination, with the vertically-movable thills and relatively fixed gear, of the box F, having the slot c', flanges c, and recess a, provided with tumblers b of the bar G, pivoted to the thills or tongue, and its end i, adapted to engage in the recess a and provided with the projecting arm f', substantially as described.

4. The combination, with the thills or pole and gear of the box F, having slots c', flanges c, recesses a, tumblers b, and spring S, of the bar G, pivoted to the thills and provided with arms f', substantially as described, and for the purposes specified.

10,080. PLATE-PRINTING PRESS. THOMAS S. BATES, Boston, Mass. Filed June 10, 1881. Original No. 145,616, dated Dec. 16, 1873. Reissue No. 5,379, dated May 18, 1874.

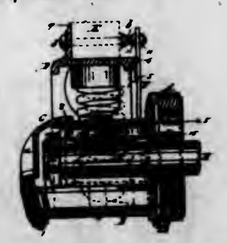


Claim.—1. The D-shaped cylinder C, stop *e*, adjustable stop *p*, and projections *t* and *d'*, in combination with the heel 25 of an adjustable wedge, L, table M M', and lever N, the spring-pawl *q r* and spring-rod and cord *s c*, substantially as and for the purpose set forth.

2. The D-shaped cylinder and projection *d'*, in combination with the inclined surface 10 of the adjustable wedge L and fly-wheel E, or a series of spokes or arms, as and for the purpose described.

3. In a plate-printing press, the D-shaped cylinder C, provided with a collar, 1, having a projection, *d'*, and made adjustable in order to vary its relative position to the edge *e* of the flattened portion c of the cylinder, in combination with and adapted to be brought into contact with a projection on the table M M' for the purpose of moving the latter under the cylinder C, substantially as and for the purpose set forth.

10,081. CAR-AXLE BOX. SUMNER A. BURNS, Springfield, Mass. Filed Oct. 18, 1881. Original No. 230,018, dated Mar. 23, 1881. Patented in England Aug. 12, 1880, in Belgium Aug. 31, 1880, and in France Sept. 22, 1880.



Claim.—1. The combination of the axle, having no brass-retaining collar of greater diameter than its bearing-surface, with the box adapted to contain the axle and its bearings, provided with a single lug, as 3, projecting down inside, and a movable brass provided with a single stud, as 2, projecting upward in a position to bear against said lug, substantially as and for the purpose set forth.

2. The combination, in an axle-box for cars, of the box adapted to contain the axle, the housing for the same at the inner end of the box, a step on each side of the box to support the car-spring, and two braces extending in different directions from each step, one to the box and the other to the housing, and made solid therewith, substantially as described.

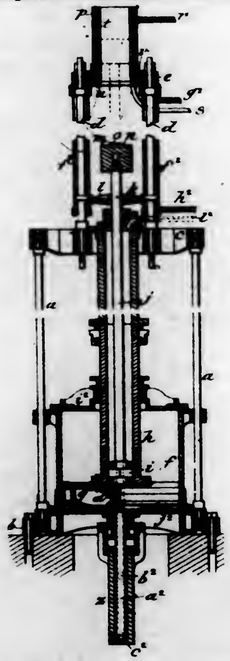
3. In a car-axle box, the combination of the spring F, with retaining-nuts, as 11, the pedestal provided with lugs, as 6, to prevent side vibration of the spring, the lug, as 5, as a bearing for said spring, and the box with its housing for containing the axle, substantially as described.

4. In a car-axle box, the reversible brass provided with a single stud, as 2, to operate in connection with a single lug, as 3, projecting down from the axle-box above and formed with elongated ends, substantially as and for the purpose set forth.

5. In an improved car-axle box, the combination of the removable brass, adapted to be moved longitudinally in the box between the journal and the upper side of the box, the box adapted to contain the axle-journal, and whose bearing for the brass on the inner surface of the upper side of the box is made on a horizontal plane extending to the outer end, the journal provided with a circumferential groove near its outer end, and a retaining-key adapted to be held in place by retaining ribs or shoulders on the interior of the box, and to engage in said groove in the journal, and extending upward in front of the brass, whereby the said brass may be easily withdrawn from its position between the journal and the upper side of the box by a horizontal movement without a vertical movement of the box, and is also prevented from any accidental horizontal movement outward, and consequent displacement, by the upwardly-projecting key, substantially as described.

6. The combination, in an improved car-axle box, of the box adapted to contain the axle-journal and its bearings, and a curved or partially-cylindrical cap fitted to the end of the box, and provided with a recess perforated at its bottom to receive the bolt which secures the lower end of the cap to the box, so that the head of said bolt, when in place, shall be within the line of the outer end of the box, to avoid collision of the bolt-head with other bodies and facilitate the attachment of the nut thereto, substantially as described.

10,082. PROCESS OF AND MACHINE FOR CASTING STEEL INGOTS. GEORGE W. BILLINGS, Cleveland, Ohio. Filed Mar. 2, 1882. Original No. 252,176, dated Feb. 7, 1882.



Claim.—1. The process of forming solid cast-steel ingots by pouring the molten steel into a mold, then gradually lowering the ingot until it has acquired the length desired, then reversing the movement of the ingot upward and compressing the ingot lengthwise, substantially as set forth.

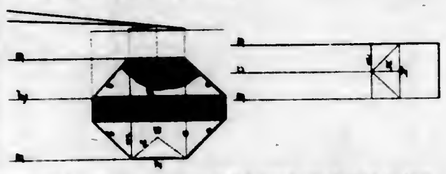
2. In a machine for casting and welding solid steel ingots, the combination of the mold *p*, cylinder A, reciprocating piston-rod *j*, having block *n* and dovetail key *o* thereon, with means, such as described, for lowering the piston-rod and the ingot thereon, substantially as set forth.

3. In a machine for casting and welding solid steel ingots, the combination of the mold *p*, steam-cylinder *f*, its piston *g*, cylinder A, piston-rod *j*, having block *n* and dovetail key *o* thereon, and the movable compression-plate *w*, substantially as and for the purposes described.

4. The steam-cylinder *f* and its piston *g*, the water-cylinder *h* and its piston-rod *j*, in combination with an ingot-mold bottom, a separate bottomless ingot-mold, and an adjustable compression-plate, substantially as and for the purpose set forth.

5. The ingot-mold *p*, in combination with a bottom, *m*, having the dovetail key *o* thereon, which reciprocates within the mold, receives upon its top the molten steel, and supports the ingot while being formed, substantially as set forth.

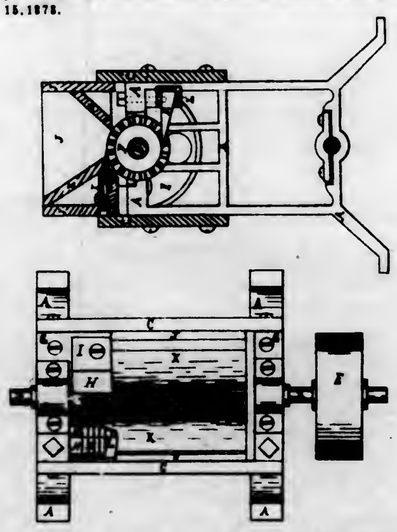
10,083. MANUFACTURE OF PAPER BAGS. MARK L. DERRIN, Cleveland, Ohio, assignor to the Union Paper Bag Machine Company, Philadelphia, Pa. Filed Nov. 29, 1881. Original No. 227,350, dated May 11, 1880.



Claim.—1. The herein-described process or method of forming paper bags by making in a sheet of paper or blank the folds B and C, then pasting together the two sides A' A², forming a bellows-sided body or tube of the bag, then spreading open one end of said body or tube, then forming the inwardly-projecting triangular folds H H, side laps, G G, and laps I J, which latter are secured in place by pasting or otherwise, substantially as described.

2. A bag consisting of a bellows-sided tube having a satchel-bottom and inward triangular folds, which form part of its two sides when distended.

10,084. OATMEAL-MACHINE. WILLIAM EBERHARD and ROBERT TURNER, Akron, Ohio, assignors to Susan Hower, same place. Filed Oct. 17, 1881. Original No. 248,870, dated Oct. 18, 1878.



Claim.—1. In a grain-cutting machine, a roller formed with cells which are open at the feeding side of the roller and hold the kernels supported on the bottom of the cells in an endwise position and projecting above the feeding side of the roller, in combination with a knife at the feeding side which cuts off the projecting portions of said kernels, substantially as set forth.

2. The combination of the roller D F, having circular rows of holes in its face and ring-grooves through the said holes, the clearers M knife H, and hopper J K, substantially as described.

3. The combination of the grooved bar L, the clearers M, and the separating-blocks N with the roller D F, formed with its holes and ring-grooves, substantially as described.

4. The combination of the roller D F, formed with its holes and ring-grooves, and the knife H and its supporting and clamping bars G I with each other and with the frame A B C and the hopper J K, substantially as described.

10,085. ORE-CRUSHING MACHINE. STEPHEN E. KNOX, Plainfield, N. J. Filed Dec. 12, 1881. Original No. 186,309, dated Jan. 19, 1876.

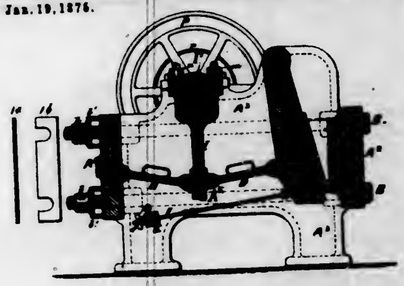
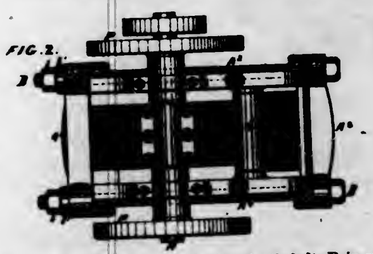


FIG. 2.



Claim.—1. The hollow washers *b'* on the tie-bolts B, in combination with the nuts *b* and stout framing A' A², and with the parts C D D I H, as specified.

2. The breaking cups *m*, in combination with the crank H, link I, toggles D D, and crushing-jaw C, as specified.

3. The combination, with the stationary and moving crushing-jaws, the toggle mechanism, the frame, and the tie-bolts, of hollow breakable pieces having less strength than the other parts of the machine, so as to give way under unusual strain and prevent injury to the other parts, substantially as set forth.

4. The exchangeable toggles D D, having rolling-surfaces, and the supporting projections *d d*, in combination with the crushing-jaws C and link I, as specified.

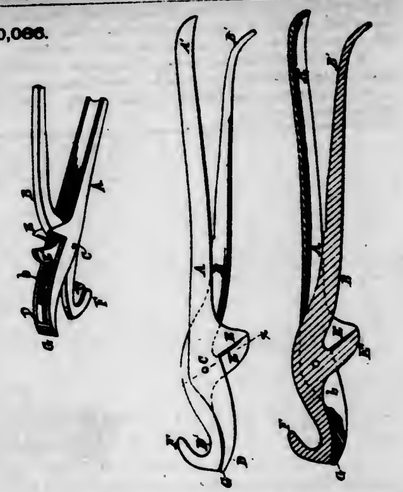
5. In a crushing-machine, the combination, with the jaws, of toggles D D, having rolling ends, and supports for the toggles, substantially as specified.

6. In a crushing-machine, the combination, with the crushing-jaw, actuating-shaft, and intervening mechanism for moving the jaw, of a fly-wheel on the shaft and a frictional connection between the fly-wheel and shaft, for the purposes and substantially as specified.

7. In a crushing-machine, the combination, with the stationary and moving jaws, supporting-frames, toggle-bars, and actuating mechanism, of tie-bolts running in the line of the strain and connecting the stationary jaw to the abutment of the toggle, substantially as set forth.

8. The combination of the sectional framing A' A² and longitudinal tie-bolts B with the ore-crushing jaw C, toggles D, and link I, the tie-bolts being arranged parallel to and directly in the line of the strain, substantially as specified.

10,086. KITCHEN IMPLEMENT. JOHN W. ROSS, Santa Clara, Cal. Filed Mar. 6, 1882. Original No. 241,622, dated May 24, 1881.

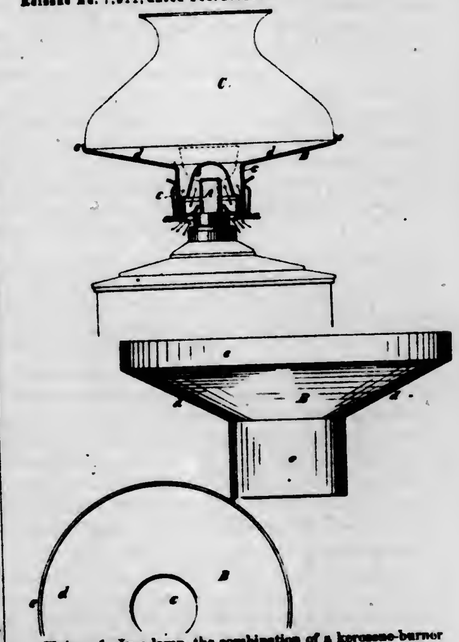


Claim.—1. A kitchen implement in two parts, pivoted together, each of the parts carrying one of the members of a set of grasping-jaws, inclined backwardly toward the handles, whereby a vessel containing hot substances may be handled and emptied with the implement without exposing the hand to the rising heat or steam, substantially as described.

2. A kitchen implement in two parts, A B, pivoted together at C, and provided with the set of grasping-jaws composed of the bifurcated member E E on the part A and the single member E' on the part B, and inclined backwardly toward the handles A' B', substantially as and for the purposes described.

3. A kitchen implement in two parts, pivoted together and provided with the hook F, the lid-lifter G, and the two sets of jaws D D' and E E', constructed, arranged, and inclined substantially as and for the purposes described.

10,087. SHADE-HOLDER FOR LAMPS. CARL VOTTI, Philadelphia, Pa., assignor to B. B. Schneider, New York, N. Y. Filed Mar. 11, 1882. Original No. 122,873, dated Oct. 3, 1876; Reissue No. 7,511, dated Feb. 13, 1877.



Claim.—1. In a lamp, the combination of a kerosene-burner with a transparent shade-holder and a shade, the shade-holder being adapted to rest upon the burner in the place adapted for the ordinary chimney, the shade resting on said shade-holder, and being formed so as to converge from its base toward its top, and the shade and shade-holder together constituting the draft-inducing device for the burner, substantially as set forth.

2. The shade-holder B, constructed of material that will admit of the passage of light, and provided with a downwardly-ex-

tending socket, c, and dish-shaped flange d, with rim e, in combination with a shade, C, converging from base to top, and the kerosene-burner A of a lamp, as and for the purpose set forth.

2. The combination, in a lamp, of the burner A, having perforated flange a and cone b, the shade-holder B and socket c, and a shade converging from base to top, substantially as and for the purpose herein set forth.

4. The combination of the shade C, shade-holder B, constructed of transparent material, and provided with a downwardly-extending socket, c, and dish-shaped flange d with the cone b, having a flange, e, provided with apertures for the admission of air to the outside and inside of the cone, the whole arranged to operate without a chimney, substantially as specified.

1880 ELIOTYPE PRINTING CO BOSTON

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE PALMER.

Decided November 30, 1861.

1. DESIGNS—PREVIOUS MECHANICAL PATENTS SHOWING.
A previous mechanical patent is of itself no bar to the grant of a patent to the patentee therein for a design shown in such patent.

2. SAME—SAME.
Former decisions commented on and disapproved.

DESIGN FOR LAMPS.

Application filed November 4, 1879.

MARBLE, *Commissioner:*

This application comes before me upon a question of law, submitted by the Examiner of Designs, as follows:

Can an application for a design patent be properly rejected upon a mechanical patent to the same party showing the same design.

It appears that this question has been already considered by three different Commissioners; but the applicants in this case and in another in which the same point has arisen urge that in view of a recent decision of Mr. Justice Blatchford in *Collender* v. *Griffith* (18 O. G., 241) the former practice of the Office is improper and should be discontinued.

The decision by Commissioner Fisher in *Ex parte Stuart & Bridge* (C. D., 1870, 15) was made under the act of 1861, which contained a different provision in reference to prior knowledge and use from the act of 1870, and hence has no weight in the present case.

The decision in *Ex parte Kohler* (C. D., 1873, 84) was based upon the ground that if a design patent should be granted any subsequent assignee of the mechanical patent could not use the form in which the inventor originally embodied his invention, and that he must consequently be considered to have "dedicated it to at least any person who now does or may hereafter own the mechanical patent." To bar the grant of a patent upon the ground of abandonment, such abandonment must be to the public, and not simply to the assigns of the inventor, and hence it seems that the position taken by the Commissioner in this case is not tenable.

In *Ex parte Towne & Taylor*, (19, Com. Mss. Dec., 6,) which also presented the same question, the Commissioner allowed a design patent upon the ground that the parties in the patent and application were not the same, the design being shown in a previous mechanical patent to Taylor, but being in fact the joint invention of Taylor and Towne. He, however, approved the decision in Kohler's case, though basing his approval upon the ground that the previous mechanical patent was a publication.

As the statute requires, in order to defeat the grant of a patent, that a publication shall be made before the invention or production of the subject-matter thereof, it does not appear how the previous mechanical patent can have such effect. If the design was invented by the patentee at all it must have been invented before the filing of the application for the mechanical patent in which it is shown, and hence a publication, to be a bar, must have been made before the invention of the mechanism embodying the design.

The point which arises here is not exactly the same as that in *Collender* v. *Griffith*, above referred to, the design patent in that case having been first granted, and the question at issue was whether it was a bar to a subsequent mechanical patent, but the principles laid down by court are equally applicable to the present case. The court says:

The claim of the design patent is to shape. The claim of the reissued mechanical patent is a claim to a mechanical combination. The shape of the structure may be the same as the shape in the design patent, but the subject-matter of the two claims is not the same. The shape covered by the claim of the design patent may be attained without following the mechanical combination claimed in the reissued mechanical patent.

There seems to be no doubt that the court by this language meant to declare the subjects-matter of design and mechanical patents to be entirely different. Nothing else could have been intended, for in the one case ornament is the basis and in the other mechanical function. It therefore follows that whichever kind of patent is first obtained by an inventor it will not be a bar to the grant to him of a patent of the other kind.

It has long been held by the Office that where the applicant is the same a previous design patent is no bar to the grant of a mechanical patent, (*Ex parte Bartholomew*, C. D., 1871, 296, and *Collender*, C. D., 1872, 217,) and I am also of the opinion that of itself a previous mechanical patent is no bar to the grant of a patent to the patentee therein for a design shown in such patent.

The view herein taken accords with that of the court in *Burton* v. *Greenville*, (18 O. G., 411,) where this precise question arose, but which they did not think it necessary to decide. They say:

A question is made by the defendants whether an inventor is not to be presumed to abandon his design when he exhibits it in the drawings of a mechanical patent. I do not see why this consequence should follow until the design has been in use for two years.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

ROOT v. LAKE SHORE AND MICHIGAN SOUTHERN RAILWAY COMPANY.

Decided March 13, 1882.

1. BILL IN EQUITY FOR NAKED ACCOUNT OF PROFITS DISMISSED.

A bill in equity brought under law of 1870 after the expiration of the patent, and not asking therefore for an injunction or other equitable relief, but for a naked account of profits, and it not appearing from the allegations of the bill that there were any circumstances that would render an action at law for the recovery of damages an inadequate remedy for the wrongs complained of, was dismissed.

2. LAW OF 1870 (SECTIONS 55, 59, AND 61) DOES NOT ABOLISH DISTINCTION BETWEEN LAW AND EQUITY IN PATENT CASES.

The language of the act of July 8, 1870, (sections 55, 59, and 61,) similar in that respect to the provisions of the acts of 1819 and 1836, conferring jurisdiction in patent cases in equity as well as in law, was not meant to obliterate the distinction between these two jurisdictions or even to confuse the boundaries between them. Indeed, it is the well-settled doctrine of this Court that this distinction of jurisdiction between law and equity is constitutional to the extent to which the seventh amendment forbids any infringement of the trial by jury as fixed by the common law, and the doctrine applies in patent cases as well as others.

3. SECTION 55 GIVES DAMAGES IN EQUITY IN ADDITION TO ACCOUNT WHERE COURT HAS JURISDICTION.

The whole force of the change in the law contained in the fifty-fifth section of the said statute, whereby the complainant is entitled to recover, in addition to the profits to be accounted for by the defendant, the damages the complainant has sustained thereby, consists in conferring upon courts of equity, in the exercise of their jurisdiction in administering relief which they are accustomed and authorized to give, the power, not merely to give that compensation for the past which consists in the profits of the infringer, but to supplement it when necessary with the full amount of damage suffered by the complainant. In other words, the power to award damages and to multiply them is added as an incident to the right to an account.

4. SECTION 61 PROVIDES APPROPRIATE MODES IN EQUITY PLEADINGS FOR TRIAL OF QUESTIONS ARISING OUT OF THE RIGHT CONFERRED BY SECTION 55 TO RECOVER DAMAGES.

The plain and obvious purpose of the provision of the sixty-first section of the said statute that "the like defenses may be pleaded in any suit in equity for relief against any alleged infringement, and proofs of the same may be given upon like notice in the answer of the defendant and with the like effect," is to furnish appropriate modes in equity pleading for the trial of all issues both of fact and law relating both to the alleged infringement and the validity of the patent without the necessity of framing special issues out of chancery for trial by jury or sending the parties to a court of law for the trial of an action in that forum in order to determine their legal right.

5. BILL IN EQUITY UNDER LAW OF 1870.

A bill in equity therefore brought under the provisions of the law of 1870 must find support in the general doctrines of equity.

6. JURISDICTION IN EQUITY—REMEDY AT LAW EXCLUSIVE.

It is the fundamental characteristic and limit of the jurisdiction in equity that it cannot give relief when there is a plain and adequate and complete remedy at law, and hence it has no original, independent, and inherent power to afford redress for breaches of contract or torts by awarding damages, for to do that was the very office of proceedings at law.

7. ACCOUNT OF PROFITS NOT A GROUND OF EQUITABLE RELIEF UNLESS REMEDY AT LAW INSUFFICIENT.

Bill in equity seeking only an account of profits cannot, therefore, generally speaking, be maintained, "nor can the Court retain the bill under an impression that a court of chancery is better adapted for the adjustment of the account for rents, profits, and improvements. The rule of the Court is that when a suit for the recovery of the possession can be properly brought in a court of equity and a decree is given that court will direct an account as an incident in the cause; but when a party has a right to a possession which he can enforce at law, his right to the rents and profits is also a legal right, and must be enforced in the same jurisdiction. (*Hipp* v. *Babin*, 91 Howard, 271.)

8. APPLICATION OF FOREGOING RULE TO INFRINGEMENT OF PATENT—INFRINGER NOT A TRUSTEE *de son tort*.

A bill for the infringement of a patent is not saved from the application of this principle by the fact that the courts have adopted the rule in ascertaining the profits of the infringer that the infringer is to be treated as though he were a trustee for the patentee in respect to profits. The case is not within the principle according to which in certain circumstances a court of equity decrees a wrong-doer to be a trustee *de son tort*, and exerts its jurisdiction over him in that character. The principle only applies where the defendant has wrongfully intermeddled with property already impressed with a trust, and he will then be required as a trustee to account, for the reason that trust property may be followed wherever it can be traced, into whosesoever possession it comes, except that of a *bona fide* purchaser, without notice.

9. GROUNDS OF RELIEF OTHER THAN INJUNCTION—INADEQUACY OF REMEDY AT LAW—SPECIAL GROUNDS MUST BE ALLEGED AND PROVED.

Grounds of equitable relief may arise other than by way of injunction, as where the title of the complainant is equitable merely, or equitable interposition is necessary on account of the impediments which prevent a resort to remedies purely legal, and such an equity may arise out of and inhere in the nature of the account itself, springing from special and peculiar circumstances which disable the patentee from a recovery at law altogether, or render his remedy in a legal tribunal difficult, inadequate, and incomplete, and as such cases cannot be defined more exactly each must rest upon its own particular circumstances as furnishing a clear and satisfactory ground of exception from the general rule.

APPEAL from the Circuit Court of the United States for the Northern District of Illinois.

Mr. A. H. Walker for the appellant.
Mr. Geo. Payson for the appellee.

Mr. Justice MATTHEWS delivered the opinion of the Court.

The appellant filed his bill in the court below on December 9, 1878, as assignee of the letters patent originally granted to Henry Tanner for an improvement in railroad-car brakes, dated July 6, 1852, and which, on July 5, 1866, were renewed and extended for the additional term of seven years, which expired July 6, 1873. It is averred in the bill that by virtue of the assignments to him the complainant was invested with all rights of action for infringements of the patent which had occurred, and particularly those of which it was alleged the defendant had been guilty from August 6, 1869, to July 6, 1873, having, as is averred, during that period used upon its railroad-cars the patented brakes, but how many, the bill states, the complainant is ignorant and cannot set forth, but avers that the number so used was large, and that defendant had derived, received, and realized great gains and profits therefrom, but to what amount he is ignorant and cannot set forth. The prayer of the bill is that the defendant may be compelled to account for and pay to the complainant all the gains, profits, and savings which it derived, received, or realized from or by reason of the use of said brakes.

To this bill a general demurrer was filed, alleging, as grounds thereof, that the bill does not contain any matter of equity on which the court could grant any relief, and that the complainant is not entitled to the relief prayed for, because he had a plain, adequate, and complete remedy at law, and also because it appeared on the face of the bill that the causes of complaint were

barred by the statutes of limitation both of the United States and of the State of Illinois. This demurrer was sustained and the bill dismissed by the decree of the circuit court, now brought here for review by this appeal.

The propositions mainly relied upon by the appellee in support of the decree are, first, that after the expiration of a patent equity has no jurisdiction to entertain a bill merely for an account and the recovery of the profits of an infringer during its existence, the remedy being at law for damages; and, second, that even if in certain cases such a jurisdiction exists the present does not fall within it.

On the other hand, it is contended on the part of the appellant that in cases for the enforcement of the rights of patentees resort may be had, as matter of right, to a court of equity, as a distinct head of its jurisdiction, for the mere purpose of establishing an infringement and ascertaining and recovering the profits of the infringer upon the independent equity that he is for that purpose a trustee of his gains for the use of the true owner of the patent and liable to account as such. In support of this contention we are referred by counsel for the appellant to numerous decisions of the circuit courts, many of which, it is claimed, are directly upon the point, and to several cases in this Court, in which, it is alleged, the same doctrine is either virtually decided or assumed, which, it is further argued, though not supported by the modern decisions of the English chancery, is found in its earlier precedents. An examination of the practice and opinions of the circuit courts undoubtedly shows much diversity, incapable of reconciliation, and makes it necessary, as far as it can be done, by a deliberate judgment of this Court, to remove the question out of its present uncertainty by a settlement upon some basis of principle in harmony with our system of equity jurisprudence, developed and modified by legislation. To effect this satisfactorily and intelligently it will be necessary to review the course of legislation and judicial decision in this Court so far as it bears upon the question from the beginning.

Prior to the passage of the patent act of 1819 (3 Stat. L., 481) Congress had passed three laws, in execution of the power conferred by the Constitution itself, and in furtherance of the policy thereby indicated, to secure to inventors an exclusive right of property in their inventions. The first of them, the act of 1790, (1 Stat. L., 109,) gave as a remedy for its violation an action at law upon the case for damages and forfeited the infringing article. The next was the act of 1793, (1 Stat. L., 318,) which fixed the rule and measure of damages recoverable in an action at law upon the act at three times the price at which the patentee had usually sold or licensed to other persons the use of the invention. This was changed by the act of 1800 (2 Stat. L., 37) to three times the actual damage sustained by the patentee by reason of the infringement. By neither of these acts, however, was any jurisdiction conferred upon the courts of the United States in equity. To vest such jurisdiction by reason of the subject-matter as a case arising under the laws of the United States, to be exercised in controversies between parties, without regard to difference of citizenship, it was held by Mr. Justice Livingston in the case of *Livingston* v. *Van Ingen* (1 Paine, 45) required the express authority of an act of Congress, and the parties in that case not being citizens of New York the bill was dismissed. The controversy was thereupon renewed in the courts of that State, and, the chancellor having refused the injunction asked for, it was brought by appeal into the court for the correction of errors. (9 Johnson, 507.) It was there objected that the right in question rested upon statute alone, which prescribed remedies at law for its violation, which, it must be deemed, were intended to be exclusive. But the decision affirmed the jurisdiction. "The principle is," said Chief Justice Kent, page 587, "that statute privileges, no less than common law rights, when in actual possession and exercise, will not be permitted to be disturbed until the opponent has fairly tried them at law and overthrown their pretension." The same learned judge refers also to the practice of the federal courts in granting injunctions under the patent law, mentioning two instances—one, the case of *Moree* v. *Reid*, an injunction bill filed in 1796 to restrain the invasion of a copyright; the other, *Whitney* v. *Fort*, in which an injunction was granted to restrain the violation of the patent for the cotton-gin. Of course, in those cases the jurisdiction of the court depended on the citizenship of the parties. Congress then passed the act of February 15, 1819, which enacted

That the circuit courts of the United States shall have original cognizance, as well in equity as at law, of all actions, suits, controversies, and cases arising under any law of the United States granting or conferring to authors or inventors the exclusive right to their respective writings, inventions, and discoveries; and upon any bill in equity filed by any party aggrieved in any such cases shall have authority to grant injunctions according to the course and principles of courts of equity to prevent the violation of the rights of any authors or inventors secured to them by any law of the United States, on such terms and conditions as the said courts may deem fit and reasonable.

In the case of *Sullivan* v. *Redfield*, (1 Paine, 441,) which was decided in 1825, Mr. Justice Thompson, who in the Livingston case had sat as one of the judges of the State court, had occasion to consider the nature of the equity jurisdiction in patent suits. "The equity jurisdiction," he said, "exercised by the court over patents for inventions is merely in aid of the common law and in order to give more complete effect to the provisions of the statute under which the patent is granted;" and, in answer to the argument that the act of 1819 gave a peremptory right to an equitable remedy by virtue of the patent itself, he said:

This act does not enlarge or alter the powers of the court over the subject-matter of the bill or the cause of action. It only extends its jurisdiction to parties not before failing within it. Before this act it had been held that a citizen of one State could not obtain an injunction in the circuit court for a violation of a patent right against a citizen of the same State, as no act of Congress authorized such suit. This act removed that objection and gave the jurisdiction, although the parties were citizens of the same State; but in the exercise of the jurisdiction in all cases of granting injunctions to prevent the violation of patent rights the court is to proceed according to the course and principles of courts of equity in such cases, so that the questions presented in the present case are precisely where they would have been without this act.

The substance of the act of 1819 was incorporated into the seventeenth section of the patent act of July 4, 1836, (5 Stat. L., 117,) so far as it related to inventors, but remained in force after the passage of the latter act so far as it gave cognizance to the courts of the United States of cases of copyright. It was under that provision of the act of 1819 that the case of *Stevens* v. *Gladding* (17 Howard, 447) arose and was decided. That was a bill for an injunction to restrain the violation of a copyright, and prayed for the recovery of the penalties given by the seventh section of the act of February 3, 1831, and for general relief. Mr. Justice Curtis, delivering the opinion of the Court, said:

There is nothing in this act of 1819 which extends the equity powers of the courts to the adjudication of forfeitures, it being manifestly intended that the jurisdiction therein conferred should be the usual and known jurisdiction exercised by courts of equity for the protection of analogous rights. The prayer of this bill for the penalties must therefore be rejected. The remaining question is whether there ought to be a decree for an account of the profits. The complainant has not prayed for such an account, nor have the defendants stated one in their answer; but the bill does pray for general relief. The right to an account of profits is incident to the right to an injunction in copy and patent right cases, citing *Colburn* v. *Simms*, (2 Hare, 554; 3 Dan. Ch. Pr., 1797.) And this Court has held in *Watts* v. *Waddle* (6 Pet., 389) that where the bill states a case proper for an account, one may be ordered under the prayer for general relief.

The seventeenth section of the act of 1836 differs from the act of 1819 in one other particular only. It makes the jurisdiction in patent causes of the courts of the United States exclusive.

It was under the act of 1836 that the question arose for the first time in *Livingston* v. *Woodworth* (15 Howard, 546) as to the rule for computing the profits of an infringer upon a decree for such an account. The bill was for an injunction and account. The validity of the patent and the fact of infringement were both admitted by the defendant, who consented to a decree requiring him to account for and pay over the gains and profits made by him during the infringement, in accordance with the prayer of the bill. The decree confirmed the report of the master, who awarded, not actual gains and profits, but such as he estimated the defendant might have made by due diligence. It was argued in support of the decree that where the court has jurisdiction to give the principal relief sought it will make a complete decree and give compensation for the past injury, as in bills for specific performance and injunction bills for waste, and that it was a correct rule to hold the party accountable as an involuntary trustee for what the patentee might have realized by the same exercise of the right, as a court of equity sometimes forces the character of a trustee upon an intruder or wrong-doer, or one in possession under color of right, or who takes rents or profits belonging to another, or might have taken them, as in cases of mortgagees; but it was admitted that the case was of first impression. The decree upon this point was reversed. The Court said, page 559:

We are aware of no rule which converts a court of equity into an instrument for the punishment of simple torts. * * * If the appellees, the plaintiffs below, had sustained an injury to their legal rights the courts of law were open to them for redress, and in these courts they might, according to a practice which, however doubtful in point of essential right, is now too inveterate to be called in question, have claimed, not compensation merely, but vengeance, for such injury as they could show they have sustained; but before a tribunal which refuses to listen even to any, save those whose acts and motives are perfectly fair and liberal, they cannot be permitted to contravene the highest and most benignant principle of the being and constitution of that tribunal. There they will be allowed to claim that which, *ex æquo et bono*, is theirs, and nothing beyond this.

The account was therefore restricted to the actual gains and profits of the appellants during the time their machine was in operation.

This rule in relation to the profits recoverable in such suits was followed in *Dean* v. *Mason*, (20 Howard, 198,) which was a case of a bill for an injunction and account, in which a decree *pro confesso* had been taken. The final decree was entered, on the report of the master, for the estimated amount of profits which the defendant with reasonable diligence might have realized, not what in fact he did realize. This was held to be erroneous. The Court said:

The rule in such a case is the amount of profits received by the unlawful use of the machines, as this in general is the damage done to the owner of the patent. It takes away the motive of the infringer of patented rights by requiring him to pay the profits of his labor to the owner of the patent. Generally this is sufficient to protect the rights of the owner; but where the wrong has been done under aggravated circumstances the court has the power under the statute to punish it adequately by an increase of the damages.

The important case of *Seymour* v. *McCormick* (16 Howard, 480) was decided in 1853. That was an action at law. The court below instructed the jury that the actual damages to which the plaintiff was entitled for an infringement of a patent for an improvement in a machine might be determined by ascertaining the profits which in judgment of law he would have made, provided the defendants had not interfered with his rights, and that the same rule applied whether the patent covered an entire machine or merely an improvement on a machine. This instruction this Court held to be erroneous, and reversed the judgment on that account. Mr. Justice Grier, in delivering the opinion of the Court, referred to the rule of damages prescribed by the acts of Congress previously in force, stating that "experience had shown the very great injustice of a horizontal rule equally affecting all cases without regard to their peculiar merits," and that it was to obviate this that the patent act of 1836 confined the jury to the assessment of actual damages, leaving it to the discretion of the Court to inflict punitive damages to the extent of trebling the verdict. He then pointed out that "it must be apparent to the most superficial observer of the immense variety of patents issued every day that there cannot, in the nature of things, be any one rule of damages which will equally apply to all cases. The mode of ascertaining actual damages must necessarily depend on the peculiar nature of the monopoly granted;" that a man who invents or discovers a new composition of matter or an entire new machine may find his profit to consist in a close monopoly, the patentee being himself able to supply the whole demand at his own price, in which cases "the profit of the infringer may be the only criterion of the actual damage of the patentee;" that "one who invents some improvement in the machinery of a mill could not claim that the profits of the whole mill should be the measure of damages for the use of his improvement, and where the profit of the patentee consisted neither in the exclusive use of the thing invented or discovered, nor in the monopoly of making it for others to use, it is evident that this rule could not apply. The case of Stimpson's patent for a turn-out in a railroad may be cited as an example. It was the interest of the patentee that all railroads should use his invention, provided they paid him the price of his license. He could not make his profit by selling it as a complete and separate machine. An infringer of such a patent could not be liable to damages to the amount of the profits of his railroad, nor could the actual damages of the patentee be measured by any known ratio of the profits of the road. * * * It is only where, from the peculiar circumstances of the case, no other rule can be found that the defendant's profits become the criterion of the plaintiff's loss. Actual damages must be actually proved, and cannot be assumed as a legal inference from any facts which amount not to actual proof of the fact." Accordingly, it was held in *New York* v. *Ransom*, (23 Howard, 487,) where the rule in *Seymour* v. *McCormick*, *supra*, was expressly approved, that in an action at law, if the plaintiff rested his case after proof of infringement merely, he was entitled only to nominal damages. It was also

applied in *Jones* v. *Morehead*, (1 Wall., 155,) which was a bill in equity for an injunction and an account, where a decree for a large sum as profits had been rendered against the defendant upon an entire machine, in respect to which it appeared as matter of fact that the defendants had not infringed the patent sued on, but had admitted to the contrary in the answer. The Court construed this admission by applying it to the smallest number of patented articles and to the use of any part of the patent found to be valid, and, reversing the decree, ordered one to be entered for a "nominal sum of one dollar for profits."

In the case of the *Rubber Company* v. *Goodyear*, (9 Wall., 788,) which was a bill for an injunction and account, a decree for a large sum was rendered in favor of the complainants, which was affirmed on appeal. "The rule," said Mr. Justice Swayne, delivering the opinion of the Court, "is founded in reason and justice. It compensates one party and punishes the other. It makes the wrong-doer liable for actual, not possible, gains. The controlling consideration is that he shall not profit by his wrong. A more favorable rule would offer a premium to dishonesty and invite to aggression. The jurisdiction of equity is adequate to give the proper remedy, whatever phase the case may assume, and the severity of the decree may be increased or mitigated according to the complexion of the conduct of the offender."

The case of *Mowry* v. *Whitney* (14 Wall., 620) was also a bill in equity for an injunction and account. A decree was rendered in favor of the complainant for all the profits on the manufactured article, instead of upon the patented process of manufacture, with interest added. On appeal this Court reversed the decree on that point, saying:

The question to be determined in this case is, what advantage did the defendant derive from using the complainant's invention over what he had in using other processes then open to the public and adequate to enable him to obtain an equally beneficial result? The fruits of that advantage are his profits. * * * That advantage is the measure of profits.

On the question of interest Mr. Justice Strong, speaking for the Court, said:

We add only that, in our opinion, the defendant should not have been charged with interest before the final decree. The profits which are recoverable against an infringer of a patent are in fact a compensation for the injury the patentee has sustained from the invasion of his right. Though called profits, they are really damages, and unliquidated until the decree is made. Interest is not generally allowable upon unliquidated damages. We will not say that in no possible case can interest be allowed. It is enough that the case in hand does not justify such an allowance.

In the case of *Packet Company* v. *Sickles*, (19 Wall., 611,) which was an action at law, the rule established in *Seymour* v. *McCormick*, *supra*, was reiterated, as "the established criterion of damages in cases to which it was applicable." "In cases where there is no established patent or license fee in the case, or even an approximation to it, general evidence must necessarily be resorted to," as was said by the Court in the case of *Suffolk Company* v. *Hayden*, (3 Wall., 315.) "And what evidence," said Mr. Justice Nelson, in that case page 320, "could be more appropriate and pertinent than that of the utility and advantage of the invention over the old modes or devices that had been used for working out similar results? With a knowledge of these benefits to the persons who have used the invention and the extent of the use by the infringer a jury will be in possession of material and controlling facts, that may enable them, in the exercise of a sound judgment, to ascertain the damages, or in other words, the loss to the patentee or owner by the piracy, instead of the purchase of the use, of the invention." He added that "a recovery does not vest the infringer with the right to continue the use, as the consequence of it may be an injunction restraining the defendant from the further use of it."

In *Packet Company* v. *Sickles*, *supra*, Mr. Justice Miller said:

The rule in suits in equity of ascertaining by a reference to a master the profits which the defendant has made by the use of the plaintiff's invention stands on a different principle. It is that of converting the infringer into a trustee for the patentee as regards the profits thus made; and the adjustment of these profits is subject to all the equitable considerations which are necessary to do complete justice between the parties, many of which would be inappropriate in a trial by jury. With these corrective powers in the hands of the chancellor, the rule of assuming profits as the groundwork for estimating the compensation due from the infringer to the patentee has produced results calculated to suggest distrust of its universal application even in courts of equity.

The doctrine of this case was reiterated in *Burdell* v. *Denig*, (92 U. S., 716,) where Mr. Justice Miller, again delivering the opinion of the Court, said:

Profits are not the primary or true criterion of damages for infringement in an action at law. That rule applies universally and mainly to cases in equity, and is based on the idea that the infringer shall be converted into a trustee as to those profits for the owner of the patent which he infringes, a principle which it is very difficult to apply in a trial before a jury, but quite appropriate on a reference to a master, who can examine defendant's books and papers, and examine him on oath, as well as all his clerks and employés. On the other hand, we have repeatedly held that sales of licenses of machines, or of a royalty established, constitute the primary and true criterion of damages in the action at law. No doubt, in the absence of satisfactory evidence of either class in the forms to which it is most appropriate, the other may be resorted to as one of the elements on which the damages or the compensation may be ascertained.

The case of *Littlefield* v. *Perry* (21 Wall., 205) was one where the patentee, by force of an agreement, held the legal title to the patent in trust for the complainant, in violation of which he was making use of his legal rights. It was held upon a bill filed for an injunction and account that it was a case under the patent laws, and the defendant was required to account for the profits he had made according to the rule in *Mowry* v. *Whitney*, *supra*. The Chief Justice said, (page 230:)

Profits actually realized are usually, in a case like this, the measure of unliquidated damages. Circumstances may, however, arise which would justify the addition of interest in order to give complete indemnity for losses sustained by willful infringements.

On July 8, 1870, Congress passed the act to revise, consolidate, and amend the statutes relating to patents and copyrights, (16 Stat. L., 198.) The fifty-ninth section renewed the provision previously in force that damages for infringement might be recovered by action on the case, and that whenever in any such action a verdict shall be rendered for the plaintiff the court may enter judgment therein for any sum above the amount found by the verdict as the actual damages sustained, according to the circumstances of the case, not exceeding three times the amount of the verdict. The fifty-fifth section is as follows:

That all actions, suits, controversies, and cases arising under the patent laws of the United States shall be originally cognizable as well in equity as at law by the circuit courts of the United States, or any district court having the power and jurisdiction of a circuit court, or by the Supreme Court of the District of Columbia, or of any territory; and the court shall have power upon bill in equity filed by any party aggrieved to grant injunctions according to the course and principles of courts of equity, to prevent the violation of any right secured by patent on such terms as the court may deem reasonable; and upon a decree being rendered in any such case for an infringement the complainant shall be entitled to recover, in addition to the profits to be accounted for by the defendant, the damages the complainant has sustained thereby, and the court shall assess the same or cause the same to be assessed under its direction, and the court shall have the same powers to increase the same, in its discretion, that are given by this act to increase the damages found by verdicts in actions upon the case; but all actions shall be brought during the term for which the letters patent shall be granted or extended, or within six years after the expiration thereof.

These provisions are substantially carried into the Revised Statutes, section 59 of the act of 1870 being section 4919 of the latter, and section 55 corresponding to section 4921 Revised Statutes, except as to the provision in respect to the limitation upon the right to sue, which is not found in the Revised Statutes. But the rights of the parties in the present suit arose while the act of 1870 was in force and are determinable under it.

In the case of *Birdsall* v. *Coolidge* (93 U. S., 64) it is declared, in reference to the effect of the act of 1870, that "gains and profits are still the proper measure of damages in equity suits, except in cases where the injury sustained by the infringement is plainly greater than the aggregate of what was made by the respondent," in which event the provision is that the complainant "shall be entitled to recover, in addition to the profits to be accounted for by the respondent, the damages he has sustained thereby." Mr. Justice Clifford in the opinion in this case quotes a passage, slightly altered, from Curtis on Patents, (section 341 a, 4th edition, page 461,) which, taken by itself, might seem to imply that prior to the act of 1870 the owner of a patent had the election to resort to a court of equity for the recovery of profits or a court of law for damages, irrespective of any other relief of an equitable character; but the language of the passage is to be restrained to mean merely that the option existed to sue at law for past infringement or seek equitable relief by way of prevention, the damages or profits following, as either jurisdiction is resorted to, each according to its kind. For, if this be not so, it follows that since the passage of the act of 1870 an owner of a patent may recover in a suit in equity profits and damages in all cases according to the rule above stated without seeking any other relief whatever, the effect of which would be to give two remedies, one in equity, the other at law, merely for the recovery of damages for an injury to a legal right, an anomaly not to be found in any other branch of our jurisprudence. And manifestly, upon such a construction, the action at law would soon become obsolete as completely as if it had been abolished by legislation. The whole force of the change in the statute consists in conferring upon courts of equity in the exercise of their jurisdiction in administering the relief which they are accustomed and authorised to give, and which is appropriate to their forms of procedure, the power not merely to give that measure of compensation for the past, which consists in the profits of the infringer, but to supplement it when necessary with the full amount of damage suffered by the complainant, and which, if he had sued for that alone, he would have recovered in another forum with power to increase the amount of the actual damages, as in courts of law. But as the account of profits previously was the incident of the suit and not its object, so now the power to award damages and to multiply them is added as an incident to the right to an account. But the difference between the state of the law before and after the act of 1870 finds its best illustration in a comparison between two cases, both of which were decided at the October term, 1877—*Elizabeth* v. *Pavement Company*, (97 U. S., 126,) and *Marsh* v. *Seymour*, (Ibid., 348.) In the former the bill was filed before the passage of the act, but prayed, besides an injunction, for both damages and profits. It was held that the court below had rightly decided that a decree for profits alone could be rendered, inasmuch as the jurisdiction of courts of equity to decree damages as distinct from profits was first conferred by the statute. Mr. Justice Bradley, delivering the opinion of the Court, remarking that the general question of the profits recoverable in equity by a patentee was surrounded with many difficulties, which the courts had not yet succeeded in overcoming, said:

> But one thing may be affirmed with reasonable confidence that if an infringer of a patent has realised no profit from the use of an invention, he cannot be called upon to respond for profits. The patentee in such case is left to his remedy for damages. It is also clear that a patentee is entitled to recover the profits that have been actually realised from the use of the invention, although from other causes the general business of the defendant in which the invention is employed may not have resulted in profits, as when it is shown that the use of his invention produced a definite saving in the process of manufacture. (*Mowry* v. *Whitney*, 14 Wall., 620; *Cawood Patent*, 94 U. S., 695.) On the contrary, though the defendant's general business be ever so profitable, if the use of the invention has not contributed to the profits, none can be recovered. The same result would seem to follow where it is impossible to show the profitable effect of using the invention upon the business results of the party infringing. It may be added that where no profits are shown to have accrued a court of equity cannot give a decree for profits by way of damages or as a punishment for the infringement. (*Livingston* v. *Woodworth*, 15 Howard, 559.) But when the entire profit of a business or undertaking results from the use of the invention the patentee will be entitled to recover the entire profits, if he elects that remedy; and in such a case the defendant will not be allowed to diminish the show of profits by putting in unconscionable claims for personal services or other inequitable deductions. (*Rubber Company* v. *Goodyear*, 9 Wall., 788.)

"And these general propositions," he added, "will hardly admit of dispute."

Accordingly in that case the bill was dismissed as to the city of Elizabeth, which had infringed, because it appeared that it had made no profit from the use of the patented improvement, while a decree was rendered against the contractor who had laid the pavement which was the subject of the patent because he was shown to have made profits from the infringement. The municipal corporation, of course, remained liable to respond in damages in an action at law for any loss which the plaintiff could have established by proof.

The cases of *Marsh* v. *Seymour*, *supra*, arose under the act of 1870, and were bills for injunction and account. Decrees were rendered in favor of the complainant and a reference ordered to a master to state an account of profits. In both cases the respondents showing that they had made no profits by reason of the use of the invention, the complainant waived his claim for a recovery on that account, and decrees were rendered for damages on the basis of a license-fee for the infringing machines which had been sold and nominal damages for those manufactured but not sold. These decrees were affirmed, the Court saying, Mr. Justice Clifford delivering its opinion, that "damages of a compensatory character may be allowed to a complainant in an equity suit where it appears that the business of the infringer was so improvidently conducted that it did not yield any substantial profits, as in the case before the Court."

In the case of *Parks* v. *Booth*, (102 U. S., 96,) which was a suit in equity for an injunction, an account of profits and damages, under the act of 1870, a decree was rendered in favor of the complainant and for profits and damages as found by a master. Under the head of damages there was included items for expenses of conducting the suit, being counsel fees, compensation for the complainant's time, and interest on the profits. The decree was modified on appeal by striking out all these allowances, except that for the complainant's time lost in attending to the suit. Interest on profits was disallowed on the authority of *Sibley* v. *Moots*, (20

Howard, 386,) on the ground that profits in such a case are to be regarded in the light of unliquidated damages. No injunction was decreed, as the term of the patent had expired. It does not appear from the report of the case when the suit was begun, but a reference to the original record shows that the bill was filed in April, 1871, before the expiration of the term of the patent.

The case of *Hendrie* v. *Sayles* (98 U. S., 546) was a bill in equity for an account of profits, filed after the expiration of the patent—the same patent on which the present suit is founded. It was decided upon a single point raised on demurrer to the bill, the question of jurisdiction not being noticed either by counsel or Court. A decree for the complainant was affirmed on appeal. This appears to be the only case of the kind until the present that found its way into this Court.

The case of *Eureka Company* v. *Bailey Company* (11 Wall., 488) is no exception to this remark, although in respect to it the observation has been made that the injunction prayed for in that case was incidental to the account, and not vice versa. That, however, is a misconception, for, unless upon the ground of a difference of citizenship, the Court would not have had jurisdiction to entertain the bill in that case if it had not prayed for an injunction. For the mere purpose of enforcing the contract for the royalty it was not a case arising under the patent laws so as to give jurisdiction to the courts of the United States. It was because the defendant was guilty of an infringement of the complainant's patent that he was suable in equity in these courts, and to restrain that an injunction was asked until he should pay what he had promised. The object of the suit doubtless was to collect the royalty, but it was sought by means of and therefore as an incident to the jurisdiction of the court, invoked for the purpose of enjoining the continuance of what until the royalty was acknowledged and paid, was found to be an infringement. All the acts of Congress relating to patents prior to that of 1870 contained provisions specifying the special defenses which might be made in an action at law for an infringement under the plea of the general issue, notice thereof having been previously given. The sixty-first section of the act of 1870 enumerates the several special matters thus authorized to be proved, and adds, for the first time in the history of this legislation, the clause that "the like defenses may be pleaded in any suit in equity for relief against an alleged infringement, and proofs of the same may be given upon like notice in the answer of the defendant and with the like effect." The plain and obvious purpose of this provision is to furnish appropriate modes in equity pleading for the trial of all issues both of fact and law relating both to the alleged infringement and the validity of the patent without the necessity of framing special issues out of chancery for trial by jury or sending the parties to a court of law for the trial of an action in that forum, in order to determine their legal right. It proceeds upon the idea that the court of equity, having acquired jurisdiction for the purpose of administering the equitable relief sought by the bill, may determine directly and for itself in the same proceeding all questions incidental to the exercise of its jurisdiction, notwithstanding they may be questions affecting legal rights and legal titles. Although this was the first statutory authority for the practice, it was rather a recognition of what had already been established than its introduction, for the practice had in fact originated long before, and was based upon well-known principles of equity jurisprudence. Whatever question may have existed in reference to it previously was settled in the courts of the United States by the decision in *Goodyear* v. *Day*, (2 Wall., Jr., C. C. Rep., 283,) a case argued by Webster and Choate, and decided by Mr. Justice Grier in 1852. That learned judge on that occasion said:

> It is true that in England the chancellor will generally not grant a final and perpetual injunction in patent cases when the answer denies the validity of the patent without sending the parties to law to have that question decided; but even there the rule is not absolute or universal. It is a practice founded more on convenience than necessity. It always rests on the sound discretion of the court. A trial at law is ordered by a chancellor to inform his conscience, not because either party may demand it as a right or that a court of equity is incompetent to judge of questions of fact or of legal titles.

See, also, *Orr* v. *Merrill*, (1 Wood. & Minot, 376.)

The distinction in the nature of the two proceedings of an action at law and a suit in equity is plainly pointed out in this section of the statute, the former as being an action for an infringement, the latter as a suit for relief against an alleged infringement. And while upon the words used in the fifty-fifth section of the act it may be that the jurisdiction in equity which is thereby conferred is not exhausted by the power to grant injunctions according to the course and principles of courts of equity to prevent the violation of any right secured by patent, yet the statute immediately says that it is upon a decree being rendered in any such case for an infringement—as though that was the only one—that the complainant shall be entitled to recover, in addition to the profits to be accounted for by the defendant, the damages the complainant has sustained thereby. It is impossible, we think, to maintain the claim that the language of this act, similar in that respect to the previous acts of 1819 and 1836, conferring jurisdiction in patent cases in equity as well as at law, was meant to obliterate the distinctions between these two jurisdictions, or even to confuse the boundaries between them, as it is alleged was done by the decision in the case of *Nevins* v. *Johnson*, (3 Blatchf., 80,) and, perhaps, in other subsequent circuit court decisions. Indeed, it is the settled doctrine of this Court that this distinction of jurisdiction between law and equity is constitutional to the extent to which the seventh amendment forbids any infringement of the right of trial by jury as fixed by the common law, and the doctrine applies in patent cases as well as others. This Court said in *Parsons* v. *Bedford*, (3 Peters, 446,) speaking of the meaning intended by the framers of that amendment, that "by common law they meant what the Constitution denominated in the third article, law, not merely suits which the common law recognized among its old and settled proceedings, but suits in which legal rights were to be ascertained and determined in contradistinction to those where equitable rights alone were recognized and equitable remedies administered." The rule was repeated in *Fenn* v. *Holme* (21 Howard, 484) in this language:

> In every instance in which this Court has expounded the phrases, proceedings at the common law and proceedings in equity with reference to the exercise of the judicial powers of the courts of the United States they will be found to have interpreted the former as signifying the application of the definitions and principles and rules of the common law to rights and obligations essentially legal, and the latter as meaning the administration with reference to equitable as contradistinguished from legal rights of the equity law as defined and enforced by the court of chancery in England.

It becomes necessary, therefore, to consider what support there is in the general doctrines of equity for the contention of the appellant.

It is the fundamental characteristic and limit of the jurisdiction in equity that it cannot give relief when there is a plain and adequate and complete remedy at law, and hence it had no original, independent, and inherent power to afford redress for breaches of contract or torts by awarding damages, for to do that was the very office of proceedings at law. When, however, relief was sought which equity alone could give, as by way of injunction to prevent a continuance of the wrong in order to avoid multiplicity of suits and to do complete justice, the court assumed jurisdiction to award compensation for the past injury, not, however, by assessing damages, which was the peculiar office of a jury, but requiring an account of profits, on the ground that if any had been made it was equitable to require the wrong-doer to refund them, as it would be inequitable that he should make a profit out of his own wrong. As was said by Vice-Chancellor Wigram in *Colburn* v. *Simms*, (2 Hare, 543,) "the court does not by an account accurately measure the damage sustained by the proprietor of an expensive work from the invasion of his copyright by the publication of a cheaper book," but, "as the nearest approximation which it can make to justice, takes from the wrong-doer all the profits he has made by his piracy and gives them to the party who has been wronged." Whether a bill for an account of profits against a wrong-doer would lie independently of other equitable grounds for the intervention of the court is a question, as was said by Lord Chancellor Brougham in *Parrott* v. *Palmer*, (3 Mylne & Keen, 640,) "which has been oftentimes agitated, and has, perhaps, never received a clear and a general decision—that is to say, a distinct judgment on the general proposition with its limitations." He concluded that "from the whole it may be collected that although as to timber there exists considerable discrepancy, yet the sound rule is to make the account the incident, and not the principal, where there is a remedy at law; but that mines are to be otherwise considered, and that as to them the party may have an account even in cases where no injunction would lie."

The supposed exception in cases of mines seems to rest upon a *dictum* of Lord Hardwicke in *Jesus College* v. *Bloom*, (3 Atkyn, 262,) that "it was a sort of trade;" but the reference is to the case of *Bishop of Winchester* v. *Knight*, (1 P. Wms. 406,) where the bill prayed for an account of ore dug by the ancestor of the defendant, in respect to which the argument was that, being a personal tort, it died with the person. The decision was that the plaintiff was not entitled; but on this point the Lord Chancellor said:

> It would be a reproach to equity to say where a man has taken my property—as my ore or timber—and disposed of it in his lifetime, and dies, that in thiscase I would be without remedy. It is true as to the trespass of breaking up meadow or ancient pasture ground; it dies with the person; but as to the property of the ore or timber, it would be clear even at law, if it came to the executor's hand, that trover would lie for it, and if it has been disposed of in the testator's life-time the executor, if assets are left, ought to answer it.

It is plain from these observations that the assumed ground of the equity jurisdiction was the absence of any remedy at law. (*Powell* v. *Aiken*, 4 Kay & Johns., 343.) It is now clearly established in the English chancery "that a bill will not lie for an account of timber felled any more than for any other money demand, except when the account is asked as an incident to an injunction, and that when the plaintiff has no right to an injunction he has no right to an account, and his remedy is at law alone." (Per Sir Wm. M. James, L. J., in *Higginbotham* v. *Hawkins*, L. R., 7 Ch. Apps., 679.)

The same rule is applied by the modern decisions in cases of mines where, as incident to the relief sought by a bill, an accounnt is asked of profits against trespassers. It appears that as to the mode of assessing compensation in such suits to an owner of coal which has been improperly worked by the owner of an adjoining mine, a different principle is applicable when the coal is taken inadvertently, or under a *bona fide* belief of title and when it is taken fraudulently, with knowledge of the wrong. In cases of the latter description at law the strict rule of damages laid down in *Martin* v. *Porter*, (5 M. & W., 351,) was to charge the value of the coal without allowing any of the expenses of getting it; but in those of the former description a milder rule was applied in *Morgan* v. *Powell*, (3 Q. B., 278,) and *Wood* v. *Morewood*, (3 Q. B., 440,) which was to give to the plaintiff the fair value of the coals, as if the coal-field had been purchased from him by the defendant. This distinction was adopted and the latter rule applied in equity by Vice-Chancellor Malins in *Hilton* v. *Woods* (L. R., 4 Eq., 432,) and by Lord Chancellor Hatherley in *Jegon* v. *Vivian*, (L. R., 6 Ch. App., 742,) the latter remarking that "this court never allows a man to make profit by a wrong." This rule was adopted in *Stockbridge Iron Co.* v. *Cone Iron Works*, (102 Mass., 86.)

The same rule applies in England in patent and copyright cases. The Vice-Chancellor Page Wood in *Smith* v. *The London and Southwestern Railway Co.* (Kay's Rep., 415) said:

> The true ground of relief in these cases is laid down in *Bailey* v. *Taylor*, (1 Russ. & M., 75,) where Sir J. Leach, M. R., says: "The court has no jurisdiction to give to a plaintiff a remedy for an alleged piracy unless he can make out that he is entitled to the equitable interposition of this court by injunction; and in such case the court will also give him an account, that his remedy here may be complete. If this court do not interfere by injunction, then his remedy, as in the case of any other injury to his property, must be at law." Unless that primary right to an injunction exists, this court has no jurisdiction with reference to a mere question of damages.

The Vice-Chancellor further observed that, as had often been stated by Lord Eldon, as the object of the court in interfering by injunction was the prevention of a multiplicity of suits, which might be rendered necessary by continued infringements of the patent, he was at a loss to see how the jurisdiction could attach or the relief by injunction be arrived at after the expiration of the patent, unless a case were made out of a numerous series of past infringements, from which the parties were still deriving advantage. He then referred to *Crossley* v. *Beverly* (Webs. Pat. Cas., 119) as a case where there was a specific ground for that relief—that the defendants had been manufacturing the patented articles secretly and fraudulently for the purpose of pouring into the market the articles so manufactured directly the patent should have expired. In that case the bill was filed before the expiration of the patent, and the right to sue having been thus acquired, the court extended it to restrain using the articles so manufactured after the patent had expired. "Such a case," continues the Vice-Chancellor, "of a fraudulent attempt to evade the patent might occur as would enable the court to restrain the use of articles made in infringement of the patent and kept back until it expired, even after its expiration, and the plaintiff having thus obtained a right to the injunction, the right to an account would follow."

In the case of *Price's Pat. Candle Co.* v. *Bauwen's Co.* (4 Kay & Johnson, 727) the bill was dismissed because the patent, having expired *pendente lite*, the relief by injunction could not be granted at the hearing; but in *Davenport* v. *Rylands* (L. R., 1 Eq. Cas., 302) the same judge retained the bill under similar circumstances for the purposes of an inquiry as to damages, because the act of 21 and 22 Vict., c. 27, commonly called "Cairn's act," passed after the former decision, had altered the rule. That statute declared that in all cases in which the court has jurisdiction to entertain an application for an injunction against a breach of any covenant, contract, or agreement, or against the commission or continuance of any wrongful act, or for the specific performance of any covenant, contract, or agreement, the same court may award damages to the party injured either in addition to or in substitution for such injunction or specific performance, and such damages may be assessed in such manner as the court shall direct, a provision which no doubt suggested the like extension of the jurisdiction of the court in patent cases contained in our patent act of 1870. But even after the passage of "Cairn's act" it was decided by Vice-Chancellor Sir Wm. M. James in *Betts* v. *Gallais* (L. R., 10 Eq. Cas. 392) that the court would not entertain a bill for the mere purposes of giving relief in damages for the infringement of a patent when the bill had been filed so immediately before the expiration of the patent as to render it impossible to have obtained an interlocutory injunction. He characterized it as "a mere device to transfer a plain jurisdiction to award damages from the court to which that jurisdiction properly belongs to this court."

Mr. Kerr in his treatise on injunctions, 41, summarizes the result of many decisions, which he cites under this statutes, as follows:

> The statute did not transfer to the court the general jurisdiction of common law by way of damages or extend its jurisdiction to cases where previously to the statute it had no jurisdiction or could not consistently with its rules and principles have interfered. The statute merely empowered the court to give damages in cases involving elements or ingredients of an equitable character. If the case as presented to the court was an equitable one, so that the subject-matter of the application is properly cognizable in equity, the court had jurisdiction under the statute to entertain the question of damages. If, on the other hand, the plaintiff had no equitable right at the time of bringing the action, so that the matter has been improperly brought into equity, the statute had no application. Damages may be awarded under the statute if it appear that at the time of bringing the action there was an equitable case, although the case for an injunction fails, or although an injunction is not competent from circumstances which have occurred since the filing of the bill.

It will be observed that the British statute does not touch the question of the account of profits by an infringer, leaving that as it stood before the passage of the act. The unavoidable inference is that damages can only be given under the act in cases in which an account might be decreed, and that the patentee must, as it was expressly decided by the House of Lords in *De Vitre* v. *Betts*, (L. R., 6 H. L., 321,) in all cases when he has a decree elect whether he will have an account of profits or an inquiry as to damages, and cannot have both. Under the act of Congress of 1870 he may recover damages in addition to the profits to be accounted for by the defendant; but as the recovery is limited by the act to the actual damages, it is manifest that the recovery of damages and profits is not intended to be double, but that when necessary the damages are to supplement that loss of the complainant which the profits found to have been received are insufficient to compensate, subject to the power of the court as to their increase, as in case of verdicts. This firm and indisputable doctrine of the English chancery has been recognized and declared by this Court in *Hipp* v. *Babin* (91 Howard, 271) to be part of the system of equity jurisprudence administered by the courts of the United States, founded, not only upon the legislative declaration in the judiciary act of 1789, "that suits in equity shall not be sustained in either of the courts of the United States in any case where plain, adequate, and complete remedy may be had at law," but also upon the intrinsic distinctions between the different jurisdictions of law and equity. In delivering the opinion of the Court in that case, Mr. Justice Curtis remarked that "the practice of the courts of the United States corresponds with that of the chancery of Great Britain, except where it has been changed by rule or is modified by local circumstances or local convenience," and cited the instances in which "this Court has denied relief in cases in equity where the remedy at law has been plain, adequate, and complete, though the question was not raised by the defendants in their pleadings nor suggested by the counsel in their arguments." He then adds:

> And the result of the argument is that whenever a court of law is competent to take cognizance of a right and has power to proceed to a judgment, which affords a plain, adequate, and complete remedy without the aid of a court of equity, the plaintiff must proceed at law, because the defendant has a constitutional right to a trial by jury.

It was contended in that case that notwithstanding this general principle the bill ought to be maintained, because the complainants being minors were authorized to call upon the defendants, who had intruded into possession of their lands, for an account as guardians, and that the court of chancery was better fitted to take an account for rents, profits, and improvements, and might decide the question of title as incidental to the account. In reply to these points Mr. Justice Curtis remarked that "there are precedents in which the right of an infant to treat a person who enters upon his estate with notice of his title as guardian or bailiff and to exact an account in equity for the profits for the whole period of his occupancy is recognized;" "but," he added, "in those cases the title must, if disputed, be established at law, or other grounds of jurisdiction must be shown."

Nor can the court retain the bill under an impression that a court of chancery is better adapted for the adjustment of the account for rents, profits, and improvements. The rule of the court is that when a suit for the recovery of the possession can be properly brought in a court of equity and a decree is given, that court will direct an account as an incident in the cause; but when a party has a right to a possession which he can enforce at law, his right to the rents and profits is also a legal right, and must be enforced in the same jurisdiction. The instances where bills for an account of rents and profits have been maintained are those in which special grounds have been stated to show that courts of law could not give a plain, adequate, and complete remedy. No instances exist where a person who had been successful at law has been allowed to file a bill for an account of rents and profits during the tortious possession held against him, or in which the complexity of the account has afforded a motive for the interposition of a court of chancery to decide the title and to adjust the account. (*Hipp* v. *Babin*.)

These principles were announced in a case for the recovery of the possession of real estate held adversely; but they are of general application, and embrace as well the case of torts to personalty and infringements of patent and copy rights.

The distinct ground upon which the opposite view is presented to us in argument is that the infringer of a patent right is by construction of law a trustee of the profits derived from his wrong for the patentee, and that

a court of equity in the exercise of its acknowledged jurisdiction over trusts and trustees will require him to account as trustee without reference to any other relief; and in support of this contention we are referred to passages in the judgments of this court in the cases of *Packet Company* v. *Sickles*, (19 Wall., 611;) *Burdell* v. *Denig*, (92 U. S., 720,) and *Birdsall* v. *Cooledge*, (93 U. S., 68,) all of which have been already cited in this opinion

But the inference sought to be drawn from the expressions referred to is not warranted. It is true that it is declared in those cases that in suits in equity for relief against infringements of patents the patentee succeeding in establishing his right is entitled to an account of the profits realized by the infringer, and that the rule for ascertaining the amount of such profits is that of treating the infringer as though he were a trustee for the patentee in respect to profits; but it is no where said that the patentee's right to an account is based upon the idea that there is a fiduciary relation created between him and the wrong-doer by the fact of infringement, thus conferring jurisdiction upon a court of equity to administer the trust and to compel the trustee to account. That would be a *reductio ad absurdum*, and if accepted would extend the jurisdiction of equity to every case of tort where the wrong-doer had realized a pecuniary profit from his wrong. All that was meant in the opinions referred to was to declare according to what rule of computation and measurement the compensation of a complainant would be ascertained in a court of equity, which, having acquired jurisdiction upon some equitable grounds to grant relief, would retain the cause for the sake of administering an entire remedy and complete justice, rather than send him to a court of law for redress in a second action. The rule adopted was that which the court in fact applies in cases of trustees who have committed breaches of trust by an unlawful use of the trust property for their own advantage—that is, to require them to refund the amount of profit which they have actually realized. This rule was adopted, not for the purpose of acquiring jurisdiction, but in cases, where having jurisdiction to grant equitable relief, the court was not permitted by the principles and practice in equity to award damages in the sense in which the law gives them, but a substitute for damages, at the election of the complainant, for the purpose of preventing multiplicity of suits; and the particular rule was formulated, as will be seen by reference to the cases already referred to, out of tenderness to defendants, in order to mitigate the severity of the punishment to which they might be subjected in an action at law for damages, and because it was thought more equitable merely to deprive them of the actual profits arising from their wrong than to make no allowances in estimating damages for the cost and expense of the business, in the prosecution of which they had violated the rights of the complainant. The same reason operated in the establishment of the similar rule acted upon in the cases of *Hilton* v. *Woods* (L. R., 4 Eq., 432) and *Jeyon* v. *Virian*, (L. R., 6 Ch. App., 742,) already cited in a previous part of this opinion. The rule itself is reasonable and just, though sometimes perverted and abused. It has been constantly acted upon by the courts; but it is a rule of administration and not of jurisdiction, and, although the creature of equity, it is recognized as well at law as one of the measures, though not the limit, for the recovery of damages.

The case is not within the principle according to which in certain circumstances a court of equity decrees a wrong-doer to be a trustee *de son tort*, and exerts its jurisdiction over him in that character. Where a defendant has wrongfully intermeddled with property already impressed with a trust he may be required as a trustee to account for it, as was done in the case of *The People* v. *Houghtaling*, (7 Cal., 348,) because trust property may be followed, wherever it can be traced, into whosesoever possession it comes, except that of a *bona fide* purchaser, without notice. It is the character of the property, and not the wrong done in converting or withholding it, that constitutes the wrong-doer a trustee.

Our conclusion is that a bill in equity for a naked account of profits and damages against an infringer of a patent cannot be sustained; that such relief ordinarily is incidental to some other equity, the right to enforce which secures to the patentee his standing in court; that the most general ground for equitable interposition is to insure to the patentee the enjoyment of his specific right by injunction against a continuance of the infringement; but that grounds of equitable relief may arise other than by way of injunction, as where the title of the complainant is equitable merely, or equitable interposition is necessary on account of the impediments which prevent a resort to remedies purely legal, and such an equity may arise out of and inhere in the nature of the account itself, springing from special and peculiar circumstances which disable the patentee from a recovery at law altogether, or render his remedy in a legal tribunal difficult, inadequate, and incomplete, and as such cases cannot be defined more exactly each must rest upon its own particular circumstances as furnishing a clear and satisfactory ground of exception from the general rule.

The case of *Garth* v. *Cotton* (1 Dickens, 183) furnishes an interesting and curious illustration of one of the excepted cases. In that case Lord Hardwicke sustained a bill in equity in a case of waste for an account of timber felled and sold where there could be no injunction in favor of a complainant unborn at the time of its commission whose estate was a contingent remainder supported by a limitation to trustees to preserve it, the defendant being the owner of a prior term of years and the ultimate remainder man in fee. The Lord Chancellor proceeded on the ground of collusion between the defendants and a nominal or imputed breach of trust on the part of the trustees to preserve the contingent remainder in permitting the wrong, and distinguished the case from *Jesus College* v. *Bloom* (3 Atk., 262) particularly on the ground that the complainant could have no remedy at law. Another instance of an exception is mentioned by Vice-Chancellor Page Wood in the extract from his judgment in the case of *Smith* v. *The London and Southwestern Railroad Co.*, (Kay's Rep., 415,) contained in a previous part of this opinion.

It does not appear from the allegations of the bill in the present case that there are any circumstances which would render an action at law for the recovery of damages an inadequate remedy for the wrongs complained of, and as no ground for equitable relief is presented we are of opinion that the circuit court did not err in sustaining the demurrer and dismissing the bill. Its decree is therefore affirmed.

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Subscriptions for 1882.

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Amendment of Rules 85 and 86.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., April 1, 1882.

Rule 85 (Rules of Practice, revised September 1, 1880) is hereby amended by striking out the last sentence, viz: the words "If the reissue shall be granted, the cost of the abstract of title will be refunded."

Rule 86 is hereby amended so as to read:

"Applicants will be required to file with their petitions for reissue—

"1st. A statement setting forth particularly the defects or insufficiencies in the specification which render the patent inoperative or invalid, and in cases where more was claimed and allowed than the applicant was entitled to claim as new such part or parts must be distinctly pointed out.

"2d. In such statement the applicant must explain how such errors arose, in order that the question of inadvertence, accident, or mistake may be determined.

"3d. The statement must be accompanied with the oath of the applicant that said errors arose without any fraudulent or deceptive intention.

"From the decision of the examiner, holding that the statement or oath is insufficient, an appeal may be taken to the Commissioner in person."

E. M. MARBLE,
Commissioner of Patents.

Approved to take effect April 15, 1882.

S. J. KIRKWOOD,
Secretary of the Interior.

Issue of April 18, 1882.

Patents	362—	No. 256,451 to	No. 256,812, inclusive.
Designs	14—	No. 12,867 to	No. 12,900, inclusive.
Trade-Marks	12—	No. 9,294 to	No. 9,305, inclusive.
Labels	5—	No. 2,665 to	No. 2,669, inclusive.
Reissues of patents	1—	No. 10,088	
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Maine	5	1	Wisconsin	9	....
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Massachusetts	31	3	United States Army	....	....
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Belgium	....	....	New Zealand	....	....
Bermuda	....	....	Norway	1	....
Brazil	....	....	Russia	....	....
Canada	4	1	Spain	....	....
Chili	....	....	Sweden	....	....
Columbia, U. S. of	....	....	Switzerland	....	....
Cuba	....	....			
Denmark	....	....	Total to citizens of foreign countries	18	2
Ecuador	....	....			
England	8	1			

DESIGNS.

12,867.—PICKLE, PRESERVE, OR SIMILAR VESSEL.—*David Barker*, Steubenville, Ohio, assignor to *Charles G. Summers*, Baltimore, Md. Application filed February 15, 1882. Term of patent 3½ years.

12,868.—HANDLE FOR A SPOON OR FORK.—*Alonzo Hebbard*, New York, N. Y., assignor to *Dominick & Haff*, same place. Application filed February 28, 1882. Term of patent 7 years.

12,889.—FRINGE.—*Eugene A. Kemper*, Philadelphia, Pa. Application filed February 7, 1882. Term of patent 3½ years.

2,890.—FONT OF PRINTING-TYPE.—*Andrew Little*, New York, N. Y. Application filed March 9, 1882. Term of patent 7 years.

12,891.—PADLOCK.—*Thomas Lyons*, Hartford, assignor to *The Russell & Erwin Manufacturing Company*, New Britain, Conn. Application filed March 2, 1882. Term of patent 14 years.

12,892 and 12,893.—ADVERTISING OR ORNAMENTAL DISK OR PLATE. *Elhanan L. Moodie*, New York, N. Y., assignor of one-half to *Charles H. Gillespie*, same place. Applications filed March 14, 1882. Term of patents 3½ years.

12,894.—HAT.—*H. Stansbury Norse*, New York, N. Y. Application filed February 17, 1882. Term of patent 3½ years.

12,895.—CARPET.—*Horatio Smith*, Kidderminster, county of Worcester, England, assignor to *William Mansell Daintrey*, New York. Application filed March 14, 1882. Term of patent 3½ years. Registered in England October 25, 1881.

12,896.—WATCH-CASE.—*Henry Untermeyer*, New York, N. Y. Application filed November 11, 1881. Term of patent 7 years.

12,897.—DOOR-HANGER.—*Stephen W. Jones*, South Union, Me. Application filed March 7, 1882. Term of patent 14 years.

12,898.—HEATING-STOVE.—*John W. Kennedy*, Troy, assignor to *The Union Stove Works*, New York, N. Y. Application filed March 15, 1882. Term of patent 7 years.

12,899 and 12,900.—FONT OF PRINTING-TYPE.—*John K. Rogers*, Brookline, Mass. Applications filed March 16, 1882. Term of patents 3½ years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

9,294.—OIL.—*John D. Archbold*, New York, N. Y. Application filed March 11, 1882.

"The arbitrarily-selected word 'ANGORA.'"

9,295.—ELECTRO-MAGNETIC APPLIANCES FOR THE CURE OF VARIOUS DISEASES.—*Josiah Baker*, East Somerville, Mass. Application filed March 24, 1882.

The portrait of the registrant and the fac-simile of his signature.

9,296.—COOKING-STOVES.—*Bridge and Beach Manufacturing Company*, St. Louis, Mo. Application filed May 9, 1881.

"The word 'SUPERIOR.'"

9,297.—COOKING-STOVES.—*Bridge and Beach Manufacturing Company*, St. Louis, Mo. Application filed May 9, 1881.

"The representation of a bunch of grapes with its leaves, tendrils, and stem, and the word 'SUPERIOR.'"

2,298.—COOKING-STOVES.—*Bridge and Beach Manufacturing Company*, St. Louis, Mo. Application filed May 9, 1881.

"The representation of a grape-leaf and the word 'SUPERIOR.'"

9,299.—REMEDY FOR THE CURE AND EXTRACTION OF CORNS.—*John C. Echard*, Staunton, Va. Application filed March 13, 1882.

"The word 'EXCELSIOR.'"

9,300.—CERTAIN SPECIFIC MEDICINE.—*Edgar B. Hurrell*, Cincinnati, Ohio. Application filed January 30, 1882.

"The arbitrary word 'SANTINELL.'"

9,301.—CIGARS.—*W. R. Irby & Bro.*, New Orleans, La. Application filed March 27, 1882.

"The words 'NEW ORLEANS COTTON EXCHANGE' and the representation of the Exchange building."

9,302.—SPOOL-COTTON.—*Kerr & Co.*, Paisley, county of Renfrew, Scotland, East Newark, N. J., and New York, N. Y. Application filed March 27, 1882.

"The dollar sign, '$.'"

9,303.—CERTAIN MEDICINAL PREPARATIONS.—*J. Warren Lowell* Cape Elizabeth, Me. Application filed March 24, 1882.

"The arbitrarily-selected letters and word 'CAULOCOREA.'"

9,304.—CERTAIN MEDICINE.—*William R. Merwin* and *George H. Leslie*, Detroit, Mich. Application filed January 30, 1882.

"The word 'MAGNETIC' and the two half-length male figures, with the clinched fist placed between them, represented as emitting flashes of electricity."

9,305.—PIPE CUTTING AND THREADING MACHINES.—*D. Saunders' Sons*, Yonkers, N. Y. Application filed March 24, 1882.

"The arbitrary symbol composed of the letters 'I X L.'"

LABELS.

2,665.—Title: "JAMAICA GINGER ALE."—*Gustavus D. Dows*, Boston, Mass. Application filed March 16, 1882.

2,666.—Title: "KEMPSHALL'S PATENT SCREW SOCKET WINDOW SPRING BOLTS."—*Eleazer Kempshall*, New Britain, Conn. Application filed March 23, 1882.

2,667.—Title: "RICE'S PINE SALT."—*North American Chemical Company*, (Limited,) Montreal, Quebec, Canada. Application filed March 24, 1882.

2,668.—Title: "LAREDO BAKING POWDER."—*D. H. Randolph & Co.*, Laredo, Tex. Application filed February 6, 1882.

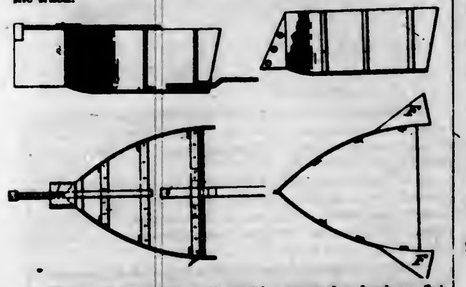
2,669.—Title: "IMPROVED GLIDDEN" (FOR BARBED FENCES.)—*Worcester Barb Fence Company*, Worcester, Mass. Application filed March 6, 1882.

PATENTS

GRANTED APRIL 18, 1882.

256,451. SNOW-PLOW. SILAS ADAMS, Gardner, Mass. Filed Oct. 26, 1881. (No model.)

Brief.—The plow has a flat tread or bottom and is without runners. Said bottom is turned up slightly at the front, and a hinged colter enables the operator to direct its course and widen the track.



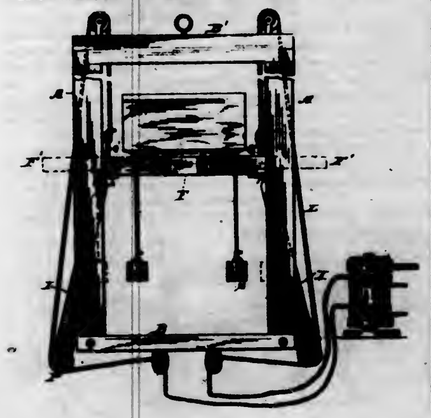
Claim.—1. The combination, with a snow-plow having a flat bottom without runners and adapted to press uniformly over the road-bed, of a colter fastened to the fore end of the plow by strong hinges with operating devices, as set forth.

2. The combination, with a snow-plow having a flat bottom without runners and adapted to press uniformly over the road-bed, of a colter and operating devices, as described.

3. The combination, with a snow-plow having a flat bottom to run upon the snow and turned up slightly at its fore end, of the colter and its operating devices, as described.

4. In combination with the plow constructed, as described, with the flat bottom without runners, of the wings F F, as set forth.

256,452. WOOD AND COAL ELEVATOR. GEORGE B. ALLIS, Little Rock, Ark. Filed Mar. 3, 1882. (No model.)



Claim.—1. In an elevator and dumping device, a box hinged to a platform moving in guides formed by the supporting-frame, and adapted to be automatically dumped, substantially as set forth.

2. In an elevator and dumping device, as described, a frame having a box-supporting platform moving therein, a fuel-box hinged to said platform, and means whereby the box and platform are raised and the box automatically dumped.

3. In an elevator and dumping device, a frame consisting of the posts A and cross-beams B B' B', in combination with the supporting-pieces I, platform F, and fuel-box C, substantially as set forth.

4. In an elevator and dumping device, the combination of a vertical supporting-frame, A B B', supports I, and platform F, moving in the frame, with a fuel-box, C, hinged to the platform, the platform and its supports being actuated by cords passing over pulleys secured to the supporting-frame and the platform-supports.

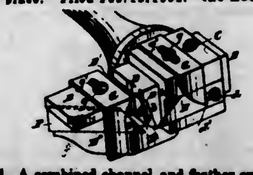
5. In an elevator and dumping device, the combination of a fuel-box supported and moved as described with the hinged arms F' and locking mechanism, substantially as described.

256,453. SHOE-FASTENER. ISAAC BANISTER, Newark, N. J., and ROBERT B. BANISTER, Providence, R. I. Filed Dec. 5, 1881. (Model.)



Claim.—A shoe-fastener composed of the loop-plate C, base-plate A, provided at one end with the cross-head *a'*, its opposite end being returned to form a hook and adapted to project through the leather or other material, as described, and the tongue or clasp B, hinged to the said cross-head, and having its free end returned, as shown and described, and adapted to pass through said loop-plate C and be sprung over and held into engagement with the rounded or hooked end of the aforesaid plate A, all in the manner and for the purposes set forth.

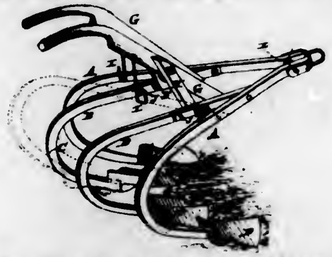
256,454. CHANNEL AND FEATHER CUTTER. PATRICK P. BARRY, Chicago, Ill., assignor of one-half to Henry B. Vandercook, same place. Filed Feb. 13, 1882. (No model.)



Claim.—1. A combined channel and feather cutter containing the laterally-adjustable block B, carrying the inclined adjustable blade F and the vertical adjustable blade D, and the laterally-adjustable horizontal blade E, applied to the stock, all combined for operation together substantially as and for the purposes specified.

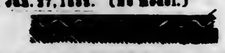
2. The combination, with the stock of a shoemaker's tool, of the adjustable block B, the inclined adjustable blade F, and the vertical adjustable blade D, both applied to the said bar, the horizontal adjustable blade E, applied to the stock, one or more gages, G, and a gage, A, substantially as and for the purposes specified.

256,455. CULTIVATOR. SMITH A. BATSON, Batson's Store, Tenn. Filed Feb. 18, 1882. (No model.)



Claim.—In a cultivator, the combination of the outer beams, A, the inner beams, B, constructed in two sections, hinged together and having their front ends attached to said outer beams, A, and the handles G, having hooks I, all constructed and arranged substantially as set forth.

256,456. PLASTERED WALL. AUGUST H. BROEKER, St. Louis, Mo. Filed Jan. 27, 1882. (No model.)

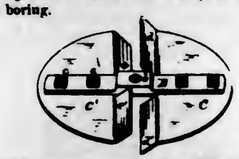


Claim.—1. The herein described mode of producing a surface upon a plastered wall, which consists in cementing a textile fabric closely thereto and then coating the fabric with paint, said wall not being painted or waterproofed, substantially as described.

2. A plastered wall having a textile fabric cemented closely and directly thereto, and said fabric having paint applied thereto, said wall not being painted or waterproofed, substantially as described.

256,457. EARTH-AUGER. WILLIAM BRUNNER, North Lewisburg, Ohio. Filed Jan. 30, 1882. (No model.)

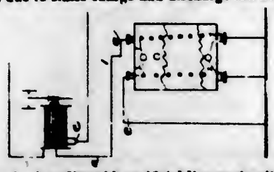
Brief.—The inner edges of the upturned disks have a bearing against the edges of the cross-bar, whereby the disks are braced in the act of boring.



Claim.—In an earth-auger, the combination of the screw-threaded and pointed handle A, the bar B, and the plates C C', the blades of which are disposed in slanted parallel lines, with the inner ends of these inclined upward abutting against the bar, substantially as shown and described.

256,458. RHEOSTAT FOR MULTIPLE TELEGRAPHY. MADISON BUELL, Buffalo, N. Y. Filed Jan. 23, 1882. (No model.)

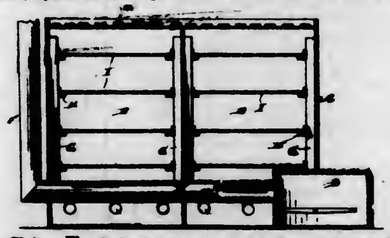
Brief.—A series of primary circuits of induction-coils are connected by ordinary switch-plugs directly in the artificial line until its resistance equals that of the main line. The secondaries are then connected up in series in a similar manner, but in an independent earth-circuit. In this way the electro-static capacity of the artificial line is made equal to that of the main line, and disturbances due to static charge and discharge are avoided.



Claim.—1. An adjustable artificial line or circuit which consists of the adjustable artificial line-circuit *a* and an adjustable artificial earth-circuit, *c*, both combined together in one or more spools, substantially as and for the purpose hereinbefore set forth.

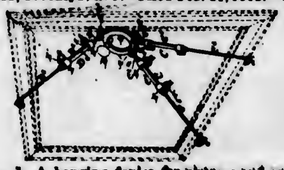
2. A rheostat composed of a series of spools of adjustable resistance, each separate spool having two wires, *a c*, thereon, side by side, one representing the artificial line *a*, the other the earth-line *c*, and insulated from each other, and arranged and operating substantially in the manner and for the purpose herein specified.

256,459. FRUIT-DRIER. JAMES D. BURDETT and LEWIS C. HILL, Myrtle Creek, Oreg. Filed Dec. 6, 1881. (No model.)



Claim.—The fruit-drier herein described, consisting of the case A, having inlets L and open tops M, the chambers B, having independent doors C, guides H, bars G, trays I, of shorter length than the transverse plane of the several chambers, arranged alternately, as shown, the furnace D, and pipe E, leading through each of the chambers, all arranged and combined to operate as set forth.

256,460. HANGING DEVICE FOR PICTURES AND MANIKINS. ALEXANDER CAMPBELL, Brooklyn, N. Y. Filed Feb. 21, 1882. (No model.)

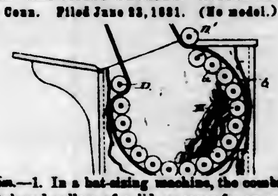


Claim.—1. A hanging device for pictures and manikin articles, constructed with a bow, ring, or frame, A, and a series of adjustable suspension and distending rods, C D, substantially as shown and described.

2. A hanging device for pictures and manikin articles, constructed with a bow, ring, or frame, A, and a series of suspending or distending rods, C and D, formed in sections, as shown, such sections being capable of adjustment one in relation to the other, substantially as and for the purpose described.

3. In a suspension device for pictures and manikin articles, the combination, with the ring or frame A, provided with lugs or projections A' A² A³ A⁴, of the rods C C and D, formed in sections C' C² C³ and D' D² D³, sliding within or upon each other, and held in position by clamps or similar holding means, E, substantially as shown and described.

256,461. HAT-SIZING MACHINE. HERMAN CHITTENDEN, Danbury, Conn. Filed June 23, 1881. (No model.)

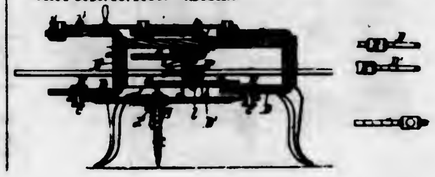


Claim.—1. In a hat-sizing machine, the combination, with a tank or tub and rollers, of a lid or cover for an opening in such tank, hinged in position and adapted to be turned back for use as a hatter's plank, substantially as described.

2. The tank, its steam-pipe and plank, combined with a series of rolls and a belt to drive such rolls simultaneously all in one direction and at the same speed, substantially as described.

3. The series of fixed rollers *a a* and the belt *b* to drive them, combined with the idlers D D' and the receiving tank or box, substantially as described.

256,462. ELLIPSOGRAPH. EZRA E. CLARK, Worcester, Mass. Filed Sept. 26, 1881. (Model.)



Claim.—1. In combination with the rectangular frame A, the cranks D D D' D', rods *d d'*, and hub H, the pivots of the rods being adjustable upon the respective cranks, and the whole being arranged to carry the stock in an elliptical path of movement, substantially as described.

2. As a means of actuating the cranks D D D' D', the cranks C C C' C', secured in the axes of the former, and being in their turn united by connecting-rods which compel them to rotate in unison, substantially as stated.

3. As a means of accelerating or retarding the speed of rotation of the stock upon its axis to maintain the knife or pen normal to the curve of the ellipse, as stated, the cross-head H', adapted to traverse the frame A in the same direction as the rod *d'*, and actuated by the cranks *c* and *c'*, and the slotted plate or arm *n*, affixed at its base to the stock and straddling a pivot depending from the cross-head, substantially as herein set forth and described.

4. The instrument as an entirety consisting of the frame A, cranks C C C C D D D D', slides or rods *d d'*, connecting rods or bars *b b b' b'* of the frame F, cross-head H, with its stud or pivot *i*, and adapted to traverse the frame A, and slotted plate or arm *n*, straddling such pivot *i*, substantially as and for the purposes described.

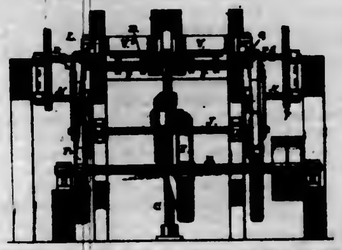
256,463. JOURNAL-BEARING. WILLIAM L. CLARK, Webster City, Iowa. Filed Jan. 27, 1882. (No model.)



Claim.—A hollow journal-box or journal, filled with liquid and firmly closed, substantially as and for the purpose described.

256,464. MACHINE FOR SAWING AND GROOVING BRAKES. FRANK H. GOWEN, Glenwood, assignor to Adolphus Gorman, San Francisco, Cal. Filed May 27, 1881. (No model.)

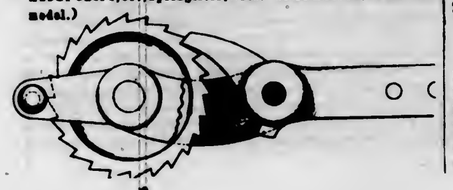
Brief.—Two automatically-operated alternately reciprocating carriages carry the belts over a horizontal saw. Small vertical saws beneath cut the grooves.



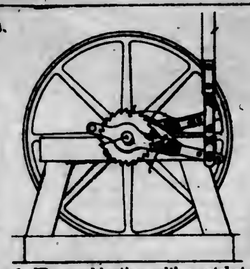
Claim.—1. In a machine for cutting and finishing shakes and other articles from a block or bolt, the combination together of the horizontally-running circular saw, the tool-carrying mandrels *g g*, the reciprocating carriages V or V', for holding and feeding the bolts in an alternate manner, or one in advance of the other upon opposite sides of the saw, the intermittent feed device Q L G H, and the mechanism for throwing the feed of one carriage into gear from the movements of the other carriage, all substantially as herein described, to operate as set forth.

2. In combination with the saw and the traveling carriages having feed-racks on them, the pistons Q, the sliding bearings of their shafts, the levers I, having upright arms arranged to project in the paths of the carriages, the lever G, and its catch H, substantially as described.

256,465. RATCHET-PAWL FOR POWER-CONVERTERS. HENRY CROFT, Jr., Springfield, Ohio. Filed Mar. 18, 1882. (No model.)



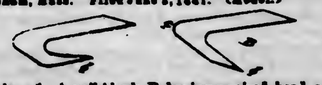
256,466.



Claim.—1. The combination, with a ratchet-wheel, of a driving-pawl, a pivoted pawl-carrier to which said pawl is pivoted, and an extension of said pawl beyond its pivotal point, whereby upon applying power to said extension of the pawl a positive lock is effected between the engaging end of the pawl and the ratchet.

2. The combination, with a ratchet-wheel, of an encompassing pawl-carrier held to said ratchet by frictional contact and provided with a detent or stop, and a pawl pivoted to said carrier and likewise provided with a detent or stop, whereby upon the backward stroke of the pawl the frictional contact of the carrier and ratchet insures the entire disengagement of the ratchet and pawl, as and for the purpose specified.

256,466. WIRE-FENCE NAIL. CHARLES W. DEAN, South Wareham, Mass. Filed June 8, 1881. (Model.)



Claim.—1. A nail-blank, B, having a raised head, *c*, and divergent sharp-pointed legs of unequal length, having the outer bevels of their points parallel with each other, as set forth.

2. A nail having a raised head and divergent sharp-pointed legs of unequal length, the shorter leg having the bevel of its point bent parallel with the long leg, substantially as herein shown and described.

256,467. BUTTER-MOLD. JOSEPH DE CARLY, Smith's Ranch, Cal. Filed Aug. 5, 1881. (Model.)



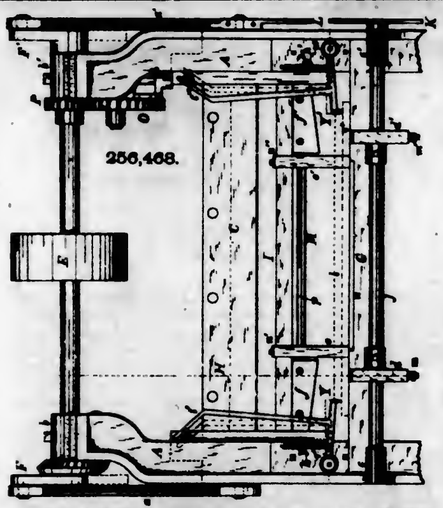
Claim.—1. In a butter-mold, a cylinder formed of three sections, as shown, having at each end a series of springs provided with hooks for securing the edges of the cloth, in combination with the curved arms E, as and for the purpose set forth.

2. In a butter-mold, a cylinder formed of three sections, as shown, in combination with the curved arms I, carrying the disks I', the arms J, and the lever K, substantially as specified.

3. In a butter-mold, a cylinder, as described, having the springs C, containing the hooks C', and the curved clamping-arms E, in combination with the levers F G, having the arms G' and spring H, and with the arms I, carrying the disks I', having the lever K and arms J, substantially as and for the purpose set forth.

256,468. HOOP-MAKING MACHINE. JOHN H. DOUGHERTY, Rochester, N. Y., assignor, by mesne assignments, to John Gonnell, same place. Filed Aug. 29, 1881. (No model.)

Brief.—A reciprocating head carries a slicing-knife and a bar centrally pivoted, which carries a lapping-knife at each end. Means are provided for oscillating this bar, so that the lapping-knives shall cut alternately. Pointing-knives are driven by cams horizontally against the plank. The plank is fed on a table operated by cams, so as to be alternately horizontal and inclined in position.



Claim.—1. The combination of the reciprocating dividing-knife C, the movable lapping or tapering knives *f f'*, arranged to act alternately on the plank, and the pointing-knives *g g'*, substantially as and for the purposes set forth.

2. The combination, with the reciprocating dividing-knife C, knife-stock I, and bar M, pivoted to the knife-stock and carrying at either end the lapping or tapering knives *f f'*, substantially as described.

3. The combination, with the reciprocating dividing-knife C, of the lapping or tapering knives *f f'* and the pointing-knives *g g'*, and mechanism for moving the lapping-knives and for alternately operating the pointing-knives, substantially as and for the purposes set forth.

4. The combination of the reciprocating dividing-knife C, knife-stock I, the movable lapping-knives *f f'*, and means for adjusting the position of the lapping-knives relatively to the dividing-knife at each reciprocation of the latter, substantially as and for the purposes set forth.

5. The combination of the reciprocating dividing-knife C, knife-stock I, pivoted bar M, and lapping-knives *f f'*, arranged to be adjusted lengthwise of said bar to lap hoops of different lengths, substantially as described.

6. The combination of the knife C, reciprocating knife-frame H, provided with studs *s' s''*, pointing-knives *g g'*, and clamping-dogs Y Y', having bent arms *i' i''*, substantially as described.

7. The combination of the reciprocating dividing-knife C, swinging bar M, lapping and tapering knives *f f'*, and rock-shaft N, substantially as described.

8. The combination of the slotted frame A A, bed-plate G, cranks F F', pitmen *a a'*, dividing-knife C, swinging bar M, lapping and beveling knives *f f'*, rock-shaft N, gearing O P, and cam *q*, substantially as described.

256,469. DRAG-SAW. ROBERT R. HARNEST, Hochheimsburg, Ohio, assignor of one-half to William P. Murray, same place. Filed Jan. 9, 1882. (Model.)



Claim.—1. The saw-frame consisting of the upright frame A, having sill B, and the braces C, pivoted to the frame A and provided with foot-board D, whereby the operator is afforded a convenient standing-place and enabled to hold the braces by his weight in any position to which they may be adjusted.

2. A drag-sawing machine consisting of the frame A, pivoted braces C, having foot-board D, pendulous lever E, provided with a jointed operating-lever, and saw I, connected with lever E, as explained, whereby the machine is adapted to be folded into a compact form for storage or shipment, as set forth.

3. In a drag-sawing mechanism, the combination of a moving arm or lever, E, slotted and furnished with a transverse bolt, and a saw-carrying pitman, H, having a notch of a depth exceeding the space between the pitman and the end of the slot, whereby the detachment of the pitman when in its operative position is prevented.

256,470. PLASTIC COMPOSITION AND VULCANITE. GEO. S. EVANS, New York, N. Y. Filed Sept. 16, 1881. (Specimens.)

Claim.—1. The process of making from gums—such as gum-kauri or gum-manila—a plastic material suitable for waterproofing or for vulcanization, which consists in mixing such gum with palm-oil and then heating the mixture, as set forth.

2. A plastic material capable of forming with a suitable solvent, like oil or turpentine, a waterproofing substance or capable of being vulcanized, consisting of a gum—such as gum-kauri or gum-manila—united or combined with palm-oil, substantially as and in the proportions described.

3. The process of vulcanizing gums—such as gum-kauri or gum-manila—which consists in rendering them plastic and then treating them with a vulcanizing substance, like sulphur or iodine.

4. A vulcanite in which a gum—such as gum-kauri or gum-manila—treated with palm-oil is united with a vulcanizing substance.

5. The method of vulcanizing substances, which consists in treating them with chloride of aluminium, substantially as described.

6. A vulcanite consisting of a suitable vulcanizable substance united or combined with chloride of aluminium.

7. The process of vulcanizing gums, which consists in rendering them plastic and then treating them with chloride of aluminium, as described.

8. The process of converting gums—such as gum-kauri or gum-manila—into a suitable vulcanite, which consists in making a plastic material of the gum by uniting it with palm-oil, then heating the mixture until sufficiently cooked, and then incorporating with it chloride of aluminium, either dry or wet, with or without heat, substantially as described.

256,471. PLASTIC COMPOUND AND VULCANITE. GEO. S. EVANS, New York, N. Y. Filed Mar. 9, 1882. (No specimens.)

Claim.—1. The process of producing a solution of caoutchouc for incorporation into plastic compounds, which consists in mixing the caoutchouc with palm-oil or analogous non-siccative oil in a heated condition, substantially as and in the proportions described.

2. The process of producing a plastic compound suitable for vulcanization, which consists in mixing caoutchouc with palm-oil or analogous non-siccative oil in a heated state and then adding to the mixture a resinous gum, substantially as described.

3. The process of vulcanizing plastic compounds, which consists in incorporating with such plastic compound chloride of magnesium or other suitable chloride of the earthy alkalies, substantially as and in the proportions set forth.

4. A composition for incorporation into plastic compounds, consisting of a solution of caoutchouc and palm-oil or analogous non-siccative oil, substantially as and in the proportions described.

5. A plastic composition suitable for vulcanization, consisting of caoutchouc, palm-oil or analogous non-siccative oil, and a resinous gum, substantially as and in the proportion described.

6. The plastic composition herein described, suitable for electric insulation, water-proof coating, &c., the same consisting of caoutchouc, palm-oil or analogous non-siccative oil, and resinous gum, mixed together and subsequently vulcanized, substantially as described.

256,472. BIER. CHARLES J. RUEBHAUSE, Canton, Ohio. Filed Jan. 14, 1882. (No model.)

Claim.—1. A bier composed of a rectangular frame, two rolls connected by ropes, and mechanism for rotating said rolls with an axle and supporting-wheels, E, placed under and connected with one end of said frame, substantially as and for the purpose described.

2. The combination of the rectangular frame of a bier, two rolls pivoted thereto, and carrying thimbles and worm-pinions with a transverse shaft carrying right and left hand worms meshing with the pinions on said rolls, substantially as and for the purpose described.

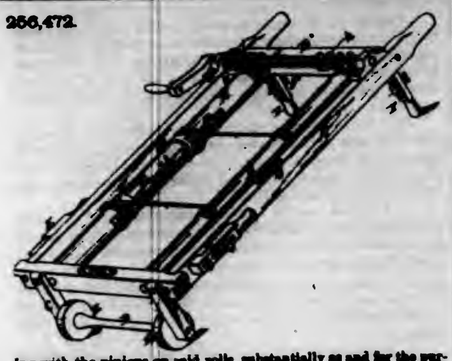
3. The combination, with the frame of a bier, of legs thereto capable of longitudinal adjustment and adapted to be folded against the sides of said frame, substantially as and for the purpose described.

4. The combination of the frame of a bier with legs made in sections and provided with interlocking rocks, flanges, and slots, and a thumb-nut, substantially as and for the purpose described.

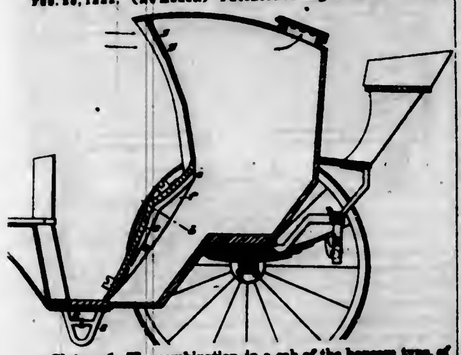
5. The combination of the frame of a bier, shafts H, and thimbles having a central recess, *e*, with ropes provided with links *i*, and a rod adapted to pass through said links and under the thimbles, substantially as and for the purposes set forth.

6. The combination of the frame of a bier, provided with longitudinally-adjustable legs, with spirit-levels secured to the rails of said frame, substantially as and for the purpose described.

256,472.



256,473. CAB. FREDERICK FORDER, London, England. Filed Feb. 25, 1882. (No model.) Patented in England Nov. 1, 1878.



Claim.—1. The combination, in a cab of the hansom type, of a raised pillar, *d*, on each side of the doorway with oblique angle-shaped doors *e*, substantially as and for the purpose described and shown.

2. In a cab of the hansom type, the ventilating arrangements consisting of the openings *g g* and ventilating roof-trap having the apertures *h h*, &c., substantially as described and shown.

3. The combination, in a cab of the hansom type, of a rigid or of a semi-yielding back stay, *l*, and in the latter case with or without spring-blades *n n*, with leather robbins *o o*, connecting the open ends of the back stay with the open back ends, *p p*, of the side springs, substantially as and for the purpose described and shown.

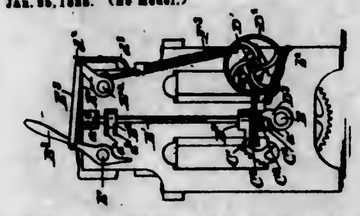
4. In a cab of the hansom type, a runner, *s*, fixed under the foot-board, on each side thereof, and provided with a cross-bar, *t*, to hold the step, substantially as and for the purpose described and shown.

256,474. DEVICE FOR CUTTING BOILER-TUBES. JAMES J. FRANKLIN, Tyler, Tex. Filed Feb. 17, 1882. (Model.)

Claim.—1. The combination of the shell or casing A, having recess B, the heads C D, the right-and-left-hand screw G, having rigid nut C and loose nuts H H, carrying flanged wedges I, and the block L, having cutter N and inclined grooves K, substantially as and for the purpose set forth.

2. The combination, in a tube-cutter, of the shell A, having head D, forming an annular flange of larger diameter than the tubes to be cut, and provided with stem or shank E, the detachable bearing-rings F, the longitudinally-grooved block L, having adjustable cutter N, and mechanism for forcing said block in an outward direction, as set forth.

256,475. CRIMPING-MACHINE. SAMUEL A. GOULD, Chicago, Ill., assignor to Henry B. Polsdorfer, Evansville, Ind. Filed Jan. 25, 1882. (No model.)



Claim.—1. In a crimping-machine, the combination, with the operating-lever B', of the collar B', provided with the jaws a^2 a^3, and the vertical shaft B', adapted to have both a lateral and a vertical movement, substantially as and for the purpose set forth.

2. In a crimping-machine, the combination, with the vertical shaft B', of the collar B', having the integral projection C', the connecting-arm C', the shifting-lever D, provided with the yoke end a^4, and the clutch D', substantially as described.

3. In a crimping-machine, the combination, with the operating-lever B', of the collar B', having the jaws a^2 a^3, the vertical shaft B', the collar B', having the integral projection C', the connecting-arm C', the shifting-lever D, provided with the yoke a^4, and the clutch D', all constructed and arranged to operate as described.

4. In a crimping-machine, the combination, with the vertical shaft B', of the collar C', having the integral projection C', the spring F', the tripping-cam D', and the shaft or roller B, carrying the series of cams C, substantially as described.

5. In a crimping-machine, the combination, with the operating-lever B', of the collar B' of the vertical shaft B', the collar C', having the integral part C', the spring F', the tripping-cam D', and the shaft or roller B, substantially as and for the purpose set forth.

6. In a crimping-machine, the combination, with the shaft or roller B, carrying the series of cams C, of the gear-wheel H', the pinion H, the horizontal shaft I', the clutch D', and the shifting-lever D, substantially as described.

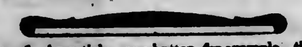
7. In a crimping-machine, the combination, with the operating-lever B', of the connecting-bar b^3, the crank-arm E', the spiral spring F', and the arm A^2 of the rock-shaft F', substantially as and for the purpose set forth.

8. In a crimping-machine, the combination, with the die-plate D', of the cam-rods E F', the crank-arm E', the connecting-bar E', and the operating-lever B', substantially as and for the purpose described.

9. In a crimping-machine, the combination, with the die-plate D', of the eyebolt d', the hook d, and the spring F', as described.

10. The combination, with a crimping-machine, of the rock-shaft F', having one end turned upward at right angles to form the arm A^2, and carrying the downward-projecting arms d^2, substantially as and for the purpose described.

256,476. MANUFACTURE OF ARTICLES FROM PLASTIC MATERIALS. TIMOTHY SULLIVAN, New York, N. Y. Filed Jan. 13, 1882. (No model.)

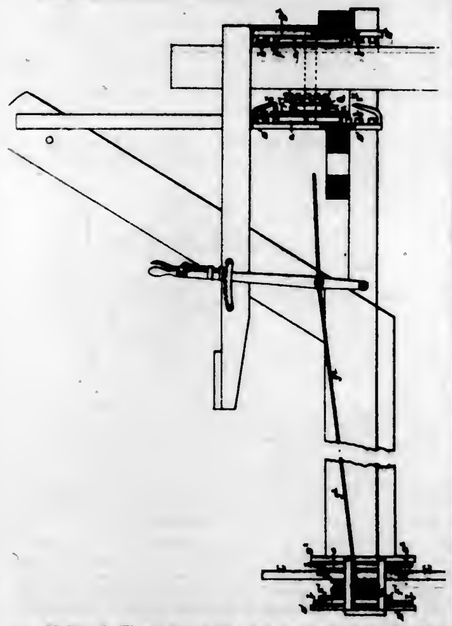


Claim.—1. An article—as a button, for example—the mass of which is formed from ground horn or hoof and the face from a thin film of celluloid or other pyroxyline compound, the two being united

by heat and pressure to form one homogeneous mass, substantially as set forth.

2. An article—as a button, for example—the mass of which is composed of ground horn or hoof and the face of a thin transparent film of celluloid or other pyroxyline compound having a design on its back, and the two being united by heat and pressure to form one homogeneous mass, as set forth.

256,477. HARVESTER-FRAME. PAUL HANSON, Salem, Miss. Filed Sept. 27, 1881. (No model.)



Claim.—1. The combination of the frame, the main axle, the toothed bars connected to said frame, and the scrolls connected to the said axle and engaging with the teeth of said toothed bars, whereby the frame may be raised or lowered by turning the scrolls, substantially as set forth.

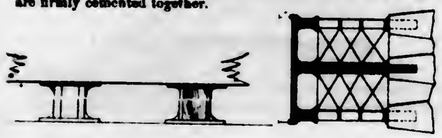
2. The combination and arrangement of a bar, D', formed with the teeth b and dovetailed groove throughout its length, a shaft or axle, E, having a shoulder adapted to fit into said dovetail groove, and a disk or similar device, F', encircling said shaft and provided with a scroll-rib, *a*, adapted to fit between said teeth *b*, whereby the revolution of the scroll-rib and disk will raise or lower the toothed bar D', substantially as set forth.

3. The combination of the frame, the main axle, the grain-wheel axle, toothed bars connected to said frame, the scrolls connected to the said axles and engaging with the teeth of said bars, and means for connecting said parts, whereby the frame may be raised or lowered at both sides at the same time while the machine is in motion, substantially as set forth.

4. The combination of a toothed plate, D' *b*, scroll-ribbed disk F' *a*, mounted upon an axle at right angles to said toothed plate, and an endless chain, whereby said scroll-ribbed disk may be revolved forward and backward to raise and lower the frame, substantially as set forth.

256,478. COLUMN, SHAFT, GIRDER, &c. HENRY J. HARRISON, Liverpool, County of Lancaster, England. Filed Nov. 8, 1881. (No model.) Patented in England Nov. 4, 1881.

Brief.—Into a hollow iron shell is loosely fitted a wooden core, the shell having first been heated to a degree below redness. Melted pitch is then forced into the interstices. When cooled both are firmly cemented together.



Claim.—1. In a column, beam, or other structure substantially such as described, the combination of a metallic body or casing and an internal wooden core secured to the metal throughout its length by a strongly-adhesive cement, and adapted to carry a material portion of the weight or strain to which the structure is subjected.

2. A hollow metallic column, shaft, girder, mast, strut, stay, post, pole, spar, or like structure, in combination with an internal core of wood, firmly cemented to the same by a strongly-adhesive tough pitch or asphalt introduced in the liquid state and setting hard, substantially as described.

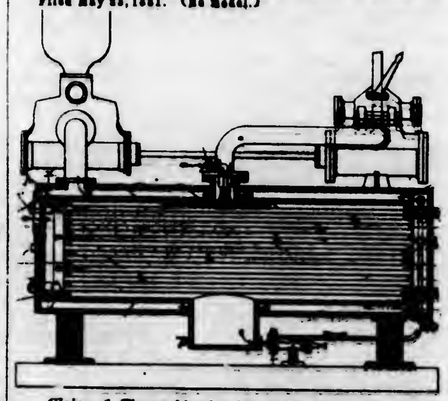
3. A hollow metallic column, shaft, girder, strut, stay, post, or like structure provided with an internal core of wood projecting beyond the end of the metal and firmly cemented to the metal, substantially as and for the purpose explained.

4. A hollow metallic structure substantially such as shown and described, having a wooden core filling its interior and held therein by strongly-adhesive cement and transverse bolts, as set forth.

5. The mode of attaching internal wooden cores securely to hollow metallic structures, consisting in heating the iron structure to a heat barely sufficient to char the wood, and then pouring in melted pitch or asphalt, so as to fill up all the interstices and securely cement the core to the metallic structure.

6. The iron girders filled with wooden planks or beams, breaking joint with each other, and having the interstices filled up with cementing material, substantially as described.

256,479. CONDENSER. WILLIAM D. ROCKER, Oakland, Cal. Filed May 23, 1881. (No model.)



Claim.—1. The combination, in a condenser, of a series of tubes supported at one or both ends in a tube-sheet movable in a stuffing-box inside of the case or shell, the adjusting-screws connected with the gland or follower and extended through the outer head of the condenser, whereby the packing in the stuffing-box may be compressed from the outside of the condenser without removing any of its parts, substantially as described.

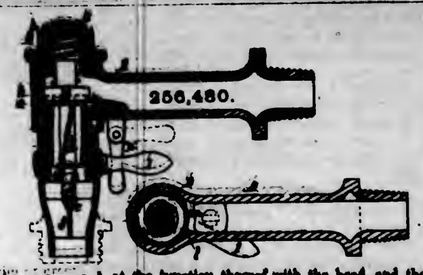
2. The combination, in a horizontal tube surface-condenser, of the steam and cold spray inlets leading through the outlet water-space into the tube-spaces, the hot-well located below the said inlets, the air-pump, the pipe leading from this pump to the boiler, the branch pipe leading to the cold-water spaces of the condenser, and the cocks applied to said pipes, substantially as described.

256,480. FAUCET. JOHN HOWES, Worcester, Mass. Filed Nov. 10, 1881. (No model.)

Brief.—The projection *l* is located at the junction of the neck and head within the shell, and its purpose is to produce a whirl or spiral action within the head to prevent vibration of the valves.

Claim.—1. The combination, substantially as hereinbefore described, of the body or shell A, having the externally-screw-threaded projection *a'* and valve-seat *a*, formed as shown, the independent valve-piece D, provided with the depending stem *d*, supported and guided within the part *a'* of said shell, and the screw-threaded thimble or nozzle B, having the bridge bar or plate *e* across its interior below the end of the valve-stem, the parts being constructed and adapted for operation as and for the purposes set forth.

2. The combination, as hereinbefore described, of the body A, having the screw-threaded extension *a'*, provided with an offset



Rim or groove, *b*, at the junction thereof with the head, and the screw-threaded valve-operating thimble B, having its top end fitted to and adapted for making a close joint at said offset or groove when in its elevated position, as and for the purpose set forth.

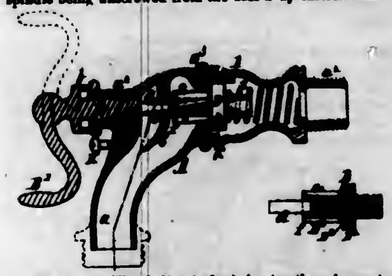
2. The shell A, provided with the deflecting leg or flange *m*, located within the neck-passage adjacent to the valve-seat *a*, whereby the current of water is deflected upward, as and for the purpose set forth.

3. In a water-service faucet, the combination, with the shell A and valve D, having interlocking lugs and grooves *h*, for preventing rotation of said valve, of an inclined projection, *l*, or deflector, whereby a whirl or spiral action is imparted to the water in contact with said valve, substantially as and for the purpose set forth.

5. The combination, with the rotating screw-threaded thimble B, provided with the handle I, of the hinged stop-pin K, fixed in the under part of the shell A, substantially as and for the purpose set forth.

256,481. FAUCET. JOHN HOWES, Worcester, Mass. Filed Nov. 10, 1881. (No model.)

Brief.—A apron C serves to break the force of and deflect the stream of water so that it will not impinge against the end of the spindle B and adjacent surface. The valve is formed of several parts, the rim or disk *f* around the stem turning the water away from the spindle-opening. The spline I engages a slot in the valve-head and prevents rotative movement of the valve. The curved ribs *e* give a rotative stream as the water passes, thus forming the side of the groove against the spline I and preventing vibration and rattling of the parts by the action of the water. Stop-screw K arrests the movements of the crank E' and prevents the spindle being unscrewed from the boss *d'* by carelessness.



Claim.—1. The shell or body A, having the valve-seat, curved rib, and spindle-boss located as shown, and provided with the deflecting-apron C, cast integral with said shell and extending laterally across the interior with its lower edge directed toward the channel of the rib, as shown and described.

2. The combination, with the shell A, having the valve-seat E, screw-threaded boss *a'*, and rib *a*, and provided with the deflecting apron C, arranged as shown, of the valve D, having a series of ribs fitted to and guided in the opening of the valve-seat, the stem *d*, passing through and guided by said apron, and the screw-threaded spindle B, with the head or cap *h*, and crank-handle E', as and for the purposes set forth.

3. The valve constructed of the recessed head-piece D', the center or hub D', with ribs or flanges *e* and end disks, *f g*, the packing-ring D', and the screw-threaded stem *d*, all combined, adjusted, and secured together in the manner shown and described.

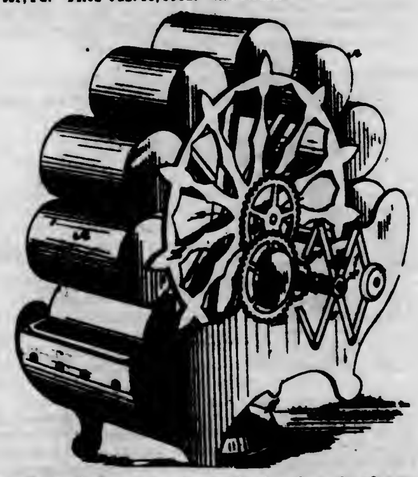
4. The combination, with the valve-seat E and valve D, provided with interlocking lugs and grooves or means for preventing rotation of the valve upon its seat, of the shank or hub D', having a series of curved or spirally-twisted ribs, *e*, substantially as and for the purpose set forth.

5. The combination, with the valve D, provided with the guiding and supporting stem *d*, passing through the apron C, of the hub D', provided with the rim-flange *f*, as shown, and for the purpose set forth.

6. In combination with the shell A, having the lug *i* and projecting bars *a'*, the valve-operating spindle or screw B, having a cap-ferrule, *h*, fitting onto the end of said bars, as and for the purpose set forth.

7. The combination, with the shell A and screw-spindle B, of the stop K, adapted for engaging a lug on the spindle cap or head and arresting outward action of said spindle at a given position, while permitting inward action thereof to the full limit of said screw, substantially as set forth.

256,482. MOTOR. ANTHONY ISEN and ALBERT ISEN, Lancaster, Pa. Filed Jan. 18, 1882. (No model.)



Claim.—1. In a motor, the combination of a series of receptacles for volatile liquid with tubes connecting them diametrically in pairs, and vertical wheels or frames, which support the ends of said receptacles and turn with them.

2. A series of receptacles for volatile liquid, in combination with wheels or frames which turn with said receptacles, and radially-adjustable brackets or supports connecting said receptacles to said frames, for the purposes set forth.

3. In a motor, the combination of a series of receptacles for volatile liquid with tubes connecting them diametrically in pairs, vertical wheels or frames which have gudgeons formed in their outer faces, and bearings which support said gudgeons, substantially as set forth.

4. In a motor, the combination of a series of receptacles for volatile liquid and tubes connecting them in pairs with vertical wheels or frames and brackets, whereby the ends of said receptacles are attached to said frames in order to turn therewith, substantially as set forth.

5. The connecting-tubes attached at different points to their respective cylinders along the length thereof, in combination with said cylinders or receptacles and their supporting-frames.

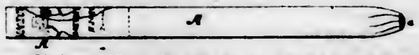
6. The combination of the cylinders A and tubes B with brackets C and frames E, each bracket being provided with a ledge to receive one end of a cylinder, and made radially adjustable by screw-and-slot connection with its frame.

7. In combination with tubes and supporting-frames E, independent of said tubes, a series of cylinders or receptacles arranged at intervals, so that they will not conduct heat to one another.

8. In combination with receptacles for volatile liquid, connected by tubes in pairs, a tank of warm water, in which the receptacles forming each pair dip alternately, and an exterior jacket, which directs the warm air from a lamp or other caloric device around the sides and the ends of said tank.

9. In combination with receptacles for volatile liquid, connected by tubes in pairs, a tank of warm water, in which the receptacles forming each pair dip alternately, and an exterior jacket or casing, which directs the warm air from a lamp or other caloric device around the sides and the ends of said tank, said jacket or casing having in one end a door or movable part that opens for the convenient withdrawal of said tank.

256,483. CIGARETTE. SIGMUND JACOBY, New York, N. Y. Filed Jan. 21, 1882. (No model.)

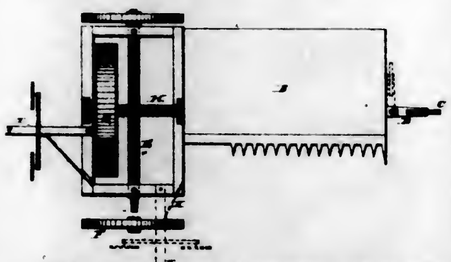


Claim.—1. In a cigarette having a mouth-piece, B, which carries a trade name or mark, the combination thereof with the transparent, or partly transparent, wrapper A, which is carried over the mouth-piece to cover the trade name or mark, substantially as described.

2. In a cigarette, the wrapper A, folded over the butt-end, and formed to produce a groove or depression, *b*, in combination with the igniting appendage *c*, which is anchored in said groove or depression, substantially as specified.

3. In a cigarette, the wrapper A, twisted at the butt-end to form a projecting teat, *a*, which is laid flat on the end of the cigarette and surrounded by a groove, *b*, to produce a proper anchor for the igniting appendage *c*, substantially as described.

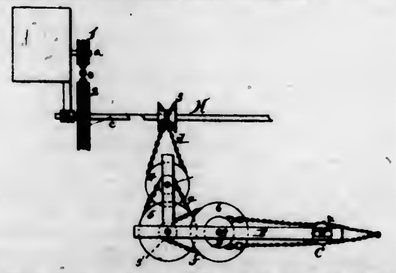
256,484. HARVESTER. THOMAS A. JOSSE, Fairbury, Ill., assignor to Samuel M. Barnes, same place. Filed Dec. 6, 1881. (No model.)



Claim.—1. In a harvester, the combination, with the frame having a vertically-moving axle secured thereto, the said axle being provided with a ground-wheel, of spindles secured to the said frame and adapted to receive removable wheels, and a draft-tongue adapted to be removably secured to the sides or end of said rectangular frame, substantially as set forth.

2. In a harvester, the combination, with the frame thereof, having a caster-wheel secured to its outer end, of a vertically-movable axle having a ground-wheel secured thereto, means for securing two removable wheels to the said frame at right angles to the said ground-wheel, and a removable draft-tongue adapted to be secured to the sides or end of the rectangular frame, substantially as set forth.

256,485. RAILWAY-CAR BRAKE. CHAUNCEY E. KENDALL, Buffalo, N. Y. Filed Mar. 2, 1882. (No model.)



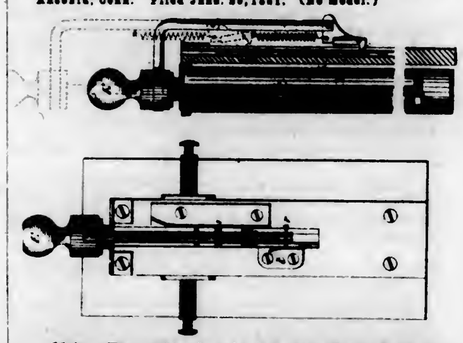
Claim.—1. In combination with a motor, the grooved pulleys 1 and 2, shafts *a* and *c*, and endless chain *b*, arranged under the engine, for transmitting movement to brake-shaft H, and the pulleys 3 4 5 6, arranged under a car, with endless chains thereon, for transmitting motion from the brake-shaft to pulleys B, D, and C in frame E, and to brakes, all arranged and operating substantially as and for the purpose specified.

2. In combination with any suitable devices for transmitting motion from the angling brake-shaft H to grooved pulley 6, and in combination therewith, the chain-wheel or pulley B, moving with pulley 6, having the risers *b b* in its grooves, also the loose wheel D, running on its hub A, which forms part of pulley B, also the grooved wheel C on an axle running in the oblong slots *a a* in frame E, said pulleys C also running in saddle *m*, with a spring, *c*, in connection therewith, and with the endless chain G, all arranged and operating substantially as and for the purpose specified.

3. In combination with the pulley B, having its loose wheel D, pulley C in spring-saddle *m* and running in oblong slots *a a*, the endless chain G, one section or part composed of large links G′ and the remainder of smaller links, as and for the purpose specified.

4. In combination with the frame E, the saddle *m m′*, with the grooved pulley C running therein, its axle running in ends of said saddle and also in oblong bearings *a a* in frame E, and the spring *c*, operating in connection with said saddle, chain G G′, and pulley B D, all arranged and operating substantially as and for the purpose specified.

256,486. ELECTRIC SIGNAL-TRANSMITTER. JOHN KING, Ansonia, Conn. Filed June 20, 1881. (No model.)



Claim.—The combination of a dash-pot and the plunger arranged therein for slow descent, an arm extending from the plunger, the finger hinged at one end of said arm and so as to move in a path parallel with the plunger, a plate parallel with said arm, to which the wires to be connected are brought, the points of connection arranged in the path of the descending armature, and device, substantially such as described, to turn the armature out of the path of said points as the armature ascends and to bring it into a path to connect said points as the armature descends, substantially as described.

256,487. CORN-PLANTER. WILLIAM E. KNECHEL and FRITZ ERICSS, Springfield, Ill. Filed Jan. 16, 1882. (No model.)

Brief.—A rod or bar having end projections is pivoted in an upright position within the feed-spout, and is operated by a peculiar shaped wheel which, by forcing the rod from side to side, causes an intermittent discharge of the seed.



Claim.—1. In a corn-planter, the rod K, provided with the star-wheel J and the cog-wheel L, in combination with the knotted cord I and the revolving drop C, all the parts constructed and arranged substantially as set forth.

2. In a corn-planter, the rod K, provided with the star-wheel J, the cog-wheel L, and the wheel M, in combination with the knotted cord I, the revolving drop C, the rod E, and spout D, substantially as set forth.

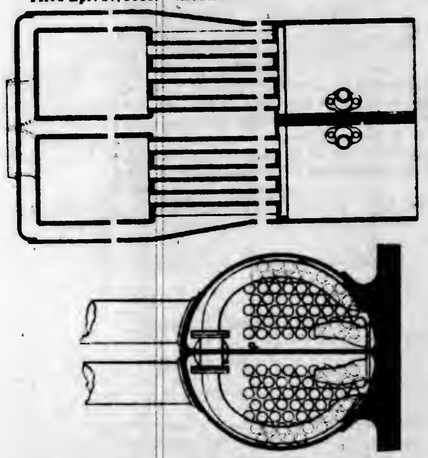
256,488. NAIL FOR WIRE FENCES. SUMNER LEONARD, Plymouth, Mass., assignor to himself, Abner Leonard, and William F. Stoddard, all of same place. Filed Jan. 23, 1882. (No model.)



Claim.—1. The hooked wire constructed with the angular recess *a* arranged in its upper end, substantially as set forth.

2. The hooked nail made not only with a wedge-shaped point, *b*, at its lower end, but with an angular recess, *a*, arranged in its upper end, as set forth.

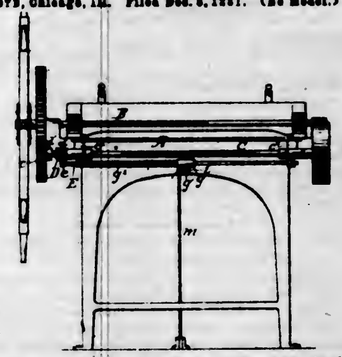
256,489. STEAM-BOILER. JAMES LOSE, Wyandotte, Kans. Filed Apr. 27, 1881. (Model.)



Claim.—1. A locomotive-boiler divided into two divisions longitudinally by a vertical partition, each of said divisions being capable of performing the service of an independent boiler, and both having a common shell, in the manner shown and described.

2. The combination, in a locomotive-boiler, of the divided fire-box, the divided smoke-box, and the independent exhaust-nozzles and smoke-stacks, so arranged that each may be used alternately or separately, substantially as shown and described.

256,490. STEREOTYPE-SHAVING MACHINE. GEORGE E. LLOYD, Chicago, Ill. Filed Dec. 8, 1881. (No model.)



Claim.—1. The combination, in a stereotype-shaving machine, of the foot-treadle G, connecting-rod *m*, and rock-shaft *l* with the reciprocating rod E, fork *e*, and clutch D, substantially as and for the purpose described.

2. The combination, in a stereotype-shaving machine, with the expansion-spring *g′*, of the reciprocating rod E and clutch D, for the purpose hereinbefore specified.

3. A device for transmitting steam-power to perform the cutting movement of a stereotype-shaving machine, consisting of a pulley on the end of the drive-shaft, near the other end of which is a clutch engaging with its counterpart box on the contiguous side of a pinion which transmits its intermittent motion to a gear-wheel on the end of the hand-lever shaft, said clutch being forced into gear through the medium of a foot-lever and being returned to its original position by the expansion-spring on the reciprocating shaft, substantially as and for the purpose hereinbefore described and set forth.

256,491. BARREL. JOHN J. LEOK, Ripon, Wis. Filed Aug. 29, 1881. (No model.)



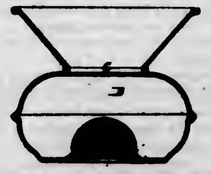
Claim.—1. In that class of barrels which are adapted to be taken apart for shipping, the combination, in a single series, of two or more staves, retaining-bands secured to the exterior of said series, and a series of staples looped over said retaining-bands and permanently secured to the exterior surface of the staves, all adapted to retain said staves in their proper relative position to each other, substantially as and for the purpose set forth.

2. The combination of two or more series of staves, the staves of each series being connected together by separate retaining-bands attached with staples to the exterior surface of said series, elastic packing *g* between the edges of the respective sections, heads K and hoops F, and end fastenings for the retaining-bands, substantially as and for the purpose specified.

3. In barrels the staves of which are connected together in two or more sections, the retaining-bands O O, each provided with knobs *s* at one end and means for securing the other end, grooves E E, formed in the exterior surface of the stave for the reception of the retaining-bands C, and staples D, for retaining said band in said groove, substantially as and for the purpose set forth.

4. In barrels formed in detachable sections, the combination of sections B B, provided with shoulders H, said sections being formed of staves retained in contact by external retaining-bands secured in grooves by staples and end fastenings, heads K, chine-hoops I I, screw J, and detachable hoops F, all substantially as and for the purpose set forth.

256,492. CUSPIDOR. WILLIAM F. HALLEY, Cleveland, Ohio. Filed Feb. 25, 1882. (No model.)



Claim.—1. In cuspidors, an improvement consisting of the interior curved or conical-shaped projection, F, in line with the area of the opening G, and a counter-weight secured within said projection in the manner substantially as described.

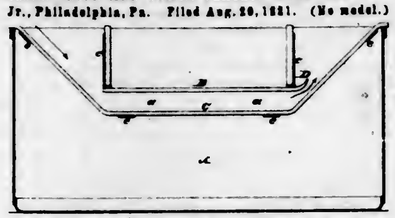
2. In cuspidors, a curved or conical-shaped projection extending up from the bottom thereof toward and in line with the opening above into the interior, substantially as described, and for the purpose set forth.

256,493. SAW-HANDLE CLAMP. WILLIAM MCMINN, Philadelphia, Pa. Filed Jan. 27, 1882. (No model.)



Claim.—A plate with a fixed screw at one end and opening at the other end, in combination with a plate having openings at opposite ends, and a loose screw, forming an improvement in saw-handle clamps, substantially as and for the purpose set forth.

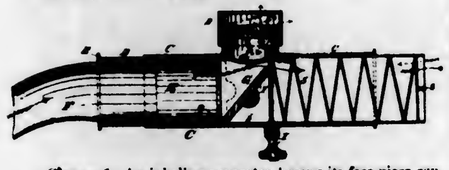
256,494. APPARATUS FOR GALVANIZING AND COATING SHEET-IRON AND OTHER PLATES. JAMES MULHOLLAND, Jr., Philadelphia, Pa. Filed Aug. 20, 1881. (No model.)



Claim.—1. The pot A, in combination with the rack C, of depressed form and constructed as described, and the rack B, constructed as described, sustained within the rack C, above the same, the rack B being suspended from its sides and the rack C being suspended from its ends, the horizontal way *a* existing between the two racks, substantially as and for the purpose set forth.

2. The pot A, in combination with the top rack, B, and the lower rack, C, of depressed form, the two racks being constructed as described and detachably suspended, as stated, the rack B having projecting guards D, substantially as and for the purpose set forth.

256,495. INHALER. JOHN H. NELSON, North East, Pa. Filed [illegible] (No model.)



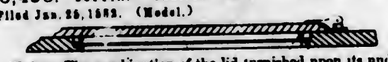
Claim.—1. An inhaling apparatus having its face-piece connected to a tube provided with a contained valve operated by a movable sleeve, which is adapted to slide upon the tube when the face-piece is pressed against the face, substantially in the manner set forth.

2. The combination, substantially as shown, with the face-piece of an inhaling apparatus, of the tube B, sleeve C, spring S, and valve G, arranged in substantially the relations and for the purposes mentioned.

3. The combination, with the face-piece of an inhaling apparatus, of the tube B, spring S, and valve G, with the sleeve C, having thereon the exhalation-valve H and a bearing for the spring S, substantially as and for the purposes mentioned.

4. The combination, with the face-piece of an inhaling apparatus, of the tubes B and E, the valve G, bar or bridge I, spring S, and sleeve C, substantially as and for the purposes mentioned.

256,496. COFFIN. CHRISTOPHER H. OLSON, Decatur, Ill. Filed Jan. 25, 1882. (Model.)



Claim.—The combination of the lid furnished upon its under side with hooks with the glass frame furnished with corresponding loops, by which the two may be connected at will, as set forth.

256,497. WARDROBE-BEDSTEAD. ERNEST OATLEFF, New York, N. Y. Filed Jan. 11, 1882. (No model.)



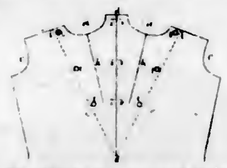
Claim.—1. The combination, with the stationary frame and swinging bottom of a folding bedstead, of an independent weight or weights suspended from the stationary frame in position to be engaged and lifted by the inner end of the swinging bottom when dropped to its horizontal position, so as to counterbalance the same, substantially in the manner and for the purpose herein set forth.

2. The combination, with the foot-piece M, hinged to the outer end of the swinging bed-bottom A E, of an arm, P, fixed to the stationary head-board or frame of the bedstead to project therefrom inside of the side pieces C C of the bed, and of a concealed connecting link or rod, N, carried inside of the frame and pivoted to the foot piece above its hinge, substantially in the manner and for the purpose herein set forth.

3. The combination, with the under side of the swinging bed-bottom A A, and with a panel, Q, fitted within an opening in the bottom, of hooks *r r* upon the edge of the panel, adapted to engage a rod fitted across the opening and form a detachable pivoted joint, permitting the panel to swing in the opening and be readily removed therefrom, substantially in the manner and for the purpose herein set forth.

4. The combination, with the stationary frame of a folding bedstead, and with fixed side pieces *a a* upon the swinging frame A A thereof, of detachable side pieces *b b*, secured by dowel-pins *s* and a tongue-and-groove joint, *t*, substantially in the manner and for the purpose herein set forth.

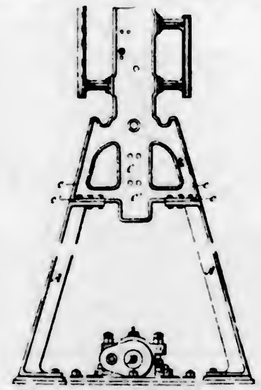
256,498. SHIRT. ALBERT R. PERKINS, Newton, assignor to Simons, Raich & Whitton, Boston, Mass. Filed Feb. 27, 1882. (No model.)



Claim.—1. The shirt-front in one piece of cloth, having at its middle and to extend down from its upper edge the slit *d e*, and also having in its upper part the two neck-notches *a a*, arranged with such slit and the shoulder-slopes, substantially as set forth.

2. The shirt-front in one piece of cloth, having the slits *d e*, *e g*, and *e f* and the two neck-notches *a a* arranged in it, (the said front,) substantially as described and represented.

256,499. FRAME FOR GANG-SAW MILLS. DE WITT C. PRESCOTT, Marinette, Wis. Filed Feb. 19, 1881. (No model.)



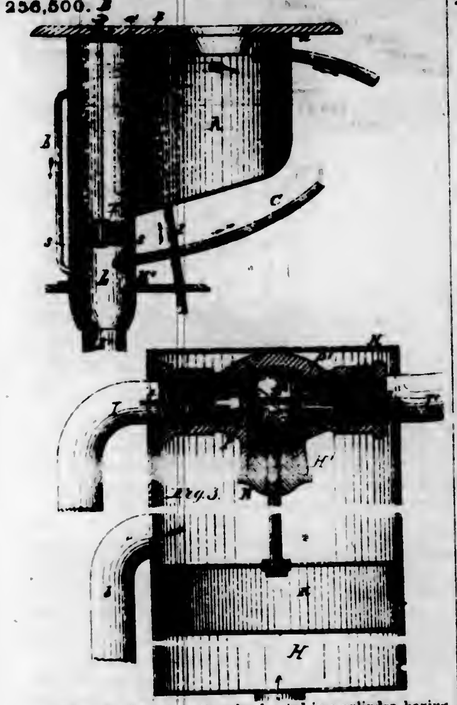
Claim.—1. The lower or supporting frame composed of two independent sections, A A, arranged transversely to the line of cut and inclined toward each other, in combination with the upper or saw frame, C, the side pieces of which, at their lower ends, rest on the lower frame and extend from one section to the other of the latter, and are secured thereto, thereby uniting the said sections of the lower frame, substantially as described.

2. The independent sections A A of the lower or supporting frame, tapering from the bottom upward, and arranged transversely to the line of cut, inclining inward toward each other, in combination with the independent saw-frame C, the side pieces, c of which are seated on the upper ends of the sections A and extend across from one to the other, being secured to each, substantially as and for the purposes set forth.

256,500. WATER-CLOSET. ROBERT REACH, Washington, D. C., assignor of one-half to Charles G. Sweet and Judith Sweet, both of same place. Filed Nov. 23, 1881. (No model.

Brief.—Water is kept in the bowl to the height *y y* and by means of pipe *h* to a level in cylinder H sufficient to close induction-valve F on float K. When the water is let out of the bowl and cylinder the float falls and the valve opens. When plunger T is closed the water rises in the bowl and cylinder to the required height and closes the induction-port. Pipe *h* prevents an overflow. C and W are ventilating-pipes.

256,500.



Claim.—1. An automatic valve located in a cylinder, having inlet and outlet water-pipes I and I', shoulders I' and I'', and flange *p*, and operated by piston K, in connection with piston F, by opening and closing the opening *e''*, substantially as shown, and for the purpose described.

2. The combination of cylinders H and H', metallic stopper and piston-guide N, shoulders I' and I'', flange *p*, and pistons F and K, substantially as shown, and for the purpose described.

3. The combination of the pipes S' and S'', flange *p*, shoulders I' and I'', cylinders H and H', metallic stopper and piston-guide N, and pistons F and K, substantially as shown, and for the purpose described.

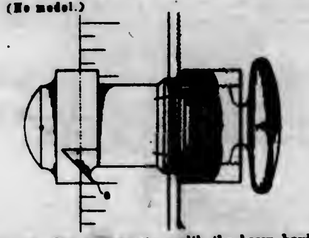
256,501. CLAMP FOR HOLDING THE TIPS OF BILLIARD-CUES. JOHN RECKTENWALT, Buffalo, N. Y., assignor of one-half to John Kreitner, same place. Filed Jan. 30, 1882. (No model.)



Claim.—1. As an improved article of manufacture, a clamp for retaining the tips of billiard-cues in position, said clamp consisting essentially of a socket, C, having the clamping-screw J J' and plate I, the connecting part B and bifurcated yoke D, provided with an adjustable nut, E, having the clamping-screw G G' and disk H, the whole being constructed and combined substantially in the manner as and for the use and purpose specified.

2. In billiard-cue clamps, the combination, with the body B, having the socket C, provided with a vertical aperture, A'', and transverse aperture K, and its upper end bifurcated at D, of the sliding nut E, with the adjusting-screw G G' and swiveled disk H, and the adjusting-screw J J', having a swiveling clamping-plate I, operating in said transverse opening K, the whole being constructed and arranged for operation substantially as and for the purpose stated.

256,502. SCALE. WILLIAM W. REYNOLDS, Rutland, Vt., assignor to the Howe Scale Company, same place. Filed Dec. 6, 1881. (No model.)

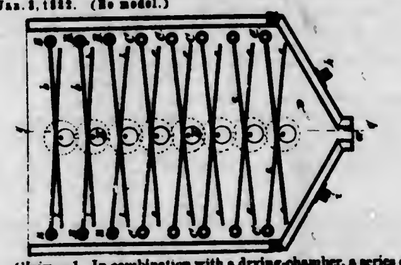


Claim.—1. The combination, with the beam having serrations, of the counterpoise provided with the set-screw having upon its abutting end one or more annular projections or teeth arranged to register with or take into said serrations, substantially as described.

2. The combination of the beam having the serrations and the counterpoise cut away, as shown, so as to make the index-point prominent, and provided with a set-screw having upon its abutting end the annular projections or teeth arranged to register with or take into said serrations, substantially as described.

3. A platform-scale of the kind described, provided with a table, as S, extending on all sides of the column *p*, and with a brace, as *b*, which extends from the deck of the scale to the column *p*, and thence to the under side of the table, thus holding the table firmly in position and supporting the column, substantially as described.

256,503. DRIER. GEORGE P. RUNYON, Chicago, Ill. Filed Jan. 3, 1882. (No model.)

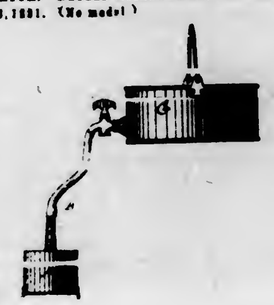


Claim.—1. In combination with a drying-chamber, a series of rocking shafts provided with arms, arranged substantially as described, whereby the material to be dried will by the movement of the shafts and arms be agitated and fed, substantially as specified.

2. In combination with a drying-chamber, a series of rocking hollow shafts, C, provided with tubes or arms *c*, arranged substantially as described, and connecting-tubes *d e*, for the purpose of permitting a circulation of steam through the tubes and agitating the material while being dried, substantially as specified.

3. In combination with a drying-chamber, a series of shafts provided with arms, arranged substantially as described, and shafts E, for the purpose of agitating the material being dried and permitting it to fall from the arms by the movement of such arms, substantially as set forth.

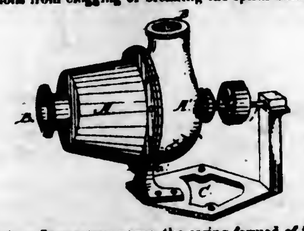
256,504. PERCOLATOR. NATHAN ROSENWASSER, Cleveland, Ohio. Filed May 3, 1881. (No model.)



Claim.—The combination, with a vessel, G, and adjustable tube F, of a percolator, A, having a large filling and discharge orifice at its lower end and a restricted opening, E, at its upper end, with which connects the lower end of the adjustable tube or pipe F, substantially as set forth.

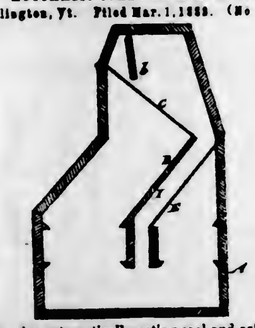
256,505. ROTARY PUMP. DAVID KUSS, Hot Springs, Ark. Filed Dec. 8, 1881. (No model.)

Brief.—The supply end A is tapering and accommodates a tapering spiral blade. The discharge end is enlarged to prevent obstructions from clogging or breaking the spiral blade.



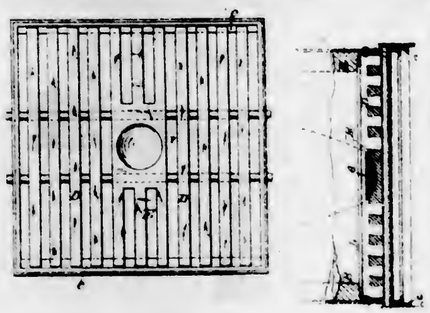
Claim.—In a rotary pump, the casing formed of the two sections A A', the front portion, A, of which is of a tapering shape, adapted to receive the spiral blade F, of a corresponding shape, and the rear portion, A', of an enlarged diameter, said sections A A' being provided with the supply and discharge openings B B', respectively, substantially as and for the purpose specified.

256,506. AUTOMATIC COAL AND ASH SIFTER. JOSEPH H. ROY, Burlington, Vt. Filed Mar. 1, 1882. (No model.)



Claim.—An automatically-acting coal and ash sifter combining in its construction a suitable case, A, for containing the screens and partitions, a swinging ash-guard, b, a wire-gauze screen, C, a solid partition, D, extending across the interior of the case, a supplemental wire-gauze screen, E, a chute, I, and receptacles G, H, and F, the parts being constructed and arranged substantially as shown and described, whereby they are caused to divide the substance treated into three separate and distinct grades of different sizes and values and to receive them in different receptacles, from which they can be readily moved, as set forth.

256,507. GRATE-BAR FOR CRUCIBLE-FURNACES. MICHAEL SCHERBERY and JOSEPH PEREIS, Chicago, Ill. Filed Mar. 16, 1881. (No model.)



Claim.—In a crucible-furnace, the grate-bars D, the central ones being cast together solid at their center and hollowed out on their upper face, and the block c, of refractory material, adapted to rest within the recessed grate-bars and receive the bottom of the crucible, substantially as and for the purpose set forth.

256,508. GAS-GOVERNOR FOR VULCANIZERS. THOMAS SHAW, Philadelphia, Pa. Filed Feb. 9, 1882. (No model.)



Claim.—1. In a governor for vulcanizers, a tube supplying the liquid fuel or gas to the vulcanizer, and means for closing the same by the ascent of a mercury column, in combination with a casing containing a chamber communicating with the mercury column and a chamber communicating with the vulcanizer, and devices, substantially as described, whereby the mercury-chamber can be contracted or expanded to set the mercury column at any desired height prior to the admission of steam, as specified.

2. The combination, in a governor for vulcanizers, of the casing r, standard containing a mercury-channel communicating with the casing, plunger c, set-screw d, spring interposed between the screw and the plunger, and branch having a channel forming a communication between the vulcanizer and the chamber below the plunger, all substantially as specified.

3. The within-described improvement in tubes for the mercury columns of gages, the same consisting of a plate or standard having a groove or channel and a glass plate covering the said groove, as set forth.

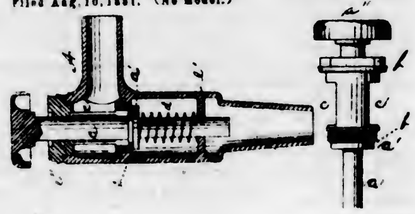
4. The combination, with a regulator for vulcanizers, of a branch having a capillary opening or channel constituting the communication between the vulcanizer and the regulator, as set forth.

256,509. VIGNETTING ATTACHMENT FOR PHOTOGRAPHIC-PRINTING FRAMES. JOHN F. SISSEL, Rockland, Me. Filed Apr. 12, 1881. (No model.)



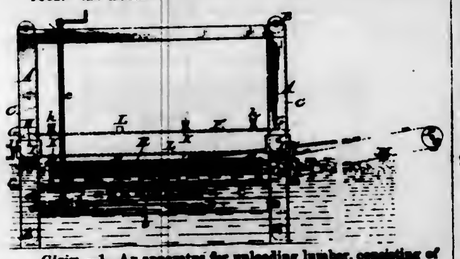
Claim.—In a printing and vignetting frame, the combination of the frame A with the slides B and C, the wedges D, and the straps or elastic bands r, substantially as and for the purpose set forth.

256,510. WATER-FAUCET. JOHN STEPHENSON, Haverhill, Mass., assignor of one-half to John H. Pollowe, same place. Filed Aug. 10, 1881. (No model.)



Claim.—In a faucet for drawing liquids, the seat-piece b, fitted within the case A, as shown, having openings c c, and arranged to form a seat for the valve a', a journal for the valve-stem a, and a cap for the case A, and operating in combination with the stem a, spring d, and case A, substantially as shown, and for the purpose specified.

256,511. APPARATUS FOR DRAWING LUMBER FROM THE CRIB. JAMES W. STILLWELL, Hannibal, Mo. Filed Mar. 2, 1882. (No model.)



Claim.—1. An apparatus for unloading lumber, consisting of a vertically-adjustable turn-table platted in the water in which the lumber is floated, and a carrier located above the turn-table and adapted and arranged to remove the boards therefrom, as explained.

2. In combination with the turn-table E, the endless carrier F, provided with slats L and brushes A, as and for the purpose set forth.

3. In combination with the carrier F, a turn-table, E, and bed or platform D, and chains or bands C, connected with the platform and adapted to elevate or lower the turn-table, as explained.

4. In combination with the turn-table E, the vertically-adjustable carrier F, as and for the purpose set forth.

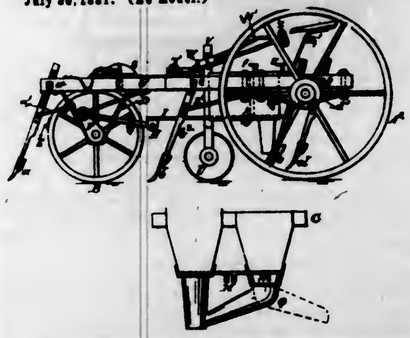
5. A lumber feeding or carrying device provided with brushes A and cross-slats L, substantially as and for the purpose set forth.

6. In combination with the frame A and vertically-adjustable turn-table E, the carrier F and adjustable supporting-blocks I, provided with set-screws J, as shown.

7. In combination with the vertically-adjustable turn-table having rack c, the pinion d, carried by a sliding shaft, e, as set forth.

8. In combination with turn-table E and carrier G, the endless carrier M, arranged and operating as shown and described.

256,512. CORN-PLANTER. WILLIAM H. SWARTOUT, Salineville, Ohio, assignor to George H. Saltzman, same place. Filed July 26, 1881. (No model.)



Claim.—1. The combination, with the frame C and the standard of the wheel U, rotating in its bearings, and adjustable vertically, of the slotted plate X and the lever W, pivoted to the upper end of the standard of the wheel U, and having one of its ends fitting loosely and sliding laterally and longitudinally in the slot in plate X and its other end under the control of the driver, substantially as set forth.

2. In a corn-planter having a grain-box and a fertilizer-box, the combination, with the fertilizer-box, of a discharge-spout bent laterally and extended to and adjustable to the front or rear of the discharge-spout of the grain-box, to discharge the fertilizer into the same furrow into which the grain is dropped, substantially as set forth.

256,513. CLOTHES-HORSE. HENRY H. SWART, Winchester, Conn. Filed Feb. 4, 1881. (No model.)



Claim.—A standard, A, and house B combined, the post extending through the house and forming a vertical shaft, whereon, are secured independently by means of pins b two or more coiled-spring reels, E, substantially as described.

256,514. SADDLE-TREE. NOBLE TRAE, Newark, N. J. Filed Nov. 28, 1881. (No model.)



Claim.—1. In a harness-saddle, the combination of a tree provided with a cantle bridge, and having the blocks G and H, or either of them, formed upon the lower side of the arch, as described, with a flap secured to the jockey, as set forth, and butted against the shoulders formed by the said blocks, substantially as and for the purpose set forth.

2. The fastening for the stiffener J, consisting of the lugs e, cast upon the lower ends of the tree and adapted to be clinched upon the stiffener, substantially as and for the purpose set forth.

3. The combination, in a casting for a leather-covered seat, of the ribs g, with the lower side of the cantle, substantially as and for the purpose set forth.

256,515. STEAM-ACTUATED VALVE. HUGH H. THOMAS, Duke Centre, Pa., assignor of one-fifth to Alvin H. Low, same place. Filed Mar. 8, 1881. (No model.)



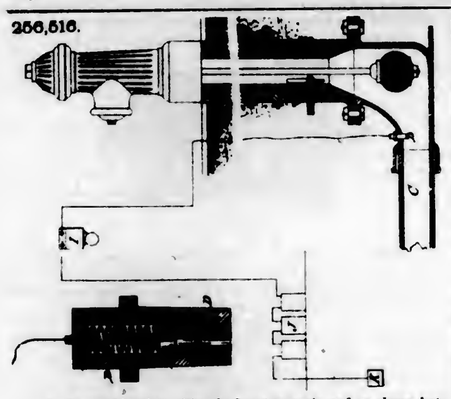
Claim.—In a single-acting steam-pump or high-pressure engine having a single piston, the direct steam-ports b b' of the steam-actuated valve, so arranged as to each serve alternately as an induction-port to the valve-plunger at one part of the stroke and as an eduction-port at another part of the stroke, substantially as described, and for the purposes specified.

256,516. ELECTRIC ALARM FOR HYDRANTS AND WATER-MAINS. VEDRIC THOMPSON, Cutchogue, assignor of one-half to A. Sidney Boone and Thomas H. Rhodes, both of Brooklyn, N. Y. Filed Nov. 4, 1881. (No model.)

Claim.—1. As an electric alarm attachment for hydrants and water-mains to indicate freezing therein, the plug, case, or envelope D, hollow and water-tight, and provided with a movable circuit-closer, whereby the expansion of the water in freezing will close the circuit, but will not clog the closer, as set forth.

2. In combination with a hydrant or main and an alarm, battery, and their wires, a plug, case, or envelope, D, hollow and water-tight, and provided with a movable circuit-closer, whereby the expansion of the water in freezing will close the circuit and give the alarm, as set forth.

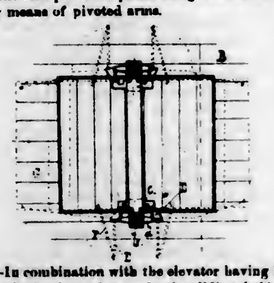
256,516.



3. In combination with a hydrant or main and an alarm, battery, and their wires, the plug D, hollow and water-tight, and provided with the piston E, whereby the expansion of the water in freezing will close the circuit and give the alarm, all as set forth and described.

256,517. ELEVATOR. STEPHEN H. THORNTON, Baltimore, Md. Filed Oct. 10, 1881. (No model.)

Brief.—Lugs on the elevator engage pivoted plates with volute ends on the side posts, the plates being connected with sliding half-doors by means of pivoted arms.



Claim.—In combination with the elevator having lugs C, the pivoted plates D, having volute ends, the sliding half-hatches G, and arms E F, as set forth.

256,518. MACHINE FOR SEWING UP MOUTHS OF BAGS. ORVILLE E. VAN VECHTEN, Brooklyn, N. Y. Filed Dec. 21, 1881. (No model.)

Brief.—Improvement on Letters Patent No. 246,644, dated September 6, 1881, and consists in the clamping-frame, thread-severing device, bed-plate, and presser-foot used in connection with a traveling sewing-machine, as specified in the claims.

Claim.—1. The clamping-frame composed of the two members, as A B, hinged together, and provided with intermeshing serrated edges, in combination with a traveling sewing-machine, substantially as described.

2. The combination of the clamping-frame composed of the two members, as A B, hinged together, the segment-bar, as 17, fast to one of the members and extending through a bearing in the other, and a traveling sewing-machine, substantially as described.

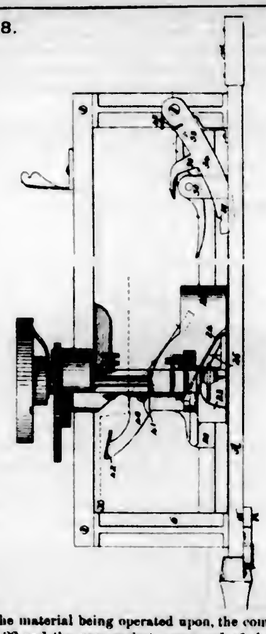
3. The clamping-frame composed of the two members, as A B, having intermeshing serrated edges, and provided with the segment-bar 17, and the spring-catch and lug 15, in combination with the traveling sewing-machine, all substantially as described.

4. The combination of the clamping-frame, the traveling sewing-machine carrying the actuating-lever, as 40, the thread-carrier, as 34, arranged to be actuated by said lever, and the pivoted shear-blade arranged to be operated by the thread-carrier, substantially as described.

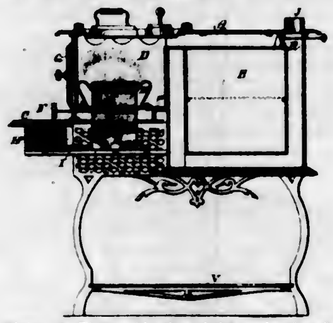
5. The combination, with a work-holding device acting to sustain the work stationary, of a sewing-machine constructed to travel bodily with respect to the work-holding device, and having the bed-plate, as 22, and the hinged spring-seated presser-foot, between which the seam-line of the material to be sewed passes, all substantially as described.

6. In a sewing-machine constructed to travel bodily with respect to the material being operated upon, the combination of the bed-plate 22 and the presser-foot, composed of the curved plates 23 24, the hinged bar 25, and the spring 28, substantially as described.

256,518.



256,519. OIL-STOVE. ADOLPH VELGUTH, Milwaukee, Wis. Filed Nov. 28, 1881. (No model.)



Claim.—1. The combination of the combustion-chamber D, having bottom P, provided with air passages or openings Q, burners E, wick-tubes N, reservoirs M, tubes I, and reservoir H, substantially as set forth.

2. The combination of burner E, wick-tube N, supporting-arms O O, bottom P, and oil-reservoir M, said burner being supported above said reservoir, out of contact therewith, whereby the oil may be drawn from said reservoir to said burner without the transmittal of heat from the flame to the oil, as set forth.

256,520. DRUM-STRAP. AUGUST VOSEN, Brooklyn, N. Y. Filed Apr. 5, 1881. (No model.)

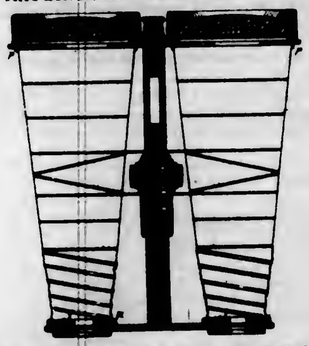


Claim.—1. A drum-strap for adjusting and tightening the cords and holding the upper and lower heads of drums to the body of the same, which consists of a strip of leather or other suitable material cut in the form described and shown, and provided with slits or apertures, and adapted to be folded and receive in the apertures the metallic lacing-pieces, folded in the manner substantially as and for the purposes described.

2. The metallic lacing-piece for drum-straps, consisting of the strip having projection *f*, and adapted to be inserted in the apertures of the strap and bent upon the same, substantially as and for the purpose set forth.

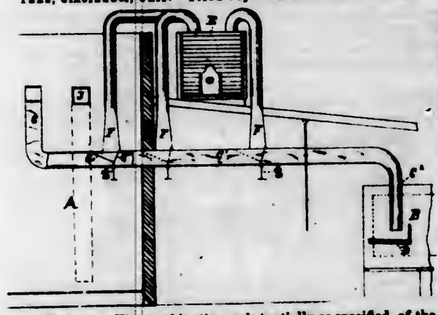
3. A drum-strap of the form and folded as described and shown, and provided with apertures, in combination with metallic lacing-pieces laced and folded, substantially as set forth.

256,521. OPERA-GLASS. JOHN WATTENHOUSE, New York, N. Y. Filed Mar. 17, 1881. (No model.)



Claim.—The combination of rings *a* and *b*, attached and fastened as described, whereby the frame is prevented from turning or collapsing, as set forth.

256,522. AUTOMATIC FURNACE-FEEDER. ARTHUR WATERS, Cincinnati, Ohio. Filed Sept. 12, 1881. (No model.)



Claim.—1. The combination, substantially as specified, of the tube C', attached to the discharge end of an apparatus constructed to collect and discharge cuttings, sawdust, &c., by pneumatic force, the branch pipes C², furnace B, and curved flanged plate D, arranged within the furnace beneath the discharge end of pipes C².

2. The combination, substantially as specified, of the discharge-tube of a pneumatic apparatus, as C, house A, tubes C', C², and J with the valve I and its operating-rod *i*, and furnace B, said parts being arranged to discharge either into house A or furnace B, as desired, and tube J, communicating with the exhaust end of tube C, so that the cuttings stored in house A may be drawn into tube C and discharged into the furnace when the valve in tube J is opened.

3. The combination of tube C', screen G, hinged wings G', and branch pipe F, arranged to operate as specified.

4. The combination, substantially as specified, of tubes C, C', C², and F, with screens G, wings G', and tank E, for the purpose set forth.

256,523. STEAM-ACTUATED VALVE. GEORGE W. WHITMAN, Columbus, Ohio. Filed Nov. 19, 1881. (No model.)

Claim.—1. In a steam-pump valve having ports formed on the interior of the steam-chest and extending to either end thereof, said ports alternately receiving steam from the interior of the valve, whereby the valve is operated, a shaft and an eccentric, whereby a rocking movement is imparted to the valve, substantially as and for the purpose set forth.

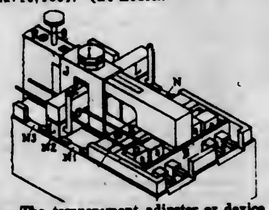
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2. In a steam-pump valve, the shaft I, said shaft being provided with an eccentric, *g*, on its end, whereby a rocking motion is imparted to the valve, substantially as and for the purpose shown and described.

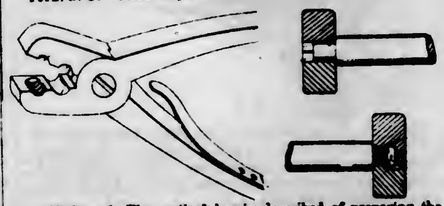
3. In a steam-pump valve, the combination, with the lugs *i* and *j*, of the shaft I, said shaft being provided with an eccentric, *g*, for imparting a rocking motion to the valve, and the arm h, substantially as and for the purpose shown and described.

256,524. TEMPERAMENT-ADJUSTER FOR MUSICAL INSTRUMENTS. WALTER KNOX WHEELER, San Francisco, Cal. Filed Aug. 10, 1881. (No model.)



Claim.—The temperament-adjuster or device for aiding in tuning key-board musical instruments, consisting of the body or support provided with four strings, and having upon its upper side edges the slots N' N² N³, in combination with the bridge L, composed of the gripping-jaws having string-slots and adapted to be moved and placed in either of the slots N' N² N³ and to be adjusted transversely, whereby the twelve chromatic tones of an octave may be obtained.

256,525. METHOD OF AND IMPLEMENT FOR UNITING THE ENDS OF BELTING. WILLIAM M. WHITING, Elizabeth, N. J., assignor to the Whiting Stronghold Belt Clasp Company, New York, N. Y. Filed July 15, 1881. (No model.)

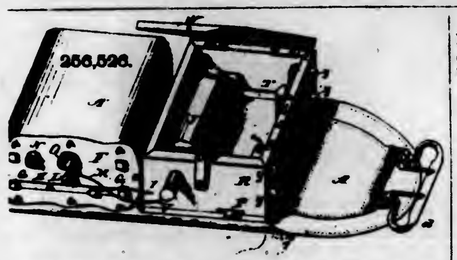


Claim.—1. The method herein described of preparing the ends of leather belts for insertion within screw-threaded metal clasps for joining the same, consisting in first compressing and solidifying the material of the belt at the ends by a compressing-instrument and then forming a screw-thread upon the compressed and solidified portions, substantially as described.

2. As a means of solidifying and treating the ends of belts for joining the same by a clasp, an implement constructed, substantially as described, in the form of pinchers, the faces of the jaws of which are formed with corresponding threaded recesses, e, as shown and described.

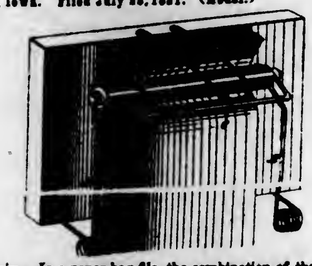
256,526. ELECTRIC BELT. THADDEUS W. WILLIAMS, Milwaukee, Wis. Filed Feb. 27, 1880. Renewed Feb. 20, 1882. (Model.)

Claim.—Devices for applying galvanic and electric currents to the human system, consisting in the combination of belt A, pocket X, battery A', having hermetically-sealed cover F, provided



with openings N and O, helix J, and helix-box R, provided with switch P, vibrator T, switch Q, pins *a b d g*, and lid W, all substantially as and for the purpose specified.

256,527. PAPER-BAG FILE. LORIN R. WITHERELL, Davenport, Iowa. Filed July 28, 1881. (Model.)



Claim.—In a paper-bag file, the combination of the roller B with the spring-clamp A, and provided with the stop-hook C, substantially as and for the purposes described.

256,528. TIRE-UPSETTER. ALEXANDER WOMACK, Emmettville, Idaho. Filed Dec. 10, 1881. (Model.)



Claim.—1. The combination of the slotted head A, the sliding cross-head H, the cams or dogs F J, the levers G K, arranged, as herein described, for operating said cams or dogs simultaneously, the forked lever M, and connecting-rods O, all arranged and operating substantially as set forth.

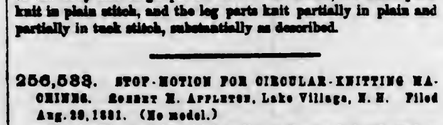
2. In a machine for upsetting tires, the combination of the slotted head A, having cross-piece D, sliding cross-head H, and the shafts E I, having toothed dogs or cams F J, and levers G K, the latter, K, being provided with eyes L, through which the levers G pass, substantially as set forth.

256,529. NUT-LOCK. WILLIAM H. WOOD, Orange, N. J. Filed Feb. 26, 1882. (No model.)



Claim.—The nut-lock composed of the strip E, divided by longitudinal and transverse slits into lips F, with their ends adjacent to each other, and adapted to be folded so that their ends will bear each against the side of a nut, substantially as set forth.

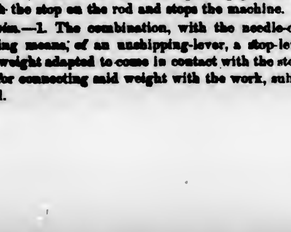
256,530. CLAMP. JOHN S. ADAMS, Boston, Mass. Filed Aug. 29, 1881. (No model.)



Claim.—1. The spring G, in combination with the sliding jaw D and clamp-iron E, as and for the purpose set forth.

2. The combination of the spring G, clasp F, clamp-iron E, jaw D, and bar A, substantially as and for the purpose set forth.

256,531. CAR-COUPLING. PETER A. AIKMAN, Windsor, Ontario, Canada, assignor to himself and William R. Merwin, Detroit, Mich. Filed Feb. 17, 1882. (No model.)



Claim.—1. In a car-coupling device, and in combination with a recessed or channeled draw-bar, a dog-latch, and a spring constructed and operating substantially as specified, a cam-lever and pin, substantially as and for the purposes described.

2. The combination, with the chambered and channeled draw-bar A B, of the dog D, provided with a slot, *b*, at its pivotal point, the spring E, the pin H, resting on the dog and provided with an enlarged head, and the cam-lever G, pivoted between lugs E E of the draw-bar, substantially as and for the purpose specified.

256,532. DRAWERS OR TIGHTS. ROBERT H. APPLETON, Lake Village, N. H. Filed July 23, 1881. (No model.)



Claim.—1. In circular seamless-leg drawers or tights, the combination, with the knitted leg parts, of the body and thigh parts knit in tuck-stitch and the knee parts knit in plain stitch, substantially as described.

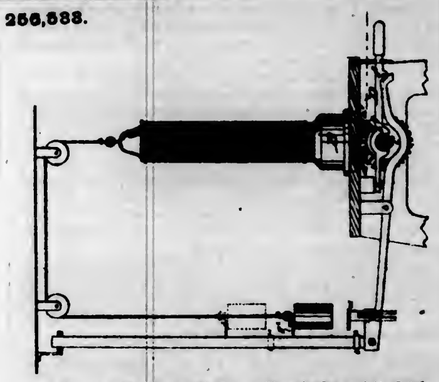
2. In circular seamless-leg drawers or tights, the combination of the body and thigh parts knit in tuck-stitch, the knee parts knit in plain stitch, and the leg parts knit partially in plain and partially in tuck stitch, substantially as described.

256,533. STOP-MOTION FOR CIRCULAR-KNITTING MACHINES. ROBERT H. APPLETON, Lake Village, N. H. Filed Aug. 26, 1881. (No model.)

Brief.—The weight which pulls up the work is adapted to come in contact with an adjustable plate on a stop-lever, which latter engages an unshipping-lever, by which the driving mechanism of the needle-cylinder is thrown out of gear and the working of the knitting-machine stopped. A vertical rod connected to the end of the said stop-lever has an adjustable stop connected to it, and the work-pulling-up weight has a like adjustable stop or catch secured to it, which catch on the weight engages or comes in contact with the stop on the rod and stops the machine.

Claim.—1. The combination, with the needle-cylinder and its driving means, of an unshipping-lever, a stop-lever, a work-pulling weight adapted to come in contact with the stop-lever, and means for connecting said weight with the work, substantially as specified.

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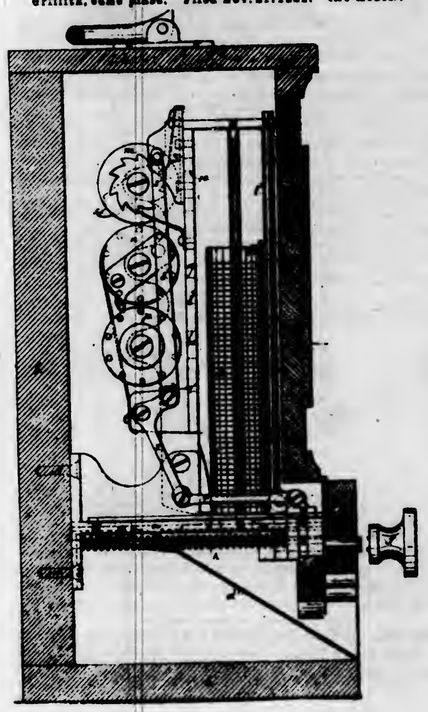


2. The combination, with the needle-cylinder and its driving means, of an unshipping-lever, a stop-lever, an adjustable stop-plate attached to said lever, a work-pulling weight adapted to come in contact with the stop-plate, and means connecting said weight with the head of the work, substantially as described.

3. The combination, with the needle-cylinder and its driving means, of an unshipping-lever, a stop-lever, a vertical rod connected to said stop-lever, an adjustable stop on said rod, a work-pulling weight adapted to come in contact with said stop, and means connecting said weight with the head of the work, substantially as set forth.

4. The combination, with the needle-cylinder and its driving means, of an unshipping-lever, a stop-lever, a vertical rod connected to said stop-lever, an adjustable stop on said rod, a work-pulling weight provided with a laterally-adjustable catch adapted to come in contact with said stop, and means for connecting said weight with the head of the work, substantially as described.

256,534. CHECK-REGISTER. ADRAIN H. AUSTIN, New York N. Y., assignor to himself, Joseph P. Tobin, and Joseph G. Griffith, same place. Filed Nov. 21, 1881. (No model.)



Claim.—1. The combination, in a check-register, of the pusher-button *f*, rod *g*, separator *i*, finger 2, upon the separator below the surface of the bed, the plate *f'*, behind the pile of checks, the bed *a*, with an opening for the check to pass through, and the stationary incline *a'*, as and for the purposes set forth.

2. The combination, in a check-register, of a bed, *a*, supporting a pile of checks, a pusher to carry off the lowest check in the pile, a finger to support one edge of the check that drops below the surface of the bed, the plate *f'*, behind the pile of checks, and a stationary incline, *a'*, a case to contain the register, supports for the plate *a*, upon which the register can be slid out, and an inclosing-door for the said case, substantially as set forth.

3. The combination, with the bed *a*, pusher *g*, separator *i*, finger 2, and plate *f'*, of the links *r* and *d'*, lever *s*, ratchets, pawls, and counting-wheels *m*, *n*, and *p*, behind the openings in the plate *f'*, substantially as set forth.

256,535. BARBED METALLIC FENCE-RAILS. GEORGE C. BARRE, Des Moines, Iowa. Filed May 23, 1881. (No model.)



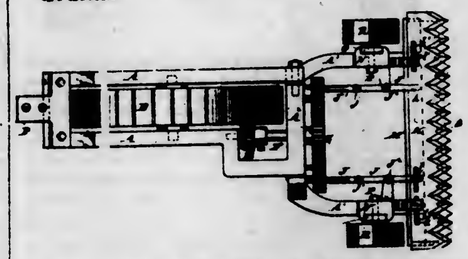
Claim.—The improved barbed metal fence-rail composed of a metal strip having its parallel edges folded toward each other, and pressed flat upon a series of flat-headed tacks, and soldered fast and twisted, substantially as shown and described, for the purposes specified.

256,536. MANUFACTURE OF ROOT OR TONIC BEER. LOUIS BROEMS, Baltimore, Md. Filed Mar. 30, 1881. (No specimens.)

Brief.—The roots are infused together in the water. The infusion is strained, colored, sweetened, and charged with carbonic acid gas.

Claim.—In the manufacture of root or tonic beer, the herein-described compound, consisting of Canada snake-root, Jamaica-ginger root, angelica-root, hops, sassafras, black-mustard seed, prickly-ash bark, tartaric acid, and malo-citrate of iron, substantially as set forth.

256,537. LAWN-MOWER. HENRY C. BENDER, Montgomeryville, and HIRAM C. BENDER, Lansdale, Pa. Filed Dec. 1, 1881. (No model.)



Claim.—1. In a lawn-mower, a light open frame adapted to be sprung open to receive the driving-wheel and its axle between its sides, and provided with means to secure the two sides rigidly together at their free ends, so as to inclose the driving-wheel in a rigid frame, said frame being mounted upon three wheels, one being a large driving-wheel in the rear and the others being two small adjustable wheels in front, in combination with said wheels, means to adjust the front wheels, a revolving spur-wheel driven by the large driving-wheel, two pinions driven by said spur-wheel and revolving in the same direction, two oppositely-reciprocating cutters, an L frame or bar to support said cutters, and levers to connect said cutters, respectively, to their respective pinions, substantially as and for the purpose specified.

2. In a lawn-mower, a light open frame adapted to be sprung open to receive the driving-wheel and its axle between its sides, and a stud or arm secured to one side, and means to secure the free end of said arm to the other side to inclose the driving-wheel in a rigid frame, all as shown and described.

3. In a lawn-mower, the combination of a frame carrying the driving-wheel B, with its gear-wheel C, bevel-pinion E, shaft F, spur-wheel G, the two pinions H, rotating in the same direction, arms J', levers J, and knife-bars K and L, substantially as and for the purpose specified.

4. In a lawn-mower, the combination of a frame carrying the driving-wheel B, with its gear-wheel C, bevel-pinion E, shaft F, spur-wheel G, the two pinions H, rotating in the same direction, arms J', levers J, knife-bars K and L, and guide-rollers R, substantially as and for the purpose specified.

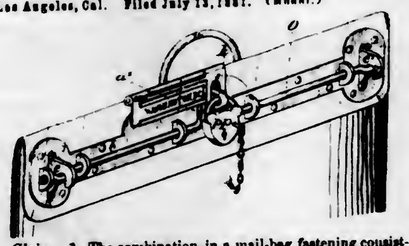
5. In a lawn-mower, the spur-wheel G, pinions H, pivoted arms J', levers J, provided on the ends with slots, knife-bars K and L, respectively provided with slots *k* and pins *l*, plate M, frame A', and plates *m*, substantially as and for the purpose specified.

256,538. SEAMLESS FELT BOOT. MELVILLE R. BISSELL, Grand Rapids, Mich., assignor to the Grand Rapids Felt Boot Company, same place. Filed Feb. 6, 1882. (Model.)



Claim.—As an improved article of manufacture, a seamless felt boot consisting of the foot portion, with the leg portion thereof provided with the overlapping flaps B B' for closing the same, and fastening devices for securing the flaps together, the foot and leg portion being made in one and the same piece without seam, and one of said flaps being formed on its inner side with a recess extending its entire length, and adapted to receive the remaining flap, whereby undue thickness is prevented and a more perfect and comfortable fit is attained when the two flaps are brought together, substantially as described.

256,539. MAIL-BAG FASTENING. EMILE AUGUST BRANDAU, Los Angeles, Cal. Filed July 13, 1881. (Model.)



Claim.—1. The combination, in a mail-bag fastening consisting of the rod O, turning in bearings or supports upon the closing-flap of the bag, and provided with cranks, which may be engaged and held after the bag is closed by hooks or jaws *c c'* and the staple *k*, projecting from the rear of the bag through slots in the plate upon which the cranked rod is mounted, substantially as herein described.

2. The bag having the flap or cover provided with a shaft, O, having cranks adapted to engage hooks or jaws *c c'* and staple *k*, which projects through the cover from the rear wall of the bag, in combination with the hinged slotted address-plate *a a*, which may be folded down over the staple, and the crank *a'*, substantially as and for the purpose herein described.

3. In a mail-bag in which the side portions are adapted to be turned or folded into the body, as described, the openings or eyelets through the folded portions, in combination with the jaws *c c'*, the staple *k*, the cranked rod O, and the hinged folding address-plate *a a*, substantially as and for the purpose herein described.

256,540. ADJUSTABLE REST FOR ROCK-DRILLS. WM. T. BROWER, Stockton, Cal., assignor of one-half to Theodore W. Sterling. Filed Aug. 31, 1881. (No model.)



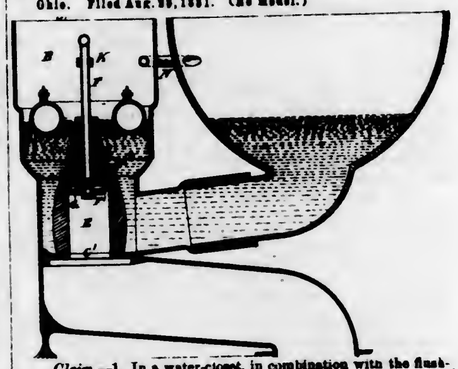
Claim.—1. In combination with a rock-drill having a supporting strap or rod, N, the swiveling bearing-block G, having a slot or groove, *e*, said block G being supported by the pivoted legs or props A, substantially as herein described.

2. The extensible legs or props A, the top plate, D, with its sockets E, and the swiveled bearing-block G, with its slot or groove *e*, having a friction-roller, I, in combination with a rock-drill having a supporting strap or rod, N, substantially as herein described.

3. The bearing-block G, having a groove or slot, *e*, with a friction-roller, I, said block being journaled, pivoted, or swiveled upon a top plate, D, by means of the staple, screw, or pivot H, and supported by adjustable and extensible legs or props A, in combination with a rock-drill having a strap or rod, N, substantially as and for the purpose herein described.

4. The adjustable support for machine rock-drills, consisting of the extensible props or legs A, pivoted to a top plate, D, and surmounted by the swiveling bearing-block G, with its adjusting-hold *i* and pin *m*, and having a groove or slot, *e*, with a friction-roller, I, substantially as herein described.

256,541. WATER-CLOSET. AUGUST F. BLESCH, Columbus, Ohio. Filed Aug. 29, 1881. (No model.)



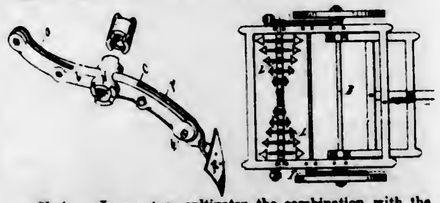
Claim.—1. In a water-closet, in combination with the flushing-valve M, a lever and float, L, a chamber, B, inclosing the float and connected with the discharge-pipe, and a plunger, C, automatically operated so as to settle slowly on its seat, and so cause a gradual rise of water in the chamber, and consequently slow movement of the valve M in closing, substantially as set forth.

2. In combination with the discharge-pipe of a water-closet, an automatic plunger formed substantially as set forth, and the perforated water-induction pipe F, serving as a guide for the plunger, and fitted with cup-leathers above and below the perforations, substantially as set forth.

3. In combination with the automatic plunger C, the supply-pipe F and plunger-valve H, substantially as set forth.

4. In combination with the automatic plunger C, plunger-valve H, and lever H^3, the forked and pivoted rod K, pawl K', and seat-spindle I, all arranged substantially as set forth.

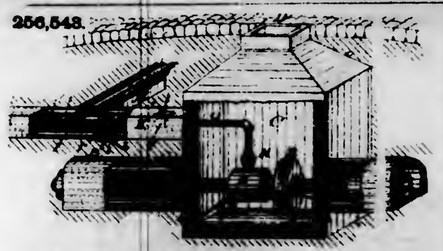
256,542. CULTIVATOR. EDWARD E. HOSTWICK, Union City, Mich. Filed Oct. 20, 1881. (No model.)



Claim.—In a rotary cultivator, the combination, with the transverse shaft and means, substantially as described, for operating said shaft, of the duplex arms L, having clutch-hubs N and slots O, and the shanks P, secured within said slots by bolts *a* and break-pins *b*, all constructed and adapted to operate as specified.

256,543. HOT-WATER OR STEAM MAIN OR PIPE. RICHARD H. BURL, New York, N. Y., assignor to the American Heating and Power Company, of New York. Filed Nov. 16, 1881. (No model.)

256,543.



Claim.—1. A system of mains or pipes for conveying steam or hot water under ground, comprising conveying and distributing mains, the latter connecting at one end with said conveying-mains and having their other end free, so as to be able to expand throughout their entire length, substantially as described.

2. The combination, with the conveying-mains, of distributing-mains having one end free, so that they can freely expand or contract, and service-pipes led off from said distributing-mains only, substantially as described.

3. In a system of underground mains or pipes, the combination, with the conveying-mains, of distributing-mains having one end free and provided at suitable intervals with connections or means for the ready attachment of service or supply pipes, substantially as described.

4. The combination, with the distributing-mains having one of their ends free, as described, and provided at suitable intervals with connections for service or supply pipes, of an inclosing pipe or box having corresponding connections or openings closed where there are no service-pipes attached by suitable caps or plugs, substantially as and for the purpose set forth.

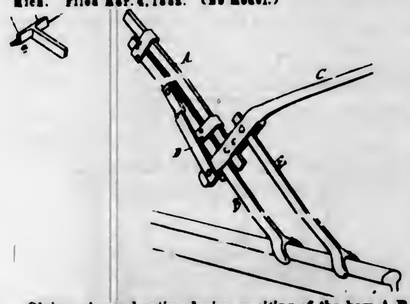
256,544. RUBBER BOOT OR SHOE. WHEELER CABLE, Boston, Mass. Filed Nov. 10, 1879.



Claim.—1. A rubber boot or shoe provided with a tap-sole formed in one with the sole, and constructed as herein described, extending backward about to the heel, gradually decreasing in thickness along the shank, and disappearing or becoming merged in the sole at or near the heel, substantially as set forth.

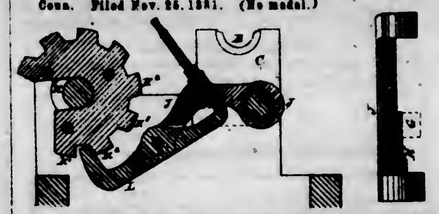
2. The improved process herein described of making rubber boots or shoes, said process consisting in shaping the upper over a last or form, rolling the integral sole and tap-sole as part of a continuous sheet of homogeneous rubber compound, cutting such combined sole and tap from said sheet with a thin projecting margin along the edges, turning up such margin, and cementing it with the integral sole and tap to the upper, subsequently applying the heel, and finally vulcanizing the whole, substantially as set forth.

256,545. CAR-SHUNTER. LA FAYETTE COLLINS, Bay City, Mich. Filed Nov. 4, 1882. (No model.)



Claim.—A car-shunting device consisting of the bars A B E and straps D, pivotally secured to the lever C, when constructed, arranged, and operating substantially as and for the purposes set forth.

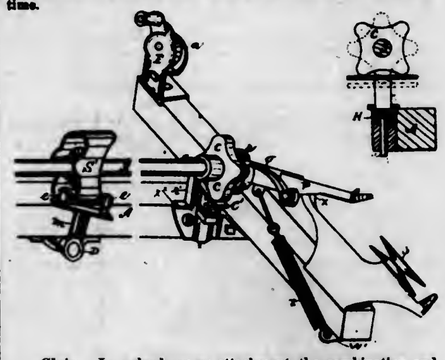
256,546. WOOD-SCREW MACHINE. ASA S. COOK, Hartford, Conn. Filed Nov. 25, 1881. (No model.)



Claim.—The pawl L, hinged to the rocking frame out of the axis of motion of said frame, and operated by an adjusting-screw extending upward from said pawl between its center of motion and the axis of said frame, in combination with said frame, the former H, arm G, shaft C, threading-tool D, and the cam K, substantially as described.

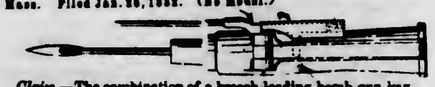
256,547. CHECK-ROW ATTACHMENT. JOSHUA H. COX and JAMES P. HERRISEY, Joliet, Ill., assignors to Amos H. Klinefelter and Andrew Dillman, same place. Filed Jan. 3, 1882. (No model.)

Brief.—On the cross-shaft, to which the forked levers are attached, is secured a cam-wheel, that rests upon the head of a spring-pressed plunger. The plunger is depressed by the rotation of the cam-points bearing upon the head; but as soon as a point commences to pass the center the head is forced upward by the spring and the rotary motion of the cam-shaft is arrested at the proper time.



Claim.—In a check-rower attachment, the combination and arrangement of beam A, shaft S, cams c and S', forked lever P, ratchet r, pawl o, coil-spring *s*, plunger o^3, coil-spring H, and barrel *u*, as and for the purpose set forth.

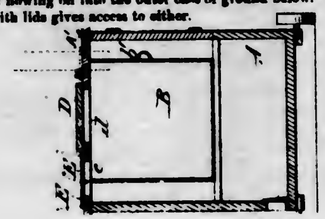
256,548. BOMB-GUN. PATRICK CUNNINGHAM, New Bedford, Mass. Filed Jan. 26, 1882. (No model.)



Claim.—The combination of a breech-loading bomb-gun having a hinged barrel and provided with the slot *l* with the socket B, having spring *i*, and the rod C, provided with the projection *g*, substantially as shown.

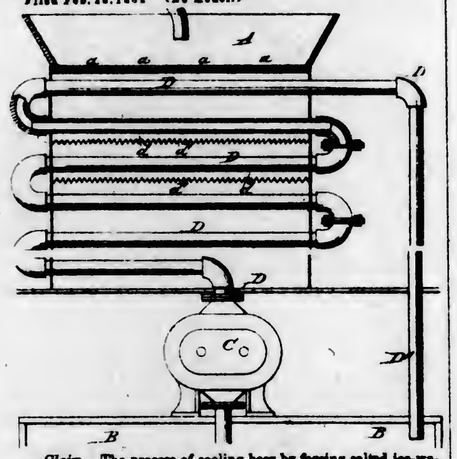
256,549. WATER-CLOSET AND GARBAGE SINK. WILLIAM H. DANIELL, Pottsville, Pa. Filed May 21, 1881. (No model.)

Brief.—A perforated receptacle retains the solid matters, the liquid flowing off into the outer case or ground below. An opening with lids gives access to either.



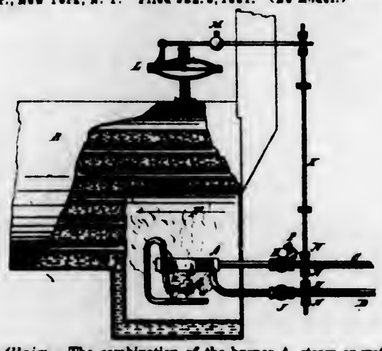
Claim.—The combination, with the outer receptacle, A, having cover A', provided with openings *d e*, closed by lids D E, of the inner perforated receptacle, B, substantially as and for the purpose specified.

256,550. COOLING BEER. DAVID W. DAVIS, Detroit, Mich. Filed Feb. 28, 1882. (No model.)



Claim.—The process of cooling beer by forcing salted ice-water into and through a coil of cooling-pipes upon which the hot beer drips, and then returning the salted ice-water back into the tank from which it was taken, substantially as described.

256,551. HYDROCARBON-BURNER. EDWARD H. DICKERSON, Jr., New York, N. Y. Filed Jan. 6, 1881. (No model.)



Claim.—The combination of the burner A, steam or water and naphtha pipes communicating therewith, a pressure-regulator, cocks in the pipes, and adjustable connections between the regulator and cocks, substantially as specified, whereby both the amounts and the relative supply of the naphtha and water are determined by the regulator, while the total stoppage of the fuel-supply is prevented, as set forth.

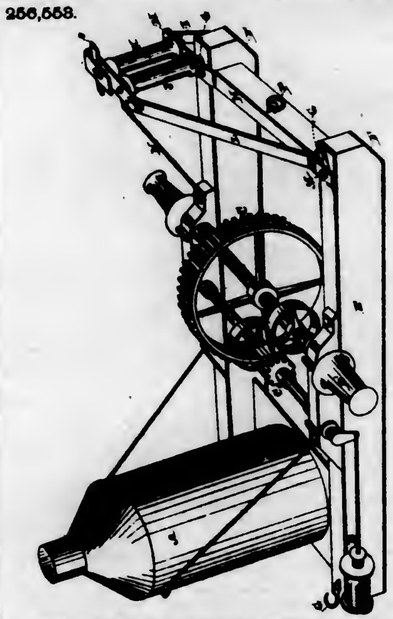
256,552. DRIVE-CHAIN. JAMES M. DODGE, Chicago, Ill. Filed Jan. 7, 1882. (Model.)



Claim.—A drive-chain link having at one end a coupler-hook that is provided with bridge-piece *c* and retainers or keepers *a a* and at the other end a divided end bar, the whole adapted to operate as described, for the purposes set forth.

256,553. LOGGING-ENGINE. JOHN DOLBEER, San Francisco, Cal. Filed Feb. 22, 1882. (No model.)

256,553.



Claim.—1. The means herein described for moving logs, consisting of the ropes or chains Q, secured to the log, passing thence to the anchored snatch-blocks, in combination with a gypsy having the vertical guide-rollers J K, or an equivalent guiding device, substantially as and for the purpose herein shown.

2. In combination with an engine and apparatus having a gypsy, as shown, the supporting frame-work having the longitudinal bearing-timbers E, beveled or curved at the front and shod so as to form runners upon which the machine may be moved from place to place.

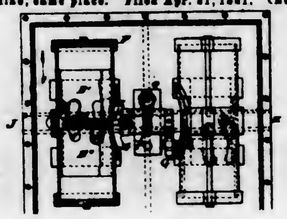
3. In combination with an engine, gearing, and gypsy D, as shown, the vertical flanged guide-rollers K L, having a space between them in a line with the gypsy, or an equivalent fixed guiding device, substantially as and for the purpose herein described.

4. The vertical flanged guide-rollers J K, having their lower ends journaled in the support H, the roller K being made to tilt outward at an angle, as shown, in combination with the top journal-support, L, made movable about the point M, and a locking bar or plate, substantially as described.

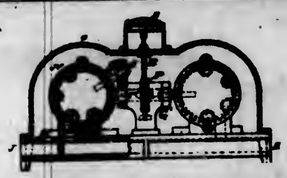
5. The steam-operated gypsy D, mounted upon the longitudinal supporting-runners E, beveled or curved in front and having the point of attachment P or G for a rope, in combination with the rollers J K, or equivalent guide, and the rope Q, leading from the apparatus to an anchored snatch-block, and thence between the guide-rollers to the gypsy, substantially as and for the purpose herein described.

6. The means herein described for moving logs, consisting of the rope or chain Q, secured to the log and leading through an anchored block, by which the direction of the log is fixed, and thence through guides J K upon the engine-frame to the steam-driven gypsy D, substantially as herein described.

256,554. PISTON FOR WATER-METERS, &c. ARTHUR P. BERRY, Brooklyn, N. Y., assignor of one-half to Charles P Houghton, same place. Filed Apr. 21, 1881. (No model.)



256,554.

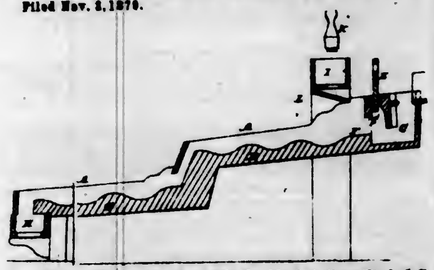


Claim.—1. The combination of a piston with its cylinder, such piston containing induction and eduction ports for each end, arranged therein so that it will, when slightly rotated within said cylinder, have at one end an induction-port opened and an eduction-port closed and at the other end an eduction-port opened and an induction-port closed alternately, so that the piston will both take and discharge water at each of its strokes, substantially as described.

2. The piston provided with channels or passages, in combination with the induction and eduction ports of the piston-cylinder, substantially as described.

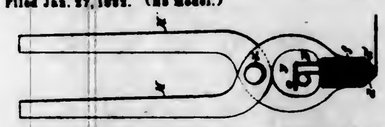
3. The combination of the piston and piston-cylinder with a ball-and-socket joint, the ball being connected to the piston by means of a spindle and the socket being contained in a crank, substantially as described.

256,555. AMALGAMATING AND CONCENTRATING RIFFLE. SUSANA E. EVANS, San Francisco, Cal., assignor of two-thirds to Alexander Lowthwaite and Samuel P. Taylor, same place. Filed Nov. 2, 1879.



Claim.—In combination with the blanket, the riffle-bed G, made with gentle undulating curves, whereby the nap of the blanket is prevented from lying flat by the flow of the current of water.

256,556. TINMAN'S TONGS. CHARLES R. EVERSON, Macedon, N. Y., assignor of one-half to L. Jerome Woolsey, same place. Filed Jan. 27, 1882. (No model.)



Claim.—A tinner's tongs consisting of pivoted cross-legs H H' and blades *d d'*, the legs being spread apart above the blades, and the latter being provided with gages secured adjustably to one blade and extending over the upper edges of both, substantially as set forth.

256,557. CURTAIN-FIXTURE. HUGH FARLEY, Philadelphia, Pa. Filed Feb. 6, 1882. (No model.)

Brief.—A spring surrounding the axle-pin at one end keeps the roller securely against the rubber brackets.



Claim.—1. The combination of roller A, provided with caps C and E, axle-pins D and F, rubber springs H, having holes *h* and plates *h'*, and spring G, substantially as described.

2. The combination of roller A, provided with caps C and E, axle-pins D and F, springs G and H, substantially as and for the purpose specified.

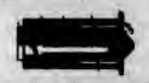
3. The combination of screen B with a roller at top and bottom thereof, said rollers being provided with rigid axle-pin D, adjustable axle-pin F, springs G and H, substantially as shown.

256,558. GLOVE. HENRY S. FLOOD, San Francisco, Cal. Filed Aug. 15, 1881. (No model.)



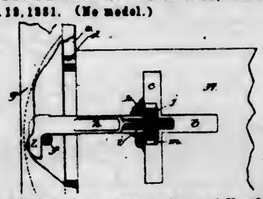
Claim.—As a new article of manufacture, gloves, gauntlets, mittens, and similar hand wear having a supplementary waterproof backing, substantially as and for the purpose herein described.

256,559. ADJUSTABLE SPRING-BOLT. PETER FOGG, Somerville, Mass. Filed Mar. 28, 1881. Renewed Nov. 4, 1881. (Model.)



Claim.—As an improved article of manufacture, the herein-described catch, composed of the case, the spiral spring, and the screw-threaded stud, extended loosely in the said case and provided with the bolt *f*, made adjustable longitudinally thereon, all substantially as set forth.

256,560. BED-FASTENING. PETER FOGG, Somerville, Mass. Filed Dec. 19, 1881. (No model.)



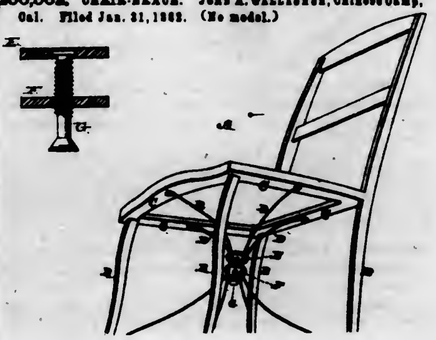
Claim.—A bed-fastening composed essentially of the hook *h l*, having a screw-threaded shank, and a nut, *j*, provided at its side, next the hook *l*, with a spur to cut into the side rail and prevent the nut and fastening from being moved laterally out from the grooves in the side rail, substantially as described.

256,561. TREE-PROTECTOR OR INSECT-BARRIER. CHARLES M. FULLER, Catasauqua, Pa. Filed Feb. 11, 1882. (No model.)



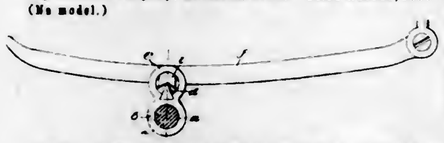
Claim.—An insect guard or barrier consisting of a band or girdle of any suitable material, in combination with a coating of fatty, soft, or sticky matter and sand or other grain-like material, as shown and described, and for the purpose set forth.

256,562. CHAIR-BRACE. JOHN A. GALLAGHER, Chinese Camp, Cal. Filed Jan. 31, 1882. (No model.)



Claim.—The chair-brace consisting of the combination and arrangement of the brace wire *a* or rods D D, secured to the seat above and to the legs below, and converging to the center, and the plates E and F upon said braces, with their thumb-screw G, operating said plates to separate or approach to tighten or loosen the brace-rods, substantially as herein described.

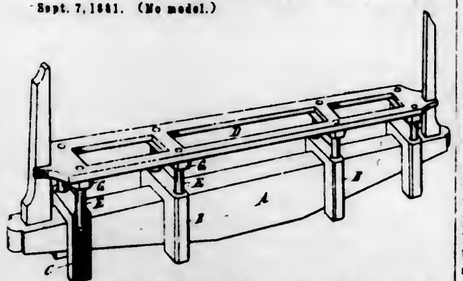
256,563. TREADLE-SUPPORT FOR SEWING-MACHINES. GEORGE W. GREGORY, Boston, Mass., assignor to the Wood Sewing Machine Company, Hartford, Conn. Filed Nov. 10, 1881. (No model.)



Claim.—1. The collars *c*, provided with the V-shaped bearings and caps, combined with a treadle having ears recessed or adapted at their under sides to rest on the V-shaped bearings, and rounded at their upper sides to be held down by the caps, substantially as described.

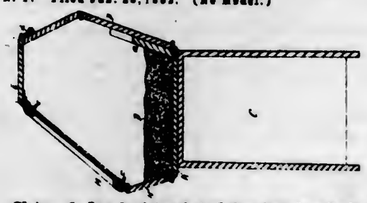
2. The rod *a*, the collars *c*, adjustably secured thereto and provided with V-shaped bearings *d*, and covering-caps *e*, combined with the treadle having ears *l*, recessed to rest on the bearings *d* and rounded at their upper sides to be held down by the said caps substantially as described.

256,564. WAGON-SPRING. JONATHAN W. HARRISON, Wayne, Mich., assignor of one-half to Orange Butler, same place. Filed Sept. 7, 1881. (No model.)



Claim.—The saddles or yokes B, constructed to straddle the bolster, and provided with sockets on each side of said bolster, in combination with the spiral springs C, the bed-plate D, and the pins E, secured at their upper ends to the bed-plate, said pins being constructed to closely fit the saddle-sockets, and provided with studs to fit inside of the springs, as and for the purpose specified.

256,565. BURIAL-CASE. JACOB H. HERRENBRG, Brooklyn, N. Y. Filed Jan. 25, 1882. (No model.)



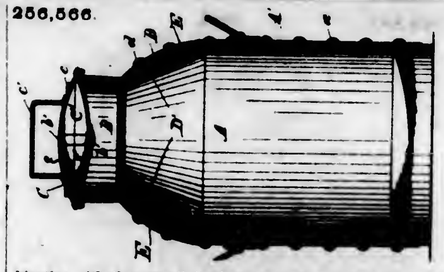
Claim.—1. In a burial-casket of the class described, the upholstered base, provided with back piece or support, secured to said base, and the movable side, end, and top pieces, substantially as shown and described.

2. The combination of the base, upholstered as explained, the back piece secured thereon, the hinged sides and top connected therewith, and the end pieces, one of the hinged pieces being inclined at an angle with the base and provided with a transparent panel, substantially as and for the purposes set forth.

256,566. REFRIGERATING-CAN. JOSEPH HEPPLEY, Sr., Philadelphia, Pa., assignor to Wm. Esch, same place. Filed Sept. 7, 1881. (No model.)

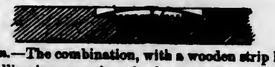
Claim.—1. A refrigerator-can consisting of the body A and neck D', re-enforced by the corrugated sheathing A' *a* D *d*, in combination with the cover C, having concave-convex top *c c'*, vent-tube *b'*, strainer *b*, and protecting-ring *c*, substantially as set forth.

256,566.



2. In a refrigerating-can, the cover C, having the concave-convex top *c c'*, in combination with the vent-tube *b'*, having strainer *b* and protecting-ring *c*, substantially as set forth.

256,567. MODE OF INCASING KNOTS OR OTHER DEFECTS IN WOOD. BRITAIN HOLMES, Buffalo, N. Y., assignor to himself and Edward Holmes, same place. Filed Oct. 21, 1881. (No model.)



Claim.—The combination, with a wooden strip having a knot, of a metallic piece covering the knot portion, with its edge embedded in the wooden strip around the knot, as and for the purpose set forth.

256,568. METHOD OF CLOSING THE PORES OF KNOTS IN STAVES, &c. BRITAIN HOLMES, Buffalo, N. Y., assignor to himself and Edward Holmes, same place. Filed Nov. 23, 1881. (No model.)



Claim.—The within-described mode of treating knots or other defects in wood to render them water-tight, consisting in subjecting the knot and the wood immediately surrounding it to a heavy pressure by means of a tool, *b*, or its equivalent, either with or without a revolving motion, substantially as described, whereby the knot is securely fastened in place and rendered water-tight, as specified.

256,569. APPARATUS FOR ROASTING ORES. CHARLES HORNSCHUH, Brooklyn, N. Y. Filed June 17, 1881. (No model.)

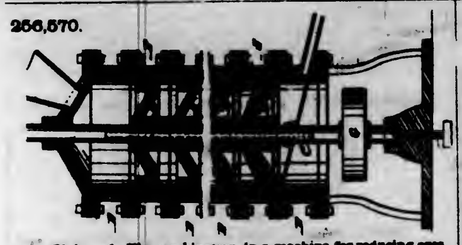


Claim.—1. In a furnace for roasting ores and other materials, the combination of a series of open-bottomed troughs, arranged one above the other, and a series of open-bottom triangular frames, located between the lower edges of the troughs, and adapted to receive and distribute air throughout the mass of material, and divide and direct the material to the successive troughs, and finally to the hearth of the furnace, substantially as described.

2. In a roasting-furnace, the herein-described series of open-bottom angular troughs extended across the furnace and arranged to leave air-spaces between their upper edges and the walls of the furnace, in combination with the frame C, arranged between the lower edges of the troughs, and adapted to receive heated air or gas at their ends and to direct the same through their bottoms into the mass of material, whereby the air or gas will pass through the material and then through the air-spaces, as indicated, and also the material will be directed by said frames to the successive troughs, and finally to the hearth of the furnace, substantially as described.

256,570. MACHINERY FOR REDUCING ORE, &c. FREDERICK J. HOYT, New York, N. Y., and WILLIAM H. HOYT, Jersey City, N. J. Filed May 14, 1881. (No model.)

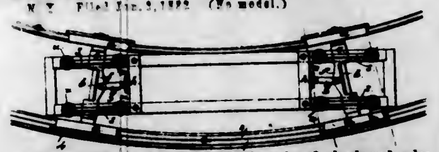
256,570.



Claim.—1. The combination, in a machine for reducing ores, of the vertical rotary shaft, with the crusher-disks A, provided with hammers *a*, the pulverizing-disks B, arranged below the crushing-disks and formed with smooth beveled edges, the cylinder composed of sections, one for each crushing and pulverizing disk, and the anvils *b*, arranged opposite the hammers, whereby the ore is first crushed by the hammers and then pulverized between the shell and the pulverizing-disks, substantially as described.

2. The combination, with the vertical rotary shaft, of the crushers A, the pulverizers B, and the shell composed of sections D, bolted together, one of said sections being provided for each crusher and pulverizer, substantially as described.

256,571. CAR-TRUCK. CHARLES W. HUNT, West Brighton, N. Y. Filed Jan. 9, 1882. (No model.)

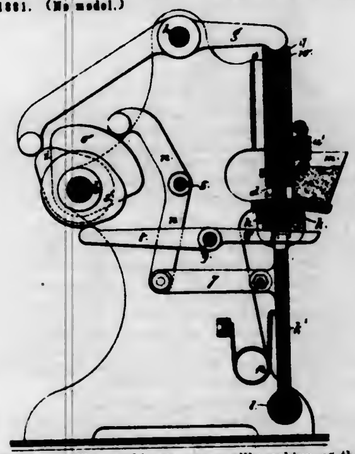


Claim.—The combination, with the pairs of wheels and axles, the former having outside flanges, of the journal-boxes *e*, the bars *f*, connecting such journals in pairs, the links *g*, pivoted to the frame and bars *f*, respectively, the bearers *i* or *s*, and the side frames of the car, substantially as set forth.

256,572. ARTIFICIAL FUEL. JOHN T. JACKSON, Des Moines, Iowa, assignor of one-half to P. P. Ingalls, same place. Filed July 21, 1881. (No specimens.)

Claim.—An artificial solid fuel composed of adhesive and inflammable tar, common soil, and incompact and incoherent fibrous vegetable substances—such as dry grass, weeds, straw, forest-leaves, and manure—substantially as and for the purposes set forth.

256,573. MACHINE FOR MAKING PILLS, LOZENGES, &c. JOHN T. JONES and CHARLES T. JONES, Utica, N. Y. Filed Dec. 9, 1881. (No model.)



Claim.—1. The combination, in a pill-machine, of the die-plate *c*, segmental die-holder *k*, powder-holder *m*, punches *d*, lifters *e*, and their supporting and actuating devices, substantially as set forth.

2. The combination, in a pill-machine, of the die-plate *c*, the segmental die-holder *k*, arm *k'*, and shaft *l* for said die-holder, the lifters *e*, bar *r* below the die-plate, the lever *t*, and cam *s'*, for raising the lifters, substantially as set forth.

3. In a pill-machine, the combination, with the segmental die-holder and dies, of the powder-holder *m*, the pressing-punches *d*, lifters *e*, and means for swinging the segmental die-holder for the delivery of the compressed pills and the reception of powder, substantially as set forth.

4. The combination, in a pill-machine, of a swinging segmental die, pressing and delivery punches, a driving-shaft, cams, and levers operating to swing the segmental die and actuate the punches and lifters, respectively, substantially as set forth.

5. The combination, with the punches and head-block in a pill-machine, of the cam and lever for moving the same, and the adjustable bearing between the lever and the head-block, substantially as set forth.

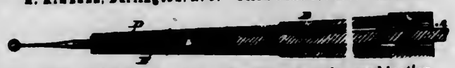
6. The combination, with the segmental die-holder and die, the pressing-punches, the lifters, the bar for the same, the change able graduating-plate, and the mechanism for giving motion to the dies, punches, and lifters, respectively, substantially as set forth.

256,574. NUT-LOCK. WALLACE C. KELLY, Hastings, Mich. Filed Feb. 16, 1882. (No model.)



Claim.—A fish-plate having bolt-holes and a vertical groove above each bolt-hole, a nut having radial grooves, and a key for locking the nut and fish-plate together, the whole combined and operating to lock the parts by the gravity of the key, as set forth.

256,575. HAND-PIECE FOR DENTAL ENGINES. WILLIAM H. KIMBALL, Burlington, N. J. Filed June 1, 1881. (Model.)



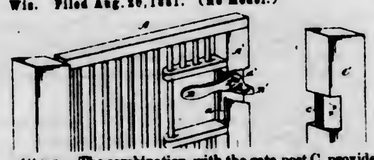
Claim.—The burr having a spiral groove, *n*, in combination with the shaft A, having a tubular spring-jaw, D, and a pin, E, projecting into the tubular portion of the shaft, and the exterior sleeve, B, which is adapted to compress said jaw, substantially as and for the purpose set forth.

256,576. STOVE-KNOB. JOHN C. KOEHLER, Philadelphia, Pa., assignor to William L. McDowell, same place. Filed Jan. 25, 1882. (No model.)



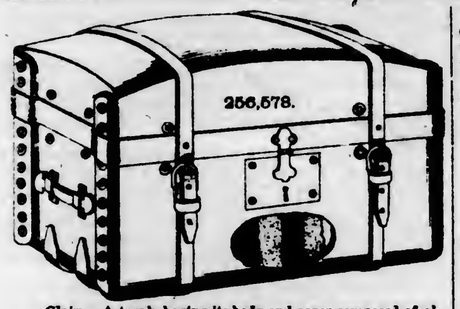
Claim.—The knob having an eye, the wedging-pin, and the stove portion having an opening and projecting lugs, the parts being combined and operating substantially as and for the purpose set forth.

256,577. GATE-LATCH. LEONARD L. LIGHTCAP, Hazel Green, Wis. Filed Aug. 20, 1881. (No model.)



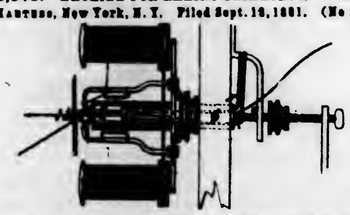
Claim.—The combination, with the gate-post C, provided with recess *c* and inclines *c'*, arranged on either side, of gate A, having its front post provided with the transverse slot *a*, and latching device B B', provided with hole *b* and slot *b'*, whereby said device may be pivotally secured in slot *a* by means of pin *a'*, and limited in its movements therein by means of pin *a'*, the several parts constructed and arranged substantially as described, shown, and for the purpose set forth.

256,578. TRUNK. CYRUS MARTS, Washington, D. C. Filed Feb. 23, 1882. (No model.)



Claim.—A trunk having its body and cover composed of alternate layers of rubber and textile material, a lining of wood, and an interposed cushion of cloth or fabric, substantially as and for the purpose set forth.

256,579. MACHINE FOR MAKING TRIMMINGS. FREDERICK MARTENS, New York, N. Y. Filed Sept. 19, 1881. (No model.)

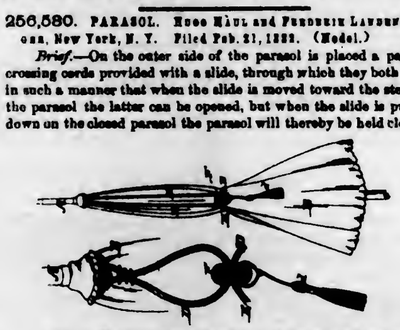


Claim.—1. The combination of a fixed guide-tube having interior cross-wires near its front end, longitudinal looping-rods passing through said tube, and a rotary bobbin-carrying flier upon said tube, substantially as described.

2. The combination of a fixed guide-tube provided with interior cross-wires, a rotary spirally-grooved guide-shaft for delivering the main gut, longitudinal looping-rods passing through said tube, a rotary flier adapted to carry bobbins, and a guide-roller adjacent to the looping-rods, substantially as described.

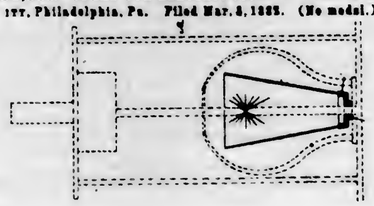
256,580. PARASOL. HUGO NIEL and FREDERIK LANDENBERGER, New York, N. Y. Filed Feb. 21, 1882. (Model.)

Brief.—On the outer side of the parasol is placed a pair of crossing cords provided with a slide, through which they both pass in such a manner that when the slide is moved toward the stem of the parasol the latter can be opened, but when the slide is pulled down on the closed parasol the parasol will thereby be held closed.



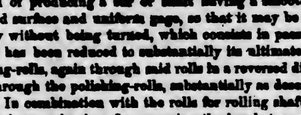
Claim.—The parasol attachment consisting of the two strands or cords D E, connected to the parasol at *a* and at G, and combined with the slide F, through which said cords or strands are passed, and in which they are crossed, substantially as and for the purpose specified.

256,581. GUARD FOR ELECTRIC LIGHTS. WILLIAM MCDEVITT, Philadelphia, Pa. Filed Mar. 8, 1882. (No model.)



Claim.—The improvement in electric lights, consisting of the combination, with the carbon points, of a mica chimney or guard which arrests the lateral escape of molten particles and a cup which receives said particles, substantially as and for the purpose set forth.

256,582. BRUSH. DANIEL A. MCPHAIL, Detroit, Mich. Filed Feb. 4, 1882. (No model.)



Claim.—A brush wherein the head is provided with a sawkerf at the base of the channel which contains the bristles, substantially as and for the purposes set forth.

256,583. DENTAL BRACKET. HENRY C. MERRILL, Wollaston, Mass. Filed Feb. 6, 1882. (No model.)



Claim.—1. The pawl H, sectoral ratchet F, and the gears E, D, and D, arranged and combined, as set forth, with the three arms G, C, and C and the swivel A, arranged with and applied to each other as explained.

2. The combination of the radial arm K, jointed to the arm G, with the three arms G, C, and C and the swivel A, and with the gears, sectoral ratchet, and its pawl, arranged with and applied to the arms G, C, and C as represented.

3. The combination of the arms M K G C C and toothed sectors D D, gear E, ratchet F, and pawl H, arranged and applied substantially as set forth.

256,584. ART OF ROLLING METAL BARS. LEWIS MILLER and FREDERICK BISHOP, Akron, Ohio. Filed Jan. 7, 1881. (No model.)



Claim.—1. As an improvement in the art of hot-rolling bars, the method of producing a bar or shaft having a smooth hard surface and uniform gage, or that it may be used in machinery without being turned, which consists in passing the bar, after it has been reduced to substantially its ultimate gage in the finishing-rolls, again through said rolls in a reversed direction, substantially as described.

2. As an improvement in the art of hot-rolling bars, the method of producing a bar or shaft having a smooth, hard, and polished surface and uniform gage, so that it may be used in machinery without being turned, which consists in passing the bar, after it has been reduced to substantially its ultimate gage in the finishing-rolls, again through said rolls in a reversed direction, and then through the polishing-rolls, substantially as described.

3. In combination with the rolls for rolling shafting or bars, the turning mechanism for reversing the bar between its passage through the rolls, substantially as described.

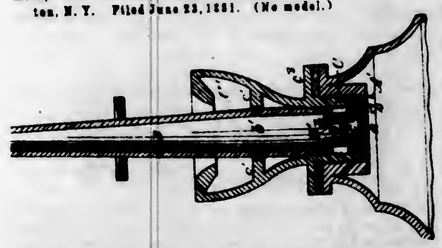
256,585. LACING-STUD. SAMUEL MONTGOMERY, New York, N. Y. Filed Feb. 25, 1882. (No model.)

Claim.—1. In a spring lacing-stud provided with a base having suitable attaching devices, the combination, with the spring-top, of the conical-shaped knob formed thereon, the point of said knob bearing against the base of the stud, substantially as and for the purposes set forth.

2. In a spring lacing-stud provided with a base having suitable attaching devices, the combination, with the spring-top, of the conical-shaped knob and the top or cover therefor, the said knob bearing against the base of the stud, substantially as shown and described.

3. In a lacing-stud having a spring-top and connected conical knob bearing against the base for closing the mouth of the stud, the throat for the reception of the lacing-cord, bent, substantially as shown, so as to extend below the base of the stud, and a base provided with suitable attaching devices, for the purposes and objects named.

256,586. OILER-NOZZLE. STEPHEN S. NEWTON, Binghamton, N. Y. Filed June 23, 1881. (No model.)

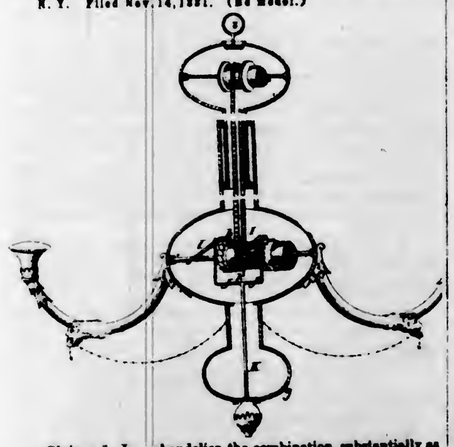


Claim.—1. In an oiler-nozzle, the combination, with the drip-cup and internally-threaded socket having an opening in its lower end for the passage of oil, of the threaded tip B, adapted to close said opening by a downward movement relative to the socket, and to be withdrawn from the socket by an upward movement to permit oil to pass from the drip-cup into the can, substantially as set forth.

2. In an oiler-nozzle, the drip-cup C, having an internal flange, *c'*, in combination with the rising and falling tip B, having a drip-port, *b'*, so arranged that when the tip is screwed down to prevent the discharge of oil from the can the said port *b'* shall be below the flange *c'*, substantially as set forth.

3. In an oiler-nozzle, the combination, with the socket C, provided with a central port, *a*, and the packing-washer *c*, of the delivery-tip having the tubular extension B' and ports *b*, substantially as set forth.

256,587. CHANDELIER. STEPHEN S. NEWTON, Binghamton, N. Y. Filed Nov. 14, 1881. (No model.)



Claim.—1. In a chandelier, the combination, substantially as hereinbefore set forth, of the following elements, namely: the telescoping supporting-tubes, an expanded bulb carried by the lower tube, a chain or flexible supporting device connecting the tubes, a coiled spring, and a drum concealed entirely within said bulb, the drum adapted to engage with the chain and to be rotated by the spring, and mounted on a shaft situated across the central line of the telescoping tubes, a stop-wheel which is rotated by said shaft, a locking-piece which at one end is fastened in the plane of rotation of said stop-wheel and at the other is movable in said plane into and out of engagement with said wheel, and an operating-rod passing through the bottom of the inclosing-bulb.

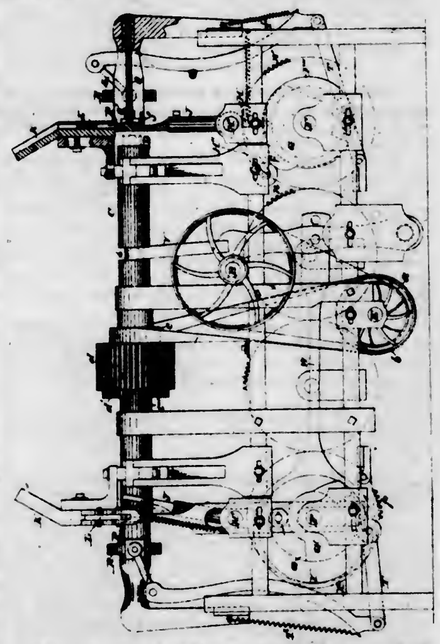
2. In a chandelier, the combination of a stationary tube, a sliding tube, a bulb carried by the sliding tube at or near the lower end thereof, a drum mounted at or near the upper end of the stationary tube, a spring which rotates said drum, a drum situated and concealed entirely within said bulb, a chain extending from the upper drum downward around the lower drum, and thence upward to the stationary tube, a stop mechanism which engages with the lower drum and prevents the winding of the chain, and an operating-rod extending downward from said stop mechanism, substantially as set forth.

3. In a chandelier, a winding-drum and spring attached to the upper stationary tube, a drum and spring attached to the lower sliding tube, a chain attached to the upper drum, passing downward around the lower drum and up to and attached to the stationary tube, and a stop mechanism to limit the rotation of one of the drums, both of said drums being constructed and arranged to engage with the chain, substantially as set forth.

4. In a chandelier, the combination, with the toothed flanges *b* and the vibrating dogs I, of the arms J and the rod K, substantially as set forth.

256,588. BUTTON-TURNING LATHE. GEORGE L. PALLATT, Philadelphia, Pa., assignor of three-fourths to Ostheimer Brothers and William T. Pallatt, all of same place. Filed July 23, 1881. (No model.)

Brief.—Hoppers at each end of the machine feed blanks alternately to the spindles, one of which operates to cut in connection with its chucking device while the other is dropping its completed work.



Claim.—1. The two rotating and sliding tool-carrying shafts, having necks *s* and geared together, and the gear-wheel *d*, in combination with forked yoke V, embracing both of said shafts, operating-arm W, and shaft F, substantially as set forth.

2. In a button-machine, a rock-shaft, H', in combination with a button-carrier secured thereto, and an operating-shaft, F, carrying cams, which give to the said shaft H its longitudinal and rocking reciprocating motions, substantially as set forth.

3. In a button-machine, a sliding-rock-shaft, H', having lug H and arm H", in combination with a button-carrier secured on said shaft, and operating-shaft F, provided with a cam which acts on said arm to rock shaft H', and with a cam-grooved pulley which acts on said lug to slide said shaft H' longitudinally, substantially as set forth.

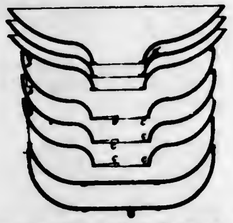
4. In a button-machine, the spout or chamber K and the feed-piece L, pivoted to and operating within said chamber, in combination with arm M, shaft F, cam G, and spring N, whereby the rotation of said shaft operates the said feed-piece, substantially as set forth.

5. In a button-machine, a chuck or button-holder, in combination with a carrier, J, a sliding rock-shaft, H', to which said carrier is secured, and a shaft and cams which give longitudinal and rocking reciprocating motions to said shaft H', substantially as set forth.

6. In a button-machine, the expandible chuck or button-holder P, in combination with sleeve R, screw R', and a cam-shaft, F, and intermediate lever-connection for closing said chuck on the button, substantially as set forth.

7. In a button-machine, the split and hollow chuck or button-holder P, in combination with sleeve R, screw R', and the mechanism for rotating the same in opposite directions, and the loose spring-pressed throw-off Q, the latter being inclosed in the chuck, substantially as and for the purpose set forth.

256,589. CUSPIDOR. HENRY L. PALMER, Brooklyn, N. Y. Filed Mar. 4, 1882. (No model.)



Claim.—1. In a cuspidor, the bowl, the breast, and the top or flaring mouth made separable from each other, and each of the said three parts provided with locking-joints, substantially as and for the purposes set forth.

2. In a cuspidor, the bowl, the breast, and the flaring mouth or top made separable from each other and provided with interlocking joints, and all the said parts constructed and arranged to be nested together, substantially as and for the purposes set forth.

3. The herein-described improved cuspidor, in which the flaring mouth or top and bowl are connected by an intermediate detachable breast, said breast being arranged to be coupled with the bowl and flaring mouth or top by locking-joints, and all the parts being constructed, substantially as shown, so as to nest together, in the manner and for the purposes set forth.

4. In a cuspidor made in separate pieces, the locking device for securing two adjacent parts, the same consisting of the projecting pin e, attached to one part, and the prongs *f f*, applied upon the walls of the slot cut in the adjoining part, substantially as shown and described.

256,590. DOUBLE CATHETER. EDWARD PRAHAR, Brooklyn, N. Y. Filed Dec. 19, 1881. (Model.)

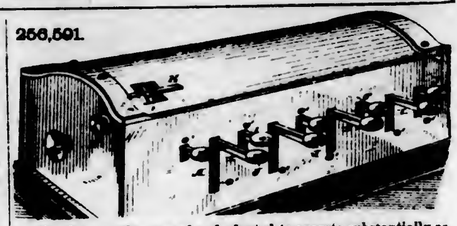


Claim.—The catheter of soft rubber, having a smooth exterior surface and of uniform diameter, or nearly so, and formed as a single tube at one end for the reception of the syringe, and the remainder of the instrument divided into two tubes, one of which forms the injecting-duct running to the point of the instrument, or nearly so, and the other the discharge-tube *a*, terminating at the back end within the main tube, and having the eyes *e* and *f*, substantially as set forth.

256,591. ADDING-MACHINE. FAWCETT PLUMB, Streator, Ill. Filed June 17, 1881. (Model.)

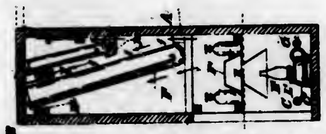
Claim.—1. In an adding-instrument, the combination, with the casing having the graduated slots, and the slotted top and pointers F E, of a transverse shaft, G, carrying the wheels C and H, and cam S, a short shaft arranged parallel to shaft G and carrying the wheels D and R, the levers L L, bar M, cam N, and a series of operating-levers, all arranged and adapted to operate substantially as set forth.

256,591.



2. In an adding-instrument, the combination, with the shafts G and O, of the bar M, pawl N, levers L L, and elastic bands connecting the latter with the shaft O, substantially as set forth.

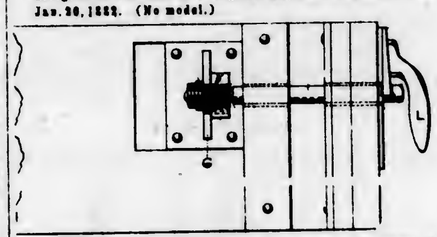
256,592. PHOTOGRAPHIC SILVER-BATH HEATER. BENJAMIN F. POWELSON, Buffalo, N. Y. Filed Nov. 19, 1880. (No model.)



Claim.—1. A photographic silver-bath heater consisting of a case, A, having doors A' and B, in combination with a heating device arranged in the lower chamber, E', a heat-distributer, F', and a suitable means, substantially as specified, for holding the baths in the upper chamber, as and for the purposes described.

2. A photographic silver-bath heater consisting of a case, A, having a heating device, C', or its equivalent, in the lower part of the case, and a suitable means, substantially as described, for supporting the bath in an inclined position in the upper part of the case.

256,593. WAGON END-GATE. GIDEON QUICK, Auburn, N. Y., assignor of one-half to George H. Hoyle, same place. Filed Jan. 20, 1882. (No model.)



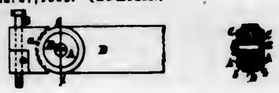
Claim.—1. As an improvement in end-gate fasteners; the plate M, having a locking-spring, *l*, and an oval hole, in combination with a mutilated scroll-cam having a wedge-shaped edge, a spring-seat, *k*, and an operating-handle, L, said cam being pivoted to said plate, as and for the purposes herein described and specified.

2. The combination, in an end-gate, of a plate secured thereto and having an ear and hub having oval holes with bushings, and a cleat having an oval hole and bushing, substantially as described and set forth.

3. An oval locking-spindle having at one end a notch and at the other a threaded extension of round form, upon which is screwed an adjusting-nut, substantially as and for the purposes described and specified.

4. The combination of the mutilated scroll-cam having a spring-seat and handle with an oval spindle having a notch at one end and a threaded extension at the other, as and for the purposes described and specified.

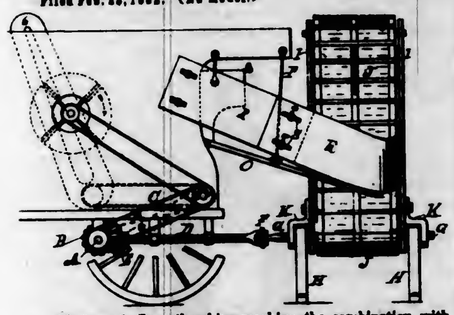
256,594. TRACE-COUPLING. ISAAC H. RANDALL, Boston, Mass., assignor of one-half to Bryant Higgins, same place. Filed Jan. 27, 1882. (No model.)



Claim.—1. The combination of plates A, disks C, having projections or pins *b*, bolt or screw E, with means of connecting the same to harness or saddle, and with a trace, lug, or hook-clasp, substantially as specified.

2. In combination with a trace, plates A, having extensions *a*, bolt or screw B, for securing the plates to the harness, disks C, having projections or pins *b*, and bolt or screw E, substantially as described.

256,595. STRAW-STACKER. DAVID RANKIN, Boston, Pa. Filed Feb. 28, 1882. (No model.)



Claim.—1. In a thrashing-machine, the combination, with the usual stacker-shaft, 1, of the transverse shaft A, longitudinal shaft D, and stacker-shaft G, carrier-belt J, and means, substantially as shown and described, for rotating said shaft and carrier-belt in either of two opposite directions at will, as and for the purpose set forth.

2. The combination of the shafts 1, A, D, and G, belt C, gears B E, coupling F, carrier J, brackets K, and stops H, substantially as shown and described.

3. In a thrashing-machine, the combination of the shoe 2, the rigidly-attached suspended bridge-plate O, the adjustably-secured sectional curved guide R, and the carrier or stacker J, substantially as shown and described.

4. The guide R, comprising two sections, the one secured adjustably to the other and curved at its outer end, in combination with a thrashing-machine and stacker, substantially as shown and described.

256,596. INK FOR DYEING PURPOSES. PETER REID, Passaic, and JOHN HARTWOOD, Belleville, N. J., assignors to the Celluloid Manufacturing Company, New York, N. Y. Filed Mar. 9, 1882. (No specimens.)

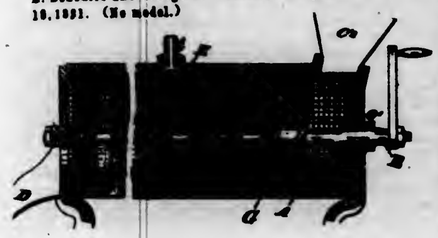
Claim.—An ink or color composed essentially of pyroxyline, a coloring agent, camphor, and a suitable menstruum, for the uses and purposes substantially as set forth.

256,597. MANUFACTURE OF PYROXYLINE FOR USE IN TOPICAL PRINTING. PETER REID, Passaic, and JOHN HARTWOOD, Belleville, N. J., assignors to the Celluloid Manufacturing Company, New York, N. Y. Filed Oct. 18, 1881. (No specimens.)

Claim.—1. The process herein described of setting or fixing a design on fabrics, &c., which consists in printing or impressing the design on the fabric with a solution composed essentially of dissolved pyroxyline and a coloring agent, substantially as set forth.

2. An ink or color for topical printing, composed essentially of dissolved pyroxyline and a coloring agent, substantially as set forth.

256,598. MACHINE FOR CLEANING FRUIT. SAMUEL A. RICH and WALTER S. OTHO, Buffalo, N. Y., assignors to Chas. E. Benedict and George B. Webster, same place. Filed Aug. 10, 1881. (No model.)



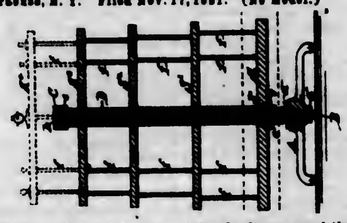
Claim.—In a fruit-cleaning-machine, the reticulated cylinder A, provided with a hopper, C, outlet-spout D, and nozzle H, in combination with the shaft E and brushes G, substantially as and for the purposes specified.

256,599. PRODUCTION OF COLORING-MATTER. CHRISTIAN E. RUDOLPH, Höchst-on-the-Main, Germany, assignor to Farbwerke, vormals Meister, Lucius & Brüning, same place. Filed Jan. 5, 1882. (Specimens.)

Brief.—This yellow coloring-matter is produced by the treatment of acetanilide in solution with dehydrating agents.

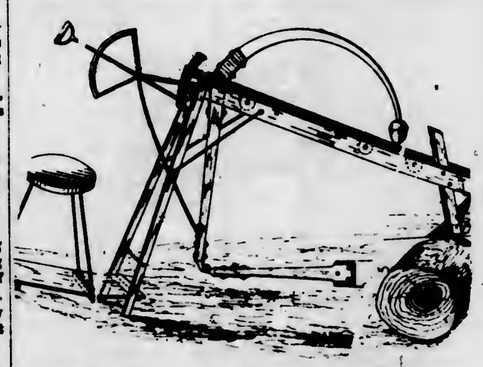
Claim.—A yellow coloring-matter having the characteristic properties herein mentioned, obtained from a mixture of acetanilide and hydrochlorate of aniline by heating the same in the presence of chloride of zinc or some other dehydrating agent, substantially as and for the purpose set forth.

256,600. REVOLVING BOOK-CASE. DUNCAN M. SCRELL, Syracuse, N. Y. Filed Nov. 17, 1881. (No model.)



Claim.—A knockdown revolving book-case consisting of a vertical central supporting-rod, B, detachably connected to a base, A, a tube or sleeve, D, surrounding said rod and suspended from the upper end thereof, and provided at its base with an external collar, *r*, a bottom shelf, S, having a central aperture fitted to slide over the tube D, said shelf S resting on the collar *r*, superstructed shelves S' S' S' S', having a central aperture by which they slide over the tube D, and detachable spindles *f f*, interposed between the respective shelves and supporting the same, all constructed and arranged substantially as described and shown.

256,601. DRAG-SAW MACHINE. SIMON O. SUDOR, Hillsdale, Iowa. Filed Aug. 2, 1881. (No model.)



Claim.—1. In a drag-saw, the combination, with the inclined legs and parallel bars, of a saw-lever journaled between said bars and projecting slightly above them to receive a counterbalance-weight, while the lower end of said lever is provided with hinges, by which it is connected with the shank of the saw, and a saw-handle having the perforated segmental portion and adapted to move within the semicircular guide secured to the rear ends of the parallel bars, substantially as set forth.

2. In a drag-saw, the combination, with the parallel bars and legs and a saw operated by suitable means, of spring-holders situated between the bars and adapted to hold the saw elevated above the wood, substantially as set forth.

3. In a drag-saw, the combination, with the saw-lever, of a two-part handle, one portion being secured to the lever and provided with a sector-bar at its outer end, and the other portion be-

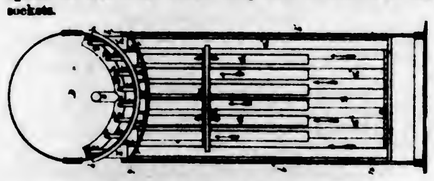
ing constructed to be adjustably secured to the sector-bar, substantially as set forth.

4. In a drag-saw, the combination, with the saw-frame, lever, weight, saw, and guide T, of a handle secured to the saw-lever and provided with the segmental portion W', as and for the purpose described.

5. In a drag-saw, the combination, with the saw-frame, lever, weight, and saw, of an adjustable handle having the perforated segmental portion W', and moving within an arc-shaped guide, T, secured to the parallel bars, substantially as set forth.

256,602. STEAM-BOILER. GEORGE SEWELL, Newark, N. J. Filed July 20, 1881. (No model.)

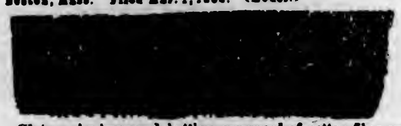
Brief.—A plate provided with sockets is arranged outside and against the shell of the boiler. Drop-tubes are fastened in said sockets.



Claim.—1. Socket-plate A, with drop-tubes G, G', and G'' secured to and within sockets A', in combination with a cylindrical boiler, D, substantially as and for the purpose set forth.

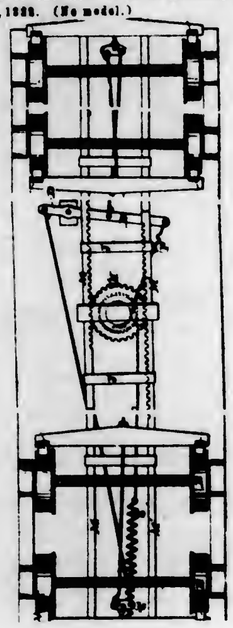
2. Pipes D' *p s o b* and check-valve *b*, in combination with hanging or pending tubes G, G', and G'', substantially as described, and for the purpose set forth.

256,603. BATTING. GEORGE H. SMITH and JOSEPH H. BEALE, Boston, Mass. Filed Mar. 1, 1882. (Model.)



Claim.—An improved batting, composed of cotton fiber and wood excelsior formed into sheets, substantially as described, as and for the purposes set forth.

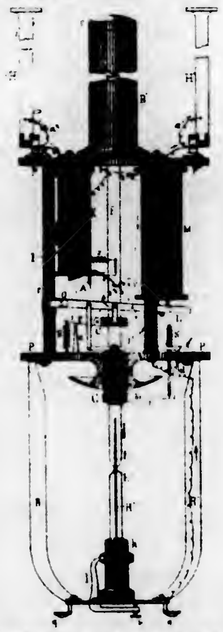
256,604. CAR-BRAKE. AMOS C. SPRINGER, San Francisco, Cal., assignor of one-half to S. W. Holladay, same place. Filed Jan. 27, 1882. (No model.)



Claim.—1. In a car-brake device, a series of rack-bars adapted to move pinions and winding devices which operate the brake-shoes, said rack-bars being provided with sliding telescopic connections to take up the slack, substantially as and for the purpose set forth.

2. In a device adapted to brake a series of cars simultaneously, the combination of telescopic rack-bars and winding devices with the spring P, interposed between the brake-lever D and the shaft I, substantially as and for the purpose described.

256,605. ELECTRIC LAMP. ELIHU THOMSON, New Britain, Conn., assignor to the American Electric Company, same place. Filed June 20, 1881. (No model.)



Claim.—1. The combination, with the upper carbon electrode in an electric lamp, of two differentially-moving clamps, each arranged so that its clamping edges or jaws tend to propel the carbon downward or to prevent movement of the carbon upward through the clamp, and means for disengaging said clamps to allow the carbons to come together upon an abnormal increase in the length of arc.

2. The combination, substantially as described, with an armature-lever, of two lifting-clamps connected thereto at different distances from its fulcrum, so that said clamps may have a different range of movement with a given movement of the armature.

3. The combination, substantially as described, with a carbon electrode, of two differentially-moving clamps and an operating-armature provided with supporting-links or similar rigid supporting devices for both clamps.

4. The combination, substantially as described, with the upper carbon in an electric lamp, of differentially-moving clamps arranged, as described, to move at different speeds, and each consisting of a movable body and pivoted clamping-toe, said clamping-toes being arranged with relation to the carbon, as described, to look against the carbon, so as to prevent a movement upward of the carbon through a clamp or to move the carbon downward positively with a clamp.

5. The combination, substantially as described, with a carbon rod, of two differentially-moving clamp-bodies, clamping-toes arranged, as described, so that a shifting downward of the clamp with relation to the carbon rod is prevented by the locking of the toe upon the rod, springs for holding the clamping-toes in engagement with the carbon, and stops arranged to release said clamping-toes.

6. In an electric lamp, clamps C and G, movable toes *f i*, springs S S', and stops *c* and *d*, in combination with a movable armature or its equivalent, and means for giving a differential movement to the clamps, whereby the following actions upon a carbon pencil are effected, viz: a free release of said carbon pencil when said armature is urged upon by its controlling-magnet, a lift of said pencil from contact with the other carbon pencil when said armature is acted upon by its controlling-magnet, and a downward feed due to a difference of range of said clamps when said armature is again released from said magnet.

7. The combination, substantially as described, with two lifting or propelling clamps having a different range of movement, of a propelling electro-magnet for said clamps, a derived-circuit electro-magnet, and a circuit closer and breaker for intermittently controlling the flow of a current through the propelling electro-magnet in obedience to the changes of arc-resistance.

8. The combination, substantially as described, with the plate P', supporting the lamp mechanism and its inclosing-case B, of the depending ribs R R' R'', placed with their edges to the light, clamping devices for the lower carbon carried by said ribs, supports *q q*, and the globe carried by said supports and surrounding the ribs and the light-giving focus.

9. In an electric lamp, a hanging support consisting of the parts H H', substantially such as described, and movable joints *m m*, whereby a rapid change of the position of said lamp is effected, in combination with a lamp-body, B, and extension B', and removable cap thereto, T, whereby a removal of carbons may be rapidly and conveniently effected, as described.

10. The combination, substantially as described, of an electric lamp hung on pivoted supports, and a shunt-circuit closer for completing a path around the lamp when the lamp is changed from its vertical position.

11. The combination, substantially as described, of the rigid supporting-arms, the hinged hanging arms, and a shunt-circuit closer, all combined in the manner set forth, so that when the lamp is swung from the vertical, said lamp is cut out of circuit.

12. The combination, substantially as described, of the main frame of the lamp, the jointed supports H H', casing and tubular extension B B', removable cap T, and automatic cut-out for completing a circuit around the lamp when the latter is swung into a horizontal position for the purpose of inserting a new carbon.

256,606. RIDING-SPUR. JUDSON L. THOMSON, Syracuse, N. Y. Filed Sept. 13, 1881. (No model.)



Claim.—The spur S, having the smooth-faced shoulder *a'* and screw-shank *b*, both integral with the spur, and the set-screw or pin *c*, passing movably through the shoulder *a'*, all constructed, combined, and operating substantially in the manner described and shown.

256,607. COMPOSITION FOR REFRACTORY FURNACE LININGS AND BOTTOMS. ALEXANDER R. TUCKER, Rhymney Iron Works, South Wales. Filed Sept. 24, 1881. (No specimens.) Patented in England June 17, 1881, in France Oct. 7, 1881, and in Belgium Oct. 8, 1881.

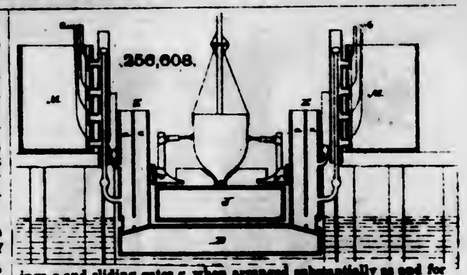
Claim.—The herein-described composition for lining Bessemer converters and furnaces, and for the making of converter-bottoms, tuyeres, and refractory bricks, the same consisting of ground ganister or sandstone, or similar ground siliceous material mixed with tar or similar hydrocarbons, preferably with the addition of a little coal-dust, in the proportions and manner herein described.

256,608. FLOATING DRY-DOCK. LIPS S. WATTS, San Francisco, Cal. Filed July 16, 1881. (No model.)

Claim.—1. In a floating dry-dock provided with the hinged brackets U and I, the lifting power of which is a dock adapted to be sunk and raised, the hollow pontoon or float , with its side gates *h*, adapted to be sunk upon the lifting-dock and to receive the vessel upon itself, substantially as and for the uses and purpose herein described.

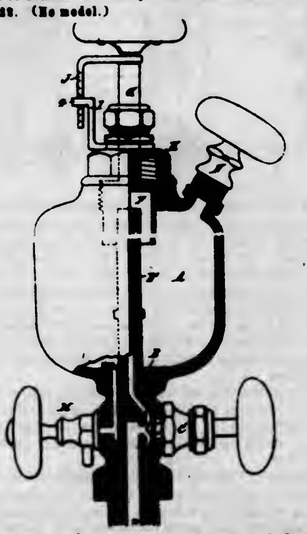
2. The floating dry-dock C, in combination with the pontoon J, having side gates, h, and keel and bilge-blocks *m*, designed to receive a vessel, the side shores, *a*, supported by the uprights *a*, and rendered adjustable by means of the hinged arms *w*, into which they screw, substantially as and for the purpose herein described.

3. In combination with the lifting-dock C, with its air-chamber D and upright compartments *a* and openings *e*, the loose-jointed inner pipes, L, outer pipes, M, and water-tanks M, with their openings *q* and sliding gates *r*, when arranged substantially as and for the purpose herein described.



4. In a floating dry-dock having a lifting-dock adapted to be sunk or raised, and water-tanks connected with said lifting-dock for filling it with water, the outer connecting-pipes, M, attached to the tanks and in open connection therewith, and the inner pipes, L, attached to the lifting-dock and in open connection therewith, and adapted to have a vertical play in the pipes M, and a side and end play by means of the ball-joint O, and the wide follower *p*, with its packing, when arranged substantially as and for the purpose herein described.

256,609. LUBRICATOR. ADOLPH WEBER, Detroit, Mich., assignor to himself and Henry W. Reed, same place. Filed Jan. 11, 1882. (No model.)



Claim.—1. The pipe D, having valve-seat and plug E, formed of one casting, and having a channel connecting with pipe D', combined with the valve C, vessel A, condensing-chamber F, and means for raising and lowering the same at will, as and for the purpose specified.

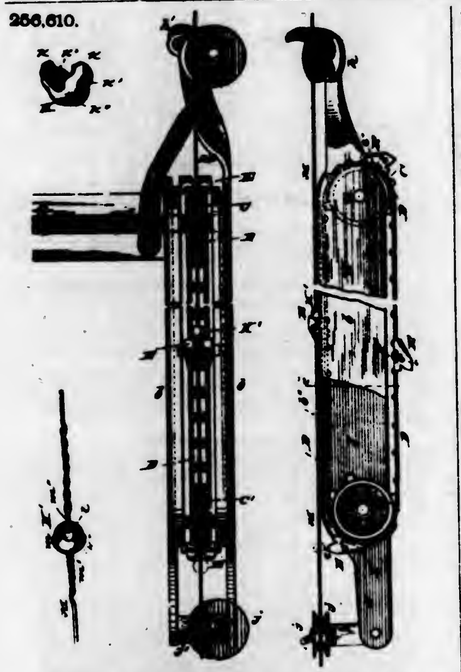
2. The vessel A, having inlet-aperture N, the plug E, having channel connecting with pipe D', the pipe D, and valve-seat, the valve C, the outlet *n* through the plug E, the condensing-chamber F, and means for adjusting its capacity at will, combined with means, I J, for indicating said capacity, all as and for the purpose set forth.

256,610. CORN-PLANTER CHECK-ROWER. RALPH W. ALEXANDER, Galesburg, Ill. Filed Jan. 26, 1882. (No model.)

Brief.—Knotted wire stretched across the field engages forked heads secured to an endless belt mounted upon sprocket-wheels for imparting motion to the seed-slide as the machine advances. Tappets or knots for check-row wire formed from a blank of malleable iron grooved and pierced for the reception of given lengths of wire.

Claim.—1. In a check-rower, the combination, substantially as described, with a tappet-wire, of a belt provided with forked heads adapted to receive motion from the tappet-wire and to impart movement to the seed-slides of the planter through suitable connecting mechanism.

256,610.



2. A belt having forked heads carried on sprocket-wheels or pulleys and adapted to impart movement to planter seed-slides, in combination, substantially as described, with a wire having tappets adapted to act on said forked heads by contact therewith.

3. In a check-rower, in combination with an actuating tappet-wire, a belt mounted on pulleys or sprocket-wheels and provided with forked heads which move with the belt, whereby the action of one tappet on the wire upon one of the forked heads will move and bring another forked head into position for the action of a succeeding tappet, substantially as described, and for the purpose specified.

4. In combination, the belt mounted on pulleys or sprocket-wheels and provided with forked heads E, tappet-wire, guide-pulleys for the tappet-wire, and means for transmitting motion from the belt to the planter seed-slides, substantially as and for the purpose specified.

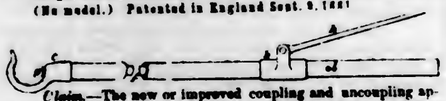
5. The belt D, having forked heads E, adapted to be actuated by a tappet-wire, sprocket-wheels C C', in combination with the shaft G, to which said belt imparts an intermittent rotary motion, whereby said shaft may impart movement to the planter seed-slides with intervals of rest between each movement of said seed-slides.

6. In combination with the belt having heads E, with side ledges, lugs, or projections, *c''*, and the sprocket-wheels, the side frame-bars, *b b*, having grooves *b''*, in which the ledges *c''* slide to hold the belt from rising while a forked head is in contact with a tappet on the wire, substantially as and for the purpose specified.

7. A tappet for corn-planter check-row tappet-wires formed of a blank, K, with holes *k'*, which holes form a hole, *k'''*, transverse to the hole *l*, both formed by closing the blank, substantially as and for the purpose specified.

8. In combination with sections of wire having interlocking eyes as *w''*, a tappet-ball having holes *l* and *k'''* transversely to each other and adapted to receive said eyes on the sections of wire, substantially as and for the purpose specified.

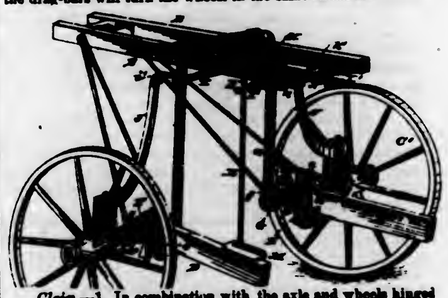
256,611. CAR-COUPLING TOOL. BENJAMIN ASKEW, Edinburgh, County of Mid-Lothian, Scotland. Filed Feb. 13, 1882. (No model.) Patented in England Sept. 9, 1881.



Claim.—The new or improved coupling and uncoupling apparatus, consisting of the combination of the tubes *a'*, hook *c*, spring *d*, rod or tube *f*, and lever A, substantially as hereinbefore described, and shown on the sheet of drawings hereunto annexed.

256,612. CULTIVATOR. ROBERT T. AVERY, Galesburg, Ill., assignor of one-half to Cyrus H. Avery, same place. Filed Sept. 9, 1881. (Model.)

Brief.—The wheels may turn to the right or left on vertically-hinged spindles. The arms from the spindles are linked to a pivoted cross-bar, and may be operated by a lever or connected by other bars and rods to the drag-bars, so that the lateral swing of the drag-bars will turn the wheels in the same direction



Claim.—1. In combination with the axle and wheels hinged thereto and arms projecting from the wheel-spindles, the transverse pivoted bar I and links *i'*, connecting the arms J, a bar, I', extending rearwardly from the bar I, by means of which the bar I may be oscillated and the wheels deflected, substantially as and for the purpose specified.

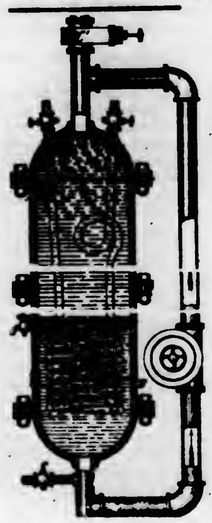
2. In combination with the axle or frame having swinging wheels with arms J, the bars I I', sliding bar K, and plow-beam D, the rods or arms L, adapted to move the wheels by the lateral movement of the plow-beam, substantially as and for the purpose specified.

3. In combination with the bars I I', for operating the swinging cultivator-wheels, and with the sliding bar K, the rigid bar N, to which the bar I' may be locked, substantially as and for the purpose specified.

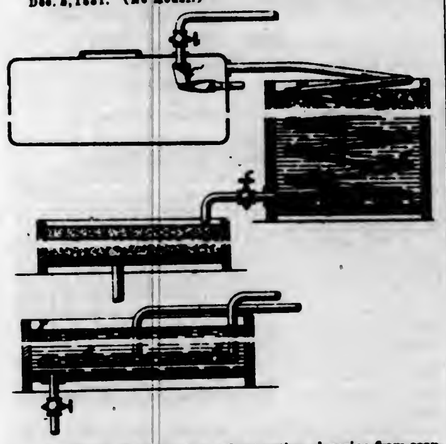
4. In combination with the sliding bar K and plow beam or gang, the rod L, adapted to move freely in the bar K to permit the plow-beam to swing vertically without moving the bar K, and to move said bar K when the plow-beam is swung laterally, substantially as and for the purpose specified.

5. In combination with the axle or frame having swinging wheels with arms J, the links *i'*, bars I I', sliding bar K, having a series of adjusting-holes, *k'''*, and plow-beam D, the rods or arms L, adapted to move the wheels by the lateral movement of the plow-beam, substantially as and for the purpose specified.

256,613.



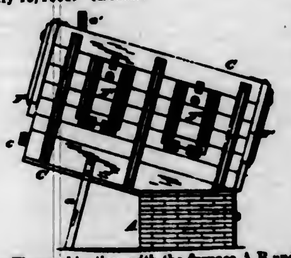
256,614. PROCESS OF EXTRACTING GLYCERINE FROM SALT SOAP-LYE. BENJAMIN T. BABBITT, New York, N. Y. Filed Dec. 5, 1881. (No model.)



Claim.—1. In the process of extracting glycerine from soap-lyes, the atomizing or spraying of the lyes by superheated steam, substantially as specified.

2. The process of extracting glycerine from soap-lyes, consisting in first atomizing or spraying the lyes by means of superheated steam, next condensing the spray, next filtering the liquid resulting from condensation, and finally evaporating the water contained in the liquid, substantially as specified.

256,615. FRUIT-DRIER. WILLIAM J. BACON, Addison, Mich. Filed July 18, 1881. (Model.)



Claim.—The combination, with the furnace A B and inclined casing C, having flues D and trays E, arranged as described, of the inclined hot-air exit-pipe *c*, arranged under the inclined roof of the casing, and provided with a series of inlets, *c' c' c'*, and outlet *c'*, substantially as shown and specified, for the purpose set forth.

256,616. MECHANISM FOR TRANSMITTING POWER FROM WINDMILL-SHAFTS. A. S. BARNS, Evansville, Wis. Filed Mar. 3, 1882. (No model.)

Claim.—1. In a windmill, the combination, with the wind-wheel shaft carried by a turn-table, of an endless-belt connection between the same and the driven mechanism, substantially as set forth.

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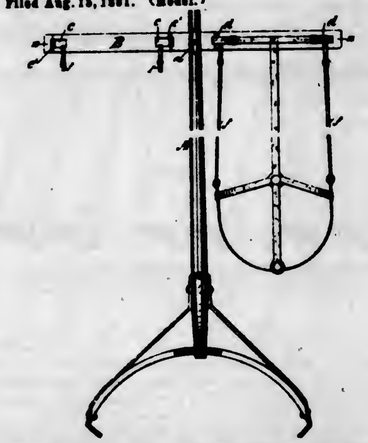


2. In a windmill, the combination, with the tower, the turn-table, and the wind-wheel shaft, of a driven mechanism located at or near the bottom of the tower, and an endless-belt connection between the wind-wheel shaft and such driven mechanism, substantially as set forth.

3. In a windmill, an endless-belt connection with the wind-wheel shaft, in combination with means for untwisting or permitting the untwisting of the belt without reversing the driven mechanism, substantially as set forth.

4. In a windmill, the combination of the endless-belt connection with means operated by hand for untwisting or permitting the untwisting of the belt without reversing the driven mechanism, substantially as set forth.

256,617. WAGON-YOKE. WILLIAM A. BARRE, Coloma, Mich. Filed Aug. 18, 1881. (Model.)



Claim.—1. An improved yoke for supporting tongues of wagons, adapted to be suspended under the horses from the back-pads, substantially as and for the purpose set forth.

2. The yoke B, formed with the slots *c*, and provided with the pins *c'*, whereby the straps *d d* and the haldback-straps *f f* may be attached to it, substantially as and for the purposes set forth.

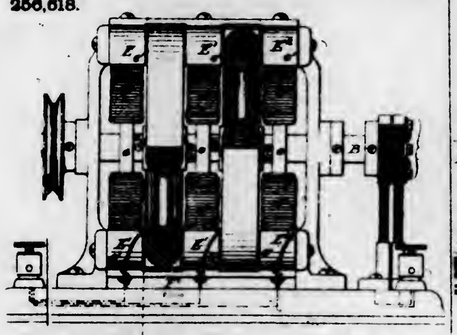
3. The combination, with the short pole A, of the yoke B, pivoted to the said pole and provided with the straps *d f*, substantially as and for the purpose set forth.

256,618. DYNAMO-ELECTRIC MACHINE. GEORGE H. BARUS, New York, N. Y. Filed July 29, 1881. (No model.)

Brief.—The field and armature magnets are formed of flat cores with enlarged segmental pole-pieces, and wound with wire nearly flush with the projections of the pole-pieces. The magnets are arranged side by side, the armature-magnets being fixed to the shaft of the machine. The poles of the field-magnets are connected by iron plates. The machine may be connected in multiple arc or series.

Claim.—1. An electro-magnet for dynamo-electric machines or electric motors, consisting of a broad flat web of iron with en-

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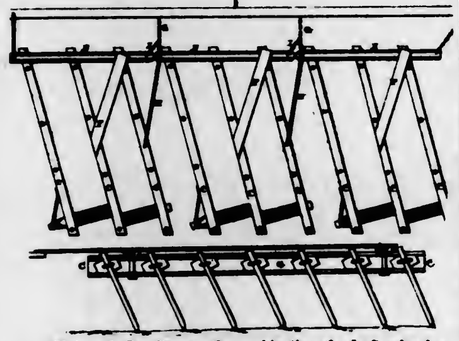


larged polar extensions, and wire wrapping nearly flush with the flat sides of said polar extensions.

2. A dynamo-electric machine or electric motor having a series of stationary field-magnets and rotary armatures arranged side by side, and each consisting of a broad flat web of iron with enlarged polar extensions, and wire coils nearly flush with the flat sides of said polar extensions, all substantially as described.

3. The combination of a series of field-magnets, E E', &c., of a dynamo-electric machine or electric motor having segment-shaped poles, with similarly-shaped rotary armatures, and a strip or strips of iron connecting the curved faces of the segmental poles of the field-magnets, substantially as specified.

256,619. HARROW. JAMES H. BARLEY, Sedalia, Mo. Filed Jan. 21, 1881. (No model.)



Claim.—1. In a harrow, the combination of a draft rod or bar with the sections of the harrow, the chains G, which unite the sections to the draft-rod, and the chain I, which unites the corner of the adjacent section to the chain G, substantially as shown.

2. In a harrow, the combination of the draft-rod, the chains G I, and the diagonal brace or chain, which unites the two sections of the harrow together, substantially as described.

3. In a harrow, the extensions E, made to project beyond the two edges of the sections of the harrow, with the chains G, which are connected to said extensions and unite the sections of the harrow to the draft-bar, substantially as set forth.

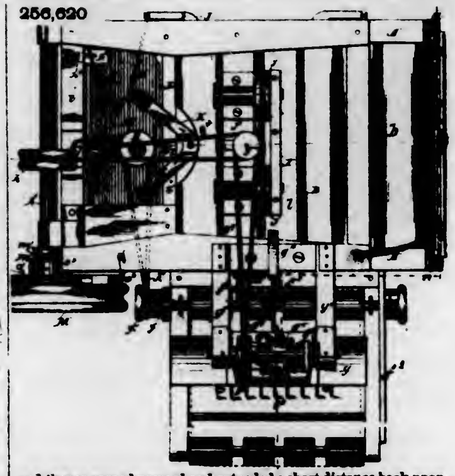
4. In a harrow, the combination, with the double-flanged beam C, of the polygonal stop-blocks J, and the harrow-tooth clamped thereto and against the edges of the flanges, which act as stops to the movement of the blocks, substantially as specified.

5. In a harrow, the combination of a tooth-holder with the double-flanged beam, the plate being clamped thereto and inserted between the flanges of the beam which holds the plate and tooth in position, substantially as and for the purpose shown and described.

256,620. GRAIN-FEEDER AND BAND-CUTTER FOR THRASHING-MACHINES. THOMAS J. BARLOW, Bald Knob, Tex. Filed July 28, 1881. (Model.)

Claim.—1. The combination, with the traveling apron B, having hinged rake-heads provided with teeth capable of projection and retraction through its slots, and provided with arms projecting within the apron, of the ways D, inclined upon their lower sides,

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and thence carved upward and extended a short distance back upon the upper surface of the frame, supporting the apron and co-operating with the aforesaid arms of rake-head, substantially as and for the purpose specified.

2. The combination, with the apron B, having hinged rake-head provided with the teeth C, projecting through a perforated slot, b^3, therein, and provided with arms b^4 and stops b^5, of the ways D, having their forward ends curved upward and carried back upon the apron-supporting frame past the forward end of the latter, and adapted to engage with the aforesaid arms of the rake-head, substantially as and for the purpose set forth.

3. The combination, with the apron-supporting frame E and board d, of the crank-shaft d', lever e, rods e' e^2, the adjusting-screw e^3, and the slide e^4, substantially as and for the purpose set forth.

4. In a grain-feeder for threshers, the combination, with the pivoted bar or board J, arranged at one side of the feeder, of the spring holding it in its vertical position, the rod h', bell-crank lever K, hooked rod h^2, bolt h^3, and the feed-table having one of its shafts or rolls provided with a fixed and a loose pulley, substantially as and for the purpose set forth.

5. In a grain-feeder for threshers, the combination, with the spring check-board J, arranged at one side of the feeder, of the rods h' h^2, lever K, spring h^3, hooked rod h^4, pulleys K' K'', the belt h^5, and the feed-table having one of its rolls provided with a fixed pulley, f', and a loose pulley, f, substantially as and for the purpose set forth.

6. The combination of the toothed bar G', cutter proper, g^2, crank-shaft g^3, the beveled pinions g^4 g^5, shaft g^7, frame g', belt g^8, and pulleys g^9 g^{10}, substantially as and for the purpose set forth.

7. The combination, with the shaft h' of the feeder, having a fixed disk provided with a pin or projection, o', of the pulley M, having the weights n, spring r, levers N o^4, wire o^5, and arm o, substantially as and for the purpose specified.

8. The combination, with the shaft h', having the disk provided with the projection o', and the feeder-frame having the projection q, of the pulley M, having eye P, weights n, disk n^2, spring r, lever N, arm o, lever o^4, wire o^5, and catches o^6 o^7, substantially as and for the purpose specified

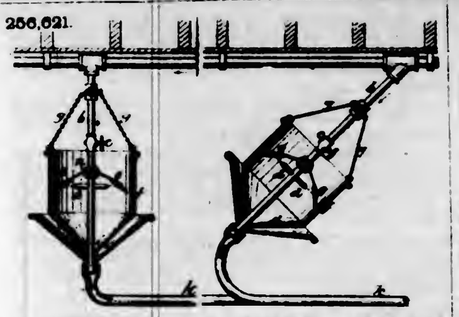
256,621. ATOMIZER. JAMES BROOS, Paterson, N. J. Filed Mar. 17, 1882. (No model.)

Brief.—A casing surrounds the spraying-tubes. This casing is open at its top, closed at its bottom, and adjusts vertically with relation to the spray-tube. An adjustable deflector is placed above the spray-jet and within the surrounding casing. These attachments prevent particles of fluid of a palpable size from reaching the room that is to be moistened.

Claim.—1. In an air-moistener, the combination, with a spraying or atomizing jet, of a casing inclosing the same and adapted to permit the impalpable misty particles to escape and diffuse into the air while arresting or retaining the heavy or palpable particles, substantially as herein set forth.

2. In an air-moistener, the combination, with spraying or atomizing jets, of a casing inclosing the same, covered or closed at

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the bottom and open at the top, substantially as and for the purpose set forth.

3. The combination, in an air-moistener, with a spraying or atomizing jet, of a casing inclosing the same, covered or closed at the bottom and open at the top, and a waste-pipe or drain connected with the bottom of the casing, substantially as herein set forth.

4. An improved air-moistener formed by the combination of a spraying or atomizing jet, a casing inclosing the jet, closed or covered at the bottom and open at the top, and a deflector placed over the jet within the casing, substantially as herein shown and described.

5. The combination, in an air-moistener, of a spraying or atomizing jet, a casing inclosing the same, and a catch-basin placed under the said casing, substantially as and for the purpose set forth.

6. The combination, with an atomizing or spraying jet, of a casing placed about the same, open at the top, covered at the bottom, and means for adjusting said casing up or down with relation to the jet.

7. In an air-moistener, the combination, with a spraying or atomizing jet, a casing inclosing the same, open at the top or sides, and a deflector placed over the jet within the casing, of means for adjusting the deflector up or down with relation to the jet, substantially as herein set forth.

8. In an air-moistener, the combination, with the jet-pipe b, of the casing f, suspenders g, and adjustable clasping-sleeve h, arranged and operating substantially as and for the purpose set forth.

256,622. METHOD OF MANUFACTURING CRYSTALLIZED ANHYDRIDE OF GRAPE-SUGAR FROM A WATERY SOLUTION OF GRAPE-SUGAR. ARNO BEHR, Jersey City, N. J. Filed Feb. 28, 1882. (No specimens.)

Brief.—Improvement on process for which Letters Patent No. 250,333 were issued December 6, 1881.

Claim.—The process of manufacturing crystallized anhydrous grape-sugar herein described, which consists in concentrating a watery solution of grape-sugar of a purity between eighty-five and ninety-five until it contains only about thirteen per cent. of water, and in introducing such solution into molds of ordinary construction, and keeping it, while in the molds, in a room in which the temperature is maintained at about 90° Fahrenheit for from one to two weeks, or until thorough crystallization has taken place, and in then expelling the liquid from the crystallized product by means of a centrifugal machine, in which the molds are placed.

256,623. PROCESS OF MANUFACTURING CRUSHED ANHYDROUS GRAPE-SUGAR. ARNO BEHR, Jersey City, N. J. Filed Feb. 28, 1882. (No specimens.)

Brief.—Improvement on process described in Letters Patent No. 250,333, dated December 6, 1881.

Claim.—The herein-described process of manufacturing crystallized anhydrous grape-sugar, which consists in first producing a coarse crystallization of anhydrous grape-sugar by subjecting a concentrated watery solution of grape-sugar to a temperature of about 90° Fahrenheit for a sufficient period of time to effect complete crystallization, and in then crushing the crystallized mass, and finally draining it in a centrifugal machine.

256,624. LAMP. DANIEL BENNETT, Baldwin Township, Allegheny County, Pa. Filed Jan. 20, 1882. (No model.)

Claim.—1. A glass-lamp fount, A, having a socket, a, on its under side, with separate inclines or thread-sections a' of glass formed on the inside wall of such socket, substantially as set forth.

2. A glass lamp having in the base of its bowl a socket, a, with separate inclines or thread-sections a' of glass on the side wall of the socket, and a glass stem, B, with threaded glass pin b, adapted to screw into the socket a, substantially as set forth.

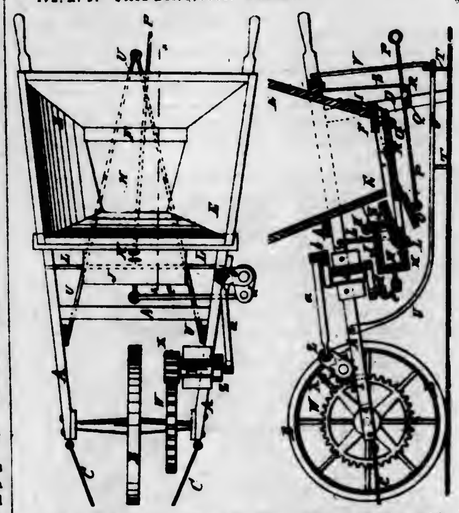
256,624.



3. A glass lamp having a separable bowl, stem, and foot formed of glass, the connections between such parts being formed of threaded glass pins and sockets, the latter having separate inclines or thread-sections on their side walls, substantially as set forth.

4. A lamp having a separable glass bowl and stem, the connection being formed of threaded pin b and socket a, with part threads a' thereon, and with a drip-cup formed of glass integral with and on the upper end of the stem, substantially as and for the purposes set forth.

256,625. FERTILIZER-DISTRIBUTER. JEROME L. SHERRY, Flatlands, assignor to himself and George B. Forrester, Brooklyn, N. Y. Filed Dec. 8, 1881. (Model.)



Claim.—1. In a fertilizer-distributer, the combination, with the hopper E, of the vibrating distributing-plate H, pivoted at its rear end to the under side of the hopper, and provided with adjustable gage-valve M and stop-valve O, and the means for vibrating the said plate, substantially as and for the purpose set forth.

2. In a fertilizer-distributer, the combination, with the hopper E, provided with the strip F in its bottom, of the vibrating distributing-plate H, pivoted to the said strip at its rear end, and connected to the hopper by its flexible strip I, and provided with the adjustable gage-valve M and stop-valve O, and means for vibrating the said distributing-plate, substantially as and for the purpose set forth.

3. In a fertilizer-distributer, the combination, with the vibrating distributing-plate H, provided with the discharge-opening, and the rod Q, attached to the legs D, of the stop-valve O, hinged to the said plate, the rod P, provided with the stop R, and the slotted upright S, substantially as and for the purpose set forth.

4. In a fertilizer-distributer, the combination, with the frame A and the toothed bar U, of the swinging bail V, substantially as herein shown and described, whereby the said toothed bar can be held down to its work and supported above the ground, as set forth.

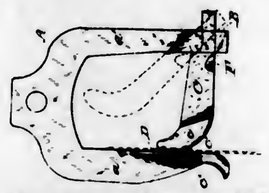
5. In a fertilizer-distributer, the combination, with the frame A and the open-bottom hopper E, of the vibrating distributing-plate H, pivoted at its rear end to the hopper, and provided with a discharge-opening and regulating-valves, the bent rod L, and the means for vibrating the said plate, substantially as and for the purpose set forth.

6. In a fertilizer-distributer, the combination, with the drive-wheel B, the hopper E, and the vibrating distributer-plate H, pi-

oted to the hopper, and provided with the end plate, K, of the gear-wheels W X, the cranks Z *b d*, and the connecting-rods *a c*, substantially as and for the purpose set forth.

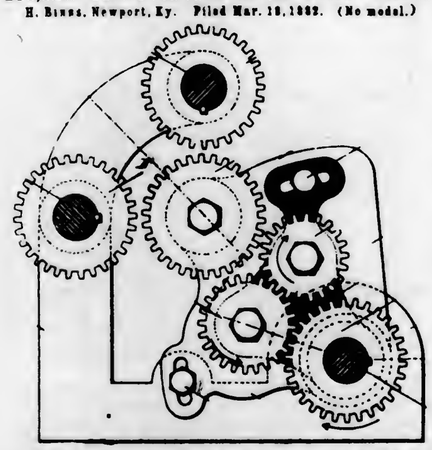
7. In a fertilizer-distributer, the combination, with the vibrating distributing-plate H, projecting in front of the hopper and covered by the board J, of the gage-valve M, hinged to the said plate, and the screw N, substantially as and for the purpose set forth.

256,626. TEMPORARY BINDER. JOHN A. BURSTLER, Marion, Pa. Filed Feb. 13, 1882. (Model.)



Claim.—As an improvement in temporary binders, the combination, with the casting A, having the arm *a'*, in the lower end of which is formed an inclined mortise or slot, B, of the adjustable and removable clamping-jaw C, having the entire surface of its inner end curved, and provided near its rear end with lateral nibs F, to prevent it from entering too far into slot or mortise B, substantially as and for the purpose specified.

256,627. DEVICE FOR TRANSMITTING MOTION. WILLIAM H. BINNS, Newport, Ky. Filed Mar. 18, 1882. (No model.)



Claim.—The six gears and two tumblers combined substantially in the manner set forth.

256,628. ROLL FOR GRINDING-MILLS. RICHARD BIRKHOLZ, Milwaukee, Wis., assignor to Edward P. Allis, same place. Filed Dec. 8, 1881. (No model.)



Claim.—1. In a grinding-roll, the tubular porcelain body having the smooth unbroken ends with beveled faces, in combination with the recessed end plates having corresponding unbroken surfaces, and the means for drawing said plates firmly against the ends of the body, as described and shown, whereby the body is maintained in a central position and prevented from fracturing.

2. The combination of the shaft, the end plates mounted and secured against rotation upon the shaft and provided with smooth tapered recesses, the porcelain body having smooth tapered end, and the tie-rods extended through the body and the end plates, as shown.

3. As a new article of manufacture, a tubular cylindrical porcelain body having on its end the unbroken, squared, and beveled surfaces *a b*, as shown and described.

4. The combination of the porcelain body having the flat and beveled surfaces at its ends, the smooth recessed end plates, the fastening devices, and the washers inserted between the body and end plates and bearing between both the flat and the beveled surfaces, as shown.

5. The porcelain roll having smooth conical ends seated in and driven by frictional communication with correspondingly-recessed end plates urged forcibly toward the roll, substantially as described and shown.

256,629. COMBINED PENCIL-POINT PROTECTOR AND TWINE-CUTTER. CLARK W. BOMAR, New York, N. Y., assignor to Joseph Rockendorfer, same place. Filed Jan. 23, 1882. (No model.)



Claim.—The point-protecting tube provided with an internal blade, *d*, and twine-admitting slot or opening *f*, substantially as hereinbefore shown and described.

256,630. SEPARATOR FOR STARCH. WILLIAM T. BOOTH and ALEXANDER H. BELL, New York, N. Y.; said Bell assignor to said Booth. Filed Oct. 5, 1881. (No model.)



Claim.—1. In a starch-separator, the combination, with supports provided with rollers, of the shaking sieve-frame having guide-bars sliding on said rollers, substantially as set forth.

2. In a starch-separator, the combination, with the frame A, the drive-shaft *d*, the eccentric *h*, and the screen B, provided with yoke *i* at its upper end, of the springs *l*, interposed between the said screen and fixed guides at each end of the screen, substantially as and for the purpose set forth.

3. In a starch-separator, the combination, with the frame A, provided with the grooved rollers *b*, the shaft *d*, the eccentric *h*, and the guides *m*, of the screen B, provided with guide-irons *e* and the yoke *i*, and the springs *l*, interposed between the screen and said fixed guides, substantially as and for the purpose set forth.

256,631. RAILWAY-CAR. CALEB H. BRADLEY, West Chester, Pa. Filed Feb. 21, 1882. (No model.)



Claim.—In a car-roof, the man-opening C, having the raised margin *d*, the flanged cover E, the catches *n*, and the hooks G, having handles *g* projecting above the roof, substantially as specified.

256,632. PITCHFORK. FRANCIS L. BRANDON, Hicksville, Ohio. Filed Mar. 2, 1882. (No model.)

Brief.—A single strip forms the end tines and is arched in the middle to form the back of the fork. The middle tines pass through openings in the cross-piece, are turned upward, and attached to the arch.



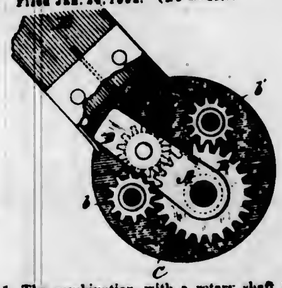
Claim.—1. The single strip or piece A, forming the end tines, B B, and bowed or arched at its center to form an upturned back, D, as and for the purpose specified.

2. The combination, with the arched piece A, forming the two end tines, and with the middle tines of the cross brace or strip provided with openings through which the tines pass, and secured on the latter, as herein shown and specified.

3. The combination, with the single strip A, forming the end tines, B B, and bowed or arched at its middle portion to form a back, D, and the cross-piece E, having a series of openings, F, of the middle tines, the rear ends of which are passed through these openings and then turned upwardly and secured to the arch C, as herein shown and specified.

4. The combination of the arched piece A, forming the end tines, B B, the cross piece or strip E, having a series of openings, F, the middle tines having upturned ends, and the rod or handle secured to the arch and cross-piece, substantially as herein shown and described.

256,633. MECHANICAL MOVEMENT. JAMES B. BRAY, Waverly, N. Y. Filed Jan. 24, 1882. (No model.)

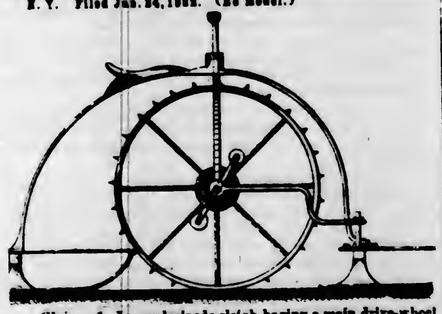


Claim.—1. The combination, with a rotary shaft having a rigid wheel thereon, a loose wheel meshing with the said rigid wheel and arranged on a fixed center, of a swinging frame hung upon the said shaft and having a loose wheel or its equivalent, as described, meshing against the said rigid wheel and adapted to jam between it and the said wheel on the fixed center, as and for the purpose described.

2. The combination, with a rotary shaft having a rigid toothed wheel thereon, a loose pinion fixed on a stationary bearing and gearing with said rigid wheel, and a swinging frame hung upon the rotary shaft and carrying a loose pinion, also gearing with the rigid wheel, and adapted, as described, to jam the same with the relatively fixed pinion, as described.

3. The combination, with the frame-plates C C and the arm E, rigidly attached thereto, of the rotary shaft A, carrying rigid wheel B, the pinions *b b'*, arranged on fixed centers on opposite sides of the swinging frame and in gear with the wheel B, and the swinging frame D, having a pinion, *a*, adapted to jam with either of the wheels *b b'*, to rotate the main shaft in either direction, as described.

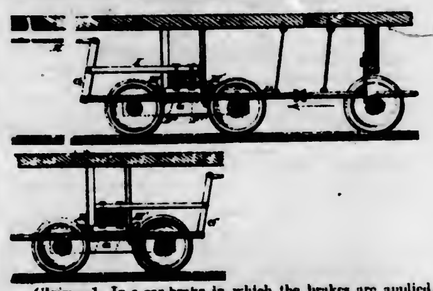
256,634. VELOCIPEDE-SLEIGH. JAMES B. BRAY, Waverly, N. Y. Filed Jan. 24, 1882. (No model.)



Claim.—1. In a velocipede-sleigh having a main drive-wheel and a pair of front and rear runners, the combination, with said drive-wheel arranged to turn on a vertical center, of one of said pair of runners arranged on an independent vertical center and connected with the drive-wheel for a parallel deflection, substantially as shown and described.

2. In a velocipede-sleigh, the combination, with the drive-wheel and the pivoted runners arranged to turn about independent vertical centers, of the double crank-pedals E and the rods F, connected at one end to the cranks at a point concentric with the wheel and by their other ends to the pivoted runners, substantially as described.

256,635. CAR-BRAKE. JAMES B. BRAY, Waverly, N. Y. Filed Jan. 24, 1882. (No model.)

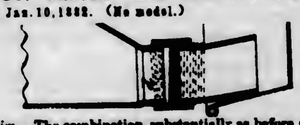


Claim.—1. In a car-brake in which the brakes are applied by pressure upon a buffer-rod transmitted from the engine, the combination of short buffer-rods extending through the trucks, the brake-beams having a direct connection with the buffer-rods through springs, a traction-rod extending from truck to truck for transmitting the movement of one buffer to the other, and levers for connecting the buffer-rods to the traction-rod, as and for the purpose described.

2. The combination of the brake-beams, the short buffer-rods extending through the trucks and passing through a guide attached to the brake-beams, and having rigid collars *a*, spiral springs arranged between the collars and the brake-beams, the levers G G', and the traction-rod H, as and for the purpose described.

3. The combination of the brake-beams, the short buffer-rods with collars *a*, extending through the trucks and passing through a guide attached to the brake-beams, the springs arranged between the collar *a* and the brake-beams, the fulcrum-bar I, attached to the truck-beam, the levers G G', and traction-rod H, substantially as shown and described.

256,636. HANGER. ORRIN CLARK BURDICT, Buffalo, N. Y. Filed Jan. 10, 1882. (No model.)



Claim.—The combination, substantially as before set forth, of the open feed-pan, the grain-hopper, and the adjustable screw-nozzle of said hopper.

256,637. SASH-HOLDER. JAMES CAMPBELL and GIBSON SIMONSON, Harrison, Ohio. Filed Mar. 1, 1882. (No model.)



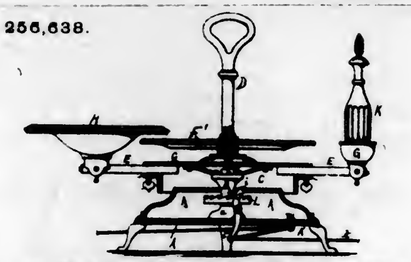
Claim.—1. In a sash-fastener, the combination, with the lock-plate provided with the lug G, of the pivoted cam E, provided with the semicircular series of teeth F, the pivoted lever B, projecting outside the lock-plate and above the lug thereon, and having the segmental rack-teeth D, engaging the teeth on the cam, and the spring H, interposed between the lug on the lock-plate and the pivoted lever, all substantially as shown and described.

2. In combination with the case A, spring-lever B, geared to cam E, the segmental slot I, and screw K, for locking the parts in position, substantially as herein set forth.

256,638. SERVER. ROBERT J. CARSON, Detroit, Mich., assignor of one-fourth to Edward Sheldon Norton, St. Paul, Minn. Filed Jan. 24, 1882. (No model.)

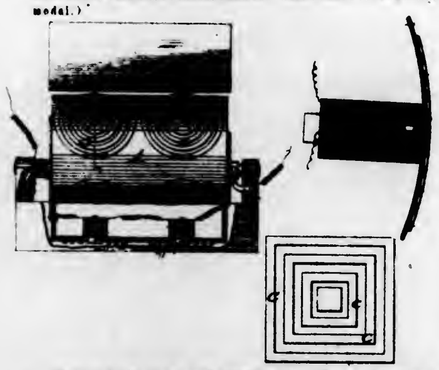
Claim.—1. The combination of the stand A and revolving plate C with the adjustable frames F F' G H, substantially as set forth.

256,638.



2. The stand A, revolving plate C, adjustable frames F F' (I I), and means for revolving said plate and adjustable frames upon said stand, substantially as set forth.

256,639. MAGNETIC ORE-SEPARATOR. SAMUEL E. ST. O. CHAPLEAU, Ottawa, Ontario, Canada. Filed Jan. 26, 1882. (No model.)



Claim.—1. In a magnetic ore-separator, the combination of an electro-magnet and a series of supplemental attractive surfaces separated from the magnetic pole and arranged in relation thereto, substantially as described and shown.

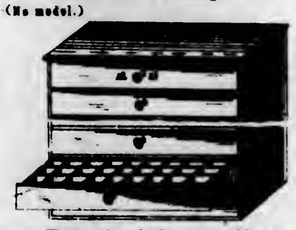
2. In an ore-separator, the combination of a magnet and a series of supplemental surfaces of magnetic material insulated and disconnected from the magnet, but arranged in relation thereto, substantially as shown.

3. In an ore-separator, the combination of a hopper, a magnet, and series of magnetic rings or plates encircling the pole of the magnet, as and for the purpose described.

4. The combination, substantially as described, of the revolving cylinder provided with the series of electro-magnets and supplemental surfaces, as described, and means whereby the magnets are rendered active and inactive alternately.

5. The combination of the revolving cylinder, the electro-magnets and supplemental surfaces mounted thereon, the feed-hopper, the two receptacles, and means, substantially as described, for magnetizing and demagnetizing the magnets.

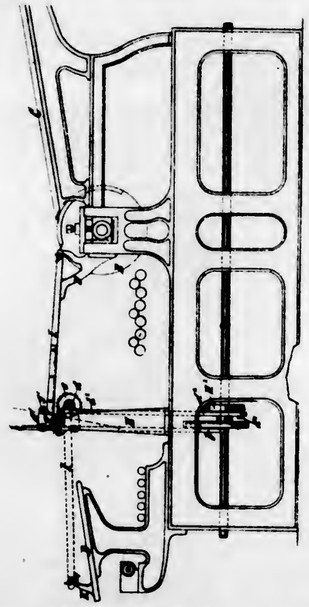
256,640. CASE OR CABINET FOR THE DISPLAY OF WATCH-CRYSTALS. NORMAN CLARK, Sterling, Ill. Filed Nov. 11, 1881. (No model.)



Claim.—1. The watch-maker's case or cabinet provided with trays or drawers B, having rectangularly-arranged compartments marked and numbered, respectively, to indicate convexities and diameter of crystals, substantially as set forth.

2. A tray for watch-crystals, having compartments regularly marked and numbered from left to right to indicate the convexities and from front to rear to indicate the diameters or the reverse arrangement, substantially as set forth.

256,641. DELIVERY APPARATUS FOR PRINTING-PRESSES. CALVERT B. COTTRELL, Westerly, R. I. Filed Dec. 24, 1881. (No model.)



Claim.—1. The combination, with the impression-cylinder and the receiving-table arranged in front thereof, of bars or rods carrying a gripper-shaft and grippers and having both a swinging-over and a longitudinal movement, substantially as and for the purpose herein described.

2. The combination, with the impression-cylinder and the receiving-table arranged in front thereof, of bars or rods carrying a gripper-shaft and grippers having a swinging-over motion, and also having a longitudinal movement back and forth during each swinging movement in either direction, substantially as and for the purpose herein described.

3. The combination, with a shaft having a rotary motion alternately in opposite directions and a concentric tubular shaft having a similar but independent motion, of frames fixed on the first-mentioned shaft, bars or rods carrying a gripper-shaft and grippers and movable longitudinally in said frames, and wheel-work for imparting to said bars or rods their longitudinal movements, substantially as and for the purpose herein described.

4. The combination of the shaft F, sleeve G, pinion *a*, and frame *g*, fixed to said shaft, pinions *c' f*, fixed to said sleeve, bars or rods I, connected wheels *d' e*, and rack-bars *b' d'*, all substantially as herein described.

5. The combination, with delivery-grippers and a gripper-shaft, of toggle-links for opening said grippers and holding them open, and springs for closing them, substantially as herein described.

6. The combination, with a longitudinally-divided gripper-shaft and arms projecting from the two parts thereof, and grippers also attached to both parts of said shaft, of toggle-links connecting said arms and serving to keep the grippers apart, and springs for drawing them together, substantially as herein described.

7. The combination of the divided gripper-shaft J J', the grippers *i i'*, the arms *h k'*, the toggle-links *l l*, and the stops *m q*, substantially as herein described.

8. The combination, with gripper-carrying rods or bars, sliding boxes fitted thereto, a gripper-shaft fitted to said boxes, and pairs of grippers attached to said shaft, of converging fingers attached to said gripper-shaft and cams upon said rods or bars for holding said fingers closed, substantially as herein described.

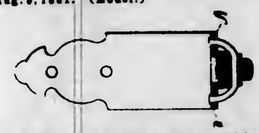
256,642. NUT-LOCK. WILLIAM COURTENAY, New York, N. Y., assignor to the Gelatinized Fibre Company, of New York. Filed Jan. 28, 1882. (No model.)



Claim.—1. A compound washer having a body, A, of fiber, and upon one side only of the body A a flanged cap, B, secured to it by pinching or crimping.

2. A compound washer having a body, A, of fiber, and a flanged cap, B, made of thin metal, so that the edges of cap may tend to bend up around and lock the nut when the latter is screwed home, substantially as described.

256,643. TRUNK-CASTER. JOHN J. GOWELL, Newark, N. J. Filed Aug. 9, 1881. (Model.)



Claim.—1. In a trunk-caster, a U-shaped journal carrying a roller, the former passing through the latter and having its extremities upwardly returned and adapted to be secured, substantially as and for the purposes herein set forth and shown.

2. In combination in a trunk-caster, a U-shaped journal carrying a roller, and a plate adapted to receive the extremities of said journal, arranged and operating substantially as and for the purposes set forth and shown.

3. In combination, a plate having bearings for the horizontal part of the U-shaped journal, and a U-shaped journal the horizontal portion of which carries a roller, the whole being arranged and operating substantially as and for the purposes herein set forth and shown.

4. In a trunk-caster, a U-shaped roller-bearing journal riveted to a plate perforated or recessed to admit the roller, substantially as and for the purposes set forth and shown.

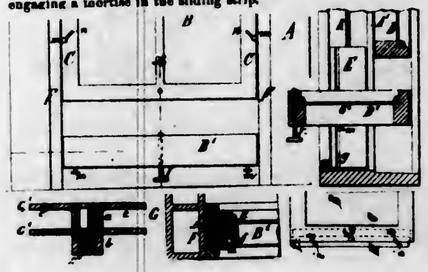
5. The combination of plates A B, the latter having depending bearings, and a U-shaped journal carrying a roller, all of said parts being arranged and operating substantially as and for the purposes herein set forth and shown.

6. In combination in a trunk-caster, the plates A B, the latter having depending recessed bearings, and a U-shaped journal passing through said plates and securing all said parts together, the whole being arranged and operating substantially as and for the purposes set forth and shown.

7. The combination, in a trunk-caster, of the plate A, perforated to admit the roller, the plate B, having depending journal-bearings passing through said perforated plate, and a U shaped journal, all of said parts being arranged and operating substantially as herein set forth and shown.

256,644. WINDOW-SASH. JOHN F. COX, Brooklyn, N. Y. Filed Feb. 18, 1882. (No model.)

Brief.—The sashes are pivoted to sliding strips by means of a bolt passing through a plate secured to the sliding strip and having a collar of smooth interior and engaging in a plate on the sash having a collar of threaded interior. The sash is locked to the sliding strip by a diagonally-sliding plate in a mortise in the sash engaging a mortise in the sliding strip.

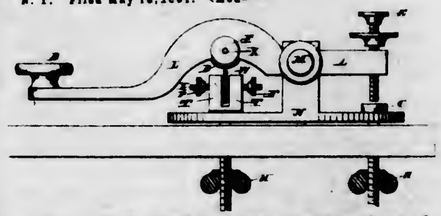


Claim.—1. A window-sash constructed substantially as herein shown and described, consisting of mortised sash B, mortised sliding strips E, diagonally-moving tongues H, and pivoting devices G, all arranged and operated as set forth.

2. The combination, with the sash B, having edge-mortises *f*, diagonal slots *a*, and pins *b*, and sliding strips E, having vertical mortises *g*, of the tongues H, having diagonal slots *i*, substantially as herein shown and described, said tongues being adapted for holding the sash and sliding strips parallel with each other, as set forth.

3. In a window-sash, as a means for pivoting the sash to the side sliding strips, the combination therewith of the pivoting device G, consisting of plate G', provided with collar *c*, of smooth interior plate, G², provided with collar *b*, of screw-threaded interior and screw-bolt G³, arranged and operating substantially as herein shown and described.

256,645. TELEGRAPH-KEY. GEORGE CUMMING, New York, N. Y. Filed May 10, 1881. (Model.)



Claim.—1. The combination, with the operating-lever and base of a telegraph-key, of two rollers or disks, one on the lever and the other on the base, said rollers having a peripheral contact and serving as the hammer and anvil for said key, substantially as described.

2. The combination of the lever and base of a telegraph-key with two disks having a peripheral contact, and arranged at approximately right angles to each other, and serving as the hammer and anvil for said key, substantially as described.

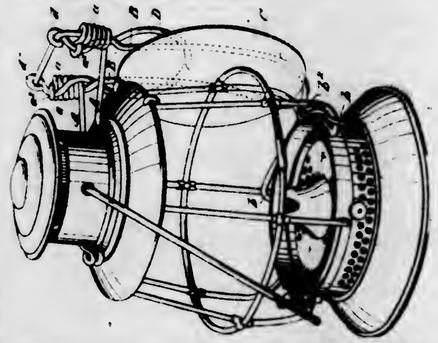
3. The combination of lever L, standard T, wheels or disks D and W, axles X X, and set screws or nuts F F, substantially as and for the purpose set forth.

256,646. TELEGRAPHIC ELECTRODE. GEORGE CUMMING and CLARA M. BRIESENDORF, New York, N. Y. Filed Aug. 12, 1881. (Model.)



Claim.—In electrical instruments, co-operating peripheral contact-electrodes arranged in planes at approximately right angles to each other and having their contact-surfaces brought to a mere line or edge, substantially as described.

256,647. LANTERN-CARRIER. ANDREW J. CURTIS, Monroe, Mo., assignor of one-half to Fred. L. Palmer and Allen M. Bashelder. Filed Mar. 7, 1882. (Model.)

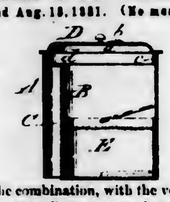


Claim.—1. A lantern-carrier consisting of clasps A provided with spiral springs *a* and eyes *a'*, an upright frame, B, having two posts secured together near their lower ends, and then bent out-

ward and provided with hooks *b*, and a holder, D, having eyes *d*, and passing through the eyes a^2 of the clasps, substantially as and for the purpose herein described.

2. A lantern-carrier constructed substantially as above described, and provided with a reflector, C, soldered or otherwise secured thereto, substantially as and for the purpose specified.

256,648. CULINARY VESSEL. WILLIAM H. DANIEL, Pottsville, Pa. Filed Aug. 18, 1881. (No model.)

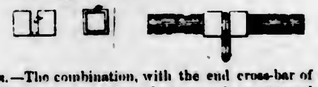


Claim.—1. The combination, with the vessel A, having a partition, B, forming a flue, C, open at each end, of the lid D, provided with a plate, *d*, adapted to cover the upper end of said flue, substantially as specified.

2. The combination of the vessel A, having a partition, B, forming a flue, C, adapted to be opened and closed, the lid D, having an opening, *a*, provided with cover *b*, and the reversible pan E, having a perforated bottom or diaphragm, and provided with two bails, substantially as shown and described.

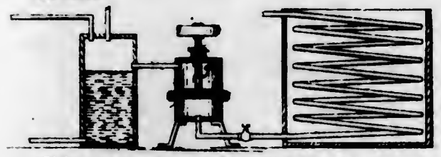
256,649. CHAIN CROSS-BAR. SALOMON DAVIDSON, New York, N. Y. Filed Feb. 24, 1882. (No model.)

Brief.—The coupling-piece engages both the bar and the box by means of openings therein.



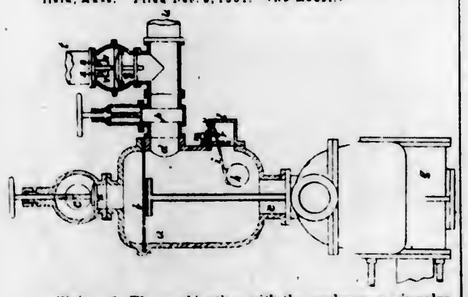
Claim.—The combination, with the end cross-bar of a vest-chain and the ornamental box thereon, each constructed with a transverse opening or recess of the separate transverse coupling-piece engaging the openings or recesses in both the bar and the box, and serving as a medium to connect the bar and box to the vest chain, substantially as and for the purposes described.

256,650. APPARATUS FOR UTILIZING WASTE HEAT IN AMMONIA REFRIGERATING APPARATUS. THOMAS DAVIS and CHARLES E. DAVIS, Indianapolis, Ind. Filed Mar. 17, 1882. (No model.)



Claim.—In an ammonia refrigerating apparatus, the combination therewith of a motor driven by the ammonia-gas discharged from the refrigerator and exhausting into the absorber, substantially as described.

256,651. STEAM-CONDENSER. CHARLES P. DEANE, Springfield, Mass. Filed Dec. 5, 1881. (No model.)

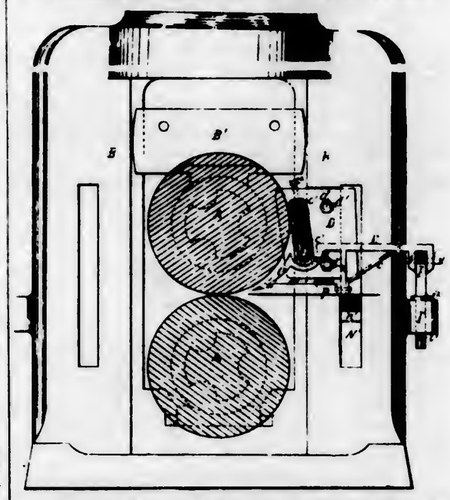


Claim.—1. The combination, with the condenser *a*, air-valve *m*, and float *h*, of the check-valve *q*, arranged and operating substantially as and for the purpose described.

2. The combination, with the condenser *a*, air-valve *m*, float *h*, and lever *i*, of the check-valve *q*, arranged and operating substantially as and for the purpose described.

3. The combination, with the main condenser *a* and the float *h*, placed therein, of the removable side chamber, *l*, the air-valve *m*, placed in the wall of the side chamber, and the lever *i*, connecting the float with the air-valve, all arranged and operating substantially as and for the purpose described.

256,652. MACHINE FOR ROLLING SHEET METAL. ALBERT J. DEMMLER, Pittsburg, Pa. Filed Feb. 2, 1882. (No model.)



Claim.—1. In a machine for cold-rolling thin iron plates, the combination of two reducing-rolls and two feed-rolls parallel with the reducing-rolls, with the passages between such two sets of rolls in different planes, substantially as and for the purposes set forth.

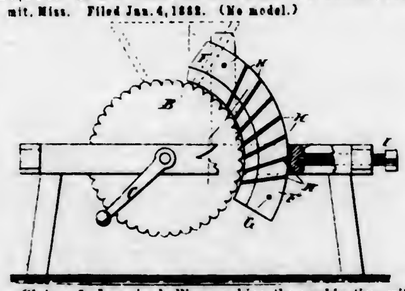
2. The combination of two reducing-rolls, A, two feed-rolls, C C', and friction-roll C^3, having bearing upon one of the reducing-rolls and also on one of the feed-rolls, substantially as set forth.

3. The combination of two reducing-rolls, two feed-rolls parallel with the reducing-rolls, but with passage through such two sets of rolls in different planes, and a guide for directing the plates from the feed to the reducing rolls, substantially as set forth.

4. The combination of reducing-rolls A, feed-rolls C C' parallel with but above the plane of passage through the reducing-rolls, inclined guide e^3, and horizontal table e, substantially as set forth.

5. The combination of housings B, reducing-rolls A, feed-rolls C C', friction driving-roll C^3, and adjustable bearing-plates D, secured to the inner side faces of the housings, substantially as described.

256,653. RICE-HULLING MACHINE. SHAD B. DENBEY, Summit, Miss. Filed Jan. 4, 1882. (No model.)



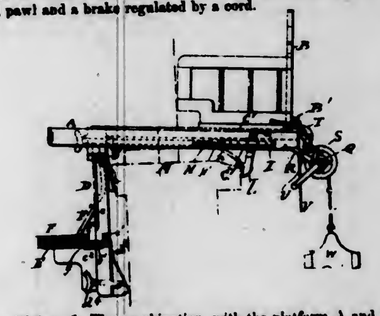
Claim.—1. In a rice-hulling machine, the combination, with the corrugated cylinder B, of the curved, rabbeted, and grooved plates F, supported by suitable means, and the steel plates H, substantially as herein shown and described, whereby the hulls will be removed from the rice by the action of the said spring-plates, as set forth.

2. In a rice-hulling machine, the combination, with the curved plates F, supported by suitable means, grooved and rabbeted upon their inner surfaces, of the steel plates H, substantially as herein shown and described, whereby the inner parts of the said steel plates will be free to vibrate, as set forth.

3. In a rice-hulling machine, the combination, with the curved, rabbeted, and grooved plates F, supported by suitable means, carrying the steel plates H, of the hand-screw I and the cross head or bar J, substantially as herein shown and described, whereby the said curved plates can be adjusted to bring the edges of the steel plates closer to or farther from the face of the corrugated cylinder, as set forth.

256,654. COMBINED WINDOW-CLEANING CHAIR AND FIRE-ESCAPE. ANNA HORNITZER, New York, N. Y. Filed Dec. 16, 1881. (No model.)

Brief.—The clamping device consists of a swinging bar on the under side of the chair, having angular sill-blocks and clamping-plates on its ends, which are adjustable in racks on the sides of the chair. The swinging bar has arms connected to a nut traveling on a screw-rod. A rope-ladder with a basket on its free end is secured to a windlass on the chair, the windlass having a ratchet and pawl and a brake regulated by a cord.

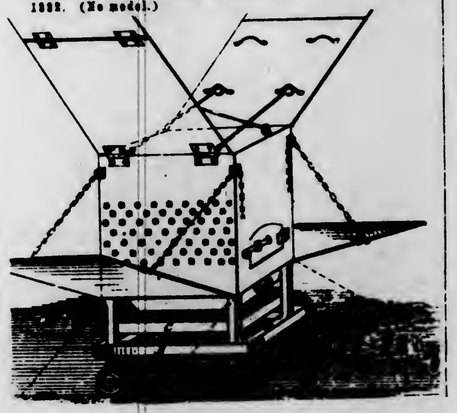


Claim.—1. The combination, with the platform A and step-frame D, of the clamping device G, consisting of clamping-bar G', blocks G^2, end plates, L, racks I, screw H, traveling nut H', and pivoted bars a a, constructed, arranged, and operated substantially as herein shown and described.

2. As a means for supporting the combined chair and fire-escape in position on a window-sill, the combination, with the screw-adjusted bar G', of the blocks G^2, serrated end plates, L, and racks I, substantially as herein shown and described.

3. The combination, with the window-cleaning chair provided with platform A, step-frame D, and suitable clamping devices and hangers, all constructed, substantially as herein shown and described, of the rope ladder P, windlass Q, ratchet S, pawl T, connected eccentric regulating-lever and cord U V, and basket W, all arranged and operated as set forth.

256,655. DRYING AND HEATING APPARATUS. AUGUSTA DENYER, Catford, County of Kent, England. Filed Jan. 30, 1882. (No model.)



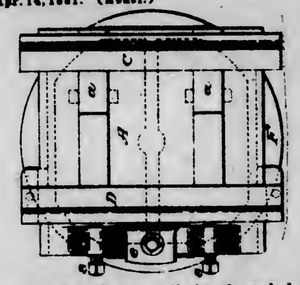
Claim.—1. In an apparatus for drying the walls of buildings, a furnace having one of its walls provided with perforations or openings, and having deflectors hinged one above and one below said openings, substantially as before set forth.

2. The combination, substantially as before set forth, of a furnace having one or more of its walls provided with openings, the deflectors hinged respectively above and below said openings and adapted to be set at an angle with the wall or walls, and means for supporting the deflectors.

3. The combination, substantially as before set forth, of a furnace having one or more of its walls provided with openings, the deflectors hinged respectively above and below said openings and adapted to be set at an angle with the wall or walls, means for supporting the deflectors, and the curtains.

4. In a drying apparatus such as described, the combination, substantially as before set forth, of the deflectors, the hooked rods, the vertical bar provided with a rack, and the pinion.

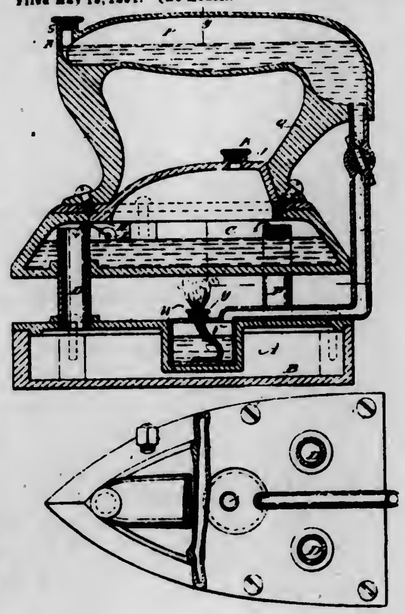
256,656. PLANER-CHUCK. GEORGE B. DURREE, Chicago, Ill. Filed Apr. 14, 1881. (Model.)



Claim.—1. The base-piece A F, slotted, notched, and otherwise constructed, substantially as described, jointly with the movable bar C, having laterally-extended arms *a a* and pins *b b*, for the purpose set forth.

2. The base-piece A F, slotted, notched, and otherwise constructed, substantially as described, jointly with the clamping-bar D, having the slotted arm *c*, flanged fingers *i i n n*, and the screws S and *f*, as and for the purpose set forth.

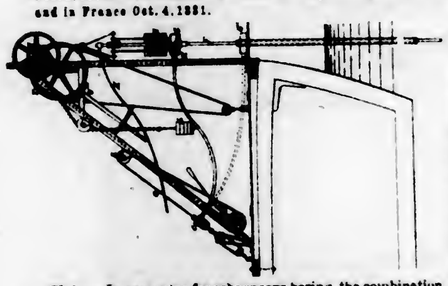
256,657. SAD-IRON. JOHN M. EDMUNDS, Salt Lake City, Utah, assignor to himself and Governeur M. Forbes, same place. Filed May 18, 1881. (No model.)



Claim.—1. In a steam-heated sad-iron the water-chamber C, supported above and connected to the steam-chamber A, which forms the bottom of the iron, by screw-threaded tubes D D, passing through an intermediate heating-space and projecting inside the chamber C to near the top thereof, whereby only steam is allowed to escape into the steam-chamber, as and for the purpose specified.

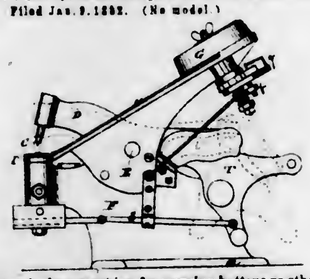
2. The steam-chamber A, provided with a recess, W, formed in its top plate to receive a lamp, V, in combination with the water-chamber C and tubes D, the latter being arranged one near the nose and the other two near the heel of the iron, as and for the purpose specified.

256,658. APPARATUS FOR SUBAQUEOUS BORING. THOS. HAWLEY, Hawley, Dartford, County of Kent, England. Filed Feb. 2, 1882. (No model.) Patented in England Apr. 5, 1881, and in France Oct. 4, 1881.



Claim.—In apparatus for subaqueous boring, the combination of a barge or floating vessel, a boring-tube loaded with adjustable weights and suspended from a framing on the vessel, a driving-shaft worked by an engine or other motor on board of the vessel, and a flexible or jointed shaft and gearing connecting the said driving-shaft to the boring-tube, substantially as and for the purposes set forth.

256,659. MACHINE FOR SETTING BUTTONS. ANDREW EPPLER, Jr., Quincy, Mass., assignor to David Whittemore, same place. Filed Jan. 9, 1882. (No model.)



Claim.—1. In a machine for securing buttons or other equivalent fastening devices having tubular shanks, the combination of a guide or roadway, a rising and falling setter, a feeding and supporting device located under the setter, and provided with pockets each adapted to receive a fastening device from the roadway, and mechanism for rotating said feeding device step by step, the location of the feeding and supporting device under the setter adapting it to support each fastening device during the action of the setter, as set forth.

2. The combination, with the rotary feed-plate having button-receiving pockets or recesses, of the roadway or guide having a yielding end or section adapted to yield to prevent injury to buttons partially inserted in the pockets of the feed-plate, and to force such buttons into the pockets, as set forth.

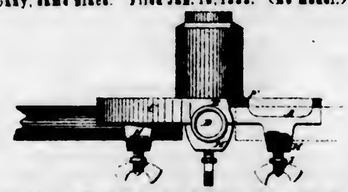
3. The combination of the rotary feed-plate having pockets or recesses and a spring-lip, *b*, adapted to hold each button in place under the setter, as set forth.

4. As a means for rotating the feed-plate step by step, the reciprocating rack Q, the pinion N, journaled loosely in the spindle of the feed-plate, and provided with an arm, O, having a pawl, P, and a ratchet, M, rigidly attached to the spindle of the feed-plate and rotated intermittently by the pawl P, as set forth.

5. The pivoted lever D, supporting at one end the setter, and provided at the other end with a stud or roller, V, combined with the pivoted lever T, having the cam-groove, U, with which said stud is engaged, as set forth.

6. The combination of the setter, its supporting-lever D, the pivoted operating-lever T, having a cam-groove engaged with a stud on the lever, the rotary feed-plate I, the rack Q, rotating said feed-plate through intermediate mechanism, and a rod, S, connecting the rack with an arm of the lever T, as set forth.

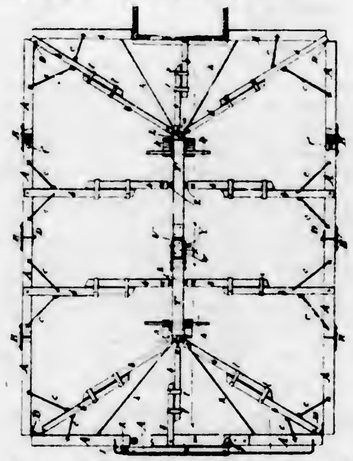
256,660. LAMP-CHANDELIER. JOHN A. EVARTS, Meriden, Conn., assignor to the Bradley & Hubbard Manufacturing Company, same place. Filed Jan. 10, 1882. (No model.)



Claim.—1. The herein-described improvement in lamp-chandeliers, consisting of the disk A, to which the arms are to be secured, constructed with radial openings having bearings E F at the outer and inner ends of the said opening upon one side, and with the intermediate bridge, H, across the said opening, and forming a bearing upon the opposite side, all formed in casting and in one and the same piece, substantially as described.

2. The herein-described improvement in lamp-chandeliers, consisting of the disk A, to which the arms are to be secured, constructed with radial openings, forming bearings F at the outer and inner ends of the said opening upon one side, and with the intermediate bridge, H, across the said opening, and forming a bearing upon the opposite side, with the set-screw I through the said intermediate bearing, substantially as described.

256,661. PORTABLE CORRAL. CHARLES A. TARNAGON, The Dalles, Oreg. Filed Dec. 7, 1881. (No model.)



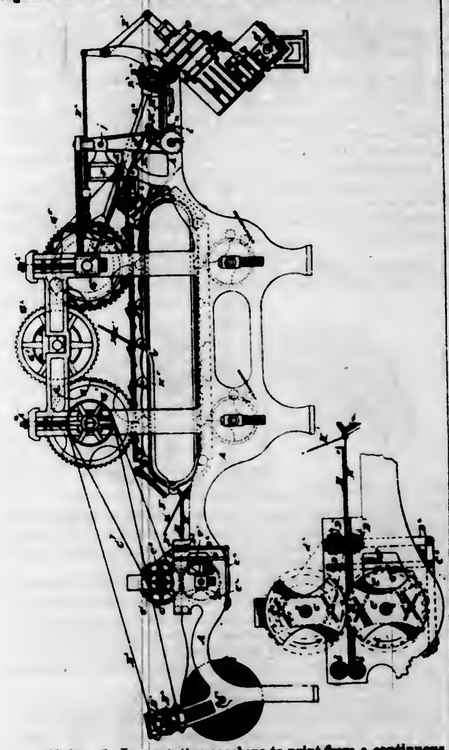
Claim.—1. A portable corral constructed substantially as herein shown and described, consisting of the separate panels A, having wheels G, the posts S, having wheels *k*, and connected by a bar, T, the extensible braces *b*, the hook-rods *c d e f*, and the tie-ropes *g h*, as set forth.

2. In a portable corral, the combination, with the separate panels A, of the cabin L, mounted upon wheels M N, substantially as herein shown and described, whereby the said cabin can be moved with the corral, as set forth.

3. In a portable corral, the combination, with the adjacent panels A, of the latches B and the pins C, substantially as herein shown and described, whereby the said panels are held from longitudinal and lateral movement, as set forth.

256,662. PRINTING, BINDING, AND TRIMMING MACHINE. HENRY P. PRENTISS, Philadelphia, Pa., assignor of one-half to Isaac Pike; said Prentiss and Pike assignors of one-third to Isaac S. Sharp, all of same place. Filed Nov. 7, 1881. (No model.)

Brief.—An endless chain of type-carriages hinged together is caused to travel upon an endless track. As the carriages move upwardly their nippers take the sheet from feed-rollers at the front of the machine, and after the first impression is received and as the carriages move forward the nippers holding the sheet are caused to turn it over onto the preceding form in time to present its unprinted side to receive an impression from another cylinder. As the carriages continue moving on the nippers carry the sheet between tape-pulleys, and in passing from these tapes to the fly a line of paste is put upon the center of each sheet, the fly then depositing it, pasted side down, upon a table upon which is a book-cover. When a sufficient number of sheets for the book or pamphlet (in the machine illustrated thirty-two pages) are received on the table it is caused to carry the ends of the printed sheets into the bite of rollers, which press the sheets together while moving them over a slot in an inclined table, in which position a folding-blade doubles the sheets by forcing them through the slot and into the bite of other rollers, which cut the ends, trim the front, and deliver a completed book. The paper is fed forward intermittingly to the nippers at the front of the machine from a web by two sets of feed-disks, the segments of which are adjustable for different lengths of sheets.



Claim.—1. In a printing-machine to print from a continuous roll of paper, an endless chain of type-carriages, in combination with one or more inking-cylinders and two impression-cylinders, said cylinders being adapted to print from every alternate type-carriage, one of said cylinders printing from the type omitted by the other, substantially as and for the purpose specified.

2. In a printing-machine to print from a continuous roll of paper, an endless chain of type-carriages, in combination with nippers arranged upon said carriages and adapted to hold the sheet of paper, inking devices to ink the type, two impression-cylinders arranged to print from every alternate type-carriage, and mechanism, substantially as described, to cause said nippers to be oscillated in passing from one impression-cylinder to the other, for the purpose of laying the sheet upon the type-carriage immediately preceding, substantially as and for the purpose specified.

3. In a printing-machine, a feeding device adapted to feed given lengths of paper from a continuous roll, a cutter or knife to cut said roll of paper into sheets, an endless chain of type-carriages provided with nippers adapted to catch and hold the paper, an inking device to ink the type on said carriages, and two impression-cylinders arranged to print from every alternate type-carriage, in combination with a cam to actuate said nippers to reverse and transfer the sheet to the next adjacent type-carriage after passing under one impression-cylinder and before it passes to the next, receiving bands or tapes, a pasting or fastening device to paste or fasten the sheet down the middle, a fly-frame, a receiving-table, and folding and trimming mechanism, substantially as described, said apparatus working to print and bind books from a continuous roll of paper, substantially as described.

4. In a printing-machine, the feeding device which consists of the notched disks C, rolling in contact, as shown and described, in combination with their shafts and means, substantially as described, to adjust and secure said disks side by side in pairs, substantially as and for the purpose specified.

5. In a printing-machine, the combination of the rollers *h*, shafts *e*, carrying disks C, gear-wheels C', cam C², arms C³, rods D' and D³, knife D, and rollers D² and D⁴, and fingers E, substantially as and for the purpose specified.

6. In a printing-machine, the carriages F, hinged together at *f* and running upon a track, F⁶, by wheels F', and provided with means, substantially as described, to secure the type-forms in place, in combination with nippers H H', secured respectively to pinions h^2 and h^3, segment-racks *h'*, and cams H^2, to actuate said segment-racks, substantially as and for the purpose specified.

7. In a printing-machine, a type-carriage, F, provided with nippers H H', secured to shafts H^2 H^3, pivoted at one end of said carriage, in combination with mechanism, substantially as described, to operate said nippers during the movement of said carriage, substantially as and for the purpose specified.

8. In a printing-machine, the combination of the endless chain of carriages F, carrying nippers H H', pivoted at one end, and racks F', inking devices to ink the type on said carriages, two impression-cylinders, G G', having impression-surfaces *g*, gears G^2, and adapted to print from every alternate carriage, fingers E, receiving-tapes *i*, cams H^2, and intermediate mechanism, substantially as described, to actuate the nippers to the end that the nippers of every alternate carriage F shall open and catch the paper from fingers E, lay it upon the carriage, and after passing under cylinder G shall reverse the sheet and lay it upon the next adjacent carriage, then pass under cylinder G', and open slightly to allow the sheet to be run off quickly by the tapes *i*, substantially as and for the purpose specified.

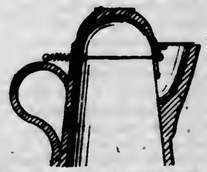
9. In a printing-machine, the combination of the endless chain of carriages F, having racks F', cylinders G and G', having teeth G^3, and intermediate gear-wheel, G^2, substantially as and for the purpose specified.

10. In a printing-machine, the endless chain of type-carriages and their nippers, in combination with tapes *i*, wheels I, shafts I', arms I', pasting or fastening wheel J, fly-frame K, receiving-table M, rollers R, mechanism, substantially as described, to reciprocate said table, and folding and trimming mechanism, substantially as and for the purpose specified.

11. In a combined printing and binding machine, the combination of the reciprocating receiving-table M, with rollers R, oblique table T, with slot *t*, folding-knife P, trimming rotary cutters O' and O^4, and mechanism, substantially as described, to reciprocate the table and folding-knife at given intervals, substantially as and for the purpose specified.

12. In a printing-machine, the combination of the cam G^4, rod K^2, crank K', pawl K^3, ratchet-wheel L, cams *l*, rollers *m*, receiving-table M, frame A, spring m^2, and rollers R R, substantially as and for the purpose shown and described.

256,663. GLASS SIRUP-CAN AND HOLD FOR MAKING THE SAME. HENRY PRUDHAM and CHARLES H. BRADY, Wellsburg, W. Va. Filed Mar. 17, 1882. (No model.)



Claim.—1. A glass strup-can having a closed top of like material and continuous with the body of the can, and a pouring-lip, substantially as and for the purpose specified.

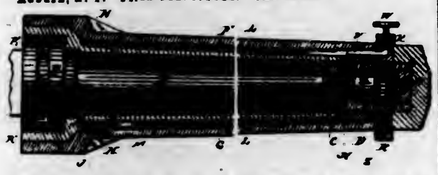
2. A glass strup-can having the cover *b* integral with the body of the can, and the projecting pouring-spout *a*, substantially as and for the purpose specified.

3. The combination, with the pivoted leaf spout-cover, of the thumb-rod for actuating the same, substantially as and for the purpose specified.

4. The combination, with a glass-mold, of two plungers arranged to pass each other within the matrix, substantially as and for the purpose specified.

5. The combination, with the mold, of a plunger flattened upon one side near its extremity and a plunger which is slightly concave upon one side near its extremity, said plungers arranged to enter the mold from different directions, so that the flattened side of one plunger shall present to the concave side of the other plunger, substantially as and for the purpose specified.

256,664. LUBRICATOR FOR VEHICLE-AXLES. EDWIN PIATT, AUBURN, N. Y. Filed Feb. 9, 1882. (No model.)

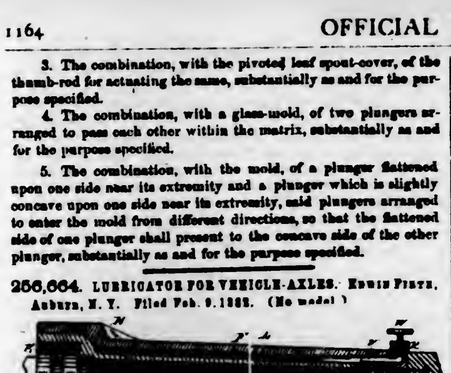


Claim.—1. The combination of the spindle having at its end a swiveled thimble with the axle-box, suitably connected to said thimble, substantially as set forth.

2. The herein-described spindle, provided at its end with two shoulders of decreasing diameters to receive an exteriorly-threaded thimble swiveled upon the inner shoulder and held in place by a ring or collar firmly secured upon the outer one, substantially as set forth.

3. The spindle provided at its end with a swiveled exteriorly-threaded thimble, in combination with the axle-box consisting of shells F G, having intermediate space, L, said shell G being provided with openings M, notches N, and flange K, the double-threaded nut R, having flange S, channel V, and plug W, and the cap or lock-nut U, substantially as and for the purpose set forth.

256,665. DOOR LOCK AND LATCH. OLE FLAGSTAD, Hamar, Norway. Filed Oct. 22, 1881. (Model.)



Claim.—1. The combination, with the spring-actuated latch and barrel having a projecting arm rigidly secured thereto, of a connecting-link pivotally secured to the spring-actuated catch at one end, and provided at its opposite end with an oblong slot, by which it is connected to the arm of the barrel, and a spring constructed substantially as described and adapted to connect the arm of the barrel to the face-plate of the lock, substantially as set forth.

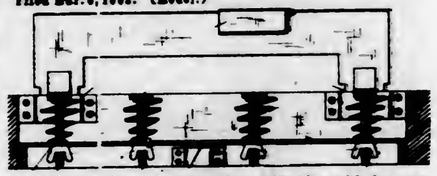
2. The combination, with the spring-actuated latch, working-barrel provided with a projecting arm, connecting-link constructed as described and adapted to connect said arm of the barrel to the spring-actuated latch, and a spring adapted to exert an outward pressure on the said arm, of a collar provided with a split or opening, the opposing ends of the said collar forming the limit of movement of the said barrel and arm, substantially as set forth.

3. The combination, with the working-barrel provided with notched faces, of handles having projections formed on the ends thereof and adapted to engage with the projections, a spindle connecting the handles to the barrel, the split collar for holding the barrel in position, and means for connecting the barrel to the spring-actuated catch.

4. The combination, with the handles K, spindle O, collars W, barrel L, and split collar M, of the spring N, connecting-link P, catch C, guide-rod I, spring J, and bag M, all constructed and arranged substantially as shown.

5. The combination, with the bolt provided with the two vertical and one transverse slots and the spring-actuated tumbler, constructed as described, and provided with a projecting end adapted to move in the above-named slots, of a spring-actuated dog provided with an opening in one side for the reception of one end of the tumbler when the bolt is shot outward, and a follower adapted to hold the dog away from the tumbler when the bolt is housed, substantially as set forth.

256,666. BEDSTEAD. FREDERIC G. FOSS, Roxborough, Pa. Filed Mar. 6, 1882. (Model.)



Claim.—1. In a bed-bottom, the combination, with the upper and lower slats and the interposed springs, of the screw-bolts provided with thumb-nuts, whereby the bed-bottom may be adjusted, substantially as and for the purposes specified.

2. In combination with a bed-bottom, the longitudinal frames adapted to be secured thereto or to the bed-bottom, and the shelf adapted to set upon said frames, substantially as and for the purpose specified.

256,667. CHURN-DASHER. CHARLES FRIEDBORN, Clare, Mich. Filed Jan. 6, 1882. (Model.)

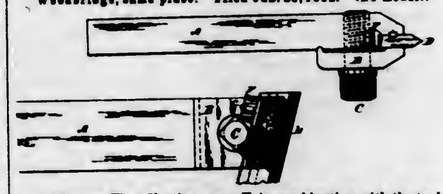


Claim.—1. The dasher made substantially as herein shown and described, consisting of the apertured conical plate A, having the concaved deflectors D, provided with end supports secured upon its upper surface, substantially as set forth.

2. In combination with the conical plate A, the concaved deflectors D, made as described, and set upon the plate A with their convex faces directly over the openings *b*, as herein shown and described, whereby the jets of cream that rise through the apertures *b* will be laterally deflected by contact with the convex surfaces of the deflectors and driven into contact with the jets that rise through the adjoining apertures *a*, as set forth.

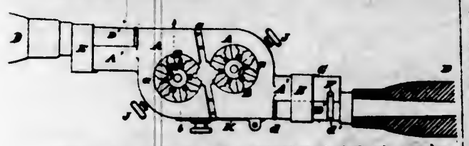
3. The concaved deflectors D, formed with the supports *g g*, and having the upturned flanges *f f*, which are curved off, as shown at *i i*, the deflectors being secured upon the conical plate A, substantially as and for the purposes described.

256,668. CUTTER-HOLDER FOR LATHES. FREDERICK H. GARDNER, Hartford, Conn., assignor to himself and JAMES H. Woodbridge, same place. Filed Jan. 26, 1882. (No model.)



Claim.—The adjusting-screw F, in combination with the tool-holder A B C and the tool D, provided with a rack, substantially as described.

256,669. DIE AND DIE-STOCK. JOH. GASSMANN, Jackson, Mo., assignor of one-half to Adam Hoffmann, same place. Filed Nov. 1, 1881. (No model.)



Claim.—1. The combination of holders A A, having projections A' A' and cylindrical cavities *a a*, dies within said cavities, screw-threaded shanks C C, extending from the holders, sockets *a' a'* in said projections, and handles D D, having shanks D' D', as set forth.

2. The combination of holder A, having die-cavity *a*, sectional die B, and central holding and securing screw H, as set forth.

3. The combination, with the die-holders adjustably connected together by screw-threaded shanks C, working in sockets *a'*, of the handles screwed on the shanks and held to the die-holders by the key-pins *f*, substantially as described.

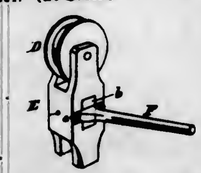
4. The combination, with the handle D, screw-threaded shank C, and projection A' of the die-holder, of the key-pin F and the strap E to hold the parts together, as set forth.

5. The combination, with the two die-holders, of the click adjustably attached to one holder and having spring-toe N working on a stud, Q, of the other holder, substantially as set forth.

6. The combination, with a set of dies, B, fitting in a holder, A, of the central retaining-screw, H, with notch *h'*, allowing the removal of any one of the dies *b*, substantially as set forth.

7. The combination, with the projecting portion A' of the die-holder A, of the shank D' of handle D, circumferentially grooved to receive a key-pin, F, the retaining slip-strap E, and the retaining spring-pin G, substantially as set forth.

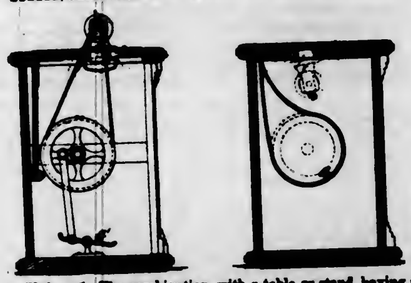
256,670. GATE-HINGE. IRA GAGEN, Schoolcraft, Mich. Filed Oct. 8, 1881. (No model.)



Claim.—1. A hinge attachment for gates, consisting of a block, E, holding wheel D, said block being recessed to receive a block, *b*, in combination with block *b*, having a bolt, F, pivoted thereto, substantially as and for the purposes described.

2. In combination with a gate, the recessed block E, holding grooved wheel D, and the block *b*, having bolt F pivoted thereto, all constructed substantially as set forth and shown.

256,671. TABLE OR STAND FOR MACHINES, &c. AMOS F. GERALD, Fairfield, Me. Filed Jan. 19, 1882. (No model.)



Claim.—1. The combination, with a table or stand having a rail-like top portion, of a revolving top portion carrying a machine and pivoted within the rail-like top portion, a cover for the revolving top portion hinged to the same, a stop for supporting the cover when the revolving portion is turned to bring the machine right side up, a wheel for transmitting motion to the machine, arranged as described, whereby it will guide the cover to the stop when the revolving portion is turned to bring the machine right side up, and a catch for retaining the revolving portion in position, substantially as specified.

2. The combination, with a table or stand having a rail-like top portion and a revolving portion pivoted within the same, of a machine or other article fitted in an opening in the revolving portion, and hinges and a catch for securing the machine to said portion, so that it may be dropped through the opening to enable the revolving portion to be turned and to carry it through the rail-like portion, substantially as specified.

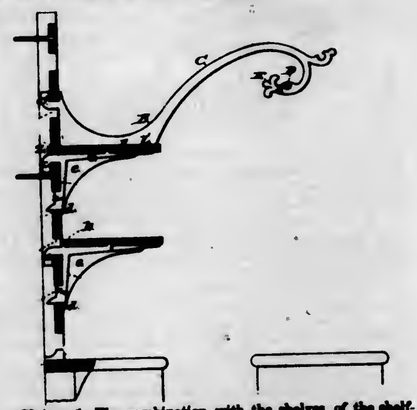
3. The combination, with a table having a rail-like top portion, of a revolving top portion pivoted within the same, carrying a machine, and provided with two openings, through which a driving-belt may pass, and which form between them a bar on which the belt is supported when thrown off the machine, and a cover hinged to said revolving portion and adapted to conceal it, the said revolving portion having a groove in its under surface for receiving the belt when the said revolving portion is inverted, substantially as specified.

4. The combination, with a table having a rail-like top portion, and a revolving top portion provided with two openings for the passage of a driving-belt, forming between them an intermediate bar, on which the belt may be supported when not in use, of a machine or other article fitting in an opening in the revolving portion, and hinges and a catch for securing the machine to said portion, so that it may be dropped down through the opening to enable the revolving portion to be turned to carry the machine through said rail-like portion, and a hinged cover for concealing the revolving portion when inverted, the said revolving portion having a groove in its under surface, in which the belt is received when said portion is inverted, substantially as specified.

5. The combination, with a table or stand having a revolving top portion, carrying a machine, of an oil-drip cup which turns or revolves with said top portion and has its edges reverted or turned inward, so that when turned upside down its reverted or turned-in edges will catch and retain the oil contained within it, substantially as specified.

256,672. SHELVING-BRACKET. DAN GREEN, Mason City Ho. Filed Dec. 24, 1881. (No model.)

Brief.—A rear hook on the top of each bracket engages the rear edge of each shelf. The bracket has also a hook and extension with a filling-piece which engages slots in an upright. The top bracket is placed above the shelf in a reversed position, and carries only the engaging-hook. It is provided with a goose-neck extension having a bearing for an exhibiting-rod.

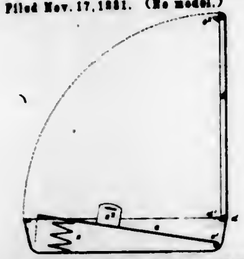


Claim.—1. The combination, with the shelves, of the shelf-brackets having rear hook, *h*, extending upward and forward to engage the rear edge of said shelves, substantially as specified.

2. A shelf-bracket having in addition to the hook *c* and projection *d* of its upright bearing the offset or filling-step *a*, designed to engage and fill the slot of the upright support above said projection and prevent the bracket from rising, substantially as specified.

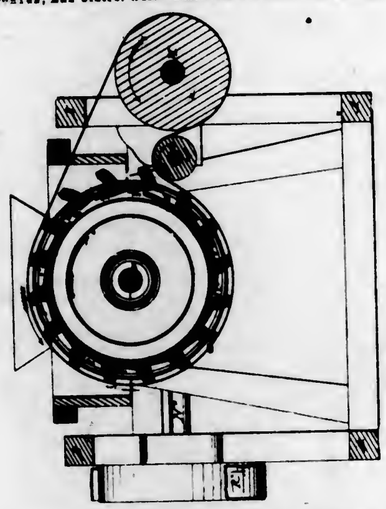
3. The reversed or overhung bracket B, having the hook *c* and the goose-neck or forward extension, G, provided at its end with a bearing, *e*, for an exhibiting-rod to be arranged over and parallel with the counter, substantially as specified.

256,673. CIGARETTE-BOX. GUSTAV GOLIASCH, Berlin, Germany. Filed Nov. 17, 1881. (No model.)



Claim.—The described box for cigars, matches, &c., consisting of a case, *a*, hinged cover *b*, and a pivoted plate, *c*, pressed constantly upward by a spring, and having the lugs *c'*, and a connecting rigid or elastic band, substantially as described and shown.

256,674. COCKLE-SEPARATING MACHINE. WILLIAM E. CORTER, Eau Claire, Wis. Filed Oct. 11, 1881. (No model.)



Claim.—1. The combination, with the main frame and the conveyer-shaft mounted thereon, of the cylinder-supporting frame and a perforated cylinder provided with tubular bearings and mounted concentric with said shaft, substantially as set forth.

2. The combination, with a perforated rotary cylinder, of an outer jacket formed of pivoted staves or sections adapted to automatically open and close when the machine is in operation, as and for the purpose set forth.

3. The combination, with the perforated cylinder and a stave-formed jacket, the several staves of which are capable of independent action, of an outer concentric jacket provided with suitable openings to receive the several staves of the stave-formed jacket, as and for the purpose described.

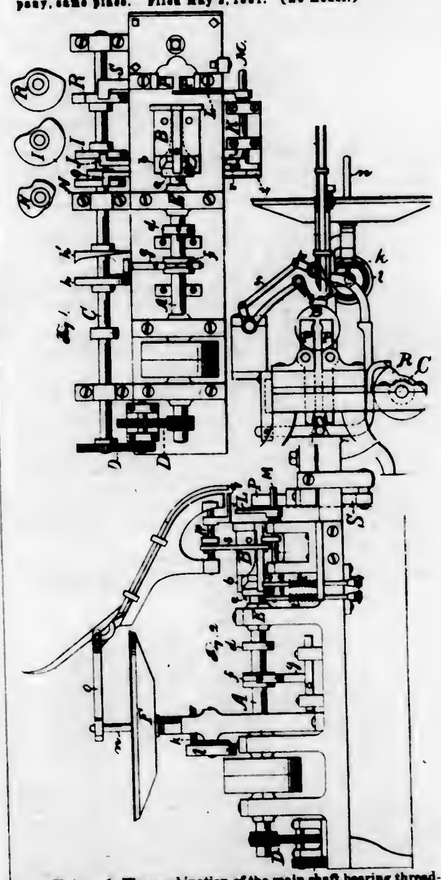
4. The combination, with the inner jacket provided with the stave portions, and the outer jacket, of springs fixed to the outer jacket, having their free ends connected with the outwardly-projecting arms of the staves of the inner jacket, substantially as set forth.

5. The combination, with the perforated cylinder, the jacket provided with stave portions, and the outer jacket, of belts operating to impart a rotary motion to the cylinder and to close the stave-jacket onto the perforated cylinder, substantially as set forth.

6. The combination, with the cylinder having the end portion of its jacket provided with outlet-openings, of a spout-like apartment to receive the discharged contents of the jacket and deliver them through an outlet-opening, substantially as set forth.

7. The combination, with the perforated cylinder provided with the stave-like jacket, of an exhaust-fan and pipe, arranged substantially as set forth.

256,675. MACHINE FOR THREADING BOLTS. CHARLES H. GRAHAM, Unionville, Conn., assignor to the Union Nut Company, same place. Filed May 2, 1881. (No model.)



Claim.—1. The combination of the main shaft bearing threading-dies and mechanism for opening and closing said dies by a longitudinal reciprocation of said shaft, the parallel cam-shaft, intermediate connecting-gearing, and cams A A', operating upon an extension from the main shaft to reciprocate it, substantially as described, and for the purpose specified.

2. In combination with the main shaft A, provided with the central rod, *a*, and hinged jaws *b*, carrying the dies, the cone *e*, collar *d*, adjusting-screws *i i*, collar *f*, sliding frame *g*, and pair of side cams, A A', substantially as described, and for the purpose specified.

3. In a bolt-threading machine, the combination of the main shaft and threading-dies, the holding-jaws P P, wedge *u*, lever S, and cam R, substantially as described, and for the purpose specified.

4. In a bolt-threading machine, the combination of the main shaft and threading-dies, the holding-jaws P P, wedge *u*, lever S, cam R, and the automatic feed mechanism for feeding the bolts from the pan or hopper through a trough to the holding-jaws, substantially as described, and for the purpose specified.

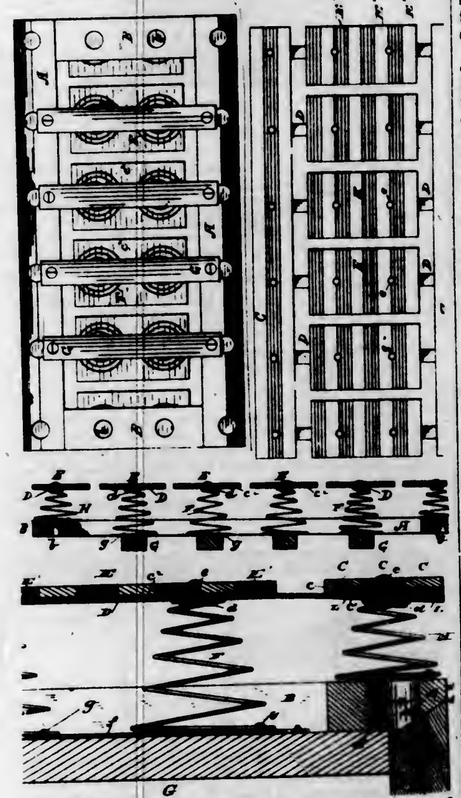
5. The combination of the main shaft bearing threading-dies and mechanism for opening and closing said dies by a longitudinal reciprocation of said shaft, the parallel cam-shaft, intermediate connecting-gearing, cams A, A', and R, lever S, wedge *u*, and jaws P P, substantially as described, and for the purpose specified.

6. In a bolt-threading machine, the combination of the main shaft and threading-dies, the holding-jaws P P, wedge *u*, lever S, cam R, rock-shafts *p* and M, and cams N and I, for operating said rock-shafts, substantially as described, and for the purpose specified.

7. The combination of the main shaft bearing threading-dies and mechanism for opening and closing said dies by a longitudinal reciprocation of said shaft, intermediate connecting-gearing, cams A, A', and R, lever S, wedge *u*, jaws P P, and the automatic feed mechanism, substantially as described, and for the purpose specified.

8. The combination of the cam R, lever S, wedge *u*, jaws P P, and the automatic feed mechanism, substantially as described, and for the purpose specified.

256,676. SEAT. HENRY S. HALL, Philadelphia, Pa. Filed Jan. 3, 1882. (Model.)



Claim.—1. A seat having upon one side a support composed of two or more elastic strips, C C, connected together by a flexible fibrous fabric, the springs H H beneath said strips and fabric, and the metallic bands or strips D D, situated transversely to the strips C C and between said strips and the springs H H, substantially as set forth.

2. A seat having upon one side a support composed of two or more elastic strips, C C, a flexible fibrous fabric secured to the under side of said strips, the springs H H below the strips, the intermediate metallic plates or bands, D D, and the blocks or building-up pieces L L between the strips C C and the plates or bands D D, substantially as set forth.

3. In a seat, the combination, with the main frame, of several series of springs, flexible metallic bands D D across the tops of the springs, independent seat-sections E E, each supported separately upon a single transverse series of springs and constructed of a series of wooden slats, E', situated transversely to the band D below it, and a flexible fibrous fabric, *e'*, between said metal band and the series of slats E', the metallic band D, extending beyond the fabric *e'*, and devices which connect together the outer ends of the metal bands D, substantially as set forth.

4. In a seat having a main frame, the combination of several transverse series of springs, flexible metallic bands D, each arranged across the top of a series of springs, wooden strips C, connected rigidly to the metallic bands D at the ends and extending the full length of the seat, and intermediate seat-sections, E E, each of which is supported upon a single series of springs, and is constructed of a flexible fibrous fabric, and a series of wooden slats attached to said fabric and situated transversely to the series of springs, substantially as set forth.

5. In a seat having a main frame, the combination of several series of transverse springs, flexible strips C, connecting together the end springs of the several series, the flexible metallic bands D, arranged across the tops of the springs of the several series, and intermediate seat-sections, E E, each supported upon a single series of springs and constructed of strips E', situated transversely to the series of springs and of a length greater than the width of the flexible metal band D by which they are supported, substantially as set forth.

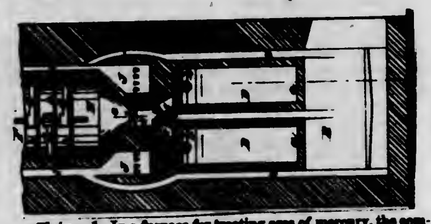
6. In a seat having a main frame, the combination of the cross-bars G G, secured to the under side of the main frame, springs H H, supported upon the side pieces and the end pieces of the main frame, the intermediate springs, F F, arranged to form, in conjunction with the springs H H, several transverse series, strips C C, arranged along the sides of the seat and extending from end to end, the flexible metallic bands D D, arranged across the tops of the series of springs, and the intermediate seat-sections, E E, each supported above a single series of springs, F F, independently of the other sections and of the side strips, C, substantially as set forth.

7. In a seat, a series of springs arranged along the edge of the seat, a series of two or more flexible strips, C C, arranged above said series of springs in close proximity to each other, seat-sections arranged behind said edge strips, and the metal bands D D, connecting the flexible edge strips and the rear seat-sections, said rear sections being supported upon the frame of said seat independently of the edge strips, substantially as set forth.

8. In a seat, a series of springs arranged along the edge of the seat, springs arranged in several series transversely across the top, flexible strips C C, extending across the tops of the edge series, a flexible fibrous fabric, *e*, which secures together the edge strips, C C, the metal bands D D, extending transversely to the strips C C across the seat, and the independent seat-sections E E, each arranged above and transversely to the metal band D and each supported upon a single transverse series of springs, substantially as set forth.

9. A seat having a wooden side piece, A, beveled at its outer lower portion, as at *a'*, in combination with a series of removable transverse cross-bars, G, and attached to said side piece in rear of the front supporting-rail, I, substantially as set forth.

256,677. FURNACE FOR TREATING THE ORES OF MERCURY. EDWARD G. HALL, Healdsburg, and HYRUS D. HASKINS, Guernoville, Cal. Filed July 28, 1881. (No model.)



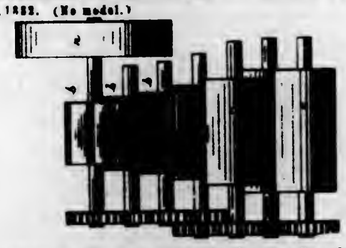
Claim.—1. In a furnace for treating ores of mercury, the combination, with the chambers D, provided with inclined floors and arched tops, of the chamber E, having a funnel-shaped bottom arranged above the said chambers, and provided with the diaphragms A, projecting from opposite sides of the chamber nearly across the same, and the revolving arms G, and communicating with the said chamber at its bottom, substantially as and for the purpose set forth.

2. In a furnace for treating ores of mercury, the combination, with the chamber E, having a funnel-shaped bottom and the fire-place B, of the chambers D, having inclined floors, and communicating with the said chamber, and arranged between the said chamber and fire-place, substantially as and for the purpose set forth.

3. In a furnace for treating ores of mercury, the combination, with the chambers D, the annular wall I, and the chamber E, having its lower part contracted, of the furnaces J, arranged in the space formed by the said annular wall and the lower contracted part of the chamber, substantially as and for the purpose described.

4. The annular space I, surrounding the chamber E, and connected with the flues H and furnaces J, as and for the purpose herein shown and described.

256,678. MACHINE FOR CRUSHING AND GRINDING LIME-STONE-ROCK, &c. JACOB HAUER, Chewsville, Md. Filed Jan. 4, 1882. (No model.)



Claim.—1. The combination, with the grooved crushing-rolls *b b b* and smooth pulverizing-rolls *c c c*, so arranged that each roll on one side of the machine operates against two rolls on the opposite side, of guides *d*, arranged as set forth, substantially as described, and for the purpose set forth.

2. The combination, with the crushing and pulverizing rolls *b c*, of the inclined frame A A, provided with recesses *e e* in its inner faces, substantially as described, and for the purpose set forth.

256,679. LAMP-CHIMNEY. HARRY L. HAWES, Whitewater, Wis. Filed Feb. 3, 1882. (No model.)



Claim.—1. The lamp-chimney composed of a glass bottom and a metal top, and so joined together as to admit a circulation of air between them, to prevent heating the bottom, and thereby save breakage, substantially as described.

2. A lamp-chimney composed of a metal top and a glass bottom, fastened together by means of a groove on the inside of the metal top, sprung over three or more projections on the outside of the glass bottom, which mesh into the groove in the metal top, substantially as described.

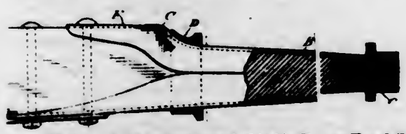
256,680. FLOOD-GATE. DAVID H. HEMINGWAY, Newport, Miss. Filed Dec. 12, 1881. (No model.)

Brief.—When the gates are tilted in a horizontal position the slack of the connecting-cord is taken up by an arm on the lower gate, and this also avoids a straight pull on said cord through the axes of the gates in their return to normal position.



Claim.—The combination, with the head-gate and its notched standard, hinged in the race, as described, of the lower gate, similarly hinged, and provided with a suitable guide, and the connecting rope or chain, the whole adapted to operate substantially as specified.

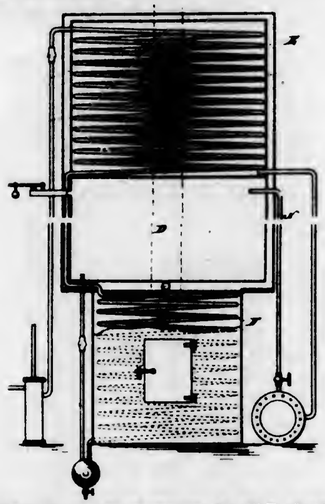
256,681. AXLE-SKEIN. JOHN HERRMANN and PETER HERRMANN, Evansville, Ind. Filed Mar. 6, 1882. (Model.)



Claim.—1. The sheet-metal thimble B, ears F and G, and shoulder C, made in one piece, in combination with the ring D, constructed as and for the purpose set forth.

2. The sheet-metal thimble B, having ears F G and shoulder C, in combination with the ring D, stud E, and nut *e*, substantially as and for the purpose set forth.

256,682. STEAM-GENERATOR. DANIEL HESS, Winona, Miss. Filed Feb. 7, 1882. (No model.)



Claim.—1. In a steam-generator, the coil E, placed within a chamber surrounded by a jacket, said jacket and chamber being heated by the exhaust-steam, in combination with a superheating-coil located in and forming the fire-box, arranged substantially as and for the purpose set forth.

2. In a steam-generator, the combination of the steam-generating coil E, the superheating-coil F, and the reservoir D, constructed and arranged as and for the purpose set forth.

256,683. SHIFTING SEAT FOR VEHICLES. JACKSON W. HEWITT, Jackson, Mich. Filed Feb. 14, 1882. (No model.)



Claim.—1. The combination, in a two-seated vehicle having a rear shifting seat, of the vehicle-body with the front seat hinged at its rear edge, so as to be turned back and lowered within the vehicle-body, and having a support constructed so that the seat can be raised at one end and brought into a vertical position at one side of the vehicle-body, substantially as and for the purpose described.

2. The combination, in a two-seated vehicle, of the support D, for the front seat, extending transversely across the body of the vehicle, and hinged at one of its ends to one of the sides of the said body, with the front seat hinged to the said support at one of its side edges, the said support being adapted to be raised at one end, and the seat being connected with the support so as to either rest upon the same or to be swung backward, so that the rear slidable seat can be brought over the seat and the support, substantially as described.

3. The combination, in a vehicle having a rear shifting seat, of the front seat, hinged at its rear edge, with the support D for the front seat, hinged at one end to one side of the body and extending from side to side of the same, a device for locking down the free end of the support, and the bracket F, constituting a rest for the free end of the support, and also adapted to be engaged by the said locking device, substantially as described.

4. The combination, with the seat C, hinged at its rear edge to a support, D, that is hinged at one end to one of the sides of the body and extended transversely across the latter, of the bracket F, secured to the opposite side of the body and provided with verti-

cal recesses, and the pins upon the said support located to enter the recesses in the bracket when the free end of the support is rested thereon, substantially as described.

5. The combination, with the hinged support D, of the seat C, hinged to said support, and the bumpers h upon the under side of the seat and the upper side of the support, substantially as described.

6. The combination, with the rear slidable seat, B, of the front seat, C, hinged at its rear edge and adapted to be turned down in order to admit of the rear seat being moved over it, and a locking device adapted to be engaged with the front seat so as to hold the same down in position for use, or to be engaged with the rear seat after the front seat has been swung back and the rear seat moved forward and over it, substantially as described.

7. The combination, with the rear sliding seat having the bent lips L, of the rails I, supporting the seat and engaged by said lips, the bars a^2, supporting the rails and secured to the vehicle-body, and the angular stop-plates P, having their upper ends inserted between the bars and the rails, said stop-plates being detachably secured to the braces R, substantially as set forth.

8. The combination, with the vehicle-body, of the support D for the front seat, hinged at one end to one side of the body, and the seat C, hinged to said support, and having its ends concaved upon the under side thereof, in the manner shown and for the purpose described.

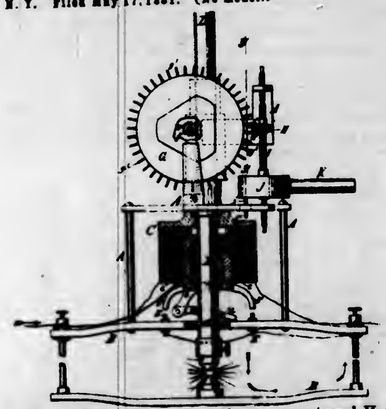
9. The combination, with the support D for the front seat, hinged at one end to the vehicle-body, of the seat C, hinged at its rear edge to the said support, and the check-plates H', applied substantially as shown and described, and for the purpose specified.

256,684. PRIMER FOR CARTRIDGES. ALFRED JAMES NEANE, Bridgeport, Conn., assignor to the Union Metallic Cartridge Company, same place. Filed Feb. 2, 1882. (No model.)



Claim.—The metallic plate or anvil A, provided upon its inner face with the central boss, *a*, and presenting upon its periphery a number of sharp corners for engagement with the interior of the cup B, substantially as shown and described.

256,685. ELECTRIC LAMP. CARL PAUL HORSACK, New York, N. Y. Filed May 17, 1881. (No model.)



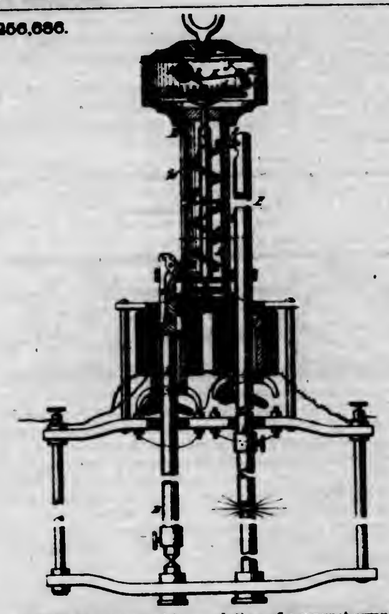
Claim.—In an electric lamp, the escapement-pawl H, wheel G, having peripheral teeth *g'*, pinion F, and the carbon-rack D, in combination with the clutch *a* and means, substantially as described, for operating said clutch, as and for the purpose specified.

256,686. ELECTRIC LIGHT. CARL PAUL HORSACK, New York, N. Y. Filed May 17, 1881. (No model.)

Claim.—1. In a carbon-feed for electric lights, the combination of a spiral incline with one or more carbon-holders arranged to be supported upon and to gradually descend the said incline, according as the carbon is consumed.

2. In combination with a revolving spiral incline supporting one or more carbon-holders for electric light, and with mechanism

256,686.



regulating the velocity of its revolution, of a magnet arranged to stop and start such spiral, according as the carbon is consumed.

3. The combination of an upright revolving spiral supporting one or more sliding carbon-holders of an electric light, with an escapement-wheel mounted upon the axis of the said spiral and with an escapement-pawl oscillating at right angles to the wheel's plane of motion.

4. The pivoted spiral incline C, supporting one or more carbons of an electric light, and having a disk or plate, N, transverse to its axis, in combination with the sliding magnet-core M, provided with devices *n n*, arranged to stop the motion of the said spiral by contact with eccentric points of the said disk, substantially as specified.

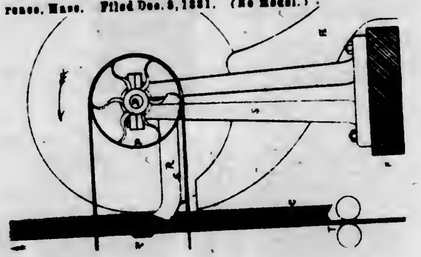
5. The combination of the spiral incline C, pivoted in the vertically-slotted tube D, with the sliding carbon-holders B, provided with horizontal supporting-arms *a*, guided by the said slots, substantially as specified.

6. In combination with the spiral incline C and with the carbon-holders B of an electric light, the spring-raised pivoted arm *a*, and a stop, *f*, to limit its upward throw, for the purpose of supporting the rod during its downward movement and yielding to its upward movement, substantially as specified.

7. In an electric lamp, the combination, with the carbon rod B, having a laterally-projecting arm, *a*, of the supporting spiral incline C, having its lower end terminating with a detached and pivoted portion, L, to allow it to revolve past the stationary arm *a* when the carbon is consumed, substantially as specified.

8. The combination, in an electric lamp, of a central spiral revolving incline, a series of carbon-holders supported by and arranged laterally or annularly around the said spiral, and one central actuating-magnet, substantially as specified.

256,687. CARD-GRINDING MACHINE. JOHN J. HOEY, Lawrence, Mass. Filed Dec. 8, 1881. (No model.)



Claim.—1. In a card-grinding machine, the standards S S', adjustable guide R, and grinding-wheel G, substantially as and for the purpose set forth.

2. In a card-grinding machine, the standards S S', shaft D, pulley P, and grinding-wheel G, provided with the spout H, in combination with the adjustable guide R, constructed and arranged substantially as and for the purpose set forth.

3. The combination, with the tension-rollers of a card-setting machine, of the standards S S', adjustable guide R, and grinding-wheel G, substantially as and for the purpose set forth.

256,688. NUT-LOCK. JOHN M. HOLLAND, Utica, Ill. Filed Dec. 28, 1881. (No model.)



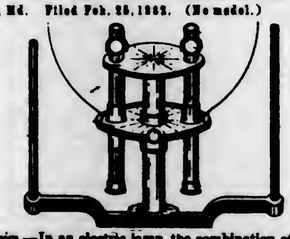
Claim.—In a nut-lock, the combination, with the screw-bolt *a* and nut *c*, of the polygonal-formed collar E and the washer D, having upon its inner face or side a holding device and upon its opposite side or face a scalloped rim or flange, *d*, extending around the entire circumference of said washer, and having its interior side of polygonal form to correspond with the form of the collar, substantially as shown, and for the purpose set forth.

256,689. COMBINED MARKING AND CUTTING INSTRUMENT. EMMA C. HOLLEY, Brooklyn, N. Y. Filed Nov. 11, 1881. (No model.)



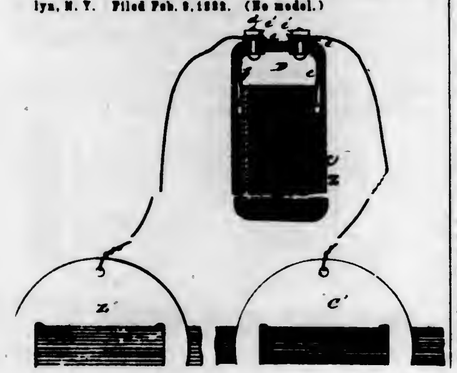
Claim.—An instrument composed of a hollow handle, A, having inclosed therein an emery-holder, B, of a marking-wheel, C, and a pencil and eraser, D and E, substantially as herein specified.

256,690. ELECTRIC LAMP. CHARLES T. HOLLOWAY, Baltimore, Md. Filed Feb. 28, 1882. (No model.)



Claim.—In an electric lamp, the combination of a plate supported by a stem, a clamping carbon-holder above the plate, a metal tube under the plate and just below the carbon-holder, and a globe-holder to move vertically on the stem, and with a hole to provide for the tube, as and for the purpose set forth.

256,691. GALVANIC BATTERY. GEORGE H. HOPKINS, Brooklyn, N. Y. Filed Feb. 9, 1882. (No model.)

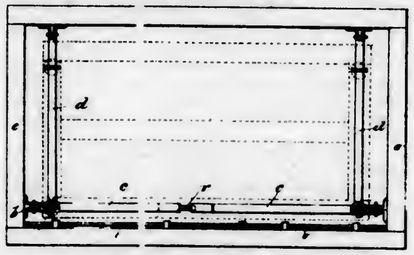


Claim.—1. In a medical battery having zinc and copper electrodes separated by bibulous paper, the combination of the springs *b c* with the cover D and inclosing-case A, substantially as herein specified.

2. In a medical battery, the combination of the case A, cover D, plates Z C, bibulous paper B, springs *b c*, and bolts *d*, having nuts *c c'*, substantially as specified.

3. As an improved article of manufacture, a medical battery consisting of zinc and copper plates separated by bibulous paper, and inclosed in a case having a close-fitting cover provided with contact-springs, as herein specified.

256,692. PLATFORM-SCALES. WILLIAM W. HOPKINS, Thorntown, Ind., assignor to the Hopkins Improved Scale Company, same place. Filed Oct. 20, 1880. (No model.)

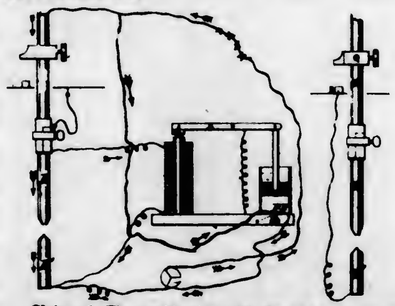


Claim.—1. A platform-scale having a fixed frame, a movable platform, a hollow pillar or case attached to and moving with said platform, the two levers *l d*, hung pivotally at one end to one of the sides of said fixed frame, the two levers *e e*, hung pivotally to the ends of said fixed frame and sustaining near their fulcra the free ends of levers *d d*, the rod *r*, supporting the free ends of levers *e e*, and the scale-beam *i*, from which the said rod *r* is suspended, substantially as set forth.

2. A platform-scale having a hollow pillar or casing supported by the platform and moving therewith, in combination with a scale beam and the actuating-rod of said beam, said rod and beam being inclosed in said pillar, whatever the position of the latter.

256,693. ELECTRIC LAMP. ERWIN J. HOUSTON, Philadelphia, Pa., assignor to the American Electric Company, New Britain, Conn. Filed June 3, 1881. (No model.)

Brief.—An automatic cut-out for electric lamps, adapted to use in street-lamps where it is desired to utilize the light for a predetermined time. An adjustable collar is affixed to the carbon-carrier, and either short-circuits the lamp direct or holds the carbon from further descent until the current from the generator becomes sufficiently strong in a high-resistance shunt-circuit to operate an electro-magnetic cut-out, which throws a low-resistance shunt around the lamp.



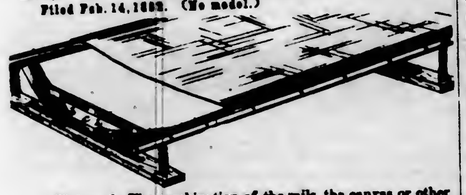
Claim.—1. The combination, with the carbon-carrier, of an electric lamp, devices, substantially as described, attached to and moving with said carrier, and adjustable in the manner and for the purpose set forth, so that the movement of the carrier may be stopped at any predetermined time.

2. The combination, with the carbon-carrier, of a lug or projection connected to or moving with the carrier, a block or anvil with which the lug or projection upon the carrier may make contact, said lug and anvil being adjustable with relation to one another, and circuit-connections, substantially as described, to the anvil, adapted to form a derived or branch circuit around the lamp when the lug or projection moving with the carrier is in contact with the block or anvil.

3. The combination, with a carbon-carrier, of a ring or collar adjustable thereupon and a stop or anvil electrically connected to the opposite carbon, so that when the collar and the stop are in contact the carbons are short-circuited and the light is extinguished.

4. The carbon rod of an electric lamp, and an adjustable collar, acting as a stop, in combination with circuit-closing devices, substantially as described, whereby an automatic extinguishment of said electric lamp takes place at times previously determined upon.

256,694. BED-BOTTOM. ELISABETH B. HULL, Clinton, Ill. Filed Feb. 14, 1882. (No model.)



Claim.—1. The combination of the rails, the canvas or other suitable flexible material, the inclined arms projecting from the rails and supporting the same, the connecting cross-bar united to the arms by hinged joints, which form the fulcrums upon which the said arms turn, and the supporting-slats, substantially as described.

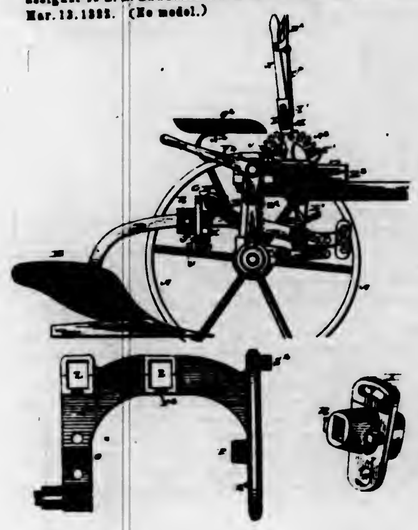
2. The combination of the rails, the canvas or other suitable flexible material, the inclined arms provided with wheels to facilitate their movement and prevent noise, the pivoted bars connecting the arms, and the supporting-slats, substantially as described.

3. The combination of the rails, the canvas or other suitable flexible material, the inclined arms provided with wheels, and the supporting-slats provided with grooves, in which said wheels run, substantially as described.

4. The combination of the rails, the canvas or other suitable flexible material, the inclined arms, the supporting-slats, the transverse bars, to which the arms are pivoted, and the springs or straps connecting the slats and rails to prevent undue rocking or tilting of the bed, substantially as described.

5. The combination of the rails, the canvas or other suitable flexible material, the connecting cross-bar, and the inclined arms provided with a series of holes adapted for the hinging of the connecting-bar at different points, substantially as and for the purpose set forth.

256,695. SULKY-PLOW. FRANKLIN B. HUNT, Richmond, Ind., assignor to L. L. Lawrence and H. H. Moon, same place. Filed Mar. 13, 1882. (No model.)



Claim.—1. The oscillator J, provided with a wedge-shaped hole for the oblique adjustment of the plow-beam, in combination with the set-screws R R, by which the beam is adjusted obliquely and held in place when adjusted, substantially as set forth.

2. The oscillator J, provided with a wedge-shaped hole and set-screws for the oblique adjustment of the beam, and the hole T and slot V for the lateral adjustment of the plow, substantially as set forth.

3. The hanger I, pivoted to the crank or bail C, and provided with the bearing S, bolt W, and corrugations X, in combination with the oscillator J, provided with the hole T, slot V, and corrugations X, for the purpose specified.

4. The oscillator J, provided with a wedge-shaped hole and set-screws for the oblique adjustment of the plow-beam, and the hole T, slot V, and corrugations X for the lateral adjustment of the beam, in combination with the hanger I, pivoted to the bail C, and provided with integral bearing S, and corrugations X, the corrugations being held in place, when adjusted, by means of the bolt W, substantially as set forth.

5. The oscillator J, provided with a wedge-shaped hole and set-screws for the oblique adjustment of the plow-beam, and the hole T and slot V for the lateral adjustment, in combination with the hanger I, provided with the pivot S for the hole T, and bolt W, substantially as set forth.

6. The seat-arch B, cast in a single piece and provided with the bearings O P, slots P^1, socketed bearings Z Z, and hollow bearing S^2, substantially as set forth.

7. The seat-arch, cast in a single piece and provided with the bearings for the bail C, socketed bearings Z Z, bearing S^2 for the lever Y^1, and the vertical bearing R^2 for the slide V^1, to which the land-wheel axle is attached, substantially as set forth.

8. The seat-arch, cast in a single piece and provided with the vertical part R^2, said vertical part being sloped or beveled and corrugated, for the purpose specified.

9. The seat-arch B, cast in a single piece and provided with socketed bearings Z Z, cast as integral parts of the arch, said bearings being provided with slots P^1, substantially as set forth.

10. The seat-arch B, cast in a single piece and provided with socketed bearings Z Z, said bearings having the slots P^1, bearings O P for the bail, hollow integral bearing S^2 for the lever, and the vertical part R^2 for the slide V^1, substantially as set forth.

11. The seat-arch, cast in a single piece and provided with the integral bearing S^2, in combination with the slide V^1, carrying the cam-lever C^1 and the block D^1, and connected with the bearing S^2 by means of lifting-bar X^1 and lever Y^1, the whole provided to be cast ready for use without fitting, substantially as set forth.

12. In combination with the integral bearing S^2 of the seat-arch, slide V^1, cam-lever C^1, and block D^1, the lever Y^1 and lifting-bar X^1, pivoted together by means of a socket-joint and held together by means of the bolt Z^1, substantially as set forth.

13. The seat-arch provided with the bearing S^2, in combination with slide V^1, the lifting-bar X^1, and lever Y^1, pivoted to the seat-arch by means of said bearing S^2, and the bolt B^2 for securing said lever in place, substantially as set forth.

14. In combination with the sloping and corrugated part R^2 of the seat-arch and the slide V^1, carrying the land-wheel spindle, the sloping corrugated block D^1, lifting-bar X^1, and lever Y^1, for raising and lowering the wheel A^1, substantially as set forth.

15. In combination with the slide V^1, cam-lever C^1, having a lug, F^1, and the corrugated block D^1, provided with lug E^1, whereby the cam-lever is adapted to lock and unlock the slide, substantially as set forth.

16. The corrugated part R^2 of the seat-arch and the corrugated part D^1, made sloping or beveled, as seen in Fig. 5, in combination with the cam-lever, by means of which the slide V^1 is clamped firmly to the seat-arch, substantially as set forth.

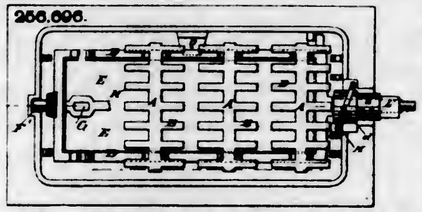
17. In combination with the seat-arch, the slide V^1, placed adjustably on the part R^2, and held in position, when adjusted, by means of the sloping or beveled corrugated block D^1, substantially as set forth.

18. In combination with the sloping corrugated part R^2 of the seat-arch, slide V^1, and sloping corrugated block D^1, the lifting-bar X^1 and the lever Y^1, for raising and lowering the wheel A^1.

256,696. SIFTING-GRATE. HENRY H. JAMES and JOHN C. DENNAN, Bangor, Me. Filed Nov. 5, 1881. (No model.)

Claim.—1. The combination of the frame E, having longitudinal bars D, with recessed projections *a b*, and the end pivots, F F', arranged in bearings of the stove or furnace frame, the bar H, having slots G, and the rocking bars B, having arms C, with spring-wire J, arranged in aperture *c*, whereby said frame and bars are held as described.

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2. In a grate, the combination, with the frame E, provided with pivots F F, of the rocking grate-bars A, the arms C, the bar H, the hook K, the sleeve L, surrounding the pivot F, and the cam-flange M on the sleeve L, substantially as herein shown and described, and for the purpose set forth.

3. In a grate, the combination, with the frame E, provided with pivots F F, of the rocking grate-bars A, the bar H, the hook K, the sleeve L, the cam-flange M, and the arm Q, substantially as herein shown and described, and for the purpose set forth.

4. In a grate, the combination, with the frame E, provided with pivots F F, of the swinging grate-bars A, the arms C, the rod H, the hook K, sleeve L, and the cam-flange M, provided with one or more notches, *d*, substantially as herein shown and described, and for the purpose set forth.

5. The combination, with the bar H, having end hook, K, and the frame E, having the flattened end pivot, F, of the sleeve L, having diagonal cam-flange M and square end L', and the crank O, having the square opening N and notch P, as and for the purpose specified.

6. In a grate, the sleeve L, constructed, as shown and described, with a squared outer end, and provided with a cam-flange, M, diagonal to the longitudinal axis of the sleeve, as set forth.

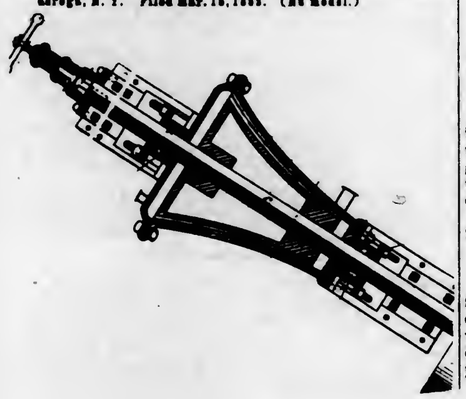
7. A grate made substantially as shown and described, and consisting of a series of rocking grate-bars resting on a pivoted frame, which has one of its pivots surrounded by a sleeve which is provided with a cam-flange or ridge passing into the opening of a hook at the end of a slotted bar, uniting the downwardly-projecting arms of the rocking grate-bars, all as set forth.

256,697. AIR-VENT FOR VESSELS CONTAINING LIQUIDS. GEORGE JAISWAY, Junction City, Ohio. Filed Oct. 18, 1881. (No model.)



Claim.—The combination, with the conical vent *a*, provided with the orifice *b* in its tapering end, and cover *c*, having the orifice *d*, of the concave diaphragm A, provided with the central orifice, *k*, and ball-valve *l*, substantially as described, and for the purpose set forth.

256,698. PULP-ENGINE. WALLACE W. D. JEFFERS, Ticonderoga, N. Y. Filed Mar. 16, 1882. (No model.)



Claim.—1. In a pulping-engine, the outer shell and inner grinder, constructed of conoidal shape, with their walls inwardly curved from end to end, substantially as and for the purposes specified.

2. In a pulping-engine, the outer shell and inner grinder, formed of conic sections of varying angles, substantially as and for the purposes specified.

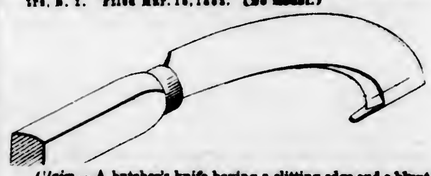
3. In a pulping-engine, the outer shell and inner grinder or roll, constructed of conoidal shape, the longitudinal line of working-surfaces at or near the small or inlet end being more nearly parallel to the axis of rotation than the working-surfaces at or near the larger or discharge end, substantially as specified.

256,699. TRUNK-HANDLE. CHARLES JENKINS, St. Louis, Mo., assignor to the Eichman Trunk Manufacturing Company, same place. Filed Feb. 22, 1882. (No model.)



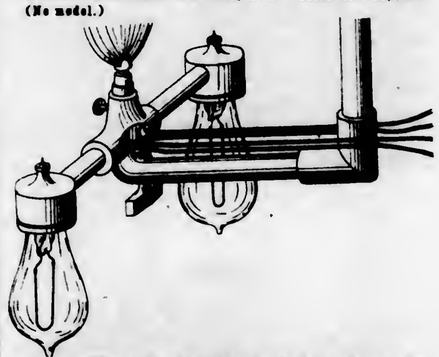
Claim.—The handle A, having flanged caps B B, in combination with brackets C C, having loops *c*, forming abutments against which the caps bear, as set forth.

256,700. SKINNING-KNIFE. MELVIN JINKS, Seneca Centre, N. Y. Filed Mar. 15, 1882. (No model.)



Claim.—A butcher's knife having a slitting-edge and a blunt guard extending beyond and approximately at right angles to said edge, substantially as described.

256,701. COMBINED GAS AND ELECTRIC-LAMP FIXTURE. EDWARD H. JOHNSON, New York, N. Y. Filed Nov. 28, 1881. (No model.)



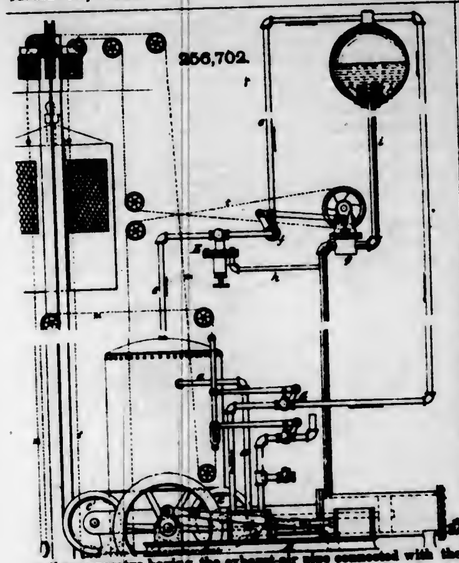
Claim.—The combination, with an arm of a gas-fixture, of an incandescent electric lamp having proper wire connections, and attached to such arm by a ring or hollow support passing over the gas-burner, the gas-burner and the electric lamp being capable of use either simultaneously or independently of each other without changing their relative position, substantially as set forth.

256,702. HYDRAULIC AND PNEUMATIC ELEVATOR. GEO. JOHNSON, Cincinnati, Ohio, and WALTER H. BAILEY, New York, N. Y. Filed Oct. 8, 1879.

Claim.—1. A hydraulic elevating apparatus having its lifting-cylinder constructed with a closed or air-tight head on its idle end, provided with an outwardly-opening check-valve, whereby a vacuum is effected and maintained on the outer side of the piston during the descending movement to serve to counterbalance, or partly counterbalance, the weight of the car.

2. A pneumatic or combined hydraulic and pneumatic ele-

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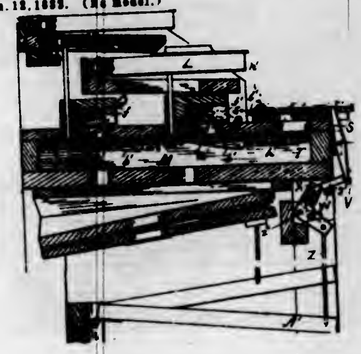
vating apparatus having the exhaust-air pipe connected with the jacket or the suction-pipe of the air-compressing pump, whereby the exhaust-air is utilized by the compressor or discharged through the jacket, serving to cool the air-cylinder and assist the working of the compressor, substantially as herein set forth.

3. A hydraulic elevating apparatus having a water-reservoir provided with a submerged float-valve guarding the water-exit therefrom to the lifting-cylinder, whereby said exit remains open during a sufficiency of water, but is closed by the descent of the float when the water falls below a normal level, thus preventing the inflow of air to the lifting-cylinder, substantially as shown and described.

4. The combination, in a hydraulic elevating apparatus operated by the pressure of air or other elastic fluid acting on a hydraulic column, of an automatic valve governing the supply of air-pressure on the hydraulic column, consisting of an air-throttling valve in the air-supply pipe connected with a movable partition or diaphragm, the chamber below which is connected with the water-column, while the chamber above the partition or diaphragm is in direct and open connection with the air-pipe around the stem connecting the throttling-valve and diaphragm, whereby the valve-stem works without friction, thus rendering the action of the valve certain and sensitive.

5. The combination of the diaphragm e and air-throttling valve *a*, connected together, the water-pressure pipe A, communicating with one side of the diaphragm, the spring assisting said pressure, and the air-supply pipe *c*, communicating with the other side of the diaphragm, substantially as herein shown and described.

256,703. APPARATUS FOR TUNING ORGAN-REEDS. GEO. B. KELLY, Boston, and ELWIN H. SMITH, Cambridge, assignors to the Mason & Hamlin Organ Company, Boston, Mass. Filed Jan. 12, 1882. (No model.)



Claim.—1. An apparatus for tuning organ-reeds, composed of a series of organ-reeds of any desired compass or scale, each reed of which is arranged in a separate reed-chamber and to be sounded of itself under the action of suitable wind mechanism, and is of a pitch higher than that of a corresponding reed in practical use, in combination with a holder of a construction to hold a reed while being tuned to and by the corresponding reed of higher pitch in said series of reeds, in communication with wind mechanism, in a manner to have the tongue of the reed unconfined in any chamber or compartment and open and free to be worked upon by the tuner, all substantially as and for the purpose described.

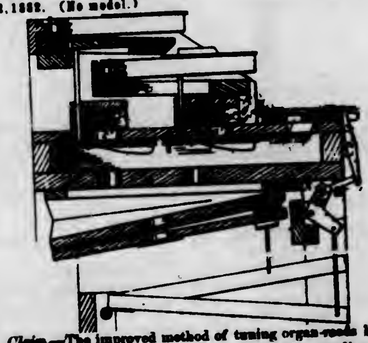
2. An apparatus for tuning organ-reeds, composed of two series of organ-reeds of any desired but of the same compass and scale, and having each reed of each series arranged in a separate reed-chamber and to be sounded of itself under the action of suitable wind mechanism, and the reeds of the one series of a higher pitch than those of the other series, in combination with a holder of a construction to hold a reed while being tuned to and by the corresponding reed of higher pitch in the one series of reeds, in communication with wind mechanism, in a manner to have the tongue of the reed unconfined in any chamber or compartment and open and free to be worked upon by the tuner, all substantially as and for the purpose described.

3. A holder or clamp for an organ-reed, composed of jaws constructed and arranged to open from and close upon a reed-block and when closed leave the reed-tongue open and free to be handled, in combination with a wind mechanism which is in communication with the tongue of the reed, all substantially as described, for the purpose specified.

4. A holder or clamp for organ-reeds, composed of jaws F r', the one, F, stationary, but adjustable in position, and the other, r', arranged to be moved toward and away from the stationary jaw, and both otherwise constructed to hold a reed-block between them and have the reed-tongue open and free to be handled, in combination with a wind mechanism which is in communication with the reed-tongue, all substantially as described, for the purpose specified.

5. A reed-clamp composed of a stationary and a sliding-jaw, in combination with a vertical lever, U, having spring V, a pusher-rod, W, a bell-crank lever, B', a pitman-rod, Z, and a treadle, A', arranged together to work upon the sliding jaw r', substantially as and for the purpose described.

256,704. METHOD OF TUNING ORGAN-REEDS. GEORGE B. KELLY, Boston, and ELWIN H. SMITH, Cambridge, assignors to the Mason & Hamlin Organ Company, Boston, Mass. Filed Jan. 12, 1882. (No model.)



Claim.—The improved method of tuning organ-reeds herein described, the same consisting in simultaneously sounding with the same or similar wind mechanism two reeds—to wit, a reed to be tuned, unconfined in any chamber or compartment, and a reed confined in a chamber or compartment and having a pitch higher than the pitch the reed being tuned is to have when in practical use in an organ—and then filing or scraping or otherwise manipulating the tongue of the reed to be tuned, bringing it in its said position to correspond in pitch and temperament to the reed of higher pitch, all substantially as and for the purposes specified.

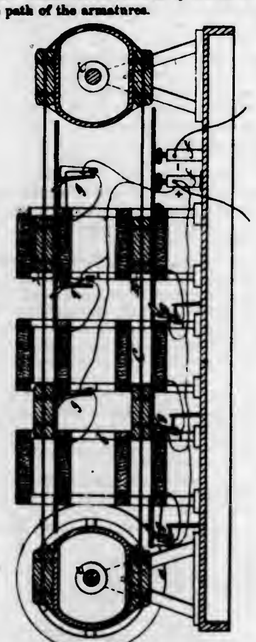
256,705. WATER-PROOF PAPER-HANGING. CHARLES T. KUNNUS, Cleveland, Ohio. Filed Oct. 8, 1881. (No specimens.)

Brief.—The paper is first coated with a solution of glue and glycerine and dried, when it is treated with a secondary solution of turpentine or naphtha, one-half part; india-rubber dissolved in naphtha, one-fourth part; linseed or other vegetable oil, one-eighth part; rosin or beeswax dissolved in turpentine, one-eighth part.

Claim.—A wall-paper rendered water-proof by treating the paper with a composition of viscous material and glycerine as a preparatory ground for the application thereto of a coating of a compound consisting of the ingredients herein formularized, or their equivalents, in about the proportions specified, and in the order and by the process substantially as described, and for the purpose set forth.

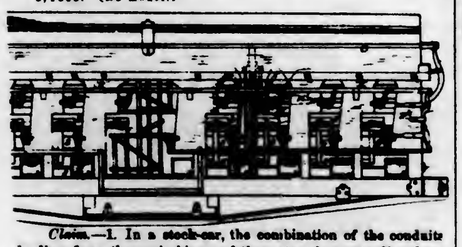
256,706. ELECTRIC MOTOR. JOHN DU BOIS KIELY, Toronto, Ontario, Canada. Filed Oct. 18, 1881. (No model.) Patented in Canada, Nov. 25, 1881.

Brief.—Armatures carried by a flexible band are drawn through axial magnets and pass around pulleys at the ends of the machine. The circuits are controlled by means of levers which project in the path of the armatures.



Claim.—The combination, with armatures arranged at intervals on a non-conducting belt and magnets fixed at intervals on one or both sides of the belt, of the lever circuit-closers *g*, one of whose arms serves to make and break the circuit for each magnet and the other to project in the path of the armatures for being operated, as described.

256,707. CATTLE-CAR. ELIAS KOHLER, York, Pa. Filed Feb. 3, 1882. (No model.)



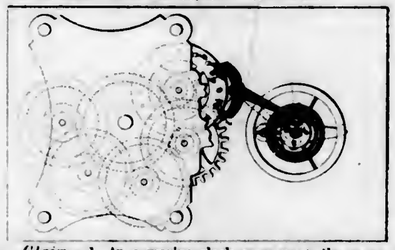
Claim.—1. In a stock-car, the combination of the conduits leading from the grain-bins, and the water-pipes extending from a water-tank through passages in the conduits, the double valves and levers for operating them simultaneously in opposite directions from the end of the car, the valves in the water-pipes adapted to be operated by suitable mechanism, and the tilting troughs and mechanism for operating the same from the end of the car, the whole arranged in such manner that the troughs may be filled with food or water or emptied, substantially as specified.

2. The combination, in a stock-car, of a water-tank at the top, the pipes leading from the same to the troughs, the said troughs being mounted on rock-shafts, whereby they may be emptied to prepare them for the reception of feed or water, the controlling-valves, and operating-rods and locking devices, all arranged to operate substantially as and for the purposes set forth.

3. In combination with the movable bottom of the car, the folding partitions hinged thereto, substantially as specified.

4. In combination with the stock-car and its movable floor and folding partitions, the flexible partitions and their rollers, arranged substantially as and for the purposes specified.

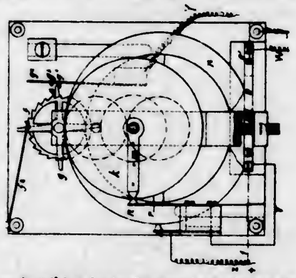
256,708. CLOCK-MOVEMENT. FREDERIC A. LAMB, New Haven, Conn. Filed Dec. 30, 1881. (No model.)



Claim.—1. In a marine clock-movement, the verge constructed with banking-pins *i i*, projecting from the working-surface of the verge, substantially as described.

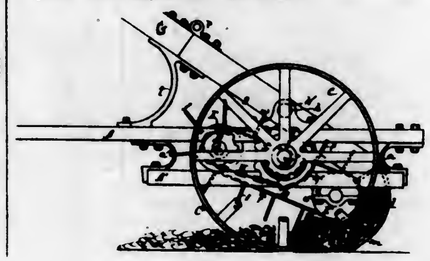
2. In a marine clock-movement, the verge constructed with banking-pins *i i*, projecting from the working-surface of the verge, made in one and the same piece with the lever or arm C, substantially as described.

256,709. STRIKING DEVICE FOR ELECTRIC AND OTHER CLOCKS. ALPHONSE LEMOINE, Paris, France. Filed Dec. 9, 1881. (No model.) Patented in France Oct. 24, 1881.



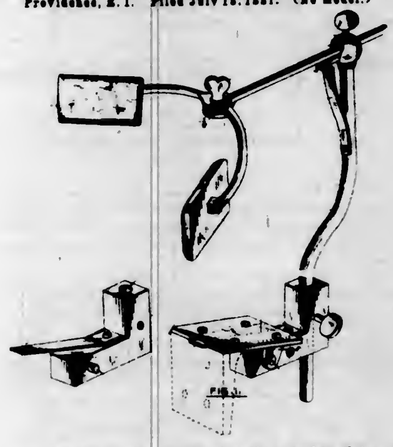
Claim.—A striking device for electric or other clocks, consisting of an insulated disk, *k*, provided with a conducting-segment, *l*, and a conducting-disk, *n*, having projections *p*, in combination with a connecting conductor-strip, *m*, two insulated contact-springs, *r s*, and two contact-springs, *v v'*, operated by an insulated pin, *u*, mounted in the pendulum, the whole actuated to make and break an electric circuit a suitable number of times at the end of each hour and cause the sounding device to strike the hour, as described.

256,710. HAY-LOADER. GEORGE W. LE VIN, Chicago, Ill., assignor of one-half to Marshall Beck, same place; said Le Vin and Beck assignors of one-third to Edwin Hopkins, same place. Filed Aug. 9, 1881. (No model.)



Claim.—In a hay-loader, the combination, with the frame A A', having brackets H and *t*, and chute G, having trunnions *h h*, and supported in said bearings or brackets, with rake-teeth *m m*, attached to its rear curved end, of the shaft or axle B', carrying wheels C C, the pulleys C' D, chain W, drums E E', and apron F, having elevating-fingers *f*, and working on a different plane from that of the lower slotted floor, *g*, of the chute, substantially as shown and described.

256,711. BACK FOR PIANO-STOOLS. WILLIAM S. LISCOMB, Providence, R. I. Filed July 16, 1881. (No model.)



Claim.—1. The combination of a securing-plate, a pivoted mortised block for receiving a vertical back-rest standard, and a spring for controlling the block, substantially as described.

2. The combination, with the pivoted mortised block provided with a spring, of the vertical standard, adjustable in said block, back-pads, and a flexible joint or joints between said pads and said standard, substantially as described.

3. The combination of the standard, the pad-bar, the ball-and-socket joint, and the spring, substantially as described.

4. The combination, with a flexibly-supported standard, of a pair of back-pads flexibly mounted on arms which are adjustable with relation to each other, substantially as described.

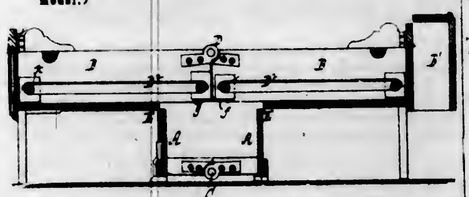
5. The combination, with a stool, a standard, and a pad-bow of a pair of back-pads separately hinged on vertical axes to said pad-bow, substantially as described.

6. The combination, with the swiveled back-pads, the bow, and the pad-bar, adjustably jointed and provided with a clamping-screw, of the standard and a spring-controlled joint at or near the connection of the bar with the standard, substantially as described.

7. The combination, with a stool-back standard, of a pivoted base-block, in which said standard is mounted, and a spring for forcing said standard forward, and an abutment for the block which limits the rearward movement of the standard, substantially as described.

8. The combination, with a stool, of the spring base-block flexibly jointed with relation to the stool, the vertically-adjustable standard, the pad-bar flexibly jointed to the standard, and the pad-bow and pads, substantially as described.

256,712. BUREAU-BEDSTEAD. WILLIAM MARSCH and FREDERICK BERTRAM, Brooklyn, N. Y. Filed Mar. 8, 1883. (No model.)



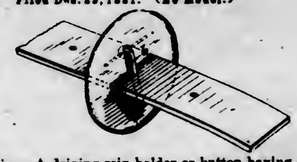
Claim.—The combination, substantially as hereinbefore set forth, of the base-frame divided into two sections, A A, hinged together by hinges C, located adjacent to the lower edges of the sections for permitting the said sections to tilt, as described, with the bedstead composed of two sections, B B, hinged together in the vertical plane of the base-frame hinges, and also hinged to said base-frame sections, as and for the purpose set forth.

256,713. HOG-RING PINCHERS. ERBE MASON, Macon County, Ill. Filed Jan. 3, 1882. (No model.)



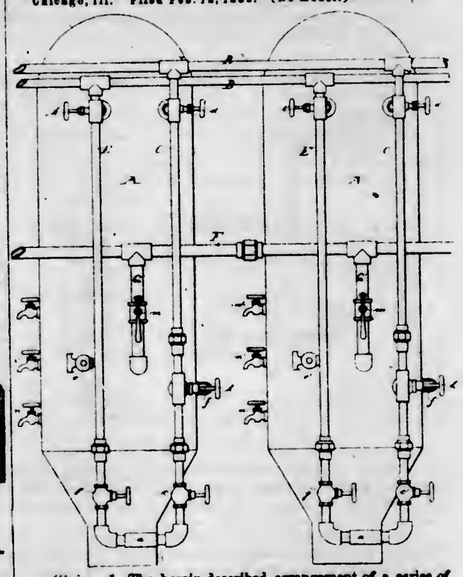
Claim.—The herein-described pinchers, having the longer or upper jaw, *a*, encompassing an arc equal to one-half of a circle, and the lower or shorter jaw, *a*, encompassing an arc equal to one-quarter of a circle, each jaw being provided with the groove extending around it, and the lower one being provided with the recess *d*, the said pinchers being adapted to have the end of the lower jaw placed against the end of the hog's snout, and to have the upper jaw forced down while the lower remains idle, so that a half-circle or a half of the full length of the blank will be under this upper jaw and be operated upon thereby continuously and regularly, thereby insuring the even and regular bending of the blank to form a circle, as set forth.

256,714. DRIVING-REIN HOLDER OR BUTTON. STEPHEN A. MARKER, Hartford, Conn., assignor to John W. Gray, same place. Filed Dec. 29, 1881. (No model.)



Claim.—A driving-rein holder or button having a transverse opening through it for the reception of the rein or strap thereof, and a tongue suitably connected directly to the holder or button for securing the rein or strap thereto, substantially as and for the purpose set forth.

256,715. LARD AND TALLOW TANK. JAMES K. MARTIN, Chicago, Ill. Filed Feb. 18, 1882. (No model.)



Claim.—1. The herein-described arrangement of a series of tanks, A A', each connected with a steam-pipe, B, water-pipe D, and lard or tallow conveying pipe F by suitable branches and

valves for adapting either tank alternately to be used for rendering or purifying purposes, substantially as set forth.

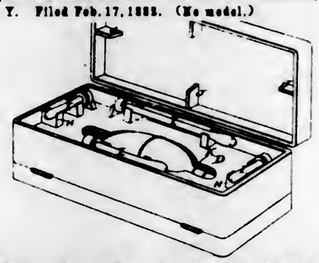
2. The combination of a series of tanks, A A′, connected with pipe F by branches G and G′, each having a valve, *m* and *m*′, for the purpose of conveying lard or tallow from any one tank to another, substantially as and for the purpose set forth.

3. The combination of a series tanks, A A′, each connected with the lard or tallow pipe F by branches G G′, having valves *m* and *m*′, and each tank containing a curved and perforated pipe, *g*, that is connected by a branch, *f*, with the steam-pipe B, all substantially as and for the purpose set forth.

4. The combination, with a series of tanks connected by pipe F and branches G and G′, having valves *m m*′, of the steam-pipe B and water-pipe D, both connected by branches with the top and bottom of all the tanks and provided with suitable valves, substantially as and for the purpose set forth.

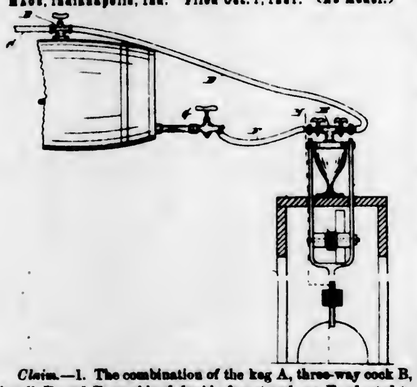
5. The combination of a series of tanks, A A′, each connected with pipe F by branches G G′, having valves *m m*′, each tanks being also connected at top and bottom with steam-pipe B by branches C C′, having valves *d d*′ and *e e*′, and having perforated pipes *g g*′, that connect the pipes *f f*′ with the branches C C′, and have valves *h h*′, and with water-pipe D by branches E E′, having valves *j j*′ and *k k*′, all substantially as and for the purpose set forth.

256,716. SYRINGE-BOX. THOMAS F. MATTHEWS, New York, N. Y. Filed Feb. 17, 1882. (No model.)



Claim.—An invertible syringe-box having hinged covers forming two of its opposite sides, an intermediate fixed partition converting the box into two compartments, one of which is adapted to hold a syringe and the other a set of pipes therefor, clamps on one of the covers, adapted to hold the pipes in place in their compartment when said cover forms the bottom of the box, and an aperture in said partition, which serves as a guide by which to place a syringe in one compartment and permit a part of the syringe to be seen through the other compartment when the box is inverted, as set forth.

256,717. APPARATUS FOR DRAWING BEER. CLEMENT A. HAUG, Indianapolis, Ind. Filed Oct. 1, 1881. (No model.)

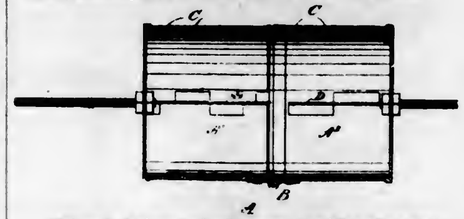


Claim.—1. The combination of the keg A, three-way cock B, tubes C, D, and F, combined double faucet and cap E, adapted to be applied to the glass, and faucet G, all substantially as shown and described, and for the purposes specified.

2. The combination, in an apparatus for drawing beer under pressure, and which prevents the escape of gases, of a cap, E, for said glass, which fits tightly thereon, a vertically-movable rod attached to said cap, and a handle for manipulating said rod and holding said cap firmly upon said glass, substantially as set forth.

3. In an apparatus for drawing beer under pressure, a combined double faucet and cap, E, having two openings not connected with each other, each having a cock, and both opening independently of each other through the bottom side into the glass, one being for the admission of beer and the other being for the admission or expulsion of air, all substantially as specified.

256,718. COFFEE AND NUT ROASTER. THOMAS F. MCCAFFERY, Philadelphia, Pa. Filed Feb. 10, 1882. (No model.)

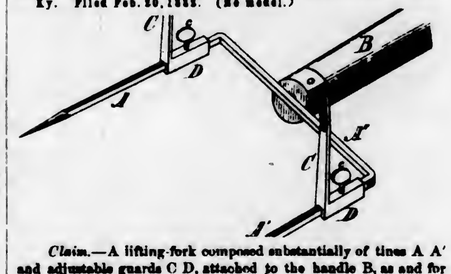


Claim.—1. An improved coffee roaster, consisting of two open-ended cylindrical sections hinged together at their open ends, with the end of one projecting into the other, and provided with pivots projecting from their closed ends, substantially as herein shown and described.

2. In a coffee and nut roaster, the combination, with the cylindrical sections A′ A², provided with apertures C, of the hinge B, uniting the two sections, substantially as herein shown and described and for the purpose set forth.

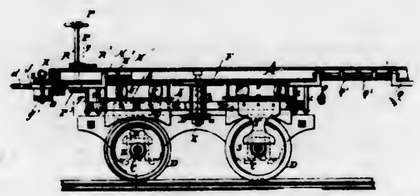
3. In a coffee and nut roaster, the combination, with the sections A′ A², provided with apertures C C, and internal projecting strips, D, of the hinge B, uniting the two sections, substantially as herein shown and described and for the purpose set forth.

256,719. LIFTING-FORK. GEORGE W. MCDANNOLD, Kenton, Ky. Filed Feb. 20, 1882. (No model.)



Claim.—A lifting-fork composed substantially of tines A A′ and adjustable guards C D, attached to the handle B, as and for the purpose herein set forth.

256,720. CAR-BRAKE. JOHN MEISSNER, New York, N. Y., assignor of one-half to Henry Fleischman, same place. Filed Sept. 30, 1881. (No model.)

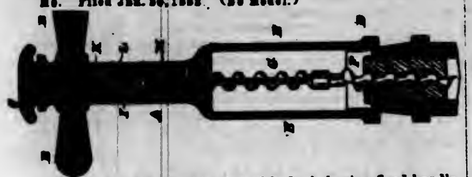


Claim.—1. The combination, with the brake-shoe frame L, of the draw-bar N, provided with suitable devices for connecting it to said frame, substantially as herein shown and described.

2. The combination, with the brake-shoe frame L and brake-shaft P, provided with lever P², of the draw-bar N, having socket A, and provided with lugs *q*′, substantially as herein shown and described, whereby the brake is set, as set forth.

3. The combination, with the brake-shoe frame L, brake-shaft P, provided with lever P², and draw-head O, of the draw-bar N, provided with frame-connecting devices *q*′, and having slotted coupling-pin hole *f*, substantially as herein shown and described, whereby the brakes may be set while the cars are coupled, as set forth.

256,721. CORK-EXTRACTOR. WILLIAM HEYNE, St. Louis, Mo. Filed Jan. 26, 1882. (No model.)

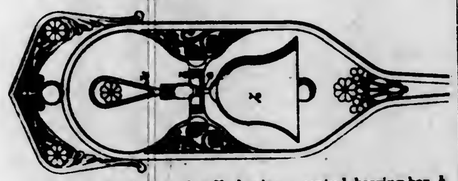


Claim.—1. The combination of body A, having fixed handle B, ring D, connecting-arms E, screws F and G, and plunger C, the screw-shaft *m* secured to the plunger so to turn freely therein, as and for the purpose set forth.

2. The combination of body A, provided with handle B, the ring D, connecting-arms E, screws F and G, plunger C, and sleeve I, the latter secured to the shaft by nut K and to the plunger by transverse pin L, all substantially as and for the purpose set forth.

3. In combination with body A, ring D, arms E, screws F and G, and plunger C, the spring M, as and for the purpose set forth.

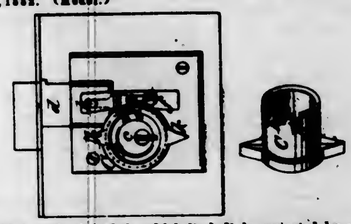
256,722. CALL-BELL FOR TABLE-WARE. WATSON J. MILLER, Birmingham, and HENRY BERRY, Huntington, Conn. Filed Mar. 11, 1882. (No model.)



Claim.—1. A center-handle having a central bearing-bar, *b*, across its loop, said bar being annularly grooved at *c* to form an arbor, and in connection therewith the detachable bell A, having its handle *b* obliquely turned just above the bowl, and the oblique hook *c* engaging said arbor, substantially as specified.

2. The combination, with the center-handle *a* and its centrally-grooved transverse bearing-bar *b*, of the detachable bell *h* and its handle-hook *c* above the bowl, substantially as specified.

256,723. DRAWER-LOCK. FRANK W. MIX, Perrysville, Conn., assignor to the Eagle Lock Company, same place. Filed Jan. 6, 1882. (Model.)



Claim.—1. A lock in which its bolt is projected by a sleeve fitting upon the lock-cylinder and engaging with a slide connected to the said bolt; substantially as herein shown and described.

2. The notched sleeve C and slotted slide *f*, provided with the lugs *i*, combined with the cylinder *b* and bolt *d* of a lock, substantially as and for the purposes set forth.

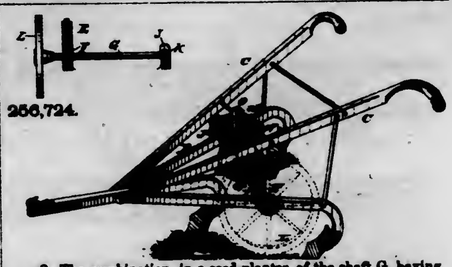
3. In a lock, the pivoted catch *m* and screw *o*, in combination with locking-cylinder C, substantially as and for the purposes set forth.

256,724. SEED-PLANTER. EDWARD P. MORRIS, Glade Hill, Va. Filed Jan. 5, 1882. (No model.)

Brief.—One end of the shaft on which the hopper and feed and bearing wheels are mounted is journaled to an oscillating bearing. The shaft near the bearing-wheel is spring-pressed, which allows it to conform to the inequalities of the ground.

Claim.—1. The combination, in a seed-planter, of a shaft for the seed-dropping wheel, which is adapted to oscillate vertically at one end, and a hopper which is supported upon the shaft and connected to a cross-rod above it by means of a slotted bar, to allow the hopper to oscillate with the shaft, substantially as specified.

256,724.



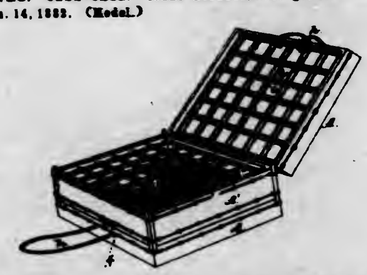
2. The combination, in a seed-planter, of the shaft G, having seed-dropping wheel H, the slotted standard E, having elastic sliding bearing F, the slotted standard J, having oscillating bearing K, the driving-wheel L, and a suitable frame-work having opening and covering plows, substantially as shown and described.

256,725. COMBINED BUCKLE AND SNAP-HOOK. WILLIAM H. MUNSS, Cleveland, Ohio. Filed Feb. 21, 1882. (No model.)



Claim.—The combination, with the end bar, E, and its hook F, curved inward toward the next bar, G, of the bar G of the buckle, and the fastening stud or tongue C, adapted to hold a strap, which, when passed over the bar G and secured, as shown, serves to form a stop to insure the engagement of a snap hook or link with the hook F, substantially as specified.

256,726. CELL-CASE. ISAAC NICHOLS, Chicago, Ill. Filed Jan. 14, 1882. (Model.)



Claim.—In an egg-carrier, the combination, with the intermediate frame, A′, having net-work *d e d* and cross-bar L, of the end frames, A A, having end walls, *b b*, handles *h* A, and net-works *c d c*, hinged to the frame A′ at *a a*, and provided with fastenings *f f*, and the short abutting supports *i*, substantially as and for the purposes specified.

256,727. GONG-BELL. GEORGE B. OWEN, Winsted, Conn. Filed Feb. 25, 1882. (Model.)



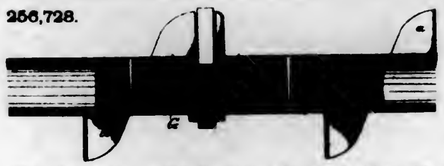
Claim.—1. A gong-bell constructed substantially as herein shown and described, and consisting of the foot A, bent standard B, sounder C, gong E, and rod F, as set forth.

2. In a gong-bell, the combination, with the sounder C, carrying the gong, of the rod F, substantially as herein shown and described, whereby the sounder is connected with a sounding-board, and the gong is made to have a louder, clearer, and more musical tone, as set forth.

256,728. BEARING AND COUPLING FOR SCREW-CONVEYER SHAFTS. HENRY PALMER, Chester, Pa. Filed Mar. 13, 1882. (No model.)

Claim.—The combination of two sections of a conveyer-shaft

256,728.



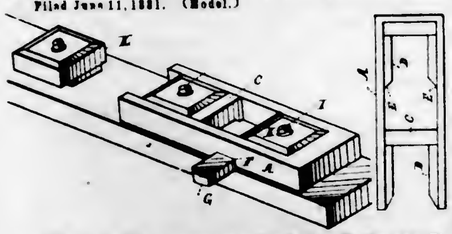
and a journal-bar, *D*, adapted to couple the same together, with a tubular bearing, G, extending into one or both of the shafts, and a bracket or hanger for carrying the said bearing, all substantially as set forth.

256,729. RAISINGS FOR UPHOLSTERY OF FELT. WILLIAM K. PARKER, New Haven, Conn., assignor of one-half to English & Mersick, same place. Filed Mar. 13, 1882. (No specimens.)



Claim.—The herein-described improvement in raisings for upholstery, consisting in felt having its surface coated with a stiffening material preparatory to the cutting of the raisings therefrom, substantially as described.

256,730. NUT-LOCK. LAWSON G. PEEL, Haslehurst, Miss. Filed June 11, 1881. (Model.)



Claim.—1. The combination, with the bar H, the nuts K, their washers, and the key G, of the locking-frame A, having internal flanges, D, beveled at E, transverse bar C, and notches F, arranged substantially as described.

2. The nut-locking frame A, consisting of the longitudinal and transverse bars, the internal flanges, D, beveled at E, and notches F, substantially as and for the purpose described.

256,731. WASH-BOILER FOUNTAIN. ELIS PITTEY, East New York, N. Y. Filed Jan. 9, 1882. (No model.)



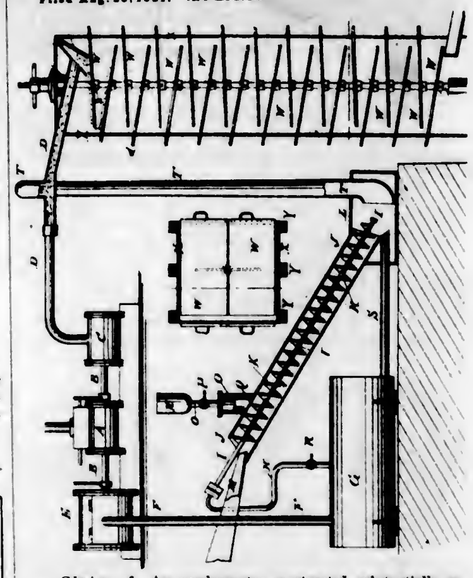
Claim.—A wash-boiler fountain consisting of a circular base having a diametrical channel, an upright discharge-tube connected to one end of said channel, independent semi-circumferential channels provided with independent openings and connected with the opposite end of said diametrical channel, and an interior tapering projection at the point of connection of the diametrical and semi-circumferential channels, all substantially as described.

256,732. ART OF ORNAMENTING METALS. JOHN D. PLASCHAMP, Chicago, Ill. Filed Feb. 15, 1882. (Specimens.)



Claim.—The art of ornamenting watch-cases by first soldering variously-shaded ornamental metals upon a body or ground metal and then trimming away the metal beyond the outlines of the sunken metal, and then blending and ornamenting the sunken metal, substantially as specified.

256,733. AMALGAMATOR. CHARLES PORTER, Omaha, Nebr. Filed Aug. 25, 1881. (No model.)



Claim.—1. An amalgamator constructed substantially as herein shown and described, and containing the following elements, viz: a mixing-tube in which rotates a conveyer and air-distributer and having a quicksilver-atomizer attached, a receiving-box connected with the mixing-tube and with an air-compressor, a transfer-pipe through which the contents of the receiving-box are projected by an air-blast into a water-pipe, and a water-forcing device by which the contents of the water-pipe are carried into an amalgamating-box and delivered upon a series of plates arranged within the box, all as set forth.

2. The combination, with the chamber G, having pipe H, of the perforated tubular shaft I, having spiral flange K, the inclined open-ended tube J, the air-tight chamber L, and the apron M, as and for the purpose described.

3. The combination, with the tube J and a quicksilver-reservoir, N, connected therewith, of the discharge-pipe O, enlarged toward its lower end, having the valve P, and provided with an atomising-diaphragm, Q, as and for the purpose described.

4. The combination, with the pipe D, of the distributer U and the upper adjustable amalgamating-plates inclined in opposite directions and coming short of the casing, as and for the purpose specified.

5. In an amalgamator, the combination, with the mixing-tube J, of the receiving-box L, the air-blast pipe S, conductor-pipe T, and water-pipe D, substantially as herein shown and described.

6. In an amalgamator, the combination, with the perforated air-shaft I, tube J, and receiving-box L, of an air-chamber, G, and pipes H S, substantially as herein shown and described, whereby the contents of tube J will be subjected to air-blasts, as set forth.

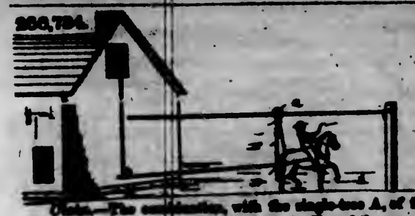
7. In an amalgamator, the combination, with the pipe D and the plates W, of the distributer U, substantially as herein shown and described, whereby the contents of pipe D will be spread upon the said plates W, as set forth.

8. In an amalgamator, the distributer U, constructed with a face-lining, V, substantially as described, whereby the wearing of the said distributer is prevented, as set forth.

9. The method of transferring the amalgamated gold and sand to the wet amalgamating mechanism, which consists in forcing the said amalgamated gold and sand by means of a blast of compressed air into a stream of water that flows into the wet amalgamating-box, as set forth.

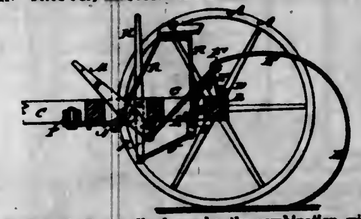
256,734. SINGLE-TREE SLING. JOSEPH H. PORTER, Ottawa, Ill. Filed Feb. 21, 1882. (No model.)

256,734.



Claim.—The combination, with the single-tree A, of the attachment B, provided with hooks C and eyes D, and the rope, wire, or chain E, and pulley-sheave G, adapted to travel upon a suitable rope, wire, or chain and support the single-tree parallel with the line of draft, substantially as and for the purposes specified.

256,735. SULKY HAY-RAKE. WALTER P. PRALL, Colusa, Cal. Filed July 23, 1881. (No model.)



Claim.—1. In a sulky hay-rake, the combination, with the axle B, bars D F, connected by the ends of teeth R, and the teeth E, of the connecting-rods G J L, connecting-lever H, hand-lever K, and foot-lever M, pivoted at N, and the pivoted draw-bar O and single-tree P, whereby when the hinging-point of draw-bar O is brought below foot-lever pivot N the draft operates to raise the rake-teeth and discharge the load, substantially as shown and described.

2. In a sulky hay-rake, the combination, with the axle B, bars D F, placed one above the other, and the teeth R, of the rods G J L, connecting-lever H, hand-lever K, and foot-lever M, whereby the rake is lowered by the combined hand and foot power of the driver, substantially as shown and described.

256,736. CURTAIN-FIXTURE. WENDELL P. PUTNAM, Watertown, Mass. Filed Jan. 23, 1882. (No model.)

Brief.—Under a fast motion the leg attached to the cap throws the pawl attached to the spindle up into engagement with the recessed end cap.



Claim.—2. A spring-actuated curtain-roller carrying an end cap, having one or more recesses in the inner wall of its peripheral flange and a pawl-lifting leg near its center, in combination with a central spindle provided with a pivoted pawl adapted to be lifted by the leg into engagement with the recess in the end cap during a quick upward movement of the shade, for the purpose set forth.

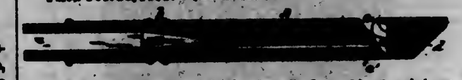
2. The spindle D and the pivoted pawl G, supported thereon, in combination with the spring-actuated roller B, carrying the recessed end cap and the leg I or equivalent devices, for the purposes set forth.

256,737. BOX-FASTENER. GEORGE S. RANDALL, Marshfield, assignor to Howard G. Barnes, Boston, Mass. Filed Mar. 8, 1882. (No model.)



Claim.—In a box-fastener, the combination of the spring part C C and the plate H with the hitch part D d d and catch E, operating together substantially as described, and for the purpose set forth.

256,738. SCRIBNER PENCIL-POINT PROTECTOR, TWINE-CUTTER, AND WHISTLE. JOSEPH ROCKENDORFER and CLARK W. DOMAN, New York, N. Y., assignors to said Rockendorfer. Filed Feb. 20, 1882. (No model.)



Claim.—1. The hereinbefore-described combined point-protector, whistle, and twine-cutter as a new article of manufacture.

2. The tube A, provided with a whistle end and with a slot, *a*, as described, in combination with the cutter *c*, and the plug *d*, constituting the whistle-plug and the cutter-holder, as shown and set forth.

256,739. DRILL-CHUCK. GEORGE REMPFER, Philadelphia, Pa., assignor to himself, John George Rehfuss, and Martin G. Rehfuss, all of same place. Filed Dec. 28, 1881. (No model.)



Claim.—1. A chuck in which the body A, having a threaded portion, *c*, and at end near its end a plain cylindrical portion, *y*, is combined with a slotted sleeve and with a nut adapted to the conical portion of the sleeve and to the threaded portion of the body, and constructed to fit snugly on and covering the plain cylindrical portion *y* of the said body, all substantially as set forth.

2. The combination of the threaded body of the chuck and its beveled end *y* with a split sleeve having a beveled shoulder, *p*, adapted to the beveled end of the body, and with the nut H, substantially as set forth.

3. A chuck in which two slotted sleeves, D and G, the cylindrical portion of one fitting into that of the other, and each having a conical termination, are combined with the body A and nut H, substantially as set forth.

4. The combination of the slotted sleeve D, having a conical termination, *d*, and beveled shoulder *n*, the slotted sleeve G, having a beveled end, *n*, adapted to the said beveled shoulder of the sleeve D, the body A, and the nut H, all substantially as specified.

256,740. NECKTIE-FASTENER. PARKER H. RAW, Rochester, N. Y. Filed Sept. 24, 1881. (Model.)



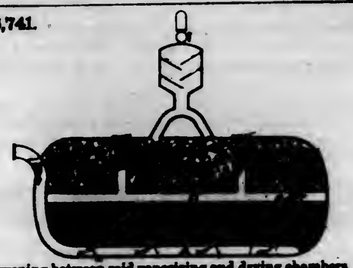
Claim.—1. The combination, with the necktie-bow G, of the wire loop-spring A and the loop or staple E, attached to the bow, substantially as herein shown and described, and for the purpose set forth.

2. The wire loop-spring A, made substantially as herein shown and described, and consisting of a wire bent to form two side loops, B B, and a middle loop, D, the ends C of the wire being crossed diagonally under the loop D, as set forth.

256,741. GAS-GENERATING APPARATUS. EDWARD E. REYNOLDS, New York, N. Y. Filed Dec. 29, 1881. (No model.)

Claim.—1. In a gas-generating cylinder, the combination, substantially as hereinbefore set forth, of the air-inlet pipe, the air-distributing chamber, the vaporizing-chamber above said air-distributing chamber, the intervening perforated division-wall, the upright air-distributing perforated pipes leading from said air-distributing chamber, the drying-chamber, the horizontal chamber

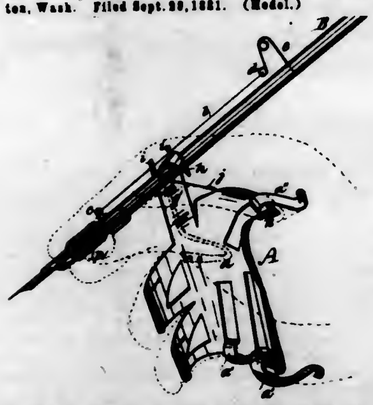
256,741.



intervening between said vaporizing and drying chambers, the perforated division-walls, and the replenishing-pipes leading to said intervening chamber.

2. The combination, substantially as hereinbefore set forth, in a gas-generating cylinder, of the air-distributing chamber, the horizontal vaporizing-chamber above said air-distributing chamber, the horizontal drying-chamber, the intervening perforated division-walls, and the gas-receiving chamber provided with inwardly-projecting deflectors.

256,742. WRITING IMPLEMENT. SAMUEL S. ROGERS, Dayton, Wash. Filed Sept. 29, 1881. (Model.)



Claim.—1. The pen-holder B, provided with the eyes *e* and *d*, and with the guide-wire *h*, substantially as and for the purposes described.

2. The main frame *a*, formed with the guide *g*, and provided with the wire *j*, in combination with the pen-holder B, provided with the guide-wire *h*, the upper end of the guide *g* being formed with the hook *h*, and the arms *i i*, as and for the purposes set forth.

3. The main palm-supporting frame *a*, formed with the finger-supports *f f*, the guide *g*, and the springs *a'* and *a''*, substantially as and for the purposes set forth.

4. The pen-holder B, provided with the wire *h*, in combination with the guide *g*, formed with the hook *h*, arms *i i*, and the wire *j*, secured to the said guide and to the curved portion *b* of the frame, as and for the purposes set forth.

5. The handle B, provided with the tension-spring *e* and with the eye *e*, in combination with the wire *h*, as and for the purposes set forth.

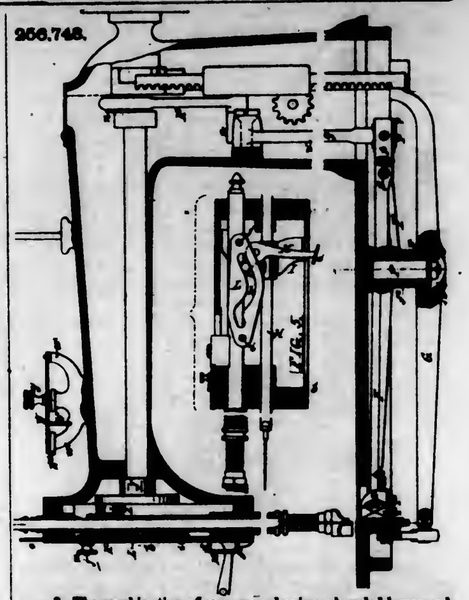
256,743. SEWING-MACHINE. GUSTAV S. ROSENBERG, Philadelphia, Pa., assignor to the American Buttonhole, Overseaming and Sewing Machine Company, same place. Filed Feb. 13, 1882. (No model.)

Brief.—The invention relates to the shuttle-feed and take-up mechanisms and to the tension device, as indicated by the claims.

Claim.—1. The combination of the needle-bar or cross-head and its pivoted take-up lever with the adjustable slotted plate L and a device for securing the said plate after adjustment, substantially as described.

2. The combination of the arm *g* and mechanism for vibrating the same with the shuttle-lever F, provided with projections *p p*, having plane inner faces, and the cylindrical block P, adapted to slide and oscillate between the projections and on the lower end of the said arm *g*, substantially as specified.

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3. The combination of the arm *g*, having a beveled lower end, the cylindrical block P, having an opening, with countersunk ends, the set-screw *i*, having a beveled head and the shuttle-lever having projections *p p*, for embracing the block P, as set forth.

4. The combination of the rod N', actuated by the driving-shaft, and the lever N, pivoted to the frame of the machine, with a connecting-pin, Q, having two portions, *a* and *a'*, the former eccentric in respect to the latter, one portion being adapted to the said rod N' and the other to an arm of the lever N, all substantially as set forth.

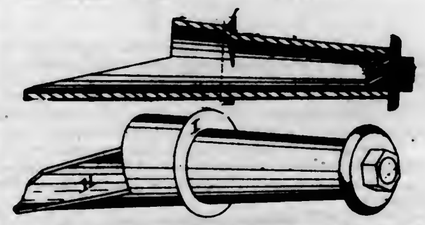
5. The combination of the feed-lever G, its recess *h'*, and pivot-pins *o' o'* with the shuttle-lever, its hub *f'*, and ring *s*, extending into the recess, all substantially as set forth.

6. A tension device in which two fixed arms *w w'*, and a spring-plate, W, loosely connected to the arm *w* and acted on by a set-screw, are combined with a plate, W', having a projection fitting in an orifice in the arm *w'*, to which the said projection is loosely connected by a pin, all substantially as described.

7. The combination of the arms *w w'* and the plates W and W', of the tension device and a thread-guiding hook, *y'*, situated at the rear and clear of said plate W', as specified.

8. The shuttle-driver consisting of two metal plates, T T', conforming substantially with each other and constructed for attachment to the shuttle-lever, as set forth.

256,744. WAGON-AXLE SKEIN. JOSHUA SANDAGE, Carpentersville, Ill. Filed Sept. 11, 1880. (No model.)



Claim.—1. An axle-skein composed of a spindle-section and an angularly enlarged extension or socket back of the former, the whole made from a single piece of plate metal and having but a single longitudinal seam, the meeting edges of which are secured by a weld along their entire length.

2. An axle-skein made from a single piece of plate metal and composed of a spindle-section, an enlarged extension or socket back of the former, a short bevel joining the two sections on the upper side of the skein.

3. An axle-skein blank of a single piece of plate metal, without longitudinal division, having a spindle portion and an enlarged extension in rear thereof, whose edges form an angle with those of the spindle portion at the points of junction.

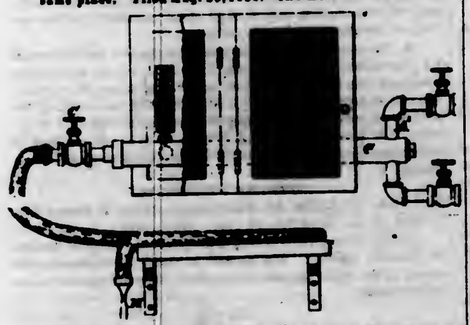
4. An axle-skein blank of a single piece of plate metal, without longitudinal division, having a spindle portion and an enlarged extension in rear thereof, whose edges form an angle with those of the spindle portion at the points of junction and diverge their own diameter angularly a short distance back of those points for the purpose of forming shoulder or angular enlargements on the upper side of the skein at the junction of the spindle with the extension.

5. A plate-metal axle-skein blank composed of a tapering section and a wider section adjoining the wider end of the former and projecting beyond it on each side thereof.

6. A metal-plate axle-skein blank composed of the tapering section, the enlarged central section projecting at each side beyond the former, and the tapering tail-section.

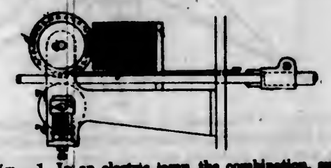
7. A metal-plate axle-skein composed of the spindle portion, an enlarged extension-socket, and a bevel, in combination with the collar fitted at its back edge upon the bevel.

256,745. APPARATUS FOR ADMINISTERING INJECTIONS. PETER V. SCHENCK, St. Louis, Mo., assignor to James W. Allen, same place. Filed Aug. 26, 1881. (No model.)



Claim.—In a device for giving injections and like purposes, the combination of the separate hot and cold water pipes with their stop-cocks, the single pipe C, with which they unite, the medicinal reservoir connected with the single pipe, and a hose and eduction-pipe, all substantially as and for the purposes set forth.

256,746. ELECTRIC LAMP. LOUIS SCHAUER, Brooklyn, N. Y. Filed Jan. 19, 1882. (No model.)

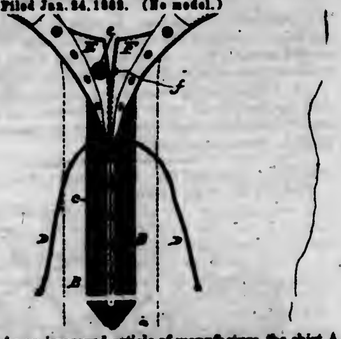


Claim.—1. In an electric lamp, the combination, substantially as herein described, of a supporting-standard, two rotary jaws mounted on arbors arranged in said standard and serving to normally clamp and hold the upper carbon, and by their rotary movement permitting the carbon to descend, a cord attached to the carbon-holder and wound around one of the rotary carbon holding and releasing jaws, a brake-wheel secured to the arbor of the rotary jaw, around which said cord is wound, and an electro-magnet included in the circuit of the carbons, and having a core arranged adjacent to the periphery of the brake-wheel, and by its attraction serving to retain the latter in a fixed position, essentially as and for the purpose described.

2. In an electric lamp, the combination, with a lower carbon and an electro-magnet and armature for vertically adjusting the same, of two rotary jaws mounted on arbors in a supporting-frame, and by their rotary movement permitting the upper carbon to descend, a brake-wheel arranged on the arbor of one of the rotary jaws, and an electro-magnet included in the circuit of the carbons and having a core arranged adjacent to the periphery of the brake-wheel, the current through which magnet causes its core to attract the brake-wheel and prevent the rotation of the carbon holding and releasing jaws, essentially as and for the purposes described.

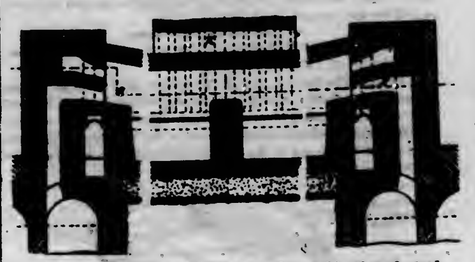
3. In an electric lamp, the combination, with a vertically-adjustable lower carbon, of two rotary jaws mounted on arbors in a supporting-frame, and serving to clamp and hold the upper carbon and by their rotary movement to permit the descent of the same, a cord connected at one end with the upper carbon and at its other end wound around one of the rotary jaws, an iron brake-wheel mounted on the arbor of one of the rotary jaws, and a stationary electro-magnet included in the circuit of the carbons and having a core arranged adjacent to the periphery of the brake-wheel, the current through said magnet causing its core to attract and hold the brake-wheel until the current decreases, when the latter will be released and the rotary jaws permitted to revolve and feed the carbon downward, essentially as set forth.

256,747. HUNTING-SHIRT. CHARLES H. SUNDAKER, Philadelphia, Pa. Filed Jan. 24, 1882. (No model.)



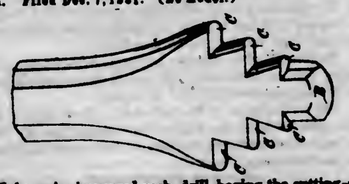
Claim.—As an improved article of manufacture, the shirt A, provided with flaps E F *e f*, front opening, *a*, the sides, having reinforce strips of braid or other suitable material, provided with metallic eyelets *c* and lacing-cord D, substantially as and for the purpose set forth.

256,748. GLASS-MELTING FURNACE. FREDERICK SIEMENS, Dresden, Germany, assignor to Charles William Siemens, Westminster, England. Filed July 12, 1881. (No model.) Patented in England Nov. 23, 1879.



Claim.—In a regenerative furnace, the combination of a tank for the continuous melting of glass, divided into separate compartments by partitions, which are kept cool by air-flues, with gas and air ports arranged on each side of the tank, as and for the purpose described.

256,749. ROCK-DRILL. WILLIAM H. SILSBY, Orleans Bar, Cal. Filed Dec. 7, 1881. (No model.)



Claim.—An improved rock-drill having the cutting-edge B and the series of side cutters, C, projecting out beyond the one next below it, the side or edges of the drill connecting the said cutters being inclined upward and toward the center longitudinal line of the drill, substantially as herein shown and described.

256,750. PLOW. FERNERT SIMONDS, Grand Island, N. Y. Filed June 1, 1881. (Model.)

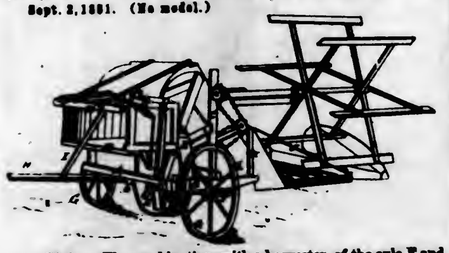
Brief.—The mold-board has a base or horizontal flange turned inward; also, a removable heel or shoe. The point is long, and the spread or curve of the share and mold-board is very gentle, as an acute wedge. The handles have an angular brace and slotted adjusting-plates. Rosette-plates connect beam and standard.



Claim.—1. A mold-board provided with an inwardly-extending flange, *b*, at the lower edge, in combination with a shoe, *c'*, secured detachably to the under side of said flange, to extend below the lower edge of the mold-board, as and for the purpose set forth.

2. A plow having a mold-board and landside, in combination with handles pivoted one to the mold-board and the other to the landside, and with angle-plates I and an intermediate plate, I, bolted to both handles, as set forth.

256,751. HARVESTER. ORIN SIMPSON, Tampico, Ind. Filed Sept. 2, 1881. (No model.)



Claim.—The combination, with a harvester, of the axle F and the wheels G G, arranged substantially as described, the tongue H, attached to the outer side girt of frame A, the brace-bar I, attached at its lower end to the tongue and at its upper end to the binder-frame D, and the chain J, attached to the cutter-bar and reel-post, as and for the purpose specified.

256,752. EARTH-SCRAPER. JOHN W. SKILLEN, Sidney, Ohio. Filed Feb. 18, 1882. (No model.)

Brief.—The body is formed of a single piece of metal having its rear end and sides united by hook-shaped flanges, which interlock. The handles are secured by elastic open rings on the scraper, which fit into circumferential grooves in the handles. The shoes are secured by flanges in the bottom of the scraper, which engage grooves therein.



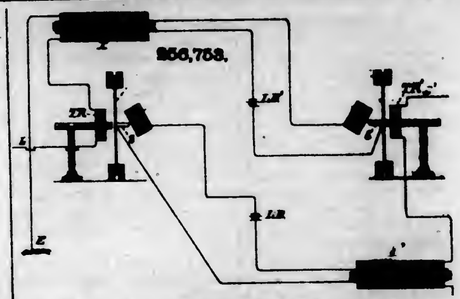
Claim.—1. The body of the scraper, formed of a single piece of metal, and having its rear end and sides united by hook-shaped flanges, as shown and described.

2. The combination of elastic open rings attached to the body of the scraper, with the handles having circumferential grooves to receive said rings, for the purpose specified.

3. The body A of the scraper, having parallel wings or flanges projecting from its under side, and formed in one piece therewith, as and for the purpose shown and described.

4. The combination of the detachable shoes having lengthwise side grooves, with the body of the scraper having wings or flanges bent downward from the bottom thereof and entering said grooves, as shown and described.

256,753. TELEPHONE-REPEATER. JAMES O. SMITH, Hackensack, N. J., assignor of two-thirds to George W. Coy, Milford, Conn., and Charles B. Buell, Washington, D. C. Filed Feb. 28, 1882. (No model.)

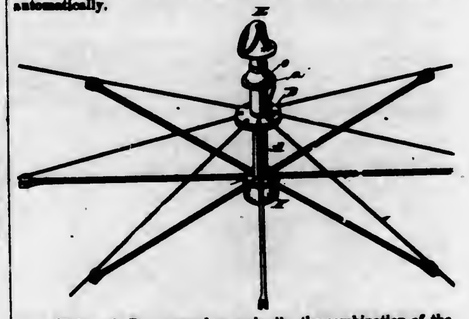


Claim.—1. The combination, substantially as described, with the two line-wires L and L', each grounded through a telephone-receiver and the secondary of an induction-coil, of a telephone-transmitter, one for each line acted upon by the receivers, and local-battery circuits for said transmitters, connected, as described, to the primary of an induction-coil, the local circuit of the transmitter operated by incoming currents from each line and including the primary of the induction-coil, through whose secondary the line-current of the other line runs to earth.

2. The combination, as described, of the two induction-coils I I', the receivers T R T R', the lines L L', circuit-connections from each line through a receiver and the secondary of an induction-coil to earth, local battery I, B' included in the circuit of the primary of induction-coil I, and the transmitter operated by receiver T R' and local battery I, B included in the local circuit of transmitter operated by receiver T R and the primary of induction-coil I'.

256,754. PARASOL OR UMBRELLA. JAMES T. SMITH, New York, N. Y. Filed Feb. 28, 1882. (No model.)

Brief.—To open the parasol the top and the flange of the rim are brought together. The parasol is closed by depressing the spring which holds the runner in place, when the parasol closes automatically.



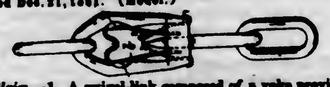
Claim.—1. In a parasol or umbrella, the combination of the runner, holding-spring, and stick, the tube of runner, and the spring and stick extending above the cover, whereby the parasol or umbrella may be opened or closed from the outside, substantially as described.

2. The stretcher-supporting notch riveted or otherwise rigidly secured to the stick, in combination with the upper rib-supporting notch and runner, substantially as described.

3. The runner provided with the stretcher-supporting notch at its lower end and a projecting flange constituting a finger-hold at its upper end, substantially as described.

4. The top E, provided with flange *e*, in combination with the runner C, provided with flange *a*, substantially as and for the purpose described.

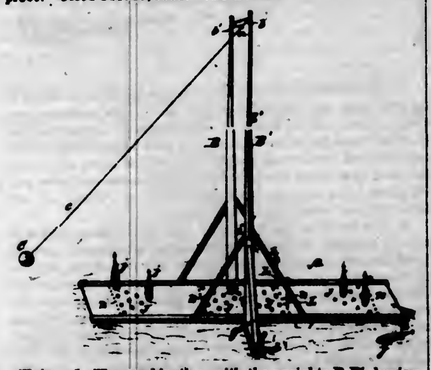
256,755. SWIVEL-LINK. DAVID F. SPANGLER, Dayton, Wash. Filed Dec. 21, 1881. (Model.)



Claim.—1. A swivel-link composed of a yoke provided with a head-piece, through which is formed an elongated opening, a detachable eye having an arrow-head or like construction adapted to be passed up through the elongated opening in the head-piece of yoke, and an independent spring arranged within the yoke and adapted to close against or near to the arrow-head of the detachable eye and prevent the same from turning, substantially as set forth.

2. The combination, with the yoke of a swivel-link, of the U-spring *b*, provided with lips or jaws on its opposite arms, adapted to grasp the sides of the yoke, and having its ends extended to and arranged to close against or near to the arrow-head of the detachable eye, substantially as set forth.

256,756. GAME APPARATUS. GEORGE R. SPEAR, Brooklyn, N. Y., assignor to himself and William J. H. McKillop, same place. Filed Feb. 16, 1882. (No model.)

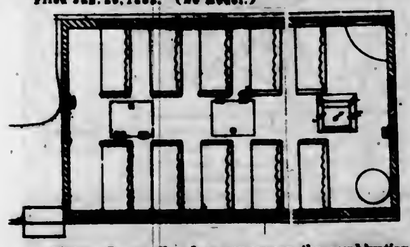


Claim.—1. The combination, with the uprights B B', having the holes *a' a''*, a cleat on the inside and a cleat on the outside, of the cords *b b'*, passing through said holes and secured to said cleats, as described.

2. In a game apparatus, the platform A, having square holes E, in combination with the angle-rods F, balls *c*, and flexibly-suspended ball C, as shown and described.

3. The combination, with the swinging ball C, of a rotary wheel-of-fortune, N, arranged on the platform, as shown and described.

256,757. SAFETY-CAR. ALFRED A. STARR, Westfield, N. J. Filed Jan. 26, 1882. (No model.)



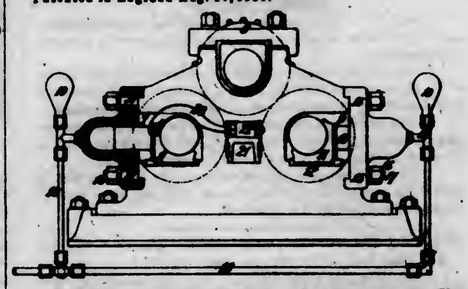
Claim.—In a railroad passenger-car, the combination, with the seats arranged on or along opposite sides of the car, of two or more trap-doors hinged respectively to opposite sides of the sides of the car, and arranged to open inward and to cover escape-openings in said sides, whereby, on whichever side the car may turn or be upset, one or more of said doors will have a tendency to open of their own weight, essentially as herein set forth.

256,758. GROUND-ROLLER. JOHN SCHISLINGER, McVille P. O., Pa. Filed Dec. 5, 1881. (Model.)



Claim.—The combination of the ground-roller, A, having convex ends and loosely-fitting axles, with the two side bars, B B, curved upward, and having their rear ends connected by the chain C or other suitable flexible connection, all constructed, arranged, and operating substantially as described and shown, for the purpose specified.

256,759. SUGAR-CANE MILL. DUNCAN STEWART, Glasgow, County of Lanark, Scotland. Filed Oct. 27, 1881. (No model.) Patented in England Aug. 17, 1881.



Claim.—1. The combination of the rolls of a sugar-cane mill and movable bearings for one or more of the rolls with hydraulic cylinders, rams acting on said movable bearings, supply-pipes, and air-vessels 19, substantially as and for the purpose set forth.

2. The combination of the bearings and three rolls, one above and between the two others, with bearings, rams, hydraulic cylinders, and rods or long bolts passing through the bearings and connecting the cylinders at opposite parts thereof, all substantially as described.

3. The combination of the rolls of a sugar-cane mill and movable bearings for one of said rolls with a returner and curved links, 28, connecting said returner to said movable bearings, substantially as specified.

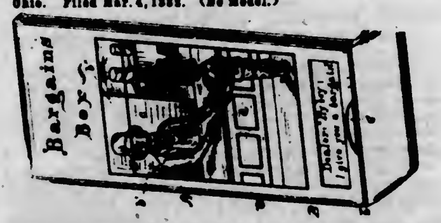
256,760. NUT-LOCK. JOHN W. SPRINGSTEEN, New Haven, Ind. Filed Feb. 11, 1882. (No model.)



Claim.—1. The combination of the nut C, having recess D, the latch F, pivoted in said recess and having stud K, and the lever I, pivoted upon said nut and having slot J, fitting over the stud K upon the latch F, as set forth.

2. As an improvement in nut-locks, the combination, with the bolt A, having longitudinal groove B, of the nut C, having recess D, latch F, pivoted in said recess, and having stud K, and the lever I, having slot J, all arranged and operating substantially as and for the purpose set forth.

256,761. TOY OR TOY BOX. WILLIAM STRONG, Cincinnati, Ohio. Filed Mar. 4, 1882. (No model.)



Claim.—A box or toy, A, having the sheath B, with side and end apertures, *b b'*, and with a fragmentary picture, *b''*, in combination with slide C, having two or more fragmentary pictures, *c c'*, which, while both correspond to the fragmentary picture on the sheath, are different in themselves, substantially as set forth.

256,762. CAR-COUPLING. STEPHEN TAPPENDEN and RICHARD S. TAPPENDEN, North Amherst, Ohio. Filed Feb. 8, 1882. (No model.)

256,762.



Claim.—1. A draw-head formed in sections, upper and lower, and with a recess, *a*, and openings *a'* *a²* *a³*, substantially as shown and described.

2. In a draw-head, the clutch B, pivoted in the rear portion of the recess *a*, provided with a pin, *b*, having a slot, *b'*, and notch in its lower side, substantially as and for the purposes set forth.

3. In a draw-head, the cam-lever C, consisting of the cam portion *c*, handle *c'*, and pin *c²*, adapted to pass through the slot *b'* of the pin *b*, substantially as and for the purposes set forth.

4. In a draw-head, the combination of the clutch B and its slotted pin *b* with lever C, beveled as set forth, and draw-head A, substantially as shown and described.

256,763. FORCE-FEED GRAIN-DRILL. MASON P. TENANT, Richmond, Ind. Filed Feb. 18, 1882. (Model.)

Brief.—The feed-cup is composed of two sections, one of which slides within the other. The movable section and the feed-wheel are mounted on a divided thimble that is clasped to the laterally-adjustable shaft, whereby said section and feed-wheel are adjusted to graduate the amount of seed sown.



Claim.—1. The combination, in a seed-cup, of the inner sliding section, B, with the divided thimble passing through said section and fitted upon the rotary shaft, and the feed-wheel locked upon the thimble upon the inner side of the sliding section, the said thimble having a flange fitted against the outer side of the section, substantially as described.

2. The combination, with the two-part seed-cup, of the divided thimble fitted upon the rotary shaft and formed with the gibs K, and the feed-wheel fitted upon the thimble and provided with recesses receiving the said gibs, substantially as described.

3. The combination, in a seed-cup, of the outer section formed with a vertical wall, C, with the rotary rosette located within an annular recess formed in a cap-plate secured to the outer side of said wall, and the fluted feed-wheel fitted in the rosette and locked upon a thimble that is secured upon the shaft and adapted to rotate in one of the sections of the seed-cup, substantially as described.

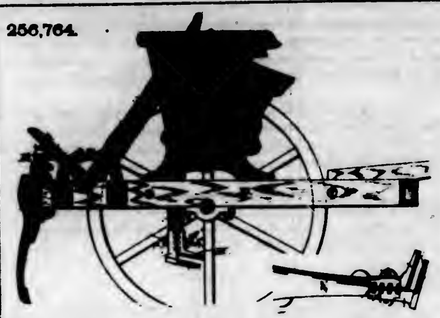
256,764. GRAIN-DRILL. MASON P. TENANT, Richmond, Ind., assignor to GAAR, SCOTT & COMPANY, same place. Filed Feb. 15, 1882. (No model.)

Brief.—The seed-tube has upon it, near its lower end, a series of projections for the reception of teeth on an adjustable two-part scatterer, the under surface of the upper section of which is formed concaved and the upper surface of the lower section convex. The cross-bar, to which the harrow-teeth are secured, is journaled in castings on the side bars and is yieldingly held depressed.

Claim.—1. A scatterer for the seed-tube of a grain-drill, consisting of two independent sections, both adapted to be secured to the seed-tube, and to be adjusted thereon independently of each other, one of said sections being provided with a scattering-plate for the seed to fall upon and the other being provided with a shield adapted to overhang the said scattering-plate, substantially as described.

2. In a two-part scatterer for the seed-tube of a grain-drill, the upper section, H, of the scatterer formed with a shield and adjustably secured to the seed-tube, whereby the shield can be raised or lowered with relation to the scattering-plate upon which the grain falls, substantially as described.

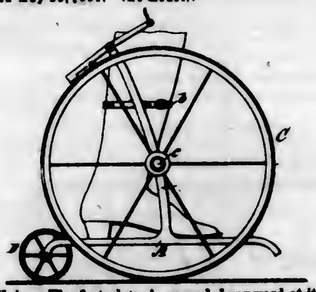
256,764.



3. The combination, with the seed-tube provided at its lower end with teeth and perforated ears, of the two-part scatterer consisting of two sections, G and H, each formed of a semi-cylindrical slotted stem having teeth adapted to mesh with the teeth of the seed-tube, and having a projecting plate at the lower end of the stem, said stem being adapted to be applied to the seed-tube, and said plates being respectively adapted to serve as a shield and as a scattering-plate, substantially as described.

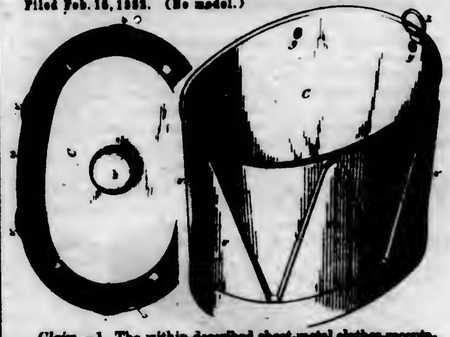
4. The combination, in a grain-drill, of the swinging-bar I, carrying a suitable number of harrow-teeth, the castings K, secured to said bar and pivoted to the side bars of the main frame, the lifting-lever secured to a rock-shaft, P, and provided with a locking-latch, the segment-rack, the rock-shaft provided with a rearwardly-projecting arm, the staple secured to the bar carrying the teeth and receiving the arm of the rock-shaft, and the spring arranged around said staple and interposed between the arm of the rock-shaft and the said bar I, substantially as described.

256,765. PEDICYCLE. ELEAZER THOMPSON, Danbury, Conn. Filed May 26, 1881. (No model.)



Claim.—The foot-plate A, curved downward at its front end and provided with supporting-wheels C and D, all as shown and described, to operate as and for the purpose specified.

256,766. WASH-BOILER. THEODORE F. TIMBY, Alma, Mich. Filed Feb. 16, 1882. (No model.)

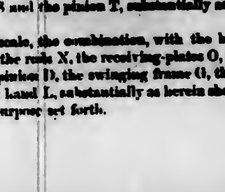


Claim.—1. The within-described sheet-metal clothes-receptacle, constructed with continuous flaring sides, having inlet-holes at top, a bottom having a central outlet-trap attached externally, tapering external conduits on all sides formed by sectional jackets attached externally to said sides and an imperforate base-rim attached to the outer walls of said sectional jackets, substantially as shown, for the purposes set forth.

2. The combination, substantially as herein specified, of a wash-boiler having slightly-flaring sides and a clothes-receptacle, forming a removable lining, constructed with a greater flare and provided with inlet-holes at top, tapering external conduits terminating at said inlets, an outlet in its bottom, and an imperforate base-rim inclosing the lower ends of said conduits and meeting with the sides and bottom of the boiler at their intersection, substantially as shown, for the purpose set forth.

3. The combination, as herein specified, of the clothes-receptacle C, constructed with continuous flaring sides, having inlet-holes therein at top, a bottom provided with a central outlet-trap, tapering external conduits on all sides, and an imperforate base-rim, substantially as shown, a wash-boiler, B, adapted to receive said clothes-receptacle upon its bottom, and a clothes-rack, A, adapted to support the clothes within said clothes-receptacle above the water-level, substantially as described, for the purposes set forth.

256,767. NUT-LOCK. THEODORE F. TIMBY, Alma, Mich. Filed Feb. 11, 1882. (No model.)



Claim.—A nut constructed with an annular recess in its back, an internal collar integral with the body of the nut, and radial indentations dividing said collar, substantially as herein specified, jointly with a washer having a portion adapted to be tightly embraced by the outer wall of said recess and a tapering central orifice adapted to embrace said collar for contracting the latter around the bolt, substantially as herein specified, for the purposes set forth.

256,768. PENDULUM-SCALES. ROSSURO THURAS, Brunswick, Ga. Filed Dec. 20, 1881. (No model.)

Claim.—1. A double weighing-scale made substantially as herein shown and described, consisting of a pair of balanced levers provided at their inner ends with toothed racks that engage the toothed wheel of a swinging sector-rack, the teeth of which latter operate a pointer-wheel that carries a pointer in front of a double-figured dial, whereby when an article to be weighed is placed on one end of the levers the pointer will move correspondingly to indicate on the dial the weight of the article, and if the article is placed on the opposite scale the pointer will move in the opposite direction and indicate the weight, as set forth.

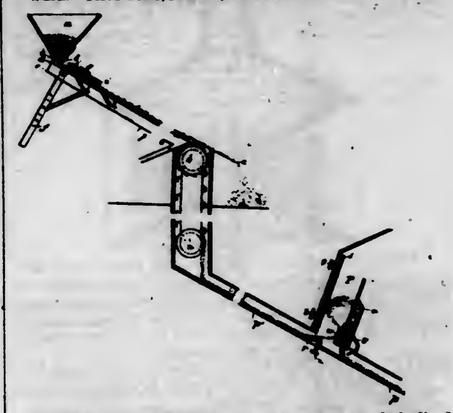
2. In a scale, the combination, with the box or casing B, of the levers A, the racks C, the pinion D, the swinging frame G, the rack H, the pinion J, the hand L, and the dial M, substantially as herein shown and described.

3. In a scale, the combination, with the sector-frame G, of the sliding rack Q and the pinion R, substantially as herein shown and described.

4. In a scale, the combination, with the sector-frame G, of the sliding rack S and the pinion T, substantially as herein shown and described.

5. In a scale, the combination, with the box or casing B, of the levers A, the rods N, the receiving-plates O, the weights P, the racks C, the pinion D, the swinging frame G, the rack H, the pinion J, and the hand L, substantially as herein shown and described, and for the purposes set forth.

256,769. GRAIN-CLEANER. SEWALL TEBAY, Walla Walla, Wash. Filed Oct 6, 1881. (No model.)



Claim.—1. A grain-cleaner consisting of two steeply-inclined chutes connected by a vertical chamber, in combination with an endless belt provided with cups, screens, and ratchets for operating the screens, substantially as shown and described.

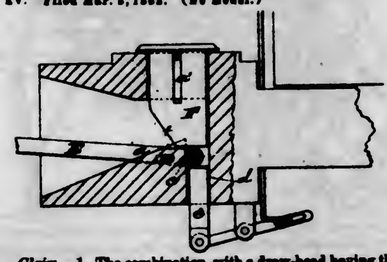
2. A grain-cleaner consisting of an inclined chute or pipe having an adjustable guide in its bottom, and connected to a blast-chamber having a curved iron plate in one side, in combination with a chute having screens, ratchets operating the screens, and a V-shaped distributer, substantially as shown and described.

3. In a grain-cleaner, the chute *p*, having hopper *o*, distributer *i*, screens *s* and *d*, and lever *f*, in combination with the vertical chamber having drum *k*, provided with ratchets, drum *n*, and endless belt *m*, having a series of cups, substantially as shown and described.

4. In a grain-cleaner, the pipe *p'*, having hinged adjustable guide *r*, in combination with pipe or chamber P, having curved iron plate *w*, adjustable board *a*, side opening, *u*, and pipes *v* and *z*, substantially as shown and described.

5. The herein-described method of cleaning grain, which consists in permitting the grain to descend through a pipe, and thereby creating a blast of air, deflecting the grain upward through a series of open pipes or chambers, and allowing the blast thus created to carry off the refuse at the top of said chamber, while the grain falls back by force of gravity, substantially as specified.

256,770. CAR-COUPLING. FREDERICK VOEGTLE, Louisville, Ky. Filed Mar. 3, 1882. (No model.)

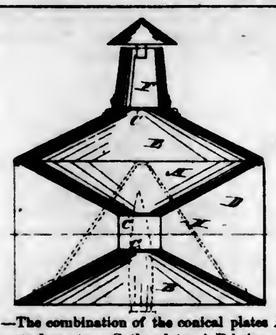


Claim.—1. The combination, with a draw-head having the interior incline-front hook-lug, D, rising from its base, the top slot, *g*, and the bottom opening, *d*, of the reciprocating uncoupler-bar *c* and the cheek-plate F, having the vertical slot *e'* and the under-beveled front edge, *f*, said cheek-plate extending from the rear wall of the cavity in the draw-bar over the incline of the hook-lug, substantially as specified.

2. The combination, with a draw-head having an interior incline-faced hook-lug rising from its base, and having a groove in its top, of the under-beveled cheek-plate operating through a slot in the top of the draw-head, and the vertically-reciprocating uncoupler-bar working in rear of the hook-lug, the operating-levers, and gravitating connections, substantially as specified.

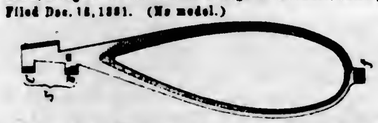
256,771. INSECT-DESTROYER. WILLIAM L. WARDY, Peytona, Ky. Filed Aug. 4, 1881. (No model.)

256,771.



Claim.—The combination of the conical plates A B E, having each a central aperture, C, the plates A B being connected by plates D, with their points turned toward each other, and the plates A E connected at their bases, for the purpose of forming a device adapted to be used with a light, as and for the purpose specified.

256,772. THILL LOOP OR LUG. WESLEY A. WALENTA, Ely, Iowa, assignor of one-half to George W. Devault, same place. Filed Dec. 16, 1881. (No model.)



Claim.—A metallic loop for harness, having a neck or extension, S, formed of side pieces, *a a*, and cross-pieces C, B, and *d*, arranged substantially as herein set forth.

256,773. ADJUSTABLE RECLINING-CHAIR. JACOB F. WARNER, Elkhart, Ind. Filed Nov. 30, 1881. (No model.)



Claim.—1. The combination of the seat-frame having pivoted uprights P P and hinged back-rest frame, the arm-rests Q, pivoted to said uprights and back-rest, and having brackets R, carrying bell-crank levers S, and the pivoted rods T, connecting said levers with ratchet-bars D, pivoted to the sides of the back-rest frame, and engaging brackets E, substantially as set forth.

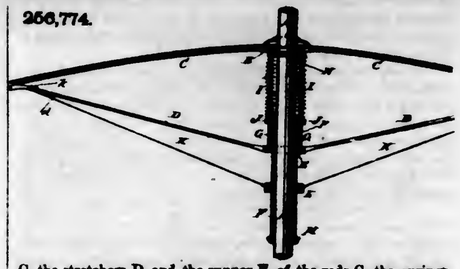
2. The combination, with the hinged leg-rest frame having lugs Y and studs D′, of the foot-rest having slotted elastic sides, provided with perforations C′, as set forth.

256,774. UMBRELLA. JOHN W. WATSON, New York, N. Y., assignor, by direct and mesne assignments, to William Grant, same place. Filed Oct. 6, 1881. (No model.)

Claim.—1. A self-opening umbrella made, substantially as herein shown and described, with secondary runner, secondary stretchers, and springs carried with the two runners, as set forth.

2. In an umbrella, the combination, with the stick A, the ribs

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C, the stretchers D, and the runner E, of the rods G, the springs I, the runner L, and the secondary stretchers K, substantially as herein shown and described, whereby the umbrella will be opened automatically when the main runner is released, as set forth.

3. In a self-opening umbrella, the combination of the rods G and springs I with the two runners E L, substantially as herein shown and described, whereby the said runners will be forced apart and the ribs extended by the tension of the said springs, as set forth.

4. In a self-opening umbrella, the combination, with the spring-carrying rods G, of the collar H, substantially as herein shown and described, whereby the upper ends of the said rods are supported from the umbrella-stick and held in place, as set forth.

5. In a self-opening umbrella, the combination, with the springs I, the collar H, the rods G, and the runner E, of the lugs J, formed upon the runner-sleeve F, substantially as herein shown and described, whereby the said springs are held against the pull of the said rods, as set forth.

6. In a self-opening umbrella, the combination of the two sets of stretchers D K, with the two runners E L, substantially as herein shown and described, whereby the ribs will be extended by moving the two runners from each other, as set forth.

7. In a self-opening umbrella, the combination, with the stretcher K, provided with the hooks *h*, of the stretcher D, having its outer forked end notched and provided with the longitudinal groove *d*, substantially as and for the purpose set forth.

8. In a self-opening umbrella, the stretchers K, made with hooks *h*, and fitted into notches in the forks of the stretchers D at their outer ends, whereby the two sets of stretchers can be readily connected, as set forth.

256,775. BUTTON. GEORGE K. WEBSTER, Attleborough, Mass. Filed Feb. 21, 1882. (No model.)

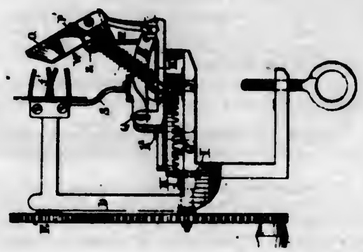


Claim.—1. A button composed of a head, a post having oppositely-placed sockets, and a shoe, the inner plate of which is slotted and provided with oppositely-placed integral pivots adapted to the said sockets, for the purpose set forth.

2. The described button, consisting of a face-plate, a post having sockets 1 1, and a shoe composed of a cap-plate and a top plate, 2, having integral pivots projecting from opposite sides of a slot therein adapted to the sockets in the post, and a spring, 4, substantially as set forth.

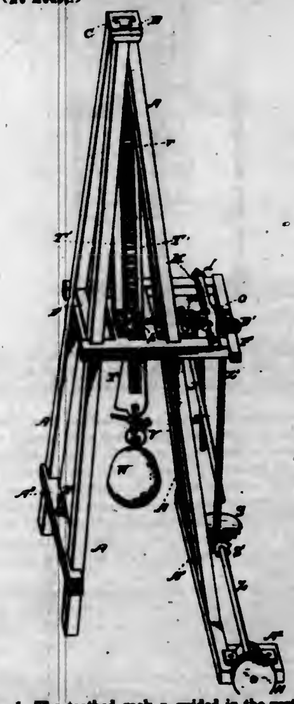
256,776. FRUIT-PARING MACHINE. DANIEL H. WEBBS, Milford, Del., assignor, by direct and mesne assignments, to Robert P. Scott, Newark, N. J. Filed May 23, 1880. (Model.)

Brief.—The novelty consists in the means for oscillating the paring-knife, as set forth in the claim.



Claim.—The combination of the knife W, crank X, link Y, vibrating arm R, pinion S, shaft R, and cog-wheels E′ and C with the holding-fork, substantially as shown and described.

256,777. DROP METAL-BREAKER. ESEC S. WERNICH, Harrisburg, Pa., assignor of two-thirds to Christopher E. Wernich and William E. McBride, both of same place. Filed Feb. 8, 1882. (No model.)



Claim.—1. The toothed rack *r*, guided in the vertical parts T′, in combination with the pinion *p* and the gears O D′ S S′, all arranged and operating substantially as set forth.

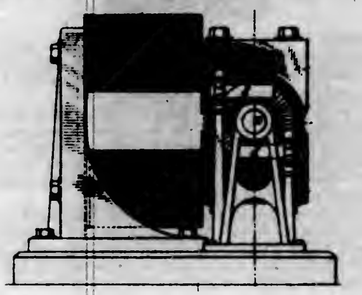
2. The rack *r*, provided with the strike T, the uncoupler P′, provided with catches P² R, and the intermittent gear O, provided with the collar *m* thereon, all constructed substantially as and for the purpose set forth.

3. The upright rack *r* T, the uncoupler P′, the intermittent gear *p* O, and the constant forward train of gears D′ S S′ and pulley H, all arranged and operating as and for the purpose set forth.

4. The friction-pulley M on shaft R, in combination with the brake-levers K K′ and wheel O, acting in conjunction with the rack *r* T, as herein set forth.

5. The lever L, provided with the grapples A, in combination with the pivot M on brace A², as and for the purpose set forth.

256,778. DYNAMO-ELECTRIC MACHINE. EDWARD WESTON, Newark, N. J. Filed Feb. 21, 1882. (No model.)



Claim.—In a dynamo-electric machine, a rotating armature, the longitudinal conductors of which are connected across the end or ends of the armature by a connecting-piece formed separately from and independently of the said conductors, and to which the ends of the conductors are mechanically attached or united, substantially as hereinbefore set forth.

256,779. APPARATUS FOR DRAWING WIRE. LEWIS WILLIAMS, Bennington, Vt. Filed Oct. 17, 1881. (No model.)



Claim.—As an improvement in wire-drawing apparatus, the combination of the flanged winding-drum B, constructed with the concentric semicircular grooves or channels G G and abutments H H, the annular clutch N N, provided on its opposite sides with lugs for engagement with the corresponding lugs of the driving and driven clutches, respectively, and having elastic cushions or springs interposed between the lugs of the annular and the driven members of the system, with a driving member, I, rigidly connected with the driving-shaft, substantially in the manner described, and for the purposes set forth.

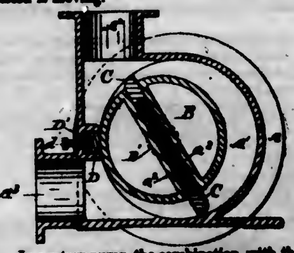
256,780. ADVERTISING-TABLE. WILLIAM WILSON, Brooklyn, N. Y. Filed July 13, 1881. (No model.)



Claim.—In an advertising-table, a top provided at its ends with projecting guide-bars *a a*, arranged parallel to each other, in combination with a transparent plate adapted to be held and to slide longitudinally between said guide-bars, and to retain an advertising-sheet in position to be seen through the plate on the table, as and for the purpose described.

256,781. ROTARY PUMP. THEODORE WIESNER, Chicago, Ill., assignor to August Lockelt, same place. Filed July 22, 1881. (No model.)

Brief.—The piston-plates C may be reversed, so as to bring their beveled faces on the right side, according to the direction in which the piston is moving.



Claim.—In a rotary pump, the combination, with the cylinder A and the piston-hub B, of the packing plate or plates C, the springs *c*′, the rods *c*², the packing-bar D, the bow-shaped spring D′, and the set-screw *d*, all constructed, arranged, and operating as described.

256,782. WOOL-WASHING MACHINE. GEORGE L. WITZIL, Philadelphia, Pa., assignor to Edward C. Edwards, Brooklyn, N. Y. Filed Nov. 19, 1881. (No model.)



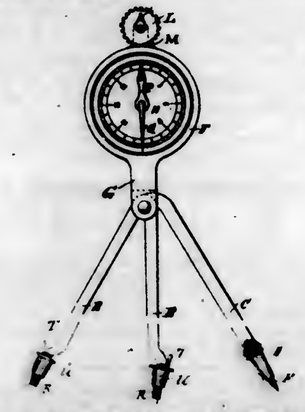
Claim.—1. The dasher C and the operating-shaft D, in combination with the beaters G and the heads E, the beaters hanging freely from said heads, whereby the beaters fly out and strike the mass of material at different places and overturn it, substantially as and for the purpose set forth.

2. The beaters G, in combination with the dasher C and inclosing-diaphragms B, said dasher being within the diaphragms and the beaters outside of the same, substantially as and for the purpose set forth.

3. The dasher C, in combination with the heads having connecting bars or shafts F, the swinging beaters G, depending from said shafts, and the operating-shaft D, said shaft D being at the bottom of the heads and the shafts F above the same, substantially as and for the purpose set forth.

256,783. DIMENSION-MEASURE. RUDOLF WITTMANN, New York, N. Y. Filed July 22, 1881. (No model.)

Brief.—A wheel of known circumference is revolved upon the line to be measured, and each revolution is by differential gear recorded upon the dial. Screw device for adjusting the points of the combination instrument.



Claim.—1. A measuring-instrument having on the piece G a casing, F, provided with the dial H, the pointer Q, and the cog-wheel J, the cog-wheel K, the cog-wheel L, journaled in a pointer carrying outside projection, M, and an inside wheel, O, having one cog less than wheel J, and carrying a pointer, P, as shown and described.

2. In a measuring-instrument, the shanks B, screw-threaded at the lower ends and provided with the tapering longitudinal groove S, in combination with the needle T and screw-sleeve U, as and for the purpose specified.

256,784. ELECTRO-MAGNETIC MOTOR. LEONIDAS G. WOOLLEY, Meadon, Mich. Filed Oct. 24, 1881. (No model.)



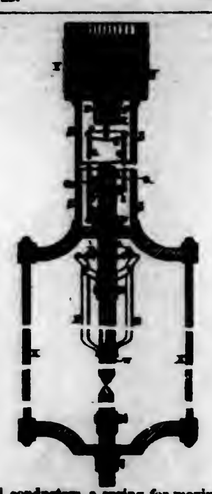
Claim.—In an electro-magnetic motor which is adapted to be held in the hand, the magnet A, having its lower portions wrapped with insulated wire for connection with a battery or generator, and having its upper ends turned outward and upward and connected by the non-magnetic piece B, the shaft C, the revolving magnets D, connected thereto, and commutator G, the parts being combined and arranged to operate substantially as shown and described.

256,785. ELECTRIC LAMP. LEONIDAS G. WOOLLEY, Meadon, Mich. Filed Oct. 28, 1881. (No model.)

Claim.—1. In an electric lamp, the combination of a carbon-clamp and a suitable electrical conductor or conductors, which are pivoted upon the clamp so as to rise and fall with the carbon, to which they are fastened at their lower ends, before the lower half of the upper carbon is consumed, substantially as shown.

2. The combination of a carbon, the carbon-clamp, one or

256,785.



more electrical conductors, a spring for moving the conductor or conductors, and a fusible wire or string by which the lower ends of the conductors are fastened to the carbon, substantially as described.

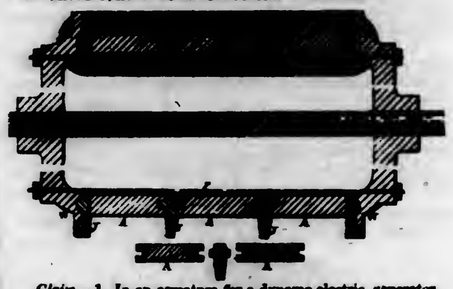
3. The combination, with a carbon-clamp, 2, of one or more pivoted jaws, B, which have their lower ends fastened to the carbon by a string or wire and a spring, E, which is secured to their upper ends for throwing the lower arm or arms outward when the cord or wire H is destroyed by heat, substantially as set forth.

4. In an electric lamp, the combination of the carbon holder or guide, a lifting mechanism, suitable frames, and two or more dogs pivoted in the said frames and applied upon opposite sides and at different elevations along the sides of the guide, substantially as specified.

5. In an electric lamp, the combination of the helix, the core, the pivoted rod O, connected to the helix, the two connecting-rods Q, the frames E, the dogs Z, and set-screws V, the dogs being applied at different heights along the sides of the guide A, substantially as specified.

6. In an electric lamp, the combination of the helix Y, core K, pin P, connecting-rods N Q, pivoted lever O, two frames, E, connected together, the two dogs, and the set-screws, substantially as set forth.

256,786. DYNAMO-ELECTRIC MACHINE. LEONIDAS G. WOOLLEY, Meadon, Mich. Filed Nov. 16, 1881. (No model.)



Claim.—1. In an armature for a dynamo-electric generator, the combination of a series of wide flat bands, A, made of magnetic material, with the non-magnetic separating-pieces J, the spiders, and the clamping-rods, substantially as shown.

2. In an armature for a dynamo-electric generator, the combination of a series of wide flat bands, A, made of magnetic material, with the non-magnetic separating-pieces J, the spiders, and the clamping-rods, the pieces J having their outer ends to project outward beyond the surfaces of the bands, so as to act as guides for the different coils, substantially as described.

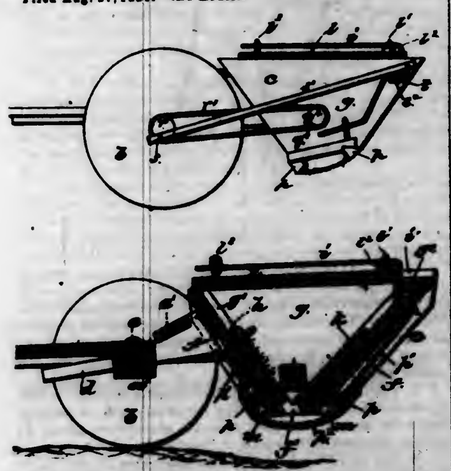
3. In an armature for a dynamo-electric generator, the combination of a series of wide flat bands, A, made of magnetic material and having grooves made in their edges, with the pieces J, having flanges on their sides to catch in the grooves, substantially as specified.

256,787. HILLSTRIKE-DRIVER. JOAB H. WOODRUM, Strykersville, N. Y. Filed Jan. 13, 1882. (No model.)



Claim.—The combination of the spindle C, of the driver I, having its horns provided with inwardly-enlarged openings e, a bail, D, provided with inwardly-enlarged openings n, and bolts m, having their heads and nuts constructed with bearing-ribs p' q', substantially as set forth.

256,788. SEED-SOWER. JOSHUA S. WRIGHT, Kaheka, Mo. Filed Aug. 27, 1881. (No model.)



Claim.—1. In a seed-sower, the combination, with the cut-off board h, provided with the rod i, of the cover l, having notch f', eye F, and open loop P, substantially as specified.

2. In a seed-sower, the combination, with the seed-box a, having the guides n m, of the slove provided with the side bars p p, the pivotal rods p' p', the boot lever t, pin s', shank s', and pulley r on the wheel of the vehicle, substantially as specified.

256,789. COMBINED SHEEP RACK AND TROUGH. ANNA E. YOST, Somerset, Ohio. Filed Sept. 16, 1881. (No model.)



Claim.—1. The combination, with the swinging racks d, of the swinging troughs c, pivoted in the outer faces of the corner posts and adapted to perform the double functions of troughs and supports for the racks, substantially as described.

2. The combination of the swinging racks d, pivoted to the inner faces of the opposite corner posts just above the box a, having their lower bars, e, pivoted in the posts b, angular troughs c, pivoted to the posts by arms n, and adapted to serve as troughs and engage with the upper bars of the racks, and buttons p, substantially as described, and for the purpose set forth.

3. The combination, with the box a, removable open rack-bottom s, and racks d, of the swinging end racks, m, and pins j, substantially as described, and for the purpose set forth.

4. The combined rack and trough herein described, consisting of the box a, provided with the posts b and removable open rack-bottom s, swinging racks d m, troughs c, pivoted to the posts by the arms n, buttons p, and pins j, substantially as described, and for the purpose set forth.

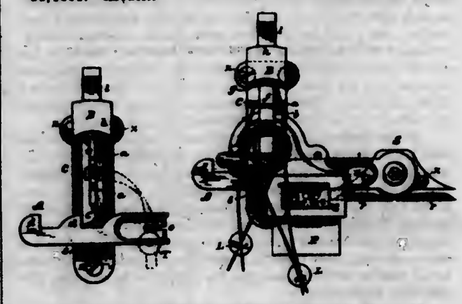
256,790. DEVICE FOR CLEARING CYLINDRICAL ROCK-DRILLS. ALBERT BALL, Claremont, N. H., assignor to the Sullivan Machine Company, same place. Filed Dec. 5, 1881. (No model.)



Claim.—1. In a cylindrical drill for boring rock or other material, the combination therewith of a rigid pipe or hollow rod (for the conveyance of water or other power to the hole being bored) provided with a nut or block secured to the lower end thereof, substantially as described, shown, and for the purpose set forth.

2. In a cylindrical drill for boring rock or other material, the combination, with the pipe or hollow rod D, provided on its lower end with nut or block B, substantially as described and shown, of the perforations c and passage b, respectively, for the outlet and passage of water or other power to the hole being bored, substantially as described, shown, and for the purpose set forth.

256,791. SEAL-LOCK. EDWARD J. BROOKS, East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Filed Feb. 23, 1881. (Model.)



Claim.—1. In a car-door fastening, the combination, with a shackle, A, of a one-part gravitating bolt, B, and a one-part bolt-casing, C, provided with one or more transverse threading-holes and otherwise adapted to be secured by a lead-and-wire seal or a padlock in the manner herein specified, said shackle being adapted to engage with the lower end of said bolt, said bolt constructed with a heavy head at its upper end, and said bolt-casing constructed with a shackle-support near its lower end, and attached to the car by screws at its respective ends, the upper screws secured by said heavy head of the bolt, substantially as shown, for the purpose set forth.

2. A car-door fastening having a vertical gravitating bolt, B, constructed with a beveled lower end, c, to engage automatically with a shackle, A, for the purpose of securing the latter, a casing, C, for said bolt, constructed with a support, e, for said shackle, and one or more transverse threading-holes in said bolt and bolt-casing to receive a lead-and-wire seal or a padlock, substantially as herein specified.

3. A car-door fastening having a vertical gravitating bolt, B, constructed with a lower end, c, beveled on the door side, a shackle, A, provided with beveled catches d on top to engage automatically with said bolt with the door either partly opened or closed, a bolt-casing constructed with a support for said shackle, and one or more transverse threading-holes in said bolt and bolt-casing to receive a lead-and-wire seal or a padlock, substantially as herein specified.

4. A car-door fastening having a sliding bolt, B, adapted to engage with a shackle, A, for securing the latter, and constructed with a longitudinal flange, c, on the front thereof, and a bolt-casing, C, having an internally-grooved face-projection, f, fitted to said flange, with transverse threading-holes a b, extending through said flange and face-projection to receive a lead-and-wire seal or a padlock,

and open grooves in the face of said bolt-casing in line with said threading-holes, substantially as herein specified.

5. In combination with a bolt-casing, C, having a shackle-support, *c*, a vertical gravitating bolt, B, constructed with a lower end, *a*, beveled on the door side, and a shackle, A, having beveled catches *d* on top to engage with said bolt, the shackle-support S, Sheet 1, having a central horizontal pivot-stud, *s*, and a horizontal shackle-rest, *r*, on each side of said pivot-stud, substantially as shown, for the purpose set forth.

256,792. SPINDLE FOR SPINNING-MACHINES AND SUPPORT THEREFOR. WILLIAM T. CARROLL, Worcester, assignor to George Draper & Sons, Hopedale, Mass. Filed Mar. 31, 1881. (No model.)

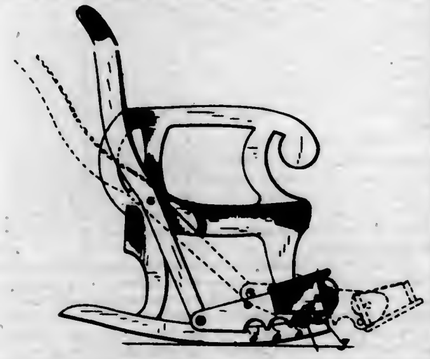
Brief.—The spindle-bolster is extended below the bolster-rail, and the inner tube is supported in the bolster, so as to rock with the spindle. The step has a horizontal or plane surface, in order that the lower end of the spindle, which rests thereon, may move freely in a lateral direction to find its true center of rotation. The sleeve-whirl is connected with the spindle, very close to the lower end of the latter, whereby the weight of the spindle and its attached revolving parts is brought down as closely as possible to the step or support on which the spindle rests and rotates, thereby enabling the spindle to be run more steadily.



Claim.—1. The bolster-rail and spindle-bolster extended below it, the said bolster having its interior portion supported therein to rock with the spindle, and the step having a horizontal or plane surface, over which the lower end of the spindle may travel freely, combined with the spindle and the whirl connected therewith, the spindle with its load being supported and steadied as described in order that the lower end of the spindle may move freely in a lateral direction to find its true center of rotation without cramping the spindle in its bearings, substantially as described.

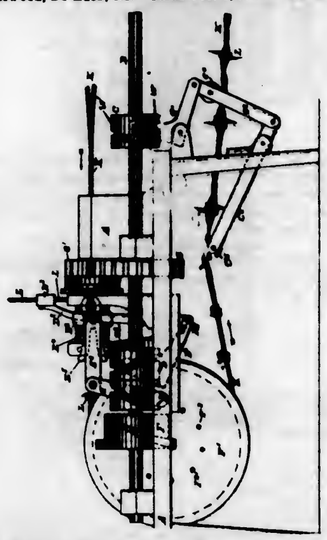
2. The bolster-rail and spindle-bolster extended below it, the said bolster having its interior portion supported therein to rock with the spindle, and the step having a horizontal or plane surface, over which the lower end of the spindle may travel freely, combined with the spindle and the sleeve-whirl connected therewith between the said bolster and step, the spindle with its load being supported and steadied as described in order that the lower end of the spindle may move freely in lateral direction to find its true center of rotation without cramping the spindle in its bearings, substantially as described.

256,793. RECLINING-CHAIR. GIACOMO GERLINI, Washington, D. C. Filed Mar. 14, 1882. (No model.)



Claim.—The combination, substantially as shown and described, of the chair-seat frame, a back hinged thereto and extended below the seat, a jointed foot-rest frame provided with notches, the front round of the chair, with which said notched frame engages, a reversible foot-rest in said frame, and stops for the back on the seat-frame, the whole constructed and arranged to operate as specified.

256,794. MACHINE FOR MAKING BARBED FENCE-WIRE. HARRIES CONVERSE and FRANK P. GANT, Cleveland, Ohio, assignors, by direct and mesne assignments, to Washburn & Moen Manufacturing Company, Worcester, Mass., and Isaac L. Ellwood, De Kalb, Ill. Filed Oct. 4, 1880. (No model.)



Claim.—1. In a machine for making barbed fencing, the combination, with means for supporting the strand-wires and preventing them from twisting around each other, and mechanism for inserting barbs between said wires, of a barbing-head for wrapping the barbs around said strand-wires and means for imparting a continuous rotation in the same direction to said barbing-head, substantially as described.

2. The combination, with the barb-bending devices of a barbing-head and means for supporting the strand-wires, of pressing-fingers for pressing the barbs upon the strand-wires during the barbing operation, substantially as described.

3. The combination, with the stationary cam H, of a revolving disk or carrier, M, and levers O and barb-bending device P P', substantially as and for the purposes shown.

4. The combination, with barb-bending finger-bars P, of operating mechanism, as explained, whereby a pressing or pounding action is imparted to said finger-bars, substantially as and for the purposes shown.

5. The combination of a stationary cam, H, and a constantly-revolving barbing-head with the barb bending and pressing fingers carried by said head and arranged to be operated by said cam, substantially as and for the purposes shown.

6. The combination, with mechanism for feeding barb-wire, a barbing-head mounted on an axis at, or approximately at, right angles to the direction in which the barb-wire is fed, and mechanism for revolving said barbing-head continuously in the same direction, of a cutter carried by and revolving with said head and a second cutter co-operating with the revolving cutter to sever the barb-wire, substantially as described.

7. The combination, with the wire barbing and feeding mechanism operating to deliver the barbed wire intermittently, of an automatic take-up between the said mechanism and the spooling mechanism, substantially as and for the purpose described.

8. In a barb-fence machine, the pinching-fingers carried by a reciprocating head movable lengthwise of the strand-wires, and combined with mechanism for closing and opening said fingers, substantially as described.

9. The combination, with the feed-wheel, its operating-cam, and means for conveying motion from the cam to said wheel, of the take-up lever, its operating-cam, and devices for conveying motion to said lever from said last-named cam, substantially as described.

10. In a fence-wire-barbing machine, the main shaft B, carrying and revolving the cams C, D, E, and F, in combination with the take-up mechanism, the barb-blank-feeding mechanism, the pinching-finger mechanism, and the strand-wire-feeding mechanism, substantially as and for the purposes shown.

11. The combination of the non-rotating holder for the strand-wires, the stationary cam mounted thereon, the rotating barbing-head surrounding said holder, the barb bending and pressing fingers, and the operating-levers carried by and rotating with said head, substantially as described.

256,795. TELEPHONIC RECEIVER. CHARLES CUTTRISS, Duxbury, and GEORGE F. HILLMEN, Boston, Mass., assignors to James Wentworth Brown and Henry B. Hyde, both of Boston, Mass. Filed Aug. 22, 1881. (No model.)

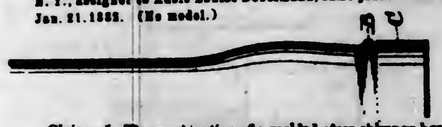


Claim.—1. The combination, substantially as hereinbefore set forth, of a resonant plate, membrane, or body, a device for communicating vibrations to the same by frictional contact therewith, and apparatus for actuating said device by the conversion of electrical undulations or vibrations into mechanical force.

2. The combination, substantially as hereinbefore set forth, of a resonant plate, membrane, or body, one or more wires or rods extending perpendicularly through an aperture formed therein, and in frictional contact therewith, and an electric actuator for imparting longitudinal vibrations to said wires or rods, which vibrations are communicated to said resonant plate.

3. The combination, substantially as hereinbefore set forth, of a resonant plate or membrane, one or more wires or rods extending perpendicularly through an aperture therein, and in frictional contact therewith, a vibratory plate supporting said wires or rods, and an electric actuator for producing vibrations in said wires and plates.

256,796. LAMP-CHIMNEY. JOHN B. DOBELMANN, Brooklyn, N. Y., assignor to Adele Louise Dobelmann, same place. Filed Jan. 21, 1882. (No model.)

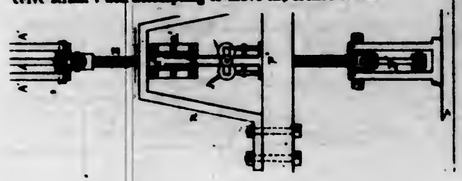


Claim.—1. The combination of a molded glass chimney having its lower edge ground true, as described, and provided with a corrugation, B, and a smooth metallic jacket or band, C, applied to the lower end of the chimney, but unattached thereto, so as to be readily removed and replaced without detaching and attaching fastening devices, the lower end of said jacket or band being bent inward at right angles to the axis of the chimney, and terminating at the inner surface of the vertical wall of the chimney, substantially as and for the purpose set forth.

2. The combination of a molded glass chimney having its lower edge ground true, as described, and provided with a corrugation, B, and a smooth metallic jacket or band, C, arranged loosely on the lower end of the said jacket or band, and having its lower edge bent inward at right angles, and terminating at the inner surface of the vertical wall of the chimney, substantially as and for the purpose described.

256,797. SWITCH AND SIGNAL LOCKING APPARATUS. OSCAR GASSETT, Boston, Mass., assignor to the Union Switch and Signal Company, Pittsburg, Pa. Filed Feb. 18, 1882. (No model.)

Brief.—To prevent the careless shifting of a switch or signal lever while a train is approaching, an armature of an electro-magnet in a closed track-circuit is actuated by short-circuiting to lock said lever-connections until the train has passed off the electrified section. The locking-armature is surrounded by a stirrup to receive strain when attempting to move the locked lever.

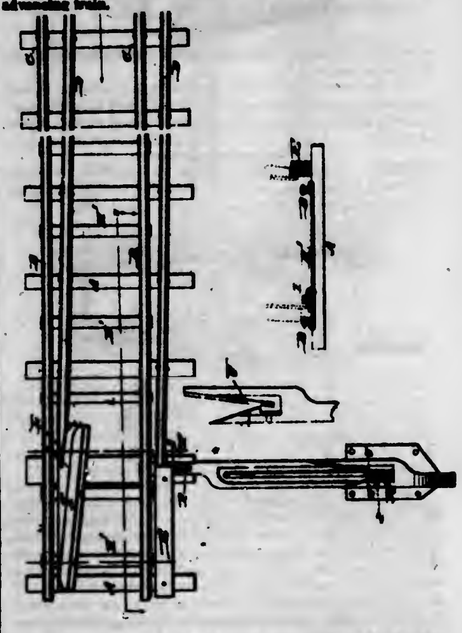


Claim.—1. In combination with the connecting-rod of a switch or signal operating mechanism, a stop, *a*, arranged on such rod, an armature-lever arranged to engage with and be disengaged from such stop, an electro-magnet, battery, and track-circuit, substantially as set forth.

2. The stirrup *a*, in combination with armature-lever *d* and stop *a* on rod B, substantially as set forth.

256,798. RAILROAD-SWITCH. JOSIAH GRAY and WESLEY SELLENBACK, Chicago, Ill., assignors to themselves, Connell B. Sheffer, and Jacob R. Reed, all of same place. Filed Jan. 11, 1882. (No model.)

Brief.—Universal main-track rails capable of lateral spring toward fixed sliding-rails, the end of one of said sliding-rails being an elevated inclined bar to carry the wheel-flanges over the main-line rail, and the end of the other sliding-rail being beveled to fit a notch in a beveled guard-rail which moves with the main-track rails. The lever-catch in the switch-stand is secured by a frangible pin, whereby a misplaced switch may be properly shifted by an advancing train.



Claim.—1. The combination of the fixed sliding-rails, the continuous main-track rails adapted to spring laterally, the guard-rail section I, movable with the main-track rails, the inclined stationary block E, and means for moving the spring-sections of the main-track rails, substantially as described.

2. In combination with the laterally-movable spring-sections of the main-track rails and the fixed sliding-rails, the switch-stand, its lever, the connections between said lever and the said laterally-movable sections, the detent or catch for holding the lever, the frangible pin or bolt *g*, and a spring, U, substantially as described.

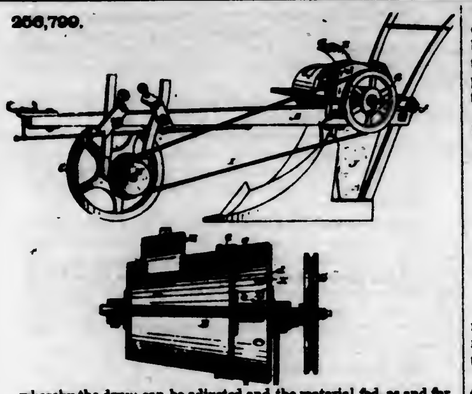
3. In combination with the continuous main-track rails adapted to spring laterally and their operating mechanism, the sliding-rails constructed as described, the outer one terminating in an inclined block and the inner one in a beveled edge, substantially as described.

4. The combination of the main-track rails adapted to spring laterally, the inner sliding-rail beveled as described, the inclined block E, and a switch-stand provided with a bifurcated arm having a beveled catch or detent and a spring, the whole arranged to operate as described.

256,799. FERTILIZER-DISTRIBUTER. JOSEPH H. KNEELAND, Hillsborough, N. J. Filed May 16, 1881. (Model.)

Claim.—1. The conoidal-shaped drum B, supported in a frame adapted to be changed to an agricultural implement, and divided transversely by partition D into apartments *a* and *b*, the apartment *b* having openings *d*, in combination with valves *c* and spout J.

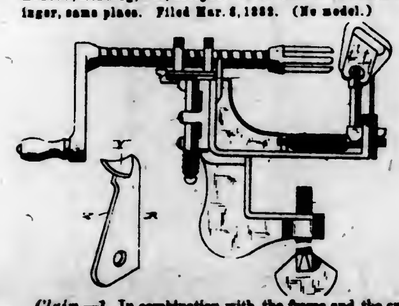
256,799.



whereby the drum can be adjusted and the material fed, as and for the purpose set forth.

2. The revolving drum B, divided by the partition D into apartments *a* and *b*, having openings *d* and lifters Y, in combination with valves *c* and spout J, substantially as and for the purpose set forth.

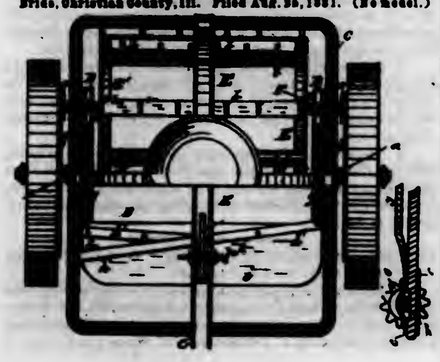
256,800. APPLE PARER, CORER, AND SLICER. CASSIUS HOLTZE, Reading, Pa., assignor of one-half to B. Frank Seltzinger, same place. Filed Mar. 6, 1882. (No model.)



Claim.—1. In combination with the frame and the cutters, the vertical shaft journaled in bearings on the frame and provided with a plate having bearings, in which is journaled the screw fork shaft, the said plate being provided with a flange to engage the edge of the seat upon which it rests, and the seat provided with a lug to engage a cone-shoulder on the shaft, whereby the shaft and its supports are automatically elevated to permit the said shaft to be turned at right angles to its normal position, substantially as specified.

2. The slicing-knife provided with a straight blade, E, having an inclined cutting-edge, Z, and a coring-cutter, Y, extending to each side of the blade, substantially as specified.

256,801. SOIL-PULVERISER. ISAAC HUFFER, Taylorville, assignor of two-thirds to John W. Moore and James O. McBride, Christian County, Ill. Filed Aug. 25, 1881. (No model.)



Claim.—In a soil-pulveriser of the character described, the combination of the tubular slides *c* on frame B, the shaft of drum E bearing in said slides, the levers *h h'*, and the rods *g g*, connecting the levers with slides *c c*, all arranged for the purpose of engaging pinions *e* with spur-wheels *f* or disengaging said wheels, substantially as described.

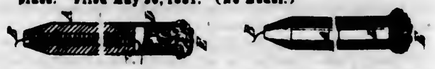
256,802. LEAD AND CRAYON HOLDER. JOSEPH ILLFELDER, Fürth, Bavaria, Germany; Leopold Illfelder Administrator of said Joseph Illfelder, deceased; said Administrator assignor to Bernhard Illfelder, New York, N. Y. Filed June 17, 1880. (No model.) Patented in France Nov. 30, 1880, and in England May 13, 1880.



Claim.—1. In a crayon-holder having expansible jaws and a rear controlling-spring, the combination, with said parts, of the ring *d*, rod *e*, plate *g'*, and the interior revolving chamber, substantially as set forth.

2. The tapering compartment-reservoir *a a' a²*, mounted in the sheath A, having the central mouth-piece, C, in combination with the cap *g* and lug *i*, arranged substantially as described, so as to present the leads to the clamping-jaws in the axial line of the holder, as set forth.

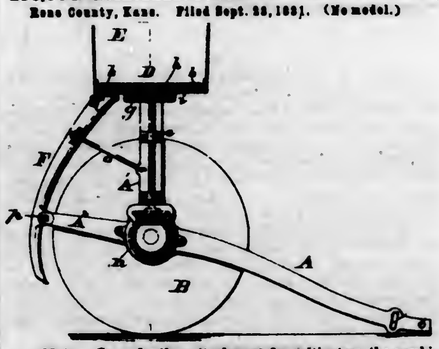
256,803. ELECTRIC-LIGHT CARBON. JOHN B. KING, Brooklyn, N. Y., assignor of one-half to Alphonse Friedrich, same place. Filed May 26, 1881. (No model.)



Claim.—1. The combination of hollow carbon A, containing wire helix C, with holder D and sponge E, substantially as described.

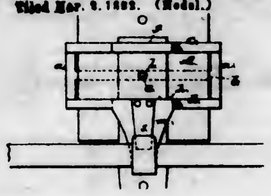
2. The combination, with a tubular carbon, of a hollow cap fitted to its base and forming an air-passage to the interior of the carbon, and a sponge placed in said passage, substantially as described.

256,804. ATTACHMENT FOR PLOWS. WILLIAM D. LIBBESBY, Rene County, Kans. Filed Sept. 26, 1881. (No model.)



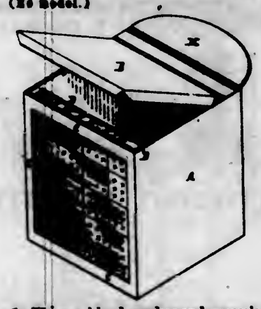
Claim.—In a planting attachment for cultivators, the combination, with the hopper E and side bar, A, having arms A' A², and wheel B, provided with gear *d*, of the perforated box *i*, attached to the lower part of the hopper, receiving disk D, having apertures *b* and gear A, vertical shaft C, having gears *f g*, and the grain-spout F, all substantially as shown and described.

256,805. BACK-BAND BUCKLE. JOSEPH A. LOWE, Gainesville, Tex., assignor of one-fourth to Abner R. Smith, same place. Filed Nov. 9, 1881. (Model.)



Claim.—The back-band triple-bar buckle having the outwardly-projecting stud *c* on its middle bar, the offset-recesses *g h* in the under portions of its upper and lower bars, and the depending lug-hook formed on the lower bar, and having a closing spring-snap, *e*, forming a cross-bearing loop, substantially as specified.

256,806. COMBINED CRACKER AND GROCER'S CAN. CHAS. F. MARELAND, Pittsburg, assignor to himself and Sylvester S. Marvin, Kilbuck Township, Allegheny County, Pa. Filed Nov. 18, 1881. (No model.)

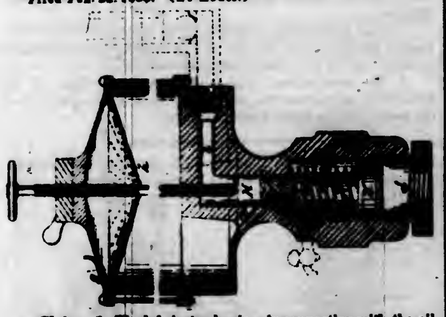


Claim.—1. The combined cracker and grocer's can herein described, provided with a hinged top lid, B, and hinged side lid, M, substantially as and for the purposes set forth.

2. The combined cracker and grocer's can herein described, provided with the hinged top lid, B, the bulged face K, and the hinged side lid, M, substantially as and for the purposes set forth.

3. In a combined cracker and grocer's can having a hinged top lid, B, hinged side lid, M, and open face C, with glass pane *c*, the removable sheet-metal false back D, adapted to be secured in the place of the glass pane *c*, substantially as and for the purposes set forth.

256,807. LUBRICATOR. MARTIN D. MILLER, Springfield, Mo., assignor of one-half to John Neukart, Jr., same place. Filed Feb. 23, 1880. (No model.)



Claim.—1. The lubricator having, in connection with the oil-cylinder and its communicating oil-reservoir, an oil-forcing piston and a screw regulating-stop, adjustable in said oil-cylinder, substantially as specified.

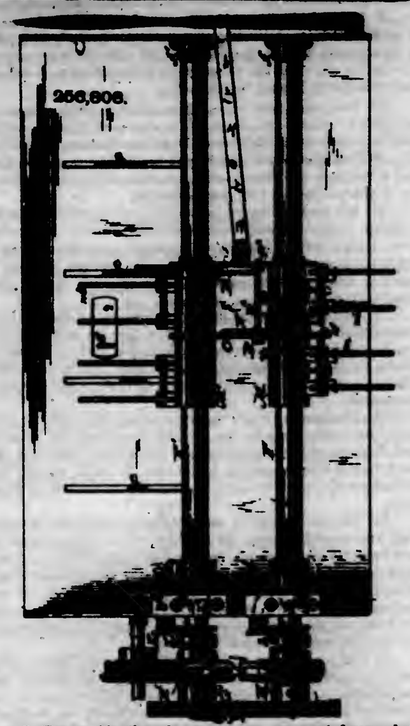
2. In a lubricator, the combination, with the oil-reservoir and its connected oil-cylinder, of the oil-forcing piston made larger at its steam end than its oil end, a spring, and an adjustable regulating device governing the play of the oil-forcing piston, substantially as specified.

3. In a lubricator, the combination, with the oil-reservoir and its communicating oil-cylinder, the steam-chamber, and the oil-forcing piston having a soft-metal oil end, of the spring, the screw regulating-stem extending into said oil-cylinder, and a check-valve, substantially as specified.

256,808. GRAIN-BINDER. NOAH T. RENT, Miamisburg, Ohio, assignor to Abel Hoover and William Gamble, same place. Filed Oct. 28, 1881. (Model.)

Claim.—1. The compressor arm or arms and band-securing mechanism secured to a laterally-sliding frame above the stationary docking or grain-receptacle, combined with a binder-arm sliding laterally upon a shaft beneath said docking, and a common adjusting-lever.

256,806.



2. The combination of compressor-arms mounted upon shafts above the docking or grain-receptacle and opposing each other, band-securing mechanism mounted proximately to the pivots of said compressor-arms, and a binding-arm mounted upon a shaft beneath the docking.

3. The combination of compressor-arms mounted upon shafts above the docking or grain-receptacle and opposing each other, band-securing mechanism mounted proximately to the pivots of said compressor-arms, a binding-arm mounted upon a shaft beneath the docking, and driving-gear whereby the binding-arm is caused to meet one of the compressor-arms as it rises to make a clean division of the gavel from the incoming stream.

4. The combination of the opposing compressor-arms attached to hubs which slide longitudinally upon their shafts, the yokes connecting said hubs to prevent the shafts from springing, the band-securing devices mounted in said yokes, the binder-arm, also attached to a hub which slides upon its shaft, the stationary docking between the compressor and binder arms, and a common lever or equivalent device connected with the hubs to co-ordinately adjust the compressing and binding mechanisms.

5. The combination, in a grain-binder, of a tripping-arm normally in position to receive the pressure of the incoming grain, and arranged to slide laterally upon its shaft, a binder-arm, also arranged to slide laterally upon its shaft, and a common adjusting-lever whereby they may be moved co-ordinately.

6. The combination, in a grain-binder, of an outside compressor-arm arranged to slide laterally upon its shaft, a tripping-arm normally in advance of said compressor-arm and sliding therewith, a binder-arm, also sliding laterally on its shaft, and a common lever whereby said devices may be simultaneously adjusted.

7. The combination, in a grain-binder, of opposing compressors arranged upon a laterally-sliding frame carried by their retaining-shafts, a trip mounted upon said frame and normally in advance of the outside compressor, a binder-arm, also arranged to slide laterally upon its shaft and parallel with the movement of the compressor frame or carriage, and a common lever for co-ordinate adjustment of said devices.

8. In a grain-binder, the combination of the grain-receptacle, a packer, an outside compressor arm or arms normally open, and a tripping-arm normally in advance of the compressor-arm and closing the exit from the receptacle, against which tripping-arm the grain is forced by the packer.

9. In a grain-binder, the combination of the grain-receptacle, a packer, outside and inside compressor-arms normally open, and a tripping-arm normally in advance of the outside compressor and closing the exit from the receptacle in such manner as to receive the grain forced forward by the packer.

10. In a grain-binder, the combination of the grain-receptacle, a packer, an outside compressor arm or arms normally open, a tripping-arm normally in advance of the compressor-arm and closing the exit from the receptacle to receive the grain from the packer, and a binding-arm actuated in common with said compressor-arm by mechanism thrown into gear by the trip.

11. In a grain-binder, the combination of the grain-receptacle, a packer, outside and inside compressor-arms normally open, a tripping-arm normally in advance of the outside compressor and closing the exit from the receptacle, and a binding-arm actuated in common with said compressor-arms by mechanism thrown into gear by the trip.

12. The combination of the outside compressor-arm, the tripping-arm normally in advance thereof to close the grain-receptacle, means whereby the tripping-arm is locked to the compressor-arm as the latter descends and comes alongside, and means releasing it therefrom as said compressor-arm nears the end of its return movement.

13. The combination of the outer compressor-shaft, the tripping-arm carried thereby, the sprocket-wheel running loose on said shaft, the sliding clutch, its yoke and notched dowel-rod, the latch upon the frame, and the tappet upon the shaft, whereby the trip causes the clutch to engage by rocking the shaft in its bearings.

14. The combination of the outer compressor-shaft, the tripping-arm carried thereby, the sprocket-wheel running loose on said shaft, the sliding clutch, its yoke and notched dowel-rod, the latch upon the frame, and the tappet and wing-cam upon the shaft, whereby the trip causes the disengagement of the latch and engagement of the clutch by rocking the shaft in its bearings, and the wing-cam restores the dowel-rod to position and reopens the clutch in the ensuing positive movement.

15. The combination of the two shafts carrying the opposing compressor-arms, the sprocket-wheels running loose thereon, the chain driving said sprocket-wheels constantly in one direction, the intermeshing fixed gear-wheels, and means whereby the shafts are turn by turn clutched to and released from their sprocket-wheels.

16. The combination of the two shafts carrying the opposing compressor-arms, the sprocket-wheels running loose thereon, the chain driving said sprocket-wheels constantly in one direction, the intermeshing fixed gear-wheels, the binder-arm and its crooked shaft, the pitman connecting the binder-arm shaft with a wrist-pin on one of the gear-wheels, and means whereby the compressor-shafts are turn by turn clutched to and released from their sprocket-wheels.

17. The combination, to form a tripping mechanism for grain-binders, of a rock-shaft, a tripping-arm mounted upon said rock-shaft and opposing the incoming grain, a constantly-driven gear or sprocket wheel normally loose upon the shaft, a spring-pressed sliding clutch held out of engagement with said wheel by means of a latch, a tappet upon the shaft in position to be brought against and release the latch as the tripping-arm yields and rolls the shaft, and means for restoring the clutch to its open position after the shaft has been driven the proper distance.

18. The combination, substantially as described, of a gear or sprocket wheel, a spring-pressed sliding clutch engaging therewith, a yoke and notched dowel-rod connected with the sliding clutch, a pivoted latch upon the frame to lock said dowel-rod, a tappet carried by the shaft to release the latch and permit the clutch to engage, and a wing-cam, also carried by the shaft to again retract the dowel-rod and clutch.

19. The combination of the opposing compressing-arms and their respective rock-shafts, the tripping-arm on the outer shaft, the sprocket-wheels running loose on said shafts, the intermeshing gear-wheels fixed to the shafts, the sliding clutches and their yokes and notched dowel-rods, the latches upon the frame, and the tappets and wing-cams carried by the shafts, all relatively arranged as set forth.

20. In combination with the outer compressor-shaft, the adjustable collar carrying the tappet and wing-cam, substantially as and for the purpose described.

21. The combination, with the shaft supported in the yokes which bind the compressor-bolts together and driving the band-uniting mechanism, of the segment upon one of the compressor-shafts for actuating said driving-shaft, as set forth.

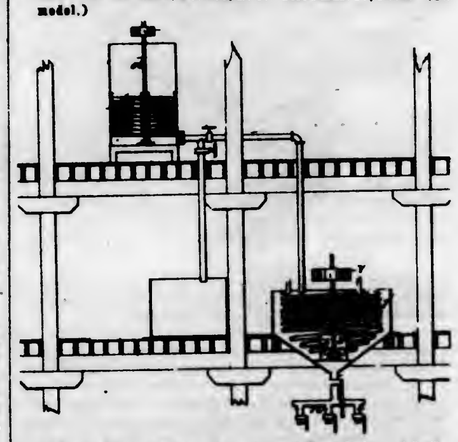
22. The combination, with the binding-arm, of the separator-arm pivoted thereto and guided as to the path in which it moves by the slot in the docking through which the binding-arm passes.

23. The tripping-arm mounted upon the shaft F, combined with the coiled spring, the brake, and the notched rim, substantially as and for the purpose set forth.

24. The combination of the tripping-arm, its coiled spring and brake, the rim a^2 and its shoulder a^3, the compressor-arm, and the stop a^4 on the frame, as and for the purpose described.

25. The combination, with the outside vibrating compressing-arm, of the pivoted dog and its stop to form a gavel-ejector, as set forth.

256,809. APPARATUS FOR CRYSTALLIZING GRAPE-SUGAR. HOWIE ROAF, Buffalo, N. Y. Filed Mar. 17, 1881. (No model.)



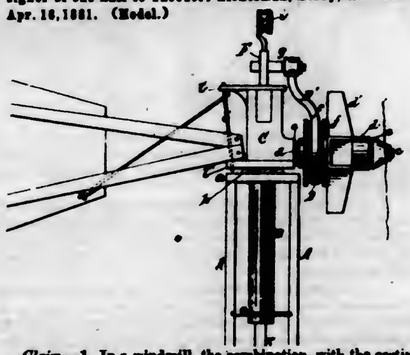
Claim.—1. The combination, substantially as before set forth, of the mixer and the crystallizer, whereby the emulsion may be conveniently supplied to the crystallizer.

2. The combination, substantially as before set forth, of the tank, the screw-bladed agitator, and the drum surrounding said agitator.

3. The combination, substantially as before set forth, of the tank of the crystallizer, the coil of pipe therein, the screw-bladed agitator, and the drum surrounding said agitator.

4. The combination, substantially as before set forth, of the tank of the crystallizer, the coil of pipes therein, the agitator, and the discharge-pipe divided into branches.

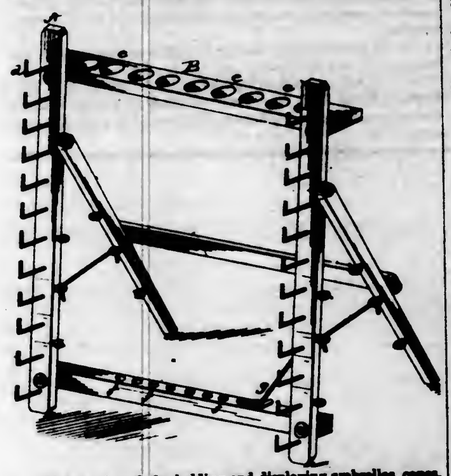
256,810. WINDMILL. EMANUEL H. SOUNDER, Nebraska, assignor of one-half to Theodore Bickerman, Henry, Ill. Filed Apr. 16, 1881. (Model.)



Claim.—1. In a windmill, the combination, with the casting C, carrying the shaft *c*, with a sleeve, *d*, having the wheel-spider *d'* and the eccentric or cam *f*, of the collar D, having the pitman *D'*, and the piston-rod E, substantially as and for the purpose set forth.

2. In a windmill, the combination, with the casting C, having the tubular shaft B and supported upon bearing anti-frictional rolls *h*, the shaft *c*, with its sleeve *d*, fitted with frictional rolls *e*, and having the spider *d'*, cam *f*, with anti-frictional bearing-rolls *f'*, collar D, having pitman *D'*, and guide-standards F, of the piston-rod E, having the pin *g* and interposed between the anti-frictional rolls *h h*, substantially as and for the purpose set forth.

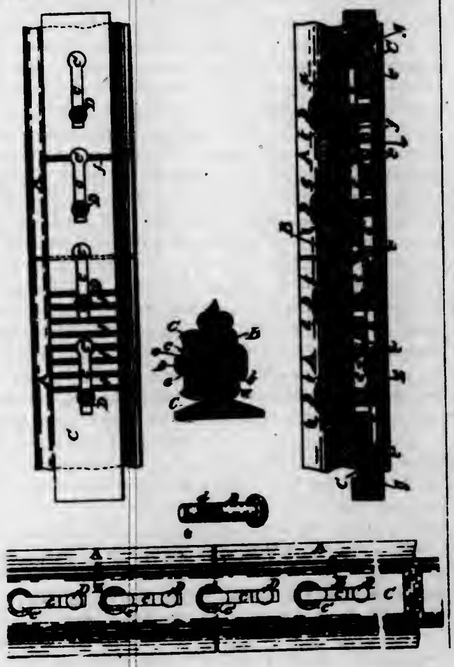
256,811. FOLDING DISPLAY-RACK. JAMES T. SMITH, New York, N. Y. Filed Feb. 24, 1882. (No model.)



Claim.—A rack for holding and displaying umbrellas, canes, or other articles, consisting of the front supports provided with hooks or pegs, the upper and lower cross-pieces provided with holes and recesses, as described, and the back braces, all pivoted to each other to permit of sliding and folding the parts together, substantially as described.

256,812. RAIL-JOINT FASTENING. HAZLOISE THIBAULT, Ottawa, Ontario, Canada, assignor of one-half to Maxime Hélanger and John Sweetland, both of same place. Filed Dec. 12, 1881. (No model.)

Brief.—Two tapered slotted plates having longitudinal slots enlarged at one end and provided with notches, in which may be inserted locking-pins, are secured to the rails by means of recked bolts.



Claim.—1. The joint-fastening consisting of the plate B, recked bolts D, the two tapered slotted plates C, provided with notches *f*, and the pin E, as shown.

2. As a new article of manufacture, a flat tapered plate provided with longitudinal slots enlarged at one end and with transverse grooves in one face.

3. The tapered slotted plate C, provided with the grooves *f*, for a fastening-pin, and the notch *g*, to facilitate their removal.

REISSUES.

10,088. ROAD SCRAPER AND GRADER. ALONZO H. KIMBALL and CHARLES H. KIMBALL, Littleton, Mass. Filed June 2, 1881. Original No. 231,589, dated Aug. 24, 1880.

Brief.—A plow is detachably secured to the end of the scraper by means of a bar at the bottom connected to lugs on the plow, passing under the scraper, and connected at its rear with a bar passing over the top of the scraper and bolted to the plow. The scraper is suspended by looped straps to the rear of a triangular frame, loosely jointed at its front end to the front axle of a wagon-frame. The scraper is connected with the frame by extension-braces having ball-and-socket joints. The rear of the triangular frame has a vertical bar passing up through slots in the cross-bars of a frame on the wagon-body. The ends of the scraper have vertical bars adjusted by means of levers and racks and pawls.

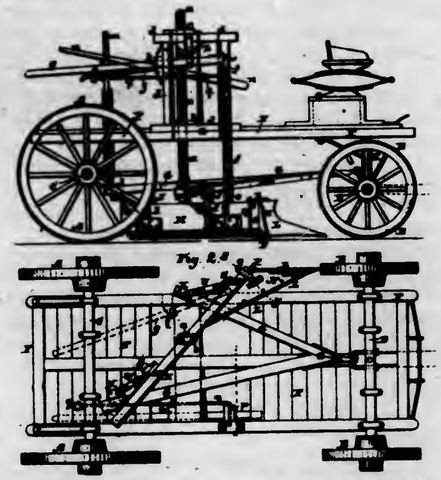
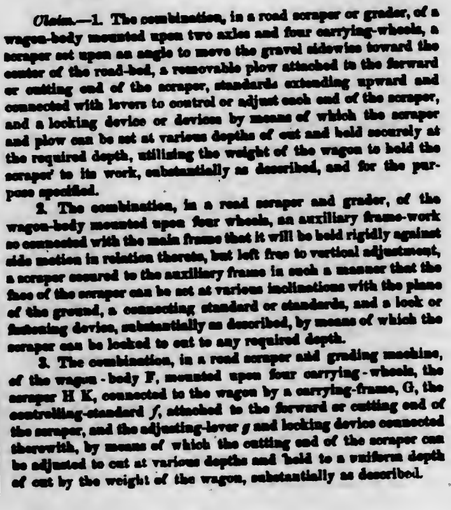


Fig. 2.



Claim.—1. The combination, in a road scraper or grader, of a wagon-body mounted upon two axles and four carrying-wheels, a scraper set upon an angle to move the gravel sidewise toward the center of the road-bed, a removable plow attached to the forward or cutting end of the scraper, standards extending upward and connected with levers to control or adjust each end of the scraper, and a locking device or devices by means of which the scraper and plow can be set at various depths of cut and held securely at the required depth, utilizing the weight of the wagon to hold the scraper to its work, substantially as described, and for the purpose specified.

2. The combination, in a road scraper and grader, of the wagon-body mounted upon four wheels, an auxiliary frame-work so connected with the main frame that it will be held rigidly against side motion in relation thereto, but left free to vertical adjustment, a scraper secured to the auxiliary frame in such a manner that the face of the scraper can be set at various inclinations with the plane of the ground, a connecting standard or standards, and a lock or fastening device, substantially as described, by means of which the scraper can be locked to cut to any required depth.

3. The combination, in a road scraper and grading machine, of the wagon-body F, mounted upon four carrying-wheels, the scraper H K, connected to the wagon by a carrying-frame, G, the controlling-standard *f*, attached to the forward or cutting end of the scraper, and the adjusting-lever *g* and locking device connected therewith, by means of which the cutting end of the scraper can be adjusted to cut at various depths and held to a uniform depth of cut by the weight of the wagon, substantially as described.

4. The combination, in a road scraper and grading machine, of the main wagon-body, mounted upon four wheels, the auxiliary frame G, connected with the main wagon-body in such a manner that it carries the scraper and holds it against the side draft, the standards *f* and *m*, for adjusting the cut of the scraper, the levers *g* and *n*, for raising and lowering the scraper, the segment *h* and catch *j*, for locking the cutting end of the scraper to the required depth of cut, and the pin *g*, used to hold the lever *n* and the rear end of the scraper at the required height or depth, substantially as described, and for the purpose set forth.

5. The combination, with the scraper H K, of the removable plow L, by means of the bar P, passing beneath the scraper-blade, the bar R, passing over the scraper, both connected with lugs or projections on the rear surface of the plow, and bolt Q, all combined and operating substantially as described, and for the purpose specified.

6. In a road scraper and grader, the combination, with the scraper H K and the frame G, of the extension-braces U V, provided with ball-and-socket bearings W X and T S at their ends, substantially as herein shown and described, to give the braces a firm support at whatever pitch the scraper may be adjusted, as set forth.

STEEL ELIOTYPE PRINTING CO BOSTON

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

OPINION OF SECRETARY OF THE INTERIOR.

1. SECTION 4887 OF THE REVISED STATUTES CONSTRUED.
   Under section 4887 of the Revised Statutes the Commissioner of Patents should limit the duration of patents issued by him to the term of foreign patents previously issued for same invention.
2. RULE 39 OF PRACTICE IN THE UNITED STATES PATENT OFFICE.
   To this end he may require of the applicant, under oath, all his knowledge upon the subject.

DEPARTMENT OF THE INTERIOR,
Washington, April 10, 1882.

SIR: I acknowledge the receipt of your letters of the 4th of January last and the 9th ultimo relative to the execution by the Patent Office of the provision of section 4887 of the Revised Statutes, which directs that every patent granted for an invention which has been previously patented in a foreign country shall be so limited as to expire at the same time with the foreign patent, or, if there be more than one, with the one having the shortest time to run, provided that in no case shall a patent be enforced more than seventeen years.

It is the policy of the law to have patents granted in this country for inventions previously patented in foreign countries expire in this country at the time at which they expire in the countries in which they have the shortest term to run. It is the duty of the Department to give effect to this policy so far as it can so do.

It has been suggested that the Patent Office has not sufficient means of learning whether in fact inventions for which patents are claimed, have been patented abroad. That is doubtless true; but still the Patent Office should use what means it has to that end. Now, it can search the conscience of the applicant and require from him all his knowledge on the subject. It is true he may falsify, but so may all witnesses, and yet we must in all controversies rely on sworn testimony. The testimony of the applicant here and the transcripts of patents in foreign countries filed in the Patent Office are, perhaps, the only means by which the Commissioner of Patents can learn the existence of a foreign patent and the date at which it was granted, and it does not seem wise to have the Office reject either of the modes of ascertaining the fact.

It is claimed in the case appealed that the applicant has made oath that he has procured a patent for an invention in one foreign country, and has been required to state in addition whether he has obtained a patent for the same invention in any other foreign country. He protests against such requirement. It seems to me a statement of this proposition carries with it its sufficient answer. The object is to get not only the truth, but the whole truth.

The applicant surely cannot complain if his patent here be limited by his own sworn statement concerning the issue of a foreign patent. He knows what the law intends to give him. If he states truly he gets all that and should not want more. If he states untruly he runs the risk of taking nothing by his falsity, if discovered, and also the risk of prosecution for perjury.

It is also suggested that if the patent issued here refers to the law limiting the life of the patent issued here to the life of a foreign patent issued for the same invention that will be effective and sufficient. That may be so in law and not in fact. If the applicant states truly all he knows (and he knows all there is to know) his patent here under the present practice gives a clue which will enable those interested to determine the facts as to the expiration of the patent. If no data as to particular foreign patents be given on the face of the patent the public may be kept in ignorance of the foreign patent and royalty may be collected on an expired patent.

I am, therefore, of opinion that the Commissioner of Patents should insert in patents issued by him the limitation shown by the facts in his possession touching the existence and date of foreign patents for the same invention so far as developed, and should also refer to the law limiting domestic patents to the life of foreign patents for the same invention.

Very respectfully,

S. J. KIRKWOOD,
Secretary.

The Commissioner of Patents.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

AGER *et al. v.* MURRAY.

Decided March 6, 1882.

1. PATENT RIGHTS LIABLE FOR DEBTS OF PATENTEES.
   A patent right may be subjected by bill in equity to the payment of a judgment debt of the patentee.
2. SALE BY ORDER OF COURT—TRUSTEE TO ASSIGN.
   The decree below, appointing a trustee to execute an assignment, if the patentee should not himself execute one, being clearly within the chancery powers of the court, affirmed.

APPEAL from the Supreme Court of the District of Columbia.

Mr. T. T. Crittenden for the appellants.
Mr. L. G. Hine and *Mr. S. T. Thomas* for the appellee.

Mr. Justice GRAY delivered the opinion of the Court.

This is a bill in equity by a judgment creditor to subject to the payment of his debt the interest of his debtor

in patent rights. The case was heard in the Supreme Court of the District of Columbia upon bill and answers, by which it appears to be as follows:

On the 10th of April, 1876, Talbot C. Murray, in an action at law upon a promissory note, recovered judgment against Wilson Ager for the sum of $2,164.66, with interest and costs. Upon that judgment a writ of *fieri facias* was issued and returned *nulla bona*. Wilson Ager had no real or personal property in the District subject to execution at law, but was the owner of sundry letters patent issued to him by the United States for useful inventions, which, if sold, would produce more than enough money to satisfy that judgment. On the 26th of September, 1876, he conveyed all his right and interest in these letters patent to the other defendant, Elisha C. Ager, who owned an equitable interest of one-third therein, and who, on the 8th of October, 1877, reconveyed the patent rights to Wilson by an assignment, which was not recorded in the Patent Office. Wilson Ager resides in the District of Columbia and the other defendant resides in the State of California, and both have appeared in the cause and answered to the merits of the bill.

The bill prays for an injunction against further assignment pending the suit, and that the patents be sold under the direction of the court, and the proceeds of the sale applied to the payment of the judgment debt, and the defendant, Wilson Ager, be required to execute such assignment as may be necessary to vest title in the purchaser or purchasers, in conformity with the patent laws, and for further relief. The decree is that, in default of his paying by a certain day the judgment mentioned in the bill, with interest and costs, and the costs of this suits, the patent rights be sold and an assignment thereof executed by him, as prayed for, and that, in default of his executing such assignment, some suitable person be appointed trustee to execute the same. From that decree the original defendants have appealed to this Court, and the single question argued before us is, whether a patent right may be ordered by a court of eqnity to be sold and the proceeds applied to the payment of a judgment debt of the patentee.

A patent or a copyright, which vests the sole and exclusive right of making, using, and vending the invention, or of publishing and selling the book, in the person to whom it has been granted by the Government, as against all persons not deriving title through him, is property capable of being assigned by him at his pleasure, although his assignment, unless recorded in the proper office, is void against subsequent purchasers or mortgagees for a valuable consideration without notice. (Rev. Stats., secs. 4884, 4898, 4952, 4955.) And the provisions of the patent and copyright acts, securing a sole and exclusive right to the patentee, do not exonerate the right and property thereby acquired by him, of which he receives the profits and has the absolute title and power of disposal, from liability to be subjected by suitable judicial proceedings to the payment of his debts.

In England it has long been held that a patent right would pass by an assignment in bankruptcy, even without express words to that effect in the bankrupt act. (*Hesse* v. *Stevenson*, 3 Bos. & Pul., 565; *S. C.* Davies Pat. Cas., 263; *Longman* v. *Tripp*, 2 New Rep., 67; *Bloxam* v. *Elsee*, 1 Car. & P., 558; *S. C.*, Ry. & Mood., 187; 6 B. & C., 169; 9 D. & R., 215; *Mawman* v. *Tegg*, 2 Russ., 385; *Edelsten* v. *Vick*, 11 Hare, 78; *Hudson* v. *Osborne*, 39 Law Journal, N. S., chap., 79.)

In *Hesse* v. *Stevenson* Mr. Justice Chambre, in the course of the argument, said: "The right to the patent is made assignable; why, then, may it not be assigned under a commission of bankrupt?" (3 Bos. & Pul., 571.) And Lord Alvanley, delivering the unanimous judgment of the court, after observing that it was contended "that the nature of the property in this patent was such that it did not pass under the assignment," and "that although by the assignment every right and interest and every right of action, as well as right of possession and possibility of interest, is taken out of the bankrupt and vested in the assignee, yet that the fruits of a man's own invention do not pass," said:

It is true that the schemes which a man may have in his own head before he obtains his certificate, or the fruits which he may make of such schemes, do not pass, nor could the assignee require him to assign them over, provided he does not carry his schemes into effect until after he has obtained his certificate. But if he avail himself of his knowledge and skill, and thereby acquire a beneficial interest, which may be the subject of assignment, I cannot frame to myself an argument why that interest should not pass in the same manner as any other property acquired by his personal industry. (3 Bos. & Pul., 577, 578.)

The recent bankrupt act of the United States, in defining what property should vest in the asignee in bankruptcy, expressly enumerated "all rights in equity, choses in action, patent rights, and copyrights," and required the assignee to sell all the property of the bankrupt for the benefit of his creditors. (Rev. Stats., secs. 5046, 5062, 5064.) The only difference is that in England all such rights pass that become vested in the bankrupt before he obtains a certificate of discharge, whereas here only those rights pass which belong to him at the time of the assignment.

It has been said by an English text-writer that "a patent right may be seized and sold in execution by the sheriff under a *fieri facias*, being in the nature of a personal chattel." (Webster on Patents, 23.) We are not aware of any instance in which such a course has been judicially approved. But it is within the general jurisdiction of a court of chancery to assist a judgment creditor to reach and apply to the payment of his debt any property of the judgment debtor which, by reason of its nature only, and not by reason of any positive rule exempting it from liability for debt, cannot be taken on execution at law, as in the case of trust property, in which the judgment debtor has the entire beneficial interest of shares in a corporation, or of choses in action. (*M'Dermutt* v. *Strong*, 4 Johns., chap., 687; *Spader* v. *Hadden*, 5 Johns., chap., 280, and 20 Johns., 554; *Edmeston* v. *Lyde*, 1 Paige, 637; *Wiggin* v. *Heywood*, 118 Mass., 514; *Sparhawk* v. *Cloon*, 125 Mass., 263; *Daniels* v. *Eldredge*, 125 Mass., 356; *Drake* v. *Rice*, 130 Mass., 410.)

In *Stephens* v. *Cady*, (14 How., 528,) and again in *Stevens* v. *Gladding*, (17 How., 447,) the point decided was that by a sale of the copper-plate engraving of a map on execution from a State court against the owner of the copyright the purchaser acquired no right to strike off and sell copies of the map.

Mr. Justice Nelson, in delivering judgment in *Stephens* v. *Cady*, said:

The copper-plate engraving, like any other tangible personal property, is the subject of seizure and sale on execution, and the title passes to the purchaser the same as if made at a private sale; but the incorporeal right secured by the statute to the author to multiply copies of the map by the use of the plate being intangible and resting altogether in grant, is not the subject of seizure or sale by means of this process—certainly not at common law. No doubt the property may be reached by a creditor's bill and be applied to the payment of the debts of the author, the same as stock of the debtor is reached and applied, the court compelling a transfer and sale of the stock for the benefit of creditors.

He then cited the cases in Johnson's and Paige's Reports above referred to, and added:

But in case of such remedy we suppose it would be necessary for the court to compel a transfer to the purchaser in conformity with the requirements of the copyright act, in order to vest him with a complete title to the property. (14 How., 531.)

In *Stevens* v. *Gladding* Mr. Justice Curtis said:

There would certainly be great difficulty in assenting to the proposition that patent and copyrights held under the laws of the United States are subject to seizure and sale on execution. Not to repeat what is said on this subject in 14 Howard, 531, it may be added that these incorporeal rights do not exist in any particular State or district. They are coextensive with the United States. There is nothing in any act of Congress or in the nature of the rights themselves to give them locality anywhere, so as to subject them to the process of courts having jurisdiction limited by the lines of States and districts. That an execution ont of the Court of Common Pleas for the County of Bristol, in the State of Massachusetts, can be levied on an incorporeal right subsisting in Rhode Island or New York will hardly be pretended. That by the levy of such an execution the entire right could be divided and so much of it as might be exercised within the county of Bristol sold would be a position subject to much difficulty. These are important questions, on which we do not find it necessary to express an opinion, because in this case neither the copyright, as such, nor any part of it, was attempted to be sold. (17 How., 451.)

The difficulties of which the learned justice here speaks are of seizing and selling a patent or copyright upon an execution at law which is ordinarily levied only upon property, or the rents and profits of property, that has itself a visible and tangible existence within the jurisdiction of the court and the precinct of the officer, and do not attend decrees of a court of equity, which are *in personam*, and may be enforced in all cases where the person is within its jurisdiction. (*Massie* v. *Watts*, 6 Cranch, 148.) And the terms in which he refers to the statement of Mr. Justice Nelson show that there was no intention to criticise or qualify that statement.

There are, indeed, decisions in the circuit courts that an assignee in insolvency, or a receiver of all the property of a debtor appointed under the laws of a State, does not, by virtue of the general assignment or appointment merely, without any conveyance made by the debtor or specifically ordered by the court, acquire a title in patent rights. (*Ashcroft* v. *Walworth*, 1 Holmes C. C., 152; *Gordon* v. *Anthony*, 16 Blatchf. C. C., 234.) But in *Ashcroft* v. *Walworth* Judge Shepley clearly intimated that the courts of the State might have compelled the debtor to execute such a conveyance; and the highest courts of New York and California have affirmed the power upon a creditor's bill to order the assignment and sale of a patent right for the payment of the patentee's judgment debts. (*Gillette* v. *Bate*, 86 N. Y.; *Pacific Bank* v. *Robinson*, 57 California.)

In *Carver* v. *Peck* (131 Mass., 291) the court reserved the expression of any opinion upon that question, because unnecessary to the decision, and the assumption in *Cooper* v. *Gunn* (4 B. Monroe, 594) that an author could not be deprived against his will and in favor of any of his creditors of any of the rights secured to him by the copyright acts was merely *obiter dictum*, unsupported by reasoning or authority.

In the case at bar the bill is filed by a judgment creditor of the patentee in a court of the United States of appropriate jurisdiction against the patentee, residing within the District and holding the entire legal title and two thirds of the equitable interest in the patent rights, and against the owner of an equitable interest in the remaining third, who is properly made a party to the bill. Both defendants are before the Court and have filed answers. The debtor's interest in the patent rights is property assignable by him, and which cannot be taken on execution at law. The case is thus brought directly within the opinion delivered by Mr. Justice Nelson in *Stephens* v. *Cady*, of the soundness of which we entertain no doubt.

The clause of the decree below, appointing a trustee to execute an assignment, if the patentee should not himself execute one, as directed by the decree, has not been objected to in argument, and was clearly within the chancery powers of the court as defined in the statute of Maryland of 1785, which is in force in the District of Columbia. (Maryland Stats. 1785, chap. 72, secs. 7, 13, 25, 2 Kilty's Laws; Laws of District of Columbia, edition 1868, pages 326, 328, 333, 336.)

Decree affirmed.

U. S. Circuit Court—Eastern District of Pennsylvania.

HAMMERSCHLAG *v.* GARRETT *et al.*

Decided January 23, 1882.

1. MOTION FOR ATTACHMENT—PROCESS—OMISSION OF STEP.
   Motion for attachment for contempt dismissed, it appearing that defendants omitted in their method the first step in the plaintiff's process.
2. PROCESS CLAIM—CHANGE OF MACHINERY—OMISSION OF STEPS.
   The position that the process claim of the patent in question covers all methods of making waxed paper by machinery, whether by complainant's method or by a new mode devised by themselves, and which dispenses with some of the steps used by the plaintiff in his particular mode, cannot be adopted.
3. SAME—INFRINGEMENT.
   Construing the claim in question as for a process, every successive step enumerated must be regarded as an essential part, and must be employed by defendants to render them liable for infringement.

MOTION FOR ATTACHMENT FOR CONTEMPT.

Messrs. Frost & Coe and *Mr. J. K. Valentine* for the complainant.

Messrs. Collier & Bell for the defendants.

BUTLER, *J.*, MCKENNAN, *C. J.*, concurring.

Subsequently to the injunction in this case the defendants constructed a machine corresponding to a section of the old Anderson machine, the patent for which has expired, and continued the manufacture of waxed paper by this means. The plaintiff, charging that the process thus employed infringes his as described in the fifth claim of his patent, asks for an attachment to prevent its further use and to punish the alleged disregard of his injunction. It is not charged that the machine is similar to the plaintiff's and infringes the claims of his patent in this respect, but simply that the process is employed in violation of the claim for this.

In passing upon the validity of the plaintiff's patent and the construction of its several claims, we adopted the judgment of the Circuit Court of the Southern District of New York in *Hammerschlag* v. *Seamoni*, (involving the same patent,) for the sake of consistency and uniformity, without critical examination of the reasons on which the judgement was based. Whether the fifth claim under consideration is for a process or simply for the combination of machinery previously described and claimed in separate parts is a debatable question, which we did not, for the reasons stated, esteem it proper to enter upon. In the case cited it was decided to be for a process consisting of successive steps, four in number, as follows: first, moving the paper over and in contact with a heated cylinder, which acts to spread the wax on the surface of the paper; second, heating the unwaxed surface to spread and fuse the wax into the fabric of the paper; third, removing the surplus wax; and, fourth, remelting and polishing the wax upon the surface, these several steps being performed substantially as set forth in the specifications. The plaintiff's present position—that this process covers all methods of making waxed paper by machinery, "and, therefore, whether or not the defendants carry on the making of waxed paper by machinery by the complainant's particular method or by a new mode devised by themselves, and which dispenses with some of the steps used by the plaintiff in his particular mode, makes no difference whatever as regards infringement"—cannot be adopted. It is clearly unsound. His invention, as described by himself and in his own language, is for an improvement relating to a "means for heating the wax, applying it to the paper, * * * removing surplus wax, and then polishing the surface," which improved means are particularly described in the specifications and embraced in the claims, the fifth of which reads as follows:

The method herein set forth of waxing paper, consisting in spreading the wax upon the surface, heating the paper from the opposite side, to spread and fuse the wax into the fabric of the paper, removing the surplus wax, and remelting and polishing the wax upon the paper, substantially as set forth.

Construing this claim to be one for a process, as has been done, every successive step enumerated must be regarded as an essential part, and must be employed by the defendants to render them liable to the charge of infringement. The first (spreading the wax upon the surface of the paper, substantially as set forth) certainly is not employed by the defendants. The paper is not moved over and in connection with the heated cylinder, which acts to spread the wax upon it, nor is the wax spread upon it by any similar or equivalent means. It is not, indeed, in the sense here contemplated, spread upon it at all. The paper is simply dipped into the wax and as much of this substance taken up as will adhere, not upon one side simply, but upon both. This omission of the first step in the plaintiff's process plainly distinguishes the defendants' from it. That such an omission would have such an effect seemed to be fully conceded on the argument for injunction by the plaintiff's expert and his counsel.

In speaking of the Anderson patent, then set up in anticipation, this witness said:

The mode of operation there is different, being that of submerging the fabric or a portion thereof in the liquid on its way through the machine. The Anderson machine does not contain the same subject-matter of the first claim, because it has no heated cylinder revolving within the trough containing wax and acting to heat the same and apply it to the paper. For the same reason it does not contain the method specified in the second claim, the first step of which consists in transferring the melted wax from the trough to the paper by a roller or cylinder. For the same reason it does not contain the combination specified in the third claim, and for the additional reason that it contains no means after the wax has been applied to one surface of the paper for heating it at the other surface to draw the wax in. Finally, it does not contain, for the same reason, the method claimed in the fifth claim.

That this witness may now express a different opinion is not important.

The plaintiff's counsel, in distinguishing the Anderson machine from the plaintiff's, adopted and enforced this view. That it was also adopted by the distinguished judge whose leading we followed in granting the injunction is rendered clear by what he said in disposing of the motion for attachment against Scamoni on September 27, 1881. We quote his language:

In regard to the Van Skelline machine, there is not in it any such heated cylinder as the cylinder *a* of claim 1 of No. 8,460 or as the cylinder C of the defendant. It does not anticipate claim 2 of No. 8,460, because not only is there not in it a roller which transfers the melted wax from the trough to the paper, but there is no scraper between the roller and the paper. It does not meet claim 3 of No. 8,460, because it has no heated cylinder like the heated cylinder *a*; nor does it meet claim 5 of No. 8,460. The operation of spreading the wax upon the surface of the paper substantially as set forth in the description of No. 8,460 involves spreading it by means of a uniform layer of wax on the spreading-cylinder, produced by a scraper applied to such cylinder between the trough and the place of contact with the paper, which removes from the cylinder the surplus wax taken up by it from the trough. In Van Skelline's machine the paper is dipped into the bath of wax and takes up all the wax it will, and then the scraper is applied to the paper. The defendant's process imitates the plaintiff's and not Van Skelline's.

As respects the question before us, the operation of the defendant's machine and his process are precisely similar to Van Skelline's. This view is also fully sustained by the testimony of the several experts called by the defendants, some of whom are men of very great experience and unusual intelligence respecting the matters of which they speak.

It is unnecessary to inquire whether the defendants employ or imitate other steps of the plaintiff's process. What we have said is sufficient to indicate our reasons for holding that they do not employ the process protected by his patent.

The motion must, therefore, be refused.

U. S. Circuit Court—Eastern District of Pennsylvania.

THE BIGELOW CARPET COMPANY *v.* DOBSON. SAME *v.* SAME. THE HARTFORD CARPET COMPANY *v.* SAME.

Decided January 27, 1882.

1. INFRINGEMENT—ASCERTAINMENT OF DAMAGES.

In cases of wilful infringement respondents ought to be held to the most rigid accountability, and no intendment ought to be made in their favor founded upon the alleged inconclusiveness of the complainant's proof of loss. Such proof ought to be interpreted most liberally in favor of complainants within the limit of an approximately accurate ascertainment of their damages.

2. SAME.

Where in a suit for infringement of a patent for a carpet design the evidence showed the quantity of complainants' carpet sold during the season of its first introduction, its cost, the profit upon it, the quantity of the infringing carpet sold by respondents during the following season, and that there was a decline in complainants' sales, the measure of damages is the profits which would have accrued to complainants upon the quantity of carpets sold by respondents. This latter quantity must under the circumstances be presumed to have displaced an equal quantity of complainants' carpets.

Mr. A. v. Briesen for the complainants.

Mr. George E. Buckley for the defendants.

McKENNAN, *C. J.*:

These were all suits for infringement by the respondents of designs for carpets patented to the complainants. The infringing designs are exact counterparts of the patented ones, and carpets embodying them were put upon the market by the respondents some time after the date of the patents and the introduction of carpets containing the designs described in them by the complainants. No defense was made by the respondents, and they therefore occupy the attitude of willful infringers. Under these circumstances the respondents ought to be held to the most rigid accountability, and no intendment ought to be made in their favor founded upon the alleged inconclusiveness of the complainants' proof of loss. On the other hand, such proof ought to be considered and interpreted most liberally in favor of the complainants within the limit of an approximately accurate ascertainment of their damages. The master has not so dealt with the evidence presented to him, and has therefore fallen into error in his conclusion. He has found nominal damages only in favor of the complainants, although they furnished proof by which the damages claimed by them might, to some extent at least, be legally measured. In this category is the evidence of the number of pieces and yards of the complainants' carpets during the season of its first introduction upon the market, the cost per yard of their manufacture, and the prices at which they were sold in the market, the number of pieces and yards of infringing carpets made and sold by the respondents in the following season, and the very large decline in the complainants' sales during this period. It furnishes the means of accurate compntation of the complainants' profits and of the extent to which the market was occupied by the respondents. All that is left for presumption is that the infringing carpets displaced in the market the complainants' carpets, and hence that the profits which would have accrued to them upon the quantity of carpets wrongfully pnt upon the market is the measure of their damages. This presumption, as against a wrong-doer, is not unreasonable, and it has the sanction of numerous decisions. (*Putnam* v. *Lomax*, 9 Fed. Reps., 448; *American Saw Company* v. *Emerson*, 8 Fed. Reps., 886; *McCaub* v. *Brodie*, 2 O. G., 117; *Westlake* v. *Cartter*, 4 O. G., 636.) Upon this basis there is no difficulty in stating an account against the respondents, and this is the only one upon which, under the evidence, the complainants' damages can be computed. It is enough for us to say that the losses claimed for the entire decline in the complainants' sales and on looms are too remotely connected with the defendant's acts as their supposed cause, and hence are too speculative in their character to entitle them to allowance.

It sufficiently appears that the respondents made and sold twenty pieces of fifty-five yards each—eleven hundred yards in all—of carpets containing the design described in No. 30 of April term, 1879, and that the complainants' profit upon carpets of that design was sixty-seven cents per yard. They lost therefore this sum upon eleven hundred yards, and their damages amount to $737, for which a final decree must be rendered in their favor.

In No. 34, April term, 1879, which is founded upon the patent for what is popularly called the "Pagoda" pattern, the respondents made twenty pieces of fifty yards each, in all one thousand yards, the profits of complainants for like carpet being seventy-five cents per yard. The defendants have not disclosed what became of the carpets thus made by them, and they are therefore held accountable for them as if put upon the market. The complainants' damages in this case are, then, seventy-five cents upon one thousand yards, equal to $750, for which a final decree will be entered in their favor.

In No. 35, April term, 1879, the respondents made fifty-three pieces of the "Chinese lantern" patent of fifty yards each, but sold only thirty-five pieces, the rest having been sealed up by the marshal.

The complainants' damages in this case are therefore seventy-five cents upon one thousand seven hundred and fifty yards, equal to $1,312.50, for which a final decree will be entered in their favor.

THE

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OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 21—NO. 17. TUESDAY, APRIL 25, 1882. PRICE—$5 per year

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The OFFICIAL GAZETTE is published every Tuesday, two volumes a year, commencing in January and July. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound volumes, $3.50 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Issue of April 25, 1882.

Patents	339	No. 254,813 to No. 257,142, inclusive.
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Trade-Marks	24	No. 9,306 to No. 9,329, inclusive.
Labels	3	No. 2,670 to No. 2,672, inclusive.
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Total issue	374	

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Arizona Territory	....	....	Nevada	....	....
Arkansas	2	....	New Hampshire	1	....
California	9	....	New Jersey	11	1
Colorado	1	....	New Mexico Territ'y	....	....
Connecticut	25	....	New York	80	9
Dakota Territory	....	....	North Carolina	1	....
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Indiana	7	....	Texas	2	....
Indian Territory	....	....	Utah Territory	1	....
Iowa	5	1	Vermont	7	....
Kansas	3	....	Virginia	3	....
Kentucky	4	1	Washington Territ'y	1	....
Louisiana	1	....	West Virginia	2	....
Maine	4	....	Wisconsin	4	1
Maryland	6	2	Wyoming Territory	....	....
Massachusetts	21	1	United States Army	....	....
Michigan	11	....	United States Navy	....	....
Minnesota	2	1			
Mississippi	1	....	Total to citizens of the United States	325	24
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Montana Territory	....	....			

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Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
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Chili	....	....	Sweden	....	....
Colombia, U. S. of	....	....	Switzerland	....	....
Cuba	....	....			
Denmark	....	....	Total to citizens of foreign countries	13	3
Ecuador	....	....			

DESIGNS.

12,901.—CARPET.—*Frank Allen*, Worcester, Mass., assignor to *Matthew J. Whittall*, same place. Application filed March 9, 1882. Term of patent 3½ years.

12,902.—PERFUMERY-BOTTLE.—*Alfred P. Babcock*, New York, N. Y., assignor to *Jesse Oakley*, *John A. Oakley*, and *E. Benedict Oakley*, all of same place. Application filed March 13, 1882. Term of patent 3½ years.

12,903.—WOVEN FRINGE.—*George F. Hetzel*, Philadelphia, Pa. Application filed March 13, 1882. Term of patent 7 years.

12,904.—LOCKET.—*Charles E. Millin*, Providence, R. I. Application filed March 10, 1882. Term of patent 7 years.

12,905.—ORNAMENTAL OR ADVERTISING EASEL.—*Ethanan L. Meedie*, New York, N. Y., assignor of one-half to *Charles H. Gillespie*, same place. Application filed March 4, 1882. Term of patent 3½ years.

12,906.—VASE.—*William T. Murphy*, New York, N. Y. Application filed March 10, 1882. Term of patent 7 years.

12,907.—WALL-PAPER.—*Emil Popcke*, New York, N. Y., assignor to *Warren, Fuller & Co.*, same place. Application filed February 13, 1882. Term of patent 3½ years.

12,908.—SPICE-BOTTLE.—*John McC. Watson*, Pittsburg, Pa. Application filed March 20, 1882. Term of patent 3½ years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

9,306.—FLOUR.—*Atlantic Milling Company*, St. Louis, Mo. Application filed March 20, 1882.

"The word 'TROPICAL.'"

9,307.—FLOUR.—*Atlantic Milling Company*, St. Louis, Mo. Application filed March 20, 1882.

"The word 'CHAMPION.'"

9,308.—SHEETS, PLATES, BARS, AND RODS OF IRON AND STEEL.—*William Barrows & Sons*, Tipton, county of Stafford, England. Application filed July 18, 1881.
"The letters 'B. B. H.' surmounted by a crown."

9,309.—PALE ALE, STRONG ALE, AND STOUT OR PORTER.—*Base, Ratcliff & Gretton*, (Limited,) Burton-on-Trent, county of Stafford, England. Application filed March 31, 1882.
"The arbitrary symbol 'Bass & Co.'s.'"

9,310.—COOKING-STOVES.—*James Beakey & Co.*, St. Louis, Mo. Application filed March 28, 1882.
"The words 'DINNER BELL.'"

9,311.—CIGARS.—*Juan Cueto y Co.*, New York, N. Y. Application filed March 28, 1882.
"DON QUIJOTE DE LA MANCHA."

9,312.—CIGARS.—*Estanillo y Co.*, New York, N. Y. Application filed March 28, 1882.
"FLOR DEL FUMAR."

9,313.—OIL AND POLISH FOR LEATHER.—*Estep & Calkins*, Chicago, Ill. Application filed November 28, 1881.
"The representation of a boat sailing, upon which are people trailing their boots and shoes in the water."

9,314.—LIQUID PROPRIETARY MEDICINE.—*Griggs & Co.*, Ottawa, Ill. Application filed February 3, 1882.
"The words 'RED CLOVER' and the representation of a clover-leaf."

9,315.—FLOUR.—*J. F. Imbs & Co.*, St. Louis, Mo. Application filed December 19, 1881.
"The registrants' monogram in connection with the shield and the wheat at opposite sides of said shield."

9,316.—LIQUID SOAP.—*Ezra L. Post*, New York, N. Y. Application filed March 20, 1882.
"The five posts, each bearing one of the letters 'P O S T'S.'"

9,317.—PICKLES, PRESERVES, AND SAUCES.—*Shilton, Foote & Co.*, Somerville, Mass. Application filed July 11, 1881.
"The words 'BUNKER HILL,' together with the pictorial device."

9,318.—COMPOUND POWDER OF DRUGS.—*B. Williams*, Chagrin Falls, Ohio. Application filed February 18, 1882.
"The arbitrarily-selected word 'DOVERINA.'"

9,319.—CIGARS.—*Ramon Allones*, New York, N. Y. Application April 3, 1882.
"The word 'MARGARITA.'"

9,320.—CIGARS.—*Ramon Allones*, New York, N. Y. Application filed April 3, 1882.
"The word 'HERNANI.'"

9,321.—CIGARS.—*Ramon Allones*, New York, N. Y. Application filed April 3, 1882.
"The words 'LA EMINENCIA.'"

9,322.—CIGARS.—*Ramon Allones*, New York, N. Y. Application filed April 3, 1882.
"The words 'EL DESIGNIO.'"

9,323.—CERTAIN MEDICINAL PREPARATION FOR THE SKIN.—*James W. Hinckley*, Minneapolis, Minn. Application filed January 26, 1882.
"The word 'BALSAMINE.'"

9,324.—FIRE-BRICKS, FIRE-SLABS, AND CLUMPS.—*Henry Lamplough*, London, England. Application filed December 17, 1881.
"The word 'ABERNANT.'"

9,325.—CIGARS.—*Perfecto F. Lopez*, New York, N. Y. Application filed April 3, 1882.
"The words 'KATHERINE AND PETRUCHIO.'"

9,326.—FLOUR-SIFTERS.—*Brainerd T. Smith*, Covington, Ky. Application filed March 28, 1882.
"The word 'AVALANCHE.'"

9,327.—CIGARS.—*Yelverton P. Stone*, Baltimore, Md. Application filed January 19, 1882.
"The fanciful term 'THREE SPANIARDS.'"

9,328.—ROASTED COFFEE.—*A. H. Stump & Sons*, Baltimore, Md. Application filed April 1, 1882.
"The words 'TOR-FUNE.'"

9,329.—LEAD-PENCILS.—*The Eagle Pencil Company*, New York, N. Y. Application filed February 20, 1882.
"The words 'CRAYON AMERICAIN,' in conjunction with the representation of an eagle."

LABELS.

2,670.—Title: "DR. CADY'S CONDITION POWDERS FOR HORSES AND CATTLE."—*Chamberlain & Co.*, Des Moines, Iowa. Application filed March 28, 1882.

2,671.—Title: "EASTBURN'S PINE TAR CORDIAL."—*Robert Eastburn*, New Brunswick, N. J. Application filed December 31, 1881.

2,672.—Title: "HINRICHS' AMERICAN CORN CURE."—*Robinson & Hinrichs*, Manitowoc, Wis. Application filed March 31, 1882.

PATENTS

GRANTED APRIL 25, 1882.

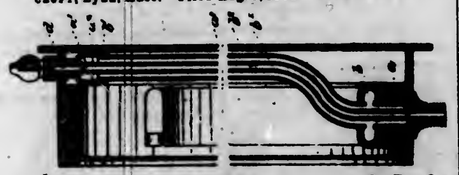
256,813. ADJUSTING MECHANISM FOR HARVESTER-FRAMES. HENRY A. ADAMS, Sandwich, Ill. Filed Aug. 10, 1881. (No model.)



Claim.—1. The main frame, in combination with circular racks attached thereto, the main axle provided with pinions engaging with the racks, a sprocket-wheel on the axle, a sprocket-pinion on the main frame, having its journal at, or very nearly at, the center of the circle of which the racks are area, and a continuous chain running around the sprocket-wheel and sprocket-pinion, substantially as described.

2. The curved guide-racks on the main frame, in combination with pinions D and sprocket-wheel F, both on the main axle, the sprocket-pinion G, arranged at, or nearly at, the center of the curve upon which the guide-racks are described, the endless chain H, independent pawl K, and independent operating-lever M, substantially as described.

256,814. MERCURY PRESSURE-GAGE. EDWARD H. ASHCROFT, Lynn, Mass. Filed Aug. 8, 1881. (No model.)



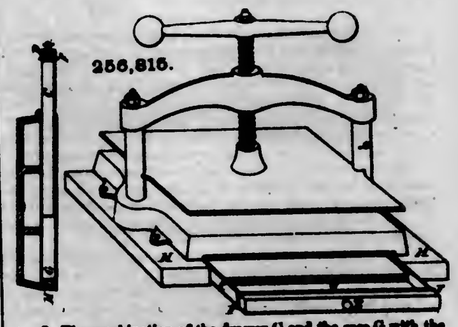
Claim.—1. The combination, in a steam-gage, of a Bourdon spring, a steam-chamber, a^2, a steam supply pipe or tube, a^1, entering said chamber, and a passage, b^2, connecting the chamber with the passage or passages in the Bourdon spring, filled with mercury, all substantially as and for the purposes described.

2. The combination of a Bourdon spring, the tube b^2, connected with the passages or chambers in the Bourdon spring, and with the steam-chamber a^2, the tube a^3 within said tube b^2, and the said chamber a^2, all substantially as and for the purposes described.

3. In a steam-gage, the combination of the steam supply-pipe, a pipe or passage connecting it with the passages of a Bourdon spring and adapted to contain mercury or other pressure-transmitting medium, and upon which the steam is brought in direct contact, and a passage communicating with the outer air extending from the end of the steam-passage, having a suitable cock or valve for opening and closing the same, all substantially as and for the purposes described.

256,815. COPYING-PRESS. LEONARD BAILEY, Hartford, Conn. Filed Sept. 14, 1881. (No model.)

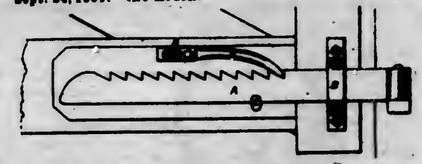
Claim.—1. In a copying-press, the combination of the rubber packing F, inserted between the drawer C and the face D, with the drawer C and the case G, substantially as described.



2. The combination of the drawer C and the case G with the base-plate B of a copying-press, substantially as described.

3. The combination of the frame H, containing the case G and the drawer C, with a copying-press, substantially as described.

256,816. HINGE. JOHN O. ROE, Meehanicsburg, Ill. Filed Sept. 24, 1881. (No model.)



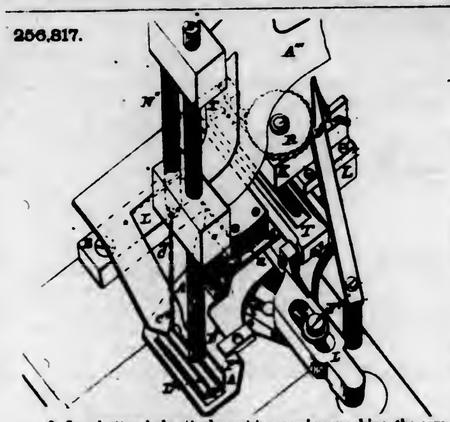
Claim.—The combination of the ratchet-plate A, guide-plate B, with pawl C, stay-plate D, and guide-pin E, all constructed and arranged substantially as and for the purpose herein represented and described.

256,817. BUTTON-HOLE ATTACHMENT FOR SEWING-MACHINES. WILLIAM H. GARR, Lansingburg, assignor to Freeland W. Ostrom, Troy, N. Y. Filed Oct. 28, 1880. (Model.)

Brief.—An angular lever, on which the cloth-clamp is mounted in suitable slides, is vibrated by a cross-grooved cam on the driving-shaft of the machine, to which the attachment is applied for the purpose of producing the overcasting or button-hole stitches. The movements of the cloth-clamp on the angular lever, required to traverse the cloth under the needle, so that the opposite sides and ends of the button-hole may be properly worked, are produced by a crank-pin carried by an endless chain intermittingly moved around a flat blade-drum by a spur-wheel carried by a shaft mounted in vertical bearings on the vibrating angular lever, said shaft being rotated by a ratchet-wheel secured thereto and operated by a pawl pivoted to the stationary bed-plate of the machine.

Claim.—1. In a button-hole attachment for a sewing-machine, the combination of a ratchet-wheel, a vertical shaft to which the latter is connected, a spur-wheel on said shaft and attached thereto, a pawl for imparting rotary movement to said ratchet-wheel, an endless chain having a crank-pin or journal firmly secured thereto, and a blade-drum around which said chain is adapted to be moved by said spur-wheel, substantially as herein described, and for the purposes set forth.

256,817.



2. In a button-hole attachment to a sewing-machine, the combination of a ratchet-wheel having a vertical shaft, a spur-wheel upon and constructed to move with the latter, a pawl for imparting motion to said ratchet-wheel, an endless chain having a crank pin or journal firmly secured thereto, a flat blade-drum around which said chain is adapted to be moved by said spur-wheel, a cloth-carrying mechanism connected to move with said journal, and the bar T, constructed to operate as herein shown and described.

3. In a button-hole attachment to a sewing-machine, the combination of an endless chain, M, its attached journal or pin, the blade-drum *e*, the cloth-carrying mechanism A, and the spur-wheel Y, with the latter constructed to move the chain, as and for the purposes herein described.

4. In a button-hole attachment to a sewing-machine, the combination of the endless chain M, its attached journal or pin J, the flat blade-drum *e*, bar T, cloth-carrier A, and the spur-wheel Y, with the latter constructed to actuate the chain, as shown and described.

5. In a button-hole attachment to a sewing-machine, the combination of the presser-foot P‴, the chain C‴, the latter being constructed to hook to or be unhooked from the presser-foot, the pivoted lever F‴, and the presser-bar N‴, arranged to operate as shown and described.

256,818. FRUIT-PICKER. EDWIN CASE, East Toledo, Ohio. Filed Jan. 31, 1881. (No model.)



Claim.—In a device for gathering fruit, the concavo-convex frame A, having aperture B and radial slots *a'* formed in the curve of the frame between the sides and top, and having handle-socket C, constructed and adapted to serve in relation to a sack secured to the edges of the said frame and a pole, as set forth.

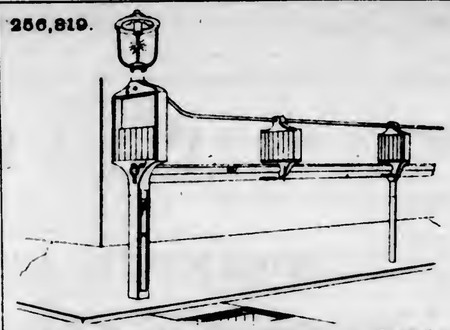
256,819. APPARATUS FOR SUSTAINING TELEGRAPH-WIRES. HENRY A. CHASE, Lynn, Mass. Filed June 17, 1881. (No model.)

Brief.—A hollow girder containing wires for lighting and working purposes is sustained on a line of posts. On this girder are placed at intervals a series of supporting-frames for telegraph and telephone wires. These frames contain each a series of vertically-removable notched sections. A railing and platform are provided.

Claim.—1. The herein-described apparatus for suporting electric conductors, consisting of a girder and supporting-posts therefor, combined with a series of carrier-supporting heads mounted upon the said girder and movable wire-carriers thereon, substantially as described.

2. The girder provided with a tubular portion to receive electric conductors and supporting-posts therefor, combined with a series of wire-carriers upon the said girder, whereby conductors for currents of dangerous intensity may be kept separate from those used for ordinary purposes of communication, substantially as described.

256,819.



3. The girder having its compression member made tubular and provided with a longitudinal opening to receive electric conductors within it, combined with a continuous series of removable covers to close the said opening, substantially as described.

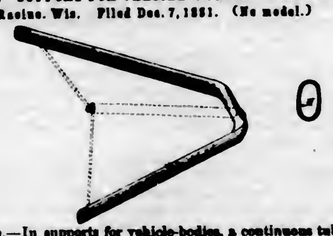
4. The girder and supports therefor and wire-carriers mounted thereon, combined with the socketed caps for the said carriers and the railing extended longitudinally between them, substantially as and for the purpose described.

5. The girder and wire-carriers thereon, combined with the brackets or platforms fixed upon the said girder, substantially as and for the purpose set forth.

6. The electric-light-supporting posts and frame-like opening therein, combined with the girder supported upon the said post below the said opening and wire-carriers in the said opening and upon the said girder, substantially as described.

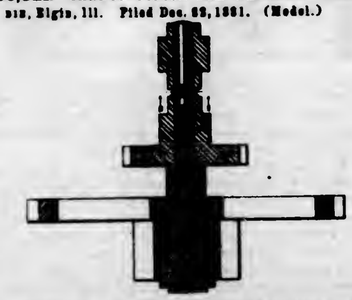
7. The dovetail-shaped carrier guide-bars and carrier-pieces provided with dovetail grooves to engage and slide longitudinally upon the said bars, substantially as described.

256,820. SUPPORT FOR VEHICLE-BODIES. CHARLES OSMSTOCK, Racine, Wis. Filed Dec. 7, 1881. (No model.)



Claim.—In supports for vehicle-bodies, a continuous tubular iron frame bent into the required shape and elliptical or oblong in cross-section.

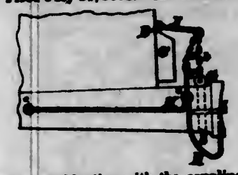
256,821. CANNON-PINION FOR WATCHES. ANTOINE CORBIN, Elgin, Ill. Filed Dec. 22, 1881. (Model.)



Claim.—1. A cannon-pinion having its cannon or barrel reduced in thickness so as to give it the elasticity of a spring, in combination with an arbor having a groove or tapering neck, the cannon-pinion and arbor being held together by the reduced portion of the cannon being indented into the groove or neck of the arbor, substantially as set forth.

2. A cannon-pinion the barrel or cannon of which has a continuous periphery and is reduced in thickness till it has the elasticity of a spring and is adapted to be indented, as and for the purpose specified.

256,822. CAR-COUPLING. CHARLES E. GORDENT, Bellefontaine, Ohio. Filed July 28, 1881. (No model.)

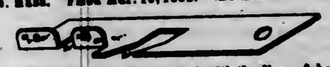


Claim.—1. In combination with the coupling apparatus of cars, the lever B, chains *b d*, swing F, notched pin G, elevating-lever H, and toggle K, as and for purpose specified.

2. In combination with the coupling apparatus of cars, the lever B, chains *b d*, swing F, and notched pin G, as and for purpose specified.

3. In combination with the coupling apparatus of cars, the lever B, chains *b d*, toggle K, and notched pin G.

256,823. BOX-FASTENER. GEORGE H. CRANE, East Somerville, Mass. Filed Mar. 10, 1882. (No model.)



Claim.—1. The hasp D, provided with the lips *c c'*, having the openings *b b* and slots *d d*, substantially as described.

2. The combination of a tub provided with a staple, a cover, and a hinged bar with a hasp provided with a tongue having a wedge-shaped end, which, when forced through the staple, will draw the cover down upon the tub, substantially as described.

3. The combination of the tub A, having the staple *f*, fixed into its side some distance from the upper edge, and the projection *l* above the staple, with the bar C, cover B, and the hasp D, provided with the tongue *f*, which has the projecting lip *e*, substantially as described.

256,824. ADJUSTABLE PIGEON-HOLE FOR DESKS, &c. FRED H. OSTLER, Buffalo, N. Y. Filed Aug. 3, 1881. (No model.)



Claim.—A removable pigeon-hole having upon its upper surface spring-pieces secured upon alternate sides, and having their free ends projecting slightly above the upper surface of the pigeon-hole, substantially as and for the purpose set forth.

256,825. LAMP-SHADE. WILLIAM DAY, Brooklyn, N. Y. Filed Feb. 25, 1882. (No model.)



Claim.—1. A lamp-shade of the character herein specified, having one or more movable screens located upon the interior of the body of the shade, adapted and arranged to be pushed upward within the shade or pulled below the edge thereof, substantially as shown and described.

2. In an adjustable shade of the character herein specified, the combination, with the body A of the shade, of a movable screen, B, secured to the interior thereof, and adapted and arranged to be raised or lowered therein, substantially as shown and described.

3. In an adjustable shade, the body A, screen B, having curve *b* and turned edge D, and strip C, attached to the interior of the shade and pressing against said screen B, the whole combined and arranged to operate substantially as shown and described.

256,826. COMBINED STEAM AND COMPRESSED-AIR ENGINE. EZEKIAH B. DUFF, Sedalia, Mo. Filed Jan. 24, 1882. (No model.)

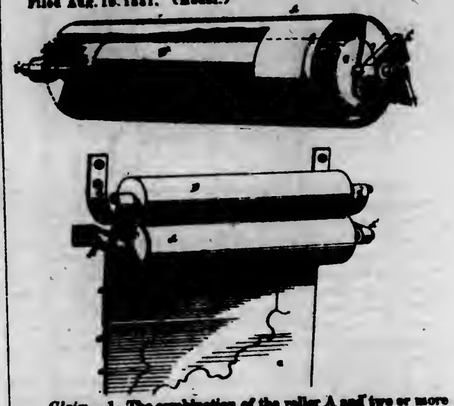


256,826.

Claim.—1. In combination with a steam-boiler, A, and steam-engine D, an air-compressor, B, and reservoir C, said parts being provided with pipes *a b' c d'*, and said pipes having suitable regulating-cock, substantially as and for the purpose described.

2. In combination with a steam-boiler, A, and steam-engine D, an air-compressor B, reservoir C, pipes *a, b', b', b', c, d'*, and *e*, and with cocks or valves *a' b' d' e' f*, substantially as and for the purpose described.

256,827. DEVICE FOR DISPLAYING MAPS, CHARTS, AND ILLUSTRATIONS. ALEXANDER DOE, Mount Healthy, Ohio. Filed Aug. 10, 1881. (Model.)



Claim.—1. The combination of the roller A and two or more sheets of maps, display-cards, charts, or illustrations hung thereon, the sheet being so arranged that the lower end of each sheet is below the one immediately behind it, and the roller B' located within the main roller A, and actuated by a spring for rotating the main roller and winding up the sheets, substantially as and for the purpose specified.

2. The combination of the roller A and two or more sheets of maps, display-cards, charts, or illustrations hung thereon, the sheets being so arranged that the lower end of each sheet is below the one immediately behind it, and a roller, B', located within the main roller A, and actuated by a spring for rotating the main roller and winding up the sheets, and the pawl O' and ratchet C, substantially as and for the purpose specified.

3. The combination of the roller A and two or more sheets of maps, display-cards, charts, or illustrations hung thereon, the sheets being so arranged that the lower end of each sheet is below the one immediately behind it, and a roller, B', located within the roller A, and actuated by a spring for rotating the main roller, and auxiliary roller D, substantially as and for the purpose specified.

4. The combination of roller A and two or more sheets of maps, display-cards, charts, or illustrations hung thereon, the sheets being so arranged that the lower end of each sheet shall hang below the one immediately behind it, and the roller B' located within the roller A, and actuated by a spring for rotating the main roller, and auxiliary roller D, and pawl O' and ratchet C, substantially as and for the purpose specified.

5. The combination of the roller A, provided with spring-pawl O', and interior spring-roller, B', provided with ratchet C, said rollers rotating on shaft *b*, provided with square extremity *b'*, to prevent the shaft from turning in the brackets or supports A', and the sheets of maps, charts, display-cards, or illustrations *a a' a' a'*, substantially as and for the purpose specified.

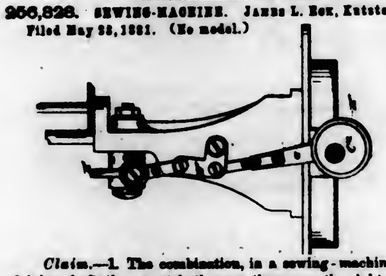
6. The combination of the roller A, provided with spring-pawl O', and interior spring-roller, B', provided with ratchet C, said rollers rotating on shaft *b*, provided with square extremity *b'*, to prevent the shaft from turning in the brackets A', and the sheets of

maps, charts, display-cards, or illustrations *a a' a² a³*, attached to roller A, and supplemental roller D, caused to bear against the roller A by the spring *d*, substantially as and for the purposes specified.

7. The combination of the roller A and two or more sheets of maps, charts, display-cards, or illustrations suspended therefrom, each sheet being attached to the one immediately behind it, the last one being suspended from the roller, the sheets being so arranged that the lower end of each one is below the one immediately behind it, substantially as and for the purposes specified.

8. The combination of the rollers A and B' and two or more sheets of maps, charts, display-cards, or illustrations suspended from roller A, the sheets being so arranged that the lower end of each sheet is below the one immediately behind it, the rollers being provided with mechanism for compelling the outer roller to move with the inner roller in one direction and permitting the outer roller to rotate in the opposite direction, independently of the inner roller, substantially as and for the purposes specified.

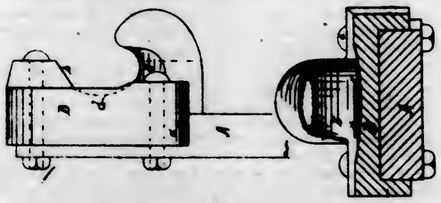
256,828. SEWING-MACHINE. JAMES L. BOX, Kutztown, Pa. Filed May 28, 1881. (No model.)



Claim.—1. The combination, in a sewing-machine, of the driving-shaft, the eccentric thereon, the arm *c*, the right-angle elbow-lever F, pivoted by one arm to the goose-neck E, and to which the arm *c* is pivoted, and the link G, connected to the needle-arm E and pivoted to the other arm of the elbow-lever, the relation of the parts being such that the distance from the needle-arm to its pivot on the elbow-lever and the distance from that pivot to the pivot of the elbow-lever on the goose-neck are equal, whereby the needle-arm and its bar are held substantially at rest for a moment when they are in their lowest positions, substantially as and for the purpose set forth.

2. The combination, in a sewing-machine, of the shuttle-race H, cut away to form the enlargement N, in order to provide space for the loop, and also to admit of the removal of the shuttle without detaching its carrier, with the rotary shuttle-carrier I, formed with a beveled recess, and the shuttle M, adapted to fit into and be retained in the said beveled recess of the shuttle-carrier, substantially as described.

256,829. LEVER FOR STARTING AND MOVING CARS. ROBERT K. EVANS, Dover, Minn., assignor to himself and Richard Evans, Jr., same place. Filed Mar. 11, 1881. (No model.)

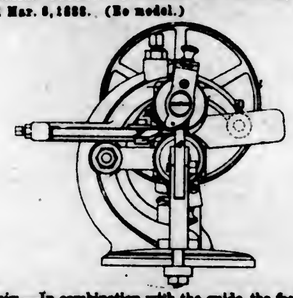


Claim.—1. The car-moving lever provided with a clutch on its end having rounded bearing-surfaces adapted to fit on the flange of the car-wheel, so that said clutch will slide freely thereon, except when force is applied to the end of the lever, substantially as specified.

2. The car-moving lever provided with clutch B, made in one piece and having bearing-point *b* and lip *b'*, made inclined toward each other at their base, as shown, to adapt the clutch to fit car-wheel flanges of different sizes, substantially as specified.

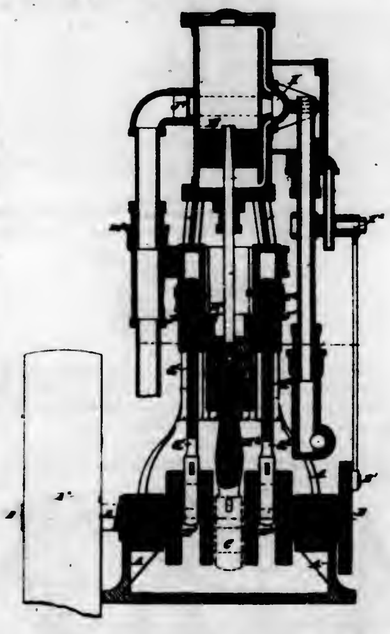
3. The car-moving lever A, provided with a clutch, B, having rounded bearing-surfaces *b* and *b'*, adapted to fit on the flange of the car-wheel, and having its plate or flat part extended, as shown at C, to prevent the lever turning or twisting, substantially as specified.

256,830. MACHINE FOR MAKING SHOE-HEEL BANDS. GREENLIEF FARNHAM and JAMES T. FARWELL, Lynn, Mass. Filed Mar. 8, 1882. (No model.)



Claim.—In combination with the guide, the feed-rollers, and the oblique splitting knife, the two edge beveling knives, as arranged to operate therewith, substantially in manner and for the purpose as explained.

256,831. STEAM-ENGINE. THOMAS F. FLINN, Flatbush, N. Y. Filed July 29, 1881. (No model.)



Claim.—1. In a steam-engine, the reciprocating cylinder J and links *G' G²*, made thin and light, in combination with the reciprocating piston E, made thick and solid, and with the heavy cross-head E' and heavy connecting-rod E², and with the triply-cranked shaft B C D' D², arranged to balance each other, as herein specified.

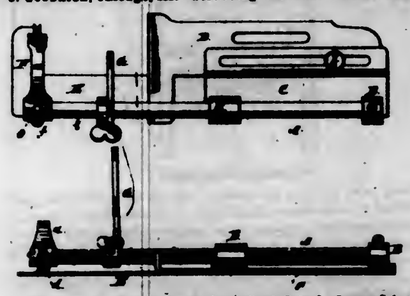
2. In an engine having a reciprocating piston working in a reciprocating cylinder, the pipe K' and its connections, arranged to perform the double functions of communicating the valve motion and forming a passage for the steam, as herein specified.

256,832. MANUFACTURE OF BAKING-POWDER. ADOLPH GIESECKE, Buffalo, N. Y. Filed Feb. 16, 1882. (No specimens.)

Claim.—1. The combination, substantially as specified, of phosphate of soda and muriatic acid, whereby a dry acid salt is produced, for the purposes described.

2. The combination of said acid salt with the usual or proper proportion of bicarbonate of soda, as and for the purposes specified.

256,833. TUCK-MARKER FOR SEWING-MACHINES. HARRY C. GOODRICH, Chicago, Ill. Filed Aug. 15, 1881. (No model.)

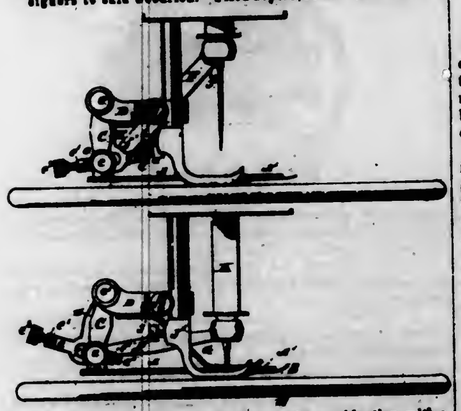


Claim.—1. In a tuck-marker adapted to be secured to the bed-plate of a sewing-machine, the combination of a rocking bar, a swinging or oscillating arm or lever attached thereto, an arched or curved spring connected with said rocking bar, a creasing-wheel carried by the free end of the spring, and a plate provided with a creasing-blade, said combination being and acting substantially as and for the purpose described.

2. In a tuck-marking device, the combination of the rocking bar, the swinging or oscillating arm or lever attached thereto, an arched or curved spring adjustably secured to the rocking bar, a creasing-wheel journaled at the outer or free end of said spring, and a plate provided with a creasing-blade, substantially as and for the purpose described.

3. In a tuck-marker, the combination of the rocking bar A, the arched or curved spring *a*, carrying a creasing-wheel at its outer end, and provided at its other end with a socket having a slot, *c*, the socket being secured to the rocking bar by a set-screw passing through said slot for adjusting the elevation of the creasing-roller, the plate C, provided with bearings B, supporting the rocking shaft, the arm or lever secured to the latter, and the plate R, provided with an arm, F, carrying a creasing-blade, *e*, substantially as described.

256,834. RUFFLING ATTACHMENT FOR SEWING-MACHINES. HARRY C. GOODRICH and RUSSEL S. DARROW, Chicago, Ill., assignors to said Goodrich. Filed Sept. 1, 1881. (Model.)



Claim.—1. In a ruffling attachment, the combination, with a support adapted to be attached to the presser-bar of a sewing-machine, of a reciprocating plate carrying a ruffling-blade, a suspended link connecting said reciprocating plate with said support, and devices connecting said link with the needle-bar, said devices being so constructed that the ruffle will be formed at the latter part of the descent of the said needle-bar, whereby a ruffle will be formed while the previously-formed ruffle is being sewed, substantially as described.

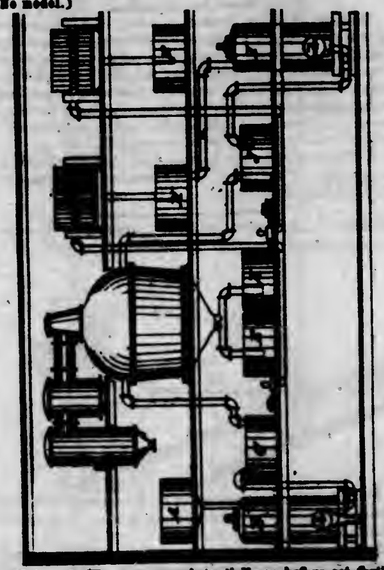
2. A reciprocating plate carrying a ruffling-blade, suspending-link C, and support D, in combination with the vibrating link E and arm or link F, for giving the plate a reciprocating movement to advance and return the blade, substantially as specified.

3. A reciprocating blade, A, carrying a ruffling-blade, and a suspending-link, C, and a support, D, in combination with the oscillating link E, set-screws *c'* and *c²*, and link or arm F, for reciprocating the plate A and adjusting its movements, substantially as specified.

4. A support, D, provided with a notch or recess, *d*, and a set-screw, *d'*, to receive the presser-foot bar and clamp the support thereon, in combination with the reciprocating plate A, carrying a ruffling-blade, links C and E, suspended from the support, and a link or arm, F, substantially as and for the purposes specified.

5. A reciprocating plate, A, carrying a ruffling-blade, B, and a guide-arm engaging the plate A, in combination with a link, C, the support D, link E, and arm or link F, substantially as specified.

256,835. PROCESS OF AND MEANS FOR PURIFYING GLUCOSE. HARRY HAMLIN, Buffalo, N. Y. Filed Mar. 17, 1882. (No model.)



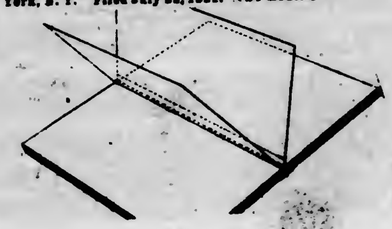
Claim.—1. The process, substantially as before set forth, of concentrating and purifying glucose, consisting of the concentration of the glucose liquor at two stages with both an intervening mechanical filtration and an intervening filtration through bone-black of the partly-concentrated liquor previous to the second stage of concentration.

2. The process, substantially as before set forth, of concentrating and purifying glucose, consisting of the concentration of the glucose liquor at two stages with an intervening mechanical filtration of the partly-concentrated liquor and an intervening filtration of it through bone-black, and with a mechanical filtration of the sirup after the second stage of concentration.

3. The combination, substantially as before set forth, of the vacuum-pan, the intervening mechanical filter, and the intervening bone-black filter, the whole constituting an apparatus for the concentration and purification of glucose liquor.

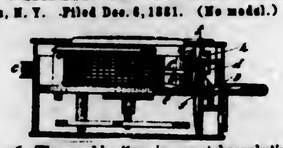
4. The combination, substantially as before set forth, of the vacuum-pan, the intervening mechanical filter, the intervening bone-black filter, and the terminal mechanical filter, the whole constituting an apparatus for the concentration and purification of glucose liquor.

256,836. WRITING-TABLET. FREDERICK S. HASBROUCK, New York, N. Y. Filed July 22, 1881. (No model.)



Claim.—A writing-tablet composed of detachable sheets of paper arranged in a number of sections which are hinged together, so that either of them may be used independently, and a blotter or blotters arranged between said sections and capable of being applied thereto, substantially as specified.

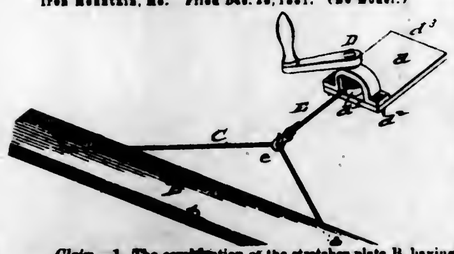
256,837. WATCHMAN'S TIME-DETECTOR. OTTO HAUSSNER, Brooklyn, N. Y. Filed Dec. 6, 1881. (No model.)



Claim.—1. The combination, in a watchman's time-detector, with a drum or carrier having a time-movement, a strip or piece of paper or other suitable material surrounding or facing the same, and a case the body of which is provided with a lock and the lid of which is provided with a hasp, of a perforating or marking device arranged within the body of the case adjacent to the lock, and adapted to be operated by said hasp in opening or closing the lid, substantially as and for the purpose specified.

2. The combination, in a watchman's time-detector, with the case and cover, of the spring *f*, pin *g*, and hasp *d*, substantially as and for the purpose specified.

256,838. CARPET-STRETCHER. WILLIAM E. HENDERSON, Iron Mountain, Mo. Filed Dec. 28, 1881. (No model.)

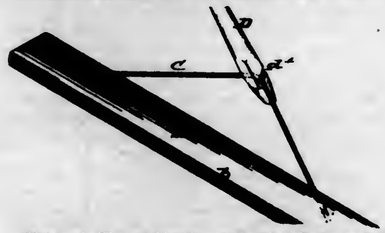


Claim.—1. The combination of the stretcher-plate B, having the teeth *b'*, the cord C, the crab D, and the cord E, substantially as described.

2. The combination of the plate B, teeth *b' b²*, the cords C E, and the crab D, substantially as described.

3. The combination of the plate B, teeth *b' b²*, the cords C E, and the crab D, having the teeth *d²* and the extended plate *d*, substantially as described.

256,839. CARPET-STRETCHER. WILLIAM E. HENDERSON, Iron Mountain, Mo. Filed Dec. 28, 1881. (No model.)



Claim.—1. The combination of the plate B, the teeth *b'*, the cord C, and the lever D, substantially as described.

2. The combination of the plate B, the teeth *b'* and *b²*, the cord C, and the lever D, substantially as described.

256,840. ASH SIFTER AND RECEPTACLE. JOHN HEDRICH and GEORGE SCHAEFER, Buffalo, N. Y. Filed Mar. 16, 1882. (No model.)

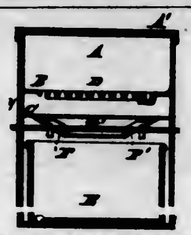
Claim.—1. In stoves, ranges, &c., having an ash-sifting device, an auxiliary-bottom for the ash-receptacle, substantially as and for the object specified.

2. In stoves, ranges, &c., having an ash-sifting device, a drop-bottom for the ash-receptacle, substantially as stated.

3. A drop-bottom for an ash-receptacle, consisting of folding wings actuated by mechanism substantially as mentioned.

4. An ash-sifter having a suitable grating for separating the

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coarser from the finer particles, a drop-bottom below said grating actuated by mechanism substantially as described, and a receptacle for said separated particles below said drop-bottom, the whole being constructed for operation substantially as and for the object specified.

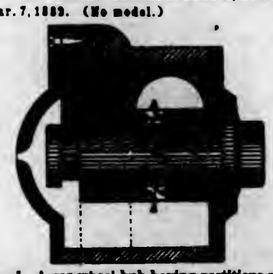
5. In ash-sifters, a drop-bottom constructed of wings forming a spout when in an unfolded position, as stated.

6. The combination, with the receptacle A, having the vibratory and oscillating grating D, of a drop-bottom for retaining the separated particles, said bottom being composed of four wings, F F G G', respectively, having curved ends matched together, as stated, and a device, substantially as specified, for holding the wings in a manner as and for the purpose stated.

7. In ash-sifters, the folding wings F F' G G', having curved ends *f g*, as stated, in combination with the rock-shaft H, having cams I, and a device, substantially as specified, for upholding said wings in a folded position, as mentioned.

8. As an improved article of manufacture, an ash-sifter consisting essentially of a box-shaped receptacle, A, having inwardly projecting flanges B C, a vibratory or other proper separator, D an auxiliary bottom below said separator, consisting of folding wings, actuated and retained in position by devices substantially as specified, and a receptacle below said auxiliary drop-bottom for the reception of the separated particles, the whole being constructed and arranged for operation and use, as and for the purpose specified.

256,841. CAR-WHEEL. THOMAS E. KNAUSS, Holcomville, Ohio. Filed Mar. 7, 1882. (No model.)



Claim.—1. A car-wheel hub having partitions which extend lengthwise of the bearing and from the latter to the shell, and are provided with passages for the lubricant, and also having apertures between such partitions, all as set forth.

2. In a car-wheel hub provided with a lubricating-chamber, the apertures *b*, having their passage-way *l* smaller than their tops and bottoms, as set forth.

3. The hub having the offset and partitions, in combination with the plate having the lugs and the notch, and the axle having the groove, all as set forth.

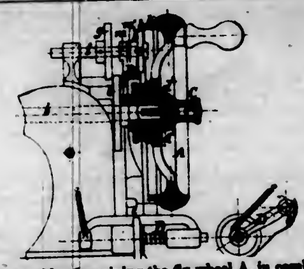
256,842. DRIVING-GEAR FOR SEWING-MACHINES. FRANZ LEHMANN, Berlin, Germany. Filed Sept. 15, 1881. (No model.) Patented in Germany Nov. 19, 1880.

Claim.—1. In a sewing-machine, the fly-wheel A, mounted concentrically with the main shaft *b* on a bushing, *a*, fixed to a rigid part of the frame, in combination with said main shaft and said bushing, and with a clutch, C, carried on an extension of the main shaft and capable of being engaged with and disengaged from the pulley A, substantially as herein specified.

2. As a sewing-machine, the fly-wheel A, mounted concentrically with the main shaft *b*, but capable of turning independently thereof, in combination with said main shaft, with oscillating gearing between the two, means for engaging and disengaging such gearing, and with a clutch, C, substantially as and for the purposes herein specified.

3. As a sewing-machine attachment, the standard B, having

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a bushing, *a*, capable of receiving the fly-wheel A, in combination with the clutch C *a*, for connecting the fly-wheel and main shaft of the machine, substantially as herein specified.

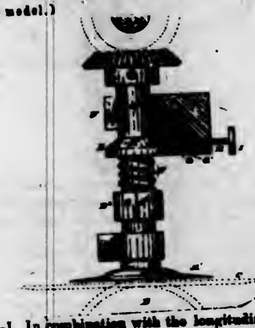
4. As a sewing-machine attachment, the standard B, having the bushing *a*, and a suitable bearing or bearings for a longitudinally-movable shaft carrying accelerating gearing, in combination with such shaft and gearing, and with a toothed circle, *h*, revolved by the fly-wheel, the gear-wheel *i*, and the clutch C, all arranged to serve relatively to each other and to the main shaft *b* of the machine, substantially as and for the purposes herein specified.

256,843. SPOON-BAIT FOR FISHING. WILLIAM T. J. LOWE, Buffalo, N. Y. Filed Feb. 28, 1882. (No model.) Patented in Canada Jan. 28, 1882.



Claim.—The combination, with the rod *a* and the spoon *d*, provided with the eye *d'*, of the spring *c*, having the spiral turn or turns *c'*, and the eye *c²*, the spring *c* being located near the top of the spoon and being rigidly attached to the spoon at one end, and working loosely upon the rod *a* at the other end, substantially as shown and described.

256,844. ADJUSTING DEVICE FOR LEATHER-SKIVING MACHINES. GEORGE H. LOCKLOW, Chicago, Ill. Filed Jan. 27, 1882. (No model.)



Claim.—1. In combination with the longitudinally-movable rotating cutter-shaft A in the machine described, a spring, F, arranged to raise the shaft, and a screw, H, suitably supported and arranged to bear downward thereon, substantially as and for the purposes set forth.

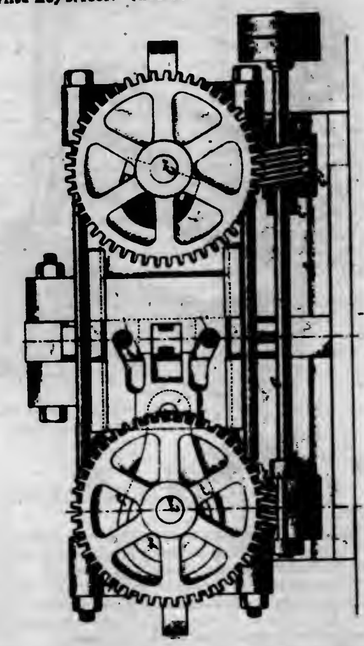
2. In a leather-skiving machine, the combination, with the shaft A, provided with a collar, E, and with the shaft-bearings D' D², of the spring F, interposed between the lower bearing and the collar, and an adjusting-screw fitted into a part of the upper bearing and arranged to bear downward upon said collar, substantially as described, and for the purposes set forth.

3. In combination with the longitudinally-movable cutter-shaft A, bearing a fixed collar, E, a part, *d'*, recessed at G', and provided with the sliding block G, and adjusting-screw H, arranged and operating substantially as described.

4. In combination with the vertically-movable shaft A, provided with the beveled collar E, and with a spring, F, to raise the shaft, a part, *d'*, provided with a beveled sliding block, G, and screw I, arranged and operating substantially as shown, and for the purpose set forth.

5. In the adjusting mechanism described for the cutter-shaft A, the screw H, provided with a notched thumb-wheel, I, combined with the spring J, arranged to engage the notches of said wheel, substantially as described.

256,845. NUT-MACHINE. JAMES P. MASON, Philadelphia, Pa., assignor of one-half to Thomas H. Moore, same place. Filed May 2, 1881. (Model.)



Claim.—1. In a nut-machine, a multiple shearing and punching device consisting of two series of dies arranged in separate die-cases, each of said series being composed of alternate cutting-off and punching dies placed side by side in said cases, and mechanism to actuate said series of dies reciprocally toward and from one another, substantially as set forth.

2. In a nut-machine, the combination of a series of alternate shearing and punching dies, a case or die-box, a backing-plate, and a clamping cap or cover, substantially as set forth.

3. In a nut-machine, the combination of a movable series of alternate shearing and punching dies and a stationary series of strippers for discharging the cut and punched nuts, said strippers being arranged in pairs on each side of and parallel to each of the punching-dies, substantially as set forth.

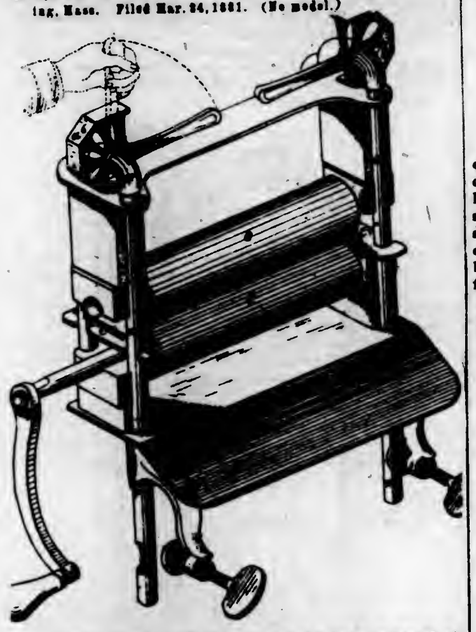
4. In a nut-machine, the combination of a frame, a head or carrier fitted to guides therein, a die-box secured removably in said head and carrying a series of alternate shearing and punching dies, and a driving-shaft by which reciprocating movement is imparted to the head or carrier, substantially as set forth.

5. In a nut-machine, the combination of a pair of heads or carriers, each provided with a series of alternate shearing and punching dies, a pair of grippers or clamping-jaws intermediate between the heads or carriers, and a pair of sliding frames having inclined slots receiving pins on the ends of the clamping-jaws, substantially as set forth.

6. In a nut-machine, the combination of a pair of reciprocating grippers or clamping-jaws and a discharger traversing intermittently over the face of one of said grippers, substantially as set forth.

7. In a nut-machine, the combination, with a pair of heads or carriers, each provided with a removable die-case having secured within it a series of alternate shearing and punching dies, of mechanism by which said die-cases are actuated reciprocally toward and from one another, stationary stripper-plates for relieving the punching-dies, and a pair of grippers or clamping-jaws reciprocated between the heads and at right angles to their line of traverse, these members being combined for joint operation substantially in the manner and for the purposes set forth.

256,846. WRINGING-MACHINE. THOMAS J. MAYALL, Reading, Mass. Filed Mar. 24, 1881. (No model.)



Claim.—1. In a wringing-machine, the frame composed of two continuous tubular arches, between and by which all the parts of the machine are supported, substantially as described.

2. The combination of the tubular frame, movable top plate, through perforations in which pass the side pieces of said frame, cam-levers acting on said top plate, elastic blocks supported in said frame, and pressure-rolls, substantially as described.

3. In a wringing-machine, the combination, with the supporting-frame composed of two tubular arches, of a movable top plate, through holes in which pass the uprights of said frame, and by which the two portions of said frame are united, as set forth.

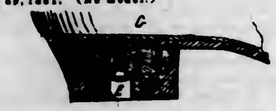
4. The tubular frame-pieces supporting between them the bearings for the rolls, and connected at the top by carved pieces which carry adjusting devices, substantially as described.

5. A wringing-machine comprising the following elements in combination: a tubular frame, a movable top plate, cam-levers supported by said frame and acting upon said plate, pressure-rolls, elastic blocks supported in said frame below said plate, and guards operating in connection with said rolls, all substantially as described.

256,847. SALVE. JOHN HAYES, Holly Springs, Miss. Filed Dec. 19, 1881. (No specimens.)

Claim.—The herein-described compositions of ingredients, consisting of red-oak bark, tobacco, lard, and beeswax, combined with rosin, in the proportions specified.

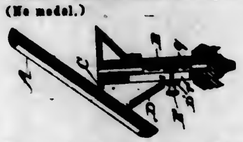
256,848. BOOT OR SHOE HEEL. EBI S. HOULTON, Chelsea, Mass., assignor to himself and JOHN B. TIERNAN, same place. Filed Aug. 29, 1881. (No model.)



Claim.—1. A boot or shoe heel composed of the inner part, C, adapted to be permanently secured to the sole, and the outer part, D, recessed to receive the inner part and entirely surround the sides and bottom of the same, substantially as described.

2. The combination, with the boot or shoe sole, of the heel composed of the inner part, C, permanently secured to the sole, the outer part, D, formed with a recess which receives the said inner part, the outer part fitting and inclosing the sides and bottom of the inner part and being secured by a screw, G, substantially as described.

256,849. TABLE. OLOF HILSTON, Chicago, Ill. Filed Oct. 31, 1881. (No model.)



Claim.—The combination of the pedestal B, having a slot, *r*, expanded toward its inner end, bar *q* within the expanded portion of the slot, and adapted to slide up and down therein, table-top A, hinged to the pedestal B on the same side as the slot *r*, jointed support D D′, hinged to the under side of the table-top on the same side as the slot *r*, and set-screw E, passing through the lower end of said support and also into the slot *r* and through the sliding bar *q*, whereby the table-top may be adjusted to any angle and firmly secured there, substantially as described.

256,850. DENTAL MALLET. JOHN B. ODELL, Chicago, Ill. Filed Dec. 13, 1881. (No model.)



Claim.—1. The combination, with an electro-magnet having hollow cores arranged axially with each other, of the mallet-stem mounted in said hollow cores and the bent armature secured to said mallet-stem for actuating the same, substantially as specified.

2. The combination, with an electro-magnet having fixed hollow cores arranged axially with each other and connected by a heel-plate, of a movable non-magnetic mallet-stem mounted in said hollow cores and an armature secured to said mallet-stem for actuating the same, substantially as specified.

3. The combination, with an electro-magnet having fixed cores arranged axially with each other, of a bent reciprocating armature secured to a reciprocating mallet-stem, substantially as specified.

4. The combination of the mallet and mallet-stem, spring for retracting the same, an electro-magnet having hollow cores arranged axially with each other, shell inclosing said magnet, coil-heads, spring-contact, circuit-breaker provided with stop and adjustable collar, and an arm secured to the armature for actuating the circuit-breaker, substantially as specified.

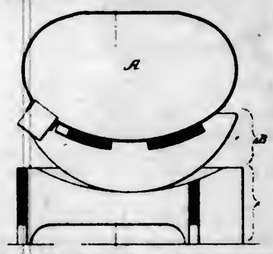
5. The combination, with an electro-magnet, of the mallet and mallet-stem, spring for retracting the same, adjustable stop to limit its upward motion, spring-contact, and circuit-breaker provided with stop and adjustable collar, and arm secured to the armature for actuating said circuit-breaker, substantially as specified.

6. The combination, with the handle K, provided with rough-ened exterior surface, of the finger-rest mounted on an adjustable conical split threaded sleeve and conical threaded nut for securing said sleeve in position on the handle K, substantially as specified.

7. The combination of handle K, provided with bent slot *f*, hollow head H, ferrule J, provided with pin *f*′, and mallet provided with slot *j*, substantially as specified.

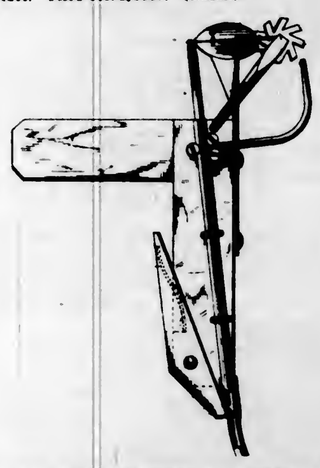
8. The combination of shell A and the handle K, provided with an adjustable finger-rest, with the mallet-stem and spring for retracting the same, an electro-magnet having cores arranged axially with each other inclosed within said shell A, mechanism for breaking the circuit by movement of the mallet-stem, and a sliding ferrule, J, mounted on said handle K and connected with the mallet-stem, whereby the circuit may be broken at the will of the operator, substantially as specified.

256,851. OVEN. BENJAMIN H. OVERMEYER, Orwell, Vt. Filed Nov. 16, 1880. (No model.)



Claim.—The combination of the vessel A, free from internal agitating devices, and having a rounded bottom and curved ends of less radius than the bottom, with rockers B, and a base having ways made on a curve less abrupt than the curve of the rockers, as set forth.

256,852. PAINT-DISTRIBUTER. ARNER PERLEE, Fort Dodge, Iowa, assignor to Liberty Walkup and Charles Walkup, same place. Filed Oct. 4, 1881. (Model.)



Claim.—1. The combination, with a reciprocating needle arranged and adapted to feed a quantity of liquid pigment to its point at every stroke, of devices for projecting a jet of air against the needle and atomizing the liquid pigment, substantially as set forth.

2. The combination, with a reciprocating needle and a grooved or trough-shaped liquid-pigment receptacle, of devices for projecting a jet of air against the point of the needle and atomizing the liquid pigment, substantially as set forth.

3. The combination, with a reciprocating needle and a liquid-pigment receptacle, of an air-jet tube arranged at right angles to the point of the needle, and apparatus for projecting a jet of air against the needle-point, substantially as set forth.

4. The combination, with a liquid-pigment receptacle, of a fan and a needle connected with the fan and adapted to be reciprocated thereby, substantially as set forth.

5. The combination, with a liquid-pigment receptacle, a fan, and a needle connected therewith, of devices to project a jet of air both upon the fan and upon the needle, substantially as set forth.

6. The combination, with a liquid-pigment receptacle, of a fan, a needle adapted to be reciprocated in the receptacle by attachment to the fan at a point near the axis thereof, and devices to project a jet of air both upon the point of the needle and upon the periphery of the fan, substantially as set forth.

The combination, with a reciprocating needle, a pigment-receptacle, and a fan, of a supply-pipe branching at its upper end into two pipes, respectively, adapted to project a jet of air upon the fan and the point of the needle, substantially as set forth.

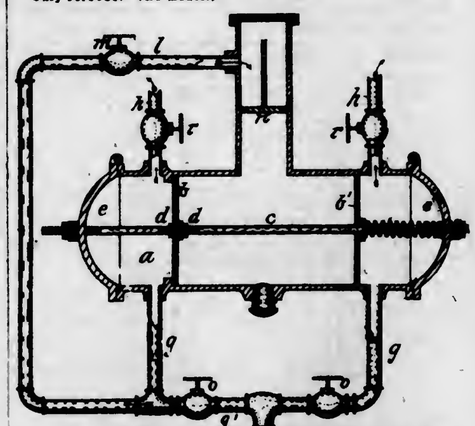
8. The combination, with a reciprocating needle, a pigment-receptacle, and a fan, of a supply-pipe adapted to convey jets of air upon the fan and needle, and a valve adapted to regulate the passage of air through the supply-pipe, substantially as set forth.

9. The combination, with a reciprocating needle, a pigment-receptacle, and a fan, of a supply-pipe for carrying air-jets to the fan and needle, a flexible pipe attached to the lower end of the supply-pipe and communicating therewith through an aperture in the side thereof, and a spring-pressed plate adapted to compress the flexible pipe, substantially as set forth.

10. The combination, with a reciprocating needle, a pigment-receptacle, and a fan, of a supply-pipe adapted to convey compressed air to the fan and needle, and an air-pump in connection with said supply-pipe, substantially as set forth.

11. The combination, with a reciprocating needle, a pigment-receptacle, and a fan, of a supply-pipe adapted to convey compressed air to the fan and needle, an air-chamber connected with said pipe, and an air-pump for forcing air into the said chamber, substantially as set forth.

256,853. FILTER. WILLIAM A. PITT, New York, N. Y. Filed July 16, 1881. (No model.)



Claim.—1. The combination, with a filtering-vessel, of automatically-operating devices for compressing the filtering material laterally and vertically, substantially in the manner and for the purpose set forth.

2. The combination, with the filtering-chamber of a filter, of a pipe connected with such chamber and a loose plunger arranged therein and operated by means of a head of water, substantially as and for the purpose specified.

3. The combination of the filter *a*, stand-pipe *k*, provided with the hand-hole *e*, plunger *n*, pipe *l*, and valve *m*, all arranged and operating in the manner and for the purpose set forth.

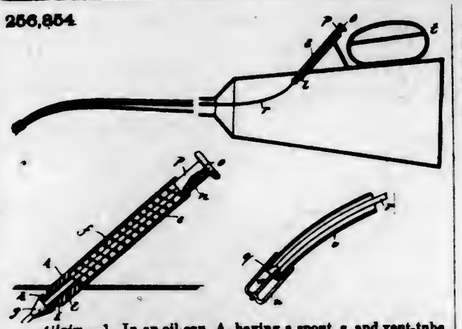
4. The combination of the vessel *a*, rod *c*, adjustable diaphragm *b*′, and spring *j*, arranged on said rod, and operating in the manner set forth.

5. The combination, with the vessel *a*, provided with covers *e e*, rod *c*, and diaphragms *b b*′, of the supply-pipes *g g* and discharge-pipes *h h*, arranged in the side of the vessel and between the said diaphragms and covers, substantially as and for the purpose set forth.

6. The combination, with a filter, of an automatic-working pressure-plate and plunger, whereby both a lateral and vertical compression of the filtering material is effected, substantially as set forth.

256,854. OIL-CAN. ARTHUR W. PLUMB, Chicago, Ill. Filed July 14, 1881. (No model.)

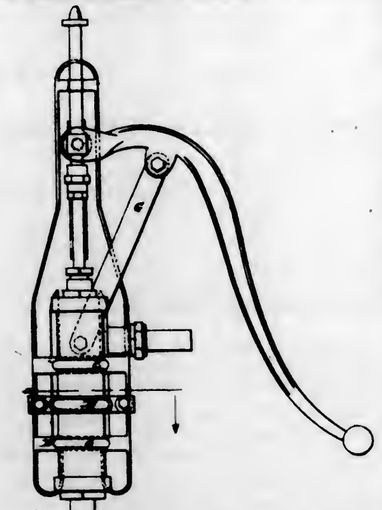
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Claim.—1. In an oil-can, A, having a spout, *c*, and vent-tube *e*, as shown, a rod, *r*, passing through said spout and vent-tube, and provided with two valves, one having for its seat the end of the spout and the other the inner end of the vent-tube, and provided also with a knob, *o*, at the outer end of the vent-tube, in combination with a spring, *f*, acting in opposition to pressure exerted on the knob, substantially as described.

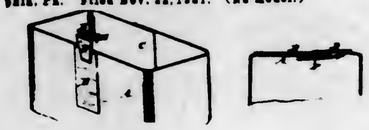
2. The combination of the can A, having the spout *c* and handle *t*, vent-tube *e*, passing through said can on the same side as the handle and extending upward and backward, rod *r*, passing through said spout and vent-tube *e*, and provided with the valve *q* at the end of the spout, valve *h* at the inner end of the vent-tube, and cylinder *p*, having the knob *o* and groove *n*, and the spring *f*, surrounding said rod in the interior of the tube and confined between said cylinder *p* and a shoulder, *g*, near the lower end of said tube, substantially as described.

256,855. PUMP-FRAME. JAMES PRESTON, New York, N. Y., assignor of one-half to Samuel A. Burns and C. A Cook, same place. Filed June 20, 1881. (No model.)



Claim.—The handle fulcrum-rod G, pivoted at its lower end in the axial line of a turning pump-cylinder, and pivoted detachably to the pump-handle at the other end, whereby it will be in its true relative position to the handle, no matter to what extent the cylinder is turned.

256,856. BAG-FASTENER. WILLIAM B. PURVIS, Philadelphia, Pa. Filed Nov. 22, 1881. (No model.)



Claim.—The combination, with the bag A, provided with its seam C, of the paper or cloth slip B, secured on the edge of the bag and opposite the seam, and the metallic piece D, provided on its end with prongs, said piece being secured to the bag through the slip B, substantially as and for the purpose specified.

256,857. STOPPER FOR JARS, &c, HENRY W. PUTNAM, Bennington, Vt. Filed Feb. 10, 1882. (Model.)



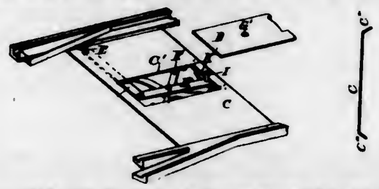
Claim.—1. The combination of the jar A, having shoulder *a*, with the neckband D, and with the sheet-metal ears F, that are doubled around and below the neckband, bent or curved inward against the body of the jar, and perforated below the neckband through its two thicknesses to receive the actuating-lever of the jar or bottle closing apparatus and the upward strain thereof, and that bear against the shoulder *a*, substantially as specified.

2. The combination, with a jar, of a fastening consisting of the eccentric lever E, straddling the jar and forming a handle at the side thereof, combined with the bail or yoke G, that is pivoted to it, and with horizontal supporting and suspending devices on the jar A, and with the cover, that is disconnected from said bail or yoke and from said pivoted lever, the proportions and arrangement of said elements being such that when the lever is raised against the vessel the yoke will hold the cover loosely in position, and when depressed will hold it tightly in position, substantially as herein shown and described.

3. The combination of a jar and its cover B, having recess or groove *g* on the raised part *h* of its top, with the springing bail or yoke and eccentric lever pivoted to the jar, all arranged and proportioned so as to allow the bail to hold the cover loosely when the lever is raised against the jar, and the cover to be taken off when said lever is so raised by springing the bail out of the groove or recess *g*, substantially as herein shown and described.

256,858. SWITCH FOR RAILWAYS. ORRIN A. REYNOLDS and JAMES A. SUPPENDORSON, Covington, Ky. Filed Feb. 16, 1882. (No model.)

Brief.—The coping for the switch-operating devices has its exposed side flanges turned down, and upon its under side is secured a spider, to which is pivoted a lever one end of which is actuated by a laterally-adjustable treadle upon the passing car, the other end being pivoted to a rod, to which is secured the switch-tongue.

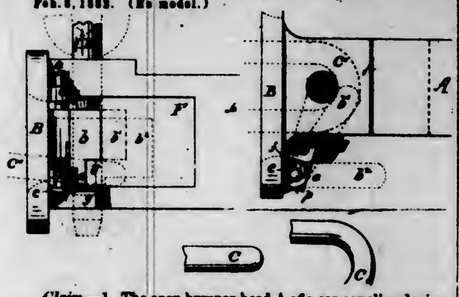


Claim.—1. In switches for street-railways, the coping C, extending from track to track, having a central opening, C', and lid D, and provided beneath said opening with the spider F, in combination with the laterally-vibrating lever H, having at one end an upwardly-projecting lug, I, and at the opposite end a connecting-rod attached to the shifting end of a rail, substantially as and for the purpose set forth.

2. In switches for street-railways, the coping having on its exposed sides the downwardly-turned flanges C', substantially as and for the purpose set forth.

3. In street-railways, the coping having the spider F, provided with the laterally-vibrating lever H, connected with the switching-rail B, the forward end of said lever having a lug projecting up through the coping, in combination with a car having a vertical shaft, O, as shown, provided with a forwardly-projecting arm, substantially as herein shown.

256,859. CAR-COUPLING. ALTAN BIRD, Rochester, N. Y., assignor of one-half to Stephen Wheeler, same place. Filed Feb. 8, 1882. (No model.)



Claim.—1. The open bumper-head A of a car-coupling device, provided with a projecting bumper-ring, B, and a gate, *b*, hung to said bumper-ring at the rear side thereof, and in such a manner that it may be swung into the opening F of the bumper-head, substantially as and for the purpose set forth.

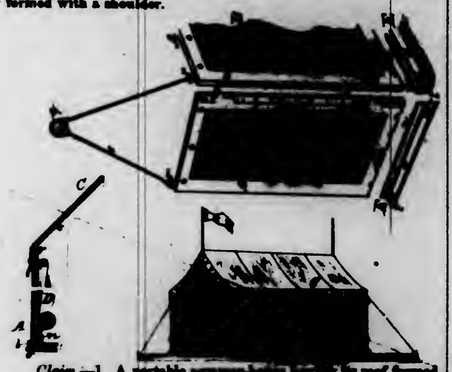
2. The open bumper-head A of a car-coupling device, provided with a projecting bumper-ring, B, and a gate, *b*, hung at the rear side of said bumper-ring and in such a manner that it may be swung into the opening F of the bumper-head, as set forth, said gate when swung within the bumper-head being adapted to the double purpose of holding in position either the coupling-link or coupling-pin, as may be required.

3. In combination with the bumper-head A, having an opening, F, a link, C, and pin D, a gate, *b*, hung at one side of the head and so as to be swung into or out of the opening F, and capable of being moved vertically up or down upon its bearing or hinge, substantially as described, and for the purpose set forth.

4. In a car-coupling device, the gate *b*, provided with the downward-projecting part *c*, and hung to the rear side of the bumper-ring B, so as to be swung into the opening F of the bumper-head, said bumper-head being provided with the ledge *g*, projecting laterally from the lower plate thereof, and in position for the said part *c* of the gate to ride upon while the latter is being swung, as and for the purpose set forth, the said ledge *g* also forming, with the part *c*, a stop for the gate when the latter is swung out of the bumper-head, to prevent it being swung therein again until needed.

256,860. PORTABLE SUMMER-HOUSE. NEETA G. ROOT, Evanston, assignor of one-half to Charles F. Ward, Chicago, Ill. Filed Feb. 20, 1882. (No model.)

Brief.—The walls are formed of wire-screen sections removably connected together. A roof-covering is placed over rods connected together at their upper ends and to the screen-sections at their lower ends. Curtains winding upon rollers are placed inside the sections. The sections rest on beveled water-shedding bases formed with a shoulder.



Claim.—1. A portable summer-house having a roof formed of material adapted to exclude rain and its walls of sections of wire screening set in frames, provided with means for detachably connecting them together, substantially as described.

2. In a portable summer-house, the combination of the wire-screening A in frames B, said frames having devices at their edges for separably connecting them together to form the walls, a roof-frame formed of rods connected together at their upper ends and to the upper edges of the frames B at their lower ends, and a roof-covering, C, substantially as described.

3. In a portable summer-house, the combination with the separable wire-screen wall-sections A B, of the curtains D, one upon each section, and adapted to be closed by drawing upward, substantially as described.

4. In a portable summer-house, the combination, with the separable wire-screen wall-sections A B, of the water-shedding bases E, each formed of the beveled horizontal side *e* and vertical strip *n*, substantially as described.

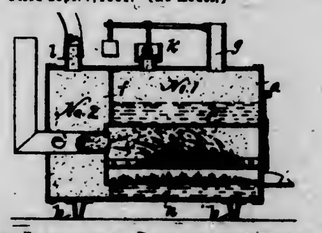
256,861. EYEGLASS-FRAME. FRIEDRICH A. BONORN, Elizabeth N. J. Filed Oct. 8, 1881. (No model.)



Claim.—1. As an improved article of manufacture, an eyeglass-frame made, substantially as herein shown and described, of hard rubber or some analogous material, and having its lens-frames and bow-spring adapted to press the lens-frames against the sides of the nose, made integral and of the same material, as set forth.

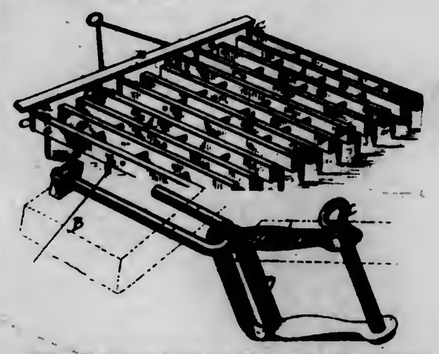
2. In an eyeglass, the combination, with the lens-frames A, made of some composition of matter—such as hard rubber or pyroxyline—of the bow-spring B, adapted to press the lens-frames against the sides of the nose, made integral with the frames and of the same material, substantially as herein shown and described, and for the purpose set forth.

256,862. STEAM-GENERATOR AND FEED-COOKER. WILLIAM W. SCOTT, Dakota, assignor of three-fourths to John H. Burgit, John Byrne, and A. B. Chauvet, Humboldt County, Iowa. Filed Sept. 7, 1881. (No model.)



Claim.—In a steam-generator, the reservoir No. 1, the superheating-chamber No. 2, the fire-chamber *c*, having a flue, *c'*, the perforated partition *f*, the water induction and ebullition tubes *g* and *h*, and the steam-eduction tube *l*, arranged and constructed substantially as shown and described, for the purpose specified.

256,863. HARROW. GEORGE SUPPERT, Moline, Ill. Filed Feb. 7, 1882. (No model.)



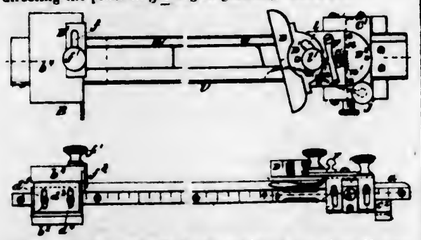
Claim.—1. The combination, with the independent harrow-frames arranged side by side, the transverse draft-bar arranged in advance of said frame, and the vertically-slotted couplings applied two between each harrow and the draft-bar.

2. In combination with the harrow-frame and draft-bar, the vertically-slotted clevis and the hook-shaped bolt having its rear end seated and covered, as shown, whereby the disengagement of the clevis is prevented.

3. The combination of the transverse draft-bar B, the harrow-frame A, connected thereto by two vertically-slotted couplings, each constructed substantially as shown, to permit motion between the parts in a vertical direction only.

256,864. ADJUSTABLE GAGE FOR PLANING. WILLIAM H. STINSON, Scandia, Kans. Filed Jan. 7, 1882. (No model.)

Brief.—Clamps having hinged top pieces capable of vertical adjustment hold the board to be gained upon the graduated base-piece. Upon one of these clamps is an angularly-adjustable guide for directing the plane in gaining or grooving the board.



Claim.—1. The guide B, having a hinged top piece, *b'*, provided with a hinge-plate capable of vertical adjustment, in combination with the base-piece A, substantially as and for the purpose set forth.

2. The guide B, combined with the base-piece A *a*, and having the adjustable clamp B', provided with a downward-projecting arm, *f*, substantially as and for the purpose set forth.

3. The guide having the adjustable clamp provided with a downward-projecting arm, and combined with a base-piece having the stop *a* at its rear side, substantially as described.

4. The sliding gage C, combined with a base-piece, A, and having the vertically-adjustable top piece, C', and an adjustable plane-guide, substantially as and for the purpose set forth.

5. The combination of the angularly-adjustable guide D, having its segmental plate D', provided in its convexity with a slot, with the toothed lever F, the adjustable and graduated leaf E, and graduated plate D^2, substantially as and for the purpose set forth.

6. The guide having the adjustable clamp provided with a vertical arm, the hinged top, the vertically-adjustable plates, one having a hook or catch, the gravity-locking latch or lever, and the plate having the downward-projecting flange, combined with a base-piece having a stop at its rear edge, substantially as and for the purpose set forth.

7. The sliding gage having the flanges resting upon its support, the holding-screw, the pointer or index, the clamp, the graduated and adjustable leaf, and graduated adjoining plate, the toothed lever, and the angularly-adjustable guide provided with a slotted plate, combined with the base-piece having a stop at its rear edge, and graduated face-plate, substantially as and for the purpose set forth.

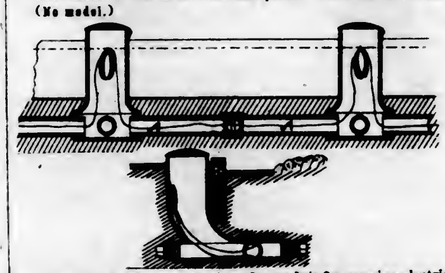
256,865. BLANKET-FASTENER. OSCAR SWEET, Boston, N. Y. Filed Mar. 3, 1882. (No model.)



Claim.—1. The combination, with a blanket, of a fastening device consisting essentially of a gravity-bolt supported in a bearing fastened to one edge of the blanket, the shank of said bolt being greater in width than in thickness, and a hook attached to the other edge of the blanket, said hook being provided with a transverse opening and having a narrow slot leading thereto, adapted to receive the shank of the bolt when presented edgewise and allow the bolt to enter the opening, substantially as set forth.

2. A fastening device for blankets, consisting essentially of a rotary bolt provided with a weighted arm, a bearing for supporting one end of the bolt, the said bolt being provided with a shank made flattened in cross-section and of greater width than thickness, and a hook provided with a narrow slot leading to a transverse opening, and adapted to receive and secure the flattened shank of the gravity-bolt, substantially as and for the purpose set forth.

256,866. DEVICE FOR UNDERGROUND ELECTRIC COMMUNICATION. H. FRANK TEAL, Philadelphia, Pa., assignor of two-thirds to Jno. E. Gowan, same place. Filed Jan. 27, 1882. (No model.)

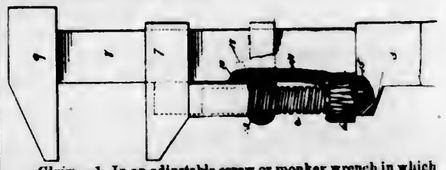


Claim.—1. The combination of a conduit for carrying electric wires (said conduits being provided with service-nipples, as described) with working or access chambers extending to one side and upward, as described, whereby the conduit may be laid in the street and the openings of the working or access chambers be located in the sidewalk of the street, all as set forth.

2. The combination, with a conduit for carrying electric wires, of working or access chambers extending to one side and upward, as described, whereby the conduit may be laid in the street and the openings of the working or access chambers be located in the side walk of the street, as set forth.

3. In combination with conduits for carrying electric wires, provided with service-nipples and working or access chambers, as described, permanent cords extending through the pipe from chamber to chamber, substantially as and for the purpose set forth.

256,867. WRENCH. JOHN THOMSEN, Brooklyn, N. Y. Filed Mar. 15, 1882. (No model.)



Claim.—1. In an adjustable screw or monkey wrench in which the movement of the sliding jaw is effected without changing the position of the hand during the rotation of the operating-screw, the combination of the semicircular nut, as 13, screw, as 6, slotted end bearing, as 15, and spring, as 11, for the purpose of permitting the depression and detachment of said screw from the movable jaw, whereby said jaw may be quickly slid or allowed to gravitate to any position on the shank, the screw being afterward used to lock the jaw, as in the ordinary manner.

2. In an adjustable screw or monkey wrench in which the movement of the sliding jaw is effected without changing the position of the hand during the rotation of the operating-screw, the combination, with the rigid jaw, as 9, shank, as 8, sliding jaw, as 7, semicircular nut, as 13, screw, as 6, and slotted end bearing, as 15, of a spring, as 11, for the purpose specified.

256,868. COMBINED FAUCET AND AUTOMATIC TOY. FORTUNATO C. HARETTI, Bryan, Tex. Filed Feb. 23, 1882. (No model.)



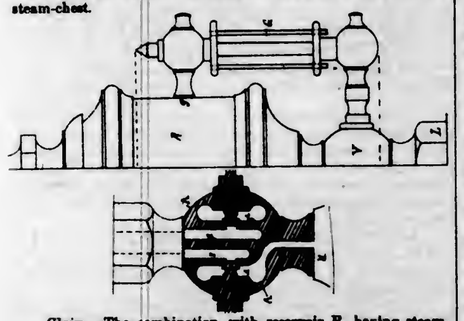
Claim.—1. A faucet constructed, as herein described, with a trough or gutter, in combination with an automatic figure operated by a paddle-wheel adapted to be actuated by the fluid passing through said trough or gutter, as set forth.

2. The combination, with the faucet A, having trough C, of the funnel or spout K, having flange L, as set forth.

3. The combination of the faucet A, having trough C, the bracket E, paddle-wheel H, shaft G, automaton I, and the funnel or spout K, having flange L, substantially as and for the purpose set forth.

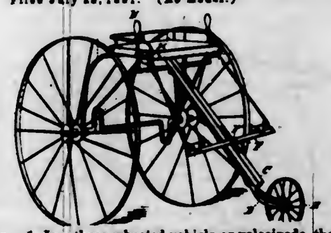
256,869. LUBRICATOR. LUTHER B. BAILEY, London, Ontario, Canada. Filed Aug. 10, 1881. (No model.)

Brief.—By opening the valve O' the steam enters and forces the lubricant out of the cup at side down through glass tube into the valve-chamber and delivers the lubricant at the back of the valve O, which regulates the supply of lubricant passing into the steam-chest.



Claim.—The combination, with reservoir E, having steam-passage *r* at bottom and oil-outlet *g* at top, of valve-chamber V, having communication with said reservoir at bottom through the valve-passage *r s* and at top through the outlet *g*, glass tube G, and valved passage *r' s'*, as set forth.

256,870. VELOCIPEDE. WALTER O. BECKWITH, Norwalk, Ohio. Filed July 28, 1881. (No model.)



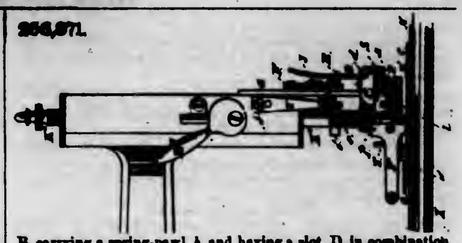
Claim.—1. In a three-wheeled vehicle or velocipede, the combination, with a double-crank axle and the leg connecting the front or caster wheel and the seat, of an adjustable oscillating foot-rest and straps, or equivalent means, connecting the cranks and the outer ends of said foot-rest, substantially as set forth.

2. In a velocipede, the combination, with the leg C, of the centrally-pivoted rest F, constructed and arranged substantially as described, to be vertically adjusted, substantially as set forth.

3. In a three-wheeled velocipede, the combination of a caster-wheel, E, having its shank pivoted to the leg C, the crank D', and suitable mechanism for moving said crank, substantially as and for the purposes shown.

4. In a velocipede adapted to be driven by the feet, the combination, with a leg supported by a caster-wheel, of a bar adjustably attached to the leg, substantially as and for the purposes shown.

256,871. UPPER-FEED AND BUTTON-HOLE ATTACHMENT FOR SEWING-MACHINES. JOHN W. BLODGETT, Chicago, Ill. Filed Mar. 18, 1880. (Model.)



Claim.—1. The feed-wheel A, having ratchet-teeth *a* and lever B, carrying the pawl *b*, in combination with the swinging plate F, operated by the needle-bar for oscillating the lever or arm B, substantially as and for the purposes specified.

2. The feed-wheel A, having ratchet-teeth *a*, and lever or arm B, carrying a spring-pawl, *b*, and having a slot, D, in combination with the swinging plate F, carrying a pin, E, and operated from the needle-bar, substantially as and for the purposes specified.

3. The feed-wheel A, having ratchet-teeth *a*, and lever or arm B, carrying a spring-pawl, *b*, and having a slot, D, in combination with the swinging plate F, carrying a pin, E, and a projecting arm, J, substantially as and for the purposes specified.

4. The feed-wheel A, having ratchet-teeth *a*, and lever or arm B, carrying the spring-pawl *b*, and having a slot, D, in combination with the swinging plate F, carrying the pin E, and having an arm or lever, J, to engage the needle-bar, and a pin or arm, H, to engage a return spring, substantially as and for the purposes specified.

5. The feed-wheel A, having ratchet-teeth *a*, and arm or lever B, carrying a spring-pawl, *b*, and having a slot, D, in combination with the plate F, pin E, arm or lever J, pin or arm H, and spring I, substantially as and for the purposes specified.

6. The feed-wheel A, having ratchet-teeth *a*, and lever or arm B, carrying a spring-pawl, *b*, and having a slot, D, in combination with the spring-stop *d e*, plate F, pin E, arm or lever J, pin or arm H, and spring I, substantially as and for the purposes specified.

7. The support C, secured to the presser-bar, and having a spindle, A, carrying the feed-wheel and its actuating-lever, in combination with the bar G, for steadying the support, substantially as specified.

8. The feed-wheel A and a mechanism for driving the same from the needle-bar, in combination with the cogged wheel S, cogged segment R, and plates O P, for giving the plates a half-revolution, substantially as and for the purposes specified.

9. The feed-wheel A and a mechanism for driving the same from the needle-bar, in combination with the pinion *m* and racks *n* and plates O P, for giving the plates a direct travel, substantially as and for the purposes specified.

10. The feed-wheel A and a mechanism for driving the same from the needle-bar, in combination with the cog-wheel S, cog-segment R, pinion *m*, racks *n*, and plates O P, for automatically operating the plates to work the button-holes, substantially as specified.

11. The combination, with the needle and the presser bars, of the ratchet feed-wheel supported by an attachment to the presser-bar and adapted to be raised and lowered by the same, the slotted vibratory lever carrying a spring-pawl arranged to engage the feed-wheel, and the pivoted oscillatory plate adapted to operate the slotted lever, and provided with an arm independent of the needle-bar, but arranged to be acted upon at a certain moment by a device upon the said needle-bar, substantially as described.

12. In a button-hole attachment consisting of a bed-plate, N, carrying-plate O, and clamping-plate P, the handle P', having notches or teeth *c*, for holding the material, substantially as specified.

13. The combination, with bed-plate N, of the carrying-plate O, the clamping-plate P, secured at one end to the carrying-plate, the spring arranged upon a rod secured to the carrying-plate and passing up through the free end of the clamping-plate, and the lever P'', adapted to raise the free end of the clamping-plate against spring-pressure, substantially as described.

14. The combination, in a button-hole attachment, of the carrying-plate with the bed-plate having the guard-bar Q, adapted to hold the carrying-plate down upon the said bed-plate, and to constitute at each of its ends a stop that will limit the revolution of the carrying-plate, the said carrying-plate being provided with parallel slots which, in connection with stops formed by the bar Q, serve to govern the movements of the carrying-plate in a right line to the extent required in stitching a button-hole, substantially in the manner shown and described.

15. The combination, with the bed-plate N and the circular carrying-plate formed with two parallel slots, *w*, of the guard-bar Q, secured to said bed-plate and adapted to hold down the carrying-plate, the ends of said bar forming stops *w'*, to limit the right-line movement of said carrying-plate, substantially as herein shown, and for the purpose specified.

256,872. METHOD OF TREATING PULP AND THE RESULTANT MATERIAL. FRANCIS BOSTON, Plymouth, assignor to H. D. Harter, Mansfield, Ohio. Filed Dec. 12, 1881. (No specimens.)

Claim.—1. Pulp made from wood or other suitable material and saturated with oil, for the purpose and substantially as described.

2. A material composed of pulp made from wood or other suitable material saturated with a drying-oil, and rolled, pressed, or molded into the desired form for use.

3. A material for roofing, paneling, and other purposes, composed of pulp saturated with oil, in combination with coloring material for giving any desired color or shade to said material when reduced to the required form for use.

256,873. FAUCET. ULRICH BORRER, New York, N. Y. Filed July 28, 1881. (No model.)



Claim.—1. The combination, in a faucet, of the wooden barrel, the tapering metal seat screwed into the wood, and an elastic valve closing against the seat, substantially as set forth.

2. The combination, in a faucet, of a wooden barrel and a metal delivery-tube, *c*, screwed into the wood and the inner end spread outwardly, substantially as set forth.

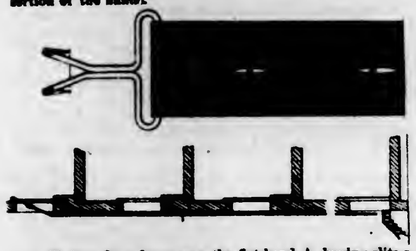
3. The combination, in a faucet, of a wooden barrel, a tapering metal plug having a tinned surface, and a handle, a washer, *o*, and attaching screws to connect the washer to the plug, substantially as set forth.

4. The combination, in a faucet, of a wooden barrel, a tapering metal plug and handle, a disk, *o*, an elastic valve, a valve-stem, and a screw connecting the disk and plug, substantially as set forth.

5. In a faucet, the combination of a wooden barrel, a tapering metal valve-seat screwed into the wooden barrel, a metal plug and handle, an elastic valve, a metal valve-stem, and an eccentric connection between the valve-stem and plug, substantially as set forth.

256,874. FIRE-ESCAPE. NICHOLAS H. BOROFSKY, New York, N. Y. Filed Jan. 25, 1882. (No model.)

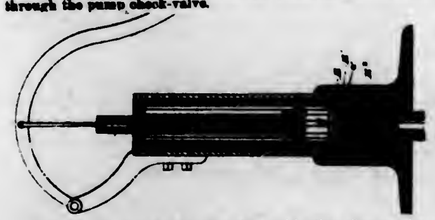
Brief.—Slits are formed in the flat webbing-band for the insertion of the hands.



Claim.—In a fire-escape, the flat band A, having slits *a*, substantially as and for the purpose herein shown and described.

256,875. CHECK-VALVE. ADELBERT H. BRAINARD, Chicago, Ill. Filed Oct. 5, 1881. (No model.)

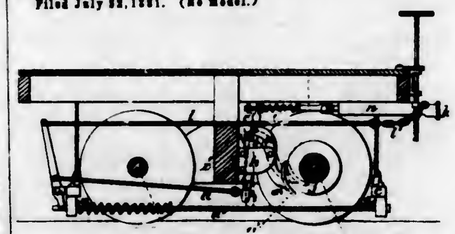
Brief.—The valve is intended for air-pumps, and the improvement is designed better to prevent the escape or passage of air through the pump check-valve.



Claim.—1. In a check-valve, the combination of an apertured seating-plate, E, a flexible flap, E', and a spring, E², together arranged to bear around the aperture, and operating substantially as described, and for the purposes set forth.

2. In a check-valve, the combination of a seating-plate, E, having its aperture *e* surrounded with a boss, *e'*, a flexible flap, E', and a spring, E², arranged to bear all around the boss, substantially as and for the purposes set forth.

256,876. CAR-BRAKE. JESSE H. BURKE, Los Angeles, Cal. Filed July 22, 1881. (No model.)



Claim.—1. The upright lever *i*, connected at its upper end with the draw-head and at its lower end with the brake-lever Y, and at some convenient point hung or pivoted to the short lever *a*.

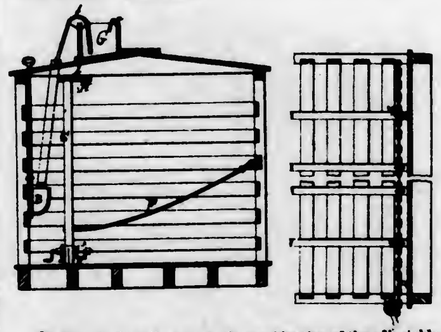
2. The short lever *a*, hung in the bearing A, with its upper end attached to the lever *i* and its lower end provided with a brake-shoe to operate against a wheel or cylinder on the axle, for the purpose set forth.

3. The hollow wheel *j*, provided on its inner surface with teeth or cogs, together with the toothed quadrant-arms f^2 f^3, the spiral springs a^2, and the sleeve a', arranged on the axle of a car and operating together, for the purpose set forth.

4. A wheel or cylinder moving upon the axle of a car in the direction of its length by means of centrifugal force acting on arms f^2 f^3, said cylinder furnishing when the car is in motion a bearing for the shoe of a brake-lever; a^2.

5. The combination of the brake-lever *i*, the auxiliary lever *a* and the wheel *j*, for the purpose set forth.

256,877. STOCK-CAR. JAMES B. CALKINS, Pacific, Mo. Filed Nov. 2, 1881. (No model.)



Claim.—1. In railway-cars, the combination of the adjustable cattle-fastenings C, provided with hooks *c*, bolts *d*, the plank H, having mortises *e*, the chain D, and the ropes F, arranged to secure and separate the cattle in the manner set forth.

2. In a railway-car arranged for transporting cattle, the food and water receiving tub G, placed upon the top of car, in combination with the siphon-tube *f*, long flexible hose *g*, and trough B, arranged to supply the cattle in the manner set forth.

256,878. FEED MECHANISM FOR ROLLER-MILLS. CHARLES B. CAMPBELL, Buffalo, N. Y., assignor to John T. Noye Manufacturing Company, same place. Filed Feb. 20, 1882. (No model.)

Claim.—1. The combination, with the feed-slide C, of a pivot, *f*, a spring, *i*, connected with the pivot, and means whereby the tension of the spring can be regulated, substantially as set forth.

2. The combination, with the feed-slide C and its pivot *f*, of a sleeve, H, spring *i*, cap J, and means whereby the cap J can be secured in different positions on the sleeve H to regulate the tension of the spring, substantially as set forth.

3. The combination, with the feed-slide C and its pivot *f*, of

256,878.

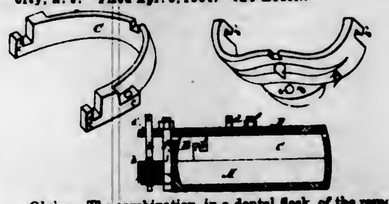


the spring *i*, sleeve H, provided with teeth *h*, and cap J, provided with teeth *l*, substantially as set forth.

4. The combination, with the feed-slide C and its pivot *f*, of the sleeve H, cap J, spring *i*, bolt *m*, and head L, substantially as set forth.

5. The combination, with the feed-hopper A and feed-roller B, of the feed-slide C, provided with suitable pivots, a spring, *i*, surrounding one of the pivots and attached with its ends, respectively, to the pivot and to a stationary part of the machine, and mechanism whereby the feed-slide is opened against the pressure of the spring, substantially as set forth.

256,879. DENTAL FLASK. MARVIN H. CARPENTER, Jersey City, N. J. Filed Apr. 8, 1881. (No model.)



Claim.—The combination, in a dental flask, of the removable front piece, B, with section C, both in conjunction with section A, the cap D, and the screw-rods *d d d*, the whole substantially as set forth, and for the purpose specified.

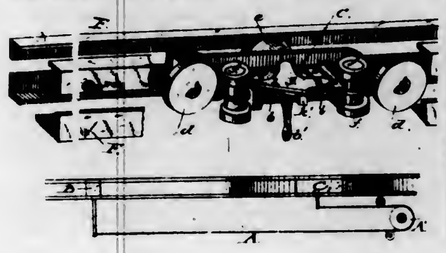
256,880. BARBED FENCE-WIRE. GEORGE CASE, De Kalb, Ill., assignor to Lolile E. Sunderland, same place. Filed Jan. 3, 1882. (No model.)



Claim.—The combination and arrangement, substantially as shown and described, of the upright perforated plate D, barb C, and fence-wire B, as and for the purpose set forth.

256,881. UNDERGROUND CABLE-WAY. HENRY CARROLL, San Francisco, Cal. Filed Jan. 17, 1882. (No model.)

Brief.—A conducting-carriage travels within the tunnel on angle-iron ways supported by brackets, consisting of double and single curved bars. The carriage is provided with rollers and a downwardly-projecting arm, to which is secured a rope, by which it is connected to a supplemental carriage. The first-named carriage has a pivoted latch, which automatically engages and disengages with a socket in the grip. The supplemental carriage consists of a vertical body provided with a gravity-latch to engage and disengage with the grip, and at its ends with V-shaped angle-irons, and is adapted to travel in V-shaped angle-iron ways secured to yokes placed at suitable distances apart in the tunnel.



Claim.—1. In a device for turning curves of endless cable-ways, the combination, in one tunnel, of a main grip-conveying carriage, a supplemental returning-carriage, and a connecting-rope, substantially as and for the purpose described.

2. The carriage C, provided with the rollers *d*, *d*, *e*, and *f*, and a spring-latch carrying a diagonal bar or rod, *l*, in combination with the angle-iron ways F and stud *m*, substantially as and for the purpose set forth.

3. The latch *g*, made from a flat blank, with its engaging end struck down at *h'*, and provided with trunnions or pivots *i i*, in combination with the plate G of the carriage and spring *h'*, all constructed and arranged as described.

4. In combination with the carriage-ways F, the bracket consisting of the double-curved bars D and the single intervening curved bar D', for the purpose specified.

5. The supplemental or returning carriage consisting of the body *k*, provided at its ends with V-shaped angle-iron sockets and the latch O near its center, in combination with the bars P and the V-shaped angle-iron ways R R, for the purpose set forth.

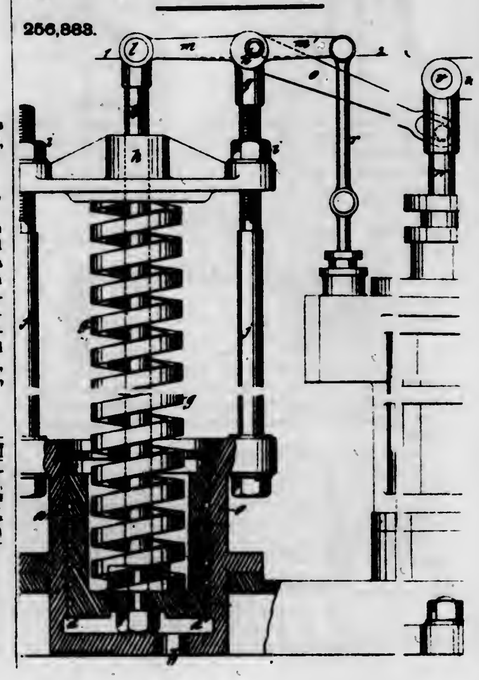
6. The gravity-latch O, made of a metal plate, having projections bent downward at o^1 o^2 and pivoted to the carriage, for the purpose specified.

256,882. HEATING-DRUM. CHARLES H. CHAPMAN, Joplin, Mo. Filed Sept. 15, 1881. (No model.)



Claim.—The heating-drum herein shown and described, the same consisting of the exterior cylinder or casing, E, having flanges F, inside drum, D, cone I, having flange J, central pipe, L, and tangential fines K and H, connecting the annular chamber between casing E and drum D with, respectively, pipe L and cone I, the whole constructed and combined as specified, for the purpose set forth.

256,883.



256,883. SAFETY-VALVE APPARATUS FOR STEAM-BOILERS. JAMES DIXON CHURCHILL, Upper Holloway, County of Middlesex, England. Filed Feb. 14, 1881. (Model.) Patented in England July 1, 1880.

Claim.—1. In safety-valve apparatus for steam-boilers wherein the safety-valve is connected to and controlled by a piston working in a cylinder, admission and emission of actuating-fluid to and from which are regulated by a slide or valve, the combination, with such slide or valve, of a piston or its equivalent in direct communication with the interior of the boiler, said piston or its equivalent being loaded by an adjustable spring adjusted by the nuts *i i*, or their equivalents, and connected to said slide or valve, substantially as herein specified.

2. In safety-valve apparatus for steam-boilers wherein the safety-valve is connected to and controlled by a piston working in a cylinder, admission and emission of actuating-fluid to and from which are regulated by a slide or valve operated through a lever, *m m'*, by a piston or its equivalent actuated by the pressure in the boiler, the combination, with said lever *m m'*, of an arm or lever, *o*, and a pin or projection, *n*, fixed to said arm or lever *o* in a position eccentric to its own fulcrum, said pin or projection *n* serving as the fulcrum of the lever *m m'*, substantially as hereinbefore described, and for the purposes specified.

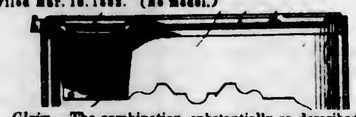
3. In a safety-valve apparatus for steam-boilers, the combination of a cylinder, *t*, containing a piston whose rod *r* is connected to the lever *u* of the safety-valve, a slide or valve working in steam-chest *v*, a rod, *r*, a lever, *m m'*, to which said rod *r* is connected, an arm or lever, *o*, connected to piston-rod *w*, an eccentric fulcrum pin or projection, *n*, on which said lever *m m'* is mounted, a rod, *k*, connected to said lever *m m'*, and a piston, *e*, working in a cylinder, *a*, and loaded by a spring, *g*, adjustable by a cross-head, *h*, nuts *i*, and rods *j*, all substantially as and for the purposes hereinbefore described.

256,884. FENCE-POST. WILLIAM CLINE, Plainfield, Ind. Filed Feb. 4, 1882. (No model.)



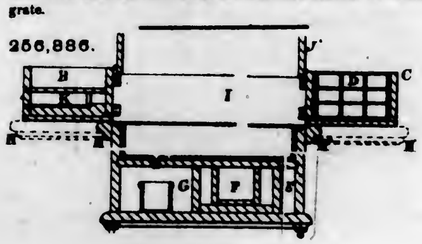
Claim.—A fence-post consisting of the side pieces, A B, cut away at their upper ends, as shown at *c*, and joined together, the cross-braces *a b* and upright C, connected together as described, said upright extending below the ends of the side pieces, and the shoulders *d* and end of the upright projecting above the cross-brace *a*, substantially as and for the purpose set forth.

256,885. RANGE. JAMES H. CODDING, North Dighton, Mass. Filed Mar. 16, 1882. (No model.)



Claim.—The combination, substantially as described, of the cabinet-base of a range, the detachable plate or frame supported thereby and carrying the sifting-grate, and the independent ash-box attached to the base within the same and beneath the sifting-grate.

256,886.



256,886. CABINET BATHING-TUB. EUGENE F. COLLINS, Auburn, Me. Filed July 27, 1881. (Model.)

Claim.—The cabinet bathing-tub herein described, in combination with the removable wash-stand B, with shelf K, removable box C, with its cover J', the removable basket D, the compartments E F G, the supports H H', all arranged and constructed as herein set forth.

256,887. SHIRT. FREDERICK A. DIETRICH, Freeport, Ill. Filed Oct. 7, 1881. (No model.)



Claim.—The shirt A, in combination with an attached strap, B, and removable loop C, located on the top of the shoulder, all constructed and arranged to operate substantially as and for the purpose set forth.

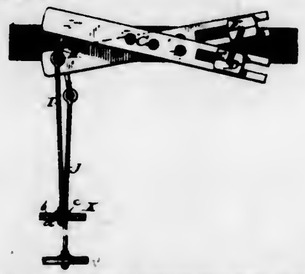
256,888. COMBINED CORSET AND ABDOMINAL AND SKIRT SUPPORTER. FREDERICK A. DIETRICH, Freeport, Ill. Filed Oct. 7, 1881. (No model.)



Claim.—In combination with the corset A, having the busks *a a*, the roll C, buckle E, webbing D, plate B, and elastic strap F, all constructed substantially as and for the purpose set forth.

256,889. PUMP. ALONZO JOSLYN EDWARDS, Dayton, Wis. Filed Dec. 1, 1881. (No model.)

Brief.—A wind-wheel may be attached to G. The fulcrum-pin C may be shifted.



Claim.—1. The pump attachment for windmills, consisting of the two slotted levers, the double-crank shaft operating directly upon said levers, and the two pump-rods provided with pistons, one rod passing through the piston of the other rod, as shown.

2. The combination of the two pump rods and pistons, as described, the levers, the double-crank shaft, and the lever-fulcrums adjustable lengthwise with regard to the levers, substantially as shown, whereby the stroke of the pistons may be varied and the attachment adapted for mills of different powers.

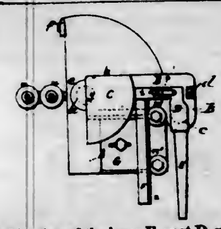
3. The combination, with the double-crank shaft and the slotted levers operated thereby, of the two piston-rods and their respective pistons, one rod being passed eccentrically through the piston of the other rod, as described and shown.

4. In combination with the piston K, consisting of the parts *a b c*, the piston-rod I, inserted through and secured to the same, and the piston-rod J, passed through said parts and closely encircled by the leather *b*, as described and shown.

256,890. MACHINE FOR BENDING PIPE. JAMES H. EVARTS, New Haven, Conn., assignor to the National Pipe Bending Company, same place. Filed Nov. 8, 1881. (No model.)

Claim.—1. The lever E, part D, pivoted to the part B, and bar *i*, in combination with the part B, provided with the stud *a* and shoulder *c*, and with the former C, having the lug *g* and ribs *m*, as set forth.

256,890.



2. The combination of the lever E, part D, pivoted to the part B, bar *i*, part B, provided with the stud *a* and shoulder *c*, and former C, having the lug *g* and ribs *m*, with the bar F, having a groove and tongue, as described, and with the adjustable pulleys *n'*, having the rectangular grooves, as set forth.

3. In a machine for bending pipe into coils, the adjustable pulleys *n*, arranged and adapted to hold the bent pipe in their semicircular grooves and give direction to the same, as set forth.

4. In a machine for bending pipes into coils, the combination of the bed A, having pulleys *o o'*, the slotted and shouldered arm B, pivoted to said bed, the segmental former C, adapted to be supported on the pivoted arm, the bars F and *i*, arranged at a right angle, and the lever D E, having a latch-connection with the bar *i*, substantially as and for the purpose described.

256,891. PRINTING-PRESS. WILLIAM H. GOLDING, Chelsea, Mass. Filed Mar. 28, 1880. (Model.)



Claim.—1. In combination with the platen, the main shaft, and the crank, a connecting-rod with intermediate connecting devices, substantially as described, for uniting the connecting-rod to the platen, substantially as described, the pivot of the upper end of the connecting-rod being during a portion of its movement nearly coincident with the center of the main shaft, substantially as and for the purpose set forth.

2. In combination with the bar f^{10} and the blocks f^9, for adjusting the cams, the movable bar f^{11}, as set forth.

3. In combination with the base-plate and face-plate of the platen, the ledges f^7 f^8, wedge-blocks f^9, springs f^{11}, and bars f^{10} f^{11}.

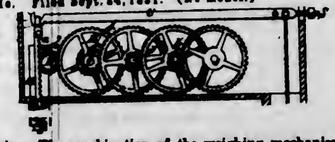
4. In combination with the hook-rods h^{10} and the springs h^{11}, the hollow studs h^9, having slots for guiding the rods, as described.

5. In combination with the hook-rod having the springs h^{11}, the bar h^{12}, and spring h^{13}, as described.

6. In combination with the rod J, the ink-distributor *j*, adapted to swing upon the pivotal rod J, as described, and the inking-rollers, the combination being such that the former receives a vibration by the upward movement of the latter, as described.

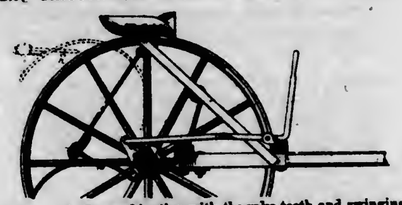
7. In combination with a pivoted ink-distributor located below the bed, mechanism, substantially as described, for giving it a lateral vibration, and inking-rollers, substantially as described, for giving a swinging movement.

256,892. WEIGHING-SCALES. JAMES P. HAGERTY, New Castle, Me. Filed Sept. 24, 1881. (No model.)



Claim.—The combination of the weighing mechanism of a platform-scale, a registering mechanism therefor, a vertical bar composed of a rack which engages an actuating-pinion of the registering mechanism, and a straight shank continuous therewith projecting through a slot in the horizontal arm of the scale-frame, said bar being provided at one end with an adjusting-nut and at the other end with a loop adapted to hook over the outer end of the scale-beam, and a spring interposed between the nut and the said arm of the frame, substantially as described.

256,893. HORSE HAY-RAKE. WILLIAM H. HALL, Tiffin, Ohio. Filed Feb. 25, 1882. (No model.)

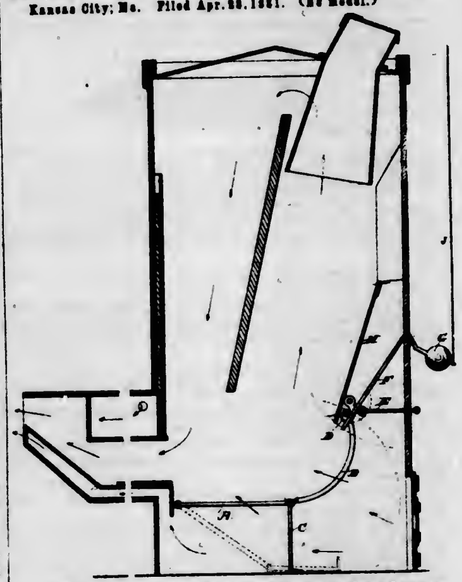


Claim.—1. In combination with the rake-teeth and swinging cleaner-bar, shoes or runners attached to the cleaner-bar and elongated in the plane of the individual teeth upon which they travel at substantially right angles to the cleaner-teeth.

2. In combination with the rake-teeth and swinging cleaner-bar, means for lifting said cleaner-bar out of contact with the rake-teeth at each end of its traverse to entirely withdraw the cleaner-teeth from beneath the rake-teeth.

3. In combination with the rake-teeth and swinging cleaner-bar, shoes or runners attached to the cleaner-bar and elongated both above and below it in the plane of the individual rake-teeth upon which they travel at substantially right angles to the cleaner-teeth.

256,894. GRATE AND SHAKER. CHRISTOPHER C. HARN, Kansas City, Mo. Filed Apr. 28, 1881. (No model.)



Claim.—1. A grate consisting of the two independent portions A B, each hinged at back and provided at front with mechanism for holding them in their normal or closed position.

2. A weighted shaking-lever, in combination with a grate having a motion perpendicular to its own plane.

3. In combination with a weighted lever for clearing the fire, a cord or wire connected thereto and enabling the operation of the lever at a distance from the stove or furnace, substantially as set forth.

4. In combination with a grate held from downward motion by suitable stops, and having free upward motion, a bent shaking-lever pivoted in the wall of the furnace at its bent portion, weighted at its outer end, and engaging under the grate at its inner end, the whole being arranged, as described, so that when the weighted end of the lever is dropped its inner end will impinge against the under side of the grate, raise it from its supports, and allow it to drop again into place thereon, substantially as set forth.

5. In combination with a hinged grate, the shaking-lever F, having weight G, for the purposes set forth.

6. In a magazine-stove, the combination of hinged reservoir-wall H, a hinged grate, and a pivoted shaker for shaking and al-

tornately compressing and releasing the coal, substantially as described.

7. The combination of hinged grate B, having catch D, shaking-lever F, having weight G, and the hinged magazine-wall H, substantially as and for the purposes set forth.

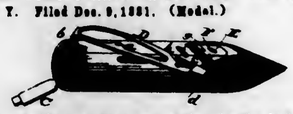
256,895. DEVICE FOR AND METHOD OF FORMING BRAID TRIMMING. DAVID HENIUS, New York, N. Y., assignor of one-half to Samuel Hernstein, same place. Filed Jan. 3, 1881. (No model.)



Claim.—1. The method of forming braid trimmings herein shown and described, which consists in laying cords together, one above the other, feeding said cords through a grooved guide, which keeps them accurately together, and sewing centrally through the said cords, substantially as herein specified.

2. A guide, C, adapted to be applied as a presser-foot to a sewing-machine, provided with a groove, *b*, of the proper width to hold one thickness of cord, and of a depth sufficient to hold two or more cords, as required, and to allow one cord to project below the same, so that the feed device may act on it and move the cords along, and with a vertical hole which admits the needle through the middle of the several cords, substantially as and for the purpose herein specified.

256,896. SEWING-MACHINE SHUTTLE. JOHN HOEFLER, Ilion, N. Y. Filed Dec. 9, 1881. (Model.)



Claim.—1. The combination of the shuttle-body and its swinging latch, the spring pivoted to the body and engaging with the latch, and the detent engaging with and holding the spring.

2. In combination with the shuttle-body and the hinged latch or cap at its base, the centrally-pivoted spring engaging at one end with the latch and at the opposite end with a retaining-lip or detent.

3. The combination of the shuttle-body A, latch C, pivoted spring D, and detent E.

4. In combination with the shuttle-body, the swinging tension-spring D and the adjustable detent E, serving the twofold purpose of retaining the spring in position and regulating the pressure upon the thread.

5. In combination with the swinging spring, the spring-supported detent E and adjusting-screw F.

6. In a shuttle, the latch or detent E, having the spring-arms formed in one piece therewith.

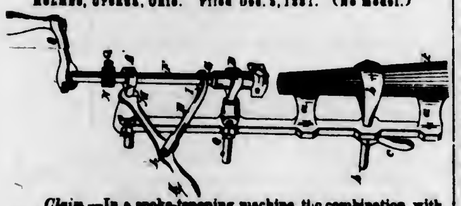
7. In combination with the shuttle-body, the tension-spring provided with the inwardly-turned lip A, substantially as shown and described.

8. In a shuttle, the tension-spring provided with the V-shaped slit or opening therein to receive the thread.

9. The shuttle-body provided with the external transverse groove, in combination with the latch, the hinge-pin for the latch, seated in the groove, and the soft metal inserted, as shown, to secure the pin in place.

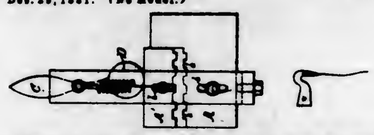
10. In a shuttle, the latch-sustaining pin secured in an external groove in the body.

256,897. SPOKE-TENONING MACHINE. CHRISTIAN B. HOLMES, Urbana, Ohio. Filed Dec. 8, 1881. (No model.)



Claim.—In a spoke-tenoning machine, the combination, with the bed A, having integral spoke-rests *a* and clamps *b* D D', of the hollow auger shaft F and compound adjusting-levers H K, adjustable feed-gage N, and crank-arm O, substantially as shown and described, and for the purpose set forth.

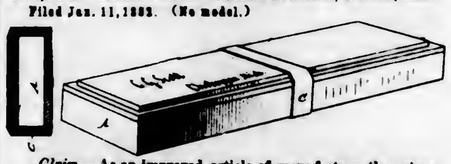
256,898. APPARATUS FOR SHAPING AND HOLDING METAL WHILE BEING TEMPERED. JOHN JACOBS, Sandusky, Ohio, assignor of one-half to Henry Jacobs, same place. Filed Dec. 29, 1881. (No model.)



Claim.—1. The combination, with the adjustable stationary nodulated die A, of the movable nodulated upper die, A', the eccentric roller D, provided with a handle and arranged to force said upper die toward the lower die, and the springs arranged to retract said upper die, substantially as described.

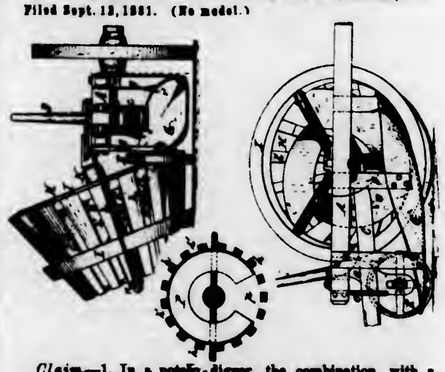
2. The combination of the upper and lower nodulated dies, the straps or standards B B', provided with the slots *b* and inwardly-projecting lower ends, the bolts F, securing the lower die, the screws E E', for supporting and adjusting the same, the bolts F', moving loosely in the upper slots and secured to the upper die, the eccentric roller D, bearing upon the upper die and provided with means for operating the same, and the springs G G', for retracting said upper die, substantially as described.

256,899. MAILING-BOX. GEORGE JOHNSTON, Detroit, Mich. Filed Jan. 11, 1882. (No model.)



Claim.—As an improved article of manufacture, the return mailing-case herein described, consisting of the box-body A, having the elastic securing-band C permanently attached thereto, and of a reversible cover provided around the periphery of each side with a rabbet, the vertical wall of each rabbet, when underneath, being seated within the box, and the horizontal wall seated on the box, as herein shown and described.

256,900. POTATO-DIGGER. LEWIS S. KELSEY, Marilla, N. Y. Filed Sept. 13, 1881. (No model.)



Claim.—1. In a potato-digger, the combination, with a wheeled frame, A, of the downwardly-inclined axle *m*, projecting laterally from the wheeled frame, a cage, H, having the form of a truncated cone, mounted on said axle and running with its lower side upon the ground, a plow, G, which delivers the potatoes and earth into the inner end of the cage, and a discharge-opening formed in the outer end of the cage H, through which the potatoes freed from the earth are delivered upon the surface of the ground, substantially as set forth.

2. In a potato-digger, the combination, with the cage H, of a stop-flange, P, and a discharge-opening, *p*, arranged at its discharge end, whereby the potatoes are temporarily retained in the cage and discharged therefrom at intervals, substantially as set forth.

3. In a potato-digger, the combination, with the cage H, of a stop-flange, P, and a discharge-opening, *p*, arranged at its discharge end, whereby the potatoes are discharged at intervals, and screw-blades *o*, whereby the material is propelled toward the discharge-opening, substantially as set forth.

256,901. HARVESTER REEL AND RAKE. JOHN KEYS, Beloit, Kans., assignor of one-half to George W. Port, same place. Filed Mar. 2, 1882. (No model.)



Claim.—1. In combination with the platform having an upward inclination to the rear, the endless belts or chains having the rake-head hinged thereto, substantially as shown.

2. The combined rake and reel consisting of the endless belts or chains provided with the fixed reel-blades, and the rake-bar attached thereto by hinged arms, substantially as shown.

3. In combination with the platform having an upward inclination to the rear, the endless reel belts or chains provided with the fixed and the hinged blades or bars, and arranged to approach the surface of the platform as they travel from its front to its rear, whereby the slain are caused to assist in retaining the moving grain in position.

4. The combination of the inclined platform, the endless belts or chains, the rake-head connected to the belts by hinged arms, the tripping-arm attached to the hinged arms, and the stud to act upon the tripping-arm and elevate the rake-head at the completion of its action, substantially as shown.

5. In combination with the traveling rake-head, the hinged presser-bar arranged to travel in advance thereof, the sustaining-arms upon said presser-bar, and the stationary tracks or cams to carry the sustaining-arms while the compressor-bar is pressing upon the grain.

6. The combination of the endless chains, the rake-head attached thereto by hinged arms, the presser-bar hinged to and in advance of the rake-head, and means, substantially as described, to sustain the presser-bar until it has passed over the butts of the grain.

7. In combination with the reel, the fixed posts, the notched hinge-post, and means, substantially as described, for securing the hinged posts in position.

256,902. PADLOCK-COVER. GEORGE E. KIRK, Washington D. C. Filed Sept. 14, 1881. (No model.)



Claim.—A weather-proof padlock-cover consisting of a cap, A, hinging to a plate, B, provided with the staple-slot *c*, as and for the purposes herein specified.

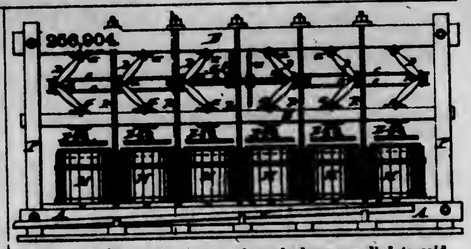
256,903. MANUFACTURE OF LOCKET-RIMS. GUSTAVUS R. W. KURTUS, Providence, R. I. Filed Dec. 9, 1880. (No model.)



Claim.—The described process for forming a locket-rim and field-piece in one piece of stock, with a joint groove in the edge of the field-piece, which consists, first, in striking up the disk to a cup form, (shown in Fig. 3;) second, in striking up the beveled rim of the field-piece and the groove for the joint at one operation, as shown in Fig. 4; third, in cutting out the central portion of the bottom of the cup and removing the surplus exterior flange of the rim, as shown in Fig. 5; fourth, in bending the raised rim inward, as shown in Fig. 6, and thus completing the locket-rim.

256,904. SAND-PRESS. EMIL LAAGE, Goddee, N. Y. Filed Feb. 13, 1882. (No model.)

Claim.—1. The combination, with a press-frame and its vertically-movable pressing-beam, of toggle-levers applied to said pressing-beam at intervals, mechanism arranged to operate said toggle-levers synchronously and in unison, and a series of plungers arranged under the pressing-beam, as set forth.



2. The combination, with a prolonged upright press-frame adapted to sustain a number of cheese-hoops in an upright position side by side, of toggle-levers arranged over the respective cheese-hoops and connected with one another, a series of plungers interposed between the toggle-levers and cheese-hoops, and a screw arranged to operate the toggle-levers simultaneously, as set forth.

3. The combination, with the prolonged upright press-frame A P P B and prolonged pressing-beam C, of two series of toggle-levers, D D, distributed over the pressing-beam and arranged conversely in relation to each other, the tie-rods *c*, connecting the respective toggle-levers of each series with one another, the nuts *n'*, connected in the first of each series of toggle-levers, the right-and-left screw *s*, a lever or other mechanical power connected to said screw, and a series of plungers connected to the pressing-beam, all as shown and described.

4. The combination, with a prolonged press-frame, of a series of plungers arranged to yield and conform to the unevenness in the heights of the several cheeses to be pressed, substantially as set forth.

5. The combination, with the prolonged pressing-beam C, of the plungers E E, composed respectively of two parts, *b b*, and an intermediate spring, *d*, as described and shown.

6. In an upright gang-press, the combination, with a prolonged press-bed and a prolonged press-head, of tie-rods connecting said members intermediately of their length, as shown and set forth.

7. In an upright gang-press, the combination, with a prolonged press-bed and a prolonged press-head, of tie-rods connecting said members intermediately of their length, and a pressing-beam moving between and guided by said tie-rods, as described and shown.

256,905. PICK FOR MILL AND OTHER STONES. LAWRENCE LAFAYETTE, Suncook, N. H. Filed Nov. 10, 1881. (No model.)



Claim.—As an improved article of manufacture, a pick composed of a stock provided with recesses to receive and inclose the shanks of the blades on all sides, of a series of blades, *b*, having their shanks fitted into the said recesses in the stock, and of a single pin for each series of blades, the said pins being extended through the said blades and screwed into the stock, substantially as described.

256,906. RECEIVER FOR TELEPHONES. ROBERT M. LOCKWOOD, New York, N. Y., assignor to the Molecular Telephone Company, same place. Filed Sept. 10, 1881. (No model.)



Claim.—1. In a telephone-receiver, a diaphragm composed of cork or equivalent non-resonant and non-magnetic material and provided with a central perforation, in combination with a disk or plate of glass covering said perforation, substantially as described

2. The diaphragm of cork, provided with a central perforation, in combination with disks or plates of glass arranged on opposite sides of said diaphragm, covering the perforation therein and forming a sound-chamber between them.

3. The diaphragm of cork, made in two parts, consisting of a central perforated disk and a ring surrounding said disk, in combination with a plate or plates of glass covering the perforation in said central disk.

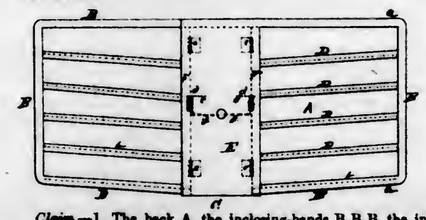
256,907. RECEIVER FOR TELEPHONES. ROBERT M. LOCKWOOD, New York, N. Y., assignor to the Molecular Telephone Company, same place. Filed Sept. 10, 1881. (No model.)

Brief.—A reduced flexible extension of the magnet-core is in contact with a piece of carbon attached to the center of a diaphragm made of cork. The molecular vibrations of the magnet are communicated to the carbon and through the same to the diaphragm.



Claim.—In a telephone-receiver, a diaphragm of cork, provided with a central button of carbon or its equivalent, applied thereto substantially as specified, in combination with the magnet having the reduced elastic extension resting in contact with said button, substantially as and for the purpose described.

256,908. POOL-BALL HOLDER. WILLIAM H. MARSHALL and CHARLES H. ANDERSON, Bridgeport, Conn. Filed Jan. 7, 1882. (No model.)



Claim.—1. The back A, the inclosing-bands B B B, the inclined plates D D D, cover E, stops F F', and discharge C, when combined substantially as described.

2. The combination of the cover, hinged stops F, the springs *d d*, and the pull *g*, when arranged and operated as described and set forth.

256,909. TOY THEATER OR PUNCH-AND-JUDY SHOW. NEWMAN R. HARSHMAN, New York, N. Y. Filed Jan. 11, 1882. (No model.)

Claim.—1. In a toy, the combination, with a revolving roller having a recess and shoulder, of a figure pivoted over said roller on a block and arranged to be thrown up to an erect position by the engagement of the shoulder with said block, substantially as set forth.

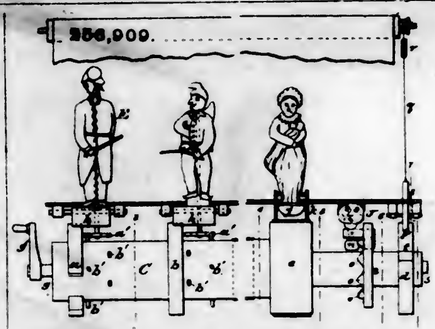
2. In a toy, the combination with a roller provided with a recessed flange, *a*, and pins *b'*, of a figure, E, mounted on a block, *h*, pivoted over the roller, the head of the figure being arranged to be moved independently by means of a stem acted upon by the pins *b'* in the roller as the latter turns, all arranged substantially as and for the purposes set forth.

3. The combination, in a toy, of a roller, an endless band or apron, an idler-pulley for the band to pass over, and a figure or figures pivotally mounted on said band and weighted at the bottom to maintain them in an erect position, substantially as and for the purpose set forth.

4. In a toy, the combination, with a figure arranged to be thrown up to an erect position by means of a shoulder on a roller, and the said shouldered roller provided with projecting pins, of a star-wheel, *a'*, fixed on the lower end of the stem which bears the head of the figure, substantially as set forth.

5. In a toy theater wherein figures appear and move on the stage, the combination, with the roller which actuates the figures, of a belt or apron bearing legends or inscriptions, the said roller and apron being arranged to exhibit said inscriptions at the proper times in order to illustrate the acts or purposes of the figures on the stage, substantially as set forth.

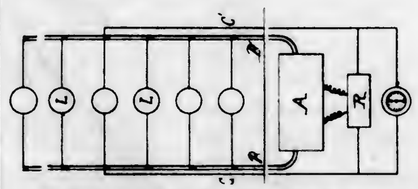
256,909.



6. The combination, in a toy, of an actuating-roller, C, provided with a cam, *c*, a head, J, a stem, *s*, a lever, *m*, on which the head is pivoted, and projections *o* on the sides of the cam *c*, said projections being arranged to impinge against the stem *s* as the cam rotates and raises the head into view, substantially as set forth.

7. In a toy theater wherein a stage is employed, the combination, with an actuating-roller, C, for imparting movements to the actors or figures, of a curtain, K, curtain-roller *p*, cord *q*, lever *s*, provided with a short arm, *s'*, and a notched flange, *d*, on the roller C, arranged to actuate the lever *s* and raise the curtain, substantially as set forth.

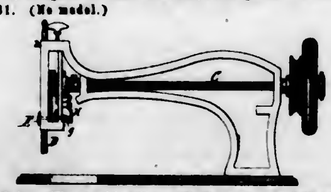
256,910. SYSTEM OF ELECTRICAL GENERATION AND DISTRIBUTION. HIRAM S. MAXIM, Brooklyn, assignor to the United States Electric Lighting Company, New York, N. Y. Filed Apr. 21, 1881. (No model.)



Claim.—1. The combination, with a main circuit and a group of branch or multiple-arc circuits containing devices for utilizing and converting the current, of a branch circuit taken off from the main conductors at or near the center of the group of branch circuits and containing devices for regulating the amount of current supplied to the main circuit, substantially as set forth.

2. The combination, in a system for generating and distributing electric currents, of one or more generators, A, main conductors B B, and two or more cross-circuits containing the devices for converting the current, with circuit C C', taken from the main wires at or near the center of the group of cross-circuits and brought back to operate the regulator R, connected with the generators, as and for the purpose set forth.

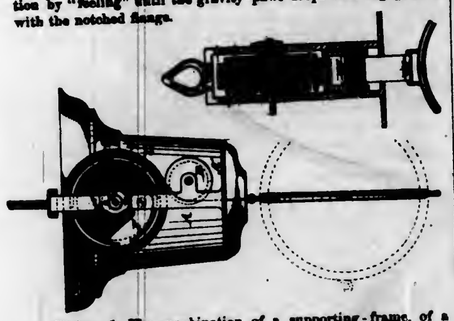
256,911. SEWING-MACHINE. NICHOLAS HEYNES, Buffalo, N. Y., assignor to John H. Fair, same place. Filed June 8, 1881. (No model.)



Claim.—The combination, with the motor-shaft C, of an actuating-cam, I, secured thereto, a disk, E, located near the lower end of the head of the machine, adapted to clamp the needle-thread between itself and the head of the machine, and attached to a stem, *f*, a spring, *g*, applied to the stem *f* and tending to press the disk E against the needle-thread, and a lever, H, operating the stem *f* from the cam I, the parts being so combined that the disk E is held away from the needle-thread by the lever H bearing against the stem *f*, except during the downward movement of the needle-bar before the needle enters the cloth, when the stem *f* is automatically released by the lever H and the disk E pressed against the needle-thread by the spring *g*, thereby preventing the formation of loops before the needle enters the cloth, substantially as set forth.

256,912. SPRING-BALANCE FOR LAMPS. CHARLES G. MILLER, Bridgeport, Conn. Filed Dec. 24, 1881. (No model.)

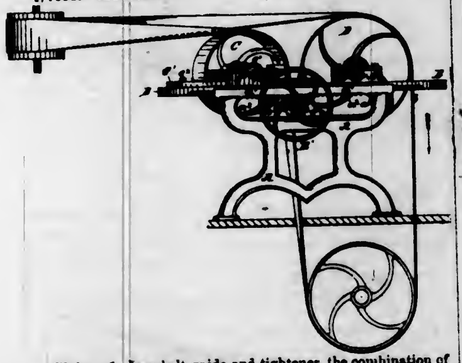
Brief.—When it is desired to raise the fixture the same is pulled down slightly against the stress of a spring to take the gravity-pawl F out of engagement with the notched flange C, when the stress of the spring and the power applied below will carry up the fixture. The fixture is secured at any desired elevation by "feeling" until the gravity-pawl drops into engagement with the notched flange.



Claim.—1. The combination of a supporting-frame, of a spring-actuated drum, and of a metallic suspension band or tape applied to the drum, with one or more gravity-pawls applied to a stationary end plate and adapted to engage notches in the flanged circumference of the same, substantially as set forth.

2. The combination of the following parts: a supporting-frame having a centrally-perforated bottom plate and top hook or eye, a fixed transverse spindle, a spring-actuated drum, a metallic suspension-tape applied to the drum, one or more gravity-pawls pivoted to a stationary end plate and adapted to engage notches in the flanged circumference of the spring-drum, and a guide-roller below the drum and at one side of the bottom opening of the frame, substantially as set forth.

256,913. BELT GUIDE AND TIGHTENER. JONATHAN MILLS, Chicago, Ill., assignor of three-fourths to Samuel S. Chisholm and Wellington P. Chisholm, both of same place. Filed Jan. 4, 1882. (No model.)



Claim.—1. In a belt guide and tightener, the combination of the frame A, adapted to be secured to the floor, the pulley-frame B, arranged to slide horizontally upon the frame A, and the pulleys C and D, mounted on the frame B, together with means for adjusting and securing said frame B, all for the purpose of deflecting a belt from one shaft to another, when located in the relative positions shown, substantially as described.

2. The combination, in a belt-guide, of the frame A, provided with the loose pulleys C and D, arranged as shown, the former being smaller than the latter, and set, or adapted to be set, at an angle with the former, substantially as and for the purpose set forth.

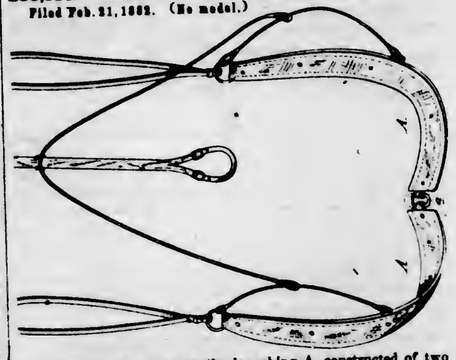
3. In a belt guide and tightener, the combination of the frame A, provided with a rack, *a'*, the pulley-frame B, fitted to slide in the frame A, the shaft E, provided with a pinion fitted to the rack *a'*, and the ratchet *c'* and pawl *c²*, arranged and operating substantially as described.

4. In a belt-guide, the combination, with the pulley D, of the pulley C, having its shaft-bearings adjustable, whereby the angle of its inclination may be varied at will, substantially as described.

5. In a belt-guide, the combination, with the pulley D, of the pulley C, having its shaft-bearings connected by the frame-piece C', adapted to be adjustably secured in place, substantially as described.

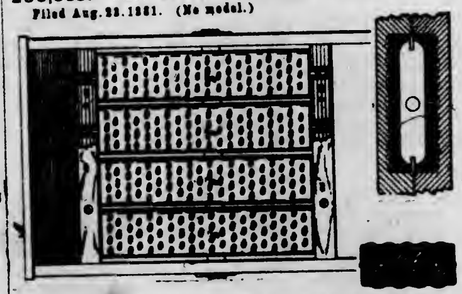
6. In a belt guide and tightener, the combination, with the separate frame-piece C', carrying the pulley C, of the sliding frame B, provided with slots *b'*, and carrying the relatively-fixed pulley D, substantially as described.

256,914. HARNESS. DAVID MORSE, Mount Pleasant, Mich. Filed Feb. 21, 1882. (No model.)



Claim.—In a harness, the breeching A, constructed of two sections of spring-steel or other suitable metal, provided with a protective covering, and secured together at their inner ends by a flexible joint, substantially as herein set forth.

256,915. WASH-BOARD. JOHN MYERS, Philadelphia, Pa. Filed Aug. 23, 1881. (No model.)



Claim.—1. A wash-board consisting in a frame having a series of vertically-pivoted slats which are held in a common plane by springs and adapted to be oscillated under pressure, substantially as shown and described.

2. A wash-board consisting of a frame having a series of vertically-pivoted slats, which are strung upon a rubber band, substantially as shown and described, and for the purpose set forth.

3. In a wash-board, the combination, with a suitable frame, of a series of vertically-pivoted slats and a rubber band or cord which is secured to the frame, and upon which the slats are strung, substantially as shown and described.

4. In a wash-board, the combination of frame A, having its top and bottom cross-pieces, *a a*, provided with bearings for the spindles of the sections, the strips *a' a'*, for holding the spindles in said bearings, the sections *b*, consisting of wooden slats having spindles at their ends and a longitudinal groove in each lateral edge and openings *d*, and which are covered with strips of corrugated metal struck up to fit the slats on opposite sides thereof, and the rubber band which passes through the sections and is secured to opposite sides of the frame, substantially as shown and described.

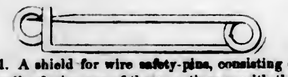
256,916. ART OF STAINING OR ENAMELING GLASS, &c. SYDNEY J. NEWNHAM, New York, N. Y., assignor of one-half to Francis T. Sargent, same place. Filed Oct. 1, 1880. Renewed Dec. 23, 1881. (No specimens.)

Claim.—1. The improvement in the art of decorating glass or similar material with designs in stains or enamels, consisting in covering the ground with a protective ink or equivalent material, leaving the lines to be decorated exposed, filling in said exposed parts with the stain or enamel, and fusing the same with the protective ground surrounding and confining the enamel, substantially as herein set forth.

2. The herein-described improvement in the art of enameling or staining embossed or etched articles—viz., leaving the protective ground intact after the embossing or etching, then applying the enamel or stain, and baking or fusing the same, with the protective ground surrounding and confining the enamel or stain—substantially as and for the purpose herein set forth.

3. In the art of enameling or staining glass or similar material, the step of covering the protective ground with a coating of an absorbent fire-proof paint previous to the baking or fusing operation, substantially as and for the purpose herein set forth.

256,917. SAFETY-PIN. HENRY H. PAINE, Newark, N. J., assignor to F. S. Peshine, same place. Filed Apr. 11, 1881. (No model.)



Claim.—1. A shield for wire safety-pins, consisting of two nearly parallel coils of wire, one of them continuous with the body of the pin, the said coils being separated sufficiently to admit the point of the pin between them, and being combined with a lock or loop of the wire forming the pin, substantially as and for the purpose set forth.

2. The safety-pin provided with the shield formed of two coils of wire separated to receive the point between them, and provided with a lock or open loop bent out of the same piece of wire as the pin and the shield and adapted to guide the point of the pin into the space between the coils, substantially as herein set forth.

256,918. NEEDLE-CASE. JOHN J. PARSONS, New York, N. Y. Filed Jan. 31, 1882. (No model.)



Claim.—1. A needle-case comprising a foundation-card, a band or strip, B, stretched across the front of the same and attached at the sides, and a soft material, C, arranged between the band B and the card, the said parts being connected together on vertical lines to form parallel bottomless pockets, substantially as set forth.

2. A needle-case comprising a foundation-card, a band, B, to form the front of the pockets, a soft filling material, C, and wire staples *g*, arranged to form partitions or divisions between the pockets, substantially as and for the purposes set forth.

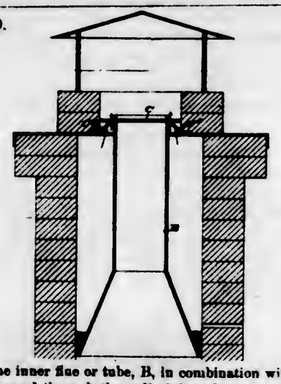
3. The combination, to form a series of bottomless pockets or keepers for the needles in a needle-case, of the foundation-card, the band B, secured thereto, the woolen strip C, interposed between the band B and the card, and the wires *g*, arranged to divide the whole up into pockets, whereby the needles are secured independently in the pockets and are prevented from rusting, substantially as set forth.

256,919. CHIMNEY. JACOB M. PATTERSON, Woodbury, N. J. Filed Dec. 28, 1881. (No model.)

Brief.—The tube B is suspended within the chimney from the top thereof by means of the rod C. The opening *d* in the wall of the chimney is to admit a draft to assist in expelling the heated air.

Claim.—1. The inner flue or tube, B, in combination with the top plate, C', and the deflector C'', the latter being supported on said plate, and the tube projecting through openings in the plate and deflector and suspended within the chimney from said deflector, substantially as and for the purpose set forth.

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2. The inner flue or tube, B, in combination with the rod C, which is passed through the wall of the tube and sustained on the top of the chimney, substantially as and for the purpose set forth.

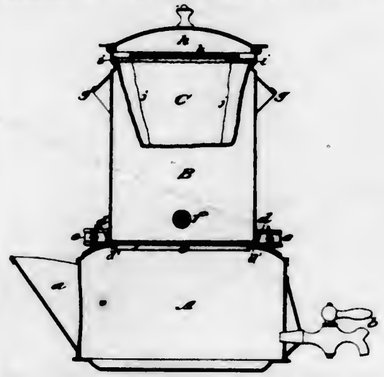
3. The chimney, in combination with the inner flue or tube, B, rod C, deflector C'', and top plate, C', substantially as and for the purpose set forth.

256,920. FRICTION-MATCH. WILLIAM H. PITT, Buffalo, N. Y. Filed Nov. 12, 1881. (No model.)



Claim.—A friction-match composed of a wooden splint having one end provided with a friction compound and the opposite end rendered incombustible, and with an intermediate portion capable of combustion, whereby the flame is confined to the combustible portion of the splint and prevented from extending to the non-combustible portion, which is held between the fingers.

256,921. COMBINED KETTLE AND URN. HENRY C. RICH, Louisiana, Mo. Filed Mar. 30, 1880. (No model.)



Claim.—1. The combination, with a pot or urn provided with a lip or dam and with a bead or ledge directly below said dam, of a flexible filtering bag or strainer provided with a ring to expand its mouth and arranged to be suspended from the bead below the dam, substantially as shown.

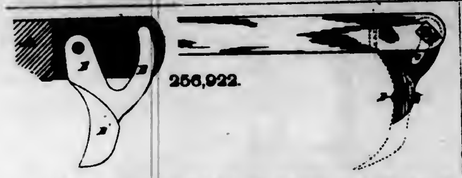
2. The combination, with the urn or pot B, provided with the dam *h* and flexible strainer C, of the kettle A, provided with the opening *e*, the marginal ledge *d'*, and the rim *d*, all substantially as set forth.

256,922. SEEDER OR CULTIVATOR TOOTH. JNO. S. ROWELL, Beaver Dam, Wis. Filed Oct. 13, 1881. (No model.)

Claim.—1. The double-pointed reversible seeder-tooth described, having its opposite ends similarly shaped and its intermediate portion or shank bent to the form shown, said tooth being struck from a single piece of sheet metal, substantially as described.

2. In combination with the beam and with a plate having a slipping connection therewith, a double-pointed tooth consisting of a shank having a blade at each end, and being, as a whole, detachably and reversibly secured to the slipping plate, the elevated

256,922.

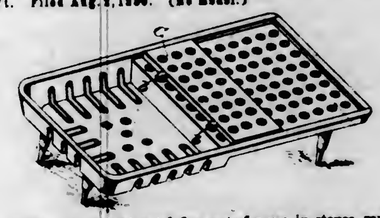


unused point being arranged beneath and near the beam, so as to be guarded thereby, substantially as described.

3. In combination with the beam having an open vertical slot at its rear end, the slipping plate B, connected to slip in said slot, and provided with an extension on its lower margin, a double-pointed tooth, and a means, substantially as described, for securing the tooth directly to and beneath the lower projection of the slipping plate, substantially as and for the purposes set forth.

4. Combined with the beam and with the bent sheet-metal double-pointed tooth described, a slipping plate having a projection thereon shaped to fit the rear concave face of the tooth, and a bolt, D, or its equivalent, for securing the tooth to said projection, substantially as described.

256,923. GRATE FOR STOVES. LAUREN S. SCOTT, Bristol, Vt. Filed Aug. 2, 1880. (No model.)



Claim.—1. A horizontal fire-grate for use in stoves, ranges, and heaters, having a section of its fuel-supporting area constructed in a plane lower than the general plane of such area, so as to constitute a basin or receiver for embers or partially-consumed fuel, the bottom of which basin is perforated with a much less number of draft-apertures than the adjacent portions of the grate, as a means for conserving fuel when the fire is dying out, substantially as specified.

2. A horizontal perforated fire-grate adapted to be used in the combustion-chambers of stoves, ranges, and heaters, in combination with a detachable partition-plate, substantially as herein described, armed with hinge-lugs adapted to articulate with the perforations in the fire-grate, whereby such partition-plate may be hinged to the fire-grate, substantially as described, and for the purposes set forth.

3. A horizontal fire-grate for use in stoves, ranges, and heaters, provided on its upper surface with a hinged perforated rolling partition-plate connected and adjusted as described, so that when erected it shall divide the fire-box into two compartments, between which draft circulation can be maintained through the perforations in said partition, and when recumbent such perforations shall coincide with the openings in the grate itself as a means for admission of air and escape of ashes, substantially as described and set forth.

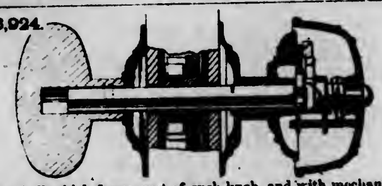
4. The specific means shown for articulating the rolling partition-plate with the grate, consisting of the crank-shaped lug *b*, projecting from the edge of the rolling plate C, constructed with the stop-facets *e* and *f*, arranged at right angles with each other, or so that when the plate is erected, one pair, *e e*, will prevent its further rotation away from the recumbent position, and when the plate is recumbent the other pair, *f f*, will so hold it locked down in such position that it cannot be displaced, substantially as specified.

5. A horizontal perforated fire-grate for use in the fire-boxes of stoves, ranges, and heaters, provided with a detachable falling partition-plate armed with hinge-lugs, the perforations of the grate and the hinge-lugs of the partition-plate being so adapted to each other that the position of the partition-plate may be reversed so as to fall in opposite directions in the manner described, and for the purposes set forth.

256,924. DOOR-KNOB ALARM. JOHN SIMON, New York, N. Y. Filed Jan. 16, 1882. (Model.)

Claim.—1. As an improvement in door-knob alarms, the combination of an alarm mechanism contained within the inner knob

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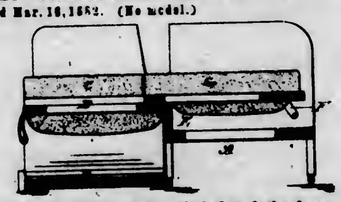


with a bell which forms part of such knob, and with mechanism whereby the alarm is thrown out of contact with the ringing device when the inner knob is turned for opening the door, substantially as and for the purpose set forth.

2. The combination of a knob-spindle, an inner knob composed of a disk connected to the door and a bell loose on the knob-spindle, a pawl-frame sliding on the knob-spindle and having wings or ears and pawls pivoted thereto, with striking mechanism, and a cam-sleeve having a perforated cam or ear, to which the bell is connected by a fixed pin, whereby the cam-sleeve is adapted to engage the pawl-frame and slide it forward clear of the striking mechanism, substantially as set forth.

3. The combination of the fixed disk, the bell, the striking mechanism, an eccentrically-pivoted cam on said disk, adapted to engage a pin of the hammer-tongue, and means for turning said cam from the outside of the knob, whereby the striking mechanism may be thrown out of gear at will, substantially as described.

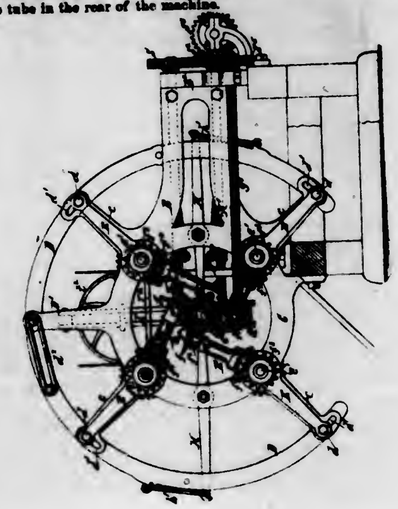
256,925. SOFA-BEDSTEAD. THOMAS SOBEL, New York, N. Y. Filed Mar. 16, 1882. (No model.)



Claim.—In a convertible sofa-bedstead, the frame A, provided with the hinged back E and brace F, in combination with the reversible front portion, B C D, substantially as and for the purpose set forth.

256,926. MACHINE FOR CUTTING GREEN CORN OFF THE COB. WELCOME SPRAGUE, Farnham, N. Y. Filed Jan. 12, 1882. (Model.)

Brief.—The corn is fed to a series of self-adjusting feed-wheels by means of an endless feed-belt. The ear is then forced forward between the self-adjusting cutters, one set of which is arranged horizontally and the other vertically. Thence it passes between two sets of feed-wheels and scrapers, and is discharged through the tube in the rear of the machine.



Claim.—1. In a machine for cutting green corn from the cob, the combination, with self-adjusting cutters, of an endless feed belt, *g*, and feed-wheels *f*, arranged between the feed-belt and the cutting mechanism, substantially as set forth.

2. In a machine for cutting green corn from the cob, the combination, with self-adjusting cutters and scrapers, of a feed-trough, G, and endless feed-belt *g*, arranged in said trough, with its upper portion exposed to receive the ears of corn, substantially as set forth.

3. The combination, with the self-adjustable cutters *h*, of self-adjustable feed-wheels *f*, mounted on swinging arms E, substantially as set forth.

4. The combination, with the cutters *h i* and scrapers L M, arranged in rear of the cutters, of feed-wheels arranged between the several sets of cutters and scrapers, substantially as set forth.

5. In a machine for cutting green corn, the combination, with the cutting mechanism, of a feed-belt and feed-wheels, whereby the ears are fed between the cutters, and of feed-wheels and scrapers arranged in rear of the cutters, substantially as set forth.

6. The combination, with the stationary ring C and movable ring D, of the arms E, pivoted to the ring C and attached with their outer ends to the ring D, and guide-plates *e* and feed-wheels *f*, mounted on the inner ends of the arms E, substantially as set forth.

7. The combination, with the stationary ring C and movable ring D, of guide-plates *e* and feed-wheels *f*, mounted on adjustable arms E, and cutters *h*, mounted on adjustable arms H, substantially as set forth.

8. The combination, with the stationary ring C and movable ring D, of guide-plates *e* and feed-wheels *f*, mounted on arms E, cutters *h*, mounted on arms H, and springs *h'* and shoulders h^2, whereby the arms H are connected with the ring D, substantially as set forth.

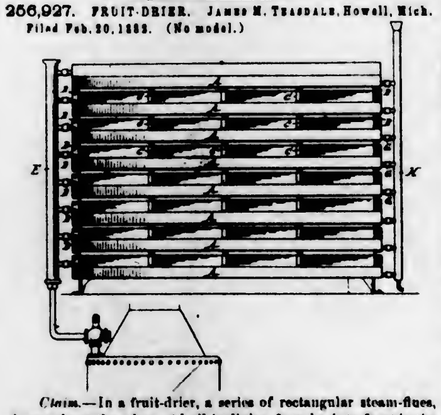
9. The combination, with the arms E, of the shafts *e'*, on which said arms turn, shafts *f'*, supported in the arms E, feed-wheels *f*, secured to the inner ends of the shafts *f'*, and gear-wheels f^3 f^4, whereby the shafts *e'* *f'* are connected, substantially as set forth.

10. The combination, with the feed-wheels *f*, of guide-plates *e*, provided with slots f^5, through which the feed-wheels project, substantially as set forth.

11. The combination, with the cutting and scraping mechanism, of feed-wheels *N* N N' N', made self-adjusting toward and from each other, substantially as set forth.

12. The combination, with the ring C, of the sleeve R, secured thereto, shafts *e'*, whereby the feed-wheels *f* are driven, and a gear-wheel, T, turning on the sleeve R and meshing with wheels *t*, mounted on the rear ends of the shafts *e'*, substantially as set forth.

256,927. FRUIT-DRIER. JAMES M. TEASDALE, Howell, Mich. Filed Feb. 20, 1882. (No model.)

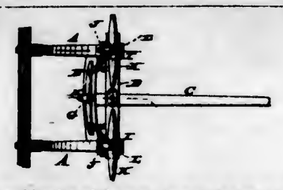


Claim.—In a fruit-drier, a series of rectangular steam-flues, A, one above the other, and all inclining from back to front in the same direction, in combination with the steam-inlet E and exhaust H, and separate connections between each flue and the inlet and exhaust pipes, said exhaust-pipe connections being made at the lowest end of the flues, substantially as shown and described.

256,928. POLE AND SHAFT FOR VEHICLES. DIODEMUS B. TERRELL, Wytheville, Va. Filed Feb. 11, 1882. (Model.)

Claim.—1. The combination of the arms A, cross-brace B, having recess F, pole C, having cross-bar D and strap E, sockets I, having brackets J, single-trees K, and suitable connecting-bolts, substantially as set forth.

256,928.



2. The combination of the arms A, cross bar or brace B, pole C, having cross-bar D, sockets I, having brackets or clips J and suitable connecting-bolts, and braces M, connecting said bolts with the cross-bar B, substantially as set forth.

256,929. DOOR-HANGER. LE GRAND TERRY, Dundee, N. Y. Filed July 18, 1881. (No model.)



Claim.—1. The hanger C, having a hinge-joint between the door and rail, and having the roller *a* at its upper end and holes for the pivot D, all as above specified.

2. The part F, having the downward projection, in combination with a hanger having a horizontal wheel and vertical roller attached to a right-angled piece integral with the hanger-strap, as herein shown and described.

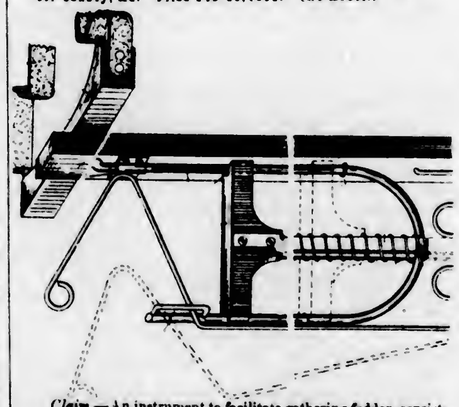
256,930. LAMP. THOS. C. J. THOMAS, 54, 55, and 56 Minories, County of Middlesex, England. Filed Oct. 3, 1881. (No model.) Patented in England June 26, 1880, in France Dec. 22, 1880, and in Belgium Dec. 24, 1880.



Claim.—1. The chimney G, having the openings H formed at suitable positions around the chimney, being independent of each other, in combination with the parabolic or other suitably-tapering formed chambers, mounted with their small ends in the openings H and their expanded ends bearing against the side of the lantern, whereby both the chimney and the reflectors are held in place, substantially as set forth.

2. In a lamp, the combination of the chimney G, provided with the holes H, and supported by the ends of the chambers J J entering said holes H, with said chambers J, and with the burner C set diagonally in relation to the chambers, substantially as set forth, and for the purpose specified.

256,931. FODDER-HOLDER. WILLIAM S. TILGHMAN, Worcester County, Md. Filed Feb 25, 1882. (No model.)



Claim.—An instrument to facilitate gathering fodder, consisting of a holder having two straight parallel sides, a spring-actuated follower moving in the said two sides and constituting the bottom of the holder, a spring-actuated device to close the top of the holder above the follower, and means, substantially as described, for attachment to the human body, as set forth.

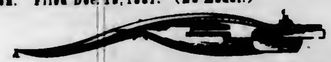
256,932. BEE-HIVE. FRANK DELLA TORRE, Baltimore, Md. Filed Feb. 25, 1882. (No model.)



Claim.—1. A bee-hive provided with bags or cushions containing quicklime or lime partly slaked, substantially as and for the purposes set forth.

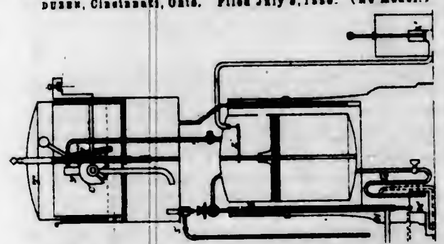
2. A bee-hive provided with quicklime or lime partly slaked, located in its interior, substantially as and for the purposes set forth.

256,933. EXTENSION-GUARD FOR REAPERS. HENRY E. TRUMBLE, Kalamazoo, and FREDERICK A. KETCHUM, Three Rivers, assignors of one-third to Frederick Motop, Kalamazoo, Mich. Filed Dec. 19, 1881. (No model.)



Claim.—In a reaper, the combination, with a sickle-guard, of an extension guard or finger curving downward and outward from said guard, and having the shoulder with the mortise in which the point of the sickle-guard is located, and the elongated slot adapting it to the varying types of reaper-guards, all substantially as set forth.

256,934. AUTOMATIC GAS APPARATUS. BENJAMIN C. VANDUSEN, Cincinnati, Ohio. Filed July 8, 1880. (No model.)



Claim.—1. In an automatic gas apparatus, a gasoline-tank, in combination with generating-pipes connected with the tank at the top and bottom, in which the gasoline is vaporized by heat, whereby the gasoline is fed from the bottom of the tank to be vaporized in the pipes and the hot vapor from the pipes discharged in the tank above the gasoline, substantially as described.

2. In an automatic gas apparatus, a gasoline-tank, in combination with generating-pipes connected with the tank at the top and bottom and containing a float, so that when gasoline is introduced into the tank and heat applied to the pipes the compartment under the float shall supply the gasoline to the pipes, to be therein vaporized, and the pipes shall conduct the vapor into the tank above the float, substantially as described.

3. The generating-pipes, combined with the double bent supply-pipe at the bottom of the gasoline-tank and a single pipe at the top of the tank, substantially as described.

4. The hot-water boiler and its connections with the hot-water tank, arranged to direct the greatest heat from the water against the lower ends of the generator-pipes for vaporizing the gasoline at the lowest point, substantially as described.

5. The combination of the water-leg and connecting-pipe with the hot-water boiler, the hot-water tank, and the generating-pipes, substantially as described.

6. The combination of the vapor-and-gasoline tank containing the float, the generating-pipes, the inclosing hot-water tank separated from the gasoline-tank by an air-space, and the hot-water boiler connected with the bottom of the water-tank, substantially as described.

7. The float, of a diameter nearly equal to that of the gasoline-tank, and composed of two sheet-metal disks, with a filling of cork between them, substantially as described.

8. The governor for regulating the flow of the hydrocarbon vapor into the gasoline-tank, in combination with said tank and the generating-pipes, and actuated automatically by the pressure of the vapor in said tank to cut off the vapor at the desired pressure in said tank and to open for continuing the supply when the pressure is reduced, substantially as described.

9. The governor or regulator consisting of two elastic metal disks secured together at their edges, a shell upon which the disks are secured, and the valve-stem attached to the upper disk and extending through the lower disk and shell to seat the valve against the under side of the shell, in combination with the gas-holder and vapor-and-gasoline tank, substantially as described.

10. The gasometer, combined with the vapor-and-gasoline tank and the regulator-valve in the generating-pipes, substantially as described.

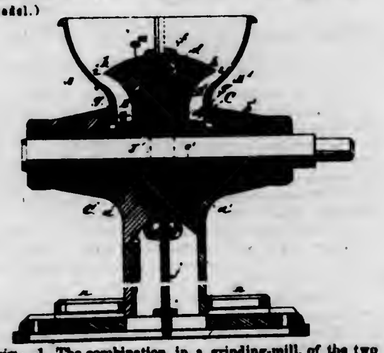
11. The combination of the cam, the angular tripping-lever and notched disk, and long pivoted link with the vapor-supply valve and inverted cylinder of the gasometer, substantially as described.

12. The combination, with the gasometer and hot-water tank, of the vapor-pipe, whereby the liquid of condensation of the gasometer is vaporized and returned to the gasometer, substantially as described.

13. The valve between the gasometer and pipe for supplying oxygenated vapor to heat the water-boiler, in combination with the regulator or governor valve in the generating-pipes, for the purpose of regulating the heat under the boiler in proportion to the varying pressure of the vapor in the generators, substantially as described.

14. The combination of the stand-pipe E' with the gasometer and the seat for the valve through which vapor is supplied to heat the water-boiler, substantially as described.

256,935. GRINDING-MILL. ANDREW S. WEAVER, Jay, N. Y., assignor to Charles H. Morse, Chicago, Ill. Filed Apr. 8, 1880. (No model.)



Claim.—1. The combination, in a grinding-mill, of the two parts A A', composing the casing, with the outer stationary grinding-rings, B B', respectively, connected with said two parts of the casing, and formed with hubs having grinding-faces and the inner rotary grinder, C, composed of two parts, each formed with a hub having a grinding-surface, substantially as described.

2. The combination, in a grinding-mill, of the rotary shaft with the grinder C, having a circumferential groove, *d*, and provided with scrapers *r*, the ring *f*, having a flange, d^3, received into said groove, the partition *j*, dividing the delivering-passage, and the grinding-rings B B', said members being constructed and organized substantially as and for the purpose described.

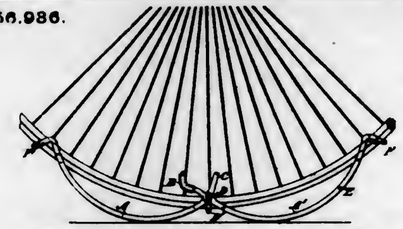
3. The combination, in a grinding-mill, of the two-part casing A A', having the wings A, arranged within the hopper substantially as set forth, with the stationary grinding-rings B B', having hubs *a a'* and openings *g*, and the rotary grinder C, all constructed and arranged substantially as and for the purpose specified.

256,936. STAND FOR BICYCLES. CHARLES WICKSTEED, Kettering, County of Northampton, England. Filed Mar. 8, 1882. (No model.) Patented in England Mar. 8, 1880.

Claim.—1. A bicycle-stand composed essentially of two frames hinged together for folding one over the other, and provided with means for holding a bicycle upright off the ground when said frames are unfolded, as described.

2. A bicycle-stand composed essentially of two frames hinged together for folding one over the other, and provided with means for holding a bicycle in an inverted position off the ground when so folded, as and for the purpose specified.

256,936.



3. The curved frames A A', jointed together by the cross-rod D, and having their ends prolonged beyond said joint and forming respectively the hooks B and legs C, substantially as set forth and shown.

4. The combination of the frame A, having extensions or legs C, with and connected to the frame A', having extensions or hooks B, and capable of being folded over upon frame A, the combined frames then forming a stand suitable for holding a bicycle in an inverted position, substantially as set forth and shown.

5. The combination of the jointed frames A A', having recesses F at their extremities, with the centrally-cranked rod D, whereby the wheel may be run onto the stand and cause said stand to grip its periphery in the said recesses F by reason of the weight of the wheel depressing the central rod, substantially as set forth.

6. The frames A A', hinged together for folding one over the other, and having the recesses F, bearings B, and legs C C, in combination with the stops or lugs E E, substantially as and for the purposes specified.

256,937. RAZOR-STROP. CHARLES H. WILCOX, Detroit, Mich. Filed Mar. 15, 1882. (No model.)



Claim.—1. A razor-strop provided with a recess, the neck of which is interiorly threaded, in combination with a brush having a threaded portion to engage with said threaded strop, substantially as described.

2. A razor-strop provided with a recess, the neck of which is interiorly threaded, in combination with a brush having a threaded portion to engage with said threaded strop, the handle of the brush being adapted to also form the handle of the strop.

3. The combination, with a strop provided with a recess to receive a razor and with a recess to receive a brush, of a brush having a threaded ferrule to screw into the brush-recess, substantially as specified.

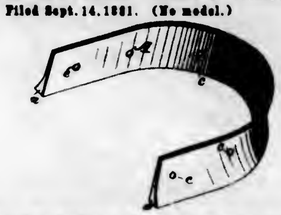
4. A razor-strop provided with a recess to receive a brush, said recess being interiorly threaded, in combination with a brush having a threaded ferrule and means, as described, for ventilating said recess when the brush is in place, substantially as and for the purposes set forth.

256,938. MECHANISM FOR REGULATING CLOCK-PENDULUMS. JOHN W. WILLIAMS, New York, N. Y. Filed Feb. 4, 1882. (No model.)



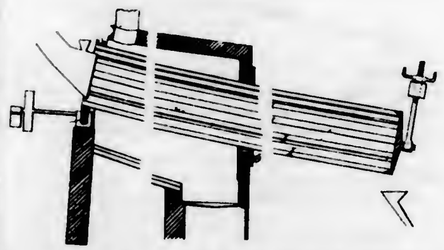
Claim.—As an improvement in clocks, the combination, with the center arbor, of an axially-turning pinion or toothed segment having a fixed pointer-arm bent over the dial, with a vertically sliding and guided rack carrying a split movable stud, and with a pendulum-rod suspended from a fixed stud above the movable stud, substantially as set forth.

256,939. HEEL-PLATE. MORRIS D. WILLIAMS, Syracuse, N. Y. Filed Sept. 14, 1881. (No model.)



Claim.—The heel-plate A, of U-shape form, and adapted to pass around the outer surface of the heel, said plate at its lower edge having a flaring or wide bearing-surface, *a*, and decreasing in thickness therefrom to its upper edge, and provided with holes *c*, for connecting it to the heel, substantially as and for the purpose set forth.

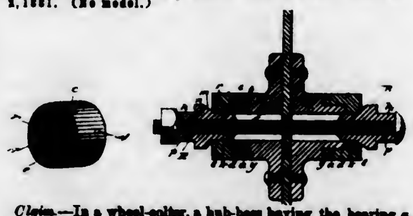
256,940. MACHINE FOR DRYING AND COOLING GRAIN AND OTHER SUBSTANCES. STANLEY E. WORRELL, Hannibal, Mo. Filed Nov. 4, 1881. (No model.)



Claim.—1. In a drying and cooling device, the combination of the inclined revolving metal cylinder or case containing cups or troughs and partly inclosed or surrounded by a furnace or heating-chamber, with the means of producing a current of air, and appliances for varying the inclination of said cylinder and rotating it, substantially as described.

2. In a drying and cooling device, the combination of the inclined revolving metal cylinder or case containing cups or troughs and partly inclosed or surrounded by a furnace or heating-chamber, and appliances for varying the inclination of said cylinder and rotating it, substantially as described.

256,941. WHEEL-COLTER. WILLIAM B. YOUNG, Alton, Ill., assignor to Hapgood Plow Company, same place. Filed Dec. 2, 1881. (No model.)



Claim.—In a wheel-colter, a hub-bem having the bearing *a*, shoulder *y*, and clutch *b*, in combination with the cap-bush A, having the recess *d*, with slit *e*, shoulder *r*, and bearing *c*, and with the plug-bush B, having the bearing *h*, oblique shoulder *m*, and extension *k*, all arranged and operating substantially as and for the purpose set forth.

256,942. FOLDING BEDSTEAD. CHARLES F. YOUNGBERG, Salt Lake City, Utah. Filed Mar. 18, 1882. (No model.)

Claim.—1. A folding cot constructed substantially as described, and provided with elastic strips I, for holding the canvas in position when folded, substantially as set forth.

2. In a folding cot, a head-rest provided with ratchet bars or props H, working in suitable notches K at the ends of the rails A, and secured by hoopers *h* and springs L, substantially as and for the purpose herein described.

3. In a folding cot, the combination, with the canvas bottom having its edges corded, of cleats E, secured to the rails A and provided with a rabbet for holding said corded edges, substantially as herein described.

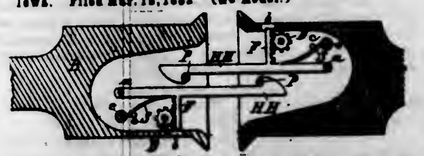
4. In a folding cot, the braces C, provided with studs *c*, for insertion in corresponding sockets in the rails A, substantially as and for the purpose herein described.

5. A folding cot having legs B, provided with lateral lugs *m*, for allowing them to be pivoted at exactly opposite points on the rails A, substantially as and for the purpose herein described.

6. In a folding cot, a hinge consisting of a staple, *f''*, and a right-angled strip or leaf, *f*, in combination with the bar F and prop H, substantially as herein described.



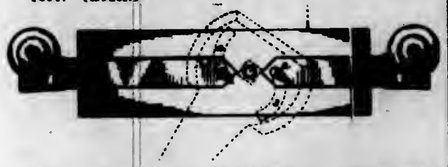
256,943. CAR-COUPLING. CARL G. A. ALEXANDER, Alden, Iowa. Filed Mar. 16, 1882. (No model.)



Claim.—1. The combination, with a draw-head, B, provided with a central opening, and a side opening, *b*, of the pivoted hook H H, rack-bar F, secured thereto, pinion D, spring S, and coupling-pin P, substantially as described, and for the purpose set forth.

2. The combination of the draw-head B, pivoted hook H H, rack-bar F, secured to said hook, shaft K, provided with the pinion D, ratchet-wheel R, and hand-wheel C, pawl A, spring S, stops *c*, and coupling-pins and stops P, substantially as described, and for the purpose set forth.

256,944. MACHINE FOR UPSETTING AND STRETCHING TIRES. ROBERT B. ALEXANDER, Niagara, Pa. Filed Nov. 16, 1881. (Model.)

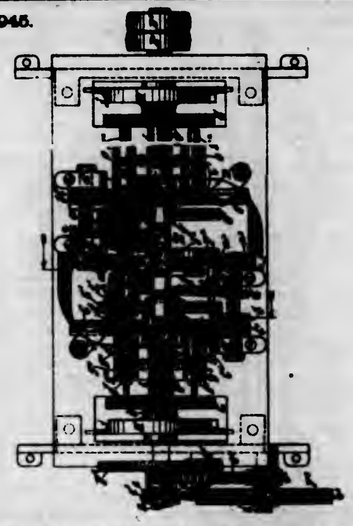


Claim.—In combination with the sliding bars and operating-lever, the tire-holders pivoted to said sliding bars, and having the fixed jaw, the movable jaw, the threaded shank, and the screw grip or handle, all substantially as described.

256,945. MACHINE FOR TURNING SPOOLS. ERWIN ALLEN and JOHN H. HOGARSON, Norwich, Conn., assignors to the Allen Spool and Printing Company, same place. Filed June 16, 1881. (No model.)

Brief.—The spool-blank is taken from a hopper (which has an adjustable throat) by oscillating pairs of spindles. The spindles are moved lengthwise in their oscillating supports by stationary spring-pressed cams, and thus caused to approach each other. Two pairs of spindles are provided, which move alternately from the hopper to revolving cutters on each side, the bottom of the hopper being closed meanwhile by interlocking tongues extending from the spindle-supports. The points on the spindles which enter the central hole of the blank are made yielding. Spring-hook cams retract the spindles at the proper time.

Claim.—1. In a spool-turning machine, the combination of a feeding-throat, a cutter or cutters, a pair of spindles movable toward and from each other, and having separately-yielding centers therein, which are adapted to enter the holes in the spool-blanks, a vibrating or reciprocating carrier in which said spindles are fitted, and which carries said spindles from said feeding-throat to said cutter or cutters for presenting spool-blanks to said cutter or cutters, and cams between which said spindles are carried, and which force the spindles toward each other to clamp a spool-blank between them, the centers of the spindles yielding when a spool blank which has not been bored is fed between the spindles, substantially as specified.



2. In a spool-turning machine, the combination of a feeding-throat, a cutter or cutters, a pair of spindles movable toward and from each other, a vibrating or reciprocating carrier in which said spindles are fitted, and which carries said spindles from said feeding-throat to said cutter or cutters, and spring-actuated pushers, which serve as cams, between which said spindles are carried, and which force said spindles toward each other to clamp a spool-blank between them, substantially as specified.

3. In a spool-turning machine, the combination of a central throat through which spool-blanks are delivered into the machine, a pair of pivoted carriers having their upper ends extending inward toward each other below said throat to form a support for the spool-blanks therein, and pairs of rotary spindles carried by said carriers, and which are alternately brought below said throat, substantially as specified.

4. In a spool-turning machine, the combination of a central throat, and two pivoted carriers, each having in it a pair of rotary spindles, which are alternately moved below said throat, and having their upper portions extending under said throat and provided with steps or depressions between the spindles of each pair, substantially as specified.

5. In a spool-turning machine, the combination of a central throat for spool-blanks, and two carriers having in them pairs of spindles which are alternately brought under said throat, and having their upper portions extending toward and past each other beneath said throat, so as to form a permanent support for the spool-blanks in said throat, substantially as specified.

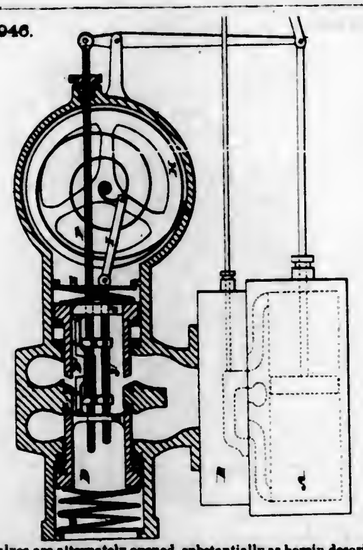
6. In a spool-turning machine, the combination of a central feeding-throat, carriers, each provided with a pair of spindles, and which are brought alternately under said throat to receive a spool-blank between said spindles, and hinged guards, which form the opposite sides of said throat at its lower end, and which are adapted to be swung outward by the spool-blanks as the carriers and spindles holding said blanks are moved outward, but which cannot swing inward, and therefore serve to remove the spools from between the spindles as the carriers and spindles are moved inward past said guards, substantially as specified.

7. The combination of the throat *c*, the carriers B B', provided with arms *d d'*, the shaft F', the rods *d*² *d*³, and the shaft F, provided with cams F' F², for operating said rods to move said carriers in one direction, and the springs *d*⁴, for moving said carriers in the other direction, substantially as specified.

256,946. STEAM-ENGINE GOVERNOR. LEE W. ANDREWS, Live Oak, Cal. Filed Dec. 19, 1881. (No model.)

Claim.—1. The valves D D', reciprocating within a case and caused to close against central seats by springs E, in combination with the valve-stem F, having the central collar, *c*, the hinged pawls *i*, acting against the ends of this collar, and the arms K, whereby

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the valves are alternately opened, substantially as herein described.

2. The valves D D′, reciprocating in a case and having the pawls *i* resting against the ends of the collar *e* upon the reciprocating valve-stem F, and spring E, in combination with the arms K, secured to the rod J, which is reciprocated by the action of the balance-wheel H, said arms tripping the pawls and allowing the valves to close, substantially as herein described.

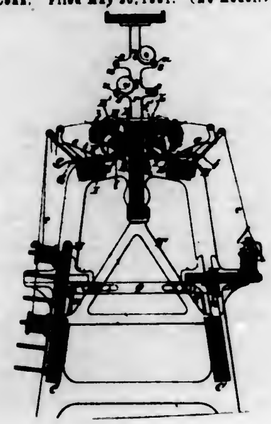
3. The valves D D′, reciprocated in a case, A, by the valve-stem F, and collar *e*, pawls *i*, and springs E, and having the seats *a*, said valves having flanges *b*, to inclose an air-cushion between themselves and the shoulder *c* of the cylinder, substantially as herein described.

4. In a governor for engines, a releasing mechanism constructed substantially as shown and described, and adapted to be operated by the isochronal vibrations of the pendulum or balance-wheel H, substantially as herein described.

256,947. PROCESS OF TREATING FRUIT-TREES. JOHN M. ASKIN, Oshtemo, Mich. Filed Nov. 21, 1881. (No specimens.)

Claim.—The process of treating diseased fruit-trees, which consists in cutting awa the diseased branches, varnishing the trunk and branches with soap, burying under the roots cast-iron covered with a compound of condensed lye, lime, and sulphur, wetting the same, and in scattering over the ground sulphur and salt, in substantially the proportions specified.

256,948. MACHINE FOR DOUBLING AND WINDING SILK AND OTHER FIBROUS MATERIALS. JOHN E. ATWOOD, Stonington, Conn. Filed May 20, 1881. (No model.)



Claim.—1. The combination, with a winding-bobbin having a ratchet spindle-head and a friction-wheel for driving said bobbin, of drop-wires and a drop lever or pawl having its fulcrum arranged as described, whereby when the said lever or pawl is brought into operation by the breakage or giving out of a thread the said lever or pawl, by its action on the ratchet, produces not only the stoppage of the bobbin, but also raises the spindle out of contact with the driving-wheel, substantially as herein described.

2. The combination, with the elbow drop lever or pawl and the rail or support for the same, of an adjustable stand carrying said lever and an adjusting-screw for adjusting the stand upon said rail or support, substantially as and for the purpose herein set forth.

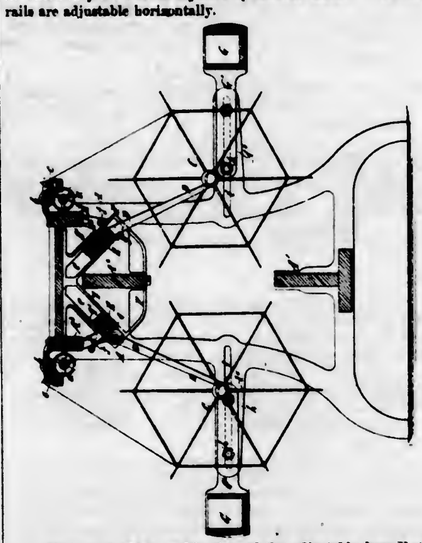
3. The combination, with a winding-bobbin spindle and means of driving the same and a stop-lever serving to stop the said spindle, of a sector-faced lever to be actuated by the friction of the material wound on the bobbin, and serving to bring the said stop-lever into operation on the spindle, substantially as specified.

4. The combination, with a winding-bobbin and a spindle therefor having ratchet-teeth on its head, and means for driving the said spindle, of the drop-lever G, which operates on said ratchet to stop the said spindle and the sector-faced lever L, actuated by the material on the bobbin and acting through the drop-lever to stop the spindle when sufficient material is on the bobbin, substantially as herein specified.

5. The combination, with the frame provided with cross-slotted or cross-grooved pocket-pieces, and the removable and convertible bobbin-boards or jack-boards fitted to said pocket-pieces, of supporting-braces Q, adjustable to be adapted either to bobbin-boards or jack-boards, substantially as specified.

256,949. MACHINE FOR WINDING SILK. JOHN E. ATWOOD, Stonington, Conn. Filed May 20, 1881. (No model.)

Brief.—The reels are supported in hangers attached to bars, which are supported transversely the machine in brackets or receivers formed with inclined slots converging upward toward the center of the frame. When different-sized reels are employed their height and also distance from the center of the frame may be varied by changing the position of the bars in the slots of the bracket in which they are held as adjusted by suitable means. The knee-rails are adjustable horizontally.

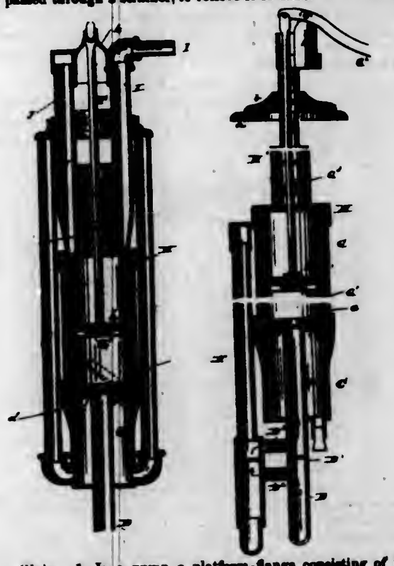


Claim.—1. The combination of the adjustable bars E, the hangers D, attached thereto, the supports or receivers F, constructed with upwardly-converging slideways or slots *e*, and means for holding said bars after adjustment, substantially as specified.

2. The combination, in a winding-machine, of the adjustable bars E, hangers D, attached thereto, the supports or receivers F, constructed with upwardly-converging slideways *e*, means for holding said bars after adjustment, and the knee-rails G, adjustable inward and outward, substantially as specified.

256,950. PUMP. JOHN BEAN and ROSCOE BEAN, Springfield, Ohio. Filed Dec. 17, 1881. (Model.)

Brief.—The platform or flange A is composed of two parts, *a b*, so arranged that the working parts of the pump may be withdrawn from the well and the stationary part remain fixed. J is an air-pipe and I the discharge. Water is drawn through D by piston G′ and delivered through L. Any water remaining above piston G′ will pass down through valve *h* when at rest and through *d* into chamber *c*, compressing the air in B B. When the pump is started this water will be forced out into the main stream and discharged. The water in rising in D is turned into pipe E, where it is passed through a strainer, to relieve it of sand.



Claim.—1. In a pump, a platform-flange consisting of the part *a* and the part *b*, substantially as described.

2. The combination of a two-part vertically and horizontally divided platform, a pump-section which is adapted to be fixed in a well, and a pump-section which is adapted to be removed from the section left in the well, substantially as described.

3. The combination of a vertically and horizontally divided platform, a pump-stock arranged above the same, and a pump-cylinder and its attachments arranged below the platform, substantially as described.

4. The stationary section of the pump, consisting of the flange *a*, the rods depending therefrom, the cylinder C, attached to said rods and adapted to receive the pump-cylinder G, and the suction-pipe D, substantially as shown.

5. The stationary section of the pump, consisting of a flange which sustains the lower cylinder, C, and the suction-pipe, substantially as described.

6. The stationary section of the pump, consisting of a flange, the suspension rods or tubes, the cylinder C, the suction-pipe, a tube communicating with the suction-pipe, and means for allowing the escape of sand from the cylinder, substantially as described.

7. The stationary section of the pump, consisting of a flange, the suspension rods or tubes, the cylinder C, the suction-pipe, tubes communicating therewith, a sand-box, and a suitable outlet from said box, substantially as described.

8. The stationary section of the pump, consisting of a flange, the cylinder C, and the suspension rods or tubes, forming air or vacuum tubes, and communicating with said cylinder below the bucket A, substantially as described.

9. The stationary section of the pump, consisting of a flange, the suspension rods or tubes, the cylinder C, the sand-box, a valve or gate at the lower end of the same, and a rod or handle extending to the top of the well, substantially as described.

10. The stationary section of the pump, consisting of the flange, the suspension rods or tubes closed at their upper ends and communicating with the cylinder C, and means for withdrawing the sand, &c., from said cap, substantially as described.

11. The combination of a flange, the suspension rods or tubes depending therefrom and communicating with the cylinder C, the suction-pipe extending upward in said cylinder and forming a valve-seat for the check-valve, and a pump-cylinder, G, detachable from said cylinder C, substantially as described.

12. The combination of the cylinder C, the suction-pipe therein, the flange *a*, leaving a space between it and the upper end of the suction-pipe, and the check-valve seated on flange *a*, substantially as described.

13. The combination of the cylinder C, the suction-pipe, and the flange *a*, perforated at *d*, having a space between them and affording seats for the check-valve, for the purpose described.

14. In a pump, the combination of the cap C, the flange *a*, provided with a perforation, *d*, and means for withdrawing the sand from the said cap, substantially as described.

15. The combination of the cylinder C, the suction-pipe therein, the diaphragm D′, water-passages D² D³, and an air-chamber, F, communicating with the said suction-pipe, substantially as described.

16. The combination of the cylinder C, the discharge-pipe therein, a sand-box communicating therewith, and an air-chamber above the sand-box, substantially as described.

17. For a pump, the combination of a sand-box, a strainer therein, and a tubular air-chamber extending above the same, substantially as described.

18. In a pump, a divided platform-flange constructed to allow the removal from the well of the working mechanism of the pump, substantially as described.

19. In a pump, a two-part vertically and horizontally divided platform-flange arranged to suspend a section of the lower part of the pump in the well after the working mechanism has been removed, substantially as described.

20. In a pump, the combination of a pump-cylinder, C, a discharge-pipe, I, a platform-flange, *a*, and a tubular air-chamber, J, independent of the discharge-pipe, adapted to allow of the withdrawal of the said parts G, I, and J from the well, substantially as described.

21. The combination, with a platform-flange, of a suspended cylinder, C, and the pump-cylinders G and H′, supported thereby, the said flange being constructed to allow of the withdrawal of the cylinders G and H′, substantially as shown.

22. In a pump, the combination of a divided or two-part flange-platform, a cylinder, C, its suspension rods or tubes, the pump-cylinder G, the suspending and holding-down discharge-pipe, and the air-chamber, substantially as described.

23. In a pump, the combination of a handle-standard and an air-chamber and discharge-pipe fixed to but removable from a non-chambered platform, said pipes communicating independently with the pump-cylinder between two pistons, for the purpose set forth.

24. In a pump, the combination of a stationary but removable discharge-pipe and a stationary and removable air-chamber when both communicate with the pump-cylinder through the head thereof and between two pistons, substantially as described.

25. In a pump, the combination of a two-part vertically and horizontally divided platform-flange and discharge-pipe, removable from part *a* of said flange, and connected to the handle-standard and communicating with the pump-cylinder between two pistons, for the purpose set forth.

26. In a pump, the combination of a cylinder, G, its removable top, cap, or head H, and a discharge-pipe and air-chamber connected to said cap H and communicating with the pump-cylinder below the cap, substantially as described.

27. In a pump, the combination of the removable cap H, the piston-cylinder G, flange A, and the suspending-tubes I J, substantially as described.

28. In a pump, the combination of the lower cylinder, C, the side supports thereof, and the divided platform to which these supports are secured, substantially as described.

29. The combination, in a pump, of the lower cylinder, C and its tubular side supports communicating with the pump-cylinder G above the check-valve, substantially as described.

30. The combination of the lower cylinder, C, provided with a chamber, a tube, and a water-passage, substantially as and for the purposes set forth.

31. The combination, in a pump, of the lower cylinder, C, provided with a valve, *e*, a seat for this valve, and a leak-hole, *d*, the suction-pipe D, forming part of said valve-seat, and means for drawing off sand, &c., from said cylinder, substantially as described.

32. In a pump, the combination of the lower cylinder, C, and one or more vacuum-pipes connecting said cylinder to the platform, and a discharge-pipe whereby the water is drawn out of the latter pipe when the pump is at rest, to prevent freezing, substantially as described.

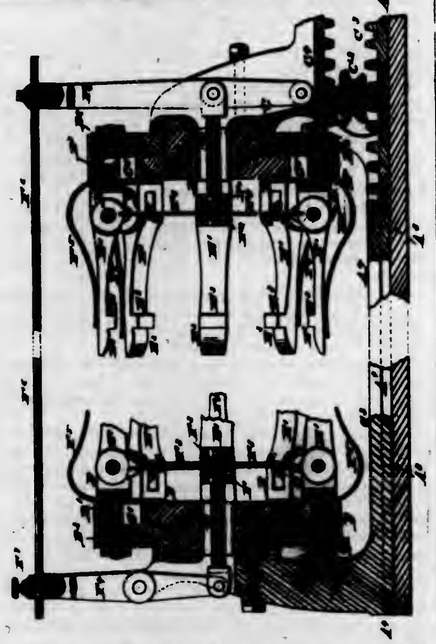
33. In a pump, an air or vacuum chamber communicating with the pump-cylinder below the piston and above the check-valve through holes *d*, for the purpose specified.

34. In a pump, a frame which is intended to be fixed in the well, having at its upper end a flange-bearing to be sustained on

the curb, and pendants connected at their lower ends by a horizontal piece, and adapted to sustain the working parts of the pump, and to allow the same to be removed or replaced at pleasure, substantially as specified.

256,951. MACHINE FOR DRIVING HOOPS UPON CASKS. MARIA E. BRADLEY, Philadelphia, Pa., assignor of one-half to William Robert Thompson, same place. Filed Nov. 26, 1881. (No model.)

Brief.—The hoop-driving arms are pivoted to jaws radially adjustable in heads, which move toward and from each other simultaneously to any required distance. The arms are moved in and out radially by means of push-rods at the center of each head, which are simultaneously moved longitudinally, and which are connected to the driving-arms by elastic arms thereon.



Claim.—1. In a machine for driving hoops upon casks, the combination of radially-adjustable jaws D and arms E, hinged thereto, having claws F', with the pair of heads C and C', and arranged to reciprocate through varying distances in opposite directions by means of gearing propelled by a reversible driving mechanism, substantially as and for the purpose set forth.

2. In a machine for hooping casks, the trunk A, having V-shaped bearings A', adjustable thereon in height, and adapted to hold casks of different diameters centrally between the driving-heads C and C', in combination with said driving-heads, provided with arms E' and jaws D, radially adjustable thereon and arranged to reciprocate simultaneously in opposite directions, as and for the purpose set forth.

3. The combination of the rigid arms E', springs F', spring arms or levers F', operated by the rods F, having collars F' and F' thereon, and moved by the levers F', connected adjustably at F' by the rod F', for the purpose of adapting the machine to casks of different lengths, substantially as described and shown.

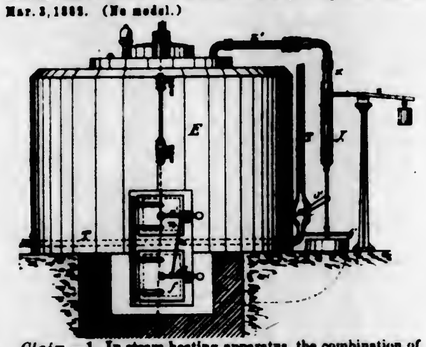
4. In a machine for driving hoops on casks, the combination of the rigid arms E', provided with shoulders E' and E', adapted to drive on or retract hoops from casks, with the elastic actuating-arm F', connected by the collars F' and F' on the rods F, for applying and releasing the shoulders E' and E' to and from hoops upon casks of imperfect circular form, as and for the purpose set forth.

5. In a machine for driving hoops on casks, the double series of arms E', having shoulders E' and E', adapted to drive on or draw off the hoops of casks, in combination with the rods F and the spring-levers F', and a driving mechanism adapted to move the pair of heads bearing both series of arms simultaneously in opposite directions, substantially as and for the purpose set forth.

6. In a machine for hooping casks, the combination of reciprocating heads C and C', operated by mechanism moving them variable distances simultaneously in opposite directions, and bearing rigid arms E, pressed inwardly by the springs F', with the elastic arms F', for the purpose of opening the arms E' and applying the shoulders of the several arms E to irregularities in the shape of the hoops, and driving the hoops on or drawing the hoops off from a cask, substantially as set forth and described.

7. The combination of the double series of arms E', connected elastically by the spring-arms F' and rods F to a single opening and closing mechanism, and hinged to the jaws D, with the pair of heads C and C', rigidly secured to said jaws D and arranged to move simultaneously in opposite directions, substantially as and for the purpose set forth.

256,952. APPARATUS FOR HEATING BUILDINGS. JULIUS ADOLPH BRUHN, Hagen, Westphalia, Germany, assignor of one-half to Carl Johann Diedrich Wilhelm Post, same place. Filed Mar. 3, 1882. (No model.)



Claim.—1. In steam-heating apparatus, the combination of the coupled doors *a* and *f*, for closing and opening simultaneously the stoke-hole N and ash-hole F, the air-conduit H, regulator J, and steam-pipe *s'*, for the purpose of maintaining a uniform pressure of steam within the boiler A, substantially as herein set forth.

2. In combination, the coupled doors *f* and *a*, air-conduit H, regulator J, steam-pipe *s'*, fire-tube D, and intermediate space, L, arranged between the boiler A and the wall E, provided with air-cone F', as set forth.

3. The combination, with the boiler of a steam heating device, of the regulator J and the high-pressure steam-conduit T, having the valve G, connected by the lever *o'* to the regulator J, substantially as and for the purpose specified.

256,953. CAR-COUPLING. MICHAEL BERGAN, Mona Township, Ford County, Ill. Filed July 1, 1881. (No model.)



Claim.—1. The combination, with a draw-head, of a pivoted locking-latch longitudinally movable in the draw-head, and means, substantially as described, for moving said latch forward in the draw-head.

2. In a car-coupling, the combination, with the rigid draw-head pin, of a pivoted latch having a slotted bearing, substantially as described.

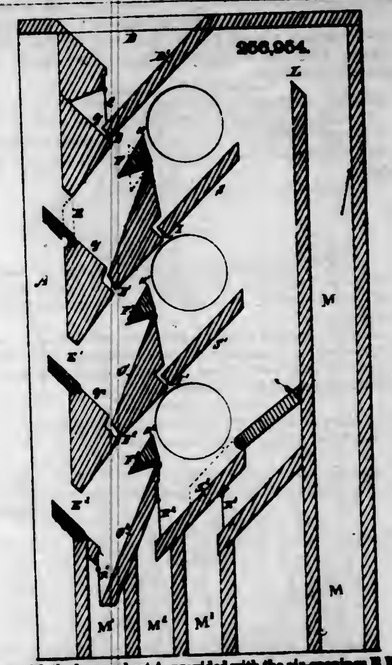
3. In a car-coupling, the pivoted and slotted gravitating latch, in combination with an expansion-spring forming a cushion for said latch, substantially as described.

4. The rigid draw-head pin and the pivoted and longitudinal movable locking-latch, in combination with a slotted arm rigid upon the latch, substantially as described.

5. The pivoted and longitudinal locking-latch, and the oscillating crank-shaft connected with said latch, in combination with the S-arm rigid upon the shaft, and a vertical lever pivoted to said arm, all arranged substantially as described.

256,954. APPARATUS FOR CLEANING GRITS. ARTUR BRAUN, Vienna, Austria-Hungary. Filed Nov. 16, 1881. (No model.) Patented in Austria Aug. 31, 1881, and in Hungary Aug. 31, 1881.

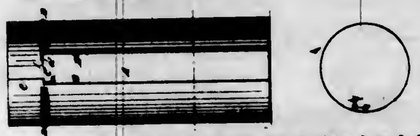
Claim.—1. In an apparatus for cleaning grits, the combination, with the box or chest A, provided with the air-openings E E' F' and the adjustable hinged gates E' E' F', of the inclined partitions O O' S S' and the pieces having their lower faces, Y Y' Y', arranged on the same inclined planes and arranged to leave between them the angular slots D' D' I' I', the upper parts of said slots being parallel with and the lower parts perpendicular to the lower faces of the said partitions and inclined planes, substantially as and for the purpose set forth.



2. In an apparatus for cleaning grits, the combination of the box or chest A, the pieces presenting the inclined planes Y Y' Y', the inclined partitions O O' O', having their lower faces arranged on the same inclined planes as those of said pieces, and arranged to leave angular slots at their points of nearest approach thereto, and the adjustable triangular prisms F F' F', hinged to the upper edge of the inclined partitions O O' O', directly facing the said slots, substantially as and for the purpose set forth.

3. In an apparatus for cleaning grits, the combination, with the box or chest A, provided with a series of air-openings and adjustable gates thereto, the hopper B, formed with slot D, and the inclined partitions O O' O' S S' F, and the pieces presenting on their lower faces the inclined planes Y Y' Y', arranged substantially in the same inclined planes as those of partitions O O' S S', of the adjustable triangular prisms F F' F', hinged to the upper edge of one series of inclined partitions, the vertical partition L, and the chutes M M' M' M', substantially as and for the purpose set forth.

256,955. SHEET-METAL PIPE. LEWIS F. BEEVE, Norton, Pa. Filed Sept. 13, 1881. (Model.)



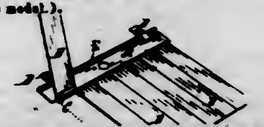
Claim.—1. A self-clasping sheet-metal pipe-joint formed of a single piece of metal having a tongue formed by bending one of the transversal edges of the metal in a radial direction to the body of the pipe, and a radial hook formed by the other transversal edge thereof, in combination with the portions O O' upon one extremity of the pipe, overlapping in a contrary direction to said tongue and hook, substantially as shown and described.

2. In a self-clasping sheet-metal pipe of the character herein specified, the combination, with the flat portions of the transversal edges O O', overlapping each other, of the tongue formed by bending one of the transversal edges below said portion O O' in a radial direction to the body of the pipe, the other corresponding edge being bent outward and inward, forming a hook projecting radially to the body of the pipe, substantially as and for the ends and purposes shown and described.

3. In a self-clasping sheet-metal pipe of the character herein specified, the combination, with the overlapping portions O O' of the transversal edges of the metal, of a radial hook formed by bending the remaining portion of one of the transversal edges from the body of the pipe and inwardly, and the radial tongue formed by bending the remaining portion of the other transversal edge of the metal outwardly from the body of the pipe, said radial tongue being cut away for a short distance below the overlapping portion O, substantially as and for the ends and purposes shown and described.

4. A self-clasping sheet-metal pipe-joint of the character herein specified, formed of a single piece of metal, A, having a radial hook, B', formed upon a part of one of its transversal edges, a radial tongue, B, upon a part of the other transversal edge, said tongue being cut away or beveled at *b*, and the overlapping portions of the transversal edges O O', the whole combined and arranged to operate substantially as shown and described.

256,956. RULER OR GUIDE FOR CUTTING FURS OR FUR TRIMMINGS. GABRIEL L. BROW, New York, N. Y. Filed Mar. 7, 1882. (No model.)

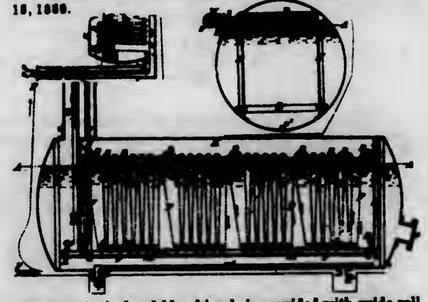


Claim.—1. The combination, in a fur-cutting ruler or guide, of a frame, A, fitted and provided with movable or lifting guides B, to secure a fixed back for the cutting-knife in each strip, substantially as described, for the purposes specified.

2. In a fur-cutting ruler or guide, the combination of a frame, A, with lifting-guides secured by hinges, movable independently of each other, and placed in a continuous line along the face or length of the frame A, all substantially as set forth.

3. The clamps D, having a hollow or mouth on one of their sides, which, in combination with the projection or rod E on the frame A, rigidly hold the frame A, substantially as shown, and for the purposes specified.

256,957. APPARATUS FOR BLEACHING WOVEN FABRICS, &c. WILLIAM BIRON, Salford, County of Lancaster, England. Filed Feb. 6, 1882. (No model.) Patented in England Nov. 18, 1880.



Claim.—1. A closed bleaching-keir provided with guide-rollers and a tube forming a seal-joint, arranged for the passage of the fabric or material to be treated to and from the keir through said tube, which has suitable feed and guide rollers, substantially as described.

2. A closed bleaching-keir provided with guide-rollers and a tube forming a seal-joint and containing a mid-feather, *m*, and arranged for the passage of the fabric or material to and from the keir on opposite sides of the feather through said tube, which has suitable feed and guide rollers, substantially as described.

256,958. WRITING-PEN. HOWARD D. BLACKWELL, Hemptonier, Vt. Filed Dec. 28, 1881. (Model.)

Claim.—1. An improved pen having a wall or partition extending entirely across and rigidly attached to the inner concave side of its body, substantially as shown and described, whereby the

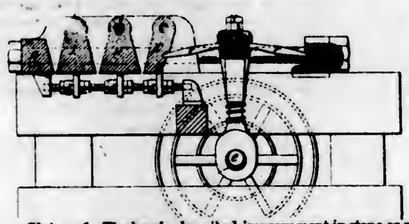
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ink is prevented from flowing back and soiling the fingers of the writer and the pen strengthened and prevented from splitting, as set forth.

2. A pen having the hollow or concave inner side of its body provided with a cross wall or partition of hollow form on its face and set inclining or shelving toward the point of the pen from the interior of the body of the latter, whereby a bucket-shaped guard is formed within said body to catch and hold any ink running back within it, substantially as herein set forth.

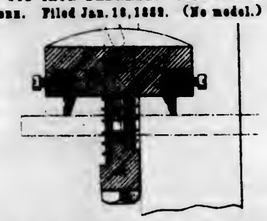
256,959. STONE-CRUSHER. THEODORE A. BLAKE, New Haven, Conn. Filed Aug. 13, 1881. (No model.)



Claim.—1. The herein-described improvement in stone or ore crushers, consisting in a stationary and a movable jaw, combined with one or more jaws arranged intermediate between said movable and stationary jaws, and adapted to receive crushing movement from said movable jaw, substantially as described.

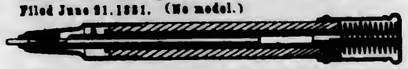
2. The herein-described improvement in stone or ore crushers, consisting in a stationary and a movable jaw, combined with one or more jaws arranged intermediate between said movable and stationary jaws, and adapted to receive crushing movement from said movable jaw, and mechanism, substantially such as described, to adjust the position of the said jaws relatively to the stationary jaw, substantially as described.

256,960. PIG-IRON BREAKER. THEODORE A. BLAKE, New Haven, Conn. Filed Jan. 16, 1882. (No model.)



Claim.—In a pig-iron breaker, the breaking block or blocks provided with a rubber spring to receive the transverse strain produced in breaking the pig, substantially as described.

256,961. LEAD AND CRAYON HOLDER. CLARE W. ROMAN, New York, N. Y., assignor to Joseph Reckendorfer, same place. Filed June 21, 1881. (No model.)



Claim.—1. The combination of the lead-tube with the grasping-jaw and the pin or contrivance for causing the jaw to grasp the lead when the tube is moved longitudinally with reference to the pin, the whole being constructed and capable of operating in combination, substantially as set forth.

2. The combination of the lead-tube with the grasping-jaw and the pin and the case and nozzle, substantially in the manner and for the purposes set forth.

256,962. WAGON-SEAT LOCK. EBENEZER H. BOOTH, West Cedarville, N. Y. Filed Feb. 21, 1882. (No model.)



Claim.—In a safety-lock, the combination, with the base-plate and its bearings *g*, *h*, and *u*, of the grooved clamp-hook and the cap-plate having the marginal bearing *s* and the cam-rib *x*, substantially as specified.

256,963. VENTILATOR FOR GRAIN, FRUIT, &c. LAFAYETTE T. BOW, Burkesville, Ky. Filed Jan. 21, 1882. (No model.)

Brief.—Perforated tubes A have detachable penetrating-points B, to facilitate their passage into the hay, &c., to be ventilated.

Claim.—1. In a ventilator for grain, hay, &c., the combination of a perforated pipe, the detachable conical penetrating-point, and a screw-coupling, or its equivalent therefor, substantially as described.

2. The combination of the spiral penetrating-point, the screw-thread coupling, and a ventilating-tube which is thickly perforated and to which said point is removably secured, substantially in the manner and for the purpose described.

256,964. TUYERE. FREDERICK BOWER, Barnhart's Mills, Pa. Filed Nov. 15, 1881. (No model.)

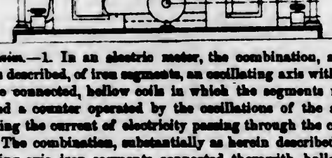


Claim.—1. A tuyere made, substantially as herein shown and described, of two or more coiled pipes, as set forth.

2. A tuyere made of the pipes B and C, coiled parallel with each other, substantially as herein shown and described, and for the purposes set forth.

3. In a tuyere, the combination, with the coiled pipes B and C, of the band D, surrounding the tuyere and holding the pipes together, substantially as herein shown and described, and for the purpose set forth.

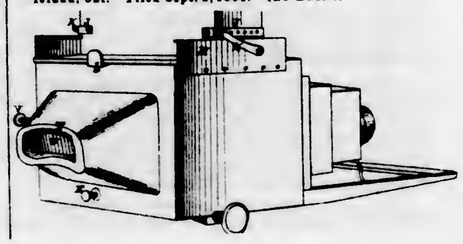
256,965. ELECTRIC METER. CHARLES V. BOYS, Wing, near Oakham, County of Rutland, England. Filed Feb. 2, 1882. (No model.) Patented in England Oct. 15, 1881.



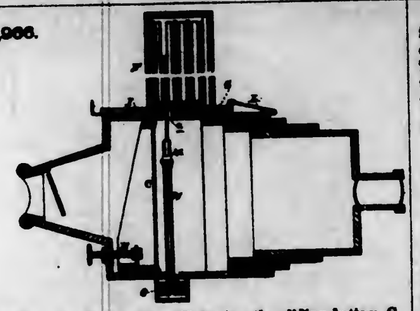
Claim.—1. In an electric meter, the combination, substantially as described, of iron segments, an oscillating axis with which they are connected, hollow coils in which the segments reciprocate, and a counter operated by the oscillations of the axis for measuring the current of electricity passing through the coils.

2. The combination, substantially as herein described, of an oscillating axis, iron segments connected therewith, hollow coils in which the segments reciprocate, a counter operated by the oscillations of the axis, and additional coils and a contact maker and breaker, essentially as and for the purposes set forth.

256,966. CAMERA ATTACHMENT. WILFRED L. BROWN, Mare Island, Cal. Filed Sept. 8, 1881. (No model.)



256,966.



Claim.—1. The plate-box F, having the sliding bottom G, made adjustable between guides H upon the top of the camera, as shown, in combination with the false bottom I, secured to the top of the camera and corresponding in thickness with G, the slot *a*, and the plate-elevator M, substantially as and for the purpose herein described.

2. In a photographic camera, the plate-elevator consisting of the horizontal bar M, having the spring R fixed beneath it, and having the bars N hinged to it at each end, while their opposite ends have nuts O loosely hinged to them, so as to traverse the screws P, together with the gears and crank, substantially as herein described.

256,967. CHURN. ORANGE L. BRUNER and WHITZEL LEWIS, Malta Road, Mo. Filed Jan. 23, 1882. (No model.)



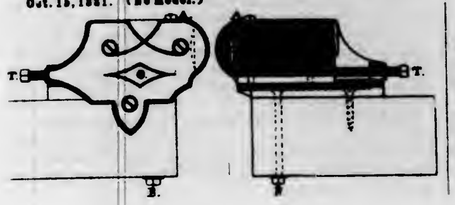
Claim.—In a reciprocating churn, the combination of the two uprights D, connected together by the cross-piece F, with the slotted guide P, which is secured upon the top of the cross-piece F, and which is provided with the projections R, to catch over the edge of the cross-piece, the slots in the guide being formed outside of the edge of the cross-piece, so as to be in a direct line with the dasher-rod, substantially as shown and described.

256,968. WEIGHT FOR EXTENSION-LAMPS. EDSON L. BRYANT, Ansonia, Conn., assignor of one-half to Wallace & Sons, same place. Filed Mar. 5, 1882. (No model.)



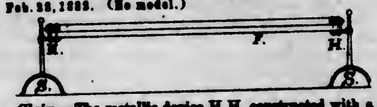
Claim.—The herein-described weight for lamp-fixtures, consisting of the cast-metal body A, constructed with annular groove or grooves *a*, combined with the sheet-metal covering B, spun into the annular groove or grooves, substantially as described.

256,969. BED. HIRAM BUCKINGHAM, Hartford, Conn. Filed Oct. 15, 1881. (No model.)



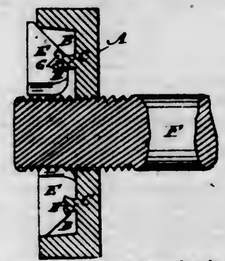
Claim.—In combination with a bed-frame, the device consisting of a dovetail slide, D, secured to the end rail by bolt A, the dovetail slide-cast B, secured to the side rail by bolt B and screw T, all constructed as described, and for the purpose of adjusting the tension of the fabric of which the bed is constituted, whether of woven wire or other material.

256,970. BED. HIRAM BUCKINGHAM, Hartford, Conn. Filed Feb. 28, 1882. (No model.)



Claim.—The metallic device H H, constructed with a notch or slot, N, to fit on the cross-bars of standards S S, combined with the bed-frame F F, and secured to the same by bolts B B, as described, and for the purposes set forth.

256,971. NUT-LOCK. JOSEPH H. BURROWS, Boise City, Idaho, assignor of one-half to Barnet E. Light. Filed Dec. 30, 1881. (No model.)

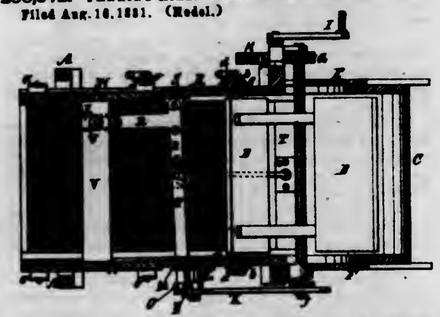


Claim.—1. A nut made, substantially as herein shown and described, with one or more recesses in its face, which recesses are provided on their bottom with a transverse ridge or projection, as set forth.

2. The combination, with the screw-bolt F, of the nut A, provided with one or more recesses, B, provided on the bottom with a projection, C, and of the keys E, provided in the bottom edge with two diverging recesses, G, forming a nose, H, between them, substantially as herein shown and described, and for the purpose set forth.

3. In a nut-lock, the wedge E, having one end sharpened and the other end beveled inwardly from the top to the bottom, and provided with the diverging recesses G, forming a nose, H, between them, substantially as herein shown and described, and for the purpose set forth.

256,972. FANNING-MILL. JONATHAN D. BUSH, Lebanon, Mo. Filed Aug. 16, 1881. (Model.)



Claim.—1. In a fan-mill, the combination, with the fan-shaft B, the upper shoe, W, and the lower shoe, T, of the crank J, the pivoted bent lever K, the lever P, the angle-bar H, the lug-plate Y, and the rod Z, substantially as herein shown and described, whereby the upper shoe will be vibrated laterally and the lower shoe longitudinally from the said fan-shaft, as set forth.

2. In a fan-mill, the combination, with the casing B, the crank J, fan-shaft B, and the vibrating lever P, provided with pin N, of the bent lever K, having its ends slotted and pivoted at its bend to the said casing, substantially as and for the purpose set forth.

3. In a fan-mill, the combination, with the slotted lower end

of the bent lever K, having flange or foot Q, and the end of the lever P, of the band O, having pin N, substantially as herein shown and described, whereby the wear and friction are lessened, as set forth.

4. In a fan-mill, the combination, with the cross-bar V of the upper shoe, W, and the lever P, of the slotted angle-bar R, the cross-plate X, having center thimble and end holes, and the pin U, substantially as herein shown and described, whereby the movement of the said shoe can be regulated, as set forth.

5. In a fanning-mill, the combination, with the casing B, the fan-shaft E, crank J, the bent lever K, and the upper shoe, W, of the lever P, and the angle-bar R, pivoted to the side of the said casing, and having the arm operating the shoe slotted, substantially as and for the purpose set forth.

6. In a fan-mill, the combination, with the casing B, the fan-shaft E, the crank J, the bent lever K, the upper shoe, W, and the lower shoe, T, provided with socket-plate *a*, of the lever P, the angle-bar R, the lug-plate Y, and the rod Z, substantially as and for the purpose set forth.

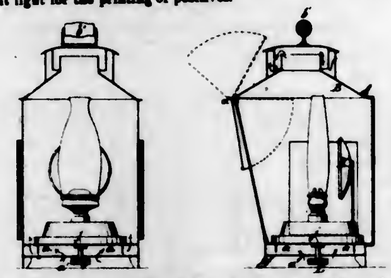
256,973. KEY FOR MUSICAL INSTRUMENTS. AUGUST CAESAR, New York, N. Y., assignor to Caesar Bros., same place. Filed Feb. 20, 1882. (No model.)



Claim.—As a new article of manufacture, a key for musical instruments the body of which is covered by an enameled plate of copper or other metal, substantially as and for the purpose set forth.

256,974. PHOTOGRAPHIC LANTERN. JOHN CARBUTT, Philadelphia, Pa. Filed Mar. 8, 1882. (No model.)

Brief.—The light can be used to furnish non-actinic rays for the coating, manipulation, and development of the plates, or a white diffused light for examining the condition of the plates, or a clear bright light for the printing of positives.



Claim.—1. A photographic lantern having on one side a window of colored glass or other material and on another side a window of semi-transparent material with a movable shutter.

2. A photographic lantern having on one side a window of colored glass or other material and on another side a window of semi-transparent material with a movable shutter, and containing a light and reflector adapted to be turned to throw the light through either window.

3. A photographic lantern containing a movable light and reflector, and having three windows, one with colored glass or other material, another semi-transparent, and a third of clear glass or open, the latter two windows being provided with shutters, all substantially as described.

4. A photographic lantern having windows on three sides, two provided with shutters, and a lamp and reflector on the inside mounted on a pivot in the base of the lantern, and means for turning the lamp on its pivot.

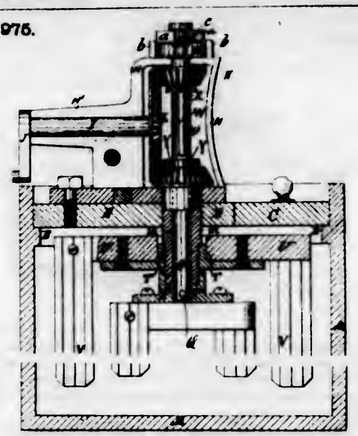
5. A photographic lantern having two or more windows and shutters for one or more of the windows, with a lamp and reflector mounted on a pivot, and a device on the exterior of the lantern for turning the lamp and reflector.

6. A photographic lantern having a window and a hinged deflector, D, with wings *d'*, substantially as described.

256,975. CHURN. JOHN COCHRAN, Jr., Millwood, Mo. Filed Sept. 8, 1881. (No model.)

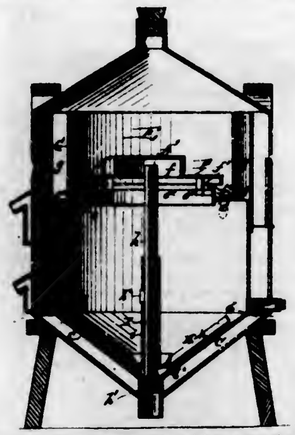
Claim.—1. In a churn, the combination, with the gear-wheels L N, provided with the recesses X Y, and the shaft O, provided with the tongues W, of the ring-flange Z, provided with recesses *c*, and the cross-head *a*, provided with arms projecting from opposite sides, substantially as and for the purpose set forth.

256,976.



2. In a churn, the combination, with the casing H, the shaft O, and the ring-flange Z, provided with recesses *b*, of the cross-head *a*, provided with arms projecting from its opposite sides, substantially as and for the purpose set forth.

256,976. MILK-COOLER. CHARLES COLBY and EDWARD BRAHMALL, Benton Harbor, Mich. Filed Sept. 27, 1881. (No model.)



Claim.—1. In an apparatus for raising cream, the cooling-pan adapted to fit upon the milk-reservoir and provided with an annular air-passage for the descent of cold air into the milk-reservoir, and also provided with vertical side passages for the ascent of the warm air, substantially as shown and described.

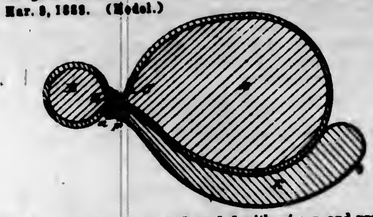
2. In an apparatus for raising cream, the cooling-pan E, provided with the flange *e'* around a central opening in its bottom, the elevated disk F, with annular cold-air passage *f''*, and the vertical side passages, *g*, for warm air, substantially as described.

3. In an apparatus for raising cream, the wiper consisting of a rod, *h*, with the slotted tube arranged to slide longitudinally thereon, the funnel-shaped disk fitted upon the tube, and the arm extending out from the disk and carrying material suitable for wiping the bottom of the milk-reservoir when the wiper is turned about its axis, substantially as described.

4. The combination, in an apparatus for raising cream, of the milk-reservoir having a funnel-shaped bottom, with the wiper H and the cooling-pan E, having an opening through which access can be had to the wiper, and a cap for closing the said opening, substantially as described.

5. The combination, in an apparatus for raising cream, of the milk-reservoir with the wiper consisting of the rod *h*, the tube I, arranged to slide upon said rod and carrying a disk, and the arm extending out from said disk and adapted to hold the wiper-cloth, substantially as described.

256,977. HORSE-COLLAR. GEORGE P. COLE, Johnstown, N. Y., assignor of one-fourth to Potter Hadden, same place. Filed Mar. 8, 1882. (Model.)



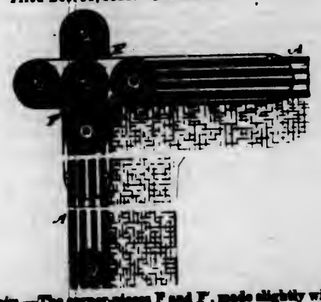
Claim.—1. The sweat-pad corded with wire *a*, and provided with wire staples G, as means for attaching the pad to the collar, substantially as specified.

2. The combination, with the sweat-pad and collar, of the wire *a*, bound in the edge of the sweat-pad, and having an eye-extension, *f*, at the lower end and a point-extension, *g*, at the upper end for connection with said collar, substantially as specified.

3. The combination of wire *a*, clips *d*, rivets *e*, pad E, staples G, and collar A B C, substantially as specified.

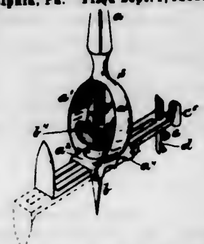
4. The sweat-pad constructed with the wire at its edge and for attachment to the collar, substantially as specified.

256,978. CARPET-FASTENER. JAMES A. COLE, Northville, N. Y. Filed Dec. 30, 1881. (No model.)



Claim.—The corner-pieces F and F', made slightly wider than the strips A, and provided at one end with diagonal or longitudinal corrugations and at the opposite end with two or more bosses, substantially as and for the purpose described.

256,979. EXTENSION-BIT AND WASHER-CUTTER. JOHN W. COOPER, Philadelphia, Pa. Filed Sept. 1, 1881. (No model.)

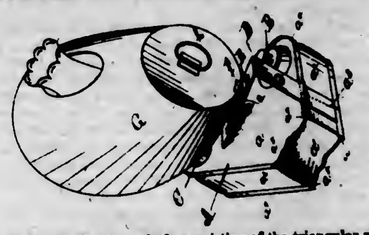


Claim.—1. In a device for cutting washers, the combination, substantially as hereinbefore set forth, of the bit-shank *a*, the lateral arms *a' a'*, extended from the lower end of the bit-shank and curved, as shown, the head *a²*, formed between the lower ends of the curved arms, and having formed through it the vertical opening to receive the centering-pin, and provided on its under side with groove to receive the cutter-bars and the centering-pin, and adapted to receive and hold the cutter-bars, as set forth.

2. The combination, with the frame S, constructed with the lateral arms *a' a'*, curved as shown, and having the head *a²*, provided with a vertical opening, *a³*, the centering-pin *b*, and nut *b'*, of the pendent screw-shank *b²*, arranged as shown and described, and for the purpose set forth.

3. The combination, with the bar *c*, constructed with the enlargement *c'* and opening *c²*, of the cutter *d*, the gage *e*, and the set-screw *c³*, substantially as set forth.

256,980. LAMP AND REFLECTOR FOR GAME. PATRICK H. COTTER, Dallas, Tex. Filed Feb. 8, 1882. (No model.)



Claim.—1. The lamp-body consisting of the triangular plates *a a'*, the beaded band *a²*, seamed at *a³*, and provided with the suspension and reflector-supporting strap D and at one corner with the filling-opening and at the corner opposite the seam *a³*, with the burner C, substantially as shown and described.

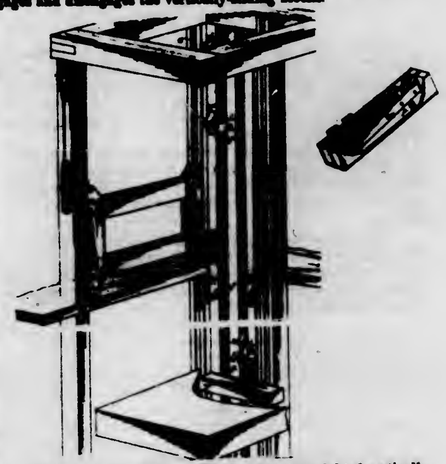
2. The strap D, provided with the clip E, having its edges turned inward, in combination with the tongue F, secured to the reflector G, substantially as shown and described.

3. The combination of the reflector-supporting strap D, slanted as shown, with the reflector G, consisting of a frustum of a cone, the lower shorter side of which terminates below and beneath the burner, and the upper longer side of which projects beyond the chimney and is perforated for the passage therethrough of the chimney, substantially as shown and described.

4. The reflector G, consisting of a frustum of a cone, the top of which is closed by a concavo-convex disk provided with a handle and with a tongue, F, the upper side of which extends beyond and is perforated for the passage of the chimney, the lower side of which extends and terminates beneath the burner, in combination with a lamp-body provided with a slanted strap, D, having a clip, E, thereon, substantially as shown and described.

256,981. AUTOMATIC GATE FOR ELEVATORS. JAMES CHERING, Dubuque, Iowa. Filed Nov. 15, 1881. (No model.)

Brief.—A counterweighted vertically-moving gate provided at its corners with friction-rollers is connected by endless cords passing over pulleys with vertically-moving blocks in the side of the elevator-shaft. A system of levers in the side of the elevator is operated by a series of inclines in the side of the shaft and engages and disengages the vertically-sliding blocks.

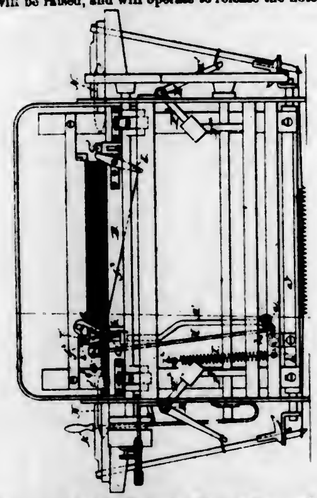


Claim.—1. In an elevator-shaft, a counterweighted vertically-moving gate provided at its corners with friction-rollers and connected by endless cords with vertically-moving blocks, said cords passing over pulleys, substantially as described, and for the purpose set forth.

2. In an elevator-shaft provided with a series of inclines, the vertically-moving blocks, as described in combination with a system of levers placed in the adjacent side of the elevator, said blocks being connected by endless cords with a vertically-moving counterweighted gate, all the parts arranged and operating as shown and described.

256,982. LOOM STOP-MOTION. JAMES W. T. DAVIDSON, Brownville, Ala., and DOUGLASS GREEN, Columbus, Ga. Filed June 16, 1881. (Model.)

Brief.—When the weft or filling breaks the head or weighted end of a lever mounted in the shuttle drops into position to engage either of two flirts or levers pivoted upon the opposite ends of the lathe. A small shaft mounted on the lathe and connected to the levers which unship the shipper-handle has connected to it a notched rod, that engages the heel of one of the flirts. When the latter is turned by contact with the lever carried in the shuttle its heel is disengaged from the notched rod, and the shaft is thus permitted to turn and effect the release of the shipper-handle. The flirt at the other end of the lathe is connected by a lever and wire with the one just referred to, in order that contact of the weighted lever with either flirt may operate to stop the loom. A bar resting upon the warps and pivoted upon the reed-cap has one of its arms connected by an intermediate lever with the first-named flirt, whereby when the shuttle flies upward out of its path the bar will be raised, and will operate to release the notched rod.

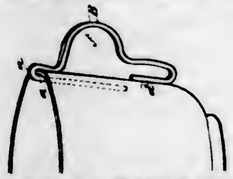


Claim.—1. A shuttle, N, having the groove *n* and slanting notch *n'*, and provided with the pivoted weighted lever P, having the tail *p'*, and the loop *p²*, in combination with the pivoted flirt C, the bent rod A', provided with the notch *f''*, the shaft *a'*, the rod H, spring I, angle-lever G, pivoted lever K, and shipper-handle *k'*, substantially as specified.

2. The combination, with the lathe and the flirts C and C', pivoted to opposite ends of the lathe, of the lever L, and wire *f'*, connecting said flirts, the bent rod A', rod H, spring I, shaft *a'*, angle-lever G, lever K, and the shipper-handle *k'*, substantially as specified.

3. The lathe and reed and the bar R, having the arms *r*, the lever S, having arms *s s'*, the flirts C C', and the wire *f²* and lever L, in combination with the bent rod A', having shoulder *f''*, the rod H, spring I, shaft *a'*, angle-lever G, lever K, and shipper-handle *k'*, substantially as specified.

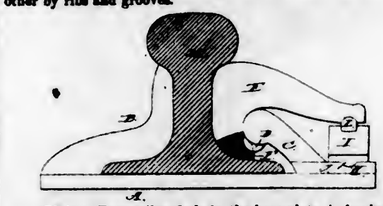
256,983. DETACHABLE HANDLE FOR TEA-CUPS, &c. JOHN W. DAVIS, Marion, S. C. Filed Feb. 24, 1882. (No model.)



Claim.—As an article of manufacture, the removable handle for cups and similar vessels, made substantially as herein shown and described, consisting of the spring-metal handle B, bent to form the prongs *e*, the fold *d*, and the grasp *f*, as set forth.

256,984. RAILROAD-CHAIR. WILLIAM W. DAWLEY, Mount Holly, Vt. Filed Oct. 1, 1881. (No model.)

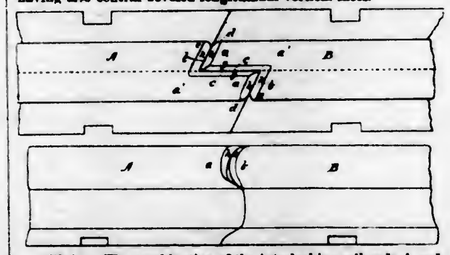
Brief.—The base-plate has a cheek for one side of the rail and an abutment serving as a fulcrum on the other side for a lever cheek-piece, which is strained in position by a wedge between it and the base-plate. The parts are kept in proper relation to each other by ribs and grooves.



Claim.—In a railroad-chair, the base-plate A, having cheek-piece B, groove H, provided with transverse recesses K, the abutment C, having stud D, in combination with the grooved removable cam-piece E, having recess F, and the spring-key I, having guides L and J and the rabbeted end, substantially as and for the purposes set forth.

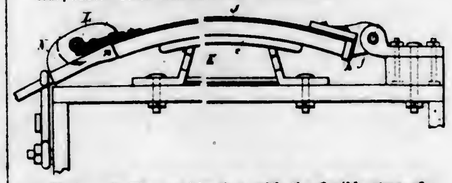
256,985. RAILWAY-RAIL. WILLIAM W. DAWLEY, Mount Holly, Vt. Filed Oct. 8, 1881. (No model.)

Brief.—The interlocking rail ends have acute-angular beveled projections and shoulders extending to the rail center, and having also central beveled longitudinal vertical faces.



Claim.—The combination of the interlocking rail ends A and B, having the acute-angular projections *a* and acute-angular shoulders *b*, beveled respectively at *b* and *b* and extending to the rail center, and the central vertical faces *c* in the direction of the length of the rail, provided with the bevels *g g*, substantially as and for the purposes specified.

256,986. STAVE-BENDING MACHINE. HENRY DE RUE, Riverside, Ohio. Filed Jan. 21, 1882. (No model.)



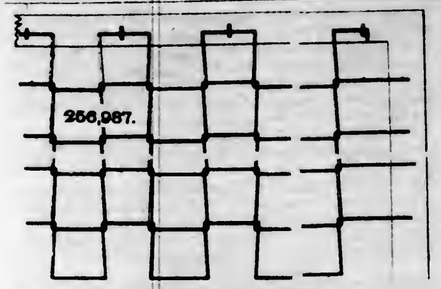
Claim.—1. The combination, with the flexible strap of a wood-bending machine, of the end lever hinged thereto by a plate, N, which takes a bearing on the strap and serves to slightly lift the lever, as set forth.

2. In a stave-bending apparatus, the combination of the former E *e*, strap J, pivoted abutments *h n*, and the pivot-bearing L, attached to and at or nearly in line with the strap, substantially as set forth.

256,987. COAL-SCREEN. WILLIAM F. DODDS, Wilkes-Barré, and THOMAS M. RICHTER, Sandy Run, Pa. Filed Dec. 16, 1881. (No model.)

Claim.—1. The screen-netting formed of crenelated or looped wires interlocked, substantially as shown and described.

2. A screen having its meshes or interspaces formed by interlocked loops of wires extending from one side to the opposite side of the frame, substantially as shown and described.



256,988. GUIDE FOR SEWING HARNESS. WILLIAM C. DUFFEY, Calhoun, Ga. Filed Sept. 19, 1881. (Model.)



Claim.—A slotted and apertured plate-spring, B, arched to carry the top guide, twice bentat one end where it is to be attached to the bed A, carrying the channeling-knives on opposite sides, the pressure-roll suspended from the arch, and the side rolls arranged on each side of the arch, said knives and the holders of the rolls being adjustable by screws, whereby there is formed an attachment which may be used in connection with a sewing-machine, as and for the purpose specified.

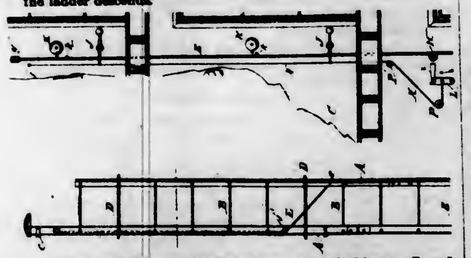
256,989. SPOON. AMELIA C. FELSENBERG, Newark, N.J. Filed Mar. 2, 1882. (No model.)



Claim.—A spoon, A, provided with the lip B, when the same extends farther upon one side of the spoon-bowl than the other, substantially as shown and described.

256,990. FIRE-ESCAPE. FRANK P. FISH, New York, N. Y. Filed Feb. 21, 1882. (No model.)

Brief.—The crank-arm of the shaft which holds the weighted cable is held from turning by a notched button, which is connected to a controlling-rope, that may be released from any story of the building. Projections on the weighted cable strike alarm-bells as the ladder descends.

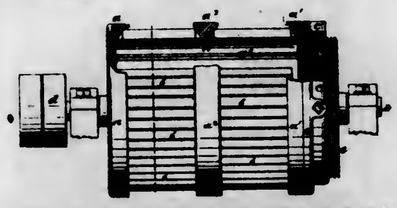


Claim.—1. The combination of an end-notched button, L, and a shaft, H, having a crank-arm, *i*, adapted to lock in the notch of said button and to hold the movable upright A' in folded position, as described.

2. The combination, with a wall, C, having pulleys P P' and pin *j*, of the cable N and button L, whereby the upright A' may be unlocked from any story of the building and allowed to drop into position for immediate use, as described.

3. The combination, with a dropping upright, A', of a weighted cable, E, having the projections *k k* and one or more bells, K, whereby the dropping of the upright causes a fire-alarm to be sounded, as described.

256,991. LATHE FOR TURNING POLYGONAL BODIES. JOHN H. FISHER and CASSIUS C. PECK, New York, N. Y.; said Fisher assignor to said Peck. Filed Jan. 3, 1881. (No model.)



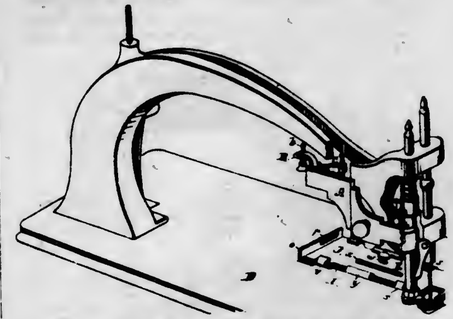
Claim.—1. In combination with the cylinder A, fixed flange *a*, and one or more intermediate adjustable flanges, *a' a²*, the tightening device consisting essentially of the nut *c*, engaging with the cylinder, for forcing said movable flanges toward the fixed shoulder *a*, for the purpose and substantially in the manner specified.

2. In combination with the cylinder A, the flanges formed with a series of annular shoulders, *a'*, for the reception of the ends of the blanks, and the inclined bearing-surfaces *a²*, for the purpose and substantially in the manner set forth.

3. In combination with the cylinder A, the flanges formed with the series of annular shoulders *a'*, for the reception of the ends of the blanks, substantially in the manner and for the purpose described.

4. In combination with the cylinder A, provided with a fixed flange, *a*, and an adjustable flange, *a'*, adapted to receive the thrust of the tightening device, the intermediate sliding flange, *a²*, provided with bearing-surfaces on both sides for engaging the adjacent ends of two series of blanks, substantially in the manner and for the purpose described.

256,992. SEWING-MACHINE ATTACHMENT. ALFRED A. FISHER and ALBERT HART, San Francisco, Cal. Filed June 14, 1881. (No model.)



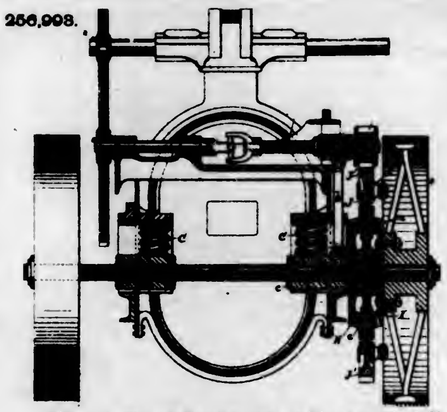
Claim.—1. A sewing-machine attachment consisting of the plate I, with its shoulders *u*, side flange-guides, *s*, wide end *t*, and slots *q* and *r*, and the plate J, with its side flanges, *v*, down-turned end *b'*, hole *w*, and slot *x*, arranged and used substantially as and for the purpose herein described.

2. In a sewing-machine having an adjustable presser-foot and fixed arm and an oscillating or vibrating needle-arm, the strip A, pivoted to the presser-arm, as shown, one end fitting under a screw or projection, *c*, on the pressure-shaft and its other end provided with points B and C, having set-screws *b* and *c*, fitting under the presser-arm and needle-arm, respectively, substantially as and for the purpose herein described.

3. In a sewing-machine having an adjustable presser-foot and fixed arm and an oscillating or vibrating needle-arm, the combination of the strip A, with its points B and C and screws *b* and *c*, and pivoted to the presser-arm, as shown, whereby its function is that of a lever acting upon the presser-foot at each stroke of the needle-arm, and the attachment consisting of the plate I, with its guide and slots, as shown, and the adjustable plate J, with its slots, as shown, and its down-turned end *b'*, arranged substantially as and for the uses and purposes herein described.

256,993. TRACTION-ENGINE. ABRAHAM O. FRICK, Waynesborough, Pa. Filed Mar. 7, 1882. (No model.)

256,993.

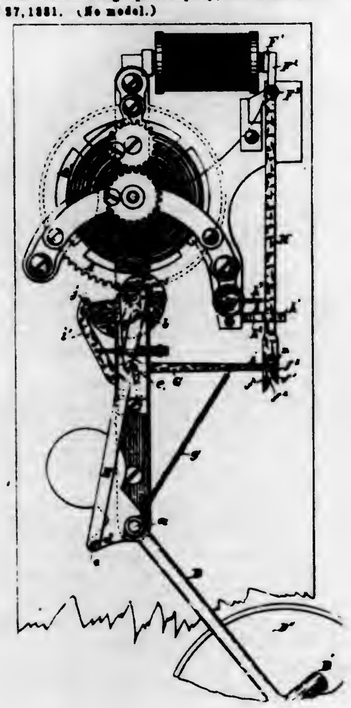


Claim.—1. The combination, with a driving gear-wheel, K, and the axle, of a compound wheel arranged upon the axle and having a laterally-flexible toothed rim and draft-connection between said toothed rim and the inner or web portion, substantially as shown and described.

2. The combination, with the body of the engine and the axle having springs interposed between the same, of a counter-shaft located above the axle and having a universal joint in the same, with a pinion, K, a movable bearing for the counter-shaft connected to the axle by a link, and a compound wheel located on the axle and provided with a laterally-flexible toothed rim, substantially as shown and described.

3. The combination, with the compensating-gears H I J *c*, of a laterally-flexible toothed rim and draft-connections between the rim and its web portion J, as described.

256,994. ELECTRO-MAGNETIC ESCAPEMENT MECHANISM. JAMES H. GARDINER, Hackensack, N. J., assignor to the Gamewell Fire Alarm Telegraph Company, New York, N. Y. Filed June 27, 1881. (No model.)

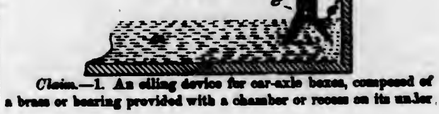


Claim.—1. The duplex electro-magnetic and mechanical escapement consisting of the magnet F, with its pivoted armature and swinging arm H, provided with escapement devices consisting of the forked ends *f* and *f'* of said lever, provided with notches *f*² and *f*³ on inner edges thereof, and the lever G, having pin *n*, and constructed and arranged to engage the arm H and to actuate a stop device, as and for the purpose described.

2. The combination of the magnet and armature, the arm H, lever G, stop *d'*, crank-arm C, cam I, and spring *g*, as and for the purpose described.

3. The combination, with the hammer D and gong D', the revolving crank-arm C and link-bar E, of the escapement mechanism described, consisting of the magnet F, with its pivoted armature F', arm H, lever G, stop *d'*, cam I, and springs *g* and *h*', all constructed to operate as and for the purpose described.

256,995. BLUING-PACKAGE. ROBERT W. GILLETT, Chicago, Ill. Filed Feb. 13, 1882. (No model.)

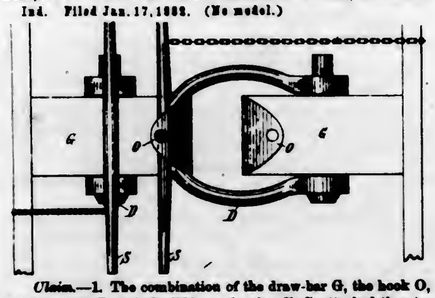


Claim.—1. A holder for laundry-bluing, consisting of a hollow reticulated and open-ended receptacle provided with a removable stopple and with an extension, substantially as described, whereby the receptacle may be manipulated, as set forth.

2. A holder for laundry-bluing, consisting of a hollow reticulated and open-ended receptacle having a removable stopple, which forms therewith a drip-cup, said receptacle being provided with an extension, substantially as described, to manipulate the same, as set forth.

3. As an article of manufacture, a hollow reticulated open-ended receptacle in which a mass of laundry-bluing is sustained, substantially as described, said receptacle being provided with an extension or handle to manipulate the same, and adapted as well for use as a tool, substantially as set forth.

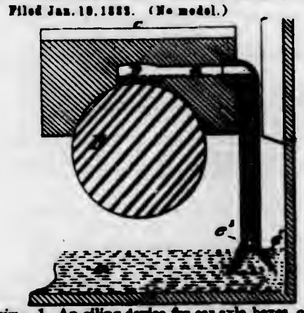
256,996. CAR-COUPLING. NEWTON J. GLOVER, Waveland, Ind. Filed Jan. 17, 1882. (No model.)



Claim.—1. The combination of the draw-bar G, the hook O, and the clevis D with the lifting rod or handle S, attached thereto, substantially as described.

2. The draw-bar G, hook O, and clevis D, with handle S, in combination with the lever N, sliding in the eye of arm J, substantially as shown and described.

256,997. CAR-AXLE BOX. GEORGE F. GOBLE, Philadelphia, Pa. Filed Jan. 19, 1882. (No model.)



Claim.—1. An oiling device for car-axle boxes, composed of a brass or bearing provided with a chamber or recess on its under

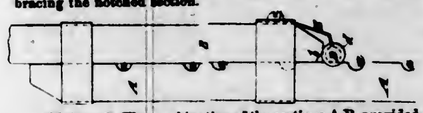
side, a pump or oil-lifting device, and a passage between said chamber and lifting device, said pump or lifting device being constructed substantially as shown and described, and caused to operate by the vibratory motion of a moving car, as set forth.

2. In combination with a car-axle box, a brass or bearing provided with a chamber or recess on its lower or the side next the axle, a pump or lifting device, and a passage-way between said chamber and pump, whereby when said pump is operated by the vertical vibratory motion of the axle-box to lift oil to said chamber such oil will be further assisted to rise thereto by the partial vacuum created in said chamber by the revolution of the axle, substantially as set forth.

3. In a car-axle box, the combination, with a brass or axle-bearing provided with chamber D, of a tube, *c*, carrying valve *c'*, piston F, spring *f*, and valve *f'*, substantially as shown and described.

256,998. EXTENSION-LEG FOR SCAFFOLD-SUPPORTS. JOSEPH GORMAN, Elizabeth, N. J. Filed Feb. 18, 1882. (No model.)

Brief.—Consists of two sections, one provided with a series of notches and the other with a notch at its lower end, and a leaf-spring with a dog engaging the notches, and having flanges embracing the notched section.



Claim.—1. The combination of the sections A B, provided one with a series of notches and the other with a dog or catch, D, and the leaf or flap spring E, substantially as and for the purpose specified.

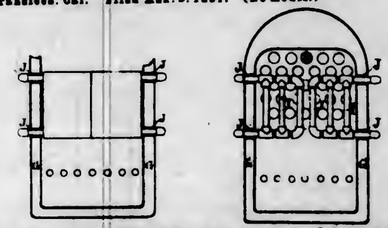
2. The combination of the sections A B, provided one with a series of notches, *a*, and the other with a notch, *b*, the dog or catch D, provided with flanges *d*, and the leaf or flap spring E, substantially as and for the purpose specified.

256,999. FASTENING FOR LACES. THOMAS GREEN, Northampton, County of Northampton, England. Filed Aug. 11, 1881. (No model.) Patented in England May 27, 1881.



Claim.—A lacing-grip consisting of the metal base-plate A formed with the outer folded portion, *d*, the wall *c*, and the inner folded portion, *e*, having its free extremity extended in close proximity to the wall *c*, to prevent the lacing inserted between the base-plate and the portion *e* from gaining access to the space behind the latter, as and for the purpose described.

257,000. STEAM-BOILER FURNACE. CONRAD I. HALL, San Francisco, Cal. Filed Aug. 5, 1881. (No model.)

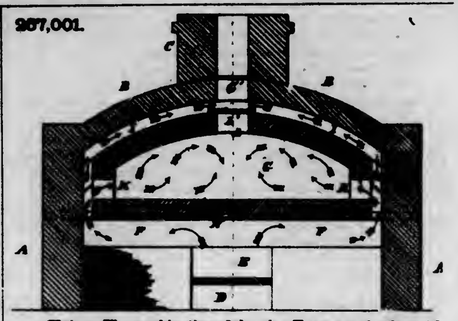


Claim.—1. In a steam-boiler furnace, the circulating-pipes I or water-back, Figs. 5 and 6, when connected with said furnace in four places by continuing all four ends of the pipes, or the ends of pipes correspondingly projected from water-back through the tubes J, set in water-walls G of furnace, when said pipes connect above and below in the water-space of boiler, so as to maintain a water-circulation between each side of furnace and the pipes I or water-back, as the case may be, substantially as and for the purpose herein described.

2. In a steam-boiler furnace, the circulating-pipes I or water-back, Fig. 5, when divided in two parts, each part being connected with the next adjacent water-wall G of furnace, as and for the purpose described.

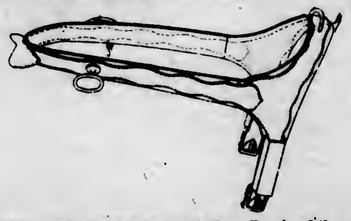
257,001. INSIDE OVEN. SAMUEL HALL, Chicago, Ill. Filed Mar. 8, 1882. (No model.)

257,001.



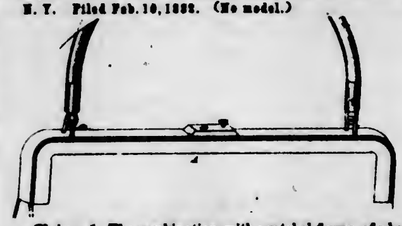
Claim.—The combination of chamber F, communicating with the fire-box, baking-chamber G, chamber J, flue C, ducts I and K, opening L, dampers L' and C', and outer wall, A B, all made substantially as and for the purpose set forth.

257,002. HORSE-COLLAR. WILLIAM H. HALL, New York, N. Y. Filed Feb. 9, 1882. (No model.)



Claim.—The combination, with the collar A, of the separate breast-band B, inclined downwardly to the front from the points of attachment to ends of the collar, and provided at its lower rear ends with loops and buckles, whereby the collar and breast-band will set on a horse, as shown, and for the purpose specified.

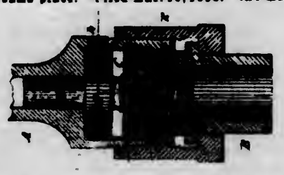
257,003. BAG OR SATCHEL. ROBERT HARRIS, Peekskill, N. Y. Filed Feb. 10, 1882. (No model.)



Claim.—1. The combination, with a satchel-frame, of a handle which is connected at one end to a staple in the frame in the usual manner and provided at the other end with a padlock, the loop of which is adapted to be fastened to or separated from a second staple in the frame by means of a suitable key, as and for the purpose specified.

2. A bag or satchel having one end of its handle connected with the satchel-frame by a padlock and staple, for the purpose specified.

257,004. ADJUSTABLE PITMAN. WESTEL E. HAWKINS, Wallingford, Conn., assignor of one-half to Walter J. Leavenworth, same place. Filed Mar. 13, 1882. (No model.)

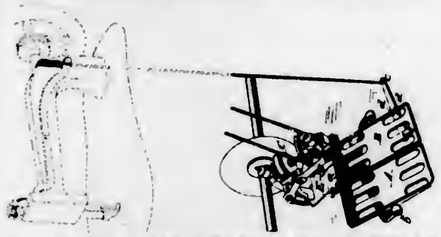


Claim.—1. The combination, in an adjustable pitman, of the two parts A B, the one part arranged to move longitudinally in a

recess in the other part, with a spindle taking a bearing on one part and screw-threaded into the other part, with a locking-sleeve to bind the two parts together, substantially as described.

2. The combination, in an adjustable pitman, of the two parts A B, the one part arranged to move longitudinally in a recess in the other part, with a spindle taking a bearing on one part and screw-threaded into the other part, with a locking-sleeve to bind the two parts together, the said spindle provided with a collar, G, with an opening, h, through the part in which it is arranged, and means, substantially such as described, for rotating the said spindle through said opening, substantially as described.

257,005. TREADLE FOR SEWING-MACHINE MOTORS. GEO. A. HEATH, Warren, Wis. Filed Mar. 15, 1882. (No model.)



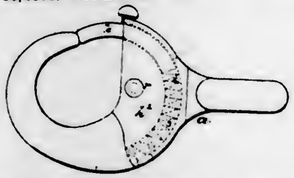
Claim.—1. A treadle for use in connection with a motor, substantially such as referred to, consisting of the section A, having the arm *a* connected with the shifting-lever of the motor, and the section B, overlapping arm *a* and connected with the presser-foot lever of a sewing-machine, as set forth.

2. The herein-described treadle, consisting of sections A B, connected respectively with the shifting or clutching lever of a motor and with the presser-foot lever of a sewing-machine, and adapted, substantially as described, to be operated both independently and in unison, as and for the purpose explained.

3. In combination with the treadle A, having arm *a*, the treadle B, overlapping said arm, and provided with the detachable arm *c* and screw or fastening *f*, as and for the purpose set forth.

4. In combination with the treadle B, the arm *c*, provided with lugs or hooks *d*, and the fastening-screw *e*, as and for the purpose set forth.

257,006. SNAP-HOOK. ALFRED S. HERR, New Haven, Conn. Filed Feb. 24, 1882. (No model.)



Claim.—A bolt snap-hook consisting of the circularly-grooved body portion *a* and the complemental circularly-grooved cap-plate *b*, riveted thereto, and forming therewith a circular recess to receive the curved bolt and spring, substantially as specified.

257,007. DYNAMO-ELECTRIC MACHINE. WILLIAM HOCHHAUSEN, New York, N. Y. Filed Feb. 17, 1882. (No model.)

Brief.—The armature-cores in the form of gratings are secured to supporting-disks slotted to receive them by clamps. Clamps are also placed centrally to prevent bulging of the segments by centrifugal force.

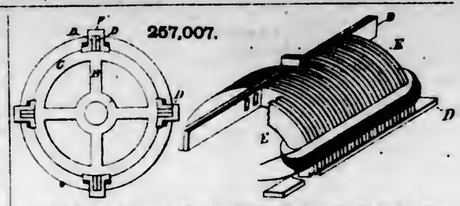
Claim.—1. The combination of the notched spider-frame, the armature-sections having longitudinal projecting bars or rods D, and the clamps F, secured to the spider-frame.

2. The combination, with the notched spider-frame, of the detachable armature-sections, each consisting of the longitudinal bars D, connected by a series of parallel bars or rods, E.

3. The combination, substantially as described, of the armature-sections having the longitudinal projecting bars or rods, the notched spider-frames, and the clamps seated in the notched spider-frames and embracing the ends of the bars or rods.

4. The combination, substantially as described, with two adjoining detachable armature-sections, each having a longitudinal bar or rod, of a clip, H, embracing the abutting bars so as to prevent bulging at the middle.

257,007.

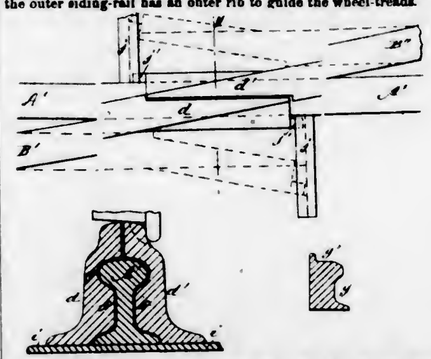


5. An armature-carrier provided with slots distributed and arranged in the manner shown, so that each slot extends only part way circumferentially and only sufficiently far to overlap some other slot in the same section.

6. The combination, substantially as described, of the bars D and their connecting-segments, the notched spider-frames, and the clamps F, embracing and clamping the ends of the abutting bars in two adjoining sections.

257,008. RAILROAD-SWITCH. JOHN H. HORTMAN, Hopewell, N. J. Filed Jan. 21, 1882. (No model.)

Brief.—The meeting ends of the siding-rails, where they bridge the main-track rail, are diagonally scarfed, and are formed to correspond to the configuration of said main-track rail, the ends of said siding-rails moving under guide-plates. The forward end of the outer siding-rail has an outer rib to guide the wheel-treads.



Claim.—1. In a railway-switch, the rails B′ B″, having their ends diagonally scarfed and provided with the swells or enlargements *f* to fit the sides of one of the main rails, and with recesses *g*, for inclosing the tread of the same, substantially as and for the purpose set forth.

2. In a railway-switch, the rails B′ B″, having their ends diagonally scarfed and of a thickness equal to the depth of the flanges of the wheels of the car, and provided with the swells or enlargements *f* to fit the sides of one of the main rails, and with recesses *g*, for inclosing the tread of the same, substantially as and for the purpose set forth.

3. In a railway-switch, the combination, with the main rail A′ and the guides *j*, of the rails B′ B″, having the diagonally-scarfed ends *d d*, and provided with the swells or enlargements *f*, the recesses *g*, and the projections *j*, substantially as and for the purpose set forth.

4. In a railway-switch, the switch-rail B, provided with the tapering side extension, *g*, having the upwardly-projecting flange *g′*, substantially as and for the purpose set forth.

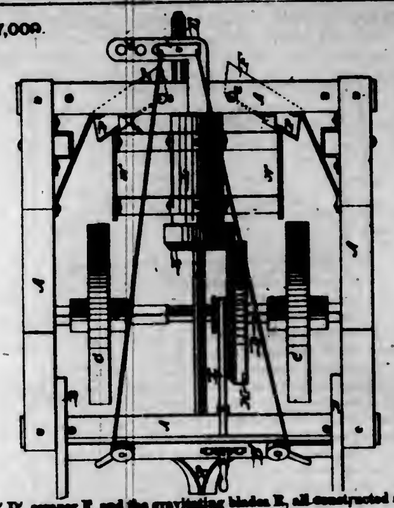
5. In a railway-switch, the rail B, provided with the tapering side extension, *g*, having upwardly-projecting flange *g′*, and the rails B′ B″, having the diagonally-scarfed ends *d d*, and provided with the swells or enlargements *f* and the recesses *g*, the rail B′ having tapering and inclined ends *b*, in combination with rails of the main track and the means for operating the said switch-rails, substantially as and for the purpose set forth.

257,009. COTTON-CULTIVATOR. JOSIAH R. HOWARD, Clinton, N. C. Filed Feb. 23, 1882. (No model.)

Brief.—In this machine are combined scrapers, choppers, center plows, and gravitating hillers. The guide-wheel is swiveled and turned by ropes attached to a cross-head. A loose gear-wheel for clutch device. Draft and guide wheel to one side of center.

Claim.—1. The combination of the adjustable draft-frame A, pinion K, revolving chopper N, guide-wheel E, supporting-wheels

257,009.



D′ D′, scraper F, and the gravitating blades E, all constructed and arranged to operate substantially as set forth.

2. The combination, with the draft-frame and its supporting-wheels, of rotary choppers, adjustable scrapers, furrow-plows, and gravitating earthing-up blades, substantially as and for the purpose described.

3. In a cotton-chopper, the pivoted gravitating earthing-up blades E E, formed as shown, in combination with the heads *i* and slots *j*, substantially as described.

257,010. CASE FOR PRESERVING FOOD. JONATHAN J. HOYT, Chelmsford, Mass. Filed Sept. 1, 1881. (No model.)

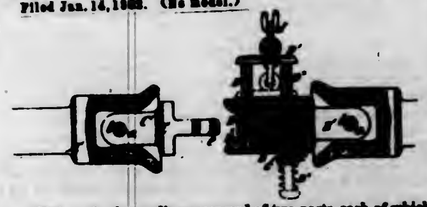


Claim.—1. The combination of the glass case D E, the protectors B B′, the ring-clamps A A′, and screw-bolts F, as and for the purpose specified.

2. The combination of the glass case D E, provided with notched flanges C′ C′, the ring-clamps A A′, and screw-bolts F, as and for the purpose specified.

3. In combination with a glass case, D E, provided with notched flanges C′ C′, as herein described, the ring-clamps A A′, provided with vertical annular flanges, and the screw-bolts F, as and for the purpose specified.

257,011. CAR-COUPLING. DAVID T. HUBBELL, Bethel, Conn. Filed Jan. 14, 1882. (No model.)



Claim.—1. A coupling compound of two parts, each of which is provided with a tongue or shank adapted to enter an ordinary draw-head and be secured therein by the ordinary coupling-pin, one of said parts being provided with a vertical bar or yoke and the other with jaws, between which said bar or yoke is received, and a transversely-movable locking pin or bolt adapted to engage with said bar or yoke, substantially as herein described.

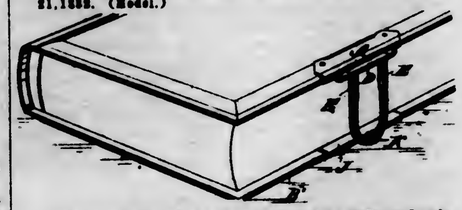
2. In a coupling, the combination of the part C, provided with the tongue or shank C′, which is arranged out of the center vertically, so as to adapt the coupling for cars having draw-heads at different heights, and also provided with the bar or yoke *c*, the part B, provided with the shank or tongue B′, and the vertical slot or opening B″, forming jaws, and the transversely-movable locking pin or bolt D, all constructed and operating substantially as and for the purpose specified.

3. The combination of the part B, the locking pin or bolt D, its attached guide-rod D′, the spring *e*, the tripping-lever E, and the part C, having a bar or yoke, *c*, substantially as specified.

4. The combination of the part B and its transverse pin or bolt D, the part C and its bar or yoke *c*, the lever G, and the lever *i*, connected with said lever G, substantially as specified.

5. The combination of the part B and its transverse locking pin or bolt D, the part C and its bar or yoke *c*, the lever G, and the lever *j*, connected with said lever G, substantially as specified.

257,012. ALBUM-CLASP. PHILIP NEUBLAND, New York, N. Y., assignor to E. & H. T. Anthony & Co., same place. Filed Jan. 21, 1882. (Model.)



Claim.—1. An album-clasp made substantially as herein shown and described, and consisting of a loop or bow of coiled elastic wire adapted to be held at its ends to the edge of a book or album cover, as set forth.

2. In an album-clasp, the combination, with the swinging sockets E, of a bow or loop made of coiled wire, the ends of the bow being secured in the sockets, substantially as herein shown and described, and for the purpose set forth.

3. In an album-clasp, the combination, with the swinging sockets E, of a bow or loop made of coiled wire, having its ends secured in these sockets, and of a U-shaped loop or stiffening-wire, F, contained within the bow formed by the coiled wire, substantially as herein shown and described, and for the purpose set forth.

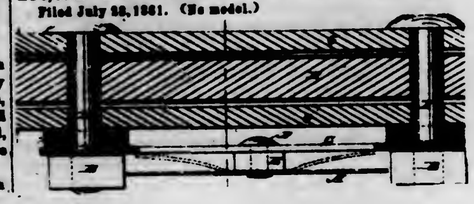
4. In an album-clasp, the combination, with the plate A, provided with swinging sockets E, of a bow or loop made of coiled wire, surrounding a U-shaped loop, F, and of the plate J, provided with a headed stud or catch, K, substantially as herein shown and described, and for the purpose set forth.

257,013. FENCE. HENRIE B. JOHNSON, Paducah, Ky. Filed Mar. 8, 1882. (Model.)



Claim.—The fence having uprights secured together at their upper and lower ends by means of stringers, and braced together at their centers and bottoms upon opposite sides by strips or braces which have their ends secured in place by means of the braces C and I, substantially as shown and described.

257,014. NUT-LOCK. WALTER B. JOHNSON, Waterloo, Ind. Filed July 28, 1881. (No model.)



Claim.—The elastic plate A, made shorter than the distance between the nuts B B, and at the middle rigidly connected with the washer-plate C, which connects the bolts F F, whereby the ends of said plate may be bent down to allow the nuts to be screwed on or off, but otherwise will resist and prevent the nuts from turning around on the screws, as described.

257,015. CLOTHES-LINE FASTENER. WILLIAM H. JOSSELYN, Bridgeport, Conn. Filed Aug. 16, 1881. (No model.)

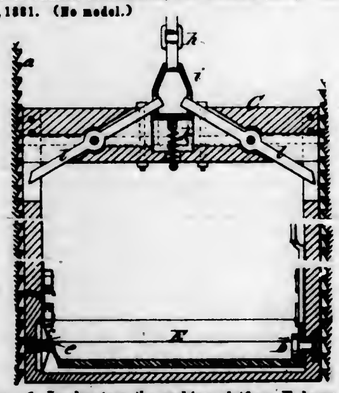


Claim.—1. A fastener, A, for a rope or cord, formed in substantially one piece, with a body portion, F, to receive the bight of the rope, a cross-recess, *d*, above said body portion, to receive the slack end portion of the rope, and a longitudinal recess, *e*, in front of said cross-recess, to receive the taut portion of rope, whereby the latter is caused to draw down upon and confine the transverse end portion, substantially as set forth.

2. A rope or cord fastener formed in substantially one piece, with a body portion, F, sockets *a* and *b* on opposite sides thereof, a transverse recess, *d*, above the socket *a*, and a longitudinal recess, *e*, in front of said transverse recess, substantially as set forth.

3. A rope or cord fastener formed in substantially one piece, with a body portion, F, sockets *a* and *b* on opposite sides thereof, a transverse recess, *d*, above the socket *a*, a longitudinal recess, *e*, in front of the recess *d*, and a circumferential groove, *g*, around the portion F, substantially as set forth.

257,016. PLATFORM-ELEVATOR. THOMAS KEITH, New York, assignor to Charles E. Hesserole, New Rochelle, N. Y. Filed Nov. 25, 1881. (No model.)



Claim.—1. In elevators, the rocking platform E, hung by pivots *b*, combined with the elevator-frame and provided with latching devices, substantially as shown and described.

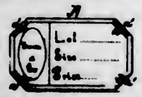
2. In elevators, the latch-piece *e* and tripping-dog *f*, in combination with the pivoted platform E, substantially as shown and described, for operation as set forth.

3. In elevators, a tilting platform retained normally in place by a latch, and tripping devices placed to release and tip the platform, combined for operation substantially as shown and described.

4. In elevators, the combination, with a double-inclined platform pivoted at its mid-length, of spring *g* and latch *e*, substantially as shown, for the purposes set forth.

5. The combination, with an elevator, of the stopping and starting chain *n*, having thereon a two-holed block, *n*, the standard-arm O, having end eye, *o'*, and the pin *p*, all arranged as shown and described.

257,017. GARMENT TAG OR TICKET. JOHN KELLER, New York, N. Y. Filed Jan. 11, 1882. (No model.)



Claim.—As an improved article of manufacture, the ticket A, having the indentations or openings *a* along its edges, as and for the purpose specified.

257,018. OVEN. THOMAS A. KELLETT, Laporte City, Iowa. Filed Nov. 3, 1881. (No model.)



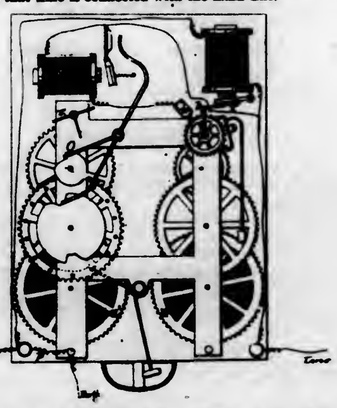
Claim.—1. A slide for ovens, consisting of two V-shaped surfaces which have a suitable opening between them for the escape of the heated air, substantially as shown.

2. In a bake-oven, the combination of the base B, having suitable openings through it, and provided with the projections C, with a sheet-iron plate that is placed upon the projections, and a grate which is provided with a second plate for the article being baked to rest upon, substantially as described.

3. In a bake-oven, the combination of the perforated base having a sheet-metal base placed above it, a grate provided with a second plate, a slide having its surface formed into two or more V shapes, and suitable fines for carrying off the hot air from the oven, substantially as set forth.

257,019. TELEPHONE-ALARM. JAMES F. KETTELL, Worcester, Mass. Filed Sept. 3, 1881. (No model.)

Brief.—At each station a branch or ground circuit normally disconnected from the main line contains a magnet, which controls a mechanically-operated bell. At the several stations, *exclusive*, this branch is connected with the main line by a clock-work which moves synchronously with a transmitting-clock at the central office. The transmitter at starting sends an impulse to line, starting all the clock-trains, and then at any desired point in its revolution it sends a second impulse, thereby calling up the station which at that time is connected with the main line.



Claim.—1. A clock mechanism normally at rest, an electro-magnet and armature arranged in the main-line circuit for controlling said clock mechanism, a main circuit, a branch or grounding circuit, two electrodes, one of which is a revolving arm and the other a stationary spring or point, an alarm mechanism consisting of a spring-impelled train of gears, as described, and an electro-magnet and armature arranged in said branch or grounding circuit for releasing the self-impelled alarm mechanism, all constructed to act in combination in the manner and for the purposes herein set forth.

2. A number of stations in a single electric circuit, each comprising a clock mechanism normally at rest, an electro-magnet and armature arranged in said circuit for controlling said clock mechanism, a branch or grounding circuit, two electrodes, one of which is a revolving arm and the other a stationary spring or point, an alarm mechanism consisting of a spring-impelled train of gears, as described, and an electro-magnet and armature arranged in said

branch or grounding circuit for releasing said alarm mechanism, the revolving arm-electrode of each station being also normally at rest, so that when said electrodes are released by their respective electro-magnets by a single impulse generated upon the main line, they will each rotate synchronously for one revolution, during which they will close the circuit through their respective branch or ground wire, each at a different period of the revolution, thereby releasing their self-impelled alarms through the electro-magnet and armature in the said branch circuit.

3. A clock mechanism at the central station normally at rest, a revolving electrode carried thereby, another electrode adjustable by hand and arranged to contact the revolving electrode, as described, and a catch for holding said clock-work normally at rest, operated by hand, and carrying a contact-point, whereby the battery-current will be thrown upon the line momentarily when the catch is operated, in combination with an out station or stations, each comprising a clock mechanism, an electro-magnet and armature arranged in the main circuit for controlling said clock-work, a branch or grounding circuit, two electrodes, one of which is a revolving arm and the other a stationary spring or point, an alarm mechanism consisting of a spring-impelled train of gears, as described, and an electro-magnet and armature arranged in said branch or grounding circuit for releasing said alarm, the revolving arm-electrodes of all the stations upon being released (the central station by its catch, and the out stations through their electro-magnets and armature in the main line) by a single impulse generated upon the main line, they will each rotate synchronously for one revolution, during which that out station, and that only, whose stationary electrode lies in the same direction as that to which the adjustable electrode of the central station has been set will have its branch or ground-wire circuit closed and the armature and magnet therein attracted, thereby releasing the spring-impelled alarm.

4. A clock mechanism, a single revolving electrode carried thereby, a catch for holding said clock-work normally at rest, operated by hand, an electrode carried by said catch, another electrode connected with a battery, and suitable wires arranged in an open circuit, all constructed to act in combination, whereby the clock-work will be mechanically released, so that the revolving electrode will make one revolution and a single contact, and the other two electrodes electrically contacted, so as to send a single impulse through the line upon the catch being operated, substantially as set forth.

5. A clock mechanism, a revolving electrode carried thereby, another electrode adjustable by hand, and arranged to contact the revolving electrode, as described, a catch for holding said clock-work normally at rest, operated by hand, an electrode carried by said catch, another electrode connected with the battery, and suitable wires arranged in an open circuit, all constructed to act in combination, whereby the clock-work will be mechanically released and the two last-named electrodes first electrically contacted, so as to send a single impulse through the line upon the catch being operated, and then the revolving and adjustable electrodes contacted, so as to send a second impulse through the line, for the purposes described.

257,020. HAY-CARRIER. GEORGE W. KISS, Marion, Ohio. Filed Feb. 15, 1882. (No model.)



Claim.—1. In combination with the beam A, adapted to be suspended from the rafters of a barn, the traveling carriage D, mounted on friction-rollers F, the pulley G, journaled in said carriage, the rope H, passing over said pulley and secured to the carriage, the frame N, provided with hook R and connection P, the guide S, the pulley M, and the swiveled hook W, and the shoulders on the traveling carriage, with which the hooks R and W are adapted to engage, respectively, substantially as specified.

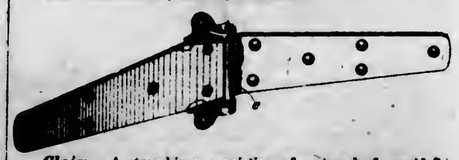
2. In combination with the beam or track upon which the carriage is adapted to travel, the plate secured thereto provided with a central boss and terminal lugs, and the swiveled lever adapted to be turned in either direction, as desired substantially as specified.

257,021. WICK-TUBE. CHARLES A. KIMBEY, Meriden, Conn., assignor to Edw. Miller & Co., same place. Filed Mar 17, 1882. (No model.)



Claim.—The wick-tube cap A, constructed with the tongues *a b*, extending vertically one on each side the slot in the cap, combined with the tube B, introduced into the slot between the said tongues and interlocked with the cap, substantially as described.

257,022. STRAP-HINGE. WILLIAM H. KURTZ, Columbus, Ohio. Filed June 3, 1881. (No model.)



Claim.—A strap-hinge consisting of a strap-leaf provided with upturned side ears or flanges, and separate and independent re-enforcing blocks external to said ears, in combination with a strap-leaf formed with a tubular knuckle received between the two ears of the other leaf, and a pintle which passes through said knuckle, ears, and external re-enforcing blocks, under the arrangement and for operation as hereinbefore shown and described.

257,023. FINGER, SCARF, AND OTHER JEWELRY RINGS. ROBERT J. LA GRANGE, Philadelphia, Pa. Filed Feb. 13, 1882. (No model.)

Brief.—The ring is adapted to have different heads applied to it. The ring is also adjustable in size, the adjustable portion being concealed by the head of the ring.



Claim.—1. The ring having a socket and a head removably fitted to said socket, whereby the head may be removed and different heads substituted therefor, substantially as and for the purpose set forth.

2. A ring having an adjustable bow and a fastening therefor concealed by the head of the ring, substantially as and for the purpose set forth.

3. A ring formed of a head and an adjustable bow, the movable section or portion whereof is formed with openings, and a fastening-pin on the head of the ring engaging with either of said openings, substantially as and for the purpose set forth.

4. The ring formed with a removable head, with a sectional bow, and a fastening-pin, the parts being combined and operating substantially as and for the purpose set forth.

5. In an adjustable ring, the movable section, in combination with a fastening-pin attached to and concealed by the head of the ring, substantially as and for the purpose set forth.

257,024. WATER-PROOF COAT. EDWARD LANDSBURGH and JAY F. TOWNER, Baltimore, Md. Filed Nov. 16, 1881. (No model.)



Claim.—A water-proof coat having a ventilating-aperture at the junction of the sleeve and body, extending to the interior of the coat and surrounded by a flap, and a stiffening device to retain the said flap and aperture in an extended condition, substantially as specified.

257,025. CLOCK-MOVEMENT. FREDERIC A. LANE, New Haven, Conn. Filed Jan. 25, 1882. (No model.)



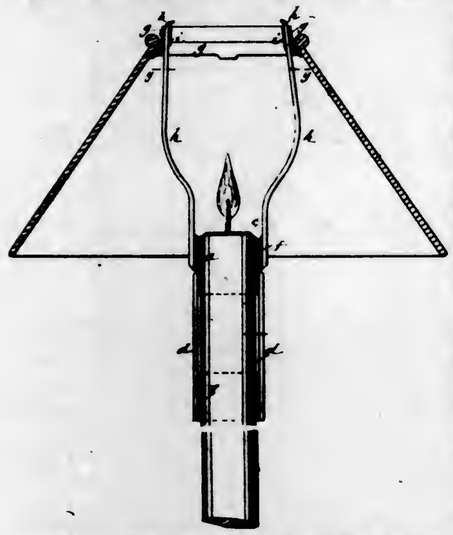
Claim.—The combination, in a clock-movement, of a plate forming the rear bearing of the main and center wheel shafts, a center plate forming a front bearing for the main-wheel shaft, and rear bearings for the shafts of the train and balance-wheel, the short front plate forming front bearings for the shafts of the center wheel and train, and a support for the front end of the balance-wheel shaft, all substantially as described.

257,026. PANTALOONS-PROTECTOR. JOHN T. LANGAN, Lyons, Kans. Filed Nov. 5, 1881. (No model.)



Claim.—A pantaloons-protector, C, curved from end to end to conform to the curve of the bottom edge of the pantaloons-leg, as described, and provided with a groove, D, to receive said lower edge, with stitch-holes *f* near the upper edge of said protector, and thread-channels *f'*, leading from said stitch-holes to said upper edge, as and for the purpose specified.

257,027. SHADE OR GLOBE HOLDER FOR CANDLES. DANIEL LEARY, New York, N. Y. Filed Feb. 1[illegible] 1882. (No model.)

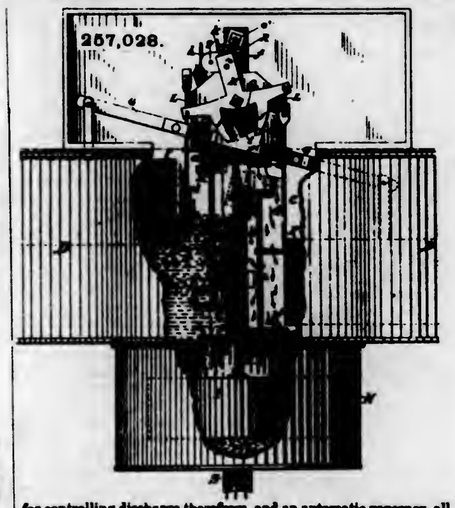


Claim.—1. The combination, with the ring *f* of the shade-holder, of the upper ring, *a*, provided with the flange *c*, the lower ring, *b*, and the rods *d*, secured to the opposite sides of the two rings, substantially as herein shown and described, whereby the holder will be held firmly upon the candle and the shade supported and held erect, and all liability of its tipping sidewise prevented, as set forth.

2. The ring *g*, provided with the perforated plates *i i*, in combination with the rods *A A*, ring *f*, and the rings *a* and *b*, substantially as described.

257,028. THREE-CHAMBERED FLOAT WATER-METER. JULIUS LUDER, Washington, D. C. Filed Oct. 5, 1881. (No model.)

Claim.—1. The combination of registering mechanism, a primary distributing-chamber, and stationary measuring-chambers, which constitute the body of the meter, and are provided with valves



for controlling discharge therefrom, and an automatic governor, all arranged as shown and described, whereby when a spigot is opened the governor instantly acts to allow water to flow uninterruptedly or in a continuous stream from the distributing-chamber, through one or the other measuring-chamber and through the governor-cylinder, into the distributing-pipe, and when the spigot is closed the said governor instantly acts to cut off the stream thus passing through the meter and simultaneously arrest the registering mechanism, as specified.

2. The combination, with registering mechanism, the stationary measuring-chambers having valves for controlling the discharge therefrom, and oscillating floats for operating said mechanism, of the automatic governor whose float and cylinder are placed beneath and its valve above the measuring-chamber, so that said governor will instantly begin to allow discharge or to cut it off, and simultaneously allow or arrest the action of the registering mechanism, as specified.

3. The combination, with measuring-chambers and registering mechanism connected therewith, of valves which are connected in pairs and located within the measuring-chambers and operate automatically to alternately allow and cut off both the supply to and discharge from said chambers, substantially as specified.

4. The combination, with the measuring-chambers, floats, and sway-lever G, of levers L L, connected with and operated by the latter, and the valves K, for regulating the induction of the said chambers, substantially as shown and described.

5. The combination, with the measuring-chambers, floats, and sway-lever G, of levers L, and the two-seat or pairs of valves K K', one set being arranged in each chamber, to operate as specified, for allowing one of said chambers to be supplied while the other is discharging, as specified.

6. The combination, with the measuring-chambers, floats, and sway-lever G, of levers L L, connected therewith, the valves K K', for regulating the induction and eduction of said chambers, and the automatic governor consisting of cylinder H, float I, valve W, and connecting-rod T, all arranged to operate substantially as shown and described.

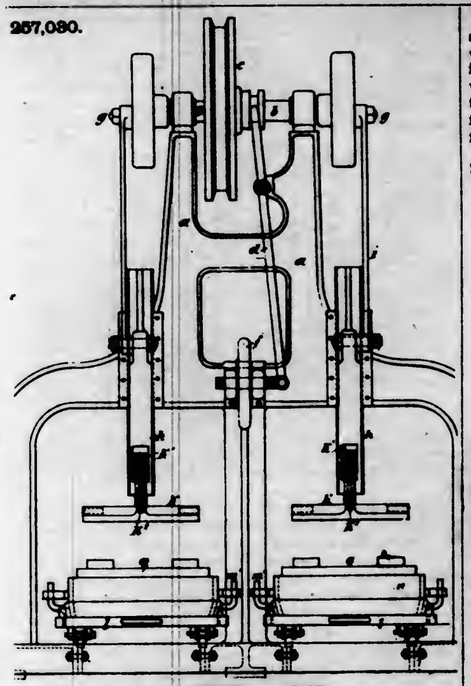
257,029. MEDICAL COMPOUND. PETER E. LEVINGS, Rockford, Ill. Filed Aug. 9, 1881. (No specimens.)

Claim.—The herein-described composition or extract, prepared from water, poplar-bark, wild-cherry bark, prickly-ash bark, dandelion-root, May-apple root, Indian-turnip root, and hops, substantially in the proportion hereinbefore set forth.

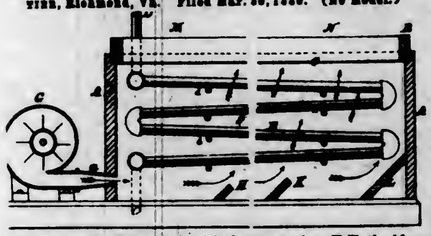
257,030. SAND HOLDING MACHINE. FRANCIS LEY, Vulcan Iron Works, Derby, England. Filed Feb. 18, 1882. (No model.) Patented in England June 21, 1881.

Claim.—The adjustable rammer consisting of the axis *b*, crank *g*, connecting-rod *i*, slide A, with screw-socket at its lower end, and pressure-plate *k*, with screw-stem *k'* entering the said screw-socket, substantially as described.

257,030.



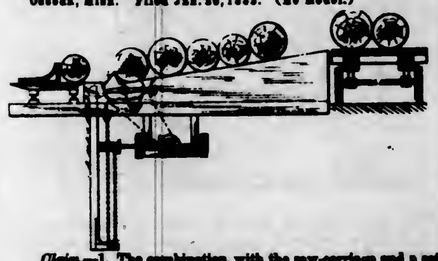
257,031. MACHINE FOR DRYING TOBACCO. LAWRENCE LOFTIN, Richmond, Va. Filed Mar. 30, 1880. (No model.)



Claim.—1. The case A, with the steam-pipes E E, the blower G, tray B, and deflecting-boards H K L, arranged as described, and for the purposes specified.

2. The deflecting-boards H K L, in combination with the blower G and steam-pipes E E, arranged as described, and for the purposes specified.

257,032. LOG FENDER AND TURNER. HENRY B. LOUD, Oscoda, Mich. Filed Jan. 30, 1882. (No model.)



Claim.—1. The combination, with the saw-carriage and a set of inclined skids or ways descending to the level of the saw-carriage, and having stop-projections at their lower ends, of a rotary shaft located beneath the level of the skids near the stop-projections, and having arms for lifting the logs over said stop-projections one by one, as described.

2. The combination, with the vertically-moving canting-bar and its immediate driving-gear, and the rotary log-delivering shaft with arms and its immediate driving-gear, of an adjustable driving-gear in common to both the foregoing devices, and combined with them, substantially as shown and described, so as to operate the rotary shaft by one movement, and to be disconnected therefrom and operate the canting-bar by the other movement, as set forth.

257,033. FOLDING COMB. JOHN LOWE, Clinton, Mass., assignor to Caroline E. Lowe, same place. Filed Mar. 8, 1882. (No model.)



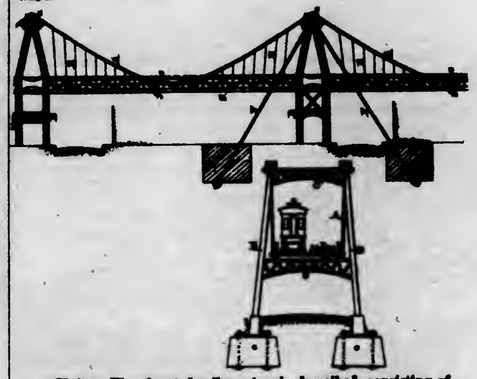
Claim.—1. A folding comb made substantially as herein shown and described, and containing the following elements, to wit: two pivoted combs and a plate pivoted between them, which plate is provided with grooved flanges for receiving the ends of the teeth of the combs when the combs are folded, whereby the teeth of the combs will be protected from being broken off and the hands will be protected from being pained by the ends of the teeth, as set forth.

2. The combination, with the pivoted combs A and B, of the plate D, pivoted between them, which plate is provided with opposite grooved flanges E and F, substantially as herein shown and described, and for the purpose set forth.

3. The combination, with the combs A and B, provided with the shoulders G and H in the backs at the pivoted ends, of the plate D, provided with opposite grooved flanges E and F, substantially as herein shown and described, and for the purposes set forth.

257,034. ELEVATED RAILWAY. LUTHER B. HASKFIELD and MARQUIS D. HOGAN, Brooklyn, N. Y., assignors of three-fourths to Samuel Bromberg and Samuel E. Hildenberg, both of same place. Filed Jan. 9, 1880. Renewed Mar. 8, 1882. (Model.)

Brief.—Trussed towers support continuous cables passing over chairs on said columns with anti-friction-rollers, the roadway being suspended from the cables by guys, the supporting-towers being braced, and the approaches at corners constituting solid roadways.

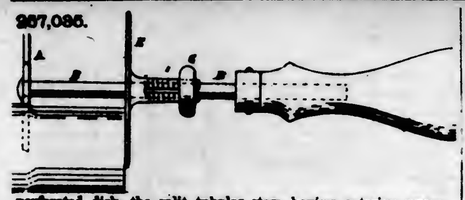


Claim.—The elevated railway herein described, consisting of the continuous cable A, extending the entire distance of each straight part, passing over chairs *a*, with friction-rollers, and supported by the road-bed D by guys E, and supported on towers B, provided with trusses C C', guys F, and stairways, and the solid roadway G at the corners, all constructed and arranged as shown and specified.

257,035. GUARD FOR PLUMBERS' SHAVE-HOOKS. JOHN W. MCARDELL, Brooklyn, N. Y. Filed Mar. 21, 1882. (Model.)

Claim.—1. A guard for plumbers' shave-hooks, constructed substantially as herein shown and described, and consisting of the

267,036.



perforated disk, the split tubular stem having exterior screw-thread, and the head-nut, as set forth.

2. The combination, with the hook A and shank B, of the adjustable disk E, substantially as herein shown and described, whereby the said disk will serve as a guard to protect the edge of the shave-hook and as a gage to limit the length of pipe shaved, as set forth.

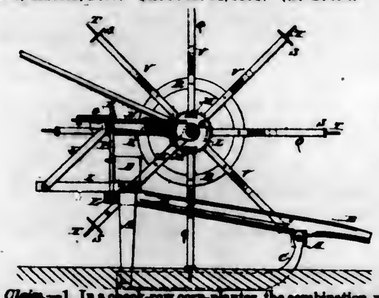
3. The combination, with the hook A and shank B, of the disk E, provided with the split tubular stem F, having exterior screw-thread, and the head-nut G, substantially as herein shown and described, whereby the said disk can be readily adjusted, and will be held securely in place, as set forth.

267,036. PANTALOONS-PROTECTOR. CHARLES J. MCDERMOTT, Sandy Hook, Conn. Filed Mar. 8, 1882. (No model.)



Claim.—The spring B, provided with the rubber ball *d* at the top, in combination with the shoe A, substantially as and for the purpose set forth.

267,037. CHECK-ROW CORN-PLANTER. ALFRED A. MCINTOSH, Lincoln, Nebr. Filed Jan. 24, 1882. (No model.)



Claim.—1. In a check-row corn-planter, the combination, with the seed-barrel D, the spoke-wheels Q, and the shaft G, of the pivoted bars F H, the stationary horizontal bar I, the pivoted connecting-bar J, and the forked bar K, substantially as herein shown and described, whereby the said forked bar is kept in a horizontal position as the shaft G rises and falls, as set forth.

2. In a check-row corn-planter, the combination, with the shaft G, of cam-wheel L, the forked lever N, pivoted to the horizontal forked bar K, the connecting-rod O, and the seed-dropping slide R, substantially as herein shown and described, whereby the said dropping-slide will be vibrated uniformly, as set forth.

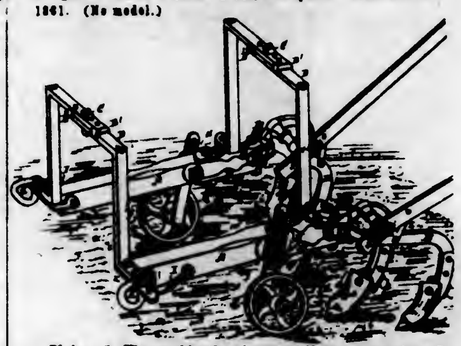
3. In a check-row corn-planter, the combination, with the spokes of the wheel Q, of the cross-heads S, provided with the spikes T, and arranged alternately with and at right angles to the plane of the wheel, substantially as herein shown and described, whereby the lines of the cross-rows will be indicated, as set forth.

267,038. DENTAL IMPRESSION-CUP. JAMES V. MCHANN, Waverly, Ohio. Filed May 2, 1882. (Model.)



Claim.—An impression-cup consisting of the sections A A, beveled at their adjacent edges, and having respectively the lip E and recess C and the screw D, all combined substantially as shown and described, whereby the sections may be adjusted to and from each other for convenience in use, as set forth.

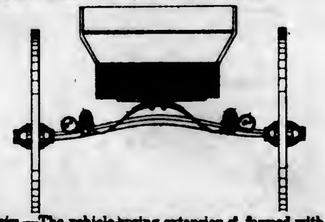
267,039. CULTIVATOR. THOMAS HEIKLE, Louisville, Ky., assignor to Thomas Heikle & Co., same place. Filed Nov. 21, 1881. (No model.)



Claim.—1. The combination, in a straddle-row cultivator, of the beams A, adjustable arches B, adjustable wheels G, and swinging plows attached to the rear of the beams, substantially as set forth.

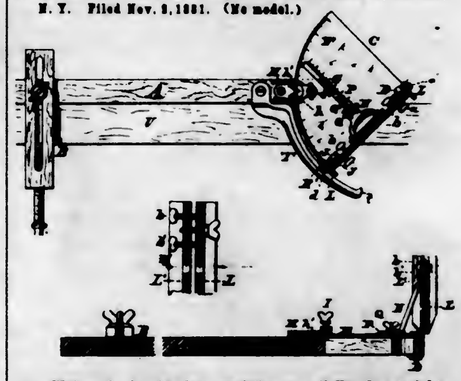
2. In combination with the beams A and plates D D', the plows E E, each set being attached behind its own beam so as to swing thereon freely horizontally, substantially as set forth.

267,040. VEHICLE-SPRING. LAFAYETTE A. HELBURN, Denver, Colo. Filed Jan. 30, 1882. (No model.)



Claim.—The vehicle-spring extension *c'*, formed with an outward and inward curve of nearly circular form, and adapted to be secured to a side bar at one end and to form a flexible joint with the end of a spring at the other at a point underneath the side bar, substantially as and for the purpose set forth.

267,041. MITER BOX OR GAGE. JOHN J. MEYERS, Buffalo, N. Y. Filed Nov. 8, 1881. (No model.)



Claim.—1. A miter-box consisting essentially of a straight-edge, A, having a clamping device, B, a quadrant, C, pivoted to the forward end of said straight-edge by the bolt D, and two saw-guiding plates, L L', said plate L' being hinged to the quadrant C, and the plate L adjustably secured to the plate L', the saw-guiding plates being provided with means, substantially as described, for varying their inclination relative to the straight-edge A, substantially as and for the object specified.

2. The combination, with the straight-edge A, of the quadrant C, having the indexes F and G and pointer *h'*, the saw-guiding plates L L', pivoted brace N, sliding plate P, with pointer Q', and the clamp-screw Q, substantially as described, for the purpose indicated.

3. In a miter-box, the combination, with the straight-edge A, of the index-plate C, pivoted to said straight-edge at its forward end by the bolt D, and the sighting-plate H, having a sighting-aperture, A, provided with an index-finger, *h'*, and on its forward end an adjusting-screw, I, adapted to press the index-plate C down upon the straight-edge A, the whole being constructed and combined for operation substantially in the manner, as and for the object stated.

4. In a miter-box having two plates forming a guide for the saw, the combination, with said plates, of two sets of set-screws, *b b'*, adapted to push the said plates apart, and one set of screws, *a*, constructed to draw said plates together, said screws *a* being located about midway between said screws *b b'*, whereby said plates may be adjusted substantially in the manner as and for the purpose specified.

5. In miter-boxes, the combination, with the dial-plate C, having an index-pointer, *h'*, of the auxiliary index-pointer T, consisting of a curved arm fixed to the straight-edge A, and provided with a pointer, *t*, substantially in the manner as and for the object specified.

267,042. BOTTLE-STOPPER. PURCHAS HILLS, Brooklyn, N. Y. Filed Mar. 1, 1882. (No model.)

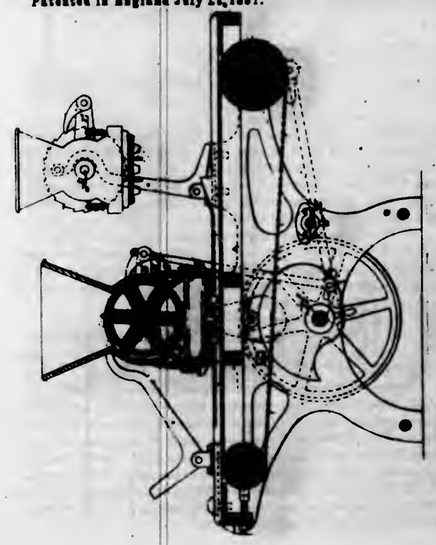


Claim.—1. The combination, with the stopper, the ball, and the lever, of a ring-loop upon the stopper and a hub upon the lever entering such ring-loop and having an opening for the ball, substantially as set forth.

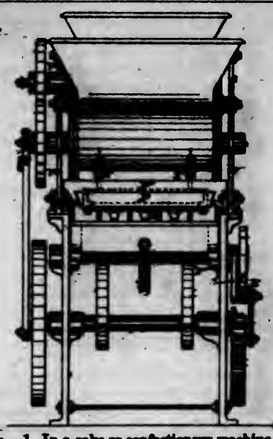
2. The combination, with the ball, the stopper, and the lever, of a ring-loop upon the stopper, through which the ball passes, and a cylindrical hub with an eccentric opening upon the lever within such ring-loop, substantially as set forth.

3. The combination, with the ball and stopper, of a lever having a two-part hub through which the ball passes eccentrically, and a ring-loop upon the stopper, substantially as set forth.

267,043. CAKE AND CONFECTIONERY MACHINE. J. HENRY MITCHELL, Philadelphia, Pa. Filed Sept. 2, 1881. (No model.) Patented in England July 14, 1881.



267,043.



Claim.—1. In a cake or confectionery machine, a casing provided with a hopper at top and an opening at the bottom, in combination with an interior cylinder or roller eccentrically mounted, wings which work in and out of said roller, a nozzle-plate, a vertically-movable table, and mechanism for operating said roller and table, substantially as set forth.

2. In a cake and confectionery machine, the combination, with a hopper or upper chamber for containing dough, dough-dividing mechanism, and a secondary or press chamber provided with nozzles, and having a vertically-movable bottom, of a rising and falling table, whereby the rising table operates the nozzle-chamber and dough will be forced out through the nozzles upon the table, substantially as specified.

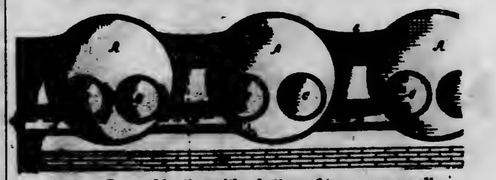
3. In a cake and confectionery machine, the combination, with a hopper or upper chamber for containing dough, dough-dividing mechanism, and a secondary or press chamber provided with nozzles, and having a vertically-movable bottom, of a rising and falling table, a nozzle-plate which receives dough from above, a yoke, frame, and springs, all operating substantially as described, whereby the rising of said table and nozzle-plate will force the dough through the nozzles and upon the table, substantially as set forth.

267,044. CLOTHES-RACK ATTACHMENT FOR BEDSTEADS. JOHN MOSSEL, Chicago, Ill., assignor to Mossel & Price, same place. Filed Jan. 25, 1882. (No model.)



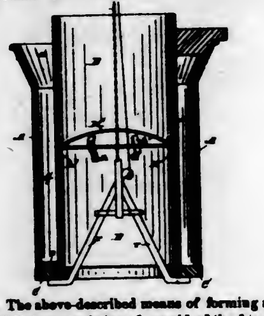
Claim.—In combination with a bedstead head-board, the fixed guides C C, extending from side to side, as shown, and the rack B, provided with pivoted hooks, and adapted to be drawn out at either side, substantially as described, and for the purpose set forth.

267,045. STEAM-BOILER. J. WILLIAM MOORE, Pittsburg, Pa. Filed Sept. 23, 1881. (No model.)



Claim.—In combination with a battery of two or more cylindrical boilers, A A, located above the boiler-furnace B and extending back longitudinally of the furnace-flue, a series of horizontal transverse water-flues, B B, connecting the sides of the different boilers and extending across the fire-chamber in the direct backward flue of the furnace, and a series of water-flue extensions, F F, projecting beyond the end boiler or boilers of the battery, substantially as and for the purposes set forth.

257,046. WELL-LINING APPARATUS. ALFRED W. MORGAN, Indianapolis, Ind., assignor to Louisa C. Morgan, same place. Filed Feb. 28, 1882. (No model.)

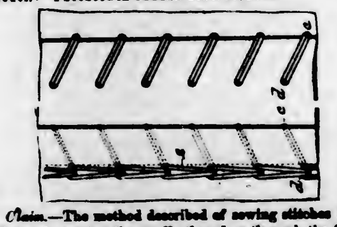


Claim.—1. The above-described means of forming a continuous concrete well-lining, consisting of a mold of the form and construction described, suspended over the well, and having its lower end closed by an annular plate or ring independently suspended, and adapted to be lowered into the well with the lining while the mold retains its position, as set forth.

2. In combination with the outward-expanding tube A, the hatch D, lug *a*, and guard E, substantially as and for the purpose set forth.

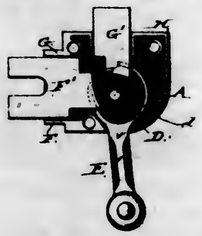
3. In combination with the inward-contracting tube B, ring H and lugs *h h'*.

257,047. METHOD OF STITCHING FABRICS. JAMES H. MORLEY, Holyoke, Mass., assignor to the Morley Sewing Machine Company, of the State of Maine. Filed Apr. 6, 1881. (No model.) Patented in Canada Sept. 20, 1881.



Claim.—The method described of sewing stitches in fabrics, consisting in passing the needle-thread up through the fabric at *c*, then from *c* carrying a double thread across the fabric substantially at right angles to the line of the feed, passing said double thread down through the fabric at *d*, interlooping said thread, and forming upon the under side of said fabric, under the ends of said cross-stitches, two parallel lines of stitches, one of said parallel lines consisting of a single thread intermediate between said cross-stitches, and the second line of said stitches consisting of double-threaded loops interlooped one with the other, substantially as shown and described.

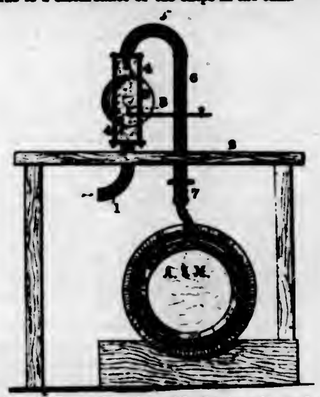
257,048. SASH-FASTENER. DANIEL P. HERRELL, South Norwalk, Conn. Filed Mar. 25, 1882. (No model.)



Claim.—A sash-fastener constructed as described, consisting of the case A, provided with stud *b*, and the lever-arm B, provided with a sleeve, D, and the cam-flanges *e e'*, in combination with bolt F, provided with a projection, *f*, and stop I, and the bolt G', provided with a projection and stop, *f'*, all constructed to operate substantially as and for purpose herein set forth.

257,049. APPARATUS FOR OBSERVING THE QUALITY OF LIQUIDS IN KEGGING. PAUL HERLEMANN, Baltimore, Md. Filed Mar. 31, 1881. Renewed Mar. 14, 1882. (No model.)

Brief.—The invention is designed to detect any muddiness of the beer due to a disturbance of the chips in the tuns.



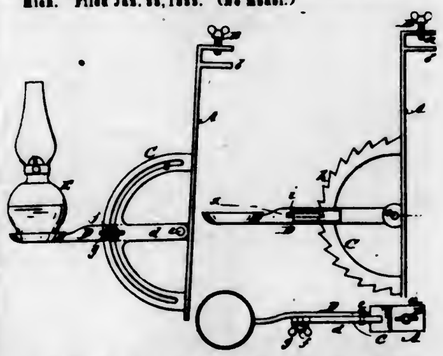
Claim.—1. In combination with the tap-pipe and cock, the transparent illuminated section 3, as set forth.

2. In combination with the tap-pipe and transparent section, the jet 8, as set forth.

3. In combination with the tap-pipe having vertical transparent section and cock 7, the jet 8, as set forth.

4. In combination with the pipe 1 and vertical transparent section 3, the pipes 5 6, cock 7, jet 8, and reflector 9, as set forth.

257,050. LAMP-BRACKET. HENRY LEE HUNSON, Charlotte, Mich. Filed Jan. 25, 1882. (No model.)



Claim.—1. In a lamp-bracket, the back piece, A, provided with the clips *a b* and set-screw B at its upper end and the arc-shaped piece C at its lower front end, in combination with the lamp-holding arm D, pivoted to the said back piece, and the means, substantially herein shown and described, for adjustably securing it to the arc-shaped piece, as set forth.

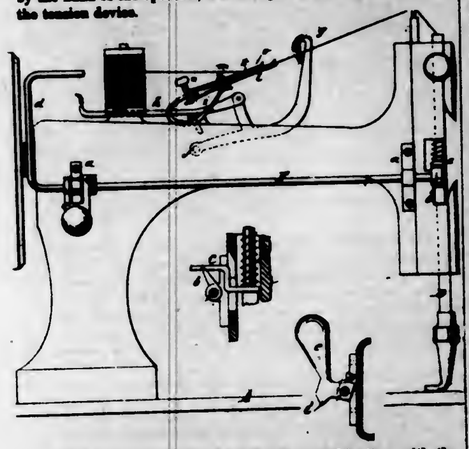
2. In a lamp-bracket, the back piece, A, provided with an attaching device at its upper end, and with the slotted arc-shaped piece C, in combination with the lamp-holding arm D, pivoted to the said back piece, and the clamping-screw *f g*, substantially as and for the purpose set forth.

257,051. PROCESS OF COLORING AND FINISHING PICTURES. CHARLES H. HYDES, Phelps, N. Y. Filed Apr. 13, 1881. (No specimens.)

Claim.—The process of coloring and finishing pictures, consisting, first, in rendering the paper upon which they are painted or photographed semi-transparent by treating the paper to a compound of the following ingredients: sugar of lead, one and one-fourth ounce; spirits of turpentine, one quart; Canada balsam, one pound; second, applying the color to the back; third, cementing the picture to a suitable backing; fourth, securing it to the backing by great pressure, and, fifth, finishing it on the surface, all in the manner described.

257,052. SEWING-MACHINE. DANIEL HEILEY, Bradford, assignor to himself and James Blain, Gilford, Ontario, Canada. Filed Jan. 17, 1882. (No model.)

Brief.—The invention relates to mechanism whereby the presser-foot may conveniently be raised and the thread slackened by the hand of the operator, which stops the machine, and also to the tension device.



Claim.—1. In a sewing-machine, the combination, with the arm B, the presser-bar D, provided with the lug *c*, and the rod F, journaled in bearings on the side of the said arm, and provided with the arm *b* and the handle *d*, of the weighted arm *e*, having projection *e'*, substantially as and for the purposes set forth.

2. In sewing-machines, the lever G, provided with eye *g*, and the slide h, in combination with the arm of the machine, substantially as and for the purposes set forth.

3. The combination, in a sewing-machine, of the presser-bar raiser F and thread-slackener G, fitted for being operated contiguously to the balance-wheel, substantially as shown and described.

4. The tension device consisting of spring-tongues *k l*, provided with a slot, *k'*, the U-shaped plate *i*, and the spring *o*, combined for use as shown and described.

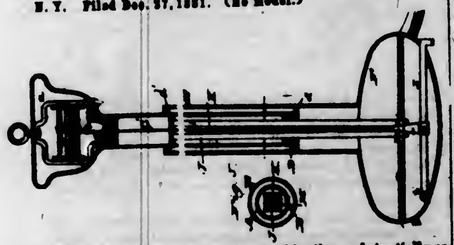
257,053. BOTTLE-STOPPER. STEPHEN S. NEWTON, Binghamton, N. Y. Filed June 10, 1881. (Model.)



Claim.—1. In a bottle-stopper, the combination, with the discharging-tube having an enlargement, *a'*, and a head C C', of the clamp-ring G, adapted to move upward on the discharging-tube for the purpose of clamping the head and to be moved downward on said tube to release the head, substantially as set forth.

2. In a bottle-stopper, the combination, with the discharging-tube and elastic head, of the clamp-ring G, having a portion of its surface of less diameter than the diameter of the enlargement *a'*, substantially as and for the purpose set forth.

257,054. CHANDELIER. STEPHEN S. NEWTON, Binghamton, N. Y. Filed Dec. 27, 1881. (No model.)



Claim.—1. In a chandelier, the combination, substantially as herein set forth, of the following elements, namely: an upper stationary tube, a lower sliding tube, the strengthening-collar D, adapted to receive the pressure of the locking devices, the locking-bars J and K, and devices, substantially such as described, to crowd said parts J and K against the strengthening part D.

2. The combination of the lower sliding tube, the upper stationary tube, the strengthening-collar D at the lower end of said stationary tube, the bar K, adapted to be thrust outward against the strengthening part D, and the bar J, passing through said part D and connected to the lower shell, F, substantially as described, whereby it prevents rotation of the lower tube relatively to the other.

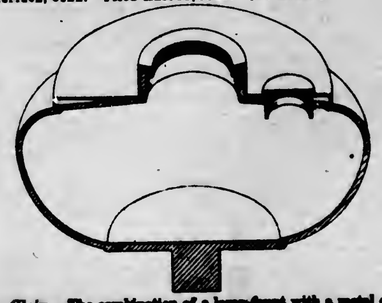
3. The combination of the lower sliding tube-section, the upper stationary tube, the strengthening-collar D at the lower end of the upper tube, the friction-bars J K, extending from the upper end of the sliding tube to the lower end, and mechanism, substantially as described, for forcing said bars outward against the part D, as set forth.

4. The combination of the lower sliding section, the upper stationary section, the two locking-bars J K, extending from the upper end to the lower end of the sliding tube-section, and a wedge having inclined faces opposite from the locking-bars and operated by the weight of the chandelier to throw said bars outward to lock the sliding section, substantially as set forth.

5. The combination of the following elements, viz: the lower sliding tube-section, the upper stationary tube-section, a cord-winding mechanism attached to the upper tube-section, a locking-bar carried by the lower tube-section and extending from the top to the bottom thereof, a sliding supporting-piece, *d'*, at or near the upper end of the lower tube-section, to which the upper end of the locking-bar is pivoted, and devices, substantially as described, which throw said locking-bar outward upon the pivot in said plate to lock the sliding section, as set forth.

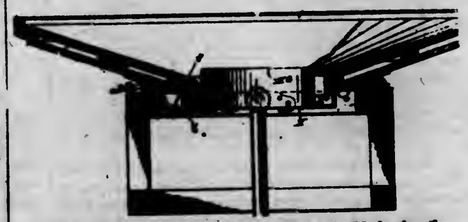
6. In a chandelier, the combination, with the upper stationary section, the lower outer sliding section, the locking-bars carried by the lower section, and the devices which crowd said bars outward, of the strengthening-piece D, cast with the spacing-flange *d*, substantially as set forth.

257,055. LAMP-FOUNT. JACOB J. NICHOLS, Brooklyn, N. Y., assignor to the Bradley & Hubbard Manufacturing Company, Meriden, Conn. Filed Mar. 11, 1882. (No model.)



Claim.—The combination of a lamp-fount with a metal covering-plate, constructed at the center with a burner socket or collar, and at one side with an opening provided with a flange, *c*, upon its under side, said flange extending through a corresponding opening in the fount and provided with a cover, substantially as described.

257,056. SLIME-TABLE FOR CONCENTRATING ORES. WILLIAM NICHOLS, Phœnix, Mich. Filed Dec. 31, 1881. (No model.)



Claim.—1. The combination of the inclined table having the annular groove at its outer edge, mechanism for rotating the table, the perforated water-supply pipe, which is supported in or above the annular groove in the table and discharges the water into the

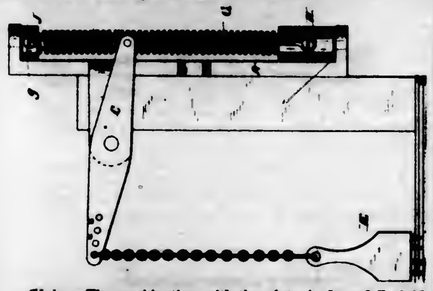
groove, ore and waste launders or receptacles at the inner edge of the table, and the water-jet pipes for washing the ore down the table into its launder, substantially as set forth.

2. The combination of the inclined table, means for revolving the same, the head f', carried by said table, the hub I, and the annular receptacle constituting the launders I' and I², which receptacle extends out beyond the lower edge of the head f' to form the open offset i, substantially as described.

3. The combination of the main supporting-frame, the wheels thereon, the superposed ring-frame, and the inclined table carried thereby, the rack and worm, the water-supply pipes O and K, and the stationary hub having the ore and waste launders, substantially as set forth.

257,057. LOOM-TEMPLE. WILLIAM E. NEELE, Pittsfield, Mass. Filed Dec. 1, 1881. (Model.)

Brief.—A sliding head mounted on a rod fixed in the temple-stand is connected by a link with one arm of a lever pivoted on the stand. The other arm of the lever is connected by a chain with the claw or hooks that engage with the selvage of the cloth. A spiral spring placed on the rod between the sliding head and an adjustable back-stop serves through the sliding head, lever, &c., to draw the claw laterally and stretch the cloth.



Claim.—The combination, with the plate A, the rod I, rigid with this plate, the spring, the sliding head H, and the adjustable back-stop J, provided with a set-screw, *g*, of the rod G, the lever C, and the claw E, connected by a chain to said lever, substantially as and for the purposes described.

257,058. FAN. JOHN HOBEN, Middletown, Conn. Filed Mar. 8, 1882. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of the plaited feather A and the stub *a*, formed of a single piece, and the re-enforce B, secured to the feather at its junction with the stub.

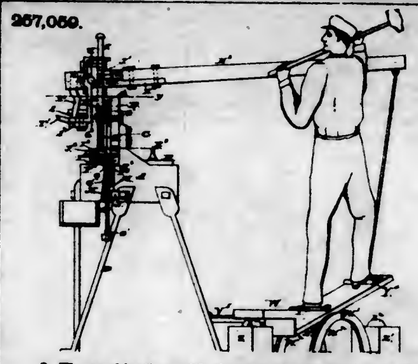
2. The combination, substantially as hereinbefore set forth, of the plaited feather A, the stub *a*, the re-enforce B, and the handle C, provided with a socket, *c*, and for the purpose specified.

257,059. MACHINE FOR SHEARING, PUNCHING, AND RIVETING. WILLIAM A. PALMER, Rome, Ga. Filed Sept. 30, 1881. (No model.)

Claim.—1. In a punching and riveting machine, the bar O, provided with the goose-bill clamp P at its upper end, in combination with the springs O' O², the lateral guide N having shoulder N', and the bed-plate A, substantially as and for the purposes specified.

2. In a punching and riveting machine, the combination, with the bifurcated operating-lever, of the pivoted arm T, carrying at its lower end the cutter T', the adjustable blade S, and the laterally-adjustable stop F, the blade S being secured to the lower face of the casting E and the stop to the lower face of the casting F, the cutter operating between them, substantially as and for the purpose set forth.

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3. The combination, with the operating-lever of a punching and riveting machine, of the rocking treadle W, connected thereto by a rod, as shown, substantially as and for the purposes specified.

4. The combination, with the rocking treadle W, of the retracting-springs connected thereto and to the supports, and the blocks provided with stop-cushions on their upper faces, placed under the ends of the treadle, substantially as and for the purpose set forth.

5. In a punching and riveting machine, the bed-plate, punch-plate, and the pivoted punch secured to the lower end of the vertical bar I and operated by the lever H², in combination with the slotted casting E, the vertical bar J, carrying the hammer-head J' at its lower end, and the goose-bill clamp P, springs O' O², and lateral guide N, having shoulder N', substantially as specified.

257,060. HEAD-BLOCK FOR SAW-MILLS. BARNES PARKHURST, St. Louis, Mo., assignor of one-half to Geo. E. Knight, same place. Filed Jan. 16, 1882. (No model.)

Brief.—The gage or stop is set and the movement of the adjusting-lever against said stop determines the movement of the log and the thickness of the board. A friction-brake attachment permits a backward movement of the knees under excessive shocks or pressure.

Claim.—1. In a head-block for saw-mills, the combined index, ratchet, and brake-wheel, in combination with suitable lever, index, and brake, as set forth.

2. In a head-block for saw-mills, the wheel H, with rim N, ratchet-teeth N', and index-teeth N², in combination with arm J and lever I, carrying reversible pawl, substantially as and for the purpose set forth.

3. In a head-block for saw-mills, the index, ratchet, and brake-wheel combined in one, in combination with a lever, I, having reversible pawl I', an index, J, and a brake, T, to receive the rebound, all substantially as specified.

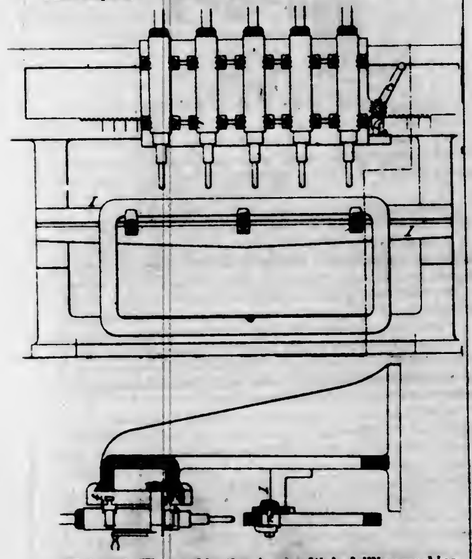
4. The combination of wheel H, lever I, provided with pawl I', brake T, index J, and arm Q, with notches E E', substantially as specified.

5. In a head-block for saw-mills, the cam S, in combination with the wheel H and index J, secured to the frame A, for the purpose set forth.

6. In a head-block for saw-mills, the wheel H, lever I, provided with a pawl, I', arm Q, and index J, the latter being made thin, so as to act as a spring, and having a rib, *e*, for engaging with the teeth of the wheel and with notches of the arm Q, all substantially as and for the purpose set forth.

7. In a head-block for saw-mills, the combination of wheel H, lever I in rear, reversible pawl I', index J in front, shaft T, arm Q, cam S, brake T beneath the wheel, lever U, pawl V, scale-bar X, provided with stop Y, all supported by the frame A, and the shaft F, engaging with the main shaft E, all substantially as and for the purpose set forth.

257,061. MULTIPLE-DRILLING MACHINE. CHAS. T. PARRY, Philadelphia, Pa. Filed Sept. 17, 1881. (No model.)



Claim.—1. The combination, in a multiple-drilling machine, of a guide-bar, a saddle adapted to the same, and mechanism for traversing the said saddle, with a series of drill-spindle carriers secured to the saddle so as to be adjustable thereon independently of each other and in the same direction as that in which the said saddle is traversed, all substantially as set forth.

2. The combination, in a multiple-drilling machine, of a fixed guide-bar, a saddle adapted thereto, mechanism for traversing the same, and a series of drill-spindle carriers adjustably secured to the saddle, with an adjustable pointer on the latter and a scale on the guide-bar, all substantially as set forth.

3. The combination, in a multiple-drilling machine, of a series of adjustable drill-spindle carriers, with a face-plate, I, rotating, adjustable thereon, and clamps for confining the object to be drilled, substantially as described.

257,062. CORKSCREW. HARRY L. PERRYMAN, Lincoln, Nebr. Filed Feb. 28, 1882. (No model.)

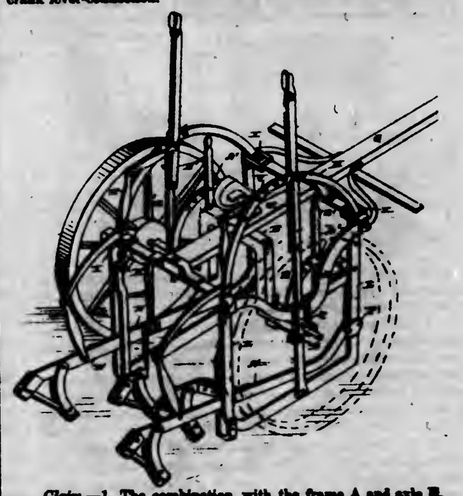


Claim.—1. The combination, with a corkscrew provided with a shank, *d*, of mechanism, substantially as described, whereby in turning a cork a sudden jerk is imparted thereto, substantially as specified.

2. The combination, with the tube A, provided with the opposite slots, *c c*, and handle *a*, secured to one end of the tube, of the screw *i* and shank *d*, having stops *h h*, substantially as described, and for the purpose set forth.

257,063. SULKY-PLOW. JOHN H. PHILLIPS, Gillsville, Ga. Filed Feb. 21, 1882. (Model.)

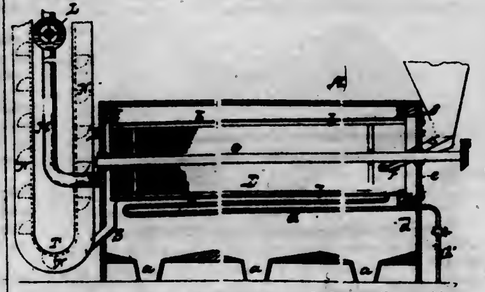
Brief.—The sides of this frame, including the plow-hangers, guides, levers, and racks, adjust to or from each other upon the axle and cross-bars. In front the plow-beams slide up and down by a link-and-lever connection, and at the rear are lifted by a bell-crank lever-connection.



Claim.—1. The combination, with the frame A and axle B, of the adjustable segments H and sliding boxes I, the stirrups P I, the plow-beams N, pivoted thereto, and the compound elbow-levers T and operating-lever S, all constructed and arranged to operate in the manner specified.

2. In combination with the segments A', the levers E' and O', the sliding boxes P, mounted upon the stirrups L, and the plow-beams N, pivoted to said boxes, all constructed and adapted to operate substantially in the manner specified.

257,064. GRAIN DRIER AND CLEANER. LEMUEL C. PORTER and COLIN MCNICOL, Winona, Minn. Filed Feb. 21, 1882. (No model.)

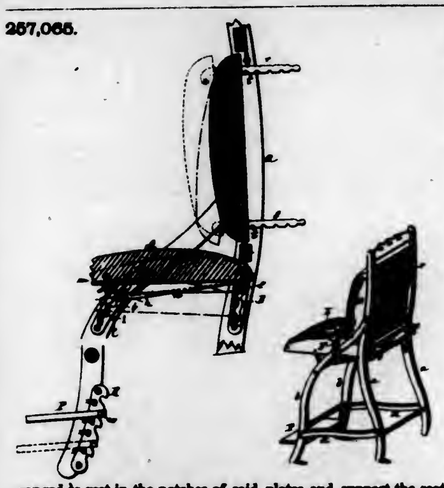


Claim.—In a grain drier, separator, and cleaner, the combination, with the air-tight case A, having the inside head, H, draft-openings *c c*, discharge S, making an air-tight connection with the elevator-tube T, and bottom hoppers, C, of the screen-reel D, steam-pipe grating under the same, suction-fan L, and pipe H, substantially as specified.

257,065. ADJUSTABLE CHAIR. JOHN PURSELL, New Haven, Conn. Filed Oct. 11, 1881. (No model.)

Claim.—1. The combination of the seat A, the notched plates B C on the rear and front legs below the seat, and rundles *c* A, ar-

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ranged to rest in the notches of said plates and support the seat, one of said rundles connected to the seat by links *f*, substantially as and for the purpose specified.

2. The combination of the seat A, the notched plates B C on the front and rear legs, with a rundle supporting the seat at the rear and extending into the notched plates at the rear, and a rundle at the front or opposite side extending into the said notched plates at the front and hung to the seat with a spring, *s*, applied to draw the two rundles toward each other, substantially as described.

3. The back D, notched arms *r s*, hinged to the back, with corresponding studs *t t* on the posts to engage the notches of the arms, and a stop above and in rear of one or more of the studs, substantially as and for the purpose described.

4. The arms composed of two parts, I H, hinged together, and the cushion L, provided with studs upon its under side, and with corresponding perforations in the said parts I H, substantially as and for the purpose described.

5. The combination of the foot-rest P, constructed with studs *w* at the rear, with the notched plates R, provided with studs *x* in front of the notches, and upon which the foot-rest will bear while the studs *w* engage the notches in the plate, substantially as and for the purpose described.

257,066. GAITER. WILLIAM A. QUINN, Cambridge, Mass. Filed Jan. 26, 1882. (No model.)

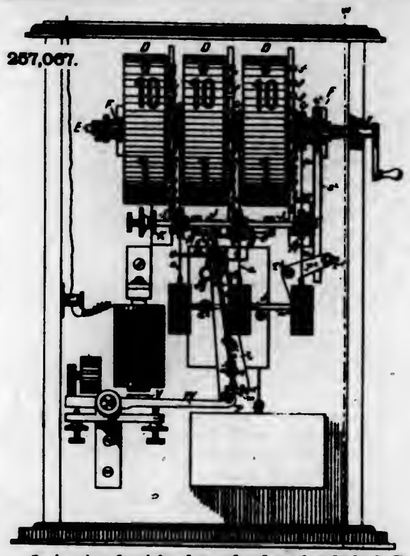


Claim.—A cloth over-gaiter, A, having a leather stay or reinforcing strip over its front seam, said stay being constructed with the widened or extended toe and instep portion, as herein shown and described.

257,067. FIRE-ALARM-REGISTERING APPARATUS. CHAS. H. RANDALL and HUGHES H. BURGESS, Boston, Mass. Filed Feb. 1, 1881. (Model.)

Claim.—1. A series of peripheral spaced and numbered wheels, D, arranged to turn separately and independently under the action of weights or their equivalents, and each provided with a series of concentrically-arranged and equidistant lateral pins, *f*, in combination with pawls M, arranged between the wheels, and each provided with two abutments for said pins, and with an actuating-lever, P, which lever is rigidly connected to and forms a part of said pawl, all combined and arranged together substantially as and for the purpose described.

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2. A series of peripheral spaced and numbered wheels, D, arranged to turn separately and independently under the action of weights or their equivalents, and each provided with a series of concentrically-arranged and equidistant lateral pins, *f*, in combination with pawls M, arranged between the wheels, and each provided with two abutments for said pins, and with an actuating-lever, P, which lever is rigidly connected to and forms a part of said pawl, and with a pusher, *r s*, arranged to travel in relation to and to operate upon and against each and all of said levers, all substantially as and for the purpose described.

3. A pusher, *r s*, and its carrier *l*, having notches *m*, and arranged to swing about an axis or center, in combination with a lever, W, arranged to vibrate, and in each vibration to enter into a notch of said carrier and therein work against said pusher, all substantially as and for the purpose described.

4. A pusher, *r s*, and its carrier *l*, having notches *m*, and together arranged to swing about an axis or center, in combination with an electro-magnet, and a lever, W, which is arranged to vibrate, and in each vibration to enter into a notch of said carrier and therein work against said pusher, and is operated upon through the said electro-magnet, all substantially as and for the purpose described.

5. The combination, with the pendulum of a clock or other suitable movement, and with the carrier *l* for a pusher, *r s*, which is moved by such clock mechanism, substantially as and for the purpose described, of the arm *p'* to said pusher-carrier *l*, and of the angular lever s^3, arranged to turn on a stationary support in relation to said pendulum, and the movement of said arm in conjunction with said pusher-carrier for said arm to place said angular lever at a bearing against the pendulum, and thereby arrest its movement, all substantially as and for the purpose described.

6. The pin *p'* of pusher *r s* and the stop-lever s^3 for the pendulum S of a clock or other movement, combined and arranged together for said pusher-pin, when moved in the proper direction to release said stop-lever from the pendulum, all substantially as and for the purpose described.

7. The carrier *l*, arranged to swing on or about a center, and carrying a pusher, *r s*, in combination with a slide-rod, m^2, for operation substantially as described, for the purpose specified.

8. The vertical pin n^2 to slide-rod m^2, in combination with the arm r^2 of stop-lever s^3 to the pendulum S of a clock or other movement, substantially as and for the purpose described.

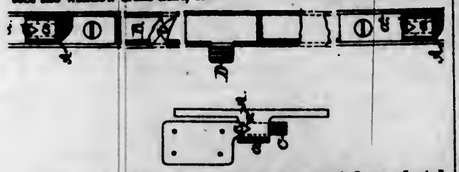
9. The peripheral spaced and numbered wheels D, each provided with concentrically-arranged pins *f*, the pawls M, each having two shoulders, *g h*, and an actuating-lever, P, in combination with a clock or other suitable movement, a carrier, *l*, carried by such movement, and having a pusher, *r s*, and notches *m*, and with the lever W, adapted to be vibrated, when severally constructed and arranged and operating together substantially as and for the purpose described.

10. The carrier *l*, carrying the pusher *r s*, in combination with the shaft of a clock or other movement, an electro-magnet, an armature, and an attached lever arranged directly beneath the pusher and acting to elevate the same, substantially in the manner described and shown.

11. The pusher-carrier *l*, provided with the notches *m*, each constructed at its inner end and along its sides substantially as shown and described, for the purposes set forth.

257,068. DUST-GUARD FOR RAILWAY-CAR WINDOWS. JOHN H. REYNOLDS, Troy, N.Y. Filed Dec. 8, 1881. (No model.)

Brief.—The hinges for the dust-guard B have notches with inclined sides, so that the force of the wind will cause the guard to ride up the incline when its position is to be changed and to settle in the notch, which will give it the proper position to protect the window from dust, &c.



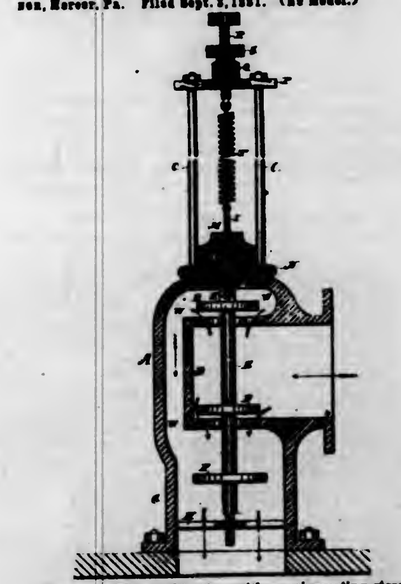
Claim.—1. A dust-guard for railway-car windows, adapted to open and close automatically, as herein described, and provided with self-locking hinges adapted to secure the said dust-guard in position when turned in a perpendicular line to the side of the car and when thrown back from the window in line with the side of the car, substantially as herein specified.

2. The combination, with a dust-guard, B, of hinges composed of a socket, *c*, provided with depressions *c'*, formed in the front and two sides of said socket, as herein described, and a plate, C, provided with a pendent projection, *c*, for the purpose of locking said dust-guard in position when projected perpendicularly from the side of the car and when thrown back from the window in line with the side of the car, and for raising said guard in the first phase of a turning movement, as herein specified.

3. In a dust-guard hinge, the plate C, provided with a shoulder, *c'*, adapted to strike against a socket-piece A for the purpose of preventing the outer edge of the dust-guard from striking against the side of the car, as herein specified.

4. The guard-strip E, provided with a lip, D, arranged as herein described, for the purpose of guiding and retaining the inner edge of the dust-guard against the face of the conjoining flange *b*, as herein specified.

257,069. GOVERNOR FOR STEAM-ENGINES. GEORGE ERNST, Mercer, Pa. Filed Sept. 3, 1881. (No model.)



Claim.—1. The combination, with a reciprocating steam-engine and a valve-chamber, A, provided with the interior chamber, B, having valve-seats C, and connected with the steam-chest and boiler of said engine, of a valve-stem, E, provided with double valves D, and a piston, F, with a wide intervening space between said piston and the inner wall of the valve-chamber, whereby when the steam is admitted into the cylinder of the engine the double valves will be closed by the momentum of the steam upon the piston, substantially as described.

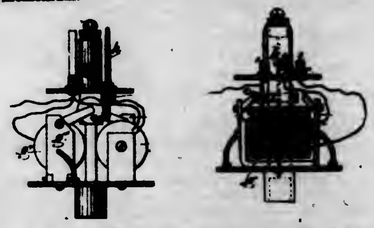
2. The combination, with a reciprocating steam-engine and a valve-chamber, A, provided with valve-seats C, and connected with the steam-chest and boiler of said engine, of the valve-stem E, having the stem I projecting into the atmosphere, and provided with the double valves D, and a piston, F, with an intervening space between said piston and the inner wall of the valve-chamber, and spring T, whereby when the steam is admitted into the cylinder of the engine the double valves will be closed by the momentum of the steam upon the piston, and when the steam is cut off from the cylinder the valves will be opened by the spring, substantially as described.

3. The combination, with a reciprocating steam-engine and a valve-chamber, A, connected with the steam-chest and boiler of said engine, of the valve-seats C C, valve-stem E, provided with the valves D D, and piston F, stem I, sub-cover R, and spring T, secured at its lower end to the upper end of the stem I, and attached at its upper end to the lower end of the sub-cover, substantially as described, and for the purpose set forth.

4. The combination of the stem I, ring N, nut M, and reciprocating washer L, chambered into ring N, and having its upper face ground to form a steam-tight joint with the lower face of the nut M, substantially as described, and for the purpose set forth.

257,070. ELECTRICAL GAS-LIGHTING APPARATUS. THOS. H. REDDIE, Brooklyn, N.Y. Filed Mar. 18, 1881. (No model.)

Brief.—The lighting-current passes through a thermal spring—that is, through 1 r 2 f 3. The expansion of the spring *r* causes it to connect through 3 with another burner, or with an extinguisher on the same burner, or with an alarm, according to prearrangement of connections. The sliding grooved valve need not be forcibly held to a seat. A part of its movement may be effected by momentum.



Claim.—1. The combination, with a gas-burner, of a sliding parallel-sided valve passing across and acting to open and close the gasway, and two electro-magnets and their armatures acting at opposite ends of the valve to move it in either direction, substantially as set forth.

2. The combination, with the gas-burner, sliding valve, and two electro-magnets and their armatures for actuating the valve, of a thermostatic circuit-closer acting to divert the circuit-connection from the igniting-magnet to the extinguishing-magnet, substantially as set forth.

3. The combination, with the magnet and burner in an electric gas-lighting apparatus, of a sliding parallel-sided valve with a groove or neck thereon, adapted to move transversely across the pipe and open and close the gasway, substantially as set forth.

4. The combination, with the gas-burner, of the sliding valve, the magnet *f*, and armature *f'*, for opening the valve, and the spark-points *h* and *i*, the latter of which is moved by the armature *f'*, substantially as set forth.

5. The combination, with the gas-burner and the sliding valve, of the two electro-magnets, one to open the gasway, the other to close it, a thermal switch to change the circuit-connections when the gas is burning, and local circuit-connections and circuit-closers *p q*, substantially as set forth.

257,071. CHURN-COVER. EDWIN G. RICHARDSON, Poultney, Vt., assignor to H. D. Chapin, same place. Filed Feb. 11, 1881. (No model.)

Claim.—1. The combination, with a vessel and its cover, of the spring locking-levers, the central standard secured to the cover, the adjustable nut upon said standard, and the locking-cams upon which the ends of the springs bear, substantially as set forth.

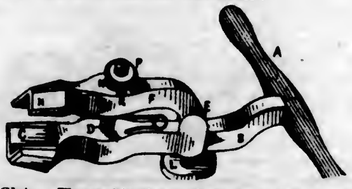
267,071.



2. In a looking device for a churn or similar cover, the spring looking-levers bearing upon the edge of the cover, their ends projecting beyond said edge and adapted to enter and bear against the looking-cams, in combination with means for compressing their central parts in order to throw their ends outward and upward and hold the springs in such position, substantially as shown and described.

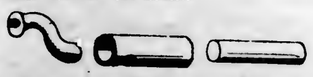
3. In combination with the spring looking-levers, the central standard secured to the cover and provided with adjustable nuts above and below the crossed springs, substantially as and for the purposes specified.

267,072. CARRIAGE-WRENCH. EDWIN A. ROBBINS, Boston, Mass. Filed Mar. 22, 1882. (No model.)



Claim.—The combination, with the shank B, having the rigid screw-bolt D, adjustable thumb-bolt L, jaw C, and cross-handle A, of the adjustable jaw H, having a shank-bar, F, provided with an incline-faced hole, T, and projections or ribs R, and the thumb-nut P, provided with a shoulder, S, and tubular projection N, all being constructed and arranged substantially as shown and described, as and for the purposes set forth.

267,073. VEHICLE-REACH. CHARLES K. ROBINSON, Lyons, N. Y., assignor of one-half to Hollis L. Hotchkiss, same place. Filed Aug. 12, 1881. (No model.)

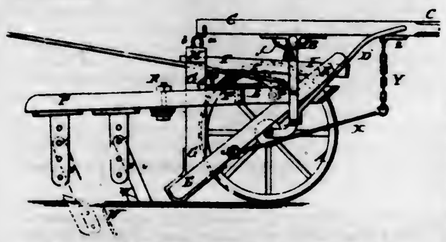


Claim.—1. A vehicle-reach consisting of a metallic tube having solid bearing ends welded thereto, the whole forming one integral body, as herein shown and described.

2. A vehicle-reach consisting of a metallic tube with solid bearing ends welded thereto and a wood filling resting in the tube, as herein shown and described.

267,074. SULKY-CULTIVATOR. JOHN W. ROCKAFELLOW, Stockton, N. J. Filed Dec. 22, 1881. (No model.)

Brief.—The sulky-frame is provided with a sub-frame having oblique bars, which rest upon the ground and form supports or gages. This frame, together with the drag-bars, is suspended by a link-connection from the axle-frame, which may be vibrated laterally by the handles or hooked rigidly to the axle. Removable side beams.



Claim.—1. The combination, with the carriage A B C D and the plow-beams L O P, of the inclined bars E, the uprights G, the cross-bars F H, and the longitudinal bar I, substantially as herein shown and described.

2. In a sulky-cultivator, the combination, with the inclined gage-bars E and the tongue C, of the draw-rods X and their supporting-chain Y, substantially as herein shown and described, whereby the draft is applied to the said inclined bars and the double-tree and whiffletrees are supported above the plants, as set forth.

3. In a sulky-cultivator, the combination, with the inclined bars E and the upright bars G, of the plow-beams L, substantially as herein shown and described.

4. In a sulky-cultivator, the combination, with the tongue C and the cross-bar H of the gage-frame, of the hook-rod *a* and the eyebolts or staples *b*, substantially as herein shown and described, whereby the plows can be suspended above the ground, as set forth.

5. In a sulky-cultivator, the combination, with the axle B and the uprights G of the gage-frame, of the hook-rods *c* and the eyebolts or staples *d e*, substantially as herein shown and described, whereby the gage-frame and the carriage can be rigidly connected, as set forth.

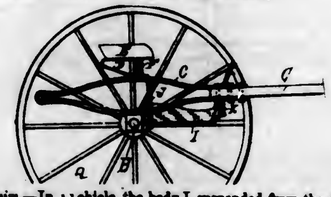
267,075. MAGNETIC RECEIVER. JAMES HARRIS ROGERS, Washington, D. C., assignor of one-half to Frank Hume and L. G. Hine, both of same place. Filed Mar. 6, 1882. (No model.)



Claim.—1. The combination of the diaphragm, the magnet having its poles arranged in close proximity, the arm carried by one pole of the magnet and resting in contact with the diaphragm, and the helix carried by the other pole, substantially as and for the purpose set forth.

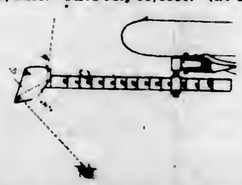
2. The combination of the casing, the diaphragm, the ring magnet secured to the casing, the helix on one pole of the magnet the opposite pole of the magnet, and the arm carried by the free pole of the magnet in contact with the diaphragm.

267,076. TWO-WHEELED VEHICLE. ROBERT ROSS, Santa Rosa, Cal. Filed Feb. 28, 1882. (No model.)



Claim.—In a vehicle, the body I, suspended from the springs C by the bolt J and from the shafts G by the spiral springs K, substantially as shown and described.

267,077. SIGHT FOR ORDNANCE. ANDREW H. RUSSELL, Watertown, Mass. Filed July 26, 1881. (No model.)



Claim.—The combination, with a gun provided with sights *b a*, of the reflecting-surfaces *d f*, carried, together with the rear sight, by a common holder adapted to be moved vertically and fastened in position, the rear sight, *h*, being arranged to move and be adjusted laterally on said holder, all substantially as and for the purpose specified.

267,078. WHIP. ANTHONY SCHARFF, Philadelphia, Pa. Filed Feb. 20, 1882. (No model.)

Claim.—1. The within-described tip for whips, said tip consisting of a coiled strip, *g*, of rawhide, having a central core, *h*, of tempered steel, as set forth.

2. The within-described tip for whips, said tip consisting of a coiled strip of rawhide, with central steel-wire core, *h*, and uncoiled depending strip *f*, as set forth.

267,078.



3. The combination, in a whip, of the stock, the tip consisting of a coiled strip of rawhide with steel core, and the covering comprising an inner braid, *i*, an outer braid, *n*, and an intermediate layer, *m*, of water-proof cement, as set forth.

267,079. COTTON-PRESS. MICHAEL H. SCHREIER, Batesville, Ark. Filed Jan. 14, 1882. (No model.)



Claim.—1. In a cotton-press, the combination, with the follower A and the levers B, of the bolts *a*, guide-plates *c*, and rods *d*, inclosing said bolts, and the rods *b*, connecting the bolts with the said follower, and the ropes *e*, secured to the bolts *a* and passing over pulleys at the inner and outer ends of the levers, substantially as shown and described, and for the purpose set forth.

2. In a cotton-press, the combination, with the levers B and the ropes *e*, passing over pulleys at the ends of the levers, of the rods *b*, connected to the follower at one end and to the ropes at the other, and forming sliding joints with the said levers, substantially as shown and described.

3. In a cotton-press, the combination, with the follower A and the follower-chamber, of the lint-room placed above the follower-chamber and having a vertically-sliding rotary table, *k*, which forms the bottom of the lint-room and the top of the follower-chamber, and means for operating the said table, substantially as shown and described.

267,080. DIE FOR MAKING ELLIPTIC SPRINGS. CHARLES T. SCHOEN, Philadelphia, Pa., assignor of one-half to Charles Scott, same place. Filed Dec. 18, 1881. (No model.)



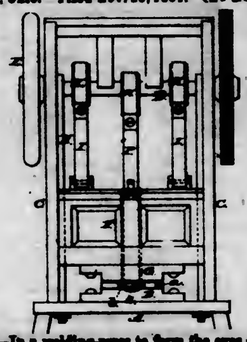
Claim.—The improved dies described, having curved faces, the one grooved and the other ribbed, substantially as set forth, and adapted for shaping the plate and for making the grooves or ribs therein by one operation.

267,081. IMITATION OF MARQUETRY BY PAINTING. WILLIAM SCHROEDER, San Francisco, Cal. Filed May 16, 1881. (No specimens.)



Claim.—The process substantially stated above, to wit: a series of steps for the production of ornaments, figures, &c., representing inlaid work on wood, consisting, first, in preparing the wood with sizing or shellac; second, in coating or grinding it with water-colors; third, in subsequently removing a part of the latter through the openings of stencils by means of a damp sponge; fourth, in applying colors through secondary stencils for finishing the designs with darker parts or lines; and, lastly, coating the whole with shellac or varnish to fix it, substantially as herein described.

267,082. MACHINE FOR MAKING HOES. ALBERT SCHWEER, Sandusky, Ohio. Filed Nov. 26, 1881. (No model.)



Claim.—In a welding-press to form the eyes of hoes or other tools, the combination, with the press-frame having guides H in its uprights C C, of the lower recessed die, E, the follower F, and upper die, G, having a bearing, *b*, through them, the welding and forming plunger L, reciprocating through the follower and upper die, and the eccentrics K N and pitmans I P, substantially as and for the purpose specified.

267,083. ART OF MAKING WATCH-CASES. ISAAC SCHWIRTER, Brooklyn, N. Y. Filed Dec. 15, 1881. (No model.)



Claim.—The method herein described of making covers for watch-cases, which consists in cutting or stamping out the ornamental rim A in a single homogeneous piece of metal, then stamping or striking up from a blank the head B, and finally uniting the rim to the edges of the head by means of solder, substantially in the manner and for the purpose described.

267,084. DEVICE FOR EXHIBITING OR HOLDING WHIPS. ORLANDO H. SCOTT, Marysville, Ohio. Filed Mar. 6, 1882. (No model.)



Claim.—In a device for exhibiting or holding whips, the combination of a whip and spring-key with a suitable slotted plate or holder adapted to receive and retain the whip and key, all substantially as and for the purpose stated.

267,085. FOLDING CUT AND BEDSTEAD. CHARLES T. SEGAR, Utica, N. Y. Filed Mar. 22, 1882. (No model.)



Claim.—1. A folding cot or bedstead consisting of side rails, A, pivoted legs B, and double parallel folding connections extending transversely between the legs of each end, and braces, substantially as specified.

2. The folding cot or bedstead consisting of the side rails, A, pivoted legs B, transverse parallel folding connecting-bars E E', jointed in the middle and pivoted to a vertical connection, F, and the chain-braces C, D, and A, substantially as specified.

3. In a folding cot or bedstead having the side rails and pivoted legs, the transverse parallel folding connections extending transversely between the legs at each end, and the extensions A under and supporting the rails, substantially as specified.

267,086. PADLOCK. WILLIAM W. SHALLUS, Lancaster, Pa. Filed Feb. 28, 1882. (Model.)



Claim.—In combination with the casing A, provided with groove B on its interior, the shackle having a longitudinal groove, E, and annular groove V, plate D, having hook C, tumbler G, provided with a beak, H, and recess I, tumblers I, adapted to work into the wards of the shackle, the intervening plates, spring P, and bow T at the key-hole, all arranged to operate substantially in the manner and for the purpose specified.

267,087. DEVICE FOR OPENING STOVE-DOORS. WILLIAM H. SHAW, Albany, N. Y. Filed Feb. 18, 1882. (Model.)



Claim.—1. The combination of a stove, the stove-door, and a pivoted lever that is attached to the stove in such relation to the door that one of its ends will catch under a projection on the door and first raise the free end of the door upward and then swing it open, substantially as shown.

2. The combination of the stove-door provided with a projection having an inclined plane and a vertical portion with a pivoted lever, by means of which the door can be first lifted and then thrown open, substantially as described.

3. The combination of the pivoted lever having the bearing-points P, and the projection O, which passes through the flange of the stove, whereby the lever may be rocked back and forth for the purpose of opening the door, substantially as set forth.

267,088. POST-VALVE. STORER SHEPARD, St. Louis, Mo., assignor of one-half to Thomas H. Bradley, Washington, D. C. Filed Jan. 14, 1882. (No model.)

Brief.—Valve G is guided in its ascent and descent by guides F F', the former bearing on ring a, whereby the friction is reduced, and the latter, by striking against C, prevents the valve rising too high in the chamber.



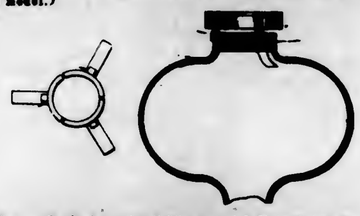
Claim.—1. A valve consisting of the disk E and the projections F F', which projections permit the valve to turn parallel to its seat and compel the disk to operate in a direct line between its seat and its cheek.

2. A valve provided with projections F', in combination with the pipe or bushing C and cylinder B, the contact of said projections with the bushing or pipe providing a check, substantially as described.

3. The valve-cylinder provided with the rim *a*, as and for the purpose described.

4. The cylinder B, having a valve-seat, *d*, and rim *a*, in combination with the pipe or bushing C and valve E, having upper and lower projections, substantially as set forth.

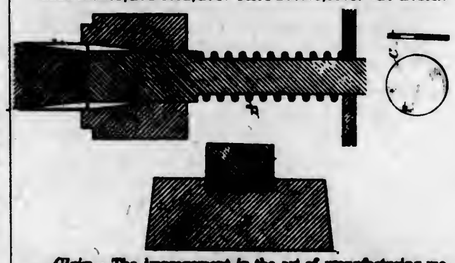
267,089. MEANS FOR ATTACHING BURNERS TO LAMPS. THORNTON A. SMITH, Philadelphia, Pa. Filed Feb. 23, 1882. (No model.)



Claim.—1. A ring of suitable material divided into two or more sections, each section having thereto attached one or more arms or equivalent device, and one or more clasps or their equivalent, together with a ring or collar of suitable material and shape, having on its inner surface two or more slots, and a vertical flange on its outer rim for attaching to the bowl or neck of lamps, substantially as described, and for the purpose set forth.

2. A ring of suitable material divided into sections, having arms and clasps thereto attached, together with a ring having slots on its inner side to fit said clasps, and a vertical flange on its outer rim, in combination with a band or washer of rubber or other suitable material for attachment to bowl or neck of lamps, substantially as described, and for the purpose set forth.

267,090. MANUFACTURE OF METALLIC CAPSULES. ALBERT STORER, New York, N. Y. Filed Nov. 30, 1881. (No model.)



Claim.—The improvement in the art of manufacturing metallic capsules, which consists in first producing a cylindrical cup from a soft-metal blank by the conjoint action of a die and plunger, by which the disk is pressed or squeezed, substantially in the manner described, and then subjecting this cup to the action of a tapering die and plunger, by which said cup is pressed into the form of a tapering capsule, substantially as and for the purposes hereinbefore set forth.

267,091. SMOKE-PURIFYING FURNACE. ALONZO J. SIMMONS, Indianapolis, Ind. Filed Jan. 28, 1882. (No model.)

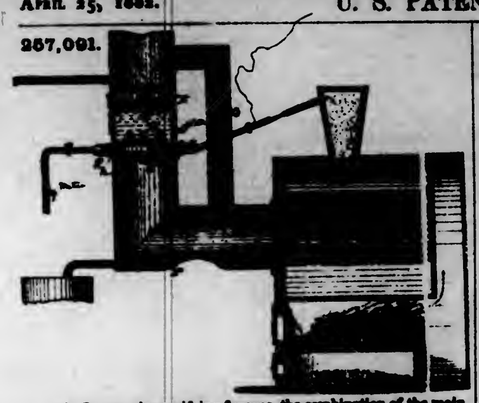
Claim.—1. In a device for deodorizing and cleansing the products of combustion in furnaces, a smoke-flue having a column of water therein, and provided with a series of injectors for the passage of steam, water, and products of combustion, the column of water being held up by the pressure from the steam and water issuing from the injectors, said injectors also acting to cause a vacuum in the lower part of the flue, substantially as set forth.

2. In a device for deodorizing and cleansing products of combustion in furnaces, a smoke-flue provided with a casing or receptacle containing a series of vacuum-injectors, said casing forming the bottom of a water-chamber in the flue, substantially as set forth.

3. A furnace provided with a flue having a series of injectors, a column of liquid in the flue above the injectors, and openings for steam and water pipes to the injectors, as set forth.

4. A furnace provided with a smoke-flue having a series of injectors, a column of water in the flue, pipes for the supply of steam and water to the injectors, and an overflow and auxiliary supply-pipe connected directly with the water-chamber, substantially as and for the purpose set forth.

267,091.



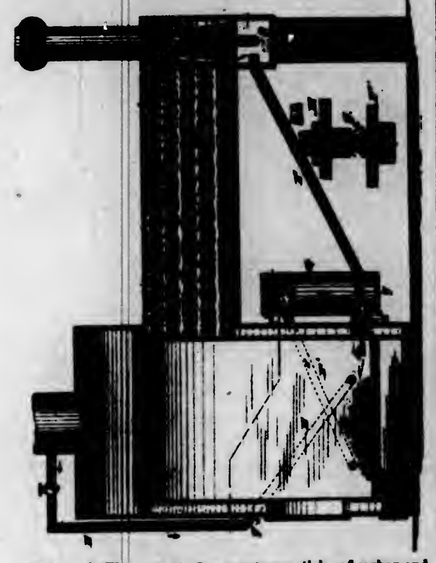
5. In a smoke-purifying furnace, the combination of the main flue having a casing and series of injectors supporting a column of water in said flue, the products of combustion passing through the injectors underneath the column of water, with an auxiliary flue having a suitable damper, whereby the products of combustion are carried off when the injectors are not in use, substantially as set forth.

6. In a device for deodorizing and cleansing products of combustion arising from the manufacture of fertilizers or other articles giving off noxious vapors, a series of injectors secured in a casing fitted to the flue, said casing having openings for the passage of steam, water, and products of combustion to the injectors, as and for the purpose set forth.

7. In a device for deodorizing and cleansing products of combustion, the combination, with the injectors arranged in the flue, of adjustable pipes leading from the boiler-dome and water-supply, substantially as set forth.

8. The combination, with the flue P and injector-casing S, forming the bottom of a water-receptacle in said flue, of the bars X in said receptacle, whereby the gas-bubbles are broken up and their escape from the top of the water prevented, substantially as and for the purpose set forth.

267,092. FURNACE FOR CONSUMING SMOKE. ALONZO J. SIMMONS, Indianapolis, Ind. Filed Jan. 28, 1882. (No model.)



Claim.—1. The method of consuming particles of carbon and gases arising from combustion of fuel in furnaces, which consists in arresting said unconsumed products as they come under the petticoat-pipe, then conducting them to a drum or receptacle provided with a vacuum injector or injectors in its lower end and a pipe at its upper end, which conducts the lighter gases to a series of injectors, where they are commingled with steam and forced into the furnace, substantially as set forth.

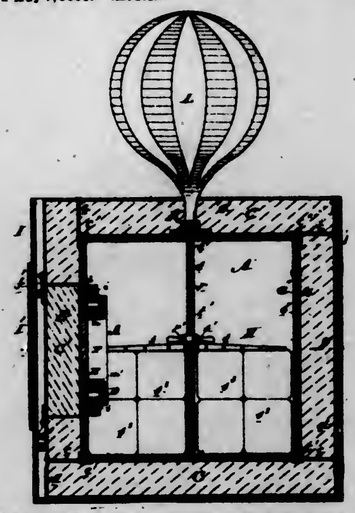
2. In a device for consuming the products of combustion in furnaces, a drum connected with the smoke-arch beneath the petticoat-pipe, said drum having a lower pipe leading to the furnace, an upper pipe connected with a series of vacuum-injectors whereby steam is admitted, and a shield for preventing particles of carbon from entering said upper pipe, substantially as set forth.

3. In combination with a furnace, a drum, G, provided with a vacuum-injector, *g*, pipe I, entering the fire-box, pipe F, leading to the smoke-arch beneath the petticoat-pipe, pipe E, leading from the steam-dome, and pipe F', provided with a series of injectors, *g*, through which the products of combustion are forced upon the burning fuel, substantially as and for the purpose set forth.

267,093. COMPOSITION FOR THE MANUFACTURE OF ARTIFICIAL TILES. ROBERT SKINNER, San Francisco, Cal. Filed Aug. 31, 1881. (No specimens.)

Claim.—A concrete block consisting of a base composed of asphalt or pitch suitably tempered and an upper surface composed of melted resin, light sharp sand or silex, and Portland cement, constructed and united together in the manner substantially as herein set forth and specified.

267,094. SAFE. DAVID W. SMITH, Port Townsend, Wash. Filed May 7, 1881. (Model.)



Claim.—1. The combination of the safe A, having an opening, *g*, cut in one of its sides, with the apertured door-plate D, secured to the inner surface of the safe over and about said opening, and having a recess, *e*, equal in length and breadth to the opening *g*, whereby space shall be provided for accommodating the locks and hinges of the safe-door, substantially as shown and described.

2. In combination with a safe, the door-plate D, having recess *e*, aperture *i*, for ingress to the safe, a grooved projection, *m*, surrounding said aperture, and provided with rubber *m'*, and projecting screw-sockets *n*, substantially as and for the purpose set forth.

3. The combination of the safe A, the door-plate D, having grooved projection *m* and rubber *m'*, with the door F, having flange E, which is adapted to fit against the said rubber, and a bent projection, *o'*, adapted to engage with the inner surface of the safe when the door is closed, substantially as shown and described, and for the purpose set forth.

4. The combination of the safe A with the grooved and notched rod *r*, the binder H, nut *r'*, and the step *t'*, substantially as shown and described.

5. The combination of the safe A, the rod *r*, having groove *t* and notches *t'*, with the binder H, having arms *o*, hub *o'*, and wires *o²*, and the step *t'*, substantially as shown and described.

6. The combination of the safe A, provided with straps *s'*, secured to its outer surface, and rods *c*, held at right angles to the

safe by the said straps, with the buoyant jacket C, having bands *d* on its outer surface and perforations for receiving the said rods, and nuts *f*, for holding the rods in position, substantially as shown and described.

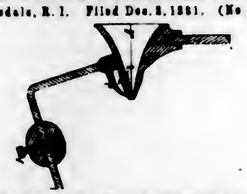
7. The combination of the safe A, having screw-threaded socket K on top, buoyant jacket C, secured to the outer surface of the safe, and the sheet-metal buoy L, having its staff screwed into said socket, substantially as shown and described.

8. The combination of the safe A, constructed of metal plates *a a' b*, and the buoyant jacket C, secured thereto in sections, with the false safe I, having rollers secured to its inner surface to facilitate the egress of the safe from the said false safe, substantially as shown and described.

9. The safe A, constructed of metal plates *a a' b*, with opening *g*, for ingress to the safe, in combination with the rubber *h*, the recessed door-plate D, secured to the inner surface of the safe, and having projecting screw-sockets *u*, and the door F, having screws *u'*, substantially as shown and described.

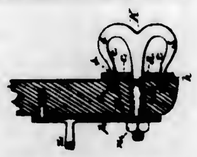
10. The combination of the safe A, the rod *r*, and the binder H, having arms *e*, radiating from a central hub and connected by wires *r'*, substantially as shown and described, and for the purpose set forth.

257,095. TRUMPET FOR RAILWAY-HEADS. JAMES MONROE SMITH, Lonsdale, R. I. Filed Dec. 8, 1881. (No model.)



Claim.—The improved railway-head trumpet substantially as described, having to its throat the pivoted tongue, and also having the bent lever and adjustable weight to operate with such tongue, essentially in manner and for the purpose set forth.

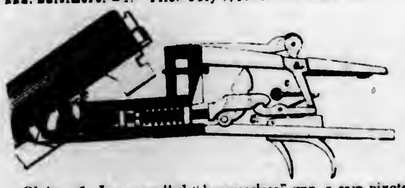
257,096. WHIFFLETREE-CLEVIS. JOHN E. SMITH, Charleston, Ark. Filed Jan. 25, 1882. (No model.)



Claim.—1. The double reversible clevis having a central threaded stem and lateral rearwardly-bent branches engaging by their terminal portions recesses in a face-plate, substantially as specified.

2. The combination, with the perforated double-tree, its back plate, *p*, and face-plate *c*, having lateral recesses A, of the reversible clevis K, engaging the recesses of the face-plate by the rear ends of its branches *e*, and provided with the securing-nut *n*, substantially as specified.

257,097. BREECH-LOADING FIRE-ARM. CHARLES W. SMITH, Baltimore, Md. Filed July 7, 1881. (No model.)

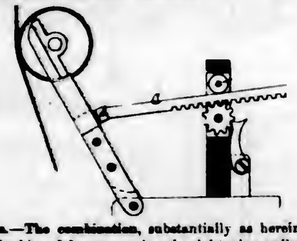


Claim.—1. In a so-called "hammerless" gun, a cam pivoted in the breech and adapted to cock the lock, in combination with a lug integral with or attached to the barrel, which said lug as the breech is opened traverses an arm of the cam in a direction away from its pivot, whereby the leverage gradually increases with the tension of the spring, as set forth.

2. In combination with the lock of a so-called "hammerless" gun, a cam pivoted in the breech and adapted to cock the lock, and having a projection against which the barrel abuts as the breech is closed, whereby the forward motion of the striker-bolt is unimpeded, as set forth.

3. In a so-called "hammerless" gun, a breech-piece chambered about the firing-pin, the said chamber having a lateral opening, in which is inserted a perforated plug, whereby any gases which leak into said chamber through the front opening for the pin are afforded a free vent to the air and their entrance through the rear bearing into the lock-cavity is prevented, as set forth.

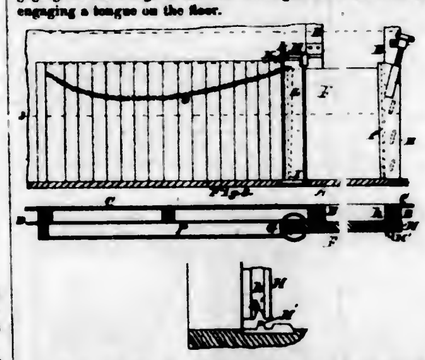
257,098. BELT-TIGHTENER. FRANK SNYDER, New York, N. Y. Filed Feb. 3, 1882. (No model.)



Claim.—The combination, substantially as hereinbefore set forth, of the hinged frame carrying the tightening-pulley, the rack pivoted to such frame, the pinion engaging the rack, and the stop-pawl, for the purpose set forth.

257,099. GRAIN-DOOR FOR FREIGHT-CARS. JACOB R. SPRAGUE, St. Louis, Mo. Filed Dec. 29, 1881. (No model.)

Brief.—A cleat with a groove for the end of the door is pivoted in a step-plate at the mouth of the door-pocket and is swung behind the inner edge of the door and locked. A sliding cleat engaging the outer edge of the door has a groove at its lower edge engaging a tongue on the floor.



Claim.—1. The pivoted cleat or holder, in combination with a grain-car door adapted to swing laterally, the said cleat or holder in one position holding one end of the door and in the other position permitting the door to slide past it, as set forth.

2. The pivoted cleat G, having channel *g*, and adapted to turn on a vertical axis, in combination with a grain-car door, as set forth.

3. The combination, with the pivoted cleat G, of the lever M, hinged thereto, and adapted to lock the cleat either in engagement or out of engagement with the door, as set forth.

4. The combination of a grain-door, F, pivoted cleat G, and casing L, covering the cleat.

5. The combination of pivoted cleat G and step plate or block I, let flush into the floor, and constructed to give bearing to the lower end of the cleat.

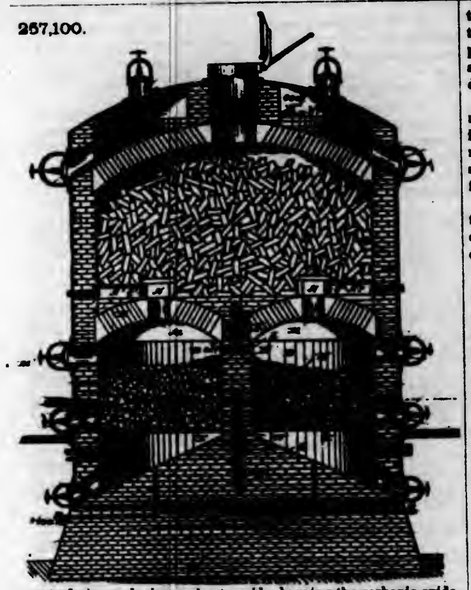
6. The combination of the car-door F, pocket P, and pivoted cleat G, adapted to open and close the pocket, as set forth.

7. The combination of the locking-cleat H, having recess A' and inclined movement, and the tongue H', adapted to enter said recess, as set forth.

257,100. PROCESS OF AND APPARATUS FOR MANUFACTURING GAS. THEODORE G. STRIBORN, New York, N. Y. Filed Jan. 14, 1882. (No model.)

Claim.—1. The herein-described process of manufacturing gas, the same consisting in the following steps, to wit: raising to incandescence a mass of carbonaceous material by a blast or current of air, producing carbonic oxide, burning the carbonic oxide by a blast or current of air above the incandescent carbonaceous material, causing the products to pass into a mass of refractory material, and thus highly heating the same, throwing upon the mass of incandescent material carbonaceous gas-producing material sufficient when reduced to coke or charcoal to supply the amount of carbonaceous material consumed during combustion and generation of gas; raising the said mass to incandescence; decomposing steam by passing it through the incandescent material, producing water-gas, causing the water-gas to come into contact with the heavy hydrocarbons being distilled from the carbonaceous gas-producing material, and thus decomposing them and causing recomposition of the different elements; then causing all the gases and vapors distilled to pass through a mass of highly-heated refractory material, where they may be enriched with naphtha and fixed, substantially as specified.

257,100.



rent of air, producing carbonic oxide, burning the carbonic oxide by a blast or current of air above the carbonaceous material, causing the products to pass into a mass of refractory material, and thus highly heating the same, throwing upon the mass of incandescent material carbonaceous gas-producing material sufficient when reduced to coke or charcoal to supply the amount of carbonaceous material consumed during combustion and generation of gas; raising the said mass to incandescence; decomposing steam by passing it through the incandescent material, producing water-gas, causing the water-gas to come into contact with the heavy hydrocarbons being distilled from the carbonaceous gas-producing material, and thus decomposing them and causing recomposition of the different elements; then causing all the gases and vapors distilled to pass through a mass of highly-heated refractory material, where they may be enriched with naphtha and fixed, substantially as specified.

2. The process of generating gas, which consists in subjecting bituminous coal to the direct heat, by contact, of a mass of incandescent fuel for evolving the gaseous vapor from the former, and at the same time decomposing steam by injecting it into the incandescent mass of coke or fuel, and conducting the resulting hot products, hydrogen and carbonic oxide, through the distilling mass of bituminous coal for taking up the heavy tarry vapors therefrom, carbureting the mixed gases and vapor thus formed, while hot, in a separate chamber, and, finally, combining the carbureted mixture into a fixed gas by bringing it into contact with a mass of heated material in a separate chamber, substantially as specified.

3. The method herein described of manufacturing gas, consisting in raising to incandescence a mass of carbonaceous material by a current of air, producing carbonic oxide, then burning the carbonic oxide by a current or blast of air above the incandescent material, causing the products to pass through a mass of some refractory material, highly heating the same, then bringing in contact with the incandescent material bituminous coal or any other solid gas-making material, distilling the gases and vapors from the same by direct heat, then causing the gases and vapors to pass through highly-heated refractory material for the purpose of fixing said gases, substantially as described.

4. The process herein described of manufacturing gas, which consists in raising to incandescence a mass of carbonaceous material by a current of air, producing carbonic oxide, then burning the carbonic oxide by a current or blast of air above the incandescent material, and conducting the hot products into and through a mass of refractory material, thus highly heating the same; then bringing in contact with the incandescent carbonaceous material bituminous coal or other solid gas-making material, distilling the gases and vapors from the same by direct contact with hot coke, and at the same time decomposing steam by passing it into the heated coke, and conducting the resulting hot products through the mass of distilling coal for taking up and carrying off the heavy tarry vapors, then causing the commingled gases and vapors to pass through the highly-heated refractory material for combining and fixing them and producing a permanent gas, substantially as described.

5. In an apparatus for generating gas from coal, the combination of the upper and lower chambers and intermediate connecting-chamber, the lower chamber being adapted to contain bituminous coal for distillation, and the upper one refractory material, to store up the heat necessary to fix the gases and vapors passing from the lower chamber, substantially as specified.

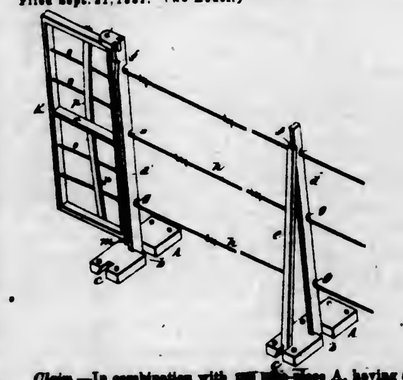
6. In combination with the lower chamber of the generator, the conical floor and the grate above the same, and the central column provided with flues for the admission of air into the said chamber, substantially as and for the purposes specified.

7. In combination with the upper and lower communicating chambers, the chambers located above the combustion and generating chamber, wherein liquid hydrocarbon is vaporized and supplied to the gases generated below in a nascent state, and an oil-supply pipe, substantially as and for the purpose set forth.

8. The combination, with the generator or lower chamber, of the heating and annular coal-chambers located successively above the said generating-chamber, substantially as shown and described.

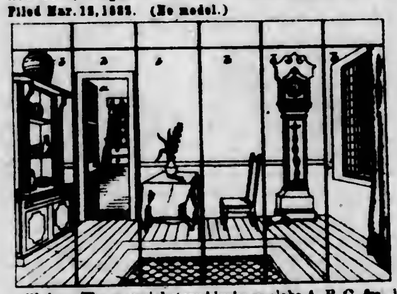
9. The combination of the upper and lower chambers of the generator, the steam and air induction flues or pipes, the hydrocarbon-fluid chambers, and the coal-heating chamber, the whole being arranged to operate substantially in the manner specified.

257,101. PORTABLE FENCE. EPHRAIM STAHL, Kenner, La. Filed Sept. 21, 1881. (No model.)



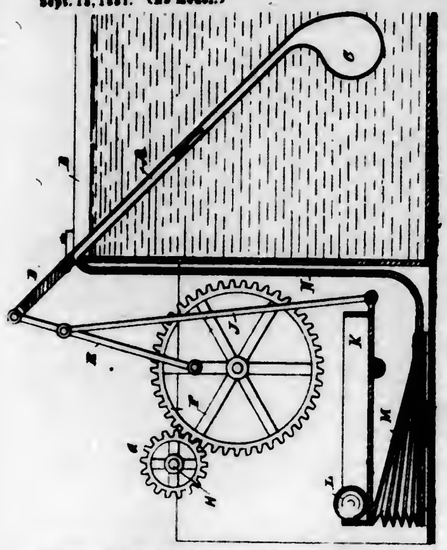
Claim.—In combination with the base-piece A, having slots *a b* cut in from its side and end, each slot having one side inclined, as shown, the post *d*, provided with a downward extension fitted to the side slot in said base-piece, and a notch, *f*, near its upper end, and the brace *e*, having its lower end provided with a downward extension which fits into said end slot of the base-piece, and having its upper end recessed to fit into said notch *f* and to embrace the sides of the post, substantially as shown.

257,102. PICTORIAL STORY-BLOCKS. WALTER STRANDBERG, New York, assignor to Edward I. Horsman, Brooklyn, N. Y. Filed Mar. 18, 1882. (No model.)



Claim.—The pictorial story blocks or slabs A, B, C, &c., having on their faces *b* illustrations of a scene, and on their other faces illustrations adapted to enter into the scene for successive display in said scene, substantially as described.

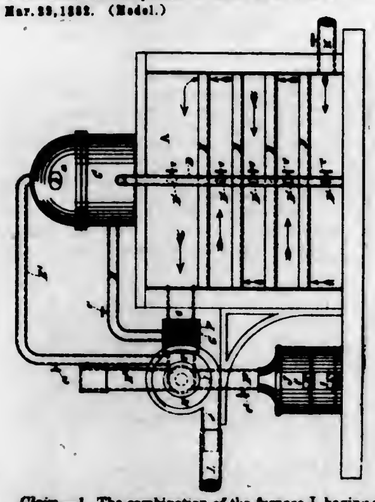
257,103. MOTOR. JOHN SUTLIFF, Sr., Huntsville, Mo. Filed Sept. 13, 1881. (No model.)



Claim.—1. In a *motor*, the combination, with the tubular lever A, pivoted on the edge of a water-tank, of devices for automatically and alternately filling this lever and its bulb with air and then exhausting the air, substantially as herein shown and described and for the purpose set forth.

2. In a motor, the combination, with the water-tank B, of the tubular lever A, terminating in a bulb, C, of the connecting-rods E and J, the wheel F, the pivoted box K, the weight L, the bellows M, and the flexible tube N, substantially as herein shown and described and for the purpose set forth.

257,104. APPARATUS FOR FUMIGATING, DISINFECTING, AND VENTILATING VESSELS, BUILDINGS, &c. BENJAMIN J. TAYMAN, Philadelphia, Pa. Filed Jan. 5, 1880. Renewed Mar. 29, 1882. (Model.)

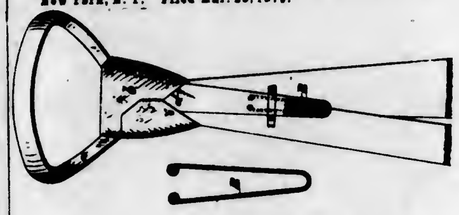


Claim.—1. The combination of the furnace J, having a lower chamber, *i*, for containing charcoal or other fuel, and an upper chamber, *i'*, having a perforated bottom for containing sulphur or equivalent material, with the chemical-reservoir C and connecting-pipes E', and the fan H, having a hose, I, for fumigating vessels, buildings, &c., with chlorine gas, sulphurous-acid gas, and carbonic-acid gas, substantially as set forth.

2. The chemical-chamber A, having trays B and pipe M, in combination with the chemical-reservoir C, and pipes D and D' communicating therewith, and a chimney connected with the short pipe *e* of the chamber, for destroying offensive odors emitted in fat-rendering, &c., substantially as set forth.

3. The combination of the fan H with the chemical-reservoir C, pipe E, chemical-box F, having a cage, G, provided with a sponge, *d*, pipe D, having branch pipes D', and the chemical-chamber A, having trays B, and short pipe M, provided with a hose, for disinfecting vessels, buildings, &c., by the use of chemicals, substantially as set forth.

257,105. NECKTIE. HIRAM E. THAYER and GEORGE W. HAYNE, New York, N. Y. Filed Mar. 25, 1879.



Claim.—In a neck scarf or tie band, the tip B, constructed in skeleton form, as and for the purpose set forth.

257,106. CORSET-CLASP. DENNIS H. TIERNEY, Waterbury, Conn. Filed Feb. 27, 1882. (No model.)



Claim.—1. In a corset, the two busks A B, one provided with headed studs and the other with eyes having an enlarged opening for the insertion of the heads, the combination therewith of a lock arranged upon the busk to which the eyes are attached, but independent of the eyes and studs, and so as to be moved over and close the enlarged part of the opening in the eye to lock the clasp together, or removed therefrom to permit their separation, substantially as described.

2. In a corset, the two busks A B, one provided with headed studs and the other with eyes having an enlarged opening for the insertion of the heads, the combination therewith of a lock arranged to slide over and close the enlarged part of the opening in the eye to lock the clasp together, or removed therefrom to permit their separation, one or more of the said eyes constructed with a slot, *n*, and the lock with a projection, *m*, working through said slot, substantially as and for the purpose described.

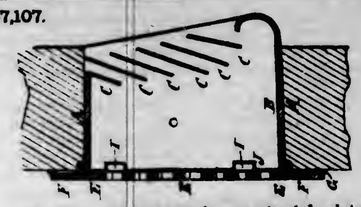
3. In a corset, the two busks A B, one provided with headed studs and the other with eyes having an enlarged opening for the insertion of the heads, the combination therewith of the piece C, arranged to slide upon that part to which the eyes are attached, the said piece C carrying a part or projection which, by the sliding movement of the said piece C, will carry such part or projection over or remove it from the enlarged part of the opening in the eye, substantially as described.

4. In a corset, the two busks A B, one provided with headed studs and the other with eyes having an enlarged opening for the insertion of the heads, the combination therewith of the piece C, arranged to slide on the part to which the eyes are attached, with the loop D, hinged to the part B and to the piece C, whereby movement is imparted to the said piece C, to cover or uncover the enlarged part of the openings in the eyes, substantially as described.

5. In a corset, the two busks A B, one provided with headed studs and the other with eyes having an enlarged opening for the insertion of the heads, the combination therewith of the piece C, arranged for longitudinal movement on that part to which the eyes are attached, and carrying projections *f*, to pass over or from the enlarged part of the openings in the eyes, constructed with inclines upon their edge next the eye, substantially as described.

257,107. AIR-FLUE REGISTER. HENRY A. TOBEY, Dayton, Ohio. Filed Feb. 24, 1882. (No model.)

257,107.



Claim.—1. An air-flue register constructed, substantially as herein shown and described, with an inclined bottom having its inner part curved upward and forward, a slotted back, and a removable grate-door provided with a lock, as set forth.

2. In an air-flue register, the back formed of inclined overlapping cross-slats C, arranged with each lower slat a little in the rear of and at a less inclination from the perpendicular than the next upper slat, substantially as herein shown and described, whereby liquid filth thrown into the register is prevented from entering the air-flue, as set forth.

3. In an air-flue register, the bottom B, having a slight upward inclination, and having its rear part curved upward and forward, substantially as herein shown and described, whereby liquids and solids are prevented from passing from the said bottom into the air-flue, as set forth.

4. In an air-flue register, the combination, with the register-walls having sockets J and L, of the removable grate-door E, having lugs I and a lock, K, substantially as herein shown and described, whereby the grate-door can be readily removed and the register cleansed, as set forth.

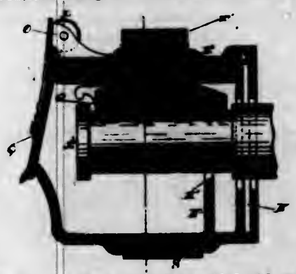
5. In an air-flue register, the combination, with the inclined bottom B, of the grate-door E, provided with the notches M in its bottom edge, substantially as and for the purpose set forth.

257,108. STARCH FOR LAUNDRY AND OTHER PURPOSES. ROBERT W. TAYLOR, Richmond, Va. Filed Mar. 15, 1882. (No specimens.)

Claim.—1. As a new article of manufacture, a starch-gloss or mica-starch for laundry purposes, composed of finely-powdered mica and ordinary starch, with or without the admixture of gum-arabic or other material, substantially as specified.

2. The herein-described composition of matter, consisting of finely-powdered mica, ordinary starch, and gum-arabic, in about the proportions and for the purposes specified.

257,109. CAR-AXLE BOX. WILLIAM L. TROUP and JOHN A. C. GEMMER, Harrisburg, Pa. Filed Nov. 23, 1881. (No model.)



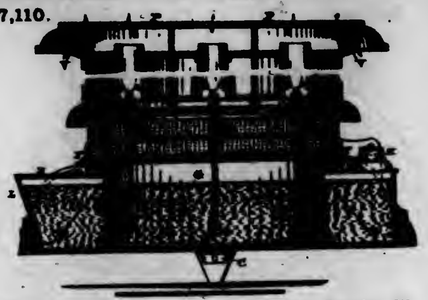
Claim.—1. The pillow-piece F, provided with spring-hinge knuckles L or O, in combination with the spring-door Q, hinged thereto and removable therewith from the casing and repairable distinct from the casing A A, as and for the purpose set forth.

2. The guiding-ledges P P, arranged longitudinally on the under side of the pillow F, in combination with the brass or journal box G, admitted at its top between said ledges to resist the displacing side action of the brake, and that said box may be freed of said ledges to facilitate its removal after said pillow-piece has been removed, substantially as set forth.

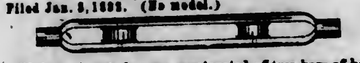
257,110. OIL-STOVE. JAPHET S. VAN DUZEE, Albany, N. Y. Filed Jan. 27, 1882. (No model.)

Claim.—In an oil-stove, the combination of the reservoir B, made largest at its bottom and provided with an extension, L, and filling-hole H, the vertical partition G, provided with the gauzes J W, the partition being loosely placed inside of the reservoir, and the extension being provided with the gauze N, substantially as shown.

257,110.



257,111. GATE-HANGER. JOSEPH WADLEIGH, Rensselaer, Ill. Filed Jan. 3, 1881. (No model.)



Claim.—A gate-hanger constructed of two bars of half-round iron, in which the rollers are journaled, said bars bent at their ends, as shown and described, and welded together to form pivots for the hanger to turn on, as set forth.

257,112. MECHANICAL TOY. WILLIAM A. WEBBER, Medford, Mass. Filed Mar. 9, 1882. (No model.)



Claim.—1. A toy constructed in imitation of a living being and provided interiorly with mechanically-operated appliances, such substantially as described, adapted to produce musical sounds in a series of notes, as set forth.

2. A toy constructed in imitation of a living being, in combination with appliances, such substantially as described, arranged within the toy and adapted to produce musical sounds in a series of notes, and mechanical means operative from the exterior of the toy to move said musical appliances, as and for the purposes set forth.

3. A mechanical toy made in imitation of a living being, and having placed within it bellows or other wind mechanism, a series of reeds and reed-chambers, a raceway for a perforated music-sheet, air-passages leading from the raceway to the reeds, and mechanism for holding a perforated music-sheet in close contact with and feeding it along the raceway, and each and all constructed and arranged in relation to each other and to the outside of the toy to be operated, substantially as and for the purposes described.

257,113. MOWING-MACHINE. WILLIAM M. WEBBER, Ravenswood, W. Va., and CHARLES C. CAMPBELL, Richmond, Va. Filed Dec. 1, 1881. (No model.)

Claim.—1. The combination, with the frames *b b*, pivoted to the axle of the driving-wheels, of the frame *t*, carrying the shoe *s*, and finger-bar *s'*, rigidly secured thereto, the frame *t* being pivoted at its front end to the arm *w*, hinged to the frame *b*, and pivoted at its rear end to the frame *b*, whereby the finger-bar is made a floating one, substantially as described.

2. The combination, with the frames *b b*, pivoted to the axle of the driving-wheels, of the frame *t*, carrying the shoe *s*, and finger-bar *s'*, rigidly secured thereto, the frame *t* being pivoted at its front end to the arm *w*, hinged to the frame *b*, and pivoted at its rear end to the frame *b*, lever *b'*, and chain *a'*, secured to the lever and frame *t*, whereby the floating finger-beam may be raised and lowered as desired, substantially as described.

3. The combination, with the frame *b*, provided with the levers *b' b'* at its front and rear ends, respectively, the former connected by a chain with the arm *w*, pivoted to the frame *b*, and the latter connected by a chain with the frame *b*, of the shaft *k*, hub *o*, plate *m*, having arms *n*, universal joint *p*, and frame *t*, pivoted to the arm *w* at its front end and hinged to the arms *n* at its rear end, substantially as described.

4. The combination, with the cutter-bars *w' w'*, each provided with a heel, *o'*, adapted to reciprocate in a recess, *p'*, in the upper

257,113.



shoe of the shoe *z*, of the lever *q'*, pivoted to the shoe and provided with the bent rods *t'* at its inner end, and having slots *r' r'*, screws *s'*, passing through the slots and secured to the heels of the cutter-bars, and wheel *r*, provided with the serpentine flange *s* on its periphery, substantially as described.

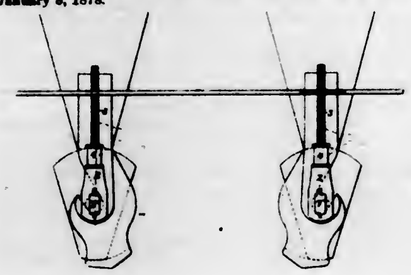
5. The combination of the cutter-bars *n' u'*, each provided with a heel, *o'*, shoe *z*, lever *q'*, provided with the bent rods *t' t'*, and having slots *r' r'*, screws *s'*, wheel *r*, having the serpentine flange *s* on its periphery, and shaft *q*, arms *u u*, secured to the frame *t* and pivoted to the arms *u*, secured to the plate *m*, universal joint *p*, shaft *k*, and cone-pulleys *i d*, provided with circular flanges fast on the driving-axle and shaft *k*, and connected by a belt, substantially as described.

6. The combination, with the oscillating lever *q'*, pivoted to the shoe and provided with the bent rods *t'* at its rear end, and having slots *r' r'*, screws *s'*, passing through the slots and secured to the heels of the cutter-bars, and wheel *r*, of the supporting-rod *v'*, secured at its lower end to the oscillating lever *q'* and pivoted at its upper end to the frame *t*, substantially as described.

7. The combination, with the wheel *r*, provided with the serpentine flange *s* on its periphery, and the oscillating lever *q'*, of the bent adjustable rods *t' t'*, each provided with a loop at its front end, screws *s'*, and washers *w'*, to adjust the rods for wear, substantially as described.

257,114. MEASURING AND DISCHARGING APPARATUS FOR COOLING TUBES OF CHAR-FURNACES. JOHN H. WEBSTER, Boston, assignor to himself and Oscar B. Stillman, Brookline, Mass. Filed Feb. 28, 1882. (No model.)

Brief.—Improvement on Letters Patent No. 199,118, dated January 8, 1878.



Claim.—1. The combination, with a movable measuring-box at the mouth of a cooling-tube and mechanism for intermittently oscillating or reciprocating said box, of an intermediate connecting arm or device of comparatively fragile construction, substantially as and for the purpose set forth.

2. The combination, with a pivoted measuring-box at the mouth of a cooling-tube and mechanism for intermittently oscillating said box, of the intermediate connecting-arm composed of the socketed part 2, attached to the trunnion of the box, and the fragile section 3, loosely inserted in the socket of the part 2, as set forth.

3. The combination, with a series of movable measuring-boxes and mechanism common to all the boxes of the series for intermittently oscillating or reciprocating said boxes, of intermediate arms or devices of fragile construction connecting the boxes with the operating mechanism, whereby when any box is accidentally obstructed the connection between such box and the others of the series is broken without interfering with the operation of the other boxes, as set forth.

257,115. PAPER-FILE. ALBERT R. WEISZ, Brooklyn, N. Y. Filed Feb. 21, 1882. (No model.)

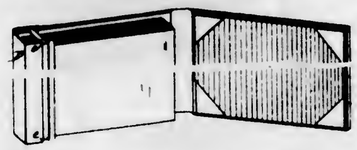
Claim.—The combination, substantially as hereinbefore described, of the back, the groove formed in said back, the paper-supporting wire curved throughout its length, the eye formed near the inner end of said wire, the stop projecting from said eye, the pin passing through the sides of the groove and through the eye, the thumb-piece formed near the outer end of the wire, and the latch secured to the back at or near its outer end.

257,116. TABLE-LEAF SUPPORTER. WILLARD F. WELLMAN, Belfast, Me., assignor to himself and William C. Thompson, same place. Filed Dec. 15, 1880. Renewed Mar. 14, 1882. (Model.)



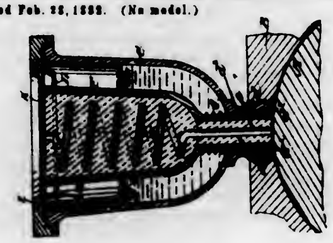
Claim.—In combination with the hinged leaf C, table rail F, and outwardly-folding rods A E, the keeper G, fixed on the rod E, and the spiral spring H, attached to the under side of leaf C and sliding at the lower end on the keeper G, as and for the purpose specified.

257,117. WRITING-TABLET. EDWIN P. WENTWORTH, Cape Elizabeth, Me. Filed Dec. 22, 1881. (Model.)



Claim.—The combination, with the tablet, flap, and pressing-strip, of the elastic band protected and covered by the flap, as described.

257,118. LUBRICATOR. JOHN H. WILLIAMS, Pittsburg, Pa. Filed Feb. 28, 1882. (No model.)



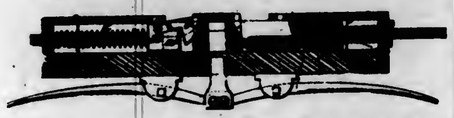
Claim.—1. The outer cup or vessel, C, having its neck *e* provided with an external thread, *d*, and an internal thread, *d'*, with vertical grooves *e* therein, substantially as and for the purpose herein described.

2. The combination, with the outer vessel, C, having grooves on the interior of its neck, and the cap or cover K, of the inner vessel, F, having grooves on the exterior of its neck, and the coiled-wire spring J, substantially as and for the purpose set forth.

3. The combination of the outer vessel, C, having grooves *e* in the interior of its neck *e*, and the inner vessel, F, having grooves *h* in the exterior of its neck *f*, substantially as and for the purpose herein described.

4. The combination, with the outer vessel, C, having grooves on the interior of its neck, and provided with the spring M, of the inner vessel, F, having grooves on the exterior of its neck, and provided with the flange L, having notches *l*, substantially as and for the purpose set forth.

257,119. CAR-COUPLING. CHARLES PERRY WILLSON, Summit Point, W. Va. Filed Mar. 6, 1882. (No model.)



Claim.—1. In a car-coupling, a horizontal pin adapted to engage with a vertical link, in combination with catches for engaging with and operating the pin from either side of the car, substantially as shown and described.

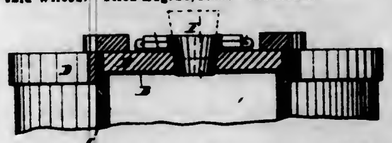
2. In a car-coupling, a coupling-pin having a conical head and a neck at each end, in combination with automatic catches adapted to be operated from either side of the car, and means for supporting said pin and catches, substantially as shown and described.

3. In a car-coupling, the combination, with the double-headed coupling-pin, of the spring-actuated catches having recesses for receiving the heads of the pin and pivoted jaws for retaining said heads, and a cross-head for supporting the catches, substantially as shown and described.

4. In a car-coupling, the combination, with a draw-head, of a cross-head having chambers on each side the draw-head, and spring-actuated sliding catches having beveled retaining-jaws, the chambers being formed with openings at the top, near the draw-head, to allow oscillation of the jaws, substantially as shown and described.

5. In a car-coupling, the combination, with the arrow-headed coupling-bar, of the vertical bar and levers for operating said bar to lift the outer end of the coupling-bar, substantially as shown and described, and for the purpose set forth.

257,120. NOZZLE FOR SHIPPING-CANS. P. CORTES WILSON and HADOCK H. BOOLS, Chicago, Ill.; said Bools assignor to said Wilson. Filed Aug. 26, 1881. (No model.)



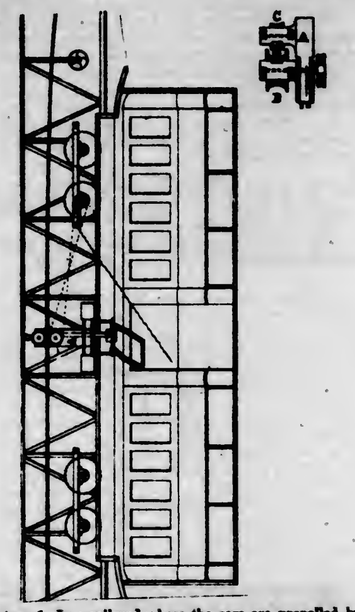
Claim.—1. The flat can-top B, in combination with the flaring nozzle F, cover E, and plate G, fitted closely around the nozzle above the cover and resting on the latter, substantially as and for the purpose set forth.

2. The flat can-top B, in combination with the flaring nozzle F, having its upper edge turned over, cover E, and plate G, fitted upon the nozzle, and having the edge around the nozzle-opening apart to rest under the turned-over edge of the nozzle, substantially as described.

257,121. CABLE RAILROAD. LEVI J. WISE, Brooklyn, N. Y. Filed Sept. 13, 1881. (No model.)

Brief.—The wheels that support the car on the track or their axles are connected with rolling compression-sheaves that grasp the cable, so that the friction of the wheels upon the track shall serve as a driving agent to set in motion the rolling sheaves, and thereby increase the speed of the car.

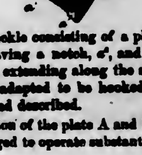
257,121.



Claim.—1. In a railroad where the cars are propelled by a moving cable, the method of accelerating or increasing the speed of the car or train, which consists in so combining one or more pairs of the wheels that support the car on the track with rolling sheaves that grasp the cable that the friction of the wheels upon the track shall serve as a driving agent to set in motion the rolling sheaves to increase the speed of the car, as specified.

2. The combination of a moving cable, a car, a clamping device, and compression-pulleys arranged to act on the moving cable, said pulleys being operated by connection with one or more pairs of the supporting-wheels or the axle of the truck for the purpose of increasing the speed of the car or train without increasing the speed of the moving cable, substantially as set forth.

257,122. BUCKLE. JOHN H. WOOD, New Brunswick, N. J. Filed Mar. 6, 1882. (Model.)



Claim.—1. A buckle consisting of a plate, A, provided with lugs *a a*, a lug, *a'*, having a notch, *a''*, and a clasp, B, journaled between the lugs *a a*, extending along the side of the plate, bent, carried across it, and adapted to be hooked in the notch *a''*, substantially as shown and described.

2. The combination of the plate A and its lugs *a a* and *a'* with the clasp B, all arranged to operate substantially as shown and described.

257,123. TRUNK, BOX, &c. WILLIAM B. WORGER and EDWIN H. RICHFORD, London, England. Filed Feb. 17, 1882. (No model.)



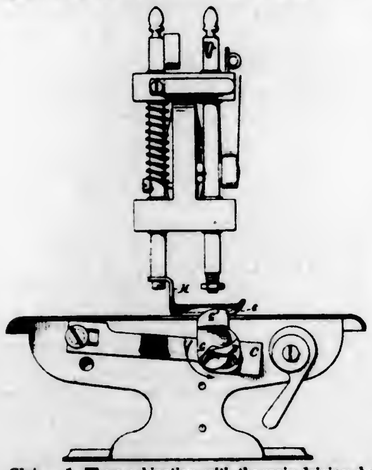
Claim.—1. The combination, with a trunk provided with recess D and groove *b*, of the lid or door A, provided with the pivots *a*, substantially as and for the purpose set forth.

2. The combination, with the lid or door A, provided with the pivots *a*, of a trunk provided with the recess D, and the grooves *b*, having their ends curved downward at right angles to their length, substantially as and for the purpose set forth.

3. The combination, with the sliding door A, of a trunk provided with the frame *c*, adapted to receive a series of drawers, and having the edges of its top and sides projecting beyond the drawers a distance equal to the thickness of the said door, substantially as and for the purpose set forth.

257,124. TRIMMING ATTACHMENT FOR SEWING-MACHINES. THOMAS R. WRIGHT and THOMAS B. HIRE, Philadelphia, Pa. Filed July 6, 1881. (No model.)

Brief.—The trimming-knife is secured to and rotates with the driving-shaft beneath the bed-plate of the machine.

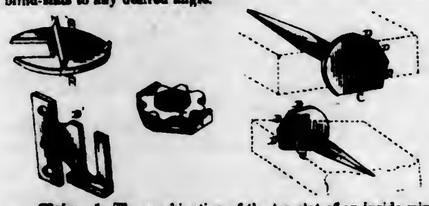


Claim.—1. The combination, with the main driving-shaft B, located beneath the bed-plate of the machine, of the cutter *c'*, secured to said shaft and adapted to project upward through a slot in said bed-plate into the grooved presser-foot, substantially as described.

2. The combination, with the driving-shaft B and cutter *c'*, of the presser-foot H, provided with the groove *e*, for the purpose specified.

257,125. SUPPORT FOR INSIDE WINDOW-BLINDS. CHARLES M. YOUNG, Lockport, N. Y. Filed Feb. 21, 1882. (No model.)

Brief.—The head of the supporting-bolt has cut-away edges, which sit on the bracket-ledge, forming resting-places to adjust the blind-slats to any desired angle.



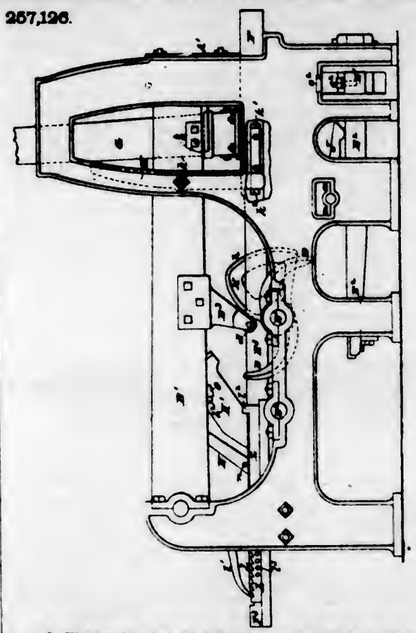
Claim.—1. The combination of the top slat of an inside window-blind with a headed bolt or casting and a suitable support, upon which the headed bolt or casting catches, the casting or bolt being provided with a number of bearings, substantially as shown.

2. The combination of the top slat of a window-blind with a headed bolt having the cut-away edges C D and a support provided with a flange, upon which the cut-away edges are adjusted, substantially as set forth.

257,126. HAMMER BRICK-MACHINE. ERWIN F. ASSERWO, St. Louis, Mo. Filed Dec. 10, 1881. (No model.)

Claim.—1. The combination, with the hammer of a brick-machine, of a pivoted latch or lever automatically operated by tappets on the side of the charger to engage and disengage from under the hammer, substantially as described, and for the purpose set forth.

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2. The combination, in a hammer brick-machine, of the pivoted cam-block H' with the hook-bar O and disengaging mechanism, substantially as described, for the purpose set forth.

3. The combination, in a hammer brick-machine, of the ratchet-bar L, having teeth *l* and adjusting holes and bolts *l' l'*, with the pawl *l'*, bell-crank lever M, pin *m*, and hammer-helve B', as described, and for the purpose set forth.

4. The combination, in a hammer brick-machine, of the pivoted cam-block H' and operating-cam H with the hook-bar O, disengaging-lever N, and sliding ratchet-bar L, operated by the hammer-helve B', substantially as described, and for the purpose set forth.

5. The combination, in a brick-machine, of a movable charger, vertically-moving mold-bottoms, lever E', and operating-cam H, having a holding-face, *h*, as described, and for the purpose set forth.

6. The combination, in a brick-machine, of a movable charger, vertically-moving mold-bottoms, with a lever, E', operated by cam H, substantially as described, and for the purpose set forth.

7. The combination, with a brick-machine, of the lever E', having a movable fulcrum that is automatically raised and lowered by the movement of the charger, substantially as described, and for the purpose set forth.

8. The combination, in a brick-machine, of a lever, E', movable fulcrum-rod *e*, incline *e'*, lever I, and tappets *i i'* with the mold-bottoms C' and charger F, as described, and for the purpose set forth.

9. The combination, in a brick-machine, of the charger F, having a removable table, F', as described, and for the purpose set forth.

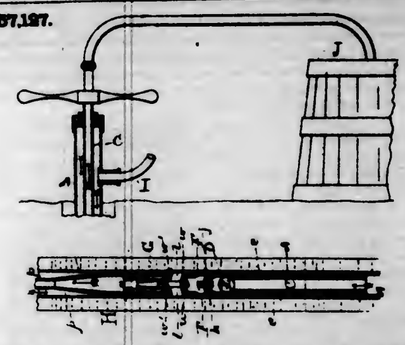
10. The charger F, formed with an open-top oil-chamber, *f'*, in combination with the capillary wicks *f''*, removable table F', and plate *f'''*, attached loosely to the charger, as described, and for the purpose set forth.

11. The bumper P, having its supporting-frame P' extending down to and resting on the anvil-block E, as described, and for the purpose set forth.

257,127. DEVICE FOR TREATING THE WALLS AND TUBING OF OIL-WELLS. BENJAMIN F. AVERILL, Dunkirk, N. Y., assignor of one-half to Thompson Pike, same place. Filed Mar. 3, 1882. (No model.)

Claim.—1. In a device for treating oil-wells by steam, and in combination with the long pipe C', the hollow connection G, with steam-ports *l l* and oil-ports *w w' w''*, and also the hollow steam-ejection pipe *k* therein, all secured to the hollow nut F, having the plug *u*, substantially as and for the purpose specified.

257,127.



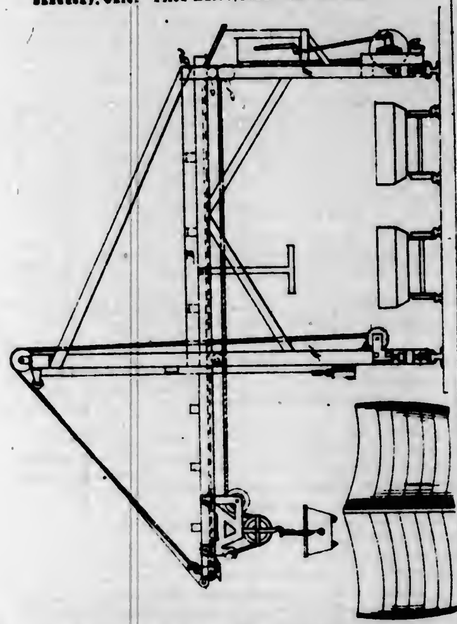
2. In a device for treating oil-wells by steam, the combination of the pipe C', connection G, and nut F, having ports *j j*, and the cap D with rounded-dome top *g*, having ports *h h* therein, said top fitting into the rounded-out bottom of the nut F, all substantially as and for the purpose specified.

3. In a device for treating oil-wells by steam, the combination of the nut F, cap D, constructed as described, the ball-valve E therein, pipe C, nuts *a* and *b*, and leg B, all arranged and operating substantially as specified.

4. In a device for treating oil-wells by steam, in combination with the steam-pipe C' and tubing or working-barrel A, the steam-space *p p* between the two, and the connection G, having steam-ports *l l* therein, substantially as and for the purpose specified.

5. In a device for treating oil-wells with steam, the combination of the pipe C', connection G, nut F, cap D, pipe C, nuts *a* and *b*, packing *c c*, and leg B, all constructed, arranged, and operating substantially as and for the purpose specified.

257,128. COAL AND IRON UNLOADER. ANDREW BRICKNER, Sandusky, Ohio. Filed Mar. 6, 1882. (No model.)



Claim.—1. In an unloader, the combination, with an adjustable boom, of the frame-work having wheels mounted upon tracks, along which it can be moved, and of a shaft extending the whole length of the wharf parallel to the rails, and having a friction-roller keyed thereon to impart motion to a friction-pulley upon the frame-work, which pulley operates the bucket-lifting mechanism, all substantially as set forth, and for the purposes described.

2. In an unloader mounted upon rails, the combination, with a shaft journaled in the frame of the unloader and having a frictional roller keyed thereto, of a friction-roller held below the friction-roller on the unloader by arms and attached by a feather or key to a revolving shaft which runs parallel to the rails and has a longitudinal keyway, in which the key or feather upon the friction-roller slides when the unloader has been moved upon the rails, substantially as described, and for the purpose set forth.

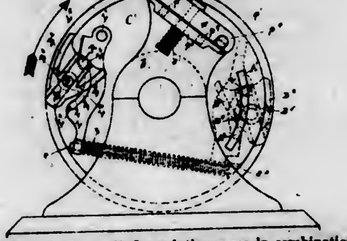
3. In an unloader adapted to be moved upon a track, the combination, with a friction-roller having eccentric bearings, of a brake-block, of a friction-pulley mounted upon a revolving shaft having a longitudinal keyway and in contact on each side with arms attached to the unloader-frame immediately below the friction-roller journaled therein, for the purpose set forth, and of a device for suspending the friction-roller between and to place it in contact either with the revolving pulley or the brake-block, substantially as described.

4. The combination, with the frame-work of an unloader having rollers and windlasses, of a boom adapted to be moved upon said rollers, and of guy-ropes passing over the top of the frame-work and attached by one end to the outer end of the boom and by the other to said windlasses, which tighten the guys when the boom has been adjusted, substantially as described, and for the purpose set forth.

5. In an unloader, an adjustable boom having a movable stop and seated upon rollers journaled in the frame-work through which the boom projects, in combination with guy-ropes attached to the outer end of the boom and to the frame-work, and provided with windlasses, whereby the guy-ropes can be tightened after the boom has been adjusted, and a traversing catch which travels upon the boom and carries a bucket provided with a trigger which strikes the movable stop and tilts the bucket, in the manner set forth.

6. In an unloader, a traversing catch consisting of a frame-work suspending from a traversing rod by means of wheels, and having a hook at one end and a sheave at the other to support a moving pulley by a lifting-cable attached to the hook and passing over the sheave, and a passage between the hook and sheave to admit the shank of a movable pulley, of a hook journaled in the frame-work above the passage and operated by a rod having a crank at one end and a spring at the other, as shown, and of a lever-latch pivoted upon the frame-work and having one end immediately over said passage and the other provided with a latch or hook which catches upon a step on the beam when the spring upon the lower end is free to play, and all combined and arranged substantially as described, and for the purpose set forth.

257,129. GRIPPER MECHANISM FOR PRINTING-PRESSES. ANDREW C. CAMPBELL, Bridgeport, Conn., assignor to the Campbell Printing Press and Manufacturing Company, of New York. Filed Apr. 26, 1881. (Model.)



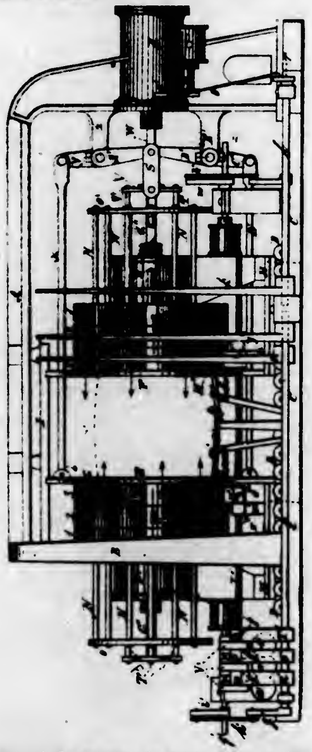
Claim.—1. In a cylinder printing-press, in combination with a cylinder provided with a double-inclined cam on one end and with a gripper rock-shaft carrying a slotted tumbler-cam having inclined side surfaces, a pair of sliding studs secured to a bearing or frame of the cylinder and connected by an oscillating lever, as described, and operated thereby and by said inclined cam, and operating and operated by said tumbler-cam, whereby the slot in said cam is as directed as to automatically engage said studs at the proper times for opening and closing the grippers, and breakage due to accidental displacement of the grippers prevented, substantially as and for the purposes set forth.

2. In a gripper mechanism of a cylinder printing-press, a governing-lever, L, provided with curved surfaces L' L' and depressions L' L', and an adjusting-spring for the same, in combination with a slotted tumbler-cam, B', carrying the wings B' B', and the roller R, all mounted on or carried by the impression-cylinder, substantially as and for the purposes set forth.

3. In the gripper mechanism of a cylinder printing-press, and secured to a rigid frame-work or support, a pair of sliding or reciprocating studs, p p', in combination with an oscillating lever, p^3, provided with friction-blocks p^4 p^5, substantially as and for the purposes set forth.

257,130. HORIZONTAL HOOP-DRIVING MACHINE. MARK L. DUNNING, Cleveland, assignor to George H. Hopper, Uniontville, Ohio. Filed Nov. 21, 1881. (Model.)

Brief.—The driving-heads are driven simultaneously by a steam-cylinder whose piston is attached directly to one and to the other by a system of levers and links. Upon each driving-head is a steam cylinder, which reciprocates the driving-slides within the heads. These slides carry fingers, which are moved out radially to permit a hoop to pass by cam-faced rings surrounding the driving-heads, the ends of the fingers passing through C-shaped slots in such rings. These rings are rotated by segment-gears feathered upon rock-shafts driven by steam-cylinders, which gears engage racks on the rings. The rings are moved in pairs, one of each pair upon each head, one rock-shaft moving a pair simultaneously. The valves of the cylinders are operated at the right time by T-arms grooved on a rock-shaft.



Claim.—1. In machines for driving hoops on barrels, a pair of retaining-heads, E and F, arranged to co-operate relatively in respect to each other, as described, and consisting of a shell provided with a peripheral series of longitudinal moving slides or heads, having therein hoop-drivers adapted to move radially in relation to the axial line of the retaining-heads and at right angles to the movement of the said slides or heads, substantially as herein set forth.

2. In combination with the shell of the retaining-heads, slides and drivers arranged therein, the springs g and rotative rings the perimeters of which are a series of inclined planes, forming cams, in which are longitudinal slots, connected to each other by transverse slot adapted to receive and allow the shanks of the drivers to slide therein to permit the rings to rotate for actuating the drivers in a radial direction by the co-operation of the cams or inclined planes, springs, and collars f, substantially as and for the purpose set forth.

3. In a horizontal double-ended machine for driving hoops on barrels, the retaining-heads E F, connected to each other by rods X and B', pivoted arms y and A' and D' C', and links connecting said arms to the head V, in combination with the steam-retaining cylinder, whereby the retaining-heads are operated reciprocally and simultaneously in alignment one with the other for the purpose specified, and substantially as set forth.

4. In a machine for driving hoops on barrels, in combination with the cam-rings of the retaining-heads and racks respectively connected thereto, segment-gears arranged to engage the said racks for rotating the cam-rings, substantially as described, and for the purpose specified.

5. In combination with the shell of the retaining-heads and driver-slides, a jacket of rotative rings the perimeters of which are a series of inclined planes, forming cams, and having C-shaped openings therein for the admission of hoop-drivers, said drivers being actuated radially in the retaining-heads by the cam-rings, substantially as set forth, and for the purpose specified.

6. With the segment-gears feathered to their respective shafts, that they may slide thereon conjointly with the movements of the retaining-heads, the combination of the cylinders a', c', and e', connected to the said shafts by piston-rods, and arms 3'', 4'', and 0'', for operating the same for the purpose specified, and substantially as described.

7. In a machine for hooping barrels, the steam-cylinders a', c', and e', arms K' and T', having in the heads thereof a cam groove or slot reversely arranged in relation to each other, arms S' between the arms R' and T', and having in the head thereof a groove with a central depression, lever-arms V' and pins projecting therefrom, respectively, into the grooves of the arms R' S' T', and shafts 3', 4', and 3', with their respective segments, in combination with the rings of the retaining-heads, substantially as described.

8. In combination with the retaining-cylinder R and retaining-heads of a hoop-driving machine and connecting mechanism, the lever k and shaft l, mounted on main frame, as shown, connected by suitable mechanism to the valve of said cylinder for actuating the same, for the purpose set forth.

9. In combination with the retaining-heads herein described, the self-adjusting abutment-plate and centering-springs arranged within the cavity of the retaining-heads, substantially as described, and for the purpose specified.

10. In a machine for driving hoops on barrels, the retaining-heads, having thereon a series of rotative cam-rings, and provided with an annular series of slides carrying the drivers K, in combination with the driving-cylinders F and U, substantially as set forth.

11. In combination with the slides K, drivers, and cam-rings of the retaining-heads, the springs g and collars f, constructed and arranged to operate and co-operate substantially as set forth.

12. In a machine for driving hoops on barrels, in combination with the retaining-heads, the frame or stand k', supporting-plate, and supplementary movable frames n' and n', connected respectively to the retaining-heads, substantially as and for the purpose set forth.

13. In a machine for driving hoops on barrels, the combination of the retaining-heads provided with annular series of slides K, carrying the hoop-drivers M, rotative cam-rings, and springs g, for operating the drivers radially, driving-cylinders, and retaining-cylinder R, arranged to operate and co-operate substantially in the manner as described, and for the purposes specified.

257,131. DROP-WIRE FOR WARPING AND BEAMING MACHINES. THOMAS C. ENTWISTLE, Lowell, Mass., assignor to the Phœnix Machine Company, same place. Filed Dec. 30, 1881. (No model.)

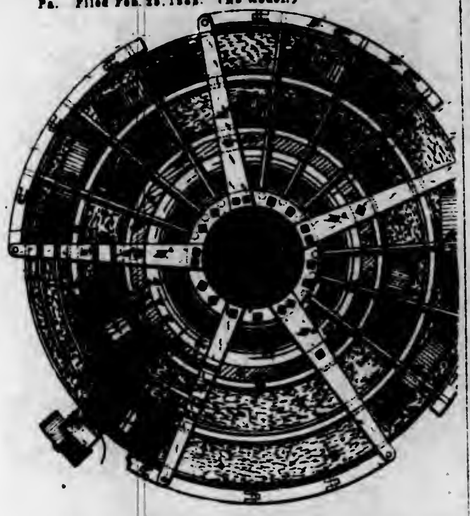
Brief.—The drop-wire bracket is connected to the supporting-bar in such a manner as to be capable of sliding or moving longitudinally thereon, and the drop-wire is pivoted or hinged to the bracket, so as to be capable of its own independent motion.



Claim.—1. The combination, substantially as hereinbefore set forth, of the supporting-bar, the bracket held to and movable lengthwise of said bar, and the drop-wire hinged or pivoted to the bracket.

2. The supporting-bar provided with a rib, bead, or projection, as described, in combination with the hook-like drop-wire-carrying bracket formed to fit upon the upper portion of the bar and to engage the rib or bead thereon, substantially as and for the purposes hereinbefore set forth.

257,132. MACHINE FOR REDUCING ORES. BENJAMIN HUNSBURY, Erie, Pa., assignor of three-fourths to Charles A. Hitchcock, Joseph A. Hyde, and Benjamin F. Thornton, all of Bradford, Pa. Filed Feb. 25, 1882. (No model.)



Claim.—1. The combination of a series of troughs for receiving the material to be crushed or ground, devices arranged in said troughs or vessels for grinding or crushing the material, and devices for elevating or lifting the material from one trough or vessel and discharging it into the other for the purpose of regrinding, substantially as and for the purpose described.

2. In an ore-crushing machine, the combination of a trough or vessel for receiving the material to be ground, a traveling roller or wheel for grinding or crushing the material, an elevating mechanism traveling in the trough or vessel and following the grinding or crushing roller or wheel for carrying the material upward, and a screen or sieve moving with the elevating mechanism, arranged to receive the material therefrom, substantially as described.

3. The combination of a series of concentrically-arranged troughs or vessels for receiving the material to be ground or crushed, a series of traveling grinding or crushing rollers or wheels arranged in said troughs or vessels, an elevating mechanism traveling in one of the troughs or vessels and following the rollers or wheels for carrying the material upward from said trough or vessel, and a screen or sieve moving with the elevating mechanism, arranged to receive the material therefrom, substantially as described.

4. The combination of a series of concentrically-arranged troughs or vessels for receiving the material to be ground or crushed, a series of traveling grinding or crushing rollers or wheels arranged in said troughs or vessels, an elevating mechanism traveling in one of the troughs or vessels and following the said rollers or wheels for carrying the material upward from said trough or vessel, a screen or sieve moving with the elevating mechanism and arranged to receive the material therefrom, and a chute or conveyor located beneath the screen and arranged to discharge the material from the inner into the outer adjacent trough, substantially as described.

5. The combination of a trough or vessel for receiving the material to be ground or crushed, a traveling roller or wheel moving in said trough or vessel, an elevating mechanism traveling in the trough or vessel and following the said roller or wheel, and a vibrating or shaking screen traveling in rear of the elevating mechanism and arranged to receive the material which is carried up by the same, substantially as described.

6. The combination, in an ore crushing or grinding machine, of a central rotary wheel, a series of radial shafts connected at their inner ends with said wheel, a series of grinding wheels or rollers supported by said shafts, troughs or vessels provided with upright rims, elevating mechanism mounted on wheels which travel on said rims, and a screen or sieve traveling in rear of the elevating mechanism and arranged to receive the material which is carried upward by the latter, substantially as described.

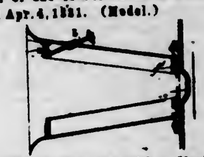
7. The combination, in an ore grinding or crushing machine, of a circular trough or vessel, provided with upright rims having upon each an inclined plane or projection, with a traveling grinding or crushing roller or wheel, a traveling elevating mechanism mounted on wheels arranged to travel on the said upright rims, and a sieve or screen traveling in rear of the said elevating mechanism, substantially as and for the purpose described.

8. The combination of a circular trough for receiving the material to be ground or crushed, a traveling grinding or crushing roller or wheel arranged therein, a traveling elevating mechanism, a screen or sieve moving in rear of the latter, an inclined chute or conveyer moving with and located beneath the screen or sieve, and a traveling receiver connected and moving with the chute or conveyer to receive the material therefrom, substantially as described.

9. The combination of a circular trough for receiving the material to be ground or crushed, a traveling grinding or crushing roller or wheel arranged therein, a traveling elevating mechanism, a screen or sieve moving in rear of the latter, an inclined chute or conveyer moving with and located beneath the screen or sieve, and a traveling receptacle connected and moving with the chute or conveyer to receive the material therefrom, and a stationary scraper arranged to clear the said receiver, substantially as and for the purpose described.

10. The combination of ring-bearings, the radial shafts having a ball-and-socket connection at their inner ends in said ring-bearings, a series of jointed links connecting the outer ends of the shafts, and grinding or crushing rollers or wheels mounted on said shafts, substantially as described, whereby the shafts are capable of rising and falling and of traveling in a circular path, as and for the purposes set forth.

257,133. TELEPHONE. A. HOWARD HIBBERSMAN, Baltimore, Md., assignor of one-fourth to A. E. Dolbear, College Hill, Mass. Filed Apr. 4, 1881. (Model.)



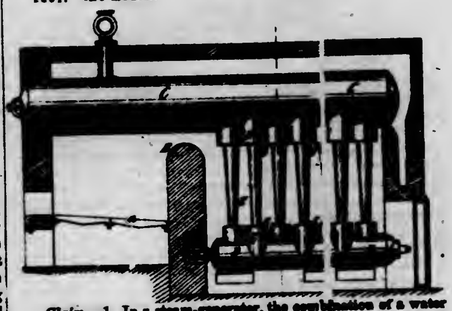
Claim.—1. The combination, with a diaphragm, of a sound-augmenter box having an opening at which the mouth or ear may be applied, and a number of resonant wires, under tension, secured within the box between the opening and diaphragm, as set forth.

2. A sound-augmenter for telephones, having a number of resonant wires, each capable of independent adjustment, and a device by means of which all the wires may be adjusted at once, as set forth.

3. The combination, with a diaphragm, of a sound-augmenter box having a sounding-board whose position is substantially that of a right angle with respect to the diaphragm, whereby the sound of the voice passes across the whole length of the board, as set forth.

4. The combination, with a diaphragm, of a sound-augmenter box having an opening at which the mouth or ear may be applied, a number of resonant wires, under tension, secured within the box and a sounding-board, substantially as set forth.

257,134. STEAM-GENERATOR. DANIEL KELLY, Philadelphia Pa., and WILLIAM H. HOFFMAN, Passaic, N. J., assignors of one third to Walter K. Ludwig, Philadelphia, Pa. Filed Nov. 4 1881. (No model.)

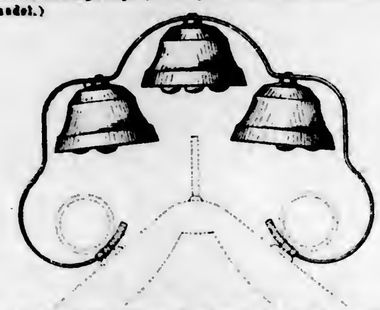


Claim.—1. In a steam-generator, the combination of a water and steam drum, C, the hollow saddles or head-pieces F, provided with internal flanges, d, riveted or bolted to said drum, and tubes

E, expanded into said saddles or head-pieces, substantially as specified.

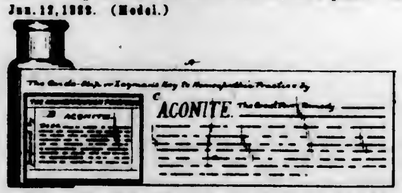
2. In a steam-generator, the combination of a water and steam drum, C, a water and sediment drum, D, hollow saddles or head and foot pieces F G, provided with internal flanges, *d e*, riveted or bolted to said drums, and tubes E, expanded into said saddles or head and foot pieces, substantially as specified.

257,135. CHIME ATTACHMENT FOR HARNESS. SAMUEL KIRBY, East Hampton, Conn., assignor to the Bevin Brothers Manufactoring Company, same place. Filed Mar. 14, 1882. (No model.)



Claim.—A spring bow or bar for supporting one or more bells having slotted ends or equivalent attaching device, whereby it can be sprung upon the terrets of a harness-saddle and be retained thereon by its inherent elasticity, said spring bow or bar being thus adapted for attachment, substantially as described.

257,136. COMBINED LABEL, GUIDE-SLIP, AND WRAPPER FOR BOTTLES. JOHN LIVER, New York, N. Y., assignor, by mesne assignments, to Mahala A. Liver, same place. Filed Jan. 12, 1882. (Model.)



Claim.—In combination with a bottle, a label, guide-slip, and wrapper, the guide-slip consisting of a strip of paper or other fabric having a printed label at one end, and the remaining portion of the slip containing instructions, the label end of the guide-slip being attached to the bottle and the remaining portion of the slip left free and adapted to be wrapped around the bottle, substantially as specified.

257,137. CUSPIDOR. CHARLES F. MARKLAND, Pittsburg, Pa. Filed Nov. 8, 1881. (No model.)

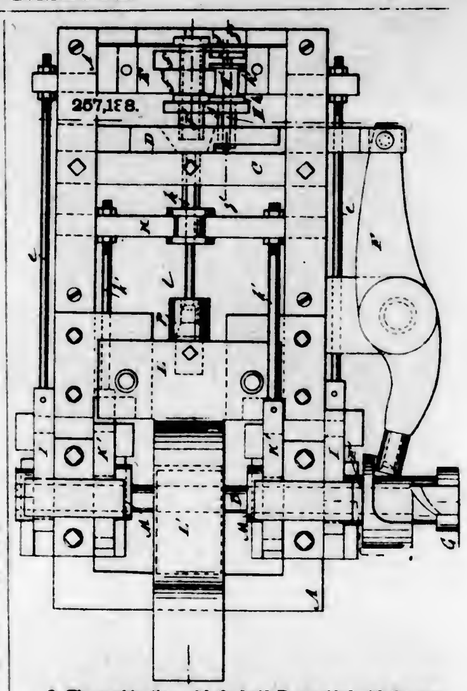


Claim.—1. A cuspidor provided with a flat rigid base-plate or platform secured to its bottom and extended laterally beyond its body, substantially as and for the purpose set forth.

2. The combination, in a cuspidor, of the body A, mat B, and one or more securing-pins *c*, as specified.

257,138. NUT-MACHINE. ALFRED MARLAND, Pittsburg, Pa., assignor to himself and Thomas Healy, same place. Filed Aug. 18, 1881. (No model.)

Claim.—1. The combination, with the stationary forming-die *c*, of the knife-bar D, punches J *l*, and hollow mandrels H *h*, arranged and operating together as described.

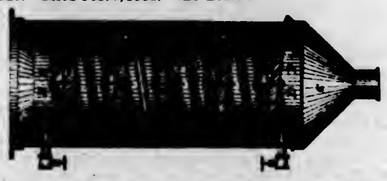


2. The combination, with the knife D, provided with the openings *c d* and cutting-edge *d'*, the lever F, and cam G, of the mandrel H, the cross-head K, rods *e e*, yokes I I, and cams E' E', as and for the purpose specified.

3. The cross-head K, provided with the opening *f*, gutters *f' f'*, and ways *f'' f''*, in combination with the collared feed-tube J' and the mandrel H, having head H' and collars *h h*, said tube and mandrel being yoked together for the purpose specified.

4. The combination, with the cross-head K, carrying hollow mandrel *h*, and the cross-head L, carrying punch *l*, of the connecting-rods *N*, yokes K' L', and cams M N, as and for the purpose specified.

257,139. WHEAT-HEATER. DANIEL W. HARMON, Indianapolis, Ind., assignor to the Nordyke & Harmon Company, of Indiana. Filed Feb. 7, 1882. (No model.)



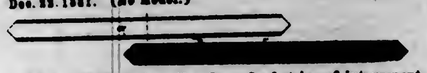
Claim.—1. The combination, in a wheat-heater, of the casing, the coiled heating-pipes, and conical devices secured to the latter, substantially as set forth.

2. The combination, in a wheat-heater, with the casing and heating-pipes, (said pipes being disposed to occupy a considerable portion of the space inside said casing,) of devices secured at intervals along the pipes, transversely across the course of the grain, whereby a pulsating or irregular flow of the grain is secured, thereby mixing said grain thoroughly and heating it evenly, substantially as described, and for the purposes specified.

3. The combination, in a wheat-heater, with the coiled pipes thereof, of the device E, provided with the bearing-wings of varying heights, whereby the said device is caused to rest in horizontal position, notwithstanding the incline of the coils of pipe, substantially as set forth.

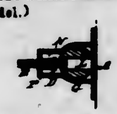
4. The combination, in a wheat-heater, of the casing, the coiled pipe, the device E, the cross-bar, and the connecting-bolt, substantially as set forth.

257,140. BOOK-SEWING SLIP. WILLIAM S. HEBB, Philadelphia, Pa., assignor to Francis W. Murphy, same place. Filed Dec. 23, 1881. (No model.)



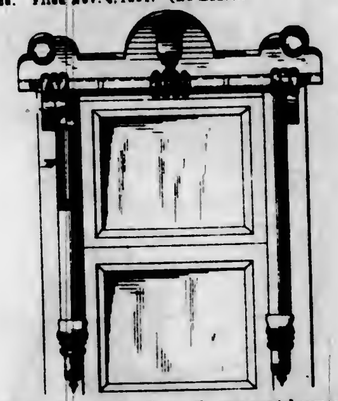
Claim.—Book-sewing slips formed of strips of integument, and guard-pieces of textile material, substantially as and for the purpose set forth.

257,141. DOOR-BOLT. WILLIAM B. FRAZER, Chicago, Ill., assignor to himself and William Linden, same place. Filed Feb. 18, 1882. (No model.)



Claim.—The hollow casting D, projecting out from one thimble of the bolt-case, in combination with the pin E and spring N, having a reciprocating movement through it in locking and unlocking the bolt, riding on the bolt when the latter is not projected into the catch, and locking the bolt only when the knob thereof is turned between the thimbles H I and against the plate A, as specified.

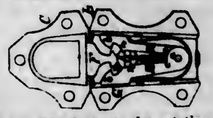
257,142. SASH-BALANCE. THOMAS H. HERMAN, Grand Rapids, Mich., assignor of one-half to William F. Hartwig, same place. Filed Nov. 4, 1881. (No model.)



Claim.—In a window-frame, the ornamental removable top and detachable hollow weight-boxes, in combination with the sash-balancing cords and pulleys arranged behind said removable top and directly on and across the surface of the top of the window-frame, substantially as described.

REISSUES.

10,089. TRUNK-FASTENER. BENJAMIN ANDREWS, Philadelphia, Pa., assignor to J. H. Sessions, Bristol, Conn. Filed Nov. 12, 1881. Original No. 127,810, dated May 21, 1872.



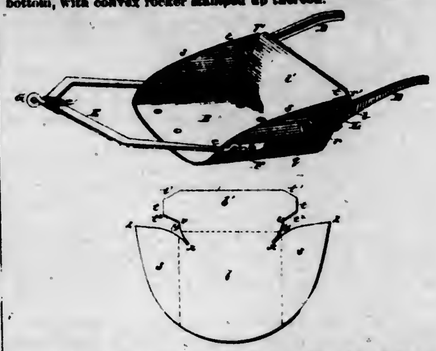
Claim.—1. In a trunk-fastener, the rotating cam-shaft, constructed as described, and operating in combination with the dogs H and catch F, substantially as described.

2. In a trunk-fastener, the dogs having the shoulders *h*, in combination with the cam *f* of the rotating cam-shaft I, acting upon said shoulders to limit the rotation of said shaft, substantially as described, and for the purpose specified.

3. In a trunk-fastener, the combination of the dogs having shoulders *h*, the casing G, having the rib K, the rotating cam-shaft I, having cam *f*, and the catch F, all operating substantially as described, and for the purpose specified.

10,090. DRAG-SCRAPER. JAMES COCHRAN and S. FRANK WELCH, Mount Pleasant, Iowa. Filed Mar. 3, 1882. Original No. 242,815, dated June 28, 1881.

Brief.—The scraper-box has rounded corners on its sides and in its rear, and is formed from a blank cut as shown. The back and side portions thereof being turned up, the projecting ends of the back are bent around upon the sides and made fast by the same bolts that hold the handles. A wear-plate is secured to the bottom, with convex rocker stamped up thereon.

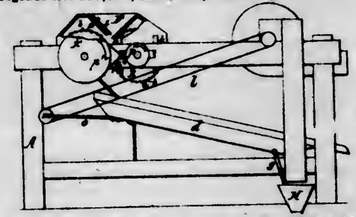


Claim.—1. A scraper-box formed of a blank of suitable material and made with curved surfaces at the juncture of its bottom with its back and sides, and the ends of the back constructed to overlap the rear ends of the sides, substantially as set forth.

2. A scraper-box formed of a blank cut and the ends of its rear portion, *b'*, and sides *a* bent as described, in combination with the bolts or rivets *l l r r*, plates or clips L L and *q q*, and the handles D D, substantially as described, and for the purposes specified.

3. In combination with the scraper-box, the plate C, having the runners *c c*, substantially as and for the purposes set forth.

10,091. BUCKWHEAT-HULLING APPARATUS. GILES S. CHANNON, Silver Creek, N. Y., assignor, by mesne assignments, to Robert L. Downton, St. Louis, Mo. Filed Aug. 24, 1881. Original No. 217,513, dated July 15, 1879.



Claim.—1. The combination, with a roller, R, provided with ribs having inclined or beveled front sides *b* and abrupt backs *a*, of a roller, R', provided with ribs having abrupt front sides *a* and inclined or beveled backs *b*, substantially as set forth.

2. The combination, with a roller, R, provided with ribs having inclined or beveled front sides *b* and abrupt backs *a*, of a roller, R', provided with ribs having abrupt front sides *a* and inclined or beveled backs *b*, and suitable mechanism whereby a greater peripheral speed is imparted to the roller R than to the roller R', substantially as set forth.

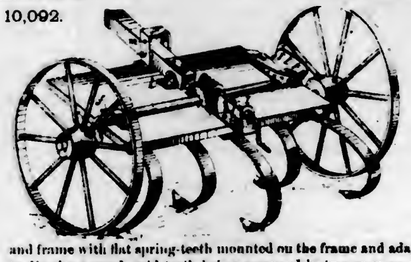
3. A pair of rollers, R R', provided with ribs *r*, having abrupt sides *a* and inclined or beveled sides *b*, with plain faces *c*, formed by portions of the roller-surface between the abrupt and inclined sides of the ribs, substantially as set forth.

4. A pair of rollers, R R', revolving at different peripheral speeds, and provided with ribs *r*, having inclined or beveled front sides *b* and abrupt backs *a* on the fast roller, and abrupt front sides *a* and inclined backs *b* on the slow roller, with plain faces *c* on the surfaces of the rollers between the inclined and abrupt sides of each rib, and suitable mechanism whereby said differential speed is imparted to the rollers, substantially as set forth.

10,092. SULKY-HARROW. CHARLES LA DOW, Albany, N. Y., assignor of one-half to Wheeler & Melick Company, same place. Filed Jan. 4, 1882. Original No. 222,512, dated Dec. 9, 18[illegible].

Claim.—1. In a harrow, the combination of a pole, wheels,

10,092.



and frame with flat spring-teeth mounted on the frame and adapted to dig the ground, said teeth being arranged in two or more rows or ranks transversely to the path of the machine.

2. In a sulky-harrow, the combination of a frame vertically adjustable on wheels and armed with spring-teeth, the inclination of which can be varied, the two adjustments being independent of each other, whereby the frame can be raised and lowered and the angle of inclination of the harrow-teeth can be varied.

3. In a sulky-harrow, the combination of wheels, frame, spring-teeth arranged in rows or ranks across the path of the machine, each row acting simultaneously on the soil, and mechanism for setting and holding all the teeth at different angles of inclination relatively to the draft-pole.

4. In a sulky-harrow, the combination of wheels, frame, spring-teeth in rows or ranks across the path of the machine, each row acting simultaneously on the soil, and mechanism for changing the position and holding the rows of teeth as adjusted relatively to the supporting-wheels.

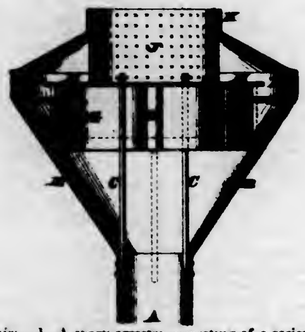
5. A draft-frame and vibratory teeth attached thereto, acting on the soil in different planes across the path of the machine, and capable of conforming to the inequalities of the surface traversed, in combination with wheels or equivalent supports for maintaining the frame a suitable distance above the ground.

6. A flat spring harrow-tooth having an eye-bearing formed out of the tooth itself to act as a hinge for said tooth, substantially as described.

7. The combination, with the rigid harrow-frame, of the rearwardly and downwardly curved vibratory spring-teeth having the upper portions of these curves secured directly under rigid solid portions of the harrow-frame, which forms a continuous bearing for the teeth, so that when the teeth are forced backward by any obstruction they will not be bowed upwardly upward, but will be held down to work by said rigid portions of the frame, essentially as set forth.

8. A curved flat spring harrow-tooth having a longitudinal rib formed on its surface, whereby the tooth is re-enforced and given a proper amount of strength, and is enabled to be made comparatively light, essentially as shown, and for the purpose set forth.

10,093. SPARK ARRESTER. CASPER F. LOCHNER, Jefferson, assignor, by mesne assignments, to Frank Sterne, Houston, Tex. Filed Feb. 8, 1882. Original No. 217,542, dated July 15, 1879.



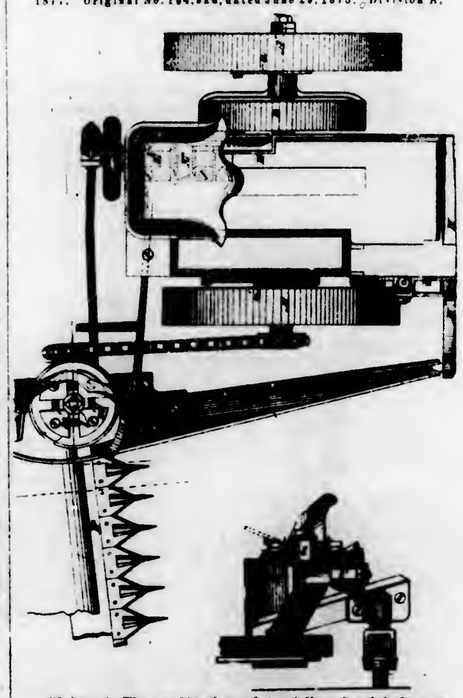
Claim.—1. A spark-arrester consisting of a series of curved wings or flanges, G, surmounted with a deflecting-plate, E, the inner ends of said flanges being united at or near the axis of the stack so as to avoid a common central opening or chamber communicating with the channels between the flanges G, as herein described.

2. The combination, in a smoke-stack, of deflecting-plate E, perforated cylinder J, and a series of wings or flanges, G, which latter curve outwardly from a common center, as and for the purpose described.

3. The combination, in a smoke-stack, of the deflecting-plate E, provided with curved flanges or wings G, radiating from a common center, said plate being supported on the standards C, arranged as herein described.

4. The combination of shell A B, standards C, perforated cylinder J, and deflecting-plate E, which plate is provided with a series of curved wings or flanges, G, radiating from a common center, said perforated cylinder being secured in the mouth K of the stack, as herein described.

10,094. HARVESTER-RAKE. JAMES S. MARSH, Lewisburg, Pa., assignor to Harry A. Marsh, same place. Filed May 21, 1877. Original No. 184,926, dated June 29, 1875. Division A.



Claim.—1. The combination, substantially as hereinbefore set forth, in a two-wheel hinge-bar rear-cut harvester, of a sprocket-wheel on the inner end of the main axle, a sprocket-pulley supported by the rake-stand on the platform, and a driving-chain connecting the two to drive the raking mechanism.

2. The combination, substantially as hereinbefore set forth, of two main supporting and driving wheels, a main frame supported thereby, a short laterally-projecting finger-beam connected therewith by a hinged drag-bar and coupling-arm, rake-supporting mechanism mounted upon the inner front corner of the grain platform, a sprocket-wheel on the main axle outside of the driving-wheel, a corresponding sprocket-wheel mounted upon the inner front corner of the platform, a driving-chain connecting the two sprocket-wheels, and rake-carrying mechanism driven thereby.

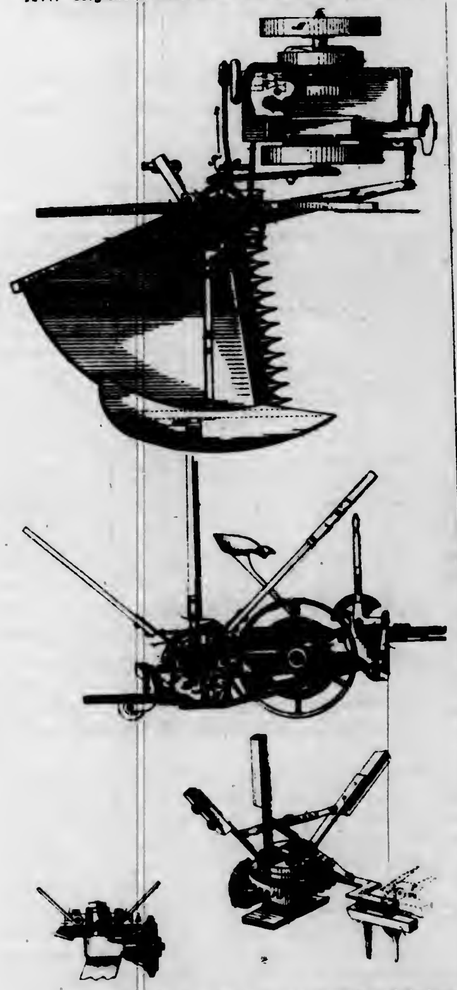
3. The combination, substantially as hereinbefore set forth, of two main supporting-wheels, the main frame supported thereby, the short laterally-projecting finger-beam connected therewith by a hinged drag-bar and coupling-arm, a low rake-supporting standard mounted upon the inner front corner of the platform, the sprocket-wheel on the main axle outside of the driving-wheel, rake-carrying mechanism mounted upon the rake-supporting standard, and a driving-chain actuating the rake-carrying mechanism.

4. The combination, in a two-wheeled hinged-bar harvester, of the rake-driving mechanism mounted upon a low rake-supporting standard at the inner front corner of the platform, the drag-bar vertically adjustable at its forward end, and the fender mounted upon the drag-bar and constructed, as described, with its rear por

tion extending over the platform and surrounding the rake-gearing and its straight front portion extending over the drag-bar, these members being constructed and operating in combination, substantially as hereinbefore set forth, whereby the fender, while protecting the rake-gearing, conforms to the movements of the rake, finger-beam, platform, and drag-bar.

5. The combination, substantially as hereinbefore set forth, in a two-wheeled hinge-bar rear-cut harvester, of rake-driving mechanism mounted upon the inner front corner of the platform and driven from the outer end of the main axle by a chain and sprocket-wheels, with a drag-bar rocked at its forward end by a lever, whereby the cutting apparatus and rake may be tilted in unison.

10,095. HARVESTER-RAKE. JAMES S. MARSH, Lewisburg, Pa., assignor to Harry A. Marsh, same place. Filed May 21, 1877. Original No. 184,926, dated June 29, 1875. Division B.



Claim.—1. The rake and reel arms pivoted at their inner ends to the hub or crown-wheel by means of the cross heads or bars fitting into suitable cavities in said hub or wheel, substantially as described.

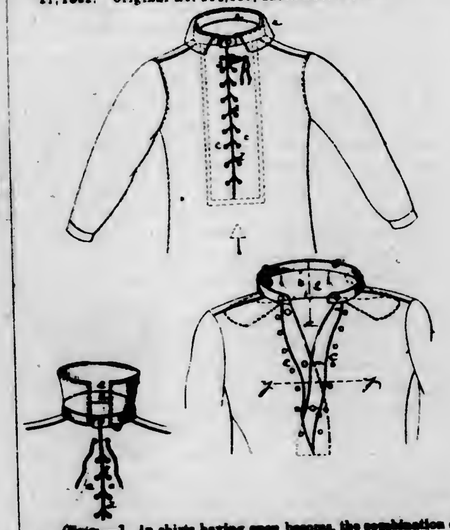
2. The rake attached to its revolving hub or crown-wheel by means of the bar bent backward from the line of attachment, as set forth, to bring the rake parallel with, but in rear of, its supporting-arm, for the purpose of depositing the gavel farther from the standing grain, substantially as described.

3. The combination of the rake-arm, the axially-turning rake-head pivoted axially thereunder, and the angular spring-lever mounted on the rake-head and abutting against the rake-arm, these members being constructed and operating in combination in the manner and for the purpose described.

4. The spring-guide applied to the cam-rail substantially as described.

5. The combination of the crown-wheel revolving on a vertical axis, the beater-arm pivoted thereon, and the longitudinally-adjustable blade forming a prolongation of the beater and sliding directly thereon to vary its length.

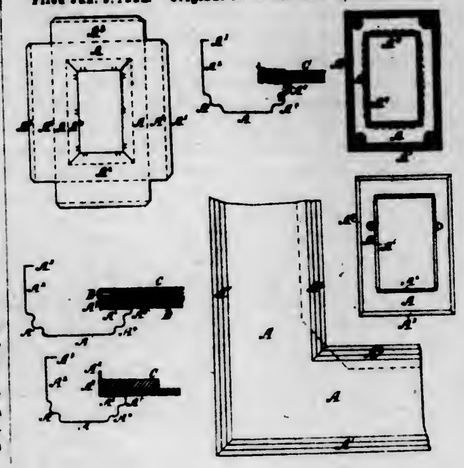
10,096. SHIRT. ISAAC SOHNUBB, New York, N. Y. Filed Mar. 21, 1882. Original No. 254,337, dated Feb. 28, 1882.



Claim.—1. In shirts having open bosoms, the combination of inner flaps, *b*, outer flaps, *c*, having eyelets and lacing-cord *d*, substantially as shown and described.

2. In a garment having neckband *g*, the combination thereof with the collar *c*, which is fastened to the inner part of said neckband, below the top edge thereof, and adapted to be entirely concealed when folded inward, and to be folded upward, outward, and downward around the neckband *g*, substantially as herein shown and described.

10,097. PICTURE-FRAME. ABRAHAM WOLF, New York, N. Y. Filed Jan. 3, 1882. Original No. 240,873, dated May 3, 1881.



Claim.—1. A rectangular picture-frame formed of one piece of sheet metal, having the front A in one piece without joint, the outer portion, A^2, bent backward to give depth, and the inner edge, A^1, bent also backward to give depth, and then bent outward, as at A^3, for the purpose of securing the glass or picture, as herein specified.

2. A rectangular picture-frame formed of one piece of sheet metal, having the front A in one piece without joint, the outer portion, A^2, bent backward to give depth, and the inner edge, A^1, bent also backward to give depth, and then bent outward, as at A^3, and then again bent backward, as at A^4, to hold the glass or picture in position, substantially as described.

3. The rectangular picture-frame, of sheet metal, herein described, having the front A in one piece without joint, the outer surface, A', and the inner edge, A^1 A^2 A^3, formed under and bent outward in a plane to match the plane surface of the glass, arranged in the ordinary position, as herein specified.

4. In a picture-frame, the backwardly-extended portion A^2, in combination with the plane portion A', produced in one piece with the main body A^4 A^1 A^2 A^3 A' A, as herein specified.

THE ELIOTYPE PRINTING CO. BOSTON

DECISIONS
OF THE
COMMISSIONER OF PATENTS
AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

THE UNION PAPER BAG MACHINE COMPANY *et al. v.* NIXON *et al.*, (two cases.) NIXON *et al. v.* THE UNION PAPER BAG MACHINE COMPANY *et al.*, (two cases.)

Decided March 6, 1882.

1. OWNER OF PATENTED MACHINE—EXTENDED TERM.
The right of an owner of a patented machine, without any conditions attached to his ownership, to continue the use of his machine during an extended term of the patent is well settled, and power to sell the machine and transfer the accompanying right of use is an incident of this unrestricted ownership.

2. SAME—SAME—LICENSE.
Whatever may be the effect of an exclusive license within a district upon the right of an owner of a patented machine before the end of the original term of the patent, as that license ceases when the term expires, it follows that during the extended term no question can arise under the license.

3. OWNERS' EXTENDED TERM—LICENSES.
The owners of an extended term of a patent take their title subject to rights of the unrestricted owners of patented machines, and their licensees take their interests, subject to the same rights.

4. SETTLING COSTS.
The decree will not be reviewed on appeal for the mere purpose of settling the costs.

APPEALS from the Circuit Court of the United States for the Southern District of Ohio.

Mr. Geo. Harding for The Union Paper Bag Machine Company *et al.*

Mr. E. W. Kittredge and *Mr. Jas. Moore* for Nixon *et al.*

Mr. Chief Justice WAITE delivered the opinion of the Court.

On the 28th of April, 1857, a patent was granted to Charles H. Morgan and Benjamin R. Smith for an invention by Benjamin F. Rice of a machine for making paper bags. This will hereafter be referred to as the Rice patent. By agreements entered into on the 11th of February and 12th of August, 1859, the owner of this patent executed to Martin Nixon, Thomas Nixon, and William H. Chatfield, partners, under the name of Nixon & Chatfield, a license for the exclusive use of the patented machines within certain territory, which included the States of Ohio and Indiana. Thomas Nixon, one of the licensees, is one of the parties to these appeals, and upon the dissolution of the firm of Nixon & Chatfield in the year 1865, his interest in the license passed to and became vested in Chatfield & Woods. On the 6th of March, 1860, a reissue of this patent was granted to Charles H. Morgan, Leonard Whitney, Jr., and Thurston Priest. Some time about the year 1863 Francis H. Morgan, a brother of Morgan, one of the patentees, became the owner of one of the machines covered by this patent, with an unrestricted license for its use. Morgan, the patentee, was for a time a joint owner of the machine with his brother; but he afterward parted with his interest, and Francis H. Morgan became the sole owner. While there is no testimony in the case showing any instrument in writing by which the other patentees united in a license for the use of this machine, we are entirely satisfied that they gave their assent to what was done by Charles H. Morgan, and are in no condition to claim adversely to the license which he undertook to grant.

On the 17th of March, 1863, another patent was issued to Charles H. Morgan for an improvement in paper-bag machines. This will hereafter be referred to as the Morgan patent. Afterward Francis H. Morgan became the owner of two machines containing the improvements embraced in this patent, with an unrestricted license for their use.

On the 26th of October, 1865, an exclusive license for the use in Philadelphia of machines embraced in both patents was granted to Francis H. Morgan; but there is no testimony showing that his rights in respect to the machines he already owned were confined to that territory, and there is no doubt but that he owned all the machines now in question long before this exclusive license was given.

On the 27th of November, 1865, which was after Thomas Nixon had retired from the firm of Nixon & Chatfield, and transferred all his interest in the exclusive license for the Rice patent to the other partners, Francis H. Morgan sold and conveyed to Thomas Nixon the two Morgan machines which he owned, and agreed to furnish on demand all other machines of like pattern and workmanship which Nixon might want. Nixon on his part bound himself not to use the machines he got in this way, except within the States of Ohio and Indiana, and to pay the owner of the patent a royalty of three cents on every thousand bags made. He also agreed not to use any other machines in the manufacture of bags than such as he procured under this contract. Afterward, on the 2d of November, 1866, Nixon wanted another machine and called on Francis H. Morgan to furnish it under his contract. Morgan, having none of the Morgan machines on hand at the time, offered his Rice machine in the place of the one called for by the contract. This Nixon agreed to accept if he could be released from his obligation not to use any other than Morgan machines within his territory. Morgan thereupon stipulated accordingly and Nixon took the machine.

All these things were done by Francis H. Morgan with the full knowledge and consent of Charles H. Morgan, who was then the sole owner of his own pat-

ent and of a half-interest in that of Rice. An attempt was made to show the contrary of this; but the testimony leaves no doubt in our minds as to the fact.

Nixon took all the machines he got from Francis H. Morgan to Richmond, Indiana, and either himself or through others carried on the manufacture of bags by their use.

On the 21st of April, 1871, the Rice patent was extended for seven years from April 28, 1871, on the application of Roxana Rice, the widow and executrix of the inventor. Mrs. Rice assigned the extended patent to the Union Paper Bag Machine Company, and that company, on the 27th of June, 1871, granted to Chatfield & Woods the exclusive right to use machines constructed under the patent in the States of Ohio and Indiana. At the same time the company granted to the same parties the exclusive right of using within the same territory other machines covered by other patents which it owned, reserving a royalty of four cents on every thousand bags manufactured by any of the machines. On the 17th of July, 1871, after this assignment, the Bag Company and Chatfield & Woods sued Thomas Nixon, Morris H. Nixon, and William Anderson, alleged to be doing business as partners under the name of Nixon & Company, to restrain them from using the Rice machine. The defendants answered, denying the alleged partnership and averring that the business was carried on by Morris H. Nixon and William Anderson alone, they using the machine which belonged to Thomas Nixon and paying him a stipulated rent therefor. The suit was then discontinued as to Thomas Nixon, and from that time it was prosecuted alone against the other defendants. A new suit of a similar character was, however, begun against Thomas Nixon, and the two were carried on together. In both the suits answers were filed, in effect denying the validity of the patent and the infringement; but on the 31st of May, 1873, decrees were entered in both cases, enjoining the defendants from using the machine, and ordering a reference to a master to state an account of profits and damages. The accounting was continued before the master until the 14th of June, 1876, when Thomas Nixon paid to the Bag Company the sum of seven thousand five hundred and forty-three dollars and took a receipt therefor, as follows:

CINCINNATI, *June* 14, 1876.

Received of Thomas Nixon the sum of seven thousand five hundred and forty-three dollars, (7,543.00,) money due under the contract of F. H. Morgan with Thomas Nixon, dated November 27th, 1865, and in full for the amount which the said Thomas Nixon reported to be due as royalties under said contract. May 10, 1876.

$7,543.00. Union Paper Bag Machine Co.,
by EDWIN J. HOWLETT, *Pres.*

The hearing before the master was continued after this payment was made, and on the 23d of October, 1877, a report was filed, in which the master stated that the period covered by his inquiries was from June 27, 1871, the date of the exclusive license to Chatfield & Woods, to June 9, 1875, the date of the service of the injunction in the case. He also set forth the facts as to the contracts with Francis H. Morgan and the payment of the royalties thereunder substantially as they have already been given. He found that the number of bags manufactured by Nixon & Company between the dates above mentioned was 93,500,000, and that the royalty fixed by the Bag Company for the use of all its machines was four cents a thousand.

After the report was filed the defendants in each of the cases asked and obtained leave to put in a supplemental answer, setting up the contract with Francis H. Morgan and the payment to and acceptance by the Bag Company of the royalties due thereunder on the 14th of June, 1876. Upon the final hearing, after these answers were in, the court proceeded on the evidence to state the accounts, and decreed that Chatfield & Woods had no right on the pleadings and evidence to any recovery. As to the Bag Company, it was found that it was the owner of the Rice patent; that it had an established license-fee for the use of the several patents for improvements in paper-bag machinery referred to in its licenses to Chatfield & Woods and others of four cents a thousand bags; that this license-fee included the use of the Rice machine; that the Francis H. Morgan contract operated as a license to Nixon for the use of the Morgan machines, but not of the Rice machine; that 93,500,000 bags had been manufactured by Nixon & Anderson by the use of all three of the machines; that they had already paid three cents a thousand on their royalty, and must now pay one cent a thousand more, amounting in the aggregate to nine hundred and thirty-five dollars, for which a decree was entered against them. From this decree both parties have appealed, the Bag Company and Chatfield & Woods claiming that the defendants were liable to them, not for the license-fee, but for the profits they made by the use of the Rice machine, and the defendants that the payment by Thomas Nixon of the royalty reserved under the Francis H. Morgan contract was a full satisfaction of all claims that could be made on them for the use of this machine as well as those constructed under the Morgan patent.

In the suit against Thomas Nixon the same general conclusions were reached as in that against Morris, Nixon, and Anderson; but a decree for one cent damages only was rendered against him, because he only rented his machines to others to be used and did not use them himself. From this decree also both parties appealed.

Upon the foregoing facts the first question that presents itself is whether the use of the Rice machine was included in the royalty fixed by the contract of Francis H. Morgan with Thomas Nixon. If it was, then clearly, so far as the Bag Company is concerned, the acceptance of the stipulated royalty was a satisfaction of all claims for damages. This was substantially conceded on the argument. The right of an owner of a patented machine, without any conditions attached to his ownership, to continue the use of his machine during an extended term of the patent is well settled. (*Bloomer* v. *McQuewan*, 14 How., 550; *Chaffee* v. *Boston Belting Company*, 22 How., 223; *Mitchell* v. *Hawley*, 16 Wall., 547; *Adams* v. *Burke*, 17 Wall., 445.) Consequently Francis H. Morgan had by his ownership of the Rice machine the right to its use during the extended term of the patent. He could also sell it to others to be used in the same way. Power to sell the machine and transfer the accompanying right of use is an incident of unrestricted ownership. The contract of Morgan was to furnish Thomas Nixon with all the Morgan machines he wanted to use in the designated territory at the stipulated price and royalty. When called upon to furnish one of these machines under the contract he persuaded Nixon to take the Rice machine instead. Under these circumstances there cannot be a doubt that it was the intention of the parties to put the Rice machine in the

place of a Morgan machine under the contract, and that whatever compensation was to be paid to the patentee for the use of the Morgan machine must be paid for the use of the Rice machine. It follows that, so far as the Bag Company is concerned, there should have been no decree against Nixon & Anderson. The payment of the royalty in June, 1876, was in full for the use of the Rice machine as well as the Morgan machines.

Next, as to Chatfield & Woods. Their exclusive right to the use of the Rice machine continued no longer than the term of the original patent. (*Wilson* v. *Rousseau*, 4 How., 646.) The Bag Company does not appear ever to have had any interest in the patent before the extension. Chatfield & Woods have never been anything else than licensees. As such they could not sue for an infringement. All their rights must be enforced through or in the name of the patentee. (*Littlefield* v. *Perry*, 21 Wall., 223.) Their recovery in this case, therefore, must be limited to their rights under the license from the Bag Company. Such was the understanding of the master, for he distinctly states in his report that his inquiries were confined to the period between the date of this license and the service of the injunction, which stopped all further use of the machines.

Whatever may have been the effect of the first exclusive license held by Chatfield & Woods upon the right of Nixon to use his Rice machine in Indiana before the end of the original term of the patent, as that license ceased when the term expired, it necessarily follows that during the extended term no questions can arise under that license. After the extended term began that license did not stand in the way of the use by Nixon of his machine wherever he pleased, and the Bag Company took its title subject to his rights as an unrestricted owner, save in respect to royalties, of one of the patented machines. Chatfield & Woods took their license subject to the same rights in Nixon. They cannot claim as against Nixon more than the company could convey, and as Nixon was in legal effect operating his machine under a valid license superior to theirs, it follows that in this suit there can be no recovery in their behalf. Their remedy, if they have any, is against the company on their contract for the license or to secure the benefit of the royalty.

From what has thus been said it appears that the decree in the suit against Nixon & Anderson as far as it requires the payment of damages was wrong. As the payment of the royalty was not made until long after the interlocutory decree sustaining the validity of the patent, and the supplementary answer setting up the special defense was not filed until after the report of the master was in, it was right to charge the costs against them.

So far as the appeal of Thomas Nixon is concerned, the controversy is really as to costs alone. The decree against him will consequently not be considered. (*Canter* v. *American and Ocean Insurance Company*, 3 Pet., 307; *Elastic Fabric Company* v. *Smith*, 100 U. S., 110.)

The decree in the case against Nixon & Anderson is reversed, with costs, and the cause remanded, with instructions to enter a decree against the defendants for one dollar only and costs of suit. That in the suit against Thomas Nixon alone is affirmed, each party to pay the costs of his own appeal.

Mr. Justice MATTHEWS having been of counsel in the court below took no part in this decision.

THE GOULDS MANUFACTURING COMPANY *v.* COWING *et al.*

Decided March 13, 1882.

1. INFRINGEMENT—MEASURE OF DAMAGES.
   Where there is a limited and local demand for a patented device which is the only one suitable for a particular purpose, and the patentees consequently have control of the market, the measure of damages for infringement is all the profits made by the infringers upon their entire sales.
2. SAME—ESTIMATING PROFITS.
   In estimating profits the use of tools, machinery, power, and other facilities employed in the manufacture should be taken into account, as well as material, labor, wastage, and expenses of marketing. *Mowry* v. *Whitney* (14 Wall., 620) commented on and approved.

APPEAL from the Circuit Court of the United States for the Northern District of New York.

Mr. W. F. Cogswell for the appellant.
Mr. Elisha Foote for the appellees.

Mr. Chief Justice WAITE delivered the opinion of the Court.

The only questions raised on this appeal relate to the amount the appellant is entitled to recover for the infringement of a patent for an improvement in pumps "specially designed for drawing off the gas from oil-wells and conducting the same to the furnace of the engine." The validity of the patent and the infringement are not disputed here.

After the patent and infringement were established below the case was sent to a master to ascertain the damages. The master reported that two hundred and ninety-eight pumps had been manufactured and sold by the defendants, the appellees, out of which a net profit of $47.71 on each pump had been realized, that being the difference between the cost of the material and labor used in making a pump and the price at which it was sold. Upon this report the court ruled that as the patent was only for an improvement on an old pump the profits for which the defendants were accountable must be confined to such as were realized from the manufacture of the patented improvement, and not from the whole pump as improved. For this reason a new reference was ordered to state the account on the proper basis.

The second report was, in its result, substantially the same as the first. The number of pumps made and sold was the same, and the profit on each pump estimated to be $46.46. The mode of calculating the profits was also the same—that is to say, on the second reference, as on the first, the defendants were charged with the price at which they sold the pump as a whole, and credited only with the cost of labor and material used in the manufacture. The master, on the second reference, however, reported further as follows:

I find as further facts from the evidence that the plaintiffs' pump, with their patented improvement, which they had introduced into the market, virtually controlled the market, and had superseded all the other pumps then in use for pumping gas, and the others were literally driven out of the market, as they could not be sold at the places where the plaintiffs' pump had been introduced. The defendants went into the very market where the plaintiffs' pumps had been introduced, and where they had sold, and where plaintiffs were then supplying most of their pumps, and the defendants, in fact, went and employed Wesson, the former agent of the plaintiffs, to sell the pumps for them, and he, from being the plaintiffs' agent in the locality, made very ready sale of the same pumps for the defendants, and had not the defendants interfered in urging the pumps which they manufactured upon this local market the plaintiffs would certainly have had the whole market to themselves, and would, beyond doubt, have secured orders and supplied the demand of the market for the same number of pumps more than they did sell, as the defendants furnished—to wit, two hundred and ninety-eight pumps. The plaintiffs were, by their agent, in the field furnishing pumps in those oil regions, and would

have supplied the market demand had not the defendants intervened and supplied to the market these two hundred and ninety-eight pumps.

This finding as to the facts is in its general effect supported by the evidence. Notwithstanding this, however, the court, still adhering to its holding as to the rule of estimating profits, set aside the report, and inasmuch as the appellant had, on the second reference, failed to show what had been realized upon the principles of accounting prescribed a final decree was entered in its favor for nominal damages only and costs. From that decree this appeal was taken by the complainant below.

The rule applicable to this class of cases was well stated by Mr. Justice Strong, speaking for the whole court, in *Mowry* v. *Whitney*, (14 Wall., 620.) The subject-matter of that suit was a patent for an improvement in the process of manufacturing car-wheels, and in respect to the profits resulting to an infringer from the use of the patented process it was said, page 651:

> The question to be determined * * * is, what advantage did the defendant derive from using the complainant's invention over what he had in using other processes then open to the public and adequate to enable him to obtain an equally beneficial result. The fruits of that advantage are his profits.

It does not necessarily follow from this that where the patent is for one of the constituent parts and not for the whole of a machine the profits are to be confined to what can be made by the manufacture and sale of the patented part separately. If, without the improvement, a machine adapted to the same uses can be made which will be valuable in the market and salable, then, as was further said in *Mowry* v. *Whitney*, page 651, the inquiry is "what was the advantage in cost, in skill required, in convenience of operation, or marketability" gained by the use of the patented improvement. If the improvement is required to adapt the machine to a particular use, and there is no other way open to the public of supplying the demand for that use, then it is clear the infringer has by his infringement secured the advantage of a market he would not otherwise have had, and that the fruits of this advantage are the entire profits he has made in that market. Such, we think, is this case. Pumps for all ordinary and many extraordinary uses were very old; but in the new developments of business something was wanted to take the gas from the casing of an oil-well and conduct it safely to the furnace of the engine. "With that special purpose in view," this inventor took the well-known parts of an ordinary double-action pump, changed some of them slightly in form, added a new device, and produced something which would do what was wanted. While nominally he only made an improvement in pumps, he actually made an improved pump. For ordinary uses the improvement added nothing to the value of the old pump; but for the new and special purpose in view the old pump was useless without the improvement. The testimony shows that there was no market for pumps adapted to this particular use, except in the oil-producing regions of Pennsylvania and Canada. The demand was limited as well as local. Less than a thousand pumps actually supplied all who wanted them. But for that particular use no other pump could at the time be sold. If the appellant kept the control of its monopoly under the patent, it alone had the advantage of this market. Unless the appellees got the improved pump, they could not become competitors in that field, and just to the extent they got into the field they drove the appellant out. Through their infringement they got the advantage of selling the pumps that had upon them the patented improvement. Without it no such sales would have been effected. The fruits of the advantage they gained by their infringement were therefore necessarily the profits they made on the entire sale.

This is an exceptional case. A limited locality required a particular kind of pump to be used only in that locality for a special purpose. The market was not only limited to a particular locality, but it was unusually limited in demand. A single manufacturer, possessing the facilities the appellant had, could easily and with reasonable promptness fill every order that was made. There was no other pump that could successfully compete with that controlled by the patent. Under these circumstances it is easy to see that what has been the appellees' gain in this business must necessarily have been the appellant's loss, and consequently the appellant's damages are to be measured by the appellees' profits derived from their business in that special and limited market. This, as it seems to us, is the logical result of the rule which has been stated. By infringing on the appellant's rights the appellees obtained the advantage of the increased marketability of their pumps. The action of the court below, therefore, limiting the field of inquiry as to damages, cannot be sustained.

We cannot agree with the master, however, in his estimate of the profits made by the appellees from what they have done. He finds that the pumps sold in the market for $80 each, while the cost of manufacturing them was only $33.54. It is true there is some evidence to show that pumps could be made for the sum named; but it is clear to our minds that many things were excluded from the estimate which ought to have been included. All the material and labor of men may have been taken into account; but there is nothing for the use of tools, machinery, power, and other facilities employed in the manufacture, and nothing for wastage and expenses of marketing. One of the appellees is reported as testifying that his firm made the pumps for $31.37 each; but this must be an error, because he at the same time stated he could not say that there was any profit at all at the prices for which sales were made. Clearly this could not be, if what only cost the sum named was sold for $80. Annexed to the statement of the testimony of this witness is a detailed estimate of the cost of manufacture, which, without any allowance for general expenses, made the cost of a single pump $61.69. The appellant furnishes some evidence to contradict this estimate; but the bare fact that the pump when finished brought, as is claimed, at the shop $80 shows that the cost must have been much more than the master has reported. Down to the time of this patent the market had been supplied with some device to accomplish what this improvement did. The change in the old pump was not an expensive one. The valves were put outside of the side chambers instead of inside, and the joints had to be carefully fitted. If the old pump only cost as much as is claimed for the new, we cannot believe it would have commanded in the market any such price as the new sold for. We must conclude, therefore, that the cost of production has been much underestimated by the master. The testimony as reported is very unsatisfactory, and we are strongly inclined to think all has not been sent here which was presented. The attention of the parties was evidently directed much more to the rule of estimating the profits than to the detail of the expense of manufacture and sale. Had there not already been two references, we should be inclined to order another. As it is, we have made the best estimate we can from the material furnished in the record, and conclude that a reasonable allowance for profits will be $15 on each pump, or $4,470 in all.

The decree is reversed, and the cause remanded, with instructions to sustain the fifth exception to the report of the master and enter a decree against the appellees for $4,470 and costs.

THE

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Subscriptions for 1882.

The OFFICIAL GAZETTE is published every Tuesday, two volumes a year, commencing in January and July. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound volumes, $3.50 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Issue of May 2, 1882.

Patents	308	No. 257,143 to No. 257,451, inclusive.
Designs	11	No. 12,909 to No. 12,919, inclusive.
Trade-Marks	9	No. 9,330 to No. 9,338, inclusive.
Labels	3	No. 2,673 to No. 2,675, inclusive.
Reissues of patents	7	No. 10,098 to No. 10,104, inclusive.
Total issue	339	

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States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
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California	16		New Jersey	13	
Colorado			New Mexico Territ'y		
Connecticut	12		New York	59	3
Dakota Territory			North Carolina	2	
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Iowa	9		Vermont	1	
Kansas	6		Virginia		
Kentucky	7		Washington Territ'y	1	
Louisiana	2		West Virginia		
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Maryland	3	1	Wyoming Territory		
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Michigan	12		United States Navy		
Minnesota	4				
Mississippi			Total to citizens of the United States	307	12
Missouri	5				
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Belgium			Italy		
Bermuda			New Zealand		
Brazil			Russia		
Canada	4		Spain		
Chili			Sweden	1	
Colombia, U. S. of			Switzerland	1	
Cuba					
Denmark			Total to citizens of foreign countries	13	
Ecuador					

DESIGNS.

12,909.—CARPET.—*Frank Allen*, Worcester, Mass., assignor to *Worcester Carpet Company*, same place. Application filed March 22, 1882. Term of patent 3½ years.

12,910.—PRINTING-TYPE.—*George G. Bailey, Jr.*, and *James Gilbert*, Boston, Mass. Application filed October 24, 1881. Term of patent 14 years.

12,911.—CARPET.—*Walter J. Gadsby*, Boston, Mass., assignor to *The Roxbury Carpet Company*, same place. Application filed April 3, 1882. Term of patent 3½ years.

12,912.—FINGER-RING.—*Heinrich Heurich*, New York, N. Y., assignor to *Rosa Heurich*, same place. Application filed April 1, 1882. Term of patent 3½ years.

12,913.—HAIR-ORNAMENT.—*Jean R. Krause*, New York, N. Y. Application filed March 7, 1882. Term of patent 7 years.

12,914.—HANDLE FOR SPOON OR FORK.—*Garry I. Mix*, Yalesville, Conn. Application filed March 14, 1882. Term of patent 7 years.

12,915 to 12,917, inclusive.—OIL-CLOTH.—*Charles T. Meyer* and *Victor E. Meyer*, Bergen, N. J., assignors to *Edward C. Sampson*, New York, N. Y. Applications filed April 6, 1882. Term of patents 3½ years.

12,918.—CARPET.—*Harriet A. Parker*, Boston, Mass., assignor to *The Roxbury Carpet Company*, same place. Application filed March 27, 1882. Term of patent 3½ years.

12,919.—GIMP.—*Robert Weiden*, New York, N. Y. Application filed March 18, 1882. Term of patent 3½ years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 6,191 and upward are registered under the act of March 3, 1881.]

9,330.—REMEDY FOR CORNS, WARTS, BUNIONS, AND INDURATIONS OF THE SKIN.—*Edward A. Abbott*, Savannah, Ga. Application filed January 28, 1882.

"The words 'INDIAN CORN' on the pictorial representation of a human foot and leg."

9,331.—CIGARS.—*Julian Alvarez*, New York, N. Y. Application filed April 8, 1882.

"The portrait of the registrant."

9,332.—CIGARS.—*Alvarez é Hijo*, New York, N. Y. Application filed April 8, 1882.

"The portrait of Mr. Francisco de P. Alvarez."

9,333.—CORSETS.—*Theodore C. Bates*, North Brookfield, Mass. Application filed March 11, 1882.

"The arbitrarily-selected word 'IRONSIDES.'"

9,334.—CORSETS.—*Theodore C. Bates*, North Brookfield, Mass. Application filed March 11, 1882.

"The arbitrarily-selected word 'DERMATOID.'"

9,335.—CORSETS.—*Theodore C. Bates*, North Brookfield, Mass. Application filed March 11, 1882.

"The arbitrarily-selected word 'EXCELSIOR.'"

9,336.—CORSETS.—*Theodore C. Bates*, North Brookfield, Mass. Application filed March 11, 1882.

"The arbitrarily-selected word 'EVERLASTINO.'"

9,337.—PEN-HOLDERS AND PENS.—*George A. Ogle*, Baltimore, Md. Application filed April 3, 1882.

"A circle and straight or dotted lines representing the sun and the words 'THE CENTURY,' located within the field described by the circle."

9,338.—DOUBLE-VANILLA CHOCOLATE.—*Henry L. Pierce*, Boston, Mass. Application filed August 2, 1881.

"The obverse and reverse of the medal of the French Exposition of 1867, connected by a horizontal bar and associated with bars or ribbons, so as to form an elliptical design bearing the words 'W. BAKER & Co's.'"

LABELS.

2,673.—Title: "CAREY'S COMPOUND PETROLEUM PILLS."—*Carey & Co.*, New York, N. Y. Application filed March 8, 1882.

2,674.—Title: "ACID EMULSION COD LIVER OIL."—*Andrew J. Robinson*, Boston, Mass. Application filed April 10, 1882.

2,675.—Title: "SEARS'S IMPROVED INSECT POWDER."—*George T. Sears*, Boston, Mass. Application filed March 21, 1882.

DISCLAIMER.

8,832, (Reissue.)—*William Sternberg*, assignor to *Leman W. Tyler*, dated August 5, 1869. IMPROVEMENT IN CHEESE-HOOPS. Disclaimer filed April 22, 1882, by the assignee.

Enters his disclaimer "to the first claim of said Letters Patent, Reissue No. 8,832, such claim being that part of the said invention of William Sternberg, patented as aforesaid, which your petitioner does not choose to claim or hold by virtue of said reissued letters patent."

PATENTS

GRANTED MAY 2, 1882.

257,143. COMBINED SNAP AND BUCKLE. JOHN ANDERSON, Roseville, Ill. Filed Mar. 20, 1882. (No model.)



Claim.—1. In a combined snap-hook and buckle, a spiral spring having two projecting arms, one fitting in a depression in the under side of a snap-bar to hold said snap in position, the other extending along the shank of the hook to a slot in the forward end thereof, into which its point is inserted, substantially as described, and for the purpose set forth.

2. The buckle F, consisting of a frame, nearly square, having two cross-pieces, D and D', and the tongue E, by means of which the strap A, having inset end A', is secured thereto, in combination with the hook C, cast integral therewith, and provided with the recess K, longitudinal slot P, and circular slot J, the spiral G, having arms I and E, and the snap B, having a part of its under surface concaved and converged, respectively, the same being secured to the shank of the hook by means of rivet h, substantially as described, and for the purposes set forth.

257,144. CASTER. ERSKINE L. HANCOCK, Cuyahoga Falls, Ohio. Filed Nov. 14, 1881. (No model.)



Claim.—A caster-pintle, *c*, having its corrugated upper portion of a wedge-like form, suitable to be driven into the upper end of the socket in a furniture-leg, a part of the pintle within said socket being made cylindrical to fit the bore of and be laterally supported by the sides of the socket, substantially as described.

257,145. SASH-FASTENER. FRED E. BAILEY, Manchester, N. H., assignor to himself and Joel P. Bailey, same place. Filed Mar. 30, 1882. (No model.)



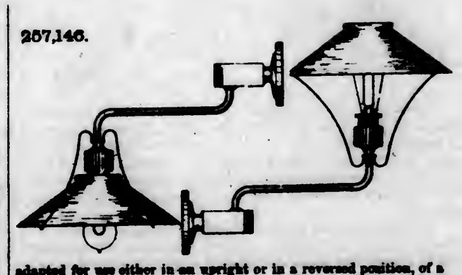
Claim.—The combination of the case provided with the notched flange, arranged as described, with two studded bolts, the slotted tumbler, the arbor, and the slotted and studded crank, all arranged and to operate substantially as set forth.

257,146. SHADE-HOLDER FOR ELECTRIC LAMPS. SIGMUND BERGMANN, New York, N. Y. Filed Feb. 28, 1882. (No model.)

Claim.—1. The combination, with an electric lamp and its socket adapted for use either in an upright or in a reversed position, of a shade-holder adapted to properly support the shade whether the lamp is upright or reversed, substantially as set forth.

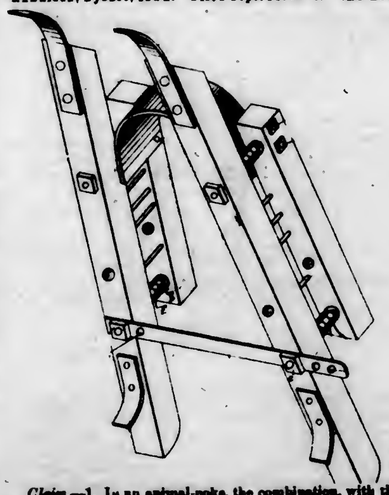
2. The combination, with an electric lamp and its socket

257,146.



adapted for use either in an upright or in a reversed position, of a shade-holder attached at a point beyond the lamp and supporting the shade from its lower or broad edge, whereby the lamp may be used in either position or removed from and replaced in its socket without disturbing the shade-holder, substantially as set forth.

257,147. ANIMAL-POKE. DWIGHT BRINTNAL and WILLIAM HARRISON, Dysart, Iowa. Filed Sept. 15, 1881. (No model.)

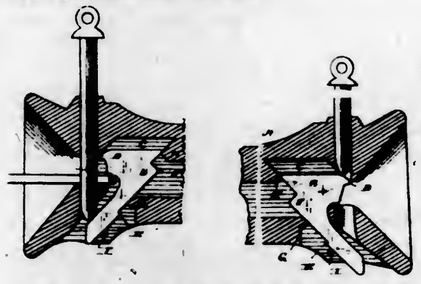


Claim.—1. In an animal-poke, the combination, with the inner slats provided with guide-rods and apertures for the passage of spurs, and the outer slats provided with spurs and apertures for the passage of the guide-rods, of springs encircling said guide-rods, a curved collar removably secured to the upper ends of the inner slats, and hooks secured to the upper and lower ends of the outer slats, substantially as set forth.

2. In an animal-poke, the combination, with the inner and outer slats provided with apertures, guide-rods, and spurs, as described, and a collar or bearing plate secured to the inside slats and adapted to form the support for the poke, of a cross-bar provided with a series of holes by means of which the width of the poke is increased or diminished, substantially as set forth.

3. In an animal-poke, the combination, with the inner and outer slats provided with apertures, guide-rods, spurs, and hooks, if, described, of a collar or bearing plate secured to the inside slats and adapted to form a support for the poke, and a cross-bar provided with a series of holes through which the guide-rods pass for the purpose of increasing or diminishing the width of the poke at its lower end, substantially as set forth.

257,148. CAR-COUPLING. RUFUS H. BROOKS, Jenkinsville, Ga. Filed Mar. 6, 1882. (No model.)

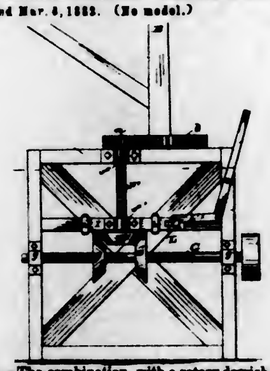


Claim.—1. In a car-coupler, the combination, with the draw-head A, provided with an oblique recess, C, the sliding dog or pawl B, having a shoulder, D, and recess M, and provided with abutments E F, adapted to strike against the abutments G H of the draw-head, whereby the force of the shock of the car will be broken when the dog is thrown back, substantially as and for the purposes specified.

2. In combination with the draw-head having an oblique recess, the sliding dog adapted to move in said recess, and provided with a recess at its lower end adapted to hold the pin in a partially-elevated position during the operation of coupling, substantially as and for the purpose specified.

3. In combination with the draw-head having an oblique recess, the sliding pawl or dog, and the pin L, which serves as a guide for the pawl or dog and to secure it in the draw-head, substantially as specified.

257,149. DERRICK-SWINGER. WALLACE C. BROWN, Monson, Me. Filed Mar. 6, 1882. (No model.)



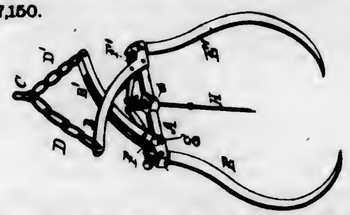
Claim.—The combination, with a rotary derrick-post, B, having mounted thereon the gear-wheel *b*, and the continuously-rotating power-shaft G, carrying the friction-wheels D D', of the swinging shaft F, having the friction-wheel E, adapted to engage with either of the wheels D D', and pinion *a*, meshing directly with the gear-wheel *b* on the derrick-post, substantially as shown and described.

257,150. HAY-FORK. LEWIS C. CHASE, Waupun, Wis. Filed Jan. 27, 1882. (No model.)

Claim.—1. In a hay-fork, the combination of two slotted levers pivotally attached to a rigid cross-bar with two inwardly curved tines having heads or ends projecting upwardly above the said cross-bar, pivoted in said levers within their closed ends, and means for drawing the upper ends of said levers toward each other, substantially as shown and described.

2. The combination of two slotted levers pivotally attached to a

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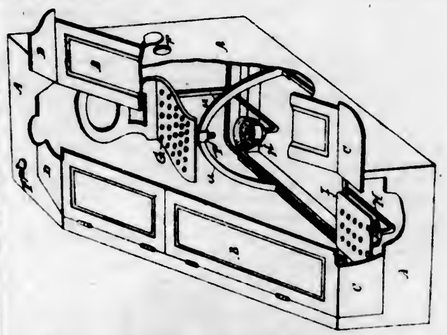
rigid cross-bar, and two inwardly-curved tines having heads or ends projecting upwardly above the said cross-bar, pivoted in said levers within their closed ends, with pivoted dogs adapted to be interposed between the upper ends of said tines and levers, substantially as shown and described.

3. The combination of the slotted levers B B', pivotally attached to the rigid cross-bar A, with the tines E E', pivotally attached to the levers, and means, substantially as shown and described, for drawing the upper ends of the levers together and for locking the tines against outward movement at their lower ends, substantially as shown and described.

4. The combination of link C, chains D D', levers B B', dogs F F', cross-bar A, perforated at *a*, rope H A A', and tines E E', pivotally attached to the levers, substantially as shown and described.

257,151. BATHING APPARATUS. JOHN B. CROCKER, Chicago, Ill. Filed Sept. 21, 1881. (No model.)

Brief.—The collar V is adjustable to answer for both large and small necks.



Claim.—1. In a portable bathing apparatus, the casing A, formed of two separate sections, and having folding doors B B, to which are secured the lower front end pieces, C C, and the top pieces, D D, and apertures F F in the sides thereof, substantially as and for the purposes set forth.

2. The combination, with a portable bathing apparatus, of the adjustable collar V, consisting of two semicircular portions, A' B', pivoted together at C', and having catch D' and perforations E', substantially as and for the purpose set forth.

3. In a portable bathing apparatus, the revolving chair G, having perforated seat, central support, P Q R, and auxiliary supports *a a*, and the hinged and perforated footstool I, substantially as set forth.

4. In a portable bathing apparatus, the gas-generator U T having glass indicator-tube A' and air-passages B' B', perforated heat-radiators H, and connecting-pipe K.

257,152. BALING-PRESS. PETER K. DEBBRICK, Albany, N. Y. Filed Oct. 24, 1881. (No model.)



Claim.—1. The herein-described method of binding bales in a continuous baling-press, consisting in forming the bale within a bight of wire extending from in front of the bale along its sides,

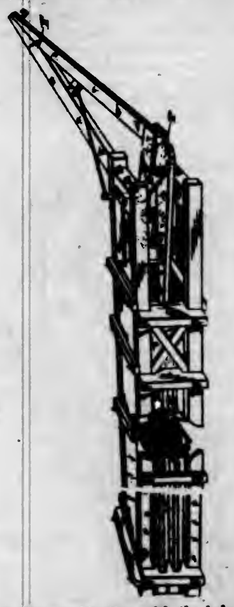
and then bringing the two wires together in rear of the bale and twisting them by automatic twisting devices, substantially as described, the whole operation being performed while the bale is on its way through the press, substantially as described.

2. In a continuous baling-press, the combination, with wires adapted to extend along the sides and front of the bale in the bale-chamber, of wire-carriers for bringing the wires together at the rear of the bale and automatic twisting-gearing for securing said wires together, substantially as described.

3. In a continuous baling-press, the combination, with wires adapted to extend along the front and sides of the bale in the bale-chamber and fed from reels or spools on opposite sides of the press, of the wire-carriers for crossing the wires behind the bale and the follower, provided with twisting-gearing for twisting the crossed wires, substantially as described.

4. In a continuous baling-press, the combination, with wires adapted to extend along the front and sides of the bales in the bale-chamber, of the needles for crossing the wires behind the bale, the followers provided with the slotted wheels or twisters, the intermediate connecting-gearing, and the rack in the bale-chamber, the whole constructed and arranged substantially as described.

257,153. BALING-PRESS. PETER K. DEBBRICK, Albany, N. Y. Filed Dec. 27, 1881. (No model.)



Claim.—1. The combination, with the bale-chamber, of the vibratory adjustable entrance to the same, substantially as described.

2. The combination-arm E, with the arm D, extension or cam P, and sweep or horse lever F, as and for the purpose set forth.

257,154. DEEP-SEA-SOUNDING APPARATUS. ALPHEE G. DELABOY, New York, N. Y., assignor to himself and Charles Scheuing, same place. Filed June 16, 1881. (No model.)

Brief.—The hollow metal sinker is made in two sections. A screw mounted upon a spindle revolves by the rush of water and actuates a train of registering mechanism in a chamber of the sinker. Valves at the top close when the sinker strikes bottom, and prevent counter revolution when being drawn up. Two valves hinged on opposite sides close the top in any position the sinker may fall.

Claim.—1. A sinker composed of two detachable semi-tubular sections, thickened at their lower ends, and provided at their upper ends with perforated ears, said sections being united at their lower ends by means of a solid tubular socket, at their upper ends by means of a band or otherwise, and intermediately by means of dovetail pieces, substantially as described.

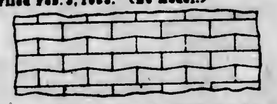
2. The combination of a tubular sinker, a rotary screw or other actuating device within the channel of the sinker, a registering de-

257,154.



vice connected with and operated by the screw, and a valve or valves within the channel, adapted to close automatically when the sinker strikes bottom, substantially as described.

257,155. BRICK. JOSEPH A. DUPUIS, Montreal, Quebec, Canada. Filed Feb. 3, 1882. (No model.)

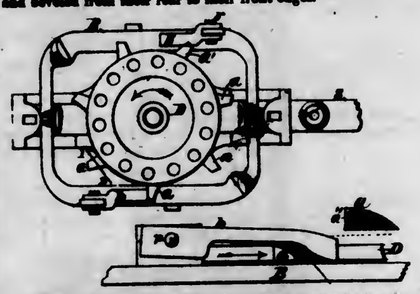


Claim.—1. A brick or building-block for the construction of walls, columns, piers, &c., having inclined bearing-surfaces, and adapted for use as herein described, whereby the structure is securely bound and lateral displacement prevented, as set forth.

2. A wall, column, or pier composed in whole or in part of bricks or blocks having inclined bearing-surfaces, as set forth.

257,156. CORN-PLANTER. AUSTIN C. EVANS, Springfield, Ohio. Filed May 28, 1881. (Model.)

Brief.—The teeth of the disk are tapering from base to point and beveled from their rear to their front edges.



Claim.—The oblong sliding frame B, operated by bar S, and provided with pawls *b b*, in combination with the perforated seed-disk D, formed with the teeth *a*, tapering from base to point, extending radially therefrom, said teeth being beveled from their rear to their front edge to give easy rise to actuating-pawls *b b*, as shown and described.

257,157. CLAMP FOR STATIONARY SPINDLES. LUTHER R. PAGONY Philadelphia, Pa. Filed Mar. 21, 1882. (No model.)



Claim.—1. The combination, substantially as set forth, of a spindle, a split or divided clamping-sleeve having a flattened screw-thread formed upon its periphery, a socket or bushing having an internal thread of corresponding section, and a head or nut, by which the sleeve and socket may be varied in position circumferentially relatively one to the other.

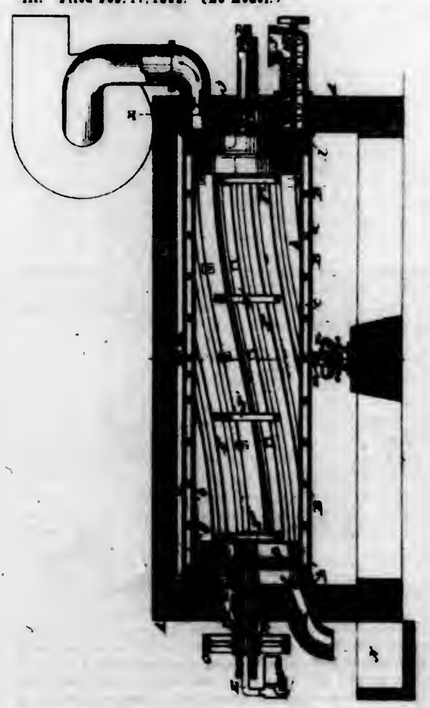
2. The combination, substantially as set forth, of a spindle, a clamping-sleeve and socket, each threaded as described, a pin or stop which prevents rotation of the sleeve in the socket, and a nut fitting a recess in the socket and having an internal thread engaging the thread of the clamping-sleeve.

257,158. NECK-YOKE. GREEN FENTON, Streetsborough, Ohio. Filed Nov. 9, 1881. (No model.)



Claim.—The sectional tubular neck-yoke A, having the brace C and the lap-joint *a*, in combination with the ferrule D, having boss E, with slot and groove *e e*, for the reception of the T-headed ring, substantially as set forth.

257,159. DRYING APPARATUS. JOHN F. GREENE, Chicago, Ill. Filed Feb. 17, 1882. (No model.)



Claim.—1. A wall-plate for drying machinery substantially such as described, consisting of the plate C, having a central opening for the passage of the cylinder-shaft, a flange, *h*, concentric with said opening, and a neck, *j*, having a horizontal lower side to receive the bearing or box H, and adapted to be built into the wall of the apparatus, as set forth.

2. A drying-cylinder provided with radial longitudinal shelves secured at their outer edges to the cylinder and connected at their inner edges by hoops or bands, as shown.

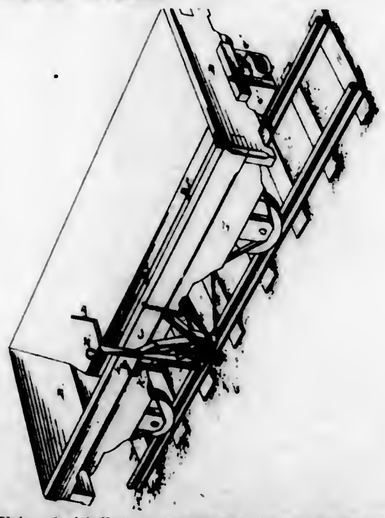
3. The spider-head C for a drying-cylinder, having the hollow shaft *d* and spokes *e*, and the double rim *f g*, whereby it is adapted to receive and be attached to the inner and outer casings of the cylinder, as set forth.

4. In combination with the cylinder B, supported at its ends, rollers *n*, located beneath the cylinder at a point between the end supports, and provided with means for adjusting them vertically, substantially as described, whereby the rollers are adapted to be set up to compensate for wear and to prevent sagging of the cylinder.

5. A drying apparatus consisting of a steam-jacketed rotary cylinder, B, having the spider-heads C, constructed with steam-passages, as explained, spiral blades or shelves F, heads or wall-plates G, hopper J, conveyer K, discharge-spout M, vapor-spout I, and an exhaust-fan connected with said spout, all arranged and operating substantially as explained.

6. In combination with the wall-plates or heads having central openings for the shaft or gudgeon *d* and the neck *j*, the adjustable boxes H, substantially as shown and described.

257,160. BALLAST-CAR. DANIEL B. HARMON, Palmyra, N. Y., assignor of one-half to Isaac T. Van Duzer, same place. Filed Mar. 2, 1882. (No model.)



Claim.—1. A ballast-car consisting of a hopper-body the center of which is carried down between the wheels close to the axles, said body having a continuous longitudinal discharge-opening, opened and closed by a sliding plate actuated by a reversible-pawl mechanism and supported by frame-pieces secured by truss-rods, whereby sagging and springing are prevented, substantially as and for the purpose set forth.

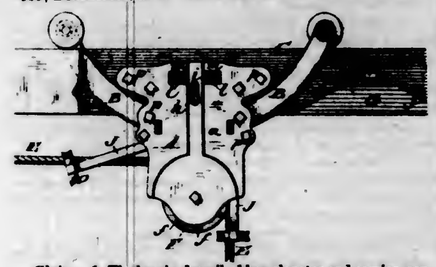
2. In a ballast-car having a longitudinal discharge-aperture, a sliding gate, C, whereby the aperture is closed or opened, said gate consisting of a movable plate secured to a ratchet-bar actuated by a reversible-pawl mechanism, as set forth.

3. In a ballast-car having a longitudinal discharge-opening, a sliding gate actuated by pawl-and-ratchet mechanism, as described, the ends of said gate abutting against guides on the frame-pieces and supported by cross-rods secured to the frame of the car-body, as set forth.

4. In a ballast-car having a longitudinal discharge-aperture, the combination of a sliding gate, supported as described, with a ratchet-bar secured at one end to the gate and ratchet-wheels actuated by a lever and a reversible pawl, substantially as and for the purpose set forth.

5. The combination, in a ballast-car as described, of a sliding gate, a ratchet-bar secured thereto and resting on a stirrup, J, attached to the car-body, ratchet-wheels F G, lever D, and reversible pawl *e*, substantially as set forth.

267,161. HAY ELEVATOR AND CARRIER. HOWIE HARRINGTON, Manchester, N. Y. Filed Oct. 3, 1881. (No model.)



Claim.—1. The herein-described hay elevator and carrier, consisting of shell A, pivoted arms B, pulley F, brake D, dogs I, and trips or yokes J, combined and operating as set forth.

2. In a hay elevator and carrier, the combination of the body A, pulley F, arms B, and vertically-sliding brake D, controlled by said arms, substantially as set forth.

3. In a hay elevator and carrier, the combination of a pulley, a vertically-sliding brake, and pivoted sustaining-arms extending through the body of the brake and serving to apply the weight of the carriage and load thereto, substantially in the manner explained.

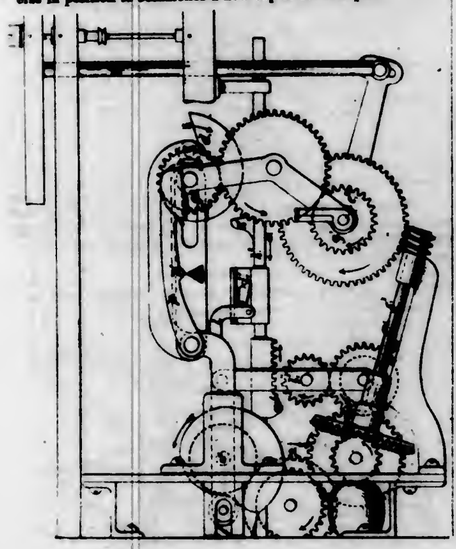
4. In combination with the grooved plates *a* and *b* and pulley F, the brake D, having ribs to fit the grooves of the plates, as and for the purpose set forth.

5. In combination with the rope-pulley having lugs *f* on its sides, the combined brake and clamp D, arranged to slide vertically in the shell or casing, substantially as shown.

6. The vertically-sliding brake and clamp D, provided with laterally-projecting lugs or pins to engage with a fixed incline, as described.

267,162. RING-SPINNING MACHINE. GEORGE P. HAZARD, Providence, R. I. Filed Feb. 8, 1881. (No model.)

Brief.—The invention embraces novel mechanism for traversing the ring-rail with a slow upward and rapid downward movement, whereby a cop formed either on a bare spindle or on an ordinary cop-tube has the conical layers of yarn thereof laid on the cop in close spirals in one direction and an open spiral for binding the layers in the other direction. When the cop is completed the ring-rail is automatically returned to the point of lowest traverse in position to commence a new cop or set of cops.



Claim.—1. The combination, substantially as before set forth, of the ring-rail, the bell-crank for supporting it, the builder-cam journaled to the bell-crank, the laying-cam, and the slide-rod and link through which the laying-cam operates on the builder-cam for working the bell-crank.

2. The combination, substantially as before set forth, of the ring-rail-supporting rocking bell-crank provided with a stud or pin, A, the slide-rod engaged by said pin and carrying a rack, the movable pinion, a yoke for supporting said pinion, the lever from which the yoke of the pinion is suspended, and the switch on the slide-rod for lifting said lever to throw the pinion in gear with said rack.

3. The combination, substantially as before set forth, of the ring-rail-supporting rocking bell-crank provided with a stud or pin, A, the slide-rod engaged by said pin and carrying a rack constructed with a cam at its heel, the movable pinion, a yoke for supporting said pinion, the lever from which the yoke of the pinion is suspended, and the switch on the slide-rod for lifting said lever to throw the pinion in gear with said rack.

267,163. CARPET-FASTENER. WILLIAM H. HENDERSON, Iron Mountain, Mo. Filed Dec. 26, 1881. (Model.)



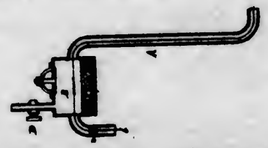
Claim.—The within-described carpet-fastener, forming a complete molding on the wall or mop board, composed of holding-strips F and E, each having outer curved surfaces to match or correspond with the other, the former, F, secured to the wall or mop board and the latter, E, with right-angular recess to match the outer edge of F, and serrated on its under surface or edge, and adapted to be secured beneath F by vertical screws which pass through F, substantially as set forth.

267,164. BLANK FOR WAGON-BOX STAPLES. JOHN G. HERMAN, St. Louis, Mo. Filed Feb. 11, 1882. (No model.)



Claim.—A blank for making wagon-box staples, which consists in a strip of metal having alternating half-oval and flat portions, the latter provided with oblique slots, as set forth.

267,165. INSULATING UNDERGROUND LINES. EDWARD A. HILL, Chicago, Ill. Filed June 28, 1881. (No model.)



Claim.—1. The pipe A, containing and inclosing air-tight one or more conducting-wires clothed with cotton or its equivalent and a dry atmosphere surrounding them, in combination with plugs *a*, and with one or more receptacles holding air-drying material in atmospheric communication with the interior of said pipe, substantially as and for the purposes specified.

2. The pipe A, containing one or more conducting-wires clothed with cotton or its equivalent, in combination with plugs *a*, and with pipes D, for giving communication at will with outside air-drying appliances, substantially as specified.

3. The plug *a'*, for subdividing the pipe A into sections, in combination with plugs *a*, with pipe D, and with appliances B E for drying the air, substantially as specified.

267,166. WATER AND AIR WHEEL. DAVID BIRD JAMES, San Francisco, Cal. Filed July 26, 1881. (No model.)



Claim.—1. A water or air wheel having a double row of buckets arranged obliquely on the periphery thereof at right angles to each other, whereby a reactionary force is caused by the passage of water or air from one bucket to another, substantially as specified.

2. The combination, with an air or water wheel having buckets A B set obliquely on the periphery thereof at right angles to each other, of the housing C and pipe D, substantially as shown and described.

257,167. STEAM-PACKING. HENRY W. JOHNS, New York, N. Y. Filed Feb. 28, 1882. (No model.)



Claim.—1. As a new article of manufacture, a steam-packing consisting of strands of asbestus twisted or laid into the form of a rope, with the interstices between the strands filled or built up with a suitable cement or size, substantially as set forth.

2. The asbestus-rope packing for steam-joints, having the interstices filled or built up, as described, and tied or bridged over by the longitudinally laid and felted short fibers, as hereinbefore set forth.

3. The asbestus-rope packing for steam-joints, composed of a series of strands of asbestus, with a central core saturated with a solution of india-rubber, as hereinbefore set forth.

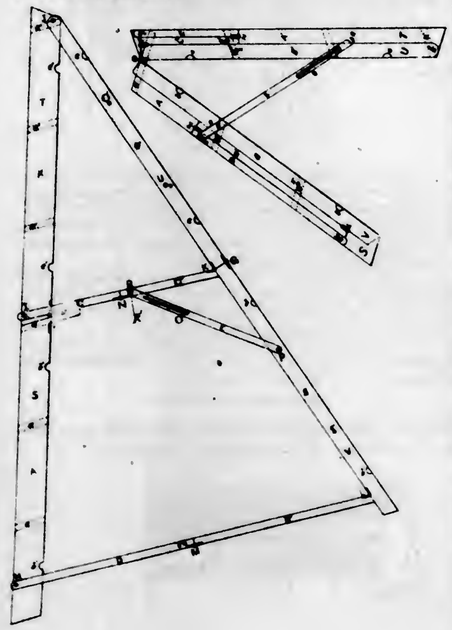
4. The process of closing and building up the interstices of asbestus rope, consisting in longitudinal manipulation of the rope with sizing or water, substantially as hereinbefore specifically set forth.

5. The method of producing a hard smooth finish or polish on the surface of asbestus, consisting in the application of water or other suitable material, as described, and friction.

6. As a sizing for application to the surface of the asbestus, a compound consisting of asbestus and oleaginous or glutinous material with flour and water or other fluid, as hereinbefore set forth.

257,168. STEP-LADDER. GEORGE T. LAPE, Brooklyn, N. Y. Filed Sept. 10, 1881. (No model.)

Brief.—The stiles and the legs are made in sections, and are so pivoted and hinged that each leg-section can be folded upon its corresponding stile-section. The ladder is braced by adjustable tie-rods and hinged braces.



Claim.—1. A folding extensible step-ladder the ladder and legs of which are pivoted or hinged at or near one end thereof, and are each formed of two sections, which sections are so constructed and so connected by pivots or hinges as to permit each ladder-section and its corresponding leg-section to be folded together, and also the pairs of coincident sections, when folded as aforesaid, to be then folded together.

2. The jointed ladder S T, in combination with the jointed legs U V, hinged and pivoted together, substantially as and for the purpose described.

3. The jointed ladder S T, in combination with the jointed legs U V, the tie-rods C and D, and the adjustable tie-rods E, substantially as and for the purpose specified.

4. The sections S V, the sections T U, the hinges F F and G G, and the tie-rods E, all combined substantially as specified.

5. The sections S V, the hinges G G and F F, and the adjustable tie-rods *a*, in combination with the sections T U, the adjustable tie-rods E, and the pins Z on section U, substantially as and for the purpose specified.

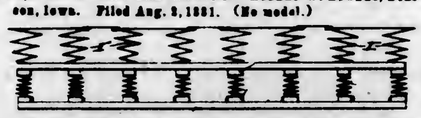
257,169. RUBBER BOOT OR SHOE. SAMUEL LIBBEY, Jr., Bristol, R. I. Filed Mar. 13, 1882. (No model.)



Claim.—1. The improved process for securing rubber heels to rubber boots and shoes, the same consisting in providing the heel with narrow strips, passing said strips through slits or cuts in the sole, and lapping the same over the inner side of the sole and securing the parts together by cementation, as described.

2. The combination, with the sole A, provided with the slits *d d*, of the heel B, provided with the strips *e e*, the whole adapted to be secured together by cementation, as and for the purpose described.

257,170. SPRING BED-BOTTOM. ROBERT W. LOWNDS, Denison, Iowa. Filed Aug. 3, 1881. (No model.)



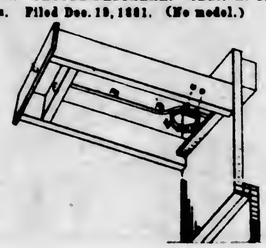
Claim.—A bed-bottom constructed of two parallel horizontal frames having transverse slats connected by intermediate cylindrical coils, in combination with the springs I, secured on top of the upper frame, as described, for the purpose set forth.

257,171. WHIFFLETREE-COUPLING. HENRY A. LUTTGENS, Paterson, N. J. Filed Aug. 23, 1881. (No model.)



Claim.—In a whiffletree-coupling, the combination of a clevis having the wearing-pin *c*, with the cap *h*, inserted in the face of the whiffletree, adjusting-bolt *c'*, and cap *c*, arranged and operating substantially as set forth.

257,172. CATTLE-FASTENER. CHAS. H. T. MANN, Methuen, Mass. Filed Dec. 19, 1881. (No model.)



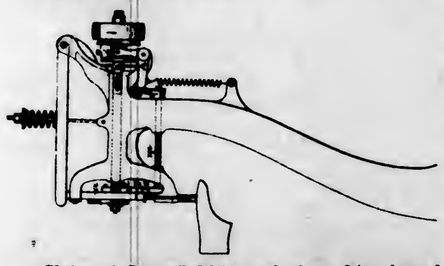
Claim.—In a device for fastening cattle, the stanchion D, bent outwardly at D', standing vertically above the bend, and provided with the sliding collar E, substantially as and for the purpose set forth.

257,173. OIL-CUP. JOHN G. MCBRIDE, Sacramento, Cal. Filed Dec. 19, 1881. (No model.)



Claim.—The valve *f*, stem *g*, cap A, provided with the ring *r*, having recesses *s*, short interposed spring *i*, and cap *t*, having a ring, *t'*, provided with lugs *t''*, the whole being arranged in the side of the lubricator-stem, and combined with said stem so as to be adapted for use with the short spring, as herein set forth.

257,174. NAILING-MACHINE. GORDON MCKAY, Newport, R. I. Filed Dec. 2, 1881. (No model.)



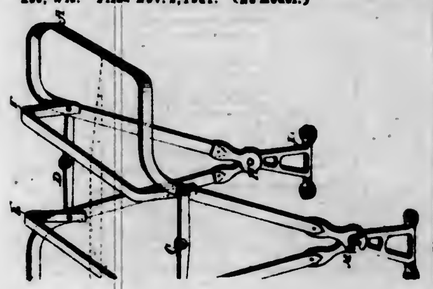
Claim.—1. In a nail-driving mechanism, a driver-bar and driver and device to keep it elevated and its spring compressed, combined with a driven loose pulley, a clutch, clutch-controlling device, and a tripping device next the nail-tube, the movement of which device by the shoe as it is pressed against the nail-tube effects the disengagement of the driver-bar, in order that it may be operated by its spring, and also the engagement of the clutch or disk and driven pulley for a sufficient time to automatically lift the driver-bar and compress its spring, the clutch and pulley being automatically disengaged as soon as the driver-bar is again lifted, for the purpose substantially as described.

2. The driver-actuating shaft and driving-pulley and clutch thereon, combined with the driver and toggle-levers connected therewith, and the clutch-controlling cam operated by the said levers, substantially as described.

3. The driver-actuating shaft and clutch thereof, combined with the driver and toggle-levers connected therewith, and the clutch-controlling cam operated by the said levers, and the tappet-arm and trip thereof operated by the article being nailed to break the toggle-joint, substantially as described.

4. The clutch provided with a notched controlling-plate and its slipping-lever, combined with the clutch-controlling cam and the roller fixed upon the frame-work to co-operate with the said notched plate, substantially as described.

257,175. CARRIAGE-TOP. FERDINAND HEIDECKE, Milwaukee, Wis. Filed Nov. 2, 1881. (No model.)



Claim.—In carriage-tops, the combination of the two main upright bows A and B, having their central parts bent outward from each other in a horizontal plane at nearly right angles to their ends, secondary small bows E and F, and knee-joints C and D, said secondary small bows and said knee-joint braces being secured to said main bows A and B by the same pivots, substantially as set forth.

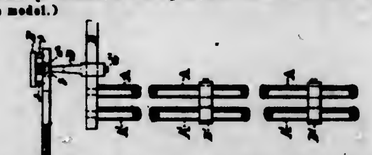
257,176. CAR-COUPLING. WALTER HULING, Albany, N. Y. Filed Feb. 1, 1882. (No model.)



Claim.—1. The combination of the draw-head A, having the transverse slot B, and the bifurcated shank A^1 A^1, with the angular weighted latch hinged at the rear upper corner of the transverse slot, as described, with its forward arm adapted to engage with the draw-head at the upper forward corner of the slot, and with its rear weighted arm adapted to play between the parts of the bifurcated shank and to be guided thereby, substantially as described.

2. The combination of the draw-head having the transverse slot and bifurcated shank and the slotted bearings *a' a'*, with the hinged weighted latch having trunnions *d' d'*, adapted to engage with the slotted bearings *a' a'*, whereby a strong hinge is formed and the latch is enabled to be readily put in and taken out when desired.

257,177. COMPENSATING PENDULUM. FRANK A. HILLS and THOMAS A. HOSMER, Philadelphia, Pa. Filed Nov. 14, 1881. (No model.)



Claim.—1. The combination of the joint-pin *a* and set-screw *d*, having a step, *e*, with the compensating lever C, and rods A and A', for the horizontal adjustment of said lever, substantially as described.

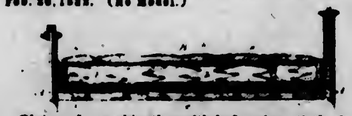
2. The combination of the compensating lever C, having a slide, J, with the rods A and A', by means of the joint-pin *a* and adjustable step *e*, the slide having fulcrum-pins a^2 and being adjusted by means of the screw d^2 and yoke K or other suitable device, substantially as described.

3. The supplemental rod H, having hooks *i i*, and provided with the bob I, in combination with the compensating lever C, having the adjustable slide J, provided with fulcrum-pins a^2 a^2, substantially as and for the purpose set forth.

4. The combination of the adjustable upright D with the bar B and cross-head E, having pins *f f* and joint-pin a^2, substantially as and for the purpose set forth.

5. The combination of the cross-head E, having pins *f f*, with the suspension-bracket G, having agate steps *h h*, which constitute the points of suspension of the pendulum, the cross-head being connected with the upright D of the pendulum by means of the joint-pin a^2, substantially as described.

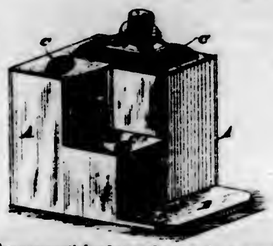
257,178. MATTRESS. GEORGE S. HOCH, Lebanon, Ky. Filed Feb. 26, 1881. (No model.)



Claim.—In combination with bed-springs C, the loosely-resting mattress B, consisting of the flexible top or cover *a* and rigid drooping sides *b*, constructed in such a manner as to be removable from the springs, for the purposes set forth.

257,179. COMBINED CEMENT-CASE AND MIXING-TABLET FOR DENTISTS. JACOB R. HOFFITT, Uniontown, Pa. Filed Mar. 21, 1882. (No model.)

257,179.



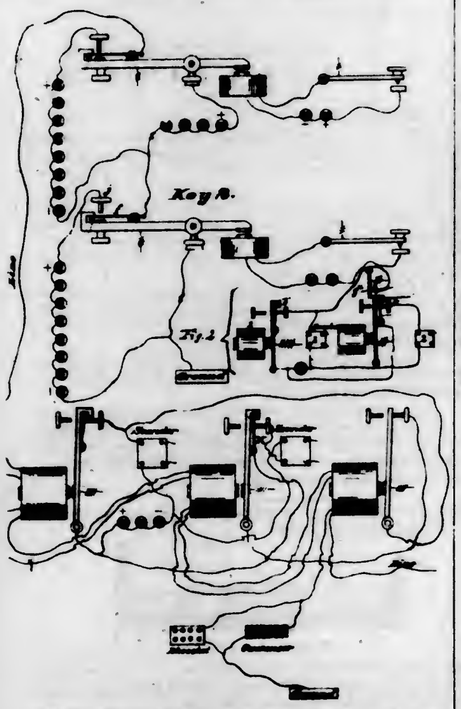
Claim.—As a new article of manufacture, the herein-described cement and liquid case and mixing-tablet, comprising the body or case A, provided with wells or receptacles C, and the tablet B, extending from the body at its lower part, all formed of a single piece of glass, porcelain, or other suitable material, substantially as and for the purpose specified.

257,180. CAR-COUPLING. FRANCIS H. HULLER, Hilroy, Ind., assignor of one-half to Daily C. Aldridge and Marshall H. Aldridge, both of same place. Filed Mar. 6, 1882. (No model.)



Claim.—The combination of draw-bar A, having lugs D, recess C, and slots J, pivoted block F, and pivoted pin E, substantially as set forth.

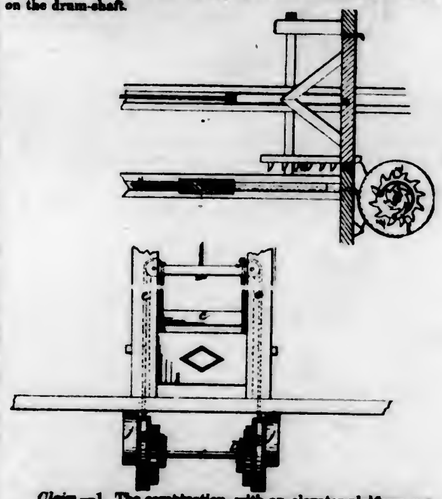
257,181. QUADRUPLEX TELEGRAPH. HENRY C. NICHOLSON, Keuton, Ky. Filed May 2, 1881. (No model.)



Claim.—The combination, substantially as before set forth, of two sounders and three neutral relays for operating the same independently, the local-battery terminals for one of the sounders, consisting respectively of a hook and an insulated contact-spring on the armature-lever of one of the relays, while the local-battery terminals of the other sounder consist respectively of the armature-levers and back contacts of the other relays.

257,182. ELEVATOR. WILLIAM H. PATTERSON, Baltimore, Md. Filed Aug. 15, 1881. (No model.)

Brief.—Vertical racks, one projecting above, the other below, the elevator. Each engage in turn one of two toothed wheels loosely mounted on the drum-shaft, and connected with the latter by a clutch device when turning in one direction. The vertically-sliding gate is connected by cords and pulleys with the drums and drops by gravity when the engaging-rack is released from action on the drum-shaft.

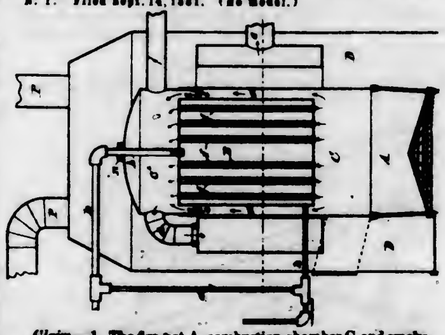


Claim.—1. The combination, with an elevator-platform provided with vertical racks and a vertically-sliding hatchway gate or guard carried by winding-cords, of a winding and releasing device arranged below the hatchway and operated by the elevator-racks, whereby to wind the cords in opening the gate, and to release the winding device to allow the gate to automatically close, substantially as described, for the purpose specified.

2. The elevator-racks carried by and projecting vertically above and below the elevator-platform, in combination with toothed wheels adapted to engage with said racks, winding and unwinding drums, and a clutch device for each toothed wheel, and a vertically-sliding gate for the hatchway, connected by winding and unwinding cords, substantially as described, for the purpose specified.

3. In an elevator, the combination of a sliding guard-gate, an elevator-platform, and the vertical racks thereof, with winding means for raising and lowering said gate, the said winding means consisting of a toothed wheel and clutch on the winding shaft, as set forth.

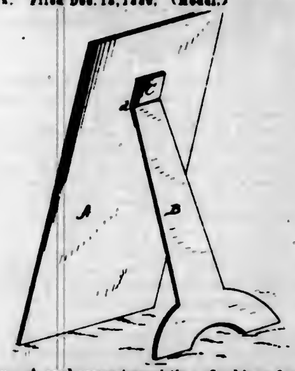
257,183. HEATING APPARATUS. JOHN F. PRESS, Syracuse, N. Y. Filed Sept. 14, 1881. (No model.)



Claim.—1. The fire-pot A, combustion-chamber C, and smoke-box C', superstructed successively one upon the other, the radiator R, arranged around the exterior of the combustion-chamber and communicating with the smoke-box C', the boiler B, arranged inside of the combustion-chamber, with the fire-passage a between them, and provided with flues *f f* and the steam-pipe b, all combined and arranged as described and shown, in combination with the inclosing-case D, provided with hot-air ducts P, substantially as specified.

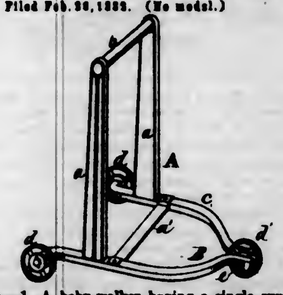
2. The combination of the combustion-chamber C, having the smoke-box C', seated upon the ledge c, on the interior of the combustion-chamber, the boiler B, suspended from said ledge c, and having the fire-passage a around its sides, and the steam-pipe b, extended vertically from the center of the upper end of the boiler through the top of the smoke-box C', and provided above the latter with the nut n, all substantially as described and shown.

257,184. CARD-SUPPORT. HENRY PENNINGTON, Philadelphia, Pa. Filed Dec. 13, 1880. (Model.)



Claim.—A card-support consisting of a hinge device formed by the combination of the hinge-card C and the support B, hinged together by means of muslin *d* or its equivalent, with the space or opening *d'*, adapting the edges of adjacent ends of the support and hinge-card to come together to form a check against the spread of the support B when in position, substantially as set forth and described.

257,185. BABY-WALKER. I. GERWIN PRICE, Springfield, Ohio. Filed Feb. 28, 1882. (No model.)



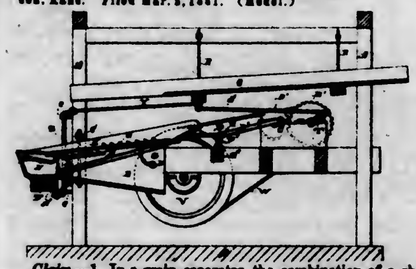
Claim.—1. A baby-walker having a single supporting-bar connecting the tops of two upright posts, secured at their lower ends in the side bars of a bed-frame supported upon wheels, and having the rear ends of said frame extending in rear of said uprights and turned outward, and terminating in axles or spindles on which said wheels are pivoted, while its front ends converge toward their forward ends, and are connected by a pivot-bolt or spindle on which a forward wheel is pivoted between said ends, substantially as shown and specified, for the purpose set forth.

2. In baby-walkers, a triangular, or nearly triangular, bed-frame supported upon wheels or casters, and having uprights or posts thereon connected by a single supporting-bar, said upright frame being set forward of the rear wheels to allow the child to walk between them, and to prevent the walker from tilting backward when the weight of the child is thrown upon the supporting-bar, substantially as hereinbefore set forth.

3. The combination, with an upright frame having a supporting-bar for the child to bear its weight upon, of a bed-frame of triangular, or nearly triangular, shape supported upon wheels, and having means for locking or clamping the front wheel of the same, as hereinbefore specified.

4. The combination, with frame A, having posts *a* and connecting-bar *b*, of the hounds-shaped bed-frame B, having side bars, *c*, connecting-bar *c'*, and wheels *d*, *d*, and *d'*, the latter being interposed between the front ends of said frame-bars *c* upon the pivot-bolt *e*, and provided with means for locking or clamping the same, as hereinbefore set forth.

257,186. GRAIN-SEPARATOR. GUSTAVUS A. RAASCH, Atchison, Kans. Filed Mar. 2, 1881. (Model.)



Claim.—1. In a grain-separator, the combination of a shoe provided with a series of sieves, and mechanism for rotating the shoe first in one direction and then in the reverse direction, substantially as set forth.

2. In a grain-separator, a shoe provided with a series of sieves, and mechanism for rotating the shoe a series of times in one direction and then in the reverse direction, substantially as set forth.

3. In a grain-separator, the combination of a reciprocating feed-trough, a crank connected to the shoe and trough, and adapted, when moved by the trough, to vibrate the shoe at right angles or obliquely to the reciprocation of the trough and at the same speed therewith, and mechanism for reciprocating the shoe and feed-trough together and in the same direction, substantially as set forth.

4. In a grain-separator, the combination of a shoe, a crank for imparting thereto a side shake, a pitman for imparting to it an end shake, gears for reversing the resultant movement of the end and side shakes, and means for giving motion to the several parts, substantially as set forth.

5. The combination of shoe B, pinions D' and E', of different diameters, means for connecting the shaft of pinion E' to the shoe and imparting to the latter a side shake, and means for connecting the shaft of pinion D' to the shoe and imparting to the latter an end shake, whereby the several parts will operate to impart to the shoe a reversible rotary shake, substantially as set forth.

6. The combination of shoe B, crank-rod Z, pinions D' and E' and their shafts, reciprocating trough Q, and rods for connecting the several parts, substantially as set forth.

257,187. STOPPER FOR EMPTY BARRELS. FERDINAND REITZ, Birmingham, Ohio. Filed Nov. 16, 1881. (No model.)

Brief.—The device is applicable to the bung-hole as well as to the faucet-hole.

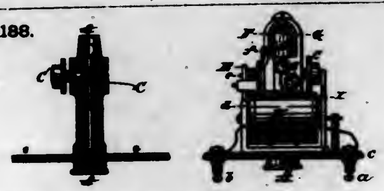


Claim.—The combination, with a movable spring-arm, of a plug secured to one end of said arm and a barrel-head provided with receptacles for the plug when not in the faucet-hole, substantially as set forth.

257,188. ELECTRICAL GAS-LIGHTING APPARATUS. THOS. H. ENDEBE, Brooklyn, N. Y. Filed Nov. 14, 1881. (No model.)

Brief.—The armature E breaks the circuit by striking the lower end of the pivoted electrode F and also simultaneously opens the sliding valve by means of the rod *c*.

257,188.



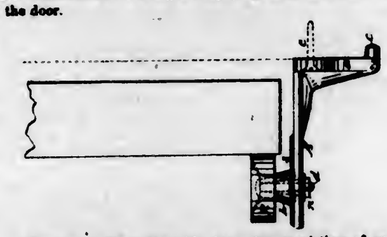
Claim.—1. The pipe A and the sliding valve C, having a conical end and seat, in combination with the magnet D, the armature E, and the rod *e*, substantially as specified.

2. The pipe A and the sliding valve C, in combination with the magnet H, armature I, arm F, magnet D, armature E, and rod *e*, substantially as set forth.

3. In combination with the pipe A, sliding valve C, magnets D H, armatures E I, rod *e*, and the bar P, the pivoted electrode F, adapted to be operated by the movement of the armature E, substantially as described.

257,189. STAY-ROLLER FOR SLIDING DOORS. ELIJAH U. SCOVILLE, Manlius, N. Y. Filed Jan. 5, 1882. (No model.)

Brief.—An arm is secured to the side of the wall beneath the door, and a stud is secured to the free end of said arm adjustably in relation to its distance from the attaching end of the arm, and provided with a suitable bearing for engaging and guiding the bottom of the door.

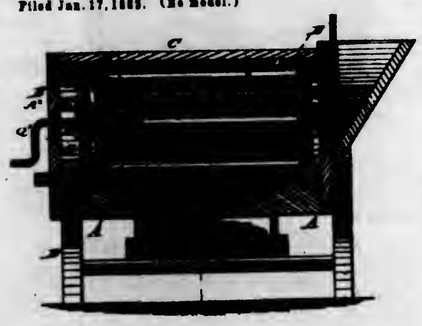


Claim.—1. The adjustable door-stay consisting of an arm adapted to be secured to the side of the wall beneath the bottom edge of the sliding door, and a stud secured to the free end of said arm adjustably in relation to its distance from the attaching end of the arm and provided with a suitable bearing for engaging and guiding the bottom of the door, substantially as set forth.

2. The horizontal arm A, provided at one end with the vertical sustaining-plate *a* and at the opposite end with the longitudinal slot *c*, the stud *b*, mounted on the arm A, and having its attaching-bolt passing through the slot *c* and provided on its end with the nut *n*, and the roller R, journaled on the upper end of the stud *b*, all combined as and for the purpose set forth.

3. The improved stay-roll for suspended sliding doors, consisting in the combination of the arm A, having at one end the attaching-plate *a*, provided with the spur *e*, and at the opposite end the longitudinal slot *c*, the stud *b*, secured to the top of the arm A by the bolt *d*, passing vertically through said stud and through the slot *c*, and provided with the clamping-nut *n*, and the roller R, journaled on the stud *b* and sustained thereon by the head of the bolt *d*, all constructed and combined substantially in the manner described and shown.

257,190. GRAIN-CLEANER. ISAAC SHANN, Richwood, Ohio. Filed Jan. 17, 1882. (No model.)



Claim.—1. The combination, with the bottom portion, A, having the end partition, Q, provided in its upper edge with a semicircular recess, Q', of the removable top or upper portion, B, having the partition A', provided in its lower edge with a semicircular recess, A', and the screen G, having the tubular discharge-spout K turning in recesses Q' A', all arranged and operating substantially as and for the purpose specified.

257,191. DARK-LANTERN. JAMES E. STOUT and LEWIS E. LINE, Bloomington, Ill. Filed Mar. 23, 1882. (No model.)



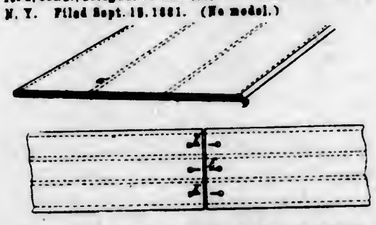
Claim.—1. In a lantern, the combination, with the case A, of a removable dark-slide provided with a removable reflector, substantially as and for the purpose specified.

2. In a lantern, the combination, with the case A, of a removable cover, a dark-slide connected thereto and carrying a removable reflector, substantially as and for the purpose specified.

3. In a lantern, the combination, with the case, of a removable dark-slide provided with side grooves for the reception of a removable reflector, substantially in the manner as and for the purpose specified.

4. In a lantern, the combination, with the case, of a removable cover carrying the cowl or chimney, and a dark-slide and a reflector removably connected to said dark-slide, all substantially in the manner as and for the purpose specified.

257,192. BELT FOR MACHINERY. WILLIAM B. TATHO, Hartford, Conn., assignor of one-half to John E. Mulford, New York, N. Y. Filed Sept. 15, 1881. (No model.)



Claim.—1. In a belt of the character herein set forth, two or more flat metallic strips or ribbons held in place by a flexible covering and separated by an intermediate welt or welts, said welt or welts being independent of the metallic ribbons, but secured to the covering fabric, substantially as and for the purposes set forth.

2. The separate welts applied at the edges of the belt, in combination with the adjacent independent flat metallic strips and the flexible covering, substantially as set forth.

3. The combination of the flat metallic strips, the intermediate welt or welts, the welts placed on the edges of the belt, and the flexible cover stitched in place, substantially as set forth.

4. In a belt made up of flat metallic strips and intermediate and edge welts, with the covering fabric for holding them in place stitched and secured as explained, the metallic strips perforated at the ends and combined with the simple belt-hooks or fastenings, substantially as set forth.

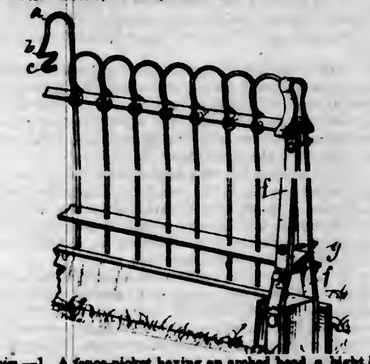
5. The herein-described improved belt, composed of the flat metallic ribbons perforated at or near their extremities, the intermediate and edge welts, the covering fabric stitched upon the independent welts, the whole covered with a protecting paint or compound, substantially as shown and set forth.

257,193. THILL-COUPLING. CHARLES C. WAGER, Black River Falls, Wis. Filed Feb. 24, 1882. (Model.)



Claim.—The clip B, having flanges C, connected by a bolt, D, having a smooth reduced front side or face, E, in combination with the thill-iron G, having hook H, provided with a shoulder, I, and a spring, K, adapted to pass the front face, E, of the bolt D when the front end of the thill is lowered and to strike against it when the thill is raised, so as to bring shoulder I in contact with the clip, as set forth.

257,194. IRON FENCE. JAMES H. WATERS, Des Moines, Iowa, assignor of one-half to T. L. Palmer and O. P. McCray, same place. Filed Mar. 7, 1882. (No model.)



Claim.—1. A fence-picket having an arched head, *a*, bight *b*, and eye or hook *c*, substantially as shown and described, for the purposes specified.

2. In a fence, the combination of the upright bars or pieces *f*, having bends or shoulders *i*, and a horizontal rail, *h*, substantially as shown and described, for the purposes specified.

3. The improved metal fence composed of fixed posts *f f*, having bends and shoulders *i*, horizontal rails *g* and *h*, and a series of pickets having arched heads *a*, a bight, *b*, and a hook or eye, *c*, substantially as shown and described.

257,195. ELECTRIC GAS-LIGHTER. WILLIAM H. H. WHITING, Chelsea, Mass. Filed Dec. 29, 1881. (No model.)



Claim.—1. The herein-described gas-lighting apparatus, it consisting of a cylindrical coil of wire, contact-electrodes mounted on one end of the case or frame-work of the said coil, and a battery-coil mechanically attached to the other end of the said coil, its poles being connected in circuit through the said coil with the said electrodes supported thereon, substantially as described.

2. The coil and electrodes supported thereon, combined with the battery-coil connected with the case or frame-work of the said coil by a universal joint, substantially as described.

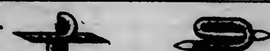
3. The electrode consisting of a fixed U-shaped wire and the bell-shaped hood mounted thereon, combined with the co-operating electrode, consisting of a spring-pressed pivoted arm located between the parallel portions of the U-shaped electrode in position to make electrical contact therewith, near the center of the said hood, substantially as described.

4. The coil of wire and its cylindrical inclosing-case, adapted to serve as a handle, combined with the supporting finger-piece *i*, and the electrodes mounted on one end of the said case, one of the said electrodes being provided with an operating thumb-piece, and the battery-cup attached to the other end of the said case, substantially as described.

257,196. WIRE-FENCE BARB. ROBERT H. WILDS, Freeport, Ill. Filed Sept. 9, 1881. (Model.)

Claim.—1. A fence-barb consisting of a single wire terminating in two opposite straight or slightly-curved points lying in the same plane and parallel to each other, the wire being formed at or near its middle into two opposite loops, one within the other, and the loops thus formed being bent up on opposite sides of the barb, forming two opposite notches or saddles, substantially as and for the purpose shown.

2. The combination, with a two-strand wire cable, of a barb consisting of a single wire terminating in two opposite straight or

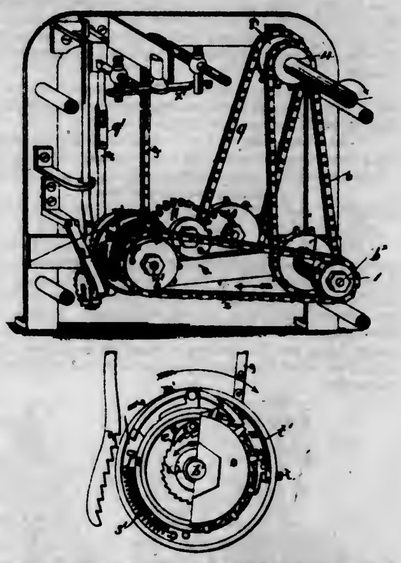


slightly-curved points lying in the same plane and parallel to each other, the wire being formed at or near its middle into two opposite loops, one within the other, and the loops thus formed being bent up on opposite sides of the barb, forming two opposite notches or saddles, substantially as and for the purpose shown.

257,197. WITHDRAWN.

257,198. RING-SPINNING MACHINE. JOHN F. WORRALL, Woonsocket, R. I. Filed Apr. 3, 1880. (Model.)

Brief.—By novel mechanism, combined with the winding-drum, which gives the reciprocating and onward or building movement to the traversing rail, the motion of said drum is automatically reversed the moment the cops or bobbins are filled, and the traversing rail is returned to the position for starting fresh cops. Immediately upon the traversing rail reaching its lowest position the belt is automatically shipped from the driving-pulley to a loose pulley and the machine is stopped.



Claim.—1. The combination, substantially as before set forth, of the chain-drum, the continuously-revolving ratchet-wheel, the pawl connected with said drum, the adjustable stop for throwing the pawl in gear with the ratchet-wheel, and the oscillating lever supporting the drum and provided with a projection for disengaging the pawl from the ratchet-wheel.

2. The combination, substantially as before set forth, of the chain-drum, the ring, the spring connecting the ring to the drum, the pawl pivoted on the ring, and the continuously-revolving ratchet-wheel.

3. The combination, substantially as before set forth, of the chain-drum, ring *c*, spring *d'*, pin *u* on said ring, spring-hook *t*, the latch, the slide-rod *w*, and the spring on said rod.

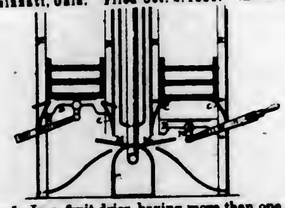
4. The combination, substantially as before set forth, of the chain-drum, ring *c*, spring *d'*, pin *u* on said ring, and spring-hook *t*.

257,199. FENCE-POST. FRED F. WYMAN, Brunswick, Ohio. Filed Jan. 9, 1882. (No model.)



Claim.—The combination, with the fence-post C, of the screw A, provided with the sharpened tang A', adapted to be driven into the lower end of the post, and the brace provided with the vertically-arranged screw portion B and the inclined portion B', the latter adapted to be secured to the side of the post, substantially as set forth.

257,200. FRUIT AND VEGETABLE DRIER. JOHN ZIMMERMAN, Cincinnati, Ohio. Filed Oct. 3, 1881. (No model.)



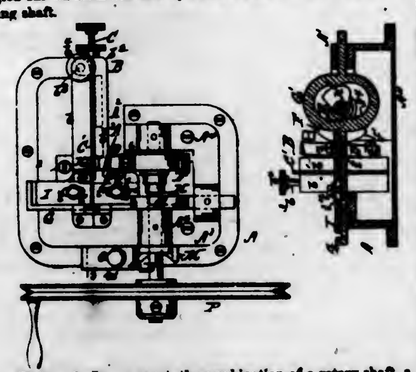
Claim.—1. In a fruit-drier having more than one drying or rack holding chamber, a hot-air chamber having double perforated walls inclosing furnace smoke-pipe located between said chambers, when said double perforated walls of hot-air chamber constitute also the interior walls of such drying-chambers, substantially as described.

2. In a fruit-drier, the combination of a hot-air chamber having double perforated walls or sides with a drying-chamber, deflectors, and furnace, substantially as described.

3. In a fruit-drier, the hot-air chamber having double perforated sides, in combination with a reciprocating elevating device a lifting-frame, and spring-catches, substantially as described.

257,201. SAW-SETTING MACHINE. GEORGE W. ANNEBURY, Philadelphia, Pa. Filed Dec. 17, 1881. (No model.)

Brief.—A main driving-shaft arranged parallel with the vise-jaws has fastened upon it three cam-wheels, operating respectively to close the movable jaw of the vise through the medium of an adjustable bearing-bar secured to said jaw, reciprocate the die-carrying frame, and actuate the feed mechanism. A spring opens the vise-jaw. The setting-dies are adjustably secured in a reciprocating frame, and the feed-dog is secured to an oscillating right-angled bar which is actuated by a cam on the end of the main rotating shaft.



Claim.—1. In a saw-set, the combination of a rotary shaft, a vise composed of a fixed and a movable jaw, the latter being provided with an adjustable bearing-bar acted on by a cam-wheel secured to said shaft, and a feeding device controlled by mechanism substantially as shown and described, and operated by a cam-wheel, also secured to said shaft, substantially as and for the purpose set forth.

2. In a saw-set, the combination, with a rotating shaft, of a vise composed of a fixed and a movable jaw, the latter being provided with an adjustable bearing-bar designed and adapted to be acted on by a cam-wheel on said shaft, whereby said jaw is closed upon the fixed jaw, substantially as shown and described.

3. In a saw-set, the combination, with a revolving shaft, of a vise having one of its jaws provided with an adjustable bearing-bar, substantially as shown and described, and designed and adapted to be acted on by a cam-wheel upon said shaft and an interposed plate or spring between such jaws, whereby when said shaft is rotated the jaws of the vise are closed upon and released from the saw, substantially as shown and described.

4. In a saw-set, the combination of a base or frame to which is attached the fixed jaw of a vise, the movable jaw being pivoted to said fixed jaw and provided with a bearing-bar which abuts against a cam-wheel secured to a rotary shaft, substantially as shown and described.

5. A saw-set provided with a rotary shaft, a vise having a fixed and a movable jaw, the latter having a bearing plate or bar which abuts against a cam-wheel on said rotary shaft, in combination with an adjustable spring-gage interposed between the vise-jaws, substantially as and for the purpose set forth.

6. In a saw-set, the combination of a vise provided with an adjustable bearing-bar and an adjustable spring-gage, a cam-wheel, a rotary shaft, and setting and feeding devices, substantially as set forth.

7. In a saw-set, the combination of a vise provided with a bearing-bar designed and adapted to be acted upon by a cam-wheel on a rotary shaft, a die carrying or holding frame located in front of said vise and meshing with a cam or crank located upon said rotary shaft, whereby said die-carrying frame is caused to reciprocate in front of said vise, as set forth.

8. In a saw-set, the combination of a vise, a rotary shaft, a cam fastened on said shaft and designed to close the movable jaw of the vise, a reciprocating die-holding frame or bar, a feed-dog located beneath said bar and in front of the vise, an oscillating bar, and an actuating cam-wheel for said bar secured to said shaft, substantially as shown and described.

9. In a saw-set, the combination of a rotary shaft, a saw holding or clamping device composed of a fixed and a movable member, the latter being designed to be closed by a cam-wheel fastened on said shaft, and a reciprocating frame or bar operated by a cam or crank secured to said shaft, said bar carrying adjustable setting-dies, substantially as shown and described.

10. In a saw-set, the combination of a vise, a bearing-bar therefor in engagement with a cam-wheel on a rotary shaft, a reciprocating die-holding bar operated by a crank or cam on said shaft and carrying adjustable setting-dies, and a feed-dog controlled by an oscillating bar operated by a cam on said shaft, substantially as shown and described.

11. In a saw-set, a base or frame, A, a rotary shaft, E, a reciprocating bar, G, and a U-shaped cap, A', constructed to form bearings for both ends of said shaft and for one end of said bar, substantially as shown and described.

12. In a saw-set, the combination of a rotary shaft having a cam-wheel which closes the movable jaw of a vise located parallel with said shaft, and a reciprocating die-holding bar arranged at right angles with said shaft and vise, and which is designed and adapted to be moved by a crank or cam secured on said shaft, substantially as shown and described.

13. In a saw-set, the combination of a vertically-arranged vise, its movable member being closed by a cam-wheel fastened to a rotary driving-shaft, a reciprocating die-holding bar operated by a cam or crank, also secured to said shaft, and feeding mechanism constructed and arranged substantially as shown and described.

14. The combination of base A, vise B, having fixed jaw *b* and movable jaw *b'*, spring-gage C', provided with adjusting-screw, bearing-plate D, shaft E, carrying cam-wheel F, substantially as shown and described.

15. In combination with a saw-holding vise or clamp and cam-wheel, F, a bar, G, provided with a yoke, G', and adjustable setting-dies I and I', shaft E, and eccentric or cam H, substantially as shown and described.

16. In a machine for setting band-saws, a reciprocating bar carrying two setting-dies, which are rigidly secured thereto, and designed and adapted to be adjusted to and from one another by a sliding movement along or on said bar, the latter being operated by a cam or crank motion, substantially as shown and described.

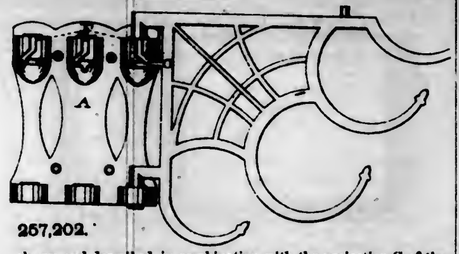
17. In combination with a saw-holding vise or clamp and a setting device, the feed-dog *l*, bar *F*, frame L, pivoted at *l'* to base A, stud L', cam-wheel M, rotating shaft E, substantially as shown and described.

18. The combination of base A, rotating shaft E, carrying cam M, stud L', secured to pivoted frame or bar L, and adjusting-screw O, substantially as shown and described.

19. In a saw-set, the combination of a rotary shaft carrying a cam-wheel actuating an opening and closing vise or clamp, a reciprocating die-holding frame operated by a crank or cam on said shaft, and a feeding-dog pivoted to an oscillating bar carrying a retracting-spring, said bar being operated by a cam-wheel secured to said shaft, substantially as shown and described.

257,202. BRACKET. GEORGE W. BASS, Dayton, Ohio. Filed Jan. 9, 1882. (No model.)

Claim.—1. The wall-plate A, with grooves in face of eye, as

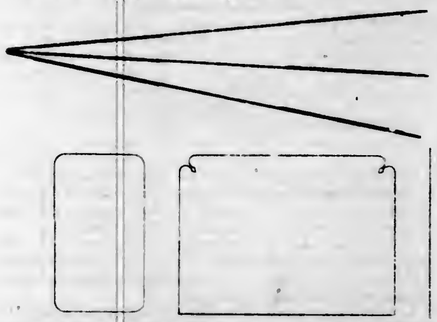


257,202.

shown and described, in combination with the projection C of the bracket to traverse the same, substantially as set forth.

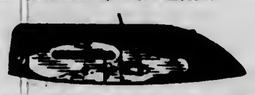
2. The wall-plate A, having a notch on the face of the eye communicating with the transverse groove, in combination with the projection C of the bracket, for the purpose of locking the same in a fixed position, substantially as set forth.

257,203. PHOTOGRAPH AND AUTOGRAPH ALBUM. GEORGE BARTLETT, Boston, Mass., assignor to himself and Arthur W. Eaton, same place. Filed Aug. 1, 1881. (No model.)



Claim.—As a new article of manufacture, a photograph and autograph album constructed substantially as described—viz., with each leaf having to each of its sides not only an open pocket for reception and exhibition of a photograph, but a bordered space for reception of an autograph or other writing, the pockets opening at one edge of and on opposite sides of the leaf, and so arranged with the autograph-receiving spaces or portions of the leaf that one of such bordered spaces or portions and a pocket-opening for the display of a picture shall be on each side of the leaf—all being essentially as specified.

257,204. SEWING-MACHINE SHUTTLE. FRANK BUCKEL, Norwalk, Ohio. Filed Feb. 9, 1882. (Model.)



Claim.—1. The combination, with a shuttle provided with an open thread-slot and with a recess near its forward end, of a tension-spring adapted to be adjustably secured at its rear end to the shuttle and provided with a projection near its forward end that enters an opening in the shuttle, said projection serving as a thread-bearing, the forward end of the tension-spring being constructed to enter a recess in the upper side of the shuttle, substantially as set forth.

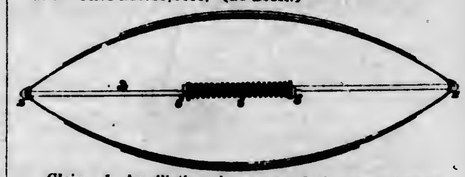
2. The combination, with a shuttle provided with a passage for the thread, of a tension-spring arranged to cover the thread-passage in the shuttle and removably secured to the shuttle by a tension-screw and a hook, said tension-spring being constructed and arranged to allow the thread to be drawn around and beneath its forward end without loosening the spring, substantially as set forth.

3. The combination, with a shuttle provided with an open thread-slot in its upper side, of a tension-spring provided with a hook intermediate its ends, said hook being constructed to be inserted through an opening in the shuttle by a longitudinal movement of the tension-spring, and a tension-screw for securing the rear end of the tension-spring to the shuttle, substantially as set forth.

4. The combination, with a shuttle, of a tension-spring provided with a projecting portion, L, that fits against the upper side of the shuttle, substantially as set forth.

5. A tension-spring having a combined attaching-hook and thread-bearing punched from the spring, substantially as set forth.

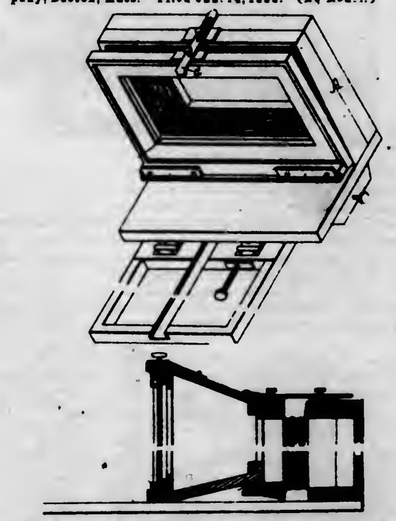
257,205. ELLIPTIC SPRING. GEORGE W. BELL, Brooklyn, N. Y. Filed Nov. 23, 1881. (No model.)



Claim.—1. An elliptic spring composed of upper and lower plates having hook-shaped ends overlapping and fitting upon each other, in combination with tension-rods which pass directly through the hook-shaped ends and are secured thereon by nuts, substantially as described.

2. An elliptic spring having tension-rods secured to the ends thereof, which tension-rods pass and overlap each other and have upset ends and washers, and a spiral spring, C, interposed between said upset ends and washers, substantially as described.

257,206. PHOTOGRAPHIC CAMERA. THOMAS H. BLAIR, Cambridge, assignor to the Blair Tourograph and Dry Plate Company, Boston, Mass. Filed Jan. 14, 1882. (No model.)

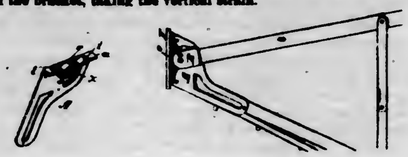


Claim.—1. In combination with a photographic camera, an extension, C, having its inner end smaller in cross-section than the interior of the body of the camera and flaring outwardly therefrom, so that its outer end is larger in cross-section than the body of the camera, substantially as and for the purposes set forth.

2. In a photographic camera, the combination of box or body A with the tapering extension C, hinged or removably attached thereto, substantially as shown.

257,207. STEP-LADDER. DAVID W. BROOKS, Frederick, Md. Filed Nov. 3, 1881. (No model.)

Brief.—Perforated round-end cap-pieces, which fit upon the upper ends of the legs, are pivoted and moved in the curved sockets of the bracket, taking the vertical strain.



Claim.—A hinge attachment for step-ladders, consisting of a bracket, A, having a flange, *c*, with a curved socket, *c*, and pin *c*, and a perforated round-ended cap-piece, B, adapted to receive the end of one of the legs, and having its bearing in the curved socket, substantially as set forth.

267,208. CAR-COUPLING. EDWARD J. BURNS, Dayton, Ohio. Filed Mar. 17, 1882. (No model.)



Claim.—1. The detent having projections, as set forth, to engage the lower surface of the projection *m* of the draw-bar to relieve the pin against vertical strain, substantially as set forth.

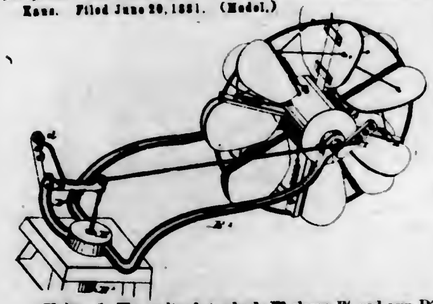
2. The projection *m* of the draw-bar to receive the longitudinal strain made by the draft of the engine, and thereby relieving the pin from strain, in combination with the coupling-bar, substantially as set forth.

267,209. HARNESS-PAD. PHILIP H. CASE, Alexandria, Minn., assignor of one-half to Robert J. McNeil, same place. Filed Feb. 11, 1882. (No model.)



Claim.—In a harness-pad, the burr or nut plate composed of the upper leather section, *d*, provided with the burrs or nuts *i*, and the metal plate *c*, riveted to the under surface of the leather section, all substantially as and for the purpose stated.

267,210. WIND-ENGINE. WILLIAM CASTERLINE, Concordia, Kans. Filed June 20, 1881. (Model.)



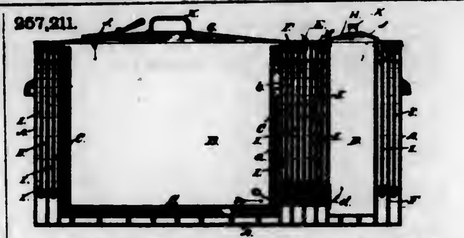
Claim.—1. The inclined standards E', sleeve E', and arm D', forming the frame E in one piece, combined with the winged wheel and proper crank-connections, as shown and set forth.

2. In a wind-engine, the sails arranged in pairs and hinged to radial arms G, in combination with cords A and spring A', substantially as and for the purpose described.

267,211. MEAT AND VEGETABLE PRESERVING CHEST. JOHN GRINGMAN, Dayton, Ohio. Filed Feb. 13, 1882. (No model.)

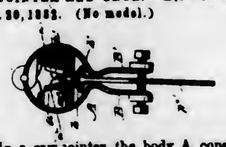
Brief.—Chambers B and D are covered by lids having wide depending flanges I, which enter water-filled spaces between triple walls A. Drawing lid H upward draws air from chamber B through valve *d*. Pressing it downward forces air out through valve *f*, and so on, forming partial vacuum in B, to aid preservation therein. Air is admitted through valve *f* in large lid to relieve (balance) pressure on lid when to be taken off.

Claim.—1. A preserving-chest for meat, vegetables, and the like, composed of an outer box and an inner preserving-chamber, with space between the two filled with water or other liquid, and having a lid or cover with slides entering the water-space, in combination with an air-exhausting pump and an inflowing-air valve, substantially as described.



2. The herein-described meat and vegetable preserving chest, composed of the outer box, A, preserving-chamber B, with non-conducting walls, supplemental chamber D, division-walls E and F, lids G and H, with pendent sides I, vent *c*, and valves *d* and *f*, the whole constructed and arranged in the manner and for the purpose specified.

267,212. SAW JOINTER AND GAGE. MILO COVEL, Chicago, Ill. Filed Feb. 20, 1882. (No model.)



Claim.—1. In a saw-jointer, the body A, consisting of the semicircular parts *a a'*, hinged together at the back, and having the projecting jaws B B', provided with the set-screws F, and adapted to fold over upon itself, substantially as described.

2. In a saw-jointer, the combination, with the parts *a a'*, hinged together at the back, of the clamping-plates a^2 a^2, provided with the rectangular slots *d d'*, adapting the same to have a lateral adjustment, substantially as described.

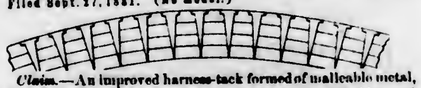
3. In a saw-jointer, the combination, with the parts *a a'*, hinged together at the back of the clamping-plates a^2 a^2, the screws d^3 d^3, and the triangular files *b b'*, substantially as described.

4. In a saw-jointer, the combination, with the parts *a a'*, of the clamping-plates a^2 a^2 and the notched locking-plate E, substantially as and for the purpose described.

5. In a saw-jointer, the combination, with the parts *a a'*, of the spring *f*, substantially as described.

6. In a saw-jointer, the combination, with the parts *a a'*, of the clamping-plates a^2 a^2, substantially as described.

267,213. TACK. ANDREW J. CULBERTSON, San Andreas, Cal. Filed Sept. 27, 1881. (No model.)



Claim.—An improved harness-tack formed of malleable metal, having a T-shaped head, a body having straight parallel sides, and a flattened point.

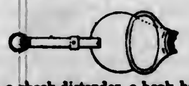
267,214. BAG-HOLDER. AUGUST CULTUM, Renville, Minn. Filed Jan. 25, 1882. (No model.)



Claim.—The herein-described bag-holder, consisting of standard A, having the folding legs B, pivoted arm E, provided with ring or hoop F, having hooks *a*, and brace H, pivoted to the rear end of beam E and adapted to engage with standard A, the parts being combined and arranged to operate substantially as set forth.

267,215. DENTAL CHEEK-HOLDER. JOHN HARRISON DOYLE, Hillsborough, Ohio. Filed Aug. 17, 1881. (No model.)

Brief.—The cheek-holder is provided with a mirror set in its lower portion.



Claim.—In a cheek-distender, a hook having its curved portion made narrow to accommodate the angle of the mouth and its inner end made large and provided with a reflector set in its surface, whereby the hook shall be adapted to represent the flow of saliva and serve as a speculum while distending the cheek, substantially as specified.

267,216. REFRIGERATOR-CAR. FRANK S. HASTMAN, Washington, D. C. Filed Mar. 7, 1882. (No model.)



Claim.—1. A railway-car provided with one or more refrigerating-chambers isolated from the interior of the car, substantially as shown and described, whereby the car is adapted for the transportation of perishable goods and passengers without subjecting the latter to an unusual temperature or atmosphere.

2. In a railway-car, one or more chambers located below the approximate line of load, and provided with non-conducting walls, substantially as and for the purpose explained.

3. A railway passenger-car provided with refrigerating-chambers beneath its seats, said chambers being isolated from the interior of the car, as set forth.

4. A railway passenger-car provided with chambers or compartments beneath its seats, communicating with an air-duct also beneath the seats, and an ice or cooling chamber communicating with said air-duct, as explained.

5. A railway-car provided with one or more refrigerating or cooling chambers isolated from the interior of the car, and one or more ice-chambers located above the refrigerating-chambers and communicating therewith.

6. The combination, in a railway-car, of one or more refrigerating or cooling chambers located below the line of load, an ice box or boxes located above the chambers and communicating therewith, and a pipe or pipes opening from the upper part of the cooling-chambers into the upper part of the ice-chambers, whereby a constant circulation of air through the ice-box and chambers is secured.

7. In combination with the ice-box F, the water-tank E, located by the side of the ice-box, and furnished with tubes *n*, whereby the water is cooled, as explained.

8. In a car for the transportation of live fish, &c., requiring water, two vertically-adjustable water-tanks arranged, substantially as described, to be alternately raised and lowered, whereby the water may be caused to flow from one to the other alternately in opposite directions.

9. In a refrigerator-car for the transportation of fish, &c., requiring water, two water-tanks suspended from common cables passing over pulleys, whereby the weight of one tank is caused to counterbalance the weight of the other.

10. In a refrigerator-car, the combination of a vertically-moving water-tank and a rack and pinion for raising and lowering the same, as shown.

11. In a refrigerating-car for transporting fish, &c., a water-tank and a water-pipe provided with flexible tubes and couplings, in combination with a series of cans or vessels having nipples to receive said couplings, as and for the purpose set forth.

12. In a refrigerator-car, a cooling-chamber located below the line of load and having its inside wall made in the form of a truss, as set forth.

13. A non-conducting wall for the refrigerating-chamber of a railway-car, having its open space filled with papier-maché, as and for the purpose explained.

14. In a railway-car, the combination, with a carrying-wheel of the truck, of a friction-wheel adapted and arranged to bear upon the tread of said wheel and to impart motion to a fan or apparatus in the car.

15. In combination with the pulley U', secured upon a shaft carried by the car-body, the friction-wheel Q, carried by the truck and provided with spool or pulley E', the pulley X', also carried by the truck, and a belt passing about said pulleys, as and for the purpose specified.

16. In combination with a car-truck, a vertically-moving standard, S, secured to the truck and carrying a friction-wheel, Q, as and for the purpose explained.

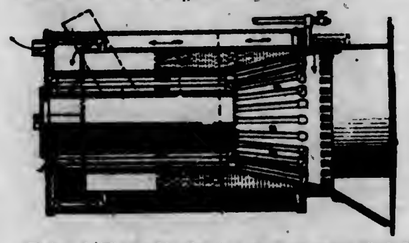
17. The combination, in a car for transporting live fish, &c., of a water-tank, a series of vessels connected with said tank by a pipe or pipes, and an air-pipe opening into said vessels, whereby the fish are supplied with fresh air and water.

18. A refrigerator-car provided with a refrigerating or cooling chamber below the side trussing of the car, and a door above said trussing extending to the roof-plate and the full width of the panel, whereby a proper opening for the entrance and removal of goods is provided without weakening the car-wall.

19. In a car provided with side doors, as shown and described, the combination of an overhead truck, a trunk running upon said truck, and a pivoted lever suspended from said truck, whereby goods may be lifted, transported, and thrust through said side doors, as set forth.

20. In a car substantially such as shown and described, a water-tank beneath the car, provided with cross-bearers *p*, as and for the purposes set forth.

267,217. STEAM-GENERATOR. CHARLES GORTON, Philadelphia, Pa. Filed Mar. 23, 1882. (No model.)



Claim.—1. The combination, in a steam-generator, of a boiler composed of two independent cylindrical sections concentrically arranged in such manner that an annular flame-space is formed between them their entire length, the inner cylinder forming a fuel-magazine and terminating at the crown of a conical fire-chamber, said chamber having at its lower end or base a casting provided with fingers or serrations flaring upward in opposite directions from the downwardly-diverging conical fire-box, whereby an angular air-space is formed for the better supply of air to the fuel above the grate when the latter is choked with ashes, substantially as described.

2. The combination, in a vertical steam-generator, of an outer water-space angular in transverse section at its base, the inner wall diverging outwardly and forming a conical fire-chamber, and a circle of tubes forming a fire-lining for said chamber, said tubes encircling the base of a fuel-magazine at their upper ends, in the manner shown and described.

3. The combination, in a steam-boiler, of the outer water-space with a central fuel-magazine, the single series of water-tubes forming the fire-box lining, and the double nest of tubes interposed between the fuel-magazine and the outer water-space, and connecting with the lower tubes, whereby a rapid circulation of water is maintained and an increased generating-surface produced, in the manner set forth and described.

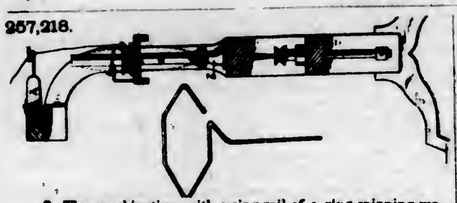
4. In a steam-generator of the vertical type, an outer water-space provided preferably at its bottom with a conical combustion-chamber, a central magazine, a series of circulating and generating tubes annularly arranged between the water-space and the magazine, and a fingered or serrated casting surrounding the grate, with or without the air-supplying tubes, all arranged and combined in the manner and for the purpose set forth.

5. In a steam-generator of the vertical type, an outer water-space provided at its bottom with a conical combustion-chamber, a central magazine, and a series of circulating and generating tubes annularly arranged between the water-space and the magazine, said series of tubes extending down and forming the fire-box lining, substantially as described.

267,218. THREAD GUARD OR CONTRACTOR FOR SPINNING-MACHINES. JUSTUS H. GRIFFIN, Holyoke, Mass. Filed Nov. 21, 1881. (No model.)

Claim.—1. A thread guard or contractor having a series of angular sides or faces, substantially as and for the purpose set forth.

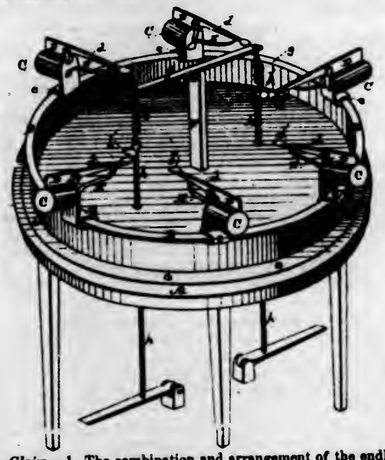
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2. The combination, with a ring-rail of a ring-spinning machine, of a thread guard or contractor having a series of angular sides or faces, and connected to said ring-rail, substantially as and for the purpose described.

257,219. ENDLESS TRACK FOR SEAMING-CYLINDERS FOR CANS. JOSEPH P. HALLAN, San Francisco, Cal., assignor of one-half to Solomon Wangenheim, same place. Filed Feb. 8, 1882. (No model.)

Brief.—Independent soldering-clamps sliding on the flanged edge of the stationary ring B.

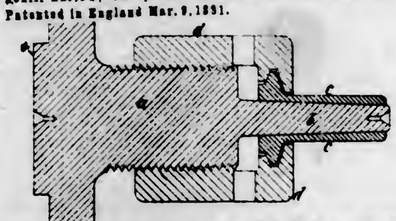


Claim.—1. The combination and arrangement of the endless track B and the seaming or forming cylinders C C, fitted upon the track and adapted to slide thereon, substantially as and for the purpose herein described.

2. The combination and arrangement of the endless track B, seaming or forming cylinders C C, having the pivoted retaining-knives D D and a spring, E, and a mechanism for raising said knives, substantially as and for the purpose herein described.

3. The combination and arrangement of an endless track, B, seaming or forming cylinders C C, having the pivoted retaining-knives D D, with stems *d d*, and held down by a spring, E, and the means for raising said knives, consisting of the rods *h h*, attached to a treadle, and having beads *h'*, adapted to engage with the ends of the stems *d d*, said rods being attached to springs *g g*, suspended from a standard, F, substantially as and for the purpose herein described.

257,220. EXPANDING MANDREL. JOSEPH HARRISON, Manchester, County of Lancaster, England, assignor to Henry Burnehill Barlow, same place. Filed Feb. 6, 1882. (No model.) Patented in England Mar. 9, 1881.



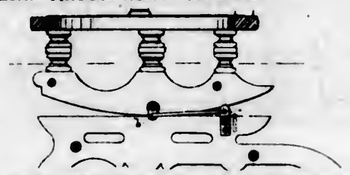
Claim.—1. In an expanding mandrel, the boss *a*, having a flange at its outer end, said flange having a projection, *a'*, for the purpose set forth.

2. The combination, with boss *a*, having tapering spindle *b*, of the nut *d* and the dies *c*, said dies being formed concave on the inner surface to fit the surface of the spindle, and provided with projections *c'*, substantially as shown and described.

3. The solid tapering spindle *b*, formed with or attached to boss *a*, in combination with the dies *c*, each provided at its outer end with a projection, *c'*, and at its inner end with a flange which connects with nut *d*, substantially as and for the purpose set forth.

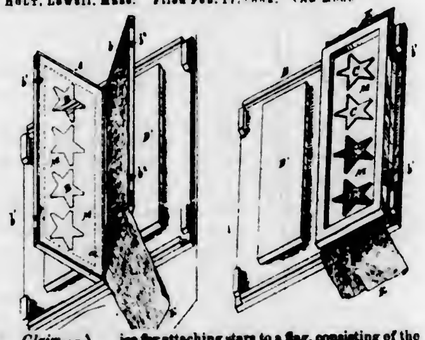
4. The combination, with boss *a*, having solid spindle *b* and dies *c*, of the nut *d*, which engages at one end with said boss by means of screw-threads and at the other end with the dies by means of a recessed part, which fits and connects with a flange formed on the dies, substantially as set forth.

257,221. BASE ROCKING-CHAIR. LEVI HAYWOOD, Gardner, Mass. Filed Dec. 8, 1881. (No model.)



Claim.—The rocking portion and base of a base rocking-chair, combined with right-angled torsional springs loosely connected to the rocking portion by centrally-arranged links, and extending thence rearwardly, and rigidly connected to the base on one side at their angles and on opposite sides by their extreme ends, all substantially as herein shown and described.

257,222. DEVICE FOR ATTACHING STARS TO FLAGS. JOHN HOLT, Lowell, Mass. Filed Feb. 17, 1882. (No model.)



Claim.—A [illegible] ice for attaching stars to a flag, consisting of the frame A, provided with hinges *a*, hooks and eyes *b'* and *b²*, respectively, and also equipped with the linings M, said linings containing the star-shaped openings B, said openings within each side of the frame being exactly opposite each other, the abrasive strips *b*, the mold-board D, with two moldings, D', the holding-weight H, and the drying-weight G, constructed, arranged, and combined substantially as described and shown.

257,223. VEHICLE-HUB. FREDERICK H. HURTLE, Dowagiac, Mich. Filed Sept. 10, 1881. (Model.)

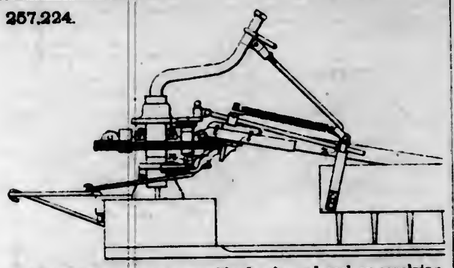


Claim.—The vehicle-axle having screw-thread I and annular flange H, in combination with the interiorly-threaded sand-band J, abutting against the said flange H, and the hub having double-flanged band D, as shown and specified.

257,224. HARVESTER-RAKE. J. HENRY JONES, Rockford, Ill., assignor to Ralph Emerson and William A. Talcott, same place. Filed July 28, 1879.

Claim.—1. The combination of the crown-wheel, the bent or

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overhanging rake-post, a combined rake and reel or revolving rising and falling arm provided with a rake-head having the capacity of acting either simply as a reel-bat or as a rake, a flexible lengthening and shortening connection between the rake-head and upper part of the rake-post, which connection admits of the distance between the rake-head and upper part of the post being increased when acting as a rake and decreased when the rake-head is changed to a reel-bat, and a dog having the capability of being interposed between the crown-wheel and the rake-arm to cause said head to act as a reel-bat, substantially as hereinbefore set forth.

2. The combination of the crown-wheel, the bent or overhanging rake-post, a combined rake and reel or revolving rising and falling arm provided with a rake-head having the capacity of acting either simply as a reel-bat or as a rake, a flexible lengthening and shortening connection between the rake-head and upper part of the rake-post, which connection admits of the distance between the rake-head and upper part of the rake-post being increased when acting as a rake and decreased when the rake-head is changed to a reel-bat, a dog for interposition between the crown-wheel and rake-arm, and tripping mechanism, substantially as and for the purpose hereinbefore set forth.

3. The combination of the crown-wheel, the bent or overhanging rake-post, a combined rake and reel or revolving rising and falling arm provided with a rake-head having the capacity of acting either simply as a reel-bat or as a rake, the flexible lengthening and shortening connection (consisting of a jointed pitman or link and swinging bracket) between the rake-head and upper part of the rake-post, which connection admits of the distance between the rake-head and upper part of the post being increased when acting as a rake and decreased when the rake-head is changed to a reel-bat, and a dog having the capability of being interposed between the crown-wheel and the rake-arm to cause said head to act as a reel-bat, substantially as hereinbefore set forth.

4. The combination of the crown-wheel, the bent or overhanging rake-post, a combined rake and reel or revolving rising and falling rake-head having the capacity of acting either simply as a reel-bat or as a rake, the flexible lengthening and shortening connection (consisting of a jointed pitman or link and swinging bracket) between the rake-head and upper part of the rake-post, which connection admits of the distance between the rake-head and upper part of the post being increased when acting as a rake and decreased when the rake-head is changed to a reel-bat, a dog for interposition between the crown-wheel and rake-arm, and tripping mechanism, substantially as and for the purpose hereinbefore set forth.

5. The combination of the crown-wheel, the bent or overhanging rake-post, the hinged rake-arm, a lengthening and shortening flexible or link connection between the rake-head and upper part of the rake-post, and a spring having the capacity of assisting in holding the rake-head down to its work, and yet allowing it to yield and its teeth to rise above the platform, substantially as and for the purpose hereinbefore set forth.

6. The combination of the crown-wheel, the bent or overhanging rake-post, the hinged rake-arm, a lengthening and shortening connection between the rake-head and upper part of the rake-post, a spring having the capacity of assisting in holding the rake-head down to its work, and yet allowing it to yield and its teeth to rise above the platform, and means controllable by the driver to prevent the descent of the rake-head to the platform when it is desired to have said head act as a reel-bat simply, substantially as hereinbefore set forth.

7. The combination of a combined rake and reel or revolving rising and falling arm provided with a rake-head having the capacity of acting either simply as a reel-bat or as a rake, the bent or overhanging rake-post, the flexible lengthening and shortening connection (consisting of a jointed pitman or link) between the rake-head and the upper part of the rake-post, and a spring assisting to hold the rake-head down to its work when operating as a rake, and yet allowing of the action of said head as a reel-bat when desired, substantially as hereinbefore set forth.

8. The combination of a combined rake and reel or revolving rising and falling arm provided with a rake-head having the capacity of acting either simply as a reel-bat or as a rake, the crown-wheel, the bent or overhanging rake-post, the flexible lengthening and shortening connection (consisting of a jointed pitman or link) between the rake-head and the upper part of the rake-post, a spring assisting to hold the rake-head down to its work when operating as a rake, and yet allowing of the action of said head as a reel-bat when desired, and a dog having the capability of being interposed between the crown-wheel and the rake-arm, substantially as hereinbefore set forth.

9. The combination of a combined rake and reel or revolving rising and falling arm provided with a rake-head having the capacity of acting either simply as a reel-bat or as a rake, the crown-wheel, the bent or overhanging rake-post, the flexible lengthening and shortening connection (consisting of a jointed pitman or link) between the rake-head and the upper part of the rake-post, a spring assisting to hold the rake-head down to its work when operating as a rake, and yet allowing of the action of said head as a reel-bat when desired, a dog for interposition between the crown-wheel and rake-arm, and tripping mechanism, substantially as and for the purpose hereinbefore set forth.

10. The combination, substantially as hereinbefore set forth, of the bent or overhanging rake-post, the crown-wheel, a rising and falling rake-arm hinged to the crown-wheel and provided with a rake-head having the capacity of acting either simply as a reel-bat or as a rake, the flexible lengthening and shortening connection (consisting of a jointed pitman or link) between the rake-head and upper part of the rake-post, which connection admits of the distance between the rake-head and upper part of the rake-post being varied, and a dog having the capability of being interposed between the crown-wheel and rake-arm for converting the rake-head into a reel-bat, whereby when said head is acting as a reel-bat the arm in passing over the platform will be supported by the dog resting on the crown-wheel, and during a corresponding time in its revolution, when the head is acting as a rake, the arm will be supported on the crown-wheel.

11. The combination, substantially as hereinbefore set forth, of the crown-wheel, the inwardly-bent or overhanging rake-post, the rake-carrying arm hinged at its heel to the crown-wheel near its edge and playing vertically, and a compensating connection between the rake and the rake-post, said connection being both flexible or transversely yielding and self-adjusting in length, for the purpose described.

12. The combination of the crown-wheel, the inwardly-bent or overhanging rake-post, the rake-arm hinged to the crown-wheel remote from its center and playing vertically, and a self-compensating connection between the rake-arm and the rake-post, having a constant spring-pressure exerted upon it, acting with a tendency to elongate it, and limited in its contractive adjustment, substantially as and for the purpose set forth.

13. The combination, substantially as hereinbefore set forth, of the crown-wheel, the inwardly-bent or overhanging rake-post, the rake-carrying arm hinged at its heel to the crown-wheel, so as to play vertically, and a self-compensating connection between the rake-arm and rake-post, the link or pitman portion of which connection is adjustable to vary the distance between the points of attachment of the compensating connection with the rake-post and the rake-arm, for the purpose described.

14. The combination, substantially as hereinbefore set forth, of the crown-wheel, the inwardly-bent or overhanging rake-post, the rake-arm hinged at its heel to said crown-wheel near its edge or remote from its center, and the bracket and pitman of the self-compensating connection, said bracket being pivoted on the rake-arm and swinging in a path at, or about at, a right angle with the plane of movement of the rake about its heel-pivot, and said pitman being doubly jointed at one end to the bracket and flexibly connected at its opposite end with the rake-post, about which it turns eccentrically to the crown-wheel, for the purpose set forth.

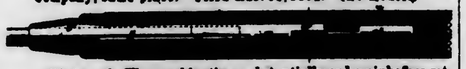
15. The combination of the rake-arm, the swinging bracket, the rod provided with a stop and playing loosely endwise in said bracket, and the spring, substantially as set forth.

16. The combination of the rake-arm, the pivoted swinging bracket thereon, the pitman turning about the rake-post, and the rod which plays loosely endwise in said bracket, substantially as set forth.

17. The combination of the crown-wheel, the rake-arm, the swinging bracket, the rod which plays loosely endwise in the bracket, the pivoted dog, and the spring-latch, substantially as set forth.

18. The combination of the rake-carrying arm carried by the crown-wheel and having vertical play about its hinged connection therewith, the inwardly-bent or overhanging rake-post, the swinging bracket and pitman adjustably connecting the rake-arm and rake-post, the rod sliding or moving endwise in the rake-arm bracket and serving to limit its inward play, the spring connecting said bracket and rod, and the crank-plate turning at intervals to positively move the sliding rod, for the purpose described.

257,225. DENTAL TOOL-HOLDER. Gideon Harris, Philadelphia, Pa., assignor to the S. S. White Dental Manufacturing Company, same place. Filed Mar. 13, 1882. (No model.)

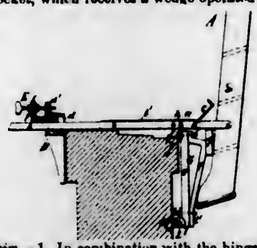


Claim.—1. The combination, substantially as hereinbefore set forth, of a sectional handle, a tool-holding chuck carried by said handle and movable endwise therein, and a connection between said tool-holding chuck and a movable section of said handle, whereby said tool-holding chuck is operated to clamp or release a tool by being moved endwise in said handle.

2. The combination, substantially as hereinbefore set forth, of the handle composed of a tubular or socketed front section to receive a split or spring jawed chuck, an intermediate tubular section having an operating-connection with the rear end of said chuck, and a third section connected with the front section by a connecting-piece around which the intermediate section turns to manipulate said chuck.

257,226. COMBINED STEP-LADDER AND WINDOW-SCAFFOLD. Mary S. Kjellbergh, New York, N. Y. Filed Feb. 16, 1882. (No model.)

Brief.—The leg-frame having a platform has brackets pivoted thereto by means of lug-castings. The bracket consists of a straight bar with an angular piece having flanges, by which it is bolted to the straight piece. The angular pieces are connected by a cross-bar. The lower end of the straight bar has a lug with curved slot to receive a rod. The legs each have a sliding bracket provided with a socket, which receives a wedge operated by a set-screw.



Claim.—1. In combination with the hinged leg-frame B of a ladder, A, provided with the exterior platform-supporting brackets, G, the socketed sliding brackets D, and the screw-clamped tightening-wedges F, to support the apparatus as a window-scaffold, substantially as set forth.

2. In combination with the hinged leg-frame B and ladder A, the brackets G, hinged to the said leg-frame, and provided with the cross bar or board *g*, bearing with its upper edge against the leg-frame and with its outer edge against the ladder-frame when in use as a scaffold, substantially as and for the purpose set forth.

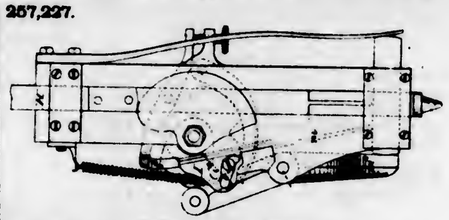
3. In combination with the leg-frame B of the ladder A, the brackets G, consisting of the bar H, the triangular bracket I, having flanges *i i'*, the lipped casting J, having pivoting-lug *h*, the lipped casting L, having lug M, and the fastening-bolts K *k*, substantially as specified.

4. In combination with the platform-supporting brackets G of a combined step-ladder and window-scaffold, the castings L, having lugs M, and curved slots *m* in the said lugs, for the reception of a rod to afford bearing against the outer wall, substantially as specified.

257,227. MAILING-MACHINE. Albion Knowlton, Boston, Mass. Filed Jan. 7, 1882. (No model.)

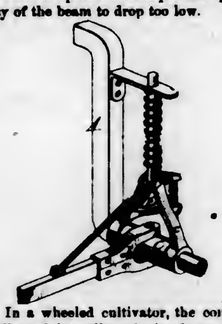
Claim.—The combination of intermittently-reciprocating wire nipper, the slide to which the nipper is pivoted, the cam-actuated lever, the spring to retract the nipper-slide, and the actuating-lever and the adjustable stop to limit the upward stroke of the nipper, substantially as and for the purposes specified.

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257,228. CULTIVATOR. Edward F. Lynch, Davenport, Iowa. Filed Feb. 24, 1882. (No model.)

Brief.—Two springs, one to aid in lifting the shovels out of the ground, the other to operate as a suspension-spring to counteract any tendency of the beam to drop too low.



Claim.—1. In a wheeled cultivator, the combination of the axle, the vertically and laterally swinging beam journaled to the axle, the lifting-arm journaled upon the axle independently of the beam-coupling, the vertically-sliding rod jointed to the lifting-arm, the spring depressing said rod, and the connection extending from the lifting-arm to the beam, substantially as shown and described.

2. The combination of the axle, the coupling-box mounted upon the axle, the beam jointed to the coupling-box, the lifting-arm mounted upon the axle independently of the coupling-box, the vertical rod jointed at one end to the lifting-arm, the spring, and the connection from the beam to the lifting devices, substantially as shown.

3. In combination with the laterally and vertically swinging beam, the lifting-arm arranged to swing about a horizontal axis, and a jointed connection between the lifting-arm and the beam and a spring, applied substantially as described, to urge the upper end of the lifting-arm downward.

4. In combination with the beam, the axle, and the coupling-box connected to said parts, the lifting-arm arranged to straddle the coupling-box and connected by intermediate devices, substantially as shown, with the beams.

5. The combination of the axle, the coupling-box, the beam, the lifting-arm independent of the coupling-box, the connection between the lifting device and the beam, the vertical rod with forward extension at its foot, and the two springs, applied substantially as described and shown.

257,229. CULTIVATOR. Edward F. Lynch, Davenport, Iowa. Filed Feb. 8, 1882. (No model.)

Brief.—A rigid arm and a loose arm upon the beam-coupling. Two springs, one attached to each arm. One spring is intended to lift the beam out of an operative position and the other to resist any tendency to go below and to act as a spring-suspension.



Claim.—1. The combination of the beam and the arm connected therewith, the secondary arm having a limited play in relation to the first arm, the rod pivoted to the second arm, and the two springs, applied substantially as described and shown.

2. The combination of the beam and the arm connected therewith, the second arm mounted loosely on the axle, and the lifting-spring and the suspending-spring, substantially as described and shown.

3. In combination with a beam and a rigid arm connected therewith, a second arm actuated by a beam-lifting spring, and a suspension-spring between the two arms, substantially as shown.

4. The combination of the beam and its arm, the independent arm, the suspension-spring, and the spring-adjusting device.

5. The combination of the beam, the upright arm connected therewith, the independent arm, the intermediate spring, the rod united to the independent arm, the knuckle-joint, and the spring mounted upon the rod, as shown.

6. In combination with the vertically-swinging cultivator-beam, a spring tending to elevate the same, and a second and stronger spring located intermediate between the arm and the first spring, in the manner and for the purpose substantially as described and shown.

257,230. BREECH-LOADING ORDNANCE. Henry F. Mann, Pittsburg, Pa. Filed Mar. 2, 1882. (No model.)



Claim.—1. The combination, with a barrel pivoted on side straps, of a breech-block, a transom or cross-head, a breech-screw in the transom or cross-head to operate the breech-block, and side straps pivoted on a carriage, substantially as and for the purpose specified.

2. In breech-loading ordnance, the combination, with a barrel pivoted on side straps, the side straps pivoted on the carriage and having a slotted block on its under side near the breech, of a breech-block and a crank-shaft pivoted on the side straps and passing through the slotted block, the side straps having separate trunnions, substantially as and for the purpose specified.

3. In breech-loading ordnance, the combination, with a barrel reduced and re-enforced at its breech, of side straps in which the barrel is pivoted on trunnions integral with said barrel, the side straps being pivoted on a suitable carriage by separate trunnions, substantially as and for the purpose specified.

4. In breech-loading ordnance of the character described, in which the breech-block is connected to the trunnions of the gun by side straps, a rack formed on the rear face of the barrel, a shaft passing transversely through side straps, a pinion or pinions on said shaft to engage the rack, and a crank for turning the shaft, all constructed and arranged substantially as described, for the purpose of opening and closing the barrel.

5. In breech-loading ordnance, the combination, with a barrel pivoted on side straps, of a saddle attached to the side straps and a slotted link pivoted on the barrel and connected with the saddle, substantially as and for the purpose specified.

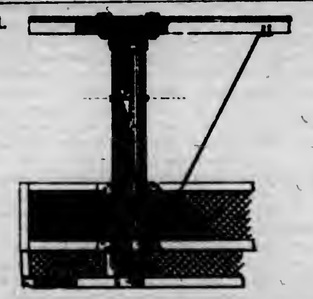
6. In breech-loading ordnance, the combination of side straps having a saddle for the support of the rear end of the barrel, a barrel pivoted on the side straps and having a rack attached to or formed on its rear end, a slotted link pivoted on the barrel and connected with the saddle, and a breech-block having pinions mounted on a shaft and let into the breech-block, substantially as and for the purpose specified.

7. The combination, with a pivoted barrel having a rack on its rear end, of a breech-block having pinions let into it and mounted on a shaft journaled in the side straps, said shaft having lateral play in the breech-block, a cross-head, and a breech-screw, substantially as and for the purpose specified.

257,231. SHIELD FOR RAILWAY-CARS. Seth G. Mason and John L. Hanson, Somerville, Mass. Filed Aug. 8, 1881. (No model.)

Claim.—1. The combination, with a railway-car, of the cylinder-posts, pistons, divided shields, and their attaching mechanism, all arranged and operating in the manner set forth.

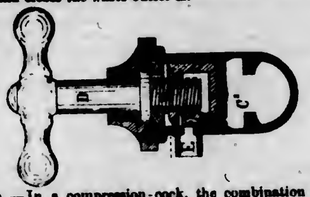
257,231.



2. The spiral spring-belt and curve, with its connecting mechanism at the ends of the movable shield, all arranged substantially as and for the purposes specified.

257,232. WASTE COMPRESSION-COCK. Edward W. McGeniss, New York, N. Y., assignor to Charles Harrison, same place. Filed Feb. 6, 1882. (No model.)

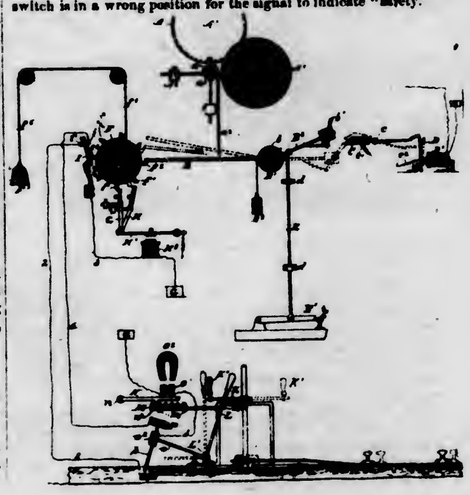
Brief.—Wedge F is fitted loosely in the side of the plug, and opens and closes the waste-outlet E.



Claim.—In a compression-cock, the combination of the actuating stem D, the valve-plug C, and the wedge F, for closing the waste-outlet, substantially as set forth.

257,233. ELECTRIC SIGNAL FOR RAILWAYS. Charles J. Mears, Boston, Mass. Filed Nov. 14, 1881. (No model.)

Brief.—A signal is held normally at "safety" through weighted connections, and is operated to "danger" by a passing train, and there secured through an electro-magnetic locking device until the train passes a given point ahead, when said lock is released through a current from said point, and the signal thereby resumes "safety." The signal is also capable of being operated to indicate the position of a switch through a weighted motor controlled by an electro-magnet, two wires extending from the signal-operating mechanism to the switch-stand, a current-changer operated by the motor being so arranged that currents by one wire set the signal to "danger" and by the other allows it to go to "safety," it being impossible to close the latter circuit when the switch is in a wrong position for the signal to indicate "safety."



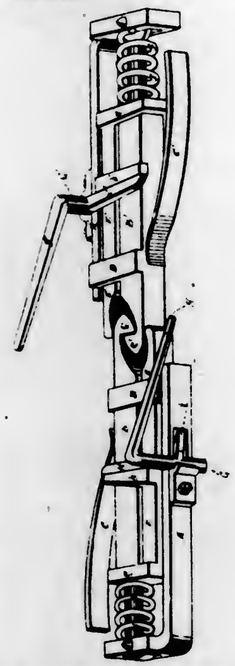
Claim.—1. In an electric railway-signal, the combination of the following elements, namely: a weighted signal, A', having a tendency to turn to indicate "danger," weight B', normally holding the said signal at "safety," mechanism operated by a passing train entering the section of railroad-track to raise said weight to allow the signal to gently rotate to "danger," and an electro-magnetic locking device for holding the weight in its raised position until said locking device is operated by the train leaving the said section of track, substantially as and for the purpose set forth.

2. The combination of the weighted signal A', chain *a'*, arm B, weight B', acting on said arm and overbalancing the weighted signal A', arm B', bearing a pawl, *b'*, latch-lever C, and armature-lever D, substantially as and for the purpose set forth.

3. The combination of the toothed wheel F, latches G and H, separated from one another by a distance equal to about three-fourths of the distance between the teeth of the toothed wheel, and an electro-magnet controlling said latches, substantially as and for the purpose set forth.

4. In a magneto-electric switch-signal apparatus, the combination of the following elements, namely: a lever, L, normally in the path of the switch-operating crank K, a magneto-electric generator caused to be operated by the said lever L when it is moved in either direction, a commutator which transmits the magneto-currents over the wire which sets the signal at "danger" when the lever L is moved out of the path of the switch-operating crank K and over the safety-wire when the lever L is moved into the path of the switch-operating crank K, and a frame, S, which prevents the last-mentioned movement except when the switch-rails are in their normal position, substantially as and for the purpose set forth.

257,234. CAR-COUPLING. FRANK MILLER, Olema, Cal. Filed Mar. 7, 1882. (No model.)

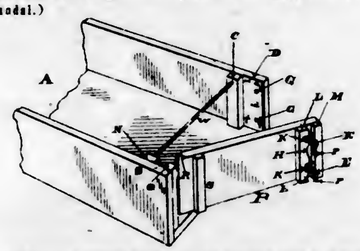


Claim.—1. In combination with the meeting horizontal coupling hooks or bars B B', pivoted at their rear ends and having hooked heads *e e'*, and the impinging springs C C', the horizontal sliding guard-bars E E', lying parallel with said coupling-bars B B' upon opposite sides of each, respectively, and held forward in position by the springs *f f'*, substantially as and for the purpose herein described.

2. The combination and arrangement of the pivoted coupling hooks or bars B B', with their hooked heads *e e'*, and guide-sockets D D', springs C C', and guide-bars E E', with their guide-sockets *e e'* and springs *f f'*, substantially as herein described.

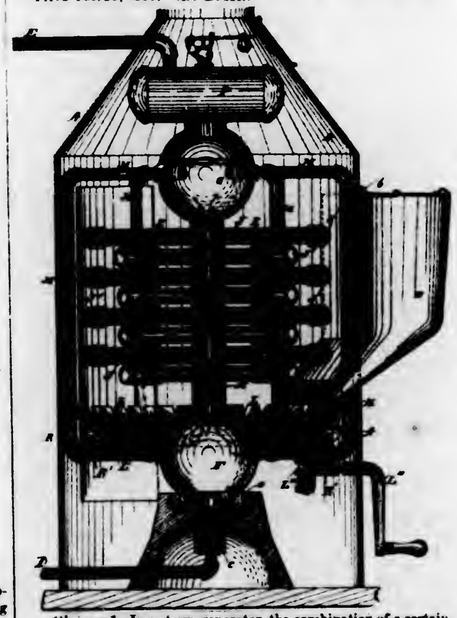
3. The meeting horizontal coupling hooks and bars B B', pivoted at their rear ends and having hooked heads *e e'*, and the impinging springs C C', in combination with the horizontal sliding guard-bars E E', lying parallel with said coupling-bars upon opposite sides of each, respectively, and held forward by springs *f f'*, and a means for uncoupling the coupling-bars, consisting of the vertical shafts G G', with their arms H H' impinging against lugs *h h'* upon the guard-bars, arms *i i*, and cranks *g g'*, or equivalent means, as shown, substantially as herein described.

257,235. END-GATE FOR WAGONS. OTIS WARREN MOORE, Monticello, Ill., assignor of two-thirds to Caleb Dana Moore and Carlton Wright, same place. Filed Aug. 26, 1881. (No model.)



Claim.—In combination with the side-boards of a wagon-body, said sides having chambered standards or cleats N O, forming a recess, X, on one board, and the standard C and perforated plate G on the opposite board, the end-gate B, having standards or cleats M L S, and provided with right-angled bolts E and snap-catch P, said bolts engaging with notches and perforations in the standards L M, respectively, and adapted to enter perforations in the plate G, substantially as and for the purpose set forth.

257,236. STEAM-GENERATOR. THOMAS G. MORSE, Erie, Pa. Filed Oct. 28, 1881. (No model.)



Claim.—1. In a steam-generator, the combination of a certain vertical tube containing a second central vertical tube, with tubes radiating from the outer vertical tube in series, arranged at stated intervals, and having tubes contained therein, substantially as shown, and radiating from the inner central vertical tube, substantially as set forth.

2. In a steam-generator, the combination of a central vertical tube containing a second vertical tube having its lower end opening into a mud-drum with tubes radiating from the outer vertical tube in series, arranged at stated intervals, and having tubes contained therein, substantially as shown, and radiating from the inner central vertical tube, substantially as and for the purpose set forth.

3. In a steam-generator, the combination of a central vertical tube containing a second vertical tube, and having a mud-drum attached to the bottom and a steam-chamber at the top, with tubes radiating from the outer vertical tube in series, arranged at stated intervals, and having contained therein tubes radiating from the inner vertical tube, substantially as described.

4. In a steam-generator, the combination of a central vertical tube containing a second vertical tube, and having a mud-drum attached to the bottom and a steam-chamber at the top, with tubes radiating from the outer vertical tubes in series, arranged at stated intervals, and having contained therein tubes radiating from the inner vertical tube, and a series of communicating tubes connecting the steam-chamber and the mud-drum, substantially as described.

5. In a steam or hot-water generating boiler which has two concentric vertical tubes and tubes radiating from each of said tubes concentrically, the combination, with the outer radial tubes, of T-shaped caps J' at their outer extremities, substantially as and for the purposes mentioned.

6. In a steam-generator, a system of tubes for the circulation of water, having a grate arranged within and partly supported upon the outer series of tubes, substantially in the manner described, and for the purpose set forth.

7. In a steam-generator, a system of tubes for the circulation of water, having a grate arranged within and partly upon the outer series of tubes, and the whole mounted upon and in combination with a swivel-joint on the supply-pipe, in the manner substantially as described, and for the purpose set forth.

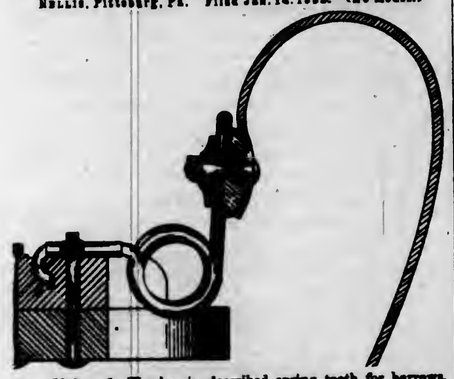
8. In a steam or hot-water generating boiler having the tubes H and I and J and K, and the sphere or chamber F, the combination therewith of the pedestal C, friction-rollers O, and swivel-joint *c*, substantially as and for the purposes set forth.

9. In a steam or hot-water generating boiler, the combination, substantially as and for the purposes set forth, of the following elements: the upright pipes H and I, the radial pipes J and K, the chambers F and G, the connecting-pipes M, the pedestal C, friction-rollers O, supply-pipe D, and swivel-joint *c*.

10. A steam or hot-water generator consisting of the combination, substantially as described, of the following elements: a boiler consisting of the tubes H I J K M and spheres F and G, arranged together substantially in the manner specified, a furnace consisting of the case A, magazine B, grate L, grate-mountings R R', and grate-actuating mechanism L' L'' L'''.

11. In a steam or hot-water generating apparatus, the combination, substantially as described, of the following elements: the case A, grate L, grate-mountings R R', grate-actuating devices L' L'' L''', boiler-mountings C and O, and boiler F G H I J K M.

257,237. HARROW OR CULTIVATOR TOOTH. AARON J. NELLIS, Pittsburg, Pa. Filed Jan. 14, 1882. (No model.)



Claim.—1. The herein-described spring-tooth for harrows, cultivators, and like implements, composed of a cutting or tooth proper and a coiled spring-section, the coil of the spring-section arranged opposite the face of the tooth-section, and the center of the coil-section below the suspension-arms by which the tooth is attached to the frame, substantially as and for the purpose specified.

2. In a harrow, cultivator, or like implement, the combination, with the frame, of a spring-tooth composed of a cutting or tooth section proper and a coiled spring-section secured thereto opposite the face of the cutting-section, the suspension-arms of the spring-section being arranged above the center of the coil and attached to the upper surface of the harrow-frame, substantially as and for the purpose specified.

3. In a spring-tooth for harrows, cultivators, and like implements, the combination of a spring-section having the vertical loop or arm, a cutting-section or tooth proper having the curved heel, and the interposed saddle having the curved face, the cutting-section adjustable on the spring-section in the arc of a circle, and also vertically, whereby both the draft and cutting-angle of the tooth can be changed, substantially as and for the purpose specified.

4. In a tooth for harrows, cultivators, and like implements, the combination of the cutting-section having the curved heel, the coiled spring-section having the vertical loop or arm, and the interposed saddle having the curved face to receive the heel of the cutting-section, substantially as and for the purpose specified.

5. In a spring-tooth for harrows, cultivators, and like implements, the combination of a hooked section or tooth proper, and the coiled spring-section having the vertical arm or loop for the attachment of the hook-section, and the suspension-arms which project at a right angle to the loop-section and in a plane above the center of the coil, substantially as and for the purpose specified.

257,238. SPINNING-RING AND HOLDER THEREFOR. HORATIO L. PERRY, Providence, R. I., assignor of one-fourth to William W. Johnston, same place. Filed July 10, 1880. (No model.)



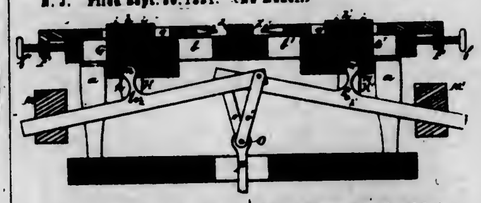
Claim.—1. The combination, with the holder adapted to be secured to the rail concentrically with the spindle-aperture thereof, of the ring and devices for loosely connecting the same to the top of said holder, whereby a limited play laterally thereon in all directions is permitted to the ring, substantially as described.

2. The combination, with the holder A, adapted to be secured in the spindle-aperture of the ring-rail of a spinning-machine, and having a flange, *a*, recessed in its under side, and provided with apertures *i i*, of the ring C, sitting loosely upon the top of said flange and provided with downwardly-projecting pins fitting loosely through the apertures in said flange, and headed on the under side thereof, substantially as described.

257,239. PROCESS OF UTILIZING SPENT LIME FOR BRICKS AND TILES. ERNEST L. RANSOME, San Francisco, Cal. Filed May 26, 1881. (No specimens.)

Claim.—A brick or tile composed of spent lime which is first pulverized and then subjected to heavy pressure in molds, substantially as described.

257,240. PUNCHING-MACHINE. JOHN M. RILEY, Kearney, N. J. Filed Sept. 30, 1881. (No model.)



Claim.—1. In a punching-machine, the combination of the punch-slides E E', having the plots *g g'*, with the adjustable blocks G G' and levers L L', all constructed and arranged substantially as described.

2. In a punching-machine, the combination of the actuating-levers L' L and blocks G G', secured to the slides E E' and adjustable therein, with the removable die C, substantially as shown and described.

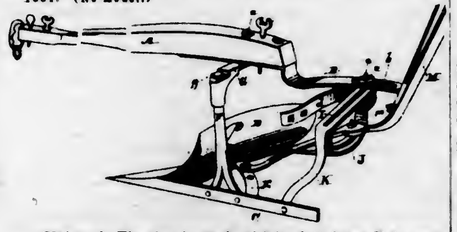
3. In a punching-machine, the slides E E', having the shoulders F F' and set-screws *f f'*, in combination with the adjustable blocks G G' and levers L L', constructed and arranged substantially as and for the purpose described.

4. In a punching-machine having separately-adjustable punch-slides, and actuating-levers for causing the punch-slides to simultaneously operate upon opposite sides of a die, the combination,

with such punch-slides and actuating-levers, of separately-adjustable counterbalance-weights, substantially as and for the purpose described.

5. In a punching-machine, the combination of the slides E E' and blocks G G', adjustable in said slides, with the levers L L', having arms *l l'*, weights M M', and straps *o o'*, to attach the said levers to the treadle-rod O, the said parts being constructed and arranged substantially as and for the purpose described.

257,241. PLOW. MILTON ROSS, San José, Cal. Filed Aug. 5, 1881. (No model.)



Claim.—1. The plow-beam A, with its slotted arm B, in combination with the crank G, standards F and K, landside C, beam-adjusting plate I, and handle-adjusting plate J, secured thereto, substantially as herein set forth.

2. The mold-board D, with its extension *d*, in combination with the slotted plates I and J and plow-beam A, with its slotted arm B, said beam being adapted to shift upon the crank G, substantially as herein described.

3. The mold-board D, with its extension *d*, in combination with the slotted plate J and handle-stem M, pivoted to the cross-brace E and adapted to travel on the slotted plate J, substantially as described.

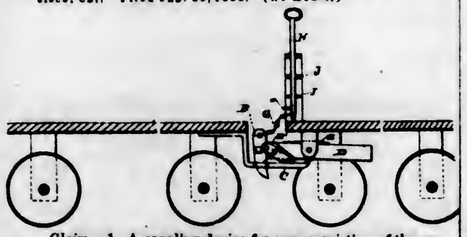
257,242. MANUFACTURE OF BROWN DYE-STUFFS. CARL RUMPFF, Aprath, near Elberfeld, Prussia, Germany. Filed Feb. 18, 1882. (Specimens.)

Claim.—The brown coloring-matter formed by the reaction of nitrous acid upon the salts of the alphanaphthylaminesulphonic acid in neutral or very slightly acid solution.

257,243. MANUFACTURE OF BROWN DYE-STUFFS. CARL RUMPFF, Aprath, near Elberfeld, Prussia, Germany. Filed Feb. 18, 1882. (Specimens.)

Claim.—The brown coloring-matter formed by the reaction of nitrous acid upon the salts of the betanaphthylaminesulphonic acid in neutral or very slightly acid solution.

257,244. CAR-COUPLING. ADOLPH SCHULENBURG, San Francisco, Cal. Filed Jan. 26, 1882. (No model.)



Claim.—1. A coupling device for cars, consisting of the centrally-pivoted arm D, supported from one car and having the T or hammer headed hook or pin B hinged to it, in combination with the perforated plate C, projecting from the opposite car, substantially as and for the purpose herein described.

2. The centrally-pivoted arm D, having the hammer-headed coupling-pin B B' pivoted to it, and the spring E, in combination with the hinged swinging latch F, depending from the coupler, and the perforated coupling-plate C from the opposite car, substantially as herein described.

3. A coupling device for cars, consisting of the centrally-pivoted weighted arm D, having the hammer-headed coupling-pin B B' hinged to it, the spring E, and the swinging latch F, in combination with the vertically-moving rod H, connected with the pin B by a chain, G, the perforated slotted guide J, and the pin I, substantially as herein described.

4. The |—shaped coupler B B, hinged to the side of the tilting arm D, the swinging latch F, the vertically-moving rod H, connected with the pin or coupler B, the slotted guide J, and the pin I, in combination with the lever-arm *a*, projecting from the rod H, and the lever *b*, connected with the arm and sliding freely in its fulcrum, so that the rod H may be both raised and turned, substantially as herein described.

257,245. BOND, CHECK, OR OTHER SECURITY. JOHN SCOTT, Washington, D. C. Filed Dec. 12, 1881. (No specimens.)



Claim.—A bond or check having the series of numbers arranged radially in the different circles, from units upward, each set having one concentric line across the faces of the figures for each unit in the denomination printed diametrically across the face of the circle.

257,246. DEVICE FOR MOLDING CAST SCREWS. EDWARD W. SARGENT, Springfield, Mass. Filed Oct. 29, 1881. (No model.)

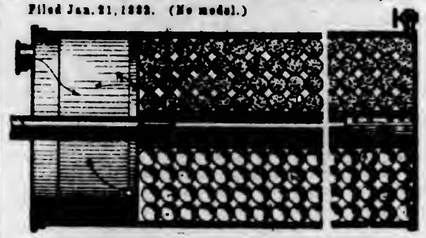


Claim.—1. The combination of guards F F F and screw-pattern A with half-pattern B, used in molding heads upon cast screws to prevent sand from dropping out of the mold, constructed and operating together in the manner and for the purpose described.

2. The combination of guards F F F, pattern-screw A, guiding-rod H, and nut J, constructed and operating together in the manner and for the purpose described.

3. In an apparatus employing, to mold screws, a pattern-screw of varying diameter, the thin circular guards F F F, of metal or other suitable material, constructed with or without projections upon their concave edges, and operating substantially as and for the purposes set forth.

257,247. CARBURETOR. IRA W. SHALER, Brooklyn, N. Y. Filed Jan. 21, 1882. (No model.)



Claim.—1. In combination with a carburetor, a porous absorbent packing consisting of a composition of peat and plaster-of-paris mixed and pressed into spheres, substantially as shown and described.

2. In a carburetor, the combination, substantially as shown, of an outlet-pipe, extending from near the bottom of the carburetor to and out of the top, with an inclosing perforated tube, H, extending through the absorbent chamber, an air-chamber, and shell provided with an inlet-pipe, substantially as set forth.

257,248. COMPOUND FOR TEMPERING STEEL. ALEXANDER H. SIEGFRIED, Selin's Grove, Pa. Filed Sept. 24, 1881. (No specimens.)

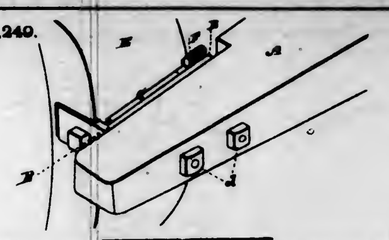
Brief.—Heats the iron to red heat, applies compound, reheats, and works to shape. Heats again to cherry red, applies compound, and then cools to harden.

Claim.—The compound for tempering steel, consisting of salt, sulphate of copper, soda-ash, sal-ammoniac, oxide of manganese, sulphate of iron, and nitrate of potassa, in substantially the proportions specified.

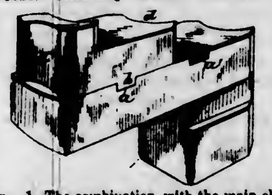
257,249. BRAKE-BLOCK. EDWARD G. SPENCER, Iowa Hill, Cal. Filed Feb. 21, 1882. (No model.)

Claim.—The combination and arrangement of the brake-beam A, sliding or adjustable clamp or jaw B, with its slots *b*, stationary clamp or jaw C, securing-bolts D D, with their nuts, brake-block E, with its transverse groove *e* and notched sides, and the separate clamping and adjusting bolt F, substantially as and for the purpose herein described.

257,249.



257,250. JAW FOR LATHE-CHUCKS. JOHN C. STEVENS, New Haven, Conn. Filed Aug. 10, 1881. (Model.)



Claim.—1. The combination, with the main chuck-jaw, having transverse grooves *a a'*, of a removable jaw provided on its under side with tenon *b* and adapted to be secured in either of said grooves, substantially as set forth.

2. The combination, with the main chuck-jaw, provided with two transverse grooves or mortises, of a double-faced removable jaw provided on its under side with a depending tenon, and a screw for securing the parts together, substantially as set forth.

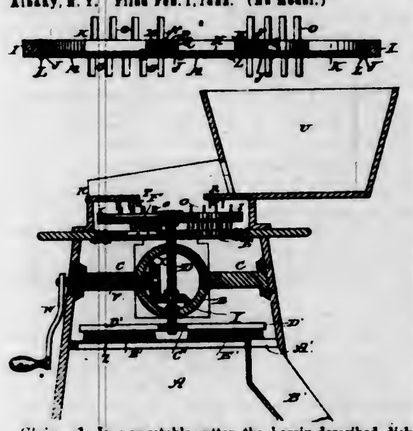
257,251. STAIR-CARPET FASTENER. CHARLES D. STONE, Brooklyn, N. Y. Filed Mar. 6, 1882. (No model.)



Claim.—1. In a carpet-fastener, the combination of a toothed or pointed device adapted to be forced through the carpet and into the steps with the plate, screw, and follower, substantially as and for the purpose specified.

2. The combination of the plate having a central longitudinal groove and triangular end pieces, the articulated toothed leaves or jaws, and the screw having the follower, substantially as and for the purpose set forth.

257,252. ROTARY VEGETABLE-CUTTER. DAVID STRASSER, Albany, N. Y. Filed Feb. 1, 1882. (No model.)



Claim.—1. In a vegetable-cutter, the herein-described disks E and F, having detachable perforated plates, as set forth.

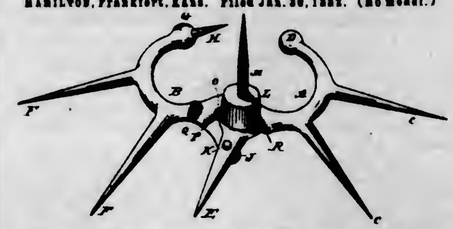
2. In a vegetable-cutter, the herein-described disks E and F, having detachable perforated plates and detachable cutter-bars, as set forth.

3. In a vegetable-cutter, the combination, with the rotary disk having detachable perforated plates and cutters, of the stationary cover having knives or cutters, and the stationary disk having detachable perforated plates and knives or cutters, as set forth.

4. In a vegetable-cutter, the combination, with the cutting apparatus, of a stationary sieve or screen and a revolving brush, arranged substantially as set forth.

5. As an improvement in vegetable-cutters, the combination of the casing A, the shaft D, carrying disk F and brush C' D' E', the disk E, cover R, sieve Z, hopper U, and chute B', all constructed, arranged, and operating substantially as and for the purpose herein set forth.

257,253. CALF-WEANER. ANDREW J. TAYLOR and MILO A. HAMILTON, Frankfort, Kans. Filed Jan. 30, 1882. (No model.)

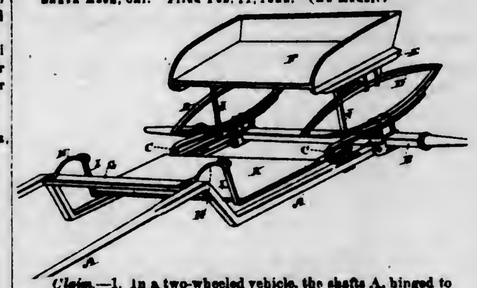


Claim.—1. The combination of the part A, having perforation O and segmental groove or recess P, with the hinged part B, having latch-pin M and lip Q, substantially as and for the purpose set forth.

2. In a calf-weaner, the combination, with the barbed part A, having stem E, of the barbed part B hinged to said stem, and having flange R, overlapping the corresponding portion of part A, substantially as and for the purpose set forth.

3. As an improvement in calf-weaners, the combination, with the part A, having barbs C, ball D, provided with recess I, stem E, perforation O, and groove P, of the hinged part B, having barbs F, ball G, provided with prong H, flattened barb J, spring latch-pin M, lip Q, and flange R, all substantially as herein shown and described, for the purpose specified.

257,254. TWO-WHEELED VEHICLE. SAMUEL S. THOMPSON, Santa Rosa, Cal. Filed Feb. 11, 1882. (No model.)



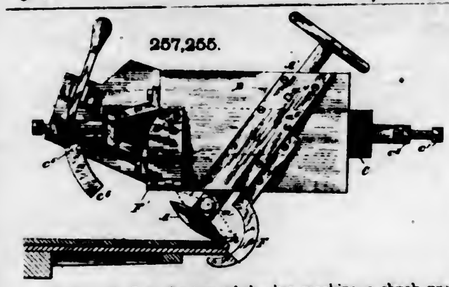
Claim.—1. In a two-wheeled vehicle, the shafts A, hinged to the axle, in combination with the seat-sustaining springs D, and the connecting-springs C, secured to the axle, and springs D, and to the shafts, substantially as and for the purpose herein described.

2. In a two-wheeled vehicle, the shafts A, having a cross-bar, G, and spring-arms H, in combination with the foot-rest-supporting straps I, hinged to the spring-arms, and straps J, secured to the body and hinged to strips I, substantially as and for the purpose herein described.

3. In a two-wheeled vehicle, the shafts A, hinged to the axle and seat-sustaining springs D, connected by supplementary springs C with the shafts, for the purpose described, in combination with the foot-board K, supported upon strips I, hinged to the spring-arms H and to the straps J, secured to the seat, substantially as and for the purpose herein described.

257,255. SHEET-METAL-SHAPING MACHINE. ISAAC VAN HAGEN, Chicago, Ill., assignor to the Adams & Westlake Manufacturing Company, same place. Filed Dec. 9, 1881. (No model.)

257,255.



Claim.—1. In a sheet-metal-shaping machine, a chuck provided with the rim *i*, in combination with the wheel A, frame B, and tool G, substantially as and for the purpose set forth.

2. In a sheet-metal-shaping machine, a chuck provided with the rim *i*, in combination with the wheel A, frame B, bed-plate C, and tool G, substantially as and for the purpose set forth.

3. In a sheet-metal-shaping machine, a chuck, in combination with the wheel A, screw-shaft A′ in line with the pivot of the wheel A, and the reciprocating frame B, substantially as and for the purpose set forth.

4. In a sheet-metal-shaping machine, a chuck, in combination with the wheel A, having a sharp edge at its periphery, substantially as shown, screw-shaft A′, frame B, and bed-plate C, having a pivot parallel with the plane of revolution of the wheel A, substantially as and for the purpose set forth.

5. In a sheet-metal-shaping machine, a chuck, in combination with the wheel A, screw-shaft A′ in line with the axis of wheel A, frame B, and bed-plate C, having a pivot parallel with the plane of revolution of the wheel A, substantially as and for the purpose set forth.

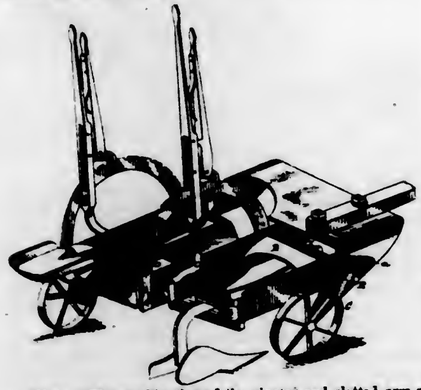
6. In a sheet-metal-shaping machine, a chuck, in combination with the wheel A, having a sharp edge at its periphery, substantially as shown, screw-shaft A′, and reciprocating frame B, substantially as and for the purpose set forth.

7. In a sheet-metal-shaping machine, a chuck, in combination with the wheel A, having a sharp edge at its periphery, substantially as shown, screw-shaft A′, frame B, and bed-plate C, substantially as and for the purpose set forth.

8. In a sheet-metal-shaping machine, a chuck, in combination with the wheel A, having a sharp edge at its periphery, substantially as shown, screw-shaft A′, frame B, and bed-plate C, substantially as and for the purpose set forth.

9. In a sheet-metal-shaping machine, a hinged rest, F′, substantially as and for the purpose set forth.

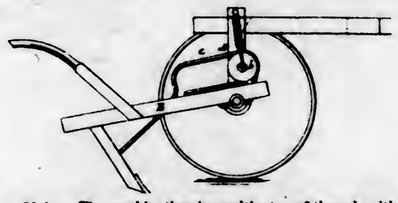
257,256. SULKY-PLOW. JAMES WARD, Handley, Tex. Filed Jan. 21, 1882. (No model.)



Claim.—The combination of the pivoted and slotted arm or hanger E, carrying furrow-wheel C, and the bolt I, passing through said slotted arm, and provided with an end nut, J, with the plow carriage or frame and the plow hanger or yoke hung on the bolt I, as and for the purpose set forth.

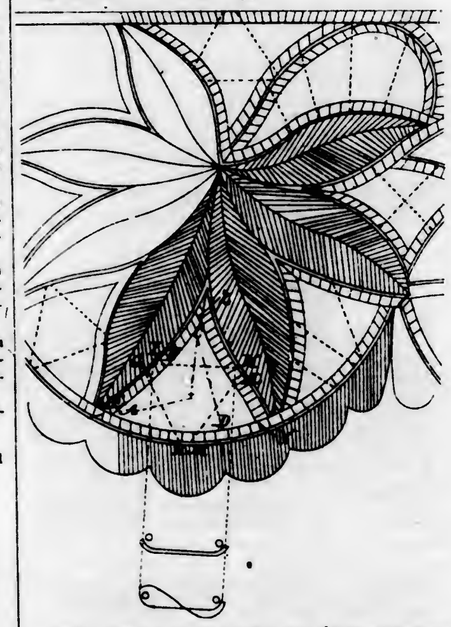
257,257. CULTIVATOR. ALANSON P. WEBBER, Saratoga, Ill. Filed Mar. 10, 1880. (No model.)

Brief.—A pulley attached to a spring and arranged to ride upon a longitudinal rod, and thus shift the lifting-point upon the plow-beam.



Claim.—The combination, in a cultivator, of the axle with the swinging shovel-beams B, the springs secured at their upper ends to the axle and at their lower ends provided with pulleys or rollers, and the rods *c*, secured to the shovel-beams and passing over the said rollers, said members being constructed and adapted for operation substantially as described.

257,258. EMBROIDERY. JAMES WIGHT, Arbon, assignor to Wetter Brothers, St. Gall, Switzerland. Filed Dec. 2, 1881. (No model.)

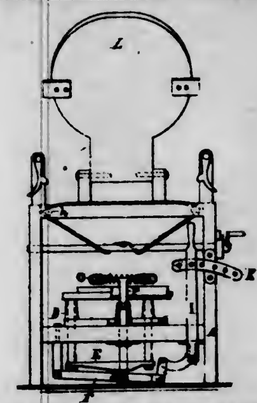


Claim.—The process of manufacturing embroidery consisting in the following steps: first, marking or indicating the outlines of a design on the body of the fabric; secondly, perforating the body of the fabric in a line or lines outside of said design and near some part thereof; thirdly, fastening to the fabric an auxiliary thread or threads extending across said line or lines of perforations to keep the fabric firm and even at the edges of the design; fourthly, in gathering into the outline of the design that part of the cloth or fabric which is between the outline thereof and the lines of perforations referred to; and, finally, in repeating these steps until all the material inside of these perforated lines is gathered into the design, and then removing the auxiliary threads, substantially as set forth.

257,259. MACHINE FOR SETTING UP BARRELS. HENRY WILDE, Newark, N. J. Filed Dec. 23, 1881. (No model.)

Claim.—1. In a barrel-raising machine provided with a gage-ring arranged to move vertically, as described, the combination, with the ring and its guiding-rods D, of means, as tripod E, levers F and I, and segment K, provided with holes *d* and suitable stop-pin, all for regulating the movement of the gage-ring, substantially as and for the purpose set forth.

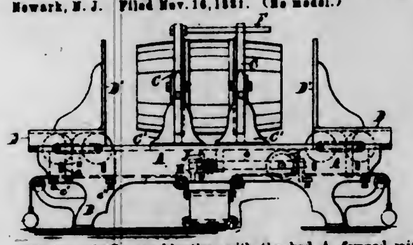
257,259.



2. In combination with a ring for setting-up staves, an internal annular spring arranged and operating substantially as described.

3. In combination with a bed-plate and gage-ring, operating substantially as described, the hinged face-plate L and automatic catches arranged and operating to lock the plate upon the top of the staves, substantially as and for the purpose set forth

257,260. BARREL-TRUSSING MACHINE. HENRY WILDE, Newark, N. J. Filed Nov. 16, 1881. (No model.)



Claim.—1. In combination with the bed A, formed with grooves *a*, and provided with mechanism for supporting and operating the truss-rings C, the squaring-plates D′, supported upon carriages D, fitted to the grooves *a* and mounted upon anti-friction rollers, as described, and the treadle *m*, straps *l*, and pulleys *n*, arranged and operating substantially as and for the purpose set forth.

2. The combination, with the squaring-plates D′ and carriages D, of the anti-friction rolls *g* and the adjustable tracks *h*, the carriages being fitted to grooves for guiding them in the bed or frame A, and the tracks being movably secured to the frame, substantially as and for the purpose set forth.

3. The combination, with the divided truss-rings C C, having a hinge at one side, of spring-catches operating to lock them automatically when closed, and the tie-bar F and counter-balance G, operating to support the upper halves of the rings automatically when opened, as herein shown and described.

257,261. SHOULDER-BRACE AND CORSET. CATHARINE A. WILLIAMSON, St. Louis, Mo. Filed Oct. 29, 1881. (Model.)



Claim.—1. The combination of the corset parts A A, the lacings B B, the flat elastic supports or stays E E, extending upward above and downward below the corset proper, and the elastic connection C, substantially as described.

2. The combination of the corset parts A A, the lacings B B, the flat elastic supports or stays E E, and the elastic connection C and inelastic connection D, said stays extending upward and downward, as described, and at each side of the spine, substantially as set forth.

3. The combination of the corset parts A A, lacings B B, flat elastic supports or stays E E, extending upward and downward, as described, elastic connection C, inelastic connection D, and the wholly or partially elastic arm-pieces F F, substantially as described

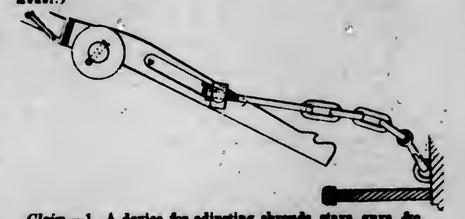
257,262. CARRIAGE-BOW. HENRY S. WING, Ashtabula, Ohio, assignor to Jennie A. Wing, same place. Filed Jan. 19, 1882. (No model.)



Claim.—1. The combination, with a spring-metal carriage-bow socket bent in an oval or any suitable form, with its side edges slightly separated, and a leather or any suitable covering the side edges of which are turned over the adjacent side edges of the socket, of a wedge or key adapted to be introduced between the adjacent edges of the socket and hold the covering in position.

2. The combination, with a spring-metal carriage-bow socket bent in the form shown, and a leather or any suitable covering the side edges of which are turned over the adjacent edges of the bow-socket, of a wedge adapted to be introduced between the said adjacent edges of the spring-metal socket and hold the covering in position, and curtain-buttons the shanks of which pass through one side of the socket and enter the wedge and hold the same in position.

257,263. DEVICE FOR SLACKENING AND TIGHTENING STAYS, GUYS, &c. JOHN B. WOOD, Brooklyn, N. Y., assignor to Mary Manross Wood, same place. Filed Mar. 24, 1882. (No model.)



Claim.—1. A device for adjusting shrouds, stays, guys, &c., consisting of two hinged levers, in combination with a slot and traveling cross-head, to which cross-head is fixed a clevis, substantially as and for the purpose shown and described.

2. In a device for adjusting shrouds, stays, guys, &c., the combination of two hinged levers with a pivoted shackle, substantially as and for the purpose shown and described.

3. In a device for adjusting shrouds, stays, guys, &c., a sliding cross-head, in combination with two hinged levers, substantially as and for the purpose shown and described.

257,264. DENTAL PLUGGER. HANK ABBOTT, New York, N. Y., assignor to the S. S. White Dental Manufacturing Company, Philadelphia, Pa. Filed Mar. 21, 1882. (No model.)

Claim.—1. The combination, substantially as hereinbefore set forth, of a hammer to give blows upon a tool-holder, with an elliptical spring formed by uniting the ends of bow or bent springs to central blocks or hubs acting upon said hammer.

2. The combination, substantially as hereinbefore set forth, of a hammer to give blows upon a tool-holder, an impelling-spring acting upon said hammer to impart said blow, and an interposed connecting-block between said hammer and said spring.

3. The combination, substantially as hereinbefore set forth, of a hammer, an elliptical spring composed in part of central hubs or blocks, one of which acts upon said hammer, and a screw for adjusting the power of said spring, working in the other of said hubs, whereby the force of the blows administered by the hammer may be regulated.

257,264.



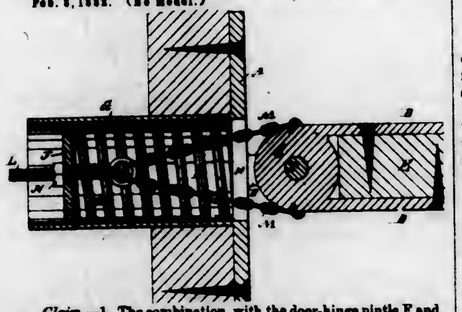
4. The combination, substantially as hereinbefore set forth, of a hammer, a spring acting upon said hammer, a movable hub or block to vary the power of said spring, and a turning-screw working in said hub or block to move it relatively to said screw.

5. The combination, substantially as hereinbefore set forth, of the casing, the bearing-guides of said casing, and the reciprocating hammer guided and supported in said casing by the said bearing-guides, whereby the friction of the hammer in the casing is reduced.

6. The combination, substantially as hereinbefore set forth, of the casing, the tool-holder, the hammer to deliver blows upon said holder, the impelling-spring of said hammer, the bearing-guides upon which the hammer reciprocates so as to have great freedom of reciprocation, and the catch connected with said tool-holder and acting upon said hammer.

7. The combination, substantially as hereinbefore set forth, of the casing-sections, the tool-holder fitted to move endwise in one of said sections, and provided with a longitudinal channel, and a screw passing through said casing-sections to unite them and into the channel of the tool-holder to form a guide for said holder and prevent its rotation in the casing.

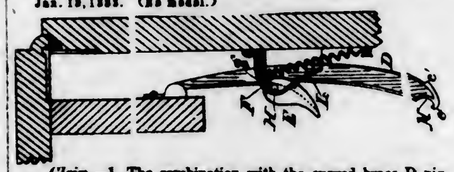
257,265. SPRING-HINGE. EZRA ALE, Altoona, Pa. Filed Feb. 8, 1882. (No model.)



Claim.—1. The combination, with the door-hinge pintle F and hinge-loop C, of the chains M M, one extending from each side of loop C to the ring on the end of a spring-retracted bolt, as shown and described.

2. In a spring-hinge, the combination, with the hinge-plates A D, of the casing G, the spring K, the plate J, the screw-rod L, the nut N, and the chains M, substantially as herein shown and described, and for the purpose set forth.

257,266. TABLE-LEAF SUPPORT. JOSEPH W. ALLISON, Dayton, Ohio, assignor to Charles P. Snyder, same place. Filed Jan. 19, 1882. (No model.)

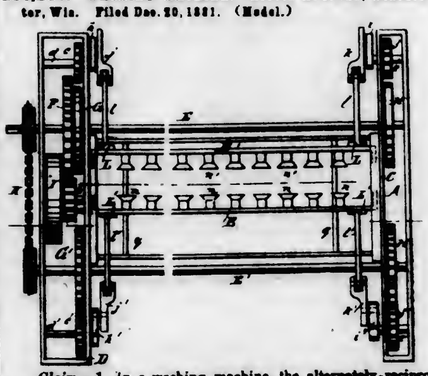


Claim.—1. The combination, with the curved brace D, pivoted at one end to the leg-frame of the table and provided at its outer end with a recess, N, of the bracket F, secured to the under side of the hinged table-leaf, and the depending latch E, having its upper end pivoted in the said bracket beneath the curved brace and serving to support the latter in its movements, and also to engage the notch in the outer end thereof to lock the brace in position, substantially as shown and described.

2. The combination, with the curved brace D, pivoted at its inner end to the leg-frame of the table and provided at its outer end with the recess N, hook *e*, and shoulder *e'*, of the bracket F, secured to the hinged table-leaf and provided with the projection or lug *d*, and the depending latch E, having its upper end pivoted to the bracket beneath the curved brace, and serving to support the latter in its movements and to engage the recess and hook thereof to lock said brace in position, substantially as described.

3. The combination, with the curved brace D, pivoted to the leg-frame of the table and provided at its outer end with a recess, N, of the bracket F, secured to the hinged table-leaf, the depending latch E, having its upper end pivoted to the bracket, and provided with an arm, *g*, and a spring, L, connected at one end to the said arm and at its other end to the table-leaf, said parts being arranged to operate substantially as described.

257,267. WASHING-MACHINE. KITTIL ARNESEN, Winchester, Wis. Filed Dec. 20, 1881. (Model.)



Claim.—1. In a washing-machine, the alternately-reciprocating boards B B', in combination with the suds-box A and means for reciprocating said boards, substantially as and for the purpose set forth.

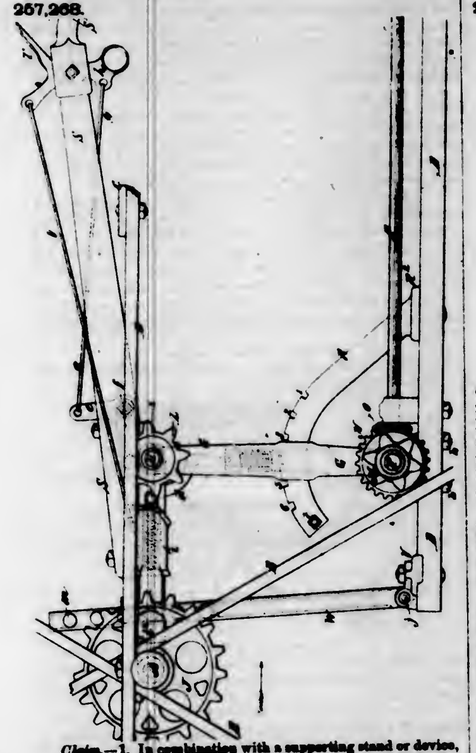
2. In a washing-machine, the shafts E E', provided with the mutilated cog-wheels G G' and H H', in combination with the pinions *e e'* and *f f'*, shafts *d d'* and *c c'*, cranks *h h'* and *i i'*, connecting-rods *j j'* and *k k'*, slotted angle-plates L L', and the boards B B', the shafts E E' being connected by the endless chain K, substantially as described.

3. In a washing-machine, the alternately-reciprocating boards B B', provided with the head-pins *n n'* and perforations *p*, in combination with the suds-box A and means for reciprocating the said boards, substantially as and for the purpose set forth.

4. In a washing-machine, the alternately-reciprocating boards B B', provided with the slotted angle-plates L and the grooves *r* in their lower edges, in combination with the suds-box A, provided with the rails *q* in its bottom, the shafts E E', and means for reciprocating said boards, substantially as set forth.

257,268. HARVESTER. JOHN P. APPLEBY, Minneapolis, Minn., Assignor to the Minneapolis Harvester Works, of Minnesota. Filed Feb. 8, 1882. (No model.)

257,268.



Claim.—1. In combination with a supporting stand or device, G, hinged at its lower end, as described, and a frame hinged at its rearmost part to the upper end of said device G and carrying at its forward end the spindle or arbor of the reel, belt-wheels J, K, L, and M, arranged in the manner specified, and a hand-lever, S, adapted to move the said stand G about its pivotal point of support, and also to move the said frame about its pivotal connection with said stand.

2. In combination with a supporting-stand, G, hinged at its lower end, and the reel-carrying frame hinged to the upper end of said stand, as specified, the hand-lever S and a locking mechanism operating to fasten the stand G in different positions, all substantially in the manner set forth.

3. In combination with the hinged stand G, the reel-carrying frame hinged thereto, and the hand-lever S, a bar, W, hinged at its lower end forward of the stand G, and means for effecting an interlocking of said bar with the forward end of said reel-carrying frame, all substantially in the manner and for the purpose set forth.

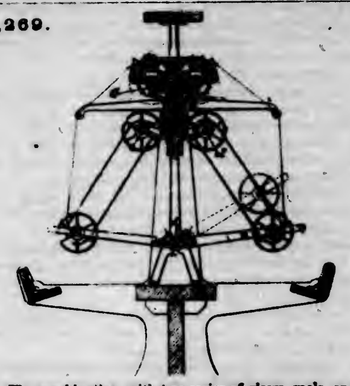
4. In combination with the hinged stand G, the reel-carrying frame, and the hand-lever, a spring latch-bolt arranged in stand G and adapted to engage with a stationary device, R, a lifter device, *d*, angle-lever *c*, rod *g*, and trigger A, the whole arranged to operate substantially as set forth.

5. In combination with the hinged reel-carrying frame and hand-lever S, a supporting-bar, W, adapted to engage at one side with a boss on said frame and at the other side with a spring-bolt device, *i*, provided with a rod extending back to within close proximity to the handle of said lever, all substantially as and for the purpose set forth.

257,269. MACHINE FOR WINDING SILK AND OTHER FIBROUS MATERIALS. JOHN E. ATWOOD and EUGENE ATWOOD, Stonington, Conn. Filed Mar. 8, 1881. (No model.)

Claim.—1. The combination, with the risers or reels, of independent adjusting-levers containing or carrying the bearings for the same, one or more stationary shafts upon which said levers may be turned, and devices for securing said levers to said shaft or shafts, so that they will be held in fixed positions after their adjustment by frictional engagement with said shaft or shafts, substantially as and for the purpose specified.

257,269.



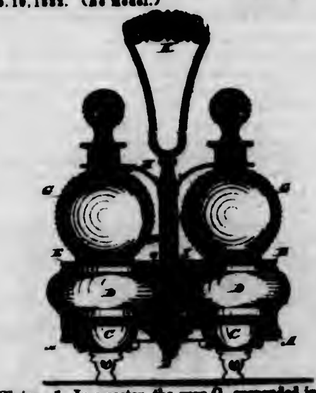
2. The combination, with two series of risers, reels, or swifts on opposite sides of the machine, of a single stationary shaft arranged between said series of risers, reels, or swifts, two series of levers projecting in opposite directions from said shaft and carrying said risers, reels, or swifts, and devices for securing said levers to said shaft, so that they may be turned thereon, and yet will be held in fixed positions after their adjustment by their frictional engagement with the shaft, substantially as specified.

3. The combination, with a riser or reel and a lever for supporting and adjusting the same, of a stationary shaft for supporting said lever, and a box and adjustable cap on the fulcrum end of said lever for obtaining an adjustable hold of the said lever on the said shaft, substantially as specified.

4. The combination, with a winding-bobbin provided with a spindle-head and a driving-wheel for operating on said spindle-head to drive the bobbin, of a sector-faced lever arranged opposite that portion of the bobbin on which material is wound, and adapted to be moved by the friction upon it of the material on the bobbin for the purpose of lifting the bobbin and taking its spindle-head out of contact with the driving-wheel when sufficient material is wound upon it, substantially as specified.

5. The combination, with the winding-bobbin provided with a spindle and the friction-wheel for driving the said spindle and bobbin, of the lever G, constructed at its free end, against which the material on the bobbin bears, with an eccentric forward portion, *m*, terminating in a shoulder, *S*, and a reduced after portion, *n*, whereby the bobbin, when filled, is stopped, and after its stoppage the lever is held by it, substantially as described.

257,270. CASTER. SETH W. BABBITT, Meriden, Conn. Filed Feb. 10, 1882. (No model.)



Claim.—1. In a caster, the cups C, suspended in the base A of the caster-frame, substantially as shown, and for the purpose specified.

2. In a caster, the boxes D, secured to a sleeve and revoluble on the standard B, and serving as a cover for the cups C, arranged substantially as and for the purpose described.

3. In a caster, the boxes D, secured to a sleeve revolving on the standard B, and provided with a lug, *b*, for engaging with a

notched projection, *d*, on the base A, substantially as set forth.

4. In a caster, the boxes D, secured to a sleeve, F, revolving on the standard B, in combination with the suspended cups C in the base A, all arranged substantially as shown, and for the purpose set forth.

5. In a caster, the revolving platform E, for supporting the bottles, and provided with a lug, *e*, for engaging with a notch in the collar I on the standard B, substantially as specified.

6. In a caster, a spring-holder, H, open at its outer ends, and carved to securely hold the bottles by clamping around their necks, substantially as shown, and for the purpose described.

7. In a caster, the combination of the revolving boxes with the revolving platform for supporting the bottles, and serving as a cover for the boxes, substantially as specified.

8. In a caster, the combination of the suspended cups in the base A with the revolving boxes D and the revolving platform E, arranged substantially as shown, and for the purposes herein set forth.

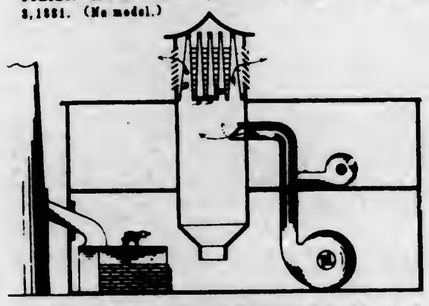
9. In a caster, the revolving platform secured to a sleeve, F, in combination with the spring bottle-holder, arranged substantially as shown, and for the purpose specified.

10. In a caster, the revolving platform secured to a sleeve, F, and provided with means for holding it in position, in combination with the spring bottle-holder H, open at its outer ends, and serving to hold bottles by clamping around their necks, substantially as herein set forth.

11. In a caster, a revolving platform supporting the bottles held and clamped by spring bottle-holders, in combination with the revolving boxes and the cups suspended in the base, substantially as shown, and for the purpose described.

12. A caster consisting of a base, A, standard B, cups C, revolving boxes D, and revolving table E, for supporting bottles G, held and clamped by spring bottle-holders H, and a handle, K, all arranged substantially as specified.

257,271. DUST-ARRESTER FOR WOOD-WORKING FACTORIES. ABSALOM BACKUS, Jr., Detroit, Mich. Filed Sept. 3, 1881. (No model.)



Claim.—The combination, with a house or building having inclosed compartments or rooms, of a dust-tower extending from the interior to the outside of said building, and having an inward extension into one or more rooms thereof, a screen of loose-meshed fabric arranged across the interior of said tower, one or more blowers arranged in a room or rooms of the building and provided with openings or an opening communicating with the interior of said room or rooms, and a discharge pipe or pipes leading from the said blower or blowers to the dust-tower below the screen therein, said tower having an opening or openings at or near its top, substantially as described.

257,272. LAMP-BURNER. ALPHEUS L. BAKER, Bellaire, Ohio, assignor to himself, Benjamin F. Cockayne, and William T. Rafer, all of same place. Filed Dec. 8, 1881. (No model.)



Claim.—1. In a lamp-burner, the combination of a wick-tube and a deflector with outwardly-corrugated corners, the deflector being adapted to touch only at its corners the inner surface of the burner-cone, whereby separate and independent air-currents may pass over the upper sides of said deflector between its corrugated corners to feed combustion of the flame, substantially as set forth.

2. In a lamp-burner, the combination of a wick-tube and a deflector with outwardly-corrugated corners, as described, the deflector being constructed and arranged to rest only at its sides upon the base of the wick-tube, whereby separate and independent air-currents may pass up the corrugated corners between said wick-tube and deflector, as and for the purposes set forth.

3. In a lamp-burner, the combination of the wick-tube, its base, and the burner-cone with a deflector having outwardly-corrugated corners, said deflector resting at its sides upon the base of the wick-tube and touching the burner-cone at each of its corrugated corners, whereby independent air-currents pass up within the corrugated corners and other independent air-currents pass over the top of the deflector between its corners and mutually assist in maintaining an equilibrium of air-supply, substantially as described.

257,273. RIDING-SADDLE. JOSEPH BASELER, San José, Cal. Filed Mar. 10, 1881. (No model.)



Claim.—In a cushion for a riding-saddle, the combination of the springs *a*, secured by metallic base-supports *c*, and bottom *d'*, cushion A, and cover *d*, substantially as shown, and for the purpose described.

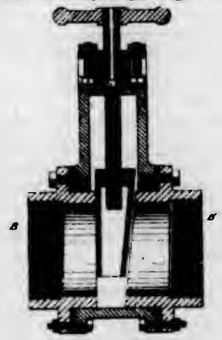
257,274. EXTENSION-TABLE. NICKLAS BAUER, Springfield, Ohio. Filed Nov. 26, 1881. (No model.)



Claim.—An elastic tenon or tongue for the slide-bars of an extension-table, constructed of a single piece of hickory or other suitable material, provided with a spring, H, said spring being constructed by a saw-cut, G, extending across the tongue near its narrowest point and backward from one end a suitable distance, and held down by a screw, I, substantially as shown and described.

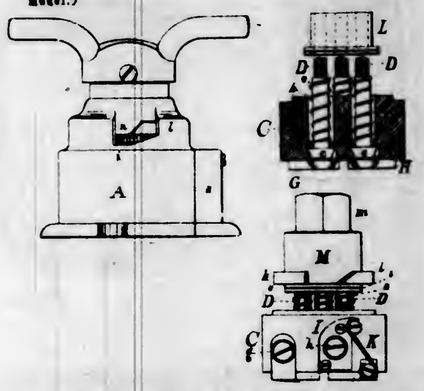
257,275. STOP-VALVE. RICHARD BEAUMONT, Kankakee, Ill. Filed Apr. 5, 1881. (Model.)

Brief.—The seating-surfaces for the valve are on bells B, which may be removed easily for grinding, &c



Claim.—The valve described, consisting of the chambered case C, having a horizontal passage through the same for the reception of the bells B, and in combination with said bells, fixed, flanged, and secured to the case, all substantially in the manner and for the purposes set forth.

257,276. SWITCH FOR ELECTRIC-LIGHT CIRCUITS. SIGMUND BERGMANN, New York, N. Y. Filed Feb. 25, 1882. (No model.)



Claim.—1. In switches for electric-light circuits, the combination, with the reciprocating circuit-controlling device, of a key-block adapted to be revolved continuously in one direction, substantially as and for the purpose set forth.

2. In switches for electric-light circuits, the combination, with the reciprocating circuit-controlling device, of a key-block adapted to be revolved continuously for giving movement in one direction and a spring or springs for moving such device in the other direction, substantially as set forth.

3. In switches for electric-light circuits, the combination, with suitable contact-plates arranged in the same circuit, of two or more split bolts and means for moving such bolts into and out of contact with the plates simultaneously, substantially as set forth.

4. In switches for electric-light circuits, the combination, with one or more circuit-controlling bolts retracted by a spring or springs, of the cap of insulating material and the key-block turning on such cap, substantially as set forth.

5. In switches for electric-light circuits, the combination, with beveled contact-plates, of a split circuit-controlling bolt, having beveled head withdrawn wholly away from such plates in breaking circuit, substantially as set forth.

6. In switches for electric-light circuits, the combination, with the inclosing-case having inclines *n n*, of the key-block M, having inclines *k l*, the insulating-block C, carrying contact-plates and binding-screws, the split circuit-controlling bolts D, retracted by springs *e*, and the insulating-cap I, substantially as set forth.

7. In switches for electric-light circuits, the combination, with case A, containing circuit-controlling device, of the removable side plate, *a*, for giving access to the connections, substantially as set forth.

8. In switches for electric-light circuits, the combination, with the insulating-block C, of the binding-screws *g h*, the safety-catch and contact-plates arranged in circuit between such binding-screws, and the circuit-controlling device composed of two or more split bolts, substantially as set forth.

9. In switches for electric-light circuits, the case A, having removable side plate, *a*, in combination with insulating-block C, carrying contact-plates and circuit-controlling bolts, and the binding-screws *g h* and safety-catch K, located on the side of such block next to the removable plate, substantially as set forth.

257,277. SOCKET FOR ELECTRIC LAMPS. SIGMUND BERGMANN, New York, N. Y. Filed Feb. 25, 1882. (No model.)



Claim.—1. An electric socket having two terminals or contacts composed, one of a plate located in the bottom of the socket against which a terminal on the end of the entering base or plug impinges, and the other of a horizontal screw-ring or similar device located between the bottom plate and the mouth of the socket, with which ring or device engages a similar ring or device on the entering base or plug, so as to force the end terminal of the base or plug upon the bottom plate of the socket and compress such base or plug between its terminals, substantially as set forth.

2. In an electric socket, the combination, with the body of insulating material, of a plate in the bottom of the socket, and a horizontal screw-ring located between the bottom plate and the mouth of the socket, said plate and ring engaging opposite parts on an entering base or plug, and serving to compress the base or plug between the terminals carried by it, substantially as set forth.

3. In an electric socket, the combination of the flanged metal ring, the insulating-washer, and the metal plate secured within the socket, substantially as set forth.

257,278. METHOD OF WELTING OR HEMMING FABRICS. JOHN BIGELOW, Philadelphia, Pa. Filed Feb. 27, 1882. (No model.)



Claim.—1. The method herein described for welting or hemming fabrics, which consists in folding the fabric back on itself, as shown, uniting the same by a line of stitching, which passes at each stitch or at each alternate stitch through the material and a bend or fold of the same, and simultaneously with the sewing trimming off the surplus fabric close to the line of the seam, substantially as set forth.

2. The method herein described for welting or hemming fabrics, which consists in folding the fabric back on itself, as shown, uniting the same by a line of stitching, which passes through the material and a bend or fold of the same, and trimming off the surplus fabric close to the line of the seam, substantially as shown and described.

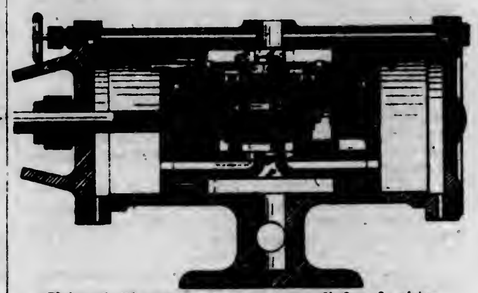
257,279. FELLY-PLATE. JOHN B. BLATT, Reading, Pa. Filed Mar. 14, 1882. (Model.)



Claim.—1. As an improved article of manufacture, the spring felly-plate herein described and shown, curved in the direction of its length, and concaved transversely to correspond to the circle and convexity of the felly and converging ends, with bolt or rivet holes, for the purpose set forth.

2. The combination and arrangement, in a vehicle-wheel, of the spring felly-plate curved to suit the circle and convexity of the felly, and connected at the ends to the felly and tire by means of bolts and nuts or rivets located near the spokes, as shown and described.

257,280. AUTOMATIC STEAM-VALVE. JAMES H. BLESSING, Albany, N. Y. Filed Mar. 6, 1882. (No model.)



Claim.—1. The combination, in a steam-cylinder, of a piston, a main valve located within said piston and carried by it, and

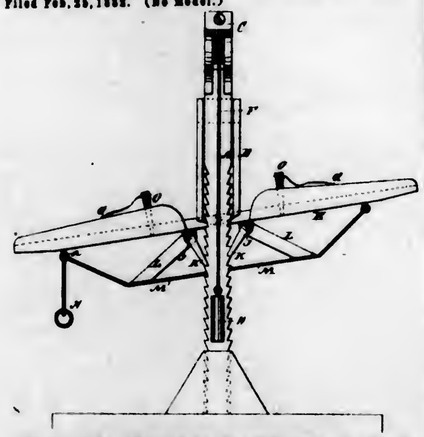
serving to operate said piston, and an auxiliary valve, also carried by and moving with said piston, which valve serves to operate the main valve, substantially as shown and described.

2. The combination, in a steam-cylinder, of a piston, an interior auxiliary piston operating a main valve carried by said piston, and an auxiliary valve located in the main piston, serving to operate the auxiliary piston, substantially as shown and described.

3. The combination, in a steam-cylinder provided with a steam-inlet above and an exhaust-outlet below, of a main piston carrying a steam-valve operating said piston, and arranged at the bottom of said piston, an auxiliary piston for operating the main valve, an auxiliary valve for operating said auxiliary piston, and the steam and exhaust passages passing around or through the main piston for conveying the steam from the steam-inlet to the steam-outlet, substantially as shown and described.

4. The combination, in a steam-cylinder, of a main piston carrying a slide-valve for operating itself, an interior auxiliary piston located centrally with relation to the axis of the main piston, and an auxiliary valve for operating the auxiliary piston, and itself carried by the main piston, substantially as shown and described.

257,281. LIFTING DEVICE. ADAM BURNS, Grand Rapids, Mich., assignor of one-half to John J. A. Shultz, same place. Filed Feb. 25, 1882. (No model.)



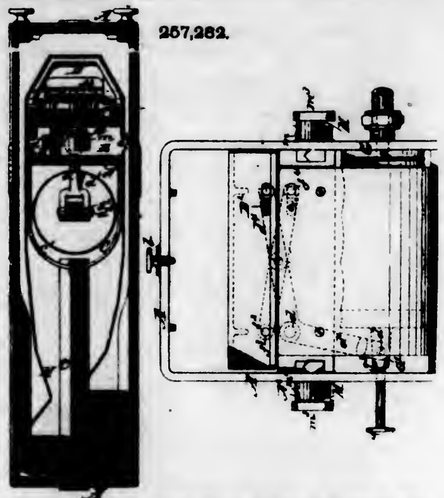
Claim.—1. In a lifting device, the combination, with the rack-standards A, of the rocking platform E, the ropes or chains F, the counter-weights H, and the pawls K on the frame E, substantially as herein shown and described, and for the purpose set forth.

2. In a lifting device, the combination, with the rack-standards A, of the guide boxes or slides D, the rocking platform E, the pawls K, the ropes or chains F, and the counter-weights H, substantially as herein shown and described, and for the purpose set forth.

3. In a lifting device, the combination, with the rack-standards A, of the rocking platform E, the shafts J, provided with pawl-arms K and with arms L, and of the strap or rope M, attached to the platform E and resting against the ends of the arms L, substantially as herein shown and described, and for the purpose set forth.

4. In a lifting device, the combination, with the rack-standards A, of the rocking platform E, provided with a series of apertures, *d*, the pawls K, and the pegs O, substantially as herein shown and described, and for the purpose set forth.

257,282. STATION-INDICATOR. EDWD. S. BOUTON, Bridgeport, Conn. Filed Sept. 29, 1881. (No model.)

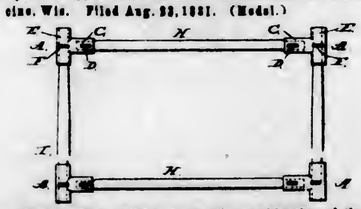


Claim.—1. In a station-indicator or similar instrument, the combination, substantially as before set forth, of a card-elevator, a vacuum or pressure cylinder, a lever connected to the piston or piston-rod of said cylinder, and lazy-tongs connecting such lever with the card-elevator.

2. In a station-indicator or similar instrument, the combination, substantially as before set forth, of a series of hinged cards and the spring card-stops E E', constructed with inclines at their lower sides and with square shoulders above, so as to permit the ascent but prevent the descent of a card.

3. In a station-indicator or similar instrument, the combination, with a series of hinged cards, of the card-stops E E', controlled in position by eccentric-pins *m*, operated by shafts M and thumb-screws *m'*, substantially as shown and described.

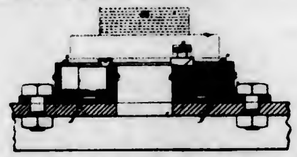
257,283. QUILTING-FRAME. CHRISTOPHER C. BRANDT, Racine, Wis. Filed Aug. 22, 1881. (Model.)



Claim.—In a quilting-frame, the combination of the legs G, winding-rails H, and adjusting-rails I, with the corner-brackets A, composed of the sockets B and C, sleeve E, and set-screws D and F, substantially as and for the purposes set forth.

257,284. MACHINERY OR APPARATUS FOR SPINNING AND DOUBLING YARN OR THREAD. THOMAS BRIGGS, Manchester, County of Lancaster, England. Filed Nov. 17, 1881. (No model.)

Brief.—Upon the upper side of a disk attached to the under side of a bobbin, said disk revolving within a circular box, are cast four radial arms, forming spaces, in which weights are loosely inserted, which, by reason of the centrifugal force imparted thereto by the rapid revolution of the said bobbin, press against the side of the box, thereby producing the drag.



Claim.—The combination of the rail of a spinning or doubling machine and a box carried thereby with a disk or boss therein adapted to be connected to the bobbin, and carrying centrifugal friction devices bearing against the wall of said box as the bobbin is rotated, all substantially as set forth.

257,285. ARTIST'S BOX. WILLIAM H. BROWNELL, Brooklyn, N. Y. Filed Mar. 11, 1882. (No model.)

Claim.—1. The box-cover containing pad-holding flanges *k l*, the spring-catch *n*, and the box A, the latter adapted to receive the palette beneath flanges *k l*, separating the palette and pad, as described.

2. The box A, formed with compartments, and with the projecting flanges *k l* on the body and cover to receive and retain the palette, substantially as described.

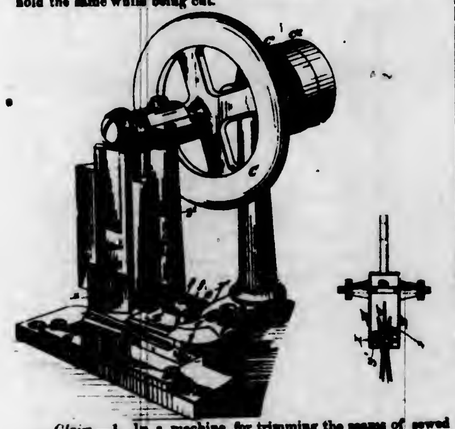


3. The double sketching-pad C, combined with a cover, *h*, having supports *m* and the spring-catch *n*, as and for the purpose specified.

4. The combination of box A, provided with projections *o o* and hooks *p*, the cover *h*, provided with hooks *q*, and the elastic bands *r*, substantially as described, and for the purpose of receiving and retaining the sketching-pad.

257,286. MACHINE FOR TRIMMING THE SEAMS OF GARMENTS, &c. NORMAN H. BRUCH, West Troy, N. Y. Filed Mar. 29, 1882. (No model.)

Brief.—A guide passes the article to be trimmed to the knives. A centering-guide fits the seam and acts in conjunction with the retaining-guide to guide the article to be trimmed to the knives and hold the same while being cut.



Claim.—1. In a machine for trimming the seams of sewed articles, a retaining-guide adapted to hold and direct the article to be trimmed to the cutting-knives, and composed of a pair of spring plates or leaves, with an intermediate space for receiving the seam, substantially as described.

2. In a machine for trimming the seams of sewed articles, the retaining-guide E, provided with the lip I, extending inwardly from its front edges, so as to leave a space between the upper and lower walls of the guide and the said lips for receiving the curled loose edges of the sewed article, substantially as described.

3. In a machine for trimming the seams of sewed articles, the retaining-guide E, located in position to direct the article to be trimmed to the knives, and formed with its inner walls converging toward the knives, substantially as described.

4. In a machine for trimming the seams of sewed articles, the retaining-guide E, located and adapted to direct the article to be trimmed to the knives, and comprising a pair of spring-leaves with a screw-threaded rod passing through the said leaves, and the tightening-nuts fitted upon said rod for the purpose of contracting the guide when desired, substantially as described.

5. In a machine for trimming the seams of sewed articles, a spring centering-guide, J, located within the retaining-guide and adapted to enter between the loose portions of the seam, substantially as described.

6. The combination, in a machine for trimming seams, of the retaining-guide H, having the inwardly-projecting lips I, with centering-guide J, having a wedge-shaped front edge and located within the retaining-guide, substantially as described.

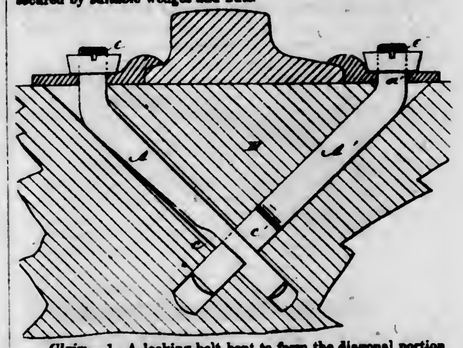
7. The combination, in a machine for trimming seams, of a guide for directing the article to be trimmed to the knives, with the centering-guide located within the retaining-guide, and composed of a spring-plate, *f'*, with a flexible metal strip bent into V shape and secured to said plate to form the wedge-shaped front edge of the guide, substantially as described.

8. The combination, in a machine for trimming the seams of sewed articles, of the reciprocating knife having an inclined cutting-edge, with the spring centering-guide J extended slightly in the path of the knife, whereby the article that is being trimmed will be caught and held between the guide and the knife during a portion of the movements of the latter, substantially as described.

9. The combination, in a machine for trimming the seams of sewed articles, of the knives, with the horizontally-adjustable retaining-guide E, and the adjustable centering-guide J, located within the retaining-guide, substantially as described.

257,287. LOCKING-BOLT. THOMAS J. BUSH, Lexington, Ky. Filed Sept. 14, 1881. (No model.)

Brief.—The locking-bolt is bent to form a diagonal, having a neck at its upper end and a notch at its lower end. The bolts are secured by suitable wedges and nuts.

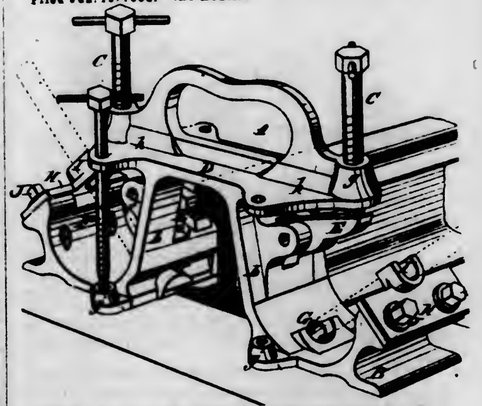


Claim.—1. A locking-bolt bent to form the diagonal portion *a* and the neck *a'*, and formed with a notch near its lower end, substantially as and for the purposes set forth.

2. The bent bolt A, formed with the notch *c*, in combination with the bent bolt A', formed with the notch *c'*, substantially as and for the purposes set forth.

3. The bent bolts A and A', formed with the notches *c* and *c'*, in combination with suitable wedges or nuts for tightening the bolts, substantially as and for the purposes set forth.

257,288. BORING-GAGE. THOMAS J. BUSH, Lexington, Ky. Filed Jan. 12, 1882. (No model.)



Claim.—1. A gage for boring intersecting diagonal holes, consisting of a suitable frame adapted to be secured upon the object to be bored, and formed with inclined passage rests or supports for the tool, substantially as described.

2. The frame A of the gage, provided with the hinged jaws E E, substantially as and for the purposes set forth.

3. The combination, with the frame A, of the screw-rods F, substantially as and for the purposes set forth.

4. The combination, with the frame A, formed with the passages G, of the adjustable rests or plates H, substantially as and for the purposes set forth.

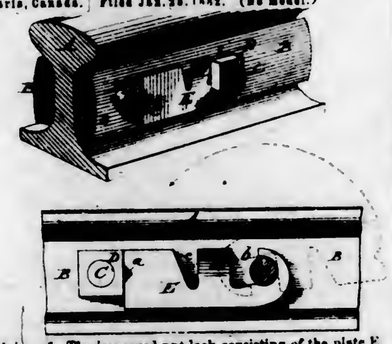
5. The gage for boring diagonal intersecting holes, made substantially as herein shown and described, consisting of the frame A, formed with the elevated table D, and the passages G, in combination with rests or plates H, jaws E, and the screw-rods C C, substantially as and for the purposes set forth.

257,289. BUTTON-HOLE CUTTER. CHARLES C. B. CARLTON and HERMAN W. CLAPP, Springfield, Mass. Filed Mar. 6, 1882. (Model.)



Claim.—The combination, with the bifurcated shank C, having apertured and recessed branch *d*, the cutter-plate A, having a series of holes, *i*, and the pivot-screw *e*, of the flat spring F, having the end stud, *f*, and the slotted obtuse-angled lever H, having the thumb-piece *h*, as and for the purpose specified.

257,290. NUT-LOCK. SAMUEL E. ST. O. CHAPLEAU, Ottawa, Ontario, Canada. Filed Jan. 28, 1882. (No model.)



Claim.—1. The improved nut-lock consisting of the plate E, having the hook-shaped end, and the tongue *d*.

2. The plate E, constructed with the notches or openings *a*, *b*, and *c* and the tongue *d*, as described and shown.

257,291. BRAKE-LOCK. GRENVILLE E. CLARKE, Racine, Wis. Filed Jan. 16, 1882. (No model.)



Claim.—1. The cylindrical base-plate or casing B, having exterior lugs, *a*, interior hub, *b*, and ratchet-teeth *c*, substantially as set forth.

2. The ratchet-plate or lock-plate C, having an oblong center, *d*, curved slot *e*, beveled slot *f*, and stop or shoulder *g*, and provided with a set or series of ratchet-teeth, *c'*, substantially as shown and set forth.

3. The tumbler D, consisting of a curved plate having the beveled boss *h*, beveled rib *i*, and concave shoulder *k*, substantially as set forth.

4. The face-plate E, cast with the extension E', having guide-plates *o* and *p*, eye *n* for the attachment of the brake-rod, and flanges or ribs *m m*, intersecting the annular rim or flange *q*, and provided with the slot or aperture *r*, studs *s t*, and central tubular hub or pintle, *l*, substantially as shown and set forth.

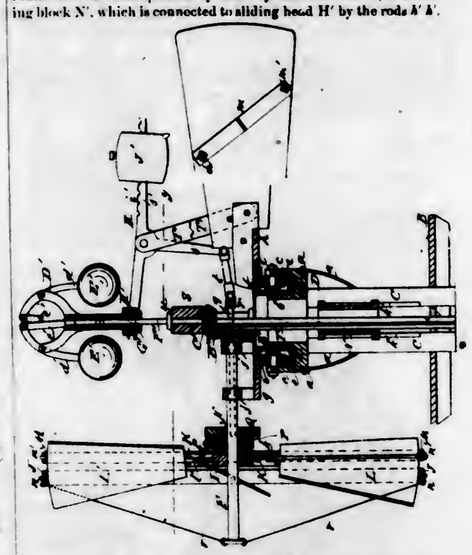
5. The combination of the flanged face-plate E, constructed as described, central bolt, K, lever G, and housing-plate I, as set forth.

6. The combination of the base-plate or casing B, constructed as described, ratchet-plate C, tumbler D, face-plate E, lever G, and bolt K, all constructed and combined to operate substantially in the manner and for the purpose herein shown and specified.

7. The combination, with the base-plate B, having the stationary inside ratchet, *c*, and the adjustable ratchet-plate C, adapted to engage with said ratchet, of the tumbler D, actuated by lever G to interlock with the ratchet-plate, substantially as and for the purpose herein shown and set forth.

257,292. WINDMILL. SANFORD P. COAD, Medicine Lodge, Kans. Filed Jan. 17, 1882. (Model.)

Brief.—The sails are automatically opened and closed by the governor D' acting through sliding head H', bell-crank lever R, arm *s*, link *t*, plate *r*, rods *q*, and collar P, which is connected by rods *p* with the inner ends of the sails L', bent to form cranks. The same result is accomplished by hand by means of rod O, and sliding block N', which is connected to sliding head H' by the rods A' A'.



Claim.—1. In a windmill, the combination, with the hub I, the spokes *k*, and the rims J K M, of the sails L L', pivoted to the said rims, the cranks *l* on the sails L', the connecting-rod *p*, the sliding collar P, connecting-rods *q*, and the weighted bell-crank lever R, substantially as and for the purpose set forth.

2. In a windmill, the combination, with the head-plate D, provided with the collar *b*, the projections *c*, and the friction-wheels pivoted to the said projections, of the turn-table E, provided with the flange *e*, resting under the friction-wheels, substantially as herein shown and described, whereby the table is held securely in place upon the head-plate, as set forth.

3. In a windmill, the combination, with the posts C, provided with the ways *k' k'*, of the cross-head H' and connecting-rods *h'*, the sliding block N', and the rod O, substantially as and for the purpose set forth.

4. The combination, with the lever R, attached to the sliding cross-head H', and provided with the weight J', of the collar P, sleeve N, sliding rods *q q*, and pitman or connecting rod *t*, the latter connecting with the arm *s* of the lever, substantially as and for the purposes set forth.

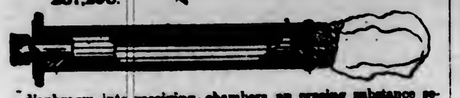
5. The combination, with the lever R, provided with the weight J', and connected to the sliding cross-head H', of the sliding block N', rods *h' h'*, and the operating-rod O, substantially as and for the purposes set forth.

6. The annular turn-table E, in combination with the annular head-plate D, whereby the shaft F and the connecting-rod T are permitted to pass through the same to the ground or platform of the mill, as and for the purposes set forth.

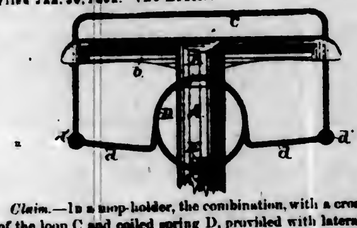
257,293. SLATE-CLEANER. PHŒBE S. CORY and MARY E. HOGAN, Westfield, N. J. Filed July 30, 1881. (No model.)

Claim.—As a new article of manufacture, a slate-cleaner formed of the tubular body B, open at each end and separated by a diaphragm into receiving-chambers, an erasing substance secured in one of said chambers, a perforated cork having a channeled head arranged therewith, and a cap closing the channel in said head, the whole being arranged and operating substantially as and for the purposes set forth and shown.

257,293.

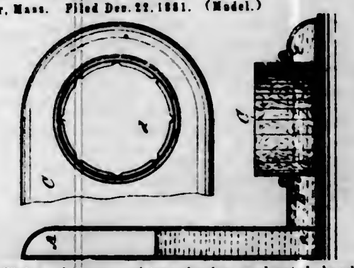


257,294. MOP-HOLDER. FRANK DAVIS, North Adams, Mass. Filed Jan. 30, 1882. (No model.)



Claim.—In a mop-holder, the combination, with a cross-piece, B, of the loop C and coiled spring D, provided with laterally-projecting arms *d*, flexibly connected to the loop C, all constructed and arranged to operate as herein specified.

257,295. STAMP-MOISTENER. FRANCIS V. DAVIS, Worcester, Mass. Filed Dec. 22, 1881. (Model.)



Claim.—A stamp-moistener having an elevated chamber, A, a lower chamber, B, connected therewith by orifice *a*, and a notched lip, *c*, about the opening *d* of said chamber B, in which is inserted the felted pad C, as shown and described.

257,296. DRAFT ATTACHMENT FOR VEHICLES. DANIEL D. DUCKER, St. Catharine, Mo. Filed Jan. 20, 1882. (Model.)



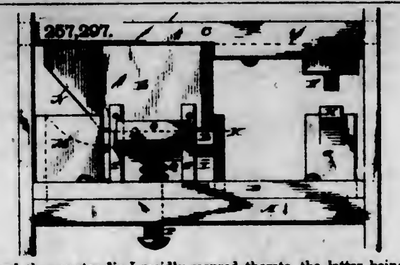
Claim.—The combination, in a platform-wagon, of the draft-rod H, having its front end turned upward, as shown, and connected to the tongue C by a single link, I, and fastening device J, which is secured to the tongue, with the tongue C, which is secured at its rear end to the springs B, the rear end of the draft-rod being bifurcated, so as to be secured to the two clips F on the axle A, substantially as shown and described.

257,297. MACHINE FOR MAKING DRILL-TEETH. SAMUEL DELANO, New Orleans, La., and GEORGE ANZL, Killbuck Township, Allegheny County, Pa. Filed Oct. 7, 1881. (Model.)

Claim.—1. In a machine for making drill-teeth, the combination, with the counter-die having a straight cutter at one end and a V-shaped cutter at the opposite end, of a plunger having a die-head secured thereto, and provided on one end with a straight cutter and at its opposite end with a V-shaped cutter so inclined as to make a gradual or sawing cut, the straight cutter, at one end of the machine, being adapted to cut one tooth from the blank, while the V-shaped cutters are adapted to form the point of the tooth, substantially as set forth.

2. In a machine for making drill-teeth, the combination, with the bed of the machine, having the die G adjustably secured thereto and the counter-die I rigidly secured thereto, the latter being shaped as shown, and provided on the side near the die G with a straight cutter and on the opposite side with a V-shaped cutter, of a plunger having the punch F adjustably secured thereto, which is adapted to register with the opening in the die G, and a die-head, E, rigidly secured thereto, the under surface of the latter being adapted to conform to the shape of the upper surface of the counter-die I, the said die-head being provided with a straight cutter on one end and a V-shaped cutter on the opposite end, substantially as set forth.

257,297.

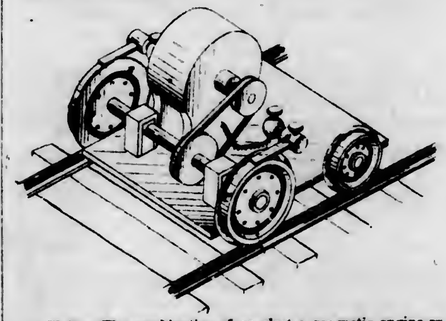


3. The combination, with the bed A, die G, having the guides H secured thereto, and the counter-die I, provided with the straight and V-shaped cutters on opposite ends thereof, of a plunger, C, punch F, and die-head E, the latter being provided with straight and V-shaped cutters, which are adapted to engage with the straight and V-shaped cutters on the counter-die I, substantially as set forth.

4. The combination, with the counter-die secured to the bed of the machine, and provided with a straight and V-shaped cutter, respectively, on its opposite ends, and the die-head secured to the plunger, and provided respectively with a straight and V-shaped cutter on its opposite ends, the under surface of the said die-head adapted to conform to the upper surface of the counter-die, of spring-actuated gages situated on opposite sides of the counter-die and adapted to guide the blank to position over the counter-die being forced down with the tooth, and automatically elevate the tooth from off the counter-die to the level of the cutters on the said die after the same has been shaped, substantially as set forth.

5. The combination, with the counter-die I, the cutters K and M, die-head E, and cutters L and N, of the gages O, provided with the arms P and lips R, springs Q, and standards T, substantially as set forth.

257,298. WHEEL FOR ELECTRO-MAGNETIC LOCOMOTIVES. EDWARD M. DICKERSON, Jr., New York, N. Y. Filed Jan. 5, 1881. (No model.)

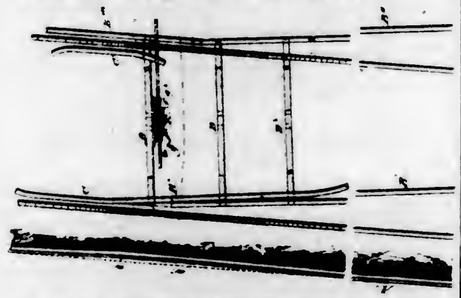


Claim.—The combination of an electro-magnetic engine or locomotive running upon rails, with paper wheels supporting such locomotive upon the rails, and provided with a metallic conducting-tire and springs for conducting the electricity from the track to the engine, while at the same time the current is insulated from the main frame of the locomotive, substantially as described.

257,299. RAILROAD-SWITCH. WILSON P. DUNSON, Philadelphia, assignor of one-half to Alexander H. Ege, Mechanicsburg, Pa. Filed Feb. 23, 1881. (No model.)

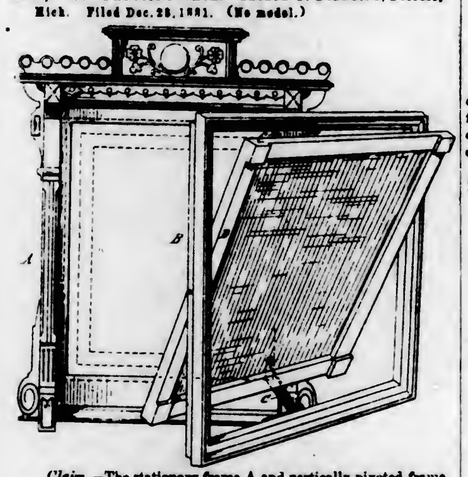
Brief.—A safety-switch in which the main line is unbroken, the rails thereof being depressed where the wheels are diverted therefrom and carried by a higher outside rail to a siding to allow

the wheel-flanges to clear the main-track rails without contact therewith. A replacing-spring is arranged in connection with swivel tie-bars to return the switch to the connection to which it is set after a train has passed it from the other line.



Claim.—The combination, with the depressed main track, of the switch composed of rails B' B''', *connected* by suitable bars D D' D², switch-bar *c*, spring E, and guard-rails C C', *to form* a safety-switch, substantially as and for the purpose set forth.

257,300. DRESSING-CASE. GEORGE F. DORNLING, Detroit, Mich. Filed Dec. 28, 1881. (No model.)



Claim.—The stationary frame A and vertically-pivoted frame B, combined with the mirror D, having horizontal pivots, and with the hinge-arms C, connected to the top and bottom of the frame B, all operating together as and for the purpose specified.

257,301. DEVICE FOR OPENING EYELET-HOLES. GEO. A. DURRBUIL, Baltimore, Md., assignor to himself, Jacob Hecht, and Solomon J. Hecht, all of same place. Filed Mar. 17, 1882. (No model.)

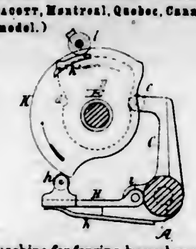


Claim.—1. The described tool, consisting of the stud having concave end and the central pin, in combination with the perforated boss set opposite said pin and with suitable arms for the pin and boss, substantially as described.

2. The combination of the arms A B, suitably connected, the perforated boss *d*, the threaded stud *e*, having concave end, and pin, substantially as described.

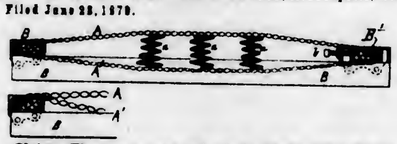
3. The described implement for the purpose described, consisting of arms A B, formed from one piece of spring metal, the lower arm having a boss, *d*, and the upper a threaded stud, *e*, and a handle, the parts being constructed and arranged substantially as described.

257,302. MACHINE FOR FORGING HORSESHOE-NAILS. CHARLES E. ELLACOTT, Montreal, Quebec, Canada. Filed Sept. 19, 1881. (No model.)



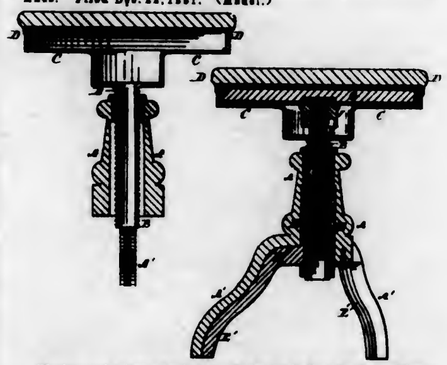
Claim.—In a machine for forging horseshoe-nails, the combination, with the rock-shaft A, the arm C, and the cam D, mounted on the shaft E, of a supplementary cam, K, also mounted on the shaft E, and an arm, H, hinged at *i* to the rock-shaft A approximately at right angles to the arm C, provided with a roller, *h*, working on the periphery of said cam K, and adjusting device *k*, substantially as and for the purpose set forth.

257,303. SPRING-BED. JAS. T. ELWELL, Minneapolis, Minn. Filed June 22, 1870.



Claim.—The woven-wire webs A A', of the same degree of elasticity, and having springs *a* interposed between them, suspended from end rails, B B', the rail B' sliding in the flanged plates C and operated by screws *b*, whereby the several parts are adapted to operate as set forth.

257,304. PIANO-STOOL. JAMES ERICSON, Williamsett, Mass. Filed Dec. 22, 1881. (Model.)



Claim.—A piano-stool composed of a hollow body and legs A A', a hollow screw, B, and a hollow seat, C D, in combination with a piano-stool composed of a body and legs, E E', adapted to fit within A A', a nut, J, separate from the body E, a screw, H, adapted to fit within the screw B, and the seat G, adapted to fit within the seat C D, substantially as described.

257,305. UMBRELLA-DRIPPER. CHARLES L. L. EMERY, Biddeford, Me. Filed Mar. 8, 1882. (No model.)

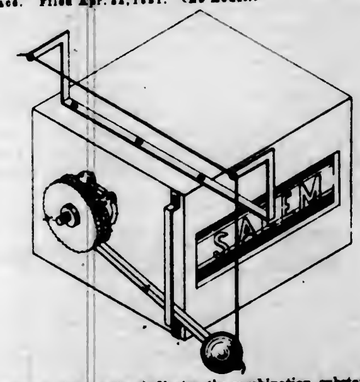
Brief.—A rubber cup is adapted to hold a sponge and receive the lower end of the staff of a closed umbrella, so as to receive and absorb the water dripping therefrom.



Claim.—1. As an improved article of manufacture, an umbrella-dripper consisting of the rubber cup A, provided with an opening in its upper and lower ends, and having its upper end below its mouth contracted to form the neck *a*, and the sponge D, arranged within the said cup, between the neck and its lower end, substantially as herein shown and described.

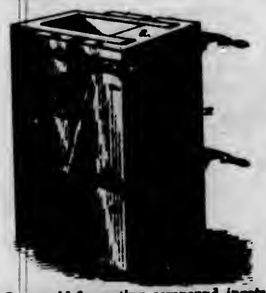
2. The combination, with the cup A, provided with the neck *a*, and containing the sponge D, of the washer E, arranged between the neck and sponge, substantially as herein shown and described, whereby the sponge is prevented from coming in contact with the cloth of the umbrella, as set forth.

257,306. STATION-INDICATOR. MICHAEL FORLEY, Portland, Oreg., assignor to L. D. Brown and H. Burbank, same place. Filed Apr. 22, 1881. (No model.)



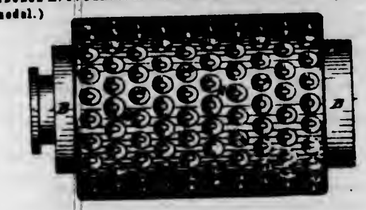
Claim.—In a station-indicator, the combination, substantially as before set forth, of the canvas rolls, the main roll for driving them, the double ratchet mounted on the shaft of the main roll, the elbow-lever fulcrumed on the shaft of the main roll, and carrying on its short arm a double pawl to actuate the double ratchet in either direction and on its long arm a weight, the cord, and a bracket provided directly above the free end of the lever with an eye through which the cord is run.

257,307. MOLD FOR CASTING COMPOUND INGOTS. PATRICK J. FITZSIMONS, Newark, N. J. Filed Feb. 8, 1882. (No model.)



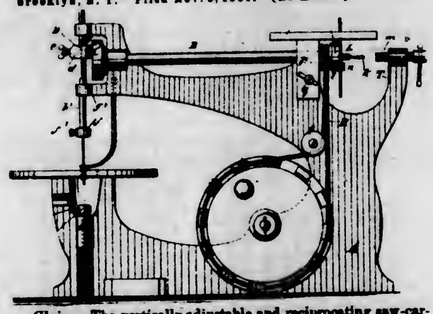
Claim.—In a mold for casting compound ingots, an adjustable cover or side plate, B, a central follower, *d*, formed upon said cover and adapted to fit accurately within the mold, and devices for securing the cover when adjusted, substantially as described.

257,308. ROLL FOR BUFFING AND POLISHING MACHINES. GEORGE H. P. FLAGG, Boston, Mass. Filed Nov. 30, 1881. (No model.)



Claim.—The improved roll above described, consisting of the central core, B, having secured upon it the rubber covering A, made with a large number of cells, *a*, in it, substantially as described.

257,309. SCROLL-SAWING MACHINE. WILLIAM FORD, Brooklyn, N. Y. Filed Nov. 8, 1881. (No model.)



Claim.—The vertically adjustable and reciprocating saw-carrying rod F, having removable collar *f* and shoulders *g g'*, in combination with the slotted yoke D, having boss *d*, provided with set-screw *e*, and the crank-wheel C, shaft B, and driving mechanism, substantially as shown and described.

257,310. LOOM. CHARLES GABRIEL, New York, N. Y. Filed May 20, 1881. (No model.)

Brief.—The lay, having provisions for two or more reeds to weave a number of fabrics side by side and a corresponding number of shuttle-boxes, is formed below the shuttle-raceway with a slideway, to which the shuttle-drivers are fitted. The latter are cast in a single piece and have sockets for the pickers, end hooks for attachment to the rods which connect them together, and wrist-pins for connection to the picking-straps. The picking-treadles are connected by links having ball-and-socket joints with arms extending inwardly from the picker-sticks, and their weight keeps the straps and chain of shuttle-drivers taut. A rock-shaft mounted near the breast-beam carries a cam at one end, on which rests a pawl attached to a spring-bumper secured to the breast-beam. The pawl, when raised by the rotation of the shaft, caused on the failure of a shuttle to enter its box, engages with the lay to check its forward movement.

Claim.—1. The shuttle-driver constructed with an eye or socket, *d*, a hook, *e*, at one end, and a wrist-pin, *e'*, at the other end, substantially as specified.

2. The shuttle-driver constructed with an eye or socket, *d*, and a hook, *e*, at each end, substantially as specified.

3. The combination, with a number of shuttle-drivers, E, each having a socket or eye, *d*, of rods having eyes or spade-handles connecting said drivers, the latter having hooks fitting said eyes or spade-handles, and the two end drivers having wrist-pins at their outer ends, straps attached to the end shuttle-drivers, and mechanism connected with said straps for operating them, substantially as specified.

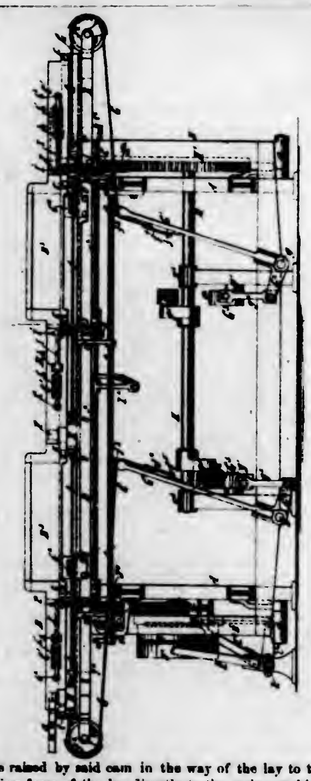
4. The combination of the lay B, having the raceway, and the slideway *c²* below the raceway, with shuttle-drivers E, externally fitting said slideway, and having sockets *d*, removable pickers F, inserted downward into said sockets, rods *f*, arranged between and in line with said shuttle-drivers and detachably connected with the ends thereof, and mechanism for operating said shuttle-drivers, all substantially as specified.

5. The combination of the lay B, constructed with shuttle-boxes C, having removable fronts (', and containing the slideway *c²* below said shuttle-boxes, and grooves *c³*, with the shuttle-drivers E, externally fitting said slideway, and having sockets *d*, mechanism for actuating said shuttle-drivers, and the pickers F, fitting said sockets and adapted to be inserted downward into them, and having tongues *d'* engaging with the grooves *c³*, substantially as specified.

6. The combination, with a number of connected shuttle-drivers, of the straps G, the bell-crank picker-sticks G' G², the treadles G³, the links *g²*, having ball-and-socket joints and connecting the treadles with the picker-sticks, whereby the weight of the treadles serves to keep the said straps tight, and mechanism for operating said treadles, substantially as specified.

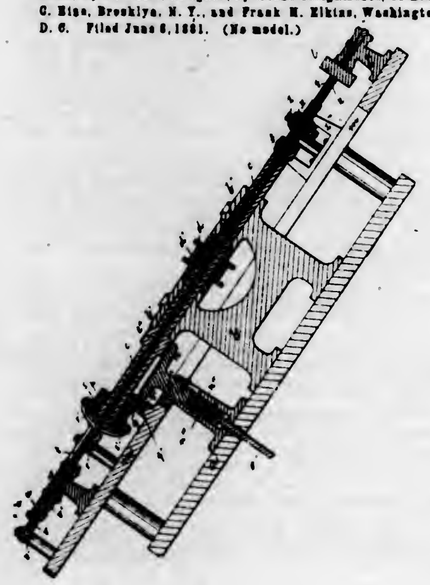
7. The combination of the lay and mechanism for operating it with the spring-cushion or elastic buffer P, the rock-shaft O and mechanism for turning it, the cam *o*, and the pivoted pawl *o'*,

257,310.



adapted to be raised by said cam in the way of the lay to transmit the striking force of the lay directly to the spring-cushion or elastic buffer, substantially as specified.

257,311. CORK-SHELL-CUTTING MACHINE. BERNARD GALLAGHER, Lynn, Mass., assignor, by mesne assignments, to Ethel C. Hine, Brooklyn, N. Y., and Frank H. Elkins, Washington, D. C. Filed June 6, 1881. (No model.)



Claim.—1. In a cork-shell-cutting machine, the herein-described shell-delivery mechanism, consisting, in combination with the rotary and longitudinally-adjustable shaft e and its cylindrical cutters *g* and *k*, of the annular piston *y*, slides *y' y'*, secured to the grooved collar *x*, the forked lever *z*, and adjustable stops *z'' z''*, as and for the purpose set forth.

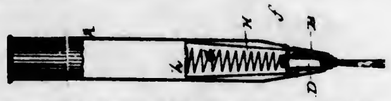
2. In a cork-shell-cutting machine, the combination of the cylindrical hollow cutters *g* and *k*, hollow main shaft e, its screw-collar *e''*, and vertically-adjustable rack-piece *n*, as and for the purpose set forth.

3. In a cork-shell-cutting machine, the combination of the hollow main shaft e, its screw-collar *e''*, adjustable rack-piece *n*, the hinged hook *q*, with its spring *q''*, and collar *p* on the shaft e, as described.

4. In a cork-shell-cutting machine, the combination of the hollow shaft e, its cylindrical cutters *g* and *k*, grooved collar *s*, ring *s'*, and spring-lever *r r'*, as and for the purpose set forth.

5. In combination, the rotary and sliding shaft e, cutters *g* and *k*, central rod, r, grooved collar *s*, ring *s'*, spring-lever *r r'*, lick *t*, lever *u*, and collars *r' r''* on the rod r, and frictional bearing *w*, as and for the purpose set forth.

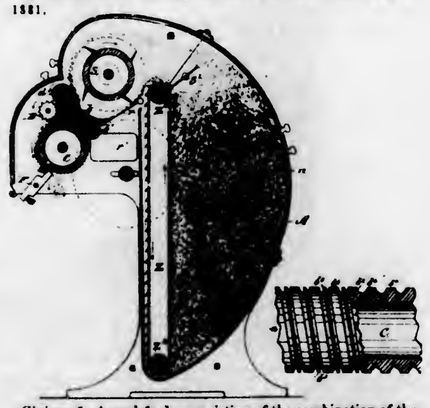
257,312. SELF-FEEDING BRUSH. THOMAS F. GAYNOR and WILLIAM J. FITZGERALD, New Haven, Conn. Filed Mar. 9, 1882. (No model.)



Claim.—1. In a fountain-brush, the combination, with the handle or fountain, of the hollow bristle-receiving thimble F, screw-threaded on its exterior, interiorly screw-threaded brush-holder and valve D, having flange *f*, and the sleeve B, substantially as and for the purpose set forth.

2. A marking-brush consisting of the fountain A, sleeve B, rigidly attached thereto at its lower end, screw-threaded thimble F, brush E, valve D *f*, yoke H, attached at its lower end to the sleeve B, and the spiral spring G, attached at one end to the valve D *f*, said spring, valve, and brush-holder being adapted to operate within said yoke, substantially as and for the purpose set forth.

257,313. FEEDING DEVICE FOR CARDING-MACHINES. ERNST GESSNER, Aue, Saxony, Germany. Filed Sept. 3, 1881. (No model.) Patented in England June 17, 1881, in Belgium Aug. 30, 1881, in France Sept. 16, 1881, and in Germany Sept. 5, 1881.



Claim.—1. A card-feeder consisting of the combination of the following elements: a wool-box, the vertical lift-apron Z, the final feed-rolls, the grate *r*, interposed between the upper portion of the lift-apron and the final feed-rolls, the revolving beater and transferring-cylinder S, located above the grate and arranged, as described, to transfer the wool, clean it in transit, and return the excess over the top of the lift-apron, and driving mechanism for operating the parts, substantially as described.

2. In a wool-feeding device, the combination of a revolving transferring and equalizing beater, S, a final feed-roll, C, and an intermediate lap-roll, *b*, with means for operating the same, the said elements being arranged the relation described, whereby the feed-roll is made to take wool uniformly from the lap-roll and

the beater is made to equalize or remove the excess of wool from the lap-roll, substantially as described.

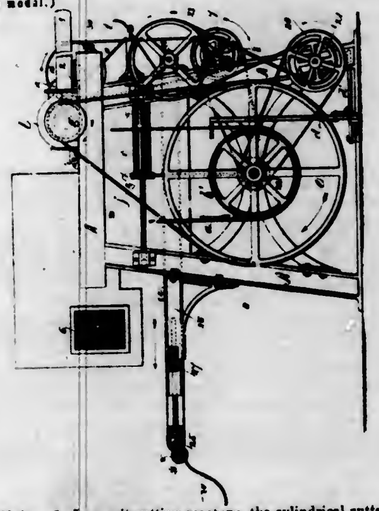
3. In a wool-feeding device, the combination of a revolving transferring and equalizing beater, S, a final feed-roll, C, the intermediate lap-roll, *b*, and the roll D, arranged to hold back the wool on the lap-roll against the pull of the feed-roll C, and means for operating the same, substantially as shown and described.

4. The combination, with the lap-roll *b* and the roll D, of the feed-roll C, having upon its periphery alternating teeth and plain surfaces of equal height, with means for operating the same whereby the lap-roll may be arranged close to the feed-roll and the wool pulled out in long shreds, as and for the purpose described.

5. The roller C, having a groove cut around its periphery and a narrower groove cut in the bottom of this groove, in combination with the strip of saw-teeth set in the narrow groove in the bottom of the main groove, with its teeth flush with the alternating plain surfaces of the cylinder, substantially as and for the purpose described.

6. The combination of the box A, apron Z, first beater S', transfer and equalizing beater S, grate *r*, rollers C D *d b*, and brush F, with means for operating them, substantially as shown and described.

257,314. MACHINE FOR CUTTING UP PELTS. THOMAS GIBSON and EDWARD ARMSTRONG, Brooklyn, assignors to Hitchcock, Darmody & Co., New York, N. Y. Filed Dec. 27, 1881. (No model.)



Claim.—1. In a pelt-cutting machine, the cylindrical cutter-head, grooved longitudinally and at an inclination to the axis, and provided with the twisted cutters bolted upon the head and within such grooves, substantially as set forth.

2. In a machine for cutting up pelts, the combination of the shear *k*, revolving cutters *i'*, feeding-rollers *m* and *n*, and belt *r*, substantially as and for the purposes set forth.

3. In a machine for cutting up pelts, the combination of the feeding-rollers *m* and *n*, shear *k*, revolving cutters *i'*, inclines *o* and *l*, and belt *u*, substantially as and for the purposes set forth.

4. In a machine for cutting up pelts, the combination of the feeding-rollers *m* and *n*, revolving cutters *i'*, receptacle *p*, belt r, and incline *o*, substantially as and for the purposes set forth.

5. The combination, in a machine for cutting up pelts, of the adjustable revolving cutters *i'*, cutter-bar *k*, cleaning-brush 29, dust-receptacle *p'*, and removable grating 6, substantially as and for the purposes set forth.

6. The combination, in a machine for cutting up pelts, of the feeding-rollers *m* and *n*, adjustable revolving cutters *i'*, cutter-bar *k*, cleaning-brush 29, and dust-receptacle *p'*, substantially as and for the purposes set forth.

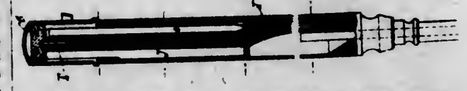
7. The combination, in a machine for cutting up pelts, of the revolving head and adjustable cutters *i'*, dust cap or cover *l*, arms 2, and weighted arm-rest 3, substantially as and for the purposes set forth.

8. The combination, with the endless belts *r* and *u*, of the brackets and rollers 25 and 24 and the adjusting-screws 19 and 27, for tightening up the belts as they become loose, as set forth.

9. The combination of the feeding-rollers *m* and *n*, revolving cutters *i'*, cutter-bar *k*, inclines *o* and *l*, belt *u* for the delivery of the fleece of fur, the roller *r*, and incline *w*, substantially as and for the purposes set forth.

10. In a machine for cutting up pelts, the combination of the inclined curved adjustable revolving cutters *i'*, body *i*, cutter-bar *k*, and adjusting-bolts 30, for setting the cutters up to the cutter-bar, substantially as set forth.

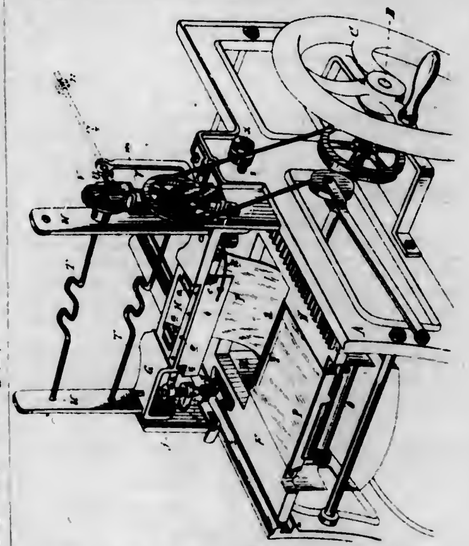
257,315. LEAD AND CRAYON HOLDER. ALBERT GORTS, Hoboken, N. J. Filed Jan. 28, 1882. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of the tubular stock or handle having the lead-holding tip secured to its lower end, the filling-piece inserted in the lower part of the handle and formed with a longitudinal lead-guiding channel communicating with the lead-holding tip, the rotating case inclosed in the upper part of the handle and formed with a series of longitudinal lead-receiving channels adapted to register with the lead-guiding channel of the filling-piece, the head fixed to the upper end of the rotating case, and the catch adapted to hold the rotating case in the required positions.

2. The combination, substantially as hereinbefore set forth, of the catch E, having the thumb-piece E', the spring S, acting on the catch, the tubular handle A, having notches in its upper end adapted to receive the thumb-piece of the catch, the head D, and rotating case C, having channels J, the whole arranged to operate as specified.

257,316. CIGAR-MACHINE. ALEXANDER GORDON, Detroit, Mich. Filed Dec. 15, 1881. (No model.)



Claim.—1. In a machine for bunching cigars, a hopper provided with an intermittently-reciprocating horizontal knife, a trough having adjustable ends and pivoted doors, a reciprocating table, and a bunching-cloth, the whole combined with and operating from a common power automatically, for the purpose set forth.

2. The combination of the following devices: an automatic dropper delivering a measured supply of filler, a bunching-cloth wound and unwound upon a roll, a bunching-roll, and a reciprocating table, the motion of all these parts being positively connected together, all substantially as described and shown.

3. A trough provided with adjustable ends, and having doors provided with mechanisms for opening them automatically and intermittently, substantially as described.

4. The combination of the bunching-cloth P, reciprocating

table F, rolls I J O, welt R, and operating mechanism, as and for the purposes described.

5. The combination of the reciprocating table F, rack N, gears L and M, rolls I, J, and O, and cloth P, as and for the purpose specified.

6. The combination of the shaft *f*, knuckle *g*, projection *h*, catch *i*, arm *l*, levers *d d*, and hinged doors *b b*, when combined and operating as described.

7. The adjustable catch *i*, combined with the knuckle *g*, shaft *f*, and connections with the doors *b b*, whereby the said knuckles may be thrown in or out of operation, as may be desired, as specified.

8. The combination of the pusher-bars T T, having crank-arms, as shown, with the hopper S, standards *s s*, pulleys V V, and trough, as and for the purposes specified.

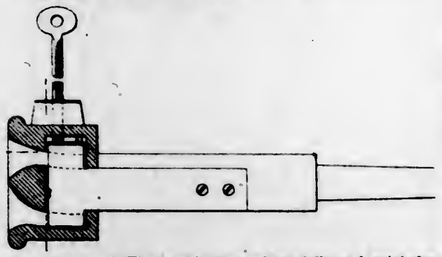
9. The combination of the knife R' with the trough having adjustable ends and automatically opening and closing hinged doors adapted to operate alternately, as and for the purposes set forth.

10. The combination of the knife R', cloth P, trough having automatically opening and closing doors, the rolls I J O, gears L M, table F, and operating mechanism, as specified, for the purpose set forth.

11. In a cigar-bunching machine, the trough having adjustable ends *a* and automatically opening and closing doors *b*, provided with interchangeable linings *p*, of various thicknesses, adapted to produce bunches of different sizes, as set forth.

12. The roller J, journaled eccentrically in boxes X, and set-screws *s*, combined with the cloth P and reciprocating table F, and adapted to be adjusted and secured in any desired location, as and for the purposes set forth.

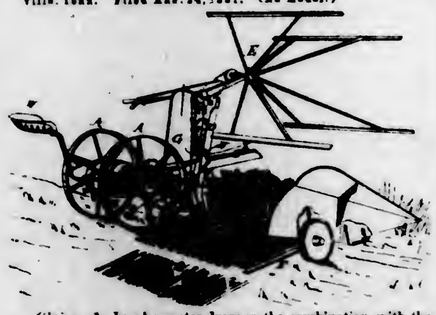
257,317. CAR-COUPLING. DUANE A. GRANT, Nyack, N. Y. Filed Feb. 21, 1882. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of the draw-head, the coupling-pin, the laterally-movable spring having an offset to sustain the coupling-pin, and the pivoted latch on the exterior of the draw-head adapted to be automatically operated by the entrance of a coupling-link and capable of being operated from the exterior by the brakeman, as and for the purpose set forth.

2. The combination, substantially as hereinbefore set forth, with the draw-head and the coupling-pin, of the pin-holding latch having a flat pivot which extends vertically through the mouth of the draw-head and takes a diagonal position when the latch is in use, for its reversal by the thrust of a coupling-link.

257,318. HARVESTER-DROPPER. SHEPHERD GRAHAM, Nashville, Tenn. Filed Aug. 24, 1881. (No model.)



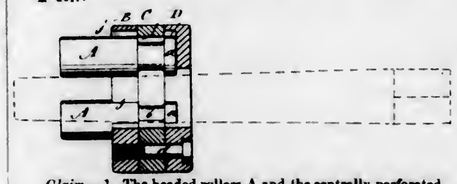
Claim.—1. In a harvester-dropper, the combination, with the dropper F, the reel-post G, and the reel-driving mechanism, of the chain J, the chain-wheels K I, the clutch M, the spring N, the shaft H, the crank-arm X, the connecting-rod Y, the pivoted plate Z, the collar *c*, and the arm *d*, substantially as herein shown and described, whereby the dropper will be lowered and raised automatically, as set forth.

2. In a harvester-dropper, the combination, with the chain-wheel I, the crank-arm X, connecting-rod Y, and the dropper F, of the clutch M, provided with a spiral groove, P, and the spring-actuated bolt, substantially as shown and described, whereby the dropper will be held stationary when in a position to receive the grain, as set forth.

3. In a harvester-dropper, the combination, with the connecting-rod Y and the pivoted plate Z, of the stop-pin *a* and spring *b*, substantially as herein shown and described, whereby the said rod is allowed to continue its movement should the dropper strike an obstruction, as set forth.

4. In a harvester-dropper, the combination, with the rod Y, the collar *c*, and arm *d*, of the fulcrum-arm *g*, lever *f*, catch-hook *h*, rod *j*, and spring-pressed bent lever *k*, substantially as herein shown and described, whereby the dropper can be adjusted to descend to a higher or lower point, as set forth.

257,319. TUBE-EXPANDER. JOSEPH T. GRISCOM and WILLIAM H. H. GRISCOM, Nashville, Tenn. Filed Mar. 7, 1882. (No model.)

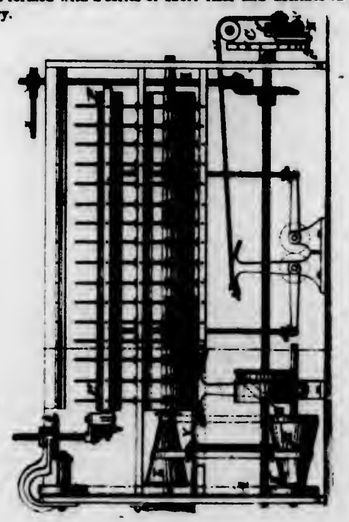


Claim.—1. The beaded rollers A and the centrally-perforated and radially-slotted plates B and C, in combination with the annular recessed plate D, the plates being secured together by the screw-bolts *d*, substantially as described.

2. The combination, with the beaded rollers A, the recessed plate D, and the radial slotted plate C, of the plate B, provided with the radial slots *j*, having their inner ends contracted, substantially as and for the purpose set forth.

257,320. RING-SPINNING FRAME. ELISHA HARRIS, Providence, R. I., assignor to himself and Abraham W. Harris, same place. Filed May 16, 1881. (No model.)

Brief.—Improvement upon Letters Patent No. 232,818, dated October 5, 1880. A driving-cylinder having vertical motions in unison with the ring-rails is employed for driving the rings, which are caused to be rotated on hollow supports with a variable rotation in relation to the movements of the ring-rail. The traverse-cam is formed with a series of short rises and declines in its periphery.



Claim.—1. In a ring-spinning frame, the combination of a ring-rail having hollow supports fastened to it for the rings to revolve upon, and allowing the bobbin to pass through the same, a ring fitted for a traveler and grooved to receive a band, and a horizontal band-cylinder having vertical motions in unison with the ring-rails, with mechanism for imparting such motion and rotating said cylinder, substantially as herein set forth.

2. The traverse-cam C, constructed as herein shown and described—that is, with a series of short rises and declines in its periphery, substantially as herein set forth.

3. The traverse-cam C, constructed with a series of short rises and declines, as described, and a ring-rail combined with mechanism for operating said cam, and for imparting motion from the same to said ring-rail, essentially as set forth.

4. The combination, with a ring-rail, a series of ring-holders mounted thereon, a series of rings adapted to rotate upon said holders, a movable and rotatable driving-cylinder, F, and a series of bands for connecting said cylinder with the rings, of mechanism for imparting a rising and falling motion to said ring-rail and cylinder, and for imparting a variable rotation to the latter, whereby the rings and ring-rail are properly traversed, the driving-cylinder caused to move in unison therewith, and the rings caused to rotate with a variable rotation in relation to the movement of the ring-rail, as specified.

257,321. CHAIN-PUMP BUCKET. JOSEPH J. HARRIS, Petersburg, Mich. Filed Aug. 19, 1881. (No model.)

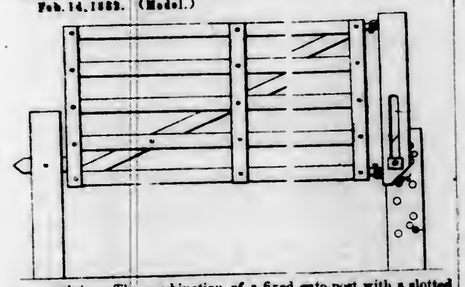
Brief.—The pin *f* may be transferred from one hole, *e*, to another, so as to hold the bucket in whatever position it may be adjusted.



Claim.—1. In a chain-pump bucket, the combination of the bucket having a conical recess in one end, the link *a*, having a conical enlargement to fit in said recess, and two or more washers, *g*, made to fit over the link in the recess, the said washers being made of unequal size and removable from the link, substantially as shown.

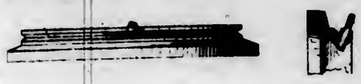
2. In a chain-pump bucket, the combination of the bucket *d*, having a conical recess in one end, the link *a*, having an enlargement to fit in the end of the recess, and provided with a series of holes at its upper end, washer *h*, pin *f*, and removable conical washers *g*, the parts being arranged to operate substantially as set forth.

257,322. GATE-POST. EDWIN J. HART, Butler, Pa. Filed Feb. 14, 1882. (Model.)



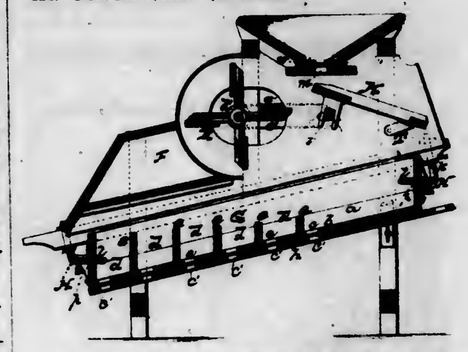
Claim.—The combination of a fixed gate-post with a slotted bar or piece that is pivoted and upheld by a bolt passing through the post and slotted bar or piece, to which piece the gate is hinged, and can be adjusted to various heights and inclinations by changing the position of the piece to which it is hinged, substantially as described.

257,323. BELT-REPLACING DEVICE. HENRY C. HARTLEY, Springfield, Ohio. Filed Aug. 18, 1881. (Model.)



Claim.—As a means for replacing a belt upon a pulley, and in combination therewith, a lag secured within one edge, at the periphery of the same, its inner plain face having a radial and laterally-outward inclination, and its edges being beveled or rounded, substantially as and for the purpose specified.

257,324. GRAIN-SEPARATOR. JAMES F. HATFIELD, Dublin, Ind. Filed Feb. 7, 1882. (No model.)

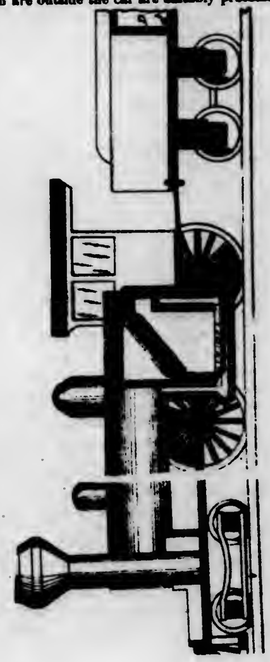


Claim.—1. The screen-shoe having the sloping sides *a*, the perforated center board, *b*, and the partitions between said perforations *c*, forming compartments *d*, in combination with the perforated slide and cut-off *h*, substantially as specified.

2. The screen-box G, provided with the reversely-arranged inclined planes *e e* and a bearing-box, *p*, at each end, in combination with the adjustable bracing-rods H H, provided with bearing lugs or centers *l* and common gearing and connections, whereby an endwise and a vibratory motion is imparted to the screen-box during its operation, as specified.

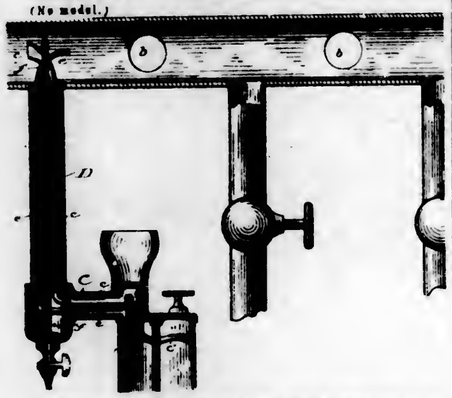
257,325. CAR-HEATER. FRANK S. HEATH, Corry, Pa. Filed Feb. 15, 1882. (No model.)

Brief.—Back pressure in the water-pipe from the heater toward the tank is prevented by suitable valves. The portions of the pipe which are outside the car are suitably protected.



Claim.—A continuous circuit or circuits of water-pipe for heating cars extending from the fire-box of a locomotive throughout the train and returning through the fire-box, the water within said pipes being heated in passing through the fire-box, substantially as described.

257,326. LUBRICATOR. ROSS J. HOFFMAN, Binghamton, N. Y., assignor to himself, Orson A. Jenks, George W. Lester, and Richard W. Lester, all of same place. Filed Mar. 24, 1882. (No model.)



Claim.—1. The combination of the main steam-supply pipe with two or more branch pipes, separate engines connected therewith, and an automatic lubricator connected to the main supply-pipe between the generator and the branch pipe nearest thereto, all substantially as described.

2. The combination of the steam-supply pipe and branch pipes, the pipe D, and pipe C *c c*, all in communication with the lubricator, substantially as set forth.

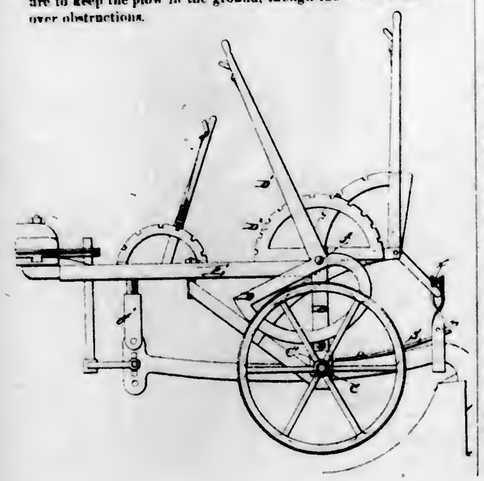
3. The pipe *f*, in combination with the pipe D, and the pipes C *c c*, with steam-supply pipe and lubricator, as set forth.

4. In combination with the oil-cup of a lubricator and with the steam-passage *c* thereof, the tube *h*, pipes 2 and *i*, all combined and operating substantially as set forth.

5. In combination with the oil-cup of a lubricator, the hollow bias or tube *k* and glass *l*, and the pipe *c'*, having inclined end or face, all arranged to operate substantially as described.

257,327. SULKY-PLOW. JOHN I HOKE, South Bend, Ind. Filed Feb. 14, 1882. (No model.)

Brief.—A lever with an enlarged cam engages with the spindle-box and raises or lowers the wheel upon the arch. The rear hanger of the plow rides laterally upon the bail or crank. A spring upon the plow-beam is designed to impart a yielding pressure to keep the plow in the ground, though the wheel should rise over obstructions.

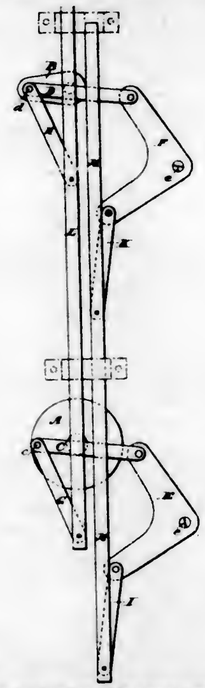


Claim.—1. In a sulky-plow, the short landside-axle C, constructed with a sleeve, C', a stud, *a*, and a lip, *b*, in combination with the arched axle B, anti-friction roller *c*, cam D, its lever D', and a locking device therefor, substantially as and for the purposes described.

2. The combination of the sleeve C', bearing the short axle C, and adjustably applied on the vertical limb of the arched axle, with a lever having a flanged cam on its end adapted to engage with sleeve C, for leveling the machine, substantially as described.

3. The combination of the pivoted bail, its hand-lever and locking device, the arched axle, the plow-beam pivoted vertically and horizontally at its front end to the sulky-frame, the suspension-stirrup for this beam, adapted to ride on said bail, and the suspension-spring S, having a bearing, *n*, on the stirrup, substantially as described

257,328. MECHANICAL MOVEMENT. WILLIAM H. HOLCOMB and CLIFFORD A. HOLCOMB, Beloit, Wis. Filed Nov. 3, 1881. (No model.)



Claim.—1. The combination of the cranks, connecting-links, bell-crank levers, and rods or tubes, arranged substantially as shown, to form a mechanical movement, as and for the purpose described.

2. In a mechanical movement, the combination of cranks A B, with the bell-crank levers E F, rods or tubes L M, and connecting-links, substantially as shown, and for the purpose specified.

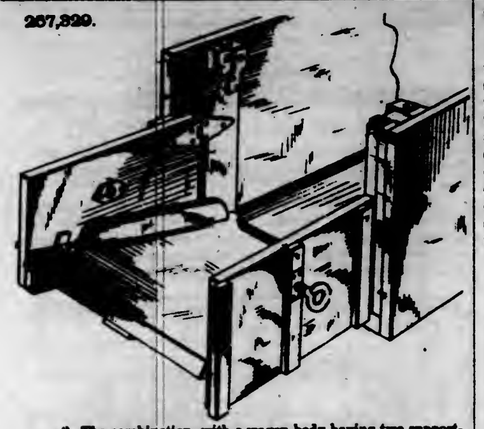
3. The combination of the cranks A B, links G H, connected to rod L, and links C D, attached to one end of the bell-crank levers E F, with the links I K, connected to the rod M, all constructed and arranged for operation substantially as shown, and for the purpose described.

4. In a mechanical movement, the pitmen I K, connected to the bell-cranks E F, links C D, cranks A B, and rods or tubes L M, arranged substantially as and for the purpose specified.

257,329. COMBINED END-GATE AND SHOVELING-BOARD. GEORGE W. HOLLY, Camanche, Iowa. Filed Aug. 6, 1881. (No model.)

Claim.—1. The combination, with a wagon-body provided with cleats and supporting-pieces removably secured to the body, of a shoveling-platform pivoted to the supporting-pieces and provided with a central slotted piece and arms, substantially as described, for locking said platform to the side supporting-pieces, as set forth.

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2. The combination, with a wagon-body having two supporting-pieces provided with straps, of a pivoted shoveling-platform provided with projections which fit under said straps, and with a central slotted piece, two locking-arms, and a locking-screw, said arms entering slots of the supporting-pieces, substantially as set forth.

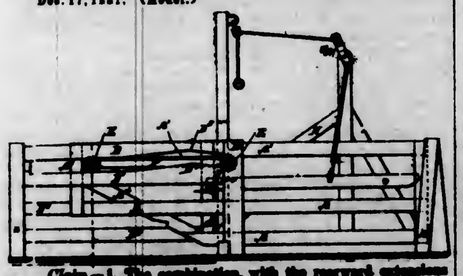
3. The combination, with a wagon-body, of the pivoted shoveling-platform, and means for locking the same to the side pieces of the wagon, and two end-gates, the inner one being provided with a vertical cleat to prevent the swing of the gate beyond the line of the side of the wagon, while the other is hinged at the opposite side of the wagon and provided with an end brace, which overlaps the cleat of the inner gate, substantially as set forth.

4. The combination, with a wagon-body, of the pivoted removable shoveling-platform, and two sliding arms for locking the platform to the side pieces of the wagon, and two end-gates hinged at opposite sides of the wagon and arranged so that the outer gate will overlap and lie parallel with the inner one, and a locking-screw for firmly holding the gates in place, substantially as set forth.

5. The combination, with a wagon-body, of two removable supporting-pieces of different widths, two end-gates arranged to overlap and lie parallel to each other, and a pivoted shoveling-platform having hinged supporting-links and side pieces or guards, substantially as set forth.

6. The combination, with a wagon-body, of side pieces provided with metallic-lined slots, a pivoted shoveling-platform having sliding locking-arms arranged to enter said slots, and two end-gates overlapping each other and provided with a central locking-bolt, substantially as set forth.

257,330. GATE. WILLIAM C. HOOKER, Abingdon, Ill. Filed Dec. 17, 1881. (Model.)

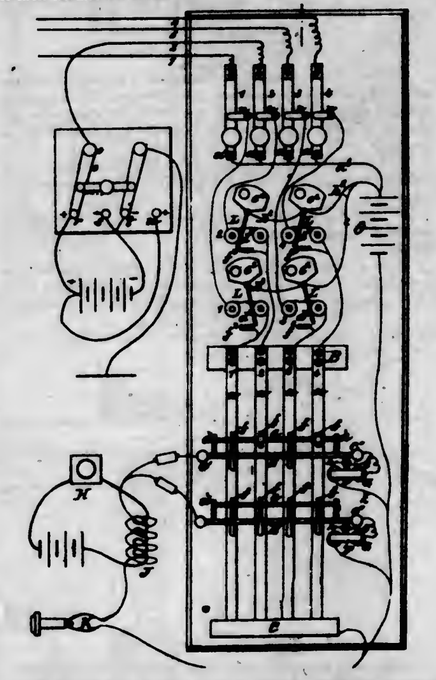


Claim.—1. The combination, with the rearward extensions A' A' of the gate and the double track D D', of the double-flanged rollers E, having links or extensions outside of the said flanges, and the forked connecting-bar F, between whose forks the said rollers are journaled, substantially as and for the purpose set forth.

2. In a gate, the combination, with the track-bars D' and the connected rollers E, of the double inclines D', substantially as herein shown and described, whereby the momentum of the gate is made to carry the said gate more surely to the desired point, as set forth.

257,331. TELEPHONE CENTRAL-OFFICE SYSTEM. GEORGE H. HOPKINS, New York, N. Y. Filed Feb. 16, 1882. (No model.)

Brief.—The line-strips of the switch-board are spring-bars normally in contact with a ground-connection. The connecting strips or bars are provided with cam-levers, which, when turned up to connect a line-strip with a cross-bar, break the contact of the line-strip with the ground-connection. The subscribers' annunciators are polarized, and their armatures, in passing from one side to the other, make contact with mercury-cups and close the circuit of a local battery through magnets which act to release the cam-levers. Upon the completion of conversation a current of opposite direction in that used to call central office is sent by the subscriber, which effects the restoration of the switching devices to their normal condition.



Claim.—1. In a telephonic central-office switch-board, a series of spring-bars, a series of weighted cam-levers on a support movable by an electro-magnet, and a corresponding series of relays for controlling a local circuit for operating the said electro-magnet, constructed and combined substantially as herein specified.

In a telephonic central-office system, the combination of the *n a*, cam-levers *f*, rock-shaft E, and magnet G, as herein specified.

3. The combination, in a central-office system, of two or more spring-bars, *a*, two or more weighted cam-levers, *f*, the rock-shaft E, carrying the rod *e*, the magnet G, and the annunciators L, adapted to control a local circuit, substantially as herein specified.

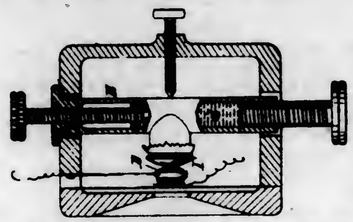
4. In a telephonic central-office switch-board, the polarized annunciators L and mercury-cups *f''*, in combination with a local circuit, including the battery O, magnet G, spring switch-bars *a*, and cam-levers *f*, as herein specified.

5. In a telephonic central-office switch-board, the combination of the double-contact keys 1, 2, &c., annunciators L, bars *a*, and cam-levers *f*, substantially as specified.

6. In a telephonic central-office switch-board, a series of spring-bars, *a*, a series of cam-levers, *f*, and the ground-connecting plate C, in combination with a series of subscribers' lines, whereby one subscriber's line may be disconnected from the central-office ground and connected with another subscriber's line, substantially as specified.

7. The combination of the receiving-instrument K and transmitting-instrument H with the rock-shaft E, bars *a*, lines 1, 2, &c., and interrupting devices, substantially as herein specified.

257,332. TELEPHONE-TRANSMITTER. GEORGE M. HOPKINS, Brooklyn, N. Y., assignor, by mesne assignments, to the People's Telephone and Telegraph Company, of New York. Filed May 31, 1880. Renewed Aug. 6, 1881. (No model.)



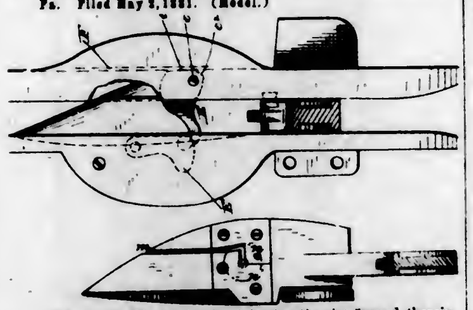
Claim.—1. In a telephone-transmitter, a hydrostatic column confined by a flexible diaphragm, in combination with a movable electrode adapted to receive the pressure of the hydrostatic column through the medium of the flexible diaphragm, as herein specified.

2. In a telephone-transmitter, the tube E, diaphragm I, and mercury column *d*, in combination with the vibratory electrode D, as specified.

3. In a telephone-transmitter, the combination of the adjusting-screw K and elastic packing *e* with the tube E, as shown and described.

4. In a telephone-transmitter, the siphon-tube E', containing an inclosed air-space, *g*, and provided with a diaphragm, I', in combination with the vibratory electrode D, as herein specified.

257,333. GRAIN-BINDER. MOSES G. BUNNARD, Norristown, Pa. Filed May 2, 1881. (Model.)



Claim.—1. The binder-head having the slot formed therein in tangential relation to the journal of the twister-pinion, or thereabout, in combination with the overhanging ledge or flange on the rack-segment.

2. The binder-head provided with the entering-slot, terminating in the retaining-slot at right angles, or nearly so, thereto, in combination with the flange on the rack-segment overhanging the entering-slot, substantially as described.

3. The removable shouldered plates, forming the retaining slot or notch in the binder-head, substantially as described.

4. The binder-head provided with the guiding-wheel, in combination with the flanges or ribs forming a shield thereto and holding it out of frictional contact with the side wall of the rack-segment, substantially as described.

5. The pivoted retaining-latch E, having the flattened heel end *e* and the inclined face *e'*, terminating in the lower face of said latch, in combination with the spring F, arranged and operating substantially as described.

6. The pendent locking-latch E', provided with the pin or spur, in combination with the flat retaining-spring, arranged and operating substantially as described.

257,334. LOCK FOR TRAVELING-BAGS. VALENTIN HEPPE, Offenbach-on-the-Main, Germany, assignor to himself and Adam Philippe Bender, same place. Filed Oct. 15, 1881. (Model.) Patented in Germany Sept. 18, 1880, and Feb. 3, 1881, in England Nov. 10, 1880, in Austria January, 1881, in Hungary January, 1881, and in France Jan. 13, 1881.

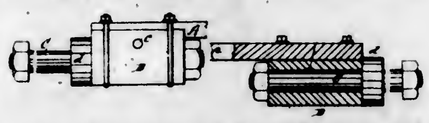
Claim.—1. In a bag-lock, the combination of the elongated bolts B B', the springs *s*, for drawing them outward, pins *h h'* upon said bolts, the fixed cap F, the angle-pieces A A', and the pressure-



caps E E', attached to said angle-pieces and adapted to be pressed inward for drawing the bolts B B' inward, substantially as specified.

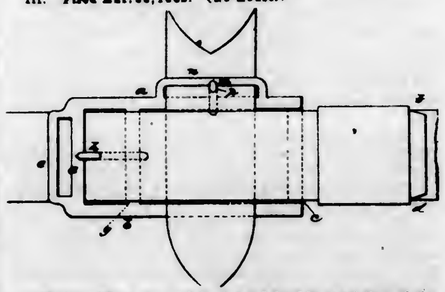
2. The combination of the elongated bolts B B', the springs *s*, for drawing them outward, the pins *h h'* upon said bolts, the pressure-caps E E' and their attached angle-pieces A A', engaging with said pins, and the bolt 1 and bell-crank or elbow 6, adapted to fit between said pins *h h'*, substantially as specified.

257,335. VEHICLE-AXLE. ROBERT P. IVEY, Cuthbert, Ga. Filed Jan. 28, 1882. (No model.)



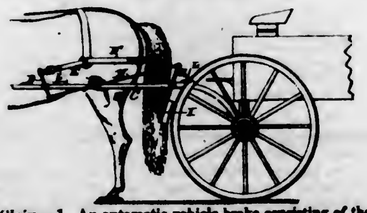
Claim.—The combination, with the boxes B B, secured under each end of axle A, of the independent spindles C C, each having a median collar, *d*, formed of corresponding size on each side of said collar, provided with a nut at each end, one side rotating in the box and the other made fast to the wheels, whereby the spindles may be reversed to equalize wear, as described, and the wheels rigidly clamped to the spindles to turn with them, as set forth.

257,336. TRACE-BUCKLE. MARSHALL S. JOHNSON, Robinson, Ill. Filed Mar. 28, 1882. (No model.)



Claim.—The trace and back-band buckle consisting of the side bars, *a b*, curved inward or depressed in front and connected by the hame-tag bar *c*, and raised at their rear ends and connected by the breeching loop-bars *e e*, the intermediate bar, *g*, carrying the main or trace tongue A, and the raised bracket *n*, extending from the upper side bar, *a*, the latter carrying a tongue, *m*, for the back-band billet, substantially as specified.

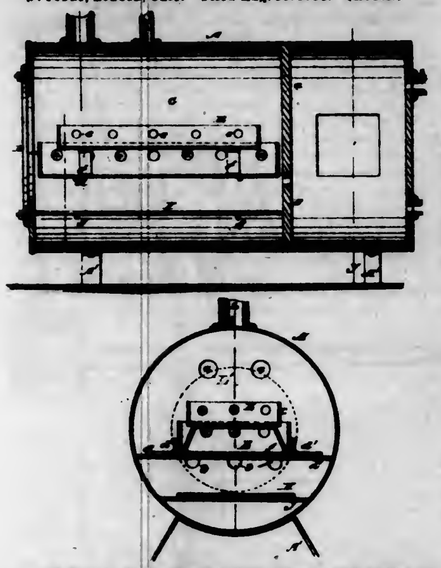
257,337. VEHICLE-BRAKE. WILLIAM T. JOHNSON, Washington, D. C., assignor of one-half to Charles H. Miller, Eureka, Ark. Filed Oct. 18, 1881. (No model.)



Claim.—1. An automatic vehicle-brake consisting of the upright pivoted lever D, one arm of which is adapted to be secured to the holdback-strap E and the other to rod H, and the upright pivoted lever G, arranged on the shaft or pole in front of the wheel, and carrying the brake-shoe I at one end and connected at the other end to rod H, the whole arranged for operation and constructed to act in combination substantially as set forth.

2. An automatic vehicle-brake consisting of the upright lever D, shaft or pole C, upright lever G, carrying brake-shoe I, rod H, connecting levers D and G, and pivoted locking-block L, the whole constructed to act in combination, substantially as set forth.

257,338. FEED-WATER HEATER AND PURIFIER. ROBERT W. JOHNS, London, Ohio. Filed Aug. 18, 1881. (Model.)



Claim.—1. An improved feed-water heater and purifier consisting of a cylinder divided into two unequal chambers by a vertical perforated partition, the smaller one of which is provided with the exhaust and water exit pipe, and the larger one with steam and water supply pipes, and with sediment-collecting pans having perforated sides arranged one above the other, and a grating below the said pans, substantially as and for the purpose set forth.

2. In a feed-water heater and purifier, the combination, with the cylinder A, provided with the vertical partition D, of the purifying-chamber C, provided with the pans E, having perforated sides and placed one above the other, and the grating F, arranged below said pans, substantially as and for the purpose set forth.

257,339. REPEATING MECHANISM FOR CLOCKS. ERWIN Y. JUDD, Hartford, Conn. Filed Nov. 12, 1881. (No model.)

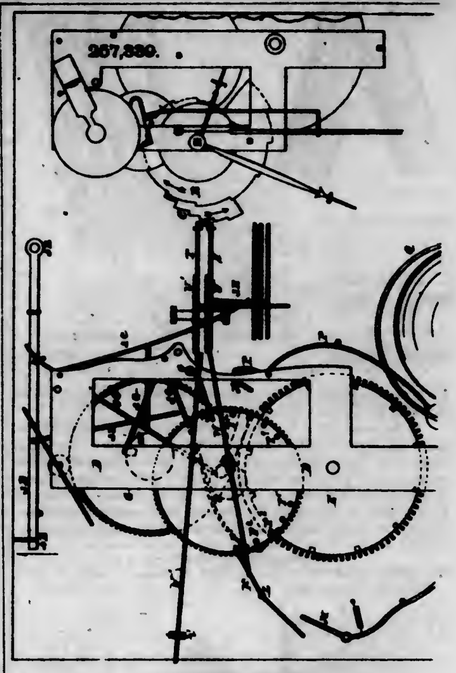
Claim.—1. The hour-snail C, concentric with the arbor of the minute-hand of a clock-train and provided with a series of teeth or notches on the side, in combination with said arbor and a ratchet or spring pawl, C', and a device, B', turning with the minute-arbor for operating said pawl, whereby the said snail is moved one notch for each revolution of the minute-arbor, substantially as described.

2. The combination of one or more fusees, S T, connected by suitable mechanism with the striking-levers K N, for operating them, with said levers and a series of pins of different lengths upon the wheel F, whereby said levers are made to engage a greater or less number of the pins, according to the position of said fusees, and with mechanism for releasing said fusees at will and allowing them to drop upon snails operated by the clock-movement and withdrawing them after one turn of the wheel F, substantially as described.

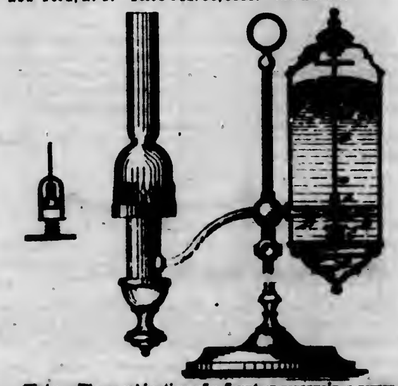
3. The combination of the bar P, the lever P', having the arm P² and the spring P³, the fusees S T, and the wheel F, having a slot for the end of the arm P², whereby the said fusees are released and kept released during the revolution of the wheel F, and then withdrawn, substantially as described.

4. The combination of the snails C R, the fusees S T, the levers K N, having their positions regulated by said fusees by connecting mechanism, the repeating-train, constructed as described, and driven by a spring, H, or its equivalent, the levers M P, carrying the hammers of the bells Q R, the releasing-bar P, the lever P' P², and the lever P⁴ P⁵, with a clock-movement, the whole forming an independent repeating mechanism for clocks, substantially as described.

257,339.



257,340. OIL FOUNT OR RESERVOIR. JÖRGEN KASCHAN, New York, N. Y. Filed Jan. 16, 1882. (No model.)

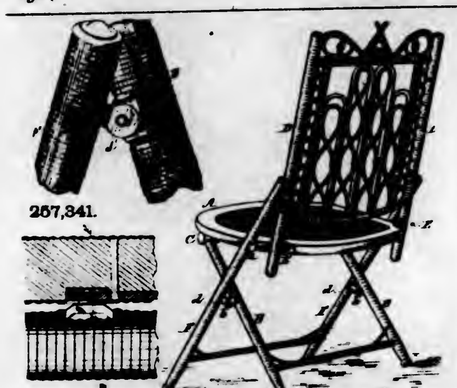


Claim.—The combination of a fount or reservoir, a screw-cap at the top thereof, an eduction-pipe having a valve-opening opposite the screw-cap, a spring-actuated valve adapted to close automatically, a perforated guide-piece or bridge below the top of the fount, a forked spindle passing through said guide-piece, the lower end of which rests upon the valve, while the upper end is adapted for contact with the screw-cap, and a float upon said spindle, substantially as described.

257,341. FOLDING CHAIR. ERWIN EDLEBY, New Haven, Conn. Filed Aug. 1, 1881. (No model.)

Claim.—1. In a folding rattan-bound chair, the combination of the back and of the front legs with the bowed or offset irons *g*, fastened to the back, having the rivet-pivots and the irons *f*, fastened to the legs and pivoted to said bowed irons, whereby to separate the rattan-bound surfaces from the abrading and wearing action, substantially as described.

2. The combination of the seat provided with hangers E with the back covered with rattan, and having bowed irons pivoted to

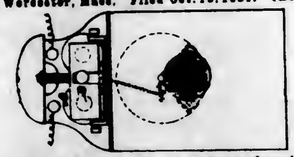


257,841.

the said hangers, whereby to separate the rattan-bound surfaces of the back from the seat-hangers, as set forth.

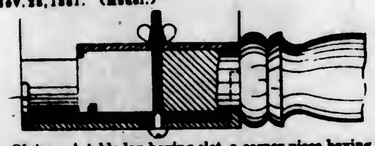
3. In combination, the legs B F, their pivot-joined right-angled plates *b b'*, the rigid seat-frame A, its hangers E E, and its pivoted connection C, with the rear legs, the back D, its inside and outside bowed irons, *g g*, and the bearing-plates *f* of the front legs, the said bearing-plates of the pivoting-connections being partially covered by the rattan wrapping, and the several parts constructed and arranged for use in a folding rattan-bound chair, substantially as described.

257,842. ELECTRIC CALL-BELL SIGNAL. JAMES F. KNOWLTON, Worcester, Mass. Filed Oct. 13, 1881. (No model.)



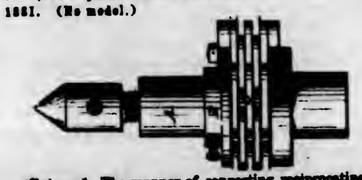
Claim.—A clock-mechanism, a disk or other visible signal carried thereby, an arm adapted to be operated by the operating mechanism of an electric bell or other alarm, and suitable stops on the clock-work engaging said arm, the whole constructed to act in combination in the manner and for the purpose set forth.

257,843. TABLE. FRANK T. KNAUSS, Scranton, Pa. Filed Nov. 26, 1881. (Model.)



Claim.—A table-leg having slot, a corner-piece having a lug fitting said slot, and a back plate having a lug also fitting said slot, in combination with a bolt and nut, as and for the purpose specified.

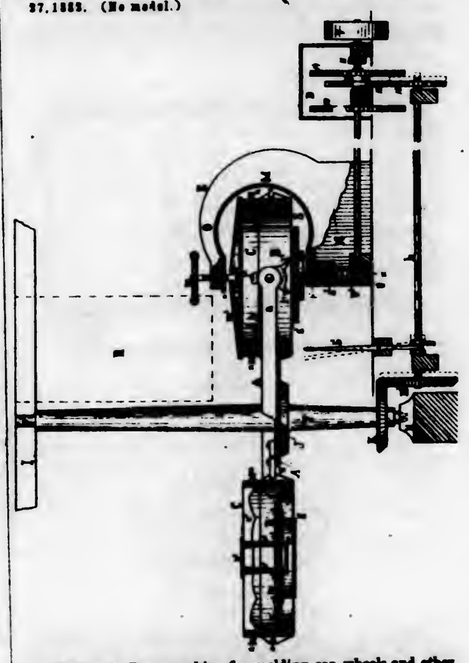
257,844. DEVICE FOR CONVERTING MOTION. WLADYSLAW T. KOSINSKI, Brooklyn, N. Y., assignor of two-tenths to Hubert West, same place. Filed July 31, 1880. Renewed May 16, 1881. (No model.)



Claim.—1. The manner of converting reciprocating into rotary motion by means of chain, steel band, or wire rope, (the ends of which are connected to a lever,) encompassing the object to be rotated by alternate grip and slip motion, as and for the purpose set forth.

2. The combination of the stock and cap, chain, and lever, as described.

257,845. MACHINE FOR MOLDING CAR-WHEELS AND OTHER CASTINGS IN SAND. JOHN LAIR, Hyde Park, Ill., assignor of one-half to H. S. Benton, same place. Filed Feb. 27, 1882. (No model.)



Claim.—1. In a machine for molding car-wheels and other castings in sand, a horizontally-rotating molding-bench carrying the sand-box B, containing a movable pattern, and a half-flask, C, seated on the top end of the said sand-box, substantially as and for the purpose set forth.

2. A horizontally-revolvable molding-bench carrying a sand-box containing a movable pattern, with a half-flask, in combination with a compressor operating to move the pattern and compress the sand, substantially as and for the purpose set forth.

3. In a machine for molding in sand, a horizontally-rotating molding-bench carrying about a center the sand-box, the pattern, and half-flask, substantially as shown, in combination with a sand-conveyer for distributing the loose sand over the pattern when the pattern and half-flask are under the conveyer, and with a compresser moving the pattern and compressing the sand out of the sand-box into the half-flask, arranged and operating substantially as shown, and for the purpose set forth.

4. In a machine for molding in sand, a horizontally-rotating molding-bench, A, constructed with arms *a* to support the sand-box, the sand-box being trunnioned in the outer ends of the said arms, with a locking-slide to engage with the sand-box and hold it in a horizontal position, as specified.

5. The combination, in a machine for molding in sand, of a horizontally-revolvable molding-bench, A, flange J, and post F, arranged, as shown, with the arms *a*, sand-box B, having pivots in the arms *a*, and the half-flask C, arranged and operating substantially as shown, and for the purpose set forth.

6. In a machine for molding in sand, the horizontally-revolvable molding-bench, the sand-box, the pattern, and half-flask, revolvable about a center, all constructed and arranged as shown and described, in combination with suitable mechanism to automatically move the molding-bench step by step, in the manner described, and for the purpose set forth.

7. In a machine for molding in sand, the horizontally-revolvable molding-bench, the sand-box, the pattern, and half flask, revolvable about a center, all constructed and arranged as shown and described, in combination with suitable mechanism to automatically move the molding-bench step by step, and with mechanism, such as shown and described, for dumping the required quantity of sand into the sand-box, for compressing the sand into the half-flask, for withdrawing the pattern, and for removing the half-flask, substantially as shown, and for the purpose set forth.

8. In a machine for molding in sand, which consists of the combination of a horizontally-revolvable molding-bench, sand-box with pattern, and a half-flask, means for revolving the same about a center, a compresser having a movable head, G, cam U, pitman U', and a slide, *g'*, arranged and operating substantially as shown, and suitable mechanism for stopping the revolving of the molding-bench, by which the sand-box and half-flask will be at rest while the compresser-head G is moving the pattern, substantially as shown, and for the purpose set forth.

9. In a machine for molding in sand, the sand-box B, constructed with open ends and with trunnions *i*, slotted ears *e*, and ear-lugs A, with dowels *i*, in combination with a half-flask, C, and with a horizontally-rotating molding-bench having arms *a*, and with a locking-slide to engage with the sand-box and hold it in a horizontal position, substantially as shown, and for the purpose set forth.

10. The combination, in a machine for molding in sand, of the sand-box B, and the pattern P, with the spring *d*, arranged and operating substantially as shown, and for the purpose set forth.

11. The combination, in a machine for molding in sand, of a locking-clamp, *l*, constructed with a catch, *l'*, and handles *F*, as shown, the said clamp pivoted to the trunnion *i*, and the catch *l'* being arranged to engage with the lug *F*, locking the half-flask to the sand-box, substantially as specified.

12. The combination, in a machine for molding in sand, of the sprue-stick *u*, constructed, substantially as shown, with a cone-shaped recess in its bottom end, and with the extension *u'*, constructed with a pointed cone-shaped top end fitting the bottom end of the sprue-stick, as shown, the extension *u'* being movably seated in perforations in the pattern, substantially as shown, and for the purpose set forth.

13. The combination, in a machine for molding in sand, of the sprue-stick *u* and the extension *u'* with the spring *u²*, the latter bearing on the extension *u'*, as shown, and for the purpose shown.

14. The combination, with a machine for molding in sand, of the conveyer R, constructed, substantially as shown, with a series of scattering-bars, *r*, arranged in succession, whereby loose sand, in passing through the conveyer, will be scattered and distributed over the surface of the pattern, substantially as specified.

15. The combination, in a machine for molding in sand, of the conveyer R, with a series of scattering-bars, *r*, arranged in succession, and with a cone-shaped scatterer, *r'*, arranged and operating substantially as shown, and for the purpose set forth.

16. In a machine for molding in sand, a horizontally-rotating molding-bench, sand-box with pattern, and a half-flask, revolving about a center, in combination with a compressor and crane, T, with grapple W, arranged in succession, whereby the loose sand will be compressed by the compressor, after which a move is made from the compressor and then the pattern withdrawn from the compressed sand by the crane and grapple, all arranged and operating substantially as shown, and for the purpose set forth.

17. The combination, with a machine for molding in sand, of the power-donkey D, consisting of a series of cogged wheels with pinions, and one wheel bare of cogs for the greater portion of its rim, as shown, arranged and operating with the compresser E and rotating molding-bench A, substantially as shown, and for the purpose set forth.

18. In a machine for molding in sand, a horizontally-revolvable molding-bench, constructed with arms *a*, and a sand-box trunnioned in the said arms at each end of the said molding-bench, in combination with suitable mechanism to move the molding-bench, carrying the sand-boxes about a center, in the manner described, and for the purpose set forth.

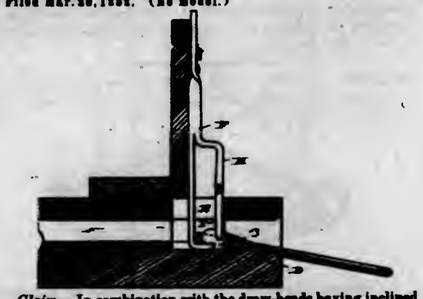
257,846. SHAFT-HITCH FOR VEHICLES. JOHN S. LAYTON, Springfield, Ohio. Filed Feb. 21, 1882. (No model.)



Claim.—1. In combination with the casings A, adapted to be secured to the shafts of a vehicle, the independently-movable draw-bars C D, having hooks at their outer ends adapted to be secured to the breast and breech straps of a hame, the plates I I, secured to the draw-bar, and the interposed spring S to take up the strain on said draw-bars, substantially as and for the purpose specified.

2. The combination of the case A, spring S, independent draw-bars C D, plates I, clamps *l*, *l*, and swiveled thumb-button H, substantially as and for the purpose specified.

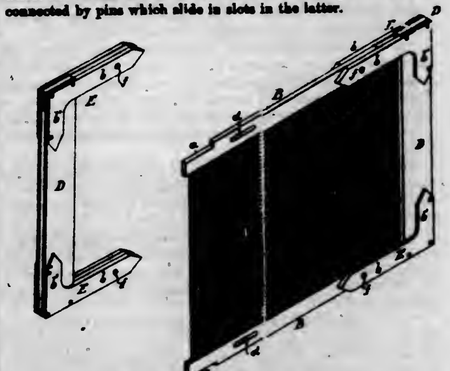
257,847. CAR-COUPLING. JOHN D. LEWIS, Columbus, Miss. Filed Mar. 30, 1881. (No model.)



Claim.—In combination with the draw-heads having inclined guides C, spaces D at each side of said guide, and vertical mortise E, the vertically-sliding frame F, provided with a horizontal arm at its lower end, and a bent arm, H, carrying a hinged pin, I, the whole arranged to operate substantially in the manner and for the purposes specified

257,848. ADJUSTABLE WINDOW-SCREEN. EDWIN L. LLOYD, Philadelphia, Pa. Filed Feb. 2, 1882. (No model.)

Brief.—The side edges of the netting are secured in bars recessed at their ends to fit into slots in box-like frames. The latter receive the unconfined ends of the netting, and have angle-irons whose inner ends embrace the ends of the netting-bars, and are connected by pins which slide in slots in the latter.



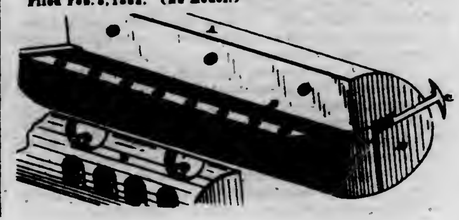
Claim.—1. The combination of the screen A, having top and bottom bars, B, and having unconfined ends, with the adjustable box-like end frames, D, guided on the bars B and adapted to receive and protect the unconfined ends of the screen, as set forth.

2. The combination of the box-like end frames, D, with the screen A, having bars B, with recesses *a* for the reception of the top and bottom strips of the frames D, as set forth.

3. The combination of the screen A and its bars B, having slots *d*, the end frames, D, adapted to said screen and its bars, and the corner plates, E, having projecting arms *b*, with transverse pins or bolts *f*, adapted to the slots *d*, as set forth.

4. The combination of the screen A and its bars B with slots *d*, the end frames, D, the corner plates, E, having thickened arms *b*, and the connecting pins or bolts *f*, adapted to the slots *d*, as set forth.

257,849. GUTTER-HEAD. ERNEST P. LOSEE, New York, N. Y. Filed Feb. 8, 1882. (No model.)



Claim.—A circular cylinder-head, A, having the right-angled recesses made in opposite sides, and provided with the parallel grooves B, in combination with the cutters C and the blocks D, which fill the recesses in the sides of the cylinder, substantially as shown and described.

257,350. POCKET. DAVID LUBIN, Sacramento City, Cal., assignor of one-half to Harris Weinstock, same place. Filed Feb. 6, 1882. (No model.)



Claim.—1. As a new article of manufacture, an attachment or frame for pockets, pouches, or other like articles, the same consisting of a frame constructed of metal or other suitable material, in sections, hinged together at the sides and ends and adapted to be secured to the pocket or other suitable article, substantially as specified.

2. In combination with a pocket, pouch, or other like article constructed of textile fabric, the attachment or frame constructed of hinged sections, as described, and made to conform to the shape of the body of the wearer, substantially as and for the purposes set forth.

3. In combination with the pocket or pouch and the hinged frame, made to conform to the shape of the body, a belt to which said frame and pocket or pouch are secured, whereby the pocket may be adapted to be worn either inside or outside of the garments, substantially as and for the purposes set forth.

4. In combination with the hinged attachment or frame and the pocket, the small pouches at the end of the mouth of the pocket, and the elastic looped bands secured therein, whereby the device may be temporarily secured to a coat, vest, pants, dress, or shirt pocket, or to other articles of male and female wearing-apparel and held by the elasticity of the bands, substantially as set forth.

5. In combination with a pocket or pouch, the hinged frame or attachment, formed as described, and provided with a recess in which a link of a watch-chain may be hooked to secure the watch, substantially as specified.

6. In combination with the pocket provided with small pouches at the mouth and with elastic bands secured in said pouches, of the hinged frame or attachment provided with apertures, whereby it may be stitched to the garment, substantially as and for the purpose set forth.

7. In combination with the hinged frame, the intermediate section consisting of the hinged stripe *i* and the hinged rectangular tubes or slides *i'*, hinged together as described, whereby the pocket may be provided with a dividing-partition, substantially as specified.

8. In combination with the hinged attachment or frame, the perforated stripe P, secured to the said frame, whereby the same may be attached to the garment, substantially as specified.

257,351. PIN. DAVID LUBIN, Sacramento City, Cal., assignor of one-half to Harris Weinstock, same place. Filed Feb. 1, 1882. (No model.)



Claim.—1. As a new article of manufacture, a pin for holding garments together, having its head concaved on the upper face thereof and its shank or body of triangular form in cross-section and longitudinally grooved, as shown and described.

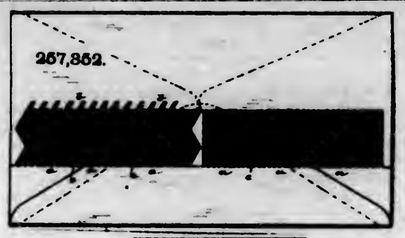
2. As a new article of manufacture, a pin for holding garments, having a triangular shank in cross-section and longitudinally grooved, as shown and described.

257,352. ENVELOPE. DAVID LUBIN, Sacramento City, Cal., assignor of one-half to Harris Weinstock, same place. Filed Jan. 31, 1882. (No model.)

Claim.—1. An envelope having its closing-flaps fringed, as described, and a tissue-paper backing cemented to the fringe, substantially as described.

2. An envelope having slips *a*, of different lengths, formed on its flap, and a tissue-paper backing cemented to said slips, for the purpose substantially as described.

3. An envelope having its closing-flap fringed and the ends of the slips *a* extended beyond the tissue-paper backing sealed to the fringe and gummed, substantially as described.



257,353. GUIDE FOR THE STEMS OF STAMP-MILLS. JAMES B. LUCAS, Tybo, Nev. Filed Jan. 19, 1882. (No model.)

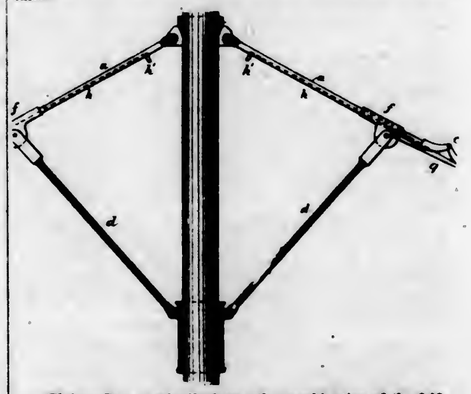


Claim.—1. The combination, with the guide-rail A, provided with the mortise *a*, having radial wings *a'*, tapering inwardly from top to bottom, and bearing-blocks *b b'*, placed in the radial wings *a'*, of the two plates or caps *d d*, having their inner or adjacent ends provided with semi-circular recesses and longitudinal slots d^2, and having their outer ends made fast to the guide-rail, and the wedges *c c*, substantially as set forth.

2. The combination, with the guide-rail provided with the mortise *a*, having radial wings *a'*, stamp-stem E, blocks *b b'*, and wedges *c c*, of the plates *d d*, made fast to the upper and under sides of the guide-rail, and provided with semicircular end recesses and radial slots d^2, the upper and under plates being arranged in the same vertical plane, substantially as set forth.

257,354. UMBRELLA. AUGUST HALMROS, Helsingborg, Sweden. Filed Nov. 28, 1881. (No model.)

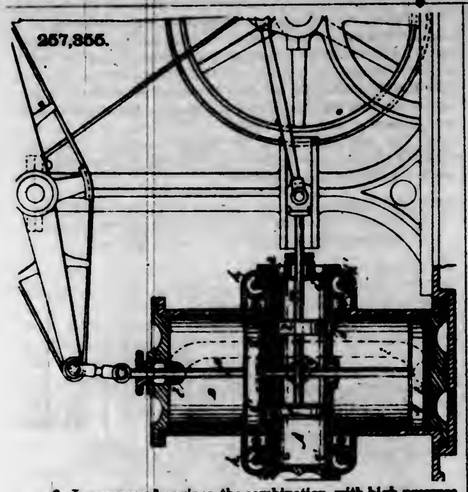
Brief.—One part of each jointed rib has an elongation, to the outer end of which is hinged a thin metal rod, which rests in the concavity of the other part of the rib and terminates in a small catch



Claim.—In an umbrella-frame, the combination of the folding ribs *a b*, provided with the joint or hinge *c*, arm *g*, projecting from the outer part, *b*, of the jointed rib, hooked rod A, hinged in the outer end of arm *g*, sliding sleeve or thimble *f*, and brace or stretcher *d*, hinged at its outer end in said thimble, the whole constructed and combined to operate substantially in the manner and for the purpose herein shown and described.

257,355. COMPOUND STEAM-ENGINE. GIDEON B. HAGENY, New York, N. Y., assignor to Jacob Lorillard, Trustee, same place. Filed Dec. 21, 1881. (No model.)

Claim.—1. In compound engines, the combination of the intersecting cylinders A B, communicating by ports *b' b'*, pistons *l l* on rod *m*, pistons *q q* on rod *p*, and the steam and exhaust ports *c' o g* of the high-pressure cylinder, substantially as shown and described.



2. In compound engines, the combination, with high-pressure cylinder A, of the low-pressure cylinder B, connected directly therewith, the pistons *q q*, rod *p*, and pipe *i*, substantially as shown and described.

3. In compound engines, the combination of two intersecting cylinders communicating with each other by open ports and a compound piston in the high-pressure cylinder fitted to act as valves for the low-pressure cylinder, substantially as shown and described.

257,356. BURGLAR-ALARM. WILLIAM D. HAYNEY, Harvel, Ill. Filed Nov. 5, 1881. (No model.)



Claim.—1. The combination of the spring-supported platform, wires of an electric circuit, contact-points in an alarm-circuit that are brought into contact by the downward movement of the platform, and movable supports arranged to sustain the platform rigidly when required, substantially as shown and described.

2. The combination of spring-platform A, movable block *n*, and the circuit-wires *o o'*, connecting with the blocks and platform, respectively, substantially as shown and described.

3. The movable bars *b b'*, *c c*, and *c' c'*, connected together and provided with studs *h*, in combination with the spring-platform A, substantially as and for the purposes set forth.

4. The movable bar *b*, links *d*, rock-shaft *f*, arms *h m*, and jointed block *n*, substantially as shown and described, combined with the spring-platform A, for operation as set forth

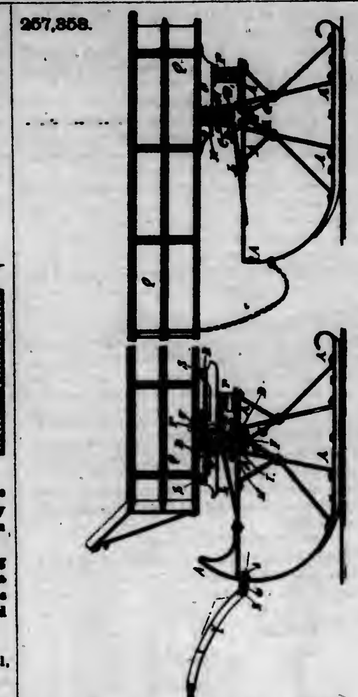
257,357. UNDERGROUND CONDUIT FOR ELECTRIC WIRES. ARCHIE F. HOLDEN, San Francisco, Cal. Filed Dec. 17, 1881. (No model.)



Claim.—In an underground conduit for electric wires, the combination of the pipe A, having an enlarged end, as described, to receive the smaller end of a corresponding pipe, with such corresponding pipe and disk G, provided with apertures for the passage of telegraph or other electric conducting-wires, and having an enlarged portion or shoulder constructed to fit the interior of the enlarged portion of pipe A, and a smaller portion constructed to fit the interior of the smaller end of the connecting-pipe, substantially as and for the purpose set forth.

257,358. BOB-SLEIGH. HIRAM MCILROY, Poplar Ridge, N. Y. Filed Oct. 27, 1881. (No model.)

Claim.—1. In a bob-sleigh, the combination, with the bolster M and the runners A, of the tubes C, the rods H, and the plates K, having lugs J, substantially as herein shown and described,

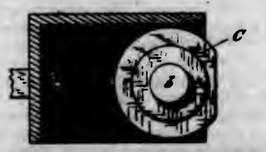


whereby the runners can move independently of each other in passing over an uneven roadway, as set forth.

2. In a bob-sleigh, the combination, with the runners A, the tubes C, and the rods H, of the concaved bars D, the clips E, having lugs F, and the braces G I, substantially as herein shown and described, whereby the runners are held firmly in place, as set forth.

3. In a bob-sleigh, the combination, with the body Q, the bolster M, and the runners hinged to the said bolster, of the springs P, interposed between the said body and runners, with their ends resting upon the upper sides of the raves of the runners, substantially as shown and described, whereby the flat surfaces of the runners will be kept upon the roadway, as set forth.

257,359. CAR-COUPLING. WILLIAM J. MCTIGUE, Pittsburg, Pa., assignor of one-fourth to Gilbert T. Rafferty, same place. Filed Mar. 6, 1882. (No model.)



Claim.—1. In a car-coupling, the rotary block C, journaled on a horizontal axis, and having the recess *d* and slot *e*, in combination with suitable means for rotating said block, substantially as described.

2. In a car-coupling, the rotary block C, journaled on a horizontal axis, and having slot *e*, opening into recess *d*, and at a point about opposite the recess *d*, provided with ball-ended coupling-bar D, in combination with suitable means for rotating said block, substantially as described.

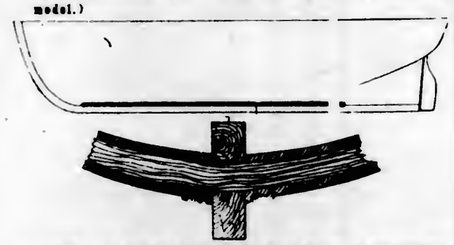
3. In a car-coupling, the rotary reversible block C, provided at one side with the recess *d* and at the other side with ball-ended coupling-bar D, and having the slot *e*, in combination with a spring, *f*, and suitable means for locking or setting the block against the tension of said spring, substantially as described.

4. The combination of the draw-head B, block C, having recess *d*, slot *e*, ball-ended bar D, and journals *b*, and spring *f*, substantially as described.

5. The combination of draw-head B, rotary coupling-block C, and chain *i*, substantially as described.

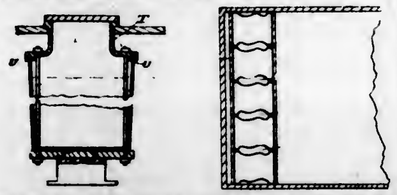
6. The combination of draw-head B, coupling-block C, journaled therein, and having plunger *k*, and spring-lever *l*, having spur *m*, substantially as set forth.

257,360. HULL OF VESSELS. EDWARD A. MERRIMAN, Medford, assignor, by direct and mesne assignments, to John M. Watson, Trustee, Brookline, Mass. Filed Jan. 17, 1882. (No model.)



Claim.—A marine or navigable vessel having a longitudinal groove in its exterior surface located in the re-entrant angle or recess immediately above the keelson, and a pipe or pipes communicating with a refrigerating apparatus and placed in said groove, whereby said plates, while exposed to the cooling action of the water on which the vessel floats, are protected from injurious contact with external objects, as set forth.

257,361. REFRIGERATOR. EDWARD A. MERRIMAN, Medford, assignor, by direct and mesne assignments, to John M. Watson, Trustee, Brookline, Mass. Filed Feb. 6, 1882. (No model.)



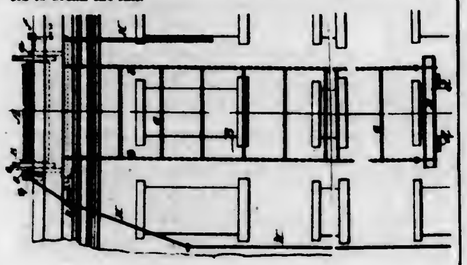
Claim.—1. In a refrigerator, a series of tanks or receptacles formed, as described, on their approximate surfaces, whereby when the tanks are placed in contact with each other said proximate surfaces will form narrow parallel-sided S-shaped vertical air-passages, the entire surfaces of which are cooled by the refrigerant in the tanks, as set forth.

2. In a refrigerator, the tanks or receptacles having S-shaped or tortuous air-passages between their proximate sides, contracted upper ends projecting through the top of the refrigerator, and spaces between said contracted upper ends connecting said air-passages with the upper portion of the preserving-chamber, as set forth.

3. The improved tank composed of the cast-metal top T, having a groove, U, the sheet-metal body having its upper end contained in said groove, and the bottom cleats connected to the top by vertical rods, as set forth.

257,362. FLEXIBLE LADDER. JOSEPH T. HILLS, Brooklyn, N. Y. Filed Feb. 18, 1882. (No model.)

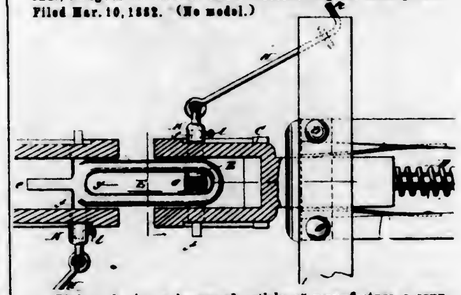
Brief.—The pawl which releases the ladder-drum and the hinged door are released simultaneously by a pull on the operating-rope. The weight at the bottom of the ladder has rubber buffers to break the fall.



Claim.—1. In a fire-escape, the combination, with the reel A, provided with the ratchet-wheel G, the ladder B, and the hinged door K, of the bent pawl *g*, the bent rod or button *k*, and the wire or cord H, attached to the said pawl and passing through an eye of the button, substantially as herein shown and described, whereby the said pawl and button will be simultaneously operated by a pull upon the wire or cord, as set forth.

2. The combination, with the ladder B and reel A, of the weight D, attached to the end of the ladder and provided with the buffers *d d*, substantially as described.

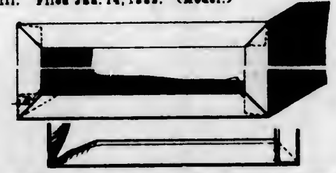
257,363. CAR-COUPLING. MAGOIN A. MORAN, Fort Wayne, Ind., assignor to herself and Frederick Rogers, same place. Filed Mar. 10, 1882. (No model.)



Claim.—1. As an improved article of manufacture, a coupling-link, E, provided with a longitudinally-extending projection, *e*, and two laterally-extending projections or trunnions, *f f*, the said projection and trunnions being integral with the link, whereby said link serves as both link and pin, substantially as herein described.

2. In a car-coupling, the combination, with the link E, provided with the trunnions *f*, integral therewith, and having square ends, of the detachable key K and the rod H, connected by a hook-and-eye joint to the said key, and provided with the handle *h*, substantially as and for the purpose set forth.

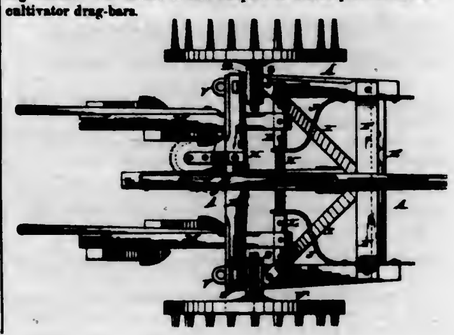
257,364. PORTABLE OVEN. JONATHAN L. MORGAN, Decatur, Ill. Filed Jan. 14, 1882. (Model.)



Claim.—A portable oven having a door front or opening formed of the extended turned-down portion of the sides, top, and bottom of said oven, the overlapping corners of the said turned-down portion being formed by folding the corners and swaging down the fold, substantially in the manner shown and described.

257,365. COMBINED PLOW, HARROW, AND CULTIVATOR. JOHN C. MOSS, Rosston, Tex. Filed Sept. 28, 1881. (Model.)

Brief.—The rotary harrows have rigid journals or spindles. The frame has two sets of bearings, adapting the harrows for bearing wheels. The frame is also adapted to attach plow-beams or cultivator drag-bars.



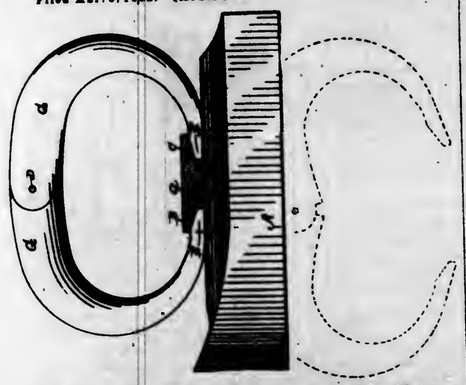
Claim.—In a combined implement, the frame A, composed of the cross-beam B, uprights C C, side beams, D D, and draft-bar E, the frame being provided with the horizontal double bearings S S and the vertical double bearings V V, the curved beams J J, and the perforated pivoted arms L L, adapted for interchangeably connecting thereto the breaking-plow, the cultivators, and the harrow-wheels, substantially as specified.

257,366. FIRE-PROOF-TILE FURRING. GEORGE H. MOULTON and ERNEST V. JOHNSON, Chicago, Ill. Filed Oct. 26, 1880. (No model.)



Claim.—The combination of the furring-tiles *b*, made in the shape shown, applied to a brick or other form of wall, with the nails *c*, and forming the air-spaces *d*, whereby a continuous circulation of air is allowed over the whole of the furred surface, thus avoiding dampness and affording means for ventilation, all as substantially set forth and described.

257,367. SAD-IRON. THEODORE C. MULLINIX, Clinton, Ind. Filed Mar. 8, 1882. (Model.)



Claim.—The iron A, having the boss *a*, provided with tapering sockets B and C, in combination with the handle G D, hinged in the center and having the tapering wedge-shaped ends E F, substantially as and for the purpose set forth.

257,368. TOOL FOR TRIMMING THE SOLES OF BOOTS AND SHOES. JAMES NUNDELL and WILLIAM J. GORDON, Philadelphia, Pa., assignors of one-third to John Nundell, same place. Filed Mar. 28, 1882. (No model.)



Claim.—1. The combination, with the arbor and a rotary cutter, of a ring-gage bearing and a vertical face-gage secured upon the arbor in the described relation to each other and said revolving cutter, for the purpose specified.

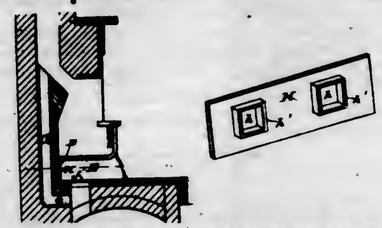
2. The combination, with the arbor and a rotary edge-trimming and rand-finishing cutter fixed thereon, of a ring-gage bearing having a fixed relation to said cutter, and a vertical face-gage having an adjustable relation to said cutter over said ring-gage, substantially as described, for the purpose specified.

3. The combination, with a rotary edge-trimming and rand-finishing cutter, of an adjustable vertical face-gage and a reversible ring-gage bearing secured in the described relation to the cutter and to the adjustable gage, for the purpose specified.

4. The combination, with the arbor and the beveling-cutter, of the adjustable ring *r*, having a vertical face bearing-gage, *f*, and a circular gage-bearing, *e*, projecting at right angles from said vertical face-gage, substantially as described, for the purpose specified.

5. The rotary tool herein described for trimming and randing the tap-sole and beveling the outsole, consisting of the arbor having a fast and loose pulley, a trimming and randing cutter on one end, and a beveling-cutter on the other, each cutter having a circular gage-bearing and an adjustable vertical face-gage, substantially as described, for the purpose specified.

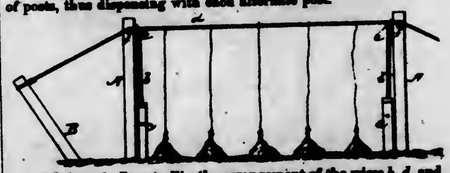
257,369. FIRE-PLACE. DAVID E. MURDOCH, Pittsburg, Pa. Filed Feb. 8, 1882. (No model.)



Claim.—The combination, with the fire-place back, of the flues D and the plates H, having openings h and flanges h', adapted to extend through the tile J, as shown and described.

257,370. VINE-TRELLIS. JOSEPHUS NELLIS, Palatine Bridge, N. Y. Filed Mar. 29, 1882. (No model.)

Brief.—Series of wires running crosswise. First series attached to posts outside trellis and passed over pins in the posts of the trellis. Second series run in same direction, attached by hooks to wires fastened to staples at each end of line of posts and to top of posts, thus dispensing with each alternate post.



Claim.—1. In a trellis, the arrangement of the wires *b*, *d*, and *g*, the former secured to the posts A and attached at each end to the stakes *c*, and the latter running crosswise the same and connected thereto by the hooks *e*, and secured at the ends to the stake B, as shown and described.

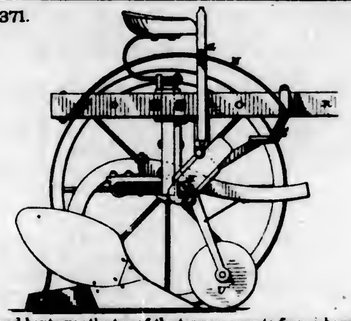
2. In a trellis, the hooks *e*, attached to the wires *b*, in combination with the wires *d*, posts A, and stakes B *c*, as described, and for the purpose specified.

257,371. WHEEL-PLOW. JOHN W. NELSON, Hutchinson, Kans. Filed Jan. 27, 1882. (No model.)

Brief.—The axle of the furrow-wheel forms the plow-ball, which is journaled in bearings upon the main axle and arch. The furrow-wheel has also a spindle-crank of adjustable length and a rigid lever, which, by one motion, raises the plow-ball and lowers the furrow-wheel. The furrow-wheel spindle may be set straight with the axle. A channeled block upon the arch casts a frame-bar, upon which a tongue is centrally pivoted. Set-screws in the clamp adjust the plow-point to or from land.

Claim.—1. The combination of the axle A, arched at its inner end, the casting P, secured to one side of the arch and clamped against the inner side of the beam O, the rack-bar X, having its

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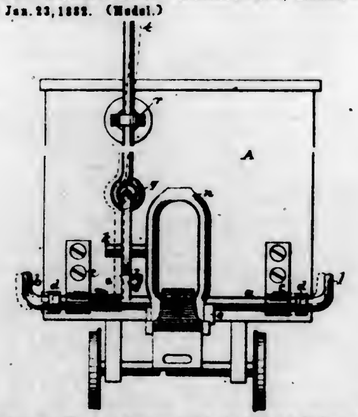
front end bent over the top of the tongue, so as to form a bearing or pivot for it, and the bar S, the rear end of the tongue being made to bear against the casting, substantially as shown.

2. The combination of the casting P, provided with the flange T, the clamping device P', the tongue R, having a fastening device to catch under the flange, and suitable bearings for the tongue, substantially as described.

3. The combination, in a wheel-plow, of the part A of the axle, the grooved casting P, secured thereto, a suitable clamping device, P', and the beam O, to which the ratchet-bar and the tongue are secured, substantially as set forth.

4. The combination of the arched axle A, the crank-axle D, the grooved casting F, the spindle H, having an adjustable shank adapted to slide in the grooved casting, and the rigid lever G, substantially as specified.

257,372. CAR-COUPLING. SYLVESTER OAR, Kansas, Ill. Filed Jan. 23, 1882. (Model.)



Claim.—1. The combination, with the pivoted link *a*, provided with the lateral arm *b*, of the rock-shaft *c*, provided with the arms *c c'*, having a slot between them, catch *b*, and spring *m*, performing the double purpose of holding the link coupled, and moving the arm *c* laterally into engagement with the catch to hold the link uncoupled, substantially as described, and for the purpose set forth.

2. The combination, with the car A, provided with the catch *b* and boxes *c c*, rock-shaft *a*, provided with handles *b b*, and arms *c c'*, having a slot between them, of spring *m*, secured to the car and rock-shaft, and rod *l*, substantially as described, and for the purpose set forth.

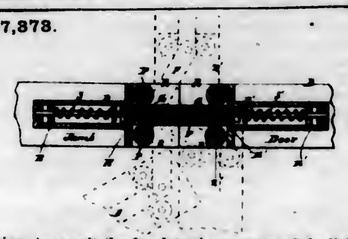
257,373. SPRING-HINGE. PATRICK E. O'LALLY, Boston, Mass. Filed May 19, 1879.

Claim.—1. The combination of springs S S', a link, F, pivotally connected with the same, and rollers P P Q Q, substantially as and for the purpose described.

2. The combination of the castings or mortises D D', the friction-rollers N O, the vertical rollers or fulcrums P P Q Q, the plates E E', the springs S S', and the link F, as set forth.

3. The castings or mortises D D', containing the sliding plates, springs, and link, and provided at their outer ends with lateral

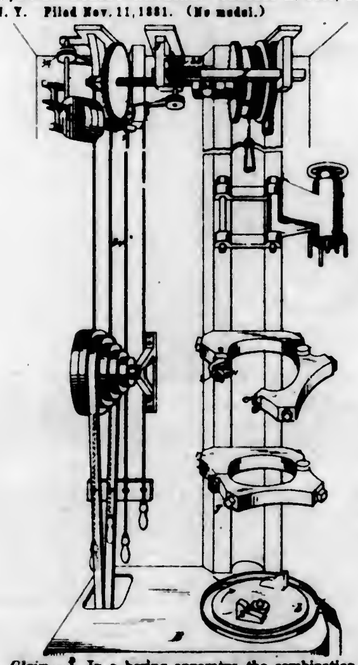
257,378.



openings to permit the free lateral movement of the link, as set forth.

4. In combination with a door and its jamb or their equivalents, connected by a hinge adapted to swing in both directions and give the door a lateral movement, a rounded projection or roller, T, located on the edge of one of the parts connected by the hinge, and a recess in the edge of the other part, adapted to receive said projection, substantially as and for the purpose specified.

257,374. BORING-MACHINE. CHARLES R. OTIS, Yonkers, N. Y. Filed Nov. 11, 1881. (No model.)



Claim.—1. In a boring apparatus, the combination, with a vertical bed or sheers, of a rotating head-stock, tail-stock capable of lateral adjustment to carry it out of line with the head-stock, and elevating mechanism constructed and arranged to raise and lower the cylinder and boring-bar, substantially as set forth.

2. The combination, with the tail-stock, of the fingers *f*, arranged to be struck by the star-wheel on the screw of the boring-bar, substantially as set forth.

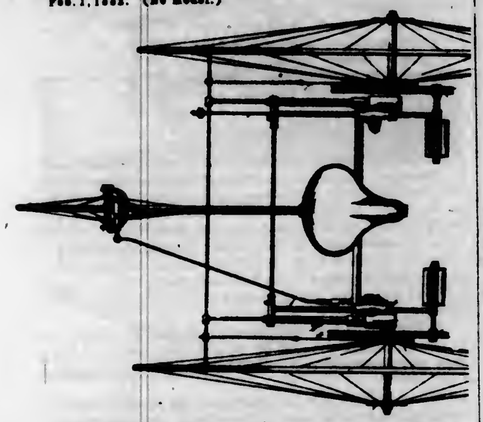
3. The combination, with the bench and head-stock, of a flange, 4, and vane 6, substantially as set forth.

4. The combination of the head and tail stocks, arranged vertically, the hoisting mechanism, driving-shaft, clutch device for throwing said mechanism into and out of operation, and appliances extending to the bench, whereby the clutch may be operated, substantially as set forth.

5. The combination, with the hoisting-drum, driving-shaft, and driving and idler pulleys, of the shifting devices and appliances extending to the bench B, constructed to shift both belts, one ahead of the other, substantially as set forth.

6. The combination, with the shaft *n* and cam-wheel M, of the shifting-bars and the rope 34, passing around a pulley on the shaft and extending to the bench B, substantially as set forth.

257,375. TRICYCLE. ALBERT R. OVERMAN, Hartford, Conn., assignor to the Overman Wheel Company, same place. Filed Feb. 1, 1882. (No model.)



Claim.—1. In a tricycle, the combination, with the driving-wheels supported on spindles provided with driving-disks and foot-pedals for actuating the driving-disks, of rearwardly and downwardly curved side frame-pieces having their lower portions connected by a cross-bar on which are mounted the rear ends of the treadle-levers, and a cross-bar supporting the seat and secured to the side frame-pieces in rear of the spindles, substantially as and for the purpose set forth.

2. In a tricycle, the combination, with the driving-wheels provided with driving-disks and foot-pedals for actuating the driving-disks, of the guide-wheel and a frame consisting of two rearwardly and downwardly curved side pieces for supporting the treadle-levers, a central frame-piece extending rearwardly and supporting the guide-wheel, and a cross-bar secured to the forward portions of the three frame-pieces and supporting the driver's seat, substantially as and for the purpose set forth.

3. In a tricycle, the combination, with the driving-wheels provided with driving-disks and foot-pedals for actuating the driving-disks, of the guide-wheel, a handle-rod supported in a bracket located below the driving-wheel spindles, a pinion secured to the lower end of the handle-rod, and a rod secured at one end to the yoke of the guide-wheel, and its forward end provided with a rack-bar, substantially as and for the purpose set forth.

4. In a tricycle, the combination, with the guide-wheel, rod, rack-bar, and pinion, of the vertically-adjustable guiding-handle, substantially as set forth.

5. In a tricycle, the combination, with the brake-rod, of the eccentric and vertically-adjustable brake-handle, substantially as set forth.

6. In a tricycle, the combination, with vertically-adjustable brake and guide handles, of the vertically-adjustable seat, substantially as and for the purpose set forth.

7. In a tricycle, the spindle-hanger and the rack-bar guide formed integral therewith, substantially as set forth.

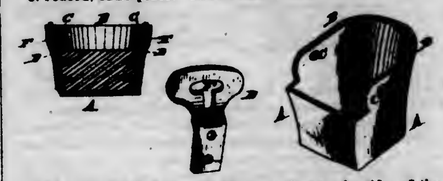
8. In a tricycle, the spindle-hanger and the eccentric support, made integral therewith, substantially as set forth.

257,376. PLANTING-PLOW. THOMAS PAYNE, Alton, Ill., assignor to Hapgood Plow Company, same place. Filed Nov. 16, 1881. (No model.)



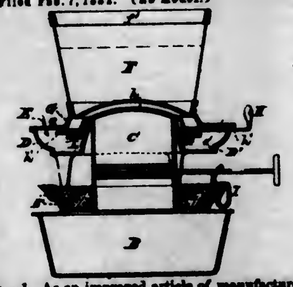
Claim.—In a planting-plow, the drag-bar *a*, having its forward end bent and slotted, fitting the back of the mold-board and adjustably attached thereto, and the rear end bent downwardly and slotted, and fitting the back of the covering-blades, and adjustably attached thereto, substantially as and for the purpose set forth.

257,377. CAP OR COVERING FOR BOOT OR SHOE HEELS. WILLIAM A. PRAY, Calhoun, Ky., assignor of one-half to Jeptha C. Jenson, same place. Filed Feb. 25, 1882. (No model.)



Claim.—The plates D, suitably secured upon the sides of the heel of a boot or shoe, and having T-shaped slots F, in combination with the herein-described heel cap or covering A, having collar B, provided with buttons C, substantially as and for the purpose herein shown and specified.

257,378. COAL-OIL STOVE. WILHELM PETERSEN, Buffalo, N. Y. Filed Feb. 7, 1882. (No model.)



Claim.—1. As an improved article of manufacture, a burner for oil-stoves, lamps, &c., consisting essentially of the oil-reservoir B, having the flaring top portion, B', provided with the cover B'', the receptacle D, provided with the air-chamber D', cover E, with perforations *e*, and depressed portion E', with perforations *e'*, cap G, and a suitable chimney, F, the whole being constructed and combined with a wick-tube, substantially in the manner as and for the object specified.

2. In oil lamps or burners, the combination, with the chamber D, having the perforated disk E, provided with central depression, E', of the crank-shaft A' A', with handle H and the plate A, substantially as and for the object stated.

257,379. TOY CATAPULT. CHARLES F. PORLMAN and HARRY THOMPSON, Fremont, Ohio. Filed Aug. 8, 1881. (No model.)

Brief.—Improvement on Letters Patent No. 239,865.



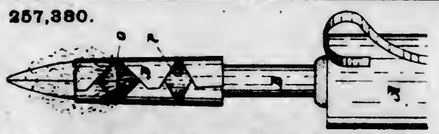
Claim.—In a toy sling or catapult of the described construction, the elastic band C, having the pocket D, and strap or loop *d*, affixed to the back of said pocket, substantially as and for the purpose herein shown and specified.

257,380. SELF-ACTING BLOW-PIPE LAMP, SOLDERING-IRON HEATER, AND PAINT-BURNER. THOMAS POTTER, San Francisco, Cal. Filed Feb. 21, 1882. (No model.)

Brief.—By moving the cylinders E and D up or down the flame is caused to burn at a greater or less distance from the tube B, thus causing the formation of more or less vapor in said tube, so that the flame may be increased or diminished.

Claim.—1. The can A, having the wick-tube B and cap C, with open reservoir or recess F and perforation G, and the wick W and packing V, in combination with the combustion-tube E, having

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the single side opening, P, to use as a portable blow-pipe and heater and burner, substantially as and for the purposes set forth.

2. The can A, having the wick-tube B and cap C, with open reservoir or recess F and perforation G, and the wick W and packing V, in combination with the combustion-tube D, with the two side openings, O and P, as used for soldering, substantially as and for the purposes set forth.

257,381. COMPOUND FOR REMOVING STAINS. EDWARD F. PRESTON, Bismarck, Mich., and LUCY A. WHITNEY, Phelps, N. Y. Filed Feb. 27, 1882. (No specimens.)

Brief.—The detergent liquid is applied by means of a brush or rag to the object to be cleansed. It is composed of deodorized or refined gasoline, one gallon; alcohol, two ounces; oil of cassia, one-half ounce; oil of winter-green, one-half ounce; sulphuric ether, three ounces; borax, one-eighth dram.

Claim.—The herein-described compound for removing grease, dirt, and spots, consisting of deodorized gasoline, alcohol, oil of cassia, oil of winter-green, sulphuric ether, and borax.

257,382. SASH-HOLDER. FREDERICK W. QUITMAN, South Norwalk, Conn. Filed Jan. 27, 1882. (No model.)



Claim.—A sash-fastener consisting of the plate A, provided with a horizontal rearwardly-extended finger-rest, *a*, a horizontal slotted wall, A, and a socket, *c'*, the lower side of which forms a bolt-guide, the pivoted cam-lever B, provided with a handle, *a'*, the spring *c*, interposed between the socket *c'* and lever B, and the horizontal bolt C, having a downwardly-projecting handle, *k*, substantially as described.

257,383. PUMP. LAFAYETTE D. RAILSBACK, Indianapolis, Ind. Filed Sept. 18, 1881. (No model.)



Claim.—1. In a force-pump constructed as described, the combination of the cylinder H, having its top end closed, the set-length I, secured by an air-tight joint to said top and to the base of the pump-body, and provided with the opening *i*, thus serving the three purposes of a set-length, a stay for the pump-rod D, and an overflow-pipe for the cylinder, and the air-chamber J and discharge-pipe L, secured to a single projection, A, upon one side of said cylinder, all substantially as shown and described, and for the purposes set forth.

2. The combination of the body A, formed of pipe, secured to the base A' at the bottom, and having the bracket B upon its top, the discharge-pipe L, and the clamp M, connecting said body and said discharge-pipe, all substantially as shown and specified.

3. The combination of the body A, bracket B, handle C, pump-rod D, valves E F G, cylinder H, set-length I, air-chamber J, suction-pipe K, and discharge-pipe L, all constructed, arranged, and operating substantially as shown and described, and for the purposes specified.

257,384. FEED MECHANISM FOR SAW-MILLS. THOMAS J. REANY, Rocky-Mount, N. C. Filed Feb. 6, 1882. (Model.)

Brief.—Two friction-face disks are placed upon the driving-shaft. Upon a swinging shaft is placed an edge disk, which may engage with either of the face-disks, and which is movable upon its shaft to engage with such disks at different distances from their centers.

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Claim.—1. The combination of mandrel B, having secured to it the two face-plates D C, of unequal size, the friction-disk E, and the shaft G, to which the disk is secured, and upon which the disk slides back and forth, substantially as shown.

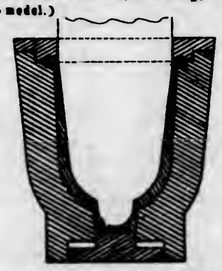
2. The combination of the mandrel B, having secured to it the two face-plates D C, the disk E, the shaft G, and the rod Q, provided with the clutch T, the disk being adapted to be brought in contact with either one of the face-plates, substantially as described.

3. The combination of the mandrel B, the face-plates C D, the disk E, and shaft G, having its ends journaled in pivoted boxes, with the rod Q, by which the disk is moved, substantially as set forth.

4. In a saw-mill, the combination of the mandrel, the two face-plates, the boxes N, supported directly upon the mandrel, the support P, the lever L, shaft G, provided with the friction-disk, and the endwise-operating lever, whereby the friction-disk is moved both back and forth upon the shaft and the shaft is moved laterally, substantially as specified.

5. The combination of the mandrel B, face-plates C D, disk E, shaft G, journaled in pivoted boxes, lever L, and rod Q, provided with a clutch and cam, substantially as shown.

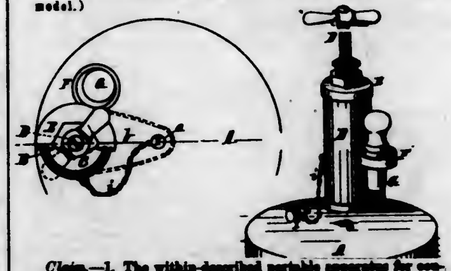
257,385. MANUFACTURE OF GLASS LAMP SHADES AND GLOBES. DANIEL C. RIPLEY, Pittsburg, Pa. Filed Mar. 22, 1882. (No model.)



Claim.—1. The method herein described of making glass shades, consisting in forming a cup-shaped or tubular casting by pressing in a mold, and then reheating and forming one end of the casting into the desired shape, substantially as and for the purposes described.

2. A glass shade having one end or opening molded and the other end or opening drawn, flared, or expanded, substantially as and for the purposes described.

257,386. PALETTE AND RESERVOIR FOR STENCILING-INK. LEVI E. ROCKWOOD, Worcester, Mass., assignor of one-half to F. Linus Child, same place. Filed Dec. 19, 1881. (No model.)



Claim.—1. The within-described portable apparatus for containing and delivering stenciling ink or color of a viscid or semi-liquid nature, consisting of the flat disk or palette-plate having a small orifice in its surface and a reservoir connected therewith, from which the color or ink is mechanically forced upon said palette through said orifice, said apparatus being adapted for use in the stenciling or marking of packing-cases, substantially as herein set forth.

2. The combination of the flat circular palette A, having the central orifice, *a*, the reservoir-cylinder B, mounted upon the side of said palette, with passage *b*, communicating therewith, the piston C, fitted within said cylinder, and the long screw D, arranged for moving said piston, all constructed and operating substantially as and for the purpose hereinbefore described.

3. The combination of the palette-plate A, having orifice *a*, the cylinder B, communicating therewith, the piston C, the screw D, the cap E, the brush-holder F, and the stopper I, substantially as shown, and for the purpose set forth.

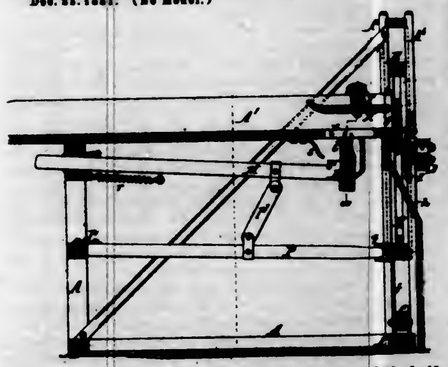
257,387. VEHICLE-SPRING. DAVID A. EDE, Columbus Junction, Iowa, assignor to Walter P. Hall, same place. Filed Feb. 23, 1882. (No model.)



Claim.—1. In a side-bar buggy, the combination of a frame, A, which is to be attached to the under side of the end of the buggy, the rods D, pivoted thereto, the hanger I, and the spring that is placed upon the top of the frame, substantially as shown.

2. In a spring for side-bar buggies, the combination of the frame A, which is to be attached to the under side of the end of the body, the rods D, pivoted at their inner ends in this frame, the hooks G, hanger I, having notches or recesses in its lower end, and the cap or cover J, having openings in its lower edges, substantially as set forth.

257,388. STRAW-CUTTER. CARL ROEHL, Lockport, N. Y., assignor of one-half to William S. Camp, same place. Filed Dec. 22, 1881. (No model.)



Claim.—1. In a straw-cutter, the combination, with the knife *b*, of the frame B, sliding at one end in the reciprocating frame E, and connected at the other end with the swinging arm C, whereby a drawing-cut is imparted to the knife, substantially as set forth.

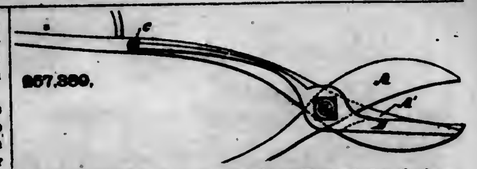
2. The combination, with a trough A', of the cutter *b*, frame B, provided with arm B', cross-arm C, reciprocating frame E, in which the knife-frame slides, and connecting-rod *f*, whereby the frame E is connected to the arm C, substantially as set forth.

3. The combination, with the trough A', of the cross-head I, provided with studs or rollers *n*, arm M, having shoulder *d'*, grooved plates E, a spring, *r*, tending to draw the arm M backward, and a spring, *s*, whereby the rearward movement of the arm M is prevented when in its highest position, substantially as set forth.

4. The combination, with the arm C, link *f*, and reciprocating frame E, of the cross-head I, arm M, springs *r s*, lever F, and connecting-rod *p'*, all arranged to operate substantially as set forth.

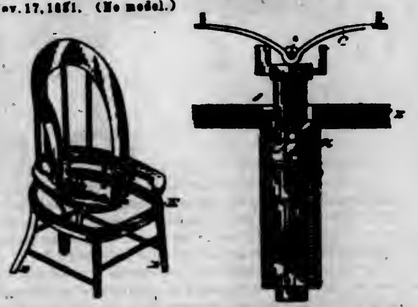
257,389. GRAPE-SHEARS. JOHN SAGER, Thamesville, Ontario, Canada, assignor to himself and Ephraim Sanford, same place. Filed Aug. 22, 1881. (Model.)

Claim.—In an implement for use in gathering grapes, the combination, with the jaws or blades A A', one having a beveled



and the other a flat edge, of the flat finger B, attached to the jaw-pivot *a*, and lying close alongside the jaw A', and having a spring-extension which is attached to the shank of said jaw, as set forth.

257,390. CHAIR. SAMUEL L. SAUNDERS, Lynn, Mass. Filed Nov. 17, 1881. (No model.)



Claim.—1. In a chair, the combination of the seat A, the supporting legs and frame, the spring-rockers, and an independent yielding or elastic support for the chair-seat between the seat-frame and rockers, the seat having both a rocking and a vertical movement.

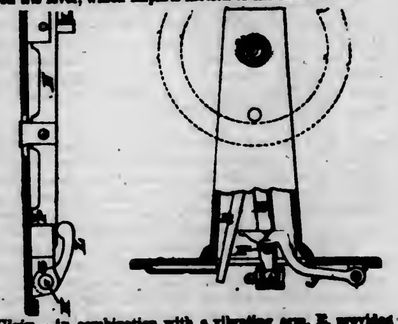
2. In a chair, the combination of the right supporting legs and frame, the vertical yielding spring-support, and the spring-rockers mounted upon each vertical support and carrying the chair-seat.

3. In combination, a chair-seat, A, the rigid frame and legs, the sliding rods F, having the spiral spring, and the supporting springs or rockers mounted upon the sliding rods.

4. The combination of the frame E, the tubes *c*, the sliding rod *f*, having collar or shoulder, the spring inclosed by the tube, the springs *c s*, and the adjustable cone *d*.

257,391. SEWING-MACHINE. HENRY F. SCHLEYTER, Cincinnati, Ohio. Filed Feb. 18, 1882. (No model.)

Brief.—The rock-shaft which lifts the feed-bar is operated by a stud on the lever, which imparts motion to the shuttle-lever.

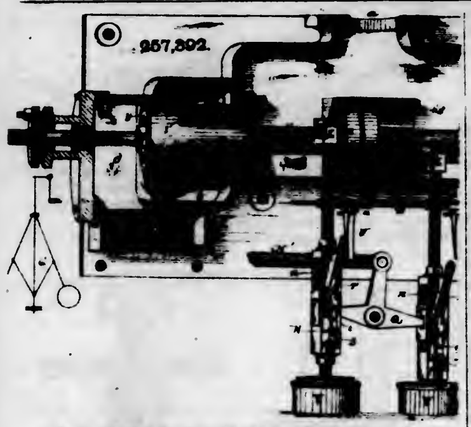


Claim.—In combination with a vibrating arm, E, provided with a stud or roller, H, and operating the shuttle-lever of a sewing-machine, substantially in the manner herein described, the lever J, having a curve, I, and connected to a rock-shaft, K, which latter carries a device, L, for lifting the reciprocating feed-bar M, as and for the purpose stated.

257,392. CUT-OFF-VALVE GEAR. FRANCIS SERGEANT, Trenton, N. J. Filed Feb. 27, 1882. (No model.)

Claim.—1. A cylindrical valve combined with means whereby a simultaneous longitudinal and rotary movement is imparted to it to open and close ports cut diagonally in the perimeters of valve and case.

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2. A cylindrical valve and means whereby a simultaneous longitudinal and rotary motion is imparted to it, combined with means whereby said valve is automatically liberated from the device which produces the rotary movement, and thereby permitted to rotate backward and cut off the steam, as described.

3. A cylindrical valve and corresponding cylindrical valve-case, and ports the leading edges whereof are cut in the perimeters of said valve and case on a helical line, combined with means whereby a longitudinal reciprocation and a simultaneous rotary movement is imparted to said valve, and means whereby said valve may be automatically liberated from the mechanism which imparts a rotary motion, and thereby be permitted to rotate backward and cut off the steam, as set forth.

4. The hollow cylindrical valve D, closed at its outer end and provided in its perimeter with a port, the leading edge whereof is cut in a helical line, and a tubular hub, *g*, and disk *h* at the outer end of the same, whereby it is mounted and adapted to rotate upon the valve-rod H, combined with mechanism whereby its rotary motion is determined and controlled.

5. The hollow cylindrical valve D, its tubular hub *g*, and the disk *h* at the extremity of the same, and the rod K, extending longitudinally parallel with the axis from the base of the valve to said disk, near the periphery, the whole mounted upon the valve-rod and capable of rotating thereon, combined with the box L, fitted to move within the steam-chest in a line transverse to the direction of reciprocation of the valve D, whereby the rotation of said valve is determined and controlled.

6. The reciprocating and rotating valve D and the reciprocating box L and rod N, whereby it is carried, combined with a sliding box, P, connected with said rod, and a latch whereby said box P and rod N are locked or unlocked, combined with automatic mechanism whereby said latch may be unlocked at a certain point in the stroke, and the valve thereby permitted to revolve backward and cut off the steam, as set forth.

7. The reciprocating and rotating valve D, and the reciprocating box L and rod N, whereby said box is carried, and the sliding box P and mechanism for actuating the same, combined with a latch, R, whereby said box P is locked to said rod N, and the latch-lever T and adjustable arm U, whereby the latch R may be caused to unlock the box P and liberate the rod N at any desired point in the stroke of said box P, substantially as set forth.

8. The reciprocating and rotating valve D, the transversely-moving box L and rod N, the sliding box P, and the locking mechanism for the same, combined with the adjustable arm U, the adjusting-plate W, and its oblique guide, whereby the position of said arm is determined and controlled and the point of cut-off determined, as set forth.

9. The reciprocating and rotating valve D, its controlling mechanism L N, the attachable box P, the latch R, and its lever T, combined with the adjustable arm U, adjusting-slide W, and the governor, whereby the position of said slide is controlled and regulated in accordance with the speed of the engine.

10. The reciprocating and rotating valve D, mounted upon the valve-rod H as an axis, combined with the non-rotating disk Y, also mounted upon said rod outside said valve, whereby said valve is balanced, substantially as set forth.

257,893. DENTAL ENGINE. SPARHAM B. SCRAVEN, Philadelphia, Pa. Filed Feb. 27, 1882. (No model.)

257,893.



Claim.—1. In a dental engine, the springs A″ E′, in combination with the upper and lower parts of the stand and main shaft, and constituting integral portions thereof, respectively, substantially as and for the purpose set forth.

2. The rising and falling arm journaled to a stationary bearing-piece at the top of the stand, the edge of the journal of the arm being pressed against the edge of the bearing-piece by the spring of the arm, substantially as and for the purpose set forth.

3. The arm formed of spring rods or bars with collars H′ and the tubular or socket piece G, combined and operating substantially as and for the purpose set forth.

4. The piece G and the spring rods or bars J, in combination with the slide G′, substantially as and for the purpose set forth.

5. The shaft, in combination with the arm F, the bent *b*′, and fastening *c*, substantially as and for the purpose set forth.

6. The coupling of a dental hand-piece and driving-shaft, consisting of the box L, the connected spindle N, the bevel-pinion P′, the bevel-wheel Q, the spindle N′, the bevel-pinion P″, and the connected rotatable disk or plate R, combined and operating substantially as and for the purpose set forth.

257,894. CONNECTION FOR POLISH AND PUMP RODS. E. P. SHUTTAS, Bullion, Pa. Filed Oct. 22, 1881. (No model.)



Claim.—1. The combination, with a polish-rod provided with means for holding the standing pipe thereon after the same has been disconnected from the tubing, and a sucker-rod, of an intermediate piece adapted to connect the lower end of the polish-rod to the upper end of the sucker-rod and hold them securely in position, substantially as set forth.

2. The combination, with a polish-rod provided with means for holding the stand-pipe thereon after it has been disconnected from the tubing, and a sucker-rod, of an intermediate connecting-piece adapted to be removably secured to the lower end of the polish-rod and the upper end of the sucker-rod, substantially as set forth.

3. The combination, with the polish-rod provided with an enlarged head having a female screw-threaded cavity therein and an annular cup-shaped shoulder on which the standing pipe rests after it has been disconnected from the tubing, and a sucker-rod provided at its upper end with screw-threads, of a connecting screw or piece provided with a screw-threaded shank adapted to fit in the cavity in the head of the polish-rod, and a head having a screw-threaded cavity in which the upper screw-threaded end of the sucker-rod fits, substantially as set forth.

4. The combination, with a polish-rod provided with an enlarged head having a female screw-threaded cavity therein, an annular shoulder on which the standing pipe rests after it has been disconnected from the tubing, and a sucker-rod provided at its upper end with screw-threads, of a connecting screw or piece provided with a screw-threaded shank adapted to fit in the cavity in the head of the polish-rod, and a head having a screw-threaded cavity in which the upper screw-threaded end of the sucker-rod fits, and a lock-nut situated on the shank of the connecting screw or piece and adapted to lock it firmly to the polish-rod, substantially as set forth.

5. The combination, with the polish-rod C, shoulder G, head D, cavity E, and sucker-rod N, provided with a screw-threaded end, M, of the connecting screw or piece F, provided with shank I, head K, cavity L, wrench-square P, and the lock-nut J, all adapted to operate substantially as set forth.

257,895. TUFTED FABRIC. MALCOLM SELKIRK, Yonkers, N. Y. Filed July 9, 1881. (No model.)

Brief.—The warp is divided into sets of four threads each, the outer threads of each set passing alternately over and under the shoots of back filling and binding them together in pairs. The middle threads pass alternately over and under a shoot of tufting-filling and the back filling on each side thereof. When additional tufting-filling threads are employed the outer warps of each set may alternately pass over the same.

Claim.—1. The new fabric consisting substantially of warp-

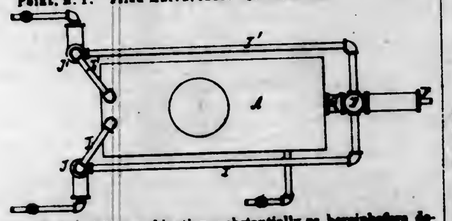


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threads and filling-threads combined as above set forth—that is to say, with the shoots of two back-filling threads and the warp-threads forming a practically continuous backing, upon and to which the upper-filling thread is bound by some of the warp-threads.

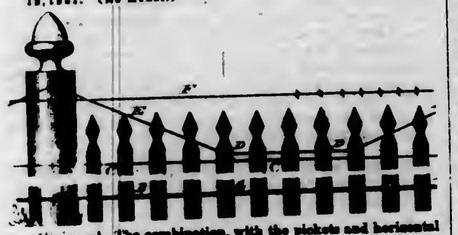
2. The new tufted fabric consisting substantially of warp-threads, filling-threads, and tufting material combined as above set forth—that is to say, with the shoots of two back-filling threads and the warp-threads forming a practically continuous web, upon and to which the tufting-filling and the tufts are bound by some of the warp-threads.

257,896. FEED-WATER HEATER. GEORGE W. SLOANE, Green Point, N. Y. Filed Mar. 3, 1882. (No model.)



Claim.—The combination, substantially as hereinbefore described, of the boiler A, the drums D J J′, the pipes I, leading from the drum D into the drum J, the pipes I′, leading from the drum D into the drum J′, the pipe G, and the pipes L L′, forming a triple connection between the drum D and the boiler.

257,897. FENCE. HORACE SMITH, Kirksville, Mo. Filed Dec. 19, 1881. (No model.)

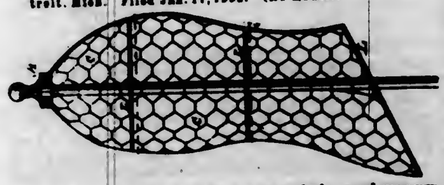


Claim.—1. The combination, with the pickets and horizontal wires, of the securing double staple which passes through the picket and has its ends driven into the same.

2. In combination with the post A, pickets G, wires B, F, and E, and double staple C, the short wire D, as before described.

3. The combination, with the posts A, of the wires B, diagonal suspending-wires E, short wire D, pickets G, and securing double staple C, arranged as and for the purposes described.

257,898. WIRE CLOTHES-FORM. THEODORE L. SMITH, Detroit, Mich. Filed Jan. 17, 1882. (No model.)

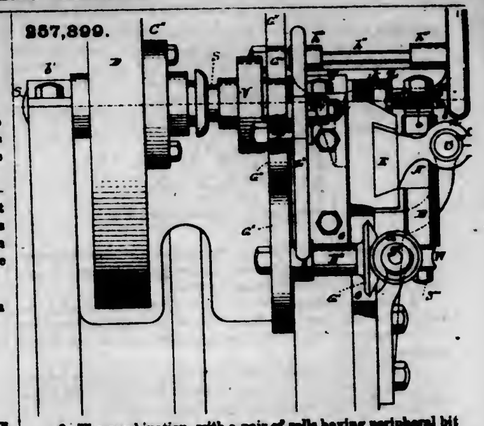


Claim.—A wire dummy form composed of a seamless woven-wire netting, in combination with rings L, rods or wires K, and a top piece, A, recessed for the reception of a supporting-standard, substantially as described.

257,899. MACHINE FOR TWISTING AUGERS. FRED A. SHELL, Pickdale, Mass. Filed Feb. 9, 1882. (No model.)

Claim.—1. The rolls R R, having formed in their peripheries the matrices *b* of a bit or auger hollow or concave, substantially as specified

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2. The combination, with a pair of rolls having peripheral bit or auger hollow matrices, and a hollow rotating shaft extending at right angles to the plane of the axes of said rolls, of connecting-gear operating said rolls and said shaft at the same time, substantially as specified.

3. The combination, with the rolls R and their shafts, the slides E, having bearings B, and box-nuts n′ n′, of the right-and-left worm C, and mechanism for turning the same, as specified.

4. The combination, with a pair of hollow matrix rolls and the shafts S‴ S‴, on which they are seated, of the hollow rotary bit-holding shaft, its thimble having a rectangular aperture, and mechanism, substantially as described, connecting the shafts S‴ S‴, as specified.

5. The combination, with the rolls R, their bearing-slides E, nuts n′, and right-and-left worms C *g*, of the hollow shaft S, loose pulley D, clutch C″, collar and gearing W G G′ G″ G‴ G⁗, substantially as specified.

6. The combination, with the rolls R, their bearing-slides E, nuts n′, and right-and-left worms C *g*, of the hollow shaft S, loose pulley D, clutch C″, collar V, gearing W G G′ G″ G‴ G⁗, and slotted lever L′, substantially as specified.

7. The combination, with the rolls, their bearing-slides E, nuts n′, right-and-left worms C *g*, and the hollow shaft S, loose pulley D, clutch C″, and collar V, of the connecting-gear, the hand-wheel H, its shaft A″, and gear-wheel G′, substantially as specified.

257,400. TOOL-HOLDER. NICHOLAS H. SNIDER, Pittsburg, Pa. Filed Jan. 9, 1882. (No model.)



Claim.—1. A bit handle or holder for grindstone-dressers, said handle consisting of a bed or rest for the bit, in combination with an eccentric pivoted on the bed and adapted to clamp the bit to the same, the bed or rest and the eccentric being provided with handles adapted to be brought together or parallel when the bit is held by the eccentric, substantially as specified.

2. In a bit-holder for grindstone-dressers, the combination of the bed or rest *c*, having the handle *d*, and provided with lugs at its forward end, and the eccentric *e*, pivoted between the lugs on the forward end of the bed and provided with handle *e*′, substantially as and for the purpose specified.

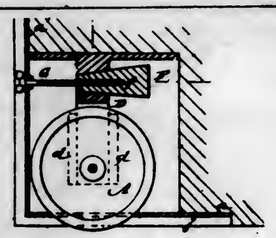
257,401. SHEAVE FOR SLIDING DOORS. ISAAC SOMERS, Detroit, Mich. Filed Jan. 25, 1882. (Model.)

Brief.—The sheave is journaled in a saddle that is adjusted vertically by means of a wedge and screw, the latter of which passes to the outside of the case. The case has two concaved angle-plates, one on the front edge and the other on the bottom edge of the door.

Claim.—1. In a door-sheave, the wheel A, adapted to have vertical movement, in combination with the saddle D, the wedge F, and means for adjusting the wedge, substantially as described.

2. The wheel A, journaled in the saddle D, in combination with the wedge F and the casing formed with the flanges *d d*, substantially as described.

267,401.

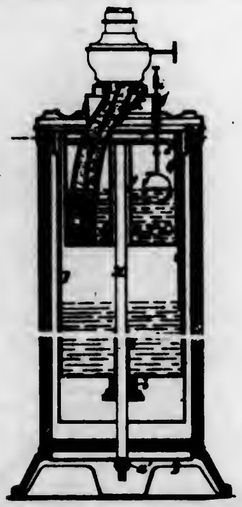


3. The casing formed with the guttered or concaved angle-plates *a a'*, in combination with the wedge F and screw G, substantially as and for the purpose set forth.

4. The combination, with the vertically-movable wheel A and wedge F, of the screw-rod G, secured to the wedge and reaching to the outside or edge of the casing, substantially as and for the purpose set forth.

5. The casing formed with the plates *a a'* and flanges *d d* and E, in combination with the wheel A, saddle D, wedge F, and screw-rod G, substantially as and for the purpose set forth.

267,402. LAMP. WILHELM STAEBLER, Brooklyn, N.Y. Filed Mar. 8, 1882. (No model.)



Claim.—1. The combination, substantially as herein described, of an outer cistern, D, adapted to slide vertically, a supporting-plate, E, attached to the upper end of the cistern, and carrying a lamp-burner and serving as a medium for raising and lowering said cistern, and a stationary inner cistern suspended in a fixed position at the upper end of the outer cistern, as and for the purpose described.

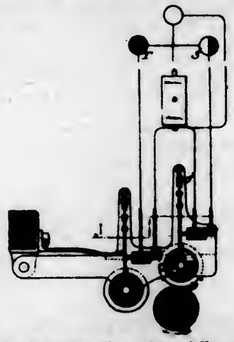
2. The combination, substantially as hereinbefore described, of the two oil-cisterns, one within the other, one being fixed while the other is movable in the direction of its axis, the rod fixed to the inner cistern and extending through a stuffing-box in the bottom of the outer cistern, and the burner secured to the outer cistern.

3. The combination, substantially as herein described, of the outer cistern, D, and the suspended inner cistern, G, provided respectively with the guide-groove *c* and the key *d*, whereby the outer cylinder can slide vertically, but not rotate, with a supporting-plate, E, attached to the upper end of the outer cistern, and carrying a lamp-burner, and serving as a medium for raising and lowering the outer cylinder, as and for the purposes set forth.

4. The combination of the two oil-cisterns, arranged one within the other, one of said cisterns being adapted to slide vertically and the other provided with an air-vent extending through it in the form of a tube, and a rim attached to the movable cistern and carrying a burner, and serving as a medium for raising and lowering the movable cistern, as and for the purposes set forth.

5. The combination, substantially as hereinbefore described, of the two oil-cisterns, one within the other, the inner cistern being fixed and the outer being made movable in the direction of its axis, the burner secured to the outer cistern, the float in the inner cistern having its stem extending through the supporting-plate of the burner and the adjustable stop on said stem.

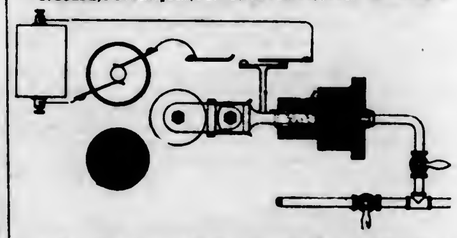
267,403. ELECTRIC LIGHTING APPARATUS. ELI T. STARR, Philadelphia, Pa. Filed Mar. 21, 1882. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of a vehicle or train of vehicles, an axle or moving part of said vehicle or train, electric lamps carried by said vehicle or train, an electric circuit including said lamps and a source of electricity, circuit-breakers also included in said circuit, and mechanism operated by said axle or moving part, whereby one of said lamps is made to give an intermittent light when said axle is turned in one direction, while the other of said lamps is made to give an intermittent light when said axle is turned in the other direction.

2. The combination, substantially as hereinbefore set forth, of a vehicle or train of vehicles, an axle or moving part thereof, a source of electricity, electric lamps, circuit-connections including said source of electricity and said lamps, circuit-breaking mechanism, substantially as described, which normally closes the circuit-connections, so as to give out constant lights from said lamps, and mechanism operated by said axle to operate said circuit-breaking mechanism, whereby when said axle is moving in one direction the light of one of said lamps will be interrupted at intervals, while when said axle is turned in the opposite direction the light of the other of said lamps will be interrupted.

267,404. MECHANISM FOR DRIVING DYNAMO-ELECTRIC MACHINES BY THE MOTION OF A MOVING VEHICLE. ELI T. STARR, Philadelphia, Pa. Filed Jan. 31, 1882. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of a vehicle or train of vehicles, a brake mechanism to brake or impede the motion of said vehicle or train, a mechanical generator of electricity carried by said vehicle or train, driving mechanism to connect said generator with an axle or moving part of the vehicle or train, and a connection between said brake and said driving mechanism, whereby when the brake mechanism is operated to retard the motion of the vehicle or train the generator will be operated.

2. The combination, substantially as hereinbefore set forth, of a vehicle or train of vehicles, a brake mechanism therefor, a mechanical generator of electricity and devices to throw said generator into action by the operation of the brake mechanism, so as to be driven by a moving part of the vehicle or train, and mechanism to cut out the generator so that the brakes may be applied without throwing said generator into action.

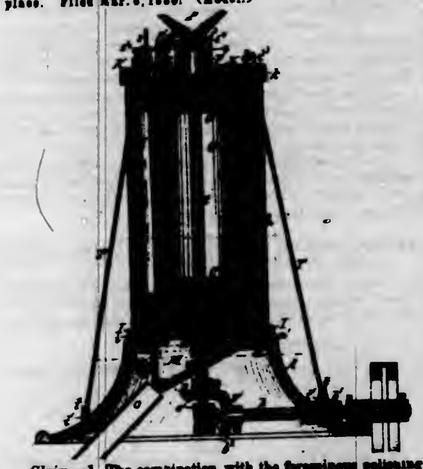
3. The combination, substantially as hereinbefore set forth, of a vehicle or train of vehicles, a brake mechanism therefor, a mechanical generator of electricity, driving mechanism between said generator and axle or moving part of said vehicle or train, adapted to be thrown into action by said brake mechanism, and mechanism, substantially as described to regulate the action of said brake mechanism relatively to the driving mechanism, so as to insure a proper driving-connection between said generator and said axle.

4. The combination, substantially as hereinbefore set forth, of the vehicle and axle or moving part of said vehicle, the mechanical generator of electricity, the driving-wheel of said generator, the gear-wheel to establish a driving-connection between said generator and said axle, a movable arm carrying said gear-wheel to establish or interrupt the driving-connection, and a piston to move said movable arm.

5. The combination, substantially as hereinbefore set forth, of a vehicle, and axle of said vehicle, a mechanical generator of electricity, a gear-wheel to establish the driving-connection between said generator and said axle, a piston governing the movements of said gear-wheel, a cylinder in which said piston moves, a pipe-connection by which pressure is brought to bear upon said piston to move it and the gear-wheel in the direction to establish the driving-connection, and a spring to move said piston and wheel in the direction to interrupt or sever the driving-connection.

6. The combination, substantially as hereinbefore set forth, of an axle or moving part of a vehicle, a mechanical generator of electricity, a driving-connection between said axle and said generator, means for operating said driving-connection at will, so as to throw said generator into or out of action, a secondary battery connected with said generator by circuit-connections, and mechanism, substantially as described, connected with said driving-connection, to complete the circuit to the battery when said connection with the generator is completed and break said circuit when the driving-connection is broken.

267,405. MACHINE FOR POLISHING RICE, &c. HENRY B. STEVENS, Buffalo, N. Y., assignor to George L. Squier, same place. Filed Mar. 6, 1880. (Model.)



Claim.—1. The combination, with the foraminous polishing-case H, having a base, A, provided with an annular flange, *a*, of the adjusting grain-pot M, provided with a flange, *m*, resting loosely upon the flange *a*, substantially as set forth.

2. The combination, with the shaft *e* and grain-pot M, of the sleeve *n*, formed with the grain-pot, and the sleeve *n'*, secured to the shaft and overlapping the sleeve *n*, substantially as set forth.

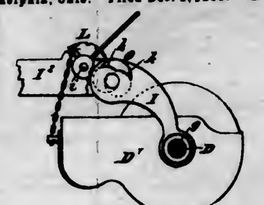
3. The combination, with the drum C, provided with leather strips G, of the plate G', constructed with a downwardly-curved rim overlapping the ends of the leather strips G, substantially as set forth.

4. The combination, with the top plate, K, constructed in two or more sections, each provided with a section of the bearing *p*, of the sleeve *g*, fitting over the sections of the bearing *p*, thereby securing the sections of the plate K together, and the hopper P, substantially as set forth.

5. In a grain-polishing machine, the combination, with the grain-receiving hopper having a discharge-spout, *p'*, of a secondary hopper, R, arranged to receive the grain from the spout *p'*, and provided with a discharge-spout, *r*, and adjustable sleeve *r'*, substantially as set forth.

6. The combination, with the base A, of the case H and top plate, K, made in two or more sections held together by clamps *l* and sleeve *q*, and the removable tie-rods T, connecting the top plate with the base, substantially as set forth.

267,406. HARVESTING-MACHINE. BENJAMIN F. STEWART, New Philadelphia, Ohio. Filed Dec. 5, 1881. (Model.)



Claim.—1. The combination, with the shaft E and the pitman H, having the ring G', of the eccentric ring or crank G', fixed on the shaft E, and the parallel disks G G, fixed eccentrically on the shaft E, abutted against the sides of and arranged diametrically opposite to the eccentric ring or crank G', the pitman-yoke G^3 being placed on the ring G' and held in place by the disks G G, as and for the purposes set forth.

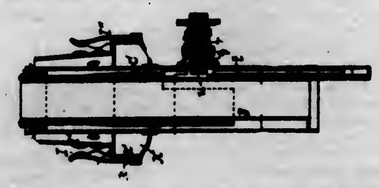
2. The combination of the tongue J, the brackets or iron I I, journaled on sleeves *g g*, surrounding the shaft D, and provided with journal-bearings I' I', the crank-od axle N M, supported in the bearings I' I', and the driving-wheel F', substantially as set forth.

3. The combination, with the axle-brackot I, having the shoulder or stop *o*, having the concavities *k*, of the driving-axle having an eccentric-arm, N, an eccentric, N', and the lever P, substantially as and for the purpose specified.

4. The combination of the grain-platform, the finger-bar B', the cutter-bar, the pitman having the ring G', the shaft E, having the eccentric ring, the counterbalancing-disks, and the pinion *e*, the shaft D, having the worm-gear, the bevel-gear *d'*, and pinion *f*, the reel-post shaft having a pinion, and the driving-wheel having the internal gear, substantially as set forth.

5. The combination, with the shaft D, provided with the spur-pinion *f*, and the driving-wheel F', having the gear F, of the platform A, connected to and tilting upon the shaft D, and the coupling-arm C, having one end made fast to the front edge of the platform A and its other end extended in front of the shaft D toward the driving-wheel and coupled adjustably to the framing, substantially as set forth.

267,407. LAMP-BURNER. CHRISTOPHER STOCKMANN, Brooklyn, N. Y. Filed Feb. 15, 1882. (No model.)

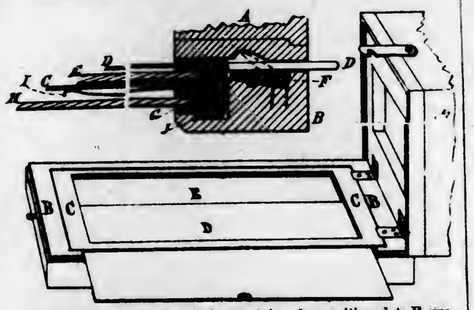


Claim.—1. The combination, substantially as hereinbefore set forth, with the outer or main tube and wick-raising rod, of the stuffing-box having an annular recess opening outward and surrounding the rod, the outwardly-tapering hard-rubber packing-sleeve embracing the rod within the stuffing-box, and the follower screwing into the box-recess and having its bore flared to engage the tapering outer end of the packing-sleeve, for the purpose specified.

2. The combination, substantially as hereinbefore set forth, with the main tube and wick-tube, of the wick-concentrating ring fitted into and resting upon the upper end of the main tube and formed with a groove opening upward for catching cinders, as specified.

3. In an Argand burner, the gallery H, secured to the main tube and provided with an annular recess, *h*, formed by two vertical walls, the inner one, *h'*, of which is higher than the outer one, as described, in combination with the chimney-holder I I', detachably arranged in the annular recess of the gallery, and against which the inner wall, *h'*, binds, substantially as and for the purpose described.

257,408. PHOTOGRAPHIC APPARATUS. SERENO E. STODDARD, Glens Falls, N. Y. Filed Jan. 19, 1882. (No model.)



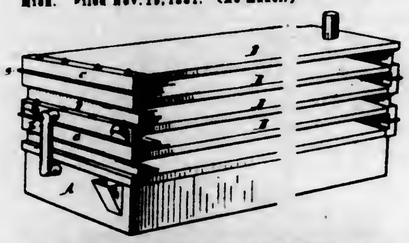
Claim.—1. The box C, for receiving the sensitive plate E, provided with the sliding shutter D, in combination with the attachment B, substantially in the manner and for the purpose herein described.

2. The attachment B, hinged or pivoted to the back of camera A, inclosing the ground-glass frame H and plate-holder C, and provided with a cut-off, F, which closes the opening formed by the non-meeting edges of attachment B and camera A when shutter D is withdrawn, substantially as and for purposes described.

3. The combination, in a camera, of the inner box, C, with an inclosing box or frame, B, having a spring or springs, I J, for holding the plate-holder C with its sensitive plate E in position, and having an aperture provided with a cut-off, through which the shutter D may be drawn, substantially as and for purposes specified.

4. The combination of the adjustable ground-glass frame G with plate-holder C and attachment B, as and for the purposes above described.

257,409. FRUIT-DRIER. JAMES H. TRASSALE, Howell, assignor to the Steam Heat Evaporator Company, Charlotte, Mich. Filed Nov. 19, 1881. (No model.)



Claim.—1. In a fruit-drier, and in combination with the main flues thereof, end flues made in sections detachable from each other and adapted to receive the ends of the main flues, substantially as and for the purpose specified.

2. In a fruit-drier, and in combination with the series of steam-flues B, the end flues, C, provided with the flanges *a* and designed to be secured together to form a steam-connection between two adjacent flues B, substantially as and for the purpose specified.

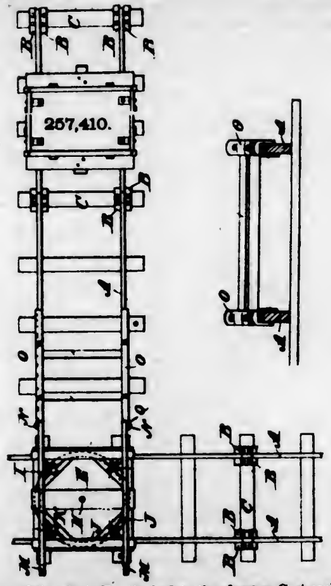
3. In a fruit-drier, and in combination with the end flues, C, and generator A, the flues B, provided with drip-pipes for the purpose of conveying the water of condensation back to the generator from said flues B, substantially as described.

4. In a fruit-drier, and in combination with the detachable end flues or sections, C, the main flues B and the walls D, as and for the purpose specified.

257,410. PORTABLE RAILWAY. GEORGE W. THOMAS, Frenchier Home Place, La. Filed July 26, 1881. (No model.)

Brief.—The wooden rails have their adjacent ends beveled in opposite directions and are secured by cleats attached to the sleepers. The rotating frame is provided with a central bearing and side beams, which rest against the sides of the rails which have beveled ends and staples and engage with inclined removable rails provided with hooks.

Claim.—1. In a portable railway, the combination, with the wooden rails A, having their adjacent ends beveled in opposite directions, of the cleats B, attached to the sleepers C at each side of the rail, substantially as shown and described, whereby sockets are formed for the preceding or succeeding section, as set forth.



2. In a portable railway, the combination, with the rails and the rotating frame J, of the base-frame E, provided with the central bearing-beam, G, and the side beams, F, which rest against the sides of the rails, substantially as and for the purpose set forth.

3. In a portable railway, the combination, with the base-frame E and the rails A, of the rotating frame J, provided with the rails I, having beveled ends M and the removable inclined rails O, substantially as and for the purpose set forth.

4. In a portable railway, the combination, with the inclined removable rails O, provided with hooks Q, of the rails I, beveled at one end and provided with the staples N at the other, substantially as and for the purpose set forth.

257,411. LADDER. WINFIELD S. THOMAS, East Dixfield, Me. Filed Mar. 15, 1882. (No model.)

Brief.—The sections are pivoted together, and a locking-rod passes through slots in the upper section and rests in notches in the ends of the lower section, and is held by pins inserted over it.

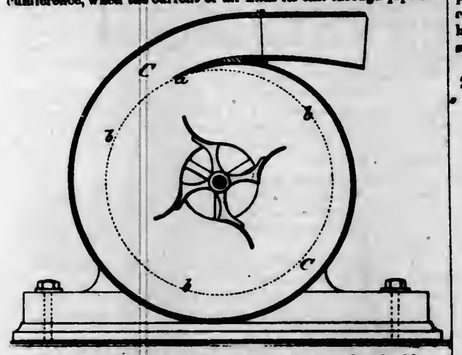


Claim.—1. In a ladder, the combination, with the lower section provided with the notches N in the ends of its side bars A, of the upper section pivoted to the said lower section and having its side bars G provided with the slots M, and the rod L, working in the said slots and adapted to be locked in the notches of the side bars of the lower section, substantially as and for the purpose set forth.

2. In a ladder, the combination, with the convergent side bars A of the lower section, having their upper ends provided with notches N, of the convergent side bars G of the upper section, provided with the slots M and the spike J, the rods K L, and the pins O, substantially as and for the purpose set forth.

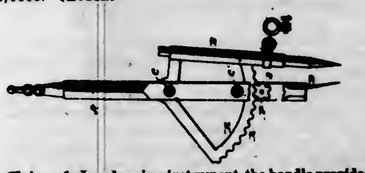
257,412. CENTRIFUGAL BLOWER. ROBERT H. THURSTON, Hoboken, N. J. Filed Oct. 17, 1881. (No model.)

Brief.—The axis of wheel A is located eccentrically to the periphery of the case F, by which construction a vortex space, B, is formed whose outer line is *b*. C is a spiral delivery-channel gradually increasing in width from the point *a* throughout its circumference, when the current of air finds its exit through pipe D.



Claim.—A blower formed by the combination of a wheel having longitudinally-curved vanes whose outer extremities are parallel to radii of the wheel, and a case in which said wheel is located eccentrically, it being nearest the point *a* of inception of the delivery-pipe with the body of the case, but at a greater distance therefrom than the diameter of the spiral delivery-channel C, which is gradually increased from the point *a* until merged in said delivery-pipe, all as shown and described.

257,413. DIVIDERS. HORTON TOELMIN, Washington, D. C., assignor of one-half to John Sherman, same place. Filed Mar. 20, 1882. (Model.)



Claim.—1. In a drawing-instrument, the handle provided with a needle or other metal point and having a longitudinal slit or slits, in combination with a pivot and binding-screw, substantially as described, and for the purposes set forth.

2. In a drawing-instrument, the holder B, cut out of sheet metal, and having its lower edges cut into the form of an arc, K, and provided with teeth R, in combination with pinion P and thumb-nut *p*, substantially as shown and described, and for the purposes set forth.

3. In a drawing-instrument, a center, measuring, or caliper point consisting of a band or tube adapted to fit over the leg of the instrument, a binding-screw for retaining it in position, and a point, substantially as shown and described, and for the purposes set forth.

4. In a drawing-instrument, the mechanism attached to the pencil-holder B, so arranged as to force the pencil in or out of the holder for nice adjustment, substantially as described, and for the purposes set forth.

5. In a drawing-instrument, the handle forming one leg thereof, provided with a point divergent to its axis, and a longitudinal slit or slits, substantially as described.

6. In a drawing-instrument, one leg thereof adapted to hold a pencil or other scribing device, struck up from metal or other suitable material, consisting of a tube and a two-part wing the leaves whereof are adapted to spring apart, for the purpose set forth.

7. In a drawing-instrument, the combination of a needle-leg, having a longitudinal slot therein, with a pencil-leg constructed of sheet metal, adapted to hold a pencil or other scribing device, and provided with an elastic wing, substantially as shown and described.

8. In a drawing-instrument, the combination of a needle-leg with a pencil-leg constructed of sheet metal and adapted to hold a pencil or other scribing device, and provided with a wing adapted to be pivoted to and guided by the opposite leg, for the purposes set forth.

9. In a drawing-instrument, the combination of a needle-leg having a longitudinal slot, a shaft journaled thereto carrying a pinion or equivalent, and a wheel adjustable thereon, with a pencil-leg constructed of sheet metal, adapted to hold a pencil or other scribing device and provided with an elastic toothed wing.

10. In a drawing-instrument, the combination of a needle-leg provided with a shaft journaled thereto carrying a pinion or its equivalent, and a wheel adjustable thereon, with a leg adapted to hold a pencil or other scribing device, having a toothed wing, substantially as described and set forth.

257,414. WRENCH FOR BUNG-BUSHES. CHARLES TRAPP, Port Washington, Wis., assignor to Henry W. Lyman and James W. Vail, same place. Filed Sept. 27, 1881. (No model.)



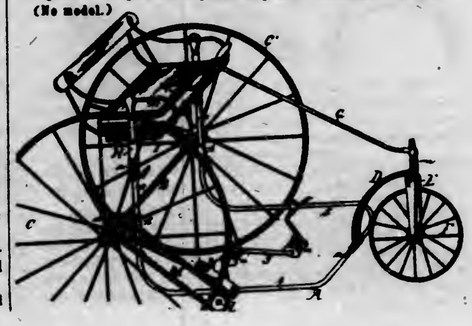
Claim.—1. A wrench for driving the bushes in and out of bung-holes, consisting of a flanged core, and eccentrics having knife-edges loosely arranged thereon, and means, substantially as described, for holding the specified parts together.

2. A wrench for bung-bushes, having flanges *a*, wedge-shaped in cross-section, and flanges *b*, dovetailed in cross-section, the flanges *a* and *b* alternating with each other, in combination with eccentrics 1 2 3, &c., arranged in the recesses between these flanges, with their knife-edges lying nearer to flanges *a* than to flanges *b*, and with means, substantially as described, for holding the specified parts together.

3. The combination of the flanged core, eccentrics, cap E, and rim C, as set forth.

4. A bush-wrench having flanged core F, rim C, base B, and shank *A*, in combination with eccentrics 1 2 3, &c., and cap E, as set forth.

257,415. VELOCIPEDE. OTTO UNSICKER, Chicago, Ill., assignor to Adolph Sheuinger, same place. Filed Jan. 18, 1882. (No model.)



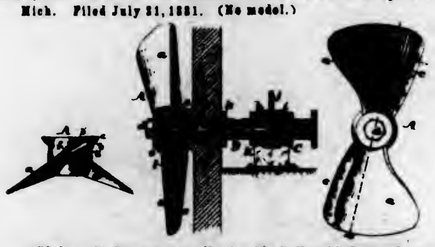
Claim.—1. A tricycle composed of frame A, consisting of a single piece of tubing horizontally bent into U shape, *a b*, and having standards *c c*, axle B, journal-boxes *d*, having a sleeve at one end to adapt the same to pass over said standards *c*, wheels C, rigidly mounted upon one end of the axle, and having sprocket-wheel *d*, wheel C', fitted loosely upon the other end of said axle, crank-shaft J, having sprocket-wheel L, and endless chain M, arc-shaped bracket D, having vertical hub *m*, bifurcated pivotal standard E, steering-wheel F, cross-bar H, having tubular ends to adapt the same to be passed over the standards *c*, coiled springs *e*, adjustable collars *f*, and seat I, secured to said cross-bar H, substantially as and for the purpose set forth.

2. The combination of the frame A, having standards *c*, cross-bar H, having end hubs to adapt the same to be passed over said standards *c*, seat-board I, secured to said cross-bar supporting springs *e*, and adjustable collar *f*, all constructed and arranged substantially as shown and described.

3. The combination, with the frame A, having standards *c*, brackets *l*, sleeved upon said standards and forming the journal-boxes for axle B, drive-wheel C, with sprocket-wheel *d*, rigidly secured thereon, and wheel C', loosely pivoted thereon, of the double-crank shaft J, pivoted in journal-boxes *j*, also sleeved upon such frame A, and adjustably secured thereto by set-screws *k*, of a sprocket-wheel, L, mounted upon the end of such crank-shaft, and of an endless chain, M, stretched over both sprocket-wheels L and *d*, all substantially as set forth.

4. In a tricycle, the guard-plate or fender N, having a sleeve or clamp formed on one end, to adapt the same to be adjustably secured to the frame A, substantially as and for the purpose set forth.

257,416. SCREW-PROPELLER. RICHARD UREN, Houghton, Mich. Filed July 21, 1881. (No model.)



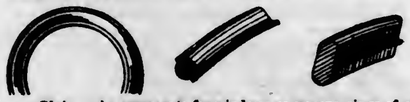
Claim.—1. A screw-propeller having hollow blades, each provided with one or more orifices in close proximity to its front radial edge and opening toward the rear radial edge of said blade, substantially as described.

2. A screw-propeller having hollow blades, each provided with two or more orifices in close proximity to its front radial edge and opening toward the rear radial edge of said blade, one or more upon each side of said blade, substantially as described.

3. The combination of the propeller A, having hollow arms *a a*, each provided with one or more openings, *b b*, the hoods *c c*, and mechanism for forcing air through the hollow arms *a a* and the orifices *b b*, substantially as and for the purposes described.

257,417. ORNAMENT OF GLASS FOR WINDOWS, SCREENS, &c. ELIAS VEDDER, New York, N. Y. Filed Dec. 19, 1881. (No model.)

Brief.—Provides rings or open figures of glass with external and internal flanges, by which they are clamped together with ordinary stained-glass plates to form a window or screen.

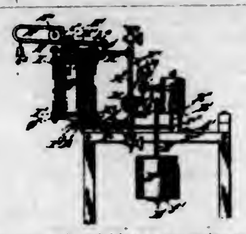


Claim.—As ornaments for windows or screens, rings of glass or equivalent open figures, provided with flanges externally and internally to receive the clamping devices for holding them in position, as hereinbefore set forth.

257,418. AUTOMATIC GRAIN-WEIGHING MACHINE. CHRISTIAN WAHL, Newport, Ky., assignor to Simpson & Gault, Cincinnati, Ohio. Filed Oct. 5, 1881. (No model.)

Claim.—1. In an automatic weighing and measuring machine, the combination, with a rising and falling scale-beam and a receiving-bucket, of a fluid brake mechanism, each substantially as described, for retarding the movement of the scale-beam a sufficient length of time to permit the complete emptying of the bucket, as set forth.

257,418.



2. In an automatic weighing or measuring machine, the combination, with the rising and falling scale-beam and receiving-bucket suspended therefrom, of a retarding brake mechanism for the scale-beam, composed substantially of a cylinder, G', a valved piston, H H', pipes K, K', and K'', and valve M, arranged for operation substantially as and for the purposes described.

3. The combination, with the scale-beam and brake mechanism composed of a cylinder, G', a valved piston, H, piston-rod H', and pipes K, K', and K'', and valve M, of the lever S, resting on said piston-rod, and provided with a traveling weight, S'', a movable frame, Q, a pivoted lever, R, and a rod, R', arranged for operation substantially as and for the purpose described.

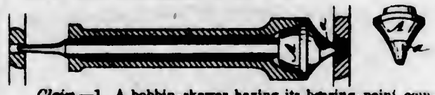
4. In an automatic weighing or measuring machine, the cylinder G', having orifices J J', and valved piston H H', in combination with a vertically-movable frame, Q, and pipes K, K', and K'', and valve M, arranged for operation substantially as and for the purpose described.

5. The combination of the weights E', the cover F', and the cylinder F, adapted to slide vertically over the weights, and provided with a slotted bottom to engage and disengage a cross-bar on the rod which is suspended from the scale-beam, substantially as described.

6. The combination of the rod suspended from the scale-beam, the weights E' thereon, and the cover F' of the removable and replaceable cylinder F, adapted to slide vertically over the weights, and means for confining it in position to cover said weights, substantially as described.

7. In an automatic weighing apparatus, the combination of the rising and falling scale-beam and the pivoted trip-lever N, having projecting lugs or arms *n n'*, arranged to be acted on by the scale-beam, with the valve P, the shell *m*, having the ports O O', the pins or stops O'', the stem M', on which the valve is mounted between the stops, and the pipes K'', said members being organized for operation substantially as shown and described.

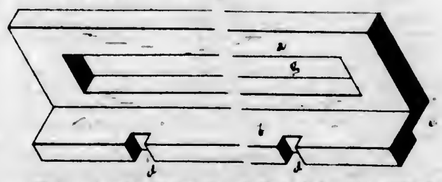
257,419. BOBBIN-SKEWER. JAMES WARBURN, Fall River, Mass. Filed Oct. 26, 1881. (No model.)



Claim.—1. A bobbin-skewer having its bearing-point composed partly of wood and partly of metal, substantially as and for the purposes set forth.

2. The skewer A, provided at its lower end or bearing-point with the metal tip *a*, substantially as and for the purposes described.

257,420. NUT-LOCK. WILLIAM C. WATSON, Puyallup, Wash. Filed Sept. 28, 1881. (No model.)



Claim.—A nut-lock consisting of a flanged plate, A, provided with a longitudinal rabbet, *e*, and with a longitudinal slot, *g*, and recesses *d*, the said plate being adapted to be secured over the nuts on the joining-bolts of the rail, whereby they are held in position, substantially as specified.

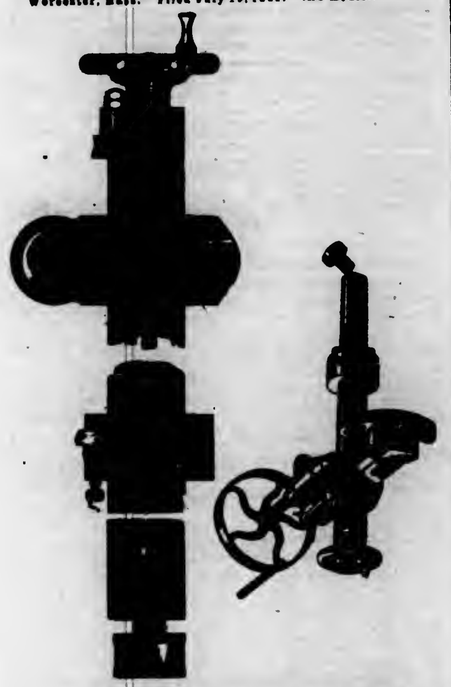
257,421. MEASURE FOR LIQUIDS. FRIEDRICH WEBER, Brooklyn, N. Y. Filed Dec. 1, 1881. (No model.)

Claim.—The combination, with the open-mouth liquid-measure, of the central vertical fixed partition, B, the oblique fixed partition C, and discharge-point *c*, forming the compartments D' D² D³, each of said partitions terminating below the mouth of the vessel, forming a compartment above their upper edges for the vessel to measure its full capacity, substantially as and for the purpose specified.

257,421.



257,422. METAL-BORING MACHINE. JEROME WHEELOCK, Worcester, Mass. Filed July 19, 1881. (No model.)



Claim.—1. The combination, with a boring-bar and its front cross-head, of gearing for rotating said bar, which is housed within said cross-head, substantially as described.

2. The combination, with the boring-bar and the cross-head, of the worm and its shaft, and the gear serving at its periphery as a journal for the bar and meshing with the worm, substantially as described.

3. The combination of a boring-bar, provided with a semi-spherical journal, and a cross-head provided with a bearing to receive said journal, substantially as described.

4. The combination, with the tubular bar and rotating mechanism, the feed-screw, its gear, and a cutter-head, of the non-rotative central spindle and the geared sleeve thereon, which meshes with the gear on the feed-screw, substantially as described.

5. The combination, with the tubular bar and rotating mechanism, the feed-screw, its gear, and a cutter-head, of the non-rotative central spindle, the geared sleeve meshing with the gear on the feed-screw and mounted on said spindle, and a hand-wheel for rotating said sleeve, substantially as described.

6. The combination, with the tubular bar and rotating mechanism, the feed-screw, its gear, and a cutter-head, of the non-rotative central spindle, the geared sleeve meshing with the gear on the feed-screw, a hand-wheel for rotating said sleeve, and a locking-nut for rendering said sleeve non-rotative during the rotation of the bar, substantially as described.

7. The combination, with the cutter-head provided with one or more recesses for the reception of cutters, of lifting-blocks and their lifting-screws within said recesses for radially projecting the cutters, and a clamping screw or screws for confining each block and cutter within a recess, substantially as described.

8. The combination, with a boring-bar provided with longitudinal grooves, of a cylindrical cutter-head provided with inwardly-projecting portions, which occupy the grooves in the bar and are recessed radially from the periphery for the reception of cutters, substantially as described.

9. The combination, with a boring-bar cross-head, of detachable brackets provided with seats for the ends of the cross-head and means for securing the cross-head thereto and variably adjusting it thereon, substantially as described.

257,423. STENCIL-PLATE. JOSEPH T. WILLIAMSON, Raleigh, N. C. Filed Feb. 2, 1882. (No model.)



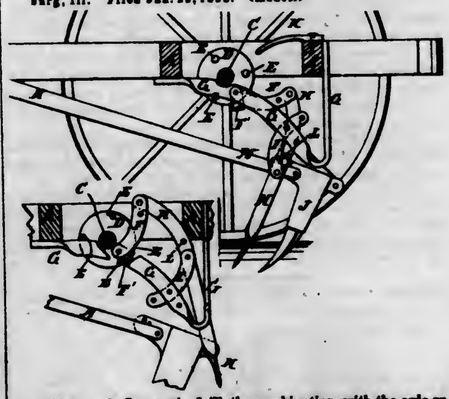
Claim.—1. The combination of a plate having suitable figures, letters, or numbers stamped through its edge with a pivoted frame which is provided with a brush and ink-reservoir, substantially as shown.

2. The combination of the stencil-plate, the pivoted frame provided with an ink-reservoir, and a brush which can be adjusted back and forth upon the frame, substantially as described.

3. The combination of the stencil-plate, a pivoted frame, and a spring locking device which catches in holes made in the stencil-plate for the purpose of locking the pivoted frame in any desired position, substantially as set forth.

4. The combination of a stencil-frame, the pivoted frame provided with a handle, the sliding plate provided with an ink-reservoir, and the handle made adjustable upon the frame, substantially as specified.

257,424. GRAIN-DRILL. WILLIAM W. WINEGAR, Chambersburg, Ill. Filed Jan. 28, 1882. (Model.)



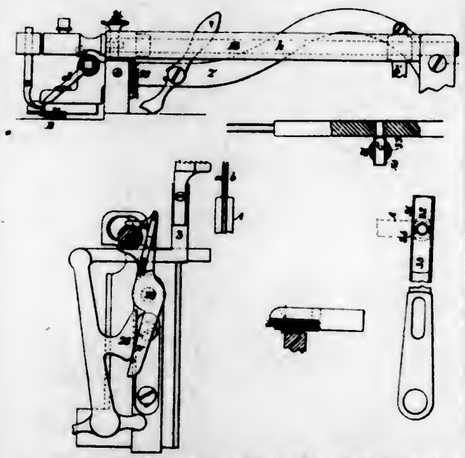
Claim.—1. In a grain-drill, the combination, with the axle or shaft C, of the wheel D, having pins E, the pivoted lever F, having pawl F', the holding-bar H, and the crank-bar I, substantially as herein shown and described, whereby the holding-bar will be operated to hold the trash until the drill-hoes have been drawn past it, as set forth.

2. In a grain-drill, the combination, with the pivoted lever F that carries the holding-bar H, of the hook K, substantially as herein shown and described, whereby the said holding-bar can be supported above the ground and held stationary, as set forth.

3. In a grain-drill, the combination, with the holding-bar H, of the projecting pin L, substantially as herein shown and described, whereby the said holding-bar can be raised by and with the drill-hoe and its draw-bar, as set forth.

257,425. STRAW-BRAID SEWING-MACHINE. EDMUND WISEMAN, Luton, County of Bedford, England. Filed Dec. 8, 1881. (No model.)

Brief.—The invention relates to means for elevating the looper when the presser-foot is raised to remove or insert the work, to a presser-foot of peculiar construction for guiding the work, and to the feeding and needle-operating mechanisms, all as indicated by the claims.



Claim.—1. The looper *c*, combined with a presser-foot extending beneath the same and with a rock-spindle and devices whereby the latter is turned to insure the rise and fall of the looper along with the lifting movement of the presser-foot, for the purpose set forth.

2. The combination of the work-plate, needle-carrier below the same, looper above the same, presser-foot extending between the looper and work-plate and mounted on an arm provided with an elevating device, and a spindle carrying the looper and having a bearing upon the arm *z*, as set forth.

3. The combination of the vibrating lever *e*, the lever 5, connected to the feeder, and arranged substantially parallel to the lever *e*, and provided with an arm, 28, having an extended face, against which the lever *e* bears, whereby the bearing-point changes vertically with the movement of the levers, producing a varying speed in the feed, substantially as and for the purpose set forth.

4. The combination of the shoe 30, with the eccentric 12, and lever *e*, as and for the purpose set forth.

5. The presser-foot of a straw-braid sewing-machine, provided with two or more steps at the under part thereof, arranged successively on different planes, as and for the purpose specified.

6. The combination of the needle-actuating lever, the needle-slide, and a lever tubular at the free end with lateral slots 32 in the tubular part and a longitudinal sliding piece, 33, and transverse bush 34, for receiving the pin *c'* on the needle-slide, as and for the purpose specified.

257,426. ROLLER-SKATE. GEORGE L. WITZEL, Philadelphia, Pa., assignor to Edward G. Edwards, Brooklyn, N. Y. Filed Nov. 22, 1881. (No model.)

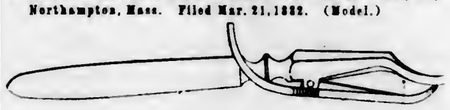


Claim.—1. In a roller-skate, the combination, with the foot-rest, of spheroidal rollers having integral gudgeons and brackets having integral bearings, substantially as and for the purpose set forth.

2. The rollers having gudgeons set into the sides thereof and grooves surrounding said gudgeons, in combination with the brackets having bearings which enter said grooves and encircle the gudgeons, substantially as and for the purpose set forth.

3. The combination, in a roller-skate, of rollers with gudgeons, and brackets with countersunk bearings for said gudgeons, substantially as and for the purpose set forth.

257,427. CARVING-FORK GUARD. EDWARD E. WOOD, Jr., Northampton, Mass. Filed Mar. 21, 1882. (Model.)



Claim.—The guard B, having the spring in its legs, and the tongue D integral therewith, the fork-shank having thereon the pivot-lugs C C, provided with the horizontal and vertical bearing-faces, said guard and shank being pivoted one to the other through the lower end of said tongue and through said pivot-lugs.

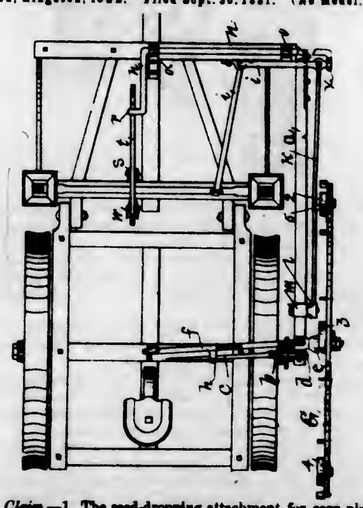
257,428. BRUSH. LOUIS YVON, Brooklyn, N. Y. Filed Feb. 11, 1882. (No model.)



Claim.—1. A brush having its back grooved in line with the rows of holes that receive the bristles and the grooves filled with metal, substantially as herein shown and described, and for purpose set forth.

2. In a brush, the combination, with the stock A, provided with the grooves C in line with the rows of holes that receive the bristles, of the metal bars E, substantially as herein shown and described, whereby the bends or loops of the bristles and the fastening-wire are covered and the brush protected from being injured by heat and moisture, as set forth.

257,429. CORN PLANTER AND MARKER. CHARLES A. ANDERSON, Mineral Ridge, assignor of one-half to Charles Nelson, Kingston, Iowa. Filed Sept. 30, 1881. (No model.)



Claim.—1. The seed-dropping attachment for corn-planters, composed of the hinged beam *a*, the pivoted fulcrum *b*, the lever *c*, link *d*, stub-axle *e*, hinged stay *f*, having a hook, *h*, the auxiliary wheel G, having cam-plates 1 2 3 4, the bell-crank *i i*, and the pitman *k*, having a pin, 5, substantially as shown and described, to be operated as set forth.

2. In a corn-planter, the combination, with the hinged beam

a, cam-wheel G, axle and stay *e f*, pitman *k*, and bell-crank *i*; of the rock-shaft *n*, having arm *s* and extension *r*, the beam *t*, and marker *w*, all constructed and adapted to operate substantially as described.

257,430. AVERAGING-MACHINE. WILLIAM S. AUCHINCLOSS, Philadelphia, Pa. Filed Feb. 16, 1882. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, of the platform provided with a series of suitable grooves or receptacles to receive the representative weights, and corresponding to the marks on a scale, the pivots or knife-edge bearings on which said platform oscillates, and mechanism for changing in a horizontal direction the position of said platform in relation to its bearings.

2. The combination, substantially as hereinbefore described of the platform provided with a series of suitable grooves or receptacles to receive the representative weights, and corresponding to the marks on a scale, the pivots or knife-edge bearings on which said platform oscillates, mechanism for changing in a horizontal direction the position of said platform in relation to its bearings, and the counter-weight.

3. The combination, substantially as hereinbefore described, of the platform provided with a series of suitable grooves or receptacles to receive the representative weights, and corresponding to the marks on a scale, the saddle which supports said platform and allows of moving the same in the direction of its length, and the knife-edge bearings extending from the saddle.

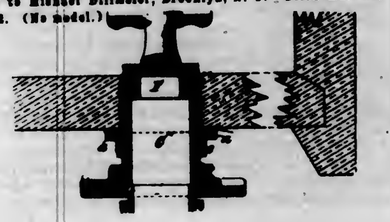
4. The combination, substantially as hereinbefore described, of the platform provided with a series of suitable grooves or receptacles to receive the representative weights, and corresponding to the marks on a scale, the saddle which supports said platform and allows of moving the same in the direction of its length, the knife-edge bearings extending from the saddle, and a counter-weight connected to the platform so as to move in a direction opposite to that in which the platform is moved.

5. The combination, substantially as hereinbefore described, of the platform, the saddle which supports the platform and allows of moving the same in the direction of its length, the knife-edge bearings extending from the saddle, the counter-weights connected to the platform, the pulleys secured on the saddle, and the chains or cords extending from the counter-weights round the pulleys to the platform.

6. The combination, substantially as hereinbefore described, of the platform, the saddle which supports said platform and allows of moving the same in the direction of its length, the knife-edge bearings extending from the saddle, the tubular side bars of the platform, the counter-weights fitted into said side bars, and mechanism for connecting the counter-weights and the platform so as to cause them when moved to move in opposite directions.

7. The method, substantially as hereinbefore described, of determining the point of common effect or the average location of a number of representative weights by distributing said weights on a balanced platform and then changing in a horizontal direction the position of said platform in relation to its bearings without disturbing the equilibrium of the platform until the representative weights are in equilibrium in regard to the bearings of the platforms.

257,431. CLEANING ATTACHMENT FOR FERMENTING AND STORAGE TANKS. JOHN BAUER, New York, assignor of one-half to Michael Dillmeier, Brooklyn, N. Y. Filed Mar. 30, 1882. (No model.)

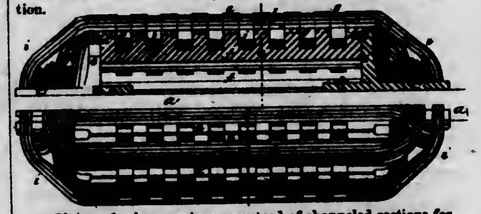


Claim.—1. The combination of a metal socket adapted to be inserted into the bottom of a tank, a hose-coupling fitted to the outer or lower end of the said socket, and a plug screwed into the inner or upper end thereof, substantially as and for the purpose specified.

2. The combination of the socket C, provided with internal and external screw-threads, and having the collar *a*, the hose-coupling fitted to the lower end of said socket, and the plug F, substantially as and for the purpose specified.

257,432. ARMATURE FOR MAGNETO-ELECTRIC MACHINES. FRANKLIN H. BENNE, Newark, N. J., assignor, by mesne assignments, to the Metropolitan Electric Light and Power Company of the United States, New York. Filed Jan. 11, 1882. (No model.)

Brief.—The armature is made open to admit of free ventilation.



Claim.—1. An armature composed of channeled sections for the reception of the induction-wire, secured at their ends to end pieces and provided with transverse grooves, in combination with sections of iron wire wound in said transverse grooves, substantially as and for the purpose set forth.

2. In an armature of the Siemens type, radial ribs extending from the end pieces along the shaft thereof, in combination with the bobbins of insulated induction-wire, substantially as and for the purpose set forth.

3. In combination, the channeled sections *e e*, secured at their ends to end pieces and provided with the transverse grooves *g g*, the iron wire *j j*, and strip *k k* of heat-insulating material, substantially as and for the purpose set forth.

4. In combination, the shaft *a*, end pieces composed of hub *b*, flange *d*, end ribs, *e e'*, channeled sections *e e*, and bobbins *i i* of insulated wire, substantially as set forth.

5. In combination, the sections *e e*, formed substantially as shown, the iron wire *j j*, the end pieces, *b e e' d*, and shaft *a*, as set forth.

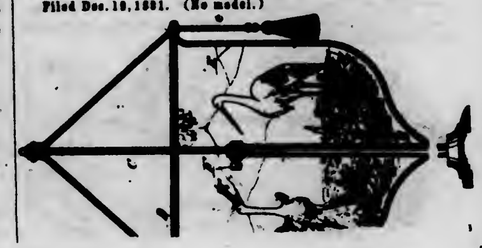
257,433. HEEL-PROTECTOR FOR BOOTS AND SHOES. SAMUEL BERGSTRESSER, Philadelphia, Pa., assignor of one-half to Jacob M. Kern, same place. Filed Mar. 27, 1882. (No model.)



Claim.—1. The combination of the heel-lifts having openings *g* with the bar or plate embedded in the heel, and having projections *h*, adapted to said openings *g*, as set forth.

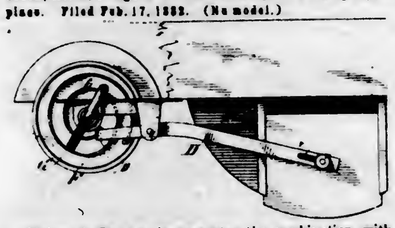
2. The combination, of the segmental bar *a*, having projections *h*, with the heel-lift *d*, having a segmental slot, *e*, and the lifts *f*, having openings *g*, as set forth.

257,434. LAMP-SHADE. ARTHUR C. BLATHEY, Riverside, Ill. Filed Dec. 10, 1881. (No model.)



Claim.—In the independent lamp-shade described, the combination, with the base having the tubular upright B, provided with the set-screw F, of the supporting-rod C, fitted to the tube, the cross-bar D, secured to the rod, and the shade E, attached at its upper end to the rod C, and adapted to depend below the top of the tube B, substantially as described.

257,435. GRAIN-SEPARATOR. EDMUND D. BROWN, Battle Creek, Mich., assignor to Nichols Shepard & Company, same place. Filed Feb. 17, 1882. (No model.)

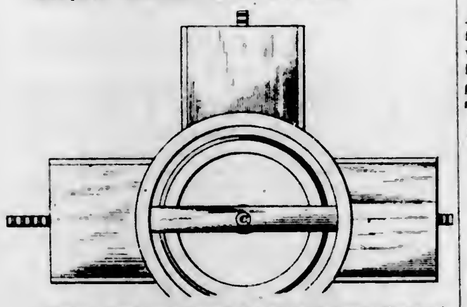


Claim.—1. In a grain-separator, the combination, with the adjustable doors of the fan-case, of adjusting-levers and a sliding transverse shaft provided with cams for actuating said doors, whereby they are adapted to be operated from either side of the machine.

2. The combination, with the adjustable doors of the fan-case and the adjusting-levers, of worm-wheels or their equivalent and a sliding transverse shaft, said wheels being mounted loosely on said shaft and adapted to be engaged therewith for operating said levers and doors, substantially as described.

3. The combination of the sliding shaft G, the worm-wheels F and F', or their equivalent, adapted to be engaged with said shaft, and the levers D and D' with the adjustable doors of the fan-case, substantially as described.

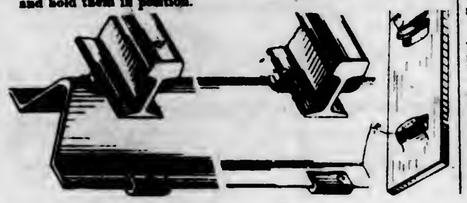
257,436. WOOD-PULP MACHINE. ROBINSON CARTWELL, Bellows Falls, Vt., assignor of one-fourth to Albert H. Fisher, same place. Filed Jan. 11, 1882. (No model.)



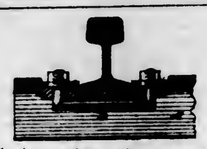
Claim.—As an improvement in machines for converting wood into paper-pulp, the cylindrical casing having radiating boxes or hoppers, provided with sliding covers and suitably operated followers, in combination with the grinding-wheel having a convex rim and suitable operating mechanism, as described, for the purpose set forth.

257,437. METALLIC RAILWAY-TIE AND FASTENING. H. DE SAVALA, Brooklyn, N. Y. Filed Mar. 13, 1882. (No model.)

Brief.—A wrought-metal corrugated tie has flattened rail-seats connected at the sides with the body of the tie, and is formed by stamping or rolling. The rails are secured by double-headed screw-threaded bolts provided with washers and nuts. Clamping-plates having ears are connected to one or more ties, so as to space and hold them in position.



257,437.

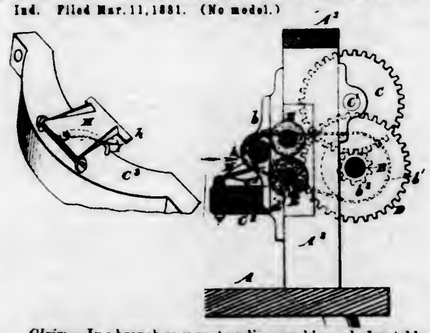


Claim.—1. A wrought-metal corrugated tie having flattened rail-seats connected at the sides with the body of the tie and formed by stamping, rolling, or equivalent means, substantially as described.

2. In combination with a corrugated tie, such as described, the double-headed screw-threaded bolt provided with washers and nuts, all arranged so as to hold the rail in position in the seat, as set forth, or any equivalent means therefor.

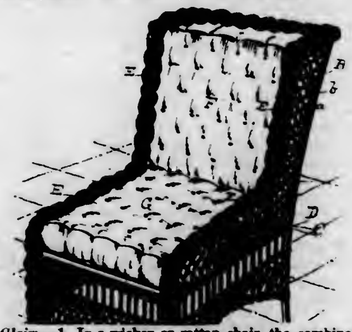
3. The clamping-plate C, having ears *a*, in combination with two or more ties, so as to space and hold in position the said ties, as described.

257,438. WILLOW-PEELER. GEORGE J. DUDLEY, St. Peter's, Ind. Filed Mar. 11, 1881. (No model.)



Claim.—In a branch or sprout peeling machine, a bed or table, A, and upright frame A' A² A³, having secured thereto the platform C⁵, cut away on its inner surface, as shown, in combination with the cutter H, having cutting-edge *h* and converging sides, all in one piece, spring I, fly-shaft B B', having pulley *b'* and pinion *b²*, gear D, pinion *d*, rollers E, and guide-roll J, as and for the purposes set forth.

257,439. WICKER OR RATTAN CHAIR. GEORGE A. ELLIS, Gardner, Mass. Filed Jan. 9, 1882. (No model.)



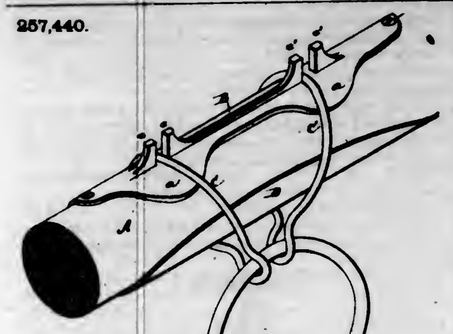
Claim.—1. In a wicker or rattan chair, the combination of upholstered cushions F and G with the back A and seat D, having flanges of wicker-work B and C and a projecting edging, E, whereby the cushions are held in place, substantially as is shown and described.

2. In a wicker or rattan chair, the back and seat thereof provided with elastic flanges, in combination with removable upholstered cushions, substantially as and for the purpose described.

257,440. NECK-YOKE. JAMES E. FINLEY, Delphi, Ind., assignor to William F. Lytle and Isaac Druffel, same place. Filed Feb. 18, 1882. (No model.)

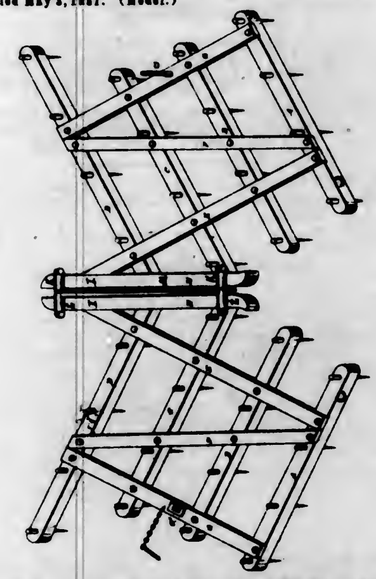
Claim.—1. The combination, with a neck-yoke and its rings, of the metal plate B, cast or formed with lugs adapted to receive and hold said rings, substantially as herein set forth.

257,440.



2. The metal plate B, having lugs *a c c' c'* and wings *a a*, in combination with rings C C and E and yoke A, all constructed and arranged substantially as and for the purpose described.

257,441. HARROW OR DRAG. JOHANN G. FRIEDEMANN, Waverly, assignor to August Friedemann, Bremer County, Iowa. Filed May 3, 1881. (Model.)



Claim.—In a sectional harrow, the combination, with the beams A B C D, of runner-beams H H, bearing eye-plates I, the coupling-bars K, hinged to said eye-plates on the outer edges of said beams H, and a locking device, substantially as described.

257,442. PROCESS OF TANNING HIDES. JOSEPH HEAD, Hornellsville, N. Y. Filed Dec. 8, 1881. (No specimens.)

Claim.—The process of tanning hides herein described, consisting of the following steps, which succeed each other in the order designated: first, placing the hides in a vat of water into which has been poured a mixture of one-half pound saltpeter, one pound oil of vitriol, one pound potash, and twenty pounds rock-salt; second, fleshing the hides after they have been soaked; third, soaking them in a vat of water into which has been poured a mixture of one bushel of quicklime and one and one-half pound of sal-soda after they have been fleshed; fourth, soaking the hides in a vat of water at a temperature of about 116° Fahrenheit after they have been limed; fifth, removing the hair and lime-shaving the hides; sixth, scouring the hides immediately after the hair is removed and they have been lime-shaved; seventh, coloring them; eighth, scouring the hides after they have been colored to remove all sediment and unnatural grain; ninth, the application of the tannin; tenth, laying the hides away in a pile after the tannin has been applied; eleventh, manuying them after they have been tanned; twelfth, scouring them on both sides; thirteenth, setting them out with a slicker and hanging them up to dry; fourteenth, stuffing them after they have become dry; fifteenth, packing them in a pile and covering them up after they have been stuffed; sixteenth, dipping them singly in a vat of water at a temperature of about 120° Fahrenheit after they have been taken from the pile; seventeenth, striking them out and drying them after they have been dipped; eighteenth, whitening, trimming, and boarding them after they have dried; nineteenth, blacking them with a composition of one pound of lamp-black, one and one-half pound of Babbitt's soap, boiled in three gallons of water; twentieth, smutting them off and applying gum-tragacanth and oil after they have been blacked; twenty-first, glassing them down and drying them; twenty-second, gumming them off with clear gum-tragacanth after they have dried.

257,443. BUCKLE. JOHN H. HUNTAMER, Janesville, Wis., assignor of two-thirds to Charles Dutton and Hiram Merrill, same place. Filed Nov. 25, 1881. (No model.)



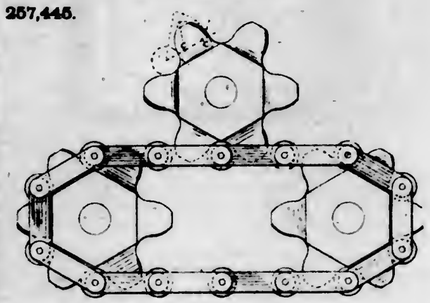
Claim.—In a buckle, the combination, with the buckle-frame and a bearing-plate consisting of the flat portion *d*, formed with a depression, *i*, a curved portion, *f*, provided with a groove, F, lugs or flanges C C, and opening *h*, of the tongue D, provided with the cross-bar E, the latter being secured within the groove F by means of the flanges or lugs C C, substantially as set forth.

257,444. TRACTION-ENGINE. HORATIO N. LAND and HOWARD CAMPBELL, Richmond, Ind., assignors to Gaar, Scott & Company, same place. Filed Jan. 16, 1882. (No model.)



Claim.—The combination, in a traction-engine, of the boiler A, supported upon traction-wheels, with the elevated horizontal tank-supporting bars G, bolted to the sides of the boiler at its front end above the front wheels and extending forward in advance of the front wheels, as shown, the elevated tank E, supported in position upon said bars in front of the smoke-stack and connected to the steam-dome by brace-rods *i*, and means for conducting and forcing the water from the tank into the boiler, substantially as described.

257,445.

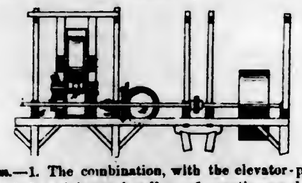


257,445. SPROCKET-WHEEL. FRANCIS H. LUCANNA, Columbus, Ohio, assignor to the Lochner Mining Machine Company, same place. Filed Jan. 3, 1882. (No model.)

Claim.—1. A sprocket-wheel the teeth of which have their engaging faces formed upon arcs of circles, substantially as set forth.

2. A sprocket-wheel having its teeth slotted to receive the intermediate bars of the chain-links, substantially as set forth.

257,446. GRAIN-ELEVATOR. WILLIAM H. LOTZ, Chicago, Ill., assignor of one-half to Edward Baumann, same place. Filed Nov. 19, 1881. (No model.)



Claim.—1. The combination, with the elevator-pulleys and paper wheels for driving such pulleys, of a continuous shaft-line for each line of elevators, such shaft-lines being driven from one end by a single pulley and by gear-wheels and a transverse shaft or shafts, and a wire-rope, chain, or rod passed through tubes in the grain-storing bins for raising and lowering the upper elevator-pulley, substantially as set forth.

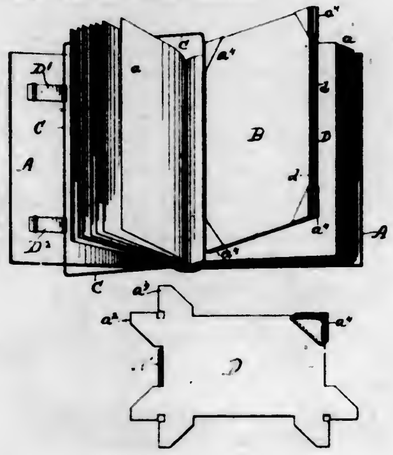
2. The combination, with a continuous line-shafting carrying gear-wheels, of an independent shaft for each paper-wheel, journaled in vertically-adjustable boxes and having a gear-wheel that meshes the gear-wheel on the line-shafting, and of the elevator-pulley riding upon such paper wheel, substantially as and for the purpose set forth.

3. In a grain-elevator, the elevator-pulley supported upon swinging beams that are raised and lowered by a wire rope passed through tubes in the grain-storing bins, so as to reach to and be operated from the lower floor of the building, all substantially as set forth.

257,447. PROCESS OF MANUFACTURING ILLUMINATING-GAS. ORASIO LUGO, New York, N. Y. Filed Apr. 7, 1882. (No specimens.)

Claim.—The process of manufacturing a fixed carbureted water-gas, which consists in carbureting the product of the decomposition of water by incandescent coal with hydrocarbons at their point of decomposition or dissociation, and then combining and fixing the mixture in a separate hot retort or bench, whereby a gas of constant photometric power is obtained free from light hydrocarbon vapor or condensable products, and whereby heavy as well as light hydrocarbons may be employed, substantially as described.

257,448. BLOTTING-PAD. JOHN E. PAYNESON, North Amherst, Ohio. Filed Oct. 28, 1881. (Model.)

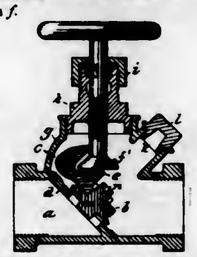


Claim.—1. In a blotting-pad, the body D, having the tubular hinge-projection A' and provided with the projecting corners a^2 a^3, which are adapted to be folded over onto the body proper in opposite directions to form the pockets a^4, substantially as and for the purpose described.

2. The combination, with the blotting-pad B, consisting of the body D and the series of blotting-sheets *d*, of the wire bail C, the elastic bands D' D^2, and the book A, substantially as described.

257,449. STEAM-VALVE. RUFUS N. PRATT, Hartford, Conn., assignor to the Steam Boiler Appliance Company, same place. Filed Nov. 14, 1881. (No model.)

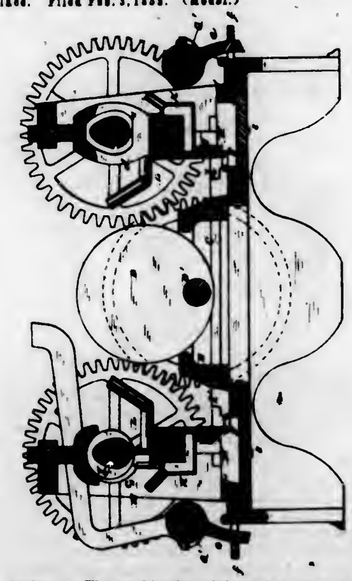
Brief.—The valve-case has two branches, *g* and *k*, and is provided with an inclined valve-seat and with a swinging flap operated by the stem *f*.



Claim.—1. In combination, in a fluid-cock, a barrel, *a*, having branches *g* and *k* and inclined valve-seat *d*, with a swinging flap, *b*, and operating-rod *f*, all substantially as described, and for the purpose set forth.

2. A fluid-cock having a barrel, *a*, inclined valve-seat *d*, branch *g*, and branch *k*, all substantially as described, and for the purpose set forth.

257,450. HORSESHOE-MACHINE. ZACHARIAH V. PURDY, Louisville, Ky., assignor of one-half to Albert G. Glover, same place. Filed Feb. 3, 1882. (Model.)



Claim.—1. The combination of the reciprocating carriage B, the bender A on this carriage, the spring-actuated jaws pivoted to the bender, having the shoulders a a', the feed-opening A' through the guide C', the hooked-spring dischargers, the collapsible die, and the curved extensions C^3, which compress the said jaws, substantially as described.

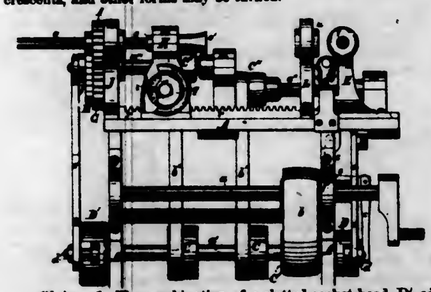
2. The spring-actuated collapsible dies H H', beveled and shouldered, as described, in combination with the opening-wedge *f* and means for actuating this wedge, substantially as described.

3. The vertically-reciprocating segment-shaped piercing-tool J, having beveled teeth and beveled gullets formed on it, means for bending rods into horseshoes, and the sprinkling-box K, all applied to a vertically-movable head, *d'*, substantially as described.

4. The combination, in a horseshoe-machine, of a right-line reciprocating carriage, a cam giving positive movements thereto, a concave bender secured to the carriage, bending-jaws pivoted to the concave bender, guides for the carriage and bending-jaws, spring discharging-hooks, bending-dies which are expansible, a nail-hole-piercing tool, and means for supplying air and water jets, substantially as described.

257,451. LATHE FOR TURNING FLUTED AND SIMILAR WORK. FREEMAN HANSON, Hollis, assignor, by mesne assignments, of four-fifths to the American Turning Company, Portland, Me. Filed Feb. 8, 1880.

Brief.—The stick to be turned is held at one end in a chuck, which may have a continuous or intermitting rotation. The intermittent rotation may be varied. The head-stock carrying a rotating cutter slides into cutting position at intervals, so that scallops, crescents, and other forms may be turned.



Claim.—1. The combination of a slotted socket-head, D', adjustable crank-rod *c'*, adjustable arm *j*, and pawl *m*, carried by said arm and engaging the teeth of a ratchet-wheel, H, all as hereinbefore shown and described.

2. The combination of the crank-rod *c'*, made adjustable at both ends, with an arm, *j*, and pawl *m* to act upon a system of gear-wheels and impart an intermittent rotation to the wood to be cut.

3. The combination of the chuck-shaft *e*, gear-wheels G and I, ratchet-wheels H, pawl *m*, and adjustable crank-rod *c'*, arranged to impart a definite intermittent rotation to the chuck-shaft, as hereinbefore described.

4. A sliding head-stock, E, and revolving arbor *i*, armed with any suitable cutting-tool, in combination with an intermittently-rotated chuck-shaft, *e*, as hereinbefore shown and described.

5. A sliding head-stock, E, and revolving and sliding arbor *i*, moved by adjustable crank-rods and slotted socket-heads, in combination with the chuck-shaft *e*, and gear-wheels G and I, arranged to impart alternately a constant or intermittent rotation to the lathe-chuck *e'*, as and for the purposes described.

REISSUES.

10,098. HORSE-COLLAR. CHRISTOPHER G. CALO, Albany, N. Y. Filed Mar. 2, 1882. Original No. 249,896, dated Nov. 22, 1881.



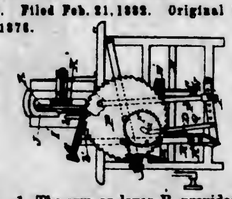
Claim.—1. As an improved article of manufacture, a hollow sectional horse-collar made of paper-pulp or papier-maché, as described.

2. The body of a hollow paper-pulp horse-collar, made in sections connected to admit opening and closing the collar, as described.

3. The combination, with the hollow sections A A', made of papier-maché, of the plugs *a a* and *a'* and the frame F, secured in the ends of the said sections, substantially as shown and described, whereby the ends of the said sections are re-enforced and provision is made for attaching the fastening devices, as set forth.

4. The combination, with the sections A A', hinged together at their lower ends, and the plate D, provided with one or more loops, *d*, and secured to the upper end of the section A, of the frame F, the plate D', having one or more slots, *d'*, the arms *f f'*, the plate *g*, the arm *h*, the spring *i*, the stop *i'*, and one or more catches, G, provided with a thumb-piece, *g'*, substantially as and for the purpose set forth.

10,099. SAW-SHARPENING MACHINE. MILO COVEL, Chicago, Ill. Filed Feb. 21, 1882. Original No. 150,115, dated July 28, 1876.



Claim.—1. The arm or lever R, provided on its upper end with a push-pawl or feeder and on its lower end with a guide or former, in combination with a vibrating lever connected to the sliding emery-wheel gate, substantially as and for the purposes specified.

2. The combination of the crank-shaft E, pitman Q, lever P', swivel-jointed connecting-arm P'', the vertically-sliding gate carrying the emery-wheel or sharpener, and the laterally-swinging gate-carrier, substantially as and for the purposes specified.

3. The angular slot *b'* in the gate-frame, in combination with the pin *b* on the vertically-sliding gate, substantially as and for the purposes specified.

4. The combination of the laterally-swinging gate-carrier or top piece, saddle L, brace M, pins *c c*, pulleys L L', the sharpening-wheel, and the driving-belts, all adapted for operation together, for the purposes set forth.

5. The guide or former R', pivoted to the feed-lever R, and having therein the slot *f*, in combination with the fastening-pin *f''* and the sharpener-actuating lever P', substantially as and for the purposes specified.

6. In combination, the beveled arm O, beveled removable and shouldered jacket T, removable bead-pieces U U, links or clasps V' V', and tighteners V'' V'', substantially as and for the purposes specified.

7. In a saw-sharpening machine, the combination, with the saw, of the pawl or feed-finger S, pivoted at one point, the loose end thereof being adapted to rise and fall in the line of the saw, but rigid laterally, substantially as described.

8. In a saw-sharpening machine, the combination, with the emery-wheel K and the arbor supporting the same, of the flanged pulley K', whereby the oil is prevented from reaching the cutting-surface of the emery-wheel, substantially as and for the purpose described.

10,100. PACKING-CASE. RALPH S. JENNINGS, Baltimore, Md., assignor to Joshua Levering, Baltimore, and George O. Manning, Baltimore County, Md., Trustees. Filed Mar. 11, 1882. Original No. 227,875, dated Feb. 15, 1881.



Claim.—1. A packing-case consisting of a pliable veneer body, to which the heads are united by textile fabric secured to the heads and to the body by stitches.

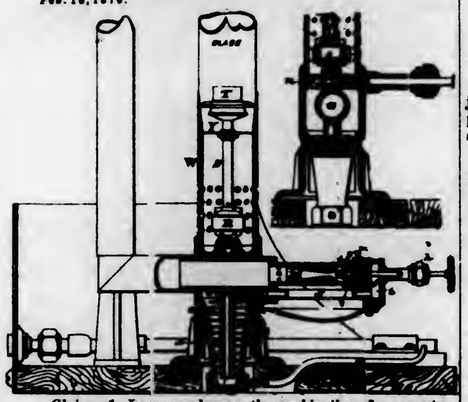
2. A packing-case whose head is united to the body by means of textile fabric, and having an open space between the edge of the head and the body, substantially as and for the purpose set forth.

3. The packing-case herein described, consisting of a body constructed of two or more layers of veneer cemented together, and having its head united to the body by a band of textile fabric stitched to the head and to the body, and united over the edge of the body, substantially as set forth.

4. A packing-case having strips of textile fabric secured to the outer edge of the body and to the rim of the head, and stitched together over the edge of the walls, forming a yielding rim for trundling and to receive blows or impacts, substantially as set forth.

5. In combination with a body of a packing-case having a textile-fabric flap secured thereto, a head having a similar flap secured near its edge, the said flaps being united and covering an annular space between the body and head, substantially as set forth.

10,101. APPARATUS FOR GENERATING GAS FOR HEAD-LIGHTS. NIRAM S. HAZIN, New York, N. Y., assignor, by mesne assignments, to F. A. Lyman and E. F. Taylor, Cleveland, Ohio. Filed Sept. 2, 1876. Original No. 99,937, dated Feb. 15, 1870.



Claim.—1. In a vapor-burner, the combination of a generator provided with a horizontal tube leading thereto, a jet-orifice controlled by a needle-valve and so placed with reference to the tube as to discharge vapor into the tube, and a pipe for the passage of gasoline to the jet-orifice, the latter provided with a drip-cup, whereby initial heat can be applied to the gasoline-pipe by igniting the contents of the drip-cup, substantially as set forth.

2. In a vapor-burner, a needle-valve operated by a screw-shaft threaded at or near its point, the screw-shaft suspended within a hollow tube, said tube provided with a stuffing-box at its outer extremity, substantially as and for the purposes shown.

3. The combination of the tank with the generating apparatus by means of a telescopic pipe, in the manner and for the purposes substantially as described.

4. The combination of the horizontal disks of wire-gauze or perforated sheet metal with the generator to prevent the disturbance or agitation of the fluid within it by the motion of the locomotive, substantially as described.

5. The combination of the small generator *c* with the burning-tube M and its contracted vent, and air-induction vents for vaporizing and burning the heavy oil from the bottom of the generator, in the manner substantially as described.

6. The combination of the sub-vaporizing apparatus with the heating-chamber, in the manner and for the purpose substantially as described.

7. The combination, with the chimney N, of the heating-chamber G, for the purpose of drawing in the heating-flame from the burning-tube M, substantially as described.

8. The combination of the tank with the generating apparatus by means of a telescopic pipe, in the manner and for the purpose substantially as described.

9. In a vapor-burner, devices, substantially as described, for heating the generator at top and cooling it at bottom, in the manner and for the purpose specified.

10. The combination, with the generator, of the pendent tube H, for removing the heavy oil from the gasoline fluid, in the manner and for the purpose set forth.

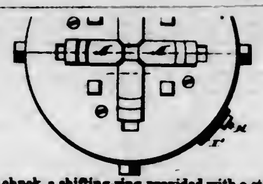
11. The combination, with the generator, of the devices, substantially as described, for separating the heavy or refuse portion of the gasoline fluid from the lighter and best portions of it, and vaporizing and burning the same to produce the heat for converting the lighter portion into an illuminating-gas, in the manner and for the purpose described.

12. The combination, with the air-tube W, perforated as described, of the burner T and wire-gauze disk Y, located below the burner, as and for the purpose described.

10,102. CHUCK. EDWARD S. PERROT and ELIZABETH C. BEHRMAN, (Administratrix of H. C. Behrman, deceased,) Philadelphia, Pa., assignors to National Manufacturing Company, New Haven, Conn. Filed Dec. 23, 1881. Original No. 167,018, dated Aug. 24, 1875.

Claim.—1. In a chuck, a shifting-ring provided with a stud that extends through an elongated slot formed in the periphery of the shell of the chuck and inclined thereto.

10,102.



2. In a chuck, a shifting-ring provided with a stud which projects through a slot formed in the shell of the chuck and a plate perforated to receive said stud and provided on its inner face with a lug to fit within the slot.

3. In a chuck, a shifting-ring provided with a stud which projects through a slot formed in the shell of the chuck and a plate constructed to cover said slot, perforated to receive the said stud and provided on its inner face with a lug to fit within the slot.

4. The combination of the stop-lug l^2 with the stud H of the shifting-ring E and the slotted shell of the chuck.

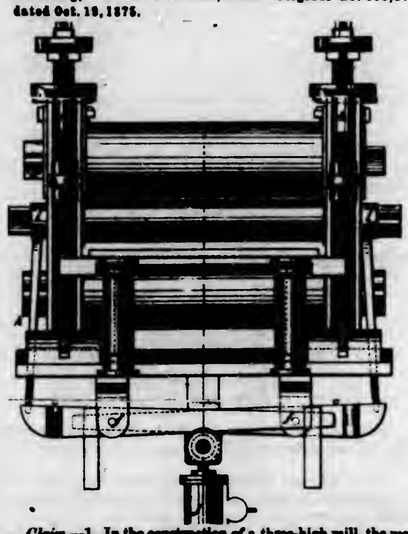
10,103. SHUTTLE FOR SEWING-MACHINES. GEORGE RENNIE, Philadelphia, Pa., assignor to American Buttonhole, Overseaming and Sewing Machine Company, same place. Filed Mar. 13, 1881. Original No. 139,431, dated May 27, 1873.



Claim.—1. The combination, with a shuttle-case provided with a slit, *b*, for the reception and removal of the thread, of the hinged plate *m*, adapted to cover the side opening of the shuttle and retain the bobbin, and having a lip, *c*, extending over the outside of the case, and overlapping and partly closing the said slit *b* in the shuttle-case, as specified.

2. The combination of the shuttle-case A, a partition, *d*, extending across the interior of the case, and having an inclined slit, *a*, with a spring, D, and a screw having a nut, A, by adjusting which the spring can be made to force the thread with more or less pressure against the partition, substantially as described.

10,104. THREE-HIGH ROLLING-MILL. JOHN I. WILLIAMS, Pittsburg, Pa. Filed Nov. 21, 1878. Original No. 169,871, dated Oct. 19, 1875.



Claim.—1. In the construction of a three-high mill, the manner of combining the fluid-pressure cylinder and movable middle roll, substantially as and for the purposes set forth.

2. The combination, in a three-high mill, of the middle roll, C, the fire-plate or rest *e*, movable fire-plate *p*, guide *q*, movable with the roll and cylinder J, and interposed connections for conveying the power of the cylinder to the roll, substantially as set forth.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

MATTHEWS *et al.* v. THE BOSTON MACHINE COMPANY *et al.*

Decided March 27, 1882.

1. REISSUE—EXPANDED CLAIM—LACHES.

Where the original patent shows upon its face that certain broad claims were not made, the patentees, if they are the inventors of such subject-matter, when apprised that it was not claimed in the patent, should use due diligence in surrendering the patent and having the mistake corrected. Fourteen years is too long a period of delay.

2. SAME—DIFFERENT INVENTION.

In this instance the reissue held to be not merely for a broader claim made many years after the original was granted, but for a different invention. By suppressing the description of certain parts of the device the reissued patent is made to cover by implication an invention described and claimed in a subsequent patent.

3. INFRINGEMENT—STATE OF THE ART.

When, in view of the state of the art, the patentee's claim must be construed to be for the specific arrangement of devices invented by him, the defendants do not infringe unless their devices are in the same specific form.

APPEAL from the Circuit Court of the United States for the District of Massachusetts.

Mr. Geo. L. Roberts and *Mr. Geo. Harding* for the appellants.

Mr. Causten Browne for the appellees.

Mr. Justice BRADLEY delivered the opinion of the Court.

This case comes before us on appeal from a decree of the Circuit Court for the District of Massachusetts, dismissing a bill in equity filed by the appellants, in which they prayed for an injunction and account of profits for an alleged infringement of two certain patents granted to Washburn Race and S. R. C. Matthews, one dated April 30, 1872, being a reissue of a patent granted January 26, 1858, and the other dated November 16, 1869. The defendants in answer denied that Race and Matthews were the first inventors of the thing patented, referring to several prior patents, and naming prior instances of knowledge and use of the alleged invention, and, among other things, setting up a patent issued to one Zebulon E. Coffin, dated July 21, 1868. They also denied that the reissued patent was for the same invention as the original, and denied infringement. The complainants filed a supplemental bill, alleging that since the filing of the original the defendants had procured a reissue of Coffin's patent, which contained substantially the same invention as that described in the plaintiffs' patent of 1869; but that Race and Matthews were the first and original inventors of the thing patented, and therefore they prayed that the Coffin patent might be declared void.

The Race and Matthews patents, on which this suit was brought, relate to casings or jackets around hydrants, and to the valves for letting on the water when wanted for use, and for draining it out of the hydrant when not in use. It is conceded that the objects of the casing are to prevent freezing in and around the hydrant by surrounding it with a volume of dead air, to keep it free from contact with the surrounding earth, and to enable the hydrant to be taken out of the ground without removing the surrounding earth. If the earth is in contact with the hydrant, it lifts the hydrant out of place by the action of the frost, and has to be dug away when repairs or other operations have to be performed below the surface. Many casings formerly used were fastened in different ways to the hydrant, and when lifted by the frost raised the latter also, causing breakage or leakage or other damage by the displacement, and also the hydrant could not be disconnected from the main and removed without removing the casing also. So far as the improvement in the casing is concerned the principal thing claimed to be effected by the patentees, Race and Matthews, is the placing of the case in position without attaching it to the hydrant or to the elbow of the main pipe below, so that the hydrant, while being protected from frost and the surrounding earth, may be lifted out separately, and so that the lifting of the case by the frost and surrounding earth will not disturb the hydrant. These objects are effected by two different devices: first, by causing the case to rest loosely on a flange projecting from the elbow of the main or otherwise, and allowing it to slide up the hydrant which it surrounds, and which is enlarged at that point for holding the valves; secondly, by allowing the upper end of the case to embrace the hydrant (enlarged at that point also) and to slide up and down upon it like a sleeve. Of course the case must fit the hydrant snugly enough to keep out the influx of cold air above and of dirt below, but not so tight as to prevent the hydrant from being lifted out or the case from slipping up and down upon it. This is the thing which the complainants contend that Race and Matthews invented.

As first patented in 1858, the invention did not accomplish the object. The bottom of the case, it is true, surrounded the hydrant like a sleeve and rested on a flange projecting from the elbow, which allowed the hydrant to be separately removed without removing the case; but the top of the case was inclosed in a flange projecting from the enlarged part of the hydrant above like the brim of a hat, but turned down over the top of the case, so that the latter, though unconnected

otherwise with the hydrant, yet if it were lifted by the frost it would press upward against the flange and raise the hydrant also. This difficulty was remedied by the invention of the improvement patented in 1869, by which the top of the case was made to surround and inclose the upper enlargement of the hydrant and to slide over it like a sleeve, as before stated. The reissued patent of 1872 substantially embraces both features of the improved case, namely, its disconnection with the hydrant both above and below, and places much stress on the dead-air chamber as a protection from frost, and on the protection of the hydrant below from the surrounding earth, although no claim is based on these last features. The defendants contend that this reissued patent is not for the same invention as that which is described and patented in and by the original patent of 1858; that the latter made no mention of the dead-air chamber formed by the casing, as a protection of the hydrant from the frost, and that it contained no indication that the case should fit closely to the hydrant, so as to prevent the passage of cold air into the chamber from without. But to these objections it is answered that the case invented by Race and Matthews in 1858 was a machine or apparatus having or being susceptible of various functions, some of which were well known and needed not to be mentioned or described. Among these known functions of the hydrant-casing were the formation of a dead-air chamber to prevent freezing and the protection of the hydrant from contact with the surrounding earth. The patent of Coffin, on which the defendants rely, states that prior to the date of his invention frost jackets or cases on hydrants were well known; that they surround the hydrant proper, an air-space existing between the two. It was not necessary for the patentees, Race and Matthews, to enumerate all the known functions of these frost-jackets in their original patent; and as no claim was based upon them it could not be hurtful to enumerate them in the reissued patent. But the complainants in their reissued patent have split up and divided the elements of their invention, and claimed them separately, and not as a combination. Of course this enlarges the scope of their patent. The separate claims embrace fewer elements in combination than were embraced in the claim of the original patent. No one could infringe the original patent unless he used all the elements of the combination. Any one will infringe the reissue who uses any of those elements which are now separately claimed.

The original patent had but a single claim in reference to the case, being a claim for a combination between the hydrant, the induction-pipe provided with a flange to sustain the jacket, and the jacket itself when arranged as described in the specification to effect the desired end, to wit: the ready removal of the hydrant. This in the reissued patent is divided into two claims, namely: first, the jacket surrounding the hydrant and forming a separate and removable part from the elbow, substantially as and for the purpose set forth; secondly, the independent jacket supported on the arm or elbow of the main at or near the junction of the hydrant, substantially as shown and described—that is to say, there is a claim of a jacket separate and removable from the elbow and of a jacket resting on the elbow. It cannot be denied that each of these separate claims is much broader than the claim in the original patent, and they are put forth in the reissue fourteen years after the original was granted. The latter showed on its face that these broad claims were not made, and if the patentees were really the inventors of an independent jacket standing loosely on the elbow of the main, when apprised that it was not claimed in the patent they ought to have used due diligence in surrendering it and having the mistake corrected. The case clearly comes within the ruling lately made in *Miller* v. *The Bridgeport Brass Company*.

There is still another objection to the claims in question. There is a wide departure from the original invention in this, that the subject of the latter was a jacket or casing whose top was inclosed in and covered by a flange projecting from the hydrant, which effectually prevented the removal of the jacket without removing the hydrant also, and which caused the hydrant to be raised when the jacket was lifted by the frost. In the reissued patent nothing is said of this arrangement of the top of the jacket, and the claims ignore it altogether, so that, as already intimated, the patent as it now stands would cover such a jacket as that described and claimed in the complainants' patent of 1869, which slides like a sleeve over the hydrant at top as well as bottom. The reissue is not only for a broader claim made many years after the original was granted, but is for a different invention. Therefore, so far as the jacket is concerned, we think it cannot be sustained.

But the patent of 1869 still remains. That was for an improvement by which it was proposed to liberate the top of the case from the flange which covered and inclosed it and make it surround the hydrant and slip over it like a sleeve. The claim is for "the detached case B, so combined and arranged with the hydrant A as to have an end play or vertical motion of several inches to compensate for the heaving by frost, the upper part of same passing outside of main stock of hydrant." Had this patent been confined to a hydrant-jacket closed at the bottom and resting on a flange of the main elbow, perhaps it might have been sustainable; but it is not so confined. It is only said that the lower end preferably shuts into a flange of the elbow. The specification, it is true, commences with a statement that the invention was a mere improvement upon that described by the patent of 1858, which was for a case closed at the bottom by standing on a flange; but before getting through there is an evident departure from that and an indication that the patentees had begun to entertain views of an expanded construction intended to be placed on the original patent, which afterward found expression in the reissue of 1872. The claim of the patent of 1869 as it stands covers any and every loose jacket having an end play to compensate for the heaving of the frost, and having the upper end passing around the hydrant. It covers the old New York wooden case or housing, which was in public use for many years before Race and Matthews gave their attention to the subject. We are of opinion, therefore, that this patent cannot be sustained.

As to the valve apparatus, the object of which is to let the water in the body of the hydrant escape when the main valve is closed and to prevent any escape of water when the main valve is open, since Race and Matthews were not the original inventors of this process, but only of a particular arrangement of valves to effect it, they can only properly claim the specific arrangement which they invented; and in view of the older valve in the St. Louis hydrants, which that of the defendants most nearly resembles, and of the fact that the valve used by the defendants is not in the specific form of that invented by Race and Matthews, we think that the defendants are correct in their position that they do not infringe the patent of Race and Matthews, as that patent must be construed in order to be sustained.

The decree of the circuit court must be affirmed.

U. S. Circuit Court—District of New Jersey.

GREEN v. FRENCH.

Decided March 28, 1882.

1. GREEN PATENT—PRIOR DECISIONS FOLLOWED.
In view of numerous decrees in other circuit courts sustaining the validity of the Green patent for driven wells, in only one of which appeal has been taken to the Supreme Court, the court declined to hear argument except as to new features of the particular case.

2. SAME—PRIOR INVENTION.
Evidence offered to show the existence of a driven well at Warsaw in the year 1859 discredited.

Mr. J. C. Clayton and *Mr. A. Q. Keasbey* for the complainant.

Mr. Wm. B. Maxson and *Mr. Jas. Buchanan* for the defendant.

NIXON, *J.*:

This is a suit in equity brought against the defendant for the infringement of Reissue Letters Patent No. 4,372, granted to Nelson W. Green, assignor of the complainant, on May 9, 1871, for an improvement in the methods of constructing Artesian wells. The original Patent No. 73,425 was issued to said Green, January 14, 1868, upon his application therefor, filed May 17, 1866. The patent is popularly known as the "Driven-well" patent, and the validity of the reissue has been the subject of controversy in the circuit courts of several districts almost without a parallel in the history of patent litigations.

It appears in this case that the contest began with the suit of *Andrews* v. *Carman* before his honor Judge Benedict in the eastern district of New York, was continued in the several cases of *Andrews* v. *Wright* before Judges Dillon and Nelson in the district of Minnesota, of *Hine* v. *Wahl* before Judge Gresham in the district of Indiana, of *Andrews* v. *Cross* before Judge Blatchford in the northern district of New York, and of *Andrews* v. *Cregan* before Judge Wheeler in the southern district of New York. All these cases resulted in sustaining the validity of the patent and in a decree in favor of the complainants. It does not appear that any except one of them have been taken up to the Supreme Court on appeal, but have been acquiesced in by the respective defendants. Under these circumstances it would seem that the time had arrived when controversy over determined questions should cease in the subordinate courts. When six learned judges in different districts have substantially agreed in the construction of a patent, another judge in a co-ordinate court, under the same state of facts, should accept their decision as final until the Supreme Court have had the opportunity of reviewing and reversing their judgment. Accordingly, when the case was called for hearing I stated to the counsel that I was unwilling to take the time of the court in listening to the discussion of issues which had been so often presented, discussed, and decided, and that unless my attention was called to features in the case which distinguished it from those elsewhere adjudicated I should be inclined to order a decree for the complainant on the authority of the suits in other districts. The counsel of the respective parties agreed that all the testimony in the present case in regard to the existence of a driven well in the premises of Timothy H. Buxton, at Warsaw, in the State of New York, as early as the spring of 1858, was new, and had never been introduced or considered in any of the other cases. The argument, therefore, at the hearing, after the suggestion of the court, was mainly directed to the question whether in fact any well was there at that date which in its process, construction, and mode of operation anticipated the alleged invention of Green.

I have given the evidence careful consideration, and find it is so contradictory that I am quite perplexed in reaching a decisive judgment. Having no reason to suppose that any of the witnesses mean to distort the truth, it is clear that some of them are mistaken, and it is hard to reconcile the many conflicting statements in regard to the facts of the case.

The principal witness in favor of the existence of a driven well in Warsaw as early as the spring of 1858 is Mr. Timothy H. Buxton, its alleged inventor, and the owner of the premises where it was put down. He describes how it was done:

"In the first place," he says, "I took a piece of gas-pipe * * * of the length I wanted and drilled in one end small holes sufficient to let water in, and then had a plug turned to put in the bottom end of the pipe with a shoulder, so that the plug would not drive up into the pipe, one end being small enough to go up into the pipe, say four inches." This plug, about ten inches in length from the shoulder and tapering to a point, was put in the bottom of the pipe. He then took a common crowbar, made a hole in the ground as far as he could with it, and then put the pipe in the hole and drove it down the depth that he supposed he could find water; then took a bar of round iron and put it in the pipe and punched out the wooden plug in the bottom; then screwed a cast-iron pump to the top of the pipe, began to pump, and got water He further states that Mr. Hiram Adams turned the block which was used for a plug at the lower end of the pipe and drilled the holes in the pipe; that the pump as thus constructed was in constant use for smith purposes in the blacksmith-shop for several years; that it was taken up when the ground was built over where it stood, and was afterward put down again in the new shop between the forges in the same manner as above described when it was first made.

It is well to remember in this connection and in view of the testimony of John West, to which reference will be made hereafter, that Mr. Buxton stated at a subsequent stage of his examination that West was present during the whole time of putting down the second driven well in the new shop and dictated about it. He is strongly supported by the testimony of Hiram E. Adams, who carefully and minutely describes a pump that he saw put down on Buxton's premises on the west side of the blacksmith-shop, north of the door, and about two feet from the wall. He says that in the spring of

1858 he formed a partnership with one Silas J. Fargo for carrying on the business of turning, sawing, and planing; that it continued for one year to the spring of 1859; that they occupied a shop belonging to C. & T. Buxton, and were to do their turning and sawing in their wagon business in consideration of their furnishing the shop; that when they took possession there was only one well on the Buxton premises; that during the year 1858 a pump was put down; that at the request of T. H. Buxton he turned a hickory plug for the end of an iron pipe, and helped drill holes in the side of the pipe and fitted the plug to the end. The pipe was about an inch and a half in diameter and from ten to fourteen feet in length. The witness recollects seeing workmen sinking the tube in the ground and attaching a pump to the upper end, which was about two and a half feet above the ground; that water was obtained by pumping and used in the work of the blacksmith-shop for probably two or three years afterward; that he used the water from the pump for his own work on the premises, and that he was in a line of persons to furnish water from it to extinguish the first fire of Hurd & Gates's planing-mills, which occurred in the year 1859.

Eli Dibble testifies that he was a carriage-maker in the employ of the Messrs. Buxton for upward of twenty years, and left them in the month of September, 1861. He remembers the well north of the door on the west side of the blacksmith-shop, and that water was pumped from it until it was drained at the fire of Hurd's planing-mills in 1859. He states that the well was an iron pipe stuck up out of the ground and a common cast-iron pump on top of it.

F. L. Hain says he was a master builder, and did much carpenter work for the Buxtons; that in the year 1859 he shingled the roof of a small house, which stood on their premises about three rods to the east of the blacksmith-shop. While engaged in this work he was in the habit of passing around the west end of the shop half a dozen times a day to go to the planing-mill for lumber. He recollects the iron pipe sticking out of the ground with a pump on the top, just north of the door, on the west side of the shop, and pumped water out of it a good many times.

There is more corroborating testimony of the same sort, and it all points to and describes the well which is covered and claimed by the Green patent, and if true as to the date of construction his invention is clearly anticipated.

The patent being *prima facie* good, the burden of proof on a question of anticipation is upon the defendant. Does the rebutting evidence of the complainant suggest a reasonable doubt of its truth? He has summoned a number of witnesses, but it is sufficient for the purposes of this case to refer to the salient points of the testimony of a few of the more important. In the first place, these witnesses were all old residents of Warsaw, and they agree in the statement that the first driven well they ever heard of in that town was put down in the street in front of the barn of the brick hotel property in the summer or fall of 1865, and that it attracted much attention at the time, and was discussed by the citizens generally as a new invention.

In view of the number of witnesses who now testify to their knowledge that Buxton invented and sunk another driven well of the same construction as early as the year 1858 or 1859, it seems rather singular that no one then remembered or adverted to the fact of its previous existence and use in the town.

In the next place, Elihu R. Benson, Charles P. Williams, and Calvin W. Bisby were in the employ of the Buxtons in their manufacturing establishment for a number of years, including the years 1858 and 1859. They were on the premises daily and give intelligent accounts of the sources whence they procured water for carrying on the work of the manufactory. They severally testify that no driven well existed there to their knowledge, and they do not understand how it could have been there without coming under their observation.

Chester P. Hurd and Ira N. Hurd were in the lumber trade in connection with the firm of Hurd & Gates, whose place of business was immediately in the rear of C. & T. Buxton. Their mode of access was along a fifteen-feet lane or alley over the Buxton premises. They were thus obliged to pass and repass to and from their work and meals every day. Their occupation also made it necessary for them to visit the shops of Buxton daily. They distinctly remember the dug well—an ordinary stoned well, near one corner of the blacksmith-shop—but they never heard of a driven well in Warsaw before the year 1865. If there had been one on Buxton's property they think that they should have known and remembered it.

The testimony of John West renders it still more incredible that a driven well existed in Warsaw in the year 1859. He states that he has lived in Warsaw for twenty-eight years past; that he never heard of a driven well there until the summer of 1865, when two or three men came from Bath or Penn Yan and put down one on the brick hotel property; that it excited great attention as a novelty, a hundred men or more being present; that he obtained the right to drive these wells in Warsaw shortly afterward, and put down in the town from seventy-five to one hundred; that Mr. Buxton employed him to sink three in different places on his property, one of which was in his blacksmith-shop; that he paid him the usual royalty for the patent right; and that all this occurred in the early part of the year 1867. The circumstances attending the sinking of the well in the blacksmith-shop are so inconsistent with any theory that Buxton had previously invented and used a few feet distant for several years a driven well that I quote his statement of what took place. The witness says:

> He [Buxton] took me into the shop and showed me where he wanted the well; asked me if I thought I could make a drive-well there. I told him I thought I could. He said he had a good well, a dug well, just outside of the shop, plenty of water, but it got dirty, and thought if he had a drive-well inside it would be better for his boys.

Such evidence greatly impairs the force and value of the testimony offered to prove the prior invention and use of the driven well. Green's invention was in the year 1861. Buxton says that a few years elapsed—how many he could not say—between the time of his sinking the first driven well and the date when West put down the second, and he is unable to indicate the year when the latter took place. Nor does he attempt to explain why he paid another a royalty for the privilege of using his own invention. A memory so defective as to allow its possessor to forget in a few years that he has made one of the most remarkable inventions of the century cannot be depended on for accuracy in the statement of transactions which took place twenty years ago.

The complainant is entitled to a decree.

It will be observed that I have made no reference to the evidence and argument on the question of the validity of the reissue. I have purposely refrained from expressing any opinion (1) because it has been fully considered and adjudicated in the other cases and (2) because in the unsettled condition of the law arising from some recent decisions of the Supreme Court I prefer to leave that tribunal to determine it in the case now pending on appeal from the Circuit Court of Indiana.

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Subscriptions for 1882.

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Issue of May 9, 1882.

Patents	384	No. 257,452 to No. 257,835, inclusive.
Designs	8	No. 12,920 to No. 12,927, inclusive.
Trade-Marks	15	No. 9,339 to No. 9,353, inclusive.
Labels	4	No. 3,676 to No. 3,679, inclusive.
Reissues of patents	7	No. 10,105 to No. 10,111, inclusive.
Total issue	418	

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Maryland	5	....	Wyoming Territory	....	....
Massachusetts	41	2	United States Army	....	....
Michigan	9	....	United States Navy	....	....
Minnesota	1	....			
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Cuba	....	....	Total to citizens of foreign countries	34	5
Denmark	....	....			
Ecuador	....	....			

DESIGNS.

12,920.—CIGAR CUTTER.—*Napoleon Du Brul*, Cincinnati, Ohio. Application filed June —, 1881. Term of patent 14 years.

12,921.—CIGAR-CUTTER.—*Napoleon Du Brul*, Cincinnati, Ohio. Application filed May 26, 1881. Term of patent 14 years.

12,922.—ADVERTISING OR ORNAMENTAL BLANK OR EASEL.—*Ethan L. Meodie*, New York, N. Y., assignor of one-half to *Charles H. Gillespie*, same place. Application filed February 27, 1882. Term of patent 3½ years.

12,923.—GRAVE-COVER.—*Robert H. Sipes*, Union City, Ind. Application filed February 7, 1882. Term of patent 14 years.

12,924.—CARPET.—*Horatio Smith*, Kidderminster, England, assignor to *William Mansell Daintrey*, New York. Application filed March 14, 1882. Term of patent 3½ years. Registered in England August 29, 1881.

12,925.—COOKING-RANGE.—*William A. Spicer*, Providence, R. I. Application filed March 20, 1882. Term of patent 7 years.

12,926.—WATCH-MOVEMENT.—*Henry Onesime Steagfer*, Ponts Martel, Switzerland. Application filed March 27, 1882. Term of patent 7 years.

12,927.—EMBLEM FOR THE ANCIENT ORDER OF HIBERNIANS.—*Christopher P. Sweetman* and *Charles M. Picard*, Dayton, Ohio. Application filed January 3, 1882. Term of patent 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

9,339.—NATURAL MINERAL WATER.—*The Bethesda Mineral Spring Company*, Waukesha, Wis. Application filed April 6, 1882.
"The word 'BETHESDA.'"

9,340.—CHAMPAGNE-WINES.—*Chandon & Co.*, Epernay, France. Application filed March 20, 1882.
"The word 'GREEN' and the two stars."

9,341.—CHAMPAGNE-WINES.—*Chandon & Co.*, Epernay, France. Application filed April 10, 1882.
"The word 'GOLD' and the two stars."

9,342.—CHAMPAGNE-WINES.—*Chandon & Co.*, Epernay, France. Application filed March 20, 1882.
"The word 'WHITE' and the two stars."

9,343.—ARTIFICIAL WATERS.—*Henry Sugden Evans*, Montreal, Quebec, Canada, and Rouse's Point, N. Y. Application filed September 17, 1881.
"The word 'PHOSPOZONE.'"

9,344.—CERTAIN PROPRIETARY MEDICINES.—*Peter Fahrney*, Chicago, Ill. Application filed March 17, 1882.
"The arbitrarily-selected letters 'P' and 'B.'"

9,345.—KNIT AND WOVEN GLOVES AND UNDERWEAR.—*Bruno Falke*, Chemnitz, Saxony, Germany. Application filed April 10, 1882.
"The representation of a falcon."

9,346.—LAGER-BEER.—*Joseph Gahm*, Boston, Mass. Application filed April 14, 1882.
"The symbol of the mug with the handle and the letters 'J. G.' on the body of the said mug."

9,347.—LINIMENT.—*B. J. Kendall & Co.*, Enosburg Falls, Vt. Application filed March 13, 1882.
"The figure or vignette of a horse's head."

9,348.—CANNED MEATS AND FISH.—*J. G. Meyer & Co.*, Brookfield, Wash. Ter. Application filed April 8, 1882.
"The representation of the stag's head with antlers."

9,349.—CANNED MEATS AND FISH.—*J. G. Meyer & Co.*, Brookfield, Wash. Ter. Application filed April 8, 1882.
"The representation of the dragon, horse, and rider."

9,350.—LEATHER-DRESSING.—*Restorff & Bettmann*, New York, N. Y. Application filed February 20, 1882.
"The arbitrarily-selected word-symbol 'SARATOGA.'"

9,351.—CANNED FRUITS, VEGETABLES, JELLIES, JAMS, PRESERVES, AND MEATS.—*San Jose Fruit Packing Company*, San José, Cal. Application filed April 13, 1882.
"The group consisting of the eagle, the can or package, and the two grizzly bears."

9,352.—SHAMPOO.—*Madame Lazelle Vaunt*, Philadelphia, Pa. Application filed April 1, 1882.
"Three nude female forms with long flowing hair bathing."

9,353.—CORDIAL DESIGNATED "SCHNAPPS."—*Joel B. Wolfe*, New York, N. Y. Application filed May 25, 1881.
"The fac-similes of the signatures of Udolpho Wolfe and Joel B. Wolfe."

LABELS.

2,676.—Title: "ARNICA SHAVING SOAP."—*C. H. Strong*, Chicago, Ill. Application filed April 15, 1882.

2,677.—Title: "DR. BIGELOW'S POSITIVE CURE."—*Charles H. Thorning*, Chicago, Ill. Application filed January 28, 1882.

2,678.—Title: "DR. HOFFMAN'S RED DROPS."—*Frank Traudt*, St. Louis, Mo. Application filed April 5, 1882.

2,679.—Title: "WHITING'S DECORATIVE INDELIBLE OUTLINE INK." *Frederic A. Whiting*, Wellesley Hills, Mass. Application filed April 17, 1882.

DISCLAIMERS.

9,842, (Reissue.)—*Tennis V. Le Roy*, assignor to *The Le Roy Journal Bearing Company*, New York, N. Y., dated August 16, 1881. IMPROVEMENT IN CAR-AXLE BOXES. Disclaimer filed April 28, 1882, by *The Le Roy Journal Bearing Company*.

Enters its disclaimer "to that part of the said specification which begins on line 70 of the printed copy, and which appears in the following words, to wit: 'Which readily yields to pressure, and is sufficiently flexible to permit the journal of the axle to adjust itself therein.'"

No. 9,028, (Reissue.)—*John Matthews*, New York, N. Y., patent dated January 6, 1880. IMPROVEMENT IN SODA-WATER APPARATUS. Disclaimer filed May 2, 1882.

Enters his disclaimer "to the fifth claim of said letters patent, which is in the following words, to wit:

"'5. In a dispensing apparatus, the ice-chamber *c*, made to extend downward behind the tumbler-recess, substantially as herein shown and described.'"

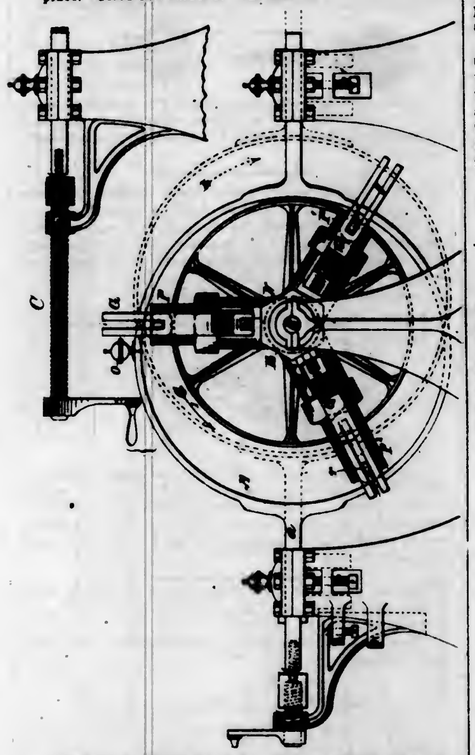
And "to the seventh claim, which is in the following words, to wit:

"'7. An apparatus having its front portion to contain an overhanging recess or chamber, *g*, containing the sirup valves and faucets, which are operated through the cover of the chamber and discharged into a recess, *h*, within which the drinking-tumblers are placed to receive the sirups or beverage.'"

PATENTS

GRANTED MAY 9, 1882.

257,452. STEAM, AIR, OR WATER ENGINE. JAS. A. ADAMS, Austin, Tex., assignor of one-half to Peter E. Roberts, same place. Filed Oct. 14, 1881. (No model.)



Claim.—1. The horizontally and vertically adjustable ring A, the shaft S, the cylinder E, pistons P P' P², and means to convey steam to and exhaust it from the cylinders of the pistons, all combined substantially as and for the purposes described.

2. The combination, with the shaft S and the cylinder E, rigidly mounted on the shaft, of the steam-chest F, loosely mounted on said shaft, and an adjustable gland or nut, whereby the steam-chest in any required position around the shaft may be tightened up to the port-face of the cylinder to compensate for the wear, substantially as described.

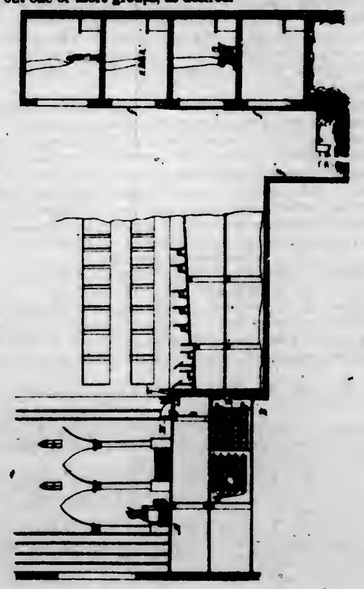
3. The combination, with the adjustable ring A, the shaft S, and the cylinder E, of the steam-chest F, adjustable around the shaft, whereby the admission and exhaust of steam may be adjusted to correspond with the adjustment of the ring, substantially as and for the purposes described.

4. The combination, with the adjustable ring A, the shaft S, and the cylinder E, having pistons P P' P² and steam-ports *d d' d²*, of the adjustable steam-chest F, having live and exhaust steam passages *f f'* and ports F' F², combined and operating substantially as and for the purposes described.

5. In a steam-engine of the class described, the method of subjecting the entire surface of the plane of resistance to equal wear by adjusting the same both horizontally and vertically relatively to the axis of rotation of the forces acting upon said plane, and correspondingly adjusting the admission and the exhaust of the power impelling said forces, whereby the position of the working-surface of the plane of resistance is shifted relatively to the forces acting thereon, substantially as described.

257,453. TELEPHONIC TRANSMISSION OF SOUND FROM THEATERS. CLEMENT ADER, Paris, France. Filed Jan. 13, 1882. (No model.) Patented in France Aug. 9, 1881, in Germany Aug. 20, 1881, in Belgium Aug. 20, 1881, in England Sept. 1, 1881, and in Italy Sept. 13, 1881.

Brief.—Transmitters are placed on or below the stage of a theater, near the foot-lights, a transmitter at the right-hand side and one at the left-hand side being connected with receivers for the right and left ears of each subscriber by lines leading to the subscribers' houses. The transmitters are protected from the jar of the stage by being hung from elastic supports, or are mounted on a base of lead. The transmitter-batteries are arranged in groups, with the necessary switches and circuits for throwing in and cutting out one or more groups, as desired.



Claim.—1. The described auro-stereoscopic arrangement of telephones for theaters and the like, consisting of two telephonic transmitters at the theater, one arranged on one side of the stage and the other on the other side, with two receiving-telephones at the subscriber's house, one designed to be placed by the auditor at each ear, with a telephonic circuit connecting the transmitter at the right of the stage with the receiver for the auditor's right ear and another circuit connecting the transmitter at the left of the stage with the receiver for the auditor's left ear, combined substantially as and for the purposes set forth.

2. The combination of the stage A of a theater with a series of transmitting-telephones, T T, arranged adjacent to the foot-lights in substantially the manner set forth and shown, with circuits extending from said transmitters to the residences of the respective subscribers and there terminating each in a receiving-telephone, substantially as set forth.

3. The combination, with the stage A of a theater, of a transmitting-telephone, T, and an interposed elastic cushion or suspender, substantially as set forth.

4. The combination of the stage A of a theater, having a sound-opening in the floor thereof, and one or more transmitting-telephones, T T, arranged beneath the floor in connection with said opening, substantially as set forth.

5. The combination of the stage A of a theater, having a sound-opening, S, through the floor thereof, a box, K, hung from the floor under said sound-opening by elastic suspenders, and a series of transmitting-telephones, T T, disposed in said box, substantially as set forth.

6. The combination of a series of transmitting-telephones, an equal series of inductoriums, a series of local circuits, each including one transmitter and one inductorium, and each divided into two or more branches, two or more series of batteries, one battery included in each such branch, a circuit-breaking commutator in each such branch, all the commutators of each separate series of batteries being arranged in a separate row or group, and means, substantially as described, for simultaneously operating all the commutators of either series, as and for the purposes set forth.

7. A series or gang of circuit-breaking commutators, consisting of a number of pairs of springs or strips arranged in a row, the opposite strips of each pair tending to fly together and close the circuits, with an insulating-bar arranged between the rows of strips and adapted to be moved between the contacting portions of the strips of all the pairs simultaneously, thereby separating them and breaking the circuits, combined and operating substantially as set forth.

8. A series of local transmitter-battery circuits, each including the primary of a separate inductorium, a series of line-circuits, each including a receiving-telephone and the secondary of one of the inductoriums, means, substantially as described, for changing the batteries in the local circuits, and a series of short-circuiting or circuit-breaking interruptors, each interposed in one of the line-circuits, with means for simultaneously operating all of said interruptors, all combined and adapted to operate substantially as set forth.

9. The combination of a transmitter arranged in a theater or the like, local battery-circuit connecting the same with an induction-coil, a line-circuit leading from said coil to the subscriber's residence, and there terminating in a receiving-telephone, a silencing-box, M, through which at least one wire of said circuit passes, a spring, *d*, and bracket *e*, interposed in said circuit and inclosed in said box, and a projection, *i*, on the lid L, adapted, when the lid is closed, to depress said spring, and thereby cut off the current from the receiving-telephone, substantially as set forth.

257,454. TOBACCO-PRESS. ROBERT L. ALEXANDER, New Liberty, Ky. Filed Mar. 22, 1882. (No model.)

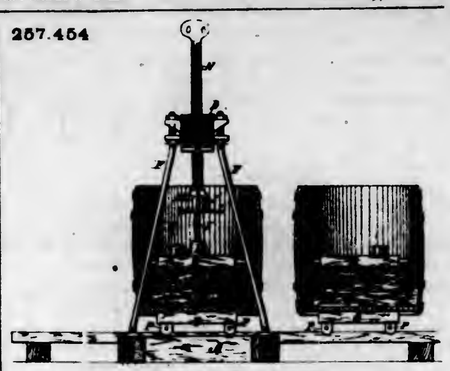
Claim.—1. In presses, a supplementary follow-board adapted, substantially as herein shown, to expand and bind against the opposing sides of a tub, hogshead, barrel, or similar receptacle, for holding the compressed contents of said receptacle, as herein set forth.

2. In presses, the adjustable follow-board, composed of the frame R S S', having the grooves E', arbor T, rack and pawl T', and pinion, or their equivalent, in combination with the U-shaped pieces U, having hinged thereto the rack-bars V, all operating substantially as and for the purpose set forth.

3. In presses, a supplementary expanding and adjustable follow-board, as shown, in combination with a press, substantially as herein set forth.

4. In presses, the combination of the screw N, having at the lower end a cross-head, M, provided at each end with the gains J', and the independently-adjustable follow-block I, having the guide-arms J, provided with holes K and pins L, substantially as and for the purpose herein shown.

257,454



257,455. CASKET TRIMMING OR ORNAMENT. DEXTER AVERY, Westfield, Mass., assignor to the Textile Manufacturing Company, same place. Filed Aug. 17, 1881. (No model.)



Claim.—An improved casket trimming or ornament, consisting of a rigid mold having its surface corrugated or roughened and platted or covered with thread or textile fabric, substantially as set forth.

257,456. LIQUID WATER-PROOF STOVE-POLISH. WILLIAM AYLING, Chicago, Ill. Filed Dec. 5, 1881. (Specimens.)

Claim.—The herein-described composition of matter for polishing stoves, consisting of crude gum-turpentine, aqua-ammonia, water, alcohol, and plumbago, substantially in the proportions specified.

257,457. PICTURE-HOOK. FRANKLIN P. BAKER, Boston, Mass. Filed Sept. 8, 1881. (No model.)

Claim.—An improved picture-hook, composed of two parts pivotally united, the upper portion provided with a hook adapted to grasp the upper edge of the molding and the lower portion provided with a hook to receive the cord, and an upwardly-projecting nose to pass behind the lower edge of the molding, all substantially as set forth.

257,458. WHISTLING RETURN-BALL. CHARLES E. BALDWIN, Albany, assignor to Albert J. Bayless, New York, N. Y. Filed Feb. 15, 1882. (No model.)

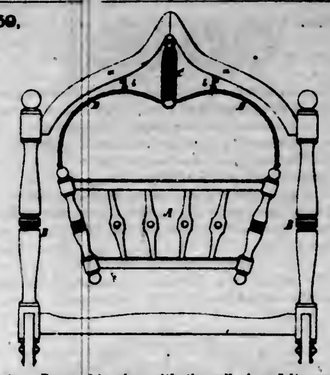
Brief.—Improvement on the device described in Letters Patent No. 149,908.

Claim.—1. An improved musical toy constructed substantially as herein shown and described, consisting of a perforated hollow ball, A, elastic diaphragm D, whistle C, cord F, and elastic G, all arranged and operated as set forth.

2. In a hollow perforated return-ball, the combination, with the fixed elastic diaphragm D, of the cord F and loop forming elastic G, substantially as herein shown and described, and for the purpose set forth.

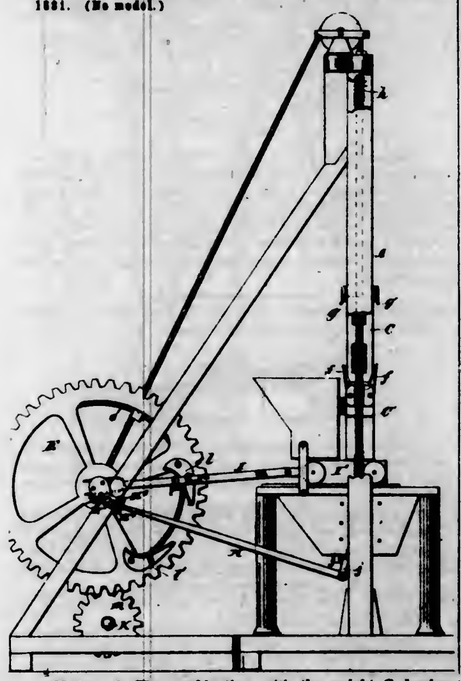
257,459. CRADLE. FRANK W. BARKER, Belmont, N. H. Filed Mar. 20, 1882. (No model.)

257,459.



Claim.—In combination with the crib A and its supporting-stand B, the spring C and the hooks *c c* and the two levers D D, provided with eyes *b b*, all being applied and arranged substantially in manner and to operate as set forth.

257,460. BRICK-MACHINE. HENRY C. BARNES, Sedalia, assignor to Edward Hurley, Pettis County, Mo. Filed Oct. 8, 1881. (No model.)



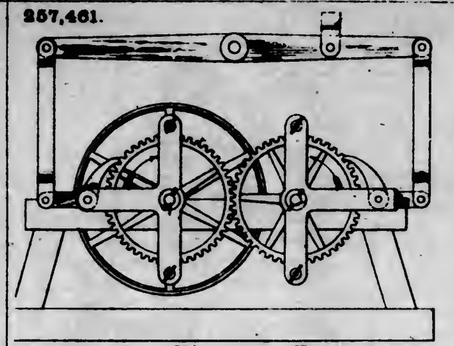
Claim.—1. The combination, with the weight C, having notches, and the intercepting latches or bars F, fixed to the uprights A, of the die C', having the spring-catches *f*, substantially as and for the purpose set forth.

2. In a brick-machine, the combination, with the wheel-shaft E and the crank-shaft *f*, carrying the cams *h*, acting upon the mold-chamber plungers *i* and the cranks *j*, of the pitmen H, having a slot at its point of connection with said shaft, substantially as and for the purpose set forth.

3. In a brick-machine, the combination, with the plunger I and pitman I, sliding upon the shaft of the wheel E, of the wheel K, having the oppositely-facing cams *l l'*, substantially as and for the purpose set forth.

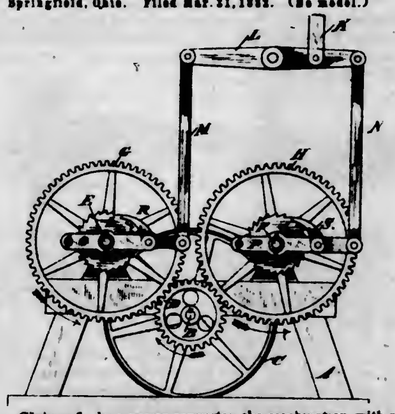
257,461. POWER-CONVERTER. FRANCIS M. ROCKWALTER, Springfield, Ohio. Filed Mar. 21, 1882. (No model.)

257,461.



Claim.—In a power-converter, the combination, with a vibrating beam actuated by a reciprocating prime mover and a driving-wheel, of two meshing gear-wheels, the one of which is secured upon the shaft of the driving-wheel and the other upon an independent journal, and dogs with connecting mechanism actuated alternately by the vibrating beam and engaging with said meshing gear-wheels, whereby the driving-wheel is caused to revolve continuously in one direction, substantially as described.

257,462. POWER-CONVERTER. FRANCIS M. ROCKWALTER, Springfield, Ohio. Filed Mar. 21, 1882. (No model.)



Claim.—1. In a power-converter, the combination, with a vibrating beam actuated by a reciprocating prime mover and a driving-wheel whose shaft is provided with a pinion or gear-wheel, of intermediate gear-wheels meshing with the aforesaid pinion on the driving-shaft, and connecting mechanism uniting the aforesaid gear-wheels with the opposite ends, respectively, of the vibrating beam, whereby said gear-wheels become alternately acting and idle-wheels, and so cause the continuous revolution of the driving-wheel, substantially as described.

2. In a power-converter, the combination of the driving-pinion D, gear-wheels G and H, ratchets I and J, dogs R and S, links M and N, vibrating beam L, and reciprocating rod K, the parts being constructed and united substantially as and for the purpose specified.

257,463. LADDER. WILLIAM A. BOYE, Strathroy, Ontario, Canada, assignor of one-half to Hiram Edgar Ketchum, same place. Filed Feb. 16, 1881. (No model.) Patented in Canada Mar. 26, 1881.

Brief.—An extensible step-ladder consisting of two lower sections, each provided with a windlass and a cross-bar supporting a pulley on its rear side, and an upper section sliding within the lower section and operated by a rope on the windlass.

Claim.—An extensible step-ladder consisting of the two lower sections, each provided with a windlass and a cross-bar supporting a pulley-wheel on its rear side, and an upper section sliding within the said lower section and adapted to be operated by the windlass thereon through a rope attached to its lower end, substantially as set forth.

257,463.



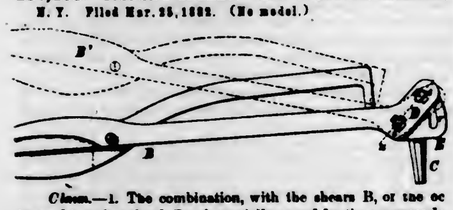
257,464. DEVICE FOR MAKING BUTTON-MAKING MOLDS. ALONZO R. BOYNTON and WILLIAM C. LOCKE, Auburn, N. Y., assignors to Driggs, Mosher & Co., same place. Filed Aug. 18, 1880. (No model.)



Claim.—1. As a means to facilitate and improve the making of molds for buttons, a transfer-plate provided with dowel-pins *a* and a series of holes, *a*, of a size equal to or larger than the buttons to be molded, in combination with a hollow guide-plug, D, made to fit within the holes *a*, and a drill, E, in said guide-plug, substantially as and for the purpose described.

2. The combination of the yielding spindle F, having its outer end flat and turned at *f* to the desired size, and the cutter-head G, having grooves in its under face, with the interchangeable cutters *i'* and *j'*, substantially as and for the purposes set forth.

257,465. TINNER'S SHEARS. JOHN F. BRAYER, Rochester, N. Y. Filed Mar. 25, 1882. (No model.)



Claim.—1. The combination, with the shears B, of the octagonal tapering shank C, substantially as and for the purposes described.

2. The combination, with the shears B, of the slotted plate E, bolts *e e'*, and shank C, for attaching the slotted plate to the bench, substantially as and for the purposes described.

3. The combination, with the shears B, of the slotted plate E, provided with the octagonal shank C, and means for adjusting the inclination of the shears, substantially as and for the purposes set forth.

4. The combination, with the shears B, of the beveled plate E and bolts *e e'*, substantially as and for the purposes set forth.

257,466. ORNAMENTAL CHAIN. WARREN W. BRIGGS, Providence, R. I., assignor to S. & E. Lederer, same place. Filed Mar. 13, 1882. (No model.)

Brief.—The rings inclose and retain the blanks.

257,466.

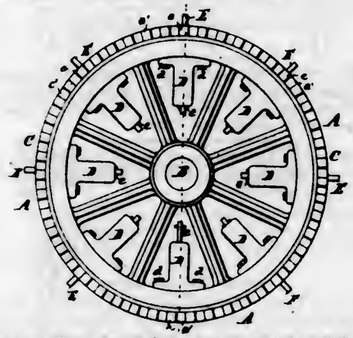


Claim.—1. An ornamental chain provided with blanks secured at intervals by passing the connecting link or links around the blank, as described, as a new article of manufacture.

2. In an ornamental chain, the combination, with the links *a a* and *b b*, of the blanks *c c*, constructed so that the link passing around the blank will firmly hold the same, as described.

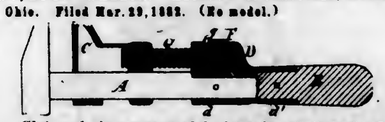
3. In an ornamental chain, the combination, with the links, of blanks or ornamental designs provided with the recesses *d d*, constructed to be secured by entering the links into the recesses, as described.

257,467. TRACTION-WHEEL. CHARLES D. BUSCOMB, St. Jacob's, Ill. Filed Feb. 17, 1882. (No model.)



Claim.—The improved traction-wheel consisting of the combination of the wheel A, the periphery or tread of which has cogs *c* and the open spaces *c'*, the series of housings D, each having flanges *d d*, internal hollow, *d'*, the shoulder at *d²*, and each of said housings containing a sliding lug or tooth, E, forming part of a stem, E', having shoulder at *f*, and the spring F, all said parts arranged and operating substantially in the manner and for the purposes set forth.

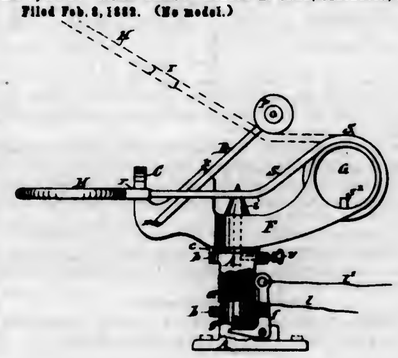
257,468. WRENCH. MATTHEW E. CAMPFIELD, Cleveland, Ohio. Filed Mar. 29, 1882. (No model.)



Claim.—1. In a wrench of the kind described, the head *g*, secured to the end of the screw G, in combination with the projection F, having the two slots *f* and *f'*, as and for the purpose specified.

2. The improved ferrule D, having the sockets *d* and *d'*, and the projection F, and having the slots *f* and *f'* for the head *g* of the adjusting-screw G to revolve in, in combination with the shank A, handle E, and screw G of a wrench, substantially as described.

257,469. BALL-TRAP. MILTON E. CARR, Canandaigua, N. Y. Filed Feb. 6, 1882. (No model.)



Claim.—1. The combination of the frame F, provided with the stationary laterally-disposed hook C, and the spring-arm S, having the ball-holder H, provided on the side of its socket *r* with a horizontal shoulder beveled on its under side, the tripping-rod h, extended vertically through the center of the spindle *a*, and provided with the cone *i*, and the lever *f*, extended under the base of the spindle, substantially as shown and set forth.

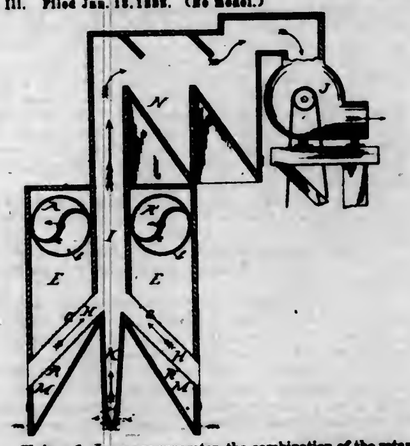
2. The spindle *a*, having the inclined face *g* at its lower end, in combination with the tripping-rod *h*, extended vertically through said spindle, and the tripping-lever *f*, extended under the base of the spindle, substantially as and for the purpose set forth.

3. The combination of the frame F, provided with the arresting-arm D, and with the open cylinder G, the latter having a notch, *o*, in its free edge, and the spring-arm S, wound around said cylinder and terminating with a hook, *s'*, turned toward the axis of the cylinder and engaging the notch *o*, said spring-arm being maintained in its connection on the cylinder by the arresting-arm depriving the spring-arm of sufficient play to effect its disengagement from the notch *o*, as specified and shown.

4. The frame F, provided with the groove *b* and holes *m*, and the arresting-arm D, lying in said groove, and having its lower extremity bent at a right angle and passing through one of the holes *m*, and provided with the clamping-nut *n*, substantially as described and shown.

5. In combination with the spring-arm S, the ball-holder consisting of the ring H, having integral with it the socket *r*, and provided on the side of said socket with a horizontal shoulder beveled on its under side, substantially as described and shown, for the purpose specified.

257,470. ORE-SEPARATOR. DELOS CAR-SHADER, Chicago, Ill. Filed Jan. 16, 1882. (No model.)



Claim.—1. In an ore-separator, the combination of the rotary sifter A, shaft *a*, cam-wheels *g*, rollers A, and rocker-arms D, substantially as and for the purpose set forth.

2. In an ore-separator, the chambers E, screens G, the receiving-hoppers M, screens R, oppositely-inclined air-ducts H, air-duct I, and the exhaust-fan J, all substantially as and for the purpose set forth.

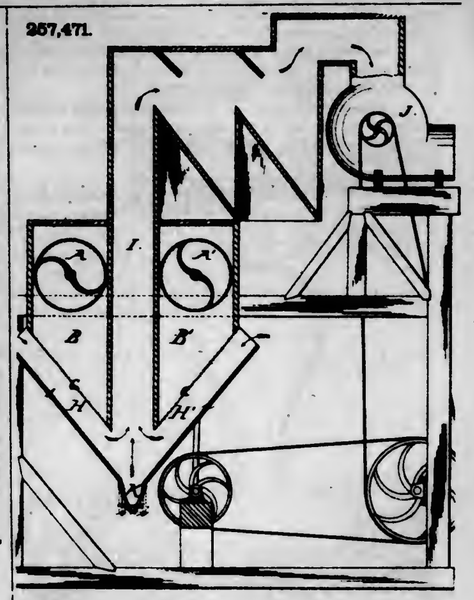
3. In an ore-separator, the chambers E, screens G and R, receiving-hoppers M, and intermediate inclined air-passages, H, in combination with the vertical air-duct K, having an adjustable air-inlet, *i*, an air-duct, I, and exhaust-fan J, all constructed and arranged substantially as and for the purpose set forth.

4. In an ore-separator, the combination of the chambers E, sifters A A', and screens G and R, intermediate air-duct, I, exhaust-fan J, the receiving-hoppers M, having valves *m*, the two opposite inclined air-ducts H, and the vertical intermediate air-duct, K, the whole being constructed and arranged substantially as and for the purpose set forth.

257,471. ORE-SEPARATOR. DELOS CAR-SHADER, Chicago, Ill. Filed Jan. 16, 1882. (No model.)

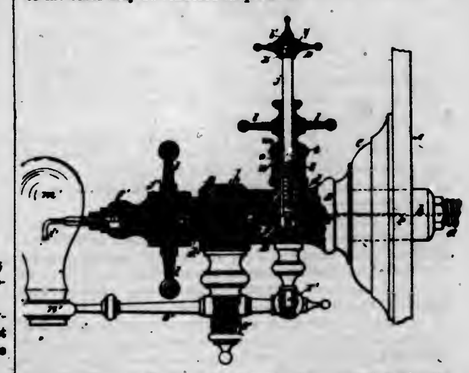
Claim.—In an ore-separator, the chambers B B', sifters A A', wire screens G, intermediate air-duct, I, and exhaust-fan J, in combination with the downwardly-inclined air-channels H H', and the opening K, having wing-valves *i*, the whole being constructed and arranged substantially as and for the purpose described and shown.

257,471.



257,472. DRAFT-TUBE FOR SODA-WATER AND OTHER BEVERAGES. WILLIAM P. CLARK, Medford, Mass. Filed Nov. 4, 1881. (No model.)

Brief.—Conduit *c* is controlled by valve *i*, and the outlet-passages *f g*, which are connected with the valve-chamber, may by the mechanism described both be rendered inoperative, or either one or the other may be rendered inoperative.



Claim.—1. The combination of valve-stem *f*, its head *i*, threaded thereon and arranged to interlock in wall *d*, the rigid collar *m* on said stem, the loose metallic collar *n*, and elastic packing *o*, arranged between said collars, substantially as specified.

2. The combination of valve-stem *f*, its interthreaded head *i*, collars *m n*, packing *o*, and cap *s*, with its packing *t*, arranged to seat upon both said collar *m* and the rim of the inclosing-wall *d*, substantially as specified.

3. The combination of valve *i*, the inlet-conduit *c*, arranged to be closed and opened by said valve, and the outlet-passages *f g*, connecting with the valve-chamber and provided with mechanism whereby either of said passages may be rendered operative and the other inoperative, or both be rendered inoperative, substantially as specified.

4. The combination of valve *i*, conduit *c*, conduits *f g*, and rotary valve *v*, having a longitudinal passage arranged to be brought into coincidence with either of said conduits *f g*, substantially as specified.

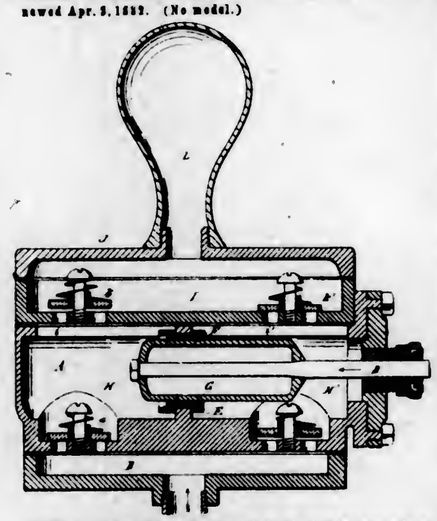
5. The rigid packing-holder *h*, formed with a recess or seat extending outside the circumferential line of the packing-passage

therein, and the packing n, formed with a corresponding projection, f', to interlock in such seat in the holder, substantially as specified.

6. The combination of glass m', its supporting-rod o', with its ring n', and studs p' r', depending from body B and connected with and sustaining said rod, substantially as specified.

7. In combination with rotary valve r and coacting conduits f g, the valve i, arranged to close the supply-passage e and to regulate the force of the jet through passage g as desired, substantially as specified.

257,473. LIFTING AND FORCE PUMP. WILLIAM H. CLOUD, Detroit, Mich., assignor, by mesne assignments, of one-half to William H. Jackson, same place. Filed Apr. 21, 1881. Renewed Apr. 5, 1882. (No model.)



Claim.—1. In a pump, the barrel A, divided into two chambers, H H', by a diaphragm, E, through which the piston reciprocates, in combination with a removable top closing the upper openings of the chambers H H', whereby access can be had to the inlet-valves in each of said chambers without removing either head of the barrel, substantially as described.

2. In a pump, the barrel A, provided with a diaphragm, E, forming two chambers, H H', in combination with a removable top closing the upper openings of said chambers, a stuffing-box secured in the diaphragm E, and the piston G, substantially as and for the purpose specified.

3. In a pump, the combination of the pump-barrel, diaphragm, and piston, constructed, substantially as described, with the separable exit-valve chamber or box I and separable cap J, surmounted with the air-chamber L, whereby access can be had either to the exit-valves, the barrel, or the inlet-valves without removing either head of the barrel, substantially as specified.

4. The pump-barrel A, divided into separate chambers H H' by a diaphragm, E, in combination with the separable exit-valve chamber I, closing the upper openings of the chambers H H', the separable cap J, closing the valve-chamber I, and bolts s s, pivoted between lugs o o of the barrel A, and engaging with lugs o o of the cap for detachably securing the barrel A, chamber I, and cap J together, substantially as and for the purpose described.

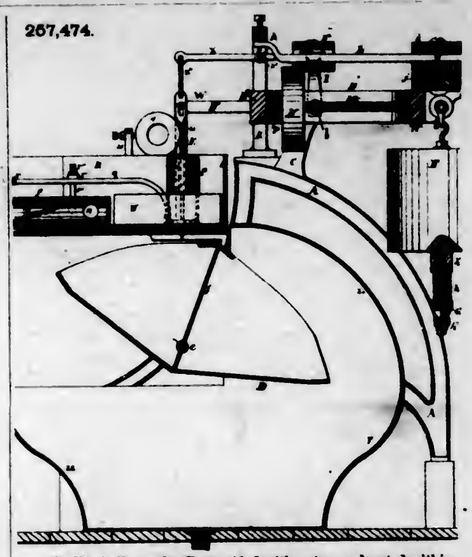
257,474. AUTOMATIC LIQUID-WEIGHING MACHINE. EDWIN CRAWLEY, Newport, Ky., assignor to Simpson & Gault, Cincinnati, Ohio. Filed Jan. 11, 1881. (Model.)

Brief.—An oscillating pan suspended from a scale-beam receives the liquid to be measured. The movement of the beam operates the inlet-valves, and the pan in its descent is automatically discharged.

Claim.—1. The hollow valve P, provided with the spider o and the guiding device o', the lower edge of the valve constituting its face, and the face of the seat inclosing the exit-orifice, and being without a surrounding ridge, substantially as and for the purpose set forth.

2. The hollow valve P, provided with a stem, u, located within the valve and engaging a guideway, v', located in the orifice of the valve-seat, substantially as and for the purposes set forth.

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3. The hollow valve P, provided with a stem, u, located within the valve and engaging a guideway located in the orifice of the valve-seat, the lower edge of the valve constituting its face, the face of the seat inclosing the exit-orifice, and being without a surrounding ridge, substantially as and for the purposes set forth.

4. The hollow valve P, provided with a stem, u, located within the valve and engaging a guideway located in the orifice of the valve-seat, the lower edge of the valve being flush with the floor of the receiving-vessel and constituting its face, the face of the seat inclosing the exit-orifice, and being without a surrounding ridge, substantially as and for the purposes specified.

5. The combination of the weighted balance-beam B and the valves P, supported from the forward end of said beam, substantially as and for the purposes specified.

6. The combination of the valve P and weighted lever X, fulcrumed at X' from arch or support K, substantially as and for the purposes specified.

7. The combination of the weighted balance-beam B and the valves P and weighted lever X, fulcrumed at X', and supporting at its forward end the valves P and connecting and operating mechanism, substantially as and for the purposes specified.

8. The combination of the weighted balance-beam B and the valves and weighted lever X, fulcrumed at X', and supporting the valves P and devices for continuing the descent of the pan after the valves have reached their seats, substantially as and for the purposes specified.

9. The combination of the weighted balance-beam B, bar W, valves P, links Z, beam X, device 3 4 5, and connecting devices, substantially as and for the purposes specified.

10. The combination of the valves P, the slotted links Z, and bar W, substantially as and for the purposes specified.

11. The combination of the valves P, the slotted links Z, bar W, stirrup 6, and device 3 4 5, substantially as and for the purposes specified.

12. The combination of the balance-beam B and the lever L, pivoted to and oscillating within said beam, one end of said lever being provided with weights j and k, supported above the end of the balance-beam in such a manner as to enable the balance-beam to receive their weight successively, substantially as and for the purposes specified.

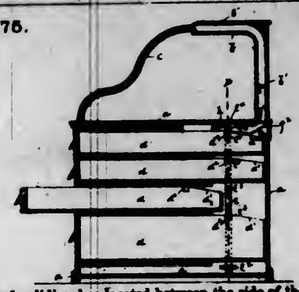
13. The combination of the weighted balance-beam B, receiving-vessel R, supply-pipe S, valve T, valve P, weighted lever X, device for continuing the descent of the pan D when the valves reach their seats, and devices for enabling the descent of the pan to allow the latter to discharge its contents, and connecting and operating mechanism, substantially as and for the purposes specified.

257,475. AUTOMATIC LOCKING MECHANISM FOR THE DRAWERS OF DESKS, &c. ANNA OUTLER, Buffalo, N. Y. Filed Nov. 4, 1881. (No model.)

Claim.—1. An automatic locking mechanism for desks, consisting of a sliding bar located between the side of the drawer and the contiguous side of the desk, and provided with inwardly-projecting pins, drawers having their sides inclined on their inner ends and having notches therein for the reception of the pins upon the sliding bar, a pivoted lever for raising the sliding bar, and the sliding cover of the desk for operating said lever, substantially as shown and described.

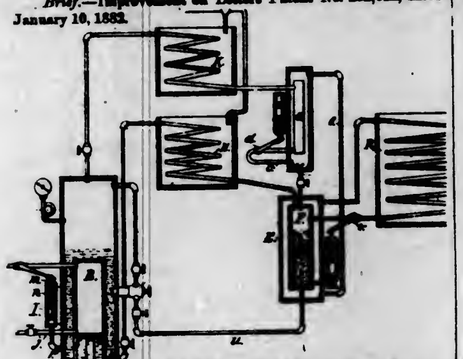
2. An automatic locking mechanism for the drawers of desks, consisting of the sliding bar c, provided with pins c' c' c', the lever f, spring h, the notches d', and inclines d' in the drawers d, and the sliding cover e, all combined and operating substantially as shown and described.

257,475.



257,476. ICE-MACHINE AND REFRIGERATING APPARATUS. THOMAS DAVIS and CHARLES E. DAVIS, Indianapolis, Ind. Filed Feb. 8, 1882. (No model.)

Brief.—Improvement on Letters Patent No. 252,621, dated January 10, 1882.



Claim.—1. In an ammonia refrigerating apparatus, the combination, with boiler A, heater B, and steam-supply pipe i, of an automatic valve-regulator, substantially as described, and for the purpose set forth.

2. In combination with a boiler, retort, or vessel containing ammonia and a pressure-gage, the use of petroleum or fluid of like properties in the presence of ammonia, substantially in the manner and for the purpose set forth.

3. In an ammonia refrigerating apparatus, the combination of vessels a and b, substantially in the manner described, and for the purpose set forth.

4. In an ammonia refrigerating apparatus, the combination, with a valve controlling the flow of liquid ammonia to the expanding-chamber, of a governor operated by the expanding gaseous ammonia, substantially in the manner described.

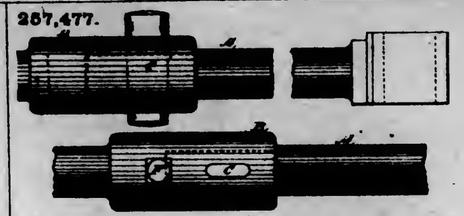
5. In an ammonia refrigerating apparatus, the absorber F and surrounding vessel E, containing ammonia-gas on its way to the refrigerator, combined substantially in the manner and for the purpose set forth.

6. In an ammonia refrigerating apparatus, the combination, with the absorber F and the refrigerator, of a valve, o, automatically regulated and controlled by the pressure in the absorber, substantially as shown and described, and for the purpose set forth.

7. The combination, in an ammonia refrigerating apparatus, of the expansion-chamber b, absorber F, and pipe c, for the purpose set forth.

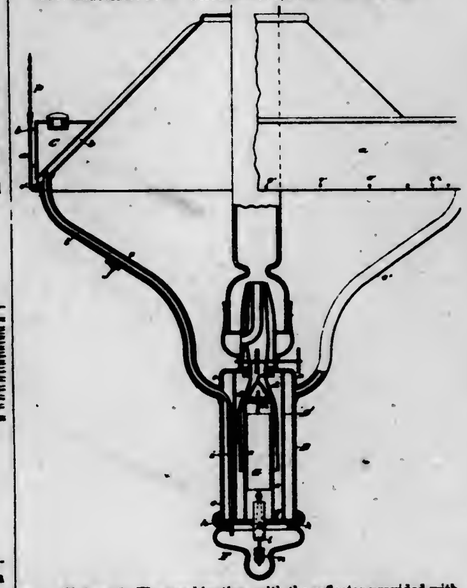
257,477. VALVE ROD AND STEM FOR STEAM-ENGINES. WALTER DAWSON, Scranton, Pa. Filed Feb. 18, 1882. (No model.)

257,477.



Claim.—The hole in the valve-rod B, as shown at D, Figs. 1 and 2, and at F, Fig. 3, and the hole in the valve-stem A, as shown at G, Fig. 4, of any suitable shape and form that will admit a wedge or bolt, pin or key, or an equivalent, for the purpose of disconnecting or separating the valve-stem A from the socket of the valve-rod B.

257,478. LAMP AND CHANDELIER. ABRAHAM F. DE VOURNEY, Montclair, N. J. Filed Sept. 30, 1881. (No model.)



Claim.—1. The combination, with the reflector provided with a flange, a, having perforations a', of the annular reservoir mounted on the reflector, as shown, and insulated therefrom by suitable interposed ribs or projections, as set forth.

2. The combination of the elongated valve-seat, the elongated plug-valve arranged to fit the same, the adjustable weights n, the perforated or apertured guide o for the float, and the float G, linked loosely to the valve and arranged to be guided in its vertical movement, substantially as set forth.

3. The combination of the reflector, the reservoir, the arms o o', the oil-pipe i, arranged in the arm c, the cock j, oil-well D', jacket D, and receiving-chamber F, the jacket D being screwed into said chamber F, and all arranged substantially as shown.

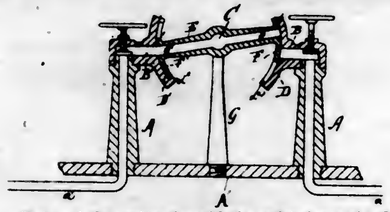
4. The combination of the oil-well, the perforated jacket, the burner, the oil-receiver secured removably to the jacket, the elongated valve and seat, the float, and the foraminous float guide and guard arranged within the well, all arranged substantially as set forth.

5. The combination of the reflector, the annular reservoir mounted on and insulated therefrom, the arms or supports o o', the oil-pipe i, the burner, the oil-well, the perforated jacket, the oil-receiver and float, the float guide and guard, and the elongated valve-seat and valve, all arranged to operate substantially as set forth.

257,479. CHEMICAL FIRE-ENGINE. JOHN A. DUGGAN, Quincy, Mass. Filed Oct. 8, 1881. (No model.)

Brief.—The device contemplates the alternate emptying of two tanks into a common eduction-pipe for the continuous dis-

charge of the fluid. For this purpose a central standard supports a discharge-pipe capable of axial rotation, having fixed upon it a tube, E, which, partaking of this motion, brings the pipe into communication with either of two pipes, *a a'*, (contained by hollow standards A A',) leading from the tanks.

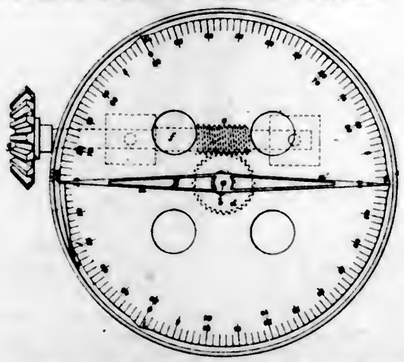


Claim.—1. In combination with the outlet-pipes *a a'* and the pipes or castings B B', the discharge-pipe C, provided with a lateral supply-tube, E, and adapted to be turned on its axis, so as to put said tube E into communication with one of said pipes or castings B or B' and out of communication with the other, substantially as set forth.

2. In combination with hollow standards A A and solid standards G, the outlet-pipes *a a'*, extending up through said standards, the pipes or castings B B', secured to the tops of said standards and communicating with pipes *a a'*, the discharge-pipe C, movable on its axis, and the supply-tube E, which may be thrown into connection with the passage in either casting by the same motion which throws it out of connection with the passage in the other casting.

3. In combination with supply-pipes, an axially-movable discharge-pipe, C, a supply-tube, E, connected thereto, lips F F', attached to the ends of said tube E, pipes or castings B B', and guideways D D', whereby the rocking of tube E in either direction cuts off the supply from one pipe or casting B or B' and admits a supply through the other, substantially as set forth.

257,480. SPEED INDICATOR AND RECORDER. WILLIAM O. DUNBAR, Altoona, Pa. Filed Nov. 7, 1881. (No model.)



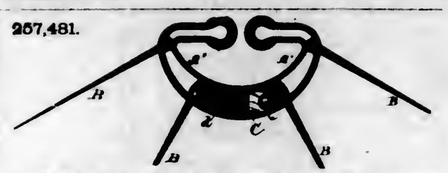
Claim.—1. The combination, with the time-piece provided with the hand, as described, of the rotary dial and mechanism for effecting the stopping and starting of the said hand, as explained, while such dial may be in revolution, as specified.

2. The combination of the marking device or spring S with the time-piece and with the rotary dial and mechanism for effecting the stopping and starting of the time-piece hand, as explained, while such dial may be in revolution, as specified.

257,481. CALF-WEANER. JOHN C. DUPER, Decatur, Ill. Filed Mar. 12, 1881. (No model.)

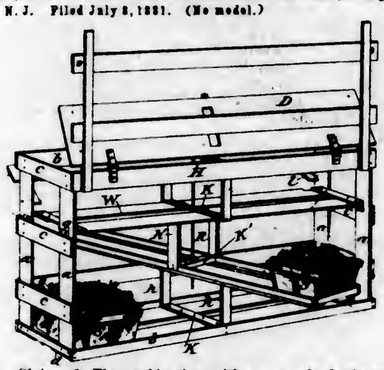
Claim.—1. A calf-weaner consisting of the parts A' and A², the part A' having a circular portion, and central hole within said circular portion, the part A² having a stem, *a²*, adapted to fit within the central hole, *a'*, of the part A', in combination with the spring-catch C, secured to the stem *a²* by a rivet, or otherwise, and adapted to pass into the central hole, *a'*, and hook onto the rear edge of said circular portion, substantially as and for the purpose specified.

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2. A calf-weaner formed, substantially as shown, with an open skeleton frame, having webs at intervals formed across the openings, the webs being provided with holes *a²*, by means of which the prongs B B are united with the body, substantially as shown.

257,482. CRATE FOR FRUIT. ELIAS W. DURAND, Irvington, N. J. Filed July 8, 1881. (No model.)



Claim.—1. The combination, with a crate, of a horizontally-revolving platform pivoted therein, the arrangement being such that on revolving the platform it projects outside of the crate, for the purpose set forth.

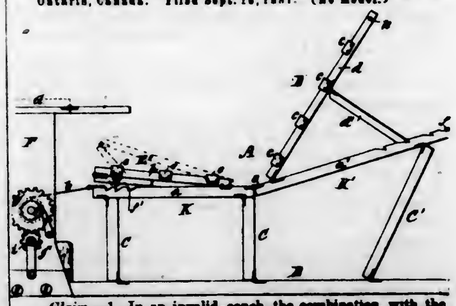
2. In a crate or carrier for fruit, the combination, together with a revolving platform, of the rod R, upper permanent cross-bars H and K, and lower permanent cross-bar, K, substantially in the manner and for the purpose described.

3. In a crate or carrier for fruit, the combination of the door having the cleats *f f* with the corner-posts *a a*, having the chamfered ends, for the purpose described.

4. The combination of two crates together, each having a horizontally-revolving platform pivoted therein, and means for securing them together, substantially in the manner and for the purpose described.

5. The combination of the single lid D', of double width, to cover two crates combined together, with the crates, each having a horizontally-revolving platform pivoted therein, substantially in the manner and for the purpose described.

257,483. INVALID-BEDSTEAD. ANNIN S. EVANS, Kingston, Ontario, Canada. Filed Sept. 16, 1881. (No model.)



Claim.—1. In an invalid-couch, the combination, with the base B and the side bars of the hinged sections K K', of the knees C C', hinged to the said side bars and base, substantially as and for the purpose set forth.

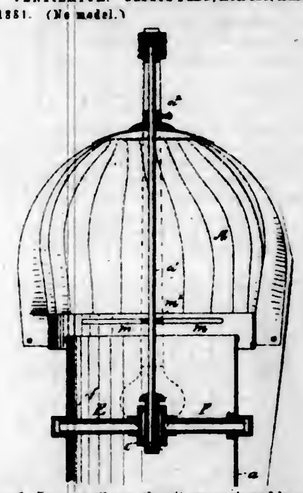
2. In an invalid-couch, the combination, with the base B, the winding-drum E, and the cord or strap *b*, of the hinged sections K K' and the knees C C', hinged to the side bars of the said sections and to the base, substantially as and for the purpose set forth.

3. In an invalid-couch, the combination, with the side bars, *a a'*, of the hinged sections K, provided with notches *f'*, of the hinged foot-rest E' and the braces A', hinged to the end of the side bars of the said foot-rest, substantially as and for the purpose set forth.

4. In an invalid-couch, the combination, with the base B and the hinged section K', of the knees C', hinged to the base and provided with the adjustable sliding bar H, hinged to the said section, substantially as and for the purpose set forth.

5. In an invalid-couch, the combination, with the base B and the hinged section K', of the knee C', provided with the slot *c'*, and the spring-dog N, and the notched bar H, provided with the headed studs *n*, substantially as and for the purpose set forth.

257,484. VENTILATOR. GEORGE FERD, Melrose, Mass. Filed Aug. 8, 1881. (No model.)



Claim.—1. In a ventilator, the oil-reservoir and bearing, and means for supporting it, consisting of the gas or steam cross *c*, the pipes E F, the spindle-bearing within the cross, and means for closing the ends of the pipes and for fastening them to the casing of the ventilator, all substantially as and for the purposes specified.

2. In a ventilator, the combination of a gas or steam cross, containing a spindle-bearing, and the spindle, all substantially as and for the purposes described.

3. As a spindle-bearing for a ventilator, the steam or gas cross, having the hole or recess *c* and the sleeve *c²*, all substantially as and for the purposes described.

4. As a means of supporting a spindle-bearing in a ventilator, the steam or gas cross *c* and the lateral pipes E F, fastened to the casing of the ventilator, all substantially as described.

5. As an upper bearing for a ventilator-spindle, the sleeve *h'*, supported within the recess *h'* in the block H, substantially as described, and surrounded by a packing of yielding material, all substantially as and for the purposes specified.

6. In a ventilator, the combination of the spindle *a'*, the head A, and the metallic braces *m*, cast in one piece, all substantially as and for the purposes described.

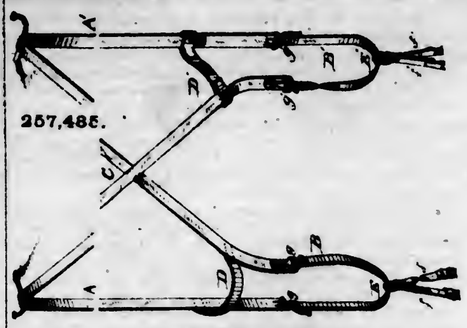
7. In a ventilator, an oil-cup consisting of the joint, cross, or other suitable casing, and the sleeve *c²* within the cup, extending to the bottom thereof, and one or more small escapes or passages connecting the chamber without the sleeve with the bearing within, all substantially as and for the purposes specified.

257,485. STOCKING-SUPPORTER. CATHARINE G. FOOTE, New York, N. Y. Filed Mar. 30, 1882. (No model.)

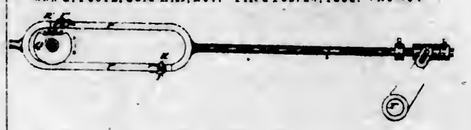
Claim.—1. The shoulder-straps A A', combined with the straps B B', to the ends of which they are united, forming practically an endless strap, and with the rings E E', supporting the straps to be fastened to the stockings.

2. The combination of the shoulder-straps A A' and straps B B', forming practically an endless strap, adjustable in length by fastening devices *g g*, sliding rings E E', and straps *f f'*, connected therewith, substantially as described.

3. The shoulder-straps A A', in combination with the straps B B', forming practically an endless strap, connecting-straps D D', sliding rings E E', and straps *f f'*, substantially as and for the purpose described.



257,486. GOVERNOR FOR DIRECT-ACTING ENGINES. HYRON G. FOOTE, Gold Hill, Nev. Filed Feb. 20, 1882. (No model.)



Claim.—1. The shaft C, connected by worm or other gearing to the throttle-valve stem, combined with the gear D, which turns the shaft C by means of the ratchet E and pawl F, also combined with the loop H, having the internal racks, K and K', said loop to be given its motion by the cross-head or other reciprocating part of the engine, substantially as described, and for the purpose set forth.

2. The combination of the shaft C with the gear Q and the loop P, having the pawls R and R', said loop to be given its motion by the rock-shaft of the engine, substantially as described, and for the purpose set forth.

257,487. STETHOSCOPE. WILLIAM F. FORD, New York, N. Y. Filed Apr. 4, 1881. (No model.)

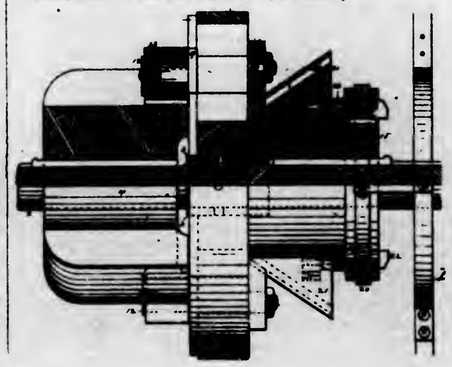
Brief.—A concealed spring automatically operates upon the arms.



Claim.—1. The combination, with a stethoscope, of a concealed noiseless spring inclosed in a casing made in two parts and connected with the tubes of the instrument, substantially as and for the purpose herein described.

2. The combination, with the tubes B B, of the arms C C, the boxes D D, having shoulders *l m*, post *e*, and stud *f*, and the coiled spring G, substantially as and for the purpose herein described.

257,488. CLUTCH FOR SHAFTING. JAMES GIBBINS, Springfield, Mass. Filed Oct. 18, 1881. (No model.)

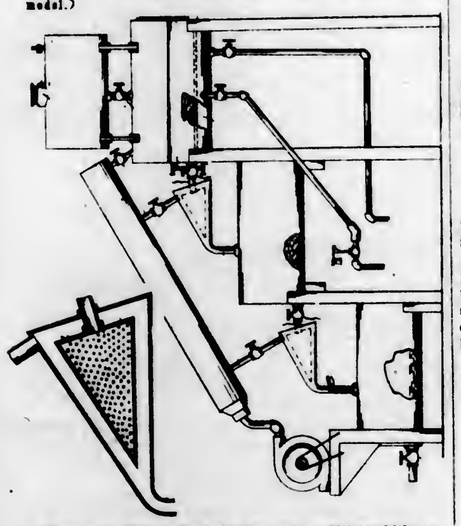


Claim.—1. The combination, in a clutch for coupling and uncoupling shafting, of a tail-block provided with radial projections and adapted to be keyed fast to one end of a line of shafting, a head-block adapted to be keyed fast to the adjacent end of separate shafting in the same line, a plate made upon or secured to said head-block at right angles to its axis and provided with radial openings, a sliding pin secured in each said opening, and mechanism to slide the said pins to and fro, each in its respective opening, to cause the pins to engage with the lugs on said tail-block in a lateral direction, or to disengage them from said lugs, substantially as described.

2. The combination, in a clutch for coupling and uncoupling shafting, of a tail-block provided with radial projections and adapted to be secured fast to one end of a line of shafting, a stationary head-block adapted to be keyed fast to the adjacent end of separate shafting in the same line, a plate made upon or secured to said head-block at right angles to its axis and provided with radial openings, a sliding pin provided with a gnide secured in each said opening, and sliding wedges having a movement in and independent of the stationary head-block and parallel with the shaft to operate the sliding pins, substantially as described.

3. In a clutch for coupling and uncoupling two separate and independent shafts, the combination of the sliding wedges, the recessed spring locking-pins located therein, and an operating-collar provided with inclined studs to engage with said pins, whereby said pins are first moved outward and the wedges unlocked, and the wedges moved to operate the sliding pins of the clutch by a single movement of said collar, substantially as described.

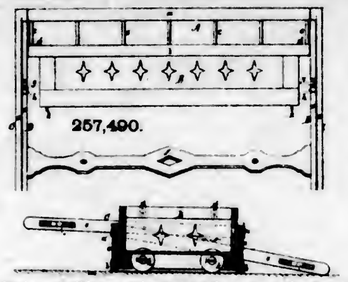
257,489. PROCESS OF AGING AND PURIFYING WHISKY. GEORGE GORWAY, Philadelphia, Pa., assignor of one-half to William W. Thomason, same place. Filed May 5, 1881. (No model.)



Claim.—1. The method of aging and purifying whisky or other spirituous liquors by heating the same to a temperature not exceeding 183° Fahrenheit, applying pressure thereto to produce atomization of said liquor, and commingling said atoms with atmospheric air, said liquor and air being then successively atomized and brought into contact with new or fresh supplies of atmospheric air and repeatedly spread over cooling-surfaces between each such atomization, until it is sufficiently cooled, whereupon it is conducted to a retaining vessel or barrel in such manner as to permit of the escape of its commingled air, substantially as described.

2. In an apparatus for aging and purifying whisky or other spirituous liquors, the combination of the following instrumentalities: a heating-vessel, a successive series of temperature-reducing vessels, the latter being provided with atomizers, and means for supplying said atomizers with continuous supplies of atmospheric air, said parts being arranged substantially as shown and described.

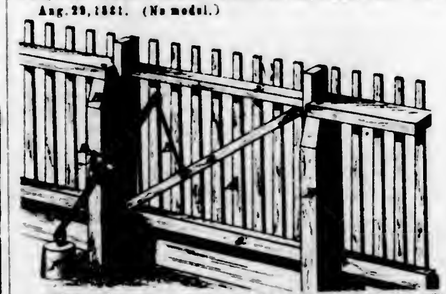
257,490. FENCE. WILLIS D. HATCH, Bath, Me. Filed Jan. 23, 1882. (No model.)



Claim.—1. The combination of the rectangular fence and the two leg-frames arranged therewith, pivoted thereto, and provided with catch-hooks and studs, all substantially and to operate as set forth.

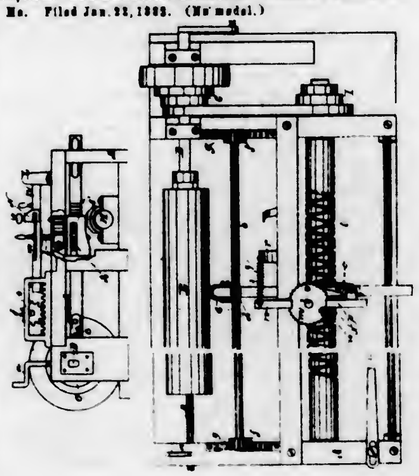
2. The combination of the bedding-holder, provided with ears and arranged and movable, as described, within the rectangular fence, with such fence and the two leg-frames applied thereto, and provided with catch-hooks and studs, all being essentially and to operate as set forth.

257,491. GATE-CLOSER. HENRY GROSS, Tiffin, Ohio. Filed Aug. 29, 1881. (No model.)



Claim.—In an automatic gate-closing device, the bearing D, fixed to the gate-post in an inclined position, and the lever C, having a journal, c, pivoted on said inclined bearing in a vertically-inclined plane, whereby the lever is caused to swing in a defined path and in such movement to move around the gate-post and extend beyond the line of the fence when the gate is opened, as described, in combination with a weight, F, connected with one end of the lever, and the link or chain connecting the other end of the lever with the gate, all substantially as described.

257,492. LOG-DRESSING MACHINE. WILLIS D. HATCH, Bath, Me. Filed Jan. 23, 1882. (No model.)



257,490. FOLDING CRIB. HERBERT GREENWOOD, East Templeton, assignor to himself and Michael Keating, Boston, Mass. Filed Mar. 30, 1882. (No model.)

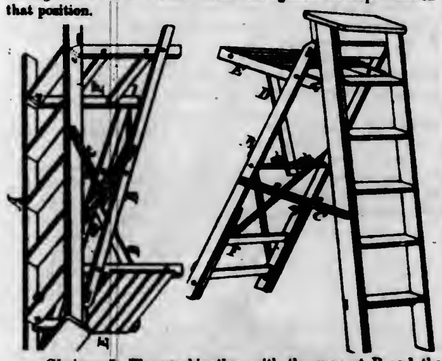
Claim.—1. The combination for feeding the cutter to the log, it consisting of the sliding tool-rack, its supporting-carriage, mechanism for reciprocating such carriage, and mechanism for intermittently advancing the tool-rack, all being substantially and to operate as set forth, the mechanism for reciprocating the carriage being the duplex spirally-grooved shaft H, the spanner *d'*, and the mechanism for intermittently advancing the tool-rack being the pinion *h*, arbor *i*, ratchet-wheel *m*, pawl *o*, spiral spring *q'*, post *r*, stop *s*, and the abutments L M, all being constructed and arranged as shown and described.

2. The combination of the sliding tool-rack, provided with mechanism for reciprocating it, and mechanism for intermittently advancing it, as described, with the auxiliary mechanism for sustaining the tool-rack, such auxiliary mechanism consisting of the hanger *d*, shaft *e*, gears *f*, racks *g*, guides *h*, and roller *i*, all constructed, arranged, and adapted to the tool-rack and the frame A, substantially as set forth.

3. The combination of the log-supporting arbor and center, the sliding tool-rack and its sustaining-carriage, the mechanism for reciprocating such carriage, as set forth, the mechanism for intermittently feeding the tool-racks, and the mechanism, as described, for supporting the said racks, this latter mechanism consisting of the hanger *d*, shaft *e*, gears *f*, racks *g*, guides *h*, and roller *i*, all being arranged in the frame and to operate substantially as explained.

257,493. COMBINED STEP-LADDER AND WASH-BENCH. CORNELIUS HOOD, Cleveland, Ohio. Filed Oct. 28, 1881. (No model.)

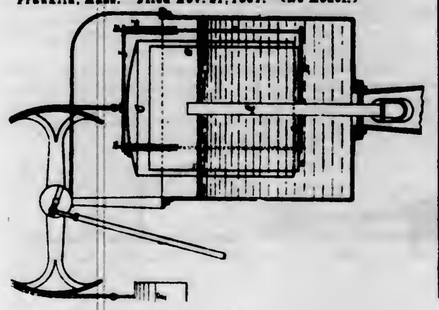
Brief.—A sliding brace which moves in a mortise in the oscillating cross-bar between the brace-legs supports the hinged shelf. When converted into a wash-bench the shelf becomes the support at one end, and a frame pivoted at the lower end of the brace-legs becomes the support at the other end, both the shelf and the frame having notches or shoulders which bear against the steps when in that position.



Claim.—1. The combination, with the support B and the hinged shelf B, of the sliding brace D, attached to the cross-bar *d*, journaled in the arms of the shelf and playing in a mortise in the oscillating cross-bar *d'*, and provided with the spring *d''*, all as shown and described.

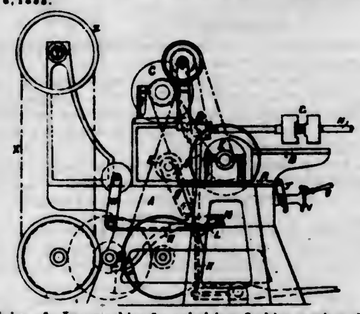
2. The combination, with the step-ladder and its support B, of the frames E and F, having the notches or shoulders *e e* in their upper ends, which engage with the edges of the steps, as and for the purpose set forth.

257,494. GAS-EXHAUST REGULATOR. REUBEN K. HUDSON, Franklin, Mass. Filed Nov. 21, 1881. (No model.)



Claim.—The inverted auxiliary bell and its elastic connection or connections, combined with the main bell and the tank of the gas-exhaust regulator, and arranged and adapted substantially in manner and to operate therewith as set forth.

257,495. MACHINE FOR TREATING HIDES AND SKINS. JOHN WILLIAM JARMAN, London, County of Middlesex, England. Filed Nov. 22, 1881. (No model.) Patented in England Sept. 23, 1881, in Belgium Nov. 15, 1881, in France Dec. 7, 1881, in Italy Dec. 21, 1881, in Austria-Hungary Jan. 2, 1882, in Queensland Jan. 26, 1882, and in New South Wales Feb. 6, 1882.



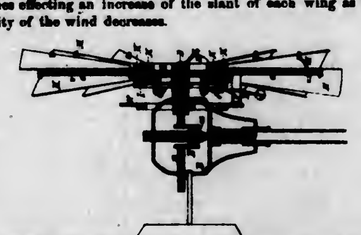
Claim.—1. In a machine for unhairing, fleshing, paring, shaving, and setting hides, skins, or pelts, the knife-cylinder E and roller F, in combination with the knife-cylinder C and roller D, arranged to operate substantially as and for the purposes set forth.

2. In combination with the cylinders C and E, the adjustable rollers D and F and clips G, as set forth.

2. The combination, with the tubes B B, of the arms C C, the boxes D D, having shoulders *l m*, post *e*, and stud *f*, and the coiled spring G, substantially as and for the purpose herein described.

257,496. WINDMILL. SAMUEL U. KING, Cottage City, Mass. Filed Jan. 3, 1882. (No model.)

Brief.—As the speed of revolution of the windmill increases the arms L L will be so moved by centrifugal force as to turn the main gear on the shaft D and cause it to simultaneously turn all the pinions K in manner to reduce the slant of the wings to the direction of the wind, the reactive power of the springs M of the vanes effecting an increase of the slant of each wing as the velocity of the wind decreases.



Claim.—1. The combination of the main and auxiliary gears I K, (applied to the wheel-shaft and wings as set forth,) the springs M, (of the wings and radial arms,) and the weighted arms L and their fulcra *d*, adapted to the wheel-hub and main gear, all being essentially as set forth, and for governing the slant of the wings of the wind-wheel.

2. The combination of the annulus N and means for advancing and retracting it, as explained, with the rotary frame B, its supporting-standard A, the curved finger P, projecting from one of the wings H, and with said wings and their supporting-arms *c*, and main and auxiliary gears I K, all being to operate substantially as specified.

257,497. DRESS-SHIELD. ISAAC N. KLEINERT, New York, N. Y. Filed Jan. 19, 1882. (No model.)

Claim.—1. A dress-shield having a saddle-strip secured over the seam connecting the two flaps by parallel seams located at the opposite edges of the saddle-strip, and uniting the latter to the flaps and forming an open space between their concave edges, substantially as set forth.

2. A dress-shield provided with a saddle-strip over the seam that joins the two flaps of the shield, said strip extending beyond

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the ends of the shield to form attachments for sewing to the dress-seams, substantially as set forth.

3. A dress-shield provided with a saddle-strip for imparting the desired form to the juncture of the two flaps, and for constituting attachments to be sewed to the dress, and with side bands secured to the saddle-strip and flaps, and extending below the latter, substantially as set forth.

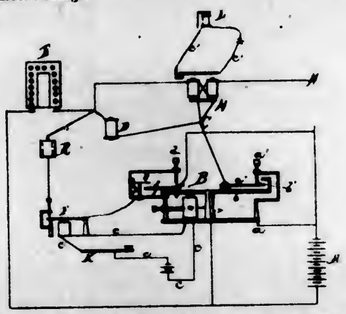
4. In a dress-shield, the combination, with the water-proof flaps provided with a saddle-strip, as described, of a supplemental shield of absorbent material, substantially as set forth.

257,498. MANUFACTURE OF COLORING-MATTER. HORACE KOECHLIN, Leerrank, Baden, Germany. Filed Apr. 6, 1882. (No specimens.) Patented in France Nov. 5, 1881, in Belgium Nov. 9, 1881, and in England Nov. 9, 1881.

Claim.—The production of the matters described—that is to say, the lenco bases and lenco products or reduction products of the bodies obtained by the action of nitroso derivatives upon tannin or equivalent reaction, said lenco bases or reduction products being obtained by the reaction of said bodies or directly, substantially as described.

257,499. MULTIPLE TELEGRAPHY. JOSEPH W. LARIMER, Buffalo, N. Y., assignor of six-tenths to James W. Tillinghast and Frank Kitton, both of same place. Filed Jan. 20, 1882. (No model.)

Brief.—A device for overcoming troubles in duplex telegraphy due to static charge and discharge and extra currents. An electro-magnetic shunt is provided around the artificial-line coil for avoiding the statical difficulties, and the battery is momentarily connected through the home relay at the instant its connection with the main line is broken for preventing false signals due to extra-current charge.

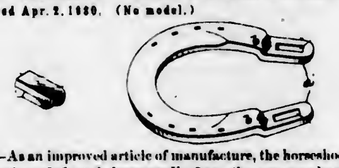


Claim.—1. The combination of the battery A, transmitter B, differential relay M, electro-magnetic shunt D, rheostats E and R, repeating-sounder F, circuit-breaker K, and the local circuits *c* and *c'*, and the metallic conductor (wire or otherwise) connecting battery A with metallic arm *f* of transmitter B, the metallic conductor connecting adjustable screw *p* with armature of repeating-sounder F, metallic conductor connecting repeating-sounder F with artificial line through adjustable resistance R, all arranged and operating substantially in the manner and for the purpose specified.

2. The combination of elements or parts in a system of multiple telegraphy, consisting of a metallic connection between battery A and point *f* on transmitter B, a like connection between set-screw *p* on transmitter and armature on repeating-sounder F, a like connection between set-screw of frame of repeating-sounder, F, through resistance R, to artificial line between rheostat E, and differential relay M, a like connection from rheostat E or any point between it and differential relay M, through electro-magnetic shunt D, to point of division C, all combined and operating as described, and in combination with the local circuit *c c c*, with circuit-breaker K, whereby repeating-sounder F is worked in same circuit with transmitter B, as specified.

3. An improved transmitter, B, one part constructed, substantially as those in common use, with continuity-preserving points, a lever with fulcrum in the center, said lever operated by an electro-magnet, and in combination with circuit-breaking or contact points at the opposite end to the continuity-preserving points, consisting of a metallic arm, *f*, extending from lever *b* and insulated from it at *f'*, an adjustable screw, *p*, insulated from frame *b* at *p'*, and a metal spring, *s*, insulated from *b* at *s'*, all arranged and operating in this system of multiple telegraphy substantially as described.

257,500. HORSESHOE. PATRICK J. LATHAM, Providence, R. I. Filed Apr. 2, 1880. (No model.)



Claim.—As an improved article of manufacture, the horseshoe with heel portions deflected downwardly from the upper or hoof surface, and provided each with a dovetail slot and an elastic cushion constructed with a dovetail projection fitted in the slot, thus forming the means to retain such cushions in place, substantially as shown and described.

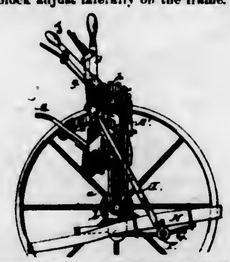
257,501. COMPOSITION FOR ROOFING AND PAVING. ARCHIBALD K. LEE, Galveston, Tex. Filed Feb. 20, 1882. (Specimens.)

Claim.—1. A compound consisting of natural asphaltum, pine-tar, and oxide of iron, in about the proportions specified, and for the purposes set forth.

2. A new article of manufacture consisting of canvas or other textile felted or fibrous fabric saturated or coated, or both, with a compound of natural asphaltum, pine-tar, and oxide of iron.

257,502. SULKY-PLOW. IVER LODGE, Russell, Iowa. Filed Dec. 13, 1881. (No model.)

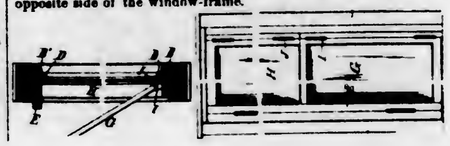
Brief.—The two arched bars forming the frame converge at the sides and form parallel ways or slides in which the wheel-spindle adjusts by a cogged lever. The plow-beam, tongue, and lever with its ratchet-block adjust laterally on the frame.



Claim.—The combination, with the frame A A' B, of the sector-plate K, elbow-lever J, hooked and forked connecting-rod I, beam-clamp or saddle G, having eyes *e*, and plow-bail F, substantially as shown and described.

257,503. WINDOW FRAME AND SASH. MICHAEL W. MAHAR, Dayton, assignor of one-half to Stephen Crane, Hamilton, Ohio. Filed Jan. 21, 1882. (No model.)

Brief.—The window-sash is hinged to a strip T-shaped in cross-section, which slides in a corresponding groove in a vertical side strip secured in the window-frame. A strip to retain the opposite side of the sash in place is hinged to a vertical strip on the opposite side of the window-frame.



Claim.—1. In a window-frame, the strip secured within the frame as shown, provided with dovetail or T grooves C, to coincide with the position of the sash, in combination with the strip B', having hinged to its inner edge the sash-retaining strip E, substantially as herein shown.

2. In a window-sash, the strips F, secured to the strip B by means of dovetail or T tongues working in similarly-formed grooves, and having the window-sash G H hinged thereto, substantially as and for the purpose herein set forth.

3. In a window-sash and frame, the frame having the strip provided with dovetail or T grooves C, and the strips B', provided with the hinged retaining-strip E, in combination with the strips F, provided with tongues operating in grooves C, having hinged thereto the sash G H, substantially as and for the purpose herein shown.

257,504. PRINTER'S GALLEY. WILLIAM J. S. MCANDREW, Hamilton, Ontario, Canada, assignor of two-thirds to John Eastwood and Reginald Kennedy, same place. Filed Dec. 9, 1881. (Model.)



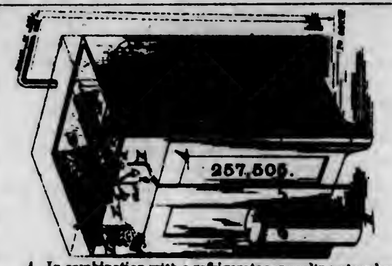
Claim.—In a printer's galley having a side-stick provided with wedge-shaped projections, the strip 2, constructed with the straight bearings 11 and 13 and the inclined bearings 12 and 14, and provided with the transverse elongated slot 16, in combination with the adjusting-wedges provided with projecting studs 18 and heads 19, substantially as and for the purpose described.

257,505. REFRIGERATING BUILDINGS, CARS, VESSELS, AND OTHER STRUCTURES. FRANCIS H. MCMILLAN and HENRY C. JOHNSON, Washington, D. C. Filed Mar. 8, 1882. (No model.)

Claim.—1. The herein-described apparatus for refrigeration, consisting of a liquefied-gas receiver and an expansion coil or chamber in communication therewith, and also in communication with the atmosphere, whereby the gas after expansion is permitted to freely escape.

2. The herein-described plant or apparatus for general refrigeration, consisting of a general or main compressing apparatus at one point, one or more expansion coils or chambers at another point or points communicating with the atmosphere, and one or more portable receivers adapted to be put into communication with such coils or chambers, as and for the purpose set forth.

3. The herein-described method of general refrigeration or cooling, consisting in compressing a gas or fluid in quantities at a main or general supply-point, placing the liquefied gas in portable receivers, transporting said receivers thus charged to structures containing the chambers to be refrigerated, there placing the receivers in communication with an expansion chamber or coil, and causing the gas after expansion to freely escape from the apparatus, as set forth.



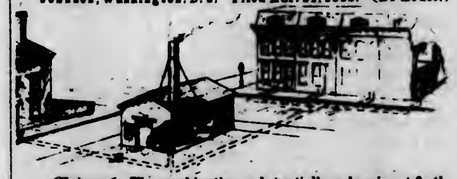
4. In combination with a refrigerator or cooling-chamber containing a coil or expansion-chamber provided with an escape-passage, a compressed-gas receiver or vessel communicating with said coil or expansion-chamber, as set forth.

5. A refrigerator provided with tank C, coil B, and gas-receiver G, communicating with the tank, as set forth.

6. In combination with the tank C and coil B, the spiral vane arranged within barrel D, wheel F, and jet or nozzle K, connected with a vessel, G, containing compressed gas or fluid, as and for the purpose set forth.

7. In combination with a domestic refrigerator or cooling-chamber provided with a brine-tank, and a gas receiver or vessel communicating with said tank, a water-service pipe coiled in or carried through said tank and provided with a faucet, whereby the water is cooled as it is drawn.

257,506. SYSTEM OF REFRIGERATION FOR COOLING CARS, SHIPS, BUILDINGS, &c. FRANCIS H. MCMILLAN and HENRY C. JOHNSON, Washington, D. C. Filed Mar. 31, 1882. (No model.)



Claim.—1. The combination, substantially as herein set forth, of a gas-compressing apparatus at one point, a structure or structures removed and distinct therefrom, and a pipe or pipes extending from the compressing apparatus to a receiver or an expansion-chamber in said structure or structures communicating with the atmosphere, said pipe being adapted and arranged to convey the compressed gas thereto.

2. The method herein set forth of cooling chambers of buildings, cars, vessels, or other structures, which consists in compressing the gas or fluid at a general supply establishment, conducting the compressed gas through a pipe or pipes to a receiver adapted to be put in communication with an expansion-chamber and located in the same structure therewith, and establishing communication between the receiver and expansion-chamber and between the expansion-chamber and the atmosphere, whereby the gas is permitted to flow from the receiver to the expansion-chamber to expand therein and to freely escape after expansion.

3. In combination with a structure containing a gas-receiver and an expansion-chamber communicating with the atmosphere, a gas-compressing apparatus provided with a pipe whereby it may be placed in communication with said receiver, the structure and the compressing apparatus being, one or both, adapted to travel in relation to the other, substantially as set forth.

4. In combination with a structure containing a gas-receiver, a large distributing-receiver, either portable or stationary, charged with a compressed gas or fluid and adapted to be put into communication with the gas-receiver of said structure, whereby the latter receiver may be supplied with gas for cooling purposes without requiring the compressing apparatus to be brought into immediate connection therewith.

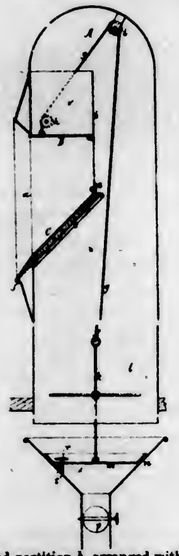
257,507. VENTILATOR FOR SHIPS. PATRICK HINAN, Chelsea, Mass. Filed Jan. 23, 1882. (No model.)

Claim.—1. The ventilator-hood provided with the single mouth *a*, and with partition *b*, deflector C, adapted and arranged and to operate therewith, substantially as set forth.

2. The ventilator-hood provided with the single mouth *a*, and with partition *b*, and the two deflectors B and C, adapted and arranged and to operate therewith, substantially as set forth.

3. The hood provided with the inclined gutters *e*, and with

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the deflector C, and partition *b*, arranged with the mouth *a* of the said hood, substantially as set forth.

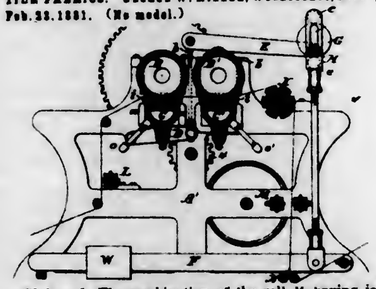
4. The deflector C, provided with the rear lip or flange, *c*, in combination, and arranged as described, with the hood and its mouth and partition *b*, disposed as shown.

5. The deflector C, provided with the side lips, *d*, in combination, and arranged as described, with the hood and its mouth *a*, partition *b*, and gutters *c*, disposed as represented.

6. The deflector C, provided with the front lip, *f*, in combination, and arranged as described, with the hood and its mouth *a* and partition *b*, disposed as represented.

7. The combination of the water-intercepting pan *m*, provided with the discharge-valve, as described, with the tunnel *n*, and with a ventilator-hood provided with a mouth, *a*, partition *b*, and the two deflectors B and C, all being adapted and arranged to operate in manner and for the purposes substantially as set forth.

257,508. MACHINE FOR PRESSING AND FINISHING TEXTILE FABRICS. GEORGE W. MILLER, Woonsocket, R. I. Filed Feb. 23, 1881. (No model.)

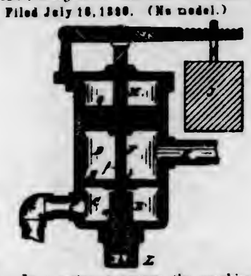


Claim.—1. The combination of the roll B, having journals turning in fixed bearings, the roll B', with journals turning in sliding boxes, the movable bed C and fixed bed C', levers D, bearing on the bed C, levers E, bearing on the sliding boxes of the roll B' and connected to the levers D, and appliances for depressing and elevating the outer ends of the levers E, substantially as set forth.

2. The combination, in a pressing-machine, of levers E, weighted levers F, rods *d*, connecting the levers E and F, appliances whereby the connection between the levers E and rods may by one movement be loosened without disconnecting them, and by another movement may be tightened to bring the weight of the levers F upon the levers E, substantially as set forth.

3. The combination of the levers E and F, slotted rods *d*, carrying rollers or bearings *e*, the shaft H, extending through both rods, and eccentrics G, arranged on the shaft between the rollers *e*, for the purpose set forth.

257,509. WATER-GOVERNOR. HARRISON S. MILLER, Indianapolis, Ind., assignor of one-half to William H. Marts, same place. Filed July 16, 1880. (No model.)



Claim.—In a water-governor, the combination of the two chambers C D, divided by the partition B, which also forms the valve-seat, and connected by the opening *b* through said partition, the weighted stem H F, the plunger G, chamber-nut L, stuffing-box *a*, and valve E, the latter being of equal size throughout and extending through into the third chamber, K, and provided with the orifice *e f*, leading from said third chamber through into the upper or discharging chamber, D, all constructed, arranged, and operated substantially as shown and described, and for the purpose specified.

257,510. COMPOSITION FOR PAINTS. WILLIAM R. MORRIS, Fort Ann, N. Y. Filed Jan. 20, 1881. (Specimens.)

Claim.—A composition for paints, consisting of oil and its substitutes and pulverized Hudson River shale or slate, said slate having as its ingredients silica, lime, alumina, carbonic acid, and water, substantially as set forth.

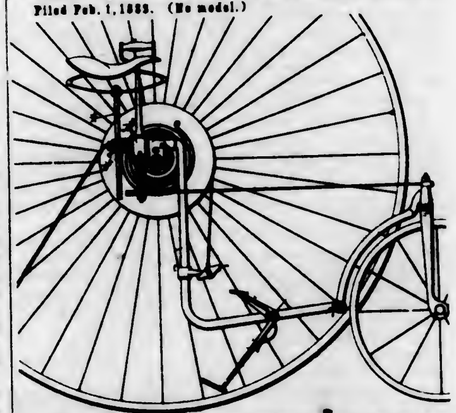
257,511. WATCH-REGULATOR. RICHARD OLIVER, Brooklyn, N. Y. Filed Dec. 30, 1881. (No model.)



Claim.—1. The combination of the slotted regulator-lever A, quadrant-rack B, provided with pin D, operating in the slot F, and pinion-wheel E, substantially as described.

2. The combination, with the regulator-lever, of a toothed quadrant, over which said lever extends, a bearing for the lever upon the quadrant near the pivot of the latter, and a pinion gearing with the quadrant, substantially as set forth.

257,512. VELOCIPEDE. ALBERT E. OVERMAN, Hartford, Conn., assignor to the Overman Wheel Company, same place. Filed Feb. 1, 1883. (No model.)



Claim.—1. In a tricycle, the combination, with the driving-wheels mounted on separate spindles, and driving-disks mounted on

the spindles and engaging the hubs of the driving-wheels, of the main supporting-frame extending downwardly in front of the driving-wheel spindles and then forwardly, and supporting the guide-wheel, and foot-pedals pivoted to brackets sleeved on the vertical portions of the side frame-pieces, and straps or bands connecting the foot-pedals and driving-disks, substantially as set forth.

2. In a tricycle, the combination, with the driving-wheels mounted on separate spindles, driving-disks mounted on said spindles, and foot-pedals for actuating the driving-disks, of a cross-bar located in rear of the spindles and supporting a seat, and side frame-pieces extending downwardly in front of the spindles and forwardly, and supporting the guide-wheel, substantially as set forth.

257,513. PREPARATION FOR CLEARING COFFEE. PERRIS S. PAINE, Boston, Mass. Filed Dec. 19, 1881. (No specimens.)



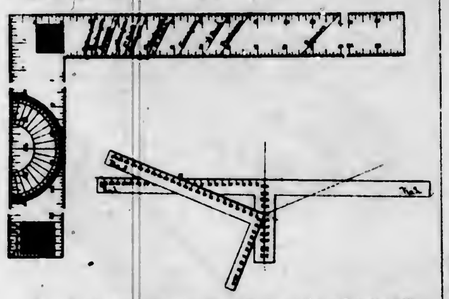
Claim.—The herein-described product for use in clearing coffee, the same consisting of fish-skin coated with white of eggs or like albuminous matter.

257,514. FIFTH-WHEEL FOR VEHICLES. GILBERT A. PARRISH, Fremont, Ohio. Filed Sept. 19, 1881. (No model.)



Claim.—The fifth-wheel of a wagon in which the upper half is composed of a full circle, solid in front of the head-block and open behind, secured to the head-block, provided on the rear side with an extension-piece forged thereto and secured to the reach, in combination with the lower half composed of an open half-circle secured to the axle-bed, the two halves constituting the fifth-wheel being held together by means of the bolt secured to the upper half and to the end of the reach below, substantially as and for the purpose herein set forth.

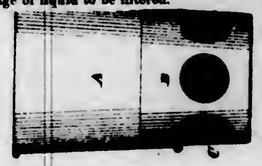
257,515. CARPENTER'S SQUARE. BYRUS PERU, Nebraville Nebr., assignor of one-half to W. H. B. Stout, same place. Filed Jan. 17, 1882. (No model.)



Claim.—A square bearing upon its face side and tongue lines coincident with those of a protractor centrally located on its blade, and indicating-marks designating the geometrical figure of which each line forms a unit or side, and also marks indicating the internal and external angles of said figures, substantially as shown and described.

257,516. FILTER. HENRY C. RICE, Louisiana, Mo. Filed Oct. 25, 1881. (No model.)

Brief.—A sheet of filtering material, C, is pressed between two frusto-conical tubes, which fit one within the other, the inner tube projecting below the outer and having perforations to allow the passage of liquid to be filtered.

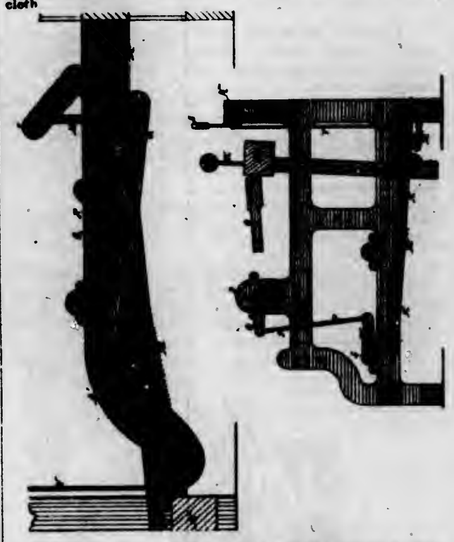


Claim.—1. The filter herein described, consisting of outer upper tube, A, inner lower tube, B, and filtering material C, the outer tube forming the upper half of the receptacle and supporting the filter and the inner tube forming the lower half of the receptacle and projecting beneath the outer tube, as shown and described.

2. The filter consisting of inner and outer frusto-conical tubes, A and B, and filtering material C, the inner tube being pressed into the outer tube to hold the cloth between the two tubes and the outer tube forming the support to the filter, as set forth.

257,517. LOOM FOR WEAVING PILE FABRICS. JOHN ROTHWELL and CHARLES ROTHWELL, Philadelphia, Pa. Filed July 22, 1881. (No model.)

Brief.—The crank-shaft is mounted in eccentric-bearings, which may be turned to shift the shaft slightly backward and cause the lay to beat partially up, or moved to shift the shaft forward again and cause the lay to beat up fully. The loops or pile are thus formed upon the fabric by partially beating up several picks of weft and then giving the lay a full beat, which slides such picks forward upon the body-warp and causes the lighter-weighted terry-warps to rise up in loops in front of these picks. The connections between the rock-shaft, by which the eccentric-bearings are operated and the lever by which such shaft is turned, are made adjustable to permit the length of loop to be varied. By means of a hand-controlled locking-bar the parts for shifting the eccentric-bearings may be held out of action during the formation of plain cloth.



Claim.—1. In a loom for weaving looped or terry and plain fabrics, the combination, with the eccentric-journals B', having the arms O secured thereto, the rods P, arms N, shaft L, and operating mechanism for said shaft, of the crank-shaft C, pitmen Q, and the lay and reed E E', as shown and described.

2. The combination of cam F, lever G, rod H, arm I, shaft L, arm J, lock-bar K, springs M, eccentric-bearing B', and connecting mechanism N P O, substantially as shown and described.

3. The combination of cam F, shaft L, eccentric-bearing B', connecting mechanism N P O, adjustable mechanism G H I, and abutment or stop *e*, whereby the length of the loops or grade of the fabric may be varied, substantially as shown and described.

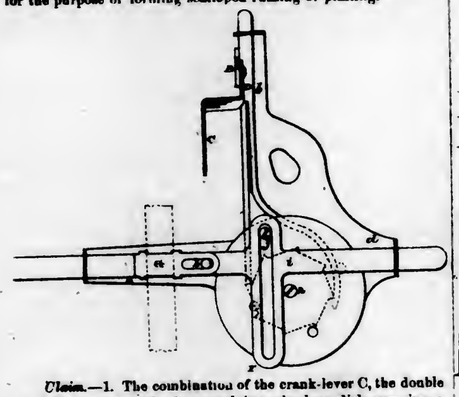
4. The combination of terry-lever S, lock-bar K, mechanism connecting said terry-lever and lock-bar, as shown, arm J, and shaft L, substantially as shown and described.

5. The combination of terry-lever S, bell-crank lever T, and rods V with the lock-bar K, formed of the parts *x y* and adjustable in the direction of its length, and having the notch *a*, the springs M, adjustable mechanism G J H I, shaft L, and cam F, substantially as shown and described.

6. The eccentric-bearings B' and rigidly-attached arm O, boxes B, rods P, arms N, and shaft L, in combination with arms J I, rod H, adjustable lock-bar K, lever G, cam F, having pin F', stop *e*, the shaft E, and means for operating said shaft, substantially as shown and described.

257,518. RUFFLING ATTACHMENT FOR SEWING-MACHINES. JOSEPH S. SACKETT, Plattsburg, N. Y. Filed Aug. 24, 1881. (Model.)

Brief.—The guide which carries the ruffling-strip is slowly reciprocated in a plane perpendicular to the direction of the feed for the purpose of forming scalloped ruffling or plaiting.



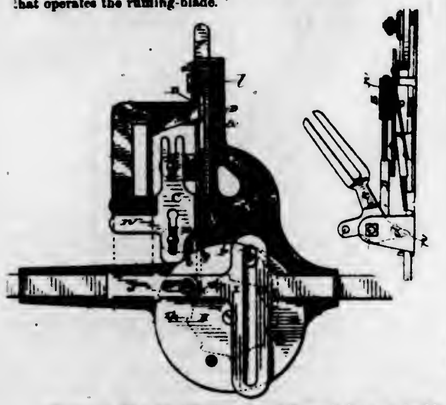
Claim.—1. The combination of the crank-lever C, the double pawl D, a ratchet-wheel, a revolving wheel or disk carrying a crank-pin, and a reciprocating cross-head carrying a guide, G, substantially as shown.

2. The combination, with the crank-lever C and the double pawl D, of the guide G and intermediate mechanism, substantially as described, for operating said guide from said pawl, as set forth.

3. The reciprocating guide G, slotted so as to be adjustable, in combination with the cross-head and its operating mechanism, substantially as set forth.

257,519. RUFFLING OR PLAITING ATTACHMENT FOR SEWING-MACHINES. JOSEPH S. SACKETT, Plattsburg, N. Y. Filed Aug. 26, 1881. (Model.)

Brief.—The guide which carries the ruffling-strip, and which is slowly reciprocated in a plane perpendicular to the direction of the feed for the purpose of forming scalloped plaiting or ruffling, is operated by mechanism connected with the same bell-crank lever that operates the ruffling-blade.



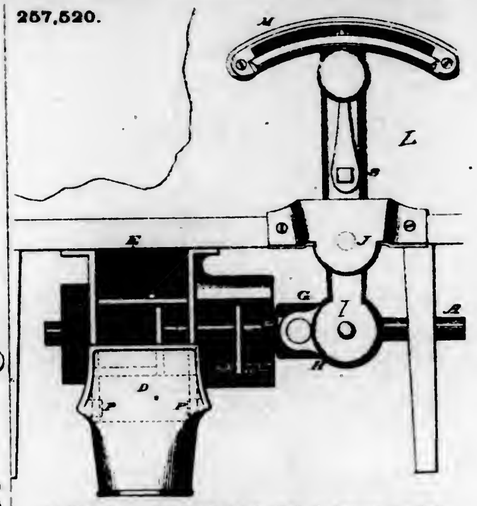
Claim.—1. The combination of a bell-crank lever, a double pawl, ratchet and crank wheel, a reciprocating head carrying a guide, and a ruffling device which is also operated by the bell-crank lever, substantially as shown.

2. The combination, with the slide C and the ruffling-blade, of the lever B, a rod for operating the said slide, arm *p*, double pawl F, ratchet-wheel H, crank-disk G, cross-head I, and guide J, substantially as described.

257,520. GRAIN-DRILL. CHARLES SCHULZ, Dayton, Ohio. Filed Apr. 18, 1881. (Model.)

Claim.—1. The pivotal binding-bar L, with set-screw S, in combination with the adjusting-arm I and indicator-plate M, substantially as and for the purpose specified.

257,520.

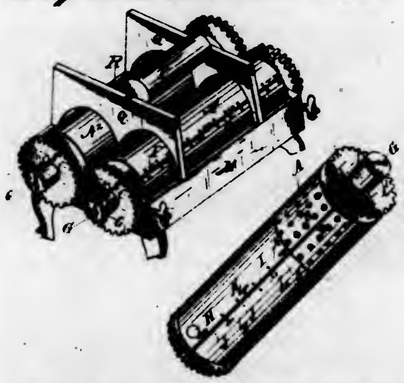


2. The sleeve G, supported on shaft A, between washers pinned to said shaft, and adjusting-arm I, connected by link H, in combination with the feeding mechanism of a grain-drill, substantially as and for the purpose specified.

3. The solidly-cast swinging conveyer D, with interior flattened projections, P, in combination with the seed-case E, having external cavities, as set forth, substantially as and for the purpose specified.

4. The washer C, composed of two plates embracing the shaft, the inner being a cut-off and the outer an end wall, and connected by plate *o*, substantially as set forth.

257,521. STENCIL-PRINTING MACHINE. ALBERT G. SHANNON, Santa Rosa, Cal. Filed Nov. 18, 1881. (No model.)



Claim.—1. In a stencil-printing machine, the cylinders A and A^1, having ink-receiving holes H, which are closed by screw-stoppers, said cylinders containing cylinders A', which are also provided with ink-receiving holes h, so arranged that the holes H and h can be placed in a direct line by means of the rod *d*, having the handle G, which is designed to be turned, when desired, on the scale C, the latter indicating the relative position of the holes H and h, the perforations B *b* in the cylinders being so arranged as to be closed when H and h are opened, all substantially as described, and for the purposes set forth.

2. The cylinders A^1 A', having perforations B *b*, the former cloth-covered and provided with groove l, springs K, and knife R, in combination with cylinders A A', similarly perforated, covered, grooved, and provided with springs, the groove in cylinder A being adapted for the working of the knife R, and said cylinders A A^1 geared together and adjustably mounted on frame M, in the manner and for the purposes set forth.

257,522. BOX OR BUCKET FOR BERRIES, &c. SETH H. SMITH, Delta, Ohio, assignor to the Smith Manufacturing Company, same place. Filed Mar. 23, 1882. (No model.)



Claim.—1. The combination, with a bent wooden box constructed substantially as described, of a lining folded from a single uncut sheet and secured in position by means of the hooked ends of the wire bail or handle, as set forth.

2. The herein-described improved box or bucket, having sides G, ends E, and flaps I, in combination with the lining folded from a single uncut sheet and having flaps K, and the wire bail or handle having hooked ends M, passing through the ends and flaps of the box and lining, which are thereby secured together, as set forth.

257,523. WHEEL. JOHN F. SNYDER and GEORGE J. BLIESNER, Blakeslee, Ohio. Filed Feb. 9, 1882. (Model.)



Claim.—1. The combination, with the rim of a wheel having a socket formed therein, of a spur projecting from and working in the socket, a boxing or cap having closed sides and top formed in one piece and fitting over the socket, and a spring or cushion fitting between the spur and boxing and bearing against both, the several parts being adapted to operate as described, and one cap to be removed without affecting the others, as set forth.

2. The combination, with the rim of a wheel having a shouldered socket, E, formed therein, of a spur, D, having a detachable plate, *d*, secured to its shank and adapted to fit within the socket in the wheel, a hollow boxing, G, having closed sides and top formed in one piece and fitting over the socket E, and a spring-cushion, F, fitting between the boxing and spur, substantially as and for the purpose set forth.

257,524. MACHINE FOR CUTTING GREEN CORN OFF THE COB. DARIUS E. SPERR, Blue Grass, Iowa. Filed Feb. 28, 1882. (Model.)

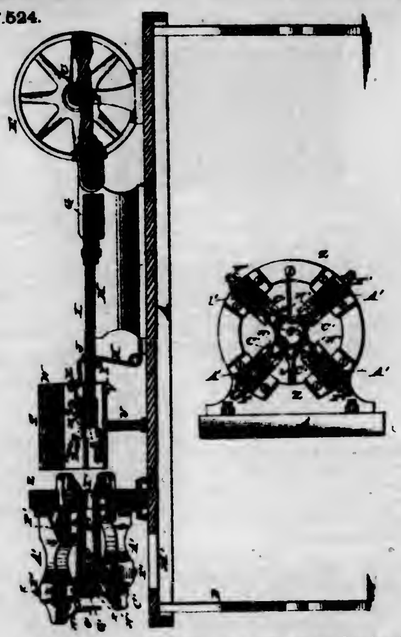
Claim.—1. The combination, with the plunger-rod I, having notch S, of the plunger-head L, consisting of a sleeve having cup-shaped rear end and provided with notch or opening R, lever-latch O, having tooth Q and spring P, and mechanism for operating said lever-latch, as set forth.

2. In a machine for cutting green corn off the cob, the combination of the trough T, having hinged flanged wings V, with mechanism, substantially as described, for automatically opening and closing the said wings, as set forth.

3. The combination of the trough T, the flanged wings V, connected to said trough by spring-hinges, the spring-bracket K, having eye J, the toggle-joints X, connecting said spring-bracket with the wings V, the plunger-rod I, having cross-pin Y, and mechanism for reciprocating the said plunger-rod, substantially as set forth.

4. In a machine for cutting green corn off the cob, the combination of the frame Z, having arms A', the shanks C', and rods I', mounted in sockets radially in said arms, springs for forcing the said shanks and rods in an inward direction, nuts for limiting their movement, and the guards H', hinged, as described, to the said shanks C' and rods I', as set forth.

257,524.



5. The combination, with the shanks C', arranged as herein described, and having knives or cutters G', of the guards H', hinged to said shanks and to the rods I', arranged as herein shown, so that the front and rear ends of said guards shall be forced independently in an inward direction, as set forth.

6. As an improvement in machines for cutting green corn off the cob, the combination of the bed-plate or table, the trough or hopper having hinged flanged wings, the plunger-rod having plunger-head connected thereto by suitable latch mechanism and provided with a cross-pin, Y, the spring-bracket K, having eye J, and connected by toggle-joints to the hinged flanged wings of the trough or hopper, the frame Z, having arm or bracket P', and arms carrying the knives or cutters and guards or guides and the crescent-shaped scrapers, and suitable operating mechanism, all arranged and operating substantially as and for the purpose set forth.

257,525. SAP-SPOUT. IRWIN H. SPELMAN, Cortland, Ohio. Filed Oct. 8, 1881. (No model.)

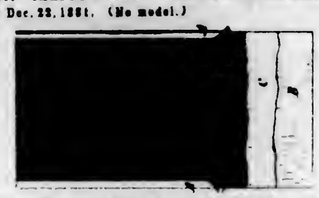


Claim.—The combination, with the sap-spout A, constructed as described, of the spur B, constructed of a flat piece of metal, and having a shoulder, *b'*, to engage with the notch *b²* on the end of the spout A, as herein described, and for the purpose set forth.

257,526. MAKING OF MOSAICS OF GLASS, PORCELAIN, OR STONE. GEORGE STANLEY, Boston, Mass. Filed Mar. 24, 1882. (No specimens.)

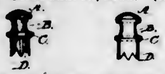
Claim.—The mode, substantially as described, of making a mosaic of glass or other mineral substance, such consisting in arranging the pieces, in manner as described, on an argillaceous and arenaceous bed, next coating the upper surfaces of the said pieces with clay or other material suitable to resist adhesion of the joining metal to such surface, next drying the whole and heating it to the temperature of the joining metal when in a molten state, and while such bed and pieces may be at such temperature pouring upon the pieces of glass and into the narrow spaces or channels between and around them lead or a joining metal in a molten state, the whole being subsequently cooled and finished by removal of the surplus metal, as set forth.

257,527. CARPET-LINING. HENRY A. SYMMES, Lincoln, R. I. Filed Dec. 22, 1881. (No model.)



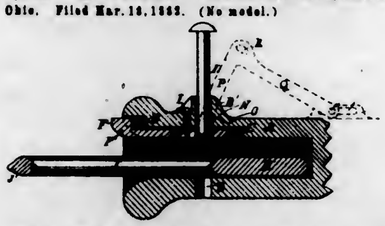
Claim.—The carpet-lining herein described, consisting of the sheet of paper A, wider than the breadth of lining, the fibrous pad B, and the woven fabric D, to form dust-receptacles, having a sheet of paper, C, between such woven fabric and the fibrous material, and the edges of paper sheet A being folded over so as to inclose the edges of the whole, as herein set forth.

257,528. LACING STUD OR BUTTON. EDWARD D. STARLE, Waterbury, Conn. Filed Jan. 10, 1882. (No model.)



Claim.—As an improved article of manufacture, the herein-described lacing-stud, formed from a hollow post or eyelet having a central flange or shoulder, C, all of a single piece of sheet metal, the said flange or shoulder dividing the stud into a lower tubular shank, D, and an upper rounded neck, B, having a spread head or rim to receive the circular disk or cap A, substantially as and for the purpose specified.

257,529. CAR-COUPLING. WILLIAM G. STRUBBE, Cincinnati, Ohio. Filed Mar. 16, 1882. (No model.)



Claim.—1. In car-couplers, the draw-head provided with an enlarged cavity, A', to the rear of the pin, having in the upper wall a dovetail groove, C, in combination with the tripping device E, placed in the said slot, having the head F, central elongated slot, G, and the sloping cavity H, substantially as and for the purpose herein shown.

2. In car-couplers, the draw-head provided with the rear enlarged cavity, A', having in the upper wall the dovetail slot C and cavity D, with the tripping device E in said slot having the head F, elongated slot G, sloping cavity H with the securing-pin I and coupling-pin L, substantially as herein shown.

257,530. STEAM SLIDE-VALVE. BENJAMIN F. STURTEVANT, Boston, Mass. Filed Feb. 25, 1882. (No model.)

Claim.—1. A valve constructed with a series of admission-ports which communicate with the cylinder-ports at each end, and adapted to have its ends open and close the exhaust-ports at each stroke, substantially as set forth.

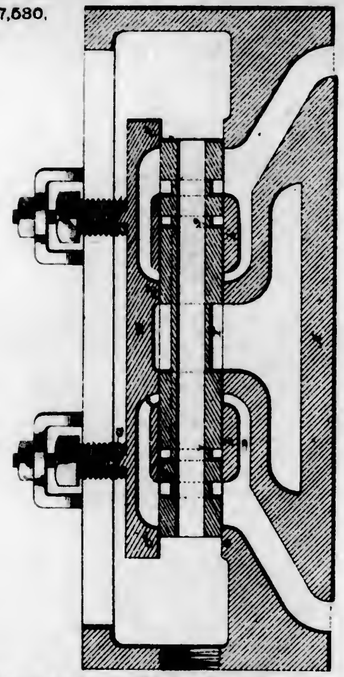
2. A valve having a steam-chamber in each end and provided with a series of admission-ports which communicate with the cylinder-ports at each end, and adapted to have its ends open and close its exhaust-ports at each stroke, substantially as set forth.

3. The combination, with the cylinder-ports and the valve cap or cover, of a double-faced valve provided with steam-chambers and with a series of admission-ports which communicate with the cylinder-ports, the ends of the valve being constructed and arranged to open and close the exhaust at each stroke, substantially as set forth.

4. The combination, with the main and supplemental ports for supplying steam to the ends of the cylinder, of a valve provided with a port adapted to open a supplemental port at each stroke, and with two or more independent ports at each end for supplying steam to the cylinder, substantially as set forth.

5. The combination, with the cylinder-ports and valve cap or cover, of a valve provided with a series of ports at each end, and

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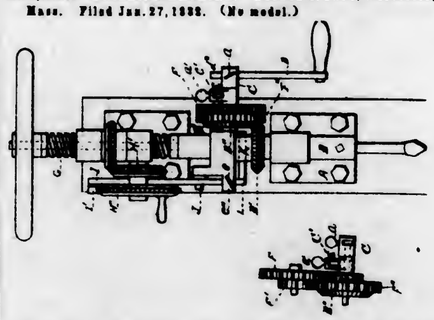
with a steam-passage to allow the steam to flow from a port in the valve through a passage in the cap and down through the valve to the cylinder-port, substantially as set forth.

257,531. BUTTON-FASTENER. PARKER H. SWEET, Jr., Washington, D. C., assignor to the Heaton Button Fastener Company, Providence, R. I. Filed Mar. 15, 1882. (No model.)



Claim.—As an improved article of manufacture, the herein-described button-fastener, consisting of the plate *b*, provided with the two front prongs, *a*, and with the central prong bent in a reverse direction and over the said plate *b*, whereby the plate protects the fabric from abrasion, substantially as and for the purpose specified.

257,532. DRILLING-MACHINE. GUSTAVE C. TAPY, Worcester, Mass. Filed Jan. 27, 1882. (No model.)



Claim.—1. The combination, with the drill-shaft B, bevel-gears B' and B'', sleeve C, and its attached crank-hub, of the loose pinion C', with its mortised projection E upon the side of its hub, the fixed intermediate gears, F F', gear F'', and interchangeable crank-bar *d*, all arranged and constructed as described, and for the purposes set forth.

2. The combination of the spring *c*, lug *c'*, vibrating bent lever I, pawl I', ratchet-wheel H'', and eccentric K on the drill-spindle, as described, and for the purposes set forth.

3. The combination of the vibrating bent lever I, pawl I', ratchet-wheel H'', eccentric K on the drill-spindle, adjusting-screw *e*, and lug *c'*, as shown, and for the purposes specified.

4. The drill-shaft B and the connected feed-screw G, in combination with the ratchet-wheel H'', vibrating lever I, pawl I', and eccentric K on the drill-spindle, as shown, and for the purposes set forth.

257,533. WARDROBE-HOOK. FREDERICK TAYLOR, Lowell, Mass. Filed Jan. 26, 1882. (No model.)



Claim.—1. A wardrobe-hook made of wire B, doubled as herein described, and having its ends bent into eyes A A' at opposite sides of said hook, as and for the purpose specified.

2. A wardrobe-hook made of wire B, doubled as herein described, and having the ends of said wire bent into eyes A A' at opposite sides of said hook, and having the strands of a branch of said hook twisted together, as and for the purpose specified.

257,534. HAY BINDER, UNLOADER, AND STACKER. A. L. THORNTON, Dover, Iowa. Filed Dec. 31, 1881. (No model.)



Claim.—1. The combination of the poles A B and the connecting series of ropes *b* with the hay-rack G, for the purpose specified.

2. The combination of the poles A B, the series of connecting-ropes *b*, the hooks *c c*, made fast to the poles A B, the anchor and draw ropes *c c*, with their crotch-ropes *h* and rings *d d*, and the anchor-stake *f*, substantially as described, for the purpose specified.

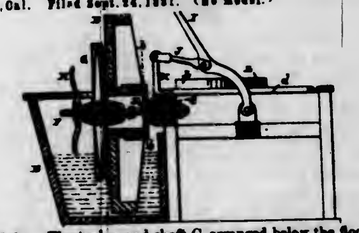
3. In a hay binding, unloading, and stacking machine, the combination of the poles A B, with the series of connecting-ropes *b*, the anchor and draw ropes *c c*, and the anchor-stake *f*, with the hay-rack G, for the purpose of rolling loads of hay from a wagon or along the ground or up the inclined side of a stack.

4. The hooks *h h*, attached to the hay-rack, substantially as shown, for the purpose specified.

257,535. COMPOSITION FOR CLEANING AND PROTECTING METAL SURFACES. CHARLES W. TRICKEY, Belmont, Mass. Filed Jan. 31, 1881. (Specimens.)

Claim.—The within-described compound for cleaning and protecting metal surfaces, consisting of marrow-oil, paraffine-oil, oleine, tincture of gum-guaiacum and oil-mirbane, in about the proportions specified.

257,536. DEVICE FOR COOLING TIRES. ISAAC L. UNDERHILL, Ione, Cal. Filed Sept. 24, 1881. (No model.)



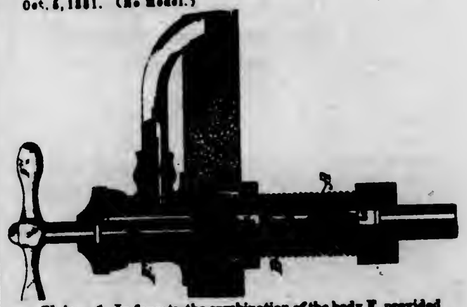
Claim.—The tank *a* and shaft C, arranged below the floor A, the latter carrying the revolving supporting-wheel E, the lever K, the lever I, and connecting-link J, and the slot *d*, the whole constructed to act in combination in the manner set forth, whereby the wheel and tire and the operating-handle of lever I, when in a horizontal position, may rest immediately upon the floor, for the purpose described.

257,537. DEVICE FOR MAKING BUTTON-MAKING MOLDS. FREDERICK VAN PATTEN, Auburn, N. Y., assignor to Driggs, Meaker & Co., same place. Filed Aug. 18, 1882. (No model.)



Claim.—The templet F, in combination with its rod F', secured to the back of the templet, and the mortised support and guide F'', adapted to slide upon said rod and against the edge of a rectangular plate, substantially as and for the purpose described.

257,538. FAUCET. CHARLES WHITTAKER, Chicago, Ill. Filed Oct. 5, 1881. (No model.)



Claim.—1. In faucets, the combination of the body F, provided with the spout at or near the supporting-flange, valve-rod E', extending from the handle to the sliding sleeve D, sliding sleeve D, stirrup H, connecting-rod E, valve G, coupling-stem B, and valve-seat A, all substantially as set forth.

2. The combination of handle F', valve-rod E', sleeve D, stirrup H, said valve-rod being connected to said sleeve by a screw, by which said sleeve and stirrup are moved upward and downward as said handle is turned toward the right and left, rod E, valve G, and valve-seats A, substantially as set forth.

3. In faucets, the combination of the stopper or valve G, adapted to be closed with instead of against the pressure of water, and the screw-cut valve-rod E, said stopper and screw being connected together by sleeve D, stirrup H, and connecting-rod E, whereby the said valve is gradually opened and closed by the action of the screw, all substantially as set forth.

257,539. MACHINE FOR CUTTING HOOP-LOCKS. HENRY WILDE, Newark, N. J. Filed Dec. 10, 1881. (No model.)

Brief.—The hoop-blank is clamped on the table, and the hoop is notched and beveled at one end and mortised and beveled at the other end by the cutters, which reciprocate in perpendicular and diagonal lines.

Claim.—1. The combination, in a machine for cutting a tongue-and-mortise lock in barrel-hoops, of a bed provided at one end with a reciprocating tool for cutting and a diagonally-moving tool for bevaling the mortise of the lock in the manner described, corresponding mechanism at the other end for cutting and beveling the tongue of the lock in similar manner, suitable gages for setting the hoop properly under the two tools, and mechanism adapted to operate the said tools, substantially as and for the purpose set forth.

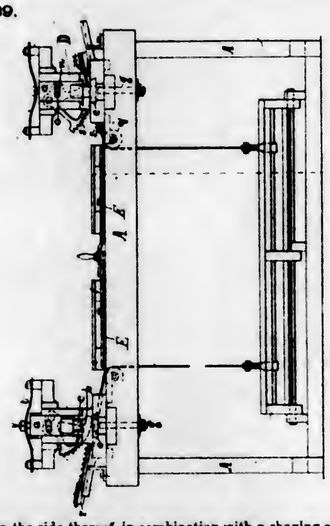
2. In combination with the top of bed A and the two sets of cutting-tools, one or both being adjustably secured thereto, the gage *h*, for setting the hoops endwise, substantially as described.

3. In combination with the dies for the mortise and tongue of the hoop, the gages *d'*, for centering the hoop beneath the punches, substantially as set forth.

4. In combination with the dies *c* and gages *d'*, the levers E, arranged and operated substantially as described, and provided with the bent ends *f'*, for pressing the hoop against the gage and die-bed, substantially as set forth.

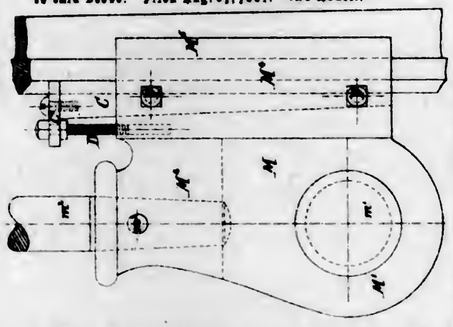
5. A punching-cutter operating as described, and having a

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recess in the side thereof, in combination with a shaving or beveling cutter moving at an angle and entering said recess at the close of its stroke, as set forth.

257,540. CROSS-HEAD FOR STEAM-ENGINES. DANIEL C. WILCOX and GEORGE H. BEEBE, Marshalltown, Iowa, assignors to said Beebe. Filed Aug. 31, 1881. (No model.)



Claim.—The combination of the slide B, projecting on either side of the framing, to which it is attached, and provided with a raised center on its outer surface, with the cross-head M, having the jaws M^2 M' M^2, and the wedge C, fitting over the outer face of the slide and provided with the adjusting means D P, substantially as set forth.

257,541. DEVICE FOR SECURING, &c., THE CLOTH OF BILLIARD-TABLES. J. FREDERICK BABCOCK, Bangor, Me., assignor of one-half to Charles P. Wiggin and William H. Bradford, both of same place. Filed Feb. 25, 1882. (No model.)



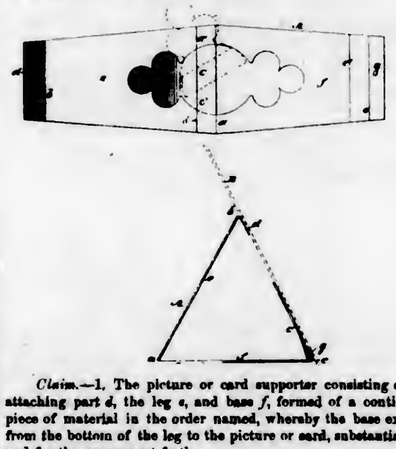
Claim.—1. In combination with a billiard-table, a cloth, *b*, covering the same and provided with a strengthening or stiffening material around its edges, substantially as herein set forth.

2. In a billiard-table, the cloth *b*, strengthened at its edges, in combination with devices whereby said cloth may be stretched or drawn over the bed with a substantially equal strain in all directions, substantially as herein set forth.

3. In a billiard-table, the cloth *b*, strengthened or stiffened at its edges, in combination with cords *d e*, passing through or under the frame of said table, and devices whereby said cords and attached cloth shall be stretched with a substantially equal strain in all directions, substantially as and for the purposes set forth.

4. In a billiard-table, the cloth *b*, strengthened or stiffened at its edges, in combination with cords *d e*, attached to said edges, passing through or under the frame of said table below the bed, shafts *f h*, gears *i g*, and crank or its equivalent attached to said shaft *f*, whereby said cords and attached cloth are stretched and drawn over said bed with a substantially equal strain in all directions, as herein set forth and described.

257,542. PICTURE AND CARD SUPPORTER. CHARLES BECK, Philadelphia, Pa. Filed Mar. 16, 1882. (No model.)



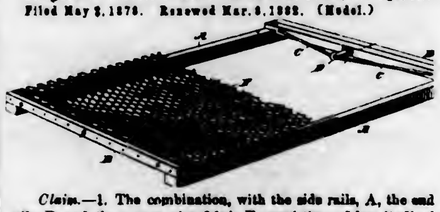
Claim.—1. The picture or card supporter consisting of the attaching part *d*, the leg *e*, and base *f*, formed of a continuous piece of material in the order named, whereby the base extends from the bottom of the leg to the picture or card, substantially as and for the purpose set forth.

2. The supporter formed of the attaching part *d*, leg *e*, and base *f*, having a tongue, *g*, in combination with the tongue C of the card or plate, substantially as and for the purpose set forth.

3. The supporter A, formed with the additional score folding lines *a' a'*, substantially as and for the purpose set forth.

4. The tongue C, adapted to be secured to the card or plate and formed with the score-line *c''*, substantially as and for the purpose set forth.

257,543. BED-BOTTOM. WILLIAM J. HOPE, Columbus, Ohio, assignor to Charles L. Ames and Abel H. Frost, Chicago, Ill. Filed May 3, 1878. Renewed Mar. 8, 1882. (Model.)



Claim.—1. The combination, with the side rails, A, the end rails, B, and the woven-wire fabric F, consisting of longitudinal spring-wire coils secured permanently to the end rails, B, of the rod C and extensible strut D, whereby the central portions or coils of the fabric F may be elongated or given increased tension without equally elongating or increasing the tension of the marginal coils, substantially as described, and for the purposes set forth.

2. In combination with the frame A B and contractile fabric F, secured at the upper surface of the end rails, the truss-rod C, having its ends attached to the inner face of the end rail, B, below the plane of the fabric, and the strut D, provided with the nut or shoulder *d*, bearing against the end rail in the plane of the rod C, and having its end extended and housed within a close-fitting recess, *b*, in the end rail, substantially as shown, and for the purposes stated.

257,544. COMPOUND FOR ROOFING. JOHN BOWMAN and GRAHAM KLINCK, Princeville, Ill. Filed Mar. 11, 1882. (No specimens.)

Claim.—1. The herein-described composition of matter to be used for roofs, &c., consisting of the following proportions, to wit: brimstone, five pounds; rosin, ten pounds; coal-tar, sixty-five pounds; flour-paste made with alum-water, twenty pounds, mixed and prepared as set forth.

2. A roofing-cover consisting of brimstone, rosin, flour and alum-water paste, coal-tar, hair, and plaster-of-paris, combined and applied as set forth.

257,545. PROCESS OF MANUFACTURING WATER-GAS. WM. H. BRADLEY, New York, N. Y. Filed Jan. 24, 1882. (No model.)

Claim.—The improvement in the process of making the gas known as "water-gas" herein described, which consists in introducing steam together with air at the bottom of a cupola or generator containing carbonaceous fuel, for the purpose of raising the fuel to incandescence, desulphurizing it, and preventing the formation of clinker and disintegrating it if formed, and in introducing steam into the generator at or near the top thereof and causing it to pass in a downward direction through the incandescent carbon, substantially as described.

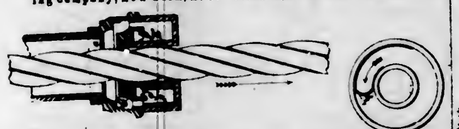
257,546. SHAFT-TUG. WILLIAM B. BROOKS, West Dennis, Mass. Filed Mar. 18, 1882. (Model.)



Claim.—1. A shaft-tug consisting of the leather strap A, provided with buckle *a* and the friction-roller *c*, connected to a suitable plate secured between the folds of said strap, substantially as and for the purpose set forth.

2. In a shaft-tug, the combination, with the strap A, of the plate B, having ears *e*, and *d*, and rollers *c*, connected to the strap, substantially as and for the purpose set forth.

257,547. EXTENSION-CHANDELIER. JAMES E. BROWN, Brooklyn, assignor to the Archer and Pancoast Manufacturing Company, New York, N. Y. Filed Apr. 8, 1882. (No model.)



Claim.—1. The friction-spring bent as explained, and bearing against the walls of the annular chamber formed in the clutch-casing, said spring being moved by the turning block as the sliding pipe or rod descends, substantially as and for the purposes set forth.

2. The spiral pipe or rod, the bent friction-spring located and movable in an annular chamber formed in the clutch-casing, and the turning-block having a serrated flange, the teeth of which engage with the fold of the spring, the several parts being combined and arranged substantially as shown and described.

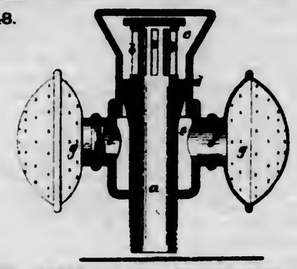
3. The combination of the spiral pipe or rod, the clutch-casing having an annular chamber formed in the lower part, the bent spring bearing against the walls of said chamber, the turning-block having the serrated flange made to engage with the spring during any downward tendency of the slide, and to release the spring when the slide is elevated, and the removable cap, substantially as and for the purposes set forth.

257,548. AUTOMATIC FIRE-EXTINGUISHER. JOSEPH R. BROWN, Providence, R. I. Filed June 13, 1881. (No model.)

Claim.—1. In an automatic fire-extinguisher, the combination, with a distributer, of an inlet-pipe closed at the end and provided with narrow ports through which the water passes, the sleeve *c*, and a seal made of a solder fusible at a low temperature, as and for the purpose set forth.

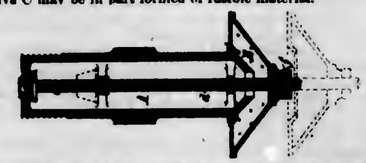
2. The combination, with the pipe *a*, provided with the enlargement at *d*, of the sleeve *c*, secured to the enlargement by a solder fusible at a low temperature, and the chamber *e*, provided with outlets, to which distributers are secured, the whole constructed to form an automatic fire-extinguisher, as described.

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257,549. AUTOMATIC FIRE-EXTINGUISHER. JOSEPH R. BROWN, Providence, R. I. Filed Nov. 11, 1881. (No model.)

Brief.—The distributer E may or may not be perforated. The valve C may be in part formed of fusible material.

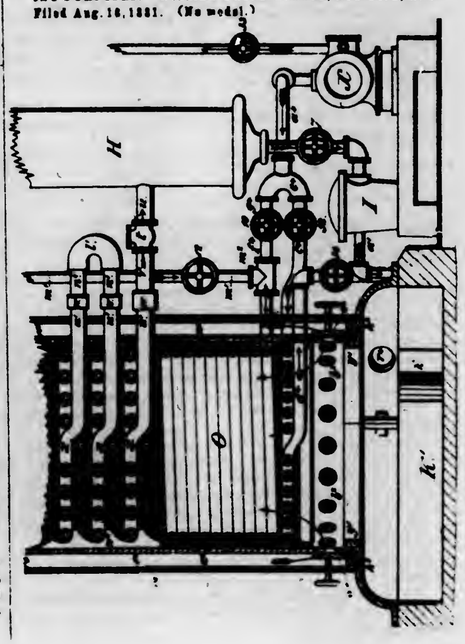


Claim.—1. In an automatic fire-extinguisher, the combination, with the pipe A, provided with a contracted outlet and an annular soldering-surface, of the valve C, constructed to exclude the water from the distributer, and a conical distributer secured by solder, as described.

2. The combination, with the pipe A and a conical distributer secured by solder, as described, of the valve C and stem *d*, provided with a screw-thread engagement with the distributer, constructed to allow the valve to be forced to its seat, as described.

3. The combination, with the pipe A, provided with a valve-seat at its upper end, and a distributer secured by fusible solder around the discharge-opening, of a valve the stem of which is secured in the distributer, and the body of which is made in part of a fusible material, as described.

257,550. PROCESS OF AND APPARATUS FOR GENERATING GASES FOR MOTIVE POWER, HEATING, AND ILLUMINATING PURPOSES. WILLIAM FRANK BROWNE, New York, N. Y. Filed Aug. 16, 1881. (No model.)



Claim.—1. A generating coil or conduit having the projecting ends thereof extending through the wall of the furnace tangentially to the inner and outer turns of the coil and the inner end of the coil, and its projection bent down and extending below the bends of the coil and furnishing a support therefor.

2. A series of flat contiguous coils or conduits having suitable end connections uniting all the coils with each other, in combination with the shell of the furnace for the circulation of liquid throughout the series.

3. A series of spiral coils having the outer bends thereof connected by external return-bends and couplings, and also the inner bends thereof connected by return-bends and couplings to form a continuously-connected conduit, whereby a continuous circulation of liquid is secured throughout the series.

4. A series of coils having their ends projecting through the wall of the furnace substantially parallel to each other, and having all their return fittings and couplings outside of the wall of the furnace.

5. In combination with the coils, the hollow supporting pipes or bars passing through the furnace and having suitable end connections, as and for the purpose described.

6. In combination with the supporting hollow bars, the means for causing a circulation of liquid therein, which consists in the stand-pipe H, containing water under pressure, pipe m^3, having valve 17, pipe a^3, having valve 18, pipe p^3, having valve 20, and steam-dome M, operating as described.

7. The furnace containing the generating-coils, constructed with a double shell extending from the base to the bonnet, the outer shell having apertures at the top and the inner shell having apertures at the bottom opening into the ash-pit, in combination with the circular damper s^4, for the purpose of utilizing the heat and heating the air supplied to the fuel.

8. The shell of the furnace, having in combination therewith a door or doors extending from the base to the bonnet and nearly one-half of the circumference of the shell, for the purpose of removing and inserting the generating-coils and other internal parts, as described.

9. The double shell of the furnace, in combination with the double shell of the door, in which the inner furnace-shell overlaps the hinge-joint for preventing leakage, as described.

10. In combination with the engine operated by gas or vapors of liquid combustibles, the exhaust-pipe g', having valve 10, and the superheating-coil O, as and for the purpose described.

11. In combination with the superheating-coils, the stand-pipe H, pipe y, having valve 16, pipe x^3, pipe g, having plug-cock 14, pipe w', and the dome M, as and for the purpose described.

12. The means for returning the liquids which are trapped off from the generator to the pump, and thence forcing them again into said generator, which consists of a pipe, a', connected with the generator, the trap I, chamber C', pump E', return-pipe o, and the necessary connections and valves, as described.

13. The water-supply pipe c', the oil-supply pipe k, and the pump E', in combination with a conducting-pipe, o, and a gas-generating apparatus.

14. The process of generating gas which consists in forcing products of combustion from the furnace and carbonaceous material by a combined jet of steam and carbonaceous vapor under pressure through a heated coil or conduit.

15. The process of generating gas which consists in forcing products of combustion and pulverized solid carbonaceous matter by a jet of steam through a heated conduit.

16. The process of generating gas by first converting liquid hydrocarbon and water into vapor or gas, and by a jet of the combined vapor forcing the products of combustion into a heated conduit and converting the mixture into a fixed gas.

17. The pipe Q, connected with the stack, the receptacle T, connecting-pipe V, pipe g^3, and the injecting device, in combination with a coil or conduit located in the furnace.

18. The counterbalanced valve i^3, provided with a guide-stem, w^3, in combination with its seat h^3 within the stack, as and for the purpose described.

19. The stack having a counterbalanced valve and seat therefor, as described, in combination with the outlet-pipe Q.

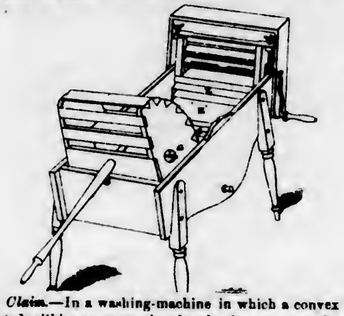
20. The pipe Q, connecting with the stack, the pipe g^3, for steam and oil vapor, and the injecting device, in combination with the heating-coils located in the shell.

21. The pipe g^3, for steam and oil vapor, the injecting device, the receptacle T, for pulverized carbonaceous matter, and a connecting-pipe, in combination with a coil or conduit located in the furnace.

22. The engine and a pipe connected with its exhaust-ports, in combination with the hollow perforated grate d^3, located in the base of the generator.

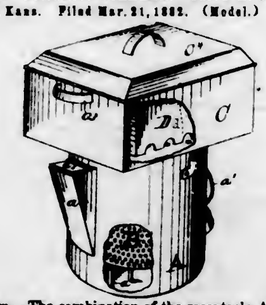
23. In a high-pressure gas-generating apparatus, the hollow perforated grate, in combination with the gas-generating conduits within said high-pressure gas-generating apparatus, for the purpose specified.

257,551. WASHING-MACHINE. ANTHONY W. BURKE, Stayner, Ontario, Canada. Filed Aug. 29, 1881. (No model.) Patented in Canada May 13, 1881.



Claim.—In a washing-machine in which a convex rubber is pivoted within an open chamber having a concaved corrugated bottom, the combination of dash-boards E, located at each end of the chamber, and inclined boards E', separating the dash-boards from the corrugations, and having their upper surfaces extending from the lower edges of the end corrugations to the under rear edges of the dash-boards E, substantially as and for the purpose specified.

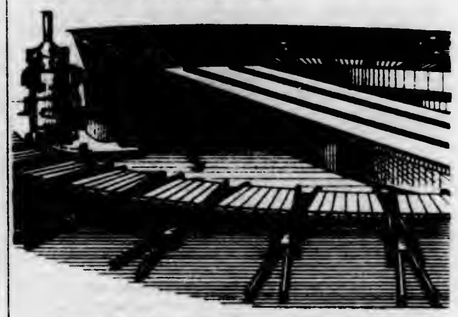
257,552. DOMESTIC STEAMER. OLIVE M. CASSEY, Leavenworth, Kans. Filed Mar. 21, 1882. (Model.)



Claim.—The combination of the receptacle A, boiler B, oven C, and pans D, the said oven being provided with a flange, c, and perforations c', and the pans having depending flanges d^3 on three sides thereof, substantially as shown and described.

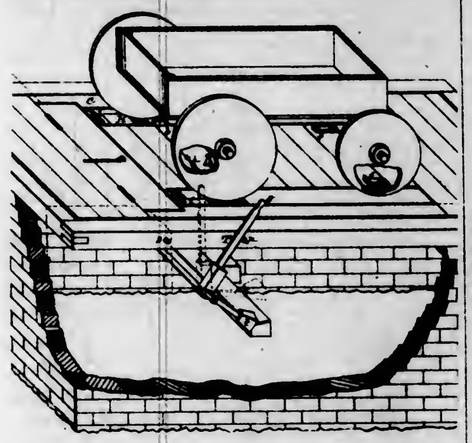
257,553. RAILROAD TURN-TABLE. JNO. B. COLLIS, Altoona, Pa. Filed June 27, 1881. (No model.)

Brief.—The table is rotated through a connected lever-arm, to the outer end of which is a locomotive.



Claim.—In combination with a turn-table, a locomotive, substantially as desired, and a lever-arm adapted for attachment to the turn-table, substantially as described.

257,554. DUMPING-PLATFORM. GEORGE H. CORMACK, Rockford, Ill. Filed Jan. 25, 1882. (No model.)



Claim.—1. A three-part dumping-platform consisting of a central portion and track side beams having a central pivot-support, the side beams and central portions capable of a pivotal dumping movement in unison or independent, substantially as and for the purpose hereinbefore set forth.

2. A three-part dumping-platform consisting of a central portion and side-track beams having a central pivotal support, the side beams and central portions capable of a pivotal dumping movement in unison or independent, and the central portion provided with lateral arms projecting in rear of the track side beams, to receive the wheels of the wagon, substantially as and for the purpose hereinbefore set forth.

3. The combination, with a three-part dumping-platform consisting of a central portion and track side beams having a common central pivot-support, the side beams and central portion capable of a pivotal dumping movement in unison or independent, of a pawl and detent connected with their respective parts and adapted to engage each other, substantially in the manner and for the purpose hereinbefore set forth.

4. The combination, with a three-part dumping-platform consisting of a central portion and track side beams having a common central pivot-support, the side beams and central portion capable of a pivotal dumping movement in unison or independent, of turn-buttons or other equivalent locking mechanism to limit the three-part platform to a unison of movement, substantially as and for the purpose hereinbefore set forth.

5. The combination, with a scale-platform, of a central three-part dumping-platform consisting of a central portion and track side beams having a common central pivotal support in the scale-platform and capable of a pivotal movement in unison or independent, substantially as and for the purpose hereinbefore set forth.

6. The combination, with the three-part dumping-platform, of pivoted standard-supports having their segment peripheral surface engage the rear ends of the central and side portions of the dumping-platform and capable of an oscillatory movement, substantially as and for the purpose hereinbefore set forth.

7. The combination, with the pivoted standard-supports of the dumping-platform, of a hand-lever for disengaging the supports from the platform and a weight operating to return the support to engage the platform and hold it in contact therewith, substantially as and for the purpose hereinbefore set forth.

8. The combination, with the three-part dumping-platform, of the hinged beam capable of its changed positions to limit the inclination of the dumping-platform to adapt it for use in connection with a wagon or sled, substantially as and for the purpose hereinbefore set forth.

257,555. SAFETY ATTACHMENT TO HARVESTERS. WILLIAM F. CORNELL and WESLEY SMITH, Adrian, Mich. Filed Mar. 21, 1882. (No model.)

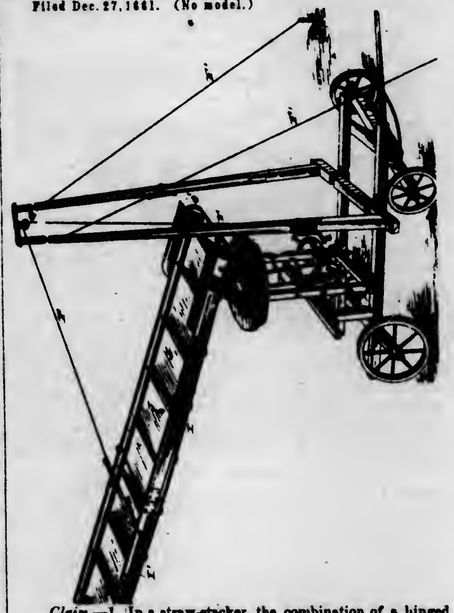
Claim.—1. The combination of the rock-shaft F, having forked arm G, the sliding rod H, having forked arm I, flange K, and washer L, the spring M, interposed between said arm and washer, and mechanism for manipulating the rock-shaft by the raising and lowering of the driver's seat, as set forth.

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2. The combination of the seat-bar O, having plate P, provided with socket Q and opening R, the seat S, having stud T, the coiled spring U, placed in socket Q, encircling the stud T, the pin B', adjustable in transverse perforations in the socket and stud, the connecting-rod X, rock-shaft F, and mechanism operated by said rock-shaft for throwing the machine into or out of gear, as set forth.

257,556. STRAW-STACKER. HENRY CORTELYOU, Fairland, Ind., assignor of one-half to Frank Chapman, same place. Filed Dec. 27, 1881. (No model.)



Claim.—1. In a straw-stacker, the combination of a hinged foldable derrick, the uprights thereof being made in two pieces, a carrier, a winding-drum, a pulley, and a rope, substantially as and for the purpose set forth.

2. In a straw-stacker mounted upon and in combination with a hinged foldable frame, a turn-table, as described.

3. The combination, in a straw-stacker, of a hinged foldable frame, a turn-table, and the running-gear, substantially as shown and described.

4. The combination, in a straw-stacker, of a carrier, a turn-table, a foldable supporting-frame, and the running-gear, substantially as shown and described.

5. The combination, in a straw-stacker, of a foldable frame, the running-gear, and two circular disks, one of which is movable about the other, substantially as shown and described.

6. A turn-table for straw-stackers, comprising a foldable frame and disks, as described, in combination with two pulley-shafts, one of said pulley-shafts passing through the foldable frame and the other being secured to one of the disks, as shown and described.

7. The combination, in a straw-stacker, of a pulley-shaft, X, the foldable frame, and suitable means whereby said shaft and the pulleys connected therewith are adjustably mounted in said frame, substantially as and for the purpose described.

8. The combination, in a straw-stacker, of a turn-table and a carrier made in two pieces, supported by and moving with the turn-

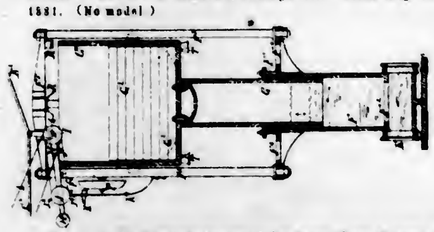
table, as described, a foldable derrick, pulleys, rope-drum, and rope, whereby the outer piece of the carrier may be raised and lowered by said rope, substantially as set forth.

9. In a straw-stacker, the combination of the turn-table provided with two disks, and the driving-shaft, the running-gear, the carrier made in two pieces, I I', a rope, F, a pulley, drum, and the derrick, substantially as and for the purpose described.

10. In a portable straw-stacker, the combination of a folding derrick made in two parts, a folding frame, a turn-table, the running-gear, and a carrier made in two parts, the lower end of the derrick, when not raised, being adapted to fall back and rest on a support on the running-gear, the upper end falling forward and resting on the carrier, the outer end of the carrier falling forward on the inner end, and the table and frame folding forward on the running-gear, substantially as and for the purpose set forth.

11. In a portable straw-stacker, the combination of a folding derrick and turn-table, provided with a movable disk, with a carrier made in two parts and provided with an endless belt or apron and actuating-shaft, a driving-belt, and a pulley-shaft, L, secured to the movable disk of the turn-table, substantially as and for the purpose set forth.

257,557. PRESSURE-REGULATOR FOR WATER-SUPPLY MAINS. DEWITT C. CREGIER, Chicago, Ill. Filed Aug. 12, 1881. (No model.)



Claim.—1. In a system for supplying water from a pump or analogous forcing means, the plunger G, made air-tight at the top and sides and sealed with water at the bottom, in combination with means for depressing it with a yielding force, and with the case F, stuffing-box F', and pipe E, as herein specified.

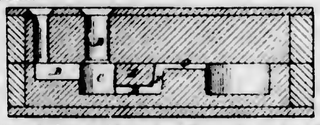
2. The carriage G', open at top, and plunger G, open at bottom, in combination with each other and with the removable weights G², guides F", pipe E, and pump D, as herein specified.

3. In combination with a pipe, E, and means for forcing water therethrough, the loaded hollow plunger G, bell P, hammer K, and means J', actuated by the engine for operating the hammer, and actuating devices H, for automatically bringing the operating means into and out of action as the plunger G rises and sinks, as herein specified.

4. In combination with the engine C, pump D, pipe E, and loaded hollow plunger G, the lever or movable piece H, operating the rods B² C², to control the speed of the pump, substantially as herein specified.

5. In combination with a lever, H, actuated by the rising and sinking of the hollow plunger G, the pulley I, and actuating-belt I', the pulley J and actuating-belt J', and pins J², hammer K, and bell P, arranged for joint operation, as herein specified.

257,558. DEVICE FOR CASTING METALS. RICHARD CROSS and JAMES GABRIEL, Cleveland, Ohio. Filed Feb. 15, 1882. (No model.)

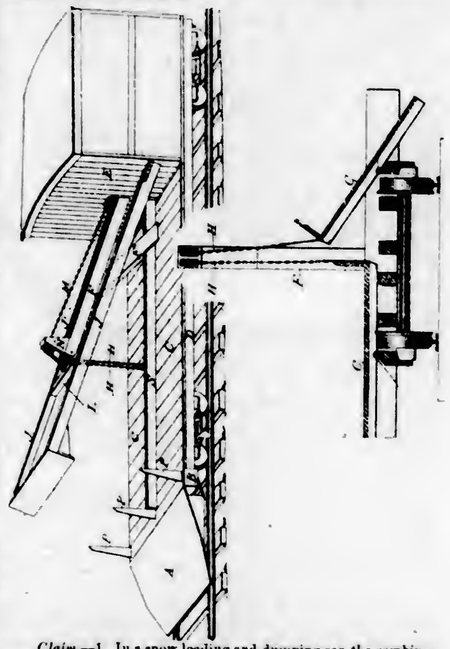


Claim.—1. In a mold prepared for casting metals, the circular chamber C, having the inlet B and outlet E in tangential directions and at different levels, and the vertical opening D, substantially as described.

2. In a mold prepared for casting metals, the combination of the inlet B, the circular chamber C, the opening D, the channel E, and the vertical channel F, substantially as described.

257,559. SNOW LOADER AND DUMPER. JAMES DAVIES, Mitchell, Dak., assignor of one half to John M. Washburn and Edward C. Currey, same place. Filed Dec. 31, 1881. (No model.)

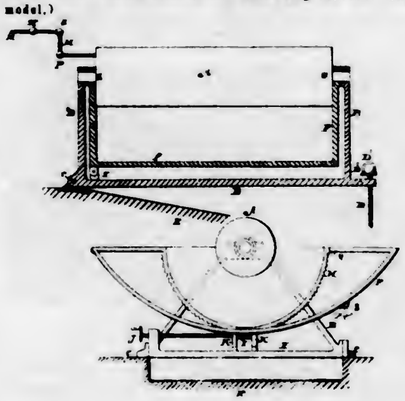
Brief.—A car is provided at one end with an inclosing shield and at the other with a plow and cutters. Pivoted platforms are adapted to be raised and lowered by chains secured to cross-beams of the platform and passing through rigid brace-pieces. A breaker consisting of beams hinged to the shield and joined at their forward end by a knife is arranged to be raised and lowered, to separate the mass from the drift.



Claim.—1. In a snow loading and dumping car, the combination, with a pivoted platform, C, raised and lowered by chains H, secured to the center of the cross-beams of the platform and passing through the rigid brace-piece F, of a breaker consisting of the beams J J', hinged to the shield E and actuated by a chain, M, passing over a roller supported on the rigid brace-piece F, substantially as described, and for the purpose set forth.

2. In a snow-car, as described, the combination of the pivoted platform-pieces C, the breaker-frame J J', pivoted to the shield E, and moving on each side of the brace F, said brace provided with pulleys for the passage of chains H M, actuating the platform and breaker-frame, and the plow A, cutters P, and inclosing-shield E, substantially as shown and described, and for the purpose set forth.

257,560. APPARATUS FOR UTILIZING SOLAR HEAT. GEO. W. DRIVSLER, San Francisco, Cal. Filed Aug. 12, 1881. (No model.)



Claim.—1. The combination of a reflector of the described shape with a heat-receiver of substantially cylindrical form, and mounted and adjusted upon the focal line of the reflector.

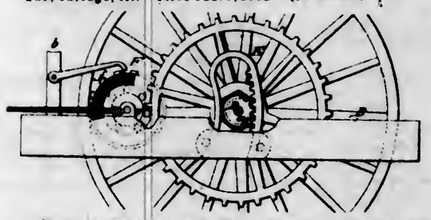
2. The combination of the parallel and cylindrical reflector F and heat-receiver A with the regulating devices composed of the screws D' D", crank D², hinges c, frame B, trunnion G, gear H, screw I, crank J, base E, orienting-bracket Q S, or other equivalent.

3. The combination of the jacket T, made of non-conducting material, with the heat-receiver A and reflector F.

4. The improved apparatus for concentrating and applying the heat-rays of the sun, consisting of a mirror straight in longitudinal direction, and of parabolic or equivalent curve in cross-section, adapted to concentrate the heat of the sun-rays on a focal line, in combination with the heat-receiver mounted on the axis of the mirror.

257,561. WITHDRAWN.

257,562. HARVESTER. ROBERT H. DIXON and JOHN F. STEWARD, Chicago, Ill. Filed Jan. 9, 1882. (No model.)

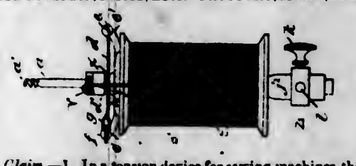


Claim.—1. In a harvester, the frame-work supported upon the drive-wheel by means of the segments E E', and the axle provided with pinions that roll therein, the gear C, for giving the pinions rotation, in combination with means for operating said gear located concentric with the segments, substantially as described.

2. The combination of the segments and the axle-pinions rolling therein with the gear C and pinion F, their radii being equal to the radius of the segment, and the axis of said pinion being coincident with the center of said segment, substantially as described.

3. The segments, the axle provided with pinions, the gear C, and the pinion F, located concentric with the segments, in combination with means for actuating them, substantially as described.

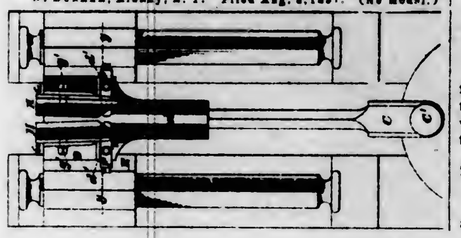
257,563. TENSION DEVICE FOR SEWING-MACHINES. WILLIAM DUCHEMIN, Boston, Mass. Filed Feb. 9, 1882. (No model.)



Claim.—1. In a tension device for sewing-machines, the transverse tension-spring d, adjusting-screw f, and groove x, arranged and located as and for the purpose described.

2. In combination, the revolving shaft a, having a central spiral-formed exit, a', the cross-bar b b, having the central boss, d', provided with the groove x, and arms c c, having the loops w r, the tubular shaft j, having the shoulder-plate h, with the lugs e' e', the set-screw e, adjusting-screw f, transverse tension-spring d, and block j', provided with the thumb-screw k and rod l, all arranged and located as and for the purpose set forth.

257,564. MACHINE FOR BEVELING CLOTH-BOARDS. JOHN W. DUNHAM, Albany, N. Y. Filed Aug. 8, 1881. (No model.)



Claim.—In a machine for scarfing or beveling cloth-boards, the combination of the reciprocating knife-stock D, having a perpendicular groove, d, horizontally-adjustable gages F, and the diverging and inclined knives H, as and for the purposes described.

257,565. WIRE STAPLE. PATRICK DUNN and THOMAS HARRIS, Côte Saint Paul, Quebec, Canada. Filed Dec. 13, 1881. (No model.)



Claim.—1. As an improved article of manufacture, a wire staple having the crown or head depressed or indented, as set forth, for the purpose described.

2. A wire staple having the crown or head depressed or notched, as described, and the points of the legs beveled on the outside, as shown, for the purpose set forth.

3. A wire staple having the crown or head depressed or notched and the extremity of the legs beveled downwardly from the outer to the inner side to form a point and prevent the legs spreading when driving.

4. A wire staple having the head or crown depressed or notched, one point cut beveling on the outside and the other cut parallel thereto and turned inwardly, as set forth, for the purpose described.

257,566. COMMUTATOR FOR MAGNETO-ELECTRIC MACHINES. ARTHUR H. RODY, Hartford, Conn. Filed Feb. 10, 1882. (No model.)



Claim.—1. In a commutator, the combination of the several insulated strips and the recessed head, into which they are forced and by which they are held together, substantially as described, and for the purpose specified.

2. In a commutator, the combination of the recessed head, the several strips having the shoulder b, the bolt F, and shaft D, substantially as described, and for the purpose specified.

3. In a commutator-strip, the body E and wearing-plate a, having their confronting sides made flat, as shown, and having the head of the deeply-slotted screw d sunk into the strip a nearly to the flat side of said strip, substantially as described, and for the purpose specified.

257,567. METHOD OF REMOVING IRON FROM FERRUGINOUS SALINE SOLUTIONS. CONSTANTIN FAHLBERG and CONRAD SEMPER, Philadelphia, Pa., assignors to John Harrison, Geo. L. Harrison, Jr., and Thomas S. Harrison, all of same place. Filed Nov. 23, 1881. (No specimens.)

Claim.—1. The method of removing iron from a ferruginous solution of the salt of a metal, alkali, or alkaline earth, which consists in treating said ferruginous solution with plumbic dioxide, either by adding said plumbic dioxide to said solution or by converting a neutral monobasic or polybasic salt of lead or an oxide of lead into plumbic dioxide in said solution.

2. The method of manufacturing sulphate of alumina or aluminous cake free, or almost free, from iron, which consists in treating ferruginous aluminous solutions with plumbic dioxide in the manner set forth.

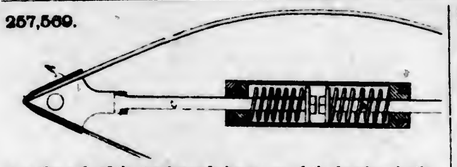
257,568. RECOVERY OF PLUMBIC DIOXIDE FROM FERRUGINOUS SOLUTIONS. CONSTANTIN FAHLBERG and CONRAD SEMPER, Philadelphia, Pa., assignors to John Harrison, Geo. L. Harrison, Jr., and Thomas S. Harrison, all of same place. Filed Nov. 23, 1881. (No specimens.)

Claim.—The process of purifying waste plumbic dioxide and ferric plumbate produced in the process of precipitating iron from ferruginous solutions, which consists in treating said waste mass with nitric or other acid or acid-salt, for the removal of the iron therefrom, as specified.

257,569. ELLIPTIC SPRING. HIRAM GARDINER, New York, N. Y. Filed Jan. 7, 1882. (No model.)

Claim.—1. The V-shaped sockets constructed and operating, as set forth, to conform to and hold the elliptical plates, and to se-

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cure the ends of the tension-rods by means of the bearings in the apex of the socket, and the bearing having the tapered opening across the base of the socket.

2. The V-shaped socket having an opening in its apex and a conical opening or seat in its base, in combination with a tension-rod having an upset or conical head adapted to be passed through the opening in the apex, and seated in the base, substantially as described.

3. The cylinder constructed in two parts, as described, with bosses cast on each end to receive thread and nuts to hold the two halves of the cylinder together, in combination with spiral spring E, truss-rods C, and knuckle A, all for the purposes set forth.

257,570. CHURN. JOHN GIFFORD, Watertown, N. Y. Filed Dec. 22, 1881. (No model.)



Claim.—1. The intermittingly-revolving vessel B, mounted upon anti-friction rollers, and having an intermittent movement imparted to it by the wheels F, F', and F², whereby the cream is dashed from side to side of the vessel when the movement takes place, substantially in the manner and for the purpose set forth.

2. The combination of the rectangular intermittingly-rotating vessel B and the wheels F F' F², dogs or ratchets F³ and F⁴, springs F⁵ and F⁶, pinion G, and connecting-rod F', for giving to the vessel B an intermittent rotative movement, substantially as and for the purpose set forth.

3. The combination of the automatically-operative and intermittingly-opening valve C, bent arm C', spring C², slotted plate C³, strip C⁴, projection C⁵, and the set-screw C⁶, the arrangement of the parts being substantially such as described, whereby they are made to ventilate the vessel B during the operation of churning, as set forth.

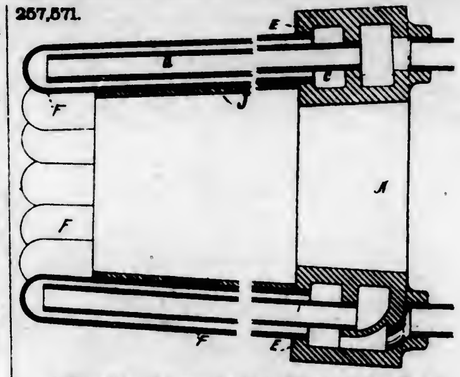
4. The combination of the vessel B, the hollow journal B', the pipe D, the eccentric D², and sliding valve D³, the parts being arranged for joint operation substantially as and for the purpose set forth.

5. The combination of the vessel B, the pipe D, the wire E', and bell E, the parts being arranged substantially as and for the purpose set forth.

257,571. TUYERE. PHIN. W. GORDON, Pittsburg, Pa. Filed Feb. 23, 1882. (No model.)

Claim.—1. The casting A, having two annular passages, B and C, each with an external connection, the closed pipes F, and the internal pipes, G, combined substantially as set forth.

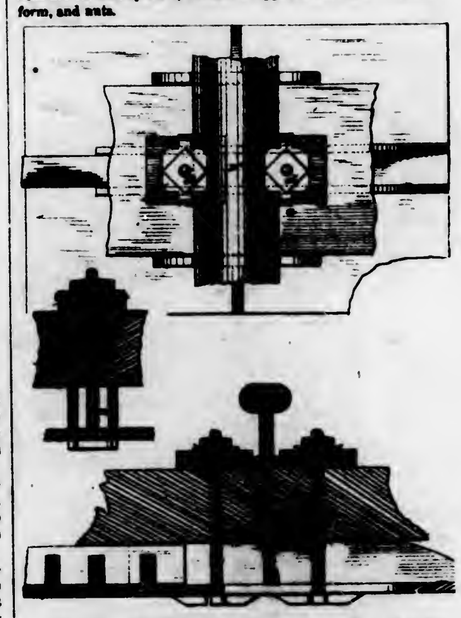
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2. The casting A, convergent pipes F, internal pipes, G, and inner shell, J, combined substantially as set forth.

257,572. RAILROAD CHAIR AND TIE. LEVI HAAS, Chester, Pa. Filed Feb. 15, 1882. (No model.)

Brief.—A bed-plate is provided with a rail-supporting seat consisting of right-angled crossing web and oblong socket and upright side pieces, the whole being constructed of one piece of metal. A notched tie rod or bar connects the chair-plates together. The rails are secured by bolts, washers of approximate concave-convex form, and nuts.

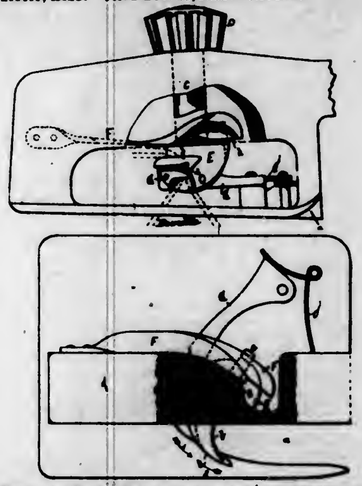


Claim.—1. The bed-plate having the right-angled crossing web and socket and the side pieces, in combination with the block, the track-rail, and means of fastening for connecting the whole together, substantially as and for the purpose set forth.

2. In a railroad structure, the bed-plate and the rail-support seat, consisting of right-angled crossing-web *a*, having oblong socket *a'*, with spaced-apart pieces *a²* and upright side pieces, *a³*, all combined and constructed of one piece of cast-iron, substantially as and for the purpose specified.

3. The combination of the base-plate having the right-angled crossing web and oblong socket provided with cross-pieces, and the side pieces, the base-block, the slotted or notched tie rod or bar, the chair-plates, the washers, concave-convex in shape, and having flanges, the headed and nutted bolts, and the rail, substantially as and for the purpose set forth.

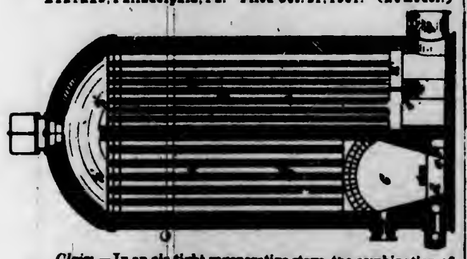
257,573. KNOT-TYER FOR GRAIN-BINDERS. PAUL HANSON, Rochester, Minn. Filed Nov. 25, 1881. (Model.)



Claim.—1. The knotter consisting of the head E, having the fixed barbed jaw *b* and the pivoted jaw *c*, in combination with the spring F, having the cam-surface *i* and a flat portion, *h*, adapted to act upon the jaw *c* to open it when the knotter is revolved in one direction and to close it when the knotter is reversed, substantially as set forth.

2. The knotter consisting of the head E, having the fixed barbed jaw *b* and the pivoted jaw *c*, in combination with the spring F, having the cam-surface *i* and a flat portion, *h*, adapted to act upon the jaw *c* to open it when the knotter is revolved in one direction and to close it when the knotter is reversed, and a spring-dog, G, for casting off the loop from the hooks, substantially as set forth.

257,574. REGENERATIVE STOVE FOR HEATING AIR. J. M. HARTMAN, Philadelphia, Pa. Filed Oct. 21, 1881. (No model.)



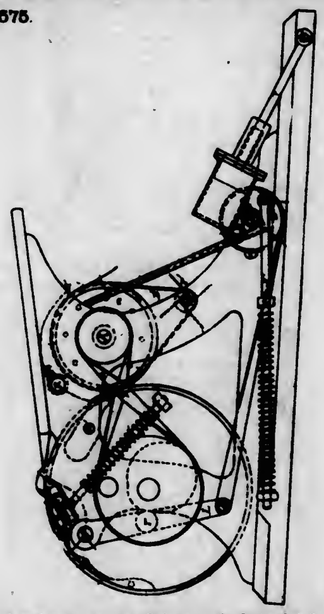
Claim.—In an air-tight regenerative stove, the combination of the combustion-chamber C at the bottom of the stove, the separate regenerator A above the combustion-chamber, the separate regenerator B, both constructed with vertical passages, and the division-wall *f*, projecting above the said regenerators, substantially as described.

257,575. SHEET-DELIVERY APPARATUS FOR PRINTING-PRESSES. JOHN T. HAWKINS, Taunton, Mass. Filed Nov. 26, 1880. (No model.)

Claim.—1. In a cylinder printing-press or other machine requiring a similar disposition or delivery of sheets of paper therefrom, the combination of frictional-surfaced sheet-driving wheels suitably spaced upon a common axis, and curved sheet-guides in contact with and conformed to the peripheries of said wheels and rigidly mounted upon a shaft above the same, all arranged and operating substantially as and for the purpose set forth.

2. In a cylinder printing-press or other machine requiring a similar disposition or delivery of sheets of paper therefrom, the combination of frictional-surfaced sheet-driving wheels suitably spaced upon a common axis, and curved sheet-guides in contact with and conformed to the peripheries of said wheels and rigidly mounted upon a shaft above the same, a revolving fan, a fly or delivery-frame consisting of an oscillating or vibrating hollow shaft having secured thereto hollow perforated bars or fingers, and provided with means, substantially as described, for forcing a current of air through perforations in said fingers, substantially as and for the purpose set forth.

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scribed, to force a current of air upon the last-printed side of each sheet of paper when discharged from between said wheels and guides, substantially as and for the purpose set forth.

3. In a cylinder printing-press or other machine requiring a similar disposition or delivery of sheets of paper therefrom, the combination of frictional-surfaced sheet-driving wheels suitably spaced upon a common axis, curved sheet-guides in contact with and conformed to the peripheries of said wheels and rigidly mounted upon a shaft above the same, a revolving fan, and an oscillating fly, all arranged and operating substantially as and for the purpose set forth.

4. In a cylinder printing-press or other machine requiring a similar disposition or delivery of sheets of paper therefrom, a fly or delivery-frame consisting of an oscillating or vibrating hollow shaft having secured thereto hollow perforated bars or fingers, and provided with means, substantially as described, for forcing a current of air through perforations in said fingers, substantially as and for the purpose set forth.

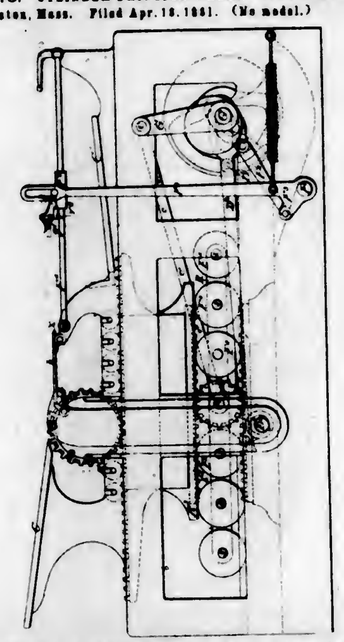
5. In a cylinder printing-press or other machine requiring a similar disposition or delivery of sheets of paper therefrom, in combination with a revolving fan, a fly or delivery-frame consisting of an oscillating or vibrating hollow shaft having secured thereto hollow perforated bars or fingers, and provided with means, substantially as described, for forcing a current of air through perforations in said fingers, substantially as and for the purpose set forth.

6. In a cylinder printing-press or other machine requiring a similar disposition or delivery of sheets of paper therefrom, in combination with a hollow fly-shaft having hollow perforated fingers, an air-pump connected thereto, whereby a current of air is forced through the perforations in said fingers during the forward or delivery oscillation of the fly, substantially as and for the purpose set forth.

7. In a cylinder printing-press or other machine requiring a similar disposition or delivery of sheets of paper therefrom, the combination of frictional-surfaced sheet-driving wheels suitably spaced upon a common axis, curved sheet-guides in contact with and conformed to the peripheries of said wheels and rigidly mounted upon a shaft above the same, an oscillating hollow fly-shaft provided with hollow perforated fingers, and an air-pump, all arranged and operating substantially as and for the purpose set forth.

8. In a cylinder printing-press or other machine requiring a similar disposition or delivery of sheets of paper therefrom, the combination of frictional-surfaced sheet-driving wheels suitably spaced upon a common axis, curved sheet-guides in contact with and conformed to the peripheries of said wheels and rigidly mounted upon a shaft above the same, a revolving fan, a hollow fly shaft provided with perforated fingers, and an air-pump, all arranged and operating substantially as and for the purposes set forth.

257,576. CYLINDER PRINTING-PRESS. JOHN T. HAWKINS, Taunton, Mass. Filed Apr. 18, 1881. (No model.)



Claim.—1. A printing-machine having an impression-cylinder geared directly and continuously to a reciprocating bed and alternately rotated thereby an equal distance in each direction, in combination with means, substantially as described, for taking a printed sheet head first from the top of the impression-cylinder and discharging said sheet partly during said cylinder's direct or printing rotation and partly during its retrograde or non-printing rotation, substantially as and for the purposes set forth.

2. In a cylinder printing-press, in combination with a reciprocating bed and an impression-cylinder geared thereto, so as to make a greater rotation than one complete revolution in each direction to a single stroke of the bed, a series of stripper-fingers and a series of traveling sheet-grippers, whereby the sheets are first partially delivered to and upon said fingers by said cylinder during a part of its forward rotation, and then during its retrograde motion removed by said grippers from said cylinder and fingers and completely delivered upon the fly-board, substantially as set forth.

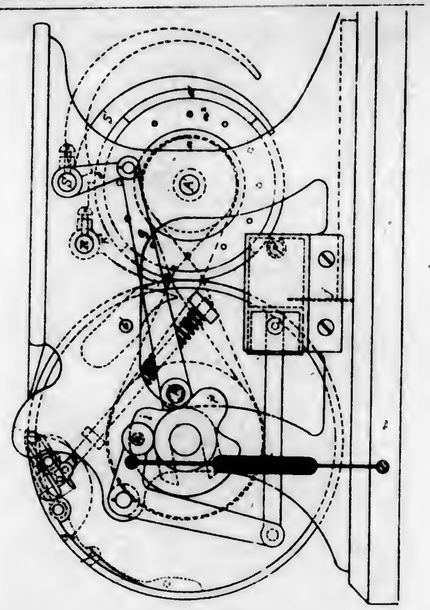
257,577. SHEET-DELIVERY APPARATUS FOR PRINTING-PRESSES. JOHN T. HAWKINS, Taunton, Mass. Filed Nov. 26, 1880. (No model.)

Claim.—1. In a cylinder printing-press or other machine requiring a similar disposition or delivery of sheets of paper therefrom, the combination of sheet-driving wheels, stationary sheet-guides, and movable sheet-guides, arranged and operating substantially as and for the purposes set forth.

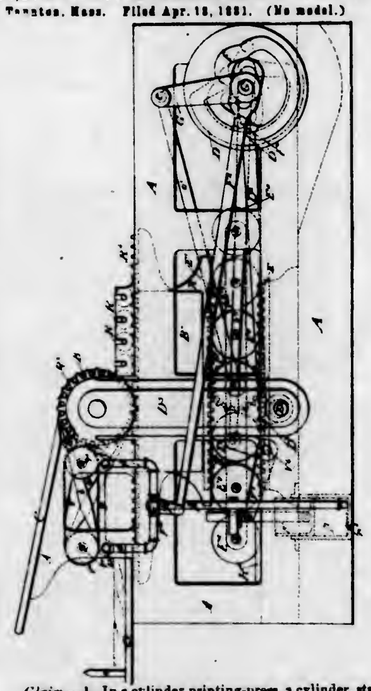
2. In a cylinder printing-press or other machine requiring a similar disposition or delivery of sheets of paper therefrom, sheet-driving wheels, and stationary and movable sheet-guides, in combination with means, substantially as described, to force a current or jets of air over or upon the sheets as delivered, substantially as and for the purposes set forth.

3. In a cylinder printing-press or other machine requiring a similar disposition or delivery of sheets of paper therefrom, the combination of sheet-driving wheels, stationary and movable sheet-guides, and an air-pump provided with a perforated discharge-pipe, all arranged and operating substantially as and for the purposes set forth.

4. In a cylinder printing-press or other machine requiring a similar disposition or delivery of sheets of paper therefrom, the combination of sheet-driving wheels, stationary and movable sheet-guides, a fly-board provided with sheet-stops, and means, substantially as described, to force a current of air over or upon the sheets in course of delivery, all arranged and operating substantially as and for the purposes set forth.



257,578. CYLINDER PRINTING-PRESS. JOHN T. HAWKINS, Taunton, Mass. Filed Apr. 18, 1881. (No model.)



Claim.—1. In a cylinder printing-press, a cylinder, stationary sheet-guides, frictional-surfaced sheet-driving wheels, and means for forcing two series of jets of air under the sheets of paper in the course of delivery, in combination with means for transmitting motion to said parts, as described, each movement being so timed in relation to the others that one series of air-jets is first forced against the surface of the cylinder under the tail edge of each sheet, and then the sheet is delivered tail first from the top of the cylinder to and between said sheet-guides and frictional-surfaced driving-wheels, and finally discharged upon another series of air-jets to the fly-board, all substantially as set forth.

2. In a cylinder printing-press, in combination with a reciprocating bed and an impression-cylinder provided with sheet-supporting fingers, and geared to said bed so as to make a greater rotation than one complete revolution of the cylinder to a single stroke of the bed in each direction, a series of stationary sheet-guides, sheet-driving wheels and jet-pipes, and means, substantially as described, for forcing air through said pipes, substantially as and for the purposes set forth.

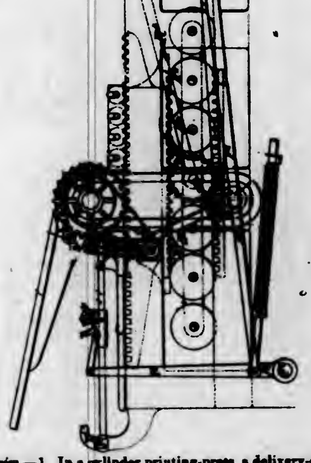
3. In a cylinder printing-press, the combination, with the cylinder, of means, substantially as described, for alternately forcing jets of air first under the delivery edge of the sheet to raise it from the cylinder, and then under the body of the sheet to float it in horizontal projection to the delivery-board, whereby the use of tapes, cords, and fly is entirely eliminated from the delivery mechanism, substantially as and for the purposes set forth.

4. In a cylinder printing-press, in combination with the cylinder and secured thereto, a series of stationary but adjustable sheet-supporting fingers, whereby the margin of the sheet is supported out of contact with the surface of the cylinder, thereby facilitating the delivery of the sheet, substantially as set forth.

5. In a cylinder printing-press, the combination, with the cylinder provided with a series of stationary but adjustable sheet-supporting fingers, of means for forcing jets of air against the surface of the cylinder between said fingers and under the sheet to be delivered, substantially as and for the purposes set forth.

6. In a cylinder printing-press, the combination, with a series of two or more jet-pipes, of means, substantially as described, for alternately forcing air-jets through said pipes, whereby the edge of the sheet to be delivered is first elevated by one series of jets preparatory to its delivery and the delivery completed by the support given to the sheet by another series of jets, substantially as and for the purposes set forth.

257,579. CYLINDER PRINTING-PRESS. JOHN T. HAWKINS, Taunton, Mass. Filed Apr. 18, 1881. (No model.)

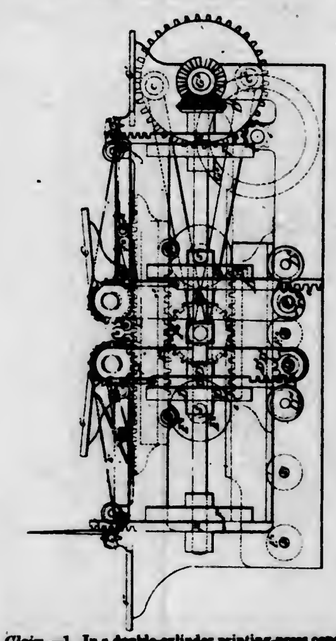


Claim.—1. In a cylinder printing-press, a delivery-cylinder, a series of oscillating stripper-fingers provided with rotary brushes and reciprocating or traveling sheet-grippers, in combination with means, substantially as described, for transmitting motion to said parts, each movement being so timed in relation to the others that each sheet is delivered tail first from the back and top of the cylinder upon said stripper-fingers, and thence seized and the delivery of the sheet completed by said grippers, substantially as and for the purposes set forth.

2. In a cylinder printing-press, in combination with a reciprocating bed and an impression-cylinder and geared to said bed, so as to make a greater rotation than one complete revolution of the cylinder to one stroke of the bed in each direction, a series of oscillating stripper-fingers provided with rotary brushes, and reciprocating or traveling sheet-grippers situated at the back of the cylinder, substantially as and for the purposes set forth.

3. In a cylinder printing-press, in combination with its cylinder, a series of oscillating or vibrating sheet stripper-fingers, a series of rotary brushes, and means, substantially as described, for imparting motion to said parts, whereby the edge of each sheet is elevated and stripped from the cylinder, substantially as set forth.

257,580. DOUBLE-CYLINDER PRINTING-PRESS. JOHN T. HAWKINS, Taunton, Mass. Filed Apr. 18, 1881. (No model.)



Claim.—1. In a double-cylinder printing-press constructed to print one side of a sheet for each single stroke of a reciprocating type-bed, two impression-cylinders geared continuously to and alternately rotated in the same direction by said bed, in combination with means, substantially as described, for delivering the sheets from each cylinder, whereby each sheet is delivered from its respective cylinder tail first as the cylinder retrogrades, and without contact of its last-printed side with any part of the delivery mechanism, substantially as and for the purposes set forth.

2. In a printing-press provided with a reciprocating type-bed, the combination, with said bed, of a reciprocating counter-balance or counter-weights and means, substantially as described, for causing said counter-balance to move in opposition to said bed and attached parts, said counter-balance being thus caused to equilibrate the momentum of the type-bed and other reciprocating parts of the machine, all substantially as set forth.

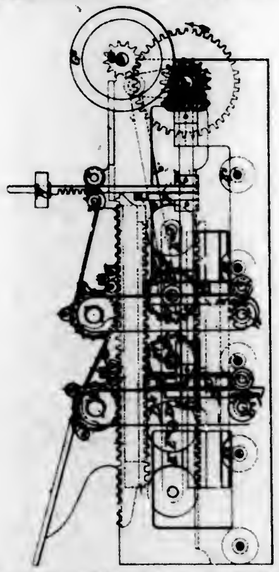
3. In a printing-press provided with a reciprocating type-bed, the combination, with said bed, of a reciprocating counter-balance provided with a pocket or pockets for holding an additional weight or weights, and means, substantially as described, for causing said counter-balance to move in opposition to said bed, whereby the momentum of the bed is equilibrated and the inertia and momentum of the counter-balance varied at will, substantially as and for the purposes set forth.

4. In a double-cylinder printing-press constructed to print one side of a sheet for each single stroke of a reciprocating type-bed, two impression-cylinders geared to and alternately rotated in the same direction by said bed, and a reciprocating counter-balance, in combination with pinions rolling between fixed racks, and

racks upon the bed and counter-balance, and connected to opposite cranks for actuating said pinions, bed, and counter-balance, whereby a higher speed of press is obtained than in presses otherwise constructed, as hereinbefore described, all substantially as and for the purposes set forth.

5. In a cylinder printing-press, an impression-cylinder provided with a flexible or yielding sheet-supporting blade and bearing-surfaces, as described, in combination with a type-bed provided with a pair of bearers corresponding to but wider than said bearing-surfaces on the cylinder, and engaging said sheet-supporting blade at the moment the cylinder makes the impression at that point, thereby bringing the blade in close contact with the cylinder, whereby said blade is caused to support the tail of the sheet and keep it raised from the surface of the cylinder for purposes of delivery, except at the point of contact indicated, when the blade is pressed close to the cylinder, clear of the type-surface and chase or furniture of the bed, substantially as set forth.

257,581. PERFECTING PRINTING-PRESS. JNO. T. HAWKINS, Taunton, Mass. Filed Apr. 16, 1881. (No model.)



Claim.—1. In a perfecting printing-press, in combination with one reciprocating type-bed carrying two forms, two impression-cylinders geared to and continuously rotated in opposite directions by said bed, and arranged, substantially as described, so that one cylinder takes the sheet at or near its top when practically at rest for printing the first side of the sheet, and the other cylinder takes the sheet at or near its bottom when practically at rest, as delivered from the top of the first cylinder, for printing the second side of the sheet, substantially as and for the purposes set forth.

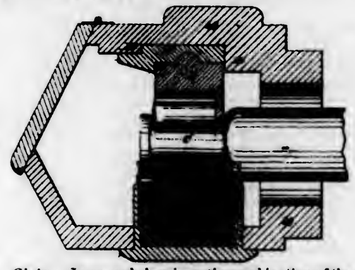
2. In a perfecting printing-press, in combination with one reciprocating type-bed carrying two forms, two impression-cylinders and two sets or series of fingers or strippers, all arranged and operating, substantially as described, so that one cylinder delivers each sheet head first from its upper side to and upon one set of said fingers or strippers inclined to the lower side of the other or second cylinder, whence the sheet is taken by the second cylinder and delivered tail first upon the second set of fingers or strippers, substantially as and for the purposes set forth.

3. In a perfecting printing-press, in combination with one reciprocating type-bed carrying two forms, one or more reciprocating weights provided with a rack or racks, and one or more gear-wheels running upon a stationary stud or studs and geared intermediately to said rack, and a rack or racks attached to the type-bed, said weights being so proportioned as to equilibrate the moments of the reciprocating bed and attached parts, substantially as set forth.

4. In a perfecting printing-press constructed to print from two forms upon a reciprocating type-bed, in combination with two impression-cylinders continuously geared to and rotated by said bed, an automatic feeding and sheet-cutting apparatus, consisting of sheet-cutting cylinders d^{11} and d^{12}, the pressure or feeding roller j^2, the strippers or fingers d^{14}, the tape-rollers j^7 and j^8, their tapes k^3, and the lifting pressure or feed rollers j^9, whereby paper in the roll is automatically fed in the machine, cut into sheets, and said sheets fed by the first-impression cylinder, substantially as set forth.

5. In a cylinder printing-press, in combination with cylinder-grippers provided with cam-shaped hubs, sheet-lifter fingers consisting of thin slotted blades resting upon said hubs, whereby the sheet is gripped between the upper face of the sheet-lifter fingers and the lower face of the grippers and the edge of the sheet lifted from the cylinder's surface by the operation of the grippers, substantially as and for the purposes set forth.

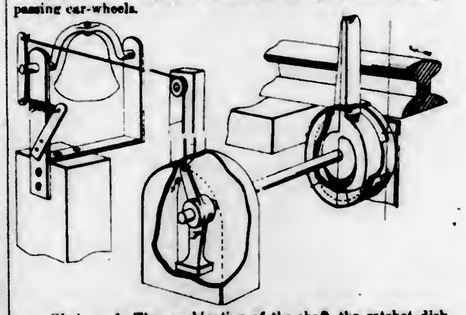
257,582. CAR-AXLE BOX. MARSHALL HAYDEN, New Milford, Pa. Filed Dec. 24, 1881. (Model.)



Claim.—In car-axle bearings, the combination of the saddle I, provided with separate cells for the anti-friction rollers, and having a projecting head on top, with the plate F, provided with a hollow to correspond with the projections on saddle I and the recess in the axle-box A, substantially as and for the purpose described.

257,583. SIGNALING APPARATUS FOR RAILROAD-CROSSINGS. JAMES H. HAYES, Corro Gordo, Ill. Filed Oct. 17, 1881. (No model.)

Brief.—A signal is operated through connection with a counterweighted shaft carrying a ratchet, which is engaged by a weighted operating-lever, which is disengaged from said ratchet after a partial revolution, and is automatically returned to a vertical position to re-engage the ratchet when again acted upon by passing car-wheels.



Claim.—1. The combination of the shaft, the ratchet-disk thereon, the vibratory operating-lever co-operating with the ratchet-disk, and weighted to bring it back to normal position, and a stop for disengaging the lever from the ratchet-disk at the proper time, substantially as described.

2. The combination of the shaft, the ratchet-disk thereon, and the vibratory operating-lever co-operating with the ratchet-disk, and weighted to bring it back to normal position, with a stop for automatically disengaging the lever from the disk, and means for automatically resetting the shaft and its disk after they have been released from the operating-arm, substantially as described.

3. The combination of the shaft, the ratchet-disk thereon, and the vibratory operating-lever co-operating with the ratchet-disk, and weighted to bring it back to normal position, with a stop for disengaging the lever from the disk, means for resetting the shaft and disk, and a signaling device operated by the rocking of the shaft, substantially as described.

4. The combination of the shaft, the ratchet disk, thereon, the vibratory operating-lever co-operating with the ratchet-disk, as described, and weighted to bring it back to normal position, and a stop for disengaging the lever, with the weighted resetting-lever and a signaling device connected to the resetting-lever, substantially as set forth.

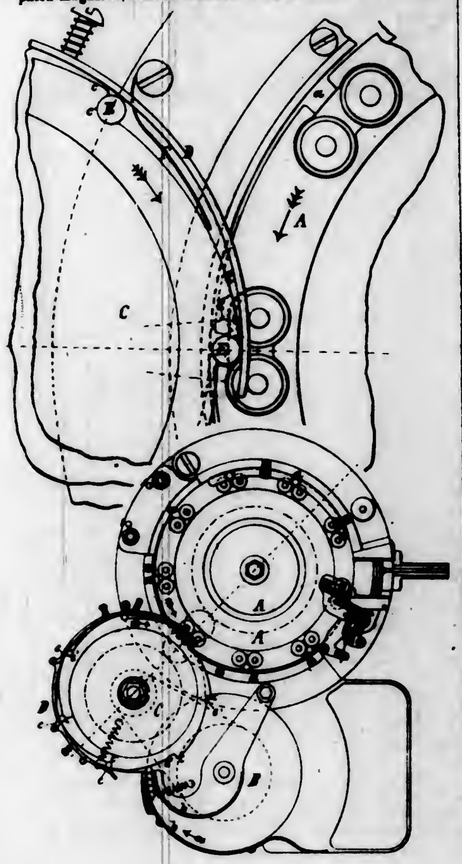
5. The combination of the shaft, the ratchet-disk thereon, the vibratory operating-lever co-operating with the disk, as described, a stop for disengaging the lever, the weighted resetting-lever for bringing the shaft back to normal position, the bell, and the connecting-cord and spring, substantially as set forth.

6. The combination of the shaft, a series of ratchet-disks mounted thereon, and a series of operating-levers co-operating with said disks, as described, with means for disengaging said levers from said disks, means for resetting the shaft after each partial rotation, and a signaling device operated from the shaft, whereby the operating of any one of the operating-levers will cause the shaft to be rocked and the signal to be made without the disturbance of any of the other levers, substantially as described.

7. The combination, with the racket-disk, the lever, and the casing, of the guard moving with the lever for preventing the entrance of dirt, water, &c., into the casing, substantially as described.

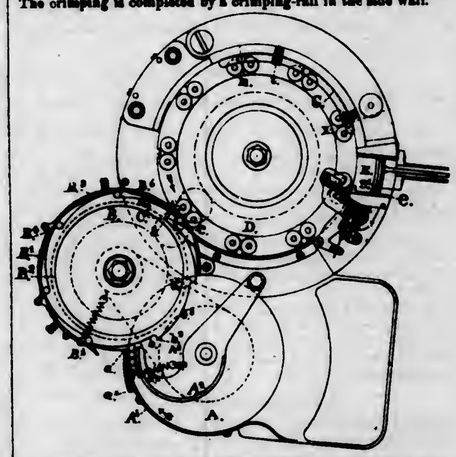
257,584. BULLET-PATCHING MACHINE. ALFRED C. HOBBS, Bridgeport, Conn., assignor to the Union Metallic Cartridge Company, same place. Filed Feb. 18, 1882. (No model.)

Brief.—An ordinary feed-disk carries the bullets against a toothed wheel, by which they are carried around in a plane overlapping another disk, denominated a "patcher-disk," which rotates in the opposite direction, and has recesses in its periphery which register with the teeth of the first disk, so that the bullets pass into said recesses during the continuous movement of the two disks. Two cylinders or drums having independent rotative movement on their own axes are arranged in each recess of the patcher-disk, by which the bullet is caused to rotate on its axis as it passes the patch-magazine, which is located in the guard-wall of the machine.



257,585. BULLET-PATCHING MACHINE. ALFRED C. HOBBS, THEODORE V. BOWERS, and CHARLES R. RICHARDS, Bridgeport, Conn., assignors to the Union Metallic Cartridge Company, same place. Filed Feb. 9, 1882. (No model.)

Brief.—An ordinary feed-disk supplies the bullets to a carrier, by which they are carried around into recesses in the periphery of a continuously-rotating disk, which carries them past a magazine of patches in the side wall of the machine. In the said recesses are friction-rollers, which have independent rotation upon their own axes, by which the bullets are rotated as they pass the magazine. After the patch is wound upon the bullet a projecting bar partially crimps in the part which projects beyond the base. The crimping is completed by a crimping-rail in the side wall.



Claim.—1. In a bullet-patching machine substantially such as described, a horizontally-rotating disk provided with recesses in its periphery, in combination with a table or other support for a bullet in proximity to the periphery of the rotating disk, and a suitably-moving carrier or pusher for imparting to the bullet a sidewise bodily movement in a path bisecting the circle described by the periphery of the rotating disk for the purpose of depositing the bullet in one of the said recesses without arresting or interfering with the continuous rotation of the disk.

2. The patching-machine disk D, provided with the recesses *d* in its periphery, in combination with the hooked or ratchet-toothed wheel B and the stationary cam *e*, arranged and operating substantially as and for the purpose set forth.

3. The patching-machine disk D, provided with the recesses *d* in its periphery, in combination with the friction feed-dial A, for arranging and presenting a series of bullets in column, and a suitably-moving carrier or pusher for moving the bullets from the end of each column and carrying them along the face of a stationary guide, by which they are forced sidewise into the recesses *d* while the disk D is continuing its rotation.

4. The continuously-rotating transfer-wheel B, provided with the teeth *b*, and with the circumferential groove C, in combination with the stationary tangential cam *e*, and the continuously-rotat-

ing patching-machine disk D, provided with the recesses *d*, substantially as and for the purpose set forth.

5. The yielding end section, *a*, of the outer guide-wall of the friction-dial A, in combination with a suitably-moving carrier or pusher for moving aside successively the end bullets of the column fed forward by the friction-dial, substantially as shown and described.

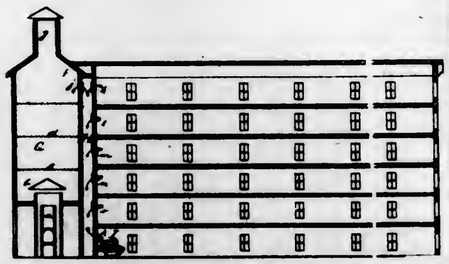
6. A magazine for holding a package of paper slips or bullet-patches, in combination with a rotating disk adapted to roll a bullet across the face of the magazine, and an agitator for transversely rubbing back and forth the edges of the paper slips for the purpose of preventing the adhesion of the superposed slips to each other.

7. The finger *e'*, arranged to bear lightly upon the outer stratum of paper slips or patches contained in the magazine, and connected with the spring-bar *e*, the end *e²* of which projects partially across the path of the bullets as they are successively rolled along by the rotating disk D, as and for the purpose set forth.

8. In combination with bullet-patching mechanism substantially such as described, the tucker F, operated by means of the cam F', for tucking or folding part of the downwardly-projecting patch under the base of the bullet, and thus preparing the lower part of the patch for the action of the eccentric crimping-rail, by which the remainder of the downwardly-projecting patch is crimped upon the base of the bullet.

9. In combination with the rotating patcher-disk D, the magazine E, provided with the follower E', and with the inclined side wall, E², for bearing with elastic pressure upon the tail ends of the mass of slips contained in the magazine.

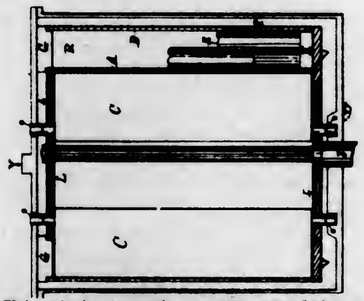
257,586. MALT-HOUSE. LOUIS C. HUCK, Chicago, Ill. Filed Mar. 20, 1882. (No model.)



Claim.—1. The malt-kiln house G, having ventilator-stack *g*, with damper *h*, in combination with flue H, exhaust-fan I, and vent *j*, all arranged substantially in the manner and for the purpose set forth.

2. In malting establishments, the vertical flue H, connected with a suction-fan and communicating through vents with the several compartments above the malt-kiln floors, and with all the growing-floors of the malt-house, all substantially as and for the purpose set forth.

257,587. ROTARY ENGINE. SALMON D. JONES, Raritan, N. J. Filed July 7, 1881. (Model.)



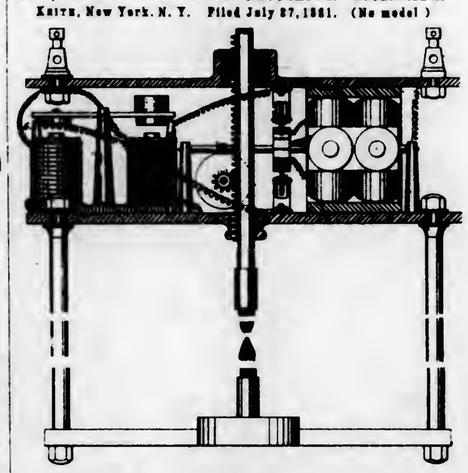
Claim.—1. A rotary engine or pump composed of two cylinders placed concentrically one within the other, and secured at one end the same end to a disk or head, and having between them a single continuous annular chamber for pressure, said cylinders being constructed to revolve simultaneously and together, the outside cylinder revolving around the abutment in said annular chamber and the periphery of the inside cylinder against the abutment substantially as and for the purposes described.

2. A rotary engine or pump composed of the two cylinders A and B, placed concentrically one within the other, having between them the single continuous annular chamber R, and both cylinders being secured at one and the same end to a single head, V, and constructed to revolve, as described, around an abutment, the inside cylinder, A, being provided with the sliding wings C, having the studs I and rollers O, and the wings being operated by means of the cams D, placed as described, and for the purposes set forth.

3. In a rotary engine or pump, a roller-abutment constructed to be attached, in the manner described, to the packing-ring G or to the stationary head T, and composed of two or more rollers, and of the frame-work, substantially as and for the purposes described.

4. A rotary engine or pump composed of the two cylinders A and B, placed concentrically one within the other, and secured at one and the same end to the single head V, and having at the other end the stationary head T, provided with the ports F and S, which is secured to the packing-ring G, attached to an abutment, the single continuous annular chamber R, the cams D, situated as described, and the wings C, provided with studs and rollers, substantially as described.

257,588. ELECTRIC-LIGHT REGULATOR. NATHANIEL S. KEITH, New York, N. Y. Filed July 27, 1881. (No model.)



Claim.—1. The combination of a carbon-carrier, an electric motor gearing with said carrier, so as to control its movement in both directions, said motor being placed in a derived or branch circuit, devices, substantially as described, for reversing the direction of movement of that portion of the motor-train which engages with the carrier, and two regulating or controlling electro-magnets operating said reversing devices, one of said magnets being placed in a derived circuit to the carbons and the other in the main or principal circuit with said carbons.

2. The combination of a carbon-carrier, an electric motor geared thereto and placed in a derived or branch circuit, circuit-closing devices for reversing the movement of the electric motor, and two regulating or controlling electro-magnets for operating said circuit-closing devices, one of said magnets being placed in a derived circuit to the carbons and the other in the main or principal circuit with the carbons.

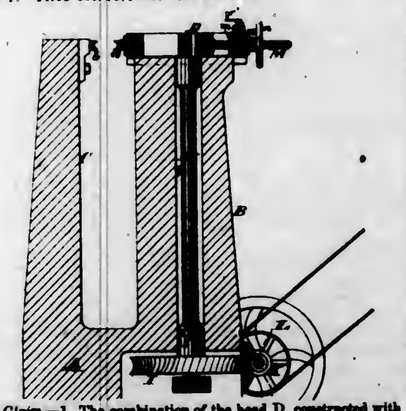
3. The combination, substantially as described, of a carbon-carrier, an electro-magnetic motor gearing with the carrier and provided with two commutator wheels or brushes bearing upon its commutator-cylinder in the manner set forth, said motor being placed in a derived or branch circuit, and devices, substantially as described, which close the circuit to one or the other of the commutator-brushes, so as to reverse the direction of rotation of the motor.

4. The combination, substantially as described, of a carbon-carrier, an electro-magnetic motor in a branch or derived circuit, geared to said carrier, a two-point circuit-closer controlled by a regulating electro-magnet, and circuit-connections, as described from said circuit-closer to independent commutator wheels or collectors upon the motor, whereby the direction of rotation of the motor may be reversed.

5. The combination of a carbon-carrier, a propelling electro-magnetic motor in a branch or derived circuit, provided with a commutator-cylinder, and independent commutator wheels or collectors, applied in the manner described to said commutator-cylinder, so that the motor may be made to revolve in either direction by closing the circuit through one or the other of said collectors, a circuit-closer joined to the collectors, opposing electro-magnets in the main or principal circuit and in a derived circuit to the arc, substantially as described.

6. The combination, substantially as described, of a carbon-carrier, an electro-magnetic motor in a derived circuit, provided with independent commutator brushes or collectors, and a pivoted armature-lever, main and derived circuit electro-magnets acting upon said lever, and circuit-connections, as described, the whole so arranged that when the attraction of the main-circuit magnet preponderates the circuit of the motor is closed through one of the collectors and the motor revolves in one direction, while, vice versa, when the attraction of the derived-circuit magnet preponderates the circuit is closed through the other collector and the motor revolves in the opposite direction.

257,589. RIVETING-MACHINE. ROBERT KENT, Brooklyn, N. Y. Filed Oct. 18, 1881. (No model.)

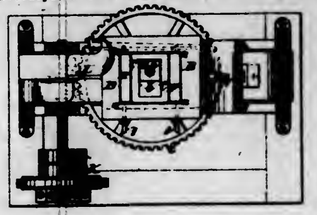


Claim.—1. The combination of the head D, constructed with the opening *a*, the block E, having the opening *d* and the threaded stem M and placed in the opening *c*, the crank-block G, placed in the opening *d* of the block E, the crank F, working through a suitable socket or bearing in the crank-block G, the nut N, working in the bearing provided to the head D, the punch *a*, attached to the head D, and the die *b*, coincident with the punch *a*, the said parts being constructed and arranged for joint use and operation substantially in the manner herein described, for the purpose specified.

2. The combination of the tightening-screw *r*, the flanged collar N, the block E, having the threaded stem M, the crank-block G, crank F, and head D, carrying the punch *a*, the said parts being constructed and arranged substantially in the manner herein described, for the purpose specified.

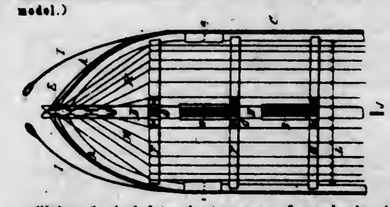
3. The reciprocating head D, having the punch *a*, constructed with the plate R, marked to the gage S, the index U, and the die *b*, placed axially coincident with the punch *a*, all substantially as and for the purpose herein set forth.

257,590. CUTTING AND PUNCHING MACHINE. ROBERT KENT, Brooklyn, N. Y. Filed Oct. 19, 1881. (No model.)



Claim.—1. The combination of the head B, constructed with the opening *a*, the block C, placed within the opening *a* of the head B, the crank-block D, placed within the opening *b* of the block C, the crank *c*, working through a suitable bearing in the block D, and the bars F, pivoted, as described, to the head B at opposite sides of the block C, the whole constructed and arranged for joint use and operation, substantially as and for the purpose herein set forth.

257,591. SECTIONAL BOAT-FRAME. CHARLES L. KING and CHARLES W. KING, Kalamazoo, Mich. Filed Sept. 28, 1881. (No model.)



Claim.—1. A skeleton boat or canoe frame having its keel and gunwale made in sections adapted to be detachably fitted together and to the ribs, in combination with a cord strained under the keel in the direction of its length and detachably secured at both ends of the same, and a cord strained around the gunwale at each side of the boat and having its ends detachably secured to the bow and stern of said boat, as and for the purpose specified.

2. In combination with a boat or canoe frame having its gunwale and keel made in sections detachable from each other and from the ribs and straining-cords for holding the whole together, as described, a series of cords, H, passing around said frame, and the fastenings *b*, for securing said cords for the purpose of providing a support for a canvas or other covering, substantially as described.

3. In combination with a boat-gunwale made in sections detachably secured together and to a sectional keel and ribs, the cord I, passing entirely around said gunwale and tightly strained around the same in a groove in its outer surface or in its fastening-clips by means substantially as described, as and for the purpose specified.

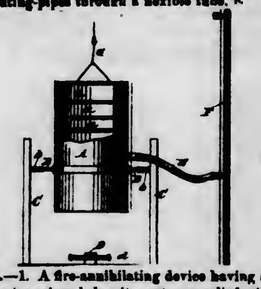
4. In a boat made in sections, the sectional keel B, detachably connected to the ribs and gunwale, in combination with the cord J, strained around the under surface of said keel in the direction of its length, and a suitable fastening device for securing its ends, substantially as described.

5. In a boat made in sections adapted to be detachably fitted together and secured by cords, as described, and in combination with the meeting ends of said sections, the clips *a*, fitting on said meeting ends and having grooved or recessed outer surfaces for the purpose of holding the fastening-cords, substantially as described.

6. In a boat-frame made in sections adapted to be detachably secured together, and in combination with the cords I J, grooved clips *a*, and the hook-plates E, for fastening the sections in place, the notched ribs G, and the cords H, fitting in the notches in said rib, substantially as and for the purpose specified.

257,592. FIRE-ANNIHILATOR. ISIDOR KITSEE, Cincinnati, Ohio. Filed Jan. 17, 1882. (No model.)

Brief.—The generator A is hung below its center and held in an upright position by wire having fusible points, which, when released, permits the generator to be agitated, and the gas passes to the distributing-pipes through a flexible tube, F.



Claim.—1. A fire-annihilating device having a swinging vessel hung on trunnions below its center, supplied with chemicals in separation, and having a flexible eduction-pipe, substantially as described.

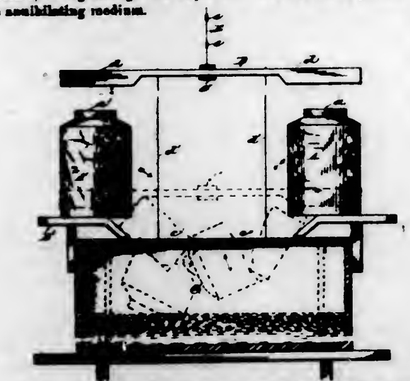
2. In a fire-annihilating device operated by melting of fusible connections, a swinging generator, A, having flexible eduction-pipe E, said generator being provided below its center with trunnions B B, mounted on standards C C, and adapted to automatically invert and swing to and fro by action of springs *b b*, surrounding said trunnions, in combination with the spring *d*, substantially as described.

3. In a fire-annihilating device, the combination of a swinging generator, hung below its center, supplied with chemicals in separation, and having a flexible eduction-pipe, with a distributing-pipe provided with eduction-openings, substantially as described.

4. The combination, in a fire-annihilating device, of the swinging generating-vessel A, with fusible connections G, eduction-pipe E, distributing-pipe F, and post D, having spring *d*, substantially as described.

257,593. FIRE-ANNIHILATOR. ISIDOR KITSEE, Cincinnati, Ohio. Filed Nov. 25, 1881. (No model.)

Brief.—When the temperature of the apartment in which the device is kept is raised by the incipient fire the fusible solder is melted, and the bar D, having weighted ends *d*, descends on the rods *d'* and fractures by contact the friable vessels A, containing the chemicals necessary to generate the extinguishing-gas, whose contents, falling through the trap *c'* into the reservoir *c*, produce the annihilating medium.



Claim.—1. In an automatic fire-extinguisher, friable vessels supplied with chemicals which, when commingled, form a fire-extinguishing gas or vapor, and a generating-reservoir to receive the contents of said friable vessels, in combination with weights held suspended by fusible connections, substantially as described.

2. In an automatic fire-extinguisher, the friable vessels A A', the receiving-generator C, having traps *c' c'*, in combination with depending rods *d' d'*, and the bar D, having weighted ends *d d*, held suspended by means of fusible connections, the melting of which is adapted to cause the weighted arm to fall, thereby breaking the friable vessels A A' and emptying their contents into the generating-reservoir, substantially as described.

257,594. FIRE-ANNIHILATOR. ISIDOR KITSEE, Cincinnati, Ohio. Filed Dec. 12, 1881. (No model.)

Brief.—Heat affecting the fusible cord B will cause the loosely-covered vessels C, containing the chemical reagents, to be tilted into the reservoir A, where their contents unite to form a fire-extinguishing gas, which escapes through the opening A'.

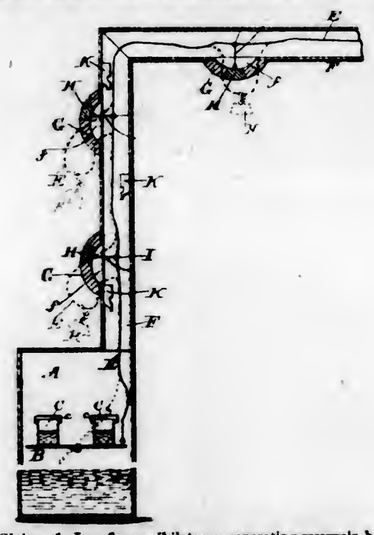


Claim.—1. In an automatic fire-annihilator, a generating-reservoir supplied with a chemical reagent, having eduction-openings and provided with an interior weighted tilting device sustained horizontally by fusible connections, said device being provided with loosely-covered independent vessels holding chemical reagents in separation, substantially as described.

2. In an automatic fire-extinguisher, the generating-reservoir A, having eduction-openings A', in combination with the fusible wire B and independent loosely-covered vessels C, supplied with chemical reagents, substantially as described.

257,595. FIRE-ANNIHILATOR. ISIDOR KITSEE, Cincinnati, Ohio. Filed Dec. 31, 1881. (No model.)

Brief.—By the heat melting the retaining material G the weight H drops, and by pulling on cord E tilts the platform B, upon which are covered receptacles C, containing chemical reagents, which, mixing in tank A, generate the fire-extinguishing gas, which rushes up pipe F, sounding the alarm-whistles K in its passage, and out the opening *f* to extinguish the fire.



Claim.—1. In a fire-annihilator, a generating-reservoir having a tilting shelf held in position by a retaining-cord provided with independent branch cords, said branch cords having end weights embedded within fusible substance, substantially as described.

2. In a fire-annihilator, a generating-reservoir having a tilting shelf supplied with vessels containing chemical reagents in separation, suspended by a cord having independent sliding branch cords, each of said branch cords having a terminal weight embedded within fusible substance, substantially as described.

3. In a fire-annihilating device, a conduit-pipe connected with and opening into a generator having openings sealed with fusible caps, as and for the purpose specified, substantially as described.

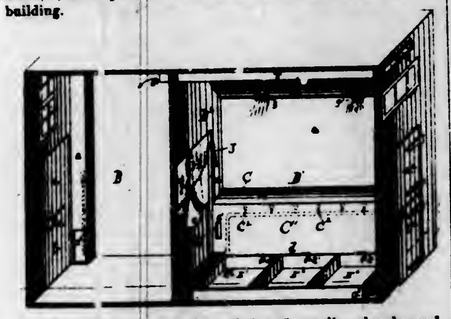
4. In a fire-annihilator, a conduit-pipe opening into and connected with a generating-reservoir, said conduit-pipe provided with interior sounding-whistles, substantially as described.

5. In a fire-annihilating device, a conduit-pipe connected with and opening into a generating-reservoir having openings sealed with fusible caps, said fusible caps retaining weights connected to a cord within said pipe, as and for the purpose intended, substantially as described.

6. The combination, in a fire-annihilating device, of a generating-reservoir, A, provided with a tilting shelf, B, and vessels C, supplied with separate chemicals, adapted, when brought into contact, to generate a fire-extinguishing gas, with a conduit-pipe, F, having openings *f*, closed with fusible seals G, which seals retain in position weights H, said pipe F being further provided with internal sounding alarm-whistles, K, cord E, and branch cords *e*, as and for the purpose intended, substantially as described.

257,596. STOCK-BATH. JAMES H. LEA HERN, New York, N. Y. Filed Jan. 21, 1882. (No model.)

Brief.—The bathing and cooling chambers B' B are adapted for the use of stock. In the former they can receive either hot-air, vapor, or cold-water baths. The boilers D D' D² D³, heated by gas-jets C³, supply the warmth, and reservoir G, having the sprinklers *g g'*, the water. The curtained half doors allow the animal to have his head outside when so desired, and the sectional tube E' E² E³ allow giving the animal foot or hip baths. Ventilators *e, e'*, and F permit free circulation of air to the interior of the building.



Claim.—1. A stock-bath consisting of a cooling-chamber and bathing-chamber, the bathing-chamber constructed with double walls, having gas-jets and boilers arranged between the walls, and double doors provided with drop cloth or cloths on their upper part, and having suitable ventilators, substantially as and for the purpose specified.

2. The combination of the bathing-chamber constructed with double doors, having its lower part or floor made into sectional tube, the water-supply pipe provided with faucets, and the waste-pipe, substantially as and for the purpose set forth.

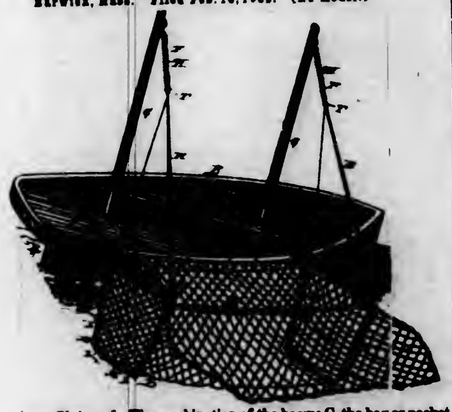
3. The double doors *a b*, the top section, *a*, having a projection, *c'*, and the bottom section, *b*, a corresponding recess, *c*, in combination with drop-cloths H and cord and pulley J, substantially as and for the purpose set forth.

4. A stock-bath consisting of a bathing-chamber provided with double doors, having drop cloth or cloths, with a water-tank provided with a suitable supply-pipe, and having rose-sprinklers, substantially as and for the purpose set forth.

5. In a stock-bath, the combination of the cooling-chamber and bathing-chamber, the bathing-chamber being constructed with double walls, having gas-jets arranged between the walls, double doors provided with drop cloth or cloths on their upper part, having suitable ventilating-shafts, with the sectional tube in its lower part provided with supply and waste pipes, and the water-tank provided with shower and spray sprinklers, substantially as and for the purpose set forth.

6. The ventilator extending entirely across the upper part of the bathing-chamber, having one end in the cooling-chamber and the other end entirely outside of the bathing-chamber, and provided with suitable discharge trap-doors for regulating the temperature in the bathing-chamber, substantially as and for the purpose set forth.

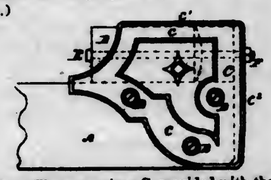
257,597. FISHING APPARATUS. SAMUEL H. LOSS, West Harwich, Mass. Filed Feb. 10, 1882. (No model.)



Claim.—1. The combination of the booms C, the bag or pocket D, the blocks I T U, ropes H, and coiled springs F, all arranged and operating substantially as and for the purpose set forth.

2. The combination, with the vessel A, of the booms C, the bag or pocket D, attached to said booms and to the side of the vessel, and having rings or eyes M, and the ropes L, attached to the outer ends of the booms, reeved through the eyes M, and having their inner ends secured adjustably to the deck of the vessel, as set forth.

257,598. DEVICE FOR STRETCHING RED-BOTTOMS. IMMANUEL LORENZEN, Hartford, Conn., assignor to the Peerless Wire Mattress Company, same place. Filed Apr. 10, 1882. (No model.)



Claim.—The corner-iron C, provided with the flange C' above and parallel to the top of the side bar, A, and the flange C² at right angles to said side bar, in combination with the side bar, A, the sliding end bar, B, and the bolt and nut E F, substantially as described.

257,599. IRON FENCE-POST. ANDREW H. LUCAS, St. Louis, Mo., assignor of one-half to L. F. Prince, same place. Filed Nov. 25, 1881. (No model.)

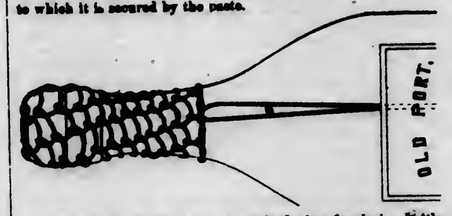


Claim.—1. As an improvement in fence-posts, a solid metallic rod, A, pointed at its lower end, at B, and provided at the base-line with a circumferential series of pointed prongs or barbs, C, integral with said post, and projecting permanently diagonally downward and outward, as herein described, for the purpose set forth.

2. The combination, with a fence-post having T-shaped recesses for the reception of the fence-wires, of a key or fastener consisting of a wedge-shaped plate having an outward-bent flange at its lower side, partly separated from said wedge-plate by a slot extending from the narrow toward the wide end, substantially as set forth.

257,600. DEVICE FOR SECURING CORKS IN BOTTLES. GERHARD LUTTJES and HENRY E. G. LUTTJES, New York, N. Y. Filed Mar. 7, 1882. (No model.)

Brief.—The neck of the bottle and the head of the stopper are covered with paste. An elastic casing of knit twine is then drawn over the neck of the bottle, about which it contracts, and to which it is secured by the paste.



Claim.—1. As an improvement in devices for closing bottles, the combination, with a cork provided with an enlarged head, of an elastic tubular casing inclosing said head and entire neck of the bottle, substantially as herein shown and described.

2. The herein-described means for closing bottles, which consists of a cork with an enlarged head, having its upper surface convex, with an elastic tubular casing inclosing the head of the cork and neck of the bottle and permanently connected thereto, substantially as specified.

3. The combination, with a bottle and its cork, of a netted or twisted tubular casing elastically fitting over the exposed surface of the cork and neck of the bottle and entirely inclosing the same, and provided with one or more ends for attachment to the body of the bottle, substantially as set forth.

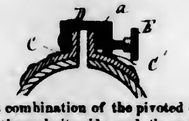
4. The herein-described device for securing corks in bottles, which consists of a tubular casing formed of netted or woven twine, which elastically envelops the cork and neck of the bottle, and is permanently secured to every part of its inclosed surface by cement, substantially in the manner and for the purpose set forth.

5. The combination of the bottle *a*, cork *b*, with enlarged head *c*, and elastic covering or casing *d*, all constructed in the manner and for the purpose set forth.

257,601. ADHESIVE CEMENT. S. CARY MURRAY, Lockport, N. Y. Filed Mar. 27, 1882. (No specimens.)

Claim.—The hereinbefore-described composition of matter or cement to be used and applied to the surface of wood, brick, stone, glass, or any metallic surface, for the purpose of resisting the passage of water and the action of the atmosphere upon such substance, consisting of the flour of lime-rock, water-washed sand, Portland cement, dry white French zinc, and boiled linseed-oil, in the proportions specified.

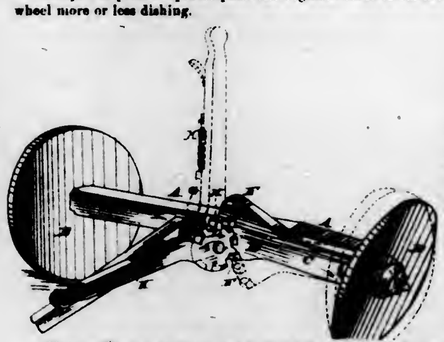
257,602. DEVICE FOR REPAIRING RUPTURES IN WATER-HOSE. LAWRENCE MERRIHEW, Rochester, N. Y., assignor of one-half to John R. Strauchon, same place. Filed Oct. 3, 1881. (No model.)



Claim.—The combination of the pivoted clasp D, having the screw E passing through its side, and the metallic flanges C C', to one of which the clasp is pivoted, the other being provided with a rib, *a*, beneath which the screw rests, as shown and described, and for the purpose specified.

257,603. SULKY-PLOW. JACOB MICKWOOD, Warsaw, Ind. Filed Mar. 6, 1882. (No model.)

Brief.—A pivoted spindle-plate and segment-lever to set the wheel more or less dishing.



Claim.—The combination of the axle A, the pivoted stub-axle C, provided near its inner end, which is flattened at E, with teeth or cogs F, the bracket G, having recess H and segmental series of teeth I, and the lever J, having segmental head provided with teeth L, and spring-catch K, all arranged and operating substantially as set forth.

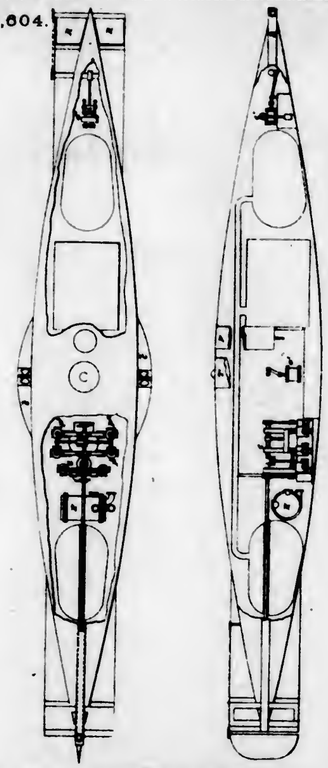
257,604. SUBMARINE VESSEL. THORSTEN NORDENFELT, London, England. Filed Sept. 9, 1881. (No model.) Patented in England Feb. 17, 1881, in France Aug. 11, 1881, in Belgium Aug. 23, 1881, and in Italy Sept. 12, 1881.

Brief.—The horizontal position of the vessel is preserved by means of longitudinal stability-rudders operated by means of a hydraulic engine. The valves of the engine are controlled by a swinging pendulum. The vessel is caused to ascend or descend in the water by the revolution of screw-propellers mounted on vertical axes at its sides.

Claim.—1. The combination, with the vessel, of the screws at its sides rotating about vertical axes, and means for actuating said screws, substantially as and for the purpose hereinbefore set forth.

2. The combination of the rudders R R, the controlling-cylinder, its piston connected with the cranked axis of the rudders, the valve V, and the weight attached to the arm of the valve-spindle, substantially as and for the purpose set forth.

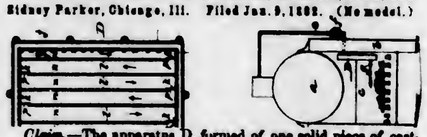
257,604.



257,605. ELECTROPLATED YELLOW-METAL. ANDREW O'NEILL, New Haven, Conn. Filed July 29, 1879.

Claim.—As a new article of manufacture, the within-described composite sheet metal, consisting of sheet yellow-metal electroplated on one side with nickel and on its other side with copper, substantially as specified, for the purposes set forth.

257,606. SMOKE-CONSUMING APPARATUS. SIDNEY PARKER and JAMES D. BENNETT, Chicago, Ill., assignors, by direct and mesne assignments, to George H. Watson, Ackley, Iowa, Abner W. Merrill and Fred S. Merrill, Waterloo, Iowa, and Sidney Parker, Chicago, Ill. Filed Jan. 9, 1882. (No model.)



Claim.—The apparatus D, formed of one solid piece of cast-iron, and provided with partition-walls *i*, dividing it into chambers *n*, having openings *p* at alternate ends of said chambers, provided with screens, channel *i*, and inlet *f*, in combination with cover *h*, provided with bead *j*, and T-shaped exhaust provided with slot *m*, substantially as specified.

257,607. TREATMENT OF CELLULOSE AND THE MANUFACTURE OF ARTICLES THEREFROM. ALEXANDER PARKES, Sutton Coldfield, Birmingham, County of Warwick, England. Filed Aug. 19, 1881. (No specimens.) Patented in England Mar. 8, 1881, in France Aug. 5, 1881, and in Belgium Aug. 8, 1881.

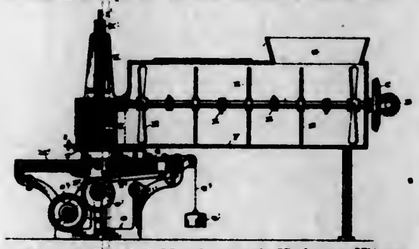
Claim.—1. As an improvement in the process of making articles in whole or part of cellulose, the treatment with a solvent consisting of a solution of iodide of zinc or its specified equivalent, substantially as described.

2. As an improvement in the process of making articles in whole or in part of cellulose, the treatment of the dissolved cellulose with the alcoholic or described equivalent solution to remove the solvent.

3. The process hereinbefore described of making articles of cellulose and of coating articles therewith, consisting in first dissolving cellulose in a solution of iodide of zinc or its specified equivalent, then molding the dissolved cellulose to the form of article required, or spreading it over the surface of the article to be coated, then removing the solvent by washing, and finally rolling, pressing, or calendering the article or coated article.

4. The process hereinbefore described of making articles of cellulose or partly of cellulose, consisting in first dissolving cellulose, as above set forth, in iodide of zinc or its specified equivalent, then washing out the solvent from the cellulose, and then molding the cellulose to the form required by subjecting it to pressure in molds or otherwise, or by rolling or spreading machinery.

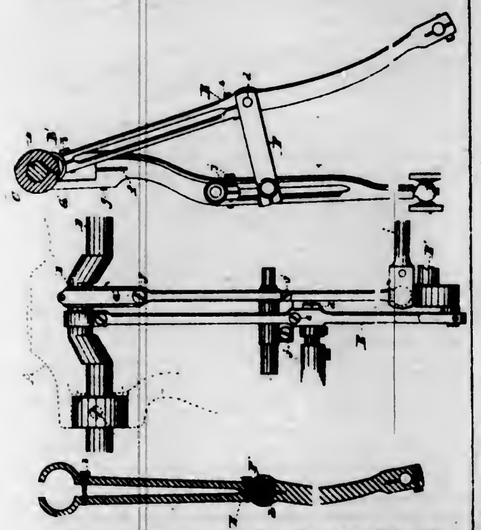
257,608. BRICK-MAKING MACHINE. STEPHEN J. PLANT, Yorkville, Ontario, Canada, assignor of one-half to Harriet Worwood, same place. Filed Nov. 25, 1881. (No model.)



Claim.—1. The shaft M and eccentric N, the arm N', cross-bar N², and set-screw N³, combined with the table M', and adapted to serve as set forth.

2. The combination of the adjustable table M' and the adjusting means N N' N² N³ with the shaft M, the wheel O', gear O², arms or levers P' P², and weighted sliding carriage Q, as and for the purposes specified.

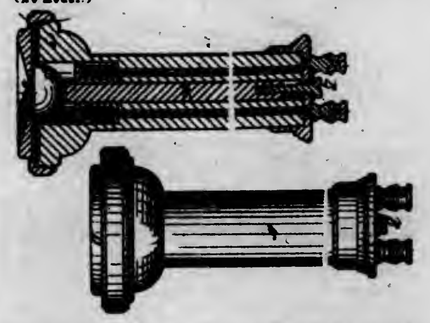
257,609. DEVICE FOR CONVERTING MOTION IN SEWING-MACHINES. D'ARCY PENTON, Cleveland, Ohio. Filed Jan. 24, 1882. (No model.)



Claim.—1. In a sewing-machine, the combination, with a crank-shaft and an oscillating lever, of a pitman constructed with two yielding arms made integral therewith, the outer ends formed as bearings to fit upon the crank, and a set-screw inserted through the yielding arms to take up for wear, a split bushing inserted in a circular bearing formed between the yielding arms, and a radius-bar connected at one end to the oscillating lever, and at the other end mounted on a bearing supported in said split bushing, substantially as set forth.

2. In a sewing-machine, the combination, with the crank B' and pitman E, said pitman being split, substantially as shown, of the radius-bar F, said radius-bar being connected to the pitman by means of a screw, *d*, passing through a split ball-bushing, F', substantially as and for the purpose shown and described.

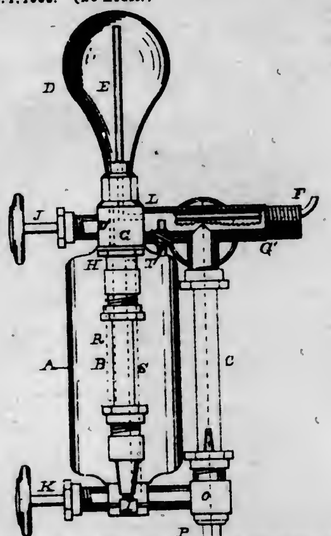
257,610. ELECTRIC TELEPHONE. THEAT T. PROSSER and JAMES P. FREEMAN, Chicago, Ill.; said Freeman assignor to the Home Telephone Company, of Illinois. Filed July 21, 1881. (No model.)



Claim.—1. A telephonic instrument constructed with a diaphragm the unsupported vibratory area of which is composed of a flat annulus and a central hemispherical depression, substantially as before set forth.

2. The combination, substantially as before set forth, of the helix, the permanent magnet, and the diaphragm whose unsupported vibratory area is composed of a flat annulus and a hemispherical depression.

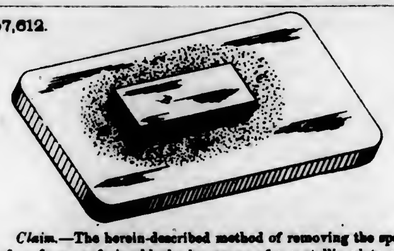
257,611. LUBRICATING OIL-CUP. WILLIAM W. RAMSEY, Dayton, Ohio, assignor of one-half to August Tegeler, same place. Filed Nov. 1, 1880. (No model.)



Claim.—The herein-described steam-actuated lubricator, consisting of the metal oil-receptacle A and steam-condensing chamber D, from which steam-pipe connection E F extends, the glass indicator-tubes B and C, arranged at the side of the oil-receptacle, with which they are connected, the pipes R, S, O, and G', having connecting-ducts, as specified, and the valves J K M, located as shown, the whole being constructed and arranged to operate substantially in the manner set forth.

257,612. METHOD OF REVIVIFYING ABRADING-SURFACES. JOSEPH RENSHAW, Hartford, Conn. Filed Aug. 22, 1881. (No model.)

257,612.



Claim.—The herein-described method of removing the spent surface from surfacing-blocks by means of a metallic plate and grains of cutting material rolling on said plate, substantially as set forth.

257,613. PAVEMENT. WILLIAM D. RICHARDSON, Springfield, Ill. Filed Mar. 20, 1882. (No model.)



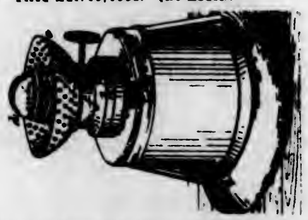
Claim.—1. A pavement for streets and roadways, comprising brick and asphalt or similar material in alternate courses, laid in the form of an arch, with the ends resting on the curbstones, substantially as described.

2. A pavement consisting of a bottom layer of asphalt, cement, or similar material, a course of brick, a second layer of asphalt or cement, and a top course of brick, the whole forming an arch of which the curbstones are the abutments, substantially as described.

3. In a pavement, the combination of the bottom layer of asphalt, cement, or similar material, the intermediate course of brick, laid flatwise and with tight joints, the second layer of asphalt, cement, or similar material, and the top course of brick, laid sidewise, as explained, and also with tight joints, the whole forming an arch, resting on the curbstones, substantially as described.

4. As a foundation for a pavement for streets and roadways, an arched course of brick laid close together and inclosed between two layers of asphalt, cement, or similar material, substantially as described.

257,614. LAMP-BURNER. CHARLES C. RICHMOND, Boston, Mass. Filed Mar. 13, 1882. (No model.)



Claim.—An inverted perforated bell-shaped casing, *c*, in combination with and located outside of a perforated cap, *d*, the base of said cap being secured directly to the bottom of said casing, as and for the purpose described.

257,615. LOZENGE-MACHINE. THOMAS ROBERTSON, Toronto, Ontario, Canada. Filed Oct. 26, 1880. (No model.) Patented in England Apr. 19, 1880.

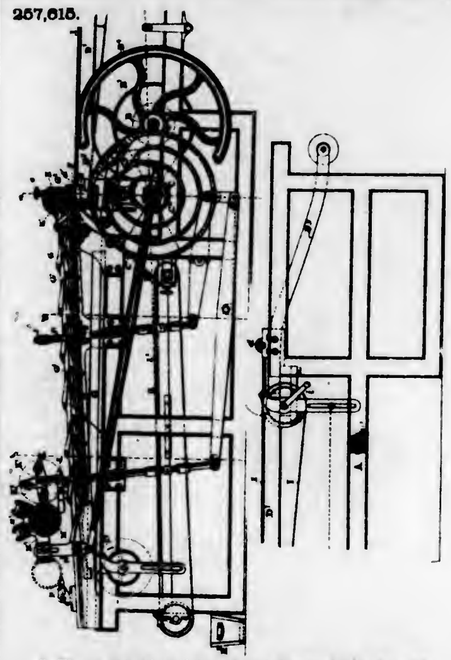
Claim.—1. The pivoted frame D', carrying the cutter-block D and provided with rollers for carrying the apron I, in combination with the cutter-block D, apron I, stationary cutter-head E, cutters F, and means, substantially as described, for giving the pivoted frame a vertical movement at its outer end, as and for the purpose specified.

2. In combination with the tubular cutters F and the slotted shanks thereof, the hooks G', passing through said slotted shanks and connected to the reciprocating conveyor-bars, substantially as and for the purpose specified.

3. In a lozenge-machine, the conveyor-table G, provided with a series of ridges, G', in combination with the reciprocating finger-bars G', substantially as and for the purpose specified.

4. The combination of the channeled cam-wheels, the pivoted paste-frame, with cutter-block and intermittently-moving apron mounted thereon, and a stationary cutter-head, substantially as shown and described.

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5. The combination of the channeled cam-wheels, the reciprocating frame carrying the cutter-block and intermittently-moving apron, the cutter-head, the embossing and printing heads, and mechanism, substantially as described, for connecting and operating said parts, and the lozenge-conveying mechanism and receiving-trays, arranged and operating substantially as shown and described.

257,616. METALLIC JOINT FOR FLEXIBLE ROOFING. FRANK E. SACHENDORPH, Cincinnati, Ohio. - Filed Jan. 25, 1882. (No model.)

Brief.—A sheet-metal strip having its lower edge bent under to form a rounded edge is interposed within the fold of the upper sheet, and a fastening passes through the strip and edges of the sheet and is covered by the outer fold of the upper sheet.



Claim.—The herein-described joint for flexible roofing, consisting of the combination of a lower sheet, an upper sheet whose underturned lower edge is applied to register with the upper edge of the lower sheet, a strip of sheet metal having its lower edge bent or doubled under so as to form a smooth rounded lower edge, and interposed within the fold of the upper sheet, and suitable fastenings passing through the said sheets, underneath, and covered by the outer fold of the upper sheet, as set forth.

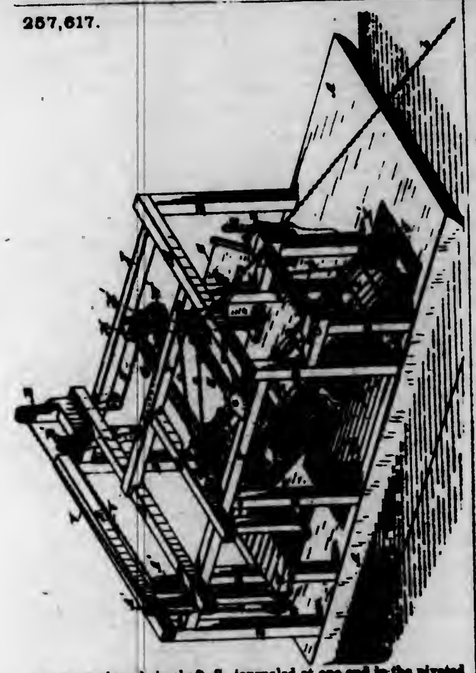
257,617. DREDGING-MACHINE. JEREMIAH SAYDER, Sunbury, Pa. Filed Feb. 2, 1882. (No model.)

Brief.—The bucket-chain is driven by a horizontal shaft from which the propelling chain-shaft is operated. From a vertical shaft which operates the horizontal drive-shaft is driven an endless chain which operates the carrier-apron.

Claim.—1. In a dredging-machine, the combination, with the endless chain of buckets and the delivery-apron U, of the horizontal drive-shaft G, upright shaft L, gearing therewith and provided with pulley W', posts A' and B', provided with sheaves, and endless chain V, passing over said sheaves and over pulleys W' W on the shaft L and shaft of apron U, respectively, substantially as and for the purposes set forth.

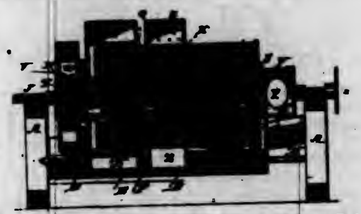
2. In a dredging-machine, the combination of a chain of elevating-buckets, a delivery-apron at the end of the chain of buck-

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ets, an anchor-chain shaft, S, journaled at one end in the pivoted lever T, a horizontal shaft, G, connected to shaft S by chain *o* and to the chain of elevating-buckets, and upright shaft L, connected to a shaft of the delivery-apron by an endless chain and to shaft G, and operating the said several parts, substantially as set forth.

257,618. APPARATUS FOR AMALGAMATING AND WASHING ORES. JAMES SCOTT, Denver, Colo., assignor of five-eighths to Lewis Packer, Charles Quentin, and John Henry Anderson, all of same place. Filed Apr. 26, 1881. (Model.)



Claim.—1. In an amalgamator, the concentrating-pan B, having compartments C E G, formed by the partitions D F, the latter of which is perforated, substantially as described.

2. In an amalgamator, the herein-described cylinder, having the centrally-located partly-perforated tapering tube M, surrounded by the imperforate tube Q, located within and communicating with a third or discharge tube, K, substantially as and for the purpose set forth.

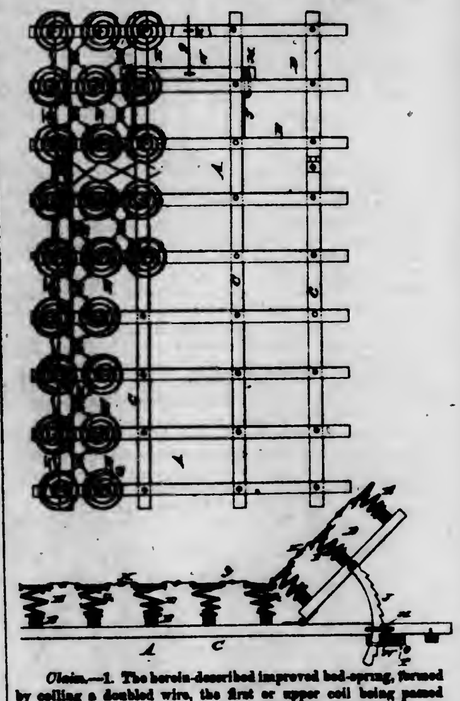
3. The cylinder I, having tapering tube M, the central portion of which is perforated and separated by flanges N from the imperforate ends, the front end of which forms a mercury-chamber, as herein described, for the purpose set forth.

4. The cylinder I, having tapering tube M, constructed and arranged as herein described, and provided with parallel-sided projecting ends R S, the former of which has partition T, chutes U, and openings V, in combination with the lifting-buckets W X, arranged as described, and discharging through the openings V into said tube M, as herein described, for the purpose set forth.

5. The tube M, having central perforated part, flanges N, and projecting end S, provided with openings V, in combination with the concentrating-pan B, having chute H, substantially as and for the purpose set forth.

6. As an improvement in amalgamators, the combination, with the pan B, having compartments C E G and chute H, of the cylinder consisting of the casing J, chuting tubes K M O, lifting-buckets W X, discharging into tube M, the perforated tailings-buckets Z, and suitable operating mechanism, all constructed and arranged substantially as herein described, for the purpose shown and specified.

257,619. SPRING BED-BOTTOM. MARVIN C. SILVER, Monroe, Wis. Filed Mar. 20, 1882. (No model.)



Claim.—1. The herein-described improved bed-spring, formed by coiling a doubled wire, the first or upper coil being passed through and secured by the loop formed by doubling the wire, as set forth.

2. In a bed-bottom, the combination, with the springs, of the joint or tie, formed by interlooping two pieces of wire which have been bent or doubled, as herein described, for the purpose set forth.

3. As an improvement in bed-bottoms, the combination of the frame A, having rails C, provided with recesses L and staples M, the hinged frame D, having flanged ratchet-bars J, the bar N, springs P, and the bed-springs secured upon said frames, as described, for the purpose set forth.

257,620. BUTTON-FASTENING. FRANKLIN A. SMITH, Jr., Providence, R. I., assignor to George W. Prentice, same place. Filed Mar. 6, 1882. (No model.)

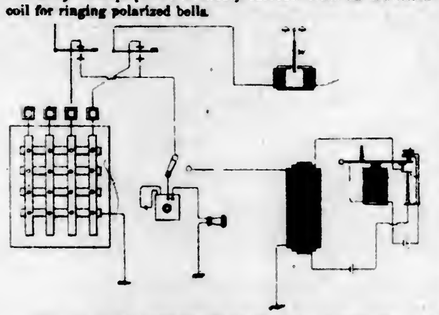


Claim.—1. As an improved article of manufacture, the herein-described button-fastener, consisting of the disk or plate B, provided with one or more depending attaching projections, *a b*, formed from the central portion thereof, and having a prong, C, to receive the shank of a button and to penetrate the material to which the button is secured, all substantially as and for the purpose specified.

2. The herein-described blank for button-fasteners, consisting of the disk or plate B, provided with one or more attaching projections, *a b*, formed from the central portion thereof, and with an integral laterally-projecting prong, C, substantially as specified.

257,621. SIGNALING APPARATUS FOR TELEPHONE-LINES. JAMES G. SMITH, Hackensack, N. J., and CHARLES E. BUELL, New Haven, Conn., assignors of one-third to George W. Coy, Milford, Conn. Filed Mar. 3, 1882. (No model.)

Brief.—Employs the secondary currents from an induction-coil for ringing polarized bells.

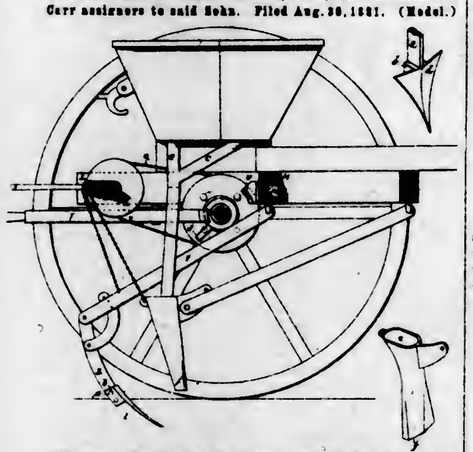


Claim.—1. The combination, substantially as described, with the central-office apparatus of a telephone-exchange system for placing any two subscribers' lines in connection with one another, of circuit-shifting apparatus for connecting any line to the secondary of an induction-coil, and in the primary circuit of the induction-coil a constantly-operating circuit-controller, whereby the current for the primary coil is suitably varied, reversed, or controlled in such a way as to produce reversed currents in the secondary coil and the connected subscriber's line.

2. The combination, substantially as described, of the telephone-exchange switch, circuit-shifters in the line-circuits, a wire or connection common to said circuit-shifters, an induction-coil whose secondary forms a portion of said common wire or connection, and a constantly-operating circuit-controller for the primary circuit of the induction-coil.

3. The combination, substantially as described, of the telephone-exchange switch, circuit-shifters for connecting any line to the secondary of an induction-coil, and in the primary circuit of the induction-coil a constantly-operating pole-changer.

257,622. SEEDING-MACHINE. JNO. W. SOHN, CHAS. O. RICHTER, and ROBT. S. CARR, Hamilton, Ohio; said Richter and Carr assignors to said Sohn. Filed Aug. 30, 1881. (Model.)



Claim.—1. In a seed-drill of the class specified, the distributing-tubes E, having a broadened and flattened issue end, F, with beveled front surfaces, substantially as shown and described.

2. The combination of distributers having broadened ends arranged to scrape the surface of the soil, seed-conduits and fertilizer-conduits, both set to issue into said distributers, and covering-shovels arranged behind and between said distributers to produce unfertilized trenches between the seed-rows, substantially as shown and described.

3. In a seed-drill of the class specified, the combination, with seed-distributing tubes having broadened, flattened, and beveled issue end, of following covering-shovels in the form of an acute triangle with straight side edges and beveled crowning faces, substantially as set forth.

4. The combination, with a shovel-shank having its end perforated, of a shovel cast thereon and having rear flanges clasping said shank, and united by the metal in said perforations, substantially as set forth.

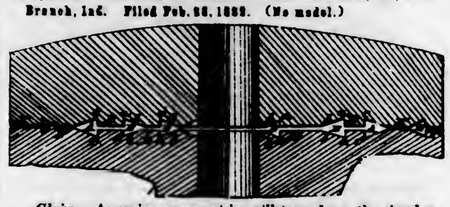
5. The combination of shovel-shank *a* with shovel L, cast thereon, having flanges *b* in contact with the shank, the shovel and flanges contacting with three sides only of the shank, substantially as and for the purpose set forth.

6. The combination with a deep-set seeder-shovel, a highly-set seed-distributer, an elevating winch-bar of flattened section, and a chain from said shovel to said winch, of a chain from said distributer attached to said winch-bar at a point nearer its axis than the point of attachment of said shovel-chain, substantially as set forth.

7. The combination of a main axle, a winch-bar parallel thereto, a series of drag-bars suspended from the winch-bar and arranged to be lifted by the rotation of the same, a means for transmitting rotary motion from the axle to the winch-bar, a sliding clutch and fixed incline or equivalent device for arresting such transmission, a lever projecting from the winch-bar, a hook to engage said lever and retain it when motion is arrested, and a lever for starting the transmission, substantially as set forth.

8. The combination, with a seeder-axle, a rotary winch-bar, a winch-bar lever, and its retaining-hook, of a tight pulley, a loose pulley, a means of transmission between them, a sliding clutch adapted to engage with said loose pulley, a hand-lever to slide said clutch, and a fixed incline to release said clutch, substantially as set forth.

257,623. MILLSTONE-DRESS. JOHN M. SPERR, Jr., Fort Branch, Ind. Filed Feb. 28, 1882. (No model.)



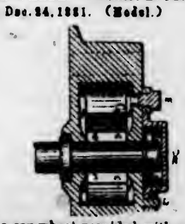
Claim.—As an improvement in millstone-dress, the circular furrow A, the tangential furrows B, increasing in depth toward the eye of the stone and meeting or running into each other near the eye, the level lands D, dressed low, the furrows E, of less draft than the furrows B, and the lands F, dressed high, substantially as set forth.

257,624. CARPET-FASTENER. SETH J. SPIVLEY, Greenville, Mich. Filed Mar. 16, 1882. (No model.)



Claim.—A device for securing or laying carpets, consisting of a supplemental molding, C, provided with studs E and hooks D, the latter of which engage with the carpet, while the former engage with loops upon the base-board, substantially in the manner and for the purposes specified.

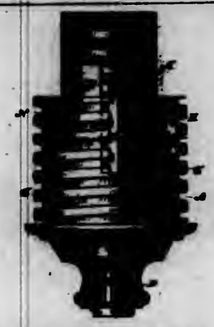
257,625. CAR-WHEEL. FRANCIS H. TANNEHILL, Barnesville, Ohio. Filed Dec. 24, 1881. (Model.)



Claim.—In a car-wheel provided with a recessed oil-box, the combination of the bars *f* on the inside of said oil-box, a hub having wedge-shaped openings *d* for the passage of the oil to the axle, the solid ends *e* sloping back from the ends of the oil-openings, and a removable cap, K, hermetically secured to the outer end of the oil-box, substantially as shown and described, and for the purpose set forth.

257,626. REMOVABLE PERMUTATION-LOCK. ROBERT W. THURMAN, Lynchburg, Va. Filed Mar. 18, 1882. (No model.)

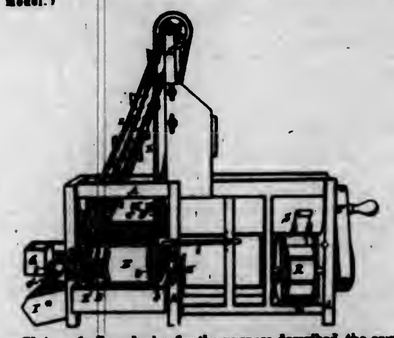
257,626.



Claim.—1. The locks N O, and cylindrical case A A', formed with screw-thread G thereon and slot F therein, in combination with pawl C and spring H, arranged to operate as and for the purpose specified.

2. A removable lock consisting of slotted screw-threaded case A A', pawl C, and spring H, in combination with locks N O, spindles B b, disks D S, and indented notched tumblers b, arranged to engage with the coincident screw-thread and groove of sleeve E, as shown and described.

257,627. MORTAR-MIXING MACHINE. RANDALL T. VAN VALKENBURG, Manchester, Mich. Filed Mar. 15, 1882. (No model.)



Claim.—1. In a device for the purpose described, the combination, within the frame A, of the rotating screen C, the cylinder E, and the screen *c*, with the chambered box B, substantially as specified.

2. In a mortar-mixing device, and in combination, the rotating screen C, cylinder E, subdivided box B, provided with openings *l*, and the subdivided screen I, adapted to deliver the contents to elevators, substantially as and for the purposes described.

3. In a mortar-mixing machine provided with devices for screening the sand, sifting the lime, and elevating the same to the hoppers J and J', the cylinders K, constructed and operating substantially as and for the purposes set forth.

4. In a mortar-mixing machine, the cylinder E, provided with a hollow and perforated shaft, in combination with the rigidly-secured water-supply pipes *c*, each hollow shaft rotating within the head of said pipe and secured in its rotation so as to form a water-tight joint by pressure upon the opposite end of each shaft, substantially as and for the purposes set forth.

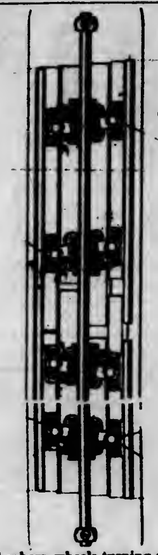
5. In a mortar-mixing machine, substantially as described, and in combination, the rotating screen C, cylinder E, box B, screen I, and elevators K, the latter being adapted to take the contents of the screen I and deliver them into the hoppers J and J', substantially as set forth.

6. The combination, in a mortar-mixing machine inclosed within the screen supporting-frame and driven from a single main shaft, of the sand-screen, lime-sifting cylinder, receiving-box, elevating devices, hoppers, graduated cut-offs, and mixing-chamber, the parts constructed, arranged, and operating substantially as and for the purposes described.

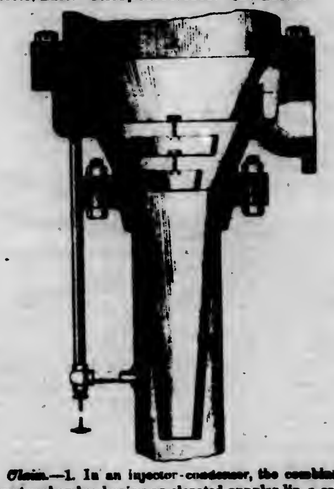
257,628. CLOTH-STRETCHING MACHINE. GEO. W. VOELKER, Woonsocket, R. I. Filed Oct. 18, 1881. (No model.)

Claim.—A cloth-stretcher cylinder consisting of the stationary shaft, inclined arbors, wheels turning on said arbors and having slotted peripheral flanges, and headed pins extending from the slots into the slots, substantially as set forth.

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257,629. INJECTOR-CONDENSER. JOSEPH WHEELOCK, Worcester, Mass. Filed Jan. 28, 1882. (No model.)



Claim.—1. In an injector-condenser, the combination, with the water-chamber having an elevated annular lip, a cone projecting downward within said lip, of a conical shell extending below said cone and water-chamber, and a discharge-pipe connected to the lower and small end of said conical shell, substantially as described.

2. The combination, with the water-chamber in an injector-condenser, of a sediment-trap and a flush-pipe, substantially as described.

3. The combination, with the conical main shell in an injector-condenser and a discharge-pipe connected to the lower end of said shell, of a tapered nozzle extending downwardly within said discharge-pipe, and in communication at its upper end with the interior of the conical shell, substantially as described.

257,630. ALPHABET-BLOCKS. ADELINE D. T. WHITNEY, Hilton, Mass. Filed Dec. 6, 1881. (Model.)

Claim.—1. A set of blocks representing the various proportional subdivisions of a given straight line and proportional area

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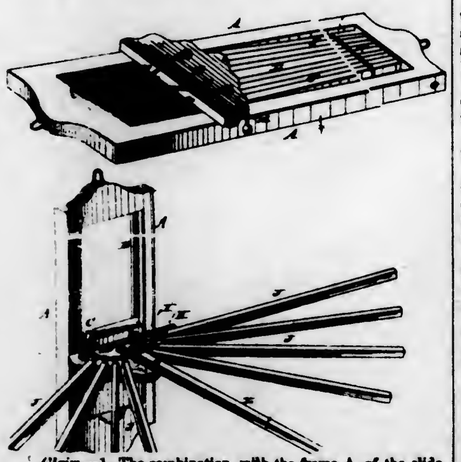


of a circle whose diameter bears a fixed ratio to the given line and capable by means of interchangeable combinations of representing the letters of the Roman alphabet and other printed characters, substantially as described.

2. A set of alphabet or toy blocks composed of blocks representing different proportional subdivisions of a given straight line and circle, each in definite relative proportion to the others and capable of representing by combination the various characters commonly used in print in regular proportion and on a uniform scale, substantially as described.

3. The blocks A, B, C, D, E, and F, having the shapes and relative proportions and capable of being used in combination, in the manner and for the purposes herein set forth.

257,631. CLOTHES-DRIER. ALBIAN L. ADSIT, North Springfield, Pa. Filed Mar. 12, 1882. (Model.)



Claim.—1. The combination, with the frame A, of the slide C, the hinged plate D, the tapering clothes-bars, hinged, as shown, to said plate, and the ring N for holding them together, so that they may be folded between the sides of frame A, as set forth.

2. The combination of the frame A, slide C, having hinged bracket D, provided with rigid central bar, L, and hinged tapering arms J, and the ring N, as and for the purpose set forth.

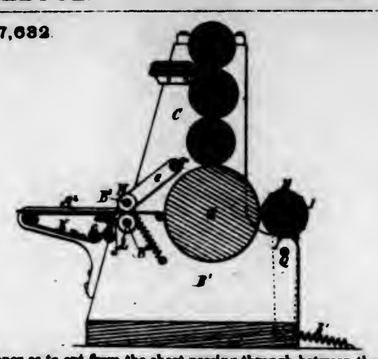
3. As an improvement in clothes racks or driers, the combination of the frame A, slide C, hinged bracket D, brace E, loop H, arms or bars J L, and the hook M, all arranged and operating substantially as set forth.

257,632. RUBBER-CUTTING MACHINE. CHARLES ADAMS, Brooklyn, N. Y. Filed Oct. 29, 1881. (No model.)

Claim.—1. In machinery for cutting sheets of rubber or other analogous elastic tenacious material into boot-uppers or other objects, the combination, with suitable feed-rolls, of two sets of revolving knives, operating one to cut the major portions of the said uppers or other objects and leave them connected by slight strips, and the other to subsequently sever such strips, leaving the uppers or other objects complete, substantially as explained.

2. In machinery for cutting a sheet of rubber or other analogous elastic tenacious material into boot-uppers or various other objects, the combination, with a shifting bearing or cutting cylinder or bed, of a revolving cylinder armed upon its periphery with a series of cutters of such form and operating with said bed in such

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manner as to cut from the sheet passing through between them a series of boot-uppers or other objects which are connected by frail strips, by which strips said uppers, after being cut, are fed along together from the knives and bed, substantially as described.

3. In machinery for cutting a sheet of rubber or other analogous elastic tenacious material into boot-uppers or various other objects, the combination, with a suitable cutting-bed, of a series of cutters mounted upon a rotary cylinder, and of a shape to cut a boot or shoe upper entire from a sheet of rubber or other analogous material, with the exception of frail strips which connect said uppers, substantially as stated.

4. The drum G, operating with the cutter I as a shifting bed to such cutters, and as a means of feeding the sheet of material along, substantially when such cutters are of a form to cut from said strip a continuous line of uppers or other objects connected by slight strips, substantially as described.

5. The cutter I, of a shape to cut from a sheet of rubber or other material a series of boot-uppers or other objects united by frail connections, substantially as and for the purposes stated.

6. The endless apron K, in combination with the drum G, cutter I, and knives or cutters *d d'*, substantially as described.

7. In combination with the rotary drum G, the cutter-cylinder or roll H, connected adjustably to the machine-frame with respect to the said drum to automatically adapt itself to varying thickness of material passing between said drum and cylinder, substantially as stated.

8. In combination with the drum G and the cutters I I, the knives or cutters *d d'*, suitably supported, and operating to sever the strips connecting the uppers or other objects cut by the said cutter I, substantially as and for the purposes set forth.

9. The combination, with the cutter I, the drum G, and the knife-stocks L, of the rotary rolls or hubs N, as connected adjustably with said stocks to constitute shifting cutter-beds for the latter, substantially as set forth.

10. In combination with the cutters I, drum G, and knives *d d'*, the endless aprons K, having openings to permit of escape of the scraps cut from the material by the said knives *d d'*, substantially as herein set forth.

11. The general physical structure of the machine as composed of the housings B B', rolls D E F, drum G, cylinder or roll H, with its cutters I, and adjustable automatically with respect to the drum G, the knives *d d'*, mounted upon rotary cylinders and operating with the rotary beds or hubs N, and the endless apron, with its openings, substantially as described.

257,633. ATTACHMENT FOR DREDGING-PUMPS. ROBERT H. ADAM, Charleston, S. C. Filed Aug. 27, 1881. (No model.)

Brief.—To prevent large stones from entering the pump, a grated cage is located in a bend or knee of the pump-tube, whereby such stones are directed into a receptacle at either side of the tube by an adjustable switch tongue or wing.

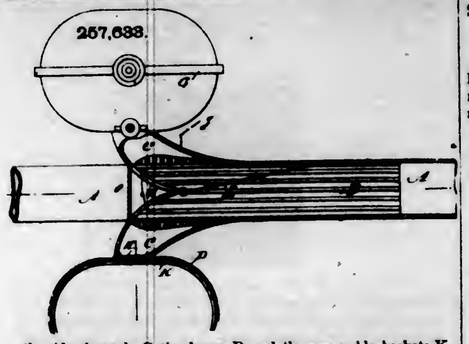
Claim.—1. The combination, with the pump-tube A, of the sleeve or grating B, arranged in the bottom of the said tube at a knee or elbow of the same, substantially as shown and described, whereby large pieces of rock are prevented from entering and injuring the pump, as set forth.

2. The combination, with the pump-tube A of the grating B, the side channels, C, above the grating B, substantially as herein shown and described, and for the purpose set forth.

3. The combination, with the pump-tube A, of the grating B, the side channels, C, and the drums D, substantially as herein shown and described, and for the purpose set forth.

4. The combination, with the pump-tube A, of the grating B,

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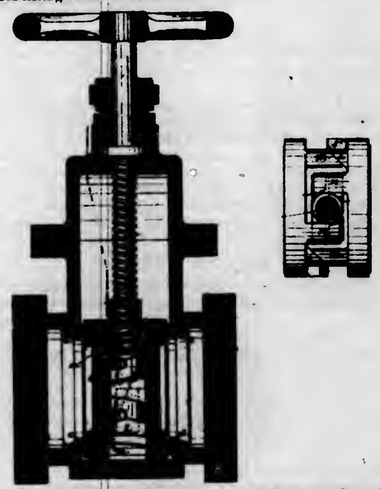
the side channels, C, the drums D, and the removable baskets K, substantially as herein shown and described, and for the purpose set forth.

5. The combination, with the pump-tube A, of the grating B, the side channels, C, the drums D, and the pivoted or swinging switch-plate L, substantially as herein shown and described, and for the purpose set forth.

6. The combination, with the pump-tube A, of the grating B, the side channels, C, the drums D, the pivoted switch-plate L, and the gates H, substantially as herein shown and described, and for the purpose set forth.

257,634. STRAIGHT-WAY VALVE. JAMES ARTHUR, Jersey City, assignor of one-half to William S. Carr, Paterson, N. J. Filed Nov. 25, 1881. (No model.)

Brief.—Two similar valves, each having interlocking cylindrical hubs and inclines, whereby both are retained in proper relative position, but may be turned one against the other, combined with a wedge-shaped lifter operated by a screw-stem, which lifter, when raised, turns the valves so as to relieve the pressure on their seats before lifting them off their seats.



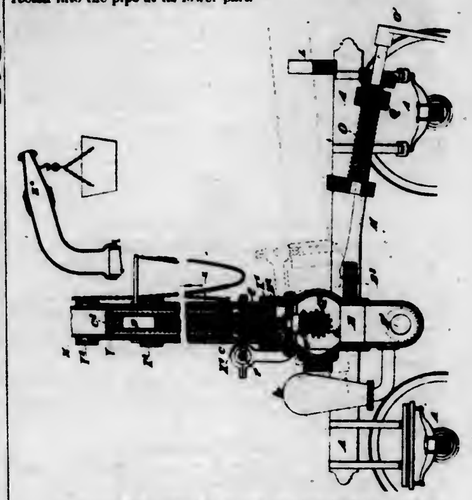
Claim.—1. The combination, in a straight-way valve, of two disks, interlocking flanges on their backs, segmental inclines, a wedge-shaped lifter, a screw to operate the same, and the projections and stops *a b*, substantially as set forth.

2. In combination with the disks placed back to back in a straight-way valve, a wedge-shaped lifter introduced between the disks, and mechanism for operating the same so as to give a partial rotation to the valve-disks in commencing to lift the same, substantially as set forth.

3. In a straight-way valve, two disks, each having similar segmental inclines upon the back, a projection by which it is lifted, and a projection by which its downward movement is arrested, in combination with the screw and lifter and a case having the projections *b*, substantially as set forth.

257,635. EXTENSION-PIPE FOR FIRE APPARATUS. JOHN ASHWORTH and CHARLES S. PATRIN, Chicago, Ill. Filed Feb. 4, 1882. (No model.)

Brief.—The extension-pipes X Y Z are carried on truck A, lying longitudinally. When intended to be used the pipes are raised by screws and water-supply from one or more sources directed into the pipe at its lower part.



Claim.—1. The screw C, having the longitudinal groove *c*, and the threaded sleeve D, having the feather *d*, in combination with the pipes X Y Z, substantially as herein specified.

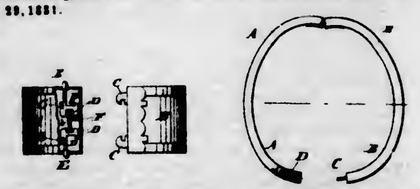
2. The pipes X Y Z, in combination with the socket-piece B, central screw, C, and concentric sleeve D, and provided with passages *x y z* and stuffing-boxes X' Y', adapted to serve as herein specified.

3. The socket-piece B, supported on the carriage A, with liberty to turn in a vertical plane, in combination with the pipe X and its connections, socketed in one end, with one or more hose-couplings, B', on the opposite end, and the operating-shaft G, mounted in the line of axis of motion, arranged for joint operation as herein specified.

4. The elevating-screw O and its operating means O', in combination with the nut Q, links M, arm B', and socket-piece B and its connections, arranged to serve as herein specified.

5. In a series of telescopic pipes, the head C' on the screw-threaded sleeve D, in combination with the pipes Y Z, arranged to prevent the elevating of the pipes beyond the proper limit, as herein specified.

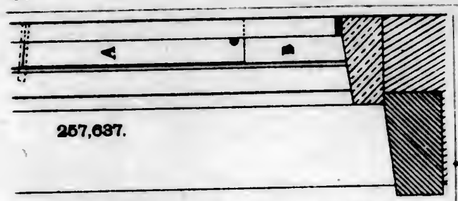
257,636. FASTENING FOR BRACELETS AND SCARF-RINGS. ELIJAH ATKINS, Birmingham, County of Warwick, England. Filed Aug. 26, 1881. (No model.) Patented in England Jan. 29, 1881.



Claim.—In a bracelet, the combination, with the rigid notched catches C of the part B, of the catches D, consisting of an angle bar or plate provided with plains *a a'* on the outer end of its shorter arm, and with the lug *b* at its angle, and the spring F, interposed between and connected to the said catches between the lugs *a' b*, arranged in the hollow end of the section A, substantially as herein shown and described.

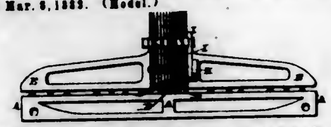
257,637. WINDOW-FRAME POCKET. ALGERNON S. BAKER, Augusta, Me. Filed Jan. 12, 1882. (No model.)

Brief.—The pocket-piece is grooved at one end to fit over a dowel-pin in the edge of the pocket-opening.



Claim.—The combination, in a window-frame pocket, of the cover A, having grooved end D and the dowel D', secured to the window-frame, as set forth.

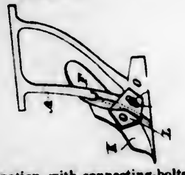
257,638. MOP-HOLDER. HENRY BAUGHMAN, Columbus, Ohio. Filed Mar. 6, 1882. (Model.)



Claim.—In a mop-holder, the combination of the lower jaw, A, having the stem B and guides D formed upon the center of its top edge, with the upper jaw, E, screw-socket L, provided with ratchet O, and the dog I, pivoted in the flange H, substantially as described.

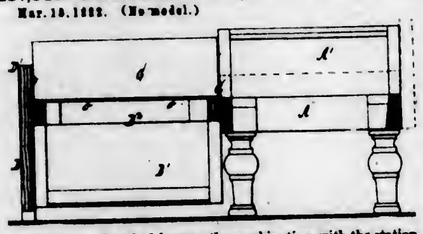
2. The combination of the jaw A, having the screw-stem formed upon its center, the upper jaw provided with a flange and a dog, and the screw-socket having a ratchet formed upon its lower edge, substantially as set forth.

257,639. PLOW. MATTHEW M. BEARD, Holmes County, Miss. Filed Sept. 24, 1881. (No model.)



Claim.—The combination, with connecting-bolts, of the front shank, A, having the plain slot C, the notched slot D, and the rabbet E, the share F, having apertures G H and flange J, the curved plate K, having the transversely-slotted angle-iron L, and the land-side having aperture N, as described.

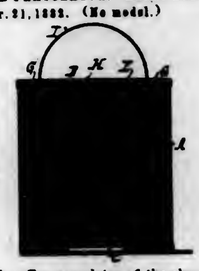
257,640. BED-LOUNGE. MAX BECKER, New York, N. Y. Filed Mar. 18, 1882. (No model.)



Claim.—1. In a bed-lounge, the combination, with the stationary main frame A, of the seat-frame B, hinged to the front edge thereof, and provided with an attached back, D, having a longitudinal rail, D', projecting downward below the under side of the seat-frame substantially the entire length thereof, and normally resting behind the main frame, but constituting a vertical bedstead-rail when the hinged seat-frame is opened, substantially as described.

2. In a bed-lounge, the combination of the stationary main frame A, the hinged seat-frame B, provided with a cross-piece, B², and an attached back, D, having a longitudinal rail, D', projecting downward below the under side of the seat-frame, and normally resting behind the main frame, but constituting a vertical bedstead-rail when the hinged frame is opened, and the head-rest G, hinged at its lower edge to the cross-piece of the seat-frame, and when in an open position supported by the head-piece of the main frame, substantially as described.

257,641. COFFEE-PERCOLATOR. HENRY BERRY, Jersey City, N. J. Filed Mar. 21, 1882. (No model.)



Claim.—1. A coffee-percolator of the character described, combining in its structure the percolating-vessel provided at its upper end with an inwardly-projecting flange, E, having a notch, F, a removable and replaceable lid or cover, D, and a handle, I, having its ends extended through the lid or cover into the form of catches G, which project from the edges of the latter, substantially as described.

2. A coffee-percolator combining in its structure the percolating-vessel provided at its upper edge with an inwardly-projecting flange, E, having the notch F, and downwardly-projecting stop H, a removable and replaceable lid or cover, D, and a handle, I, having its ends extended through the lid or cover in the form of catches G, which project from the edges of the latter, substantially as described.

257,642. BOTTLE-WRAPPER. HENRY BELL, Baltimore, Md. Filed Mar. 10, 1882. (No model.)



Claim.—1. A bottle-wrapper made of lengths of vegetable fiber, which are secured together at their centers and adapted to be bent up from the bottom to the neck of a bottle, substantially as shown and described.

2. A bottle-wrapper made of lengths of vegetable fiber, which are secured together at their centers between pieces of pasteboard or felting, substantially as shown and described.

3. A bottle-wrapper composed of suitable pieces of material, which are secured together at the center and bent up around the bottle and confined by a band, and having a number of the strips made longer than the rest and bent back over the said band and confined by another band inclosing the wrapper, substantially as shown and described.

257,643. DECORATING GLASSWARE. BENJAMIN BUDAS and JOSEF PLOGEL, Brooklyn, N. Y. Filed Oct. 6, 1881. (Model.)



Claim.—1. A composition for decorating the surface of glassware, consisting of red lead, granulated quartz, boric acid, potash, and bismuth, substantially as described.

2. The method herein described of decorating the surface of glassware, consisting of the application with a suitable flux of a layer of composition of red lead, granulated quartz, boric acid, potash, and bismuth, then placing it in a muffle and exposing it to the heat of a furnace until the fusion of the composition takes place, substantially as described.

3. The process herein described of decorating the surface of glassware, consisting of first frosting a portion of it with a colored composition of red lead, granulated quartz, boric acid, potash, and bismuth, and, second, of painting the unfrosted portions of it with

a part of like composition ground to an impalpable powder and colored with metallic oxide, and then exposing to the heat of a decorating-furnace until the fusion of the composition takes place, substantially as described.

4. As an article of manufacture, glassware having portions of its surface frosted with composition, as herein described, and unfrosted portions painted with like composition ground and colored with metallic oxide, substantially as described.

257,644. CUFF-BUTTON, &c. SANGUINET H. BENOIST, St. Louis, Mo. Filed Mar. 23, 1882. (Model.)

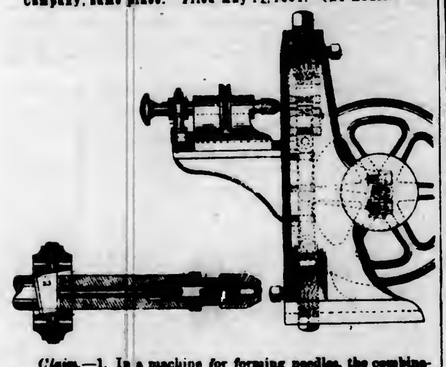


Claim.—1. In a removable button or stud for cuffs, &c., the combination of the head A and shoe-piece B B' *b*, sliding in the inner face of the head to and from the end thereof, substantially as and for the purpose set forth.

2. In a removable button or stud for cuffs, &c., the combination of head A, with grooves *a'* and orifice *b*², and the sliding shoe-piece B B' *b*, with spring-catch *b'*, constructed and operating substantially as set forth.

3. The shoe-piece B B' *b b'* for cuff-buttons, formed of a single plate of metal folded together substantially as shown and described.

257,645. MACHINE FOR SWAGING NEEDLE-BLANKS. JOHN BURRY, Springfield, Mass., assignor to the National Needle Company, same place. Filed May 11, 1881. (No model.)



Claim.—1. In a machine for forming needles, the combination of two forming-dies, one stationary and the other made movable and loose in a reciprocating plunger, and an adjustable stop for arresting the downward movement of said loosely-fitted die, two knuckle-jointed bars connected with a pitman and crank for actuating said plunger, and two adjusting-screws for adjusting said forming-dies in either direction in the line of movement of said plunger, substantially as described.

2. In a machine for forming needles, the combination of two forming-dies, one stationary and the other made movable and loose in a reciprocating plunger, two knuckle-jointed bars connected with a pitman and crank for actuating said plunger and die, two adjusting-screws for adjusting said forming-dies in either direction in the line of movement of said plunger, and a revolving clamp for holding the needle-blanks while being formed, substantially as described.

3. In a machine for forming needles, the combination of two forming-dies, one stationary and the other made movable and loose in a reciprocating plunger, two knuckle-jointed bars connected with a pitman and crank for actuating said plunger and die, an adjustable arm extending into a cavity in the plug beneath the movable die and secured in any desired position in the guideway of the plunger, for limiting the movement of the movable die, and two adjusting-screws for adjusting the forming-dies in either direction in the line of movement of the plunger, substantially as described.

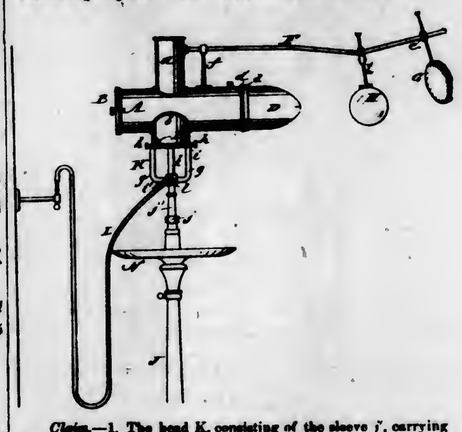
4. In a machine for forming needles, a revolving clamp for holding the needles while being formed, consisting of a tubular spindle provided with a slot having its rear edge beveled on both sides, and containing a key correspondingly beveled on its rear edge for preventing said key from being accidentally jarred loose, an annular grooved sleeve having a movement along said spindle, and provided with a slot having inclined parallel ends to actuate said key, sliding jaws moving within said spindle and operated by the said key, in combination with dies for forming the needles, substantially as described.

5. In a machine for forming needles, the combination of a fixed die, a reciprocating plunger, a movable forming-die actuated by said plunger, fixed guide-plates for guiding said plunger, a revolvable plug inserted into one of said plates, provided at the end with an eccentric-pin projecting into a cavity in the plunger beneath said movable forming-die, and adapted at its outer end to be adjusted and secured in any desired position, whereby the throw or length of movement of the movable die in the plunger is regulated or controlled, substantially as described.

6. In a machine for compressing needles, the combination of two forming-dies, one stationary and the other movable between two guide-plates, two knuckle-jointed bars to actuate said movable die, and connected with a pitman and crank, and a revolving clamp for holding the needles while being compressed, substantially as set forth.

257,646. LARYNGOSCOPE. CARL BEEBLER, New York, N. Y. Filed Dec. 16, 1881. (Model.)

Brief.—In the front end of the lens-tube is a shade with its outer end cut at about an angle of forty-five degrees, and turning freely. The mirror-arm is bent so that it may throw the mirror's center to right or left at will. The mirrors are attached to the arm through adjustable shafts and double ball and sockets.



Claim.—1. The head K, consisting of the sleeve *j'*, carrying the lateral screw *j*, tube *l*, enlargement *l'*, arms *g g*, the flanged rim I *i*, and the tube *h*, said head being adapted to connect by screws *h* with an extension, *h*, on cylinder A, and to be turned, raised, or lowered in the socket of a stand, as described.

2. The combination, with the cylinder A, having the upward extension *a* and a post, *f*, with a guide-aperture at the top, of the rod F, end-threaded to screw into a threaded perforation on said extension *a*, passing through the guide-aperture of post, and provided with a bend or elbow, whereby the mirrors may be held in their true relative position to the cylinder, whether the dentist works on the right or left of the instrument, as described.

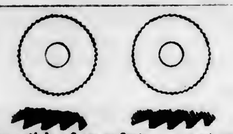
3. The combination, with the cylinder A, of the shade D, swiveled on the end thereof and cut at an angle of about forty-five degrees, whereby it may be held by friction in any desired position to protect the eyes of the operator from the light which comes from the lens, as described.

4. The combination, with the rod F and mirrors connected therewith by arms *h'*, of the sleeves *h*², having threaded branch tubes *h*², clamp-screws *h*¹, side tubes *h*², with clamp-screws *h*⁴, and the ball-and-socket joint *h'* *h*² *h*², whereby the mirrors G H may be adjusted with great nicety to each other and to the cylinder, as described.

257,647. GRINDING-ROLL AND METHOD OF MANUFACTURING THE SAME. RICHARD BIRKHOLZ, Milwaukee, Wis. Filed Feb. 16, 1882. (No model.)

Claim.—1. As an improvement in the art of manufacturing grinding-rolls, the method consisting in first casting the roll in a chill with teeth or ribs thereon, and subsequently grinding away the points or edges of the teeth to complete the roll.

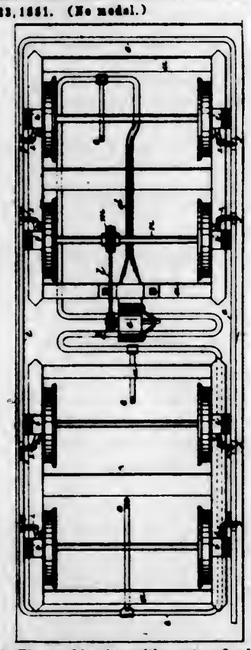
257,647.



2. As a new article of manufacture, a cast-metal grinding-roll having thereon chilled ribs or teeth, portions of the edges of which are of softer metal than the remainder, as described and shown.

3. As a new article of manufacture, the cast-metal roll having thereon and integral therewith the chilled teeth or ribs with ground points or extremities.

257,648. CAR-AXLE BOX. HENRY BOUCHARD, St. Elmo, Ala. Filed Nov. 23, 1881. (No model.)



Claim.—1. The combination, with a rotary fan-blower driven by a belt connected with the shaft of the blower and a car-axle, of the main air-pipe *e* and branch air-pipes *g*, each hinged to the air-pipe and leading to an axle-box, and ventilating-pipes *o*, leading from the main air-pipe *e* through the floor of the car into its interior, whereby the car-axle boxes are kept cool and the car ventilated at the same time, substantially as described.

2. The combination, with the axle-box *q*, provided with the adjusting-screws *t*, of the axle-box *p*, adapted to be inserted therein, and provided with the steps *v v* and springs *v u*, secured to the under face, substantially as described, and for the purpose set forth.

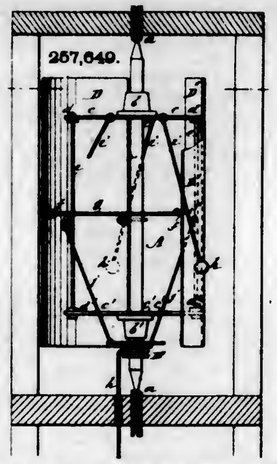
257,649. WINDMILL. BENJAMIN J. BRAGDON, Beloit, Kans. Filed Jan. 4, 1881. (Model.)

Brief.—The wind, striking the vanes D D′ D″, causes them to revolve and operate the mill. If the velocity is too great, the weighted rods *i* are thrown outwardly and partially close the vanes, thus automatically regulating the movement of the mill. The rods *g*, connecting the edges of the vanes together, cause the opening and closing movement to be uniform.

Claim.—1. The curved vanes or wings D D′ D″, centrally hinged to the arms *c c′* and connected together by the rods *g*, substantially in the manner and for the purposes set forth.

2. The arms *c* and *c′*, formed with the curved arms *d* and *d′*, in combination with the wings or vanes D D′ D″, hinged to the arms *c* and *c′*, substantially as described.

3. The combination, with the centrally hinged and joined wings or vanes D D′ D″, provided with the eyes *f′* on their leeward edges, and the fixed upper collar, *b*, of the shaft A, of the



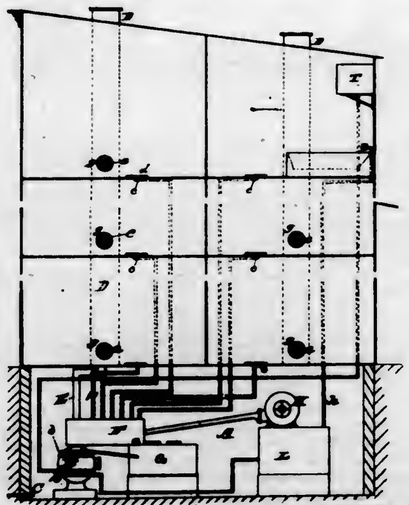
257,649.

governors *h i*, hinged at their upper ends to the said collar and passing through the eyes of the vanes, substantially as and for the purpose set forth.

4. The combination, with the arms *c*, provided with the curved arms *d* and the vanes D D′ D″, hinged to the said arms, of the sliding collar E, the connecting-rods *j*, and the operating-rod *k*, substantially as shown and described, whereby the said wings will be drawn in against the curved arms, as and for the purpose set forth.

5. The curved vanes or wings D D′ D″, centrally hinged upon the tie-rods *e*, in combination with the rods *g g g* and the curved arms *d*, the rods connecting the windward edges of the wings with opposite leeward edges thereof, substantially as described.

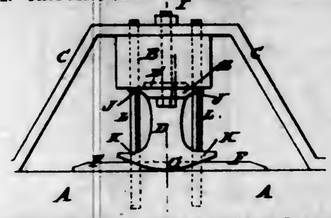
257,650. APPARATUS FOR HEATING AIR AND WATER FOR BUILDINGS. ALVIA K. BROWN, Newton, Iowa. Filed Mar. 11, 1882. (No model.)



Claim.—1. The air and water heating apparatus for buildings and apartments, consisting of the air-tight furnace-chamber A, furnace B, drum F, water-chamber G, fan K, water-tanks L T, and coiled heating-pipes *b* A, substantially as specified.

2. The air-heating and ventilating apparatus for buildings and apartments, consisting of the air-tight furnace-chamber A, furnace B, water-chamber G, coiled heating-pipe *b*, drum F, fan K, cold-air flue C, hot-air pipes H, and cold-air outlets *o* in chimneys D, substantially as specified.

257,651. SLEIGH-KNEE. BENJAMIN F. BROWN, Houghton, Mich. Filed Jan. 30, 1882. (No model.)

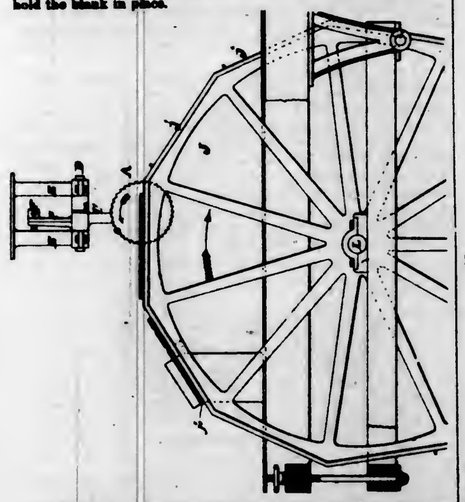


Claim.—1. The herein-described sleigh-knee D, provided with the horizontal flange E around its upper part, a little below its upper end, D′, having perforations H in its sides to receive the fastening-bolts and recesses J in its front and rear to receive the strengthening-pins, and having its lower end flared at the front and rear and provided with perforations K and flanges, substantially as set forth.

2. The combination, with the runners A, the beam B, having its lower side recessed, and the brace C, perforated and having its ends secured to the runners, of the knee D, provided with the perforated and recessed flange E around its upper part, a little below the upper end, D′, and downwardly-projecting flanges G on the sides of its flaring lower part, the fastening-bolts I, and the strengthening-pins J, substantially as and for the purpose set forth.

257,652. STAVE-JOINTING MACHINE. WILLIAM BROWN, St. Louis, Mo. Filed Nov. 26, 1881. (No model.)

Brief.—An adjustable feed-wheel with tangential sides carries the blank without clamping to inclined saws, the sides of which hold the blank in place.



Claim.—1. The combination of a feed-wheel, J, having tangential beds *j*, each provided with a single stud, *j′*, and the inclined saws A A, the wheel being adapted to deliver the blanks after being cut, and the inclined saws, mounted one on each side of the wheel and adapted to hold the blank down in its place on the bed while sawing the sides in jointing, as set forth.

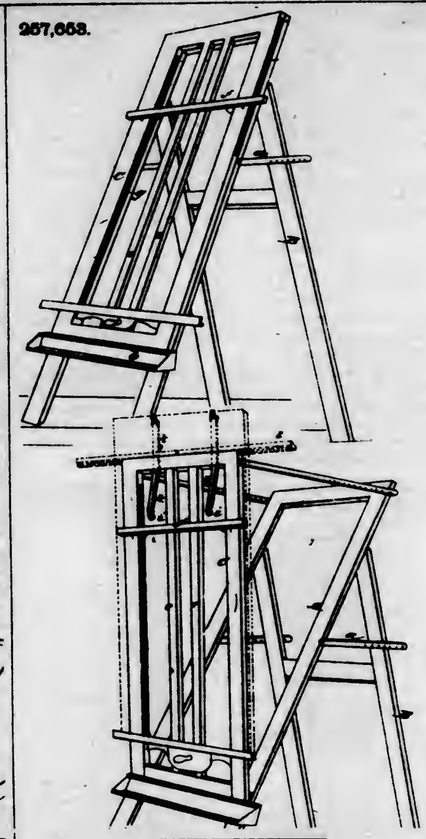
2. In combination with inclined saws, a feed-wheel beneath, having straight beds *j*, said wheel being adjustable toward and away from the saws and adapted to deliver the blanks lengthwise to the saws, as set forth.

257,653. HASSEL. WILLIAM H. BROWNELL, Brooklyn, N. Y. Filed Mar. 17, 1882. (No model.)

Claim.—1. The combination, with the main frame, of an auxiliary frame, C, carrying the work-slides and hinged at its lower end to the front of the main frame, whereby the frame C may be adjusted with respect to the main frame to hold the work in varying positions, as described.

2. The clasps *i* and bands *k*, in combination with the easel-frame C, substantially as and for the purpose described.

257,653.



257,654. FIRE-EXTINGUISHER. ALBERT H. BURRITT, Waterbury, Conn., assignor to the A. Burritt Hardware Company, same place. Filed Feb. 1, 1882. (No model.)



Claim.—1. The distributer consisting of the cup-shaped disk attached to the nozzle and arranged in a plane at substantially right angles to the discharge and a short distance therefrom, the rim of the said cup perforated, substantially as described.

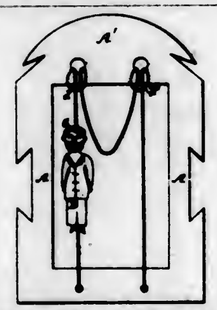
2. The distributer consisting of the cup-shaped disk attached to the nozzle and arranged in a plane at substantially right angles to the discharge and a short distance therefrom, the rim of the said cup perforated, with a conical plug to close the nozzle, secured by a fusible connection, the spindle of the plug extending through the bottom of the distributer substantially as and for the purpose described.

3. The distributer consisting of the cup-shaped disk attached to the nozzle and arranged in a plane at substantially right angles to the discharge and a short distance therefrom, the rim of the said cup perforated, with a plug to close the nozzle, its spindle extending through the distributer and secured by a fusible connection between the spindle and the distributer, substantially as described.

257,655. TOY OR PUZZLE. ABRAHAM D. CAMPBELL, Hackensack, N. J., assignor of one-half to William Cronkright, same place. Filed Mar. 20, 1882. (No model.)

Claim.—1. As a new article of manufacture, a puzzle or toy consisting of a frame or gallows, A, and a suspended body, B, the

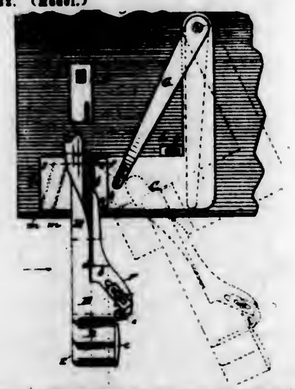
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head C and trunk of which are formed in separate parts and suspended on a looped cord or line arranged and supported substantially as shown and described.

2. As a new article of manufacture, a puzzle or toy consisting of a frame or gallows, A, and a suspended body, B, the head C and trunk of which are formed in separate parts and suspended on a looped cord or line so arranged that the head may be removed from one section of the line and placed upon another without removing the head from the line, substantially as set forth.

267,656. REVERSE-SEAMING GUIDE FOR SEWING-MACHINES. JAMES W. CHAMBERS, Baltimore, Md. Filed Feb. 20, 1882. (Model.)



Claim.—1. The devices for forming the reversed seam, consisting of the combination of a middle plate, the upper and lower tongue spring-guides, bent at their ends to form tapering throats, and the upper and lower curved folding-lips, connected to the middle plate and diverging from its plane from a point, *d*, near the middle line of the throats, and curved over and inclosing the tongue spring-guides, substantially as and for the purpose described.

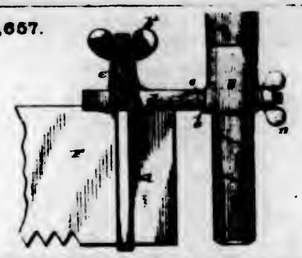
2. The combination, with the machine-table having slots *j*, with inclined bottoms, of the right-angular spring base-plate C, having pins *b* and guide-ribs *m*, and connected to the machine-table by a pivot-screw, *a*, substantially as and for the purpose described.

3. The combination, with the machine-table and the right-angular base-plate C, of the bearing-spring G and pivot-screw *a*, connecting both the said spring and the base-plate to the machine-table, as and for the purpose set forth.

4. The combination, with the pivoted right-angular plate C, bearing the seam-folding devices, of the adjustable gage A, as and for the purpose described.

5. The combination, with the middle plate, D, the upper and lower curved lips, D' and D², and the upper and lower spring-tongues, E and E', of the adjustable gage F, substantially as and for the purpose described.

267,657. SAW-HANDLE. WILLIAM CLEMSON, Middletown, N. Y., assignor to the Wheeler, Madden & Clemson Manufacturing Company, same place. Filed Feb. 11, 1882. (No model.)



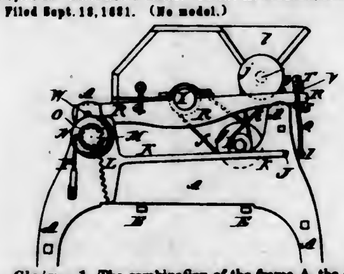
Claim.—1. The combination, with a handle and an eye or socket secured thereto, the latter being provided with an angular opening or recess on one side and an opening on the opposite side for the passage of the end of the shank, of a shank having means for securing the saw-blade thereto, and provided with an angular shoulder of the same size as the angular recess before referred to, and with a screw-threaded portion adapted to pass through the handle and through the opening on the opposite side of the eye or socket, and means for securing the said shank in position, substantially as set forth.

2. The combination, with a handle and an eye or socket secured thereto, the latter being provided with an angular recess on one side and provided on the opposite side with an opening for the passage of the end of the shank, of a shank consisting of a body portion and a screw-threaded end portion, the body portion being provided with a longitudinal groove for the saw to rest in, and an angular shoulder adapted to fit in the angular opening in the said eye or socket, as described, and means for securing the saw-blade to the said shank, substantially as set forth.

3. The combination, with the saw-handle provided with a socket having an angular opening or recess on one side and an opening on its opposite side, of a shank constructed to extend through the socket and provided with an angular portion that fits within the angular recess in the socket and with a groove to receive the edge of the saw-blade, and a clamping-bolt and thumb-nut for securing the saw-blade to said shank, substantially as set forth.

4. The combination, with the saw-handle provided with a downward extension, an eye or socket, B, provided with an angular opening or recess on one side and an opening on its opposite side, of a screw-threaded shank inserted through the socket and secured by a thumb-nut, and constructed with an angular portion that fits in the angular opening of the socket, said shank being provided with a groove, *g*, and a projection, *c'*, and the clamping-bolt G and thumb-nut *b'*, substantially as set forth.

267,658. GRINDING-MILL. JAMES H. COLLINS, Gadsden, Ala. Filed Sept. 19, 1881. (No model.)



Claim.—1. The combination of the frame A, the stationary concave stone B, the cylindrical runner C, and the hinged supporting-racks D E, as set forth.

2. In a grinding-mill, the combination, with frame A and the stationary stone B, of the hinged rack D, the connecting-rods G, the cross-bars I, the rock-shaft J, and mechanism for turning said shaft, substantially as herein shown and described, whereby the said stone can be adjusted by turning the said shaft, as set forth.

3. In a grinding-mill, the combination, with the frame A and the cylindrical runner C, of the hinged rack E, the connecting-rods Q, the cross-bars I, and the rock-shaft J, and mechanism for turning said shaft, substantially as herein shown and described, whereby the said runner can be adjusted by turning the said shaft, as set forth.

4. In a grinding-mill, the combination, with the frame A and the racks D E, that carry the grinding-stones, of the connecting-rods G and Q, the cross-bars I, and the rock-shaft J, and mechanism for turning said shaft, substantially as herein shown and described, whereby both stones can be adjusted by one operation, as set forth.

5. In a grinding-mill, the combination, with the rack D, carrying the stationary stone B, and the connecting-rods G, of the hook-nuts H, substantially as herein shown and described, whereby the said connecting-rods can be readily detached from the said rack, as set forth.

6. In a grinding-mill, the combination, with the rock-shaft J, carrying the cross-bars I, connecting-rods G Q, and the racks D E, of the lever K, rack-segment L, gear-wheel M, and ratchet and pawl O P, substantially as herein shown and described, whereby the said shaft can be readily turned to adjust the stones and will be securely held when adjusted, as set forth.

257,659. CAR-COUPLING. GEORGE O. S. CONWAY, Stonefield, assignor of one-half to James Cooper and Frederick Fairman, both of Montreal, Canada. Filed Nov. 26, 1881. (No model.)

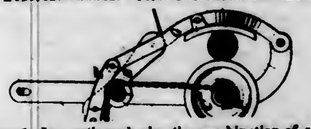


Claim.—1. A car-coupler having an oval internal chamber, in which is contained a ball dropping automatically into place on the entry of the link, so as to hold it in position, substantially as specified.

2. The combination, with the chamber A' and ball C, contained therein, and adapted to lodge in and retain the link, of recess G, as and for the purposes set forth.

3. The combination, with the ball C, contained in chamber A', provided with recess G, of arm E, mounted on pivot-spindle D, all constructed and operating substantially as and for the purposes set forth.

257,660. CAR-BRAKE. GEORGE O. S. CONWAY, Stonefield, assignor of one-half to James Cooper and Frederick Fairman, both of Montreal Canada. Filed Dec. 24, 1881. (No model.)

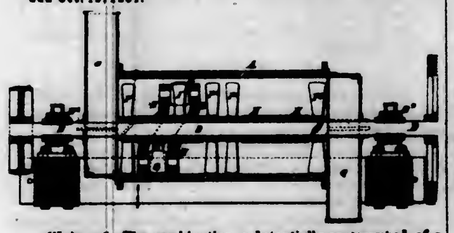


Claim.—1. In a railway-brake, the combination of a swinging oscillating frame and lever pivoted thereto operated to grip the axle, when so desired, between them, and thereby wind up the brake-chains and put on the brakes, all substantially as herein set forth.

2. The combination, in a railway-brake, of a swinging frame, a curved lever carrying a shoe, a drum and spindle carried in frame, and a lever pivoted in the upper part of the swinging frame, worked by means of a cord passing through it, but unattached thereto, and operating to close the lever and frame on the axle, and thereby put on the brakes, all substantially as herein described.

3. The combination, with a rod, either vertical or horizontal, operating when rotated to cant the lever E, to which it is connected, and thereby apply the brake mechanism herein described, of a cross-head mounted on end of said shaft and moved in either direction by a continuous cord passing through same, all as herein set forth.

257,661. MACHINE FOR REDUCING COAL, CORN, &c. RICHARD COOK, Sheffield, England. Filed Mar. 8, 1882. (No model.) Patented in England Oct. 18, 1880, in Germany Mar. 14, 1881, in France Mar. 18, 1881, in Belgium Mar. 16, 1881, and in Canada Oct. 18, 1881.

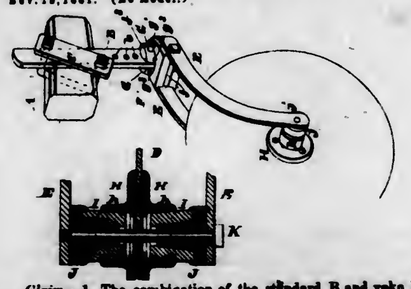


Claim.—1. The combination, substantially as described, of a case or cylinder, A, a shaft, D, curved drivers or carriers H, secured to the shaft, and rollers G, arranged respectively on the ends of the drivers or carriers to rotate in different vertical planes, essentially in the manner and for the purposes set forth.

2. The combination, with the case or cylinder A, having feed and discharge tubes at its ends, respectively, the horizontal shaft D, and the traveling grinding or crushing rollers G, of the double-armed fans P, P', and P², arranged respectively at the feed and discharge ends of the case or cylinder and at the side of the traveling grinding or crushing rollers for cooling the material being operated on, feeding it along, and discharging the same at one end of the case or cylinder, substantially as described.

3. The combination of the case or cylinder A, the tube or shaft O, and the chute or pipe Q with the shaft D, curved drivers or arms H, the rollers G, and the blades or fans I, substantially as above described, and for the purpose specified.

257,662. ROTARY COLTER. OSCAR J. CORNOYER, St. Louis, Mo., assignor of one-half to Joseph H. Barr, same place. Filed Nov. 15, 1881. (No model.)



Claim.—1. The combination of the standard B and yoke E with the box F, secured to the yoke, and the bearing-blocks G, adjustably secured to the standard, for the purpose set forth.

2. The combination, with a yoke, E, and flanged box F, of the standard B, having orifices *b*, and the bearing-blocks G G, having pin *g'*, the said blocks being adjustable on the standard, as and for the purpose set forth.

3. The combination of standard B, adjustable bearing-blocks G, with flanges *g*, pin *g'*, box F, having grooves *f f²*, bolt *f'*, and the yoke E of a rotary colter, all made substantially as set forth.

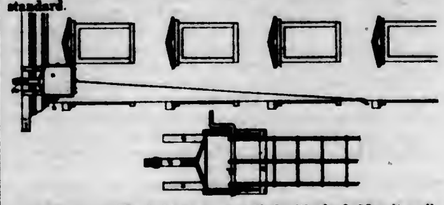
4. In combination with the standard B, yoke E, and box F, the adjustable bearing-blocks G, having the teats *g²* secured thereto, as and for the purpose set forth.

5. The blocks G G, formed with teats *g²* *g²*, and provided with the pin *g'*, in combination with the box F, having stop *f³*, and the standard B, having orifices *b*, as set forth.

6. The combination of the cutter D, disks H H, having hubs *h h*, concentrically-ribbed arbors J J, yoke E, bolt K, and the concentrically-grooved housings I I intermediate of the arbors and hubs, as set forth.

257,663. FIRE-ESCAPE. PATRICK H. COSTELLO, Boston, Mass. Filed Mar. 6, 1882. (No model.)

Brief.—The shaft upon which the ladder is wound is inclosed in a case which is provided with guides and a central sustaining-standard.

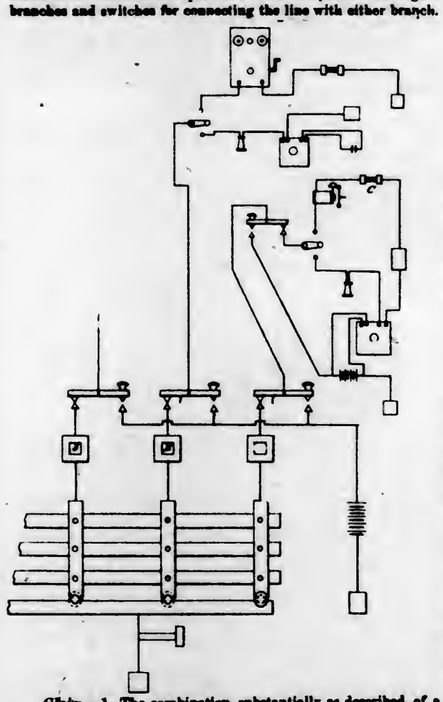


Claim.—1. The ladder-case provided with the ladder, its coiling-shaft, and the central standard and its wheel, and the guides, arranged substantially as set forth.

2. The guide-rail arranged with the building, as described, in combination with the coiling-ladder, and with its case and coiling-shaft, and with the sustaining-standard and its wheel and guides, arranged with each case, as shown and described.

257,664. TELEPHONE-EXCHANGE SYSTEM. GEORGE W. COY, Milford, Conn., assignor, by mesne assignments, to the United States Telephone Manufacturing Company, New York, N. Y. Filed Dec. 31, 1880. (No model.)

Brief.—The lines are normally grounded through a listening-telephone located in a common earth-connection at the central office. High resistances at the subscribers' stations prevent the diversion of currents from the central-office ground. Annunciators are placed in the lines and a battery in the branch, and keys are provided whereby the lines may be connected either with annunciators and telephone to ground or with the battery branch. Subscribers' stations are provided with telephone and signal branches and switches for connecting the line with either branch.



Claim.—1. The combination, substantially as described, of a series of telephone-lines centering in a single office, switch apparatus for connecting any two of said lines for telephonic communication, an annunciator in each normal line-circuit and in direct connection with said circuit, and circuit-shifting apparatus for connecting any line at pleasure to a wire leading to an electric generator for signaling to a subscriber's station.

2. The combination, substantially as described, of a series of telephone-lines, a common switch apparatus for connecting any two lines for telephonic communication, an annunciator at the central office placed directly in each normal line-circuit, an electric generator in a branch line for signaling purposes, and circuit-shifting apparatus for disconnecting any line from the portion of its normal circuit running to the annunciator and ground and connecting said line to the wire leading to the generator.

3. In a station telephone apparatus, a battery in a local circuit, in combination with a switch in the line having connections to the station apparatus and the local battery, and acting to disconnect the line from the station apparatus and connect it with the local battery, substantially as and for the purpose described.

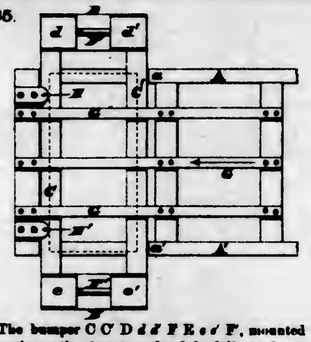
257,665. BRICK-MACHINE. JONATHAN CARADER, Cincinnati, Ohio, assignor of one-half to Wilhelm Pieper, same place. Filed Feb. 24, 1882. (No model.)

Claim.—1. A bumping apparatus reciprocating transversely of the delivery-frame of a brick-machine, and adapted to alternately strike the opposite ends of the charged molds, in combination with suitable stops for arresting said molds in a proper position, substantially as described.

2. The combination, in a brick-machine, of delivery-frame A *a* A' *a'*, reciprocating bumper C C' D E, bearing-bars G, and stops H H', substantially as described.

3. A brick-machine bumper consisting of the beams C C', ends D E, blocks *d d' e e'*, and handles F F', as and for the purpose specified.

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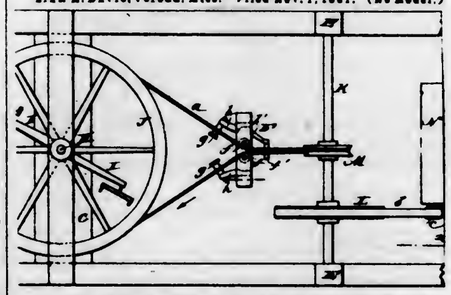
4. The bumper C C D *d d* F E *e e* F, mounted on rollers *j j*, and reciprocating transversely of the delivery-frame of a brick-machine, substantially as herein described.

257,666. COTTON-SCRAPER. CHARLES C. DAVIS and WILLIAM H. MERCER, Hayden, S. C. Filed Feb. 23, 1882. (Model.)



Claim.—In a cotton-scraper, the combination of the two beams A, each made in a single piece with the standards, and having the handles D secured between their rear ends, the shaft B, having the two cutting-wheels G secured thereto, and the scrapers C, which cut close to the outsides of the wheels, substantially as shown and described.

257,667. DRIVING MACHINERY FOR COTTON-GINS. WILLIAM H. DAVIS, Verona, Miss. Filed Nov. 1, 1881. (No model.)

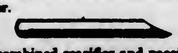


Claim.—1. The adjustable arms A A, provided with the rollers *g g*, and the adjustable arms A' A', provided with the rollers *f' f'*, in combination with the vertical guide-rollers *f f*, substantially as and for the purposes set forth.

2. In combination with the vertical king-post H, provided with the levers I I, and carrying the main drive-wheel J, and the horizontal shaft K, provided with the pulleys L and M, the intermediate frame, F, provided with the adjustable arms A A, having the rollers *g g*, and the arms A' A', provided with the rollers *f' f'*, substantially as and for the purposes set forth.

257,668. VACCINATOR. JOHN H. DICKSON, New Castle, Pa. Filed Feb. 8, 1882. (No model.)

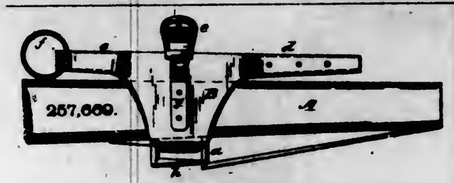
Brief.—A quill-point carries the virus, and is also adapted to serve as a scarifier.



Claim.—A combined scarifier and vaccine-carrier, consisting of a quill clarified, hardened, and sharpened, and bearing the virus, substantially as described.

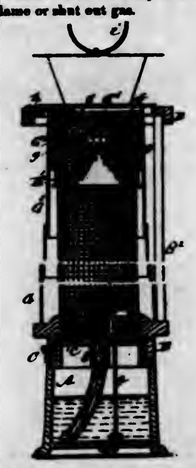
257,669. HARNESS ATTACHMENT FOR VEHICLE-SHAFTS. JOHN H. DIEFFENBACHER, Edwardsburg, Mich. Filed Mar. 6, 1882. (No model.)

Claim.—The shaft A, having connected to it the spring-catch *c* and confining-arm A, in combination with the girdle B, having buckle *e*, straps *d g*, and strap *c*, with ring *f*, substantially as and for the purpose set forth.



257,670. SAFETY-LAMP FOR MINERS' USE. JOHN M. DOLBY, Wilcoxboro, Pa., assignor to himself, William H. Thomas and James J. Kerwin, same place. Filed Mar. 6, 1882. (No model.)

Brief.—A telescopic extinguishing-case exterior to the gauze cage of the lamp is raised when the lamp is in use and lowered to extinguish the flame or shut out gas.



Claim.—1. The telescoping tubular sections G G', the section G², provided with openings *g*, the section G³, having bar S, and the covering-section G⁴, in combination with the cage E E', and the frame-bars F', as shown and described.

2. The combination, in a lantern, of a cage-body, E, wire-gauze E', and supporting-frame *f*, as shown and described.

3. The externally-threaded cap D and the bowl having internally-threaded neck *c*, in combination with the burner *b*, having perforated collar *d* and washer-plate *d'*, whereby the burner may be made fast to the bowl, the trimming and raising wire may be readily manipulated, and the oil may be prevented from escaping on the cage or wire-gauze, as described.

257,671. MAP AND CHART EXHIBITOR. ALEXANDER DOM, Mount Healthy, Ohio. Filed Oct. 18, 1881. (No model.)



Claim.—1. In combination with a series of display-sheets, a frame or support to which one end of said sheets is attached, said frame being retained on an appropriate support and capable of being turned horizontally thereon, substantially as and for the purpose specified.

2. The roller C, having attached thereto a series of display-sheets, E, and supported by a frame, said frame being retained on an appropriate support and capable of being turned horizontally thereon, substantially as and for the purpose specified.

3. The standard A, provided at the top with hole *b'*, and frame A', consisting of the horizontal rail B and arms E', the frame being provided with pin *b* and capable of being turned horizontally on the standard, in combination with the roller C, having attached thereto at intervals around its face a series of display-sheets, E, substantially as and for the purpose specified.

4. The standard A and frame A', capable of being turned horizontally on the top of the standard, said frame being further provided with notches *d*, in combination with the roller C, having attached thereto a series of display-sheets, substantially as described.

5. The rail C, retained on an appropriate support and capable of being turned horizontally on such support, and a series of display-sheets attached to said rail by means of a connecting-strip, X, substantially as and for the purposes specified.

257,672. SURCINGLE. MARSHALL E. DOWLIN, North Adams, Mass. Filed Dec. 12, 1881. (No model.)



Claim.—1. A surcingle formed with two distinct inflexible bearing-pads, separated so as to freely admit the ridge of the backbone between them, and adapted to bear on the fleshy parts of the back, on either side of the ridge, with a flexible connection between said pads, adapted to span the backbone without bearing seriously thereon, together with a buckling-strap for fastening the same around the blanketed body of the horse, substantially as herein shown and described.

2. A surcingle constructed with bearing-pads formed of wooden blocks joined by a flexible connection or hinge, substantially as and for the purpose set forth.

3. The combination, in a surcingle with inflexible bearing-pads and their connection, of the buckling-strap *d*, fastened to the middle of the said connections and free in both directions therefrom, but passing loosely over the pads, substantially as and for the purpose set forth.

4. The combination, in a surcingle, with inflexible bearing-pads and their connector, of the buckling-strap *d*, fastened to the middle of the connector, with loops *b b* near the outer ends of the pads, through which the strap is loosely passed, substantially as herein shown and described.

257,673. ART OR PROCESS OF REFINING SUGAR. GEORGE A. DRUMMOND, Montreal, Quebec, Canada. Filed Feb. 4, 1882. (No specimens.)

Claim.—1. The art or process of clarifying syrup or solution of sugar by forcing it up through a suitable medium contained in a vessel, which, at the desired point of the operation, is inverted, so that the syrup remaining therein filtrates downward, but in the original direction and to the original outlet, all substantially as herein described, and for the purposes set forth.

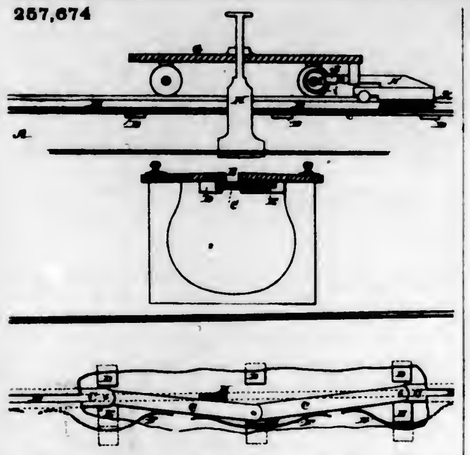
2. The art or process of clarifying any liquid and cleansing the clarifying medium by a liquid of less density by forcing the liquid to be purified up through the medium, reversing, when desired, the vessel containing same, allowing the remainder of the liquid to filtrate downward, and simultaneously letting in the cleansing-fluid on top, all as herein described, and for the purposes set forth.

257,674. CABLE RAILWAY. THEODORE DUPPY, San Francisco, Cal. Filed Feb. 11, 1882. (No model.)

Brief.—The slot of the tunnel is closed and protected by jointed sections confined in suitable guides, and opened by the passing grip-shank and returned to position by means of springs. A cleaner traveling in the slot is attached to a dummy and is operated by an eccentric upon the forward axle of the dummy.

Claim.—1. In a cable railway having an underground tunnel or tube in which the cable travels and a grip-slot through which the shank of the grip passes, the jointed sections or strips C C under the grip-slot, and confined in suitable guides to close said slot, and to be moved to one side by the passing grip-shank and to return to position by means of springs F, substantially as described.

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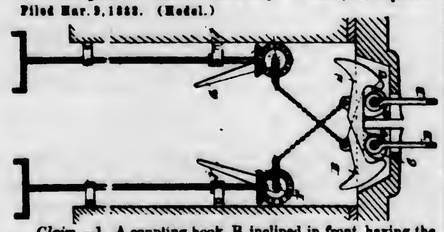
2. In a cable railway having an underground tunnel or tube and a grip-slot through which the shank of the grip passes, the combination and arrangement of the jointed strips C C, guides D E, and springs F, substantially as described.

3. In a cable railway having an underground tunnel or tube and a grip-slot, the jointed strips C C, closing the said slot underneath and opening as the grip-shank passes, in combination with a cleaning attachment upon the dummy, said cleaner traveling in the grip-slot in advance of the grip-shank, substantially as and for the purpose herein described.

4. In a cable railway having a tunnel or tube and a grip-slot, the jointed strips C C, arranged, as shown, to close or open the slot around the passing grip-shank, in combination with the cleaning device attached to the dummy, consisting of a cleaner, K, operating within the grip-slot, and the cleaners *l l* on top, and attached to a frame, N, secured to the throw-rod J, operated by an eccentric, I, upon the forward axle of the dummy, substantially as and for the purpose herein described.

5. In a cable railway, as shown, a cleaning device attached to the dummy in front, consisting of the cleaners K, traveling in the grip-slot, and cleaners *l l*, passing on top of the road, said cleaners having a forward and return motion in addition to the progress of the dummy by means of the frame N, rod J, strap *i*, and eccentric I upon the forward axle of the dummy, substantially as herein described.

257,675. CAR-COUPLING. DAVID B. DUNCAN, New Richmond, Ohio, assignor to himself and HARRY F. MOORE, same place. Filed Mar. 9, 1882. (Model.)



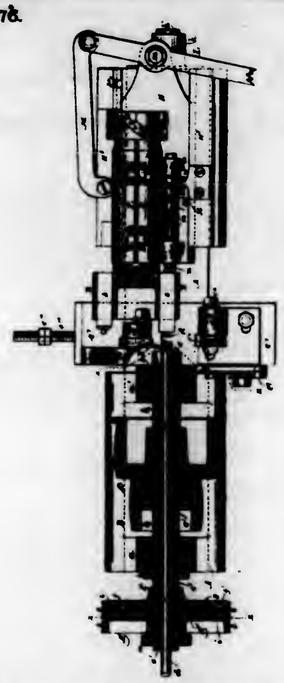
Claim.—1. A coupling-hook, B, inclined in front, having the lateral cam C and a recessed heel, and pivoted on a bolt, *c*, in combination with a notched draw-head and an iron rod bent in the middle to form a link, D, said rod being provided with an eye at each end, as and for the purpose specified.

2. The combination, with two hooks, B B, on pivots *c*, of the cams C C, each arranged on the heel of a hook to be out of the way of the opposite hook when its own is in a vertical position, but when the same is in a horizontal position to permit the point of the opposite hook to ride over it and engage, as described.

257,676. METAL-WORKING LATHE. FREDERIC ECAUSERY, New York, N. Y. Filed Jan. 13, 1881. (No model.)

Claim.—1. The combination, with the revolving tubular mandrel, of a tubular chuck within the mandrel, a wheel with an internal screw screwing upon the rear part of the tubular mandrel, mechanism, substantially as specified, for detaining the wheel and causing the screw to give end motion to the clamping-chuck, and means for revolving the screw-wheel more rapidly than the mandrel to screw the wheel in the other direction and liberate the article clamped by the chuck without stopping the rotation of the mandrel, substantially as specified.

257,676.



2. The combination, with the hollow mandrel and the chuck, of the wheels *f* and *g*, disk *e*, pinions *i*, internal and external gears, and friction-bands 5 and 6, substantially as set forth, whereby the chuck is operated during the revolution of the mandrel, substantially as set forth.

3. The combination, with the mandrel, chuck-wheels *f* and *g*, and bands 5 and 6, of the cylinder A and lever *h*, substantially as set forth.

4. The combination, with the tubular mandrel and chuck, of the wheels *f* and *g*, intermediate gearing, straps 5 and 6, cylinder A, and friction-pad acting against the wheel *f*, for the purposes and substantially as set forth.

5. The friction-pad 16, swinging strap *n*, and pin 18, in combination with the cylinder A, straps 5 and 6, wheels *f* and *g*, mandrel, and chuck, substantially as set forth.

6. The cylindrical tool-holder having parallel holes, a circular range of parallel tool-stocks, and the arbor F, in combination with the stock G, bed H, zigzag cam N, stud 24, and mechanism for moving the bed back and forth, substantially as set forth.

7. The bolt *u*, pin 35, slotted sleeve *v*, and stud 33, in combination with the tool-holding cylinder E and mechanism for reciprocating the same and revolving it progressively, substantially as set forth.

8. In a lathe having a reciprocating tool-holding cylinder, a head having a hub that projects toward the central recessed portion of the tool-holding cylinder, and a tool supported upon such hub, in combination with mechanism for moving the hub and tool transversely of the lathe, as and for the purposes set forth.

9. The combination, in a lathe, of a revolving mandrel, a holding-chuck, a tool-holding cylinder having parallel holes for the tool-stocks, the mechanism for turning the cylinder progressively and holding it, an external shaping-cutter, a separating-cutter, and a transverse sliding bed with heads for holding such cutters, and mechanism for moving and stopping the bed, substantially as specified.

257,677. TELEPHONE. THOMAS A. EDISON, Menlo Park, N. J. Filed Oct. 17, 1881. (No model.) Patented in England June 15, 1878.



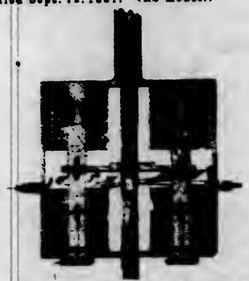
Claim.—1. A tension-regulating device, a support for the same, a diaphragm resting against the tension-regulator, and a spring-presser acting to retain the diaphragm in place, substantially as specified.

2. In a telephone, a diaphragm the whole of which is free to vibrate under the action of sound, a tension-regulating device at one side of the diaphragm, a mouth-piece, and a spring acting to press the diaphragm toward the tension-regulator, substantially as set forth.

3. In a telephone-instrument, a diaphragm that is corrugated or ribbed at or near its edges, substantially as set forth.

4. In a telephone, the combination, with the diaphragm, of a yielding tension-regulator at one side and a yielding presser acting against the other side.

257,678. ELECTRIC LIGHT. EDGAR A. EDWARDS, Cincinnati, Ohio. Filed Sept. 12, 1881. (No model.)



Claim.—1. The combination, in an electric lamp, of the channeled carbon-holder with the knife-edged friction-clutch arranged to work in the channel of the carbon-holder and connected to a vibratory yoke, the yoke rigidly connecting the axial cores of the magnets, and adapted to raise said vibratory yoke, whereby the raising of such yoke will cause the friction-clutch to act as a brake for retarding the descent of the carbon-holder, substantially as described.

2. The combination, with the double U-shaped electro-magnet composing magnets of different resistances, of the double-edged friction knife clutch and brake adapted to impinge simultaneously against the opposite sides of the channel-shaped carbon-holder, and mechanism for operating said clutch, substantially as set forth.

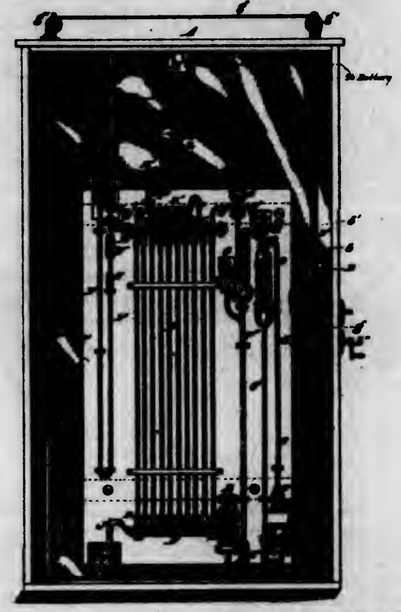
3. In combination with the channel-shaped carbon-holder and the friction-clutch brake, the link-levers f' M and the armature-yoke Y, connected with the stirrup *l*, whereby the carbon-holder will rise and fall and adjust the arc of the light, substantially as described.

4. The soft-iron case A, inclosing the two U-shaped electro-magnets of different resistance magnetically connected to the interior of the case, in combination with a carbon-holder passing vertically up through the case, and the automatically-operating devices for connecting the armature-yoke with the carbon-holder, substantially as herein set forth.

5. An electric lamp comprising the soft-iron case A and the two U-shaped electro-magnets of different resistances magnetically connected to and located within the interior of the case, said magnets having rising and falling axial cores united by a common armature-yoke, with an automatically-adjusting clutch mechanism adapted to raise and lower a metallic carbon-holder passing loosely up through the case, substantially as herein set forth.

6. In an electric lamp, the double U-magnet comprising coils of different resistance, with rising and falling axial cores united by a common armature-yoke, the rise and fall of which armature-yoke and cores operate the adjusting clutch mechanism for adjusting the arc of the light, the electro-magnets being magnetically connected to the metallic shell of the case, which acts as a metallic conductor and forms a part of the lamp-circuit through the carbon-holder and carbons, an external circuit being employed for regulating the magnetic forces actuating the common yoke of the two magnets, substantially as set forth.

257,679. MERCURY AIR-EXHAUSTER. EDGAR A. EDWARDS, Cincinnati, Ohio. Filed Apr. 18, 1881. (No model.)



Claim.—1. An air-exhauster composed substantially of the primary exhaust-chamber C, having stop-cock N, pipe C' *e* and seal *e'*, and reservoir B, combined with guide-rods, cord, and pulley, so as to be rapidly operated, in the manner substantially as herein set forth.

2. The exhaust-chamber C, with the tubes *e e*, connected to the top of said chamber, in combination with the seal cut-off cock N, substantially as herein set forth.

3. The combination of the series of drop-tubes D with the air-chamber E, feed-tube E', and discharge-chamber D', in combination with an elevated mercury-reservoir, F', for exhausting air from a vessel, L, in the manner substantially as herein set forth.

4. In combination with one or more drop-tubes, D, and reservoir F', the U-shaped tube F, with an air-trap, W, arranged to connect the parts, in the manner substantially as herein set forth.

5. In combination with the U-shaped tube F, the air-trap W and seal cut-off cock U, substantially as herein set forth.

6. In combination with the reservoir F, the float F'', and alarm *f'* H, the reservoir G, arranged to be raised and lowered by cord and pulley, in combination with the reservoir F', tube *f*, and drop-tubes D, substantially as herein set forth.

7. The combination of the primary exhausting apparatus B C with the compound series of drop-tubes D and feed-tube E' in air-chamber E and elevated mercury-reservoir F', for exhausting air from a vessel, L, in the manner substantially as herein set forth.

257,680. CAR-DOOR. THOMAS EUBANK, Sedalia, Mo. Filed Nov. 14, 1881. (No model.)

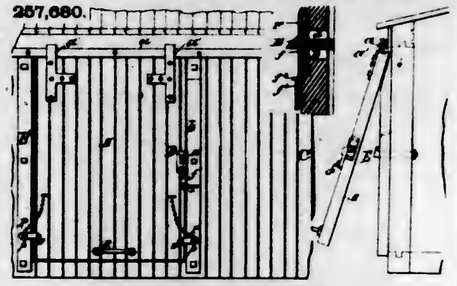
Brief.—A slotted plate on the door has a slotted sliding keeper with depending foot, the keeper engaging a hook on the car. The door-frame has a vertical stop on each side, one of which is beveled at the top to allow the door suspended by hooks on a rail to swing over and past it.

Claim.—1. The combination of the plate D, having slot *d*, keeper F, having foot *f'*, and catch E, substantially as shown, and for the purpose described.

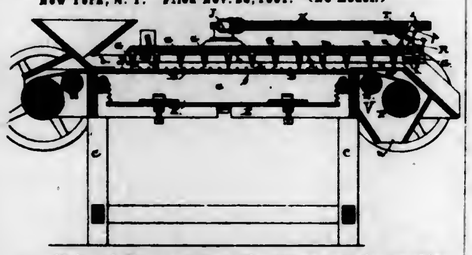
2. The combination of the door A, provided with the hangers *a'*, and keeper F, with the metallic rail or slide *a*, and catch C, substantially as shown, and for the purpose described.

3. A sliding car-door, in combination with a door-frame having a beveled and unbeveled step to secure it against cinders, the door swinging over and past the beveled stop and locked, substantially as shown and described.

257,680.



257,681. DRY-ORE CONCENTRATOR. WILLARD B. FARWELL, New York, N. Y. Filed Nov. 26, 1881. (No model.)



Claim.—1. In an ore separating or concentrating machine, the combination of a perforate ore-supporting surface, means for moving it forward or backward when desired, means for distributing the pulverized ore thereon evenly and for moving the light particles forward toward the discharge end, and an air-blast apparatus located beneath and forcing the current of air upward through the supporting-surface and ore-stratum, as set forth.

2. The combination, in an ore-separator, of the perforate ore-supporting surface B and means for directing upward through said surface a blast of air with the ore-spreading blades G and the bars L, as set forth.

3. In an ore-separator, the combination, with a perforate ore-supporting surface, means for delivering ore thereon, and means for moving said surface in either direction, of a series of rakes, G, and means for imparting to them a reciprocating movement for acting upon the stratum of light material in one direction and for elevating them above it in the other direction, substantially as set forth.

4. The combination of the reciprocating frame *h i* and supporting-surface B with the pivoted bars G, provided with blades *g*, mechanism for giving said frame a longitudinal reciprocating motion, and means for turning said bars upon their pivots to bring the blades thereof into an inclined or angular position during the reciprocation of their carrying-frame in one direction and for turning them down into vertical or working position at the return movement of the said frame, substantially as hereinbefore described, for the purpose set forth.

5. The combination, in a dry-ore separator, of the longitudinally-movable perforate supporting-surface B, the transverse slats L, the longitudinally-reciprocating scrapers *g g*, and the air-blast mechanism E E, substantially as hereinbefore described.

6. The reciprocating frame *h i*, having scrapers G, the bar *m*, connections *n*, the lever *p*, post R, the pitman, the crank, and the stop T, all combined to operate substantially as set forth.

257,682. PAPER-CUTTING MACHINE. HENRY P. PRENTIS, Philadelphia, Pa. Filed Sept. 1, 1880. (No model.)

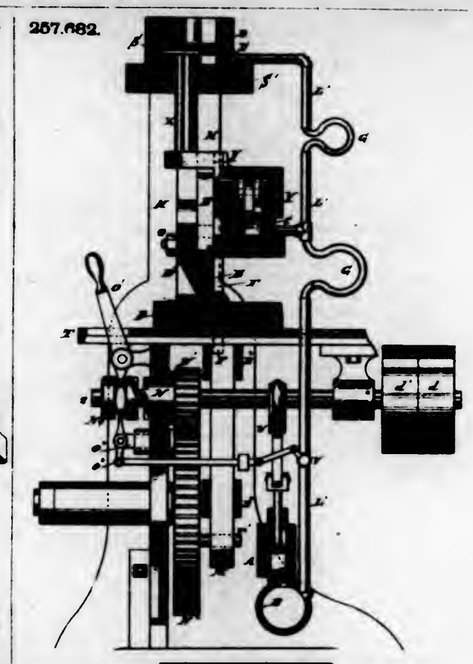
Claim.—1. The clamp E, in combination with air-cylinders C C, pistons I I, flexible rubber connections G G, and conducting-pipes L, substantially as shown and described.

2. In a paper-cutting machine, the combination, with yoke Y and table T, of air-cylinder D, piston S, and rod X, adapted to operate as and for the purpose set forth.

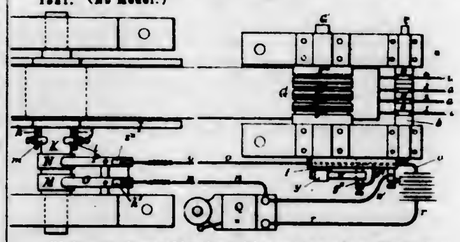
3. In a paper-cutting machine, the combination, with clamping-bar E and yoke Y, respectively, of air-cylinders C C, pistons I I, air-pipes L', flexible connections G G, and air-valve V, adapted to operate substantially as set forth.

4. The combination of starting-lever O', unshipping-bar O², cam *n*, connecting-rod O³, and two-way air-valve V, all substantially as set forth.

257,682.



257,683. ALARM FOR DETECTING DEFECTS IN INSULATING CONDUCTORS. LOUIS FIGUIER, Melrose, assignor of one-half to Lewis S. Judd, New Bedford, Mass. Filed Sept. 26, 1881. (No model.)



Claim.—1. In combination with machinery for coiling wires into a cable and the wires operated on thereby, a battery, a signal, and electric connections between said signal and battery and between these latter parts, respectively, and the alternate wires aforesaid, whereby the contact of two of these wires completes the circuit and operates the signal, substantially as set forth.

2. The combination of a battery with compressing-rolls electrically connected to one of its poles, an insulated wire electrically connected to its other pole, and a signal forming part of the circuit, whereby the contact of said wire with said rolls consequent on the uncovering of said wire will operate said signal, substantially as set forth.

3. The series G H of rolls, in combination with a battery and wires passing between the rolls, each wire being of different polarity from the rolls between which it passes, and the alternate rolls on the same shaft being of the same polarity.

4. In combination with the wires *a* and *i* and a battery and signal, the reel I, supporting said wires *a* at one end and making a part of the electric circuit, substantially as set forth.

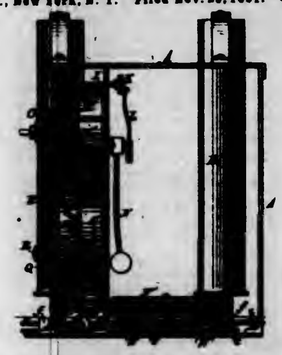
5. In combination with the series G H of rolls, the wires *a*, the reel I, the battery and wires to constitute an electric circuit, and the bell or signal Q, substantially as set forth.

6. The wires *a*, polarized alternately in pairs of opposite polarity and connected at one end with the reel I, in combination with said reel, the battery, wires *i*, and electrical connections, substantially as set forth.

7. In combination with a battery, a signal and cable-wires electrically connected to said battery, the rolls forming series G H, each roll being insulated from the roll nearest it, each alternate roll being insulated from its shaft, and said rolls being polarized alternately, substantially as set forth.

8. In combination with wires *a* and the battery, signal, and electrical connections, a pair of shafts and the rolls thereon, each shaft being connected to the pole of a battery and serving the purpose of polarizing the rolls, substantially as set forth.

257,684. ADVERTISING APPARATUS. JONATHAN S. FOWLER, Jr., New York, N. Y. Filed Nov. 29, 1881. (Model.)



Claim.—1. The combination of the apron C, adapted to move on the supporting-rolls B, the clock-train, and the intermediate mechanism, substantially as described, whereby the clock-train is adapted to cause the apron to advance by a series of quick movements, with long intervals of rest, in one direction, and then in like manner in the opposite direction, whereby the cards or signs are displayed successively and one changed instantly to expose another.

2. In an advertising apparatus, the combination of a movable part or apron, C, a clock-train adapted to be propelled by a spring and intermediate mechanism, substantially as shown and described, whereby the belt is moved automatically and rapidly back and forth, the movement in each direction being effected by right and left hand cam-teeth upon a wheel, causing a succession of long quick movements of the apron, separated by longer intervals of rest, whereby each sign or placard is exposed at rest and an instantaneous change made to expose the next sign.

3. The combination of the driving-train, the cam-wheel provided with the right and left hand cam-teeth, the pin acted upon by said teeth, and devices, substantially such as described, connecting the pin with the movable display-surface.

4. The cam-wheel S, provided with the right and left hand cam-teeth, as described, in combination with a member reciprocated by the action of said teeth, and two springs arranged to operate alternately and force said member to the right and left.

5. The combination of the cam-wheel S, provided with right and left hand cam-teeth, as described, the reciprocating rack-bar V, connected with said wheel, and the two alternately-acting spring-arms W W'

6. The combination of the cam-wheel having right and left hand teeth, the reciprocating rack-bar V, the springs W W', and the two driving-wheels connected by ratchet mechanism with pinions driven by the rack-bar, as shown and described.

7. The combination of the rolls B, the driving-pulleys with gear-wheels E', gear-wheels A', B', C', and D', with their ratchet mechanism, the reciprocating rack-bar V, the spring-arms W W', and the cam-wheel having teeth *a a'*.

8. In combination with the cam-wheel having right and left hand teeth, as described, the reciprocating bar, the two gear-wheels A' and B', two spring-arms to operate upon said bar, and stops for said arms, whereby they are caused to operate alternately on the rack-bar.

9. In combination with a member adapted for reciprocation, a cam-wheel provided with two series of cam-teeth, *a* and *a'*, and passages *b* between said teeth, as described and shown.

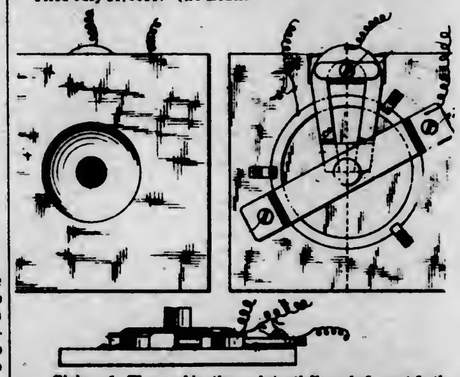
257,685. APPARATUS FOR RIVETING KNIFE-SCALES. HENRY H. FRANCIS, Hangatuck, Conn. Filed Feb. 16, 1882. (No model.)



Claim.—1. The combination of the two pairs of cutters *b a, f h*, arranged to receive the scale and lining between them, with guides to conduct the wire through the hole in the scale and lining, while arranged between the two pairs of cutters, substantially as described.

2. The combination of the two pairs of cutters *b a, f h*, arranged to receive the scale and lining between them, with guides to conduct the wire through the hole in the scale and lining, while arranged between the two pairs of cutters, and mechanism, substantially such as described, to adjust the two pairs of cutters relatively to each other substantially as described.

257,686. ELECTRIC TELEPHONE. JAMES P. FREEMAN, Chicago, Ill., assignor to the Home Telephone Company, of Illinois. Filed July 21, 1881. (No model.)



Claim.—1. The combination, substantially as before set forth, of the diaphragm, the fixed permanent magnet, the flat oscillatory keeper in constant contact with said magnet, and the electrode carried by the keeper and held in contact with the diaphragm solely by magnetic attraction exerted on the flat side of the keeper.

2. The combination, substantially as before set forth, of the diaphragm, the fixed permanent magnet, the flat oscillatory keeper in constant contact with said magnet, the electrode carried by the keeper and held in contact with the diaphragm solely by magnetic attraction exerted on the flat side of the keeper, and the fixed electrode.

3. The combination, substantially as before set forth, of the diaphragm, the electrode operated thereby, and the oscillatory keeper, of a permanent magnet carrying said electrode, the fixed electrode, the cross-bar supporting said fixed electrode, and the elastic cushions interposed between the cross-bar and the door or side to which the cross-bar is secured by screws.

257,687. TELEPHONE-TRANSMITTER. JAMES P. FREEMAN, TRUAT T. PROCTER, and HENRY B. PROCTER, Chicago, Ill., assignors to the Home Telephone Company, of Illinois. Filed Oct. 22, 1880. (Model.)



Claim.—1. A tension-regulator composed of a compressed compound of steel filings, coke, lamp-black, and balsam of fir, substantially as before specified.

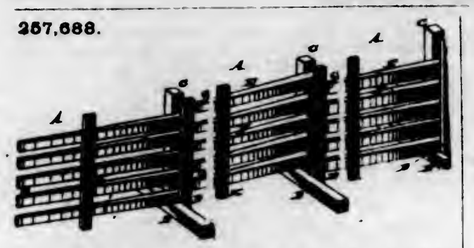
2. The combination, substantially as before specified, of the spring-arm, the button secured in a ring thereof, and the platinum-foil strips inserted between the button and its encircling ring.

3. The combination, substantially as before specified, of the spring-arm carrying the button or tension-regulator, the rigidly-secured but somewhat elastic non-conducting bracket supporting said arm, and the adjusting-screw acting on said bracket.

257,688. FENCE. MICHAEL FRENCH, French, Texas. Filed Mar. 14, 1882. (No model.)

Claim.—1. The combination of two or more panels, having

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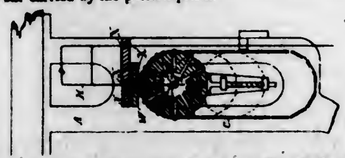


the sides of the horizontal rails tapered toward the end and secured to uprights, with a space between the rails, the smaller ends of the rails of one panel being adapted to be inserted into this space between the larger ends of the rails of the adjoining panel, as and for the purpose specified.

2. The panels A, consisting of cross-piece B, having vertical post C, between which and the binding-strip D the large ends of the tapering rails are secured, the latter being provided at some distance from their smaller end with a vertical bracing-strip, H, as and for the purpose herein set forth.

257,689. JACQUARD LOOM. JOHN O. PAYNE, Lowell, Mass. Filed Sept. 18, 1880. (No model.)

Brief.—The upper shuttle interweaves the silk or other weft carried by it with the figuring-warps operated by the pattern-hooks to form the face of the fabric, and is moved at every other pick of the loom, while the other shuttle interweaves its weft with the warps of the body of the fabric and is moved at every pick. The pattern-prism is reciprocated at every other pick, and is overhung by the upper bent ends of the hooks, which are raised directly by the unperforated parts of the pattern-cards, the threads connected with the selected hooks so raised being elevated to form the upper portion of the top shed. The hooks which pass through the perforations in the cards are also raised to lift the warps connected thereto into the middle line between the two sheds by a stop plate or bar carried by the pattern-prism.



Claim.—1. The combination of the hooks H with the prism B, the stop I', and mechanism for giving to said prism and stop a reciprocating motion, as and for the purpose specified.

2. The combination of the prism B, pattern-card C, hooks H, stop I', and mechanism for giving to said prism, card, and stop a reciprocating motion at every other pick of the loom, with the upper shuttle, K, and mechanism for throwing the same at every other pick, as and for the purpose specified.

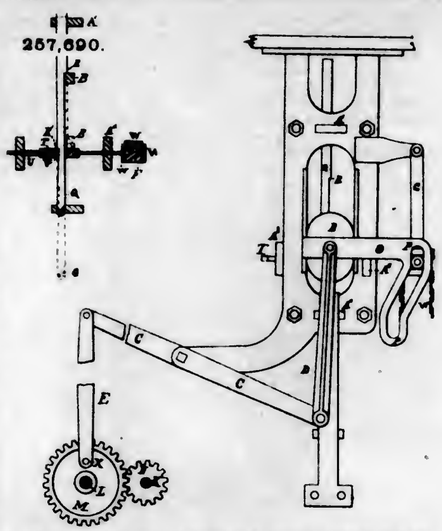
3. The combination of the prism B, pattern-card C, hooks H, stop I', and mechanism for giving to said prism, card, and stop a reciprocating motion at every other pick of the loom, with the upper shuttle, K, and mechanism for throwing the same at every other pick, and the lower shuttle, K', and mechanism for throwing the same at every pick, and harnesses D and mechanism for operating them, as and for the purpose specified.

257,690. JACQUARD MECHANISM FOR LOOMS. JOHN O. PAYNE, Lowell, Mass. Filed July 8, 1880. (No model.)

Brief.—The griff is raised once in two picks—that is, at every other pick—of the loom, being operated by a lever connected to a crank upon a counter-shaft driven by gearing from the main shaft of the loom at half the speed of the latter. A plate secured to the griff and slotted upward and outward causes the pattern-prism to move outward as the griff descends and inward against the needles as the griff ascends. The hooks are passed through slotted needles, and are all lifted at each rise of the griff, those selected to be kept elevated for the next pick being retained up by their needles, which, when permitted by holes in the pattern-card to move forward, pass under shoulders upon the needles.

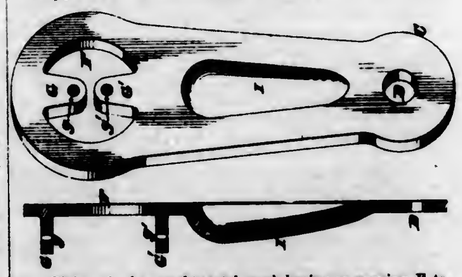
Claim.—1. The combination, with the griff B, piece O, slotted upward and outward, and mechanism for causing said griff to fall at every other pick of the loom, of the prism F and mechanism for causing said prism to revolve at the falling of said griff, as and for the purpose specified.

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2. The combination of the griff B, piece O, slotted at P upward and outward, the griff-lever C, and its connecting-rods D E, the counter-shaft L, provided with a crank, X, and a gear, M, the main shaft K, also provided with a gear, N, the former gear, M, having twice as many teeth as the latter gear, N, and caused to revolve by the latter, the prism F, provided with pins I, and the pawl or hook H, as and for the purpose specified.

257,691. CRANK FOR MACHINERY. ALBERT E. GATCHELL, Newport, Ky. Filed Feb. 4, 1881. (No model.)



Claim.—1. A wrought-metal crank having an opening, F, to receive the shaft and one or more lugs, G G', capable of being bent so as to afford a means of attachment to said shaft, substantially as described.

2. A wrought-metal crank having an opening, F, to receive the shaft and one or more perforated lugs, G g G' g', capable of being bent so as to afford a means of attachment to said shaft, substantially as described.

3. A wrought-metal crank having an opening, F, to receive the shaft and one or more perforated lugs, G g G' g', bent about at right angles to the face of said crank, for the purpose specified.

4. A wrought-metal crank having an opening, F, to receive the shaft, one or more lugs, G G', for attachment to said shaft, and an eye, D, to receive the wrist-pin or handle-shank, substantially as described.

5. A wrought-metal crank having an opening, F, to receive the shaft, one or more attaching-lugs, G G', an eye, D, to receive the wrist-pin or handle-spindle, and a stiffening bead or groove, I, disposed longitudinally of the web of the crank, for the purpose specified.

6. A wrought-metal crank bent back on itself to afford a double thickness of material to receive the wrist-pin or handle-spindle, substantially as described.

7. A wrought-metal crank having a groove or bead swaged longitudinally of the web of the same, as and for the purpose specified.

257,692. VENT FOR CASKS. RICHARD GORSALL, Baltimore, Md. assignor of one-half to W. A. Roberts, same place. Filed Mar. 16, 1882. (No model.)

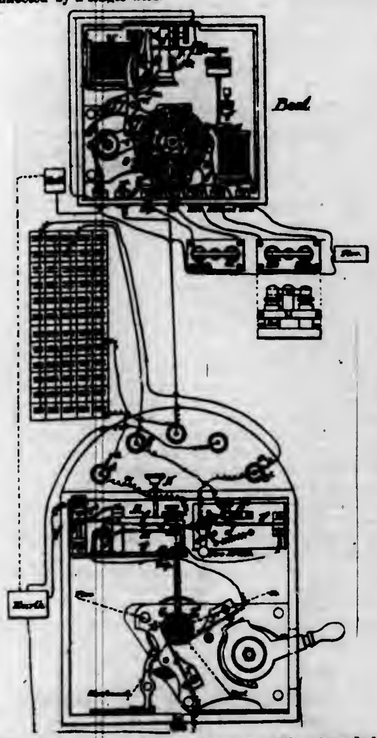


Claim.—1. In combination with the tube adapted for insertion into a barrel or keg, an inclined valve-chamber, and a gravity-valve having a stem, the said chamber being provided with a guide socket or recess for such valve-stem.

2. Combined with a tube adapted to be inserted into a barrel or cask, a valve-chamber connected with such tube and having a recess, 2, a screw-plug adapted to fit in such chamber and having a vent-orifice and an upwardly-tapering internal cavity, and a gravity-valve having a guide-stem, substantially as described.

257,693. CURRENT-CONTROLLING DEVICE FOR TORPEDO-BOATS. GEORGE E. HAIGHT, Hartford, Conn., assignor, by mesne assignments, of one-half to William E. Winsor, New York, N. Y. Filed June 14, 1881. (No model.)

Brief.—The devices consist of a step-by-step switch to be carried by the boat, having connections to the various electrical devices for propelling and steering the boat and firing the torpedo, and a controlling mechanism located on shore or in any other suitable place, whereby the switch may be operated to connect with any desired device in the boat, and more or less battery put to the line according to requirement. The boat and shore mechanisms are connected by a single wire.



Claim.—1. A current-director located within a torpedo-boat or other desirable point, consisting of a clock mechanism carrying a switch actuated by the armature of an electro-magnet and having a switch-board electrically connected with the several different functional mechanisms of the boat, in combination with a key-board mechanism on shore or other suitable directing-point, electrically connected to the current-director by a single wire, said mechanism consisting of a circuit making and breaking piece, with means, substantially as described, for operating the same.

2. The spring-driven switch, the series of wires leading therefrom to the operative mechanisms of the boat, and the locking device, constructed substantially as described, and electrically connected with said switch to lock it at the unison-point, all constructed to act in combination substantially as set forth.

3. The spring-driven switch consisting of a revolving switch-arm and its contacts with wires leading therefrom, as described, the locking device for holding said switch at the unison-point, and the escapement or equivalent device, and connecting operating-wire, all in combination substantially as described.

4. The spring-driven switch, a locking device holding said switch at the unison-point, which locking device is constructed so as to be controlled from a distant point by means of an electric circuit, substantially as described, an escapement device having several contact-points, wires leading from the switch to several operative mechanisms, and a key-board and controlling-stops, substantially as described, whereby the escapement-wheel may be detained at any point by means of currents acting through a single wire, all in combination substantially as described.

5. A spring-driven switch having several operating-wires leading therefrom, as described, the locking device for the switch at the unison-point operated by an increase of the battery-current, and the single escapement and pawl connected with said switch and controlled by the operator through an electro-magnetic circuit, all in combination substantially as described.

6. The combination of the spring-driven switch, the unison-stop, and the several wires leading from the switch, with the escapement, its pawl operated by an electro-magnetic circuit, as described, and the several keys and their connections, substantially as described, whereby the operator is enabled to throw the switch into line with any wire leading therefrom or to bring it to the unison-stop by means of a current operating through a single wire, as set forth.

7. The combination, with a spring-driven switch, of two or more electro-magnets of different power, but connected to the same wire, whereby the switch may be controlled by throwing more or less electrical elements into the circuit through the single wire, substantially as described.

8. The combination of the spring-driven switch, as R, and its connections, the unison-stop controlled by a current of a given power, the escapement and connections controlled by a current of different power, a single wire leading to both, and a battery constructed to throw greater or less currents through the wire, as set forth.

9. In combination with a notched oscillating ring, as described, a series of buttons or operating-keys having projections designed to arrest the revolving needle of a spring-driven or equivalent train of gears at the desired points, for the purpose described, said projections being so constructed and arranged that the pressing down of one button and its projection will cause any one previously pressed down to be released.

10. The combination, with a notched oscillating ring and a series of buttons or operating keys, substantially as described, of a unison-key which, when operated, releases all buttons or keys held down and allows the needle to freely revolve, for the purpose substantially as set forth.

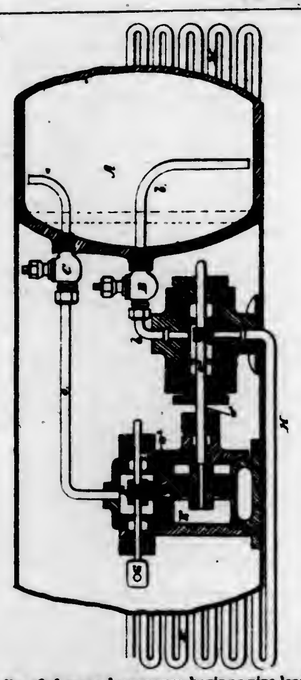
11. The herein-described method of propelling, steering, and firing a torpedo-boat from any suitable directing-point through an electrical wire connection, consisting, first, in the employment of a comparatively feeble normal current sufficient only to throw into electrical connection any one of the several operative circuits, as described; secondly, in the employment of a stronger current of sufficient intensity to effect the desired movement of the boat through the circuit previously placed in electrical connection; thirdly, in transferring the current to the firing-circuit, whereby the torpedo will be fired by contact with an obstruction.

12. The herein-described method of propelling, steering, and firing a torpedo-boat from any suitable directing-point through an electrical wire connection, consisting, first, in the employment of a comparatively feeble normal current sufficient only to throw into electrical connection any one of the several operative circuits, as described; secondly, in the employment of a stronger current of sufficient intensity to effect the desired movement of the boat through the circuit previously placed in electrical connection; thirdly, in transferring the current to the firing-circuit; and, fourthly, in sending a still stronger current whereby the torpedo will be instantaneously exploded.

257,694. DEVICE FOR CONTROLLING TORPEDO-BOATS. GEORGE E. HAIGHT, Hartford, Conn., assignor of one-half to William E. Winsor, New York, N. Y. Filed Sept. 7, 1881. (No model.)

Claim.—1. In a valve apparatus for torpedo-boats, a reservoir

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containing liquefied gas under pressure, having a pipe leading from the liquid and a pipe leading from the gas therein, substantially as described, and for the purpose set forth.

2. A reservoir containing liquefied gas under pressure, having a pipe leading from the liquid and a pipe leading from the gas therein, in combination with a valve apparatus, substantially as described, whereby the pressure from the gas contained in the reservoir is applied to shift the liquid-controlling valve.

3. In combination with a valve apparatus for torpedo-boats, the reservoir A, having the pipe *c* in communication with the top and pipe *b* in communication with the bottom thereof, substantially as and for the purpose described.

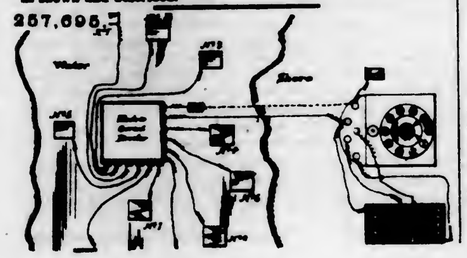
4. A reservoir containing liquefied gas under pressure, having a pipe leading from the liquid therein to and in combination with an expansion chamber or pipe, the passage thereto being controlled by a valve, and said reservoir having another pipe leading from the gas therein to valve apparatus, substantially as described, whereby the pressure of gas contained in the reservoir is used to shift the said liquid-controlling valve, for the purpose described.

5. In a valve apparatus for torpedo-boats, the combination of cylinder E, slide-valve F, magnet G, piston *e*, piston-rod *d'*, and valve D, substantially as described.

6. The combination with the gas-reservoir, of a pipe, *c*, leading from the gas in the reservoir to cylinder E, and pipe *b*, leading from the liquid in the reservoir to the expansion-pipes, but closed or opened by valve D, which is operated by the piston in cylinder E, substantially as described.

7. The combination of reservoir A, gas-pipe *c*, and liquid-pipe *b*, valve F, operated by magnet-cylinder E, valve D, operated as described, and expansion-pipes leading to the engine, substantially as shown and described.

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257,695. ELECTRICAL DEVICE FOR OPERATING SUBMERGED MINES, &c. Gurdon E. Halsey, Hartford, Conn., assignor of one-half to Harvey D. Winsor, New York, N. Y. Filed Sept. 7, 1881. (No model.)

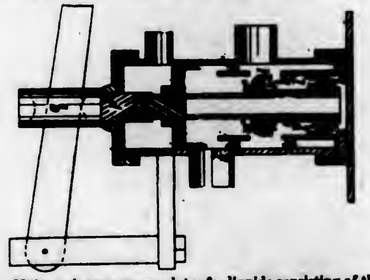
Claim.—A series of fixed submerged mines or torpedoes, each having a wire leading to a submerged current-selector, said current-selector being in electrical connection through a single wire with a key-board apparatus and battery located at a distant point on shore or shipboard, the whole constructed to act in combination, in the manner and for the purposes set forth.

257,696. COMBINED SHOULDER-BRACE AND SUSPENDERS. John D. Hanbury and Charles H. Clifton, New York, N. Y.; said Clifton assignor to said Hanbury. Filed Mar. 3, 1882. (Model.)



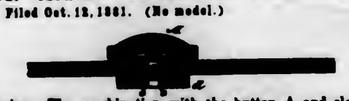
Claim.—As an article of manufacture, a combined shoulder-brace and suspenders consisting of the supporting-straps A, the arm-straps B, the adjustable transverse strap C, attached to the supporting-straps, and the adjustable transverse strap E, attached to the arm-straps, substantially as herein shown and described.

257,697. WATER-PRESSURE REGULATOR. Patrick Harvey, Chicago, Ill. Filed Apr. 4, 1881. (No model.)



Claim.—A pressure-regulator for liquids consisting of the following elements: first, a tubular shell closed at the ends and having lateral induct, educt, and relief openings, the educt being longitudinally between the other two; second, three pistons fitted within such shell, rigidly attached to and moving with a single piston-stem, which penetrates the end of the shell nearest to which is the relief-opening, the first or lowest piston playing below the induct-opening, the second or highest piston playing above the educt and to and beyond the relief opening, and the third piston being between the other two, situated and serving as a valve to open and close the induct; third, a conduit or water-way opening into the piston-chamber at one end below the first piston and at the other end between the other two pistons, and which may be either through the piston-stem or in the body of or exterior to the shell; fourth, a weighted lever, or its mechanical equivalent, adjusted against the outer end of the piston-stem, actuating it inward against the water-pressure, all combined and operating substantially as set forth.

257,698. SEPARABLE BUTTON. Asa K. Hawley, Delhi, La. Filed Oct. 12, 1881. (No model.)



Claim.—The combination, with the button A and slotted washer *d*, of the plate B, having a flanged head, *a*, made fast to the button, elastic posts *b b*, forming the button-shank, and turned-up ends *c c*, all constructed and arranged to adapt the button to be applied as described.

257,699. HAME. William B. Haynes, Columbus, Ohio. Filed Apr. 3, 1882. (Model.)

Claim.—1. The combination, with the slotted metal hame-

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top having a series of sockets, *d'*, formed along each of its two opposing walls and located entirely within the slot, of the metal-strap loop, having a pair of studs projecting inwardly from one of its cross-bars, said studs being adapted to be received within the sockets, and the loop being adapted in size to embrace the hame-tip and to leave a space for the hame-strap between one of its bars and the hame-top when the studs upon the opposite bar are received in the aforesaid sockets, substantially as and for the purpose described.

2. The combination, with the slotted metal hame-top having the raised portions *d'* formed along each of its two opposing walls, and provided with sockets *d'*, of the metal-strap loop having the two studs *e* projecting inwardly from one of its cross-bars, the loop being adapted to embrace the hame-top and to leave a space between the same and side of the loop that is opposite the side provided with the studs, substantially as described.

257,700. BUCKLE. William B. Haynes, Columbus, Ohio. Filed Apr. 3, 1882. (Model.)

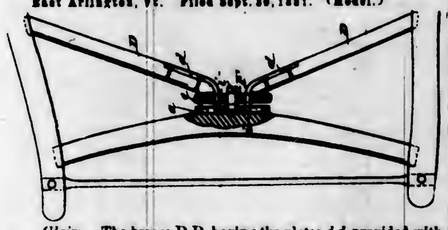


Claim.—1. As an improved article of manufacture, a buckle having its front cross-bar formed with a transverse rib or swell-bearing, 6, depending from the plane of the under side of the said cross-bar, substantially as and for the purpose described.

2. A buckle having the inner edge of its front cross-bar formed with a transverse rib or swell-bearing, 6, depending from the plane of the under side of the cross-bar, and with a uniformly-curved upper surface, 8, which terminates or vanishes in said rib or swell-bearing, substantially as described.

3. A cast-iron buckle-frame formed integral with the front and rear cross-bars, the inner edge of the front bar being formed with a curved upper edge, 8, and a transverse rib or swell-bearing 6, depending from the plane of the under side of the cross-bar, substantially as and for the purpose described.

257,701. FRAME FOR BUCK-SAWS. Frederick L. Hemmer, East Arlington, Vt. Filed Sept. 30, 1881. (Model.)



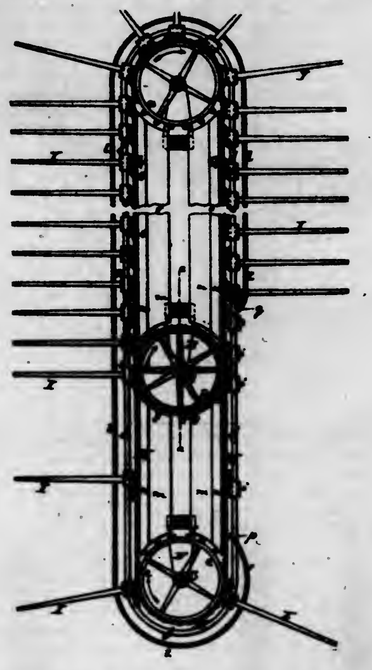
Claim.—The braces D D, having the plates *d d*, provided with the projections or studs *i i*, in combination with the slotted plate *a* and the right and left hand screw-bolt F, substantially as and for the purposes set forth.

257,702. UNDERSHOE. Frederick W. Hesse, Santa Rosa, Cal. Filed Mar. 13, 1882. (No model.)



Claim.—As an improved article of manufacture, an undershoe or slipper of seamless paper-pulp re-enforced by a facing of textile fabric, substantially as set forth, and for the purposes described.

257,703. APPARATUS FOR DRYING WALL-PAPER. Henry Hilbert, Flushing, N. Y. Filed Mar. 22, 1882. (No model.)



Claim.—1. In apparatus for drying paper or other fabric, the traveling festoon-carriers I I, combined with the guiding-rail *j*, and with one or more moving chains, G H, and supporting-rail *l*, substantially as and for the purpose specified.

2. The combination of the beams *m*, brackets *j'*, and extensions *k* with the rail *j*, supporting-rail *l*, festoon-carriers I and their blocks *i*, and with one or more chains for moving the festoon-carriers, substantially as specified.

3. The apparatus for drying paper or other fabric, consisting of series of traveling festoon-carriers, which are combined with the supporting-rail *l*, to be dropped automatically when they reach the end of said rail, substantially as specified.

4. The combination of the chain G, having closely-set projections *g*, with the chain H, having more widely set projections *h*, and with the festoon-carriers I and apparatus for supporting the same, substantially as herein shown and described.

5. The festoon-carrier I, adapted to be moved by bolt or chain and combined with the round rod *j*, on which it can slide and be swung into vertical or into horizontal position, substantially as herein shown and described.

257,704. SAW-GUIDE. William E. Hill, Big Rapids, Mich. Filed May 10, 1881. Renewed Mar. 27, 1882. (No model.)

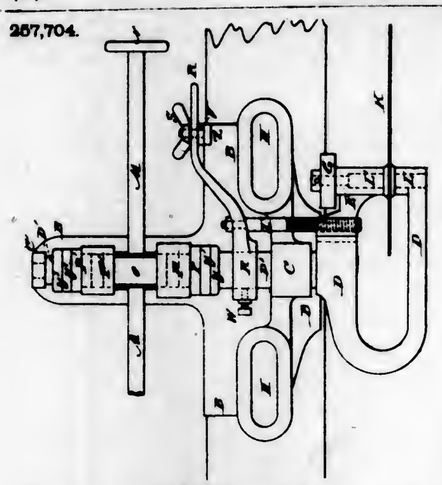
Claim.—1. A saw-guide constructed substantially as herein shown and described, consisting of the adjustable swiveled jaws D E, having journal D' and rod T, the adjusting-lever E, the adjustable legs F F', the eccentric O and shaft M, and the elastic cushions P P', as set forth.

2. In a saw-guide, the combination, with the journal D' of the jaws D E, of the adjustable legs F F', the eccentric O, and its shaft M, substantially as herein shown and described, whereby the guide D E can be adjusted laterally, as set forth.

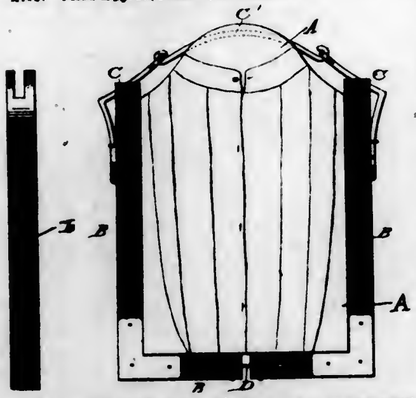
3. In a saw-guide, the combination, with the journal D' of the guide D E, the legs F F', and the eccentric O, of the elastic cushions P P', substantially as herein shown and described, whereby the breaking of the saw or guide by a sudden jar is prevented, as set forth.

4. In a saw-guide, the combination, with the lever E, attached to the journal D' of the jaws D E, of the link V, the bolt X Z, and the hand-nut S, substantially as herein shown and described.

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257,706. BOSOM-BOARD. WILLIAM A. HILTON, Battle Creek, Mich. Filed Aug. 26, 1881. (No model.)



Claim.—The combination, with the board A, provided with a groove at its upper edge, of the frame B, constructed in two parts hinged together by a link, D, and the springs C and connecting-wire C', all constructed and adapted to be operated substantially as specified.

257,706. CRAYON. WILLIAM CULLEN HOSER, Bexley, County of Kent, England. Filed Oct. 8, 1881. (No specimens.) Patented in England Feb. 25, 1881.

Claim.—A crayon, pencil, or writing-chalk composed of a luminous substance and a base or vehicle, substantially as herein described.

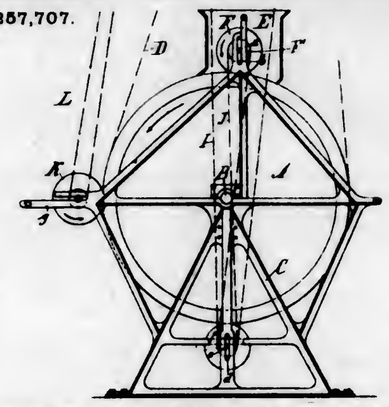
257,707. MACHINE FOR CLEANING FUR ROBES. FRANDSEN HANSEN, Brooklyn, N. Y. Filed Feb. 23, 1882. (No model.)

Claim.—1. In a machine for cleaning fur robes, the combination, with a revolving drum to which the robes are to be secured, of a brush resting on the drum and contained in a longitudinal box adapted to receive sawdust, sand, and like material, and of a series of brushes for combing and smoothing the fur and removing the sand and sawdust that have been brushed or beaten into it to clean it, substantially as herein shown and described, and for the purpose set forth.

2. In a machine for cleaning fur robes, the combination, with the revolving drum A, of the brush F, on the top of the drum A, the sand-box E, surrounding the brush F, the brush K at the side of the drum A, and the brush G at the bottom of the drum A, substantially as herein shown and described, and for the purpose set forth.

3. In a machine for cleaning fur robes, the drum A, having

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longitudinal grooves M, combined with a bar or rail, P', and devices for securing the ends of a rail or bar, P, for holding the ends of the robes in the grooves, substantially as herein shown and described, and for the purpose set forth.

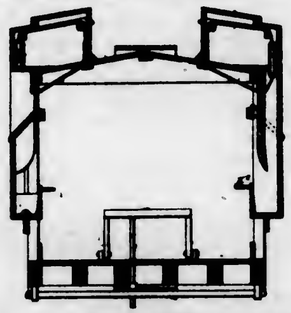
4. In a machine for cleaning fur robes, the drum A, constructed with longitudinal grooves M, a raised band, *l*, at one edge of the drum, and swiveled keys at the ends of the grooves M, substantially as herein shown and described, and for the purpose set forth.

5. In a machine for cleaning fur robes, the combination, with the drum A, provided with a series of grooves, M, and a transverse groove, Q, of an adjustable clamp, S, and a bar or rail, P, fitting in the grooves M and adapted to hold the end of the robe, substantially as herein shown and described, and for the purpose set forth.

6. In a machine for cleaning fur robes, the combination, with a drum, A, provided with longitudinal grooves M and a transverse groove, Q, of plates *s*, projecting from the sides of the grooves Q, the bar or rail P, fitting in the grooves M, the sliding clamp S in the groove Q, and the screw *o* and winged nut *p*, for locking the clamp S in the desired position, substantially as herein shown and described, and for the purpose set forth.

7. In a machine for cleaning fur robes, the combination, with the drum A, provided with a series of longitudinal grooves, M, of a bar or rail, P, fitting in the grooves M, and provided on its under side with a series of studs or spikes, A, substantially as herein shown and described, and for the purpose set forth.

257,708. STOCK-CAR. JAMES HOWARD, Toronto, Ontario, Canada. Filed Dec. 19, 1881. (No model.)



Claim.—1. In a stock-car, a vertically-sliding door provided with a trough or receptacle for food and water, and adapted to be secured at any desired elevation, substantially as described.

2. In a stock-car, the combination of the swinging body-rest, the levers pivotally connected at one end to the same and at the other end to the car-floor, a rod attached to the body-rest and projecting downward therefrom, and a lever located beneath the car and connected with said rod for swinging the body-rest, substantially as and for the purpose described.

3. In a stock-car, the combination, with feed-bins arranged at the top of the car and spouts leading therefrom to troughs at the

sides of the car, of tubes arranged in the upper ends of said spouts and adapted to be raised above or lowered below the contents of the bins for the purpose of regulating the passage of feed by gravitation to the troughs, substantially as described.

4. In a stock-car, the combination, with a feed-bin and its discharge-spouts, of a shaft arranged in said bin and having on its projecting end a registering-wheel, tubes arranged to hang in the upper ends of the discharge-spouts, and cords or bands connecting said tubes with the shaft, whereby the rotation of said shaft will cause the tubes to be lowered below the level of the contents of the bin, and thereby permit the passage of feed by gravitation through the discharge-spouts, substantially as described.

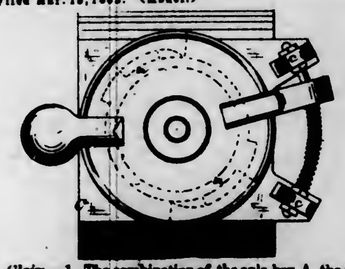
5. In a stock-car, the combination, with a bin having suitable discharge-spouts, a shaft provided with registering-wheel, having projecting pins and tubes arranged to hang in the upper ends of the spouts and connected with the shaft by cords or bands, of a spring-catch adapted to engage with the pins on the registering-wheel, and thereby prevent the rotation of its attached shaft, substantially as described.

6. In a stock-car, the combination of feed-bins arranged above the roof, troughs arranged at the sides of the car and having tops provided with hinged covers, spouts connecting said bins and troughs vertically-sliding doors provided with troughs, flexible partitions adapted to divide the car into compartments, and an adjustable body-rest adapted to be raised and lowered, substantially as shown and described.

7. In a stock-car, sliding cross-rails supported in sliding frames carried on the sides of the car, said cross-rails constituting partitions, and also serving to maintain the body-rest in position, as described.

8. In a stock-car, a series of separate feed-receptacles arranged along the top of the car, on each side thereof, to contain the feed for each animal separate from that for the others, in combination with a series of tubes, *a*, one for each feed-receptacle, and means for operating the same, substantially as and for the purposes described.

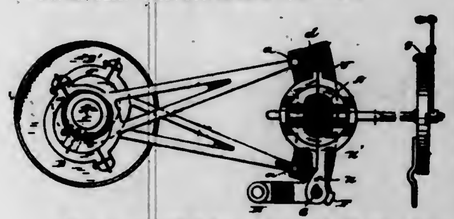
257,709. CAR-AXLE BOX. EDWARD FISHER, Marion, Ohio. Filed Mar. 18, 1882. (Model.)



Claim.—1. The combination of the axle-box A, the interlocking lugs on the collar surrounding the feed-opening therein, the cover hinged to a segment-pintle, the interlocking lugs on the cover, and the loaded handle, substantially as described.

2. The combination of the axle-box provided with lugs, the hinged cover provided with interlocking lugs, the segment-pintle, and the spring applied on this pintle, substantially as and for the purposes described.

257,710. REVERSIBLE LINK-MOTION. EDWARD HOSER, Marion, Ohio. Filed Feb. 10, 1882. (No model.)

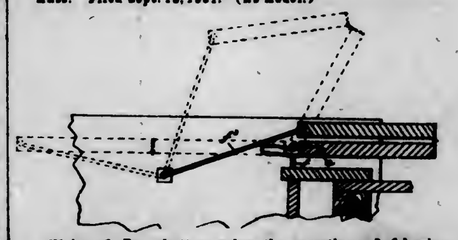


Claim.—1. The combination of the slotted adjustable link D, receiving motion from eccentrics on a shaft or axle, the toothed rack applied rigidly to the link, and a pinion having its bearing on the rock-arm frame, substantially as described.

2. The combination of the frame F, adapted to rock in suitable bearings, the valve rock-arm H on this frame, the block E, oscillating on the pin *e* on the arm *b* of said frame F, the vertically-adjustable link receiving oscillation from eccentrics on a shaft or axle, A, the toothed segment J, the pinion M, the bearing-arm K, and means, substantially as described, for turning said pinion and sustaining the link at any desired point of adjustment.

3. The oscillating stirrup-shaped frame F, bearing the valve rock-arm H, the block E, and the arm K, in combination with the rock-plate J, the pinion M, means for turning this pinion and locking it, and means for oscillating the link and its segment-plate, substantially as described.

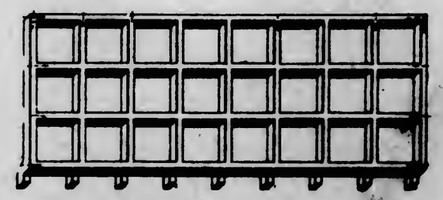
257,711. SHUTTER-WORKER. LAFAYETTE HUNTOON, Natick, assignor to the Huntoon Manufacturing Company, Boston, Mass. Filed Sept. 15, 1881. (No model.)



Claim.—1. In a shutter-worker, the operating-rod *f*, having its inner pivoted section extended beyond the pivot, so as to form a lock when said inner section is in a vertical position, in combination with the screw-threaded bushing *c*, through which the rod passes and with which the hinged section of the rod co-operates to form the lock, said bushing being capable of adjustment in and out, so as to adapt the device to castings of different thicknesses, substantially as described.

2. The combination, with a blind composed of an inner fold hinged to the building, an outer fold hinged to the inner fold of the stud on the inner fold, of the rod and slotted plate co-operating with said stud, and a rod articulated at one end to the building and at the other to the outer fold of the blind, whereby said outer fold is operated simultaneously with the inner fold, as set forth.

257,712. CONSTRUCTING AND REPAIRING ILLUMINATING-ROOFS, &c. THADDEUS HYATT, New York, N. Y., assignor to Elizabeth Adelaide Lake Hyatt, same place. Filed Apr. 14, 1882. (No model.)



Claim.—1. Illuminating-roofs and roof-pavements made by combining quarry glass holders with foundation-gratings, substantially as and for the purposes herein set forth and illustrated.

2. Monomorphous illuminating-roofs and roof-pavements constructed substantially as and for the purposes herein set forth and illustrated.

3. Illuminating-roofs made by combining illuminating-quarries with curved foundation-gratings, substantially as and for the purposes herein set forth and illustrated.

4. Illuminating area-coverings formed by combining illuminating-quarries with foundation-gratings cast in steep and step form, substantially as and for the purposes herein set forth and illustrated.

5. Illuminating area-gratings cast in steep and step form and combined with glass, substantially as and for the purposes herein set forth and illustrated.

6. Foundation-gratings cast or formed with ventilating-cuttles, substantially as and for the purposes herein set forth and illustrated.

7. Concreted foundation-gratings, in combination with either concrete or concreted illuminating-quarries, substantially as and for the purposes herein set forth and illustrated.

8. Foundation-gratings cast with underlapping lugs, substantially as and for the purposes herein set forth and illustrated.

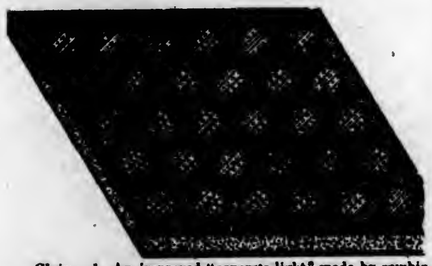
9. Foundation-gratings formed with an open side of abutting cross-bars, in combination with foundation-gratings made with underlapping laps to give support thereto, substantially as and for the purposes herein set forth and illustrated.

10. Illuminating-gratings formed with no dead material at the borders, substantially as and for the purposes herein set forth and illustrated.

11. Facing illuminating-roofs and roof-pavements with concrete or material held to the face of the grating by means of nocks or glass surplusage, substantially as and for the purposes herein set forth and illustrated.

12. Illuminating-roofs and roof-pavements made by combinations of illuminating-gratings or of quarry glass holders, the glasses of which are formed with glass surplusage or nocks to stand above the general level of the work as a means of attachment for a monomorphous finishing coat of material, substantially as and for the purposes herein set forth and illustrated.

257,713. ILLUMINATING GRATING OR VAULT-COVER. THADDEUS HYATT, New York, N. Y., assignor to Elizabeth Adelaide Lake Hyatt, same place. Filed Apr. 11, 1881. (No model.)



Claim.—1. An improved "concrete light" made by combining lens-shaped glasses with concrete and protecting metallic knobs, substantially as and for the purposes herein set forth and illustrated.

2. An improved concrete light made by combining protecting metallic knobs with the concrete and glasses, substantially as and for the purposes herein set forth and illustrated.

3. An improved "knob-light" made by combining with the glasses and knobs a non-slipping or foot-holding material which practically surrounds both glasses and knobs, substantially as and for the purposes herein set forth and illustrated.

257,714. ILLUMINATING VAULT-COVER OR GRATING. THADDEUS HYATT, New York, N. Y., assignor to Elizabeth Adelaide Lake Hyatt, same place. Filed Apr. 11, 1882. (No model.)



Claim.—1. A concrete light or illuminating stone grating formed with a channeled foot-surface, substantially as and for the purposes herein set forth and illustrated.

2. A concrete light or illuminating stone grating formed with a soft-metal foot-surface, substantially as and for the purposes herein set forth and illustrated.

3. A cast-iron illuminating-grating, combined with a soft-metal facing-plate and concrete, substantially as and for the purposes herein set forth and illustrated.

4. A soft-metal perforated facing-plate formed with boltheads and a channeled face, in combination with an illuminating-grating, substantially as and for the purposes herein set forth and illustrated.

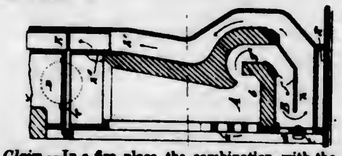
257,715. PAVEMENT-PLATE OR VAULT-COVER. THADDEUS HYATT, New York, N. Y., assignor to Elizabeth Adelaide Lake Hyatt, same place. Filed Apr. 11, 1882. (No model.) Patented in England Oct. 18, 1873.



Claim.—1. Soft foot-surfaces formed upon metal pavement-plates, tiles, gratings, or covers, and upon foot-surface constructions made therefrom, by means of lead veneers, substantially as and for the purposes herein set forth and illustrated.

2. Illuminating or glass-set lead-plated foot-surface plates and constructions, substantially as and for the purposes herein set forth and illustrated.

257,716. FIRE-PLACE OR STOVE. MATTHEW INGHAM, Manchester, County of Lancaster, England. Filed Jan. 13, 1882. (No model.) Patented in England May 3, 1881, and in France Nov. 2, 1881.

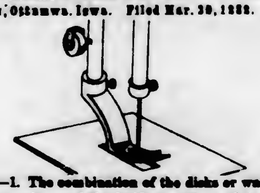


Claim.—In a fire-place, the combination, with the grate *a b* and combustion-chamber A, of the downflue *g*, the combustion-chamber B, having valved door *c d*, and the flue *h*, leading to chimney, as shown and described.

257,717. MANUFACTURE OF RED COLORING-MATTER. EMIL JACOBSEN, Berlin, Germany. Filed Mar. 13, 1882. (No specimens.)

Claim.—The mode or process, substantially as described, for the manufacture of the red or violet coloring-matter, as explained, the said process consisting in heating a mixture of equal, or about equal, parts of chinoline or pyridine and benzotrichloride, and subsequently treating such with water, an acid, and an alkali, as set forth.

257,718. THREAD-CUTTER FOR SEWING-MACHINES. ALLEN JOHNSTON, Ottumwa, Iowa. Filed Mar. 30, 1882. (No model.)



Claim.—1. The combination of the disks or washers, pressed together by a spring, and the knife or cutter, substantially as described.

2. The combination of the disks or washers, spring, and knife or cutter in one piece with said spring, substantially as described.

3. A combined thread holder and cutter comprising two disks or washers pressed together by a bent spring, the cutting-edge being formed on said spring, substantially as described.

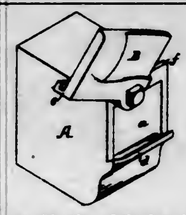
257,719. DIE FOR BUTTONS. JOHN G. KRAECHE, Newark, N. J., assignor of one-half to John C. Dickinson, Brooklyn, N. Y. Filed Sept. 30, 1881. (No model.)



Claim.—The combination, with the countersunk plate *a*, that forms the backs of the buttons, of the die-plate *b* and separate button-dies *c*, each of which has a tapering base and a stud at the bottom passing into a hole in the die-plate *b*, for the purposes and as set forth.

257,720. GAR-AXLE BOX. FLORUS KRIEBS, Pottstown, Pa., assignor of one-half to George J. Folker, same place. Filed Aug. 19, 1881. (No model.)

257,720.



Claim.—1. The combination of the box A and lug *b* on the top of the same, near one side, with the lid B, hung at one of its upper corners to the said lug *b*, and having a stop, *a*, for limiting its movement and maintaining it in a balanced position when opened, as set forth.

2. The combination of the box A, having a rib, *f*, on its upper front edge, with the laterally-swinging lid B, having on its upper edge a recessed projection, *c*, as set forth.

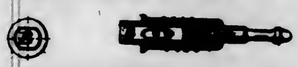
257,721. SNAP-HOOK. ELNATHAN KEMPSHALL, New Britain, Conn. Filed Dec. 15, 1881. (No model.)



Claim.—1. In a snap-hook, the cylindrical body consisting of two semi-cylindrical shells having lugs upon one part and corresponding recesses in the other part, which hold the parts together when the lugs are put in place and bent inward, substantially as described, and for the purpose specified.

2. The improved double-hooked snap, consisting of the cylindrical body, two hooks and sliding bolts, and one spring acting upon both sliding bolts, substantially as described, and for the purpose specified.

257,722. SASH-FASTENER. ELNATHAN KEMPSHALL, New Britain, Conn. Filed Mar. 6, 1882. (No model.)



Claim.—A sash-fastener consisting of the solid cylindrical case having a screw-threaded periphery and the flattened orifice at its outer end, the spring-actuated bolt projecting from both ends of said case and having its outer end of a flattened form corresponding to that of the flattened orifice in the case, and having also the longitudinal slot through which the pin passes, substantially as described, and for the purpose specified.

257,723. PAPER-BOARD FOR DRESSING WOUNDS. PAUL KOCH, Neuffen, Würtemberg, Germany. Filed Sept. 24, 1881. (Specimens.) Patented in Germany Mar. 24, 1881, and June 13, 1881, in Belgium Apr. 11, 1881, in France Apr. 13, 1881, in England Apr. 23, 1881, in Austria May 21, 1881, and in Hungary May 21, 1881.

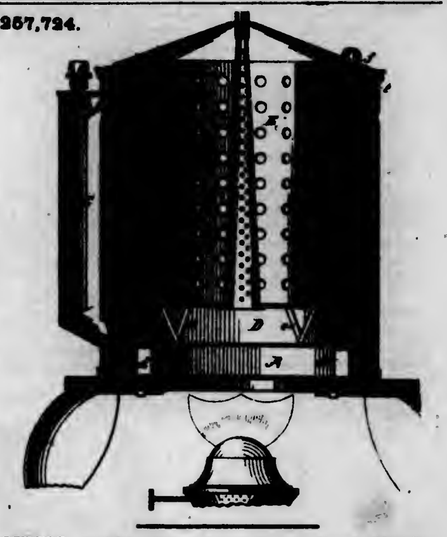
Claim.—1. The method of preparing a pulp for dressing wounds, consisting in beating up the pulp employed in the manufacture of pasteboard and then steeping the same in an alcoholic solution of shellac, resin, and turpentine, then softening the article after it has been dried, and rolling it out, as and for the purpose specified.

2. Treating the pulp employed in the manufacture of pasteboard as above specified, and then coating it, first, with a solution of gutta-percha and chloroform; secondly, with a coating of alcoholic copal varnish, and, thirdly, with a coating of any ordinary varnish, for the purpose set forth.

257,724. APPARATUS FOR TREATING LEAF-TOBACCO. LOUIS KRUCKENBERG, Cincinnati, Ohio. Filed Dec. 27, 1881. (No model.)

Claim.—The combination of the vessel A, having cone-shaped locked cover B, with the perforated vessel E, having inclined flange F, and the intervening vessel D, said vessels being constructed and located with relation to each other as shown and described.

257,724.



257,725. LATCH. THOMAS LALOR, Toronto, Ontario, Canada, assignor of one-half to William Hamilton, same place. Filed Aug. 29, 1881. (Model.)



Claim.—A cylindrical block having a notch, G, to receive the bar of the gate, and pivoted in the frame of a lock provided with a semicircular guard-piece, K, in combination with a wing or projection, H, attached to or forming part of the cylindrical block C, and arranged in connection with the tumbler I, substantially as and for the purpose specified.

257,726. WATCH-MAKER'S COMBINATION-TOOL. WILLIAM H. LAMB, San Francisco, Cal. Filed Oct. 3, 1881. (No model.)



Claim.—1. The frame A, having [illegible] and C formed in its ends, as shown, in combination with [illegible] arms D, having inclines *b* and *d*, substantially as and for the purpose herein described.

2. The parallel arms D, having the sockets *e e* to receive the pivots of a wheel, and having the converging inclines *b* and *d* for adjusting the distance between the arms, in combination with frame A, having slots B and C, substantially as herein described.

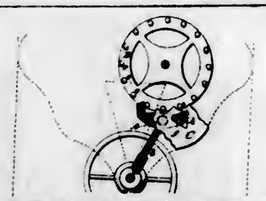
3. The hinged or pivoted swinging plate G, having groove *i*, the bar H, having corresponding grooves equidistantly arranged to groove *i*, the frame A, having perforations I', and the spring-bar K, with its locking-pin J, the whole constructed to act in combination, as set forth.

4. In combination with the frame A, the pivoted arm L, perforated spring-arm *m*, and perforated and socked spring-arm *n*, arranged for operation substantially as described.

5. A tool consisting of the frame A; dotted, and having the arms D, with their inclines and the sockets *e*, together with the pivoted clamping-plate G, with its locking-pin, and the perforated arms L *m n*, substantially as herein described.

257,727. CLOCK-ESCAPEMENT. FREDERIC A. LAMB, New Haven, Conn. Filed Mar. 3, 1882. (Model.)

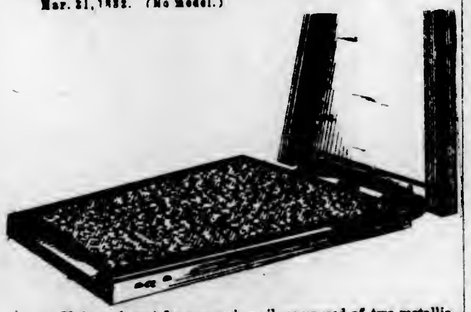
257,727.



Claim.—1. The herein-described improvement in marine clock-movements, consisting of the thin metal verge and lever *a b*, in one and the same piece, combined with the collar *d*, attached thereto to form connection with the shaft, and the crown-wheel, constructed with pins projecting from its side parallel with the axis of the wheel, substantially as described.

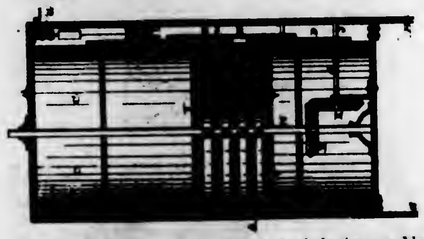
2. In a marine clock-movement, the pin *f*, extending from the verge or lever, and the frame, constructed with a triangular opening, through which said pin projects, and upon opposite sides of which the said pin will bank, and between which sides the said pin may be adjusted, substantially as and for the purpose described.

257,728. OIL-MAT. GEORGE LEDEE, Demopolis, Ala. Filed Mar. 21, 1882. (No model.)



Claim.—A mat for expressing oil, composed of two metallic leaves hinged together at one end, each leaf being provided with two side flanges or ridges, and each side flange or ridge being traversed by transverse and longitudinal grooves, substantially as and for the purpose hereinbefore described.

257,729. MECHANICAL HEATING APPARATUS. SYLVESTER J. LIEB, Nordamia, assignor of one-half to S. W. Holden, Magnolia, Iowa. Filed Feb. 20, 1882. (No model.)



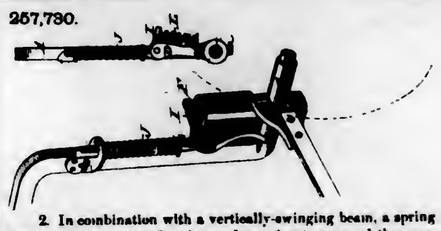
Claim.—The combination of a frame, A, having a cooking or heating chamber, C, and a chamber in which the frictional plates are placed, with the operating-shaft N, having a series of plates secured to it, a series of stationary plates, and an operating mechanism that is connected to the shaft, substantially as shown.

257,730. WHEEL-CULTIVATOR. EDWARD P. LYNCH, Davenport, Iowa. Filed Feb. 8, 1882. (No model.)

Brief.—A cultivator-coupling combining two springs, one to exert a lifting force in raising the drag-bar, the other to limit the descent of the plow into the ground. The latter only comes into action when the shovel is at work and counteracts the action of the mainspring when it passes the dead-center. In the ordinary positions of working or being lifted the effect of each spring diminishes as the other increases.

Claim.—1. In combination with a vertically-swinging plow-beam, a lifting-spring and a suspending-spring, arranged to operate substantially as described and shown.

257,730.



2. In combination with a vertically-swinging beam, a spring to raise the same out of action and a spring to suspend the same in an operative position, the two arranged to operate alternately.

3. In combination with the plow-beam and the upright arm connected thereto, the rod pivoted to said arm and provided with the finger, the guide for the rod, and the two springs applied substantially as shown.

4. The combination of the beam and its rigid arm, the movable rod pivoted to the arm, and the compression-spring located between the rod and arm forward of their connecting-pivot, to suspend the beam in an operative position, substantially as described.

5. In combination with the vertically-swinging beam and the arm D, connected therewith, the rod J, jointed to said arm, the spring F, to limit the descent of the beam, located directly between the arm and rod, forward of their connecting-joint, and the adjustable spring-sustaining spindle L, as described and shown.

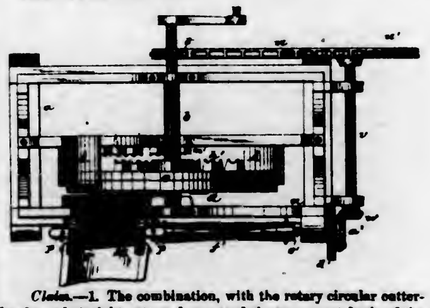
6. The combination of the beam, the upright arm connected rigidly therewith, the movable rod pivoted to said arm, the suspending-spring F, located between the arm and rod, to sustain the beam in an operative position, and the adjustable spindle L, mounted and arranged to support the spring.

7. The coupling-box for a cultivator, provided with the upright arm D, and a spindle, L, adapted to support a spiral spring, as described and shown.

8. In combination with a vertically-moving beam, two springs, substantially as described, one tending to raise and the other to depress the beam when the latter is in an operative position.

9. In combination with the vertically-swinging beam, the spring attachment constructed, substantially as shown, with two springs, which tend one to raise and the other to depress the beam when it is in an operative position, whereby the beam is held by spring-pressure from either rising or falling, as set forth.

257,731. CORNSTALK CUTTER AND CRUSHER. WILLIAM H. H. LYNN and GEORGE W. HYLER, Staunton, Va. Filed Feb. 8, 1882. (No model.)



Claim.—1. The combination, with the rotary circular cutter-head *c* and straight cutters *d*, arranged thereon, as set forth, of the inclined ledger-plate *l*, open at its outer end and provided with the inclined cutting-edge l^2 and upwardly-curved inner end, l^3, having its cutting-edge in line with the edge l^2 of the ledger-plate, substantially as described, and for the purpose set forth.

2. The combination, with the lower longitudinally-fluted conical feed-roll, *e*, of the upper adjustable longitudinally-fluted conical feed-roll, *e*, the apices of the projecting ribs of both conical rolls being cut away and provided with flutes, substantially as described, and for the purpose set forth.

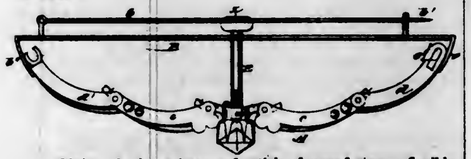
3. The combination, with the cutter-head *c*, of the pyramidal tooth h', having a hollow or cup-shaped top face, h^1, provided with the four projecting points, h^2, substantially as described, and for the purpose set forth.

4. The combination, with the cutter-head *c*, provided with pyramidal teeth h', each having a hollow or cup-shaped top face, h^1, provided with projecting points h^2 and arranged on its back face at

irregular distances from the center, of the stationary crusher-plate l', provided with similar pyramidal teeth m', similarly arranged on its inner face, substantially as described, and for the purpose set forth.

257,732. COMBINED FINGER-RING, LACE-PIN, AND BRACELET. LEON MAISON, New York, N. Y., assignor to Heller & Bardel, same place. Filed Feb. 18, 1882. (No model.)

Brief.—The flexible ornament is adapted to be clasped together and worn as a finger-ring, and to be unfolded and straightened out and worn as the ornamental portion of a lace-pin or bracelet.



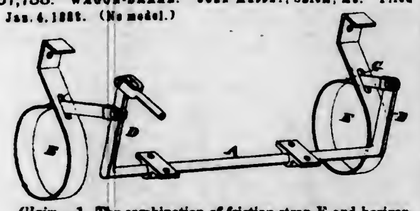
Claim.—1. As an improved article of manufacture, a flexible ornament, A, consisting of a series of quadrantal sections hinged to each other and adapted to be clasped together to form a finger-ring and to be straightened out to form the ornamental portion of a lace-pin or bracelet, substantially as herein shown and described.

2. The combination, with the flexible ornament A, of the pin-plate B, provided with the plate b'', and means, substantially as herein shown and described, for securing the said plate to the ornament, as set forth.

3. The central section, *a*, of the flexible ornament, formed with the threaded socket a', and having the sections *c* and d d hinged thereto, in combination with the pin-plate B and screw E, substantially as described.

4. The combination, with the pin-plate B, provided with the hinged pin *b*, of the flexible ornament A, provided with the ornamental extension-plate *f* on one of its sections, substantially as and for the purpose set forth.

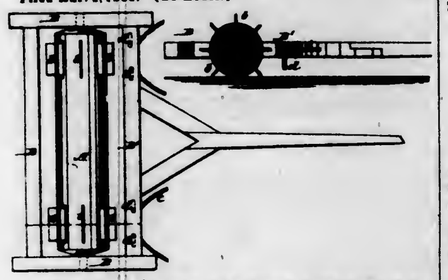
257,733. WAGON-BRAKE. JOHN MASSEY, Salem, Mo. Filed Jan. 4, 1882. (No model.)



Claim.—1. The combination of friction-strap E and horizontal rock-shaft A, having crank-arm or handle D, one end of said friction-strap being secured to a stationary part of the vehicle and the other end passed under and over the hub of a wheel and secured to the crank arm or handle, substantially as set forth.

2. The combination of bracket H, removable and replaceable friction-strap E, horizontal rock-shaft A, and crank-arm or handle D, as set forth.

257,734. STALK-BREAKER. NEILL MCDUFFIE, Kentyre, S. C. Filed Mar. 4, 1882. (No model.)



Claim.—The combination, with the roll A and frame B B', of the blades *b*, the pairs of diverging stalk-gatherers *c* projecting in front and in rear of said gatherers, and the downwardly-projecting stalk-holders *d*, whereby the stalks are first gathered, then held in position, and finally broken, as described.

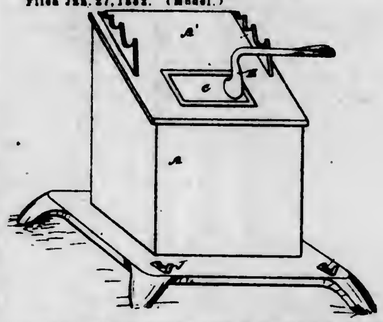
257,735. CIGAR-MOLD. FREDERICK C. MILLER and HENRY C. PETERS, New York, N. Y. Filed Apr. 18, 1881. (Model.)



Claim.—1. A wooden cigar-mold plunger provided with a margin of rubber or analogous elastic material, substantially as described.

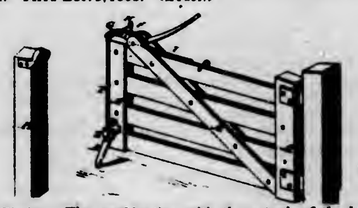
2. The combination, with a wooden plunger for cigar-molds, of an exterior covering or margin of rubber or analogous elastic material, substantially as described.

257,736. INKSTAND. GEORGE C. MILLER, Johnstown, Pa. Filed Jan. 27, 1882. (Model.)



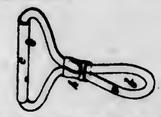
Claim.—The combination, with the inkstand A, provided with the opening B, of the lid C, hinged to the under side of the top A', the weight D, attached to the hinged end of the said lid, and the angular arm E, projecting from the top of the lid to one side of the inkstand, and having its outer end flattened and recessed, substantially as and for the purpose set forth.

257,737. GATE-HOLDER. WILLIAM H. MILLS, Clear Creek, Ill. Filed Mar. 2, 1882. (Model.)



Claim.—The combination, with the gate A, of the hinged pawls D, having eyes E on top, the rods F, the cross-rod H, the lever G, and the spring I, all arranged substantially as and for the purpose specified.

257,738. SUSPENDER-LOOP. SELON E. MOORE, Swanton, Vt. Filed Apr. 1, 1882. (No model.)



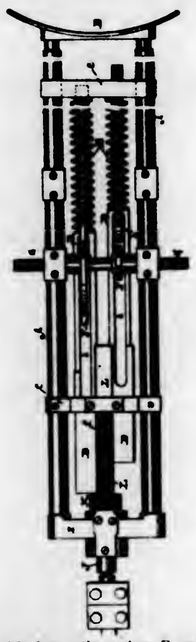
Claim.—1. A triangular cord-loop for suspenders, having its ends secured in and held together by the transverse ferrule *c* and its sides held in to form the button-loop by a clasp or clamp, substantially as specified.

2. The cord-loop *a*, the transverse punched ferrule *c*, holding its ends together, and the clamp *b*, holding the sides together to form the button-loop, substantially as specified.

257,739. HAND ROCK-DRILL. HUGHES MURRAY, San Francisco, Cal., assignor to Theodore A. Sterling, same place. Filed Sept. 12, 1881. (No model.)

Claim.—1. In a machine hand rock-drill, the combination and arrangement of the reciprocating hammers D D, having their

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shanks provided with slots *a*, the springs E, and the cams F, revolving in said slots *a*, substantially as herein described.

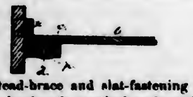
2. In a machine hand rock-drill having reciprocating hammers D D, or a single hammer, and a loosely-journaled drill-containing rod, J, having a head, K, adapted to receive the impact of said hammer or hammers, the combination and arrangement of the feathered ratchet *i* upon the rod J, counter or retaining pawl *r*, loose sleeve M, with its pawl *m* and lug O, the sliding strip L, with its inclined groove *o*, fitting over the lug O, its spring *f*, and downwardly-extending shoulder *c*, adapted to engage with the shoulders *d d* upon the hammers D D, or an equivalent device, whereby said strip L is drawn back by the operation of the hammers, substantially as and for the purpose herein described

257,740. BED-PAN. WALTER F. MORGAN, Leavenworth, Kans. Filed June 27 1881. (Model.)



Claim.—A porcelain bed-pan provided with a socket into which is secured a permanent rubber cushion, in combination with a soft rubber evacuating-tube, substantially as described.

257,741. DEVICE FOR STRENGTHENING BEDSTEADS. FRANK MORRIS, Brown's Station, Mo. Filed Mar. 4, 1882. (No model.)



Claim.—The bedstead-brace and slat-fastening consisting of the angular rail-plate *b*, having the vertical perforated flange *b* and the perforations *p* in the horizontal portion, and the slat-plate *c*, having the studs *d* projecting downward, and the screw-holes *e*, substantially as specified.

257,742. TOY. ENOCH R. MORRISON, Chicago, Ill., assignor to Samuel F. Estell and William S. Estell, same place. Filed Mar. 16, 1882. (No model.)

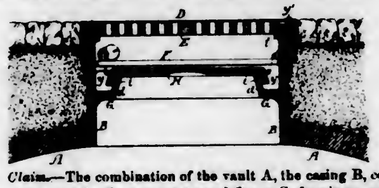
257,742.



Claim.—1. The wheel C, crank *a*, and bar E, in combination with the body and a fore and hind leg of a toy imitation of a quadruped, substantially as and for the purpose described.

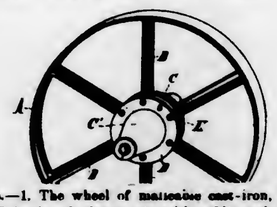
2. The combination of body A, legs D and D', wheel C, bar E, and handle B, said body and handle being pivoted at *a*, and the whole arranged to operate substantially as and for the purpose set forth.

257,743. VAULT FOR UNDERGROUND CONDUITS. WILLIAM B. MURRAY, Philadelphia, Pa., assignor of one-half to Calvin Detrick, same place. Filed Jan. 19, 1882. (No model.)



Claim.—The combination of the vault A, the casing B, cover D, and support for the same, upturned flange G, forming a receptacle, *y*, cover H, the flange and cover being constructed substantially as described, whereby a packing-ring may be interposed between the two, and a device for keeping the said cover H down to its place, all substantially as set forth.

257,744. VEHICLE-WHEEL. WILLIAM MUHRING, Cincinnati, Ohio, assignor to the Queen City Malleable Iron Company, same place. Filed Feb. 20, 1882. (No model.)



Claim.—1. The wheel of malleable cast-iron, composed of spider A B, having the inner extremities of its spokes without direct cast connection, and secured by rivets E between the flanged hollow cones or frustums C C', substantially as set forth.

2. In described combination with the spider A B, cones C C', and rivets E, the core G, whose groove *g* receives a tongue, *c'*, that projects from the interior of one of the cones, for the purpose designated.

3. The wheel of malleable cast-iron, composed of spider A B, having the inner extremities of its spokes without direct cast connection, and occupying notches *d* in flanges D of the bottom frustums, C C', to which they are secured by bolts or rivets E, substantially as set forth.

257,745. GRATE FOR STOVES AND FURNACES. OSCAR W. NOBLE, Lynn, Mass., assignor to himself and Robert L. Markland, same place. Filed Mar. 22, 1882. (No model.)



Claim.—1. The combination, with the open-center grate B, of the convex central dumping portion, D, extending up above the edge of the central opening, c, and pivoted directly to the grate B, said portion D being provided with a shaft or arbor, E, which serves the double purpose of reciprocating or shaking the grate

and dumping the central portion thereof when the grate is in any position, substantially as described.

2. The combination, with the grate B, dumping portion D, and lug G, with its rib or portion *h*, of the arbor E, provided with a collar or flange, *g*, extending partially around it, and having ends 7 8, which form stops for limiting the movement of the dumping portion D in either direction, substantially as described.

257,746. BOTTLE-STOPPING DEVICE. SIMEON S. MORRIS, Baltimore, Md. Filed Feb. 18, 1882. (No model.)



Claim.—1. A bottle-stopping device composed of an elastic plug having in the middle of its length a collar adapted to rest upon the edge of a bottle-mouth, a head above said collar, and a neck thereunder, said head and neck being formed with the same periphery and provided with a conical recess, *b'*, being adapted for use alternately, substantially as and for the purposes described.

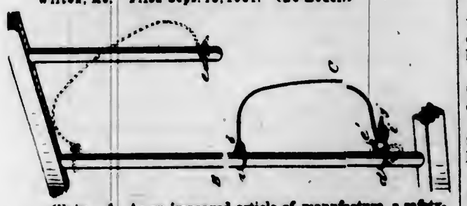
2. In a bottle-stopping device, the combination of an elastic plug perforated through the center thereof, and having a collar adapted to rest upon the edge of a bottle-mouth, a head projecting above said collar, and under said collar a neck provided with a central conical recess, with a metal cap adapted to cover the head of the stopper, and provided with a shank passing through the stopper.

3. In a bottle-stopping device, the combination of an elastic plug perforated through the center thereof, and having a central collar adapted to rest upon the edge of a bottle-mouth, and two ends adapted to be used and each one inserted alternately within said bottle, with a metal cap adapted to cover either end of the plug, and the shank of said cap passing through the stopper, substantially as and for the purpose described.

4. The combination of a bottle neck-band consisting of a wire bent and twisted to form a vertical looped branch upon one side and a loop, *e*, upon the other, with a stopper-cap provided with ears *c'*, a link, *f*, permanently secured to one of the ears and adapted to engage with the under side of the loop *e* of the neck-band, and a lever, G, pivoted upon the neck-band and consisting of wire bent and coiled to form a bearing adapted to engage with the loop *e*, and present a convex surface for the link *f* to slide over, substantially as and for the purpose described.

5. The combination of a bottle neck-band having a looped branch upon one side and a loop, *e*, upon the other, with a stopper-cap provided with ears, a link, *f*, permanently secured to one of the ears and adapted to engage under the loop *e*, and a lever, G, constructed to form a bearing adapted to engage with the loop *e* and present a convex surface for the link *f* to slide over, with projection *g'*, substantially as and for the purpose described.

257,747. SAFETY-TIE FOR CATTLE. MERRILL J. NORTH, Wilton, Me. Filed Sept. 15, 1881. (No model.)

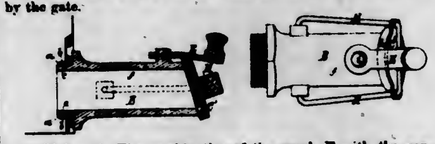


Claim.—1. As an improved article of manufacture, a safety-tie for cattle, consisting of the bow C, provided at one end with a ring adapted to slide upon the stanchion-bar, and at its other end with a hook having spring-catch adapted to engage with a loose ring on the said stanchion-bar, substantially as shown and described.

2. The combination, with the post B, provided with the loose ring *d* and the pin *d'*, of the bow C, provided at its upper end with the ring *a* and its lower end with the hook *i*, substantially as and for the purpose set forth.

257,748. OIL-CAN EDUCT. AARON P. ORDWAY and ARTHUR F. RYDER, Lawrence, Mass. Filed Jan. 9, 1882. (No model.)

Brief.—By revolving the crank around on the screw the altitude of the crank may be varied relatively to the nozzle and gate. In this way the crank may be adjusted to obtain by it the necessary pressure on the gate to effect the proper closing of the nozzle by the gate.

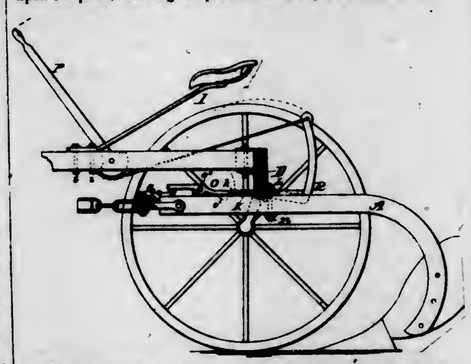


Claim.—1. The combination of the crank E with the can-nozzle *f*, having its outer end inclined as set forth, and with the gate C and its supporting-yoke H, applied to the said nozzle, all being substantially as described.

2. The combination of the can-nozzle *f*, inclined at its outer end, as set forth, the gate C', yoke H, crank E, and the supporting and adjusting screw *i* of said crank, all being arranged and applied and to operate substantially in manner as explained.

257,749. SULEY-PLOW. ALVAH P. OSBORN, Trumansburg, N. Y., assignor to Orman Osborn, same place. Filed Dec. 9, 1881. (No model.)

Brief.—A plate on the plow-beam to lock it in line of draft. When released by a foot-pawl it may swing around freely and on returning lock automatically. The lifting-arm comes under a stud upon the plate, allowing the plow to rise freely over obstructions.



Claim.—1. The combination, in a sulky-plow, of a plow-beam vertically pivoted to the frame, and mechanism for automatically locking it in a position corresponding to the line of draft, substantially as and for the purpose set forth.

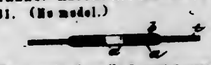
2. The combination, in a sulky-plow, of a plow-beam pivoted to the frame forward of the point of the plow, and mechanism for automatically locking it in a position corresponding to the line of draft and releasing it therefrom at the will of the operator, as set forth.

3. In a sulky-plow, a vertically-pivoted plow-beam provided with a locking-lever, combined with a frame having a catch to receive the locking-lever, whereby the beam may be automatically locked in position, substantially as and for the purpose set forth.

4. In a sulky-plow, the beam A, having the locking foot-lever O, in combination with the shaft L, arch-axle D, clutch K, having detent *k*, and yoke N, substantially as and for the purpose set forth.

5. In a sulky-plow, the beam A, secured to the clutch K, having the arm M, in combination with the crank R and hand-lever P, substantially as and for the purpose set forth.

257,750. EYELET. ALBERT L. PARCELLS, Boston, Mass. Filed June 24, 1881. (No model.)

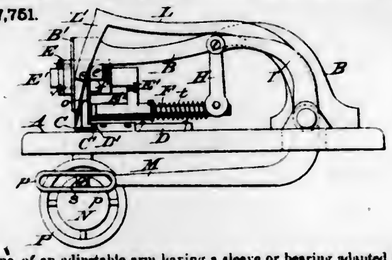


Claim.—The herein-described eyelet, consisting of the two metal plates *b a*, concaved or bent inward at their outer edges, and united by means of the central tubular knife-edged projection on the plate *a* entering the central orifice of the plate *b*, and turned down against said plate *b*, so as to form a close joint therewith, substantially as described.

257,751. TRIMMER FOR SEWING-MACHINES. THOMAS S. PARKER, Schenectady, N. Y. Filed Mar. 3, 1882. (No model.)

Claim.—1. The combination, with the head of a sewing-ma-

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chine, of an adjustable arm having a sleeve or bearing adapted to receive a rock-shaft, to which is attached the upper or movable knife, substantially as described.

2. In a sewing-machine trimmer, the combination, with a rock-shaft provided at one end with a movable knife and at its opposite end with a lever, of a bent arm adjustably secured to a rock-shaft arranged at a right angle to the knife-carrying rock-shaft, said bent arm being connected with the lever by means of a link, and the various parts being adapted for joint operation, substantially as shown and described.

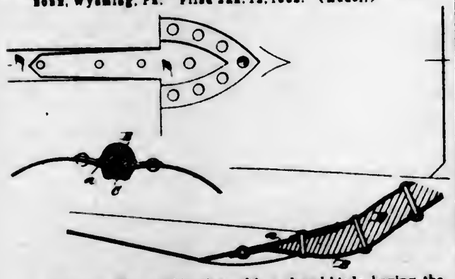
3. In a sewing-machine trimmer, the combination, with the bed A and adjustable plate D, having an inclined portion provided with stationary knife D', of the slotted or bifurcated presser-foot C, having an inclined arm, C', arranged above the end of said stationary knife, and a movable knife, F', adapted to vibrate in said slot in contact with the cutting-edge of the stationary knife, substantially as described.

4. In a sewing-machine trimmer, the combination, with the head B', slotted presser-foot C, and stationary knife D', of the adjustable arm E', supported in a bracket attached to said head and provided with a sleeve or bearing, E², the rock-shaft F, supported in said bearing and provided with a knife, F', adapted to vibrate in the slotted presser-foot in contact with the cutting-edge of the stationary knife, and means for actuating said knife-carrying rock-shaft, substantially as described.

5. In a sewing-machine trimmer, the combination, with a rock-shaft, F, supported in a suitable bearing and provided with a knife, F', and a spring, *t*, adapted to hold said knife in contact with a stationary cutter, of an adjustable lever, G, attached to said shaft, a rock-shaft, K, arranged at a right angle to the knife-carrying shaft and provided with an adjustable arm, I, a link, H, connecting the arm I and lever G, and suitable mechanism for actuating the shaft K, substantially as described.

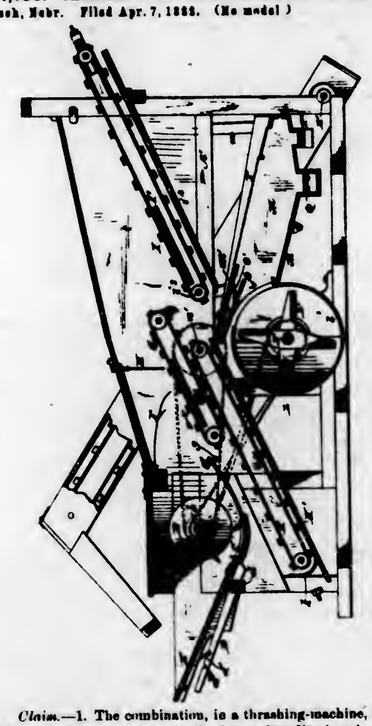
6. In a sewing-machine trimmer, the combination of the bed A, arm B, having head B', slotted presser-foot C, attached thereto and provided with inclined arm C', adjustable plate D, having an inclined portion provided with stationary knife D', arm E', adjustably secured to the head B', and provided with sleeve E², rock-shaft F, supported in said sleeve and provided with movable knife F' and spring *t*, the lever G, link H, and arm I, connecting said rock-shaft with a rock-shaft, K, arranged at a right angle thereto and provided with levers L M, needle-bar L', attached to the upper lever, L, and the wheel P', and eccentric disk N, adapted to actuate the levers and simultaneously operate the needle and movable knife, substantially as described.

257,752. SHOVEL, SPADE, OR SCOOP. ROBERT T. PEYTONSON, Wyoming, Pa. Filed Jan. 13, 1882. (Model.)



Claim.—The combination, with a shovel-blade having the handle-socket portion *a*, of a back strap, B, having its edges bent back, as described, to form straight flanges on the sides of the socket portion, and rivets passing through said flanges and socket-sides, as and for the purpose specified.

257,753. THRASHING-MACHINE. JASON L. PHILLIPS, Tecumseh, Nebr. Filed Apr. 7, 1882. (No model.)



Claim.—1. The combination, in a thrashing-machine, of the feed-board, the hinged concave, the levers for adjusting the same, and the swinging bail for actuating the levers, substantially as described.

2. The combination, with the hinged concave C, of the notched levers D, for adjusting the concave, the swinging bail *d'*, engaging in the notches of the levers, and the pivoted feed-board, which is raised or lowered by the adjustment of the concave, substantially as described.

3. The combination of the thrashing-cylinder, the straw-carrier G, and the stationary spring-fingers F, extending over the middle portion of the said carrier, these spring-fingers being arranged with relation to the thrashing-cylinder so that the grain, as it is thrown back by the latter, shall strike the fingers and be thereby spread upon the carrier, substantially as described.

4. The combination of the fan, the frame-work of the machine, and the fan-case composed of the two sections *l*, detachably secured in the main frame of the machine, substantially as described.

5. The combination, with the shoe and the fan, of the blast-regulator O, the incline M', and a rod, O', substantially as described.

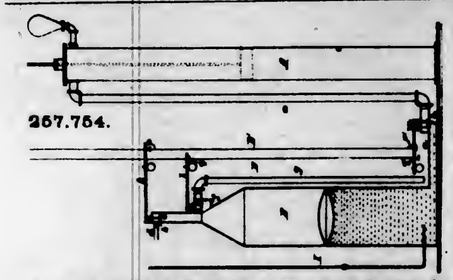
6. The combination of the grain-well and board *k*, the slatted carrier-belt K, for lifting the grain from the well, and the slatted straw-carrier belt G, engaged and driven by the said carrier K, substantially as described.

257,754. HYDRAULIC ELEVATOR. GOLDSBURY H. POND, New York, N. Y. Filed Apr. 14, 1882. (No model.)

Claim.—1. The combination, with the elevator-cylinder A, tank B, connecting-pipe *a*, and steam-pipe *d*, and the valves *c v i*, of the rods D D', both provided with tappets arranged so as to open the water-valve and afterward the steam-valve, to raise the piston, in the cylinder, and also to open the overflow-valve before the water-valve is raised to lower the piston, for the purpose set forth.

2. The combination of the steam and water tank B, communicating with the cylinder, with the overflow-pipe which regulates the water-line, and a steam-pipe communicating with an extension of the tank above the water-line, substantially as described.

3. The combination, with the steam and water tank communicating with the cylinder and provided with steam and overflow



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valves and pipes, of pipe I, admitting cold water to the tank, for the purpose specified.

4. The combination, with the steam and water tank B, communicating with a steam-pipe and with an elevator-cylinder, of a water-inlet pipe and an overflow-pipe, substantially as and for the purpose set forth.

5. The combination, with the steam and water tank, communicating with a steam-pipe and with an elevator-cylinder, and provided with a water-inlet pipe and an overflow, of valves arranged in the steam-inlet overflow, and in the pipe between the tank and cylinder, and appliances, substantially as described, for operating the valves successively, as specified.

257,755. PORTABLE FENCE. SANFORD P. PORTER, West Richfield, Ohio. Filed Feb. 28, 1882. (Model.)



Claim.—1. The combination of a panel provided with the sharp projections upon its lower edge with a brace having horizontal projections which catch upon opposite sides of the end of the panel, substantially as set forth.

2. A brace for fences, provided with horizontal projections upon opposite sides, so as to catch over the ends of the two panels at the same time, substantially as described.

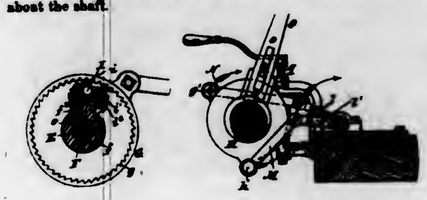
257,756. FOUNTAIN-PEN. FRANÇOIS XAVIER POSTANSKI, Paris, France. Filed Nov. 30, 1881. (Model.) Patented in France June 30, 1881.



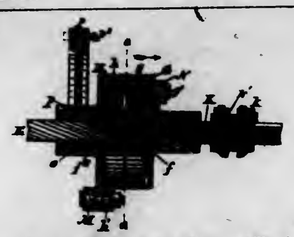
Claim.—The combination of the piston *d*, elastic tube *b*, sleeve *c*, reservoir-tube *a*, having the shouldered end tube, *a'*, the hollow plug *e*, having closed bottom *f* and side opening, *g*, the rod *h*, and the tube *i*, to form a pen-holder adapted to receive and distribute ink, as described.

257,757. SETTING MECHANISM FOR SAW-MILLS. DE WITT C. PRESCOTT, Marinette, Wis. Filed Feb. 18, 1881. (No model.)

Brief.—Upon the knee-driving pinion-shaft is secured a pawl-support. To this is pivoted a pawl with a spring on one side of the pivot and a sliding bar on the other side. This bar is moved out against the pawl to retract its point by a wedge sliding longitudinally in a groove in the shaft. Engaging with the pawl are ratchet-teeth on the inside of circular boxes, which are revolved about the shaft.



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Claim.—1. In a setting mechanism for saw-mills, the knees and connections, in combination with a pawl-carrier fastened to the shaft by which the knees are adjusted, two ratchet-wheels mounted loosely on the same shaft and surrounding the carrier, and connecting mechanism, substantially as described, operated by a lever, whereby the vibration of the latter causes the ratchet-wheels to oscillate in opposite directions and engage alternately with their respective pawls on the carrier, substantially as and for the purpose set forth.

2. The pawl-carrier F, mounted rigidly on the actuating-shaft, in combination with the ratchet-wheels G and H, mounted loosely on said shaft and arranged around the carrier, the pawls I and J on the carrier, the vibrating toggle L, the pitmen M and N, the knees C, and mechanism connecting the latter with the actuating-shaft, whereby the knees are adjusted by the movement of the shaft, substantially as and for the purposes set forth.

3. In a setting mechanism for saw-mills, the ratchet-wheels G and H, mounted on the shaft from which motion is communicated to the adjustable knees, in combination with the pitmen M and N, the vibrating toggle L, constructed with sections in different planes, to each of which one of said pitmen is connected, and an operating-lever, substantially as and for the purposes set forth.

4. The actuating-shaft of a setting mechanism for saw-mills, in combination with a pawl-carrier rigidly attached thereto and provided with suitable pawls, the ratchet-wheels mounted loosely thereon, the toggle L, provided with the arms *l'* in different planes, and the central web-arm, *F*, and the pitmen M and N, substantially as described.

5. The actuating-shaft of a setting mechanism for saw-mills, in combination with the pawl-carrier F, rigidly secured thereto, the pawls I and J, mounted thereon and provided with tail-pieces *i j*, the loose pin *f''*, arranged on the carrier underneath the tail-pieces of the pawls, and mechanism whereby the pin may be lifted to turn the pawls on their pivots and disengage them from the ratchet-wheels, substantially as described.

6. The actuating-shaft of a setting mechanism for saw-mills, in combination with the pawl-carrier F, rigidly secured thereto, the pawls I and J, mounted thereon and provided with tail-pieces *i j*, the loose pin *f''*, arranged on the carrier underneath the tail-pieces of the pawls, the beveled slide K, arranged in a groove in the shaft, and mechanism for reciprocating the latter, substantially as and for the purposes set forth.

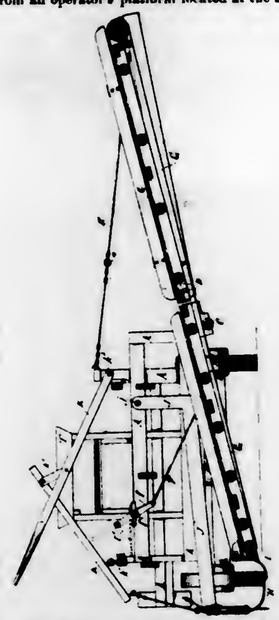
7. The actuating-shaft of a setting mechanism for saw-mills, in combination with the pawl-carrier F, rigidly secured thereto, the pawls I J, mounted thereon and provided with tail-pieces *i j*, the springs *i' j'*, arranged in sockets in the carrier under the working ends of the pawls, the loose pin *f''*, arranged on the carrier underneath the tail-pieces of the pawls, and mechanism for raising said pin, substantially as and for the purposes set forth.

8. In a setting mechanism for saw-mills, the knees and connections, in combination with a pawl-carrier fastened to the shaft by which the knees are adjusted, the two pawls mounted on said carrier, the two loose ratchet-wheels mounted on said shaft and surrounding the carrier and pawls, mechanism connecting the two ratchet-wheels, whereby the oscillation of one will cause the other to oscillate in the opposite direction, a lever for oscillating one of the ratchet-wheels, and a graduated series of stops, all arranged and operating, substantially as described, to make half the set by the vibration of the lever in one direction and the other half by its return movement, both these movements being determined by the adjustment of the stops.

257,758. GRADING AND DITCHING MACHINE. JOHN C. PRESCOTT, Cincinnati, Ohio, assignor of one-half to John O. Sloan, same place, said John O. Sloan Administrator of John C. Prescott, deceased. Filed May 12, 1881. (No model.)

Brief.—The main truck-frame carries a hinged two-part endless conveyer-frame, the lower end of which carries one section of the scraper, the other scraper-section being supported by a vertically-adjustable frame. The inner section of the conveyer-frame

and the outer scraper-section are adjustable through rod and lever connections from an operator's platform located at the side of the machine.



Claim.—1. In a machine of the character described, the combination of the frame A, the two-part endless conveyer-frame, the lower part carrying the part I of the scraper, and means for the independent adjustment of either outer end of the conveyer-frame upon bearings arranged near the hinged joint, substantially as described.

2. The combination, substantially as specified, of frame A, the transversely-arranged endless conveyer G and its frame, and the part I of the scraper secured to the lower end of the conveyer-frame and carrying over the lower end and front edge of the apron to protect the same.

3. The two-part scraper H I, each part having vertical and lower horizontal edges, the lower edges being cut back toward the center, in combination with the endless conveyer of a grading and ditching machine, as shown and described.

4. In a machine of the character described, the combination of the endless carrier G and its adjustable frame, the scraper composed of two parts, H I, the scraper-frame J J', with levers K K' to independently elevate the part H, substantially as described.

5. The combination, substantially as specified, of the adjustable endless conveyer, the part I of the scraper secured thereto, the rods F, their actuating-levers and retaining-pawl with the frame J J', part H; and compound lever K K', for the purpose described.

6. The combination, substantially as hereinbefore set forth, of frame A, to support the operative parts, the adjustable apron and scraper-frames, and clutch N, with platform B, and the levers for elevating and lowering the frames, and for operating the clutch in proximity to said platform, for the purpose set forth.

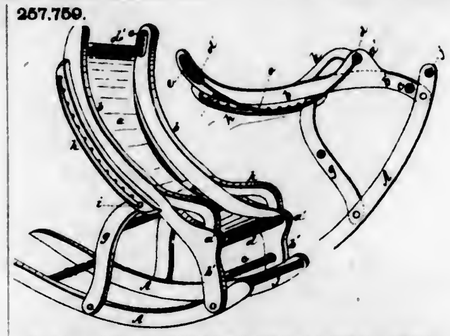
257,759. HAMMOCK-CHAIR. JOHN PURSELL, Sr., New Haven, Conn. Filed Jan. 14, 1882. (No model.)

Claim.—1. In a reclining hammock-chair, the combination, with the pivoted adjustable frame forming the front legs, and the back provided with the inside slotted rack-plates, *c*, of the hammock *a*, secured to a fixed round, *d*, of the front legs, and to an adjustable head-round, *d'*, provided with headed bearings *f*, interlocking with said slotted rack-plates, substantially as described, for the purpose specified.

2. The combination, with the pivoted adjustable frame forming the front legs, and back provided with the outside slotted rack-plates, *h*, and hammock-seat, of the rear pivoted legs, *g*, provided with headed bearings *i*, interlocking with said slotted rack-plates, and means, substantially as described, for connecting the front and rear legs, for the purpose set forth.

3. The hammock chair and bed herein described, consisting

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of the pivoted frame provided with inside and outside slotted rack-plates, *c h*, the hammock *a*, the rear pivoted legs, *g*, and the rockers A, the upper round of the hammock and the upper ends of the rear legs having headed bearings interlocking with said slotted rack-plates, substantially as described, for the purpose specified.

257,760. FLY-NET FOR HORSES. JAMES R. RUBURTTON and FRANK H. HACK, Woodsport, N. Y. Filed Feb. 16, 1882. (No model.)



Claim.—1. A fly-net having its longitudinal bars and transverse lashes secured together by means of eyelets applied one on each side of the lash, whereby the edges of the lash are overlapped by the edges of the eyelets and the lash firmly bound upon the bar without puncturing the lash, substantially as shown and described.

2. A fly-net having its transverse lashes passing through slits in the longitudinal bars, and secured to the said bars by eyelets located along the edges of the lashes out of line with each other, a portion of the edge of each eyelet overlapping the edge of the lash for binding the same firmly upon the bar, all substantially as shown and described.

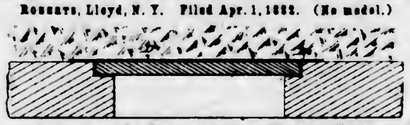
257,761. WATERPROOFING PAPER. JOB H. RIDGWAY, Philadelphia, Pa. Filed Feb. 13, 1882. (No model.)



Claim.—1. The mode herein described of imparting a coating of paraffine to the surface of paper or pasteboard, the said mode consisting in applying a block or blocks or granulated or powdered masses of paraffine to the surface of the paper under pressure while the paper or the paraffine is in motion, substantially as described.

2. As an article of manufacture, paper or pasteboard having on one or both faces a thin film of paraffine, as set forth.

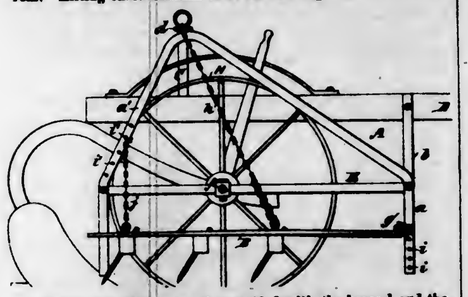
257,762. PRESERVING ENSILAGE IN SILOS. CHARLES H. ROGERS, Lloyd, N. Y. Filed Apr. 1, 1882. (No model.)



Claim.—In a silo, the combination, with the walls, doors, and covers of the ensilage-receptacle, of one or more sheets or strips of water and air proof fabric, substantially as herein shown and described, to prevent access of air or the evaporation of the moisture of the ensilage, and thereby preserve the same from decomposition, as set forth.

257,763. COMBINED SULKY-PLOW AND DRAG. MILES ROBINSON, Wichita, Kans. Filed Nov. 29, 1881. (Model.)

Brief.—Bent frame-piece with means for attachment to outside of any ordinary sulky-plow. Drag is connected with frame-piece by adjustable hinged connection at front and chain at the rear. Lifting-chain sustains outer side of drag.

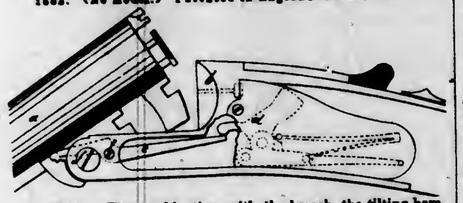


Claim.—1. The frame A, provided with the brace *b* and the bent arm C, in combination with the hinged drag B, the frame being provided with the cross-bar E, having the attachment *f*, substantially as and for the purposes set forth.

2. The bent frame A, provided with the opposite holes, *i* and *i'*, in combination with the chain *j* and drag B, hinged to the part *a* of the frame at *g*, substantially as described, and for the purpose set forth.

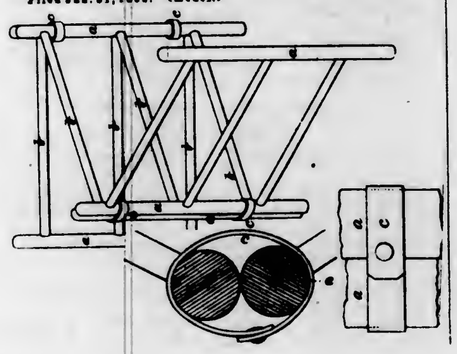
3. The combination, with the frame A, provided with the holes *i i'*, brace *b*, cross-bar E, having the attachment *f*, and bent arm C, of the drag B, hinged at *g* to the frame A, and chains *j h*, substantially as described and for the purpose set forth.

257,764. BREECH-LOADING FIRE-ARM. JOHN T. ROGERS and JOHN ROGERS, Birmingham, County of Warwick, England, assignors to John B. Clabrough, same place. Filed Jan. 24, 1882. (No model.) Patented in England Jan. 29, 1881.



Claim.—The combination, with the breech, the tilting hammer, and barrel, of a main fulcrum-pin, *f*, for connecting the barrel to the breech, extending from side to side of the breech, and the cocking-lever *e*, fulcrumed upon an independent center between the barrel-fulcrum and the hammer, and having its forward end raised to a higher level than its rear end, and extended over and past the main fulcrum-pin, and arranged to play between the same and the lower face of the barrel, substantially as shown and described.

257,765. CLOTHES-DRIER. THOMAS ROWE, New York, N. Y. Filed Jan. 31, 1882. (Model.)



Claim.—In combination with the uprights *a a* of a folding clothes-drier, the elliptical spring-metal bands *c*, embracing said uprights to connect and hinge them together, as specified.

257,766. WELL-DRILLING MACHINE. OSCAR RUST, St. Joseph, Mo. Filed Feb. 9, 1882. (No model.)



Claim.—1. In a well-drilling machine, the combination, with the driving-shaft *a*, located at the center of the sweep of lever *c*, of the drum *d*, carrying the rope of the slush-bucket and geared at will directly with the driving-shaft, whereby the greatest power of the machine shall be applied to lift and sink a heavy bucket through a bed of sand, as specified.

2. In a well-drilling machine, the shaft *h*, having the sprocket *j*, which is provided with a clutch rigidly secured thereto at one end, the drum *d*, loosely mounted on the shaft and adapted to be shifted into engagement with said clutch, the collar *m*, sliding on the shaft at its other end, and the sprocket *k*, loosely mounted on said shaft and adapted to be engaged by the said collar, whereby two shafts, in addition to the driving-shaft, shall suffice for operating the two drums independently of each other, as specified.

257,767. WELL-DRILLING MACHINE. OSCAR RUST, St. Joseph, Mo. Filed Feb. 7, 1882. (No model.)



Claim.—1. A well-drilling machine having the driving-shaft located at the center of the arc described by the drill-operating lever, whereby the said lever shall be operated by the shortest arm possible on the driving-shaft, substantially as shown and described, and for the purpose set forth.

2. A well-drilling machine having the driving-shaft located at the base of the supporting-frame, and the fulcrum of the drill-operating lever on a horizontal level with the said shaft, whereby power shall be gained in the operation of the lever by the arm on the said shaft, and the frame shall be rendered steady when the machine is in motion, substantially as set forth.

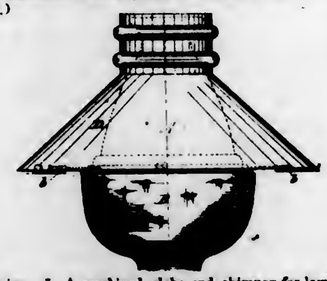
3. In a well-drilling machine, the combination, with the lever *c*, of an open shackle, *e*, for supporting the sheave *f*, substantially as shown and described, whereby the rope may be removed from the sheave to allow it to be wound evenly on the drum, as set forth.

4. In a well-drilling machine, the mast composed of two vertical side pieces placed nearly in juxtaposition with each other, and having spaces for journaling the sheaves formed by intervening blocks inclosed between the side pieces, substantially as shown and described, whereby the spaces shall be formed without mortising the mast, and the upper and lower sheaves shall be supported by the side pieces immediately at the sides thereof, as specified.

5. In a well-drilling machine, the combination, with the drum *h*, carrying the drill-rope, of the sliding pinion *m*, gearing directly with the drive-wheel *b*, and connected with the drum, substantialy as shown and described, whereby the drum shall be wound with increased rapidity in hoisting the drill from the well, as set forth.

6. In a well-drilling machine, the combination, with the fly-wheel *p*, of the flanged drum *q*, carrying the rope of the slush-bucket, and adapted to be shifted to throw the flange into frictional contact with the side of the fly-wheel, substantially as shown and described, whereby a rapid motion shall be given to the drum without the use of intermediate gearing between the drum and the fly-wheel, as set forth.

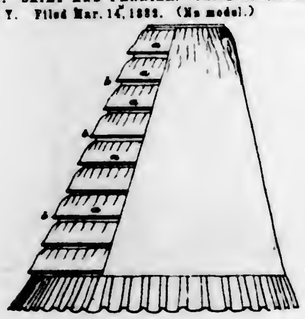
257,768. COMBINED GLOBE AND CHIMNEY FOR LAMPS. PETER SCHNEIDER, Brooklyn, N. Y. Filed Feb. 11, 1882. (No model.)



Claim.—1. A combined globe and chimney for lamps provided with a ledge or shoulder for the support of a shade, in combination with a shade the base of which is extended laterally beyond the base of the chimney, and suitable arms interposed between the base of the shade, and a ring supported on the ledge or shoulder and connecting the base of the shade with the ledge or shoulder, substantially as described.

2. The combination of the shade D, having its base extended laterally beyond the top of the globe, the ring *a*, provided with the arms *b*, and the ledge or shoulder C of the combined globe and chimney, substantially as described.

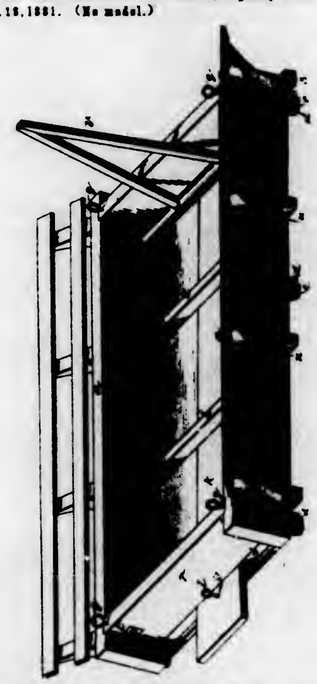
257,769. SKIRT AND PANNIER. JACOB SCHOENHOF, New York, N. Y. Filed Mar. 14, 1881. (No model.)



Claim.—1. A skirt provided with a series of ruffles on its back breadth, said ruffles being sewed to the skirt at their upper edges and ends, and having springs in their free lower edges, substantially as set forth.

2. The combination, to form a combined skirt and pannier, of the skirt, the ruffles *a*, gathered and stitched to the skirt at their upper edges and ends, the springs *b* arranged in the lower free edges of the ruffles, and the lacing device comprising the strips *c c* and lacing cord *d*, all constructed and arranged substantially as set forth.

257,770. HAY-RACK. JOHN SHAFER, Logansport, Ind. Filed Nov. 18, 1881. (No model.)



Claim.—1. The combination, with the end-gate *r*, provided with the projections *t t* and recesses *p*, and side-board *a*, provided with end mortises, *c*, of the end brace, *m*, provided with a tenon, *m'*, extending through the side-board and into the recess, and secured thereto by a pin, *q*, substantially as described, and for the purpose set forth.

2. The combination of the side-boards *a*, provided with the mortises *b c* and hooks *e*, removable cross-bars *h d*, removable wedge-shaped boards *i i k*, braces *m m' n n'*, connected by slats *o o*, end-gates *r r*, constructed as set forth, and pins *l q u*, whereby the hay-racks and wagon-box can be separated or put together, substantially as described, and for the purpose set forth.

257,771. FUNNEL-BLOCK FOR PARTITIONS OF BUILDINGS. DENNIS SHEA, Portsmouth, and ROMAINE TRIPPLETHEN, Dover, N. H. Filed Dec. 28, 1881. (No model.)

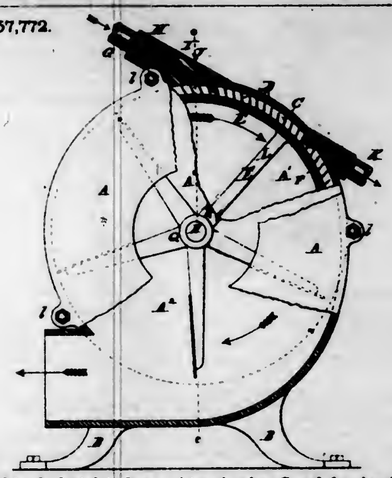


Claim.—As a new article of manufacture, a funnel-block, A, having its edges rabbeted at *b* on each side to form tongues or projections *c* of less thickness than the body of the block, and adapted to fit between the two series of laths on opposite sides of a partition, substantially as and for the purpose set forth.

257,772. ROTARY FAN. HOWARD M. SMITH, St. Louis, Mo. Filed Aug. 5, 1881. (No model.)

Claim.—1. The combination of case A, side plate, A', having bearing P, and head A', having bearing O, the said case, side plate,

257,772.



and head adapted to form a piston-chamber, C, and fan-chamber W, as set forth.

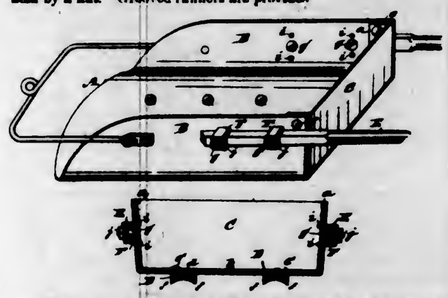
2. The rotary piston with buckets D and packing-grooves, combined with the packing-ribs *s* of the case, for the purpose set forth.

3. The removable jet-nozzle J, in combination with the head A', having socket I, the connecting-piece H, and the steam-pipe G, the jet-nozzle being adapted to be dropped into position, as set forth.

4. The combination of head A', having socket I, the nozzle J, connecting-piece H, steam-pipe G, and exhaust-pipe K, as set forth.

257,773. EARTH-SCRAPER. PHILIP SMITH, Sidney, Ohio. Filed Jan. 26, 1882. (No model.)

Brief.—The scraper-body consists of a metal blank bent up to form the sides and an end piece having side and bottom flanges, by which it is riveted to the main portion. Each handle is secured by a metal clip having ends projecting through the side of the scraper and by a bolt passing through the clip and handle and held by a nut. Grooved runners are provided



Claim.—1. An improved earth-scraper, consisting of the blade A, struck up to form the sides B, the end plate, C, and the runners D, substantially as herein shown and described.

2. In combination with an earth-scraper, the runners D, guttered upon the under side or concaved to form the projections *f f*, substantially as described.

3. In an earth-scraper, the combination, with the sides of the plate and the handles E, of the staple-plates F, provided with points *i*, entering perforations in the said sides, and the bolts *g*, passing through the sides of the blade, the handle, and the staple-plates, and provided with nuts *j*, substantially as herein shown and described, whereby provision is made for taking up the shrinkage or wear of the handles, as set forth.

4. In an earth-scraper, the end plate, C, formed with the flanges *a* and *b* and riveted to the bottom and sides of the scraper, substantially as described.

5. The body of the scraper, formed of the steel blade A and sides B B, in combination with the guttered runners D D, end plate, C, and adjustable handles E E, substantially as described.

257,774. WASHING-MACHINE. RACHEL P. SMITH, Chicago, Ill. Filed Jan. 19, 1882. (Model.)

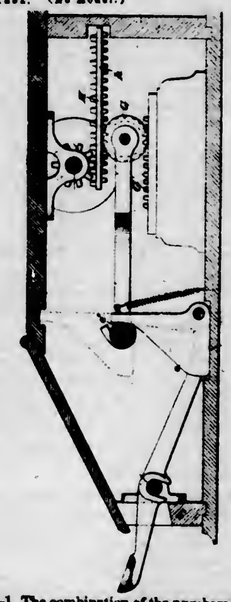


Claim.—1. In combination with the frame adapted to be secured to the edge of the tub, the movable frame connected to the stationary frame by links, the adjustable extensions secured to the movable frame, and the pivoted rubber secured to said extensions, the whole adapted to operate substantially in the manner specified.

2. In combination with the stationary and movable frames, the links provided with lugs or stops for holding the frames in proper relative positions when folded, substantially as specified.

3. A hollow metallic rubber provided with a valve aperture or seat at its under side, and a flap-valve longer in one direction and narrower in the other than said aperture, whereby the valve is supported and the water allowed to escape, as described, in combination with the fluted rolls journaled thereto, substantially as specified.

257,775. ADDING-MACHINE. WALTER C. SPELLIER, New York, N. Y., assignor to Rastus S. Ransom, same place. Filed Mar. 16, 1882. (No model.)



Claim.—1. The combination of the numbered levers, the cams thereon, the operating bail or frame, the gearing, and the registering mechanism, substantially as set forth.

2. The combination of the levers, the cams, the operating-bail, its pinion, the racks G' and H, the register-wheel, the registering mechanism, and a spring for automatically returning the traveling rack to its normal position, substantially as set forth.

3. The combination of the numbered lever, its cam pivoted thereto, the operating bail or frame, and the spring which serves to restore the lever to its normal position, substantially as set forth.

4. The combination of the traveling operating bail or frame, mechanism for imparting to it a series of motions corresponding with and proportioned to a series of numbers, the pinion carried by the bail, the racks, the registering-pinion, and means for automatically returning the parts to normal position after the bail has been operated, substantially as set forth.

5. The combination of the levers, their cams, the operating bail or frame, and the guides in which the cams work, substantially as set forth.

257,776. ELECTRIC CANDLE. LOUIS SELIGNAC, Paris, France, assignor to the Jablochkoff Electric Lighting Company, New York. Filed Jan. 4, 1882. (No model.) Patented in France Mar. 7, 1879, No. 129,743.



Claim.—1. The combination, with two parallel conductor sticks or pencils, one of which is approximately twice the size of the other, of a wire, core, or sheath composed of a material that is a better conductor of electricity than the material of said pencils, said wire, core, or sheath being applied to the smaller of the two pencils in the manner described, whereby the resistance of the two combustible sticks or pencils of different size is equalized, as and for the purpose set forth.

2. An electric candle composed of two parallel sticks of carbon separated by insulating material, one of which is approximately half the size of the other, and is provided with a metallic conducting core, sheath, or wire, substantially as and for the purpose set forth.

257,777. SUSPENDER-BUCKLE. FREDERICK B. SPOONER, Brooklyn, N. Y. Filed Feb. 14, 1882. (No model.)



Claim.—1. In a buckle, the combination, with the buckle-plate, of a sliding frame provided with a hook passing through an aperture in the buckle-plate, substantially as herein shown and described, and for the purpose set forth.

2. In a buckle, the combination, with the plate A, of the sliding frame D, provided with a hook or tongue, F, and of the spring C, substantially as herein shown and described, and for the purpose set forth.

3. In a buckle, the combination, with the plate A, provided with spring-tongues K, having jaws at their free ends, of the sliding frame D, provided with a hook or tongue, F, and of the spring C, substantially as herein shown and described, and for the purpose set forth.

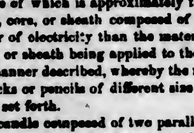
4. In a buckle, the combination, with the plate A, provided with an aperture, G, and with spring-tongues K, having jaws at their lower ends, of the sliding frame D, provided with a tongue, F, passing through the aperture G, and having a hook or head at its upper end, and of the spring C, substantially as herein shown and described, and for the purpose set forth.

5. In a buckle, the combination, with the plate A, of the sliding frame D, provided with a hook or tongue, F, the spring C, and the holder or straps E, attached to the frame D, substantially as herein shown and described, and for the purpose set forth.

6. In a buckle, the combination, with the plate A, provided with an aperture, G, of the sliding frame D, provided with a tongue, F, passing through the aperture G, and provided at its end with a hook or head, H, substantially as herein shown and described, and for the purpose set forth.

7. In a buckle, the combination, with the plate A, provided with slots B and J, forming spring-tongues K, of the sliding frame D, provided with a tongue, F, and of the spring C, substantially as herein shown and described, and for the purpose set forth.

257,778. CONDUCTOR. J. HILTON STEARNS, Jr., Brooklyn, assignor, by mesne assignments, to the New York Telegraph Company, New York, N. Y. Filed Nov. 26, 1881. (No model.)



Claim.—An underground cable for telegraphic or telephonic purposes which consists of two or more wires, A, having insulating coatings B and induction-casing C, said insulated wires being arranged in the bends of the induction-casing and on alternately-opposite sides of same, substantially as and for the purpose specified.

257,779. DRILL-HOLE CLEANER. WILLIAM H. STEWART and REMBY J. CHAPMAN, Denver, Colo. Filed Jan. 30, 1882. (Model.)

Claim.—1. In a drill-hole cleaner, the combination, with the tube K, carrying one or more sediment-cups, L, at its lower end, of an air-compressor, A D, substantially as herein shown and described, and for the purpose set forth.

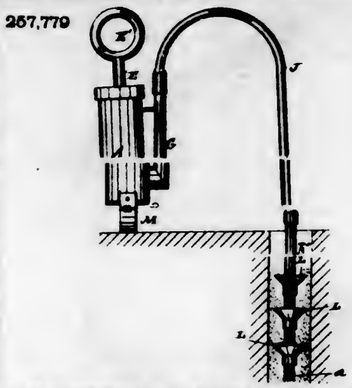
2. In a drill-hole cleaner, the combination, with the tube K, of one or more adjustable sediment-cups mounted on its lower end, and of an air-compressor, A D, substantially as herein shown and described, and for the purpose set forth.

3. In a drill-hole cleaner, the combination, with the tube K, having its lower end threaded, of one or more sediment-cups, L, screwed on this threaded part of the tube, and of an air-compressor, A D, substantially as herein shown and described, and for the purpose set forth.

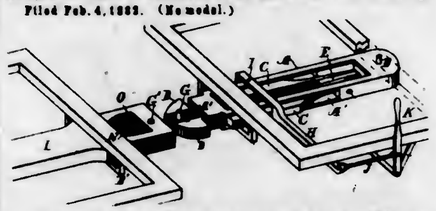
4. In a drill-hole cleaner, the combination, with the tube K, provided at its lower end with a series of notches or recesses, *a*, of the sediment-cups L, mounted on the tube K, and of an air-compressor, A D, substantially as herein shown and described, and for the purpose set forth.

5. In a drill-hole cleaner, the combination, with the tube K, of the sediment-cups L, mounted on the lower end of the same, and of the air-compressor A D, provided at its lower end with a stirrup, M, substantially as herein shown and described, and for the purpose set forth.

257,779



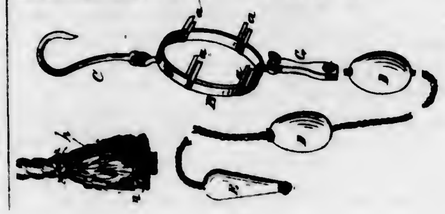
257,780. CAR-COUPLING. LOUIS A. [illegible], Pleasant Lick, Ky. Filed Feb. 4, 1882. (No model.)



Claim.—In car-couplers, the draw-bar A, having within a recess, A', containing the latches C, provided with leaves or wings which project through the sides of the draw-bar, and with jaws D, which project from the forward end, and looped lever H, in combination with the draw-bar L, having the mouth N, provided with ledges or shoulders O, substantially as herein set forth.

257,781. FIRE-ESCAPE. JOHN H. O. SULLIVAN, Hopkinton, Mass. Filed Mar. 20, 1882. (No model.)

Brief.—Bunches of fiber are inserted between the strands of the rope and fastened, forming conical stops for the hand-pieces, which are bored and slid down onto them. The reel is provided with bifurcated spring-holders to receive and hold the rope.



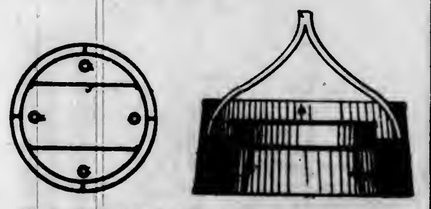
Claim.—The improved portable fire-escape described, the same consisting of the rope A, provided with the stops A, hand-pieces D link G, and plumb E, in combination with the reel B, provided with the holders *a a*, and hook C, all constructed and arranged to operate substantially as set forth and specified.

257,782. NUT-LOCK. JOHN B. SUTTON, Pittsburg, Pa. Filed Feb. 23, 1882. (No model.)



Claim.—A device for locking nuts on bolts, consisting of a small steel bar bent to form an open ring to be placed on a bolt under a nut as a washer, of which one end overlaps the other, the inner end having a pointed projection at its under surface, the other end, when bent upward, locking the nut, substantially as described.

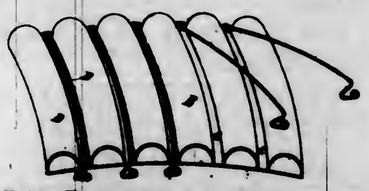
257,783. CLOTHES-POUNDER. FRANKLIN W. SUTTON, Angola, Ind. Filed Mar. 6, 1882. (Model.)



Claim.—1. A clothes-pounder having two or more chambers, and provided with tubes which extend down into each chamber, and also having a groove or channel upon its top, substantially as described.

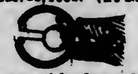
2. The combination of the clothes-pounder having a groove or channel formed in its top, and provided with the tubes which extend downward into each chamber, with the guide or guard which is secured around the pounder, substantially as set forth.

257,784. HAIR-CRIMPER. MARY SWARTS, Greenville, Ohio. Filed Mar. 9, 1882. (No model.)



Claim.—The combination of plate B, having convex faces, furrows between the faces, and spring-clamps hinged at one end of the furrows, and having catch-hooks and handles at their free extremities, as set forth.

257,785. TOY HOOP-STICK. WILLIAM L. TAYLOR, Philadelphia, Pa. Filed Mar. 20, 1882. (No model.)



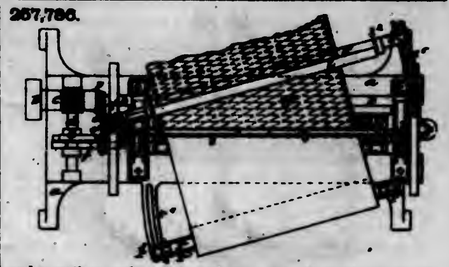
Claim.—1. As a new article of manufacture, a toy hoop-stick consisting of the body of wood surrounded on its end with a metallic ferrule, and provided with a globe-bell on said end, substantially as and for the purpose specified.

2. A globe-bell provided on the top with a hole large enough to admit a screw-head and on the bottom with a hole large enough to admit the shank of a screw, in combination with the screw and hoop-stick, substantially as shown.

257,786. SEWING-MACHINE FOR QUILTING. JOS. THOMAS, Hoboken, N. J. Filed Jan. 18, 1882. (No model.)

Claim.—1. In combination, the feed-rollers *l l'*, carried by the adjustable frame F, the bevel-wheels *m m'*, ratchet-wheels *n* and *n'*,

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and operating-pawl *o*, substantially as and for the purpose set forth.

2. As a variable device for feed-rollers of sewing-machines, the plain ratchet *n*, secured rigidly to its shaft, the ratchet-wheel *n'*, turning freely on the shaft adjacent thereto, and having teeth of varying depth, and operating-pawl *o*, in combination, substantially as set forth.

3. The combination of the row of needles *i i* with the feed-rollers *l l'*, carried by the frame F, which is pivoted at one end in close proximity to one end of the row of needles and secured at its other end to a curved slotted bracket, whereby the said feed-rollers may be set at different angles to the row of needles, substantially as set forth.

4. In combination, the row of needles *i i*, the adjustable frames F and *f'*, pivoted at one of their ends at the opposite sides and ends of the row of needles and secured at their other ends to curved slotted brackets, whereby they may be set at different angles to the row of needles and parallel to one another, said frame F being adapted to carry the feed-rollers *l l'*, and the said frame *f'* being adapted to carry the roll of goods *g*, substantially as and for the purpose set forth.

257,787. HEAD-COVERING. RICHARD H. TRESTER, Greenville, N. J. Filed Mar. 9, 1882. (Model.)



Claim.—1. As a new article of manufacture, a hat made of strips of napped fabric, napped either on one or on both sides, sewed or pasted together.

2. A lady's or child's hat of strips of cotton, silk, or woolen napped fabric, napped either on one or both sides, and sewed into a hat alternating with strips of straw or other braid, sized and blocked into shape, substantially as specified.

3. The method herein described of making ladies' and children's hats from strips of fabric napped on one or both sides, or napped fabric and straw or other braid sewed or stuck together, sizing and blocking the same into shape, substantially as set forth.

257,788. NUT-LOCK. CHARLES B. TYLER, Newark, N. J., assignor to himself, Clark W. Hills, Pompton, N. J., and Gaolair Thoren, New York, N. Y. Filed Jan. 9, 1882. (No model.)

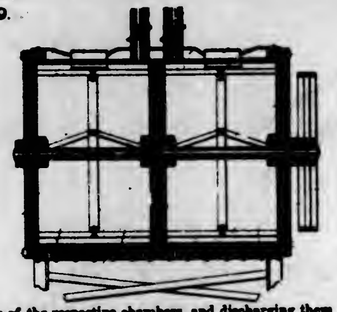


Claim.—In combination with a nut and a bolt having one side removed, a washer having points and a tapering tongue turned up from the metal of the washer in forming the hole for the bolt, the base of such tapering tongue being of a width to cause it to be compressed at its angles by the nut as it is screwed upon the tongue, substantially as and for the purposes set forth.

257,789. HEATING AND COOKING APPARATUS. GILBERT N. VENABLE, Memphis, Tenn. Filed May 26, 1881. (No model.)

Claim.—1. The heating or cooking apparatus herein described, consisting of a horizontal cylinder transversely divided into two or more separate chambers with independent discharge-doors, and a rotary shaft carrying scrapers adapted for stirring the

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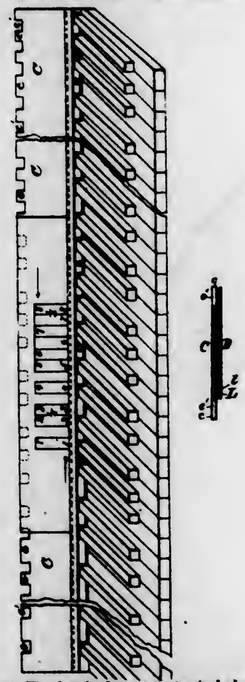


contents of the respective chambers, and discharging them either simultaneously or separately, so that one chamber may be in full operation while another is being filled or emptied.

2. In combination with a cylindrical heater and a spider revolving axially therein, the V-shaped knives arranged to stir the materials under treatment, as described.

3. In combination with a cylindrical heater and an axially-revolving spider carrying suitable scraping-knives, the strengthening band or ring connecting said knives, for the purposes set forth.

257,790. MUSIC-CHART. MAXIMILIAN WAGNER, Berlin, Germany. Filed Dec. 24, 1881. (No model.) Patented in England Dec. 27, 1881, and in France Dec. 27, 1881.



Claim.—1. The herein-described musical chart C, composed of two or more sections hinged together for folding, and provided on its opposite edges with teeth *c* and a ledge, L, having a wedge-shaped groove therein, substantially as and for the purpose specified.

2. The main chart C, having ledge L, and provided with teeth *c* on its opposite edges, the end teeth at both edges being longer than the intervening teeth, substantially as and for the purpose specified.

3. The combination, with the main chart C, having teeth *c* and ledge L, provided with a wedge-shaped groove, of a chart, D E F G having one of its edges beveled, substantially as and for the purpose specified.

257,791. GONG-BELL. JAS. WALKER, New York, N. Y. Filed Apr. 8, 1882. (No model.)

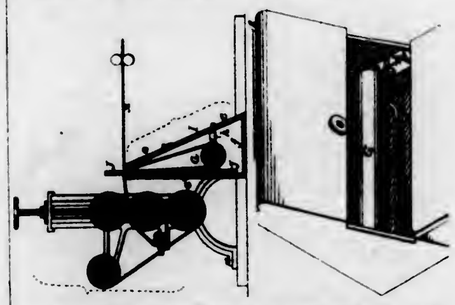
Brief.—A gong and attaching device which have but a single joint, so as not to unnecessarily break the continuity of the metal and thereby impair the sonorous vibrations.



Claim.—1. A gong-support having an attaching body, a coiled or volute shank, and a securing-plate cast in a single piece, combined with a gong, whereby the gong is firmly secured to a clock or other object with but a single joint, as specified.

2. The gong A and head B, welded or brazed together, as shown, combined with the support composed of the body D *d*, shank E, and plate F, cast in a single piece, and with the attaching-screw C, as and for the purposes specified.

257,792. CLOTH-STEAMING BOX. ROBERT J. WALKER, Philadelphia, Pa. Filed Jan. 12, 1882. (No model.)



Claim.—1. The combination of a steaming-box having at the top an elongated opening, with a pipe for admitting steam to the box, and with a roller whereby the fabric is directed downward and upward through the said opening and in the course described within the box, all substantially as set forth.

2. The within-described steaming-box, having converging front and rear and an elongated opening in the top, in combination with a roller, G, and a steam-pipe, J, substantially as described.

3. A steam-box provided with door I, roller G, and slotted bearings *i j*, whereby the said roller may be readily removed, all being combined substantially as set forth.

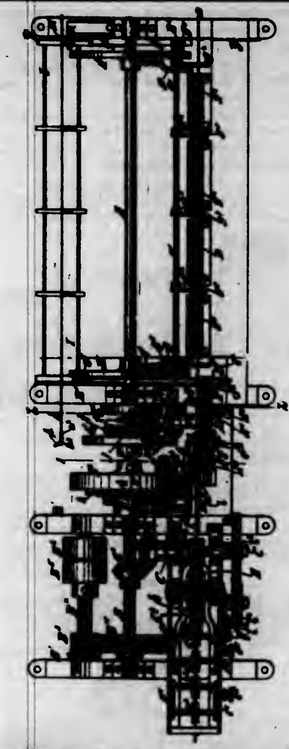
257,793. MACHINE FOR MAKING WIRE BALE-BANDS. THEODORE A. WEBER, New York, N. Y., assignor to Susan C. Nicholson, same place. Filed Oct. 12, 1881. (No model.)

Brief.—The wire passes through a straightening device, the feed-rolls, a stationary cutter, a conical guide, and the eye in a link onto arms on a rotating carrier, which clutch and hold the wire. The wire is then severed by a knife on a rotating disk. The conical guide opens the rotating holder, carries the wire so as to place the rear end of it on a twisting-nib, the link going into a notch in said nib. The end of the wire is then bent around the nib and held alongside of the main portion in a notch by a spring-pawl. The nib is then rotated, twisting the two parts of the wire together, forming an eye, in which the link is held. The twisting-nib, the bending-arm, the notch, and pawl for holding the two parts during twisting are mounted on disks, which rotate with the carrier. After the bale-band has been completed it is freed from the carrier and drops onto a registering device.

Claim.—1. In a machine for making the wire bale-bands herein described, the combination of feeding mechanism, shears for cutting off the wire, mechanism for feeding the links, and mechanism for doubling or bending the wire and twisting it to form a loop, all constructed and operating substantially as herein described.

2. In a machine for making the wire bale-bands herein described, the combination of feeding mechanism, shears for cutting off the wires, mechanism for feeding the links, a rotary carriage for the wire after being cut off, and mechanism rotating with said carriage for doubling or bending the wire and twisting it to form a loop, all constructed and operating substantially as herein described.

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3. The combination, with the grooved and geared feeding-wheels C' C', of the lever E, provided with uprights b^3, the yoke *e*, and cam *e'*, substantially as herein described.

4. In a machine for making wire bale-bands, the combination of feeding mechanism, shears for cutting off the wire, a box or trough for the reception of links, mechanism for ejecting the links transversely from said box or trough, a divided guide for the wire, and mechanism for opening said guide to permit the removal of the wire transversely therefrom, substantially as herein described.

5. The combination of the box or trough F', the pusher or blade *e*, the arm *e'*, rock-shaft *e²*, and lever *e³*, for working said pusher or blade, and the disk or flange H, provided with the depression *d'* and spring *d²*, all substantially as herein described.

6. The combination of the divided conical guide *f f'*, the lever f^3, the link f^4, arm f^5, rock-shaft f^6 and the lever f^7, and the disk or flange H, provided with the depression *d'* and spring *d²*, all substantially as herein described.

7. In a machine for making wire bale-bands, the combination of a rotary carriage for the wire, comprising fixed fingers and a series of oscillating fingers, a table or bed for the cut wire, through which said oscillating fingers may pass, and mechanism for moving said oscillating fingers in one direction to pass under and lift the wire from said table or bed, and mechanism for moving said fingers in the other direction to carry the wire into said fixed fingers, substantially as herein described.

8. The combination of the V-shaped table or bed g^9, the shaft B, and its disks or flanges H H', the fixed fingers or forks *g*, the shaft or rod *g'*, the oscillating fingers or forks g^3, the spring g^4, and the cam g^5 and arm g^6, all substantially as herein described.

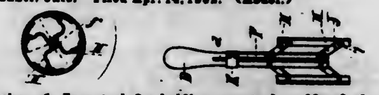
9. In a machine for making wire bale-bands, the combination of feeding mechanism, shears for cutting off the wire, a main shaft, a rotary wire-carriage, and two disks, all fixed upon said shaft, a rotary twister carried by one of said disks, mechanism carried by the other disk for doubling or bending the wire over said twister and holding it while being twisted, substantially as herein described.

10. In a machine for making wire bale-bands, the combination of the shaft B, the rotary wire-carriage, the disk G, the shouldered finger *i*, the dog i^2, the rotary dog j^2, the reciprocating rack-bar j^3 and stationary cam G', and the disk F, carrying the twister A, and the stationary cam F', for operating the twister, all substantially as herein described.

11. In a machine for making wire bale-bands, the combination of the main shaft B, the rotary wire-carriage, the flange F, the rotary twister *h*, carried by said flange, and the reciprocating rack-bar *h* and stationary cam F', for rotating said twister, all substantially as herein described.

12. In a machine for making wire bale-bands, the combination of the main shaft B, the flanges or disks F and G, and the rotary wire-carriage fixed upon said shaft, the doubling or bending and the twisting mechanism carried by said flanges or disks, the feed-wheels C' C', and the transverse counter-shaft C, and gearing by which said shaft C is driven from the shaft B, and through which it drives said feed-wheels, substantially as herein described.

257,794. FRUIT-CAN-SOLDERING TOOL. JACOB F. WHITSEL, Cincinnati, Ohio. Filed Apr. 14, 1882. (Model.)

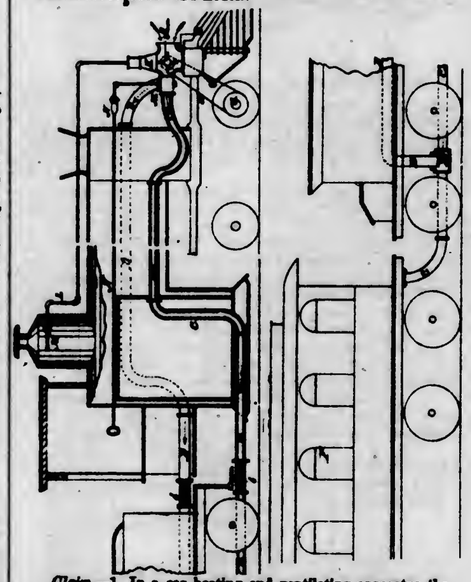


Claim.—1. In a tool for holding cans to be soldered, the handled shank or stem D F, so connected to a congeries of equidistant expanders or arc-plates J by as many pairs of curved elastic parallel-rule links H as to become self-locking in the act of insertion, substantially as set forth.

2. In combination with a congeries of arc-plates, H, arranged equidistantly around the circle, and with as many pairs of curved elastic hinged links H, the X-formed stem F, having the handle D, substantially as set forth.

3. In combination with the expanders J and the curved elastic hinged links H, the stem F, composed of four L-formed strips, and occupying a cruciform kerf, *d*, in handle D, in the manner described.

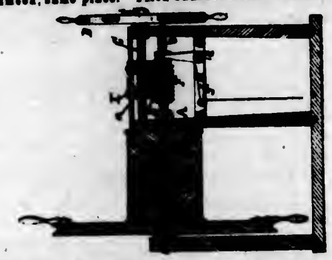
257,795. CAR HEATING AND VENTILATING APPARATUS. LEWIS B. WHITE and LEONARD HENDERSON, Middleburg, N. C. Filed Jan. 16, 1881. (No model.)



Claim.—1. In a car heating and ventilating apparatus, the combination, with the hot-air tubes C and D and the valve M', of the automatic valve R, located at the rear junction of said tubes, so as to close the exit-opening of one of them when air is forced through the other, as set forth.

2. In a ventilating apparatus for railway-cars, the combination, with the blower and its shaft, of the engine K and chain, locomotive-axle, and chain-pulley having a ratchet-and-pawl connection with said shaft, and the open-mouthed tube which extends rearward and connects with a car, as shown and described, whereby the rotation of the shaft may be continued by the operation of either the engine or the chain, as required.

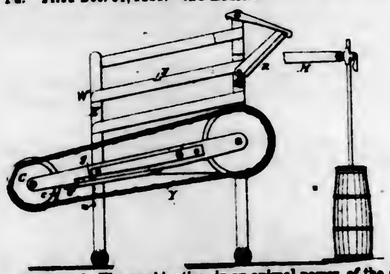
257,796. STEAM STEERING MECHANISM. WILLIAM G. WILLIAMSON and HALVOR O. FLADVAD, Philadelphia, Pa., assignors to said Williamson, George W. Williamson, and John B. Williamson, same place. Filed Jan. 26, 1882. (No model.)



Claim.—1. The combination, substantially as before set forth, of the hand-wheel D, screwed spindle C, nut E, moving in guides, screwed sleeve F, and the lever H.

2. The combination, substantially as before set forth, of the hand-wheel D, screwed spindle C, nut E, moving in guides, screwed sleeve F, lever H, and shaft G.

257,797. CHURN-POWER. JEFFERSON WILSON, Beaver Falls, Pa. Filed Dec. 31, 1881. (No model.)



Claim.—1. The combination, in an animal-power, of the supporting-frame W, the web-frame A, pivoted within said frame W, between its ends, so that it may be turned within the frame to a vertical position, and provided with a device, substantially as described, for securing it in any position to which it may be adjusted, substantially as set forth.

2. The combination, in an animal-power, of the supporting-frame W, its notches *y* and *u*, and the pivoted web-frame A, provided with the sliding bar *g*, substantially as set forth.

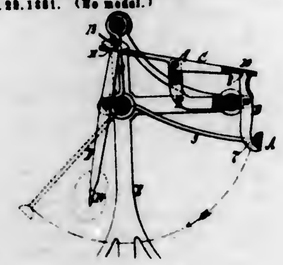
3. The web-link provided with a cross-head at one end and with sockets at the opposite end, adapted to the cross-head of the adjacent link, all cast in one piece, substantially as set forth.

4. The combination of the links, their cross-heads and sockets, each cast in one piece, as set forth, and slats Y, retaining the cross-heads in the sockets, substantially as described.

5. The combination, with the operating-lever H, of the pivoted clamp provided with a cam-lever, Q, grooved and sparred, substantially as described, for the purpose set forth.

6. The combination, with the supporting-frame of the apparatus, of a hinged head-board, R, and devices for securing said head-board in its different positions, substantially as described.

257,798. ANIMAL-TRAP. CHARLES G. WILTSE, New York, N. Y., assignor to himself and Argus L. Freeman, same place. Filed Sept. 29, 1881. (No model.)



Claim.—1. In an electric-light regulator constructed to offer two conducting-paths to the current, an axial electro-magnet placed in the main or light circuit, and provided with a movable core seated upon a coiled spring, in combination with contacts controlling a branch or safety circuit around the lamp of a resistance approximately equal to that of the normal arc.

2. An axial electro-magnetic circuit-closer consisting of electro-magnetic coils or helices and a movable core provided with a contact, in combination with a metallic plate seated upon the head of the coils, and bent around to form a circuit-closing point to act in conjunction with the core.

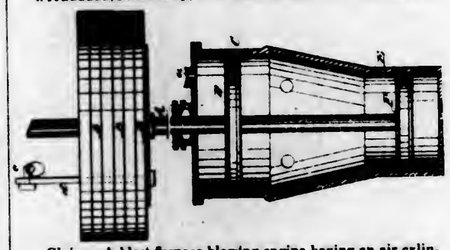
3. In an axial electro-magnet switch, a movable core and supporting-spring, in combination with a supporting metallic plate and an inclosing metallic cylinder, substantially as described.

4. In an axial electro-magnet switch, the combination of a movable core, an inclosing metallic cylinder, and a flexible electrical connection from the cylinder to the core.

Claim.—1. The combination of a bar, 4, a horizontal knocker, A, hung to springs arranged on said bar, a vertical pivoted catch B, adapted to engage the knocker and hold it suspended, a detent C, adapted to engage the upper end of the catch, and a pendent bait holder engaging the other end of the detent, all substantially in the manner described.

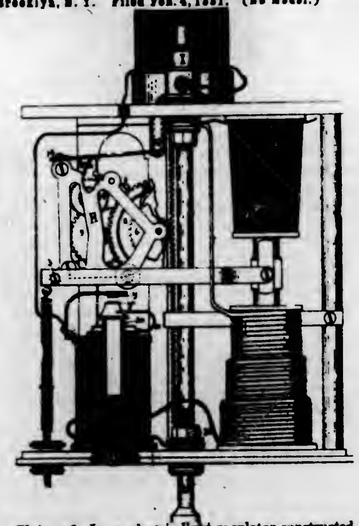
2. The combination of the knocker A and its springs 3, the pivoted catch B, having the hook 7 and toe 8, the pivoted detent C, having openings 10 11, and the pivoted bait-holder D, having the head 13, for the purpose specified.

257,799. REGULATOR FOR BLOWING-ENGINES. THOMAS F. WITHERBEE, Port Henry, N. Y. Filed Feb. 9, 1882. (No model.)



Claim.—A blast-furnace blowing-engine having an air-cylinder, C, connecting with the blast-pipe, a steam-cylinder, E, having piston F, and a speed-governor having the rod and piston A D working in the cylinder C, whereby a given volume of air may be maintained regardless of the steam-pressure and the air-resistance, as described.

257,800. ELECTRIC-LIGHT REGULATOR. JAMES J. WOOD, Brooklyn, N. Y. Filed Feb. 4, 1881. (No model.)



Claim.—1. In an electric-light regulator constructed to offer two conducting-paths to the current, an axial electro-magnet placed in the main or light circuit, and provided with a movable core seated upon a coiled spring, in combination with contacts controlling a branch or safety circuit around the lamp of a resistance approximately equal to that of the normal arc.

2. An axial electro-magnetic circuit-closer consisting of electro-magnetic coils or helices and a movable core provided with a contact, in combination with a metallic plate seated upon the head of the coils, and bent around to form a circuit-closing point to act in conjunction with the core.

3. In an axial electro-magnet switch, a movable core and supporting-spring, in combination with a supporting metallic plate and an inclosing metallic cylinder, substantially as described.

4. In an axial electro-magnet switch, the combination of a movable core, an inclosing metallic cylinder, and a flexible electrical connection from the cylinder to the core.

5. In an axial electro-magnet switch, the combination of a movable core, a metallic plate bent to form a circuit-closer for the core, and seated upon the head of the coils, an inclosing metallic cylinder for the core, and flexible electrical connection from the end of the core to the cylinder, substantially as described.

6. The combination, substantially as described, of regulating devices for an electric-arc lamp, two axial magnetic cores controlling or supporting said regulating devices, two sets of coils or helices inclosing the ends of the cores, one set of coils being in the circuit with the arc and the other in a derived circuit to the arc, so as to be under the constant action of electric currents, and a common bridge or cross-piece of magnetic material joining the cores between the coils and at or near the center of the cores, the whole arranged, as set forth, so that the coils at each end of the cores are free to exert their full force without interference from the opposing influence of the magnetic induction from the coils at the other end.

7. In an electric-light regulator, a releasing-train the members of which are supported in a frame-work pivoted on the armature-lever, in combination with a parallel-motion link attached at one end to the frame-work in which the train is mounted and at the other to the plate or frame of the lamp.

8. In an electric-light regulator, a releasing-train supported and pivoted on the armature-lever, in combination with a parallel-motion link carrying a detent for the train.

9. In an electric-light regulator, a pivoted releasing-train supported on the armature-lever, in combination with a parallel-motion link consisting of a flexible spring carrying a detent.

10. In combination with a flexible spring forming a parallel-motion link for a pivoted releasing-train, a detent formed by cutting and bending up a portion of the spring.

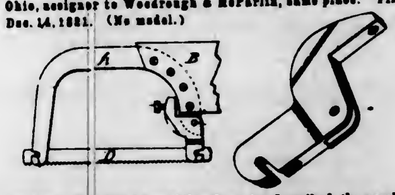
257,801. CAR-COUPLING. SIDNEY WOODRING, Du Bois, Pa. Filed Mar. 9, 1882. (No model.)



Claim.—1. The double link A, composed of a right-angular bar provided with the hole *o* near its angle and links *m* at right angles to each other, substantially as described.

2. The combination, with the double link A, constructed as set forth, of the draw-head *a*, provided with a horizontal slot, *b*, extending crosswise through its vertical sides, and slots *c c* in the upper and lower faces of the draw-head, and coupling-pin *d*, substantially as described, and for the purpose set forth.

257,802. HANDSAW. JAMES R. WOODBURN, Cincinnati, Ohio, assignor to Woodrough & McParlin, same place. Filed Dec. 14, 1881. (No model.)



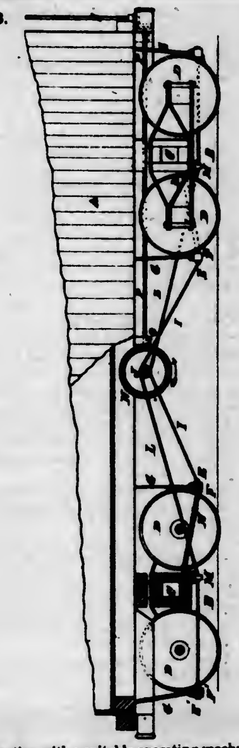
Claim.—In a handsaw of the character described, the combination, substantially as hereinbefore set forth, of blade D and handle B with a curved metal frame, one end of which extends to receive the end of the blade and the opposite end shortened to receive a lever which forms a continuation of said frame, a lever fulcrumed upon said shortened end, one arm of said lever adapted to receive one end of the saw-blade and the opposite arm extended opposite the shortened end of the frame, and a screw passing through said arm and bearing against said shortened end to turn said lever on its fulcrum for the purpose of tightening or loosening the saw-blade.

257,803. CAR-BRAKE. DANIEL W. WOODS, St. Louis, Mo. Filed Mar. 16, 1882. (No model.)

Claim.—1. The two trucks B, with springs H and brake-bars E and E', connected to a central shaft, J, by chains I and L, wound on the shaft in opposite directions.

2. The brake-bars E and E', springs H, forcing the brake-bars E toward the wheels, chains I and L, extending from the brake-bars E E' to a shaft, J, and wound in contrary directions thereon,

257,803.

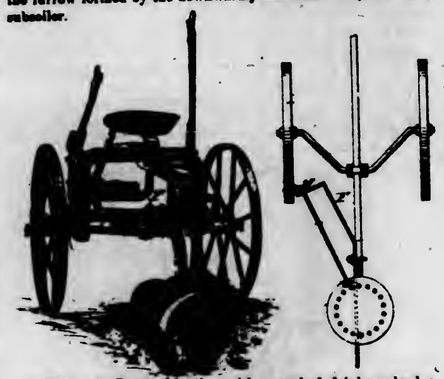


in combination with a suitable operating mechanism, as hand-shaft S, wheels R Q O N, and shaft P.

3. The combination of trucks B B, body A, brake-bars E E', chains I L, shaft J, cog-wheels N O Q R, shafts P and S, hand-wheel T, and holding device U V W, or their mechanical equivalents, for the purposes set forth.

257,804. COMBINED PLOW AND PLANTER. EDGAR A. WRIGHT, Moline, Ill. Filed Jan. 31, 1882. (No model.)

Brief.—The plow-beam, at the rear, has an angular supplemental frame secured to it, upon which is mounted seeding devices that are operated from the ground-wheel for discharging seed into the furrow formed by the downwardly and backwardly extending subsoiler.



Claim.—1. In combination with a spoked driving-wheel, a seeder-operating wheel provided with a series of arms engaging with and driven by the spokes, as described and shown.

2. The combination of the main frame, its sustaining-wheels, the plow-beam, the supplemental frame attached to the plow-beam,

the seeding device, and the shaft extending from the seeding device and provided with arms engaging with and driven by the spokes of the ground-wheel, substantially as shown.

3. In combination with a main frame and sustaining-wheels, one of which is provided with spokes, a seeding device having an actuating-wheel provided with arms, substantially as described, to engage with and be driven by the spokes.

4. The improved attachment for transmitting motion from the ground-wheel of a wheeled machine, consisting of the supplemental frame or support, provided with a wheel constructed substantially as described and shown, whereby it is adapted to engage with and receive motion from the spokes of the ground-wheel.

5. The seeding attachment for wheeled plows, consisting of a supplemental frame adapted, substantially as described and shown, to be carried wholly by the plow-beam, said supplemental frame being provided with seeding devices, and with driving-gear for imparting motion thereto, substantially as shown.

6. In combination with the wheeled main frame and plow, the supplemental frame attached to the plow-beam, the seeding devices upon the supplemental frame, and the driving-shaft provided with arms engaging with the ground-wheel spokes, as described and shown.

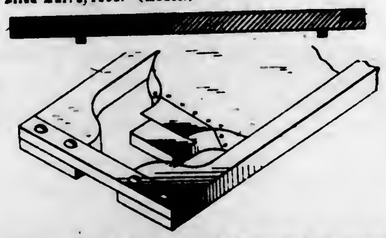
7. The angular supplemental frame F, in combination with the seed-discharging devices and the shaft for imparting motion to said devices, both mounted upon said supplemental frame, and the actuating-arms M upon the forward end of said shaft, substantially as shown, the whole constituting a seeding attachment for wheeled plows.

8. The subsoiling device consisting of the base-piece and its standard, having a downward and backward inclination, substantially as described and shown.

9. In combination with the base-piece, the share or standard extending upward and forward therefrom, with the cutting-edge at its front.

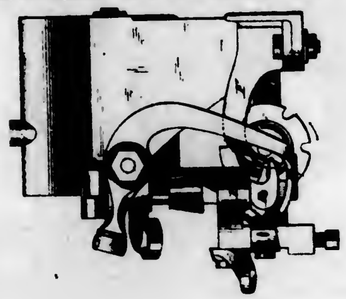
10. In a subsoiling device, the base-piece, and the standard extending downward and backward therefrom, the standard being carried below and in front of the front end of the base, substantially as described and shown.

257,805. BOSOM-BOARD. FRANK H. WRIGHT, Palmyra, N. Y. Filed Mar. 2, 1882. (Model.)



Claim.—The combination, with the board having rounded shoulders near its upper end and an extension provided with an angular undercut recess, of the rectangular frame of a configuration to fit upon the edges of the board and provided with a cross-bar having a beveled edge, the sides of the board and inner sides of the frame being reversely beveled, as described, substantially as and for the purposes specified.

257,806. GRAIN-BINDER. FREDERICK J. YANDLE, Beloit, Wis., assignor to the McCormick Harvesting Machine Company, Chicago, Ill. Filed Oct. 20, 1881. (Model.)



Claim.—1. In combination with the knotter or band-securing device, an underlying cord-guide and a holder beneath the cord-guide adapted to receive the ends of the band and carry them along the guide until they come in position for the action of the band-securing device.

2. In combination with the knotter or tying-bill, a holder adapted to move thereteward to render up slack in the knotting operation and a support between said knotter and holder arranged to resist the lateral thrust of the band ends.

3. In combination with the knotter or tying-bill, an underlying cord-guide and a holder beneath said guide adapted to move toward the knotter during the tying operation to render up slack.

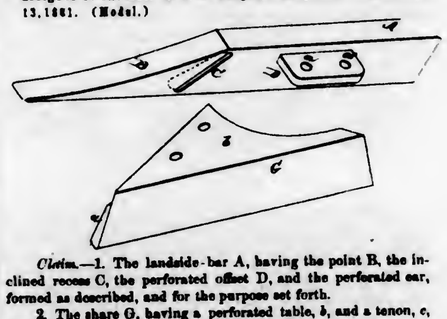
4. In combination with the knotter, underlying cord-guide, and holder beneath said cord-guide, a cutter moving transversely between the guide and holder to sever the cord ends.

5. In combination with the knotter, an underlying cord-guide, a holder beneath said cord-guide, a movable guide and stripper on the other side of the knotter, and a cutter attached to said guide and stripper in position to be drawn by its movement across the cord between the first-named guide and holder to sever it.

6. In combination with the tying-bill having pivoted inner jaw, a cord-guide formed and arranged as described, whereby the nose of the fixed jaw is caused to traverse a part of said guide as it approaches the end of its revolution and while the pivoted jaw is open.

7. The cord-guide B, having the outline shown and described, and arranged substantially as set forth.

257,807. PLOWSHARE. CYRUS YEISER, Newmanstown, Pa., assignor of one-half to M. A. Yingst, same place. Filed Dec. 13, 1881. (Model.)

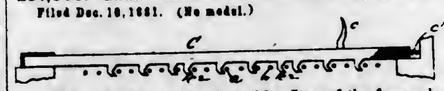


Claim.—1. The landside-bar A, having the point B, the inclined recess C, the perforated offset D, and the perforated ear, formed as described, and for the purpose set forth.

2. The share G, having a perforated table, *b*, and a tenon, *c*, formed as described, and for the purposes set forth.

3. The combination of the bar A, its point B, inclined recess C, and perforated offset D with the share G, its perforated table *b*, tenon *c*, and bolt-fastenings, substantially as described.

257,808. HARP. CHARLES F. ZIMMERMAN, Philadelphia, Pa. Filed Dec. 10, 1881. (No model.)



Claim.—1. The combination, with a harp of the form substantially as shown and described, of a series of bars, C C, arranged transversely across the strings thereof, and provided with depending teeth or fingers designed and adapted to come in contact with and silence or "cut out" certain strings when said bars are moved, substantially as set forth.

2. In a harp of the form substantially as shown and described, the combination of trigger-bars C and C′, the latter being placed transversely across the middle of the strings of the harp, substantially as shown, and for the purpose set forth.

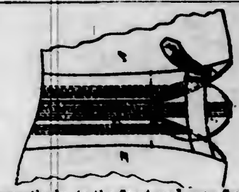
3. In combination with harp A, the transversely-arranged triggers C C′, provided with depending fingers or teeth *c*′, resting at one end against springs *c*′ *c*′, substantially as shown, and for the purpose set forth.

4. The combination, with a harp of the form shown and described, of a series of trigger-bars arranged transversely across the strings of said harp, and constructed, substantially as shown and described, for silencing certain strings thereof, substantially as and for the purpose set forth.

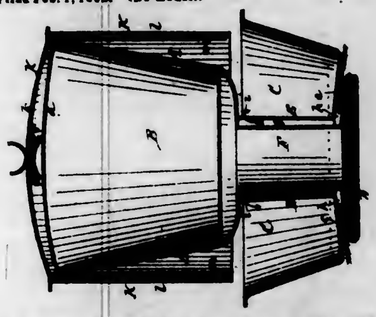
257,809. CORSET. MAX ADLER, New Haven, Conn., assignor to Mayer, Strauss & Co., same place. Filed Mar. 6, 1882. (Model.)

Claim.—A corset constructed with the two side portions, A B, cut away, respectively, to the front and rear from the waist-line downward, combined with the central portion, C, between the said two portions A B, detached from them below the waist-line, expanded to lap upon the two parts A B, with a series of stays on the central part, C, extending from under the arm down over the hip, and an adjustable device to connect the two parts A B over the hip, substantially as described.

257,809.



257,810. BOILER FOR COOKING GRAIN. WILLIAM E. ARNOLD, Rochester, N. Y., assignor to Wilmot Castle, same place. Filed Feb. 1, 1882. (No model.)



Claim.—1. In a cooking-boiler, the combination, with the boiler A and supply-reservoir C, of the condenser K, covering the boiler, and having an open bottom which rests over the supply-reservoir, as and for the purpose specified.

2. In a cooking-boiler, the combination of the supply-reservoir C, the heating-reservoir D, the tubular water-passage F, the casing E, the boiler A, the kettle B, and the condenser K, as shown and described, and for the purpose specified.

3. In a cooking-boiler, the combination, with the supply-reservoir C and heating-reservoir D, of the central tubular water-passage, F, forming the intermediate portion of the boiler, and the exterior casing, E, leaving a flue-space between itself and the water-passage, and provided at its top with holes *i i*, as shown and described, and for the purpose specified.

4. In a cooking-boiler, the combination of the heating-reservoir D, the tube F, and casing E, forming a flue, the boiler A, the kettle B, the cover *a*, having the projecting boss *r*, and the condenser K, substantially as specified.

5. In a cooking-boiler, the combination, with the supply-reservoir C, of the double-walled flue, consisting of the tube F and casing E, with holes *i i* at the top of the casing and holes or passages *c c* leading from the supply-reservoir to the heating-reservoir beneath the tube F, as herein shown and described.

257,811. PROCESS OF PHOTOGRAPH-COLORING. HARRY AUSTIN and LA VERNE J. KIMBALL, San Francisco, Cal. Filed Jan. 4, 1882. (No specimens.)

Claim.—1. The process of producing colored pictures from photographs, the same consisting of the following steps: first, in fixing the paper on which is the picture to a plate of glass by means of a cement composed of amylum, water, nitrate of strontia, granulated sugar, and gum-arabic; second, removing almost all of the paper fiber by abrasion, leaving only a thin film adhering to the glass; third, coating this film with a hot solution of paraffine and beeswax; fourth, coloring the back of the picture; fifth, excluding air from the same by cementing another transparent plate to the back of the first and retouching in colors on the back of this plate; and, sixth, applying a third plate or board set back of the second plate and frosted or covered with colored fabric, all substantially as described.

2. In the process of treating photographic pictures to be applied on glass and rendered transparent, the compound consisting of amylum, water, nitrate of strontia, granulated sugar, and gum-arabic mixed together in about the proportions specified.

257,812. PREPARATION OF MATERIAL FOR MANUFACTURE OF ARTIFICIAL INDIGO. ADOLF BAEYER and VICTOR B. DARWERS, Munich, Bavaria, assignors to Badische Anilin and Soda Fabrik, Mannheim, Germany. Filed Apr. 14, 1882. (No specimens.)

Claim.—The within-described process for producing orthonitrocinnamylformic acid from orthonitrobenzaldehyde by the action of pyroracemic (pyruvic) acid in the presence of hydrochloric acid, substantially as described.

257,813. PREPARATION OF MATERIAL USED IN THE MANUFACTURE OF ARTIFICIAL INDIGO. ADOLF BAEYER and VICTOR B. DARWERS, Munich, Bavaria, assignors to Badische Anilin and Soda Fabrik, Mannheim, Germany. Filed Mar 11, 1882. (Specimens.)

Claim.—As a new article of manufacture, orthonitrocinnamylformic acid, possessing the properties substantially as described.

257,814. MANUFACTURE OF ARTIFICIAL INDIGO. ADOLF BAEYER and VICTOR B. DARWERS, Munich, Bavaria, assignors to Badische Anilin and Soda Fabrik, Mannheim, Germany. Filed Apr. 14, 1882. (No specimens.)

Claim.—The within-described process for producing artificial indigo from orthonitrobenzaldehyde by the action of acetone in the presence of a diluted solution of an alkali, such as caustic soda, substantially as described.

257,815. ARTIFICIAL INDIGO. ADOLF BAEYER and VICTOR B. DARWERS, Munich, Bavaria, assignors to Badische Anilin and Soda Fabrik, Mannheim, Germany. Filed Mar. 11, 1882. (Specimens.)

Claim.—As a new product, an artificial indigo having the properties above stated, and prepared by the action of acetone upon orthonitrobenzaldehyde in the presence of a diluted solution of caustic soda, substantially as described, or by any other means which will produce a like result.

257,816. CORSET. BYRON BALDWIN, Chicago, Ill. Filed Jan. 16, 1882. (Model.)

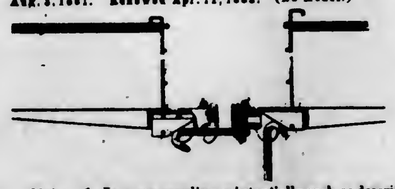


Claim.—1. A corset fabric or foundation fitted to the form of the wearer, combined with stiffeners of close-coiled wire, B, inserted in pockets in said foundation, whereby they are restrained from lateral movements with respect to said foundation, substantially as set forth and described.

2. The combination, with a corset, of the series of tubular stiffeners B, of close-coiled wire, constructed and arranged substantially as herein described.

3. As a new article of manufacture, a corset having a series of close-coiled-wire stiffeners inserted in pockets, so as to be confined and restrained from lateral movement, substantially as and for the purpose described.

257,817. CAR-COUPLING. JNO. BRADLEY, Newark, N. J. Filed Aug. 3, 1881. Renewed Apr. 11, 1882. (No model.)



Claim.—1. In a car-coupling substantially such as described, the pivoted upwardly-engaging link provided with the eccentric, in combination with movable cam-block when operating in conjunction, substantially in the manner and for the purpose set forth.

2. In a car-coupling substantially such as described, the mova-

ble cam-block provided with and capable of being actuated by either the vertical rod from the top of the car or the auxiliary side levers for the purpose of controlling the position of the upwardly-engaging link, substantially in the manner and for the purposes herein set forth.

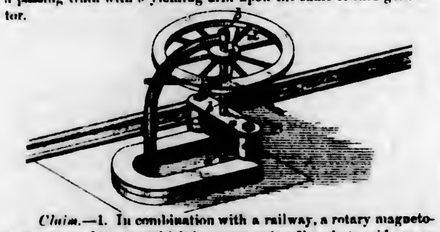
257,818. FASTENING FOR LEATHER. GEORGE W. FREEMAN, Frankfort, Ind., assignor of one-half to Theodore F. Albee, same place. Filed Feb. 21, 1882. (No model.)



Claim.—The herein improved method of uniting two pieces of leather, consisting in first securing the overlapping ends together by a line or lines of stitching and surrounding such overlapping portions by a metallic loop or loops held in place by indentations or inwardly-punched perforations, substantially as set forth.

257,819. RAILWAY-SIGNAL. WESLEY W. GARY, Boston, Mass. Filed Apr. 21, 1881. (No model.)

Brief.—The magneto-generator is driven by direct contact of a passing train with a yielding arm upon the shaft of said generator.



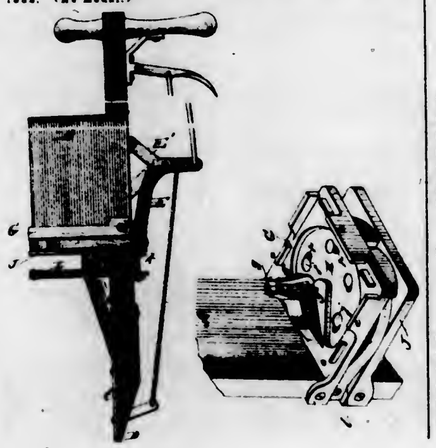
Claim.—1. In combination with a railway, a rotary magneto-generator and an arm which imparts motion directly to said generator, said arm, constructed and arranged substantially as described, to be operated directly by passing trains.

2. In combination with a rotary magneto-generator, an operating-arm applied directly to the shaft or arbor of its armature and arranged to be driven by the direct action of passing trains.

3. In combination with a rotary magneto-generator, a driving-arm applied directly to its shaft or arbor, said arm being constructed to yield in a backward direction without affecting the generator and arranged to be operated by the direct action of passing trains.

4. In combination with the magneto-generator and its operating-arms arranged to be operated by passing trains, yielding sections applied to said arms and adapted to yield freely in one direction and to a limited extent in the opposite direction, substantially as described and shown.

257,820. HAND CORN-PLANTER. THEODORE HORTON, Bluffton, Ind., assignor to himself, and Washington I. Fitch and William W. Wisill, Sr., both of same place. Filed Feb. 13, 1882. (No model.)

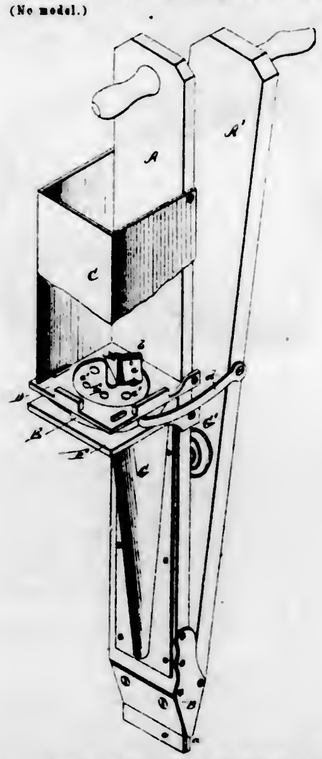


Claim.—1. The frame G, consisting of the gateway and the offset g^2, in combination with the dropping-wheel, the perforated bracket, the passage leading therefrom to the bottom of the staff, the cut-off valve L, and means for actuating the dropping-wheel, substantially as described.

2. The combination of the frame G, the gateway g, formed thereon, the dropping-wheel turning about a pivot on the bracket J, the pawls k l, the cut-off valve L, and the lever E, connected to the spring point-plate D and to the finger-lever, substantially as described.

3. The frame G, cast entire and consisting of the gateway g, the offset g^2, the lugs e, and lugs f, substantially in the manner and for the purposes described.

257,821. HAND CORN-PLANTER. THEODORE HORTON, Bluffton, Ind., assignor to himself, and Washington I. Fitch and William W. Wisill, Sr., both of same place. Filed Feb. 13, 1882. (No model.)



Claim.—A hand corn-planter having the following elements: the two hand-staffs A A', pivoted together, the penetrating-blades a a, the handles on said staffs, a spring interposed between the staffs, a hooked spring-pawl, d, pivoted to the staff A', a retaining spring or pawl, e, attached to the staff A, the ratchet dropping-wheel R, the perforated bracket F, the cast-metal frame D, the gateway, its cut-off, the hopper-box, and the tube G, fixed to the staff A, all arranged and constructed as herein described.

257,822. ILLUMINATING-GRATING AND BUILDING LIGHTED THEREBY. THADDEUS HYATT, New York, N. Y., assignor to Elizabeth A. L. Hyatt, same place. Filed Apr. 19, 1882. (No model.)

Claim.—1. Illuminated basements, illuminated basement-extensions, and illuminated ground-floors of buildings lighted by metallic gratings set with prism-glasses, when the same are formed with either single or cluster lenses upon the weather-face thereof, the glasses being so set in the gratings and the gratings so combined with the parts of the building to be lighted as that the reflecting-slopes of the prisms shall lie parallel with the front and

257,822.



rear walls of the building, substantially as and for the purposes herein set forth and illustrated.

2. Combination lens and prism-glasses, where the prism portion of the glass is formed of two non-reflecting or perpendicular ends and two sloping opposing sides, the internal faces of which receive and distribute the light of the lenses, and combining the same with metallic gratings, substantially as and for the purposes herein set forth and illustrated.

3. Combination lens and prism-glasses, where the prism portion of the glass is formed of two non-reflecting or perpendicular ends and two sides, one of which is perpendicular, or nearly so, and the other a slope, the internal face of which receives and distributes the light of the lenses, and combining the same with metallic gratings, substantially as and for the purposes herein set forth and illustrated.

4. Combination lens and prism-glasses, where the area of the internal reflecting face or faces of the prism is enlarged, and combining the same with metallic gratings, substantially as and for the purposes herein set forth and illustrated.

5. An illuminating rear-extension roof constructed in the form of steps, made of illuminating treads and risers, substantially as and for the purposes herein set forth and illustrated.

6. Illuminating-steps and step-roofs formed of metallic gratings set with combination lens and prism-glasses, substantially as and for the purposes herein set forth and illustrated.

7. Illuminating area-coverings formed of metallic gratings set with combination lens and prism-glasses, substantially as and for the purposes herein set forth and illustrated.

257,823. BREECH-LOADING ORDNANCE. HENRY P. HANN, Pittsburg, Pa. Filed Apr. 17, 1882. (No model.) Patented in England Dec. 19, 1876.

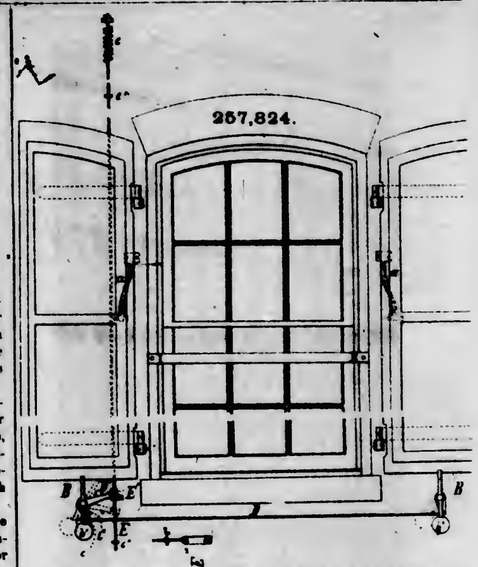


Claim.—In breech-loading ordnance, the combination, with the barrel, of side straps attached to the breech-block and pivoted on a carriage, the barrel being pivoted on the side straps by separate trunnions, substantially as and for the purpose specified.

257,824. SHUTTER-FASTENER. PEARL O. MATTERNEGH, Irvington, N. Y. Filed Apr. 6, 1882. (No model.)

Claim.—1. A series of self-closing window-shutters, with fastenings for holding open the shutters, capable of being independently oscillated by hand in one direction for the purpose of releasing the shutters, respectively, and a corresponding series of crank-levers adapted by their action to oscillate the shutter-fastenings in like manner, in combination with a series of horizontal sway-bars, each connecting two or more crank-levers together, and a corresponding series of bell-crank levers for imparting endwise movements to the said horizontal sway-bars, respectively, and a vertically-sliding rod for oscillating the said bell-crank levers, and thereby causing the simultaneous oscillation of the shutter-fastenings and the consequent simultaneous release of the series of shutters to the action of the springs or other instrumentalities by which they are severally closed over the window-openings.

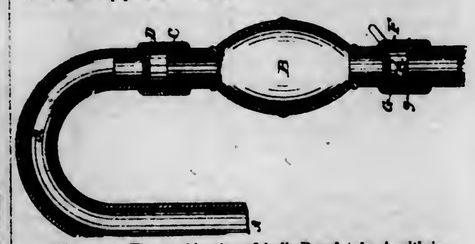
257,824.



2. A vertical rod or chain, E, capable of endwise movement and suitably connected with a series of bell-crank levers, D', provided with the crank-pins c, in combination with the series of buttons B of a number of self-closing window-shutters located one above another, substantially as shown and described.

257,825. SIPHON. FRANCIS W. HAKSTAFF, Albany, N. Y., assignor of one-half to Bernhard Manbaum, same place. Filed Apr. 15, 1882. (No model.)

Brief.—The siphon A has a bulb, B, located in the longer arm, so as to be able to start the flow by suction. Check-valves D and F are placed above and below the bulb, and the latter is provided with a locking device, so that sufficient fluid may be retained in the pipe to start the flow.



Claim.—1. The combination of bulb B and tube A with induction-valve D, eduction-valve F, and a locking device which at will can be made to prevent said valve F from opening.

2. The combination, with the tube A and elastic bulb B, of the induction-valve D, the eduction-valve F, rock-shaft g, arm G, and means for operating said rock-shaft and arm to lock said eduction-valve and thereby cut off the flow of liquid, substantially as set forth.

257,826. CURTAIN-FIXTURE. JAMES ANDREW MCCUTCHEON, Pine Grove, assignor of one-third to Wm. H. Dight, Mercer, Pa. Filed Mar. 6, 1882. (No model.)

Brief.—The cord passes over pulleys and through eyes at the top and down under the roller at the bottom, so that the blind may be lowered from the top and raised from the bottom by the same cords.

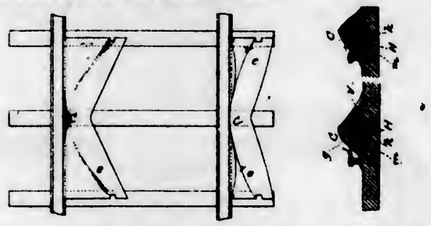
Claim.—The combination, with the window-blind provided with a roller and a top strip, of the pulleys D D D' D', the cord E, fixed at a a to the lintel, passed over the outer pulleys, around the curtain-roller, over pulleys D' D', through an eye or ring attached to the tassel, through the eye d and the eye g, all substantially in the manner and for the purposes described.

257,826.



257,827. CAR-REPLACER. JOHN E. NORWOOD, Sykesville, Md., assignor of one-half to Charles R. Favour, same place. Filed Mar. 23, 1882. (No model.)

Brief.—Plates are made centrally and obliquely rigid and inclining toward each end, the center supports being provided with spikes and rabbets under their projecting edge. In the outside plate the oblique ridge is rounded from end to end and its upper surface is provided with a valley or groove.



Claim.—1. The car-replacer consisting of a plate centrally and obliquely ridged, at C, and inclined toward each end, as at *e*, the center post or support, H, its holding point or spike *k*, and the rabbet or groove *m* under the projecting edge *d*, substantially as specified.

2. The outside replacer-plate having the central oblique ridge, C, rounded from end to end and merging into the oblique inclines *e* toward each end, the projecting undergrooved edge *d*, the valley or groove *c* in the upper surface, back of said edge, and the center support, H, substantially as specified.

257,828. TARTRATE OF OXYCHINOLINE. WILHELM PICKHARDT, New York, and HERMANN RUDEMANN, Brooklyn, N. Y. Filed Mar. 21, 1882. (Specimens.)

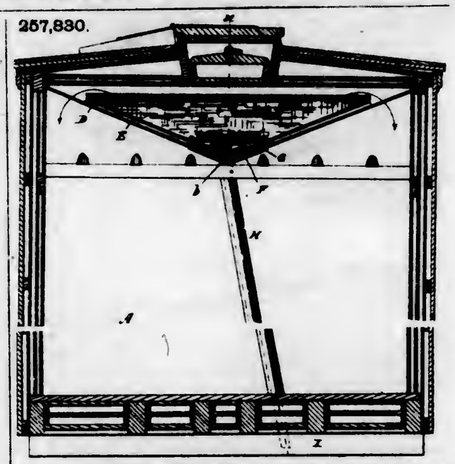
Claim.—The tartrate of oxychinoline prepared by the action of tartaric acid upon the oxychinoline of Skraup, substantially in the manner above set forth.

257,829. HYDROCHLORATE OF OXYCHINOLINE. WILHELM PICKHARDT, New York, and HERMANN RUDEMANN, Brooklyn, N. Y. Filed Mar. 21, 1882. (Specimens.)

Claim.—The hydrochlorate of oxychinoline prepared by the action of hydrochloric acid upon the oxychinoline of Skraup, substantially in the manner above set forth.

257,830. REFRIGERATOR-CAR. CHARLES F. PINAUD, Chicago, Ill. Filed Aug. 15, 1881. (No model.)

257,830.



Claim.—1. In a refrigerator-car, the car-roof or ceiling, in combination with a V-shaped ice-pan arranged lengthwise of the car, and supported a short distance from the ceiling, whereby open spaces are provided between the side edges of the pan and the ceiling for the free circulation of air, substantially as described.

2. In a refrigerator-car, an ice-pan provided with inclined or sloping sides with waste-openings at the bottom, in combination with a separate waste-gutter arranged underneath the pan, substantially as described.

3. The ice-pan B, having its sides sloping downward and inward, and provided with waste-openings at the angle, in combination with a separate waste-gutter, F, arranged underneath the angle of the pan, and hangers D, substantially as described.

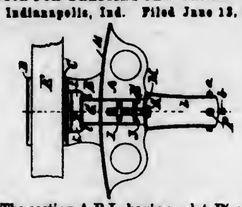
4. The ice-pan B, having sloping sides, in combination with the hangers D, wooden strips E, and gutter F, substantially as described.

5. The car-body A, in combination with the sloping ice-pan B, of less width than the interior of the car, and arranged lengthwise in the upper part of the latter on suitable supports, and a separate waste-gutter, F, substantially as described.

6. The ice-pan provided with sloping sides, in combination with the waste-gutter F and separate waste-pipe H, substantially as described.

7. The sloping ice-pan B, in combination with the separate metallic gutter F and wooden sheathing-strips G, arranged to cover the under sides of the gutter, substantially as and for the purpose set forth.

257,831. DEVICE FOR DRESSING SAW-TEETH. ROBERT E. POINDEXTER, Indianapolis, Ind. Filed June 13, 1881. (No model.)



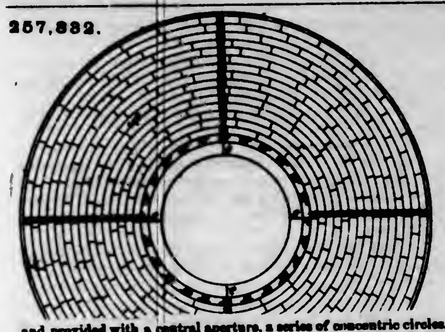
Claim.—1. The casting A B L, having a slot, B', and upward-projecting arms *f f'*, bar C, and the ribs H and M, combined with adjusting-screw P *a*, the clamp-slide G D, and the screw K, substantially as shown and described.

2. The clamp-jaw D on the slide G, combined with the jaw C on the main casting, the screw K, nut I, guide J, and rib M, by means of which the file E is held firmly in position to dress the sides of the teeth of a saw, substantially as shown and described.

257,832. POLYGON-PROTRACTOR. ARTHUR FRÜHER, Vienna, Austria-Hungary, assignor of one-half to Victor Schlesinger, same place. Filed Sept. 24, 1881. (No model.) Patented in Austria Feb. 22, 1880, in Hungary Feb. 22, 1880, in France July 10, 1880, and in Germany Aug. 20, 1880.

Claim.—1. The herein-described polygon-protractor, consisting of a disk constructed of material capable of being perforated,

257,832.



and provided with a central aperture, a series of concentric circles, each divided into a given number of equal parts, and radial indices indicating the subdivisions of said circles, substantially as and for the purpose specified.

2. The herein-described polygon-protractor, consisting of a disk constructed of a material capable of being perforated, and provided with a central aperture, a circle divided into degrees, a series of auxiliary circles, each divided into a given number of equal parts, and radial indices indicating the subdivisions of said circles, substantially as and for the purpose specified.

257,833. LIFTING-JACK. WILLIAM SCHREMER, Denver, Colo. Filed Feb. 16, 1882. (Model.)



Claim.—1. In a lifting-jack, the combination of the upright or standard A, having vertical groove G, the extension-slide B, having pins or studs I, and the adjustable hand-lever D, substantially as set forth.

2. In a lifting-jack, the combination of the vertically-grooved upright or standard, the extension-slide provided with pins or studs I, and the lever D, having slot E, provided with notch H, by which it is fulcrumed upon the upright or standard, substantially as set forth.

3. As an improvement in lifting-jacks, the combination of the vertically-grooved upright or standard, the extension-slide B, having pins or studs I, the lever D, having slot E, provided with notch H, and the notched latch J, all arranged and operating substantially as set forth.

4. In a lifting-jack, the combination of the vertically-grooved upright, the extension-slide B, having pins or studs I, the rest or bracket P, adjustable upon said pins or studs, and suitable operating mechanism, substantially as set forth.

257,834. CASTER. JOHN SCOTT and FRANK S. AVERY, Chicago, Ill., assignors of one-third to Herbert H. Avery, same place. Filed June 7, 1881. (No model.)

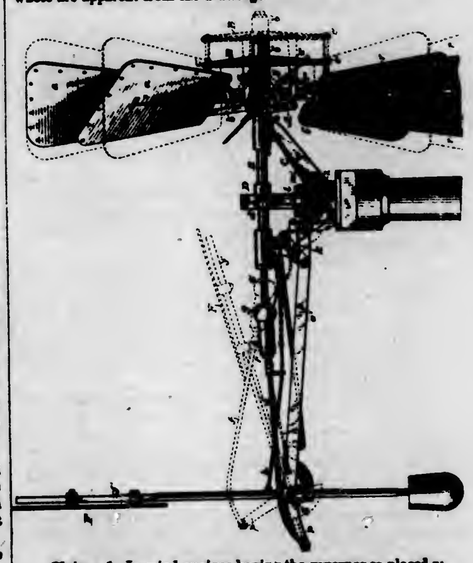


Claim.—1. In a caster, the combination of the case A, provided with recess I, and having beveled surface D and downward-extending flange C, with the caster-frame B, with a pivot, H, and having an oblique slot, K, adapted to receive the anti-friction wheel C', all arranged and operating as set forth.

2. The improved caster hereinbefore described, consisting of the frame B, with the side cheek-pieces, B', between which is journaled and revolves the wheel G, and formed with the oblique slot K, in which is journaled diagonally the anti-friction wheel C', and provided with the pivot or shank H, formed with the groove, and the flanged casing A, formed with the central elevation, as shown and set forth.

257,835. WIND-ENGINE. FLAVIUS W. SHELLABARGER, Miami County, assignor to the Iron Monitor Wind Engine and Manufacturing Company, Troy, Ohio. Filed Mar. 16, 1881. (No model.)

Brief.—The rod supporting the governing-vane is twisted, thereby increasing its strength by the resistance of the edge instead of the flat side. The vane, by means of suitable connections, actuates the spider B, which controls the position of the vanes. The vanes are strengthened by a band around their outer edges and cross-bar *b''*, enlarged at its middle part, forming the thimble *c''*, through which passes the strengthening-rods *r*. The vanes are also provided with brace-rods O. The purpose of the other parts of the machine structure and the operation of the wind-mill as a whole are apparent from the drawings.



Claim.—1. In wind-engines having the governor so placed as to face the wind, the combination of the spider B on the rear end of the hollow shaft E, having the terminals *a'*, by which the several spokes of the spider are each connected with the wheel-vane next in advance of it, by the longitudinal movement of which the vanes are turned into or out of wind, substantially as shown, for the purpose set forth.

2. Vane-arm *b*, having cross-bar *b''* and thimble *c''*, and cast in a single piece, whereby the wing-vane is strengthened at the point where it is connected with the arm or spoke of the spider B, as shown.

3. In wind-engines, the combination of the centrally-pivoted wind-vanes *a*, strengthened at their edges by a border of strap-iron, with the thimble *c''* and brace-rods *r*, attached thereto and to the strengthened edges, as shown and described.

4. In a wind-engine having its wheel connected with the governor through a hollow main shaft by a rod or its equivalent, the combination of a ball-and-socket joint-piece and adjusting-nuts with its connecting-sections, substantially as herein shown and specified.

5. In a wind-engine, the combination of the arm *b*, cross-bar *b''*, and thimble *c''*, formed in a single piece, with the vane *a*, provided with centrally-secured brace-rods *r* and strengthening-binding *a''*, as shown and described.

6. The wheel-vane *a*, formed with a hole therein, in combination with the cap or thimble *j* and brace-rods *o*, substantially as shown and described.

7. The eccentric strap *d*, having the arm *d'*, extending obliquely downward therefrom, in combination with lever *m'* and arm *m* and the ball-and-socket end joint, *n' l*, as shown and described.

8. In combination with fork C and the supporting-column,

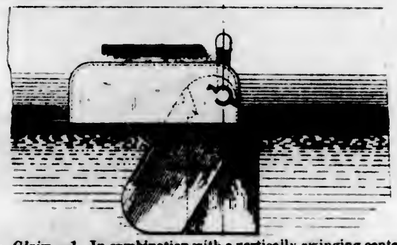
the hollow stem S, having the friction-rollers s, pivoted in niches formed in its sides, as shown and described.

9. In a wind-engine, the vibrating governor having vane F, twisted stem f', rock-shaft G, rod h, and bell-crank k and chain, in combination with arm p, rod f, coupling $g\ g'$, rod e, hollow shaft b', and spider B, as shown and described.

10. The combination, with the automatic rock-shaft G, curved arm p, and rod f, of the flexible coupling $g\ g'$, rod e', hollow shaft b', and spider B, as shown and described.

REISSUES.

10,105. CENTER-BOARD FOR BOATS. MONTRAVILLE W. ATWOOD, Clayton, N. Y. Filed Mar. 8, 1882. Original No. 230,949, dated Aug. 10, 1880.



Claim.—1. In combination with a vertically-swinging center-board, a hinge-pin sustaining the same, and provided with a handle or operating device, substantially as shown, whereby the board may be swung upward and downward.

2. The vertically-swinging center-board, mounted upon and turning with a transverse pivot or hinge-pin, arranged, as described, to be raised and lowered by the rotation of said pin.

3. In a boat, the combination of the closed well, the vertically-swinging center-board mounted therein, the transverse pivot arranged to sustain and rotate with said board, and an operating device applied to the end of said pivot outside of the well, substantially as described and shown.

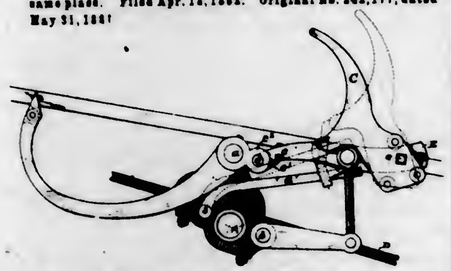
4. In combination with the well, the vertically-swinging center-board, the transverse pivot arranged, as described, to turn the center-board upward and downward, and the tightening devices applied to the transverse pivot, substantially as shown and described, whereby lateral pressure may be applied to retain the center-board in position.

5. In combination with the well and the flattened pivot-pin provided with an operating-handle extending through and beyond the same, the center-board sections, one provided with the rectangular slot and the other with a slot having widened ends.

6. The combination of the well, the vertically-swinging center-board, the flattened threaded pivot-bolt extended through the well and the center-board, the hand-lever, the washers, and the tightening-nut applied to said bolt, as shown.

7. In combination with the well, the two center-board sections mounted upon a common pivot within the well, and having their forward ends constructed, as described and shown, to co-operate with the front of the well and form stops to sustain the sections in their proper relative positions for action, as set forth and shown.

10,106. HARVESTER-BINDER. WILLIAM E. BAKER, Chicago, Ill., assignor to the McCormick Harvesting Machine Company, same place. Filed Apr. 13, 1882. Original No. 243,177, dated May 31, 1881.



Claim.—1. In a grain-binder, the combination, with the grain-receptacle and supporting-bar which carries the tripping-fingers, of locking mechanism which holds said bar positively against movement away from the receptacle until the tripping-fingers have started the binding mechanism.

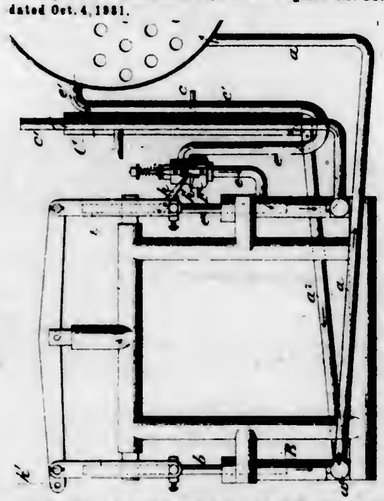
2. In a grain-binder, the combination, with the trip-lever, the yielding tripping-fingers, and the spring-supported bar which carries said fingers, of locking mechanism which positively stops the arm from yielding against the stress of the spring until the trip-lever has been actuated by the fingers.

3. In a grain-binder, the combination, with the vibrating binding-arm, the tripping finger or fingers, and the supporting-bar which carries the latter, of a hinge-connection between said binding-arm and supporting-bar rigid in one direction, whereby the bar is locked against yielding or sagging when the binding-arm is down.

4. In a grain-binder, the combination of the trip-lever, the tripping-fingers, the supporting-bar which carries the latter, the vibrating binding-arm, and a hinge-connection between said binding-arm and supporting-bar adapted to lock the latter against yielding away from the grain-receptacle until the trip-lever has been actuated and the binding mechanism started.

5. In a grain-binder, a support, E, for the compressing and tripping fingers C, hinged to the binding-arm, in combination with a pin, c, on support E, and a lip, c', on the binding-arm, all arranged to operate substantially as and for the purpose specified.

10,107. FEED-WATER REGULATOR. NICHOLAS CLUTE, Schenectady, N. Y. Filed Jan. 19, 1882. Original No. 247,889, dated Oct. 4, 1881.



Claim.—1. The herein-described method of supplying steam-boilers with feed-water, consisting essentially in the continuous supply of more water than is evaporated, the surplus being conveyed from the boiler by means of an eduction-pipe at the water-line and returned to the circulation, whereby a uniform water-level is constantly maintained within the boiler, substantially as described.

2. In an automatic feed-water regulator for steam-boilers, the combination, with a boiler and a pump, of a receiver for hot and cold water, said receiver having an overflow-nozzle and an air-vent, and being adapted to receive the overflow hot water from the boiler and cold water from any suitable supply, and to deliver its contents to the pump to be constantly fed to the boiler, whereby a uniform water-line is maintained in said boiler, substantially as described.

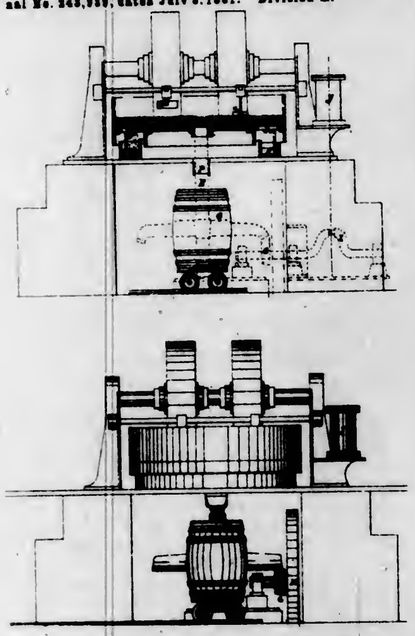
3. In an automatic feed-water regulator for steam-boilers, a receiver for hot and cold water, having an overflow-nozzle, an air-vent, a supply pipe or pipes for hot and cold water, and an outlet to a pump, substantially as described.

4. In an automatic feed-water regulator for steam-boilers, a cut-off check-valve having an entrance for water and steam above the valve, and a valve-stem extending up through a packing-box and actuated to positively seat the valve by a spiral spring, substantially as shown and described.

5. In an automatic feed-water regulator for steam-boilers, the combination of the cut-off check-valve F with the means for operating the same, consisting of the trips h h, attached to a pump or its connections, substantially as shown and described.

6. In an automatic feed-water regulator for steam-boilers, the combination, with the boiler A and supply-pump B, connected by pipe a, of the receiver C, having one or more inlets for hot and cold water, an outlet to the pump, an overflow-nozzle, and an air-vent, and the valve F, placed between said boiler and receiver, and communicating with each through pipes $a\ a'$, respectively, whereby the overflow hot water from the boiler is conveyed to the receiver to heat the incoming cold water, and the whole automatically fed to the boiler, substantially as shown and described.

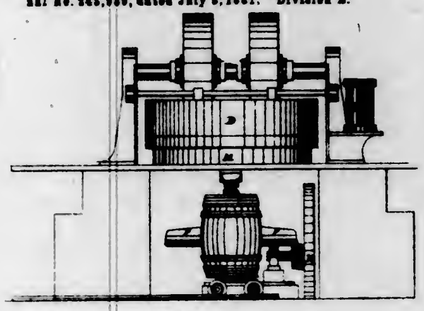
10,108. GRINDING AND SIEVING CAUSTIC ALKALI. WILLIAM J. HENNING, Saint Helen's, County of Lancaster, England, assignor of one-half to George T. Lewis, Philadelphia, Pa. Filed Apr. 12, 1882. Patented in England Oct. 21, 1879. Original No. 243,930, dated July 5, 1881. Division A.



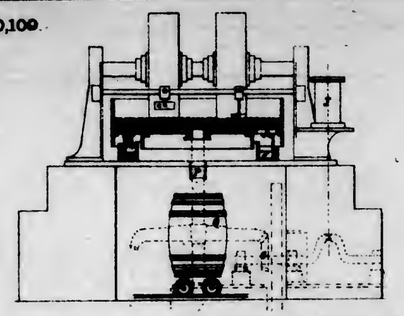
Claim.—1. The within-described process for producing ground or powdered caustic alkali, consisting in grinding the alkali while hot or in a temperature sufficiently high to prevent deliquescence.

2. The within-described process for producing ground or powdered caustic alkali, consisting in grinding the alkali while hot or in a temperature sufficiently high to prevent deliquescence, and sieving or bolting the same.

10,109. GRINDING AND SIEVING CAUSTIC ALKALI. WILLIAM J. HENNING, Saint Helen's, County of Lancaster, England, assignor of one-half to George T. Lewis, Philadelphia, Pa. Filed Apr. 12, 1882. Patented in England Oct. 21, 1879. Original No. 243,930, dated July 5, 1881. Division B.

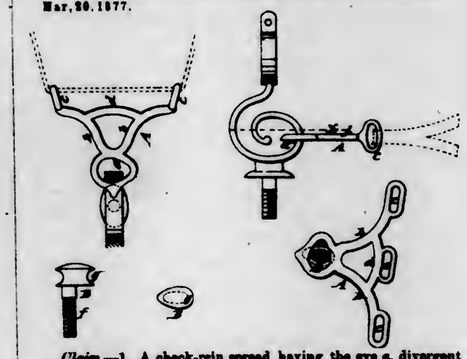


10,109.



Claim.—Dry ground or powdered caustic alkali, as herein described.

10,110. CHECK-REIN SPREAD AND ATTACHMENT. DANIEL SCHOENMAKER, Newark, N. J., assignor to Henry C. Maxwell, Rome, N. Y. Filed Feb. 23, 1882. Original No. 186,546, dated Mar. 20, 1877.



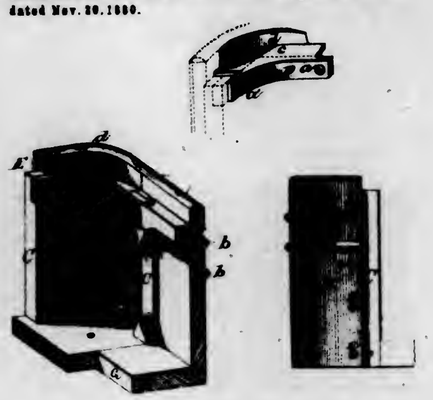
Claim.—1. A check-rein spread having the eye a, divergent arms $b\ b$, and the eyes $c\ c$ on the free end of said arms, all formed in one piece of cast metal, substantially as described and shown.

2. The combination, with the curved divergent arms $b\ b$, each provided with the eye c, for the reception of the check-rein, as shown, of the brace d, as and for the purpose set forth.

3. As an improved article of manufacture, the check-rein spread A, composed of the oval eye a, curved arms b, the eyes $c\ c$, arc-shaped brace d, and loop e, substantially as shown and described.

4. The combination of the check-rein spread A and saddle-bolt B, having the oval grooved head g, substantially as shown and described.

10,111. CORNER-IRON FOR WAGON-BODIES. CHARLES CORCORAN, Racine, Wis. Filed Feb. 13, 1882. Original No. 234,883, dated Nov. 30, 1880.



Claim.—1. A corner-iron, E, for wagon-bodies, having corrugations *b' b'*, in combination with binding-piece D, having flanges *c d* and suitable bolts, whereby the end portions of the body are clamped between the corner-iron and the binding-piece, as set forth.

2. A corner-iron in combination with a clamping-piece, D, having flanges *c d* and suitable securing-bolts, as set forth.

THE ELIOTYPE PRINTING CO. BOSTON

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

HEALD *v.* RICE.

Decided March 6, 1882.

1. REISSUE—PATENT WITH DRAWING—NEW MATTER.

In cases of reissues of patents, inoperative or invalid by reason of a defective or insufficient specification, or by reason of the patentee claiming as his own invention or discovery more than he had a right to claim as new, it is imperative that the new patent, when issued, shall be for the same invention, and that no new matter shall be introduced into the specification when, as in the present case, there is a drawing, with reference to which the invention is described.

2. SAME—COMPARISON OF PATENTS—QUESTION FOR COURT.

If it appears from the face of the instruments that extrinsic evidence is not needed to explain terms of art or to apply the descriptions to the subject-matter, so that the court is able from mere comparison to say what are the inventions described in each, and to affirm from such mere comparison that they are not the same but different, then the question of identity is one of pure construction and not of evidence, and consequently is matter of law for the court without any auxiliary matter of fact to be passed upon by a jury if the action be at law.

3. SAME—SAME—STEAM-BOILERS—DIFFERENT INVENTIONS.

In the present case it appears from the mere reading of the two specifications that the invention described in the first is for the return-flue boiler, while that described in the second, abandoning the claim for the boiler itself, is for a particular mode of using it with straw as a fuel by means of an attachment to the furnace-door for that purpose. These two inventions are distinct, and a patent originally issued for one cannot lawfully be surrendered as the basis for the reissue for the other.

4. SAME—EXPANSION OF CLAIM.

The rule reiterated that a patent for a machine cannot be reissued for the purpose of claiming the process of operating that machine, because if the claim for the process is anything more than for the use of the particular machine patented it is for a different invention. (*Campbell* v. *James.*)

5. RICE PATENT ANTICIPATED BY MOREY PATENT.

The invention, moreover, is anticipated in Morey's patent, which, in covering the combination of the feeding-tube with any kind of thrashing engine or boiler, necessarily includes the combination of the feeding-tube with the return-flue boiler. This particular application of the feeding-tube to the return-flue boiler is within the scope and provision of Morey's invention, whether it had been tested by his experience or was anticipated by his foresight or not.

IN ERROR to the Circuit Court of the United States for the District of California.

Mr. George Harding for the plaintiff.

Mr. A. Wheaton for the defendant.

Mr. Justice MATTHEWS delivered the opinion of the Court.

This was an action at law brought by Rice to recover damages for an alleged infringement of Reissue Letters Patent No. 6,422, granted May 4, 1875, to him for improvements in steam-boilers. The original patent was No. 146,614, dated January 20, 1874. The invention, as stated in the complaint, consisted, among other things, of a combination of a straw-feeding attachment with the furnace-door of a return-flue steam-boiler, for the use of straw alone as fuel in generating steam ample for practically operating steam-engines. The case was tried by a jury and resulted in a verdict and judgment for the plaintiff, to reverse which this writ of error is prosecuted.

A bill of exceptions sets out the exceptions of the plaintiff in error to the rulings of the court below and all the evidence. The court was asked at the close of the plaintiff's testimony, and again when all the evidence on both sides had been introduced, to instruct the jury to return a verdict for the defendant, the refusal to do which, among other rulings, is assigned for error, and thus the whole case on the merits is brought here for review so far as they rest upon questions of law.

The plaintiff below introduced in evidence his original and reissued patent. For the purpose of comparison, which, in view of the questions of law raised, becomes important and necessary, the specifications and claims are exhibited here in parallel columns, using one copy for both patents when they are identical and putting all the language that is in the original and not in the reissued patent in the left-hand column in italics and putting in the right-hand column in italics all the language used in the reissued patent that is not in the original.

Specifications forming part of Letters Patent No. 146,614, dated January 20, 1874.

Reissue No. 6,422, dated May 4, 1875.

Application filed *November 3, 1873.* *March 17, 1875.*

To all whom it may concern:

Be it known that I, Harvey Wood Rice, of Haywood, Alameda county, State of California, have invented new and useful Improvements in Steam-Boilers; and I do hereby declare the following description and accompanying drawing are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention without further invention or experiment.

My invention relates to *certain improvements in the construction of steam-boilers, whereby I am enabled to utilize straw and other light substances for fuel, so that a complete combustion of the smoke is attained, and the danger from fire in the harvest-fields, where those boilers are more especially useful, is entirely obviated; and*

the combination of a straw-feeding device with the furnace-door of that class of boilers which are known as "return-flue" boilers, by which combination I am able to provide a superior arrangement for utilizing straw as a fuel for generating steam.

Many attempts have heretofore been made, both in this country and in Europe, to successfully utilize straw as a fuel for generating steam in steam-boilers; but these attempts have always resulted in failures or partial failures.

When straw is fed into the furnace of an ordinary steam-boiler it burns too quickly to do much good in heating the water in the boiler, until a sufficient quantity

of cinders accumulates upon the grate-bars to impede the draft; and unless the cinders are frequently removed from between the grate-bars, they soon accumulate to such an extent as to choke the draft entirely and prevent combustion.

Many devices have been tried and patented for overcoming these troubles; but, as far as I am aware, none of them have succeeded in remedying the difficulties sufficiently to make the straw-burning engine a practical success.

My experiments, however, have developed the fact that, by attaching a tube or box-door to the furnaces of that class of boilers known as "return-flue" boilers, in which the chimney or stack is constructed directly above the furnace, and the heat and products of combustion from the furnace are carried along under the boiler, and then returned back to the stack through flues or tubes leading through the length of the boiler, the combustion will be so complete that no sparks and but very little smoke will escape from the chimney, and the straw will be burned freely, giving out a high degree of heat without danger of choking the grate-bars.

My invention also relates to a novel method of securing the tubes and tube-sheet within the shell of the boiler, so that they can be at any time easily removed for the purpose of cleaning or repairing, and at a much less expense than is ordinarily entailed for such work.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a perspective view *exposing the tube-sheet of one end of the boiler. Fig. 2 is a longitudinal section. Fig. 3 is an end view with rear head removed. Fig. 4 shows the tube and tube-sheet removed. Fig. 5 is an enlarged view, showing the manner of securing the tube-sheet in the shell. and ring.*

A is the shell of my boiler, which is more especially intended to be used for that class of engines employed in thrashing and other field work where there is straw or other light material enough for fuel, but which has never been satisfactorily burned without an artificial draft or blast, and which has always been dangerous by reason of the sparks thrown out on account of incomplete combustion. In order to remedy these faults and perfectly consume all the smoke and sparks I perforate my tube-sheet B B so as to admit one large *tube* *furnace* C, near the bottom, which receives the fuel upon the grate D, and acts at the same time as a tube and fire-box.

Any suitable feeder may be employed to supply straw to the grate; but I have found the device patented by D. Morey, June 20, 1873, to be very suitable.

To the door of the furnace C, I attach a straw-feeding tube, E, through which the straw or other light fuel is fed to the furnaces. This tube can be constructed in the manner described by David Morey in his patents dated February 11, 1873, and May 25, 1873, for straw-feeding attachment for furnaces, or in some other similar manner for feeding the straw without admitting a draft of air.

Above and around the sides of the large *tube* *furnace* C. I place small or locomotive boiler-tubes *e e*, as shown, and these serve to return the heat and the products of combustion to the chimney F, which is located at the front end of the boiler, and communicates with the chamber H, formed between the flue-sheet and the head or door G. A similar chamber, H', is formed at the back end of the boiler, into which the products of combustion pass from the large *tube* *furnace* C before entering the return-flues *e*.

By this construction the light fuel is thoroughly ignited in its passage through the large tube, which has plenty of air admitted for the purpose. The heat and flame will be concentrated in returning through the small flues, and the combustion will be so complete that no sparks and but very little smoke will escape from the chimney, and this latter will not even need a bonnet.

The tube-sheets B B are made with a flange, *i*, which is turned outward, and these flanges are pierced, so as to admit screw-bolts or rivets *g*, as may be preferred. These bolts secure the tube-sheets in their places perfectly steam and water tight.

Whenever, by reason of long use, there is a collection of scale or sediment, or if the tubes or the interior of the boiler need repairing, the screw-bolts can be removed; or, if rivets are used, they can be cut off, when the two tube-sheets, with the tubes, can be removed from the shell in a body, and repairs or cleaning can be easily effected with much less time and trouble than when the boilers are made in the ordinary manner.

The flange on the rear tube-sheet is turned so much smaller than the interior of the shell that an iron ring, *n*, can be introduced between it and the shell, the bolt passing through it. When it is necessary to remove the tubes and sheets this ring can be taken out after removing the nuts and rivets, and this leaves the rear tube-sheet small enough to pass any rivets or obstructions freely when taking it out.

By this construction I am enabled to make a boiler and furnace in which straw can be used as a fuel with perfect safety, and in which repairs can be easily effected.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. *The boiler A, having the furnaces C, grate D, return flues or tubes e e, and stack or chimney E arranged as described, in combination with the straw-feeding furnace-door attachment, substantially as and for the purpose described.*

2. In a horizontal steam-boiler the *large tube* *furnace* C, formed with a grate, D, to serve as a fire-place, in combination with small return-flues, *e e*, when the tubes and tube-sheets are secured by flanges *i* and bolts *g*, so as to be removable from the shell in a body, substantially as and for the purpose described.

It is admitted that there had been no infringement by the defendant of the second claim of the reissued patent, which included that feature of the improvement described, which consisted in the peculiar construction by which the tubes and tube-sheets were secured by flanges and bolts so as to be removable from the shell in a body. This claim, therefore, is excluded from further consideration in the case.

The patents of David Morey for a straw-feeding attachment, referred to in the specifications in the Rice original and reissued patent, consisted of an original Patent No. 135,659, dated February 11, 1873, reissued as Reissue No. 6,420, dated May 4, 1875, and original Patent No. 139,075, dated May 20, 1875. The specifications of the latter describe the invention as relating to—

An improved furnace-door attachment which is especially intended for facilitating the use of straw as a fuel, especially applicable to the removable furnaces of thrashing-machine engines; and it consists in attaching to the opening of the furnace (intended for the door) a tube or funnel having arranged within it a diagonal swinging valve, with its lower end turned up into a shoe, whereby the straw can be inserted into the furnace and no sparks allowed to fly out nor a draft of air allowed to enter.

It was also therein declared that the straw was to be fed through the tube by means of an ordinary hay-fork. When the straw is pushed through the tube the valve or door will be lifted so as to allow the straw to pass through, when it will immediately drop down and cut off the draft of cold air which would otherwise be admitted into the furnace to the detriment of the fire.

The claim of the patent was for—

The removable tube or funnel having arranged within it the diagonal valve with its lower edge turned up, in combination with a furnace, as set forth.

In the reissued Morey patent a revolving partition in the box or attachment is substituted for the diagonal swinging valve suspended upon and revolving upon journals and kept in position by means of springs. The office of the partition is to keep the box or tube closed and prevent the entrance of air after the straw has been pushed through the tube, though the specification adds that "it is evident that by leaving the tube or box filled so as to choke the opening through it the partition or door can be dispensed with." The straw is introduced into the furnace through the hopper of the box by means of an ordinary hay-fork. The fork-load of straw is placed against the lower end of the partition and pushed through the box, the pressure turning the partition to a horizontal position to admit the hay or straw. As soon as the fork is unloaded and withdrawn the partition is closed automatically by the springs, thus making a half-revolution each time a fork-load of straw is introduced and immediately closing again, so as to shut off the draft. The claim of the reissued patent

embraced, first, "in combination with the furnace of a thrashing-machine, the detachable box or tube provided with a flaring mouth, the base of the tube projecting from the furnace at, or nearly at, a right angle to the front of the furnace, substantially as and for the purpose set forth;" and, second, "in combination with the furnace of a thrashing-engine, the box or tube provided with a flaring mouth and having the partition or door, substantially as and for the purpose set forth."

The following is a statement in the language of counsel for the defendant in error of what he claims to be the proof on the trial of the cause as contained in the bill of exceptions, showing the state of the art and the history of the inventions attributed to Morey and Rice, respectively:

For many years before the invention thrashing-machines had been driven by steam as a motive power. In generating steam portable fire-box boilers had been used. Such fire-box boilers were about like the ordinary locomotive-boilers in common use. They had a fire-box furnace and a number of tubes or flues passing from one end to the other through the water in the boiler. The fire and products of combustion passed from front to rear through such tubes or flues, and thence out through a smoke-stack placed at the end of the boiler farthest from the furnace. Wood or coal was used for fuel with such fire-box boilers. During all this time it had been a great *desideratum* to substitute straw as fuel in place of wood and coal. In California in most grain districts wood and coal were very expensive, and were inconvenient on account of having to be transported to the harvest-fields and from place to place in the fields, as the thrashing-machine was moved from one spot to another as one section of the field was thrashed and another about to be commenced. The transportation of the wood and coal for fuel required teams and men at a time when all were needed in the harvest-fields for other purposes. At the same time where the thrashing was done there was always an accumulation of straw which was of no value, and which the farmers were glad to burn to get it out of the way. With the portable engines and boilers then in use straw could not be successfully used as fuel. Steam could be raised with it while the engine was not working; but when the engine was put to work the steam would run down. In 1872 David Morey attempted to accomplish the desired object by attaching straw-feeding attachments to the fire-box boilers then in use with wood or coal for fuel. He experimented with one in Watsonville, and believed from that experiment that his efforts were successful. He took out two patents early in 1873 for his inventions. * * * He made his experiment in Watsonville in 1872 after the thrashing season was over for that year. He was anxious to introduce his supposed invention and desired to exhibit it to the large dealers in agricultural implements in San Francisco. He accordingly went to San Francisco and looked for a place to try his invention at which it would be convenient for the merchants to attend. Rice had a machine-shop at Haywards, and also had thrashing-engines which he had for many years used in the harvest-fields during the thrashing season. He had at his place two portable engines with return-flue boilers and one with a fire-box boiler. One of the engines with return-flue boilers was used for running the machinery in his shop when not in the field during the thrashing season. Morey went to Rice and requested the privilege of attaching his straw-feeder to one of Rice's boilers and exhibiting its operation. Rice readily consented and assisted in making the attachment and test. Morey wished to attach the straw-feeder to Rice's fire-box boiler, but Rice insisted on attaching it to the return-flue boiler. It was attached to the return-flue boiler. A test of it was made and an exhibition given by getting up steam and running the machinery in the shop with it. The test and exhibition gave satisfactory results as far as they went, as Morey's experiment had previously done when made with the same straw-feeder attached to fire-box boiler in Watsonville. No one learned from the test and exhibition at Haywards whether there was any advantage in substituting the return-flue boiler for the fire-box boiler or not. Rice was the only man that thought the return-flue boiler was the better for the purpose. Morey then licensed the firm of Treadwell & Co. to make and sell his invention. The exhibitions of Morey had created a belief that straw could be used for fuel in generating steam for running thrashing-machines, and that very season (1873) many of the heaviest firms in San Francisco and Morey himself used and exercised their means and abilities to make the invention practically successful. Hawley & Co. tried it, Baker & Hamilton tried it, Treadwell & Co. tried it, and Morey tried it. Some of the partners or engineers of each of the said firms had witnessed the exhibition with the return-flue boiler at Haywards. Yet each of said firms and Morey himself made all their subsequent tests in the season of 1873 with fire-box boilers and they all failed. They all gave up the invention after testing it that season, and believed that their tests and experiments had proved that straw could not be successfully used for fuel in generating steam for running thrashing-machines. Not one of them thought for a moment that anything could be gained by substituting the return-flue boiler for the fire-box boiler. All of them worked and experimented with the fire-box boiler, and when they found it impossible to make that do the work with the straw-feeding attachment they believed that they had exhausted the subject by proving that it was impossible to utilise straw for fuel, as desired, by any possible means. Yet they had all seen or thoroughly understood all that was shown or proved by the test and exhibition with the return-flue boiler at Haywards in the previous month of March. Rice alone believed in the advantages of a return-flue boiler combined with the straw-feeding attachment. Rice alone went into the harvest-fields with the return-flue boiler and straw-feeding attachment, and it proved entirely successful. Rice did not know at the time what the other parties were doing; neither were they informed of what Rice was doing. Rice's operations in the thrashing season of 1873 were in different sections of the country from where the other parties were experimenting. While all the other parties were by their experiments with fire-box boilers proving that straw could not be utilized for fuel, as desired, Rice alone proved that it could be so utilized by substituting the return-flue boiler for the fire-box boiler. Rice was the first and only one that suggested the combination of the return-flue boiler with the straw-feeding attachment, and he was the only one that tested and proved its advantages, and except for this individual and independent idea and action of Rice there is no reason for supposing that the great advantages of using straw for fuel in the harvest-fields would have been enjoyed to-day.

It further appears from the testimony of Rice that he considered the main principle of his invention to be combining the arrangement patented by Morey with the return-flue boiler. He supposed at first that his invention covered the boiler itself, though he found afterward that it was not new, but was, on the contrary, well known as the "Cornish" boiler. The main difficulty he claimed to overcome by his invention was in preventing air from being admitted when the straw was fed into the furnace. He says:

I took his (Morey's) tube and attached it to this boiler, (the return-flue boiler,) and it was a success.

The act of invention he specified to consist in "combining the two together."

The contention on the part of the defendant in error is set forth in the language of his counsel in argument, as follows:

Applying the rules of law to the Morey and Rice patents and (admitting Morey's patents to be valid) the following are the extent and limits of their respective inventions, viz: Morey discovered that by attaching a straw-feeding tube with a door in it to prevent a draft of air through it to portable locomotive or fire-box steam-boilers straw could be used with them for fuel more effectively than it could be without such tube. The combination of a straw-feeding tube which would prevent a draft of air through it with portable steam-boilers was Morey's invention. The discovery that a draft of air must not be admitted between the top of the fire and the bottom of the boiler was his discovery. All of Morey's discoveries and inventions, however, were insufficient to make portable steam-boilers adequate to the one great task which it was so desirable for them to perform, viz: that of running thrashing-machines with only straw for use as fuel. Rice began his discoveries and invention where Morey left off. Morey's patents were both issued before Rice had given the subject a thought. Rice discovered that by tearing out the inside of the boiler, which he found in Morey's combination, and by adding to the combination (but inside of the boiler) the large tube C, to serve as a furnace and the return-flues, that he obtained a combined machine which was a very great improvement over Morey's. Rice's combination may have and probably did include Morey's combination, but it included more, viz: the large tube or furnace C and the return-flues *e e*.

* * * * * * * * *

In this case Morey's patents were for combining straw-feeders with portable steam-boilers generally. Rice discovered that by substituting one particular kind of portable steam-boiler, which no one else had used, for the steam-boilers which had been used that he had a better combination than was ever before made, a combination which did better work than any others, and had within it a new and better mode of operation than any others. It burned all of the straw put in it, while the others would not. It did not choke up with partly-burned straw and cinders, while the others would. It caused the heat and flame of the fire to pass twice through the length of the boiler, while in the others the heat and flame passed but once through the length of the boiler.

* * * * * * * * *

It is to be noticed that the Morey patents describe and claim only the combination of the straw-feeding device with the furnace of a boiler. His patents stop at the furnace-door. They do not go into the boiler beyond the furnace. Rice's patent, on the other hand, begins at the furnace-door, where Morey's stop, and goes beyond into the boiler, adding new elements.

The bill of exceptions contains fourteen exceptions to as many rulings of the court during the trial, but in argument all the points raised by them were reduced and classified by counsel for plaintiff in error under three heads, as follows:

1. That the reissued letters patent to Rice on which the action was founded were for an invention different from that described in the original, and was therefore void.

2. That the invention described and claimed in the first claim of the plaintiff's reissued patent, which alone was material to the controversy, was anticipated and covered by the letters patent granted to Morey.

3. That if, after the Morey patents were issued, there was any invention in the combination claimed in the Rice reissued patent, then, in fact, it is to be attributed to Morey himself, and not to Rice.

I. The first question for our determination is that raised as to the identity of the invention intended to be described in the original and reissued patents to Rice, upon the answer to which the validity of the latter, so far as this suit is concerned, depends.

In cases of reissues of patents, inoperative or invalid by reason of a defective or insufficient specification, or by reason of the patentee claiming as his own invention or discovery more than he had a right to claim as new, it is imperative that the new patent, when issued, shall be for the same invention, and that no new matter shall be introduced into the specification when, as in the present case, there is a drawing, with reference to which the invention is described. (Rev. Stats., sec. 4916.)

The principles for determining the validity of reissued patents have been discussed and formulated so repeatedly and so recently in this Court that it is necessary at present only to refer to the cases of *James* v. *Campbell* and *Miller & Co.* v. *Bridgeport Brass Company*, decided at the present term, *Burr* v. *Duryee*, (1 Wall., 531,) and *Powder Company* v. *Powder Works*, (98 U. S., 139.)

In the present case the question of the identity of the invention in the original and reissued patents is to be determined from their face by mere comparison, notwithstanding what was said in *Batten* v. *Taggart*, (17 Howard, 74, 85,) and consistently with *Bischoff* v. *Wethered*, (9 Wall., 812,) according to the rule laid down in *Seymour* v. *Osborne*, (11 Wall., 515,) and *Powder Company* v. *Powder Works*, (98 U. S., 134.) That is, if it appears from the face of the instruments that extrinsic evidence is not needed to explain terms of art or to apply the descriptions to the subject-matter, so that the court is able from mere comparison to say what are the inventions described in each, and to affirm from such mere comparison that they are not the same but different, then the question of identity is one of pure construction and not of evidence, and consequently is matter of law for the court, without any auxiliary matter of fact to be passed upon by a jury if the action be at law.

The question arises in the present record upon an exception of the defendant below to the refusal of the court after the plaintiff had read in evidence the original patent to sustain an objection to the introduction in evidence of the reissued letters patent, on the ground that they were void for want of identity in the invention, and also upon the refusal of the court to instruct the jury, both after the close of the plaintiff's case and after all the evidence was in, to return a verdict for the defendant. Looking therefore to the original patent nothing can be more clear than that the supposed invention described in it is nothing more nor less than the return-flue boiler itself. The patent is for a new and useful improvement in steam-boilers. The specification begins by declaring that the invention relates to certain improvements in the construction of steam-boilers, whereby the inventor says:

> I am enabled to utilize straw and other light substances for fuel, so that a complete combustion of the smoke is attained, and the danger from fire in harvest-fields, where these boilers are more especially useful, is entirely obviated.

It also relates, as is said, to a novel method of securing the tubes and tube-sheets within the shell of the boiler. Reference is then made to the accompanying drawings for a more complete explanation of the invention. He refers to the shell of the boiler, which he says is more especially intended to be used for that class of engines employed in thrashing and other field work where there is straw or other light material enough for fuel, but which has never been satisfactorily burned without an artificial draft or blast, and which has always been dangerous by reason of the sparks thrown out on account of incomplete combustion. It was, "in order to remedy these faults and perfectly consume all the smoke and sparks," he continues, that "I perforate my tube-sheets, so as to admit one large tube near the bottom, which receives the fuel upon a grate and acts at the same time as a tube and fire-box." Then occurs this sentence:

> Any suitable feeder may be employed to supply straw to the grate; but I have found the device patented by D. Morey, June 20, 1873, to be very suitable.

He then proceeds with the description of the tubes and the return-tubes conducting to the chimney in front, and the communicating chamber between the flue-sheet and the boiler-head, and the similar chamber at the back end of the boiler, into which the products of combustion pass from the large flues before entering the return-flues. "By this construction," the specification continues, "the light fuel is thoroughly ignited in its passage through the large tube, which has plenty of air admitted for the purpose. The heat and flame will be concentrated in returning through the small flues, and the combustion will be so complete that no sparks and very little smoke will escape from the chimney, and this little will not even need a bonnet." This is followed by a description of the device for removing the tubes and tube-sheets from the shell in a body for repair or cleaning, which is not material. The inventor then adds: "By this construction I am enabled to make a boiler and furnace in which straw can be used as a fuel with perfect safety and in which repairs can be easily effected," and concludes:

> Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—
>
> In a horizontal steam-boiler, the large tube C, formed with a grate, D, to serve as a fire-place, in combination with small return-flues *e e*, when the tubes and tube-sheets are secured by flanges *f* and bolts *g*, so as to be removable from the shell in a body, substantially as and for the purpose set forth.

The allusion to the mode of supplying straw to the grate is merely casual and incidental. Any suitable feeder may be employed, it is said. The inventor adds: "But I have found the device patented by D. Morey, June 20, 1873, to be very suitable." In what respect this device has been found to be very suitable is not mentioned, nor is it hinted that there are not many others quite as good. No attempt is made to explain what is needed in a feeder to make it suitable, nor any hint that any of the advantages described as resulting from the operation of the machine depend in any degree upon the character of the feeder. For aught that may be inferred from what is said concerning it there need be nothing peculiar in the mode of supply, except

what is rendered necessary by the character of straw as a fuel in lightness and bulk and a supposed convenience on that account of supporting it as it is pushed into the furnace. There is certainly no suggestion that is considered important much less necessary in supplying this fuel to do it in such manner and by means of such device as will prevent the introduction of a draft of cold air between the top of the fuel and the bottom of the boiler while in the act of replenishing the supply. Neither the mode of feeding the fuel nor any device for doing it is made any part of the described invention, nor is either referred to in any way as performing any useful or essential function in the operation of the machine described. Every desired advantage which it is expected to accomplish is referred expressly to the boiler itself and its structure and internal arrangement. As is well said by counsel for plaintiff in error on this point:

> What he sought was complete combustion of the straw by making the products of combustion pass through the boiler twice before they were allowed to escape into the chimney, and the office of the feeder was not auxiliary to the combustion, but preliminary to it. It supplied the straw. It did not burn it. It is true that a Morey tube is shown in the drawing as attached to the front of his engine, but that does not make it part of his invention any more than a set of wheels and axles would have become part of it if the drawing had represented his boiler as mounted on running-gear.

If we turn now to the reissued patent we find that the patentee declares that—

> My invention relates to the combination of a straw-feeding device with the furnace-door of the class of boilers which are known as "return-flue" boilers, by which combination I am able to provide a superior arrangement for utilizing straw as a fuel for generating steam.

He then refers to the failure of previous attempts to utilize straw as fuel for generating steam, and gives as the reason that "when straw is fed into the furnace of an ordinary steam-boiler it burns too quickly to do much good in heating the water in the boiler until a sufficient quantity of cinders accumulates upon the grate-bars to impede the draft, and unless the cinders are frequently removed from between the grate-bars they soon accumulate to such an extent as to choke the draft entirely and prevent combustion." He then adds that his experiments have developed the fact that by attaching a tube or box-door to the furnaces of that class of boilers known as "return-flue" boilers the combustion will be so complete that no sparks and but very little smoke will escape from the chimney, and the straw will be burned freely, giving out a high degree of heat without danger of choking the grate-bars. He then gives a description with reference to the drawings, which are the same as those attached to the original specifications. In that description, differing in that respect from the former one, he inserts: "To the door of the furnace C, I attach a straw-feeding tube, E, through which the straw or other light fuel is fed to the furnaces," and changes the sentence in reference to the character of the straw-feeder so as to read as follows:

> This tube can be constructed in the manner described by David Morey in his patents dated February 11, 1873, and May 25, 1873, for straw-feeding attachment for furnaces, or in some other suitable manner for feeding the straw without admitting a draft of air.

The first claim of the reissued patent reads thus:

> The boiler A, having the furnace C, grate D, return flues or tubes *e e*, and stack or chimney B, arranged as described, in combination with the straw-feeding furnace-door attachment, substantially as and for the purpose described.

It appears, then, from the mere reading of the two specifications that the invention described in the first is for the return-flue boiler, while that described in the second, abandoning the claim for the boiler itself, is for a particular mode of using it with straw as a fuel, by means of an attachment to the furnace-door for that purpose. It might well be that Rice was entitled to patents for both separately or to one for both inventions; but it is too plain for argument that they are perfectly distinct. A patent, consequently, originally issued for one cannot lawfully be surrendered as the basis for a reissue for the other. They are as essentially diverse as a patent for a process and one for a compound, as in the case of *Powder Company* v. *Powder Works*, (98 U. S., 134,) where the reissued patent was avoided, although the original application claimed the invention both of the process and the compound. The case comes directly within the principle held in *James* v. *Campbell*, *supra*, that a patent for a machine cannot be reissued for the purpose of claiming the process of operating that class of machines, because if the claim for the process is anything more than for the use of the particular machine patented it is for a different invention.

II. The second principal objection to the validity of the Rice reissued patent is that it is anticipated by the Morey patents. We are of opinion that it also is well taken. Morey's reissued patent of May 4, 1875, covers distinctly and expressly a combination of the furnace of a thrashing-engine with a detachable box or tube provided with a flaring mouth, the base of the tube projecting from the furnace at, or nearly at, a right angle to the front of the furnace, the office of which is to furnish means for the supply of straw as fuel to the furnace in such manner as to prevent the entrance of air after the straw has been pushed through the tube, which may be effected either by means of a movable partition, for which a separate claim is made, or without it, by merely having the tube or box filled, so as to choke the opening through it with successive supplies of straw. It applies to every description of thrashing engines and boilers, whether fire-box or return-flue. It is true that it does not specify either class, but it embraces both by its language; and in its application to both it operates in precisely the same manner and with precisely similar effect. If there is any superiority in the return-flue boilers used with this attachment as a straw-burner over the fire-box boiler when used in the same way the superiority is due not to any difference in the straw-feeding attachment, nor in the mode of its operation, nor to any new feature of the combination, but merely to the superiority of the return-flue boiler itself; and it does not militate against the validity of Morey's patent or limit the extent and effect of its application to concede what is claimed that he was not aware at the time of his invention of the superior value of its application to return-flue boilers over fire-box boilers or that the discovery of that superiority is attributable to Rice. That application of it is within the scope and provision of Morey's invention, whether it had been tested by his experience or was anticipated by his foresight or not. If at the date of Morey's invention return-flue boilers had not been known, but had been subsequently invented, his patent, as applied to them, would still have prevailed against any new claimant, for the new application does not produce any new effect. It is only the occasion which is new; the use itself is merely analogous. The case of *Hall's Patent*, (1 Webst. Pat. Cas., 96,) where the flame of gas

was used instead of an Argand lamp for singeing lace, is pressed upon us as authority for a different conclusion upon this point; but the decision of Lord Abinger in *Losh* v. *Hague* (1 Webst. Pat. Cas., 207) and his comments upon the case of Hall's patent show that it has no application here. There was no patentable invention in Rice's adaptation. The return-flue boiler, it is admitted, was old. The Morey attachment had been already invented. The idea and principle of its operation in adapting boilers to the use of straw as a fuel was the essence of his invention. Rice, it is confessed, discovered nothing more than that for such purposes a return-flue boiler was better than fire-box boilers, which were the only kind that had then been used. "But this," in the language of Mr. Justice Nelson in *Hotchkiss* v. *Greenwood* (11 How., 266,) "of itself can never be the subject of a patent. No one will pretend that a machine made in whole or in part of materials better adapted to the purpose for which it is used than the materials of which the old one is constructed, and for that reason better and cheaper, can be distinguished from the old one, or, in the sense of the patent law, can entitle the manufacturer to a patent. The difference is formal and destitute of ingenuity or invention. It may afford evidence of judgment and skill in the selection and adaptation of the materials in the manufacture of the instrument for the purposes intended, but nothing more." *Hicks* v. *Kelsey* (18 Wall., 670) affirms this case. The same principle was applied in the case of *Stow* v. *City of Chicago*, decided at the present term. The case would not be altered if we suppose that at the date of Morey's patent there had been also a valid patent outstanding in a stranger for the return-flue boiler. On that supposition could it for a moment be contended that Rice could secure for himself a valid patent for the combination as an improvement on both? What invention could he claim? He uses Morey's device precisely as Morey's patent contemplated and the Cornish boiler exactly as it was designed it should be used; and in the combination each operates separately, producing its own results. There was no inventive resource drawn upon to bring them together. Could not the owners of the patents for the straw-feeding attachment and the return-flue boiler unite their machines and work them together in defiance of a claim for the combination? To ask the question is to answer it. Yet the case supposed does not differ from the case as it exists, for the public owned the right to the Cornish boiler and was entitled to every use to which a patentee owning it might lawfully apply it.

On the trial of the cause below Morey's patent seems to have been treated in the charge of the court as if it were a patent for a combination of a straw-feeding attachment with the furnace of boilers other than those with return-flues, and that Rice added to the combination the new element of the return-flues with a new and important result. But this view, in our opinion, is not justified by the true construction of the patents. If Morey's patent is for a combination it is a combination of the straw-feeding attachment with all boilers for generating steam when it is desired to use straw for fuel, and therefore includes the very combination claimed by Rice. And if it is for the straw-feeding attachment as an independent device, but to be used in boilers for generating steam when straw is to be used as fuel, then the application of it to the return-flue boilers, although these were not actually known to the inventor, is merely a new and analogous use of an old device, operating in the very manner intended by its inventor, and the use of which in the new application involved no invention, and could not therefore be the subject of a patent.

III. In fact it is very apparent from the testimony on the part of the plaintiff below that the actual application of the Morey straw-feeding attachment to the return-flue boiler at Rice's establishment was a demonstration made by Morey himself of the practical operation of his device, intended to show, what he had already proved by previous trials with fire-box boilers to his own satisfaction, that he had invented an arrangement for applying the principle by which straw could be made useful as a fuel for steam-boilers, that principle being to prevent the introduction of a draft of cold air while feeding the supply. He showed this to Rice by the trial at the establishment of the latter on one of his own return-flue boilers. Rice, by subsequent experience or previous knowledge, it matters not which, perceived the advantages of the return-flue boiler over the fire-box boiler for such a use. That was his sole discovery and constitutes the basis of the claim for his patent. The marvel is that he should have succeeded in persuading Morey that he had given all its value to the invention of the former, and obtained from him the conveyance of his patent for a consideration dependent upon the result of this litigation.

The court below in its rulings upon objections to the introduction of the reissued patent of Rice, in its refusals to charge the jury as requested by the defendant below, and in its charge as given took views of the validity of the patent on which the case of the defendant in error rested, opposed to those expressed in this opinion, and which necessarily resulted in the verdict and judgment against the plaintiff in error. For these errors the judgment is reversed and a new trial ordered, and for that purpose the cause is remanded.

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The OFFICIAL GAZETTE is published every Tuesday, two volumes a year, commencing in January and July. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound volumes, $3.50 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Issue of May 16, 1882.

Patents	370	No. 257,836 to No. 258,205, inclusive.
Designs	8	No. 12,928 to No. 12,935, inclusive.
Trade-Marks	31	No. 9,354 to No. 9,384, inclusive.
Labels	4	No. 2,660 to No. 2,663, inclusive.
Reissues of patents	7	No. 10,112 to No. 10,118, inclusive.
Total issue	420	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	1	....	Nebraska	3	....
Arizona Territory	....	....	Nevada	2	....
Arkansas	....	....	New Hampshire	2	....
California	10	1	New Jersey	13	3
Colorado	1	....	New Mexico Territ'y	....	....
Connecticut	14	....	New York	86	9
Dakota Territory	....	....	North Carolina	3	3
Delaware	1	....	Ohio	29	....
District of Columbia	5	1	Oregon	1	....
Florida	....	....	Pennsylvania	39	3
Georgia	2	....	Rhode Island	4	....
Idaho Territory	....	....	South Carolina	1	....
Illinois	30	2	Tennessee	1	....
Indiana	19	....	Texas	4	....
Indian Territory	....	....	Utah Territory	1	....
Iowa	5	3	Vermont	....	....
Kansas	6	1	Virginia	1	....
Kentucky	4	....	Washington Territ'y	....	....
Louisiana	2	....	West Virginia	3	....
Maine	2	....	Wisconsin	6	....
Maryland	2	1	Wyoming Territory	....	....
Massachusetts	20	4	United States Army	1	....
Michigan	14	1	United States Navy	....	....
Minnesota	3	9			
Mississippi	1	....	Total to citizens of the United States	361	34
Missouri	8	....			
Montana Territory	1	....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia	....	....	England	8	....
Austria	....	....	France	2	....
Barbadoes	....	....	Germany	2	....
Belgium	....	....	Italy	....	....
Bermuda	....	....	New Zealand	....	....
Brazil	....	....	Russia	....	....
Canada	5	1	Spain	....	....
Chili	....	....	Sweden	....	....
Colombia, U. S. of	....	....	Switzerland	....	....
Cuba	....	....			
Denmark	....	....	Total to citizens of foreign countries	17	1
Ecuador	....	....			

DESIGNS.

12,928.—GATE.—*Henry Faller*, Middle Village, assignor to *John Timmes*, Brooklyn, N. Y. Application filed March 30, 1882. Term of patent 7 years.

12,929.—NAP-SURFACE OF CLOTH.—*Felix Samson*, New York, N. Y. Application filed February 25, 1882. Term of patent 3½ years.

12,930.—HANGING LAMP.—*F. Robert Seidensticker*, Meriden, Conn., assignor to *The Bradley & Hubbard Manufacturing Company*, same place. Application filed March 25, 1882. Term of patent 7 years.

12,931 and 12,932.—CARPET.—*Thomas J. Stearns*, Boston, Mass., assignor to *The Roxbury Carpet Company*, same place. Applications filed March 16, 1882. Term of patents 3½ years.

12,933.—FONT OF PRINTING-TYPE.—*Charles E. Heyer*, Chicago, Ill., assignor to *Arthur M. Barnhart*, *Alson E. Barnhart*, and *Charles E. Spindler*, same place. Application filed November 18, 1881. Term of patent 7 years.

12,934.—PLATES OF A HEATING-STOVE.—*James M. Atchison*, Philadelphia, Pa., assignor to *Francis P. Nicholson*, same place. Application filed March 27, 1882. Term of patent 7 years.

12,935.—FONT OF TYPE.—*John West*, Brooklyn, N. Y. Application filed April 5, 1882. Term of patent 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

9,354.—PLUG CHEWING-TOBACCO.—*Brown & Brother*, Winston, N. C. Application filed April 20, 1882.

"The word and figure 'HONEST 7.'"

9,355.—MEDICINAL PREPARATIONS.—*Fredrick W. A. Bergengren*, Lynn, Mass. Application filed April 4, 1882.

"A pictorial representation of the national flags of the United States of America and of the Kingdom of Sweden, in connection with the Swedish national coat of arms."

9,356.—SYRUPS.—*August Buermann*, Newark, N. J. Application filed April 7, 1882.

"The figure of a star."

9,357.—FLOUR.—*Leonard Day & Co.*, Minneapolis, Minn. Application filed April 3, 1882.
"The word 'PALISADE.'"

9,358.—FLOUR.—*Leonard Day & Co.*, Minneapolis, Minn. Application filed April 3, 1882.
"The words 'ROYAL ROSE.'"

9,359.—FLOUR.—*Leonard Day & Co.*, Minneapolis, Minn. Application filed April 3, 1882.
"The word 'BISMARCK.'"

9,360.—FLOUR.—*Day, Rollins & Co.*, Minneapolis, Minn. Application filed March 30, 1882.
"The word 'ORIENT.'"

9,361.—FLOUR.—*Day, Rollins & Co.*, Minneapolis, Minn. Application filed March 30, 1882.
"The words 'GOLD LEAF.'"

9,362.—FLOUR.—*Day, Rollins & Co*, Minneapolis, Minn. Application filed March 30, 1882.
"The words 'WHITE SPRAY.'"

9,363.—FLOUR.—*Day, Rollins & Co.*, Minneapolis, Minn. Application filed March 30, 1882.
"The word 'HERCULES.'"

9,364.—FLOUR.—*Day, Rollins & Co.*, Minneapolis, Minn. Application filed March 30, 1882.
"The word 'ZENITH.'"

9,365.—FLOUR.—*Day, Rollins & Co.*, Minneapolis, Minn. Application filed March 30, 1882.
"The word 'ADVANCE.'"

9,366.—HARNESS-TRIMMINGS OR HARNESS-MOUNTINGS, AND OTHER GOODS PERTAINING TO SADDLERY-HARDWARE.—*William F. Ford*, Newark, N. J. Application filed April 10, 1882.
"The arbitrary word-symbol 'BONANZA.'"

9,367.—SUSPENDERS OR BRACES.—*James Bowers*, Newark, N. J. Application filed April 12, 1882.
"The word-symbol 'ELECTRIC.'"

9,368.—PAINTS.—*Harrison Bros. & Co.*, Philadelphia, Pa. Application filed April 15, 1882.
"The words 'QUEEN ANNE.'"

9,369.—PAINTS.—*Harrison Bros. & Co.*, Philadelphia, Pa. Application filed April 15, 1882.
"The word 'ARCHITECTURAL.'"

9,370.—MEDICINAL PREPARATIONS.—*Dr. D. Jayne & Son*, Philadelphia, Pa. Application filed December 10, 1881.
"The letters 'D. JAYNE' in the form of a water-mark."

9,371.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO. *Kaufmann Bros. & Bondy*, New York, N. Y. Application filed April 13, 1882.
"The arbitrary word 'JUMBO.'"

9,372.—CEMENT.—*T. R. Keator & Co.*, New York, N. Y. Application filed April 15, 1882.
"A red cross."

9,373.—STEEL PENS.—*Benjamin Lawrence*, New York, N. Y. Application filed April 4, 1882.
"The letters and words 'B. L. METALLIC QUILL.'"

9,374.—SOAP.—*Christopher Lippe*, Baltimore, Md. Application filed September 5, 1881.
"A medallion bearing on its face the representation of Helvetia, goddess of Switzerland."

9,375.—LEATHER.—*Augustus B. Martin & Co.*, Boston and Lynn, Mass. Application filed April 6, 1882.
"The arbitrarily-selected word 'SIAMANG.'"

9,376.—CIGARS AND CIGARETTES.—*Michalitschke Bros. & Co.*, San Francisco, Cal. Application filed April 7, 1882.
"The representation of a peacock."

9,377.—DAIRY-SALT.—*North American Chemical Company*, (Limited,) Montreal, Quebec, Canada. Application filed March 24, 1882.
"The autograph 'GEO. RICE.'"

9,378.—BAKING-POWDERS.—*James A. Parent & Co.*, Detroit, Mich. Application filed July 5, 1881.
"The fac-simile signature of James A. Parent & Co. and the pictorial representation of a man carrying a tray."

9,379.—CIGARS, SNUFF, AND SMOKING, FINE-CUT, AND PLUG CHEWING TOBACCO.—*Spaulding & Merrick*, Chicago, Ill. Application filed April 3, 1882.
"The words 'OLD GLORY.'"

9,380.—MAGNETO-THERAPEUTIC APPLIANCES.—*Hugh Thomas*, New York, N. Y. Application filed April 10, 1882.
"The word-symbol 'SPHEROTHERAPEUTIA' and the representation of the hand, sphere, and the zigzag lines."

9,381.—HAMMOCKS.—*Thomas Trestlian*, Gloucester, Mass. Application filed April 15, 1882.
"The fanciful title 'UNION.'"

9,382.—CIGARS, CIGARETTES, SNUFF, AND CHEWING AND SMOKING TOBACCO.—*George A. Trymer* and *Horace C. Richardson*, Bloomington, Ill. Application filed April 6, 1882.
"The two cigars crossed obliquely, the barred helmet with crest of feather, the Maltese cross, and the two stripe or streamers, the upper one of which having the name 'De Molay' on its face and the lower one containing the sentence 'La Vuelta Abajo.'"

9,383.—MEDICAL PREPARATION FOR EXTERNAL APPLICATION.—*Weeks & Potter*, Boston, Mass. Application filed March 20, 1882.
"The representations of the man, horse, and cow.

9,384.—CONDITION-POWDERS.—*James Yates & Co.*, Atchison, Kans. Application filed March 10, 1882.
"The arbitrarily-selected word 'OVERLAND' and design of a tallyho coach."

LABELS.

2,680.—Title: "NEW YORK CITY SOAP."—*Charles Memmert*, Washington, D. C. Application filed April 21, 1882.

2,681.—Title: "DR. OWEN'S (O & C'S) CAMPHORATED HARTSHORN LINIMENT."—*Luther P. Owen*, Marion, Iowa. Application filed April 6, 1882.

2,682.—Title: "DR. OWEN'S (O & C'S) COUGH REMEDY."—*Luther P. Owen*, Marion, Iowa. Application filed April 6, 1882.

2,683.—Title: "DR. OWEN'S COLIC, CHOLERA AND DIARRHŒA REMEDY."—*Luther P. Owen*, Marion, Iowa. Application filed April 10, 1882.

DISCLAIMERS.

4,636, (Reissue.)—*Theodore E. Harris*, Green Bay, Wis., patent dated November 14, 1871. IMPROVEMENT IN MACHINES FOR SHEARING AND PUNCHING SHINGLE-STRAPS. Disclaimer filed May 5, 1882, by *Matthew Graf* and *William M. Everson*, assignees.

Enter their disclaimer to the first claim of said reissued letters patent, which is in the following words, to wit: "1. A machine cut and punched shingle-strip or bale-fastening made from sheet-iron, substantially in the manner described."

Also, to the following words in the printed copy of the said specification commencing on the nineteenth line and ending with the word "end" in the forty-seventh line thereof, as follows: "In packing shingles at the mill for the market the ordinary method has always been to arrange them with the points together, as shown at A in Fig. 5, and tie the ends of the wooden binders B B together by means of withes, cords, or wires, or connect them by strips of hoop-iron nailed or otherwise fastened to them. None of these articles have ever, to my knowledge, been prepared and put into the market as an article of manufacture and sale, but the manufacturer of the shingles has always been obliged to prepare them for his own use. Cords of any kind are objectionable on the score of expense, and also of weakness and liability to decay. Wires are difficult to fasten properly. Withes are not to be had in many localities, and hoop-iron, besides being scarce, is inconvenient to cut and punch at the mill. From these causes the supply of proper materials for tying the binders together has never been regular and reliable, and great inconvenience has resulted to manufacturers therefrom. The object of my invention is to produce a new article of manufacture and sale, which, being adapted to convenient use as a fastening for the binders, can be furnished to the market in any required quantities at a reasonable expense, thereby obviating all the inconveniences heretofore suffered from the cause referred to. To this end."

Also, to the following words, commencing with the word "first" on the forty-seventh line of page 1 of said printed specification and ending with the word "secondly" on the fifty-first line thereof, as follows: "First, in the new article of manufacture, to wit, a cut and punched sheet-metal shingle-strip, formed substantially as shown in Fig. 4, and adapted to be applied as represented in Fig. 5; and secondly."

92,469.—*Jacob Reese*, Pittsburg, Pa., patent dated July 13, 1869. IMPROVED METHOD OF MAKING BANDS FOR SHINGLE-BUNDLES. Disclaimer filed May 5, 1882, by *Matthew Graf* and *William M. Everson*, assignees.

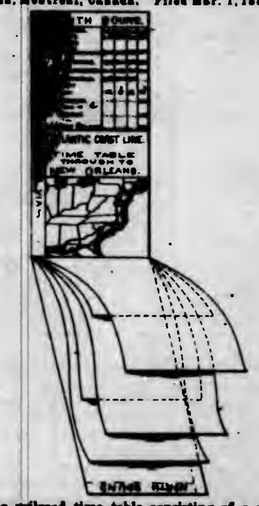
Enter their disclaimer to the first claim of said letters patent, which is in the following words, to wit: "1. A machine cut and punched shingle-strip or bale-fastening made, substantially in the manner described, from sheet, as distinguished from hoop-iron."

Also, to the following words on page 2 of the printed specification attached to and forming a part of said letters patent: "Metallic strips made substantially as described are useful for other purposes, or for securing bundles and bales of other articles, and all such uses of such strips I include in my invention."

PATENTS

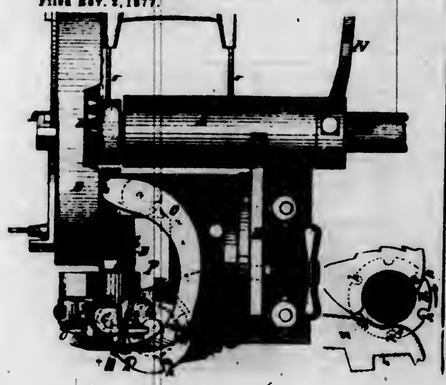
GRANTED MAY 16, 1882.

257,836. RAILROAD TIME-TABLE. RICHARD ALEXANDER, New York, N. Y., assignor to Gustave Love, same place, and Henry P. Alden, Montreal, Canada. Filed Mar. 1, 1882. (No model.)



Claim.—The railroad time-table consisting of a series of leaves of varying lengths, all fastened together at one edge, and adapted to be folded one upon the other, and when folded one upon the other, to produce continuous reading-matter and continuous time-tables between terminal stations, as herein shown and described.

257,837. GRAIN-BINDER. JOHN F. APPLEBY, Beloit, Wis. Filed Nov. 2, 1877.



Claim.—1. In combination with the driving-shaft A and its sheaf-discharging arm M, located at the outer side of the tying mechanism, an auxiliary revolving arm, N, located at the inner side of said mechanism, and rotating about the shaft A simultaneously with arm M, substantially as and for the purpose set forth.

2. The cord-guide O, having the cord-severing knife P mounted thereon and operating therewith in substantially the manner and for the purpose herein specified.

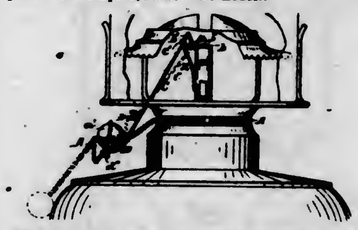
3. The combination of the intermittingly-revolving disks Q and R, the holder-plate S, having its operative edge arranged between said disks and shaped as described, and means, substantially as described, by which said holder is adapted to act first with a yielding and then with a rigid pressure, all substantially in the manner and for the purpose described.

4. The combination, with the disks Q R, provided with a ratchet-wheel, of the pawl T, the bolt *m*, which actuates said pawl, and the cam *n*, formed with two steps, *n n'*, for actuating said bolt and imparting to said disks two successive movements at each stroke of the pawl, substantially as herein before described.

5. The combination, as shown, of the cord-guide O, severing-knife P, and their actuating mechanism with the tyer C and cord-holding devices Q, R, and S, for the triple purpose of guiding the cord to the tyer, drawing the knot therefrom, and severing the cord, all substantially as set forth.

6. In combination with the tying mechanism, the actuating cam-and-rock wheel provided with the cam *w*, the sliding bar *m*, and the springs *o o* acting thereon, the construction and operation being such, as described, that the bar *m*, with its springs *o o*, operates as a brake on said wheel to insure the stoppage of the parts in the proper place, substantially as set forth.

257,838. LAMP-EXTINGUISHER. WILLIAM H. BALDWIN, Chicago, Ill., assignor of one-half to Henry C. Whitney, same place. Filed Apr. 3, 1882. (No model.)



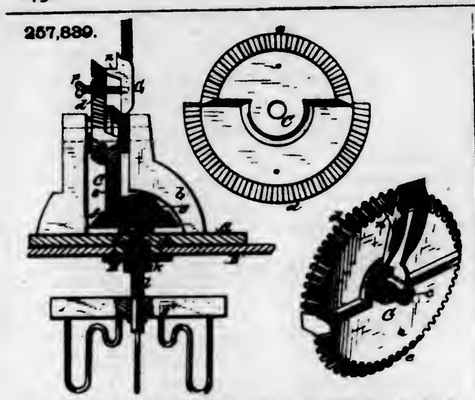
Claim.—1. In an automatic lamp-extinguisher, the combination of the metallic sleeve B, the extinguisher *b'*, the spring E, the wire C, the tongue D, and the weight *a'*, constructed and arranged as herein described and shown.

2. An automatic lamp-extinguisher, *b'*, operated by the weight *a'*, the tongue D, the wire C, and the spring E, substantially as set forth and described above.

3. An automatic lamp-extinguisher, held in reserve when the lamp is in use by the combination of the wire C, the tongue D, and the weight *a'*, and caused to move upon the flame, when an exigency arrives, by the joint action of the spring E, the tongue D, and the wire C, substantially as set forth above.

257,839. WASHING-MACHINE. EUGENE H. BARNES, Oskaloosa, Iowa. Filed Feb. 8, 1882. (No model.)

257,839.



Claim.—1. In a washing-machine, the combination, with the agitator thereof, having connected to its shaft a bevel-gear wheel with two sets of teeth, of a driving gear-wheel connected to a horizontal shaft, said wheel having two sets of teeth, each of which describes a segment of a circle on different vertical planes and of different radii, and an operating-lever adjustably connected to the said wheel, substantially as and for the purpose set forth.

2. In a washing-machine, the combination, with the gear-wheel D, having teeth *f g*, for operating the agitator, of the wheel C, constructed, as shown, with the teeth *d e*, and the seat G, having teeth *n*, and means for connecting it to the wheel, substantially as and for the purpose specified.

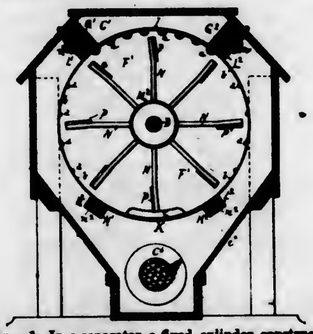
257,840. PLASTERED WALL. AUGUST H. BECKER, St. Louis, Mo. Filed Mar. 10, 1882. (No model.)



Claim.—1. The herein-described mode of producing a surface upon a plastered wall, which consists in placing a textile fabric against the wall and then working paint onto, through, and beneath the fabric, and thereby causing the fabric to adhere to the wall, substantially as described.

2. A plastered wall having a textile fabric attached thereto, paint being worked onto, through, and beneath the fabric, as and for the purpose described.

257,841. CENTRIFUGAL SEPARATOR. ALBERT D. BULLINGER, Minneapolis, Minn. Filed Jan. 24, 1882. (No model.)



Claim.—1. In a separator, a fixed cylinder constructed with a closed top and bottom, and bolting-cloth sides, with beater-strips *d* on the inside thereof, in combination with a revolving beater, substantially as set forth.

2. In a separator, a fixed cylinder constructed with bolting-cloth sides, a closed top, I, a fabric covering the inside of the top, and beater-strips in front thereof, in combination with a revolving beater, substantially as set forth.

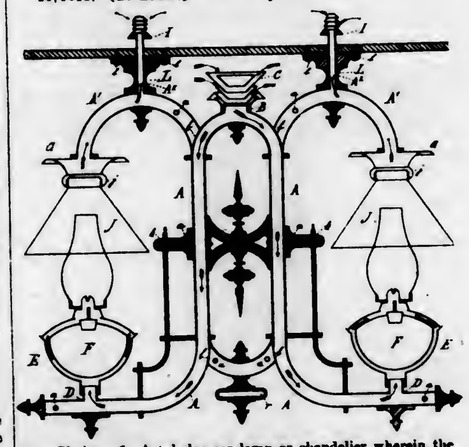
3. In a separator, a fixed cylinder constructed with a closed top, I, beater-strips *c*, a closed bottom, K, open sides covered with bolting-cloth *b*, and beater-strips *d* in front thereof, in combination with a revolving beater, substantially as set forth.

4. In a separator, a fixed cylinder constructed with closed top I, strips *c* in front thereof, a closed bottom, bolting-cloth sides, and strips *d*, smaller than strips *c*, in front of the bolting-cloth, in combination with a revolving beater, substantially as set forth.

5. In a separator, a fixed cylinder constructed with a closed top, beater-strips *c* in front of said top, a closed bottom, bolting-cloth side strips, *d*, on the inside of said cloth, and a discharge-spout, *i*, next to the closed bottom, in combination with revolving beater, substantially as set forth.

6. In a separator, a cylinder composed of heads F' F², ribs G' G² H' H², plates I, strips *c*, plate K, connecting ribs H' H², bolting-cloth sides *b*, and strips *d*, in combination with a revolving beater, substantially as set forth.

257,842. CAR-LAMP. LEWIS F. BEVIS, Norton, Pa., assignor of one-half to Robert E. Dietz, New York, N. Y. Filed Mar. 20, 1882. (No model.)



Claim.—1. A tubular car lamp or chandelier wherein the tubes forming the conduits for the fresh air and for the products of combustion are constructed of two cast-metal sections secured together by bolts or screws, substantially as shown and described.

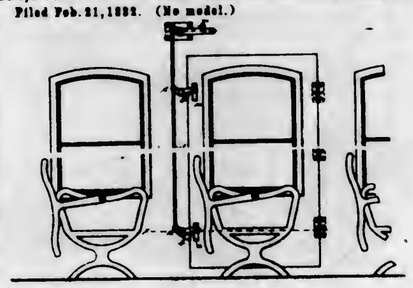
2. In a tubular car lamp or chandelier of the character herein specified, the combination, with the tubes A, cast in two parts and secured together by screws or bolts, of the injecting device C, adapted and arranged to direct a current of fresh air to the burners, substantially as shown and described.

3. In a tubular car lamp or chandelier of the character herein specified, the combination, with tubes A, constructed, substantially as set forth, of air-injector C, smoke-bell G, tubes A', and ejecting devices I, substantially as shown and described.

4. A tubular car lamp or chandelier having tubes A and A', cast in two parts, said parts being secured together by bolts *s*, air-injecting device C, projections D, supporting shells E, inclosing lamp-pot F, and tubes A², surmounted by ejectors I, the whole combined and arranged to operate substantially as shown and described.

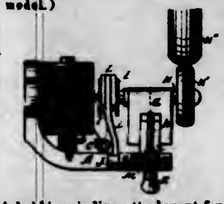
5. In a tubular car-lamp of the character herein specified, the combination, with tubes A', of smoke-bell G, springs *j*, holding shade J, and tubes A², terminating in ejecting devices I, substantially as shown and described.

257,843. RAILWAY-CAR. ISAAC BLUMENTHAL, Chicago, Ill. Filed Feb. 21, 1882. (No model.)



Claim.—In a passenger-car having end doors, as usual, inlets and outlets, and auxiliary side doors, the latch-hooks *a*, secured to said doors, latches *b*, pivotally connected to the wall of the car and having tail-projections *c*, by which the same are pivotally connected to and operated by a rod, *d*, and lever E, having handle *f*, substantially as and for the purpose set forth.

257,844. BOBBIN-WINDING ATTACHMENT FOR SEWING-MACHINES. GILBERT A. BRADY, Chicago, Ill. Filed Feb. 25, 1881. (No model.)



Claim.—A bobbin-winding attachment for sewing-machines, consisting of the combination of the base-piece or frame A, the vertically-movable bearing G, the shaft H, having therein the groove *f* and carrying the spring-catch N, arranged in the said groove, the attachment-driver H', the shaft or rocker J, having thereon the catch K, and the arm L, the spring M, and the bobbin I, having therein a socket to receive the stud *g*, substantially as and for the purposes specified.

257,845. ALARM-LOCK. ISAAC M. BUCK, Elgin, Ill. Filed Jan. 27, 1882. (Model.)

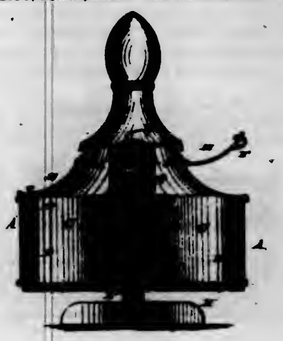


Claim.—1. The combination, substantially as hereinbefore described, of a bolt, a clock-work alarm, and a sliding block for controlling said alarm and adjustable with relation to the bolt and its actuating devices, whereby, when said bolt is retracted, the alarm will or will not be sounded, according to whether the block be movable or stationary as a result of the special adjustment of said block.

2. The combination, substantially as hereinbefore described, of a knob-latch bolt, a clock-work alarm, and a sliding block for controlling said alarm and adjustable with relation to the bolt, whereby, when the knob is rotated, the alarm will or will not be sounded, according to whether the block be movable or stationary as a result of the special adjustment of said block.

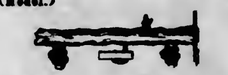
3. The combination of the bolt, the alarm, and the sliding block with the setting-cam, which prevents said block from sliding or permits it to slide, and is accessible from the exterior of the lock-case, substantially as described.

257,846. REVOLVING CADDY. JOHN H. BURDEN and JOHN R. BANCROFT, Vassar, Mich. Filed Mar. 31, 1882. (No model.)



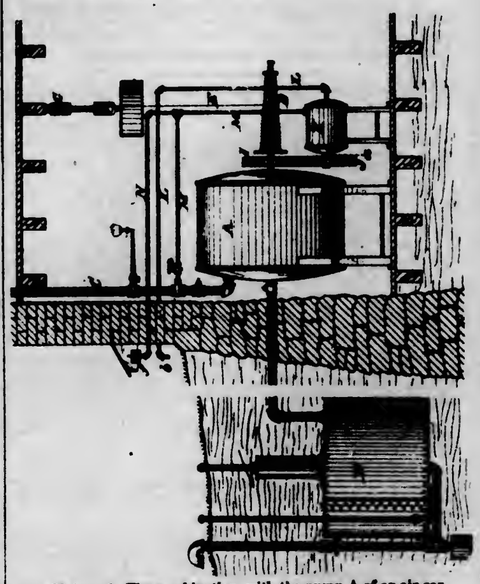
Claim.—The combination of the base H, having vertical shaft G, the caddy A, having central vertical tube, B, partitions C, forming compartments D, and doors E, the cap I and washer K, having grooves M, and the wires N, arranged, as described, to secure the said cap and washer in the tube B, as and for the purpose set forth.

257,847. BOARD AND WIRE FENCE. NATHAN CHENEY, Fairmount, Ill., and MOSES CHENEY, Coshocton, Ohio. Filed Nov. 25, 1881. (Model.)



Claim.—The combination, with fence wires or boards and posts consisting of growing timber, of spikes driven into said timber and having at their outer ends means for securing said wires or boards, the said means and boards or wires being located a sufficient distance from said timber to prevent the dislodgment of said spikes and boards by the force exerted by the timber in growing, substantially as described.

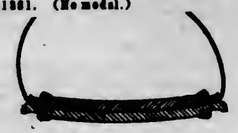
257,848. AIR-GAS MACHINE. JAMES P. CLIFFORD, Brooklyn, N. Y. Filed Dec. 23, 1881. (No model.)



Claim.—1. The combination, with the pump A of an air-carbureting or air-gas machine provided with the usual drum, D, of the supplemental air-pump K, connecting actuating mechanism, an air-inlet pipe, L, connecting with the said pump K, and an air-outlet pipe, M, extending from the supplemental pump K to the main or conducting pipe C, which forms the outlet of the pump of the machine, all substantially as and for the purpose herein set forth.

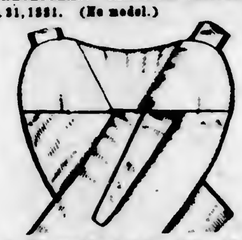
2. The combination of the branch pipe N, having a valve or seal at its outer end, with the pipes M and L, the pump A of the machine, the supplemental pump K, connecting actuating mechanism, and the main or conducting pipe C, the whole arranged for joint use and operation, substantially as and for the purpose herein set forth.

257,849. SHOE. WILLARD GOODY, Westborough, assignor to the Improved Sole Sewing Machine Company, Boston, Mass. Filed Aug. 17, 1881. (No model.)



Claim.—The improved sewed shoe above described, having both its inner and its outer soles channeled, and stitches extending through both the inner and outer soles and the upper, and covered on the inside of the sole by the lip of the channel of the inner sole and on the outside of the sole by the lip of the channel of the outer sole, as shown.

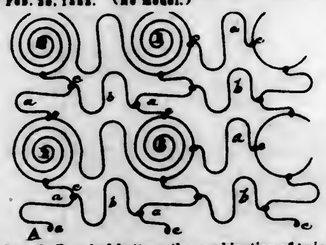
257,850. NECKSCARF. CHARLES H. CROSSETTE, Chicago, Ill. Filed Aug. 31, 1881. (No model.)



Claim.—1. The combination, in a flat scarf, of the stiffening-boards with the stiffening connecting-strip, substantially as described.

2. In a flat scarf, the combination, with the two aprons and with independent stiffening-boards attached to the upper ends of said aprons, of a metal strip connecting said boards, said scarf having a flexible center piece, substantially as described.

257,851. BED-SPRING. SAMUEL CROSSMAN, Middleville, Mich. Filed Feb. 25, 1882. (No model.)



Claim.—1. In a bed-bottom, the combination of twin springs having S-shaped connecting portions with a yielding connecting-link of substantially S shape, substantially as shown and described.

2. As an article of manufacture, the yielding connecting-link A, being substantially S shape, and adapted to be attached to the coils of a spring, substantially as shown and described.

3. In a bed-spring, the clamp B, consisting of the parts *d e f g*, formed integral with the spring, and having the end *g* abutting against the under surface of the final coil thereof, substantially as shown and described.

257,852. MECHANICAL MOVEMENT FOR ORE-CRUSHING MACHINES. JACOB DAVIS, Brooklyn, N. Y. Filed July 27, 1881. (No model.)

Claim.—1. In ore-crushing machines, a mechanical movement consisting of the movable support C, the toggle-levers Q E, the pitman D, provided with notches, the crank P, and shaft *c*, in combination with the mechanical movement consisting of the movable support B, the toggle-levers K L, the immovable support H, crank-levers M, and cranks O, for the purpose as shown and described.

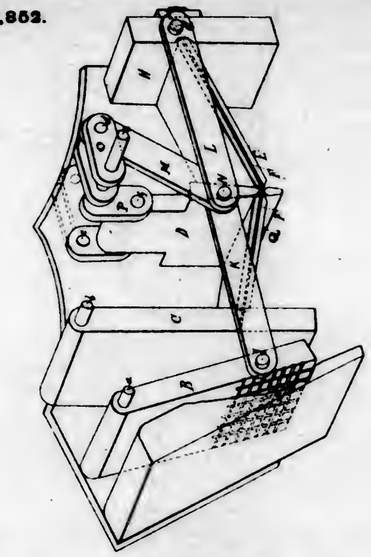
2. The toggle-levers Q E, the pitman D, crank P, jaw C, support H, and the toggle-levers K L, crank-levers M, cranks O, shaft *c*, and jaw B, whereby the movable jaws B C will approach to and recede from each other twice at each revolution of the shaft, as shown and described.

3. A mechanical movement for ore-crushing machines, consisting of the shaft *c*, cranks O O, crank-levers M M, toggle-levers K K and L L, one set of each on each side of the machine, a fixed support, and a movable support or crushing-jaw, B, for the purpose as shown and described.

4. The combination of the steel bars F F with toggle-levers having a longitudinal groove on each side, and the notched pitman D, as shown and described.

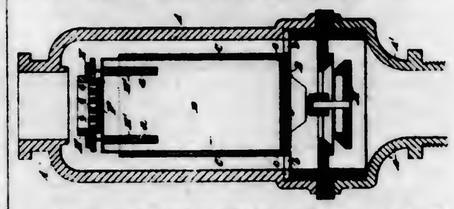
5. In ore-crushing machines, in combination with toggle-levers having a longitudinal groove or orifice and a pitman having a corresponding orifice, the steel springs or bars F F, an immovable support, and a movable object, for the purpose as shown and described.

257,852.



257,853. AIR-VALVE FOR WATER-PIPES. JOHN L. DIBBLE, Brooklyn, N. Y. Filed Jan. 25, 1882. (No model.)

Brief.—The device is to be attached to the top of a system of pipes, so that when filling the system for the first time from the bottom the air which is in the pipes may escape through E, while the water rising to that height will raise the float D and close the valve. Also, in case of the pipes draining very rapidly, the valve will fall and prevent a vacuum forming in the pipes.



Claim.—1. The casing A, inclosed float D, main valve E, and sub-valve F, and means for attachment to a pipe, arranged to serve as herein specified.

2. The valve or valves F, arranged to control the series of small apertures *c c*, and open one of the apertures at a time, in combination with the operating-float D and with a casing, A, with provisions for connecting with a water-pipe, as herein specified.

3. The hollow float D, open only at or near the bottom, in combination with the main valve E, sub-valve F, and casing A, as herein specified.

4. The shield-plate B and internal case or cup, C, having limited openings *c*, arranged to serve relatively to the float D, main valve E, and external casing, A, as herein specified.

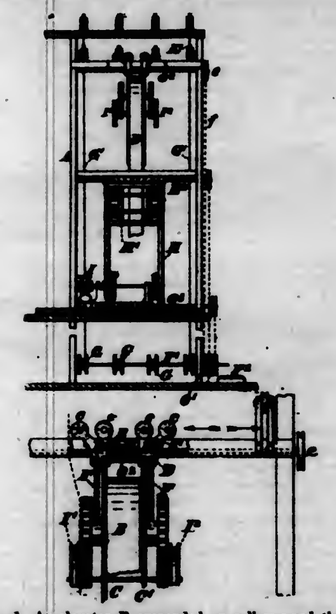
5. The combination, with the main valve E, float D, shield-plate B, and casing A, of the check-valve M, arranged to serve as herein specified.

257,854. NUT-LOCK. WILLIAM S. F. DILLON, Madeira, Ohio. Filed Apr. 13, 1881. (No model.)



Claim.—The combination, substantially as specified, of bolt A with the nut composed of two parts, B and C, secured by screw-thread connection, as shown, the screw connecting the two parts of the nut being of a different pitch from the screw upon the bolt.

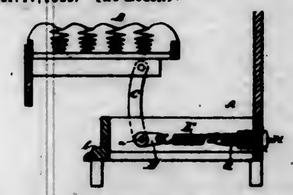
257,855. GRAIN-CONVEYER. ROBERT DUNBAR, Buffalo, N. Y. Filed Jan. 28, 1882. (No model.)



Claim.—1. An elevator, B, suspended on rollers *e* and their supporting and connecting mechanism C C' D' D² and beams E E', substantially as specified, in combination with a screw-shaft, *d*, provided with a pulley, *e*, for connecting by a suitable cable, *f*, with the engine-pulley *d'*, for the purpose of giving it a horizontal adjustment, substantially as described.

2. An elevator, B, provided with rollers *e* and their connecting and supporting mechanism C C' D' D² and beams E E', as specified, and having the driving-pulleys I' I², frames H H', and tightening-pulleys, and the engine I and its connecting-cables, in combination with the horizontally-adjustable screw-shafts, the winding-drums G and their connecting-cables and pulleys and a suitable engine, whereby either a horizontal or vertical adjustment may be given to the elevator.

257,856. BED-LOUNGE. FREDERICK FREDERICK, Chicago, Ill. Filed Mar. 17, 1882. (No model.)



Claim.—1. In bed-lounges of the class described, a single spring, E, coupled with an arm, D, on shaft *c*, and adjustably connected with the body A, substantially in the manner and for the purpose described.

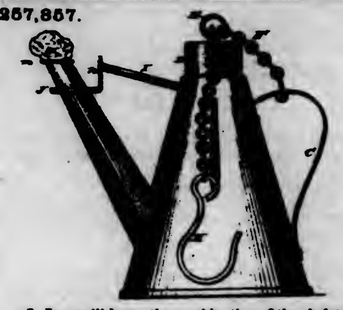
2. In bed-lounges of the class described, the combination of shaft *c*, arm D, spring E, hook G, and adjusting-screw H, all constructed and arranged substantially as and for the purpose set forth.

257,857. MILK-LAMP. JAMES L. FORSAITH and AARON S. KREITER, Sharpsburg, Pa.; said Kreiter assignor to said Forsaith. Filed Jan. 14, 1882. (No model.)

Claim.—1. In a milk-lamp, the combination of the tube I, vertical arm a, and dish J with the wick-tube B, having opening *c*, substantially as herein described, and for the purpose set forth.

2. In a milk-lamp, the combination, with the wick-tube B, the skeleton wick-tube K, having flange *m*, and the skeleton tube L, substantially as herein described, and for the purpose set forth.

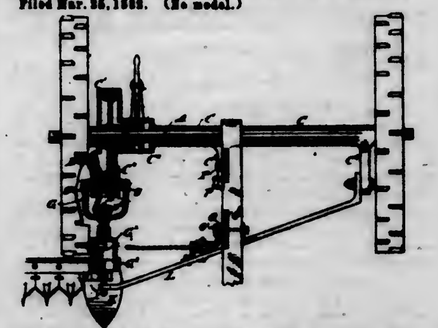
257,857.



3. In a milk-lamp, the combination of the skeleton wick-tube K, having a flange, *m*, with the wick-tube B, substantially as herein described, and for the purpose set forth.

4. In a milk-lamp, the chain F, having a hook, H, attached to the handle C, and passing through the swivel E, substantially as herein described, and for the purpose set forth.

257,858. MOWING-MACHINE. WILLIAM GAYER, Kokomo, Ind. Filed Mar. 26, 1882. (No model.)



Claim.—1. The tubular main frame inclosing and protecting the main driving-gear, in combination with the pivoted casing-sleeves and shoe-bases connecting the cutting apparatus with said frame, substantially as described.

2. The tubular main frame surrounding the axle and provided with the arms C' and C², in combination with the cutter-frame hinged thereto in line with the pinion-shaft, the lever-arm C³, the pivoted tongue, and the adjusting-lever arranged and operating substantially as described.

3. The casing-sleeve G', surrounding the crank-shaft and rigidly connected with the finger-bar, in combination with the internal gear for actuating the crank to which the sickle-bar is attached.

4. The crank-wrist actuating the sickle-bar, in combination with the pinion on the crank-shaft, and the internally-geared rim for actuating said crank-wrist, whereby the latter is adapted to move in right lines and to be connected directly to the reciprocating sickle-bar head, substantially as described.

5. The reciprocating sickle-bar, in combination with an actuating crank-wrist connected directly thereto, and mechanism by which said crank-wrist is reciprocated in right lines, substantially as and for the purpose set forth.

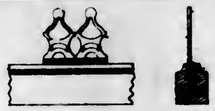
6. The crank-shaft above pivoted to and adjustable around the secondary shaft as a center, in combination with the sleeve to which the inner shoe is rigidly connected, pivoted and turning upon the crank-shaft sleeve, and the means for adjusting said sleeves, arranged and operating in connection with the hinged shoe-brace and the hinged pole or tongue frame, substantially as described.

7. The combination, with the main drive-wheel axle, of the tubular casing-frame C, provided with the arms C', C², and C³, the casing-sleeves G and G', the latter rigidly connected with the shoe, brace L, and lifting-levers C' and F, substantially as described.

257,859. GRAVE-GUARD. ALFRED GERT, Sherman, Tex. Filed Dec. 29, 1881. (No model.)

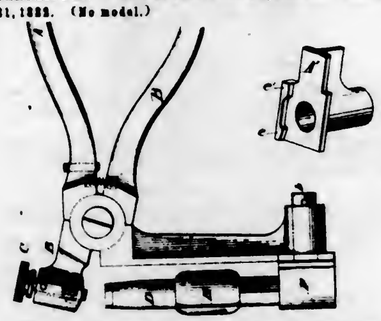
Claim.—A grave-guard consisting of panels having a flange upon their front and a wedge-shaped tongue projecting downwardly into a groove, and of a base having a groove of greater width than

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the tongue, which is held in said groove by cement inserted from the rear of the panel, all combined and arranged for the purpose set forth.

257,860. IMPLEMENT FOR CAPPING AND DECAPPING CARTRIDGES. JAMES H. GILL, Philadelphia, Pa. Filed Jan. 21, 1882. (No model.)



Claim.—1. The arm B, provided with the head I, having the recess *e* and adjustable punch C, in combination with the arm A, provided with the pendant A′, having the support or sleeve F journaled to its lower end, with the reversible or adjustable stud D, said parts being constructed and arranged to operate substantially as and for the purpose set forth.

2. In combination with the pivoted arms A B, the stud D, provided with the detachable spring-sleeve E, said stud D being journaled to the pendant A′ of the arm A, the construction and arrangement being substantially as shown and described.

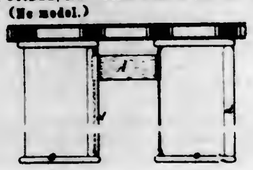
3. In combination with the arm B, provided with the head I and adjustable punch C, the arm A, having the holding socket or sleeve F journaled thereto, as shown, and the stud D, provided with the detachable sleeve E, all arranged for joint operation as set forth.

257,861. PLOW. THEODORE E. GOLDEN, Columbus, Ga. Filed Mar. 1, 1882. (No model.)



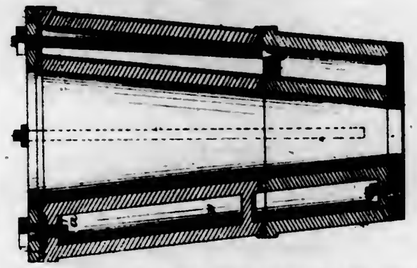
Claim.—The combination, with the beam A and standard C, provided with the upwardly and forwardly projecting side pieces, *g*, of the brace B, provided with perforations H, or their equivalent, arranged on an arc of a circle, the bolt D, extending through the upper ends of the side pieces, *g*, and the brace, and serving to clamp the standard in any desired adjustment, and bolt F, extending through the standard and through or beneath the beam, substantially as set forth.

257,862. LIMB-REST FOR RAILWAY TRAVELERS. FRANK H. GARDE, Ottawa, Ill. Filed June 30, 1881. Renewed Apr. 16, 1882. (No model.)



Claim.—As a new article of manufacture, the portable car-seat limb-rest, comprising the canvas portion A, adapted to fill the space between two car-seats, the cords B B, provided with hooks *b b*, and loosely confined by the side edges of the canvas, so that the canvas can be slid along upon the cords and compressed into a compact condition at one end of two adjoining seats when not in use or unoccupied, substantially as described.

257,863. TUYERE. ARCHIBALD D. GRIFFIN, Woodbury, Pa. Filed Jan. 17, 1882. (No model.)



Claim.—1. In a tuyere, the combination, with a body-section and a detachable nose-section, of bolts provided with hooks at their inner ends to engage bridges of the nose-section, and screw-threaded at their outer ends to receive nuts, substantially as set forth.

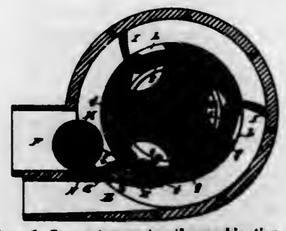
2. In a tuyere, the combination, with the tapering body-section, composed of two concentric shells separated by bridges, and the tapering detachable nose-piece, composed of two concentric shells separated by bridges, of hook-bolts adapted to engage the two sections in the manner described and bold them together.

3. In a tuyere, the combination, with the body-section composed of concentric shells separated by bridges and provided on opposite ends with the circular bridges or grooves, as described, and the removable end piece provided with grooves or ridges adapted to register with the ridges or grooves on the body, of the detachable nose-piece provided with the removable end and provided with ridges and grooves described, and means for securing the said nose to the body portion.

4. The combination, with the body of the tuyere provided with a removable end piece, the latter being provided with means for conveying water into and discharging from the water-space, and the detachable nose-piece, also provided with a removable end piece, of hook-bolts adapted to secure the said body and nose-piece together, substantially in the manner described.

5. The combination, with the body of the tuyere, constructed substantially as described, of the nose portion provided with a detachable end, the latter being provided with screws adapted to pass through bridges in the said nose portion and be secured therein by nuts and hook-bolts, adapted by engagement with the said body and nose portions to secure them together, substantially as set forth.

257,864. MOTOR. WILLIAM J. GUEST, Sarnia, Ontario, Canada. Filed Jan. 20, 1882. (No model.)



Claim.—1. In a rotary motor, the combination, with the pivoted wing-pistons, of the rubber-faced wheel M, as and for the purpose specified.

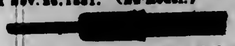
2. In a rotary motor, the combination, with the pivoted wing-pistons, of the rubber-faced wheel M and inclined planes or horns N, substantially as and for the purpose specified.

3. In a rotary motor, the combination, with a series of pivoted wing-pistons, of the circular guideway K, the rubber-faced wheel M, and the inclined planes or horns N, substantially as and for the purpose specified.

4. In a rotary water-motor, the pivoted wing-pistons I, in combination with the hub having recesses L, and with the water-exits *f* and *g*, as and for the purposes specified.

5. In combination with a rotary motor, the abutment G, provided with the leather flap *b* and spring-plate H, as and for the purpose described.

257,865. TIP FOR FLEXIBLE CORDS. JAMES H. HAMILTON, New York, N. Y., assignor to Eugene F. Phillips, Providence, R. I. Filed Nov. 26, 1881. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, of a flexible electric insulated conductor, an internally-threaded shell, and a stem or tip projecting through said shell, connected to the conductor, and compressed into close contact with the wire thereof by the screwing of the conductor into said shell, as set forth.

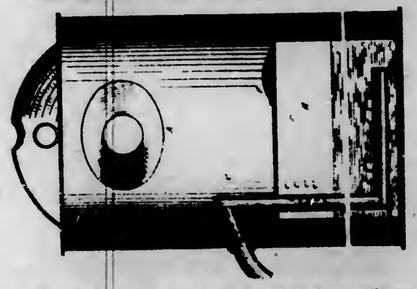
2. The combination of a flexible electric insulated conductor with an internally-threaded shell and a stem or tip provided with an enlarged stab at its inner end, which engages with the wire of the conductor and is compressed into close contact therewith by the screwing of the conductor into the shell, substantially as described.

3. The combination of an insulated spiral conducting-wire, an internally-threaded shell, and a stem or tip provided with a spiral stab for engaging internally with the wire between the convolutions thereof, substantially as described.

4. The stem or tip for flexible electric cords, provided with an enlarged flat spiraled stab at its inner end, substantially as described.

5. The cylindrical tip-shell internally threaded, open at its rear end and closed at its front end, with the exception of a central aperture for the reception of a tip or stem, substantially as described.

257,866. PROCESS OF AND APPARATUS FOR ADMINISTERING ANÆSTHETICS. SAMUEL J. HAYES, Pittsburg, Pa. Filed Mar. 17, 1881. (Model.)



Claim.—1. The process herein described of generating anæsthetic vapors and of aerating and applying the anæsthetic elements to the patient, which consists in charging the liquid into a suitable vessel or receiver and subjecting it to the action of a series of air-currents, and of surcharging the vapor arising therefrom with counter-currents of atmospheric air under pressure, whereby a light agreeable anæsthetic vapor having the necessary properties to support respiration and life is produced or developed and administered under pressure, substantially as herein described.

2. The vessel A, containing the chamber B, and having the perforated air-induction pipe C, substantially as set forth.

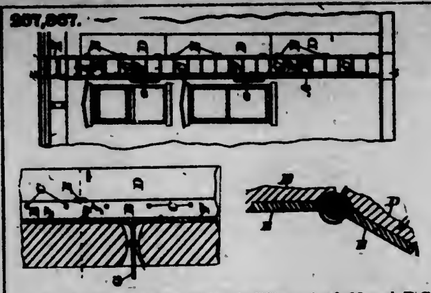
3. The combination of the vessel A with an interior generating-chamber, B, and an air-induction pipe, C, with an elastic tube, D, and an air-forcing device, constructed and arranged substantially as herein set forth.

257,867. FIRE-ESCAPE. JAMES C. HENDRICKS, Indianapolis, Ind. Filed Mar. 21, 1882. (No model.)

Brief.—A ladder fastened to the building is inclosed by a door having spring-hinges. The door is opened by a releasing-bar, to which the catch is secured, and operated by levers extending into the inside of the building. A hinged supplemental ladder leads to the roof.

Claim.—1. A fire-escape for buildings, consisting of a common ladder attached permanently to the wall, a door for inclosing the same, and means, substantially as described, for operating said door, whereby said operation can be effected from the inside of the building, substantially as set forth.

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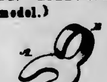


2. The combination, with a building, of a ladder, A B C, a door, D, therefor, a catch thereon, and a rod, F, provided with handles or levers extending to the inside of the building, whereby said catch mechanism can be operated from any one of several floors to release said door, substantially as set forth.

3. The combination, with a building, of a fire-escape consisting of a ladder, a door or doors therefor, mounted on spring-hinges, and mechanism, substantially as described, for fastening and releasing said door or doors, all substantially as set forth.

4. The combination, with an inclosed fire-escape ladder, as specified, of a supplemental roof-ladder, H, which is adapted to be thrown back or let down, substantially as described, and for the purposes specified.

257,868. HOG-RING. HENRY C. HILL, Clinton, Ill. Filed Mar. 11, 1882. (No model.)



Claim.—The nose ring or jewel for swine, consisting of the plate A, of horseshoe form, having prong or prongs B, extending endwise therefrom, and the indentation *a* in its front part, as shown and described.

257,869. GRINDING-SURFACE OF ORE AND OTHER PULVERIZERS. FREDERICK J. HOYT and WILLIAM H. HOYT, New York, N. Y. Filed Sept. 24, 1881. (No model.)



Claim.—1. The revolving heads (one or more) having their grinding-surfaces composed of soft metal of the character specified, in combination with a shell adapted to such heads, for the purpose set forth.

2. The shell having its grinding surface or surfaces composed of soft metal of the character specified, in combination with revolving heads (one or more) co-operating with such shell, for the purpose set forth.

3. The combination of the revolving heads (one or more) and the shell or concave, both having soft-metal grinding-surfaces of the character specified, for the purpose set forth.

257,870. CAVITY-PLANE. FRANK A. HUMPHREY, Worcester, Mass. Filed Nov. 28, 1881. (No model.)

Brief.—A plane adapted to smooth the inner surfaces of cylindrical or curved holes or recesses.



Claim.—1. The body or frame formed with cylindrical ends or neck-bosses, constructed by the externally-rounded back bar and inwardly-inclined guard-flange, and the straight cutter-blade seated

on said back bar, with its sharpened edge protruding through the throat-opening at the rear of said guard-flange, the parts being combined and located in relation to each other and the exterior curvature substantially as shown and described.

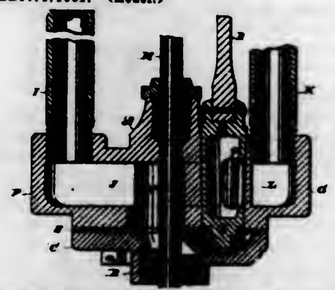
2. The combination of the body or frame having the back bar and front guard, the straight blade supported on said back bar, and the cheek-pieces fitted into said frame and pressed against the ends of said blade in direction of its length by a screw or clamping device axially arranged within the ends of the frame for retaining it in position, substantially as set forth.

3. The combination, substantially as hereinbefore described, of the frame having hollow screw-threaded ends A^5, connected to each other by the back bar, *a*, and guard-flange *a'*, as shown, the straight cutting-blade B, rested on said back bar, the cheek-pieces C, fitted in recesses of the frame ends and resting with a beveled surface against the ends of said blade, and the detachable handles D, having studs or threaded ends for screwing into said frame ends and against said cheek-pieces, for the purposes set forth.

4. The combination, with the detachable handles D and blade supporting frame A, of the convertible tip-pieces E, adapted for use as set-screws for the cheek-pieces when the handles are detached or as end nuts on said handles, substantially as hereinbefore described.

5. The combination, with the body or frame A, of the handles D, having the screw-threaded end studs, D', with projection *f*, ferrule D^2, and tang D^3, screw-threaded at its outer end, *d*, and the convertible tip-pieces E, with sinks *e*, as shown and described.

257,871. PUMP. JOHN HUMPHREYS, Jr., Salem, Ohio, assignor to the Silver and Deming Manufacturing Company, same place. Filed Nov. 1, 1881. (Model.)



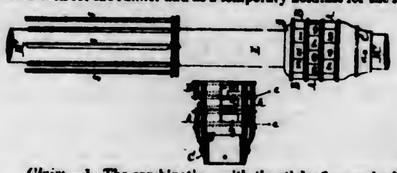
Claim.—1. In a pump for windmills, a valve-seat provided with channels *c*, *d*, and *f*, chamber P, and a plug, Q, all arranged for communication with the pump-cylinder, air-chamber, discharge-pipe, and escape-pipe, substantially as set forth.

2. The combination of the seat A, provided with chambers N, J, L, and P, with the pipes I and K and plug Q, substantially as shown and described.

3. In a pump for windmills, the combination of an air-chamber with a valve-seat provided with a three-way cock, with which the air-chamber is in direct communication, an inlet-opening, an escape-pipe, and a discharge-pipe, substantially as shown and described.

257,872. UMBRELLA OR PARASOL. ALPHONSE ISEL, Hasnamet, France. Filed Mar. 2, 1882. (No model.) Patented in France Aug. 30, 1881, in England Dec. 6, 1881, in Belgium Dec. 23, 1881, and in Austria Dec. 27, 1881.

Brief.—The lock is fixed to the stick and serves as a permutative lock for the runner and as a temporary holdfast for the same.

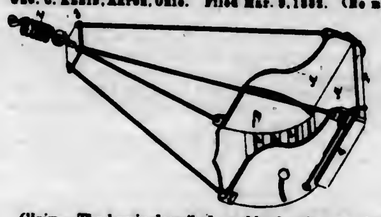


Claim.—1. The combination, with the stick of an umbrella or parasol, of a runner provided with a catch, *g*, a tube, D, mounted on and fixed to the stick and provided with a fixed ring, B, a vertical slot, *c*, and a lateral slot, *b*, and a loose ring, A, mounted to turn on the tube D, and provided with recessed flanges *a c*, and with characters on its outer periphery arranged to be brought into coincidence with similar characters on the fixed ring B, all arranged substantially as set forth.

2. The combination, with the stick of an umbrella or parasol, of a runner provided with a catch, *g*, a tube, D, provided with a vertical slot, *c*, and lateral slot *b*, and a fixed ring, B, and a loose ring, A, mounted to turn on the tube D, and provided with characters on its outer periphery adapted to be brought into coincidence with similar characters on the ring B, the tube D being fixed on the stick with the entrance of the slot *c* a little to one side of the path of the catch on the runner, whereby it is necessary to twist the runner on the stick in order to cause the catch to enter the slot, substantially as and for the purposes set forth.

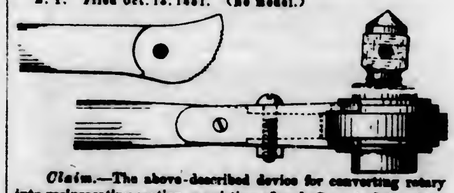
3. The combination, with the stick of an umbrella or parasol, of the slotted tube D, provided with the fixed ring B, of the loose ring A and the screw-collar F, all constructed and arranged to operate substantially as set forth.

257,873. COMBINED BABY-JUMPER, SWING, AND BED. GEO. C. KLEIN, Akron, Ohio. Filed Mar. 9, 1882. (No model.)



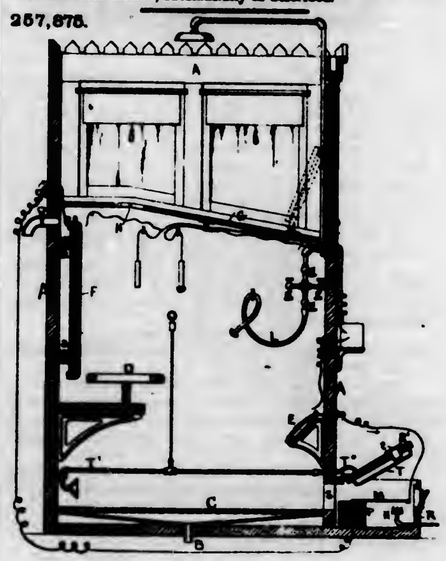
Claim.—The herein-described combined swing, consisting of the seat A, swinging back B, sliding board F, supporting-cords and revolving plate J, and spring L, all constructed and arranged substantially as shown, and for the purpose specified.

257,874. DEVICE FOR CONVERTING RECIPROCATING INTO ROTARY MOTION. WLADYSLAW T. KOSINSKI, Brooklyn, N. Y. Filed Oct. 13, 1881. (No model.)



Claim.—The above-described device for converting rotary into reciprocating motion, consisting of a shaft or stock to which rotary motion is applied by means of a serrated lever, pinochets rotating or having free motion around the shaft or stock, which are connected with the lever, and a spring for assisting in the production of said motion, substantially as described.

257,875.

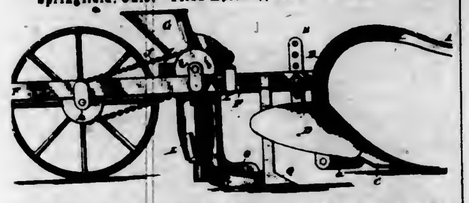


257,875. ELECTRIC BATH. GEORGE W. LAWSON, Brooklyn, N. Y. Filed Jan. 24, 1882. (No model.)

Claim.—1. The combination of a bath-chamber, A, a separate communicating chamber, B, burners M, placed therein, adapted to heat said chambers, an electro-thermal pile or battery, M M', adapted to be heated continuously on one side by said burners, and to be cooled on the other by a continuous current of water, and a back plate, F, and foot-rest E, constituting the electrodes of said battery, all substantially as and for the purpose herein set forth.

2. The combination, with an electro-thermal pile or battery, M M', a back plate, F, and foot-rest E, constituting its electrodes, and a bath-chamber, A, inclosing said electrodes, of a hot-water and vapor-generating tank, T, adapted to be heated by the calorific device of the battery, and communicating with the bath-chamber by a connecting-pipe, T, substantially as and for the purpose herein set forth.

257,876. CORN-PLANTER. JOHN LOGAN, Delphos, Kans., assignor, by mesne assignments, of one-half to E. S. Evans, Springfield, Ohio. Filed Apr. 26, 1881. (No model.)



Claim.—1. In a combined listing-plow and corn-planter, the combination of the triangular double-edged share having a flat front portion, the long and narrow mold-boards D, the subsoil-plows Q, arranged at the rear of said mold-boards and having inwardly-projecting wings R, the fixed seed-spout L, and vertically-adjustable furrow-opener O I', with the beam A, pivoted frame F, and seed-distributing mechanism, as and for the purpose herein set forth.

2. The plows Q, arranged on each side of frame F, and formed with the wing-shares R, and the vertically-adjustable furrow-opener O, having leg P, formed with ears *p*, in combination with the flanged seed-spout L, wheel K, chain J, the seed-dropping devices, frame F, and plow C D, substantially as shown and described.

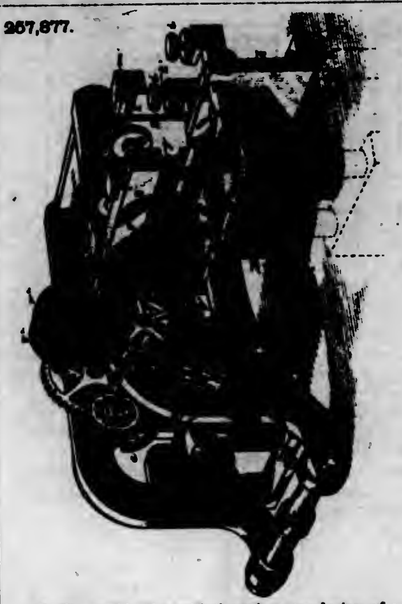
257,877. PRINTING-TELEGRAPH. J. HOLMES LONGSTREET, Hoboken, N. J., and JOHN E. WRIGHT, New York, N. Y., assignors of one-half to John O. Moore, New York, N. Y. Filed Feb. 6, 1882. (No model.)

Brief.—A double-line printer with the type-wheel-rotating magnet in one line and the printing-magnets for the double type-wheel in the other line. The transmitter sends intensity-currents to line No. 1, which operates the step-by-step mechanism and rotates the type-wheels. When the desired letter or number is reached a key is pushed down, which stops the transmitter. One of two keys in the printing line or circuit No. 2 is closed and a plus or a minus current sent through the printing-magnet, dependent upon whether it is desired to print a number or a letter. A peculiar double-tongued electro-magnet whose armatures are released or retained by currents of opposite polarities.

Claim.—1. In a telegraphic printing-instrument, the combination, with two type-wheels and devices for rotating the same to and stopping them in desired positions, of a printing-pad for each type-wheel, separate armatures arranged to operate said pads, and two connected helices having permanently magnetic cores arranged to control said armatures, respectively, the arrangement of said helices being such that an electric current therethrough in one direction will neutralize, or partly neutralize, the core of one, while a current in the opposite direction will have a similar effect upon the other, substantially as described.

2. In a telegraphic printing-instrument, the combination, with two type-wheels fixed upon the same shaft and devices for rotating the said shaft to and stopping it in desired positions, of two printing-pads, one for each type-wheel, separate armatures for operating said pads, and controlled by the cores of separate helices, said cores being connected to one pole of a permanent magnet and the armatures pivoted to the other pole of said magnet, the arrangement of the said helices being such that an electric current in one direction will neutralize, or partly neutralize, the core of one, while the current in the opposite direction will have a similar effect upon the core of the other, substantially as described.

257,877.



3. The combination, with the unison-stop devices of a printing-telegraph provided with two type-wheels fixed upon the same shaft, of two armatures arranged to operate separate printing-pads for said wheels, respectively, and intermediate devices by which both of said armatures control said unison-stop devices independently of each other, substantially as described.

4. The combination, with the two type-wheels fixed upon the same shaft and suitable escapement devices, of the helices D D', surrounding cores forming extensions of one pole of the permanent magnet H, the armatures E and E', pivoted to the other pole of said permanent magnet, and provided with the arms *f* and *f'*, having the attached printing-pads, and the springs *g* and *g'*, substantially as described.

5. The combination, with the unison-stop devices, substantially as described, and the shaft *l*, carrying the tripping-arm M and provided with the pins *m* and *m'*, of the armatures E and E', controlled by separate electro-magnet cores, and the hooked arms *k* and *k'*, having their hooks arranged to strike said pins, substantially as described, and for the purpose set forth.

6. The combination, with a printing telegraph-instrument provided with two type-wheels fixed upon the same shaft, the escapement, and duplex printing devices, substantially as described, of a transmitting apparatus provided with means for sending reversed currents over one wire for operating said escapement devices, and means for sending reversed currents over a separate wire for operating independently of each other the two portions of said printing devices, substantially as described.

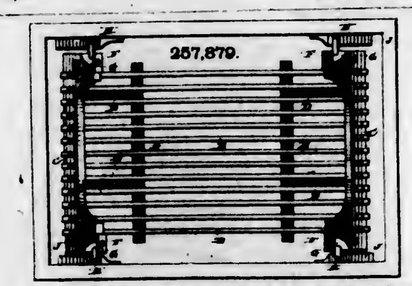
257,878. CAR-COUPLING. HENRY HARCHERTER, Wallaceburg, Ontario, Canada. Filed Feb. 20, 1882. (No model.)



Claim.—In a car-coupler, the combination of the chambers B, C, D, and E with the shuttles G and J, and their relation to each other, as herein shown and described.

257,879. BED-SPRING. JOSIAH B. HARTERS, Johnsonville, N. Y. Filed Apr. 13, 1882. (No model.)

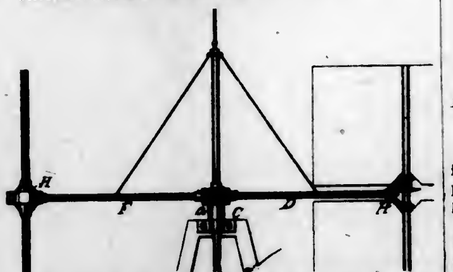
Claim.—1. The herein-described improved bed-bottom, consisting of the end frames, C D E, having sockets F, provided with diagonal arms G, having laterally-projecting lugs H, and the longitudinal slats B, connecting said end frames, as herein described.



2. In a bed-bottom constructed as herein described, the sockets F, having diagonal arms G, provided with outward-projecting triangular lugs H, as and for the purpose shown and specified.

3. The combination, with the bed-frame having the inclined ratchet-bars J secured to its sides, near the ends, of the bed-bottom consisting of the end frames, C D E, capable of being adjustably pivoted between the said ratchet-bars by lugs H, projecting outward from the diagonal arms G of sockets F upon the end bars of said end frames, said end frames being connected by the longitudinal elastic slats B, as herein described.

257,880. WIND-ENGINE. FRANK MCCLINTOCK, West Union, Iowa, assignor of one-half to Wm. McClintock, same place. Filed Mar. 20, 1882. (No model.)



Claim.—1. In a horizontal wind-engine, the combination, with a vertical vane-shaft and vertical revolving mill-shafts, of bevel-gearing arranged and operating substantially as and for the purpose specified.

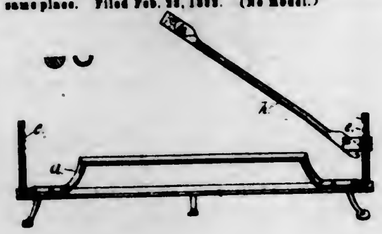
2. In a horizontal wind-engine, the combination, with a vertical vane-shaft and vertical mill-shafts connected by bevel-gearing, so that two revolutions of the engine cause the mill-shafts to make one revolution in the same direction, of covered beam C and H, and hollow arms D, E, F, and G, for covering and protecting the gearing, substantially as specified.

257,881. ROOFING-PAINT. ALLEN MCDERMELL, Rule, Nebr. Filed Oct. 14, 1881. (No specimens.)

Claim.—1. The herein-described paint for roofs, consisting of a mixture of coal-tar, turpentine, sulphuric acid, and a suitable pigment material, substantially as herein described.

2. A composition for painting roofs, consisting of a mixture of coal-tar, turpentine, sulphuric acid, and asphaltum, when mixed in the proportions and by the process substantially as herein described.

257,882. ROSE-LOCK FOR VEHICLES. HENRY C. MCFARLAND, Indianapolis, Ind., assignor to Martha A. McFarland, same place. Filed Feb. 28, 1882. (No model.)

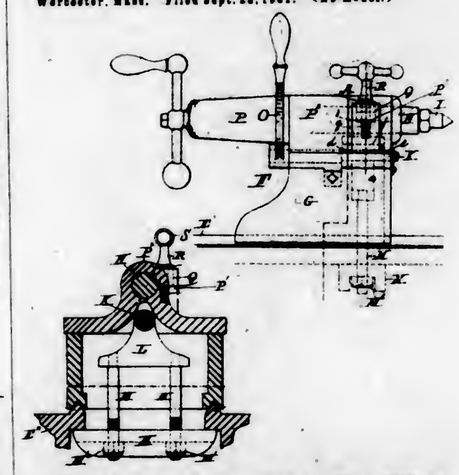


Claim.—1. The combination, with frame *a*, of bar *b*, adjustably secured to uprights *c* and *c'*, substantially in the manner described, for the purpose set forth.

2. A robe-locking device consisting of the holding-frame *a* and locking clamping-bar A, substantially as described.

3. The above-described robe holding and locking device, combined with a foot-rest and a carriage-body, substantially in the manner described.

257,883. TAIL-STOCK FOR LATHES. MICHAEL F. MCMAHON, Worcester, Mass. Filed Sept. 28, 1881. (No model.)

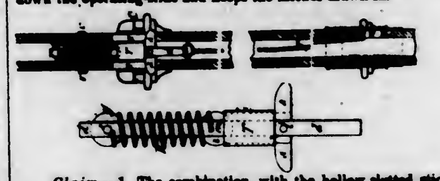


Claim.—1. The combination, with the part P' of spindle-casing P' and spindle H, of friction-block Q and its holding and compressing bolt R, substantially as shown and described, for the purpose stated.

2. The combination of a horizontal longitudinal cam-spindle, K, provided with a turning-handle, O, and so formed as to raise and lower a hanger, L, when said spindle K is turned, tie-rods M M, and binding-shoe N, substantially as shown and described, for the purpose stated.

257,884. UMBRELLA. JULES WIENER, Paris, France. Filed Apr. 6, 1882. (Model.) Patented in France Feb. 27, 1882.

Brief.—When the umbrella is raised the runner rests on the projecting ends of the latches. When closed the runner presses down the operating-slide and keeps the latches drawn in.



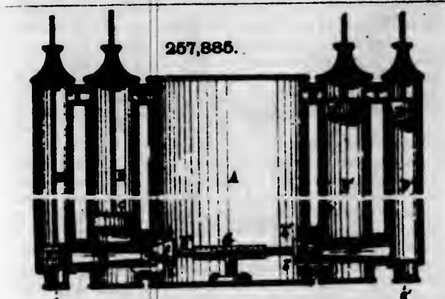
Claim.—1. The combination, with the hollow slotted stick and the draw-rod, of the spring-rod, the latches pivoted in the spring-rod and arranged to project through slots in the stick, the spring arranged to press upon the latches, and an intermediate piece between the latches and the spring, all arranged to operate substantially as set forth.

2. The combination, to form a device for holding and releasing the runner of an umbrella, of the spring-rod *d*, the roller *g*, the latches *a a*, the intermediate piece, *p*, and the spiral spring R, all arranged to operate substantially as set forth.

3. The combination, to form a device for holding and releasing the runner of an umbrella, of the spring-rod, the roller *g*, the latches, the tubular piece *p*, the disk *r*, and the spring R, all arranged to operate substantially as set forth.

257,885. AIR-COMPRESSOR. CHARLES HOUSON, New Haven Conn. Filed Mar. 20, 1881. (Model.)

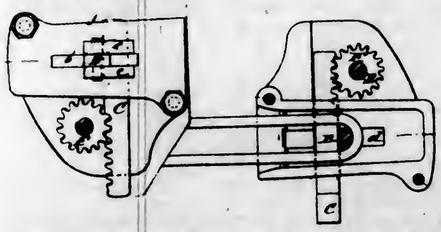
Claim.—1. The cylinder B, discharging compressed air through its port *b* into the air-chamber A by means of the piston C, in combination with the cylinder D, discharging natural air through its port *d* into the air-chamber A by means of its piston E, said pistons descending simultaneously within their respective cylinders for the purpose of injecting a current of natural air into a current of compressed air while both currents are moving in the same direction, substantially as specified.



2. The combination of the air-chamber A, the cylinders B D, the pistons C E, the ports *a b c d*, and valve *e*, to facilitate the descent of the piston E in its cylinder D by the pressure of the compressed air upon its upper surface, substantially as described.

3. The improved air-compressor herein described, consisting of the chamber A, cylinders B E' D D', pistons C C' E E', ports *a a' b b' c c' d d'*, valves *e e'* F, and standard G, all operating substantially as shown, and for the purpose specified.

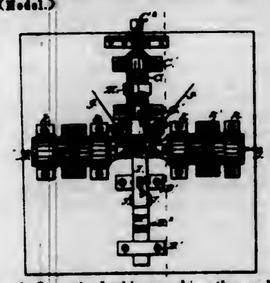
257,886. CAR-COUPLING. ADONS MORRISON, Boston, Mass., assignor to William J. Bride, same place. Filed Mar. 23, 1881. (No model.)



Claim.—1. In a car-coupling, the pivoted coupling-pin B, in combination with the sliding bar C, substantially as and for the purposes set forth.

2. In a draw-head of a car-coupler, the combination of the pivoted pin B, adapted to swing vertically in the passage *j* and recess *d* on a horizontal pivot, and the abutment or bar C, adapted to be moved across the recess *d*, to form a stop against which the end of the pin shall contact, and to be withdrawn from said recess to release the pin in the act of uncoupling, all substantially as described, and for the purposes set forth.

257,887. MACHINE FOR MAKING WIRE-BARB FENCES. ANDREW H. HUNTER and BENDIX HUNTER, Lee, Ill. Filed Jan. 16, 1882. (Model.)



Claim.—1. In a wire-barbing machine, the combination, with mechanism for cutting the barbs and mechanism for twisting them around the main wire, of a movable die, *b*, and a die, *c*, for forming a bend or offset, *d*, on the main wire D prior to cutting and twisting the barbs around the main wire, substantially in the manner herein shown and described.

2. In a wire-barbing machine, the combination of the steel dies S S, having grooves or guides *f'*, arranged on different horizontal planes for the reception of the wires *g g*, and the rocking or vibrating shaft provided with the knives E E, arranged relatively to each other, substantially in the manner as and for the purpose specified.

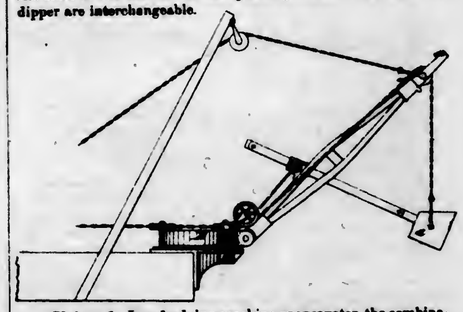
3. In a wire-barbing machine, the combination of the tubes K K, adapted to be revolved in opposite directions, and each provided with the projecting portions L L, provided with plates *l l*, having beveled lugs *l' l'*, provided with slots *l' l'*, substantially as and for the purpose specified.

4. In a wire-barbing machine, the combination, with the steel dies S S, of the longitudinally-adjustable and transversely rocking or vibrating shaft C, provided with the knives E E, substantially in the manner as and for the purpose herein shown and described.

5. In a wire-barbing machine, the combination, with the die *c*, of a movable die, *b*, having a central depression, *b'*, and two of its corners diagonally opposite each other, provided with tapering or pointed projections *b' b'*, substantially as and for the purpose specified.

257,888. DREDGER AND EXCAVATOR. RALPH E. OSBORN, Troy, N.Y. Filed May 27, 1880. (No model.)

Brief.—The pole-guides are pivoted on the same boom or crane, with a pivoted guide for the dipper-handle, and on opposite sides of the sheaves for the operating-chains. The scoop and dipper are interchangeable.



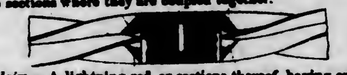
Claim.—1. In a dredging-machine or excavator, the combination, with the swinging boom or crane, carrying the shovel-handle guide, of the pole-guides for the clam-shell-dipper poles mounted upon said boom or crane, and adapted to operate substantially in the manner and for the purposes set forth.

2. In combination with the swinging boom or crane, the guide for the dipper-handle axled upon said boom, and the pole-guides also axled thereon on opposite sides thereof and on opposite sides of the sheaves for the operating-chains, substantially as shown and described.

3. The herein-described convertible excavator, the same being composed essentially of the boom or crane carrying the movable dipper-handle guide and fittings, and the clam-shell-pole guides mounted upon said boom or crane, the whole being adapted for use substantially in the manner and for the purposes set forth.

257,889. LIGHTNING-ROD COUPLING. THEODORUS H. PAYNE, Greencastle, Ind. Filed Oct. 18, 1881. (No model.)

Brief.—An enlarged portion is wrought upon or near the ends of the sections where they are coupled together.



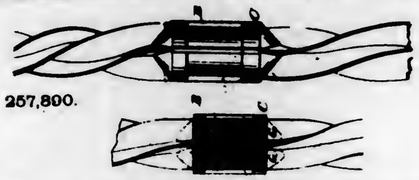
Claim.—A lightning-rod or sections thereof having enlargements wrought upon them at or near their ends, which form a part of the material of which the sections are made, whereby said sections are strengthened at and near the points where they are joined together and the conducting capacity of the rod is increased, all substantially as set forth.

257,890. LIGHTNING-ROD COUPLING. THEODORUS H. PAYNE, Greencastle, Ind. Filed Mar. 3, 1881. (No model.)

Brief.—The screw-threaded ends of the spirally-flanged rod-sections are screwed into the couplings, the pointed projections of the couplings fitting between the flanges of the rod. The couplings are then screwed together.

Claim.—A coupling for uniting the sections of a lightning-rod, consisting of two parts, B and C, the former being provided upon one of its ends with pointed projections and with an inter-

257,890.



nally screw-threaded cavity for the reception of an externally screw-threaded tenon or projection formed on the end of a section of the spirally-flanged portion of the rod and at its opposite end with a female screw-thread for the reception of a male screw formed on the part C, which part is provided with a cavity for the screw-threaded tenon or projection on the spiral portion or section, and with pointed projections, all substantially as and for the purposes set forth.

257,891. LIGHTNING-ROD COUPLING. THEODORUS H. PATER, Greencastle, Ind. Filed Nov. 1, 1881. (No model.)

Brief.—The sheet-metal portions, which are secured to the rod-sections, are swaged into depressions on the cast or wrought plugs, which are screw-threaded to form a coupling.

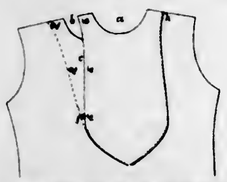


Claim.—1. In a coupling-section for lightning-rods, the sheet-metal portions B and F, their outer ends being formed with projections and depressions, whereby they are made to fit the spiral or intermediate sections of the rod, substantially as shown and described.

2. The combination, in a coupling-section for lightning-rods, of the sheet-metal part B and cast or wrought portion C, substantially as and for the purpose set forth.

3. The parts B, C, E', and F, in combination with the spiral or equivalently formed sections A A' of a lightning-rod, substantially as set forth.

257,892. SHIRT. ALBERT R. PERKINS, Newton, assignor to Simons, Hatch & Whitten, Boston, Mass. Filed Feb. 27, 1882. (No model.)



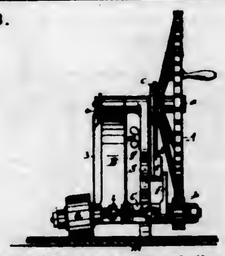
Claim.—The shirt-front having in its upper part the neck-notch *a*, and one or two supplementary notches, *b*, and a slit, *c*, extending down from each of said supplementary notches, all being substantially and for the purpose as set forth, the said shirt-front being provided with buttons and button-holes or other suitable separable fastenings, arranged substantially as represented.

257,893. MACHINE FOR GRINDING MOWER AND HARVESTER KNIVES. KING H. C. PRESTON, Manlius, N. Y. Filed Oct. 18, 1881. (No model.)

Claim.—1. A machine for grinding mower and harvester knives, consisting of a driving-wheel journaled at a fixed point on a stationary standard, a grinding-wheel hung in a vibratory frame, a suitable gear connected to the shaft of the grinding-wheel and actuated directly by the driving-wheel, an eccentric connected to the driving-wheel, and an oscillating lever having an adjustable fulcrum on the standard and actuated by the aforesaid eccentric, and engaging with its free end the frame which carries the grinding-wheel, all as described and shown.

2. In combination with the standard S, the arbor *a*, having

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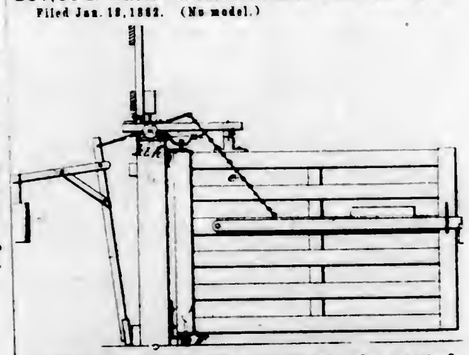


connected to it the driving-wheel A and vibratory arm B, said arm having at its free end the horizontal extension C, and supporting thereby the grinding-wheel G and the shaft thereof, the pinion *b* on said shaft, the eccentric *e*, fixed to the driving-wheel, and the eccentric rod or lever *d*, fulcrumed on the standard S, and having at its free end the elongated bearings *e e*, engaging the lug *f* on the arm-extension C, substantially as described and shown.

3. In combination with the vibratory arm B, supporting at its free end the grinding-wheel and its axle, and the driving-wheel A, provided with the eccentric *e*, the eccentric-rod *d*, engaging with its free end the support of the grinding-wheel, and provided with the slot *r*, the standard S, provided with the slot *s*, and the fulcrum *g*, having a screw-threaded shank passing through the slot of the standard, and provided with the clamping-nut *r*, substantially in the manner set forth and shown.

4. The combination, with the grinding-wheel G, journaled on a frame which is connected with the vibratory arm B by a swivel or universal joint, of the shaft *k*, made flexible, or with universal joints *l l*, substantially as and for the purpose shown and set forth.

257,894. GATE. ADDISON F. PURNELL, Wake Forest, N. C. Filed Jan. 18, 1882. (No model.)



Claim.—1. The combination, with the gate and gate-post, of the lever pivoted to said post and provided with a slot, a pin on the gate working in said slot, devices for operating the lever to open and close the gate, and an auxiliary latch-releasing device connected with aforesaid devices and adapted to release the latch before motion is imparted to said lever, substantially as described.

2. The combination, with the latch, of the rock-shaft, its arms, and connections between the said arms and the latch for releasing the said latch, substantially as described.

3. The combination of the gate, gate-post, latch, horizontal lever for moving the gate, rock-shaft or other latch-releasing device carried by said lever, and operating devices connected with said lever and rock-shaft or latch-releasing device, so that in opening the gate the latch is first released independently of the said lever, and motion is then communicated to the latter to move the gate, substantially as described.

4. The combination, with the gate and gate-post, of the upright lever pivoted at the base of the post, and a horizontal lever pivoted to the said post at the top, and connected with the gates by means of a slot-and-pin connection, and adapted to be operated to move the gate by said upright lever, substantially as described.

5. The combination, with a gate, gate-post, and mechanism for moving the gate, of an upright lever having its pivot or fulcrum at the base of the post and connected with said mechanism, and one or more arms attached to and projecting from said upright lever to operate the same, substantially as described.

6. The combination of the upright lever, its operating-arms,

horizontal lever, rock-shaft, and connections for unlatching and for opening and closing a gate, substantially as described.

7. The combination, with mechanism for opening and closing a gate, of devices carried by the gate-post and operating independently of the weight of the gate, for holding the gate when opened in that position, while permitting it to be closed through said mechanism, substantially as described.

8. The combination, with a gate and mechanism for opening and closing the same, of mechanism operating independently of the weight of the gate and comprising a weight, a notched device, and one or more rollers, pins, or other projections for engaging the notch or notches of said device, as and for the purpose set forth.

9. The combination, with a moving lever capable of a slight vertical movement or movement lengthwise of its pivot, of rollers or projections on said lever and a notched disk or device, substantially as described.

10. The combination, with a hinged gate and its gate-post, of one or more counterpoises supported at the base of the post and connected with the pivot of the upper hinge, as set forth.

11. The hinge comprising, in combination with a pivot-pin, a plate pierced with a hole for the passage of the pivot-pin, and bent upon itself to form bearing for the end of the said pin, substantially as described.

12. An automatic gate comprising, in combination with the gate, gate-post, and latch, the following elements: upright lever with operating-arms, horizontal lever connected with gate, rock-shaft, or other latch-releasing device, such as indicated, carried by the horizontal lever, and connected with said upright lever and with the latch, and means, as explained, for holding the gate open by the engagement of rollers or projections in notches, substantially as described.

257,895. ALCOHOL-VESSEL FOR WATCH-MAKERS' USE. OSCAR P. ERRO, Melrose, Mass. Filed Jan. 25, 1882. (No model.)



Claim.—In an alcohol-vessel for watch-makers' use, a larger compartment, in combination with a smaller communicating compartment and a cover common to both, said cover being arranged to uncover the smaller compartment without uncovering the other, substantially as set forth.

257,896. CORE BREAKER AND LIFTER. H. C. ERICHARDT, Pottsville, Pa. Filed Feb. 19, 1883. (No model.)

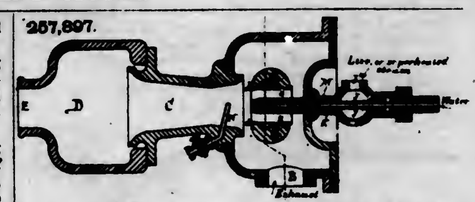


Claim.—1. In a core breaker and lifter for diamond-drills, the cylinder D, having an unobstructed internal surface for the passage of cores, and having the springs 1 1 1 attached thereto, each spring carrying a toothed wheel, 2, for the purpose of engaging the core and breaking or lifting it, in combination with the shell A, having the chambered recess B, with inclined surface roughened or grooved, with which the wheels 2 2 2 engage, and are forced downward and outward against the core, as shown and set forth.

2. The herein-described core breaker and lifter, consisting of the shell A, the cylinder D, the springs 1 1 1, the toothed wheels 2 2 2, in combination with the inner core-barrel, X, having slots X' X' X', as shown and set forth.

257,897. INJECTOR. DAVID RENSHAW, Cohasset, and SHARON B. H. TOWNE, Boston; said Towne assignor to said Renshaw; said Renshaw assignor of one-half to Harvey T. Litchfield, Hull, Mass. Filed Jan. 14, 1880.

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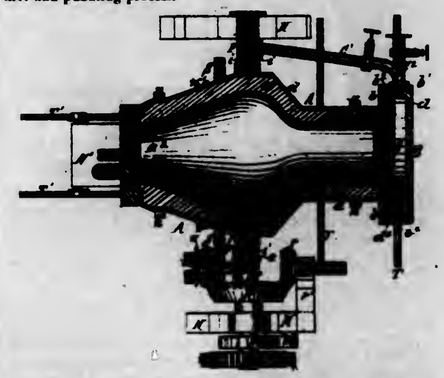
Claim.—1. In an injector, the ring G, provided with a chamber, *a*, in combination with the tube H, the passages *o c*, and the exit or mouth *d*.

2. In an injector, the combination of the steam-chamber J, adjustable tube M, tube K, and ring G, constructed as described, substantially as and for the purpose set forth.

3. In an injector, the combination of the chamber A, the ring G, constructed as described, the tube H, tubes K and M, and the tapering nozzle C, substantially as and for the purpose set forth.

257,898. MANUFACTURE OF PUDDLED IRON. WILLIAM SMITH, Pittsburg, Pa. Filed Oct. 24, 1881. (No model.)

Brief.—The apparatus is capable of use in a combined Bessemer and puddling process.

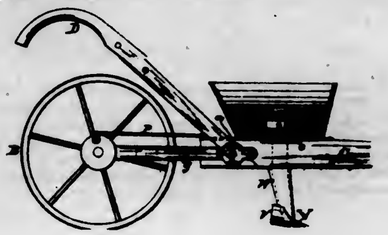


Claim.—1. The converter-body A, in combination with band I, rim F, trunnions E E', and supports H, whereby the body has rotary movement on both its transverse and longitudinal axes, as described, and with an air-supply chest, C, loosely secured to the body, as described, whereby such air-supply chest is movable with the body on its transverse axis, but stationary with relation to rotary movement of the body on its longitudinal axis, and tuyeres *c*, substantially as set forth.

2. A converter-body, A, having a surrounding flange, d^3, at its bottom end, in combination with chambered bottom B, having rim *b'*, cap or band *b*, tuyeres *c*, such bottom being adapted to permit axial rotation of the converter-body, the bottom being stationary, and blast-pipe C', substantially as set forth.

3. A converter, A, having a band, I, with tongue *i*, surrounding and secured to its middle zone, in combination with rim F, having groove *e* therein, adapted to receive tongue *i*, trunnions E E', and frames H, for supporting the rim and converter, and mechanism for rotating the converter on its trunnions and also axially within the rim, substantially as and for the purposes set forth.

257,899. SEED-PLANTER. ELISHA SPILLER, St. Helena Parish, La. Filed Jan. 3, 1882. (No model.)



Claim.—In a seed-planter for planting seed in drills, the combination of beam C, wheel B, eccentric and rod *g*, handles D, hollow standard W, slotted arms Y, plow V, adjustable plates *f*, and spider *z*, all as described, and for the purposes specified.

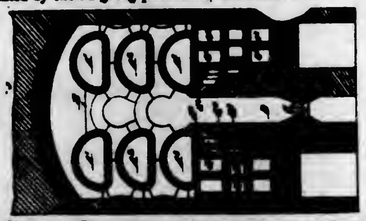
257,900. FENCE-POST. JOHN J. SQUIER, Sedalia, Mo. Filed July 11, 1881. (No model.)



Claim.—As a new article of manufacture, the cast-metal post A, having a rounded or semi-cylindrical body, D, provided with a central rounded rib, E, notched at *e*, and integral therewith, a base, B, having pointed and ribbed end *b b' b² b³*, said base being offset from D, so as to have on its upper end the driving-cap C, all substantially as described.

257,901. FURNACE FOR RETORTS. WILLIAM A. STEBBINS, Newport, R. I., and IRA H. STANLEY, Brooklyn, N. Y. Filed June 4, 1881. (No model.)

Brief.—The ingoing air to support combustion in the furnace is heated by the outgoing products of combustion.

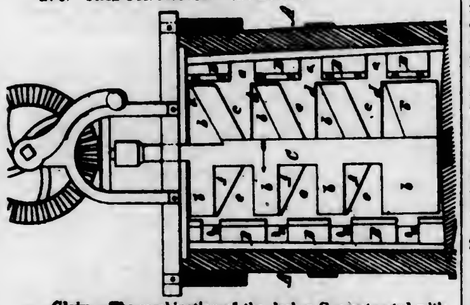


Claim.—1. In a gas apparatus, the combination, with a bench of retorts, A' A² A³, with provisions for circulating hot products of combustion around them, of inclosing masonry B, having flues *c' c² c³*, arranged to conduct the products of combustion twice forward and back, and also having flues *d' d²*, for conducting air through the space between them, arranged to absorb heat from above and below, substantially as herein specified.

2. In a gas-manufacturing apparatus, the furnace D, formed with orifices *d²* in the side walls, as shown, in combination with longitudinal hot-air flues *d' d³* and connecting-passages, and with the flues *d' d²*, receiving the air and partially heating the same, all arranged relatively to each other and to the flues *c' c² c³*, for conveying the hot products of combustion from the vicinity of the retorts, substantially as herein specified.

3. In combination with the bench of retorts A' A², &c., surrounding masonry B, and furnace D, the hollow grate-bar C, valved and connected as shown, and having perforations *e e* arranged in the contracted base of the furnace, as and for the purpose herein specified.

257,902. CHURN. VALENTINE STIREWALT, Davidson College, N. C. Filed Dec. 12, 1881. (No model.)



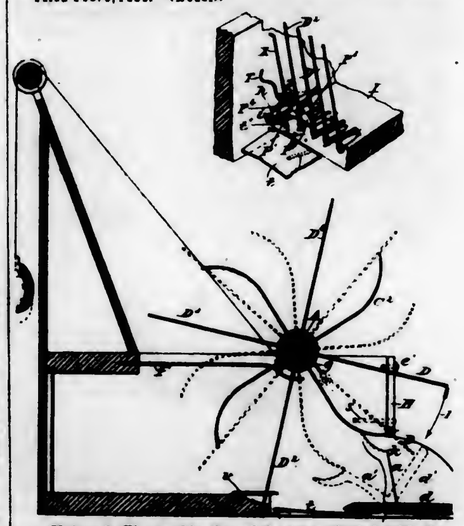
Claim.—The combination of the dasher C, constructed with sets of blades *b b*, having inclined surfaces and alternating spaces *c c*, as described, and the churn-body A, constructed with vertical cleats B B on its inner surface, the said cleats being broken or interrupted by cross notches or spaces *a a*, the notches of one cleat alternating in position with those of adjacent cleats, substantially as and for the purpose herein specified.

257,903. BUFFING-TOOL. FRANK W. STORY, Lynn, assignor of two-thirds to Frederick S. Andrews, Gloucester, and Fitzhugh S. Andrews, Essex, Mass. Filed Jan. 24, 1882. (No model.)



Claim.—The improved tool above described, consisting of the elastic yielding pad A, having its bottom face covered with fine emery or other suitable scouring material attached directly to the surface of the pad, the non-elastic shaft D, and base E, molded in the pad, substantially as set forth.

257,904. ANIMAL-TRAP. HIRAM B. SWARTS, Wooster, Ohio. Filed Feb. 8, 1882. (Model.)



Claim.—1. The combination of the trap-wheel A with the spokes D, the floor having the grooves *c*, and the feeders F, when arranged to intercorrespond, the feeder X, and the set of first four spokes, D' D² D³ D⁴, when arranged to intersect consecutively the swivel E, substantially as shown and described, and for the purpose specified.

2. The combination of the four spoke-arms *c c' c² c³*, extending from one end of the axle of the trap-wheel at right angles to each other, respectively, and the tilting arm *a* with the tilting board *d*, all being shaped substantially as shown, and as and for the purpose specified.

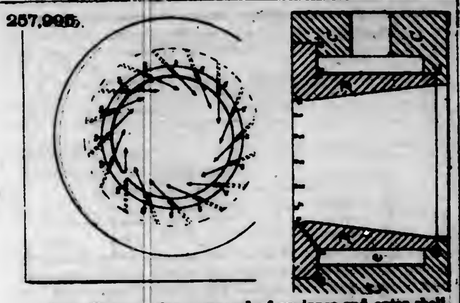
3. The combination of the four spoke-arms *c c' c² c³* with the swinging stop H upon the pivot *s*, operated and limited in its movement by the spring *s'* and the stop *s*, substantially as and for the purpose specified.

4. The swivel E, having four arms, P P' P² P³, at right angles to each other, respectively, and rotating upon a pivot, *c''*, in connection with the stop *f*, which limits its movement, and the lever T, fulcrumed at *c''* and resting with its short arm upon the treadle *t*, substantially as and for the purpose specified.

257,905. FEEDING AIR TO FURNACES. GEORGE B. H. TOWER, Boston, assignor to David Renshaw and Lydia F. Renshaw, Cohasset; said David Renshaw assignor to Harvey T. Litchfield, Hull, Mass. Filed Oct. 21, 1878.

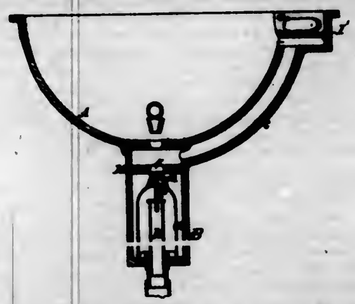
Claim.—1. The combination, with the bridge-wall of a furnace, of the tile or casting provided with a double wall, between which is formed an annular chamber for the heating of air, and oblique outlets, whereby the air issuing therefrom forces the passing products of combustion to take a circular or revolving course for the better admixture of the two elements, as described, and in the manner set forth.

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2. A tile or casting composed of an inner and outer shell, forming an air-chamber between them, one of which is provided with recesses and the other with corresponding projections to fit therein, the inner shell having oblique apertures, whereby the air and gases are made to take a whirling or revolving course while passing through the flue, substantially as herein set forth and described.

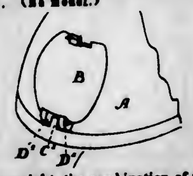
257,906. WASTE-PIPE TRAP. EDWARD A. TUTTLE, New York, N. Y. Filed Mar. 31, 1881. (No model.)



Claim.—1. The combination, with the trap-case B and the vertical extension K of the waste-pipe therein, of the inverted cup-shaped valve G and the seat H therefor, located above said valve, substantially as described.

2. The waste-pipe-trap case B and its connections with the basin, constructed together and integral with the basin A, and with an opening from the basin into said case for the admission of the valve, also with the seat for said valve detachably arranged, substantially as described.

257,907. TOE-WEIGHT. GEORGE E. TWAMBLEY, Saco, Me. Filed Dec. 5, 1881. (No model.)



Claim.—In a toe-weight, the combination of the shoe C, provided with the projection *d'*, with the bolding-piece D D², latch-spring H, and weight B, all operating together substantially as described, and for the purpose set forth.

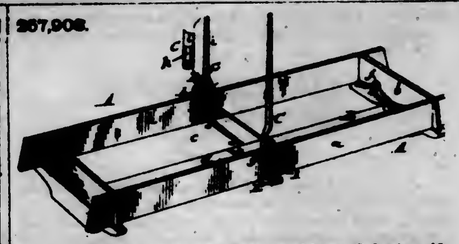
257,908. DUMPING-WAGON. DAVID S. WATSON, Stratford, N. Y. Filed Mar. 7, 1882. (Model.)

Claim.—1. The herein-described box or body for wagons, consisting of the fixed ends and sides, the longitudinally-divided bottom having hand-levers rigidly applied to its pivoted sections, and devices, substantially such as described and shown, for locking said levers in an upright position.

2. In combination with a pivoted section of a wagon-box bottom, a tipping or operating lever connected with said section, and provided with an ear to engage over the side of the box for the purpose of sustaining said section.

3. The herein-described wagon-box, consisting of the body A,

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the pivoted bottom sections, *c d*, the hand-levers C, having side cam, *g*, attached to the bottom sections, *c d*, and the catching or locking devices D, all combined and operating substantially as described.

4. In combination with the tipping sections *c d*, provided with rollers *j*, the curved supporting track or bar H, substantially as and for the purpose set forth.

5. In combination with the body having tipping bottom sections and hangers, *h*, the supporting track or cross-bar having its ends notched and passing through the eyes of the hangers, as explained.

6. In combination with the sections *c d*, pivoted or journaled at their ends, a support located at a point between the ends and concentric with the pivots or journals, as and for the purpose set forth.

7. In combination with the tipping sections *c d*, the levers C, having the sockets *h* and detachable handle *i*, as and for the purpose explained.

257,909. MECHANISM FOR SUPPORTING AND LUBRICATING THE SPINDLES OF RING-SPINNING FRAMES. JOSEPH W. WATTLES, Canton, Mass. Filed Feb. 18, 1882. (No model.)

Brief.—Improvement upon Letters Patent No. 248,816. The spindle is supported by a tubular bolster, which is carried by a fixed standard or wick-carrier, between which and said bolster is placed a tubular wick. Lateral oil-ducts are provided in the bolster, wick-carrier, and spindle-foot step in such position that when said parts are adjusted for operation such holes will open into each other, whereby the oil drawn from the reservoir by the wick will pass not only to the spindle-foot step, but to the outside of the tubular bolster, thereby lubricating all parts.



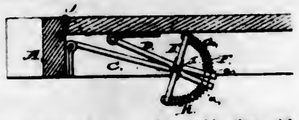
Claim.—1. The bearing-tube E and the spindle-foot step, arranged, connected, and provided with oil-ducts substantially as set forth, in combination with the oil-reservoir B, wick-carrier C, and tubular wick D, and with the spinning-frame spindle A, having the bearing foot or pivot *a*, the whirl *a*, and its sleeve *b*, all substantially as described.

2. The spindle-foot step *s*, arranged within and connected to the bearing-tube E at the upper part thereof, and having not only a wick-receiving space between them, the said tube and step, but one or more ducts leading from the said space into the said step, all being substantially as set forth.

3. The wick-carrier provided with the tubular wick and extended upward from the oil-reservoir, and having in its upper part a step-socket, as described, in combination with the said oil-reservoir, and with a spindle having a foot or pivot, a whirl, and its sleeve, arranged as set forth, and also with a removable bearing-tube encompassing the wick and having a spindle-foot step extending into the socket of the said wick-carrier, and being, with the said bearing-tube, provided with oil-ducts, as set forth.

4. The combination, with the oil-reservoir, its wick, and stationary wick-carrier having the step-socket, the oil-ducts *v*, and stud *o*, and with a spinning-frame spindle provided with the foot or pivot, whirl, and whirl-sleeve, arranged as described, of the removable bearing-tube E and step *s*, connected thereto and provided with oil-ducts *u* and *w* and the notch *p*, such notch, when in engagement with the stud, being to prevent the tube from revolving on the wick and to bring the oil-ducts *u* and *v* to open into each other, in order for oil from a wick to flow into the step, as explained.

257,910. DOOR-SPRING. JESSE W. WEBBEL, Freeport, Ill., assignor of one-half to P. S. Kahley, same place. Filed Oct. 19, 1881. (No model.)



Claim.—In a door-spring, the combination, with the door-frame and door, of the hinged intersecting levers C D and the chord-plate E, united by a common pivot, I, and the metal arch F, passing through the perforated ends of the levers C D, and the spiral springs G, substantially as and for the purposes specified.

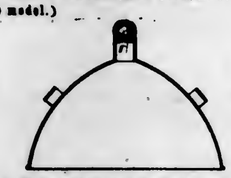
257,911. CORSET. WILLIAM S. ALLEN, Hillsdale, Mich. Filed Aug. 25, 1881. (No model.)



Claim.—1. In combination with a corset having a side opening to entirely disclose the hip of the wearer, an adjusting-strap provided with an enlargement forming a flexible shield adapted to entirely cover said hip-opening, whereby said shield prevents the flesh of the wearer from protruding through the hip-opening, and at the same time prevents undue pressure thereon, substantially as and for the purpose specified.

2. In combination with a corset having a hip-opening, as described, the flexible shield B, adapted to entirely close said hip-opening, and provided with a slit, *c*, and terminating in an adjusting-strap, *b*, substantially as and for the purpose described.

257,912. STEAM COOKING, HEATING, AND BAKING APPARATUS. WILLIAM C. BAKER, New York, N. Y. Filed July 28, 1881. (No model.)



Claim.—1. The combination, in a steam cooking apparatus, of a double exterior casing packed with mineral wool or similar non-conducting material, an oven or ovens, ranges of steam-heating pipes outside the ovens and within the double casing, and sand or similar material around the steam-pipes, substantially as set forth.

2. In combination with the oven in a steam cooking apparatus, the headers and steam-pipes above, below, and at the sides of the oven, and the connecting pipes and cocks, arranged, substantially as specified, to maintain a circulation of the steam throughout the range of pipes, as set forth.

3. In combination with the ranges of pipes and filling of sand in a steam cooking apparatus, a heating-chamber, B, resting upon the cooking apparatus and heated by the steam-pipes below it, substantially as set forth.

4. In a steam cooking apparatus, a case, *r*, in combination with a coil within the case and a cock to admit steam to pass at atmospheric pressure, or nearly so, through the coil, and become of the same temperature, or nearly so, as the surrounding steam under a higher pressure, substantially as set forth.

257,913. MARINE SIGNALING CODE. WILLIAM B. BARKER, Hoboken, N. J. Filed July 15, 1881. (No model.) Patented in England June 27, 1881.

Claim.—1. The improved method of indicating the course of vessels at sea by eight predetermined sound-signals, each composed of systematically-arranged long notes of a vibratory or undulatory character and short notes of uniformly plain character, the four eastward signals commencing with a long vibratory or undulatory

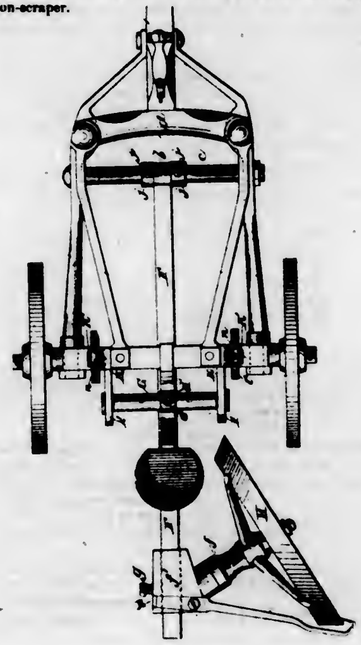


sound, the four westward signals commencing with a short plain sound, the four northward signals ending with a short plain sound, and the four southward signals ending with a long vibratory or undulatory sound, as described, and adapted to be produced by means substantially as and for the purpose set forth.

2. The improved method of signaling by sound to indicate the courses of vessels, adapted to be produced by means substantially as described, the north to north-east signal being composed of one long note of a vibratory or undulatory character and two short notes of a uniformly plain character; the north-east to the east signal one long vibratory or undulatory note and three short plain notes; the east to south-east signal one long vibratory or undulatory note, one short plain note, and one long vibratory or undulatory note; the south-east to south signal one long vibratory or undulatory note, two short plain notes, and one long vibratory or undulatory note; the south to south-west signal two short plain notes and one long vibratory or undulatory note; the south-west to west signal three short plain notes and one long vibratory or undulatory note; the west to north-west signal one short plain note, one long vibratory or undulatory note, and one short plain note; and the north-west to north signal four short plain notes, all produced with proper intervals of rest between each two distinct sounds or notes, as hereinbefore set forth.

257,914. SULKY-PLOW AND COTTON-SCRAPER. SAMUEL C. BAUCUM, Waco, Tex. Filed Jan. 16, 1882. (No model.)

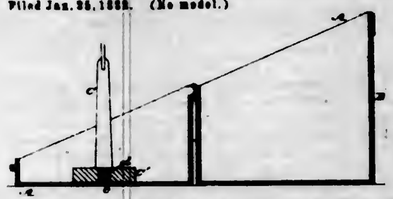
Brief.—Beam is supported in the rear by a rod whose ends work in slotted arms, and adjustably connected at its front end to a transverse rod, whereby it may receive oblique adjustment. Said slotted arms are each operated by an independent lever. Disk supporting bracket is reversible to form a right or left hand plow. A substitutive bracket with two disks, to convert machine into a cotton-scraper.



Claim.—1. The combination, with the beam F, having eye *b*, the bracket *f'*, and disk H, of the rod *c*, adjusting-collars *j*, rod G, support *d d'*, levers K, and slotted arms *k'*, all constructed and adapted to operate as described.

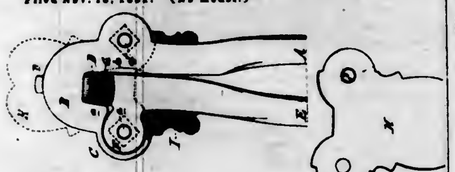
2. The combination, with the beam F, carrying disk H, of the rod *c*, collars *j*, rod G, support *d d'*, slotted arms *k'*, and independent levers K', substantially as described.

257,915. SHOW-BOX. ISIDORE BIRGE, Philadelphia, Pa. Filed Jan. 25, 1882. (No model.)



Claim.—The box A, having a glass, B, and an opening, *d*, through its bottom, in combination with the removable standard C, said standard being adapted to be sustained in the opening within or on the outside of the box, substantially as and for the purpose set forth.

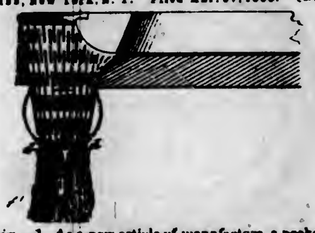
257,916. BOLT-CUTTER. ASEN BLOWERS, Cambridge, Mich. Filed Nov. 18, 1881. (No model.)



Claim.—1. In a bolt-cutting device, the handle A, with an overhanging head, B, ear C, and cutter D, in combination with the handle E, ear F, and cutter G, and suitable means for holding the parts together, the parts constructed, arranged, and operating substantially as and for the purposes described.

2. In combination, the handles A E, ears C F, and cutters D G, with the face-plates H I, and suitable means for securing the parts together and holding the plates in their respective places, all being constructed, arranged, and operating substantially as set forth.

257,917. BILLIARD AND POOL TABLE POCKET. HENRY BOECKEN, New York, N. Y. Filed Mar. 27, 1882. (No model.)



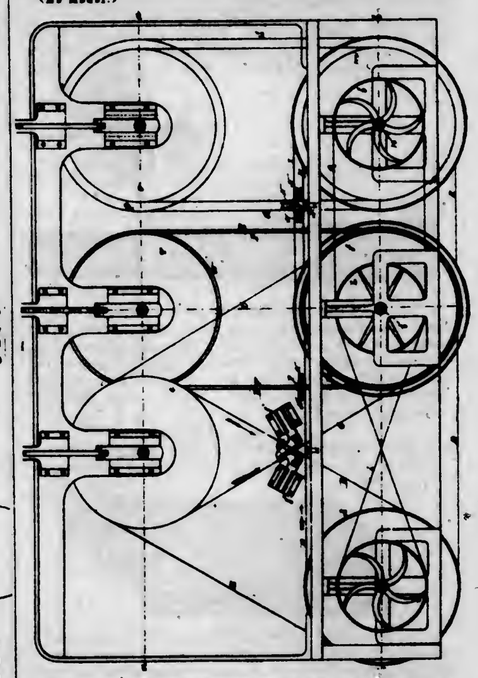
Claim.—1. As a new article of manufacture, a pocket for billiard and pool tables, constructed from a leather blank which is provided with longitudinal and alternating lines of short slits, whereby the pocket is capable of expansion and contraction when in use, substantially as set forth.

2. A blank for billiard and pool table pockets, provided with parallel longitudinal lines of slits, which slits alternate with each other, the blank having end fingers and strips of greater length at the middle than at the sides, substantially as set forth.

3. A blank for billiard and pool table pockets, having alternating longitudinal slits *a*, upper end strips or fingers, *b b' b²*, and lower fingers, *d*, having short slits *c*, substantially as specified.

4. A pocket for billiard and pool tables, constructed of a blank having alternating longitudinal slits, exterior longer strips or fingers, and interior shorter strips or fingers at the upper edge for attachment to the rail and irons, and slitted fingers or strips at the lower edge for attachment to the bottom ring, substantially as set forth.

257,918. MACHINE FOR SAWING BARREL-HOOPS FROM POLES. WILLIAM BOWERS, Somerville, assignor to himself and Robert Williams, Boston, Mass. Filed Jan. 23, 1882. (No model.)



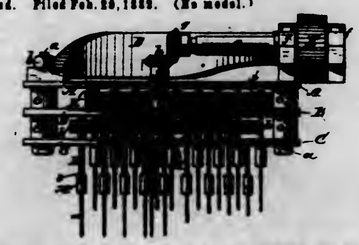
Claim.—1. The combination of two or more endless band-saws with a guide, *k'*, and a pressure-roller, N, located at and adapted to hold the work to each of such saws, substantially as set forth.

2. The combination of one or more sets of feed-rollers and a set of draft-rollers with two or more endless band-saws and a guide and pressure roller located at and adapted to hold the work to each of such saws, substantially as set forth.

3. Two next contiguous band-saws supporting pulleys provided with separate arbors, arranged in, or about in, line with each other, and having between them, and also between the two pulleys, a space, *e*, as described, a little wider than the band-saw to run on one of such pulleys, all being substantially as shown and specified, and for the purpose set forth.

4. The three endless band-saws B C D and their pulleys *d*, *e*, *f*, *g*, and *h*, the latter arranged in pairs, as shown, the pulley *f*, supporting the two saws C and D, the whole combined and arranged for simultaneously making three cuts in the pole, as set forth and described.

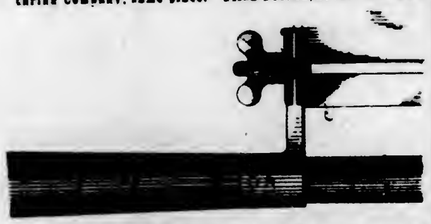
257,919. BORING-MACHINE. WATSON N. BROWN, Madison, Ind. Filed Feb. 20, 1882. (No model.)



Claim.—1. In a boring-machine, the combination, with the plates A B C, arranged as shown, of the two sets of shafts K L, having detachably connected thereto suitable drills, and the cog-wheels *i k*, secured to said shafts as a means of imparting motion thereto, substantially as and for the purpose set forth.

2. In a boring-machine, the plates A B C and hanger D, in combination with the shafts *d e*, provided with gear-wheels *g*, shafts F G, with gear-wheels A H I, and the two sets of spindles K L, having connected to them the cog-wheels and drills, substantially as and for the purpose specified.

257,920. SAW-HANDLE. WILLIAM CLEMMER, Middletown, N. Y., assignor to the Wheeler, Madden & Clemmer Manufacturing Company, same place. Filed Feb. 11, 1882. (Model.)



Claim.—The combination, with the saw-handle and socketed shank secured thereto, said shank being provided with longitudinal grooves in its sides and bottom, with an enlargement, C, having convex surfaces and provided with intersecting holes, of a clamping-bolt, a fastening-nut, and a sleeve provided with a concave bearing that fits the convex surfaces of said enlargement C, substantially as set forth.

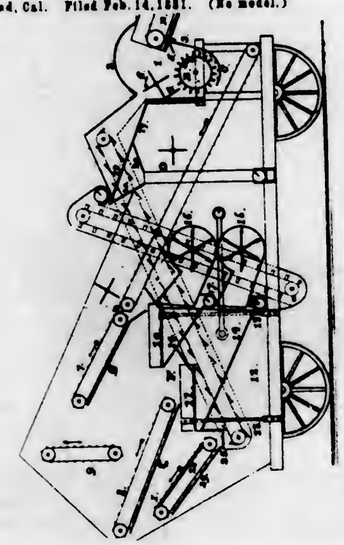
257,921. METHOD OF ORNAMENTING TEXTILE FABRICS. PARLEY A. DAILEY, New York, N. Y. Filed July 18, 1881. (Specimens.)



Claim.—1. As a new article, a fabric of fibrous material having interposed spots composed of threads passing through from one face to the other of the fabric, with the ends spread and interlocked with the fibers of the fabric, substantially as specified.

2. The method herein specified of spotting textile fabrics, consisting in passing threads through the fabric, cutting off such threads at or near the surface of the fabric, and causing the fibers to expand and interlock, so as to hold the spotting-threads in place, substantially as specified.

257,922. THRASHING-MACHINE. HENRY M. DALTON, Oakland, Cal. Filed Feb. 14, 1881. (No model.)



Claim.—1. In a thrashing-machine, the combination of the thrashing-cylinder, a closed chamber having a removable top and front plate, the feeder projecting a short distance into the chamber, a rotating beater revolved in the same direction as the motion of the thrashing-cylinder, and a fixed rear stop-plate to prevent the return of the thrashed material, substantially as set forth.

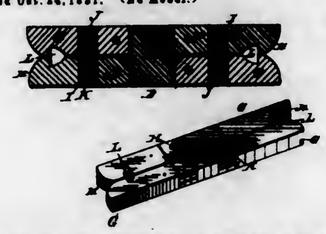
2. In a thrashing-machine, the combination of the means, substantially as described, for presenting an upright surface, 9, the straw-carrier, and the shoe or separator 11, substantially as set forth.

3. In a thrashing-machine, the combination of the endless belt or draper presenting an upright surface and having a movement in one direction, of the straw-carrier 8 and the carrier 7, substantially as and for the purpose specified.

4. The combination of the sieves 10 and 11, the former being arranged above and back of the latter, so that the refuse from the former falls upon the latter, with the carrier 7 and incline *g*, for directing the heavier materials onto the sieve 10, and the carrier 8 and incline *g*, for directing the heavier materials gathered by it upon sieve 11, substantially as set forth.

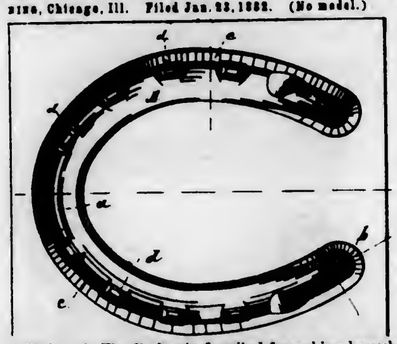
5. In a thrashing-machine, the combination, with the upright slatted endless belt or draper 9, of the separator F, having the two sieves 10 and 11, the inclines 14 and 15, receiving-spouts 17, and fans 16 16, substantially as set forth.

257,923. CAR-COUPLING. DANIEL DILL, Fletcher, Ohio. Filed Oct. 24, 1881. (No model.)



Claim.—As an improvement in coupling-links, the plate E, having recesses F F and pivoted arms G G G G, provided with beveled ends M, notches L, and recesses I, to receive the springs J, which are held in said recesses by vertical pins K, substantially as set forth.

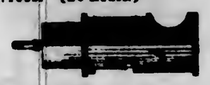
257,924. DIE FOR MAKING HORSESHOES. GERARD DUBBINS, Chicago, Ill. Filed Jan. 23, 1882. (No model.)



Claim.—1. The die herein described for making horseshoes, the same being constructed with the recesses *a* and *b* to form the heel and toe calks, and on its opposite sides with the recesses *c c* and projecting punches *d d*, to form the side calks and punch the nail-holes at the sides of the shoe, substantially as set forth, whereby a horseshoe can be constructed from a single piece of metal with the toe, heel, and side calks and nail-holes simultaneously formed at one operation.

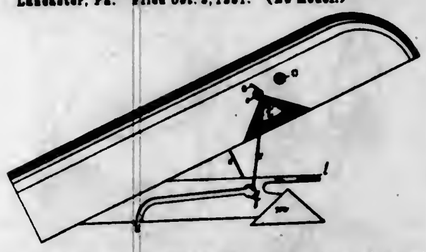
2. The herein-described process of forming a die to be used in the manufacture of horseshoes, consisting, first, in heating a steel block and forcing into the same the former corresponding in size and form with the shoe to be made; second, in planing down the face of the block or partially-formed die, and then forcing the former again into the block, completing points in the die of sufficient length to form the nail-holes of the shoe, all substantially as herein specified.

257,925. CIGAR-CUTTER. CHARLES A. FAAS, Brooklyn, N. Y. Filed Feb. 23, 1882. (No model.)



Claim.—The combination, with the square case, of a hollow square tube sliding endwise within that case, a spring within the sliding tube, a cutter at one angle of the sliding tube, and a cap on the case opening into the same and adapted to receive the cigar-tip, substantially as specified.

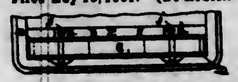
257,926. SEWING-MACHINE SHUTTLE. CHRISTIAN FATH, Lancaster, Pa. Filed Oct. 3, 1881. (No model.)



Claim.—1. The combination, in a shuttle, of an eyelet, *e*, triangular opening *f*, and corresponding triangle *m*, all substantially as and for the purpose set forth.

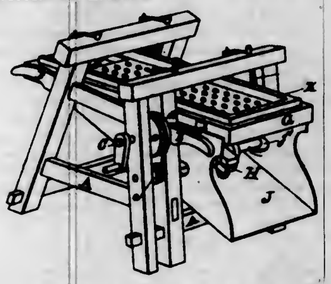
2. In a shuttle, the combination of a tension-spring, *A*, having a triangle, *m*, firmly attached thereto, with an opening, *f*, and eyelet *e*, all substantially as set forth.

257,927. CARPET-SWEEPER. BENEDICT FIORA, San Francisco, Cal. Filed May 18, 1881. (No model.)



Claim.—The combination, with the driving-wheels, of the grooved partition and plate A, having journals *g*, integral therewith, fitting in said grooves of the partition and fastened at the bottom to the under side of the partition, substantially as described.

257,928. SIFTER. GEORGE T. FIELDY, Webster, Pa. Filed Apr. 8, 1882. (No model.)



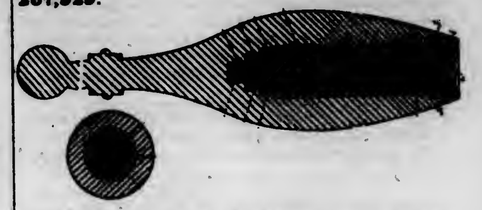
Claim.—1. The combination of the inclined suspended screen-frame and screen with the chute, oppositely inclined and having perforated sides and secured to the screen-frame, and means for their operation, substantially as shown and described.

2. The combination of crank-shaft C, rod H, bar I, frame G, chute J, and screen K, with means for their operation, substantially as shown and described.

257,929. EXERCISING-CLUB. EDGAR M. FOLK, Brooklyn, N. Y. Filed June 25, 1881. (No model.)

Claim.—1. The combination, in a chambered club, of concentric weights and heads for the chamber, provided with annular recesses adapted to secure and hold in position the weights, substantially as set forth.

257,929.



2. In a chambered club, a chamber-head provided with internal elastic packing, substantially as described.

3. The combination of the threaded head *i* and ring *j* with rubber plate *k*, as herein shown and described.

257,930. MANUFACTURE OF GLUCOSE OR GRAPE-SUGAR. EDWARD FOX, New York, N. Y., assignor to ANDREW ALBRIGHT, Newark, N. J. Filed Mar. 27, 1882. (No model.)

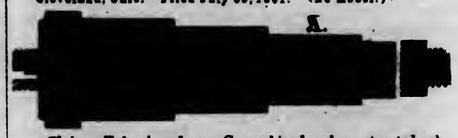


Claim.—1. The method herein specified of extracting starch from grains—such as corn—consisting in agitating such material and water by the action of atmospheric air in a digesting-vessel, then passing the digested material through filters to retain the gluten, substantially as set forth.

2. The method herein specified of treating starch or grain for its conversion into glucose or grape-sugar, consisting in agitating the same by currents of air under pressure and heating the same to the proper temperature by steam in a converting-vessel in the presence of acid, neutralizing any surplus acid and removing the same and any impurities, then concentrating the syrup by the action of currents of air or steam, or both, forced through the liquid, and then crystallizing or granulating the material in filter-bags, through which the syrup is forced from the converter by the pressure of air in such converter, substantially as set forth.

3. The combination, with the converting-vessel and the delivery-tube, branch pipes, cocks, and filter-bags, of an air-pipe connected to the converting-vessel and serving to admit air under pressure for forcing the contents of the converter directly to the filters, substantially as specified.

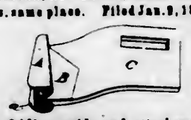
257,931. STEAM-GENERATING TUBE. ALLAN E. FRANCIS, Cleveland, Ohio. Filed July 30, 1881. (No model.)



Claim.—Tube A and core C, combined and constructed substantially as shown, the tube A having its interior smallest at its inlet end and made with varying but increasing widths from inlet to exit to accommodate the expansion of water and steam, and core

O having its exterior smallest at the end nearest the inlet and its external surface so arranged that when in position in tube A a narrow space is left between the external surface of core O and the internal surface of tube A, said space expanding in area from inlet toward exit, and in which space steam can be generated or heated.

257,932. GUIDING ATTACHMENT FOR SEWING-MACHINES. EDWARD J. PRITCHER, New Haven, Conn., assignor of one-half to Julius Twiss, same place. Filed Jan. 9, 1882. (No model.)

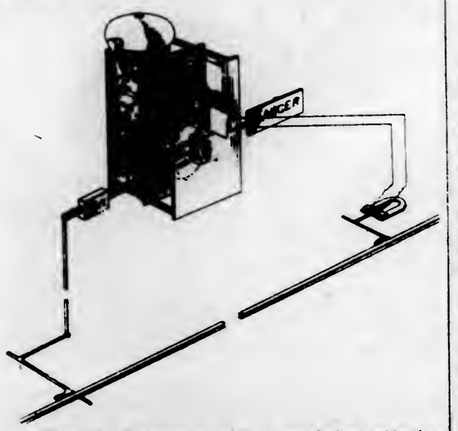


Claim.—1. A folding guide and attachment for sewing-machines, composed of two separate exterior scrolls, A *a*, turning in reverse directions and united to and supported by an interior looped plate, B, attached to or forming part of the bed-plate C, substantially as and for the purpose described.

2. The combination of the two scrolls, A *a*, the looper-plate B, to which they are united, and the plate C, by which the device is adjustably attached to the bed-plate of a sewing-machine, substantially as described.

257,933. AUTOMATIC RAILWAY-SIGNAL. WESLEY W. GAY, Boston, Mass. Filed Sept. 14, 1881. (No model.)

Brief.—The bell-striking train is set for action by a passing train and its controlling detent is released through an electro-magnet which is vitalized by a magneto-generator actuated by a moving train.



Claim.—1. In an automatic railway-signal, the combination of a bell-striking train, means for setting or adjusting the same for action from passing trains, a detent controlled by an electro-magnet to prevent the operation of the striking-train, and a magneto-generator for the purpose of releasing the gear-train, and means, substantially as described, for operating the electro-magnet from passing railway-trains.

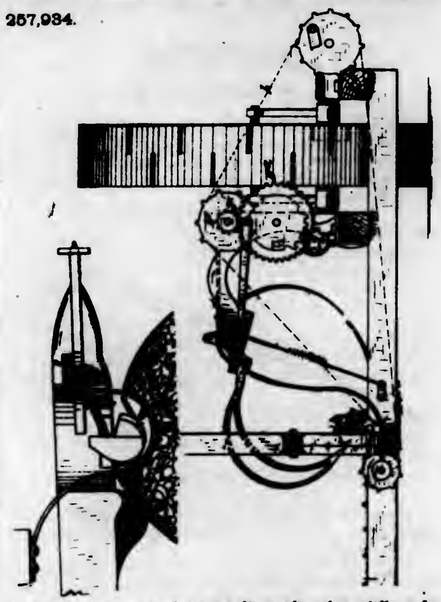
2. In a railway-signal, the combination of a bell-striking train of gear, a weighted lever connected therewith by a pawl and ratchet or equivalent clutch, and means, substantially as described, whereby the weight may be raised by passing trains.

3. In an automatic railway-signal, the combination of a geared bell-striking train, and appliances, substantially such as shown, whereby said gear is set for action by a passing train, an electro-magnet for releasing the gear-train, and a magneto-generator connected with said magnet and arranged to be operated by a passing railway-train.

257,934. GRAIN-BINDER. WILLIAM GAUSS, Kokomo, Ind., and JOHN F. SHRAUDING, Akron, Ohio, assignors, by direct and mesne assignments, to said Satterlee. Filed Mar. 10, 1881. (Model.)

Claim.—7. In a grain-binder, mechanism for removing the grain from the platform and delivering it to the binding devices, in combination with shifting devices for automatically throwing said mechanism out of action when the binding mechanism is thrown into action, and vice versa, whereby said raking and binding mechanisms are made to act alternately, substantially as described.

257,934.



2. In a grain-binder, mechanism for raking or discharging the grain from the grain-platform and delivering it to the binding devices, in combination with shifting-levers for automatically throwing the binding devices out of action when the needle-arm is raised into position to admit a bundle and simultaneously throwing the raking mechanism into action.

3. The pendent fingers against which the grain is crowded by the action of the raking mechanism, in combination with means for automatically throwing the binding mechanism into action simultaneously with the throwing of the raking mechanism out of action, substantially as described.

4. The alternately and intermittingly operating binding and raking mechanism, operated by means of the endless chain which drives the reel with a continuous motion.

5. The combination, with the needle-arm, of the compressing-arm connected to and moving with said needle-arm, and having a slotted connection with the shaft of said arm, whereby it is adapted to receive a vibratory movement independent of said needle-arm.

6. The compressing-arm L, having a slotted connection with the shaft of the needle-arm, in combination with the slotted link and cam or equivalent devices for imparting a vibratory movement independent of the needle-arm to said compressing-arm.

7. The concave-convex shield or guard around which the bundle is compressed, in combination with band-uniting devices operating within said shield within the circle of the bundle operated upon, substantially as and for the purpose described.

8. The knotter consisting of the sliding shank having the fixed jaw, in combination with the moving jaw having a longitudinal movement relatively to the shank of the fixed jaw, and adapted to be operated upon by the tension upon the ends of the band.

9. The sliding knotter-shank provided with the hub or collar, in combination with the cam-projection on the needle-arm for giving said shank a longitudinal movement.

10. The rock-shaft carrying the pendent fingers *m*, between which and the needle-arm the grain is grasped and carried to the band-uniting devices, provided with the heel-projection having the cam-ledges, in combination with the friction-roller on the needle-arm shaft for depressing said fingers and discharging the bound bundle, substantially as described.

11. The needle-arm shaft provided with the slotted angular crank-arm, in combination with the slotted plate *e*, for guiding the pin and giving to the needle and compressing arm a varying speed and power, substantially as and for the purpose set forth.

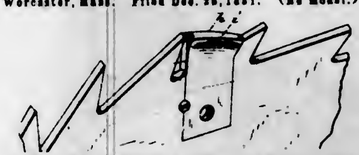
12. The needle-arm provided with the vibrating needle N', having the band-holding spur *n*, in combination with the spur *n'* on the needle-arm for forcing the ends of the band into the cutter when the needle is vibrated.

257,935. PROCESS OF UTILIZING SPENT HOPS IN THE MANUFACTURE OF MALT LIQUORS. JULIUS GERSTARD, New York, N. Y., assignor, by direct and mesne assignments, of five-eighths to Sol. Hoffpern and John S. Lockwood, both of same place. Filed Feb. 18, 1882. (No specimens.)

Claim.—1. The process of utilizing the spent hops from one brewing, which consists in steeping the same in a solution of sulphite of soda and water and adding the mixture to the mash of a subsequent brewing, substantially as described.

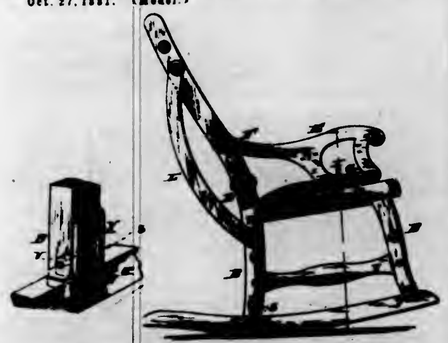
2. The process of utilizing the spent hops in one brewing in a subsequent one, which consists in introducing them into the mash-tub in each subsequent brewing, by which a further extraction is had, at a temperature below the boiling-point of the wort, substantially as described.

257,936. PLANER-TOOTH FOR SAWS. JOHN B. GENIN, Worcester, Mass. Filed Dec. 28, 1881. (No model.)



Claim.—The combination, with a circular saw, of the planer-teeth B, formed with cutting-edges A *i*, curved as shown with relation to the saw-teeth—that is, the front edge of the planer-tooth being inside the extremity of a saw-tooth and curving backward and outward to near the outer end of the succeeding saw-tooth—substantially as and for the purpose set forth.

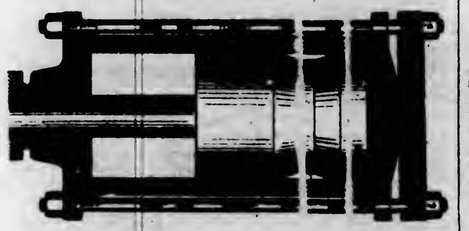
257,937. CHAIR. LEWIS D. GRAWIS, Terre Haute, Ind. Filed Oct. 27, 1881. (Model.)



Claim.—1. The combination, substantially as described, of the seat A, having angle-plates G, provided with slots *g*, the hinged-back frame, and the arms E, pivoted thereto, and provided with bolts H and nuts I, whereby the slotted angle-irons provide the bearings for said bolts and nuts, and a surface to take the wear of the arms in moving, as set forth.

2. In a chair, the combination, with the legs B, having transverse slots S, of the angle-plates U, having upward-projecting transverse legs V, pivoted in said slots, and laterally-projecting flanges W, the rockers T, secured to said angle-plates, and the latches Y, pivoted to the legs, as set forth.

257,938. STEAM ROCK-DRILL. GEORGE H. GUNNING, Brooklyn, N. Y. Filed Sept. 30, 1881. (No model.)

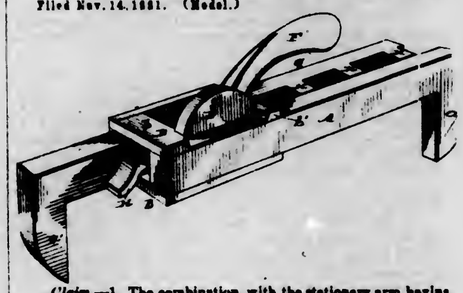


Claim.—1. The combination, with the piston, cylinder, and heads in a rock-drill, of bolts for holding the cylinder-head, having bends in such bolts to allow the same to spring or yield longitudinally, for the purposes and substantially as set forth.

2. The combination, with the cylinder and piston in a rock-drill, of a convex head having a central bearing, a cross-bar resting upon the same, and bolts passing through the ends of the cross-bar, for the purposes and substantially as set forth.

3. The combination, with the cylinder and piston in a rock-drill, of a head having a central bearing, a cross-bar, bolts having the bodies bent into curved lines, and nuts, substantially as set forth.

257,939. ADJUSTABLE CLAMP. CHARLES H. GOVE, Norwalk, Ohio, assignor of one-half to Charles E. Gove, same place. Filed Nov. 14, 1881. (Model.)



Claim.—1. The combination, with the stationary arm having a recess or seat formed therein, and a movable arm having teeth on one side and adapted to be loosely secured to the said stationary arm by any suitable means, of the disk having the lever and cam secured thereto and adapted to rest in the seat or recess in the stationary arm and be held therein against displacement by the removable arm, substantially as set forth.

2. The combination, with the stationary arm provided with means for loosely holding the movable arm, and with a recess or seat, and a sliding arm having teeth thereon, the latter being shaped substantially as described, of a disk having a cam and lever rigidly secured thereto, the said disk adapted to fit in said recess or seat and be partly rotated therein, so as to enable the cam to be moved between the said teeth, substantially as set forth.

3. The combination, with the arm A, provided with the jaw *a*, recess or seat D, and bearing B, and the movable arm G, provided with the jaw *a'* and teeth H, of the disk C, adapted to loosely fit in the said recess D, and provided with the cam E and lever F, substantially as set forth.

257,940. SEWING-MACHINE. GEORGE GRIEBL, San Francisco, Cal. Filed Sept. 28, 1881. (No model.)

Brief.—For sewing together stalks of tule-grass or similar plants for making mats, &c. Consists in the mechanism for feeding the stalks with accuracy to a gang of needles, as embraced in the claims.



Claim.—1. In a machine for sewing together stalks of tule-grass and other like plants, the combination, with a reciprocating needle, of a pair of grooved feeding and clamping rollers, arranged relatively to the needle substantially as described, and having an intermittent rotation, for the purpose set forth.

2. In a machine for sewing together stalks of tule-grass and other like plants, the combination, with the reciprocating needle-bar carrying a gang of needles, of the sets of grooved feeding-rollers L L', having an intermittent rotation and a simultaneous movement together, by which a length of stalk is brought regularly for-

ward in line with and beneath the needles of the gang for simultaneous penetration, substantially as hereinbefore described.

3. In a machine for sewing together stalks of tule and other like plants, the combination, with a set of grooved feeding-rollers, L L', having an intermittent rotation, of a vibrating or oscillating feeding-finger applied to operate substantially as described, for the purpose set forth.

4. In combination with the vibrating or oscillating arm Y, the yielding finger W, having a turning movement in the backward motion of its arm, but a rigid position at the forward motion, substantially as described, for the purpose set forth.

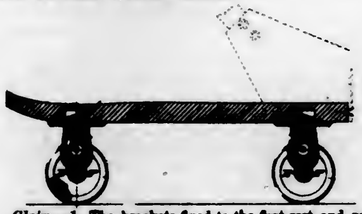
5. The feeding-finger W, pivoted on the end of its operating-arm Y, and having a spring to hold and to return it to its working position with respect to the arm, and an adjustable stop, substantially as described, for the purpose set forth.

6. The combination, with the intermittently-rotating feeding-rollers and the vibrating feeding-fingers, of the inclined guides *x*, substantially as described, for the purpose set forth.

7. In a machine for sewing together stalks of tule and other like plants, the combination, with the work-supporting table or surface, of the grooved feed-rollers L L upon the shaft F, held in bearings above the said table, the similarly-grooved rollers L' L' upon the shaft G, beneath the table, the gears connecting the said shafts together, and the mechanism for giving said shafts intermittent rotation simultaneously toward each other, consisting of the ratchet-wheel, the pawl, and its operating-lever, and the cam on the shaft, substantially as described, for the purpose set forth.

8. The herein-described machine for sewing together in parallel rows stalks of tule-grass, consisting of the work-supporting table or surface, the standards at each end, the motor-shaft, the shafts operated with an intermittent rotation for actuating the sets of feed-rollers, the grooved feed-rollers arranged in pairs upon said shafts, the rock-shaft carrying and operating the vibrating feeding-fingers, and the needle-operating shafts and the horizontal needle-carrying bar, combined to operate in the manner and for the purpose set forth.

257,941. ROLLER-SKATE. CHARLES HEBNER, Philadelphia, Pa. Filed Mar. 6, 1882. (Model.)



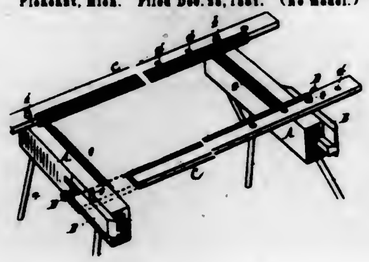
Claim.—1. The brackets fixed to the foot-rest and provided with depending cars, in combination with rotating spindles rising from the bosses of the axial pins of the rollers and fitted between said depending cars and the springs, substantially as and for the purpose set forth.

2. The fixed brackets, in combination with the rotating spindles, whose upper ends are guided in said brackets, substantially as and for the purpose set forth.

3. The fixed brackets, in combination with the rotating spindles, whose upper ends are guided in said brackets and provided with heads which bear against the brackets, substantially as and for the purpose set forth.

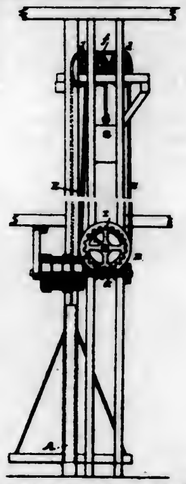
4. The rollers and spindles, in combination with the brackets formed with upwardly-projecting bosses, substantially as and for the purpose set forth.

257,942. QUILTING-FRAME. PETER S. NICKMAN, Mount Pleasant, Mich. Filed Dec. 28, 1881. (No model.)



Claim.—The horses A, having pins *b* and dovetail guides, the side rails, C, having holes *d*, the adjustable slides B, having pins *c*, and the set-screw D, all constructed, combined, and adapted to serve together as and for the purposes set forth.

257,943. ELEVATOR. PHILIP HIEBLE, San Francisco, Cal. Filed Sept. 27, 1881. (No model.)



Claim.—1. In an elevator, the combination, with the hoisting-drum B, of the cage A and rope C thereof attached to one side of the drum B, and the overbalance-weight G and rope E thereof attached to the opposite side of the drum B, substantially as set forth.

2. The combination, with the drum B and ropes C and E, attached to the opposite sides thereof and suspending the cage and overbalance-weight, respectively, of the power-shaft J, provided with the worm, as described, and the worm-wheel I, mounted on the same shaft with B, as set forth.

257,944. FENCE. JACOB HOFFMAN, Chippewa Falls, Wis. Filed Jan. 14, 1882. (No model.)



Claim.—A portable fence constructed of panels A, consisting of vertical posts C, horizontal bars or rails B, having lap-joints F G, wires D, formed with eyes J and hooks K, engaging them of the adjoining panel, and hooks and staples H I, substantially as and for the purpose set forth.

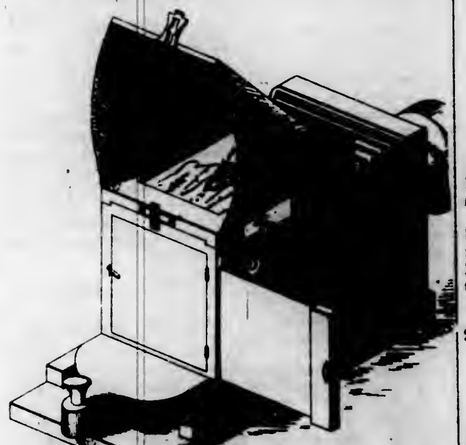
257,945. STRAP SPLICE OR CLASP. WILLIAM L. HOOVER, Norway, Iowa. Filed Mar. 16, 1882. (Model.)



Claim.—1. In a means for splicing harness or similar straps, a metallic plate formed with a longitudinal elongated button-slot in one end and a fixed button or locking stud in the other end adapted to co-operate with a similarly-constructed plate, substantially as set forth.

2. A metallic casing, A, formed with side walls and provided with an elongated button-slot in one end and a button-stud in the other end, in combination with a metallic plate, B, serving as a clasping means, formed with a longitudinal elongated button-slot in one end and a fixed button-stud in the other end, substantially as described.

257,946. PHOTOGRAPHIC CAMERA. ALFRED HOFFHEIMER, Philadelphia, Pa., assignor of two-thirds to John S. S. Nagle and William F. Bacon, both of same place. Filed Mar. 28, 1881. (No model.)



Claim.—1. A photographic camera provided with a dark chamber to receive the sensitized plate while the object is being focused, combined with a hooded focusing-glass and a reflector to throw the image upon the focusing-glass, and adapted to be operated to admit the light through the lens upon the sensitized plate after the focus is obtained, substantially as shown and described.

2. The combination, with a photographic camera, of a movable reflector connected to the sides of the box by flexible opaque material, and adapted to convert that portion of the camera in which the sensitized plate is arranged into a dark chamber while the focus is being obtained, and to open such chamber to the transmission of light through the lens upon the sensitized plate thereafter, substantially as shown and described.

3. The combination of a camera-box having a focus-glass, a hood thereon, and a leaf hinged in said box and provided with a reflector, whereby the focus is obtained upon said glass, substantially as described.

4. The combination of a focus-glass, a hood thereon, a reflector, and a dark chamber to receive the sensitized plate, whereby the object is focused and the sensitized plate protected from the light during the focusing, with means to cut off the light from and through the focus-glass and direct it through the lens upon the sensitized plate, substantially as described.

5. The combination, substantially as shown and described, of a dark chamber, a leaf therein, and means to hold said leaf in position to admit light into said dark chamber.

257,947. OILING-BOX FOR ROLLS AND PINIONS. JAMES HUNTER and URI HAZEEN, Pittsburg, Pa., assignors of one-third to Samuel T. Owens, same place. Filed Jan. 27, 1882. (No model.)

Claim.—1. A bearing for the journals of rolls or pinions, having a cup or concavity in the top communicating to the neck of the roll by a suitable hole or passage, said bearing having also a hole or passage through the lower part to lead the oil down upon the collar of the adjacent roll, substantially as and for the purpose described.

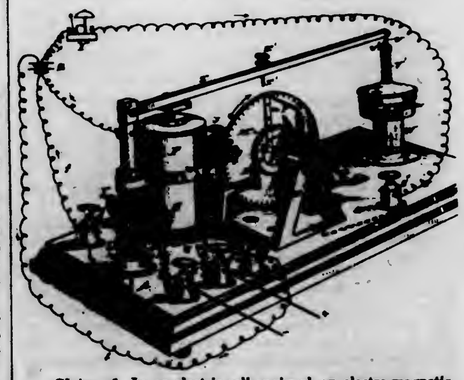
2. A bearing for the journals of rolls and pinions, having an oil cup or concavity in the top and a lip extending laterally at its upper edge, which, when the bearing is in place, projects beyond the face of the housing for filling said oil-cup and catching the drip from the journal above, substantially as and for the purpose described.



3. Hollow housing-standards, in combination with an oiling hole or holes leading through the bearings to the necks of the rolls, substantially as and for the purposes described.

4. In combination with journal-bearings for rolls and pinions, having oil-holes extending into and down from the bearing-surface, a trough placed under the lower roll or pinion and a channel leading from the bearing-surfaces of the journal-boxes to said trough, substantially as and for the purposes described.

257,948. ELECTRIC SIGNAL. RUDOLPH M. HUNTER, Philadelphia, Pa. Filed Oct. 18, 1881. (No model.)



Claim.—1. In an electric call or signal, an electro-magnetic core and means to magnetize and demagnetize it with the line-circuit, in combination with two armatures arranged one at each end or pole of said core, one of which armatures is provided with retaining devices and the other with circuit-closing devices, and a contact-wheel having a conducting-point on its periphery, one of said armatures operating to intermittently retain said contact-wheel and the other of said armatures operating to close a local circuit through said contact-wheel.

2. In an electric call or signal, two electric coils or helices, means to actuate or electrify one of them by the line-circuit and the other by a local circuit, in combination with an alarm-bell, a local battery, two local circuits, a contact-wheel, an armature actuated by one of said helices to intermittently retain said contact-wheel and complete at every stroke one of the local circuits through the other helix, and an armature operated by said helix in the local circuit to close the other local circuit through the alarm-bell.

3. In an electric signal, two electric coils or helices, means in the line-circuit to control the passage of electricity through one of said helices, a contact-wheel, and an armature to retain said contact-wheel, and provided with means to close a local circuit through the other of said helices at every stroke, in combination with a second armature actuated by the local circuited helix to complete a local circuit through the alarm-bell, two local circuits, and a retarding device to prevent the latter of said armatures descending too rapidly to close the alarm-circuit.

4. In an electric signal, the combination of two electric coils or helices, a line-circuit through one of said coils and a local circuit through the other of said coils, and mechanism arranged to complete the local circuit through one coil upon a current, being passed through the other coil, with mechanism, substantially as described, to complete a single local alarm-circuit, said mechanism being operated and controlled by both of said helices jointly, substantially as and for the purpose specified.

5. In an electric signal, two helices, two armatures, a contact-wheel, an alarm, and three circuits, one of which is the main line and is circuited through one of said helices, the second a local circuit through the other helix, and the third a local circuit through the alarm, in combination with mechanism to close both the first and second of said circuits at every stroke of the key or closing of the line-circuit, and means to close the third of said circuits through the alarm upon holding said first and second circuits closed.

6. In an electric signal, the combination of core G, helix E E', of two diameters, armature H, with its spring-finger H', contact-wheel M, and armature T, independent of armature H, provided with contact-screw T', substantially as and for the purpose specified.

7. In an electric signal, the combination of core G, helix E E', armature H, with its spring-finger H', contact-wheel M, armature T, provided with contact-screw T', and a retarding device to prevent the armature T (said core G being the common attraction for both of said armatures H and T) from falling quickly.

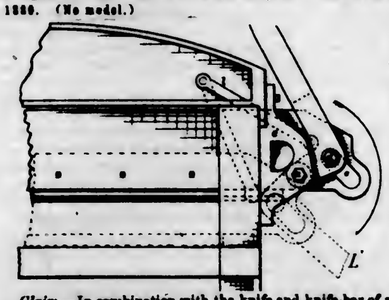
8. A retarding device for electric signals, which consists of a cylinder having the small diameter W and large diameter w, in combination with a piston or plunger, V, adapted to vertical movement, a spring, V', or its equivalent, to hold said piston above or at the top of said small diameter of the cylinder, an armature-lever attached to said plunger and provided with a contact to complete a local circuit which is independent of the electro-magnet which actuates said armature, and an electro-magnet to actuate said armature-lever and force the plunger down into the small diameter of the cylinder.

9. In an electric signal, the combination of core G, helices E F, armature H, provided with a contact, I, bushing L, or its equivalent, and a contact-screw, J, said armature operating to complete a local circuit through helix F, substantially as and for the purpose specified.

10. In an electric signal, the combination of helices E and F, core G, common to both of said helices, armature H, provided with spring-finger H', means, substantially as described, to complete a circuit through helix F every time a current is passed through helix E, contact-wheel M, armature T, provided with contact-screw T', and contact-screw J, in circuit with helix F, substantially as and for the purpose specified.

11. In an electric signal, a retarding device which consists of a vessel having two diameters, the smaller being at the bottom, and a plunger or piston which before action is above the small diameter and in the large diameter, so as to leave a clear passage-way for the liquid from above the piston to below the same after it has been fully raised, in combination with an alarm-circuit, a contact to close said alarm-circuit and controlled by said plunger and its operating electro-magnet, and an electro-magnet to actuate said plunger and force it down into the small diameter, substantially as set forth.

257,949. PAPER-CUTTER. HENRY JOHNSON, New York, N. Y., assignor to H. Nichols Johnson, same place. Filed Oct. 27, 1880. (No model.)



Claim.—In combination with the knife and knife-bar of a paper-cutter, having a diagonal cutting motion, the lever L, provided with a bent arm pivoted to the frame at its inner end, and connected to the knife-bar by a pin passing through an inclined slot in the knife-bar, substantially as and for the purposes described.

257,950. FAN. LOUIS JORDAN, New York, N. Y. Filed Mar. 31, 1882. (No model.)

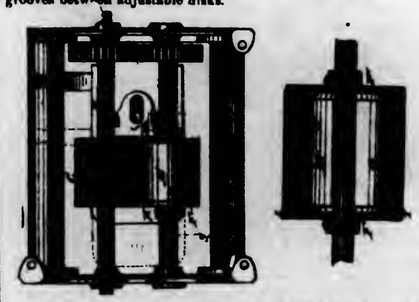


Claim.—1. A circular folding fan-leaf pivoted to a suitable handle or frame, and having side pieces, *b c*, in combination with the hinged clasp *e*, the side piece *c* being connected to the frame or handle and immovable during the opening or closing movement of the fan-leaf, and the side piece *b* free to swing when disengaged from the clasp *e*, substantially as set forth.

2. In combination with a circular folding fan-leaf and frame or handle, substantially as described, the side piece *c*, plate *d*, side piece *b*, and clasp *e*, substantially as set forth.

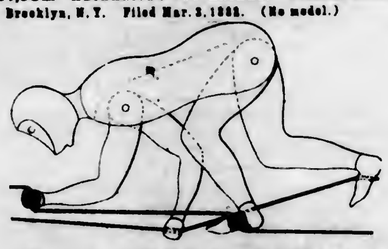
257,951. GRAIN-DRILL. JOHN F. KELLER, Martinsburg, W. Va. Filed Dec. 8, 1881. (No model.)

Brief.—The glass-surfaced feed-roller or ring is clamped in grooves between adjustable disks.



Claim.—In a seeder or fertilizer-distributer, the glass-surfaced feed roller or ring E, and the adjustable disks F, having a groove to receive the edge or projecting ends I of the roller, in combination with the elastic roller C, substantially as set forth and shown.

257,952. MECHANICAL TOY ANIMAL. WILLIAM KENNISH, Brooklyn, N. Y. Filed Mar. 3, 1882. (No model.)



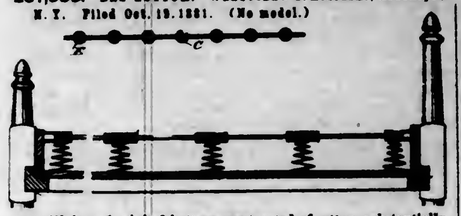
Claim.—1. In a mechanical toy animal, four limbs with independent action, having terminal passages for string, as shown.

2. In a mechanical toy animal, a continuous string, forming an upward and downward part, passing through terminal passages in the animal's limbs, as shown, and for the purpose specified.

3. In a mechanical toy animal, as described, a rocking bar for the purpose of giving a reciprocating motion to the string, as described and set forth.

4. In a mechanical toy animal, the combination of a body having four limbs with independent motion and terminal passages, with a string doubled to give the reciprocating motion, as shown and described.

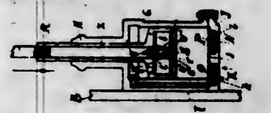
257,953. BED-BOTTOM. WLADYSLAW T. KOSINSKI, Brooklyn, N. Y. Filed Oct. 19, 1881. (No model.)



Claim.—1. A bed-bottom constructed of rattan, substantially as described.

2. The bed-bottom composed of a frame carrying on its upper part and on opposite sides of the rails tubes formed either solid or in skeleton form, as shown in Figs. 3, 4, and 5, and two or more similar tubes distributed symmetrically throughout the length or width of the bed-bottom, all said tubes being supported by spiral springs resting on slats and having rattan passed through them, in the manner shown and described.

257,954. PUMP. EDWARD LEHNAY, Lima, Ohio. Filed Mar. 14, 1882. (No model.)



Claim.—In a double-acting submerged pump, the combination, with the barrel H I and the lower or suction valve system, J, and with the tubular combined piston and piston-rod Q R, of the separable piston-valve chamber T, having the horizontal ported disks W w W' w', connected in one integral casting by the upflared ported partitions U u U' u', forming the compartments t t' t'', that communicate respectively with the lower and upper portions of the barrel and with the piston-discharge neck, and of which the compartment t'' confines and affords double seat-bearing to the valve V v, in the manner set forth.

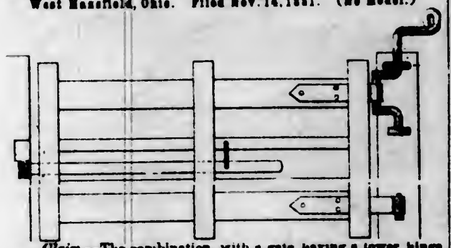
257,955. POLICE AND MILITARY HAT. CARL LEHMANN, New York, N. Y. Filed Mar. 1, 1882. (Model.)



Claim.—1. As a new article of manufacture, a military hat consisting of a body made of cork sections blocked into shape and united at the abutting edges by a suitable cement, of an outer layer or covering, and of an inner layer or lining, said covering and lining being applied to the blocked cork body by means of water-proof cement, substantially as set forth.

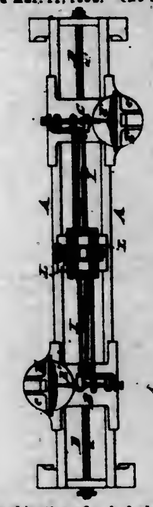
2. The method herein described of making hats for military and other purposes, consisting first in blocking the cork sections that form the body of the hat, uniting the abutting edges by cement, coating the exterior and interior surfaces of the cork body by a water-proof cement, and finally applying the covering and lining thereto, substantially as set forth.

257,956. AUTOMATIC GATE ATTACHMENT. JOHN F. LUERSS, West Mansfield, Ohio. Filed Nov. 14, 1881. (No model.)



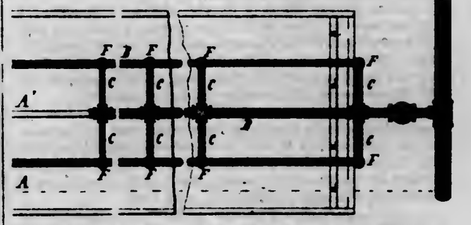
Claim.—The combination, with a gate having a tower hinge of any suitable kind, of an upper hinge consisting of a hinge-strap, and of a rod bent to form a double crank and a lever-arm, the crank passing through the hinge-strap and attached to the hinge-post above and below the double crank, while the lever-arm is extended above the post and provided with pulley cords or wires, whereby the gate may be opened and closed from a distance, substantially as described.

257,957. WOOD-CARVING MACHINE. GERHARD MATHIS, New York, N. Y. Filed Mar. 11, 1882. (No model.)



Claim.—The combination of a bed-plate, A, carriages B C, arranged to reciprocate in opposite directions to each other, upright standards E E', applied to the carriages for supporting model and blanks, one or more levers, H and I, which are fulcrumed to a forked axially-turning standard, G, and provided at the ends with a guide-pin and carving-tools, and means for transmitting rotary motion to the carving-tools, substantially as and for the purpose set forth.

257,958. WASHING OUT STARCH-TROUGHS. FRANK O. MATTHIESSEN, Irvington, N. Y., and EDWARD H. QUIMBY, Orange, N. J., assignors to the Chicago Sugar Refining Company, Chicago, Ill. Filed Mar. 23, 1882. (No model.)



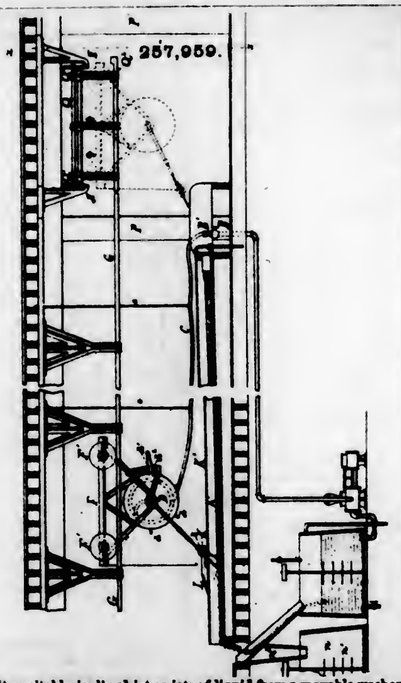
Claim.—1. In apparatus for washing out starch-troughs, a jet-pipe arranged over a starch-trough and having its lower portion perforated with rows of holes, substantially as shown, and provided at convenient distances apart with valves, and connecting-pipes connecting the jet-pipe with a distributing-pipe through which water or other liquid is supplied to the jet-pipe, the valves being arranged, substantially as shown, so that either one or more of the sections of the jet-pipe between the valves may be independently supplied with the washing-liquid, as and for the purposes set forth.

2. The starch-troughs A and A', in combination with the distributing-pipe D, the jet-pipes B and B', the connecting-pipes C, and the valves F, as and for the purposes set forth.

257,959. METHOD OF AND APPARATUS FOR EMPTYING STARCH-TABLES. FRANK O. MATTHIESSEN, Irvington, N. Y., and ARNO BEER, Jersey City, N. J., assignors to the Chicago Sugar Refining Company, Chicago, Ill. Filed Mar. 23, 1882. (No model.)

Claim.—1. The method of removing starch from starch-tables herein described, which consists in projecting upon the starch de-

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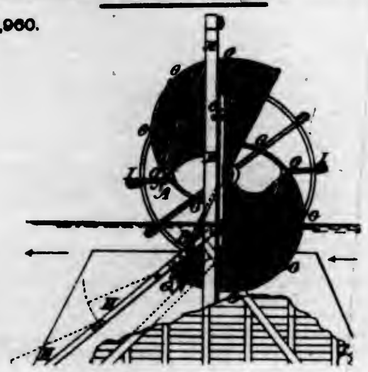
posit a suitably-inclined jet or jets of liquid from a movable washer supplied through a flexible pipe either with pure water or with a mixture of starch and water, substantially as and for the purposes set forth.

2. In apparatus for effecting the removal of the deposits of starch from adjoining starch-tables, the spraying or jet pipes I and their pipe-connections with suitable means for supplying them with water or other liquid, and the shields L, carried upon the shaft or axle K, provided with the wheels k, in combination with the sides of the starch-troughs A, preferably provided with the rails K', as and for the purpose set forth.

3. The elevated trunks G, the hose-carriage F, the drum D, provided with the hollow shaft D', the spraying-pipes I, and their pipe-connections with the opposite ends, respectively, of the hollow shaft D', in combination with the flexible pipe C, connected at one end with the hollow shaft D' of the drum and at its opposite end with the service-pipe B, as and for the purpose set forth.

4. The elevated trunks G, arranged longitudinally over the starch-tables, washing apparatus, substantially such as described, and the hose-carriage F and the transfer-carriage Q, provided with the rails Q', in combination with the transfer-rails *g*, for effecting the transfer of the washing apparatus from one group of starch-tables to another, substantially as set forth.

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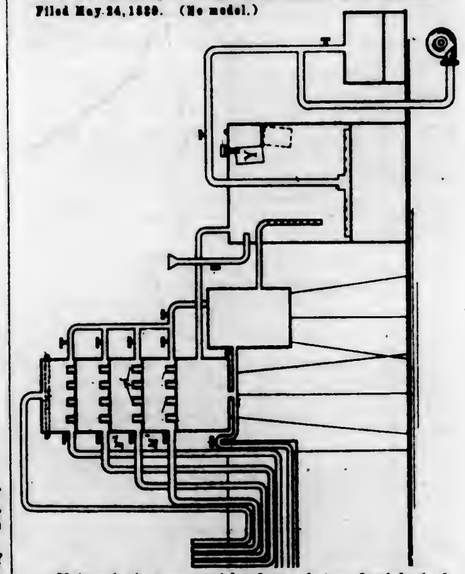


257,960. FISH-WHEEL. WILLIAM R. McCONE, East Portland, Oreg., assignor to himself, S. B. Story, C. W. Prindle, and J. M. McCoy. Filed Jan. 4, 1882. (No model.)

Claim.—1. A fish-wheel, A, having baskets F in the form described, the sides secured to the wheel-arms, the diagonal pieces G, and the bottom made of the segments O, as described.

2. Pieces C and frames H', rising and falling, as shown, on guides D, in combination with the wheel.

257,961. PROCESS OF AND MECHANISM FOR DISTILLING HYDROCARBONS. THOMSON MCGOWAN, Cleveland, Ohio. Filed May 24, 1880. (No model.)



Claim.—1. As a new article of manufacture, desulphurized American petroleum-oil.

2. The herein-described process for the removal of sulphur from petroleum, consisting in introducing oxygen and an alkali simultaneously into the petroleum, substantially as set forth.

3. The herein-described process for the removal of sulphur from petroleum, consisting in introducing oxygen and an alkali simultaneously into the body of the petroleum during distillation and when the temperature thereof is 300° Fahrenheit or above, substantially as set forth.

4. In an apparatus for the distillation of hydrocarbons, the combination, with an upright condenser divided into a series of horizontal compartments which collect different grades of hydrocarbon, of devices connecting respectively with the compartments to conduct said different grades of hydrocarbon to the receiving-house and to the still, substantially as set forth.

257,962. FIRE-ARMOR. CHARLES HOLSTON, Jersey City, N. J. Filed Mar. 8, 1882. (No model.)



Claim.—1. In a fire-armor, a mouth-piece provided with a flexible tube penetrating the outer wrap or garment, and adapted to take its supply of air from the inner protected side thereof.

2. The combination, with a fire armor or wrap, of eyeglasses provided with protecting-rims of asbestus, said glasses forming a part of the fire-armor, substantially as and for the purpose described.

3. A fire-armor consisting of an outer wrap or garment of asbestus, in combination with a mouth-piece and eyeglasses protected by asbestus or its equivalent, substantially as described.

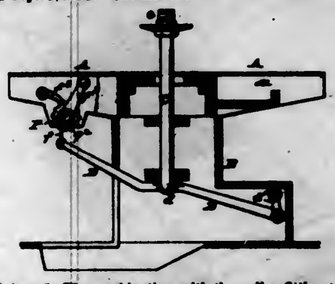
257,963. BENDING METAL PLATES. PHILIP MEDART, St. Louis, Mo., assignor of one-half to William Medart, same place. Filed Aug. 26, 1881. (No model.)



Claim.—1. The combination, in a machine for bending and crowning pulley-rims, of the rolls B C, crowned and dished as described, the adjustable bending-roll E, and the guide-plates F F, equally and simultaneously adjustable to and from the apex of the crown of the roll B, substantially as and for the purpose set forth.

2. The combination, in a machine for bending and crowning pulley-rims, of the rolls B C, crowned and dished as described, the adjustable bending-roll E, the guide-plates F F, equally and simultaneously adjustable to and from the apex of the crown of the roll B, and the anti-friction guide-roll D, substantially as and for the purpose set forth.

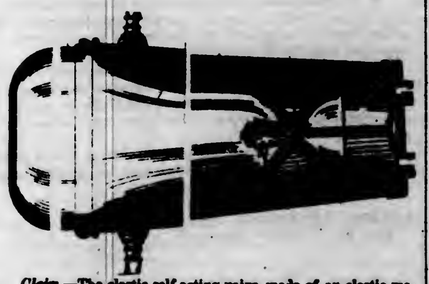
257,964. PULLEY-FITTING TABLE. PHILIP MEDART, St. Louis, Mo., assignor of one-half to William Medart, same place. Filed Sept. 5, 1881. (No model.)



Claim.—1. The combination, with the pulley-fitting table A, of an adjustable rotary arbor, C, arranged in a plane at right angles to the face of the table, and provided with a spider-holding head, *c*, and an adjustable step-bearing, *d*, for the arbor C, substantially as and for the purpose set forth.

2. The combination of the table A; arbor C, lever D, with its step-bearing *d*, link *d'*, adjusting-drum F, and rope *f*, substantially as and for the purpose set forth.

257,965. CONSTANT-LEVEL LAMP. MONTGOMERY C. MEIGS, Washington, D. C. Filed Mar. 27, 1882. (Model.)



Claim.—The elastic self-acting valve made of an elastic material, capable, without injury, of being pushed through a narrow neck or opening into a font or vessel to contain oil in a constant-level lamp, having also a stiff stem with cross-piece or other enlargement to prevent its falling through the neck into the body of the font or oil-vessel, and expanding by its elasticity after being forcibly inserted, so as to act as a valve and control the flow of oil from the font, arranged and operating substantially as set forth and described.

257,966. KINDLING-WOOD-SPLITTING MACHINE. HENRY MIDWOOD, Providence, R. I. Filed Nov. 11, 1881. (No model.)



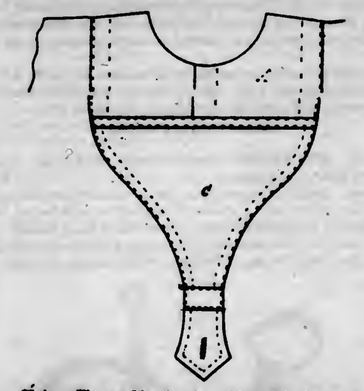
Claim.—1. In a kindling-wood-splitting machine, the combination, with the knife D, of the yielding knives F F, substantially as and for the purpose set forth.

2. The combination, with the reciprocating knife D and the central knife, E, of the hinged knives F F, constructed to yield to the wood and split the same, as described.

3. The combination, with the reciprocating knife D, the knife E, and knives F F, pivoted at their upper ends, of the stripper H, set at an angle to the knife D, as described.

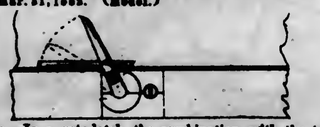
4. The combination, with the knife D, provided with the thrust-bearing for the knives F F, of the knives F F, pivoted to the knife D, and bearing against the thrust *g g*, the springs *i i*, and bar A, constructed to secure the knives and allow the same to move laterally to split the wood, as described.

257,967. SHIRT-BOSOM. WILLIAM H. HOBB, Waterford, N. Y., assignor to the Waterford Manufacturing Company, same place. Filed May 20, 1881. (No model.)



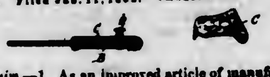
Claim.—The combination, in a shirt, of the bosom A and independent facing C, the latter below the former and joined to the shirt-front and bosom at the bottom of the latter, and the lower end of the facing attached to the shirt-front with button-hole tab at the bottom of the facing, as shown and described.

257,968. GATE-LATCH. JAMES HOGGHAN, Westerville, Ohio. Filed Mar. 31, 1882. (Model.)



Claim.—In a gate-latch, the combination, with the tubular casing provided with a face-plate and having stops arranged thereon adjacent to the tubular opening to limit the movement of the wing of the latch, of the latch having its shank held in the tubular casing and its wing arranged to rest on the stop P and project beyond the edge of the post in position to be engaged and lifted by the gate in the act of closing, substantially as set forth.

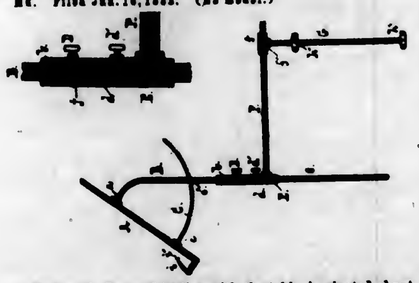
257,969. CORSET-CLASP. Henry W. Moulton, Jackson, Mich. Filed Jan. 11, 1882. (Model.)



Claim.—1. As an improved article of manufacture, the metal shield C, provided with fastening-lips, and having an aperture larger than the head of the fastening-stud of a corset-busk, adapted to be applied to a corset over the fabric after the fastening-stud attached to the busk has been secured in place, substantially as and for the purpose specified.

2. The combination, with the busk B and the stud *b* thereof, of the shield C, made entirely separate from the busk and stud, and secured to the corset over the fabric and stud after the busk and stud have first been secured within said corset fabric, substantially as and for the purpose specified.

257,970. BOOK-SUPPORT. William W. Murray, Baltimore, Md. Filed Jan. 16, 1882. (No model.)



Claim.—1. In combination with the table A, pivoted about a horizontal axis in the end of a vertical swiveling rod, the sleeves *b* E and the rod *c*, provided with the pin *d*, as set forth.

2. In combination with the table, pivoted, as described, in the end of the rod B, the sleeve *b*, rigidly secured to the latter, and having screw D, the vertically-adjustable rod *c*, having groove *f* and pin *d*, and the sleeve E, secured to the horizontal arm, as set forth.

3. The book-support consisting of the table A, rod B, bar C, sleeves *b* E, and rod *c*, the tube F, sleeve *f*, and rod G, the said sleeves being provided with clamping-screws, as set forth.

257,971. SULKY-PLOW. Jacob Nixon, Winfield, Kans. Filed Mar. 2, 1882. (No model.)

Brief.—Draft is attached to the plow-standard below the beam. By an elbow-lever and a system of toggle-links and braces the plow is drawn backward out of the ground when being raised. A stop prevents the plow-standard from dropping below a fixed depth and another holds the toggle from going below a straight line.



Claim.—1. In a sulky-plow, the combination, with the tongue provided on one side with a hook or stop, of the plow provided with an extended standard, having on one side a loop-guide through which the tongue passes, and on its opposite side a stud or projection adapted to engage with the stop on the tongue, substantially as set forth.

2. The combination, with the axle, plow-tongue, and extended standard, of the lever I, pivoted at one end to the axle, and at its opposite end to the upper end of the standard, a lifting-lever, and suitable connections for raising and retracting the plow, substantially as set forth.

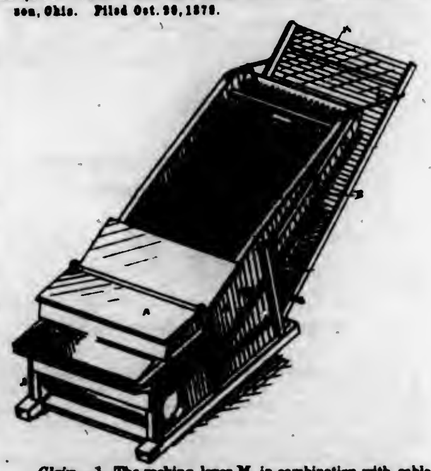
3. The combination, with the axle, plow-tongue, and plow, the latter being provided with an extended standard, of the lever I, pivoted at one end to the upper extremity of the standard and at its opposite end to the axle, the lifting-lever, and a toggle-connection provided with a stop, and pivoted at its rear end to the axle and at its forward end to the standard at a point above the mold-board of the plow, substantially as set forth.

4. In a sulky-plow, the combination, with the standard and its toggle-connection J, of the draft-frame, substantially as shown, pivoted to the standard at its rear end, while its forward end is suspended loosely from the tongue and adapted to receive the coupling for the team, substantially as set forth.

5. In a sulky-plow, the combination, with the plow-tongue and vertically-moving standard, of the draft-frame pivoted at its rear end to the standard above the mold-board, while its opposite end is supported between swinging arms depending from the tongue, and provided with means for lateral draft adjustments, substantially as set forth.

6. The combination, with the plow-tongue, of a bracket adapted to be secured thereto, and provided with upwardly-projecting sides to receive the lifting-lever, the inner one of said sides being notched to form the holding-sector of the plow, substantially as set forth.

257,972. THRASHING-MACHINE. Solomon E. Oviatt, Hudson, Ohio. Filed Oct. 26, 1876.



Claim.—1. The rocking lever M, in combination with cable L, a stacker, K, and means for securing the cable in position, substantially as set forth.

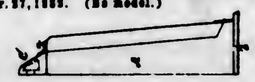
2. The combination of the stacker K, cable L, rocking lever M, and mechanism for paying out or taking in the cable L, substantially as and for the purpose shown.

3. The combination, with a screen of a thrashing-machine located and constructed to separate the straw from the grain, of the screen-frame D, its screen C, attached to said frame between its upper and under faces, substantially as set forth.

4. In a grain-thrashing machine, the combination of a screen-frame, D, a screen, C, located between the upper and under faces of said screen-frame, and broad hoe-shaped blades or scrapers F, connected with the under face of said screen-frame, substantially as set forth.

5. The combination, with the screen C, of the stationary grated surface H, located in the rear of said screen, substantially as set forth.

257,973. TOILET-CASE. Henry Pattberg, Jersey City, N. J. Filed Mar. 27, 1882. (No model.)

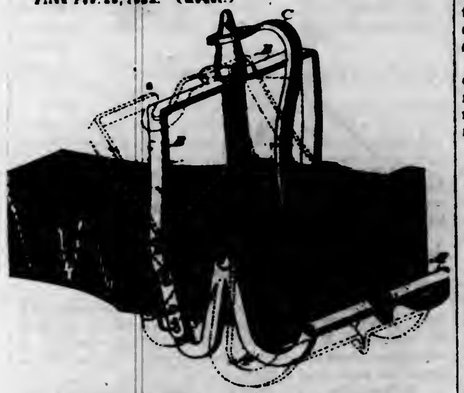


Claim.—1. A toilet-case, A, wider at the bottom than at the upper end, and provided with a hinged front or cover, B, hinged at the bottom, and secured at top by a suitable staple, *a*, in combination with a base-plate, *b*, projecting some distance from the front of the case, substantially in the manner and for the purpose described.

2. A toilet-case, A, in combination with a projecting part or ing, C, at its upper part, having a cavity, *d*, with opening *e* at the back, for the purpose substantially as set forth.

3. In combination with a toilet-case, A, the spring-blocks consisting of two blocks, D D, with suitable recesses, *c c*, joined together by a flexible material forming a hinge, in combination with spiral springs *e e*, substantially in the manner and for the purpose herein specified.

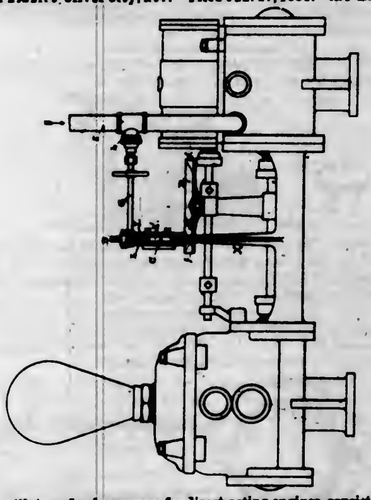
257,974. CAR-COUPLING. John H. Patterson, U. S. Army. Filed Feb. 28, 1882. (Model.)



Claim.—1. In combination, the pivotal abutting link-lifter A and pin-holder B, united by the link D, as shown and described, and for the purpose set forth.

2. In a car-coupling, the link-guide A, pin-support B, link-bars D, and pin-guide C, substantially as shown and described.

257,975. GOVERNOR FOR PUMPING-ENGINES. George C. Phillips, Silver City, Nev. Filed Jan. 27, 1882. (No model.)



Claim.—1. A governor for direct-acting engines, consisting of mechanism or a device having a step-by-step movement connected with the throttle-valve or governor-valve of the engine and operated by or from the movements of the piston by mechanism, substantially as described, for regulating the admission of steam to the engine according to the length of stroke, constructed and operating substantially as described.

2. A governor for direct-acting engines, consisting of the ratchet or teeth wheel D, adapted to be connected with a throttle or governor valve, and to produce by its rotation in one direction an increase of inlet area and in the opposite direction a decrease in the same, and means, substantially as described, connected with or operated by the reciprocations of the engine-piston, for producing alternate rotation back and forth of the said wheel and for changing the relative length or amount of the two movements of the wheel in degree corresponding to the variations in the length of stroke of the piston, substantially as described.

3. The combination, with a throttle or governor valve of an engine, of mechanism connected with and operated by or from the movements of the engine-piston to produce at some time in the stroke of the piston first an increase of the inlet-aperture and then a decrease of the said inlet through the valve, said mechanism, substantially as described, being adapted to increase the closing over the opening movement of the valve as the length of stroke of the engine increases or exceeds a given length, and to act oppositely upon the valve as the stroke falls behind each given length, substantially as described.

4. The combination, with the ratchet-wheel D, adapted to be connected with a governor or controlling valve, of the pawl-carrying bars C C′ and the tappet-plate B, with its inclines *e f f*, connected with or moved by the engine-piston, and having motion uniformly with such piston, substantially as described.

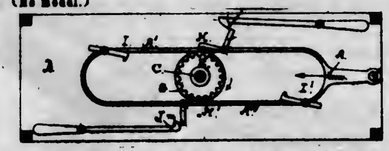
5. The combination, with the ratchet-wheel D, adapted to be connected with a governor or other controlling valve, of the pawl-carrying bars C C′, held in inclined slotted bearings *k*, the counter-weights at the upper ends, and the tappets or inclines *e f f* upon the plate B, which is connected with and to be driven by the engine-piston, substantially as described.

6. The combination, with the ratchet-wheel D, of the pawl-carrying bars C C′ and the reciprocating tappet-plate B, adapted to be connected with and having its motion produced uniformly by and with the engine-piston, as a means for producing rotation alternately in opposite directions of the ratchet-wheel from the stroke of the piston, substantially as described, for the purpose specified.

7. The plate B, having the tappets or inclines *e f f*, and adapted to be connected to or operated from the movements of the engine-piston to travel uniformly therewith, substantially as described.

8. The combination, with the pawl-carrying bars C C′, held in inclined slotted bearings, of the reciprocating plate B, having tappets or inclines *e f f*, and the cam plate or surface for producing from the reciprocations of the plate first a lateral movement of the upper end of the bar and then a perpendicular movement, substantially as herein described.

257,976. GOVERNOR FOR DIRECT-ACTING ENGINES. George C. Phillips, Silver City, Nev. Filed Mar. 16, 1882. (No model.)



Claim.—1. The combination, with the notched or toothed wheel E, keyed to the shaft C, which is connected with a valve governing the steam-supply, of the frame or elongated yoke A, having catches H H′ I I′, and connected with the engine-piston to travel uniformly therewith and with the same length of stroke, substantially as herein described, to operate as set forth.

2. The combination, with the elongated yoke A, adapted to be driven by or from the movements of the engine-piston and to travel with a reciprocating move ent over the notched or toothed wheel E, of the balanced catch H H′ I I′ and the latches J J, substantially as herein described.

3. The combination together of the wheel E, keyed to the shaft C, the wheel G, turning loosely upon the shaft, the reciprocating yoke A, having catches H H′ I I′, and the face-plates B B, substantially as herein described.

4. The herein-described stroke-governing device for direct-acting engines, consisting of the face-plates B B, the shaft C, passing through the same, the notched or toothed wheel E, keyed to the said shaft, the wheel G, held loosely upon said shaft, the elongated yoke A, having the pivoted catches H H′ I I′ and the latches J J, combined for operation together substantially as described.

257,977. BEER-CHIP. Bernard Rich, Brooklyn, N. Y. Filed Nov. 1, 1881. (Specimens.)

257,977.



Claim.—A calendered beer-chip having indentations or grooves impressed upon its surface, whereby the superficies of the chip and its density are increased, as and for the purpose set forth.

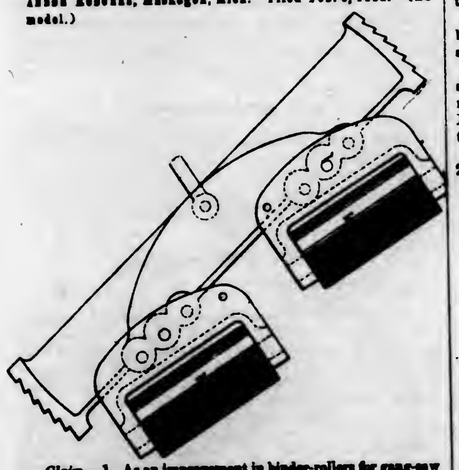
257,978. SAW-HANDLE. CHRISTOPHER W. ROBINSON, Saegertown, Pa. Filed Feb. 17, 1882. (No model.)



Claim.—1. The combination, with the handle and adjustable blade, of the clamping-collar having an adjusting-lever adapted to engage the blade and provided with a set-screw for holding it in position, as set forth.

2. The combination, with the handle provided with the U-shaped clamping-collar having an adjusting-lever pivoted between the arms thereof, and provided with a hooked or notched end and a set or adjusting screw, of the adjustable saw-blade having a series of serrations on its upper edge and a curved recess near its lower edge, substantially as and for the purpose specified.

257,979. PRESSER-ROLLER FOR GANG-SAW MILLS. ALEXANDER ROBERTS, Muskegon, Mich. Filed Feb. 8, 1882. (No model.)

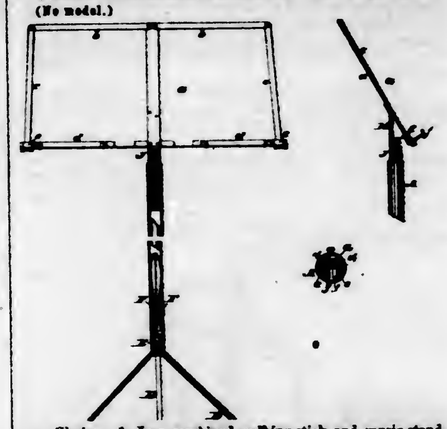


Claim.—1. As an improvement in binder-rollers for gang-saw mills, the combination, with two separate rollers and their adjustable frames, of a swinging equalizing-beam and vertical guides for the ends of the same, all arranged substantially as and for the purpose specified.

2. In binder-rollers for gang-saw mills, the combination, with an equalizing-beam provided with ratcheted ends, of grooved guides having pawls for sustaining said beam in a stationary position when desired and adjustable roller-frames attached to said beam, substantially as and for the purpose described.

3. The combination of the equalizing-beam, the roller-frames and rollers pivoted thereto, with the pins e, for the purpose of converting said rollers and roller-frames from swinging attachments to said bar to rigid fixture thereto, substantially as and for the purpose described.

257,980. COMBINED WALKING-STICK AND MUSIC-STAND. WILLIAM H. HOLDSWORTH, Camden, N. J. Filed Aug. 16, 1881. (No model.)



Claim.—1. In a combined walking-stick and music-stand, folding legs hinged to a block, E, which is provided with upwardly-projecting retaining-springs F, substantially as and for the purpose set forth.

2. In a combined walking-stick and music-stand, a folding music-stand provided with a supporting-sleeve, J, made adjustable in the stick, and formed of an expansible or split tube, substantially as and for the purpose set forth.

3. The folding music-stand, in combination with the sleeve J and support H, said support rising from the sleeve at one side, leaving the shoulder H', and having the stand hinged or pivoted to said support above the bottom edge of the former, substantially as and for the purpose set forth.

4. The folding music-stand G, provided with angular fingers *f*, in combination with the inclosing-stick, substantially as and for the purpose set forth.

5. The folding music-stand having side bars or pieces, c, the bottom pieces, *d*, with eyes *e*, substantially as and for the purpose set forth.

6. The combination, in a combined walking-stick and music-stand, of a stick, A, with removable head and ferrule, a folding music-stand, G, with an expansible sleeve, J, and the folding legs D, with the block E and upwardly-projecting springs F, substantially as and for the purpose set forth.

257,981. BENCH-PLANE. SOLON R. RUST, Pine Meadow, Conn. Filed Sept. 8, 1880. (No model.)



Claim.—The stock *a*, provided with ways *b* in the side plates thereof, the bed *c*, hung in such ways, the cutting-iron *j*, and the clamping-lever *k*, taking its fulcrum on bed *c*, all combined substantially as described, for the purpose set forth.

257,982. NIPPERS FOR OPENING BOTTLES. J. ALBERT SCHMIDT, New York, N. Y. Filed Mar. 16, 1882. (No model.) Patented in Germany Jan. 9, 1882, No. 16,578.



Claim.—As a new article of manufacture, a pair of nippers for cutting the cork-fastening wires and strings of bottles, the handles of which are bent into arc-shaped portions adjoining the nippers and provided with cutting devices concentric to the arc-shaped portions, substantially as set forth.

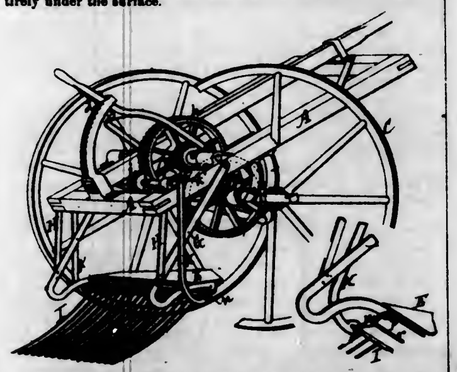
257,983. PIPE-COUPLING. LEVI T. SCOFIELD, Cleveland, Ohio. Filed Dec. 13, 1881. (No model.)



Claim.—A coupling for securing communication between a pipe and a vessel, or between two pipes, consisting of a hollow plug open at one end and closed at the other with a hexagonal cap, so that it can be turned with a wrench, the outer surface of said plug being a male thread of tapering form and provided with a hole on its side, so that when screwed tight in a valve, vessel, or socket forming a part of the coupling the opening will be the only communication between the pipes or pipe and vessel through the plug, said socket being provided with a grooved chamber encircling the plug at the opening, substantially as and for the purpose set forth.

257,984. POTATO-DIGGER. CHARLES W. SHEARER, Hendon, N. Y. Filed Mar. 27, 1882. (No model.)

Brief.—Connecting-links have free turning movement in their bearings, and the ends of the cross-head of the shaker also have free movement in the end of the pitmen, the peculiar construction giving vibration only to the inner end of the grating or shaker, while its outer end rests on the ground and the shaker works entirely under the surface.



Claim.—The combination, with the scoop E and grating I, of the links *n n*, connecting the grating with the back of the scoop, and the pitmen K K, connecting the grating with the crank-shaft *k*, as shown and described, and for the purpose specified.

257,985. ARTIFICIAL FUEL. WILLIAM C. SIPPERD, Victoria, British Columbia, Canada. Filed July 8, 1881. (No specimens.) Patented in Canada June 13, 1881, No. 13,965.



LONGITUDINAL SECTION.

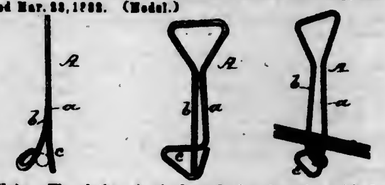
Claim.—An artificial fuel consisting of nine parts of coal-screenings, one of clay, one of sawdust, and a sufficient quantity of water, substantially as specified, whereby a cheap fuel shall be provided capable of producing the brilliant effects of a natural fuel, as set forth.

257,986. DOOR-CHECK. HENRY SENDERZY, Sparkbrook, near Birmingham, County of Warwick, assignor to William Henry Tonks and Edmund Tonks, Moseley Street, Birmingham, England. Filed Dec. 28, 1881. (No model.) Patented in England Feb. 21, 1881, No. 744.



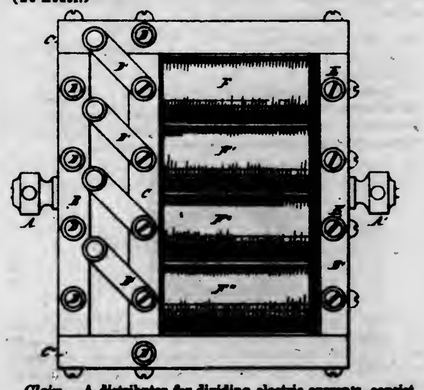
Claim.—A door-chain or door-fastening consisting of a longitudinally-slotted link, *e f g*, with the locking-slot h, secured by a chain to the door-frame, and of a necked stud or pin, *e d*, fixed on the door, the slotted link being combined with the necked stud or pin, and the two parts used substantially as described, and illustrated in the accompanying drawings.

257,987. CLOTHES-PIN. SUTTON STROUP, Harmony, Ind. Filed Mar. 23, 1882. (Model.)



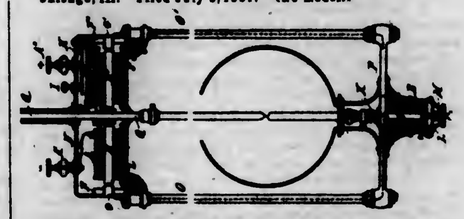
Claim.—The clothes-pin A, formed of spring-wire, with depending arms *a b*, the arm *a* being bent, substantially as shown, to form a triangular extension, *c*, while the arm *b* is bent and curved outwardly, substantially as and for the purpose set forth.

257,988. SHUNTING DEVICE FOR ELECTRIC LIGHTS. CHARLES J. VAN DEPOELE, Chicago, Ill. Filed May 4, 1881. (No model.)



Claim.—A distributer for dividing electric currents, consisting of the frame B B' C C C', carrying the checks or coils F F F'' F''', all connected with the main line by posts A A', and the switches D' and posts D, substantially as described.

257,989. ELECTRIC-ARC LAMP. CHARLES J. VAN DEPOELE, Chicago, Ill. Filed July 8, 1881. (No model.)



Claim.—1. In an electric lamp, a brake or stop constructed and adapted to alternately hold and release the carbon, in combination with suitable means for giving said brake or stop a rapidly-vibrating movement, substantially as and for the purpose specified.

2. In an electric-arc lamp, and in combination with a suitable device for normally holding the upper carbon, a stop or brake adapted to vibrate rapidly to or from the carbon-holder, whereby it will alternately hold and release the carbon only when it becomes necessary to feed the same, substantially as and for the purpose specified.

3. In an electric-arc lamp, and in combination with a suitable device for normally holding the upper carbon, a stop or brake constructed to vibrate rapidly and to alternately act on the carbon when feeding is necessary, and a suitable circuit-breaker, substantially as and for the purpose specified.

4. In an electric-arc lamp, and in combination with the upper carbon or carbon-holder thereof, the plate D, magnets A C, cores E E', and a vibrating stop, substantially as and for the purpose described.

5. In an electric-arc lamp, and in combination with the carbons thereof, the electro-magnets A C, means for passing a steady current through the magnet A and a rapidly-pulsating current through the magnet C, and devices actuated by said magnets for normally holding the upper carbon and gradually allowing the same to fall when feeding is necessary, substantially as and for the purpose specified.

6. In an electric-arc lamp, the carbon-holding rod Q, in combination with the plate D, embracing said rod, the magnets A C, the cores E E', the vibrating lever or stop G, and a suitable automatic circuit-breaker, substantially as and for the purpose specified.

7. In an electric-arc lamp, the carbon-holding rod Q, in combination with the plate D, core E, vibrating core E', vibrating lever or stop G, and a suitable circuit-breaker, as and for the purpose specified.

8. In an electric-arc lamp, and in combination with the cores E E' and the plate D, operating substantially as described, the screws *s s'*, whereby the position of the upper-carbon holder may be regulated.

9. In an electric-arc lamp, the combination of the lower-carbon holder, upper-carbon-holding rod, Q, plate D, cores E E', magnets A B C, lever or stop G, disks F F', spring-contact H, and suitable electric and magnetic connections between the various parts, substantially as described.

257,990. COMBINED ELECTRIC MOTOR AND GENERATOR.

CHARLES J. VAN DEPOELE, Chicago, Ill. Filed Apr. 8, 1881. (No model.)

Brief.—An armature has two systems of independent coils, one of which, being put in the circuit of a generator, acts to drive the armature as a motor. Currents are induced in the other coils, which may be utilized for lighting or other purposes.



Claim.—1. An electric motor the armature of which is wound with a primary and a secondary wire, the former to be used as the motive force and at the same time to induce currents of alternating directions in the latter when in operation, substantially as described.

2. In an electric motor and current-generating machine, and in combination with the field-magnets thereof, an armature consisting of insulated sections combined to form a wing or cylinder, each section being composed of a curved core and a primary and a secondary coil, all insulated from each other, substantially as described.

3. An electromotor the armature of which is wound with a primary and a secondary wire, in combination with an electric generator for supplying an electric current to said motor and circuit-connections for carrying off the current from the secondary wire, substantially as and for the purpose specified.

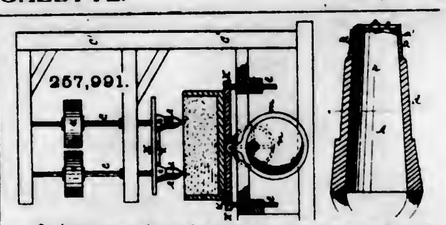
4. The combination, with a motor or motors provided with an armature or armatures having primary and secondary coils, of an electric generator producing motive power in said motor or motors and a lamp-circuit connecting with the secondary coils of said armature or armatures, as and for the purpose specified.

5. In combination with an electromotor and current-generating machine, a regulator or governor consisting of an insulated ring, F, and a series of fliers adapted to "short-circuit" the motor when the speed becomes excessive, substantially as described.

6. A governor for electric motors, consisting of a metal ring, F, supported and insulated from the motor by a non-conducting disk, *a*, and a series of fliers, F' F'', mounted on the shaft of the motor, both the ring and the fliers being suitably connected with the main circuit, substantially as specified.

257,991. METHOD OF AND APPARATUS FOR FORMING MOLDS FOR CASTINGS. S. JARVIS ADAMS, Pittsburg, Pa. Filed June 3, 1881. (No model.)

Claim.—1. The herein-described method of forming cylindrical molds in a body of sand, consisting in at the same time rapidly rotating and gradually advancing a pattern into the body of sand, so as to compact and smooth the walls of the mold, substantially as and for the purposes set forth.



2. A rotary pressing tool or pattern for forming molds in sand, provided with a series of pressing-faces on its periphery, adapted to gradually press out the sand, substantially as set forth.

3. A rotary pressing tool or pattern for forming molds in sand, having a hollow passage extending axially through the entering end for the escape of sand, substantially as set forth.

4. A rotary pressing tool or pattern for forming molds in sand, provided with a central passage for the escape or removal of part of the sand, and a wire or knife across the mouth of the passage, substantially as and for the purposes set forth.

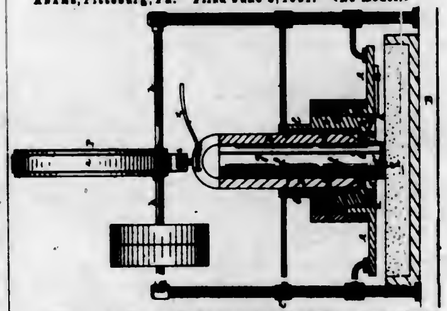
5. In combination with a rotary pattern for forming molds in sand, a vertically-moving flask-table adapted to advance the flask to the rotary pattern and withdraw it therefrom after the formation of the mold, substantially as set forth.

6. The combination of the rotary patterns A, vertically-moving flask-table K, guide-rods *l*, and cam or eccentric for imparting motion to the flask-table, substantially as and for the purposes set forth.

7. The combination of the rotary patterns A, flask-table K, long flask U, divided into separate compartments, and stop mechanism for holding the flask in proper relative position to the patterns, substantially as set forth.

8. The combination of the long flask U, divided into separate compartments, and the bottom board, T, provided with the circular openings *t* under each compartment, substantially as and for the purposes set forth.

257,992. FORMING MOLDS FOR CASTINGS. S. JARVIS ADAMS, Pittsburg, Pa. Filed June 3, 1881. (No model.)



Claim.—1. The method herein described of forming cylindrical molds in a body of sand, consisting in first forcing the pattern into the sand by direct compression longitudinally of its axis, and subsequently rotating the pattern so forced in circumferentially of its axis to smooth or finish the mold, substantially as and for the purposes set forth.

2. A pattern, D, for forming molds in sand by compression, provided with a cope-head, *c*, for molding the cope-print above the mold, said cope-head having an annular downwardly-extending lip, *c'*, for compacting the sand at the top of the mold, substantially as set forth.

3. A pattern for forming molds, constructed in two parts, the pattern proper, *d*, adapted to be first advanced into the sand, and the cope-head *c*, adapted to be afterward advanced, and provided with an annular downwardly-extending lip, *c'*, to compress the sand against the pattern proper, substantially as set forth.

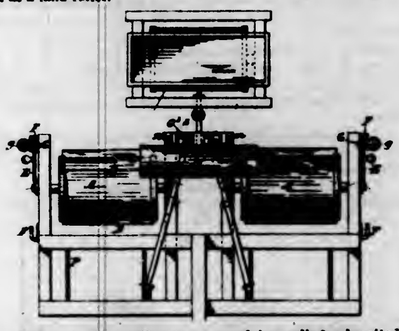
4. A pattern for forming molds in a solid body of sand by direct compression, provided with a passage extending longitudinally through the pattern, to permit a portion of the sand to enter the pattern as it is pressed into the sand and fall through or be withdrawn by the pattern, substantially as set forth.

5. A pattern for forming molds in sand by compression, provided with a central passage to permit a portion of the sand to enter the pattern, said central passage having an irregular face to hold the sand, substantially as and for the purposes set forth.

6. In machines for forming molds in sand by compression, the combination of the pattern D, templet-plate A, and cam I', or equivalent power apparatus, the pattern and templet-plate being so connected by a telescopic joint that both are advanced and retracted by the movement of the power apparatus, substantially as and for the purposes set forth.

257,993. STALK-CUTTER. JOHN Q. ADAMS, Marseilles, Ill. Filed Aug. 29, 1881. (No model.)

Brief.—Knife-holders attached to arms which have their bearings on a shaft eccentrically to the cylinder, said holders carrying detachable knives, whereby the machine may be converted into a land-roller or stalk-chopper at will. Devices for locking and releasing the crank-shaft and for flexibly and detachably connecting a rear supplementary roller when the machine is to be used as a land-roller.

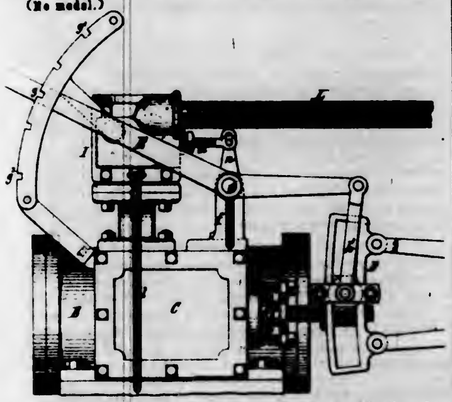


Claim.—1. In a stalk-cutter, a revolving cylinder longitudinally slotted, in combination with a fixed crank-shaft on which it revolves, with knife-carrying arms having their bearings on the shaft eccentrically to the cylinder, with knife-holders H H', attached to the knife-carrying arms, and with knife-blades detachably set in the knife-holders, substantially as and for the purpose described.

2. The lever E, rigidly set on the crank-shaft D and provided near its free end with the slot *s*, in combination with the plates F, having the elongated slots *f*, and with the bolt G, provided at its inner end with the lug *g* and at its outer end with the parallel weighted arm *g'*, substantially as and for the purposes described.

3. The knife-cylinders A, in combination with knife-blades detachably set therein, and with means for flexibly and detachably connecting said cylinders with a supplementary rear cylinder, substantially as and for the purposes described.

257,994. VALVE-GEAR FOR STEAM-ENGINES. ROBERT W. AITKEN and DAVID FARQUHAR, Buffalo, N. Y., assignors to the Pitts Agricultural Works, same place. Filed Mar. 16, 1882. (No model.)



Claim.—1. In a reversible steam-engine, the combination of a steam-distributing valve adapted to be operated forward and backward, a throttle-valve whereby the admission of steam to the steam-distributing valve is controlled, and mechanism whereby the motion of the steam-distributing valve and the position of the throttle-valve are controlled simultaneously, substantially as set forth.

2. The combination, with the link D, whereby the motion of the steam-distributing valve is controlled, and a throttle-valve, J, whereby the admission of steam to the distributing-valve is regulated, of a reversing-lever, E, connected with the link D and the valve J, whereby both are adjusted simultaneously, substantially as set forth.

3. The combination, with the steam-valve C' and the throttle-valve J, of the link D, connected with the valve C', the reversing-lever E, mounted on a rock-shaft, *e*, and connected with the link D, and an arm, *n*, secured to the shaft *e* and connected with the throttle-valve J, substantially as set forth.

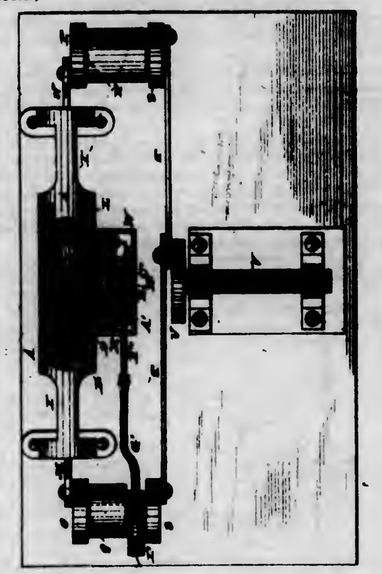
4. The combination of a valve-chest, I, connected with the steam-boiler by a pipe, L, and a drip-pipe, *l*, which descends from the valve-chest to the steam-boiler, and whereby the water of condensation is returned to the boiler, substantially as set forth.

257,995. LOCK. ELI ANDERSON, Carpentersville, Ind. Filed Mar. 16, 1882. (Model.)



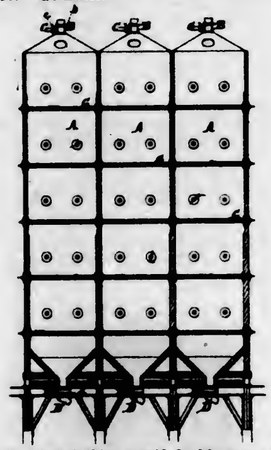
Claim.—The combination of the tumbler having shoulders G I, cam K, having curved side L, and arm M, provided with notch N and spring O, the spring H, and the detent J, all arranged and operating substantially as set forth.

257,996. STEAM-ENGINE. JAMES ANDERSON and JOHN MCDONALD, Cambridgeport, Mass. Filed Mar. 2, 1882. (No model.)



Claim.—As an improvement in steam-engines, the cylinder A, having counter-cuts I I, forming segmental ways for the cross-heads J K, pistons B B', connected by rods D, having flanges and nuts countersunk in said pistons, central piston, C, piston-rods G L, arranged as described, pitmen M N, crank-shafts Q R, having wheels O, P, and S, pitmen T, shaft V, having crank-wheel U, steam-chest W, having ports X Y, valve Z, having recesses A' C', channels D', and exhaust-port E', and the eccentric I', mounted upon shaft Q and connected with the valve Z, all constructed, arranged, and operating substantially as herein shown and specified.

257,997. GRAIN-BIN. EDWARD ARNAN, Brooklyn, N. Y. Filed Sept. 2, 1881. (No model.)



Claim.—1. Air-tight bins provided with valves for controlling the flow of air as well as of grain, substantially as herein specified.

2. The grain-bins A, formed with a strong and close main wall, an impervious flexible lining, and a further layer of overlapping material, as clapboards, combined substantially as herein specified.

3. The combination, with one or more grain-bins, of tight-abutting valves for the admission and discharge of the grain, and provisions for introducing cold air to fill the interstices of the grain, as herein specified.

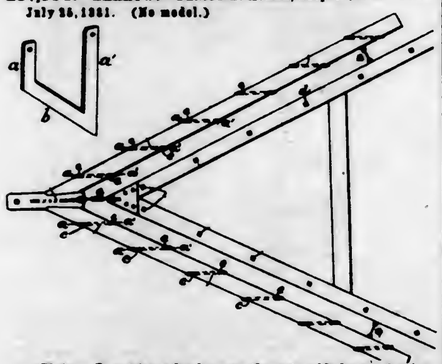
4. In a grain-bin having provisions for the discharge of grain, a separate provision for the introduction of air, the apertures $d^{\times}$, arranged to induct the air without discharging grain, as herein specified.

5. The valve J, discharge-nozzle D, provided with the inclined apertures $d^{\times}$, valve e, and air-induction nozzle E, so arranged that the latter surrounds the former, as and for the purposes herein specified.

6. The nozzle B, for the entrance of grain, and the branch nozzle C, for the eduction of air, combined with each other and with the bin and adapted for joint operation, as herein specified.

7. In an air-tight grain-bin having provisions for the introduction and removal of grain and of air, a safety-valve opening in two directions, adapted to prevent an excess of pressure either inward or outward, substantially as herein specified.

257,998. HARROW. DANIEL B. ASHER, Gosport, Ind. Filed July 25, 1881. (No model.)



Claim.—In a triangular harrow, the outer side beams, having their outer and inner sides formed with recesses c, in combination with the knives, constructed as shown, with the inclined cutting blade b and the vertical shanks a and a', said shanks being bolted in said recesses to bring the blades of the knives on lines parallel with the line of draft, as herein set forth and described.

257,999. ARMATURE FOR DYNAMO-ELECTRIC MACHINES. CHARLES E. HALL, Philadelphia, Pa. Filed Feb. 25, 1882. (No model.)

Brief.—The armature-coils are composed of iron wire coated with a metal which is a better conductor of electricity than iron, the whole being insulated in the usual manner. The coated wire serves at the same time as magnetic core and generating-coil.

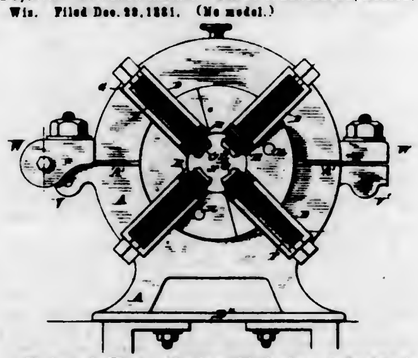


Claim.—1. An armature for dynamo-electric machines, having its coils composed of a wire of magnetic material coated or plated with a non-magnetic material of greater conductivity than the body of the wire, substantially as and for the purpose described.

2. An armature for dynamo-electric machines, composed wholly of a series of coils of wire of a magnetic material coated or plated with a material of a substantially non-magnetic character and of greater conductivity than the material of which the body of the wire is composed, both the wire and its covering being in and forming part of the electric circuit, substantially as described.

3. An armature composed of a series of coils of wire of magnetic material coated with a non-magnetic conductor and mounted on a suitable center, substantially as described.

258,000. TURNING-LATHE. HENRY C. BALDWIN, Hudson, Wis. Filed Dec. 29, 1881. (No model.)



Claim.—1. The combination, with the frame or bearing A, of the reversible revolving collar B, provided on each side with grooves for the detachable clamping-jaws C, substantially as and for the purpose set forth.

2. The herein-described revolving collar, consisting of two parts connected by a dovetail joint, tapering or wedge-shaped in direction of its length, and by a single tapering pin, substantially as set forth.

3. The frame consisting of the base R and hinged top S, with the interposed plates or washers A', in combination with the revolving reversible collar B, substantially as set forth.

4. The slotted lug W, having sleeves C' fitted in its sides and projecting at the ends, in combination with the headed bolts or set-screws B', passing loosely through said sleeves and into the sides of lug V, forming a hinge, substantially as set forth.

5. The combination, with the reversible revolving collar, constructed and arranged substantially as described, of the frame consisting of two parts hinged together and having a set-screw adapted to enter a recess in the edge of said revolving collar, so as to hold it stationary, substantially as set forth.

258,001. PRESERVING COMPOUND. FREDERICK S. BARFF, Kilburn, County of Middlesex, England. Filed Mar. 21, 1882. (No specimens.) Patented in England Mar. 26, 1881, No. 1,329.

Claim.—As an agent for the preservation of organic matter, a compound of boracic acid and glycerine having the characteristics described.

258,002. GATE-HINGE. MARION J. BARROW, Barrow, assignor of one-half to Albert B. Proctor and George W. Fick, Rockhouse, Ill. Filed Mar. 10, 1882. (Model.)

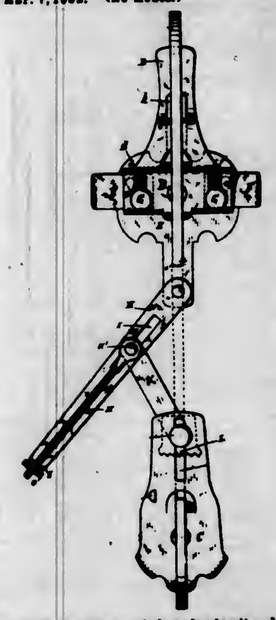
Claim.—The combination, substantially as hereinbefore set forth, of the lower section provided with jaws b b, circular bearing

258,002.



b', and upwardly-projecting portion b^2, and the upper section formed with the shell or casing c, having its rim arranged to bear on the circular bearing b', and the under side of its top arranged to bear on the top of portion b^2, and provided with guide-rolls d' and rollers d^2, as set forth.

258,003. SKATE. JOHN BARNLEY, Oshawa, Ontario, Canada. Filed Mar. 7, 1882. (No model.)



Claim.—1. An improved skate having its sole and heel plates connected to a slotted lever carrying an adjustable screw-rod, substantially as herein shown and described, whereby the said sole and heel plates are adjusted simultaneously, as set forth.

2. In a skate, the combination, with the runner A, the toe-plate B, and the heel-plate C, of the longitudinally-movable sole-plate E, the transversely-movable sole-clamps F, and devices for moving and locking the sole-plate, substantially as herein shown and described, and for the purpose set forth.

3. In a skate, the combination, with the runner A, the toe-plate B, provided with slots d, and heel-plate C, of the longitudinally-movable sole-plate E, the transversely-movable sole-clamps F, provided with diagonal slots e, the pintles G, attached to the sole-plate E and passing through the slots e and d, and of devices for moving and locking the sole-plate E, substantially as herein shown and described, and for the purpose set forth.

4. The combination, in a skate, of a longitudinally-movable sole-plate, E, with the lever H, pivoted to the rear end of the same, and the lever K, pivoted to the lever H and to the sliding heel-clamp L, substantially as herein shown and described, and for the purpose set forth.

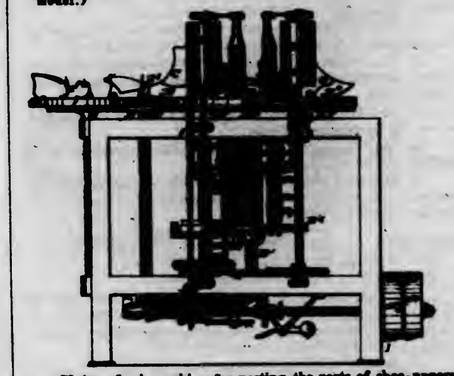
5. The combination, with a skate, of the longitudinally-movable sole-plate E, the clamps F, the longitudinally-slotted lever H, the lever K, the pintle K', the screw-rod N, and the nut O, substantially as herein shown and described, and for the purpose set forth.

6. The combination, with a skate, of the movable sole-plate E, the lever H, having its end J bent downward, the clamps F, the lever K, the pintle K', the screw-rod N, and the nut O, substantially as herein shown and described, and for the purpose set forth.

7. The combination, with a skate, of the movable sole-plate E, the clamps F, the levers H K, and the stud P, projecting from the bottom of the heel-plate C, substantially as herein shown and described, and for the purpose set forth.

8. In a skate, the combination, with the runner A, the toe-plate B, provided with a slot, e, and the heel-plate C, of the longitudinally-movable sole-plate E, provided with a tongue, b, the clamps F, and the levers H K, substantially as herein shown and described, and for the purpose set forth.

258,004. MACHINE FOR PASTING SHOE-UPPERS. MARIA H. BRADLEY and S. LLOYD WIEGAND, Philadelphia, Pa.; said Wiegand assignor to said Bradley. Filed Sept. 26, 1881. (No model.)



Claim.—1. A machine for pasting the parts of shoe-uppers together, embracing the following devices in combination: a series of forms for receiving and holding the upper, a paste fountain and brush, a clamping device, and a discharging mechanism, all substantially as described, arranged to operate substantially in the manner set forth.

2. In a machine for pasting the parts of shoe-uppers together, the combination of gages and forms, substantially as described, for guiding the fitting of parts and determining the registration thereof, substantially as and for the purpose set forth.

3. In a machine for pasting shoes, the combination, substantially as described, of pasting-brushes with guards or stencils for restricting the spreading of paste or other cement, substantially as and for the purpose set forth.

4. In a machine for pasting together the parts of shoe-uppers, the perforated forms, in combination with clamps for holding the parts in position while drying.

5. In a machine for pasting together the parts of shoe-uppers, the combination of the scraping device with a pasting device, substantially as and for the purpose set forth.

6. In a machine for uniting the parts of shoe-uppers by pasting, the combination of a wheel for receiving and conveying the forms bearing uppers with the pasting and clamping devices, substantially as and for the purpose set forth.

7. In a machine for pasting the parts of shoe-uppers together, the combination of a throw-off or disengaging device driven with the driving-shaft and the feeding and clamping mechanisms, substantially as and for the purpose set forth.

8. In a machine for pasting shoe-uppers together, the combination of a tempering or stirring device, substantially as shown, with the paste-fountains, substantially as and for the purpose set forth.

9. In a machine for pasting the parts of shoe-uppers together, the combination of forms and clamps with the guiding and discharging mechanism, substantially as shown and described.

10. In a machine for pasting the parts of shoe-uppers together, the combination of guides and clamps, substantially as shown and described, for holding the vamps during the pasting operation.

11. In a machine for pasting the parts of shoe-uppers together, the combination of an intermittently-moving table, adapted to receive the forms bearing the quarter-pieces, with a reciprocating flier adapted to convey and apply molds or clamps containing the vamps, all substantially as and for the purpose set forth.

12. In a machine for pasting together the parts of shoe-uppers, the combination of the intermittently-rotating mold or table adapted to receive vamps in clamps or molds and deliver them to a flier, substantially as and for the purpose set forth.

13. In a machine for pasting the parts of shoe-uppers together, the combination of the flier for applying the vamps with the stop-motion to automatically stop the machine when the vamp fails to

apply properly to the quarters, as and for the purpose set forth.

14. In a machine for pasting the parts of shoe-uppers together, the combination of the discharging mechanism with a registering mechanism, so as to register the uppers delivered, as and for the purpose set forth.

15. In a mechanism for pasting the parts of shoe-uppers together, the combination of two or more intermittently-moving tables, substantially as set forth, adapted to convey forms bearing the parts of the uppers to a pasting and a clamping mechanism, as and for the purpose set forth.

16. The form C, provided with springs C^2, substantially as shown and described, and for the purpose set forth.

17. The clamps C^1, provided with register-pins C^3 and springs G^2, substantially as and for the purpose set forth and shown.

18. The combination of forms and clamps, substantially as described, constructed and arranged to co-operate as and for the purpose set forth.

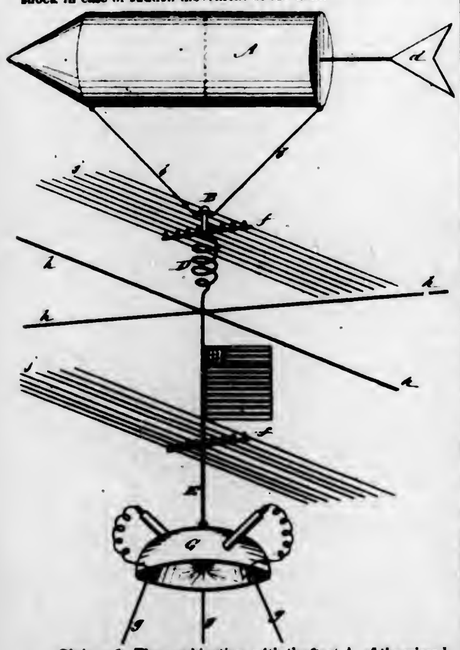
19. The adjustable stencils or guides constructed and arranged as and for the purpose set forth.

20. The disengaging and backing devices combined to co-operate as and for the purpose set forth.

21. The combination of the sliding bolts B^2 with the intermittently-moving table B and forms or clamps C, substantially as and for the purpose set forth

258,005. BALLOON-SUPPORT FOR TELEGRAPH-WIRES, &c. WILLIAM BENSON, Miles City, Mont. Filed Dec. 17, 1881. (No model.)

Brief.—A float which is stayed by guy-ropes holds the rod by which is supported an electric light, telegraph-wires, &c. A spring may be located between the rod and support to prevent any shock in case of sudden movement of the float.



Claim.—1. The combination, with the float A, of the wires *b*, the head B, and the rod E, substantially as and for the purpose set forth.

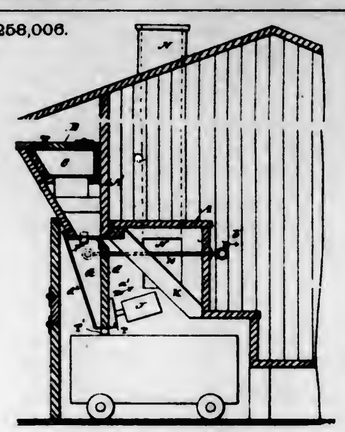
2. In combination with the float A, the head B, spring D, rod E, and the stay rods or wires *g g*, substantially as and for the purposes set forth.

3. The rod E, carrying the cross-pieces *f f*, and provided with the spring D and head B, in combination with the float A and stays *g g*, as and for the purposes set forth.

258,006. EARTH-CLOSET. HENRY J. BERNARD, New York, N. Y. Filed Feb. 8, 1882. (No model.)

Claim.—1. In an earth-closet, the combination, with the seat and a receptacle for powdered material, of a swinging hopper for

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conducting the powdered material upon the excrement, provided with a valve for opening and closing the bottom of the said receptacle, substantially as and for the purpose set forth.

2. In an earth-closet, the combination, with the receptacle B for powdered material, of the swinging hopper G and the valve slat or rail F in the top of the swinging hopper for closing the bottom of the receptacle B, substantially as herein shown and described, and for the purpose set forth.

3. In an earth-closet, the combination, with the receptacle B for powdered material, of the swinging hopper G, provided with a valve slat or rail, F, and of the rod H, for operating the swinging hopper G, substantially as herein shown and described, and for the purpose set forth.

4. In an earth-closet, the combination, with the receptacle B, of the swinging hopper G, provided with a valve for opening and closing the bottom of the said receptacle, the rod H, and the weight J, substantially as and for the purpose set forth.

5. In an earth-closet, the combination, with the swinging hopper G, of the receptacle B, the sieve C, and means for reciprocating the sieve, substantially as and for the purpose set forth.

6. In an earth-closet, the combination, with the receptacle B, of the swinging hopper G, and devices, substantially herein shown and described, for loosening the powdered material in the said receptacle, the said devices being operated by the movement of the said hopper, as set forth.

7. In an earth-closet, the combination, with the receptacle B for powdered material, of the swinging hopper G, the slat F, and of devices attached to the strip or slat F, for loosening the powdered material in the receptacle G, substantially as herein shown and described, and for the purpose set forth.

8. In an earth-closet, the combination, with the receptacle B, for powdered material, of the swinging hopper G, the slat F, the frames P and Q, pivoted to the top of the strip or slat F in the hopper G, and of the pivoted wires R S, for connecting these frames with the sides of the receptacle B, substantially as herein shown and described, and for the purpose set forth.

9. In an earth-closet, the combination, with the receptacle B, for powdered material, the hopper G, and the slat F, of the swinging frames P and Q and the fixed frames or projection O on the top of the strip or slat F in the hopper G, and of the wires R S, substantially as herein shown and described, and for the purpose set forth.

10. In an earth-closet, the combination, with the receptacle B and the swinging hopper G, of the check-block T, the projecting rail T', and the check-bar K, substantially as herein shown and described, and for the purpose set forth.

258,007. POCKET DOOR-FASTENING. ARTHUR BELOISE, Chicago, Ill. Filed Jan. 21, 1882. (No model.)

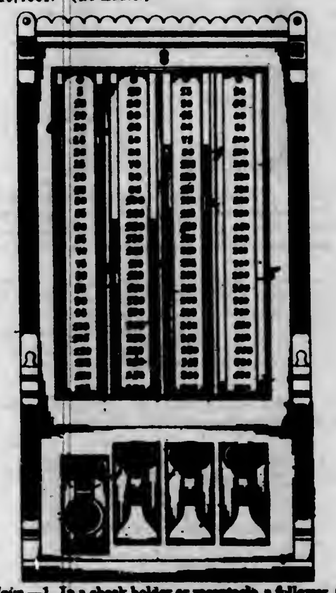


Claim.—1. In a portable or pocket door-fastening consisting of the grooved and slotted button A and hooked tongue D, provided with pin *d*, the slot C, inclined with reference to the bearing-face A', and laterally extended at one or both ends, substantially as described, and for the purposes set forth.

2. In combination with the hooked tongue D, the button A, having the groove B and the slot C, laterally extended at one end, and the recess *e'*, whereby the tongue may be folded against the back, with the hooks guarded, substantially as shown and described.

3. In the fastening described, the combination, with the tongue D, having holes d^1, of the plate E, provided with pins *e e*, fitted to the holes d^1, whereby the plate may be attached to the tongue for the purpose of giving greater thickness to the latter, substantially as described.

258,008. CHECK-REGISTER. JOSEPH RESNOR, Philadelphia, Pa., assignor of one-half to Henry Loth, same place. Filed Aug. 18, 1881. (No model.)



Claim.—1. In a check holder or receptacle, a follower, G, with pawl and rack, substantially as shown, for preventing the fraudulent insertion of checks through the ejection-opening, as set forth.

2. The combination, in a check-register having a check tube or holder with slotted or open front and a door which, when closed, forms a front to said tube, of a register strip or gage affixed to the inside of said door, and a follower located in said tube and having arms which embrace the edge of said strip, substantially as shown and described.

258,009. DRAWER-PULL. ELI J. BLACKMAN, Bridgeport, assignor to the Benedict & Burnham Manufacturing Company, Waterbury, Conn. Filed Apr. 15, 1882. (No model.)

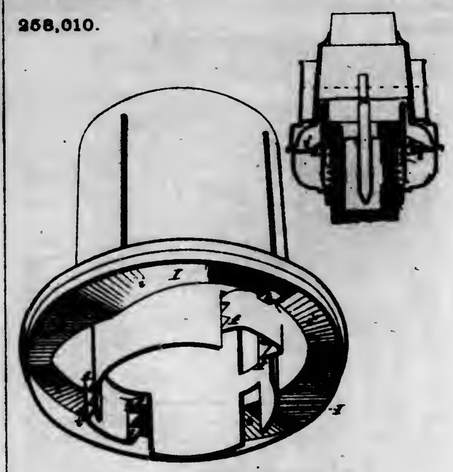


Claim.—The herein-described drawer-pull, consisting of the socket by which the pull is secured to the drawer, a tube through its head, a U-shaped handle, its two ends resting against the corresponding ends of said tube, and a spindle through said tube, secured in the ends of said handle, substantially as described.

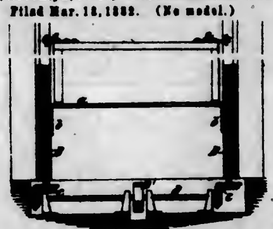
258,010. LAMP-BURNER. STURGIS BOILEAU, St. Louis, Mo., assignor of one-half to William Somerville, same place. Filed Jan. 16, 1882. (No model.)

Claim.—A lamp-burner having a vertically-sliding ring with spring-claws having notched studs connected thereto, and the cam I, with inclined portions *i* and *i'*, constructed and operating substantially as set forth.

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258,011. HOISTING APPARATUS FOR ELEVATORS. SUSAN A. BOND, Brooklyn, N. Y., Administratrix of Edwin Bond, deceased. Filed Mar. 18, 1882. (No model.)



Claim.—1. The combination, with an elevator platform or car, of upright stationary nuts upon the uprights or guides between which said platform or car travels, upright shafts extending through said stationary nuts from end to end thereof, mechanism for rotating said shafts, and screws fitting said nuts and supporting said platform or car, and connected with said shafts each by a spline and groove, so that they may slide freely longitudinally upon said shafts as they are advanced by rotating in said nuts, substantially as specified.

2. The combination of the upright stationary nuts C, slotted at the front, the shafts B, arranged in and extending from end to end of said nuts, the screws *b*, connected with said shafts by splines and grooves, so as to slide freely thereon when advanced by rotating in said nuts, and the bar *a*, supported by said screws and working up and down in the slots in said nuts, substantially as specified.

258,012. REVOLVING HARROW. JOHN BRADFORD, Nelson, Ind. Filed Jan. 17, 1882. (No model.)

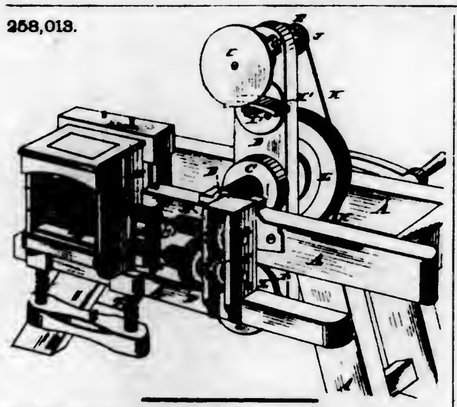


Claim.—As an improvement in revolving harrows, the combination, with the frame A, having sides B, provided with vertical slots D E, of the toothed cylinder F and the roller G, mounted in said slots, and the rigid crushing-bars H H, arranged respectively in front and in rear of said roller G, substantially as set forth.

258,013. FEED-CUTTER. AUGUST BRANDT, Fort Wayne, Ind. Filed Mar. 11, 1882. (Model.)

Claim.—The combination of the feed-rollers, the couplings B' C', the shafts Z, having intermeshing pinions A' and bevel-gear D', the shaft F', having pinion E' and friction-wheel G', and the main shaft having arms D, carrying the rotary cutters, and shoes H', provided with rubber blocks I', substantially as set forth.

258,013.

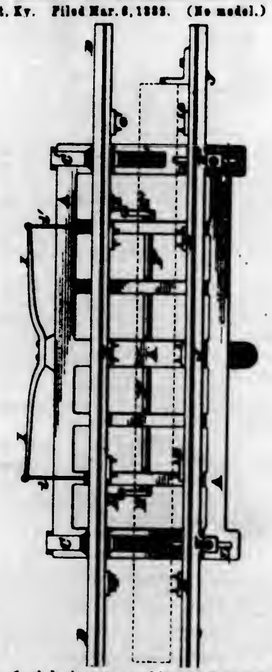


258,014. BARBED FENCE. JACOB BRINKERHOFF and WARREN W. BRINKERHOFF, Auburn, N. Y. Filed Apr. 11, 1882. (Model.)



Claim.—In combination with a fence-wire of the class used for barb-fences, a metal barb divided at one end to form barbs and having at its other extremity a solid barbless base clamped upon the wire by bending said solid base thereon toward the divided end, substantially as shown and described.

258,015. LAYING-OUT MACHINE. JAMES A. BROWNFIELD, Newport, Ky. Filed Mar. 6, 1882. (No model.)

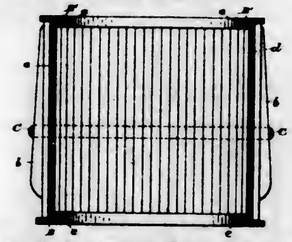


Claim.—1. A laying-out machine consisting of the table A, provided with a pair of grooves, B B', traversed by the slides C C' of reciprocating marker-rail D, which latter is operated by a treadle and rock-shaft in the manner described, another marker-rail, J, being secured to said table with locking devices K K' L L', so as to be adjusted parallel with reference to said rail D, both of these rails being furnished with shiftable cutter-heads armed with points, for the purpose specified.

2. In combination with the reciprocating marker-rail D of a laying-out machine, the rock-shaft F, having cranks H H' and links h h', which links are located at some distance from the center of said rail to prevent it springing.

3. A marker-rail having a longitudinal dovetail groove, *j*, to receive the tongue *n* of the shiftable cutter-head N, whose projecting base O is armed with the points P *p*, said head being secured in position by the set-screw R, as herein described.

258,016. FIRE-POT. VOLNEY BUSH, East Saginaw, Mich. Filed Apr. 8, 1882. (No model.)

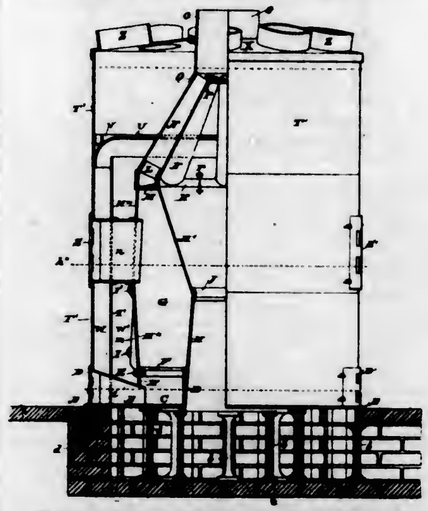


Claim.—1. A fire-pot the walls of which are formed of a series of T-shaped sections, the parts *b* of which are of increasing depth from top to bottom, in combination with one or more binders, C, embracing the outer edges of parts *b*, as shown and described.

2. In a fire-pot, the sections A, provided with tongues *e* and grooves *d*, and parts *b*, of increasing depth, as described, in combination with one or more binders, C, as set forth.

3. In a fire-pot, the parts B B', of annular form or otherwise, as described, and provided with the flanges *e*, in combination with the sections A and one or more binders, C, as set forth.

258,017. AIR-HEATING FURNACE. VOLNEY BUSH, East Saginaw, Mich. Filed Apr. 25, 1881. (No model.)



Claim.—1. In an air-heating furnace, the annular fire-chamber G, constructed as described, in combination with the base-plate A, provided with openings A', and resting on the supporting-piers *b* and wall *d*, the central air-passage, W'', formed by the oppositely-inclined walls H H', the air-passage W', formed by the oppositely-inclined sections H'' H''' and vertical annular wall T, and the air-passage W, formed by the annular vertical wall T and jacket T', said jacket being provided with the deflector U and trough V, substantially as and for the purposes set forth.

2. In an air-heating furnace, the annular fire-chamber G, formed of the outwardly-inclined sections H H'', resting upon the annular supporting-walls B B', with the interposed ring E, the upwardly-inclined sections H' H'', provided with rings I' J, and united at their upper ends by radiator-head K and annular plate M, said plate being provided with openings *p* and holes *r'*, and the bolts *r*, substantially as and for the purposes set forth.

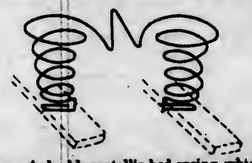
3. In an air-heating furnace, the annular fire-chamber G, constructed as described, and provided with the plate M and radiator-head K, having collars L, in combination with the conical pipes N, the stack O, provided with collars Q, annular flange R, and flange ring or washer R', the furnace-top X, and jacket T', substantially as set forth.

4. In an air-heating furnace, the combination of the sections H H' H'' H''' with the rings I J, substantially as described.

5. In an air-heating furnace, the sections H' H''', in combination with radiator-head K, having collars L, plate M, provided with openings *p* and holes *r'*, and bolts *r*, substantially as set forth.

6. In an air-heating furnace, the grate F, composed of a series of radial bars with radial openings between said bars, the ring E and wall B B', in combination with the shaker-wheel *h*, shaft *i*, and wall T T', the latter wall, T', being provided with the sleeve Y, substantially as specified.

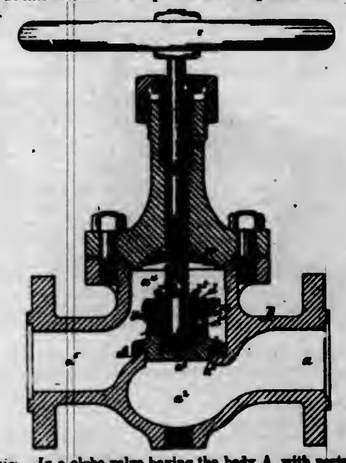
258,018. BED-SPRING. WILLIAM CHILDERS and MARTIN M. REBALY, Philadelphia, Pa. Filed Mar. 16, 1882. (No model.)



Claim.—A double metallic bed-spring, which consists of two spirals or springs connected together at their tops by a double-adjusting bridge made W shape to allow the spring to be adjusted without turning the spirals, and provided on the bottom of the spirals with double reversed hooks, as shown, their closed ends being toward each other, and the whole spring being made of one piece of wire, as set forth.

258,019. GLOBE-VALVE. JOHN CHRIST, Roboken, N. J. Filed Nov. 11, 1881. (No model.)

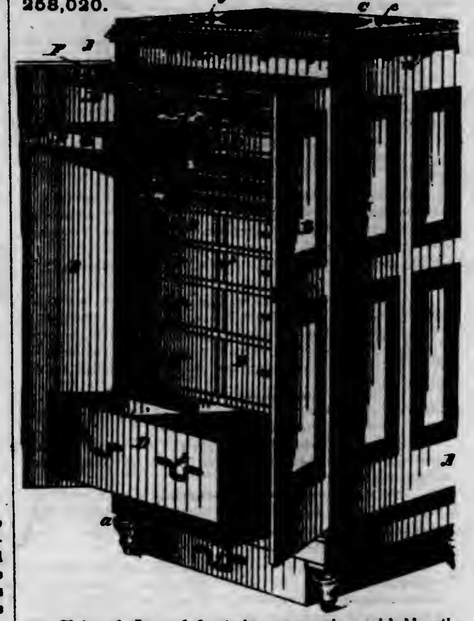
Brief.—When the valve is opened the projections on the top of cap D fit into recesses *d*' and prevent the escape of fluid around the stem.



Claim.—In a globe-valve having the body A, with ports and chambers, substantially as described, the centrally-recessed head B, provided with the convex plate *b*', together with the stem C, having flange *b*', and the screw-cap D, having central tapered aperture, *d*, said head B having annular recess *b*, adapted to fit upon seat *a*' of the valve, and said cap D having annular projection *d*', adapted to fit into the recess *d*' about the stem C when the valve is opened, as and for the purpose specified.

258,020. SAFE FOR PRESERVING FRUIT AND VEGETABLES. GEORGE A. COCHRANE, Liverpool, County of Lancaster, England. Filed Dec. 16, 1881. (No model.) Patented in England June 24, 1881, No. 2,756, and Dec. 24, 1881, No. 5,647; in France July 6, 1881; in Spain July 8, 1881; and in Canada July 21, 1881, reissued Mar. 20, 1882, Nos. 13,104, and 14,506.

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Claim.—1. In a safe for storing or preserving perishable articles, such as described, a chamber below and in communication with the storing trays or drawers for collecting the gases emanated from the articles stored, substantially as described.

2. In a safe for storing or preserving perishable articles, such as described, a chamber below and in communication with the storing trays or drawers containing an absorbent, such as earth or its equivalent, substantially as described.

3. In a safe for storing or preserving perishable articles, such as described, an inclosing case having air-passages at top only, a series of ventilated shelves, trays, or drawers, or a combination of such a chamber below and in communication with said shelves, trays, or drawers, containing an absorbent—such as earth or its equivalent—having a great affinity for the deleterious gases emanated from the articles stored, substantially as and for the purpose specified.

4. In a safe for storing or preserving perishable articles, such as described, an inclosing case having air-inlets at top only, a water-chamber through which the air admitted is caused to pass, a series of carriers or supports for the articles to be stored in communication with said chamber, and a receptacle below the carriers and in communication therewith, containing an absorbent—such as earth or its equivalent—having a great affinity for the gases emanated from said articles, substantially as and for the purpose specified.

5. In a safe for storing and preserving perishable articles, such as described, a water and acid proof lining the side plates of which are provided with steps, in combination with perforated shelves or drawers, or a combination of such, also made of water and acid proof material, whereby the said shelves or drawers, or both, are made adjustable vertically in the safe, and ventilation is secured between them, as and for the purpose specified.

6. In a safe for storing and preserving perishable articles, such as described, a glass lining, the side plates of which have steps, in combination with perforated glass shelves, and coils for the reception of the articles to be stored on said shelves, of the same or equivalent material, whereby the shelves are made adjustable vertically in the safe, and coils of varying dimensions may be employed and ventilation established between the coils and shelves throughout the safe, as and for the purpose specified.

7. In a safe for storing and preserving perishable articles, such as described, a lining composed of an acid and water proof material, and shelves or drawers, or both, adapted to be ventilated, and made of like material, adjustably connected with the lining, in combination with an inclosing case with which said parts are removably connected, substantially as and for the purpose specified.

8. In a safe of the class described, a lining made of acid and water proof material, the side plates of which are stepped, and a partition-plate of like material stepped upon its opposite faces, in combination with an inclosing case with which said parts are removably connected, substantially as and for the purpose specified.

9. In a safe for storing or preserving perishable articles, such as described, the combination of an inclosing case, A, having a door or doors, B, and lid C, the chamber a', having perforated bottom a^2, air-passages a^3, a series of ventilated removable shelves, trays, or drawers, or a combination of such, and a gas-chamber, G, all arranged to operate substantially as and for the purpose specified.

10. In a safe for storing or preserving fruit or vegetables, an inclosing case lined with glass, a series of ventilated shelves or trays, or drawers adapted to be ventilated, and made of or lined with the same material, in combination with ventilated cells or pockets of glass also, substantially as and for the purpose specified.

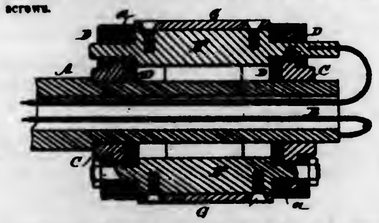
11. In a safe of the class described, the combination, with an inclosing case, of a lining made of an acid and water proof material, composed of a back plate, L, side plates, M, having steps m, a top plate, a', and a bottom plate, N, all constructed and arranged for removal from the inclosing case, substantially as and for the purposes specified.

258,021. RUBBER COMPOUND. CHARLES CONNER, New York, N. Y. Filed Mar. 16, 1882. (No specimens.)

Claim.—The herein-described composition of matter, consisting of rubber, soda, lime, camphor, and sulphur, in about the proportions specified.

258,022. COMMUTATOR FOR DYNAMO-ELECTRIC MACHINES. CHARLES A. COOLEY, New Britain, Conn. Filed Mar. 14, 1882. (No model.)

Brief.—The commutator-bars are carried by, but insulated from, flanges mounted on the shaft of the machine. The armature-wires are connected to the outer ends of these bars through the hollow shaft, and removable wearing-plates are fastened to the bars by screws.

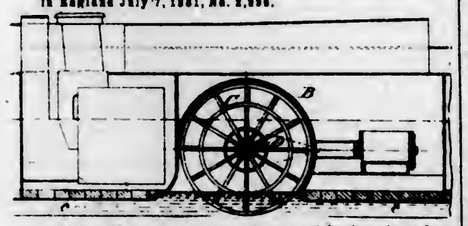


Claim.—1. In commutators, the flanged hubs C, insulating-washers D, rods F, and copper segments G, combined on the shaft A, substantially as described.

2. The recessed insulating-washers D, in combination with the flanged hubs C of a commutator, substantially as described.

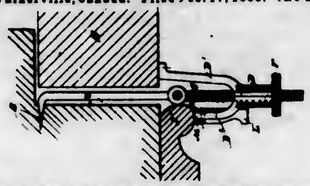
3. In commutators, the rods F, having enlarged middle portions, in combination with the flanged hubs C and washers D, substantially as described.

258,023. PROPULSION OF SHIPS. WILLIAM COPPIN, London, England. Filed Feb. 23, 1882. (No model.) Patented in England July 7, 1881, No. 2,996.



Claim.—The combination, with a vessel having channels c between keels a for the whole length of the vessel, of the median air-tight paddle-boxes B, opening into the channels c, and the paddle-wheels C, having their shafts journaled in air-tight bearings, whereby compressed air may be employed to force the water in said boxes to a level just above the paddles, and thus permit said paddles to utilize a maximum of the power, while the water will be so condensed as to produce a maximum of resistance, as described.

258,024. PORTABLE DOOR-SECURER. CHARLES A. CROSSMAN, Detroit, Mich., assignor to himself and George W. Rusch, Walkerville, Canada. Filed Feb. 17, 1882. (No model.)



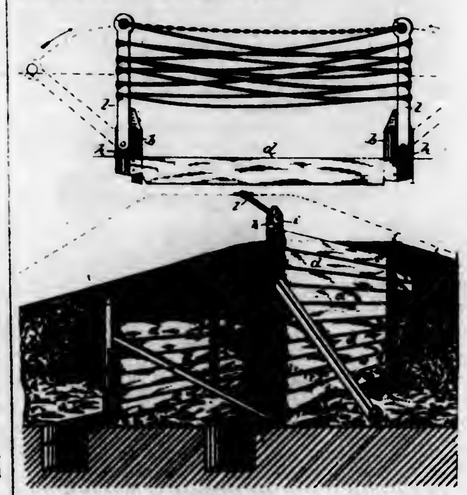
Claim.—1. In a portable door-securer, the combination of the strip A, having a bent end, B, and the rod C, screw-threaded at its outer end, pivoted thereto, with the tube D, having arms O' O^2, the latter provided with an extension-leg, L, and the nut F, substantially as and for the purpose described.

2. The strip A, having hook end B, combined with a screw, C, connected therewith, a nut, F, working on said screw, and a tube, D, having shank D', as and for the purpose described.

3. In a portable door-securer, the U-shaped fastening D for the holding device, provided with arms D' D^2, the latter having a jointed leg, whereby the securer is adapted to be used at will on a casing with or without a molding, substantially as described.

258,025. LEVEE. JOHN W. CRUMP, West Point, Miss. Filed Apr. 3, 1882. (No model.)

Brief.—Within the embankment are two or more parallel fences or walls, each of less height than the adjoining one from the rear toward the water-front, the tops of posts of the highest fence having pivoted levers, to be raised when desired to heighten the levee to prevent a wash or repair a break.



Claim.—1. A levee with two or more continuous parallel walls, the rear wall being highest and the others diminishing successively in height toward the river-front, all the walls resting on the ground under the levee and covered by it, substantially as described, and for the purpose set forth.

2. A levee provided with the two or more continuous parallel lines of piles b b, extending its entire length, braces e e, and boards d d, secured to the piles, all resting on the ground under the levee and covered by it, substantially as described, and for the purpose set forth.

3. The combination, with the piles b b, covered by the levee and provided with the right and left shoulders h h, of the pivoted angular arms l l, substantially as described, and for the purpose set forth.

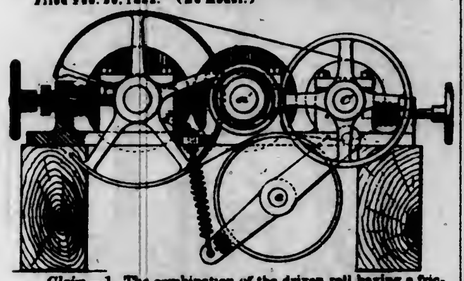
258,026. SASH-FASTENER. JOHN A. CURTIS, New Britain, Conn. Filed Apr. 6, 1882. (No model.)

Claim.—The sash-fastener herein shown and described, the same consisting of the bolt G, composed of the parts b, c, d d, and e, arranged as described, spiral spring D, and plate E, constructed and combined substantially in the manner and for the purpose herein shown and described.

258,026.



258,027. ROLLER-MILL. JOHN R. DAVIS, Jr., Neenah, Wis. Filed Feb. 25, 1882. (No model.)



Claim.—1. The combination of the driven roll having a friction-wheel on its shaft, a shaft on one side thereof, mounted in movable bearings and carrying an opposing friction-wheel and a pulley, a companion roll on the other side, having also a pulley on its shaft, and a belt connecting the two pulleys.

2. The combination of the driven roll having friction-wheels at or near each end of its shaft, the friction-shaft on one side thereof, mounted in movable bearings and carrying opposing friction-wheels, and having pulleys at its ends, the companion roll on the other side, having also pulleys on its shaft opposite to those on the friction-shaft, and belts connecting said pulleys.

3. The combination of the driven roll, the friction-shaft on one side thereof, the companion roll on the other, the friction-wheels connecting the driven roll and friction-shaft, the pulleys and belts connecting friction-shaft and companion roll, and the tightener acting upon said belts.

4. The combination of the driven roll, the friction-shaft on one side thereof, the companion roll on the other, the friction-wheels connecting driven roll and friction-shaft, the pulleys and belts connecting friction-shaft and companion roll, the tightener acting upon said belts, and means for adjusting said tightener as to the pressure it exerts.

5. The combination of the driven roll, the friction-shaft on one side thereof, the companion roll on the other, the friction-wheels connecting driven roll and friction-shaft, the pulleys and belts connecting friction-shaft and companion roll, and screws or equivalent devices arranged to move the bearings of the friction-shaft toward the bearings of the driven roll.

6. The combination of the driven roll, the friction-shaft on one side thereof, the companion roll on the other, the friction-wheels connecting driven roll and friction-shaft, the pulleys and belts connecting friction-shaft and companion roll, the screws arranged behind the bearings of the friction-shaft, and springs interposed between said screws and bearings.

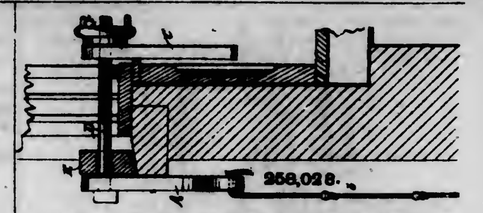
7. The combination of the driven roll, the friction-shaft on one side thereof, the companion roll on the other, the differential friction-wheels connecting driven roll and friction-shaft, and the pulleys and belt connecting friction-shaft and companion roll.

8. The combination of the driven roll, the friction-shaft on one side thereof, the companion roll on the other, the differential friction-wheels connecting driven roll and friction-shaft, and the differential pulleys and belt running thereon, connecting friction-shaft and companion roll.

9. The combination of the driven roll mounted in stationary bearings, the friction-shaft mounted in sliding bearings on one side thereof, the companion roll mounted in sliding bearings on the other side thereof, the friction-wheels connecting the driven roll and friction-shaft, the pulleys and belt connecting friction-shaft and companion roll, and the tightener acting upon the belt to draw both sets of movable bearings toward the bearings of the driven roll.

258,028. FIRE-ESCAPE. HELEN H. DOREN, New York, N. Y. Filed Mar. 14, 1882. (No model.)

Brief.—A screw-rod having a hand-wheel passes through a clamp-plate on the inside of the window and through a plate on the outside, to which the ladder is attached, also through a supporting-block which rests on the window-sill.

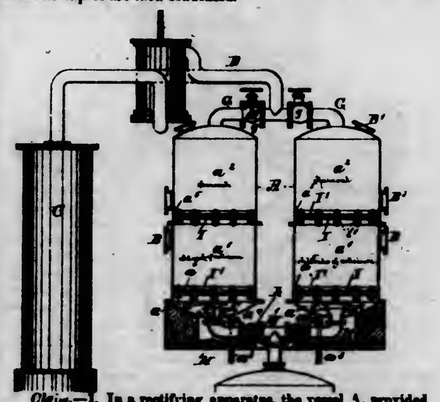


Claim.—1. The fire-escape herein shown and described, consisting of the plate A, to which the ropes b b of the ladder are attached, the clamp-plate C, and the screw-rod D and hand-wheel F, substantially as set forth.

2. In combination with the plates A and C, rod D, and wheel F, the block E, substantially as and for the purposes set forth.

258,029. APPARATUS FOR THE MANUFACTURE OF ALCOHOL. AUGUST DREHSEN, Berlin, Germany. Filed Nov. 1, 1881. (No model.) Patented in Germany June 30, 1880, No. 13,940; in Belgium June 16, 1881, No. 54,027; in France Oct. 21, 1881, No. 145,401; in England Oct. 31, 1881, No. 4,761; in Italy Nov. 21, 1881, No. 71, (XXVII;) and in Austria-Hungary Jan. 4, 1882, Nos. 35,384 and 48,542.

Brief.—Eliminates the aqueous vapors from the alcohol by passing the mixed vapors through chloride of calcium, and then eliminates the deleterious constituents carried over with the alcohol vapors by passing the mixed vapors through charcoal. The alcoholic vapors are then condensed.



Claim.—1. In a rectifying apparatus, the vessel A, provided with the diaphragms I I' and the layers of chloride of calcium and charcoal, substantially as and for the purpose specified.

2. The distilling and rectifying apparatus hereinbefore described, composed of a still, F, the twin rectifying-vessels A A, constructed and arranged to contain each a layer of calcium chloride and a layer of charcoal, substantially as described, a condenser, an air-pump, and suitable valved connecting-pipes between the elements described, whereby either one or both the rectifying-vessels may be used, substantially as and for the purpose specified.

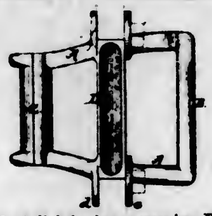
3. The vessel A, having chamber a and discharge-pipe a^2, in combination with the valved pipe H H', projecting within said chamber and carrying the hood or shield H^2, substantially as and for the purpose specified.

4. The vessel A, having chamber a and discharge-pipe a^2, the valved pipe H H', projecting within said chamber and terminating in a flaring mouth, h', in combination with the hood or shield H^2 and the rectifying-column F, all arranged and operating substantially as and for the purpose specified.

5. The vessel or vessels A A, provided with internal flanges, a^3, and having inlet and outlet pipes H G, discharge-pipe a^2, charging-gates B E', and discharging-gate H^2, all capable of being hermetically closed, in combination with two diaphragms composed of a perforated metallic plate, I, and a wire-cloth I', secured to said flanges and dividing said vessels into three chambers, u a' a^3, all constructed, arranged, and operating substantially as and for the purpose specified.

258,030. ATTACHMENT-LINK FOR CONVEYERS. JAMES H. DOREN, Chicago, Ill. Filed Apr. 6, 1882. (Model.)

258,030.

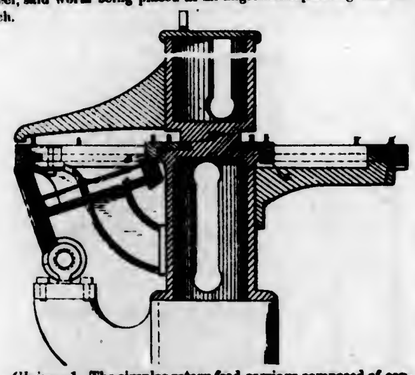


Claim.—1. A link having a cross-bar, D, and flight attachments, the said cross-bar being of a width not greater than that of the flight designed to be mounted over and on it, and being shaped so as to extend down to the level of the lower edge of the flight to be applied to it, and to form a continuation thereof, as set forth.

2. In combination with a link having a cross-bar, D, and flight attachments, as specified, of a flight, E, cut out at its lower edge to let in the cross-bar D, the whole being constructed and operating substantially as specified, for the purpose described.

258,031. SPOKE-THROATING MACHINE. WILLIAM H. DOANE and GEORGE W. BUSHER, Cincinnati, Ohio, assignors to J. A. Fay & Co., same place. Filed Feb. 17, 1882. (No model.)

Brief.—The central standard is cast in one piece, the inner collar of the rotating table being divided to permit of such construction. Suitable guides are provided for this table at the outer edge, and it is driven by a worm engaging directly with a bevel-wheel, said worm being placed at an angle corresponding with its pitch.



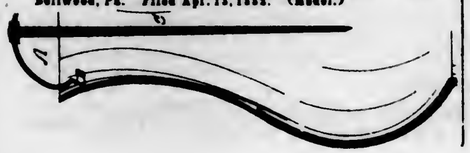
Claim.—1. The circular rotary feed-carriage composed of connected inner and outer rings, the inner ring being made of sections, in combination with the central housing having a neck to support the inner ring of said carriage, substantially as before set forth.

2. The combination, substantially as before set forth, of the central housing composed of an upper and a lower trunk cast in one piece with a solid connecting-neck and the circular rotary feed-carriage, of which the inner ring is made of sections laterally applied to and fitted around the solid neck of the housing.

3. The combination, substantially as before set forth, of the circular rotary feed-carriage, the central housing having a neck to support the inner ring of the carriage, the spider for supporting the outer ring thereof, and the gib for confining said outer ring to a recess in the rim of the spider.

4. The combination, substantially as before set forth, of the inner and outer rings of the circular rotary feed-carriage, the cogs on the outer ring thereof, and the worm for driving the outer ring through an intermediate bevel-wheel the axis of which lies in a vertical plane parallel to a line intersecting the axis of the worm at the angle of the pitch.

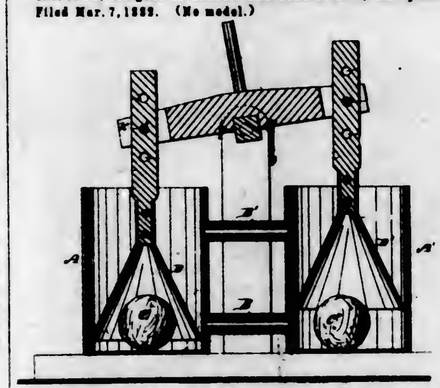
258,032. LAMP-CHIMNEY PROTECTOR. WHEELER H. DUNN, Bellwood, Pa. Filed Apr. 13, 1882. (Model.)



Claim.—1. A protector for lamp-chimneys made, substantially as herein shown and described, of two curved metal strips pivoted to one end of a rod, as set forth.

2. In a lamp-chimney protector, the combination, with the metal rod or wire C, of the crossed curved metal strips A, having the ends B bent outward, substantially as herein shown and described, and for the purpose set forth.

258,033. WASHING-MACHINE. WILLIAM F. DENALL, Blanchard, Iowa, assignor to himself and John D. Kite, same place. Filed Mar. 7, 1882. (No model.)



Claim.—1. The combination, with two cylinders having a tubular connection, of a reciprocating beater or pounder and a wooden ball in each cylinder, as and for the purpose described.

2. The combination, with two beating or pounding devices, of the two cylinders A A', connected by an upper tube, B', as well as by a lower tube, B, as and for the purpose set forth.

3. The connected cylinders A A', funnel-shaped beaters D D', wooden balls C C', in combination with means for reciprocating the beaters, substantially as described.

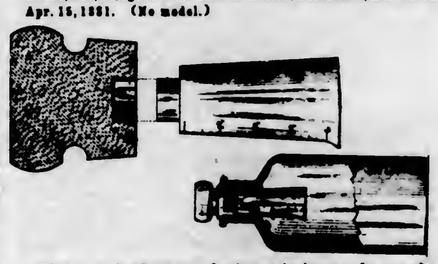
258,034. CASE FOR EMBROIDERY. EDWARD JOHN VAVASOUR EARLE, Berners Street, Oxford Street, County of Middlesex, England. Filed Oct. 26, 1881. (Model.)

Brief.—A specimen of the trimming is permanently secured to the cover of the case.



Claim.—The combination of a box or case having a longitudinal slit or opening with a flexible strip covering said slit or opening, and a roller journaled in said box or case and adapted to have a strip of goods wound upon it, substantially as specified.

258,035. MEASURING BOTTLE-STOPPER. JOHN J. EASTMAN, Media, Pa., assignor to Wilmer L. Keller, Baltimore, Md. Filed Apr. 15, 1881. (No model.)

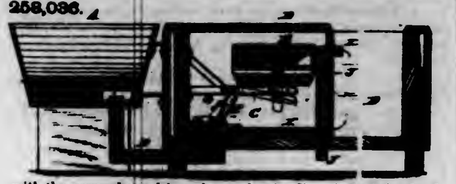


Claim.—A bottle-stopper having at its inner or lower end a measuring-extension and an annular groove surrounding the base of the said extension, substantially as and for the purpose specified.

258,036. APPARATUS FOR WATERING STOCK. JOHN MARVIN EISTON, Marysville, Ohio. Filed Feb. 1, 1882. (No model.)

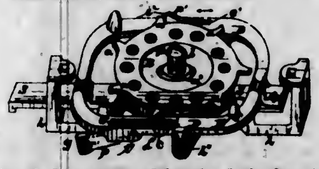
Claim.—In an apparatus for watering stock, the combination,

258,036.



with the reservoir or cistern A, supply-pipe B, and pivoted valve *b*, and receiver D, having valve-chamber C, of the float-valve E and pivoted bell-crank lever F, arranged in said chamber C and pivotally connected at one end to said float, and its free end adapted to engage said valve *b* for closing it, substantially as and for the purpose herein shown and described.

258,037. CORN-PLANTER. AUSTIN O. EVANS, Springfield, Ohio. Filed Nov. 14, 1881. (No model.)



Claim.—1. In a rotary seed-dropping device for a two-horse planter, the combination, with a seed-hopper, its supporting-frame, and the reciprocating slide having vertically-moving pawls, of a detachable seed-disk, which may be removed edgewise from either side of the hopper, as set forth.

2. In a rotary seed-dropping device for planters, the combination, with the hopper-bottom A', having cap *n*, with hole *e* therein, and the supporting-frame provided with a central hole in its top *n'*, of the loosely-fitted center pin, *b*, extending through said cap and frame and having the interposed detachable seed-disk B pivoted thereon, as and for the purpose herein set forth.

3. In a rotary seed-dropping device operated by a slide-lever, the combination of the detachable disk, the supporting-frame over which it is pivoted, the loosely-fitted center pin, and the seed-hopper in which said disk is operated, having an open slot on either side to permit its removal edgewise therefrom, as set forth.

4. A rotary seed-dropping device for a two-horse planter, in which a rigidly-attached hopper having an open slot on either side is supported upon a bearing-frame, with an interposed seed-disk pivoted upon a loose center pin extending through the cap, disk, and bearing-frame, said disk being driven by a slide-lever and a system of pawls engaging with teeth upon the edge of the same and being removable edgewise through a slot on either side of the hopper by the withdrawal of the center pin without disturbing the other elements of the device.

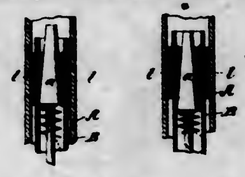
5. In a rotary seed-dropping device for planters operated by a slide-lever, the combination, with the hopper-bottom, the supporting-frame, and a removable seed-disk loosely pivoted between them, of a loosely-pivoted center pin, on which said disk is pivoted, having a head resting upon the crown-plate or cap of the hopper-bottom, and held in place by gravity, so as to be easily and quickly withdrawn for the purpose of removing the seed-disk edgewise therefrom, as set forth.

6. In a rotary seed-dropping device for planters operated by a slide-lever, as specified, a center pin held in its place by gravity, and a removable seed-disk with its engaging-teeth on the edge thereof and having its bearing upon said pin, whereby the disk is made removable edgewise by the withdrawal of said pin, as set forth.

7. In a rotary seed-dropping device for planters, the combination, with the oblong frame D, bolted to slide-lever S and operated thereby, and having slots *d'* on each side, of the weighted upward-acting push-pawls *p p'*, having the upper cut notches, *d*, in their ends, and provided with a jaw, C, extending therefrom on the under side beyond the opening of said slot, whereby the upward movement is arrested at the engaging end of said pawls, as hereinbefore set forth.

8. In a rotary seed-dropping device for planters, as hereinbefore described, the combination of the hopper-bottom A', having cap *n*, with hole *e* therein, removable disk B, the loose center pin, *b*, on which said disk is pivoted, having head *b'*, resting on said cap, the supporting-frame A, having top *h'*, with a central hole for the lower end of the pin *b*, the slide-bar S, with the oblong frame D, having slots *d'*, and the pawls *p* and *p'*, pivoted thereto and operating upon the teeth *a* of the disk outside the circle of seed-holes, as hereinbefore set forth.

258,038. EXTENSION LAMP-FIXTURE. JOHN A. EVARTS, Meriden, Conn., assignor to Bradley & Hubbard Manufacturing Company, same place. Filed Dec. 19, 1881. (No model.)



Claim.—1. In an extension-fixture, the combination of the outer and inner tube or parts, A B, the inclined slide *a*, the clamps *l l*, the spring to force said clamps asunder and into contact with the inner surface of the outer tube, and means, substantially such as described, to relieve said clamps from the force of the inclined slide, substantially as and for the purpose described.

2. The combination of the outer stationary tube, the inner movable tube, the clamps *l l*, arranged in recesses in said inner tube, the inclined slide *a* and its spring arranged to force said slide between said clamps and said clamps into frictional contact with the outer tube, and a connection, substantially such as described, from said slide to near the bottom of the fixture, whereby said slide is withdrawn from between the clamps, substantially as described.

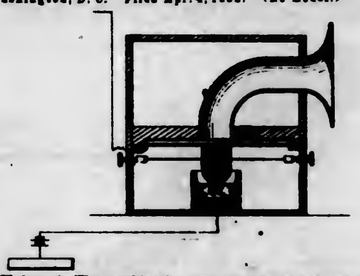
258,039. CAR-COUPLING. WILLIAM L. EVERITT, New Haven, Conn. Filed Jan. 16, 1882. (No model.)



Claim.—1. The combination of the bolt D, the latching-lever G, and its latch H with the bar F, arranged transversely across in front of and below the bolt, constructed with inclined seats below and engaged with the said latch-lever G, so that as the said latch-lever G is turned in one direction it will draw the bar toward it and up the inclines to raise the bar bodily, and in the opposite direction permit the bar to fall down the inclines, substantially as described.

2. In a car-coupling, the yoke L and adjusting-screw P, for the adjustment of the elevation of the coupler, substantially as described.

258,040. TELEPHONE-TRANSMITTER. CHARLES KWISO, Washington, D. C. Filed Apr. 4, 1882. (No model.)

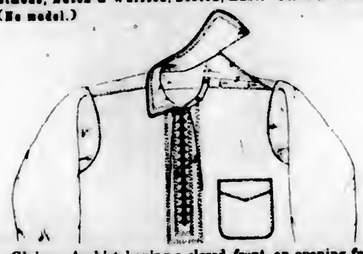


Claim.—1. The combination of a transmitting-diaphragm, a mercury electrode, and a carbon block or pencil suspended between and in contact with the diaphragm and mercury, substantially as set forth.

2. The combination of a transmitting-diaphragm, a mercury electrode, and a carbon block or pencil elastically suspended between and in contact with the diaphragm and mercury, substantially as set forth.

3. The combination of a transmitting-diaphragm, a mercury electrode, a carbon block or pencil suspended between and in contact with the diaphragm and mercury, the spring or other suitable device, such, substantially as described, for supporting the carbon, and the adjusting-screws.

258,041. SHIRT. GEORGE F. FAXON, Watertown, assignor to Simons, Hatch & Whittee, Boston, Mass. Filed Feb. 27, 1882. (No model.)



Claim.—A shirt having a closed front, an opening from the neck down along the shoulder, and a collar connected with the shirt from such opening entirely around the back of the neck and to the middle of the front, but disconnected therefrom, from the shoulder-opening thereof to, or near to, the middle of the front of the neck, the shirt being provided with buttons and button-holes or other suitable separable fastenings properly arranged for closing the opening at the shoulder and connecting the free part of the collar to the shirt, as occasion may require, all being substantially as set forth.

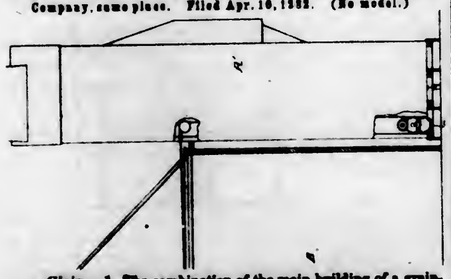
258,042. ANTI-FRICTIONAL BEARING. THOMAS R. FERRALL, Boston, Mass. Filed Mar. 15, 1882. (No model.)



Claim.—1. In an anti-friction bearing, the shells or cases *a*, having flanges *a'*, the revolving sleeve-bearing *c*, the series of rollers *b*, the regulators *c*, the connecting pins or rivets *d*, and the annular flanges *d'*, or their described equivalents, coacting with the parts specified to prevent the sleeve-bearing from moving longitudinally in the direction of the axis of the shaft, substantially as described.

2. The herein-described anti-frictional bearing, consisting of the case or shells *a a*, their annular flanges *a' a'*, the rollers *b b*, the regulators *c c*, with their rivets *d d d* and dividers *c' c'*, and the central bearing-sleeve, *c*, with its flanges *c' c'*, said flanges *c'* coacting with the parts specified to prevent the sleeve-bearing from moving longitudinally in the direction of the axis of the shaft, all constructed, arranged, and combined as and for the purpose set forth.

258,043. GRAIN-ELEVATOR. FRANK J. FIRTH, Philadelphia, Pa., assignor to the Erie and Western Transportation Company, same place. Filed Apr. 10, 1882. (No model.)



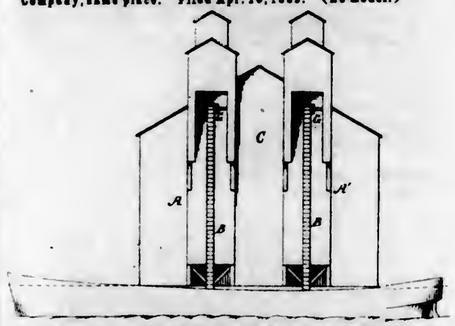
Claim.—1. The combination of the main building of a grain-elevator with an elevator-tower having wheels adapted to a track or tracks in front of the said main building, substantially as set forth.

2. The combination of the fixed elevator-tower A, the main building B, and the movable elevator-tower A', having wheels adapted to tracks in front of the main building, substantially as specified.

3. The combination of a movable elevator-tower having wheels adapted to tracks, with a rope or chain, M, anchored at both ends and passing round a pulley carried by the elevator, and with gearing through the medium of which the said pulley may be rotated, substantially as set forth.

4. The combination of the main building B, a movable elevator-tower, guy-ropes connecting the two, and mechanism whereby said guy-ropes may be tightened and loosened, all substantially as described.

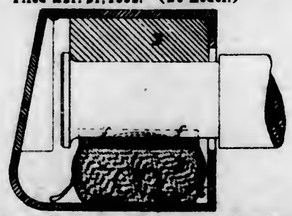
258,044. GRAIN-ELEVATOR. FRANK J. FIRTH, Philadelphia, Pa., assignor to the Erie and Western Transportation Company, same place. Filed Apr. 10, 1882. (No model.)



Claim.—1. The combination of a fixed elevator structure or tower, A, an elevator-leg, B, hung to a vertically-adjustable frame in the said tower, and mechanism whereby the said leg may be adjusted laterally, all substantially as set forth.

2. The combination of the main building C, two or more elevator structures or towers, A A', and a laterally-adjustable elevator-leg in one or more of the towers, substantially as specified.

258,045. CAR-AXLE LUBRICATOR. CHESTER D. FLYNT, Brooklyn, N. Y., assignor to himself and Frank B. Tracy, same place. Filed Mar. 21, 1882. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, of the pad formed of cotton-waste and hair, or equivalent absorbent and elastic material, and inclosed in a suitable foraminous envelope, the distributer of felt or equivalent material secured to the pad, and metal strips fastened to the distributer.

2. The combination, substantially as hereinbefore described, of the pad formed of cotton-waste and hair, or equivalent absorbent and elastic materials, inclosed in a suitable foraminous envelope, and the distributer of felt or equivalent material secured to the pad.

3. The combination, substantially as hereinbefore described, of the pad formed of cotton-waste or other equivalent absorbent material, and of hair or other elastic material, the foraminous envelope inclosing said pad, the springs secured in the envelope, and the distributer of felt or equivalent material secured to the pad.

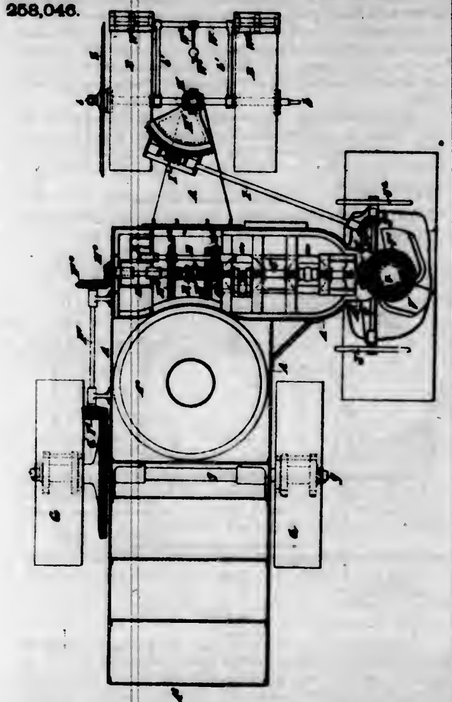
4. The combination, substantially as hereinbefore described, of the pad of cotton-waste or other equivalent absorbent material, and of hair or equivalent elastic material, the foraminous envelope inclosing said pad, the springs secured in the envelope, the distributer fastened to the pad, and the metallic strips secured to the distributer.

258,046. STEAM-PLOW. JAMES H. FOGARTY, New York, N. Y. Filed Dec. 3, 1881. (No model.)

Brief.—Rotary plow upon a vertical shaft supported outside the track of the wheels. The steam-cylinder alongside the plow-shaft case. A lever and spring-pin may hold the plow elevated without the force of steam. Reversible scrapers, to operate when going in either direction, held at work by a gravity-ball. Two trains of gears from the main shaft, one rotating the plow-shaft and the other the carrying-wheels.

Claim.—1. In a steam-plow having capacity for moving in both directions without turning around, the arrangement of the

258,046.



revolving plow V and upright shaft *v* outside of the line of travel of the wheels, as and for the purposes herein specified.

2. The revolving plow V, mounted on the upright shaft *v*, in combination with the engine-shaft C, with its gear-wheel C', counter-shaft D, with its wheels D' D', wheels E' E', clutch R, and shaft E, with its gear-wheel E', and the train of connections therefrom to the driving-wheels G, as herein specified.

3. In a steam-plow, the lifting-cylinder L and piston-rod *l*, arranged alongside the telescopic bearing K, and connected by the arm K', and adapted to serve relatively to each other and to the plow V, and its operating means, as herein specified.

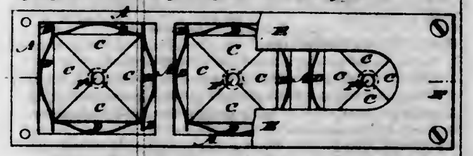
4. In a steam-plow, the latch O, lever P, and spring Q, in combination with the telescopic bearing K and the connected plow V *v*, as herein specified.

5. In a steam-plow, the scrapers W', carried on a rocking-shaft, W, supported and loaded as shown and serving relatively to the wheels B, as herein specified.

6. In a plowing-machine, the driving-wheels G G, plowing device V, operated outside of the path of the driving-wheels, and the cutter-wheel Z, mounted at one end of the machine, combined and arranged as herein specified.

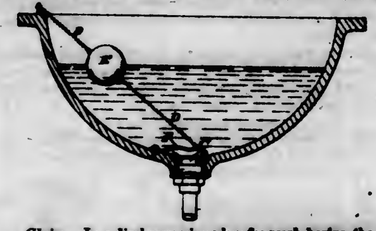
258,047. CANE-STRIPPER. WILLIAM P. CARR, Parsons, Kans. Filed Mar. 23, 1882. (No model.)

Brief.—A set of triangular blocks having apertures at their apexes is placed in a recessed plate or frame and held forward by springs and secured in place by removable face-plate.



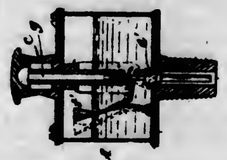
Claim.—The combination of the frame A, having the rectangular recesses B and apertures G, the removable cut-away plate F, the four equal triangular stripper-blocks C F, and the four unattached springs D, whereby the strippers and springs are removably held in the recesses of the frame, as shown and described.

258,048. DISCHARGE-PIPE PLUG FOR WASH-BASINS. JNO. H. GILBERT, New York, N. Y. Filed Feb. 21, 1882. (No model.)



Claim.—In a discharge-pipe plug for wash-basins, the combination, with the hinged plug C and its chain D, of a float, E, substantially as herein shown and described, whereby the said plug will be raised automatically when the water has risen in the basin to a fixed point, as set forth.

258,049. OIL-CUP. JOHN R. GILLIGAN, Niko, Nev. Filed Mar. 21, 1882. (No model.)



Claim.—1. The combination, with the plunger *c*, having valve *c'* and opening *c'*, of the plate-lever *f*, hinged to the lower side of casing and bent into a cup-shaped form on the side next the body of the oil, and connected to the plunger by rod *f'*, substantially as described.

2. The combination, substantially as hereinbefore set forth, of the plunger *c*, having valve *c'*, the hinged lever *f*, connected to plunger *c*, and the regulating-tube *g*, threaded and arranged to bear against shoulder formed on plunger *c*, and provided with slots *g'*, substantially as described.

258,050. COMPOSITION FOR STAINING WOOD. ANTON F. GLOSER, Jr., and JOSEPH P. GLOSER, Columbus, Tex. Filed July 11, 1881. Renewed Mar. 24, 1882. (No specimens.)

Claim.—The herein-described stain, composed of water, Vandyke brown, carbonate of soda, acetate of soda, oxide of lead, and permanganate of potash, in the proportions set forth.

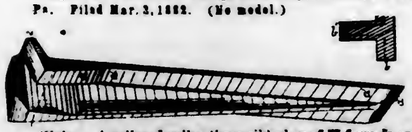
258,051. BREECH-LOADING FIRE-ARM. JOHN W. GOODALL, Hayes, Kans. Filed Jan. 30, 1882. (No model.)



Claim.—1. The combination, with a breech-block having a loop or eye, *h*, and a catch, *c*, of the rod K, rigidly secured to the barrels, and provided with a transverse notch and a shoulder to receive the latch *c* and limit the movement of the barrels, substantially as described.

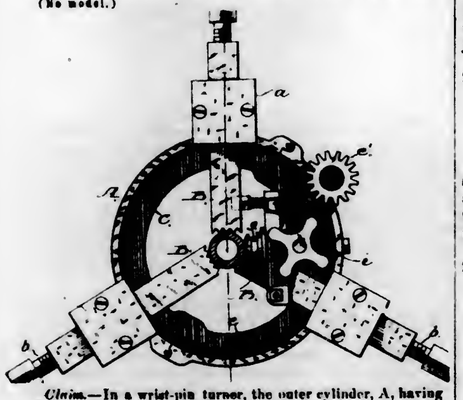
2. The combination of the rod K, the spring L, the barrels A, the notched and shouldered rod M, the breech-block provided with a loop, *h*, and a catch for retaining the barrels in contact with the breech-block, substantially as described.

258,052. RAILROAD-SPIKE. HOWARD GREER, Chicago, Ill., assignor of one-half to George H. Christy, Trustee, Sewickley, Pa. Filed Mar. 3, 1882. (No model.)



Claim.—A railroad-spike, three-ribbed or of T form in cross-section, wherein the side ribs constituting the T-head are made heavy and tapering at their upper ends, as at *a*, of uniform thickness, thence nearly to the point, as at *a'*, and thence tapering, as at *a²*, to the point, substantially as set forth.

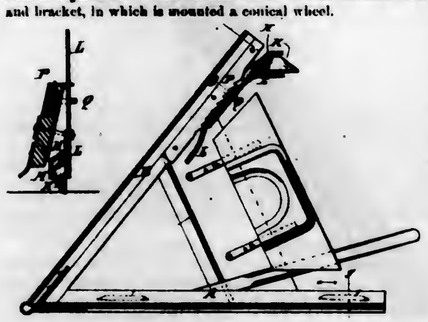
258,053. WRIST-PIN TURNER. LAUCHLIN B. GREER, Washington, D. C., assignor to Charles W. Hayes, Chauncey F. Greer, and Marcus Greer, all of same place. Filed Dec. 28, 1881. (No model.)



Claim.—In a wrist-pin turner, the outer cylinder, A, having arranged at intervals interiorly-projecting pins *i*, pinion *d'*, and chuck-bars B, in combination with the inner cylinder, C, having a circle of cogs, *c*, the endless screw *f'*, provided with the sprocket-wheel *h*, the cutter-table D, having a cutter, *g*, and centering-bar P, substantially as set forth.

258,054. TRIANGULAR ROAD SCRAPER AND GRADER. ALEXANDER L. GRIFFITH, Bealleville, Ohio. Filed Dec. 28, 1881. (No model.)

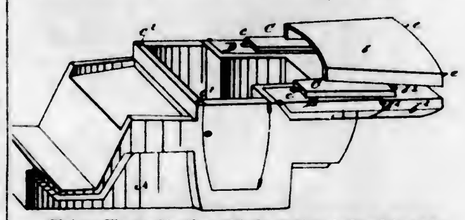
Brief.—An inclined mold-board plank is located on one side of the scraper, and has on its upper edge a toothed plate and keeper, in which the upper end of a lever pivoted to the mold-board is held in adjustment. The lever has secured to it an inclined block and bracket, in which is mounted a conical wheel.



Claim.—1. In a road-scraper, the combination, with the inclined mold-board plank B, of the conical wheel K and the lever L, provided with the tapering block N, and pivoted to the inner side of the said inclined mold-board plank, substantially as shown and described, whereby the inclination of the said mold-board plank can be adjusted and the scraper held against lateral pressure, as set forth.

2. In a road-scraper, the combination, with the inclined mold-board plank B, provided with the toothed plate P and keeper Q, of the conical wheel K, and the pivoted lever L, provided with the bracket M, and the tapering block N, substantially as and for the purpose set forth.

258,055. CARRIAGE-TOP. CONRAD GROSS and GOTTFRIED GROSS, Richmond, Va. Filed Mar. 2, 1882. (No model.)



Claim.—The combination, with the carriage-body, of the posts D, hinged to said body, the top section, *b'*, hinged to said posts, the top section, *k*, and the posts C, hinged to section *b* and removably jointed to the body, as shown and described.

258,056. GAGE FOR SETTING SEWING-MACHINE GUIDES. JAMES F. J. GUNNING, New Haven, Conn. Filed Mar. 30, 1882. (No model.)



Claim.—The herein-described gage for setting the guide of sewing-machines, consisting of the plate A, constructed with an aperture, through which the needle will pass, and an edge, *b*, distant from the aperture according to the relative position required for the guide, substantially as described.

258,057. LEATHER SUBSTITUTE. EMIL C. F. GUSTHER, New York, N. Y., assignor to himself and Auguste Schwencke, same place. Filed Nov. 18, 1881. (No model.)



Claim.—1. As a new article of manufacture, a leather substitute consisting of covering layers of split leather and an intermediate layer of leather-shavings, united with the covering layers by a water-proof cement, substantially as and for the purpose set forth.

2. As a new article of manufacture, a leather substitute made of covering layers of split leather and an intermediate layer or layers of split leather or leather-shavings, united to the covering layers by a water-proof cement, substantially as set forth.

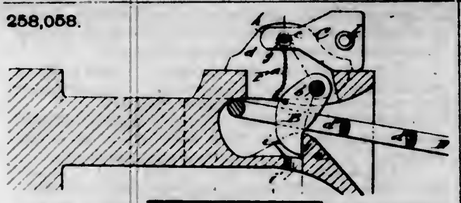
3. The method herein set forth of making a leather substitute from split leather and leather-shavings by impregnating the leather-shavings or split leather, or both, with a suitable water-proof cement, uniting it with covering layers of split leather by pressure, and finally allowing the article to dry slowly, substantially as specified.

258,058. CAR-COUPLING. WILLIAM HALSEY, Truro, Nova Scotia, Canada. Filed Jan. 6, 1882. (No model.)

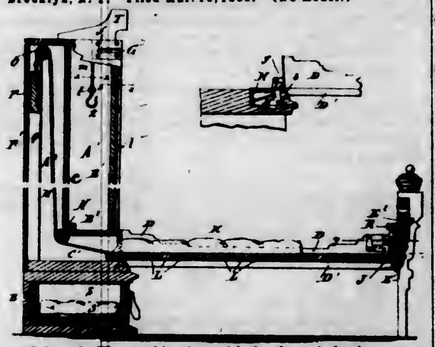
Claim.—1. In a car-coupling, the pawl B, pivoted in a slot of the draw-head top, and the tumbler C, pivoted upon or above said top, said pawl and tumbler being flexibly connected, in combination with a draw-head having tin perforated projections *d*, carrying the cross-pins *b c*, and forming the passage F, as shown and described.

2. A draw-head having a throat with the enlargements *e e* rising from the mouth to the point of contact with the pawls, then cut away at *i* to form lips *j*, and then descending to form a cavity behind the pawl, as described.

258,058.



258,059. FOLDING BED AND CLOSET. MAX HALLHEIMER, Brooklyn, N. Y. Filed Mar. 16, 1882. (No model.)



Claim.—1. The combination, with the closet A, having a rear compartment, A', extending under the bottom of compartment A', of the flexibly-connected strips L, carrying a mattress, the end weighted straps, M, and the pulleys N O, as and for the purpose described.

2. The combination, with the closet A and the base B, having curved head *a*, of the side rails, D, having the inwardly-projecting flanges D' pivoted to the top front edge of base B, and having the curved recess *b*, whereby the flanges can be made to rest against the front and the rails against the sides of closet, as described.

3. The combination, with each side rail and closet A, of the spring-catch hook F, having stud *e* passing through a plate on rail D and into a closet-groove, *g*, terminating in a deeper recess, *f*, as and for the purpose set forth.

4. The combination, with the base B, having recess H', and the rails D, of the swinging arms *g* and the springs H, arranged in said recess, whereby the side rails are partially counterbalanced, as described.

5. The combination, with the closet A, provided with front and rear compartments, A' A², of the hinged bedstead side rails, D, the sliding mattress K L, the straps M, the weight-block P', and the guides Q, substantially as herein shown and described, and for the purpose set forth.

6. The combination, with the closet A, of the hinged bedstead side rails, D, the foot-piece E, hinged to the same, the sliding mattress K L, the foot-board J, attached to one end of the same and adapted to close the opening through which the mattress slides into the closet, and the latch R on the foot-piece E, for locking the board J to this foot-piece when the mattress is withdrawn, substantially as herein shown and described, and for the purpose set forth.

258,060. CLEANING ATTACHMENT TO COTTON-PICKERS. DANIEL B. HASELTON, Charleston, S. C. Filed Aug. 18, 1881. (No model.)

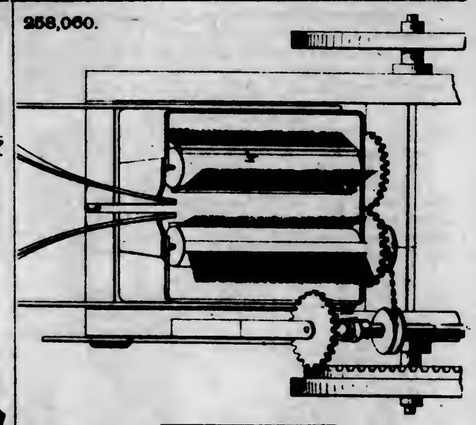
Claim.—1. The combination, in a cotton-cleaner, of the two cleaning-brushes placed upon an incline with their lower ends inward the front of the machine, with their operating mechanism, whereby the dirt, leaves, and insects are brushed from the growing plants previous to picking, substantially as specified.

2. The combination, in a cotton-cleaner, of cleaning-brushes, with the receptacle above the same, and the sulphur-receptacle for containing burning sulphur or other poison to destroy living insects brushed from the plants, substantially as specified.

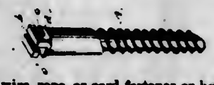
3. The combination, with the rotary brushes and their guards, of the receptacle above the brushes, having channels at each side for the reception of the dirt and insects brushed off the plants, substantially as specified.

4. In combination with the swinging frame and the main frame, the screw-rod and adjusting-nut for elevating the frame, substantially as and for the purpose specified.

258,060.

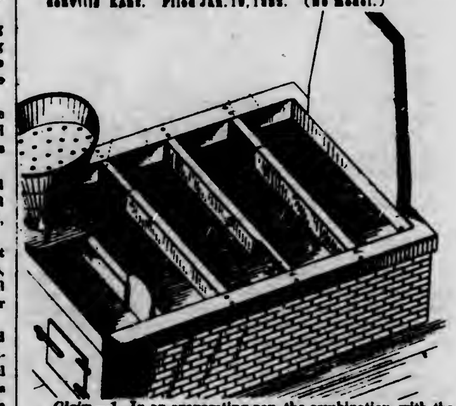


258,061. SCREW FOR FASTENING TELEGRAPH-WIRES. ANDREW J. KAVILAND, Fort Dodge, Iowa. Filed Mar. 3, 1882. (No model.)



Claim.—A wire, rope, or cord fastener or holder consisting of a screw body, and a head provided with the slits *b*, *c*, and *c'*, substantially as described.

258,062. EVAPORATING-PAN. ALLEN E. HENTHORN, Burdenville, Kans. Filed Jan. 19, 1882. (No model.)



Claim.—1. In an evaporating-pan, the combination, with the hollow partitions, of metallic heat-retaining bars arranged within said partitions and secured to the sides of the pan, substantially as set forth.

2. The combination, with the furnace, of the pan provided with hollow partitions and flanges C and C', and the heat-retaining-bars E, arranged within said partitions and secured to the flange C, substantially as set forth.

258,063. BUCKBOARD-WAGON. FRANK A. HILL, Benicia, Cal. Filed Jan. 28, 1882. (No model.)



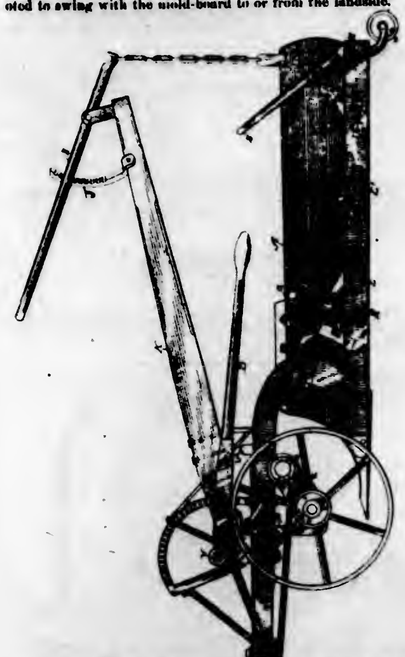
Claim.—1. The combination of the wooden side springs, A A, the V-shaped springs S S, and the center spring, B, the ends resting upon the side springs, substantially as described.

2. In combination with the wooden side springs, A, the braces G', hinged at e e', substantially as described.

3. The combination, with the side springs, A, and the springs resting thereon to support the body, of the elastic braces G, connected to the side springs, A, and to the hind axle, substantially as described.

258,064. DITCHING AND GRADING PLOW. FRANK A. HILL, Benicia, and MOSES J. CHURCH, Fresno, Cal. Filed Jan. 14, 1882. (No model.)

Brief.—Plow-beam suspended from a crank by which the plow is lifted at the front. At the rear a truck-wheel upon a lever is adapted to be let down as a carrier. An extension mold-board adjustable laterally and lifted by a lever. Its fulcrum-beam is pivoted to swing with the mold-board to or from the landside.



Claim.—1. In a ditching-plow, the combination of the carrying-wheels, the rock-shaft V, the plow having a permanent mold-board, the pivoted extension A, having independent vertical and lateral adjustment, and the lever K, pivoted to the rock-shaft and connected to the extension of the mold-board.

2. The combination, with the mold-board, of the extension A, pivoted at R, and having the pin and slot G, the support K, and the rack and lever J I.

258,065. PACKING FOR UNDERGROUND STEAM-MAINS. JOSEPH G. HILL, Newark, N. J., and JOHN LAWRENCE LEE, New York, N. Y.; said Hill assignor to the American Heating and Power Company, New York, N. Y. Filed Dec. 19, 1881. (No model.)



Claim.—1. Lamp-black as a moisture-repellent packing material, substantially as described.

2. Underground mains or pipes jacketed with or enveloped in lamp-black as a heat-retaining moisture-repellent medium, substantially as described.

3. Underground mains or pipes for transmission of steam, hot water, or the like, laid in trenches and embedded in lamp-black, substantially as described.

4. The method of applying finely-divided lamp-black to steam and other pipes, where exposed to moisture or laid in trenches or placed under ground, by filling bags with the same and wrapping the bags around the pipes, substantially as described.

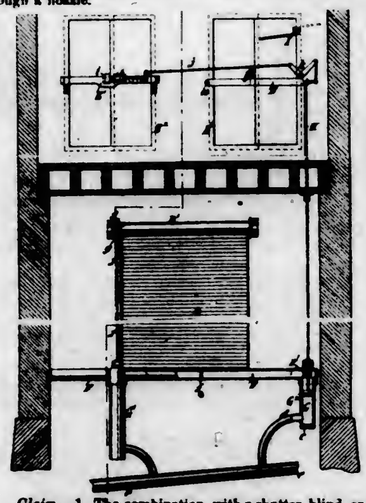
5. Steam or other pipes, where exposed to moisture or laid in trenches or placed under ground, surrounded by bags filled with finely-divided lamp-black, substantially as described.

6. Woven envelopes filled with lamp-black for jacketing steam-pipes and other articles where exposed to moisture or laid in trenches or placed under ground, substantially as described.

7. A heat-retaining and water-repellent jacket for mains, pipes, and other objects, where exposed to moisture or laid in trenches or placed under ground, of lamp-black held in place by woven fabric waterproofed, substantially as described.

258,066. MEANS FOR UNLOCKING AND OPENING SHUTTERS. JACOB C. HEATON, New York, N. Y., assignor of one-half to Henry Wall and Sylvester P. Gilbert, same place. Filed Feb. 9, 1882. (Model.)

Brief.—A fluid-motor is arranged within the building and connected with a series of shutter-fasteners by means of a piston-rod, for the purpose of unlocking the shutters, and is operated by a supply of water or steam from the exterior of the building, applied through a nozzle.



Claim.—1. The combination, with a shutter, blind, or door of a building, of a fluid-motor within the building, connected with said shutter, blind, or door, or its securing device for operating it, and a nozzle projecting from said motor or its supply-pipe and accessible from the exterior of the building for the attachment of a hose, substantially as and for the purpose specified.

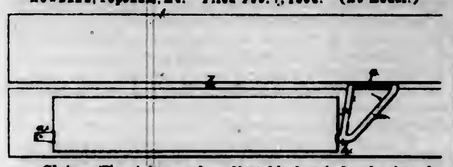
2. The combination, with a shutter, blind, or door of a building, of a fluid-motor cylinder arranged within the building, a piston fitting said cylinder and connected with the operating or securing devices of said shutter, blind, or door, and a nozzle accessible from the exterior of the building and communicating with said cylinder, substantially as and for the purpose specified.

3. The combination, with a shutter of a building, of devices for holding it closed, a spring for throwing it open when released, a fluid-motor for operating said securing devices to release the shutter, and a nozzle leading from said motor and accessible from the exterior of the building, substantially as and for the purpose specified.

4. The combination, with the shutter or blind of a building, of a cylinder, (3, having a shoulder, c, and a waste-pipe, d, and arranged within the building, a nozzle, F', communicating with the cylinder and accessible from the exterior of the building for the attachment of a hose, a piston, (3', and connections between said piston and the operating or securing devices of the shutter, substantially as specified.

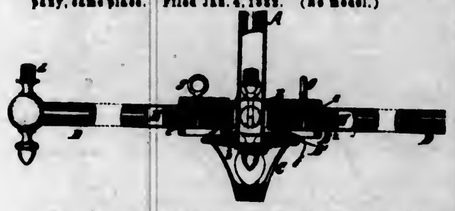
5. The combination, with the shutters of a building and their operating or securing devices, of a pipe, F, extending across the interior of a wall of the building, two or more cylinders, G (3', connected with said pipe, pistons (3', a nozzle or nozzles, F', accessible from the exterior of the building for the attachment of a hose, and connections between said pistons and the operating or securing devices of the shutters, substantially as and for the purpose specified.

258,067. BENCH-DOG. WILLIAM H. NEWLAND and JAMES E. NEWLAND, Topsham, Me. Filed Feb. 7, 1882. (No model.)



Claim.—The right-angular adjustable bench-dog having the laterally-projecting biting-lug A at one end and the downwardly-extending flange e at the other end, in combination with a bench having slide-groove b, substantially as specified.

258,068. CHANDELIER. WOLCOTT A. HULL, New York, N. Y., assignor of one-half to the Ansonia Brass and Copper Company, same place. Filed Jan. 4, 1882. (No model.)



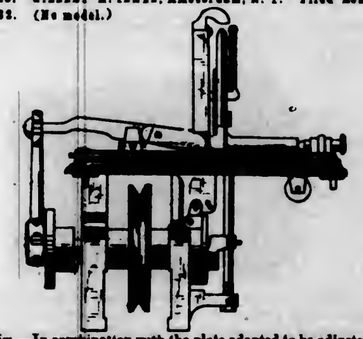
Claim.—1. The combination, with the body of a chandelier, composed of a disk and inner and outer flanges projecting from and formed integral with said disk, and each provided with holes radially opposite the holes in the other, of arms inserted into said holes, and pins, screws, or like devices inserted through said disk and transversely through said arms, substantially as herein described.

2. The combination, with the body of the chandelier, provided with sockets, of tubular arms containing plugs of wood and fitting in said sockets, and screws passing through the body and screwing into the plugs of wood in the said arms, substantially as specified.

3. The combination, with the body B B' B', provided with the sockets *e f*, of the arms D and screws *g*, substantially as specified.

4. The combination of the stem A, the body B B' B', screwed thereon, and the fulcrum-piece C, screwed on the stem below the body, substantially as specified.

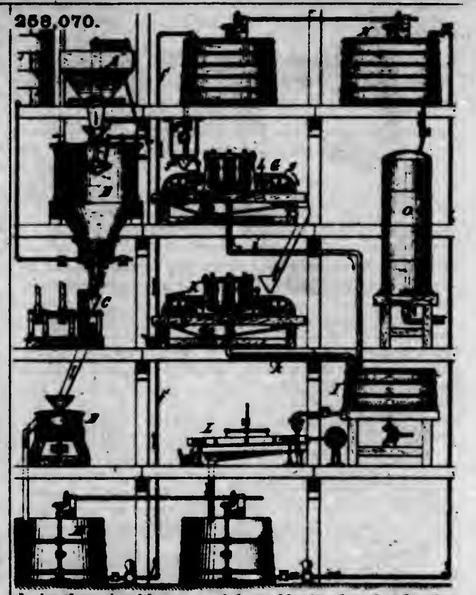
258,069. TRIMMING ATTACHMENT FOR SEWING-MACHINES. GILBERT H. INMAN, Amsterdam, N. Y. Filed Feb. 21, 1882. (No model.)



Claim.—In combination with the plate adapted to be adjusted to the bed of the machine, the rock-shaft journaled in bearings in suitable standards on said plate, the bent lever adjustably secured to the rock-shaft and adapted to be connected with the operating mechanism of the machine, the stationary shear-blade secured to the plate and adapted to be adjusted longitudinally in line with its cutting-edge, and the vibrating blade secured to the rock-shaft, the whole arranged to operate substantially as specified.

258,070. METHOD OF AND APPARATUS FOR OBTAINING STARCH FROM GRAIN, &c. THOMAS A. JESS and WILLIAM T. JESS, Buffalo, N. Y. Filed Feb. 9, 1882. (No model.)

Claim.—1. As an improvement in the art of extracting starch from grain, the herein-described method, which consists in first reducing the grain with water, and then subjecting the reduced grain to pressure, whereby the starch-water is pressed out and separated from the bran and other coarse matter.



2. As an improvement in the art of extracting starch from grain, the herein-described method, consisting in first coarsely disintegrating the grain, then reducing the grain in a separate machine to the proper degree of fineness, and then separating the starch-water from the bran and other coarse particles by pressure.

3. As an improvement in the art of extracting starch from grain, the herein-described method, consisting in first reducing the grain with water, then separating the starch-water from the bran and other coarse particles by pressure, and then treating the starch-water for the production of the desired product, the material passing through the several stages of the process continuously and without interruption.

4. As an improvement in the art of extracting starch from grain, the herein-described method, which consists in first reducing the grain with water, then separating the starch-water from the bran and other coarse particles by pressure, and then separating the remaining impurities from the starch-water by sifting.

5. As an improvement in the art of extracting starch from grain, the herein-described method, which consists in first reducing the grain with water, then separating the starch-water from the bran and other coarse material, and treating the starch-water for obtaining the desired product, then regrinding the bran and other coarse material separately and extracting the starch from this ground material separately.

6. In apparatus for extracting starch from grain, the combination of a reducing mechanism whereby the grain is reduced to the desired degree of fineness with water, and a separating-machine composed of an endless perforate or porous apron and pressure-rollers, which receive the reduced grains, whereby the starch-water is separated from the coarse particles, substantially as set forth.

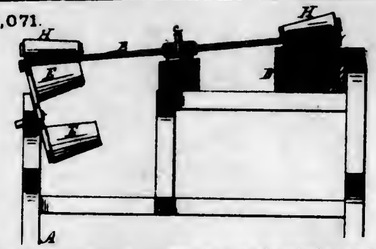
7. In apparatus for extracting starch from grain, the combination of a reducing mechanism whereby the grain is reduced to the desired degree of fineness, a separating-machine whereby the starch-water is separated from the bran, &c., and a subsequent separator, whereby the remaining impurities are separated from the starch-water, substantially as set forth.

8. In apparatus for extracting starch from grain, the combination of a steep, B, preliminary disintegrator C, grinding-mill D, receiver E, separator G, and subsequent separator I, substantially as set forth.

258,071. APPARATUS FOR MAKING PAPER VESSELS. HERBERT A. JOHNSON, Medina, N. Y. Filed Jan. 18, 1882. (No model.)

Claim.—1. In an apparatus for forming paper vessels from pulp, a circular felt in the form of a disk mounted centrally upon a journal or pin, so as to have a free rotation on its own axis, and

258,071.



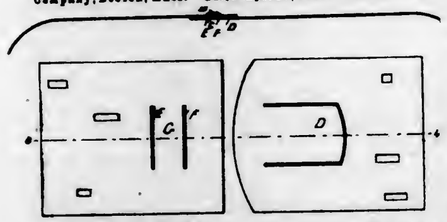
serving by its rotation to transfer the pulp deposited upon it by the take-up roller to the forming-roller on another side of the felt, as specified.

2. In an apparatus for forming paper vessels from pulp, the combination of a circular felt mounted centrally upon a journal or pin, so as to have a free rotation on its own axis, a conical take-up roller on one side and under the felt, which deposits the pulp on the under side of the felt, a conical forming-roller on another side and under the felt, which removes the pulp from the felt and deposits it upon itself, and two pressing-rollers above the felt, resting over the conical take-up and forming rollers, as specified.

3. The combination, with the circular felt resting and turning on a central journal or pin, of the two conical forming-rollers mounted on a frame pivoted to the main frame centrally between the rollers, whereby either roller may be turned up beneath and in contact with the felt when the other roller is turned down, as specified.

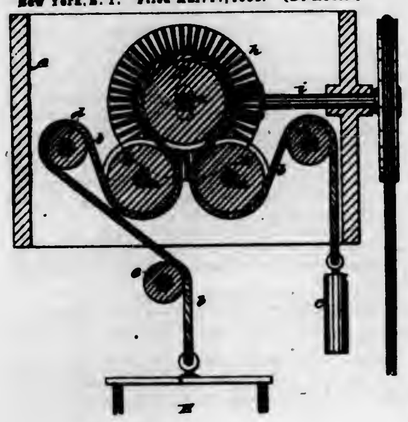
4. The combination, with the circular rotating felt B, mounted on a central journal or pin, *c*, of the swinging frame I, carrying the pressing-roller H, and the band *p*, resting upon pulleys attached respectively to the roller H and shaft K, as shown and described, and for the purpose specified.

258,072. PERFORATED MUSIC-SHEET. WILLIS JOHNSON, Waterbury, Conn., assignor to the American Automatic Organ Company, Boston, Mass. Filed Apr. 28, 1881. (No model.)



Claim.—A perforated music-sheet having a tongue, D, on one end and transverse slots E F on the other end, to form the bar G, all substantially as described, and for the purpose specified.

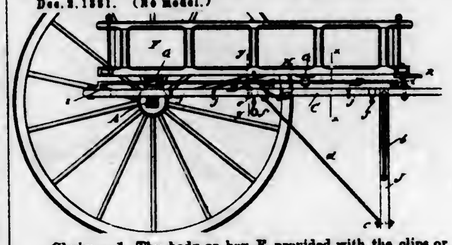
258,073. ELEVATOR AND DUMB-WAITER. JOHN JOHNSTON, New York, N. Y. Filed Mar. 17, 1882. (No model.)



Claim.—1. In an elevator, the combination, with the framework of the well A and the suspension-rope *b*, of the rollers C D, of the same size and journaled in the same horizontal plane, and the large roller B, journaled above and between the rollers C D, the said rollers being grooved to the depth of the thickness of the rope to adapt them to revolve in contact with each other, substantially as herein shown and described, whereby the friction between the rollers is increased in proportion to the weight, and the car sustained at any point, as set forth.

2. In an elevator, the combination, with the frame A, the rope *b*, the weight *c*, and the car E, of the grooved rollers B C D, journaled in the said frame and revolving in contact with each other, the side guide-rollers, *d d*, and central guide-rollers, *e*, substantially as and for the purpose set forth.

258,074. HAND-CART. JOSEPH M. JOHNS, Paris, Ky. Filed Dec. 2, 1881. (No model.)



Claim.—1. The body or box F, provided with the clips or sleeves G, having the rollers m, in combination with the runners D on the side bars of the frame, substantially as and for the purposes set forth.

2. The buffers *i i*, in combination with the runners D and the sliding box or body F, substantially as and for the purposes set forth.

3. The sliding box or body F, provided with the chains *h*, in combination with the eyes, ring, or hooks *j*, secured to the side bars, C, of the frame, substantially as and for the purposes set forth.

4. In hand-carts, the runners D D, supported in the center by the bolts or similar device E, substantially as and for the purposes set forth.

5. In hand-carts, the hinged support or standard J, braced at the sides by the braces *b b*, and from the rear by the hooked rod *d*, the rod being adapted to be placed in the hook *f* and the standard to be placed in the hook *f'*, substantially as and for the purposes set forth.

6. The sliding box or body F, provided with the handles or hand-grasps *h*, substantially as and for the purposes set forth.

258,075. GENERATOR FOR STEAM HEATING APPARATUS. THADDEUS C. JOY, Titusville, Pa. Filed Feb. 2, 1882. (No model.)



Claim.—1. An annular steam-generator composed of segments having downward flame-flues extending through them, in combination with an annular grate-section, which supports the segmental generator, and is beveled or cut away at the ends of the downward flame-flues to give exit to the flame, substantially as and for the purposes described.

2. A segmental steam-generator composed of hollow segments, each having a radial inward projection extending over the fire-chamber, the interior of both segment and projection constituting one chamber, the lower part of which acts as a steam-generator and the upper part as a steam-drum, substantially as and for the purposes described.

3. A segment of a steam-generator, having a tapering radial projection at its upper end, the lower side of which is tapered or cone-shaped, so that when in place it shall be exposed to the action of the heat arising from below, substantially as and for the purposes described.

4. A segmental steam-generator composed of hollow segments having inward radial projections which communicate with each other by ground and packed joints, substantially as and for the purposes described.

5. A segmental steam-generator having return-flues extending down between the segments, combined with segments having radial projections extending inward at the upper ends, which projections have cone-shaped or tapered under surfaces, so as to form between them the passages to the return-flues and to increase their heating-surface, substantially as described.

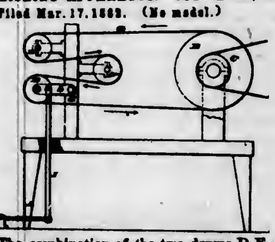
6. A segmental steam-generator having a vertical fire-chamber and return-flues, provided with holes or openings directly over the wall between the fire-chamber and return-flues, so as to permit the introduction through one opening of a brush or other device for cleaning the walls of both, substantially as and for the purposes described.

7. A segmental steam-generator having steam-generating chambers projecting from the annular water-chamber formed by the segments into the central fire-chamber, in combination with overhanging radial projections extending inward from the upper ends of the segments and nipples, making a direct vertical connection between the secondary generating-chambers and the radial projections, substantially as and for the purposes described.

8. A steam-generator having a central fuel-reservoir composed of sectional plates secured in or by supporting and retaining lugs on the steam-generating chambers which surround or are placed in the fire-chamber, substantially as and for the purposes described.

9. In a segmental steam-generator having secondary generating-chambers extending in from the main or segmental chambers, inverted T-lugs at the lower ends and vertical lugs at the upper ends of said secondary chambers, for supporting, and in combination with, fire-plates placed thereon and forming a fuel-reservoir in the center of said generator, substantially as and for the purpose described.

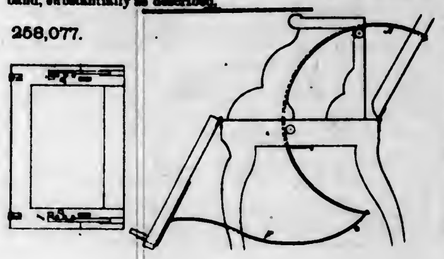
258,076. POLISHING APPARATUS. JOHN KARL, Wallingford, Conn. Filed Mar. 17, 1882. (No model.)



Claim.—1. The combination of the two drums D E, the intermediate drum, F, and the endless driven band *a*, having its surface coated with the grinding or polishing material and running around one of the said drums, D, thence around the intermediate drum, F, thence around the other drum, E, whereby the same working-surface of the band is presented between the two drums D E opposite to each other, with mechanism, substantially such as described, to impart to said drums a rapid revolution, and to the said band a corresponding rapid and constant movement, substantially as described.

2. The combination of the two drums D E, the intermediate drum, F, and the endless driven band *a*, having its surface coated with the grinding or polishing material, and running around one of the said drums, D, thence around the intermediate drum, F, thence around the other drum, E, whereby the same working-surface of the band is presented between the two drums D E opposite to each other, one or both of the said drums D E made adjustable to vary the distance between the working-surfaces of the band, substantially as described.

258,077.

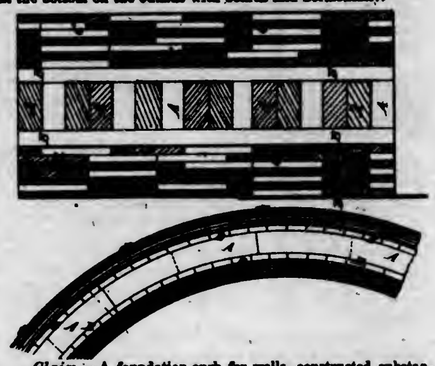


258,077. ADJUSTABLE CHAIR. JOHN D. KING, Elmira, N. Y. Filed Dec. 19, 1881. (No model.)

Claim.—The combination of the curved rod A with the hinged back of the chair rigidly attached to the same, and arranged, as described, so that moving in the arc of a circle it passes through the arm and seat; also, with the rod F, the hinged foot-rest, the rod F being pivoted to the hinged foot-rest, and a fastening device for securing it in any desired position, substantially as described.

258,078. FOUNDATION-CURB FOR WELLS. SPENCER A. KINGSLAND, Brooklyn, N. Y. Filed Sept. 1, 1881. (No model.)

Brief.—A central tier of horizontal timbers and an outer and inner tier of vertical timbers are spiked together and faced at the bottom on the outside with boards laid horizontally.



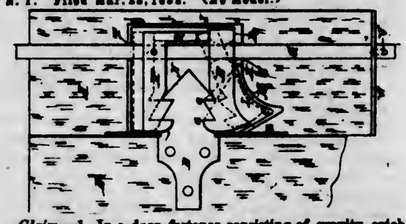
Claim.—A foundation-curb for wells, constructed substantially as herein shown and described, consisting of the central tier or core of curved horizontal timbers A, the outer and inner tiers of vertical planks B, and the outer and inner series of tiers of horizontal boards C, as set forth.

258,079. CIGAR. FRANCIS S. KINNEY, New Brighton, assignor to the Kinney Tobacco Company, New York, N. Y. Filed June 28, 1881. (No model.)



Claim.—A cigar having a label attached thereto by means of one or more prongs pressed or forced therein through its wrapper, substantially as described.

258,080. CAR-DOOR LOCK. JAMES W. KNAPPS, New York, N. Y. Filed Mar. 25, 1882. (No model.)



Claim.—1. In a door-fastener consisting of gravity-catches E F, bar G, and the notched bolt D, the pivot H for the catch E, formed on a base-plate, I, located in the recess N made in the wood for the said fastener, substantially as described.

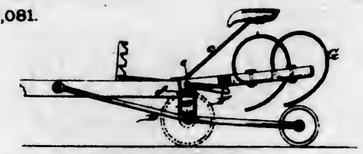
2. The combination, with catches E F, bar G, and notched bolt D, of the pivot H and the rest R for catch E on base-plate I, substantially as described.

3. The combination, with the bar G, catches E F, and bolt D, of the staple V and plate W, the said plate being attached to the end of cleat A and provided with slots X and Y, and the staple being attached to bar G and in the described relation to plate W, substantially as described

258,081. SULKY-HARROW. CHARLES LA DOW, Albany, N. Y. Filed July 26, 1881. (Model.)

Claim.—1. In a harrow, the combination of the main frame, the long and short independently and vertically vibrating tooth-

258,081.



arms hinged thereto, and spring-teeth connected to said arms, said teeth being constructed to yield rearwardly and recoil without side vibration, substantially as and for the purpose described.

2. In a harrow, the combination of a draft-frame, an arm attached thereto and adapted to conform to the surface traversed, and a flat spring-tooth adjustably connected to said arm, substantially as described, whereby the extent of vibration of the tooth can be varied.

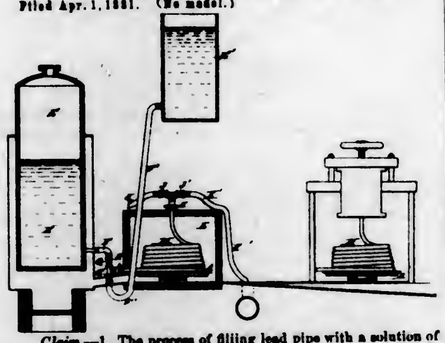
3. The combination, in a harrow, of the main frame, with a vibratory tooth-arm hinged thereto, and the broad and flat spring-tooth carried by the vibratory tooth-arm, said arm being arranged to extend over the cutting-point of the tooth, substantially as and for the purpose described.

4. The combination, in a harrow, of the pole with the cross-bar B, the braces D, extending rearwardly from the cross-bar to provide supports for the main frame, and the spring-teeth G, secured to the hinged tooth-arms, substantially as described.

5. In a harrow, the combination of the pole, the cross-bar B, the braces D, the hinged tooth-arms, the flat spring-teeth G, secured to the latter, and lifting mechanism for raising and supporting the teeth, the points of the said spring-teeth being constructed and arranged to act on the soil in different vertical planes transversely to the line of draft, substantially as and for the purposes described.

6. In a harrow, the combination of the main frame, the independently-articulating tooth-arms hinged thereto and provided with slots, and the flat spring-teeth vibrating within the slots in the tooth-arms, said members being organized for operation substantially as and for the purposes described.

258,082. LEAD PIPE. PAUL LANGHAMMER, Denver, Colo., assignor to himself and Charles Stedler, Jersey City, N. J. Filed Apr. 1, 1881. (No model.)



Claim.—1. The process of filling lead pipe with a solution of sulphate of potassium and holding it therein under pressure at a temperature of about 257° Fahrenheit, so as to produce the highly-metalline sulphate composed of four atoms of lead to one of sulphur in the inner and lining portion, as set forth.

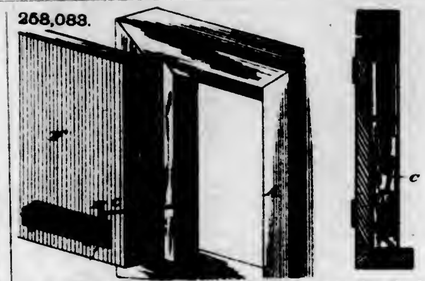
2. The apparatus described, having the boiler E, hose F, cock G, clamps H I, cock J, hose K, and oven L, for subjecting the interior of the pipe M to a solution at high temperature and under pressure, in combination with the reservoir or main E', hose F', cocks G' J', and hose K', for conveniently removing the uncombined particles of the solution, as herein specified.

258,083. COMBINED WEATHER-STRIP AND DOOR-SPRING. ANDERSON LATHROP, Van Hornesville, N. Y. Filed Mar. 14, 1882. (No model.)

Brief.—A hinged strip on the bottom of the door is connected by a cord passing through staples with a spring on the door-post, whereby the door-spring lifts the weather-strip upon opening the door.

Claim.—1. The combination, with the gravity weather-strip on the door, of the spring device secured to the door-frame and adapted to raise the weather-strip when the door is opened, as set forth.

258,083.

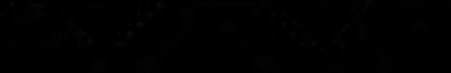


2. The combination of the spring device secured to the door-frame, and having connecting-cord C, adjustably secured to one end of the weather-strip, with the weather-strip hinged to the door at the bottom thereof, as herein shown and specified.

3. The combination of the spring device secured to the door-frame, the connecting-cord secured to the lower end thereof and passing down through staples or their equivalent affixed to the frame and door, its lower end being secured to the weather-strip, and the metallic plate forming the weather-strip, substantially as and for the purpose specified.

258,084. ORNAMENTAL CHAIN. BENEDICT B. LUDEMAN, Providence, R. I. Filed Jan. 23, 1882. (No model.)

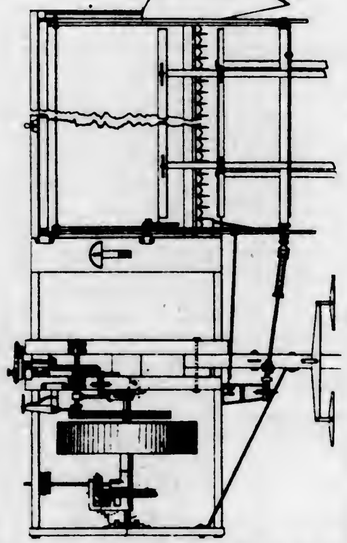
Brief.—A tube has notches cut therein to receive the connecting-link.



Claim.—1. As a new article of manufacture, a chain made up in part or whole of pieces of tube, having notches cut into the sides thereof, placed transversely to the chain and secured together along the sides of the tubes, as described.

2. In an ornamental chain, the combination, with the tubular links E E, placed transversely to the line of the chain and having notches cut into the sides thereof, of the rings F F, arranged to connect the tubular links together, as described.

258,085. HARVESTER. CHRISTOPHER W. LEVALLEY, St. Paul, Minn. Filed Jan. 26, 1882. (No model.)

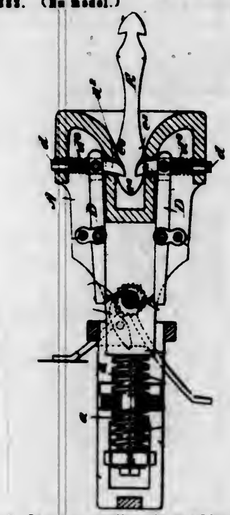


Claim.—1. In a harvester, the combination, with the main axle and the main frame, of the cogged yokes, bevel-gears, bevel-pinion, and counter-shaft, substantially as set forth.

2. In a harvester, the combination, with the main axle, the bevel gear and pinion, and the counter-shaft, of the swinging keeper, substantially as set forth.

3. In a harvester, the combination, with the main frame and main axle, of cogged yokes, a gear on the main axle, a counter-shaft arranged at right angles to the axle, and a gear mounted on said counter-shaft and engaging with the gear on the main axle, substantially as set forth.

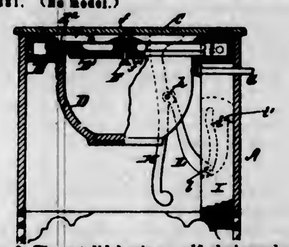
258,086. CAR-COUPLING. LUCIUS LOSS, Sublette, Ill. Filed Feb. 14, 1882. (No model.)



Claim.—1. In a car-coupling, the combination of a coupling-bar, E, formed, as above described, with a draw-head, A, provided with levers D, having pivoted hooks or studs d^2 and springs d^3, substantially as and for the purpose herein set forth.

2. In a car-coupling, the pivoted and spring-pressed levers D, provided with the pivoted hooks or studs d^2 on their outer ends, in combination with the draw-head A, and means, substantially as herein shown and described, for operating the said levers, as and for the purpose set forth.

258,087. COMMODE. HENRY LOVE, Philadelphia, Pa. Filed Sept. 9, 1881. (No model.)



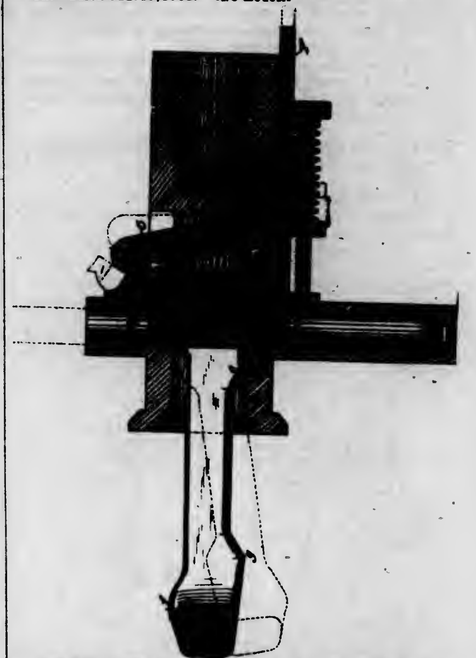
Claim.—1. The pot-lid having a self-closing valve, F, with stem *f* projecting above said lid, whereby said valve is adapted to be opened by the pressure or impact on its stem of the commode-cover, substantially as shown and described.

2. The combination of a pot having a lid with self-closing valve F with a commode having a cover which, when down or closed, opens said valve to admit air to the pot, substantially as shown and described.

3. The combination, with the commode-body A, having buttons K and pivoted levers I, with recesses *f'* and grooves *f''*, of cover C, having arms H and pivoted braces L, said parts being constructed and combined for operation substantially as shown and described.

4. In a commode having openings on either side of the hole or seat-opening for the passage of the arms when the lid or cover is turned down or closed, the combination, with said openings, of hinged bars for closing up or occupying said side openings when said lid or cover is raised, substantially as shown and described.

258,088. CAR-COUPLING. CHARLES E. HAGARTEY, Forsyth, Ga. Filed Jan. 26, 1882. (No model.)



Claim.—1. The combination, with a draw-bar having a tubular projection above the pin-hole and a headless pin, of a latch-bar pivoted in said tubular projection, and having one end extending across the pin-hole, and a vertical trigger-bar pivoted in the bottom of the draw-bar, and having its upper end formed with a hooked catch adapted to engage the latch and hold it horizontal to retain the pin in an elevated position and to lock the pin down, as described.

2. The combination, with a draw-bar and a headless pin, of a pin-receiver attached to the bottom of the draw-bar about the pin-hole, as and for the purposes described.

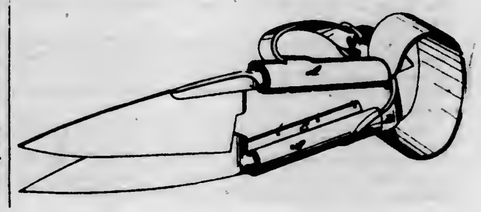
3. The combination, with a draw-bar and a headless pin, of a pin-receiver attached to the bottom of the draw-bar about the pin-hole and made in the form of a tube with an open lower end and adjustable stop at its lower end to permit the pin to be retained or removed, as described.

4. The combination, with the pin-receiver, of the stop-bolt c, permanently connected to the pin-receiver by a slot and pin, and provided with a spring-catch, z, as and for the purposes described.

5. The combination, with a draw-bar and a headless pin, of means for holding the pin in elevated position, a slide for holding the pin in the coupled position, &c., and a subjacent pin-receiver arranged about the pin beneath the slide, as and for the purposes described.

6. The link, formed with projections *f f* on one side and *g g* on the other, one of said sets of projections being nearer the end of the link than the other, as and for the purpose described.

258,089. SHEAR-PAD. ALFRED P. MANN, Kearney, Nebr. Filed Feb. 27, 1882. (Model.)

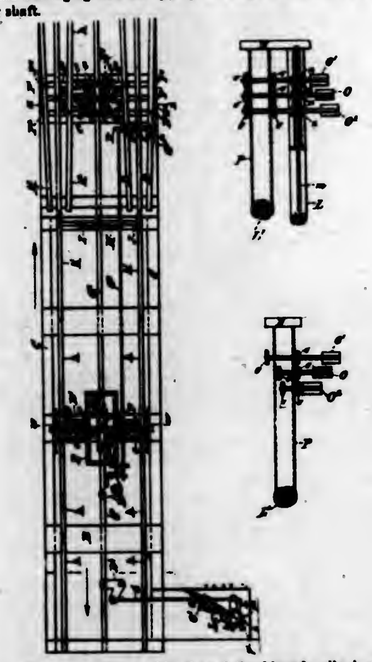


Claim.—1. The combination, with the casings A, provided with the covering B and adapted to be secured on the shanks of shears, of the straps D, for connecting these casings, substantially as herein shown and described, and for the purpose of holding the shears in the operator's hand, as set forth.

2. The combination, with the casing A, of the covering-layer B, of cloth or leather, held on the casing A by the overlapping longitudinal edges C of the casing, substantially as herein shown and described, and for the purpose set forth.

258,090. RAILROAD-SWITCH. MARTIN MARSHALL and HUGH J. MCDEVITT, Philadelphia, Pa. Filed Sept. 24, 1881. (No model.)

Brief.—In approaching the switch on the main line it is set to the desired siding through pivoted swinging levers at the side of the track operated from the train, said levers controlling the position of fingers or keys on a sleeve of a rotary shaft, the weight of the train depressing jointed rails, causing said fingers to be operated, whereby a partial rotation of the shaft shifts the switch-rails through pinion-and-rack connection. In approaching the switch on either siding it is set through jointed sections of the siding-rails being depressed by weight of passing train actuating levers bearing against the appropriate fingers or keys on the rotating shaft.



Claim.—1. The combination of the hinged rails A with the switch-rails A', having a rack, I, by means of the intermediate levers, D, rods F, springs e, and rod G', having a toothed wheel, H, whereby the said rails A, when caused to descend from their inclined to their normal horizontal position by the weight of a train passing over them, shall so move the said intermediates as to operate the switch-rails A', substantially as described.

2. One or more levers, O, constructed substantially as described, and so arranged as to be in reach of the brakeman of a passing train, in combination with the tube P, or equivalent device, having a rod or rods, p, and arm h, for setting switch-keys, substantially as described.

3. The key-levers O, in combination with the vertical rods or posts L L' and tube P, substantially as described, the levers being arranged in such proximity to the railroad as to be operated by an employé on a passing train, substantially as and for the purpose set forth.

4. The combination of the vertical rod or post L, provided with levers O, O', and O², and rod or post L', having a tube, P, provided with cross-rods p, p', and p², and an arm, h, with the rod G, bell-crank lever D², and rod G', having a three-pronged key, K, substantially as described, and for the purpose set forth.

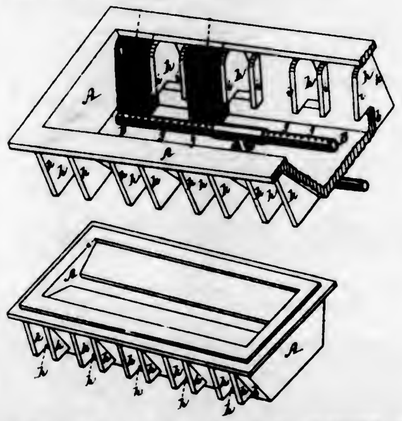
5. The combination of the bell-crank levers D D, rods F F, and springs e e with the key K and jointed inclined rails A, substantially in the manner and for the purpose set forth.

6. The combination of the longitudinal rod G², having a gear-wheel, H, with the rod G', having a key, K, and a switch having rails A' A' and toothed rack I, substantially in the manner and for the purpose above set forth.

7. The combination of the bell-crank levers D', D², and D³, rods F', F², and F³, and springs e', e², and e³ with the rod G², having a key, K², and the inclined rails A, A², and A³, substantially as described, for operating the switch when the train is passing from the connected track onto the main track.

8. The combination of the rod G² with the rod G', having a key, K, and the rod G², having rods e, e', and e², substantially in the manner and for the purpose set forth.

258,091. STOVE OR FURNACE FOR BURNING HYDROCARBON AND OTHER OILS. PHAAL MARTIN, Medford, assignor to the Boston Petroleum Heating Company, Boston, Mass. Filed Jan. 14, 1882. (No model.)



Claim.—1. In an oil stove or furnace, the combination, with a fire-pot, A, having its sides grooved for the reception of wicks, of a series of air-inlet apertures, h, located in its sides between or at the sides of the wick-grooves, and so arranged that each aperture h on one side of the fire-pot will be directly opposite to or in line with a wick-groove, s, on the other side of the pot, substantially as and for the purpose set forth.

2. In an oil stove or furnace, the combination, with the air-inlet apertures h in the sides of the fire-pot A, of the projecting wings or plates i h, adapted to increase the surface area of the sides of the air-apertures, for the purpose of imparting additional heat to the air entering the fire-pot, substantially as described.

3. In an oil stove or furnace, the combination, with a fire-pot having its side or sides grooved for the reception of wicks and a series of air-inlet apertures located in its sides between or at the sides of the wick-grooves, of a deflector so arranged as to intercept and deflect the incoming currents of air down to the bottom of the fire-pot into close proximity with the perforated oil-pipe, substantially in the manner and for the purpose set forth.

4. In an oil stove or furnace, the combination, with a fire-pot provided with air-inlet apertures in its sides and a deflector placed thereover, of a perforated oil-pipe, B, located above the bottom of the pot to allow of the passage thereunder of the currents of air projected downward by the deflector, substantially as and for the purpose described.

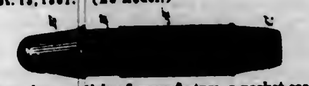
258,092. RADIATOR. JOSHUA HASON, Paterson, N.J. Filed Feb. 20, 1882. (No model.)



Claim.—1. The combination, in a radiator, of an upper and a lower water or steam chamber or head, outer and inner upright tubes, the former of which connect the two water chambers or heads and the latter of which pass through the former and through both chambers or heads, and a central tube communicating with the upper chamber or head and having an inlet at the lower end thereof, substantially as and for the purpose specified.

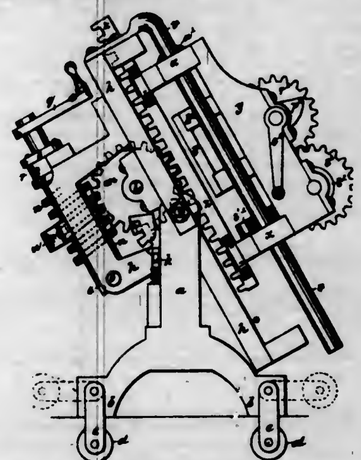
2. The combination of the lower head or chamber, A, constructed with the passage or conduit a, the upper head or chamber, B, the outer and inner tubes, C D, and the central tube, F, substantially as specified.

258,093. CIGAR-CASE. EDWARD S. MAY, Detroit, Mich. Filed Oct. 19, 1881. (No model.)



Claim.—As an article of manufacture, a pocket-case consisting of tubes A B, telescoped together, and the detachable thimble E, substantially as and for the purpose set forth.

258,094. ROCK-DRILL. JOSEPH L. MCCLOSKEY, Ozark, Mo. Filed Dec. 1, 1881. (No model.)



Claim.—1. The combination, with a rock-drill frame secured to the upper ends of its legs, and legs e, provided with curved feet b, of the swinging roller-frames e d, pivoted to the feet, whereby the rollers can readily be swung under the feet when it is desired to move the machine, and when the latter has reached the desired position the roller-frames can be swung into a horizontal position, with the feet of the drill resting on the ground, substantially as described.

2. The combination, with the frame A, provided with the guide-rods v v, and frame y, adapted to slide on said guide-rods and provided with the guide-bolts a' a', of the roller-frame b', carrying the drill-bolt h', coiled spring m', and crank-shaft n', provided with a tappet, g', substantially as described, and for the purpose set forth.

3. The combination, with the frame y, provided with the guide-bolts a' a' h', and spring m', of the frame b', carrying the roller g', shaft n', carrying the tappet g', pinions r' d', worm t', and worm-wheel f', substantially as described, and for the purpose set forth.

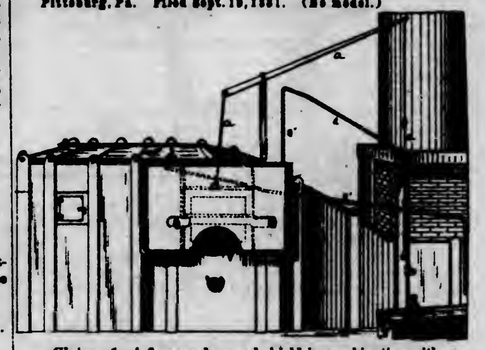
4. The combination, with the frame y, provided with guide-bolts a' a', having nuts on their ends, of the plate c', having a central hole for the passage of the drill and thimble d', substantially as described, and for the purpose set forth.

5. The combination, with the frame b', carrying the drill-bolt h' and nut n², of the spring a', encircling the lower end of the bolt and lying between the upper cross-bar, b², of the frame b' and the nut n², substantially as described, and for the purpose set forth.

6. The combination, with the shaft l, carrying the pinion m, and frame y, carrying the rack-bar n, of the worm n, adapted to be thrown in or out of engagement with the pinion, substantially as described, and for the purpose set forth.

7. The combination, with the shaft l, carrying the pinion m and worm n, journaled at its lower end in the rock-bar c, and having its upper bearing in a hole, p, open on one side, of the jointed clamp r and pin t, substantially as described, and for the purpose set forth.

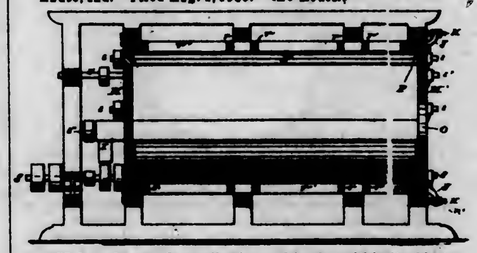
258,095. FURNACE DOOR AND SHIELD. HUGH MCDONALD, Pittsburg, Pa. Filed Sept. 19, 1881. (No model.)



Claim.—1. A furnace door and shield in combination with a water-supply to one and a discharge therefrom to the other, substantially as described.

2. The band d, having cross-bar d', as a means of attachment to a shield to be moved simultaneously by the same motion, substantially as described.

258,096. DUST-COLLECTOR. FRANCIS H. MCELFRESH, Terre Haute, Ind. Filed Aug. 4, 1880. (No model.)



Claim.—1. In a dust-collecting reel having within it a blast-chamber and a still-air chamber, separated by the inclosing boards of a hopper, the rotating closing-strips D D', arranged to simultaneous bear upon the hopper-boards and the traveling cloth to prevent the blast from entering the hopper, substantially as described.

2. The combination, with the traveling cloth and the still-air chamber, of the rotating brush E, arranged in contact with the cloth and within the still-air chamber, substantially as described, and for the purpose stated.

3. The combination, with the rotating reel B, having ribs r, of the non-rotating heads H H' and adjusting devices for regulating the relative positions of said reel and heads.

4. In combination with the frame A and reel B, the head H', provided with the brackets J, the threaded rods K, fixed frame, and the nuts n and n', constructed, arranged, and operating substantially as described, and for the purposes set forth.

258,097. WHEEL-CULTIVATOR. ALFRED HEISENBUTTE, Munster, Ill. Filed Oct 31, 1881. (No model.)



Claim.—The combination, with the arms b e f, secured to the opposite sides of the rear end of the plow-beam and bent outwardly, substantially as set forth, and provided with adjusting-holes in their downwardly-projecting ends, of the arms h l m n, secured to the arms b f, and bent as shown, and threaded bolts o r, serving the double purpose of braces for the arms and a means of laterally adjusting the teeth, substantially as described.

258,098. WATER-BACK FOR STOVES. WILLIAM HILLER, Cincinnati, Ohio. Filed Feb. 21, 1882. (No model.)

Claim.—1. A tubular lateral extension applied to the upper

258,098.



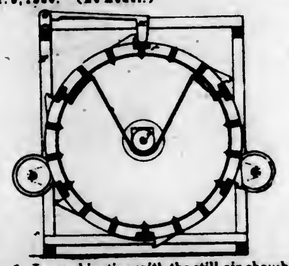
part of a water-back and supporting the panels or long centers of a range or stove or other cooking or heating apparatus, substantially as described.

2. The communicating shells E E' F, of which the upper one, E', is provided with a hollow lateral extension, G, as and for the purpose described.

3. A fire-box lined on each side with a water-back having a hollow extension that supports the panels or long centers of the cooking or heating apparatus containing said fire-box, substantially as described.

4. As a new article of manufacture, a tubular back or fire-box lining provided with a hollow lateral extension, for the purpose specified.

258,099. DUST-COLLECTOR. JONATHAN HILLS, Chicago, Ill. Filed Apr. 6, 1880. (No model.)

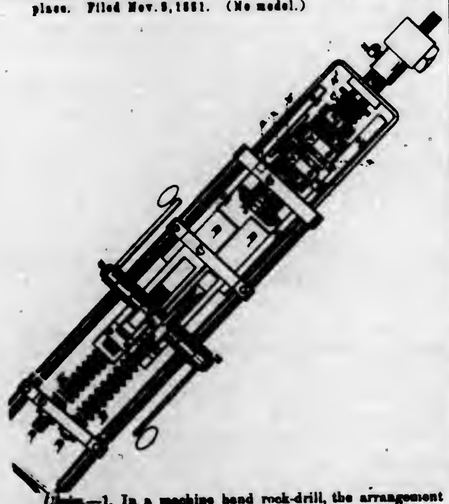


Claim.—1. In combination with the still-air chamber and the moving cloth of a dust-collector, the conveyer W, substantially as and for the purposes set forth.

2. A rotating reel bearing a dust-cloth, in combination with a blast-chamber and a still-air chamber within said reel, as described.

3. In combination with a reel bearing a dust-cloth, a hopper arranged within the reel to separate the general interior thereof into two unconnected chambers, substantially as and for the purposes set forth.

258,100. MACHINE HAND ROCK-DRILL. EUGÈNE MOREAU, San Francisco, Cal., assignor to Theodore W. Sterling, same place. Filed Nov. 9, 1881. (No model.)



Claim.—1. In a machine hand rock-drill, the arrangement and combination of the hammers D D, provided with arms or stirps L, having lugs *a*, and the loosely-journaled drill-bolding spindle H, with its head J and spring C, substantially as and for the purpose herein described.

2. In a machine hand rock-drill, the combination and arrangement of the hammers D D, having arms or strips L and cams U, and the loosely-journaled drill-holding spindle H, with its sleeves V, having lugs *r*, springs *s*, and pawls W, and the feathered ratchets X, substantially as and for the purpose herein described.

3. In a machine hand rock-drill, the combination and arrangement of the hammers D D, having lugs *a* and cams U, and the loosely-journaled drill-containing spindle H, with its head J, spring C, loose sleeves V, with their lugs *r*, springs *s*, and pawls W, and the feathered ratchets X, substantially as and for the purpose herein described.

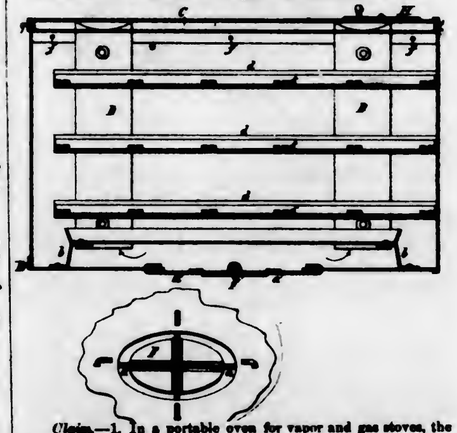
4. In a machine hand rock-drill, the combination and arrangement of the hammers D D, lifting-cams F F, having their points curved to the arc of a circle, as shown, arms L, with their cams U, and spindle H, with its sleeves V, lugs *r*, and pawls W, and the feathered ratchets X, substantially as and for the purpose herein described.

5. In a machine hand rock-drill having a striking hammer, the combination of the loosely-journaled drill-holding spindle H, threaded rod M, and a means for receding said rod M as the drill advances, consisting of the arm T, attached to the hammer, and having a pin or lug, *w*, the fulcred lever R, with its pawl S, the ratchet Q, gears *q'* and *q*, and the actuating-nut N, substantially as and for the purpose herein described.

6. In a machine hand rock-drill, the combination of the loosely-journaled drill-holding spindle H, supporting rod M, and intermediate mechanism to cause said rod to recede as the said spindle advances, substantially as and for the purpose herein described.

7. The combination herein of the threaded rod M, actuating-nut N, and locking device, consisting of the pivoted lever P, with its cam *p*, substantially as and for the purpose herein described.

258,101. PORTABLE OVEN FOR GAS AND VAPOR STOVES. J. L. HORGAN, Decatur, Ill. Filed July 30, 1881. (Model.)



Claim.—1. In a portable oven for vapor and gas stoves, the radiator or disk, corrugated to prevent warping as well as to allow the wires to pass through it flatwise, and the wires for the purpose of suspending the disk in its position above the flame, substantially as shown and described.

2. In a portable oven, the conducting-tubes D, secured to the side walls of the oven at equal distances from the ends thereof, the side walls of the oven forming one side of the tubes and the tubes being of the same depth as the flanges B of the oven.

3. In a portable oven provided with flanges B, the combination, with the conducting-tubes secured to the sides of the oven and being of the same width as the flanges of the oven, of the brackets *d d*, secured to the sides of the tubes D, substantially as set forth.

4. A portable oven having a door-front or opening formed of the extended turned-down portions of the sides, top, and bottom of said oven, substantially as described, the overlapping corners of said turned-down portions being secured together by rivets.

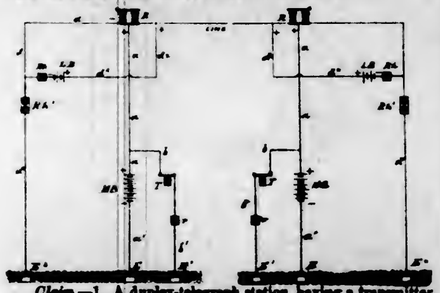
5. In a portable oven for vapor and gas stoves, the combination of the following elements, viz: the corrugated radiating-disk F and bottom part of the oven and the sub-radiator or drip-pan E, the conducting-tubes D, and air-chamber C, having the valve or damper H, the brackets *d d*, and grate G, all arranged substantially as herein shown and described.

6. A sheet-metal shelf or grate having two side bars and a number of cross-bars, the side bars being bent longitudinally and embracing and overlapping the cross-bars, which are bent transversely at their extremities, and the cross-bars at each end being secured to the side bars by rivets, substantially as described.

258,102. WITHDRAWN.

258,103. DUPLEX TELEGRAPH. GARDNER S. HOTT, Philadelphia, Pa. Filed Mar. 25, 1882. (No model.)

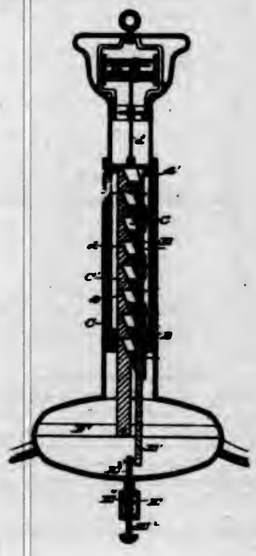
Brief.—The transmitting-batteries are normally short-circuited through their own transmitters, and each relay has a local circuit permanently closed through both coils. The relay-coils are not necessarily differentially wound. When a current is sent to line its influence is overcome on the line-coil of the relay by the local, and that coil is entirely nullified as to its effects, while that of the artificial line is doubled, thus leaving the home instrument silent, while the balance is disturbed at the distant station.



Claim.—1. A duplex-telegraph station having a transmitter, relay, resistances, and circuits, substantially as described, with a main battery which goes to line through one portion of the relay, and has a ground-connection through the other portion of the relay and a rheostat, and a local battery permanently in circuit through both portions of the relay, substantially as set forth.

2. A duplex-telegraph station having a transmitter, relay, resistances, and circuits, substantially as described, with a main battery having a local circuit through the transmitter, and a magnetic coil, m, between the connection of the wires *a' b'* of this local circuit and the ground, as and for the purpose set forth.

258,104. CHANDELIER. STEPHEN S. NEWTON, Binghamton, N. Y. Filed Dec. 27, 1881. (No model.)



Claim.—1. In a chandelier, the combination, substantially as set forth, of the following elements, namely: the upper stationary tube-section, a cord-winding mechanism attached to said stationary tube-section, a horizontal and inwardly-projecting supporting-stop at the lower end of said stationary tube, a lower sliding tube-section, a series of locking lugs or spurs carried by and concealed entirely within the lower section and arranged to be moved laterally relatively thereto, a cord attached to said series of locking lugs or spurs and to the winding mechanism in the stationary section, means, substantially as set forth, to move said lugs or spurs laterally relatively to the supporting-stop to throw them into engagement therewith, and the means which withdraw them to permit them to pass vertically through the supporting-stop.

2. In a chandelier, the combination of an upper stationary tube-section, a supporting-stop attached to said section, a lower sliding tube-section, a series of vibrating locking-dogs carried by the sliding section and arranged to engage with the supporting-stop on the stationary section, and two opposing wedges, of which one is connected by a cord to the stationary section and the other is connected to the sliding section, said wedges being operated by the weight of the chandelier to crowd the vibrating locking-dogs into engagement with the supporting-stop on the stationary section to provide a positive support for the sliding section, substantially as set forth.

3. In a chandelier, the combination of an upper stationary tube-section, a supporting-stop attached to said section, a lower sliding tube-section, a series of vibrating locking-dogs carried by the sliding section and arranged to engage with the supporting-stop on the stationary section, and two opposing wedges, connected respectively to the stationary section and to the sliding section and operated by the weight of the chandelier to crowd the vibrating locking-dogs into engagement with the supporting-stop on the stationary section to provide a positive support for the sliding section, substantially as set forth.

4. In a chandelier, the combination, with the upper tube-section having an inwardly-projecting shoulder or supporting-surface, B, of the slotted tube-section C', provided with inclined faces *d*, the vibrating locking-bar E, and devices, substantially as described, which throw said bar inward when it is moved upward relatively to the sliding tube-section, substantially as set forth.

5. In a chandelier, the combination, with the stationary tube-section, the sliding tube-section, and the vibrating locking-bar E, of the devices which are operated by the weight of the chandelier to move said locking-bar outward, and the stem E', projecting through the bottom of the sliding portion and arranged, substantially as set forth, to permit the vibrating locking-bar to be pushed upward relatively to the sliding portion, substantially as set forth.

6. In a chandelier, the combination, with the stationary section having a stop, and the sliding section, of a locking-bar carried by the sliding section, and having a series of stops upon one slide and one or more wedges formed upon the opposite side, and wedging devices attached to the sliding section and arranged to crowd the locking-bar outward by engaging with the wedge or wedges on said bar, substantially as set forth.

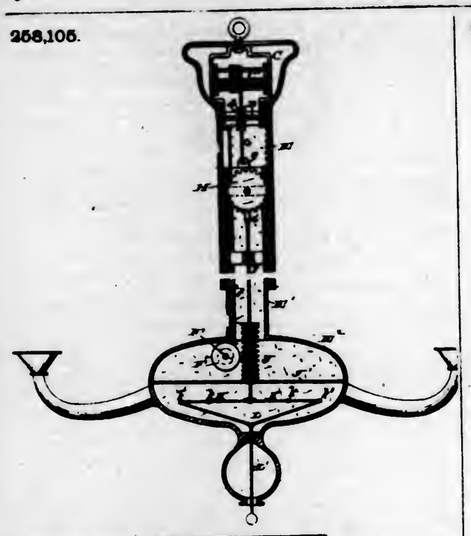
258,105. CHANDELIER. STEPHEN S. NEWTON, Binghamton, N. Y. Filed Dec. 27, 1881. (No model.)

Claim.—1. In a chandelier, the combination, substantially as hereinbefore set forth, of the following elements, namely: the upper stationary tube-section, a lower sliding tube-section carrying the bulb F', a spring cord-winding mechanism mounted in the upper tube-section and carrying a cord attached to the sliding tube-section, a spring cord-winding mechanism mounted in the sliding part of the chandelier, having a cord attached to the stationary tube-section, and a locking mechanism carried by the sliding tube-section at its upper end and concealed within the tube-sections, and arranged to permit the passage of the cord which is wound in the sliding tube-section.

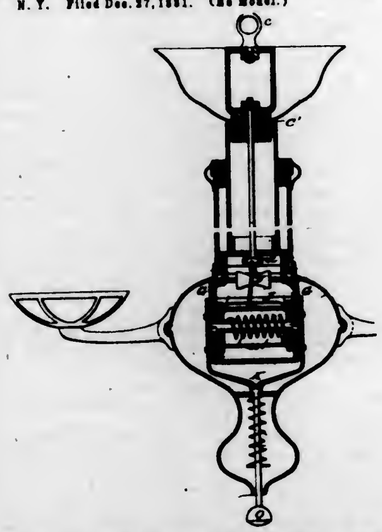
2. The combination of the upper stationary tube-section, the lower sliding tube-section, the devices which prevent the rotation of the lower tube-section relatively to the upper, a spring winding mechanism mounted in the upper tube-section and having a flexible connection with the lower tube-section, a spring winding mechanism mounted in the lower tube-section, and having a flexible connection with the upper tube-section, and a locking mechanism carried by the sliding tube-section and adapted to engage with the stationary tube-section, shell E, carried by the sliding tube-section, and a stem or lever projecting from the bottom for operating the stops, substantially as set forth.

3. In a chandelier, the combination, with the stationary section provided with the rack E, and the sliding section provided with the toothed wheel H, of the locking-rod I, carrying the detent *i*, the levers K K, and the stem L', substantially as set forth.

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258,106. CHANDELIER. STEPHEN S. NEWTON, Binghamton, N. Y. Filed Dec. 27, 1881. (No model.)



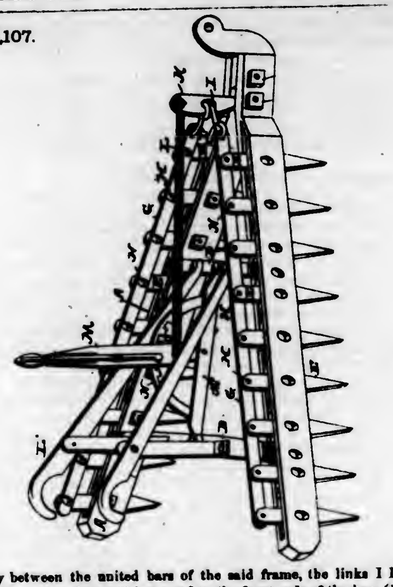
Claim.—1. The combination of the stationary tube-section, the sliding tube-section, the ratcheted spring-drum in the sliding tube-section, the frame G for supporting the drum, the thumb-piece projecting through the bottom of the sliding section, the cross-bar J, having detents to engage with the ratcheted drum, the U-shaped or forked yoke K, carrying said cross-bar J, and guides secured to the drum-frame to support the U-shaped yoke, substantially as set forth.

2. The combination of the upper stationary tube-section, the lower sliding tube-section, the cord connected at one end to the upper tube-section, the cord-winding mechanism supported in the lower tube-section, the frame G, the yoke K, carrying detent *f*, and the ratchet-teeth carried by the drum, substantially as set forth.

258,107. HARROW. PETER B. PASCHELL, Ashmore, Ill. Filed July 29, 1881. (Model.)

Claim.—The combination, with the rigid triangular harrow-frame, its pivoted teeth, and the bars G, to which the upper extremities of these teeth are pivoted, of the lever K, pivoted con-

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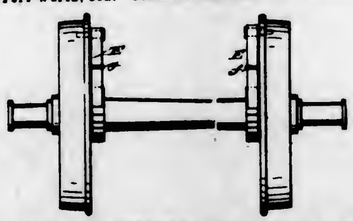
trally between the united bars of the said frame, the links I I, loosely connected to said lever and to the front ends of the bars G, the rod L, pivoted to the upper end of the lever K, the hand-lever M, having rod L pivoted to it, the centrally-arranged bar M', the cross-bars D D, the notched segment, and the locking-lever, all arranged in the manner substantially as described.

258,108. DECORATING GLASS, &c. ANDREW C. PAUL, Boston, and JOHN H. ROHDE, Somerville, Mass. Filed Sept. 12, 1881. (Specimens.)

Claim.—1. The within-described process of decorating glass, the same consisting in applying to the rear or inner surface of the glass, through the medium of an adhesive coating, a uniform backing of the within-described powdered or fragmentary mineral substances, substantially as and for the purpose described.

2. The process herein described of decorating glass, the same consisting in applying uniformly throughout the rear or inner surface of the glass, through the medium of a coating of adhesive substance, a backing of mineral substances, consisting essentially of powdered or fragmentary metallic chips or filings, silicious substances, glass, and sand, substantially as described.

258,109. CAR AXLE AND WHEEL. WILLIAM S. PRESLETON, Fort Worth, Tex. Filed Oct. 25, 1881. (No model.)



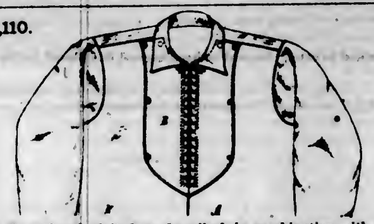
Claim.—The combination, with a car-axle having a fixed ratchet-wheel at each end, of wheels arranged loosely thereon, carrying spring-pawls E, and provided with the pins *f*, as and for the purpose specified.

258,110. SHIRT. ALBERT B. PERKINS, Newton, assignor to Simons, Hatch & Whitton, Boston, Mass. Filed Feb. 27, 1882. (No model.)

Claim.—1. A shirt-body, A, slit down the middle of its front from the neck to, or about to, the waist of such body, as described, in combination with two separate semi-fronts, B B, arranged with the slit *a* and sewed to the edges thereof, all being substantially as set forth.

2. A shirt-body slit down the middle of its front from the

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neck thereof and plaited, as described, in combination with two separate semi-fronts, arranged with the slit *a* and sewed to the edges thereof, all being substantially as set forth.

258,111. BRACELET. HENRY H. PERTHAM, Pawtucket, R. I. Filed Sept. 16, 1881. (No model.)

Brief.—The central plate is rigidly secured through its entire length to the band portion of the bracelet.



Claim.—1. The improved hand-bracelet herein described, consisting of a strip, A, of elastic material, and a box member, B, rigidly secured throughout its length to the exterior of the central portion of said strip and projecting above the same.

2. The strip or band A, having elastic end portions, combined with the box member B, rigidly secured throughout to the band, between its ends, substantially as shown and described.

258,112. HANDLE FOR POCKET-BOOKS, &c. CARL G. PFINGSTEN and EDWIN YOUNG, New York, N. Y., assignors to said Young. Filed Oct. 21, 1880. (No model.)



Claim.—1. The combination, with a book-holder, pocket-book, satchel, or similar article, of a handle pivoted to the book-holder, pocket-book, or similar article at its opposite ends, and adapted to swing beneath and be held in frictional contact with the lower edge thereof, substantially as and for the purpose shown and described.

2. The combination, with the handle and with the book-holder, pocket-book, or other similar article, of two loops which engage with the handle and swivel in the ends of the book-holder or other article, substantially as and for the purpose set forth.

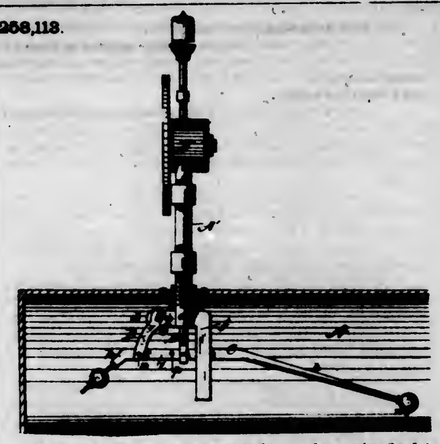
3. The combination, with the swivel-loops and with the book-holder or other article to which said swivel-loops are fastened, of a handle which is adapted to slide in said swivel-loops, substantially as and for the purpose described.

258,113. ATTACHMENT FOR STEAM-BOILERS. NAPOLEON B. PORTER, Charleston, W. Va., assignor of one-half to Delafield Du Bois, same place. Filed Jan. 28, 1882. (No model.)

Claim.—1. The combination, substantially as described, of the vertical tube or pipe A, the steam-chamber F, having an induction-port leading from the boiler and an eduction-port leading to the whistle, the peripheral ported valve I, arranged within the steam-chamber, and provided with connected actuating means, the indicating mechanism, the lever C, and the guiding and adjusting means, as set forth.

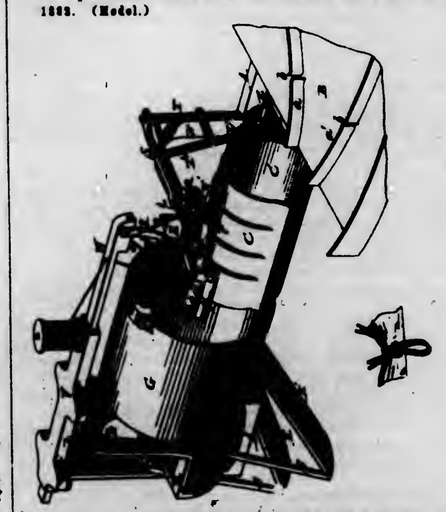
2. In an indicator for a steam-boiler, the combination, with a steam chamber having induction and eduction ports and a removable cap, of the actuated valve I, ported on the periphery, and the coil-spring *w*, surrounding the arbor of the valve, said parts being arranged within the steam-chamber, as shown and described.

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3. In an indicator for a steam-boiler, a tube or pipe fixed to the upper portion of the boiler and extending within the same, and formed with a side extension and a pin, in combination with a connected lever provided with a float at one end, and having pivotally-connected arms with notches, constituting, in connection with pin or side extension, an adjusting means for setting the position of the lever within the boiler, substantially as set forth.

258,114. GRAIN-BINDING MACHINE. JOHN R. PRESCOTT, Beaver Dam, Wis., assignor of one-half to Richard J. Andrews, same place, and Horace Foster, Sheldon, Ill. Filed Jan. 17, 1882. (Model.)



Claim.—1. In combination with a reaper, a grain bundling and compressing device composed of segmental sections C C', adapted and arranged to receive the grain at the end while closed, one of said sections being hinged to the other, and adapted to open to discharge the bundle, substantially as described.

2. In a reaper provided with a binding attachment, a grain-platform provided with curved guides *a a'*, approaching each other toward the delivery side of the platform, and provided with openings for the passage of the rake teeth or fingers, as set forth.

3. The compressor C, provided with hinged section C', in combination with lever F, connected with section C', and cam D, adapted to depress the lever, as explained.

4. In combination with the compressor, lever F and intermediate elastic section, F', connected with the hinged section C' in rear of its pivot.

5. In combination with the hinged compressor, section C', the operating-lever F F', and the chain connecting the section C' with the lever, as and for the purposes set forth.

6. In a grain-binder, the combination of a cylindrical compressor and an open-ended rotary cylinder adapted to receive and support the heads of the grain, and provided with a cord-carrying device, substantially as described, whereby it is adapted to pass the band about the bundle.

7. In combination with the compressor or bundle-former C, the open-ended rotary cylinder G, provided with a cord-holding device, and means, substantially such as described, for rotating the cylinder G alternately in reverse directions, as and for the purpose set forth.

8. In combination with the cylinder G, provided with a cord-holder and mounted upon a rock-shaft, straps or bands J, wound upon said shaft in reverse directions and attached respectively to levers K K', and cams L L', adapted and arranged to depress or actuate the levers alternately, substantially as set forth.

9. The herein-described method of binding grain, consisting in passing the band about the bundle of grain, then carrying the two strands of the band through an independent band of penetrable or perforated material and about the edge of the same, thereby introducing said material into the knot to prevent the slipping or drawing out thereof.

10. The method of securing the knots of grain-bands, consisting in introducing therein, substantially in the manner explained, an independent strip of material, through and around which the band is carried, as shown and described.

11. The cord-tying device for grain-binders, consisting of the pointed needle *f* and circular needle *n*, arranged and operating in connection with needle *f*, substantially as described.

12. In a grain-binding machine, the combination of a strip of penetrable or perforated material, a needle adapted and arranged to pass through said strip and to carry the strands of the band in the form of a loop through the same, and a second needle or finger operating substantially as described, whereby it serves to pass the outer ends of the strands through the loop.

13. In combination with the needle *f*, the steady-pin *e*, adapted and arranged to guide the needle and to hold the strip I' in place.

14. In combination with the rib or flange *d*, provided with the slot or opening *h*, the arm O, provided with needle *f*, and adapted and arranged to move straight out from the rib, and then to swing to one side to permit the placing of the strands of the band across the opening *h*, as explained.

15. In combination with the rib *d*, provided with hole *g* and slot or opening *h*, the arm O, provided with pin *e*, and needle *f*, adapted and arranged to move in a straight line from the rib and then to swing to one side, substantially as set forth.

16. The arm O, provided with needle *f*, and slotted as described, in combination with a stationary pin extending into said slot, and means for reciprocating the arm, whereby it is caused to move a given distance in a straight line, then to swing to one side, as set forth and shown.

17. The combination, in a grain-binder, of the rib *d*, provided with slot or opening A, arm O, provided with needle *f*, bar S, and means, substantially as shown and described, for reciprocating said bar.

18. In a grain-binder, the combination of band-fastening mechanism, substantially such as shown and described, a sliding bar, W, connected with a feeding-dog, and provided with lugs or studs *k*, and cam-wheel M, working between said studs, as shown and described, whereby the bar is reciprocated and caused to actuate the feeding-dog to supply material to the feeding devices.

19. In combination with the needle or finger *n*, a pulley secured upon its shaft, and a band connected with the sliding bar W and passing about said pulley and about a second pulley in line therewith, whereby the needle or finger is rotated alternately in opposite directions.

20. In a grain-binder, the combination of a notched needle adapted to pass the strands of the band in the form of a loop through an interposed piece of material, and a circular finger or needle adapted and arranged to seize the strands above the loop and to carry them through the same, as set forth.

21. In combination with the notched needle *f* and slotted or recessed rib *d*, the notched circular finger or needle *n*, rotating in a plane at right angles to the movement of the needle *f*, whereby it is adapted to seize the ends of the strands and carry them through the loop formed by the needle *f*.

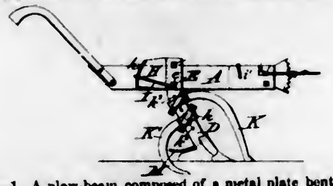
22. In combination with the needle *f* and circular needle or finger *n*, notched as described, a cord guide or eye located above and in line with opening *h*, and a cord-carrier arranged, substantially as described, to carry the second strand up to a position by the side of the strand coming from said eye or guide, whereby the strands are brought into position to be seized by the needle *f* and the finger or needle *n*.

23. In combination with the cylinder G, provided with the cord-carrier H, compressor C, and bed or plate N, projecting over the space between the cylinder and compressor, whereby it is adapted to catch the cord or band carried downward by the cord-carrier H.

24. The herein-described binding mechanism, consisting of needle *f*, arm O and its operating mechanism, circular finger or needle *n*, sliding bar W, cam M, strip P, and cord-carrier H, all combined and operating substantially as specified.

258,115. PLOW. ADDISON F. PURROY, Wake Forest, N. C. Filed Dec. 5, 1881. (Model.)

Brief.—The beam is of angle-iron, the horizontal base being narrowest. The standard clamp or staple has one arm passing over the beam, whereby it may rock with the standard when loosened in the arc-shaped recess. A sector-plate is bolted to the standard, which holds it at any pitch by the bent stop or bolt. The clevis-plate and beam have each an angular notch which register to insert the clevis-rod, when, by means of slots, the plate is moved forward, closing the slot. Provision is made to attach a depth-regulator with adjusting-grooves and various other implements to the standard.



Claim.—1. A plow-beam composed of a metal plate bent at its lower edge to form a flange, and provided with the angular slot *s'* and arc G, substantially as described.

2. The combination of a plow-beam, a standard attached to said beam by a pivot-bolt and clamp, as represented by E F, a toothed segment, H, fastened to said standard, and a stop-piece, I, for engaging the teeth of said segment, substantially as described.

3. The combination, with the plow-beam and standard pivoted thereto, of a toothed segment fastened to said standard and a separate stop-piece, I, adapted both to engage the teeth on said segment and to clamp the segment against the side of the beam, substantially as described.

4. The combination, with the plow-beam provided with the arc-shaped recess G, of the plow-standard attached to said beam by a pivot-bolt and clamp, E F, the part *f* of said clamp working in said recess, substantially as described.

5. The means described for securing a colter, subsoiler, harrow, or other attachment to a plow-standard, comprising a bent attaching-plate, *k*, adapted to embrace the standard, a pin to enter holes in the said standard, and a double bolt for binding the whole together, substantially as described.

6. A depth-regulator comprising a shoe and an upright with oblique grooves, substantially as described.

7. The combination, with a plow and plow-standard, of a harrow attachment, K³, having the body *l* oblique to the attaching-plate *k* and secured in front of the standard, substantially as shown and described, so that the harrow-teeth are above and behind the point of the plow, substantially as described.

8. The combination, with a plow and plow-standard, of a harrow attachment, substantially as shown and described, secured in front of the plow-standard above the plow, so as to be vertically adjustable on said standard, as set forth.

9. The combination, with the flanged metal plate provided with notches in the flange, of the teeth, grooved and fitting within said notches, and bolts for holding the teeth in position, substantially as described.

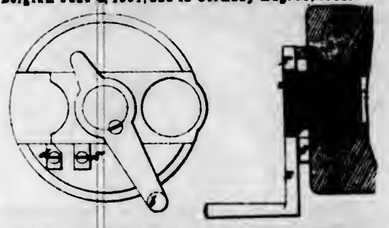
10. The combination, with a plow-beam, of a vertical toothed plate adjustably connected therewith, so as to be capable of a limited sliding movement lengthwise of said beam, and a detachable clevis provided with a toothed cross-bar, substantially as described.

11. A plow-beam having at the end an angular slot for securing the clevis, in combination with a plate, also slotted and capable of a limited movement lengthwise of the beam, so as to lock the clevis, substantially as described.

12. A clevis formed of a metal bar, bent and twisted, as shown, and provided with a toothed cross-bar, substantially as described.

13. The combination of a plow-beam made of a metal plate, bent at the bottom to form a flange, the vertical toothed plate bolted to the upright part of the beam, with its lower edge resting on said flange, and the clevis provided with a toothed cross-bar, said clevis being held in a slot in the beam, and said vertical toothed plate being capable of movement lengthwise of the beam, substantially as described.

258,116. BREECH-LOADING ORDNANCE. GEORGE QUICK, Chipping Camden, England. Filed Jan. 24, 1882. (No model.) Patented in England May 24, 1881, in France June 5, 1881, in Belgium June 6, 1881, and in Germany Aug. 30, 1881.



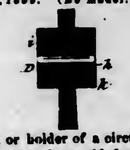
Claim.—1. The combination, with a gun having a horizontal open slideway extending transversely to the bore in the extreme breech of the gun, and provided upon its upper and lower sides with parallel grooves and lands, of a sliding carriage having corresponding lands and grooves fitted in said slideway, so as to leave a considerable space between said carriage and the powder-chamber, and having a loading-hole, and a breech-screw fitting in said carriage and adapted to be turned to close the powder-chamber, substantially as specified.

2. The combination, with the gun having a transverse slideway, the carriage fitting therein, and the breech-screw in said carriage, of an arm fixed upon the screw and a bearing or guide on the gun, with which said arm, or a pin or roller thereon, is adapted to engage to shift the carriage, substantially as specified.

3. The combination, with the gun having a transverse slideway in the breech, the sliding carriage, and the breech-screw fitting therein, of a gear-wheel fixed upon the screw, an arm, also fixed upon the screw and carrying a pin or roller, a pinion and lever or crank for turning said gear-wheel and screw, and a guide or lugs on the breech of the gun, with which said pin or roller may engage to shift the carriage, substantially as specified.

4. The combination, with a flared gas-check ring having a convex face and adapted to be flattened by the pressure of gas upon said convex face to expand it diametrically, of a breech-screw, in which said ring is secured, so as to leave a space between the ring and screw opposite the convex face, whereby provision is afforded for the flattening of the ring, substantially as and for the purpose described.

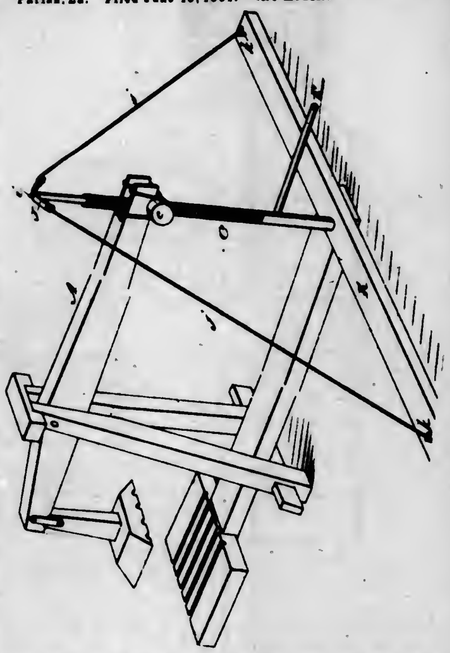
258,117. CIRCULAR BRUSH. BENJAMIN F. QUIMBY, Boston, Mass. Filed Jan. 24, 1882. (No model.)



Claim.—1. A stock or holder of a circular brush, composed of two main or side portions, *i k*, provided with central openings, and united by a central tubular portion, *h*, formed integral with or separate from one of the side portions, in combination with a series of bunches of bristles or their substitutes interposed between the two side portions and secured in place by wire and glue or other adhesive substance directly upon the central tubular portion, *h*, the said two portions of the holder being without screw-threads, and their union consequently accomplished without screwing them together, and the employment of washers provided with a series of notches for holding the bunches being dispensed with, my said holder being constructed substantially as and for the purpose described.

2. The within-described method of making a circular brush for removing the inequalities in the surface of metallic or other articles, consisting first in bending or looping the bunches of bristles or their substitutes at their centers by passing them through perforations in a plate and through tubes B, inserted in said perforations, then removing the bunches from the plate with their tubes B surrounding them, then stringing the bunches on a wire and arranging them radially upon and around a central tubular portion of the holder D, and securing them thereto by wire and glue or other adhesive substance, next slipping the portion *k* of the holder over the tubular portion *h*, then removing the tubes B, which confine the bunches, then spreading the ends of the bristles or their substitutes so as to form a continuous brush having no intervals at its periphery, and finally applying pressure to securely and permanently unite the whole, as and for the purpose specified.

258,118. COTTON-PRESS. LEWIS F. B. REESELDS, Claiborne Parish, La. Filed June 18, 1881. (No model.)



Claim.—In a cotton-press, the combination, with the main lever A and the screw-block *c*, of the vertical screw-shaft C, made conical at *i*, the collar J, secured at its middle upon the end of said screw, and the ropes *j j*, connecting said collar with the sill K, as shown and described.

258,119. MODE OF PLATING IRON OR STEEL. HERMANN RUDOLPH, Dillingen-on-the-Saar, Prussia, Germany. Filed Oct. 13, 1881. (No specimens.) Patented in France Sept. 20, 1881, No. 145,070; in England Oct. 13, 1881, No. 4,444; in Luxemburg Oct. 13, 1881, No. 164; and in Belgium Oct. 13, 1881, No. 55,966.

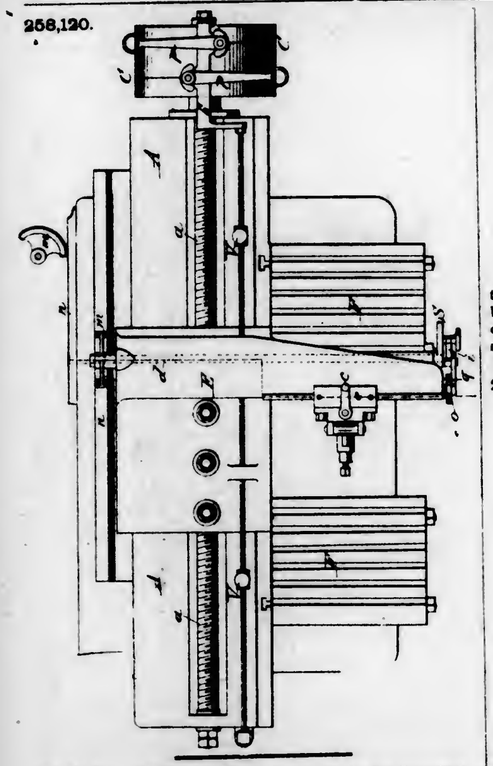
Claim.—The process of plating iron or steel with such metals or alloys of metals as can be drawn or rolled at a red heat, or the plating of the latter with one another, which consists in first applying to the surface or surfaces to be plated a metallic chloride vaporizable at a red heat, then covering the surface or surfaces so treated with tin-foil and applying the metal with which said surface or surfaces are to be plated, and heating the same to a red heat, and finally passing the heated metals between cold rolls, substantially as and for the purpose specified.

258,120. METAL-PLANING MACHINE. JOHN RICHARDS, San Francisco, Cal. Filed July 13, 1881. (No model.)

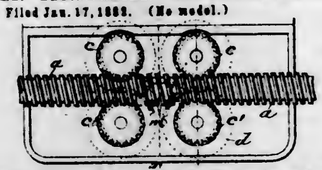
Claim.—1. In a metal-planing machine, the combination, with the frame A and carriage B, mounted thereon, and provided with screw *b* and tool-holder *c*, of the shaft *d*, having a quadrant, *m*, adapted to rock on an arm, *n*, attached to the main frame, at each reciprocation of the carriage, and suitable mechanism for transmitting motion from the shaft *d* to the screw *b*, whereby a transverse feed is imparted to the tool-holder, substantially as shown and described.

2. In a metal-planing machine, the combination of the frame A, carriage B, mounted thereon, and provided with arm or bracket E, longitudinal screw *a*, arranged to engage with the carriage, and provided with pulleys C C, tool-holder *c*, adapted to slide on the arm of the carriage, transverse screw *b*, for actuating said tool-holder, shaft *d*, having a quadrant, *m*, adapted to rock on an arm, *n*, attached to the frame, and the rocker-arm S, link *i*, pawl *o*, and ratchet-wheel *q*, for imparting motion to the screw *b* and regulating its speed, whereby the cutting-tool is adapted to receive a transverse feed during the longitudinal reciprocation of the carriage, substantially as shown and described.

258,120.



258,121. ENGINE-LATHE. JOHN RICHARDS, San Francisco, Cal. Filed Jan. 17, 1882. (No model.)



Claim.—1. In combination with the carriage of an engine-lathe, two or more tangent-wheels meshing into the lead-screw, substantially as shown and described.

2. In combination with the carriage of an engine-lathe, two or more tangent-wheels connected by spur-wheels, substantially as shown and described.

3. In combination with an engine-lathe carriage, an outer and inner train of gearing, connected and operating substantially as shown and described.

4. In combination with the carriage of an engine-lathe, two or more tangent-wheels connected with friction devices for retarding or arresting their motion, substantially as shown and described.

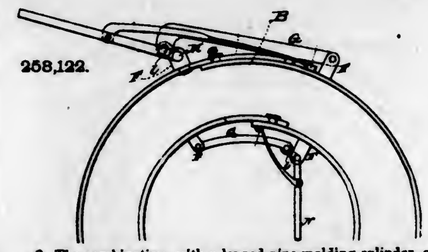
5. In combination with the carriage of an engine-lathe, a train of connected spur and tangent wheels and a friction-clutch, substantially as shown and described.

6. In an engine-lathe, the combination, with the carriage C, apron B, and lead-screw *a*, of the tangent gear-wheels *c c'*, meshing with said screw, and provided with shafts *i i*, carrying spur-wheels *d d*, the pinion *m*, gearing with the lower pair of spur-wheels, and provided with flange *n*, and the hand-wheel *f* and nut *g*, substantially as shown and described.

258,122. PIPE-MOLD. LEVI RICHARDSON and FRANK J. MEYLETON, San Gabriel, Cal. Filed Mar. 11, 1882. (No model.)

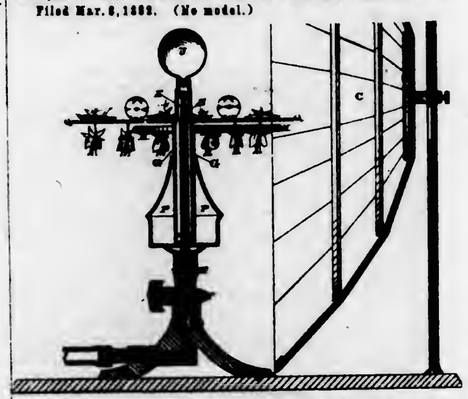
Claim.—1. The lapped pipe-molding cylinder having stud-and-slot connections in the lapped portion, bearing-lugs F, the rock-shaft M, its arms *l*, and the connecting-bars pivoted to the bearing-lugs on one side of the lap and to the arms of the rock-shaft on the other side, substantially as specified.

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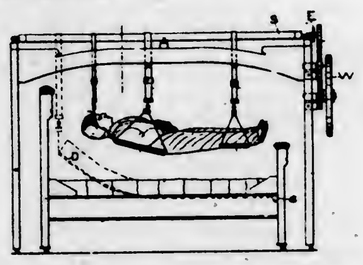
2. The combination, with a lapped pipe-molding cylinder, of the bearing-lugs F, the rock-shaft M, its arms *l*, the connecting-bars pivoted to the bearing-lugs and to the arms of the rock-shaft on opposite sides of the lap, the lever-arm N, and the stop devices, substantially as specified.

258,123. SHOW-STAND. GILES S. ROATH, Greenville, Conn. Filed Mar. 6, 1882. (No model.)



Claim.—In a show-stand, the combination of a concavo-convex mirror, C, a gas-pipe provided with a revolving top, G, and suitable jets, H, for causing the top and the table Q, attached thereto, to revolve, the table being adapted to hold ornamental objects to be reflected in the mirror, substantially as shown.

258,124. APPARATUS FOR LIFTING AND TURNING INVALIDS. GEORGE W. ROBBINS, Fall River, Mass. Filed Feb. 17, 1882. (No model.)



Claim.—1. In a lifting apparatus, one or more slings, each sling having a yoke, to the ends of which a rest is secured by cords having the adjustable fastening T X, substantially as and for the purpose set forth.

2. A sling for a lifting apparatus, having a yoke, K, in combination with a rest, H', provided with rods *s* at its extremities, said rods being connected by detachable cords I with the yoke, substantially as and for the purposes described.

3. In a lifting apparatus, a sling having a yoke provided with cords I and I', in combination with a rest, H', provided with rods *s* at its extremities, and a central rod, *s'*, substantially as set forth and described.

4. In the lifting apparatus, the strip D, connected with the bedstead at or near the foot, said strip passing under the mattress, as shown, and having one end connected with shaft S, substantially as and for the purpose set forth.

5. In a lifting apparatus for invalids, in combination with the horizontal shaft operated by means of the hand-wheel W, one or more slings connected with the shaft and provided with yokes having rests detachably secured thereto, as herein set forth and described.

258,125. MECHANICAL MOVEMENT. CHARLES H. ROBERTS, Evansville, Ind. Filed Feb. 18, 1882. (No model.)



Claim.—1. The combination of the cross-head B and rods A and C with the shaft F, crank E, pin *e'*, and block D, substantially as described.

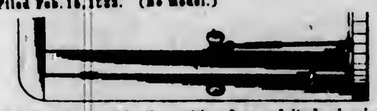
2. The combination of the cross-head B, strap H, and guide-rod G with the shaft F, crank E, pin *e'*, and block D, substantially as described.

258,126. HAND-STAMP. ARTHUR H. ROGERS, Springfield, Mass. Filed May 16, 1881. (No model.)



Claim.—A hand-stamp composed of a series of separate printing-characters, *a*, each having two perforations, *a'*, coinciding with those in the other characters, and two composing-rods, *b b*, of rigid unyielding material, passing through said perforations and holding the blocks together, substantially as set forth.

258,127. DOOR-CHECK. JOHN E. ROSENTHAL, St. Louis, Mo. Filed Feb. 16, 1882. (No model.)



Claim.—The combination, with a door and its knob-spindle, of the cam check or stop connected by a rod and lever or arm to the knob-spindle, substantially as and for the purpose set forth.

258,128. HAIR-FASTENER. BENJAMIN P. EVENS, Somerville, assignor of three-fourths to Charles P. Coffin, Boston, Mass. Filed Aug. 2, 1881. (No model.)



Claim.—1. In a hair-fastener, a catch having two or more hooks made in one piece, as shown and described.

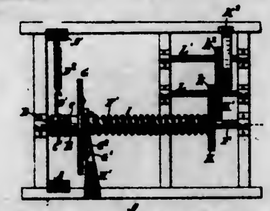
2. The combination, in a hair-fastener, of a catch having two or more hooks in one piece, with an elastic cord or braid, as and for the purpose before described.

258,129. DEVICE FOR CONVERTING MOTION. WILLIAM H. RYDER, Northville, assignor of one-half to Clark & Co., Somonauk, Ill. Filed Feb. 18, 1881. Renewed Mar. 15, 1882. (No model.)

Claim.—1. In machinery for converting motion, a shaft arranged to turn in bearings, a wheel loosely mounted on the shaft, mechanism connecting the wheel with a reciprocating pitman, and a coiled spring surrounding the shaft, and fastened to it at one end and to the wheel at the other, all in combination, substantially as and for the purpose described.

2. The revolving shaft F, wheel H, loosely mounted thereon, reciprocating pitman B, mechanism connecting the pitman with

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the wheel, sleeve F', arranged on the shaft, as described, and coiled spring I, surrounding the sleeve, and fastened at one end to the wheel H and at the other to the shaft, all in combination, substantially as and for the purpose described.

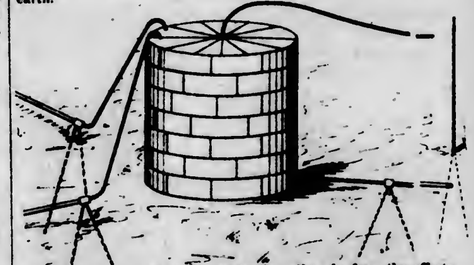
3. The pitman B, shaft F, drum E, loosely mounted on F, cord D, connecting F and E, and cord D' and spring D^4, connecting E with a fixed point, all in combination, substantially as and for the purpose described.

4. The shaft F, revolving drum E, loosely mounted thereon, flexibly connected with a reciprocating pitman and provided with a device for turning it back when the pull of the pitman ceases, wheel G, provided with the pawl G' and the spring G^3, ratchet-wheel H, mounted on the shaft F, and pawl H', all constructed, arranged, and operating in combination, substantially as and for the purpose described.

5. The pitman B, slotted at its lower end and perforated at b^1, in combination with the connecting-bar C, arranged to pass through the slot, pivoted in the lower end thereof, perforated at *c'*, and provided with the notch *c*, substantially as and for the purpose described.

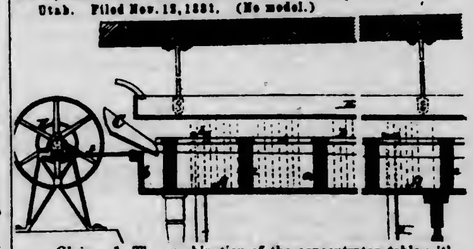
258,130. MEANS FOR PROTECTING OIL-TANKS FROM LIGHTNING. FREDERIC G. SACKET, Knox, Pa. Filed Aug. 3, 1880. (No model.)

Brief.—The pipe-connections are insulated at a point near the tank and provided with conductors extending down into the earth.



Claim.—As a means for protecting oil-tanks from the effects of lightning, a pipe for conveying the oil into the tank, insulated at a point near the tank, and provided with a suitable conductor or conductors, whereby the electric fluid is arrested and conveyed away, substantially as shown and described.

258,131. ORE-CONCENTRATOR. JOHN F. HANBURG, Ogden, Utah. Filed Nov. 18, 1881. (No model.)



Claim.—1. The combination of the concentrator-table with mechanism *f F*, for moving it longitudinally, and with the rake D and mechanism A H, for moving said rake laterally, substantially as herein shown and described.

2. The concentrator-table A, combined with rake D, mechanism for moving said rake laterally and said table longitudinally, frame I, and perforated trough E, substantially as herein shown and described.

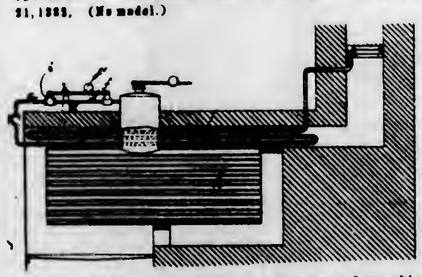
258,132. WINDOW-AWNING. JESSE SANDS, New Haven, Conn., assignor of one-half to Charles T. Ward, same place. Filed Apr. 8, 1882. (No model.)



Claim.—1. The herein-described awning-frame, consisting of the combination of the staff A, made adjustable as to length, the runner D, the ribs *e e*, hinged to the staff at its upper end and extending to the lower front angles, with braces from said ribs to the runner, and braces *i i*, extending from the runner to the upper angles, *l*, and a device, substantially such as described, to lock the runner in its lifted or open position, substantially as described.

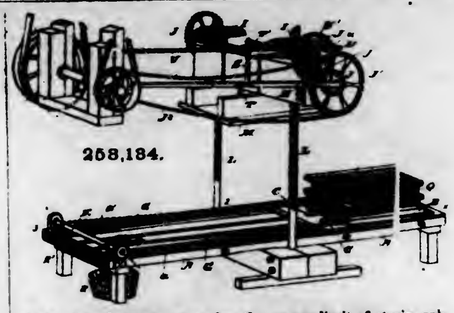
2. The herein-described awning-frame, consisting of the combination of the staff A, made adjustable as to length, the runner D, the ribs *e e*, hinged to the staff at its upper end and extending to the lower front angles, with braces from said ribs to the runner, and braces *i i*, extending from the runner to the upper angles, *l*, and a device, substantially such as described, to lock the runner in its lifted or open position, with the rod F hung to the runner and adjustable as to length, substantially as described.

258,133. APPARATUS FOR INCREASING THE DRAFT OF CHIMNEYS. JOHN C. SCHAEFER, New York, N. Y., assignor of two-thirds to Klausmann & Mayer, same place. Filed Feb. 21, 1882. (No model.)



Claim.—The combination, with the boiler, steam-dome, chimney, and superheating-coil *b*, arranged above the boiler and connected at one end by a pipe, *a*, with the steam-dome and at the other with a steam-nozzle in the chimney, of the automatic regulator E, connected with the pipe *a* between the steam-dome and superheating-coil, and composed essentially of the pivoted lever *g* and valves *i* and *f*, connected with the ends of the lever, substantially as and for the purposes described.

258,134. CIDER AND WINE PRESS. MARCUS P. SCHENCK, Fulton, N. Y. Filed Oct. 15, 1881. (No model.)



Claim.—1. In combination with a cider-press, the double or extension platform A, provided with a sliding rack or carriage, B, for shifting the cheese from the place where it is laid up to the place of pressing, substantially as set forth.

2. The traveling rack or carriage B, traveling on ways C C, elevating it above the bed for draining and giving it a firm bearing thereon for pressing, substantially as described.

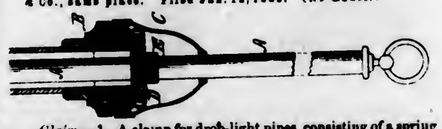
3. In a cider-press, a double or extension platform adapted for the laying up of a cheese at one point and the pressing thereof at another point, and with cleats *a a' a²*, and separate discharge-openings *r r'*, for delivering the juice into different receptacles.

4. The combination of the beam H, follower M, push-rods T T', lever S, alarm-bar U, and tappet-wheel J *j*, for sounding an alarm when the press approaches the proper limit of strain, substantially as set forth.

5. The combination, with a cider-press, of the automatic belt-shifting device for throwing the driving mechanism out of gear by the springing of the follower when the press reaches the proper limit of strain.

6. In a cider-press, the combination of a moving beam, H, and a counter-shaft, K, the latter running in swinging hangers K' and connected to the beam and its gearing by a strut, K³, and driving-chain J³, so that an equal tension of the said chain will be maintained in different positions of the beam.

258,135. DROP-LIGHT PIPE FOR CHANDELIERS. GEORGE P. SCHMUCKER, Philadelphia, Pa., assignor to W. J. Buck, Son & Co., same place. Filed Jan. 12, 1882. (No model.)



Claim.—1. A clamp for drop-light pipes, consisting of a spring collar or ring encircling said pipe, and located in a box or shell, with its longitudinal axis horizontal and transverse to the like axis of the sliding pipe, substantially as shown and described.

2. The combination, with sliding pipe A, of encircling spiral spring D, whose longitudinal axis is transverse to that of the pipe, and shell C, with threaded cap or nut B, adapted and designed to compress and flatten the coils of said spring, and thereby increase the pressure of the clamping-collar on the pipe, substantially as shown and described.

3. The combination, with sliding pipe A and encircling spiral spring D, having its longitudinal axis transverse to the like axis of said pipe, of the soft packing E, interposed between said spring and pipe to protect the latter from abrasion, as set forth.

258,136. ELECTRIC GAS-LIGHTER. WILSON D. SCHOOLEY, Richmond, Ind. Filed Apr. 4, 1882. (No model.)

Claim.—1. The combination, with the gas-tube M, of the valve F, carried by the arm *f'*, having cam *f*, the lever G, arranged to act upon said cam, the armature arranged to actuate said lever, and the magnet arranged to control said armature, substantially as specified.

2. In an apparatus for turning on and off the supply of gas to a burner, the casing having two compartments, one of which is a gas-chamber connected with a burner and divided from the other chamber by a gas-tight partition, in combination with a gas-supply passage opening into said gas-chamber, a gas-valve located in said chamber and arranged to open and close said passage, an armature arranged also in said gas-chamber to operate said valve, and an electro-magnet arranged in the other chamber, and having its poles projecting into the gas-chamber through the partition for operating said armature, substantially as described.

3. The casing having two compartments, the upper of which is divided from the lower by a gas-tight partition, the upper compartment containing the gas-valve and the lower compartment containing an electro-magnet for operating said valve, the bottom plate of said lower compartment having the core or cores of the electro-magnet secured directly thereto, substantially as described.

4. The casing having the two chambers inclosing the parts of the apparatus and composed of the separable sections, combined with a gas-tight partition, substantially as described.

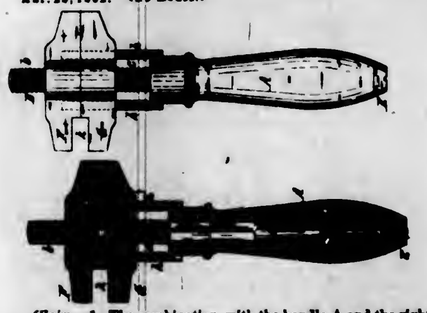
5. The combination, with the casing having the bottom B, supporting the binding-posts, of the cup-plate R, having passages for said posts, substantially as described.

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6. The combination, with the gas-tube M, of the valve F, carried by arm *f'*, the lever G, arranged to act upon said arm, the adjustable armature arranged to actuate said lever, and the magnet arranged to control said armature, substantially as described.

258,137. WRENCH. JOSEPH SCHWEGLER, Buffalo, N. Y., assignor of one-half to Isidor Schwegler, same place. Filed Mar. 25, 1882. (No model.)



Claim.—1. The combination, with the handle A and the right and left hand screw B, secured thereto, of the jaws F G, provided with screw-threaded openings, through which the right and left hand portions *b* and *c* of the screw B work, and means whereby both jaws are retained parallel with each other, but permitted to move simultaneously toward and from each other, substantially as set forth.

2. The combination, with the handle A and right and left hand screw B, secured thereto, of the jaws F G, provided with screw-threaded openings, through which the right and left hand portions *b* and *c* of the screw B work, and guide-rods A, secured to one of the jaws F and passing through openings in the other jaw, substantially as set forth.

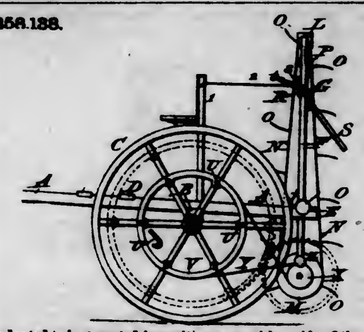
258,138. COMBINED HAY TEDDER AND LOADER. HAMILTON L. SHIELDS, Troy, N. Y. Filed Nov. 28, 1881. (No model.)

Claim.—1. In combination with the pieces A, extending rearward beyond the ground-wheels and provided in their top rear ends with recesses E, the bar H, with trunnioned ends removably secured in said recesses E, and uprights F of the elevator-frame, removably secured to the bar H, as and for the purposes hereinbefore described.

2. In combination with the pieces A, the elevator-frame composed of cross-bar H, which supports the entire elevator-frame, side vertical bars, F, adjustably secured to said bar H, cross-bars G I², and diagonal braces I, substantially as and for the purposes described.

3. In combination with the cross-bar G of the elevator-frame, provided with a series of inclined holes therein, the deflector-blades S, placed in pairs adjacent to the toothed bands O, and adapted to be inserted in position upon either side of the cross-bar, for the purposes specified.

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4. In combination with the toothed bands, the top roller made with flat parallel faces or square in cross-section, and with circumferential grooves, substantially as hereinbefore described, for the purposes specified.

5. The elevating mechanism consisting of frame F G, supporting-bar H, top square roller, L, bottom large cylinder, M, and endless forked belts N O, substantially as and for the purposes described.

6. In combination with the frame A and axle B, the dividing-board I, for supporting the driver's seat, and, in connection with removable hooked braces 2, holding the top end of the elevating-frame in position, as hereinbefore described.

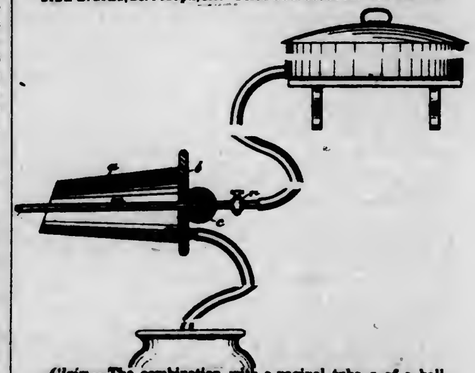
7. In combination with the ground-wheels C, the large grooved wheel V, removably secured to said ground-wheels, smaller grooved wheel X upon the lower cylinder, cord Y, and small grooved pulley Z, whose flanges overhang the edges of the pulley X at the point of contact therewith, substantially as and for the purposes described.

258,139. TRACE-CARRIER. HYRON B. SIMMONS, Rocky Ridge, Ohio, assignor of one-half to Allen S. McPherson, same place. Filed Mar. 23, 1882. (No model.)



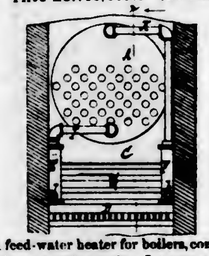
Claim.—In a trace-carrier, the plate A, provided with loops B, C, D, and D', the hooks E E, spring F, and guards G G, substantially as described, and for the purposes set forth.

258,140. INSTRUMENT FOR WASHING THE VAGINA. WILLIAM B. SIMS, St. Joseph, Ill. Filed Feb. 15, 1882. (No model.)



Claim.—The combination, with a vaginal tube, *a*, of a ball-and-socket joint, *b c*, secured to the cover of said tube, and an adjustable delivery-tube, *x*, passing through the ball-and-socket joint, substantially as described, and for the purpose set forth.

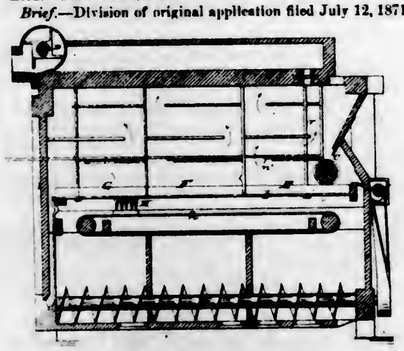
258,141. FEED-WATER HEATER. GEORGE W. SLOANE, Green Point, N. Y. Filed Mar. 16, 1882. (No model.)



Claim.—A feed-water heater for boilers, composed of the drum E, having at its lower portion a pipe, J, to connect it with a source of feed-water supply, and at its upper portion with a pipe, I, connecting said drum with the water-space of the boiler, a drum, E, having a pipe, K, connecting it with the boiler above the water-line thereof, and a tier of pipes connected with the drums and extending along the sides and rear of the fire-chamber, said members being combined and arranged for operation substantially as shown and described

258,142. MIDDLINGS-PURIFIER. GEORGE T. SMITH, Jackson, Mich. Filed Jan. 4, 1873.

Brief.—Division of original application filed July 12, 1871.



Claim.—1. In a middlings-purifier, a vibrating screen the cloth of which is formed in sections of increasing coarseness of mesh, and which is provided with supports for the cloth intermediate between its edges to maintain the cloth in plane, substantially as set forth.

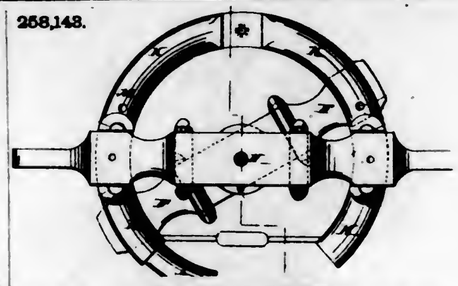
2. In a middlings-purifier, a vibrating screen the cloth of which is formed in increasing coarseness of mesh, and which is provided with supports for the cloth intermediate between its edges to maintain the cloth in plane, in combination with a casing forming a wind-trunk, extending from the fan-case to the screen, so as to direct a current of air put in motion by the fan through the entire extent of the screen, whereby the middlings, if fed uniformly across the head of the screen, are subjected to the action of atmospheric currents substantially uniformly across the entire width of the cloth, and which increase in force as the meshes become coarser and coarser and the particles of middlings upon the screen become relatively coarser, substantially as set forth.

3. In a middlings-purifier, a vibrating screen the cloth of which is formed in sections of increasing coarseness of mesh, and which is provided with supports for the cloth intermediate between its edges to maintain the sections of cloth in plane, in combination with a casing which forms a continuous wind-trunk, extending from the fan-case to the screen, so as to direct a current of air put in motion by the fan through the entire extent of the screen, and a cloth-cleaner acting against the surface of the screen for keeping its meshes open, substantially as set forth.

258,143. FIFTH-WHEEL FOR VEHICLES. GROSSE W. SMITH, Darlington, Wis. Filed Nov. 11, 1881. (Model.)

Claim.—The center plates, B F, the former connected with head-block and the latter with axle, in combination with a king-bolt, H, having its head fitted in a square recess of plate F, the circle I, fitting cross-grooves of said plate, and the circle K, overlapping the sides of circle I, as shown and described.

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258,144. WATER-CLOSET. ROBERT D. O. SMITH, Washington, D. C. Filed Aug. 1, 1881. (No model.)

Brief.—A reservoir, L, contains the water, which is admitted to the bowl through the shell C. Running lengthwise of this shell is the valve-stem E, which is operated by the weight of the occupant by means of the rock-shaft and lever F.



Claim.—1. In a water-closet or other similar receptacle, a water-connection wherein the devices for operating the valve are entirely within the water-way, with the valve-stem projecting therefrom into the hopper and actuated from within the hopper itself, substantially as set forth.

2. A valve, D, in the service-pipe, combined with a controlling-stem, E, entirely within the water-way, and a lever, F, within the hopper to engage with and actuate said stem, and mechanism whereby said lever F may be actuated, substantially as set forth.

3. In a water-closet or other receptacle, the combination of a stem entirely within the water-way and actuating mechanism within the bowl, and a water-connection provided with a valve, D, and a valve, m, both mounted on and simultaneously operated by the same stem, and an intermediate reservoir exterior to the closet, as set forth.

4. In a water-closet or other similar receptacle, a water-connection provided with valve D, combined with a valve, M, and an intermediate reservoir, closed at its top to form an air-chamber, and an air-valve which may be placed more or less near the top, substantially as and for the purpose set forth.

5. In a water-closet or other similar receptacle, a service-pipe provided with a valve, D, a valve, M, provided with a chamber, O, and a valve-stem, E, common to both of said valves, combined with a reservoir, L, intermediate between said valves, and a lever, F, actuated by suitable mechanism, as set forth.

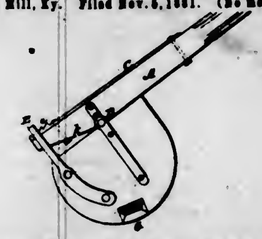
6. In a water-closet or other similar receptacle, a water-service pipe provided with a valve, D, and its operative stem located entirely within the water-way, combined with the compound lever, whereof one member, F, is within the hopper A and the other member is outside of the same.

7. In a water-closet or other similar receptacle, a water-service pipe provided with a valve, N, and a valve, M, and a connecting operative device combined with a reservoir, L, intermediate as to said valves, and an air-valve, D, at the lower end of a tube de-

pending in said reservoir, whereby the air-compression may be modified, as set forth.

8. A valve-stem having the valves D and M, controlled by said stem, and an interposed reservoir, L, combined with the lever T, to engage with and actuate said stem at one extremity of the rock-shaft W and the lever Y at the other extremity, and coupled therewith the lever G, depressed by the weight of the user to operate said valves, as set forth.

258,145. SPROUT-PULLING MACHINE. STEPHEN C. SMITH, Poole's Hill, Ky. Filed Nov. 5, 1881. (No model.)



Claim.—1. The combination, with the lever A, provided with the bevel *b* and plate C, having notches *c* on its lower end, of the segmental block B, eccentrically pivoted to the lever A, and arm E, secured to the segmental block, and provided at its upper end with the right-angular jaw h, serrated on its under surface, substantially as described, and for the purpose set forth.

2. The combination of the beveled lever A, provided with the plate C, having notches *c*, segmental block B, eccentrically hinged to the lever, block G, let into the lower edge of the segmental block, guide F, projecting above the segmental block, and arm E, provided with the serrated jaw h, substantially as described, and for the purpose set forth.

258,146. GYMNASTIC APPARATUS. WILLIAM A. SMITH, Wilmington, Del. Filed Mar. 21, 1882. (No model.)



Claim.—1. A portable gymnastic or exercising apparatus consisting of two vertical bars, A A, having their upper ends provided with spurs B and their lower ends formed into hooks *a*, a horizontal connecting-brace, D, and a horizontal exercising-bar, C, substantially as herein described.

2. The combination, with the vertical bars A A, of the horizontal connecting-brace D, consisting of two bars having their outer ends pivoted to said bars A and their inner ends pivoted to each other, substantially as herein described.

258,147. DRESSING HOGS. JOSEPH H. SMITHSON, Chicago, Ill. Filed Feb. 28, 1882. (No model.)

Claim.—The within-described mode of treating the carcass of the hog, the same consisting in first scalding the carcass with hot water and scraping off the bristles, then singeing, and then scraping to remove the hair and outer cuticle, substantially as set forth.

258,148. BELT-FASTENER. WILLIAM H. SPEIL, Battersea, County of Surrey, England. Filed Nov. 13, 1882. (No model.)

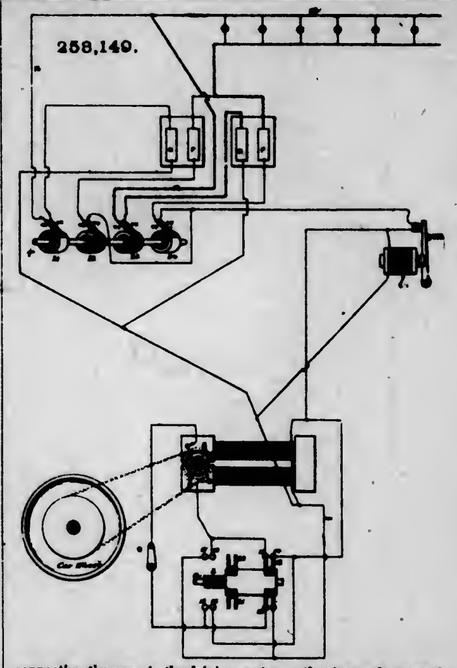


Claim.—A belt-fastening consisting of a series of staples provided with a transverse strip of leather secured thereon as shown, said strip adapted to lie between the ends of the belt and the staples to pass through the ends of the belt, all substantially as set forth, for the purpose described.

258,149. LIGHTING CARS BY ELECTRICITY. WILLIAM A. STEDE and HENRY H. BYLLESBY, New York, N. Y., assignors of one-half to Thomas A. Edison, Menlo Park, N. J. Filed Jan. 16, 1882. (No model.)

Claim.—1. The combination, in an apparatus for developing electric currents, of a dynamo-electric generator, mechanism for

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connecting the same to the driving-motor, so that it may be rotated thereby in either one direction or the other, an automatic circuit-changer operated by the shaft of the dynamo-generator, and the circuit-connections, substantially as specified, whereby the current is caused to pass in the same direction through the field-helices regardless of the direction of rotation of the armature and its helices, substantially as set forth.

2. The combination, with the armature and field-helices, of the nut and screw on the armature-shaft, and the circuit-closing springs and contact-points, brought into action in opposite directions by the movement of the nut and the circuit-connections to the field-helices, substantially as set forth, whereby the direction of current in the field-helices is not reversed when the direction of rotation of the armature is reversed, as set forth.

3. The combination, in an apparatus for lighting cars by electricity, of a dynamo-generator, means for revolving the armature thereof by a connection to the wheels or axle, automatic circuit-changing devices between the field-magnets and the armature, storage-batteries, circuit-changers between the lights, the storage-batteries, and the dynamo-generator, and an electro-magnetic circuit-breaker between the storage-batteries and the dynamo-generator, substantially as and for the purposes specified.

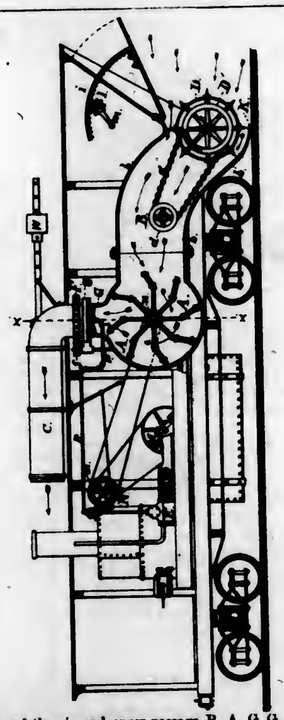
4. The circuit-reversing apparatus consisting of the wheels 31, 32, 33, and 34, composed of conducting and non-conducting material, the pairs of springs bearing on each wheel, and the shaft carrying each wheels and means for revolving each shaft, the dynamo-generators, storage-batteries, and lights or other working apparatus, and the circuit-connections to the same, for the purposes and substantially as set forth.

258,150. MACHINE FOR REMOVING SNOW FROM RAILROAD-TRACKS. HENRY T. STOCK, Toledo, Ohio. Filed Nov. 23, 1881. (No model.)

Brief.—In an air or snow passage secured to a car or truck is placed a steam-jet pipe connected to a boiler in the line of the snow-conduit, and a double fan on a single shaft is operated by a belt passing over a sheave connected with suitable motive power, both fan and steam-jet operating to force a blast through the air and snow conduit. The inlet pipe or conduit consists of a flaring or funnel-shaped mouth having converging sides, in which is secured a rotating cylindrical toothed rack. The outlet-passage consists of a horizontally-rotating pipe provided with a counter-weight. To the front of the machine is hinged an adjustable gate or guide.

Claim.—1. In a machine for removing snow from roads and ways by pneumatic force, the steam-pipe a, in combination with

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the fan A and the air and snow passage B, A, G G, and C, substantially as shown and described, for the purposes specified.

2. In a machine for removing snow from tracks and ways by pneumatic force, the combination of steam-pipe *p* with the air and snow passage B, A, G G, and C, substantially as shown and described, for the purposes specified.

3. The combination of the steam-pipe *p*, fan A, inlet B *b b*, having flaring or funnel-like mouth, with converging sides, horizontally-rotating pipe C, and toothed skeleton cylinder D, substantially as shown, for the purposes specified.

268,151. SPRING-GEAR FOR VEHICLES. CASPER F. STERR, Pinckney, Mich. Filed July 26, 1881. Renewed Mar. 23, 1882. (No model.)



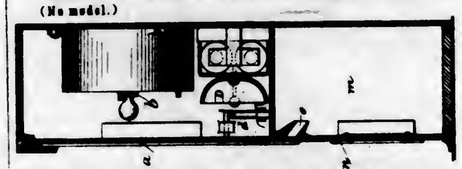
Claim.—1. In a spring-gear for vehicles, the combination, with longitudinal springs extending from the rear axle to the forward end of the vehicle, of a U-shaped spring having its extremities connected to the longitudinal springs and its central portion attached to the bolster, and a similar U-spring having its extremities connected with the longitudinal spring and its middle point attached to the rear axle, substantially as described.

2. In a spring-gear for vehicles, the combination, with longitudinal springs extending from the rear axle forward to the front of the vehicle, of a U-shaped spring having its arms connected with the longitudinal springs between the axles and its middle portion attached to the rear axle, substantially as described.

3. In a spring-gear for vehicles, the combination, with longitudinal springs extending from the rear axle forward to the front of the vehicle, of a U-shaped spring having its extremities connected with the longitudinal springs between the axles, and its middle point attached to the bolster, substantially as described.

4. A spring-gear for vehicles, consisting of two parallel longitudinal springs extending from the rear axle to a cross-bar beneath the forward axle, cross-pieces E E', the U-springs F, and stay-bars G, substantially as described.

268,152. TELEGRAPH AND MESSENGER SERVICE BOX. CHARLES M. TALBOT, New York, N. Y. Filed Nov. 26, 1881. (No model.)



Claim.—The combination, in a box for telegraphic messenger service, of an electric calling device, *b*, within the box, a receptacle, *m*, for a message, a separate door, *n*, for said receptacle *m*, an opening, *o*, in the case, through which the message or card is passed into the receptacle *m*, and a door, *a*, that gives access to the electric calling device, and also covers the opening *o* when shut, substantially as set forth.

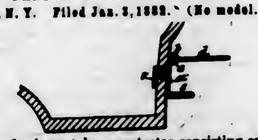
268,153. SEEDING-MACHINE AND FERTILIZER-DISTRIBUTER. CHARLES H. THOMPSON, Claremont, N. H. Filed Mar. 11, 1882. (No model.)



Claim.—1. The plow I, constructed with the shoulder or offset *i*, parallel concavities or grooves *l l*, and wing-shaped shears I' I', substantially as shown and set forth.

2. The combination, in a combined seeding-machine and fertilizer-distributer, of the plow I, constructed with the shoulder or offset *i*, parallel concavities or grooves *l l*, and wing-shaped shears I' I', seed-spout H, arranged in front of the shoulder *i* and between the concave grooves *l l*, and fertilizer-spout H', arranged between the flaring rear ends of wings I' I', substantially as and for the purpose herein shown and set forth.

268,154. PANTALOON-PROTECTOR. JUDSON L. THOMSON, Syracuse, N. Y. Filed Jan. 3, 1882. (No model.)



Claim.—1. A pantaloon-protector consisting essentially of a plate adapted to be secured to the back of a rubber shoe, and a spring-arm hinged on said plate and restrained from undue deflection below a horizontal position by a shoulder on the attaching-plate, substantially as set forth.

2. The combination of the plate *a*, formed with the loop *b*, and with the lateral extension *c* on the ends of said loop, the wire ball *d*, hinged in the loop *b* and restrained from deflecting below a horizontal position by the extensions *c* aforesaid, and the washer *e* and attaching-stud *r*, all as shown and described.

3. The combination of the plate *a*, provided with the stop *s* and with the loop *b*, the shoulders *c*, the ball *d*, hinged on the said loop, and the washer *e*, provided with rivets *r*, all as shown and set forth.

268,155. PANTALOON-PROTECTOR. JUDSON L. THOMSON, Syracuse, N. Y., assignor of one-half to C. Valletta Ranson, Detroit, Mich. Filed Feb. 9, 1882. (No model.)



Claim.—The within-described pantaloon-protector, consisting of the plate *a*, provided with the spurs *n*, and with the loop *b*, having the notches *c c*, the ball *d*, hinged in said loop, and the attaching-screw *u*, inserted through the lower portion of the plate, substantially as described and shown.

268,156. GLASS-ANNEALING FURNACE. CLEON TOWNSEND, Ithaca, N. Y. Filed Feb. 27, 1882. (No model.)



Claim.—1. The combination of the bars *d d'*, arranged side by side and alternately between each other, the set *d* supporting the sheets of glass, while the bars *d'* are pushed toward the lear or flattening-wheel *a*, and the set *d'* supporting the sheets of glass and moving them onward and through the tunnel, substantially as set forth.

2. The transmitting-bars *d'*, reciprocating between the alternate bars *d*, which receive the glass at the times described, in combination with the arms *d' d'''*, which by the lever *h''* and shafts *f* change simultaneously the elevation of the sets of bars *d d'* and the glass supported by each, as set forth.

3. The furnace *a* and tunnel *h'*, made with a continuous and straight chamber from the section *c''* of the flattening-wheel *a*, in combination with the bars *d d'*, so constructed that the bars *d'* shall enter the lear-furnace over the section *c''* of the wheel, as set forth.

4. A furnace and tunnel made with a draft through both from the fuel-chamber *a'*, and with a draft-flue, *m*, and dampers *n*, in combination with the bars *d d'*, the several parts being constructed as set forth.

5. The furnace *a*, with flattening-wheel *a* and tunnel *h'*, constructed and adapted to the two sets of bars *d d'*, the bars *d'* being made by the wheels *e* to reciprocate and project alternately into the furnace over the segment *c''* and out of the exit *h*, whereby the sheets of glass are received by the furnace ends of said bars and discharged by their exit ends out of the tunnel without opening the furnace or tunnel, as set forth.

268,157. STEAM-PUMP. GEORGE B. M. TOWNE, New York, N. Y., assignor of one-half to Edward L. Lamble, Washington, D. C. Filed Feb. 9, 1882. (No model.)



Claim.—1. In a steam-pump, the combination of trunnioned steam and water cylinders, having inlet and outlet ports adapted to register with corresponding ports for admitting and exhausting steam, and admitting and discharging water from them, respectively, and pistons connected together and adapted to be moved simultaneously in opposite directions in their respective cylinders, and communicating oscillating movements thereto, substantially as and for the purpose specified.

2. In a steam-pump, the combination of trunnioned steam and water cylinders, having inlet and outlet ports adapted to register with corresponding ports for admitting and exhausting steam, and admitting and discharging water from them, respectively, pistons adapted to move in said cylinders, and crank or similar connection provided with a fly or balance wheel, connecting said pistons together, whereby they are adapted to be moved simultaneously in opposite directions in their respective cylinders, and communicating oscillating movements thereto, substantially in the manner as and for the purpose herein shown and described.

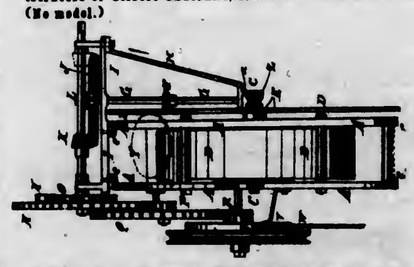
3. In a steam-pump, the combination of the supporting-frame A, having bearing-boxes B B, provided with caps *b b*, and inlet and outlet ports a^3 a^3, cylinders C D, and trunnions *c d*, having inlet and outlet ports *a a'*, pistons E F, and crank G, provided with crank-pin *g*, to which said pistons are connected, and fly or balance wheel H, the several parts constructed and relatively arranged to operate substantially in the manner as and for the purpose herein shown and described.

268,158. SNAP-HOOK. GEORGE B. M. TOWNE, New York, N. Y., assignor of one-half to Edward L. Lamble, Washington, D. C. Filed Feb. 9, 1882. (No model.)



Claim.—A snap-hook formed of a single piece of sheet metal, as shown, having the shank and hook of a single thickness, and the attaching-loop *a* of a double thickness, of material, and the spring-tongue *b*, consisting of a prolongation of the overlapped portion of the attaching-loop, as shown and described, for the purpose specified.

268,159. SPRING-MOTOR. JOHN D. UNDERHILL, Hoboken, N. J., and ELIZABETH UNDERHILL, New Rochelle, N. Y., Administrators of Gilbert Underhill, deceased. Filed Oct. 6, 1881. (No model.)



Claim.—1. A spring-motor constructed substantially as herein shown and described, and consisting of the frame A, the coiled spring or springs B, the regulating-wheel D, having spiral row of perforations E, the sliding spur-wheel F, the train of gear-wheels J K M P Q R, and the belt-pulley S, as set forth.

2. In a spring-motor, the regulating-wheel D, constructed, substantially as herein shown and described, with a spiral row of perforations to receive the spurs of a spur-wheel, as set forth.

3. In a spring-motor, the combination, with the spring B and the train of gear-wheels J K M P Q R, of the regulating-wheel D, having spiral row of perforations E, substantially as herein shown and described, whereby the power will be applied to the gear-wheels with a gradually-increasing advantage of leverage as the force of the uncoiling spring decreases, as set forth.

4. In a spring-motor, the combination, with the frame A and the regulating-wheel D, of the wheel Y, substantially as herein shown and described, whereby the said regulating-wheel is held against the push of the spur-wheel, as set forth.

5. In a spring-motor, the combination, with the regulating-wheel D, of the extra spur-wheel *c* and the extra shaft Z, substantially as herein shown and described, whereby the said regulating-wheel can be readily turned back to coil the spring, as set forth

258,160. CAR-COUPLING. WILLIAM T. VAN DORN, Lincoln, Nebr. Filed Feb. 13, 1882. (No model.)



Claim.—1. In a car-coupling, the coupling-bar having a catch at one end and a perforation near the opposite end, which opposite end is made heavier or larger than the first to balance the bar and hold the catch end in position for automatic coupling, substantially as shown and described.

2. The combination, with a coupling-bar having a lateral catch, of a vertical coupling-pin which is made with a beveled or inclined surface adapted to deflect the bar to allow the catch to pass behind the pin, and which is removable to release the catch, substantially as shown and described.

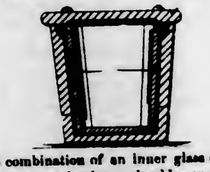
3. The combination, with a coupling-bar having a catch at the end, and a draw-head having means for engaging the catch, of a retaining device having means for increasing the tension of the same, substantially as shown and described.

4. In a car-coupling, the combination of a spring arranged in one side of the draw-head and a bolt connected thereto which passes through the opposite side of the draw-head, whereby the tension of the spring may be adjusted, substantially as shown and described.

5. In a car-coupling, the combination, with a retaining device for a catch-bar, of a safety-pin which is adapted to be inserted in a perforation to hold the retaining device in engagement with the catch-bar, substantially as shown and described.

258,161. COFFIN. CHARLES E. VAN DUSEN, Oneonta, N. Y. Filed Jan. 4, 1882. (No model.)

Brief.—A glass coffin is inclosed within a wooden case with a layer of cement or mortar between the glass and wood.



Claim.—The combination of an inner glass coffin, a layer of mortar, and an outer case having a shoulder or rest for a gasket to hermetically seal the glass cover, substantially as and for the purposes set forth.

258,162. WITHDRAWN.

258,163. PUMP. BENJAMIN C. VANDUSEN, Cincinnati, Ohio, assignor to John P. Martin, Newport, Ky. Filed May 26, 1881. (No model.)



Claim.—1. The combination of the reversely-reciprocated pistons G I, the dome D, tube E, and the annular lips or collars J J', substantially as and for the purposes designated.

2. The combination of column N with interior loosely-suspended air-chamber Q, discharge-spout P, and the operating lever or handle O, substantially as set forth.

3. A pneumatic cushion or air-chamber consisting of a pipe, Q, open below into the water-pipe, and having the hermetically-closed expanded and flattened upper end for suspension within such water-pipe, in the manner and for the purpose stated.

4. The combination of the rods F H, the interiorly-located rubber tubes or sleeves J, arranged and operating as and for the purpose set forth.

5. In combination with the pipe N', the bed-plate Z, with integrally-cast projection *b* and separable cap *b'*.

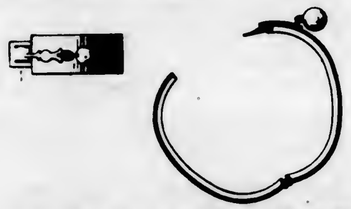
258,164. OPTICAL TOY. HENRY VAN HOEVENBERGH, Elizabeth, N. J. Filed Apr. 7, 1882. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of a series of leaves in which each successive leaf bears a pictorial representation of an object in a different position, and means, substantially such as described, for securing said leaves together bookwise at one of their edges.

2. The combination, substantially as hereinbefore set forth, of a series of leaves of progressively increasing length or breadth, in which each successive leaf bears a pictorial representation of an object in a different position, and means, substantially such as described, for securing said leaves together bookwise at one of their edges.

258,165. BRACELET. JOHN B. VAN HOUTEN, Newark, N. J. Filed Aug. 8, 1881. (No model.)

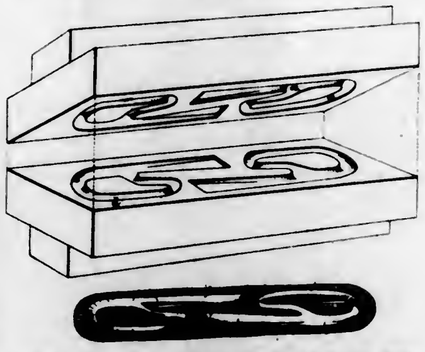


Claim.—1. The combination, in a bracelet with one section provided with a spring-clip, of the lever pivoted upon said section and engaging at one end with said spring-clip, having a normal tendency to hold and holding the other end of said lever in engagement with said section, substantially as and for the purposes set forth and shown.

2. The combination, in a bracelet, with the spring-clip *a* and lever *d*, lying in close engagement with the body of the bracelet, of the hand-piece linked to the said lever, substantially as and for the purposes set forth and shown.

258,166. ART OF FORMING CHEEK-PIECES FOR BRIDLE-BITS. THOMAS E. VAN NESS and DANIEL MALONEY, Newark, N. J. Filed Dec. 10, 1881. (No model.)

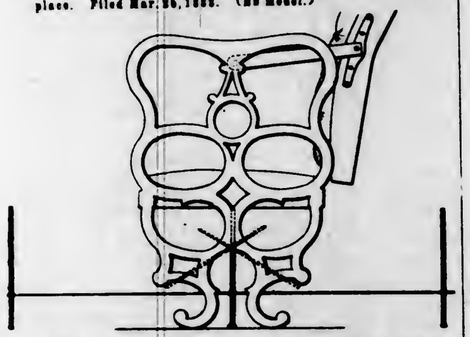
Fig. 4.



Claim.—1. As an improvement in the art of making cheek-pieces for bridle-bits, raising said cheek-pieces in relief on opposite surfaces of a plate or bar by dies that, while producing substantially the proper form and dimensions in cross-section, shall, by an irregular or distorted line of the raised portion thereof, give the ring or bow in one direction a reduced sectional area to bring the article in the ensemble within greatly-reduced limits, (whereby a saving in stock and in the cost of dies and in the power to operate the same is effected,) then trimming off the fins and intermediate plate of metal, and finally opening out said ring or bow to its proper form and dimensions, substantially as specified.

2. The dies, as described, and shown in Fig. 4, substantially as and for the purpose shown.

258,167. CAR-SEAT ATTACHMENT. ISAAC M. VAN WAGNER, Nyack, N. Y., assignor of one-third to Charles M. White, same place. Filed Mar. 16, 1882. (No model.)



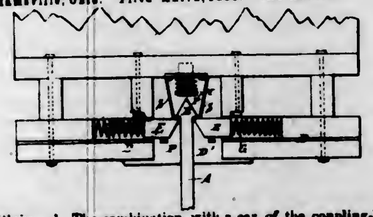
Claim.—1. The combination of a car-seat with the swinging partition which is placed under the seat for the purpose of preventing drafts of cold air around the feet of the passengers, substantially as shown.

2. In a car, the combination of the seats with the partitions placed under them, and connected together by means of rods, cords, or wires in such a manner that the partitions can be raised and lowered, substantially as described.

3. The combination of the car-seats, the hinged or pivoted partitions placed under the seats, and the rubber strips I, the parts being arranged and combined to operate substantially as shown and described.

4. The combination of a car-seat with a suitable partition loosely attached thereto, and having an elastic material attached to its lower edge, the partition being adapted to be worked back and forth over the floor for the purpose of assisting in cleaning the car under the seat, substantially as specified.

258,168. CAR-COUPLING. FREDERIC A. R. VON NEERWITH, Sedamsville, Ohio. Filed Mar. 8, 1882. (No model.)



Claim.—1. The combination, with a car, of the coupling-bar A, provided with triangular heads B, the sliding spring-blocks E, the plate P, and the extension P' of the same, provided with vertical flanges S, substantially as herein shown and described, and for the purpose set forth.

2. The combination, with a car, of coupling-bar A, provided with triangular heads B, the sliding beveled spring-blocks E, the levers J, pivoted to the blocks E, the pintle K, for pivoting the two levers to each other, and the slotted standard T, through which the pintle K passes, substantially as herein shown and described, and for the purpose set forth.

3. The combination, with a car, of the coupling-bar A, provided with triangular heads B, the sliding beveled spring-blocks E, the pivoted levers J, pivoted to these blocks and provided at the ends with handles N, and the hooks O on the car, substantially as herein shown and described, and for the purpose set forth.

4. The combination, with a car, of the coupling-bar A, provided with triangular heads B, the beveled spring-blocks E, sliding in a frame, D, at the end of the car, and the buffer H on the end of the car, substantially as herein shown and described, and for the purpose set forth.

5. A coupling-bar made, substantially as herein shown and described, with the upper and lower surfaces of the heads rounded or beveled for the purpose of facilitating automatic disengagement of the cars in case one of the cars is capsized, as set forth.

258,169. BALING-PRESS. JACOB A. WAGNER, Quincy, Ill. Filed Feb. 16, 1882. (No model.)

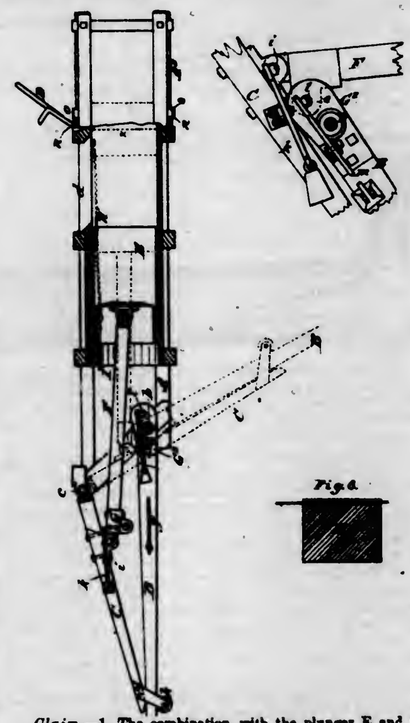


Fig. 6.

Claim.—1. The combination, with the plunger E and the main actuating-lever B, of the secondary or auxiliary lever C, the sliding connection A, and means, substantially as herein shown and described, for alternately connecting the said levers to the plunger, as set forth.

2. The combination of the connected levers B C on opposite sides of the press with the plunger E and plunger-rod F, having a cap-piece, G, constructed to provide for attachment of said rod to either of said levers, essentially as described.

3. The combination of the removable coupling-pins *i* and *I* with the connected levers B and C and the plunger-rod F, made capable of attachment either to the lever C in advance of its fulcrum *c* or to the lever B at a shorter distance from its fulcrum *b* and in rear thereof, whereby a compound lever-action to produce the necessary pressure is made readily convertible into a more powerful simple lever one, and both the forward and back motions of the main lever B are made available in the pressing-stroke of the plunger, substantially as specified.

4. The combination of the forked prongs H with the plunger E, and mechanism for automatically causing said prongs to project in front of the plunger during its travel past the feed-opening of the press, essentially as and for the purposes herein set forth.

258,170. POCKET-COMB. JOHN H. WALBRIDGE, New York, N. Y. Filed Apr. 6, 1882. (No model.)



Claim.—1. The combination of a comb having an enlarged or shouldered portion at one end with a case or sheath having formed within it a channel or channels in which said shouldered portion fits and slides, substantially as described.

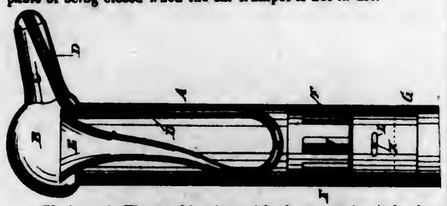
2. The combination, with a comb and sheath formed and arranged as set forth, of a spiral spring or springs for causing and maintaining the protruding of the comb from the sheath, substantially as described.

3. The combination, with a comb, a sheath, and spiral springs, as described, of a spring-catch for retaining the comb in its sheath, substantially as set forth.

4. The combination of the comb A, sheath B, springs D, and catch G, substantially as described.

258,171. COMBINED BAR-TRUMPET AND CANE-HANDLE. HENRY WALDSTEIN, New York, N.Y. Filed Mar. 8, 1882. (No model.)

Brief.—An ear-trumpet is contained in a cane-handle. This handle is provided with apertures for admitting the sound, and capable of being closed when the ear-trumpet is not in use.



Claim.—1. The combination, with the cane-tube A, having hollow head B and arm C, of the open tube D, commencing at the end of arm C, passing through said arm down into tube A, and then turned upward and carried with a flared end, E, into the head B, as and for the purpose described.

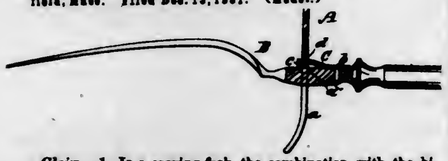
2. The combination, with a cane-handle provided with side apertures, of an ear-trumpet contained within the handle, substantially as herein shown and described, and for the purpose set forth.

3. The combination, with the tube A, provided with apertures or slots F, of the tube G, provided with apertures or slots J, and the ear-trumpet D E in the tube A, substantially as herein shown and described, and for the purpose set forth.

4. The combination, with the tube A, provided with apertures or slots F, of the tube G, provided with apertures or slots J and slots I, the transverse pintle K, and the ear-trumpet D E, substantially as herein shown and described, and for the purpose set forth.

5. The combination, with the tube A, provided with a hollow bulb or head, B, and a hollow arm, C, of the tube D, passing through the arm C and tube A, and provided with a mouth, E, within or directly below the head B, substantially as herein shown and described, and for the purpose set forth.

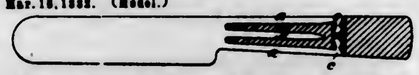
258,172. CARVING-FORK GUARD. STEPHEN S. WARD, Greenfield, Mass. Filed Dec. 13, 1881. (Model.)



Claim.—1. In a carving-fork, the combination, with the bifurcated guard A, provided with the slot *d*, of the spring C, secured to the fork, and provided with the lip *c*, taking over the bar *d'*, that forms the bottom of the slot *d*, substantially as and for the purpose set forth.

2. The combination, with the fork B, of the bifurcated guard A, provided with the slot *d*, and the spring C, secured to the said fork, and provided with the lip *c* and shoulders *e* on its outer end, substantially as and for the purpose set forth.

258,173. KNIFE. STEPHEN S. WARD, Greenfield, Mass. Filed Mar. 16, 1882. (Model.)

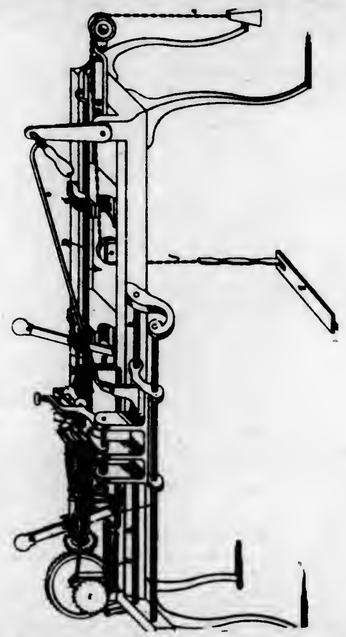


Claim.—1. The combination of the middle tang, *b*, with the two outer tangs, *a*, of the blade, substantially as shown and described.

2. A knife or similar instrument provided with triple tangs, in combination with a handle and cast-metal filling, said handle having a central hole and edge grooves, as shown and described.

3. In a three-tang instrument, the two outer tangs, *a*, formed with hook-lugs *c* at their outer ends, substantially as described.

258,174. GREEN-CORN CUTTER. SOLOMON D. WARFIELD, Baltimore, Md. Filed Sept. 24, 1881. (Model.)



Claim.—1. In a green-corn cutter, the revolving shaft and the bar carrying the centers for supporting an ear of corn, provided with flaring centering devices adapted to yield and expose the said ear to the said centers as the ear is compressed endwise in the centering operation, substantially as and for purpose specified.

2. In a green-corn cutter, the centering prongs or devices for centering the ear of corn, connected to weighted pivoted levers, whereby they are susceptible of longitudinal movement on their respective shafts and bars by the force of gravity in excess of that imparted to them by the endwise compression of the ear, substantially as and for the purpose specified.

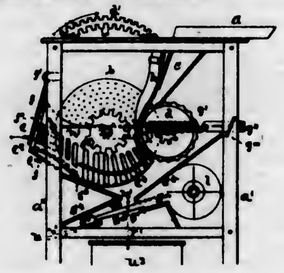
3. In a green-corn cutter, the longitudinally-moving knife for removing the grain from the cob, combined with a longitudinally-moving scraper adapted to bear on the cob with a yielding pressure, substantially as and for the purpose specified.

4. In a green-corn cutter, the longitudinally-moving knife for separating the grain from the cob, turned upward at its rear end to form a deflector for the severed grain, substantially as and for the purpose specified.

5. In a green-corn cutter, a chute or pan adapted to receive the grain and cob after their separation, provided with interior deflecting devices to conduct the cob to an exit-aperture distinct from that for the grain, substantially as specified.

6. In combination with the bar D, the weighted chain *e*, chain *f*, and treadle *g*, substantially as and for the purpose specified.

258,175. CORN-SHELLER. JOHN SAYLES WATERMAN, Ithaca, N.Y. Filed Oct. 26, 1881. (No model.)



Claim.—1. The described device for controlling the pressure-bar A, consisting of the spring *g'*, clamp *g''*, and clamp-screw *g'''*, projection *h'*, check-rod *a'*, check-rod clamp *a''*, and its set-screw *a'''*, in combination with the pressure-bar A and posts *a' a''*, the parts being constructed substantially as set forth.

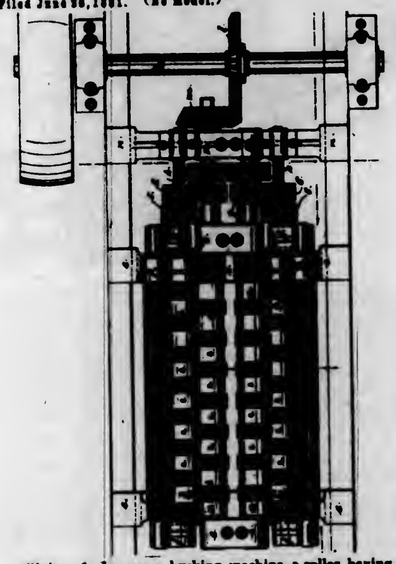
2. The combination of the rag-wheel *b*, corn-returning lip *c'''*, and the tubular conveyor *c'*, the latter fitted to and covering the lower part of the toothed side of the rag-wheel *b*, and having a top or roof part, *i*, a side part, *i'*, and a floor part, *i''*, the said parts being provided with openings and bars which radiate transversely from the axis of the wheel *b* in their position next the bar *h*, and beyond that having bars and openings arranged perpendicularly to the line on which the emerging cobs are carried, said conveyor extending into the corn-returning lip *c'''*, and being also provided with perpendicular openings and bars, substantially as set forth.

3. The cob-conveyor *c'*, provided with the sifting-extension *c''* and with the corn-returning lip *c'''*, the said extension being made with bars and openings and operating as set forth.

4. The lip *c'''*, inclosing the extension *c''* of the cob-conveyor, composed of the floor or base *f*, sides *j j'*, and the extension *c''*, in combination with the apron *f'* and hinging-staples *f''*, said apron closing the outer margin of the exit *e*, as set forth.

5. The combination of the fan *l* with the blast-tube shown and described, constructed of the boards *c' c' c'*, and provided with an upper aperture, *a'*, and a lower aperture, *a''*, through which apertures the shelled corn passes, the lower aperture being covered by wires arranged side by side, as shown, and having their upper ends secured to the board *c'*, and their lower ends loose and elevated above and projecting over the end *c''* of the board *c'*, the said parts operating to winnow the shelled corn of its chaff, silk, and other impurities as it drops through the blast-tube, as set forth.

258,176. CORN-HUSKER. JOSIAH WEBBER, Jr., Brooklyn, assignor to the Champion Corn Husker Company, New York, N.Y. Filed June 30, 1881. (No model.)



Claim.—1. In a corn-husking machine, a roller having sections that are plain and intermediate sections that are larger and grooved longitudinally to form teeth, in combination with a second roller having similar toothed and plain sections, the plain sections being longer than the toothed sections, and the rollers placed together so that the toothed sections in one roller pass in between the toothed sections of the other roller and are adjacent to the plain sections, substantially as specified.

2. The combination, with a pair of husking-rolls, of a regulating-roller, *c*, grooved spirally, for the purposes and substantially as set forth.

3. In combination with the pairs of husking-rollers and grooved regulating-rollers, the lever-bearings *f* and the helical springs 5, acting against the lower end, substantially as set forth.

4. The combination, with the husking-rollers *a b* and regulating-rollers *c*, of the bearers *e*, *f*, and *n* and gear-wheels *l* as 7 9 8 6 5, substantially as and for the purposes set forth.

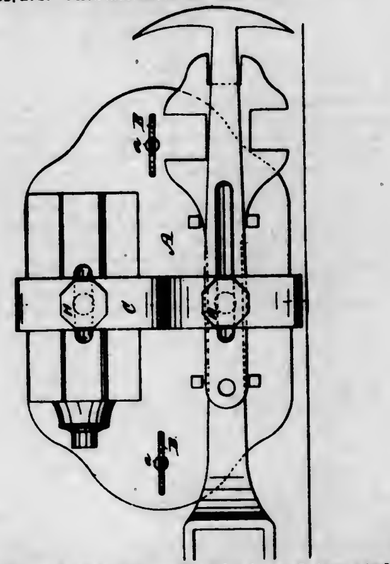
258,177. TOBACCO-POUCH FRAME. RICHARD I. WELLER, Washington, D. C. Filed Mar. 11, 1882. (No model.)



Claim.—1. A tobacco-pouch having a frame composed of the spring portion B, the spring force of which serves to keep the mouth of the pouch in a closed condition, the cross-arm C, by which the spring-pressure may be overcome at will, and the horizontal portion *c*, substantially as specified.

2. The frame A, formed into spring portion B, cross-arms C *c*, and having eyed portions, combined with the rings D and bag E, as specified.

258,178. TOOL-CARRIER. CHESTER L. WENTWORTH, Mount Vision, N.Y. Filed Mar. 16, 1882. (Model.)



Claim.—1. As an improved article of manufacture, a tool-carrier consisting of a frame composed of a plate, A, and bar C, adapted to be attached to a wagon seat or body, and provided with means for holding in place an oil-can and a tool or tools, substantially as herein described.

2. The combination, with the plate A and the bar C, provided with screw-threaded holes, of the set-screws H, for holding the tools in place, as shown and described.

3. The combination, with the plate A, provided with the holes *a*, of the thumb-screws B, for attaching the apparatus to a wagon seat or body, as herein shown and described.

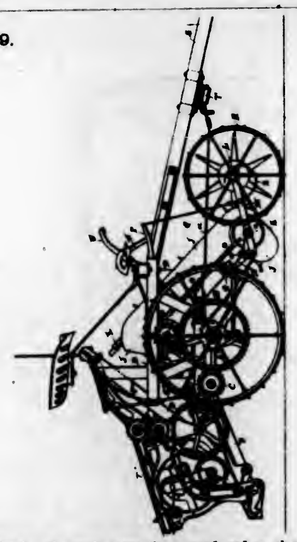
258,179. GRAIN GATHERING AND BINDING MACHINE. WM. H. WHITELEY, Springfield, Ohio, assignor to Whiteley, Fassler & Kelly, same place. Filed Jan. 3, 1881. (No model.)

Claim.—1. The pivoted arms M, provided with T-shaped ends *m*, and extending behind the elevator-shaft K, and supported at their forward ends by the gathering-cylinder shaft L, in combination with the pins *n* and arms N, arranged to form an adjustable joint between the gathering-cylinder and the elevator, substantially as described.

2. The foot-lever U, pivoted upon the main frame D and connected to the pole S by the rod W, in combination with the arm P, flexibly connected with the elevator-frame by the rods Q and the arms M, substantially as set forth.

3. In an independent gathering and binding machine, devices

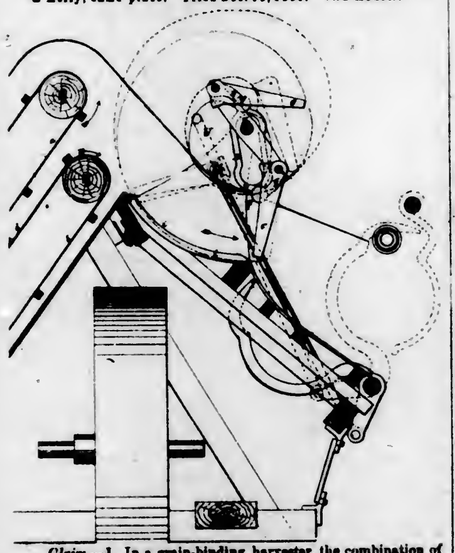
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for gathering the grain upon the ground and an elevator for raising the same therefrom, the elevator-shaft H, passing through bearings in the frame J and supported by the brackets I, in combination with the flexible tambling shaft G, pinion F, and main driving-gear B, substantially as and for the purpose specified.

4. An independent float, X, provided with curved guards Z, extending around the gathering-cylinder shaft L, in combination with the pivoted arms Y, connecting the float X movably to the frame J, substantially as and for the purpose set forth.

268,180. GRAIN-PACKER FOR BINDING-MACHINES. WM. M. WHITELEY, Springfield, Ohio, assignor to Whiteley, Fassler & Kelly, same place. Filed Dec. 15, 1880. (No model.)



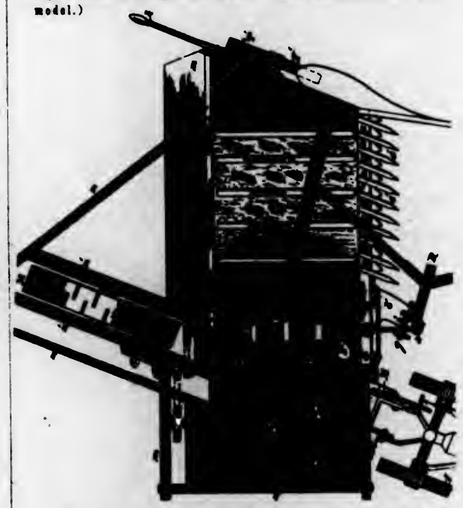
Claim.—1. In a grain-binding harvester, the combination of a double-belt elevator, a revolving falling-tooth packer, and a controlling-cam, and means connecting said cam with the binder-arm shaft, whereby the position of the cam may be changed so that it may operate in one position to swing the revolving packer-teeth out to sweep the grain from the elevator-belt to the binder-arm, and in the other position it may operate to withdraw the packer-teeth endwise before they pass over the grain-receptacle.

2. The combination of the rotary rake-heads, linked together as described, and the movable cam with the connecting-rod R, for connecting the cam with the binder-arm shaft located at one end of the receptacle, whereby said cam and the operative parts connected with it are removed from the vicinity of the grain in the receptacle.

3. The double-belt elevator, in combination with the continuously-rotating rakes which sweep the grain from the elevating-belts and deposit it in proper position in the receptacle, a controlling-cam and a connecting-rod coupled with a crank on the binder-arm shaft.

4. A continuous rotating rake-packer and means for controlling its path of rotation directly by and in unison with the binder-arm, whereby its movements are so arranged as to always sweep the grain off the elevating mechanism, but to vary the time of grain-deposit in the grain-receptacle, so as to admit of the free working of the binder-arm on its return downward.

268,181. HARVESTER AND BINDER. WILLIAM H. WHITELEY and WILLIAM BAYLEY, Springfield, Ohio, assignors to Whiteley, Fassler & Kelly, same place. Filed Dec. 13, 1880. (No model.)



Claim.—1. An endless traveling conveyer, C, moving in an oblique direction to the line of travel of the machine to which it is attached, and a cutting apparatus, E, parallel with the conveyer, and provided with fingers *v'*, that stand parallel with the line of travel of said machine and obliquely to said cutting apparatus and conveyer, in combination with a revolving reel, R, the axis whereof is set obliquely to the line of progression, as set forth, the whole arranged and constructed for the purpose of straightening the grain during its travel upon said conveyer.

2. A combined harvesting and binding machine provided with a rear master-wheel, M, a vertically-adjustable forward truck, I I, a cutting apparatus, conveyer, and automatic binder mounted between said wheel and truck, and extended laterally in a direction oblique to the line of progression, and a vertically-adjustable grain-wheel, I', for the purpose of a better presentation of grain to the binding-machine.

3. A platform, m, carrying a cutting apparatus, E, a conveyer, C, a packer, P, and a binding apparatus at A, the whole mounted upon wheels, and the conveyer moving in an oblique direction to the line of travel of the machine, substantially as and for the purpose specified.

268,182. MANUFACTURE OF CHILLED CASTINGS. JOHN R. WHITNEY, Radnor Township, Delaware County, Pa. Filed Nov. 10, 1881. (No model.)

Claim.—1. The improvement in the art of manufacturing chilled castings, which consists in the suitable application to and distribution over the outer surface of the chill of a series of minute jets or currents of water or other cooling medium, substantially as set forth.

2. In an apparatus for the manufacture of chilled castings, the combination of a chill, a reservoir for water or other cooling

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medium, a valved supply pipe or pipes, and a discharge-pipe connected to said supply-pipe, and provided with a series of perforations or exit-nozzles, each adapted to discharge a jet or current of cooling medium upon the exterior of the chill, substantially as set forth.

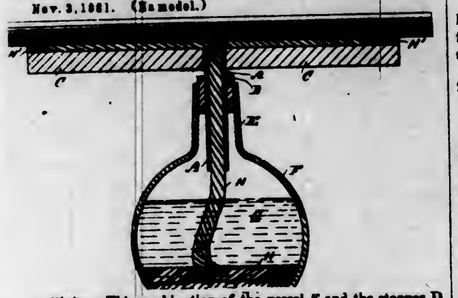
268,183. BUTTER-TRAY. WILLIAM R. WILCOX and NORMAN E. BROWN, St. Joseph, Mich. Filed Apr. 1, 1882. (No model.)



Claim.—1. A butter-tray having at each end of the body portion the interrupted transverse scoring, consisting of the independent score-sections between the body portions and end laps, the middle score-section being set back from the lateral score-sections a distance equal to the thickness of the stock, substantially as specified.

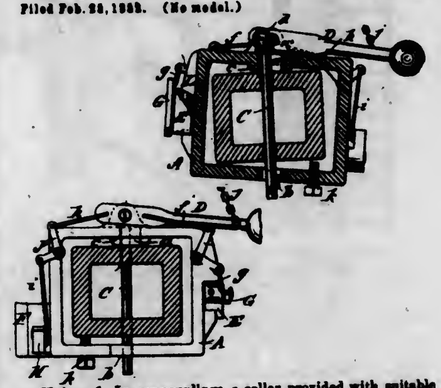
2. A grocer's tray having the interrupted score and the lateral end laps folded upon each other and upon the middle lap and secured together, forming a triple fold connected and braced handle portion, substantially as specified.

268,184. OILER. WILLIAM H. WILLIAMS, Bristol, N. H. Filed Nov. 3, 1881. (No model.)



Claim.—The combination of the vessel F and the stopper D with the bearing C, the tube A, secured to the bearing and extending downward into the vessel, and the wick H, leading from the vessel to and extending along the inner bottom surface of the bearing, substantially as shown and described, whereby the vessel is adapted to be withdrawn from the stopper or the vessel and stopper withdrawn from the tube, as and for the purpose set forth.

268,185. CAR-COUPLING. JOSEPH D. WILSON, Kansas City, Mo., assignor of one-half to Frank J. Mitchell, same place. Filed Feb. 28, 1882. (No model.)



Claim.—1. In car-couplings, a collar provided with suitable locking devices, and adapted to have a partial rotation or rocking movement upon the draw-heads, for coupling and uncoupling the cars, substantially as described.

2. The collar A, provided with the hooked arm E upon one side and the catch F upon the other, in combination with the pivoted weighted lever D, for partially rotating or rocking the collar, substantially as described.

3. The collars A A, adapted to be attached to the ordinary draw-heads, and adapted to have partial rotation or a rocking movement upon the draw-heads, substantially as described.

4. The collar A, formed with the elongated holes *a* and *b*, and with the projection *c*, substantially as and for the purposes set forth.

5. The collar A, formed with the elongated openings *a* and *b*, and with the projection *c*, in combination with the shifting weighted lever D, as and for the purposes set forth.

6. The partially rotating or rocking collar A, provided with the set-screw *k*, and with the shifting weighted lever D, as and for the purposes set forth.

7. The combination, with the collar A, provided with the hooked spring-actuated arm E, of the lever G, pivoted to the arm E and attached to the weighted lever D by the rods *f g*, and bell-crank lever I, substantially as described.

8. The combination, with the collar A, provided with the hooked arm E, of the pivoted block H, attached to the weighted lever D by the rods *h i*, and bell-crank lever J, substantially as described.

9. The car-couplings herein shown and described, consisting of the rotating, or partially rotating, collars A A, each provided with the hooked arms E E and catches F F upon opposite sides, and each provided with the weighted shifting-levers D D and with the set-screws *k k*, the collars being adapted to be attached to the ordinary draw-heads, as described.

10. The collar A, adapted to be placed upon the draw-heads, in combination with the pivoted hooked arm E, and the spring *e*, for holding the collar and arm evenly upon the draw-head, substantially as described.

268,186. FIRE-ESCAPE. JOSEPH R. WINTERS, Chambersburg, Pa., assignor of one-half to Samuel B. Reed, New York, N. Y. Filed Mar. 16, 1882. (No model.)

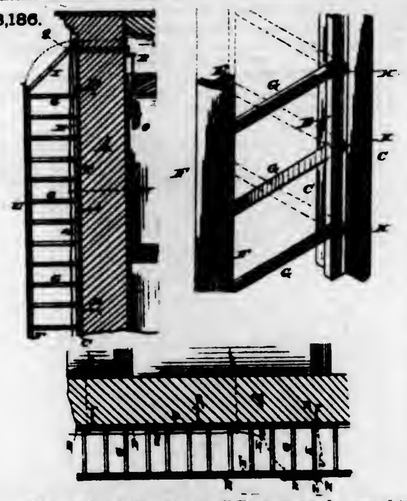
Brief.—The rungs are pivoted on alternate sides of the flange on the inner and outer rails, and when the ladder is folded it is inclosed in a shield secured to the outer rail. A platform at the base folds up with the ladder, and both are held by a latch provided with a releasing-wire. An alarm is connected to the jointed brace at the top of the ladder.

Claim.—1. The inner rail, B, having flanges C, and secured by means of bolts passing through said flanges, as set forth.

2. The combination of the permanent rail B, the pivoted rungs G, and the rail E, having shield or casing J, as set forth.

3. The combination, with the fire-escape ladder constructed as described, of the shield or casing J, secured to the outer rail, E, of said ladder, and having edges K, forming handles, as set forth.

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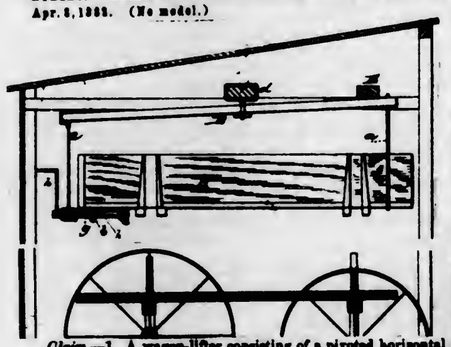
4. The combination, with the rail B, permanently secured to a wall, A, of the rail E and the pivoted rungs G, arranged alternately on opposite sides of said rails, as set forth.

5. The combination of the folding ladder B E G, having shield or casing J, the support L, and the releasing-wire M, having branches N, as set forth.

6. The combination of the rail B, pivoted rungs G, rail E, horizontal rods U V, secured respectively to the wall of the structure and to rail E, the diagonal braces W, and the pivoted rungs S, forming a folding platform, as set forth.

7. The herein-described improved fire-escape, consisting of the folding ladder B G E, having shield or casing J, jointed brace I, and folding platform R, the support L, releasing-wires M N, and alarm mechanism O P Q, all combined and operating substantially as and for the purpose set forth.

258,187. DEVICE FOR RAISING AND LOWERING WAGON-BODIES. WILLIS F. WITHERINGTON, Kenton, Tenn. Filed Apr. 8, 1881. (No model.)

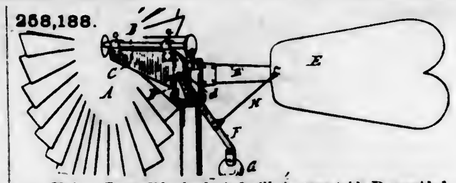


Claim.—1. A wagon-lifter consisting of a pivoted horizontal bar, B, in engagement with a check-bar, E, over one end, and having at one end a rope or chain, *a*, and at the other a rope or chain, *c*, carrying a winding roller, *g*, and crank-handle, substantially as specified.

2. In a wagon-lifter, the combination, with the bearings *b* and *c* at the end of the wagon-bed, of the supporting-bar B, its front rope or chain, *a*, and its rear rope or chain, *c*, carrying a crank-shaft, *g*, adapted to engage said bearings and to be detached therefrom, substantially as described.

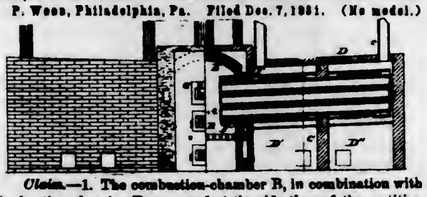
3. In a wagon-lifter, the combination, with the bearings *b* and *c* at the end of the wagon-bed, the supporting-bar, and the ropes *a* and *c*, of the winding roller or shaft *g* and the transversely-pivoted crank-handle h, substantially as specified.

258,188. WINDMILL. HENRY J. WOLCOTT, Albion, Mich. Filed Sept. 14, 1881. (No model.)



Claim.—In a solid-wheel windmill, the turn-table D, provided with an arm, C, having two bearings, *c c*, and a smaller arm, *d*, having its outer edge at an angle of about forty-five degrees to the axis of the wheel, in combination with the wheel A, shaft B, supported in the bearings *c c* of the arm C, the weighted arm F, hinged to the angular edge of the arm *d*, the vane-arm E, hinged to the turn-table opposite to the arm *d*, and the rod H, connecting the weight-arm F and the vane-arm E, substantially as described.

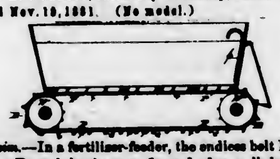
258,189. APPARATUS FOR HEATING AIR BY STEAM. JAMES P. WOOD, Philadelphia, Pa. Filed Dec. 7, 1881. (No model.)



Claim.—1. The combustion-chamber B, in combination with the heating-chamber D, arranged at the side thereof, the partition C, which divides said heating-chamber into a nearer section and a farther section, the closed pipes A, extending from said combustion-chamber through the first section and into the other section of the heating-chamber, and an independent air-inlet and air-exit for each section of said chamber, substantially as set forth.

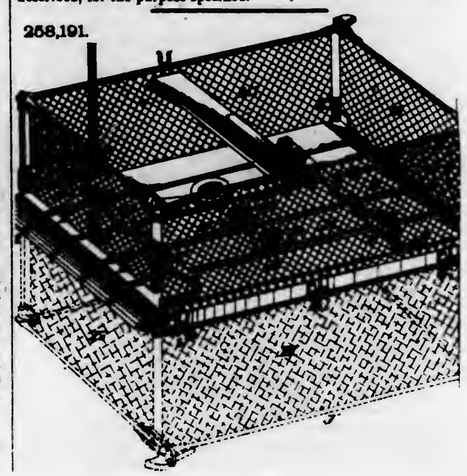
2. Two plates, F, having packing *g* interposed between them, and having openings to receive pipes A, in combination with said pipes, the combustion-chamber, and the heating-chamber, substantially as set forth.

258,190. FERTILIZER-FEEDER FOR GRAIN-DRILLS. ALFRED H. WOLBERT, Salisbury Township, Lancaster County, Pa. Filed Nov. 18, 1881. (No model.)



Claim.—In a fertilizer-feeder, the endless belt B, composed of the plates P, each having one flanged edge, *e*, linked together, all constructed, arranged, and operating substantially as shown and described, for the purpose specified.

258,191.



258,191. LIFE-RAFT. MARIA E. BRADLEY, Philadelphia, Pa. Filed Jan. 17, 1881. (No model.)

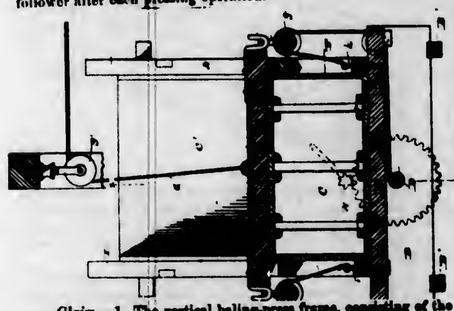
Brief.—A reversible life-raft having a hinged guard-railing so arranged as to project above the raft whichever side may be upward.

Claim.—1. The hollow rectangular metallic floats united by hinges, so as to present parallel flat surfaces of the floats to each other when either folded or extended, and with beveled ends adapted to ride with either surface upward.

2. In a reversible life-raft composed of hinged sections susceptible of folding and extension into a flat plane, the combination of a guard-railing attached thereto by hinges susceptible of turning with said railing through a sufficient arc of a circle to present the railing above either flat surface of the raft, substantially as and for the purpose described and shown.

258,192. HAY-PRESS. JEPTHA G. BOTLAND, Crawfordsville, Ind., assignor of one-half to Paul Hughes, same place. Filed Apr. 8, 1881. (No model.)

Brief.—A windlass is arranged beneath the bottom of the press-box and has its end bearings in the strong frame thereof. A master spur-wheel is keyed on one end of this windlass, which engages with a pinion on a winding-shaft having a crank-handle, by which the machine is operated. There is, further, a novel arrangement of ropes or chains passed about grooved pulleys and pulleys attached to swivel-links and to the vertically-movable follower of the press, and also a rope or chain centrally connected to the follower, and which passes over a pulley hung from the rafter of the building, and is carried off for use in elevating the follower after each pressing operation.



Claim.—1. The vertical baling-press frame, consisting of the housed-in receiving-box C', slotted vertically at its ends to receive the ends of the follower-beam, the press-box C, closed at both ends, slatted at one side, and provided with a removable door on the opposite side, the floor of the press-box provided with transverse slats, the broad sill-timbers B B, the intermediate floor-beam, E, and the subsills serving as supports and also ties for the timbers B B, the latter being firmly united to extensions of the corner uprights of the main frame, all substantially in the manner and for the purpose described.

2. The combination of the timbers B B, the corner uprights of the main frame of the superstructure secured rigidly to these timbers, the windlass D, having its end bearings therein, the subsills secured by tie-joints thereto, the press-box floor secured thereon, the beam E, the endwise-movable pulleys at the extremities of this beam, the ropes or chains h h, the loosely-hanging pulleys *g g*, the supporting-hooks at the ends of the follower-beam, and the eyebolts to which the said chains are attached, all arranged for joint operation substantially as described.

3. The combination, in an upright press, of a follower, a rope or chain, G', carried from the follower over a pulley applied to the rafter of the building in which the press is mounted, the ropes or chains secured to the sills of the main frame of the press, loosely-pendent pulleys applied to the follower-beam, endwise-movable pulleys arranged at the ends of the floor-beam of the press-box, a windlass arranged between these pulleys beneath the floor of the press-box, and the spur-wheels for actuating the windlass while depressing the follower, substantially as described.

4. In a vertical press of the kind described, the horizontal transverse windlass arranged on one side of the press-box center, beneath the press-box, the ropes or chains h h, secured to this windlass near its ends, the endwise-movable pulleys arranged on opposite sides of the press-floor beam under which said ropes pass, the loosely-hanging pulleys *g g*, attached to the ends of the follower over which the said ropes pass, and the eyebolts fixed centrally to the press-frame to which these ropes are secured, substantially as described.

258,193. FEED-REGULATING DEVICE. HENRY F. BROWN, Elkhart, Ind., assignor to himself and William Forward, same place. Filed Dec. 21, 1881. (No model.)



Claim.—1. In a feed-regulating device, the combination of the hopper, the pressure-board, the pivoted lever 9, the tension-spring 25, and the pivoted cut-off having an independent tension device.

2. In a feed-regulating device, the combination of a hopper, a cut-off, a pivoted lever, a pressure-board pivoted independently to the said lever, and a locking device.

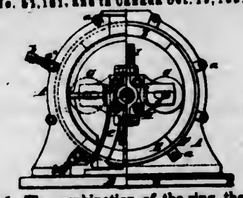
3. In combination, the pressure-board, the pivoted lever-arm 9, having the serrated eye, the arm 11, having the correspondingly-serrated eye, the screw-bolt, and the locking-pin.

4. In combination, the pressure-board, the pivoted lever-arm 9, the cut-off, the standard 14, and the bolt 15, substantially as described.

5. In combination, the pressure-board, the lever-arm 9, the pivoted cut-off, the spring 25, attached to screw-bolt 16, and the nut 19.

6. A feed-regulating device consisting of a hopper, an adjustable pressure-board, a pivoted lever connected to the hopper, a spring to return said lever and board to normal position, a pivoted cut-off, and a spring for closing the cut-off when the pressure-board is free.

258,194. GRINDING-MACHINE. RICHARD COOK, Sheffield, England. Filed Oct. 17, 1881. (No model.) Patented in England Oct. 18, 1880, No. 4,344; in Germany Mar. 14, 1881, No. 18,243; in France Mar. 18, 1881, No. 141,801; in Belgium Mar. 18, 1881, No. 51,161, and in Canada Oct. 19, 1881, No. 13,549.



Claim.—1. The combination of the ring, the rollers therein, the sieves or screens at the sides thereof, and the blades or fans J, arranged to agitate and fan the material being operated on and force the same against the screens or sieves, substantially as described.

2. The combination of a casing, A, a ring, E, a grinding-roller traveling within the ring, a driving-arm, H, supporting the roller, a shaft sustaining the driving-arm, a blade or fan, J, attached to said arm, and screens or sieves at the sides of the ring, substantially as and for the purpose described.

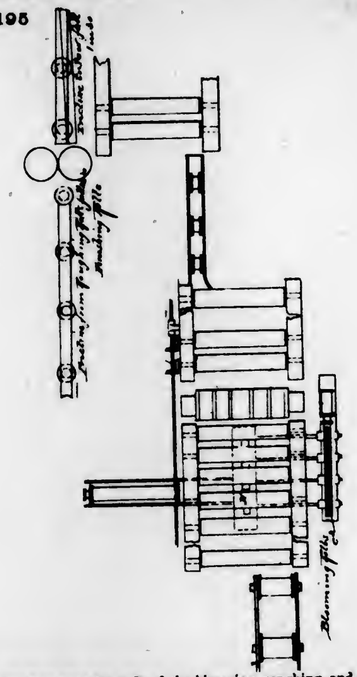
3. The combination, with the shaft D, of attached roller drivers or propellers, composed of plates H H, and the central piece, I, attached to the shaft and carrying the said plates, and rollers G, arranged between the ends of the latter and supported thereby, substantially as described.

258,195. METAL-ROLLING MILL. THOMAS CHYCHELOW, Steelton, Pa. Filed June 20, 1881. (No model.)

Claim.—1. In machinery for the manufacture of rails, beams and the like, substantially as herein set forth, the traveling carriage for manipulating the ingot, located in close proximity to the feeding-rolls, and provided with one or more vertically-operating plungers, as described, and for the purposes specified.

2. In machinery for the manufacture of rails, beams, and the like, substantially as herein set forth, the combination therewith of the succession of inclined feeding-trains situated in line with

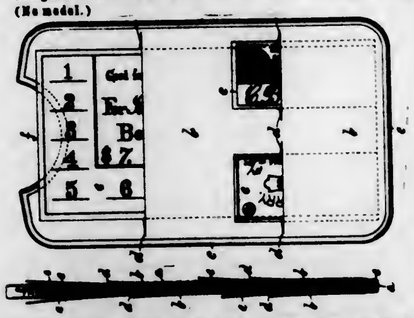
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the alternate opposite ends of the blooming, roughing, and finishing rolls, whereby a continuous feed of the ingot may be maintained, as herein specified.

3. In machinery for the manufacture of rails, beams, and the like, substantially as herein set forth, the combination of the succession of inclined feeding-trains with the manipulating-carriage having vertically-operating plungers, whereby the ingot may be readily fed to the feeding-rolls and transversely moved thereon for the purposes specified.

258,196. TICKET-CASE. SAMUEL S. CROSS, Beverly, Mass., assignor to Daniel E. Cross, same place. Filed Feb. 17, 1882. (No model.)



Claim.—The herein-described portable ticket-case, consisting of central stiffener and divider, *a*, covers *b b*, having each one or more slits, *d d*, and united to the partition *a* by the continuous metal binder *c*, all arranged and combined substantially as and for the purpose set forth.

258,197. ROTARY WATER-METER. BENAIAH FITTS, Worcester, Mass., assignor to the Union Water Meter Company, same place. Filed Sept. 30, 1880. (No model.)

Claim.—1. A water-meter provided with a deflector arranged at the induction-opening within the meter-shell and projecting across the opening, but not extending throughout the depth of the piston-chamber, substantially as set forth.

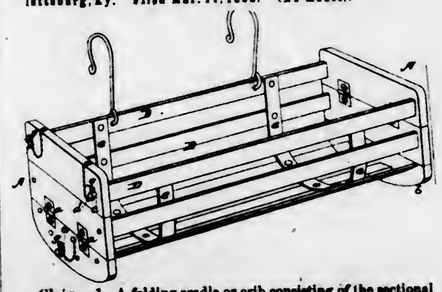
258,197.



2. In combination with two coacting pistons provided with radial blades having at their ends segmental bearing-surfaces, a deflector arranged at the induction-opening within the meter-shell and projecting across the opening, but not extending throughout the depth of the piston-chamber, substantially as set forth.

3. A rotary piston having its ends provided with grooves or depressions K, to form a water-packing and to prevent sand or other sediment from wedging in between the ends of the piston and the adjacent wall of the meter-shell, for the purpose set forth.

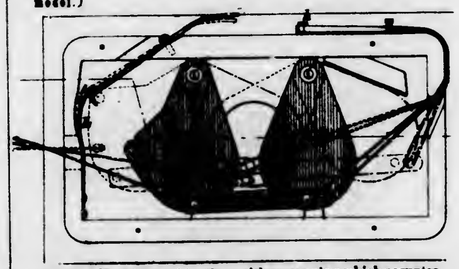
258,198. CRIB. WILLIAM H. FITZWATER, Louisa, Ky., assignor to L. T. McClure, same place, and T. B. McClure, Catlettsburg, Ky. Filed Mar. 11, 1882. (No model.)



Claim.—1. A folding cradle or crib consisting of the sectional head and foot pieces A A, the series of slats D, forming the bottom and sides, their flexible connections *c*, and the fastening devices whereby the ends of the slats are secured to the sections of the head and foot boards, substantially as specified.

2. The combination, with the sectional hinged head and foot boards having the rocker-sections *b*, of the flexibly-connected series of slats forming the bottom and sides of the cradle, and the fastening devices connecting the ends of the slats to the sections of the head and foot boards, substantially as specified.

258,199. SHUTTER FOR PHOTOGRAPHIC CAMERAS. MATHIAS FLAMMANG, Newark, N. J. Filed Dec. 28, 1881. (No model.)



Claim.—1. The combination, with an opening which occupies, or is adapted to occupy, a position opposite the lens-tube of a photographic camera, of two shutters pivoted independently to a support, and means connected with said shutters for moving them upon their pivots over and past the said opening, substantially as specified.

2. The combination, with an opening which occupies, or is adapted to occupy, a position opposite the lens-tube of a photographic camera, of two shutters pivoted independently to a support and a connection between the shutters, substantially as specified.

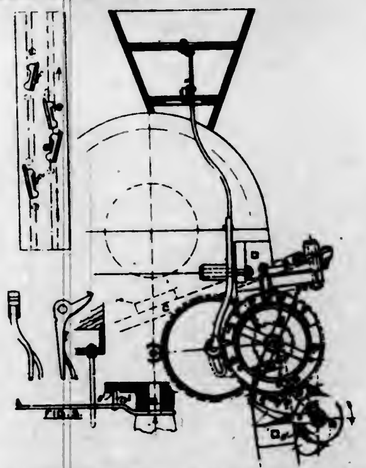
3. The combination, with an opening which occupies, or is adapted to occupy, a position opposite the lens-tube of a photographic camera, of two shutters pivoted independently to a support, a connection between the shutters, means for moving said shutters

in one direction, and a spring for moving them in the opposite direction, substantially as specified.

4. The combination, with an opening which occupies, or is adapted to occupy, a position opposite the lens-tube of a photographic camera, of two shutters pivoted independently to a support, a connection between the shutters, means for moving said shutters in one direction, a catch for holding the shutters in a certain position, and a spring for moving the shutters in the opposite direction when the catch is made to release it, substantially as specified.

5. The combination, with an opening in the front of a camera, of two shutters pivoted independently thereto rearward of the face, means connected with said shutters for moving them upon their pivots in one direction, and a spring for moving them in the opposite direction, substantially as specified.

258,200. AUTOMATIC FEEDING AND DISCHARGING MECHANISM FOR HOMINY-MILLS, &c. JAMES GOODYEAR, Yonkers, N. Y., assignor of one-half to Rudolf Hickemeyer, same place. Filed Dec. 19, 1881. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, of the mill-chamber, the valves or gates, the cam-wheel for opening and closing said gates, and mechanism, substantially as described, which causes a complete rotation of said cam-wheel for promptly opening and closing said valves, and permits it to rest after each rotation until the completion of operations within the chamber, as set forth.

2. The combination of one or more gate-levers, the cam-wheel, its continuously-rotating driving-gear, a pawl on said cam-wheel for connecting and disconnecting said wheel from its driving-gear, and an automatic stop for controlling and permitting the rotation of said cam-wheel at intervals, substantially as described.

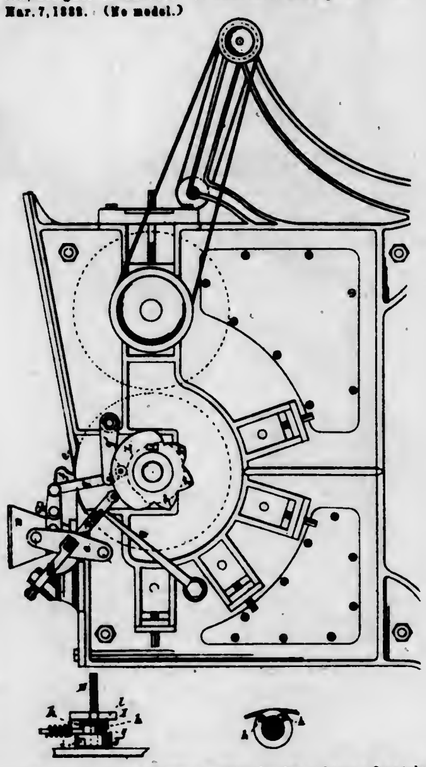
3. The combination of one or more gate-levers, the cam-wheel, its two-fingered pawl, and the automatic stop, substantially as described, whereby the cam-wheel, when permitted to revolve, is limited to a single rotation, as set forth.

4. The combination, with one or more gate-levers, the cam-wheel for moving said levers and a stop for controlling the rotation of the cam-wheel at intervals, a spring for moving said stop in one direction, and a cam on a ratchet-wheel rotated step by step for moving said stop in the opposite direction, substantially as described, whereby during each slow rotation of said ratchet-wheel the cam-wheel is permitted in quicker time to make a single rotation, as set forth.

5. The combination, with one or more gate-levers, the cam-wheel, the stop, and the ratchet-wheel which automatically controls said stop, of a continuously-rotating driving-gear and a pawl-lever for said ratchet-wheel, which is adjustable as to the extent of its vibratory movement, substantially as described, whereby the time of rotation of said ratchet-wheel is varied for varying the movements of the stop, and thereby varying the intervals between the rotations of the cam-wheel and the operation of the gate-levers, as set forth.

6. The combination, with the gate-levers and the continuously-driven toothed wheel, of the cam-wheel outside of said toothed wheel, the spring-pawl mounted radially on the cam-wheel, for engaging with said toothed wheel, and an automatic stop for controlling the rotation of the cam-wheel by contact with and releasing said spring-pawl at intervals, substantially as described.

258,201. BRONZING-MACHINE. JOHN W. HEIBER, Chicago, Ill., assignor to Theodore F. Lawrence, same place. Filed Mar. 7, 1882. (No model.)



Claim.—1. In a bronzing-machine having a bronze-fountain provided with a longitudinal slot in its bottom, a longitudinal reciprocating agitator located in said fountain, and composed of a shaft and depending fingers, the latter being adapted to move in the slotted bottom of the fountain, substantially as and for the purpose described.

2. In a bronzing-machine, the combination of an agitator arranged in the bronze-fountain to reciprocate in a longitudinal direction with respect thereto, the bronze-pad, and the cross-bar connecting the latter with the agitator, and serving to simultaneously operate both the agitator and the pad, substantially as and for the purpose described.

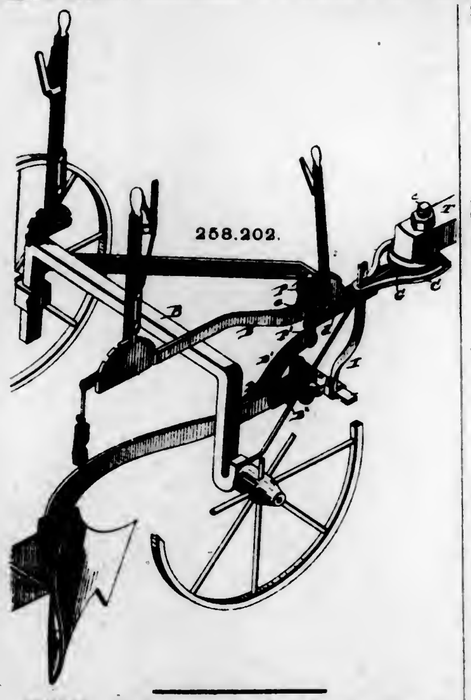
3. In a bronzing-machine, an agitator located in the bronze-fountain and a bronzing-pad connected with the agitator, in combination with a disk, L, provided with cams *r*, bell-crank lever M, and bar P, substantially as and for the purpose specified.

4. The head J of the gripper-shaft of the cylinder C, provided with the slots *i* and *j*, formed as shown and described, in combination with the pins *k* and *k'* upon the frame, whereby the grippers will act quickly when grasping the sheet and will open slowly when releasing the sheet, substantially as specified.

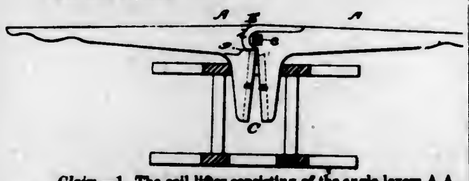
258,202. SULKY-PLOW. JOHN I. HORN, South Bend, Ind. Filed Feb. 20, 1881. (No model.)

Claim.—1. The combination of the clevis E', fixed to the plow-beam, the draft-clevis E and its extension E', pivoted to clevis E', the latch-arm I, the guide G, fixed to pivoted bracket G', and the open heart-shaped catch C, fixed to the pivoted tongue, substantially as and for the purposes described.

2. The combination of the pivoted heart-shaped catch C, having the draft-tongue rigidly secured to it, the guide G, the vibrating catch-arm I, and the pivoted clevis to which this arm is attached, substantially as described.



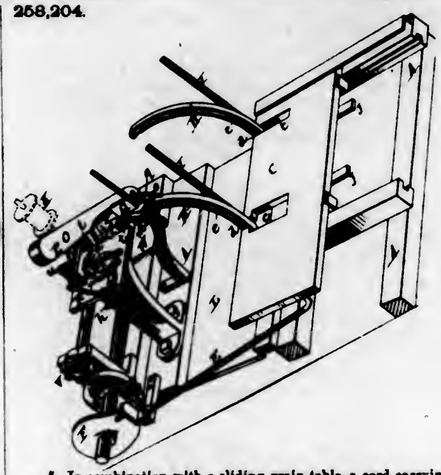
258,203. GRAPPLE. ANDREW PALM, Lawrence, Kans., assignor of one-half to the Lawrence Plow Company, same place. Filed Mar. 28, 1882. (No model.)



Claim.—1. The coil-lifter consisting of the angle-levers A A, having the bill ends C, meeting each other squarely to form a rounded projection to be inserted in the eye of the coil-spool, and pivoted together through laterally-lapping lugs E, extending beyond the meeting faces of the bill ends, substantially as specified.

2. The coil-lifter having its pivoted angle-levers A A provided at their angular portions with grooves *g* in the lateral shoulders *h* to engage the circular edges *h* of the projecting and lapping lugs E, thereby forming a laterally-braced joint, substantially as specified.

258,204. GRAIN-BINDING MACHINE. JOSEPH E. PRESCOTT, Beaver Dam, Wis., assignor of one-fourth to Richard J. Andrews, same place. Filed Jan. 17, 1882. (Model.)



Claim.—1. In a grain-binding machine, the combination of a sliding grain-table and one or more pivoted arms adapted and arranged to lie down close to the table while receiving grain, but to rise and throw the grain forward as the table advances, substantially as explained.

2. In combination with the sliding grain-table C, one or more pivoted arms, I, each provided with a foot, *f*, and a track or rail, J, located beneath said foot or feet, substantially as shown and described.

3. In combination with a sliding grain-table, a cord-carrying arm pivoted beneath the table and arranged to rise through an opening therein as the table advances.

4. In combination with the sliding grain-table and the cord-carrying arm H, arranged to rise and move forward with the table, the arm H', arranged to operate as and for the purpose explained.

5. In combination with a sliding grain-table, a cord-carrying arm mounted upon a shaft the ends of which are seated and arranged to slide in grooves, substantially as shown and described.

6. In a grain-binder, a cord-carrying arm pivoted beneath the grain-table and arranged to rise through an opening in the same and to move forward, substantially as explained.

7. In combination with the sliding grain-table C, the cord-carrying arm H, pivoted beneath the same and adapted and arranged to rise gradually as the table moves forward, and the arms I, arranged to rise at the commencement of said forward movement and to throw the grain in advance of the cord-carrying arm.

8. In combination with the sliding grain-table C, a pivoted binding-platform, L, and intermediate connections, substantially such as shown and described, whereby the binding-table is caused to fall as the grain-table moves back to its receiving position and to rise as the grain-table advances with a fresh supply of grain.

9. In combination with the rock-shaft S, provided with crank *w* and drum D, the pivoted binding-platform L, and sliding grain-table C, connected respectively with the crank and drum, substantially as and for the purpose explained

10. In combination with the pivoted binding-platform L and means, substantially such as shown, for positively tipping the same, a counter-weight *g*, or its equivalent, connected with the binding-table and adapted to return the same to its normal position when tipped or thrown down.

11. In a grain-binding machine, the combination of a gravitating arm carrying a cutter, and a reciprocating arm arranged, substantially as described, to raise and release the gravitating arm, whereby it is adapted to cut blanks from a strip for the formation of clips, substantially as explained.

12. In a grain-binding mechanism, the combination of a pivoted arm carrying a die, and a reciprocating arm adapted and arranged to elevate and release the die, substantially as described, whereby said die is caused to act upon the clip-blank, as explained.

13. In combination with the pivoted arm O, the reciprocating arm H, provided with the inclined rib *e*, and the sliding plate Q, whereby the arm O is raised gradually and permitted to fall suddenly.

14. In a clip forming and applying mechanism, the combination of the formers N, arranged to separate from each other and sustain the ends of the blank, and subsequently to fold the same, and a die or hammer adapted and arranged to act upon the blank before and after the folding operation, first to bend it into U form and afterward to flatten down the ends, substantially as set forth.

15. In combination with the pivoted folding arms or formers N, having beveled lugs at their rear ends, the arm H, provided with a beveled projection to enter between said lugs and throw the forward ends together.

16. In a grain-binder, the combination of grain-table C, arms I, cord-carrying arm H, and clip-applying mechanism adapted and arranged to be actuated by the cord-carrying arm, substantially as shown and described.

17. The herein-described grain-binding attachment, consisting of table C, arms H and I, binding-table L, and their operating mechanism, arm O, provided with a cutter and a die or hammer, and the arms N, adapted and arranged to be actuated by the arms H.

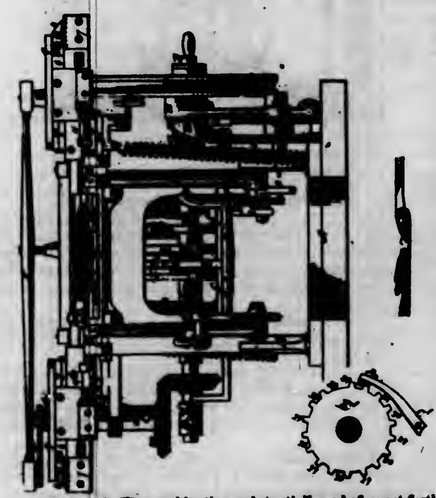
258,205. TRACE-BUCKLE. HOLABIRD E. SHALER, Bluffton, Ohio. Filed Feb. 20, 1880.



Claim.—In a trace or harness buckle, the bail having a tag-bar, two side bars of an inverted-S shape, the subdividing cross-bar at a point past the center, and having a transverse recess or groove, and adapted to slide on the frame, in combination with a frame having its inner end provided with a tongue, substantially as and for the purpose set forth.

REISSUES.

10,112. KNITTING-MACHINE. WILLIAM H. ABEL, Laconia, N. H., assignor of one-half to E. W. Boardman, Lowell, Mass. Filed June 21, 1881. Original No. 187,696, dated Feb. 27, 1877; Reissue No. 8,778, dated July 1, 1879.



Claim.—1. The combination, substantially as before set forth, of the series of eye-pointed latch-needles, the covering-point, and the rocking bar by which the covering-point is engaged in and is removed from the eyes of the eye-pointed latch-needles.

2. The combination, substantially as before set forth, of the series of eye-pointed latch-needles, the covering-point, the rocking bar, and the pattern-wheel by which the times at which the rocking bar is operated are determined.

3. The combination, substantially as before set forth, of the series of eye-pointed latch-needles, the covering-point, the back sinker-bar, by whose action a loop is moved from an eye-pointed latch-needle to a covering-point, and the front sinker-bar, by whose action a loop is moved back from a covering-point to an eye-pointed latch-needle.

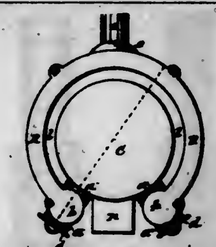
4. The combination, substantially as before set forth, of the series of eye-pointed latch-needles, the covering-point, the back sinker-bar, the front sinker-bar, and the pattern-wheel, by which the times at which the covering-point and sinker-bars are to operate are determined.

5. The combination, substantially as before set forth, of the series of eye-pointed latch-needles, the covering-point, the back sinker-bar, the front sinker-bar, the needle-bar, and the slide by which the needles of the end of the series are depressed and raised.

6. The combination, substantially as before set forth, of the series of eye-pointed latch-needles, the covering-points, the back sinker-bar, the front sinker-bar, the needle-bar, the slide by which the needles at the end of the series are depressed and raised, and the pattern-wheel, by which the times at which said needles are successively depressed are determined.

10,113. HOT-AIR FURNACE. JOHN F. PEASE, Syracuse, N. Y. Filed Mar. 13, 1882. Original No. 183,337, dated July 18, 1877.

10,113.



Claim.—1. In combination with the combustion-chamber C, the radiator R, consisting of two segments of cylinders of different diameters arranged concentrically side by side, united at the ends, and closed at the top and bottom, and communicating with the interior of the combustion-chamber at or near the feed-door, and provided with an exit for the products of combustion, substantially as set forth.

2. In combination with the combustion-chamber C, the radiator R, arranged around the exterior of the combustion-chamber, and consisting of two segments of cylinders placed concentrically side by side, closed at the top and bottom, and terminating with cylindrical enlargements *b b*, a flue extended from the cylinder *b* to the combustion-chamber, and an exit, *c*, in the radiator for the escape of the products of combustion after their circulation through said radiator, as set forth.

3. In combination with the combustion-chamber C, the radiator R, consisting of a deep narrow segmental flue arranged around the exterior of the combustion-chamber and communicating therewith, and the cleaning-flues *a a*, connected to the base of the radiator and provided with removable covers *d d*, as and for the purpose set forth.

4. The combination of the radiator R, constructed of two segments of cylinders of different diameters arranged concentrically side by side, united at the ends, and closed at the top and bottom by segments of annular plates, the horizontal flues *a a*, and interior passages formed by bridges *f*, substantially as shown and described.

5. The combination of the radiator R, constructed of two segments of cylinders of different diameters arranged concentrically side by side, and closed at the top and bottom by segments of annular plates, and formed with cylindric enlargements *b b* at its ends, the horizontal flues *a a*, and bridges *f*, all constructed and combined substantially in the manner described and shown, for the purpose set forth.

10,114. TOY LOCOMOTIVE. WILLIAM S. REED, Leominster, Mass., assignor to W. S. Reed Toy Company, same place. Filed Feb. 3, 1882. Original No. 183,466, dated July 24, 1877.



Claim.—1. A knockdown or combination toy vehicle mounted on wheels, in which one portion serves as a box or receptacle for containing the other detached portions thereof, substantially as set forth.

2. A knockdown toy mounted on wheels, in which one portion serves as a box or receptacle for the remaining detached portions of the toy, as set forth.

10,115. HAND-PIECE FOR DENTAL ENGINES. THOMAS S. PHILLIPS, Buffalo, N. Y., assignor, by mesne assignments, to the S. S. White Dental Manufacturing Company, Philadelphia, Pa. Filed Jan. 11, 1882. Original No. 210,872, dated Sept. 23, 1879.

Brief.—A gripping spring-jawed rotating tool-holder is operated to look the tool through cam mechanism and suitable connections.

Claim.—1. The combination, substantially as herein before set forth, of the hollow spindle fitted to turn in an inclosing-casing, the gripping tool-holder contained within said spindle, and cam mechanism to give a longitudinal motion to the tool-holder.

2. The combination, substantially as herein before set forth, of the hollow spindle fitted to rotate in bearings in an inclosing-casing, a gripping tool-holder contained within said spindle, cam mechanism to give said tool-holder a slight longitudinal motion in one direction, and a spring to move said holder in the opposite direction.

10,116.

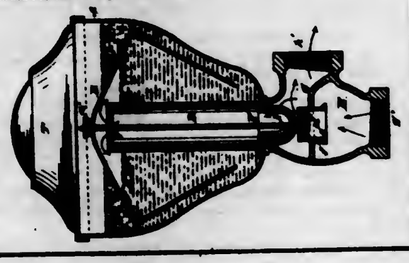


3. The combination, substantially as hereinbefore set forth, of a tubular casing having an opening in its side, a hollow spindle enveloped by said casing, a gripping or split tool-holder contained within said spindle, and a turning sleeve mounted externally upon the casing to move said tool-holder endwise in the spindle through intermediate connections, substantially as described.

4. A hand-piece having a chamber at the nose or front end thereof, said chamber being formed by the extension of the front section of the casing or nose-piece beyond the end of the tool-carrying spindle and its approach to without bearing upon the tool, substantially as described.

5. The combination, substantially as hereinbefore set forth, of the casing, the hollow spindle fitted to rotate in bearings in said casing, the gripping tool-holder contained in said spindle, and a detent mounted upon the casing and acting therethrough to prevent rotation of said spindle when the tool-holder is being operated.

10,116. GAS-REGULATOR. NATHANIEL SLENMAN, Birmingham, assignor, by mesne assignments, to National Gas Saving Company, Ansonia, Conn. Filed Apr. 17, 1882. Original No. 219,290, dated Sept. 23, 1879.

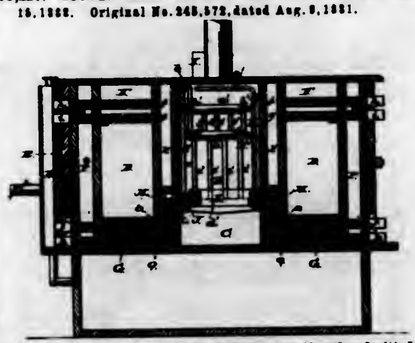


Claim.—1. In a gas-regulator, the combination, with the shell A, of the conical-sided and arch-topped float B and the annular valve C, mounted on rod F, located longitudinally of tube D, which has orifice *h'*, and having inwardly-beveled upper rim and sloping exterior flange on lower rim, to fit respectively on valve-seats on lower end of said tube D and in aperture *f'* of diaphragm G of globe E, substantially as and for the purpose specified.

2. In a gas-regulator, the combination of a shell, A, float B, tube D, stem F, and globe E, having diaphragm G, of the double annular valve C, substantially as described.

3. In a gas-regulator, the combination, with a float B, hemispherically-pointed tube D, provided with orifice *h'*, and diaphragm G, provided with aperture *f'*, of the annular double valve C, substantially as described.

10,117. STOVE. JAMES G. SMITH, Cleveland, Ohio. Filed Apr. 15, 1882. Original No. 245,572, dated Aug. 9, 1881.



Claim.—1. In a stove in which steam is directly admitted to the articles to be cooked, a steam generator and superheater located in the fire-chamber, in combination with an oven and means of communication, whereby steam generated by the heat of the stove fire is superheated by the same and is then passed to the oven, as set forth.

2. Steam-generator J, superheater K, and distributer L, in combination with oven D and means, substantially as described, for connecting the same, as set forth.

3. In a stove or range arranged for a greater or less supply of superheated steam, as required, two generators and a superheater connected to one of them, and means, substantially as described, whereby one of the generators can be converted into a superheater, as set forth.

4. The combination of the generator J, reservoir E, tank I, force-pump B', superheater K, distributer L, and means for conducting steam from the distributer to the pipe leading up into the building, as set forth.

5. A stove or range having as part of its structure a water-supply chamber and pump, as set forth.

10,118. MILLSTONE-DRIVER. LEWIS P. WEARSE, Jr., New Harmony, Ind. Filed Apr. 12, 1882. Original No. 252,557, dated Jan. 17, 1882.



Claim.—The combination of the L-shaped ring or band A, provided with the dowel-pins B, the top plate, C, the pivotal bolts D, and the driver G, made in two parts and having their ends bear against each other, so that the slightest movement of one part will react upon the other, substantially as described.

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DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Northern District of Illinois.

GRAHAM v. MCCORMICK *et al.*

Decided March 13, 1869.

1. CONTINUOUS APPLICATION—PUBLIC USE.

Where a second application is filed for a certain part of an invention disclosed in a prior application the two applications will be regarded as a continuous proceeding, and public use of the invention, to defeat a patent granted upon such second application, must be shown to have occurred more than two years prior to the first application.

2. PUBLIC USE—EXPERIMENTAL USE AND SALE.

The law permits an inventor to make practical tests of his invention, and when an invention is used in public in the way of experiment or trial, or when a machine is sold on trial and warranted, it is not such a public use or sale as is contemplated by the statute.

3. TWO PATENTS FOR PARTS OF SAME INVENTION.

Where a person has within the meaning of the patent law made an invention which he has described in specifications, including other matter of invention, for which last a patent has been issued, he should not be precluded for that reason alone from applying for and obtaining a patent for that which was not claimed in the first patent.

4. LEGAL TITLE—EQUITABLE INTEREST NOT EXAMINED COLLATERALLY.

The legal title to the patent being in the plaintiff, it constitutes no defense to the action to make a showing of equitable interests in other parties.

5. IMPROVEMENT IN HARVESTERS—NOVELTY.

The Ball patent and the Zug machine examined and *Held* not to anticipate the combination in controversy.

Messrs. Banning & Banning for the complainant.

Mr. E. N. Dickerson, *Mr. M. D. Leggett*, and *Messrs. Offield & Towle* for the defendants.

[This case was argued before the circuit judge and Judge Dyer of the eastern district of Wisconsin, the parties having requested the latter to sit with the circuit judge in this case, inasmuch as a case involving the same questions under the patent had been heard by him at Milwaukee and was yet undecided. Judge Dyer did not officially sit in this case, but he heard the arguments and participated in the consultation, after which the following opinion was delivered, which, although given by the circuit judge, may be regarded as the joint opinion of both.]

DRUMMOND, *J.*:

This is a bill filed by the plaintiff as assignee of A. B. Graham, to whom a patent was issued on the 11th of February, 1868. The controversy arises only upon the first and second claims of that patent. Various objections have been made to the patent and to the right of the plaintiff to maintain suit thereon.

It is objected by the defendants that the Graham patent is invalid because the invention was in public use and on sale for more than two years prior to the application for a patent. The first conception in the mind of the patentee seems to have been in the winter of 1862-'3, and during the year 1863 he made an arrangement with certain parties under which some machines were constructed containing his invention, which, however, proved unsuccessful. Under an arrangement made with another person in the following year several other machines were constructed, parts of the old machines of 1863 being used in the construction of some of the new ones. Conditional sales were made of some of these machines, and with a few of them some grass or grain was cut. They were continually getting out of repair and could not be regarded as a success, and in some instances where money had been paid for the machines it was refunded in whole or in part. It is insisted on the part of the defendants that these facts constituted a sale and use of the invention for more than two years prior to the application for the patent, while on the part of the plaintiff it is claimed that it was nothing more than testing by experiment in various ways whether the invention was successful.

In order to a proper understanding of this part of the case it is necessary to consider the history of the application for the patent. That was first made on the 25th of February, 1864, by being placed in the hands of solicitors in New York, to be by them presented to the Patent Office. The application, however, for some unexplained reason, was not in fact filed there until the 2d of December, 1865. The patentee claims that instructions were given to the solicitors to file the application at once, and he supposed that it was so filed. It contained five claims, the first of which embraced the invention now in controversy. On the 30th of December, 1865, the first three claims were rejected, an offer being made at the time to allow the other two claims. This offer was not accepted, and on the 24th of March, 1866, an amended claim was filed in place of the first rejected claim. It is understood that this referred to the invention now in controversy. On the 4th of April, 1866, this claim was rejected. On the 11th of February, 1867, the first application being still pending, with the action of the Patent Office as stated, a second application was filed, containing, among others, the two claims now in suit. In June, 1867, the claims which embraced the invention now in controversy were withdrawn from the first application, and on the 23d of July, 1867, a patent was issued on the first application. As issued, that patent did not include the invention now in suit. A patent for the invention in controversy now was issued on the second application on the 11th of February, 1868. A description of the invention now under consideration was contained in the original specifications and drawings which accompanied the first ap-

plication. It is claimed by the plaintiff that under this state of facts the application for the patent embracing this invention, for the purpose of fixing the time when the two years should begin to run, should be considered as having been made on the 25th of February, 1864, when the patentee's first application was put in charge of his solicitors; or, if that be not so, that it should be considered as made when that application was filed in the Patent Office on the 2d of December, 1865, so that the two years would embrace the years 1864 and 1865. On the other hand, it is contended by the defendants that the two years began to run on the 11th of February, 1865, because the second application, upon which the present patent was issued, was filed on the 11th of February, 1867, and that the connection between the first and second applications was effectually broken under the circumstances, so that the two applications could not be considered one continuous proceeding.

The rule is well understood that if an invention has been in public use or on sale with the knowledge and consent of the inventor more than two years before his application for a patent, it will render the patent invalid; but it is clear that, in order to determine whether the case is within the rule, we must consider whether the particular devices which the inventor claims to have invented were perfect, so that they embodied a complete invention. We have some doubts, even upon the theory that the two applications should be considered as parts of one and the same proceeding, whether the patentee's first application can be regarded as made, within the meaning of the law, at the time it was placed in the hands of his solicitors, in February, 1864; but we think, under the circumstances which attended the efforts of the patentee to obtain a patent, together with the connection which the second application seems to have with the first, that, for the purpose of fixing the time when the two years began to run, the second application should be treated as a continuation of the first, and that both are part of one preceeding. In this respect this case is not wholly unlike that of *Smith* v. *Goodyear Dental Vulcanite Company*, (93 U. S., 500,) where the court held that the effort to obtain a new patent in 1864 ought not to be regarded as disconnected from the original application made in 1855, and that it was but one stage in a continuous effort. It is true in this case, unlike that, a patent was granted on the first application covering the claims which were not rejected, and the patent in suit was granted on the second application; but the subject-matter of the second application was embraced in the first, and the invention now in controversy was described in the specifications and the drawings which constitute part of the first application, and we think it may be said that the continuity of the proceeding which originated in the first application was not broken up to the time when the patent for the invention in suit was granted in 1868. See, also, *Blandy* v. *Griffiths*, (3 Fisher, 616.) In view, therefore, of the circumstances under which Graham made his second application and withdrew from the first the claims covering the invention now in suit, we cannot say that the proceeding should be severed so as to make the two years date back from the 11th of February, 1867, and we think that the two years within which the invention could be sold and publicly used without invalidating the patent began to run on the 2d of December, 1863, which was two years prior to the filing of the first application. It is manifest that the only machine made in 1863 which is distinctly proved to have been sold was delivered on trial and warranted, and should be regarded rather in the light of a use of the invention for such practical tests as the law permits an inventor to make than as such a public sale or use as is contemplated by the statute. At that stage of the inventor's work his invention was largely in experiment and trial. It could only be tested by practical use in the field, and it was essential that it should be so tested by farmers on their farms. The inventor was then struggling, as inventors often do, to establish the success of his invention. It was necessary that thorough experimental tests should be made and that he should have the assistance of others in making them, and it is manifest, we think, that the machines of 1863 were not yet so perfected as to be practical machines capable of successful work.

In the light of all the testimony we conclude that what was done by the patentee with reference to the use of the machines in 1863 was intended by him, and was, in fact, for the purpose of experiment and as a test of the machines with a view to their perfection. This part of the defense rests upon a claim of forfeiture of rights secured by the patent. To justify the court in sustaining it the proof should be clear and satisfactory. The right of the infringer to invalidate the patent for this cause should be undoubted. And in view of these considerations we think the patent should be held valid against this objection.

It is insisted further by the defendants that the plaintiff's patent is invalid because the first application for a patent included the invention which is the subject of the two claims in controversy covered by the patent of 1868; and because that invention was not allowed in a previous patent, but the previous patent was issued for other claims, that the second patent, of 1868, is inoperative. And it is said that instead of there being a new patent issued in the case there might have been a reissue of the original patent. And it is also insisted that the second patent was issued for something in addition to what was claimed in the previous patent, which claim was rejected, and the second patent is invalid on that account.

Admitting the facts to be as stated by the defendants, is the conclusion drawn from them correct? We think it is not. It was not a proper case for a reissue. There was no defective or insufficient specification. The inventor had not claimed more than he had a right to claim as new. The case as it is put is one where there was the description of an invention which was not claimed, the claims in controversy here having been withdrawn, and where we must assume that the person was entitled to a patent inasmuch as the Office subsequently granted him a patent for the invention described. On general principles, we think that where a person has within the meaning of the patent law made an invention which he has described in specifications, including other matters of invention, for which last a patent has been issued, that he should not be precluded for that reason alone from applying for and obtaining a patent for that which was not claimed in the first patent. The object of the patent law was to protect a party who made an invention which was useful, provided he complied with the terms of the law and a patent issued for the invention; and unless there is something in the law which declares a patent issued under such circumstances to be invalid, it is the duty of the courts to sustain a patent for an invention thus made. It is to be borne in mind that the application for the second patent, that of 1868, the one in controvery here, was made while that for the previous patent was pending, and before the prior patent had been issued. There were thus pending before the Patent Office two applications at the same time, where the claims were different, and we understand it to be in accordance with the practice of the Patent Office to allow applications to be made at the same time by the same party for different parts of the same machine.

It is also insisted by the defendants that the plaintiff cannot maintain the suit because the inventor had not the right to assign to him the whole interest in the invention under the patent of 1868.

On the 25th of November, 1865, A. B. Graham, the inventor, made a contract with W. B. & C. A. Werden that they should have the exclusive right to manufacture and sell the improvement in the machine, and that that right should continue until the patent about to be applied for expired, and Graham agreed that before the letters patent should issue for the invention he would make such necessary assignment that the patent might issue to all the parties jointly, each to have an undivided one-third interest therein. It will be observed that this was not of itself an assignment, but only an agreement to assign. On the same day that this contract was made what purported to be an assignment was executed by Graham. It stated that, whereas Graham himself and the Werdens had agreed to purchase from Graham all the right, title, and interest which he had in the invention through the grant of the letters patent therefor, therefore he, Graham, assigned to himself and the Werdens the full and exclusive right to said invention of all the improvements made by him, as fully set forth and described in the specification which he had prepared for the purpose of obtaining a patent. The circumstances connected with the application and obtaining the respective patents have been already stated. On the 23d of July, 1867, in pursuance of the contract and assignment already referred to, letters patent were issued to Graham and the Werdens. That patent is not the subject of controversy here. On the 11th of February, 1868, a patent was issued, which included the two claims in controversy here, to A. B. Graham alone. It is claimed by the defendants that these facts show that A. B. Graham could not assign to the plaintiff a right to enable him to maintain this suit in his own name on the patent of 1868.

The evidence tends to show that a controversy arose between A. B. Graham and the Werdens as to the contracts of November 25, 1865. The former insisted that the Werdens had not complied with their contract, and from that or some other cause there seems to have been no additional assignment made to the Werdens of any interest in the patent of 1868, and, as already stated, that patent was issued to Graham alone. We think that upon this state of facts, there being no controversy about the validity of the assignment by A. B. Graham to the plaintiff of the patent of 1868, the plaintiff must be considered as having the legal title to that patent, and consequently has the right to maintain this suit in his own name. Whatever equities there may be between the parties to the contract of November, 1865, can be adjusted in a controversy between themselves or their legal representatives. We do not think that the defendant can claim that the facts stated constitute a defense to this action.

The two claims of the Graham patent which are alone in controversy here are the first and second. The first claim is for a combination of the finger-beam with the gearing-carriage by means of the vibratable link, the draft-rod, and the two swivel-joints M and M', so that the finger-beam may both rise and fall at either end and rock backward and forward; and the second claim is the same as the first with this only added, that an arm is attached to the vibratable link, by which the rocking of the finger-beam is controlled by the driver. The object of this invention as set forth in these two claims seems to be mainly to produce the rocking motion of the finger-beam as described and by the method described. In the Ball patent, while there may be said to be something equivalent to the swivel-joint M of the plaintiff's machine where it is attached to the frame, and also something similar to the draft-rod and the arm, there is nothing to produce the rocking motion, which is the essential object in the first two claims of the plaintiff's machine, and consequently there is no swivel-joint M', as in the plaintiff's machine, so that there is nothing in the Ball machine to prevent the validity of the combination in the first two claims of the plaintiff's patent. The Zug machine has, if not a swivel-joint like that of plaintiff's at M, where connected with the frame, something which seems substantially similar. It has a vibratable link, and it has something which is equivalent to the draft-rod, the main difference being that it is attached beneath the shoe instead of above, but there is no swivel-joint M'. There is an arm which is attached to the draft-rod and shoe, by which it can be raised and lowered; but Zug claims in his patent that when the machine is in progress over the field, and when the finger-bar strikes any obstacle, there is a device in a box in which the forward part of the draft-rod is fastened by which the finger-bar yields to the obstacle, and that there is also a mode by which the vibratable rod is attached to the frame, called "joint 16," in his patent, and what has been termed an "open clevis" where the vibratable link is connected with the draft-rod, by which a motion is given to the finger-bar, and thus the finger-bar is relieved from the obstacle. Zug does not claim that the finger-bar in his machine has a rocking motion, but only that the mode by which the draft-rod is fastened and the motion given to the finger-bar prevents the obstacle which the machine may meet from doing damage to it. These seem to be the main differences between the two machines, and the question is, whether there is anything in the Zug machine to prevent the combination named in the first two claims of the plaintiff's patent from being valid.

The defendants' machine has the swivel-joint attached to the frame, the vibratable link in the same form as the plaintiff's, and the draft-rod attached forward in substantially the same way as the plaintiff's; but instead of having a swivel-joint at M', as stated in plaintiff's machine, forward of the shoe, the draft-rod has a swivel-joint at the rear end of the shoe, and there is an arm attached to a part of the vibratable link substantially like that of the plaintiff's; and the substantial difference, as it seems, between the plaintiff's device as described in the first and second claims and that of defendants' is that the draft-rod is attached to the rear part of the shoe, and not to the forward part, as in the plaintiff's patent. There are also other devices in the defendants' machine which may make it different from the plaintiff's; but as to the swivel-joint, the vibratable link, and the mode in which the motion is produced in the finger-bar there does not seem to be much difference in substance, and in both machines and by substantially the same means there is produced a rocking motion.

In this connection it is noticeable that the defendants, in the claims set forth in their specifications, make a rocking motion of the shoe and cutter a feature of their combination. In their second claim they say that they claim the combination of the—

> Shoe and the drag-bar extending over and in rear of the shoe, and its swivel-pin connecting it with the rear end of the shoe, whereby the drag-bar sustains the thrust of the shoe while leaving it free to rock on its hinges.

Again, in their fifth claim, they say that they claim the combination—

> Of the shoe, the forked coupling-arm, the drag-bar extending over and in rear of the shoe, the swivel-pin connecting the two, the rocking-lever and detent mounted on the drag-bar, and the adjustable link-connection between the lever and the coupling-arm, whereby the shoe readily may be rocked or adjusted.

And again, the motion which seems to be produced in the operation of plaintiff's machine is more distinctly described in the seventh claim made by the defendants in their patent, as follows: The combination "of the shoe, the drag-bar, the forked coupling-arm," and the other elements of mechanism before mentioned, "whereby the shoe is first rocked and then lifted by one continuous movement of the lever."

It must be confessed that the difference between the Zug machine and the first two claims of plaintiff's patent is not very marked; but in view of the description contained in the specifications of Zug's patent and in those of the plaintiff's patent, we are inclined to think that the plaintiff's patent may be sustained on the ground that there is a difference in the manner in which the draft-rod is attached to the shoe and the finger-bar to the shoe and to the vibratable link, and that there is also a difference in the manner in which the combination of the various parts are adjusted, and that there is an effect produced in the plaintiff's machine which does not exist in the Zug machine. In the plaintiff's machine there is a rocking motion, and not a mere vibratory motion, such as exists in the Zug machine in consequence of the open clevis. Neither is there in the plaintiff's machine the yielding of the draft-rod as described in the Zug patent; and it is obvious, too, that from the manner in which the parts are constructed in the Zug machine there is only a small vibratory action of the finger-bar, so that, on the whole, we think that the combination as described in the plaintiff's patent may be sustained.

Then, from what we have said, we do not see that there can be any substantial difference between the combination, as described in the plaintiff's machine, of the swivel-joints, draft-rod, and vibratable link with the frame and shoe and finger-bar, and that of the defendants' machine. The differences which have been stated between the two machines in this respect do not constitute any difference in principle. The one is substantially the same thing as the other. The additions which have been made to the defendants' machine, such as the device by which the pressure of the cutting apparatus upon the ground is regulated, and other devices which have been made, do not affect the combination

as claimed in the plaintiff's machine. The attachment of the draft-rod to the rear part of the shoe, instead of to the front part, which is substantially the only difference that there seems to be in the mode of construction, cannot constitute a difference in principle, and cannot prevent the defendants' machine from being an infringement of the plaintiff's patent.

It may be said that there are differences also between the defendants' machine and that of the plaintiff in the manner in which the arm is attached to the vibratable link, and also as to the mode in which the force applied to the arm may operate upon the finger-bar; but these are differences of form and not of substance.

U. S. Circuit Court—Eastern District of Wisconsin.

GRAHAM v. THE GENEVA LAKE CRAWFORD MANUFACTURING COMPANY.

Decided October 11, 1880.

1. GRAHAM v. MCCORMICK FOLLOWED.
   The rulings in *Graham* v. *McCormick* upon the validity of the patent and title of plaintiff approved and adopted.
2. INFRINGEMENTS—EQUIVALENTS.
   The various parts of the defendant's machine exhibit mechanical parts equivalent to those in complainant's machine and produce the same result, and therefore infringe, notwithstanding the two machines in various particulars are unlike in form.

Messrs. Banning & Banning for the complainant.

Messrs. Flanders & Bottum for the defendant.

DYER, *J.:*

This is a bill in equity to restrain the alleged infringement of a patent issued to Alvaro B. Graham, February 11, 1868, for an improvement in harvesters. The complainant is assignee of the patentee, and there are involved in the present controversy the first and second claims of the patent. These claims are as follows:

1. The combination, as set forth, in a harvester, of the finger-beam with the gearing-carriage by means of the vibratable link, the draft-rod, and the two swivel-joints M and M', so that the finger-beam may both rise and fall at either end and rock forward and backward.
2. The combination, as set forth, in a harvester, of the finger-beam, gearing-carriage, vibratable link, draft-rod, swivel joints and arm, by which the rocking of the finger-beam is controlled.

Several defenses are interposed, but before passing to their consideration it may be well to state that the validity of the patent was involved in the case of *Graham* v. *Gammon*, (7 Biss., 490,) and has also since been passed upon in the northern district of Illinois in the case of *Graham* v. *McCormick et al.*, (unreported,) which was heard by the circuit judge and the district judge by whom the present case is decided, sitting together; and most of the questions here involved have been passed upon, after most elaborate argument in the McCormick case.

Further, as preliminary to the consideration of the grounds of defense urged by the defendant, it is important to state, as part of the history of this patent, that the application for the patent was first made February 25, 1864, by placing it in the hands of solicitors in New York, to be by them presented to the Patent Office. The application was not, however, in fact filed until December 2, 1865. In its original form it contained five claims, the first of which related to the invention now in suit and the last four to other improvements. The first three claims were rejected by the Patent Office December 30, 1865, and an offer was then made to allow the other two claims. This offer was not accepted, and an amended claim was filed March 24, 1866, in place of the first rejected claim. This claim, which had reference to the invention now in controversy, was rejected April 4, 1866. While the first application was still pending, and on the 11th of February, 1867, a second application was filed, containing, among other things, the two claims now in suit. In June, 1867, the claims which embrace the present invention were withdrawn from the first application and a patent was issued on that application July 23, 1867; but that patent did not include the invention now in question. A patent for that invention was issued on the second application February 11, 1868. The original specifications and drawings, which accompanied the first application, contained a description of the invention now under consideration.

It is insisted, first, that complainant's patent is invalid because previous to its issuance the patentee had procured a patent to himself and others as his assignees in the specifications of which the invention now in question was delineated and described, and that therefore the prior patent (meaning the patent of 1867) can be reissued so as to cover all that was invented by the applicant for the patent in suit, and also that the inventor, A. B. Graham, prior to his application for the patent of 1868, applied for the patent of 1867, in which application he set forth, but did not claim, the invention now in controversy, and that by his failure at that time to make such claim he impliedly admitted his device to be old, and was thereby estopped from afterward claiming the same to be new in any subsequent application. In the McCormick case the court had occasion to consider this objection, and it was held untenable. It was there decided that it was not a proper case for reissue, that there was no defective or insufficient specification, and that the inventor had not claimed more than he had a right to claim as new. In the opinion delivered by Judge Drummond it is said:

> On general principles, we think that where a person has within the meaning of the patent law made an invention which he has described in specifications, including other matters of invention, for which last a patent has been issued, that he should not be precluded for that reason alone from applying for and obtaining a patent for that which was not claimed in the first patent. The object of the patent law was to protect a party who made an invention which was useful, provided he complied with the terms of the law and a patent issued for the invention; and unless there is something in the law which declares a patent issued under such circumstances to be invalid it is the duty of the courts to sustain a patent for an invention thus made. It is to be borne in mind that the application for the second patent, that of 1868, the one in controversy here, was made while that for the previous patent was pending and before the prior patent had been issued. There were thus pending before the Patent Office two applications at the same time where the claims were different, and we understand it to be in accordance with the practice of the Patent Office to allow applications to be made at the same time by the same party for different parts of the same machine.

In this connection, and as bearing upon this question, I refer to *McMillan et al.* v. *Rees et al.*, (17 O. G., No. 21, 1222.)

The further ground of defense is urged that the patent in suit is invalid because the alleged invention was with the inventor's consent and allowance in public use and on sale for more than two years prior to his application for a patent therefor. This defense was also interposed in *Graham* v. *McCormick*, *supra*, and we had occasion there to consider it. It was there held that for the purpose of fixing the time when the two years began to run the application for the patent in suit should be treated as a continuation of the first application, filed December 2, 1865, and that "the continuity of the proceeding which originated in the first application was not broken up to the time when the patent for the invention in suit was granted in 1868." From this conclusion it would follow that the two years within which the invention could be sold and publicly used without invalidating the patent began to run December 2, 1863, which was two years prior to the filing of the first application.

Some testimony bearing upon the defense under consideration has been taken in the case at bar, and in addition thereto by stipulation the testimony upon the same subject taken in the case of *Graham* v. *McCormick* has been submitted.

The only machine made in 1863 by Graham, the inventor, which is clearly proved to have been sold was delivered on trial, and the transactions of the inventor in that year, by which his then unperfected invention was brought into notice, as was stated by the court in *Graham* v. *McCormick*—

> Should be regarded rather in the light of a use of the invention for such practical tests as the law permits an inventor to make than as such a public sale or use as is contemplated by the statute. At that stage of the inventor's work his invention was largely in experiment and trial. It could only be tested by practical use in the field, and it was essential that it should be so tested by farmers on their farms. The inventor was then struggling, as inventors often do, to establish the success of his invention. It was necessary that thorough experimental tests should be made and that he should have the assistance of others in making them; and it is manifest, we think, that the machines of 1863 were not yet so perfected as to be practical machines, capable of successful work.

I am aware of the opinion of Judge Lowell in *Henry* v. *The Francestown Soap Stone Stove Company*, (17 O. G., No. 10, 569,) and of his disagreement with Judge Shepley, who delivered an opinion in the same case, reported in 9 OFFICIAL GAZETTE, 409; but upon consideration of all the testimony I conclude that what was done by the patentee, Graham—

> With reference to the use of the machines in 1863 was intended by him and was in fact for the purpose of experiment and as a test of the machines with a view to their perfection. This part of the defense rests upon a claim of forfeiture of rights secured by the patent. To justify the court in sustaining it the proof should be clear and satisfactory; the right of the infringer to invalidate the patent for this cause should be undoubted.

I must hold this defense insufficient to invalidate the patent.

Attack has been made upon complainant's title to the patent in question, and therefore upon his right to maintain this action.

In November, 1865, the inventor, A. B. Graham, made a contract with W. B. & C. A. Werden, granting to them the exclusive right to manufacture and sell the improvement in the machine in question, and providing that such right should continue until the patent about to be applied for should expire. By this contract Graham also agreed that before a patent should be obtained he would make such an assignment to the Werdens as would secure an issuance of the patent to all three of the parties jointly, each to have an undivided one-third interest therein. This, of course, was merely an agreement to assign, but at the same time—viz., November 25, 1865—an assignment was executed by Graham to the Werdens, by which the full and exclusive right to the invention described in specifications then prepared and executed preparatory to obtaining letters patent was granted to the Werdens, the same to be held and enjoyed by them "to the full end of the term for which the said letters patent may be granted, as fully and entirely as the same could have been held and enjoyed by him (Graham) if this assignment and sale had not been made." This, it is to be observed, occurred before either the first or second patent was obtained. It is nevertheless contended that the language of this assignment is so broad as to vest in the Werdens an interest in the invention covered by the patent of 1868, and therefore that the present action cannot be maintained by complainant. It is also to be observed that the patent of 1868 was issued to Graham alone, and that there was thereafter no further assignment of any interest in that patent made to the Werdens. There is evidence tending to show that the contract before referred to, made between Graham and the Werdens, was virtually abandoned by the latter, and that a controversy arose between the parties, which has ever since existed, upon the question as to whether the Werdens have not forfeited their rights and interest in even the patent of 1867. It is evident that there is a serious controversy between the parties upon that question, and without here determining what are its precise merits and what are the rights of the Werdens, if any, in either the patent of 1867 or 1868, I am of opinion, as was the court upon the same question in *Graham* v. *McCormick*, *supra*, that "whatever equities there may be between the parties to the contract of November, 1865, can be adjusted in a controversy between themselves." And as the patent of 1868 was issued to Graham alone, and as no additional assignment of any interest was thereafter made to the Werdens, and since, in view of the controversy between these parties, grave doubts may well exist as to whether the Werdens can claim any interest in the invention covered by that patent, I am of opinion that such controversy and doubt ought not in this suit to be resolved in favor of the Werdens, especially as the present objection comes from a third party, the present defendant, who is claimed to be an infringer of the patent.

The defendant further insists that the idea or principle involved in the patent in suit, and which is developed in a combination which enables the finger-beam of the harvester to both rise and fall at either end and rock forward and backward, is old, and is shown in the following letters patent, to wit: The Dolph patent, issued in 1857; the Zug patent, issued in 1859; the Dodge patent, issued in 1865; the Bartlett and Dodge patent, issued in 1862; the De Witt patent, issued in 1862; the Ball patent, issued in 1859; the Aultman patents, issued in 1858 and 1859; the Bramer patent, issued in 1865; the Ray and Grant patent, issued in 1865, and the Russell patent, issued in 1861. Of these the Dolph, the Zug, the Ball, and the Bartlett and Dodge patents were considered by Judge Blodgett in *Graham* v. *Gammon*, *supra*, and were held by him as not embracing the Graham device or combination. The Ball and Zug machines were also severally considered by the court in the case of *Graham* v. *McCormick*, *supra*, and it was there held that there was nothing in either of those machines to prevent or invalidate the combination named in the first two claims of complainant's patent; and by the conclusions thus arrived at in those cases with reference to these several patents I feel bound.

The Aultman patents, the last of which was a reissue, do not anticipate the Graham invention, because they do not, I think, provide for any rocking motion. They only provide for a movement by which the finger-bar may be raised and lowered at either end or folded over for transportation; and I cannot, from the specifications and drawings, find that they contain the Graham swivel-joints or the arm for rocking the finger-bar. The same must be said of the De Witt device, which is one for raising and holding a flexible cutter-bar so as to pass over an obstruction, and at the same time allow it to fall below the level of the wheels, and to render it firm, so that it cannot be depressed at any point of its elevation. The rocking feature, which is the essential element of the Graham machine, is wanting.

The nature of the Dodge invention, as stated in his specifications—

> Consists in a novel manner of constructing the main frame of the machine and of the arrangement of the gearing in connection therewith. It further consists in a novel arrangement of the devices for lifting the cutting apparatus, and also in a self-adjusting pair of pulleys to be used in connection with the reel.

I do not perceive that this patent can be regarded as at all anticipating or limiting the Graham claims now in suit.

In the Russell machine the finger-bar may be raised and lowered; but the character of the mechanism in respect of arrangement of parts is such, so far as I can judge, as to deprive the finger-bar of a rocking motion. I cannot discover that the drawings show either the swivel-joints in Graham's machine or the arm for controlling the motions of the finger-bar. Nor do I think that the Graham machine is anticipated by either the Ray and Grant patent or the Bramer patent.

The remaining, and, as I consider, the most important question in this case is, does the defendant's machine infringe complainant's patent?

The Graham invention, as it is covered by the first claim, consists of a combination composed of six parts, namely: the gearing-carriage, finger-bar, vibratable link, draft-rod, and swivel-joints M and M', and the arrangement of the combination is such as to permit the rising and falling at either end and the rocking forward and backward of the finger-bar. The second claim embraces the same combination with one additional part, which is the arm or lever by which the rocking of the finger-bar is controlled. As was stated by the court in *Graham* v. *McCormick*, "the object of the invention as set forth in these two claims seems to be mainly to produce the rocking motion of the finger-beam, as described and by the method described."

The complainant's mechanism consists of the so-called "vibratable link," which extends from the shoe to which the cutter-bar is attached backward and in the rear of the frame to a bracket or short arm which is fastened to the frame of the machine, and this vibratable link is connected with the bracket by means of a swivel-joint, identified in complainant's patent as M. Then there is a draft-rod extending from the forward end of the shoe to the forward beam of the main frame and running forward outside the wheel of the gearing-carriage. It is connected with the forward end of the shoe and with the vibratable link by what the patentee calls a "swivel-

joint," M', but which appears to be rather a hook than a swivel-joint connection. Then there is a vertical arm extending upward from the vibratable link, which is connected by a rod extending forward with a lever, by working which backward and forward the driver may control the tilting and rocking movement of the finger-beam, this movement being dependent upon the free play of the joints at M and M'.

Now, the question is, does the defendant, in order to produce the rocking motion in its machine, employ a combination of parts which is the same as or the equivalent of complainant's?

Defendant claims under a patent issued November 12, 1872, to Burdick and Le Roy. In the specifications of this patent it is stated that—

> The invention consists in a novel manner of constructing, attaching, and bracing the inner or main shoe; in a novel arrangement of devices for rolling the bar edgewise, in order to change the height of cut as may be necessary, as hereinafter more fully explained.

The machine, as appears from the specifications and drawings, consists of a solid frame, the main axle on which the frame is mounted, and the wheels, "all of which parts are constructed and arranged in the ordinary manner." Then there is a shoe which is placed forward of one of the wheels of the gearing-carriage, which is supported and held at its forward end by means of what the patentee calls a "transverse brace," E, and at its rear end by an arm on the side of what is described as a "head-block," F, this shoe being provided with two pairs of lugs on its top, between which the arm at the rear end and the brace at the forward end are pivoted. The brace E extends crosswise under the frame and has its outer end swiveled and mounted loosely on a horizontal rod, G, which is secured lengthwise under the outer side of the frame. It is stated in the specifications that the object of swiveling the end of the brace and mounting it on the rod is to permit it to move forward and back when the shoe is rocked or tipped.

The head-block F consists of a flat upright plate provided on its outer side with the arm to which the shoe is pivoted. The head-block is held by two longitudinal bars or braces, L and K, extending backward under the gearing-carriage, and also by a rod, R, extending forward and connected to the tongue of the machine. The lower brace, K, has its forward end pivoted to the lower front corner of the head-block and its rear end pivoted to a rigid depending arm on the under side of the frame immediately below the axle. The upper brace, L, has its forward end pivoted to the top of the head-block and its rear end passed through a slot in the rigid depending arm, and is pivoted to an upright hand-lever, the lower end of which is pivoted to the end of brace K, the latter being extended back of the arm before mentioned. As is stated in the specifications—

> The two braces serve to hold the head-block securely in position, so that it cannot move either forward or backward or laterally, while at the same time they permit a free vertical movement, in order that the shoe may rise and fall in conformity with the surface of the ground. By moving the hand-lever the upper brace, L, is moved lengthwise and caused to tip the head-block backward or forward, as the case may be, so as to rock the shoe and finger-bar and change the height of the fingers from the ground.

An examination of defendant's model and machine shows that by grasping the lever which extends upward from the horizontal brace L the movement of the finger-beam may be controlled and the desired rocking motion produced, which motion is, so far as I have been able to discover, the same motion as that produced in complainant's machine; and in the defendant's machine this motion is dependent upon the free play of the rear or swivel end of brace E where it is connected with the main frame, and with the free movement of the connection of the shoe at its forward end with brace E, and at its rear end with the arm on the side of the so-called "head-block," the free play of these last-named connections being facilitated by the two pairs of lugs on top of the shoe. It should be stated further that the rod R, extending from the head-block forward to its connection with the tongue, is connected with the head-block by means of a hook and a sort of staple or clevis, which has a loose and free connection with the head-block.

The mechanism of the two machines in various particulars is quite unlike in form, and this dissimilarity is more apparent from the fact that defendant's machine is one where the cutting apparatus is forward of the axle and wheel; but, as before stated, Graham provides in his specifications for a device as applicable to a forward cut as to a rear cut machine.

Upon careful consideration of the question I am of the opinion that the differences between defendant's and complainant's machines are differences of form and not of substance, and that defendant's machine really shows the various parts described in complainant's patent. The rod R in defendant's machine connecting the tongue with the head-block is the draft-rod in complainant's machine. Its connections are by a hook and not by a swivel-joint. But in its attachment to the head-block and the brace L, in connection with the arm, by which the rear end of the shoe has its connection with the head-block, it performs the functions of Graham's draft-rod, and is not, so far as I can see, materially unlike the same rod as shown in Sprague's machine, which was held to be an infringement of complainant's in *Graham* v. *Gammon*, *supra*. The brace E in defendant's machine is the vibratable link in complainant's. It is true that the connection at the rear end with the main frame is not described in defendant's patent as a swivel-joint, but it is described as having that end swiveled and mounted loosely on a horizontal rod, the object of this swiveling and mounting being to permit it to move forward and back when the shoe is rocked or tipped. Its connection with the bracket that is fastened to the frame is loose, and is certainly of the nature of a swivel-joint, and its connection with the shoe is of a similar character, and it clearly performs the functions of the vibratable link in the Graham machine. The formation of the parts which connect the rear end of the shoe with the machine, in connection with which are the longitudinal braces L and K, is such certainly as to permit a swivel-joint movement, although there appears to be in this respect greater complication of mechanism than there is in the Graham machine. Upon the operation of the upright lever the movement of the cutter-bar in the two machines appears to be identical, and this movement is produced by substantially, if not precisely, the same co-operation of parts in the two machines.

On examination of the model of the Sprague machine, which it is understood was used on the hearing of *Graham* v. *Gammon*, there can be no doubt that that case was correctly decided; and if the Sprague machine, unlike the Graham machine as it is in various points of construction, is an infringement of the latter, it is exceedingly difficult to see why the defendant's machine is not also an infringement. The various parts of defendant's machine may be said, I think, to exhibit mechanical parts equivalent to those in complainant's machine and producing the same result, and I am of the opinion, therefore, that an infringement is established.

A point was made upon the argument which has not been yet noticed, namely: that the proofs disclosed an agreement of some nature between Alvaro B. Graham, the patentee, and complainant by which the former may be interested in the result of this suit. The patentee has testified that he has the general management of the patent and of litigation connected with it, and that he has an arrangement by which he is to share in a certain percentage of any amounts recovered, and it was insisted, therefore, that this suit could not further proceed unless A. B. Graham was made a party complainant; but A. B. Graham has since filed in the cause, as I think he may be permitted to do, a waiver or disclaimer of all interest in any decree which may be here rendered, and in any sum or sums of money which may be paid by defendant pursuant to such decree for the past or future use of the invention in question, and I think he is now, if he was not before, estopped from making any claim against the defendant under the patent in suit, and hence that it is not necessary that he should be made a party complainant.

The case will be sent to a master to assess complainant's damages, and an injunction will issue according to the usual practice to restrain further infringement.

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DESIGNS.

12,936.—HANDKERCHIEF.—*Henry Doherty* and *Joseph Wadsworth*, Paterson, N. J. Application filed April 11, 1882. Term of patent 3½ years.

12,937.—PARASOL.—*William A. Drown*, Abington, Pa. Application filed April 10, 1882. Term of patent 7 years.

12,938.—MONUMENT.—*Levi P. Graham*, Decatur, Ill. Application filed March 30, 1882. Term of patent 3½ years.

12,939 and 12,940.—ORNAMENTAL CHAIN-LINK.—*James L. Hosley*, Attleborough Falls, Mass. Applications filed April 22, 1880. Term of patents 7 years.

12,941.—FONT OF PRINTING-TYPE.—*Andrew Little*, New York, N. Y. Application filed March 21, 1882. Term of patent 7 years.

12,942.—BOX.—*Henry F. Moeller*, Davenport, Iowa. Application filed April 13, 1882. Term of patent 14 years.

12,943.—PICKLE-BOTTLE.—*George O. Sanborn*, Boston, Mass. Application filed April 15, 1882. Term of patent 7 years.

12,944.—MERCHANDISE-TAG.—*Sabin L. Sayles*, Killingly, Conn. Application filed April 12, 1882. Term of patent 3½ years.

12,945.—CARPET.—*Horatio Smith*, Kidderminster, England, assignor to *William Mansell Daintrey*, New York. Application filed March 14, 1882. Term of patent 3½ years. Registered in England November 27, 1881, No. 374,767.

12,946.—CARPET.—*Horatio Smith*, Kidderminster, England, assignor to *William Mansell Daintrey*, New York. Application filed March 14, 1882. Term of patent 3½ years. Registered in England February 22, 1881, No. 362,009.

12,947.—COACH-LAMP.—*Charles E. Thompson*, New Haven, Conn. Application filed April 8, 1882. Term of patent 3½ years.

12,948.—RING.—*Christopher J. Theuerner*, Newark, N. J., assignor to himself and *C. Fred. Church*, same place. Application filed April 11, 1882. Term of patent 7 years.

12,949.—TENONING-MACHINE.—*William H. Deane*, Cincinnati, Ohio, Application filed September 29, 1881. Term of patent 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

9,385.—WHEATEN FLOUR, GRAHAM FLOUR, BUCKWHEAT FLOUR, OATMEAL, AND VARIOUS MIXTURES OF FLOUR AND MEAL.—*Magdalen Cuirna*, Havana, N. Y. Application filed April 13, 1882.
"The word-symbol 'DALENAS.'"

9,386.—WINES.—*Chandon & Co.*, Epernay, France. Application filed April 19, 1882.
"A band of white paper forming the segment of a circle with double lines."

9,387.—WINES.—*Chandon & Co.*, Epernay, France. Application filed April 27, 1882.
"The words and sign 'MOËT & CHANDON.'"

9,388.—BAKING-POWDER.—*E. C. Orawford* and *J. W. Orawford*, Houston, Tex. Application filed September 7, 1881.
"A symbol composed of a five-pointed star imposed upon a circular disk."

9,389.—COVER-PAPER.—*Crocker Manufacturing Company*, Holyoke, Mass. Application filed April 14, 1882.
"The symbolic figure and the word 'KNICKERBOCKER.'"

9,390.—MEDICINES.—*James C. Davidson* and *Calvin C. Davidson*, Denver, Colo. Application filed April 13, 1882.
"The representation of the globe and the monogram 'W C C' and the letters 'Co.'"

9,391.—CANNED FRUITS, VEGETABLES, AND FISH.—*The Franco-Californian Packing Company*, San Francisco, Cal. Application filed April 18, 1882.
"The monogram 'W. D.' in a circular border, having at each side the representation of a griffin or dragon."

9,392.—BOOTS.—*Gramsfelder, Rosenthal & Co.*, Chicago, Ill. Application filed April 3, 1882.
"The word 'WHITNEY.'"

9,393.—MEDICAL COMPOUND FOR THE CURE OF INGROWING NAILS.—*Joseph A. Hincks*, New Orleans, La. Application filed April 18, 1882.
"The arbitrarily-selected word 'ONYXIS' and the monogram composed of letters 'J A H.'"

9,394.—MEDICINAL PREPARATION.—*Dr. D. Jayne & Son*, Philadelphia, Pa. Application filed December 8, 1881.
"The pictorial view of the original south front of our place of business."

9,395.—MEDICINAL PREPARATION.—*Dr. D. Jayne & Son*, Philadelphia, Pa. Application filed December 8, 1881.
"The pictorial illustration of the woodland scene."

9,396.—MEDICINAL PREPARATION.—*Dr. D. Jayne & Son*, Philadelphia, Pa. Application filed December 8, 1881.
"The portrait of Dr. David Jayne, and the front and rear views of our place of business as it existed at the time of the adoption of our trade-mark."

9,397.—MEDICINAL PREPARATION.—*Dr. D. Jayne & Son*, Philadelphia, Pa. Application filed December 8, 1881.
"The pictorial matter representing the group of women and children."

9,398.—MEDICINAL PREPARATION.—*Dr. D. Jayne & Son*, Philadelphia, Pa. Application filed December 8, 1881.
"The medallion portrait of Dr. David Jayne."

9,399.—MEDICINAL PREPARATION.—*Dr. D. Jayne & Son*, Philadelphia, Pa. Application filed December 8, 1881.
"Pictorial matter comprising certain figure views, together with front and rear views of our place of business."

9,400.—MEDICINAL PREPARATION.—*Dr. D. Jayne & Son*, Philadelphia, Pa. Application filed December 8, 1881.
"The picture of our warehouse."

9,401.—MEDICINAL PREPARATION.—*Dr. D. Jayne & Son*, Philadelphia, Pa. Application filed December 10, 1881.
"The front view of our place of business and a medallion portrait of Dr. David Jayne, the whole being combined with and inclosed by an elaborately-ornamented and arched frame-work."

9,402.—MEASURING-TAPES.—*Kenfel & Esser*, New York, N. Y. Application filed April 10, 1882.
"The arbitrarily-selected word 'EXCELSIOR.'"

9,403.—CIGARS.—*Jayme Magi*, New Orleans, La. Application filed February 3, 1882.
"The words 'FLOR DE JAYME MAGI.'"

9,404.—SOAP.—*G. B. Marsh & Co.*, Lynn, Mass. Application filed April 5, 1882.
"The words 'PRIDE OF AMERICA.'"

9,405.—CERTAIN TOILET ARTICLES.—*Möllhens & Kropff*, New York, N. Y. Application filed April 27, 1882.
"The number '4711.'"

9,406.—OINTMENT.—*M. E. Peck*, Stamford, Conn. Application filed March 1, 1882.
"The fac-simile of registrant's signature."

9,407.—TOILET AND OTHER SOAPS.—*A. & F. Pears*, Bloomsbury and Isleworth, county of Middlesex, England. Application filed August 23, 1881.
"The representation of the statuette and the words 'YOU DIRTY BOY' on the pedestal, together with our firm-signature."

9,408.—SINGLE-VANILLA CHOCOLATE.—*Henry L. Pierce*, Boston, Mass. Application filed April 19, 1882.
"An elliptical figure inclosing the words 'W. BAKER & Co.'s' over a band connecting the arabesque circular figures."

9,409.—INFANT-SIRUP FOR SOOTHING AND QUIETING CHILDREN.—*Charles H. Ruth*, Reading, Pa. Application filed March 16, 1882.
"The cut or figure of an infant reclining in a shell floating on the sea and a ship at full sail."

9,410.—PICKLES.—*Sanborn Pickle Co.*, Boston, Mass. Application filed April 1, 1882.
"The word 'UNION.'"

9,411.—CIGARS.—*William Taylor*, Jersey City, N. J. Application filed March 15, 1882.
"The words 'BILLT (which may be spelled Billee) TAYLOR.'"

9,412.—ARTISTIC STATIONERY.—*Willy Wallach*, New York, N. Y. Application filed April 25, 1882.
"The leafy branches, the obelisk, its base bearing the letters 'W. W.,' and the eagle."

9,413.—MEDICINE.—*Jean F. Webb*, Lebanon, Ill. Application filed April 25, 1882.
"The representation of a lemon."

9,414.—RANGES AND STOVES.—*Wrought Iron Range Company*, St. Louis, Mo. Application filed April 21, 1882.
"The words 'HOME COMFORT.'"

9,415.—SHOE-LEATHER.—*Richard Young*, Brooklyn, N. Y. Application filed April 27, 1882.
"The word 'CAMELOPARD' or picture of a camelopard."

9,416.—PAINTS.—*Harrison Bros. & Co.*, Philadelphia, Pa. Application filed April 28, 1882.
"The words 'TOWN AND COUNTRY.'"

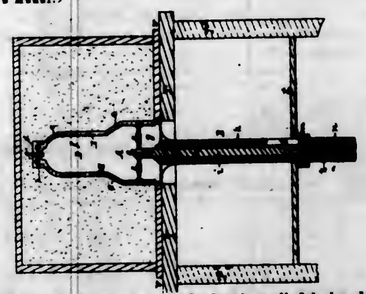
LABELS.

2,664.—Title: "ALEXANDER'S NUTRITIOUS ELIXIR WHEAT, SARSAPARILLA AND RYE CORDIAL."—*Daniel G. Alexander*, Woburn, Mass. Application filed April 14, 1882.

PATENTS

GRANTED MAY 23, 1882.

258,206. APPARATUS FOR FORMING MOLDS FOR CASTING. S. JARVIS ADAMS, Pittsburg, Pa. Filed July 2, 1881. (No model.)



Claim.—1. A rotary pattern for forming cylindrical molds in sand, provided with a cutter to cut a cavity of approximately the shape required, and finishing apparatus adapted to be advanced beyond the cutter and finish the mold, substantially as set forth.

2. In rotary patterns for forming molds, the combination of a cutter adapted to cut a cavity of approximately the shape required, and finishing apparatus pivoted to said cutter and adapted to be advanced beyond the edges of the cutter and finish the mold, substantially as set forth.

3. In rotary patterns for forming molds, the combination of the cutter D, finisher E, formed of the arms *e*, pivoted at the point of the cutter, and toggle A, substantially as and for the purposes set forth.

4. In rotary patterns for forming molds, the combination of the pattern A, formed of the cutter D and finisher E, the spindle B, carrying the pattern, and the sliding rod *i*, working longitudinally of the spindle for the operation of the pattern, substantially as and for the purposes set forth.

5. In rotary patterns for forming molds, the combination of the pattern A, formed of the cutter D and finisher E, the spindle B, carrying the pattern, the sliding rod *i*, working longitudinally of the spindle and provided with the ring *m*, and the horizontal plate *i*, substantially as and for the purposes set forth.

6. In rotary patterns for forming molds, the cutter D, secured to the spindle B, in combination with the finisher E, pivoted to the cutter, toggle A, and sliding rod *i*, adapted to advance and retract the finisher, substantially as and for the purposes set forth.

7. In rotary patterns for forming molds, the cutter D, in combination with the finisher E, provided with apparatus for the adjustment of the finisher to form different sizes of molds, substantially as set forth.

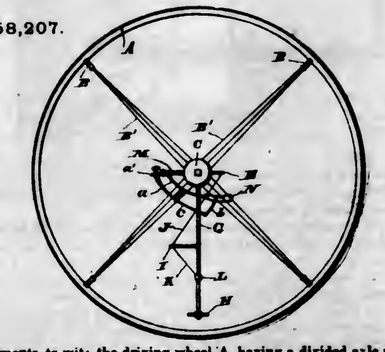
8. In rotary patterns for forming molds, the cutter D and pivoted finisher E, in combination with the block *o*, sliding blocks *r*, and the right and left hand screw-rod *p*, substantially as and for the purposes set forth.

9. In rotary patterns for forming molds, the combination of the cutter D, arms *e e* of the finisher pivoted to the cutter, and the toggle A, having adjusting-couplings *s*, substantially as and for the purposes set forth.

258,207. VELOCIPEDE. JOSEPH AHLERT, San Francisco, Cal. Filed Feb. 16, 1882. (No model.)

Claim.—1. In a monocycle, the combination of the following

258,207.



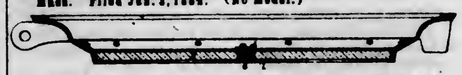
elements, to wit: the driving-wheel A, having a divided axle provided with internal crank-arms operated by stirrups or pedals sliding upon suitable guides and connecting-rods and vibrating lever-arms, and the seat or saddle supported by said divided axle, constructed, arranged, and operating substantially as described, for the purpose specified.

2. In a velocipede, the axle D of the main driving-wheel, provided with a left-hand screw-thread, in combination with the auxiliary steering or propelling roller-handle *f* and sustaining or balancing handle *g*, loosely journaled upon said handle *f*, when constructed and arranged to operate substantially in the manner and for the purpose specified.

3. In a velocipede, the hinged saddle N, pivoted to the rod *a*, rigidly attached to the rest or hand-rod M, and provided with a forwardly-projecting perforated lip, *a'*, rods *b* and *c*, catch-spring *d*, and spring-loop *e*, constructed, arranged, and operating substantially as described.

4. In a monocycle, the combination of the rim A, rim-bows B, stay-rods B', hubs or disks C C, divided axle D, having crank-arms E E', oscillating lever-arms I I, pedals or stirrups L L, and the connecting-rods J J K K, downwardly-projected rods or guides G G, foot-board H, and hand-rod M, carrying the saddle N, constructed, arranged, and operating substantially as described, for the purpose specified.

258,208. STOVE OR OVEN DOOR. DANA K. ALDEN, Sterling, Mass. Filed Jan. 3, 1882. (No model.)

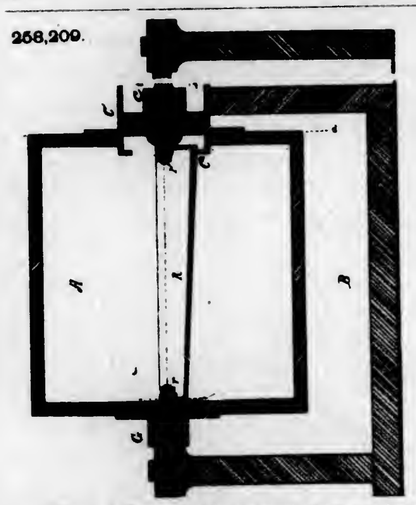


Claim.—1. The combination, with a stove or oven door, of a plate or panel of glass fixed therein and provided with a hole extending through it, (the said plate,) as and for the purpose as set forth.

2. The combination of an oven or stove door with a plate or panel of glass, perforated as described, and fixed therein, and with a covering-plate and screw-bolt and nut, arranged, substantially as set forth, with the perforation or hole of the said glass panel or plate, all being essentially and for the purpose as specified.

258,209. WASHER FOR PAPER-PULP AND OTHER FIBROUS MATERIAL. CHRISTIAN ANDERSON and THOMAS PATTEN, Neenah, Wis. Filed Jan. 25, 1882. (No model.)

258,209.

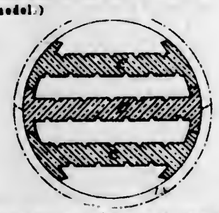


Claim.—1. In a washer for paper-pulp, the suspension of the receiver R by lugs *r* and *r'* from the gudgeons C and G, so that it will remain at rest independent of the revolutions of the washer A, substantially as described.

2. In a receiver suspended as above described, the detachable lugs *r* and *r'*, substantially as described, and for the purpose as set forth.

3. In a washer for paper-pulp, the discharging cylindrical opening through the gudgeon C, having near its inner end the internal flange, C', of sufficient width to cause an increased impetus to the water and prevent its tendency to return to the washer, substantially as described.

258,210. SUPPORT FOR UNDERGROUND TELEGRAPH-LINES. THOMAS S. ATTERBURY, Pittsburg, Pa. Filed Nov. 19, 1881. (No model.)



Claim.—As a new article of manufacture, a sectional wire-holder for insulating underground telegraph-wires, made of glass or other vitreous material, provided with grooves on each side and in reverse order, and with laterally-projecting wings at each end, as set forth.

258,211. SAFETY-ELEVATOR FOR HATCHWAYS. JOHN B. ATWATER, Chicago, Ill., assignor to Peter J. Singer, same place. Filed Jan. 25, 1882. (No model.)

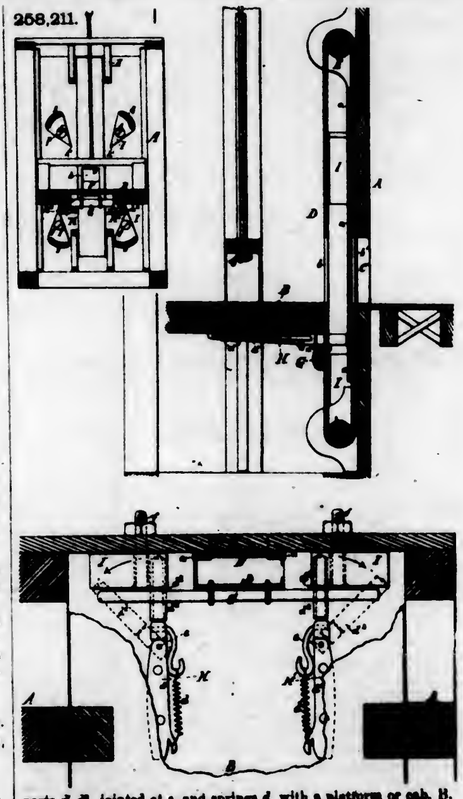
Brief.—An endless belt is located at each landing with openings registering with the doorway. Spring-actuated hinged bars on the elevator engage a slat on the belt to operate it, and are released therefrom by inclined spring-actuated pivoted stops on the hatchway above and below the doorway.

Claim.—1. An elevator provided with one or more belts, as D, separate from the cab and having doorways through them, and with mechanical appliances whereby the belts are successively operated and caused to open and close the doorways from a hatchway to landings and from landings to a hatchway in either the ascent or descent of the cab or platform B of the elevator, substantially as described.

2. The combination of the belt D, having doorways through it and provided with an interlocking slat, G, a hatchway, A, provided with unlocking-stops I, and a cab or platform provided with interlocking bars H, having joints *e*, substantially as and for the purpose described.

3. The combination of the interlocking bars H, composed of

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parts *d'* *d²*, jointed at *e*, and springs *d*, with a platform or cab, B, substantially as described.

4. The combination of the unlocking inclined stops I, pivoted to the boarding or framing of the hatchway A, and springs *g*, substantially as and for the purpose described.

258,212. COMBINATION TOY HOUSE OR STRUCTURE. W. W. BARNES, New York, N. Y., assignor to McLoughlin Brothers, same place. Filed Apr. 6, 1882. (No model.)



Claim.—1. The combination of box A, having grooves *a a*, with a smaller box, B, of a length approximately equal to the width of the larger box, having grooves *b b*, and with panels C, capable of sliding lengthwise into the grooves *b b* and of sliding sidewise into the grooves *a a*, substantially as set forth.

2. The combination of two boxes, B B, with a larger box, A, having an internal length approximately equal to the sum of the external lengths of the boxes B B, and an external width approximately equal to the external length of each box B, and with panels C C, of a length approximately equal to the width of the box A, and a width approximately equal to the width of the boxes B B, substantially as set forth.

3. The combination of two boxes, B B, having grooves *b b*, and each having a side groove, *b*, with panels C C and box A, substantially as set forth.

4. The combination of box A, cleats *d d*, fixed therein, brack-

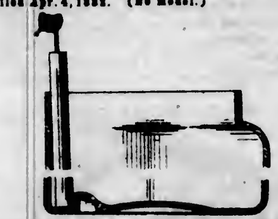
ets F F, having grooves *g g*, strip J, and roof-board K, substantially as set forth.

5. The combination of box A, brackets F F, having slots *h h*, and grooves *f f*, boards G and G', and pins H, substantially as set forth.

6. The combination of box A, having holes *e e*, roof-supports L L, having pins *l l*, and roof-board K, substantially as set forth.

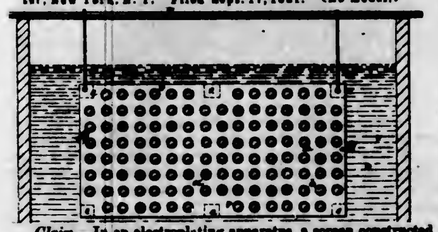
7. The combination of box A, having grooves *a a*, panels C C, adapted to slide sidewise into said grooves, and pilasters E E, having grooves in their side edges, substantially as set forth.

258,213. BATTERY-CELL. HORATIO J. BERWER, New York, N. Y. Filed Apr. 4, 1882. (No model.)



Claim.—A battery-cell having a bottom provided with a rib or elevation adapted to hold the bottom of the zinc away from the other pole, substantially as described.

258,214. APPARATUS FOR ELECTROPLATING. ALEXANDER BRUCKMANN, Astoria, assignor to himself and George H. Worcester, New York, N. Y. Filed Sept. 17, 1881. (No model.)



Claim.—In an electroplating apparatus, a screen constructed of two or more metallic plates, both having aligned perforations which are smaller in one plate than in the other, said plates being adapted to expose both ends of the articles to be plated to the solution, and being united by metallic posts or parts for metallic connection with the conductor of a battery, substantially as specified.

258,215. ADJUSTABLE HORSE-BLANKET FASTENER. E. E. BROWN, Portland, Me. Filed Mar. 24, 1881. (No model.)



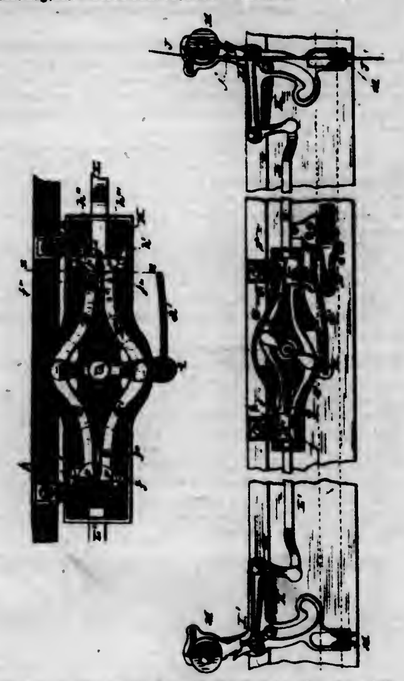
Claim.—1. An improved fastener for horse-blankets, consisting of two or more transverse straps provided with end attaching devices and a longitudinal strap connected to said straps, the whole adapted to be applied underneath the belly of the animal and to be attached to each side of the blanket, substantially as set forth.

2. The combination, with a horse-blanket provided with suitable side receiving attachments, of the transverse straps connected by a longitudinal strap, the transverse straps provided with suitable end attaching devices, adapted to co-operate with the receiving attachments of the blanket, substantially as set forth.

3. The improved fastener for horse-blankets, consisting of the adjustable transverse straps, the adjustable longitudinal strap provided with end loops through which the transverse straps may slide, and the end attaching devices adapted to co-operate with suitable receiving devices upon the sides of the blanket, all substantially as set forth.

4. The combination, in a fastener for horse-blankets, of the rings *f*, transverse adjustable straps *d d*, with hooks *h h*, and adjustable strap *b*, all adapted to operate substantially as set forth.

258,216. CORN-PLANTER CHECK-ROWER. GEO. W. BROWN, Galesburg, Ill. Filed Jan. 21, 1882. (Model.)



Claim.—1. In combination with the push-bar L and head D, having arms F F' hinged thereto, a swinging plate located beneath the arms F F' and provided with cam-lugs adapted to lift said arms F F' alternately, and thereby permit the push-bar to slide beneath the lifted arm, substantially as and for the purpose specified.

2. In combination with the head D, having arms F F' hinged thereto, with cam-lugs *f'* on the ends of said arms, the plate H, having lugs adapted to coact with said lugs *f'*, whereby a swinging movement is transmitted to the plate H from a reciprocating movement of the arms F F', substantially as and for the purpose specified.

3. The swinging plate H, having cam-lugs h h, constructed substantially as described, in combination with the head D, having arms F F' hinged thereto, and provided with cam-lugs *f'*, substantially as and for the purpose specified.

4. In combination with the head D, with arms F F' hinged thereto, and swinging plate H, guides formed of the sides of the case C and the standard *g*, which cause the free ends of the arms F F' to move in straight and coincident paths, substantially as and for the purpose specified.

5. In combination with the push-bar L and head D, having arms F F' hinged thereto, which arms have lugs *f'*, constructed substantially as described, the swinging plate H, having lugs h h', adapted to coact with the arms F F' and lugs *f'*, substantially as and for the purpose specified.

6. In combination with the swinging head D and arms F F', hinged thereto, the forked lever and push-bar L, adapted to impart movement to the arms F F' and head D, substantially as and for the purpose specified.

7. In a corn-planter check-rower, in combination with an oscillating bar, D, adapted to impart movement to the seed-slides, and having arms F F' hinged thereto, a push-bar, L, adapted to be actuated by a tappet-wire through the instrumentality of a forked lever, substantially as and for the purpose specified.

8. In a corn-planter check-rower, the combination of a head, D, connected with the planter seed-slides by suitable mechanism, and having arms F F' hinged thereto, swinging plate H, push-bar L, and bent lever I, adapted to be moved in one direction by the tappet-wire and in the opposite direction by a spring, substantially as and for the purpose specified.

9. In combination with the push-bars L L', forked levers I I', and tappet-wire for actuating them, devices for receiving motion

from the push-bars and imparting movement to the planter seed-slides, and adapted to receive motion from one push-bar without imparting movement to the other, substantially as and for the purpose specified.

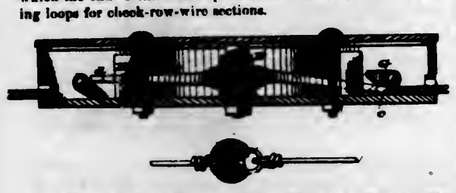
10. The head D, with the arms F F', hinged to and projecting from one of its sides and arms G G' hinged to and projecting from its other side, in combination with push-bars, one of which is adapted to remain stationary while the other acts upon two of the hinged arms alternately, substantially as and for the purpose specified.

11. In combination with the head D, having a pair of arms projecting from each of its opposite sides, push-bars L L', and forked levers, springs adapted to retract the push-bars L L', whereby one push-bar may act on the devices for transmitting motion to the planter seed-slides while the other push-bar remains stationary, substantially as and for the purpose specified.

12. In combination with the push-bars, forked levers, and retracting-springs, the bar D, with a pair of arms projecting from each of its opposite sides, and lever E, connected to the bar D, whereby the planter seed-slides may be operated by the lever E without moving the push-bars or forked levers, substantially as and for the purpose specified.

258,217. CORN-PLANTER CHECK-ROWER. GEO. W. BROWN, Galesburg, Ill. Filed Jan. 21, 1882. (Model.)

Brief.—To either end of the centrally-pivoted head are attached duplicate arms, which are reciprocated by a push-bar, which strikes against the ends alternately. Hinged cam-tracks at either side and both ends of the case are for lugs on the arms to ride upon to avoid conflict with the push-bars in their return to be again acted upon. The tappets or knots are castings of spherical form, with a cavity and hole extending through the tappet, into and through which the end of the wire is passed and twisted upon itself, forming loops for check-row-wire sections.



Claim.—1. In a check-rower, in combination with the head B and sliding arms C C', the hinged cam-tracks G G', adapted to swing upwardly to allow the arms C C' to pass back below them, and to fall to form inclines up which the same arms slide to elevate them, substantially as and for the purpose specified.

2. In combination with the head B, with arms C C' hinged thereto, and push-bar F, adapted to act alternately on said arms C C', the hinged cam-track bars G G', adapted to swing upwardly to allow the arms C C' to pass beneath them, and to fall to form inclines for elevating said arms, substantially as and for the purpose specified.

3. In combination with the head B, having arms C C' hinged thereto, with lugs e on their free ends, the cam-tracks G G', adapted to swing to permit said lugs e to pass beneath them, and to form inclines up which said lugs e slide to raise the arms C C', substantially as and for the purpose specified.

4. A tappet-wire formed of tappets with a cavity in one side, which forms a seat for an eye on one section of the wire, which eye is held in the tappet, substantially as herein described, and interlocked with an eye on the adjacent section of the wire, which eye is held by coiling the wire, substantially as and for the purpose specified.

258,218. CLOG. JOHN CASSIDY, Cambridge, Mass. Filed Feb. 20, 1882. (No model.)

Brief.—The clog is provided with a magazine in the breast of the heel for explosives and a discharging device attached to the sole, and it is specially designed for clog-dancers.



Claim.—1. A clog having a holding device in the breast of the heel for explosives, and a discharging device attached to the sole, and adapted to operate substantially as and for the purposes specified.

2. In a clog, the rod B, knob x', spring y', and the studs z z, in combination with the cylinder C, having teeth or inclines upon each side, y y, substantially as and for the purposes set forth.

3. A clog provided with explosives arranged in a circular position upon the heel, in combination with a discharging mechanism attached to the sole of the clog, all adapted to be operated substantially as and for the purposes set forth.

4. The combination of the clog A, having a sole, h, and heel s, with the pyrotechnic-discharging device B, with button x', spring y', studs z z, and the bent end x, the said rod adapted to revolve in a stationary cylinder, C, said cylinder having a row of projecting teeth or inclines upon either end, placed to relatively operate upon the studs z z to turn the rod B, all arranged, combined, and operating substantially as and for the purposes set forth.

5. The combination of a clog provided with a holding device for explosives, and a discharging device attached to the clog, all operating substantially as and for the purposes set forth.

258,219. CHILD'S CARRIAGE. OSCAR CLOSE, Worcester, Mass. Filed Mar. 20, 1882. (No model.)



Claim.—1. In a vehicle, the frame-bars A A, supported upon and connecting the axles and arched over the body, as set forth.

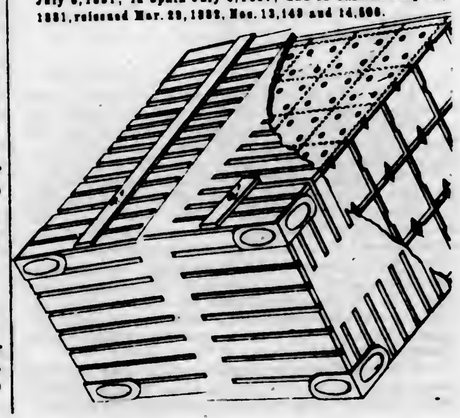
2. In a vehicle, the combination, with the frame-bars A A, supported upon and connecting the axles and arched over the body, of the handle B, which connects the free ends of said frame-bars, as set forth.

3. The combination, with the frame-bars A A, supported upon and connecting the axles, arched as shown, and having their free ends connected, of the body J, suspended under the said arched frame-bars by springs K, as set forth.

4. The combination of the arched frame-bars A A, supported upon and connecting the axles C E, the body J, the suspension-springs K, and the brace-springs N O, as set forth.

5. The combination of the arched frame-bars A A, the top or awning L, having hooks M, the body J, and the adjustable suspension-springs K, as set forth.

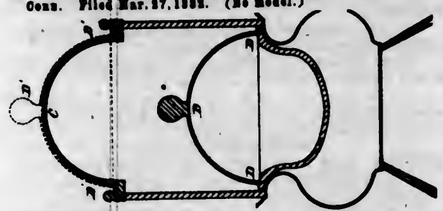
258,220. FRUIT OR VEGETABLE CRATE OR CARRIER. JOSEPH A. COCHRANE, Liverpool, County of Lancaster, England. Filed Dec. 16, 1881. (Model.) Patented in England June 24, 1881, No. 2,756, and Dec. 24, 1881, No. 5,647; in France July 6, 1881; in Spain July 6, 1881; and in Canada July 31, 1881, released Mar. 29, 1882, Nos. 13,149 and 14,566.



Claim.—1. A crate apertured on all sides, and provided with means for keeping every side of the crate apart from the floor and from other crates, in whatever position the crate is placed, whereby a vertical ventilation through each crate is secured, substantially as and for the purpose specified.

2. A crate apertured on all sides, and provided with means for keeping every side of the crate apart from the floor and from other crates, in whatever position the crate is placed, in combination with similarly-apertured trays and coils, whereby a vertical ventilation through such coils, trays, and crate is secured, substantially as and for the purpose specified.

258,221. COVERED DISH. AUGUSTUS CORNABY, Middletown, Conn. Filed Mar. 27, 1882. (No model.)



Claim.—1. In combination with a dish having a removable cover, a handle adapted to receive and support said cover upon its top and pass upward within it to retain it in place, substantially as described.

2. In a covered dish, the combination of the detachable cover D, the handle-bar C, adapted to project upward within it, and the supports E, attached to the handle, substantially as described.

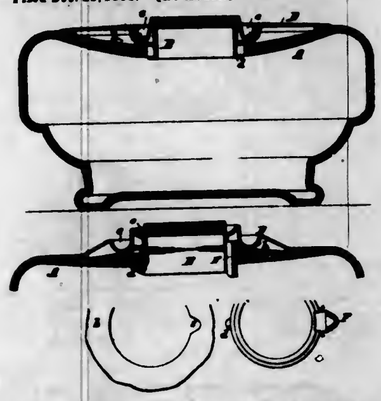
258,222. DRAIN-PIPE. BENJAMIN C. GROSS, Dewsbury, County of York, England. Filed Oct. 7, 1881. (No model.) Patented in England Feb. 26, 1881, No. 822.



Claim.—1. The socket D, having a flat bottom, in combination with the corresponding end of the pipe E, which also has a flat bottom, so as to form at F a flat part of the joint between the pipes, substantially as set forth and shown.

2. The pipe C, having a flat bottom which is of a thickness greater than the rest of the pipe, substantially as set forth and shown.

258,223. COAL-OIL LAMP. JOHN H. DEXTER, Elmira, N. Y. Filed Dec. 22, 1881. (No model.)



Claim.—1. The combination, with a lamp-reservoir, A, of a central tube, B, and means for connecting it detachably to the reservoir, and collar-plate D, screwing upon said tube, extending toward the sides of the reservoir and provided with a recess, c, substantially as set forth.

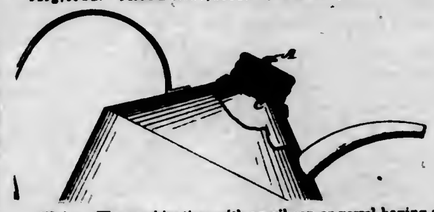
2. The combination of the reservoir having a centrally-depressed top, tube B, and a plate, D, having a recess, c, and downwardly-inclined screw-flange w, as set forth.

3. The combination of the reservoir, collar-plate, and packing h, as set forth.

4. The reservoir provided with an annular raised serrated seat for the packing, substantially as described.

5. The combination of the notched reservoir, tube B, having a lip, d, and shoulders f f, and detachable key F, substantially as set forth.

258,224. VENT FOR OIL-CANS. THOMAS FERGUSON, Parkersburg, Iowa. Filed Mar. 27, 1882. (No model.)



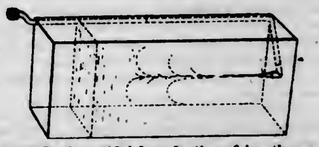
Claim.—The combination, with an oil can or vessel having a perforation through its top or side, of a vent consisting of the upright rod B, having at its upper end a valve, A, located upon the outside of the can or vessel, and at its lower end a removable weight, C, said vent adapted to be removed from the can or vessel and operating by the tipping of the same, substantially as and for the purpose set forth.

258,225. CALIPERS. HENRY FORSTER, Newark, N. J. Filed July 8, 1881. (No model.)



Claim.—The caliper-jaws A B, combined with the tubular pivot F and countersunk washers D E, the ends of said pivot being spread substantially as herein shown and described.

258,226. APPARATUS FOR MAKING CLEAR ICE. FRANK GREENE, Brooklyn, assignor to Etienne Gillet, New York, N. Y. Filed Oct. 25, 1881. (No model.)



Claim.—1. In the artificial production of ice, the method of treating water to remove the contained air by injecting a current of water therein, substantially as and by the means described.

2. The method of treating the water to be frozen in the freezing-vessels of ice-machines by withdrawing a portion thereof and returning it forcibly, so as to agitate the water to be frozen, substantially as described.

3. A freezing vessel or can for containing water to be frozen by artificial means, in combination with one or more pipes for injecting water into said vessel or can to agitate the water therein contained, substantially as described.

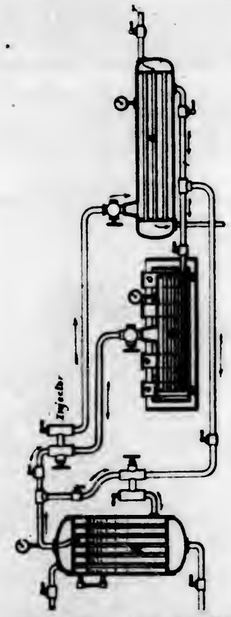
4. The combination of a series of freezing vessels or cans, one or more pipes for each vessel or can for injecting water therein, and a common pump connected with said pipes, substantially as described.

5. An apparatus comprising in combination the freezing-tank of an ice-machine, the vessels or cans for containing the water to be frozen, and means, as indicated, for forcing or injecting water into said vessels or cans to agitate the contents thereof, substantially as described.

6. The combination, with the freezing vessels or cans and the pipes for injecting water therein, of a pump without valves, substantially as described.

258,227. ICE-MACHINE. FRANK GREENE, Brooklyn, assignor to Etienne Gillet, New York, N. Y. Filed Nov. 28, 1881. (No model.)

258,227.



Claim.—1. The improvement in the artificial production of cold, consisting in aiding or effecting the volatilization or expansion of the liquefied or condensed refrigerant by making a vacuum or reduction of pressure above it through the action of a jet in an injector, substantially as described.

2. The improvement consisting in aiding or effecting the alternate volatilization or expansion and liquefaction or condensation of the refrigerant through the action of an injector, substantially as described.

3. The improvement consisting in creating, by means of an injector, a vacuum above the liquefied or condensed refrigerant in the refrigerator, in producing also by means of an injector, pressure upon the volatilized or expanded refrigerant in the condenser of an ice-machine, and in conducting the liquefied or condensed refrigerant from said condenser to said refrigerator, the volatilization or expansion, liquefaction or condensation, and return of the refrigerant being effected successively and continuously, substantially as described.

4. In an ice-machine operating by the alternate volatilization and liquefaction of the refrigerant, the improvement consisting in aiding or effecting the liquefaction of the said refrigerant by a jet acting through an injector, substantially as described.

5. The improvement in the artificial production of cold, consisting in heating a portion of the liquefied or condensed refrigerant so as to bring the same under pressure, supplying a jet of said refrigerant to an injector, and thereby aiding or effecting the volatilization or expansion of the liquefied or condensed refrigerant, and also the liquefaction or condensation of the volatilized or expanded refrigerant, or either of said operations of volatilization and liquefaction, substantially as described.

6. The improvement in ice-machines consisting in heating in a boiler a liquefied or condensed refrigerant to bring the same under pressure, supplying a jet of said heated material to an injector, so as to create a vacuum in the refrigerator, and thus to volatilize or expand the liquid or condensed refrigerant therein, forcing the volatilized or expanded refrigerant by the action of said jet, together with the material composing the latter, into a condenser, wherein the refrigerant is liquefied or condensed by the pressure, aided by a cooling medium, and supplying the liquefied or condensed material to said refrigerator and to said boiler, substantially as described.

7. The combination of the refrigerator, injector, and boiler, the injector having its inlet connected with said refrigerator and being supplied from said boiler, substantially as described.

8. The combination of the refrigerator, injector, boiler, and condenser, the said injector having its inlet connected with the refrigerator and its outlet with the condenser, substantially as described.

9. The combination, with the refrigerator of an ice-machine, of an injector having its inlet connected with said refrigerator, and means, as indicated, for supplying a jet to said injector, so as to produce a vacuum or reduction of pressure in said refrigerator, substantially as described.

10. The combination, with the condenser of an ice-machine, of an injector having its outlet connected with said condenser, and means, as indicated, for supplying a jet to said injector, so as to force the refrigerant into said condenser, substantially as described.

11. The combination, with the refrigerator and condenser of an ice-machine, of an injector having its inlet connected with the refrigerator and its outlet with the condenser, and means for supplying a jet to said injector, so as to withdraw the refrigerant from the refrigerator and force it into said condenser, substantially as described.

12. The combination of the refrigerator, injector, condenser, and return-pipes, substantially as described.

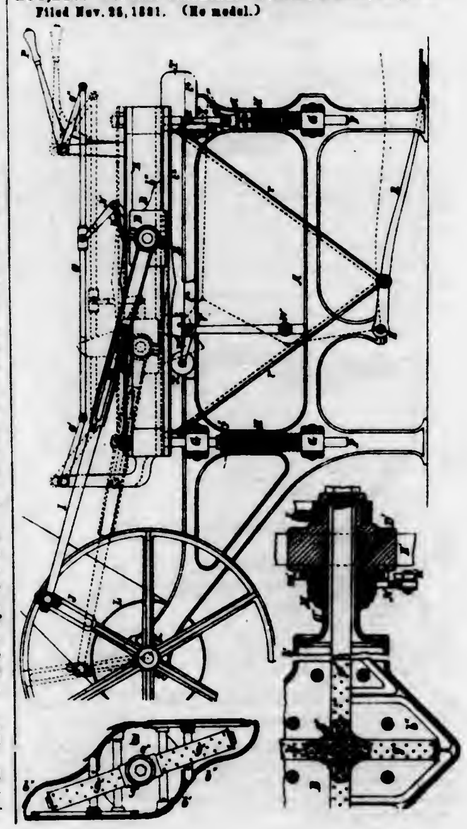
13. The combination of the boiler, refrigerator, injector, condenser, and return-pipes, substantially as described.

14. The combination of the boiler, refrigerator, injector, condenser, return-pipes, and contrivance connected with the return-pipe to the boiler, substantially as described.

258,228. SOLE-EDGE PROTECTOR FOR BOOTS OR SHOES. WILLIAM GORDON, Boston, Mass. Filed Oct. 18, 1881. (No model.)

Claim.—A sole-edge protector composed of an elastic band adapted to encompass a sole-edge, and provided with means, substantially as shown, for keeping it in position laterally, as set forth.

258,229. IRONING-MACHINE. WILLIAM L. HALL, Troy, N. Y. Filed Nov. 25, 1881. (No model.)



Claim.—1. In an ironing-machine, the combination of an iron, the main portion or body of which is cylindrical, with two independently-operating wedge-shaped cam-like points projecting therefrom, each having one or more polishing-surfaces, mechanism, substantially as described, for bringing each end alternately into use and bearing them when not in use, trunnions upon which said iron is hung, sliding boxes carrying said trunnions, ways for said slides, and mechanisms, substantially as described, for longitudinally and transversely reciprocating, reversing, elevating or depressing, and regulating the stroke of said iron when desired, for the purposes set forth.

2. The combination of the swivel-plate Q, secured to ways E, having grooves g' and adjustable frog g'', the spur-wheel d' upon spindle C, engaging said grooves and frog, and the guides D D', with the iron B, having transverse movement between said guides, for the purpose specified.

3. The combination of iron B, having cam-like projecting points b'', with the roller X, in connection with arms a', rock-shaft V, toggle-levers W, cross-shaft S, and treadle R, for purpose specified.

4. In combination with the ironing-points b'', the independent polishing-surfaces, provided with pins and springs, constructed, arranged, and operating substantially as set forth.

5. The combination of the spring reversing lever P, horizontal rod O, and links o' o'', hung upon stationary standards attached to ways E, one of which links rotates upon a fixed pivot, the other being keyed to a rotary pivot, to which said lever P is also secured, the elbowed lever E, hung upon sleeve M, and hinged to the slide traveling upon said rod, the said sleeve and ratchet-wheel m' thereon, and the pawls d'' n', engaging said ratchet-wheel, with the feathered spindle C' and iron B, for objects set forth.

6. In combination with a reversible iron, the automatic device for regulating the combustion of gas and air within and alternately heating different portions of same, consisting of stationary main pipes or stem o', rotary branches g', and swivel-joint g'' with valve therein, substantially as shown.

7. The combination of the table T with the links Y, toggle-levers W, rock-shaft V, cross-shaft S, and treadle R, the cross-shaft and links being hung to frame-work, all operating in elevation and depression of said table, the same having inclining and receding tendency during latter movement, as hereinbefore described.

8. In combination with iron B, having centrally-projecting wedge-shaped points, the table with recess or socket correspondingly located in transverse head-rail, and shirt-board provided with steady-pin fitted to enter said socket, substantially as and for the purpose specified.

258,230. GRAIN-CRADLE. HENDON W. HARALSON, La Grange, Ga. Filed Mar. 20, 1882. (No model.)



Claim.—1. In a grain-cradle, the combination of the horizontal fingers D, intermediate horizontal wires, J, and twisted wires K L, connecting said wires J together and to the fingers D, as set forth.

2. In a grain-cradle having the fingers D and intermediate wires, J, the combination therewith of the twisted wire L, connecting said wires and fingers near the points of the latter, and caused by drawing the wires J taut to bulge inwardly between the fingers, as set forth.

258,231.

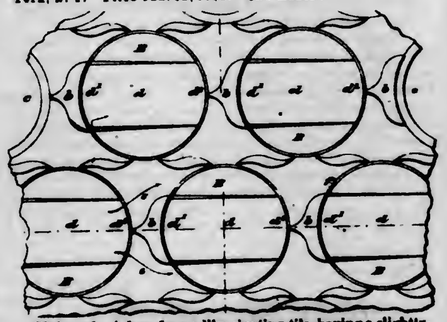


2. The combination of the long curved scrolls J, extending over in front of the gleaning-cylinder, and beginning near its axle and back toward the trailing-frame, with a curved support for said scrolls, secured at one end to the trailing-frame and having its other end free, and the gleaner arms or sprockets, substantially as and for the purpose specified.

3. The gleaner-cylinder, in combination with plate or scroll I, rigidly secured to the trailing-frame and partly encircling the gleaner-shaft, and arranged between two adjacent gleaning-hubs, and scrolls J, firmly secured to said plate I in front at a point below the center of said gleaning-shaft, substantially as and for the purpose specified.

4. The gleaning sprockets or teeth, in combination with curved plates I, having notches i, which, when two plates are placed side by side on opposite sides of the gleaner-teeth H, form openings I', substantially as shown.

258,232. ILLUMINATING-TILE. JOSHUA K. INGALLS, New York, N. Y. Filed Jan. 12, 1882. (No model.)



Claim.—1. A lens for an illuminating-tile, having a slightly-spheroidal upper portion to rest in a correspondingly-shaped socket, and a pendent portion united to the upper portion by a long sweep or curve, whereby the formation of a neck or abrupt angle is avoided, and an underlying flange or lip on the socket is rendered unnecessary, substantially as set forth.

2. A lens for an illuminating-tile, having slender ribs formed exteriorly on the portion of the lens which rests in the socket, whereby the said lenses may be the better adjusted to a uniform level, as set forth.

3. A lens for an illuminating-tile, having a pendent portion, one side of which stands nearly vertical and the other face inclined, said pendent portion having substantially the form of an angula, as set forth and shown.

4. A lens for an illuminating-tile, having a portion of its upper exterior face made into the form of an inclined plane, substantially as and for the purpose set forth.

5. A lens for an illuminating-tile, having a conical portion to rest in the socket in the socket-plate, and a pendent portion having a vertical face and a curved, oblique, or inclined face, substantially as and for the purpose set forth.

6. A lens for an illuminating-tile, having a conical portion, c, provided with ribs g and an inclined plane, d, and a pendent portion, h, having the form of an angula, substantially as herein set forth.

7. The combination of a lens having an inclined plane formed on a portion of its upper face only, and said plane being arranged obliquely to the vertical axis of the lens, with a socket-plate having the axes of its lens-sockets arranged at right angles to the general level of the plate, and provided with an elevation or stud arranged at the end of the inclined plane on the lens, substantially as and for the purposes set forth.

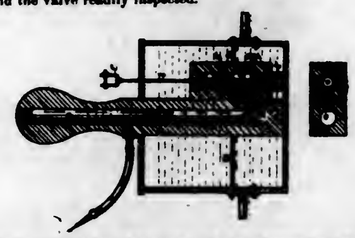
8. The combination, with the socket-plate provided with studs a a and pointed elevations b b, arranged as shown, of the lenses B, provided with inclined planes d and pendent angulas h, all arranged substantially as set forth.

258,233. GRAIN-BINDER. HOSEA G. HUBBARD, Norristown, Pa. Filed Feb. 3, 1882. (No model.)

Claim.—1. The combination of the revolving gleaning-cylinder, having a series of hubs provided with radial arms secured thereon, with a stationary plate or scroll arranged between every pair of hubs, partly encircling the shaft and filling the space between said hubs, substantially as and for the purpose specified.

258,233. WATER-ENGINE. HALE P. KAUFFER, Kalamazoo, Mich. Filed Dec. 16, 1881. (No model.)

Brief.—The spout has a central rib and ends of equal size. When the logs are separated the spout can be removed from the side and the valve readily inspected.

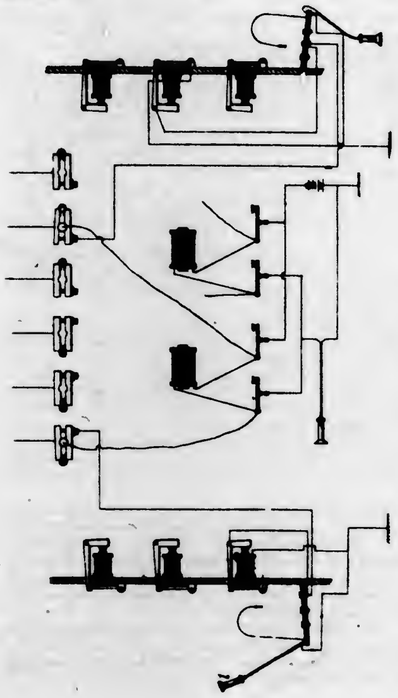


Claim.—1. The combination, with the plunger-log and the air-chamber log, of the spout having the central rib and ends of equal size, and the valve secured to the end of said spout, all substantially as described, for the objects set forth.

2. In a water-engine consisting of a force-pump and a portable tank, the tank having the rod located through it, serving the double purpose set forth, all substantially as described and shown.

258,234. ANNUNCIATOR-BOARD AND CIRCUIT FOR TELEPHONE-EXCHANGES. MILO G. KELLOGG, Hyde Park, assignor to the Western Electric Manufacturing Company, Chicago, Ill. Filed Apr. 4, 1881. (No model.)

Brief.—Lines entering the central office pass first to the spring-jacks upon the switch-board, and from these they are grouped to separate annunciator-boards. The annunciator operators receive orders, each operator from a particular group of subscribers, by means of the usual telephonic devices, and connection between lines is made upon the switch-board. Clearing-out annunciators are interposed in connecting lines, and keys and circuits are provided whereby the switch-board operator can put his telephone or signaling-battery to line as desired. The circuits of the subscribers' annunciators are through the armatures and drops, so that the fall of a drop cuts its magnet out of the line and cuts off the ground-connection.



Claim.—1. In a telephone-exchange, two lines connected together for conversation, in combination with two keys, one of which, on being depressed, grounds the line through the central-office telephone, and the other of which, on being depressed, grounds the line through the central-office signaling-battery.

2. In a telephone-exchange, the combination of a switch-board at the central office, provided with spring jack-switches, one switch for each line which enters the central office, two or more annunciator-boards, upon which the lines are grouped, annunciators upon each of the annunciator-boards, one annunciator for each line of the group, and telephone-lines, each line passing first to its switch on the switch-board, thence to its annunciator of its group, and to ground, whereby an annunciator of a group is disconnected from its line when a line is connected at the switch-board with another line, substantially as shown and described.

3. In a telephone-exchange system, the combination of two lines connected together for conversation, a clearing-out annunciator in the circuit of said lines, and a battery and calling-key at the central office, so connected that when the calling-key is operated so as to signal to line the clearing-out annunciator responds or indicates that the signal has been sent.

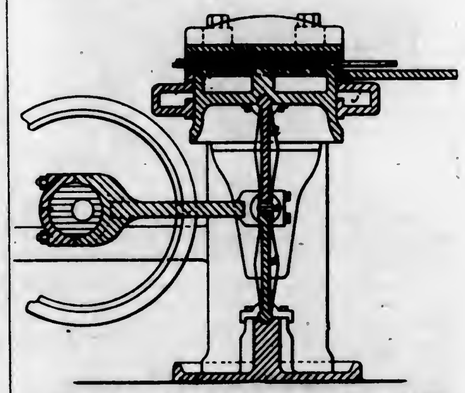
4. In a telephone-exchange system, the combination, at the central office, of a switch-board at which is performed the switching between all the lines which center at the office, two or more calling-annunciator boards, among which the wires are grouped and at which the calling-signals are received, and clearing-out annunciators, on which the clearing-out signals are received when the lines are connected together for conversation.

5. In a telephone-exchange system, the combination, at the central office, of a switch-board at which is performed the switching between all the lines which center at the office, two or more annunciator-boards upon which the wires are grouped, each annunciator-board having annunciators and contact plates, one annunciator and one contact-plate for each line of its group, operators telephones, one for each annunciator-board, each operator's telephone being grounded on one side and connected on the other side by a flexible cord with a metallic contact-peg, and telephone-lines, each line passing first to the switch-board, thence to its contact-plate on the annunciator-board, and thence to its annunciator-magnet and to ground, as and for the purpose specified.

258,235. INCRUSTATION-PREVENTIVE. HUGO KOLBE, Breslau, Prussia, Germany. Filed Jan. 6, 1882. (No specimens.)

Claim.—The herein-described composition of catechu of Pegu, English white caustic soda, dried pomegranate-shell, dried and coarse-pulverized chestnuts, and fresh water, in the proportions specified, and for the purpose substantially as set forth.

258,236. PULP-HOLDING MACHINERY. GEORGE W. LARAWAY and DWIGHT SLATE, Hartford, Conn., assignors to the American Paper Barrel Company, same place. Filed Feb. 7, 1881. (No model.)



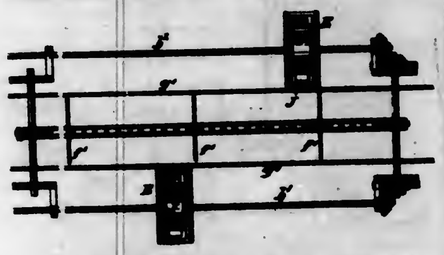
Claim.—1. The combination of the piston, the resisting-surface opposed to the piston, and the laterally-removable matrix-case, all substantially as described, and for the purpose specified.

2. The removable matrix-case, made of sections hinged together, to the end that the case may be opened, substantially as described, and for the purpose set forth.

3. As a part of a pulp-molding machine, the removable matrix-case provided with a movable cover, substantially as described, and for the purpose specified.

4. The combination of the eccentric, the toggle-arms, and the piston, all substantially as described, and for the purpose specified.

258,237. APPARATUS FOR UNLOADING VESSELS. MARTIN HAHN, Buffalo, N. Y. Filed Jan. 30, 1882. (No model.)



Claim.—1. An elevator, E, arranged upon a grooved shaft, *b'*, so as to be capable of both a horizontal movement back and forth along the shaft and a swinging movement as described, in combination with a conveyor arranged to move at right angles, or nearly so, to the movement of the elevator, and the operating mechanism of the several parts, substantially as specified.

2. The shafts *b' b'*, each provided with grooves C, and an elevator, E, and their operating mechanism, substantially as specified, in combination with a conveyor provided with a series of plates, *f'*, arranged within a trough, G *g'*, and their operating mechanism, substantially as described.

258,238. MECHANICAL MOVEMENT FOR CHURNS. ROBERT L. HARAWILLA, Rutland, Vt. Filed Feb. 11, 1882. (No model.)

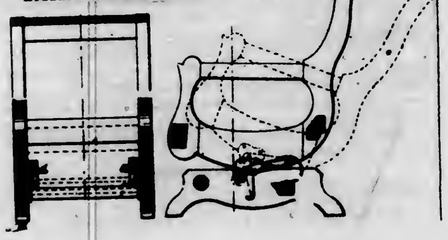


Claim.—1. The combination of the frame A, lever D, pivoted thereto, and provided with the pin *d*, with the slotted lever E, pivoted inside of the frame to the cross-bar B, and adapted to support the body G of a churn, substantially as shown and described.

2. The combination of levers D and E, located outside and inside of the frame, respectively, frames A A, and cross-bar B, with the body G of a churn, provided with the spring-catch F, substantially as shown and described.

3. The lever E, slotted at *e*, and provided with the bearing *d'* and supporting-straps *d' d'*, in combination with the churn-body G and means for its oscillation upon the cross-bar B, substantially as shown and described.

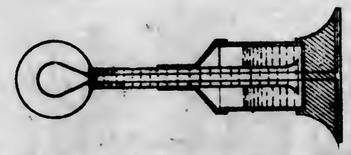
258,239. BABE ROCKING-CHAIR. WILLIAM MCCABE and ROBERT MCCABE, Meadville, Pa. Filed Jan. 17, 1882. (Model.)



Claim.—1. In a babe rocking-chair, a spring attached to the base and projecting forward and provided with an inelastic arm having a slot therein, in combination with a rocking seat having a pin for holding the inelastic arm in place, and a downwardly-projecting hooked arm which catches upon a pin on the legs when the chair has been tilted.

2. In a babe rocking-chair, a base having a curved spring attached to its rear rung, and having an inelastic arm provided with a slot formed above the base, in combination with a rocking seat having a pin for holding the inelastic arm in place, and a downwardly-projecting hooked arm which catches upon a pin fixed to the base when the chair has been tilted, all arranged substantially as described.

258,240. ELECTRIC LAMP. JAMES J. MCTIGUE, Pittsburg, Pa. Filed Sept. 5, 1881. (No model.)



Claim.—1. The method of producing and maintaining an oxygenless atmosphere in electric lamps, consisting in inclosing the burner in a suitable globe, filling said globe with a vaporizable liquid devoid of oxygen, sealing the globe with said liquid, and finally passing the current through the burner, substantially as described, whereby the liquid is vaporized by the heat in the burner, and access of oxygen to the globe is prevented by the liquid seal.

2. The method of renewing or reintegrating a carbon electric-lamp burner by submerging it in a hydrocarbon liquid in a globe or vessel, excluding the atmospheric air therefrom, and then alternately admitting current to the burner and shutting it off therefrom, substantially as described, whereby the first admission of current to the burner heats and vaporizes the liquid, the following cessation of current allows the vapor to condense and saturate the burner, and the next admission of current again vaporizes the liquid and cokes the burner, and so on.

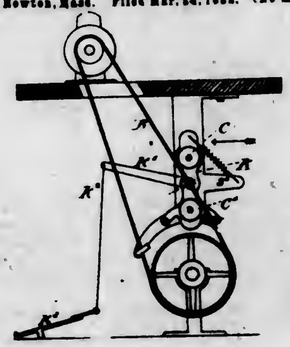
3. In incandescent carbon electric lamps, the combination of a containing-globe communicating at one end with the external atmosphere, a burner and its leading-wires, and a liquid hydrocarbon contained in said globe and sealing its open end, substantially as described.

258,241. COUPLING FOR ROPES AND ROUND BANDS. EDWARD W. HERRILL, Brooklyn, N. Y. Filed Sept. 16, 1881. (No model.)



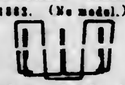
Claim.—The coupling for ropes and bands, composed of two sockets swiveled together and each comprising two semi-cylindric jaws, between which the end of the rope or band is directly inserted, and rivets or other devices inserted transversely through said jaws for drawing them together and clamping them upon the rope or band, substantially as specified.

258,242. ATTACHMENT FOR BELT-IDLERS. BENJAMIN HERRITT, Newton, Mass. Filed Mar. 24, 1882. (No model.)



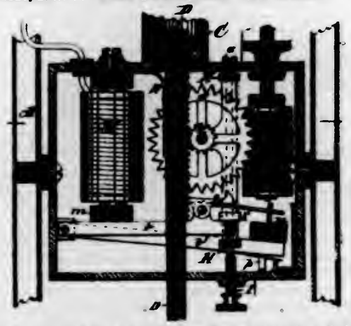
Claim.—The combination of the rocker-plate K, the idlers C C', and the arm H' with the stationary arm H and the bolt B, all operating together substantially as described, and for the purpose set forth.

258,243. MUSTACHE-GUARD. CHARLES MILLER, Reesville, Ms. Filed Jan. 10, 1882. (No model.)



Claim.—A mustache guard and trainer consisting of a wire spring-clamp adapted for adjustment upon the mustache, as herein set forth, and for the purposes herein described.

258,244. ELECTRIC-ARC LAMP. RICHARD B. MOFFATT, Brooklyn, N. Y. Filed Dec. 13, 1881. (No model.)



Claim.—1. In an electric lamp, the combination of the electro-magnet N, forming part of a derived circuit, its armature a, a device for breaking and closing said circuit, the moving frame H, escapement g, escapement-wheel c', pinion c, racked carbon-holder a, and means for allowing the armature to move a sufficient distance to insure the working of the escapement and the operation of the feed mechanism before breaking the circuit, and which also permit said armature to return to or near its normal position before closing said circuit, substantially as specified.

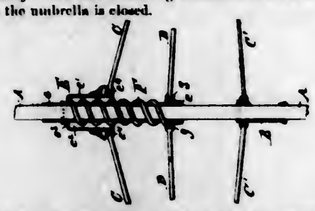
2. In an electric lamp, the combination of an electro-magnet, N, forming part of a derived circuit, its armature a, a device for breaking and closing said circuit by said magnet, mechanism for feeding the carbons, and means for moving and adjusting the magnet N for the purpose of increasing or diminishing the space between said magnet and its armature, substantially as specified.

3. In an electric lamp, the combination, with the carbon-holder D, of the moving frame H, guide-rods c c, wheel c', escapement g, armature-frame c, and the electro-magnet M, substantially as and for the purpose specified.

4. In an electric lamp, the combination of the carbon-holder D, the moving frame H, wheel c', guide-rods c c, armature-frame c, electro-magnet M, and the adjusting-screw I, substantially as and for the purpose specified.

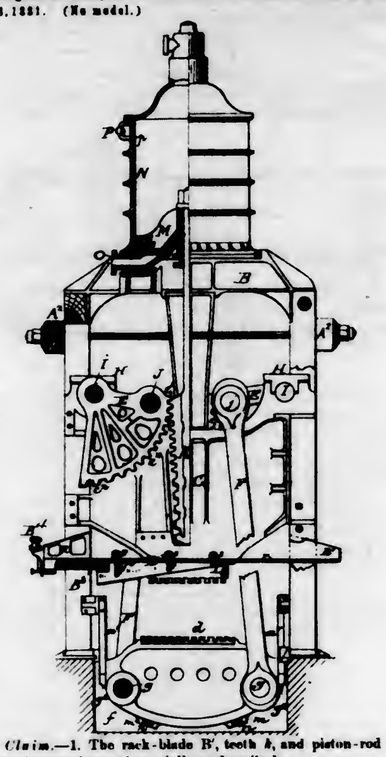
258,245. UMBRELLA. BERNARD MOHR, St. Louis, Mo. Filed Jan. 4, 1882. (No model.)

Brief.—The sleeve-housing receives and conceals the spring when the umbrella is closed.



Claim.—In combination with the handle or stick A, having a movable slide, B, and wire spring a, the sleeve-housing E, consisting of the sleeve e, housing e', having collar e', the top ribs, C, the spring F, the middle slide-collar, g, carrying the middle ribs, D, the movable collar or slide B, carrying the lower ribs, C', the outer end of each middle and lower rib being secured to a top rib, all said parts being constructed and arranged to operate in the manner and for the purposes set forth.

258,246. COTTON-PRESS. EDMUND L. MORAN, St. Louis, Mo., assignor to Schuyler B. Steers, New Orleans, La. Filed July 26, 1881. (No model.)



Claim.—1. The rack-blade B', teeth k, and piston-rod I, formed in one piece, substantially as described.

2. The rack-blade B', having the tooth k on each side thereof formed solid therewith, and the cog-racks K, having the last four teeth of gradually-increasing size as compared with the other teeth, said last tooth k being considerably larger than the largest tooth in said racks, substantially as and for the purpose set forth.

3. The combination of the rack-blade B', formed in one piece with the piston-rod I, and having enlarged lower teeth, the cog-racks K K, and the T-pieces for securing said cog-racks together and to the rack-blade, substantially as described.

4. The combination of the cog-sectors E, having greater spaces between the cogs at the longer than at the shorter ends, rack-blade B, having enlarged lower tooth and piston-rod formed therewith, and the cog-racks K K, having enlarged lower teeth, substantially as and for the purpose set forth.

5. The wrought rack-blade formed in one piece with the piston-rod, and the cast cog-racks K, said cog-racks being secured to said rack-blade by wrought T-pieces t, that are heated and then shrunk into the rack, substantially as described.

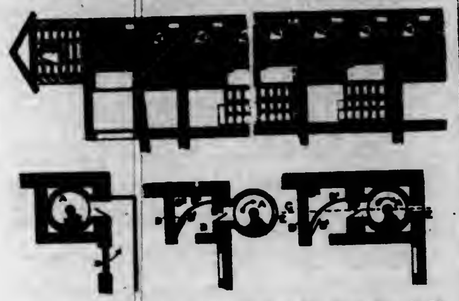
6. The wedge-brackets R' R', provided with a track, r, for the wedge-rollers s, and the wedge-brackets R R, for supporting the wedge-engine B', substantially as set forth.

7. The lower platen, constructed in two separate pieces, as described, each separate portion being composed of two ribs, having wide flanges at the bottom and small flanges at the top, and also having a greater width at the bottom than at the top, as and for the purpose described.

8. The combination, in a cotton-press, with the two-part lower platen, G, having recess e in its upper face, of a channeled plate, d, adapted to rest within said recess and extend across the two sections of said platen, and be removable therefrom to admit of plates of different degrees of thickness being substituted therefor without changing the plates or changing the length of the eye-bars, substantially as described.

258,247. FIRE-ESCAPE. PETER A. NICHOLSON, Philadelphia, Pa. Filed Nov. 3, 1881. (No model.)

Brief.—The grooved spiral slide has numerous variations of inclination, and is entered by passage-ways from the different stories of the building, which passage-ways are provided with fire-proof doors and air-chambers.

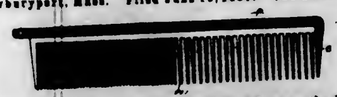


Claim.—1. A grooved or concave inclined slide formed of incombustible and rigid material, having numerous variations in inclination, adapted to retard persons descending thereon, substantially as set forth and described.

2. A grooved inclined spiral slide of varying inclination, having the outer side raised to adapt it to resist the centrifugal action of persons descending, substantially as set forth and described.

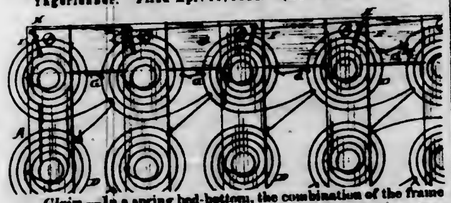
3. An inclined spiral slide, A, in combination with passage B, doors B' and B'' and air-chambers D, arranged substantially as described and shown.

258,248. COMB. WILLIAM MOYSE and WILLIAM H. MOYSE, Newburyport, Mass. Filed June 16, 1881. (No model.)



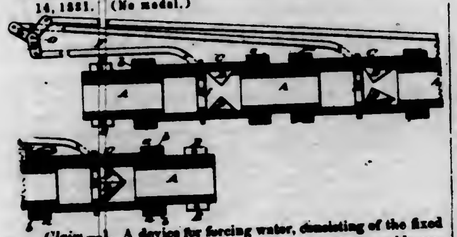
Claim.—As an improved article of manufacture, the herein-described comb, consisting of the toothed portion a, the metal back b, made from a solid rod or wire grooved to receive and hold the toothed portion a, and the metal guard-teeth c, rigidly fastened in the said groove, substantially as and for the purpose described.

258,249. SPRING BED-BOTTOM. WILLIAM A. OBER and JOHN YAGERLANDER, Nine Mile, Ind.; said Ober assignor to said Yagerlander. Filed Apr. 11, 1882. (No model.)



Claim.—In a spring bed-bottom, the combination of the frame A, having slats B, provided at their ends with staples H, the springs D, arranged and interlaced, substantially as described, and the wires I, connecting the staples H with the middle coils of the springs at the sides of the bed-bottom through which they are continuously laced, substantially as set forth.

258,250. PUMP. ENOCH OSSEON, Brooklyn, N. Y. Filed May 14, 1881. (No model.)



Claim.—1. A device for forcing water, consisting of the fixed and movable sections and devices for operating the movable sections, in combination with the double valves D D and valve-seats, the sections being adapted to operate successively, substantially as described.

2. The combination of the fixed inner sections, A, the outer movable sections, C, and the valves D D, hinged in said outer sections, whereby when said valves are open they do not obstruct the flow of water, all substantially as described.

3. The combination of the fixed and movable sections and the valves with the crank-shaft, cranks set at different points on the shaft, and connecting-rods connecting cranks to the movable sections, whereby said sections are operated successively, substantially as described.

4. The double-acting valves D D, arranged in pairs on opposite sides of the seat, and combined with the alternately-operating catches, substantially as described.

5. The combination of two or more movable sections of a pump with fixed sections and with two or more sets of valves, said movable sections sliding upon said fixed sections, and being provided with mechanism, substantially as described, for moving them successively in proper order, all as set forth.

258,251. MACHINE FOR MANUFACTURING HONEY-COMB FOUNDATIONS. WILLIAM C. PULHAM, Mayesville, assignor to W. C. Pulham, Macon County, Ky. Filed Jan. 31, 1882. (Model.)

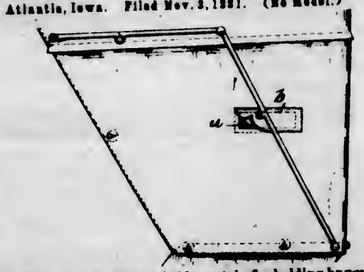


Claim.—1. A die-section for the manufacture of honey-comb foundations, consisting of a series of independent and separate dies, inclined relatively to the radius of the axis of the roller which carries said section, substantially as shown and described.

2. A die-roll for manufacturing honey-comb foundations, composed of a series of die-sections mounted on a spindle or shaft, the dies of the sections being independent and separate, and inclined relatively to the radius of the roller, substantially as shown and described.

3. In a machine for manufacturing artificial honey-comb foundations, the combination of a pair of matching die-rollers arranged in the same vertical plane, or nearly so, said die-rollers being formed of dies inclined relatively to the radius of the rollers, substantially as described.

258,252. SIDE CURTAIN FOR CARRIAGES. JAS. K. POWERS, Atlantic, Iowa. Filed Nov. 3, 1881. (No model.)



Claim.—An improved side curtain for holding buggy and carriage tops, having an aperture, a, and pendent cover or flap b, substantially as shown and described, for the purposes specified.

258,253. WAGON-BRAKE. CARSTEN F. QUAST, Greenfield, Ill. Filed Feb. 14, 1882. (No model.)

Claim.—1. In a wagon-brake, the plate or casting B, having pin or stud C and flanged bracket D, substantially as and for the purpose set forth.

2. In a wagon-brake, the combination, with the plate or casting B, having pin or stud C and flanged bracket D, of the brake-

258,253.



lever F, pivoted upon pin C, and having lever G, provided with a toothed arm, H, engaging bracket D, and mechanism for manipulating said latch-lever, as set forth.

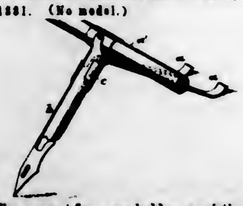
3. In a wagon-brake, the combination of the plate B, having pin or stud C and flanged bracket D, the segmental guide-strip N, the brake-lever F, having finger M, and latch-lever G, provided with a toothed arm, H, and mechanism for manipulating said latch-lever, as set forth.

4. In a wagon-brake, the cross bar or brace T, secured transversely upon the reach, and having downward-projecting bails or brackets in which the brake-bar is supported, and means for pivoting the brake-lever to the outer end of said bar T, as set forth.

5. In a wagon-brake, the herein-described plates B B, having studs or pins C and flanged brackets D, and secured respectively to the side of the wagon-bed and to the end of a cross-bar, T, secured upon the reach, in combination with an interchangeable brake-lever, substantially as and for the purpose set forth.

6. In a wagon-brake, a brake-lever interchangeable between the wagon-bed and the running-gear, both of which are provided with suitably constructed and arranged means to engage and cooperate with the latch mechanism of said brake-lever, as and for the purpose shown and specified.

258,254. PEN-HOLDER. LEONARD SCHUYLERELL, Athens, Ga. Filed Sept. 7, 1881. (No model.)

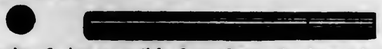


Claim.—1. The support for a pen-holder, consisting of diverging arms *a a*, connected with a clip, *c*, adapted for application to the shaft of the holder, and arranged on the clip to extend at or about right angles from the holder, as set forth.

2. The combination, with the shaft of a pen-holder, of diverging arms *a a*, extending at about right angles from the shaft, substantially as set forth.

3. A pen-holder in which are combined a shaft consisting of a shank and a bar at right angles thereto at the rear end of the shank, and arms *a*, forming a tripod with the shank, substantially as set forth.

258,255. CIGARETTE. HENRY H. SCHLUNDT, Rochester, N.Y. Filed Aug. 24, 1881. (No model.)



Claim.—1. As a new article of manufacture, the cigarette having its mouth-piece composed of a long strip or ribbon of soft absorbent wood of uniform, or substantially uniform, width, with the grain running transversely, coiled endwise upon itself into a cylindrical form, whereby it is adapted to absorb the nicotine and sustain the cigarette-body when moist.

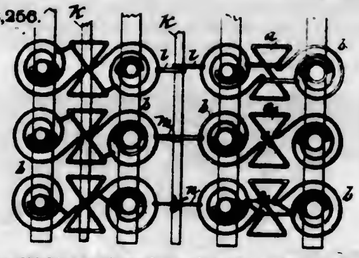
2. The mouth-piece of a cigarette, consisting of a thin ribbon of absorbent wood wound closely into cylindrical form, the grain of the wood lying lengthwise of the cylinder.

258,256. SPRING BED-BOTTOM. HARLEY L. SHERWOOD, Des Moines, assignor to H. E. Sherwood, Algona, Iowa. Filed Mar. 16, 1882. (No model.)

Claim.—1. A twin spring for bed-bottoms, having triangular-shaped sections *a a* formed integral with its upper coils, *h*, by means of bights *c c* and bends 1 2 3 4, substantially as shown and described, for the purposes specified.

2. The improved twin spring for bed-bottoms, having triangular-shaped sections *a* formed integral with its upper coils, *h*, by

258,256.

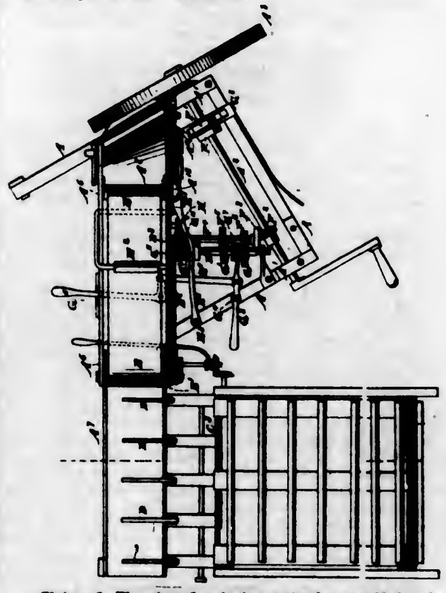


means of bights *c c* and angular bends 1 2 3 4, and an angular bend, *f*, in its lower coil, immediately over the loop *h* of a transverse extension, and clasp *h'*, for engaging a slat, substantially as shown and described, for the purposes specified.

3. The adjustable and detachable coupling device, composed of a rod or bar, *k*, and a series of bands, straps, or cords *l m n*, in combination with two series or rows of springs, substantially as shown and described, to operate in the manner set forth, for the purposes specified.

4. The improved bed-bottom, composed of a series of adjustable slats, a series of twin springs having triangular-shaped sections *a*, bights *c c*, and bends 1 2 3 4 in their top surfaces, adapted to retain adjustable stays, and bends *f* and loops *h* at their bottoms, adapted to receive keys or pins *i* and adjustable coupling devices *k l m n*, substantially as shown and described, for the purposes specified.

258,257. ENSILAGE-CUTTER. JOHN Y. SMITH, Pittsburg, Pa. Filed Sept. 14, 1881. (No model.)



Claim.—1. The pivoted swinging cutter-bar provided with arms for attaching it to the cutter-box, one of said arms being provided with cam-shaped projections for operating the mechanism which stops the movements of the feed-rollers, its construction being substantially as shown and described.

2. A knife to be used in connection with a machine for cutting food for animals, consisting of a curved plate of metal having attached to it a number of sections, each having upon it a curved cutting-edge of a greater degree of curvature than the one which succeeds it, and each of which projects beyond the plate to which it is attached to a greater distance than the one which succeeds it, substantially as and for the purpose set forth.

3. The combination of the pivoted swinging cutter-bar having upon its inner ends a cam-shaped projection, A^{12}, lever E', the clutch G^3, pulley G, belt B^3, and pulleys B^4 and B^5, whereby to arrest the motion of the feed-rollers in the event of any solid substance passing them and coming in contact with the knives, substantially as and for the purpose specified.

4. The combination of the cutter-box A^4, the automatically-moving stop E, having a roller, E^5, placed upon one of its arms, and lever E', the parts being arranged for operation substantially in the manner described and shown.

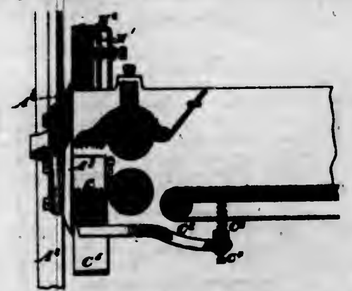
5. The combination of the elevator for carrying the material to be cut to the cutter-box, the receiver or holder for delivering the same in regulated quantities, and the cutter-box, or an extension thereof, substantially as set forth.

6. In combination with the feeding-rolls of a fodder-cutting machine and a belt for driving them, the worm F^6, pinion F^5, wheels G and G', clutch G^3, and wheels F^3 and F^4, their arrangement being substantially such as is shown and described, whereby they are made to regulate the length of the parts cut from the material in the cutting-box, as set forth.

7. The combination of a swinging cutter-bar having upon one of its arms a cam for operating a belt-shifter, and the belt-shifter G^2, the parts being arranged for joint operation, substantially as set forth.

8. The combination of a swinging cutter-bar having upon one of its arms a cam-shaped projection for throwing the feed-motion of the machine out of gear, and a lever pivoted to the frame of the machine for unclutching said feeding mechanism, the parts being arranged to operate substantially as set forth.

258,258. ENSILAGE-CUTTER. JOHN Y. SMITH, Pittsburg, Pa. Filed Sept. 14, 1881. (No model.)



Claim.—1. A cutter-bar for use in machines for cutting food for animals, having upon its surface a series of projections for preventing the rolling of the material, in combination with the cutting-knives, substantially as set forth, and for the purpose specified.

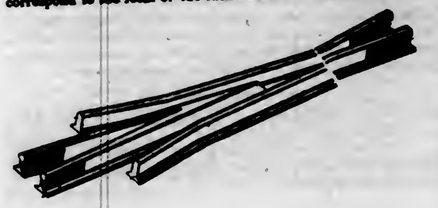
2. The combination of the curved cutting-knives A^3 and the grinding-roller H, mounted in an adjustable frame, the arrangement of the roller with reference to said curved knives being substantially such as is described and shown, whereby the action of the knives in passing it is made to cause a rotation or partial rotation thereof, thus causing it to sharpen the knives, substantially as set forth.

3. In a machine for cutting food for animals, and in combination with the cutting-knives, the cutter-bar C, having a series of projections upon its upper surface, and the vertically-moving cap covering the upper feed-roll, a portion of the under surface of which is provided with a series of projections, substantially as shown and described.

4. In combination with the cutting-box of a machine for cutting food for animals, a movable cap for covering the adjustable feed-roll, and an adjustable plate for directing the material to be cut to the feed-rollers.

258,259. RAILROAD-FROG. JOSHUA STAPLES, Indianapolis, Ind. Filed Jan. 30, 1882. (No model.)

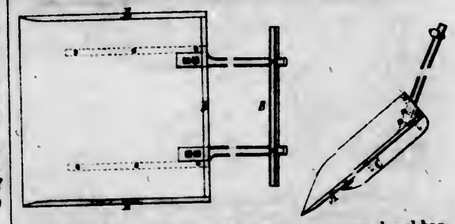
Brief.—Frogs are constructed by rolling in a solid piece in the form intended to be used, and have their ends planed out to correspond to the form of the rails and receive the fish-plates.



Claim.—1. As a new article of manufacture, a railroad-frog constructed of rolled metal, the several portions thereof being rolled all together and in a single piece, substantially as set forth.

2. A railroad-frog rolled in a solid piece in the general form in which it is intended to be used, having its ends planed out to correspond with the form of the rails to be used in connection therewith, in combination with said rails and angle-bars or fish-plates, which fit into said planed-out places and are secured therein, substantially as set forth.

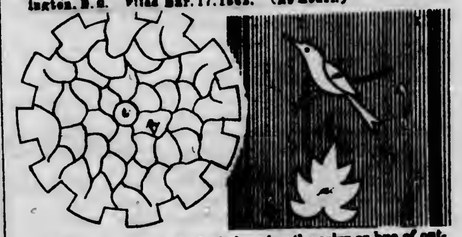
258,260. SNOW-SHOVEL. HENRY W. STAPLES, Old Orchard, Me. Filed Feb. 20, 1882. (No model.)



Claim.—1. As an improved manufacture, a snow-shovel having attached to its blade end and side guards to project upward therefrom, and also having a pair of runners, C C, attached to the under surface of such blade, and having their front ends in rear of the front edge of such blade a distance of one-third the length of the blade, or thereabout, all being substantially as set forth.

2. As an improved manufacture, a snow-shovel having a pair of runners, C C, attached to the under surface of the blade, and having their front ends in rear of the front edge of such blade a distance of one-third the length of the blade, or thereabout, all being substantially as set forth.

258,261. CHANGEABLE PICTURE. JOHN W. STOCKTON, Washington, D.C. Filed Mar. 17, 1882. (No model.)



Claim.—1. The method of changing the color or hue of outline transparent pictures by means of a revolving or sliding variegated disk at the back of a coated plate of glass or other transparency, the picture being formed by removing portions of said coating, substantially as described.

2. The combination of the plate A, provided with the outline pictures *a*, and the variegated plate or disk B, substantially as set forth.

3. The combination of the plate A, provided with the outline pictures *a*, the variegated plate or disk B, and the pin or bearing *c*, attached to the back C, substantially as specified.

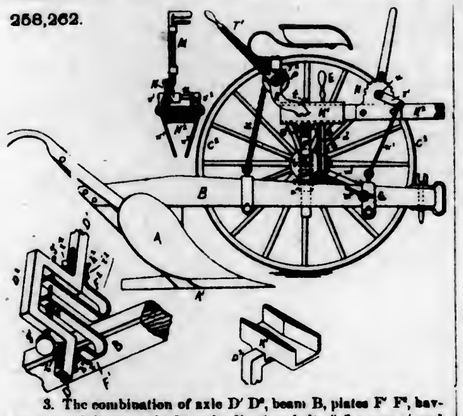
258,262. SULKY-PLOW. ORVILLE A. STONEMAN, Minneapolis, Minn. Filed July 16, 1881. (No model.)

Brief.—Beam suspended in arched portion of axle between two plates connected at upper ends by screw-bolt passing through arch of axle and having their lower ends upwardly and outwardly bent and secured to axle by bolts passing through slots therein, whereby the beam may be adjusted laterally and is allowed a limited vibratory movement. Tongue pivoted in sleeve having oppositely-inclined walls to allow limited lateral vibration. One of the draft-rods connecting forward end of beam to axle has slot-and-bolt connection therewith to admit of lateral adjustment.

Claim.—1. The combination, with beam B and axle D', having bend D^3, of the curved plates F' F^2, secured at their lower ends to axle D' and at their upper ends within the bend D^3 by a transverse adjusting-screw, *f'*, substantially as set forth.

2. The combination, with beam B and axle D', of the curved plates F' F^2, having curved lower ends, h' h^2, and admitting of lateral adjustment at their upper ends by means of a screw, substantially as specified.

258,262.

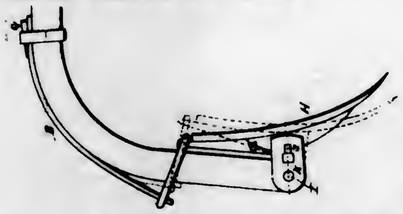


3. The combination of axle D' D², beam B, plates F' F², having curved lower ends, lateral adjusting-bolts i' i², screw g', and nuts g² g², substantially as specified.

4. The beam B, suspended in the crank portion D² of the axle D' between the plates F' F², in combination with the oaky-tongue H², pivoted in the sleeve H', having double inclined walls, and secured to the crank portion D² of the axle, by means whereof both beam and tongue may have a vibratory motion without communicating it to the axle, substantially as set forth.

5. The combination of axle D', beam B, and rods m' m², connecting the axle and beam, one of the rods being secured to the axle by a bolt passing through an elongated slot in the axle, by means whereof the axle and beam may be adjusted at right angle to each other, substantially as set forth.

258,263. CULTIVATOR-TOOTH. WILLIAM D. STROUD, Oshkosh, Wis. Filed Feb. 14, 1882. (Model.)



Claim.—1. The combination of the cultivator-tooth H, key-seated wrist G, and gib S with the pivoted yoke K, substantially as shown and described.

2. The cultivator-tooth H, having a key-seated wrist, G, and gib S, in combination with the pivoted yoke K, link E, and spring B, substantially as and for the purpose shown and described.

258,264. CAR BRAKE AND COUPLING. NILS OLOF SWENSON, Terraville, Dak. Filed Mar. 8, 1882. (No model.)

Claim.—1. The combination of the automatic coupling mechanism, consisting of the spring-hooks pivoted within the draw-head, and the push-arm of an automatic braking mechanism provided with a head sliding between the coupling-hooks within the draw-head, substantially as described.

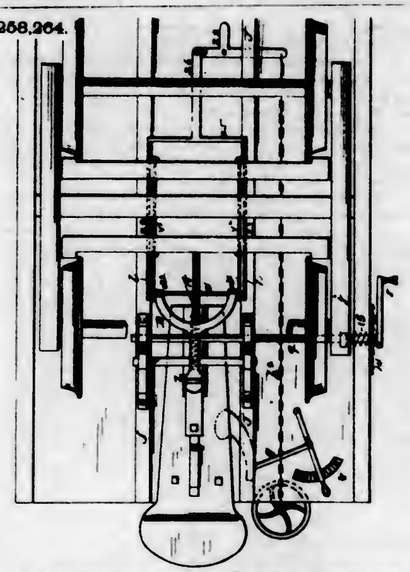
2. The braking mechanism consisting of the push-arm B, provided with projecting head b', and the forked end l, and controlled by action of a spring, in combination with the braking-lever D, brake-beams, and their connecting arms or rods, substantially as described.

3. The spring coupling-hooks 1 and 2, pivoted, as described, within the draw-head between the plates b c, in combination with said plates, the rod S, on which the rear ends of said hooks slide, the lever g, and rack-bar a, substantially as set forth.

4. The push-arm B, consisting of the two separable parts, the head b', extending above the surface of the hooks, within the draw-head, and through and below the draw-head, and the forked part l, having rounded portion o, substantially as described.

5. The swinging forked brake-lever D, in combination with frame and hand-lever, whereby to lower and raise the same, and the rods and brake-beams, substantially as described.

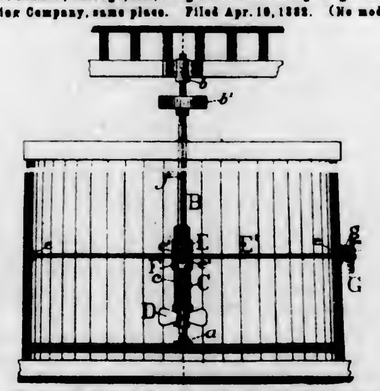
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6. The combination, with the draw-head, of spring-catch 29, attached to the top of said draw-head, and the beveled pin 28, provided with a hole to receive the said catch for the purpose of securing the link within the draw-head, substantially as described.

7. In combination with the draw-head, the box p, provided with a plug, p', to contain a spring and afford a support for the piece l of push-arm B, substantially as described.

258,265. STIRRER FOR STARCH-SETTLING TANKS. JOHN J. TOBIN, Chicago, Ill., assignor to the Chicago Sugar Refining Company, same place. Filed Apr. 10, 1882. (No model.)



Claim.—1. The stirring-wheel D, affixed to the lower end of the hollow cylindrical rack C, adapted to slide upon the square shaft B, in combination with the pinion E, keyed to the elevator-shaft E', provided with the hand-wheel H and with the ratchet-wheel G, for engagement by the detent-pawl g, pivoted to the wall of the tank, as and for the purpose set forth.

2. A hollow cylindrical rack, carrying upon its lower end a stirring-wheel, and loosely fitted upon a square rotating shaft, in combination with the box F, supported by the rods f f, and the pinion E, keyed to the elevator-shaft E', and means for rotating the same, substantially as and for the purposes set forth.

258,266. CAR-WHEEL. NATHAN WASSERBURG, Allston, Mass. Filed Oct. 24, 1881. (No model.)

Claim.—1. The combination of the car-wheel body or rim and the two metallic rings, and their connecting-bolts arranged in such body or rim, substantially as set forth.

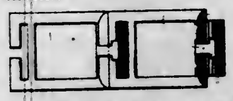
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2. The combination of the two metallic rings, their connection-bolts, and the series of spokes, with the rim and hub arranged with and cast upon them, as specified.

3. The combination of the two metallic rings, their connection-bolts, the series of spokes, and the steel tire with the hub cast upon the spokes, and with the rim cast within and against the tire and upon the rings and bolts, all substantially as set forth.

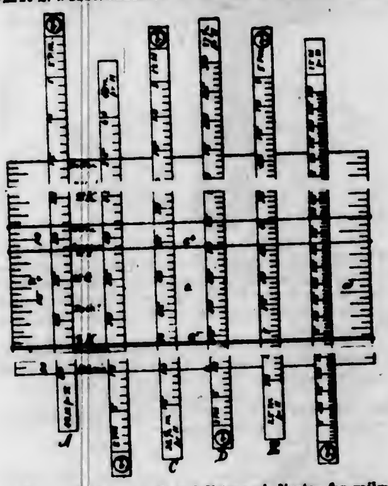
258,267. DRIVE-CHAIN. JAMES H. WEAVER, Chicago, Ill., assignor of one-half to Martin Boom, same place. Filed Feb. 13, 1881. (Model.)



Claim.—1. In a detachable chain, a link provided at one end with a hook having a bar or diaphragm connecting the point of the hook with the end bar, substantially as described, and at its opposite end with an open end bar.

2. In a detachable chain, a link provided at one end with a hook having a bar or diaphragm, substantially as described, and at its opposite end with an open end bar, in connection with a transverse bar intermediate the hook and end bar, and rigidly connecting the side bars of the links.

258,268. RAILWAY TIME AND SPEED PER-INDICATOR. JAMES R. WELLS, Auburn, N. Y. Filed July 11, 1881. (Model.)

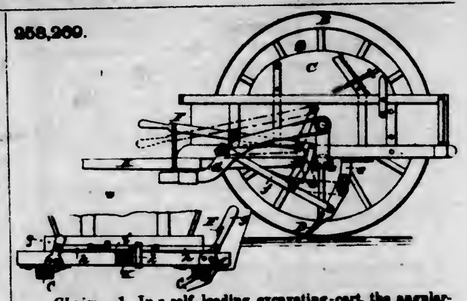


Claim.—A time, speed, and distance indicator for railways, composed of a base-plate provided with a series of longitudinal channels, and having its edges graduated to indicate miles, and a series of movable slides placed in the channels in the base-plate, and having their upper faces graduated to indicate the time and speed of the train, substantially as set forth.

258,269. SELF-LOADING EXCAVATING-CART. GEORGE W. WHITSON, Asheville, N. C. Filed Feb. 25, 1882. (No model.)

Brief.—The buckets are formed of two angular-shaped pieces of metal united by lips and secured to the tire and felly of the wheels, and formed highest next to the felly. A deflecting-board on the cart adjacent to each wheel is formed with a yielding portion. The false shafts are secured in carrying position by cams on levers connected by links on a cross-bar. One of the cam-levers is notched to engage the lever of the plow-operating mechanism. The plows are connected by a torsional axle, which moves in slotted hangers. A bent spring is located beneath the main axle, its ends resting on the torsional axle. Temper-screws are placed between the main axle and the bent spring. A bar with bifurcated ends is also secured to the main axle and cart-body.

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Claim.—1. In a self-loading excavating-cart, the angular-shaped buckets for the wheels formed highest next the felly, substantially as set forth.

2. In a self-loading excavating-cart, the buckets b', formed of two angular-shaped pieces of metal, having coincident lips or flanges and adapted to be secured to the felly and tire of the wheel, substantially as set forth.

3. In a self-loading excavating-cart, the combination of the cam-levers g, the cross-bar, the false shafts, and the links h h and i, substantially as set forth.

4. In a self-loading excavating-cart, the combination of the cam-lever g, provided with a notch or notches in its handle, the lever F, plow D, and intermediate links, f f', substantially as set forth.

5. In a self-loading excavating-cart, the combination of the twisted torsional axle I, the brackets c, and plows, substantially as set forth.

6. In a self-loading excavating-cart, the combination of the axle I, the bent spring H, slotted brackets c, and plows, substantially as set forth.

7. In a self-loading excavating-cart, the combination of the axle I, the bent spring H, temper-screws, slotted brackets c, and plows, substantially as set forth.

8. In a self-loading excavating-cart, a shield or guide consisting of a rigid and a hinged section, substantially as set forth.

9. In a self-loading excavating-cart, the shield or guide consisting of the rigid part C and the hinged section C', in combination with the springs e' and e', substantially as set forth.

10. In a self-loading excavating-cart, the supplemental bar, having bifurcated or forked ends bolted to the cart-body and chain to secure it to the bent axle-bar, substantially as set forth.

258,270. SHILD'S CARRIAGE. CHARLES WITTENBERG, Indianapolis, Ind., assignor to Norman B. Byram and Edward S. Cornelius, both of same place. Filed Sept. 29, 1881. (No model.)



Claim.—1. The parallel rods a a, secured to the body of a carriage substantially in the manner described and shown, and combined with supports for a canopy secured adjustably along said rods, in the manner and for the purpose set forth.

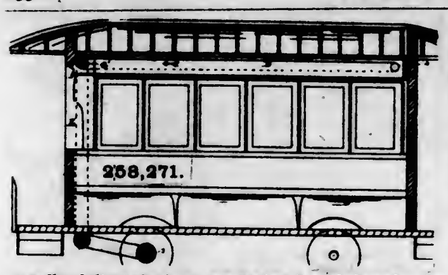
2. The combination of the stub-standards o o, the rods a a, and a carriage-body, substantially in the manner and for the purpose set forth.

258,271. FARE-COLLECTOR FOR STREET-CARS. EDWARD W. ANDREWS, Detroit, Mich., assignor of one-third to John H. Eakins, same place. Filed Mar. 4, 1882. (No model.)

Brief.—An endless belt is arranged above the windows of the car and connects with the fare-receiving box. The belt is actuated by gearing connected with the car-axle.

Claim.—1. The combination, with a car and the fare-receiving box thereof, of an endless belt, arranged and operating substantially as and for the purposes set forth.

2. In a car, and in combination with the receiving-box thereof,



an endless belt running in an open-top box situated above the windows of said car and actuated by the rotation of the car-axle, substantially as and for the purposes specified.

258,272. ART OR METHOD OF MANUFACTURING PAPER BAGS. DANIEL APPEL, Cleveland, Ohio, assignor to the Eastern Paper Bag Company, Hartford, Conn. Filed Sept. 23, 1881. (No model.)



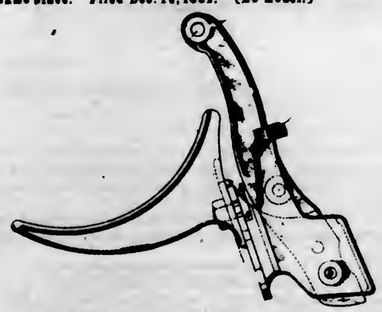
Claim.—The herein-described improvement in the art or method of manufacturing satchel-bottom paper bags from a tubi, which consists in first forming the diamond fold, then cross-folding the leading corner of the diamond fold, and subsequently completing the satchel-bottom by cross-folding the rearmost corner of the diamond fold, and together with it the main body of the bag-blank, on the line of this second cross-fold, substantially as and for the purpose described.

258,273. CORNSTALK-FODDER. FRANK H. BACON, Plainfield, N. J., assignor to himself, Joseph Fowler, and Garman Parse, same place. Filed Sept. 12, 1881. (No model.)



Claim.—A bale of cornstalks in a crushed condition, cut to length, pressed, and tied for transportation, substantially as specified, as a new article for fodder.

258,274. GRAIN-BINDER. WILLIAM R. RAMM, Chicago, Ill., assignor to the McCormick Harvesting Machine Company, same place. Filed Dec. 16, 1881. (No model.)



Claim.—1. The combination of the sustaining arm or bar, a section of a compressing and tripping arm pivoted thereto, and a second section adjustably connected to the first so as to increase or diminish the grain-receiving space.

2. The combination of the sustaining-arm, the lower section of the tripping-arm pivoted thereto, and the upper section of said tripping-arm adjustable along the other.

3. The combination of the sustaining-bar, the lower section of the tripping-arm pivoted thereto and having heel-extension and eye, and the upper section adjustable along the top of the lower.

4. The combination of the lower section of the tripping-arm, its base-plate having longitudinal and cross slots and channels, the upper section formed with a pendent tongue and the bolt uniting the two.

5. The upper section of the tripping-arm formed with flaring sides, embracing or saddling the lower section or shank.

6. The combination of a tripping-arm made in sections, one of which is adjustable along the top of the other, with a sustaining-bar, to which the lower section is pivoted, and along which it is adjustable.

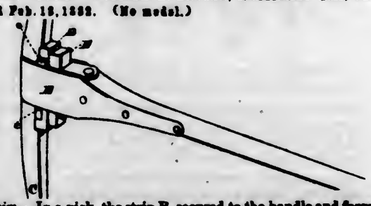
258,275. PUMP. GEORGE F. BERRY, Hornellsville, N. Y. Filed Apr. 7, 1882. (No model.)



Claim.—1. A pump provided with three working-barrels, the middle one being of greater diameter than the upper one, in combination with an adjustable piston-rod and two pistons, whereby the pistons can be adjusted up or down to change the pump from a force to a lift pump and from a lift to a force pump, substantially as set forth.

2. The combination of three working-barrels with the pipe Z, for connecting the two lower barrels to adapt the pump to walk of different depths, substantially as described and shown.

258,276. PICK. WILLIAM L. BLYTHE, Mokelumne Hill, Cal. Filed Feb. 16, 1882. (No model.)



Claim.—In a pick, the strip B, secured to the handle and forming a socket or eye, in combination with the blade C, having notches *a b*, wedge D, with its lugs *c*, and spring *e*, having a head, *e'*, and the wedge E, all arranged to secure the blade within the eye, substantially as described.

258,277. PROCESS OF PRODUCING WATER-PROOF GUM FROM FLAX. JONATHAN HOYT, Providence, R. I. Filed Apr. 24, 1882. (No specimens.)

Claim.—1. The art of producing water-proof gum from the flax-plant by subjecting the plant to the process of softening, as described, removing the fatty matter by pressure, and concentrating the same by evaporation.

2. As a new article of manufacture, a gum having the consistency of india-rubber, made from the flax-plant, as described.

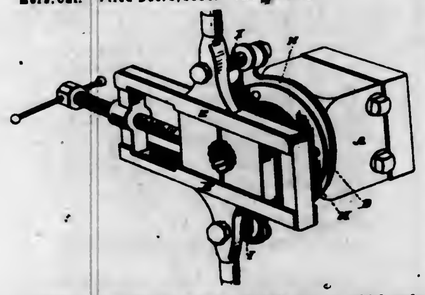
258,278. SEAL AND TAG. EDWARD J. BROOKS, East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Filed Jan. 12, 1881. (No model.)



Claim.—1. A rigid, or substantially rigid, return-tag bearing a permanent number or distinguishing-mark, and having one or more threading-holes in the form of horizontal slots, as herein specified, in combination with a sheet-metal seal-shackle and an ordinary car-door hasp and staple, substantially as herein described, the combination being such that the tag is attached to the staple by the sealed shackle, and the hasp is secured on the shackle by the tag, so as to provide for leaving the door open, or for partly opening the door, and for freely separating the tag from the seal shackle for return as a check and for repeated use.

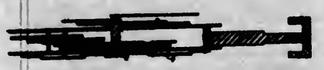
2. The combination, in a seal and tag, of a tag bearing a permanent number or distinguishing mark and a sheet-metal seal-shackle impressed with a corresponding number or mark, substantially as herein specified, for the purpose set forth.

258,279. DEVICE FOR FORMING SHOULDERS UPON VEHICLE-AXLES. GEORGE BRAINARD and JACOB E. SWARTS, Livermore, Cal. Filed Dec. 3, 1881. (No model.)



Claim.—A device for forming shoulders upon vehicle-axles, consisting of a case, A, having clamps by which it may be secured to the axle, a grooved periphery, as shown, and a tool-holder, E, in combination with the crescent-shaped arms H, fitting into the groove D, and the posts I, projecting in a line parallel with the spindle, and adapted to support the tool-holder so that it operates at a distance from the case, substantially as herein described.

258,280. TOY WATCH. ROBERT J. CLAY, Arlington, N. J. Filed Mar. 1, 1882. (No model.)



Claim.—1. The combination, with the standards cut out of the material of the base-plate and bent up as shown, of the shaft of the winding-pinion projecting through one of the said standards, substantially as shown and described.

2. In combination with the winding-wheel, the open ring or eyelet connected therewith by the two prongs or projections, and provided with a hook or catch for connecting the main-spring and winding-wheel, substantially in the manner and for the purpose set forth.

3. The combination, with the winding-wheel, of the open ring or eyelet attached thereto, and the shaft of the spring-wheel projecting through said eyelet and resting upon the winding-wheel, substantially as shown and described.

4. The combination of the base-plate, the winding-wheel struck up with a central bearing-surface for contact with said plate, and the open ring or eyelet having prongs projecting through the winding-wheel and located in the central recess formed in said wheel, substantially as shown and described.

5. The combination, with the base-plate, of the winding-wheel having the annular recess formed therein to escape the projecting shafts of the wheels above said plate, and the central bearing-surface for contact with the base-plate, substantially as shown and described.

258,281. ARGAND LAMP-BURNER. ADOLPH E. CONRAD, Philadelphia, Pa., assignor of one-half to Andrew J. Weidner, same place. Filed Aug. 24, 1881. (No model.)



Claim.—1. The combination of the inner and outer tubes, A A', of the burner, the wick-carrier D, having a lug, *d*, and the coiled wire F, serving as an elevator for the wick-carrier, as set forth.

2. The combination of the inner and outer tubes, forming an oil-chamber, and the wick-tube having a stud, with the spiral coil and ring at the upper end of the tube for turning the coil in the said chamber, substantially as specified.

3. The combination of the inner and outer tubes, forming an oil-chamber, and the wick-tube having a stud, with the spiral in the said chamber, a ring at the top secured to the spiral, and a chimney-support attached to said ring, all substantially as described.

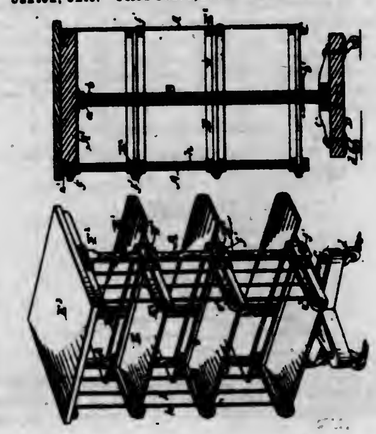
258,282. VENTILATOR FOR WINDOWS. HUGH H. CRAIG, Baltimore, Md. Filed Feb. 24, 1882. (No model.)



Claim.—1. A window-ventilator consisting of a bar adapted when placed in position, to separate the meeting bars of the sash and provided with a flange, *d*, as and for the purpose set forth.

2. The window-ventilator herein described, consisting of the bar *c*, made in two parts, hinged or pivoted together, and having the flange *d* and overlapping joint *f*, as set forth.

258,283. REVOLVING SHELF OR STAND. JOHN DANNER, Canton, Ohio. Filed Feb. 8, 1882. (No model.)

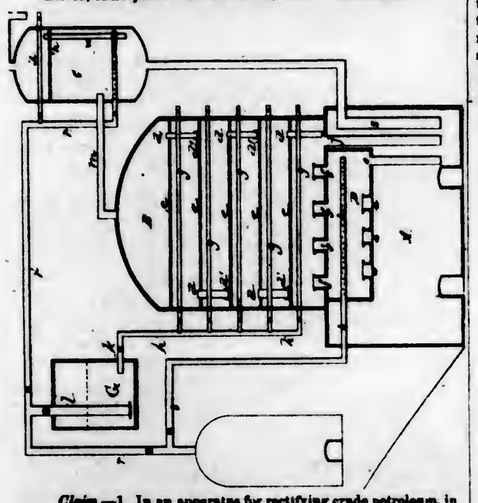


Claim.—1. The combination of a post having a hollow cap-bearing in its upper end, a yoke provided with a pendent pin, *a*, rods A, provided with a hooked end, *a'*, and a series of shelves provided with clamps secured thereto, and set-screws *f'*, adapted to operate upon or engage with the rods A, substantially as and for the purposes set forth.

2. The combination of a post, a yoke resting upon said post, vertical rods secured to said yoke, and a series of shelves provided with bars E^5, having vertical perforations c^5, with rods A, passing through the ends of the shelves, and clamps secured to the shelves and bars E^5, substantially as and for the purposes described.

3. The combination of a post, a yoke adapted to rest thereon, and vertical rods secured to said yoke and provided with perforations a^5, with a series of shelves and screws, *f*, adapted to pass through the perforations a^5 and engage with the shelves, substantially as and for the purposes described.

258,284. APPARATUS FOR RECTIFYING PETROLEUM. LOUIS DAHL, Buffalo, N. Y., assignor of one-half to Charles F. Ritter, same place. Filed Jan. 20, 1882. (No model.)

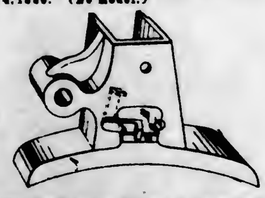


Claim.—1. In an apparatus for rectifying crude petroleum, in combination with still A and rectifier B, the separating-chamber D at the top of said still, provided with openings *a a a* and *f f f*, the steam-pipe *b*, and discharge-pipe *c*, all arranged and operating substantially as specified.

2. In an apparatus for rectifying petroleum, in combination with the main portion or walls, the perforated plates *e e e*, pipes *d*, and cap *d'*, the coils or worms *g g g*, situated just beneath plates *e*, and the hot-water tank G, and pipe connecting the worms with such tanks, all substantially as specified.

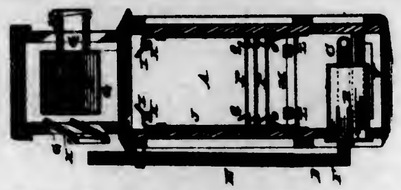
3. In an apparatus for rectifying petroleum, the purifier C, provided with pipes *p* and *n*, and perforated plate *n*, in combination with the steam-generator and connecting-pipe, as described, a distillation-chamber, and a pipe connecting the still and purifier, said connecting-pipe entering the purifier above the pipe *p* and below the perforated plate, all substantially as and for the purpose specified.

258,285. BRAKE-SHOE. JAMES DENVER, New Haven, Conn. Filed Aug. 4, 1880. (No model.)



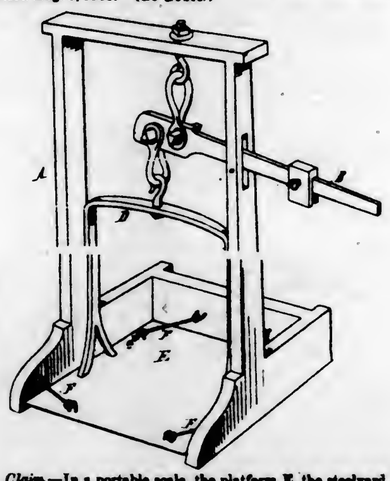
Claim.—The combination of shoe A, shank B, receiving-box G, and pressure-lever J, its shank K, and nut L, constructed and operating together substantially as and for the purpose described.

258,286. FRUIT-DRIER. WILLIAM G. DORSETT, Albany, Oreg. Filed Jan. 16, 1882. (Model.)



Claim.—In a fruit-drier, the herein-described combination and arrangement of the casing A, having ventilators H, openings U, provided with doors or dampers V and deflectors W, and mechanism, substantially as described, for manipulating the drying-trays, with the furnace B, having smoke-pipe C at its rear end, from which branches D, having dampers F, extend forwardly between the sides of the furnace and the walls of the casing and out through the front, where they are again united, by which arrangement, by manipulating the dampers F, the heat may be regulated and thrown to either side of the casing, as set forth.

258,287. BARREL-SCALES. JOHN DOLPH, Bay City, Mich. Filed Aug. 8, 1881. (No model.)



Claim.—In a portable scale, the platform E, the steelyard B, and the bifurcated yoke D, connecting the platform and steelyard, in combination with the frame A, supporting the steelyard and provided with a base surrounding three sides of the platform, and the four stay-rods F, connected to four sides of the upper surface of the platform and to the three sides of the base at points above the platform, substantially as and for the purpose specified.

258,288. SIDE-HILL PLOW. WILLIAM H. DUNFEE, Fall River, Mass. Filed Feb. 20, 1882. (No model.)

Brief.—Axle centrally pivoted to swing around and place the wheel always upon the land side. The front caster-wheel is turned to the front and braced to the tongue. When turning this operates to raise that side of the frame, taking the weight off the wheel and permitting it to be turned. The plow-beam is rotated by a hand-wheel and pinions and locked by a drop foot-pawl.

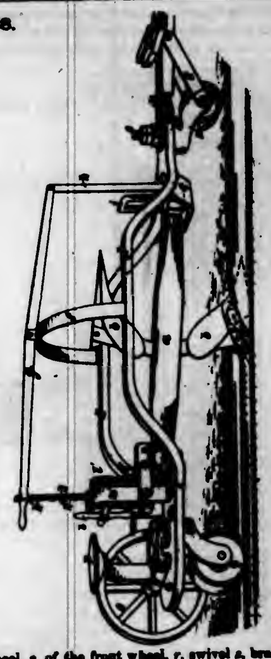
Claim.—1. In a side-hill plow, the combination, with the plow-beam *a*, of the frame *e*, forming the rear, and the frame *c*, forming the front, of the machine, the curved connecting-bars *d d*, and the arch *f*, constructed to allow the plows to be turned within the frame, as described.

2. The combination, with the plow-beam *a* and frame *c*, of the locking-lever *m*, the notched ring, the hand-wheel, and the pinions *l l*, adapted to turn the plow-beam, as described.

3. The combination, with the plow-frame, of the side wheel, *o*, secured to the pivoted axle *n*, and means for securing the axle in place and of turning it to change the side wheel from one side to the other, as described.

4. The combination, with the frame and the pivotally-secured

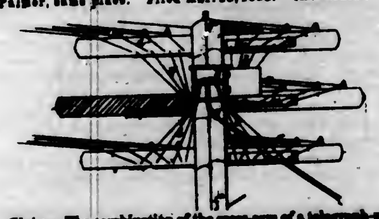
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side wheel, *o*, of the front wheel, *r*, swivel *s*, brace *t*, and tongue-plates *u*, all arranged and operating substantially as described.

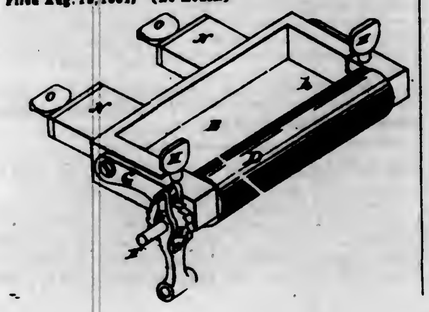
5. The combination, with the frame *c* and pivoted axle *n*, of the seat *p*, adapted to turn with the axle, as described.

258,289. PROTECTOR FOR LIGHTNING-ARRESTERS. CHAS. T. PITCH, Buffalo, N. Y., assignor of one-half to Marlow C. Palmer, same place. Filed Mar. 28, 1882. (No model.)



Claim.—The combination of the cross-arm of a telegraph-pole, provided with a recess in its under side and a removable or adjustable cover for such recess, with the line and cable wires leading to the interior of such recess and a lightning-arrester located in such recess, with the line and cable wires suitably connected thereto, substantially as shown and described.

258,290. INK-FOUNTAIN. ALFRED GAGE, Philadelphia, Pa. Filed Aug. 16, 1881. (No model.)

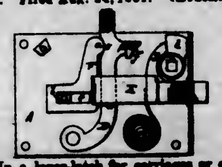


Claim.—1. The combination, with the trough or receptacle B, of the dust-collar D, hinged arms G, and regulating-screws H, constructed and operating substantially as and for the purpose specified.

2. The combination, with the trough or receptacle B, of the lugs M, hollow plates N, and regulating-screws O, constructed and operating substantially as and for the purpose set forth.

3. The combination, with the trough or receptacle B, of the threaded standards P, brackets R, plates N, and threaded collars, substantially as and for the purpose set forth.

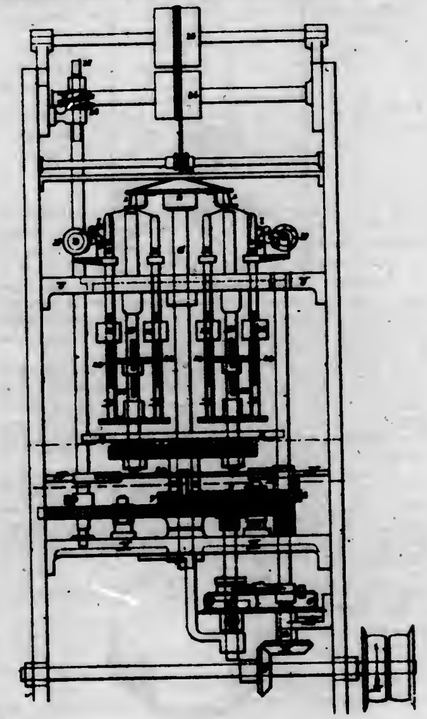
258,291. LATCH FOR CARRIAGE-DOORS. WILLIAM GAYNE, New Haven, Conn., assignor of one-half to Albert L. Babcock, same place. Filed Aug. 24, 1881. (Model.)



Claim.—In a lever-latch for carriages or other vehicles, the combination, with the latch-bolt B, having the upward extension *g*, and extension F, with curved bearing *a*, of the operating-lever D, curved at its lower end, as shown, and pivoted to the plate A, and having the curved recess *c*, constructed and arranged to operate substantially as and for the purpose set forth.

258,292. MACHINERY FOR TWISTING WIRE, &c. WALTER T. GLOVER and GEORGE F. JAMES, Manchester, County of Lancaster, England. Filed May 8, 1881. (No model.) Patented in Belgium Feb. 28, 1881, No. 53,063; in England Mar. 8, 1881, No. 913, and in France Sept. 3, 1881, No. 144,765.

Brief.—The delivery of wire from the bobbins is regulated by an escapement-lever upon each spindle adapted to engage with pins upon one of the heads of the bobbin carried thereby. The wire passes from the bobbin over a roller carried by the escapement-lever and under a pulley on the drop-rod within the spindle, and the drop-rod, when elevated by the tension of the wire, acts upon an arm of the lever to free its projection or catch from the



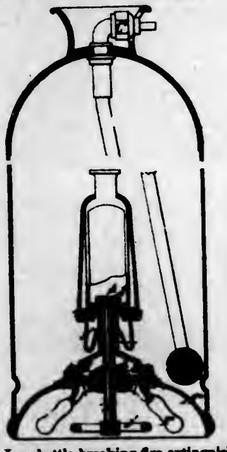
pins on the bobbin. When a wire breaks the drop-rod suspended therefrom descends and carries its weight into contact with a table upon a second drop-rod within one of the intermediate axes and causes the depression of the latter drop-rod. The projecting lower end of the second rod is carried by the revolution of the machine into contact with a projection on a tripping-ring, which is moved thereby and caused to release the shipper-rod.

Claim.—1. The combination of a hollow spindle having an internal drop-rod, a bobbin having pegs or projections on one of its ends, and an escapement having a lever-arm to engage with said drop-rod, a catch-projection to engage with said pegs, and a guide-roller, all mounted and operating substantially as hereinbefore specified, for the purpose set forth.

2. A weighted drop-rod, 24, arranged and operating substantially as hereinbefore specified, in combination with a bobbin-escapement, *e*, casting with the upper end of said drop-rod, a drop-rod, 25, having a table, 28, to engage with the weight of the former, clutching and unclutching mechanism, and mechanism connecting said drop-rod 25 with said clutching and unclutching mechanism, substantially as shown and described, for the purpose set forth.

258,293. BOTTLE-BREAKING FIRE-EXTINGUISHER. ALMON H. GRAGGS, Boston, Mass. Filed Sept. 15, 1881. (No model.)

Brief.—The bottle is adapted to be held at one end while it is rotated at the other end, thereby breaking it by torsional strain. When the rotative force is applied at the lower end the upper end is held stationary by two skeleton arms composing the neck of the polygonal or square bottle. When applied at the other end motion is communicated to the skeleton arms around the neck of the bottle, while a square or polygonal projection, fitting a corresponding recess in the bottle, holds the lower end stationary.



Claim.—1. In a bottle-breaking fire-extinguisher, the combination of a bottle-holder, which is adapted to fit one end of a bottle and hold it against turning, and a rotary device adapted to engage with the other end of the bottle, and by its turning to subject the bottle to torsional strain, substantially as specified.

2. In a bottle-breaking fire-extinguisher, the combination of a case, shell, or cup adapted to receive within it one end of a bottle and to fit the exterior thereof, and a projection adapted to enter a recess or depression in the bottom of the bottle, one of said parts being stationary and the other capable of being turned or rotated, substantially as specified.

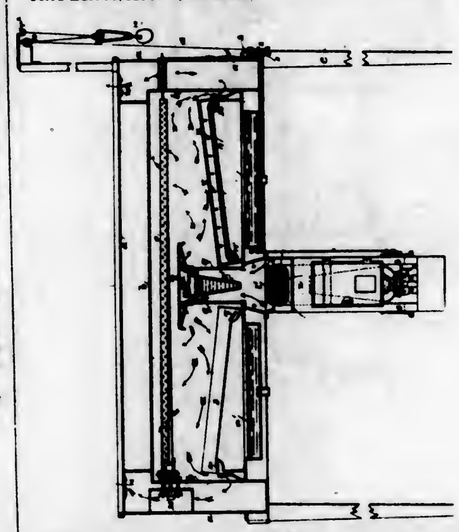
3. In a bottle-breaking fire-extinguisher, the combination of a bottle-holder comprising a case or shell adapted to fit the exterior of a bottle and hold it against turning, and a rotary spindle carrying a square or polygonal projection, which is adapted to engage with a recess or depression of corresponding form in the bottom of the bottle, substantially as specified.

258,294. MUSTACHE-GUARD. GEORGE P. HALL, Baltimore, Md. Filed Mar. 30, 1882. (No model.)



Claim.—A mustache-guard consisting of the combination of a comb to enter the mustache, a guard-plate hinged to the comb, and a spring-plate attached to the comb to cause pressure on the guard-plate, as set forth.

258,295. INCUBATOR. AUGUSTUS M. HALSTED, Rye, N. Y. Filed Mar. 11, 1881. (No model.)



Claim.—1. In an incubating apparatus, the combination, with the chamber containing the egg-tray, of a lamp below the bottom of the chamber, the heating-drum and chimney, also below the egg-chamber, and connected so that the gases escape laterally at the ends of the drum, an air-chamber below the egg-chamber, around the chimney and drum, into which air is admitted and warmed before passing into the egg-chamber, and an opening for the escape of the heating-air from the egg-chamber, substantially as specified.

2. In combination with the incubating-chamber, the lamp, the heating-drum, and the air-trough, the deflector *l* partially covering the air-trough and directing the air horizontally toward the front and back portions of the incubator-chamber, as set forth.

3. The combination, with the incubator-chamber and the lamp and heating-drum, of the partitions *q* and deflector *r* within the incubating-chamber, substantially as set forth.

4. The evaporating-trough *r'*, in combination with the partitions *q*, deflector *r*, and incubating-chamber, substantially as set forth.

5. In an incubator, the combination, with the lamp-chimney and heating-drum, of the diaphragm 7 and ring 6, as and for the purposes set forth.

6. In an egg-holding tray, the combination, with the wires or cross-bars, of a web of muslin or similar material on which the eggs rest, and which is movable, so as turn the eggs, substantially as set forth.

7. The combination, in an egg holding and turning tray, of cross wires or bars, a web, and a roller upon which the web may be wound, substantially as set forth.

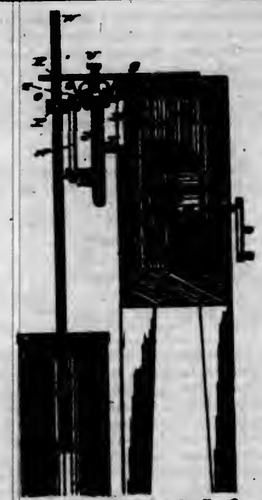
8. The tray having cross wires or bars and a bottom of netting or open-work, a web of muslin or equivalent material, and two rollers with which the ends of the web are connected, as set forth.

9. In combination with the incubating-chamber, a lamp, heating-drum, and air-box, connected below the chamber and made removable, substantially as set forth.

258,296. CHURN-MOTOR. THOMAS J. HARRIS and CALEB P. OBERN, Sardis, Miss. Filed Mar. 16, 1882. (No model.)

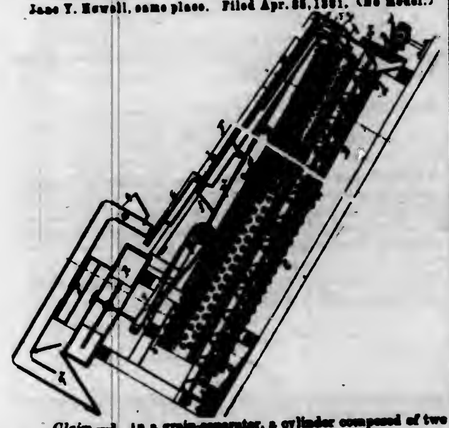
Claim.—In a churn-motor, the combination, with the frame A, main shaft B, and spring C, operating through a train of wheels the shaft I, of the casing K, having slot L, through which said shaft projects, and bracket Q, having perforation R, hangers S, levers T and set-screw U, the balance-wheel J, having wrist-pin

258,296.



or crank M, the pitman N, having swiveled collar O, provided with set-screw P, and the churn-dasher W, all arranged and operating as set forth.

258,297. GRAIN AND COCKLE SEPARATOR. PAULINA M. L. RUSSE, Buffalo, N. Y., assignor, by mesne assignments, to Jane Y. Newell, same place. Filed Apr. 28, 1881. (No model.)



Claim.—1. In a grain-separator, a cylinder composed of two or more sections arranged end to end and provided with cavities, cells, or indentations of different sizes, and independent discharge mechanism for each section of the cylinder, substantially as set forth.

2. The combination, with the cylinder B, provided on its inner surface with indentations, cells, or pockets which admit the cockle and reject the wheat, and the cylinder C, forming a continuation of the cylinder B, and provided on its inner surface with indentations, cells, or pockets which admit the wheat and reject the oats, of pockets or cups *e*, which are interposed between the cylinders B and C and receive the wheat from the cylinder B and deliver it into the wheat-discharge trough of the cylinder C, substantially as set forth.

3. The combination, with the cylinder B, provided on its inner surface with indentations, cells, or pockets which admit the cockle and reject the wheat, and the cylinder C, provided on its inner surface with indentations, cells, or pockets which admit the wheat and reject the oats, of a preliminary grading apparatus, whereby the grain is divided into three different grades according to size, and mechanism whereby the smallest grains are delivered into the cylinder B, the largest grains into the cylinder C, and the medium-sized grains into the wheat-discharge trough of the cylinder C, substantially as set forth.

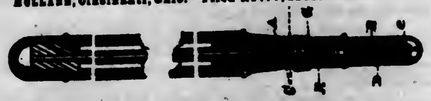
258,298. PENCIL-CASE. JOHN HOLLAND, Cincinnati, Ohio. Filed Feb. 27, 1882. (No model.)



Claim.—1. The combination, substantially as before set forth, of the outer tube, E, the lead-tube secured thereto, the tubes C C', interposed between the tube E and the lead-tube, and the caps F F'.

2. In a pencil-case, the combination, substantially as hereinbefore set forth, of the case composed of the tubes B C C' E and caps F F', with slide D, tube A, collars *a' a''*, and clamping-sleeve *a*.

258,299. WRITING-POINT FOR STYLOGRAPHIC PENS. JNO. HOLLAND, Cincinnati, Ohio. Filed Nov. 7, 1878.



Claim.—1. The tube D of a fountain-pen, tipped with a bored grain of iridosmine, applied substantially as specified.

2. In a fountain-pen, the combination of the pen-holder A, tube D, collar *c*, and point F, constructed substantially as and for the purpose specified.

3. In a fountain-pen, the combination, substantially as specified, of the gravitating valve C, the needle-point secured thereto, the tube H and its spring G, said valve C being centrally bored to receive the tube H and its spring G, for the purpose set forth.

4. The described method of constructing fountain-pens with non-wearing writing-points, which consists in inserting an easily-drilled core within the discharge-tube, leaving the end of the core projecting, placing the perforated writing-point over the projecting end of the core, and securing the parts together, after which the core is bored out and the writing-point dressed down to a cone shape.

5. A writing-point for fountain-pens, formed of a single piece of iridium perforated and ground to a cone shape, as described, in combination with a tube, as D, as and for the purpose specified.

6. In a stylographic fountain-pen, the tube formed and reamed to the shortest section of the pen-holder, in combination with a perforated point or tip formed of a single piece of iridium, as set forth.

258,300. METHOD OF SECURING ROLLS OR PACKAGES OF FABRICS FROM UNROLLING. WILLIAM S. HOLLAND, Pence Dale, R. I. Filed July 28, 1880. (No model.)



Claim.—That improvement in the method of putting up piece-goods in rolls or packages consisting of applying at the end or ends of the roll or package an elastic or yielding fastening provided with end hooks, all substantially as shown and described.

258,301. MANUFACTURE OF FILES. MARTIN A. HOWELL, Jr., Chicago, Ill. Filed July 5, 1881. (No specimens.)

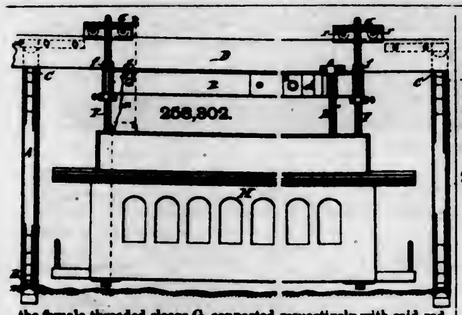
Claim.—1. In the manufacture of files, the process which combines the decarburization of cast-iron blanks for the purpose of softening and cutting, with the subsequent recarburization for the purpose of hardening and tempering, substantially as set forth.

2. In the manufacture of files, the combined process of carburizing, cutting, recarburizing, and hardening of decarburized cast-iron blanks, substantially as and for the purpose set forth.

258,302. ELEVATED RAILWAY. ALBERT P. HOBBSON, Elizabridge, N. Y. Filed Aug. 18, 1881. (No model.)

Brief.—To a frame-work is secured an elevated rail, from which is centrally suspended a car by means of screw-threaded rods engaging with screw-threaded sleeves and adapted to be raised or lowered. The rods are connected by a bar, and are provided with rollers. The car is provided with a horizontal fins and carries a suitable motor, which operates a shaft having friction-wheels engaging opposite sides of the track-rail, and maintained yieldingly in contact therewith by spring-plates provided with an adjusting-screw. A brake adapted to engage with the rail is connected to the top of the car.

Claim.—1. In combination with the elevated rail D and rollers *r*, the suspension-rod F, screw-threaded at its lower end, and



the female-threaded sleeve G, connected respectively with said rod and with the car, as described and shown.

2. The combination of the car H, suspended centrally from the elevated track-rail D, and propelled by frictional contact of the wheels *c* directly with said track-rail, substantially as described and shown.

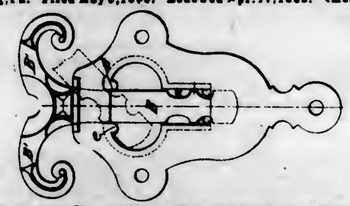
3. In combination with the elevated rail D and the car H, suspended therefrom, as shown, and carrying a suitable motor, the shafts *b b*, connected with the car and its motor, and having friction-wheels *c c*, engaging opposite sides of the track-rail and maintained yieldingly in contact therewith by spring-plates *d*, as described, for the purpose set forth.

4. In combination with the elevated rail D, suspended car H, and the shafts *b b*, provided with friction-wheels *c*, the spring-plates *d*, arranged to hold the friction-wheels yieldingly against the track-rail, and provided with the adjusting-screw *e*, substantially as described and shown.

5. In combination with the elevated rail D and the car H, suspended therefrom, as shown, a brake connected to the top of the car and adapted to engage the rail D, as and for the purpose set forth.

6. The combination, with the car H, of the engine K, tank L, exhaust-pipe M, leading to said tank, and the horizontal flue I, all arranged upon the top of the car, substantially as described and shown.

258,803. WAGON-SEAT SUPPORT. HENRY H. JACOBS, Waynesburg, Pa. Filed May 8, 1882. Renewed Apr. 17, 1882. (Model.)



Claim.—1. The metal seat-bearer with the notches in its lower end for catching upon corresponding projections in the seat-bearing socket, for the purpose and substantially as set forth.

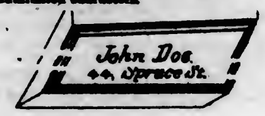
2. The inwardly-enlarged cavity in a metal seat-bearing socket, in combination with the interiorly-fitting notched end of the seat-bearer, for the purpose set forth.

3. The lug *g*, in combination with the notched metal seat-bearer B and inwardly-enlarged cavity *n*, for the purpose set forth.

4. The elliptical spring secured to the curved arms of the wagon-seat bearer B, with the notches *a a* and *c c*, in combination with the socket-plate having inwardly-enlarged cavity *n* and bearings *c c*, substantially as shown.

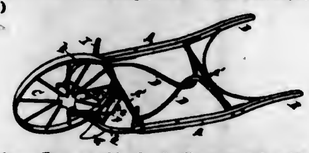
258,804. ILLUMINATED SIGN OR NAME-PLATE. AMOS B. KEITH, Boston, assignor to William W. Keith, Trustee, Newtonville, Mass. Filed Feb. 4, 1882. (No model.)

Brief.—The sign or name-plate has a layer of phosphorescent material laid thereon, a second plate having characters stenciled in it, and a glass facing which protects the phosphorescent material behind the stenciled openings, but allows it to be seen in the form of illuminated characters.



Claim.—In combination with a plate having a facing of luminous material applied thereto, a second opaque plate having characters cut through or stenciled in it and covering said luminous material, and a transparent plate, sheet, or facing which covers said stenciled characters as well as the remainder of the stenciled plate, but allows the light of the material behind to shine through in the form of illuminated characters, substantially as set forth.

258,805. COMBINED WHEELBARROW AND CULTIVATOR. WALTER W. KELLY, Hastings, Mich. Filed Dec. 28, 1881. (No model.)



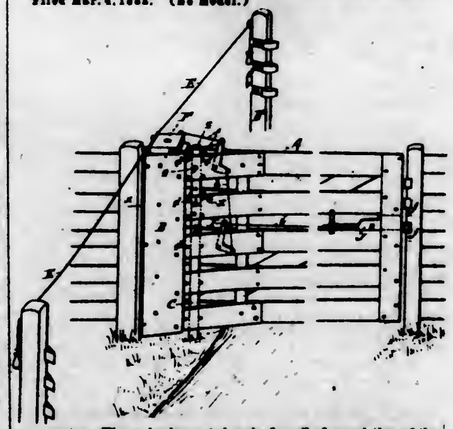
Claim.—In a combined wheelbarrow and cultivator, the wooden side bars and handles A B, having metal extensions *b* to support the wheel *c*, and provided with bent metal cross-bars A' and with upturned stakes I, in combination with the legs D, each made of a single piece of bent metal, and hinged to and between the cross-bars A', the socket E, secured to the front cross-bar, the shovel G, having a shank adapted to be adjustably secured in the socket E, and the metal body H, bent to fit the frame and stakes, and provided with rigid eyes to slip over the stakes, all combined substantially as shown and described.

258,806. SWINGING GATE. GIDEON KING, Eminence, Ky. Filed Jan. 16, 1882. (No model.)



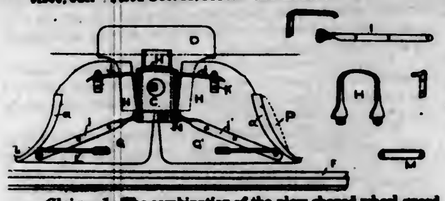
Claim.—Rod A, arm C, hinge D, crank F, key and washer *e*, swinging levers E E, levers K K, brackets *d d*, posts I I, slots H H, hand-holds J J, ropes *a a*, curved rod *p*, notch R, verticals *b b*, and elevations *f f*, combined, arranged, constructed, and operated substantially as and for the purposes specified.

258,807. SWINGING GATE. CHARLES H. LAMB, Delphos, Ohio. Filed Mar. 4, 1882. (No model.)



Claim.—The swinging gate herein described, consisting of the box B and rails A, secured to said box alternately, the pivotal post made in sections, the portion C having a pivotal pin and the portion *c* being secured to the gate, and having corresponding socket, the rope E, pivotal plate F, latch J, and connections, all combined and arranged to serve as set forth.

258,808. RAILWAY-CAR. HILTON H. LAMBURN, San Francisco, Cal. Filed Dec. 21, 1881. (No model.)



Claim.—1. The combination of the plow-shaped wheel-guard G, extending around the tread and in front of the wheel, with the hinge-supports H and I, connected to axle-box C, and spring-bracket J, as and for the purpose herein described.

2. In combination with the guard G, the cushion P, as and for the purpose herein described.

258,809. MACHINE FOR BRONZING OR OTHERWISE ORNAMENTING PAPER, &c. THOMAS LUDWING, RICHARD RAY, and FRANCIS G. LYNDS, Manchester, County of Lancaster, England. Filed Mar. 6, 1882. (No model.) Patented in England Jan. 4, 1878, No. 56, and Oct. 27, 1874, No. 3,764, and in Germany Sept. 21, 1877, No. 480.



Claim.—1. In a bronzing-machine, the endless traveling table A, made of india-rubber or other suitable material, in combination with the cross sweeping bands *j* and *l*, as and for the purpose specified.

2. In a bronzing-machine, the cross sweeping bands *j* and *l*, operating as and for the purposes specified.

3. In a bronzing-machine, the combination, with a suspended hopper, of kickers whereby a jerking motion is imparted to the hopper for shedding the powder onto the paper, and of buffers for regulating the supply of the powder, all substantially as set forth.

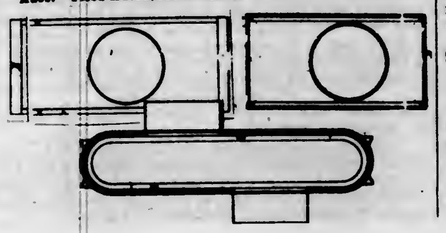
4. The combination, in a bronzing-machine, of a suspended hopper, operated as described, buffers for regulating the supply of powder, an endless table, A, cross sweeping band *j* and *l*, and flap-valve *c*, these parts being arranged and operating in the manner and for the purposes described.

258,810. CORSET-BUSK. ADELAIDE B. HAHN, Lawrence, Mass. Filed Feb. 6, 1882. (No model.)



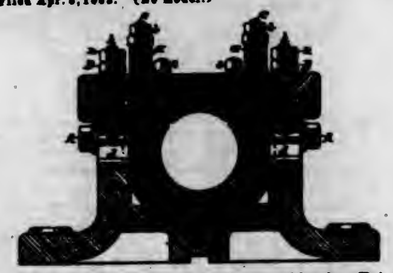
Claim.—In a corset, the busk C, having its front edge turned back against the main body thereof, providing a space between the turned-back portion and the main body of said busk, and having slots cut through into the said inner space, and the busk A, having the hooks B extended out from its edge and adapted to enter the slots in busk C, substantially as described.

258,811. STOVE ATTACHMENT. JOHN O. NEILSON, Hedford, Mass. Filed Mar. 6, 1882. (No model.)



Claim.—The combination of the endless belt provided with an indent and an object, the two flanged side pieces, and the exterior connection-bars, whereby the side pieces and the endless belt are secured together, all being adapted to operate as and for the purpose set forth.

258,812. PILLOW-BLOCK. GEORGE K. ORRELL, Oswego, N. Y. Filed Apr. 3, 1882. (No model.)



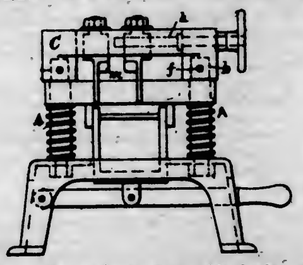
Claim.—1. In combination with the journal-box base P, jaws J, and cap C, the stud *h*, fixed to the jaws, the hollow bolt B, fitted loosely over the stud and working in a screw-threaded eye in the cap, and the nut *n* on the end of the stud, as set forth and shown.

2. In combination with the journal-box base P, jaws J, cap C, cheek-piece D, and wedge *w*, the studs *h* and *c*, fixed respectively to the jaws and to the wedge, the hollow bolts B and *a*, slipped loosely over the respective studs and working in threaded eyes in the cap, and the nuts *n* and *b*, applied respectively to the extremities of the studs, substantially as described and shown.

3. In combination with the journal-box base P, jaws J, cap C, cheek-piece D, and wedge *w*, the studs *h* and *c*, hollow bolts B and *a*, nuts *n* and *b*, and the set-screws A, all as shown and set forth.

4. In combination with the journal-box base P, jaws J, cap C, bottom bearing, *c*, and wedge *w*, the cheek-piece D, resting on the bottom bearing, *c*, and the set-screw *a*, working in the cap C and bearing on top of the cheek-piece, substantially as described and shown.

258,813. TRACE-TRIMMING MACHINE. HENRY P. OSBORN, Newark, N. J. Filed Nov. 21, 1881. (No model.)



Claim.—1. In a trace-trimming machine having a clamp and cross-head for carrying the guides, mounted upon pillars for the purpose described, the combination, with the cross-head C, formed with sockets *c* upon its lower side, for the purpose described, of the pillars A, removably secured therein, as by pins *f*, for securing access to the knives at pleasure, substantially as herein set forth.

2. In combination with the cross-head formed with slot I, the studs H, provided with knives and double guides, arranged as described, and the screw *h*, inserted in the end of the cross-head and in one of the studs H, and operated to adjust the distance of the guides from one another, substantially as shown and described.

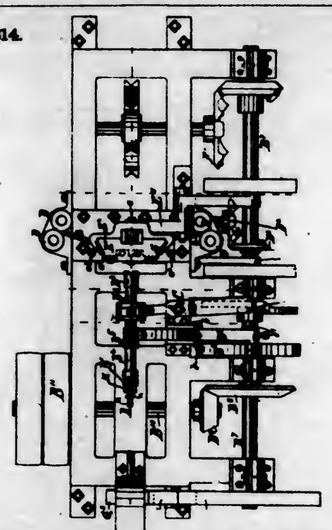
258,814. BARB-WIRE-FENCE MACHINE. FLOYD B. PATTERSON, Chicago, Ill., assignor to William L. Carpenter, Des Moines, Iowa. Filed Mar. 20, 1882. (No model.)

Claim.—1. In a barb-fence machine, the grooved spindle B, in combination with the adjustable holder M and the sleeve, substantially as specified.

2. The grooved spindle and its adjustable holder, in combination with the sleeve encircling the spindle and the coiling-head carried by the sleeve, substantially as specified.

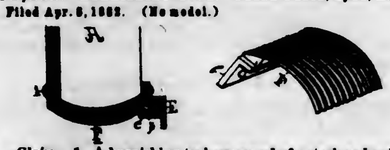
3. The combination, with the continuously-rotating mutilated

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bevel-gear D^3, having broken rim d^3, of the intermittently-rotating bevel-gear D^2, provided with circular depressions in its periphery adapted to engage with the circular part of the rim d^3 for the purpose of intermittently locking the gear D^2, the feed-rolls, and mechanism for driving the same from the intermittently-rotating and locked gear D^2, substantially as specified.

258,315. BURNISHING-TOOL. FRANK FRASS, Lynn, Mass. Filed Apr. 6, 1882. (No model.)

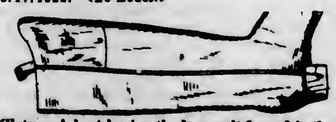


Claim.—1. A burnishing-tool composed of a stock or head, *a*, and a burnishing-face composed of a series of springs placed side by side and adapted to yield independently to conform to the surface being operated upon.

2. As an improved article of manufacture, a face-plate composed of a series of independent springs placed contiguous to each other, and substantially in the same plane, and adapted to be attached to a burnishing-tool, all substantially as set forth.

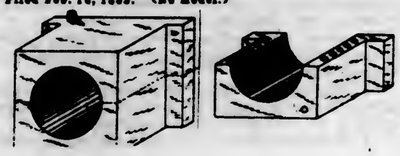
3. The guard-plate E, having groove *f* and lip *e*, combined with the detachable burnisher-plate F and blank A, substantially as described.

258,316. BOOT. EDWIN E. EDES, Williamstown, Mich., assignor of one-half to Leonard H. Simons, same place. Filed Feb. 17, 1882. (No model.)



Claim.—A boot having the loop-welt formed in the leg-seam, as described, combined with a wire spring operating in said loop-welt and the lower end thereof firmly embedded in the boot-heel, as set forth.

258,317. JOURNAL-BEARING. JACOB EDES, Pittsburg, Pa. Filed Feb. 16, 1882. (No model.)

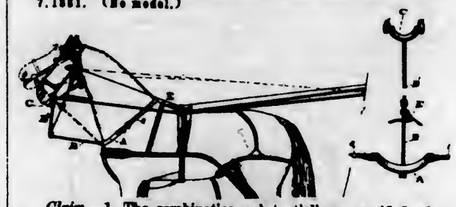


Claim.—1. The method of manufacturing water-jacketed brasses or journal-bearings which consists in placing a spiral tube within a suitable mold, then casting the metal around the tube, then cutting the bearing so made into two sections, substantially as and for the purpose set forth.

2. As a step in the manufacture of water-jacketed brasses or journal-bearings, placing a spiral tube within a suitable mold, and then casting the metal around the tube, substantially as and for the purpose set forth.

3. The method herein described of securing a circular flow of water through a sectional water-jacketed brass or journal-bearing, which consists in forming the bearing in one piece and having an internal spiral tube, then cutting the bearing into two sections and placing the sections together, with an intervening gasket, substantially as and for the purpose set forth.

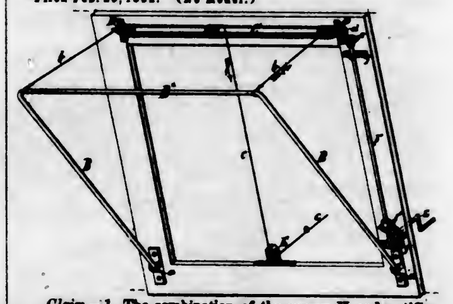
258,318. DEVICE FOR PREVENTING HORSES FROM RUNNING AWAY. MAX REYNOLDS, Cincinnati, Ohio. Filed Nov. 7, 1881. (No model.)



Claim.—1. The combination, substantially as specified, of a bit-piece and a breast-piece attached to a horse with toggle-jointed bars connecting said pieces and a line attached to the said jointed bars for the purpose of straightening them, as set forth.

2. As a new article of manufacture, the horse-controlling device hereinbefore described, consisting of breast-piece A, bit-piece C, jointed bars B B', and joint-piece D, constructed and combined to operate as specified.

258,319. AWNING. A. GUSTAV SAHLQUIST, Brooklyn, N. Y. Filed Feb. 20, 1882. (No model.)



Claim.—1. The combination of the canvas H and a stiffening-bar, B', attached to said canvas, with the supporting-cords *b*, operating-cords *c*, and roller C, said cords being secured by their ends to wind in opposite directions upon the roller C, so that the unwinding of the cord *c* will wind the cords *b*, and vice versa, substantially as set forth.

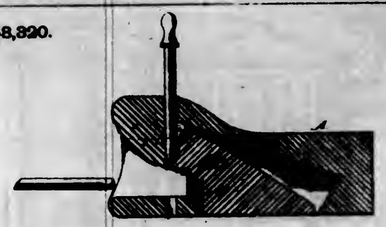
2. In an awning, the combination of the hinge-frame B B', the roller C, the canvas-supporting cords *b*, attached with their ends to the frame B, and roller C, and the operating-cord *c*, wound upon the roller C in opposite direction to that of the cords *b*, substantially as set forth.

3. In an awning, the combination, with the bar B', connecting the front ends of the canvas-supporting cords *b*, and with the roller C, and operating-cord *c*, the said cords *b* and *c* being wound on the roller in opposite directions, as described, of a canvas, H, having rings A, attached at intervals to slide on the cords *b*, for folding and unfolding the canvas by the winding and unwinding, respectively, of the cords *b*, substantially as specified.

258,320. CAR-COUPLING. REUBEN A. CAMPBELL, Salem, Ohio. Filed Feb. 9, 1882. (No model.)

Claim.—An automatic car-coupling consisting of the draw-head A, having within it the latch-block, constructed with a flat projecting lip for the support of the coupling-pin, and an angular slot to move upward and backward in parallel lines by the pressure of the connecting-link, substantially as described.

258,320.

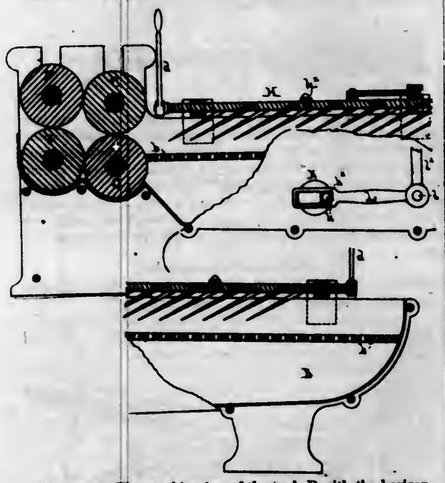


258,321. OX-SHOE. ALBERT SANFORD, Oshkosh, Wis. Filed Mar. 25, 1882. (No model.)



Claim.—An ox-shoe having toe and heel calks and one or more intermediate calks extending transversely across the shoe, all said calks being broader or laterally wider at their outer portions than elsewhere, substantially as described, for the purpose specified.

258,322. WOOL-WASHING MACHINE. FREDERICK G. SARGENT and ALLAN C. SARGENT, Graniteville, Mass. Filed June 13, 1881. (No model.)



Claim.—1. The combination of the tank B with the horizontally-reciprocating rake H, extending over substantially the entire portion of the bowl used to wash the wool in, provided with fixed teeth inclined forward in the line of their direction of forward movement, substantially as described.

2. The combination of the bowl B, provided with the swinging frame E, hinged to one side of it, with the sliding frame H, which extends over substantially the entire washing-space of the bowl, and is provided with forwardly-inclined teeth, substantially as described.

3. The combination of the bowl B with the rock-shaft D, supported by hinges at one side of the bowl, and provided with the hand-lever *d*, with the frame E, attached to each shaft, and the sliding frame H, provided with inclined teeth, substantially as described.

4. The combination of the tank B with a horizontally-reciprocating rake-frame provided with fixed inclined teeth, adapted to move backward and forward without being raised from the liquid in the tank, and feed the wool forward by their forward movement, and agitate it in the liquid by their backward movement, substantially as described.

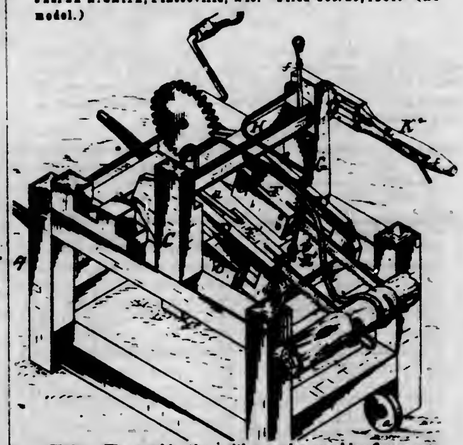
258,323. WHEELBARROW. GEORGE H. SHUMAKER, Pierceton, Ind. Filed Mar. 29, 1882. (No model.)



Claim.—1. In a wheelbarrow or truck, the combination, with the downwardly-curved longitudinal braces and supports F F, the lowermost portions of which rest on the ground, of the semicircular curved transverse brace and support I, formed of a single piece, and having its lower ends secured to the supports F F at a point in rear of where the latter touch the ground, and continued downwardly to form auxiliary supports or legs K K, touching the ground, as set forth.

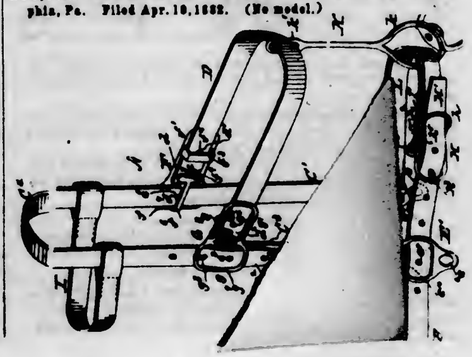
2. In a wheelbarrow or truck, the combination, with the braces or supports F F, of the semicircular curved forwardly-inclined transverse brace and support I, formed of a single piece, and having its central portion, I, secured to the body of the wheelbarrow or truck on its under side, and at or near the center thereof, and its lower ends to the braces F F, from whence they are continued downwardly to form legs or supports K K, resting on the ground, as set forth.

258,324. DEAD-SAWING MACHINE. ANDREW J. SMITH and JASPER N. SMITH, Plattsville, Wis. Filed Oct. 29, 1881. (No model.)

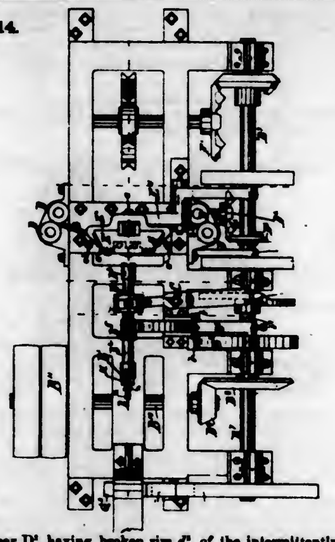


Claim.—The combination, with a sawing-machine frame constructed with the uprights G and bucks *i*, of a transverse shaft, H, having at one end a lever, K', with spring-pawl *k*, the fixed ratchet *l*, and clamping-bar K, substantially as and for the purpose set forth.

258,325. HALTER OR BRIDLE. HENRY F. SMITH, Philadelphia, Pa. Filed Apr. 10, 1882. (No model.)

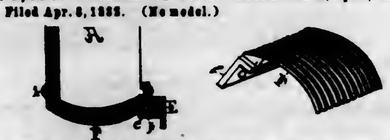


258,314.



bevel-gear D^1, having broken rim d^3, of the intermittently-rotating bevel-gear D^2, provided with circular depressions in its periphery adapted to engage with the circular part of the rim d^3 for the purpose of intermittently locking the gear D^2, the feed-rolls, and mechanism for driving the same from the intermittently-rotating and locked gear D^2, substantially as specified.

258,315. BURNISHING-TOOL. FRANK FRASH, Lynn, Mass. Filed Apr. 6, 1882. (No model.)

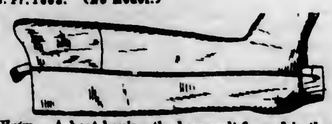


Claim.—1. A burnishing-tool composed of a stock or head, *a*, and a burnishing-face composed of a series of springs placed side by side and adapted to yield independently to conform to the surface being operated upon.

2. As an improved article of manufacture, a face-plate composed of a series of independent springs placed contiguous to each other, and substantially in the same plane, and adapted to be attached to a burnishing-tool, all substantially as set forth.

3. The guard-plate E, having groove *f* and lip *e*, combined with the detachable burnisher-plate F and blank A, substantially as described.

258,316. BOOT. EDWIN H. REED, Williamstown, Mich., assignor of one-half to Leonard H. Simons, same place. Filed Feb. 17, 1882. (No model.)



Claim.—A boot having the loop-welt formed in the leg-seam, as described, combined with a wire spring operating in said loop-welt and the lower end thereof firmly embedded in the boot-heel, as set forth.

258,317. JOURNAL-BEARING. JACOB REESE, Pittsburg, Pa. Filed Feb. 18, 1882. (No model.)



Claim.—1. The method of manufacturing water-jacketed brasses or journal-bearings which consists in placing a spiral tube within a suitable mold, then casting the metal around the tube, then cutting the bearing so made into two sections, substantially as and for the purpose set forth.

2. As a step in the manufacture of water-jacketed brasses or journal-bearings, placing a spiral tube within a suitable mold, and then casting the metal around the tube, substantially as and for the purpose set forth.

3. The method herein described of securing a circular flow of water through a sectional water-jacketed brass or journal-bearing, which consists in forming the bearing in one piece and having an internal spiral tube, then cutting the bearing into two sections and placing the sections together, with an intervening gasket, substantially as and for the purpose set forth.

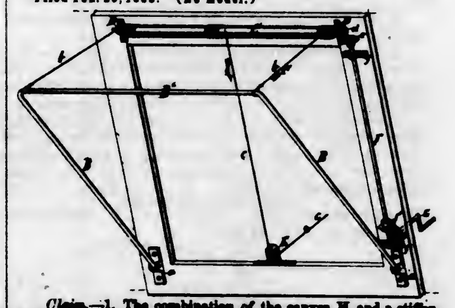
258,318. DEVICE FOR PREVENTING HORSES FROM RUNNING AWAY. MAX ROTHSCHILD, Cincinnati, Ohio. Filed Nov. 7, 1881. (No model.)



Claim.—1. The combination, substantially as specified, of a bit-piece and a breast-piece attached to a horse with toggle-jointed bars connecting said pieces and a line attached to the said jointed bars for the purpose of straightening them, as set forth.

2. As a new article of manufacture, the horse-controlling device hereinbefore described, consisting of breast-piece A, bit-piece C, jointed bars B B', and joint-piece D, constructed and combined to operate as specified.

258,319. AWNING. A. GUSTAF SAHLQVIST, Brooklyn, N. Y. Filed Feb. 20, 1882. (No model.)



Claim.—1. The combination of the canvas H and a stiffening-bar, B', attached to said canvas, with the supporting-cords *b*, operating-cords *c*, and roller C, said cords being secured by their ends to wind in opposite directions upon the roller C, so that the unwinding of the cord *c* will wind the cords *b*, and vice versa, substantially as set forth.

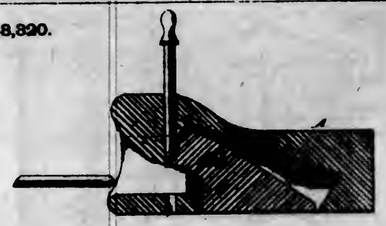
2. In an awning, the combination of the hinge-frame B B', the roller C, the canvas-supporting cords *b*, attached with their ends to the frame B, and roller C, and the operating-cord *c*, wound upon the roller C in opposite direction to that of the cords *b*, substantially as set forth.

3. In an awning, the combination, with the bar B', connecting the front ends of the canvas-supporting cords *b*, and with the roller C, and operating-cord *c*, the said cords *b* and *c* being wound on the roller in opposite directions, as described, of a canvas, H, having rings h, attached at intervals to slide on the cords *b*, for folding and unfolding the canvas by the winding and unwinding, respectively, of the cords *b*, substantially as specified.

258,320. CAR-COUPLING. HOMER A. SANFORD, Salem, Ohio. Filed Feb. 3, 1882. (No model.)

Claim.—An automatic car-coupling consisting of the draw-head A, having within it the latch-block, constructed with a flat projecting lip for the support of the coupling-pin, and an angular slot to move upward and backward in parallel lines by the pressure of the connecting-link, substantially as described.

258,320.

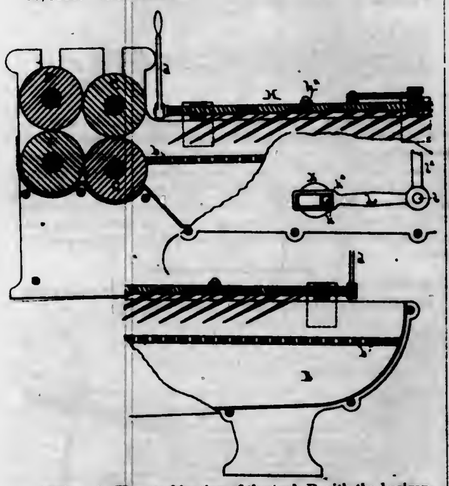


258,321. OX-SHOE. ALBERT SANFORD, Oshkosh, Wis. Filed Mar. 25, 1882. (No model.)



Claim.—An ox-shoe having toe and heel calks and one or more intermediate calks extending transversely across the shoe, all said calks being broader or laterally wider at their outer portions than elsewhere, substantially as described, for the purpose specified.

258,322. WOOL-WASHING MACHINE. FREDERICK G. SARGENT and ALLAN C. SARGENT, Graniteville, Mass. Filed June 13, 1881. (No model.)



Claim.—1. The combination of the tank B with the horizontally-reciprocating rake H, extending over substantially the entire portion of the bowl used to wash the wool in, provided with fixed teeth inclined forward in the line of their direction of forward movement, substantially as described.

2. The combination of the bowl B, provided with the swinging frame E, hinged to one side of it, with the sliding frame H, which extends over substantially the entire washing-space of the bowl, and is provided with forwardly-inclined teeth, substantially as described.

3. The combination of the bowl B with the rock-shaft D, supported by hinges at one side of the bowl, and provided with the hand-lever *d*, with the frame E, attached to such shaft, and the sliding frame H, provided with inclined teeth, substantially as described.

4. The combination of the tank B with a horizontally-reciprocating rake-frame provided with fixed inclined teeth, adapted to move backward and forward without being raised from the liquid in the tank, and feed the wool forward by their forward movement, and agitate it in the liquid by their backward movement, substantially as described.

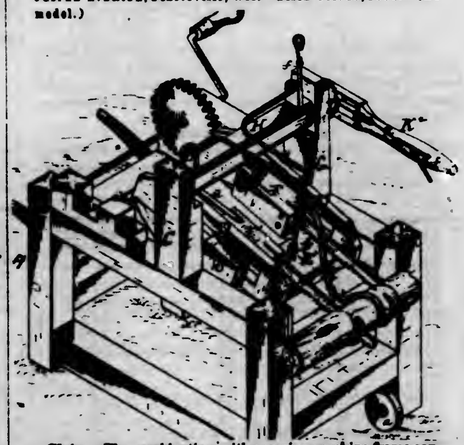
258,323. WHEELBARROW. GEORGE M. SHUMAKER, Pierceton, Ind. Filed Mar. 30, 1882. (No model.)



Claim.—1. In a wheelbarrow or truck, the combination, with the downwardly-curved longitudinal braces and supports F F, the lowermost portions of which rest on the ground, of the semicircular curved transverse brace and support I, formed of a single piece, and having its lower ends secured to the supports F F at a point in rear of where the latter touch the ground, and continued downwardly to form auxiliary supports or legs K K, touching the ground, as set forth.

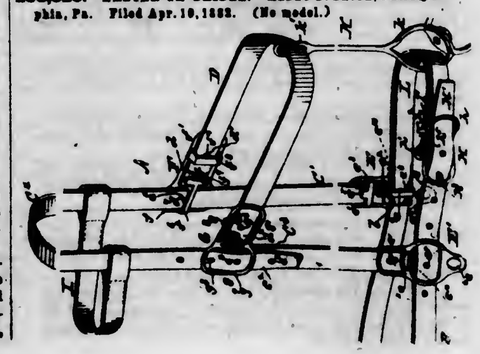
2. In a wheelbarrow or truck, the combination, with the braces or supports F F, of the semicircular curved forwardly-inclined transverse brace and support I, formed of a single piece, and having its central portion, L, secured to the body of the wheelbarrow or truck on its under side, and at or near the center thereof, and its lower ends to the braces F F, from whence they are continued downwardly to form legs or supports K K, resting on the ground, as set forth.

258,324. DRAG-SAWING MACHINE. ANDREW J. SMITH and JASPER M. SMITH, Plattsville, Wis. Filed Oct. 28, 1881. (No model.)



Claim.—The combination, with a mowing-machine frame constructed with the uprights G and bushes *i*, of a transverse shaft, H, having at one end a lever, K^1, with spring-pawl *k*, the fixed ratchet *l*, and clamping-bar K, substantially as and for the purpose set forth.

258,325. HALTER OR BRIDLE. HENRY F. SMITH, Philadelphia, Pa. Filed Apr. 10, 1882. (No model.)



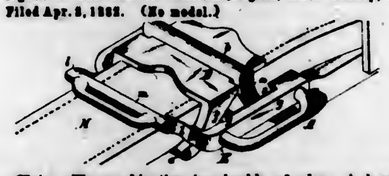
Claim.—1. The improved halter or bridle, having continuous cheek-and-head strap C C' and a separate cheek-strap, C, united to strap C' by a tongued buckle, the two-part buckles E E', having grooves or recesses e^2, for the reception and protection of the lower ends of cheek-straps C C', and the continuous nose-and-chin strap B, secured to buckles E E', and provided with a tongued buckle, said parts being constructed substantially as shown and described.

2. A halter-buckle composed of two uniting frames or parts formed with a depressed cross-bar having a projecting lip adapted and designed to form a recess or groove for the reception and protection of the end of a strap, substantially as shown and described.

3. The combination, with cheek-straps C C' and chin-and-nose strap B, united by buckles E E', formed with grooves or recesses e^2, constructed substantially as shown and described, of the re-enforcing strap L, secured at one end to buckle E and at its opposite end to a buckle, H, on strap B, substantially as shown and described.

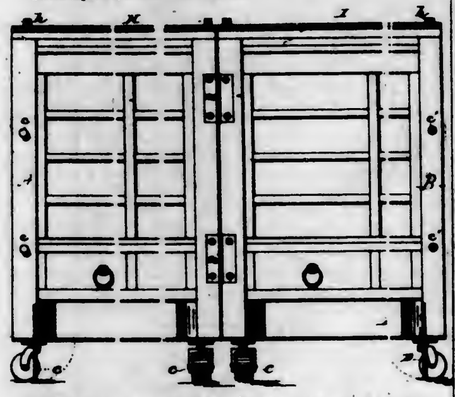
4. The buckle H, having depressed cross-bars h' h^3 and intermediate bar, h^2, elevated above frame h, the bar h' carrying tongue h^4 and the bar h^2 formed with or without stud h^5, substantially as shown and described.

258,326. BUCKLE. WILLIAM S. SPONHAUER, Fort Wayne, assignor of one-half to William Rogers, Allen County, Ind. Filed Apr. 8, 1881. (No model.)



Claim.—The combination, in a buckle, of a loop, A, having side arms and cross-bars, a lock-plate, D, provided with a pin, *d*, arms *f f*, and cross-bar *e*, and a union-plate, E, having recessed side pieces, *g g*, cross-pieces h h', notched arms *l l*, and a cross-bar, *m*, all substantially as set forth.

258,327. PROVISION-SAFE. ROBERT R. STEBS, Gallisburg, Fox., assignor of one-half to William S. Russell, same place. Filed Apr. 20, 1881. (No model.)



Claim.—1. In a provision-safe, the sections A B, provided with the spring-lock *e d* and jointed cover H I, substantially as set forth.

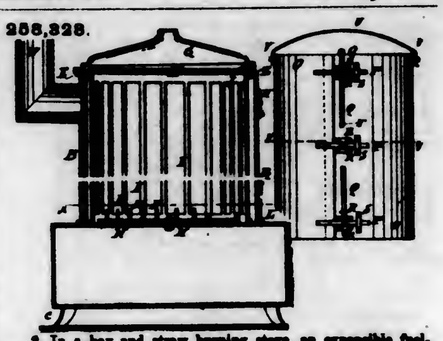
2. In a provision-safe, the sections A B, having jointed cover H I and metallic bottom L, the whole being mounted on the caster-rollers C C, as and for the purpose set forth.

3. The sections A B, having jointed cover H I, metallic bottom L, and caster-rollers C C, in combination with the folding leg E F, having clasp G, substantially as set forth.

258,328. HAY AND STRAW BURNING STOVE. WILLIAM TREPLE, Watertown, Dak., assignor to himself and H. C. Trout, same place. Filed Oct. 6, 1881. (No model.)

Claim.—1. The outer and inner cylinders, B I, the latter supported on cross-bars H of the former, in combination with the flanged cap E, having inner and outer covers, F G, pivoted thereto, as shown and described.

258,328.

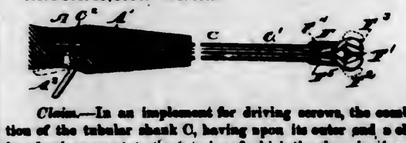


2. In a hay and straw burning stove, an expansible fuel-bucket, O, made substantially as herein shown and described, and consisting of a cylinder which is capable of being expanded after its introduction within the fire-chamber, so as to discharge the fuel, as set forth.

3. In a hay and straw burning stove, the combination, with the expansible bucket O, of the notched straps P and the sliding look-rod Q, substantially as herein shown and described, whereby the bucket can be readily fastened and unfastened, as set forth.

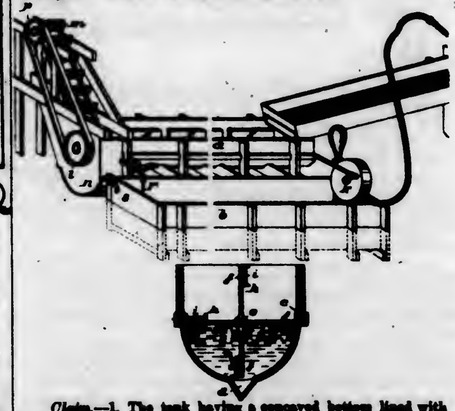
4. In a hay and straw burning stove, the combination, with the bucket-locking rod Q, of the projecting pin T, substantially as herein shown and described, to strike against the top of the stove, unlock the bucket automatically, and discharge the fuel when the filled bucket is inserted in the stove, as set forth.

258,329. SCREW-DRIVER. CAL THOMAS, Terre Haute, Ind. Filed Feb. 16, 1881. (Model.)



Claim.—In an implement for driving screws, the combination of the tubular shank C, having upon its outer end a chambered enlargement, to the interior of which the clamping-jaws are pivoted, a sliding rod, C', which passes through the shank and enters the handle A, clamping-jaws F F, a spring, A', for operating said jaws, located in the handle, and a lever, A^2, or equivalent device, for operating the clamping-jaws, the parts being constructed and arranged substantially as and for the purpose set forth.

258,330. AMALGAMATOR. HORATIO GREACH TRAIN, Kansas City, Mo. Filed June 13, 1881. (No model.)



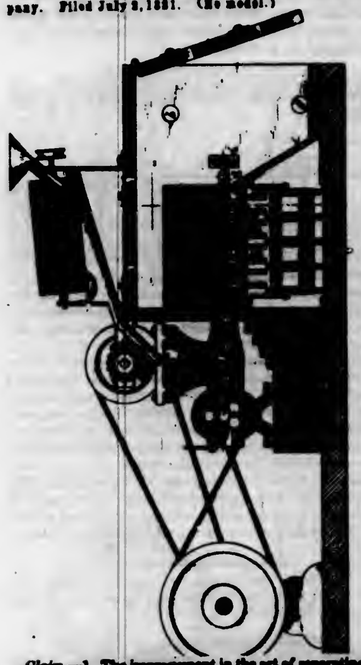
Claim.—1. The tank having a concaved bottom lined with amalgam-plates, with a V-shaped gutter in the bottom and opening into a well, substantially as and for the purposes described.

2. In an amalgamator, a tank provided with a shaft having a series of separate conveyers, the wings or flanges of one conveyer being on a line between the flanges of the other conveyer, and having amalgamated surfaces, substantially as specified.

3. The combination of tanks a and b, well n at the end of tank a, pad communicating with tank b, and conveyers in the tank and well, the said conveyers being connected together and operated by power from the same shaft, substantially as set forth.

4. In combination with an amalgamator, the conveyers or paddles *f*, having amalgamated surfaces i, the tanks a and b, the concaved bottom covered with amalgam-plates o, the gutter d, for containing quicksilver, well n, buckets m, and discharge-cocks r and s, substantially as and for the purposes described.

258,331. SEPARATOR AND CONCENTRATOR FOR ORES, &c. ELIJAH WARNE, Easton, Pa., assignor, by direct and mesne assignments, to the Warne Concentrator and Separator Company. Filed July 2, 1881. (No model.)



Claim.—1. The improvement in the art of separating ores and other materials which consists in carrying and forcing the entire material in granular form, by means of an air-blast, through a nozzle, whereon it is blown over a series of separate openings or pockets, substantially as and for the purposes hereinbefore set forth.

2. In machinery for separating or concentrating ores and other materials, the combination of the blower or air-forcing apparatus, the air-duct leading therefrom, and the ore-feeding device communicating with and opening into said air-duct at a point intermediate between its nozzle or discharge end and the blower, substantially as and for the purposes hereinbefore set forth.

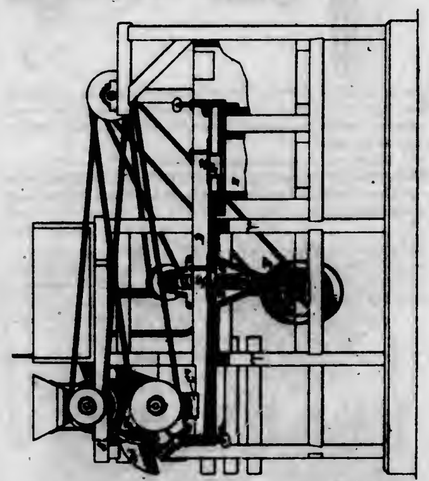
3. In machinery for separating or concentrating ores and other materials, the combination of a blower or air-forcing apparatus, an air-duct leading therefrom into an exhaust-chamber, an ore-feed device communicating with and opening into said air-duct at a point intermediate between its nozzle or discharge end and the blower, and a series of separate ore-receiving pockets arranged on or in the floor of the exhaust-chamber, substantially as and for the purposes hereinbefore set forth.

4. The feed-hopper and rotating feed-worm therein, in combination with the blower, the air-duct and its discharge nozzle, and the separate ore-receiving pockets or openings, under the arrangement and for operation as herein shown and set forth.

5. The combination, substantially as hereinbefore set forth, of the air and ore discharge nozzle with the exhaust-chamber, provided with openings for admission of air and means for closing the same more or less as required, and the ore-receiving pockets formed on or in the floor of said chamber and adjustable in width, substantially as and for purposes hereinbefore set forth.

6. The combination, substantially as hereinbefore set forth, of the blower, the air-duct and its discharge-nozzle, the ore-feed device, the exhaust-chamber, the ore-receiving pockets adjustable in width, and means, substantially as described, whereby the communication of said blower and exhaust-chamber with the surrounding air can be varied at pleasure, substantially as and for the purposes specified.

258,332. CONCENTRATOR AND SEPARATOR FOR ORES. ELIJAH WARNE, Easton, Pa., assignor, by direct and mesne assignments, to the Warne Concentrator and Separator Company. Filed July 2, 1881. (No model.)



Claim.—1. In machinery for concentrating and separating ores and other materials by the wet process, an inclined sluice provided at intervals in its bottom with openings or pockets adjustable in size in the direction of the length of the sluice and from their lower or downstream edges, substantially as and for the purposes set forth.

2. A sluice provided with openings or pockets, and having a bottom provided with sections adjustable, so that they may be tilted or inclined in order to regulate or modify the current of water passing through the sluice over said openings.

3. The combination of a sluice provided with openings or pockets adjustable in size, and with bottom sections adapted to be variably tilted or inclined in combination with one or more spouts or nozzles for supplying water under head or pressure to the sluice, and means for regulating the water-supply, substantially as hereinbefore set forth.

4. The inclined sluice provided with bottom openings or pockets adjustable in size, substantially as set forth, and one or more pipes or ducts for supplying water directly to said sluice, in combination with the receptacles containing still or non-flowing water, and communicating with said openings or pockets, said conveyers in said receptacles arranged and operating to raise and carry off from the receptacles the material deposited therein through the openings or pockets, substantially as hereinbefore set forth.

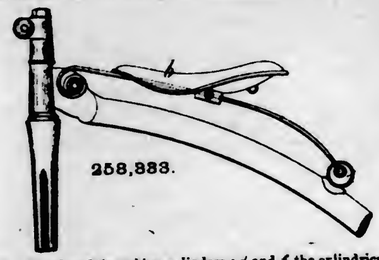
5. The inclined mixing and separating trough and conveyer arranged in the same, in combination with the sluice provided with bottom openings or pockets adjustable in size and arranged at the upper or higher end of said trough to receive from the same the heavier material which settles to the bottom of the trough, substantially as and for the purposes set forth.

6. The inclined mixing-trough and conveyer contained in the same, in combination with the two sluices D X, and their adjuncts, and means for furnishing independent water-supply to the said trough and sluices, these parts being arranged for joint operation, substantially as set forth.

7. The inclined mixing and separating trough provided at its lower end with a vertically movable and adjustable gate, in combination with the conveyer contained in said trough, and the two sluices D X, substantially as hereinbefore set forth.

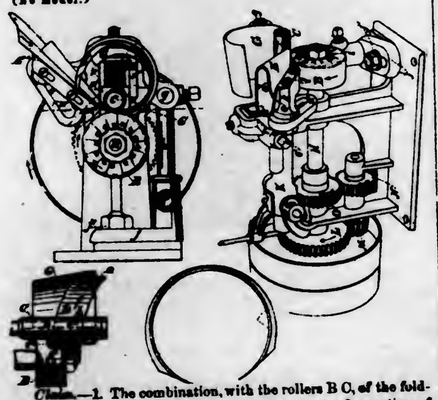
258,333. SEAT-SPRING FOR BICYCLES. JOSEPH WHITE, Coventry, County of Warwick, England. Patented in England Feb. 7, 1881, No. 512. (No model.)

Claim.—The combination, with the seat, seat-spring, and back-



bone in a bicycle, of the rubber cylinders *e e'* and *f*, the cylindrical cases for such springs, the joint pins or bolts passing through such rubber cylinders, and the jaw connected with the spine, substantially as set forth.

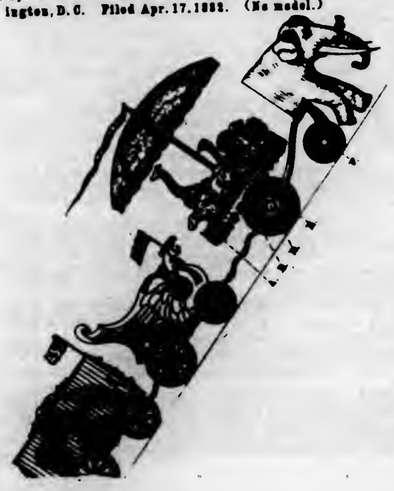
258,884. MACHINERY FOR FOLDING AND CURLING COLLARS. THOMAS S. WILES, Albany, N. Y. Filed Feb. 13, 1882. (No model.)



Claim.—1. The combination, with the rollers B C, of the folding-guide E and the curling-guide G in the form of a section of the inner surface of a hollow cone, and arranged in respect to said rollers and folding-guide substantially as described.

2. The combination, with the roller B, having a covering of cloth, hard roller C, and means, substantially as set forth, for heating said hard roller, of the folding-guide E and curling-guide G, both arranged in respect to said rollers and each other substantially as described.

258,885. MECHANICAL TOY. TURNEY E. WILKINS, Washington, D. C. Filed Apr. 17, 1882. (No model.)



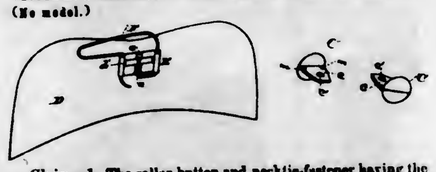
Claim.—1. In a mechanical toy, the combination of the horizontal platform A, provided with holes *i*, carrying toy figures, the axle D, the drive-wheel B, having a beveled gear on its edge meshing into a beveled gear on the edge of the platform A, and the vertical axis *a*, fixed to the axle D, as described.

2. In a mechanical toy, the combination of the circular platform A, carrying toy figures, the beveled-gear wheel B, the fixed vertical axis *a* upon the axle D, supporting a canopy by a central staff, as described.

3. In a mechanical toy, the combination of a pair of wheels and an axle supporting a revolving platform carrying toy figures, said axle being firmly secured to a figure-head in the form of some animal, in whole or in part, said figure-head resting upon a caster-wheel forming part of the performing car, as described.

4. The combination of the platform A, carrying toy figures, the axle D, the drive-wheel B, provided with a hand-crank, E, and the supporting-jack C, as described.

258,886. COLLAR-BUTTON AND CRAVAT-FASTENER. SYLVESTER H. WILLIAMS, San Francisco, Cal. Filed Mar. 28, 1882. (No model.)



Claim.—1. The collar-button and necktie-fastener having the button C, provided with an apertured flat shank, *c*, combined with the spring F, having an L-shaped arm, and the plate E, having a central slot, and above and below said slot a guide-socket, *e*, substantially as and for the purpose set forth.

2. The collar-button and necktie attachment, consisting of the button C, with its flat shank *c*, having a hole, *c'*, and the plate *d*, with the slot or aperture *d'* in the stiffener of the cravat, the plate E upon the other side, with its socket-guide *e*, and the spring-wire F, a part of which passes above the stiffener, arranged and operating in the socket *e*, as shown, substantially as herein described.

3. The collar-button C, constructed of a piece or strip of metal having rounded ends and ears *m*, and notches *m'*, said strip being folded at the middle, its body forming the flat wide shank *c*, in which a hole, *c'*, is punched, and its rounded ends turned at right angles, forming the head of said button, substantially as herein described.

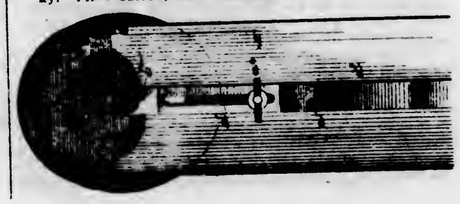
258,887. MITTEN. HERMON O. WITHERELL, Elkhart, Ind., assignor to the Eagle Knitting Company, same place. Filed Mar. 1, 1882. (No model.)



Claim.—1. A mitten composed of a hand portion provided with a thumb-opening cut therein, a double contracted wrist portion formed integral with said hand portion, and an attached lining provided with a thumb-stall, substantially as described.

2. A knitted mitten formed from a continuous web and having a whipped or stitched end and a double contracted wrist portion, and provided with an attached lining and facing, substantially as described.

258,888. HEAD-REST. WILLIAM H. WOOLDRIDGE, Louisville, Ky. Filed Mar. 21, 1881. (No model.)

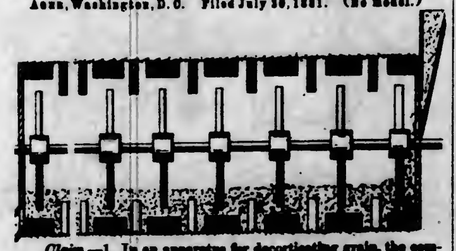


258,888.



Claim.—In a head-rest, the combination of standard A, having a central longitudinal slot and recessed at its upper end, the pivoted cushion B, and the bar *a*, having longitudinal slot *a'*, bend *a²* at one end, and outward inclination *b²* at the other, substantially as shown and described, and for the purpose specified.

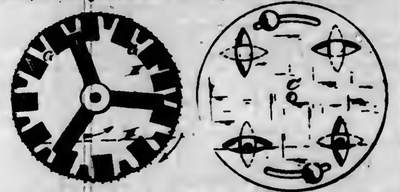
258,889. GRAIN-DECORTICATING APPARATUS. WILSON AGEE, Washington, D. C. Filed July 30, 1881. (No model.)



Claim.—1. In an apparatus for decorticating grain, the combination of the rotary screen having alternate long and short decorticators on the interior thereof with the central shaft provided with a series of radial decorticators, the whole arranged to operate substantially in the manner explained.

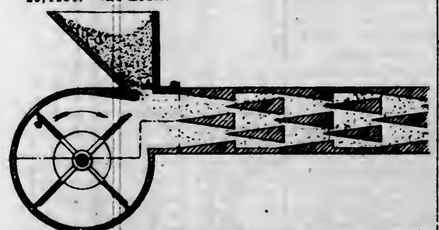
2. In an apparatus for decorticating grain or cereals, the rotary screen having alternate long and short decorticators on the interior thereof, the rotary shaft, and decorticators, the two being adapted to operate as described, in combination with air-exhaust mechanism to remove the dust and decorticated hulls, substantially as and for the purposes described.

258,890. GRAIN-DECORTICATING APPARATUS. WILSON AGEE, Washington, D. C. Filed Sept. 17, 1881. (No model.)



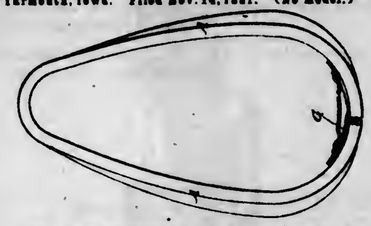
Claim.—The combination of the horizontal cylinder provided with a feed-opening at one end, the shaft C, having decorticators mounted on it, the adjustable discharging-passages at the opposite end, means for moving the shaft and screen and decorticators attached thereto in opposite directions with a relatively fast and slow speed, an inclosing-shell for said cylinder, and means for producing an air-blast, substantially as described.

258,891. GRAIN-DECORTICATING APPARATUS. WILSON AGEE, Washington, D. C. Filed Jan. 31, 1881. Renewed Nov. 25, 1881. (No model.)



Claim.—In an apparatus for decorticating rice, coffee, and cereals, the horizontal box or grain passage having a series of stationary beveled surfaces on its interior walls composed of abrasive material, and a series of stationary alternating and tapering decorticators, composed of similar material, located within the box, and a blast or exhaust fan, the whole being combined and arranged substantially as and for the purpose specified.

258,892. HORSE-COLLAR FASTENING. JOHN W. ALBRIGHT, Yarmouth, Iowa. Filed Nov. 14, 1881. (No model.)



Claim.—1. The combination, with the part B, provided with the socket D, and the vertical slots F, opening into the said socket, of the part C, provided with the screw-threaded catch-bolt E, substantially as shown and described, whereby the collar is adapted to be widened, as set forth.

2. The combination, with the collar A, made open at the bottom, and provided with a flap overlapping the joint, of the keeper H, secured to the said flap, substantially as shown and described, whereby the pole-strap is prevented from dropping off when the collar is unfastened, as set forth.

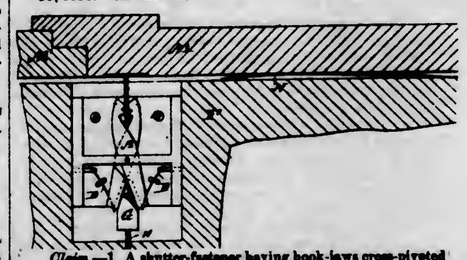
258,893. CARPET-SWEEPER. CHARLES O. ALLEN, Grand Rapids, Mich. Filed Apr. 7, 1881. (Model.)



Claim.—1. A rotary brush consisting of a central core having bristle-sockets bored therein transversely, with smaller holes or passage-ways connecting these sockets, in combination with the bristles and one or more wires laced through said holes and around the middle of the tufts of bristles, as described.

2. A rotary brush consisting of a central core having bristle-sockets bored therein transversely with holes *c*, connecting diametrical sockets and diagonal holes *d*, in combination with the bristles and a single wire laced through said holes and around the bristles, substantially as shown and described.

258,894. SHUTTER-FASTENER. CHARLES ALTSHILLER, New York, N. Y., assignor of one-half to Meyer A. Stein. Filed Apr. 11, 1882. (No model.)

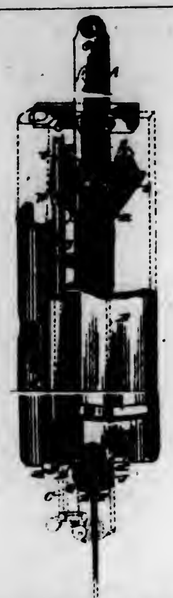


Claim.—1. A shutter-fastener having hook-jaws cross-pivoted to a bed-plate, and springs D D, arranged to bear on the outer rear ends of said jaws, whereby both the front and rear of jaws are simultaneously pressed toward each other, as shown and described.

2. The combination, with the cross-pivoted hook-jaws having vertical flanges K, of the end-beveled block G, rhomboidal in shape and arranged on the end of a hand-rod, H, as and for the purpose specified.

258,895. NEEDLE-THREADING ATTACHMENT FOR SEWING-MACHINES. FRANK G. ALTMANS and FRED POHREN, Edina, Mo. Filed Mar. 4, 1882. (Model.)

258,345.



Claim.—1. In a needle-threading attachment for sewing-machines, the sliding rod C, carrying the hinged frame F, bevoled at H, and having the threading-tube G, in combination with the bracket J, having notch J, as and for the purpose set forth.

2. The threading-tube carrier C, having pin or stud T, in combination with the needle-bar A, having pin V, as and for the purpose set forth.

3. The needle-bar A, having pivoted cam-plate N, provided with the finger O, tooth P, and shallow notch Q, spring E, having hook S, and pin V, in combination with the threading-tube carrier C, having pin or stud T, as and for the purpose set forth.

258,346. SEWING-MACHINE SHUTTLE. MARSHALL D. ANDRUS, Middletown, Conn., assignor to the Victor Sewing Machine Company, same place. Filed Mar. 21, 1882. (No model.)



Claim.—1. A sewing-machine shuttle provided with a guard that is rigid with the shuttle-case, the said guard being formed with a curved wall located over and in close proximity to the flanged end of the bobbin, but not touching the same, whereby the thread will be prevented from slipping over the said end of the bobbin, substantially as described.

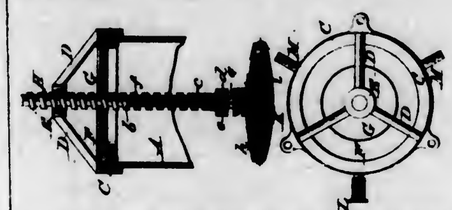
2. A sewing-machine shuttle provided with a concaved guard rigid with the shuttle-case and adapted to prevent the thread from slipping over the end of the bobbin, the said guard having a centrally-located step for the bobbin-journal, and the flanged end of the bobbin at the heel of the shuttle being received in the concavity of the guard, substantially as described.

3. The combination, in a sewing-machine shuttle, of the gate E, provided at its free end with a curved guard adapted to close over the flanged end of the bobbin at the point of the shuttle and to prevent the thread from slipping off the end of the bobbin, substantially as described.

4. The combination, with the shuttle-case, of concaved guard C at the heel of the shuttle, and the curved guard F upon the pivoted shuttle-gate, substantially as described.

258,347. AIR-PUMP. ALFRED H. ARMEN, Chicago, Ill. Filed June 30, 1881. (No model.)

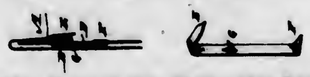
Brief.—The base of the frame is provided with nippers L M M, the former for the expulsion of air, the latter for drawing into the pump air from contiguous vessels. The interior base is of a conformation adapted to form an air-tight contact with the convex surface of the piston K, which is made of two plano-convex plates, *h i*, having concentric hubs *n n*, whose circumferences rest on a packing-ring, *s*. The interior hub, *n*, is screw-threaded to engage with a rod, *c*, which connects it to the hollow piston-rod H by means of the nuts *d f g*. The upper end of the pump contains on a packing, *a*, a cover, F, having a beveled central hole, whereby access is had to the interior of the cylinder. A cap, C, screw-threaded to engage with the threaded surface of the upper end of the frame, surmounts the whole, and radiating from it are two arms, D, which terminate in a central ring, E, in which the piston-rod works.



Claim.—1. The combination, with the piston K and tubular piston-rod H, having screw-thread *b* and nut *c*, of the rod *c*, provided with nuts *d g f*, substantially as shown and described.

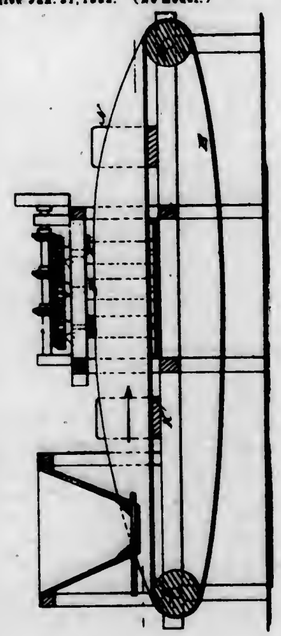
2. The combination, with the ribbed and flanged plates *h i*, having concentric hubs *n n*, of the tubular screw-threaded piston-rod H, nut *c*, and rod *c*, having nuts *d g f*, substantially as shown and described.

258,348. FASTENING FOR SAMPLE ENVELOPES. CHARLES W. BALLARD, New York, N. Y. Filed Aug. 8, 1881. (Model.)



Claim.—The combination, with an envelope, B, provided with a perforated flap, A, of a metal strip, D, provided with an open hook, E, a closed hook, F, and a tongue, G, substantially as herein shown and described, and for the purpose set forth.

258,349. CIDER-MILL. WILLIAM W. BARR, Elizabethtown, Ky. Filed Jan. 31, 1882. (No model.)

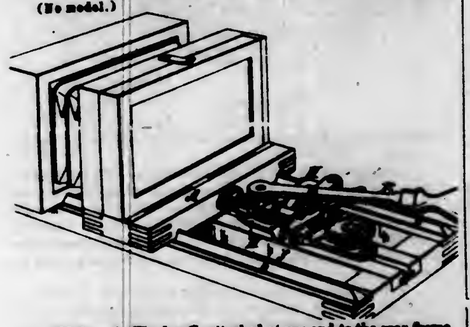


Claim.—1. In a cider-mill, the combination, with a series of rollers, of an endless apron and means, substantially as herein shown and described, for turning up the edges of the apron to cause it to pass between the said rollers in a fold, as set forth.

2. The series of vertically-arranged rollers placed successively nearer to each other, in combination with the folded apron E, flanged board K, and the means, substantially as described, for revolving the rollers as and for the purposes set forth.

3. The combination, with the crushing and compressing rollers and the folded apron E, of the saddle M, substantially as and for the purposes set forth.

258,350. FOCUSING ATTACHMENT FOR PHOTOGRAPHIC CAMERAS. ERASTUS B. BARKER, New York, N. Y., assignor to E. & H. T. Anthony & Co., same place. Filed Apr. 7, 1882. (No model.)



Claim.—1. The bar G, attached at one end to the rear frame, A, and having at its forward end a projection, *d*, in combination with the plate E, having long slot *e*, and the transversely-sliding plate H, having oblique slot *f*, forming the reverse wedges *g g*, as and for the purpose specified.

2. The combination, with the rear part of the body of the camera, the base-piece on or along which said body part slides, and the general adjusting or sliding plate E, provided with means for securing it, of the transverse slide or plate H, having an oblique slot, *f*, and the sliding bar G, connecting the obliquely-slotted portion of said plate H with the rear part of the body of the camera, essentially as and for the purposes herein set forth.

3. The combination, with the longitudinally-adjustable plate E and the transversely-sliding plate H, constructed to form reverse wedges *g g*, of the lever K, attached to said plates E H, the bar G, the rear body part, A, of the camera, and the base-piece D, substantially as shown and described.

258,351. STOVE-SUPPORT. H. CLAY BACCON, Troy, N. Y., assignor to H. S. Vedder Pattern Works, Bacon, Galbraith & Co., same place. Filed Sept. 30, 1881. (No model.)



Claim.—1. A stove-support composed of a horizontal frame of separable bars or plates and a corresponding number of legs which are adapted to and engaged by the ends of said bars, substantially as described, and the whole automatically locked together by gravity, substantially as and for the purpose specified.

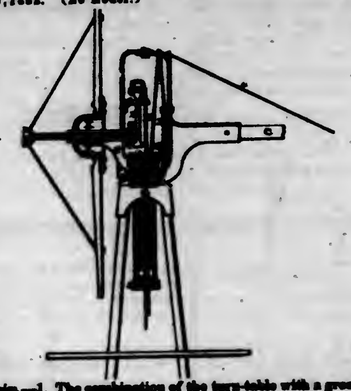
2. A stove-support composed of detachable legs having the central and lateral standing legs, *c d d*, with intervening spaces *e* and seats *f*, substantially as described, and the horizontal portion having the parts *g g* extending and fitting between and against said legs, and engaging with the lateral edges thereof, and resting upon said seats, and preventing lateral or sidewise movement of the legs on or along said horizontal portion, as set forth.

3. A stove-support composed of detachable legs having the standing top legs, *c* and *d d*, substantially as described, in combination with a horizontal portion consisting of separable bars or sections, each having its end portions, *g g*, extending and fitting between and against and engaging with said legs, and thereby securing said legs and bars or sections together in the form of a continuous or ring-like frame, as set forth.

4. The leg composed of the main portion L, having the standing top part, *c*, and the separable upper front portion, M, having the lateral legs *d d*, and fitting upon and against and engaging with said main portion, and adapted to be firmly secured thereto by engagement with the parts *g g* of the horizontal portion of a stove-support, substantially as described.

5. The combination, with the compound leg consisting of the separable parts L M, shaped and fitting together substantially as described, of the bars having end parts, *g g*, formed and engaging with the two parts of the leg, and thereby securing the same together, substantially as set forth.

258,352. WINDMILL. STEPHEN H. BOARD, Angola, Ind. Filed Jan. 27, 1882. (No model.)



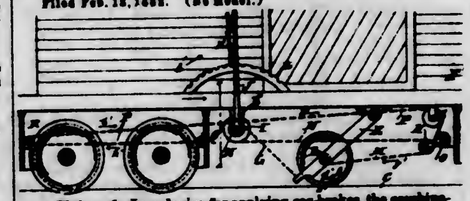
Claim.—1. The combination of the turn-table with a grooved ring made in two parts, the guide for the pump-rod, which is placed inside of the divided ring, and a set-screw for holding the parts in place, substantially as set forth.

2. In a vertical wind-wheel, the casting E, in which the wheel is journaled, and which is curved laterally, so as to throw the wheel-shaft out of line with the vane, and thus enable it to swing around out of the wind, substantially as shown.

3. The combination of the guide-support 1, having an opening for the pitman to pass through, with the guides 6, which are placed upon its top and made adjustable, substantially as described.

4. The combination of the guide-support 1, having a flange formed upon the part 12, with the guides 6, having the grooves 18 formed in their under sides, substantially as set forth.

258,353. CAR-BRAKE. ARTHUR B. BUETTIS, Brooklyn, N. Y. Filed Feb. 18, 1882. (No model.)



Claim.—1. In a device for applying car-brakes, the combination, with the brakes, of the friction-wheels A, mounted on an axle, B, journaled in adjustable frames E, the lifting-chain G, attached to the frames E, and a shaft, H, and the chains M, attached to the axle B and to the drums or pulleys on the shaft H, substantially as herein shown and described, and for the purpose set forth.

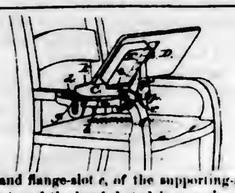
2. In a device for applying car-brakes, the combination, with the brakes, of the friction-wheels A, mounted rigidly on an axle, B, journaled in adjustable frames E, the chains M, attached to the axle B and a shaft, H, the pulley S on the bottom of the car, the coupled pulleys N O, and the brake-chains P, substantially as herein shown and described, and for the purpose set forth.

3. In a device for applying car-brakes, the combination, with the brakes, of the friction-wheels A, mounted rigidly on an axle, B, journaled in adjustable frames E, the lifting-chain G, attached to the frames E and to a shaft, H, the chain M, attached to the axle B and to pulleys or drums I on the shaft H, the lever J, for turning the shaft H, and devices for locking this lever J in the desired position, substantially as herein shown and described, and for the purpose set forth.

258,354. ATTACHMENT FOR CHAIRS. CHARLES S. BULL, Beaver Falls, Pa. Filed Nov. 5, 1881. (Model.)

Claim.—1. The combination, with the flanged arm-plate hav-

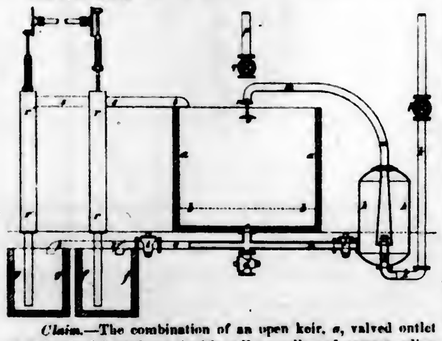
258,354.



ing the slot *d*, and flange-slot *e*, of the supporting-arm C, having the hinged tablet, and the headed stud *b*, engaging the slot of the arm-plate, substantially as specified.

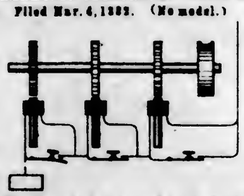
2. The supporting-arm C, having the inclined surface *k*, oblique shoulder *l*, and oblique forked extension-bearing *m*, and shouldered pawl *q*, in combination with the hinged tablet D and its ratchet *s*, substantially as specified.

258,355. APPARATUS FOR BLEACHING YARNS, &c. CHAS. E. BENNETT, Birch Vale, near Stockport, County of Derby, England. Filed Feb. 6, 1882. (No model.) Patented in England Jan. 7, 1880, No. 88.



Claim.—The combination of an open keir, *a*, valved outlet *a*, and valved branches *c d* with well or wells and corresponding pumps for receiving the discharged liquids through one branch, and a closed vessel, A, communicating with the other branch, steam-pipe *h*, and pipe *m*, all substantially as described.

258,356. HARMONIC TELEGRAPH. EMILE BERLINER, Boston, Mass. Filed Mar. 6, 1882. (No model.)



Claim.—In a harmonic telegraph, a shaft giving motion simultaneously to several iron or steel wheels placed in a magnetic field in proximity with wire coils, each wheel having teeth different in number in a given segment from the other wheels, and thereby producing electric undulations in each coil at a rate per minute different from the rest, substantially as described.

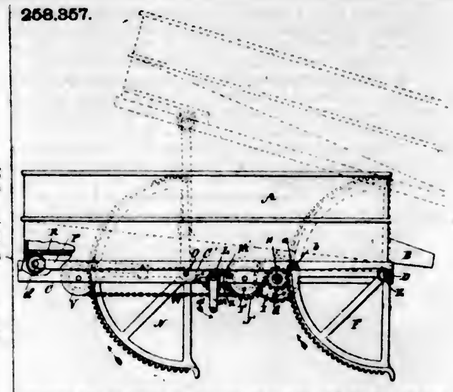
258,357. DUMPING-WAGON. HENRY S. BERNHART and ISAAC R. RITTER, Reading, Pa. Filed Jan. 12, 1882. (No model.)

Claim.—1. In a dumping-wagon, the combination, with the supporting-frame C and the box A, of the quadrants or circular racks F at the rear end of the wagon and the quadrant or circular rack N at the front end of the wagon, and of gear-wheels for operating these racks, substantially as herein shown and described, and for the purpose set forth.

2. In a dumping-wagon, the combination, with the supporting-frame C and the box A, of the rear quadrants or circular racks, F, the front quadrant or circular rack, N, gear-wheels, sprocket-wheels U V, and the chain W, for operating the front and rear racks simultaneously, substantially as herein shown and described, and for the purpose set forth.

3. In a dumping-wagon, the combination, with the supporting-frame C and the box A, of the shaft D, the rear quadrants or circular racks, F, the shaft H, the pinions G, the front quadrant or circular rack, N, the shaft T, the pinion S, the sprocket-wheels U and V, the chain W, and of gear-wheels for operating the racks,

258,357.



substantially as herein shown and described, and for the purpose set forth.

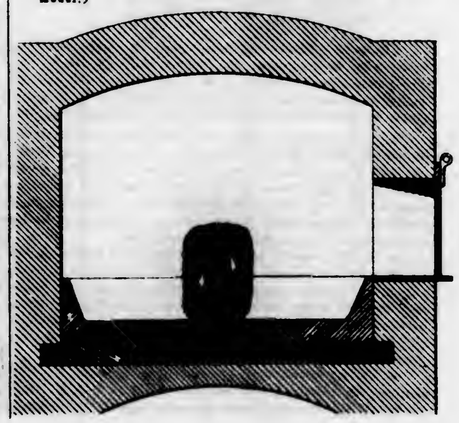
4. In a dumping-wagon, the combination, with the supporting-frame and the box, of circular or quadrant racks at the rear end of the wagon, a circular or quadrant rack at the front end of the wagon, the front rack being provided with an arm adjustably secured thereto, and of gear-wheels for operating the racks, substantially as herein shown and described, and for the purpose set forth.

5. In a dumping-wagon, the combination, with the supporting-frame C and the box A, of the rear circular or quadrant racks, F, the front rack, N, provided with sliding arms F', having a pulley, Q, at the outer ends, the groove R in the bottom of the box, at the front end of the same, and of gear-wheels for operating the racks, substantially as herein shown and described, and for the purpose set forth.

6. In a dumping-wagon, the shaft D, provided with the eccentric bushings E, in combination with the body A, the frame C, the quadrant-rack F, and mechanism for operating the same, substantially as shown and described, whereby the said rack is adapted to be disengaged from the operating mechanism, as and for the purpose set forth.

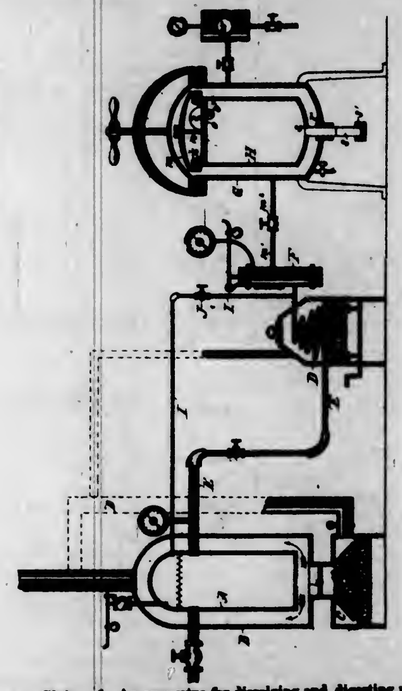
7. In a dumping-wagon, the combination, with the supporting-frame C and the box A, of the front circular or quadrant rack, N, the shaft D, provided with eccentric bushings E, the circular or quadrant racks F, loosely mounted on these eccentric bushings E, which racks are provided at the upper ends with slots *a*, the pintles *b*, passing through the slots *a* into the box A, and of gear-wheels for operating these racks, substantially as herein shown and described, and for the purpose of disengaging the rear racks, F, from their pinions, so that the box will be raised by the front rack only, as set forth.

258,358. PROCESS OF WELDING BESSEMER STEEL. WILLIARD T. BLOCK, Hannibal, Mo. Filed Sept. 13, 1881. (No model.)



Claim.—The described process of welding together bars of Bessemer steel, wherein the said magnetic iron ore is used as a coating in place of the iron turnings heretofore used.

258,359. APPARATUS FOR DISSOLVING AND DIGESTING MEAT. SAMUEL W. BOWNE, New York, N. Y., assignor to Scott & Bowne, same place. Filed Jan. 24, 1881. (Model.)



Claim.—1. An apparatus for dissolving and digesting meat, consisting essentially of two vessels hermetically sealed, one suspended wholly within the other and carrying the charge of meat to be acted upon by superheated steam, and means whereby the steam is first introduced directly into the outer vessel at a defined pressure, and from thence, minus condensation, through a pressure-valve into the inner vessel, all substantially as and for the purposes as herein shown and set forth.

2. The dissolving and digesting apparatus consisting of vessel G and interior vessel, H, provided with compensating-valves *c* and *c'*, inlet steam-pipe *m'*, and discharge-pipe *c*, both vessels capable of being hermetically closed, all substantially as and for the purposes as herein shown and described.

3. The combination of vessels G and H, arranged to be hermetically closed and provided with inlet-pipe *m'*, discharge-pipe *c*, and automatic compensating-valves *c* and *c'*, and the vacuum-chamber M, all arranged, applied, and operating as and for the purposes substantially as herein shown and set forth.

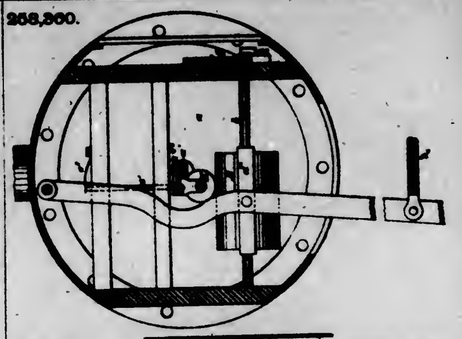
4. The combination of the steam-drier A and heater B, superheater D, expansion-chamber F, and digesting apparatus G H, all arranged, applied, and operating substantially as and for the purpose as herein shown and set forth.

258,360. INTEGRATING APPARATUS. CHARLES V. BOYS, Wing, near Oakham, County of Rutland, England. Filed Dec. 8, 1881. (No model.) Patented in England June 8, 1881, No. 2,440, and in France Nov. 14, 1881, No. 146,772.

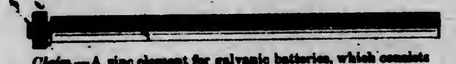
Claim.—1. An integrating apparatus consisting of a cylinder made to slide along its axis while its surface is in contact with a disk more or less inclined to the axis, and of a counter which registers the amount of revolution thus imparted to the cylinder, substantially as and for the purpose herein set forth.

2. In combination with the integrating-cylinder B, the disk E, mounted in frame *e*, and actuated alternately by the flexible diaphragms *a a*, subject to the pressure in the working-cylinder of the engine, substantially as and for the purposes set forth.

258,360.



258,361. RING FOR BATTERIES. HORATIO J. BENNER, New York, N. Y. Filed Apr. 4, 1882. (No model.)



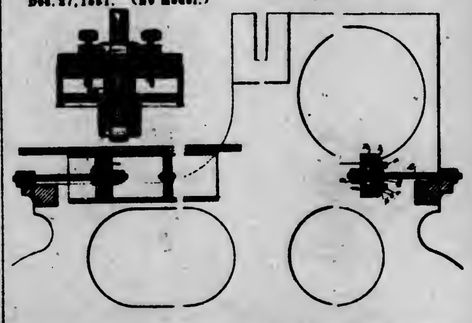
Claim.—A zinc element for galvanic batteries, which consists of a zinc rod, A, provided with a screw-thread, B, cut upon it, and a nut, C, of different material screwing upon said screw-thread, and adapted to clamp the wire or strip beneath it, substantially as described.

258,362. DETACHABLE SAW-TOOTH. WILLIAM H. BROOKS, Trenton, N. J., assignor to the American Saw Company, same place. Filed Jan. 14, 1882. (No model.)



Claim.—The combination, with the saw-plate A, having recesses *a a'* and projection a^2, and the movable tooth B, provided with grooves *b b'* and concave surface b^2, of the spring locking-plate C, having groove *c*, tongue *c'*, projections c^2 c^3, and recess c^4, and the latch D, pivoted in the recess c^4, and having an arm, *d*, adapted to bear against the projection a^2, thereby securing the parts, substantially as described.

258,363. CUSHIONING DEVICE FOR PRINTING-PRESSES. JOHN RAGGE, Plainfield, N. J., assignor, by mesne assignments, to C. Potter, Jr., & Co., New York, N. Y., and himself. Filed Dec. 27, 1881. (No model.)



Claim.—1. The combination, in a cushioning apparatus, of a cylinder, a piston, a cup-leather, and a disk having an inclined edge and acting within the edge of the cup-leather to expand the same, substantially as set forth.

2. The combination, in a cushioning apparatus, of the piston,

the cup-leather, and an expander within the edge of the cup-leather, and actuated automatically by the pressure of the atmosphere for expanding such cup-leather or for allowing it to contract, substantially as specified.

3. In a cushioning apparatus for printing-presses, the combination, with the cylinder, of a cup-leather packing, a piston having openings through it, a tubular sleeve around the piston-rod, an expander having an inclined edge and sliding upon the sleeve, and adjusting-screws to limit the motion of the expander, substantially as set forth.

258,864. CLASP. WILLIAM G. BROWNE, Ansonia, Conn. Filed Mar. 17, 1882. (No model.)



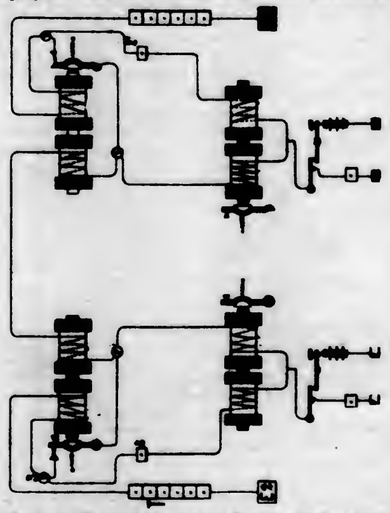
Claim.—The herein-described clasp, consisting of the two parts A C, the one constructed with an eye, *a*, having an opening narrower than the eye itself, the other with a loop, *b*, at one end for attachment to one part of the strap, the other end T shape, the body of the T being broader than the opening in the eye, but narrower than the eye itself, the parts constructed and arranged for engagement substantially as described.

258,865. LAMP-BURNER. EDSON L. BRYANT, Ansonia, Conn., assignor of one-half to Wallace & Sons, same place. Filed Apr. 15, 1882. (No model.)



Claim.—As an article of manufacture, the herein-described burner, consisting of the chimney-rest, perforated air-distributer, and springs C, all made in one and the same piece, attached to the base, and having the deflector E, hinged to the rest at a point between the chimney-springs, substantially as described.

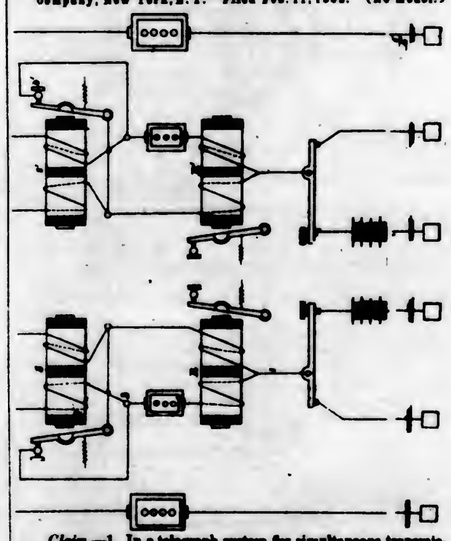
258,866. DUPLEX TELEGRAPH. CHARLES L. BUCHINGHAM, Elizabeth, N. J., assignor to the Western Union Telegraph Company, New York, N. Y. Filed June 16, 1881. (No model.)



Claim.—1. The method, substantially as specified, of rendering the receiving-relay of a differential duplex system insensible to the effects of the inductive charge and discharge of the main line, which consists in causing both the inductive charge and discharge, respectively, to be divided or differentialized through the two oppositely-wound coils of the differential relay.

2. The method, substantially as specified, of rendering the receiving-relay at a transmitting-station in a telegraphic system for simultaneous transmission in opposite directions insensible to the effects of the inductive charge and discharge of the main line, which consists in causing both the inductive charge and discharge, respectively, through the receiving-instrument at the transmitting-station to be divided before passing through said receiving-relay, whereby the divided portion, will act oppositely thereon to produce neutral effects and avoid false signals.

258,867. DUPLEX TELEGRAPH. CHARLES L. BUCHINGHAM, Elizabeth, N. J., assignor to the Western Union Telegraph Company, New York, N. Y. Filed Feb. 11, 1882. (No model.)



Claim.—1. In a telegraph system for simultaneous transmission in opposite directions, the combination, substantially as specified, at each station of the main line, an artificial line, a differential receiving-instrument, a differential electro-magnet whose oppositely-wound coils are in the main and artificial lines, respectively, and a bridge-conductor joining the main and artificial lines which is opened and closed by the agency of said differential electro-magnet.

2. In combination with a duplex-telegraph line, an artificial line, a differential receiving-relay, a normally-closed bridge or branch conductor, and a differential electro-magnetic circuit-breaker whose armature is adjusted to be insensible to the static discharge from the line, but which is actuated by a sufficiently-prolonged current from a distant station to make a signal, whereby the static discharge will pass to earth through both coils of the differential receiving relay or instrument, while a prolonged signal-current sent from a distant station will cause the bridge-conductor to be broken.

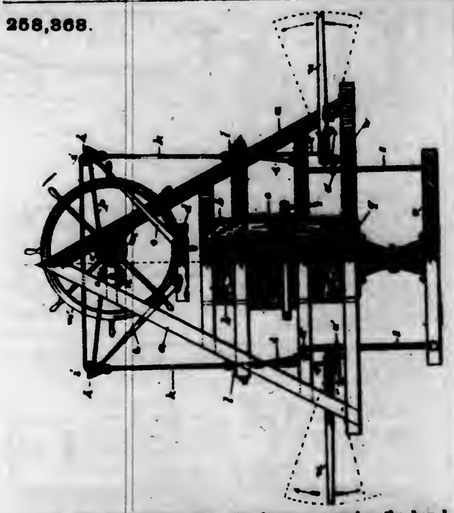
3. The combination, substantially as specified, of a main and artificial line, differential relay R, differential electro-magnetic circuit-breaker S, and a normally-closed bridge which is broken and closed by means of said circuit-breaker S.

4. In a telegraph system for simultaneous transmission in opposite directions, the combination at each station of a main line, an artificial or compensating circuit, a receiving-instrument, a bridge or branch conductor for connecting the main and artificial lines, and an automatic circuit-breaker for opening and closing said bridge, whereby said bridge may be closed both at the time of inductive charge and discharge of the main line, substantially as specified.

258,868. BAY AND COTTON PRESS. DAVID P. BURNETT, Elmo, Ark., assignor of one-third to Robt. R. Cass, same place; Keziah H. Burkett, Administratrix of David P. Burkett, deceased. Filed Jan. 26, 1882. (No model.)

Claim.—1. In a press, the combination, with a box open at its ends and provided with doors in its opposite sides, of an upper descending follower, *d*, a lower ascending follower, *g*, and auxiliary mechanism operating separately and independently of the frame, substantially as described.

258,868.



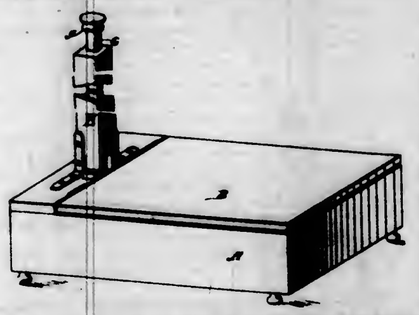
2. The combination, with the frame *a*, carrying the box *b*, open at its ends and provided with doors in its opposite sides, of the follower *d*, provided with the hinged arms *e*, hooks *h*, having pulleys *i*, eyebolts *k*, links *l*, shafts *m n*, wire rope *p* and hand-wheel *m'*, and slit *r*, provided with rods *s*, and follower *g*, fulcrumed irons *t t*, suspended from the links *l*, levers *o o*, and rings *o'*, substantially as described, and for the purpose set forth.

258,869. FIRE-KINDLER HOLD. JAMES W. BURNS, Springfield, Ohio. Filed Dec. 2, 1881. (No model.)



Claim.—The combination, with a mold partitioned to form chambers *c*, of followers B, connected by flexible strip F, and having between them spaces, into which the partitions pass as the followers are pressed down, whereby a number of kindlers are formed at the same time, as described.

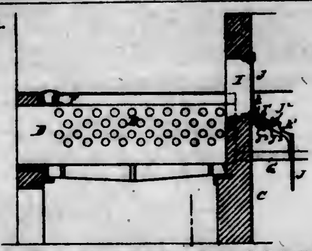
258,870. SPITTOON-HOLDER. JAMES CAMPOS, Saguache, Colo. Filed Feb. 14, 1882. (No model.)



Claim.—In a spittoon-holder, the combination, with the box or case A, the hinged cover B, provided with the rigid arm D, and the vertical hollow standard E, of the sliding rod G, provided with the knob *g* at its upper end, and at its lower end with a lateral fork, consisting of the arms A A', adapted to engage alternately with the arm of the cover for raising and lowering the same, substantially as herein shown and described.

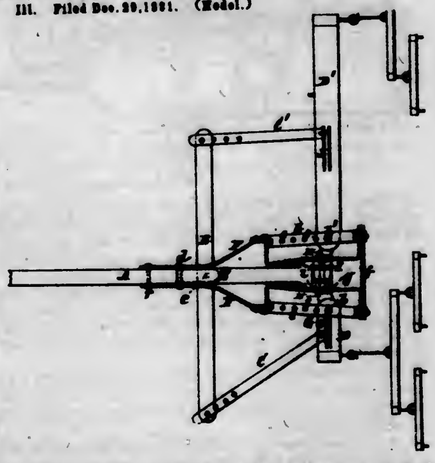
258,871. STEAM-GENERATOR FURNACE. CLAUDE H. CANDLEE and JAMES WHITEHEAD, Detroit, Mich. Filed Nov. 1, 1881. (No model.)

258,871.



Claim.—The combination of the bridge-wall C, having openings I, with the combined division-wall and feed-water heater D, having connections F G H, and provided with transverse tubes E, the dampers J, the parallel shafts J' J², the pinions J³, and the arms *b b'*, substantially as described.

258,872. DRAFT-EQUALIZER. DALLAS CARR, Chandlerville, Ill. Filed Dec. 29, 1881. (Model.)



Claim.—1. The combination, with the plow-beam A, draft cross-bar B, connecting-bars C C', and draft-equalizing levers D D', of the adjustable side arms, F F, substantially as specified.

2. The pivoted loop E, in combination with the draft cross-bar B, the adjustable side arms, F F, and the plow-beam A, essentially as shown and described.

3. The pivoted loop E and draft cross-bar B, made adjustable up or down by a pin, *d*, and holes *e e* in the side arms, F F, in combination with the plow-beam A, to which said side arms are adjustably attached, substantially as specified.

4. The plow-beam A, provided with a series of adjusting-apertures, *h*, in its jaw or forward end, in combination with the pivoted side arms, F F, the pin *g*, the looped straps G G, and the levers D D', of different lengths, essentially as described.

5. The looped straps G G, provided with a series of adjusting-apertures, *e e*, in combination with the levers D D', pivots *b b'*, fitting said apertures, the adjustable side arms, F F, and the plow-beam A, substantially as and for the purpose specified.

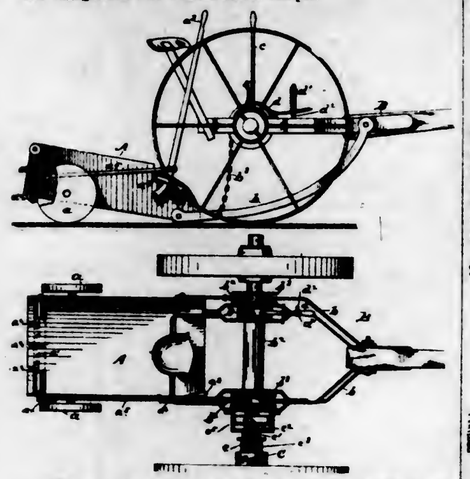
6. The adjustable stirrup I, in combination with the adjustable braces H H and the draft-equalizing levers D D', essentially as herein set forth.

7. The combination of the draft-equalizing levers D D', the looped straps G G, having adjusting-apertures for the fulcrums of said levers, the adjustable side bars, F F, the draft cross-bar B, adjustably attached to said levers, the connecting-bars C C', the adjustable stirrup I, the adjustable braces H H, and the plow-beam A, substantially as specified.

258,873. EARTH-SCRAPER. ROBERT W. CHAMBERS, Sidney, Ohio, assignor of one-half to P. Smith, Brother & Co., same place. Filed Dec. 19, 1881. (No model.)

Brief.—The scraper has rollers on its rear and curved bars on its front connecting with the tongue of a sulky. The curved bars are connected with sheaves on the sulky-axle by means of hoisting-chains. The sheaves are rotated by a clutch mechanism on

the axle engaging one of the sulky-wheels. The end-gate of the scraper is hinged at the top and secured at its lower edge by pins on a shaft actuated by lever-arms connected to a lever-handle adjacent to the sulky-seat and held by a spring forcing a pin thereon into engagement with a notch on the scraper.



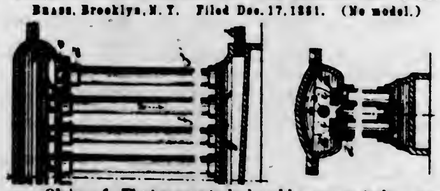
Claim.—1. In an earth-scraper, the end-gate hinged at the upper edge, in combination with a shaft having stops for holding the end-gate and means for operating the said shaft, the scraper being mounted on rollers at the rear end and supported by a sulky at the forward end, substantially as shown and described.

2. The combination, in the scraper A, mounted on the rollers *a a*, of the end-gate *a'*, hinged at its upper edge, the pins *a²* and their shaft, arranged underneath the scraper, the lever *a³*, arm *a⁴*, rod *a⁵*, having a lug on its inner side, and spring *a⁶*, substantially as shown and described.

3. The combination of the scraper A, the curved bars *b b*, the sulky B, the axle *b²*, sheaves *b³ b³*, chains *b⁴ b⁴*, and means for regulating the winding and unwinding of the said chains, substantially as shown and described.

4. The combination of the sulky B, having its tongue secured to its axle to one side of the center thereof, the scraper A, secured to said tongue and adapted to run close to one of the wheels of the sulky, and having suitable means for being operated, substantially as shown and described.

258,374. STEAM-RADIATOR. JOHN CHAPMAN and ROBERT BRASS, Brooklyn, N. Y. Filed Dec. 17, 1881. (No model.)

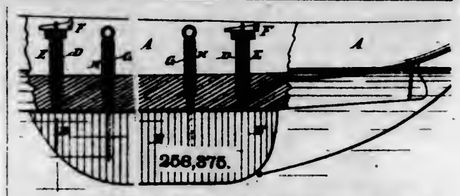


Claim.—1. The top receptacle, *b*, and lower receptacle, *g*, connected by circulating-pipes *f*, secured within the bottom plate of the upper receptacle by nipples *d*, attached to the ends of the pipes by screw-threads, said nipples passing loosely through the bottom plate of the receptacle and secured in place by nuts *d'*, whereby the joint may be packed, substantially as described.

2. The top and bottom receptacles connected by circulating-pipes *f*, secured by nipples *d* and nuts *d'*, projecting above the bottom plate of the receptacle *b*, in combination with the horizontal conduit-pipe *e*, arranged between the rows of pipes *f*, and provided with exits in the bottom thereof, as hereinbefore set forth.

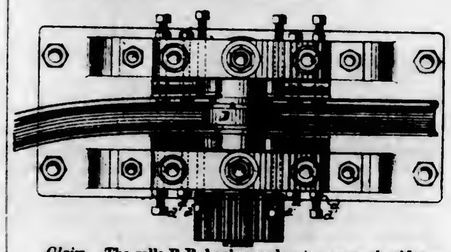
3. The top receptacle, *b*, formed with a transverse trough, *c*, below the bottom of the receptacle to receive the products of condensation, in combination with the end pipes, *f'*, and nipples, arranged, as described, to receive the water and conduct it to the receptacle below, as set forth.

258,375. CENTER-BOARD BOAT. THOMAS CHAPMAN, Roslyn, N. Y. Filed Feb. 28, 1882. (No model.)



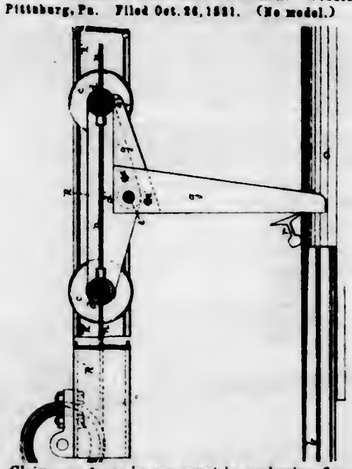
Claim.—In a center-board boat, the combination, with the boat A, provided with holes in its keel, and with the tubes E H, of the rods D, passing up through the holes of the keel and the tubes E, and secured by the washers and keys F, the center-board B, hinged to the lower ends of the said rods, and the pins G, passing down through the tubes H and holes in the keel into holes in the center-board, substantially as herein shown and described, and for the purpose set forth.

258,376. CAMBERING-MACHINE. WILLIAM CLARK, Pittsburg, Pa. Filed Oct. 26, 1881. (No model.)



Claim.—The rolls B B, having each a tongue or shoulder, *s*, adapted to engage the under side of the head of a rail while passing through, in combination with side guides on both the feeding and delivery sides of the rolls, arranged and adjusted to engage the top of the rail-head and bend the rail out of the direct line of feed to a uniform curvature, substantially as set forth.

258,377. ROLLING-MILL RAIL-CARRIER. WILLIAM CLARK, Pittsburg, Pa. Filed Oct. 26, 1881. (No model.)



Claim.—1. As an improvement in mechanism for removing rails from the rolling-mill, the arrangement of the moving mechanism above and distinct from the cooling-bed, in the manner substantially as described.

2. The truck R, composed of wheels *c*, frame *d*, pivoted swinging pusher-leg *g*, and a stop to limit the swinging of the pusher in one direction and support it against the force brought to bear to move the rail, substantially as set forth.

3. In combination with a cooling bed or frame and raised or elevated channeled guide-rails R', a truck, R, carrying a pusher-leg, *g*, and connected to a power drawing mechanism at one end and to a counter-weight at the other, substantially as set forth.

258,378. DARNING-LAST. GEORGE A. COCHRANE, New York, N. Y. Filed Feb. 28, 1882. (No model.)



Claim.—1. A darning-last having a groove formed around its body, in combination with an elastic band or equivalent means for securing the fabric to said last, for the purpose set forth.

2. A darning-last provided with two or more peripheral grooves, in combination with an elastic band or bands, for the purpose specified.

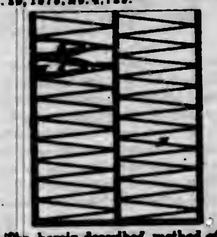
3. A darning-last having a groove formed around its body at or near its greatest diameter, in combination with an elastic band cylindrical in cross-section, as and for the purpose specified.

4. A darning-last of conoidal form, having a peripheral groove at or near its greatest diameter and a like groove near its vertex, in combination with elastic bands, as and for the purpose specified.

5. A darning-last having the configuration herein described and shown—that is, of substantially conoidal form, with broad flattened base and sides or periphery, carving from base to point or vertex—substantially as and for the purpose specified.

6. In combination with a darning-last, a band or equivalent means for holding the fabric rigidly thereon, as described.

258,379. METHOD OF PACKING BOTTLES AND OTHER ARTICLES. THOMAS COCKSHOTT, Birkenhead, County of Chester, England. Filed Apr. 14, 1882. (No model.) Patented in England Nov. 29, 1879, No. 4,729.



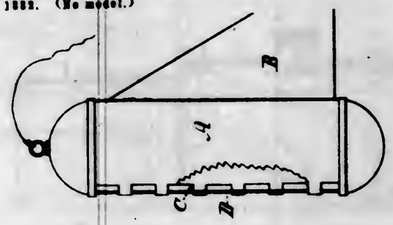
Claim.—1. The herein-described method of packing bottles and other articles larger at one end than at the other, consisting in forcing said articles between flexible partitions with the large and small ends alternated, substantially as set forth, whereby a double flexure is formed in the partition, as explained.

2. The herein-described method of packing bottles and other articles larger at one end than at the other, consisting in forcing a series of two or more of said articles between flat flexible partitions against opposite sides of each partition at points on the said partitions not opposite to each other, thus producing a flexure and a retention of said partitions in an abnormal form, whereby a double flexure is formed in the partitions, as explained.

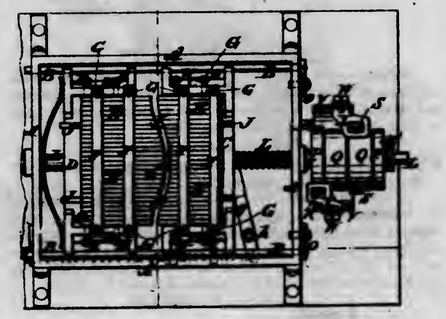
258,380. WATER-PROOF CLOTH. ERASMUS B. COLLINS and LYMAN P. CONVERSE, Chicago, Ill. Filed Apr. 24, 1882. (No specimens.)

Claim.—The compound for rendering fabrics water-proof, composed of the raw linseed-oil, copal varnish, gutta-percha bark, burnt umber, red oxide of iron or white lead, pulverized pumice-stone, and japan, in the proportions set forth, and prepared, applied, and finished substantially as described.

258,381. TOY. LYMAN P. CONVERSE, Chicago, Ill., assignor of one-half to Erasmus B. Collins, same place. Filed Mar. 27, 1882. (No model.)



258,382. SPRING-SETTER. JOHN CORRIGAN and CHARLES D. TYLER, Jr., Cleveland, Ohio. Filed Aug. 20, 1881. (No model.)



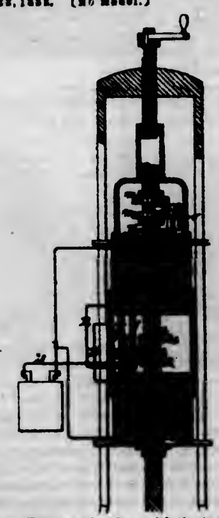
Claim.—1. The combination of the rods B, the grooved end flanged plates, C D, having notched end lugs, the adjustable bars E, held down by bars F, the bolts G, the screws H, and the bars J, as and for the purpose specified.

2. The combination, with the slide-bar Y, of the slotted lever *g*, the pivoted slide-rod *i*, provided with collars *l m*, and the hangers *j k*, one of which is attached to movable plate C, as and for the purpose specified.

3. The combination, with the frame C, of the nut K, the screw L, the two flat pulleys Q, the straight belt R, the crossed belts S, the long pulley T on drive-shaft U, the slotted curved plate V, the slotted arms X, the pivoted slide-bar Y, and the bar *b*, pivoted to standard *c* and having arms *d e*, as and for the purpose specified.

4. In a spring-setter, the combination, with the sliding bar Y of the belt-shifter, of the double angle-lever *b d e*, substantially as herein shown and described.

258,383. ELECTRIC MOTOR. LEE DAFT, Greenville, N. J. Filed Jan. 23, 1882. (No model.)



Claim.—1. The combination, with the two axial magnets and soft-iron core common to both, of the metal rod *f*, sectional rod *g h*, circuit-changer *e*, sliding on both rods, and tappets *a b*, arranged to strike and slide the circuit-changer, substantially as set forth.

2. The combination, with the reciprocating core common to the two magnets, carrying a tool, and sliding in but turning with a ratchet, S, of a crank-lever, *n o*, annular tappets *m m* on the core,

arranged to strike one arm, *n*, of the lever, ring *v*, turning on the core and vibrated by the arm *o* of the crank-lever, and a pawl, *r*, carried by the ring and engaging with the ratchet, as and for the purpose specified.

258,884. OVEN. ERSKINE DAVIS, Canton, Ohio. Filed Feb. 18, 1882. (No model.)



Claim.—As a new article of manufacture, a lining for ovens, consisting of a tile or slab made of some suitable porous material, and having a metallic surface made non-oxidizable by a coating or glaze thereon, substantially as set forth.

258,885. VAPOR-BURNER. ERSKINE DAVIS, Canton, Ohio. Filed Feb. 18, 1882. (No model.)

Brief.—When the cover of the burner is made to swing off the induction-tube is constructed with a deflecting-side of such size that when moved sufficiently far a portion of the jet of vapor will pass through the burner and burn at the top, while the remainder will be deflected against the bottom thereof. When the top is not removable all of the vapor is deflected to one side.



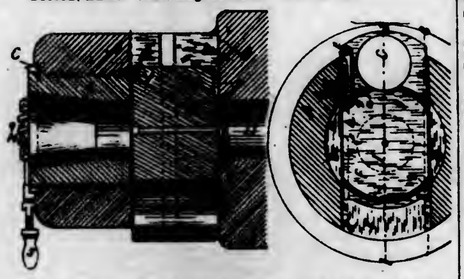
Claim.—1. A vapor-burner having an induction-tube pivoted to its under side, in combination with a connecting-rod and movable cap, the tube and cap being connected directly and rigidly together, substantially as shown.

2. In a vapor-burner, the combination of a pivoted induction-tube, a movable cap or top, and a connecting-rod which passes up through the burner, whereby the cap and induction-tube are made to move together, substantially as described.

3. The combination of a vapor-burner with a pivoted induction-tube, the induction-tube having a deflecting-surface, F, formed upon its side, substantially as set forth.

4. The combination of the vapor-burner with an induction-tube having a deflector formed upon its side, and a movable cap, whereby an auxiliary heating-flame may be maintained at the top of the burner, substantially as specified.

258,886. BREECH-LOADING ORDNANCE. SAMUEL B. DEAN, Boston, Mass. Filed Aug. 15, 1881. (No model.)



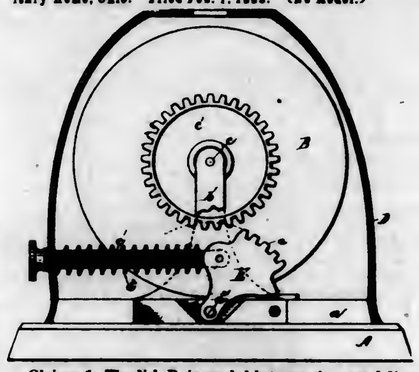
Claim.—1. The combination, with a gun having a breech-screw, L, provided with a central opening and a transverse guide-slot, E, of a breech-block, F, composed of a loading-opening, G, and a solid part, J, said breech-screw and said breech-block being interlocked, substantially as described, so that the turning of the breech-screw will cause the breech-block to slide in said guide-slot, as and for the purpose specified.

2. A breech-block, F, with its loading-opening G, a solid part, J, circular running groove *g*, and draw-bar H, and a transverse slot, E, at open breech end of gun, in combination with a breech-screw, L, with its central opening, and pin *u*, said screw being arranged to turn in a screw-socket of the gun, all substantially as described, for the purpose specified.

3. A breech-block, F, provided with a loading-opening, G, solid part J, two circular running grooves, *f g*, and draw-bar H, and arranged in a transverse guide-slot, E, at the open breech end of the gun, in combination with a breech-screw, L, provided with an opening, and two pins, *t u*, arranged to turn in a screw-socket, C, of the gun, all substantially as and for the purpose described.

4. The combination, with a transverse guide-slot, E, having a rib or tenon at the breech end of the gun, of a breech-block, F, composed of a loading-opening, G, and a solid part, J, and having a groove to fit said rib, said rib and said groove serving in the movement of the breech-block in said guide-slot by the narrowing of the rib, substantially as described, to move the breech-block to and away from the inner face, *h*, of the said guide-slot, substantially as and for the purpose specified.

258,887. GAME-WHEEL. WILLIAM DOBBINGS, National Military Home, Ohio. Filed Feb. 1, 1882. (No model.)



Claim.—1. The disk B, journaled between the posts *b b'*, and provided with a cog-wheel, *c'*, adapted to impart motion to the disk, substantially as and for the purposes specified.

2. The disk B, journaled between the posts *b b'*, having its periphery bent at right angles, with figures marked on its face and carved projections *b³* on its inner side, the solid cylinder *b⁴*, ranging on said projection, and the plate *c²*, placed on the shaft *c* and adapted to fit inside the periphery of the disk, substantially as shown and described.

3. The pawl E, provided with teeth *e*, pivoted in the recess *a'* by the pin *e²*, and adapted to revolve the disk B, substantially as shown and described.

4. The casing D, having a recess in its top, and adapted to cover the disk B and to be secured to the sides of the projection *a'*, substantially as shown.

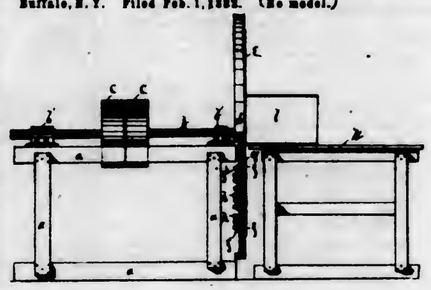
5. The lever *c'*, pivoted to the pawl E, passing through the side of the casing D, and provided with a spiral spring, *c³*, substantially as and for the purposes shown and described.

6. The combination of the disk B and its cog-wheel *c'* with the pawl E and its actuating-lever *c'*, all arranged to operate as set forth.

7. The combination of the pawl E, actuating-lever *c'*, and spring *c³* with the stand A and casing D, all arranged as shown and described.

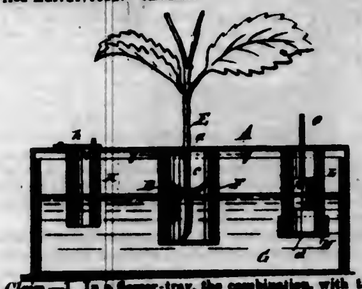
8. The spring *c³*, arranged around the lever *c'*, in combination with the pawl E and casing D, substantially as and for the purposes set forth.

258,888. BOX-TRIMMING CUTTER. JULIAN F. DE WITT, Buffalo, N. Y. Filed Feb. 1, 1882. (No model.)



Claim.—A box-trimmer consisting of the disk *d*, adapted to operate by suitable power, and provided with the recesses *g* and slots *g'*, the knives *e*, provided with the slots *e'*, having beveled sides *e²*, such knives being adapted by means of adjusting-screws *f* and *h* to be adjusted both in the plane of the disk and to and from such plane in the manner shown, the whole being combined and operating substantially as shown and described.

258,889. FLOWER-TRAY. JOHN DREW, Old Mission, Mich. Filed Mar. 21, 1882. (Model.)



Claim.—1. In a flower-tray, the combination, with the box provided with an aperture in its top, of a closed vessel secured to the under side of the top of the said box, and provided with means, substantially herein shown and described, for holding the lower ends of the flowers, as set forth.

2. In a flower-tray, the combination, with the box A, provided with an aperture, *a*, in its top, and having a closed vessel or cup, B, with a side aperture, F, attached to the under side of its top, of the reservoir G, substantially as herein shown and described, and for the purpose set forth.

3. In a flower-tray, the combination, with the box A, having an aperture, *a*, in its top, and with the reservoir G, of the closed vessel or cup B, attached to the under side of the top of the box A, and provided with a side aperture, F, and with an apertured transverse strip, C, substantially as herein shown and described, and for the purpose set forth.

4. In a flower-tray, the combination, with the box A, having apertures *a* and H in its top, and having a vessel or cup, B, attached to the under side of its top, of the reservoir G, substantially as herein shown and described, and for the purpose set forth.

5. In a flower-tray, the combination, with the box A, having a cup, B, attached to the under side of its top, of the reservoir G, the tube L, the float M, and the indicator-rod O, substantially as herein shown and described, and for the purpose set forth.

6. In a flower-tray, the combination, with the box A, having apertures *a* and H in its top, and having a vessel or cup, B, attached to the under side of its top, of the reservoir G and gate h, for closing the aperture H, substantially as herein shown and described, and for the purpose set forth.

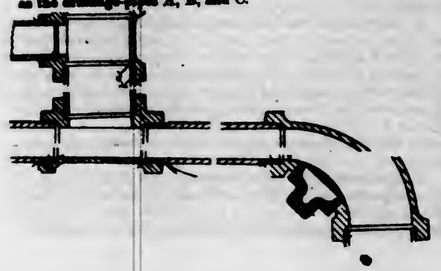
258,890. REAMER. GEORGE W. DUDLEY, Waynesborough, assignor to himself and J. Marshall McCue, Afton, Va. Filed Aug. 16, 1881. (No model.)



Claim.—A reamer made with flat tapered sides, grooved at the corners, and twisted, substantially as shown and described.

258,891. ELBOW-FITTING FOR DRAINAGE-PIPES. CALEB W. DURHAM, Chicago, Ill. Filed Nov. 26, 1881. (No model.)

Brief.—The fittings H G K have the same internal diameter as the drainage-pipes A, B, and C.



Claim.—The elbow-fitting for drainage-pipes, provided with a hand-hole at its inner angle, substantially as specified.

258,892. WHIFFLETREE-HOOK. FERDINAND ECCERS, Rock County, Wis. Filed Oct. 5, 1881. (No model.)



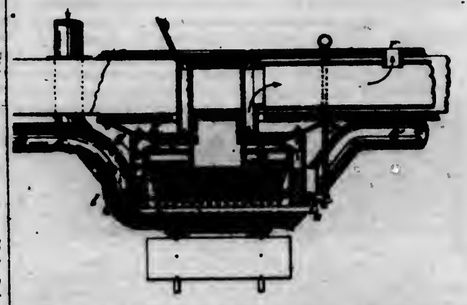
Claim.—A whiffletree-thimble having hook C and lugs *b b*, in combination with a pivoted recessed block adapted to receive and lock the eyebolts, as set forth.

258,893. FLY-HOOK. FRANCIS ENRIGHT, Clifton, assignor to Charles F. Imbrie, New York, N. Y. Filed July 6, 1881. (No model.)



Claim.—In fly-hooks, the threads *d*, in combination with eyelets *b*, as and for the purposes described.

258,894. CAR-HEATER. PHILO S. EWING, West Berkshire Vt., and FREDERICK A. WISWELL, Beebe Plain, Quebec, Canada. Filed Nov. 9, 1881. (No model.)



Claim.—1. The combination, with the fire-pot of a car-heating apparatus, of a fuel-magazine provided with doors for closing the mouth thereof, the hinged falling doors arranged in the interior of the fuel-magazine, and the door-operating mechanism located outside the said fuel-magazine, all substantially as shown and described, and for the purpose set forth.

2. In a car-heater, the combination, with a fire-pot, of a fuel-magazine having means for closing its mouth and provided with the flanges upon its interior surface, and the pair of hinged doors with means for raising or lowering said doors and holding them against the under surface of said flanges, substantially as and for the purpose set forth.

3. In a car-heater the combination, with the fire-pot, of a fuel-magazine having means for closing its mouth and provided with the interior flanges, the pair of hinged doors, the sectors, and the chain and lifting-rod provided with a spring-catch, as set forth, and for the purpose described.

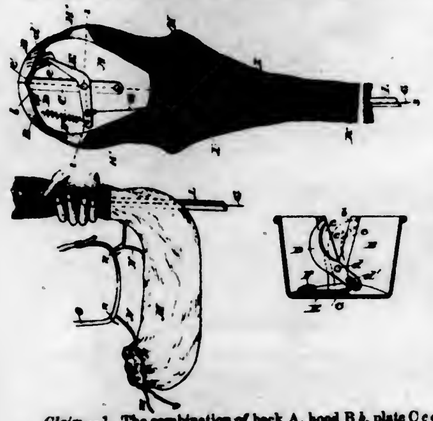
4. The combination, with the fire-chamber D, of the auxiliary chambers *l l'*, communicating with the space below the grates, the intermediate perforated partitions P, and the draft-flues L L', opening into the auxiliary chambers and provided each with means for regulating the draft, substantially as shown and described, and for the purpose set forth.

5. The fire-chamber having the auxiliary chambers provided each with a door, as shown, and the perforated partitions separating the auxiliary chambers from the fire-chamber, in combination, substantially as set forth.

6. The combination, with the air-chamber, of the supplemental chamber extending along one side and partially around the ends of

the air-chamber, as shown, the intermediate perforated partition dividing the supplemental chamber from the air-chamber, and the air-supply pipes Q Q', connected to the supplemental chamber at opposite ends thereof, and provided each with dampers, as shown, and for the purpose set forth.

258,395. FRUIT-GATHERER. PHILLIP A. FABLER, St. Louis, Mo. Filed June 24, 1881. (No model.)



Claim.—1. The combination of hook A, hood B *b*, plate C *c c'*, curved knife D, having pivot *d*, lever E, slot-and-stud connection *d' e*, spring F, and cord G, as set forth.

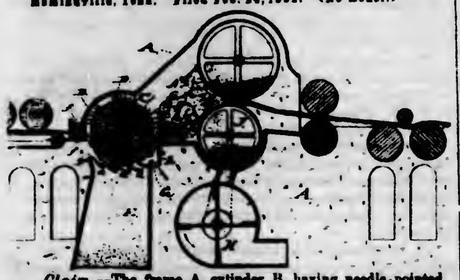
2. The combination of gatherer A B *b* C *c c'*, wire rings H H', netting I, hose K, knife D, lever E, spring F, cord G, and pole L.

258,396. METALLIC WASH-BOARD PLATE. MARSHALL H. FARNSWORTH, Brooklyn, assignor to the Ohio Wooden Ware Manufacturing Company, Cleveland, Ohio. Filed Oct. 8, 1881. (Model.)



Claim.—A metallic wash-board plate having a series of transverse angular corrugations, A, the faces of which are traversed by a series of oblique or downward-diverging depressions, *a*, with confluent upper ends, in the angle of which are projections or swells *c*, sloping down to the channels between the transverse corrugations, and having between the said series of oblique depressions or grooves swells or projections *c*, causing alternating swells and depressions along in the face of said corrugations A, substantially as described.

258,397. COTTON OPENER OR LAPPER. WM. P. FARLEVER, McMinnville, Tenn. Filed Feb. 24, 1881. (No model.)



Claim.—The frame A, cylinder B, having needle-pointed wires D, and concave knife-edged grate-bars *a a*, in combination with the trunk A', provided with the opening G, the hinged plate *b*, chamber E, and fan H, all constructed to operate substantially as set forth.

258,398. CHECK-VALVE INDICATOR. EDWARD G. FELTHOUSEN, Buffalo, N. Y. Filed Dec. 12, 1881. (No model.)

Brief.—As the valve rises and falls the short end, *h*, of the indicator H takes part in the movement of the valve as it is held against the under side of the valve-stem *g* by the overhanging weight of the long arm of the indicator.



Claim.—1. The combination, with a check-valve, of an indicator, means whereby an increased motion is imparted to the indicator, and a transparent case which incloses the indicator and renders its movements visible, substantially as set forth.

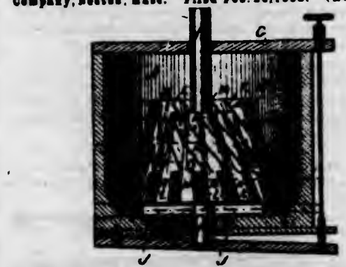
2. The combination, with a check-valve provided with a stem, *g*, of the pivoted indicator H, composed of a short arm and a long arm, a chamber, G, inclosing the stem *g* of the valve and the short arm of the indicator, and a transparent chamber, I, inclosing the long arm of the indicator, substantially as set forth.

3. The combination, with the pivoted indicator H, of the chamber G, pivot-plate L, glass tube *i*, inclosing-tube *j*, washer *m*, and packing-disk *n*, substantially as set forth.

4. The combination, with the pivoted indicator H and transparent casing I, of the chamber G, provided with projection *p*, and pivot-plate L, having a notch, *o*, substantially as set forth.

5. The combination, with a check-valve, B, of an indicator set in motion by the check-valve and a transparent case which incloses the indicator, and which communicates with the chamber in which the check-valve is arranged by a passage located above the transparent case, whereby the latter can be kept filled with a transparent liquid of heavier specific gravity than the non-transparent liquid which passes through the check-valve chamber, and thus render the movements of the indicator visible, substantially as set forth.

258,399. PAPER-PULP ENGINE. HOSEA B. FLETCHER, Bristol, N. H., assignor to the New Hampshire Chemical Pulp Company, Boston, Mass. Filed Feb. 20, 1882. (No model.)



Claim.—1. In a tank, A, the rotating vertical drum D and fixed vertical shell B, each of conical shape and each provided with ribs that are arranged in one or more rows and severally run in a vertical and inclined direction, and are disposed, the ribs of the drum to intersect and cross the ribs of the shell, in combination with the chamber between the shell and drum, and open at both ends to the tank, all substantially as described, for the purpose specified.

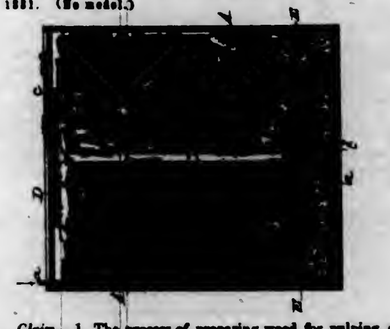
2. In a tank, the rotating vertical drum D and fixed vertical shell B, each of conical shape and each provided with ribs that are arranged in one or more rows and severally run in a vertical and inclined direction, and are disposed, the ribs of the drum to intersect and cross the ribs of the shell and the ribs of each to be separated by a vertical channel or groove, in combination with the chamber E, between the shell and the drum, and open at both ends to the tank, all substantially as described, for the purpose set forth.

3. In a tank, A, the rotating vertical drum D, the fixed vertical shell, each of conical shape and each provided with ribs that are arranged in one or more rows and severally run in a vertical and inclined direction, and are disposed, the ribs of the drum to intersect and cross the ribs of the shell, and the chamber E, between the drum and shell, open at both ends to the tank, in combination with mechanism adapted to raise and lower the drum within the shell, all substantially as described, for the purpose specified.

4. In a tank, A, the rotating vertical drum D, the fixed vertical shell B, each of conical shape and each provided with ribs that are arranged in one or more rows and severally run in a vertical and inclined direction, and are disposed, the ribs of the drum to intersect and cross the ribs of the shell, and the chamber between the drum and shell, open at both ends to the tank, in combination with the rotating fan located at the bottom of the drum and shell and within the chamber of the tank, all substantially as and for the purpose described.

5. The tank A, the rotating vertical drum D, the fixed vertical shell B, each of conical shape and each provided with vertical inclined ribs—such as the crushing and severing ribs, or either of them—in one or more rows, and running, the ribs of the one in a direction across the ribs of the other, and with grooves or channels M N between the ribs, the annular chamber between the shell and drum, open at both ends to the tank, and the rotating fan J, all substantially as described, for the purpose specified.

258,400. APPARATUS FOR AND PROCESS OF PULPING WOOD. HENRY A. FRANKSON, Kaukauna, Wis. Filed May 17, 1881. (No model.)



Claim.—1. The process of preparing wood for pulping, consisting in subjecting it to the simultaneous action of intermittent jets of mingled spray and steam, as set forth.

2. The process of preparing wood for pulping, consisting in subjecting it, in a closed vessel, to the combined and simultaneous action of steam and spray introduced within the vessel from above the wood, as set forth.

3. In the preparation of wood pulp, the process of purifying the wood, consisting in cooking out the resinous matters wholly by steam, combined with only sufficient water to carry off the impurities and preserve the tenacity of the fibre of the wood without deadening them and without lowering the temperature of the steam.

4. In a wood-pulping apparatus, the combination of the closed vessel A, perforated false bottom E, steam-injecting pipe *a*, open tube C, deflector D, and annular flange *b*, substantially as shown and described.

5. In the preparation of wood pulp, the process of subdividing the wood while in a natural condition, with the bark on, and subjecting it to the described combined and simultaneous action of steam and spray, whereby the natural gum uniting the bark and wood is dissolved out, enabling their subsequent easy separation and avoiding any preliminary stripping off of bark, as set forth.

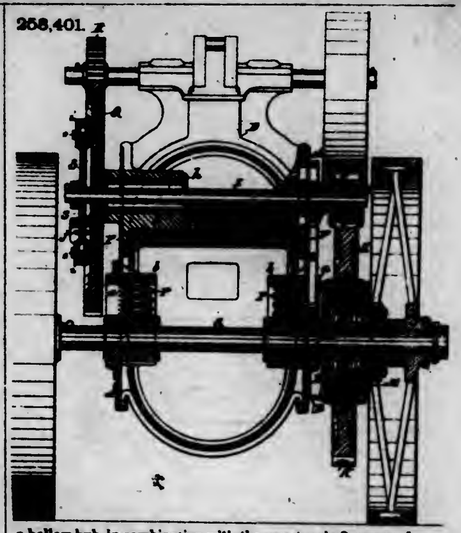
258,401. TRACTION-ENGINE. ABRAHAM C. PRICE, Waynesborough, Pa. Filed Mar. 7, 1882. (No model.)

Claim.—1. The engine-cylinder, crank-shaft, and slotted side plates, all connected together for transmitting the strain to the axle independently of the boiler, in combination with the axle, springs supporting the weight of the engine, a radially-movable counter-shaft having one end extended through and made vertically movable in a slot in the side plate, and a link connecting the counter-shaft at this end to the axle, substantially as and for the purpose described.

2. The combination of the axle, the counter-shaft, and the driving-gear, the axle being connected at one end to the counter-shaft by a link, and the counter-shaft having at its other end a loose-jointed or flexible connection with its driving-gear, substantially as shown and described.

3. The gear-wheel Q, mounted in fixed bearings and having

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a hollow hub, in combination with the counter-shaft arranged concentrically therein, and connected to said gear-wheel for a loose or flexible movement, substantially as described.

4. The deflectible counter-shaft I, with its gear-wheels, arranged above the main axle, and combined with the crank-shaft and its driving-gear, the axle and its driving-gear, the supporting-springs for the engine, and a link for connecting the axle and counter-shaft at one end only, as and for the purpose described.

5. The combination, with the axle of a traction-engine having a gear-wheel thereon, of the longitudinally-adjustable counter-shaft I, having a gear-wheel, substantially as described, arranged to mesh with the wheel on the axle, and to follow the same in its lateral variations.

6. The combination, with the axle having compensating-gear K L M *e*, arranged, as described, to transmit rotary strain to either or both of the traction-wheels, of springs for sustaining the weight of the engine, a horizontal counter-shaft having one end only made vertically movable for a radial adjustment, and a link connecting the bearing of the axle at one end to the bearing of the counter-shaft, from which motion is imparted to the compensating-gear, as described.

7. The deflectible and longitudinally-movable counter-shaft I, arranged above and combined with the axle and supporting-springs by wheels and a link at one end only, and connected to the driving mechanism, substantially as described.

8. The side plates, F, slotted at one side and combined with its brace N, having marginal guide *d* at that side and a bearing at the other, and the counter-shaft having a movable bar, *v*, playing in said guide, as set forth.

9. The tag-spring T, composed of a single spring, *k*, and loops or stirrups *l m*, with feet *l' m'*, in combination with the draft-bolt *a* and *e*, and the hollow abutment-lugs *i* and *j*, whereby the same spring is made to furnish a rotary elastic strain in either forward or backward movement, as described.

258,402. MANUFACTURING GLASS FOR USE IN ILLUMINATED WINDOWS. ALPHONSE FRIEDRICH, Brooklyn, N. Y. Filed Oct. 19, 1881. (No specimens.)

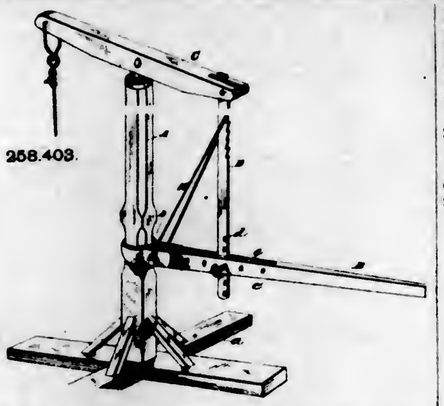
Claim.—The hereinbefore-described process of molding glass sections for illuminated windows, which consists in first forming a sectional pattern-matrix of the complete design, and then pressing or rolling the melted glass into the matrix, thereby forming the design in sections as required for use.

258,403. CRANE. MARK FRISBIE, Orland, Ind. Filed Apr. 13, 1882. (No model.)

Claim.—1. The upright or post A, the hand-lever B, capable of turning upon the post, the lever C, also adapted to turn upon the post, the rack D and bail E, in combination, substantially as and for the purpose set forth.

2. The post A, having the levers B and C adapted to turn thereon, and one provided with adjusting slots and apertures, in combination with the rack D, provided with adjusting-apertures and the bail E, substantially as and for the purpose set forth.

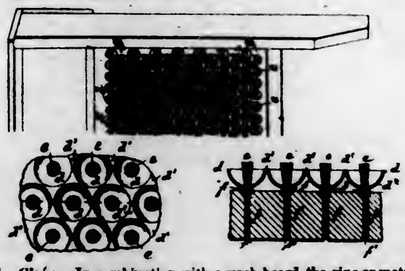
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258,404. EDGE-BLACKING POWDER FOR LEATHER. JAMES H. GARRETT, Terre Haute, Ind. Filed Feb. 7, 1882. (No specimens.)

Claim.—The edge-blacking powder for leather, consisting of the extract of logwood, bichromate of potash, prussiate of potash, and copperas, and blue vitriol, compounded in the proportions specified.

258,405. WASH-BOARD. ADELBERT W. GRIESEL, St. Louis, Mo. Filed Mar. 13, 1882. (No model.)



Claim.—In combination with a wash-board, the zinc or metal face D, having the series of concavities *d* arranged in "staggering" rows, the bristles or brushes *e*, and fastening-wire *f*, to operate as and for the purposes set forth.

258,406. WALL-PAPER-HANGING DEVICE. WILLIAM GRIST, Pittsburg, Pa. Filed Mar. 13, 1882. (No model.)



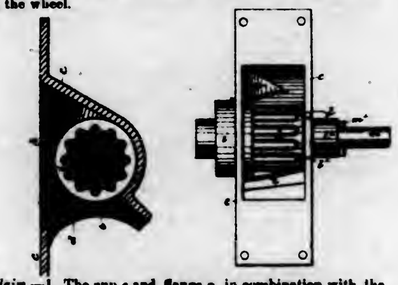
Claim.—1. In a device for holding wall-paper, the holder herein described, consisting of the hinged parts *a b*, one of which has an edge rubber strip and the other an upset biting edge or lip, in combination with a swiveling curved clamping-arm, and a spring carried by said arm between the hinged parts, substantially as herein set forth.

2. In a device for hanging wall-paper, the part *a*, formed with an edge groove, and having the rubber strip seated therein, and the part *b*, hinged to the part *a*, and formed with an angle biting edge or lip, in combination with a curved clamping-arm having a swiveling connection with one part and passing through a hole in the other part, and a spring arranged upon said clamping-arm between said hinged parts, substantially as described.

3. The particular device herein described and shown for use in matching and hanging wall-paper, consisting of the hinged parts *a b*, one part having an edge rubber strip seated in a groove and the other an upset edge lip, a curved clamping-arm having a swiveling connection with one part and passing through a hole in the other part, a spring arranged upon said clamping-arm between the hinged parts, and the stops to limit the opening of the part *b* to hold it open and to support the device in level position.

258,407. GRAIN AND GRASS-SEED DISTRIBUTER. ADOLPHUS F. GIBBONEY, Belleville, Pa. Filed Jan. 7, 1882. (Model.)

Brief.—Within the cup, and forming a part thereof, is an inclined triangular flange for guiding the grain to be fed and for freeing the wheel.



Claim.—1. The cup *c* and flange *n*, in combination with the sliding cut-off *i*, whereby the flange performs the double purpose of guiding the grain and scraping the cut-off, substantially as described.

2. The combination with the hopper *b*, seed-cup *c*, provided with the guide-flange *n* and opening *d*, having a slanting lip, *e*, sliding shaft *m*, cylindrical corrugated cut-off *i*, fast thereon, and feed-wheel *k*, substantially as described, and for the purpose set forth.

258,408. GLOVE-FASTENING. WM. GIFFORD, Schenectady, N. Y. Filed Oct. 11, 1881. (No model.)

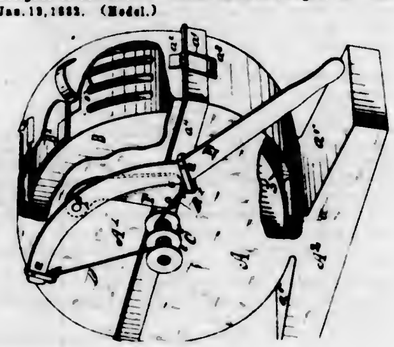


Claim.—1. In a glove-fastening, the metallic strips A H, having the parts A' H' folded or bent over the edge of the glove material, and provided with prongs E L to enter said material, as shown and described.

2. The combination, with a glove, of the strip A, the strip H, the strip N, the rivet R, and devices for holding the strips A and H together, substantially as herein shown and described, and for the purpose set forth.

3. The combination, with a glove, of the strip A, provided with an apertured tongue, F, the strip H, provided with a stud, M, and the rivet R, substantially as herein shown and described, and for the purpose set forth.

258,409. WASHING-MACHINE. GEORGE W. GLICK, Paris, assignor of one-third to Charles A. Miner, Edgar, Ill. Filed Jan. 19, 1882. (Model.)



Claim.—1. The case A A', cylindrical in form, attached to the apex of the slanting top *a' a'* of the bottom portion, A', and separated therefrom by a slotted partition, substantially as shown and described.

2. The combination of a slotted internal case, B, adapted to be rotated, an outer cylindrical case, A A', adapted to support the rotative inner case, B, and secured to the apex of the slanting top *a' a'* of the bottom portion, A', and separated therefrom by a slotted partition, with means for rotating said inner case, all substantially as shown and described.

258,410. WINDOW-SHADE. BENJAMIN L. GOLDSMITH, Baltimore, Md. Filed Feb. 13, 1882. (No model.)

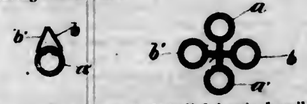
Brief.—The shade is folded around the roller, lapped upon itself, and fastened by a tough elastic cement.



Claim.—A window-shade folded round its bar or roller and lapped upon itself, and having a tough elastic and flexible cement between the shade and bar or roller and the lapped portions of the shade, the said cement subserving the double functions of attaching the shade to the bar or roller and of affording an elastic stiffened portion of the shade, preventing it from bending sharply upon itself and breaking when rolled, as set forth.

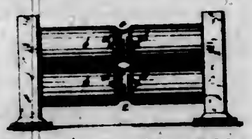
258,411. CHAIN-LINK. HENRY GORHAM, Providence, R. I., assignor of three-fourths to Sylvester G. Martin, William A. Copeland, and Edgar W. Martin, all of same place. Filed Sept. 16, 1881. (No model.)

Brief.—The links are formed from a punched cross-shaped blank having circular ends.



Claim.—The improved chain-link herein described, consisting of the cross-shaped blank, with its annular ends *a a'* bent upward and together and ends *b b'* bent downward and together, substantially as and for the purpose specified.

258,412. MANUFACTURE OF BARBED STRIPS FOR FENCES. SAML. H. GROSS, Crawfordsville, Ind. Filed Feb. 8, 1882. (No model.)



Claim.—1. The combination of the rolls *b b*, provided with oval grooves *c c*, having angular recesses *d d* cut in their sides and lying directly opposite each other, substantially as described, and for the purpose set forth.

2. The process herein described of manufacturing metallic corrugated barbed fencing-strips, consisting in first passing a round bar or rod through a pair of rolls having oval grooves formed therein, then passing said bar or rod through a second pair of rolls provided with oval grooves having angular recesses cut in their sides, and lying directly opposite each other, then passing the oval bar provided with spurs between rolls provided with flat square grooves to flatten and reduce the thickness of the rod, then trimming the strip and its barbs, and finally passing it through a pair of rolls grooved longitudinally, whereby the strip and its barbs are crimped or corrugated transversely, as set forth.

3. As an improved article of manufacture, the metallic fencing-strip A, corrugated transversely, and provided with opposite barbs in the plane of the strip and integral therewith, and projecting upwardly and downwardly from its upper and lower edges, as and for the purposes specified.

258,413. JOURNAL-BEARING. NATHANIEL A. GRIFFITH, Austin, Nev. Filed Mar. 27, 1882. (No model.)

Claim.—1. In a journal-bearing, the combination, with the journal box and shaft, of an outer and an inner series of anti-friction rollers secured together and to the box and shaft by rib-and-groove engagement, substantially as set forth.

2. In a journal-bearing, the combination, with a journal-box

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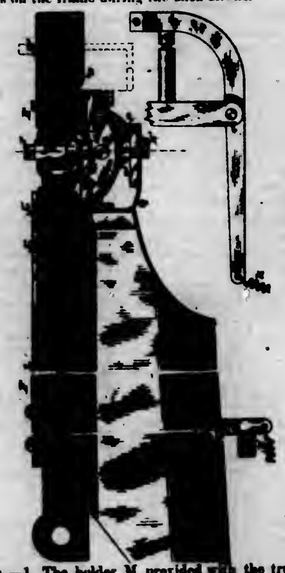


provided with an interior annular flange and a shaft provided with an annular groove, of a series of anti-friction rollers provided with annular grooves adapted to the rib of the box, and a second series of anti-friction rollers provided with annular flanges adapted to the groove of the shaft and those of the outer series of rollers, substantially as set forth.

3. In a journal-bearing, the combination, with the box and shaft, of two series of anti-friction rollers, all of said parts being connected by tongue-and-groove connections, and one of said rollers being formed in two sections connected by a male and female screw connection, substantially as set forth.

258,414. MACHINE FOR CUTTING MATCH-SPLINTS. HERBERT L. HARMON, Athol, Mass., assignor to Hapgood & Smith, same place. Filed Sept. 19, 1881. (No model.)

Brief.—A reciprocating knife-carriage moves below a hopper, with suitable feed-rolls for feeding the block, said carriage carrying a slicing-knife and a pivoted head supporting small upright knives. This head bears against abutments during the forward stroke of the carriage and is thrown over, so as to depress the knives by projections on the frame during the back stroke.



Claim.—1. The holder M, provided with the trunnions *j j* and means of holding a gang of spar-cutters, *i i*, and the planing-cutters *r* and *r'*, in combination with one or more removable washers, *s s*, fitted to each trunnion, substantially as and for the purposes described.

2. The combination of the slide F, provided with the abutments V and V', the holder M, mounted by its trunnions *j* and *j'* in bearings on said slide, and provided with means of holding a gang of spar-cutters, *i i*, and mechanism for imparting to said holder an intermittent oscillating motion.

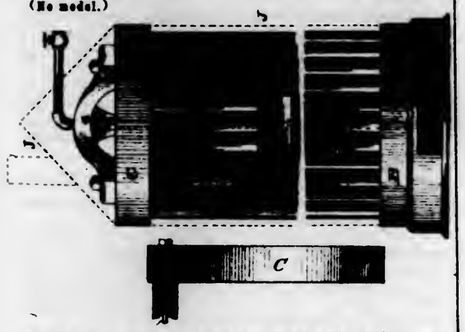
3. The combination of the reciprocating slide F, the holder M, the forked and slotted lever N, the stops O and P', and means of locking the lever N in a vertical and an inclined position.

4. The combination of the slide F, the holder M, the forked lever N, provided with the curved slot *s*, the pin *l*, the stops O and P', the spring Q, provided with the detent-notches *p* and *p'*, and the roll *q*, all arranged and adapted to operate substantially as and for the purposes described.

5. The combination of the slide F, cutter-holder M, mounted by its trunnions in half-boxes formed on said slide, the removable half-boxes *t t*, the pivoted caps T T, the lips *u u*, the section F′ of slide F, pivoted as set forth, and the screw *w*, all arranged and adapted to operate substantially as and for the purposes described.

6. The combination of the slide F, the holder M, the lever N, the stop-levers O and P, springs *b* and *b′*, and the stops or abutments *a* and *a′*, all arranged and adapted to operate substantially as described.

258,415. TUBULAR SECTIONAL BOILER. THOMAS HARDING, Lafayette, Ind., assignor of two-thirds to William T. Barbee and Chas. B. Simpson, both of same place. Filed Oct. 1, 1881. (No model.)

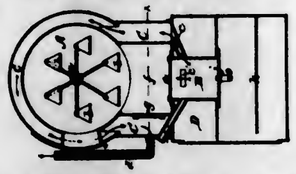


Claim.—1. A tubular boiler constructed with a hollow annulus-ring at bottom and a similar ring at top, joined together by a consecutive series of vertical tubes set in a circular line, whereby said annuli and tubes constitute both the shell and frame of water-jacket, fire-chamber, and steam-generator, and the products of combustion pass freely out at the top, as set forth.

2. The hollow annuli B and C and their connecting-tubes set close together to inclose the grate, combined with the pieces E, fashioned to fit and be retained in place between and by the tubes, as set forth, whereby the lower part of the boiler is caused to constitute a close fire-box, and the jacket J, surrounding and inclosing the whole, as set forth.

3. The hollow annuli and their connecting-tubes arranged in a circular line close together to form the shell and frame of a boiler, combined with a hollow arched bridge-piece, G, substantially as described.

258,416. BAKER'S OVEN. TIMOTHY HARRINGTON, Boston, Mass. Filed Dec. 8, 1881. (No model.)

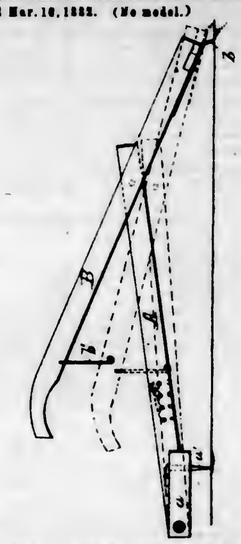


Claim.—1. In a baker's oven, the combination of the oven A, the fire-pot B under the oven, the flue C, surrounding the oven and arranged to conduct the products of combustion around the oven, as described, and the end flues, *d* C′, connected with the fire-pot and conducting the products of combustion upwardly along the ends of the oven into the flue C, as set forth.

2. In a baker's oven, the combination of the oven A, containing the shelves, and having the lower extension, *f*, with the flue C, surrounding the oven, the fire-pot, and the slides or dampers *e g*, whereby the products of combustion may be caused to pass from the fire-pot directly through the extension *f* and into the flue C, without passing into the part of the oven containing the trays, substantially as described.

3. In a baker's oven, the combination of the oven A, the fire-pot B under the oven, the flue C, surrounding the oven and arranged to conduct the products of combustion around the oven, as described, the end flues, *d* C′, connected with the fire-pot and conducting said products of combustion upwardly along the ends of the oven into the flue, and the slides or dampers *e g*, whereby direct communication can be had from the fire-pot to the flue C through the lower extension, *f*, of the oven, substantially as described.

258,417. CARPET-STRETCHER. JAMES H. HAWLEY, Odin, Ill. Filed Mar. 16, 1882. (No model.)

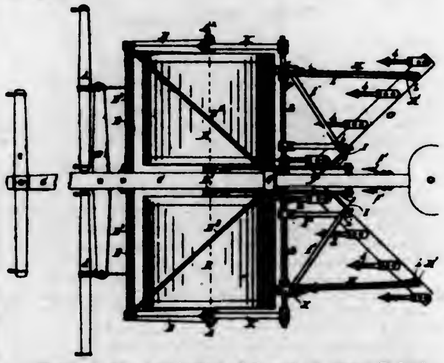


Claim.—1. A carpet-stretcher consisting of the brace A, provided with an arm, *a*, in which is secured a brace-pin, *a′*, and of a stretcher, B, pivoted to the forward portion of the brace, and arranged to operate substantially as shown and described.

2. In a carpet-stretcher, the combination of the brace A, arm *a*, and its pin *a′* with the T-shaped stretcher B, pivoted to the forward portion of the brace A, all arranged to operate substantially as shown and described.

3. In a carpet-stretcher, the combination of the brace A, provided with pin-arm *a* and its pin *a′*, with the T-shaped stretcher B, pivoted in to the former portion of the brace A, and provided with a hook-rod, *b′*, adapted to be secured to one of the pins *a′*, substantially as shown and described.

258,418. COMBINED ROLLER, HARROW, AND CULTIVATOR. GEORGE M. EAIM, Brownsville, Ind. Filed June 26, 1880. (No model.)



Claim.—1. The combination of the axle A, rollers B, horizontal bars or frame B, vertical bars B′, attached to the axle between the rollers B, and securing the tongue C, braces B″, and diagonal braces B‴, for holding the tongue rigidly in position, rods K, pivoted to the axle at their front ends, and being connected in pairs by the rods L, substantially as shown and described.

2. The combination of the rollers B, axle A, rods K, pivoted upon the axle at their front ends and to the rods L at their rear ends, the rods or braces *l l′ F*, and the cultivator-frame, to which the cultivating devices are secured, substantially as set forth.

3. The combination of the rollers, mechanism for attaching the frame to which the cultivating or harrowing devices are secured, the rollers, and brace-rods, which bear against the rollers so as to force the cultivating devices into the ground, all substantially as specified.

4. The combination of the rollers, frames to which the cultivating devices are attached, and mechanism for attaching the frames to the rollers, with the brace-rods M, provided with the rollers N, substantially as shown.

5. The combination of the rollers, frames to which the cultivating devices are attached, mechanism for attaching the frames to the rollers, with the brace-rods M, provided with the rollers N, and suitable adjusting mechanism, whereby the cultivator or harrow teeth can be caused to run shallow or deep, all combined and arranged substantially in the manner and for the purpose set forth.

258,419. ICE-CREEPER. JOSEPH P. HENNESSY and PATRICK WELSH, Woonsocket, R.I. Filed Apr. 1, 1882. (No model.)



Claim.—1. The combination, with the rabbeted heel *a b*, of the bowed metallic protector-band having its serrated lower edge, *l*, level, or nearly so, with the heel-base and the points *b* on its upper edge, the end pivots, *g*, and holding-screws *h* in rear, substantially as specified.

2. The combination, with the rabbeted heel *a b*, of the bowed and reversible metallic protector-band and creeper *d* and the elastic support *e*, having end hooks, *n*, substantially as specified.

258,420. CORKSCREW. RICHARD HESSEL, Berlin, Germany. Filed Apr. 7, 1882. (No model.)



Claim.—A corkscrew provided with a splitting-cone between the shank and screw portion proper, substantially as and for the purpose set forth.

258,421. CLOCK. ARTHUR B. HOTCHKISS, Cheshire, Conn. Filed Dec. 24, 1881. (Model.)



Claim.—1. In a clock, the combination, with the center shaft and pinion-shafts of the train arranged horizontally and supported in vertical plates, of the mainspring-arbor arranged vertically in the clock, and a mainspring attached to one end thereof, and suitable gearing connecting the mainspring-arbor and center shaft, substantially as set forth.

2. In a clock, the combination, with the center shaft and pinion-shafts of the train arranged horizontally and supported in vertical plates, of the mainspring-arbor arranged vertically in the clock, a winding device attached to one end of the mainspring-arbor, and a mainspring contacted with its opposite end, substantially as set forth.

3. The combination, with the center shaft and pinion-shafts of the train arranged horizontally and supported in vertical plates, of a mainspring-arbor arranged vertically in the clock and connected by gearing with the center shaft, and devices located on the outside of the movement for setting the hands or pointers, substantially as set forth.

4. The combination, with the center shaft of a clock, of a mainspring-arbor arranged vertically in the clock and connected by gearing with the center arbor, and winding devices attached to the opposite ends of the mainspring-arbor, substantially as set forth.

5. The combination, with the center shaft and pinion-shafts of the train arranged horizontally and supported in vertical plates, of the mainspring-arbor arranged vertically in the clock, a sleeve encircling the mainspring-arbor and provided with gearing for imparting motion to the clock-train, and ratchet and pawl for connecting the sleeve with the mainspring, substantially as set forth.

6. The combination, with a pinion attached to the center shaft of a clock, of a sleeve encircling the mainspring-arbor and provided with a pinion adapted to mesh with the pinion on the center shaft, and a disk attached to the sleeve for turning the latter and setting the hands, substantially as set forth.

7. A clock having a rotary top constructed and adapted for setting the hands of the clock, substantially as set forth.

8. The combination, with the center shaft and pinion-shafts of the train arranged horizontally and supported in vertical plates, of the mainspring-arbor arranged vertically in the clock, a mainspring attached to the lower end of said arbor, and a winding device to its upper end, substantially as set forth.

9. The combination, with the center shaft and pinion-shafts of the train arranged horizontally and supported in vertical plates, of the mainspring-arbor arranged vertically, and having winding and setting devices connected with its upper end and located at the top of the clock, substantially as set forth.

10. A clock wherein is employed a train of wheels located between the front and middle plates, and a mainspring-arbor arranged vertically between the middle and back of the frame, substantially as set forth.

11. A clock consisting of the center shaft and pinion-shafts of the train supported in vertical plates, a mainspring located in a separate casing supporting said vertical plates, and a mainspring-arbor arranged vertically, and gearing for transmitting motion to the clock-train, substantially as set forth.

12. A clock having the mainspring-arbor arranged at right angles to the pinion-shafts of the remainder of the train of the movement.

258,422. LOCK-NUT. HENRY HOWSON, Philadelphia, Pa., assignor to Allen Middleton, same place. Filed Mar. 20, 1882. (No model.)

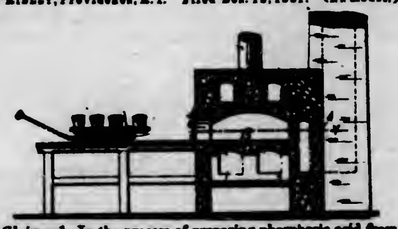


Claim.—1. A nut-locking device in which a nut, A, notched in its under face so as to form segments *b*, is combined with a ring, D, which is interposed between the object to be confined by the nut and the said segments *b* of the same, all substantially as and for the purpose set forth.

2. As a new manufacture, the ring D, having an outer flange, *d*, substantially as shown and described.

3. The combination of the notched nut A with the ring D and its flange *d*, as specified.

258,423. PROCESS OF PREPARING PHOSPHORIC ACID FROM BONES. WILLIAM H. HUGHES, Johnston, and PHILIP O'REILLY, Providence, R.I. Filed Dec. 15, 1881. (No model.)



Claim.—1. In the process of preparing phosphoric acid from bones, the treating calcined bones by mixing them with sulphuric acid, leaching the result, then heating the resulting products by the application of heat equally in all directions to substantial dryness and fusion, and dissolving the last result, while hot, in water with successive filtrations at different stages of the process, substantially as herein described.

2. Treating liquid acid phosphates with chlorate of potassa or its equivalents, and subjecting the compound to a high degree of heat, as described, and for the purpose set forth.

3. In the process of preparing phosphoric acid from bones, the treating calcined bones by mixing them with sulphuric acid, leaching the result, treating the leached products with steam, then heating the resulting products by the application of heat equally

in all directions to dryness or until fusion takes place, and dissolving the last result, while hot, in water with successive filtrations at different stages of the process, substantially as herein described.

4. The within-described process of obtaining phosphoric acid and acid phosphates from bones, consisting substantially of, first, washing the bones before calcination with water acidulated with hydrochloric acid, as described; second, calcining the bones; third, mixing the calcined bones, as described, with sulphuric acid and water; fourth, filtering the mixture, as described; fifth, the treating of the filtered result with hot air or steam; sixth, treating the result with chlorate of potassa and subjecting the same to heat, as described, in an evenly-heated furnace; seventh, the mixing the result with water and filtering the same.

258,424. DENTAL PLUGGER. ANDREW JACKSON, San Francisco, Cal. Filed Mar. 21, 1881. (No model.)

Brief.—The lower part of the plugger-case is made up of curved tubes that turn in couplings. The power is conveyed from the hammer through these curved tubes to the plugging-point by a series of balls.



Claim.—1. In a dental plugger having a main or casing tube, A, two or more curved tubes, one of which carries the plugging point or tool, said curved tube or tubes being coupled to the main tube and to each other, so as to turn thereon either jointly or separately to change the direction of the plugging point or tool, and a means for transmitting power from its source through said curved tube or tubes to the plugging point or tool to cause it to deliver a blow, substantially as herein described.

2. In a dental plugger, the main tube A, with a curved forward end, A', the curved tube B, carrying the plugging point or tool, said tube B being coupled to the curved end A' and turning thereon to change the direction of the plugging point or tool and the line of balls or spheres E within the curved end A', and the curved tube B, for transmitting power from its source through said curved portions to the plugging point or tool to cause it to deliver a blow, substantially as herein described.

3. In a dental plugger, the main tube having curved jointed tubes, the line of transmitting-balls E, the plunger P and its stem, the spring *f*, pawl *h*, and cam *e*, substantially as and for the purpose set forth.

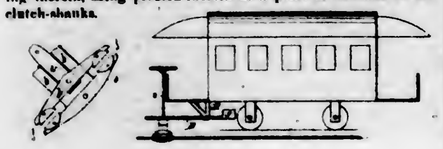
4. In a dental plugger, the combination and arrangement of the main tube A, adjustable curved tubes A' and B, reducing-tube C, tool or point holder D, with its spring *d*, and the power-transmitting balls E, substantially as herein described.

5. In a dental plugger, the combination of curved tube, line of balls, a plugger-point, a hammer, and means for transmitting power to the hammer, substantially as and for the purpose set forth.

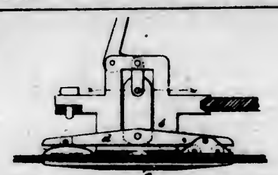
6. An automatic universal dental plugger consisting of the main tube A, adjustable curved tubes A' and B, reducing-tube C, tool or point holder D, with its spring *d*, power-transmitting balls E, plunger P, with its operating-spring *f*, and a means for drawing back said plunger and letting it slip to deliver its blow, substantially as herein described.

258,425. CABLE-TRACTION FOR STREET-CARS. ORLANDO H. JARVIS, Brooklyn, N.Y. Filed Dec. 19, 1881. (No model.)

Brief.—The clutch consists of two main jaws, one or both being adapted to rock in the plane of the cable, and provided with supplemental bearing-surfaces having friction-rollers, also pivoted to rock in the plane of the cable. The clutch has flexible connection with the car by means of a counterbalanced pull-bar fulcrumed thereto, and the clutch is enabled to oscillate laterally in an opening therein, being pivoted thereto at a point in advance of the clutch-shanks.



258,425.



Claim.—1. In a clutch or grip for seizing a traction-rope, the combination of the two main jaws *a* and *d*, one or both of which are made to rock in the plane of the cable and one or both of which are provided with supplemental bearing-surfaces, also pivoted to rock in the plane of the cable, substantially as shown and described.

2. In a clutch or grip for seizing a traction-rope, the combination of the two main jaws *a* and *d*, one or both of which are arranged to rock in the plane of the cable and one or both of which are provided with supplemental shoes, also pivoted to rock in the plane of the cable, and bearing friction-rollers, substantially as and for the purpose described.

3. The combination, with the cable, the car, and a clutch having flexible connection with the car, of a counterbalance pull-bar for sustaining the clutch in equilibrium and relieving the cable of its weight.

4. The combination, with a car, of a pull-bar extending the full length of the car and fulcrumed thereto in the middle, and provided at each end with a clutch or grip for connection with the cable, substantially as and for the purpose described.

5. The combination of the clutch and the pull-bar connecting the same with the car, the two being jointed together at a point in advance of the center of the clutch, as described.

6. The combination, with the pull-bar having an opening in its forward end, of the clutch-frame pivoted to the bar at its forward end, and arranged to swing in said opening horizontally, as described.

258,426. BOILER-FLUE CLEANER. OMAR H. JEWELL, Chicago, Ill. Filed Sept. 13, 1881. (No model.)



Claim.—1. An apparatus constructed substantially as shown, that is flexibly connected with a boiler and detachably connected with the flues of a boiler, in combination with a flue-scraper, and adapted to force the scraper through the flues by the pressure of steam, in the manner set forth.

2. An apparatus substantially as shown that is flexibly connected with a boiler and detachably connected with the flues in the boiler, and arranged to force the scraper through the flue by the pressure of steam, and then to retract it by spring-power, all in the manner substantially as set forth.

3. The casing A, having pipe-neck *b*, with valve G, and a pipe-neck, *c*, with rubber cone *h*, and inclosing sheave B, for winding chain *r*, that holds scraper C, all constructed and arranged substantially in the manner and for the purpose described and shown.

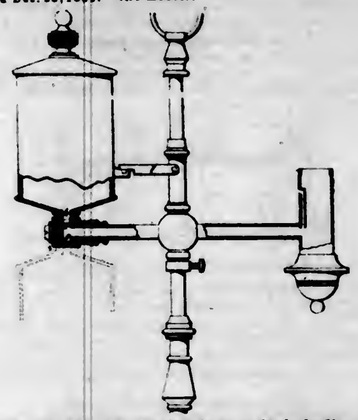
4. In combination with the casing A, having pipe-neck *b*, the valve G and pipe-neck *c*, the rubber cone *h*, the sheave B, bolt *o*, and spring *p*, adapted to wind up the chain *r*, that holds the flue-scraper C, all substantially as and for the purpose set forth.

5. The casing A, having pipe-neck *b*, with valve G, that is provided with hose-coupling *f*, pipe-neck *c*, with rubber cone *h*, handles *i* and *j*, and bell-crank *k*, all substantially as and for the purpose set forth.

6. The casing A, having pipe-neck *b*, with valve G, pipe-neck *c*, with rubber cone *h*, and shells *n*, holding springs *m*, in combination with sheave B, spindle *l*, chain *r*, and flue-scraper C, all constructed and arranged substantially in the manner and for the purpose set forth.

7. The combination, with the flue-cleaning apparatus described, of the flue-scraper C, composed of cone *c*, wire or blade carrying shank *t*, and rubber disk *n*, all constructed and arranged substantially as and for the purpose specified.

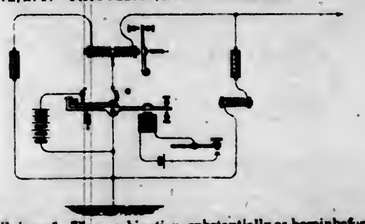
258,427. STUDY-LAMP. AUGUSTUS H. JONES, Meriden, Conn. Filed Dec. 20, 1881. (No model.)



Claim.—1. The wick-chamber, fount, and tube leading from the fount to the wick-chamber, the said fount being attached to the said tube by a swiveled joint, whereby the fount may be inverted on said joint, with an opening from said tube into the fount in both the upright and inverted position, whereby when in the inverted position the fount may be filled through the wick-chamber, substantially as described.

2. The wick-chamber, fount, and tube leading from the fount to the wick-chamber, the said fount being attached to the said tube by a swiveled joint, whereby the fount may be inverted on said joint, with an opening from said tube into the fount in both the upright and inverted position, whereby when in the inverted position the fount may be filled through the wick-chamber, with mechanism, substantially such as described, to secure the fount in its upright position, and substantially as specified.

258,428. DUPLEX TELEGRAPH. FRANCIS W. JONES, New York, N.Y. Filed Jan. 14, 1882. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of a main line, an artificial line, a main battery, a key or transmitter which connects said battery simultaneously to said main and artificial lines, a receiving-instrument upon which the outgoing currents upon the main and artificial lines produce equal and opposite effects, a branch line extending from a point between the main line and the receiving-instrument to the earth, and an electro-magnetic inductor included in said branch line.

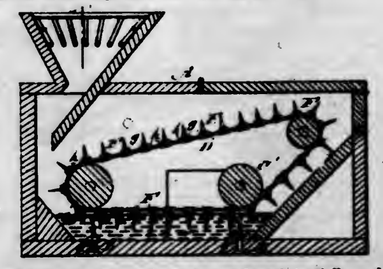
2. The combination, substantially as hereinbefore set forth, of a main line, an artificial line, a main battery, a key or transmitter which connects said battery simultaneously to said main and artificial lines, a receiving-instrument upon which the outgoing currents upon the main and artificial lines produce equal and opposite effects, a branch line extending from a point between the main line and the receiving-instrument to the earth, an electro-magnetic inductor included in said branch line, and means for varying the normal electrical resistance of said branch line.

3. The combination, substantially as hereinbefore set forth, of a main line, an artificial line, a main battery, a key or transmitter which connects said battery simultaneously to said main and artificial lines, a receiving-instrument upon which the outgoing currents upon the main and artificial lines produce equal and opposite effects, a branch line extending from a point between the main line and the receiving-instrument to the earth, an electro-magnet included in said branch line, and means for varying the intensity of force of the electric discharge from said inductor.

4. The combination, substantially as hereinbefore set forth, of a main line, an artificial line, a main battery, a key or transmitter which connects said battery simultaneously to said main and artificial lines, a receiving-instrument upon which the outgoing currents upon the main and artificial lines produce equal and opposite effects, a branch line extending from a point between the main line and the receiving-instrument to the earth, an electro-magnetic inductor included in the branch line, and means for varying the length or duration of the electric discharge from said inductor.

5. In a duplex telegraph, the combination, substantially as hereinbefore set forth, of a main line extending to the distant station, an artificial equating-line returning directly to the earth at the home station, having a resistance less than that of the main line, and a branch line extending from a point between the main line and the receiving-instrument to the earth, having a resistance greater than that of the main line.

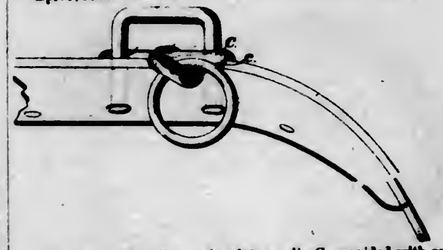
258,429. AMALGAMATOR. HENRY M. JONES, Santa Fe, N. Mex. Filed Sept. 15, 1881. (No model.)



Claim.—1. An amalgamator made substantially as herein shown and described, consisting of an endless belt of teeth adapted to travel over rollers within a suitable receptacle which has fixed teeth rising from its bottom, the belt-teeth passing between the fixed teeth, whereby the ore and the mercury will be thoroughly mixed, as set forth.

2. In an amalgamator, the combination, with the box A, having fixed teeth rising from its bottom, of the revolving endless belt D, provided with teeth F, substantially as herein shown and described, whereby the ore and mercury are mixed, as set forth.

258,430. HAME. RICHARD W. JONES, Syracuse, N.Y. Filed Apr. 5, 1882. (Model.)



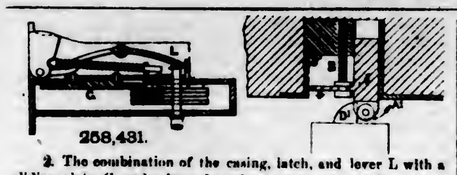
Claim.—1. In a hame, the plate or clip C, provided with recesses or bearings on opposite sides of the hame-staple and rigidly secured to the hame-iron, substantially as set forth.

2. The hame clip or plate C, provided with recesses at each end and at opposite sides, and adapted to rest against each leg of the hame-staple, and having a suitable eye for the breast-ring, substantially as set forth.

3. The hame clip or plate C, provided with flanges at each side and at opposite ends, which are adapted to bear against the back or hame iron, substantially as specified.

258,431. LATCH. JOSEPH KAYE, Kirkstall, near Leeds, County of York, England. Filed Jan. 13, 1881. (Model.) Patented in England Apr. 21, 1880. No. 1,643.

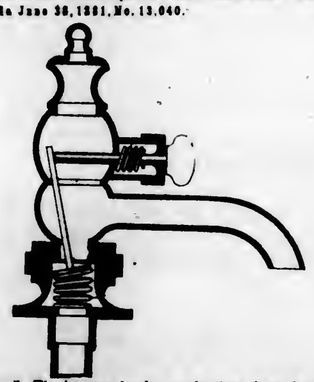
Claim.—1. A striking-plate having a movable striking-face, and a screw, B, having a swivel-connection with said movable striker, whereby the turning of the screw will adjust the striker toward or from the door, all substantially as set forth.



258,431.

2. The combination of the casing, latch, and lever L with a sliding plate, G, and a key adapted to operate the sliding plate, and also the said lever, when the plate is thrown back, substantially as described.

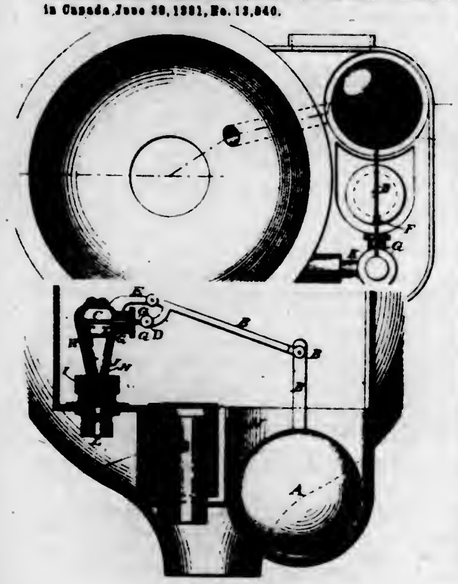
258,432. VALVE MECHANISM. DAVID S. KEITH, Toronto, Ontario, Canada. Filed Apr. 12, 1882. (No model.) Patented in Canada June 26, 1881, No. 13,040.



Claim.—1. The improved valve mechanism above described, consisting of the combination of the canting spindle-valve, the guides, the valve-spring, the push-rod and its spring and hand-knob, the stuffing-box, and the jacket or valve-body with the outlet and inlet pipes or passages, substantially as and for the purposes set forth.

2. The combination of the inverted canting spindle-valve, the guides, the push-rod and its spring and hand-knob, the stuffing-box, the jacket or valve-body, and the outlet and inlet pipes or passages, substantially as and for the purposes set forth.

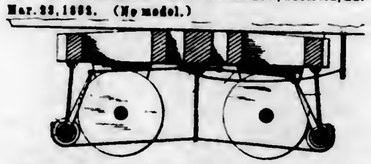
258,433. WATER-CLOSET. DAVID SMITH KEITH, Toronto, Ontario, Canada. Filed Oct. 28, 1881. (No model.) Patented in Canada June 26, 1881, No. 13,040.



Claim.—1. The valve mechanism above described, consisting of the combination of the canting spindle-valve H H, the guides T T, the spring I, the spindle C, the stuffing-box G G G, and the jacket J J, with the outlet K, substantially as and for the purpose above set forth.

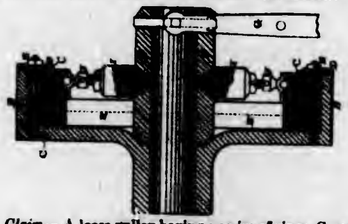
2. The valve mechanism above described, consisting of the combination of the canting spindle-valve H H, the guides T T, the spring I, the spindle C, the stuffing-box G G, the jacket J J, with the outlet K, and the floating ball A and hinged lever B B B, substantially as and for the purpose set forth.

258,434. CAR-BRAKE. JOHN W. KENADY, Garfield, La. Filed Mar. 23, 1882. (No model.)



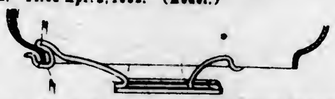
Claim.—In a car-brake, the suspended brake-shafts having brakes capable of a partial rotary movement and movement toward and from the wheels, combined with the chains or cords fastened to said brakes and passed through eye or looped bolts depending from the car and having their lower ends arranged slightly above the lower surfaces of the brakes, and mechanism to rotate the brake-shafts in their bearings, substantially as and for the purpose set forth.

258,435. FRICTION-CLUTCH AND LOOSE PULLEY. JOHN KING, Oswego, N. Y., assignor to the Vulcan Iron Works Company, same place. Filed Feb. 8, 1882. (No model.)



Claim.—A loose pulley having a series of rings, C, secured inside of it, the friction-blocks D', the screws J, the sockets I, sleeve F, and lever G, substantially as shown and described.

258,436. GLOBE-HOLDER. CHARLES A. KINNEY, Meriden, Conn. Filed Apr. 3, 1882. (Model.)



Claim.—1. In combination with the lamp-ring provided with struck-up fluted horizontal seats at equidistant points, the arms provided with horizontal boat ends, adapted to set into the seats from the inside, extending horizontally to the periphery of the ring and secured in the seats, substantially as specified.

2. In combination with the burner-ring, the arms provided with U-shaped seats at their ends, and the arm provided with a series of beads, forming a lip, E, to engage the inside of the shade, and a seat, F, for the lower edge thereof, substantially as and for the purpose specified.

258,437. WAGON-SPRING. WILLIAM V. KISH, Buffalo, N. Y. Filed Mar. 11, 1882. (No model.)



Claim.—1. The combination, with the boards A B and spiral springs C, interposed between said boards, of sockets D and plates E, fitting in said sockets, so as to slide therein, said sockets and plates being connected by elongated openings and bolts b, and secured respectively to said boards A B, near their ends, the whole forming a removable spring-support in which both boards are rigidly held against lateral displacement, but permitted to move freely toward and from each other, substantially as set forth.

2. The combination, with the boards A and B and interposed springs C, of telescopic fastening devices D E, arranged transversely between the boards, and a similar fastening device arranged lengthwise between the boards, substantially as set forth.

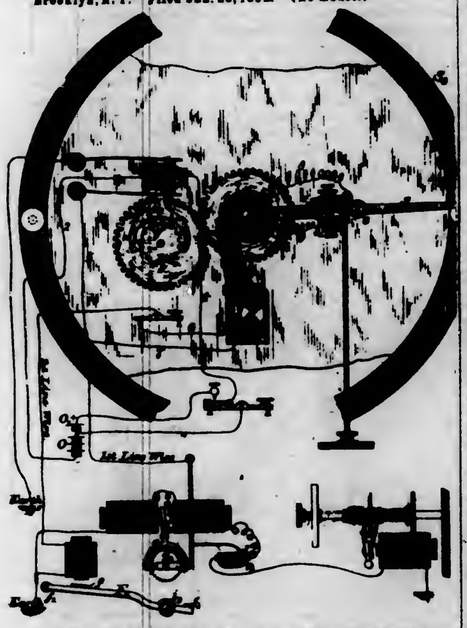
3. The combination, with the boards A and B and interposed spiral springs C, of the sockets D and plates E, provided respectively with flanges *d* and *e*, which overlap the edges of the boards, and horizontal fastening-bolts *f*, substantially as set forth.

258,438. PILLOW-SHAM FRAME. JOHN A. KNIGHT, Auburn, Me. Filed Mar. 15, 1882. (No model.)



Claim.—The combination of the roll *a*, spiral spring *b*, catch *c*, ears *d*, wire rods *e e e*, and cord *f*, the same being made as herein set forth, and attached to a bedstead, as described.

258,439. PRINTING-TELEGRAPH. ADOLPHUS A. KNUDSON, Brooklyn, N. Y. Filed Jan. 26, 1882. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, in a printing-telegraph, of a type-wheel, a platen for effecting the impression of a character upon said type-wheel, a clock or time-piece, a corrector for adjusting the minute-hand of said time-piece, and mechanism, substantially such as described, for actuating said platen and corrector.

2. The combination, substantially as hereinbefore set forth, in a printing-telegraph, of a type-wheel, a platen for effecting the impression of a character upon said type-wheel, a time-piece, a corrector for adjusting the minute-hand of said time-piece, and an electro-magnet for actuating said platen and corrector.

3. The combination, substantially as hereinbefore set forth, in a printing-telegraph, of a platen for effecting the impression of a character upon the type-wheel, a corrector for adjusting the minute-hand of a time-piece, an electro-magnet for actuating said platen and corrector, a line-wire, and two independent transmitters connected therewith, one for actuating the printing-platen and the other for actuating the time-corrector.

4. The combination, substantially as hereinbefore set forth, in a printing-telegraph, of a clock or time-piece, mechanism, substantially such as described, for correcting the position of the hands of said time-piece by the action of the printing mechanism, and means for disconnecting the printing from the correcting mechanism, except at stated times or when the correction is to be effected.

5. The combination, substantially as hereinbefore set forth, in a printing-telegraph, of an intermittently-rotating shaft, a radial arm mounted thereupon, a circular range of finger-keys, each of which, when depressed, arrests the rotation of the arm at a predetermined point, a line-wire, a transmitter actuated by said shaft for sending electrical pulsations over said line-wire, a second line-wire, and a yielding contact-lever mounted upon said radial arm, which closes a circuit with said second line-wire when brought into contact with a depressed key.

6. The combination, substantially as hereinbefore set forth, in a printing-telegraph, of an intermittently-rotating shaft, a battery, a line-wire, a series of finger-keys for controlling the movement of said shaft, a pole-changer for sending electric pulsation of alternate polarity from said battery through said line-wire, a second line-wire, and a key or circuit-closer which transmits a pulsation of either polarity over the second line-wire, and is actuated whenever said shaft is arrested by the depression of a finger-key.

7. The combination, substantially as hereinbefore set forth, in a printing-telegraph, of a type-wheel, an electro-magnet for controlling said type-wheel, a unison-stop, a device for releasing the type-wheel from the control of said electro-magnet while being brought to unison, a constantly-moving time-train, and a circuit-changer operated by said time-train to close a circuit through an independent electro-magnet for actuating said releasing device whenever an intermission occurs in the movement of the type-wheel.

8. The combination, substantially as hereinbefore set forth, of a main line, an electro-magnet included in said main line, a type-wheel controlled by said electro-magnet, a unison device, an independent electro-magnet for controlling the action of said unison device, a circuit-changer for diverting the main-line current from the type-wheel magnet to the unison-magnet during a pause in the movement of the type-wheel, and a time-train and connections, substantially such as described, for actuating said circuit-changer.

9. The combination, substantially as hereinbefore set forth, of a main line, an electro-magnet included in said main line, a type-wheel controlled by said electro-magnet, a unison device, an independent electro-magnet for controlling the action of said unison device, a circuit-changer for diverting the main-line current from the type-wheel magnet to the unison-magnet during a pause in the movement of the type-wheel, and a device moving with the type-wheel for operating said circuit-changer to close the circuit through said type-wheel magnet when the type-wheel is at the zero or unison point.

10. In a printing-telegraph, the combination, substantially as hereinbefore set forth, of the type-wheel, the electro-magnet for controlling said type-wheel, the type-wheel shaft, the escape-wheel, the clutch-wheel longitudinally movable along said shaft, the locking-pin, the spring for normally locking the clutch-wheel and pin together, the fork for disconnecting said clutch-wheel from the pin, the independent electro-magnet for actuating the fork, the circuit-changer, and the device moving with the type-wheel for operating said circuit-changer to close a circuit through the type-wheel magnet when the type-wheel is at its zero or unison point.

258,440. WITHDRAWN.

258,441. FIRE-ESCAPE. JOHN R. KOONS, Shickshinny, Pa. Filed Feb. 16, 1882. (No model.)

Brief.—The ladder rests on rods extending lengthwise through the case when not in use. The rounds are metal, having filling-pieces of wood clamped or riveted in. Lengthening-ropes can be attached to the ladder at its upper end, so that the full length of ladder can hang outside the case.



Claim.—1. In fire-escapes, the rope ladder B, combined with the case A, provided with rods *a*, substantially as shown and described.

2. In a fire-escape, the combination, with the ropes *c* of the ladder, of the rounds *d*, composed of looped metal strips surround-

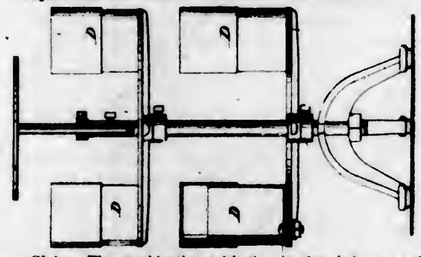
ing the said ropes, the filling-pieces *c*, of wood, and the straps *f*, for securing the filling-piece between the looped strips and clamping the ends of the said strips to the ropes, substantially as herein shown and described.

3. The combination of the case A, rods *a*, ladder B, and rope *k*, substantially as shown and described.

4. The split loops *a*, combined with ladder B, case A, and rope *k*, substantially as and for the purposes set forth.

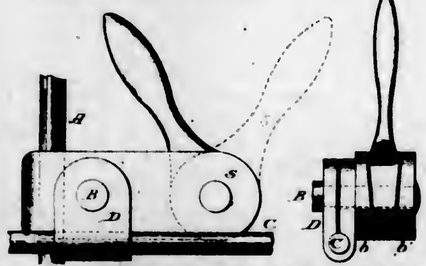
5. The lengthening-ropes *p*, combined with the case A and ladder B, substantially in the manner and for the purposes set forth.

258,442. REVOLVING BOOK-STAND. DAVID T. KOSER, Ringgsville, Pa. Filed Feb. 11, 1882. (No model.)



Claim.—The combination, with the circular shelves *c*, each provided with a circular slot near its periphery, of the book-receptacle D and the bolts O, whereby the receptacle may be adjusted on the shelves, as shown, and for the purpose described.

258,443. HEAD AND BACK REST FOR PHOTOGRAPHIC PURPOSES. WILLIAM S. LAIGHTON, Norwich, Conn., assignor to E. & H. T. Anthony, New York, N. Y. Filed Oct. 19, 1881. (No model.)



Claim.—The combination of the rod A, clamp *b b'*, bolt B, and cam S with the clamp D and rod C, substantially as described, and for the purpose set forth.

258,444. HAME. EMMIT S. LATTA, Friendship, N. Y., assignor of two-thirds to Adrian C. Latta, same place, and Harvey D. Blakeslee, Buffalo, N. Y. Filed Mar. 2, 1882. (No model.)



Claim.—1. The combination, with a hame, of a plate, C, provided on its inner sides with ribs or projections *c*, forming openings *c'*, through which the hame-strap may be drawn, and provided in its face with openings *d*, adapted to receive a plate or projection formed on the hame-strap loop, substantially as set forth.

2. The combination, with the plate C, provided with one or more upright slots, *d*, having enlargements *d'*, of a hame-strap loop, B, provided with an inwardly-projecting plate, *e*, having lateral projections *e'*, substantially as set forth.

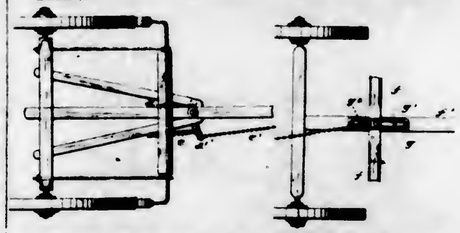
3. The combination, with the plate C, provided with a socket, *f*, of the terret F, having an arm or stud, *f'*, engaging in said socket, substantially as set forth.

4. The combination, with the hame A, back-strap A', and draft-staple H, of the loop or ring I, provided with a plate, J, interposed between the body of the hame and the back-strap, substantially as set forth.

5. The combination of the loop or ring I, provided with plates J and L, and the draft-staple H, passing through said plates, substantially as set forth.

6. The combination, with the loop or ring I, of the plate J and loop K, all cast together in one piece, substantially as set forth.

258,445. WAGON-BRAKE. CHARLES J. LE ROY, Palestine, and JOHN W. HENSON, Dallas, assignors to themselves and Samuel J. Adams, Jack Leonard, J. T. Odell, Sidney Smith, and N. W. Godbold, all of Dallas, Tex. Filed Jan. 26, 1882. (No model.)



Claim.—1. In a wagon-brake, the combination, with a running-gear, of a brake-arm supported across the reach and connected by rods to the rear bolster, a lever pivoted underneath the reach and connected rigidly at one end to the said arm and at the other end having a spring connected to the adjacent bound, and a back-and-forth-sliding double-tree connected to said lever by a chain, substantially as shown and described.

2. In a wagon-brake, the combination, with a wagon, of the brake-arm *b'*, supported upon the bar *a'*, the rods *c'*, connecting the arm to the rear bolster, the lever *d'*, pivoted to the reach and connected to the arm by the rod *d*, the spring *e*, connecting the long end of the lever to the adjacent bound, and a suitable device for operating the said lever, substantially as shown and described.

3. In a wagon-brake, the combination, with a wagon, of the double-tree *f*, having an upward-projecting bolt provided with a link, *g'*, the guide consisting of the slotted bar *g* and upward-projecting bolts at each end, and the link *g'* in the rear bolt, and a suitable brake connected to the double-tree, substantially as shown and described.

258,446. CHILD'S BLOUSE. CHRISTIAN C. LIBE, New York, N. Y. Filed Jan. 26, 1882. (No model.)



Claim.—1. The combination, with a boy's blouse or coat having front plaits and a single line of front buttons between the same, of a detachable front portion having two rows of buttons and fastening devices covered by the plaits when attached, whereby the blouse may be changed from a single to a double breasted coat, substantially as set forth.

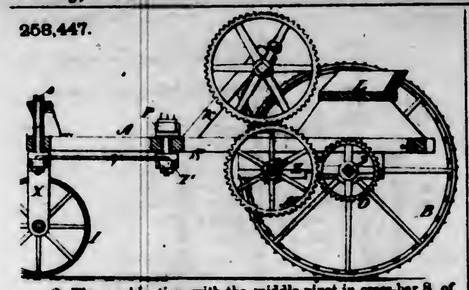
2. The combination, in a boy's blouse or coat having a single line of front buttons and front plaits, of a detachable front portion, detachable collar, and detachable pocket, sleeve, and back pieces, which are applied by fastening devices to covering-plaits, substantially as specified.

3. In a boy's blouse or coat, the combination, with the sleeve having detachable buttons, of a lining which is slotted below the buttons and provided with closing devices, substantially as set forth.

258,447. VELOCIPEDE. JOHN H. LOWERY, La Grange, Ga. Filed Mar. 28, 1882. (No model.)

Claim.—1. The combination, with an axle, D, having fast wheel B, thimble G, and loose wheel C, of the frame A, having the bearing-boxes E F, and the hand mechanism O M J, as and for the purpose described.

258,447.



2. The combination, with the middle pivot in cross-bar S, of the levers P T on opposite sides of said cross-bar, the rods V, the arms W, the standard X, and the wheel I, as and for the purpose specified.

3. The driving-axle positively secured in the hub of one of the driving-wheels and working loosely in the other, and being fitted in the frame-box F by a thimble, G, substantially as specified.

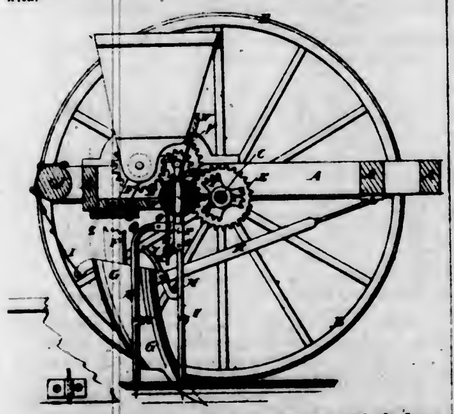
258,448. COMBINED BUNG AND BUSHING FOR BEER-BARRELS. PHILIPP HADLENER, Milwaukee, Wis. Filed Mar. 22, 1882. (No model.)



Claim.—The combination of the bushing A, having locking-lugs *a'*, with the bung B, provided with handle *b*, and the locking-plug D, provided with grooves and inclined ways for the lugs, and cut away centrally on its under side, so as to leave space for the handle of the bung, and also a downward depending circular flange adapted to be interposed between the said bung and the locking-lugs on the bushing, as set forth.

258,449. GRAIN-DRILL. SLAUGHTER G. MAJOR, Haynesville, Me. Filed Feb. 10, 1882. (No model.)

Brief.—Depending from a transverse shaft on either side of the drill-boot are teeth, provided with rule-joints and break-pins, for cleaning accumulated trash from the boots. The shaft is provided with a segment, whereby an intermittent oscillatory movement is imparted to it by a gear-wheel on the axle engaging therewith.

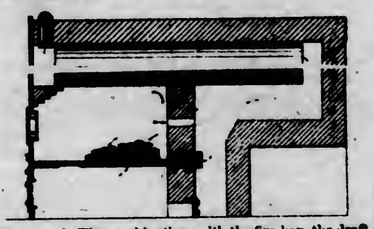


Claim.—1. In a grain-drill, the combination, with the frame A and the axle C, of the shaft K, the jointed teeth M, the gear-segments T U, and the spring V, substantially as herein shown and described, whereby the said shaft and teeth will receive a reciprocating movement from the revolution of the said axle, as set forth.

2. The combination, with the hoes, arranged in two rows, and a single shaft, K, of teeth M, having the bend or offset Q in their upper parts, whereby both rows of hoes can be cleared by a single shaft, as described.

3. The combination, with the teeth M, rule-jointed at N, the shaft K, having spring V and arm Y, and the axle C, of the gear-wheel T, formed of three segments, each provided with four teeth, the four-toothed segment U on shaft K, and the leather plate Z on frame, as and for the purpose specified.

258,450. BOILER OR OTHER FURNACE. EDWD. J. HALLETT, Jr., New York, N. Y. Filed Jan. 31, 1882. (No model.)

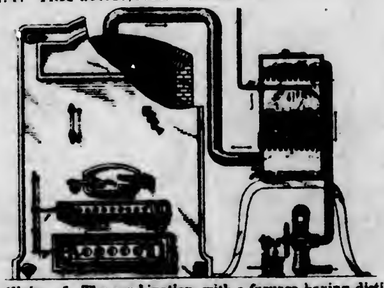


Claim.—1. The combination, with the fire-box, the draft-flue, and the suction-fan or air-exhauster, of the perforated septum or division-wall, and separate, distinct, and controllable air channels or ducts, admitting air in regulated quantities, the one to the ash-pit, the other to the furnace, at a point where the air will meet and mingle with the fuel-gases passing through or issuing from the said division-wall, substantially as hereinbefore set forth.

2. The fire-box, the draft-flue, and the suction-fan or air-exhauster, in combination with the perforated septum or division-wall, the separate and distinct air channels or ducts, admitting air, the one to the ash-pit, the other to the furnace, at a point where the air will meet and mingle with the fuel-gases passing through or issuing from the said division-wall, and registers or gates for said air-channels, substantially as hereinbefore set forth.

3. The combination, with the air-exhauster and the condenser or cooler, of the furnace provided with perforated septum or division-wall, and with separate and distinct sets of valve or register controlled air channels or ducts, substantially as and for the purpose hereinbefore set forth.

258,451. APPARATUS FOR PROMOTING THE COMBUSTION OF FUEL IN FURNACES. EDWD. J. HALLETT, Jr., New York, N. Y. Filed Nov. 28, 1881. (No model.)



Claim.—1. The combination, with a furnace having distinct separate and controllable air-inlets which introduce air in regulated quantities to the furnace both through the ash-pit and also at a point where it will meet the fuel-gases, of a draft-flue and a suction-fan by which air is sucked or drawn into and through the furnace, substantially as and for the purposes hereinbefore set forth.

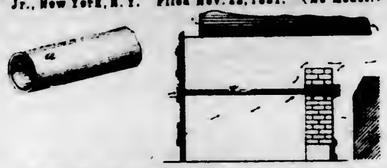
2. The combination, substantially as hereinbefore set forth, of the furnace provided with inlets which introduce air into the furnace both through the ash-pit and at a point where it will meet the fuel-gases, the draft-flue, the suction-fan, and the condenser.

3. The combination, substantially as hereinbefore set forth, of the furnace provided with two sets of air-inlets, the one admitting air to the fire through the ash-pit, the other conducting air into the furnace at a point where it will meet the fuel-gases, the registers or gates for said sets of inlets, and the suction-fan.

4. The combination, substantially as hereinbefore set forth, of the tubular grate-bars open from end to end and discharging air into the furnace at a point beyond the bridge-wall, the ash-pit and air-inlets therein, registers or gates controlling admission of air through said inlets and through the grate-bars, the suction-fan, and the condenser.

5. The combination, substantially as hereinbefore set forth, of hollow grate-bars, suction-fan or air-exhauster, and intermediate water-contact condenser.

258,452. BOILER OR OTHER FURNACE. EDWD. J. HALLETT, Jr., New York, N. Y. Filed Nov. 23, 1881. (No model.)



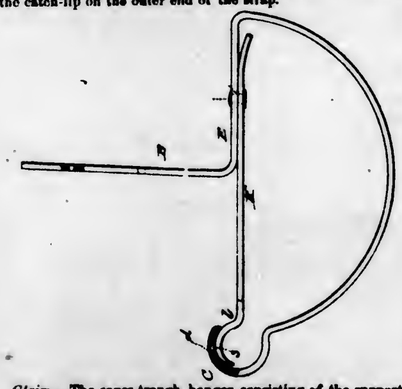
Claim.—1. In a furnace, the combination, substantially as hereinbefore set forth, of tubular grate-bars open from end to end and conducting air from the outside into or beyond the bridge-wall, air-inlet passages in the ash-pit which admit air beneath the grate-bars, and registers applied to and controlling both the open inlet ends of the grate-bars and the air-inlet passages of the ash-pit, substantially as hereinbefore set forth.

2. The combination, with the tubular grate-bars and the air-inlet passages of the ash-pit, of registers applied to the outer ends of the bars and the air-inlets of the ash-pit, respectively, and the lever-handle connected to and adapted to operate simultaneously both sets of registers, so that in proportion as the one is closed the other will open, substantially as hereinbefore set forth.

3. The combination of the tubular grate-bar, adapted both to slide lengthwise and rotate, and the removable key, provided, the one with bayonet-slots and the other with pin to engage said slots, substantially as and for the purposes hereinbefore set forth.

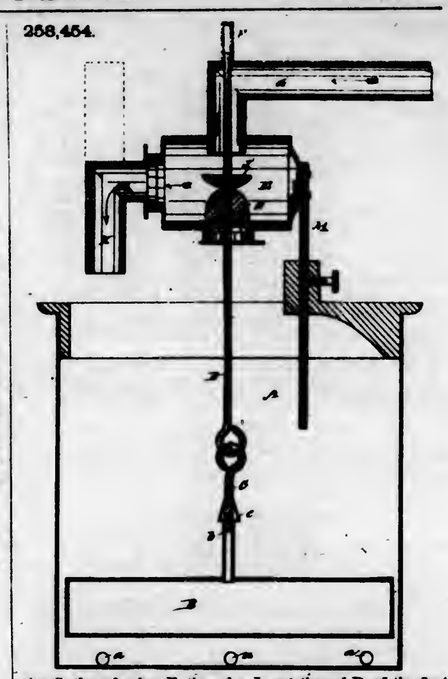
258,453. EAVES-TROUGH HANGER. RICHMOND E. HALLEY, West Salem, Ohio. Filed Mar. 25, 1882. (No model.)

Brief.—A stud on the pivoted latch-bar engages a perforation in the catch-lip on the outer end of the strap.



Claim.—The eaves-trough hanger consisting of the supporting-strap B, its perforated arm E and perforated catch-lip C, and the pivoted latch-bar K, its curved end *l* fitting under the catch-lip and its stud *s* engaging the perforation *d* of said catch-lip, substantially as specified.

258,454. SELF-REGULATING FEEDER FOR SACCHARINE LIQUIDS. CHARLES F. HANSEN, Weston, Vt. Filed Feb. 13, 1882. (No model.)



Claim.—1. In a self-regulating feeder, the combination, with the feed-pipe G and the valve-box E, of the valve J, loosely mounted on the rod D, the supporting-block H on the rod D, and the float-supporting rod D, substantially as herein shown and described, and for the purpose set forth.

2. In a self-regulating feeder, the combination, with the feed-pipe G and the valve-box E, of the valve J, the block H, the rod D, and the float B, substantially as herein shown and described, and for the purpose set forth.

3. In a self-regulating feeder, the combination, with the feed-pipe G and the valve-box E, of the valve J, the block H, the rod D, the float B, and the vessel A, containing the float and provided with apertures *a* for the entrance of the sap or saccharine liquid, substantially as herein shown and described, and for the purpose set forth.

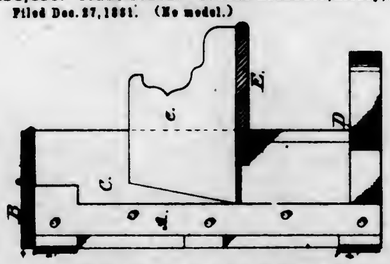
4. In a self-regulating feeder, the combination, with the feed-pipe G, of the valve-box E, the adjustable supporting-rod M, the valve J, the rod D, the float B, and the vessel A, substantially as herein shown and described, and for the purpose set forth.

5. In a self-regulating feeder, the combination, with the feed-pipe G, the valve-box E, the valve J, and the rod D, of the float B and the hollow suspending-hook C, provided with an air-vent, *b*, substantially as herein shown and described, and for the purpose set forth.

6. In a self-regulating feeder, the combination, with the feed-pipe G and the float-rod D, of the rounded block H, rigidly mounted on the rod D, and the valve J, loosely mounted on the rod D and resting on the block H, which valve has a layer of rubber on its upper surface, substantially as herein shown and described, and for the purpose set forth.

7. In a self-regulating feeder, the combination, with the feed-pipe G and the valve-box E, of the valve-supporting and float-carrying rod D and of the guide-socket F on the pipe G, substantially as herein shown and described, and for the purpose set forth.

258,455. PIANO-FORTE. EDWARD MCCAMMON, Albany, N. Y. Filed Dec. 27, 1881. (No model.)



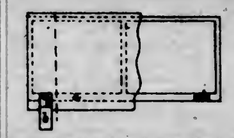
Claim.—1. In an upright piano, the combination, with a body-frame, A, containing the usual iron plate, strings, and sounding-board, of an outer ornamental casing separable from the frame A, substantially as described, and for the purpose set forth.

2. The combination, with the body-frame A, for containing the plate, strings, and sounding-board of an upright piano, of an ornamental casing consisting of the end pieces, C, pedal-rail D, and key-board bottom E, separable from the frame A, essentially as and for the purpose specified.

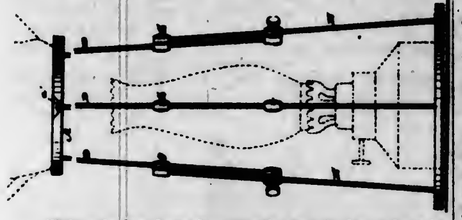
258,456. DASH-BOARD FOR VEHICLES. LACHLAN E. MCKINNON, St. Catharines, Ontario, Canada. Filed Nov. 18, 1881. (No model.) Patented in Canada Dec. 16, 1881, No. 13,849.

Claim.—The combination of a dash, with its lower rail, *a*, provided with the groove *g*, having slots *d*, with the bolts C, having oblong heads adapted to be inserted through said slots and turned across said channels, and secured to the foot by nuts, substantially as described, and for the purpose set forth.

258,456.



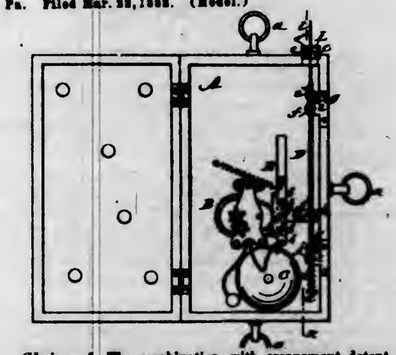
258,457. HEATING-FRAME FOR LAMPS. JOSIAH W. HELVIN, Houston, Tex. Filed Apr. 8, 1882. (Model.)



Claim.—1. In a frame for supporting vessels above a lamp in position to be heated, the thin cast-metal top plate, A, formed with an annular marginal flange, and having upon its upper surface a series of horizontal radial ribs, C, upon which the vessel to be heated rests, the flange being recessed at intervals, and the plate being supported upon rods secured in its ribbed portions, substantially as described.

2. The combination, with the flanged cast-metal top plate, A, formed with a central opening and a series of radial ribs, C, of the two sets of supporting-rods D and E, and the metal base-ring provided with feet or lugs *f* upon its under side, the upper set of rods being secured in the ribbed portions of the top plate, the lower set of rods being inserted in the base-rings where the feet or lugs occur, and both sets of rods being connected together by slidable connections, substantially as described.

258,458. BURGLAR-ALARM. PETER HOGAN, Philadelphia, Pa. Filed Mar. 22, 1882. (Model.)



Claim.—1. The combination, with escapement-detent and alarm mechanism, of the spring-pressed sliding rods D, and the plate F, connecting the rods with the detent, substantially as and for the purpose set forth.

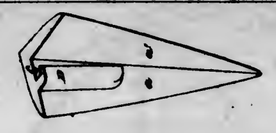
2. The combination, with the escapement-detent E, provided with the pins *h*, of the sliding rods D, provided with the pins *h*, and the T-shaped plate F, provided with the inclines *i* and the slot, substantially as and for the purpose set forth.

3. The combination, with the box A, provided with the perforated posts *f f'*, and the detent E, provided with pins *h*, of the rods D, the springs *d*, and the T-shaped plate F, provided with the inclines *i*, substantially as and for the purpose set forth.

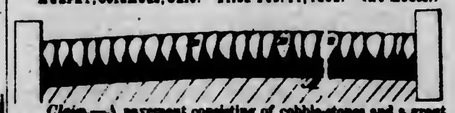
258,459. FENCE-POST. JOSEPH F. HOUGHTON, Fort Atkinson, Wis. Filed Apr. 4, 1881. (No model.)

Claim.—In fence-posts, the socket A, consisting of two blades, *a* and *a'*, at substantially right angles to each other, and the hooked flange D, as set forth.

258,459.



258,460. COBBLE-STONE AND GROUT PAVEMENT. JOHN MURPHY, Columbus, Ohio. Filed Feb. 11, 1882. (No model.)



Claim.—A pavement consisting of cobble-stones and a grout composed of pulverized slag, sand, lime, silica, Portland cement, and ore-dust, substantially as described, whereby the use of pitch or asphaltum may be dispensed with, as set forth.

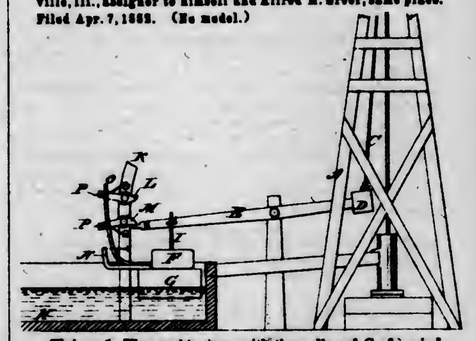
258,461. BUFFER FOR LOOMS. MICHAEL MURRAY, South Manchester, Conn. Filed Feb. 21, 1881. (No model.)

Brief.—The blow of the shuttle upon the picker is checked by means of a small crank pivoted upon the under side of the lathe-beam and bearing against the side of the picker-stick. The strap connecting the crank with the spring that draws it forward is formed with several holes, whereby such connection may be adjusted. The crank admits of being turned back away from the picker-stick and thrown out of operation.



Claim.—The combination of a lathe-beam, *a*, and a picker-stick, *c*, with the retractible crank *e* and spring *f*, and means for adjustably connecting said spring and crank, all substantially as described.

258,462. WINDMILL-REGULATOR. JOHN H. NEWELL, Scottsville, Ill., assignor to himself and Alfred H. Greer, same place. Filed Apr. 7, 1882. (No model.)



Claim.—1. The combination, with the pull-cord C of a windmill, and weight D, suspended thereon, of setting and tripping lever E, float G, weight F, catch-dogs L M, and tripping-arms N O, substantially as specified.

2. The combination of weight F, yoke I, and float G with the tripping-lever E, substantially as specified.

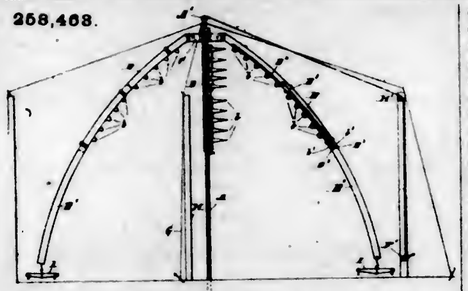
3. The catch-dogs L M, combined with the lever E, weight F, float G, and the trippers N O, substantially as specified.

4. The catch and trip dogs L M, arranged on the vertical standard K, in combination with the vertically-swinging shifting-lever E and the float G, said float having trippers N O, substantially as specified.

258,463. MACHINE FOR STACKING HAY AND STRAW. JOHN G. A. NEWSOM, Columbus, Ind. Filed Aug. 26, 1881. (No model.)

Claim.—1. The combination, in a hay or straw stacker, of the central pole and the revolving arms, said pole being substantially

258,468.



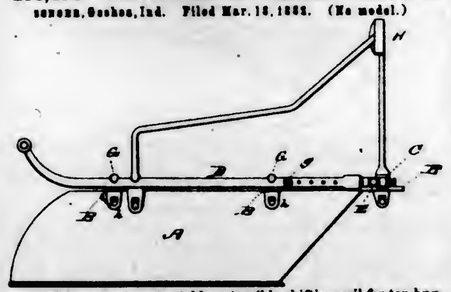
vertical, and said arms being adapted to continuously bear upon and move over the surface of the stack while the same is in process of being built, all substantially as described, and for the purposes specified.

2. The combination, in a hay or straw stacker, of the central shaft, the revolving arms, and the guiding arms or fingers *b*, substantially as shown and described, and for the purposes specified.

3. The combination, with the arms B of a straw or hay stacker, of fingers *b*, rod B', and thumb-screws B', passing through bearings secured to said arms, all substantially as and for the purposes set forth.

4. The combination of the pole A, cross-head C, arms B, and extensions B', substantially as and for the purposes set forth.

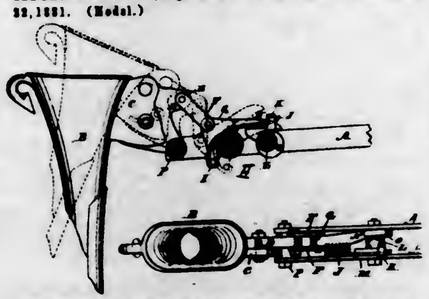
258,464. SHIFTING-RAIL FOR VEHICLES. JAMES A. MCKENZIE, Goshen, Ind. Filed Mar. 16, 1881. (No model.)



Claim.—1. An adjustable extensible shifting-rail for top-buggies, consisting of the angle-irons E, the slotted rail-section C, and the slotted adjustable rail-sections D D in sliding engagement therewith, said sections being adapted to be secured to the seat by fastening-bolts and bearings, substantially as specified.

2. In a shifting-rail for vehicle-seats, the combination, with the seat A, having perforated bearing-plates B secured thereto, of the perforated slotted rails C D, having apertures *c*, the angle-irons E, screws *g*, and the T-headed bolts G and nuts *h*, substantially as specified.

258,466. SPRING-HOE FOR GRAIN-DRILLS. JAMES NIXON and THOMAS H. NIXON, Ingersoll, Ontario, Canada. Filed Dec. 22, 1881. (Model.)

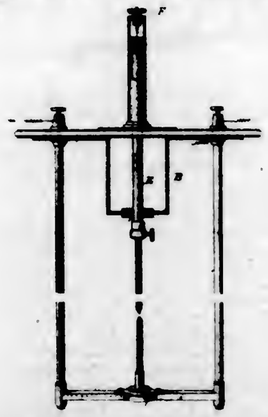


Claim.—1. In a grain-drill, the combination, with the hoe B and drag-bars A A', of a rocking cylinder, H, axially journaled between the drag-bars, spring J, wound spirally around said cylinder, the free end secured to a lug, I, of the cylinder, the other end attached to a fixture, links F F, pivoted to a lug, G, of the cylinder, and to a plate, D, or fin C of the hoe above the pivot-point of its connection with the drag-bars, and eccentric O, forming a stop for an arm, N, of cylinder H, whereby the primary resistance of the hoe to an obstruction can be weakened and strengthened by throwing the pivotal end of links F F more or less out of line with the axis of cylinder H by the adjustment of the eccentric O, raising and lowering the arm N, the spring J reacting to retract the hoe to a normal position after yielding to and passing over an obstruction, as set forth.

2. In combination with a cylinder, H, journaled between the drag-bars of a grain-drill, and spring J, wound spirally around said cylinder, the cylinder I, axially secured between the drag-bars by a clamping-bolt, and provided with interlocking faces, for the purpose set forth.

3. In combination with spring J, wound around a cylinder, H, journaled between drag-bars A A, pivoted to the hoes B or plate D, and connected to the hoes by links F F, the cylinder I, axially secured between the bars A A, and having a flange, M, and projection K, to secure the end of spring J fixedly, as set forth.

258,466. ELECTRIC-ARC LAMP. MICHAEL J. O'SULLIVAN, Baltimore, Md., assignor to the American Electrophore Company, Washington, D. C. Filed Dec. 19, 1881. (No model.)



Claim.—1. In an arc lamp, the combination, with the movable upper-carbon holder, of a horn insulated from electrical connection with said holder, and other parts which may be embraced in the lamp-circuit, substantially as hereinbefore set forth.

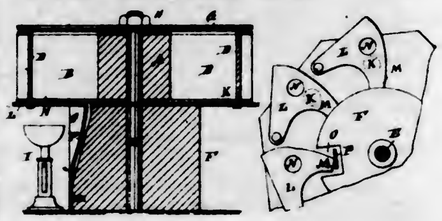
2. The non-conducting or insulated plug F, in combination with the horn, the holder E, and the plunger, substantially as and for the purposes hereinbefore set forth.

3. The holder E, surmounted by a non-conducting overflow, *e*, in combination with the plunger, the non-conducting or insulated plug F, and the horn, substantially as hereinbefore set forth.

4. The combination of the movable upper-carbon holder, the case or box B, provided with insulated bearings at the point or points where the holder has contact with said case, and the lower-carbon holder, insulated also from said case, substantially as and for the purposes set forth.

5. In an arc lamp, the combination, with the carbon-holders and other parts embraced in the lamp-circuit, of the horn and the frame, insulated from said parts, substantially as and for the purposes set forth.

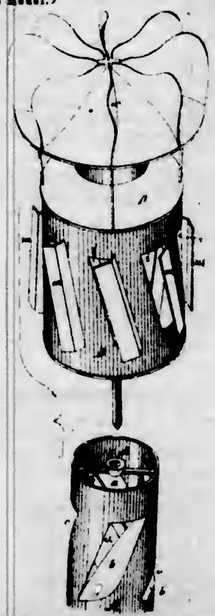
258,467. SHOW-CASE FOR SHOT. CHARLES PALMER, Springfield, Tenn. Filed Jan. 23, 1882. (Model.)



Claim.—1. The combination, with the show-case A, subdivided into compartments B, of the gates L, each provided with an opening, N, and a lug, M, the standard F, provided with a recess, O, and the spring P, substantially as herein shown and described, and for the purpose set forth.

2. The combination, with the bottom of case A, of the gate L, having one end pivoted to said bottom, a lug, M, projecting against a spring, P, and an end or corner projecting beyond the case, whereby a simple pressure of the salesman's person will open a gate for the outlet of the article which is wanted, as described.

258,468. CHIMNEY-CAP. WILLIAM H. PAYNE, Camden, N. J., assignor of one-half to Alvin Wilke, same place. Filed Feb 28, 1882. (No model.)



Claim.—1. The combination, in a chimney cap of the central fixed casing, A, having inclined openings *a* and internal vanes, *b*, with the rotating drum D, inclosing said casing, and having inclined internal vanes, *n*, all substantially as set forth.

2. The combination, in a chimney-cap, of the fixed central casing, A, having inclined openings *a* and internal vanes, *b*, with the rotating drum D, inclosing said casing, and having inclined openings *i*, and inclined internal vanes, *n*, as set forth.

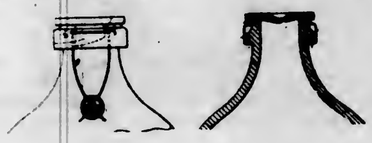
3. The combination, in a chimney-cap, of the fixed central casing, A, having inclined openings *a* and internal vanes, *b*, with the rotating drum D, inclosing said casing, and having inclined openings *i*, inclined internal vanes, *n*, and exterior vanes, *m*, as specified.

258,469. WAGON-JACK. JOHN V. PHILLIPS, New Buffalo, Mich. Filed Nov. 16, 1881. (No model.)



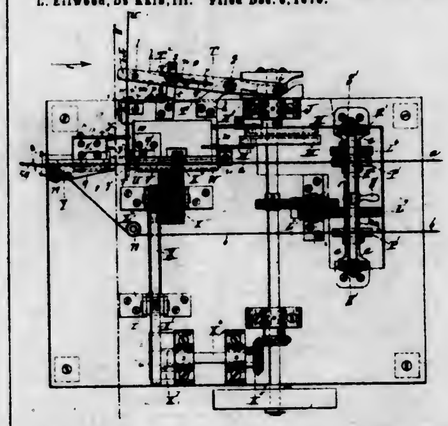
Claim.—The iron plate Fig. 1, with hook-shaped notches on the outer surface, with the lateral projections on the upper end, dowel-pin *c*, and a tenon or tongue and shoulder, as shown at *d*, substantially and for the purpose as set forth.

258,470. BOTTLE-STOPPER. FERDINAND PRAUNEGGER, Gratz, Austria. Filed Oct. 18, 1881. (No model.) Patented in Austria-Hungary Aug. 6, 1880.



Claim.—The cap having inwardly-projecting lips and holes on opposite sides of and above one of such lips, and the vessel having locking-shoulders with upright ends, in combination with a sealing-cord passing through the holes and flanking one of the shoulders at its opposite ends, and a seal attached to the vessel and securing the cord, substantially as and for the purpose described.

258,471. MACHINE FOR MANUFACTURING BARBED FENCE-WIRE. HENRY W. PUTNAM, LEVI BRADBURY, and LEWIS WILLIAMS, Bonalagton, Vt.: said Bradbury and Williams assignors to said Putnam; said Putnam assignor to the Washburn & Moen Manufacturing Company, Worcester, Mass., and Isaac L. Ellwood, De Kalb, Ill. Filed Dec. 6, 1879.



Claim.—1. The combination, with shaft Q' and lifting-shaft S', of hand-lever S, hinged linked pieces S' S', top plate, *e*, springs *e e*, adjusting-screws *f f*, and plates *d d*, substantially as and for the purposes set forth.

2. The combination, with wrapping-spindle U and sliding block T', of bearing-piece V, sliding bearing W and its retaining-spring 20, cam N, and link-piece N', substantially as and for the purposes set forth.

3. The combination, with sliding block T' and wrapping-spindle U, provided with bearings V and W, of sliding block Z, cam N, and link-piece M', substantially as and for the purposes set forth.

4. The combination, with the notched winding-pin *s'*, wrapping-spindle U, provided with gear X' and the yielding bearing W, of operating-gears X' and X', and rack-bar X, provided with slot 7, substantially as and for the purposes set forth.

5. The combination, with feed-arm T, of gripping-lever *k*, spring *n*, pin *m*, and adjusting-screw *p*, substantially as and for the purposes set forth.

6. The combination, with feed-lever T and gripping-lever *k*, of spring *g* and wedge-piece *o*, substantially as and for the purposes set forth.

7. The combination, with guide-arm *y*, of hinged guide-arm support 13, adjusting-screw 17, and angular holding-plate 16, substantially as and for the purposes set forth.

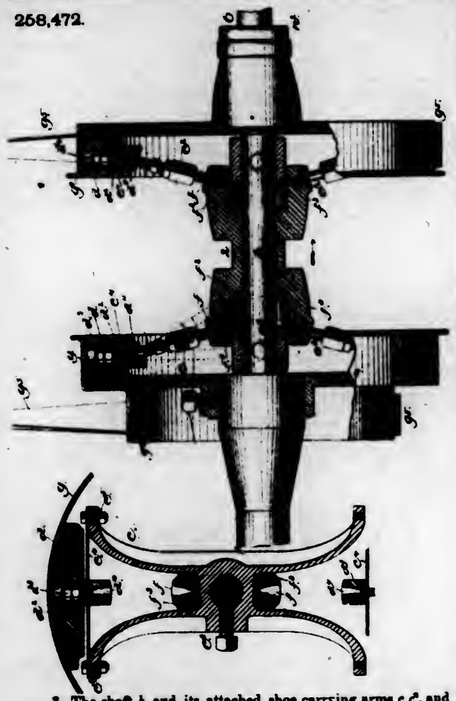
8. The combination, with wrapping-spindle U, of feed-guide arm *y* and guide-piece 8, substantially as and for the purposes set forth.

258,472. CLUTCH MECHANISM FOR COUNTER-SHAFTING. BENJAMIN F. RADFORD, Hyde Park, Mass. Filed Feb. 23, 1882. (No model.)

Claim.—1. The counter-shaft *b*, adapted to be rotated continuously in one direction, clutches carried and moved in unison with it, and two pulleys loose on the said counter-shaft, combined with a reversing-belt extended about both of the said loose pulleys, and supported on suitable pulleys, whereby when one of the said loose pulleys is being driven in unison with the said counter-shaft the other pulley will at the same time be driven in opposite directions, substantially as and for the purpose described.

2. The shaft *b*, its attached arms *c c'*, the quill loose on the said shaft, and the struts supported by the said quill, combined with the plates, and shoes, and two loose pulleys, either of which may be driven at will with and in the direction of rotation of the shaft *b*, for the purpose described.

258,472.

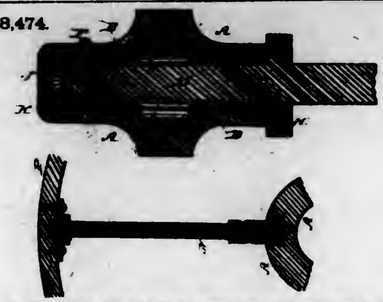


3. The shaft *b*, and its attached shoe carrying arms *c c'*, and struts, combined with the quill loose on the said shaft, and having prongs engaged at all times with the said arms to insure the rotation of the quill with the shaft *b*, substantially as described.

4. The shaft *b*, adapted to be moved continuously in one direction, two loose pulleys thereon, one of which carries a pulley, *m*, and has a belt-receiving portion, *g'*, of smaller diameter than the belt-receiving portion of the other loose pulley, combined with a reversing-belt, and means, substantially as described, to connect either of the said two loose pulleys with and move it in unison with the said shaft, and reverse the movement of the other loose pulley, as and for the purpose set forth.

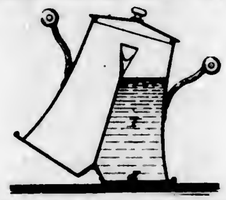
5. The adjustable struts, the arms *c c'*, yielding plates, shoes, and socketed pieces *d'*, combined with the quill having sockets *f*, to receive one end of each strut, substantially as and for the purpose described.

258,474.



2. The herein-described hub, consisting of the casting A, having arranged inside the cylindrical longitudinally-slotted spindle-box B and cap J at its outer end, cap H at its inner end, and screw F, passing through the casting and spindle-box and adapted to enter a circumferential annular groove in the spindle, as and for the purpose shown and specified.

258,475. MILK-BOILING VESSEL. JUAN RUESCH, Duisburg, Prussia, Germany. Filed Apr. 7, 1882. (No model.)



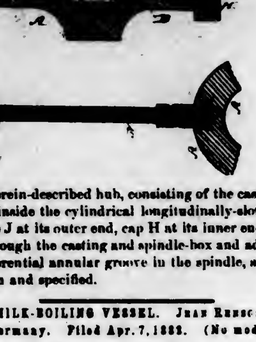
Claim.—A milk-boiler composed of a vessel having a central partition extending from the bottom to some distance from the top, and a bottom provided with a narrow center portion, and with upwardly-inclined portions at both sides of the center portion, substantially as specified.

258,476. GROCER'S SCOOP. CHARLES H. ROBERTS, Montour, Iowa, assignor of one-half to O. H. Mills. Filed Feb. 17, 1882. (No model.)



Claim.—The scoop A, in combination with the pivoted handle B, the flat bar C, the link *b*, and the scale-beam D, provided with a counterpoise, E, constructed to operate substantially as and for the purpose set forth.

258,477. MACHINE FOR BEATING UP NAPPED HATS. JAS. R. RUSSELL, Boston, Mass. Filed Mar. 22, 1882. (No model.)



Claim.—1. The combination, substantially as shown and described, of a hot-water supply, a plank supported on rollers, means to reciprocate said plank longitudinally, beating-up sticks overlying such plank, and means to vibrate said sticks.

2. The combination, substantially as shown and described, of a hot-water supply, a plank, means to reciprocate such plank longitudinally, beater-up sticks arranged upon a rod and provided with heads, and a shaft having a number of tappets equal in number to the number of the sticks to act upon such heads to vibrate the sticks.

3. The combination, substantially as shown and described, of a tank to hold hot water, a plank above the same, suitably supported beater-up sticks overlying such plank, a shaft provided with tappets to vibrate said sticks, a crank-shaft to reciprocate said plank, and a pump to supply hot water from the tank to the plank.

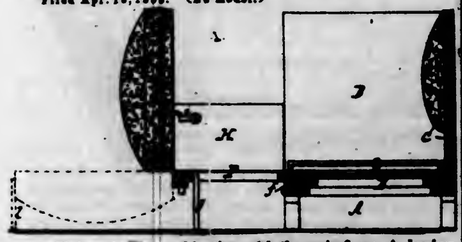
4. The combination, substantially as shown and described, of the beater-up sticks loosely pivoted upon a rod, with a rail upon which they may be rested in order to gain access to the plank.

5. The fenders arranged longitudinally of, between, and alongside the beater-up sticks, substantially as shown and described, to enable the workman to obtain access to all portions of the plank while protected from the splash.

6. The plank supported upon a fixed bed and adapted to receive a longitudinal reciprocating motion therefrom, substantially as shown and described.

7. The beater-up sticks loosely pivoted upon a rod and operated by tappets acting upon them in the rear of their pivots, combined with means to aid their fall, substantially as and for the purpose described.

258,478. HOPA-HEDSTEAD. HARRY SAMUELS, New York, N. Y. Filed Apr. 18, 1882. (No model.)



Claim.—1. The combination, with the main frame A, having the attached head-piece B, back C, and stationary bottom frame, D, of the frame F, arranged to slide horizontally over the stationary bottom frame, and the seat G, hinged to the outer edge of the sliding frame, and means for retaining the hinged seat in a vertical or a horizontal position, substantially as described.

2. The combination of the main frame, having grooves *h*, attached head-piece B, back C, and bottom frame, D, the horizontal sliding frame F, having end pins engaging the said grooves, the seat G, hinged to the sliding frame and provided with pivoted legs *g*, to support the seat in an extended horizontal position, and the head-board H, provided with means for retaining the seat in a vertical position, substantially as described.

258,479. WITHDRAWN.

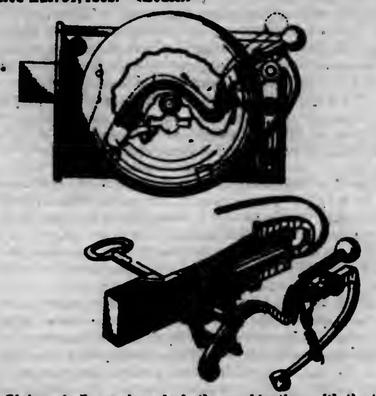
258,480. COLLAR OR CUFF OF CELLULOID OR OTHER PYROXYLINE MATERIAL. ALBERT A. SANBORN, Newark, N. J., assignor, by direct and mesne assignments, to the Celluloid Manufacturing Company, New York, N. Y. Filed Sept. 18, 1881. (Model.)



Claim.—1. The process of manufacturing collars and cuffs of celluloid or other pyroxyline material, consisting in making up the body and tab separately, and then uniting them with cement, &c., substantially as and for the purpose specified.

2. The collars and cuffs of celluloid or other pyroxyline material, constructed substantially as specified, and for the purpose set forth.

258,481. ALARM-LOCK. REINHARD SCHADE, New York, N. Y. Filed Mar. 31, 1882. (Model.)



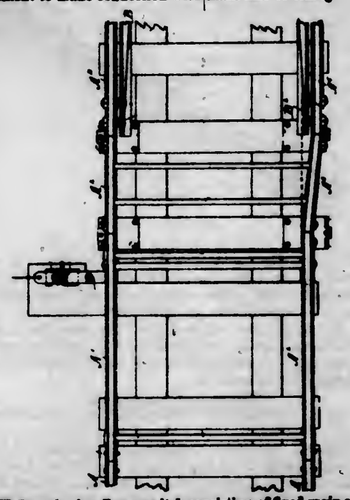
Claim.—1. In an alarm-lock, the combination, with the tumbler of the lock and an alarm mechanism having a vibratory hammer-arm arranged to strike a gong, of a swinging tripping-lever operated solely by the movement of the tumbler and acted directly on the hammer-arm which sounds the gong.

2. In an alarm-lock, the combination of the tumbler provided with a laterally-projecting pin, a tripping-lever normally resting on said pin, a hammer-arm operated by the end of the tripping-lever when the latter is raised by the pin on the tumbler, and a gong which is sounded by the hammer-arm.

3. The combination, with a lock-case inclosing a sliding bolt and a vertically-movable tumbler, of a pin on said tumbler projecting laterally through the lock-case, and an alarm mechanism having its hammer operated by the vertical movement of the pin on the tumbler through the medium of a hammer-tripping lever.

258,482. RAILWAY-SWITCH. FRANZ S. SCHEFFLER, Richmond, Quebec, Canada. Filed Feb. 3, 1882. (No model.)

Brief.—The switch-rails are constructed each of two rail-sections having their outer ends pivoted to fixed portions of the track, and so jointed at their inner ends that they are capable of a lateral movement to make connection with main line or siding.



Claim.—1. A railway-switch consisting of fixed main and siding rails, one of each being pointed and all having their ends on substantially the same line, in combination with switch-rails fixed at one end so as to connect with the main rails and free at the other, the free ends being connected to one of the sliding and one of the main rails by interposed movable pieces.

2. In a railway-switch, the combination of the main-line rails A A, the siding-rail A', and the main-line rail A², (the said rails A being permanently connected to said rails A' A² by spring-rails A' A' and short movable rails A² A²,) and the pointed main and siding rails B B', the parts being so constructed and arranged that the movement of the spring-rails A' A' and short rails A² A² operates the switch without breaking the connecting-joints.

3. In a railway-switch, the combination of main-line rail A' A, arranged to move laterally, adjustable rails A² A², forming continuous junctions therewith and with rigid rails A¹ A¹ and pointed rails B B', all substantially as described.

258,483. PROCESS OF OBTAINING SUGAR FROM MOLASSES AND SIRUPS. CARL SCHEIBLER, Berlin, Germany. Filed Feb. 23, 1882. (No specimens.) Patented in Germany July 24, 1880, No. 15,385; in France Oct. 22, 1880, No. 139,256; in Belgium Oct. 22, 1880, No. 52,341; in Austria-Hungary Dec. 11, 1880, Nos. 34,683 and 35,324, and in England Jan. 25, 1881, No. 331.

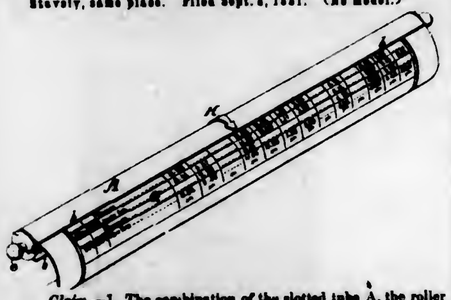
Claim.—1. The method herein described for obtaining strontium saccharates, which consists in treating saccharine solutions with caustic strontium or hydroxide of strontium, and separating the strontium saccharate by boiling, substantially as described.

2. The method herein described for obtaining sugar from saccharine solutions, which consists in treating the solution with a caustic strontium or hydroxide of strontium in excess, separating the strontium saccharate from the non-sugary lye, and finally separating the sugar from the strontium by means of carbonic acid, substantially as described.

3. In the treatment of saccharine solutions by means of caustic strontium or hydroxide of strontium in excess, the method herein described for removing in part the strontium, which consists in treating the over basic saccharate with water at low temperature to crystallize a portion of the strontium, substantially as and for the purpose specified.

4. The method herein described of obtaining sugar from saccharine solutions, which consists in treating such solutions with caustic strontium or hydroxide of strontium in excess, to obtain a strontium saccharate, then eliminating a part of the strontium from the over basic saccharate by treating with water at low temperatures, and finally removing the strontium from the basic saccharate by means of carbonic acid, substantially as herein described, and for the purpose specified.

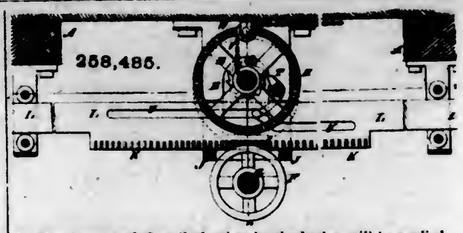
258,484. RAILWAY TIME-INDICATOR. JOHN S. SCHNIBELL, Philadelphia, Pa., assignor of three-fourths to J. Thomas Stavely, same place. Filed Sept. 8, 1881. (No model.)



Claim.—1. The combination of the slotted tube A, the roller D, journaled in bearings in the end of the tube, and a time-table attached to the roller, with a pointer constructed for longitudinal adjustment on the said tube, all substantially as set forth.

2. The combination of the slotted tube, containing a roller journaled in bearings on the tube, and having ribs *b b*, one on each edge of the slot, and with the adjustable duplex pointer H on the tube, substantially as set forth.

258,485. CAR-BRAKE. WILLIAM C. SCHULTEN, Marengo, Iowa. Filed Mar. 31, 1882. (No model.)



Claim.—1. A car-brake constructed substantially as herein shown and described, and consisting of the friction-wheels E F, the gear-wheels H I, the slide-bars L, having rack-bars K and grooves Q U, the sliding bearing-blocks C, and ratchet-wheels and pawls S T, as set forth.

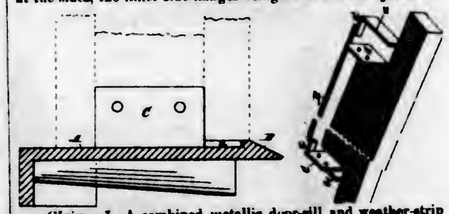
2. In a car-brake, the combination, with the axle G, the car A, and the brake-chain V, of the sliding bearing-blocks C, the friction-wheels E F, the gear-wheels H I, and the slide-bars L provided with rack-bars K, and having grooves Q, substantially as herein shown and described, whereby the brakes will be applied by the advance of the cars, as set forth.

3. In a car-brake, the combination, with the shaft D, carrying the friction-wheel E and brake-chain V, and the slide-bars L, having grooves U, of the ratchet-wheels S, and the pawls T, substantially as herein shown and described, whereby the said shaft and brake-chain are held in place when the friction-wheels are thrown out of contact, as set forth.

4. In a car-brake, the combination, with the slide-bars L and the car A, of the chain *d*, the guide-pulleys *h*, the spring *e*, the piston *f*, and the cylinder *g*, substantially as herein shown and described, whereby the said slide-bars are drawn back to a central position when released, as set forth.

258,486. COMBINED WEATHER-STRIP AND DOOR-SILL. JOSEPH SIMONS, Wayne, Ind. Filed Dec. 13, 1881. (No model.)

Brief.—A metallic door-sill formed in a single piece and with front and side flanges inclosing a gutter in front and the door-jambs at the sides, the inner side flanges being secured to the jambs.



Claim.—1. A combined metallic door-sill and weather-strip for wooden buildings cast in a single piece and constructed, as specified, with the raised portions B *a' a*, whereby rain is prevented from entering the house or reaching any wooden portion below said sill, substantially as specified.

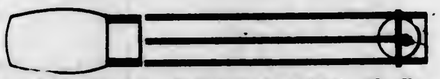
2. A combined metallic door-sill and weather-strip having the foot portion A, the weather strip or ridge B, the projecting portions C, to which the wooden frame is attached, and the flanges *a a'*, against which the back sides of the frame parts rest, all cast in a single piece, substantially as shown and described, and for the purposes specified.

258,487. SUSPENDER-END. JOSEPH WILLIAM SMITH, Boston, Mass. Filed Nov. 21, 1881. (No model.)



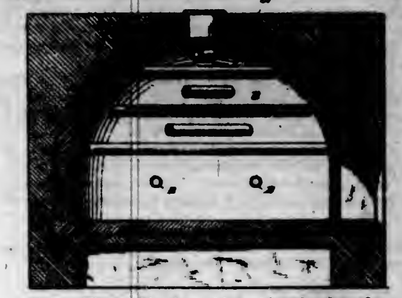
Claim.—The improved suspender-end above described, consisting of the button-strap A, circular in cross-section at and near its middle, the flexible strip B, looped around it, as shown, and with its ends laid together and secured by the metal clasp D, all as set forth.

258,488. GRAIN-SAMPLER. LEWIS C. SMITH, Berlin, Wis. Filed Apr. 5, 1882. (No model.)



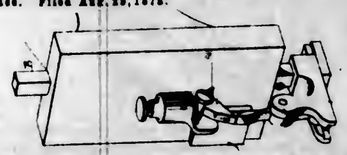
Claim.—A grain-sampling tube having an interior valve diametrically pivoted at or near one end thereof, a handle having a short stem portion or guide in the other end thereof, a shoulder or stop on the handle, and an interior rod connecting the handle to the valve eccentrically, substantially as specified.

258,489. COKE-OVEN. WILLIAM B. SMITH, Anniston, Ala. Filed Nov. 3, 1881. (No model.)



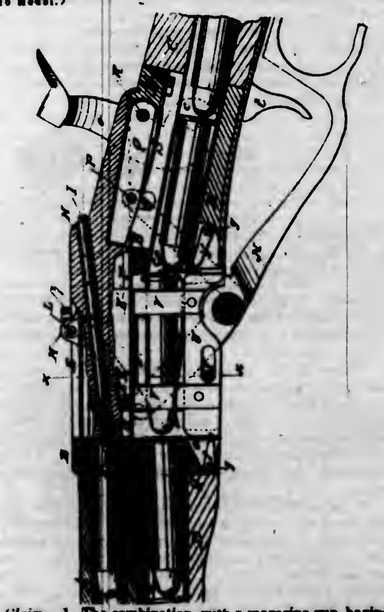
Claim.—The combination, with a coking-chamber, of a series of perforated horizontal tubes, B, traversing said chamber at different elevations or planes, and crossing each other, for conveying water for vaporizing purposes through the mass of burning coal contained in said chamber, as and for the purpose set forth.

258,490. SEWING-MACHINE ATTACHMENT. JAMES F. SPENCER, Philadelphia, Pa., assignor to John C. Love, same place. Filed Aug. 29, 1878.



Claim.—A sewing-machine attachment in which a pivoted spring-lever, *c*, having three arms, as described, is combined with a needle-carrying slide and an arm or lever for acting on and being acted on by the said lever *c*, as set forth.

258,491. MAGAZINE FIRE-ARM. GEORGE N. SPENCER, New York, N. Y., assignor of one-half to Dion C. Goldsborough and Obadiah Osborn, Walla Walla, Wash. Filed Dec. 28, 1881. (No model.)



Claim.—1. The combination, with a magazine-gun having a magazine arranged to feed in the usual manner, placed under the barrel, and a similar magazine in the stock, of an open-ended carrier arranged, as described, in line with both magazines, and mechanism, substantially as described, for shutting off one magazine while permitting the other to feed to the carrier, as set forth.

2. The combination, with the lever N, of the bars O, pivoted on pin I', connected to the locking-block by a pin at each side thereof, the recessed breech-frame B, having concaved shoulder, the hinged locking-block Q, having convexed rear end bearing on said shoulder, and the spring S, bearing on the locking-block, as shown and described.

3. In a magazine-gun, the combination, with the carrier U and the magazines *c d*, of the gates *e*, the levers *f g h*, and the connecting-bar *i*, substantially as herein shown and described, whereby the inner ends of the magazines, either or both, can be opened and closed, as set forth.

4. In a gun, the combination, with the carrier U, the forked lever N, and the connecting-bars K, of the three-armed lever Z and the triangular lever *a*, substantially as herein shown and described, whereby the said carrier will be raised and lowered by the movements of the said forked lever, as set forth.

5. The combination, with the sliding breech-block E, the levers N K, the carrier U, and the grooved breech-frame B, of the angular spring *b*, having the end of its lower arm pivoted to and its upper arm sliding in a groove of said frame, and provided with a projection, *b'*, as shown and described.

6. The combination, with the carrier U and three-armed lever Z, of a spring, *b*, having a beveled angle or bend arranged to rest against the end of said lever, whereby the said carrier can be forced down, as and for the purpose specified.

7. The combination, with the removable magazine-tube *c*, having plug *k* and lugs *l l*, of the recessed stock C, the lever *m*, pivoted to and between said lugs, and the slotted plate *n*, as and for the purpose specified.

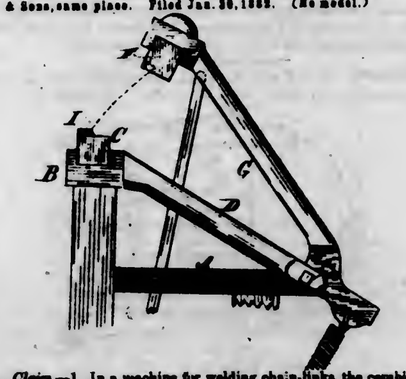
8. The combination, with the trigger *i*, the lever N, and the plate *o*, of the bent lever *u*, pivoted at the angle to said plate, having a shoulder upon its upper arm and having its lower arm made heavier than its upper one, as and for the purpose described.

258,492. DUST-CAP FOR AXLES. THOMAS W. SQUIRES, Beacon Falls, N. Y. Filed Jan. 18, 1882. (Model.)



Claim.—The improved dust-cap for journal-boxes or axle-boxes, consisting of the metal nut or cap B', provided with the flange D and with lugs C, and the rubber or other envelope, A', embracing closely the exterior of said nut, and having the projection E at the base of same, all constructed and combined substantially as described and shown, for the purpose set forth.

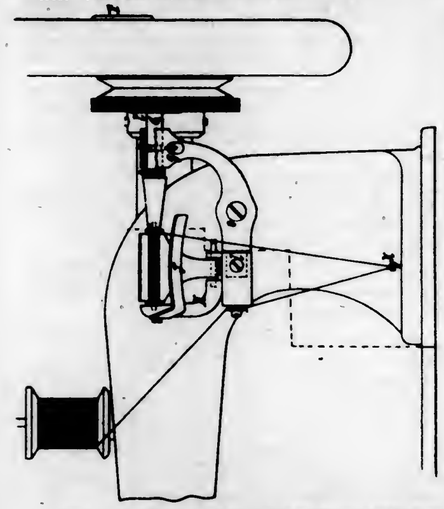
258,493. DEVICE FOR WELDING LINKS. PHILANDER H. STANDISH, Cincinnati, Ohio, assignor of one-half to P. Wilson & Sons, same place. Filed Jan. 30, 1882. (No model.)



Claim.—1. In a machine for welding chain-links, the combination, substantially as hereinbefore described, of a stationary anvil, B, provided with an attached die, C, having the projection I, with the hammer-arm G, pivoted below the plane of the anvil, as described, and provided with the die F, having the recess K, as and for the purpose set forth.

2. In a machine for welding chain-links, the combination, substantially as hereinbefore described, of a base, A, a stationary anvil, B, carrying the die C, the inclined brace D, connected with the anvil and base, the hammer-arm G, pivoted below the plane of the anvil, and provided with a hammer-head carrying the die F, essentially as and for the purpose set forth.

258,494. BOBBIN-WINDER. ROBERT STRIEGL, Gratz, Austria. Filed Oct. 12, 1881. (No model.)

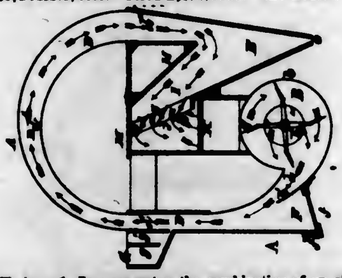


Claim.—1. The combination, substantially as herein before set forth, with the machine-shaft, of the fixed fly-wheel on such shaft, having an elongated hub, the loose pulley and its driving cog-wheel, arranged on such elongated hub, the collar fixed to the hub next to the loose pulley, the set-screw arranged in the fly-wheel to engage the pulley, and the bobbin-winding mechanism adapted to gear with the driving cog-wheel.

2. The combination, substantially as hereinbefore set forth, with the pulley and its driving cog-wheel, of the transversely-grooved bobbin-holding spindle capable of longitudinal movement, the fixed pinion of the spindle, adapted to gear with the driving cog-wheel, the spring bating on the sliding spindle with a tendency to throw its pinion out of gear with the driving cog-wheel, and the catch-pin arranged in the spindle-bearing for engaging the groove of the spindle, and thereby retaining the pinion in gear with the driving cog-wheel.

3. The combination, substantially as hereinbefore set forth, of the bobbin-holding spindle having the inner portion thereof tapered for the reception of a grindstone or other similar device, the fixed spindle-bearing, and the swiveled bobbin-holding arm.

258,495. GRAIN AND MINERAL SEPARATOR. JAY STRESSBERG, Boulder, Colo. Filed Apr. 3, 1881. (No model.)



Claim.—1. In a separator, the combination of an air-shaft simulating a horseshoe, a chamber connecting the ends thereof, a fan located in said chamber, and a feed-hopper placed on one arm of said shaft and arranged to deliver the material in the flue of the blast, the ends of the shaft forming hoppers for the reception of the separated material, as set forth.

2. In a separator, the combination of a fan located in a chamber at the bottom of the machine, an air-shaft, D, leading from and to the chamber, and having upwardly-inclined portions d I, vertical portions d' d''', arched portion d'', and hopper portions E F, and a feed-hopper, G, located on one side of the vertical portion d', as set forth.

3. The combination of fan C, chamber B, formed with inlet-openings b^2, shaft D, receptacles E F, provided with outlets e f, projection H, channel I, forming part of air-passage, opening J, deflector K, and air-chambers A^2, as set forth.

4. The combination of fan C, chamber B, provided with inlet-openings b^2, shaft D, receptacles F and E, provided with outlets f and e, projection H, channel I, forming part of air-passage, opening J, having valves f' f' f', deflector K, and air-chambers A^2, as set forth.

258,496. WIND-ENGINE. HARRY R. STEVENS, Los Angeles, Cal. Filed Jan. 30, 1882. (No model.)



Claim.—1. In a windmill, the combination, with the revolving upright B, having horizontal bracket L, of the bar M, hinged to said bracket, and having horizontal vane N, and mechanism for operating the same, substantially as set forth.

2. The combination of the revolving upright B, having bracket L, the bar M, hinged to the latter, and having horizontal vane N, the bracket O, hinged horizontally to upright B and having adjustable vertical vane P, and the pivoted connecting-rods S, all arranged and operating substantially as set forth.

3. In a wind-engine, the hinged bracket O, having slot R and vane P, adjustable by means of a set-screw, Q, working in said slot, as set forth.

258,497. NUT-LOCK. JOHN L. STEVENS, Chicago, Ill., assignor, by direct and mesne assignments, of three-fourths to George A. Smith and Edward Hempstead, same place. Filed Jan. 21, 1882. (No model.)



Claim.—The herein-described nut-lock, consisting of an oval ring of metal provided with projections on the inside and adapted to be slipped upon the bolt and secured thereon by compression, causing the projections to bite the threads, or the projections and threads to mutually bite, substantially as set forth.

258,498. COMBINED FURNACE AND STACK FOR DESTROYING NOXIOUS OR POISONOUS GASES. OSCAR A. STEVENS and EDMUND L. DU BARRY, Washington, D. C. Filed July 28, 1881. (No model.)

Claim.—1. The herein-described method of treating noxious gases by first passing the gases in an upwardly-ascending current over moist retarding-surfaces and upward through a descending spray of water, so as to cool and wash the gases, and then burning them in their washed and cooled condition at an intense heat by forcing them into intimate contact with incandescent or ignited combustible and inflammable substances, substantially as described.

2. In combination with the gas-reservoir, the tower provided with means for retarding the currents of gases and subjecting them to the action of a current of water for the purpose of washing and cooling the same preparatory to burning, and the injector arranged to force a current of steam or air directly into the tower, thereby inducing a current of the gases and forcing the same into and up through the tower and thence to the furnace, substantially as specified.

3. In an apparatus for destroying noxious gases, the tower connecting with the gas receptacle or chamber and with a furnace, the said tower being provided with a course of loosely-arranged bricks and a course of broken terra-cotta or similar material, and with an overflow-vessel and water-pipes, whereby the gas on its upward passage may be thoroughly washed and cooled, substantially as described.

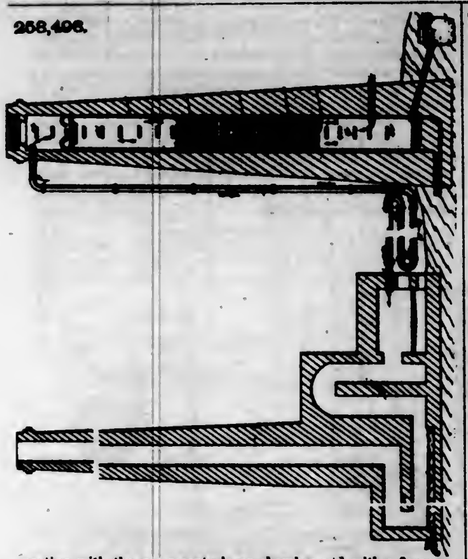
4. In combination with the tower and furnace and the connecting-pipes, the series of pipes and return-bends, provided with a suitable cock, whereby any condensed vapor carried over may be collected, substantially as described.

5. In combination with the tower, the herein-described furnace, connected therewith by means of a suitable pipe, whereby the washed and cooled gases and vapors are subjected to the action of intense heat and destroyed, substantially as specified.

6. In combination with the furnace and its vertical flue, the horizontal flue, and the receptacle at the bottom of said flue for holding water, whereby the solid products of combustion arising from the burning gases and fuel are arrested and prevented from escaping into the atmosphere, substantially as specified.

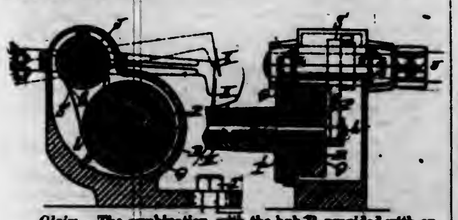
7. The combination, in an apparatus for destroying noxious gases, of the gas-chamber and connections, the tower provided with devices for retarding the gas and for washing and cooling it, the pipe and return pipe and bends and the furnace and flues leading to the chimney, arranged and adapted to operate substantially in the manner specified.

258,498.



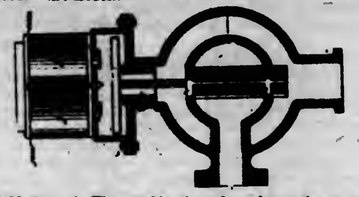
258,499. MECHANISM FOR OPERATING DOFFER-COMBS OF CARDING-MACHINES. HARLEY STONE and HARLEY A. STONE, Worcester, Mass. Filed Nov. 14, 1881. (No model.)

Brief.—Upon the inner end of the driving-shaft is secured a hub provided with a circular groove eccentric with the center thereof, said groove receiving a ring, upon which is fastened a pin for engaging with a crank-lever, whereby the operation of the comb-blade is effected.



Claim.—The combination, with the hub P, provided with an eccentric groove, Q, of the circular ring R, inserted therein as described, and provided with pivot-pin A, the doffer-comb blade K, its shaft J, and crank-lever S, said parts being constructed and arranged in relation to each other substantially as shown and described.

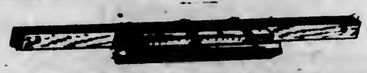
258,500. BALANCED VALVE AND OPERATING MECHANISM. GEORGE W. STORER, Philadelphia, Pa. Filed Jan. 18, 1882. (No model.)



Claim.—1. The combination of a valve-casing, a valve, or valve and stem, contained wholly within said casing, and presenting to pressure, when either closed or open, opposite faces of the same area, and an electro-magnet adapted to actuate the valve, all substantially as set forth.

2. The combination of the valve-casing, the valve contained wholly within the casing, and presenting to pressure, when either closed or open, opposite faces of the same area, and an electro-magnet having a pole or poles projecting through the casing and adapted to act upon the valve or upon an armature connected thereto, as set forth.

258,501. WIRE FENCE. JAMES F. STRONG, Detroit, Mich. Filed Jan. 20, 1882. (No model.)

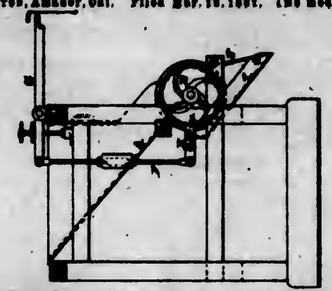


Claim.—The method herein described of packing a fence for transportation, consisting in first separating the rails from the posts, leaving the wires attached, placing the rails and one of the posts together, and winding the wires around said rails and posts, thus bringing both of the posts and both of the rails in close proximity and securely holding the whole together, substantially as described.

258,502. MANUFACTURE OF BUTTONS FROM PLASTIC MATERIAL. PHILIP L. SYLVESTER, Auburn, N. Y., assignor of one-half to Woodruff Bros., same place. Filed Mar. 14, 1882. (Specimens.)

Claim.—The method of ornamenting the faces of buttons or other articles by first impressing or indenting the desired figure within the surface of a sheet of plastic material from which the same are made, then sprinkling into such indentations or impressions powdered stock having a different color or shade, and finally subjecting said material to the action of heat, substantially as and for the purpose specified.

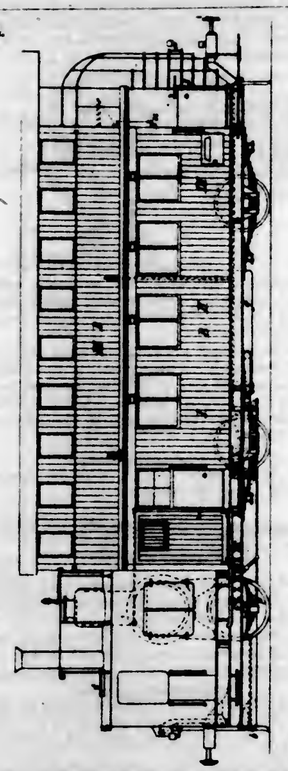
258,503. ORE-FEEDER FOR STAMP-MILLS. ISAAC N. THEPLETON, Amador, Cal. Filed Mar. 18, 1881. (No model.)



Claim.—The combination, in an ore-feeding device, of the chute or hopper A, having the inclined bottom, and front or gate A', with a smooth-surfaced cylinder, B, which extends across the end of the chute and outside the front A', lever G, the tappet upon the stamp-stem, adjustable connecting-rod F, clutch E, and pulley D, substantially as herein described.

258,504. RAILWAY ROLLING STOCK. OSCAR THOMAS, Hayence, Germany. Filed Oct. 14, 1880. (No model.) Patented in Germany Mar. 10, 1880, No. 13,035; in France Sept. 14, 1880, No. 133,033; in Italy Sept. 17, 1880, XIV, 18,185 and XXIV, 205; in Belgium Sept. 15, 1880, No. 53,533; in England Sept. 24, 1880, No. 3,573, and in Austria-Hungary Nov. 7, 1880, Nos. 23,080 and 23,094.

258,504.

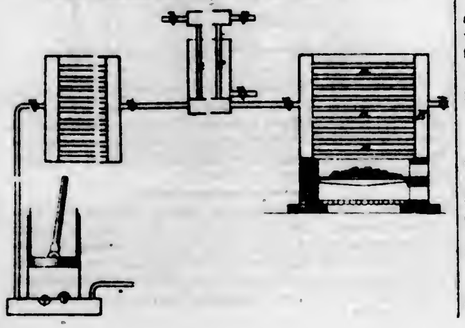


Claim.—1. In a railroad-locomotive having two axles, the combination of a fixed driving-axle, a removable reserve axle, removable buffers, and removable traction-hook for the purpose of rendering the locomotive applicable either as an independent vehicle, with the removable axle, traction-hook, and buffers attached, or as part of a steam-carriage by detaching the movable axle, the removable buffers, and traction-book, and attaching the under frame to the under frame of a carriage, substantially as described.

2. In a railroad-locomotive having two axles, the combination of a fixed driving-axle with a removable reserve axle and a horizontal boiler placed over the driving-axle and parallel with the same, substantially as described.

3. In a railroad-vehicle consisting of a carriage proper and a detachable locomotive part, the combination of a feed-water tank carried by the locomotive part with an independent feed-water reservoir, *g*, placed under the carriage part, and lateral cisterns *i i*, provided with feed-openings R, substantially as and for the purpose described.

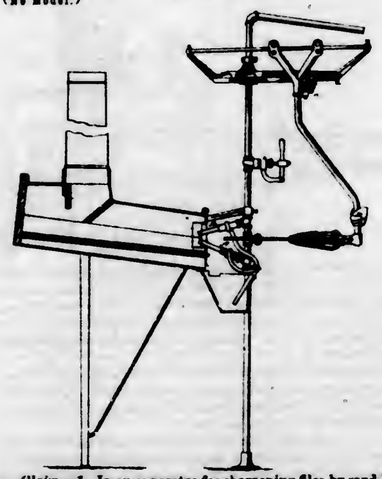
258,505. APPARATUS FOR COOLING AND HEATING. JOEL TIFFANY, Hinsdale, Ill. Filed Oct. 12, 1881. (No model.)



Claim.—1. The combination of a radiator, a steam-superheater, a pipe directly connecting the heater with the radiator, a refrigerator, a pipe directly connecting the refrigerator and the radiator, stop-cocks in said pipes, an air-forcing apparatus, and a pipe connecting said air-forcing apparatus with the refrigerator, all substantially as described.

2. The combination of a tank, a radiator therein, a steam-heater, a pipe directly connecting the heater with the radiator, a refrigerator, a pipe directly connecting the refrigerator and the radiator, stop-cocks in said pipes, an air-forcing apparatus, and a pipe connecting said air-forcing apparatus with the refrigerator, all substantially as described.

258,506. SAND-BLAST FILE-SHARPENING APPARATUS. EDWARD N. TRUMP, SAMUEL N. TRUMP, CHARLES N. TRUMP, and CHRISTIAN FREDERICK, Wilmington, Del. Filed Mar. 3, 1882. (No model.)



Claim.—1. In an apparatus for sharpening files by sand-blast, the combination of one or more guns with an overhead train or carriage moving upon a round bar attached to a suitable support and carrying the file-holder, substantially as described.

2. In a sand-blast file-sharpening apparatus, an overhead train or carriage with grooved rollers moving upon a round bar, thus permitting a lateral movement, and provided with an adjustable stop for limiting and regulating said lateral movement, substantially as described.

3. In a sand-blast file-sharpening apparatus, a file-holder consisting of supporting-piece, a pair of jaws closed by a cam, and provided with a central pin free to move in line with the file and recessed at end to receive the tang of the file, substantially as shown and described.

4. In a sand-blast file-sharpening apparatus, the combination of one or more guns with an iron box or case, having its upper section farthest from the guns considerably enlarged and furnished with deflecting-boards for collecting sand and water and uptake for waste steam, and with mouth-piece extending into the box in the form of a pipe surrounding the jets or blast, substantially as described.

5. In a sand-blast file-sharpening apparatus, a head-piece for single or double sand-tubes, provided with a pivoted plate air-valve, whereby the sand and water may be readily cut off and the file cleaned by the dry steam, substantially as described.

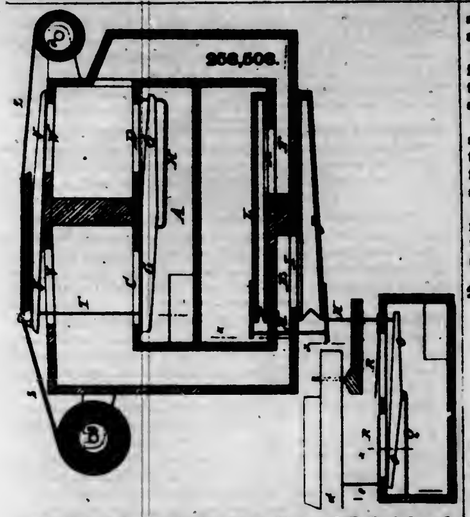
258,507. INSECTICIDE. GEORGE W. TUCKER, Milwaukee, Wis., assignor to Clarence S. Brown, same place. Filed Oct. 25, 1881. (No specimens.)

Claim.—1. In a compound for exterminating vermin, the combination of honey, phosphorus, and rye-flour, as set forth.

2. In a compound for exterminating vermin, the combination of honey, phosphorus, rye-flour, and a substance for keeping the compound in a moist and plastic condition, as set forth

258,508. MECHANICAL MUSICAL INSTRUMENT. GEORGE W. VAN DUSEN, Brooklyn, N. Y. Filed Mar. 9, 1881. (No model.)

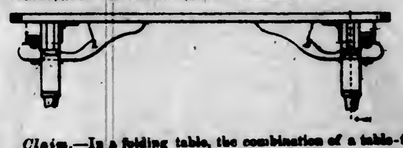
Claim.—1. A mechanical musical instrument constructed substantially as herein shown and described, and consisting of the



double balanced valves U G, connected by a rod, T, the balanced bellows J I, connected by a rod, M, the reed-valve O, connecting-rod N, the reeds R, the air-chambers A P, and the air-passages E F, as set forth.

2. In a mechanical musical instrument, the combination, with the perforated music-sheet Z and the reed-valve O, of the balanced double valves U G and the balanced bellows J I, substantially as herein shown and described, whereby the valves are operated by the pressure of the said perforated music-sheet and by air-pressure, as set forth.

258,509. FOLDING TABLE. CHARLES A. VAN DUSEN, Governeur, N. Y. Filed Jan. 3, 1882. (Model.)



Claim.—In a folding table, the combination of a table-top having on its under side, adjacent to each end, a transverse batten, the hinged legs, connected at their upper ends by cross-bars, a spring-latch attached to each of said cross-bars at or near its center, the yokes attached at their ends, respectively, to the under side of the table-top and to the battens, and provided at their opposite end portions with depressions or notches to engage the spring-latches on the cross-bars of the hinged legs in both the folded and unfolded positions of said legs, substantially as described.

258,510. SPRING-HINGE. CORNELIUS S. VAN WAGONER, Brooklyn, assignor to Van Wagoner & Williams, New York, N. Y. Filed Nov. 23, 1881. (Model.)

Brief.—The novelty consists in the minutiæ of construction of the details.



Claim.—1. The combination, in an adjustable spring-hinge, of the radially-recessed spring-leg, a hinge-ear having a vertical open slot, and a swinging latch or bolt which engages with the spring-leg through the slot in the hinge-ear, substantially as described.

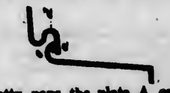
2. The combination, with the hinge-leaves and a spiral spring between the upper and lower hinge-joints, of a non-adjustable spring-leg, which is between the end of said spring and a coincident ear of the hinge, has a bearing against one leaf of the hinge, and is locked thereto against independent rotation, substantially as described.

3. The combination, with the spring and the adjustable rotating tension-leg in a spring-hinge, of a stop which limits the rotation of the leg, and thereby limits the tension of the spring, substantially as described.

4. A detachable spring-leg provided with a neck for entering a spiral spring and centering it, and an abutting stud parallel with the axis of the leg and affording a space between the stud and neck for the reception of the terminal coil of a spring, and a bearing-surface for the inner face of a hinge-ear, substantially as described.

5. A tension-leg for adjustable spring-hinges, provided with radial recesses open at the top of the leg and its edge, in combination with a hinge-ear which closes said recesses at one side thereof, substantially as described.

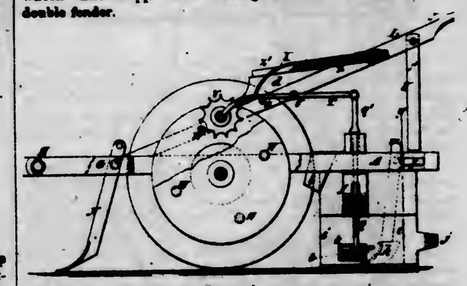
258,511. PATTY-PAN. AIMÉ VUILLEUM, Portland, Conn., assignor to John E. Ingersoll, same place. Filed Mar. 30, 1882. (No model.)



Claim.—In patty-pans, the plate A, constructed with the edge openings turned downward, outward, and re-turned to form a groove, *d*, combined with the pan constructed with the projecting edge *e*, introduced and closed into said groove, substantially as described.

258,512. COTTON-CHOPPER. JOHN H. WALKER, Fort Valley, Ga. Filed Mar. 18, 1882. (Model.)

Brief.—The chopper has intermittent motion, caused by being hung upon a crank-lever pivoted at its angle, and connected to a pinion that is struck at intervals by the pins in a double disk-wheel. The chopper works through one of the side plates of a double fender.



Claim.—1. In a cotton-chopper, the combination, with choppers P and scrapers *h*, of the guards *i*, having rear curved extensions, *j*, higher in the lower edge than said guards, as and for the purpose described.

2. In a cotton-chopper, the combination, with the frame-blocks *g* and choppers P Q, of the guard *i*, extended forward of the chopper and having slot *k*, as and for the purpose specified.

3. The combination of the spur-wheel V, wheel F, having bar-tappets W, working-lever T, and the spring X, with the elbow-lever Q and chopper P, substantially as specified.

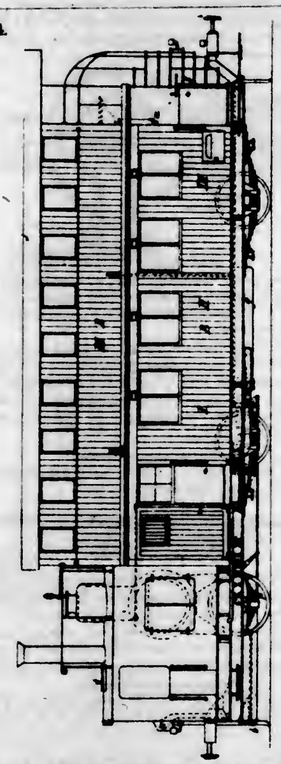
258,513. FORM FOR MAKING INDIA-RUBBER BOOTS AND SHOES. WILLIAM C. WATKINS, New Haven, Conn. Filed Apr. 24, 1882. (No model.)



Claim.—1. As an article of manufacture, a form for making india-rubber boots or shoes, constructed from papier-maché made hollow, substantially as described.

2. A boot-form for making india-rubber boots, the leg and foot sections, the foot-section, pro-

258,504.

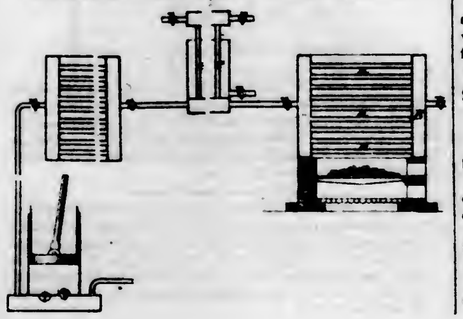


Claim.—1. The combination of a railroad-locomotive having two axles, the combination of a fixed driving-axle, a removable reserve axle, removable buffers, and removable traction-hook for the purpose of rendering the locomotive applicable either as an independent vehicle, with the removable axle, traction-hook, and buffers attached, or as part of a steam-carriage by detaching the movable axle, the removable buffers, and traction-hook, and attaching the under frame to the under frame of a carriage, substantially as described.

2. In a railroad-locomotive having two axles, the combination of a fixed driving-axle with a removable reserve axle and a horizontal boiler placed over the driving-axle and parallel with the same, substantially as described.

3. In a railroad-vehicle consisting of a carriage proper and a detachable locomotive part, the combination of a feed-water tank carried by the locomotive part with an independent feed-water reservoir, *g*, placed under the carriage part, and lateral cisterns *i i*, provided with feed-openings H, substantially as and for the purpose described.

258,505. APPARATUS FOR COOLING AND HEATING. JOEL TIFFANY, Hinsdale, Ill. Filed Oct. 13, 1881. (No model.)



Claim.—1. In an apparatus for sharpening files by sand-blast, the combination of one or more guns with an overhead train or carriage moving upon a round bar attached to a suitable support and carrying the file-holder, substantially as described.

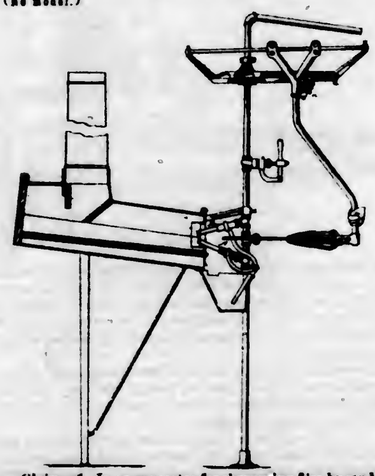
2. In a sand-blast file-sharpening apparatus, an overhead train or carriage with grooved rollers moving upon a round bar, thus permitting a lateral movement, and provided with an adjustable stop for limiting and regulating said lateral movement, substantially as described.

3. In a sand-blast file-sharpening apparatus, a file-holder consisting of supporting-piece, a pair of jaws closed by a cam, and provided with a central pin free to move in line with the file and recessed at end to receive the tang of the file, substantially as shown and described.

4. In a sand-blast file-sharpening apparatus, the combination of one or more guns with an iron box or case, having its upper section farthest from the guns considerably enlarged and furnished with deflecting-boards for collecting sand and water and uptake for waste steam, and with mouth-piece extending into the box in the form of a pipe surrounding the jets or blast, substantially as described.

5. In a sand-blast file-sharpening apparatus, a head-piece for single or double sand-tubes, provided with a pivoted plate air-valve, whereby the sand and water may be readily cut off and the file cleaned by the dry steam, substantially as described.

258,506. SAND-BLAST FILE-SHARPENING APPARATUS. EDWARD N. TRUMP, SAMUEL N. TRUMP, CHARLES N. TRUMP, and CHRISTIAN-FREDERICK, Wilmington, Del. Filed Mar. 8, 1882. (No model.)



Claim.—1. The combination of a radiator, a steam-superheater, a pipe directly connecting the heater with the radiator, a refrigerator, a pipe directly connecting the refrigerator and the radiator, stop-cocks in said pipes, an air-forcing apparatus, and a pipe connecting said air-forcing apparatus with the refrigerator, all substantially as described.

2. The combination of a tank, a radiator therein, a steam-heater, a pipe directly connecting the heater with the radiator, a refrigerator, a pipe directly connecting the refrigerator and the radiator, stop-cocks in said pipe, an air-forcing apparatus, and a pipe connecting said air-forcing apparatus with the refrigerator, all substantially as described.

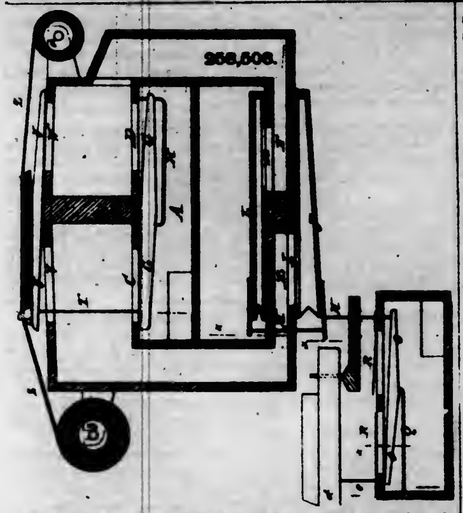
258,507. INSECTICIDE. GEORGE W. TUCKER, Milwaukee, Wis., assignor to Clarence S. Brown, same place. Filed Oct. 25, 1881. (No specimens.)

Claim.—1. In a compound for exterminating vermin, the combination of honey, phosphorus, and rye-flour, as set forth.

2. In a compound for exterminating vermin, the combination of honey, phosphorus, rye-flour, and a substance for keeping the compound in a moist and plastic condition, as set forth

258,508. MECHANICAL MUSICAL INSTRUMENT. GEORGE W. VAN DUSEN, Brooklyn, N. Y. Filed Mar. 9, 1882. (No model.)

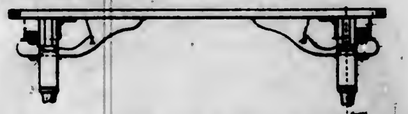
Claim.—1. A mechanical musical instrument constructed substantially as herein shown and described, and consisting of the



double balanced valves U G, connected by a rod, T, the balanced bellows J L, connected by a rod, M, the reed-valve O, connecting-rod N, the reeds R, the air-chambers A P, and the air-passages E F, as set forth.

2. In a mechanical musical instrument, the combination, with the perforated music-sheet E and the reed-valve O, of the balanced double valves U G and the balanced bellows J L, substantially as herein shown and described, whereby the valves are operated by the pressure of the said perforated music-sheet and by air-pressure, as set forth.

258,509. FOLDING TABLE. CHARLES A. VAN DUSEN, Governeur, N. Y. Filed Jan. 3, 1882. (Model.)



Claim.—In a folding table, the combination of a table-top having on its under side, adjacent to each end, a transverse batten, the hinged legs, connected at their upper ends by cross-bars, a spring-latch attached to each of said cross-bars at or near its center, the yokes attached at their ends, respectively, to the under side of the table-top and to the battens, and provided at their opposite end portions with depressions or notches to engage the spring-latches on the cross-bars of the hinged legs in both the folded and unfolded positions of said legs, substantially as described.

258,510. SPRING-HINGE. CORNELIUS S. VAN WAGENEN, Brooklyn, assignor to Van Wagenen & Williams, New York, N. Y. Filed Nov. 23, 1881. (Model.)

Brief.—The novelty consists in the minutiæ of construction of the details.



Claim.—1. The combination, in an adjustable spring-hinge, of the radially-recessed spring-leg, a hinge-ear having a vertical open slot, and a swinging latch or bolt which engages with the spring-leg through the slot in the hinge-ear, substantially as described.

2. The combination, with the hinge-leaves and a spiral spring between the upper and lower hinge-joints, of a non-adjustable spring-leg, which is between the end of said spring and a coincident ear of the hinge, has a bearing against one leaf of the hinge, and is locked thereto against independent rotation, substantially as described.

3. The combination, with the spring and the adjustable rotating tension-leg in a spring-hinge, of a stop which limits the rotation of the leg, and thereby limits the tension of the spring, substantially as described.

4. A detachable spring-leg provided with a neck for entering a spiral spring and centering it, and an abutting steel parallel with the axis of the leg and affording a space between the steel and neck for the reception of the terminal coil of a spring, and a bearing-surface for the inner face of a hinge-ear, substantially as described.

5. A tension-leg for adjustable spring-hinges, provided with radial recesses open at the top of the leg and its edge, in combination with a hinge-ear which closes said recesses at one side thereof, substantially as described.

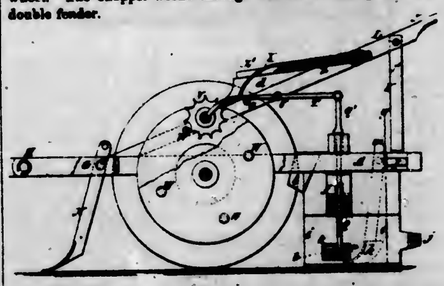
258,511. PATTY-PAN. AUGUSTUS VEILLEUX, Portland, Conn., assignor to John E. Ingersoll, same place. Filed Mar. 30, 1882. (No model.)



Claim.—In patty-pans, the plate A, constructed with the edge openings turned downward, outward, and re-turned to form a groove, *d*, combined with the pan constructed with the projecting edge *e*, introduced and closed into said groove, substantially as described.

258,512. COTTON-CHOPPER. JOHN H. WALDEN, Fort Valley, Ga. Filed Mar. 18, 1882. (Model.)

Brief.—The chopper has intermittent motion, caused by being hung upon a crank-lever pivoted at its angle, and connected to a pinion that is struck at intervals by the pins in a double disk-wheel. The chopper works through one of the side plates of a double fender.

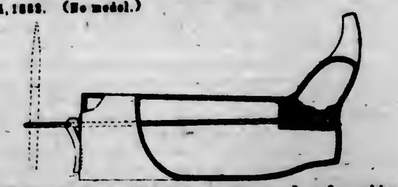


Claim.—1. In a cotton-chopper, the combination, with choppers P and scrapers A, of the guards *i*, having rear curved extensions, *j*, higher in the lower edge than said guards, as and for the purpose described.

2. In a cotton-chopper, the combination, with the frame-blocks *g* and choppers P Q, of the guard *i*, extended forward of the chopper and having slot *h*, as and for the purpose specified.

3. The combination of the spur-wheel V, wheel F, having bar-tappets W, working-lever T, and the spring X, with the elbow-lever Q and chopper P, substantially as specified.

258,513. FORM FOR MAKING INDIA-RUBBER BOOTS AND SHOES. WILLIAM C. WATKINS, New Haven, Conn. Filed Apr. 24, 1882. (No model.)



Claim.—1. As an article of manufacture, a form for making india-rubber boots or shoes, constructed from papier-maché and made hollow, substantially as described.

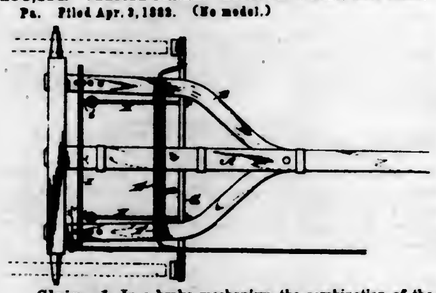
2. A boot-form for making india-rubber boots, consisting of the leg and foot sections, the foot-portion, provided with the socket

O and the rod a, constructed with the T-shaped end, to pass through the socket in the foot, the rod extending up through the leg to form the loop, combined with a cam-lever hung to the said rod, whereby the leg is clamped to the foot portion or detached therefrom, substantially as described.

3. A boot-form for making india-rubber boots, consisting of the leg and foot sections, the foot-section provided with the socket C, the rod a, constructed with the T-shaped end, to pass through the socket in the boot, the rod extending up through the leg to form the loop, combined with a cam-lever hung to the said rod, whereby the leg is clamped to the foot portion or detached therefrom; and the top of the form constructed with a recess, A, in which the arm will lie when the parts are clamped together, substantially as and for the purpose described.

4. A rod for clamping the leg to the foot portion of a boot-form for making india-rubber boots, provided with a loop at its upper end, constructed with shoulders a a, that part of the loop above the shoulder corresponding in shape to the transverse section of the pin upon which the form is to be suspended, substantially as described.

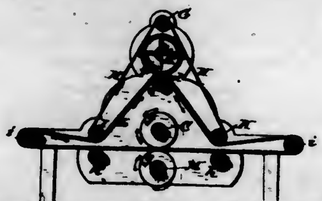
258,514. VEHICLE-BRAKE. BARGUM R. WELCH, Wolf Creek, Pa. Filed Apr. 3, 1882. (No model.)



Claim.—1. In a brake mechanism, the combination of the cross-bar D, swinging bail E, supported thereby and having downward-bent ends, the brake-bar suspended from the bent ends of the bail, the cranked rock-bar I, a draw-bar connecting the crank of the rock-bar with the brake-bar, and a brake-rod for rocking the rock-bar, substantially as described.

2. The combination, in a brake for vehicles, of the grooved cross-bar D, secured to the hounds, with the rocking bail E, arranged within the groove of said bar, and retained therein by eye-bolts securing the grooved bar to the hounds, the brake-bar G, carrying the brake-shoes and connected with the crank-shaped ends of the bail, the draw-rods rigidly secured to the brake-bar, and also connected to arms upon a rock-bar that has its bearings upon the hounds, and the rod connected with an arm upon the rock-bar, and also connected with the operating-lever, substantially as described.

258,515. COTTON-GIN. PETER V. WESTFALL, Kalamazoo, Mich., assignor of one-half to William Nelson, same place. Filed Apr. 6, 1882. (No model.)



Claim.—1. In a cotton-cleaner, the combination, with a hollow cylinder having an elongated opening and a spiral comb, of an endless rotating apron for feeding the cotton to the comb, and endless rotating wires working on grooved rollers for holding the cotton on the apron, substantially as shown and described.

2. In a cotton-cleaner, the combination, with the cylinder F, having elongated opening d, of the revolving spiral comb E, having one of its faces serrated and the other plain, substantially as and for the purpose set forth.

3. In a cotton-cleaner, the spiral comb E, endless apron L, friction-wheels *f g*, and rollers *e h i*, in combination with grooved rollers G I K, rotating wires H, said wires and apron being elevated to an acute angle, the main shaft, driving gear-wheel, and a smaller gear-wheel upon one of the journals of the comb, substantially as and for the purpose specified.

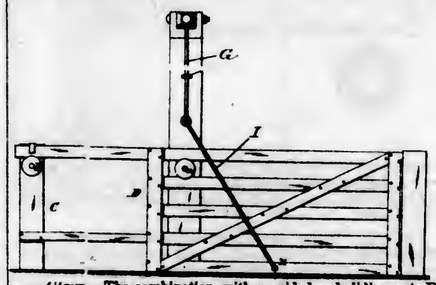
4. In a cotton-cleaner, the hollow slotted cylinder F, revolving spiral comb E, grooved rollers G I K, wires H, rollers *e h i*, main shaft C, counter-shaft M, and friction-wheels *f g*, all arranged to operate substantially as described.

258,516. MANUFACTURE OF STRAINER-PLATE. DAVID H WESTON, Boston, Mass. Filed Feb. 20, 1882. (No model.)



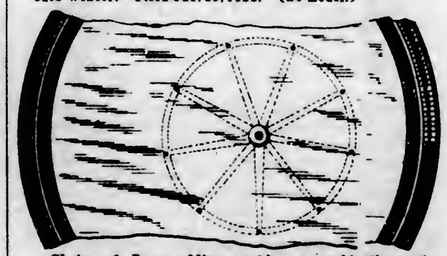
Claim.—The herein-described method of producing metal strainer-plate, it comprehending punching through the plate a series of elongated slots, and then further elongating and contracting the width of the said slots by rolling the said plate, substantially as described.

258,517. SLIDING GATE. WILLIAM R. WHITE, Neoga, Ill. Filed Apr. 7, 1882. (No model.)



Claim.—The combination, with a guided and sliding gate D, of a vertically-guided rod, G, levers E E, connected thereto, and a pitman, I, jointed to the lower end of the rod and to the gate centrally near the lower part, substantially as set forth.

258,518. ADDING-MACHINE. MARY E. WINTER, Galesburg, and CHESMAN W. CRARY, Chicago, Ill.; said Crary assignor to said Winter. Filed Jan. 25, 1882. (No model.)



Claim.—1. In an adding-machine, in combination with a ratchet-wheel, operating-keys, and pawl-carrying arms, the bent pawls hinged to their carrying-arms, and pawl-trippers hinged or pivoted to said carrying-arms and adapted to swing the pawls to release them from the ratchet-wheel, substantially as and for the purpose specified.

2. In an adding-machine, in combination with a ratchet-wheel, swinging pawl-carrying arms, and pawls hinged thereto, pawl-trippers, also hinged to said pawl-carrying arms, and adapted to swing the parts into and out of gear with the ratchet-wheel, substantially as and for the purpose specified.

3. In an adding-machine, in combination with a ratchet-wheel, swinging pawl-carrying arms, and slotted pawls hinged to said arms, pawl-trippers, also hinged to said arms, and adapted to swing the pawls, substantially as and for the purpose specified.

4. In an adding-machine, in combination with the ratchet-wheel, swinging pawl-carrying arms, swinging pawls, and pawl-tripping arms, springs connected, the one with the pawl-carrying arm and the other with the pawl-tripper arm, substantially as and for the purpose specified.

5. In an adding-machine, in combination with the ratchet-wheel, swinging pawl-carrying arms, swinging pawls, pawl-tripping arms, and springs adapted to move both the pawl-carrying arms and the pawl-tripper arms, rods connected with the pawl-tripper arms and the operating-keys, whereby the tripper-arm is moved to engage the pawl with the ratchet-wheel before the pawl-carrying arm is moved, substantially as and for the purpose specified.

6. In an adding-machine, in combination with the ratchet-wheel and pawl-carrying arms with hinged pawls, an arc-shaped support for the distal end of the pawl-carrying arms, substantially as and for the purpose specified.

7. In an adding-machine, in combination with a ratchet-wheel and pawl-carrying arms, hinged at their outer ends or ends exterior to the ratchet-wheel, actuated by keys and connecting-rods, stops adapted to limit the throw of the pawls, substantially as and for the purpose specified.

8. In an adding-machine, in combination with a ratchet-wheel and swinging arms having pawls hinged to their distal ends, stops adapted to arrest the movement of the pawl-carrying arms by coming in contact with said pawls, and thereby control the extent of movement of the ratchet-wheel, substantially as and for the purpose specified.

9. In an adding-machine, in combination with a ratchet-wheel, arms I, having pawls hinged to their outer ends, and swinging arms adapted to swing said pawls, rods connecting the swinging arms with operating-keys, substantially as and for the purpose specified.

10. The arm F and I, in combination with retracting-springs, actuating rods and keys, ratchet-wheel, and hinged pawls, substantially as and for the purpose specified.

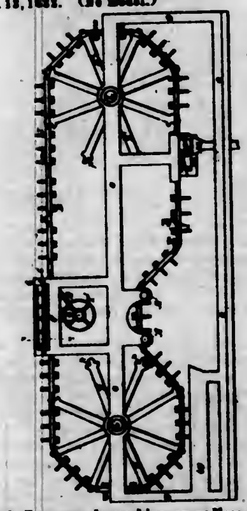
11. In combination with the ratchet-wheel, arms I and F, and hinged pawl, the stops for regulating the throw of the swinging arms, substantially as and for the purpose specified.

12. In combination with the ratchet-wheel and detent M, having its end beveled on one side, the step F', having an inclined side and a vertical side, adapted to permit the ratchet-wheel to rotate in one direction and to arrest its motion when desired when rotated in an opposite direction, substantially as and for the purpose specified.

13. In an adding-machine, in combination with a dial-plate, and ratchet-wheel which rotates coincidently therewith, and with swinging arms having pawls hinged to their distal ends, rods connecting said swinging arms with actuating-keys, substantially as and for the purpose specified.

14. In combination with the ratchet-wheel and arms hinged at their outer ends and provided with pawls hinged to their ends next to the ratchet-wheel, actuated by keys and connecting-rods, stops adapted to limit the throw of the pawls, substantially as and for the purpose specified.

258,519. CAPSULE-MACHINE. ALFRED WOOD, Detroit, Mich. Filed Mar. 13, 1882. (No model.)



Claim.—1. In a capsule-machine, an endless chain of plates carrying suitable pins or molds for forming the capsules, as herein shown and described.

2. In a capsule-machine, the combination of a plate carrying suitable pins or molds for forming capsules, one or more friction-rolls engaging with and rotating said pins, and one or more pairs of spring-cutters adapted to bear upon said pins while rotating, as and for the purposes set forth.

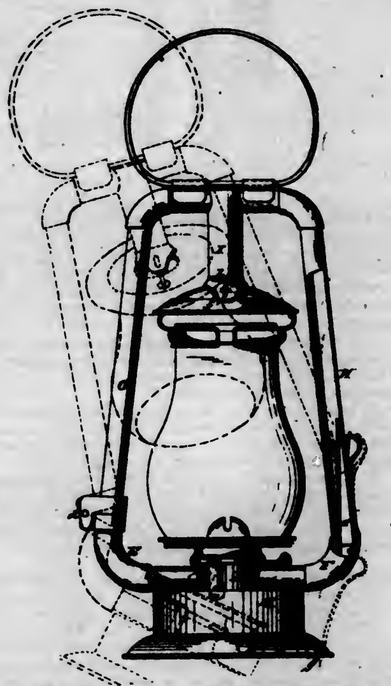
2. The combination of the plates D, carrying pins I, and the spring-cutters O O', having straight edges for a portion of their length, and the inclined edge S, as and for the purpose set forth.

4. In a capsule-machine, the combination of the plate D and pins I, carried thereby, with devices for rotating the pins, substantially as and for the purposes described.

5. In a capsule-machine, the combination of the plate D, pins I, having thereon wheel or pulley B, and friction-roll Q, substantially as herein shown and described.

6. In a capsule-machine, the combination of the endless belt of plates D, the pins I, arranged to freely rotate in said plates, and the stripper R, having an inclined edge arranged to force the capsules from the pins, substantially as and for the purpose described.

258,520. TUBULAR LANTERN. CLARK WOODBURY, FOSTER WOOD, and ALLEN J. SAWYER, Old Town, Me. Filed Mar. 30, 1882. (Model.)



Claim.—1. In a tubular lantern, the combination, with the tube G, hinged at its lower end to the stationary tube-section E, of the tube H and stationary tube-section F, the latter being provided with a fastening device for securely locking the tube H to the tube-section F or releasing it therefrom, substantially as and for the purpose set forth.

2. In a tubular lantern, the combination, with the upright tube I, of the cap K, hinged thereto and carrying the globe L, substantially as and for the purpose specified.

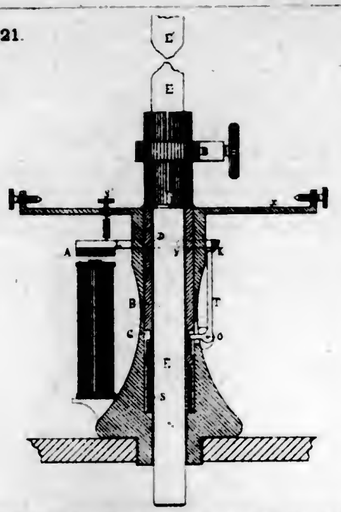
3. In a tubular lantern, the hinged tube G and tube H, in combination with the air-tube sections E F, the latter having a yielding guide-plate, c, and suitable means for fastening or releasing the tube H therefrom, substantially as specified.

258,521. SAFETY DEVICE FOR ELECTRIC LAMPS. JOHN JOSEPH WRIGHT, Philadelphia, Pa., assignor to George S. Garrett, same place. Filed July 8, 1881. (No model.)

Claim.—1. In combination with an electric-lamp carbon-holder, an automatic safety device consisting substantially of an electro-magnet in a derived circuit around the electrodes, an armature thereafter, a catch or detent in operative combination with said armature, as described, and a spring held compressed by said detent until released by a movement of said armature on an increase in the power of said derived-circuit magnet.

2. In an electric lamp, the combination of a carbon-holder, a

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spring to elevate the same, a detent to engage the carbon-holder when the same is depressed against the face of the spring, a lever provided with an armature, and a device to hold the detent in engagement with the carbon-holder and a magnet in a shunt-circuit, whereby the carbon-holder may be held in position while the lamp is burning, but will be released and forced against the opposing carbon on an abnormal increase of current in the shunt-circuit, as described.

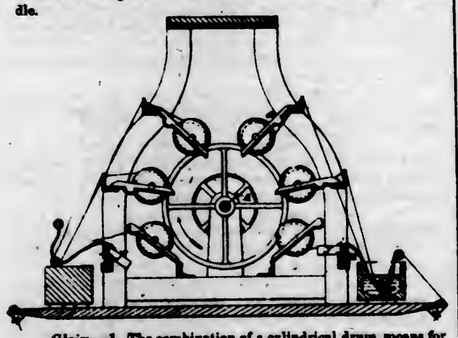
3. In a safety circuit-preserver, a setting and releasing device consisting of the part B and its groove G, or their equivalents, and of the lever T and lever L, with projection K, or their mechanical equivalents, substantially as described.

4. In an electric lamp, the combination, with a shunt or derived circuit magnet around the arc of said lamp, of its armature, a lever, L, hook or catch K, and detent-lever T, a carbon-holder, B, and grooved sleeves G, substantially as specified.

5. In combination with a carbon-holder of an electric lamp, a derived-circuit magnet around the arc and armature thereof, and mechanism constructed substantially as set forth, whereby movement is imparted to said carbon-holder by a spring released by said derived-circuit magnet on an abnormal increase in its power.

258,522. MACHINE FOR DOUBLING YARN. ALFRED YATES, Tissington, County of Derby, England. Filed Feb. 4, 1882. (No model.) Patented in England Sept. 19, 1881, No. 3,996.

Brief.—Arms adapted to support the creel-bobbins are so arranged and hung at such an angle around the circumference of the drum that said bobbins will rest upon the surface thereof, so that as the same revolves the yarn will be unwound therefrom and be conducted over guide-rails and through water-troughs to the spindle.



Claim.—1. The combination of a cylindrical drum, means for rotating the drum, a series of downwardly-inclined arms arranged at different heights around the drum, in near proximity thereto, which are adapted to hold a series of bobbins in contact with the periphery thereof, a suitable supporting-frame for the drum and arms, and means for guiding the thread from the bobbins, substantially as described.

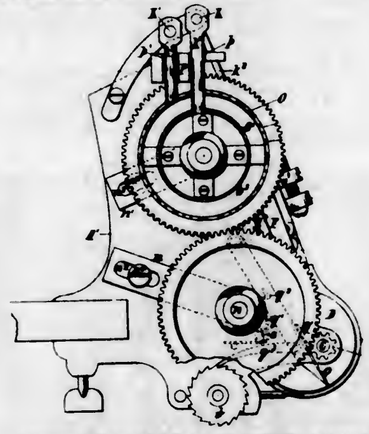
2. The combination of a cylindrical drum, means for rotating the drum, a series of downwardly-inclined arms arranged at different heights around the drum, in near proximity thereto, which are adapted to hold a series of bobbins in contact with the periphery thereof, said arms being provided with longitudinal guide-ribs, a suitable supporting-frame for the drum and arms, and means for guiding the threads from the bobbins, substantially as described.

3. The combination of a cylindrical drum, means for rotating the drum, a series of downwardly-inclined arms arranged at different heights around the drum, in near proximity thereto, which are adapted to hold a series of bobbins in contact with the periphery thereof, said arms being provided with longitudinal guide-ribs and with notches or depressions near their upper ends, a suitable supporting-frame for the drum and arms, and means for guiding the threads from the bobbins, substantially as described.

4. The combination of a cylindrical drum, means for rotating the drum, a series of downwardly-inclined arms arranged at different heights around the drum, in near proximity thereto, which are adapted to hold a series of bobbins in contact with the periphery thereof, a suitable supporting-frame for the drum and arms, means for guiding the threads from the bobbins, tanks at the sides of the drum, and pivoted counterbalanced bent levers provided with suitable thread-guides, substantially as described.

258,523. KNITTING-MACHINE. CHARLES YOUNG, Chicago, Ill., assignor, by mesne assignments, of one-half to Burgess P. Pratt and E. C. Walker, same place. Filed June 23, 1880. (No model.)

Brief.—This invention is an improvement on applicant's machine covered by Letters Patent No. 209,786. The claims alone will be found to convey quite a full and clear understanding of the construction and operation of the machine.



Claim.—1. The wheel N^3, provided with the indented rims O and O', in combination with mechanism for revolving it, and with the thread-carrier shafts K' and K, provided respectively with the roller-bars k^2 and k^3, for the purpose of communicating to the shafts a motion in the direction of their length, substantially as described.

2. The levers L and L', in combination with mechanism for depressing their lower ends and means for automatically depressing their upper ends, with fixed supports, with shafts or rods arranged in bearings in said supports and having rigidly-affixed rocking arms l^2 and l^3, and with connecting-rods l, l', l^2, and l^3, substantially as and for the purpose described.

3. In a knitting-machine, first, a series of needles provided with hooks at their lower ends; second, mechanism for giving them a longitudinal motion; third, a stitch-varying bar connected with this mechanism, arranged over the hooks and at right angles to the directions of the needles, provided with grooves parallel to the needles large enough to allow the hooks to pass through, and whose number is a divisor of the number of needles; and, fourth, mechanism operated by the same power which moves the needles, for giving to the bar a motion in the direction of its length, all in combination, substantially as and for the purpose described.

4. The combination of the main shaft, the cam a', rigidly affixed thereto, the lever I, the rocking arm j, and the loop-hook shaft J, provided with the loop-hooks j', substantially as and for the purpose described.

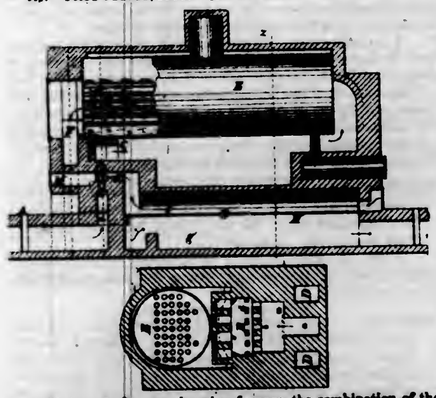
5. The combination of the grooved plate B, the needles b, the needle-bars E and G, the catch-bar b^1, the loop-hooks j', thread-carriers k^2 and k^3, and take-up rollers T with mechanism for communicating to needles, loop-hooks, thread-carriers, and take-up rollers concordant motions from a single driving-shaft, substantially as and for the purpose described.

6. The combination of the grooved plate B, the needles b, catch-bar b^1, loop-hooks j', thread-carriers k^2 and k^3, and take-up rollers T with mechanism for communicating to needles, loop-hooks, thread-carriers, and take-up rollers concordant motions from a common driving-shaft, substantially as and for the purpose described.

258,524. FERTILIZER-BAG. ROBERT B. ELLS, Baltimore, Md. Filed Mar. 9, 1882. (No specimens.)

Claim.—An acid-proof bag for holding fertilizers, which consists of bagging treated with an aqueous solution of rosin-soap, alum, asbestus, and gelatine, in the proportions substantially as specified.

258,525. BOILER GAS-FURNACE. JOHN ELLWOOD, Chicago, Ill. Filed Jan. 12, 1882. (No model.)



Claim.—1. In a gas-burning furnace, the combination of the vertical escape-flue F, the bottom flue connecting therewith, and the partitioned recuperator H, having upper air-heating chamber, g, and bottom chamber, g', for the outgoing products of combustion, and a burner located at the front end of the air-heating chamber, substantially as and for the purpose set forth.

2. In a gas-burning furnace, the combination of the horizontal firing-hole M and vertical escape F, surrounding the same, with the burner B, arranged at the rear of the firing-hole, as and for the purpose set forth.

3. In a gas-burning furnace, the combination of the burner B, having a contracted outlet, e, for the flame, gas-inlet openings b, and air-supply openings d, and the superposed deflector c, with gas-supply flue A, and hot-air flue g, as and for the purpose set forth.

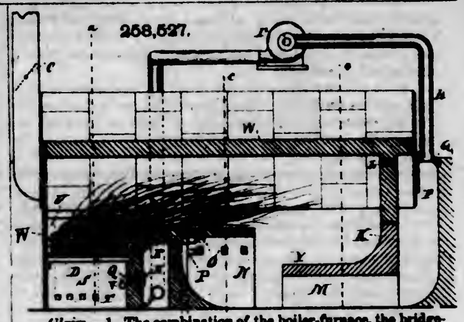
258,526. GLASS OR EARTHENWARE PITCHER OR JUG. WM. ZIMMER, Bellaire, Ohio. Filed Feb. 18, 1882. (No model.)



Claim.—As a new article of merchandise, a glass pitcher having a handle adapted for tilting and a separate handle adapted for carrying the same, substantially as described.

258,527. BOILER-FURNACE. GEORGE BLACKBURN, Columbus, assignor of three-fourths to Lemuel E. Hartmann, Cincinnati, Ohio. Filed Feb. 23, 1882. (No model.)

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Claim.—1. The combination of the boiler-furnace, the bridge-wall, the arch N, extending rearwardly from the bridge-wall and having parallel rows of perforations O, and the jet-pipes P, arranged to issue under the arch along said rows of perforations.

2. The combination of the boiler-furnace, the dead-wall K, opening M under wall K Y, perforated arch N, and air-pipes P.

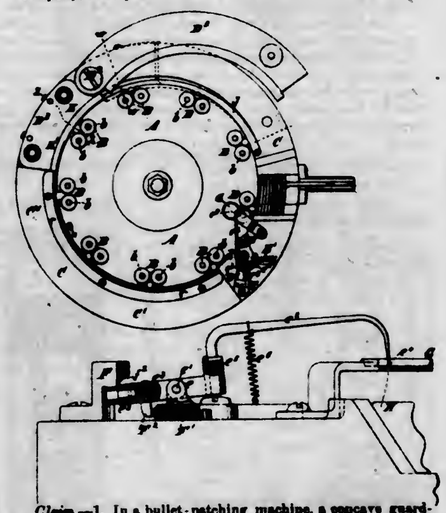
3. The combination of the boiler-furnace, the dead-wall K, opening M thereunder, roof Y, extending forward therefrom, and perforated arch N, with air-pipes P.

4. The combination of the boiler-furnace, perforated arch N, air-pipes P, dead-wall K, opening M thereunder, and top openings, L, in said dead-wall.

5. The combination of the boiler-furnace, perforated arch N, air-pipe P, dead-wall K, opening M, top openings, L, and roof Y.

6. The combination of the boiler-furnace, the hollow bridge-wall E, slitted openings Q in the front of the bridge-wall, jetted pipe V below the openings Q, fan I', and pipe H.

258,528. BULLET-PATCHING MACHINE. HUGO BORCHARDT, Bridgeport, Conn., assignor to the Union Metallic Cartridge Company, same place. Filed Feb. 10, 1882. (No model.)



Claim.—1. In a bullet-patching machine, a concave guard-rail, in which is inserted a magazine of patches, in combination with a rotating disk provided with friction-rollers arranged in pairs near the periphery of the disk, and having their axes of rotation parallel with the axis of the disk, for the purpose of preserving the bullets in vertical positions while they are being rolled across the guard-rail and magazine, substantially as set forth.

2. A concave guard-rail, in which is inserted a magazine of patches, and a rotating disk provided with friction-rollers arranged in pairs near the periphery of the disk, and having their axes of rotation parallel with the axis of the disk, in combination with means for effecting the positive rotation of the friction-rollers in directions opposite to the direction of rotation of the rotating disk at a prescribed rate of speed, and thereby imparting to the bullet a slightly more rapid speed of rotation upon its own longitudinal

axis than that which would be caused by the progressive rolling of the bullet across the concave face of the guard-rail, for the purpose of causing the bullet to draw the patch tight around its body, substantially as set forth.

3. In combination with bullet-patching mechanism substantially such as described, a mucilage-reservoir and a mucilage-distributer, consisting of a jointed arm operated as described, and having both a vertical and a horizontal axis of oscillation, for depositing mucilage upon the patches successively at the parts of their surfaces with which the bullets respectively first acquire contact.

4. The oscillating plate E and means for effecting the oscillation thereof upon its vertical axis, and the longitudinal rock-shaft d', supported upon the oscillating plate E, carrying the mucilage-distributing arm d^3, and provided with the arm d^5, in combination with the cam F, for the purpose of imparting to the mucilage-distributing arm d^3 and finger d^4 the resultant motions due to the oscillation of the plate E upon a vertical axis and the oscillation of the rock-shaft d' upon a horizontal axis, substantially as described.

5. In combination with bullet-patching mechanism substantially such as described, the mucilage-distributing arm d^3, connected with the rock-shaft d' by the hinged joint d^6, in combination with the spring d^7, as and for the purpose set forth.

6. In combination with bullet-patching mechanism substantially such as described, the oscillating plate E, provided with the retracting-spring E', and having its free end projecting over the space between the guard-rail D and the rotating disk A, provided with the pairs of rollers B, for the purpose of having the oscillation of the plate E effected by the bullets, successively, as they are rolled along the face of the guard-rail.

7. In combination with bullet-patching mechanism substantially such as described, the crimping-rail J, provided with a spring, J', substantially as shown, and for the purpose set forth.

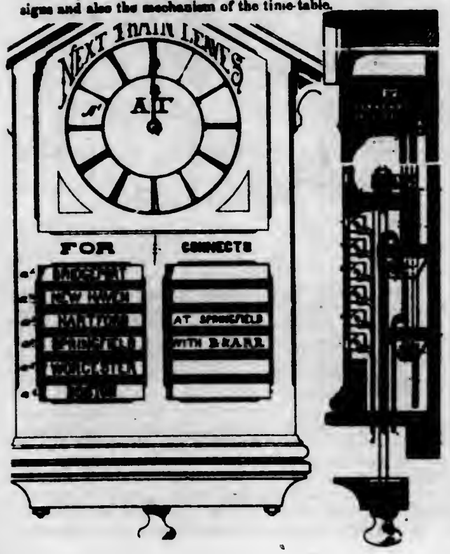
8. In combination with bullet-patching mechanism substantially such as described, the crimping-rail J, provided with the serrated concave edge j, as shown.

9. In combination with the rotating disk of a bullet-patching machine substantially such as described, the movable segment D' of the guard-rail, having a range of movement sufficient to carry it out of its operative position, as and for the purpose set forth.

10. In combination with the rotating disk of a bullet-patching machine substantially such as described, an adjustable gage provided with an offset, and so arranged relatively to the disk that suitably-patched bullets are discharged from the narrower space between the disk and gage, while bullets which have been too thickly patched are held by friction and rolled along and discharged from the wider space between the disk and gage, as set forth.

258,529. INFORMATION-TABLET. EDWARD S. BOYNTON, Bridgeport, Conn. Filed Jan. 26, 1882. (No model.)

Brief.—A key automatically displays a definite selection of signs and also the mechanism of the time-table.



Claim.—1. In an information-tablet, the combination, substantially as before set forth, of a number of signs and a key for automatically displaying a determinate selection thereof.

2. In an information-tablet, the combination, substantially as before set forth, of a number of signs, a time-indicator, and a key or keys for automatically displaying a determinate selection of signs and setting the hands of the time-indicator.

3. The combination, substantially as before set forth, of the signs and a removable Jacquard key for automatically displaying a determinate selection thereof.

4. The combination, substantially as before set forth, of the signs, the sign-tumblers, and a removable Jacquard key.

5. The combination, substantially as before set forth, of the dial and hour and minute hands, the spring-actuated rack-bars and pinions, the locking-cylinders, the time-tumblers, and a removable Jacquard key.

6. The combination, substantially as before set forth, of the signs, the sign-tumblers, the removable Jacquard key, and the movable key-holder.

7. The combination, substantially as before set forth, of the dial and hour and minute hands, the spring-actuated rack-bars and pinions, the locking-cylinders, the time-tumblers, a removable Jacquard key, and the movable key-holder.

8. The combination, substantially as before set forth, of the spring-actuated rack-bars and pinions and the bellows or governors for governing the resilient action of the springs.

9. An imperforate Jacquard key-blank, (from which Jacquard keys for operating information-tablets of above description may be prepared by perforating the blank at determinable points,) consisting of a strip of card-board or other stiff material provided with marks of a definite number and arrangement, each such mark being designated by a word or letter or numeral (one or more of each) corresponding to the information that may be displayed on the particular tablet for which the blank is designed.

258,530. MANUFACTURE OF ANTHRACENE-BLUE. HEINRICH BRUNCK, Ludwigshafen-on-the-Rhine, Bavaria, assignor to the Badische Anilin and Soda Fabrik, Mannheim, Germany. Filed Nov. 2, 1881. (Specimens.)

Claim.—As a new article of manufacture, the blue coloring-matter termed "anthracene-blue," having the characteristics hereinbefore stated.

258,531. THE PRODUCTION OF BLUE COLORS UPON TEXTILE FABRICS. HEINRICH BRUNCK, Ludwigshafen-on-the-Rhine, Bavaria, assignor to the Badische Anilin and Soda Fabrik, Mannheim, Germany. Filed Nov. 2, 1881. (Specimens.)

Claim.—1. The within-described process for developing a blue color in or upon a textile fiber, yarn, or cloth, whether knit or woven, by impregnating said fiber, yarn, or cloth with an aqueous solution of the anthracene-blue hereinbefore described, and then exposing the same to heat, substantially as set forth.

2. The within-described process for developing a blue color in or upon a textile fiber, yarn, or cloth, whether knit or woven, by impregnating said fiber, yarn, or cloth with a solution of acetic acid or tartaric acid, or the hereinbefore-named salts of said acids, and with an aqueous solution of the anthracene-blue hereinbefore described, and then exposing the same to heat, substantially as set forth.

3. As a new article of manufacture, textile fiber, yarn, or cloth, whether knit or woven, having a blue color developed within or upon the same by impregnating it with an aqueous solution of the anthracene-blue hereinbefore described, and then exposing it to heat, or by any other means which will produce the same result.

258,532. BLANK FOR LACING-STUDS. LOUIS GODDU, Winchester, assignor of one-half to Albert Van Wagenen, Boston, Mass. Filed Apr. 1, 1881. (No model.)

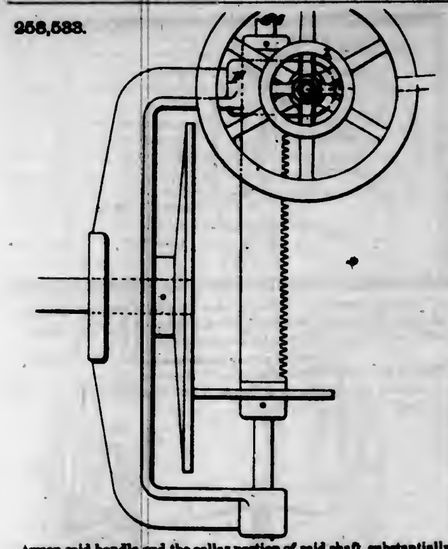


Claim.—The sheet-metal eyelet-blank a, having the hook 2 and pronged part to form the upper flanged rim of the eyelet, substantially as described.

258,533. ADJUSTING-GEARING. ALEXANDER GORDON, Cincinnati, and SPENCER T. RIDER, Hamilton, assignors to the Niles Tool Works, Hamilton, Ohio. Filed Apr. 3, 1882. (No model.)

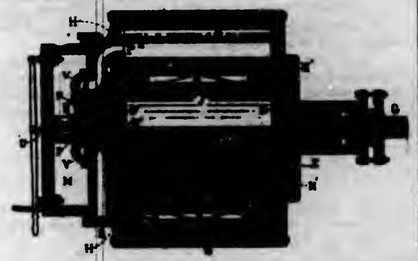
Claim.—1. The combination, with a rack or gear to be moved by a pinion, of a pinion, a collared pinion-shaft, a divided pinion-shaft bearing adapted to clamp the rack or gear, a handle fitted to slide on the pinion-shaft, and a nut screwing on the pinion-shaft to cause said divided bearing and rack or gear to be pinched between said handle and the collar portion of said shaft, substantially as and for the purpose set forth.

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2. The combination, with a rack or gear to be moved by a pinion, of a pinion, a collared pinion-shaft, pinion-shaft bearing, a handle fitted to slide on the pinion-shaft, and a nut screwing on the pinion-shaft, whereby friction is created at the ends of the bearing, and the shaft thus locked against rotation, substantially as and for the purpose set forth.

258,534. ORBITAL ROTARY ENGINE. DEXTER D. HARDY, Havana, Ill. Filed Aug. 29, 1881. (No model.)



Claim.—1. As a valve for rotary engines, the rod U, swiveled to the pin R, the eccentric F, having a slotted collar, the valve V, having upon one side an annular groove, and the slotted shaft Z', rotated by the disk D', in combination with the head H, having ports P and an annular groove with a discharge-pipe leading therefrom, as set forth.

2. The combination of the stationary internally-toothed cylinder B, having two or more lugs, T, the heads H' and H, having ports P and fastened to said cylinder B, the spur-gear wheel A, having recesses to admit said lugs T, the crescent C, and disks D' and D, bolted to said crescent C, with shaft G and crank-pin Z, as and for the purpose specified.

3. The rod U, pin R, eccentric F, valve V, shaft Z', and disk D', in combination with the head H, having ports P, head H', disk D, internally-toothed cylinder B, crescent C, spur-wheel A, and crank-pin Z, as and for the purpose specified.

258,535. ROTARY PUMP AND MOTOR. MOSES W. KIDDER, Boston, assignor to Person Hoyes, Lowell, Mass. Filed Oct. 15, 1881. (No model.)

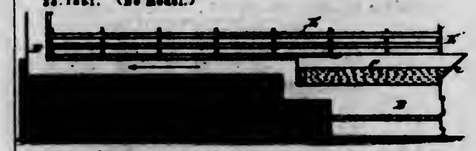
Brief.—Diagonal grooves J J extend from the induction-port B to the eduction-port C, forming channels for the removal of any sand or other matter which may find its way between the pistons and the concave ends of the casing. The grooves are formed in the interior surfaces of the casing.

Claim.—The combination of the casing having the induction and eduction ports with the rotating pistons and the grooves or passages, adapted to receive sand, &c., from the induction-passage and to discharge it into the eduction-passage, thereby preventing the wear of pistons and casing, substantially as described.

258,535.



258,536. STEAM VEGETABLE AND FRUIT EVAPORATOR. RUTH W. LOWELL, Nunda, N. Y., assignor of two-thirds to Frank S. Belcher and John B. Belcher, Charlotte, Mich. Filed Nov. 23, 1881. (No model.)



Claim.—The combination of the furnace B, boiler C, lower steam-pipe E, and the smoke-flue, all arranged and operating as shown and described.

258,537. ELECTRICAL ANNUNCIATOR. ADAM LOWENY, New York, N. Y. Filed Sept. 7, 1881. (Model.)



Claim.—1. The combination, with an annunciator-magnet and its drop or tag, of an armature or armature-pawl having a part projecting into the path of motion of the tag or drop, with the tag or drop arranged to strike the said armature in its fall, and thereby retract it from the magnet, substantially as herein set forth.

2. The combination, with an annunciator-magnet and its tag, of an armature-pawl having one arm arranged to be attracted by the magnet and to engage the tag, and the opposite arm or foot of the pawl bent or directed across the path of the tag in its direction of drop, whereby the tag, when released, falls upon the foot of the pawl, and is thereby stopped in its motion, and at the same time retracts the pawl from the magnet, substantially as herein shown and described.

3. An annunciator constructed with a magnet-supporting shelf, in combination with magnets supported in holders affixed to said shelves, and armatures or armature-pawls pivoted on the said holders and depending before the edge of the shelf, whereby the said edge forms the stop to limit the retraction of the pawl, substantially as herein set forth.

4. In an annunciator, the screen-plate r, arranged before the magnets and armatures and behind the reading opening or window of the case, with tags arranged to project over in front of said screen when released, whereby the screen serves to conceal the general mechanism of the instrument, and affords a contrasting background, against which a fallen tag will conspicuously show, substantially as herein shown and described.

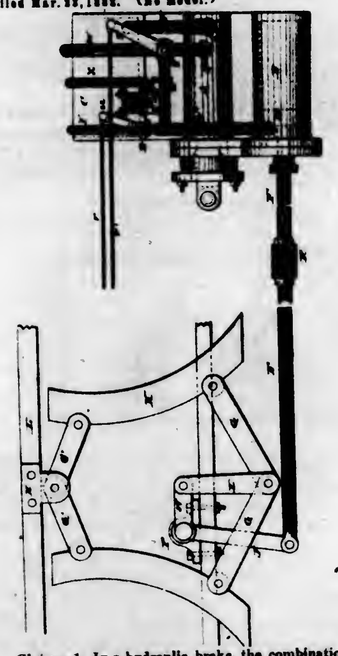
5. A pivoted annunciator-tag having a long arm formed with a tag-plate at one side of the pivoted axis, and a short arm at the opposite side of the axis, provided with counter-weights w, so proportioned as to dispose the center of gravity in the long arm near the axis, substantially as and for the purpose set forth.

6. An annunciator constructed with a longitudinal shelf or bar and with magnet-holders, each carrying a magnet and its pawl-armature mounted in transverse rotation with said bar, with the pawls depending against the edge thereof, and with a means of fastening said holders in fixed position with an adjustment back and forth transverse to said bar, substantially as and for the purpose set forth.

7. A tag raising and setting device for annunciators, consisting of levers *s s*, pivoted at opposite ends of a series or row of tags, and a longitudinal bar, *x*, overlying or commanding said row, and fixed at each end to said levers, with projections on the pivotal arms of said tags disposed in the arc of motion of said bar, and with a manipulating device to sway one of the levers, *s*, and thereby sweep said bar toward the tags, substantially as and for the purpose set forth.

8. The combination, with two or more rows of annunciator magnets and tags, of a multiple raising and setting device consisting of levers *s s*, and bars *x x*, arranged substantially as set forth, and duplicated in each row with the coupling-links *v v*, connecting the succeeding series of bars and levers with the preceding, and with a common manipulating device to sway the first series, and thereby operate the whole, substantially as herein shown and described.

258,538. HYDRAULIC BRAKE. WILLIAM A. HYNDS, Scranton, Pa., assignor of one-half to S. N. Stetler, same place. Filed Mar. 23, 1882. (No model.)



Claim.—1. In a hydraulic brake, the combination, with the pump A, cylinder B, and tank C, of the pipes V, W, W', and Y, the valves Q, Q', and *z*, the safety-valve *e*, and its return-pipe *x*, the eccentric on the axle of the engine, the piston E, rod F, the toggles G and G', brake-shoes K, and the lever, arm, and link J N I, substantially as and for the purposes set forth.

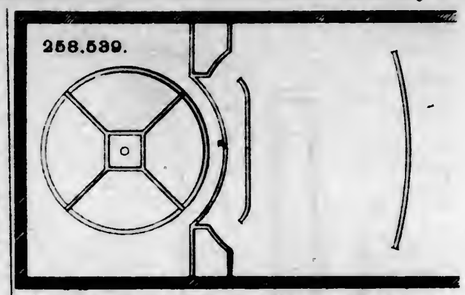
2. In a hydraulic brake, the combination of the brake-shoes K, the toggles G', secured to the frame L by the hangers H, the toggles G, the angle-levers J, having rock-shafts or journals on the engine-frame, the arms N, links I, and rods F, and mechanism for operating them, substantially as specified.

3. In a hydraulic brake, the combination, with the pump A, cylinder B, and tank C, of the pipes V, W, W', and Y, the valves Q, Q', and *z*, the safety-valve *e*, and its return-pipe *x*, and the eccentric on the axle of the engine operating the pump, substantially as specified.

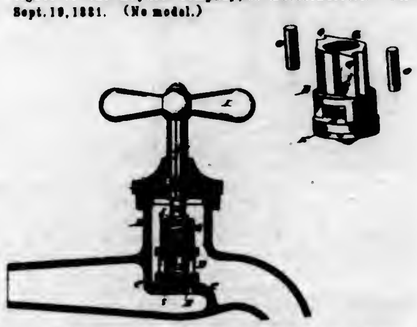
258,539. THEATER-STAGE. CHARLES A. NEEDHAM, New York, N. Y., assignor to himself and Elias P. Needham, same place. Filed Feb. 24, 1882. (No model.)

Claim.—1. The combination, with the proscenium of a theater, of a multiple stage provided with a vertical axis and arranged opposite the center of the proscenium, and adapted to be turned or rotated to bring different portions adjacent to the proscenium, substantially as described.

2. The combination, with the proscenium of a theater, of a multiple stage provided with a vertical axis and with radial vertical partitions arranged opposite the center of the proscenium, and adapted to be turned or rotated to bring different portions adjacent to the proscenium, substantially as described.



258,540. FAUCET. ARTHUR H. WHITING, Boston, Mass., assignor to the Hayden Company, of Massachusetts. Filed Sept. 19, 1881. (No model.)

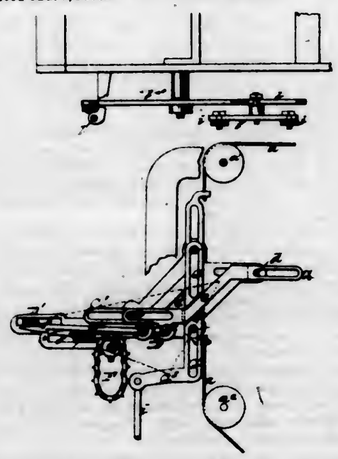


Claim.—1. A faucet provided with casing B, having grooves P, in combination with a valve, D, having grooves Q and rods O, substantially as and for the purpose specified.

2. A faucet provided with a casing, B, having grooves P in its sides, in combination with a valve, D, having grooves Q and nut G, rods O, and spindle provided on the bottom with a screw-thread and adapted to reciprocate said valve without rotating it, substantially as and for the purpose specified.

REISSUES.

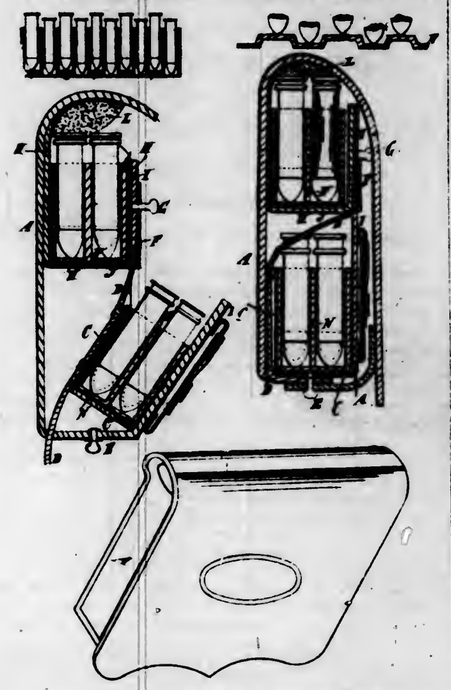
10,119. SHUTTLE-BOX MOTION FOR LOOMS. JOHN BARNES, Whittenton, Mass. Filed June 6, 1879. Original No. 211,126, dated Jan. 7, 1879.



Claim.—1. The combination of the vertically-sliding bars G, provided with angular arms G², the horizontally-sliding bars G', having the jacks G³ jointed thereto, and their actuating mechanism, the lever *i'*, and connecting-rods *i*, with the end-slotted lever *l*, the pivot-link, swiveled clamp-nut, and the shuttle-box rod *l'*, as and for the purpose specified.

2. The combination, with the vertically-sliding bars G, provided with angular arms G², and having inclined recesses midway of their length, and formed with seats *e'*, of the horizontally-sliding bars G', having the inclined middle portions, *e*, the jacks G³, jointed to said bars G', and operating mechanism, substantially as and for the purposes set forth.

10,120. CARTRIDGE-BOX. FELIX GRILLENWORTH, New Haven, Conn., assignor to Andrew H. Leslie, Chicago, Ill. Filed Sept. 28, 1881. Original No. 91,419, dated June 15, 1869.



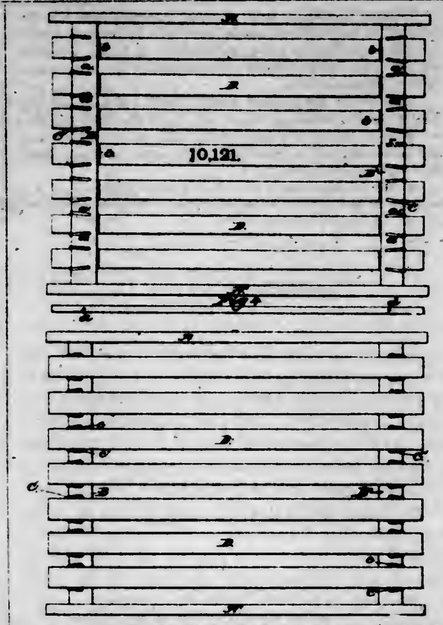
Claim.—1. A cartridge-box comprising the combination of a box or case which may be opened at the front, an upper compartment, and a lower compartment adapted to be tilted forward just beyond the upper compartment to facilitate the extraction of cartridges therefrom without endangering their falling out and while both compartments are in said box or case, substantially as specified.

2. A cartridge-box comprising the combination of an upper compartment, a lower compartment adapted to be tilted forward just beyond the upper compartment to facilitate the extraction of cartridges therefrom without endangering their falling out, and means for limiting the forward tilting movement of said lower compartment and supporting it in its tilted position, substantially as specified.

3. A cartridge-box having two compartments, C and H, one above the other, the lower one of which is hinged at A and operated by means of the strap D, all constructed and operating substantially as herein described and set forth.

4. A cartridge-box containing the compartments C and H, the lower being hinged at A, the strap D, buttons E G, flap-lining L, and openings for said strap D.

10,121. SPRING BED-BOTTOM. OTIS HOWE, Cambridgeport, Mass., assignee of Tyler Howe and of Lovinda Fulton, Administratrix of said Tyler Howe, deceased. Filed Mar. 1, 1882. Original No. 160,408, dated Mar. 1, 1870.

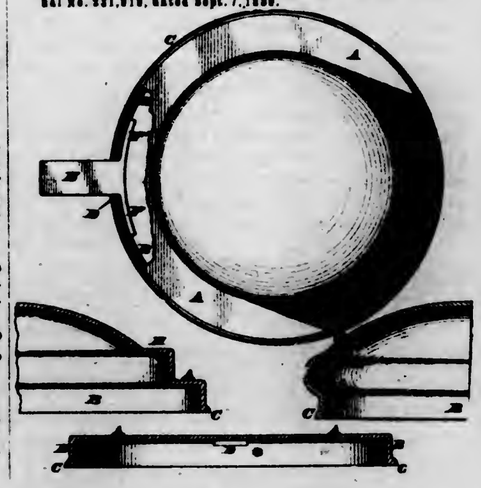


Claim.—1. The described spring bed-bottom, composed of the frame or rails A A, the two cross-bars B B', the two series of springs C C, formed as described, and the series of slats C', arranged and applied together substantially as hereinbefore specified.

2. In a spring bed-bottom, the rails A and cross-bars B B', and slats D, provided with holes or sockets *d* at each side near their ends, combined with a series of slat-supporting springs having journals or supports *c c'* at their ends or extremities, and adapted to be sprung into the holes or sockets in the sides of and support the said slats, substantially as and for the purpose described.

3. The slat-supporting springs bent to embrace and be held in place by the cross-bars, and having their ends or extremities turned toward each other to form journals or supports to be sprung into sockets in the edges of and support the slats, substantially as described.

10,122. FLYING TARGET. GEORGE LIGOWSKY, Cincinnati, Ohio, assignor, by mesne assignments, to Ligowsky & Co., same place; said Ligowsky & Co. assignors to the Ligowsky Clay Pigeon Company, same place. Filed Aug. 16, 1881. Original No. 231,818, dated Sept. 7, 1880.



Claim.—1. A flying target concave in general form, and provided with a flat peripheral tongue, wherewith the device is applied to the jaw or clamp of a trap, substantially as herein described, said flat tongue being separate and distinct from the target proper, for the purpose set forth.

2. A fragile flying target concave in general form and provided with a flat peripheral tongue, wherewith the device is applied to the jaw or clamp of a trap, substantially as herein described, said flat tongue being separate and distinct from the target proper, for the purpose set forth.

3. The combination of the slotted concave flying target A B D and flat detachable tongue E F F', as and for the purpose described.

4. A concave or dish-shaped flying target composed of a suitable fragile material, and slotted at its periphery to receive a flat tongue, said target having a strengthening-rim, C, at the margin of its flange B, as and for the purpose herein described.

5. A flat tongue projecting from the periphery of a flying target, for the purpose of enabling the latter to be thrown in the manner herein described, said flat tongue being separate and distinct from the target proper, as set forth.

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DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Southern District of New York.

LINDSAY *v.* STEIN.

Decided February 24, 1882.

1. PATENT NO. 202,735—SLEEVE-SUPPORTERS—PATENTABILITY—DOUBLE USE.

The invention described in Letters Patent No. 202,735, for an improvement in sleeve-supporters, which consists of two of the clasps described in No. 156,439, one being at each end of a connecting web or strap, is not merely a duplication of the clasp or a new application thereof. As a structure the two clasps with the uniting-strap will do what one clasp, or one clasp with an attached webbing, cannot do, and involved invention beyond what the clasp alone indicated.

2. SECTION 4894 REVISED STATUTES—APPLICATION, NOT INVENTION, ABANDONED.

Section 4894 Revised Statutes, which provides that upon failure to prosecute an application within two years after action is had thereon by the Patent Office it shall be regarded as abandoned, refers to the application, not the invention, and does not prevent a subsequent application for the same invention.

3. SAME—SAME—SECOND APPLICATION INDEPENDENT.

Such second application when made can derive no aid as to time from the prior abandoned application, and the applicant must stand as to defences in suits on the patent as if the new application were the first application.

Messrs. Munson & Philipp for the plaintiff.
Mr. J. B. Staples for the defendant.

BLATCHFORD, *J.*:

This suit is brought on Letters Patent No. 202,735, granted to the plaintiff April 23, 1878, for an improvement in sleeve-supporters.

Some time in 1873 the plaintiff invented a clasp. He applied for a patent for it on the 31st of August, 1874, and obtained a patent for it, No. 156,439, November 3, 1874. The specification of that patent speaks of the clasp as one "for stocking-supporters or various other articles of wearing-apparel." The clasp is composed of two jawed levers pivoted together and a spring arranged between them. The tail of each jaw-lever is made concavo-convex in transverse section, the lower lever with its jaw being extended within the upper lever and its jaw. At the place of connection of the two levers the lower one is punched inward on its flanks, so as to form two concavo-convex teats or projections. The spring is shaped or made of wire, and has an eye which is slipped upon the two teats, after which the upper jaw-lever is arranged with respect to the spring and the lower jaw-lever in proper position, and then is punched inward on its flanks, so as to enter the two teats, and thus the two levers are connected and pivoted together. The levers cover and protect the spring, and, as the specification says, prevent it "from being caught in the stocking or clothing" and from moving laterally or getting out of place. The specification says that each of the jaws may be notched or provided with teeth in its opposite edges, and that, by having the jaws of the lower lever close into the concavity of the jaw of the upper lever, a much better hold of the "material or stocking" will be secured than when the jaws abut together at their edges. The tail of the upper lever has a slotted head, which is projected from the tail in such manner that its flanks, in case the clasp is pressed "against the leg of the wearer, may bring up against it in a manner to prevent" the tail of the lower jaw from being accidentally moved inward, so as to open the jaws sufficiently to cause them to let go their hold "on the stocking;" and "the slotted head is also to enable the clasp to be attached to a strap of a stocking-supporter."

The claim of No. 156,439 is this:

The clasp composed of the levers provided with the operative spring, pivoted together by means of the indentations as described, and made with concave-convex jaws and tails, and with the one jaw to close within the concavity of the other, all substantially as specified.

In January or February, 1874, the plaintiff invented the sleeve-supporter afterward patented by No. 202,735. It consisted of two of the clasps described in No. 156,439, one being at each end of a connection, either elastic or non-elastic. No. 202,735 describes the supporter as one "for the sleeves of shirts and other garments." It is applied to the sleeves in a direction longitudinal with the arm, "thereby avoiding the compression and consequent interference with the free circulation of the blood incident to that class of supporters which partially or entirely encircle the arm." One clasp grasps a fold of the lower part of the sleeve to be supported, while the other clasp grasps a fold of the upper or supporting portion of the sleeve, the lower portion of the sleeve being drawn up to the desired distance before attaching the second clasp, the intermediate portion between the two clasps being drawn up into folds by that operation. The specification disclaims—

A garment-supporter consisting of an elastic strap and two tongued plates attached to its ends, the tongues being made to enter holes in the garments and being afterward clinched down thereon.

It also says:

My improved supporter simply grasps the sleeve, and does not go into or through it, and consequently, in detaching the supporter therefrom it does not require to be pulled lengthwise, and thereby causes undue strain, which tends to tear the sleeve. Nor does my supporter require cuts or holes to be made in the sleeve to receive it, as is usually the case with garment-supporters.

The claims of No. 202,735 are two, as follows:

1. The improved method of supporting or shortening the sleeves of shirts and other garments without compression, to avoid interference of the free circulation of the blood of the wearer incidental to the use of constricting bands, by means of a holder, consisting, essentially, of a short piece of elastic or non-elastic webbing, provided at each end with an automatic clasping device applied to the sleeve in the direction of its length, substantially as described and shown.

2. As a new article of manufacture, a sleeve-supporter consisting of the strip B, provided at its ends with the clasping-jaws A A, all combined and adapted for use substantially as described.

The plaintiff, after making one of these supporters in January or February, 1874, showed it to other persons, and illustrated its use at that time, and used it himself satisfactorily in March or April, 1874. He made a second supporter of the same structure in September, 1874, as a model for an application for a patent. His application was filed in the Patent Office complete October 28, 1874. The specification was sworn to October 20, 1874. The drawings were substantially the same as those in No. 202,735, and the description was to the same effect. The claim was substantially like claim 2 of No. 202,735. The spring closes the jaws, and they are opened by pushing the tails of the jaws toward each other against the action of the spring, the tail of the lower jaw projecting downward. This application was rejected November 9, 1874, on the ground that it did not involve invention in view of No. 156,429 and of a patent to Langford and one to Boughton. On December 26, 1874, amendments were filed. One, to obviate the Boughton patent, disclaimed a supporter consisting of an elastic strap and two hooked plates fixed to its ends, the hooks "being to enter a garment." Another disclaimed either of the clasps separate from the strap. The amendments were considered, and on January 2, 1875, the application was again rejected in view of the same references. Nothing more was done till April, 1878. On the 9th of April, 1878, a new application was filed complete with a new petition, oath, specification, drawing and model, and a new fee. The oath was made April 5, 1878. On the 11th of April, 1878, the application was rejected, as being "found to be lacking in patentable novelty, in view of the state of the art," because the clasp was old, as seen in No. 156,429, and because—

Suspending-straps composed of an elastic band with a clasp, buckle, or other adjusting device on each end are also old, and therefore in the present instance the alleged invention is but the mere substitution of one old clasp in the place of another upon the ends of the strap, and is not deemed an invention.

Reference was made in the letter of rejection to Patent No. 88,984 to Robbins; and to patents to Gibbons, Church, and Eames, and Philbrook. On the 11th of April, 1878, after said rejection, amendments were made, making the specification and claims exactly as they are in No. 202,735.

The application was rejected again, on the 13th of April, 1878, on the same references and on a patent to Sanford; but on the same day the patent was ordered to be issued.

It is contended for the defendant that No. 156,429 contains everything that is found in No. 202,735; that there was no invention involved in passing from the clasp to the structure with one of the clasps at each end of it, and that the case is one of mere duplication or double use, or, at least, of merely a new application of the clasp. It is quite apparent from the evidence that the clasp was applicable and was applied for use by being attached to one end of a piece of elastic and then fastened to a stocking to hold it up, the other end of the elastic being fastened by a button or other device to another garment above. Large numbers of the clasps were made and sold and used in that way. The plaintiff, almost simultaneously with his invention of the clasp, capable of such separate use, invented the supporter consisting of the two clasps and the connecting-strap. The latter invention was completed before he applied for the patent for the former. In that application he might have covered the supporter and also claimed the clasp separately, and one patent might have embraced both. The supporter is not merely a new application of the clasp; it is something more. As a structure the two clasps with the uniting-strap will do what one clasp or one clasp with an attached webbing cannot do. It is an article complete in itself, capable of use at any place without any appliance except what it contains, and of being moved from one place to another without any previous special preparation of the garment to receive it. It involved invention beyond what the clasp alone indicated.

The specification of No. 202,735 is criticised as being obscure and as not pointing out what invention is claimed. The first claim is properly to be construed as a claim to using the structure described, consisting of material with the clasp described, or its substantial equivalent, at each end, when such structure is applied to the sleeve in the direction of its length. There is no valid objection to this claim. The article can be used otherwise than lengthwise of the sleeve. The second claim is for the article irrespective of the manner in which it is used. The first claim may be unnecessary, and there may be little practical difference between the two claims; but the claims sufficiently point out the inventions, and they are patentable.

By section 12 of the act of March 2, 1861, (12 U. S. Stats. at Large, 248,) it was enacted as follows:

All applications for patents shall be completed and prepared for examination within two years after the filing of the petition, and in default thereof they shall be regarded as abandoned by the parties thereto, unless it be shown to the satisfaction of the Commissioner of Patents that such delay was unavoidable.

By section 32 of the act of July 8, 1870, (16 Id., 202,) it was enacted as follows:

All applications for patents shall be completed and prepared for examination within two years after the filing of the petition, and in default thereof or upon failure of the applicant to present the same within two years after any action therein, of which notice shall have been given to the applicant, they shall be regarded as abandoned by the parties thereto, unless it be shown to the satisfaction of the Commissioner that such delay was unavoidable.

This section is substantially re-enacted in section 4894 of the Revised Statutes, approved June 22, 1874, the only change being that the words "the filing of the petition" in section 32 are altered to the words "the filing of the application" in section 4894.

On comparing section 32 of the act of 1870 with section 12 of the act of 1861 it is seen that a material change was made by the addition in section 32 of the words "or upon failure of the applicant to prosecute the same within two years after any action therein." The effect of the addition was that when an applicant for a patent should make an application and complete it for examination, and the Patent Office should take action upon it and reject it and notify him of such action, and he should fail to prosecute it within two years after such rejection, it should be regarded as abandoned, so that it could not be resumed and prosecuted further after the lapse of such two years, unless it should be shown to the satisfaction of the Commissioner of Patents that such delay was unavoidable. It is not the invention which should be regarded as abandoned, but the application. In the present case the application of October 28, 1874, was rejected a second time, January 2, 1875. That application was never prosecuted at all after that. More than two years elapsed, and in December, 1877, the plaintiff employed new attorneys and

gave them a power of attorney, and revoked the power of attorney given to his former attorney. A paper to that effect was filed in the Patent Office December 17, 1877, in the files of the first application. The new attorneys, with the whole matter before them, advised the plaintiff that he had better make a new application. They did this unquestionably because they saw that they could not show to the satisfaction of the Commissioner that the delay beyond two years from January 2, 1875, was unavoidable. The new application was made complete April 9, 1878.

The defendant contends that the effect of the act of 1870 is that when an application is under section 32 to be regarded as abandoned no new application for a patent for the same thing can be subsequently made. There is nothing to prevent a subsequent application. When made it can derive no aid as to time from the prior abandoned application, and the applicant must stand as to defenses in suits on the patent as if the new application were the first application. Therefore, as applied to the present case, the words "two years prior to his application" in section 4886 of the Revised Statutes, and the words "two years before his application for a patent" in section 4920, must mean two years before April 9, 1878, so that No. 202,735 will be invalid if the inventions covered by it were in public use or on sale in this country for more than two years before April 9, 1878. The decisions of the courts under the statutory provisions before that in section 32 of the act of 1870 in regard to the continuity of an application once made can have no application to a case like the present, in view of the express provision of section 32. An application which is to be "regarded as abandoned" must be regarded as abandoned by the Commissioner and the courts, and if it is to be regarded as abandoned it cannot be regarded as subsisting for the purposes of sections 4886 and 4920. The cases of *Singer* v. *Braunsdorf*, (7 Blatchf. C. C. R., 521;) *Blandy* v. *Griffith*, (3 Fisher's Pat. Cases, 609;) *Howes* v. *McNeal*, (15 Blatchf. C. C. R., 103;) *Godfrey* v. *Eames*, (1 Wallace, 317,) and *Smith* v. *Goodyear Dental Vulcanite Company*, (3 Otto, 486,) arose under statutory provisions enacted before the act of 1870, and can have no application to the present case.

It is argued for the plaintiff that as No. 202,735 was granted on the second application for the same invention that was claimed in the first application, it must be presumed that the Commissioner had before him evidence showing that the delay in prosecuting the first application was unavoidable. This would be so if in fact the Commissioner had allowed the first application to be prosecuted further. But he did not. It was the application of April 9, 1878, that was rejected April 11, 1878, and granted April 23, 1878, and No. 202,735 was issued on that application, as appears on its face and by the records of the Patent Office.

The defenses of want of novelty and of public use and sale of the invention for more than two years before the application for the patent are urged by the defendant. The latter defense is not set up in the answer, but the plaintiff appears desirous of having it considered under the proofs.

There is no satisfactory evidence that the plaintiff, either by himself or by his agents, allowed his sleeve-supporter to be in public use or on sale at any time prior to two years before April 9, 1878, or that a structure substantially like his was in public use or sale at any time prior to two years before April 9, 1878. The date of any sale by Taylor Brothers cannot be fixed earlier than January, 1877. There was no sale by Shelby before the last part of 1876. The Thomas transaction was in May, 1876. The evidence as to sales by Rollins does not show beyond a reasonable doubt that such sales were made before April 10, 1876.

Defendant's Exhibits Nos. 1 and 2 are arranged to penetrate or pass through at one end one portion of the article to be supported, while at the other end are loops or hooks to pass over or around buttons or some other previously-arranged attaching means formed upon the garment. Defendant's Exhibits Nos. 3 and 16 have no hinged jaws, and require a further shortening of the garment to allow of attaching or disengaging the wires, and the device is liable to lose its hold, and cannot seize the margin of a garment. Defendant's Exhibit No. 21 is the patent to Robbins, No. 88,984, and Defendant's Exhibit No. 5 is a garter made according to that patent in part. They show devices the structure of which is such as to necessitate the penetration of the garment at each end of the webbing by the devices.

The Robbins patent is the only one of the prior patents referred to by the Patent Office (except No. 156,429) which has been put in evidence by the defendant. It shows two like devices at each end of a piece of webbing. It is of the date of 1869. But the existence in it of identity between the fastening devices at each end of it does not, in view of the evidence as to the invention by the plaintiff of the clasp and of the supporter and of the characteristic features of the supporter, show a want of patentability in the invention of the supporter. The Ellis patent, No. 137,539, requires a button at one end of the device. The Core patent, No. 55,064, has no clamping-jaws and no webbing with holding means at each end of it. The Kendall or Vail patent, No. 61,011, has no clamping-jaws on each end of a strap of webbing.

Defendant's Exhibit No. 22, the *Demorest* book, is not proved as to its date of publication and is not set up in the answer. Independently of this it is not clear what the thing shown in it is or how such thing is to be used. From what can be made out it is liable to the same objections as Defendant's Exhibit No. 3, requiring the fabric to be forced into a narrow opening and requiring increased shortening to free the fabric, and having no clamping-jaws. As to the exhibits Furness and Furness No. 3, no original article actually made more than two years before April 9, 1878, is produced. The question as to the time when any sleeve-supporters of the kind were made and sold rests wholly on the unaided memory of Mr. Furness, and in view of all the evidence it must be held that the defense as to the Furness sleeve-supporter is not established. Irrespective of this it is not at all clear that the Furness exhibits embrace the plaintiff's invention or will practically accomplish the results which the plaintiff's supporter will accomplish. None of the prior articles or patents anticipate the invention of the plaintiff, and none of the defenses considered are established.

It appears that the patented article is one of great utility, and has found a ready market as compared with any prior structures. Under the plaintiff's authority from eight hundred and fifty thousand to one million one hundred and fifty thousand pairs of his

supporters have been sold during 1878, 1879, and 1880, and there have been infringements. The article combines these points of advantage: it does not compress the arm; it does not require adjustment of length for arms of different sizes; it does not require previous preparation of the garment by putting on buttons or making eyelet-holes at either end; it can be used to support cuffs and stiff articles on their edges; it can be applied by one hand; it is secured without perforating the garment; it is not pulled off by a slight strain; it does not require to be pulled lengthwise to release its hold; it has superseded older articles and is largely recognized by the public and licensees as a useful invention. All these matters are very persuasive in favor of its patentability. (*Smith* v. *Goodyear Dental Vulcanite Company*, 3 Otto, 486, 495.)

The defendant has sold two structures, No. 1 and No. 2. No. 2 is identical with the plaintiff's in all substantial particulars. It is a sleeve-supporter formed of a short piece of elastic webbing with a clasp at each end. Each clasp is composed of two jawed levers pivoted together, with a spring between them, which closes the jaws automatically, and the jaws are opened by pressing together the tails of the levers. Each jaw has across its end teeth or projections which take into corresponding indentations in the end of the other jaw. This construction is an equivalent construction for the closing of the lower jaw within the upper jaw, as shown in No. 156,429 and in the drawings of No. 202,735. The bending of the fabric, in the one case transversely and in the other case longitudinally, assists in holding it, though it by no means follows that No. 202,735 would not be infringed if the clasps had flush meeting edges in the jaws with a spring or means of holding them together sufficiently powerful. No. 1 is a sleeve-supporter having at each end of a piece of elastic webbing a clasp made of two jaws of springy metal, the end of each of which is a lip projecting toward the other jaw, one lip shutting inside of the other and the ends of the lips not meeting. There is a slide inclosing the shanks of the two jaws, and the bite is made by sliding the slide toward the lips, which forces the lips together. Sliding the slide in the reverse direction allows the jaws to open, which they do by their springy action, they being set to stand open unless made to shut. They shut against the action of the spring, while in the plaintiff's form the clasp opens against the action of the spring.

The form of clasp in No. 1 is substantially the clasp shown in the Ellis patent, No. 137,539, granted April 8, 1873. But that patent shows that Ellis contemplated the use of only one clasp, and that at the top of a stocking, while above the supporter was to be attached by a button to a waistband. No. 1 has all the points of advantage of the plaintiff's structure. It has an automatic clasping device at each end, consisting of clamping-jaws, and the structure as a whole and in its parts, and in their co-operation to effect the result produced by the whole, is the equivalent of the plaintiff's structure. The change in the springy action, to hold open instead of to hold shut, is immaterial in regard to the action of the structure as a whole. There was nothing in the Ellis clasp by itself to indicate the plaintiff's supporter, or No. 1, any more than there was anything in the plaintiff's clasp by itself to indicate the plaintiff's supporter, or No. 2.

On the foregoing considerations it must be held that both No. 1 and No. 2 infringe the second claim of No. 202,735, and there must be a decree to that effect and for an account of profits and damages with a perpetual injunction and costs to the plaintiff.

Supreme Court of the United States.

MELLON *et al. v.* THE DELAWARE, LACKAWANNA, AND WESTERN RAILROAD COMPANY.

Decided April 3, 1882.

LICENSE ALLEGED TO HAVE BEEN DELIVERED AS AN ESCROW—BURDEN OF PROOF.

Where a license executed by the complainant is in the possession of the defendant and is produced by it on the trial, and on its face is absolute and without any limitation or condition, the burden of proof is upon the complainant to show that it was delivered as an escrow.

APPEAL from the Circuit Court of the United States for the Western District of Pennsylvania.

Mr. Furman Shepard and *Mr. H. T. Fenton* for the appellants.

Mr. Justice WOODS delivered the opinion of the Court.

The bill charged infringement of letters patent dated October 2, 1866, granted to Edward Mellon, one of the complainants, for an improvement in the mode of attaching tires to wheels of locomotives. Mellon had assigned a one-half interest in his letters patent to William Matthews, and they two were joined as complainants.

The defendant pleaded that while Mellon was the sole owner of the patent, to wit, on May 15, 1867, he had, for a valuable consideration, granted a license in writing to the defendant for the full term of the patent to use the improvement described therein upon all its locomotives, locomotive-tires, and wheels. The complainants took issue on this plea. The circuit court heard the cause upon the pleadings and evidence and dismissed the bill. The appeal of the complainants has brought up the case for our consideration. To support the issue on its part the defendant produced a license in writing, signed and sealed by Mellon, dated May 15, 1867, which, its execution being admitted by Mellon, proved every allegation of the plea. The appellants asserted, however, that the license had been delivered as an escrow to John Brisbin, the president of the appellee, in order that he might present it at the next meeting of the board of directors of the company, and if the board consented to pay and did pay thirty-five hundred dollars for the license, it was to take effect, otherwise not; and that nothing whatever had been paid for it. The appellee denied this, and asserted that the delivery was upon a valuable consideration received by Mellon, was absolute, and without condition or reference to any future contingency.

As the license is in the possession of appellee and is produced by it on the trial, and on its face is absolute and without any limitation or condition, the burden of proof is upon the appellants to show that it was delivered as an escrow. The only evidence to maintain their side of the controversy is the deposition of Mellon. On the part of the appellee is the testimony of Brisbin, its president, to whom the license was delivered. His deposition contains a direct and explicit denial of the testimony of Mellon in reference to the delivery of the license, and he is corroborated by the evidence of another witness, who was superintendent of the rolling stock of the appellee at the time the license was delivered.

The case turns upon a single question of fact. The burden of proving that fact is on the appellants, but the weight of the evidence is with the appellee.

The decree of the circuit court dismissing the bill was right, and must be affirmed.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

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The OFFICIAL GAZETTE is published every Tuesday, two volumes a year, commencing in January and July. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound volumes, $3.50 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Issue of May 30, 1882.

Patents	329	No. 258,541 to No. 258,869, inclusive.
Designs	4	No. 12,950 to No. 12,953, inclusive.
Trade-Marks	14	No. 9,417 to No. 9,430, inclusive.
Labels	8	No. 2,685 to No. 2,692, inclusive.
Reissues of patents	6	No. 10,123 to No. 10,128, inclusive.
Total issue	361	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	2	1	Nebraska	2	.....
Arizona Territory	.....	.....	Nevada	1	.....
Arkansas	1	.....	New Hampshire	1	.....
California	8	.....	New Jersey	9	1
Colorado	.....	1	New Mexico Territ'y	.....	.....
Connecticut	17	1	New York	70	5
Dakota Territory	.....	.....	North Carolina	1	.....
Delaware	3	.....	Ohio	26	3
District of Columbia	4	.....	Oregon	1	.....
Florida	1	.....	Pennsylvania	27	1
Georgia	3	.....	Rhode Island	6	1
Idaho Territory	.....	.....	South Carolina	.....	.....
Illinois	27	3	Tennessee	1	.....
Indiana	8	.....	Texas	3	.....
Indian Territory	.....	.....	Utah Territory	.....	.....
Iowa	5	.....	Vermont	1	.....
Kansas	4	.....	Virginia	2	2
Kentucky	6	1	Washington Territ'y	.....	.....
Louisiana	2	.....	West Virginia	2	.....
Maine	1	.....	Wisconsin	4	.....
Maryland	5	.....	Wyoming Territory	.....	.....
Massachusetts	34	2	United States Army	.....	.....
Michigan	11	.....	United States Navy	.....	.....
Minnesota	2	.....			
Mississippi	.....	.....	Total to citizens of the United States	312	22
Missouri	11	.....			
Montana Territory	.....	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia	.....	.....	England	5	.....
Austria	.....	.....	France	4	.....
Barbadoes	.....	.....	Germany	5	.....
Belgium	.....	.....	Italy	.....	.....
Bermuda	.....	.....	New Zealand	.....	.....
Brazil	.....	.....	Russia	.....	.....
Canada	4	.....	Spain	.....	.....
Chili	.....	.....	Sweden	.....	.....
Colombia, U. S. of	.....	.....	Switzerland	2	.....
Cuba	.....	.....			
Denmark	1	.....	Total to citizens of foreign countries	21	.....
Ecuador	.....	.....			

DESIGNS.

12,950.—ORNAMENTAL CHAIN.—*Warren W. Briggs*, Providence, R. I. Application filed April 24, 1882. Term of patent 7 years.

12,951.—ORNAMENTAL CHAIN.—*Warren W. Briggs*, Providence, R. I., assignor to *S. & B. Lederer*, same place. Application filed March 13, 1882. Term of patent 7 years.

12,952.—MUSIC-TYPE.—*John J. Hood*, Philadelphia, Pa. Application filed November 12, 1881. Term of patent 14 years.

12,953.—NAP-SURFACE OF CLOTH.—*Emanuel Einstein*, New York, N. Y. Application filed February 2, 1882. Term of patent 3½ years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

9,417.—CONDENSED MILK.—*Anglo-Swiss Condensed Milk Company*, Middletown and New York, N. Y. Application filed May 8, 1882.

"A milkmaid holding on her head one pail and carrying in her hand another pail."

9,418.—CIGARETTE-PAPER.—*William Demuth*, New York, N. Y. Application filed April 1, 1882.

"The words 'RIZ LA TOUR.'"

9,419.—HAMS, BACON, AND LARD.—*Henry Denny & Sons*, Chicago, Ill. Application filed March 17, 1882.

"The representation of a shamrock-leaf."

9,420.—HAMS, BACON, AND LARD.—*Henry Denny & Sons*, Chicago, Ill. Application filed March 17, 1882.

"The representation of the sun with a face thereon."

9,421.—GRAIN MACHINERY.—*The Edmands Manufacturing Company*, Hamilton, Ohio. Application filed April 24, 1882.

"The word 'STANDARD.'"

9,422.—HAMMERS.—*Hartford Hammer Company*, Hartford, Conn. Application filed April 29, 1882.

"The pictorial representation of the outline of a machinist's hammer without a handle inclosed in a circle, forming a fanciful design."

9,423.—RING-TRAVELERS.—*Nathan P. Hicks*, Pawtucket, R.I. Application filed May 1, 1882.

"Two likenesses of N. P. Hicks, the one representing him as a young man, with a short beard beneath the chin, and the other representing him as a middle-aged man, with a grayish beard upon his chin and with a mustache."

9,424.—PLUG AND TWIST TOBACCO, SMOKING-TOBACCO, CIGARS, AND CIGARETTES.—*Thomas C. Williams & Co.*, Richmond, Va. Application filed May 3, 1882.

"The words 'LUCY HINTON.'"

9,425.—CIGARETTES.—*S. Jacoby & Co.*, New York, N. Y. Application filed April 14, 1882.

"The representation of the two hands, the one box, the cigarette, and the flame, in the order described."

9,426.—PERIODICAL.—*James Lefel & Co.*, Springfield, Ohio, and New York, N. Y. Application filed February 4, 1882.

"The words 'MECHANICAL NEWS.'"

9,427.—SHIRTS.—*The Morley Manufacturing Company*, Newark, N. J. Application filed May 4, 1882.

"The word 'ENIGMA.'"

9,428.—VANILLA-CHOCOLATE.—*Henry L. Pierce*, Boston, Mass. Application filed April 19, 1882.

"The words 'W. BAKER & Co.'s,' together with the figures of the cupids supporting wreaths, the bust, and the medals, as shown and described."

9,429.—ILLUMINATING-OIL.—*Scofield, Shurmer & Teagle*, Cleveland, Ohio. Application filed May 1, 1882.

"The word 'PALACINE.'"

9,430.—OILED CLOTHING.—*Abner J. Tower*, Boston, Mass. Application filed May 3, 1882.

"The representation of a fish."

LABELS.

2,685.—Title: "CONDENSED MILK ANGLO-SWISS CONDENSED MILK CO. CHAM, SWITZERLAND. PREPARED IN AMERICA."—*Anglo-Swiss Condensed Milk Co.*, Middletown and New York, N. Y. Application filed May 8, 1882.

2,686.—Title: "DR. BRACK'S TOILET AND LAUNDRY SOAPS."—*M. W. Brack*, Hardin Springs, Ky. Application filed April 27, 1882.

2,687.—Title: "THE WORLD'S CATARRH CURE."—*James C. Davidson* and *Calvin C. Davidson*, Denver, Colo. Application filed April 13, 1882.

2,688.—Title: "PHENOL MOUTH WASH."—*Owens & Minor*, Richmond, Va. Application filed April 17, 1882.

2,689.—Title: "POWELL'S LOOSE MATCH AND SQUIB, FOR MINERS USE."—*John R. Powell*, Plymouth, Pa. Application filed May 1, 1882.

2,690.—Title: "BEEF, IRON & RYE."—*Thomas Scott*, Brooklyn, N. Y. Application filed April 21, 1882.

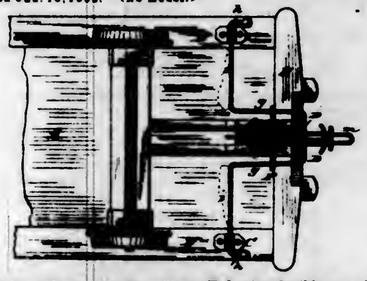
2,691.—Title: "BAKING POWDER."—*John A. Tolman & Co.*, Chicago, Ill. Application filed February 27, 1882.

2,692.—Title: "ORIGINAL TEXAS TOLU CHEWING GUM."—*Benjamin Ward*, Mobile, Ala. Application filed May 8, 1882.

PATENTS

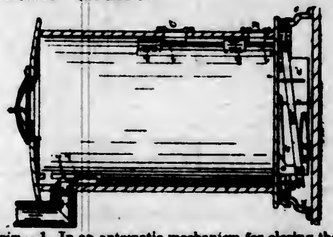
GRANTED MAY 30, 1882.

258,541. CAR-COUPLING. JAMES H. BAILEY, Pittsburg, Pa. Filed Jan. 18, 1882. (No model.)



Claim.—The combination of lever D, having flexible arms d d, and weighted arms b b, and lifting-point b, pivot c, yoke F, and buffer-head of railway-car, substantially as herein described.

258,542. CAR-STOVE. WILLIAM H. BALDWIN, Chicago, Ill., assignor of one-half to Henry C. Whitney, same place. Filed Apr. 10, 1882. (No model.)

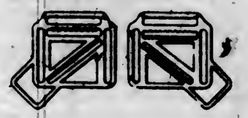


Claim.—1. In an automatic mechanism for closing the apertures in a railway heating-stove, the combination of the frame a', the bar I, the rods e, the slides d, the latch i, the spring G, the lever F, and the chain or rod f, attached to the staple e, arranged in the manner and operating substantially as set forth.

2. The bar I, attached to the frame a', held in position by the lever F, in combination with the rods e e, and the slides d d, and the latch i, and corresponding catch on the lid, substantially as set forth and described.

3. The slides d d, and the latch i, operated by the spring G, the rod or chain f, attached to the fixed staple e, the lever F, and the bar I, arranged and operating in the manner substantially as set forth.

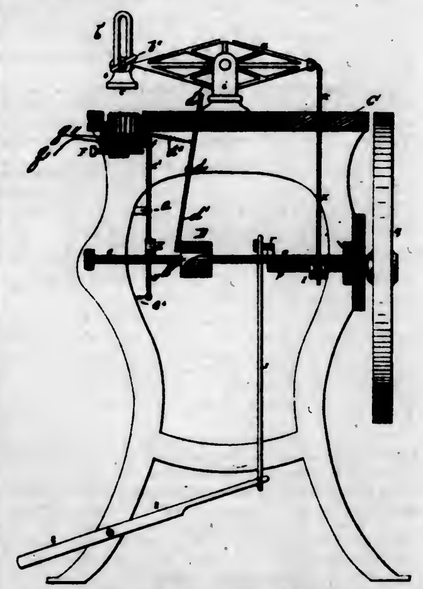
258,543. HALTER. EDWARD BARNARD, Rome, N. Y., assignor of one-half to Henry C. Maxwell, same place. Filed Feb. 11, 1882. (No model.)



Claim.—1. In a halter, corner-pieces provided with vertical end slots, horizontal slots, and an inclined slot, provided with a biting-edge to retain the halter-strap, substantially as and for the purpose set forth.

2. In a halter, a corner-piece provided with a vertical slot at each end, an outer and an inner horizontal slot, the latter being provided with a biting-edge, and a diagonal slot arranged between the said vertical slots, substantially as and for the purpose set forth.

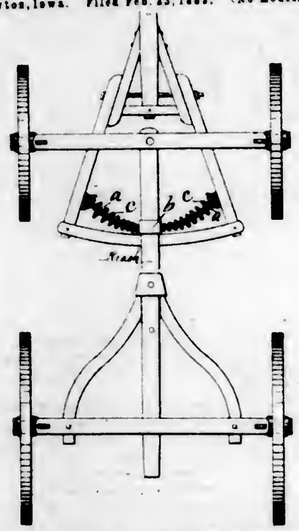
258,544. ADDRESSING-MACHINE. WILLARD W. W. BELKNAPP and GEORGE H. ROSILLARD, Brighton, N. Y. Filed June 16, 1881. (No model.)



Claim.—1. In an addressing-machine, the combination of the main shaft c, provided with the crank l, cam D, and eccentric E, with rod K, walking-beam a, adjustable impression-block b, delivery-lever d', spring d'', feed-lever e', spring e'', and galley-bed f', and ratchet f, substantially as shown and described.

2. In an addressing-machine, the combination of the main shaft c, provided with the roll D, having the peripheral groove d''', straight upon one side and curved upon the other, as shown, with the pivoted lever d', the lower end of which is spring-pressed against the end of roll D and into the groove d''', and the upper end of which lever is extended through and above the table C, whereby said upper end of said lever is at each revolution of the shaft c, by the action of the spring, caused to suddenly remove the printed wrapped paper, as shown and described.

258,545. RUNNING-GEAR FOR WAGONS. ISAAC E. BASSETT, Newton, Iowa. Filed Feb. 23, 1882. (No model.)

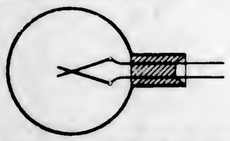


Claim.—1. A governing attachment for wagons, consisting of a curved bar, a spring or springs, and a loop or fastening device for connecting the complete device to a wagon-reach, arranged and combined relative to each other and the running-gear of a wagon, substantially as shown and described, to operate in the manner set forth, for the purposes specified.

2. The combination of springs with the bounds of the front carriage of a wagon and a reach fixed to the rear carriage, and pivoted to the axle of the front carriage, substantially as shown and described, to operate in the manner set forth, for the purposes specified.

3. The combination of the bar *a a*, fixed to the bounds of the front carriage of a wagon, the loop *b*, the springs *c c*, and a wagon-reach, substantially as shown and described, for the purposes specified.

258,546. ELECTRIC INCANDESCENT LAMP. EMILE BERLINER, Boston, Mass. Filed Mar. 31, 1882. (No model.)

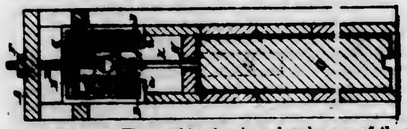


Claim.—1. An electric lamp consisting of two electric carbons in loose contact with one another and inclosed in a transparent or semi-transparent vacuous chamber.

2. An electric lamp consisting of two conductors overlapping and in loose contact with one another and inclosed in a vacuum.

3. In an electric lamp, a vacuous chamber containing a conductor consisting of elastic carbon, as described, and in loose contact with another conductor, substantially as described.

258,547. DOOR-HANGER. WILBUR F. BERRY, Martinsburg, W. Va. Filed Dec. 7, 1881. (Model.)



Claim.—1. The combination, in a door-hanger, of the vertically-adjustable box B, having an open bottom, the rails D D, rigidly applied to the inner sides of the said box, the double sheaves G G, mounted on the said rails, the hanger-rods, and the door-plates, substantially as and for the purposes specified.

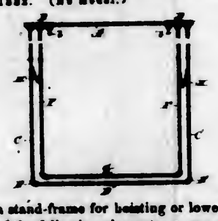
2. The combination, in a door-hanger, of the two flanged sheaves G G, each having beveled or inclined perimeters, and the correspondingly-beveled rails D D, substantially as and for the purposes specified.

3. The combination, in a door-hanger, of the headed-screw bolts E E, the plates or irons C C, the hollow box B, having an open bottom, the rails D D, and the nuts F F, substantially as and for the purposes specified.

4. The combination, in a door-hanger, of the hollow block H, having spindles on its sides and a circular opening, *b*, the sheaves G G, mounted on the said spindles, the hanger-rod K, and a semi-circular nut, J, run upon the said rod and arranged in the opening *b*, substantially as and for the purposes specified.

5. The combination, in a door-hanger, of the right and left screw-threaded hanger-rods K K, the plates L and L', adapted for attachment to the outside of the door, and having therein screw-holes to receive the lower ends of the said rods, and the sheaves G G, adjustably connected to the upper ends of the said rods by means of male and female screws working oppositely from those at the lower end thereof, whereby a simple turn of the said rod will adjust the door vertically to an extent greater than if the screw-threads on the said rods both run in the same direction, substantially as specified.

258,548. STAND-FRAME FOR HOISTING. WILLIAM S. BLUNT, New York, N. Y., assignor to Catharine S. Blunt, same place. Filed Apr. 28, 1882. (No model.)



Claim.—In a stand-frame for hoisting or lowering purposes, the combination of the following elements: a screw-threaded rod, A, the T's B, the upright rods C and F, the right-hand and left-hand elbows E, and the bottom rods, D and G, the same being constructed and operating substantially as and for the purposes set forth.

258,549. INSULATING MATERIAL FOR ELECTRICAL CONDUCTORS. FRANÇOIS BOREL, Cortaillod, Switzerland, assignor to the Société Anonyme de Câbles Électriques, (Système Berthoud, Borel & Cie.,) Paris, France. Filed Apr. 15, 1882. (No specimens.) Patented in France Mar. 4, 1882, in Germany Mar. 15, 1882, and in England Mar. 29, 1882.

Claim.—1. As an insulating material or ingredient in insulating compounds, siccative oil—such as linseed-oil—transformed by heat into a solid body, substantially as described.

2. The combination, with siccative oil—such as linseed-oil—transformed into a solid by heat, of a resinous matter—such as colophony—substantially as described.

258,550. CAR-COUPLING. PATRICK H. BRACKLIN, Davenport, Iowa. Filed Nov. 26, 1881. (Model.)



Claim.—1. The recessed draw-head having the fulcrum-lips *c*, enlarged link-recess E, pin-passage G, extending vertically through the front portion of the link-recess, the recess H, for the dog in rear, and the bridge or partition *a*, separating said passage from the lower portion of the latter recess, substantially as specified.

2. The combination, with the draw-head A, having the fulcrum-lips *c*, enlarged link-recess E, and the bridge or rest *a*, of the gravitating dog having the rear pivot, *l*, lateral arms *z*, and angular head R, substantially as specified.

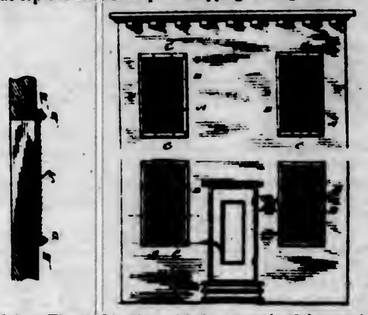
3. In a draw-head, the combination, with the fulcrum-lips *c*, pin-passage G, and the recesses for the link and dog, of the pivoted dog, its top rest, *r'*, face *e*, short under lip, *t*, and handles *z*, substantially as specified.

4. In a recessed draw-head, the pivoted gravitating dog having the pin-rest *r*, the face *e*, and the short under lip, *t*, at right angles, or nearly so, with said face.

5. The combination, with the fulcrum-lips *c* of the draw-head and the dog K, having the short under lip, *t*, of the pin V and link W, substantially as specified.

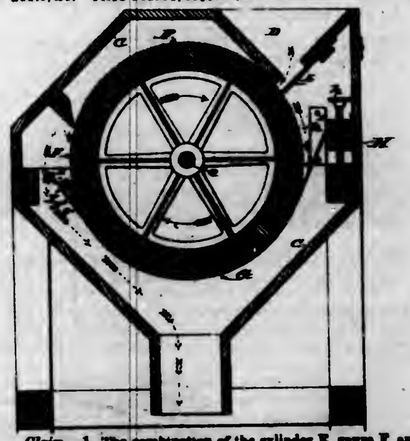
258,551. PERMANENT WINDOW-SCREEN. JOHN H. BRADFORD, Belleville, Kans. Filed Mar. 23, 1882. (No model.)

Brief.—The edges of the netting are held by metallic U-shaped strips, the top and bottom strips overlapping the edges of the side strips.



Claim.—The combination, with the screen A, of the securing-strips B B C C, bent around the edges of the screen, the latter strips being also bent over the edges of the former, as and for the purpose set forth.

258,552. RIDDLINGS-DETACHER. CHARLES BROWN, St. Louis, Mo. Filed Feb. 25, 1882. (No model.)



Claim.—1. The combination of the cylinder E, gauze F, and concave G, substantially as described.

2. The combination of the cylinder E, the gauze F, the concave G, and means for adjusting relatively the gauze and concave.

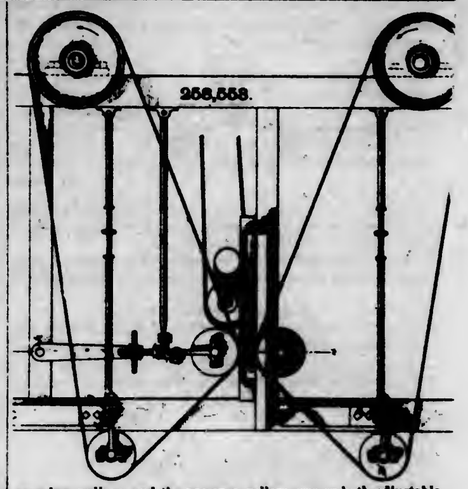
3. The combination of the cylinder E, the gauze F, the concave G, the rod I, and the adjustable clamp H, substantially as described.

4. The combination of the casing C, the hopper D, the cylinder E, the gauze F, and the concave G, substantially as described.

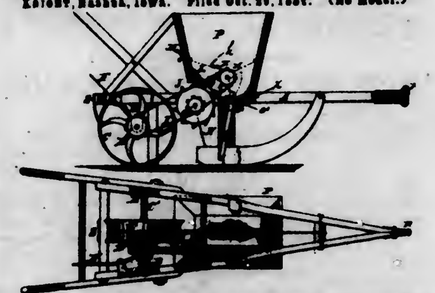
258,553. MACHINE FOR SANDPAPERING WHEEL RIMS OR FELLIES AND OTHER ARTICLES. GEORGE A. BROWN and BENJAMIN HOLT, Concord, N. H., assignors of one-third to Amos F. Holt, same place. Filed Jan. 17, 1882. (No model.)

Claim.—1. The combination, with the bed or table and a guide or guides and feed mechanism for the material to be operated on, of the sandpapering-belt, the carrying-pulleys, and the pressure-rollers adjustable to and from the table and adapted to be canted or tilted in the direction of its length, under the arrangement and for operation substantially as hereinbefore set forth.

2. The combination, with the bed or table and a guide or guides and feed mechanism for the material to be operated on, of the two sandpapering-belts, one above and the other below the table, the carrying-pulleys, and the pressure-rollers adjustable to and from the table and adapted to be canted or tilted in the direction of their length, substantially as and for the purposes hereinbefore set forth.



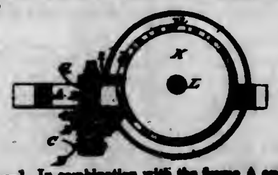
258,554. PLANTER. SAMUEL W. BYERS and HENRY W. KEIGHT, Nashua, Iowa. Filed Oct. 29, 1881. (No model.)



Claim.—1. The combination of the adjustable covering-wheel shaft C', wheel C, feed-wheel J, and slotted seed-box P, provided with the agitator K, having the curved spoken *k*, the parts being arranged and operating substantially as shown and described.

2. The combination of seed-box P, having the slanted slotted side L, the perforated bottom, the adjustable slides X M, and the feed-wheel J and agitators K *k*, substantially as shown and described.

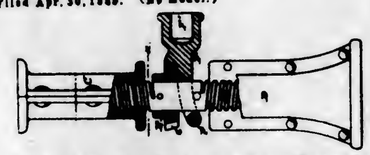
258,555. MOWING-MACHINE. CHARLES W. CHENEY, Athol, Mass., assignor of a part to C. Walter Knowlton and William C. Bowers, both of Brooklyn, N. Y. Filed July 13, 1881. (No model.)



Claim.—1. In combination with the frame A and main axle L, the two disconnected cam-wheels K K', made adjustable relative to each other, the shaft G, provided with the three arms *q*, the pivoted bar H, the pitmen E F, and the two cutters C D, the whole constructed and arranged to operate substantially as and for the purpose set forth.

2. In combination with the cutters C D and pitmen E F, the shaft G, provided with the arms *x y* and the adjustable and removable arm *z*, and means for imparting to said shaft a rotary oscillating motion, substantially as described.

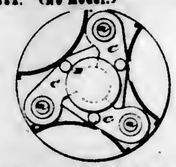
258,556. LIFTING-JACK. JAMES CHURCH, St. Louis, Mo. Filed Apr. 30, 1869. (No model.)



Claim. 1. The operating-screw provided with gear-wheel E, in combination with a tilting sleeve or lever, F, having one or more teeth, *f*, as and for the purpose set forth.

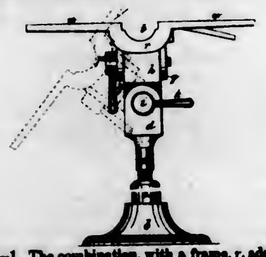
2. The combination of operating-screws A B, parts C D, gear-wheel E, tilting sleeve F, and teeth *f*, as and for the purpose set forth.

258,557. HUB-FASTENER. NORMAN CLARK, Sterling, Ill. Filed Mar. 23, 1882. (No model.)



Claim.—The latches C C C, pivoted near one end, and used in groups of not less than three, and having their inner faces recessed circularly, so that each recessed face, in the aggregate, encircle the axle A at the recess B therein, whereby each recess is completely filled, and at the same time less space and action are required to withdraw each latches from said recess B, substantially as shown, and for the purpose specified.

258,558. CARRIAGE-PAINTER'S JACK. EUGENE COOK, Nashville, Mich. Filed Nov. 3, 1881. (No model.)



Claim.—1. The combination, with a frame, *r*, adapted to support and be secured to a vehicle-body, of a threaded shaft, *c*, engaging in an interiorly-threaded socket or tube, *a*, and connected with the frame *r* by a universal joint, substantially as described, and for the purpose set forth.

2. The combination, with the socket or tube *a*, interiorly threaded near its upper end, and shaft *c*, provided with a bifurcated head, *d*, and threaded near its lower end and fitting in said socket, of the tenoned block A, frame *r*, provided with the lugs *q q*, and clamping-bolts *i p*, substantially as described, and for the purpose set forth.

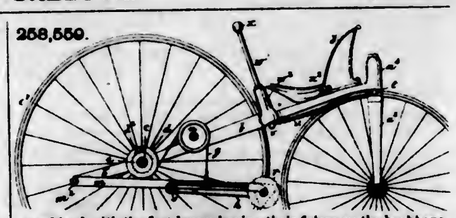
3. The combination of the socket or tube *a*, interiorly threaded near its upper end, shaft *c*, provided with a bifurcated head, *d*, and fitting in said socket, tenoned block A, clamping-bolt *i*, and coupling *m*, substantially as described, and for the purpose set forth.

4. The frame *r*, composed of the parallel longitudinal pieces *s*, with a slot, *t*, between them, perforated lugs *q q*, hollowed end pieces, *u u*, and cam-levers *v v*, substantially as described, and for the purpose set forth.

258,559. BICYCLE. HOSEA G. CHASE, Newton, Mass. Filed Oct. 6, 1881. (No model.)

Claim.—1. In a bicycle, the front wheel, the pawl-carrying drums and actuating-levers therefor, and backbone provided with a seat back of the front wheel, combined with the rear wheel, and its fork adapted to swivel in the backbone to steer the bicycle, substantially as described.

2. The front wheel, c^2, its shaft and rigid bearings therefor in the backbone, and the loose pawl-carrying drums and the ratchets,



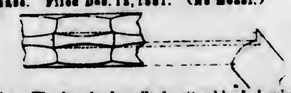
combined with the foot-levers having their fulcra on the backbone, and with belts to connect the said levers and pawl-carrying drums, and with means, substantially as described, to vary the point of connection of the said straps with the said levers, substantially as set forth.

3. The front wheel, c^2, its shaft and rigid bearings located near the front of the backbone, and the fixed ratchets and loose pawl-carriers and pawls, combined with straps and foot-levers having their fulcra on the backbone, whereby the said levers are made to move the drums in one direction, while a spring moves them in the opposite direction, substantially as described.

4. The front wheel, c^2, its ratchets, and shaft having bearings fixed to the backbone, and the pawl-carriers and straps, combined with the intermediate pulleys or sheaves, having their axes fixed to the said backbone near the shaft of the front wheel, and with the levers, and means, substantially as described, attached to the levers to change the effective points of connection of the said straps and levers, substantially as set forth.

5. In a bicycle, a backbone, a front wheel in fixed bearings thereon, ratchets, and pawl-carrying drums and straps, combined with foot-actuated levers having their fulcra on the backbone, in front of the bearings for the front wheel and with strap-supporting sheaves located on the backbone at the rear of the axle of the front wheel, substantially as described.

258,560. MILLING CUTTER-BLANK. MOSES G. CRANE, Newton, Mass. Filed Dec. 13, 1881. (No model.)



Claim.—The herein-described cutter-blank, having its periphery provided with a series of concavities sunk laterally, or in a direction parallel with its axis of rotation, whereby the side edges of the teeth subsequently formed therein by notching are properly beveled, substantially as described.

258,561. ELECTRIC SWITCH BOARD AND PLUG. DUNCAN DUNBAR, Indianapolis, Ind. Filed Oct. 3, 1881. (No model.)

Brief.—The invention in the switch-board consists essentially in so arranging the conducting-bars with relation to the grain of the wood of the frame as to prevent the inconvenient effects of warping. The construction of the switch-plug is set forth in the claims.



Claim.—1. The combination, in an electric switch-board, with the base-board, the electric conducting-bars thereon, and the upper conducting-bars, of the coupling-saddles secured individually to the base-board in electric contact with the conducting-bars thereon, and separated at each end from the upper bars by spaces or recesses fitted to receive switch-plugs, substantially as described.

2. The combination, with the handle and the central rigid bar, of the two bow-shaped springs united to the bar near the handle, substantially as described.

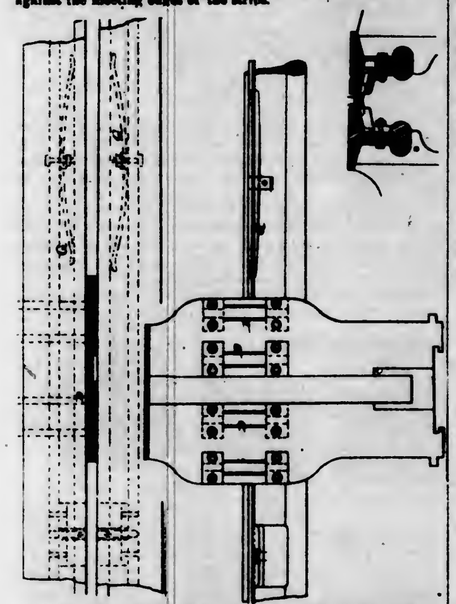
3. The switch-plug having a central rigid bar and a spring or springs, and a stem formed by a union of the springs and said bar, substantially as described.

4. A spring switch-plug embodying a threaded stem comprising the ends of the spring or springs, which are united by soft cast metal, substantially as described.

5. The switch-plug having springs composed of a doubled piece of spring metal, and a central bar united at one end with the ends of the spring by means of threaded soft metal to provide a stem for entering a handle, substantially as described.

258,562. GUIDE-RAIL FOR ROPE-RAILWAY CLUTCHES. CHARLES S. DRAKE, San Francisco, Cal. Filed Oct. 19, 1881. (No model.)

Brief.—Consists of inverted T-shaped rails having a slot between them, and having at their under sides continuous elastic closing-strips actuated by bow-springs and guided in brackets secured to the rails. A shank secured to the car is provided with gripping-wheels and vertical anti-friction rollers arranged to roll against the meeting edges of the strips.

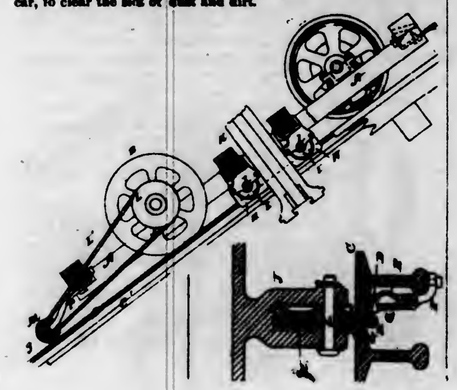


Claim.—1. The combination of the inverted T-shaped rails, the continuous elastic closing-strips, the guides therefor, and the bow-springs applied behind the said strips, substantially as described.

2. The combination of the anti-friction rollers, arranged as described, with the shank, substantially as and for the purpose explained.

258,563. ATTACHMENT FOR WIRE-ROPE RAILWAYS. CHARLES S. DRAKE, San Francisco, Cal. Filed Oct. 24, 1881. (No model.)

Brief.—The closing-strip has a convex top and is supported upon a bow-spring provided with a supplemental spring. The whole is hinged to a bracket and applied from below to the slot of a tube or tunnel. An opening device consisting of a shank or bracket provided with opening-wheels and guards is attached to the car and crowds the closing-strip to one side in advance of the grip. To the front of said car is secured a rotary brush, which is operated by an endless chain and pulley secured to the axle of the car, to clear the slot of dust and dirt.



Claim.—1. The combination, with the shank which is attached to the car, of opening-wheels and guards and a closing-strip, substantially as described.

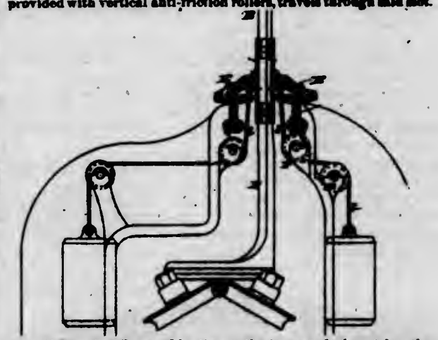
2. The combination of the bracket J, the wheel, the guard, and a closing-strip applied to the slot or space between the guide-rails, substantially as described.

3. The combination of one or more rotary brushes, the guard or guide rails, the closing-strip for the groove between the rails, and means for opening and closing said strip, substantially as described.

4. In combination with the inverted T-rails, the closing-strip D, convex on top, the bow-spring E, the bracket F, and the supplemental spring G, substantially as described.

258,564. APPARATUS FOR COVERING SLOTS IN CABLE RAILWAYS. CHARLES S. DRAKE, San Francisco, Cal. Filed Oct. 24, 1881. (No model.)

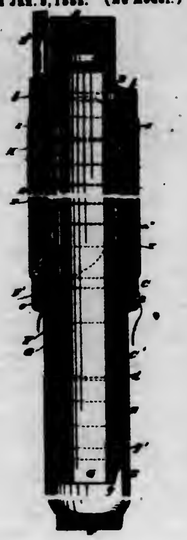
Brief.—Hinged and beveled closing-strips are riveted to inverted T-rails, which are arranged to form a slot, which is kept closed by means of weights connected by wires passing partly around grooved pulleys to said closing-strip. A shank of the grip, provided with vertical anti-friction rollers, travels through said slot.



Claim.—1. The combination of the hinged closing-strips, the inverted T-rails, the hinges E, and weights or their equivalents, for keeping said strips closed, substantially as described.

2. The combination of the shank B, the anti-friction rollers thereon, the guide-rails arranged with a slot between them, the hinged and beveled closing-strips, and the means, substantially as described, for keeping these strips closed, all substantially as described.

258,565. OIL-WELL PACKER. SOLOMON R. DRESSER, Bradford, Pa. Filed Jan. 9, 1882. (No model.)



Claim.—1. In an oil-well packer wherein is a rubber annulus arranged between two compressing-flanges which are attached to sections of tubing which telescope together, the combination therewith of chambers within said flanges, and a slotted tube connected with one of said flanges and communicating between said chambers, substantially as and for the purposes mentioned.

2. The combination within an oil-well packer of the following elements: a rubber annulus arranged between two chambered flanges, a tube within said annulus communicating between said chambers and containing a tube which forms part of the eduction-tube, and which is sufficiently smaller to form an annular space between said tubes, which space is closed at its lower end by packing upon a shoulder on the inner tube, substantially as and for the purposes set forth.

3. In an oil-well packer, the combination of the following elements: the rubber annulus A, flanges B and C, with chambers *b* and *c*, tube F, with slot F', tube G, with shoulder *g* and packing *g'*, extension C' of flange C, coupler D, packing *d*, and reducer E, substantially as shown.

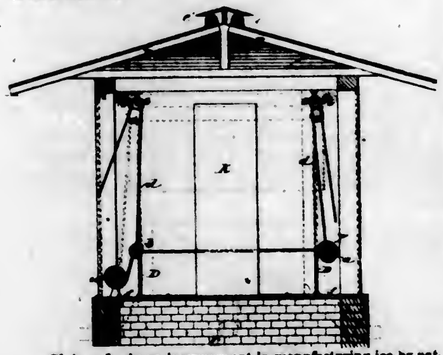
4. In combination with the rubber annulus of an oil-well packer, a shoulder-lining ring, H, having radial dovetail lugs *h*, which ring is embedded in the rubber annulus at the time of its formation.

5. In an oil-well packer, a rubber annulus provided with a series of indentations of different depth arranged in the order shown upon the inner wall of said annulus, for the purposes mentioned.

6. In the rubber annulus of an oil-well packer, the shoulder-lining ring H, and a strip of duck cloth or other fabric within the material back of said ring, substantially as and for the purposes mentioned.

258,566. MANUFACTURE OF ICE. WILLIAM W. DUDENBURY, Brooklyn, N.Y. Filed Oct. 13, 1881. (No model.)

Brief.—Uses curtains of felt or other heavy fabric to inclose ice frozen by natural cold to protect the ice from warm outside air, and lowers the curtain-walls to expose water to cold outside air to form more ice.



Claim.—1. As an improvement in manufacturing ice by natural cold, an inclosure formed by walls composed of continuous pieces or sections arranged to be extended from the floor upward, and to be lowered for the purpose of exposing the interior to the air, and to shut in and to protect the ice when formed, substantially as described.

2. Walls for an inclosure in which to manufacture and store ice, made of a flexible material or structure, and adapted to be raised to inclose the ice-space for the purpose of preserving the ice and lowered to expose the same and admit cold exterior air, substantially as described.

3. The walls D, having their lower edges attached to the floor of the structure, in combination with suitable devices for raising and lowering the same, substantially as described.

4. The combination of the cold-air shaft K, arranged to be surrounded by the ice, the openings *f* in the floor of the structure, between the inner and outer walls, and a refrigerating-chamber communicating with the shaft K and openings *f*, substantially as described.

5. The walls D, adapted to be raised to inclose the sides of the ice and to be laid over the top of the same to protect and preserve it, substantially as described.

258,567. BOBBIN-HOLDER FOR SPOOLING-MACHINES. THEO. C. ENTWISTLE, Lowell, Mass., assignor to the Phœnix Machine Company, same place. Filed Jan. 26, 1882. (No model.)

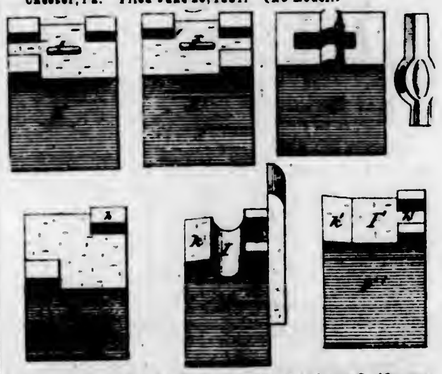
Brief.—The bobbin lies loose without other bearings in the holder, which consists of a trough closed at both ends and provided with a cap hinged thereto to rest upon the bobbin, and thereby retain the bobbin in place and supply requisite friction, and provided also with an adjustable weight to vary the tension.



Claim.—1. The bobbin-containing trough A, adapted to receive and support without other bearings a bobbin loose within it, in combination with the cap D, these parts being united by a hinge-connection and adapted for joint operation, as hereinbefore set forth.

2. The bobbin-containing trough A, adapted to receive and support without other bearings a bobbin loose within it, in combination with the cap D, united therewith by a hinge-connection, and the adjustable weight E, as hereinbefore set forth.

258,568. DIE FOR MAKING HATCHETS. WILLIAM EVANS, Chester, Pa. Filed June 20, 1881. (No model.)



Claim.—1. The die C, formed with the slot and ridges arranged on opposite sides of the slot, substantially as shown and described.

2. The pair of dies E E, for fullering the metal, substantially as shown and described.

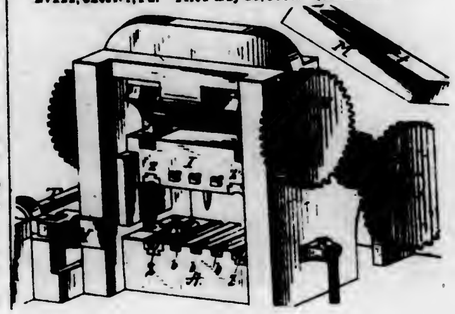
3. The pair of dies F F', the die F being formed with an inclined surface, K', horizontal surface I', and depression *h'*, and the other die, F, being formed with the incline surface *k*, concave surface I, depression *h*, for the purpose of setting down the metal on the upper portion of the eye-socket and inclosing the bit portion, substantially as set forth.

4. The pair of dies H H' of the construction substantially as seen in Figs. 13 and 14, for the purpose stated.

5. The pair of dies K K of the construction substantially as seen in Figs. 17 and 18, for the purpose stated.

6. The series of dies hereinbefore described for manufacturing hatchets in progressive steps.

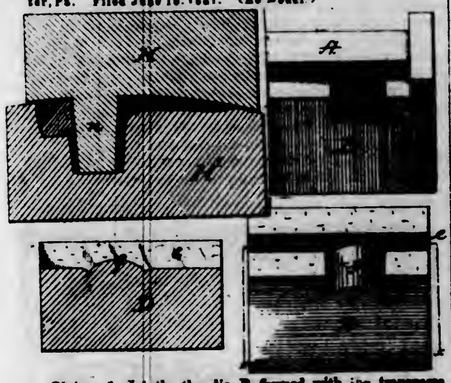
258,569. MACHINE FOR FORGING HAMMERS. WILLIAM EVANS, Chester, Pa. Filed May 26, 1881. (No model.)



Claim.—1. In a machine for forging hammers, the combination, with the upper and lower sections of a hammer-die, of the movable side section or plunger, M, means for advancing the said side section, and a spring for retracting the same, substantially as described.

2. In a machine for forging hammers, the combination of the bed-block A, having dies, and the side sections or plungers, M, with slots *f*, and the follower I, with dies, and tapering arms J', with means for operating the follower, substantially as described.

258,570. DIE FOR MAKING ADZES. WILLIAM EVANS, Chester, Pa. Filed June 15, 1881. (No model.)



Claim.—1. Jointly, the die B, formed with the transverse groove *a* and flange *b*, and die C, with a plain surface for breaking down the metal, substantially as described.

2. Jointly, the dies D, each constructed with the longitudinal groove *e* and the transverse convex surface *f*, said groove and surface being arranged as shown, for the purpose of fullering the metal.

3. The die E, substantially of the construction seen in Fig. 7, for the purpose stated.

4. The pair of dies F F'—the former or lower one formed with square opening, shoulder *h*, and cavities *i k*, and the latter or upper one provided with a punch, *m*, substantially as and for the purpose set forth.

5. The pair of dies H H', substantially of the construction seen in Fig. 10, for finally shaping the adz.

6. The series of dies hereinbefore described for manufacturing adzes in progressive steps.

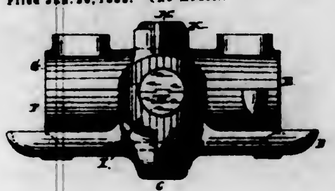
258,571. LAMP-STAND. TEMPLE GARCHAU, Boston, Mass. Filed Mar. 8, 1882. (No model.)



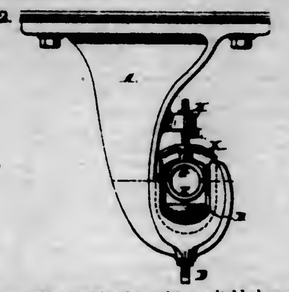
Claim.—1. A lamp-stand to rest on the floor, having a weighted base, *a*, a stem, *b*, and a lamp-holder, *c*, separably connected together, so that the stem *b* may be dispensed with and the base *a* and holder *c* be united to make a lamp-stand of the ordinary height for table use, substantially as set forth.

2. In combination with a lamp-stand composed of sections adapted to be fastened to each other, a table-top or similar article secured between two of the sections, substantially as and for the purposes specified.

258,572. SHAFT-HANGER. EVERETT S. GIBSON, Providence, R.I. Filed Jan. 20, 1882. (No model.)



258,572.

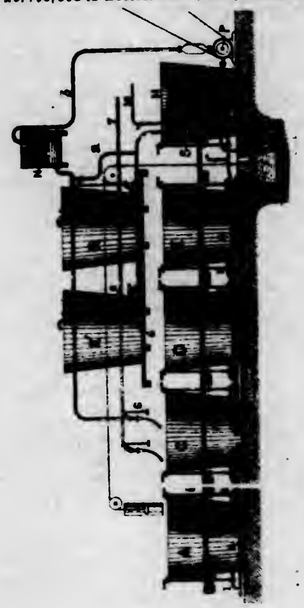


Claim.—The combination, with a suitable hanger, A, having arm M, and securing devices D L, of the sleeve E, having lugs H, drip-pan B, having ears I and socket C, and the cap K, having socket N, the cap extending over the sleeve and covering the lugs with the ears, so as to form a bearing, and the sockets receiving the ends of the securing devices, as set forth.

258,573. PROCESS OF MANUFACTURING TANNIN EXTRACTS. PAUL GONDOLO, Paris, France, assignor to the Gondolo Tannin Company, Huntingdon, Pa. Filed Dec. 10, 1881. (No specimens.) Patented in France Mar. 13, 1879, No. 128,541; in England Mar. 18, 1879, No. 1,076; in Belgium Mar. 19, 1879, No. 47,694; in Germany Apr. 2, 1879, No. 7,864; in Italy Apr. 9, 1879, No. 19,837; in Austria Apr. 7, 1879, No. 1,076, and in Spain July 28, 1879, No. 385.

Claim.—The hereinbefore-described improvement in the process of manufacturing tannin extracts, which consists in the maceration of the vegetable matters in a slightly-acidulated bath, the addition thereto of a coagulant or absorbent, the subsequent addition of an alkali or alkaline salt and of a further quantity of coagulant or absorbent, and the final precipitation by means of an acid, substantially as set forth.

258,574. PROCESS OF AND APPARATUS FOR THE MANUFACTURE OF TANNIN EXTRACTS. PAUL GONDOLO, Paris, France, assignor to the Gondolo Tannin Company, Huntingdon, Pa. Filed Dec. 16, 1881. (No model.) Patented in Germany Apr. 2, 1880, No. 7,864; in France Apr. 10, 1880, No. 128,865; in Belgium Apr. 14, 1880, No. 51,139; in England Apr. 16, 1880, No. 1,668; in Italy Apr. 19, 1880, No. 11,781; in Spain July 1, 1880, No. 795, and in Austria Oct. 4, 1880, No. 24,918.

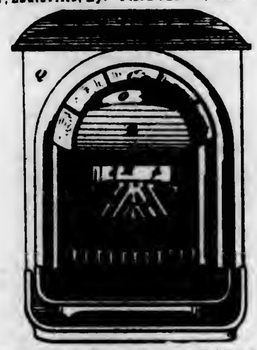


Claim.—1. The hereinbefore-described improvement in the manufacture of tannin extracts, which consists in first macerating the substances containing the tannin in a bath containing a salt of sulphurous acid, and then treating the resulting solution by the addition of sulphuric acid, substantially as set forth.

2. The hereinbefore-described improvement in the manufacture of tannin extracts, which consists in first macerating the substances containing the tannin in a bath containing a salt of sulphurous acid, and then treating the resulting solution by the addition of sulphuric acid, and finally clarifying the liquor by the admixture and coagulation of blood or other coagulant, substantially as set forth.

3. The combination of the steeping-vats, the reservoirs N R R', and the clarifying-vat H, provided with the cooling coiled pipe and the heater S', substantially as and for the purposes described.

258,575. FRANKLIN STOVE AND FIRE-GRATE. ALFRED GREENAWAY, Louisville, Ky. Filed Jan. 20, 1881. (No model.)



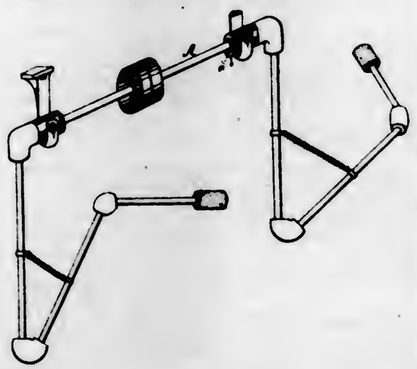
Claim.—1. A basket, E, and the surrounding frame Q, having its opening extended about the basket, as shown and described, to secure a large heat-outlet, combined with the tile L, the cap N, and the smoke-flue between the two, and the mica-filled hood C, placed about the opening of said frame to insure a perfect draft and prevent smoking, all constructed and arranged to operate substantially as set forth.

2. The tile L, as shown and described, cemented in place, combined with the grate, the grate-frame Q, with its enlarged opening and hood, and the cap N, substantially as shown and described, whereby an enlarged heat-opening is obtained and a perfect draft insured.

3. In a grate, the front portion, E, made with grate-bars, combined with the back F, having projections *a b*, to interlock with the front portion, E, to hold said back at, or about at, an angle of forty-five degrees to the horizontal, substantially as described.

4. The air-conduit H, the air-chamber G, the grate E, its back F, the fines I, the tile L, and the chamber P, combined and arranged as shown and described, and for the purpose specified.

258,576. UNIVERSAL JOINT. JOHN JAMES GREENOUGH, Syracuse, N. Y. Filed Apr. 18, 1882. (No model.)



Claim.—1. The manner of suspending the shaft of the upper arm coupled with the main or driving shaft by means of the coupling-joint, in which the main shaft A turns, resting in and being supported by the hanger independent of the main shaft, as and for the purposes specified.

2. The combination of the upper arm and forearm connected by a spring, *s*, as herein specified, to assist in holding up the forearm at the wrist-joint.

3. The combination of the swiveling shoulder and wrist-joint with the non-swiveling elbow-joint, as and for the purposes specified.

4. The bearings rigidly affixed in the tubes surrounding and forming the boxes in which the shafts turn and in which they are supported independent of the couplings, as herein described.

5. The bevel-gear arranged and combined as herein specified, in combination with the couplings forming a universal joint, in the manner and for the purposes specified.

6. The combination of two pendent shafts with the shaft A, one at each end thereof, so as to cause the brush or other tool to rotate in opposite directions, as and for the purposes specified.

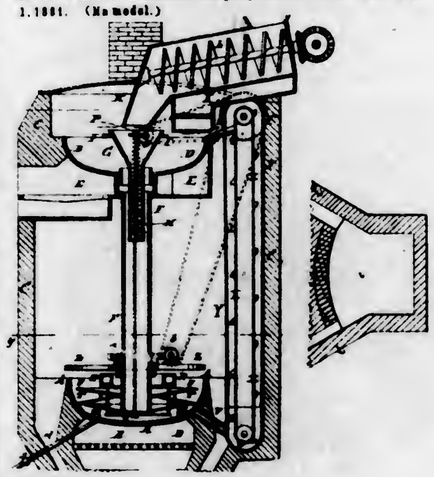
258,577. FIRE AND BURGLAR PROOF SAFE. HENRY GROSS, Tiffin, Ohio. Filed July 11, 1881. (No model.)



Claim.—1. In a fire-proof safe, the door-frame B' B' and the door-jamb frame C C, constructed in sections and provided with lugs *b' b'* and *c' c'*, respectively, to receive the connecting bolts or rivets, and acting as braces to stiffen the connection of the sections, substantially as and for the purpose specified.

2. In a fire and burglar proof safe, the burglar-proof plates L and *l'*, composed of continuous pieces of welded iron and steel or steel-plate, the plate L extending continuously through the body of cement filling in the safe-body and the plate *l'* extending through the cement filling in the door-frame, said plates having their ends connected respectively with the interior of the door-jamb and door-frame, substantially as and for the purpose described.

258,578. APPARATUS FOR AMALGAMATING GOLD AND SILVER ORES. WALTER HAMILTON, New York, N. Y., assignor to the Hamilton Reduction Company, of New York. Filed Apr. 1, 1881. (No model.)



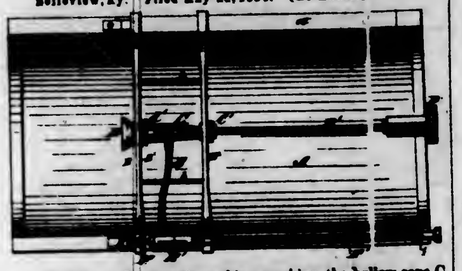
Claim.—1. In a gold and silver ore amalgamator, the combination of the upper and lower basins, D A, the funnel G, having a feed-screw within its tube H, the pipe or tube F, surrounding tube H and communicating at the top with the basin D, and the valve Q, connecting with float R, as and for the purpose described.

2. In an apparatus for amalgamating gold and silver ores, the combination, with the lower basin, A, the upper basin, D, the connecting-pipe F, the elevator or pump X, and the funnel G H, of the furnace C, substantially as herein shown and described, whereby the amalgamating substance is kept molten, as set forth.

3. The combination, with the pipe F and basin A, of the revolving arms Z and a receptacle connecting with the top of said basin by a passage around the fire-chamber B, as shown and described.

4. In an apparatus for amalgamating gold and silver ores, the combination, with the pipe F, connecting the upper basin, D, and the lower basin, A, of the valve Q, substantially as herein shown and described, whereby the passage through the said pipe of the amalgamating substance and the ore is regulated, as set forth.

258,579. BOTTLE-WASHING MACHINE. KONRAD HOFMANN, Cincinnati, Ohio, assignor of one-half to Albert V. Fuhrmann, Bellevieu, Ky. Filed May 28, 1881. (No model.)



Claim.—In a bottle-washing machine, the hollow cone C and funnel D, the latter consisting of an enlarged portion lined by an elastic lining, J, and a neck, which latter is screwed into the end of the cone C and the loose bushing or sleeve K, in combination with a revolving brush or scraper and a device for automatically supplying water to the interior of the bottle, substantially as and for the purposes specified.

2. The combination of the cone C, constructed substantially as described, and the valve-box E', connected to said cone by the pipe E, said valve-box being attached to the slide *e*, which slides on the way *a*, and having in its interior the valve-seat *e'* and valve *e'*, the latter being attached to the rod *e²*, supported by the post F on the frame B, substantially as and for the purposes specified.

3. The combination of the frame B, sliding on ways *a*, and provided with post F, the valve-box E', having in its interior the valve-seat *e'* and valve *e'*, the latter being attached to rod *e²* and supported by said post F, and the supply-pipe F', substantially as and for the purposes specified.

4. In combination with the cone C, funnel D, and loose bushing K, and means for automatically supplying water to said cone C, a revolving cleaning device consisting of a hollow casing, 1, provided with the two levers 3, pivoted to one end of said casing, and adapted to be separated by the spring 8, contained within said casing, substantially as and for the purposes specified.

5. The herein-described cleaning device, consisting of the hollow casing 1, provided with shank 2 and levers 3, the latter being pivoted to one end of the casing and provided with flexible strip 10, said levers being caused to separate by the spring 8 and sliding plunger 6, substantially as and for the purposes specified.

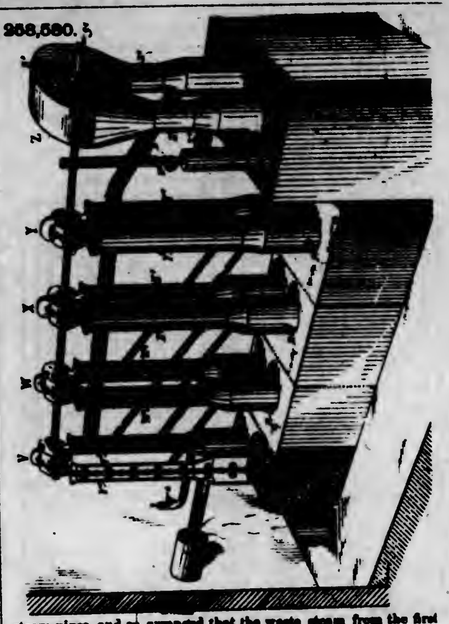
6. The combination of the casing 1, the arms 4, pivoted to said casing, and the felt strips 10, secured to said arms by means of the clamping-plate 11, and a suitable spring and plunger to cause said arms to separate when in the bottle, substantially as described.

7. The combination of the cleaning-device holder and the valve-box E', connected thereto by a suitable conduit, said valve-box being attached to the slide *e*, which slides on the way *a*, and having in its interior the valve-seat *e'* and valve *e'*, and connecting and operating mechanism for enabling the latter to automatically supply water to the cleaning device, all substantially as and for the purposes specified.

258,580. STEAM-MOTOR. SAMUEL W. HUSSEY, Hudsondale, Pa. Filed Dec. 16, 1881. (No model.)

Claim.—1. The combination of two or more distinct and independent motors, substantially such as described, connected by

258,580.



steam-pipes, and so arranged that the waste steam from the first motor serves to operate the other motor or motors, as set forth.

2. The combination of the motors V W X Y, their connecting steam-pipes, the motor Z, and the steam-pipe E, substantially as set forth.

3. The combination of the several independent motors, their sprockets S', the connecting steam-pipes, and the common shaft S', substantially as set forth.

4. The combination of the motors V W X Y, having steam-cylinders and air-compressing tubes, their connecting steam-pipes, and their connecting air-pipes, substantially as set forth.

5. The combination of the steam-cylinder, the air-compressing tube, the endless chain, piston-heads, and sprockets, a fluid seal, and a closed or sealed tank, substantially as set forth.

6. The combination of the steam-cylinder, the air-compressing tube, the endless chain, the cup-shaped piston-heads, sprocket-pulleys, and a fluid seal, substantially as set forth.

7. The combination of the steam-cylinder, the sprocket-pulleys, the elongated piston-heads, having comparatively small spaces between them, the endless chain or connecting-links, and a fluid seal, substantially as set forth.

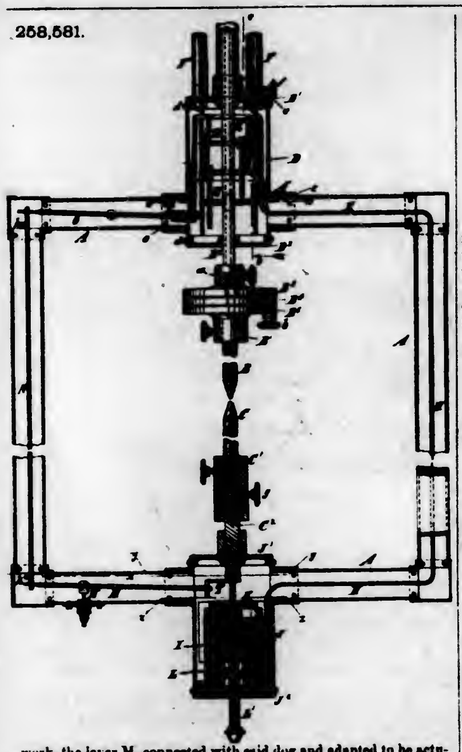
258,581. ELECTRIC-ARC LAMP. CHARLES A. HUSSEY, New York, N. Y., assignor to the Hussey Electric Company, same place. Filed May 25, 1881. (No model.)

Claim.—1. In an electric lamp, the combination of a single electric circuit, an electro-magnet or solenoid in said circuit, an armature for said electro-magnet or solenoid directly connected with the lower carbon, a train of wheel-work for controlling the feed of the upper carbon, a dog for controlling said wheel-work, a lever adapted to be actuated by said armature, but arranged so that the armature may have a given range of movement before acting upon the lever, and means for transmitting motion from said lever to said dog to effect the disengagement of said dog from said wheel-work and permit the feed of the upper carbon, substantially as specified.

2. In an electric lamp, the combination of a single electric circuit, an electro-magnet or solenoid, I, and an armature, K, therefor, contained in a case, J, the lower carbon, C, connected with said armature, the upper carbon, B, the train of wheel-work E, for controlling the feed of the upper carbon, and the device Q Q', for regulating the operation of said wheel-work, contained in a case, D, a hollow frame, A, connecting the cases D and J, and the lever M, rod N, and lever O, arranged within said hollow frame, substantially as specified.

3. In an electric lamp, the combination of a single electric circuit, the electro-magnet or solenoid I and its armature K, the lower carbon, C, directly connected with said armature, the upper carbon, B, the wheel-work E, the dog Q', controlling said wheel-

258,581.



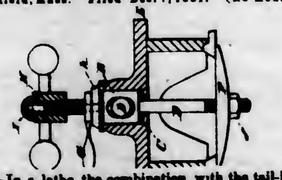
work, the lever M, connected with said dog and adapted to be actuated by said armature, but arranged so that the armature has a given range of movement before acting upon it, and the fulcrum M', adapted to be adjusted to suit currents of different potentials, substantially as specified.

4. In an electric lamp, the combination, with a carbon-holder and its supporting-rod, of two or more plates connecting said holder and rod, and a pivot or pivots connecting said plates eccentrically to said holder and rod, so that the plates may be swung laterally relatively to each other to adjust said carbon-holder into line with the opposite carbon-holder, substantially as specified.

5. In an electric lamp, the combination, with a carbon-holder and its supporting-rod, of two or more plates connecting said holder and rod, and a screw or screws pivoting said plates together eccentrically to said holder and rod, so that the plates may be swung laterally relatively to each other, and also serving to clamp the plates together after such lateral adjustment, substantially as specified.

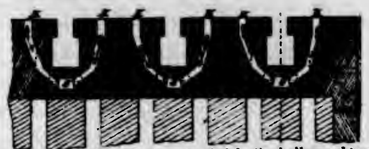
6. The combination of the case D, containing a train of wheel-work, E, the removable cap D', insulating-bushing *a*, suspending-rod F, wire or conductor H, and set-screw *f*, substantially as specified.

258,582. TAIL-STOCK FOR TURNING-LATHES. ANDREW HYDE, Hatfield, Mass. Filed Dec. 7, 1881. (No model.)



Claim.—In a lathe, the combination, with the tail-block and with the spindle *b*, of the clamp-rod D, having the perforated slide B, hollow end, and rod I, washer A, or equivalent bearing-surface, handle-nut G, solid top nut, H, and clamp-plate F, arranged to effect the clamping of tail-block and spindle upon a common axis in a vertical line with the axis of the spindle, substantially as shown and described.

258,583. KILN FOR BURNING BRICK. JAMES JOHNSON, Bay View, assignor of one-half to Martin Darelaar, Milwaukee, Wis. Filed Mar. 3, 1882. (No model.)

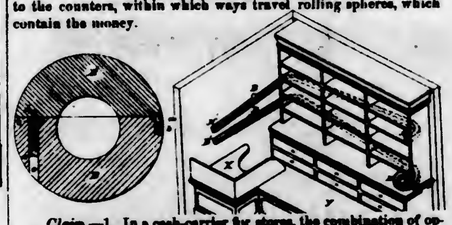


Claim.—1. In kilns for burning brick, the hollow column I, formed in rear of the combustion-chamber, provided with one or more cold-air passages, K, communicating from said hollow space with the exterior air, substantially as and for the purpose specified.

2. In kilns for burning brick, the column I, provided with open space J, inlet air-passages K, and outlet-passages L, substantially as and for the purpose specified.

258,584. AUTOMATIC CASH-CARRIER. WILLIAM S. LAMSON, Lowell, assignor to the Lamson Cash Carrier Company, Boston, Mass. Filed Dec. 5, 1879.

Brief.—Reversely-inclined ways extend from cashier's desk to the counters, within which ways travel rolling spheres, which contain the money.



Claim.—1. In a cash-carrier for stores, the combination of oppositely-inclined ways N N' D' D, and a rolling cash holder or box, B B', substantially as and for the purpose specified.

2. In a cash-carrier for stores, the combination of oppositely-inclined ways N N' D' D, adapted to the cashier's desk *x* and counter *y* of a store, and hollow rolling balls B B', adapted to receive and carry cash on said ways, as and for the purpose specified.

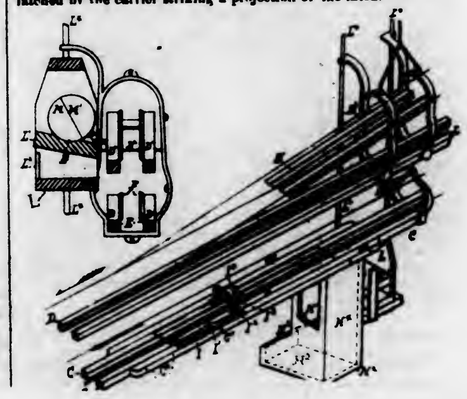
3. The combination, with the counters *y* and desk *x* of a store, of two ways, N N' D' D, connecting the same, each way consisting of a trough, substantially as set forth.

4. The combination of the box B and the cover B', turning one upon the other, as specified, the pin *a* and spring *b*, as and for the purpose specified.

5. The combination of the box B, the cover B', the spring *b*, and the pin *a*, beveled on the top, as and for the purpose specified.

258,585. AUTOMATIC CASH-CARRIER. WILLIAM S. LAMSON, Lowell, assignor to the Lamson Cash Carrier Company, Boston, Mass. Filed Aug. 29, 1881. (No model.)

Brief.—The carrier or ball rests in a depression in a shelf in the elevator. The shelf is tilted by its contact with a projection on a bridge pivoted above the way and tilted toward the way by the weight of the carrier. The carrier is transferred to a receptacle beneath the way by means of a tilting section of the way unlatched by the carrier striking a projection of the latch.



Claim.—1. The elevator provided with a tilting shelf, L', having a depression, L'', as and for the purpose specified.

2. The elevator L, provided with a pivoted shelf, L', having a depression, L'', in combination with means for tilting said shelf, as and for the purpose specified.

3. In combination with the way D, the pivoted bridge D', and a carrier, M M', adapted to travel on said bridge and to tilt the same, as and for the purpose described.

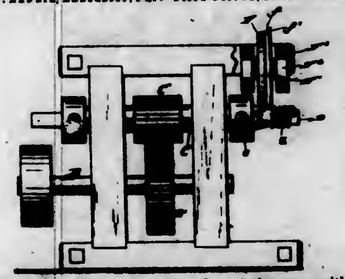
4. In combination with the pivoted bridge D', provided with a catch, D'', the elevator L, provided with the tilting shelf L', as and for the purpose described.

5. In combination with the way C, the pivoted bridge D', and a carrier, M M', adapted to travel on said bridge and to tilt the same, as and for the purpose specified.

6. The way C, provided with switches R and means for allowing said switches to be opened by carriers M M', traveling thereon, in combination with said carriers, as and for the purpose described.

7. The combination of the switch R and the box H', provided with an opening, H'', as and for the purpose specified.

258,586. MACHINE FOR MAKING SPRINGS AND RINGS. E. F. LAUBIN, Lancaster, Pa. Filed Oct. 13, 1881. (No model.)



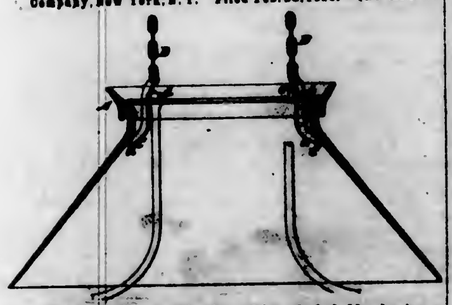
Claim.—1. The combination of a rotating cone with a bar sliding through the same, but rotating therewith, said bar being adapted to the attachment of wire, substantially as set forth.

2. A rotating cone and a pressure-wheel arranged to bear against the ends of wire on said cone, in combination with a sliding bar that turns with said cone, and to which the wire is attached, substantially as set forth.

3. Pressure-wheel F, having groove *f* and guide-flange *f'*, in combination with rotating cone E and bar D, turning with said cone, but sliding endwise therein, substantially as set forth.

4. Tubular shaft C, recessed at one end, in combination with cone E, having extension E', which sets into said recess, a detachable fastening therefor, and a bar to which the wire is attached, and which slides in said parts C E, but turns with them, substantially as set forth.

258,587. SHADE-HOLDER. CHARLES HASCHBURGH, Bridgeport, Conn., assignor to the Craighead & Hiwell Manufacturing Company, New York, N. Y. Filed Feb. 24, 1882. (No model.)



Claim.—1. The combination, with a shade-holder having a rim or flange for bearing against one side of a shade, of fingers or fastenings adapted to bear on the other side, and chains or other means for suspending the shade, connected directly with said fingers or fastenings, substantially as specified.

2. The combination, with the shade-holder A, of the fingers C, having hook-shaped lower ends, and attached to the chains D or like devices, substantially as specified.

3. The combination, with the shade-holder A, of the fingers C, made polygonal, fitting in corresponding bearings, having hook-shaped lower ends, and attached to chains D or like devices, substantially as specified.

4. The combination, with the shade-holder A, of the fingers C, having hook-shaped lower ends and reversely-bent upper ends, the bearings *a*, the guides *b*, and the chains or like devices, substantially as specified.

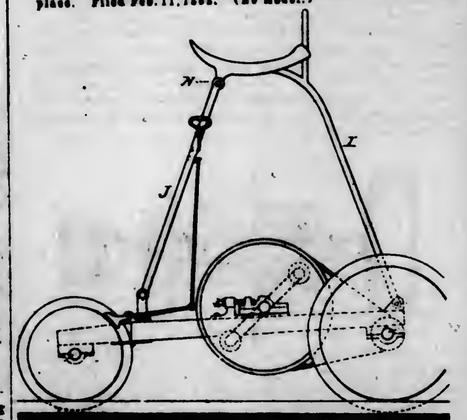
258,588. SAFETY-VALVE. JOSEPH R. MITCHELL, New Brighton, Pa. Filed Jan. 13, 1882. (No model.)



Claim.—1. A hollow valve, B, resting upon two seats, with radial adjusted holes for the escape of the steam in the proper proportion from the central hollow part, for the purpose as shown and set forth.

2. In a safety-valve arranged as described, the hollow stem and valve with regulating-holes and resting upon two seats, in combination with the adjusting pin-valve X, substantially as and for the purpose shown.

258,589. RAILWAY-VELOCIPEDE. GEORGE A. HOSMER, Troy, N. Y., assignor of one-half to Nelson Davenport, same place. Filed Feb. 11, 1882. (No model.)



Claim.—1. In a railway-velocipede, and in combination, a seat or saddle, a detachable seat-support, I, hinged supports J, and connecting-joints N, substantially as described, and for the purposes set forth.

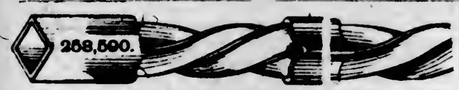
2. In a railway-car, a car-frame made in two sections, each section being provided with two track-wheels, one upon each end of the same axle, in combination with sliding or folding joints which connect said sections together in such a way that said axles will be and remain parallel to each other in every position assumed by said sections, for the purpose of varying the length of said car and enabling the same to run upon a railway-track in a folded as well as extended position, substantially as described.

3. In a railway-velocipede, a double-crank shaft provided with sliding bearings adapted to be moved backward or forward relatively to a superimposed seat or saddle, in combination with said seat or saddle, substantially as described, and for the purposes set forth.

258,590. COUPLING FOR LIGHTNING-RODS. WILLIAM H. MUNN, Collingswood, N. J. Filed Feb. 1, 1882. (No model.)

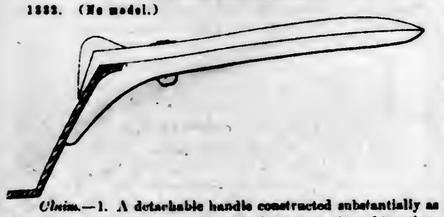
Claim.—1. A coupling for spiral lightning-rod sections, consisting of a cast-metal box hollow from end to end, and adapted to be secured to the sections by compression in the manner set forth.

2. A section of spiral lightning-rod with one or both of its ends provided with a cast-metal coupling-box hollow from end to



end, secured in place by compression, and adapted to receive the end of an adjacent section, substantially as and for the purpose set forth.

258,591. DETACHABLE HANDLE FOR UTENSILS. FRED A. MEINER and GEORGE GASSMANN, Augusta, Ky. Filed Feb. 28, 1882. (No model.)

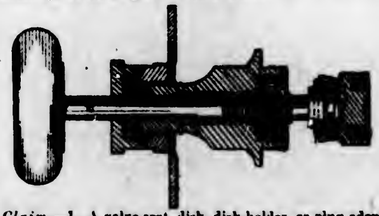


Claim.—1. A detachable handle constructed substantially as described—that is to say, constructed of two parts pivoted together, and provided with jaws arranged to move in closing in planes substantially parallel to their faces, as set forth.

2. The combination, to form a detachable handle for utensils, of the two parts pivoted together and provided with jaws to grasp the utensil, arranged to move in closing in planes substantially parallel to their faces, and one part arranged to close within a pocket in the other when the two are brought together, substantially as set forth.

258,592. VALVE. JEREMIAH O'HARA, New York, N. Y. Filed Jan. 27, 1882. (No model.)

Brief.—The valve-disk is provided with a grooved projection adapted to be loosely slipped on the end of a stem and held thereupon with freedom of motion, so as to become self-adjusting, by means of an annular cap inclosing said grooved projection, and locked down thereupon by a pin. The threaded wrench *o*, having a handle, *p*, is placed below the divided box to hold it against displacement by the sticking of the stem therein.



Claim.—1. A valve-seat, disk, disk-holder, or plug adapted to be loosely connected to a stem or spindle, combined with a loose superposed cap and independent means to hold said cap in place, substantially as described.

2. A valve-stem having a collar on its end, a disk, or its described equivalent, having an undercut grooved projection to fit over such collar, a cap on said stem provided with a flange to embrace such projection to prevent its lateral displacement, and a pin secured in the stem above the cap to hold said cap against vertical displacement and down upon the projection of the disk, substantially as shown and specified.

3. A valve-stem provided with a collar on its end, a disk, or its described equivalents, provided with parallel lips to embrace such collar, an annular cap on the stem having a flange to inclose said lips and collar, and means to prevent the vertical displacement of such cap, substantially as shown and specified.

4. A threaded wrench provided with a handle and applied to the threaded bonnet of a valve below the box or gland thereon to hold such box or gland against being backed or run off by the turning of the valve-stem, substantially as shown and described.

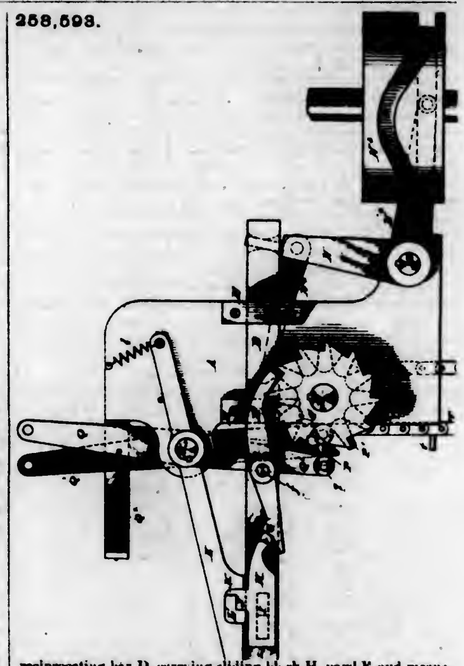
5. The combination, with a threaded bonnet and a box thereupon, of a handled wrench applied below such box on the bonnet, substantially as and for the purpose described.

6. The handled wrench *o*, combined with an independently-movable stuffing-box or gland to hold such box or gland against accidental displacement, substantially as specified.

258,593. MECHANICAL MOVEMENT. JOHN H. OSBORNE, Philadelphia, Pa. Filed Apr. 18, 1882. (No model.)

Claim.—1. The combination of ratchet-wheel C, sliding or

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reciprocating bar D, carrying sliding block H, pawl F, and means to arrest the movement of the sliding block in either direction after it has traveled some distance.

2. The combination of ratchet-wheel C, sliding or reciprocating bar D, carrying sliding block H, furnished with lug J, pawl F, means on said block to raise said pawl free of the teeth of said ratchet-wheel, and lever L, or its equivalent, provided with slot L', substantially as described.

3. The combination, with ratchet-wheel C, of reciprocating bar D, carrying pawl F and sliding block H, furnished with projection J and arm A, lever L, having slot L', and pattern mechanism to automatically raise or lower said lever at stated intervals, substantially as specified.

4. The combination, with ratchet-wheel C, of reciprocating bar D, carrying pawl F, having cam-projection G, and sliding block having projection J and arm A, lever L, shaft M, arm M', chain-wheel B', and chain T, provided with pins *t*, substantially as described.

5. The combination of sliding or reciprocating bar D, carrying pawl F, provided with a cam-projection, G, sliding block provided with arm A, and means to arrest the movement of the sliding block as it is carried in either direction by the reciprocating bar, substantially as set forth.

6. The combination of shaft B, having secured thereon one or more cam-wheels and a ratchet-wheel, C, reciprocating bar D, carrying a pawl, F, provided with cam-projection G, and sliding block H carrying arm A, and means to arrest the movement of the sliding block as it is carried in either direction by the reciprocating bar, substantially as set forth.

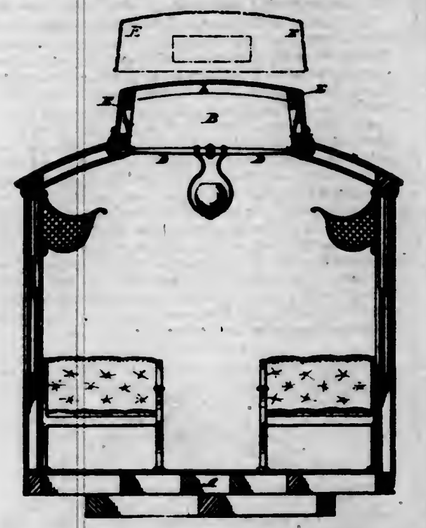
7. The combination of shaft B, having secured thereon one or more cam-wheels and a ratchet-wheel, C, reciprocating bar D, carrying pawl F and sliding block H, lever L, having slot L', shaft M, arm M', and chain mechanism to actuate said arm, substantially as set forth.

8. The combination of shaft B, having secured thereon one or more cam-wheels and ratchet-wheel C, reciprocating bar D, carrying pawl F and sliding block H, lever L, shaft M, arm M', chain-wheel B', having ratchet-wheel R, chain T, having pins *t*, rock-shaft O, arms N N', pawl M', arm N², and cam N², substantially as described.

9. The combination of shaft B, having secured thereon one or more cam-wheels, P P', and ratchet-wheel C, reciprocating bar D, pawl F, pivoted thereto, sliding block H, means to arrest the movement of said sliding block in either direction after it has moved some distance, and one or more levers, Q Q', with springs Q², substantially as described.

10. The combination of the ratchet-wheel with the reciprocating bar carrying a pawl and automatic pattern mechanism to raise said pawl up clear of said ratchet-wheel except at stated intervals, substantially as set forth.

258,594. RAILWAY-CAR. JAMES PATTERSON, Washington, D. C. Filed May 23, 1882. (No model.)



Claim.—1. In passenger-cars, a removable roof or cover, E, having sides and ends fitting over the elevated part B of a car, substantially as set forth.

2. In cars, a removable roof or cover, E, having inclined sides and ends fitting over the inclined elevated part B of the car, substantially as specified.

3. In cars, a removable roof or cover, E, having sides and ends fitting over the elevated part B of the car, and provided with packing *i*, substantially as described.

4. In cars, a removable roof or cover, E, having sides and ends fitting over the elevated part B of the car and secured by hooks A or other suitable fastenings, substantially as set forth.

5. In cars, a removable roof or cover, E, having sides and ends fitting over the elevated part B, and having braces D, to strengthen the upper part of the car, substantially as shown, and for the purpose specified.

6. The combination of a car-body with the elevated part B, removable cover E, a series of braces, D, and joints *h*, all arranged substantially as set forth.

258,595. SPRING BED-BOTTOM. WILLIAM L. PHILLIPS, Brooklyn, N. Y., assignor to Alice B. Phillips, same place. Filed Sept. 7, 1881. (No model.)

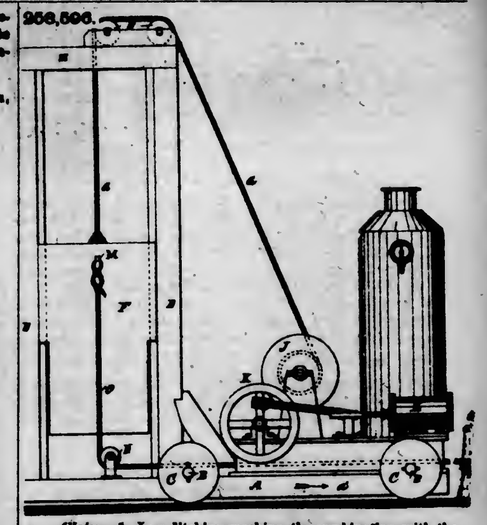


Claim.—The construction of a woven-wire bate having a rigid frame made in one or more parts with spiral springs mounted thereon and secured thereto, substantially as described.

258,596. DITCHING-MACHINE. FRANCIS PIDGEON, Saugerties, N. Y., assignor to H. H. Pidgeon, same place. Filed Sept. 2, 1881. (No model.)

Brief.—To move the machine forward the hauling-rope is attached to the knife when down, and as the knife is elevated the machine is correspondingly advanced.

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Claim.—1. In a ditching-machine, the combination, with the platform A, of the uprights D, the drop-knife F, the rope G, the windlass E, the rope O, the pulley N, and the cleat M, substantially as herein shown and described, and for the purpose set forth.

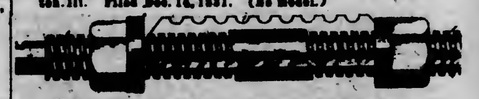
2. The method, substantially as herein shown and described, of propelling the platform A, carrying a drop-knife, consisting in attaching the end of the rope O, passing through a pulley, N, to the knife F, when the same is lowered, and then raising this knife, as set forth.

258,597. DOOR-HANGER AND PULLEY. CHAS. W. PIERCE, Oak Hill, N. Y. Filed May 23, 1881. (Model.)



Claim.—The block or frame of a door-hanger or sheave-pulley, consisting of the main bar A and its attachments, lateral branches G, and connecting-bar H, all arranged as described, and cast or otherwise formed in one solid piece, and provided with bearing-holes B for the pivots of the roller or sheave, and channels L for the entry of said pivots to said bearing-holes by springing the frame apart for said entry and closing thereafter to secure the pulley, substantially as described.

258,598. EXPANDING MANDREL. JOHN G. POPE, Bloomington, Ill. Filed Dec. 14, 1881. (No model.)



Claim.—1. An expanding mandrel provided with sliding boys or plates held in place upon the arbor by nuts at the ends of the boys, the boys or plates being provided upon their outer edges with a series of inward curves or scallops, substantially as and for the purpose set forth.

2. A mandrel boy or plate provided upon its outer edge with a series of inward curves or scallops, substantially as and for the purpose set forth.

258,599. PISTON. JAMES PRESTON, New York, N. Y., assignor of one-half to S. A. Burns and G. A. Cooke, same place. Filed Aug. 8, 1881. (No model.)

Claim.—1. In a piston, the combination, with a valve-cage having a beveled flange and attached to a rod, of a beveled ring attached to the lower end of a tube surrounding the rod, and of a packing-strip wound spirally around the valve-cage and held between the beveled flange and beveled ring, substantially as herein shown and described, and for the purpose set forth.

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2. In a piston, the combination, with the short cylinder A, fastened to a rod, C, by a transverse bar, B, of the apertured bottom D, forming a beveled flange, F, of the beveled ring H, attached to the fork J at the lower end of the tube K, and of a packing-strip, L, wound spirally around the short cylinder A, substantially as herein shown and described, and for the purpose set forth.

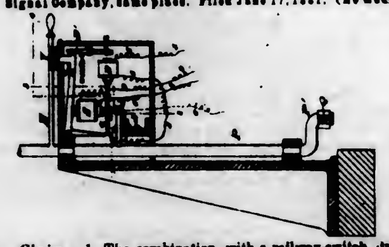
3. The piston-rod C, constructed, substantially as herein shown and described, with a valve-cage formed of the short cylinder A, the transverse bar B, and the apertured bottom D, with projecting beveled edges at its lower end, as and for the purpose set forth.

258,600. ELECTRIC RAILWAY-SIGNAL. THEODORE A. B. PUTNAM, New York, N. Y., assignor, by mesne assignments, to the Railway Cab Electric Signal Company, same place. Filed June 28, 1881. (No model.)



Claim.—A locomotive bearing a partial-closed electric circuit, including a generator and alarm, and terminating, on the one hand, in a pair of wheels of the locomotive, and, on the other hand, in a truck or pair of wheels of the locomotive, tender, or some car of the train, said wheels being insulated from those first named, in combination with a railway-track having insulated spaces or breaks in both the right-hand and left-hand rails thereof, the insulations of one rail being opposite those of the other, substantially as set forth.

258,601. ELECTRIC SAFETY APPLIANCE FOR RAILWAY-SWITCHES, &c. THEODORE A. B. PUTNAM, New York, N. Y., assignor, by mesne assignments, to the Railway Cab Electric Signal Company, same place. Filed June 17, 1881. (No model.)



Claim.—1. The combination, with a railway-switch, draw-bridge, or similar structure or provision, of a visual signal disk or plate arranged adjacent to the operating-handle, and tending to move into the way thereof, an electro-magnetic detent arranged to normally restrain said signal, a partial electric circuit including said magnet extending to a distant signaling-point and there terminating in two adjacent and successive track-rails insulated from each other, and a circuit-breaking device, also included in said partial circuit, and so arranged in connection with the switch, bridge, &c., that the said partial circuit remains closed when said switch or bridge is properly set, and is broken when the latter is set to "danger," substantially as set forth.

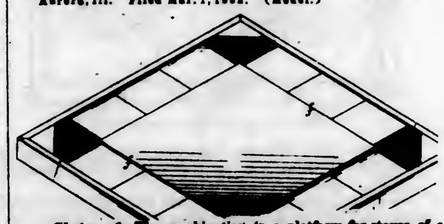
2. A switch or draw-bridge locking device consisting of the combination of a partial circuit terminating in distant insulated rails H J, an electro-magnet, D, included in said circuit, a detent-lever, D', bearing the armature of said magnet, a lever, S', bearing a locking device, V, tending to thrust the latter into engagement with the operating-handle, and normally restrained by said detent-lever, whereby an instantaneous electrical impulse through said circuit will cause the locking of the switch or bridge, and the latter will thereupon remain locked until the locking device is otherwise withdrawn, with automatic means for withdrawing said lock upon the passage of a train past a point on the track adjacent thereto, substantially as set forth.

3. The combination of operating-handle E, disk V, armature-lever S', magnet S, a partial circuit including said magnet and terminating in two successive track-rails at a point adjacent thereto, the said rails insulated from each other, a withholding detent-lever, D', bearing an armature, an electro-magnet, D, a partial circuit including said magnet extending to a remote point on the track, and there terminating in two successive track-rails, and the said rails insulated from each other, all constructed and arranged to operate substantially as set forth.

4. A railway-switch, draw-bridge, or other structure provided with an electro-magnetically-applied lock, in combination with a mechanical or spring latch adapted to always engage the operative mechanism when the structure is in the position of "safety," and to strongly resist any effort to move it out of that position, thereby relieving the electrical lock of more or less strain, substantially as set forth.

5. A railway-switch provided with an electro-magnetically-applied lock adapted to engage the operative mechanism when the switch is set to "safety," in combination with an automatic mechanical locking device consisting of a locking-lever, T, having a central recess near its fulcrum adapted to engage a moving part, *b* or *b'*, on the switch-shifting mechanism when the switch is set in its "safety" position, and having an arm or arms extended laterally of said socket for engagement with said part in its movement toward or from said socket, in combination with said part and with a spring or springs, *d*, arranged to cause the lever to resist the tilting movement necessary to the escape of said part from its socket, substantially as set forth.

258,602. TILE STOVE-PLATFORM. EDWIN W. L. RICE, Aurora, Ill. Filed Mar. 1, 1882. (Model.)



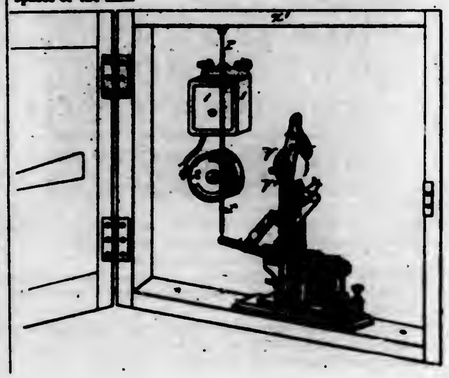
Claim.—1. The combination, in a platform for stoves, of a wooden base or bed, a central metal plate, and a set of inlaid tiles.

2. In a platform for stoves, the combination, with a set or system of tiles, of a flanged exterior band or binding and a flanged metallic center piece, the band and center piece serving to hold the tiles in place.

3. In a platform for stoves, the base-board constructed with a raised center piece or block, combined with a metal cap secured thereto, and having a flange projecting beyond such block, as and for the purposes described.

258,603. ELECTRIC TIME-DETECTOR. JAMES E. RICHARDS, Cedar Keys, Fla. Filed Oct. 20, 1881. (No model.)

Brief.—An alarm located in a locked box in the room to be visited is sounded on the completion of the circuit by the automatic make and break wheel, and a disk is rotated one space behind the door of the said locked box. Through a slot in the said door the watchman records the exact time of his visits on the white spaces of the disk.



Claim.—1. The combination of a battery, a continuously-moving make and break circuit device, as constructed that the times when the circuit will be made and broken may be varied at will, and one or more locked station-boxes, through a slot in the lid of which the dial may be seen, and in each of which is the following apparatus—*i. e.*, electro-magnets provided with the usual armature and fittings, a lever connecting the lever of the armature with mechanism for revolving a dial, and a bell, all combined and operating substantially as and for the purposes set forth.

2. The combination of a battery, a continuously-moving make and break circuit device, as constructed that the times when the circuit will be made and broken may be varied at will, and one or more station-boxes, in each of which is the following apparatus—*i. e.*, electro-magnets provided with the usual armature and fittings, a dial caused to rotate at stated times by the movement of the armature, upon which dial the watchman may register his rounds, and a bell, all combined and operating substantially as and for the purposes set forth.

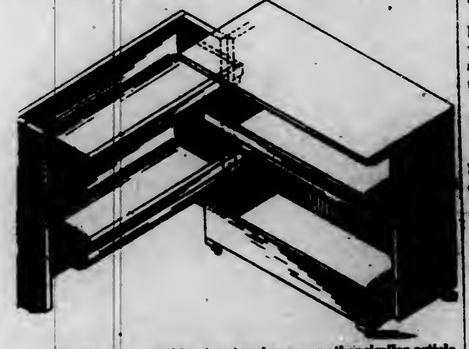
3. The combination of an automatic make and break circuit apparatus on an electric circuit and one or more station-boxes, in each of which is the following apparatus—*i. e.*, electro-magnets provided with the usual armature and fittings, a shaft upon which is a dial, which shaft is caused to rotate at stated times by the movement of the armature-lever, and upon which dial the watchman can register his rounds, and a bell, the said station-boxes being placed on a local circuit, the relay of which is actuated by the current sent through another circuit by the automatic make and break circuit apparatus.

4. The combination of the wheel A, provided with the teeth E, the tipping lever A, having on one end thereof the insulating-plate *i*, and one or more station-boxes containing electro-magnets provided with the usual armature and fittings, and a movable dial operated by the movement of the armature-lever, all combined substantially as and for the purposes set forth.

5. The tipping lever A, having on one end thereof the insulating-plate *i*, placed near the end thereof, and an automatically-moving metallic surface, portions of which at stated times come in contact with, first, the insulating-plate, and, secondly, the metal of the tipping lever, all combined and arranged to give good and instant contact between the metal surfaces, substantially as and for the purposes set forth.

6. The combination, in an electric time-detector, of an automatic make and break circuit apparatus provided with its battery, alarm, and dial-registering devices at one or more station-boxes, a double-contact button placed in the main line, and an alarm-bell, the bell being operated by a current from a separate battery passing through the double-contact button, all combined and arranged substantially as and for the purposes set forth.

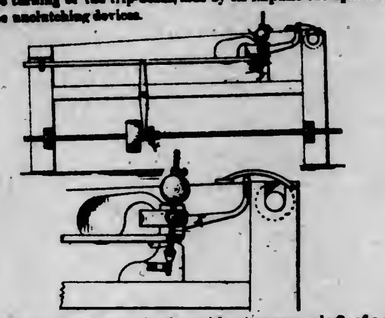
258,604. BUREAU, &c. GEORGE F. RICHARDSON, Montague, Mass. Filed Dec. 16, 1881. (No model.)



Claim.—The combination, in a bureau or other similar article of case-work, of receptacles or compartments arranged alternately on opposite sides, so that when opened the contents of each receptacle will be readily accessible, and when closed the spaces between each receptacle will be filled by the opposite receptacles, substantially as specified.

258,605. WARP-STOP MECHANISM FOR LOOMS. TIMOTHY R. RIDER, Pitch Bay, Quebec, Canada. Filed June 16, 1881. (No model.)

Brief.—A series of forked detector-levers is pivoted upon a shaft placed transversely in the loom-frame below the line of warp-threads, and a trip-beam, also mounted on said shaft, is formed with a sleeve, to which are attached an upright weighted arm resting normally a slight distance to one side of a vertical line passing through said sleeve and a dependent arm connected with the unclutching devices. An adjustable stop engaging a lever which is pivoted to the dependent arm, and which may be thrown up to permit movement of the trip-beam by hand, regulates the position of the weighted arm. The latter, when carried past the vertical line by the turning of the trip-beam, aids by its impulse the operation of the unclutching devices.



Claim.—1. The combination, with a transverse shaft, of a series of weighted levers provided with slots or eyes to receive the warp-threads, a trip-beam having its ends bent and pivoted on said shaft, and arranged to be operated by said levers, and an arm provided with an adjustable weight, substantially as described.

2. The combination, with a transverse shaft, of a series of weighted levers, constructed and arranged, as described, to admit of the contact of the threads therewith, a trip-beam arranged relative to said levers, an arm provided with an adjustable weight, a dependent arm, a lever connected to said dependent arm, and a stop for preventing backward tilting of the weighted arm, substantially as described.

3. The combination, with the transverse shaft, of a series of levers, a trip-beam provided with a weighted arm, and an adjustable stop for preventing undue backward motion of said arm, substantially as described.

4. The combination, with the transverse shaft, of a series of levers and a trip-beam provided at one end with a sleeve having the arm provided with an adjustable weight, substantially as described.

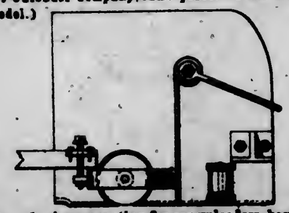
5. The combination, with a transverse shaft, of a series of levers, a trip-beam having its ends bent at right angles for connection to said shaft, a sleeve, an upright arm secured to said sleeve, a dependent arm, and shipping or unclutching devices, substantially as described.

6. The combination, with the transverse shaft, of a series of levers, a trip-beam arranged relative to said levers, a sleeve, a weighted arm secured to the latter, a dependent arm provided with a stud, a lever pivoted to the dependent arm, and an adjustable stop, substantially as described.

7. The combination, with the trip-beam having a weighted arm and a dependent arm with its lever, of the adjustable stop, as and for the purpose set forth.

8. The combination, with the series of levers, and the trip-beam having a weighted arm and dependent arm with its lever, of the adjustable stop, as and for the purpose set forth.

258,606. NOSE-CASTING FOR CAR-UNLOADERS. GEORGE W. ROLFE, Toledo, Ohio, assignor to the American Rail Road Ballast Unloader Company, same place. Filed Mar. 28, 1882. (No model.)



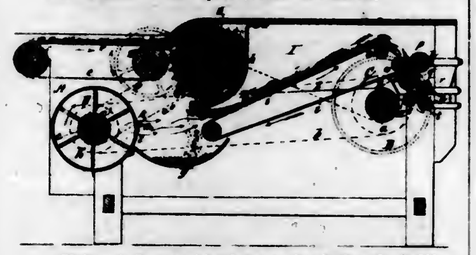
Claim.—1. A nose-casting for car-unloaders, having upon its inner side a bracket of suitable construction, to which is pivoted or otherwise adjustably connected an anti-friction roller adapted to bear upon the car-platform, substantially as and for the purpose set forth.

2. In a car-unloader, the nose-casting at the extreme forward end thereof, having pivoted to its inner side a suitable frame, carrying an anti-friction roller, in combination with means, substantially as shown, for raising and lowering said frame, for the purpose set forth.

3. In a car-unloader, the combination, with the nose-casting thereof, of an anti-friction roller connected to the forward end of said nose-casting and adapted to bear against the guide-rail of the car-platform, substantially as and for the purpose specified.

4. A nose-casting provided with a bracket on the inner side of its forward end to rest over and above the guide-rail of the car-platform, substantially as and for the purpose described.

258,607. APPARATUS FOR PREPARING FEATHERS FOR BEDDING, &c. GEORGE A. SANBORN and GEORGE W. SANBORN, Boston, Mass. Filed Sept. 27, 1881. (No model.)



Claim.—1. In a machine for preparing feathers for bedding, &c., a series of corrugated or fluted rolls, in combination with means for producing an air-blast and a picker, H, constructed to operate substantially as described.

2. An endless apron, *i*, having an upwardly-inclined portion and a downwardly-inclined portion, traveling within a closed passage, I, in combination with a series of corrugated or fluted rolls, mechanism for producing an air-blast, and a picker, as set forth.

3. The combination of the endless feed-apron *e*, the angular endless apron *i*, located in a closed passage, I, a series of corrugated or fluted rolls, a picker, and mechanism for producing an air-blast, as and for the purpose specified.

4. A slotted frame, K, a series of corrugated or fluted rolls having bearings in said slotted frame, as described, in combination with a series of levers, L P, and links for connecting the same, one of the said levers being weighted to allow of the adjustment of the rolls, for the purpose set forth.

258,608. ROPE-CLAMP. THOMAS SAMSON, Egg Harbor Township, Atlantic County, N. J., assignor of one-half to Wm. B. Rose, same place. Filed Feb. 14, 1882. (Model.)



Claim.—The block A, having the oblong opening B and transverse slot C, in combination with the shaft D, journaled therein, and carrying the reversible crescent-shaped clamping-block E and handle F, all constructed and arranged substantially as described.

258,609. CLOCK-BELL. GEORGE W. SANFORD and AARON C. SANFORD, Winsted, Conn. Filed Mar. 3, 1882. (No model.)

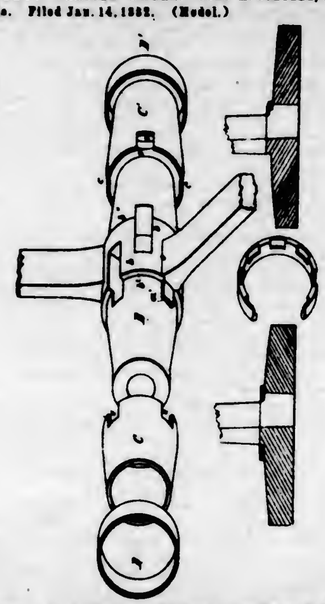


Claim.—1. A clock-bell consisting of a bell-wire fastened to a sounding-disk and a wire fastened to the sounding-disk and crossed beneath the same, the ends of the wire being perforated for the insertion of fastening-screws, substantially as set forth.

2. A clock-bell consisting of a bell-wire fastened to a sounding-disk and a supporting-wire on which the sounding-disk is cast, substantially as set forth.

3. The combination, with the sounding-disk, bell-wire, and supporting-wire, of the rubber washers interposed between the ends of the supporting-wire and clock-case, substantially as set forth.

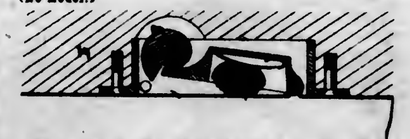
258,610. VEHICLE-WHEEL. JOHN A. SCHULER, Hillville, Ohio. Filed Jan. 14, 1882. (Model.)



Claim.—1. A vehicle-wheel having a wooden hub, B, in combination with wooden spokes whose tenons A are widened beyond the spoke-face and extend radially upward along such face beyond the hub's periphery, as at *a'*, and are driven and glued fast in the hub-mortices; one or more metallic shells, C C', indented on their inner edges to receive said tenon-extensions and flush therewith; lastly, bands or hoops D D', embracing said tenon-extensions and the notched portions of the shells and supporting the outer faces of the spokes, substantially as set forth.

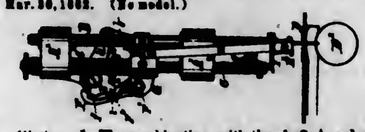
2. In the described combination with wooden hub B, spokes A, and covering-bands D D', the shells C C', indented on their inner edges and having the interior fin or burr, *c''*, to prevent their accidental displacement, as set forth.

258,611. SASH-HOLDER. HENRY A. STORR, Brooklyn, N. Y., assignor to Andrew Randell, same place. Filed Oct. 17, 1881. (No model.)



Claim.—The combination, substantially as hereinbefore set forth, of the pivoted self-retracting friction-stop, the revolving cam acting on such stop, and the rocking spring-sustained double eccentric forming the working-face of the stop, for the purpose specified.

258,612. AUTOMATIC PRESSER-FOOT LIFTER FOR SEWING-MACHINES. CHARLES G. STRATTON, Worcester, Mass. Filed Mar. 30, 1882. (No model.)



Claim.—1. The combination, with the shaft A and presser-bar C, of the oscillating head-piece E, having the offset *f* and trip *l*, and the latch-piece F, adapted for automatically effecting the

elevation of said presser-bar, substantially as hereinbefore set forth.

2. The combination, substantially as hereinbefore described, of the presser-bar C, the auxiliary movable bar H, carrying the presser-foot H', the drop block or hub G, fixed to said presser-bar, the guide I, the latch-piece F, the oscillating head E, fixed to the shaft A and provided with offsets or lugs *f l*, and the springs F' and K, for the purposes set forth.

3. The combination, with the auxiliary swinging bar H, carrying the foot H', and the presser-bar C, with its spring C', of the drop block or hub G, having a lip, G', extending over the end of said swing-bar and forming a pressure-socket therefor, substantially as shown and described.

4. The combination, with the shaft A, provided with arm *a*, and presser-bar C, provided with the catch-piece F, of the head-piece E, having offset or lug *f*, and projections *l m*, the adjusting-screw M, and trip-screw L, as and for the purposes set forth.

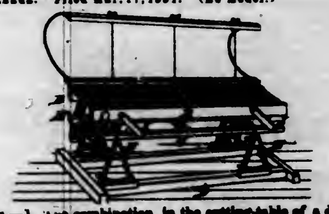
258,613. BED-BOTTOM FRAME. JOHN A. THOMPSON and ELIAS WELLS, Pittsburg, Pa. Filed Apr. 19, 1882. (No model.)



Claim.—1. A woven-wire-mattress frame consisting of screw-threaded metallic side rails, threaded metallic corner-pieces, having sockets for the end and side rails, in combination with set-screws which pass through the corner-pieces and bear against the threaded portion of the side rails, substantially as and for the purposes specified.

2. A mattress-frame having adjustable side rails, provided with a set screw or screws extending through the sockets and biting on the rail fitting therein, substantially as and for the purposes described.

258,614. DRAIN-TILE MACHINE. GEORGE S. TIFFANY, London, Canada. Filed Mar. 17, 1881. (No model.)



Claim.—1. The combination, in the cutting-table of a drain-tile machine, of the hinges or hinged supports I I I I and frame C, substantially as and for the purpose herein set forth.

2. The combination of the slotted bars H H, binding-rod K, crank-nut L, and frame C with the cutting-table of a machine for making drain-tiles, substantially as and for the purpose herein specified.

258,615. AUTOMATIC CAR-BRAKE. DOLPHUS TORREY, New York, N. Y. Filed Oct. 18, 1881. (No model.)

Claim.—1. In a double-acting draw-bar brake apparatus, the combination, with the draw-bar and brake-lever, of duplicated blocks or toggles, arranged for alternative use to transmit motion from the draw-bar to the brake-lever in one or the other direction.

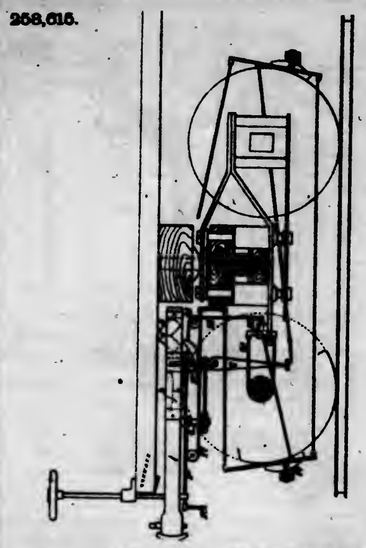
2. In an automatic draw-bar brake apparatus, the combination, with the draw-bar and brake-lever, of duplicated blocks or toggles for transmitting motion from the former to the latter in one or the other direction, and a reversible tripping device for unsetting one or the other of said transmitting-blocks or toggles.

3. The combination, with the draw-bar, the brake-lever, and a transmitting device for communicating motion from one to the other, of a cam-drum, mounted on the brake-lever and carrying a tripping device for unsetting the transmitting device, substantially as described.

4. The combination, with the draw-bar, the brake-lever, and one or more blocks or toggles for transmitting motion from the draw-bar to the brake-lever, of the cam-drum and the oblique cam or eccentric carried thereby, for tripping the transmitting-block or toggle, substantially as described.

5. The automatic adjustment device 20 22, placed in active position by the movement of the brake-beam and actuated by the rotation of the axle, substantially as described.

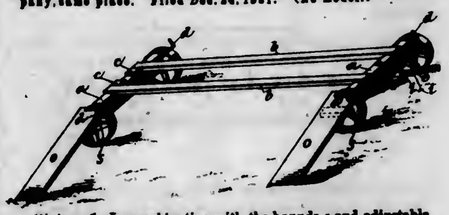
258,616.



6. The reversible yoke, in combination with the transmitting-shaft and chain or cord, for setting said chain or cord on either side of the shaft for direction adjustment, as explained.

7. The combination of the draw-bar or transmitting-bar connected therewith, the brake-lever, one or more interposed blocks or toggles, the cam-drum, and the transmitting chain or cord actuating said cam-drum for automatic adjustment, substantially as described.

258,616. TRUCK FOR MOVING HARVESTERS. WILLIAM H. TURNER, Indianapolis, Ind., assignor to the Turner Truck Company, same place. Filed Dec. 24, 1881. (No model.)



Claim.—1. In combination with the bounds *c* and adjustable blocks *i i*, a truck having bolsters *a a*, reaches *b b*, blocks *e e*, and hooks *d*, all constructed and arranged in the manner described.

2. A skid, *e*, having one end cut to fit the curve of the wheel-rim, as described, the block *s*, and the wheel of a truck, combined in the manner described and shown, and for the purpose set forth.

258,617. STEAM-ENGINE. ALBERT F. VALLOTTON and HENRY LUBWAY, St. Louis, Mo. Filed Aug. 26, 1876. Renewed Sept. 26, 1881. (Model.)

Claim.—1. The cylinder D, having the center d^3 and the adjustable parts d^4 d^5, as and for the purpose described.

2. The combination of the slides *e e*, the cross-head C, stud *c'*, and the cylinder D, having the adjustable parts d^4 d^5, substantially as described.

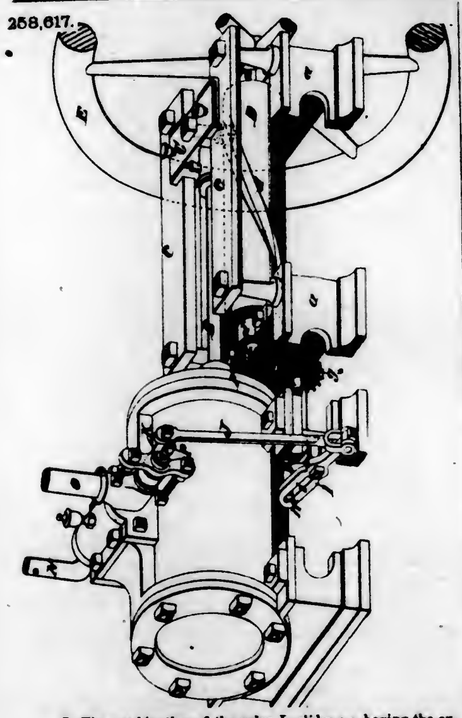
3. The combination of the slides *e e*, having the extended bearings e^3 e^3, the cross-head C, stud *c'*, and the cylinder D, having the groove *d*, the said parts being relatively adjusted as and for the purpose set forth.

4. The combination of the slides *e e*, having the extended bearings e^3 e^3, and the cross-head C, having the rollers c^2 c^2 and the stud *c'*, and the cylinder D, substantially as described.

5. The combination of the cylinder D, pinion F, gear *g*, shaft G, pin g^2, crank H, pin h^2, slotted lever I, rod J, arm K, and valve L, substantially as described.

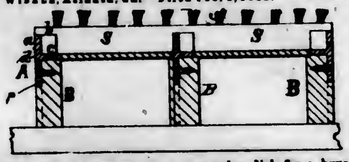
6. The combination of the shaft G, crank H, having the shoulders *h h'* and pin h^2, and the slotted lever I, as and for the purpose set forth.

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7. The combination of the valve L, slides *c c*, having the extended bearings *c' c'*, seat M, stem *l*, and screw P, substantially as described.

258,618. BRUSH-CYLINDER FOR COTTON-GINS. EDWARD VAN WINKLE, Atlanta, Ga. Filed Feb. 8, 1882. (No model.)

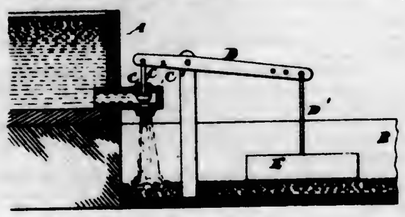


Claim.—1. A metallic ring or annular disk for a brush-cylinder of a cotton-gin, composed of the vertical wall *d*, horizontal flange *e*, and the dovetailed or trapezoidal slots, substantially as described.

2. A metallic ring or annular disk, A, for a brush-cylinder of a cotton-gin, having converging walls *b b* and the walls *a*, substantially as described.

3. The improved brush-cylinder for a cotton-gin, consisting essentially of a shaft, wooden disks B, the annular rings formed with the trapezoidal or dovetailed slots, and the brush-slats S, formed of a trapezoidal shape, substantially as shown and described.

258,619. WATERING ANIMALS. ISAAC WELTY, Olney, Ill. Filed Oct. 5, 1881. (No model.)



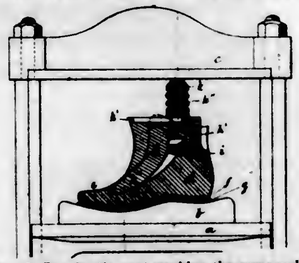
Claim.—1. An automatically-operating apparatus for watering stock, the combination of the reservoirs A and B, the pipe C, having a horizontal opening communicating with the reservoir A, and a vertical opening for the discharge of water into the reservoir B, said vertical opening being provided with a valve-seat for the automatically-operating valve to close upon, the float E, the graduated lever D, the valve C', and the connecting-rod D', the parts being constructed and arranged as shown and described.

258,620. TOP-FLAT OF CARDING-MACHINES. WILLIAM E. WHITEHEAD, Lowell, Mass., assignor to the Whitehead & Atherton Machine Company, same place. Filed Mar. 23, 1882. (No model.)



Claim.—A molded fibrous pulp top-flat for carding-machines, substantially as hereinbefore set forth.

258,621. DEVICE FOR BEATING OUT SHOE-SOLES. SIDNEY W. WINSLOW, Salem, Mass. Filed Oct. 10, 1881. (No model.)



Claim.—1. In a beating-out machine, the pressure-block *h*, in combination with the adjustable swivel heel-piece *i* and last *d*, as and for the purpose set forth.

2. In a beating-out machine, the pressure-block *h*, in combination with the laterally-adjustable screw and nut *k k'* and last *d*, as and for the purpose set forth.

3. In a beating-out machine, the last *d*, the pressure-block *h*, with its swivel heel-piece *i*, and laterally-adjustable screw and nut *k k'*, as and for the purpose set forth.

258,622. CORSET. WILLIAM S. ALLEN, Hillsdale, assignor to Charles W. Higby, Jackson, Mich. Filed Aug. 25, 1881. (No model.)



Claim.—1. In a corset provided with side openings to entirely disclose the hip of the wearer, as described, an adjusting-strap provided with a flexible shield of substantially the shape shown at its point of attachment to the corset, said shield being adapted to prevent the flesh of the wearer from unduly protruding through the hip-opening, and prevent undue pressure on the same, as and for the purpose specified.

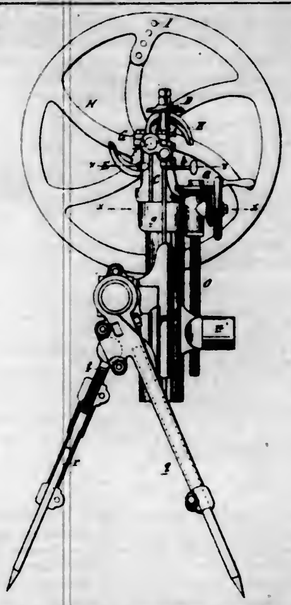
2. In combination with a corset having hip-openings to entirely disclose the hip of the wearer, as described, adjusting-straps provided with flexible shields or enlargements, and adapted to close the rear half only of said hip-openings, and having the lower and vertical sides at right angles, or nearly so, with each other, and having curved sides at their point of attachment to the corset, substantially as and for the purpose specified.

3. In combination with a corset having side openings to entirely disclose the hip of the wearer, the flexible quadrant-shaped shield B and the strap *b*, both made in a single piece, substantially as described.

258,623. ROCK-DRILL. ERWIN A. ARMSTRONG, Detroit, Mich. Filed Sept. 14, 1881. (No model.)

Claim.—1. In a rock-drill, the frame C, in combination with

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the drill-stock A, the spring J, adapted to give said drill-stock its downward movement, the ratchet-wheels K Q, screw O, driving-shaft F, and connections, substantially as described, between the driving-shaft and the ratchet-wheels, as and for the purpose specified.

2. In a rock-drilling machine, the main shaft F and cam M', rotating with said shaft, in combination with the pawl and lever L N and the ratchet-wheel K and the drill-stock, for the purpose of automatically and intermittently rotating said drill-stock, substantially as described.

3. In a rock-drilling machine, the main shaft F and cam M, rotating with said shaft, in combination with the pawl-lever E, the ratchet-wheel Q, and the screw O, for the purpose of automatically and intermittently advancing the frame supporting the operating parts, substantially as described.

4. In a rock-drill, a tripod-head provided with trunnions *n n'*, in combination with the secondary trunnions *o*, adapted to be clamped upon either of the trunnions *n n'*, and the adjustable legs *q r*, substantially as described.

5. In a rock-drill, a tripod-head provided with two trunnions, *n n'*, each having an end socket, *s*, in combination with the leg *r*, having an adjustable ball-head, *t*, whereby the tripod-head can be clamped in a horizontal position, substantially as and for the purpose specified.

6. In a rock-drill, the case C, supported on the trunnions *n n'* and legs *q r*, and the drill-stock A and spring J, operating in said case, in combination with the head D, the cams E M M', arms R N, pawls *k* L, ratchet-wheels K Q, and the screw O, as and for the purpose specified.

7. In a rock-drill, the shaft F, provided with the cam E, for retracting the drill-stock, and with cams M M', for feeding and rotating said drill-stock, in combination with intermediate mechanism, substantially as described, between the cams and the drill-stock and drill-frame, as set forth.

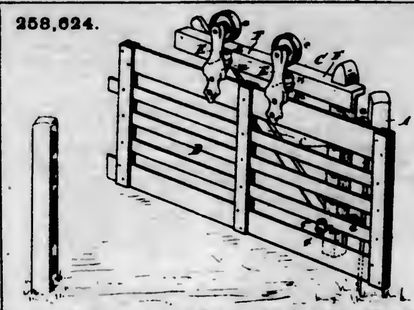
258,624. FARM-GATE. GEORGE I. BLYTH, Memphis, Mich. Filed Feb. 4, 1882. (No model.)

Claim.—1. In a sliding hinged gate, the gate-body suspended from two brackets arranged equidistant from and upon each side of its center, said brackets carrying rollers arranged at right angles to each other, and the whole combined with a hinged frame, as set forth.

2. A hinged frame the horizontal arm of which forms an angle-bar, as shown, combined with sets of rollers, each set arranged at right angles to the other, and adapted to traverse the angle-arm both upon the upper and side surfaces, and with a gate suspended therefrom, as specified.

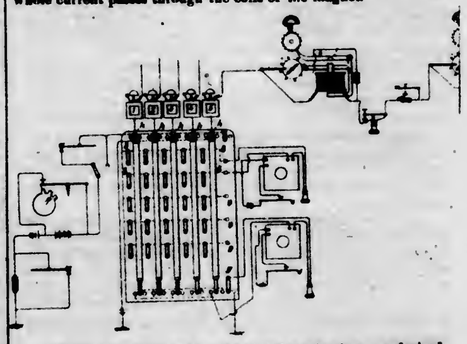
3. The combination of the post A, the hinged frame C, having arm *d*, roller *e*, and track F, the gate D, the brackets E, and the rollers *e n*, at right angles to each other, all constructed and arranged substantially as and for the purpose specified.

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258,625. ELECTRIC INDIVIDUAL SIGNALING APPARATUS. CHARLES E. BUELL, New Haven, Conn., assignor, by mesne assignments, to the United States Telephone Manufacturing Company, New York, N. Y. Filed July 6, 1881. (No model.)

Brief.—A single magnet is employed to operate step-by-step mechanism and to unlock the signaling mechanism. The escapement-wheel of the step-by-step mechanism is provided with an insulating-tooth and forms part of a shunt which is normally closed around the magnet. A polarized armature which vibrates by the currents sent to line while the shunt is closed operates or controls the escapement. The signal mechanism is unlocked by a neutral armature, which is not affected till the shunt is broken and the whole current passes through the coils of the magnet.



Claim.—1. In a step-by-step signal mechanism, a polarized electro-magnetic receiving-instrument controlling step-by-step circuit-breaking devices, and provided with a supplemental neutral armature controlling the bell.

2. In combination with bell devices and step-by-step mechanism which serves to throw the bell devices into and out of operative electrical condition, a polarized electro-magnetic receiving-instrument provided with a supplemental neutral armature.

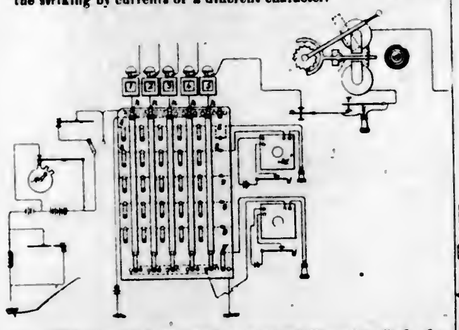
3. The combination, substantially as described, in an individual signaling apparatus, of a metal escapement-wheel connected to the main electric circuit on one side of said apparatus, and provided with an insulated tooth, and an escapement-lever having conducting-pallets electrically connected with the circuit upon the other side of the apparatus.

4. The combination, of an electro-magnetic receiver provided with a polarized and a supplemental neutral armature, a circuit closer and breaker normally closing a branch circuit around the electro-magnet, devices controlled by the polarized armature serving to operate the circuit-closer so as to break the branch circuit at a predetermined point in its movement, and bell-ringing devices operated by the supplemental armature, substantially as described.

5. The combination of step-by-step mechanism, an electro-magnet in the main-line circuit controlling said mechanism, a derived circuit around said magnet controlled by the step-by-step mechanism, and containing a resistance and a supplemental armature for said electro-magnet controlling the bell-ringing devices, and adjusted above the tension of the line-currents used in operating the step-by-step mechanism.

258,626. INDIVIDUAL SIGNALING APPARATUS FOR TELEPHONE SYSTEMS. CHARLES E. BUELL, New Haven, Conn., assignor, by mesne assignments, to the United States Telephone Manufacturing Company, New York, N. Y. Filed July 8, 1881. (No model.)

Brief.—The bell-hammer or bell is rotated by a step-by-step device, so that the hammer can only strike the bell in a given position, this position being different for the several stations on a line. The rotation is effected by currents of one kind or strength and the striking by currents of a different character.



Claim.—1. The combination, substantially as described, of a bell-hammer and a bell, movable with relation to one another into and out of position where the bell-hammer, when operated, will strike the bell, mechanism controlled by an electro-magnet adjusted to be operated by currents of one kind or strength for producing the desired relative movement, and devices adapted to be operated by an electro-magnet and currents of another kind or strength for causing the bell-hammer to strike the bell.

2. The combination, substantially as described, of a bell-hammer and a bell, movable with relation to one another into and out of position where the bell may be struck, devices controlled by a polarized electro-magnet adapted to be operated by reversals of current for producing the desired relative movement, and a neutral armature carried by or attached to the bell-hammer for causing the hammer to strike the bell, and adapted to be operated by a current of either polarity, but differing in strength from the reversed currents.

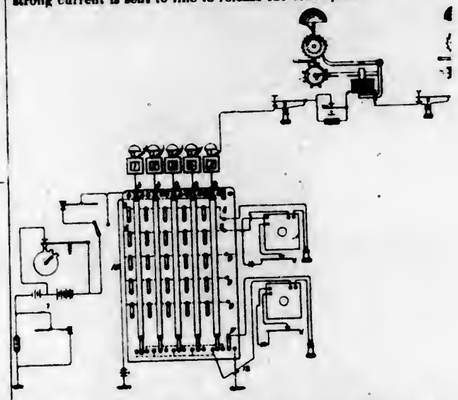
3. The combination, substantially as described, of step-by-step mechanism controlled by a polarized electro-magnetic receiving-instrument, a bell-hammer lever operated by said step-by-step mechanism and carried into and out of position where it may strike a bell, an armature attached to or carried by the bell-hammer, and a retractor for said bell-hammer lever and armature, adjusted above the tension of the currents used for controlling the step-by-step mechanism.

4. The combination, substantially as described, of an electro-magnet provided with a polarized and a neutral armature, step-by-step mechanism controlled by the polarized armature, and carrying a bell-hammer lever to which is attached the neutral armature, and a stationary bell arranged to be struck by the hammer when the latter is operated at the proper point in its movement with relation thereto.

5. The combination, upon the same main line, of a series of polarized electro-magnetic receiving-instruments, each provided with a supplemental neutral armature-lever carrying a bell-hammer, a stationary bell arranged to be struck by the hammer when it is in position for that purpose, and step-by-step mechanisms controlled by reversals of current and carrying the bell-hammer, but arranged to place the bell-hammer at the various stations into position where they may strike the bell at a time different for the various mechanisms.

258,627. ELECTRIC INDIVIDUAL SIGNAL APPARATUS. CHARLES E. BUELL, New Haven, Conn., assignor, by mesne assignments, to the United States Telephone Manufacturing Company, New York, N. Y. Filed July 6, 1881. (No model.)

Brief.—Each station is provided with a mechanical signaling apparatus which is normally held from operation by two locking-pawls. One of these pawls is held in engagement with the signaling mechanism by a disk having a notch at one point, into which the pawl may fall at a certain point in the rotation of the disk. The other pawl is attached to the lever of an armature of an electro-magnet. This magnet has a polarized armature, by which the rotation of the disk is effected, and a neutral locking-armature for the signal apparatus. The neutral armature is adjusted to require stronger currents than the polarized armature. The disk is first rotated by reversed currents till one pawl is released, and then a strong current is sent to line to release the other pawl.



Claim.—1. At two or more stations on a telephone or telegraph line, the combination of step-by-step mechanism operated by an electro-magnet in the main-line circuit, mechanism controlled by the step-by-step devices, serving to unlock the bell-ringing devices from operation at a point in the movement of the step-by-step devices different for the different stations, and a second armature for operating the bell-ringing devices, actuated by a current differing from that used in operating the step-by-step mechanism, substantially as described.

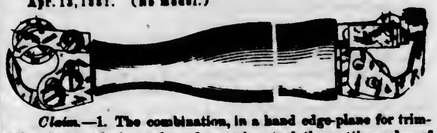
2. In a step-by-step signal mechanism, a polarized electro-magnetic receiving-instrument, which controls through the step-by-step devices mechanism for the bell devices, in combination with a neutral armature adjusted above the tension of the current used for operating the step-by-step mechanism, and serving, when operated, to ring the bell.

3. In combination with bell devices and step-by-step mechanism which locks the bell devices from operation excepting at a predetermined point, a polarized electro-magnet provided with a supplemental neutral armature.

4. The combination, with step-by-step mechanism controlled by a polarized electro-magnetic receiving-instrument and reversals of current, of locking mechanism for locking the bell-ringing devices from operation, and a second neutral armature controlled by the electro-magnet, and adapted to be operated by an increased current for ringing the bell after the step-by-step mechanism and the locking mechanism have been placed in the proper position, substantially as described.

5. The combination of the escapement-wheel and its notched flange, the locking-toe resting upon the flange, and the bell-ringing devices.

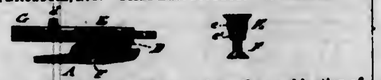
258,628. EDGE-PLANE. LUTHER D. RUSSELL, Boston, Mass., assignor of one-half to James E. Russell, same place. Filed Apr. 13, 1881. (No model.)



Claim.—1. The combination, in a hand edge-plane for trimming boot and shoe soles, of a cutting-tool the cutting-edge of which is shaped to cut away portions of the thickness of the sole to a greater depth than other portions, and a gage-roll of equal diameter throughout, arranged to bear upon the sole in front of said cutting-edge and form between it and said cutting-edge a throat of varying width, whereby a chip of varying thickness in cross-section may be cut from the sole-edge, and thus reduce it to the desired form at one operation, substantially as described.

2. In an edge-plane for trimming boot and shoe soles by hand, the combination of a cutting-tool adapted to trim and shape the edge of the sole, a revolving gage-roll adapted to bear upon the edge of the sole in advance of the cutter, and a revolving guide-roll adapted to bear against the tread-surface of the sole, substantially as described.

258,629. HOT AND COLD AIR REGISTER. RICHARD S. T. CISSEL, Elizabeth, N. J. Filed Mar. 27, 1882. (No model.)

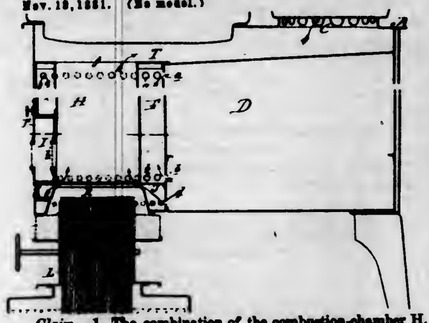


Claim.—1. In a hot and cold air register, the combination of frame A, having top and bottom bars, C and D, valves B, governing-rod B', operating-lever G, female screw E, and male screw F, substantially as set forth.

2. In a hot and cold air register, the combination of the frame A, having a bottom bar, D, and the valve-operating lever G, with a female screw, E, and a male fastening-screw, F, said female screw having a partly-cylindrical and partly-square shank to serve as a pivot for the lever and as a fastening for the bottom bar, substantially as set forth.

3. In a hot and cold air register, the combination of a frame, A, bottom bar, D, operating-lever G, female screw E, having a cylindrical shank portion, *c*, below its head, and a square end portion, *c'*, and a male fastening-screw, F, which is inserted through the frame A into the interiorly-threaded shank of the female screw, substantially as specified.

258,630. OIL-STOVE. ORSON E. CLARK, Detroit, Mich. Filed Nov. 19, 1881. (No model.)



Claim.—1. The combination of the combustion-chamber H, the flue F, surrounding said chamber, and the oven D, partly surrounding the flue F, said flue being provided with openings *a* at its upper end and with openings *b* near its lower end, whereby a constant circulation of air in the oven and flue is insured, substantially as shown, and for the purpose specified.

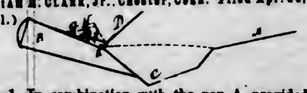
2. In an oil-stove, the combination of the outer casing having a series of holes, the flue F, having holes *a b*, the cones R, the slotted plates J and T, the flues H and E, and the oven D, substantially as shown and described.

3. In an oil-stove, the combination, with the oven D and the chimney H, of the flue F, provided with an upper series of holes, *a*, and two lower series of holes, *b* and *d*, and the chimney-base J, supported between the lower two series of holes, and forming two distinct chambers in the flue F, substantially as set forth.

4. The combination, with the outer casing and the flue F and chimney H within said outer casing, of the double-walled or chambered door I', constructed to close and fill a passage, I, leading into the chimney H through the flue F, substantially as and for the purpose specified.

5. In a lamp-stove, the flue F, fitting within the outer casing thereof, and provided with a bottom composed of a bottom plate, the cones R, and passages Q, leading to said cones, in combination with the slotted plate J and the chimney H, fitting within said flue above the cones, and a lamp having wick-tubes projecting into the latter, substantially as and for the purpose specified.

258,631. DUST-PAN. WILLIAM H. CLARK, JAMES B. CLARK, and WILLIAM H. CLARK, Jr., Chester, Conn. Filed Apr. 24, 1882. (No model.)



Claim.—1. In combination with the pan A, provided with the receptacle C and the handle B, the hinged cover D, provided with the thumb-piece F, extending back toward the handle, substantially as described.

2. In combination with the pan A and the handle B, the hinged cover D, the thumb-piece F, attached to said cover, the spring G, and the latch H, substantially as described.

258,632. PROCESS OF ADMINISTERING ANÆSTHETICS. SHERMAN COOPER, Westfield, N. J., and EDWARD DENNIS, Sing Sing, N. Y.; said Dennis assignor to Charles Hilbert, Sing Sing, N. Y. Filed Jan. 21, 1882. (No model.)



Claim.—1. That improvement in the art of administering anæsthetics which consists, first, in inclosing material saturated with the anæsthetic in a close vessel, so as to prevent waste or escape thereof; second, opening such inclosed anæsthetic to the admission of air, and, finally, forcing the air by external mechanical means through such anæsthetic, whereby it is laden with the anæsthetic and is forcibly expelled in the form of a dry gas at the point of application.

2. As a means for administering anæsthetics in the form of a dry gas, the cylindrical shell A, its cap B, and plug or valve G, forming an air-tight vessel, the absorbent packing M, means to forcibly drive a current of air through said packing, and means to convey such forced current to the point of application, substantially as shown and described.

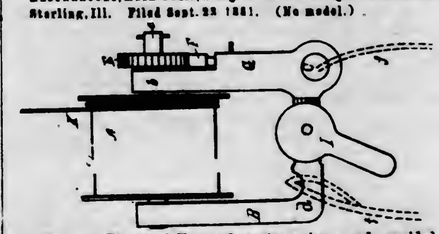
3. The shell A, its tubular cap B, a valve controlling the tubes in such cap, means to confine a packing within such shell, a tube, J, extending through the cap to near the bottom of the shell, an air-forcing apparatus, P Q, and an applying device, R S, substantially as and for the purpose described.

258,633. VAPOR-BURNER. JOHN F. DANIELS, Decatur, Ill. Filed Mar. 25, 1882. (No model.)



Claim.—The vapor-burner described, consisting of the flat circular generator-chamber *b* and passage *c*, leading downward and opening into the duct *d*, vapor-chamber having funnel-shaped mouth *e e*, and conical tip *e e*, extending down from above and provided with exit-openings *f g*, as set forth.

258,634. WINDLASS FOR WIRE-STRETCHERS. ROLLIN BASTARDOOKS, Rock Falls, assignor to Washington H. Dillon, Sterling, Ill. Filed Sept. 22 1881. (No model.)

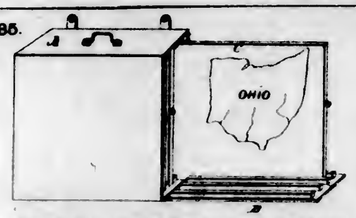


Claim.—The pawl F, seated on the spring *e*, and provided with the spur *e*, the spur *g*, the sleeve G, provided with the longitudinal slot *l* and recess *i*, the axle *a*, wheel E, frame B, drum A, and slotted lever H, in combination, whereby the pawl F can be used to engage the wheel E when either side of the frame B is upward, or can be held disengaged from such wheel at the will of the operator, substantially as shown, and for the purpose specified.

258,635. COMBINED BLACKBOARD AND MAP-CASE. ASA C. ELLIOTT, New Jerusalem, Ohio. Filed Sept. 8, 1881. (Model.)

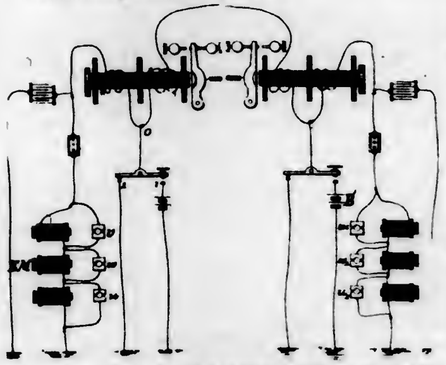
Claim.—1. The combination, with the case having a blackboard-surface and internal grooves adapted to hold a series of maps in a vertical position, of the grooved end hinged to the case and adapted to form a horizontal support for the maps when withdrawn from the case, substantially as described.

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2. The internally-grooved case A, having the hinged and grooved end B, substantially as described, and for the purpose set forth.

258,636. DUPLEX TELEGRAPH. JOSEPH E. FENN, Elizabeth, N. J. Filed Jan. 5, 1882. (No model.)

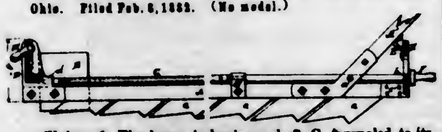


Claim.—1. The method of preventing the extra current upon a telegraph-line, set up by receiving-instruments at distant stations, from producing false signals upon the receiving-instrument at the home station in the process of transmitting signals therefrom, which consists in the simultaneous production at the home station of an artificial extra current capable of exerting an effect substantially equal but opposite to that due to the distant instrument set up in the main line upon the receiving-instrument at the home station.

2. In a telegraph system for simultaneous transmission in opposite directions, the combination, at each and both terminal stations, of transmitting devices, duplex receiving-instruments, and an artificial line having a resistance proportional to that of the main line, and electro-magnetic induction apparatus, said resistance being located upon the artificial line between the receiving-instrument and the induction-magnets, as specified.

3. In a telegraph system for simultaneous transmission, the combination, at each station, of duplex receiving-instruments, and an artificial line having an adjustable electro-magnetic device, substantially as specified, and a resistance proportional to that of the main line, situated between the receiving-instruments and the electro-magnetic devices, for the purpose set forth.

258,637. ICE MARKER AND PLOW. JOSEPH B. FISCHER, Hamilton, assignor of two-thirds to Martin Rare, Cincinnati, Ohio. Filed Feb. 6, 1882. (No model.)



Claim.—1. The beam A, having a shaft, C, journaled to its upper edge, and extending from the front to the rear end of said beam, in combination with the guide-plate B, attached to the shaft C by the adjustable arm B', the rear end of said shaft being provided with means for turning the guide-plate from one side of the beam to the other, substantially as and for the purposes specified.

2. The combination of the shaft C and the guide-plate B, connected to said shaft by the arm B', said arm being constructed in two sections, 1 and 2, one section being capable of sliding on and being secured at the desired point to the other section, substantially as and for the purposes specified.

3. The combination of the beam A and the shaft C, extending from the front to the rear end of said beam, the front end of said shaft being provided with a guide-plate, B, and the rear end with mechanism for rotating said shaft to carry the guide-plate from one side of the beam to the other, substantially as described.

4. The beam A, provided at its front end with the clevis-block D and at the rear end with the bearing-plate *e*, in combination with the shaft C, provided with the guide-plate B, one end of said shaft being journaled in the clevis-block and the other end in the bearing-plate *e*, said shaft being provided with means for causing it to rotate, substantially as and for the purposes specified.

5. The combination of the beam A and the shaft C, the latter provided with a guide-plate, B, and mechanism for rotating said shaft to carry the guide-plate from one side of the beam to the other, and for holding the shaft and guide-plate in the desired positions, substantially as and for the purposes specified.

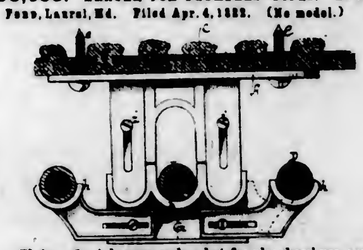
6. The beam A, provided with plate *e* and semicircular plate E, in combination with the shaft C, provided with the crank F, said crank and semicircular plate being provided with means for causing the crank to be held in the desired position, substantially as and for the purposes specified.

7. The beam A, provided with the clevis-block D and the semicircular plate E, said plate being provided with notches *h*, in combination with the shaft C, provided with the crank F and spring-pawl G, substantially as and for the purposes specified.

8. The beam A, constructed substantially as described, in combination with the shaft C, journaled at each end of the beam, and at or near the center in the clip or box *d'*, substantially as and for the purposes specified.

9. The beam A, provided with the semicircular plate E, in combination with the handles A', secured to the beam by the plates *a'* and to the semicircular plate by the angle-irons or braces E', substantially as and for the purposes specified.

258,638. HANGER FOR PLUMBERS' PIPES. EDWARD C. FENN, Laurel, Md. Filed Apr. 4, 1882. (No model.)



Claim.—1. A hanger or bracket for plumbers' use, consisting of a plate, A, with means for attachment to the ceiling, combined with a part, G, and saddles *h*, horizontally adjustable, substantially as set forth.

2. A hanger or bracket for plumbers' use, consisting of a part, A, for attachment to the wall, and a part, G, provided with saddles *h*, combined with slots *f* in the part A, whereby the fastening-screws *e* may have a lateral range of location irrespective of the location of the bracket, as and for the purpose set forth.

3. A hanger or bracket for plumbers' use, consisting of a plate, A, provided with means for attachment to the ceiling having a range of lateral location irrespective of the location of the bracket, combined with a part, G, and saddles *h h*, which are capable of vertical and horizontal adjustment, substantially as set forth.

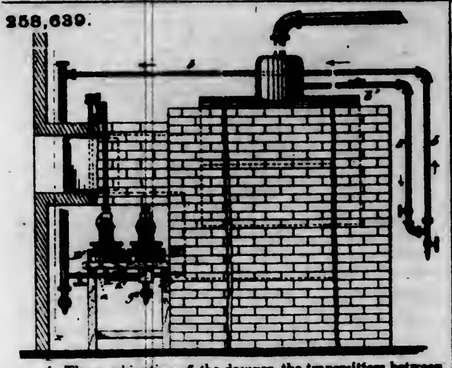
258,639. AUTOMATIC DAMPER-REGULATOR. JOHN W. FUNCK, Stapleton, N. Y. Filed Jan. 24, 1882. (No model.)

Claim.—1. The combination of a steam-boiler-furnace damper-regulator, two separate cylinders both having elastic diaphragms, the weighted regulating-levers, a slide-valve actuated by the starting-cylinder, a communication between the said diaphragms, an outlet for the surplus water of condensation from said starting-cylinder, and a stand-pipe communicating with the steam-spaces of the boiler and with the starting-cylinder, substantially in the manner and for the purpose described.

2. The combination of a starting-cylinder having an elastic diaphragm acted on by a weighted lever, a spindle fixed to the diaphragm, a valve applied to guide-recesses of the spindle, the supply and discharge pipes, the second or working cylinder, its diaphragm and loaded lever, and a stand-pipe communicating with the steam-boiler and the first cylinder, substantially as described.

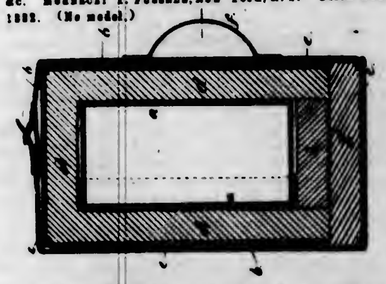
3. The combination of the two cylinders B B', their diaphragms and loaded levers, the receiving and discharge pipes, and a valve applied to the spindle, substantially as described.

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4. The combination of the damper, the transmitters between this damper, a bucket lever, *c'*, the diaphragms in the two communicating cylinders B B', the loaded lever applied to the diaphragm of the cylinder B, the valve applied to the spindle in the latter cylinder, and the stand-pipe communicating with the steam-boiler and with the cylinder, substantially as described.

258,640. NON-CONDUCTING ENVELOPE FOR ICE-CREAM, &c. MORDECAI T. FUSSELL, New York, N. Y. Filed Feb. 13, 1882. (No model.)



Claim.—1. The combination, with the box or package of ice-cream or similar material, of the canvas case *b*, the felt lining *d*, the case *e*, adapted to slip over the case *b*, and the stopper *g*, of felt, fastened into the bottom of the case *e*, substantially as set forth.

2. The combination, in an envelope for packages of ice-cream, of the canvas case *b*, the felt lining *d*, the case *e*, felt stopper *g*, plug *h*, and handle, substantially as set forth.

258,641. MACHINE FOR FORGING CARRIAGE-BOLTS. GEO. GELCHER and JOS. T. GELCHER, Reading, Pa. Filed July 11, 1881. (No model.)

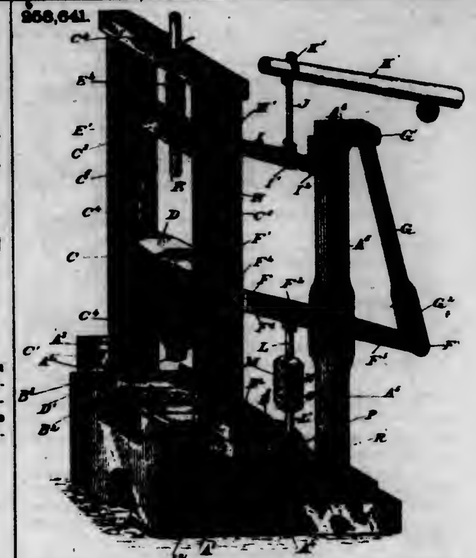
Claim.—1. In a carriage-bolt-forging machine, the combination of the following elements: an anvil, A, provided with die-recess B, guide-standards C, back post, A^1, vertical drop-hammer D, spring cushion or buffer E^1, mounted on spindle E, having collar E^1, helve F, suspension-link G, and suspension-rods H and J, intermediate or compound lever, I, with fulcrum-plate I', clips F^1 and K', connecting-rod L L^1, provided with swivel-link, M, nut N, and spring O, all arranged to be operated by suitable mechanism through the crank-pin P on the disk R, substantially as shown, and for the purpose described.

2. A vertically-guided hammer, D, in combination with a reciprocating helve, F, suspension-link G, links H and J, lever I, fulcrum-plate I', and spring-pole K, substantially as shown, and for the purpose set forth.

3. The compound lever I and its fulcrum-plate I', in combination with the hammer D, suspension-link G, crank-pin P, spring-pole K, the links J H, helve F, connecting-rod L L^1, and fulcrum-pin F^1, substantially as shown, and for the purpose specified.

4. The suspension-link G, having a bifurcated end, provided with a series of holes, G^1, and suspended from the back post, A^1, by the arm A^2, in combination with the hammer D, crank-pin P, spring-pole K, fulcrum-pin F^1, helve F, connecting-rod L L^1, links H and J, and lever I, substantially as shown, and for the purpose set forth.

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258,642. RULING-MACHINE. SIDNEY A. GRANT, Springfield, Mass. Filed Feb. 7, 1882. (No model.)



Claim.—1. In a machine for ruling two sides of a strip of paper simultaneously, the combination, with two sets of ruling devices, of the rolls *o* o^3 and adjustable pressure-rollers *n n*, to receive and bear upon the paper as it passes between said rolls *o* o^3 and said rollers *n n*, substantially as set forth.

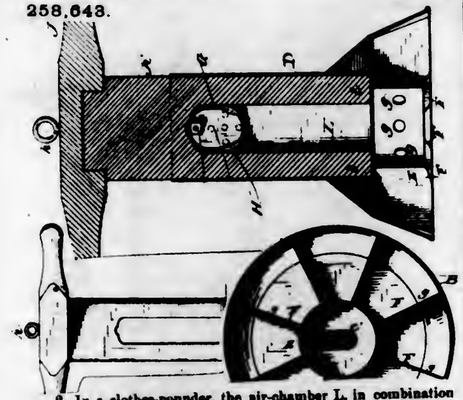
2. In a paper-ruling machine, the combination of two pairs of rods, *o* o', two tension-springs, *c*, two sets of suitable ruling devices, the rolls *o* o^3, and two pressure-rollers, *n n*, to bear upon each of said rolls *o* o^3, substantially as set forth.

3. The within-described improvement in the method of feeding a strip of paper from a roll, B, thereof to the ruling devices of a paper-ruling machine, which consists in seizing the end of said strip, which leads directly from said roll between revolving pressure-rollers, then passing said end loosely around said roll, then between a suitable tension device and under ruling devices, and again between said revolving pressure-rollers, substantially as set forth.

258,643. CLOTHES-POUNDER. CHARLES HANSHAW and THOMAS HANSHAW, Holden, Mo. Filed Mar. 8, 1882. (Model.)

Claim.—1. A clothes-pounder provided with an air-chamber, in combination with the valve located in and on one side of said chamber, and the forked center piece extending into said chamber and around said valve, substantially as described.

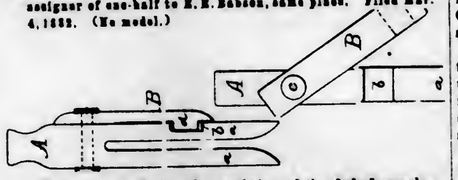
258,643.



2. In a clothes-pounder, the air-chamber L, in combination with the valve G, located in and on one side of said chamber, and the metallic cup H, inclosing the lower portion of said valve, substantially as described.

3. In a clothes-pounder, the inner rim or ring, E, provided with holes *g*, in combination with a diaphragm having a central opening, the radial vanes F, with rounded inner edges, the funnel-shaped body A, and flaring lower rim, B, substantially as described.

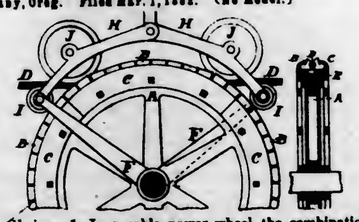
258,644. CLOTHES-PIN. JOSEPH T. HASKINS, Rockport, Mass., assignor of one-half to E. E. Babson, same place. Filed Mar. 4, 1882. (No model.)



Claim.—1. A clothes-pin consisting of the forked member having the notch through one of its sides and the swinging holder pivoted thereto, and having the projection for entering said notch, substantially as described, and for the purpose specified.

2. A clothes-pin consisting of the head A, legs *a a*, one of which has the notch *b*, the holder B, having projection *d*, and the pin *c*, passing through the holder B and head A, all substantially as described, and for the purpose specified.

258,645. CABLE-POWER WHEEL. ROBERT D. HAVEN, Albany, Oreg. Filed Mar. 1, 1882. (No model.)



Claim.—1. In a cable-power wheel, the combination of a series of eccentric grips, B B, adapted to the cable D, with the ball-and-socket joints K K, substantially as described.

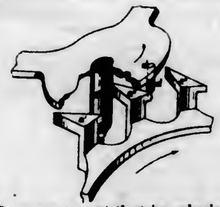
2. In a cable-power wheel, the endless spiral spring E, resting in a groove adapted to said spring, and extending entirely around said wheel, substantially as described, for the purpose specified.

3. The cap-segments C C, having the sockets *h h* and the recesses *e e*, and being secured to the wheel A, substantially as shown, for the purpose specified.

4. In connection with a cable-power wheel, the combination of the arms F F with the levers H H, carrying the sheaves I I and J J, adapted to said cable D, all substantially as set forth, for the purpose specified.

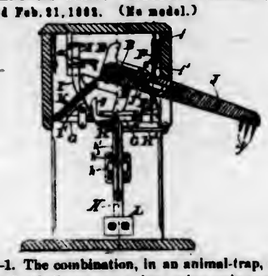
258,646. WATCH-ESCAPEMENT. ALBERT HENSELS, Ueberlingen, Germany. Filed Jan. 12, 1882. (No model.)

258,646.



Claim.—In an escapement, the triangular impulse and escapement teeth elevated above the surface of the escapement-wheel, in combination with the balance having a grooved arbor, and the impulse-pin *d*, substantially as specified.

258,647. ANIMAL-TRAP. CHARLES S. HENSLEY, Lawrence, Ind. Filed Feb. 21, 1882. (No model.)



Claim.—1. The combination, in an animal-trap, of the bait-lever H, pivoted at h, the transversely-moving spring-actuated slide G, the detent F, the ratchet-wheel E, the shaft B, and the striking-arm, substantially as set forth.

2. The combination, in an animal-trap, of a spring-driven rotating shaft, a striking-arm loosely mounted thereon, but adapted to be driven thereby by a releasable catch mechanism, said catch mechanism, an intermittently-actuated ratchet-wheel on the said shaft, a detent for said wheel, and means for operating the same, substantially as set forth.

3. The combination, in an animal-trap, with the bait-lever thereto and a long-toothed ratchet-wheel on the shaft of the trap, of a slide, I, connected to said bait-lever by a cord, I', and adapted to be operated by said ratchet-wheel, whereby said bait-lever is returned to engagement with the springing mechanism and the trap is thereby automatically reset, substantially as set forth.

4. The combination, with spring-slide G, of the bait-lever H, having pivoted catch part H' and spring h^3, whereby an elasticity is imparted to the catch part and a more certain engagement effected, substantially as set forth.

5. The combination, in an animal-trap, of a shaft, a loosely-mounted striking-arm thereon, and a rigidly-mounted ratchet-wheel on said shaft, said arm having a sliding catch, with which said wheel will engage, and, when engaged and the trap mechanism is operated, force said arm forward, but which is adapted to slide down beyond the point of engagement, and thus permit said arm to return to its normal position, substantially as specified.

6. The combination, in an animal-trap, of the arm J, having sliding catch or cross-bar J' and an inclined spring, a^3, to force said catch to the upper end of its slide when said arm is raised, all substantially as set forth.

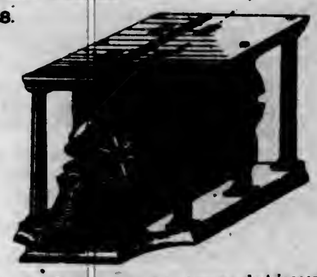
7. The combination, in an animal-trap, of the shaft B, striking-arm J, mechanism consisting of a spring, a ratchet, and a detent, and means for engaging and releasing the same for operating said striking-arm, and a spring, K, for forcing said arm back into position, substantially as set forth.

258,648. DYNAMO-ELECTRIC MACHINE. EDWIN J. HOUSTON, Philadelphia, Pa., assignor to the American Electric Company, New Britain, Conn. Filed Oct. 21, 1881. (No model.)

Brief.—The invention relates to the construction of armatures for dynamo-electric machines, and consists in so forming the carriers for the coils that the armature-cores shall be both mechanically and magnetically separated from each other. Free spaces between the ends of adjacent cores permit the passage of air for cooling the armature. The field-magnets are made hollow for purpose of ventilation.

Claim.—1. A cylindrical armature for a dynamo-electric machine, constructed in separate and distinct sections, as described, separated from one another by free-air spaces parallel to the axis of rotation of the armature.

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2. A cylindrical armature for a dynamo-electric machine, constructed in separate and distinct sections, each of which is separated from adjoining sections by free-air spaces, and is provided with distinct and independent means for securing it in place, all constructed as set forth, whereby each section is magnetically independent of the others, and may be removed without disturbing the adjoining sections.

3. The combination, substantially as described, of a spider-frame of brass or other non-magnetic material, the curved armature-sections provided with the lugs P P, and screws or equivalent fastening means for each section, whereby the lugs P P and the connected section may be fastened to the spider-frame independently of the other sections.

4. In a dynamo-electric machine, a cylindrical armature-core constructed in sections, suitably mounted upon the shaft of the machine, said sections being separated from one another by free longitudinal slots extending in a direction parallel to the axis of rotation, for the purpose of ventilating the armature and insuring a more rapid change in the magnetic polarity thereof.

5. In a dynamo-electric machine, an armature-section consisting of a curved plate provided with slots extending in a direction parallel to the line of rotation and included within the edges of the plate, said plate being wound with coils of insulated wire parallel to the axis of rotation.

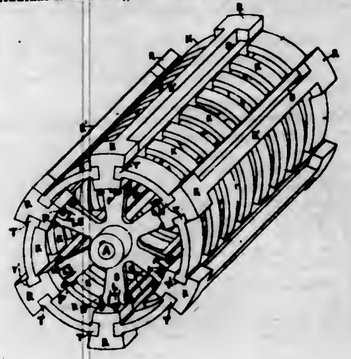
6. The combination, with a cylinder-armature constructed in independent sections separated from one another by air-spaces parallel to the axis of rotation, of compound field-magnets constructed, as described, so as to provide air-spaces between the cores and pole-pieces of the individual magnets, said spaces being parallel to those upon the armature, so as to aid in ventilation of the armature.

7. The combination, with the field-magnet plate provided with openings, as described, of hollow field-magnet cores bolted to said plates over the openings, substantially as and for the purpose described.

8. The combination, with the field-magnet plate, of two separate field-magnet cores bolted to the plate on opposite sides of a slot or perforation therein coinciding with the space between the two cores and their pole-pieces.

258,649. DYNAMO-ELECTRIC MACHINE. EDWIN J. HOUSTON, Philadelphia, Pa., assignor to the American Electric Company, New Britain, Conn. Filed Dec. 10, 1881. (No model.)

Brief.—The armature-cores are supported in longitudinal ribs, which are secured to spider-arms. These ribs are provided with lateral grooves, into which the ends of the sections of the armature-cores are seated. Space for ventilation is provided by means of longitudinal slots through the ribs or at the sides thereof.



Claim.—1. A supporting-frame for a sectional armature, constructed, substantially as described, of a spider-frame connected to the armature-shaft and longitudinal grooved supporting-ribs for the armature-sections attached to said spider-frame.

2. A supporting-frame for a sectional armature, constructed, substantially as described, of a spider-frame attached to the armature-shaft and longitudinal ribs attached to said spider-frame and shaped so as to form portions of a cylindrical outline.

3. A supporting-frame for a sectional armature, constructed, substantially as described, of supporting disks or spiders and longitudinal supporting-ribs provided with side grooves, in combination with separately-detachable armature-sections having supporting tongues or projections which enter the side grooves, and by which said sections are supported.

4. The combination, in a ring-armature, of a supporting armature-frame constructed substantially as described, and separately-detachable armature-sections supported at each end upon the armature-frame by tongues and grooves formed in or upon the armature-frame and in or upon the ends of the separate sections.

5. A supporting-frame for a sectional armature, constructed of a spider-frame and longitudinal stiffening or supporting ribs slotted or perforated, so as to provide openings for ventilation and to prevent circulation of induced currents.

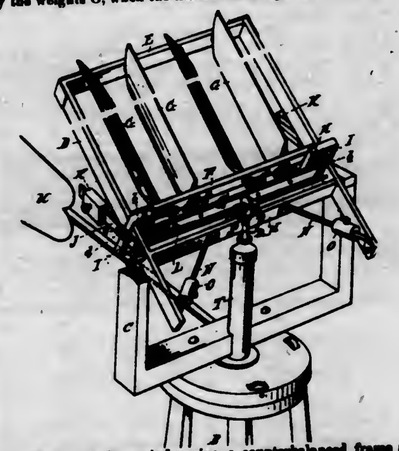
6. In an armature-core for dynamo-electric machines, the central longitudinal rib, R R, provided with a longitudinal slot or groove extending along the entire length of its upper face, and with central openings, O O, &c., and side grooves or slots, T T, substantially as and for the purpose set forth.

7. The combination, with the separately-detachable sections in a ring-armature, of longitudinal supporting-ribs provided with side grooves and central openings or slots for ventilation.

8. In an armature-core for dynamo-electric machines, the supporting-rings M M and the longitudinal ribs R R, cast in one piece with the rings and furnished with slots or grooves for the insertion of the separate detachable sections, substantially as and for the purpose set forth.

258,650. WIND-ENGINE. EPHRAIM HOWLAND, Pontiac, Mich. Filed Dec. 1, 1881. (No model.)

Brief.—The frame D is normally inclined toward the wind, the blades G being closed. When the frame D is blown back the blades G are automatically opened, whereby the wind is allowed to pass through. The frame is returned to the original position by the weights O, when the movement is repeated.



Claim.—1. In a wind-engine, a counterbalanced frame supported on journals upon the turn-table, and provided with a series of pivoted wings adapted to be opened or closed by the downward or upward movement of the frame, substantially as described.

2. The pivoted and counterbalanced frame D, provided with a series of pivoted sails or wings, G, in combination with the pivoted weight-arm J, and connections, substantially as described, between said weight-arm and the sails, whereby the movement of the frame and the weight-arm opens and closes the sails, as and for the purpose specified.

3. In a wind-engine, substantially as described, the pivoted frame D, brace-rods N, and adjustable counter-weights O, as and for the purpose specified.

4. In combination with the pivoted and counterbalanced frame

D, the pivoted sails G, provided with links *a*, the sliding bar G', provided with pins *c*, and the pivoted weight-arms J, substantially as described.

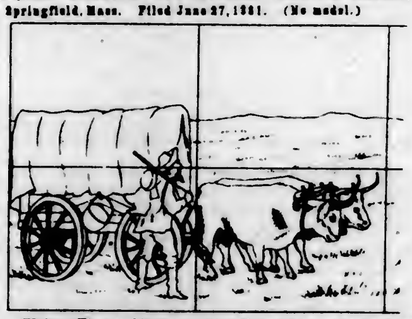
5. In combination with the pivoted and counterbalanced frame D, the pivoted sails G, and means, substantially as described, for turning said sails by the upward and downward movement of the frame, the bifurcated arm P, secured to the frame D, the rod R, and the side projections, S, on said rod, as and for the purpose specified.

6. In combination with the frame D, carrying the sails G, the sliding bar G', weight-lever J, and connections, substantially as described, between the bar G' and sails, as set forth.

7. The pivoted and counterbalanced frame D, carrying the sails G, in combination with the links *a* of said sails, the sliding bar G', the yokes I, and the pins *c* and *d* on said bar, the guides *b*, and the slotted and weighted lever J, substantially as and for the purpose specified.

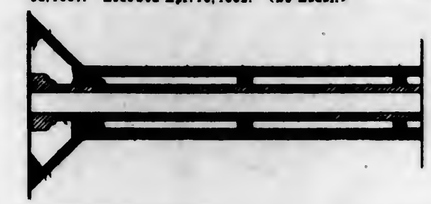
8. In combination with the frame D, provided with guides *b*, and the sliding bar G, the weight-arms J, and the rod L, rigidly connecting said weighted arms, whereby the bar G is caused to move exactly the same at both ends, substantially as described.

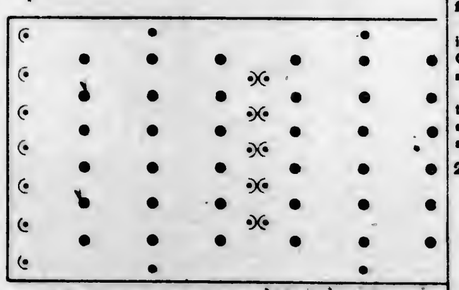
258,651. DISSECTED TOY PICTURE. GEORGE H. INGLAND, Springfield, Mass. Filed June 27, 1881. (No model.)



Claim.—The combination, with a dissected toy picture, of one or more substitute sections to be introduced into the said toy picture to convey something additional to the original dissected toy picture, substantially as set forth.

258,652. REFLECTOR. CHARLES W. JUDD, Boston, assignor of one-half to H. Baker Welch, Cambridge, Mass. Filed Apr. 23, 1881. Renewed Apr. 18, 1882. (No model.)





Claim.—1. The reflectors described, consisting of detachable frames bearing the reflective material, in combination with the columns and with one or more electric lights arranged to diffuse and distribute the light, as herein specified.

2. The combination, with extended reflective surfaces mounted upon the ceiling and walls of a room receiving the light from one or more lamps, and with pillars provided with a removable frame having a reflective coating, of said lamps, substantially as set forth.

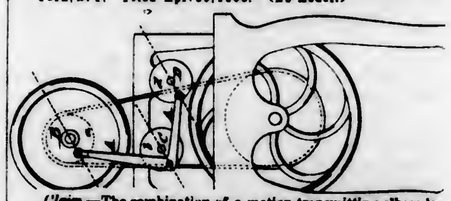
3. The system of electric lamps herein described, consisting of two rows of end lamps having their reflectors arranged at angles so as to throw the rays toward the center of the room, and the double row of lamps in the mid-length of the room, having their reflectors back to back, so as to distribute the light between the several pillars, substantially as set forth.

4. The reflectors described, for use upon columns, consisting of a circular or polygonal sheath encompassing the greater part of the column, and an inverted conical reflector mounted above it, substantially as set forth.

5. The reflector described, formed in two parts and afterward placed around the column, as set forth.

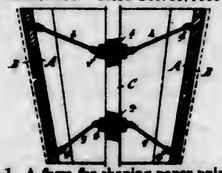
6. A room having columns provided with removable frames bearing a coating of sulphide of calcium or analogous material, so as to reflect and diffuse light while it is received, and to continue it after the extinguishment of the lamps or other lighting means, in combination with said lamps or lighting means, substantially as set forth.

258,653. MECHANICAL MOVEMENT. JOSEPH A. JONES, New York, N. Y. Filed Apr. 29, 1881. (No model.)



Claim.—The combination of a motion-transmitting elbow-lever, A, with crank-disks of a primary shaft, B, an intermediate shaft, C, and an auxiliary shaft, D, to which the elbow-lever is pivoted equidistantly from the centers of the shaft, at its ends, and at the apex of its angle, substantially as and for the purpose set forth.

258,654. FORM FOR MAKING PAPER-PULP PAILS. DAVID C. JONES, Detroit, Mich. Filed Dec. 26, 1881. (No model.)



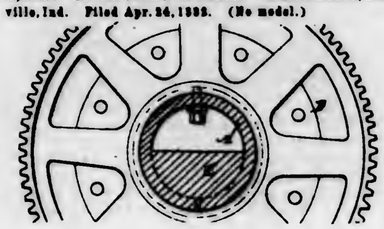
Claim.—1. A form for shaping paper-pulp pails, consisting of expansible and contractible staves permanently secured at their adjoining edges to elastic connecting-pieces, substantially as and for the purpose specified.

2. A form for the purposes specified, consisting of the rabbeted staves, elastic connecting-pieces, and means for expanding and contracting the staves from a fixed center, substantially as and for the purposes set forth.

3. In combination with the staves A, secured at their adjoining edges to elastic connecting-strips B, the screw-threaded shaft C, the nuts *e f*, and the rods *e*, substantially as and for the purpose specified.

4. In combination with the staves A, the elastic strips B, for the purpose of connecting said staves and permitting them to be expanded without exposing openings between them, substantially as set forth.

258,655. LUBRICATING-JOURNAL. GEORGE KRAPS, Evansville, Ind. Filed Apr. 24, 1882. (No model.)



Claim.—The combination, with a suitable spur or gear wheel and the side plate of a boiler, of, the journal A, formed with oil-cup C, having feed-holes *b*, and the annular flange D, for securing it to the side plate, substantially as and for the purpose set forth.

258,656. MECHANISM FOR OPERATING DOFFER-COMBS OF CARDING-ENGINES. PERLEY LAPLIN, Warren, assignor to George Draper & Sons, Hopedale, Mass. Filed Feb. 28, 1882. (No model.)

Brief.—The comb-shaft is mounted upon a bearing within a fixed sleeve and vibrated about said bearing by means of a pin fixed eccentrically upon a plate attached to a pulley revolving upon the sleeve, the extent of each vibration depending upon the degree of eccentricity of the said pin. The arms which carry the doffer-comb are grooved at their rear ends and provided with pins which are inserted in holes made in the rock-shaft, the friction of said pins holding the arms firmly.

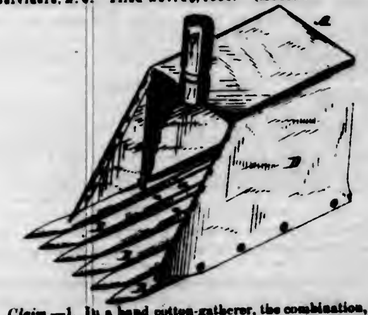


Claim.—1. The tubular fixed sleeve *a* and its bearings d^3, and the comb rock-shaft supported upon the said bearings at one side of its center, and provided at its end with a slot, *e*, combined with a driving-pulley, *c*, having a pin mounted eccentrically thereon and entered directly within said slot, the rotation of the pulley causing its pin within the said slot to vibrate the rock-shaft, substantially as described.

2. The tubular fixed sleeve *a* and the bearings d^3, the pulley *c*, mounted on said sleeve, and its eccentrically-placed pin c^2, combined with the comb rock-shaft supported at one side of its center by the bearings d^1, and provided at one end with a slot to be entered by the pin c^2, whereby by the rotation of the said pulley its stud or pin is caused to rock the rock-shaft, substantially as described.

3. The tubular fixed sleeve *a*, provided with slot 10, bearings d^1, and the cylindrical bearing 2 for the pulley, and the pulley *c* and its eccentrically-placed pin c^2, and the comb rock-shaft *d*, sustained by the bearings d^1 at one side of its center, and provided with the slot *e*, to receive the said pin c^2, combined with the comb *i* and its arms *h*, connected, substantially as described, with the comb rock-shaft, as and for the purpose set forth.

258,657. HAND COTTON-GATHERER. BENJAMIN F. LAND, Belvidere, N. C. Filed Nov. 21, 1881. (Model.)



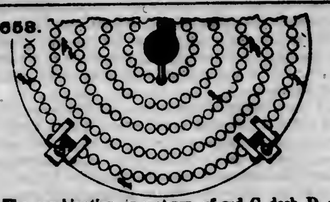
Claim.—1. In a hand cotton-gatherer, the combination, with a suitable receptacle, A, provided with handle C, of the fingers B, having shanks *a*, which, when together, form one of the sides of the receptacle, substantially as and for the purpose set forth.

2. In a hand cotton-gatherer, the fingers B, having shanks *a*, in combination with the frame composed of the wires *c d e f g* h, bent as shown, and having the handle C, said frame being covered with a suitable material, substantially as and for the purpose specified.

258,658. CHURN. WILLIAM D. LEAVITT, Cincinnati, Ohio, assignor of one-half to George B. Moore, same place. Filed Sept. 13, 1881. (No model.)

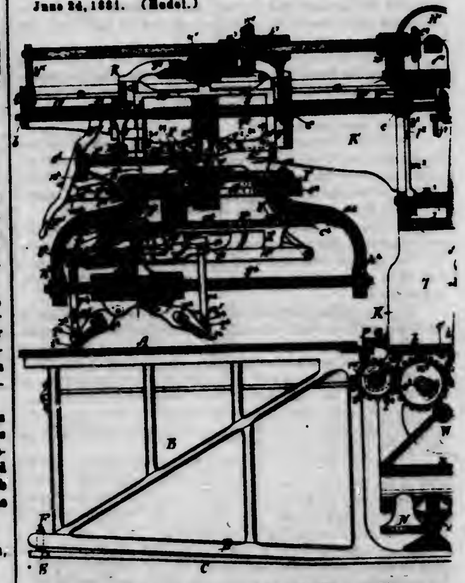
Claim.—1. The perforated disk F *f*, attached to the pierced dash-rod C *c* by pins E E, whose heads *e e* snap into said perforations *f*, as and for the purpose described.

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2. The combination, in a churn, of rod C, dash D, and adjustable perforated disk F *f*, which latter carries the guiding-rollers G, for the purpose stated.

258,659. MACHINE FOR SCOURING, SETTING, OR GLAZING LEATHER. FREDERIC A. LOCKWOOD, Boston, Mass. Filed June 24, 1881. (Model.)



Claim.—1. In a machine for dressing leather, a table or support for the skin and the truck and beam, combined with a carriage composed of a trundle-frame and a vertically-adjustable head therein, adapted to support the guide-rod for the tool-carrier, substantially as and for the purposes described.

2. The truck and its beam, the trundle-frame of the carriage, movable thereon, and the vertically-adjustable head mounted in the trundle-frame, combined with the yoke, its guide-rod, the tool-carrier, and with means to reciprocate the tool-carrier upon its guide-rod while the yoke and guide-rod are locked or held in position.

3. In a leather-dressing machine, the combination of a screw-shaft with and to operate the carriage transversely of the table to effect the traverse of the dressing-tools and their operative devices transversely of the table.

4. The truck and its beam, provided with guides or ways and the carriage fitted thereto, combined with the screw-shaft and means to rotate it, whereby the carriage is moved positively.

5. The skin-supporting table and the truck, combined with a nut and screw to move the truck positively longitudinally of the table, substantially as and for the purposes described.

6. The skin-supporting table, the truck, and nut and screw to move the truck longitudinally of the table, combined with the carriage and a screw to move the carriage transversely of the table, substantially as described.

7. A leather-dressing machine containing the following instrumentalities, viz: a skin-supporting table, a truck, means to move the truck longitudinally of the table, an independently-movable carriage which, by its change of position, places the dressing-tools in the desired position with relation to the table, means to move the said carriage transversely of the table, and a single guide-lever and connections between it and the devices which directly con-

trol the movements of the truck and carriage, whereby the said single guide-lever, by moving it more or less in one or the other direction, insures the separate or joint movement of the truck and carriage in either of their directions, substantially as and for the purposes described.

8. In a leather-dressing machine, the skin-supporting table, the truck and the carriage movable thereon, and the shaft J' of the carriage, adapted to impart reciprocating movements to the tool-carrier and dressing-tools, combined with the shaft X and shaft s^2, and intermediate gearing to directly and positively drive the said shaft J' in all the positions of the truck and carriage and dressing-tools with relation to the table, substantially as described.

9. In a leather-dressing machine, the trundle-frame of the carriage, combined with the vertically-adjustable head therein, adapted to support the shaft J', and also the yoke and guide-rod for the tool-carrier, substantially as described.

10. In a leather-dressing machine, the truck, the trundle-frame of the carriage, and the vertically-adjustable head therein, combined with the axially-movable yoke and its guide-rod, substantially as described.

11. The skin-supporting table, the truck, the trundle-frame movable on the truck, and the head fitted to move in the trundle-frame, combined with the shaft n^2 and intermediate mechanism to adjust the head vertically in the trundle-frame, substantially as and for the purpose described.

12. In a machine for dressing leather, the head of the carriage, the sectoral toothed plates or levers pivoted thereon and connected at their outer ends with the trundle-frame, and the toothed racks n^2, combined with the toothed bell-crank levers and means to operate them simultaneously, substantially as described.

13. The rock-shafts G' W', extended through the beam B', combined with the guide-lever and with connecting mechanism between the said lever and rock-shafts to enable the said lever to turn them in the proper directions to ship the belts, substantially as described.

14. The guide-lever and the rock-shaft G', actuated by it, combined with the belt-shipper s^3 and intermediate mechanism, whereby the belt s^3 may be shifted to control the movements of the truck in one or the other direction, substantially as described.

15. The guide-lever and the rock-shaft W', actuated by it, combined with the belt-shipper and intermediate mechanism, whereby the belt y may be shifted to control the movement of the carriage transversely of the skin-supporting table, substantially as and for the purpose described.

16. The combination, in a leather-dressing machine, of the beam of the truck, the carriage thereon, the screw-shaft S, to move it on the beam, the belt y, belt-shipper d', and the fast and loose pulleys with which the said belt co-operates to effect the rotation of the said screw, substantially as described.

17. In a leather-dressing machine, shafts X and s^2, located at right angles to each other, combined with intermediate gearing, the reciprocating dressing-tools, the traveling carriage and the pulleys, the truck having beam B', and table, said truck, carriage, and tools being operated by the rotation of the said shafts, substantially as described.

18. In a leather-dressing machine, the pulleys A' B' V b^2 s^3 f', the belts y and s^3, the stop-rod d', and shipper-arm s^3, the latter guiding the belt s^3 and being secured to and moving with the rod, substantially as described.

19. In combination, the rod d', shipper-arms d' s^3, toothed bars f' b^2, and rock-shafts W' G', with suitable intermediate mechanism, whereby the rocking of either shaft tends to move the shipper-arms in one or the other direction, substantially as described.

20. The combination, in a leather-dressing machine, of the truck and beam, the carriage, and driving-shaft X, pulleys W and H', the rock-shafts G' W', and suitable intermediate mechanism, whereby the continuous rotation of the said pulleys in one direction effects the rotation in either direction of the devices which engage and move the truck on its rails and the carriage on the truck, substantially as described.

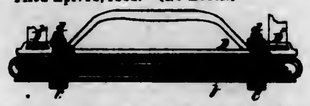
21. The combination of the rock-shaft W' and screw-shaft S, the truck, its beam, and the trundle-frame of the carriage, combined with intermediate mechanism, whereby the said screw-shaft is rotated to move the trundle-frame upon the truck, and the rock-shaft is enabled to control the rotations of the said screw-shaft, substantially as described.

22. In combination, the truck and its beam, the carriage, the rock-shafts G' W', the screw-shaft S, and screw-rod s^3, nut r^3, the guide-lever F', and suitable connecting mechanism, whereby said guide-lever controls the rotation of the shaft S and nut r^3, and of the movements of the truck and of the carriage on the truck, substantially as described.

23. The rock-shaft W' and connected lever E', and the carriage, combined with the shipper-rod p^2, connected with the said lever, whereby as the rod p^2 is moved in the carriage as the latter reaches its extreme positions the belt-shipper d' is moved to ship the belt y upon the loose pulley B' and stop the movement of the carriage, substantially as described.

24. In a leather-dressing machine, the truck, the loosely-held stop-motion rod d', and its connected arm s^3, whereby as the rod d' is moved on the truck as the latter reaches its extreme positions the said arm s^3 moves the belt s^3 upon the idle-pulley b^2 and stops the movement of the truck, substantially as described.

258,660. PACKAGE-COVERING. JOHN W. MARSH, Oxford, Mass. Filed Apr. 12, 1882. (No model.)



Claim.—1. The combination of the sheet of water-proof fabric A and inclosing-case B, provided with straps d, or means for its temporary attachment to a shawl-strap bar or handle, substantially as and for the purpose set forth.

2. The combination, with the shawl-strap handle D, of the sheet of fabric A and the case B, for containing said fabric when folded, substantially as set forth.

3. The combination, with the handle-bar D, having straps D' D', of a case or receptacle, B, and a sheet of fabric, A, adapted for covering hand-packages and capable of being folded and inclosed within said case when not required for use, substantially as hereinbefore set forth.

258,661. FIRE-BRICK COMPOUND. EDWARD A. MARTIN, Virginia City, Nev. Filed Apr. 1, 1882. (No specimens.)

Claim.—The herein-described composition of matter suitable for and forming fire-brick, consisting of silica, potash, or soda and lime, in substantially the proportions specified.

258,662. METHOD OF FORMING WAVED HAIR-FRONTS. JOHN B. MCCARTHY, Philadelphia, Pa. Filed Mar. 25, 1882. (No model.)



Claim.—The method of forming hair-waves hereinbefore described, which consists, first, in stretching or straightening natural or artificial curly hair over a block, and in securing said hair upon said block in a straightened or stretched condition by means of strings, cords, or kindred devices passed over said straightened hair and secured to said block; second, in drawing, working, or otherwise manipulating said straightened hair forward and backward upon said block, between and under said strings or cords, in order to form the desired wave therein; third, in treating the wave so formed with moisture by means of a wet towel or other moisture-containing article applied thereto; and, finally, in drying said wave upon said block.

258,663. PAINT COMPOUND. WILLIAM JAY MCDONALD, Gainesville, Ga.* Filed Feb. 28, 1882. (No specimens.)

Claim.—A paint composition consisting of gas-tar, asphaltum varnish, Venetian red, yellow ocher, gum-shellac, salt, sal-soda, spirits of turpentine, alcohol, carbolic acid, and water, in the proportions substantially as herein set forth and described.

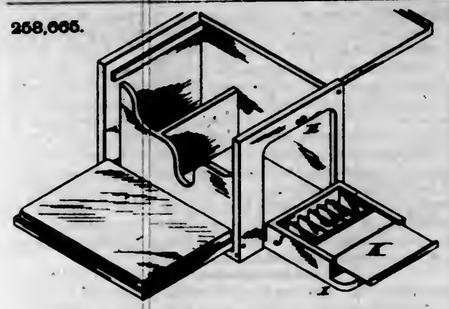
258,664. PROCESS OF MAKING BREWERS' YEAST. FRIEDRICH MEYER, Wilmington, Del. Filed Feb. 28, 1882. (No specimens.)

Claim.—The herein-described process of making a present-use yeast, consisting in, first, making a first yeast from hops, malt, and water in the proportions and at the temperatures described, then a second yeast from hops, malt, and water and the first yeast, as described, then making a third yeast from malt, hops, and water and the second yeast, as described, and compounding this third or stock yeast with malt, hops, and water to produce the fourth or present-use yeast, substantially as described.

258,665. RUBBER-STAMP CABINET. JAMES HUDNOCK, Jr., Cincinnati, Ohio. Filed Mar. 24, 1882. (No model.)

Claim.—The rubber-stamp cabinet having a folding top and front, the opening H in the end of the cabinet, the door I, pivoted in said end, the tray J, fixed to said door, and the sliding lid K of said tray, all combined substantially as and for the purpose set forth.

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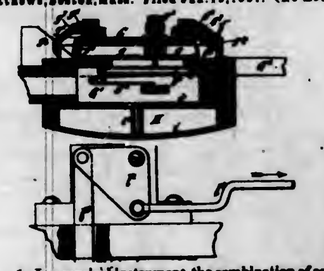


258,666. HAND-STAMP. JAMES HUDNOCK, Jr., Cincinnati, Ohio. Filed Mar. 24, 1882. (No model.)



Claim.—The die-plate B, having threaded boss H and cavity E, handle C, threaded ferrule D, fixed on the handle and projecting therefrom, and the disk F, having screw K and notches J, all combined substantially as and for the purpose set forth.

258,667. MECHANICAL MUSICAL INSTRUMENT. ORWELL H. NEWMAN, New York, N. Y., assignor, by mesne assignments, to John Michel, same place, James Morgan, Brooklyn, N. Y., and Jane Matthews, Boston, Mass. Filed Jan. 13, 1881. (No model.)



Claim.—1. In a musical instrument, the combination of sound-producing devices, a rest provided with ducts for the passage of air to operate said sound-producing devices and with ports extending from said ducts to the side of the rest, a traveling music-sheet for controlling the passage of air through said ducts, and a cheek-piece adjustably secured to the side of said rest, and constructed with ports ranging with the ports in said rest, whereby the sound-producing devices of one octave may be coupled with sound-producing devices of corresponding notes in another octave, substantially as specified.

2. In a musical instrument, the combination of sound-producing devices, a rest provided with ducts for the passage of air to operate said sound-producing devices and with ports leading from said ducts alternately to opposite sides of the rest, a traveling music-sheet controlling the passage of air through said ducts, and cheek-pieces adjustably secured to opposite sides of said rest, and constructed with ports ranging with the ports in said rest, one of said cheek-pieces serving to couple alternate sound-producing devices and the other the intermediate sound-producing devices in one octave with devices of corresponding notes in another octave, substantially as specified.

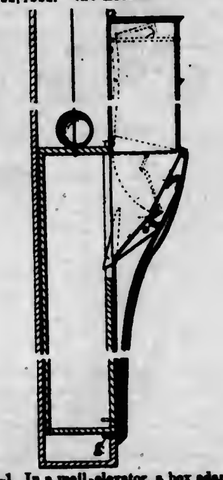
3. The combination, with the rest C', of a cheek-piece adjustably secured upon the side thereof, and a link, F, lever F, and rod or stop-draw $\bar{f}$, for adjusting the position of said cheek-piece, substantially as specified.

4. The combination, with the rest C', of cheek-pieces J J', a bridge, $\bar{l}$, connecting said cheek-pieces, and a link, F, lever F, and rod or stop-draw $\bar{f}$, connected with one of said cheek-pieces, substantially as specified.

5. In a wind musical instrument, the combination of a set of sound-producing devices, an exhaust chest or chamber with which they communicate, a hollow sound-board, also communicating with said chest or chamber, and means for exhausting air from said chest or chamber and also from said sound-board, for applying tension to said sound-board, substantially as specified.

6. The combination of the reeds g, the valves g', the exhaust chest or chamber G', the sound-board composed of the boards $\bar{i}$ $\bar{i}'$, the latter of which is provided with openings, and the posts $\bar{i}^2$, and the bellows $\bar{G}^2$, for exhausting air from said chest or chamber to cause the outer board, $\bar{i}$, to be bulged inward by atmospheric pressure, and tension to be applied to the board $\bar{i}'$ through the posts $\bar{i}^2$, substantially as specified.

258,668. MAIL-ELEVATOR. JOHN W. PAINE, Baltimore, Md. Filed Apr. 22, 1882. (No model.)



Claim.—1. In a mail-elevator, a box adapted to receive the mail and discharge the same into a suitable car, in combination with a hoisting device and means for lowering the car to a position to receive the contents of the box.

2. In a mail-elevator, a box adapted to receive the mail, a car provided with suitable hoisting and lowering mechanism, and means for retaining mail-matter placed in the box until the car is lowered into position to receive it, as set forth.

3. In a mail-elevator, a receiving-box, a hoisting-car, suitable elevating and lowering mechanism, and a slide or bottom which normally closes the bottom of the receiving-box, and is automatically operated to open by the descent of the car, as set forth.

4. In a mail-elevator, a receiving-box, a hoisting-car, suitable elevating and lowering mechanism, a latch for securing the car in position to receive mail-matter placed in the box, and a cover for the bottom of the box which automatically closes as the car rises and opens as it descends, as set forth.

5. In combination with the receiving-box and hoisting-car, a latch for securing the car concealed when the box is closed, and an automatically-operating delivery-chute, as set forth.

6. In combination with the receiving-box and hoisting-car, the swinging bottom and supplemental chute automatically operated, as set forth.

7. In combination with the receiving-box and shaft, the hoisting-car and automatically-operating delivery chute and bottom, and mechanism at the top of the shaft for sounding an alarm on the arrival of the car and for lowering the same, as set forth.

258,669. WATCH-MAKER'S LATHE. DAVID L. PETITPIERRE, Couvet, Neufchatel, Switzerland. Filed Jan. 26, 1882. (No model.) Patented in France Dec. 13, 1881.

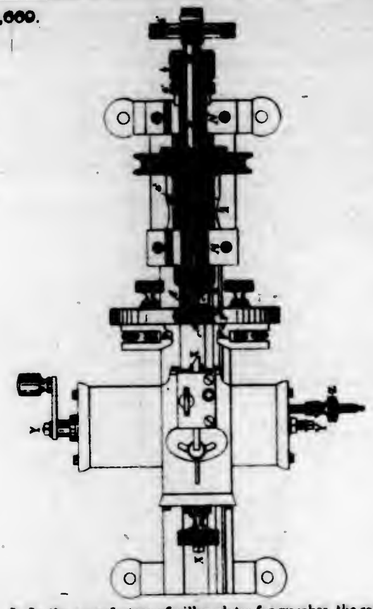
Claim.—1. In a watch-maker's lathe, the tubular shaft A, plate P, and pin C, in combination with the pin B, disk B', and nuts a' $\bar{b}$, substantially as and for the purpose specified.

2. The plate P', in combination with the cap r', secured thereto, the pins a' $\bar{b}'$ in the cap, and the dogs q' upon the plate P', substantially as and for the purpose specified.

3. The plate P', in combination with the cap r', pins a' $\bar{b}'$, dogs q', and push-pieces $\bar{s}'$, substantially as and for the purpose specified.

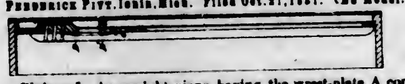
4. The strap U, support T, spindle W, and boring or sinking tool, in combination with the screw R, passing through such support, and the shoe S upon the strap U, substantially as and for the purpose specified.

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5. In the manufacture of pillar-plates for watches, the several plates P' P^{a} P^{a}, &c., adapted to hold the pillar-plate during the several operations, each provided with a cap to receive the pillar-plate, pins to position the pillar-plate, and dogs to hold it within the cap, the caps and pins so placed that the pillar-plate is brought to its proper position successively upon the respective plates to bring the center to be bored central with the axle of the plate to which it is held, as specified.

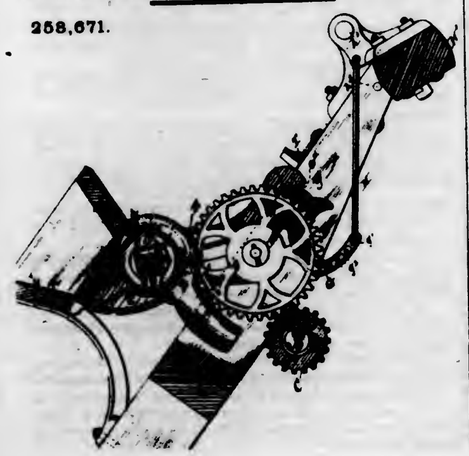
258,670. SOUNDING-BOARD FOR UPRIGHT PIANO-FORTES. FREDERICK PITT, Ionia, Mich. Filed Oct. 21, 1881. (No model.)



Claim.—1. An upright piano having the wrest-plate A constructed in one piece with the frame B, or rigidly attached thereto, in combination with an undivided sound-board extended above and beyond the range of the tuning-pins, substantially as described.

2. An upright piano-forte having an undivided sound-board extended above or beyond the range of the tuning-pins, in the manner and for the purpose substantially as specified.

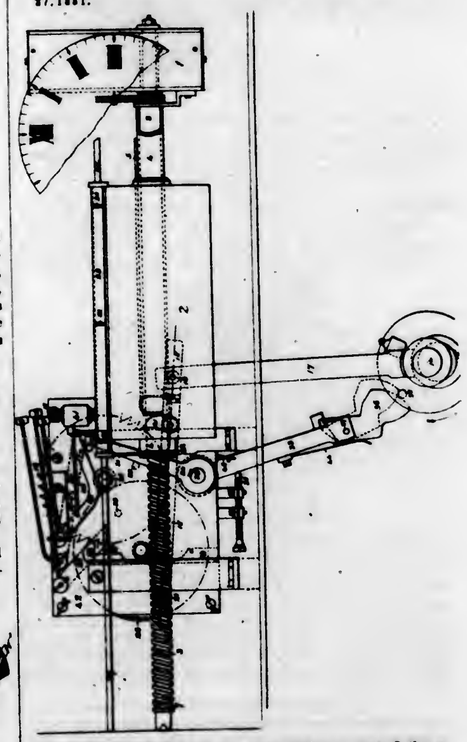
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258,671. SEED-PLANTER. LUTHER E. PRESTON, St. Cloud Minn., assignor of one-half to the Rosenberger Manufacturing Company, same place. Filed Oct. 15, 1881. (No model.)

Claim.—As an improvement in seed-planters, the combination of the gear-wheel C on the main axle B, the swinging bracket E, carrying the gear-wheel D, and having a hooked or semicircular recess, e', at its upper end, by which it is hooked or hung upon the axle e of the seeding-cylinder, and a semicircular recess, e^3, in its free lower end, the lifting-pawl G, pivoted at the side of the frame, the upper arm of which, g, engages the recess e^3 of bracket E, and having its lower arm, g', provided with a series of perforations, g^3, and the lifting-rod H, the lower end of which engages the perforations g^3 while its upper end is adjusted in a casting, h, on the eccentric-shaft H', all arranged and operating substantially as and for the purpose specified.

258,672. RECORDER FOR LOCOMOTIVES. ALEXANDRE LOUIS POUGET, Montpellier, France. Filed Nov. 5, 1881. (No model.) Patented in France July 8, 1880, No. 137,637, and June 25, 1881; in Belgium Oct. 14, 1880, No. 53,776, and Aug. 8, 1881; in England (provisional patent) July 23, 1881, and in Italy Aug. 27, 1881.



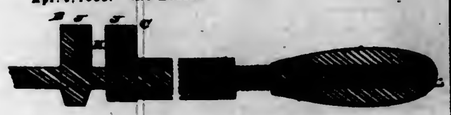
Claim.—1. The combination of the stationary screw 3, the rotating cylinder 2, provided with the keyway, the sliding key 6, and the rotating tube 4, provided with the feather 5, whereby a rotative, and at the same time a progressive, motion is imparted to the cylinders, while at any time the progressive motion may be arrested by raising the sliding key out of the screw, and whereby when such disconnection is effected the cylinder can be freely moved by hand longitudinally on the tube for the purpose of setting it at any particular point, when progressive motion can be again established by reinserting the key in the thread of the screw, substantially as described.

2. In a mechanism for marking the fractions of kilometers (or other measures of distance traveled by a locomotive) on a recording-sheet, the combination, with the shaft 14, rotated by a road-wheel running on one of the locomotive-wheels, and provided with the eccentric 15, of the eccentric-rod 17, lever 18, pawl 21, ratchet-wheel 16, carrying studs 23, lever 24, hammer 8, and punch or marker 10, substantially as described.

3. In a mechanism for marking on a recording-sheet units of distance traveled by a locomotive, the combination, with the shaft 14, rotated by a road-wheel running in contact with one of the wheels of a locomotive, and provided with the eccentric 15, of the eccentric-rod 17, lever 18, pawl 21, ratchet-wheel 16, pinion 26, gear 26, provided with stud 27, lever 28, hammer 13, and punch or marker 12, substantially as described.

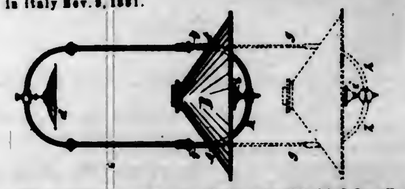
4. The mechanism for marking the retrograde travel of a locomotive on a recording-sheet, consisting of the shaft 14, rotated by a road-wheel running in contact with one of the wheels of a locomotive, which road-wheel is provided with a disk carrying the pin 38, the double lever 33 34, spindle 30, pawl 36, provided with spring 44, bent lever 60, spring 43, hammer 9, and punch or marker 11, substantially as described.

258,673. WRENCH. JOHN E. PRESTON, Brunswick, Mo. Filed Apr. 6, 1882. (No model.)



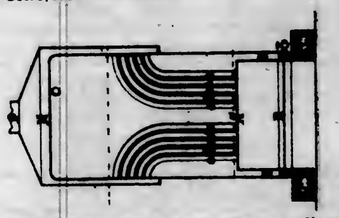
Claim.—In a wrench, the jaws B C, having V-shaped recesses J, with convex inner sides, K, as and for the purpose set forth.

258,674. LAMP-SUPPORT. HEINRICH RAUPP, Heilbronn, Wurtemberg, Germany. Filed Mar. 1, 1882. (No model.) Patented in Italy Nov. 9, 1881.



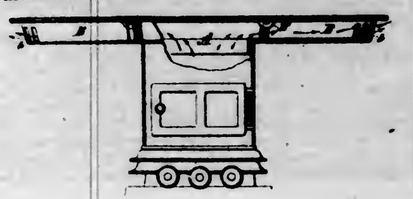
Claim.—In a lamp-support of the extensible kind described, the combination of the fixed and extensible tubes a g, the stuffing-boxes provided with clamping-screws, the transverse tube h, connecting the lower ends of the tubes g, the chain B, the supports A A therefor on said tube h, and the burner i between said supports, all substantially as and for the purposes described.

258,675. FIRE-TUBE STEAM-BOILER. DAVID RUSHAW, Gohasset, assignor of one-half to Harvey T. Litchfield, Hull, Mass. Filed Dec. 1, 1880. (No model.)



Claim.—In a vertical steam-generator, the group of heat tubes extending from the crown-sheet to and through the entire body of water and approaching all sides of the shell, in combination with a hood constructed in such manner that the space between the hood and the shell of the boiler is less in area than the combined area of all the tubes, for the purpose set forth and described.

258,676. PETROLEUM COOKING-STOVE. CHRISTOPHER RISBERG, New York, N. Y. Filed Mar. 11, 1882. (No model.)



Claim.—1. In a petroleum or other cooking-stove, a hollow extension-top flue provided at its outer end with a series of openings for the escape of gas, and an open inner end, in combination with a horizontal flue-section into which the main stove, a semi-circular hook attached to the hollow extension-flue, and the socket in the top A, by which the two flues are locked together, substantially as described.

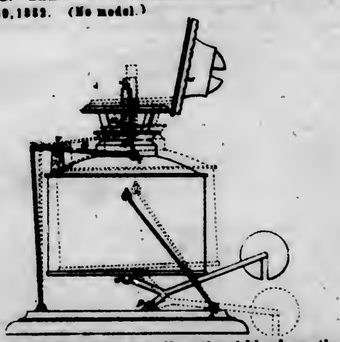
2. In a petroleum or other cooking-stove, the top part, A, having a series of draft-openings, a, in combination with an extension, detachable flue with an open end adjoining said top part and a series of exit-openings, b, in its outer end, and with the locking devices B' A', substantially as described.

258,677. HORSE-COLLAR FASTENING. ALFRED B. ROBINSON, Lebanon, Mo. Filed Mar. 27, 1882. (No model.)



Claim.—In a horse-collar, the combination, with the end A, having shouldered tongues a, of the end B, having recesses b, caps c, formed with elongated openings d, and the rod C, having curved end e, and constructed to operate substantially as and for the purpose set forth.

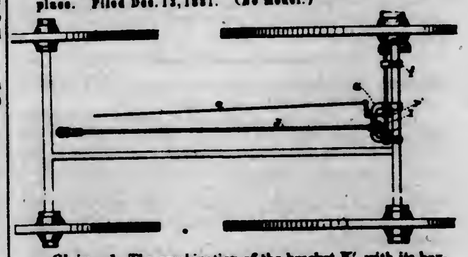
258,678. LAMP. WALTER SCOTT, Hoosick Falls, N. Y. Filed Mar. 30, 1882. (No model.)



Claim.—1. In an automatically-extinguishing lamp, the combination of an oil-receptacle with a counterpoise-weight or its equivalent connected by mechanism to the extinguisher near the flame, whereby the movement of receptacle after a certain amount of illuminating material has been consumed actuates the extinguisher and quenches the light or flame, substantially as and for the purpose set forth.

2. In an automatically-extinguishing lamp, a receptacle for the illuminating material, supported on a pivot and connected by suitable mechanism to an extinguishing device, combined with a counterpoise or balance adjustable at will, whereby the time at which the extinguisher shall quench the flame may be predetermined.

258,679. REIN-HOLDER. RICHARD E. SHARPER, San Francisco, Cal., assignor of one-half to Adolph T. F. Obermeyer, same place. Filed Dec. 13, 1881. (No model.)



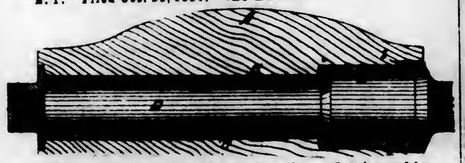
Claim.—1. The combination of the bracket K', with its boxing K, divided sleeve S, with its curved slots s, having shoulders c, and the shaft J, with its spring b, lugs a, and pawls T, having

shoulders *d'*, and the loose pinion L, with its ratchet-hub *l* and groove *i*, substantially as and for the purpose herein described.

2. The combination and arrangement of the shaft J, with its feathered pinion I and its spring *b*, lugs *a*, and pawls T, with their shoulders *c'*, sleeve S, with its curved slots *s*, having shoulders *e*, loose pinion L, with its ratchet-hub *l* and groove *i*, bracket K', with its box K, pinion M, and rod N, with its forked head *n*, substantially as and for the purpose herein described.

3. The dash-board O, having the spools *o o* upon its side, in combination with the winding-shaft N, substantially as and for the purpose herein described.

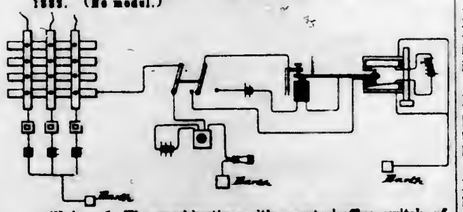
258,680. CARRIAGE-AXLE. ALFRED E. SMITH, Bronxville, N.Y. Filed Oct. 20, 1881. (No model.)



Claim.—1. An axle with an enlarged tapering journal-bearing at its rear end, up which a detachable and adjustable flanged sand-band or collar is pressed or driven until it is placed beyond the inner end of the axle-box.

2. A detachable flanged sand-band or collar which is driven up on the taper of the enlarged bearing at the rear end of the axle until it is beyond the rear end of the axle-box when said box is properly fitted to its axle, and its inner end revolves within the cup formed by the flange projecting toward the front end of the axle-box or against the collar which it may abut.

258,681. SIGNALING APPARATUS FOR TELEPHONE-EXCHANGES. JAMES G. SMITH, Hackensack, N.J. Filed Mar. 23, 1882. (No model.)



Claim.—1. The combination, with a central-office switch, of devices for connecting a subscriber's line to the signaling apparatus and auxiliary switch devices for completing the connection of the local battery by which the signaling apparatus is operated, combined as set forth, so that the act of connecting any line to the signaling apparatus simultaneously and by the same operation completes the circuit of the local battery or batteries by which the signaling apparatus is controlled or operated.

2. The combination, with a central-office switch, of apparatus for producing reversed electric impulses, a local battery or batteries and electro-magnet for operating said apparatus, a switch device for connecting any subscriber's line to the reversed-current apparatus, and auxiliary switch devices for simultaneously and by the same operation completing the circuit of the local battery.

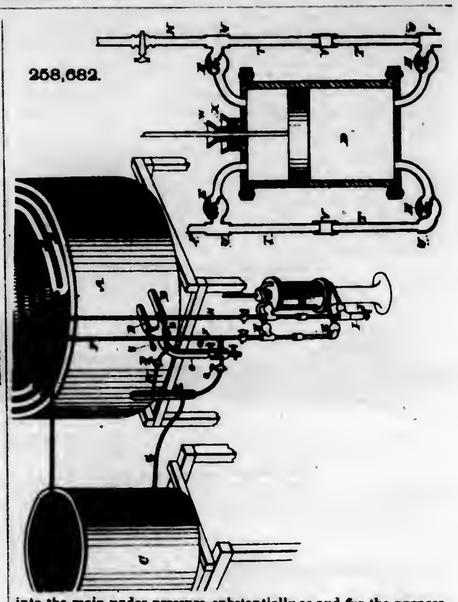
3. The combination, substantially as described, of a pole-changer, a local battery and operating electro-magnet for said pole-changer, a switch for completing the circuit from said pole-changer to line, and auxiliary switch devices for completing simultaneously and by the same operation the circuit of the local battery and operating electro-magnet.

258,682. ICE-MACHINE. GEORGE W. STEVENS, San Francisco, Cal. Filed Dec. 30, 1881. (No model.)

Claim.—1. In an ice-machine, and in combination the freezing and condensing tanks, the vertical chamber L, with closed extension at the top, and having the supply-pipe G, leading into the lower part from the condenser, and the pipe N, leading from the upper part into the distributing-main O, in combination with the trap M and cocks, as shown, connected with both chamber and main, so that any heavy liquid will gravitate into it, substantially as herein described.

2. In an ice-machine, the main O, having the small supply-pipe N, opening into it from the pressure-chamber L, and in the direction of its length, so that the liquid may be blowed through

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into the main under pressure, substantially as and for the purpose herein described.

3. In an ice-machine, and in combination with the chamber L, pipe N, with its cock P, and the main O, the small branch pipes B, leading from the main through the freezing-tank A, and having the wire-gauze or equivalent distributing material compressed into them, substantially as herein described.

4. In an ice-machine, and in combination with the chamber L, pipe N, with its cock P, the distributing-main O, and the branch pipes B, the pipes S, secured centrally within the pipes B, to spread the liquid into thin sheets within the outer pipes, substantially as herein described.

5. In an ice-machine, and in combination with the chamber L, pipe N, cock P, distributing-main O, and branch pipes B, the hollow pipes S, extending into the pipes B, and having their interior ends closed and their outer ends fitted with couplings, whereby steam or hot water may be introduced, substantially as and for the purpose herein described.

6. The pump D, having the valve-chambers E above and below, as shown, and the connecting-pipes F H, formed with screw-threads at opposite ends to connect with the couplings U, in combination with the leaden connecting-sleeve V, inclosing the meeting ends of the pipes, and soldered to them after they are secured in place, to form a joint, substantially as herein described.

258,683. TRACTION-ENGINE. EDWARD J. TAYLOR, Frankfort, W. Va. Filed Apr. 7, 1882. (No model.)

Claim.—1. A traction-engine having a frame provided with journal-boxes at the top, in combination with a boiler suspended within such frame below the level of the boxes, and a rock-shaft secured to the boiler and resting in said boxes, as set forth.

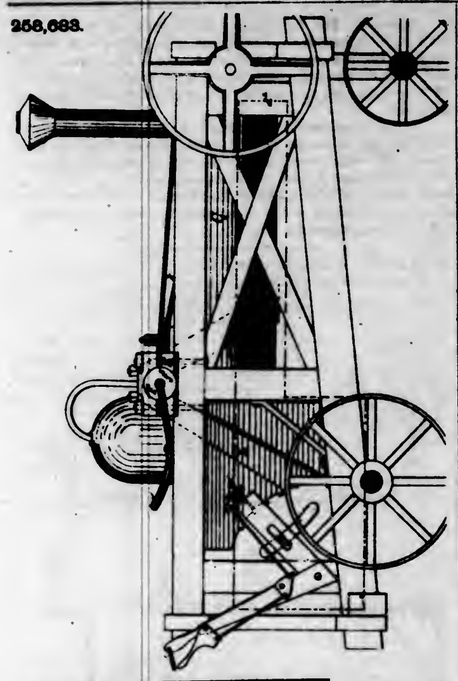
2. A traction-engine having a frame provided with journal-boxes, in combination with a self-adjusting boiler suspended within the frame, and a rock-shaft, bored as described, and provided with connections for the steam and water supply and the exhaust, as set forth.

3. In a traction-engine, a self-adjusting boiler, in combination with means, substantially as described, for locking it at any desired point after it is leveled, as set forth.

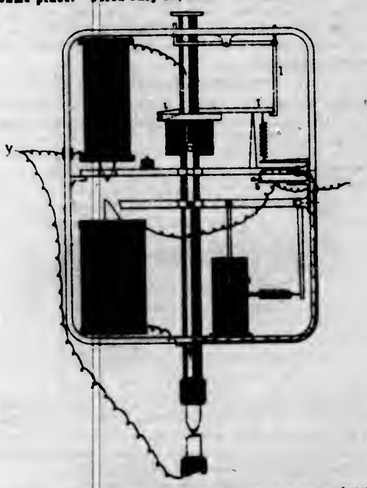
4. In a traction-engine, the shield or apron located at the sides and beneath the boiler, as and for the purpose set forth.

5. A traction-engine provided with a frame having the journal-boxes, as described, in combination with a self-adjusting boiler suspended within the frame, and a rock-shaft secured to the boiler, resting in the boxes, and provided at its ends outside of the boxes with the collars, whereby, in the event of one side of the engine being higher than the other, the greater part of the weight of the boiler will be sustained by the upper side of the frame, as set forth.

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258,684. ELECTRIC-ARC LAMP. ELIHU THOMSON, New Britain, Conn., assignor to the American Electric Company, same place. Filed July 11, 1881. (No model.)



Claim.—1. The combination, with the clamp or clutch in an electric lamp, a feed-operating electro-magnet normally out of circuit, and a retractor acting in opposition to said electro-magnet for holding the clamp in position, where it will engage with and prevent the carbon rod from feeding, of a derived-circuit electro-magnet, a circuit closer and breaker operated thereby, and circuit-connections arranged in the manner described, whereby when the derived-circuit magnet is strengthened, owing to an increase in the length of arc, an electric current is admitted to the feed-operating electro-magnet and energizes the same for the purpose of producing a feed of the carbon.

2. The combination, with the feed-regulating mechanism in an electric lamp, an electro-magnet for releasing said feed mechanism, and a retractor acting in opposition to said electro-magnet to hold the feed mechanism out of action, of a derived-circuit electro-magnet, a circuit-closer, and connections, substantially as described, whereby when the power of the derived-circuit electro-magnet is increased an electric current may be admitted to the electro-magnet of the feed-regulating mechanism, so as to energize the same and cause the feeding of the electrode.

3. The combination, with the carbon rod or carrier in an electric lamp, of a clutch or clamp and spring for normally holding said clamp in engagement with the rod or carrier, an electro-magnet for releasing the clutch from the rod or carrier, a derived-circuit electro-magnet, and a circuit-closer, and connections, as described, for admitting an electric current to the releasing electro-magnet when the power of the derived-circuit electro-magnet increases.

4. The combination, with the feed-regulating clutch or clamp for the carbon rod or carrier, of means for releasing the clamp, and a lug, toe, or projection upon the carbon rod, arranged as described, to come into contact with and actuate the releasing devices.

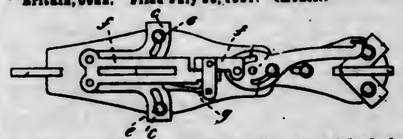
5. The combination, substantially as described, with the spring-actuated clamping-toe, of mechanism engaging with the toe so as to disengage it from the carbon-carrier, and a lug or projection upon the carbon-carrier.

6. The combination, with the carbon-support and its lug F, of lever L, stop *l*, and clamp-jaw *t t'*, substantially as and for the purpose described.

7. The combination, with an electric lamp, of a dash-pot having division G placed with its opening immediately above the piston, so that the latter acts as a valve when the cup is inverted.

8. The combination, with an electric lamp, of a dash-pot having a division, G, and curved cup J, combined, in the manner shown and described, with the piston H, rod *r*, and inverted cup I.

258,685. SKATE. THOMAS TRACY and CHARLES E. HART, New Britain, Conn. Filed July 26, 1881. (Model.)



Claim.—1. In a skate, the movable sole and heel clamps, combined with and operated by the longitudinally-movable double eccentric disk, all substantially as described.

2. In a skate, the combination of the longitudinally-movable eccentric disk *j*, sole-clamps *o c*, heel-clamp *i*, serrated connection-rod parts *f f'*, and the cam *g*, all substantially as described.

258,686. FRICTION-CLUTCH. OSCAR E. WAIT, Woonsocket, R. I., assignor of two-thirds to Philetus W. Gould, Pittsfield, Mass., and Franklin E. Darrow, Bristol, Conn.; Amelia W. Darrow and Elbert E. Thorpe, Bristol, Conn., Administrators of Franklin E. Darrow, deceased. Filed May 3, 1880. (Model.)

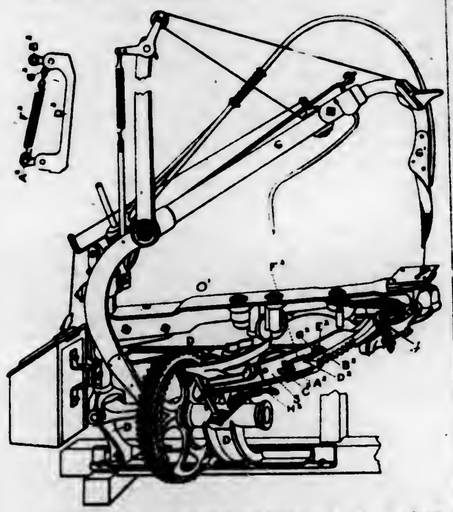


Claim.—1. The combination of the ordinary pulley C, having the ordinary central bore which constitutes its axial bearing and which embraces the clutch mechanism, the hub B, having the part outside the shoulder of its flange substantially equal in length to that of the axial bore of the pulley, the divided ring *h*, secured to the hub B and fitted to the smallest axial bore of said pulley, and the shipper-wedge *d*, substantially as described, and for the purpose specified.

2. The combination of the hub B, divided ring *h*, pulley C, shipper-ring D, having the wedge *d* secured thereto, and the set-screw *k*, inserted in the hub B and acting as an adjustable stop to limit the motion of the shipper-ring toward the hub B, substantially as described, and for the purpose specified.

3. The combination of the shaft A, a friction-clutch mechanism mounted on said shaft, and the pulley C, having its smallest axial bore embracing the clutch mechanism, the whole being so combined, in the manner substantially as hereinbefore described, that when the pulley is revolving and the shaft is stationary the pulley takes all of its bearing axially upon the clutch mechanism instead of upon the shaft.

258,687. GRAIN-BINDER. CALVIN YOUNG, Auburn, N. Y. Filed July 18, 1881. (Model.)



Claim.—1. In a grain-binder, the horizontally-vibrating knotting devices, in combination with a switch and rack frame provided with a track or cam suspended from said frame by swinging links adapting it to rise and fall bodily.

2. The combination, in a grain-binder, of a switch-frame, a pendent swinging track or cam suspended therefrom, a fixed lower track or cam, and mechanism for actuating the knotter-shaft.

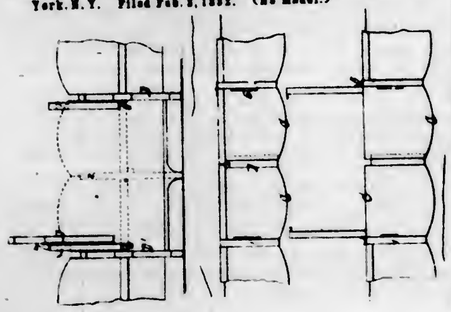
3. The combination, in a grain-binder, of a switch-frame, a movable track or cam connected with said frame by swinging links, a fixed lower track or cam, a horizontally-vibrating knotter-shaft and mechanism for actuating said shaft.

4. The combination, in a grain-binder, of a switch-frame, a horizontally-vibrating arm moving over said frame and carrying the knotting devices, mechanism for actuating the knotter-shaft, a movable track or cam suspended from the switch-frame by swinging links, and a fixed lower track or cam operating in connection with the swinging track or cam for actuating the knotter-hook.

5. The swinging track or cam plate, suspended in a vertical slot in the switch-frame by means of parallel links, substantially as described, whereby it is adapted to be lifted or swung up out of the way for allowing the knotter-hook to remain closed on the return or backward movement of the knotter-carrying arm, in combination with the spring for throwing said cam-plate into position for acting on said hook on its outward movement, substantially as described.

6. The combination, with the switch and rack frame for actuating the horizontally-oscillating knotting devices, of the swinging track or cam plate D^5, pivoted thereto by the parallel links A^5 and B^5, the spring F^5, and the fixed lower track, H^5, having the inclined ends I^5 and J^5, all arranged and operating substantially as described.

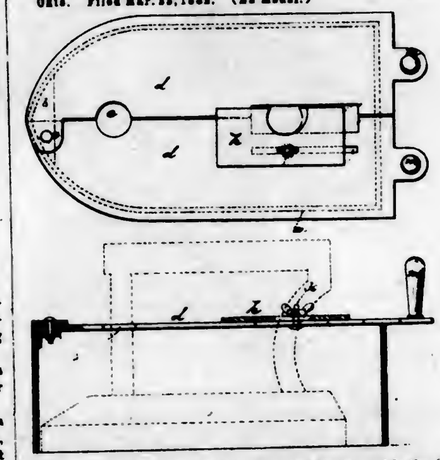
258,688. FOLDING OPERA-CHAIR. ALLEN W. ADAMS, New York, N. Y. Filed Feb. 3, 1882. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, with suitable chair-standards, of the folding back hinged on one of its vertical edges to swing rearward in a horizontal plane and the folding seat hinged on one of its side edges independently of the folding back to swing in a lateral direction, for the purpose specified.

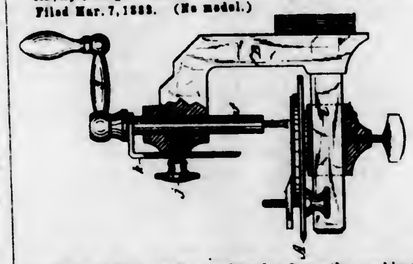
2. The combination, substantially as hereinbefore set forth, with the outer chair-standards, of the two folding backs hinged on one of their vertical edges and the two folding seats hinged on one of their side edges to such standards, independently of the folding back, to form two chairs, and the intermediate or folding standard hinged to the folding seat of either chair to swing upward therewith, for the purpose specified.

258,689. FLAT-IRON HEATER. IRA R. ARNELL, Delphos, Ohio. Filed Mar. 23, 1882. (No model.)



Claim.—In a flat-iron heater, the combination, with the inclosing-case wall *a*, of the notched and pivoted cover-sections *d d*, provided with handles *m m*, and the adjustable notched slide *h*, substantially as specified.

258,690. JEWELING-TOOL. WILLIAM B. ATKINSON, Franklin, Ky., assignor of one-half to William B. Jackson, same place. Filed Mar. 7, 1882. (No model.)



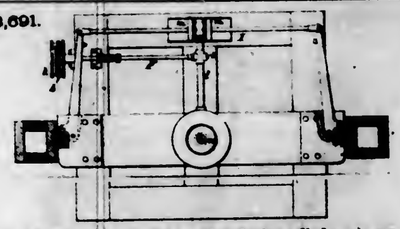
Claim.—In a jeweling-tool for hand use, the combination of the bracket B, the drill-rod *f*, journaled in the bracket, and the slotted and perforated gage *k* and thumb-screw *j*, with a bed-plate, A, adjustably supported on an arm of the bracket and having movable clamps, substantially as shown and described.

258,691. SAFETY APPARATUS FOR ELEVATORS. CYRUS W. BALDWIN, Chicago, Ill. Filed Apr. 19, 1882. (No model.)

Claim.—1. In a safety apparatus for elevators having brake-levers arranged upon the cage to clamp or clutch the guides, the combination, with such levers, of one or more detents, constructed to retain the levers in the positions to which they are set by the safety appliances, as set forth.

2. The combination, with the brakes of an elevator-cage, of a brake-cylinder, a cylinder communicating with the brake-cylinder, and a piston and connections, as specified, whereby the motion of the piston may be arrested, while that of the cage is continued, as and for the purpose set forth.

258,691.

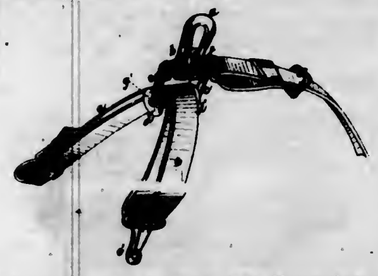


3. The combination of the brake, brake-cylinder, air-compression cylinder communicating therewith, operating-rope *b*, governor, and appliances, constructed and arranged as described, whereby the brake-cylinder is supplied with air under pressure when the travel of the rope is arrested.

4. The combination of the cage, brake-levers, brake-cylinder, governor, operating-rope *b*, and a cylinder containing the operating-fluid and provided with a piston connected to the rope *b*, substantially as specified.

5. The combination of the brake-levers, governor, and operating-rope *b*, and a shaft, F, connected with the brake-operating appliances and carrying a drum round which the rope *b* is wound, as set forth.

258,692. NECK-YOKE ADJUSTER. JOHN A. BARNES, Laclede, Mo. Filed Apr. 14, 1882. (No model.)



Claim.—1. In a neck-yoke adjuster for double-team harness, the combination, with the T-shank having the forked or slotted hook f' and the arms *c c*, of the tongue *h*, having the rib i' and the projection h', the spring *j*, the flanged roller *d*, and the link *f*, substantially as described, for the purpose specified.

2. In a neck-yoke adjuster, the hooked T-shank having the side and middle arms, *c a b' b'*, the latter formed with the cross-pin b^5, in combination with the tongue *h*, having the eye-forming strap end *i*, the projection h', and the ribbed end i', and the spring *j*, the flanged roller, and the link *f*, substantially as and for the purpose set forth.

3. In a neck-yoke adjuster, the snap-hook frame having the confining-eye *a*, for the side link, formed by the projection a', and the wing c^5, as shown and described.

4. In a neck-yoke adjuster, the flanged roller *d*, having a hollow hub and end shoulders, d' d', in combination with the hook-frame arms *c c*, one of which has screw-threaded hole g' and the screw-bolt *g*, as shown, and for the purpose described.

258,693. ADJUSTABLE ECCENTRIC. JOHN BAPTISTE BARNOUT, Woodhaven, N. Y. Filed Feb. 7, 1882. (No model.)

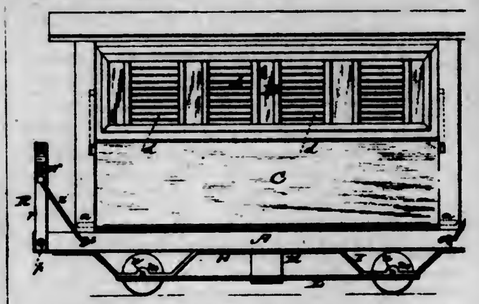


Claim.—1. The screw collars or rings D, in combination with the two halves of the eccentric C, the latter being correspondingly threaded, as herein specified.

2. The two eccentrics B and C, one within the other, having a series of grooves or splines in the one jointly with a single pawl in the other, adapted to serve as herein specified.

3. The two eccentrics B and C, one within the other, having a series of grooves or splines in the one jointly with a single pawl, K, in the other, and with means F, for urging the pawl into engagement with said grooves, as herein specified.

258,694. CONVERTIBLE CRIB. JOHN W. HARTER, Emporia, Kans. Filed Apr. 1, 1882. (No model.)



Claim.—1. In a crib having the form and gear resembling a car, the combination of the folding side walls, the side sashes, the roof, end railings, and the under gear, substantially as specified.

2. In a crib, the removable roof having its sections connected by hinges, carrying slide-rods *c'*, to engage sockets in the end walls of the crib, substantially as specified.

3. In a crib having folding side walls, the grooves *h* in the end walls engaging the studs *k* of the side walls and the openings *h''* in the outer walls of said grooves, substantially as specified.

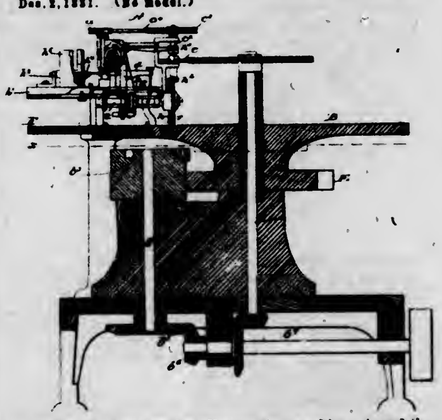
4. In a crib, the lower side-wall sections having sockets *g*, and the upper side-wall sections having slide-rods *c*, engaging said sockets, substantially as specified.

5. In a crib, the folding sides, their hinge rods or journals *a*, and the projecting side edges of the bottom, forming brace-ledges *b*, to support the sides when folded down or open, substantially as specified.

6. The reversible railings R, pivoted to the ends of the bottom, and forming, when reversed, rockers, and the braces *s*, securing the railing or rockers in position, substantially as specified.

7. In a crib, the bent straps H, forming, in connection with the tie-straps I, and brace-strap M, the under gearing supporting the crib on the wheel-journals, substantially as specified.

258,695. MECHANISM FOR GROOVING SEWING-MACHINE-NEEDLE BLANKS. PHILO H. BURNS, Bridgeport, Conn. Filed Dec. 2, 1881. (No model.)



Claim.—1. A series of needle-grooving machines, A, and the movable support therefor, combined with the mechanism, substantially as described, to automatically and successively operate the needle-blank-holding jaws of the said machines to grip and hold the blanks to be grooved, substantially as described.

2. A series of needle-grooving machines, A, and intermittingly-rotating support B therefor, bed F, and needle-blank-holding jaws, and cam to automatically close them, combined with the needle-withdrawing mechanism adapted to automatically engage and withdraw a grooved needle-blank from the needle-grooving machine opposite it, substantially as described.

3. A series of needle-grooving machines, A, and intermit-

tingly-rotating support B therefor, bed F, and needle-blank-holding jaws, and the means to automatically close and lock them, as described, combined with a hopper and ejector, and the means, substantially as described, to operate the ejector to automatically transfer a needle-blank from the hopper into position between the jaws to be grasped and held thereby while being grooved, substantially as described.

4. The bed F and hopper and ejector to move a needle-blank into position between the needle-blank-holding jaws and the needle-withdrawing mechanism to automatically seize and withdraw a grooved blank from the needle-blank-holding jaws, combined with a series of needle-grooving machines having needle-blank-holding jaws, and with the intermittingly-rotating support by which the said machines are brought one after the other in the proper order before the hopper and the needle-withdrawing mechanism, substantially as set forth.

5. The hopper h^1, to contain the needle-blanks, slide-plates to remove a blank from the hopper, and an ejector for forcing the blanks into the blank-holding jaws, the bed F, and the carriage-throwing-in mechanism connected therewith, combined with the carriage *h* and the automatically-operated needle-blank-holding jaws mounted thereon, substantially as described.

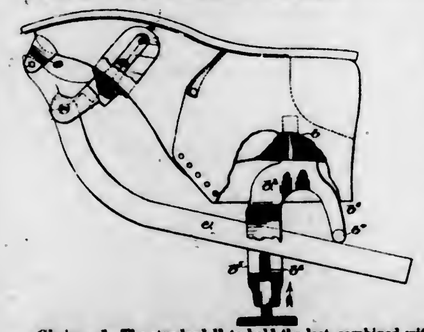
6. The intermittingly-revolving support B, bed F, and needle-blank-holding jaws, combined with cam d^5, shaft d^6, arm d^7 thereon, and fingers to strike the said arm and actuate the shaft and cam, substantially as described.

7. The needle-withdrawing mechanism composed of the jaws G, the links, the jaw-actuating slide g^1, and slide g^2, to operate substantially as described, and the bed F, combined with the intermittingly-revolving support B, a series of needle-grooving machines, A, and needle-blank-holding jaws thereon, substantially as and for the purposes set forth.

8. The hopper and the loosely-connected slide-plates, 12 16, combined with the adjusting device 34, to insure the correct position of the forward end of the slide 16 with relation to the discharge-passage at the bottom of the hopper, substantially as described.

9. The hopper, the slide-plates, and the lever 38 and its presser 27, to engage and bear upon the needle-blanks, combined with a cam-ledge to give to the said lever and presser the proper movements to enable the presser to press the needle-blanks down in the hopper at the proper times and between the slide-plates, substantially as described.

258,696. BOOT OR SHOE HOLDING JACK. ELI BERTRAND, Boston, Mass. Filed Apr. 6, 1882. (No model.)



Claim.—1. The standard b^1, to hold the last, combined with the lever *c*, means to move it, and with the spring-clamp to act upon the upper over the top of the last, as shown, between its toe and instep, substantially as described.

2. The standard b^1, to hold the last, the lever *c*, and lever-adjusting device, combined with the block and toe-rest, substantially as described.

3. The standard to hold the last, the lever, the lever-adjusting device, and spring-clamp to fit the upper to the last, combined with the toe-clamp, substantially as and for the purpose described.

4. The lever *b* and projected toe-clamp, combined with the last, standard b^1, lever *c*, and lever-adjusting device, substantially as described.

258,697. REVERSIBLE CLOAK. HERMANN F. BIDDELL, New York, N. Y. Filed Apr. 24, 1882. (No model.)

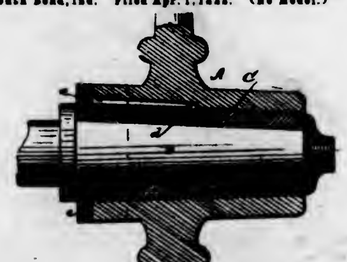


Claim.—1. A reversible cloak composed of a silk covering, an intermediate layer of water-proof material, and of a lining of fur, quilted, or other fabric, said layers or parts being connected at the sides, but the silk covering disconnected from the lining and water-proof material at the upper and lower ends, whereby the cloak may be reversed so as to bring the silk covering or the water-proof material to the outside, substantially as set forth.

2. A reversible cloak consisting of a silk or other covering, an intermediate water-proof layer, and a lining of fur, quilted, or other fabric, which are connected at the sides but open at the upper and lower ends, said ends being provided with means for attaching the silk covering to either side of the connected lining and water-proof layer after reversing the cloak, substantially as set forth.

3. The combination, in a reversible cloak, of a silk covering, an intermediate layer of water-proof material, and a lining of fur, quilted, or other fabric, the layers or parts being connected at the sides but open at the upper and lower edges for being reversed, the parts being provided with a double trimming along the sides, substantially as described.

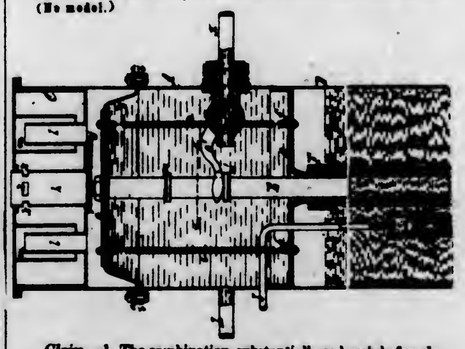
258,698. WHEEL FOR SULKY-PLOWS. THELUS H. BISSELL, South Bend, Ind. Filed Apr. 1, 1882. (No model.)



Claim.—1. The wheel-hub A, constructed with internal grooves, *a b b*, in combination with the thimble having a lug, *d*, formed on it for the purpose of binding the hub and thimble, substantially as described.

2. The combination of the internally-grooved hub, the thimble having a collar and a lug formed on it externally, and the nut fastening for the axle, substantially as described.

258,699. DISINFECTING APPARATUS FOR WATER-CLOSETS. HENRY BLACKMAN, New York, N. Y. Filed Mar. 8, 1882. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, of the vessel A, the diaphragm D, the connections K L, the disinfecting-drum C, the air-tube A, the circulating-pipes *l m*, and the valve *i*.

2. The combination, substantially as hereinbefore described, of the vessel A, the diaphragm B, the plunger E, the collars *a a'*, for actuating the valve *c*, and the connections K L.

3. The combination, substantially as hereinbefore described, of the vessel A, the diaphragm B, the plunger E, the cylinder G, the valve-chamber H, and the pipe I, leading into the basin of a water-closet.

4. The combination, substantially as hereinbefore described, of the vessel A, the diaphragm B, the connections K L, the disinfecting-drum C, the plunger E, the pump-cylinder G, and the pipe I, leading into the basin of a water-closet.

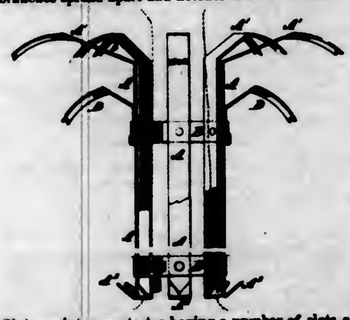
258,700. THILL-COUPLING. ISAAC S. BOWEN, Fremont, Ohio, assignor of one-half to Byron B. Budrow, same place. Filed Mar. 23, 1882. (No model.)



Claim.—In a thill-coupling, the combination of the coupling-iron C C' C^1, constructed as described, and having the thumb-screw D, thill-iron E, having cross-head *e*, bearing-plate F, having concaved shoulders *f f* and transverse rib *g*, elastic block H, having transverse groove or recess *h*, and top plate, G, having end flanges, *e e*, and raised seat *d*, the whole constructed and combined to operate substantially in the manner, and for the purpose herein shown and described.

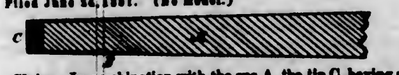
258,701. TREE-PROTECTOR. THOMAS BOWEN, Waterburg, N. Y. Filed Apr. 1, 1882. (No model.)

Brief.—Slats set in a circle at a short distance apart, held together by bands, and provided with bent barbed extensions having split branches spread apart and notches at the outer end.



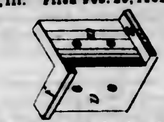
Claim.—A tree-protector having a number of slats arranged at a short distance apart in a circle, held together by the bands B, and provided with the bent barbed extensions A', said extensions being split branches spread apart and notched at the outer ends, as shown and described.

258,702. BILLIARD-CUE. HENRY A. BOWEN, Lexington, Ky. Filed June 24, 1881. (No model.)



Claim.—In combination with the cue A, the tip C, having an elastic ferrule, B, said tip and ferrule being made of one and the same piece, substantially as and for the purposes set forth.

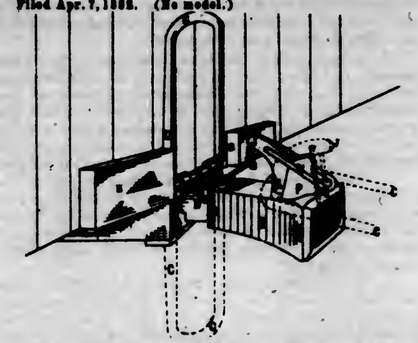
258,703. CAR-FRAME. THORNTON A. BRADY and CALVIN D. HANAIS, Matteson, Ill. Filed Feb. 25, 1882. (No model.)



Claim.—1. The angle-iron D, having the lower edge-flange, E, and at right angles thereto the upper edge-flange, F, whereby the iron may be used as described.

2. In a railroad-car frame, the combination, with the end sills, A, and the side sills, B, of the angle-irons D, having flanges E F, substantially as herein shown and described, whereby the end and side sills are connected firmly and detachably, as set forth.

258,704. CAR-COUPLING. SANFORD BRAY, Boston, Mass. Filed Apr. 7, 1882. (No model.)



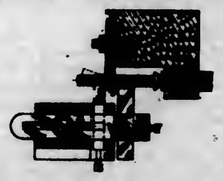
Claim.—1. The coupling-links C, hinged to the end of the car-body, and provided with a projection, D, adapted to contact with a projection or shoulder, H, formed upon the draw-bar E, when the said draw-bar is forced inwardly by contact with an opposing draw-bar in the act of coupling, as and for the purposes set forth.

2. The combination, with the draw-bar E, having the horn P and guard or spring G, and provided with the coupling-pin L, having the curved upper end portion, J, provided with the guard-link N, and its lower end provided with a short pin or projection, *r*, and the hinged coupling-link C, provided with the projection D, substantially as described, as and for the purposes set forth.

3. The combination, with the draw-bar E, having the projecting horn P, of the coupling-pin L, having the curved upper end portion, J, provided with the guard-link N, adapted to engage with said horn, as and for the purposes set forth.

4. The combination, with the draw-bar E, having the shoulder H, and provided with the coupling-pin L, having the bent upper portion, J, of the coupling-link C, adapted to be turned down to couple by the horizontal or inward movement of the said draw-bar, substantially as described, as and for the purposes set forth.

258,705. SHEARING ATTACHMENT FOR HEADING-MACHINES. THOMAS J. BRAY, Pittsburg, Pa., assignor to Oliver Bros. & Phillips, same place. Filed Jan. 5, 1882. (No model.)



Claim.—1. The combination, in a metal-shearing machine, of a fixed knife, a movable knife, and a stop movable with the movable knife and arranged with relation to the knives, substantially as specified, to prevent the end portion of the rod from swinging around under the action of the cutting-knife, substantially as and for the purpose set forth.

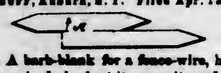
2. The combination, in a metal-shearing machine, of a fixed knife, a movable knife, and a laterally and longitudinally adjustable stop mounted on and adapted to move with the movable knife, substantially as and for the purpose specified.

3. The combination, in a metal-shearing machine, of a fixed knife and a gage mounted therewith, with a movable knife and a bearing-stop movable therewith, substantially as and for the purpose specified.

4. The combination, in a metal-shearing machine, of a fixed knife, a gage mounted with the fixed knife, a movable knife, and a laterally and longitudinally adjustable stop mounted on and adapted to move with the movable knife, substantially as and for the purpose specified.

5. The combination of the cutting-lever with the gripping-lever of the header and an intermediate lever and link, substantially as and for the purposes described.

258,706. BARBED FENCE. JACOB BRINKERHOFF and WARREN H. BRINKERHOFF, Auburn, N. Y. Filed Apr. 13, 1882. (Model.)



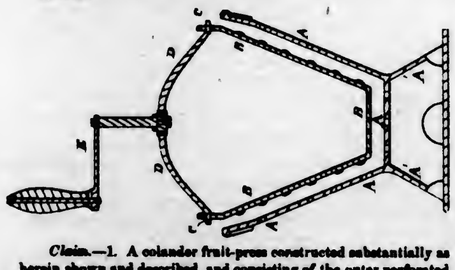
Claim.—1. A barb-blank for a fence-wire, having two barbs at one end, with a single barb at its opposite end substantially in the same line with one of the said two barbs, whereby the barb out of line with the single barb can be passed by the edge of said single barb when bending it upon a fence-wire.

2. A three-pronged sheet-metal barb-blank for wire fences, consisting of a base or body portion having at one of its end corners a single barb, and at its opposite end provided with two barbs of unequal length, whereby when its body portion is bent upon the fence-wire and its longer barb bent thereon, so as to project reversely to the two short barbs, all of said barbs will project to substantially the same extent from the wire, substantially as described.

3. A three-pronged sheet-metal barb-blank comprising a base or body portion, A, provided at one end with the two barbs of unequal length, and at its remaining end provided with one barb and one short lip, said barb-blank being adapted to be clasped upon the fence-wire and its barbs projected therefrom, substantially in the manner described.

4. The combination, with a fence-wire, of the three-pronged barb-blank comprising a body, A, with two barbs of unequal length at one end and one barb and one short lip at its remaining end, the body being adapted to be bent upon the wire so as to bring the two short barbs in diverging planes, and the lip and the long barb being bent upon the wire reversely to the two short barbs, substantially as described.

258,707. COLANDER AND FRUIT-PRESS COMBINED. LORETTA BREWSLOW, East Paw Paw, Ill. Filed Mar. 18, 1882. (Model.)



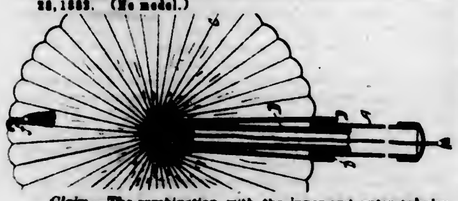
Claim.—1. A colander fruit-press constructed substantially as herein shown and described, and consisting of the outer perforated vessel, A, the similarly-shaped inner vessel, B, having roughened outer surface, the spider and crank D E, and the tongs G, as set forth.

2. In a colander fruit-press, the combination, with the outer perforated vessel, A, of the inner similarly-shaped vessel, B, having a roughened outer surface, substantially as herein shown and described, whereby the fruit can be crushed between the two vessels and pressed and strained through the perforations of the outer vessel, as set forth.

3. In a colander fruit-press, the combination, with the inner vessel, B, of the spider D and crank E, substantially as herein shown and described, whereby the said inner vessel can be readily turned within the outer vessel, as set forth.

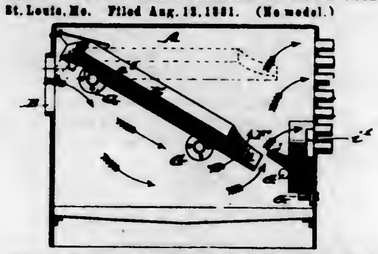
4. In a colander fruit-press, the combination, with the perforated outer vessel, A, of the tongs G, substantially as herein described, whereby the said outer vessel can be held stationary while the inner vessel is being operated, as set forth.

258,708. FAN. GUSTAV BRUNCK, New York, N. Y. Filed Mar. 28, 1882. (No model.)



Claim.—The combination, with the inner and outer tubular sections, A B, of the two tapes D, extending through and around both ends of the inner section, and each tape having its two ends connected with the upper end of the outer section, and the fan C, carried by the inner section, and having its outer or end leaves connected with the tapes, substantially as and for the purpose described.

258,709. LOCOMOTIVE-FURNACE. THOMAS A. BUCKLAND, St. Louis, Mo. Filed Aug. 15, 1881. (No model.)

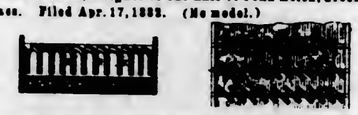


Claim.—1. The combination of the furnace A, the diaphragm E, having the projections *e e*, and the tiling I, having the projection *i*, extending toward and over, but not coming in contact with, the diaphragm, substantially as described.

2. In a locomotive-furnace, the tiling I, having a flue in rear of and extending from the bottom to the top of the tiling, as and for the purpose described.

3. In a furnace, the combination of the supports G G and the diaphragm E, said diaphragm having a series, *e' e'*, of recesses, as and for the purpose described.

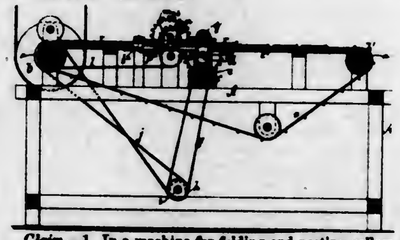
258,710. MANUFACTURE OF PAPER. CHARLES M. BURNETT, Turner's Falls, assignor of one-half to John Keith, Greenfield, Mass. Filed Apr. 17, 1882. (No model.)



Claim.—1. In the manufacture of paper, a series of magnets suspended upon rods with their poles immediately above or within the flowing pulp, as and for the purpose set forth.

2. Two or more series of permanent or electro magnets arranged and suspended in quincunx order above or within the flowing pulp, substantially as and for the purpose set forth.

258,711. MACHINE FOR FOLDING AND PASTING THE ENDS OF PAPER COLLARS. EDGAR GARY, New York, N. Y. Filed Feb. 14, 1882. (No model.)



Claim.—1. In a machine for folding and pasting collars, the combination, substantially as described, of the transverse shaft *m*, provided near each end with a folder-cam, *n*, with the carrying belts or chains moving at right angles to said shaft.

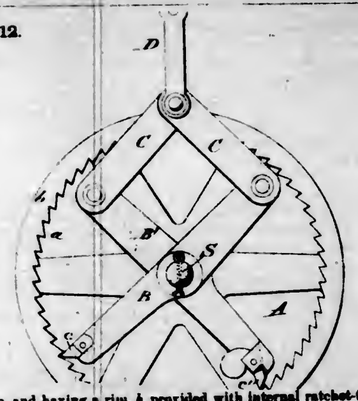
2. In a machine for folding and pasting collars, the combination of the guides *r*, carrying rotary friction-rollers *g*, with the pasting-disks *d*, arranged directly beneath the friction-rollers, the carrying belts or chains, and the transverse shaft *m*, provided near each end with a folder-cam, *n*, substantially as described.

3. The combination of the transverse folder-shaft *m*, carrying near each end a folder-cam, *n*, the transverse shaft *d'*, carrying paste-disks *d* and geared at one end with the folder-shaft, and the friction-rollers *g*, arranged directly above the paste-disks, substantially as described.

258,712. DEVICE FOR CONVERTING RECIPROCATING INTO ROTARY MOTION. JOHN W. CHAMBERLAIN, Pontoon, Ill. Filed Feb. 25, 1882. (No model.)

Claim.—1. The combination of the shaft S, wheel A, secured

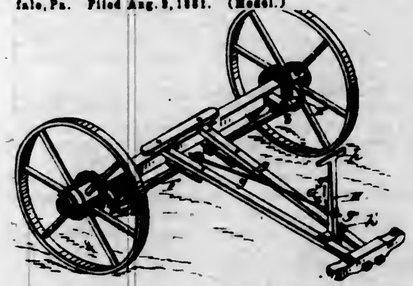
258,712.



thereto, and having a rim, *b*, provided with internal ratchet-teeth, *a*, the arms or bars B B', pivoted on said shaft, and having pawls *c c'*, adapted to engage alternately with the ratchet *a*, the connecting-bars C C, pivoted to the bars or arms at their ends opposite to the pawls, and the link D, connected with the connecting-bars, substantially as and for the purpose described.

2. The combination of the wheel A, ratchet-teeth *a*, cross-bars B B', pawls *c c'*, connecting-arms C C, link D, and shaft S, substantially as shown and described, and for the purpose set forth.

258,713. VEHICLE-BRAKE. WALLACE CLAYPOOL, North Buffalo, Pa. Filed Aug. 3, 1881. (Model.)



Claim.—The forked rod G, having stem *x* and branches *g g*, in combination with the hand-lever H, brake-levers F F, and the triple sets of nuts *g' g' g'*, whereby is formed a device for operating the brakes in which either or both brakes can be adjusted at will, all as set forth and described.

258,714. CREAMING-CAN. ERWIN B. CLEMENT, Barnet, Vt. Filed Jan. 30, 1882. (No model.)



Claim.—As an improvement in creaming-cans, a deep water vat or tank, B, suspended within a light frame composed of uprights A and parallel connecting-bars *a a'* and *b b'*, in combination with one or more deep and narrow cream-cans, C, having ears *c c'* at their ends, by which they are suspended upon the cross-bars *b b* of the frame, out of contact with the water vat or tank B, as shown and set forth.

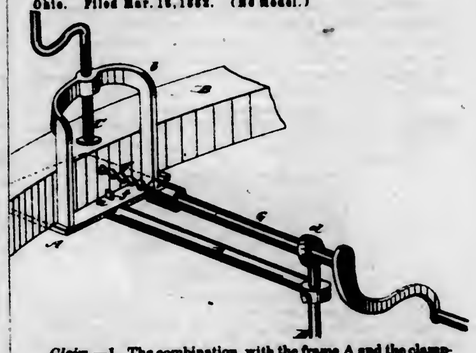
258,715. BUCKLE. EDWARD A. COOPER, Buffalo, N. Y., assignor of one-fourth to Pratt & Letchworth, same place. Filed Jan. 12, 1882. (No model.)

258,716.



Claim.—A harness-buckle provided with cross-bars *e* and *g*, having fixed tongues *f* and *h*, intermediate cross-bars *i* and *k*, and a snap-hook, B, substantially as set forth.

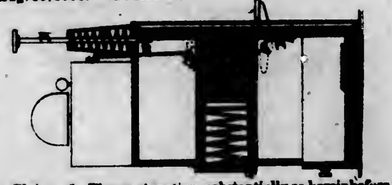
258,716. BORING-MACHINE. VINCENT COX, New Vienna, Ohio. Filed Mar. 16, 1882. (No model.)



Claim.—1. The combination, with the frame A and the clamping-screw C, of the bit or auger holding and operating shaft G, and the supporting-post E, having a rolling bearing-surface, substantially as herein shown and described, whereby the direction of the bit or auger can be varied, as set forth.

2. The combination, with the frame A, provided with a clamping-screw, C, and forwardly-projecting arm D, of the post E, adjustable both longitudinally and axially within and through said arm, and the bit or auger holding and operating shaft G, supported in an eye, *d*, of said post, constructed to form a bearing having a rolling surface, essentially as shown and described.

258,717. CHECK-CASE. JOHN S. OBARR, Cohoes, N. Y. Filed Aug. 23, 1881. (No model.)



Claim.—1. The combination, substantially as herein before described, of the check-magazine, the pusher for forcing the checks successively out of said magazine, the window for displaying the figure which indicates the value of the check, the device for retaining the check during the time the figure is being displayed, and the look-box for receiving the check or tally.

2. The combination, substantially as herein before described, of the check-magazine, the pusher, the window for displaying the figure which indicates the value of the check, the device for retaining the check during the time the figure is being displayed, the alarm-lever, actuated by the pusher, the catch for retaining the alarm-lever, and the handle for releasing the check-retaining device and the catch.

3. The combination, substantially as herein before described, of the check-magazine, the spring acting on the checks in said magazine, the pusher, the window for displaying the figure which indicates the value of the check, the device for retaining the check during the time the figure is being displayed, the alarm-lever actuated by the pusher, the catch for retaining the alarm-lever, the handle for releasing the check-retaining device, and the catch and the look-box.

258,718. CHICKEN-COOP. DAVID E. DAVIS, Marion, Va. Filed Apr. 10, 1882. (No model.)

Brief.—All the parts are separable, there being no hinges.

268,718.



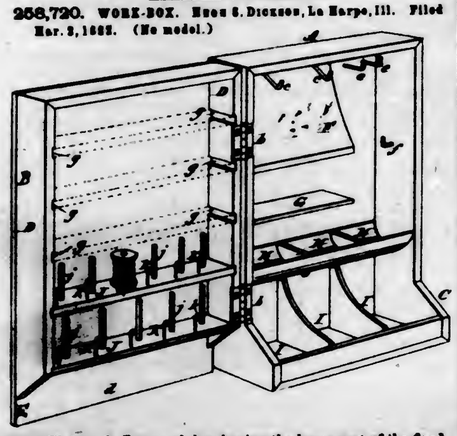
Claim.—In a poultry-coop, the combination of the separable side and end pieces, B B and C C, having hooks *e e f f*, bottom piece, A, having side loops, *b b*, and top piece, D, having the swivel-eyed bands *g g*, provided at their projecting outer ends with loops *h h*, adapted to engage hooks *h h*, affixed to the side pieces, substantially as shown and set forth.

268,719. PROCESS OF PACKING MEAT FOR TRANSPORTATION. CHARLES H. DUNNY, Chicago, Ill. Filed Dec. 22, 1881. (No specimens.)



Claim.—The mode described of packing fresh meat for transportation, the same consisting of applying a limited quantity of dry borax to the meat and wrapping the latter in coarse cloth, as set forth.

268,720. WORK-BOX. HUGH S. DICKSON, La Harpe, Ill. Filed Mar. 2, 1882. (No model.)



Claim.—1. In a work-box having the lower part of the fixed portion extended forward at C, the lower part of the swinging portion, with its side pieces, D, cut away angularly at its lower end, and the outside piece, E, extended down at *d*, as shown and described.

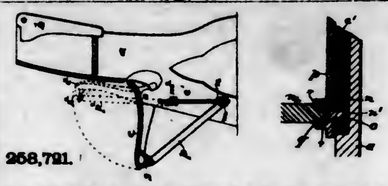
2. The hinged part B, provided with the removable shelves J, having the pins *j* and thread-holders K, substantially as and for the purposes described.

3. The main or back part, A, of the box provided with the hooks *e e* and *f*, cushion F, shelf G, and the recessed trays H and I, substantially as described.

268,721. SCHOOL-DESK. GORDON DIBBRELL, Kirksville, Mo. Filed Feb. 16, 1882. (No model.)

Claim.—1. The combination, with a desk-frame provided with grooves in its sides and a seat hinged to the desk-frame, of a foot-rest sliding in said grooves, and means, substantially as described, for connecting the foot-rest and hinged seat, whereby the foot-rest and seat rise and fall simultaneously, as specified.

2. The combination of the desk-frame *a*, provided with grooves *a'*, foot-rest *m*, hinged seat *o*, rigid arms *p*, secured to the foot-



268,721.

rest at their lower ends and hinged to the seat-frame at their upper ends, substantially as described, and for the purpose set forth.

3. The combination of the desk-frame *a*, provided with vertical grooves *a'*, foot-rest *m*, slides *n*, hinged seat *o*, provided with rigid arms *s*, and rigid arms *p*, secured to the foot-rest at their lower ends and hinged to the lower ends of the arms *s* at their upper ends, substantially as set forth.

4. The combination, with the desk-frame *a*, provided with grooves *a'*, hinged seat *o*, slides *n*, and sliding foot-rest *m*, of the rigid arms *p*, hinged to the seat-frame at their upper ends, and provided with the gudgeons *o o* and mortises *g g* and screws *r r*, substantially as described, and for the purpose set forth.

268,722. ATTACHMENT-LINK. JAMES H. DOBSON, Chicago, Ill. Filed Apr. 8, 1882. (Model.)



Claim.—1. An attachment-link for conveyors formed or provided with devices *e e*, or their equivalents, and a bearing-surface, *g*, the said devices being arranged in the proper relationship to the portion *g* of the link, as described, and being properly shaped to permit the employment, in connection with the link, of a metallic flight, *f*, in the manner explained, and to effect the retention of said flight in place through the media of suitable fastening devices, all as set forth.

2. In combination with an attachment-link, A, for conveyors, having a bearing-surface for the flight at *g*, and provided with projecting devices *e e*, or their equivalents, a metallic flight, *f*, cut out at the lower edge to fit over the end of the link and secured to the latter, all substantially as and for the purposes set forth.

268,723. WATCH-CHARM. WILLIAM W. DOBSON, Washington, D. C. Filed Apr. 14, 1882. (No model.)

Brief.—The watch-charm contains or is coated with a phosphorescent or luminous compound or substance, whereby it is caused to give light in the dark.



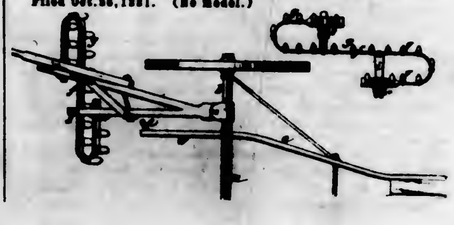
Claim.—1. A charm for watch-chains, &c., charged with luminous matter, substantially such as described, and adapted to be attached to a chain.

2. As a new article of manufacture, a watch-charm containing a transparent body provided on its inside with luminous matter, as explained.

3. The herein-described charm, having the globe B, charged with luminous matter, substantially such as described, and provided with valve C, as and for the purpose explained.

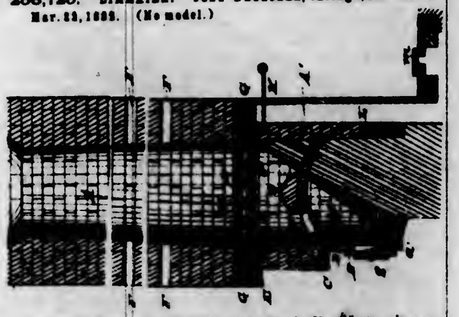
4. In a charm such as described, the globe B, having the inwardly-turned edge *b*, as and for the purpose set forth.

268,724. CULTIVATOR. THOS. C. DODSWORTH, Ottawa, Kans. Filed Oct. 26, 1881. (No model.)



Claim.—In combination, the beams of a straddle-row cultivator, the single-tooth carrying-bar crossing between the beam-standards, having opposite return ends, the braces *i i*, secured to said bar between its return ends and its middle part, and the clips *s*, for securing the ends to said beam-standards, substantially as set forth.

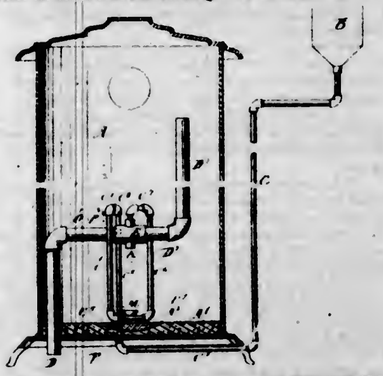
268,725. LIMEKILN. JOHN DEUSCHER, Chicago, Ill. Filed Mar. 23, 1882. (No model.)



Claim.—In a gas-burning limekiln, the inclined bars *a*, in connection with the front or face wall having the arched offsets *a'*, C, and E, and the bridge or inside arch, N, supporting the saddle O, and spanning the enlarged lower part of the kiln below the gas or burner channel P, between the back wall, A', and front arch, C, said arches N and C being at right angles to one another, substantially as and for the purpose shown and set forth.

268,726. OIL-GAS STOVE. THOMAS E. DUDLEY, Boston, Mass., assignor of one-half to Jett Grant, same place. Filed Dec. 21, 1881. (No model.)

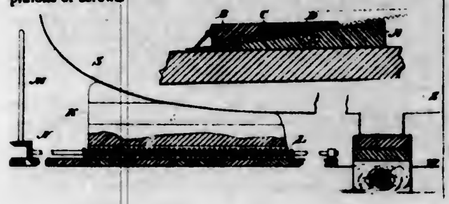
Brief.—The bottom of the stove is covered with ashes, asbestus, or some other non-combustible material, and has a shallow dish in the center for convenience in kindling an initial flame.



Claim.—The combination of the generator C' C' C' C' C' C' C' with the air-chamber E E' E² and orifice *e*, arranged to operate substantially as described, and for the purpose set forth.

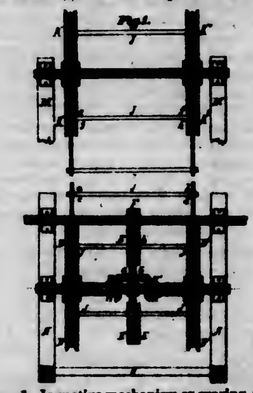
268,727. SHIP-RAILWAY AND DRY-DOCK. JAMES B. EADS, St. Louis, Mo. Filed Jan. 7, 1881. (No model.)

Brief.—Checks and keel-blocks are advanced and retracted by means of positive connections, gearing, shafts, and racks and pinions or screws.



Claim.—The combination, in a ship's cradle or dry-dock, of a system of wedges or inclined checks, and racks and pinions or screws, and positive mechanical means for operating the same for forcing the said wedges or checks up in contact with the ship's bottom, substantially as described.

268,728. MOTIVE MECHANISM OR GEARING. OLIVER H. EATON, New York, N. Y. Filed Sept. 8, 1881. (No model.)



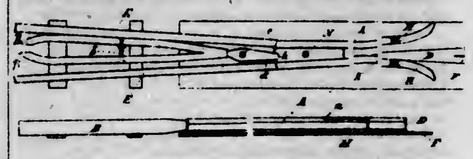
Claim.—1. In motive mechanism or gearing, the arrangement of two actuating or driving pulleys or drums connected together by interposed gearing for the purpose and in the manner substantially as set forth.

2. In motive mechanism or gearing, the combination of two or more driving or winding pulleys or drums connected by interposed gearing, whereby these motive pulleys or drums are allowed reciprocal movement to compensate for unequal motion.

3. In motive mechanism or gearing, a driving-gear bearing radially gearing suited to communicate motion to and allow reciprocal movement of actuating pulleys or drums on each side.

268,729. RAILROAD-FROG. WILLIAM H. EGGLES, St. Louis, Mo., and JOHN C. O'HELVENY, East St. Louis, Ill. Filed Mar. 3, 1882. (No model.)

Brief.—The frog consists of a base-plate with two pivotal standards, one serving as a pivot for two sections of rails rigidly connected together, having flaring ends cut down to a lower level from the point where they commence to flare, (to meet the flanges, but not the treads of wheels,) and one on which turns a lever for shifting the section-rails, two bowed rails being attached thereto, to be operated by the flanges of the car-wheels. The said bowed rails are adjustable by means of a bolt and suitable nuts.



Claim.—1. In a railroad-frog, the two sections of rails permanently attached together and moving with each other on a pivotal standard, N, being provided with the flaring wings H H at their ends, in combination with the lever *d* and its flange-wings B B, by means of which they are operated automatically by the action of the flanges of the wheels of cars.

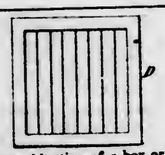
2. In a railroad-frog, the movable section-rails A A, with their flaring ends, in combination with the lever *d*, with its flange-wings B B, and the base-plate F, with its pivotal standards *c* and N, and its frog-point D, substantially as above described.

3. In a railroad-frog, the bolt I, with its adjustable nuts, in combination with the wings B B, as and for the purposes set forth.

4. In a railroad-frog, the flaring wings H H, with their treads cut away, so as not to interfere with tread of the wheel in the operation of the frog.

268,730. APPARATUS FOR SEPARATING THE SKINS FROM THE PULP OF POTATOES. GEORGE H. EDWARDS, Chicago, Ill. Filed June 22, 1881. (No model.)

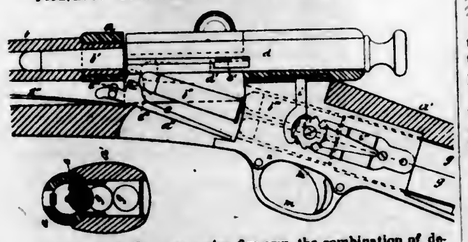
258,730.



Claim.—1. The combination of a box or hopper having an open grating or perforated bottom with a removable lining of one or more sheets of woven wire or frames of parallel wires, or a mixture of such sheets and frames, either being of uniform size of mesh and used together or separately or of a varying size of mesh to suit the quality of the vegetable, for the purpose of removing the skins from cooked potatoes or yams, substantially as set forth.

2. A box or hopper having an open bottom formed of a grating or perforated plate, and a lining of one or more sheets of woven wire or frames of parallel wires, or a mixture of such sheets and frames, with a press used to force the pulp of cooked potatoes or yams through such lining for the purpose of removing the skins from the vegetables, substantially as set forth.

258,731. MAGAZINE FIRE-ARM. WILLIAM H. ELLIOT, New York, N. Y. Filed Feb. 21, 1882. (No model.)



Claim.—1. In a magazine fire-arm, the combination of devices substantially as follows: a bolt which moves in a line with the barrel for closing the chamber, and is provided with groove d', which extends forward through the face of that device for the reception of the stop s when the arm is closed, a stop rigidly fastened to the receiver or to some device supported by the receiver, which projects unyieldingly into the receiving-chamber and touches the body of the cartridge at a point forward of its head to stop its upward or lateral movement, and a carrier which applies its force to the cartridge both in rear and in front of said stop, substantially as specified.

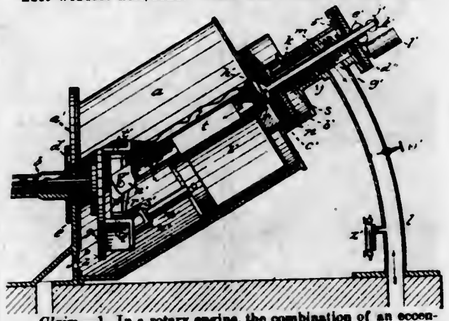
2. In a magazine fire-arm, the combination of devices substantially as follows: a bolt which moves in a line with the barrel for closing the chamber, and is provided with groove d', which extends forward through the face of that device for the reception of the stop and ejector e when the arm is closed, and is also provided with an extractor, e'', a stop and ejector rigidly fastened to the receiver or to some device supported by the receiver, which projects unyieldingly into the receiving-chamber and touches the body of the cartridge at a point forward of its head to stop its upward or lateral movement, and is located at a proper distance from the rear end of the chamber of the barrel to serve as an ejector of the shell, and a carrier which applies its force to the cartridge both in rear and in front of said stop and ejector, whereby this device serves the double purpose of stopping the advancing cartridge before the bolt and of ejecting the empty shell from the arm, substantially as specified.

3. In a magazine fire-arm, a tubular magazine located in the butt-stock, a bolt or breech-block for closing the chamber, which moves in a line with the barrel, and in combination therewith a carrier pivoted to the receiver under, or nearly under, the rear end of the barrel by means of an oblong pivot-bearing, c'', and with spring c''', said bearing being oblong in a vertical direction, so that it yields downward to cushion the force of the advancing column of cartridges or to make room for a cartridge in the receiver between the carrier and the bolt when the arm is closed, substantially as specified.

4. In a magazine fire-arm having a bolt for closing the chamber provided with a handle which terminates under the guard-strap, and in combination therewith, a spring, , provided with the catch v'' and an extension, v''', which projects over the rear end of the trigger, whereby the trigger is only allowed movement enough to trip the hammer when the handle is locked in place, substantially as specified.

5. In a magazine fire-arm having a bolt or breech-block for closing the chamber, which moves in a line with the barrel, and is provided with groove n, for holding the cartridge in a central position, and in combination therewith a carrier which holds the end of the cartridge in said groove, substantially as shown and described.

258,732. ROTARY STEAM-ENGINE. ERASTUS W. ELLSWORTH, East Windsor Hill, Conn. Filed Dec. 2, 1881. (No model.)



Claim.—1. In a rotary engine, the combination of an eccentric adjustable stop-pin, l', with the rotary arm k', communicating through suitable intermediate mechanism with the rotary cut-off plate, substantially as described.

2. In a rotary engine, the combination of an eccentric adjustable stop-pin, l', with the rotary arm o', communicating through suitable mechanism with the rotary valve, substantially as described.

3. In a rotary engine, the combination of the eccentric adjustable stop-pins l' l' with the rotary arms k' and o', communicating, respectively, through suitable intermediate mechanism with the rotary valve, substantially as described.

4. In a rotary steam-engine, the combination of the group of cylinders revolving about an axis parallel with the axis of each cylinder, the rotary and plane-surfaced valve-seat on the end of the cylinders, the flat-surfaced valve, and the rotary cut-off, all substantially as described.

5. In a rotary engine, the combination of the laterally-revolving cylinders, the rotary valve-seat upon the end thereof, the valve and its tubular rod, and the rotary cut-off with its rod passing through said tubular rod, all substantially as described.

6. In a rotary engine, the combination of the tubular steam-chest trunnion, the tubular valve-stem, the stuffing-boxes m d', and the spring g', pressing the stuffing of both, all substantially as described.

7. In a rotary steam-engine, the combination of the group of cylinders revolving about an axis parallel with the axis of each cylinder, the rotary and plane-surfaced valve-seat on the end of the cylinders, the plane-surfaced valve, and the semicircular and rotary cut-off plate having an independent movement on the back of the valve, all substantially as described.

8. In a rotary steam-engine, the combination of a group of cylinders revolving about an axis parallel with the axis of each cylinder, the central duct formed by the juxtaposition of the cylinders and running from end to end of the cylinders, the cylinder-ports, and the valve taking the exhaust steam from the cylinders and delivering it into said central duct, all substantially as described.

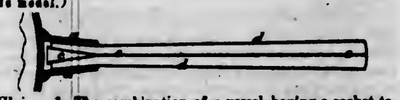
9. In a rotary steam-engine, the combination of a group of cylinders revolving about an axis parallel with the axis of each cylinder, the rotary steam-chest on the end of the cylinders, and the tubular trunnion affording entrance to the live steam, all substantially as described.

10. In a rotary steam-engine, the combination of the pistons, the group of cylinders revolving about an axis parallel with the axis of each cylinder, the steam-ports of the cylinders, the plane-surfaced and rotary valve-seat upon the end of the cylinders, and the plane-surfaced valve having ports so cut and arranged relatively to the cylinder-ports as to put steam-pressure on the pistons just before beginning their outward stroke and to maintain the pressure till just after the completion of such stroke, (to prevent jarring,) all substantially as described.

11. In a rotary engine, the combination of the piston-rods, disk g, arbors f', sleeves p', journal-pins o', springs r', and yokes s', substantially as described.

12. In a rotary engine, the combination of a piston-rod, a disk, g, arbor f', exteriorly threaded, and sleeve p', interiorly threaded, substantially as described.

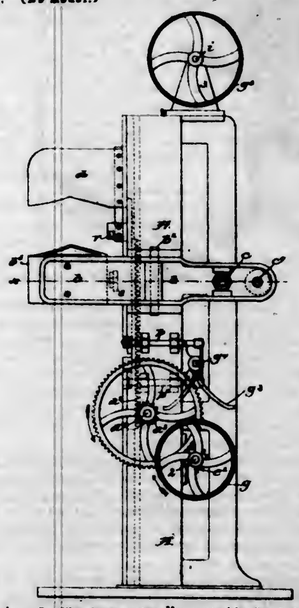
258,733. HANDLE FOR SAUCEPANS. CHARLES EZARD, Manchester, County of Lancaster, England. Filed Dec. 27, 1881. (No model.)



Claim.—1. The combination of a vessel having a socket tapering outward and a wedging device within the socket with a hollow handle adapted to be expanded and secured in the socket by being forced therein, substantially as described.

2. The combination of a vessel having a socket tapering outward and a wedge within the socket, with a tubular metal handle having a butt-joint, and adapted to be expanded and fixed by being driven into the socket, substantially as set forth.

258,734. CRIMPING-MACHINE FOR BOOTS AND SHOES. JOHN W. D. FIFIELD, North Brookfield, Mass. Filed Feb. 28, 1882. (No model.)



Claim.—1. The longitudinally-movable form carrying rack having the inclines d 5, combined with the rock-shafts p p^1, their arms, and the bolt-shipper, to operate substantially as described.

2. The rack having the inclines 4 5, the form thereon, the rock-shafts p p^1, and the bolt-shipper, combined with the toothed wheels e f, pinions e^1 f^1, and pulleys c^1 f^2, to operate all substantially as described.

3. The shaft i, its loose pulley and three fast pulleys, the pulleys g h c^1 f^1, pinions e^1 f^1, gears e f, and pinion d^2, combined with the rack-bar and its form, and the jaws a b, substantially as described.

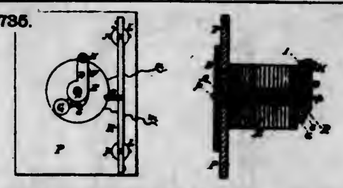
4. The jaws a b and their carrying arms or levers, and projections or rollers 8 thereon, combined with the rack-bar, its projection r, and the form, substantially as and for the purpose described.

258,735. ELECTRICAL ANNUNCIATOR. FRANK E. FISHER, Detroit, Mich. Filed Mar. 6, 1882. (No model.)

Brief.—When the current passes the armature is attracted, the shoulder X is released from the stop S, and the outer end of the armature, together with the crank-arm D, falls by gravity upon the stop o. This crank-arm actuates the pointer through the medium of the rod p, to which both are rigidly attached.

Claim.—1. The combination, substantially as hereinbefore described, of the supporting-plate, the electro-magnet having a hollow core provided at one end with an interior screw-thread, the hollow screw extending through the supporting-plate and engaging the interior screw-threaded end of the core of the magnet, and the crank-rod having its bearing in the hollow screw.

258,736.



2. In an electric annunciator, an electro-magnet having its inner end faced with a diamagnetic substance, a hollow core projecting beyond the inner end of the electro-magnet, a diamagnetic rod passing through the hollow core, and having at its inner end a diamagnetic crank-arm rigidly fastened thereto, and an armature pivoted to the free end of said crank-arm, and having therein a shoulder adapted to engage with a suitable stop fastened in the facing of the inner end of the electro-magnet, substantially as herein shown and described.

3. The combination of the electro-magnet E, core E, rod p, pointer B, crank-arm D, having stop F, armature I, having shoulder X and weighted end G, and stop S, substantially as herein shown and described.

4. The combination of crank-arm D, rigidly fastened to rod p, and having stop F, armature I, having weighted end G and shoulder X, and pivot H, connecting said crank-arm and armature, all constructed, arranged, and operating substantially as herein shown and described.

258,736. GAGE ATTACHMENT FOR SEWING-MACHINES. HORACE FISHER, Troy, N. Y. Filed Oct. 21, 1881. (Model.)



Claim.—1. In a gage attachment for sewing-machines, the combination of a horizontal blade, B, pivotally connected to a foot, F, a connecting-mandrel, M, and surrounding coil-spring H, substantially as described.

2. In a gage attachment for sewing-machines, the combination of the horizontal blade B, pivotally attached to the foot F, the mandrel M, with coil-spring H, the leg L, with perforated projections G′ G″, and the slot S′, and pin and button P, substantially as shown and set forth.

3. In a sewing-machine gage attachment, the combination of the frame A, with slotted ends, the slotted member L, with perforated projections G′ G″, mandrel M, surrounding coil-spring H, foot F, and pivoted gage-plate B, substantially as and for the purpose set forth.

258,737. TREATMENT OF PRAIRIE SOIL TO OBTAIN USEFUL PRODUCTS THEREFROM. CHARLES L. FLEISCHMANN, Washington, D. C. Filed Mar. 20, 1882. (No specimens.)

Claim.—The herein-described method of extracting the alkaline, carbonaceous, and nitrogenous matters existing in or derivable from the vegetable mold of prairie or other rich soils, by exposing such soils to the heat of combustion and sublimation, and subsequently treating the products thus obtained by purification and lixiviation, as set forth.

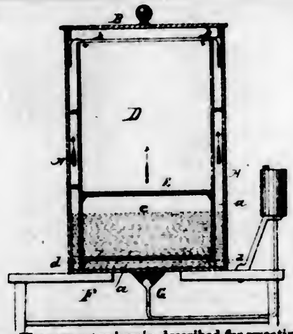
258,738. CARPENTER'S FLOORING-TONGS. WILLIAM B. FORSTER, Bakerville, Tenn. Filed Mar. 6, 1882. (No model.)



Claim.—In a ceiling and flooring tongs, the combination of the jaws A, pivoted together, and having the points B, the spring C, catch D, pivoted brace F, and spring G, substantially as shown and described.

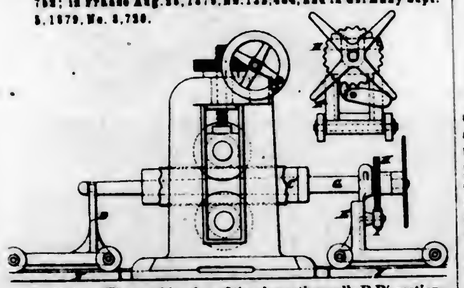
258,739. APPARATUS FOR SWEATING TOBACCO. WILLIAM FOUS, Mansfield, Ohio. Filed Aug. 18, 1881. (No model.)

258,739.



Claim.—The apparatus herein described for sweating tobacco, which consists of the covered casing A and uncovered casing D, the latter being supplied with the grate E and water-space *f*, and being placed within the casing A, the water-space *a* and steam-passage *b* being formed between the two casings, the steam-passage *b* leading from the space *a* directly into the uncovered casing D, the two water-spaces mentioned being independent of each other, substantially as set forth.

258,740. MACHINE FOR MAKING METAL TUBES AND PIPES. SAMSON FOX, Leeds, County of York, England. Filed Apr. 7, 1882. (No model.) Patented in England Feb. 26, 1879, No. 782; in France Aug. 26, 1879, No. 132,464, and in Germany Sept. 5, 1879, No. 8,730.



Claim.—The combination of the elongating-rolls R R', sectionally-constructed collapsible mandrel C, and supporting-carriages D and E, all constructed, combined, and arranged to operate substantially as and for the purpose specified.

258,741. WASHING-MACHINE. BENJAMIN F. FUCHS, Tiger Mill, Tex. Filed Sept. 1, 1881. (No model.)



Claim.—1. An attachment for a washing-machine, consisting of the wash-board D, provided or formed with a rectangular board, *d'*, and a rectangular board, *d''*, hinged to the upper end of the board *d'* of the wash-board D, and provided with a rubbing-surface, substantially as described.

2. In a washing-machine of the class described, having a longitudinal moving disk and crank-shaft, the tilting board serving a two-fold purpose—to wit, a brace to prevent the crank-shaft and its rotating disk from moving longitudinally and a guard for the dropped clothes—substantially as described.

3. In a washing-machine, the combination, with the wash-board D, of the endwise-moving rotating wash-board E, provided with a crank and a balance-weight, substantially as and for the purpose stated

258,742. MAGNETO GENERATOR FOR RAILROAD-SIGNALS. WESLEY WARD GARY, Boston, Mass. Filed Jan. 5, 1882. (No model.)

Brief.—A rotary magneto-generator actuated through a rock-shaft, one arm of which engages an arm on the shaft carrying the revolving armature, the other arm of the shaft being actuated by a passing car-wheel, the armature-shaft carrying a fly-wheel whereby prolonged rotation is secured after the wheel ceases to act. The foregoing actuates electrically a bell-signal located in advance of the generator, producing by the electric current a protracted signal after the train has passed the generator.



Claim.—1. In an automatic railway-signal, the combination of the following elements: a magneto-electric generator, appliances, substantially as shown, for imparting a continuing motion to said generator from passing railway-trains, a signal-instrument provided with an electro-magnet, whereby it is positively propelled or actuated, and an electric conductor extending from the generator to the signal, substantially as shown, whereby an electric current may be produced by the train and applied as the motive power to propel the signal with a continuing action.

2. In an automatic railway-signal, the combination of a magneto-electric generator, appliances, substantially as shown, whereby a passing car-wheel is caused to actuate the generator in a prolonged or continuing manner, an alarm-bell, a vibrating striker, and an electro-magnet arranged to operate the striker and connected electrically with the generator, substantially as described and shown.

3. In an automatic railway-signal, the combination of a magneto-generator, appliances, substantially as described, for setting said generator in action from passing railway-trains, and a fly-wheel or equivalent device for continuing or prolonging the motion of the generator after the passage of the train.

4. In an automatic railway-signal, the combination, with driving devices adapted to be actuated by passing trains, of a magneto-electric generator having its armature and a fly-wheel mounted on one and the same shaft.

5. In an automatic railway-signal, the combination of an electrically-propelled signal located at a crossing or other point to be guarded, a magneto-electric generator located beside the railway-track in advance of the signal and electrically connected with the signal, and appliances, substantially as described, whereby a passing car-wheel is caused to actuate the generator so as to produce a prolonged current or succession of currents.

6. The combination, in a railway-signal system, of a bell-alarm provided with an electro-magnet, whereby it is propelled, a magneto-generator connected electrically with said signal, a fly-wheel applied to the generator, and appliances, substantially as shown, whereby motion is imparted to the generator by the action of passing trains.

7. The combination of the rock-shaft having the two arms with the armature, its shaft, and the arm or bar upon said shaft.

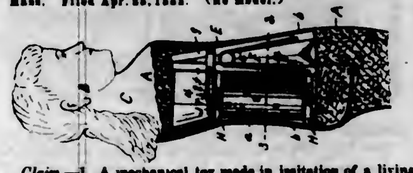
8. The combination of the rotary shaft, having an armature thereon, a bar or arm attached to said shaft, and a rock-shaft provided with an arm to operate upon said bar, and with a second arm adapted to be operated by passing railway-trains.

9. The combination of the shaft, the armature thereon, the yielding dogs attached to the shaft, and a rock-shaft provided with the two arms, as described and shown.

10. In combination with the rock-shaft having the horizontal and vertical arms, the vertical shaft provided with the armature, the fly-wheel, and the yielding dogs *e*.

11. In combination with the vertical shaft having the armature mounted thereon, the rock-shaft provided with the two arms, and an intermediate connecting-dog arranged to yield in one direction only.

258,743. MECHANICAL TOY. JOHN L. GIVEN, Cambridge, Mass. Filed Apr. 28, 1882. (No model.)



Claim.—1. A mechanical toy made in imitation of a living being and having placed within it bellows F, reeds *m*, and reed-chambers *l* in a board, A, and in communication with said bellows, and the face *o* of the board A, and a perforated musical drum G, adapted to be driven by the movement of the bellows, and all combined and arranged together to be operated from the outside of the doll, substantially as described, and for the purpose specified.

2. The music perforated drum G, rotating in standards H, concave seat *o* for said drum, having air-passages *a*, leading to reed-chambers *l* of a reed-board, A, in combination with springs *c*, arranged to press upon said drum with an elastic yielding pressure, substantially as described.

258,744. APPARATUS FOR THE DISPOSAL OF SEWAGE. AMASEN S. GLOVER, Brockton, Mass. Filed Oct. 15, 1881. (No model.)

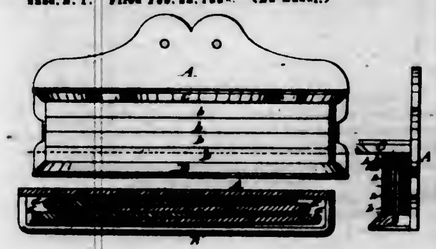
Brief.—The noxious gases are directed by the inclined roof into the chimney.

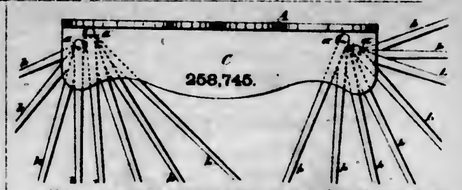


Claim.—1. In an apparatus for the disposal of sewage, the combination of a series of tanks, a sewer main or pipe arranged to discharge sewage matter into the first tank of the series, from which said matter flows successively through the other tanks, a building or inclosure over said tanks, having an inclined roof forming a flue having an opening, H, at its lower end for the admission of external air, and a chimney, A, connected to the upper end of said roof or flue, said chimney, flue, and opening causing a current of air to pass over the series of tanks to the chimney and carry with it from the building all the gases and odors arising from the matter in the tanks, as set forth.

2. The improved apparatus or building for the disposal of sewage, consisting of, first, a central structure receiving a sewer-main, and provided with a ventilating flue or chimney; and, secondly, radiating wings or inclosures, each having a series of tanks adapted to receive sewage matter from the central structure, and an inclined roof or flue communicating with the central chimney and adapted to conduct to the chimney the gases and odors from the sewage matter in the tanks, the central structure being provided with means for shutting off the sewage from either of the wings whenever the tanks require cleaning, as set forth.

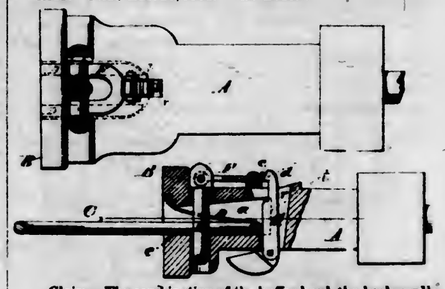
258,745. FOLDING CLOTHES-BARS. JOHN S. GOURLEY, Syracuse, N. Y. Filed Feb. 25, 1882. (No model.)





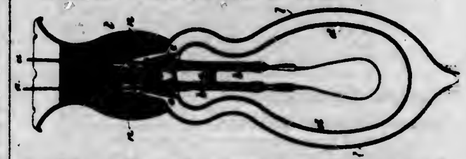
Claim.—In combination with the back A, base B, and shelf C, two or more rods, *a a*, secured to each end of the base and shelf and at different distances from the back A and from the ends of the shelf, and the bars *b b*, pivoted on said rods and adapted to fold over one another alternately from opposite ends of the shelf and base, and tapered to lie closely together when folded, all as shown and set forth.

258,746. CAR-COUPLING. EDWARD W. GRANT, Ypsilanti, Mich. Filed Mar. 25, 1882. (No model.)



Claim.—The combination of the buffer-head, the backwardly-flaring chamber at the rear rounded abutment, *t*, thereof, the independent springs D, having free inner ends, which are also rounded to fit the abutment *t*, the gravitating catch-lever G, extended vertically through the base A in rear of the abutment *t* and the rounded ends of said springs, the catch F on top of the bar A, and the coupling-pin E, pivoted to the catch F, all arranged and operating substantially as described.

258,747. ELECTRIC INCANDESCENT LAMP. JOHN H. GODDY, Brooklyn, N. Y. Filed Dec. 23, 1881. (No model.)



Claim.—1. The metal conductors for an electric lamp cased with glass inside the globe and united by the glass cross-bar, substantially as set forth.

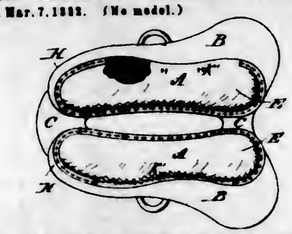
2. The combination, in an electric lamp, of the globe, the metal conductors, the glass cases covering such conductors, the carbon filament, and the lead or similar metal surrounding the conductors and within the glass tests of the globe, substantially as set forth.

3. In an electric lamp, the combination, with the inner and the outer glass globes, of tests through which the metallic conductors pass, and one or more projections or tests on the inner globe projecting into glass tests on the outer globe, and the glass melted together for supporting the inner globe in its proper position in the outer globe, as set forth.

4. The method herein specified of exhausting and hermetically sealing the inner globe of an electric lamp, consisting in providing an open test on the inner globe, passing into a closed test on the outer globe, exhausting both globes, and then hermetically sealing the parts by melting the glass of the outer and inner tests together, substantially as set forth.

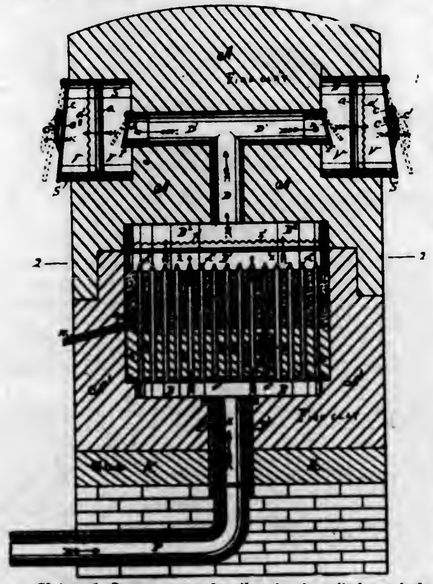
5. In an electric lamp, two globes made wholly of glass, and each globe being of nearly uniform thickness throughout, and the glass of the globes contracted around the conductors, and the two globes exhausted of air and each hermetically sealed, in combination with the conductors passing through the globes, and the incandescing filament within the inner globe, substantially as set forth.

258,748. SADDLE-PAD. FRANCIS ANTON HAHN, Cuero, Tex. Filed Mar. 7, 1882. (No model.)



Claim.—A saddle-pad consisting of an upper and lower cover, connected by lacing, provided with pockets to fit saddle-tree projections and filled intermediately with layers of felt or cloth, as shown and described.

258,749. PROTECTOR FOR OIL-TANKS. WILLIAM J. HALL, Syracuse, N. Y., assignor to himself and William J. Hutchins, Joliet, Ill. Filed Nov. 21, 1881. (No model.)



Claim.—1. In a protector for oil-tanks, the cylinder or body A and A', provided with the pipes P and P', chambers B, B', and B², orifices or openings D and D', chambers V, and self-closing valves a and e, for the use and purpose set forth.

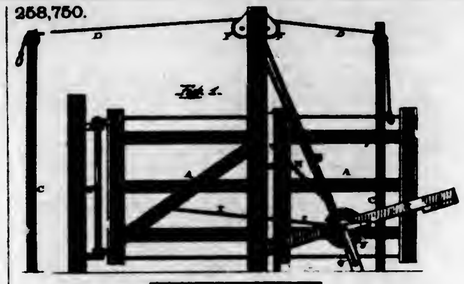
2. In a protector for oil-tanks, the exterior case, constructed in two parts, A and A', and containing the chambers B, B', B², D, D', and V, pipe w, perforated clay partition r, containing the pipes d, provided with gas-burners d', and filling T, metal disk e, valves a, e, and e', and partitions a a' and x x', all arranged to operate as set forth, and supported on the glass plate K and connected to an oil-tank by means of the pipe P', having the glass lining H, and pipes P, P², and L, in the manner and for the purpose set forth.

258,750. SELF-OPENING GATE. WILLIAM B. HAMBLETON, Winchester, Ill. Filed Apr. 4, 1882. (Model.)

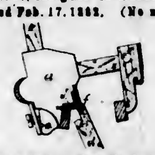
Claim.—1. The combination of the hinged gate, the connecting-cords D, the standard or standards E, provided with guides for the cords to pass over, a pivoted lever which is connected by a rod, a chain, and pulley, and a pivoted rod having one of its ends bent so as to catch over the side of the lever, substantially as set forth.

2. The combination of the lever, which is connected to the gate by a rod, a rod or shaft which is journaled upon the lever, and which has a pulley rigidly secured at one end and a bent lever at the other, the pulley having a chain secured to it for regulating the distance the lever shall move, and the bent arm or lever having the operating-cords secured to it, substantially as specified.

258,750.



258,751. REPETITION-ACTION FOR PIANOS. JOHN HARDMAN, New York, N. Y., assignor to Hardman, Dowling & Peck, same place. Filed Feb. 17, 1882. (No model.)



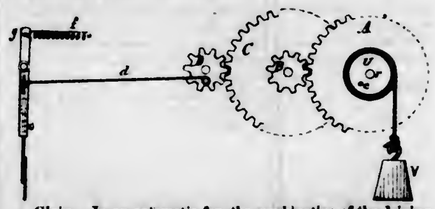
Claim.—In a piano-forte action, the butt-block *a*, with its projecting shoulder *f*, in combination with the cut-away shouldered end of the jack *d*, as shown at *e i*, all constructed and operating substantially in the manner and for the purposes set forth.

258,752. REFRIGERATOR. GUS J. HARRER, Louisville, Ky. Filed Apr. 15, 1882. (No model.)



Claim.—The refrigerating-box A, having the sectional cover K, K', and K², arranged as described, and provided with the central chamber or compartment, C, having faucet D, waste-pipe G, and brackets *e e*, detachable ice-box E, having drain-spout F, and detachable chipping-board H, and detachable side racks, I, all constructed and combined substantially as and for the purpose herein shown and described.

258,753. AUTOMATIC FAN. THOMAS HEATON, Cornwall, N. Y. Filed Feb. 8, 1882. (No model.)

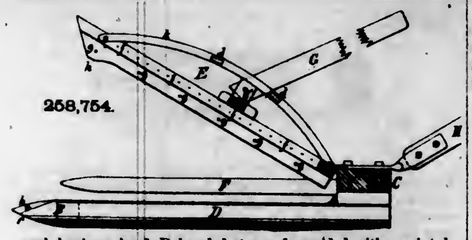


Claim.—In an automatic fan, the combination of the driving mechanism, adjustable blades so constructed that they may be raised and lowered, and the adjustable flexible connecting-cord *d* and return-spring *f*, to operate the fan back and forth, constructed and arranged substantially in the manner herein set forth.

258,754. CRANBERRY REAPER AND DETACHER. CHARLES W. HEISLEY, Tuckahoe, N. J. Filed Feb. 28, 1882. (No model.)

Claim.—1. In a cranberry-gathering machine, the troughs D,

258,754.



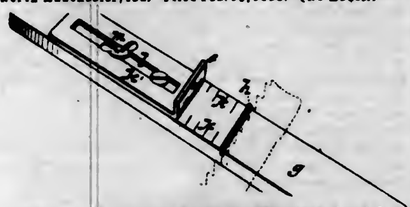
each having a head, B, beveled at *c*, and provided with a point, *b*, and ledges or shoulders *a*, as described and shown, and for the purposes set forth.

2. In a cranberry-gathering machine, the combination of troughs D, reapers A, and auxiliary reapers *g*, substantially as described and shown.

3. In a cranberry-gathering machine, the hinged lid E, provided with reapers *g*, cross-bars *f*, and a handle, G, combined substantially as specified.

4. In a cranberry-gathering machine, the troughs D, separated from each other by spaces K, in combination with the sides or fenders F, substantially as and for the purposes set forth.

258,755. SAW-JOINTING MACHINE. REMUS HOLSHUMAN, North Manchester, Ind. Filed Feb. 13, 1882. (No model.)



Claim.—1. In a saw-file having the filing-blade *b* and bearing *a*, the handle *d* and heel set-screw *s*, substantially as specified.

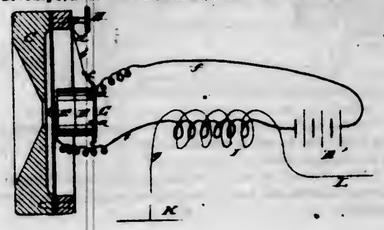
2. The combination, with a side file for saws, having its filing-blade *b* set at a slight angle to its bearing *a*, of the check-gage *g*, its tooth-bar *h*, and gage-slide *k'*, substantially as specified.

258,756. VEHICLE-CUSHION. KING W. HOLMES, Columbus, Ohio. Filed Mar. 9, 1881. (Model.)



Claim.—As a new article of manufacture, the described carriage-cushion, consisting of a skeleton frame, to which pieces of canvas are tacked and filled in with hair or moss without stitching at any point, and provided with an independent rear and end edge piece constructed of suitable facing material, similarly filled and tacked to the cushion-frame, with intermediate and outside welts, and having a front upper edge, composed of folds of leather tacked firmly to the wooden frame, and a bottom welt and a fall, as shown and described.

258,757. TELEPHONE-TRANSMITTER. STEPHEN M. HOPKINS, Brooklyn, N. Y. Filed Mar. 30, 1882. (No model.)



Claim.—The combination, with a piano-faced hard-carbon button carried by the diaphragm, of a vibratory electrode suspended by two or more threads, serving the double purpose of suspending and pressing the button F into contact with the button E, substantially as described.

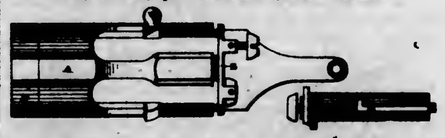
258,758. LAMP-BURNER. WILLIAM L. HORNE, Meriden, Conn. Filed June 21, 1881. (No model.)



Claim.—1. In combination with the wick-tube of a lamp-burner, an adjustable hood having in its upper end a chamber, which extends over a portion only of the wick in the direction of its greatest diameter for collecting the gas and directing it to any portion of the wick which is left burning, substantially in the manner and for the purpose set forth.

2. The combination, in a lamp-burner, of an adjustable hood having in its upper end a chamber which extends over a portion only of the wick in the direction of its greatest diameter for collecting the gas and directing it to any portion of the wick which is left burning, a wick-tube, and a gas-tube for conducting any gas that may be generated in the lamp to the chamber in the hood, substantially as and for the purpose set forth.

258,759. BREECH-LOADING FIRE-ARM. FERDINAND HUNNIUS, Sr., Paducah, Ky. Filed Feb. 28, 1881. (Model.)



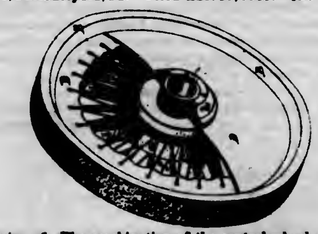
Claim.—1. In a breech-loading gun, the combination of the frame, two endwise-moving bolts, stops for regulating the movements of the bolts, and a plate, I, for connecting the rear ends of the bolts loosely together, substantially as shown.

2. The combination of the frame A, two endwise-moving bolts, D, having the slots *s* in their outer sides, and provided with teeth or cogs for causing them to turn in opposite directions, the plate I, for connecting the two bolts together, and the screws I, provided with friction-rolls, substantially as described.

3. The combination of the two bolts D, connected together at their rear ends by a plate, I, and a shield, N, the shield being attached to the plate and made to move with the bolts, substantially as set forth.

4. In a breech-loading fire-arm, the combination of the frame, A, open upon its top, endwise-moving bolts provided with levers or projections, a connecting-plate, I, the shield N, connected to the plate, and provided with the spring-wings O, substantially as specified.

258,760. GRINDING OR POLISHING WHEEL. CHARLES V. HUNT, Philadelphia, Pa. Filed Mar. 27, 1882. (No model.)

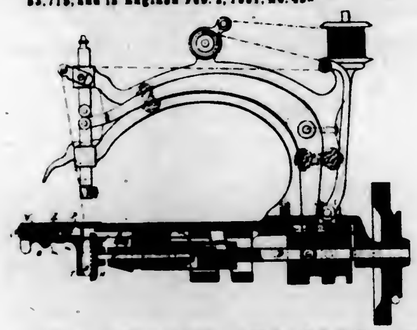


Claim.—1. The combination of the central wheel, the covering-strip B, and lacings *f*, whereby said covering-strip is drawn over the rim of the said wheel, as set forth.

2. The combination of the central wheel, the covering-strip B, the lacings *f*, and the side plates, D D, as specified.

3. The combination of the central wheel, the covering B, the lacings *f*, the side plates, D, and the bushing F, with flange *g* and nut A, as specified.

258,761. SEWING-MACHINE. AUGUSTE JACQUES HENRY, Paris, France. Filed Aug. 24, 1881. (Model.) Patented in France Sept. 4, 1879, No. 132,885; in Belgium Jan. 28, 1881, No. 53,715, and in England Feb. 2, 1881, No. 466



Claim.—1. The combination, with the shaft D D' and rotary hook H, of the toothed segment F, bevel-pinion G, and cam E, substantially as and for the purpose set forth.

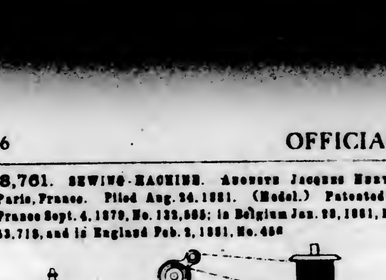
2. The spring Y, arranged as described, the feed-claw I, the lever S, and arm M, having common pivotal points in the swinging lever L, cams J and Q, and shaft D, all said parts being combined substantially as and for the purpose set forth.

3. The combination, with a shuttle having an arm attached on one side, of the tension-spring h, entering, at its lower end, a recess, i, of said shuttle, substantially as described.

4. The combination, with the bed-plate having a slot one side of which is notched, as shown, of the plate V, having a device for holding the shuttle attached, and the pivotal catch X, and spring Z, acting thereon, as and for the purpose specified.

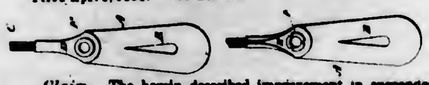
5. The combination of the elastic bar N, with segment O, worm P, and knob P', the lever S, pivoted to adapt it for adjustment in a horizontal plane, and carrying at its inner end a journaled block, d, the lever L, swinging in a vertical plane, and the tapered cam J, shaft D D', and hook H, all as set forth and described, for use in varying the length of stitch.

258,762. STEAM-TABLE. JOHN W. HYATT, Newark, N. J. Filed July 25, 1881. (No model.)



Claim.—A steam-table composed of two corresponding plates, in the inner surface of one or both of which is formed a continuous channel for the circulation of the heating or cooling agent, and having a groove containing an elastic packing, for the uses and purposes substantially as shown and described.

258,763. SUSPENDER-END. JAS. G. HYDE, West Haven, Conn., assignor to the West Haven Buckle Company, same place. Filed Apr. 8, 1882. (No model.)



Claim.—The herein-described improvement in suspender-ends, consisting of the tab A and a cord C, combined with the two parts D E of the clasp, one part attached to one side of the tab and the other upon the opposite side, the two parts closed upon the cord, substantially as described.

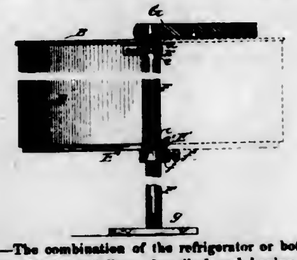
258,764. BIT-STOCK. WILLIAM A. IVES, New Haven, Conn. Filed Apr. 8, 1882. (No model.)



Claim.—1. In a bit-brace, the combination of the socket A constructed with a longitudinal slot, D, opening through the head, and with an annular shoulder, d, above the head, with a bridge, F, across the slot, an internally-screw-threaded sleeve, G, arranged upon the socket to bear against the shoulder a, and the collar provided at the other end to prevent longitudinal movement of the sleeve, but yet leave the sleeve free for rotation, the follower H, constructed with the recess e, threaded upon its ends and arranged in the slot of the socket, its threaded end engaging the internal thread of the sleeve, whereby the rotation of the sleeve imparts longitudinal movement to said follower, the jaws L L, pivoted in the recess in said follower and constructed to bear upon the bridge near their inside tail ends, and inclined upon their back at their ends, substantially as described

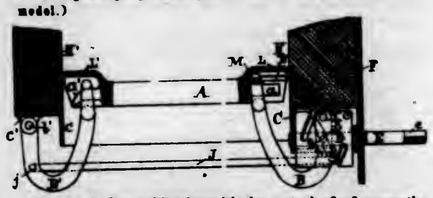
2. In a bit-brace, the combination of the socket A, constructed with a longitudinal slot, D, opening through the head, and with an annular shoulder, d, above the head, with a bridge, F, across the slot, an internally-screw-threaded sleeve, G, arranged upon the socket to bear against the shoulder a, and the collar provided at the other end to prevent longitudinal movement of the sleeve, but yet leave the sleeve free for rotation, the follower H, constructed with the recess e, threaded upon its ends and arranged in the slot of the socket, its threaded end engaging the internal thread of the sleeve, whereby the rotation of the sleeve imparts longitudinal movement to said follower, the jaws L L, pivoted in the recess in said follower and constructed to bear upon the bridge near their inside tail ends, and inclined upon their back at their outer ends, with the U-shaped spring l, arranged in the recess in the follower and so as to bear upon the outside of the jaws, substantially as and for the purpose described.

258,765. REFRIGERATING BOTTLE-SAFE. PATRICK KEARNS, Shamokin, Pa. Filed Mar. 11, 1882. (No model.)



Claim.—The combination of the refrigerator or bottle-safe A B, constructed substantially as described, and having the top and bottom brace-bars, E and E', provided respectively with eye-plates e and e', and vertical supporting-rod F, having the shoe G, and provided with the adjustable collar f, substantially as set forth.

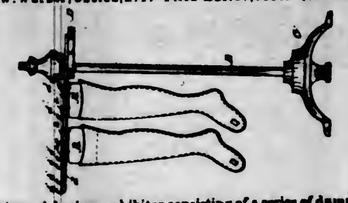
258,766. GRATE FOR STOVES AND RANGES. THOS. KEARNS, San Francisco, Cal., assignor to the Adjustable Grate Manufacturing Company, same place. Filed Oct. 19, 1881. (No model.)



Claim.—1. In combination with the grate A of a furnace, the levers B, B', and G, rod J, cam D, and rod E, as and for the purpose herein described.

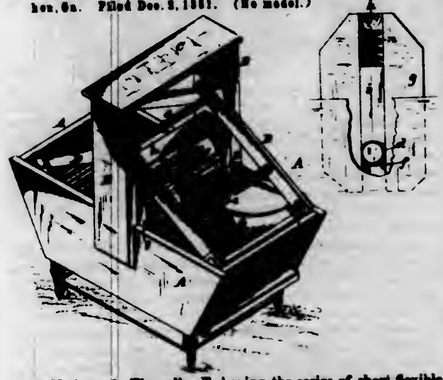
2. The levers B, B', and G, and rod J, when operated by suitable means to raise and lower the grate A, as and for the purpose described.

258,767. METHOD OF AND APPARATUS FOR EXHIBITING HOSIERY. J. H. KENNARD, Waterloo, assignor of two-thirds to J. W. Warner, Oneida, N. Y. Filed Mar. 27, 1882. (No model.)



Claim.—A hosiery-exhibitor consisting of a series of dummies, A A, provided with rings a a, the standard B C, the segmental bar D, provided with vertical holes, and the pivotal arms d d d', the said dummies being suspended from said arms, the whole combined and arranged as and for the purpose set forth.

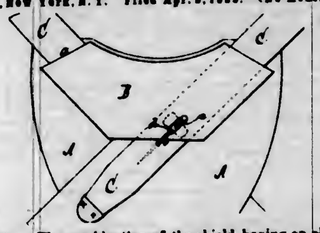
258,768. WASHING-MACHINE. JOHN W. KENNEDY, Sr., Hoboken, Ga. Filed Dec. 3, 1881. (No model.)



Claim.—1. The roller E, having the series of short flexible rubbers composed of the strips c, secured in the body of the roller by means of the wedge-blocks b, the two edges projecting beyond the periphery of said roller, as and for the purpose set forth.

2. The combination of the frame A B and the pivoted oscillating frame D, having the segmental corrugated bed c, with the roller E, mounted in spring-bearings within said oscillating frame, and having projecting flexible rubbers, as set forth.

258,769. NECKWEAR SHIELD AND FASTENER. ALBERT KOHP, New York, N. Y. Filed Apr. 8, 1882. (No model.)



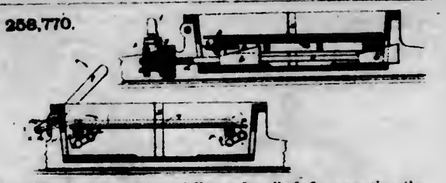
Claim.—The combination of the shield having an elongated slot, d, the pin having a loop, c, arranged in and projecting through said slot, and the key or wedge e, inserted into the projecting part of the loop against the shield, substantially as described.

258,770. LITHOGRAPHIC PRINTING-PRESS. JOS. KRATZER, Johannisberg-on-the-Rhine, Germany. Filed Mar. 2, 1882. (No model.) Patented in Germany Aug. 16, 1879, No. 6,666.

Claim.—1. In a lithographic press, the supporting-plate for the stone, resting upon a series of wedges, as set forth, in combination with mechanism, substantially as described, for moving the same either singly, in pairs, or all at once, whereby the stone may be adjusted to a horizontal position and then raised or lowered vertically, as may be desired.

2. In combination with the stone-holder, the wedges b b', connected together at either side of the same, the supplemental wedges

258,770.



b, and mechanism, substantially as described, for operating the wedges in pairs or singly, substantially as set forth.

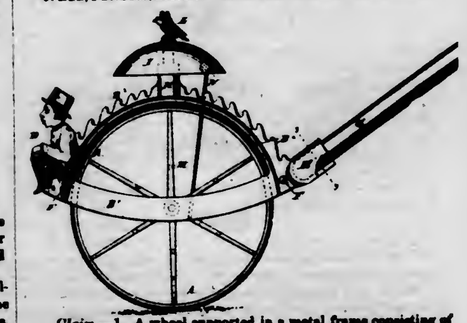
3. In combination with the holder and plate a, the wedges b b' b, ratchet-wheels c, screw-rods d, and connected levers f, having pawls e, as set forth.

4. In combination with the holder, the supporting-plate k for the stone, and mechanism, substantially as described, for raising the same flush with the upper edge of the holder, and for lowering it, as set forth.

5. In combination with the holder, the supporting-plate k, shaft m, lever l, rods o q, and bell-crank levers p, substantially as described.

6. In combination with the stone-holder of a lithographic press, the plate a, having independently-movable wedges at the corners thereof for adjusting the plate horizontally, the supplemental supporting-plate k, and mechanism, substantially as described, for lifting the latter flush with the edge of the holder and for lowering it upon the plate a, as set forth.

258,771. TOY MUSICAL WHEEL. LOUIS KYZER and ALFRED C. REX, Philadelphia, Pa. Filed Dec. 31, 1881. (No model.)



Claim.—1. A wheel supported in a metal frame consisting of a horizontal bar and a curved bar at top, inclosing the upper part of said wheel, and provided with striking-pins and adapted to be propelled along the ground, in combination with a bell held rigidly upon said frame, and a spring-hammer rigidly secured at its bottom to said frame and adapted to be vibrated by said striking-pins to cause the bell to ring, substantially as and for the purpose specified.

2. A wheel, A, provided with pins M, in combination with a frame, B, carrying at the top a bell and on one end a core, E, handle G, and spring-hammer N, all substantially as and for the purpose specified.

3. A wheel, A, in combination with a frame, B, composed of two pieces, riveted together at F, each of said pieces being formed with a hollow part to form core E, a side bar, B', to carry the wheel A, and curved parts which, when the frame is riveted together, form an arch or curved part, B', over the upper half of the wheel, substantially as and for the purpose specified.

4. The combination of wheel A, having striking-pins M, frame B, having core E, figure D, hollow hub H, support J, with its nut L, bell I, spring-hammer N, and handle or rod G, substantially as and for the purpose specified.

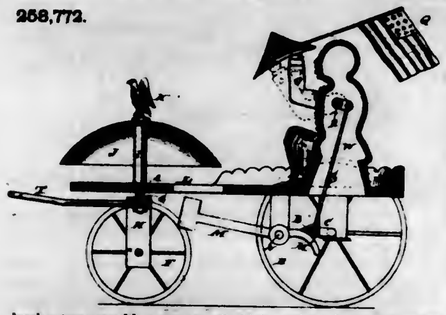
5. The wheel A, in combination with a frame, B, provided with hollow hub H, figure D, and hollow core E, substantially as and for the purpose specified.

6. The wheel A, in combination with a frame, B, having side bars, B', and top curved bar, B', and figure D, substantially as and for the purpose specified.

258,772. TOY CHARIOT. LOUIS KYZER and ALFRED C. REX, Philadelphia, Pa. Filed Dec. 31, 1881. (No model.)

Claim.—1. A toy provided with wheels and adapted to be propelled on the ground, having a bell rigidly secured to the frame mechanism independent of the figure to ring said bell, and a figure

258,772.

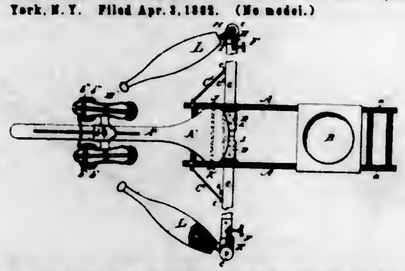


having two movable arms, one of which carries a flag and the other a hat, substantially as and for the purpose specified.

2. The combination of a carriage upon wheels with bell J, pivoted hammer M, crank D, figure W, having pivoted arms O O', one of which carries a hat and the other a flag, Q, crank R, and rod S, substantially as and for the purpose specified.

3. In a toy chariot, the frame A upon wheels B F, crank-axle C, figure W, having arms O O', one of which puts a hat on and off the head of the figure and the other waves a flag, Q, crank R, and rod S, substantially as and for the purpose specified.

258,773. EXERCISING APPARATUS. JOHN H. LAFLIN, New York, N. Y. Filed Apr. 3, 1882. (No model.)



Claim.—1. In an exercising apparatus, the body A, having one or more outriggers, C, in combination with coiled springs F at the ends of said outriggers, capable of receiving Indian clubs or other similar devices to be used in guise of oars, substantially as herein specified.

2. In an exercising apparatus, the body A and one or more outriggers, C, in combination with coiled springs F and adjusting means E', to regulate the force of said springs, substantially as and for the purpose specified.

3. In an exercising apparatus, the body A and one or more outriggers, C, adapted to receive oars or their equivalents, in combination with the slotted center piece, A', and foot-rest B', adjustably connected to the latter by means of a thumb-screw or its equivalent, substantially as herein specified.

4. In a rowing-machine, the counter H and its operating means, in combination with an oar or its equivalent, the whole arranged so as to co-operate substantially as herein specified.

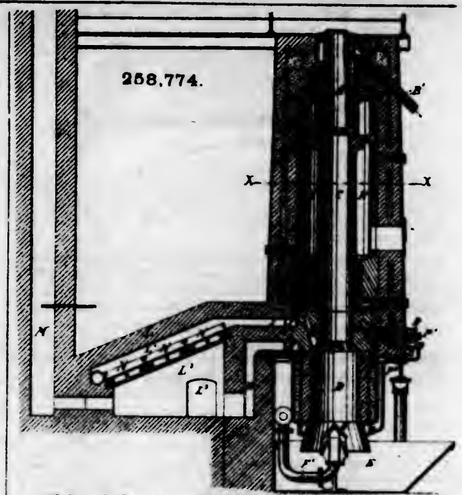
5. In a rowing apparatus, the body A, carrying sockets D, in combination with suitable outriggers capable of sliding in said sockets, and with means for adjustably fixing the same in the latter, substantially as herein specified.

6. In an exercising apparatus substantially as herein set forth, the rubber pieces *a*, fixed to the bottom parts of the apparatus, so as to be interposed between the latter and the floor, substantially as and for the purpose herein specified.

7. In a rowing apparatus, the body A, having grooves *a'*, in combination with the sliding seat B, having at its bottom a series of running wheels, *b*, formed of rawhide and adapted to run in the grooves of the body A, substantially as and for the purposes herein set forth.

258,774. APPARATUS FOR THE MANUFACTURE OF COMBUSTIBLE GAS. EUGEN LAVERS, Cologne, Germany. Filed May 26, 1881. (No model.) Patented in England May 2, 1881, No. 1,894; in France May 9, 1881, No. 142,751; in Belgium May 19, 1881, No. 54,617; in Italy May 31, 1881; in Austria July 3, 1881, and in Spain Oct. 6, 1881.

258,774.



Claim.—1. In apparatus for the manufacture of gas, a vertical retort having side openings at its lower part, communicating with passages leading into a surrounding chamber for leading off carbonic oxide and nitrogen into the latter, in combination with means for supplying steam or water to the interior of the retort at a point above the said side openings, substantially as and for the purpose set forth.

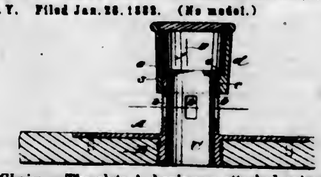
2. A gas-producer consisting of a vertical retort having side openings in its lower part, communicating with passages leading into the upper part of a combustion-chamber surrounding the retort, into the upper part of which chamber also open passages for conducting heated air from a regenerator, and having a third set of passages leading from the bottom of the said chamber to the regenerator for conducting the hot products of combustion from the former into the latter, in combination with the regenerator, substantially as herein described.

3. A regenerator for imparting the heat from the products of combustion to the incoming air, consisting of a chamber divided by a metallic partition, N, into a narrow compartment, L', through which the air passes, and a comparatively large compartment, L', through which the products of combustion pass, the said metallic partition consisting of plates having ribs or projections on both sides, offering very extended surfaces both for taking up heat from the products of combustion and for imparting such heat to the air, substantially as described.

4. The combination of the feeding-chamber A with annular chamber B, for leading off the products of distillation, shaft or retort C, the annular chamber H, chamber D, flues G, J, and K, regenerator L, and pipe or pipes Q, for the introduction of steam or water, all arranged and operating as herein set forth.

5. Apparatus for introducing a regulated supply of steam or water into a gas-producer, the said apparatus consisting of a tank, P, with overflow-cocks P' at different levels, in combination with one or more pipes, Q, leading from the bottom of the tank upward through the producers to a height at or above the highest water-level of the tank, substantially as described.

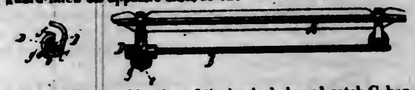
258,775. BOAT-PLUG. GEORGE A. LEAVITT, Jr., Newburg, N. Y. Filed Jan. 26, 1882. (No model.)



Claim.—The plate A, having an attached externally-screw-threaded tube, C, arranged to project from opposite faces of it, and provided with one or more lateral openings in one of its projecting screw-threaded portions, and with a flaring end, *a*, on such portion, in combination with the cap D, having a closed top and internally-screw-threaded inner end, *c*, and enlarged interior chamber or body portion, *f*, essentially as shown and described.

258,776. CATCH FOR JEWELRY. PHILIP A. LEIBBACH, New York, N. Y. Filed Apr. 13, 1882. (Model.)

Brief.—The ends of the finger-piece are fastened to the rotating guard-latch on opposite sides of the hooked catch.



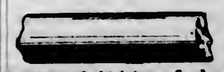
Claim.—The combination of the hooked-shaped catch C, having stops *e* and *f* projecting from its surface, the rotating guard-latch D, arranged in the hooked catch, and a yoke-shaped finger-piece, *g*, secured to the guard-latch on opposite sides of the hooked catch, substantially as described.

258,777. SHAVING-MUG. PETER H. LUCHARS, New York, N. Y. Filed Mar. 4, 1882. (No model.)



Claim.—The combination, with the cylindrical or tapering shaving-mug A, of the soap-compartment E, formed of the horizontal partition D and the vertical transverse partition B, and provided with the spout F, projecting from the outer side of the said vertical partition, the said compartment being within and only about one-half the depth of the mug, substantially as herein shown and described, whereby the superfluous water in the said compartment can be poured into the mug, as set forth.

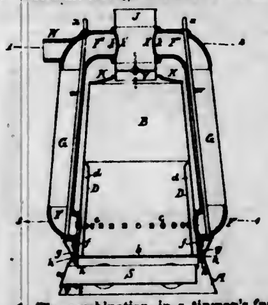
258,778. MODE OF MANUFACTURING NAPHTHALINE INTO A FORM FOR CARBURETING. JAMES LIVESEY, Westminster, and JAMES KIDD, St. Bride's Street, Ludgate Circus, London, County of Middlesex, England. Filed July 26, 1881. (No model.)



Claim.—The process of obtaining refined naphthaline, consisting in first heating the crude naphthaline in a closed boiler, then passing a current of air over its surface for collecting the naphthaline, then conducting the air impregnated with the naphthaline into a condensing-chamber, where the naphthaline is freed from the air, then reheating the collected naphthaline, and finally molding the same in refrigerated molds, substantially as described.

258,779. FINMAN'S FURNACE. JAMES F. LOCKWOOD, Philadelphia, Pa. Filed Feb. 28, 1882. (No model.)

Brief.—By a partial revolution of the cover K, which bears the fine J, the holes in the latter are moved so as not to coincide with flues F'. The draft through said flues is therefore closed.



Claim.—1. The combination, in a tinman's furnace, of the fire-pot casing B, having a grate and an opening for the soldering-irons, with a cap, K, adapted to close the top of the casing, and having a chimney, J, and side flues forming a communication between said chimney and the lower end of the fire-pot, as set forth.

2. The combination, in a tinman's furnace, of the fire-pot casing B, having a grate and an opening for the soldering-irons, side-flue casings pivoted at their lower ends, and a cap, K, adapted to close the top of the casing B, and having a chimney, J, said chimney and cap being carried by the side-flue casings, so as to swing with the same, as set forth.

3. The combination of the fire-pot casing, the elbows F, pipe-sections G, elbows F', with ring H, having openings *h*, the top K, and the chimney J, free to turn in the ring H, and having openings *h'*, as set forth.

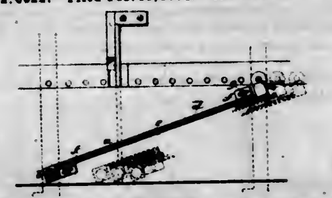
4. The combination of the fire-pot casing with the door-frame M, the door N, having openings *n n*, and the pivoted cover-plate P, as set forth.

5. The combination of the flanged base A, having an ash-drawer opening, with lower flange, *v*, and the ash-drawer S, having a lug or pin, *t*, as set forth.

6. The combination of the base A, having a grate-opening, the fire-pot casing B, and the grate *b*, the plate forming which has flanged edges, forming a pan or tray around the base of the fire-pot, as set forth.

7. The combination of the upper elbow, F', with the tubular projection W, forming a mandrel for expanding or contracting the ends of sheet-metal tubes, as set forth.

258,780. COUPLER FOR ORGANS. JOHN B. LOMAS, West Haven, Conn. Filed Feb. 18, 1882. (No model.)



Claim.—1. The herein described coupler for organs, pianos and like instruments, consisting of the two levers *a d*, crossing each other, pivoted together midway of their length, and arranged to swing in a vertical plane, one end of one lever engaged with the spindle or valve or key to be coupled, the opposite end of the other lever beneath the active key, the opposite ends of the two levers taking a bearing below, and so that the depression of the active key will, through the said two levers, depress the coupled valve, spindle, or key, combined with means, substantially such as described, to throw the said lever out of or into engagement, substantially as described.

2. The herein-described coupler for organs, pianos, and like instruments, consisting of the two levers *a d*, crossing each other, pivoted together midway of their length, and arranged to swing in a vertical plane, one end of one lever engaged with the spindle or valve or key to be coupled, the opposite end of the other lever taking a bearing below, and so that the depression of the active key will, through the said two levers, depress the coupled valve, spindle, or key, the said levers arranged upon and combined with the hinged board C, and mechanism for turning the said board upon its hinge to engage or disengage the said levers with the active key, substantially as described.

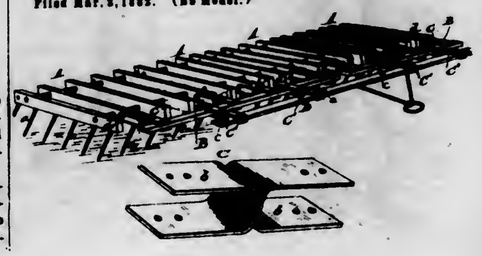
258,781. CIGAR. THOMAS S. LUBY, Baltimore, Md. Filed Mar. 10, 1882. (No model.)



Claim.—1. A cigar having a wrapper rolled from the middle to each end, as set forth.

2. A cigar tipped at both ends and having a wrapper rolled from the middle to the ends, as set forth.

258,782. HARROW. EDWARD P. LYNCH, Davenport, Iowa. Filed Mar. 3, 1882. (No model.)



Claim.—1. The coupling for connecting a harrow-frame with a draft-bar, the same consisting of two U-shaped jaws adapted to embrace the harrow-frame and the draft-bar, respectively, and united at their closed ends by a swiveling connection.

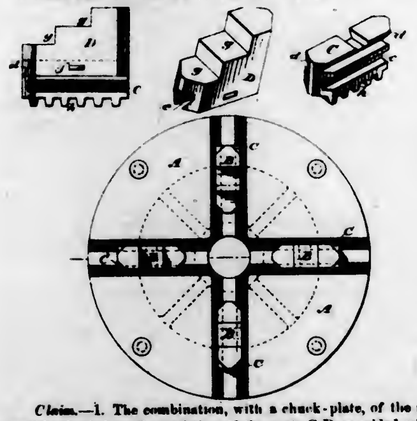
2. The coupling for connecting a harrow with a draft-bar, consisting solely of two U-shaped heads or jaws extended in opposite directions and united by a swivel-connection, substantially as shown, each jaw having its arms provided with a hole to receive a pivot-pin.

3. The combination of the independent harrow-frames A, the secondary draft-bars B, two connections, substantially as shown, between each harrow-frame and the corresponding draft-bar, and the main draft-bar D, connected with the secondary bars, as shown.

4. As an improvement in convertible sectional harrows, the frame A, secondary bars B, coupling C C', and the main draft-bar D, adapted, as described, for connection with the harrow-frames A or with the secondary bar B at will, whereby the one draft-bar is adapted for use with any required number of sections, substantially as and for the purpose set forth.

5. In a convertible harrow, the combination of the main draft-bar D, two or more secondary draft-bars, B, harrow frames or sections A, and connecting devices C, said parts constructed, substantially as described and shown, to permit the frame-sections to be connected to the main draft-bar or to the secondary draft-bars at will, substantially as and for the purpose described.

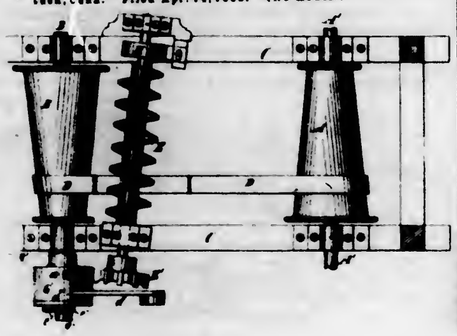
258,783. REVERSIBLE CHUCK-JAW. CÁRLOS MADUELL, New Orleans, La. Filed Feb. 18, 1882. (No model.)



Claim.—1. The combination, with a chuck-plate, of the reversible chuck-jaw, B, consisting of the parts C D, provided with radial grooves *c*, and tongues *d* of dovetail shape, and secured together by means of keys *f*, all constructed and arranged substantially as shown and specified.

2. The combination, with a chuck-plate, of the reversible chuck-jaws B, consisting of the parts C D, having dovetailed shape grooves *c*, and tongues *d*, arranged radially on the parts C D, secured together by keys *f*, and means for adjustment, all arranged substantially as and for the purpose set forth.

258,784. SPEED-REGULATOR. FRANCIS T. MALLON, Pawcatuck, Conn. Filed Apr. 14, 1882. (No model.)



Claim.—1. The combination, with reversely-coned pulleys or drums and a driving-belt thereon, of a worm or screw arranged transversely to the belt, and receiving the latter between the convolutions of its thread, a rotary governor or regulator deriving motion from the driven pulley or drum, and adapted to turn said worm or screw in one direction, and means applied to said worm or screw for turning it in the opposite direction, substantially as and for the purpose herein described.

2. The combination, with reversely-coned pulleys or drums and the driving-belt thereon, of the worm or screw provided with a wheel, the rotary governor or regulator provided with dogs, which are adapted to engage with the wheel upon said worm or screw for turning the latter in one direction, and means applied to said worm or screw for turning it in the opposite direction, all arranged and operating substantially as herein described.

3. The combination, with reversely-coned pulleys or drums and a driving-belt thereon, of the worm or screw, a rotary governor or regulator adapted to turn said worm or screw in one direction, and a spring or weight applied to said worm or screw for turning it in the reverse direction, all arranged and operating substantially as herein described.

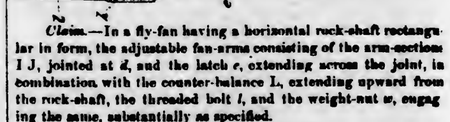
4. The combination, in a rotary speed governor or regulator, of a case and a shaft extending through the same, a radial arm mounted loosely on said shaft and forming a drag, a spring supporting said arm on one side, and dogs connected with said arm and adapted to be thrown out by the backward movement of said arm against the force of said spring, substantially as herein described.

5. The combination, with the case G and shaft B', of the drag-arm *d* and its attached dogs *a*, the bent spring *f*, and the arm *e'*, forming an abutment for said spring, substantially as herein described.

6. The combination, with the case G and shaft B', of the drag-arm *d* and its attached dogs *a*, the loose sleeve *e*, carrying the ratchet-wheel *e'*, and the abutment-arm *e*, the pawl *e*, and the spring *f*, arranged between the arm *d* and abutment-arm *e*, all substantially as herein described.

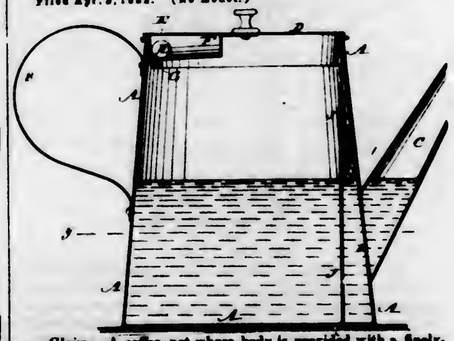
258,785. FLY-FAN. THOMAS A. MARTIN, Evansville, Ind. Filed Mar. 16, 1882. (No model.)

Brief.—The rock-shaft, rectangular in form, is provided with adjustable arms having square bearings, whereby they engage the shaft. The fan can be raised by turning the lower section upward. An arm extending upward from the rock-shaft carries an adjustable counterbalance-weight.



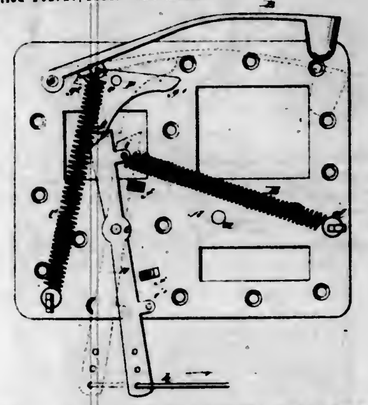
Claim.—In a fly-fan having a horizontal rock-shaft rectangular in form, the adjustable fan-arms consisting of the arm-sections I J, jointed at *d*, and the latch *e*, extending across the joint, in combination with the counter-balance L, extending upward from the rock-shaft, the threaded bolt *l*, and the weight-nut *w*, engaging the same, substantially as specified.

258,786. COFFEE-POT. JOHN MCANERNEY, Philadelphia, Pa. Filed Apr. 5, 1882. (No model.)



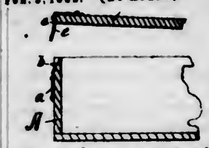
Claim.—A coffee-pot whose body is provided with a finely-perforated upright plate, J, and the aperture I, leading to the spout, the plate J being solid at its lower part, whereby the coffee-grounds are kept back and prevented from flowing out with the liquid, as described.

258,787. DOOR-BELL. ROBERT MCSHANE, Brooklyn, N. Y. Filed Feb. 27, 1882. (No model.)



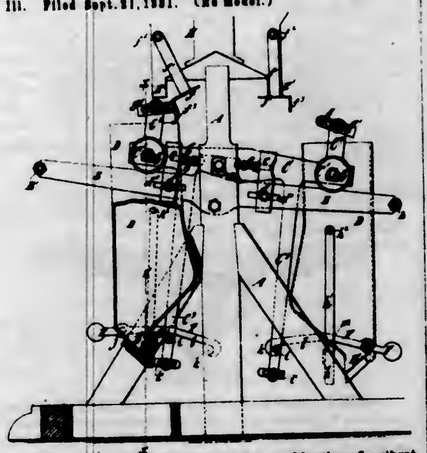
Claim.—In a door bell, the combination, with the hammer B and the spring C, of the lever D, provided with the lugs *i i'*, the spring E, and the dog F, provided with the projections *g g' g²*, substantially as and for the purpose set forth.

258,788. CIGAR-BOX CATCH. JULIUS E. HERRCOTT, Newark, N. J. Filed Feb. 3, 1882. (No model.)



Claim.—A box-fastener composed of the plate *a*, adapted to be secured to the outside of the recessed wall of a box, and provided with the upwardly-projecting flexible tongue terminating with the outwardly-projecting lip *b*, and adapted to be bent backward into said recessed wall, and the plate *c*, adapted to be secured to the outside of the lid of a box, and provided with the downwardly-projecting flexible and slotted tongue *c*, arranged and operating, when closing the box, to engage with the lip *b*, as herein described, for the purpose set forth.

258,789. AUTOMATIC SCALE. BERNHARD C. MEYER, Bethalto, Ill. Filed Sept. 21, 1881. (No model.)



Claim.—1. In an automatic scale, the combination of a vibrating beam, a carriage movable thereon, a stationary hopper or hoppers, and two weighing or movable hoppers pivoted to said carriage, one upon each side of the center of vibrations of said beam and adapted to be brought alternately under the stationary hopper or hoppers by the movements of said carriage to receive their load, substantially as specified.

2. In an automatic scale, the combination of a vibrating beam, a single carriage movable thereon, adjustable stops for limiting the movements of said carriage in either direction, a stationary hopper or hoppers, and two weighing or movable hoppers pivoted in said carriage, one upon each side of the center of vibration, and adapted to be brought alternately under the stationary hopper or hoppers by the movement of said carriage to receive their load, substantially as specified.

3. The combination, with the vibrating beam and the wheeled carriage, with its pivoted weighing-hoppers, of the stationary hopper provided with outlets and the swinging valves or gates pivoted above said outlets, and adapted to be swung bodily to open said outlets by the impact of said carriage or devices projecting therefrom, substantially as specified.

4. The combination of the vibrating beam B B', the wheeled carriage C, provided with rigid downwardly-projecting arms C', connected by cross-rods *i*, the pivoted weighing-hoppers D, the swinging valves or gates A, and the pivoted trip-levers F, all substantially as specified.

258,790. DUMPING-WAGON. JAMES HILLS, Wilmington, Del. Filed Mar. 20, 1882. (No model.)



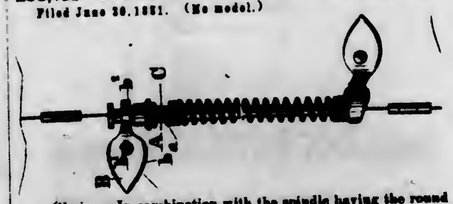
Claim.—1. The combination, in a dumping-wagon, of the sills A, the wagon-body B, the actuating bar or bars F, pivoted to the body, hauling mechanism for said bar or bars, and inclined-plane devices, substantially as described, for elevating the body as it is moved rearward, as set forth.

2. The combination of the sills A, the wagon-body B, inclined-plane devices, substantially as described, the pivoted bar or bars F, and hauling mechanism having a retracting-chain, *w*, as set forth.

3. The combination of the wagon-body B, the sills A, having a support on which said body can tilt, hauling mechanism for imparting a rearward movement to the wagon-body, and a retaining device adapted to be brought into action as the body is moved rearward and before said body reaches the tilting position, as set forth.

4. The combination of the wagon-body B, the sills A, having a support on which said body can tilt, hauling mechanism for imparting a rearward movement to the wagon-body, a retaining device adapted to prevent premature tilting of said body, and a rod whereby the retaining device can be operated from the rear end of the body, as set forth.

258,791. DOOR-SPRING. MARVIN C. HOUK, Manchester, Iowa. Filed June 30, 1881. (No model.)



Claim.—In combination with the spindle having the round and angular portions, as described, the bearing-bracket B, with angular portion, as described, and the cap *a'*, securing the bracket to the spindle, as set forth, whereby by rotating the bracket or its screw the tension of the spring may be regulated as desired, substantially as described.

258,792. SAFETY-PIN CATCH. SAMUEL MOSES, Providence, R. I., assignor to the Oakville Company, Waterbury, Conn. Filed Apr. 8, 1882. (No model.)

Brief.—A U-shaped spring is arranged within a U-shaped catch, one leg resting upon the base, the other leg closing the recess on the opposite side, its ends projecting to one or both sides, so that the end of the pin pressed down upon the spring will open the passage into the catch for the entrance of the pin and close as soon as the pin has entered.

Claim.—1. The U-shaped catch A B C, the one leg, B, re-

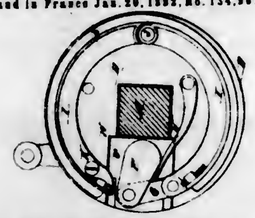
258,792.



ceased upon its under side to receive the pin, combined with a correspondingly U-shaped spring, D E, one leg resting upon the base, the other closing the recess, and provided with a projection, *b*, at its outer end upon one or both sides, substantially as described.

2. The U-shaped catch A B C, the one leg, B, recessed upon its under side to receive the pin, combined with a correspondingly U-shaped spring, D E, one leg resting upon the base, the other closing the recess, and provided with a projection, *b*, at its outer end upon one or both sides, the inner edges of the part C turned inward over the bend F of the spring to secure the pin to the catch, substantially as described.

258,793. CARRIAGE-BRAKE. WALTER RUSSELL MORTIMER, Rogate Lodge, Rogate, County of Sussex, England. Filed Mar. 24, 1882. (No model.) Patented in England July 26, 1881, No. 3,279, and in France Jan. 20, 1882, No. 134,967.



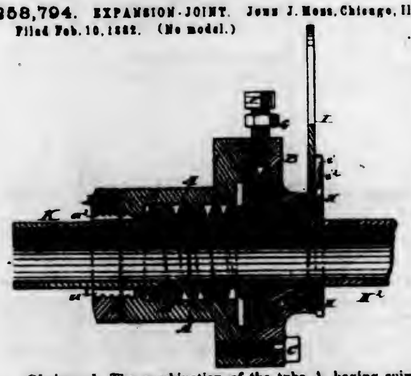
Claim.—1. The combination, with a ring secured to the nave of a wheel or to a drum and a ring secured to an axle or other fixed support, of a divided expanding ring or segments of a ring secured to the said disk, and a lever connected to the expanding ring or segments for expanding the same, substantially as and for the purpose set forth.

2. The combination, with the ring B, and the disk D, of the ring H I, secured to the said disk, the lever E, provided with the arm F, and the connecting-link G, substantially as and for the purpose set forth.

3. The combination of disk D, ring H I, lever E F, bearing U, and the ring B of a wheel or drum, substantially as specified.

4. The combination of disk D, ring H I, lever E F, spring N, and the ring B of a wheel or drum, substantially as specified.

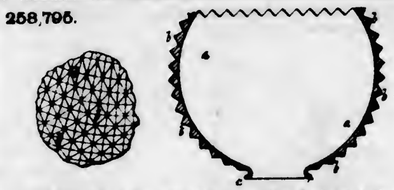
258,794. EXPANSION-JOINT. JOHN J. MOSS, Chicago, Ill. Filed Feb. 10, 1882. (No model.)



Claim.—1. The combination of the tube A, having spiral middle recess *a*, collar *a*', and longitudinal compression-slots *a*', with the case B, the nut E, and the screw F, as and for the purpose specified.

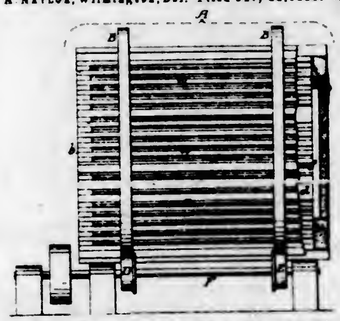
2. The combination, with a tube, A, constructed as above described and provided with a collar, *a*, having recesses *a*', of the case B D, provided with set-screws F, arranged with reference to said recesses, substantially as and for the purpose herein described.

258,795. GLASS GLOBE FOR ELECTRIC AND OTHER LIGHTS. JOHN D. HULLER, New York, N. Y. Filed Oct. 29, 1881. (No model.)



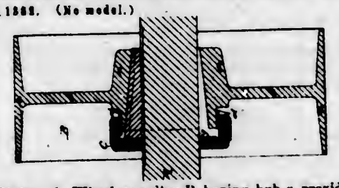
Claim.—As a new manufacture, a glass shade or globe having the inner surface smooth and the outer surface formed entirely of abutting pyramidal projections, substantially as and for the purpose described.

258,796. TUMBLING-REEL FOR CLEANING CARPETS. THOS. A. NAYLOR, Wilmington, Del. Filed July 25, 1881. (No model.)



Claim.—The combination of the polygonal reel having slotted sides, annular rails B, and a covered opening in one or both ends, with flanged wheels D E, adapted to support said reel in a horizontal position and to drive the same by contact with the annular rails B, as set forth.

258,797. DEVICE FOR CLAMPING WHEELS OR PULLEYS UPON SHAFTS. AUGUSTUS NEWELL, Chicago, Ill. Filed Apr. 24, 1882. (No model.)



Claim.—1. Wheel or pulley B, having hub *a*, provided with radial longitudinally-tapering grooves, and with screw-threaded flange *d*, in combination with taper keys *e* and clamp C, all constructed and arranged substantially as and for the purpose set forth.

2. Wheel or pulley B, having hub *a*, provided with radial longitudinally-tapering grooves for taper keys *e*, and with screw-threaded flange *d* for clamp-nut C, and with washer *f*, all substantially as and for the purpose set forth.

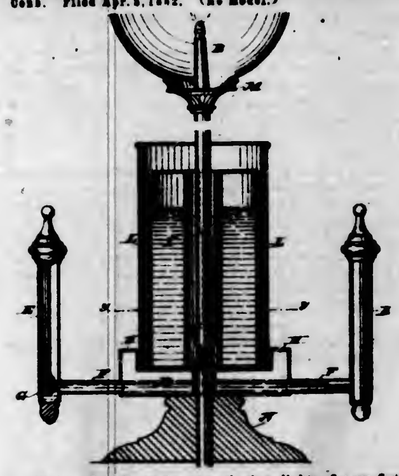
258,798. CLAMP FOR CARRIAGE-TOPS. BAXTER B. MOYER, Greenfield, Mass., assignor to Sanford A. Smith, Guilford, Vt. Filed Feb. 9, 1882. (No model.)



Claim.—1. The combination of the base-plate C, the collar G, the thimble H, and the nut I, these parts being combined and operating in combination substantially as and for the purposes described.

2. The combination, with the supporting-bar, of the base-plate, the collar, the thimble, and the clamping-nut, substantially as and for the purposes described.

258,799. CIGAR-LIGHTER. EDWARD A. PARKER, Meriden, Conn. Filed Apr. 5, 1882. (No model.)

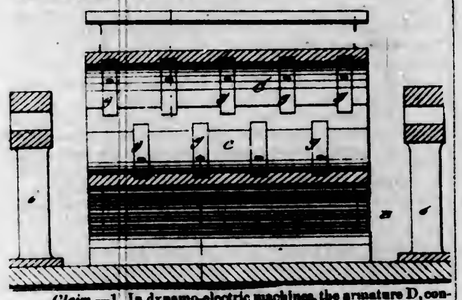


Claim.—1. A fountain-reservoir cigar-lighter for gas-fixtures, consisting of a body, D, provided with one or more torch-receivers, E, and reservoir-support H, in combination with a laterally-removable reservoir, I, having feed mechanism K, substantially as and for the purpose set forth.

2. The body D, provided with supporting-rim H and one or more torch-receivers, E, in combination with the laterally-removable reservoir I and surrounding shell L, substantially as and for the purpose set forth.

258,800. DYNAMO-ELECTRIC MACHINE. WILLIAM S. PADEN, New York, N. Y. Filed Mar. 4, 1882. (No model.)

Brief.—The pole-pieces of the field-magnets are of cast-iron and have grooves in their faces next the armature. The grooves are filled with soft-iron bars. The carriers for the armature-coils are formed of thin iron turned up at the edges and having slots cut through the turned-up edges.



Claim.—1. In dynamo-electric machines, the armature D, consisting of heads *c* and bars *d*, formed with separated flanges *e*, and wound with wire, substantially as shown and described.

2. In armatures for dynamo-machines, the soft-iron bars *d*, formed with flanges *e*, separated by the interspaces *f*, substantially as and for the purposes set forth.

3. The pole-blocks C C', having transverse grooves in their concave faces, and soft-iron bars *g*, fitted in said grooves, as shown and described.

258,801. CLOCK-DIAL. JOSEPH R. PATSON, Jr., Chicago, Ill. Filed Jan. 30, 1882. (No model.)

Claim.—1. A supplemental clock-dial phosphorescently illuminated and adapted to be attached to an ordinary clock-dial, substantially as described.

2. The combination, with a clock-dial, of a phosphorescently-illuminated supplemental dial having a common center with the clock-dial, substantially as described.

3. The combination, with a clock-dial, of a phosphorescently-illuminated supplemental dial having a common center with the

258,801.



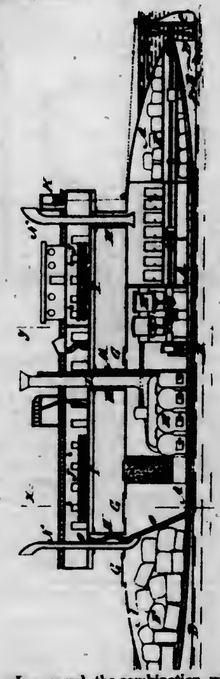
clock-dial, and arranged within a circle having a common center with the clock-dial, but not extending beyond the key-holes, substantially as described.

258,802. CAP FOR MINERS' LAMPS. HENRY P. PEARCE, Hyde Park, Pa. Filed Apr. 6, 1882. (Model.)



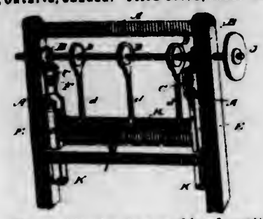
Claim.—As an article of manufacture, a cap for a miner's lamp, having a lining arranged to form a space, *d*, and having the annularly-located perforations *c*', whereby none of the perforations in the lining directly communicate with the vent in the cap, substantially as shown and described.

258,803. CONSTRUCTION OF VESSELS. THEODORE W. PHINNEY, Newport, R. I. Filed Jan. 9, 1882. (No model.)



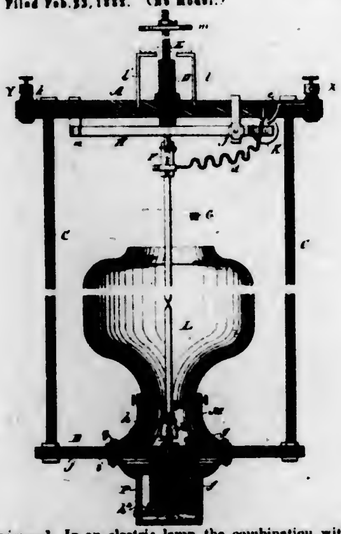
Claim.—In a vessel, the combination, with the hull A, made egg-shaped in cross-section, and adapted to receive the driving mechanism E and cargo F, and provided with the hatches G, of the hollow columns H, attached to the top of the said hull, and the deck I, supported upon the upper ends of the said columns, and provided with cabins J, and pilot-house K, substantially as shown and described, whereby provision is made for giving access to the hold and passages for the smoke-stack, steam-pipe, and ventilating-flues, formed as set forth.

258,804. BARREL-HOOP-CUTTING MACHINE. JOHN B. PIKE, Pikeville, Ontario, Canada. Filed Oct. 2, 1880. (No model.)



Claim.—The combination, in a machine for cutting and shaping hoops, of the frame A, having the fixed table I and studs K K, drive-shaft L, having eccentrics D and pinions B, connecting-rods or pitmen *d*, knife-bar H, oscillating guides E, having flanges *e* and slotted heads *a*, and cog-wheels C, having cams F, for operating said guides, all constructed and combined substantially as and for the purpose herein shown and specified.

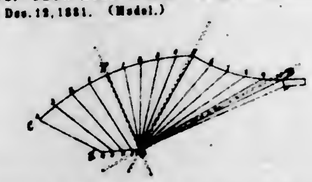
258,805. ELECTRIC-ARC LAMP. ROBERT J. PRATT, Troy, N. Y. Filed Feb. 23, 1882. (No model.)



Claim.—1. In an electric lamp, the combination, with the progressively-fed carbon and its holder, of a pair of levers disposed at right angles thereto upon opposite sides of said holder, and provided with clamping-faces, a pair of armatures arranged upon the ends of said levers, an electro-magnet arranged in the light-circuit, and placed between the armatures of the two levers to bring said levers together, and one or more springs for forcing said levers apart, substantially as and for the purpose described.

2. The combination, with the carbon-holder stem E, of the horizontal levers H H, arranged upon opposite sides of the carbon, and provided with clamps *b b*, the springs I I, and the horizontal magnet K, arranged between the ends of said levers, as and for the purpose described.

258,806. PLOW MOLD-BOARD. JOHN QUIS, Wakeman, Ohio. Filed Dec. 12, 1881. (Model.)

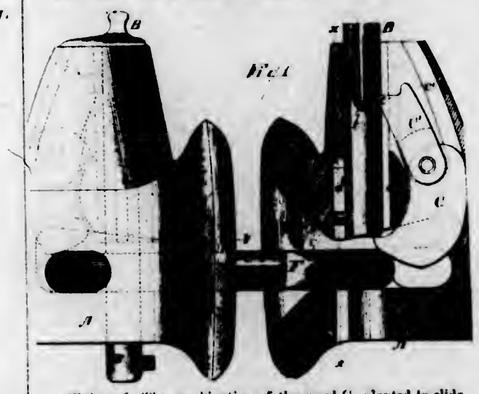


Claim.—1. A mold-board having the exterior curvature set forth, in which all the lines of its concave surface radiating from the point O upward, and also forward to the point B, lie in contact with a straight-edge revolved upon the mold-board with the point O as a center, substantially as described, and for the purpose set forth.

2. A mold-board having the exterior curvature set forth, in which all the lines of its concave surface radiating from the point O upward, and also forward to the point B, lie in contact with a straight-edge revolved upon the mold-board with the point O as a center, and the end of the mold-board in rear of the line O P, constructed as specified, substantially as described, and for the purpose set forth.

3. The method of constructing a plow mold-board as herein described, consisting in first forming on a block, in the manner set forth, the upper and lower construction-lines, C P B and E O K, and the points O and P, connected by the straight line O P, forming one line of the mold-board, then cutting away said block so that a straight-edge centered at O and revolved from the point P forward to the point B will always be in contact with the face of the block, and finally in constructing the end of the mold-board in rear of the line O P, as specified, substantially as described.

258,807. CAR-COUPLING. HORATIO G. H. REED, Milwaukee, Wis. Filed Mar. 30, 1882. (No model.)



Claim.—1. The combination of the pawl C, adapted to slide in a curved way, with a dog hinged to it and adapted to slide up and down in inclined pockets in the pin-guide above the curved way, and to suspend it (the pawl C) in position to carry its lower end or point under the pin-hole and out contact with the bottom of the throat of the draw-head, but in position to be tripped from beneath the pin by an entering link, as set forth.

2. The sliding block and a dog hinged to it, both working in suitable guides, in combination with a pin having wings adapted to rest on flanges of the dog, which, when the link is beneath the pawl, will prevent the pin from falling through the link, as set forth.

3. The combination of the pin having a short bolt in its lower end with the draw-head, having the vertical recess *e* and heart-shaped recess *E e' e'*, as set forth.

258,808. ORNAMENTION OF GLASSWARE. FRANK REIDS, Brooklyn, N. Y. Filed Jan. 30, 1882. (No model.)

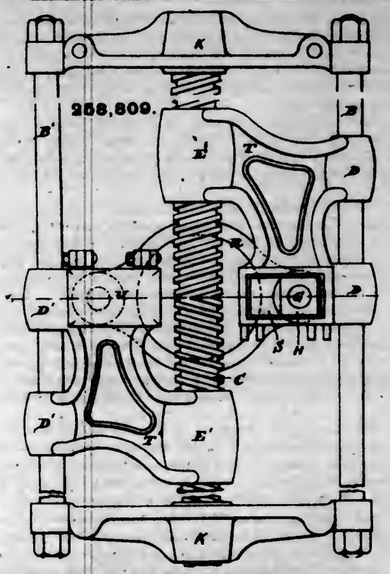


Claim.—As a new article of manufacture, a glass cylinder for lamp-pedestals, having its inner surface coated with gum and a covering of any suitable colored granular substance applied to the gum while wet, as set forth.

258,809. STEERING MECHANISM. NATHAN RICHARDSON, Gloucester, Mass. Filed Feb. 4, 1882. (No model.)

Claim.—The combination, with a rudder-head having arms carrying journals G, of a frame consisting of cross-heads K K and guides B B, a right-and-left screw, C, turning in the cross-heads, and L-shaped arms T, slotted to receive the journals, bearing with their long arms on and sliding on the guides B B, and formed into nuts receiving the screw at the ends of their inner arms, as specified.

258,809.



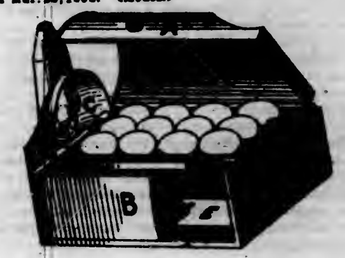
258,810. TOY PISTOL. CHARLES F. RITCHELL, Bridgeport, Conn., assignor to Edward R. Ives, same place, and Cornelius Blakeslee and Edward G. Williams, Brooklyn, N. Y. Filed Jan. 30, 1882. (No model.)



Claim.—1. The combination, with a toy designed for use with explosives, and having a barrel which receives gases generated by explosives, and is provided with a transverse opening, of a cover connected with the toy and adapted to be applied to the transverse opening, as and for the purpose specified.

2. The combination, with a toy designed for use with explosives, and having a barrel which receives gases generated by explosives, and is provided with a transverse opening, of a cover pivoted to the toy and adapted to be applied to the transverse opening, as and for the purpose specified.

258,811. EGG-TESTER. THOMAS H. B. SAUNDERS, St. Louis, Mo. Filed Mar. 20, 1882. (Model.)



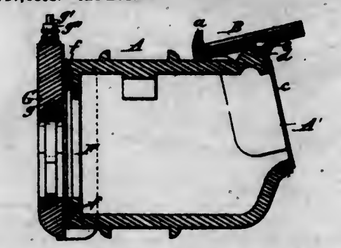
Claim.—An egg-tester consisting of a tight box having an egg-tray and looking-glass, and a concave lid at the top, and provided with a lamp at one end, inclosed in a lamp-house, all specifically constructed, combined, and arranged as herein described, and for the purposes set forth.

258,812. LEMON-SQUEEZER. ALBERT SCHLAPBACH, Seaside, Kans. Filed Apr. 10, 1882. (No model.)



Claim.—The herein-described hand-press or fruit-squeezer, consisting of a tube having an enlarged chamber and flaring slotted mouth at its lower end, and provided with a plunger and rod having a detachable handle, and a spiral spring for holding the plunger normally elevated, substantially as and for the purposes specified.

258,813. CAR-AXLE BOX. JAMES O. SCOTT, Tyler, Tex. Filed Mar. 27, 1882. (No model.)

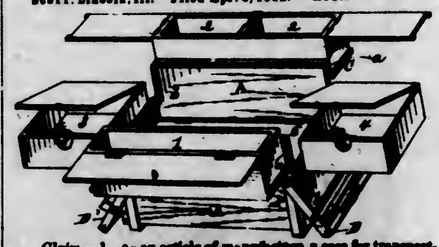


Claim.—1. In an axle-box, the combination, with the box A, having ridge *d*, and opening A', provided with packing *e* around its edges, groove C, with extensions C', wall D, and projection E, with recess for packing *e*, of the cap B, having arms *b*, provided with pins *b'*, knob *a*, and handle *a*, substantially as shown, and for the purposes set forth.

2. The combination, in an axle-box, of the box A, having opening F, with packing *f* around its edges, and ribs *j*, with the dust-plate G, having strips H, provided with recesses *i*, segmental springs I, and tongues *g*, packing *h'*, bolts *g'*, and nuts *g''*, all arranged, constructed, and operating in the manner and for the purposes substantially as shown and described.

3. An axle-box consisting of box A, having ridge *d*, opening A', packing *e*, groove C, with extensions C', cap B, having arms *b*, provided with pins *b'*, knob *a*, and handle *a*, dust-plate G, having slot A, strips H, provided with recesses *i*, segmental springs I, and tongue *g*, bolts *g'*, nuts *g''*, and packing *h'*, substantially as shown and described.

258,814. CASE FOR EXHIBITING SAMPLES. JOSEPH C. SCOTT, Lincoln, Ill. Filed Apr. 6, 1882. (Model.)



Claim.—1. As an article of manufacture, a case for transporting and exhibiting samples, the sides and ends of which consist of hinged sections carrying compartments adapted to be turned outward, the upper rear and front sections being hinged on lines at different distances from the top of the case, whereby one of said sections may be opened without changing the position of the other, substantially as shown and described.

2. In a case for transporting and exhibiting samples, the com-

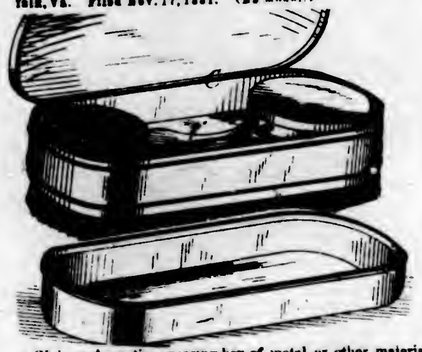
bination of the sectional hinged jointed sides and ends and the binding-strap D, pivoted to the lower of said side sections, and provided with the bands *d'*, substantially as shown and described.

3. The combination of the centrally-divided cover C, cleats *e e*, and strap D, grooved at *d*, substantially as shown and described.

4. The combination of the tray 5, the outwardly-swinging end compartments, 3 4, and the outwardly-swinging side compartments, 1 2, substantially as shown and described.

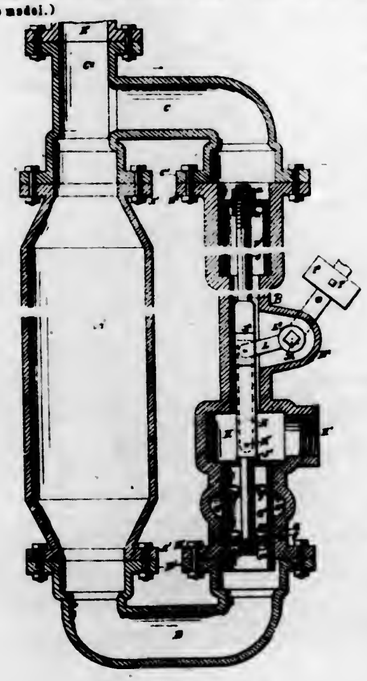
5. The combination of the compartments 1, 2, 3, and 4, each provided with a cover and means for locking the same, and each adapted to be folded in the manner described by closing the hinged section to which each is attached, substantially as shown and described.

258,815. BLACKING-BRUSH CASE. ALFRED L. SHARBURY, Norfolk, Va. Filed Nov. 17, 1881. (No model.)



Claim.—An entire incasing-box of metal or other material, consisting of an upper and a lower part, with a brush fitted and fixed in the said upper part, so as to leave space therein for daubing-brush and blacking, and the lower part fitting over the brush and the sides of the upper part of the incasing-box, so that when the lower part of the box is removed the brush is ready for use.

258,816. DRAINAGE APPARATUS FOR STEAM-PIPES. ALBERT B. EDWARD, Cincinnati, Ohio. Filed Jan. 28, 1882. (No model.)



Claim.—1. A steam-trap for draining steam-pipes, provided with a double piston and means for allowing the steam to press on both ends of said pistons, the trap being provided with means for automatically permitting the escape of water condensing in the pipes when the pressure of said water causes the piston to rise, substantially as described.

2. A steam-trap provided with the chambers A and B, connected by the passages C D, the chamber B being provided with a double piston and means for permitting the escape of water when the piston is raised by the pressure of said water, substantially as described.

3. The combination of the chambers A and B, connected by the passages C D, the chamber B being provided with the pistons F and G', connected by the rod J, the piston G' preventing the escape of steam or water when at its lowest point, but provided with openings for permitting the escape of water when the piston is raised, substantially as and for the purposes specified.

4. The chamber A, having inlet C', in combination with the chamber B, having outlet H' and annular passage G^2, said chamber being connected by passages C D, the chamber B being provided with the pistons F G', connected by the rod J, the piston G' having openings to permit water to escape when the piston is raised through the passage G^2, and outlet H', substantially as described.

5. The chamber B, connected at top and bottom with the steam-pipes by the passages C D, and having an outlet-chamber, H, and annular passage G^2, said chamber B being provided with the pistons F G', suitably connected, the latter being provided with openings g' g^3 g^3, substantially as and for the purposes specified.

6. The chamber B, connected at top and bottom with the steam-pipes, and having the supplemental chambers H G^2 and outlet H', the chamber B being provided with the pistons F G', connected by the rod J, the piston G' being provided with openings g' g^3 g^3, so placed that when the piston is lifted by the pressure of the water the openings g' will be in the chamber H, and the openings g^3 and g^3 will coincide with the chamber G^2, substantially as and for the purposes specified.

7. The piston-valve G', having an interior partition, *g*, the sides of said valve being provided with the openings g' g^3 g^3, the openings g^3 being on one side of the partition and the openings g' g^3 on the opposite side of the partition, all in combination with the chambers G^2 and H, substantially as and for the purposes specified.

8. The pistons F G', connected by the rod J, said rod being provided with slot J^2, and the pitman K, located in said slot, one end of said pitman being pivoted at the lower end of the slot, the other end of the pitman being pivoted to the arm L, attached to the rock-shaft M, to which is also attached the counterbalance-arm O, substantially as and for the purposes specified.

9. The combination of the rod J, connecting the pistons F G', and the pitman K', arm L, rock-shaft M, arm O, and counterbalance-weight P, substantially as and for the purposes specified.

10. The combination of the chamber B, connected at the top and bottom with the steam-pipes, and provided with supplemental chambers H and G^2, and the pistons F G', and the adjustable counter-balance P, and connecting mechanism, substantially as and for the purposes specified.

258,817. GRINDING-MILL. GEORGE K. SMITH, Freeport, Ill. Filed Mar. 4, 1882. (No model.)



Claim.—1. In a grinding-mill, a master-wheel having a central opening for the reception of the grinding-burrs, in combination with a pair of grinding-burrs, one stationary and one movable, arranged in said central opening, and suitable gearing for imparting the motion of the master-wheel to said movable burr, substantially as shown and described.

2. In a grinding-mill, a master-wheel having its shaft centrally chambered for the reception of the grinding-burrs of the mill, in combination with a pair of grinding-burrs, one stationary and the other movable, arranged in said central chamber, and suitable gearing for communicating the motion of the master-wheel to said movable burr, substantially as set forth.

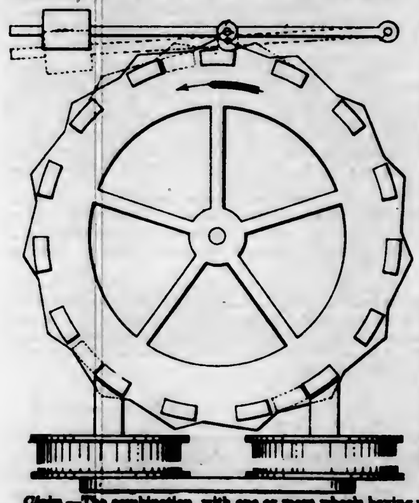
3. In a grinding-mill, the combination of a centrally-chambered master-wheel and a pair of grinding-burrs, one stationary and one movable, located in said central chamber, with suitable gearing connecting said master-wheel and movable burr, said gearing being constructed substantially as described, and so as to drive said burr at a speed different from that of the master-wheel, substantially as shown.

4. In a grinding-mill constructed as shown, the combination of the frame A, plate N, master-wheel N, and covering-plate M, so constructed and attached as to hold said master-wheel in its bearing, and at the same time form the upper bearing of the spindle of the movable grinding-burr of the mill, substantially as shown, and for the purpose set forth.

5. In a grinding-mill constructed as described, the combination of the plate N and yoke G thereto attached, the covering-plate M and cross-bar H, and stationary grinding-burr K thereto attached, the spindle F, having bearings in yoke G and cross-bar H, the movable grinding-burr L, and the regulating device consisting of rod I and hand-wheel W, all substantially as and for the purpose described.

6. The combination, in a grinding-mill, of the frame A, plate N, master-wheel N, covering-plate M, spur-wheels C D E, spindle F, and grinding-burrs K L, all substantially as and for the purpose set forth.

258,818. ELECTRIC MOTOR FOR CLOCKS. LOUIS E. SPELLIER, Doylestown, Pa. Filed Dec. 17, 1881. (No model.)



Claim.—The combination, with one or more wheels having a circular series of armatures and a corresponding series of inclined teeth, of an electro-magnet for attracting the armatures, and a pressing device arranged upon the inclined teeth to operate alternately with the magnet to produce a progressive intermittent movement of the wheel in the same direction, as described.

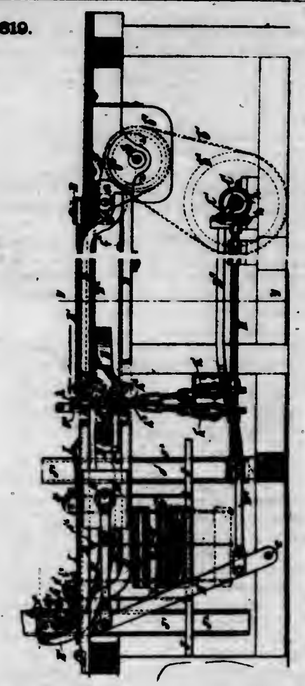
258,819. PAPER-BOX MACHINE. ALBERT SPEARNS, Brooklyn, N. Y. Filed Dec. 19, 1881. (No model.)

Brief.—The blank is seized by grippers F on reciprocating carrier E and drawn under former E', where it is folded by oscillating folders *g*. Grippers G on carrier E' seize the folded tube and draw it off the former and under the head I of an automatically-adjusted press, where it dries. The grippers F G have each one fixed and one movable spring-pressed jaw, the latter being opened by a cam-lever that strikes a stop at the point where the blank or tube is to be released, and the jaws remain open until the cam is tripped at the point where the tube or blank is to be seized. The carriers are raised and lowered by a sliding gib, *s'*, that strikes a stop at each end of its path, the raising of one carrier causing the lowering of the other.

Claim.—1. In a paper-box machine, the combination, with a former and folders arranged on opposite sides thereof, of grippers for drawing the strips forward under said former, and other grippers for drawing the tubes from said former, substantially as specified.

2. In a paper-box machine, the combination, with a former and folders arranged on opposite sides thereof, of a carrier-slide and mechanism, substantially such as described, for reciprocating it, carriers attached to said slide, and two pairs of grippers attached to said carriers and reciprocated together to draw the strips under said former and to draw the tubes from said former, substantially as specified.

3. In a paper-box machine, the combination, with a former and folders arranged on opposite sides thereof, of grippers for drawing the strips under said former, grippers for drawing the tubes from said former, and mechanism, substantially such as described, for reciprocating said grippers and for giving them a rising and falling movement at the termination of their reciprocating movement, substantially as specified.



4. The combination of the former F and folders *g*, the carrier-slide D', and guide-bars D, the bar pivoted to said slide and comprising the carriers E E', the sliding gib *s'*, the stops *f f'*, and the pairs of grippers F G, substantially as specified.

5. The combination, with the former F and two pairs of reciprocating grippers, F and G—one pair for drawing strips under the former and the other pair for drawing tubes therefrom—of the folders *g*, pinions *g'* on the shafts of said folders, the cam-shaft H, and the rack-bars h^2, engaging with the cams on said shaft and gearing with said pinions, substantially as specified.

6. The combination of the former F, the carrier-slide D', the gripper-carriers E E', the grippers F, for drawing strips under said former, the grippers G, for drawing tubes from said former, the lever D^2 and link D^3, the connecting-rod D^4, and the crank-shaft C, all substantially as specified.

7. In a paper-box machine, the combination, with a former and folders on opposite sides thereof, of a pair of reciprocating grippers for drawing strips under said former, a second pair of reciprocating grippers for drawing the tubes from the former, and a press into which the tubes are drawn by the last-mentioned grippers, substantially as specified.

8. In a paper-box machine, the combination, with a former, folders on opposite sides thereof, and reciprocating grippers for drawing the strips under said former, and for drawing the tubes from the former, of the pieces I, flared or inclined at the ends, and the weighted piston J, substantially as specified.

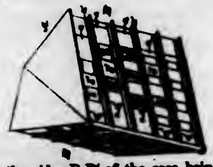
9. The combination of the pieces I, forming the head of the press, the piston J, a weight or weights for resting upon said piston, and the supplemental weights, which are taken up as the number of tubes in the press increases, substantially as specified.

258,820. EXPRESS SIGNAL-CALL. HENRY S. SITZ, Cincinnati, Ohio. Filed Oct. 21, 1881. (Model.)

Claim.—1. An express signal-call consisting of a triangular case, two of the sides of which are provided with translucent signs representing one or more express companies, and adjustable covers for rendering the signs visible or invisible at will, substantially as described.

2. An express signal-call consisting of a case, A, having an

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interior lamp, C, the sides B B' of the case being provided with translucent signs, each sign having adjustable covers *a*, for rendering the sign visible or invisible at will, substantially as and for the purpose set forth.

2. An express signal-call consisting of a case, substantially as described, the sides B B' of said case being provided with translucent signs representing one or more express companies, and the sliding covers *a*, provided with the openings *b* and solid portions *b'*, substantially as and for the purpose specified.

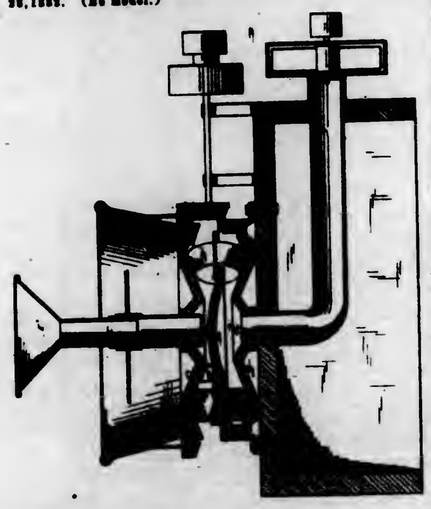
258,821. GAME-PIECE AND METHOD OF EXHIBITING THE SAME. JOSEPH STORCK, Boston, Mass. Filed Sept. 1, 1881. (No model.)



Claim.—1. The improved method hereinbefore described of exhibiting representative samples of game, for use especially in restaurants, dining-rooms, and the like, which consists in firmly attaching at various points by means of wires and cement a stuffed and preserved natural specimen of the bird, fish, or other specimen of game to be exhibited to a flat backing of suitable material, and then inclosing the same in an oval or other shaped frame of the character of the ordinary picture-frame, adapted to be suspended, and provided with a transparent glass plate in front of sufficient convexity to inclose the specimens and preserve the same from injury, substantially as set forth.

2. As a new article of manufacture, a framed game-piece consisting of a stuffed and preserved bird firmly attached at various points by means of wires and cement to a backing of wood or other suitable material, and an inclosing frame provided with the convex-concave glass plate D, adapted to conform to the contour and relief of the inclosed game specimen without injury to its form, substantially as described and shown.

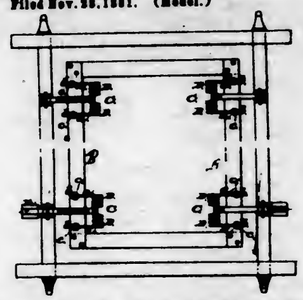
258,822. MACHINE FOR CRUSHING AND PULVERIZING QUARTZ. JEROME B. SWEETLAND, Pontiac, Mich. Filed Feb. 28, 1882. (No model.)



Claim.—1. The combination of the convex distributer E, having rollers and flanges applied to its circumference, with the bed A, the tank, the rollers D', and the hinged trap-doors *f*, applied to said flanges substantially as described.

2. The combination of a yielding scraper, F, with a revolving distributer, a revolving tank, to which said distributer is attached, crushing-rollers, and a bed on which these rollers revolve, substantially as described.

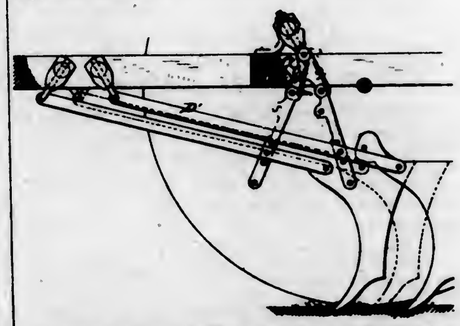
258,823. VEHICLE-SPRING. CHARLES L. THOMAS, Janesville, Wis. Filed Nov. 28, 1881. (Model.)



Claim.—The springs C, each consisting of the two spiral branches D D, each having an end arm, *a*, extending outward from the spiral to the marginal frame-work B of the body, and secured thereto by means of the screw or bolt *b*, passing through a terminal eye, *c*, in combination with the arms E, pivoted to hangers on the side bars, extending inward and secured to the springs C upon arms *d*, between the spiral branches D D, substantially as specified.

258,824. SEEDING-MACHINE AND CULTIVATOR. JOSEPH W. THOMAS and ABRAHAM R. LUDLOW, Springfield, Ohio, assignors to Thomas, Ludlow & Rodgers, same place. Filed Jan. 9, 1882. (No model.)

Brief.—The draw-bars are alternately attached at their front ends to oscillating bars for adjusting the teeth in and out of line. Near the rear ends of the drag-bars are attached jointed pressure-rods secured to a transverse rock-shaft, which is oscillated to elevate or depress the teeth, they being attached to allow each an independent movement.



Claim.—1. The combination, with a hoe or tooth and a lifting roller or shaft for raising and lowering the same, of a jointed pressure-rod hinged to said shaft and provided with a shouldered or locking joint, substantially as and for purpose described.

2. The combination of the hoe or tooth, the rock-shaft for raising and lowering the same, a jointed pressure-rod interposed between said tooth and rock-shaft, and having a shouldered or locking joint, and a spring arranged to exert its tension to straighten said jointed rod.

3. The combination of the hoes or teeth, the lifting roller or shaft for raising and lowering the same, the jointed rods connecting said teeth and shaft hinged to the latter, and having shouldered or locking joints, and means for locking said shaft, whereby the hoes or teeth may be held locked in working position, while at the same time any one tooth is adapted to rise without disturbing the others or the lifting roller or shaft.

4. The combination of the hoes or teeth, the lifting roller or shaft for raising and lowering the same, the jointed pressure-rods connecting said teeth and shaft and having a hinged or pivotal connection with the latter, and a lever geared to said shaft for actuating it.

5. The combination of the hoes or teeth, a lifting roller or shaft connected therewith by jointed pressure-rods and provided with a toothed wheel, a lever geared thereto for actuating it, and means for holding said lever at any desired adjustment.

6. A jointed pressure-rod for connecting the hoes or teeth and the rock-shaft, adapted to be hinged to the latter, and provided with the shouldered or locking joints, in combination with the distending springs, substantially as described.

7. The jointed pressure-rods connecting the hoes or teeth and the rock-shaft, hinged to the latter, and provided with shouldered or locking joints, distending springs, and slots permitting the hoes or teeth to fall and rise within certain limits each independently of the others, substantially as described.

8. The jointed and folding pressure-rods connecting the hoes or teeth and the lifting roller or shaft, and having a pivotal connection with the latter, said jointed rods having slots permitting the independent movement of the teeth, perforations and set-screws or bolts adapting them to hold the teeth at any desired adjustment, and self-locking or shouldered joints, in combination with springs applied and operating substantially as described.

9. The jointed and folding pressure-rods connecting the hoes or teeth with the lifting-roller, provided with shouldered or self-locking joints, in combination with distending springs, and means for holding said joints flexed, substantially as described.

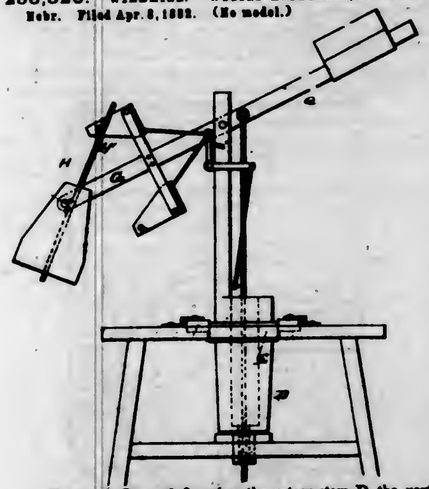
10. The combination, with the hoes or teeth and adjustable drag-bars for changing said teeth from a straight line or single row to a zigzag position, and vice versa, of a lifting-roller hinged to the latter, and provided with shouldered or self-locking joints, substantially as and for the purpose described.

258,825. CIRCUIT-CLOSER FOR TELEGRAPH-KEYS. JOHN A. TIMMERMAN, Odessa, Ontario, Canada. Filed Mar. 13, 1882. (No model.)



Claim.—The circuit-closer consisting of a spring-plate, *d*, attached by one end beneath and in metallic contact with the front contact-point, *c*, and resting at its outer end on the back of lever C, in combination with the lever B, hung on pivot *a*, and extending with its bent forward end through the recessed button *e* of the main lever provided with a flat disk, *i*, and connecting by hook *f* with the screw *g*, resting on said spring-plate, as shown and described.

258,826. WINDMILL. WALTER H. TRUMBLE, Grenwood, Nebr. Filed Apr. 8, 1882. (No model.)

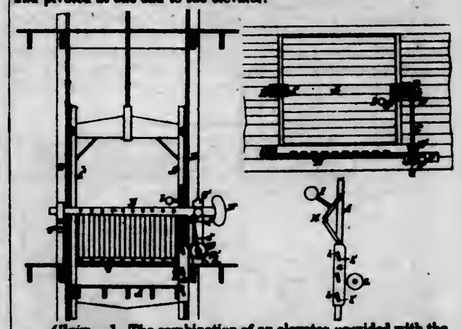


Claim.—1. In a wind-engine, the rotary stem D, the vertically-vibrating lever-beam G, pivoted thereto, the vertically-vibrating sail H, pivoted to an arm of the lever-beam, and the reversing-stops *e* and *f*, substantially as specified.

2. A vibrating wind-engine consisting of a rotary stem in bearings, a vertically-vibrating lever-beam pivoted thereto, a vertically-vibrating sail pivoted to an arm of said lever-beam, and pivoted lever-stops arranged to engage and reverse the sail and limit the movements of the lever-beam, substantially as specified.

258,827. AUTOMATIC GATE FOR ELEVATORS. BENJ. O. VANDUSEN, Cincinnati, Ohio. Filed Sept. 5, 1881. (No model.)

Brief.—A friction-plate on the elevator engages a friction-wheel on one end of a shaft mounted in bearings at the landing. On the other end of the shaft is a crank and lever connecting with a tilting gate. The friction-plate has inclined slots riding on pins, and is moved laterally by a knuckle-joint provided with a handle and pivoted at one end to the elevator.



Claim.—1. The combination of an elevator provided with the plate *a*, friction-wheel D, attached to shaft C, crank D' *d*, connecting-rod *d'*, and the gate E, one end of the connecting-rod *d'* being connected to the crank and the other to the gate, substantially as described.

2. The combination of the gate E, friction-wheel D, and connecting and operating mechanism, and the plate *a*, adjustably attached to the elevator and capable of being adjusted to impinge against the friction-wheel D or pass it without coming in contact therewith as the elevator passes up or down, substantially as and for the purpose described.

3. The combination of the upright post A' of an elevator, the plate *a*, provided with the oblique slots h, which engage with the pins *h'*, projecting from said upright post, the knuckle-joint H, friction-wheel D, and the gate E, and connecting and operating mechanism, substantially as and for the purpose specified.

4. The combination of the friction-wheel D and plate *a*, provided with oblique notches h, which engage with pins *h'*, projecting from the upright A', and the knuckle-joint H, the lower member of said joint being attached to the plate *a* and the upper member to the upright A', said upper member being provided with the weighted lever I, substantially as and for the purpose specified.

258,828. SAND-DISTRIBUTER FOR LOCOMOTIVES. PLATT B. VISSH, Rochester, N. Y. Filed Oct. 11, 1881. (No model.)



Claim.—The combination, with the sand-tube D and injector *h*, of the valve *d*, arranged to be operated upon by the jet from the injector to open the valve and to close of its own action when the jet is shut off, as herein shown and described.

258,829. MOISTURE-PROOF COATING AND COVERING FOR WALLS, FLOORS, &c. RASMUS VON PETERSEN, Copenhagen, Denmark. Filed Mar. 11, 1882. (No specimens.)

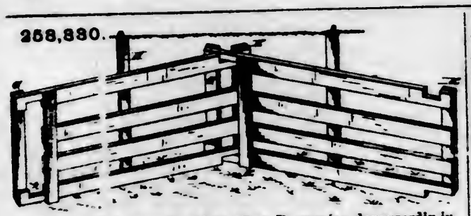
Claim.—1. The herein-described compound or composition for coating floors, walls, roofs, and other surfaces, consisting of natural asphalt or bitumen and comminuted cork mixed in suitable proportions, as set forth.

2. As an article of manufacture, a mixture of natural asphalt or bitumen and comminuted cork molded into bricks or blocks of suitable size, as set forth.

258,830. PORTABLE FENCE. DANIEL B. WAGNER, Mount Blanchard, Ohio, assignor of one-half to David H. Driesbach, same place. Filed Feb. 11, 1882. (No model.)

Claim.—In a portable fence, a panel having at one end an upwardly-opening square notch, C, both sides of the notch rising

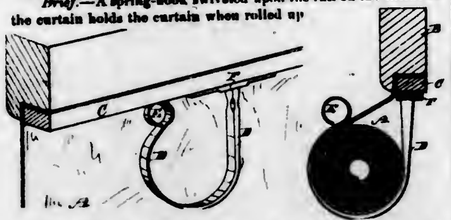
258,830.



flush with the top rail, and an offset, D, opening downwardly in the corner of the lower rail, and a post, E, in combination with a panel having at one end a downwardly-opening notch, N, in the upper rail and an upwardly-opening notch, P, in the lower rail, and the supplemental post G, connecting the extreme ends of the upper and lower rails, all constructed, arranged, and operated as set forth.

258,831. CARRIAGE-CURTAIN FASTENING. WILLIAM H. WEAVER, Emmittsburg, Md. Filed Feb. 28, 1882. (No model.)

Brief.—A spring-hook swiveled upon the rail on the inside of the curtain holds the curtain when rolled up.

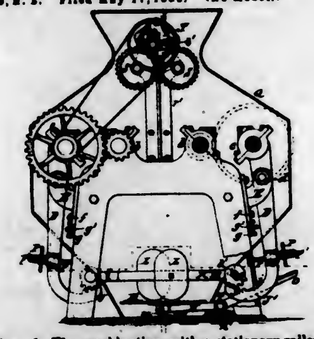


Claim.—1. The combination, with the rail B and the curtain A, of the spring-hook D, swiveled upon the rail, substantially as herein shown and described, and for the purpose set forth.

2. The combination, with the rail B and the curtain A, of the spring-hook D, provided with a loop or ring, E, at its free end, which hook is swiveled upon the rail, substantially as herein shown and described, and for the purpose set forth.

3. The combination, with the rail B and curtain A, of the hook D and the swivel-plate F, substantially as herein shown and described, and for the purpose set forth.

258,832. ROLLER-MILL. IRA WESCOTT, Buffalo, N. Y., and JOSEPH S. KARNS, Lima, Ohio, assignors to John T. Noye & Sons, Buffalo, N. Y. Filed May 17, 1880. (No model.)



Claim.—1. The combination, with a stationary roller, B, of a movable roller, C, the levers D, supporting the movable roller in their upper ends, and the fulcrum-bearings E, arranged between the ends of the levers, made vertically adjustable on the stationary frame of the machine, substantially as set forth.

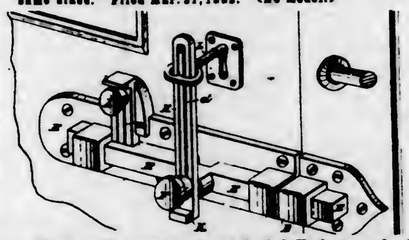
2. The combination, with the levers D, pivoted as described, provided at their lower ends with gear-racks J, of the levers K, provided with pinions *h* and weights L, and mechanism whereby the weights L can be raised simultaneously, substantially as set forth.

3. The combination, with the levers D, provided at their lower ends with gear-racks J, of the levers K, provided with pinions *h* and weights L, tables M, and lifting-levers N O, substantially as set forth.

4. The combination, with the feed-rolls E, provided with gear-wheels S, of the driving-pinion *s* and supporting-bracket T, made adjustable with reference to the gear-wheels S, substantially as set forth.

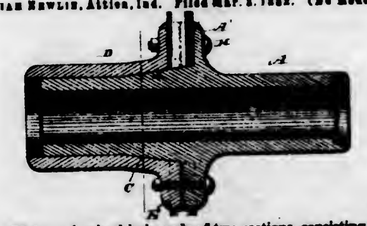
5. The combination, with the feed-rolls E, provided with gear-wheels S, of the driving-pinion *s* and supporting-bracket T, pivoted at *t*, and provided with screw-bolts *f* and curved elongated holes f^2, substantially as set forth.

258,833. COMBINED BOLT AND KEY FASTENER. WILLIAM WHITE, Chicago, Ill., assignor of one-half to John Merchant, same place. Filed Mar. 21, 1882. (No model.)



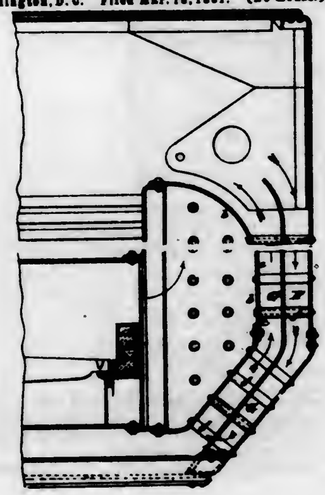
Claim.—The combination of the bolt E, the screw-knob F, and the slotted bar K, adapted to fasten a key, substantially as and for the purposes specified.

258,834. VEHICLE-WHEEL. SAMUEL WHITEHALL and WILLIAM NEWLIN, Attica, Ind. Filed Mar. 3, 1882. (No model.)



Claim.—A wheel-hub made of two sections, consisting of the axle-box A, having the flange A', and extended inclined bearing C, formed integral therewith, the inner face of the flange A' being provided with separate radial grooves, the sleeve D, provided with a flange, E, having separate radial grooves formed in its inner face, said sleeve being provided with an extended conical or tapering bearing that fits upon the inclined bearing C of the axle-box, and fastening-bolts inserted through the flanges and between the spoke-grooves, substantially as set forth.

258,835. SEPARATING-DIAPHRAGM. GEORGE B. WHITING, Washington, D. C. Filed Mar. 16, 1881. (No model.)



Claim.—In a marine boiler provided with a hook-water space F, and having also a water-bottom, a diaphragm, G, constructed as described, inserted midway between the front and rear sheets of the hook-water space, with free passages underneath, and connecting with the water-bottom space for the purpose of promoting circulation, in the manner and for the purposes set forth.

258,836. MILL-PACKER REGISTER. GEORGE L. WILLIAMS, Edwardsville, Ill. Filed July 6, 1881. (No model.)



Claim.—1. In a mill-packer register, the combination of the base-plate A, box B, studs *g*, non-circular wheel F, ratchet-wheels G H, dial-plates L *m*, and crank N, substantially as shown and described.

2. The plate A, box or case B, non-circular wheel F, and ratchet-gear wheels G H, having studs and pawls, as shown, in combination with the knee-jointed lever I *j*, spring K, and the reciprocating arm of a mill-packer, substantially as shown and described.

3. The combination, with the actuating-arm of a mill-packer indicator, of the frame or case A B, ratchet-wheels G H, dial-plates L *m*, non-circular plate-wheel F, jointed lever I *j*, having the part I right and the part *j* bear upon the shaft of the wheel F, and spring or weight K, substantially as shown and described.

258,837. ADJUSTABLE BASE-BOARD. CHARLES H. WILLSON, Mount Vernon, N. Y. Filed Dec. 22, 1881. (No model.)

Brief.—The movable section slides in guides on the fixed section and held in place by springs. The joint between the two sections is covered by a projection on the movable section, and points for holding the carpet are secured to the lower side of the movable section.

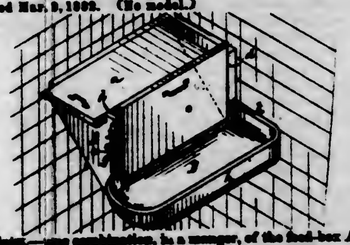


Claim.—1. A base-board constructed of a stationary section and a movable section, the stationary section being provided with suitable guides to allow the movable section to rise and fall and with springs which act on the movable section, substantially as set forth.

2. The combination, with the stationary section *a*, its guides D, and the movable section *b*, of a projection extending upward from the movable section to cover the joint, substantially as shown and described.

3. The combination, with the stationary section *a*, its guides D, the movable section *b*, and springs *d*, of points *h*, for retaining a carpet, substantially as set forth.

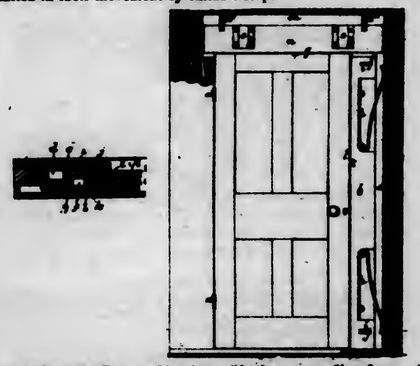
258,838. MANGER. CHARLES H. WILLSON, Mount Vernon, N. Y. Filed Mar. 9, 1882. (No model.)



Claim.—...ger combination, in a manger, of the feed-box A, arranged along the side of a stall, and provided with a sliding vertical door, C, arranged to extend over and form the front of the feed-box, the flat-bottomed feed-basin B, extending laterally from the feed-box, and the extension *b'* of the feed-basin, projecting forward beyond the door C and beyond the adjacent end of the feed-box, and curved within and without, substantially as shown and described.

258,839. FRAME FOR DOORS OR WINDOWS. CHARLES H. WILLSON, Mount Vernon, N. Y. Filed Dec. 26, 1881. (No model.)

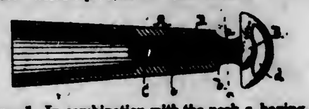
Brief.—The door jamb or lintel consists of a spring-actuated strip formed with a tongue and groove, which fit a corresponding tongue and groove in the door-frame. The adjacent edges of the door and movable section are beveled. The movable sections are limited in their movement by suitable stops.



Claim.—1. The combination, with the surrounding frame of a door or window, of a movable section, *b*, both the said section and the frame being provided with tongues *e g* and grooves *d f*, respectively, the stops *i i*, and springs *h h*, substantially as and for the purpose set forth.

2. The combination, with the surrounding frame of a door or window, of a jamb or lintel composed of a movable section, *b*, springs *h h*, acting on the movable section, suitable stops for limiting the motion of said movable section, and beveled edges *b f* on the movable section and door or window, respectively, substantially as and for the purpose shown and described.

258,840. WHIFFLETREE-HOOK. HARRY H. WILSON, Baltimore, Md. Filed Apr. 1, 1882. (No model.)



Claim.—1. In combination with the neck *a*, having screw F, the hook B, rod *b*, having inclined recess E, and the spring *c*, as set forth.

2. In combination with the shell A, the hook B, adapted to be retracted and turned to attach the trace and to automatically return to its normal position upon being released, as set forth.

3. In combination with the shell A, the hook B, having opening *d*, the rod *b*, spring *c*, and screw F, as set forth.

258,841. PROCESS OF MANUFACTURE OF MILK-SUGAR. LEWIS E. WITTE, Cleveland, Ohio. Filed Oct. 19, 1878.

Claim.—1. A process in the manufacture of milk-sugar, consisting in filtering whey through caseous or albuminous matter, substantially as and for the purpose shown.

2. As a process in the manufacture of milk-sugar, a treatment of whey consisting of the application of acid and heat, substantially as and for the purpose shown.

3. A filter for purifying whey in the process of making milk-sugar, consisting of an envelope of fabric having an internal layer or lining of caseous or albuminous matter, substantially as and for the purpose shown.

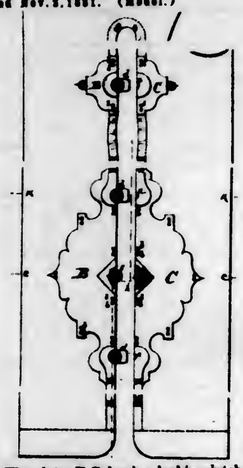
4. As an article of manufacture, milk-sugar made according to the process herein specified, substantially as shown.

5. The combination of whey and muriatic acid, substantially as shown.

6. One, two, or more filters, A B, in combination with suitable apparatus for feeding to and collecting from them, substantially as and for the purpose shown.

7. The process of preparing whey for the manufacture of milk-sugar, consisting in the scalding and filtering of the whey, substantially as and for the purpose described.

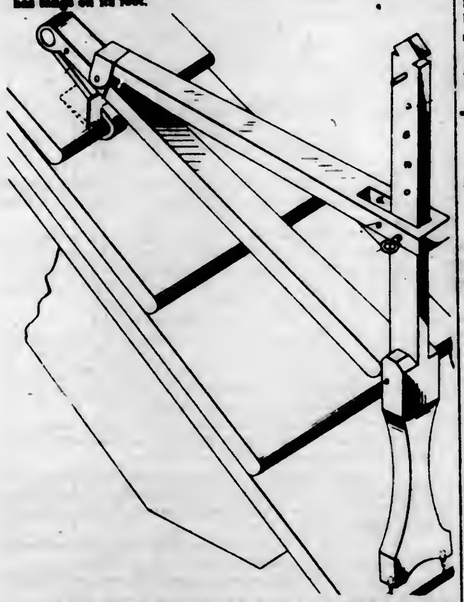
258,842. GLOVE-FASTENING. JULIUS WOHLSKA, New York, N.Y. Filed Nov. 3, 1881. (Model.)



Claim.—The plates B C, having locking-latches *d* and socket *e*, in combination with the pin *f* and spring A, which spring is contained in the recess *g*, substantially as specified.

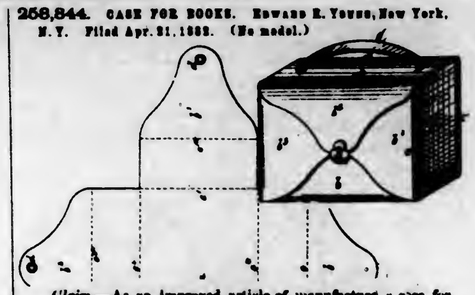
258,843. ROOFING-BRACKET. STEPHEN WOODARD, Delano, Minn. Filed Feb. 28, 1882. (No model.)

Brief.—The upper end of the main beam has a pivoted hook and a bifurcated metallic plate, which straddles the hook between the latter and the main beam. The bifurcated plate is serrated at its lower ends. The main beam is pivoted at its lower end to a standard, and has pivoted at its upper end a beam slotted at its other end to engage the standard. It is adjustable upon the standard by a pin engaging perforations in the standard. The standard has tangs on its foot.



Claim.—In combination with the main beam and devices for securing its upper end, the adjustable beam pivoted to said main beam, the standard pivoted thereto, and the devices for adjusting the adjustable beam on the standard, the said standard being provided with tangs at its lower end, adapted to bite into the shingles, substantially as specified.

258,844. CASE FOR BOOKS. EDWARD R. YOUNG, New York, N.Y. Filed Apr. 21, 1882. (No model.)



Claim.—As an improved article of manufacture, a case for carrying books, composed of a base, *a*, folding flaps *b b' b² b³*, eyelet-holes in the flaps *b' b² b³*, a clasp secured to the flap *b*, and a handle for carrying the case, all as shown and described.

258,845. EARTHENWARE LIQUID-MEASURE. JOHN W. YOUNG, East Liverpool, Ohio, assignor of one-third to Wm. Brunt, Jr., same place. Filed Dec. 5, 1881. (No model.)



Claim.—1. The combination, with an earthenware measure for measuring liquids, of a supplemental piece adapted to be secured in the bottom of a measure so as not to fall out when the measure is inverted, and also capable of being removed when the measure is being cleaned, substantially as described.

2. The combination, with the herein-described earthenware measure, having the projections *a a* near its bottom, of the removable supplemental piece P, having the notches *b b* on its edges, substantially as described.

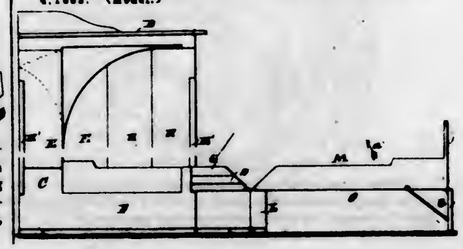
258,846. FRUIT-PICKING IMPLEMENT. CHARLES ALLEN, Rochester, N.Y. Filed Dec. 21, 1881. (No model.)



Claim.—1. In a fruit-picking implement, the combination of the notched cylindrical knife C, sliding within the double notched cylinder E B, kept in place by the spring *a* and operated by means of a wire leading downward from the spring, all substantially as shown and described, for the purpose specified.

2. In a fruit-picking implement, the combination of the hollow handle A with the notched cylindrical knife C and the double notched cylinder B E, substantially as and for the purpose set forth.

258,847. FOLDING BED. HERBERT H. BURNEY, Port Richmond, assignor to Electa L. Russell, New York, Henry Jordan, Jr., Nyack, and Rosa D. Bement, Port Richmond, N.Y. Filed Jan. 4, 1882. (Model.)



Claim.—1. The combination, with the stationary head-piece A, composed of top and side pieces, of a horizontally-sliding box, G, and a swinging box, M, hinged to the outer edge of the latter and provided with a closed bottom, said hinged box being adapted to swing upward, so that its closed bottom constitutes a front wall for the stationary head-piece, substantially as and for the purpose described.

2. The combination, with the stationary head-piece A, composed of top and side pieces and a front base plate or board, of a horizontally-sliding box, G, and a swinging box, M, hinged to the outer edge of the latter and provided with a closed bottom, said hinged box being adapted to swing upward, so that its closed bottom constitutes a front wall for the stationary head-piece, in connection with the front base plate or board of the latter, substantially as and for the purpose described.

3. In a folding bedstead, the combination of the head-piece composed of top and side pieces, the horizontally-sliding box G, the hinged pillow-section J, adapted to turn downward when the sliding box is moved outward, and the box M, having a closed bottom and hinged to the outer edge of the sliding box, said hinged box being adapted to swing upward, so that its closed bottom constitutes a front wall for the head-piece, substantially as described.

4. In a folding bedstead, the combination of a head-piece composed of top and side pieces and a front base board or plate, of a sliding box, G, provided at its inner edge with a hinged pillow-section, J, and a box, M, hinged to the outer edge of the sliding box, and having a closed bottom which constitutes a front wall to the head-piece when said box is turned to a vertical position, substantially as described.

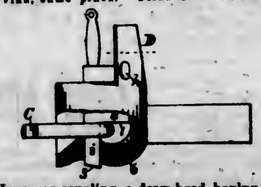
5. The folding bed herein described, composed essentially of the head-piece A, provided with attached folding doors E at its sides, the horizontally-sliding box G in the base of the head-piece, and a box, M, hinged to the outer edge of the sliding box, said hinged box being adapted to turn vertically to constitute a front wall to the head-piece, substantially as set forth.

6. The folding bed herein described, composed essentially of the head-piece A, provided with a horizontal top plate, vertical side pieces, and hinged side doors having strips E', a sliding box, G, and a hinged box, M, adapted to swing vertically and constitute a front to the head-piece, substantially as set forth.

7. The combination, with the head-piece A, provided in its base with the beveled-edged slats or rails F, having the transverse front check-rail, K, of the sliding box G, provided at its bottom with dovetailed projections F', arranged between the beveled-edged slats or rails, substantially as set forth.

8. In a folding bedstead, the combination, with the base sides D, provided on the inner surface with longitudinal dovetailed grooves, of the sliding box G, the beveled-edged slats or rails F F, the dovetailed projections F' on the under side of the box G, and the longitudinal dovetailed ridges H on the outer surfaces of the sides of the sliding box G, substantially as herein shown and described, and for the purpose set forth.

258,848. CAR-COUPLING. JOHN C. BLOSSER, Lima, Ohio, assignor of three-fourths to George W. James, Byron Bowers, and James Irvine, same place. Filed Feb. 16, 1882. (No model.)



Claim.—1. In a car-coupling, a draw-head having upon its top and rear part a beam, D, which projects vertically above the draw-head, and said beam provided on its front side with a vertical slot, *e*, which has within it on each side a vertical groove, *g*, in combination with a coupling-pin having a lower straight end, *i*, to engage with the link, and provided above the lower straight end with a rear projecting part, *c*, to slide in the slot on the front side of the beam, and said rear projecting part having a key whose ends slide in the vertical grooves, as set forth.

2. In a car-coupling, a draw-bar having an upward-projecting beam provided with a vertical slot, *e*, and within the slot on each side a vertical groove, *g*, closed at the upper end, and a key-hole, in combination with a coupling-pin provided with a rear projecting part to slide in the slot, and having a key whose ends slide in the groove, as set forth.

3. In a car-coupling, the combination and arrangement of a draw-head having a notch, *d*, in its top adjoining the pin-hole, an upward projecting beam provided with vertical side grooves closed at the top, and a coupling-pin provided with a key whose ends slide in the vertical grooves, as set forth.

4. In a car-coupling, a draw-head having in its top a slot, *d*, and at the rear end thereof an intersecting slot with a vertical wall, *f*, and in the bottom of its mouth a horizontal seat, which, with the vertical wall, forms a right-angled notch, *6*, in combination with a coupling-pin having a rear projection provided with a lower horizontal edge, *l*, and a rear vertical edge, *i'*, as set forth.

258,849. COTTON-GIN CONDENSER. WILLIAM B. BURRISS and JOSEPH H. BENNER, Troy, Ala.; said Burriss assignor to Frank Baltzell, same place. Filed Oct. 24, 1881. (No model.)



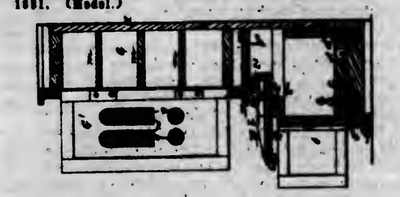
Claim.—The combination, in a cotton-gin condenser, of the receptacle A, having hinged bottom B', perforated false bottom B, having concave *b*, deflector *b'*, and toothed cylinder C, provided with the flexible strips *a*, substantially as and for the purpose herein shown and set forth.

258,850. PURIFICATION OF ALKALINE SOLUTIONS OBTAINED IN THE MANUFACTURE OF SODA. EUSTACE GARDY, HOLBROOK GASKELL, Jr., and FERDINAND HUNTER, Widnes, County of Lancaster, England. Filed Dec. 19, 1881. (No specimens.) Patented in England Feb. 11, 1880, No. 668.

Claim.—1. The method of purifying alkaline solutions by oxidizing the sulphur compounds therein with the aid of manganous oxide, sodium nitrate, or other suitable oxygen compound, and then heating the liquor to a high temperature, as indicated, to cause the double decomposition of the said oxidized sulphur compounds and the cyanogen compounds in the liquor, substantially as described.

2. In the purification of alkaline liquor, the production of ammonia by the decomposition of nitrogen compounds—such as ferrocyanides and nitrates—during the heating of the liquor and recovery of the ammonia produced, substantially as described.

258,851. KITCHEN-CABINET. WILLIAM B. CRAIG, De Witt, Nebr., assignor to Mary E. Craig, same place. Filed Aug. 3, 1881. (Model.)



Claim.—1. The combination, with the rolling-board E, provided with racks *h l*, and cover F, provided with racks F', of the pinions and shaft *I F*, substantially as herein shown and described, whereby said board and cover are simultaneously moved in opposite directions, as set forth.

2. In a kitchen-cabinet, the combination, with the closet D and the cupboard G, of the sink K, provided with the water-retaining depression *e*, hinged to the said closet and adapted to fold against the side of the cupboard, substantially as and for the purpose set forth.

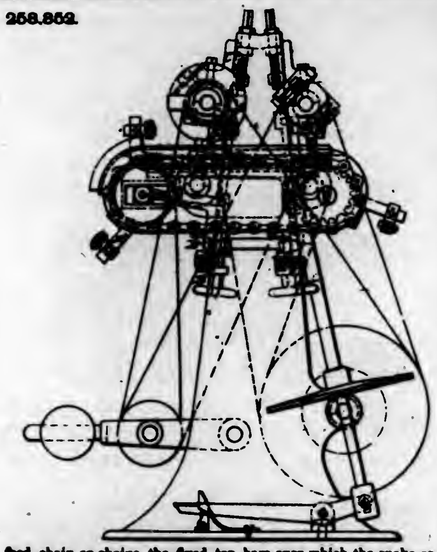
258,852. SPOKE TENONING AND CHAMFERING MACHINE. WILLIAM H. DOANE and GEORGE W. BUCHER, Cincinnati, Ohio. Filed Apr. 18, 1881. (No model.)

Brief.—The spokes are fed to the endless carrier-chains, and by a cam-surface alongside the chains the spokes are lifted into contact with the clamps on the chains, when they are carried forward between the heads for tenoning and chamfering the corners.

Claim.—1. The combination, substantially as before set forth, of the tenoning cutter-heads, the spoke-tapering cutter-heads, and the feed chain or chains provided with pairs of dogs for feeding spokes through between the respective cutter-heads.

2. The combination, substantially as before set forth, of the

258,852.



feed chain or chains, the fixed top bars over which the spoke or other object is moved, and the dogs on said chains, provided with spring-clamps.

3. The combination, substantially as before set forth, of the spoke-supporting top bars, constructed at one end with downwardly-curved eccentric portions, the feed chain or chains, and dogs on said chains, provided with spring-clamps.

4. The combination, substantially as before set forth, of the spoke-supporting top bars, constructed at one end with downwardly-curved eccentric portions, the feed chain or chains, the dogs on said chains, provided with spring-clamps and laterally-projecting anti-friction guide-rollers, and the guides for said rollers.

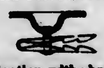
5. The combination, substantially as before set forth, of the spoke-supporting top bar provided with a dull-edged rib, and the spring-clamps on the feed chain or chains.

6. The combination, substantially as before set forth, of the feed chain or chains, the worm-gearing for driving the same, the upright worm-shaft carrying a friction-disk, the counter-shaft provided with a friction-driver, and the treadle for lifting the worm-shaft to disconnect its friction-disk from the said friction-driver.

7. In a machine for tenoning and tapering spokes, a frame having diverging faces, upon which are mounted the four slides supporting the two sets of cutter-heads, combined with said slides and cutter-heads, substantially as before set forth.

8. In a machine for tenoning and tapering spokes, the combination, substantially as before set forth, of the endless feed chain or chains, the fixed top bars constructed with ascending grades or inclines at the feeding-in end of the machine, and independent dogs on the chain or chains, whereby a spoke is first automatically gripped for holding it firmly in feeding it through between the cutter-heads, and then automatically released and discharged.

258,853. BUTTON. Enno Fischer, Stuttgart, Wurtemberg, Germany. Filed Feb. 20, 1882. (No model.) Patented in Germany Mar. 10, 1881, No. 15,091; in France Dec. 17, 1881, No. 146,399, and in Austria Feb. 14, 1882. No. 41,818.



Claim.—The combination, with a button provided with a screw-threaded socket, of the pair of serrated jaws, and the screw-threaded button-shank passing through said jaws and received in the screw-threaded socket of the button, whereby by turning down the latter upon its shank the jaws will be forced together, substantially as described.

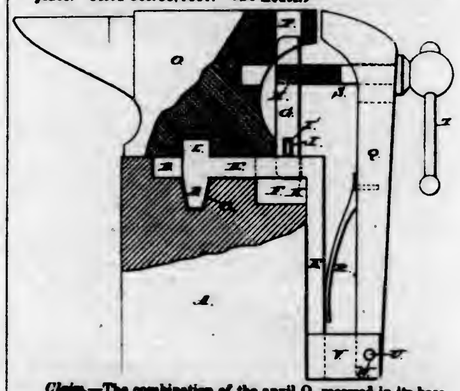
258,854. TRUSS. Joseph Fay, Ligonier, Pa. Filed Apr. 11, 1881. (No model.)

Claim.—In a truss, the combination of the hip-band or spring B, formed with a pivot arm or extension, b, the pad A, provided with arm a, having holes a' and a'', the torsional spring S, and studs P P', substantially as described.

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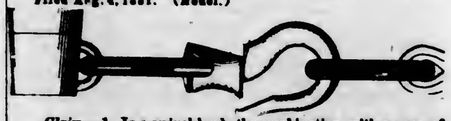


258,855. COMBINED ANVIL AND VISE. John J. Glover, Dardanelle, Ark., assignor of one-half to Louis C. Hall, same place. Filed Oct. 26, 1881. (No model.)



Claim.—The combination of the anvil O, recessed in its base at M, with the anvil-block A, having the channel B, recesses C and F, the angular arm E, having slot K, studs D and L, and the legs V V, the piece G, slotted at I, key I', movable jaw Q, pin U, screw S, and lever T, substantially as and for the purposes specified.

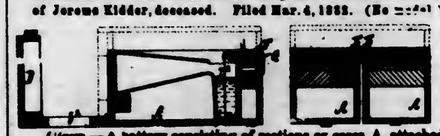
258,856. WHIFFLETREE-HOOK. John H. Reuteree, Janesville, Wis., assignor of one-half to Charles Dutton, same place. Filed Aug. 4, 1881. (Model.)



Claim.—1. In a swivel-hook, the combination, with an eye, of a hook eccentrically pivoted to said eye, substantially as set forth.

2. In a swivel-hook, the combination, with an eye formed at its lower edge with a circumferential shoulder cut away at one side, of a hook eccentrically swiveled to said eye, substantially as set forth.

258,857. GALVANIC BATTERY. Francis H. Kidder, New York, and Hannah W. Keyes, Brooklyn, N. Y., Administrators of Jerome Kidder, deceased. Filed Mar. 4, 1882. (No model.)



Claim.—A battery consisting of sections or cases A, attached to a lid or support, B, containing cells of a battery, and provided with strips or rods of metal E, for electrically connecting the cells in any of said sections or cases with the cells of adjoining cases when charged and in the proper position, substantially as and for the purposes above described.

258,858. DENTIST'S FLASK. Elias H. Locke, Troy, Ala., assignor of one-half to Frank Baltzell, same place. Filed Oct. 10, 1881. (No model.)



Claim.—A dentist's flask consisting of the solid bottom A, having uprights B B, the middle ring, C, consisting of two parts, C' C', having legs b, and connected by hinges D D', having removable knuckle-pins d, the top ring, C'', having notches N, and the detachable top E, having projections P, all arranged and operating substantially as and for the purpose set forth.

258,859. ELECTRICAL CONNECTION FOR RAILWAY-TRAINS. Jesse H. Low, Pulaski, N. Y., assignor of one-half to Frank S. Low, same place. Filed Mar. 1, 1882. (No model.)

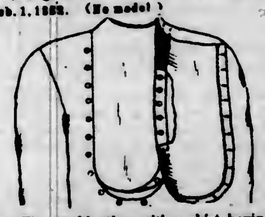


Claim.—1. In an organized system of electrical conductors attached to the cars of a railway-train for the purpose of signaling the engineer in charge of the train, the combination, with the electrical conductors a and a', fixed to each car and adapted to connect and disconnect by means of the fixed conducting-pieces G and the flexible conductors H, provided with the metallic springs f', constructed and arranged to operate as set forth, and one or more push-buttons, F, fixed in or on the cars, and electrically connected to the conductors a and a', as herein described, of the battery C and alarm-bell D, fixed on the engine of the train, as and for the purpose specified.

2. In an open-circuit system of electric conductors, the combination, with the conductive pieces G, provided with the projections f', as herein described, of separable conductors provided with springs f', adapted to engage in the pieces G in such manner that a closing of the open circuit will be automatically effected by every engagement and disengagement of said springs with the pieces G, in the manner herein specified.

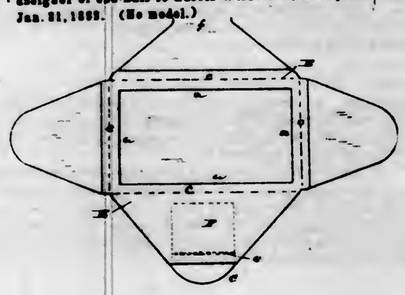
3. The device herein described for connecting and disconnecting the lines of open-circuit electric conductors, composed of the conductive pieces G, containing the projections f' and insulated from each other, as herein set forth, and the springs f', insulated from each other and adapted to engage with the pieces G in such manner that the open circuit will be momentarily closed every time the said springs are connected to or disconnected from the said pieces G, as herein specified.

258,860. REVERSIBLE SHIRT. David Lubin, Sacramento City, Cal., assignor of one-half to Harris Weinstock, same place. Filed Feb. 1, 1882. (No model.)



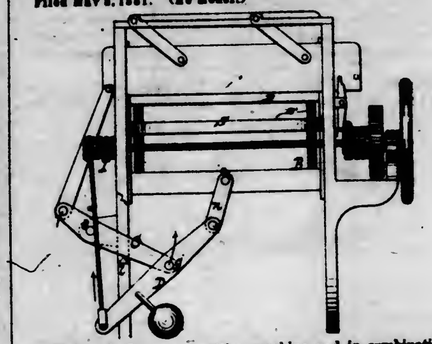
Claim.—The combination, with a shirt having a bosom-flap open on one side only, of a breast and back protector having a flap opening opposite to the said bosom-flap, substantially as and for the purposes described.

258,861. ENVELOPE. David Lubin, Sacramento City, Cal., assignor of one-half to Harris Weinstock, same place. Filed Jan. 31, 1882. (No model.)



Claim.—An envelope having a self-sealing tongue, f, on its closing-flap, a re-enforcing frame, E, for the four corners of the envelope, and the flap G, a pocket, F, for receiving the tongue, and a slit, e, all substantially as described.

258,862. PAPER-CUTTING MACHINE. Alexander Hall, Brooklyn, assignor to T. W. & C. B. Sheridan, New York, N. Y. Filed May 2, 1881. (No model.)



Claim.—1. In a paper-cutting machine, and in combination with the knife and the clamp-bar of the same, a compound lever composed of bars C D, one member whereof is coupled to the knife and fulcrumed on the frame, and the other member whereof is pivotally jointed to the first member and coupled to the movable clamp-bar, substantially as shown, and its free end coupled to the driving-power.

2. In a paper-cutting machine, the combination of a knife-lever fulcrumed on the main frame and having a pivotal traction connection with the knife-stock, a clamp-frame and a clamp-lever having a pivotal connection thereto and pivotally attached intermediate its ends directly to the knife-lever, and a traction device connected to the outer end of the clamp-lever, the said members being arranged in the described relation, to operate as set forth.

3. The combination, substantially as hereinbefore set forth, of the knife-lever pivoted intermediate of its ends to the machine-frame and having a pivotal connection with the knife-stock at the outer end, a clamp-lever pivoted intermediate of its ends to the inner end of the knife-lever and having a pivotal connection with the clamp-frame at the inner end, and the balance-weight and the traction device connected to the outer end of the clamp-lever.

258,863. DRIVE-CHAIN. Dennis B. McKernan, Chicago, Ill. Filed Mar. 6, 1882. (Model.)

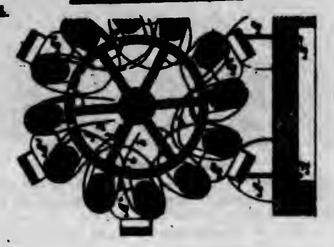


Claim.—1. In a detachable link, the combination, with the hook and with a lug on the end bar, of a key fitting in grooves abutting against and forming substantially a uniform continuation of the point of the hook and the end bar, and adapted to close the throat of the hook, substantially as described.

2. In a drive-chain, a link one end of the side bars of which are provided with lugs projecting above the same, and their opposite ends joined by a hook, in combination with a removable key closing the throat of the hook, substantially as described.

3. The link A, provided with the lugs *a a*, and the hook *b*, having its point provided with internal grooves, in combination with the end bar and its grooved rib, and the key *c*, fitting in said grooves, substantially as described.

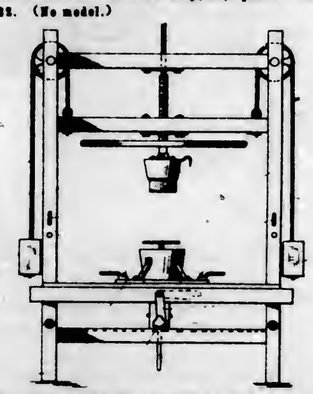
258,864.



258,864. DYNAMO-ELECTRIC MACHINE. HARE J. HELLER, New York, N. Y., assignor (if one-fourth to Alexander Lovett, same place. Filed Oct. 13, 1879. Patented in England Apr. 25, 1881, No. 1,737; in France Apr. 26, 1881, No. 142,636; in Belgium Apr. 26, 1881, No. 54,504; in Canada May 31, 1881, No. 13,283; in Spain July 21, 1881, No. 1,520, and in Austria July 29, 1881, No. 14,283.

Claim.—In a dynamo-electric machine, the combination, with opposite field-of-force magnets, of an armature-wheel having its coils J', J², &c., placed in an inclined position to radii of said wheel, substantially as shown and described, for the purpose specified.

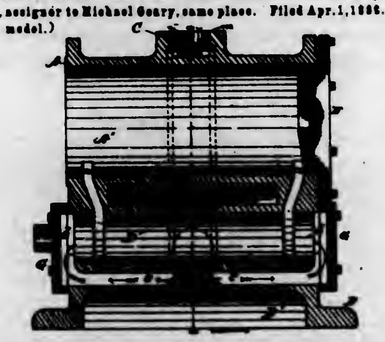
258,865. POTTERY-PRESS. DANIEL PIKE, New Orleans, La., assignor of one-half to H. J. Deady, same place. Filed Mar. 18, 1882. (No model.)



Claim.—1. In combination with the mold, the plunger secured to a screw passing through a cross-beam, arranged to move in ways or guides, and counterbalanced by means of suitable weights and chains, substantially as specified.

2. In combination with the mold, the rotating plunger having a series of beveled faces on its bottom, substantially as and for the purposes specified.

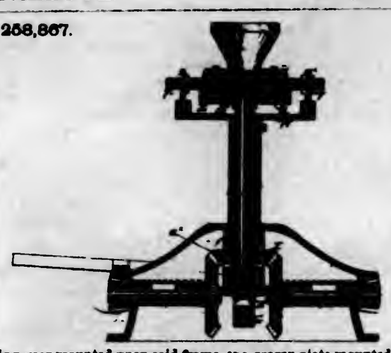
258,866. STEAM-ENGINE. JAMES W. PLIMPTON, Oil City, Pa., assignor to Michael Geary, same place. Filed Apr. 1, 1882. (No model.)



Claim.—A casting for a steam-engine having a cylinder, A, with piston-chamber A', a pedestal, D, for supporting the same, a steam-chest, B, with valve-chamber B', lying below and parallel with said cylinder and within said pedestal, and connected to said piston-chamber by ports *a a*, and being sufficiently shorter than said cylinder to leave spaces *b b* at its ends, an exhaust-passage, E, leading from said valve-chamber directly through the walls of the pedestal, and, finally, a supply-passage, C, which passes from above the cylinder to below the steam-chest, and there branching into passages *c c*, leading to the spaces *b b*, all of which parts are produced in said casting at the operation of casting.

258,867. GRINDING-MILL. GEORGE RAYNOR and ALBERT RAYNOR, Chicago, Ill., assignors of one-half to Orville H. Tuboy, same place. Filed July 12, 1881. (No model.)

Claim.—1. In a grinding-mill, the combination of a base-frame provided with the tubular upright post or standard, the driving-gear mounted upon said frame, the geared plate mounted upon the central post, the vertical central spindle, the revolving disk attached to the spindle, and the stationary grinding-disk, and devices, substantially such as shown, connecting the stationary disk with and supporting it from the tubular post, as described and shown.



2. In a disk-action grinder, the combination of a base-frame having a tubular post thereon, a central vertical spindle mounted within the post and provided with a grinding-disk at the upper end, two horizontal driving-shafts geared to the spindle upon opposite sides of its axis, and a revolving peripherally-toothed driving-plate mounted on an axis concentric with the mill-spindle and engaging with pinions upon the outer ends of the two driving-shafts, whereby the power is applied uniformly upon the two sides of the spindle.

3. In a grinding-mill, the base-frame provided with a central opening, the central tubular standard sustained above the openings by the bridge-tree, and bearings for two horizontal shafts located upon opposite sides of the opening below the level of the bridge-tree.

4. The combination of the base-frame provided with the central opening, the bridge-tree, and the tubular standard upon the latter, the central spindle, the pinion upon the lower end of the spindle, the two vertical pinions engaging with opposite sides of the spindle-pinion and sustained by outwardly-extending shafts, and the central spindle-adjusting lever, G, located between the vertical pinions beneath the bridge-tree, as shown and described.

5. In a grinding-mill, the base-frame provided with the bridge-tree, and the tubular standard thereon, in combination with the horizontal shafts provided with beveled pinions on their two ends, the vertical central spindle provided with the beveled pinion upon its lower end, and the revolving toothed plate mounted upon and around the central standard, and provided at its outer edge with teeth engaging with the pinions upon the outer ends of the horizontal shaft.

6. The base-frame, the bridge-tree, the central standard upon the latter, and the cross-bar D, in combination with the central vertically-adjustable mill-spindle and its driving-pinion mounted between the bridge-tree and bar D, as shown, having a sliding connection with the spindle.

7. The base-frame provided with the central opening, the bridge-tree spanning the same, and the tubular post or standard sustained upon the bridge-tree, in combination with the cross-bar beneath the bridge-tree, the vertical spindle, its driving-pinion, and the adjustable step for the spindle seated in bearing B, substantially as shown.

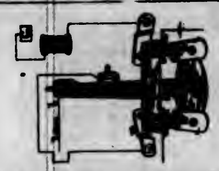
8. In combination with the two grinding-disks and the curb or casing Z, the sustaining-frame W, constructed, as described, to permit the curb to be dropped below the grinding-faces of the disks.

9. The combination of the two grinding-disks, the spindle, the frame W, the vertical screws, the top plate, and the curb or casing, substantially as shown.

258,868. TELEPHONE-EXCHANGE SWITCH-BOARD. CHAS. W. ROSS and GEO. H. TWISS, Columbus, Ohio, assignors to the Western Electric Manufacturing Company, Chicago, Ill. Filed Mar. 10, 1882. (No model.)

Claim.—1. The subscriber's ground-circuit in combination with two contact-springs, one for connecting with the operator's outfit, the other for taking off the ground, and an intermediate non-conducting pin whereby, when the former is depressed so as to connect with the operator's outfit, the latter will be moved automatically, so as to take off the ground.

258,868.



2. The combination of the circuit of a telephone-line through the spring-jack and annunciator to ground with two springs, one for connecting with the operator's outfit, the other for connecting with the generator, and means whereby the ground is automatically taken off when either spring is depressed, as and for the purpose specified.

3. The combination, upon the switch-board of a telephone-exchange, of spring-jacks, one for each line, each line passing through its spring-jack to ground, and pairs of keys, one pair for each spring-jack, one key of each pair for connecting to the operator's outfit, the other for connecting with the generator.

4. The combination, upon the switch-board of a telephone-exchange, of spring-jacks, one for each line, each line passing through its spring-jack to ground, and pairs of keys, one pair for each spring-jack, one key of each pair for connecting to the operator's outfit, the other for connecting with the generator, and means at each pair whereby the ground is automatically removed when either key is depressed.

258,869. BURIAL-VAULT. JAMES F. WINCHELL, Springfield, Ohio, assignor to George W. Boyd & Co., same place. Filed Feb. 8, 1881. (No model.)



Claim.—An outer metallic coffin having an open end surrounded by an inwardly-projecting flange, in combination with a head or door, E, having catches G G at its lower edge, on the inner face thereof, and pivoted weighted catches I I near the upper edge, on the same face, to engage the flange and lock the head from the inside, substantially as shown and described.

REISSUES.

10,123. UNDERGROUND-TELEGRAPH LINE. DAVID BROOKS, Philadelphia, Pa. Filed Apr. 26, 1882. Original No. 254,868, dated Feb. 28, 1882.



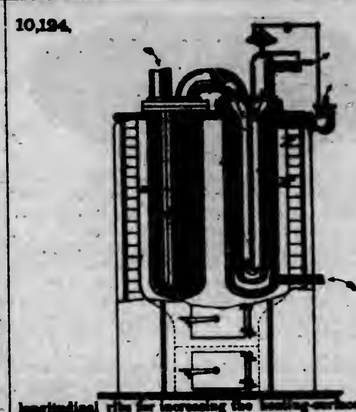
Claim.—The mode herein described of preventing the escape of insulating-fluid from the terminal pipes of underground-telegraph lines, the said mode consisting in introducing paraffine or similar material into such terminals, and compressing the same around the wires in the pipe near the end of the said pipe.

10,124. APPARATUS FOR SUPERHEATING STEAM OR HEATING AIR. SOLOMON H. CARVALHO, New York, N. Y., assignee to Jacob S. Carvalho, same place. Filed Apr. 10, 1882. Original No. 242,502, dated Nov. 15, 1881.

Claim.—1. In an apparatus for superheating steam or heating air, a retort composed of an exterior and an interior casing, the latter provided with a longitudinal diaphragm which extends centrally through it to a point at some distance from the bottom of the same, substantially as set forth.

2. In an apparatus for superheating steam or heating air, a retort composed of an interior and an exterior casing, the former having a central longitudinal diaphragm extending to a point at some distance from the bottom, both casings being provided with

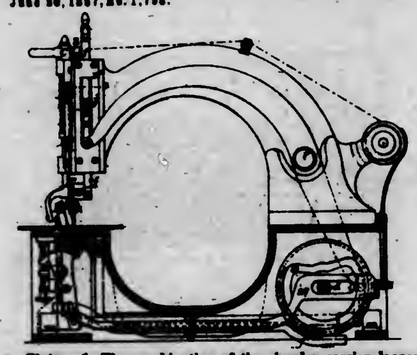
10,124.



longitudinal ribs for increasing the heating-surface, substantially as specified.

3. In an apparatus for superheating steam or heating air, the combination, with a retort composed of an interior and exterior casing, of inlet and outlet pipes connected to the outer casing and mechanism whereby the temperature to which the steam or air which is to be heated is controlled by the admission of cold air, substantially as specified.

10,125. SEWING-MACHINE. AUGUSTE JACQUES HAUTH and VICTOR JOSEPH HAUTH, Paris, France, assignors, by mesne assignments, to Hauth Sewing Machine Company, of New York. Filed Mar. 24, 1880. Original No. 23,064, dated Dec. 21, 1858. Patented in France June 11, 1867, No. 78,719, and in England June 20, 1867, No. 1,798.



Claim.—1. The combination of the circular carrier, looper, and devices for revolving the same, and ring 16, and operating appliances whereby the loop is thrown off the carrier, substantially as set forth.

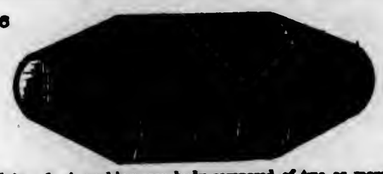
2. The combination of the awl and needle carriers, and devices for sliding them and appliances for rotating them to bring the needle and awl successively over the same point in and passing them through the material without moving the latter, substantially as set forth.

3. In a double-thread sewing-machine, the combination of a needle and shuttle, an independent take-up having a positive motion, a gripping device acting positively, and appliances whereby the same is caused to bear against the bobbin at the time the take-up is in operation and prevent the thread from being then unwound, substantially as set forth.

4. The combination, with the gripper and appliances to positively operate it to grip the upper thread and with the positively-moving take-up, whereby the upper thread is drawn up after being interlocked with the lower thread and while it is gripped, of an adjustable device for regulating the extent to which the thread is drawn up by the take-up, as set forth.

10,126. PACKING-CASE. RALPH S. JENNINGS, Baltimore, assignor to Joshua Levering, Baltimore, and George C. Manning, Baltimore County, Md., Trustees. Filed Mar. 11, 1882. Original No. 237,673, dated Feb. 15, 1881.

10,126



Claim.—1. A packing-case body composed of two or more sheets of veneer cemented together and having its side seam united by corrodible stitches, said seam and stitches being covered by a coating of non-corrodible cement, substantially as described.

2. A packing-case having a veneer body whose seam is secured by corrodible stitches, said seam and stitches being covered by a coating of non-corrodible cement, for the purpose set forth.

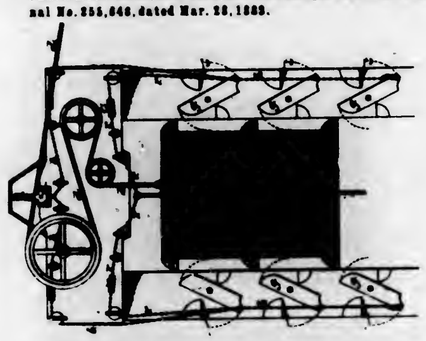
3. The packing-case herein described, consisting of a veneer body, with its wall-seam secured by stitches, and having flanged metallic heads secured to the body by stitches, substantially as described.

4. A packing-case consisting of two or more sheets of veneer cemented together with the grain crossed, the wall-seam being secured by stitches, and of metal flanged heads secured to the body by stitches and by a water-proof material, substantially as described.

5. As a new article of manufacture, a water and acid proof packing-case consisting essentially of a veneer body with a wall-seam secured by corrodible stitches, the seams and stitches being protected by a covering of non-corrodible cement, and a head secured to the body by stitches, substantially as described.

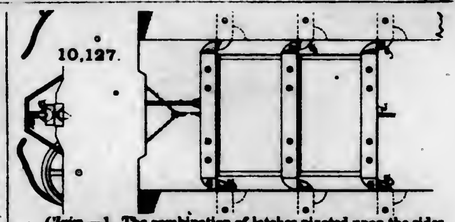
6. A packing-case consisting of two or more sheets of veneer cemented together, and having a flanged metallic head secured to the body by stitching, substantially as set forth.

10,127. SELF-ACTING ELEVATOR SAFETY APPARATUS. JAMES MCCARROLL, New York, N.Y. Filed Apr. 29, 1882. Original No. 255,646, dated Mar. 28, 1882.



Claim.—The combination of the slotted right-angular plate, the pivoted wedge-shaped or oblique-faced catch having a horizontal top flange, the movable latch bolt or rod, and the pivoted unlatching-lever, with the gate-post, and the gate having an aperture for the passage of the latch-bolt, as and for the purpose set forth.

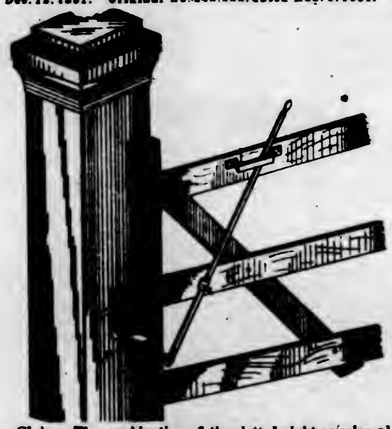
10,127.



Claim.—1. The combination of latches pivoted upon the sides of an elevator shaft or frame, and adapted to engage projections or recesses in the elevator, with a spring brought into play by the tension thereon of the main rope, under the weight of the elevator suspended therefrom, and with intermediate cords, by which the spring, when relieved from tension, will be made to act upon the latches and throw them into effective engagement with the elevator to arrest and support it, substantially in the manner and for the purpose herein set forth.

2. The cam, bellow tube, and auxiliary chains in their connection with the latches, substantially in the manner and for the purpose herein set forth.

10,128. GATE-LATCH. PHILIP J. WISE, Fork Union, Va. Filed Dec. 12, 1881. Original No. 245,253, dated Aug. 2, 1881.



Claim.—The combination of the slotted right-angular plate, the pivoted wedge-shaped or oblique-faced catch having a horizontal top flange, the movable latch bolt or rod, and the pivoted unlatching-lever, with the gate-post, and the gate having an aperture for the passage of the latch-bolt, as and for the purpose set forth.

ELIOTYPE PRINTING CO BOSTON

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

THE WILSON PACKING COMPANY *et al. v.* THE CHICAGO PACKING AND PROVISION COMPANY *et al.*

APPEAL from the Circuit Court of the United States for the Northern District of Illinois.

THE WILSON PACKING COMPANY *et al. v.* HUNTER *et al.*, (two cases.)

APPEALS from the Circuit Court of the United States for the Southern District of Illinois.

Decided May 8, 1882.

1. REISSUED LETTERS PATENT NO. 6,370 INVALID.

Reissued Letters Patent No. 6,370, granted to William J. Wilson for improvements in processes of preserving and packing cooked meats as limited by the two disclaimers filed October 26, 1880, construed and held to be void for want of novelty and invention.

2. SAME—MERE CHANGE—AGGREGATION.

All the other parts of a process of preserving meats remaining unchanged, a mere change in the mode of cooking the meat from broiling, roasting, or steaming to boiling cannot be called invention and entitle the party who suggests the change to a patent for the process. It is a mere aggregation of old elements, bringing out no new product nor any old product in a cheaper or otherwise more advantageous way.

3. REISSUED LETTERS PATENT NO. 7,923 INVALID.

Reissued Letters Patent No. 7,923, for an improvement in sheet-metal cases, held to be void for want of novelty.

Mr. Wm. Henry Clifford and *Mr. Jno. N. Jewett* for the appellants.

Mr. L. L. Coburn and *Mr. Jno. W. Noble* for the appellees.

STATEMENT.

By stipulation of the parties these cases were argued together as one case.

The bills of complaint charged the defendants with the infringement of their several reissued letters patent of the United States, of which the complainants were the assignees and owners. Only two of these patents are relied on. These are: First, Reissue Letters Patent No. 6,370, granted to William J. Wilson, dated April 6, 1875, upon an application filed April 2, 1875, for improvements in processes for preserving and packing cooked meats; and, second, Reissue Letters Patent No. 7,923, granted to John A. Wilson, dated October 23, 1877, upon an application filed October 15, 1877, for improvement in sheet-metal cases. The bills of complaint were dismissed on final hearing by the courts below in which, respectively, the cases were tried, and the complainants have brought them to this Court by appeal. The controversy relating to these patents will be separately stated and considered.

The original patent to William J. Wilson bore date March 31, 1874. The specification of this patent was as follows:

Be it known that I, William J. Wilson, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful improvements in processes for preserving and packing cooked meats; and I do hereby declare that the following is a full, clear, and exact description thereof.

The nature of my invention consists in a process for packing cooked meats for transportation in a compressed form, while heated with cooking, into an air-tight package, so as to preserve the meat in its integrity and retain all the natural juices and nutritious qualities of the meat.

In carrying out my invention, the meat is first cooked thoroughly at a temperature of 212° Fahrenheit, so that all the bone and gristle can be removed and the meat yet retain its natural grain and integrity. The meat is then in proper condition for eating, and is wholesome and palatable. A measured quantity of this cooked meat is then, while yet warm with cooking, pressed by any suitable apparatus into a previously-prepared box or case with sufficient force to remove the air and all superfluous moisture and make the meat form a solid cake. The box or case is then closed air-tight upon the meat.

The meat is thus packed and compressed in its natural state—that is, without disintegration or desiccation—and it retains all the juices and nutritious qualities of the meat, the compression only removing the superfluous moisture. The meat thus put up is available at all times, even when cooking is impracticable, as it is already cooked before it is packed. It is more economical, as it is compressed and reduced in weight one-half from the uncooked weight, being free from bone and gristle and put up in a compact portable shape for transportation, rendering the usual expensive cooperage unnecessary. Besides this, there is a great saving in the cost of transportation. A barrel containing two hundred pounds uncooked meat weighs, gross, three hundred and twenty pounds meat, salt, brine, and barrel, while by my process it would weigh only one hundred and ten pounds, gross, making a saving in cost of freight alone of nearly two-thirds.

The box or case may be made of wood or metal, or both combined, of any suitable form or shape, and of any desired dimensions.

The claims were thus stated:

1. The within-described process for packing cooked meats for transportation, by compressing the same, while heated with cooking, into an air-tight package, so as to preserve the meat in its integrity and retain all the natural juices and nutritious qualities of the meat, substantially as set forth.

2. As a new article of merchandise, cooked meat put up in solid form, in its natural state, without disintegration or desiccation, in hermetically-sealed packages, as set forth.

The differences between the specification and claims of the reissue and the original patents of William J. Wilson were these: First, in the omission from the second clause of the reissue specification of the words "while heated with cooking," contained in the corresponding clause of the original specification; second, the insertion of the word "preferably" in the third clause of the reissue specification before the words "while yet warm with cooking;" third, omitting from the first claim of his reissue the words "while heated with cooking," contained in the first claim of the original patent. In all other respects the specification and claims of the original and reissued patents are identical. Therefore the original and reissued patents of William J. Wilson are the same, except that the reissue covers the process of packing the meat cold, if preferred, while the original required that it should be packed while warm with cooking. There is nothing in either the original or reissued patent in regard to the boiling or in regard to any preliminary corning or curing of the meat.

While the causes were pending in the court below, and after the testimony in chief of the defendants had been taken, to wit, on October 26, 1880, the patentee and the complainants filed in the Patent Office a disclaimer, disclaiming the word "preferably" where inserted in the specification of the reissued patent, and also any process described and claimed by which meat is to be compressed into the packages in any other than a warm or heated condition. On the same day the

patentee and complainants filed another disclaimer, whereby they disclaimed any interpretation or legal construction of the words of the specification of the reissued patent broader than is conveyed by the words "the meat is first cooked thoroughly by boiling it in water, so that all the bone and gristle can be removed and the meat yet retain its natural grain and integrity." The effect of this disclaimer was to restore the claims of the reissued patent to what they were in the original patent, except that the claim of the original patent is limited by the second disclaimer to the packing of meat cooked by boiling. As amended by these disclaimers the claims of the reissued patent were as follows:

1. The within-described process of packing for transportation meats cooked by boiling by compressing the same, while heated with cooking, into an air-tight package, so as to preserve the meat in its integrity and retain the natural juices and nutritious qualities of the same.

2. As a new article of manufacture, meat cooked by boiling put up while heated with cooking, so as to form a solid cake in the package in its natural state, without disintegration or desiccation, in hermetically-sealed packages, as set forth.

It will be seen that the invention covered by the letters patent of William J. Wilson after the disclaimers was a process consisting of the following elements:

First. The thorough cooking of the meat by boiling in water at a temperature of 212° Fahrenheit and the removing of the bone and gristle.

Second. The pressing of the meat, while warm with cooking, into a box or case with sufficient force to remove the air and superfluous moisture, so as to make the meat form a solid cake.

Third. The closing of the box or case air-tight upon the meat.

It also covered the product of this process as described in the second claim.

The defense set up was want of novelty, and it was averred that the process described in the reissued letters patent of William J. Wilson was also described in prior English, French, and American patents, which are specified, and was practiced by many persons, whose names and residences are given, at various dates prior to the application of Wilson for his patent.

Mr. Justice WOODS delivered the opinion of the Court.

The patent does not specify what kind of box or case was required, nor what kind of meat was to be used in its processes, whether corned or fresh, nor in what manner or by what process it was to be compacted in the case or box, provided sufficient force was used to remove the air and all superfluous moisture and make the meat form a solid cake, nor the degree of warmth necessary in the meat when it was put in the case or box. Neither does it state the method by which the case was to be sealed up. It was simply required to be "closed air-tight upon the meat," the air having first been excluded from the case by cramming the latter full of meat. The patent, therefore, apparently covers only the process of cooking meat by boiling and while it is still warm pressing it compactly in cases and sealing it up air-tight.

The second disclaimer of Wilson is a substantial admission that his patent only covered the process in which the boiling of the meat was one of the elements. That is to say, any one might pack cooked meats for transportation by compressing the same, while heated with cooking, into an air-tight hermetically-sealed package, so as to preserve the meat in its integrity and retain all its natural juices and nutritious qualities, substantially as set forth in the Wilson patent, and not infringe the patent, provided he did not cook the meat by boiling. If any other method of cooking the meat should be adopted, there would be no infringement. The patentee and the complainants, it appears, were induced to make this disclaimer by the evidence introduced by the defendants in this case, especially the patent of A. S. Lyman, dated June 22, 1869, "for an improved mode of preparing and pressing roast meat in a condensed and concentrated form;" and it amounts to an admission that they could not sustain the process covered by their patent, except as applied to boiled meats.

We are clearly of opinion that a change in the mode of cooking the meat from broiling, roasting, or steaming to boiling, all the other parts of the process remaining unchanged, cannot be called invention, and entitle the party who suggests the change to a patent for the process.

All improvement is not invention, and entitled to protection as such. Thus to entitle it it must be the product of some exercise of the inventive faculties, and it must involve something more than what is obvious to persons skilled in the art. (*Pearce* v. *Mulford*, 102, U. S., 112.) (See, also, *Rubber Tip Pencil Company* v. *Howard*, 20 Wall., 498; *Hotchkiss* v. *Greenwood*, 11 How., 248; *Simpson* v. *Hardman*, 10 Wall., 117.)

If meat cooked by roasting or steaming and put up in a given mode formed a valuable article of commerce, the cooking of the meat in other ways—as, for instance, by boiling—would naturally occur to any one engaged in the business of packing such food for the market. But we think there is nothing new in the process covered by the patent under consideration. Clearly all its separate elements are old and well known, and have been long used. This is not controverted. The evidence shows that the process of boiling meat, packing it while warm in cans, and sealing it air-tight had long been used before the application of Wilson for his original patent. There is, it is true, much conflict in the evidence, but, taken all together, it leaves no doubt in our minds that the process of cooking meat, lobsters, and other articles of food by boiling and compacting them in cans while warm from the cooking and then sealing them up air-tight was practiced in many places and many years before the application of Wilson for his patent. Complainants, however, insist that there are two elements in their process which, taken in connection with the others above mentioned, form a combination never used before the date of Wilson's patent. The first of these is the subjecting of the cases after they are packed and sealed air-tight to what is known as the "Appert process." This consists of placing the cans after they have been filled and sealed up in a bath of hot water, and thereby heating them, after which they are removed and punctured and the heated air and gases which have formed in the cans are allowed to escape, and the puncture is immediately closed by a drop of solder. The contention is that all this is made a part of the process covered by the Wilson patent by the description of the new article of merchandise covered by the second claim of the patent as "cooked meat" "in hermetically-sealed packages." It is insisted that "hermetically-sealed packages" is a term which, among those dealing in canned goods, implies that the packages have been subjected to the Appert process. We think that this is an unwarrantable stretch of the meaning of the second claim of the patent. The article of merchandise covered by the second claim is that produced by the process disclosed by the specification and first claim. The second claim expressly states that it covers cooked meat put up in solid form, &c., "in hermetically-sealed packages, as set forth."

Recurring to the specification and first claim of the patent, we are not left in doubt about what the process

of sealing the cases or cans hermetically is which is set forth. The specification declares the invention to consist in a process for packing cooked meats into an air-tight package. The method of doing this is thus described:

A measured quantity of this cooked meat is, while yet warm with cooking, pressed by any suitable apparatus into a previously-prepared box or case with sufficient force to remove the air and all superfluous moisture and make the meat form a solid cake. The box or case is then closed air-tight upon the meat.

The process of hermetically sealing as set forth is simply to exclude the air from the case by filling it compactly with cooked meat still warm, so that the cover, when applied, will rest on the meat, and then closing the case by fitting on the cover air-tight. There is no suggestion here of anything further to be done to make the package a hermetically-sealed one. The process described leaves it hermetically sealed. There is no hint that the Appert process is to be subsequently applied as a part of the process covered by the patent. On the contrary, that idea is excluded by the terms of the second claim, "hermetically sealed, as set forth."

It is further contended by the appellants that the process disclosed by the Wilson patent includes the cooking of the meat to be canned by plunging it into water already heated to the boiling-point. That is, the process of cooking is commenced by placing the meat in water already heated up to 212° Fahrenheit. By this method of cooking it is said the meat is preserved in its integrity, and all its natural juices and nutritious qualities are retained.

We think that the plan of beginning this process of cooking by putting the meat in water already heated to the boiling-point is not set forth in the specification or claims. The conditions prescribed by the specification would just as well be filled by placing the meat in cold water and then heating the water to the boiling-point, and allowing the meat to remain in it until cooked thoroughly. No person on reading the specification could extract the idea that there was any advantage to be gained by heating the water to the boiling-point before placing the meat in it to be cooked, or that any such method was in the mind of the inventor. This part of complainants' process is clearly an afterthought, and not intended by the inventor to be covered by his patent when he applied for it. It is evident that the part of the process now under consideration is nowhere described in the specification in full, clear, and exact terms, as required by law. On the contrary, it is not described at all.

The Appert process and the cooking of meats by plunging them into water already heated to the boiling-point may be of great advantage to the canned meats put up by the complainants, and to these practices their alleged superiority to the products of other parties may be attributed; but the trouble with complainants' case is that these elements are not included in the process disclosed by the patent which they allege is infringed by the defendants.

Our conclusion is, therefore, that there is nothing new in the process described in the William J. Wilson patent. All the elements of the process are old. They are merely aggregated, and the aggregation brings out no new product, nor does it bring out any old product in a cheaper or otherwise more advantageous way. This disposes of the first claim of the patent under consideration. If that claim cannot stand, it follows that the second claim, which is for the product made by the employment of the process described in the first claim, is also invalid. We are of opinion, therefore, that the patent to William J. Wilson, on which the complainants rely, is void for want of invention and for want of novelty in the process described therein.

We shall next consider that branch of the case which rests on the letters patent to John A. Wilson for improvements in metallic cans for containing cooked meats.

The specification declares that—

My invention relates to hermetically-sealed cans used in packing meats or other articles; and it consists in a pyramidal-shaped can having rounded corners, and both ends slightly flaring to form shoulders, against which the head or end pieces rest.

a represents the body of my can, made in the form of a truncated pyramid with rounded corners, and with any desired number of sides, though I prefer to make it with four sides. Both ends of the body are made slightly flaring, so as to form interior shoulders of offsets c, against which the heads B and C are to rest. The edges of these heads are turned outward, as shown, a b, and the flaring edge d of the end of the can is turned over the flange b, and the three thicknesses of metal pressed together by machinery, with or without solder, so as to make air-tight joints.

In packing cooked meats it is done by means of a plunger through an aperture in the large head B, which opening is afterward hermetically sealed by means of a cap or plate, D. * * * The can is to be opened at the larger end at or near the shoulder a by means of a suitable can-opener, so that when the can is reversed again a slight tap on the smaller head c will cause the solidly-packed meat to slide out in one piece, so as to be readily sliced, as desired.

The claims which are in controversy in this case are the first and third, which are as follows:

1. A can for packing food, hermetically sealed, and constructed of pyramidal form, with rounded corners and offset ends to support the heads, said heads being secured, as shown and described.

3. As an improved article of manufacture, solid meat compressed and secured within a pyramidal case or can, so that said can forms a mold for the meat and permits its discharge as a solid cake, substantially as specified.

The defenses set up to this branch of complainants' case are that the devices covered by the patent are not new and that the defendants do not infringe.

The evidence clearly shows that none of the defendants use cans "with offset ends to support the heads, said heads being secured as shown and described" in the patent. The cans which they use are made by turning a flange of the head down over the outside of the shell of the can and fastening the head in place with solder.

It also appears that this method of fastening the heads and bottoms of the cans was practiced before the date of Wilson's application for his patent by Gibbie and Perl as early as 1872. The method was also described in the fifth addition of the French patent of Emile Peltier, dated April 1, 1869.

All, therefore, that is left to consider is whether the shape of the can described in the John A. Wilson patent is new and whether the defendants use it.

The shape of the can described in the patent is pyramidal, with round corners, and with four or more sides. It is admitted on the record by counsel for complainants that conical tin cans were made and used for canning alimentary substances and sealed air-tight prior to the date of the Wilson patents. If it be conceded that the change of a conical can to a pyramidal can with rounded corners involves invention, the complainants are met with distinct and unequivocal evidence that cans used for containing preserved food and closed air-tight, having four or more sides, and pyramidal in form, with rounded corners, were mentioned in the fifth addition to the patent of Emile Peltier, before referred to, and that the machinery for making them was therein described.

The cans used by the defendant, The St. Louis Beef

Packing Company, and by the defendants, Robert D. Hunter and others and The Chicago Packing and Provision Company, are all included in the descriptions of the Peltier patent. The defense of want of novelty set up by the defendants against the first claim of the patent of John A. Wilson must therefore prevail.

What has been said leaves nothing for the third claim of the John A. Wilson patent to rest on. There is nothing new either in the shape or construction or material of his cans. There is abundant evidence in the record of the packing, long before the date of his patent, of cooked meat in cans, so that the can served as a mold for the meat, and the meat formed a solid cake. The use of a pyramidal can, which was old, for the purpose of receiving the meat cake, which was also old, involved no invention. The use of vessels with flaring sides as receptacles and molds for edible substances is as old as the art of cookery.

Our conclusion is that both the first and third claims of the John A. Wilson patent are void for want of novelty. The result of the views expressed is that the decree of the court below, dismissing the bills of complaint, were right and should be affirmed.

—

The case of *The Wilson Packing Company et al.* v. *William B. Clapp* (appeal from the Circuit Court of the United States for the Northern District of Illinois) was argued at the same time with the cases disposed of in the foregoing opinion. The case involved the validity of both claims of the reissued patent of William J. Wilson and the first and third claims of the reissued patent of John A. Wilson. Upon these questions the opinions of the judges of the court were divided, and a decree dismissing the bill was thereupon entered in accordance with the opinion of the presiding judge.

The views expressed by us in the foregoing cases dispose of this case also. We concur in the opinion of the presiding judge of the circuit court, and the decree of that court, dismissing the bill, must be affirmed.

Supreme Court of the United States.

GUIDET *v.* THE CITY OF BROOKLYN.

Decided April 17, 1882.

PAVEMENTS—PATENTABILITY—MATTER OF DEGREE.

Where a firm bed and an open joint for foothold had been before obtained by using parallelopipeds with rough side surfaces in conjunction with a filling of sand it required no invention to secure the entire result by selecting stones with rougher side surfaces and dispensing with artificial means for keeping the stones apart. The change was only of degree and not patentable.

APPEAL from the Circuit Court of the United States for the Eastern District of New York.

Mr. Geo. Harding for the appellant.

Mr. William C. De Witt for the appellee.

Mr. Chief Justice WAITE delivered the opinion of the Court.

The invention of Guidet covered by his reissued patent may fairly be stated thus:

Take stone blocks in the form of parallelopipeds, with the ends sufficiently smooth and the sides sufficiently rough, and put them together in a street-pavement so that the ends will be parallel to the street and the sides at right angles.

How large the blocks should be, how smooth the ends, or how rough the sides is nowhere stated. All that has been left to the judgment and skill of him who does the work.

The evidence leaves no doubt whatever in our minds that pavements made of blocks of stone broken into the general form of parallelopipeds and set on edge, with their ends parallel to the street and their sides across it, were in use long before the date of Guidet's invention. This is conceded, in fact, both in the original patent and the reissue, for in the original it is said: "I do not claim broadly as my invention a pavement composed of blocks made in the form of parallelopipeds;" and in the reissue: "I am aware that pavements have been produced of blocks made in the form of parallelopipeds." The difficulty had been, undoubtedly, that the spaces between the sides of the blocks in ordinary use before Guidet's invention were not sufficient to furnish a firm foothold for draft-animals, especially after the surfaces had been worn smooth. How to remedy this defect was the problem to be solved. Formerly it had been done, as is said in the reissued patent, by interposing between the adjoining blocks thin strips of wood or stone. As a substitute for this Guidet chamfered the edges of the broad sides, and thus got the advantage of placing the blocks close against each other and keeping the pavement firm while he secured on the surface the necessary open joint to furnish a good foothold. That, as it seems to us, was all there was of his invention, and we are by no means inclined to hold it was not patentable to him. He took the block of stone in ordinary use, and, by substituting the chamfered edge on the broad side for the narrow strip of wood or stone, got the space that was needed for the joint, and solidified the pavement by bringing the stones that furnished the surface which was to be used for travel firmly together. But after he got his patent he seems to have found that by selecting blocks sufficiently rough on their sides the joints could be made open enough for all practical purposes without chamfering, and so in his reissue he abandoned that feature of his patent and claimed for rough side surfaces only. In this way, as it seems to us, he left the field of invention and entered that of mechanical skill only. Pavements of stone in the form of parallelopipeds being confessedly old, he has really done no more than suggest the best kind of stone to be used in that way. The pavements in Rochester and Buffalo, which it is agreed antedated his invention, were laid in all substantial respects like his. The quality of the stone was different and the side surfaces were comparatively smoother than his, though to some extent they were rough. He, as has already been seen, does not say what degree of roughness is required. The effect of his specification and claim is that if blocks are selected with their sides rough enough joints can be made that will furnish a suitable foothold without the use of strips and without chamfering. It is true that in Rochester and Buffalo sand may have been used to some extent to keep the blocks apart; but that was only another way of doing what it is agreed had been done before. What Guidet did was to show that if stone were used with rougher side surfaces than those found in the old pavements, all artificial means of keeping the transverse joints opened might be abandoned and the requisite surface secured. This was simply carrying forward the old idea and doing what had been done before in substantially the same way, but with better results. The change was only in degree, and consequently not patentable. Clearly the reissued patent cannot be sustained.

The decree is affirmed.

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

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Subscriptions for 1882.

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Issue of June 6, 1882.

Patents	412	No. 256,670 to No. 259,281, inclusive.
Designs	11	No. 12,954 to No. 12,964, inclusive.
Trade-Marks	13	No. 9,431 to No. 9,443, inclusive.
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Louisiana	2		West Virginia		
Maine	1		Wisconsin	8	1
Maryland	5	2	Wyoming Territory		
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Michigan	13		United States Navy		
Minnesota	1		Total to citizens of the United States	401	19
Mississippi					
Missouri	11				
Montana Territory					

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Belgium			Italy		
Bermuda			New Zealand		
Brazil			Russia		
Canada	2		Spain		
Chili			Sweden		
Columbia, U. S. of			Switzerland		
Cuba					
Denmark	1		Total to citizens of foreign countries	22	3
Ecuador					

DESIGNS.

12,954.—DOCTOR-ENGINE.—*George J. Fritz*, St. Louis, Mo. Application filed March 24, 1882. Term of patent 14 years.

12,955.—SUSPENDERS.—*Victor Guinzburg* and *Samuel Glass*, New York, N. Y. Application filed March 23, 1882. Term of patent 3½ years.

12,956.—WINDOW-SHADE.—*Benjamin Handforth*, Hoboken, N. J., and *Alonzo E. Wemple*, Brooklyn, N. Y. Application filed April 8, 1882. Term of patent 7 years.

12,957.—FINGER-RING.—*Heinrich Henrich*, New York, N. Y., assignor to *Ross Henrich*, same place. Application filed April 1, 1882. Term of patent 3½ years.

12,958.—WALL-PAPER.—*Eduard Leisner*, New York, N. Y. Application filed April 21, 1882. Term of patent 3½ years.

12,959.—CARPET.—*William McCallum*, Yonkers, N. Y., assignor to *The Bigelow Carpet Company*, Clinton, Mass. Application filed April 22, 1882. Term of patent 3½ years.

12,960.—IMITATION SHELL FOR FLOWER-BEDS.—*Edward Mueller*, Indianapolis, Ind. Application filed April 10, 1882. Term of patent 3½ years.

12,961.—EARTHENWARE TEA-POT.—*Jacob Shenkel*, East Liverpool, Ohio. Application filed April 10, 1882. Term of patent 3½ years.

12,962.—WOVEN FABRIC.—*James Simpson*, Paterson, N. J., assignor to *Hamil & Booth*, same place. Application filed April 13, 1882. Term of patent 3½ years.

12,963.—BADGE.—*Erasmus D. Wilt*, Pittsburg, Pa. Application filed April 11, 1882. Term of patent 7 years.

12,964.—RAZOR.—*William H. De Pew*, New York, N. Y. Application filed April 19, 1882. Term of patent 14 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

9,431.—PERFORATED MUSIC-SHEETS.—*The Automatic Music Paper Company*, Boston, Mass. Application filed May 15, 1882.

"The three musical notes arranged substantially as shown."

9,432.—ILLUMINATING-OILS.—*Consolidated Tank Line Company*, Cincinnati, Ohio, and Hannibal, Mo. Application filed April 14, 1882.

"The picture of a woman surrounded by a circular band and reading by a lamp."

9,433.—HAMS, BACON, AND LARD.—*Henry Denny & Sons*, Chicago, Ill. Application filed May 9, 1882.

"A representation of a sunflower."

9,434.—LINIMENT.—*Henry D. Huggan, Amini R. Hahn, George W. Copeland*, and *William H. Grainger*, East Boston, Mass. Application filed April 29, 1882.

"The arbitrarily-selected word 'EEL.'"

9,435.—PACKING.—*Jenkins Bros.*, Boston, Mass., and New York, N. Y. Application filed May 10, 1882.

"The word 'STANDARD.'"

9,436.—BUTTONS.—*Morris Livingston*, New York, N. Y. Application filed May 11, 1882.

"The letters 'R H L.'"

9,437.—BUTTONS.—*Morris Livingston*, New York, N. Y. Application filed May 11, 1882.

"The letters 'S J F.'"

9,438.—CANNED GOODS.—*E. B. Mallory & Co.*, Baltimore, Md. Application filed May 9, 1882.

"The word 'ARROW' and a representation of an arrow, either in conjunction or each by itself."

9,439.—RHEUMATIC LINIMENT.—*George W. May*, Norwich, Conn. Application filed April 14, 1882.

"The arbitrarily-selected word 'VICTOR.'"

9,440.—CRUCIBLES AND OTHER CHEMICAL WARE.—*The Morgan Crucible Company*, Battersea, county of Surrey, England. Application filed May 10, 1882.

"The words 'THE MORGAN CRUCIBLE COMPANY,' arranged in circular form, inclosing the words 'BATTERSEA, LONDON,' and surrounded by a circular line, the whole surmounted by the words 'MORGAN'S CRUCIBLE.'"

9,441.—CRUCIBLES.—*The Morgan Orucible Company*, Battersea, county of Surrey, England. Application filed May 10, 1882.

"A device or representation of a nest of triangular crucibles."

9,442.—CRUCIBLES.—*The Morgan Orucible Company*, Battersea, county of Surrey, England. Application filed May 10, 1882.

"A device or representation of a nest of round crucibles."

9,443.—BROMA.—*Henry L. Pierce*, Boston, Mass. Application filed April 19, 1882.

"The words 'WALTER BAKER & Co.'s' printed on a scroll over the branches, leaves, flowers, and fruit of the cocoa."

9,444.—HALF-VANILLA CHOCOLATE.—*Henry L. Pierce*, Boston, Mass. Application filed April 19, 1882.

"A diamond-shaped figure, inclosing on the top thereof the words 'W. BAKER & Co.'s,' with an octagonal figure at each end of the diamond, with a belt connecting the same, as shown and described."

9,445.—PENS.—*Turner & Harrison*, Philadelphia, Pa. Application filed May 10, 1882.

"The word-symbol 'MOHKTA.'"

LABELS.

2,693.—Title: "BIRCH BITTERS FOR THE BLOOD AND GENERAL DEBILITY, INDIGESTION ETC."—*George G. Campbell*, Rochester, N. Y. Application filed May 13, 1882.

2,694.—Title: "SMITH & SHAKMAN'S CELEBRATED HORSE AND CATTLE POWDERS."—*Smith & Shakman*, Baltimore, Md. Application filed April 26, 1882.

2,695.—Title: "'THICK SET" STEEL BARB FENCING."—*Washburn & Moen Manufacturing Company*, Worcester, Mass. Application filed May 9, 1882.

2,696.—Title: "FOUR POINTED GLIDDEN" STEEL BARB FENCING." *Washburn & Moen Manufacturing Company*, Worcester, Mass Application filed May 9, 1882.

2,697.—Title: "GLIDDEN FOUR POINTED STEEL BARB FENCING." *Washburn & Moen Manufacturing Company*, Worcester, Mass. Application filed May 9, 1882.

2,698.—Title: "WHITTALL BRUSSELS," (FOR CARPETS.)—*Matthew J. Whittall*, Worcester, Mass. Application filed May 6, 1882.

2,699.—Title: "THE ORIGINAL HOP BITTERS WITH IRON."—*M. J. Williams*, Oshkosh, Wis. Application filed May 4, 1882.

DISCLAIMER.

242,486.—*William Westlake*, Brooklyn, N. Y., patent dated June 7, 1881. IMPROVEMENT IN CUSPIDORS. Disclaimer filed May 27, 1882.

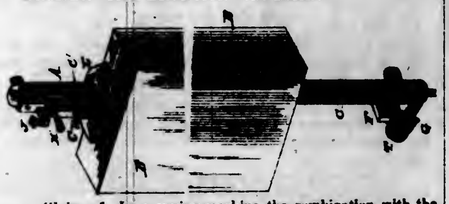
Enters his disclaimer to the first claim in said letters patent in words as follows:

"1. A cuspidor provided with a flat rigid base plate or platform secured to its bottom and extended laterally beyond its body, substantially as and for the purpose described."

PATENTS

GRANTED JUNE 6, 1882.

258,870. NEEDLE-THREADING ATTACHMENT FOR SEWING-MACHINES. FRANK G. ALTMANS and FRED POEHNS, Edina, Mo. Filed Mar. 4, 1882. (No model.)

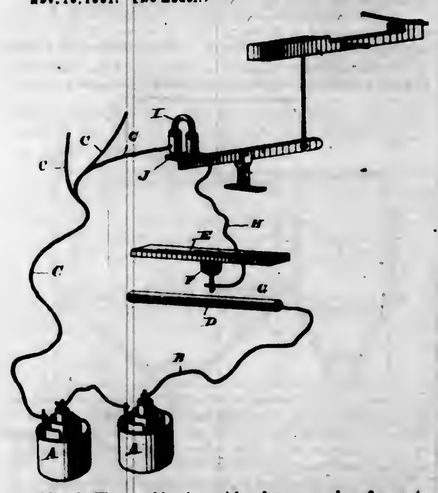


Claim.—1. In a sewing-machine, the combination, with the needle-bar, of the vertically-sliding rod and threading-tube mounted in a frame hinged to the lower end of said rod, as set forth.

2. The combination of the needle-bar A, having groove D and ring or flange E, with the sliding rod C, having pin or stud K, and hinged frame G, carrying the threading-tube T, as set forth.

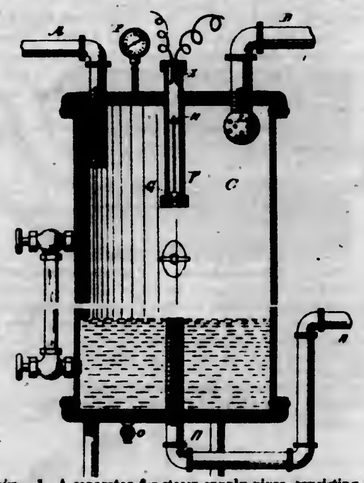
3. The combination of the frame B, having spring-supported pin M, the needle-bar A, having groove D, ring E and catch J, and the sliding rod C, having handle H, notch I, pin K, and hinged frame G, carrying the threading-tube T, all arranged and operating substantially as and for the purpose set forth.

258,871. ELECTRO-MAGNETIC ACTION FOR MUSICAL INSTRUMENTS. CHARLES H. ANDREWS, San Francisco, Cal. Filed Nov. 18, 1881. (No model.)



Claim.—The combination, with a key or a valve of an automatic musical instrument, of the battery A A, conducting-wires B C, insulated cylinder D, connected with the positive pole of said battery, helix I, connected with the negative pole of the battery, an armature, J, mounted upon a pivotal support connected with the key or valve to be acted upon, a platinum rod, G, adapted to have a vertical play in its insulator F, a conducting-wire, H, connecting said platinum rod with the helix, and a strip of slotted or perforated non-conducting material, O, adapted to pass between the cylinder D and point or rod G, whereby the circuit is alternately opened and closed, substantially as and for the purpose shown and described.

258,872. WATER AND STEAM SEPARATOR. EDWARD H. ASHCROFT, Lynn, Mass. Filed Apr. 19, 1882. (No model.)



Claim.—1. A separator for steam-supply pipes, consisting of the separator or vessel C, inlet and outlet steam-pipes A and B, and means for signaling or alarming the attendant or engineer of a steam-engine, by means of an electric battery, of a surplus of water, as set forth.

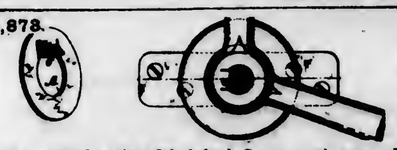
2. The combination, in a steam and water separator, of a water-trap, the inlet and outlet steam-pipes A and B, the water-escape pipe D, the float-chamber F, and float G, and guide H, being arranged to operate a signaling device, substantially as shown and described.

3. A steam and water separator and alarm consisting of the vessel C, steam-pipes A and B, float-chamber F, float G, guide H, metallic springs I, waste-pipe D, and signaling mechanism, all arranged in the manner set forth and described.

258,873. NUT-LOCK. SELDEN A. BAILEY, New York, N. Y. Filed Sept. 24, 1881. (No model.)

Claim.—1. A metallic washer provided at its inner edge with a short tongue formed by transverse slits cut in the body of the washer, said tongue being adapted to open outward for the placing of the washer and to close flush under pressure of the nut, the end of the tongue being square or straight and adapted to bite firmly

258,873.



against a flattened portion of the bolt, shaft, or pupp when pressed home, substantially as described.

2. The combination of a prop, bolt, or shaft screw-threaded at one end and flattened on one side, a brace or other part on said prop, a nut for holding said brace, and a washer between the brace and nut provided with a short tongue the end of which bites firmly against the flattened side of the prop as the nut is screwed home and holds the nut rigidly to the shaft, substantially as described.

258,874. BRUSH. JAMES F. BARTLETT, Cleveland, Ohio. Filed Mar. 23, 1882. (No model.)



Claim.—The combination and arrangement, as herein described, of the socket A, having opening C, the wedge or shell D, in which a nut, F, is soldered or otherwise secured, spaces a being left between the sides of the nut and said shell, and the handle G, having screw H, as set forth.

258,875. DUST-COLLECTOR FOR GRINDING-MILLS. SAMUEL L. BEAR, Washington, D. C. Filed Jan. 6, 1881. Renewed Oct. 11, 1881. (No model.)



Claim.—The combination, substantially as before set forth, of a screen or separator, and a blast-pipe within it, provided with a longitudinal slot serving as the air-outlet, the blast-pipe moving with respect to the screen, or vice versa, whereby those portions of the screen not subjected to the dust-laden air-blast are more readily freed from the dust during their intervals of relief from pressure.

258,876. FLOUR-DUST-COLLECTING BALLOON. SAMUEL L. BEAR, Washington, D. C. Filed Nov. 16, 1880. (No model.)

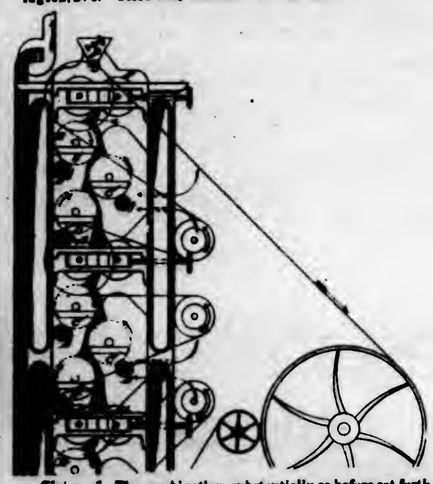


Claim.—1. The combination, substantially as before set forth, of a stellated dust-catching balloon and an automatically-operated cut-off or gate within the same, which periodically cuts off the air-current from a portion of the angles or separating-chambers of the balloon to permit the dust to be shaken from the cloth sides of such cut-off angles.

2. The combination, substantially as before set forth, of a stellated dust-catching balloon and a traveling gate within the same for cutting off the air-current from successive angles of said balloon.

3. The combination, substantially as before set forth, of a stellated dust-catching balloon, a traveling gate within the same for cutting off the air-current from successive angles of said balloon, and a traveling knocker.

258,877. ROLLER GRINDING-MILL. SAMUEL L. BEAR, Washington, D. C. Filed July 13, 1881. (No model.)



Claim.—1. The combination, substantially as before set forth, of a pair of grinding-rollers and a rotating cylindrical screen, onto the exterior surface of which the chop from the grinding-rollers falls.

2. The combination, substantially as before set forth, of a pair of grinding-rollers and a series of rotating cylindrical screens, onto the exterior surface of which the chop from the grinding-rollers falls, arranged stepwise, so that the chop shall pass from the exterior surface of one down upon the next.

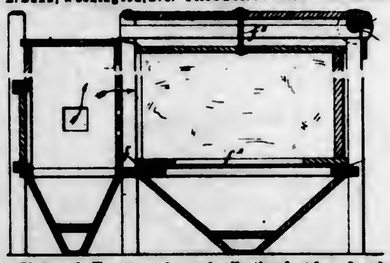
3. The combination, substantially as before set forth, of a pair of grinding-rollers, a rotating cylindrical screen, onto the exterior surface of which the chop from the grinding-rollers falls, and a brush at a point outside of the flow or current of chop.

4. The combination, substantially as before set forth, of a pair of grinding-rollers, a rotating cylindrical screen, onto the exterior surface of which the chop from the grinding-rollers falls, and a shaking-trough for conveying away the particles separated from the chop by the rotating screen.

5. The combination, substantially as before set forth, of a pair of grinding-rollers, a rotating cylindrical screen, onto the exterior surface of which the chop from the grinding-rollers falls, and a shaking-trough within the screen.

6. The combination, substantially as before set forth, of a pair of grinding-rollers, a rotating cylindrical screen, onto the exterior surface of which the chop from the grinding-rollers falls, a shaking-trough within the screen, and a brush operating on the screen at a point outside of the flow or current of chop.

258,878. DUST-COLLECTOR FOR FLOUR-MILLS. SAMUEL L. BEAR, Washington, D. C. Filed Dec. 31, 1880. (No model.)



Claim.—1. For separating and collecting dust from dust-laden air in grinding-mills, the combination, substantially as before set forth, of an anti-settling chamber and an air-straining separator or screen communicating therewith and designed to strain all remaining dust from the air before the air escapes.

2. For separating and collecting dust from dust-laden air in grinding-mills, the combination, substantially as before set forth, of a settling-chamber and a separator or screen communicating by a series of slots.

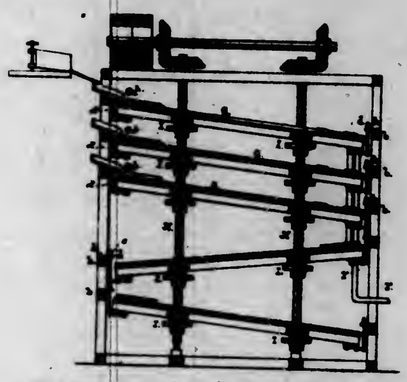
2. The combination, substantially as before set forth, of a screen for separating dust from dust-laden air-currents in grinding-mills, a means for jarring the screen in vertical directions to shake the dust therefrom, and a dust-receptacle on that side of the cloth against which the dust-laden air-currents impinge to be screened.

4. The combination, substantially as before set forth, of a vertical dust-laden air-straining screen constructed with elastic-cloth rails, and means for periodically contracting said screen vertically and permitting it to expand endlessly, whereby a snapping of the cloth of the screen is effected.

5. The combination, substantially as before set forth, of a screen for separating dust from dust-laden air-currents in grinding-mills, a lift-and-let-fall mechanism for jarring the screen in vertical directions to shake the dust therefrom, and a dust-receptacle on that side of the cloth against which the dust-laden air-currents impinge to be screened.

6. The combination, substantially as before set forth, of a separator or screen, a series of air-ports, and means for moving the former with respect to the latter.

258,879. ORE-CONCENTRATOR. ANDREW BLATCHLY and SHIRO KUSUMI, San Francisco, Cal. Filed Apr. 3, 1881. (No model.)



Claim.—1. In an ore-concentrating machine, the two suspended tables C C, mounted in the same plane and provided with bumpers G G, in combination with one or more upright shafts, H, arranged between said tables and provided with cams I, substantially as and for the purpose specified.

2. In a swinging concentrating-table, C, the rod-hangers d, each of which is provided with an adjustable block, e, and a V-shaped projection, g, in combination with the slotted supporting-plate A, with its notched upper surface, substantially as and for the purpose described.

3. In a laterally-shaking concentrating-table, the india-rubber surface, one portion of which is corrugated, while the remainder is plain, substantially as described.

4. In an ore-concentrating machine, a series of inclined tables suspended in pairs, side by side, in combination with mechanism for producing an outward motion, substantially as shown and described, said tables being provided with a partially-corrugated and a partially-plain surface, and having at their lower ends dividers q q and screen Q, substantially as and for the purpose specified.

258,880. BALING-PRESS. ARGEL E. BLOOMBURG, Hackett City, Ark. Filed Apr. 8, 1882. (No model.)



Claim.—1. In a bale-press, the combination, with the frame A, having beams N, of the press-box, the packing-chamber C of which is provided with the detachably-hinged side G and hinged side and top E D, and the clamp L, having shoulders M and handle O, as set forth.

3. In a bale-press, the packing-chamber having hinged covers adapted to fold one over the other, as set forth.

3. In a bale-press, the packing-chamber having hinged cover H H, in combination with the frame-partitions I I, as and for the purpose set forth.

4. The lever S, having pawls T U, pivoted above and below its fulcrum, the upper one, T, being provided with a slot, D', in combination with the connecting-rods E' and bell-crank levers C', pivoted to the upper end of lever S, as set forth.

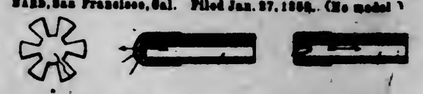
5. In a bale-press, the press-box having extension P and cross-pieces A', provided with rollers S, in combination with the follower X, having rollers Y and stem W, as set forth.

6. The press-blocks F', having grooves G' and recesses H', in combination with the rods or clamps J', having hooks I', as set forth.

7. The combination, in a bale-press, of the press-box having a detachable side, F, with the hinged platform K', as set forth.

8. The combination of the packing-chamber having hinged covers with the press-box D, follower X, having ratchet-stem W, lever S, having pawls T U and mechanism for releasing said pawls, the press-blocks F', clamps J, and hinged platform K', all constructed and operating substantially as set forth.

258,881. VALVE FOR COLLAPSIBLE FLOATS. ALBERT BOSSARD, San Francisco, Cal. Filed Jan. 27, 1882. (No model.)



Claim.—In a sack, bag, or buoy capable of being inflated with atmospheric air, the elastic valves provided with a disk or fillet fitting over the introduced ends of the pipes or tubes contained in said sacks or bags, and provided with radial bolding arms or flaps and intermediate spaces, through which air is caused to pass when said valves are inflated, and adapted to be closed by the backward pressure of the air upon the said disks or fillets, substantially in the manner as herein set forth and specified.

258,882. DRAWER-PULL. RICHARD BERGL, Bridgeport, Conn., assignor to Smith & Egge Manufacturing Company, same place. Filed Dec. 23, 1879.



Claim.—The ferrule I and shank A, connected together substantially as described, in combination with the escutcheon B, having a raised central portion or annular shoulder, the whole adapted to be held together and in position on a drawer by a key-wedge or nut, as hereinbefore set forth.

258,883. LABEL-HOLDER. JOHN F. BURGOYNE, Buffalo, N. Y. Filed Mar. 3, 1882. (No model.)

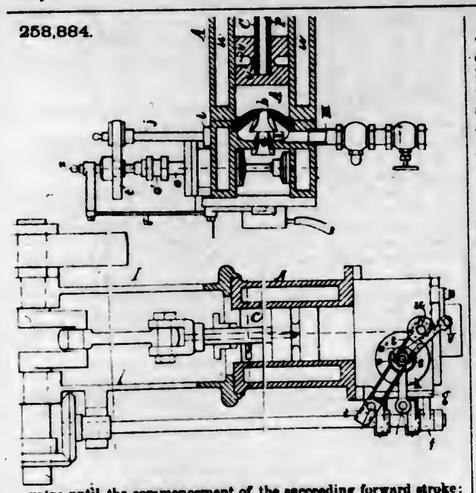


Claim.—A label-holder consisting of an open metallic reversible frame, B, adapted to be attached to a shipping-package and to swing on a hinge, and to have its sides and one end bent over to form lips or grooves *a b*, and with corresponding lips or grooves formed on the reverse side of the holder, adapted to hold labels or address-cards, one side being for the address of the consignor and the other side for the consignee, substantially as shown, and for the purpose specified.

258,884. GAS-MOTOR ENGINE. ERNEST H. DUBRITZ, Newark, N. J. Filed Oct. 11, 1881. (No model.)

Claim.—1. The method herein described of supplying a compressed charge of mingled air and gas to the cylinder of a gas-motor, consisting, first, in drawing the air and gas in suitable proportions into one end of the cylinder by the reverse movement of the operative piston; second, in compressing the same into a recess or cavity near the ignition-chamber by the forward movement of the piston; third, in retaining the mixture in the recess by a suitable

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valve until the commencement of the succeeding forward stroke; and, fourth, in discharging the compressed mixture into the ignition-chamber at such time by suitable valve, substantially as and for the purpose set forth.

2. The improved method of converting the heat of explosion into useful power, consisting, first, in exploding the gaseous mixture in a chamber separate from the operative cylinder; second, in conducting the products of the explosion through a chamber located between the ignition-chamber and the cylinder and mingling cold air with the heated gases on their passage to the cylinder; and, third, in conducting the products of the explosion, mingled with cold air, to the cylinder, to operate conjointly upon the piston, substantially as and for the purpose set forth.

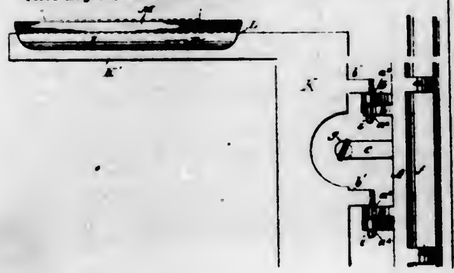
3. The combination, in a gas-motor, of the cylinder A, provided with an operative piston, an ignition-chamber supplied with an explosive charge for the purpose set forth, and an intermediate injector-chamber, constructed and operated to supply a current of air through a feed-pipe, M, to the ignited gases on their passages to the operative cylinder, substantially as and for the purpose described.

4. The combination, in a gas-motor, of an operative cylinder and piston, substantially as described, an injector-chamber supplied with air-inlet and nozzles *a b*, for the purpose specified, and ignition-chamber supplied with an explosive charge for the purpose set forth, inlet and outlet valves combined with the ignition-chamber as described, and a gas-slide operated to fire the charge by connection to the inlet-valve, so as to open when the latter is closed, substantially as herein shown and described.

5. The combination, with the piston of a gas-motor, of a hollow rod, as *C p*, an annular space in the body of the piston, as *r*, and a connection between the two, as *r'*, substantially as and for the purpose set forth.

6. The method herein described for generating and supplying the vapor of gasoline to a gas-motor, consisting in vaporizing the gasoline in a suitable vessel in contact with the heated gases exhausted from the gas-motor, and in mixing the vapor of the heated gasoline with air and applying it to charge and operate the motor, substantially as herein described.

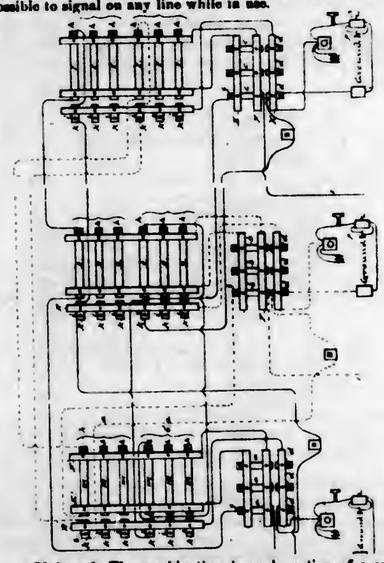
258,885. BRACKET. ALEXANDER CAMPBELL, Brooklyn, N.Y. Filed Aug. 25, 1881. (Model.)



Claim.—The combination, with a table or shelf, M, provided with ribs *l l* and set-screw *n*, and a bracket, K, formed with a lateral arm, K', adapted to support the table M, and provided with hinges *b' b'* and pins *i i*, of the vertical rods A A', each provided with claws *a a* and curved arms *b b*, the levers *c c'*, a set-screw, *g*, and seat A, the whole being arranged and constructed substantially as shown and described.

258,886. TELEPHONE CENTRAL-OFFICE SWITCH. MARTIN J. CAHNEY, Toledo, Ohio, assignor of one-half to John H. Wheeler, same place. Filed Oct. 14, 1881. (No model.)

Brief.—Each section of a duplicate switch-board system has, in addition to the usual switch-board, a supplemental switch-board, through which the lines from all other sections pass before going to ground through the annunciators of the sections to which the lines severally belong. Any operator can connect any line of his own section with any line of any other section through his supplemental switch-board, and in so doing cuts out the line from its annunciator and ground. The breaking of the line renders it impossible to signal on any line while in use.



Claim.—1. The combination, in each section of a sectional telephone switch-board, of line strips or plates connected to the lines assigned to that section, connecting strips or plates adapted to be connected to said line-strips, a series of supplemental line-strips interposed in the circuit of the lines assigned to and connected with line-strips on another section of the apparatus, and a connecting-strip common to said supplemental strips, and with which any one of said supplemental strips may be connected, said latter connecting-strip being joined to the plate or strip which is adapted to make connection with principal line strips or plates of the first-named section.

2. A sectional telephone switch-board each section of which contains a set of principal line-strips and means for connecting any two line-strips for oral communication, one or more sets of supplemental line-strips, the number of said sets being one less than the whole number of sections, each of said line-strips forming a portion of a loop from a principal line-strip and the ground connection plate of another section, supplemental connecting-strips connected with the principal line-strips of the section, and a supplemental instrument-strip adapted to be connected with the loop at a point between the various supplemental line-strips and the ground connection plate in which said loop terminates.

3. The combination, with the principal line-strips and the ground connection plates of one section of a sectional switch-board, of leading-wires connected to said line-strip and containing corresponding supplemental line-strips in another section, return-wires connected to the ground-plates, connecting-plates and switch-plugs normally interposed in said return-wires, and a supplemental instrument-strip combined with said connecting-plates, the whole arranged in the manner described, so that when any one of said plugs is shifted to the instrument-strip the connection of a return-wire with a normally-connected ground-plate is broken, and connection is at the same time made between the instrument-strip and a principal line-strip of the first-named section.

4. The combination, with the principal line-strip in one section of a sectional switch-board, of a leading-wire passing through supplemental line-strips in the other sections, a return-wire adapted to be connected with a supplemental instrument-strip in each of said sections, switch-plugs normally forming a part of the leading-wire, as described, and supplemental connecting-strips, the whole combined in the manner described, so that said plugs may be removed and used for connecting a supplemental line-connecting strip with a supplemental line-strip, and so that at the same time the continuity of the leading and return wire will be broken and the use of the supplemental instrument-strips in other sections for sending signals be prevented.

5. The combination, in each section of a sectional switch-board, of main or principal line-strips and connecting devices adapted to connect any of the lines assigned to that section, one or more sets of supplemental line-strips, the strips in each set being connected in local circuits or loops leading from the corresponding principal line-strips of another section or sections and terminating in the ground-connecting plates of that section or sections, and connecting-strips joined to the principal connecting devices of the first-named section, and adapted to make connection with the supplemental line-strips in the latter section, all combined in the manner and for the purpose set forth.

6. The combination, in each section of a sectional switch-board, of line-connecting and indicating devices for the lines assigned to that section, signaling and communicating apparatus adapted to be placed in connection with any one of said lines, a series of supplemental plates placed in the circuit of lines assigned to another section of the switch-board, and interposed between the line strips or plates and the ground-plates of that section, an instrument strip or plate common to said series of supplemental plates and connected to the signaling apparatus of the section in which said plates are located, and switch-connecting plugs forming a portion of and adapted to preserve the continuity of the loops or connections in which the plates are normally connected, or to connect said plates to the instrument-strip, at the same time breaking the normal connection.

7. The combination, with a sectional telephone switch-board apparatus, in which the line-circuits for each section pass to and through supplemental devices in the other sections, of annunciators for each section, placed in circuit between the earth and the supplemental devices of other sections, so that when connection is made with said circuit upon the supplemental portion of other sections for the purpose of signaling to a subscriber's station from such other sections the annunciator at the central office may be cut out and a false signal at the section of board to which the annunciator belongs be prevented.

8. A switch-plug consisting of a stem or spindle having attached to its lower end two semi-cylindrical springs embracing the stem and free at their upper ends, substantially as described.

258,887. BARBED FENCE-STRAP. JAS. CARPENTER, Moravia, N.Y. Filed Feb. 4, 1882. (No model.)



Claim.—1. The strap *a*, having enlarged or re-enforced edges and transversely crimped or corrugated surfaces, and barbs *b b*, pressed or struck out of said re-enforced edges, substantially as set forth.

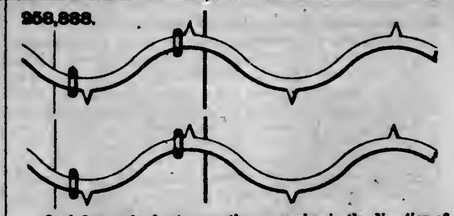
2. The strap *a*, formed with enlarged or re-enforced edges and with crimped or corrugated surfaces, and the barbs *b b*, pressed or struck out of said enlarged edges at the convex side of the corrugations and alternately in opposite directions from the plane of the strap, substantially as described and shown.

3. The within-described method of forming barbed fence-strips, consisting in first rolling out the strap with enlarged or re-enforced edges, then corrugating said bead and pressing out of the enlarged edges thereof barbs standing in opposite directions from the plane of the strap, substantially as described.

258,888. BARBED FENCE. JAS. CARPENTER, Moravia, N.Y. Filed Oct. 7, 1881. (No model.)

Claim.—1. A fence-wire of oval or elliptic form in cross-section, and bent serpentine or waving longitudinally and in the same plane as the greater diameter of the said wire, as shown and set forth.

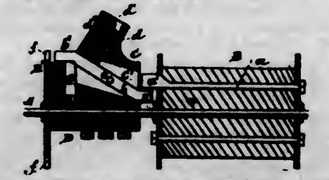
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2. A fence-wire bent serpentine or waving in the direction of its length, and having projecting from the alternate upward and downward bents or curves, respectively, upward and downward projecting barbs.

3. A fence-wire bent serpentine or waving in the direction of its length, and secured with its bents in a vertical plane by fastenings to the post at the highest and lowest points of two or more of the bents in the wire, substantially as and for the purpose set forth.

258,889. WINDING-DRUM. MATTHEW T. CHAPMAN, Aurora, Ill. Filed Nov. 5, 1881. (No model.)



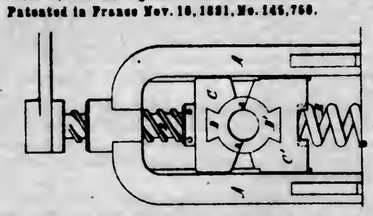
Claim.—1. The loose winding-drum B, having a stationary catch or lock and stationary head or block C, carrying a movable catch or lock, in combination with an adjustable cam for operating the movable catch or lock and releasing the drum, substantially as and for the purposes specified.

2. The loose winding-drum B, having a stationary catch or lock and stationary head or block C, carrying a movable catch or lock, in combination with a raising or lifting cam, *e*, and adjustable plate D', carrying the cam for changing the position of the cam relative to the drum and automatically tripping the catch or lock to release the drum, substantially as and for the purposes specified.

3. The loose winding-drum B, having a stationary catch or lock, *a a'*, stationary head or block C, carrying a movable catch or lock, *b b' b''*, and returning-spring *d*, in combination with a raising or lifting cam, *e*, adjustable in relation to the drum for automatically engaging and disengaging the catch or lock to cause the drum to wind or unwind, substantially as specified.

4. The loose winding-drum B, having a stationary catch or lock, *a a'*, stationary head or block C, carrying a movable catch or lock, *b b' b''*, and returning-spring *d*, in combination with a raising or lifting cam, *e*, plate or disk D', having notches *f*, and lever E, substantially as and for the purposes specified.

258,890. MACHINE FOR CAPSULING BOTTLES. CHAS. CHESWRIGHT, London, England. Filed Feb. 18, 1882. (No model.) Patented in France Nov. 16, 1881, No. 145,760.

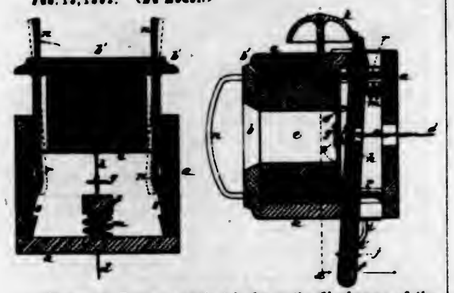


Claim.—1. A machine for capsuling bottles, having semicircular clamping and plaiting segments made from an elastic and yielding material, whereby said segments are enabled to adapt themselves to bottle-necks of various shapes and sizes, as set forth.

2. The combination, to form a capsuling-machine, of a press-frame and screw and upper sliding boxing coupled to the screw, a lower sliding boxing elastically mounted, and the rubber segments D D', all constructed and arranged substantially as set forth.

3. The combination of the frame A, screw B, boxings C C', rubber segments D D', springs E, nut I, screw G, and disk F, all constructed and arranged to operate substantially as set forth.

258,891. TELEPHONE. JAMES W. CLARK, Etna, Ohio. Filed Feb. 13, 1882. (No model.)



Claim.—1. In an acoustic telephone, the diaphragm of the speaking and hearing part, connected with the vocal line by a short section of cord of some suitable flexible material, in combination with the signal-operating lever, a sustaining-spring therefor, and a fixed part or case within which the said speaking and hearing part is adapted for adjustment to render the said diaphragm connection slack or taut in relation to the vocal line, substantially as described, for the purpose specified.

2. The combination, in an acoustic telephone, of a fixed part or case and the vocal line with an adjustable speaking and hearing part, a short cord or flexible section connecting it with the vocal line, a pivoted device connected with the said fixed part or case and the vocal line, and a sustaining-spring for said pivoted part, substantially as herein set forth, for the purpose specified.

3. In an acoustic telephone, the transmitting and receiving instrument, composed of a fixed part or case and an adjustable speaking and hearing part having the diaphragm, the latter being connected to the vocal line by a short flexible cord-section and adapted to be set toward and from the end of the vocal line to render the said flexible section slack or taut in relation to said vocal line, substantially as described, for the purpose specified.

4. The combination, in an acoustic telephone, of the fixed part or case, the vocal line, and means for connecting it with said fixed part or case with the adjustable speaking and hearing part, the flexible cord-connection of the diaphragm with said vocal line, and means for operating said speaking and hearing part and holding the same when set in taut connection with the vocal line, substantially as described, for the purpose specified.

5. In combination, in an acoustic telephone, the fixed part or case *a*, the adjustable speaking and hearing part *b*, having the diaphragm *c*, the vocal line *d*, the signal-operating lever *f*, its supporting-spring *m*, the flexible cord-section *h* of the line, the signal device, and means for operating and holding the adjustable part in relation to the fixed part, substantially as described, for the purpose specified.

6. The combination, in an acoustic telephone, of the fixed part or case *a*, the adjustable speaking and hearing part *b*, having the diaphragm *c*, the flexible cord-section *h*, the lever *f*, its supporting-spring *m*, the line *d*, and the signal device, with the handles *n n*, forming the ratchet-pawls *r r*, and carried by said adjustable part, and the racks *s s*, carried by said fixed part, substantially as described, for the purpose specified.

7. The combination, in an acoustic telephone, of the line *d*, the lever *f*, and the line-button *g*, having a non-fixed relation to said lever, with an adjustable speaking and hearing part, a supporting-spring, *m*, for said lever, and a signal device operated by said lever.

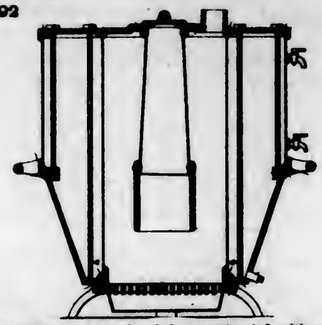
8. In an acoustic telephone, the combination of the line and means for supporting it independent of the diaphragm with an adjustable carrying part for the diaphragm and a short cord-section connecting said diaphragm with the line, substantially as described, for the purpose specified.

258,892. STEAM-GENERATOR. GORDON W. CONSTOCK, New York, N. Y. Filed Oct. 12, 1881. (No model.)

Claim.—1. A steam-generator consisting of the combination, substantially as hereinbefore set forth, of the cast-metal base, a conical section of cast metal supported thereon, a cast-metal top, united with said section by bolts, two intervening cylinders of sheet metal jointed therewith, and a central magazine supported from said top and provided with a lid of cast metal.

2. In a steam-generator, the combination, substantially as hereinbefore set forth, of a cast-metal base, a cast-metal top, an intervening water-chamber, a combustion-chamber, and a fuel-

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magazine, said water-chamber being constructed with an inner cylindrical wall and an outer wall, consisting of an upper cylindrical section and a lower section converging toward the bottom of said inner wall and having its sheet-metal sections jointed with cast-metal portions of the generator, and said top being constructed with an outer annular casting forming the top of the water-chamber, and a second annular casting resting upon the inner edge of the outer casting.

3. In a steam-generator, the lower section of the outer wall of the water-chamber, constructed of cast metal, and provided with a flange projecting inwardly from its lower edge, a circular groove around the upper side of said flange, and a similar groove at the upper extremity of said section, substantially as shown and described.

258,893. GIG-SADDLE. WILLIAM H. COGLESER, Portland, Mich. Filed Apr. 10, 1882. (No model.)

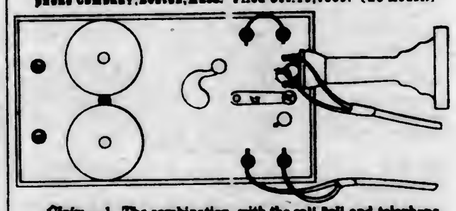


Claim.—1. The combination, with the cross-tree having bridges or supports C C, and housing H, having slots I I, covered by flaps or jockeys J J, of the separate billets passing under the jockeys through slots I I and resting on bridges C C, in which position they are secured, as set forth.

2. The combination, with the cross-tree having bridges or supports C C, housing H, having slots I I, covered by flaps or jockeys J J, and separate billets having their inner ends resting on bridges C C, of the turret-rings having their screw-threaded bolts or shanks passing down through the jockeys, housing, billets, and bridges, as set forth.

3. The combination, with the cross-tree, to the ends of which are secured the skirts and the housing having the flaps or jockeys, of the screws K K, passing through the ends thereof and into the cross-tree, as set forth.

258,894. TELEPHONIC SWITCH APPARATUS. HENRY W. CONNER, Newport, R. I., assignor to the American Bell Telephone Company, Boston, Mass. Filed Oct. 16, 1880. (No model.)

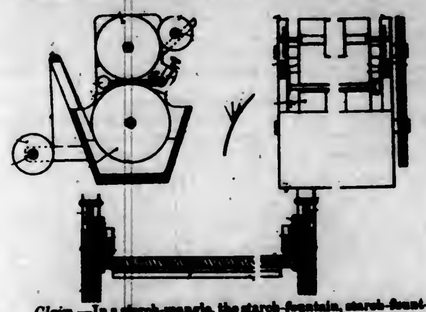


Claim.—1. The combination, with the call-bell and telephone circuits and their contact-plates, of a switch-lever having a knob or handle, and a telephone-hook so placed with reference to the

contact-plate of the telephone-circuit that when the switch is on said contact-plate the knob or handle will be under and to one side of said hook, and present an obstacle to the hanging of the telephone thereon, substantially as described.

2. The combination, with the contact-plate of the telephone-circuit and a switch-lever, of a telephone hook or support so placed with reference to said contact-plate that said switch-lever cannot be moved into contact therewith so long as the telephone is on said hook or support, substantially as described.

258,895. STARCH-MANGLE. JOHN CRAWSHAW and JOHN H. CRAWSHAW, Central Falls, R. I. Filed Jan. 7, 1882. (No model.)



Claim.—In a starch-mangle, the starch-fountain, starch-fountain roll, and the pivoted doctor-plate, with mechanism for giving it a yielding pressure, in combination with means for adjustably varying the angle of the doctor-plate with respect to the surface of the starch-fountain roll, and with mechanism for drawing the cloth through the starch and between the yielding doctor-plate and the starch-fountain roll, substantially as described.

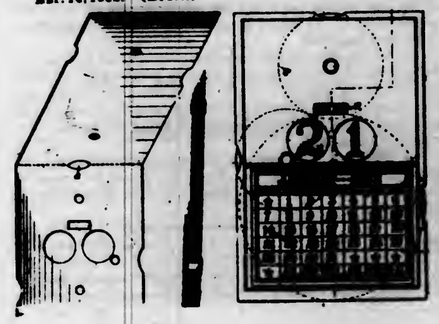
258,896. SIGN. HENRY S. CROCKER, New York, N. Y. Filed Apr. 1, 1881. (No model.)



Claim.—1. A sign composed of separate and contrasting pieces of tin-foil united to form a homogeneous sheet, and having portions removed from one of the pieces so as to disclose the other, substantially as described.

2. The method of forming signs by removing ornamental shapes or portions from a sheet of tin-foil and then covering the openings formed by said removed portions with a separate sheet of foil, and uniting the two to form a single homogeneous sheet, substantially as described.

258,897. CALENDAR. JOHN GUSSOW, Glen Allen, Va. Filed Mar. 14, 1882. (Model.)



Claim.—1. A calendar made substantially as described, and adapted to show the figures indicating the day of the month through suitable openings formed in the face of the calendar-frame for said purpose, by means of two dials, one of which is smaller than the other, and carries three figures and a blank, while the larger dial carries ten figures, the dials being arranged, substantially as described, so that the smaller one shall partially overlap the other, and while exposing its own figure at its own aperture shall conceal the figure on the larger dial, which would otherwise be exposed at the aperture of the small dial, another figure of the larger dial being exposed at a central aperture, substantially as described.

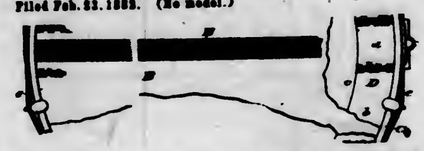
2. The combination, in a calendar, of a frame of card-board or similar material, doubled in long folds and provided with perforations and notched edges, dials containing the days of the week and the days of the month pivoted within said frame and adapted to register with the openings formed therein, and a tear-off tablet attached to the face of the frame, substantially as described.

258,898. COMBINED SASH HOLDER AND FASTENER. ANDREW J. DAVIS, Hartford, Mich. Filed Jan. 30, 1882. (Model.)



Claim.—In a sash holder and fastener, the combination of the trough-shaped friction-plate A, having a catch, B, on its upper end, with springs D, plate E, and set-screw C on the lower sash, and with the pin F on the upper sash, substantially as and for the purpose set forth.

258,899. SNARE-DRUM. HENRY C. BOSTON, New York, N. Y. Filed Feb. 23, 1882. (No model.)



Claim.—1. In a drum, the combination of body A, snare-head B, sheet-metal ball D, consisting essentially of annular portion *b* and flange *a*, or equivalent means of connection with the drum-body, as described, interposed between the body A and snare-head B, and the snare B, strained across said ball, whereby the distorting tendency of the tension of the snare is resisted and the drum-body is retained in shape, substantially as set forth.

2. The combination of drum-body A, parchment head B, sheet-metal ball D, having depressions *d d*, snare E, and means for tightening said parchment and snare, substantially as set forth.

258,900. FLOOR. WILLIAM L. DOBERSAM, West Newton, Mass. Filed Apr. 3, 1882. (No model.)

Brief.—Composed of foundation-timbers, covering-course of boards, superimposed course of grooved planks, and water-proof composition in the grooves.



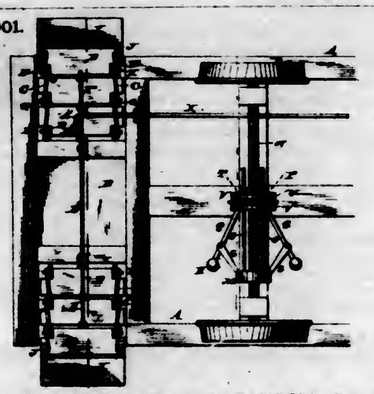
Claim.—A water-proof floor, substantially as described, composed of the foundation-timbers *c*, the covering-course of boards B, the superimposed course of grooved or rabbeted planks A, and the elastic, adhesive, and water-proof composition fillings *b*, arranged and combined essentially as explained.

258,901. SAFETY-STEP FOR CARS. THOMAS H. BOYLE, Norwich, N. Y. Filed Apr. 11, 1882. (No model.)

Claim.—1. The combination, with a railway-car, of the brackets C, pivoted steps D, connecting-rod K, a governor mounted upon the car-axle, and mechanism for operating the said pivoted steps automatically by means of said governor, as set forth.

2. The combination of the car-axle, the governor having sliding eccentrically-grooved disk F, the band U, forked lever V, shaft X, having cranks Y A', connecting-rod K, brackets C, pivoted steps D, and the connecting-rod K, having eye L, as set forth.

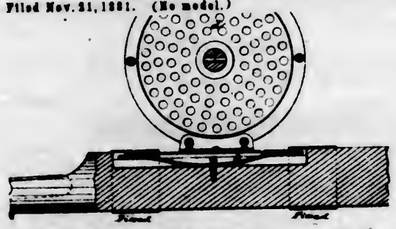
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3. The combination of the car-axle, the disk M, having guide-rods O, the sliding disk P, having weighted hinged arms Q, the connecting-rods S, the pivoted steps D, and mechanism, substantially as described, connecting said pivoted steps with the sliding disk P, as set forth.

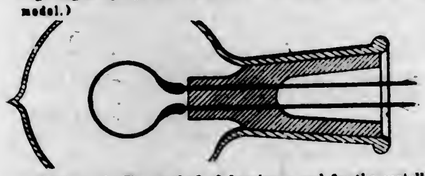
4. The combination of the brackets C, the pivoted steps D, the connecting-rods K, the rod or chain B', the lever C', and ratchet-bar D', substantially as set forth.

258,902. REEL-SEAT FOR FISHING-RODS. HIRAM EGGLESTON, Manchester, Vt., assignor to Charles F. Orvis, same place. Filed Nov. 21, 1881. (No model.)



Claim.—In a reel-seat for fishing-rods, a spring-clamping seat, *b*, in combination with the rod having the fixed ring-bands, substantially as described.

258,903. ELECTRIC INCANDESCENT LAMP. MOSES G. FARMER, Newport, R. I., assignor to the United States Electric Lighting Company, New York, N. Y. Filed May 27, 1881. (No model.)



Claim.—1. The method of forming a seal for the metallic conductors of an incandescent lamp, which consists in embedding them in a plastic material, molding it to the desired shape, solidifying and hardening the same by heat, and then fitting the same to an opening in the lamp, as set forth.

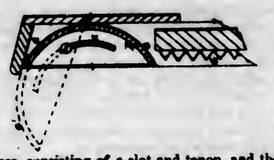
2. In an incandescent electric lamp, the combination, with a plug or stopper composed of porcelain, earthenware, or a similar material, of conducting-wires of nickel or an alloy containing nickel, embedded in the stopper, as described.

258,904. WASH-BOARD PROTECTOR. MARSHALL M. FARNSWORTH, Brooklyn Village, assignor to the Ohio Wooden Ware Manufacturing Company, Cleveland, Ohio. Filed Oct. 18, 1881. (No model.)

Claim.—1. A protector in combination with the upper part of a wash-board, and connecting devices between the side pieces thereof, arranged substantially as described, whereby the protector may slide between said sides, as and for the purposes set forth.

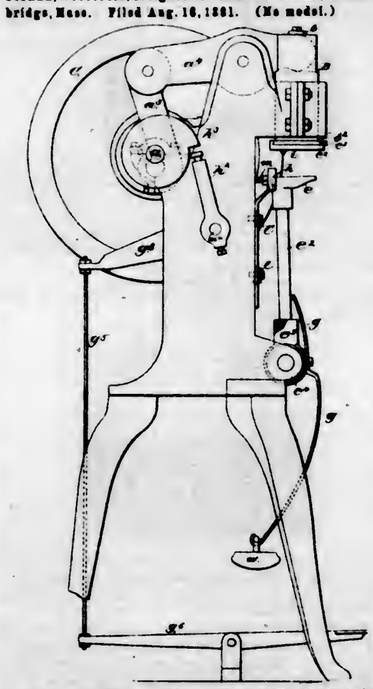
2. A wash-board provided with a groove or notch, *e*, the connecting devices, consisting of a slot and tenon, and the protector, all in combination, and arranged to operate in the manner substantially as described, and for the purpose set forth.

258,904.



3. In a wash-board, a semi-cylindrical protector adapted to roll or slide within the sides thereof and provided with ends having curved slots therein and pins extending from the said sides into the slots, respectively, whereby the protector is retained in position for use or for being packed for transportation, substantially as set forth.

258,905. BOOT AND SHOE HEELING MACHINE. EDWIN PIERCE, Worcester, assignor to James W. Brooks, Trustee, Cambridge, Mass. Filed Aug. 16, 1881. (No model.)



Claim.—1. The metal last *c*, the spindle c^3, adapted to vertically adjust the said last, the pivotal bearing c^2 for said spindle, the rest A, and the weighted arm *g*, for normally pressing the spindle and last toward the frame of the machine to hold the counter of the boot or shoe in the said rest, combined with the nail-driving mechanism and means to operate the same, substantially as shown and described.

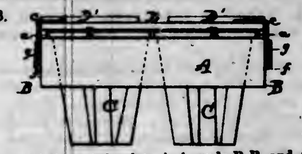
2. In a machine to nail heels to boots and shoes, the iron last and spindle to carry it, combined with the plunger and removable plate connected with the foot of the plunger, and provided with a type or stamp to mark the heel as the nails partially driven therein are driven through the heel into the sole of the boot or shoe, substantially as described.

3. The rest A, made vertically and horizontally adjustable, and the stop and adjusting-screw *m*, combined with the last *c*, spindle c^3, its pivoted bearing c^2, and weighted arm g^3, all substantially as and for the purposes described.

258,906. FRUIT-PACKAGE. ASA B. FISK, Lyndonville, N. Y. Filed Feb. 9, 1882. (Model.)

Claim.—1. In combination with a peach basket or baskets, C C, having a rim or shoulder, *b*, around the upper edge, the cover

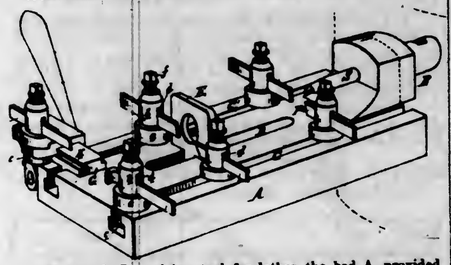
258,906.



and frame consisting of the slats A A, ends B B, and top D, arranged so as to leave the space *a* at the sides, between the top D and sides A A, and suitable fastening devices, substantially as and for the purpose specified.

2. In combination with the basket C and covering A B D, the locking device consisting of the bent hasps *c c*, stay-piece D', and eccentrically-pivoted locking-piece *g g'*, all arranged and operating substantially in the manner and for the purpose specified.

258,907. SIZING-TOOL FOR LATHES. JAMES FLOWER, Detroit, Mich. Filed Feb. 18, 1882. (No model.)

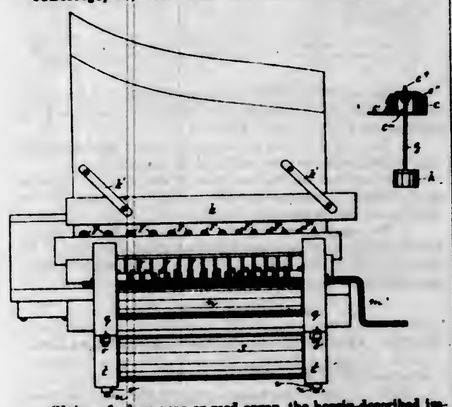


Claim.—1. In a sizing-tool for lathes, the bed A, provided at one end with a shank, B, and having two parallel mortises, C C', running from end to end, in combination with a series of cutter-holders secured in said mortises on both sides of the center of the bed, substantially as described.

2. The combination, with a sizing-tool for lathes, of one or more steadying-posts, E, provided with round holes *e* and adjustably secured in a slot, D, of the bed, said post or posts being adapted to support the work at different points as the work is fed to the cutters, substantially as and for the purpose specified.

3. In a sizing-tool for lathes, the bed A, provided at one end with a shank, B, and having a central longitudinal slot, D, and two parallel mortises, C C', one on each side of said slot, in combination with one or more apertured steadying-posts, E, adjustably secured in the slot, and a series of cutter-holders secured in the mortises on both sides of the steadying-posts, substantially as described.

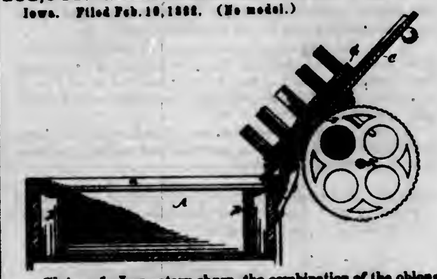
258,908. ORGAN. CARL FOEHLDRG and GEORGE W. GRAVES, Cambridgeport, Mass. Filed Jan. 14, 1881. (No model.)



Claim.—1. In a pipe or reed organ, the herein-described improved valves, consisting of the main or common valve *a*, with its relief-vent a''', and auxiliary relief-valve a'' and stop a^4, for the purpose set forth.

2. The herein-described fall-stop, consisting of the swinging bar A, pivoted to the case, as shown, in combination with the pipes *f f*, as and for the purpose set forth.

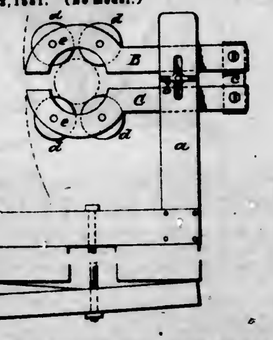
258,909. ROTARY CHURN. SAMUEL FOSELER, Eagle City, Iowa. Filed Feb. 10, 1882. (No model.)



Claim.—1. In a rotary churn, the combination of the oblong rectangular churn-body A, having its upper edges recessed and beveled, with the lid C and the corner-pieces B, beveled upon their upper ends, substantially as described, whereby when the lid is raised or the cream is driven upward through the interstices about the edges of the lid said cream is returned to the churn-body, and whereby the cream is prevented from collecting in the corners of the churn, and thereby retarding the formation of the butter.

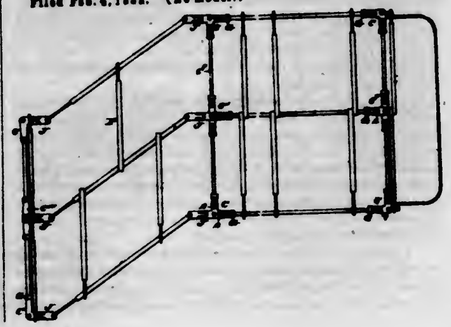
2. The combination, with the churn-body A, of the corner-pieces B, of prismatic shape, and having their upper ends beveled, substantially as described, whereby the butter and cream are prevented from collecting in the corners, and whereby the churn may be easily cleaned.

258,910. LATHE-REST. EUGENE S. FULLER, Hartford, Conn. Filed Dec. 12, 1881. (No model.)



Claim.—In a center-rest for lathes, the combination, with the slotted standard *a*, of the pivoted horizontal arms B C, removably connected to the standard, said arms being arranged one above the other and having curved or semicircular ends *e*, carrying friction-rollers *d*, substantially as and for the purpose set forth.

258,911. FRAME FOR CANOPIES, AWNINGS, AND TENTS. WESLEY B. GARVER and EDWARD VARIAN, Philadelphia, Pa. Filed Feb. 4, 1882. (No model.)



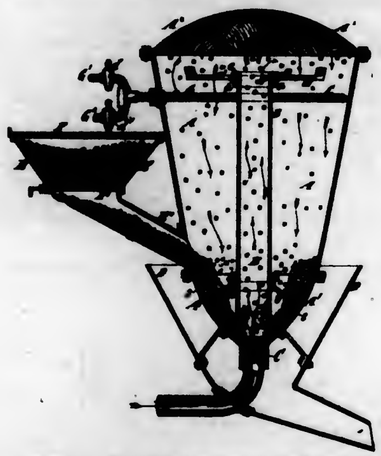
Claim.—1. The standards and horizontal beams, in combination with the couplings, which are provided with sockets *c*, the plugs H, and sleeves G, substantially as and for the purpose set forth.

2. The standards, horizontal beams, ridge-poles, couplings with sockets, king-posts, plugs, and sleeves, combined and operating substantially as and for the purpose set forth.

3. The frame for canopies, &c., formed of standards and horizontal beams, having couplings C and knuckle-joints J, said couplings C being connected to the standards and the joints J to the horizontal beams and the couplings, substantially as and for the purpose set forth.

4. The standards, horizontal beams, ridge-poles, couplings, knuckle-joints, and king-posts, combined and operating substantially as and for the purpose set forth.

258,912. APPARATUS FOR DISINTEGRATING VEGETABLE SUBSTANCES. GUSTAVUS O. GOSSELINK, Jersey City, N. J. Filed Dec. 29, 1880. (No model.)



Claim.—1. The combination, with a closed vessel or chamber having a perforated bottom or lower portion, of a pipe or trunk supported therein and open at both ends, and a nozzle through which air or steam or water may be injected to produce an upward current of the material to be disintegrated through said pipe or trunk and against the top or head of said vessel or chamber, whereby I provide for a continuous delivery of the disintegrated material through the perforated bottom or lower portion of said vessel or chamber, substantially as specified.

2. The combination, with the closed vessel or chamber, of a pipe or trunk supported therein and open at both ends, the nozzle through which air, steam, or water may be injected to produce an upward current of the material to be disintegrated through said pipe or trunk, and a removable and adjustable head against which the material is impelled by said air, steam, or water, substantially as specified.

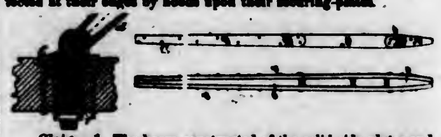
3. The combination, with a closed vessel or chamber having a perforated bottom or lower portion, of a pipe or trunk supported therein and open at both ends, a nozzle through which air or steam or water may be injected to produce an upward current of the material to be disintegrated through said pipe or trunk and against the top or head of said vessel or chamber, and a pipe for supplying water to the contents of said vessel or chamber, substantially as and for the purpose specified.

4. The combination, with a closed vessel or chamber having a perforated bottom or lower portion, a pipe or trunk supported in said vessel or chamber and open at both ends, and a nozzle through which steam or air or water may be injected to produce an upward current of the material to be disintegrated through said pipe or trunk and against the top or head of said vessel or chamber, of a hopper communicating with said vessel or chamber between its top or head and its perforated bottom or lower portion, substantially as and for the purpose specified.

5. The combination of the closed vessel or chamber A, having a perforated bottom or lower portion, A', and head A^2, the hopper B, provided with gates F F', the spout E', the pipe or trunk B, and the air, water, or steam nozzle C, all substantially as specified.

258,913. DREDGING APPARATUS. ALBERT E. HALL and MILAN W. HALL, Plainfield, N. J. Filed Nov. 26, 1880. (No model.)

Brief.—A dredging-boom having solid side pieces and tapered end blocks, which leave an enlarged opening for the dipper-handle, said boom being stepped in a socketed pintle having a circular flange resting in a tubular socket. Hawse-hole sheaves are protected at their edges by hoods upon their mooring-plates.



Claim.—1. The boom constructed of the solid side plates and the tapered middle pieces, the latter arranged to leave an elongated opening to receive the dipper-handle and to form with the side pieces a solid butt and peak for the boom, substantially as set forth.

2. The combination, to form a step for the boom, of the socketed pintle provided with a circular flange, the tubular socket provided with a flange at its top, and a circular recess therein to receive the flange on the pintle, and the socket for the boom, all constructed and arranged substantially as set forth.

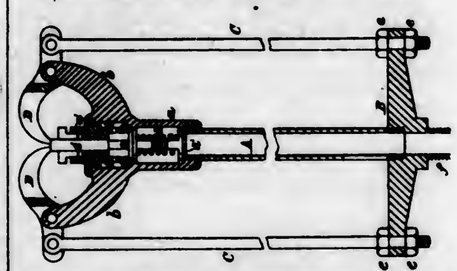
3. The combination, with the plate a, of the cheeks or plates *p p p*, the sheaves *q q q'*, and the triangular hoods *s s*, all constructed and arranged substantially as set forth.

258,914. BARB-FENCE. WILLIAM H. HARRIS, Neola, Iowa. Filed Mar. 31, 1882. (Model.)



Claim.—As an article of manufacture, a perforated sheet-metal strand provided with a wire barb the central portion of which is bent about a portion of the strand at an angle to its length, the legs of which are disposed side by side therethrough, and the points of which are projected in opposite directions from opposite sides of the strand, substantially as shown and described.

258,915. STEAM-TRAP. JAMES L. HASTINGS and JAMES S. STEWART, Philadelphia, Pa. Filed Sept. 17, 1881. (No model.)



Claim.—1. The levers D D, in combination with the valve *c* in the slotted plug *c'*, the spring *d*, and bearing-piece *d'*, substantially as and for the purposes described.

2. The plug *c'*, slotted and screwed into the head-piece *a*, in combination with a valve, *c*, substantially as set forth.

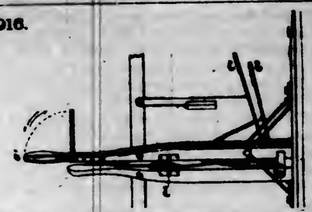
3. In combination, the head-piece *a*, slotted plug *c'*, valve *c*, spring *d*, and the bearing-piece *d'*, provided with a pin, substantially as and for the purposes described.

4. The combination, with the head-piece *a*, slotted plug *c'*, valve *c*, spring *d*, and bearing-piece *d'*, provided with a pin, of the yoke B, levers D D, and the rods C C, provided with set-nuts *e*, substantially as and for the purposes described.

258,916. APPARATUS FOR LASTING AND TREEING WOOL FELT. ALFRED A. HAWLEY, Merrimac, assignor to the Merino Shoe Company, Boston, Mass. Filed Feb. 13, 1882. (No model.)

Claim.—1. The device for steaming the felt of a wool boot, consisting of a perforated cone-shaped steam-distributer and a convex-convex disk in the lower part of it, in combination with any suitable conductor of steam.

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2. The device for opening a wool boot, as that it will admit a last and tree, consisting of the upright beams *c*, the foot-opener *c'*, the levers c^3 and c^4, and the rods and jointed coupling c^5 and c^6.

3. The above-described machine for lasting and treeing wool boots, consisting of a supporting-frame and table, the double tongs a^2, the actuating devices a^3, the fixed blocks c^3 and c^4, and the tree-opening devices *c c' c³ c⁴ c⁵*, all made substantially as described.

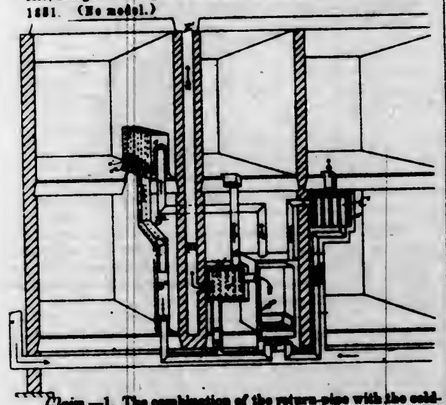
4. In a machine and apparatus for lasting and treeing wool boots, in combination with a tree in the boot and the devices a^3, *c*, *c'*, and c^6, for opening the tree, the block c^3, substantially as described.

258,917. FORMER FOR SUPPORTING HOLLOW FELTED ARTICLES. ALFRED A. HAWLEY, Merrimac, assignor to the Merino Shoe Company, Boston, Mass. Filed Feb. 13, 1882. (No model.)



Claim.—The improved former herein described, consisting of an air-tight flexible elastic bag approximating in form to and inflated with compressed air in the article to be finished on it, and provided with suitable devices for inducting, retaining, and discharging air, all substantially as described, and for the purpose set forth.

258,918. HEATING SYSTEM. BENJAMIN R. HAWLEY, Chicago Ill., assignor to Agnes Hawley, same place. Filed Dec. 27, 1881. (No model.)



Claim.—1. The combination of the return-pipe with the cold-air duct, through which it passes without opening therein to, whereby the return-pipe is subjected to the cooling effect of the outside atmosphere before the latter becomes warmed, substantially as specified.

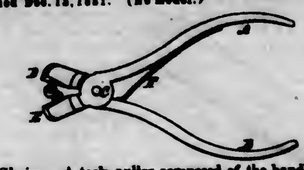
2. The combination, with the return-pipes, the radiators, and the cold-air duct, of the passages surrounding the return-pipes and connecting the cold-air duct with the radiator, substantially as set forth.

258,919. CIGAR-REAMER. RANDOLPH HAYDEN, Haddam, Conn. Filed Dec. 14, 1881. (No model.)



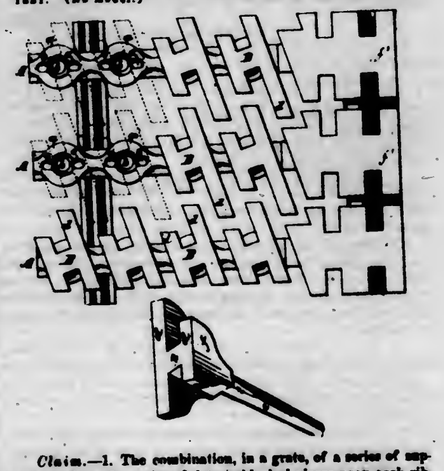
Claim.—The grooved and needle-pointed cigar-reamer blade B, provided with four straight cutting-edges, B', extending back from the point, in combination with a suitable handle for rotating it, substantially as described.

258,920. TACK-PULLER. RANDOLPH HAYDEN, Haddam, Conn. Filed Dec. 13, 1881. (No model.)



Claim.—A tack-puller composed of the handles A B, held apart by the spring F, and the jaws D E, provided with sharp flaring edges set opposite each other at an angle with the line of the handles and meeting at their inner ends only, substantially as described.

258,921. GRATE. HENRY T. HILL, Manchester, N. H., assignor of one-half to Person C. Cheney, same place. Filed Sept. 19, 1881. (No model.)



Claim.—1. The combination, in a grate, of a series of supporting-ribs and a series of detachable bed-pieces upon each rib, each bed-piece having bars *d d*, of different lengths, substantially as and for the purpose set forth.

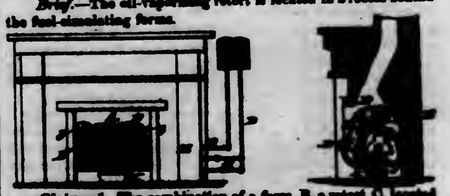
2. The combination, in a grate, of the series of supporting-ribs, each having a series of sockets, *b*, and the bed-pieces, having shanks constructed to project through the sockets and below the edges of the ribs, for the purpose set forth.

3. The supporting-rib A, each having a series of socketed beams, *a*, with side notches, *e*, and constructed to support each a series of bed-pieces, B, with shanks and feathers *f*, substantially as set forth.

4. The combination of the ribs and bed-pieces supported thereby, each consisting of two or more bars arranged at an angle to the rib, substantially as set forth.

258,922. FIRE-PLACE. CHARLES HOLLAND, Chicago, Ill. Filed Sept. 27, 1880. (No model.)

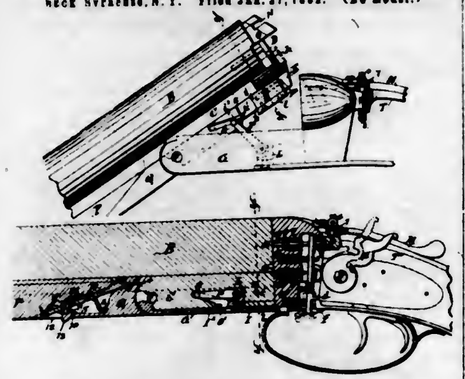
Brief.—The oil-vaporizing retort is located in a room behind the fuel-simulating forms.



Claim.—1. The combination of a form, B, a retort, C, located behind, beneath, or within, and receiving heat radiated from said form and connected with a liquid-hydrocarbon-supplying tube, D, a heating-pipe, F G, and a pipe, J, substantially as and for the purpose set forth.

2. The combination of the retort C, located in a chamber, A, within a form, B, simulating burning fuel, with the pipes J and F, as and for the purpose set forth.

258,923. BREECH-LOADING FIRE-ARM. FRANK A. HOLLENBECK, Syracuse, N. Y. Filed Jan. 27, 1882. (No model.)



Claim.—1. The combination of the tang T, provided with the boss 1 and vertical hole 2, the lever M, pivoted on said boss, the sight 4, having the stem 3 in the hole 2, and the spring 7 at the side of the stem and overlapping the top of the lever, all combined and arranged as shown and set forth.

2. The combination of the tang T, provided with the vertical hole 2, the sight 4, having the stem 3, provided with the slot 5, and the connecting-pin 6, substantially in the manner described and shown.

3. The combination, with a three-barreled gun, of a shifting-bar arranged across the rear end of the firing-pins and provided with passages for the firing-pins, arranged in such relative position that while one of said passages is brought in coincidence with a firing-pin the other is normally out of coincidence with its respective firing-pin.

4. In combination with the barrels B C, their firing-pins *a* and *a'*, and the hammer H, the shifting-bar *s*, arranged across the end of said firing-pins, having the apertures *r* and *r'*, arranged as described, and the plunger *b*, provided with the cavity *c*, as set forth and shown.

5. In combination with the barrels B C, their firing-pins *a* and *a'*, and the hammer H, the shifting-bar *s*, provided with apertures *r* and *r'* and with the catch or shoulder *d*, the springs *e e' e''*, and the plunger *b*, provided with the cavity *c*, substantially as and for the purpose specified.

6. In combination with the shifting-bar *s*, provided with the shoulder *d*, and arranged so as to be movable laterally in the stock, as shown, the eccentric screw or button *f*, as and for the purpose specified.

7. The combination and arrangement, with the two barrels B B, situated side by side, of the third barrel, C, placed beneath the former and central between them, and the extractor E, arranged beneath the third barrel and adapted to engage the cartridge or shell in the barrel C, and to actuate simultaneously the extractor of the barrels B B, substantially as described and shown.

8. The combination, with the two barrels B B, situated side by side, of the third barrel, C, placed beneath the former and central between them, the extractor E, adapted to engage the cartridge or shell of the barrel C, and provided with the shoulder *g*, and the extractor D, having the plate *h* in front of said shoulder, substantially as described and shown, for the purpose set forth.

9. In combination with the three barrels B B and C, arranged as described, the lug *i*, projecting from the bottom of the barrel C, and provided with the channel *h*, the extractor E, having the tongue *h'* in said channel, and the plate *l*, detachably applied to the bottom of the said lug, as and for the purpose set forth.

10. In combination with the barrels B B and C, the lugs *i i'*, having the channel *h* and inclined slot *o*, with notch *o'*, the extractor E, having the tongue *h'* in said channel, and provided with the slot *m*, the pin *n*, and the link *p*, hinged on the bridge L and having its free end in the slot *o* and engaging the front end of the extractor, all constructed and combined in the manner shown and set forth.

11. The combination of the fore-end P, forwardly-inclined shank R, tip-strap Q, having a beveled forward end, and the spring V, as and for the purpose set forth.

12. In combination with the fore-end P and breech-extension G, the forwardly-inclined shank R, provided with the segmental face 14, the tip-strap Q, fitted to the shank and having a corresponding segmental face, and the set-screw 15, inserted in the tip-strap at said face, substantially as and for the purpose set forth.

13. The combination of the forwardly-inclined shank R, fixed to the barrel and provided with a mortise, and with the stud 9 in said mortise, the fore-end inserted under said shank, the tip-strap Q, having a beveled forward end and provided with the mortise S, and with the pin 11 and hook 8 in said mortise, and the spring U, connected to the hook 8 and having at its forward end the reversed curved face V, bearing on the stud 9, and its extremity 10, extended underneath the pin 11, all constructed and combined substantially in the manner described and shown, for the purpose set forth.

258,924. MANUFACTURE OF FLOUR. JESSE HOLLINGSWORTH, New York, assignor of one-half to James A. Whitney, Dobbs Ferry, N. Y. Filed Feb. 14, 1882. (No specimens.)

Claim.—1. The process of manufacturing flour which consists in crushing decorticated wheat to liberate the husk within the crease of the berry, separating the said portion of the husk from the food-product, and then converting the purified food-product to flour, substantially as herein set forth.

2. As a new article of manufacture, wheat-flour composed of the starchy and the glutinous components of wheat in substantially the proportions in which they exist in nature in the wheat-berry, and freed from ground bran or germ, substantially as herein set forth.

258,925. PAPER AND OTHER BAGS. JESSE H. HOLMES, St. Louis, Mo. Filed Feb. 14, 1882. (Model.)



Claim.—As a new manufacture, the bag D, having the part *d'* of the bottom between the sides d^2 d^3, the side d^3 being folded inward at its lower end, and the side d^4 projecting beyond the folded side d^3, substantially as shown and described.

258,926. WINDOW-WASHER. GEORGE A. KENDE, Lynn, Mass., assignor of one-half to Charles W. Melcher and Gustavus M. Spinney, same place. Filed Feb. 23, 1883. (No model.)

Claim.—The herein-described improved window-washer, consisting of the elastic mouth-piece B, provided with the central opening, B', and bead *b*, the rigid back piece or reservoir, A, provided with the inlet-hole *a*, and the pole-holder D, all combined and arranged substantially as and for the purpose set forth.

258,927. COTTON-GIN FEEDER. ERWIN H. KEITH, Bridgewater, Mass., assignor to the Eagle Cotton Gin Company, same place. Filed Aug. 29, 1881. (No model.)

Claim.—1. In a cotton-gin feeder, the support I, having the upper portion, I', in combination with the lower end, K', of the bracket, the casing A, and screws, substantially as and for the purpose set forth.

2. The combination of the lever G, provided with a square hole, the stud *g*, and horns or guides *d*, said stud being fitted in a corresponding opening in the head of the horns or guides *d*, by means of which the lever is rendered reversible, so as to be readily attached to either side of the frame, substantially as set forth.

3. The recessed bracket *e*, provided with the reversible spring *e'*, substantially as and for the purpose set forth.

4. In a cotton-gin feeder, the rocker-arm E, having on its face side, both above and below the center bearing, a recess provided with scale-marks, in combination with the separately-adjustable boxes *b b*, pawls *a a*, attached thereto, and ratchet-wheel C, adapted to be actuated by said pawls, all substantially as and for the purpose specified.

258,928. SEED-DRILL AND FERTILIZER. HORACE M. KEITH, Commerce, assignor of one-half to Joel P. Harger, Pontiac, Mich. Filed Feb. 16, 1882. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, in a seed-drill, of a hopper having interior vertical seed-conducting tubes or chutes, provided with top inclined trays, with feed-wheels having internal buckets adapted to operate in relation to said trays, for the purpose specified.

2. The combination, substantially as hereinbefore set forth, in a seed-drill, of a hopper having interior vertical seed-conducting tubes or chutes, provided with top inclined trays, with feed-wheels having internal buckets and means for laterally adjusting said feed-wheels in relation to the trays, for the purpose specified.

3. In combination, the hopper, the fixed vertical tubes or chutes therein, the open feed-wheels having internal buckets, the shaft upon which they are fixed, and means for effecting the end-wise adjustment of said shaft, and the feed-wheels thereon, consisting of the screw-stems *i*, the coupling-plates *i'*, the screw-nuts *j*, and the spring *j'*, arranged at the end of the hopper, whereby to set the feed-wheels toward and from the fixed hopper-tubes, for the purpose specified.

4. The feed-wheel band *d*, mounted at one edge upon spokes *d'*, and having buckets *c*, arranged upon the interior wall of said band, in combination with a fixed tube or chute having a tray extending within and beneath the said band toward its spoked side and below the path of the buckets, and the hopper through the bottom of which the said chute passes, substantially as described, for the purpose specified.

5. The combination, in a seed-drill, of the hopper for the fertilizer having longitudinal side slots, *k*, on a plane with its bottom, with feed-arms *r*, passing into and through said slots and having a reciprocating movement across and upon the bottom of the hopper, and means for producing such movement, whereby to effect the feed of the fertilizer from both sides of the hopper, substantially as described.

6. The hopper for the fertilizer adapted to have an endwise movement, and provided with longitudinal side slots, *k*, on a plane with its bottom, in combination with feed-arms *r*, adapted to operate within and through said slots and across the hopper-bottom, and means for operating both the hopper and the said feed-arms, substantially as described, for the purpose specified.

7. In combination, the hopper for the fertilizer adapted to have an endwise movement, and having longitudinal side slots, *k*, on a plane with its bottom, feed-arms *r*, adapted to operate within said slots upon and across the hopper-bottom, bell-crank levers pivoted to the frame, and serpentine cams *p*, for operating said levers, the said feed-arms being carried by a bar pivoted to said levers and operated, in the manner and for the purpose specified, by suitable drill drive-gear connections.

8. The hopper for the fertilizer adapted to have an endwise movement, having longitudinal side slots, *k*, and side strips, *s*, adapted for vertical adjustment in relation to said slots, the scraper G upon the rear side of the hopper, and the feed-arms *r*, adapted to operate within said slots upon and across the hopper-bottom and beneath the said regulating-strips *s*, and the scraper, all constructed and combined with the seed-drill tubes and with the chutes *b*, substantially as described, for the purpose specified.

9. The combination, with the drill-tubes of a seed-planter, of the hopper for the fertilizer, the guides *l* for said hopper, the serpentine cam *m*, for operating said hopper, the feed-arms *r*, operating through slots in the sides of the hopper, the bell-crank levers pivoted to the carrying-bar of said feed-arms, the serpentine cams *p*, and the shaft *n*, operated by the drive-gear of the drill, the said serpentine cams being arranged in relation to each other to operate simultaneously the hopper and the feed-arms to deliver the fertilizer from both sides of the hopper.

10. The combination, substantially as hereinbefore set forth, in a seed-drill, of the drill-tubes thereof with a supplemental drill-point or cutting-edge adapted for attachment to said drill-tube, and operating in front thereof, for the purpose specified.

11. The supplemental drill device, consisting of an arm, *c*, having a yoke and a dip, *c'*, whereby it is secured to a drill-tube, and a narrow point or cutting-edge, *u*, carried by said arm in front of and below said drill-tube, substantially as described, for the purpose specified.

12. The combination, substantially hereinbefore set forth, of a seed-conducting tube with a thin narrow cutting blade or point, *u*, and a covering device, substantially as described, and adapted to travel in the slit made by said narrow cutting-blade, for the purpose specified.

13. The combination, substantially hereinbefore set forth, of a seed-conducting tube and an attachable thin or narrow cutting blade or point, *u*, with an attachable covering-blade, *w*, constructed substantially as described, and adapted to travel in the slit or narrow opening made by said cutting-blade, for the purpose specified.

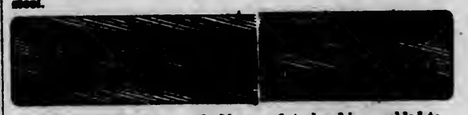
14. The combination of the seed-conductor with the arm *c*, extending in front thereof, the clip *c'*, the narrow drill-forming point *u*, a clamp, c^2, therefor, and a covering dish-shaped wheel, *w*, substantially as described, for the purpose specified.

15. The combination, in a seed-drill, of a seed-conductor, a thin or narrow cutting-blade or point, *u*, and a covering-blade, *w*, as described, with the seed-hopper C, a feed device for feeding the seed continuously, and a chute, *c*, substantially as and for the purpose specified.

16. In combination in a seed-drill and fertilizer, the hopper C, its feed device, the hopper B, its feed device, means, substantially as described, for connecting and operating the feeding devices of said hoppers, means for rendering the feed devices of the hopper A non-operative, a drill-forming point or cutting-blade adapted for attachment to the drill-tube, and a covering device adapted to travel in the cut made by the drill-forming point, substantially as described.

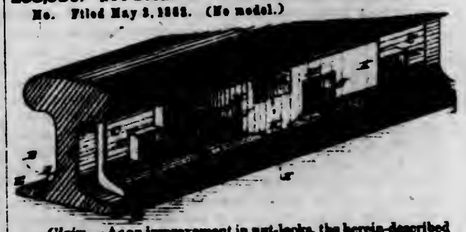
258,929. JAIL, PRISON, AND GRATING BAR. GEO. KINSEY, Wyoming, Ohio. Filed Mar. 25, 1882. (No model.)

Brief.—The inner layers of iron are provided with cores of steel.



Claim.—A bar composed of layers of steel and iron welded together, the inner layer or layers of iron being provided with a core or cores of steel, substantially as and for the purpose described.

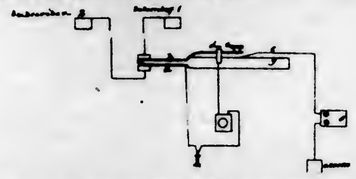
258,930. NUT-LOCK. DAVID M. KIRKPATRICK, Kansas City, Mo. Filed May 3, 1882. (No model.)



Claim.—As an improvement in nut-locks, the herein-described combination and arrangement of the bolts F, having nuts H, the fish-plate C, having flange D, provided with recess L, the flexible metal strip M, and the lock-plate I, having tongue K and recesses J, substantially as and for the purpose set forth.

258,931. PLUG FOR ELECTRICAL SWITCH-BOARDS. HARRY W. LELAND, South Framingham, assignor to himself and Joel C. Clark, Framingham, Mass. Filed Jan. 3, 1882. (No model.)

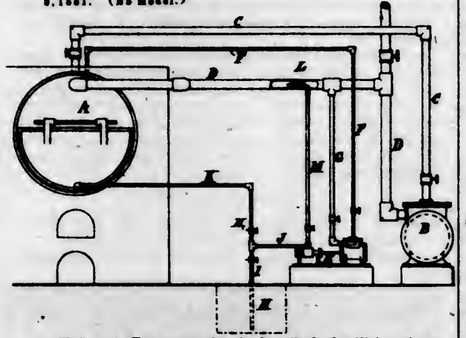
Brief.—The plug is provided with one or more keys and circuit-connections, whereby subscribers may be called by the same hand that is used for the insertion of the plug.



Claim.—1. A switch-board plug of the class described, supporting a back contact, a terminal or anvil, and a spring-key, said parts being connected respectively with the operator's telephone, with a generator or battery, and with one of the metal plates of the plug, whereby the operator is enabled to manipulate the key and make and break the usual connections with the same hand that holds the plug, as set forth.

2. A switch-board plug of the class described, supporting one or more back contacts, one or more terminals or anvils, and one or more spring-keys, said parts being connected respectively with the operator's telephone, a battery or generator, and one or both of the metal plates of the plug, whereby the operator is enabled to make and break the usual connections with the same hand that holds the plug, and when two back contacts, spring-keys, and terminals are provided the operator is enabled to connect both of the metal plates of the plug with a generator or battery, and thereby send currents to both parts of a line-circuit into which the plug is inserted, as set forth.

258,932. UTILIZING EXHAUST-STEAM. HARVEY T. LITCHFIELD, Hull, and DAVID RUSSHAW, Cohasset, Mass. Filed Aug. 8, 1881. (No model.)



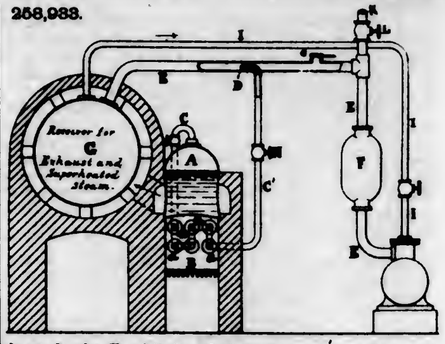
Claim.—1. The process herein described of utilizing the exhaust of an engine, consisting of first drawing or pumping water from a working-boiler, then forcing it under greater pressure than the boiler-pressure into the exhaust-pipe of an engine, whereby the water and the exhaust of the engine is forced into the same boiler from which they were taken, substantially as described.

2. The combination, in an apparatus for utilizing the exhaust of engines, the boiler A, cylinder B, pump E, with their supply and exhaust pipes, the tank H, and pipes I, J, M, and D, whereby water may be fed to the boiler for leakage and supply, in the manner set forth and described.

258,933. UTILIZING WASTE STEAM. HARVEY T. LITCHFIELD, Hull, and DAVID RUSSHAW, Cohasset, Mass. Filed July 10, 1881. (No model.)

Claim.—1. The process herein described of utilizing exhaust-steam by means of a boiler, superheater, and a receiver or reservoir and suitable connections, which consists in first generating steam, then superheating it and using it to draw in air, then heating the mixture to working-pressure and utilizing it as motive power, then forcing the exhaust of said mixture into the receiver and revivifying it, whereby it can be repeatedly used, in the manner set forth.

2. The combination, in an apparatus for utilizing the exhaust of an engine, of the generator, superheater, and reservoir, the exhaust-chamber F and its branch pipes, air-valve *e*, and the superheated-steam nozzle D, all arranged to operate together, for the purpose described.

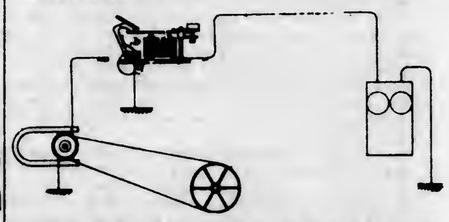


3. The combination, in an apparatus for generating motive power and the utilization of the same, of the generator, superheater, and reservoir-pipe I, exhaust-chamber F and its branches E, air-valve *e*, and superheated-steam pipe C' D, constructed and arranged in the manner shown and described.

4. In an apparatus for generating motive power, the boiler A, superheater *a a*, and the reservoir G, arranged concentrically within a flue, by which the waste products of combustion from the furnace are utilized in maintaining the temperature of its contents, and also the means for connecting one with the other, in the manner shown and described.

258,934. ELECTRICAL SIGNALING-CIRCUIT. THOMAS D. LOCKWOOD, Malden, Mass. Filed Apr. 12, 1882. (No model.)

Brief.—Subscribers' lines normally grounded through annunciator. When a signal is sent to central office by a subscriber the annunciator-drop in falling breaks the ground and connects the line to another ground branch, including a generator, thereby automatically sending a return-signal to notify the subscriber that his call has been received.



Claim.—1. A main line, an annunciator, and a branch circuit to earth direct, combined with a magneto-electric machine or other generator of electricity in a normally-open branch circuit, and an electric switch automatically operated by the annunciator and adapted to change the circuit of the main line from the earth branch circuit to the normally-open generator branch circuit.

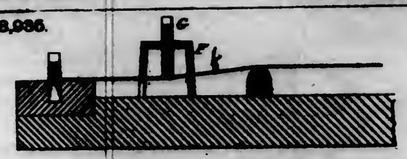
2. The combination, substantially as hereinbefore described, of a series of main-line circuits, each provided with an annunciator, and branch circuit to earth direct, with a normally-open branch circuit, including a magneto-electric generator or other source of electricity common to the series of main lines, and means, substantially as indicated, whereby one or more of the main lines may be connected to the said generator for the purpose of transmitting a return-signal over the main line or lines so connected.

3. The electric generator, the anvil forming a support for the annunciator-drops, and a conducting-wire connecting one with the other, combined with the electro-mechanical switch or circuit-changer, and a main-line annunciator, as described.

258,935. TUNING ATTACHMENT FOR PIANO-FORTES. JOHN H. LOWRY, Chicago, Ill., assignor of one-half to John A. Newman, same place. Filed Mar. 7, 1882. (No model.)

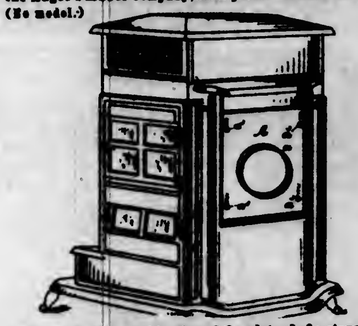
Claim.—1. In piano-fortes, the combination, with the bed thereof, of a tuning attachment which consists of a frame extended across the strings and which is provided with threaded perforations and with a series of adjusting-screws that bear directly upon the strings beneath, substantially as described.

258,936.



2. The combination, with the bed or frame of a piano-forte, of the arched frame E, provided with adjusting-screws G and guide-slots *f*, and extending across the strings, substantially as described.

258,936. STOVE. JOEL HAGER, Chelsea, Mass., assignor to the Hager Furnace Company, same place. Filed Mar. 27, 1882. (No model.)



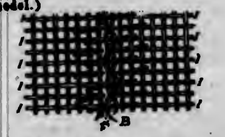
Claim.—1. The combination of the plate a^2 of a stove, having the long aperture *a* opening into one of the direct flues of the stove, with the plate A, having a pipe collar or ring, *c*, and means for securing said plate to the stove and for adjusting it upon said plate, all substantially as and for the purposes described.

2. The combination of the back plate, a^2, of a stove, having the slots a^4 and the plate A, carrying the pipe collar or support *c* and the bolts a^3, all substantially as and for the purposes described.

3. The combination of the back plate, a^2, of a stove, recessed as described, and having the slots a^4 and aperture a^5, with the plate A, adapted to fit within the recess and carrying the pipe collar or support *c* and the bolts a^3, all substantially as and for the purposes described.

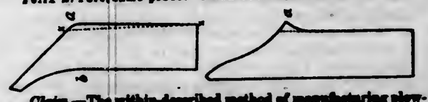
4. The reversible plate A, having the pipe collar or support *c* nearer one edge thereof than the other, all substantially as and for the purposes described.

258,937. SEAM FOR WIRE-CLOTH FOR PAPER MANUFACTURE. MARY A. MARTIN, Springfield, Mass. Filed Apr. 14, 1882. (No model.)



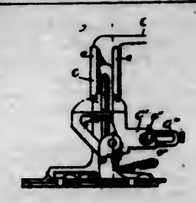
Claim.—In a seam for wire-cloth for paper manufacture, the combination of the unraveled and backward-bent strands, and the seam-wire B, carried half-way around the edge-wires F F, and over and behind the knuckle of each alternate opposite wire I, as and for the purpose set forth.

258,938. MANUFACTURE OF PLOWSHARES. LEWIS MCKINNISS, Decatur, Ill., assignor of one-half to Joseph S. Tait and Felix B. Tait, same place. Filed Oct. 15, 1881. (No model.)



Claim.—The within-described method of manufacturing plowshares, consisting in making the blank with a bold projection, *a*, at a point opposite the concave *b*, and then forging down said projection, thereby widening and strengthening the share in the concave *b*, substantially as set forth.

258,939. RUFFLING ATTACHMENT FOR SEWING-MACHINES. ALEXANDER MCMULLEN, Chicago, Ill. Filed Apr. 3, 1882. (No model.)



Claim.—1. In a ruffler attachment, the horizontal carrier of the ruffler-blade provided with carriage-rollers b''', as and for the purpose specified.

2. In a ruffler attachment, a vertical slide, C, having an inclined adjustable slot or way and arms C', substantially of the construction shown.

3. In a ruffler attachment, a notched sliding bar, C''', having the part *c*, in combination with dog c', as and for the purpose specified.

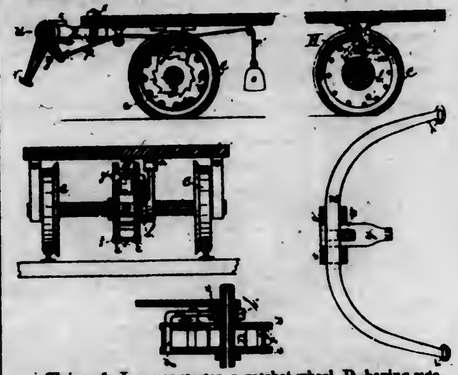
4. In a ruffler attachment, a vertical slide, C, operated by the needle-bar, and provided with an inclined slot or way, in combination with the horizontal carrier of the ruffler-blade, having an arm and pin connecting with such inclined way or slot, substantially as and for the purpose specified.

258,940. CIGAR-MOLD. FREDERICK C. HILLER and HENRY C. PETERS, New York, N. Y. Filed Dec. 6, 1881. (No model.)



Claim.—The combination, in a cigar-mold, of the lid having at its extreme end an outer bearing and turning point resting on the lower part of the mold, extended beyond the end cup or matrix a sufficient distance to enable the plunger to be moved out of the matrix in a plane substantially parallel with the sides of the matrix, and without subjecting the edges of the plunger or the side walls of the matrix to strain, with the gain or rabbet at or near the opposite end of the mold, substantially as described.

258,941. CAR-STARTER. DOMINGO MENDOZA, Jr., and WILLIAM B. FLEMING, New Orleans, La. Filed Mar. 21, 1882. (No model.)



Claim.—1. In a car-starter, a ratchet-wheel, D, having axle bosses on which are fitted levers *e d'*, connected by means of bolts *f*, around which the rope *p p'* is wound, as described, and for the purpose set forth.

2. In a car-starter, the annular ring or slide *i*, fitted on a stationary bearing, and provided with a slot, *s*, in which operates the end of a pin, *i'*, said pin being connected with the pawl H, and acting in guides *h* of the lever *d* to throw the pawl in or out of gear, as described, and for the purpose set forth.

3. In combination with a car-starter composed of a ratchet-wheel, D, operating-levers *e d'*, and pawl H, a draw-bend, E, provided with straps *t t'*, forming bearings for a single-tree, U, having a stud, *w*, for operating a lever, *y*, connected with the starter, as described, and for the purpose set forth.

258,942. CARBON FOR INCANDESCENT LAMPS. JOSEPH V. NICHOLS, Brooklyn, assignor to the United States Electric Lighting Company, New York, N.Y. Filed Feb. 1[illegible]1882. (No model.)



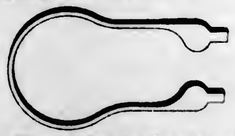
Claim.—1. A carbon conductor for incandescent lamps, having its clamping ends composed in part of metal mechanically incorporated therewith, as described.

2. A carbon conductor for incandescent lamps, re-enforced at its ends by a film or strip of metal mechanically incorporated therewith, substantially as described.

3. As a new article of manufacture, a conductor for incandescent lamps, composed of a single or compound strip of carbonized material, having enlarged clamping ends, re-enforced by a film or strip of metal mechanically incorporated therewith, substantially as described.

258,943. INCANDESCENT LAMP. JOSEPH V. NICHOLS, Brooklyn, assignor to the United States Electric Lighting Company, New York, N.Y. Filed Sept. 7, 1881. (No model.)

Brief.—The object is to render the ends of the filament much better conductors than the body thereof.

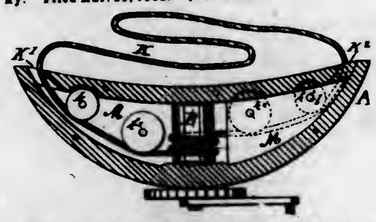


Claim.—1. The method of manufacturing carbon conductors for incandescent lamps which consists in re-enforcing a sheet of fibrous material by a strip or strips of similar material united thereto, then cutting or punching partly from the main and partly from the re-enforced portions thereof strips of the desired shape, and carbonizing such strips, substantially as set forth.

2. The method of manufacturing carbon conductors for incandescent lamps which consists in forming a compound sheet of fibrous material, re-enforced by a strip or strips of a similar material united thereto, and consolidating the same by heat and pressure, as described, then cutting or punching partly from the main and partly from the re-enforced portions thereof strips of the desired shape, and carbonizing such strips, substantially as described.

3. The conductor for incandescent electric lamps, composed of one or several superposed layers or strips of fibrous material, with a re-enforcing strip or strips at the ends, united together and carbonized, substantially as described.

258,944. BARREL-TRUSS. JAMES M. O'BRYAN, Paynesville, Ky. Filed Mar. 20, 1882. (No model.)



Claim.—1. The portable crescent-shaped case A, provided with the central shaft, B, the ratchet and pawl, and the rope K, wound in opposite directions on the shaft, the whole being combined, arranged, and operating substantially as shown and described.

2. In a barrel-truss, the combination of the crescent-shaped case A, provided with the partitions M, shaft B, rope K, and pulleys h h' h^2 h^3, located in pairs on opposite sides of the partitions, substantially as shown and described.

258,945. CHATELAINE. THOMAS W. RICHARDS, Jersey City, N.J. Filed Apr. 17, 1882. (No model.)

Brief.—The frame carries and protects a memorandum-book and pencil, to which the chatelaine can be attached.

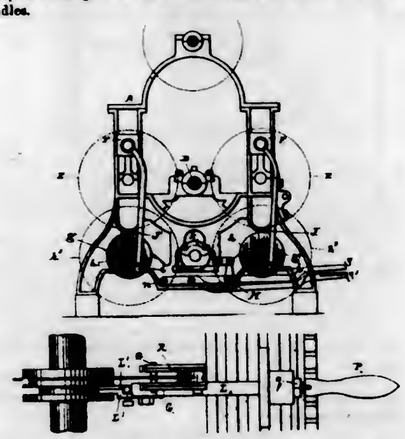
Claim.—1. As a new article of jewelry and ornamentation, a chatelaine consisting essentially of an open frame adapted to receive a memorandum-book, whereby convenient means is afforded for carrying such book and protecting its edges, substantially as described.

2. In a chatelaine, the combination of an open frame, a pencil-holder on such frame, provided with a spring arranged to retain one end of a pencil, and a pencil-point support, substantially as set forth.



258,946. EDGER. JAMES A. REDD, San José, Cal. Filed Jan. 4, 1882. (No model.)

Brief.—The boxes of the feed-rolls are lifted by connecting-rods from wrist-pins or disks g, one or the other of which may be thrown into gear with a friction-driver. The setting-levers are clamped in the grooved lever-bar by means of screw-nuts on the handles.



Claim.—1. In a gang-edger, the combination, with the upper feed-rolls journaled in sliding boxes F, of the shafts A, with their friction-wheels, the disks g j g, having wrist-pins i, the connection-rods J J, the shaft with friction-pulley k, and mechanism, substantially as herein described, for shifting or laterally throwing one end of said shafts toward either of the said shafts G G, for the purposes set forth.

2. The combination, with the shifting box m, of the rock-shaft N, fixed arm, and link r, the lever S, in said rock-shaft, and the secondary lever, S', pivoted at t to the frame, and having the inner end of the lever S attached to it at a point in front of its fulcrum, substantially as described.

3. The combination of the slotted bar T with the end of the setting-lever L, having the T-slot, the handle with a threaded shank, and the nuts q q', substantially as described.

4. In combination with the setting-lever L, the detachable nose-piece L', formed of two plates, which are provided with a spreading or setting means whereby they are moved from each other and held in such position, substantially as and for the purpose set forth.

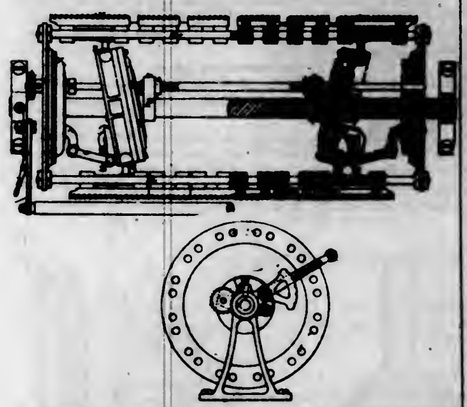
5. The detachable nose-piece for the ends of the setting-levers in edgers, consisting of the two separable plates L' and the separating-screws 2 3 4, by which the upper edges of the plates can be spread and held apart to a greater extent than the lower portion thereof, in combination with grooved saw-collars, substantially as described, for the purposes set forth.

6. In combination with the grooved saw-collars and the separable plates L', forming the nose-piece, as described, the clamp W and lubricator material, applied substantially as described, for the purpose specified.

7. In combination with the upright end of the setting-lever L, the sawdust-spout R, having the adjustable saw-stops G G, substantially as described.

258,947. CLOTH-STRETCHING MACHINE. FREDERICK P. UPHAM, GEORGE A. SANDBERG, and HENRY A. SHELDEN, Pawtucket, assignors of one-half to John E. Goldsworthy, Central Falls, R.I. Filed Jan. 6, 1879.

Brief.—The stationary cam-disks and the guide-wheels inclosing the same are adjusted to vary their obliquity and adjust the stretch of the cloth upon fixed fulcra located substantially at the outer ends of radii of the guide-wheels, whereby the angle of the said disks and wheels may be varied without changing the position of their inner sides. The cam-disks are pivoted upon sleeves splined to the supporting-shaft, and are simultaneously adjusted by means of a right and left hand screw-shaft passing through the ends of the cylinder. The interior of each cam-disk is made as an oil-reservoir, which communicates with the surrounding guide-wheel through openings.



Claim.—1. In combination, substantially as specified, the adjustable cam-disks and guide-wheels, devices for adjustment substantially as described, and the fixed fulcra for said disks, located substantially at the end of a radius of the guide-wheels.

2. The combination of the cylinder provided with parallel rods, the series of linked stretcher-blocks, the guide-wheels, the cam-disks chambered out to serve as reservoirs for oil, fixed fulcra for said disks situated near their peripheries, and means of adjustment, substantially as described.

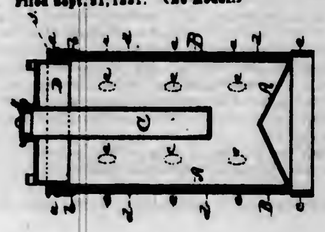
3. In combination, substantially as specified, the adjustable cam-disks and guide-wheels, the central shaft, the sleeves splined thereto, and the right and left hand screw-threaded rod for simultaneously changing said cam-disks and guide-wheels.

4. The combination, substantially as specified, of the cylinder provided with parallel rods, the series of linked stretcher-blocks, the adjustable cam-disks, and the guide-wheels having fixed fulcra near their peripheries.

5. The combination of the adjustable cam-disk and guide-wheel, the cylinder-head, the jointed arm, one end of which is fixed to the said cylinder-head and the other end to the said cam-disk, and suitable means of adjustment, substantially as specified.

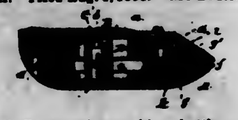
6. The combination, substantially as specified, of the adjustable cam-disks and guide-wheels, sleeves splined to the central shaft and having projections provided with female screws, and the adjusting-rod provided with a right and left hand screw adapted to the female screws in said projections to simultaneously adjust the cam-disks and guide-wheels to their proper planes of divergence while the machine is at rest or in motion.

258,948. MILK-CAN. CHARLES S. SHEPARD, Cherry Creek, N.Y. Filed Sept. 21, 1881. (No model.)



Claim.—The milk can and cooler described, consisting of an inner can, A, provided with the shoulder a, cover D, and cooling-tube C, and the outer can, B, provided with the bead c, and extending below the base of the can A, the whole being constructed of metal and having an air-chamber, f, between the can A and case B, substantially as set forth.

258,949. SEWING-MACHINE SHUTTLE. JOHN BIGWALT, Jr., Chicago, Ill. Filed Aug. 2, 1881. (No model.)



Claim.—1. In a sewing-machine shuttle, a spool or bobbin having its upper flange or end provided with an exterior face of a conical shape to form a bearing-point, b, for reducing the frictional contact between the surfaces of the flange or end and the cover and giving the spool or bobbin a freer movement, substantially as specified.

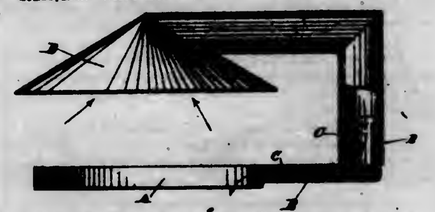
2. In a sewing-machine shuttle, a post or pivot, E, having a conical-shaped bearing-point, a, in combination with a spool or bobbin, C, having a conical-shaped flange or end to form a bearing-point, b, and a corresponding bearing-surface for giving the spool or bobbin a small bearing in either direction, substantially as and for the purposes specified.

3. The shuttle A, provided with a post or pivot, E, having a conical-shaped bearing-point, a, in combination with a cover, B, and spool or bobbin C, having its flange or end of a conical exterior shape to form a bearing-point in holding the spool or bobbin in position and giving it perfect freedom of movement in revolving, substantially as and for the purposes specified.

4. The cover B, the post or pivot E, having a conical-shaped bearing-point, a, and spring c, in combination with a spool or bobbin, C, having a bearing-point, b, on its flange or end for keeping the thread under proper tension and preventing it from coming off too rapidly or becoming slack, substantially as specified.

5. The cover B, the post or pivot having a conical-shaped bearing-point, a, and spool or bobbin C, having a bearing-point, b, on its flange or end, and spring c, in combination with the shuttle A, tension-disks g g', and devices for controlling the tension-disks, substantially as and for the purposes specified.

258,950. DEVICE FOR CARRYING OFF STEAM AND ODORS FROM COOKING-VESSELS. DEXTER M. SMALL, East Providence, R.I. Filed Nov. 16, 1881. (No model.)



Claim.—The rim A, with the arm B B, having a passage, C C, therein, in combination with the cover D and a pipe or tube connecting them, substantially as described.

258,951. EXCAVATING AND DREDGING MACHINE. GEORGE DOUTHIT, Boston, Mass. Filed Feb. 13, 1882. (No model.)

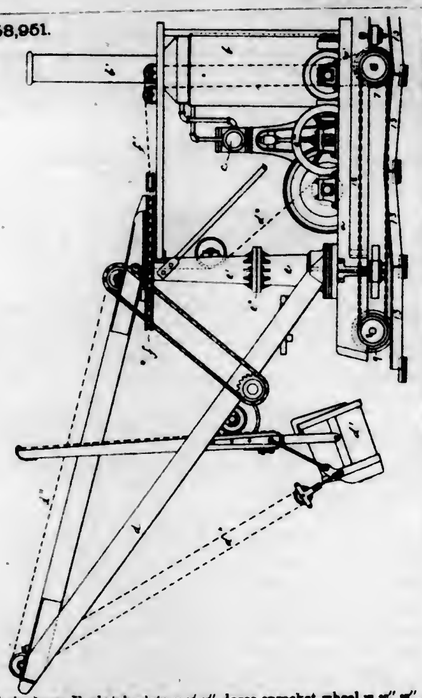
Claim.—1. In an excavating or dredging machine, the hollow metal crane-post, made in two parts, as described—viz., an upper detachable part, d', and a lower stationary part, c—bolted together at c'', as and for the purpose set forth.

2. In an excavating or dredging machine, the combination of the trunk-rolls 6 6 and trunks 7 7 9 9 with chain-wheels 10 10 11 11 and the endless connecting-chains 12 12, the chain-pulley w''' on shaft 6, and its endless chain w', actuated by drum-shaft W' and its chain-pulley w, as and for the purpose set forth.

3. In an excavating or dredging machine, the hoisting mechanism, as described, consisting of shaft k', loose gear-wheel k, annular flange k''', friction-shoes k k, guide L l l, levers l''' l''', sleeve l', rods l l, bab m, drum D, spindle m''', and connecting mechanism to the trunnion p', as set forth.

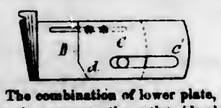
4. In an excavating or dredging machine, the herein-described swinging and propelling mechanism, consisting of shaft W', loose

258,951.



chain-drum F, clutch-plate *y y' y''*, loose sprocket-wheel *w w' w''*, bevel-gear W, shaft *t*, loose bevel-gears U V U' V', adjustable cones *u v*, and connecting mechanism for its operation, as and for the purpose set forth.

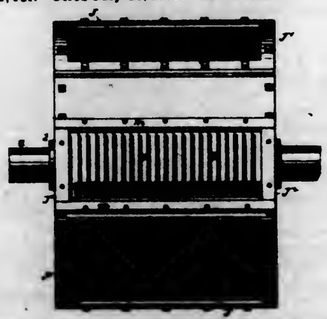
258,952. HEMMER FOR SEWING-MACHINES. EDWD. STERN, Boston, Mass. Filed Mar. 18, 1882. (No model.)



Claim.—1. The combination of lower plate, C, with plate D, the former having its corner on the outlet side obliquely cut away at *d*, the remainder of its forward edge being approximately at right angles to its sides.

2. In combination, the plates C D, adapted to be secured in place by a screw passing through them, and with the lower plate, C, formed with a beveled edge, *b*, and the oblique corner *d*, essentially as explained.

258,953. ROTARY PULVERISER. JAMES O. STEWART, Alameda, Cal. Filed July 20, 1881. (No model.)



Claim.—1. In a rotary barrel pulveriser, the hollow trunnion C, provided with flanges *d e*, in combination with the sections A A, which form the end of the barrel, combined and arranged substantially as described.

2. A rotary barrel pulveriser the inner surface of which is composed of alternate binding and grinding plates H, arranged transversely across the barrel, and the interposed screen-protecting bars I, arranged in line with the travel of the balls and ore, substantially as described.

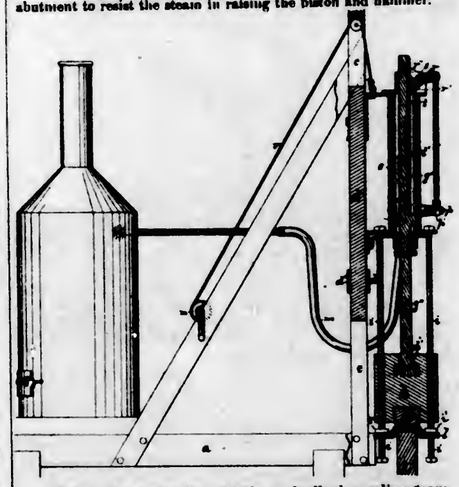
3. In a rotary pulveriser, the grinding and binding plates H, cast or formed with a groove, *i*, in each edge, in combination with the connecting screen-bars I, substantially as described.

4. In a rotary pulveriser, the grinding and binding plates H, spaced by transverse grate or screen bars I, and having the outward projecting flanges *n* at each edge, in combination with the screen J, secured to the outer edges of the flanges, substantially as and for the purpose described.

5. In a rotary pulveriser, the screen-bars I, each of which has a projecting shoulder, *s*, at each end on one side, and an opening or recess, *t*, in its opposite edge, near one end, substantially as and for the purpose described

258,954. PILE-DRIVER. STEPHEN H. TARBELL and GEORGE SOUTHER, Boston, Mass. Filed Dec. 31, 1880. Renewed Jan. 9, 1882. (No model.)

Brief.—The steam-cylinder and hammer descend gradually, the hammer striking a shoe which rests loosely upon the top of the pile, the shoe and cylinder being so connected by rods with heads and collars upon them that the shoe and pile become the abutment to resist the steam in raising the piston and hammer.



Claim.—In combination with the gradually-descending steam-cylinder *e* and its hammer A, the shoe *l*, resting loosely on the top of the pile, as and for the purpose set forth and described.

258,955. MECHANICAL MUSICAL INSTRUMENT. HENRY S. TAYLOR, New York, assignor of one-half to George H. Chinnock, Brooklyn, N. Y. Filed July 18, 1880. (No model.)

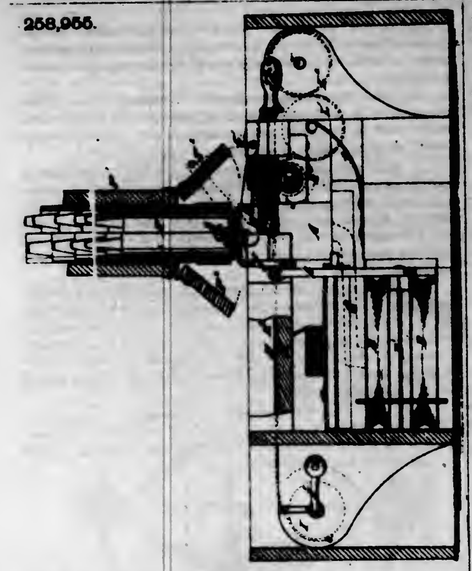
Claim.—1. The combination of the wind-chest A, the movable sound-board D, constructed with ducts or passages *a*, the springs *c*, and the cam-levers G, all substantially as specified.

2. The combination of the wind-chest A, the vertically-movable sound-board D, constructed with air ducts or passages *a*, springs for keeping said sound-board down, the pipes F, the inclosing-case F', and the swells F² at opposite sides of said case, substantially as specified.

3. The combination, in a mechanical musical instrument adapted to be operated by a perforated music-sheet, of a wind-chest and a vertically-movable sound-board arranged above said wind-chest, between which the music-sheet passes, and the latter of which is constructed with a series of air ducts or passages, and a top plate, channeled or recessed at *d*, so as to form guides for the music-sheet and for the vertically-movable sound-board, substantially as specified.

4. The combination, in a mechanical musical instrument adapted to be operated by a perforated music-sheet, of feed-rollers, between which the music-sheet passes, one of which is movable transversely, springs for holding said movable roller in contact

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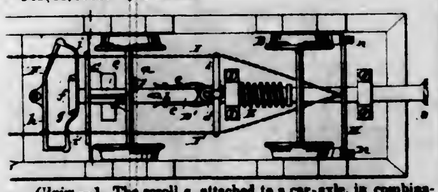
with said sheet, and devices acting directly upon said springs for raising them and holding them in an elevated position to permit of the roller being freely raised to allow of the insertion of the music-sheet under it, substantially as specified.

5. The combination of feed-rollers J K, a take-up roller, L, wheels K² L' L², connecting said take-up roller with the feed-roller J, the worm-wheel J' and worm or screw J³, the bellows B B', and the crank J⁴, and rod S, for operating said bellows from the worm or screw J³, all substantially as specified.

6. The combination, in a mechanical musical instrument adapted to be operated by a perforated music-sheet, of a stationary tube or hollow cylinder having a longitudinal slot or slit in its periphery, and a pair of feed-rollers arranged parallel with said tube or cylinder, between which the music-sheet passes, and by which it is fed through the said slot into said tube or cylinder and coiled therein, substantially as specified.

7. In a mechanical musical instrument, the tube or hollow cylinder M, open at one or both ends, and constructed with the longitudinal slot or slit *g*, and the notch *h* in its end, substantially as and for the purpose specified.

258,956. CAR-BRAKE. SAMUEL H. TERRY, Guthrie, Mo. Filed Feb. 27, 1882. (No model.)



Claim.—1. The scroll *a*, attached to a car-axle, in combination with the hinged section or prolongation D' of the draw-bar, having the projection or pin *b*, substantially as specified.

2. The pivoted lever or frame F, composed of the bars *h i*, in combination with the cross-head *f* of the bar D', substantially as described.

3. The combination of the bar D', having the flange or projection *e*, with the guide-bridge G and the head *f*, with the pivoted lever or frame F, substantially as set forth.

4. The combination of the pivoted sliding bar D', having the projection or pin *b* and head *f*, with the pivoted frame F and brake-operating chain I, substantially as specified.

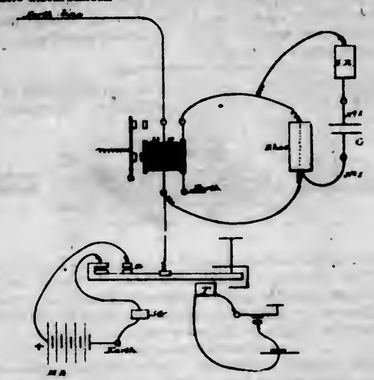
5. The side springs *c*, in combination with a sliding draw-bar, D, having a pivoted section, D', for setting the pivoted section when moved out of line, substantially as described.

6. The combination of the sliding draw-bar D, spring E, pivoted section D', pin *b*, and scroll *a* with the pivoted lever or frame F and the brake-operating chain I, substantially as set forth.

7. The pivoted frame F, having the bar *i*, with its head or stop *f'*, in combination with the head *f* of the bar D', and the pin *g*, whereby the brake can be operated by pulling on the draw-bar, substantially as specified.

258,957. DUPLEX TELEGRAPH. BENJAMIN THOMPSON and CHARLES SELDEN, Toledo, Ohio. Filed July 10, 1879.

Brief.—A condenser is placed in the artificial line between the transmitter and the receiving-instrument, and so arranged as to utilize the charge and discharge of both faces in overcoming static disturbances.



Claim.—1. The combination, with the equating-circuit in a multiple telegraph, of an artificial resistance placed in said equating-circuit between the key and the equating-coils, and a condenser connected in a loop of the equating-circuit, one end of said loop being connected to said circuit at a point between the resistance and the main-line circuits and the other end at a point between the resistance and the equating-coils, substantially as and for the purpose described.

2. The combination, with the equating-circuit of the condenser C, connected to the same at a point between the key and the equating-coils, and the rheostats Rheo. and S R, all arranged substantially in the manner and for the purposes set forth.

258,958. PNEUMATIC COUNTER-BALANCE FOR PUMP-RODS OF DEEP-WELL PUMPS. WILLIAM F. TOOTHAKER, San Francisco, Cal. Filed Jan. 31, 1882. (No model.)



Claim.—1. In combination with the pump-rod of a deep-well pump, the piston D, arranged and adapted to work in a cylinder in which are provided air inlet and outlet apertures controlled by valves or cocks, substantially as hereinbefore described, whereby air is taken in behind the said piston during its stroke in one direction and is expelled or caused to escape through contracted or smaller openings on the return-stroke and from in front of the piston, substantially as and for the purpose set forth.

2. The cylinder E, adapted to receive the piston or head D of a rod to be counterbalanced, having the apertures a in the side, and the apertures L J, communicating with the ends of the cylinder-space, substantially as described, the said apertures being provided with or controlled by cocks or valves, for the purposes set forth.

3. In a direct-acting steam-pump for bored and other deep wells, the combination, with the steam-cylinder having its piston-rod extended beyond and working through the top of its cylinder, of the piston D, secured to the end of said piston-rod, the cylinder in which said piston is adapted to work, and the inlet and outlet apertures in said cylinder, provided with cocks or valves, substantially as hereinbefore described, whereby the movements of the

main or steam pistons are caused to produce an alternate induction and expulsion of atmospheric air into and from the said cylinder in front of its piston, the amount or velocity of which entering and escaping air is controllable for the purpose set forth.

258,959. DOUBLE RAZOR-STROP. JOS. R. TORREY, Worcester, Mass. Filed Mar. 18, 1882. (No model.)



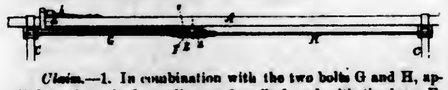
Claim.—The combination of a cushioned casing or pocket, A, having one or more cushioned stropping parts, B, upon the same, with removable stropping part F, provided with suitable stropping-surfaces, and contained within said cushioned casing A, substantially as shown and described.

258,960. DIE-STOCK. BENJAMIN L. WALKER, Sing Sing, N.Y., assignor to Walker, Cady & Co., same place. Filed Jan. 15, 1881. (No model.)



Claim.—The combination of the stock piece or body A, the dies C C', the set-screw F, for adjusting the die C, the rigid handle B, the pivoted handle B', provided with a cam-face, *g*, and a push-pin or plunger, *e*, through which said cam-face acts upon the die C', substantially as and for the purpose specified.

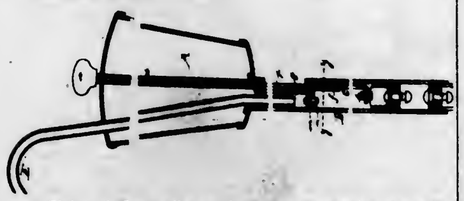
258,961. HORSE-DETACHER. JAMES T. WALKER, Falmouth, Mass. Filed Dec. 23, 1881. (No model.)



Claim.—1. In combination with the two bolts G and H, applied to the axle draw-clips, as described, and with the lever E, adapted as set forth, the catch-hook *a*, latch *b*, and spring F, the said lever being provided with the stopping-ear *c*, and all being arranged and applied to the axle substantially in manner and to operate as explained.

2. The lever E, pivoted to the front side of the axle, and provided with the catch-hook *a*, to rest on and extend across the axle when said lever is down, in combination with the bolts G H, arranged on the front side of the axle, and also with the latch *b*, arranged on the rear side of the axle, the said catch-hook serving not only as a stop to arrest the downward motion of the lever, but to act with the latch in holding down the lever, as set forth.

258,962. OIL-PUMP. ALBERT J. WHITE, Chicago, Ill. Filed Mar. 11, 1882. (No model.)



Claim.—1. In an oil-pump having an air-chamber above the pump-barrel and a discharge-nozzle extending above such air-chamber, an opening below such air-chamber that communicates with the inside of the tube or tubes for guiding the plunger-rod, and which furnishes an outlet for any oil forced into or through such tube, all substantially in the manner set forth.

2. In oil-pumps, the air-chamber A, having central tube, *c*, for guiding the plunger-rod C, and discharge-nozzle E, in combination with the pump-barrel B, eccentrically connected with such air-chamber A, substantially as and for the purpose set forth.

3. In oil-pumps, the air-chamber A, having central tube, *c*, for guiding the plunger-rod C, such tube *c* extending through both ends of the air-chamber and being connected therein by air-tight joints, substantially as and for the purpose set forth.

4. In oil-pumps, the air-chamber A, having central tube, *c*, for guiding the plunger-rod C, and the pump-barrel B, eccentrically connected with each air-chamber A, in combination with the discharge-nozzle E, extending through the air-chamber into each pump-barrel B, all substantially as and for the purpose described and shown.

5. In oil-pumps, the air-chamber A, having tube *c*, and the pump-barrel B, having notch *p*, tube *f*, and partition *g*, in combination with the pump-rod passing through and guided in tubes *c* and *f*, all substantially as and for the purpose set forth.

6. In oil-pumps, the air-chamber A, having central tube, *c*, and the pump-barrel B, connected eccentrically with each air-chamber A, and having notch *p*, tube *f*, and partition *g*, in combination with the plunger-rod C, passed through the tubes *c* and *f*, and with the discharge-nozzle E, projected through the air-chamber A and into the pump-barrel B, all substantially as and for the purpose set forth.

7. In oil-pumps, the air-chamber A, having central tube, *c*, and the pump-barrel B, connected eccentrically with each air-chamber A, and having notch *p*, tube *f*, partition *g*, and check-valve *n*, in combination with plunger-rod C, passed through the tubes *c* and *f*, and with the discharge-nozzle E, projected through the air-chamber A and into the pump-barrel B, all substantially as and for the purpose set forth.

258,963. SAFETY-LAMP. LAVINA A. WESTLAND, Providence, R.I., Administratrix of Charles S. Westland, deceased. Filed Apr. 24, 1882. (No model.)

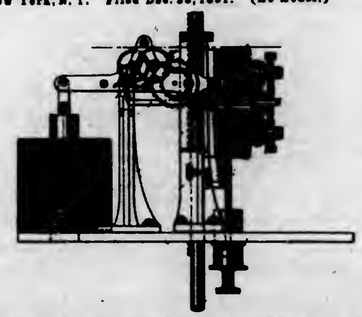


Claim.—1. The combination, with the oil-vessel A and the burner *b*, of the cover *c*, the rod *h*, and spring *i*, constructed to extinguish the flame when the spring is released, as described.

2. In an oil-lamp, the combination, with the burner, of a spring resting against the inner walls of the oil-vessel and connected with an extinguisher constructed to extinguish the flame when the vessel breaks, as described.

3. The combination, with the oil-vessel A and burner *b*, of the sleeve *g*, provided with the hinged cover *c*, the abutment *f*, rod *h*, and spring *i*, the whole constructed to extinguish the flame when the vessel breaks, as described.

258,964. ELECTRIC LAMP. EDWARD WESTON, Newark, N.J., assignor to the United States Electric Lighting Company, New York, N.Y. Filed Dec. 30, 1881. (No model.)



Claim.—1. In an electric lamp, the combination, with the upper-carbon holder, of two electro-magnets in the main or lamp circuit, and an electro-magnet in a shunt-circuit, for the purpose of forming and regulating the arc.

2. In an electric lamp, the combination, with a gravitating carbon-carrier, and feed-controlling mechanism connected therewith, of a helix in the lamp-circuit, and two electro-magnets in the lamp-circuit and in a shunt about the lamp, respectively, for the purpose of forming and regulating the arc.

3. The combination, with a movable frame or lever, carrying a train of gears in engagement with a gravitating carbon-carrier, of an electro-magnet or equivalent in the lamp-circuit connected to the said frame or lever, and two opposed electro-magnets, one in the lamp-circuit, the other in a shunt around the lamp, and a detent controlled by said magnets, substantially as and for the purpose set forth.

4. The combination, with a pivoted frame or lever, carrying a train of gears in engagement with a gravitating carbon-carrier, of an electro-magnetic helix in the lamp-circuit, for moving the frame, and two electro-magnets in the lamp-circuit and in a shunt around the lamp, and a detent controlled thereby for locking or releasing the train of gears, as set forth.

5. The combination, with a pivoted frame, of a train of gears and escapement, having its shaft in line with the pivotal axis of the frame, a carbon-carrier engaging with the train, a magnet or its equivalent in the lamp-circuit, for moving the frame, and a detent controlled by the action of two electro-magnets, as set forth, for the purpose of locking or releasing the escapement.

258,965. ELECTRIC-LAMP BRACKET. EDWARD WESTON, Newark, N.J., assignor to the United States Electric Lighting Company, New York, N.Y. Filed Dec. 13, 1881. (No model.)



Claim.—1. The combination, with an electric lamp of the kind described, of two oppositely-placed holders or sockets, connected by a rigid insulating-frame and a spring-contact, arranged in conjunction with one of said sockets and adapted to hold the lamp in place, substantially as described.

2. A bracket for incandescent electric lamps of the kind described, consisting of a socket or holder adapted for attachment to a suitable support, a retaining cone or cap, a spring-carried contact-piece arranged therein, and one or more rods connecting the said cone to the socket, the rod or rods being insulated from the socket and serving as conductors for the current, substantially as set forth.

3. The combination of socket A, rod or rods B, insulated therefrom, cone B, and spring C.

258,966. INCANDESCENT LAMP. EDWARD WESTON, Newark, N.J., assignor to the United States Electric Lighting Company, New York, N.Y. Filed July 12, 1881. (No model.)



Claim.—An electric lamp consisting of a transparent, exhausted, and hermetically-sealed receiver, surrounding a conductor capable of being rendered incandescent, and containing a small quantity of an air-absorbent substance, such as thorina, as and for the purpose set forth.

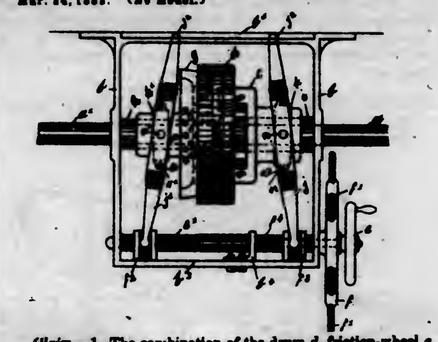
258,967. INDIRECT RADIATOR. ELISHA T. WEYMOUTH, Brooklyn, N.Y. Filed Jan. 3, 1882. (No model.)



Claim.—1. In a steam-radiator of the character herein set forth, the similar sections A A, each having corrugated sides *a b* and partitions B B, the right and left threaded nipples N N, the inlet-pipe E and the outlet-pipe F, the several parts being arranged and combined substantially in the manner and for the purposes set forth.

2. In a steam-radiator of the character herein set forth, the similar sections A A, each having corrugated sides *a b* and partitions B B, the right and left threaded nipples N N, the inlet-pipe E and the outlet-pipe F, and the box or casing D, provided with the air-inlet H at the bottom and the air-outlet K at the top, the several parts being arranged and combined substantially in the manner and for the purposes and objects named.

258,968. CLUTCH. EDWARD WILKINSON, Paterson, N.J. Filed Mar. 24, 1882. (No model.)

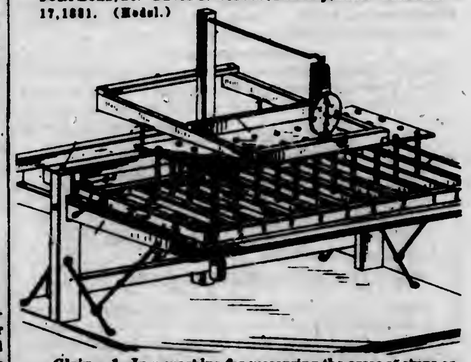


Claim.—1. The combination of the drum *d*, friction-wheel *g*, collar *h'*, sleeve *h*, feather *o'*, pins *n'*, perforations P, shifting-arm *f*, screw-nut *f'*, screw *o'*, hand-wheel *o*, step *b'*, slot *f'*, frame *b'*, frame *b'*, frame *h*, and shaft *a'*, substantially as described, and for the purpose set forth.

2. The combination of the drum *d*, clutch *c*, lugs *m*, openings *m'*, collar K, pins *n*, shifting-arm *f*, screw-nut *f'*, hollow screw *f'*, screw *o'*, step *b'*, wheel *e*, wheel *f*, slot *f'*, groove *q*, collar *i*, oil-hole *i'*, frame *b'*, frame *b b'*, and connected shaft *a*, substantially as described, and for the purpose set forth.

3. The combination of friction-wheel *g* and the clutch C, when the same are in engagement, as and for the purpose set forth.

258,969. MACHINE FOR MEASURING THE AREA OF HIDES, SURFACES, &c. DAVID T. WINTER, Peabody, Mass. Filed Mar. 17, 1881. (Model.)



Claim.—1. In a machine for measuring the areas of skins or other articles, the combination, with an upper weighted table, of a lower lever-frame fulcrumed at the rear of the machine and arranged to be lowered at its front when the skin is introduced, and to be raised to a horizontal position to lift the skin to the weights.

2. In an area-measuring machine, a sliding table or carriage for supporting the article to be measured, and arranged to run in and out on guideways to receive such article and to convey it to and from the weights or pins which determine the measurement.

3. In an area-measuring machine, the combination of a lever-frame and a table-carriage arranged to travel thereon, the combination being and operating substantially as and for the purposes set forth.

4. The lever-frame provided with a counter-balance at its rear and with connecting rods or links beneath the same at its front, serving to limit both its upward and its downward motions, substantially as shown and described.

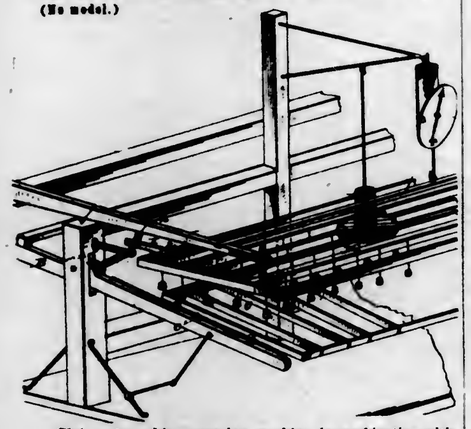
5. In combination with an under lever-frame having a vibratory motion for receiving and raising the skin to be measured,

a weighted and balanced upper table directly connected to the indicating apparatus, and whereby the needless lifting and swinging of the weights or pins and disturbance of the indicator may be avoided.

6. A weighted table carrying a system of weights or pins in which those of each adjacent row are all of uniform weight and length, and in which the several rows are placed at varying distances apart or graded as to weight, in the manner and for the purpose substantially as shown and described.

7. A weighted table in which the weights or pins of each row vary as to weight from those of its next adjacent row or rows, substantially as and for the purposes described, and in which the several rows reach down to the same level and are equidistant from each other.

258,970. MACHINE FOR MEASURING THE AREA OF HIDES, &c. DAVID T. WIGTON, Peabody, Mass. Filed June 10, 1881. (No model.)



Claim.—In a skin-measuring machine, in combination with a system of weights of equal weight and arranged in rows equidistant from each other, a system of equalizing-levers, substantially as and for the purpose described.

258,971. REED-PLANE. FREDERICK V. YEAGER, Philadelphia, Pa. Filed Aug. 26, 1881. (No model.)



Claim.—1. In a plane for working reeds across the grain of wood, the combination of advance cutters D D', having serrated cutting-edges *d*, plane-bit B, having convex cutter *b*, outside ground or bevel, *b'*, sole F, having adjustable section *f'*, and gage G, secured to the body of the plane by links *g g*, and provided with a thumb-screw, H, substantially as shown and described.

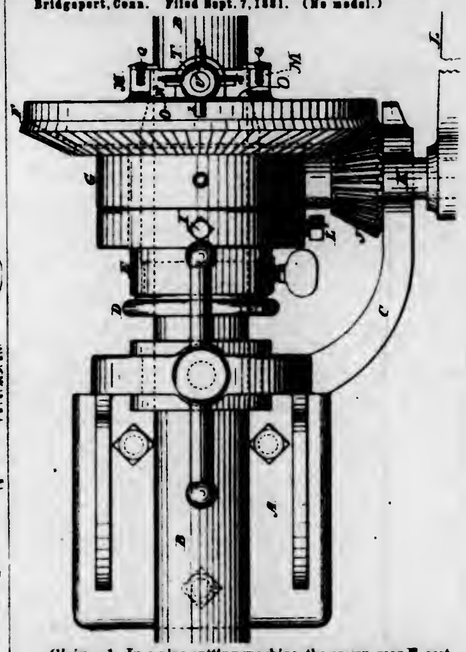
2. In a plane for working reeds across the grain of wood, the combination of main bit B, having convex cutter *b*, outside ground or bevel, *b'*, advance cutters D D', provided with serrated cutting-edges *d d*, and adjustable sole-section *f'*, substantially as shown and described.

258,972. TOY CAP-EXPLODER. EDWARD ALDEN, Brooklyn, N.Y. Filed Jan. 20, 1882. (No model.)



Claim.—A ball with a slot cut half-way through to the center, in combination with hammer A, pivoted in said slot, and spring B, bearing upon the hammer, with a string attached to the lower part of hammer, at E, combined and arranged to operate substantially as and for the purpose set forth.

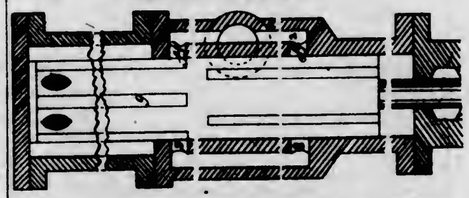
258,973. PIPE-CUTTING MACHINE. FRANK ARMSTRONG, Bridgeport, Conn. Filed Sept. 7, 1881. (No model.)



Claim.—1. In a pipe-cutting machine, the crown-gear F, cast with hub E, and having arranged thereon the fast and loose collars H G, the latter provided with a crank-shaft bearing, in combination with the cutters R, vise A, support C, crank-shaft K, and pinion J, substantially as and for the purpose set forth.

2. The crown-gear F, provided with suitable guides and ways or ribs, M O, and bearings T, in combination with the cutter-blocks N, feed-screws S, provided with sprocket-head U, and the cutters R, substantially as and for the purpose set forth.

258,974. STEAM ROCK-DRILL. WILLIAM T. BELL, New York, N.Y. Filed Feb. 13, 1882. (No model.)



Claim.—A rock-drill composed of a piston having two or more elliptical studs adjusted to the upper end thereof, and having a series of straight grooves or steamways at each end thereof, a series of connected irregular grooves in which the elliptical studs attached to the piston operate to produce a rotary motion at each stroke of the piston, substantially as described.

258,975. PAINT. EDWIN BENNETT, Hornellsville, N.Y. Filed Feb. 13, 1882. (No specimens.)

Claim.—A paint composed of a suitable oil having an admixture of rosin, beeswax, and muriatic acid, or its equivalent, as set forth, and a coloring-matter which will not be deleteriously affected by the acid, substantially as specified.

258,976. ELECTRIC INCANDESCENT LAMP. ALEX BERNSTEIN, New York, N.Y. Filed Dec. 24, 1881. (No model.)

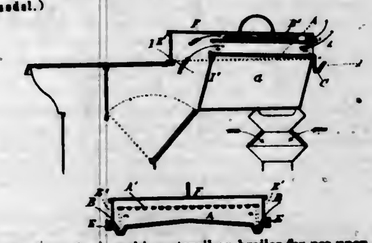


Claim.—1. In an electric lamp based on the principle of incandescence, a light-giving part composed of a non-conducting and infusible carrier and of a film or deposit of carbon covering partly or entirely the surface of the carrier, substantially as set forth.

2. In an electric lamp, the combination of the conducting-wires having enlarged end clamps with a light-giving part supported thereby, said light-giving part being composed of a non-conducting and infusible substance, and being partly covered with a film of carbon, substantially as specified.

3. In an electric lamp, the combination, with a bulb, A, having a centrally-channeled stopper, B, of conducting-wires C C, sealed into a collar of the stopper below the upper end of the same, and adapted to support the light-giving part D, substantially as set forth.

258,977. BROILER FOR OIL OR GAS STOVES. LEWIS F. BUTTS, Norton, Pa., assignor to John H. Irwin, same place, and Robert E. Dietz, New York, N.Y. Filed Mar. 14, 1882. (No model.)



Claim.—1. A cooking utensil or broiler for use upon oil or gas stoves, having a raised center, gradually sloping to grooves or gutters formed near the edge of a pan and leading to a receptacle at the extremity thereof, in combination with a raised gridiron located above said pan, and a rim attached to the edge of the pan, and extending around three sides thereof, the whole being surmounted by a removable cover, substantially as shown and described.

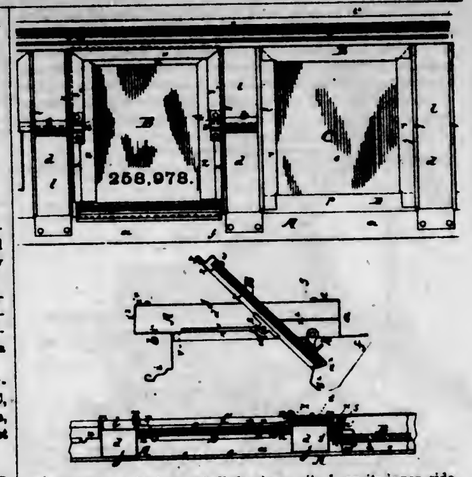
2. In a cooking utensil or broiler for use upon oil or gas stoves, a pan, A, having a raised center, gradually sloping to grooves or gutters B in the edge of the pan, receptacle C, having lip D, rim E', cover F, and gridiron A', the whole adapted and arranged to fit upon the top of a stove, substantially as shown and described.

3. In a cooking utensil of the character herein specified, the combination, with pan A, having grooves or gutters B, receptacle C, and opening I, of rim E', gridiron A', and cover F, adapted and arranged to fit upon rim E', the pan, rim, and cover forming a conduit for the heated products of combustion, in which the gridiron is located, substantially as shown and described.

258,978. TURRET FOR SKYLIGHTS. ADAM BICKELHUPT and GERSON BICKELHUPT, New York, N.Y. Filed Dec. 19, 1881. (No model.)

Brief.—The posts consist of a U-shaped metallic piece and an outer piece doubled to embrace the edges of the U-shaped piece, and extended laterally at one edge to form the inner flange for the glass. Doubled strips are placed over the fold of the two pieces, and are extended at one edge to form the outer flange for the glass. The swinging glass rests in a sheet-metal frame having grooves at the sides and top, and held by locking-strips therein. The bottom of the frame is formed with a shoulder for the glass, a suspended ledge, and a rib. The suspended ledge overlaps a depending portion of the base of the sash-frame and the rib engages a lip on an upward extension of the base. The upper portion of the sash abuts against a depending flange attached to a gutter-cornice on the sash-frame. The depending portion of the bottom of the fixed frame rests directly on the sill.

Claim.—1. The base *a*, having upwardly-projecting ledge *c* on its inner side, and outwardly-extending lip *g* thereon, in combination with the swinging sash B, having a rib, A, on its inner side, which rib is adapted to enter beneath the lip *g*, substantially as described.



2. The post *d*, constructed of the U-piece *j* and of the outer portion, *l*, which is doubled at *m* in line with the transverse walls of the U-piece *j*, to embrace the edges of the U-piece, substantially as described.

3. The posts *d*, made with outwardly-projecting doubled extensions *l*, and combined with doubled strips *r r* and with the lower supporting-piece, D, having shoulder *p*, and upper receiver, E, all arranged for receiving and securing the glass C in the frame A, substantially as specified.

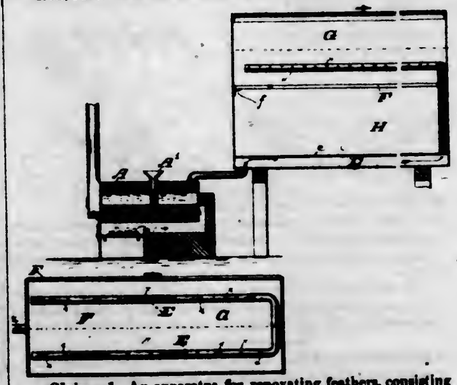
4. The posts *d*, made with outwardly-projecting doubled extensions *l*, and combined with the lower supporting-piece, D, having shoulder *p*, and upper receiver, E, all arranged for receiving and securing the glass C in the frame A, substantially as specified.

5. The combination of the vibrating sash B with the base *a*, having ledge *c*, and with the top *b*, having cornice *i*, bends *i' i'' i'''*, and downwardly-projecting flange *e*, substantially as described.

6. The sash-frame *w*, constructed with lower shoulder, *a'*, suspended ledge *b'*, and rib *h*, substantially as specified.

7. The sash-frame *w*, having grooves at the sides and top, and combined with the locking-strips *s*, which are inserted in said grooves and hold the glass in place, together with said frame *w*, substantially as specified.

258,979. FEATHER-RENOVATOR. JOHN W. BINGAMAN, Aberdeen, Ohio. Filed Feb. 3, 1882. (No model.)

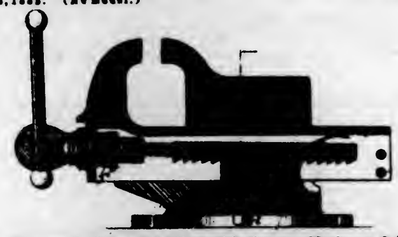


Claim.—1. An apparatus for renovating feathers, consisting essentially of a steam-boiler, a feather-receptacle divided into two compartments by a removable diaphragm, a steam-chamber forming one side of one compartment of said receptacle, a steam-pipe leading from the boiler to said steam-chamber, another pipe leading from said chamber to the other compartment, where it connects

with perforated tubes or pipes, and said pipes or tubes located inside said compartment, all substantially as set forth.

2. The combination of two chambers, G H, separated by a removable partition, F, the removal of which precipitates the contents of one chamber into the other, the boiler A, steam-chamber C, perforated pipes E, and connecting-pipes, whereby the same current of steam can be utilized both in drying and steaming feathers at the same time, substantially as set forth.

258,980. VISE. JOHN A. BLAKE, Watertown, N. Y. Filed Apr. 3, 1882. (No model.)



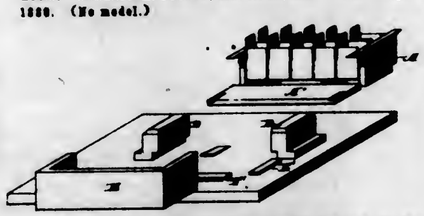
Claim.—1. The combination, with the movable jaw and its slide, of a toothed bar contained in said slide and screw-threaded at one end to engage with an internal thread in a nut held in the end of said slide, and a series of fixed teeth or projections for engaging said toothed bar, the latter having sufficient vertical play in said slide to enable it to be lifted out of engagement with said teeth or projections by pressing downward on the head of said nut, substantially as described.

2. In a vise, the combination of the movable jaw carried by a slide which works in an opening formed in the body of the vise below the fixed jaw, an internally-threaded nut and handle for turning the same, a toothed bar threaded at one end and engaging with said nut, one or more fixed teeth or projections for engaging said toothed bar, and a spring bearing upon said bar and tending to keep it in engagement with said teeth or projections, substantially as described.

3. The combination of the hollow slide, nut turning in the end of said slide and having a collar formed thereon, and a spiral spring encircling said nut and bearing at one end against said collar and at the other against the end of said slide, substantially as and for the purpose set forth.

4. The combination of the hollow support provided with an internal shoulder, the bottom plate of the vise fitting in and turning on said support, the spider-frame fitting in said support and against said shoulder, screws for attaching said frame to the bottom plate, nut engaging one of said screws, and handle for turning said nut, said screw being eccentric to the axis of the vise and said handle and nut above the bottom plate, substantially as described.

258,981. DEVICE FOR HANDLING FILLED BOXES OR PACKAGES. CHARLES E. BOLTON, Cleveland, Ohio. Filed Sept. 9, 1880. (No model.)



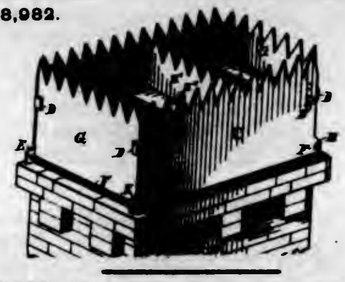
Claim.—1. The combination, with a prime receiver, A, having swinging sides $A' A^3$, constructed to be locked in closed position, of a second receiver, E, substantially as and for the purpose shown.

2. In combination, a prime receiver, A, having swinging sides $A' A^3$, constructed to be locked in closed position, guides D, and a second receiver, E, substantially as and for the purpose shown.

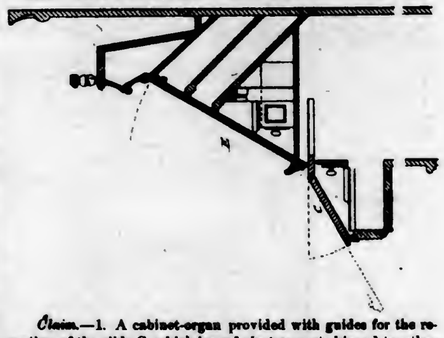
258,982. CHIMNEY-CAP. JOSEPH ROSLAND, Valencia, Pa., assignor of one-half to William E. Rose, same place. Filed Mar. 23, 1882. (No model.)

Claim.—In chimney-caps, the side pieces, C, having the lips D E, with the cross-pieces G H', horizontal plate H, lugs C' H'', and tie-rods D' F, substantially as and for the purpose herein shown.

258,982.



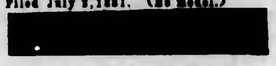
258,983. ORGAN-CASE. WILLIAM E. BERARDEY, Detroit Mich. Filed Jan. 26, 1882. (No model.)



Claim.—1. A cabinet-organ provided with guides for the reception of the slide C, which is made in two parts hinged together substantially in the manner described, whereby both parts may be pushed into the guides in the body of the organ-case, entirely out of sight, by first raising the front part of the slide to a horizontal position, as set forth.

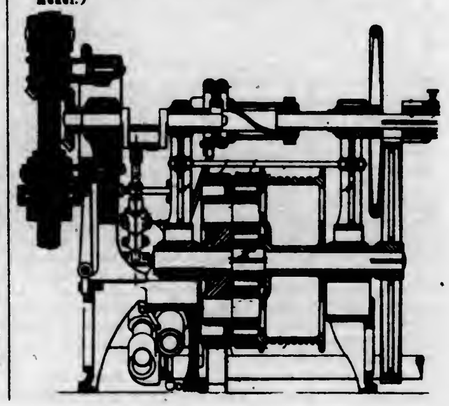
2. In a combined cabinet-organ and writing-desk, the hinged front E and sliding hinged portion C, combined and adapted to serve as and for the purposes set forth.

258,984. WRITING-TABLET. MORGAN W. BROWN, Brooklyn, N.Y. Filed July 3, 1881. (No model.)



Claim.—As an improved article of manufacture, a paper pad or tablet composed of a series of sheets or leaves connected upon one or more of their edges by a coating, strip, or layer of permanently-elastic material or composition, substantially as set forth.

258,985. HOISTING APPARATUS FOR STEAM ROCK-DRILLS. MILAN C. BULLOCK, Chicago, Ill. Filed June 24, 1881. (No model.)



Claim.—1. The combination, substantially as before set forth, of the steam-cylinders set at reverse angles of forty-five degrees on the bed-plate and at right angles to each other, the crank-shaft overhead, the hoisting apparatus below the crank-shaft, and the wheel and pinion for transmitting the motion of the crank-shaft to the hoisting apparatus.

2. The combination, substantially as before set forth, of the segments of the brake-strap, the eyebolt, the cam-lever, the screw, and the traveling nut connected with the cam-lever to prevent said nut from turning.

3. The combination, substantially as before set forth, of the brake-strap, the friction-strap, the screw-spindle, screw-threaded sleeve thereon, and the two traveling nuts for operating the cam-levers of the brake-strap and friction-strap, one nut being fitted on the screw-spindle and the other on the screw-threaded sleeve.

258,986. LOCKING-LATCH. RICHARD HERR, Schwenningen, Wirtemberg, Germany, assignor to Mathew Nicolius, New York, N.Y. Filed Jan. 19, 1882. (Model.)



Claim.—1. As an improvement in door-locks, the combination of a tubular spindle, C, having a recessed double cam, *b*, and an interior axially-turning bolt, D', having a cam, D, and also extending through the recessed double cam *b*, with a guided and spring-actuated main bolt, B, having arc-shaped middle pieces, B', and inwardly-extending projections *a* and *d*, which projections are engaged either by the double cam *b* or by cam D, according as the bolt is to be withdrawn or locked, substantially as specified.

2. As an improvement in door-locks, the combination of the guided and spring-actuated main bolt B, having a socket-shaped rear part, B'', and an interior semicircular shank, *f'*, with an axially-turning latch, E', having a semicircular shank, *f*, whereby the main bolt is locked when the shanks are thrown into line with each other, substantially as specified.

3. As an improvement in door-locks, the combination of a recessed double cam, and interior axially-turning bolt having a cam and extending through said recessed cam, and a guided and spring-actuated main bolt having arc-shaped middle pieces, inwardly-extending projections, socket-shaped rear part, and an interior semicircular shank, with an axially-turning latch having a semicircular shank adapted to lock the main bolt substantially as described.

258,987. SULKY-PLOW. WILLIAM L. CASADAY, New Carlisle Ind. Filed Mar. 14, 1882. (No model.)

Brief.—Plow-beam in two sections, each connected by independent pivot to the crank of the axle. The oblique wheel and spindle attached to a plate pivoted upon the axle and adjusted to run on or off by a vertical eccentric shaft. The seat-frame and tongue attached to sleeves upon the axle. A locking-bar is adapted to make rigid the two beam-sections, and they are unlocked by a foot-pawl. A notched bar will hold the plow elevated, and will be automatically disengaged by a plunger moved by the turning of the axle-crank. A coiled spring in a guard on the land spindle-sleeve, and aids the lever in adjusting the wheels.

Claim.—1. In a sulky-plow, the combination, with a crank-axle, of a plow-beam consisting of two independent sections pivotally connected to the crank of the axle, substantially as set forth.

2. In a sulky-plow, the combination, with a crank-axle, of a plow-beam made in sections, one section being pivoted to the crank and the other section pivoted on a bolt extending through the crank, substantially as set forth.

3. In a sulky-plow, the combination, with a crank-axle, of a plow-beam having a rear section provided with arms which embrace the crank of the axle and are pivoted thereto, and a forward section adapted to be centrally pivoted to said crank, substantially as set forth.

4. In a sulky-plow, the combination, with a crank-axle, of a plow-beam consisting of a front and a rear section, said sections being pivotally connected with the crank of the axle, and suitable means for connecting and disconnecting the sections of the beam, substantially as set forth.

5. In a sulky-plow, the combination, with a crank-axle and a frame, of a plow-beam consisting of a rear section and a front section pivotally connected to the crank of the axle, and a depending notched bar or latch pivoted upon said frame and adapted to engage a catch on the rear section of the beam, substantially as set forth.

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6. In a sulky-plow, the combination, with a crank-axle and a seat-supporting frame, of a plow-beam consisting of a rear section and a front section pivotally connected to the crank of the axle, a locking-brace pivoted to said rear section and adapted to engage a catch on the forward section, a depending notched bar or latch pivoted upon said frame and adapted to engage a catch projecting laterally from the adjacent side of said rear section, and a plunger pivoted to the rear end of said forward section, and having a stud arranged to project laterally through a slot in said rear section to automatically disengage the latch from its catch, substantially as set forth.

7. In a sulky-plow, the combination, with a crank-axle and a sectional plow-beam having the adjacent ends of the forward and rear sections pivoted to the crank of the axle, of a guide adapted to receive the forward end of the front section of the plow-beam and allow of a limited vertical movement thereof, substantially as set forth.

8. In a sulky-plow, the combination, with the tongue and forward end of the plow-beam, of a stud or foot-rest projecting laterally from said tongue and pivotally supporting slotted guide-links, within which are supported laterally-projecting studs of the plow-beam, substantially as set forth.

9. In a sulky-plow, the combination, with a crank-axle, of a plow-beam having its rear section pivotally connected to the crank of the axle and its forward section pivoted at one end to said crank, while its opposite end is provided with laterally-projecting studs which receive slotted guide-links, the latter being pivoted to a projecting stud of the plow-beam, substantially as set forth.

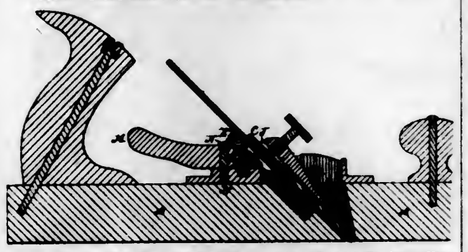
10. In a sulky-plow, the combination, with an inclined spindle secured at one end to an oscillating plate connected with the axle, of a vertical shaft and a cam or eccentric for imparting an oscillating movement to said plate, and thereby adjusting the position of the wheel, substantially as set forth.

11. In a sulky-plow, the combination, with the furrow side of the axle and with the tongue, of a sleeve or box mounted on said axle and a plate secured to the under side of said sleeve and tongue, the frame of the furrow-wheel pivoted at one end to the outer end of said plate, while its opposite end is adapted to slide in a guide formed on the inner side of said plate, and is provided with an elongated slot, within which is arranged an operating-cam connected to a rotating shaft adapted to be operated by the driver, substantially as set forth.

12. In a sulky-plow, the combination, with the axle, of a seat-supporting frame secured thereto at one end, while its opposite end is secured upon a sleeve mounted on said axle, a plate or bracket secured to the under side of said sleeve and to the tongue, a furrow-wheel axle-frame pivotally connected to the outer end of said plate, while its inner end is adapted to a guide formed on the inner side of said plate, and is slotted to receive an operating-cam, the latter being connected to a rotating vertical shaft which ex-

tends through a perforated and indented plate secured to the adjacent side of the seat-frame, and is provided with a hand-lever or dog whereby the furrow-wheel may be adjusted, substantially as set forth.

258,988. BENCH-PLANE. WILLIAM S. CASE, New Britain, Conn. Filed Mar. 17, 1882. (No model.)



Claim.—In a bench-plane, the combination of the laterally-swinging lever M, provided with the cam L and the vertically-swinging forked lever J, pivoted to the plate or frame E, with the said plate and the plane-iron, substantially as described.

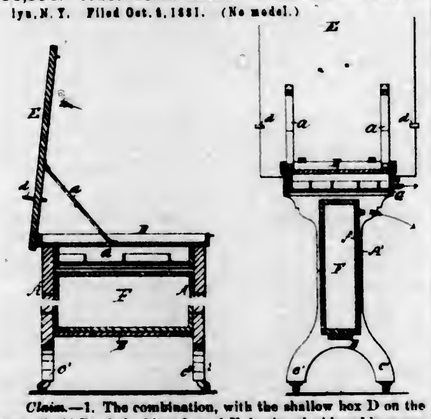
258,989. ATTACHMENT FOR TELEPHONES. JOSEPHUS C. CHAMBERS, Cincinnati, Ohio. Filed Apr. 25, 1881. (Model.)



Claim.—1. A telephone attachment consisting of a bent spring having means at one end adapting it to be secured to a telephone-tube and bearing at the other end a pad which, when the attachment is in position, closes the unused ear, for the purpose set forth.

2. The telephone-tube attachment consisting of a bent spring having at one end a pad for closing the unused ear and at the other a device for attaching it to the telephone-tube, and a set-screw for modulating the pad pressure, as set forth.

258,990. COMBINATION-EASEL. ALONZO CHAPPEL, Brooklyn, N. Y. Filed Oct. 4, 1881. (No model.)



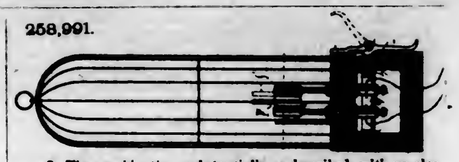
Claim.—1. The combination, with the shallow box D on the frame A A' B, of the hinged easel E, having the hinged braces *e*, the cross-bars *c*, the cramp-plates *d*, and the clamps *g*, arranged as shown and described.

2. In combination with the hinged easel E and the receptacle D, the portfolio F and drawer G, substantially as and for the purposes set forth.

258,991. ELECTRIC LAMP. CHARLES A. CHEEVER, New York, N. Y. Filed Mar. 28, 1882. (No model.)

Claim.—1. The combination, substantially as described, with an electric lamp, of an inclosing or protecting cage or cover and means, substantially as described, for automatically shunting or diverting the current from the lamp when the inclosing and protecting cage and the parts supporting the light-giving portion of the lamp are disconnected.

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2. The combination, substantially as described, with an electric lamp, of an inclosing-cage, an electric switch for cutting out the lamp, and a lock for preventing the detachment of the protecting cage or guard, whereby the disconnection of the cage and the lamp proper is made dependent upon the operation of the lock, and the act of unlocking is made to operate the switch.

3. The combination, substantially as described, with an electric lamp, of a base-block supporting the light-giving portions of the lamp, binding-posts connected to the bottom of the base-block, and an inclosing base-plate, substantially as and for the purpose described.

4. The combination, with an electric lamp, of an inclosing or protecting cage or cover connected to the lamp by a bayonet-joint, a locking device to prevent the turning of the cage or cover to disconnect it, and an electric switch controlled by the locking device, substantially as and for the purpose described.

5. The combination, substantially as described, of an electric lamp, a protecting cage or globe for the light-giving portions of the lamp, an electric switch held in proper position to cause the current to pass through the lamp when the cage and lamp are connected, and means for securing the cage and the lamp together.

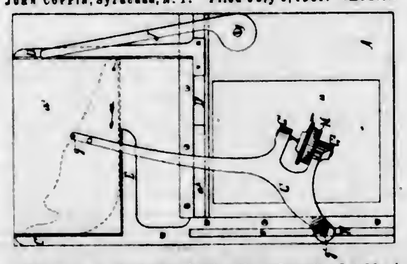
258,992. COMPOUND TO BE USED IN THE PLACE OF BUTTER FOR COOKING PURPOSES. SAML. H. COCHRAN, Everett, Mass. Filed May 2, 1882. (No specimens.)

Claim.—1. The described method or process of purifying and flavoring beef-suet oil, which consists in mixing therewith slippery-elm bark, substantially in the proportions and in the manner and for the purpose shown and described.

2. The described method or process of purifying and flavoring cotton-seed oil and its equivalent oils, which consists in mixing therewith slippery-elm bark, in the proportions, substantially, and in the manner and for the purpose shown and described.

3. The combination of beef-suet oil, cotton-seed oil and its equivalents, purified and flavored, as described, with beef-stearine and slippery-elm bark, substantially in the proportions set forth, and for the purpose shown and described.

258,993. AVERAGEOMETER OR INSTRUMENT FOR MEASURING THE AVERAGE BREADTH OF IRREGULAR PLANES. JOHN COFFIN, Syracuse, N. Y. Filed July 6, 1881. (Model.)

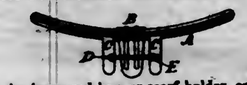


Claim.—1. A planimeter having the soft-surfaced table A *a* and groove or straight guiding means *c*, in combination with the adjustable ruler D, mounted parallel to the line of the groove *c*, and with the wheel M *m*, and bar G, with its guiding-point *g*, and pivot *g'* engaging through the block H or otherwise with the groove *c*, and arranged as herein specified.

2. The combination, with the parts M *m* G *g g'* H A *a c*, of the ruler C, fixed in the extended line of the guiding means *c*, and the adjustable ruler D, parallel to C, as herein specified.

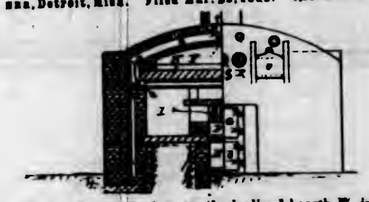
3. The combination, with the ordinary parts of a planimeter, of the spring-ruler C in line with the guiding-groove *c*, adapted to serve both in determining the position and clamping or holding the paper *a'*, on which is the diagram to be measured, and also of the spring-ruler D, parallel to C, arranged to serve both in holding the paper *a'* and guiding the scribing-point *g* in the final movement to determine the height of an equal rectangle, as herein specified.

258,994. BOW OR SCARF HOLDER. JOHN GOEPEL, Boston, Mass. Filed Nov. 25, 1881. (No model.)



Claim.—An improved bow or scarf holder, consisting of the brace A, hook B, plates C C, pin D, and loops E E, all substantially as shown and described.

258,996. BAKER'S OVEN. JOSEPH GORSLY and JOHN WAUGHAN, Detroit, Mich. Filed Mar. 23, 1882. (No model.)



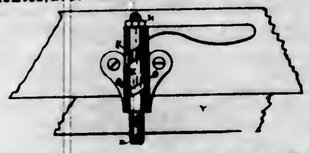
Claim.—In a baker's oven, the inclined hearth F', in combination with the chamber I immediately under the hearth, the furnace surrounded on three sides by and opening into the chamber I, the flues *c*, *d*, *e*, h, and L, and the dampers K M, substantially as and for the purpose specified.

258,996. LEGGING. MARY E. CORY, Richmond, Ind. Filed Apr. 7, 1882. (No model.)



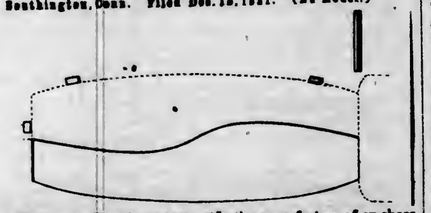
Claim.—An improved water-proof legging, A, provided with the elastic band *a*, elastic gusset *d*, and the inner flap, *f*, all substantially as and for the purpose described.

258,997. SEAT-LOCK FOR VEHICLES. GEORGE L. CHANDAL, Binghamton, N. Y. Filed Feb. 13, 1882. (No model.)



Claim.—In a seat-fastening, the bearing-box K, having the opening C, in combination with the hook B and pin D, substantially as herein described.

258,998. MANUFACTURE OF OX-SHOES. JOHN DESELL, Southington, Conn. Filed Dec. 15, 1881. (No model.)



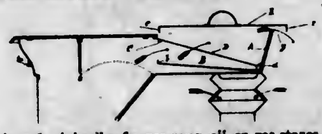
Claim.—1. That improvement in the manufacture of ox-shoes which consists in cutting two blanks from the width of a bar by dividing the toes from the heels on a line which extends the whole length of said blanks, bringing the edges at the heel end of the blank into substantially its final form of curvature, and then bending the toe end of the blank, substantially as described, and for the purpose specified.

2. That improvement in the manufacture of ox-shoes which consists in first forming a blank in the shape of a truncated oval figure, then dividing it from end to end on a curved line, forming the calks thereon, and bending the toe end, substantially as described, and for the purpose specified.

3. That improvement in the art of forming ox-shoes which consists in first forming the blank with the edges of its heel end having substantially the same curvature as that of a finished shoe, then forming the calks thereon, then bending the toe end, and finally striking the same to finish it, substantially as described, and for the purpose specified.

4. The bending-dies having the calk-forming recess *f*, for forming the calk under pressure, and acting longitudinally with reference to the length of the blank, substantially as described, and for the purpose specified.

258,999. BROILER FOR OIL OR GAS STOVES. ROBERT E. DIRYS, New York, N. Y. Filed Mar. 26, 1882. (No model.)



Claim.—1. A broiler for use upon oil or gas stoves, adapted and arranged to fit within the conduit for products of combustion, the walls of said broiler resting against the walls of said conduit, substantially as shown and described.

2. A broiling device for use upon oil or gas stoves, consisting of a pan adapted and arranged to fit within the conduit for the products of combustion, said pan being provided with sides and an end wall which rest against the walls of the conduit, as set forth, and a gridiron or grate located below the level of the top of the stove and supported within the pan, substantially as shown and described.

3. In a broiler for use upon oil or gas stoves, a pan, A, open at one end for the admission of heated products of combustion, in combination with a cover, E, adapted and arranged to fit over the pan, leaving an outlet for the exhausted products of combustion at the extremity of the pan most remote from the source of heat, substantially as shown and described.

4. In a broiler for use upon oil or gas stoves, the pan A, having sloping bottom B, cross-bar C, and turned edge *a*, said pan being adapted and arranged to fit within the conduit for the products of combustion from the flame-space, the back and side walls of the pan resting against the walls of said conduit, as specified, in combination with a sloping gridiron or grate, D, inclosed in said pan, and a cover, E, fitting over the whole, substantially as shown and described.

259,000. MORTISING-MACHINE. WILLIAM H. DOANE and GEORGE W. ENGESS, Cincinnati, Ohio, assignors to J. A. Fay & Co., same place. Filed Feb. 21, 1882. (No model.)

Brief.—The lathe for holding the hub is raised to the reciprocating chisels by a cam upon a shaft, which is driven from the shaft which operates the chisels, and the cam-shaft may be stopped without stopping the main shaft by means of a friction-clutch, &c. The hub-rotating locking and unlocking mechanism is also operated by cams on the cam-shaft. Devices are provided for spreading the chisels and for adjusting the chisel-bar yokes for producing staggering mortises.

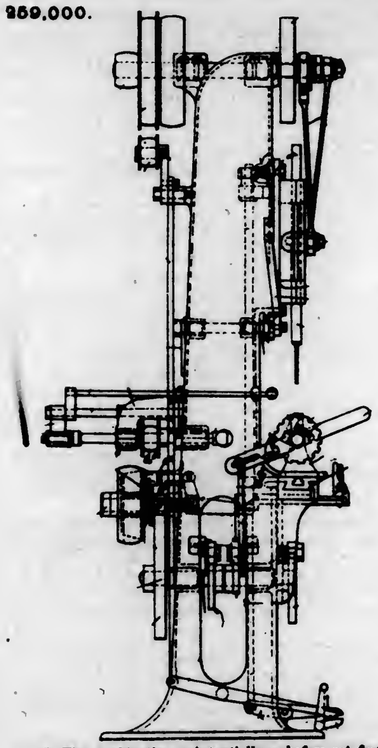
Claim.—1. The combination, substantially as before set forth, of the continuously-rotating main shaft, the chisel-bars operated thereby, the ascending and descending lathe driven from said shaft, and means, substantially as described, for moving and stopping the lathe without stopping the main shaft.

2. The combination, substantially as before set forth, of the continuously-rotating main shaft, the chisel-bars operated thereby, the ascending lathe, the shaft and lifting-cam for moving the lathe, and the internal friction-pulley and friction-clutch for transmitting motion to said shaft, the friction-pulley being driven from the continuously-rotating main shaft of the machine.

3. In a machine for mortising hubs, the combination, with the lathe, substantially as before set forth, of the internal friction-pulley, the friction-clutch, the treadle for moving said clutch, and a bell-crank for locking and raising the treadle.

4. The combination, substantially as before set forth, of chisel-bar yokes, the independently-adjustable slides to which the yokes are pivoted, the rocking cross-bar and links for spreading the yokes and chisel-bars, the connected levers for rocking the cross-bars, the shaft and cam for operating said levers, and the internal friction-pulley and friction-clutch for transmitting motion to said shaft.

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5. The combination, substantially as before set forth, of the chisel-bar yokes, the independently-adjustable slides to which the yokes are pivoted, and the rack connecting the slides and adapted to adjust or move them simultaneously.

6. The combination, substantially as before set forth, of the slides to which the chisel-bar yokes are pivoted, the rack connecting said slides, the lathe-slide carrying the hub-chucking devices and provided with a rack, and the stagger-shaft and pinions for simultaneously moving the lathe-slide and the slides of the chisel-bar yokes.

7. The combination, substantially as before set forth, of the chisel-bars, the hub-chucking devices, and means, substantially such as described, for simultaneously shifting the chisel-bars and hub-chucking devices in cutting stagger-mortises, whereby both sets of mortises will be properly aligned automatically.

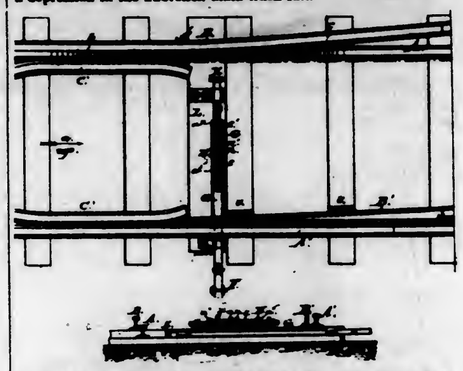
8. The combination, substantially as before set forth, of the notched disk on the spindle in the head-stock of the lathe, the spring-latch, the lever and pawl for turning the disk, the latch-lifting finger on said lever, the hub-turning cam and lever, and the adjustable rod for connecting the two levers.

9. In a wheel-hub-mortising machine organized to operate with continuously-reciprocating chisel-bars, and an ascending and descending lathe adapted to be stopped at the will of the operator without stopping the machine, the combination, substantially as before set forth, of the main shaft for driving the chisel-bars and lathe and a boring-spindle, also driven by said main shaft.

10. A machine for mortising hubs, embodying the following instrumentalities, viz: two continuously-reciprocating chisel-bars, an ascending and descending lathe for presenting the hubs, a boring-spindle for boring the hubs preparatory to mortising them, a continuously-rotating main driving-shaft, and treadles for controlling the means for driving the lathe and boring-spindle at the front of the machine, substantially as before set forth.

259,001. RAILROAD-SWITCH. WILSON P. DODSON, Philadelphia, assignor of one-half to Alexander H. Ege, Cumberland County, Pa. Filed Oct. 7, 1881. (No model.)

Brief.—The switch is formed by a depressed unbroken main-track rail combined with an unbroken siding and main track rail and a spring-held movable siding point-rail. The springs of the movable rail are independently adjustable. The frog is formed by a depression in the unbroken main-track rail.



Claim.—1. In a railroad switch and frog, the depressed rail A of the main track and the rail A′ of the same, in combination with the permanent elbow-rail B and the pointed and movable switch-rail B′ of the siding, as and for the purpose hereinbefore set forth.

2. In a railroad-switch, the combination, with the main-track rails A and A′, the former being depressed, and the permanent elbow-rail B, and the pointed and movable switch-rail B′ of the siding, of a suitable spring or springs for actuating the pointed switch-rail B′ laterally for the purpose of shunting a car or train from said main track onto the siding, or vice versa, substantially as described.

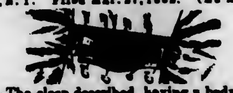
3. In combination with the springs *s s′*, the housing H, and spring-bar G, the adjusting-nuts *n n′*, movable on the said screw-threaded spring-bar G, to increase or diminish the tension of said springs, substantially as and for the purpose hereinbefore set forth.

4. The combination, with the main track A A′ and the siding B B′, of the depressed frog O and supporting-rail B″, substantially as and for the purpose set forth.

5. A railroad-frog provided with a depressed main-track rail, and having the necessary mi[s]ing and guard rails associated therewith, substantially as and for the purpose set forth.

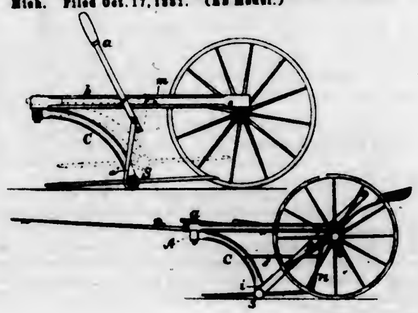
6. The combination, with the throw-bar and switch-point, of screw-threaded spring-bar G, the springs *s s′*, and adjustable nuts *n n′*, whereby the tension of said springs may be regulated independently of each other, as and for the purpose set forth.

259,002. CLASP OR DRESS-SUPPORTER. HENRY C. PEARL, New York, N. Y. Filed Mar. 27, 1882. (No model.)



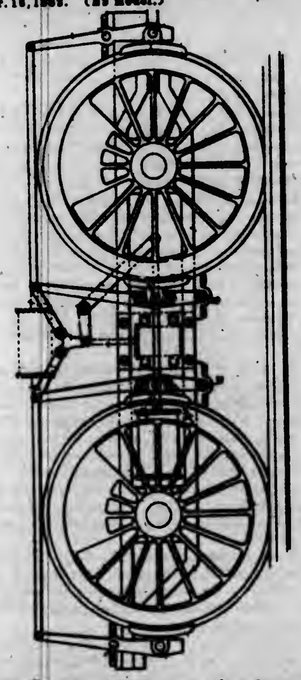
Claim.—The clasp described, having a body, A, with its legs or cars A′ A′ and the single pivot B, sustained thereon, carrying the springs E′ E, the reversed levers C D, each with its narrow body and broad end C′ D′, extending across the full width of the body A, all substantially as and for the purposes specified.

259,003. HORSE HAY-RAKE. THOMAS W. GUERNSEY, Lansing, Mich. Filed Oct. 17, 1881. (No model.)



Claim.—The combination, with the rake-head S, pivoted thereto C, and the bar b of the main frame, of the hook *a′*, pivoted to the lever *a*, the lever *a*, pivoted to the bar b, and the fixed pin *m*, adapted to hook the lever *a* to the bar b when the rake is elevated, the whole being arranged and adapted to serve substantially as and for the purpose set forth.

259,004. LOCOMOTIVE-BRAKE. WILLIAM B. GUERNSEY, Norwich, and WILLIAM B. TURNER, New York, N. Y., assignors of one-third to the Torrey Automatic Brake Company, New York. Filed Mar. 16, 1882. (No model.)



Claim.—1. In a driver-brake for locomotives, the combination of a suitable motor, one or more pairs of brake-shoes arranged on opposite, or nearly opposite, sides of the respective wheels, levers to which said brake-shoes are hinged, constituting the means of support, attachment, and operation of the shoes, and connections between the levers, all in the plane of the wheels, or nearly so, substantially as herein shown and described.

2. In a driver-brake for locomotives, the combination of a suitable motor and one or more pairs of brake-shoes, applying simultaneous pressure to opposite, or nearly opposite, sides of each driving-wheel, and actuated simultaneously by levers of different orders, constituting the means of attachment and suspension of the brake-shoes, the whole being in the plane of the wheels, or nearly so, substantially as hereinbefore set forth.

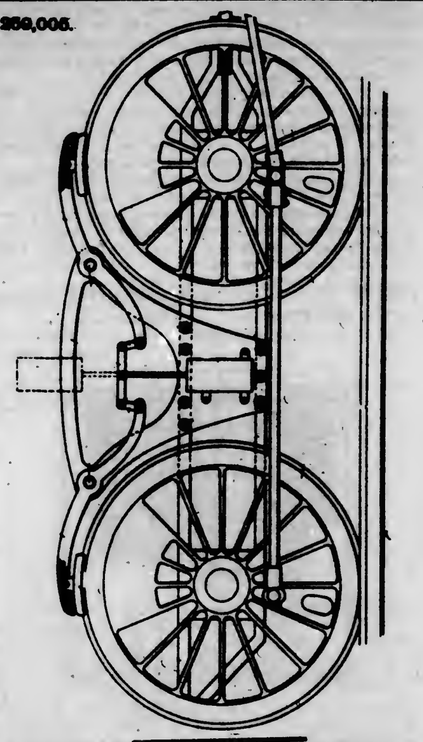
3. In a driver-brake for locomotives, a system of brake-shoes mounted or suspended by levers of different orders connected substantially as set forth, so as to communicate simultaneously an equal motion to all the shoes of the system from a common motor, the said brake-shoes and connections being in the plane of the wheels, or nearly so.

259,005. LOCOMOTIVE-BRAKE. WILLIAM B. GUERNSEY, Norwich, and WILLIAM B. TURNER, New York, N. Y., assignors of one-third to the Torrey Automatic Brake Company, New York. Filed Mar. 14, 1882. (No model.)

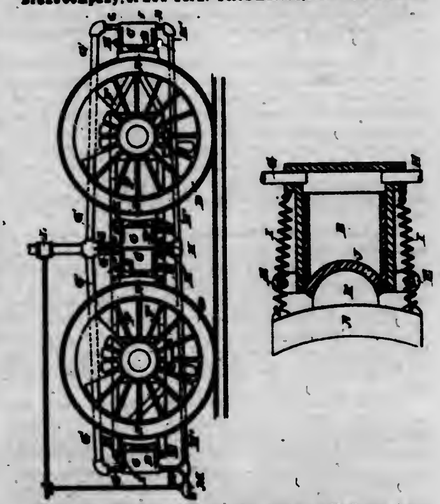
Claim.—1. A top brake for locomotives, having a pair of brake-shoes hinged to the ends of an equalizing-lever and applied to the top of two adjacent wheels by power acting in the plane of the wheels, or nearly so.

2. A top brake for locomotive-drivers, consisting of a pair of shoe-levers, an equalizing-lever, and a motor-cylinder mounted on a common supporting plate or frame, by which the entire apparatus may be secured to the frame of the locomotive, substantially as herein described.

259,006.



259,006. LOCOMOTIVE-BRAKE. WILLIAM B. GUERNSEY, Norwich, N. Y., assignor of one-third to the Torrey Automatic Brake Company, of New York. Filed Mar. 14, 1882. (No model.)



Claim.—1. A brake consisting of a pressure-cylinder, a piston contained therein, and a shoe supported and actuated through the medium of said piston, substantially as described.

2. The combination, with a cylinder and contained piston and a shoe supported and actuated by connection with the said piston, of springs attached at their respective ends to the cylinder and the shoe for the purpose of retracting the latter when relieved of pressure.

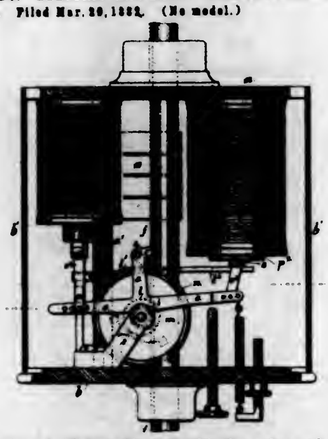
3. In a brake consisting of a pressure-cylinder, a piston contained therein, and a shoe supported and actuated by said piston, an attaching-plate formed with or secured to the pressure-cylinder to permit the bolting of such brakes independently to the frame of a locomotive or car, substantially as described.

4. The combination of a system of brake-shoes, A A, pistons B B, one for each shoe, acting directly thereon, constituting the support and attachment for said shoes, cylinders C C, in which said pistons work, and pipes G G', for applying pressure simultaneously to the said cylinders C, substantially as described.

5. The combination of the piston B, shoes A, and universal joint-bearings J K between them, substantially as described.

6. The combination, with the cylinders C, pistons B, and shoes A, of the supply-pipes G, exhaust-pipes H, and inlet cocks or valves L, and discharge-cocks M, connected to be operated by a single movement, substantially as described.

259,007. ELECTRIC-ARC LAMP. JOHN H. GUSEY, Brooklyn, N.Y. Filed Mar. 29, 1882. (No model.)



Claim.—1. The combination, with the carbon and carbon-holder, of an electro-magnet the helix of which is of high resistance and is a shunt-circuit, a lever and pawl, a ratchet-wheel and pinion by which the said magnet imparts to the carbon-holder a positive feed motion, and a second electro-magnet of low resistance in the main circuit to draw back the lever and pawl, substantially as set forth.

2. The combination, in an electric lamp, of the magnet C in the main circuit, a lever, *p*, a spring, 26, and an insulated circuit-closing block, *q*, adapted to move vertically, the circuit-connections to the + and – binding-posts, and the spring 30, the parts being arranged substantially as specified, so that the block *q* is supported by the lever *p* previous to the lamp being lighted and dropped when the current is turned on, and the shunt-circuit is closed by the lever *p* and spring 30 acting on said block *q* when the current in the magnet C becomes too weak, substantially as set forth.

3. In a mechanism for feeding carbons in electric lamps, the combination, with the carbon-holder and rack, of a pinion and ratchet-wheel on a sleeve, a shaft passing through such sleeve, a brake-wheel and a ratchet-wheel on the shaft, and a brake and feeding-lever, pawl, and electro-magnet, substantially as specified.

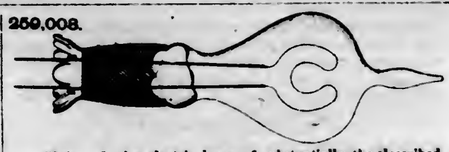
4. The combination, with the lower carbon, carbon-holder, and armature, of four helices and their cores, said helices being in two branch circuits, the wires of each branch circuit being about half the size of the wires in the main circuit, for the purposes and as set forth.

5. The combination, with the carbon-holder, pinion, feed-wheel, lever, and magnet for feeding the carbon, of a friction-wheel, a spring-brake, a magnet in the main circuit, and a lever to apply the necessary pressure to the spring-brake for supporting the carbon when the lamp is in operation, substantially as set forth.

6. The combination, with the carbon-holder and its armature, of four cores and their helices, of comparatively fine wire, connected by branches in the main circuit, so as to obtain the necessary magnetic force in a small space for separating the carbons without materially increasing the resistance, substantially as set forth.

259,008. ELECTRIC INCANDESCENT LAMP. JOHN H. GUSEY, Brooklyn, N.Y. Filed Sept. 12, 1881. (No model.)

259,008.



Claim.—1. An electric lamp of substantially the described kind, having its issuing circuit-wires hermetically sealed into the lamp-globe by a charge of solidified metal deposited in the tubes or apertures surrounding the issuing wires, substantially as herein set forth.

2. An electric lamp consisting of a globe constructed with tubular stems through which its wires issue, and with a charge of adherent metal forced into said tubes around the wires, substantially as herein shown and described.

3. The described mode of sealing circuit-wires into the glass globes of electric lamps, consisting in depositing or forcing into the tubes surrounding the issuing conducting-wires a charge of molten metal having a chemical adhesion for the glass and solidifying the same therein, substantially as herein shown and described.

4. The mode of affixing and sealing luminant loops and their circuit-wires in the globes of electric lamps, consisting in first temporarily supporting the loop and the wires in the globe by a suitable clamping or supporting device, with the ends of the wires protruding from apertures or tubes in the globe, then immersing these tubes and wires in molten metal and causing the same to rise in the tubes around the wires, retaining the column of metal in said tubes and raising them out of the molten mass, and allowing the charge in the tubes to solidify, substantially as herein shown and described.

5. The mode of depositing a charge of solidified metal in the tubes of electric-lamp globes surrounding the issuing wires thereof by immersing said tubes and wires in a mass of molten metal, withdrawing a portion of the air from the globe, and thereby causing the molten metal to rise in said tubes by atmospheric pressure, and thence retaining the metal so raised and allowing it to solidify in said tubes around the wires, substantially as herein set forth.

6. An electric-lamp globe formed with tubes through which its wires issue, flared at both ends, with a charge of solidified metal in said tubes around the issuing wires, substantially as and for the purpose set forth.

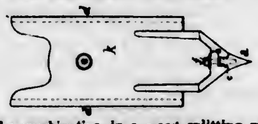
7. An electric lamp formed with a sheath or cap surrounding and extending beyond the stems, through which the wires issue, and concealing and protecting said stems and wires, but open at the end to permit free connection with the wires, substantially as herein shown and described.

8. An electric lamp of substantially the described kind, having the end of its globe where the wires issue provided with a flared cap, *s*, open at the rim, with the protruding circuit-wires terminating with said cap and concealed thereby, substantially as herein shown and described.

259,009. SHOE-POLISH. MICHAEL MACNETT, New York, N.Y. Filed Jan. 11, 1882. (Specimens.)

Claim.—The herein-described composition of matter, consisting of black ink produced from nut-gall and sulphate of iron, port-wine, gum-arabic, brown rock-candy, and spirits of wine, combined in the proportions herein named, substantially as and for the purposes described.

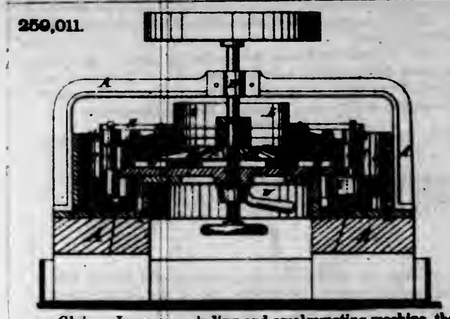
259,010. CUTTER FOR WOOD-SPLITTING MACHINES. WILLARD M. HALL, Worcester, assignor to Edwin A. Hildreth, Harvard, Mass. Filed Feb 21, 1881. (No model.)



Claim.—The combination, in a wood-splitting machine, of the ax-head *k*, formed with the grooved recess *b* in the lower edge thereof to receive the tongue or shank *c* of the ax-edge or knife *a*, bolts *f f*, passing vertically through portions of the ax-head and into the shank *c* of the ax-edge *a*, the groove *b* being formed of sufficient depth to allow the vertical bolts *f f* to bind the ax-edge *a* firmly to the ax-head *k* against the shoulders on both sides of the base of the shank *c*, substantially as and for the purpose specified.

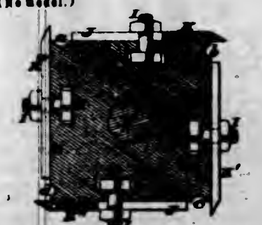
259,011. ORE GRINDING AND AMALGAMATING MACHINE. WILLIAM E. HARRIS, New York, N. Y. Filed Sept. 23, 1881. (No model.)

259,011.



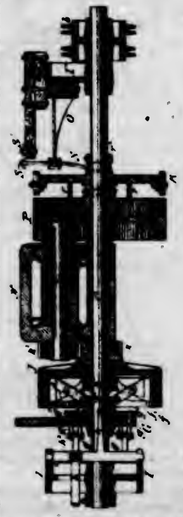
Claim.—In an ore grinding and amalgamating machine, the combination, with the grinding-plates J M, the ring grinding-plates S, and the trough Q, of the copper plates *c d*, substantially as herein shown and described, whereby the ore will be finely ground and thoroughly amalgamated, as set forth.

259,012. CUTTER-HEAD. MURRAY MEYER, Cincinnati, Ohio, assignor of one-half to James Richey, same place. Filed Jan. 28, 1882. (No model.)



Claim.—A square cutter-head having four flat faces A B C D, slotted respectively as E F G H to receive bolts I, wherewith the slotted knives K K' K'' K''' are secured to said head, the cutters K K'' on two opposite faces of the head being broader relatively than the knives K' K''' on the two other opposite faces thereof, for the purpose stated.

259,013. CAR BRAKE AND STARTER. NEHEMIAH HINCKLEY and HIRAM CULVER, Philadelphia, Pa., assignors, by mesne assignments, of one-fourth to Martha W. Page, same place. Filed Feb. 14, 1882. (No model.)



Claim.—1. The combination, with the hollow friction brake-wheel J, of the spider-wheel E, carrying the brake-shoes *e e e*, the sliding collars F and G, and the guides *g'*, constructed and operating substantially as set forth.

2. The combination of the wheel P, having the internal V-shaped ratchet-gear, with the hub Q, provided with spring-pawls, as described, and the friction-bar R, substantially as set forth.

3. The combination of the friction brake-wheel J, the spider-wheel E, the sliding collars F and G, and the wheel P, provided with the hub Q and pawl-and-ratchet mechanism, and the friction-bar R, substantially as set forth.

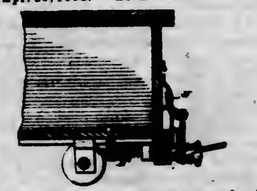
4. The combination of the friction-bar R, the hub Q, and the springs *g''*, and coiled spring between the parts Q and R, substantially as set forth.

5. The combination of the wheel J, the small pinion *h*, the larger pinion *h'*, the drum M, of smaller diameter than the pinions *h h'*, and the small pinion *h²*, and the internal gear-wheel, P, substantially as set forth.

6. The combination, with the friction-bar R, of the springs S and cam-lever O, substantially as set forth.

7. The combination of the pivoted standard H, with its arms and the cam-lever O, springs S, friction-bar R, and wheel P, substantially as set forth.

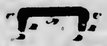
259,014. CAR-COUPLING. DAVID W. HODGES, Washington, Ind. Filed Apr. 29, 1882. (No model.)



Claim.—1. The combination, with the draw-head capable of a horizontal movement, and having an elastic buffer or cushion, F, at its rear end, of the coupling-pin having pivoted to its head the ends of levers J J, having a series of notches, L, in their upper sides, and the pivoted arms N N, the beveled ends of which engage said notches to hold the pin in an elevated position, the arrangement being such that when the link enters the draw-head it pushes the same back, thus throwing the arms N N from out of engagement with the notches L, to allow the pin to drop and effect the coupling, as set forth.

2. In a car-coupling, the combination, with the pin having a projection adapted to press on the rear end of the coupling-link, when the latter is in position in the draw-head, by aid of suitably-arranged levers, of the coupling-link provided on its under side, near the end, with the projections, one on each side, which act as a fulcrum against the bottom of the draw-head when the front end of the link is raised, as and for the purpose specified.

259,015. BELT-FASTENER. BENJAMIN HOGAN, Saginaw, Mich. Filed Apr. 1, 1882. (No model.)



Claim.—The belt-fastener A, formed with points B B, having shoulders C C and straight knife-edges D D, as set forth.

259,016. SPINDLE AND BEARING THEREFOR. ADDISON S. HOPKINS, Passaic, N.J. Filed Jan. 23, 1882. (No model.)

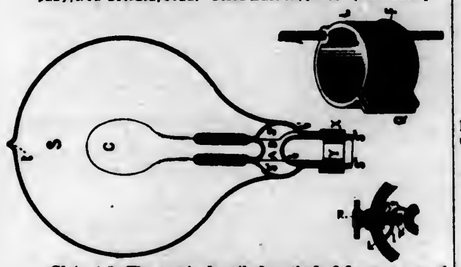
Brief.—The bolster provided at its upper end with a flange, the under cone-shaped side of which rests loosely upon a correspondingly-formed shoulder on the bolster-case, is eccentrically bored for the reception of the spindle, whereby when if in the revolution of the spindle the same should bind in its bearings the bolster would adjust itself to said spindle. A groove formed in the flange of the bolster is filled with wicking, to facilitate lubrication.



Claim.—1. A spindle-bolster consisting of a tube having at its upper end a circular flange arranged eccentrically with relation to the bore or spindle-bearing of the tube, said flange being beveled upon its lower and provided upon its upper side with a circular groove, and having formed in its peripheral edge an inclined groove, which communicates through openings with said circular groove and with the spindle-bearing.

2. The combination, substantially as before set forth, of the spindle, the bolster-case provided with an oil-well, *a*, and an enlargement, *b*, having a beveled shoulder, and the bolster having a flange, *c'*, which is provided with an annular groove communicating through oil-holes with the spindle-bearing of the bolster.

259,017. ELECTRIC INCANDESCENT LAMP. EDWIN J. HOUSTON, Philadelphia, Pa., assignor to the American Electric Company, New Britain, Conn. Filed Mar. 14, 1882. (No model.)



Claim.—1. The herein-described method of forming a good electrical connection with the carbon strip or filament of an incandescent lamp, consisting in fastening the strip or filament to a conductor of iron or other conducting substance capable of entering into chemical combination with carbon, and then carbonizing the conductor thus attached.

2. The herein-described method of forming an electrical connection between the carbon strip or filament of an incandescent electric lamp and the outside conductor, consisting in fastening the strip or filament to a conductor of a material capable of entering into chemical combination with carbon, electroplating the joint with a similar material, capable also of entering into chemical combination with carbon, and then converting the joint thus formed into a carbide of the material employed.

3. The herein-described method of forming an electrical connection with the strip or filament of an incandescent carbon lamp, consisting in fastening said strip to a length of iron conducting-wire, and then converting the iron thus attached into a carbide.

4. The herein-described method of forming an electrical connection with the strip or filament of an incandescent carbon lamp, consisting in fastening said strip to an iron conductor; electroplating the joint with iron or other suitable metal, and then treating the joint thus formed so as to convert the iron into a carbide.

5. The herein-described method of forming an electrical connection between the strip or filament of an incandescent carbon lamp, consisting in connecting the strip or filament before carbonization to an iron conductor, wrapping the iron with a carbonizable material, carbonizing the strip or filament with the conductor thus attached, and afterward electroplating with iron and heating to incandescence in a carbon vapor, gas, or liquid.

6. A compound leading-in conductor for an incandescent light, composed of platinum at the point where it passes through the walls of the glass inclosing-globe and of iron or similar material capable of entering into chemical combination with carbon at the point where it is attached to the carbon strip or filament.

7. In an incandescent electric lamp, a carbon strip or filament, in combination with a leading-in conductor of carbide of iron covered with carbon at the point of junction, deposited in the manner set forth.

8. In an incandescent lamp, a compound conductor for the purpose of carrying the current to and from the carbon filament, consisting essentially of a metallic wire of suitable material for sealing into the glass support by melting the glass around it, welded to or wrapped around one end of a wire capable of entering into chemical combination with the carbon of the filament, and combined chemically in the manner substantially as described with the end of the filament and with other carbon deposited thereon.

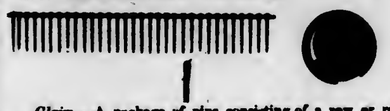
9. A glass supporting and an inclosing globe for the incandescing filament of an electric lamp, fashioned at its bottom into the form of a hollow cylinder, S" S", to the inside and outside of which, respectively, are attached the conducting-rings X Y, connected to the ends of the filament.

10. The combination, substantially as described, of an electric lamp [illegible] at its base with a conducting-ring forming a terminal [illegible] portion, and a ring-socket for holding the [illegible], said ring being provided with a suit[illegible] with the conductor by which [illegible] lamp.

11. The combination of the double-ring socket L and M and shunting-key P.

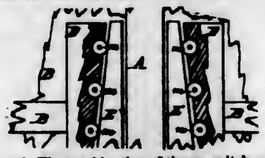
12. The combination of the double-ring socket L M, springs or conductors projecting from said rings, and the turning screw or spindle P, mounted in the outer ring and provided with means for completing and breaking the circuit between the springs.

259,018. PIN-PACKAGE. WILLIAM C. HOWARD, Brooklyn, N.Y. Filed Mar. 2, 1882. (No model.)



Claim.—A package of pins consisting of a row or rows of pins confined between the folds or plies of the holding material, substantially as described.

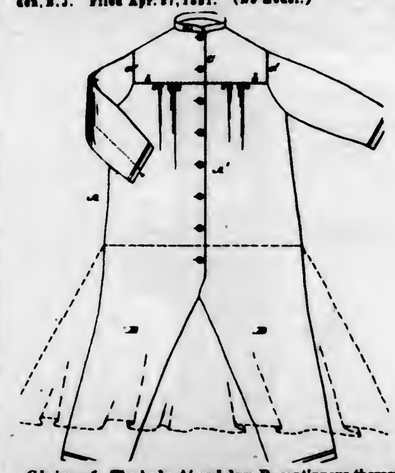
259,019. SAFETY APPARATUS FOR PASSENGER AND OTHER ELEVATORS. MERRILL M. HUTCHINSON, New York, N.Y. Filed Apr. 19, 1882. (No model.)



Claim.—1. The combination of the oppositely-arranged blocks or inclined planes D upon the car or cage A, the wedges E, arranged to act in connection with the said blocks or inclined planes, and the post A, placed between the said wedges, so that the upward movement of the wedges with reference to the blocks or inclined planes D will cause the post A to be firmly gripped between the said wedges, all substantially as and for the purpose herein set forth.

2. The oppositely-arranged blocks or inclined planes D, attached to the car or cage B, the wedges E, arranged coincident with the said blocks or inclined planes D, the post A, placed between the said wedges, the lever *a*, the rope F, the counter-weight G, and means, substantially as described, for connecting the rope F with the oppositely-arranged wedges, all substantially as and for the purpose herein set forth.

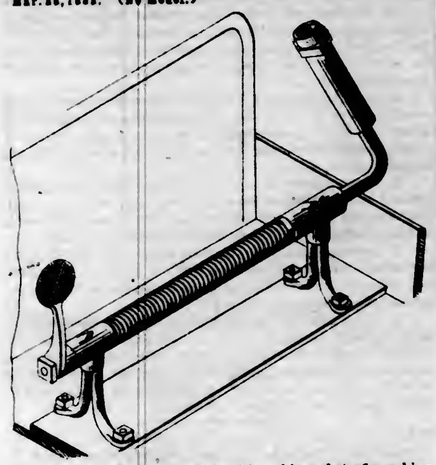
259,020. BATHING-GARMENT. DAVID W. J. HUTTON, Camden, N.J. Filed Apr. 27, 1881. (No model.)



Claim.—1. The body A' and legs B, continuous thereof, in combination with the yoke C, extending from the line *b* in front over the shoulders to the line *b'* at the back, forming an improvement in bathing-garments, as set forth.

2. The bathing-garment consisting of the body A' and legs B, continuous thereof, having the yoke C, which extends from the line *b* over and beyond the top of the shoulders, substantially as and for the purpose set forth.

259,021. WHIP-HOLDER. FRANK HOPP, Allegheny, Pa. Filed Mar. 25, 1882. (No model.)

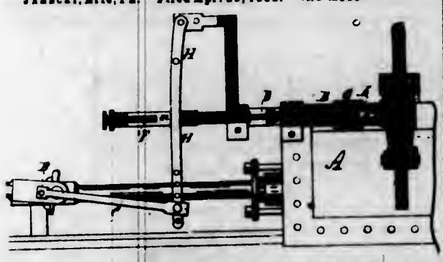


Claim.—1. The combination, with a whip-socket, of a rocking rod, a pedal or treadle, and a spring, substantially in the manner and for the purposes described.

2. The combination of a whip-socket, means for holding a whip therein, a rocking rod having a treadle secured on one end, and a spring which will return the socket to its normal position after it is pressed forward to whip the horse, substantially as described.

3. The combination, with a vibrating whip-socket, of a pedal or treadle, and means for returning the socket to an upright position after it has been pressed forward, substantially as described.

259,022. LUBRICATOR FOR STEAM-ENGINES. FREDERICK JARECKI, Erie, Pa. Filed Apr. 25, 1882. (No model.)

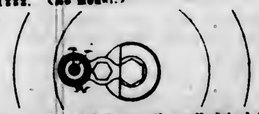


Claim.—1. The combination of the adjusting-bolt B, connecting-rod C, lever H, cylinder E, and adjustable bearing G, substantially as and for the purpose herein specified.

2. The slotted plunger D, in combination with the lever H, substantially as and for the purpose herein specified.

3. The adjusting-screw *p*, in the outer end of the plunger D, in combination with the lever H, substantially as and for the purpose herein specified.

259,023. LUBRICATOR. OMAR H. JEWELL, Chicago, Ill., assignor of one-half to George A. Stannard, same place. Filed Mar. 1, 1882. (No model.)



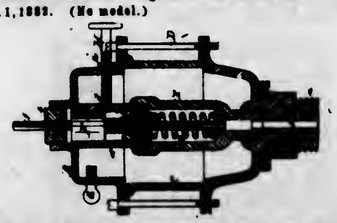
Claim.—1. In a lubricator, the cylindrical base A, having vertical oil-hole *b*, extending centrally therethrough and through the screw-stem *a*, said base being countersunk on its bottom to form a seat for a conical check-valve, and having tubular extension *c*, bored to form the oil-pump cylinder, and provided with perforations *d d* near its lower end, the rod F, with plunger-head *f*, the check-valve *n*, with spring *o*, and auxiliary valve *p*, with spring *r*, all constructed and arranged substantially as and for the purpose set forth.

2. A lubricator composed of base A, having cylinder *c*, with perforations *d*, screw-stem *a*, and perforated diaphragm M, of glass tube D, cap C, with stuffing-box *e*, and screw-plug *m*, and of plunger-rod F and check-valve *n*, with spring *o*, thimble N, valve-casing O, check-valve *p*, and spring *r*, all constructed and arranged substantially as and for the purpose set forth.

3. A lubricator composed of base A, having cylinder *c*, with perforations *d*, screw-stem *a*, and perforated diaphragm M, of glass tube D, cap C, with stuffing-box *e*, screw-plug *m*, and diaphragm L, and of plunger-rod F and check-valve *n*, with spring *o*, all constructed and arranged substantially as and for the purpose set forth.

4. In a lubricator, the plunger-rod F, passed through a stuffing-box, *e*, and having socketed arm G, in combination with the operating-rod I, guided in eyes *j j'*, having spring J, screw-collar *k*, and arm H, that enters the socket in arm G, and is adjustably secured by set-screw *k*, all constructed and arranged substantially as and for the purpose set forth.

259,024. LUBRICATOR. OMAR H. JEWELL, Chicago, Ill., assignor of one-half to George A. Stannard, same place. Filed Mar. 1, 1882. (No model.)



Claim.—1. In a lubricator, the cylinder *d*, having orifice *j*, cap B, screw H, jam-nut *i*, tubular piece E, piston F, stem *f*, spring *e*, and valve *g*, having notches or grooves *h* in its periphery, the lower end of said valve being arranged to rest upon said spring while its upper end is in contact with the piston F, substantially as and for the purpose set forth.

2. A lubricator secured to the hub of a loose pulley and provided with cylinder *d*, having orifice *j*, cap B, screw H, jam-nut *i*, tubular piece E, piston F, stem *f*, valve *g*, having grooves *h*, and spring *e*, said valve being arranged to rest upon the spring *e* with its upper end in contact with the piston F, and being pressed up into its seat by said spring, and said stem *f* being projected through the rim of the pulley to be reciprocated by the alternate contact of the belt, all substantially as and for the purpose set forth.

3. A lubricator consisting of base A, having screw-stem *a* and oil-hole *b*, of cap B, having cylinder *d*, with orifice *j* and plug *e*, and of glass tube C, in combination with tubular piece E, piston F, stem *f*, valve *g*, having grooves *h*, and spring *e*, all constructed and arranged substantially as and for the purpose set forth.

4. A lubricator consisting of base A, having screw-stem *a* and oil-hole *b*, of cap B, having cylinder *d*, with orifice *j*, plug *e*, and regulating-screw H, and of glass tube C, in combination with tubular piece E, stem *f*, piston F, valve *g*, having grooves *h*, and spring *e*, all constructed and arranged substantially as and for the purpose set forth.

259,025. PROCESS OF RECOVERING WOOL FROM MIXED FABRICS. CHARLES LUNGE and JOHN B. LUNGE, Philadelphia, Pa. Filed Sept. 16, 1880. (No specimens.)

Claim.—The use of impure alum mother-liquors (product of the manufacture of alum) for the destructive solution and consequent separation of all vegetable fibers employed in the manufacture of mixed woolen fabrics, and the consequent recovery for use of the wool contained therein, substantially as described.

259,026. MANUFACTURE OF OXIDES OF LEAD. GEORGE T. LEWIS, Philadelphia, Pa. Filed Apr. 8, 1882. (No specimens.)

Claim.—The process of manufacturing commercial oxides of lead by subjecting waste-lead fumes to the action of carbonate of soda or caustic soda and heat by roasting in a furnace, substantially as set forth.

259,027. AUTOMATIC GATE. NATHAN E. LONG, Hunnie, Ind., assignor of one-half to William B. Kline, same place. Filed Mar. 27, 1882. (No model.)

Claim.—1. In an automatic gate-hinge mechanism, the combination of the T-lever *d*, held in the socket of bracket *c* by the

259,027.



weight of the gate on the hinge-rod *a*, said rod tapered to fit in the tapering hole in the T-lever, as and for the purpose set forth.

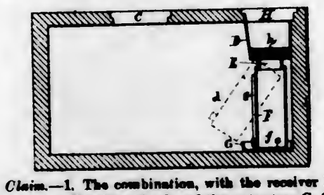
2. In combination with the mechanism of an automatic gate, the T-lever *d*, gudgeon *d'*, and socket *b''*, adjustably secured to the bracket *c* by the bolt *b'*, for the purpose set forth.

3. In a double gate, the hinge mechanism, in combination with the curved bars *b'''''* and *b''''''*, for the purpose set forth.

4. The latch *i*, in combination with the parts *i' i''* *s* and spring *u*, as shown, and for the purpose set forth.

5. In combination with the hinge-rod *a* and hinge part *c*, the U-shaped loop *c''*, gate E, and stud H, for the purpose set forth.

259,028. **REFRIGERATOR.** PAUL L. MALTHIE, Newark, N. J. Filed Mar. 25, 1882. (No model.)



Claim.—1. The combination, with the receiver D, provided with openings E and nozzles *b*, and the water-tray G, for receiving the melted ice, of the removable ice-tubes F, formed with tight bottoms, or closed by resting in close contact with the tray, and operating to cool the air of the refrigerator by the exposure of their cold outer surfaces, substantially as herein shown and described.

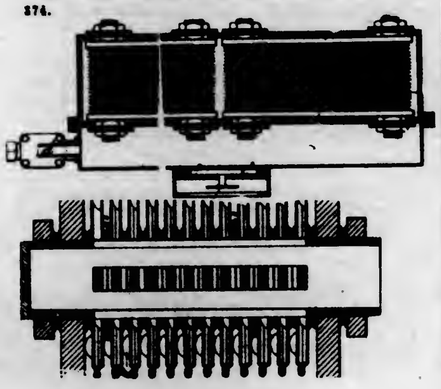
2. The combination, in a refrigerator, of the receiver D, provided with openings E and nozzles *b*, and the ice-tubes formed with closed bottoms *c*, substantially as shown and described.

3. The combination, in a removable ice-tube having a closed bottom, of an overflow-opening near the top and an emptying-outlet near the bottom, as and for the purpose set forth.

4. The combination, in an ice-tube having a closed bottom, of an overflow-outlet and guiding-channel, arranged and operating as described.

5. The combination, with the removable ice-tubes F and an ice-receiver, D, having openings E in the bottom for conducting the ice to the tubes when fed with crushed ice, as herein described, of the ridges A, for directing the crushed ice into the openings, substantially as shown and described.

259,029. **APPARATUS FOR CONDENSING STEAM.** ROBERT HUGH MARCHANT, Clerkenwell, County of Middlesex, England, assignor of one-half to James Suter and William Frederick Lote, London, and William Downie, Southampton Buildings, Chancery Lane, County of Middlesex, England. Filed Sept. 20, 1881. (No model.) Patented in England Jan. 28, 1880, No. 374.



Claim.—1. In an apparatus for condensing steam and other vapors, a series of plates arranged in pairs and united at the edges to form chambers, said plates being provided with cups or indentations facing alternately inward and outward, the indentations which extend within the chambers serving to brace the same and the other cups or indentations serving to separate the chambers from one another.

2. In an apparatus for condensing steam and other vapors, a series of plates united at the edges in pairs, and provided with raised annular flanges surrounding the holes in said plates, said annular flanges of each pair of plates interlocking, substantially as set forth.

3. In an apparatus for condensing steam and other vapors, a series of plates united to form pairs, each pair inclosing a compartment, and the several compartments being separated by elastic packing-rings, substantially as and for the purpose set forth.

4. In an apparatus for condensing steam and other vapors, a wire screen and a shield extending below or outside of said screen and serving to protect the central part of that screen from grease, substantially as set forth.

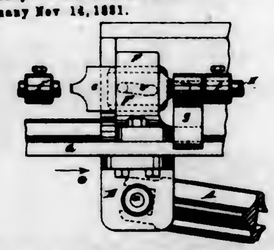
5. In an apparatus for condensing steam or other vapors, a series of plates arranged and united at the edges in pairs, as hereinbefore described, the said plates being formed with indentations or cups, and with holes having raised edges, and being threaded on slotted pipes, and made tight at the joints, all substantially as and for the purposes hereinbefore described.

259,030. **WOOD-PRESERVING COMPOSITION.** JOHN C. MARSHALL, Oakland, Cal., assignor of two-thirds to Lucien B. Jewell and William B. Frederick, both of same place. Filed Sept. 8, 1881. (No specimens.)

Brief.—Mixes in the following proportions, viz: Linseed-oil, one gallon; common salt, four ounces; saltpeter, two ounces; turpentine, one pint; and applies while hot. It is used for oiling follies, and at the same time producing tightly-fitting tires. May also be applied to buckets or casks which are to stand in the sun, to prevent shrinkage or warping.

Claim.—A composition for treating wood, consisting of linseed-oil, common salt, saltpeter, and turpentine, mixed in about the proportions set forth.

259,031. **MACHINE FOR RIFLING GUN AND PISTOL BARRELS.** PAUL HAUSER, Oberndorf-on-the-Neckar, Wurtemberg, Germany. Filed Dec. 27, 1881. (No model.) Patented in Germany Nov 16, 1881.

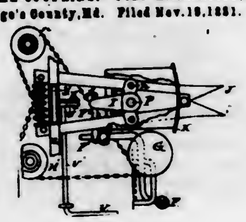


Claim—1. The combination, with the ruler A, in which the cutter-head is held, of an automatically-operated elevating and depressing means, D, attached thereto, whereby one end of the ruler is elevated or depressed, substantially as set forth.

2. The combination of the ruler A and guide D, provided with the slot *a'*, of the slide *c*, pin *d*, and tappets *f f'*, operated from the main shaft of the rifling-machine, substantially as set forth.

3. The combination, with the piece *c*, having the slot *a'* and adjusting means h, of the guide D, ruler A, and operating means, substantially as set forth.

259,032. **CAR-COUPLING.** JOHN H. HERRITH, Sarattoville, Prince George's County, Md. Filed Nov. 16, 1881. (No model.)



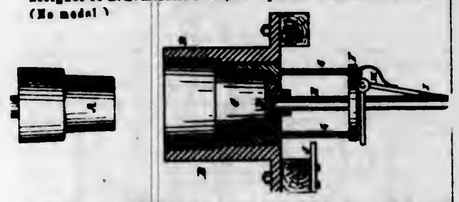
Claim.—1. In a car-coupling, the levers or bell-cranks F F' F'', in combination with staple *l* and plate I, as described, and for the purposes set forth.

2. The combination, in a car-coupling, of the levers F F' F'', hook *f*, staple *l*, and ratchet-plate E, substantially as shown and described, and for the purposes set forth.

3. A locking plate or wedge arranged to be raised and lowered between the coupling hook bars of a car-coupling, as described, and for the purposes set forth.

4. In a car-coupling, the combination of locking plate or wedge Y, operating-lever U, shaft U', arm V, link W, and casing or slide Z, substantially as shown and described, and for the purposes set forth.

259,033. **POTTERY-MOLD.** HENRY E. HERRILL, Akron, Ohio, assignor to E. H. Herrill & Co., same place. Filed Mar. 8, 1882. (No model.)



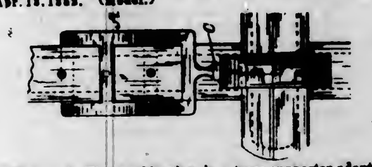
Claim.—1. In combination with the mold B, the mold C and disk D, all constructed and arranged as shown, and for the purpose specified.

2. In combination with the mold C and disk D, the collar F, rods G G, latch H, and stop I, all constructed and arranged substantially as shown, and for the purpose specified.

3. In combination with the disk D and shaft E, the mold C, with devices, such substantially as shown, for lifting said mold with said disk a part of the distance, and then releasing it, substantially as herein described, and for the purpose specified.

4. The herein-described pot-mold, consisting of the plunger A, molds B C, disk D, and shaft E, with devices, such substantially as shown, for raising the mold C, all constructed and arranged substantially as shown, and for the purpose herein set forth.

259,034. **TRACE-SUPPORTER.** THOMAS HEVEN, Logansport, Ind., assignor of one-half to Henry Tucker, same place. Filed Apr. 18, 1882. (Model.)



Claim.—1. The combination, in a trace-supporter adapted to be attached to the lip-strap of a harness without breeching, and in harness with breeching to a short leather stay on the same, of the frame A, having vertical parallel side bars, with four transversely-parallel bars, its lower part provided with a knob, C, having at its extreme end the axis *a'*, with the loop B, having rigid pin *b'*, tongue D, the pivot *d'*, spiral spring *c'*, the bolt E, slot *f'*, and button *f*, all substantially as described, and for the purposes specified.

2. In a trace-supporter, the loop B, having rigid pin *b'*, and tongue D, with bolt E, adapted to be moved against spiral spring *c'* by means of the button *f* working in the slot *f'*.

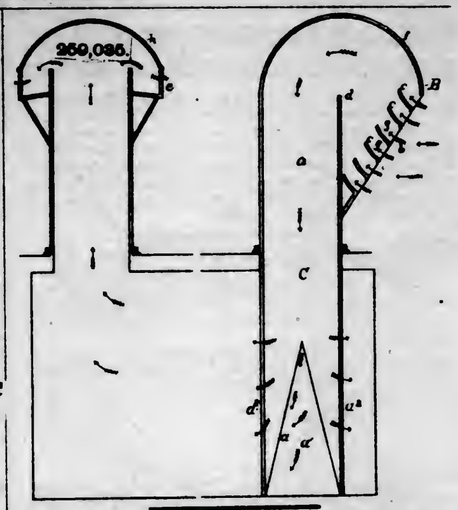
259,035. **AIR-INJECTING VENTILATOR.** PATRICK HINAN, Chelsea, Mass. Filed May 23, 1881. (Model.) Patented in England Nov. 23, 1880, No. 4,855.

Claim.—1. A ventilator having a conduit, C, and a head formed as an arc of a circle, *f*, whose radius-point or center is at or near one side of said conduit, and with the air-passages arranged in the oblique line *h*, which intersects the line of said conduit and said arc, substantially as specified.

2. In a ventilator formed with the head projecting beyond the walls of the conduit, the oblique line *h*, intersecting the wall of the conduit and the arc of the head and subdivided into passages *g*, substantially as specified.

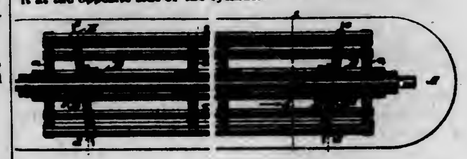
3. In a ventilator, the combination of the arc-like head B, whose radius-point or center is at or near the side of conduit C, the oblique line *h*, intersecting said arc, and the openings *g* in said oblique line subdivided by the curved partitions *e*, substantially as specified.

259,036.



259,036. **MACHINE FOR STRETCHING FABRICS.** GEORGE W. MILLER, Woonsocket, R. I. Filed Nov. 1, 1881. (No model.)

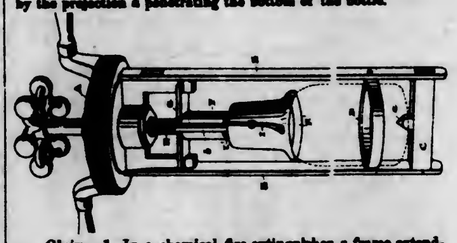
Brief.—A cylinder having its sides composed of longitudinal bars revolves upon a fixed shaft, upon which are fixed inclined arbors, upon which turn two wheels having radial arms extending through the spaces between the bars and terminating in sharp pins. The wheels are set at equal angles to the intermediate transverse plane of the cylinder, and receive the fabric at the side of the cylinder where their peripheries are nearest to each other and release it at the opposite side of the cylinder.



Claim.—The combination, in a stretching-machine, of a cylinder turning on a fixed shaft, A, and consisting of parallel disks *a a* and connecting longitudinal bars *b* and wheels E, turning on inclined arbors D upon the shaft, and provided with arms extending between the bars and carrying points *c*, substantially as set forth.

259,037. **FIRE-EXTINGUISHER.** WM. HORRIGAN, Toronto, Ontario, Canada. Filed Jan. 16, 1882. (No model.)

Brief.—The rest for the acid-bottle is provided with a pointed projection, *a*, and a cap bears on the bottle, so that by pressing down the bottle by means of screw H the acid will be discharged below by the projection *a* penetrating the bottom of the bottle.



Claim.—1. In a chemical fire-extinguisher, a frame extending from and rigid with the main ping, a shank, F, having feather-cleats *b*, and a sliding cap having recesses corresponding to said cleats, whereby the bottle may be inserted by sliding the cap upward and locked by partially rotating the cap after the cleats are out of engagement, as set forth.

2. In a chemical fire-annihilator, the frame B, rigid with the

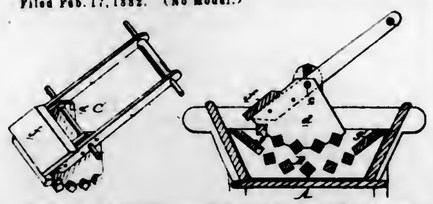
plug A, and having the cross-bar C, with point *a*, the shank F, having feather-cloats *b*, and the sliding cap E', having corresponding recesses, combined with the ring D, pivoted to the said cross-bar C, as specified.

3. In a chemical fire-extinguisher in which the acid-bottle rests upon a stationary pointed projection, an adjustable cross-head with a downwardly-projecting neck having a feather-key formed upon one side of it, in combination with a cap arranged to fit over the top of the bottle and onto the projecting neck, a slotted passage-way being made in the cap to admit the feather-key, and a spring arranged to hold the cap in its proper relative position, as and for the purpose specified.

259,038. COMPOSITION FOR PRESERVING EGGS. GEORGE W. HOWEY, Geneva, N.Y. Filed Dec. 14, 1881. (No specimens.)

Claim.—A compound for preserving eggs, consisting in a weak solution of chloride of calcium mixed with air-slaked lime, the preparation being thoroughly dampened with water, substantially as set forth.

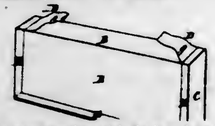
259,039. WASHING-MACHINE. IRA HUDSON, Wayne, Mich. Filed Feb. 17, 1882. (No model.)



Claim.—1. The combination, with the tub A, of the frame or base D, provided with angularly-disposed ribs, the rubber C, provided with similar ribs, and the plates *f* and *g*, secured respectively to the rubber C and frame D, and having right-angle or square edges next to the angularly-disposed ribs, substantially as and for the purpose specified.

2. In combination with the tub A and the vibrating rubber C, the removable frame or tray D, and the plates *g g'* of said frame, having concave outer surfaces, substantially as and for the purpose specified.

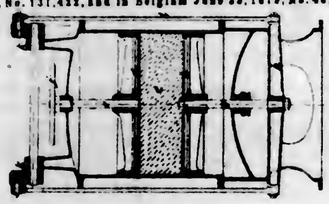
259,040. AMMUNITION-BOX. EDWARD G. PARKHURST, Hartford, Conn., assignor to the Pratt & Whitney Company, same place. Filed Jan. 10, 1882. (No model.)



Claim.—1. In combination with the box A and contained cartridges, the exterior case composed of the two rectangular pasteboard parts B and C, each bent to form three sides of the box and turned with their open sides toward each other over the cartridges and box A, and the binding E, covering the corners, substantially as described.

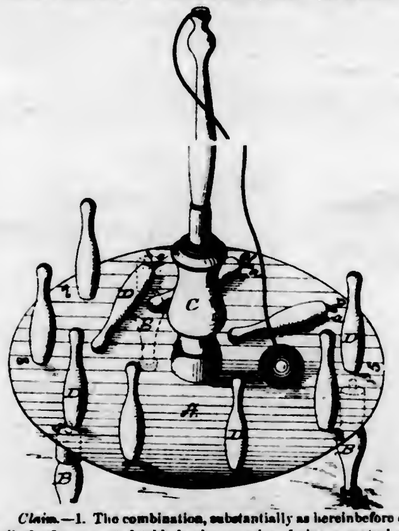
2. In combination with the box or casing composed of two parts arranged respectively to each other as shown, the detaching-strip D, arranged between the two parts of the casing, and having a projecting portion to be grasped by the hand, as and for the purpose described.

259,041. FILTER. EDWARD PERRETT, Victoria Chambers, Westminster, England, assignor to John Eliot Hodgkin, Managing Director of the Pulsometer Engineering Company, (Limited,) London, England. Filed Nov. 8, 1881. (No model.) Patented in England Jan. 27, 1879, No. 330; in France June 26, 1879, No. 131,422, and in Belgium June 28, 1879, No. 46,813.



Claim.—The combination, in a filtering apparatus, substantially as specified, of a reciprocating device for alternately compressing and releasing the filtering material, and pipes, arranged as described, to permit a reverse current of liquid for cleaning the said material while the same is being worked.

259,042. GAME-BOARD. JUDSON S. POST, Stamford, Conn. Filed Oct. 27, 1856. Renewed Jan. 12, 1882. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, of a supported table having a series of pins, a central rod or lever with a suspended ball for knocking down the pins, and a connecting means for setting up the fallen pins simultaneously through the agency of the central rod or lever.

2. The combination of a table having a series of impressed or otherwise formed numbers on the upper surface of the table, a series of pins arranged over or alongside of the numbers, and a central rod with suspended ball for knocking down the pins, whereby the player is exercised in mental arithmetic—addition and subtraction—substantially as hereinbefore described.

3. In combination with a supported table, a means for connecting all the pins below the table, and a device operated by pressure from above the table for setting up all the knocked-down pins simultaneously, substantially as described.

4. In combination with a supported table having a central passage for an operating rod or lever and a series of apertures, a disk or collar having a series of loops or hooks, a series of pins, and a continuous cord connecting the disk and all the pins, substantially as described, and for the purpose set forth.

5. The combination, substantially as described, of a supported table having a central opening and a series of apertures near the circumferential edge, a series of ten-pins, a suspended disk with continuous cord, and a central lever or rod with a retracting-spring, substantially described.

6. In combination with the suspended disk, continuous cord, and pins, the central rod or lever with the coil-spring, for the purposes hereinbefore stated.

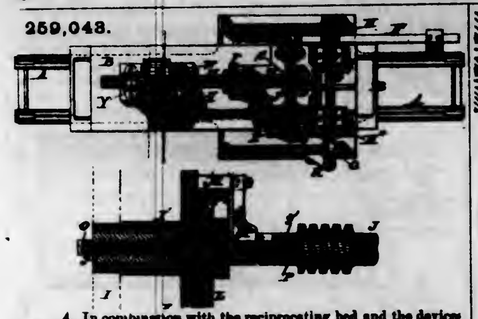
259,043. MACHINE FOR CUTTING SPIRAL GROOVES IN GRINDING-ROLLS. EDWIN REYNOLDS, Milwaukee, Wis. Filed Mar. 10, 1881. (Model.)

Claim.—1. In combination with the stationary cutter E, the reciprocating bed B, with supports for the roller X, the gear-train located upon the bed for turning the roller upon its axis, the stationary rack F, an uncoupling or disconnecting device in the driving-train, and a dog, Q, arranged to operate the disconnecting device as the bed moves in one direction only.

2. In a machine for spirally grooving grinding-rolls, the combination of the positively-driven dial-plate K, disk L, coupling-pin M, spindle O, and dog Q.

3. In a machine for cutting spiral grooves in grinding-rolls, the combination, in a train for rotating the roll, of the dial-plate K, having several circular series of holes, the disk L, and the radially-adjustable coupling device.

259,043.



4. In combination with the reciprocating bed and the devices thereon for sustaining and rotating a roll, a stationary rack arranged, substantially as shown, to operate the roll-turning devices as the bed is moved endwise.

5. The combination of the rotating dial-plate K, provided with two or more circular series of holes or teeth located at different distances from the center, a driven shaft, J, the device M, adjustable radially to engage with one or the other of the series of teeth, the spindle O, and the intermittingly-acting dog Q, substantially as described, whereby the dial-plate and shaft are momentarily disconnected in order that one may change its relation to the other, substantially as described and shown.

6. In a roller-grooving machine, the combination of the reciprocating bed and roller-turning devices with the stationary operating-rack, adapted to be reversed as described, whereby the machine is adapted to cut either right or left hand spirals at will.

7. The combination of the reciprocating bed, the stationary rack, pinion F, shaft G, wheels H° and I, dial-plate K, and disk L, coupling-pin M, spindle O, and dog Q.

259,044. UNDERGROUND ELECTRIC CONDUCTOR. GEORGE RICHARDSON, Philadelphia, Pa. Filed Apr. 5, 1882. (No model.)



Claim.—1. An insulated electrical conductor consisting of the conductor proper and an insulating casing of pure hydraulic cement, substantially as before set forth.

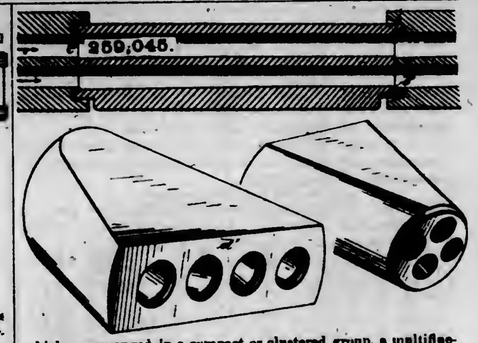
2. The combination, substantially as set forth, of an underground conduit and a wood foundation board or plank of curved or wave-like contour.

3. The combination, substantially as before set forth, of the foundation D, the wire or wires A, and the hydraulic cement in which said wire is embedded.

4. The combination, substantially as set forth, of the underground electric wire or wires, the man-hole or trap E, and the porous block F, constructed as described, and in contact with the earth.

5. The combination, substantially as before set forth, of a conduit for electrical conductors, a foundation for the same, and a man-hole or trap, said foundation being constructed with a projection or shelf around the man-hole.

259,045. UNDERGROUND CONDUIT FOR ELECTRIC CONDUCTORS. GEORGE RICHARDSON, Philadelphia, Pa. Filed Apr. 7, 1882. (No model.)



Claim.—1. A conduit for electrical conductors, composed of sections having tapering flues for the conductors, and laid with the ends of lesser bore of one section connected to the end of greater bore of the next adjacent section, substantially as before set forth.

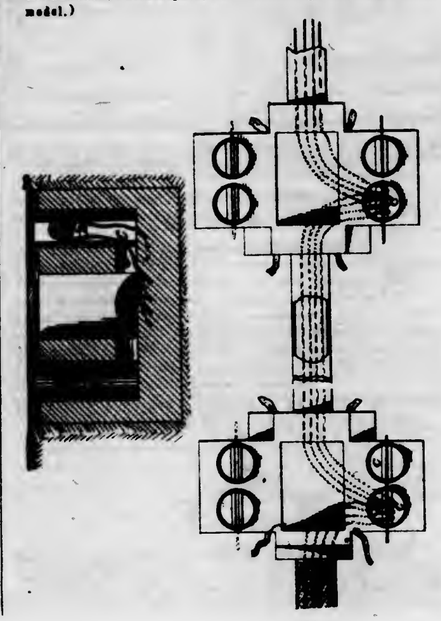
2. A multiflue coupling the flues of which are arranged, as described, so as to be in a compact or clustered group at one end and in a row at the other end, substantially as before set forth.

3. In a conduit for electrical conductors, the combination, substantially as before set forth, of a multiflue pipe the flues of which are arranged in a compact or clustered group, a multiflue coupling the flues of which change from a compact or clustered group at the end connected to said pipe to a single row at the other end, a second similarly-constructed pipe and connected coupling, and a multiflue pipe the flues of which are arranged in a row for connecting the ends of the couplings at which their flues are arranged in a row.

4. In an underground conduit for electric conductors, the combination of main sections of multiflue pipe, such sections being provided at each end with a socket or recess and having a projecting rim encircling the same, with coupling-sections of larger diameter than the main sections, and having in each end a groove surrounding the flues, of the same size as the projecting rim of the main sections, and a rim or flange exterior to said groove and tapering outward to the edge, whereby the main sections may be closely fitted into the coupling-section, the bottom of the recess in the main sections cemented against or to the corresponding face of the coupling-section, and space left between the projecting flange or rim of the latter and the outside of the main section for binding-cement, substantially as shown and described.

5. An underground conduit for electrical conductors, composed of separate lines of sectional pipes having a flat bottom and a flat top, and each section provided with tapering flues, the sections being laid with the end of lesser bore of one connected to the end of greater bore of the next adjacent one, and the lines of pipe being laid one on top of the other, substantially as before set forth.

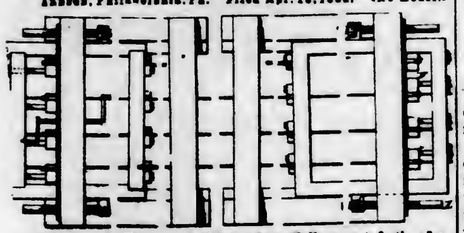
259,046. UNDERGROUND ELECTRICAL CONDUCTOR. GEO. RICHARDSON, Philadelphia, Pa. Filed Apr. 11, 1882. (No model.)



Claim.—1. The improvement of the art of laying and insulating underground electrical conductors or wires, which consists in first threading or drawing the wire or wires through a previously-constructed covered conduit or section thereof, and then insulating such wires from the ends of the conduit or section by covering them with a fluid or plastic insulating substance which will solidify around them, all substantially as before set forth.

2. A conduit for electric wires, composed of a line of pipes, intersecting vaults, and one or more lateral man-holes at each vault, substantially as before set forth.

259,047. WIRE-STRETCHING APPARATUS. GEORGE RICHARDSON, Philadelphia, Pa. Filed Apr. 13, 1882. (No model.)



Claim.—1. The combination, substantially as set forth, of a frame, the sliding sash, and a series of clamps, each composed of a pair of jaws adapted to grasp a wire sidewise at any point of its length.

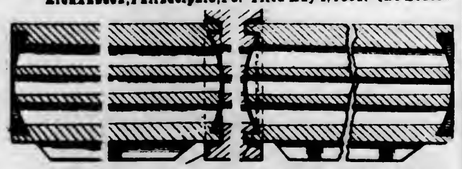
2. The combination, substantially as before set forth, of a frame, the sliding sash, and an independently-movable clamp composed of a pair of jaws adapted to grasp a wire sidewise at any point of its length.

3. The combination, substantially as before set forth, of a frame, the sliding sash, a fixed clamp, and an independently-movable clamp, both clamps being adapted to grasp a wire sidewise at any point of its length.

4. The combination, substantially as before set forth, of a frame, the sliding sash, an independently-movable clamp constructed with a screw-threaded rod or stem, and a nut on said screw-threaded rod.

5. The combination, substantially as before set forth, of a frame, the sliding sash, a series of fixed clamps, and a series of independently-movable clamps, all the clamps being adapted to grasp wires sidewise at any point of their length.

259,048. MULTIFLUE PIPE AND COUPLING-SECTION. OTIS RICHARDSON, Philadelphia, Pa. Filed May 4, 1882. (No model.)



Claim.—1. A multiflue pipe each end of which is constructed with a convex area and an encircling-rim, substantially as before set forth.

2. A multiflue coupling-section each end of which is constructed with a concave area surrounded by an annular recess, which is in turn encircled by a rim, substantially as before set forth.

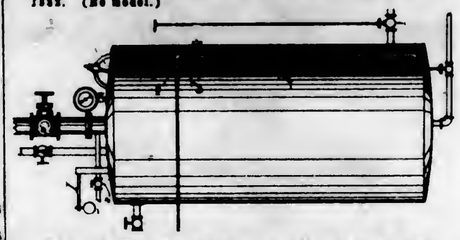
3. The combination, substantially as before set forth, of a multiflue pipe and a multiflue coupling-section having interlocking convex and concave portions, respectively, at their ends, the pipe being also constructed with a surrounding rim and the coupling-section with a corresponding annular recess encircled by a rim.

259,049. TEA-POT AND COVER. FRANCIS B. RICHARDSON, Boston, Mass. Filed Feb. 17, 1882. (No model.)



Claim.—The combination and arrangement of pot and cover shown in Fig. I, being the cover A, with the outwardly-curving flange B and the spring C, in combination with the pot and its mouth, all substantially as described and shown.

259,050. CONVERTER FOR CONVERTING STARCH INTO GLUCOSE. EDWIN ROAT, ALLEN K. MCKEE, and HARRY HAMLIN, Buffalo, N. Y., assignors to said Hamlin. Filed Apr. 24, 1882. (No model.)



Claim.—1. The combination, substantially as before set forth, of the converter, the test-pipe thereof, and the steam-pipe for cleansing said test-pipe.

2. The combination, substantially as before set forth, of the closed converter and the blow-off pipe having its lower end arranged within the converter and above the bottom of the same, whereby the contents of the converter may be discharged in an upward direction to within a short distance of the bottom of the converter.

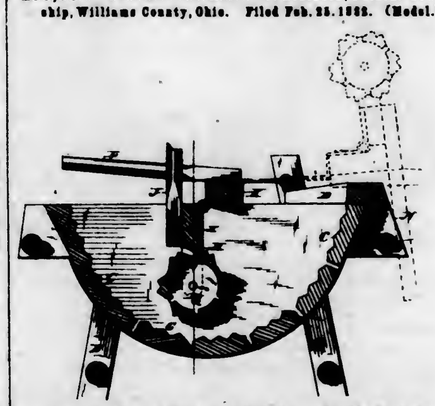
3. The combination, substantially as before set forth, of the closed converter, the blow-off pipe thereof, and the upper steam-pipe combined with said blow-off pipe.

4. The combination, substantially as before set forth, of the closed converter, the discharge-pipe thereof, and the steam-pipe, combined with the lower end of said blow-off pipe.

5. The combination, substantially as before set forth, of the closed converter, the discharge-pipe thereof, leading in an upward direction, and the blow-off tank located above the level of the converter.

6. The combination, substantially as before set forth, of the closed converter, the blow-off pipe thereof, the blow-off tank, and the guard at the discharge end of said blow-off pipe.

259,051. WASHING-MACHINE. J. ROBINSON, Pulaski Township, Williams County, Ohio. Filed Feb. 25, 1882. (Model.)



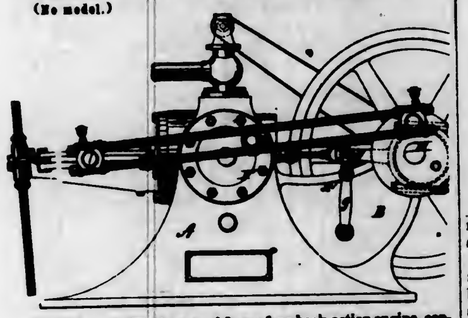
Claim.—The tub A, provided at one end with the supplemental block D, and at one side with a wringer-rest composed of legs B, cross-bar E, and inclined plate F, in combination with bar K, hinged to the tub, and bar I, hinged to bar K, and provided with fluted roller G and handle J, whereby the water is prevented from being forced over the end of the tub by the rubber and the latter can be thrown back from the wringer-rest, all substantially as set forth.

259,052. BOLT AND RIVET CLIPPER. BALTHASER SCHMIDT, Juneau, Wis., assignor of one-half to Peter Rolfler, same place. Filed Apr. 17, 1882. (Model.)



Claim.—The combination, with a lever having its end bent over and formed into a cutting-edge, and having an aperture, of a lever eccentrically pivoted to the lever aforesaid, and provided with a cutting-edge flush with its outer face and located in the same plane as the edge of the other lever, both levers being cut away to form a clearance-space back of their cutting-edges, into which the aperture aforesaid leads.

259,053. FRAME FOR STEAM AND OTHER POWER ENGINES. LOUIS SCHUTTE, Philadelphia, Pa. Filed Jan. 3, 1882. (No model.)



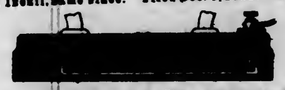
Claim.—1. The improved frame for a back-action engine, consisting of a flat elongated base, the central portion curving upward from the two ends of the base and gradually contracted toward its top, a horizontal cylinder mounted upon the upper end of said central portion, the cross-head guides extending from one end of the same, and the shaft-supporting arms extending from the opposite end of the same and supported directly from the base portion, as shown.

2. The engine-frame consisting of the broadened base portion, the central portion or standard, curving upward from the ends of the base and terminating above the center of the base in a contracted portion, and the shaft-supporting arms or webs B, extending upward from the base and outward from the standard, as described and shown.

3. The frame A, constructed with a broad base and contracted thence upward to the center, in combination with the cylinder and its circular supporting-shocks bolted to the top of the frame, substantially as shown and described.

4. In an engine-frame, the flat rectangular base portion, the standard, curving inward and upward from the two ends of said base and adapted to receive the cylinder at their upper ends, and the main shaft-supports B, extending upward and outward, as shown, with bearings substantially over one end of the base.

259,054. ELECTRIC FLAT-IRON. HENRY W. SEELY, New York, N. Y., assignor of two-thirds to Richard N. Dyer and Samuel Insull, same place. Filed Dec. 8, 1881. (No model.)



Claim.—1. The combination, with a flat-iron or similar utensil, of an electrical resistance located within the same, the face of said iron being heated by radiation from said resistance, substantially as set forth.

2. A chambered flat-iron or similar utensil, in combination with an electrical resistance inclosed entirely thereby, whereby all the heat radiated from such resistance will be utilized, substantially as set forth.

3. A chambered flat-iron or similar utensil, in combination with an electrical resistance inclosed thereby, and a layer of non-heat-conducting material to confine the heat to the face of the iron, substantially as set forth.

259,055. OIL-STOVE. JAS. L. SHARP, New York, N. Y. Filed Feb. 14, 1882. (No model.)

Brief.—A non-heat-conducting packing is placed between the reservoir and the supporting-frame, as shown at *a*. The wick-tubes are rigidly connected to the drum H only, and the drum D and cover C are entirely supported by the frame A.

Claim.—1. In a coal-oil stove, the combination of a supporting-frame, A, with a reservoir, B, suspended at two or more projecting points from said reservoir, and with non-conducting packing *g* between said projecting points and the supporting-frame, substantially as described.

2. The combination of the oil-reservoir B, having projecting nozzle *f*, with the surrounding supporting-frame A, having flue-like extension *g*, into which the said nozzle *f* enters, substantially as and for the purpose described.

3. The combination of the supporting-frame A, containing the suspended oil-vessel B, with the cover C, drum H, that holds the wick-tubes, and with the drum-frame E, which is hinged to the frame A, and entirely supported thereon, so that the drum and its attachments will not be supported on the cover C nor on the drum H, substantially as described.

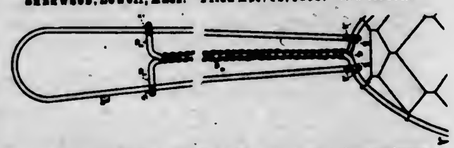
4. The combination of the supporting-frame A with the suspended oil-reservoir B, and with the cover C, having projecting hinge-piece *l*, that enters a slot in the flange of the frame A, and with the drum D, which is separately hinged to the frame A, so that by folding the drum D the cover C and the wick-tubes will be left undisturbed, substantially as specified.

5. The combination of the frame A, having air openings or apertures, with the suspended reservoir B, and with the cover C, all arranged to form an air-space, *m*, between the cover and the reservoir, and a communication, *n*, between said air-space *m* and the outer air, substantially as specified.

6. In an oil-stove, the wick tube or tubes G, carried by and fastened to a hollow drum, H, having perforated wall *s* and closed top and bottom, in combination with the annular cover C and reservoir B, the drum H resting directly on and closing the opening in said cover, substantially as specified.

7. In an oil-stove, the combination of the annular cover C of the oil-reservoir with the ring *p*, posts *o*, diaphragm F, wick-tubes G, hollow drum H, having perforated walls and closed top and bottom, and bolts *r*, substantially as described.

259,056. HANDLE FOR WIRE-RIMMED ARTICLES. DANIEL SHERWOOD, Lowell, Mass. Filed Apr. 13, 1882. (No model.)



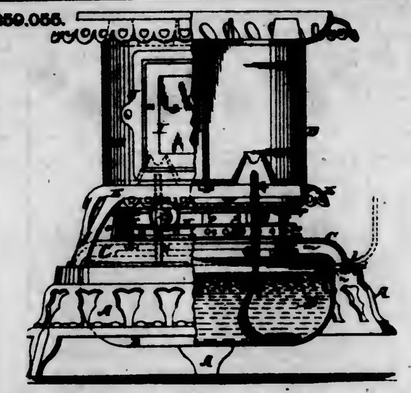
Claim.—1. The combination of the rim-wire A, having its two parts twisted together at *a*² and separated into the two parts *a*², which are extended at right angles to the twisted portion and clasped around the strengthening-wire B, with each wire B bent to form a loop, and having its ends *b b* clasped around the wire A near the twisted portion, substantially as described.

2. A handle for articles having a wire-supported rim formed of portions of each wire twisted together and extending out from such rim a part of the length of such handle, and then separated to form supports to a wire loop whose ends are clasped to the rim portion of such rim-wire, and which forms part of the handle, substantially as described.

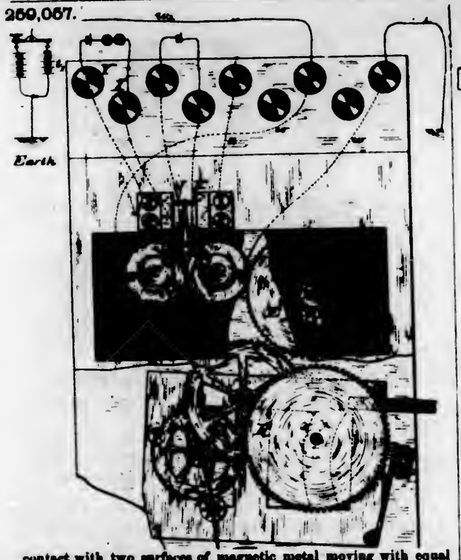
259,057. TELEGRAPHIC RECEIVING-INSTRUMENT. OTIS SMITH, Astoria, N. Y. Filed Jan. 4, 1882. (No model.)

Claim.—1. The combination, substantially as hereinbefore set forth, of a polarized armature maintained in permanent frictional

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contact with two surfaces of magnetic metal moving with equal rapidity but in opposite directions, and a magnetizing-coil which acts to induce contrary magnetic polarity in or upon said moving surfaces, respectively.

2. The combination, substantially as hereinbefore set forth, of two cylinders of magnetic metal, mechanism for rotating said cylinders simultaneously in opposite directions, magnetizing-coils acting upon said cylinders in such a manner as to induce unlike magnetic polarity in them, respectively, a polarized armature mounted in permanent magnetic contact with the moving surfaces of both cylinders and capable of receiving motion therefrom by friction, and stops for limiting the movements of said armature in each direction.

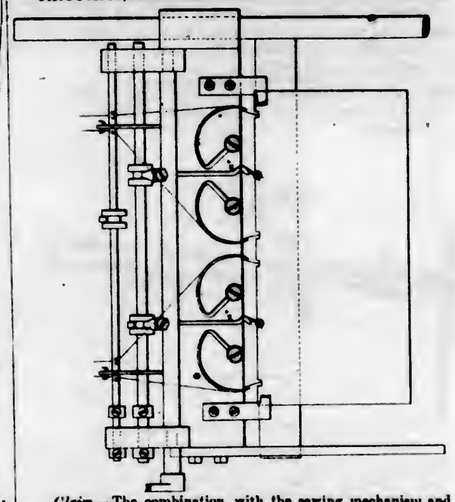
3. The combination, substantially as hereinbefore set forth, of two cylinders of magnetic metal, mechanism for rotating said cylinders simultaneously at a like speed but in opposite directions, magnetizing-coils acting upon said cylinders in such a manner as to induce unlike magnetic polarity in them, respectively, a polarized armature maintained in permanent magnetic contact with the moving surfaces of both cylinders and capable of receiving motion therefrom by friction, an electric circuit including said magnetizing-coils, and means for transmitting currents or pulsations alternately of positive and negative electricity through said circuit.

4. The combination, substantially as hereinbefore set forth, of two cylinders of magnetic metal, mechanism for rotating said cylinders simultaneously at a like speed but in opposite directions, magnetizing-coils acting upon said cylinders in such a manner as to induce unlike magnetic polarity in them, respectively, a polarized armature maintained in permanent magnetic contact with the moving surfaces of both cylinders and capable of receiving motion therefrom by friction, and an independent circuit traversed by an electric current and controlled by the movements of said armature.

5. The combination, substantially as hereinbefore set forth, of two cylinders of magnetic metal, mechanism for rotating said cylinders simultaneously at a like speed but in opposite directions, magnetizing-coils acting upon said cylinders in such a manner as to induce unlike magnetic polarity in them, respectively, a polarized armature constructed in two sections mechanically united but magnetically insulated from each other, said sections being respectively maintained in permanent magnetic contact with the moving surfaces of the rotating cylinders, so as to be capable of receiving motion therefrom by friction.

6. The combination, substantially as hereinbefore set forth, of two cylinders of magnetic metal, mechanism for rotating said cylinders simultaneously at a like speed but in opposite directions, magnetizing-coils acting upon said cylinders in such a manner as to induce unlike magnetic polarity in them, respectively, a polarized armature maintained in magnetic contact with the moving surfaces of both cylinders and capable of receiving motion therefrom by friction, and a permanent polarized stationary magnet for imparting like magnetic polarity to both sections of the polarized armature.

259,058. BOOK-SEWING. DAVID M. SMYTH, Hartford, Conn., assignor to the Smyth Manufacturing Company, same place. Filed Feb. 27, 1882. (No model.)



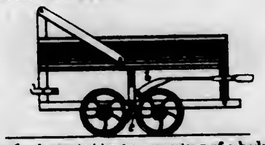
Claim.—The combination, with the sewing mechanism and sheet-holder in a book-sewing machine, of a needle occupying the channel cut in the backs of the signatures, and a projection upon such needle forming a sheet-keeper, substantially as set forth.

259,059. MANUFACTURE AND LAYING OF COMPOSITE PAVEMENTS. PETER STUART, Edinburgh, County of Mid-Lothian, Scotland. Filed Nov. 28, 1881. (No specimens.)

Claim.—1. The composition for pavements, landings, stair-steps, and other like structures, consisting of a mixture of cement or other binding material and broken or cubed granite, thoroughly cleaned to present the solid smooth faces of its crystals, the mixture being thoroughly amalgamated before application as a wearing-surface, substantially as set forth.

2. The method of making artificial stone for pavements and other structures, which consists in crushing or otherwise reducing granite to small pieces or cubes, removing therefrom the fine dust or flour resulting from this operation, so as to present the clean faces of the crystals, adding thereto a suitable quantity of cement or other binding material, thoroughly amalgamating the mixture in a pug-mill or otherwise, and molding or applying the same as a wearing-surface, substantially as and for the purpose set forth.

259,060. CAR-BRAKE. JOHN THOMPSON, Bucyrus, Ohio. Filed June 13, 1881. (No model.)



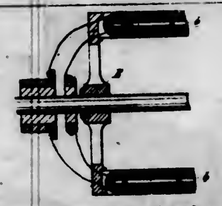
Claim.—1. A pivoted brake consisting of a body portion having a horizontal slot, to allow self-adjustment upon the pivot, and provided with an upwardly-projecting flange and reversed end heads or bearing-surfaces, in combination with a pair of car-wheels, a suitable support, and a lever fastened to the flange of the shoe, as and for the purpose set forth.

2. The combination of the spring-lever *b*, its retaining device, and fixed pivot-bolt *f* with the slotted brake-shoe carrying said lever, and a car-body, as herein set forth.

259,061. DYNAMO-ELECTRIC MACHINE. CHARLES J. VAN DEPOELE, Chicago, Ill. Filed Dec. 15, 1881. (No model.)

Brief.—The armature-sections are formed of plates of sheet-iron bent upon themselves, the conducting-wire being in layers alternating with the plates. Plates of sheet-iron are fastened to the sections to form the polar extremities of the sections and to afford means of attachment to the supporting-disks. Each armature-coil is connected at one end to a ring which is common to all, the other terminal of each coil being connected to a commutator-plate.

259,061.



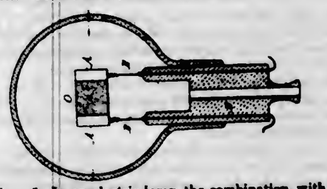
Claim.—1. In an armature, a series of sectional cores, each composed of thin sheet-iron plates folded upon themselves, in combination with layers of wire wound between said metal plates, substantially as described.

2. In an armature for a dynamo-electric machine, a magnetic section consisting of a sheet-iron core bent or doubled upon itself and secured to pole-faces of the same material and coils of wire wound upon said core, substantially as described.

3. The pole-faces *d*, in combination with the bent sheet-iron cores *b*, forming supports for the layers of wire forming the magnet-coil, substantially as described.

4. The combination, with the pole-faces *d*, having projecting ends, of the alternate bent sheet-iron cores *b* and layers of wire secured between said pole-faces, the disks B, having recesses to receive the ends of said pole-faces, the rods D, and the nuts *f*, substantially as described.

259,062. ELECTRIC LAMP. CHARLES J. VAN DEPOELE, Chicago, Ill. Filed Feb. 11, 1882. (No model.)



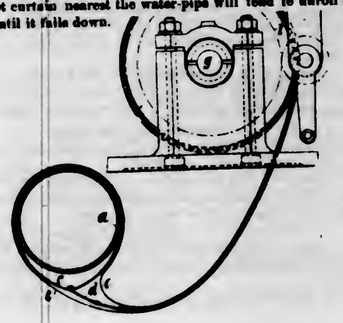
Claim.—1. In an electric lamp, the combination, with a confining-globe, a holding device, and conducting-wires, of a non-conducting medium connected with the wires, and provided upon its surface with small particles of finely-divided conducting medium secured close together, but not in electrical contact, substantially as described.

2. In an electric lamp, and in combination with the terminals A A, conductors B B, a confining-globe, and a suitable support, the non-conducting medium O, provided with small particles of carbon not in electrical contact, substantially as described.

3. In an electric lamp, the combination, with a non-conducting medium provided superficially with small particles of finely-divided conducting material not in electrical contact, of a glass globe inclosing said conducting and non-conducting mediums, and from which the air has been abstracted and replaced by some non-supporting gas, and suitable electrical connections leading from the mediums within the globe, substantially as described.

259,063. FIRE-PROOF CURTAIN FOR THEATERS. KONRAD VON FALKENHAUSEN, Wallisfarth, near Glatz, Germany. Filed Mar. 7, 1882. (No model.)

Brief.—The curtain, which is closed at the sides and open at the bottom, is secured at the upper end to a perforated water-pipe. The other end is rolled up on a roller stationed above and in front of the water-pipe, so that when the water is turned on the weight of the wet curtain nearest the water-pipe will tend to unroll the curtain until it falls down.



Claim.—1. The combination, in a fire-proof curtain for insulating the stage of theaters, of a net, *d*, attached by the rope *e* to the water-pipe *a*, with the cover of mill-cloth *c*, all substantially as set forth.

2. The combination of a fire-proof curtain for insulating the stage of theaters, composed of the net *d*, the cover *c*, and the water-pipe *a* with the roller *m*, round which the curtain may be wound, all as and for the purpose specified.

259,064. PHOTOGRAPHIC CAMERA. WILLIAM H. WALKER, Rochester, N. Y. Filed Feb. 16, 1882. (No model.)



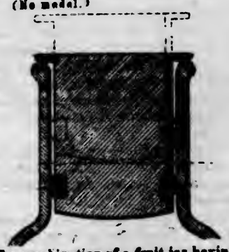
Claim.—1. The combination of the hinged focusing-screen frame C and camera-body A, provided with side plates, J J, adapted to retain the holder in place on the camera-body, substantially as described.

2. The combination of the holder H, provided with pins I I, and the camera-body A, having side plates, J J, attached thereto, substantially as described.

3. The combination, with the camera A, provided with concave plate E, of the convex tripod-head E', provided with lugs K and pins *o*, rod *r*, nut T, and spring *s*, substantially as and for the purposes set forth.

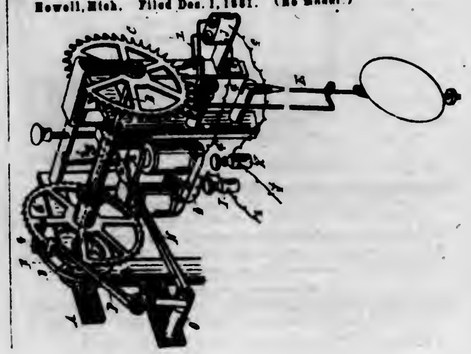
4. The camera-body A, provided with internal light-reflecting grooves, *g g*, substantially as and for the purposes set forth.

259,065. FRUIT-JAR. ALBERT C. WETHERBEE, Hammonton, N. J., Administrator of Henry B. Wetherbee, deceased. Filed Oct. 3, 1880. (No model.)



Claim.—The combination of a fruit-jar having a neck with a smooth straight and cylindrical inner surface with a stopper having a groove around the base and an elastic packing-ring embedded immovably in the groove, and having in its side a groove for a venting-pin, the stopper having a cylindrical extension above the packing-ring nearly corresponding in diameter with that of the extended neck of the jar, whereby the stopper without tipping may rise and fall within the neck of the jar as the contents expand or contract, and the jar may be vented, all as and for the purposes set forth.

259,066. ELECTRIC SPRING-CLOCK. WALTER D. WHALEN, Howell, Mich. Filed Dec. 1, 1881. (No model.)

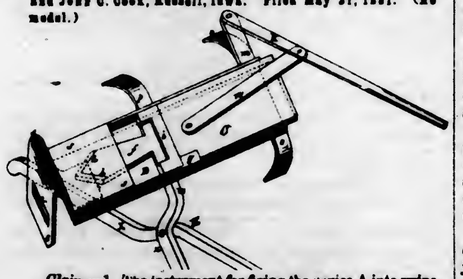


Claim.—1. The combination, with the arbor B, carrying an escapement-wheel, the spring F, the magnet H, bell-crank N, armature M, pawl P, and a circuit-breaker, of the ratchet-wheel G, mounted on a stationary sleeve, R, adapted to allow the free passage and movement of the arbor B, substantially as and for the purpose specified.

2. The combination, with the escapement C, arbor B, ratchet-wheel G, spring F, pawl P, bell-crank N, armature M, magnet H, and a circuit-breaker, of the supporting-frame A and the sleeve R, secured to the frame, said sleeve forming a bearing for the ratchet-wheel G, and forming a free passage for the arbor B, substantially as and for the purpose specified.

3. The combination, with the escapement-wheel C, of the arbor B, the ratchet-wheel G, the spring F, secured at its ends to said arbor and ratchet-wheel, the pawl P, the bell-crank and armature M N, the electro-magnet H, the verge D, the bent yoke L, connected to and moving with the verge, the double mercury-cup J, and electrical connections between the electro-magnet and the mercury-cup, substantially as described.

259,067. HOG-RINGING TOOL. WILLIAM H. WHITTLESEY and JOHN C. COOK, Russell, Iowa. Filed May 31, 1881. (No model.)

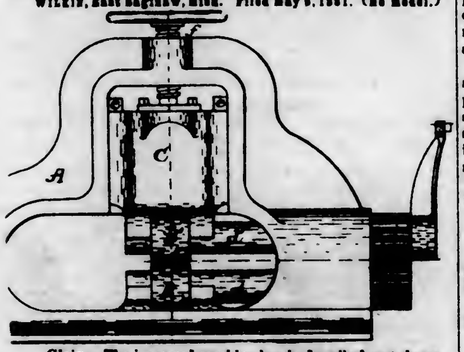


Claim.—1. The instrument for fixing the device A into swine-snouts, which consists of the sliding plate C, having the spear-headed chisel *f*, provided with the recessed flanges *h* and *i* and the sliding plate-lever *k*, and of the bed-plate D and the thereto rigidly-attached fulcrum-lug *m*, the curved clamps *o* and *p*, the slotted mount-piece *s*, and the clamping-tongs E, the lower tongue, *x*, of which is free and provided with a probe-point, all as and for the purpose herein specified.

2. In the instrument herein described, the clamping-tongs E, the bed-plate D, and its curved clamps *o* and *p*, in combination with the sliding plate C, its chisel *f*, and lever *k*, as and for the purpose herein specified.

3. In the instrument herein described, the chisel *f* and its recessed flanges *h* and *i*, in combination with the sliding plate-lever *k*, and the slotted mount-piece *s*, as and for the purposes herein specified.

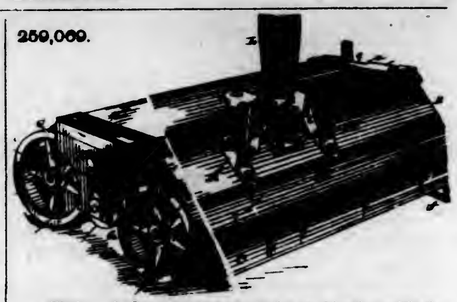
259,068. MACHINE FOR STRETCHING SAWS. THEODORE S. WILKIN, East Saginaw, Mich. Filed May 9, 1881. (No model.)



Claim.—The improved machine herein described and shown for stretching saws, consisting essentially of the frame A, the rolls B B', the gears and crank for operating the rolls, the cross-head C, and the screw *f*, substantially as specified.

259,069. CARPET-SWEEPER. HENRY S. WISE, Ashtabula, Ohio, assignor to Jennie A. Wing, same place. Filed Jan. 7, 1882. (Model.)

259,069.



Claim.—1. In a carpet-sweeper, the combination, with the casing and the pivoted pans, of a slotted bell-crank lever connected with and adapted to dump said pans, substantially as set forth.

2. In a carpet-sweeper, the combination, with the casing and the pans, the latter having inwardly-projecting ears and lugs, of a bell-crank lever pivoted to said casing and provided with slots adapted to receive said lugs of the pans, substantially as set forth.

3. In a carpet-sweeper, the combination, with the casing, of pivoted pans and a bell-crank lever adapted to tilt the latter, and the friction-wheels mounted on journals projecting from the ends of the pans and adapted to force the latter back into operative position, substantially as set forth.

4. In a carpet-sweeper, the combination, with the casing and pivoted pans, of a slotted bell-crank lever adapted to simultaneously dump said pans, friction-rollers, and a revolving brush constructed and arranged substantially as described, whereby said pans are thrown back into operative position by weight or pressure upon the top of the sweeper, substantially as set forth.

5. In a carpet-sweeper, the combination, with the end piece of the casing, of the pivoted pans provided with outwardly-projecting studs or journals upon which are mounted friction-wheels, substantially as set forth.

6. In a carpet-sweeper, the combination, with the brush and its rollers, of a bell-crank lever pivoted to the casing and provided at its inner end with a bearing for one end of the brush-roller, substantially as set forth.

7. In a carpet-sweeper, the combination, with the casing, of a handle-socket provided with arms adapted to be secured in bearings on the casing, elastic washers surrounding the ends of said arms within the bearings, and a catch secured to the top of the casing and so arranged relative to said socket that the latter will be held thereby, substantially as set forth.

8. In a carpet-sweeper, the combination, with the casing, of the bearings M, the handle-socket L, adapted to receive a handle, and provided with arms *l*, elastic washers *m'*, catch N, and brace *n*, substantially as set forth.

9. In a carpet-sweeper, the combination, with the top brace and the brush-roller, of a bracket depending from said brace and provided with guides to receive a sliding bearing supporting one end of the brush-roller, and a sliding finger-piece having a diagonal slot within which bears a stud projecting from said bearing, substantially as set forth.

10. In a carpet-sweeper, the combination, with the top brace and the brush-roller, of a bracket depending from said brace and provided on its inner side with guides between which is supported a sliding bearing, the lower end of the latter being adapted to a slot in the lower end of the bracket, and a sliding finger-piece having a diagonal slot within which bears a projecting stud of said sliding bearing, substantially as set forth.

259,070. MEDICAL COMPOUND FOR DIPHTHERIA. HENRY WIEDEMANN, Canton, Ohio. Filed Dec. 20, 1881. (No specimens.)

Claim.—As a diphtheria medicine, the herein-described compound, consisting of white-oak bark, *Cimicifuga racemosa*, alum, borax, and water, in substantially the proportions herein named.

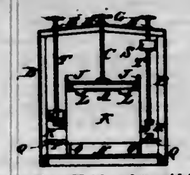
259,071. STOCK-CAR. WILLIAM T. ABBOTT, Fort Wayne Ind. Filed Apr. 13, 1882. (No model.)

Claim.—1. The combination, with a freight-car, of the vertically-adjustable frame A and partitions K, attached to the under side of said frame, substantially as described.

2. A series of doors or partitions, K, hinged to the under side of a frame, A, at intervals along the same within a freight-car, and said frame being vertically adjustable, substantially as specified.

3. The combination, with a freight-car, of vertically-adjustable frame A and partitions K, hinged to said frame, said partitions having arms P and fastening-bolts Q, to secure said partitions to the sides of the car, substantially as specified.

259,071.

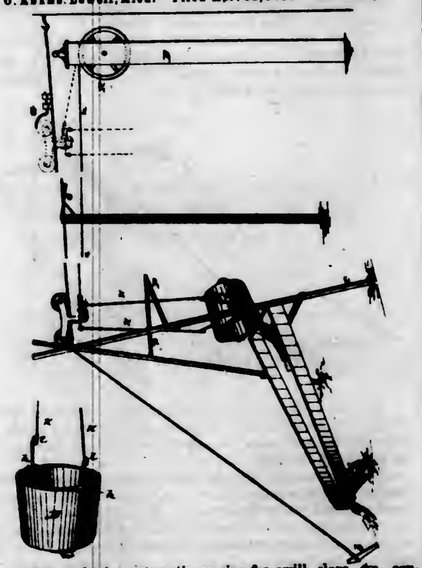


4. The combination, with a freight-car, of vertically-adjustable frame A, partitions K, hinged to said frame, and vertically-adjustable troughs S, the arrangement being such that the troughs may be let down between the partitions and the sides of the car, substantially as specified.

5. The combination, with a freight-car, of a vertically-adjustable frame, A, having partitions K suspended from the under side, and having a floor or cover, I, and sides J, substantially as specified.

6. In a series of partitions, K, hinged to the under side of a frame, A, in the upper part of a cattle-car, one of said partitions having a hinge, *a*, to fold on itself, to allow the rest to fold over it from each way, substantially as specified.

259,072. AUTOMATIC SLOP AND SWILL CARRIER. GRAIN O. ADAMS, Lowell, Mich. Filed Apr. 13, 1882. (No model.)



Claim.—1. An automatic carrier for swill, slops, &c., consisting of an inclined cable-track and its supports, a hanger-carriage, jointed suspending-rods, a bucket having notched ears or bearings at its sides and laterally pivoted to the lower ends of said suspending-rods, and an angular spreader, substantially as specified.

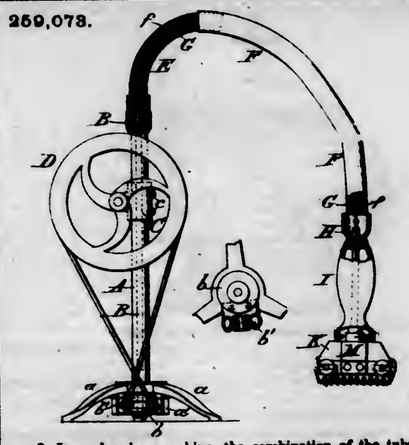
2. The combination, with the hanger-carriage and the inclined cable-track, the bucket, and the automatic dumping devices, of the retracting-cord, its spring and reel, the reversing-weight, its spool on the reel-shaft, and the connecting cord or tape reversely wound on said spool, substantially as specified.

3. In an automatic carrying and dumping device, the combination, with a hanger-carriage and lateral jointed rods *b*, pivoted to a bucket below said carriage, of the lateral notches or bearings *h* on said bucket, and an angular spreader, *g*, substantially as specified.

259,073. ANIMAL-SHEARS. PHILANDER ANDERSON, New York, N. Y. Filed June 23, 1881. (Model.)

Claim.—1. The combination of the tubular standard A, tube E, and flexible tube F, containing coil *f*, with the vertical rotating shaft B, flexible chain G, and hand-piece I, having shaft H, substantially as and for the purpose set forth.

259,073.



2. In a shearing-machine, the combination of the tubular standard A, provided with vertical rotating shaft B, pulleys *b b'*, and adjustable driving-wheel D, tubes E F, flexible driving-chain G, and hand-piece I, having rotating shaft H, adapted to actuate the reciprocating plate K, substantially as and for the purpose shown and described.

3. The combination, with the tubular standard A, having feet *a a*, of the bracket *a'* and vertical shaft B, stepped in said bracket and carrying a combined pulley and fly-wheel, *b*, substantially as and for the purpose specified.

259,074. WASH BOWL AND STAND. JOHN B. ATWATER, Chicago, Ill. Filed Mar. 1, 1882. (No model.)



Claim.—1. A wash-basin which is provided with the ordinary discharge-passage leading to the sewer, and with conical valve-chamber B, conical valve C, provided with upper and lower stems, *g g'*, spring A, arranged centrally beneath the valve, and lever E, arranged inside the basin, and acting by its short arm down upon the upper stem of the valve, substantially as and for the purpose described.

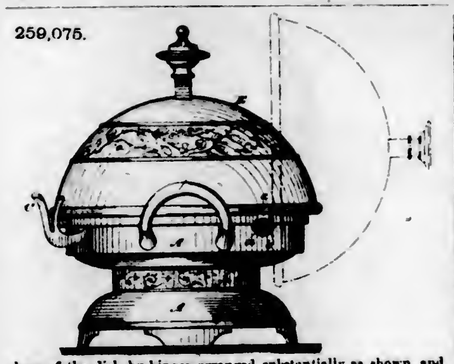
2. The combination of conical valve-chamber B, attached to the under side of the basin and connected with the sewer-pipe, a conical valve, C, and a spiral spring, *h*, placed beneath the valve and shielded from trash and dirty water by the valve, this combination being such that the water and trash are directed by the valve in an oblique outward and downward direction toward the walls of the valve-chamber and discharged into the sewer-pipe without coming in direct contact with the spring, substantially as and for the purpose described.

259,075. BUTTER-DISH. SETH W. BARRITT, Meriden, Conn. Filed Mar. 23, 1882. (No model.)

Claim.—1. A butter-dish having the cover hinged at one side to the main body or base of the dish, substantially as shown and specified.

2. A butter-dish having the cover pivoted to one side of the

259,075.



base of the dish by hinges arranged substantially as shown, and for the purpose described.

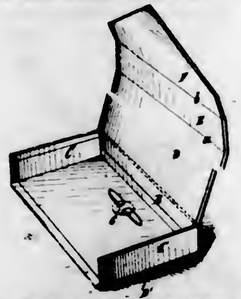
3. A butter-dish having the base A provided with lugs *a b*, and the cover E with lugs *c d*, and screws *e*, to form hinges, arranged substantially as and for the purpose set forth.

4. The butter-dish herein described, consisting of the base A, having lugs *a b*, in combination with a cover, E, provided with lugs *c d*, and the screws *e*, arranged at one side of the said dish, substantially as shown and specified.

5. In butter-dishes, the manner herein described of hinging the cover eccentrically to the base and forming a stop for the cover by the edges of the base, substantially as shown and specified.

6. In a butter-dish, the cover hinged eccentrically to the base, the edges of which form a stop for the cover when in its upright or open position, substantially as set forth.

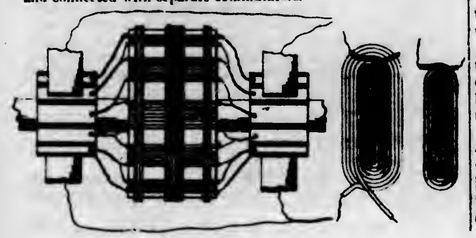
259,076. CARD-CASE. WILLIAM W. BAINBRIDGE, Brooklyn, N.Y. Filed May 2, 1882. (No model.)



Claim.—In a card-case, the combination, with the body having the bottom, back, and sides rigidly connected together, and open at the top and front, of the cover composed of the top D, front E, and flap F, and creased at *a* and *b*, and hinged to the back so that it may be turned up to expose the contents or turned down over the open top and front and made to lap the bottom of the body, substantially as and for the purpose herein described.

259,077. DYNAMO-ELECTRIC MACHINE. CHARLES E. BALL, Philadelphia, Pa. Filed Feb. 25, 1882. (No model.)

Brief.—Forms the cores of the armature of coils of insulated iron wire and winds coils of insulated copper wire upon them, the winding being parallel with the axis of the machine. The terminals of these coils are taken out at opposite ends of the armature and connected with separate commutators.



Claim.—1. An armature for dynamo-electric machines, comprising a core composed of bobbins of iron wire and an external helix or wrapping of copper wire, the wire of both the core and the helix being wound in a direction parallel with the axis on which they revolve, substantially as described.

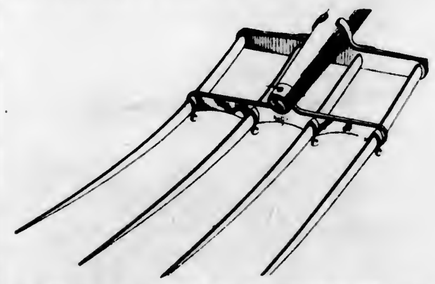
2. A compound bobbin consisting of an internal bobbin of iron wire and an external bobbin of copper wire surrounding the internal bobbin, both said bobbins being wound in a direction at right angles to the direction of revolution, and having their terminals taken out at opposite sides of the armature, substantially as described and shown.

3. An armature composed of a cylinder of wood or other non-conducting material, and having secured thereto, substantially as set forth, a series of compound bobbins, each compound bobbin consisting of an internal or core bobbin of insulated iron wire and an external surrounding bobbin of insulated copper wire, both said bobbins having the wires of which they are composed wound in a direction at right angles to the direction of the revolution of the said armature, the ends of the bobbins being respectively connected as set forth—*i. e.*, the iron bobbins in one series and the copper bobbins in another series, both leading to a commutator or commutators, as set forth.

4. An armature having a core composed of a magnetic material which is connected to a commutator, and having a surrounding helix connected to another commutator, so as to collect separate currents from the core and from the helix, substantially as set forth.

259,078. FORK. GEORGE BARSTOW, Barre, Vt., assignor of one-half to the Stafford & Holden Manufacturing Company, same place. Filed Mar. 29, 1882. (Model.)

Brief.—Cross-bar of malleable iron with integral ferrule, screw-holding handle in ferrule, and flanged opening for the tines. Metallic head with integral clasping-arms and screw-threaded apertures for reception of shanks of tines.



Claim.—1. In a grain and hay fork, the combination, with a handle, head, and tines, of a cross-bar provided with a ferrule or socket for the reception of the end of the handle and openings for the passage of the tines.

2. In a grain or hay fork, the combination, with a handle, head, and tines, of a metallic cross-bar provided with a ferrule formed integral therewith for the reception of the end of the handle, and a pin or screw for securing the said handle therein, the said cross-bar being perforated at suitable intervals apart for the passage of the tines.

3. In a grain or hay fork, the combination, with the handle, head, and tines, of a metallic cross-bar having a socket or ferrule formed integral therewith for the reception of the end of the handle, the said cross-bar being provided with openings for the tines, and flanges formed around said openings, as described, and adapted to closely embrace the tines and hold them in position, substantially as described.

4. In a grain or hay fork, the combination, with the handle, tines, and cross-bar, of the head provided with curved arms adapted to embrace the handle and hold the same in position.

5. In a grain or hay fork, the combination, with the handle, tines, and cross-bar, of a malleable iron head provided on its upper edge with curved arms adapted to embrace the handle, the said head being perforated for the reception of the shank ends of the tines, substantially as described.

6. In a grain or hay fork, the combination, with the handle, cross-bar, and tines, of a metallic head provided on its upper edge with two curved arms adapted to closely embrace the handle and hold the head in position, and with screw-threaded apertures into which the screw-threaded ends of the tines are secured, all of the above parts constructed substantially as described.

259,079. TOOL-HANDLE. THOMAS HAYES, Janesville, Wis. Filed Nov. 26, 1881. (No model.)

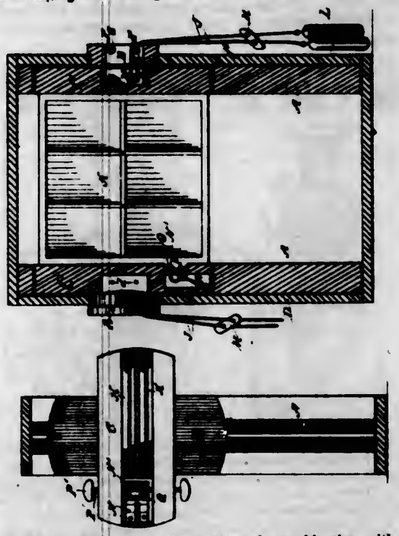


Claim.—1. The jaws of a tool-holder provided with side flanges, *f f*, overlapping their main faces on opposite sides and in opposite directions, coming short of the length of the jaws and forming shoulders *d d*, as shown and described.

2. The combination, with the hollow handle A, the ferrule B, and the adjustable hinged jaws having shallow gutters *e e*, of the sleeve J, whereby small tools may be conveniently held, as set forth.

259,080. REVERSIBLE WINDOW. HENRY BECKER, New York, N.Y. Filed Mar. 31, 1882. (No model.)

Brief.—Swinging frames in the jambs fit recesses therein, and are mounted on hollow pivots provided with cross-pintles and rollers, over which the sash-cords pass. A spring-catch in one of the side frames, operated by a lug on a rod, engages a notch in the sashes. The cords have an apertured plate to prevent twisting. The swinging frames are grooved to receive the sashes.



Claim.—1. In a reversible window, the combination, with the window casing and sashes, of swinging frames in the window-jambs, and of hollow pivots attached to these frames and passing through or into the side standards of the window-frame, substantially as herein shown and described, and for the purpose set forth.

2. In a reversible window, the combination, with a window frame and sashes, of the swinging side frames, C, fitting in recesses E in the window-jamb, the hollow pivots B, the sash-cords I, and the weights L, substantially as herein shown and described, and for the purpose set forth.

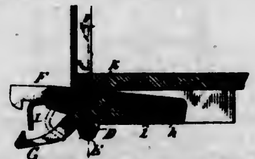
3. In a reversible window, the combination, with the window frame and sashes, of the swinging frames C, the hollow pivots B, and the rollers or pulleys G, the sash-cords J, and the weights D, substantially as herein shown and described, and for the purpose set forth.

4. In a reversible window, the combination, with the window frame and sashes, of the swinging frames C, the hollow pivots B, the rollers or pulleys G, the transverse wire H, the cords J, and weights L, substantially as herein shown and described, and for the purpose set forth.

5. In a reversible window, the combination, with the window frame and sashes, of the swinging frames C, the spring N, and the shaft P, provided with a lug, Q, substantially as herein shown and described, and for the purpose set forth.

6. The combination, with window weight-cords and weights, of an apertured plate, M, through which the cords pass, substantially as herein shown and described, and for the purpose of preventing entangling of the cords, as set forth.

259,081. CAR-COUPLING. LYMAN M. BEDFORD, Sioux Falls, Dak. Filed Feb. 6, 1882. (No model.)



Claim.—1. The coupling-head consisting of the two hooked pivoted jaws, having their hooked ends arranged to swing in different vertical planes, and means, substantially as described, for moving said jaws simultaneously in opposite directions.

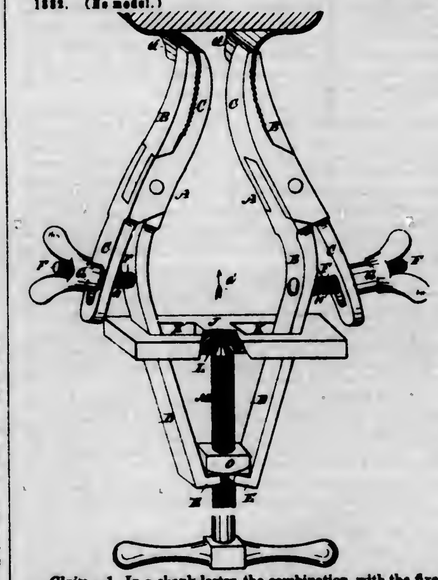
2. In combination with the upwardly-moving jaw pivoted at its rear end, the lower jaw pivoted thereto at a middle point, and a bearing or fulcrum to the lower jaw, located in advance of its pivot, whereby the elevation of the upper jaw is caused to depress the lower jaw, and vice versa.

3. In combination with the hooked jaws F and G, arranged to move in opposite directions, the two eccentrics D and E, located thereunder, as shown and described.

4. In combination with the two coupling-jaws, as described, the eccentrics and the horizontal eccentric shaft, the vertical shaft connected with the horizontal shaft by chains, as described and shown.

5. In combination with the hooked jaws F and G, arranged to open in opposite directions, the finger I, pivoted to one of the jaws, and arranged to engage at its free end with the opposite jaw, as described and shown, whereby the movement of the jaws is caused to lock and unlock the finger.

259,082. SHANK-LASTING APPARATUS FOR BOOTS AND SHOES. FRANK BEYERLE, North Branch, N.Y. Filed Feb. 20, 1882. (No model.)



Claim.—1. In a shank-laster, the combination, with the fixed jaws B, of the pivoted jaws C, extended beyond the pivots and having their ends slotted, the screw-bolts F, the nuts G, and the springs H, substantially as and for the purpose set forth.

2. In a shank-laster, the combination, with the clamps A, provided with extensions D, terminating in flanges E at their ends, of the plate J, provided with apertures K, the nut O, and the screw M, substantially as herein shown and described, and for the purpose set forth.

3. In a shank-laster, the combination, with the clamps A, having end projections, E, of the plate J, provided with apertures K, having their outer edges beveled, and of the screw M, resting on said plate, substantially as herein shown and described, and for the purpose set forth.

259,083. WAX-THREAD SEWING-MACHINE. CHARLES F. BOSWORTH, Milford, Conn. Filed Apr. 24, 1882. (No model.)



Claim.—1. In a wax-thread sewing-machine, the bath containing melted wax and a rotating device working in said bath, and in the relation to the loop of needle-thread described, whereby said rotating device takes the wax from said bath and delivers it to the thread, substantially as described.

2. In a wax-thread sewing-machine, the wax-bath, with mechanism, substantially such as described, to deliver the regulated quantity of wax to said bath, and a rotating device running in said bath and in relation to the needle-thread, substantially as described, whereby the said rotating device takes the wax from the bath and delivers it to the thread, substantially as and for the purpose described.

3. In a wax-thread sewing-machine, the wax-bath, with mechanism, substantially such as described, to deliver the regulated quantity of wax to said bath, and a rotating device running in said bath and in relation to the needle-thread, substantially as described, whereby the said rotating device takes the wax from the bath and delivers it to the thread, and an adjustable scraper, *m*, substantially as and for the purpose described.

4. In a wax-thread sewing-machine, the bath containing melted wax, a rotating device working in said bath, and in the relation to the needle-thread described, whereby said rotating device takes the wax from said bath and delivers it to the thread, and mechanism, substantially such as described, to adjust the dip of the rotating device into the bath, substantially as and for the purpose described.

5. In a wax-thread sewing-machine, the reservoir containing wax in a melted state, an intermittently-rotating device arranged to dip into the wax in said reservoir, take a portion therefrom, and deliver it to a bath in connection with said reservoir, the connection between the bath and reservoir being such substantially as described, whereby a constant level is maintained in the said bath, and a correspondingly-intermittent rotating device in said bath, substantially as and for the purpose described.

6. In a wax-thread sewing-machine, the reservoir containing wax in a melted state, an intermittently-rotating device arranged to dip into the wax in said reservoir, take a portion therefrom, and deliver it to a bath in connection with said reservoir, the connection between the bath and reservoir being such substantially as described, whereby a constant level is maintained in the said bath, and a correspondingly-intermittent rotating device in said bath, with mechanism, substantially such as described, to adjust the dip of said rotating devices into the reservoir and bath, substantially as described.

7. In a wax-thread sewing-machine, the combination of the reservoir A, bath B, shaft C, carrying the disk F in the reservoir and the disk *f* in the bath, mechanism, substantially such as described, to impart rotation to said shaft and disk, a partition, *b*, arranged to conduct the wax from the disk F into the bath, and an opening, *c*, from said bath back into the reservoir, substantially as and for the purpose described.

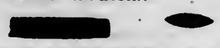
8. In a wax-thread sewing-machine, the combination of the reservoir A, bath B, shaft C, carrying the disk F in the reservoir and the disk *f* in the bath, mechanism, substantially such as described, to impart rotation to said shaft and disk, a partition, *b*, arranged to conduct the wax from the disk F into the bath, and an opening, *c*, from said bath back into the reservoir, and mechanism, substantially such as described, to adjust said disks, substantially as described.

9. In a wax-thread sewing-machine, the combination of the reservoir A, bath B, shaft C, carrying the disk F in the reservoir and the disk *f* in the bath, mechanism, substantially such as described, to impart rotation to said shaft and disk, a partition, *b*, arranged to conduct the wax from the disk F into the bath, and an opening, *c*, from said bath back into the reservoir with the adjustable scraper *m*, substantially as described.

10. In a wax-thread sewing-machine, the combination of the reservoir A, bath B, shaft C, carrying the disk F in the reservoir and the disk *f* in the bath, mechanism, substantially such as described, to impart rotation to said shaft and disk, a partition, *b*, arranged to conduct the wax from the disk F into the bath, and an opening, *c*, from said bath back into the reservoir, with the adjustable scraper *m*, and mechanism, substantially such as described, to adjust the elevation of the disks, substantially as and for the purpose described.

11. In a wax-thread sewing-machine, the combination of the reservoir A, bath B, shaft C, carrying the disk F in the reservoir and the disk *f* in the bath, mechanism, substantially such as described, to impart rotation to said shaft and disk, a partition, *b*, arranged to conduct the wax from the disk F into the bath, and an opening, *c*, from said bath back into the reservoir, with the scraper *r*, substantially as and for the purpose described.

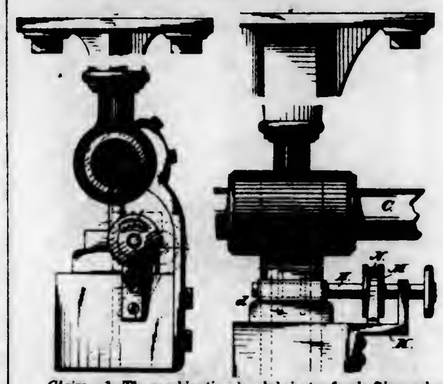
259,084. CORSET-STAY. MORRIS P. BEAT, Worcester, Mass. Filed Feb. 1, 1882. (No model.)



Claim.—1. The herein-described stay for corsets, consisting of the two strips cut from the outside of reed, bamboo, or like material and their flat sides placed together and secured so as to present the natural surface on the outside, making stay elliptical in form, substantially as described.

2. The herein-described stay for corsets, consisting of the two strips cut from the outside of reed, bamboo, or like material, and their flat sides placed together and secured so as to present the natural surface on the outside, making a stay elliptical in form, the stay being closed by a covering, substantially as described and shown.

259,085. LUBRICATING MECHANISM FOR JOURNALS, HANGERS, AXLES, &c. JACOB BEINKHOFF, Auburn, N. Y. Filed May 2, 1882. (No model.)



Claim.—1. The combination, in a lubricator for shafting, axles, &c., of a wick-tube connected to an oil-receptacle, a spindle provided with one or more spur-wheels or other propelling devices for feeding forward the wick, and a spring for actuating the spindle so as to cause the wick to be fed forward as it wears away.

2. The combination, in a lubricator for shafting, of a spindle provided with one or more spur-wheels or analogous devices for feeding forward the wick from the oil-receptacle to the shaft, and the pivoted bracket K, providing a bearing for the spindle and rendered adjustable, substantially as described.

3. The combination, with the bearing-box for a shaft, of the oil-receptacle suspended from said bearing-box, the wick-tube intermediate of the two, the spindle I, provided with one or more spur-wheels or other suitable propelling devices, the drum M, and the spring N, constructed and arranged substantially as described.

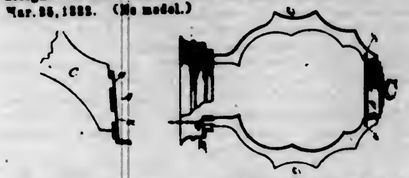
259,086. FIRE-ALARM-BOX APPARATUS. JAS. J. BROPHY, New York, N. Y. Filed Apr. 24, 1882. (No model.)

Brief.—A local alarm is arranged for each signal-box situated in such a position as to be inaccessible to any one turning in an alarm. It is mechanically connected with the signaling mechanism in such manner that when an alarm is turned in the said local mechanism operates and gives warning to all persons in the immediate neighborhood that some one is at the signal-box and has turned in an alarm.



Claim.—The combination, with a fire-alarm circuit-closer and, *a*, having arm *m*, of a suspended box containing gong *f*, trip-wheel *g*, pivoted hammer *h*, and gear-wheel *i*, having pins *k*, and the rod *l*, extending into the back of box A loosely through arm *m*, having an end button, and provided with a cross-pin, *o*, as and for the purpose specified.

259,087. HANGING LAMP. EUSEBE L. BEYAERT, Ansonia, Conn., assignor of one-half to Wallace & Benz, same place. Filed Mar. 25, 1882. (No model.)



Claim.—1. A hanging-lamp fixture consisting of the lamp-holder A and the connections C, the said connections constructed from sheet metal cut with studs or projections *a* to pass through corresponding holes in the lamp-holder and serve as rivets for securing the two parts together, the said connections also secured to the shade-ring above, substantially as described.

2. The lamp-holder A, constructed with the vertical recesses *e* upon its inside, and the connections C, constructed with studs *a*, extending through corresponding perforations in the holder and into the recesses *e* and there riveted, substantially as described.

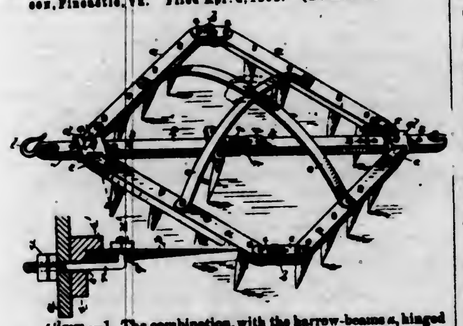
3. The lamp-holder A, constructed with the flanges *f* and radial slots *h* therein, and the sheet-metal connections C, set into the slots *h* and secured to the holder, substantially as described.

259,088. WATER-PITCHER. THOMAS L. I. BULLUSS, Birmingham, Conn. Filed Apr. 17, 1882. (No model.)



Claim.—A metallic pitcher or vessel having an inner or lining wall, D, of pressed water-proof paper, and an edge ring, B, serving to protect the margin of said wall, and as a means whereby the soldering or attachment of said wall to the outer wall is effected, substantially as specified.

259,089. HARROW. HENRY R. BURRUSS and JOSEPH B. BIRPSON, Pinesville, Va. Filed Apr. 4, 1882. (No model.)

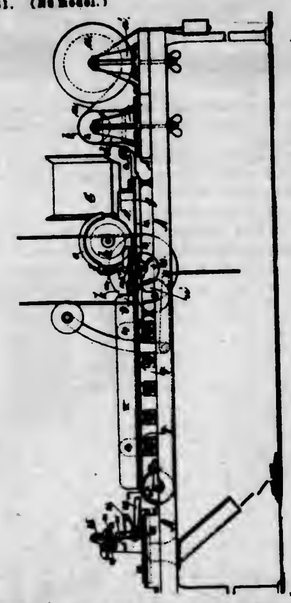


Claim.—1. The combination, with the harrow-beams *a*, hinged together at their outer ends and hinged to the draft-bars at their inner ends, and the diagonal draft-bars *b*, hinged together at their inner ends, of the curved spring seat-supports *c c*, each secured at its ends to the middle of the opposite harrow-beams, and crossing each other at their highest points for the support of the seat, substantially as described, and for the purpose set forth.

2. The combination of the harrow-beams *a*, provided with the clevises *c c*, links *b*, slotted adjusting-plates *d d*, draft-bars *b b*, provided with draft-hooks *l*, adjusting-holes *n*, and clevises *n*, link *m*, and curved spring seat-supports *c*, all substantially as described, and for the purpose set forth.

3. The combination, with the harrow-beam *a*, and harrow-tooth *p*, provided with the hole *g*, of the plate *f*, provided with the downwardly-projecting flange *f'* and hole *s*, and angular bolt *r*, threaded at both ends and provided with the nuts *u u'*, whereby the harrow-tooth is firmly clamped between the flange of the plate and the angular bolt, substantially as described.

259,090. CIGARETTE-MACHINE. JAMES BURNS, Brooklyn, and ALEXANDER BUCKMAN, Schodack Depot, N. Y. Filed Aug. 8, 1881. (No model.)



Claim.—1. The combination, in a cigarette-machine, of a roll for paper, the roller *b*, and disk 2, on the same shaft as the roller *b*, the trough for adhesive material, the hopper for tobacco, the feed-wheel having pins, the guide-bar *c*, the folders 3 4, and guide-plates *c'*, substantially as specified.

2. The combination, in a cigarette-machine, of the feed-wheel A, having pins projecting all around its periphery, the former *i*, slotted for the passage of the pins, the guide-plates *c' c'*, folders 3 and 4, and the wheels 14 at each side of the trough of paper, substantially as specified.

3. The combination, in a cigarette-machine, of the feed-wheel A, having pins, the former *i*, slotted for the passage of the pins, the guide-bar *c*, guide-plates *c'*, folders 3 and 4, finger *r*, and means for supplying a strip of paper pasted near one edge, substantially as specified.

4. The combination, in a cigarette-machine, of the feed-wheel having pins, the former *i*, having slots for the pins, the folders 3 and 4, and the finger *r*, as and for the purposes set forth.

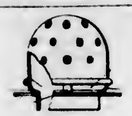
5. In a cigarette-machine, the combination, with the means for forming the paper into a tube and filling and moving the same, of the holding-bar *c*, grooved on its under surface, and the belt *u*, as and for the purposes set forth.

6. In a cigarette-machine, the combination, with the means for forming and filling the paper tube, of a reciprocating stock, *w*, a reciprocating knife, 21, a spring for holding up the knife on the return movement, and a cam-switch for moving the knife to cut off the cigarette, substantially as set forth.

7. In a cigarette-machine, the combination of the holding-bar *c*, elastic belt *u*, and the blocks or pieces of rubber *u'* upon its surface, for the purposes substantially as set forth.

259,091. FIRE-EXTINGUISHING NOZZLE. ABBOTT M. BURNETT, Waterbury, Conn., assignor to the A. Burritt Hardware Company, same place. Filed Mar. 17, 1883. (No model.)

259,091.



Claim.—The herein-described distributer for fire-extinguishers, consisting of the perforated rose constructed with openings at its base, combined with the perforated disk below the openings at the base, substantially as described.

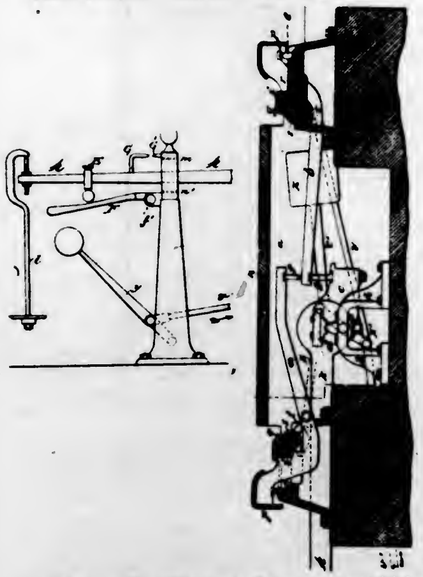
259,092. AIR-CUSHION FOR BOOT AND SHOE SOLES. GEO. P. BUTTERFIELD, Stoneham, Mass. Filed Mar. 27, 1882. (No model.)



Claim.—1. An elastic outer sole, tap-sole, or heel for boots and shoes, formed hollow or with a closed air-space within it, for the purpose set forth.

2. A boot or shoe provided with a hollow imperforate rubber outer sole, tap-sole, or heel retaining a fixed amount of air within its cavity, for the purpose set forth.

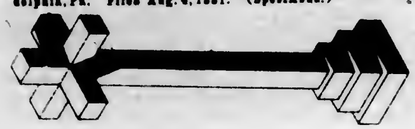
259,093. RAILWAY WEIGHING-SCALES. FREDERIK CASSE, Haarlev, Denmark. Filed Feb. 1, 1882. (No model.)



Claim.—1. The combination of the arms *a a* and *b b*, having their fulcrums at *e*, and provided with knife-edges *i i*, rocking bridge-pieces *q q*, having arms *t*, and connected by the coupling-rods *u* and *x*, double-armed lever *x'*, rod *v'*, and weighted lever *y*, substantially as and for the purpose herein shown and set forth.

2. The combination of the arms *a a* and *b b*, having their fulcrums at *e*, and provided with knife-edges *i i*, knife-edge links *f* and *g'*, and rock-shaft *d*, having arms *c c'*, and provided with the adjustable weight *z*, substantially as and for the purpose herein shown and described.

259,094. PROCESS OF MAKING PHOTOGRAPHIC COPIES OR FAC-SIMILES OF DRAWINGS, &c. SAMUEL CHADWICK, Philadelphia, Pa. Filed Aug. 4, 1881. (Specimens.)



Claim.—1. The combination, with the frame *a*, circular track *b*, horizontal on one side, and provided with the inclines *c c* and horizontal part *d*, and shaft *h*, of the radial arms *k*, arms *l*, pivoted thereto, and each provided with a rod, *n'*, projecting from its end, and caster-wheel *m*, levers *r*, rods *s*, and sliding buckets *o o*, substantially as described, and for the purpose set forth.

2. The bucket *o*, made concave on its front face, with its outer end, *o'*, bent inwardly toward the center of the wheel, its inner front side open, and its back face convex, substantially as described, and for the purpose set forth.

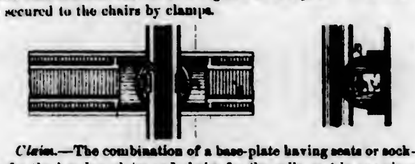
3. The combination, with the bucket *o*, constructed as set forth, and provided with perforated lugs *p p* on its convex side, of the square rod *n'*, on which the bucket is adapted to turn and slide, having a longitudinal twist, substantially as described, and for the purpose set forth.

4. The combination, with the arms *l*, provided with rods *n'* on their ends and buckets *o*, suspended thereon, of the gate A and rods *s'*, secured to the buckets and gate, substantially as described, and for the purpose set forth.

5. The combination, with the frame *a*, track *b*, constructed as set forth, arms *h l*, rods *n'*, caster-wheels *m*, levers *r*, rods *s*, and sliding and turning buckets *o*, of the gate A and rods *s'*, substantially as described, and for the purpose set forth.

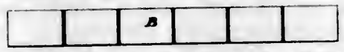
259,095. METALLIC RAILROAD-TIE. JOSEPH CLARK, Green Point, N. Y. Filed Mar. 16, 1882. (No model.)

Brief.—A base-plate has seats or sockets, for the reception of arched bearing-plates provided with top recesses, and chairs, upon which rests the rail, the whole being cast in one piece. The rails are secured to the chairs by clamps.



Claim.—The combination of a base-plate having seats or sockets for the bearing-plates and chairs for the rails, cast in one piece therewith, with arched bearing-plates having top recesses for the rails, and with clamps for attaching the base of the rails to the chairs, substantially as and for the purpose set forth.

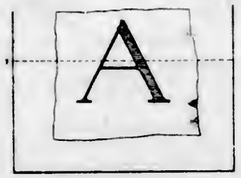
259,096. EGG-CARRIER. OLIVER P. CLARK, St. Louis, Mo. Filed Mar. 1, 1882. (No model.)



Claim.—The egg-carrier tray A, consisting of bottom C, cell part B, horizontally divided into upper and lower halves, sheet-metal strips *c*, securing the lower half of the cell part to the bottom, and the outside strips, *a*, the full height of the cell part, the upper half of the cell part being removable, as set forth.

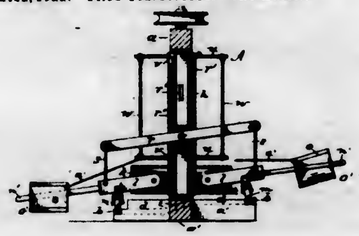
259,097. METHOD OF MAKING DEPRESSED LETTERS OR DESIGNS IN METAL FOR SIGNS. JOHN F. CLULEY, Pittsburg, Pa. Filed Jan. 26, 1882. (No model.)

Brief.—The interior portion of the character cut through the metal foil and varnish is removed before the acid is applied to the plate.



Claim.—The method of making depressed letters, characters, or designs for a sign in a metal plate, consisting in applying a varnished coating to the plate and applying a metallic foil over the varnished coating, and then cutting the design, characters, or letters through the metal foil and varnish to the plate, and then applying acid on the plate through the design, substantially as described, and for the purpose set forth.

259,098. CURRENT-WHEEL. WALTER M. COFFMAN, Elizabethton, Tenn. Filed Feb. 15, 1882. (No model.)



Claim.—1. The combination, with the frame *a*, circular track *b*, horizontal on one side, and provided with the inclines *c c* and horizontal part *d*, and shaft *h*, of the radial arms *k*, arms *l*, pivoted thereto, and each provided with a rod, *n'*, projecting from its end, and caster-wheel *m*, levers *r*, rods *s*, and sliding buckets *o o*, substantially as described, and for the purpose set forth.

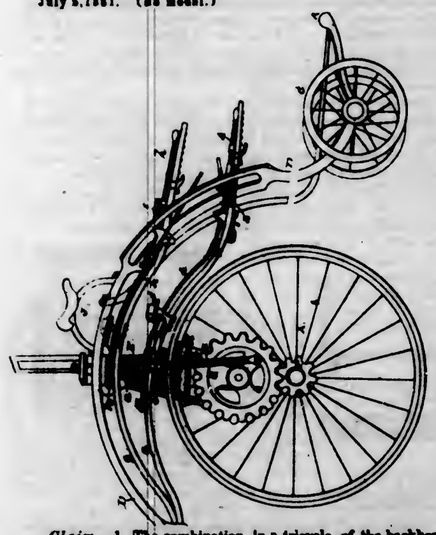
2. The bucket *o*, made concave on its front face, with its outer end, *o'*, bent inwardly toward the center of the wheel, its inner front side open, and its back face convex, substantially as described, and for the purpose set forth.

3. The combination, with the bucket *o*, constructed as set forth, and provided with perforated lugs *p p* on its convex side, of the square rod *n'*, on which the bucket is adapted to turn and slide, having a longitudinal twist, substantially as described, and for the purpose set forth.

4. The combination, with the arms *l*, provided with rods *n'* on their ends and buckets *o*, suspended thereon, of the gate A and rods *s'*, secured to the buckets and gate, substantially as described, and for the purpose set forth.

5. The combination, with the frame *a*, track *b*, constructed as set forth, arms *h l*, rods *n'*, caster-wheels *m*, levers *r*, rods *s*, and sliding and turning buckets *o*, of the gate A and rods *s'*, substantially as described, and for the purpose set forth.

259,099. TRICYCLE. PAUL E. COLLINS, Lynn, assignor of one-twentieth to Enidah J. Downing, Chelsea, Mass. Filed July 5, 1881. (No model.)



Claim.—1. The combination, in a tricycle, of the backbone D, operating-levers *e e*, driving-wheel A, and means, substantially as set forth, for connecting said levers *e e* with the driving-wheel A, substantially as and for the purposes described.

2. In combination with the driving-wheel A, fork E, and levers *e e*, the steering-rods A, arranged substantially as and for the purposes set forth.

3. In a tricycle, the arrangement of a rider's stand or platform, J, by suspending the same from rear arms, K K, to the backbone D at a point in front of or near the vertical diameter of the driving-wheel A, substantially as and for the purposes described.

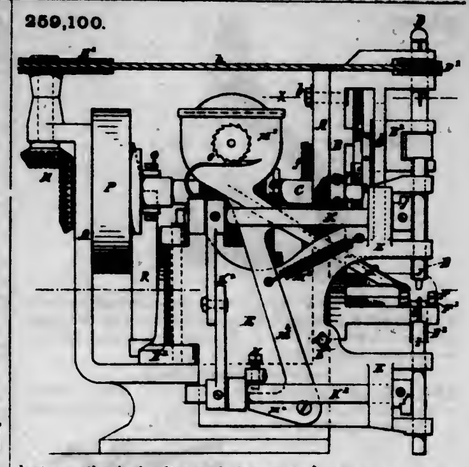
4. In combination, the articulated lever *i i'*, the box 5, having an inside block adapted to rock and slide vertically, as set forth, the bent 3, and screw 4, all arranged to operate in combination, substantially as and for the purposes described.

5. In combination, the articulated lever *i i'*, the box 5, having an inside block adapted to rock and slide vertically, as set forth, the bent 3, screw 4, and means, substantially as shown, for turning the screw 4, as and for the purposes described.

259,100. EYELETING-MACHINE. CHARLES A. GORHAM, Coshituate, Mass. Filed Feb. 27, 1882. (Model.)

Claim.—1. The combination of the revolving heading and punching bar, its cutting-bed, the movable head provided with bearings for supporting and guiding said punching-bar, and an operating mechanism whereby rotating, reciprocating, and lateral vibratory action is simultaneously imparted to said punch-bar, substantially as and for the purposes set forth.

259,100.



2. In a machine for punching, heading, and eyeleting at simultaneous operations, the combination of a reciprocating revolving punch mounted on a laterally-swinging head-piece and provided with a cutting-die and headed end face, a pair of eyelet-setting dies mounted on a hinged frame adapted for side movement to allow the alternate advancement of the punch and eyelet-setting dies to a common position in relation to the work, a guiding and holding presser or jaw mechanism adapted for automatically retaining and releasing the work, and means for adjusting the relative swing or lateral movement of the parts for increasing and diminishing the spacing between the holes, substantially as set forth.

3. The combination, with the frame A and swinging head-piece B, carrying punching-dies D D^1, of the laterally-swinging frame E, carrying the eyelet-setting dies I J, and the mechanism for operating the same, substantially as set forth.

4. The combination, with the punching and eyeleting devices, arranged for operation as described, of the jaw F, with backward-extended arm F^2, the spring *f*, the depressing-lever G', and cam G, for the purposes set forth.

5. The combination of the feed-chute M, adapted for delivering eyelets with their flanged ends uppermost, the upper setting-die, J, having a central opening, and the lower setting-die, I, provided with a fixed or rigid picker or receiving pin, *i*, whereby the eyelets are delivered and set into the work from the upper side thereof, substantially as hereinbefore set forth.

6. The combination, with the eyelet-setting bars or dies I and J, of the rocker-shafts K K', connected thereto by arms I' and J', and mounted in bearings on the swinging frame E, the connecting-arms K^2 K^3, and actuating-cam L, substantially as and for the purpose set forth.

7. The combination, with the swinging head B, carrying the punching devices, and the laterally-swinging frame E, carrying the eyeleting mechanism, of the spring *a*, for retaining said head and frame in close connection, and the adjusting stop-screw E^2, for regulating the movement of said frame, as set forth.

8. The combination, with the frame E and eyelet-setting dies I J, of the eyelet-hopper M' and chute M, mounted on the swinging arm M^2, the cam L, spring M^4, and adjustable stop or screw N, substantially as and for the purposes set forth.

9. The combination, with the bar L', operated by cam L, and the arm K^2, operating the rock-shafts K K', which actuate the eyelet-setting dies I J, of the adjustable connection L^2, substantially as and for the purpose set forth.

10. The combination, with the hinged frame E, carrying the eyeleting mechanism, of the hinge support or bracket E', adjustably connected to the main frame for backward or forward adjustment, as and for the purpose set forth.

11. The combination of the punch-rod D, the head B, pivoted to the main frame at *b*, and having the slotted bar B', the slide B'', pitman *c*, cam C', and revolving shaft C, as and for the purposes set forth.

259,101. SAFETY-STIRRUP. JAMES L. COX, Moore's Salt Works, Ohio. Filed Apr. 19, 1882. (No model.)

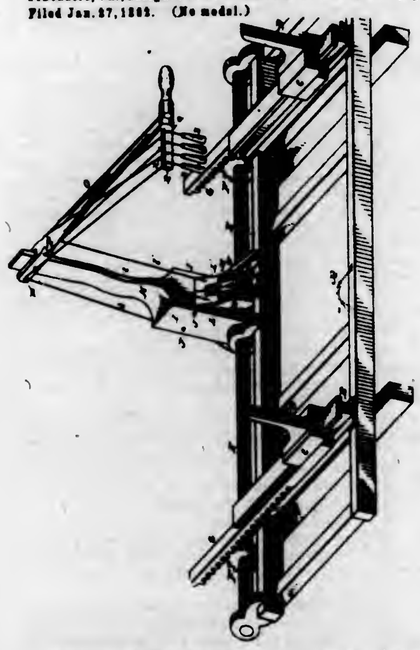
Claim.—The stirrup A, consisting of side piece, B, having

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eye P and perforation H, and foot-rest C, having flanged bracket D, provided with a perforation, M, in combination with the hinged spring-rod I, provided with an S-shaped loop, J, near its lower end, as and for the purpose set forth.

259,102. HEAD-BLOCK FOR SAW-MILLS. JOHN T. CRUSH, Pisgatic, Va., assignor of one-half to D. P. Crush, same place. Filed Jan. 27, 1882. (No model.)

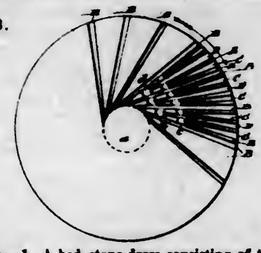


Claim.—1. The combination, with the shafts E, having gear-wheels M, of the forked lever H, the pawls or dogs K K' and L L', the springs N, the lever O, hinged to the upper end of lever H, and having eyes P and cross-bar or handle R, provided with perforations Q, and the cords *h h' l l'*, attached to the dogs or pawls K K' L L', and passed through the eyes P and perforations Q, said cords being provided with handles S, as and for the purpose set forth.

2. The combination of the shafts E, having gear-wheels M, the lever H, having pawls K K' L L', engaging said gear-wheels, the springs N, mechanism, substantially as described, for manipulating the pawls K K' L L', to release one or more of them, so that the shaft or shafts may be turned by the combined action of the lever H and the remaining pawls, and the friction blocks or cushions T, arranged to bear against the gear-wheels M, to prevent the latter and shafts E from turning when the lever H is moved back, as set forth.

259,103. MILLSTONE-DRESS. EDWARDS CURTS, Augusta, Ohio, assignor to himself and Alexander Cunningham, same place. Filed Mar. 1, 1882. (No model.)

259,103.

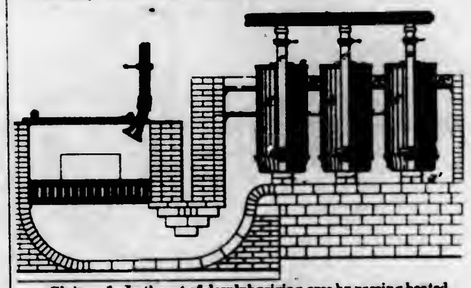


Claim.—1. A bed-stone dress consisting of the quarter-furrows B, tangential to the eye *a*, the furrows D, arranged midway between the quarter-furrows, extending three-fourths of the distance from the periphery to the center of stone, and connected by a transverse channel, *d*, with the quarter-furrows, and the furrows C, placed midway between the furrows B D, extending about one-half the distance from the periphery to center of the stone, and connected by channels *c* with the furrows B D, the furrows B D C successively increasing in their taper toward the periphery, as described.

2. A runner dress consisting of the quarter-furrows B^1, the tapering furrows D^1, arranged midway between the quarter-furrows, and terminating in a point extending nearly to the eye a^1, the tapering furrows C^1, arranged midway between the furrows B^1 D^1, and terminating in a point one-half the distance from the periphery to the eye a^1, and the equal lands E^1 communicating with each other, said furrows becoming gradually more shallow toward the periphery, as described.

3. The combination of a bed-stone provided with intermediate furrows and transverse channels between its quarter-furrows, and a runner provided with intermediate tapering furrows between its quarter-furrows, and having the lands of each quarter communicating with each other, substantially as herein described.

259,104. TREATMENT OF ORES. APPOLO DE FIGANIÈRE, Philadelphia, Pa. Filed Jan. 16, 1881. (No model.)



Claim.—1. In the art of desulphurising ores by passing heated air through the same, the process of freeing the ore from sulphur without melting the charge, which consists in reducing the ore to a granulated state, as described, then heating such ore and passing through the same a regulated current of hot air, such current being induced by constantly exhausting the atmosphere of the vessel containing the ore, substantially as and for the purpose set forth.

2. In an apparatus for the desulphurization of ores, the combination, substantially as set forth, of a furnace, a retort heated thereby, an air-supply pipe provided with a regulating valve or gate and communicating with said retort at one end, an escape-pipe communicating with said retort at the other end, and an ore-vessel located within said retort, said vessel having a perforated bottom and cover and being interposed between the supply and escape pipes of the retort, so as to form the sole avenue of communication between the said pipes.

3. In an apparatus for the desulphurization of ores, the combination, substantially as set forth, of the retort-bottom provided with grooves in its upper edge, as described, and having a pipe or nozzle for connection to an air-supply pipe, a retort-body, and an internal ore-vessel, each fitted by a packed joint to a groove in the upper edge of the retort-bottom above its pipe or nozzle, whereby an air-supply chamber is formed in the base of the retort, as set forth.

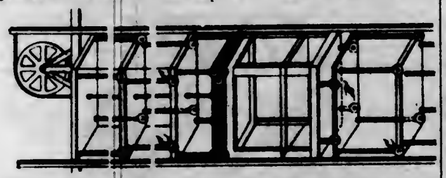
4. In an apparatus for the desulphurization of ores, the combination, substantially as set forth, of a retort having an air-chamber, as described, an ore-vessel having a perforated bottom and being provided with a perforated cover, the said ore-vessel being placed within the retort and communicating therewith through perforations in a cap or cover, and with the supply-chamber through the perforations in the bottom, as set forth.

5. In an apparatus for the desulphurization of ores, a vessel having a shell or body, a bottom plate with a series of short open pipes or passages adjacent to its periphery, and a partition or diaphragm extending across the body adjacent to the bottom plate, said partition being imperforate around and above the pipes of said plate, and being dished or recessed to a point below the upper ends of said pipes and perforated throughout its dished portion, substantially as set forth.

6. In an apparatus for the desulphurization of ores, a vessel having a shell or body, a bottom plate provided with an air-supply, and a chambered lid or cover constructed, as described, to receive a suitable packing, provided with a central tube, and having a series of perforations arranged in its lower plate and central tube, so as to direct the discharge of fumes from the vessel through the packing of the cover and through the central tube, substantially as set forth.

259,105. AUTOMATIC FLOOR FOR ELEVATOR-SHAFTS. ELLEN L. DEBENNET, New York, N. Y. Filed Feb. 28, 1882. (No model.)

Brief.—The hatchway-doors above and below the elevator are connected thereto and together by flexible bands, which coil into pockets in the corners of the doors by means of springs.



Claim.—1. The combination, with an elevator, of two sets of automatic adjustable floors or hatches, connected together and to the elevator or to a suitable platform with cords or bands of any flexible material, and coil-springs, substantially as described.

2. The combination, with an elevator, of a set of automatic floors suspended below the elevator by cords or bands of any flexible material and coil-springs, and adapted to ascend and descend with the elevator, substantially as described.

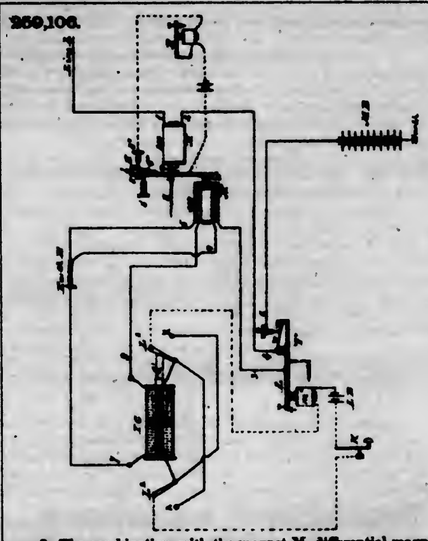
259,106. DUPLEX TELEGRAPH. BENJAMIN F. DILLON, Savannah, and JOHN W. BROWN, Augusta, Ga. Filed Aug. 28, 1881. (No model.)

Brief.—Normally no battery on line and the batteries so arranged that when both operators are transmitting both batteries are united and actuate the main-line relays M. One operator transmits by his own battery passing a current through both relays M and M' at the distant station. A device for overcoming static discharge by sending the secondary current of an induction-coil through one branch of differential relay M' in a reverse direction to that of said discharge. The static charge does not affect the home instrument, because it passes only through relay M, which is insensible to it by reason of high adjustment of its retractile spring.

Claim.—1. A duplex receiving-instrument consisting in the combination, with lever *l*, operating the sounder-circuit, of a magnet, M, arranged always in the main-line circuit, a second magnet, M', operating in unison with magnet M on the same lever, the main battery, and a transmitter, T, interposed between the main battery and the magnet M', and arranged, as described, to direct the main-line current alternately through the simple magnet M and main battery for one position of the home key, and to divert the main-line current through both the magnets M and M' for the other positions of the key, whereby the receiving-instrument is operated alternately by the conjoint effect of both batteries on one magnet, M, and then by the single effect of one battery on the two magnets M and M', as and for the purpose described.

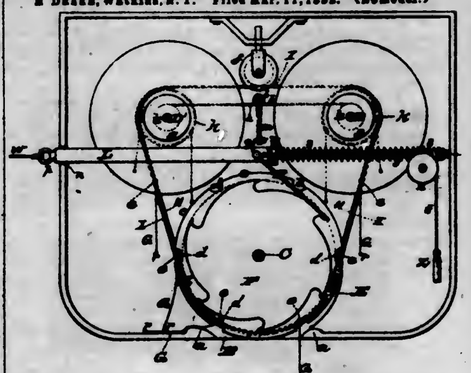
2. The combination of the common armature-lever *l*, the simple magnet M, arranged in the main line, the differential magnet M', acting in unison with the main battery, and the transmitter T, interposed between the main battery and differential magnet, and arranged to alternately divert the line-current through the main battery and the differential magnet, and an induction-coil having its primary wire in the circuit of the transmitter and its secondary wire connected with the reversely-wound coil of the differential magnet for neutralizing static discharge, as set forth.

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3. The combination, with the magnet M, differential magnet M', the common lever *l*, the main battery, and the transmitter T, of the induction-coil having its primary wire in the transmitter-circuit and its secondary wire connected to the reversely-wound coil of the differential magnet, and provided with an adjustable core, C', to regulate the secondary current to suit the amount of static discharge, as set forth.

259,107. STATION-INDICATOR. JAMES B. DRAKE and CHARLES H DRAKE, Watkins, N. Y. Filed Mar. 11, 1882. (No model.)



Claim.—1. In a station-indicator, the combination of the shaft C, having the notched-rim pulleys E, the upper shafts, D D', having the drums K, the flag-belts H, passing around all of the cylinders, and flag-rods *e* and flags G, the ends of said rods extending across the belts H and into the notches in the pulleys E, substantially as specified.

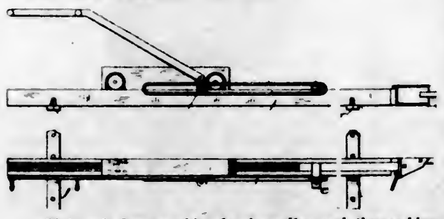
2. In a station-indicator, the combination of the shaft C, having the notched-rim pulleys E, the upper shafts, D D', having the drums K, the flag-belts H, passing around all of the cylinders, and flag-rods *e* and flags G, the ends of said rods *e* extending across the belts H and into the notches in the pulleys E, the ratchet-wheels F on the shaft C, and the spring-retracted pawl-slides L and pivoted pawls P, for operating the flags, substantially as specified.

3. In a station-indicator, the combination of the shaft C, having the notched-rim pulleys E and ratchet-wheels F, the shafts D D', having the drums K and spools *k*, the flag-belts H, passing around all of the cylinders, and carrying the flag-rods *e* and flags G, the ends of said rods *e* resting in the notches *d* of the pulleys E, the straining-cord *k*, adapted to be wound and unwound upon the spools *k*, the endless belts I, overlying the flag-belts H, and the

spring-retracted pawl-slides L and pivoted pawls P, substantially as specified.

4. In a station-indicator, the combination, with the reversed ratchet-wheels F on the driving-shaft C, of the retracted pawl-slides L, their pivoted pawls P, having extensions *q* at their upper ends, and the stop *v*, whereby the pawls P are disengaged from the ratchet-wheels F when the slides L are in their normal positions, substantially as specified.

259,108. COAL-MINING MACHINE. JOHN DU BOIS, Du Bois, Pa. Filed Nov. 4, 1881. (No model.)



Claim.—1. In a machine for channeling coal, the combination of the guide, a reciprocating sliding chisel adapted to be projected beyond the guide, and the reciprocating sliding ram operating said chisel, the ram and chisel being connected by means, substantially as described, permitting a limited independent motion in relation to each other.

2. The combination, in a hand channeling-machine, of a horizontal guide, a chisel reciprocating therein and capable of being projected beyond the same, a sliding ram, and a handle for operating said ram, substantially as shown.

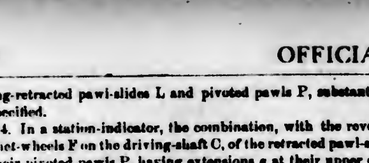
3. In a coal-mining machine, the combination of the guide, the reciprocating ram, and the ram-supporting wheels, seated in and covered by the ram and arranged to travel upon the guide, as described and shown, whereby they are protected from dust and dirt.

4. In a hand mining-machine, the combination of a reciprocating chisel or cutter and a reciprocating ram connected therewith, substantially as described, to operate with a percussive action upon the chisel in withdrawing the same from the coal.

5. In a hand mining-machine, the combination of the reciprocating chisel, the reciprocating ram, and a readily-detachable connection, substantially as shown, constructed to permit a lost motion between said parts.

6. In combination with a reciprocating channeling-tool, substantially as described, the lip or clearer pivoted thereto and arranged to swing backward out of action during the advance of the chisel, substantially as shown.

259,109. SAFETY-VALVE. WM. DUCHESNE, Boston, Mass., assignor to James W. Denihue, same place. Filed May 1, 1882. (No model.)



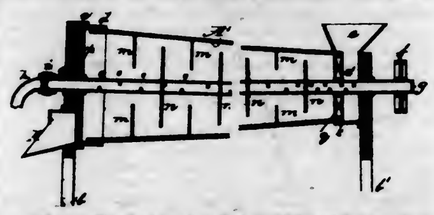
Claim.—1. In an automatic safety-valve, the combination of the tubular casing *a*, having the flange *b*, valve-seat *b'*, elevated above the upper side of said flange, internal recesses, *v*, located above the valve-seat, and guide or nut *d*, located at the upper end of the casing, with the valve *c*, having the stem *c'*, which passes through the guide or nut *d*, and provided with the cavity *f* and perforations *h*, and held down by a spring, *e*, all arranged and operating as and for the purpose specified.

2. The valve *c*, having the hollow perforated stem *c'*, combined with the tubular casing *a*, having the valve-seat *b'*, recesses *v*, and guide or nut *d*, and the spring *e*, arranged between the nut *d* and valve *c*, all as set forth.

3. In a safety-valve for beer-barrels, having a spring-valve, *c*, the tubular casing *a*, having the flange *b* and the valve-seat *b'* elevated above the upper side of said flange, whereby the valve and valve-seat are prevented from projecting downwardly into the barrel, as set forth.

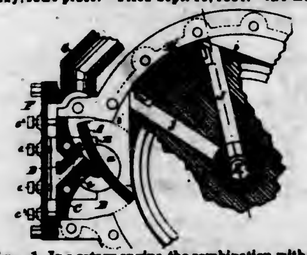
4. The combination, with a barrel or cask head, of the casing *a*, screwed into a hole in the head, and provided with the spring-valve having the hollow perforated stem, and the cap or cover *t*, screwed into the outer end of said hole, and provided with orifices *n n*, for the escape of gas and for the application of a wrench, as set forth.

259,110. MACHINE FOR WASHING CURRANTS. WILLIAM H. DUCKER, Brooklyn, N. Y. Filed Mar. 31, 1882. (No model.)



Claim.—The machine described, consisting of the cage A, revolving within collars *c c'* on the frame *b b'*, provided with a hollow perforated shaft, *g*, arranged to revolve in the opposite direction, in combination with the hopper *e* and spout K, substantially as described.

259,111. ROTARY ENGINE. GEORGE W. DUDLEY, Waynesborough, Va., assignor to the Elastic Wheel and Manufacturing Company, same place. Filed Sept. 19, 1881. (No model.)

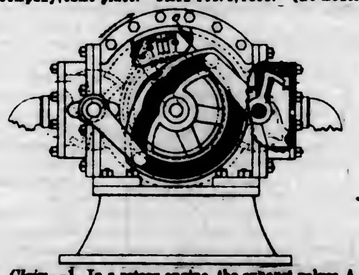


Claim.—1. In a rotary engine, the combination, with the double exhaust-valve A, of the disk L, having solid tangential projections *i* and ports J issuing through the said projections at their highest point, and the segmental piston H, secured between said projections, substantially as shown and described, whereby an abutment shall be formed simultaneously with the opening of the exhaust-valve, as set forth.

2. In a rotary engine, the combination, with the segmental exhaust-valve A, supported in the walls of its chamber, and the stationary valve-seat C, forming a knuckle-joint with the valve A, of the outer plate, F, forming a wall of the said chamber, and provided with set-screws *e e'*, and the recessed plates E, substantially as shown and described, and for the purpose set forth.

3. In a rotary engine, the combination, with the valve K, having a pin, *m*, which projects through a slot in the hollow shaft M, of the clutch-collar L, having an internal spiral groove for receiving the pin, and adapted to slide upon a feather, *l*, on the outer surface of the said shaft, substantially as shown and described.

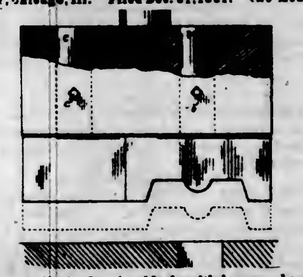
259,112. ROTARY ENGINE. GEORGE W. DUDLEY, Waynesborough, Va., assignor to the Elastic Wheel and Manufacturing Company, same place. Filed Feb. 6, 1882. (No model.)



Claim.—1. In a rotary engine, the exhaust-valves A, having lips formed on the rear or outer sides of their ends, with openings at the sides for the exhaust, and adapted to form abutments across the steam-chamber, substantially as shown and described.

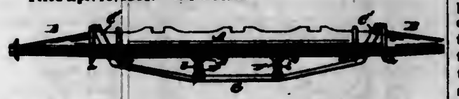
2. In a rotary engine, the combination, with the segmental exhaust-valves having segmental lips formed on their rear or outer sides at the ends thereof, and located in chambers having suitable passages for the exhaust at one or both ends of the valves, of a suitable cam substantially as described, which is made to rotate with the piston, and which is connected with the said valves in such manner as to insure a given movement thereof under all circumstances, substantially as shown and described.

259,113. MANUFACTURE OF BLACKSMITHS' SWAGES. JAS. F. DUFFY, Chicago, Ill. Filed Dec. 31, 1881. (No model.)



Claim.—A die for forming blacksmiths' swages, having a depression in its face consisting of side beveled walls, a plane operating-face, and a ridge semicircular in cross-section running centrally and longitudinally over said operating-face, in combination with an anvil or base having a hole or depression corresponding to the tang of a swage, and located immediately under the center of said die, substantially as and for the purpose hereinbefore described and set forth.

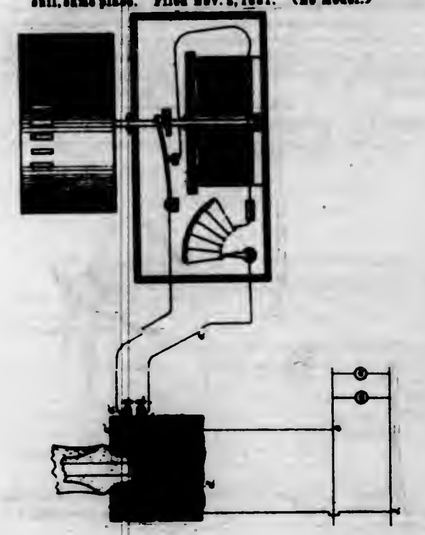
259,114. VEHICLE-AXLE. JAMES DU SHANE, South Bend, Ind. Filed Apr. 12, 1882. (No model.)



Claim.—1. The brace-rod C, provided at each end with diagonal brace-clips C' C', in combination with axle A and chains B B, said chains having collars *a a*, all constructed and arranged to operate as set forth.

2. The combination of axle A, conical washers D D, riding washers E E, nuts *b b*, and brace-rod C, having diagonal brace-clips C' C', all arranged to operate substantially as described.

259,115. ELECTRIC TOY. RICHARD H. DYER and HENRY W. SEELY, New York, N. Y., assignors of one-third to Samuel Insull, same place. Filed Nov. 8, 1881. (No model.)



Claim.—1. The combination of an electrical toy with means for removably connecting said toy with a lamp-socket of a system of electric lighting, substantially as set forth.

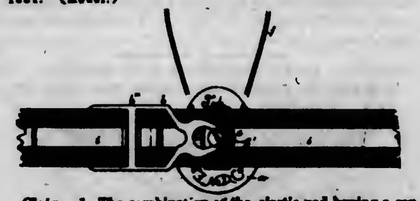
2. The combination of an electrical toy, means for removably connecting said toy with a lamp-socket of a system of incandescent electric lighting, and an adjustable resistance in the toy-circuit, external to said lamp-socket, substantially as set forth.

3. The combination of an electrical toy, means for removably connecting said toy with a lamp-socket of a system of incandescent electric lighting, and an incandescing electric lamp serving as a resistance and located in the mains derived or multiple-arc circuit of said system with the toy, substantially as set forth.

4. The combination, with a lamp-socket of a multiple-arc system of incandescent electric lighting, and the removable lamp, of removable connections with an external circuit, whereby each lamp and the external circuit will be both supplied through the terminals of the same socket, substantially as set forth.

5. The second socket described, adapted to be placed in a lamp-socket and to receive an electric lamp, and having connections with an external circuit, substantially as set forth.

259,116. SPUDS. JAMES ENOCH, Boston, Mass. Filed Sept. 27, 1881. (Model.)



Claim.—1. The combination of the elastic pad having a central socket and an opening leading through the flat side of the pad to its said socket, with the screw-threaded pin provided upon one end with a ball received into the socket in the pad, the screw-threaded sleeve formed with a base-plate and adapted to receive the screw-threaded pin, and the clamp-plate secured by a screw to the base-plate of the screw-threaded sleeve, substantially as described.

2. The combination, in a truss, of the pad with the screw-threaded sleeve, receiving a pin for connecting the same with the pad, and the arched abdominal support *f*, secured to the base-plate of said sleeve, substantially as described.

3. The elastic pad, the inclined metal socket-piece C, with radial arms, the screw-threaded pin having its ball-shaped head received into the socket of piece C, the screw-threaded sleeve receiving the said pin and formed with a base-plate, the bolt, and the clamp-plate A, holding the bolt against the base-plate by a screw, said members being organized and formed substantially as described.

4. The elastic pad provided with internal metallic arms, serving in its center as a bearing for the ball C of the connecting-rod *c'*, and having the annular elastic holding *c'''*, for connecting the pad to the ball and to admit of its easy removal, substantially as shown and described.

259,117. PIPE-WHEEL FOR VEHICLES. THOMAS B. ELLIS, Dayton, Wis. Filed Feb. 7, 1882. (No model.)



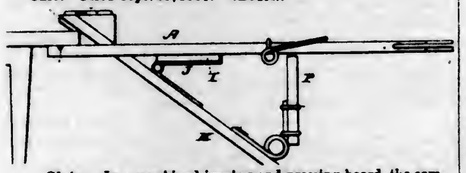
Claim.—1. In a fifth-wheel, the combination of the frame, the plate F, provided with the depending annular flange, the plate G, having the central cylindrical hub, and the intermediate cylindrical rolls, *g*, having their axes arranged in a vertical position and their surfaces arranged to travel around the flange and the hub on the respective plates.

2. In a vehicle, the combination of the main frame and its flanged plate F, the truck and its plate G, having a central hub, and the vertical cylindrical rolls mounted between the plates in the manner described and shown, and connected to the main plate by the pivots *d*, as shown.

3. The combination of the plate F, provided with the depending flange *a*, and the central depending stud, J, the plate G, provided with the central recess, *c*, the cylindrical vertical rollers *g*, located between said plates, and the king-bolt E.

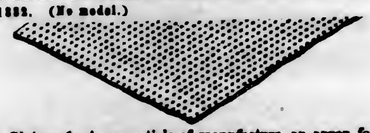
4. The combination of the plates F and G, constructed as described, and the vertical cylindrical rolls arranged to bear within the flange *a*, the hub *b* of the upper plate, and also against the hub *c* of the lower plate.

259,118. IRONING-BOARD. JAMES E. ELLISON, Scioteville, Ohio. Filed Sept. 19, 1881. (Model.)



Claim.—In a combined ironing and pressing board, the combination, with the board A, slotted at B, and the hinged pressing-board or brace K, of the spring-brace N, secured to the pressing-board K, and having its arm portion P extending to near the ironing-board A, substantially as and for the purposes specified.

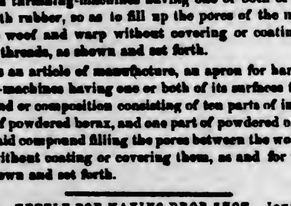
259,119. FABRIC FOR APRONS OF HARVESTERS. JACOB B. RADLEY and CHARLES S. SMITH, Akron, Ohio. Filed Apr. 17, 1882. (No model.)



Claim.—1. As an article of manufacture, an apron for harvesters and threshing-machines having one or both of its surfaces treated with rubber, so as to fill up the pores of the material between the woof and warp without covering or coating the woof and warp threads, as shown and set forth.

2. As an article of manufacture, an apron for harvesters and threshing-machines having one or both of its surfaces treated with a compound or composition consisting of ten parts of india-rubber, one part of powdered borax, and one part of powdered oxide of magnesium, said compound filling the pores between the woof and warp threads without coating or covering them, as and for the purpose herein shown and set forth.

259,120. KETTLE FOR MAKING DROP-SHOT. JOHN FARRELL, Pittsburg, Pa. Filed May 1, 1882. (No model.)



Claim.—1. A drop-shot kettle having perforations through its bottom which are countersunk or conically enlarged on the inner side of the bottom, in combination with a filter or regulating mechanism within the kettle for retarding the flow of lead to such perforations, substantially as and for the purposes set forth.

2. The combination of a kettle having a perforated bottom, an inner pan also having a perforated bottom, and one or more fine woven-wire screens between the pan and kettle-bottom for retarding and regulating the flow of lead from the perforations above to those below, substantially as set forth.

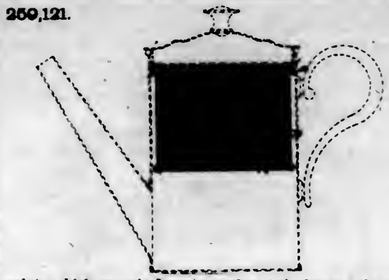
3. The kettle A, having perforations *a* in its bottom, which open into the kettle in conical or countersunk enlargements *a'*, in combination with one or more fine woven-wire screens, E, on the inner face of the kettle-bottom, and perforated pan C, bound tightly upon the screens and kettle-bottom, substantially as set forth.

4. A kettle, A, having a perforated bottom, an inner pan, C, having a perforated bottom, the perforations in both bottoms being in line, and one or more fine woven-wire screens, E, between the two bottoms, substantially as and for the purposes set forth.

259,121. COFFEE-POT. H. CLAY PIER, Philadelphia, Pa. Filed Jan. 12, 1882. (No model.)

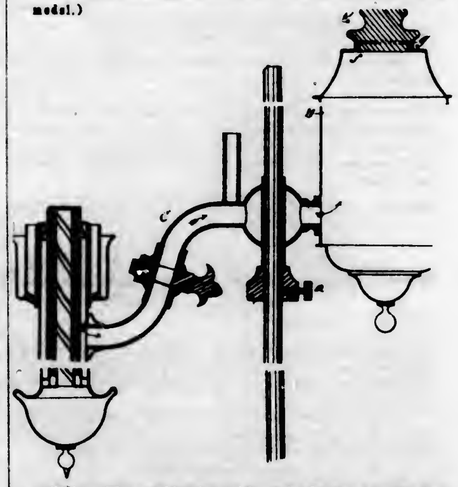
Claim.—The coffee-pot sack consisting of a body and a bottom formed of one piece of fabric, said piece being cut to form

259,121.



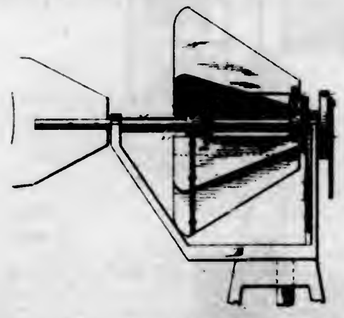
points, which are united one to another at the bottom, the contiguous edges overlapping, and rings at top and bottom of the sack, both rings being sewed to the fabric, substantially as and for the purpose set forth.

259,122. LAMP. WILLIAM B. FLEMING, Belvidere, assignor to James H. Fleming, Newark, N. J. Filed Mar. 1, 1882. (No model.)



Claim.—The combination, with a tube, B, closed at the bottom, open at the top, surrounding the wick-tube, and connected with said tube near the bottom, of a superposed air-tight oil-reservoir, D, having the removable top ping, E, and connected with the tube B above its communication with the wick-tube by a tube, C, having the cock *d*, whereby the oil may be automatically fed from the reservoir and kept at a uniform height in the tube B, as described.

259,123. WINDMILL. JOSEPH B. GALLOWAY and JAMES M. GALLOWAY, Concordia, Kans. Filed Oct. 15, 1881. (No model.)



Claim.—1. In a windmill, the combination, with the driving-shaft, of the vanes connected to a disk or collar connected by a spring to the shaft, and a toothed disk or wheel connected to the opposite ends of the vanes and capable of being turned upon the shaft to adjust the relative position of the vanes to its shaft by a lever, and means for operating the same, substantially as and for the purpose set forth.

2. In a windmill, the combination, with the driving-shaft, of the vanes connected to a disk or collar connected by a spring to the shaft, a disk or wheel having a pinion and capable of turning upon the shaft, and the cogged lever having means for its operation, substantially as described.

259,124. RUFFLER FOR SEWING-MACHINES. THOMAS B. GARRETSON, Oskaloosa, Iowa, assignor to the Garretson Ruffler Company, same place. Filed Oct. 22, 1881. (No model.)



Claim.—1. In a ruffling and shirring attachment for sewing-machines, the base-plate A, having at its front end a rearward-turned lip, V, and provided near its rear end with upward-projecting clamping-brackets C, connected by a screw, D, substantially as set forth.

2. In a ruffling and shirring attachment for sewing-machines, the frame comprising the base-plate A, brackets B B' C, lip V, and lugs R, stamped or otherwise formed of a single piece of metal, substantially as shown and specified.

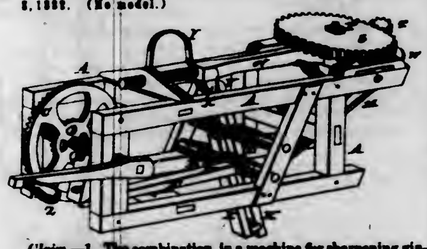
3. In a ruffling and shirring attachment for sewing-machines, the combination of the plate A, having brackets B B', the former of which is provided with lugs R, the bolt G, the pivoted carrier I, having pushing-blade J, the regulator-plate M, adjustable, as shown, in relation to the carrier I, and the spring S, coiled upon bolt G, and having one end adjustable under any one of the lugs R, and the other end hooked around carrier I, forcing the latter rearward, substantially as herein shown and specified.

4. The spring S, having hook T, and finger-piece U, when arranged in a frame having arm B, provided with lugs R, substantially as herein described, for the purpose set forth.

5. The combination, with the bolt G, having thumb-nut H, connecting the frame A B B' R C V with the pushing-blade, carrier, and regulator-plate, of the adjustable spring S, having hook T and thumb-piece U, substantially as shown and specified.

6. The combination, with a ruffling and shirring attachment constructed substantially as described, and having brackets B B', provided with slots X, of the gage Y Z A', substantially as described, for the purpose shown and specified.

259,125. MACHINE FOR SHARPENING GIN-SAWS. ALBERT P. GATHRIGHT and ANTHONY W. POTTS, Cooper, Ga. Filed Mar. 8, 1882. (No model.)

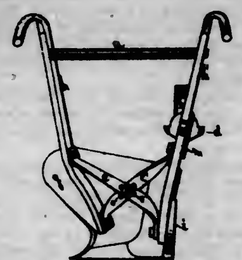


Claim.—1. The combination, in a machine for sharpening gin-saws, of the main shaft B, having cam G, rock-shaft E, having lever F and vertically-adjustable arm I, and the rock-shaft L, having arm K, provided with a forward-extending pawl, M, substantially as set forth.

2. As an improvement in machines for sharpening gin-saws, the combination of the main shaft B, having cam G, rock-shaft E, having lever F and vertically-adjustable arm I, rock-shaft L, having arm K, provided with pawl M and arm V, the driving-shaft D, having pinion C and worm E, the slide N, having stud X, shafts P U, gear-wheel S, pinions T Q, and file W, and the spring Y, all arranged and operating substantially as set forth.

259,126. PLOW. LEWIS GIBBS, Canton, Ohio, assignor to himself, John R. Rucker, and Henry A. Cavnah. Filed Mar. 3, 1882. (No model.)

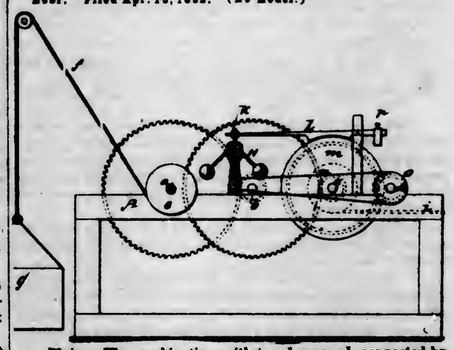
259,126.



Claim.—1. The upper handle-brace, *a*, of a trough-like shape, with the convex side downward, and formed with openings *c*, in combination with the handles *h h'*, screw-bolts *b*, and nuts *n*, the bolts having their heads within the brace and being fastened by the nuts at the outer sides of the handles, substantially as described.

2. The adjustable braces *c c'*, crossing each other, and formed with elongated holes *e*, through which they are bolted together, in combination with handles *h h'*, substantially as described.

259,127. POWER MECHANISM. THOMAS R. GIBSON, Fremont, Nebr. Filed Apr. 13, 1882. (No model.)



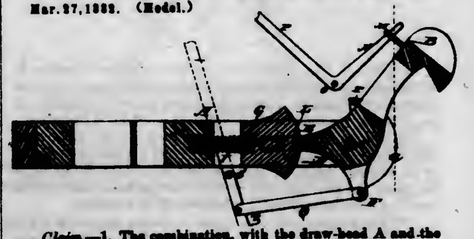
Claim.—The combination, with two drums, *e h*, connected by intermediate mechanism, and adapted to be operated in opposite directions alternately by power and a weight, of the brake-wheel *m* and lever *l*, the latter connected at the outer end with the stem *h* of a governor, H, as and for the purpose specified.

259,128. CORSET-STAY. THOMAS S. GILBERT, New Haven, Conn., assignor to Max Adler, same place. Filed Dec. 13, 1881. (Model.)



Claim.—A corset-stay composed of several fibers of tampico running longitudinally of the stay, secured together by india-rubber or adhesive material between the said fibers, substantially as described.

259,129. CAR-COUPLING. JOHN E. GLEASON, Dayton, assignor to himself and Catharine H. Gleason, Cleveland, Ohio. Filed Mar. 27, 1882. (Model.)



Claim.—1. The combination, with the draw-head A and the sliding block G, having convex forward end, of the coupling-hook B, having the concave rear end, D, substantially as and for the purpose set forth.

2. The coupling-hook B, pivoted between the cheeks of the draw-bar at C, and having concave rear end, D, and projection E, in combination with the spring-pressed sliding convex-ended block G, having cavity L, and being also arranged on the draw-bar, substantially as specified.

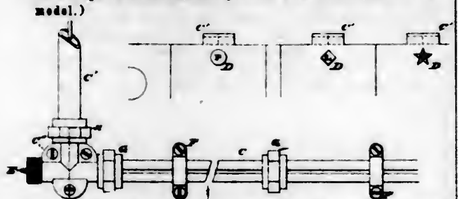
3. The combination, with the draw-bar A and the spring-held coupling-hook B, provided with the projection F at its rear end, of the lever R and the connecting-rod Q, substantially as and for the purpose set forth.

4. The combination of hook-coupler B, pivoted on the draw-bar, as described, and having projections E and F, sliding block G, spring J, and levers O and Q, substantially as specified.

5. The pressure-block G, having convex front end, and being arranged between the cheeks of the draw-bar, with projections H in guide-slots I of the said bar, in combination with hook B, substantially as specified.

6. The combination of stop-pin T with the hook B, pressure-block G, draw-bar A, and the lever N, substantially as specified.

259,130. UNDERGROUND CONDUIT FOR ELECTRIC WIRES. CHRISTIAN H. GOEBEL, Philadelphia, Pa., assignor of one-half to George W. Bratton, same place. Filed Mar. 7, 1882. (No model.)

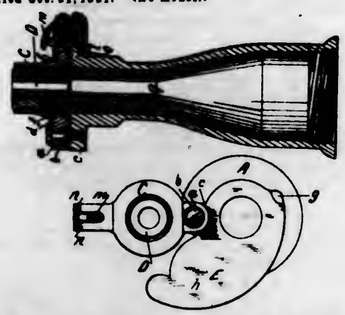


Claim.—1. An electric conductor or cable composed of pipes formed of separate or sectional pipes, each section containing a conductor with an inclosing insulating material, such conductor constructed with a recessed end, as described, and having its other end projecting beyond the end of the section, substantially as and for the purpose specified.

2. The pipes with inclosed wires and branches C', in combination with the conduit provided with indicators D, substantially as and for the purpose set forth.

3. The method of insulating electric wires, consisting in surrounding them with vulcanizable insulating material, inclosing this material in split pipes, and clamping said pipes together, so as to compress said material during the application of heat, substantially as set forth.

259,131. NOZZLE FOR HOSE-PIPES. THOMAS GOULD, Wakefield, assignor of one-half to Oscar I. Stowell, Lynnfield, Mass. Filed Oct. 21, 1881. (No model.)



Claim.—1. The combination, with a hose pipe or nozzle, A, of the swiveled laterally-swinging nozzle C, having an open unobstructed water-passage adapted to receive a detachable thimble, D, for changing the form of the stream, substantially as described.

2. The combination, with a hose pipe or nozzle, A, provided with a laterally-projecting guard, E, having a plane outer face, A, of the swiveled nozzle C, arranged to swing laterally on the face of the guard and provided with an open water-passage constructed to receive a detachable thimble, substantially as described.

3. The combination, with a pipe or nozzle, A, provided with a laterally-projecting guard, E, having a fixed stop, g, of a swiveled laterally-swinging nozzle having a water-passage through it and adapted to strike the said stop when its water-passage is in coincidence with the passage in the pipe or nozzle, substantially as and for the purpose described.

4. A hose pipe or nozzle, A, and its part C hung to it, in combination with the lever *n* and block *k*, all substantially as described, for the purposes specified.

5. A hose pipe or nozzle, A, and its part C hung to it and interiorly shouldered, in combination with an exteriorly-shouldered thimble, all substantially as and for the purpose specified.

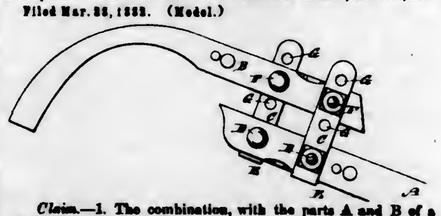
259,132. LAUNDRY-HEATER. DANIEL C. GRIFFIN, Burlington, Iowa. Filed June 1, 1880. (Model.)



Claim.—1. In a laundry-heater, the combination of a fire-box having inclined surfaces D E and surrounding rims *d a*, for supporting the sad-irons and smoothing or polishing irons, the steam-boiler F, arranged over said fire-box, vertical flue or flues *f*, passing up through said boiler, conical hood G, and smoke-stack H, substantially in the manner as and for the purpose herein shown and described.

2. In a laundry-heater, the combination, with the fire-box having inclined surfaces and steam-boiler, of the dry-room I and jacket J, partially inclosing said heater, substantially as and for the purpose herein shown and described.

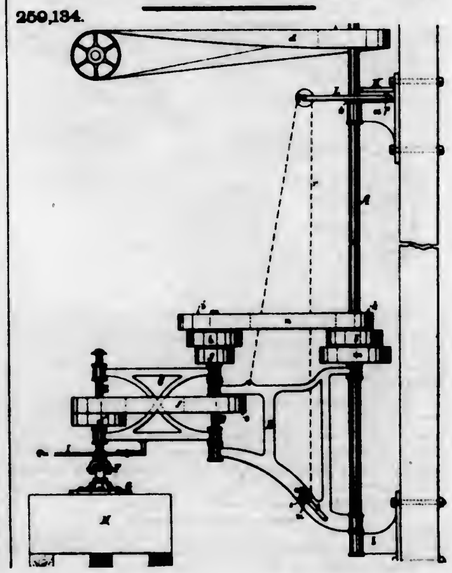
259,133. PLOW-HANDLE. FREDERICK HACKE, De Soto, Mo. Filed Mar. 28, 1882. (Model.)



Claim.—1. The combination, with the parts A and B of a plow-handle, of the perforated standards C, bolted respectively to the said parts, substantially as and for the purpose set forth.

2. The combination, with the parts A B of a plow-handle, of the standards C, provided with the flanges E and the perforations G, and the bolts D F, substantially as and for the purpose set forth.

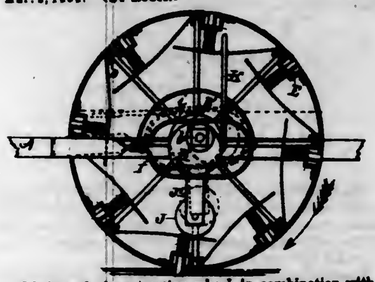
259,134.



259,134. MACHINE FOR DRESSING OR POLISHING STONE. CYRUS J. HALL, Belfast, Me. Filed Apr. 14, 1882. (No model.)

Claim.—The combination of the stationary plate K and the lever L, having the grooved wheel *q*, with the shaft A and its supports, and with the frames B and C, adapted to each other and to the said shaft, and provided with the lifting-chain and with the grinder and its actuating mechanism, as explained, all being substantially as set forth.

259,135. TRACTION-WHEEL. LEWIS HALL, Metamora, assignor of one-fourth to Andrew G. Scherer, Peoria, Ill. Filed Mar. 2, 1882. (No model.)



Claim.—1. In a traction-wheel, in combination with cam-tracks having reciprocating spurs, a cam-roller adapted to act on said cam-tracks successionally, substantially as and for the purpose specified.

2. In a traction-wheel, in combination with hinged cam-tracks having spurs adapted to pass outward through the rim of the wheel, springs adapted to retract the spurs, substantially as and for the purpose specified.

3. In a traction-wheel, in combination with cam-tracks having reciprocating spurs and retracting-springs, cam-roller J, and oscillating bar I, having limbs *i i'*, the eccentric H, adapted to force the cam-roller into contact with the cam-tracks and to raise it free therefrom, substantially as and for the purpose specified.

4. In a traction-engine, in combination with cam-tracks having reciprocating spurs and retracting-springs, cam-roller J, swinging bar I, having limbs *i i'*, and eccentric H, the lever K, adapted to rotate said eccentric and operate the parts, substantially as and for the purpose specified.

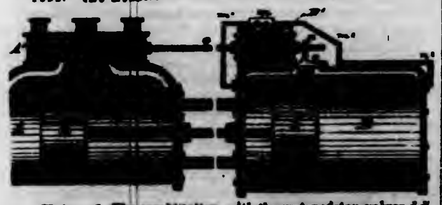
5. In a traction-wheel, in combination with cam-tracks having reciprocating spurs, a swinging bar having a cam-roller adapted to actuate said cam-tracks and spurs, and an eccentric adapted to actuate said swinging bar and cam-roller, substantially as and for the purpose specified.

6. In combination with the swinging arm, carrying the cam-roller, and the eccentric for operating the swinging arm, the cam-tracks extended beyond their attachment to the spurs, substantially as and for the purpose specified.

7. In combination with the cam-roller and means for holding it, the cam-tracks extended beyond their points of attachment to the spurs, substantially as and for the purpose specified.

8. In a traction-wheel, in combination with a cam-roller, cam-tracks having spurs, said cam-tracks being hinged to the wheel, so as to permit of endwise movement of the cam-tracks and the use of straight spurs, substantially as and for the purpose specified.

259,136. STEAM-PUMP. HARRY R. HALL, Fair Mount, assignor of one-half to Frank W. Hall, Dahlonega, Ga. Filed Mar. 11, 1882. (No model.)



Claim.—1. The combination, with the water piston-valves *d d'*, of the steam-cylinder E', placed alongside the main steam-cylinder, and the valve *m*, adapted to be operated by the piston of the main steam-cylinder, substantially as shown and described.

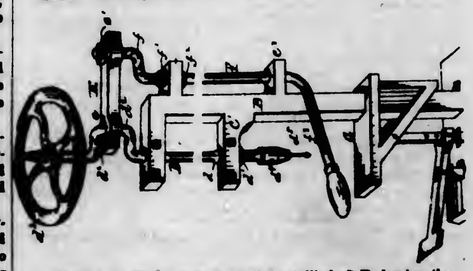
2. The combination, with the main water and steam cylinders, of the rod *o*, connecting the piston-valve of the main water-cylinder with the piston *b'*, and having a longitudinal slot therein, the valve of the main steam-cylinder having a stem fitting in said slot, and the valve of the cylinder E' having arms adapted to be operated by the piston of the main steam-cylinder, substantially as shown and described, and for the purpose set forth.

259,137. BELTING. WILLIAM H. HALL, Newark, N. J. Filed Mar. 31, 1882. (No model.)



Claim.—In a belt composed of leather and metal links united together by metallic pins, the combination of the leather links *a*, having holes *a'* therein, the inner metal links, *b*, of the same length, but narrower than said leather links, and having holes *b'* therein, the outer metal links, *c*, the same size and shape as the leather links *a*, and having recesses *c' c''*, the latter recess having grooves *f* therein, and the pins *d*, extending through the holes or recesses in the links *a b c* from side to side of the belt, the heads and the nuts of said pins being tapered, and having the lugs *e* on the under side of said heads, adapted to fit in the grooves *f*, to prevent the pin from slipping, substantially as described.

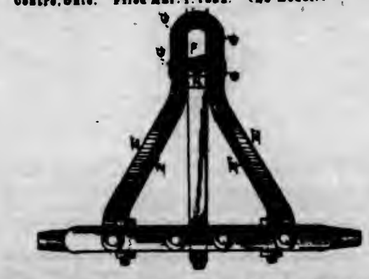
259,138. UPRIGHT DRILL. RUPHNATUS A. HAHN, Parlinville, Kans. Filed Apr. 26, 1881. (No model.)



Claim.—1. The combination of the drill-shaft D, having the crank *d*, fly-wheel *d'*, the connecting-rod E, and the shaft F, having the crank *f* and lever *f'*, substantially as shown and described.

2. The combination of shaft D, having the crank *d*, fly-wheel *d'*, rod E, shaft F, having crank *f* and lever *f'*, with the adjustable table G, substantially as shown and described.

259,139. WAGON-HOUND. WILLIAM S. HARPER, Unionville Centre, Ohio. Filed Mar. 1, 1882. (No model.)

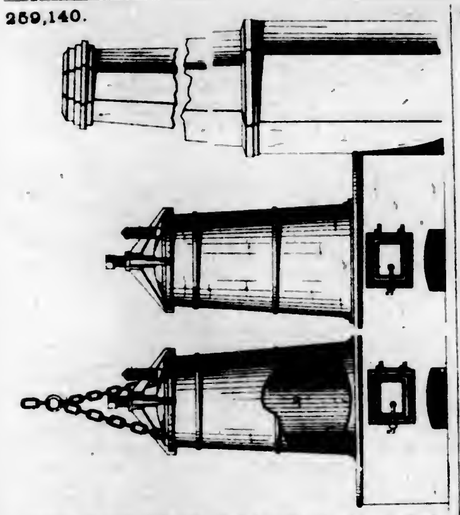


Claim.—In combination with the brace-bar E and brace-rod F, the vertical bolts G G, the sleeves H H, and brace-bar I, substantially as described, and for the purpose set forth.

259,140. MANUFACTURE OF FERTILIZING MATERIAL. FRANK L. HARRIS, Harrisonburg, Va. Filed Jan. 19, 1882. (Specimens.)

Claim.—The herein-described process of producing a fertilizer, consisting in immersing bones, horns, or hoofs in water

259,140.

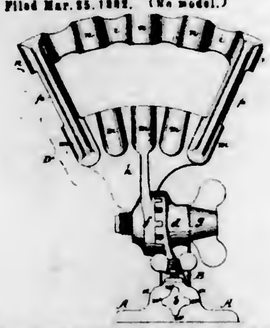


within an air-tight vessel and while so immersed and confined subjecting the article to pressure by heating the water above the boiling-point, removing and drying the charge and introducing into the same water a fresh charge and treating it in a similar manner, next allowing a quantity of the article thus treated and dried to soak in the water, so as to absorb the gelatine contained therein, and finally drying and pulverizing the article.

259,141. PROCESS OF EXTRACTING GOLD FROM ORES. WM. E. HARRIS, New York, N. Y. Filed Feb. 8, 1882. (No specimens.)

Claim.—In obtaining precious metals from ores by amalgamation, the process of protecting the mercury from the action of sulphates and chlorides, which consists in adding bromide of sodium to the ore in about the proportions stated, and then mixing the same with mercury and water, as described.

259,142. FLAG-STAFF HOLDER. WALTER HART, New York, N.Y. Filed Mar. 25, 1882. (No model.)



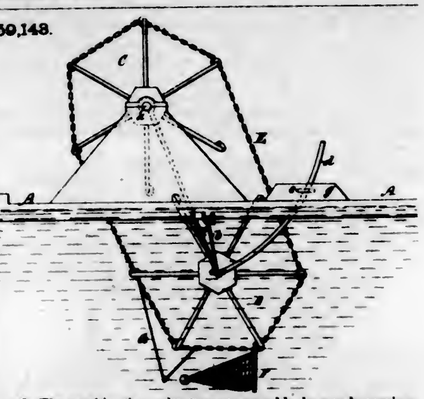
Claim.—1. The combination of the plate A, having a lug, *a*, the arm B, having a shank adapted to an opening in the lug, and a projection, *d*, with recessed face, the pole-holding frame D, having a projection, *f*, with lugs, as described, and the confining-screw *g*, as set forth.

2. The pole-holding frame D, comprising the segmental plate A, with projection *f* and radial sockets *m*, the segmental bar *i*, with radial tubes *n*, and the connecting-bars *p* at the ends of the bar *i* and plate A, as set forth.

259,143. MECHANICAL DEVICE FOR CATCHING FISH. THOS. HEATON, Vancouver, Wash. Filed Jan. 17, 1882. (Model.)

Claim.—1. The combination of two endless parallel chains on two skeleton wheels and two floats supporting the same, whereby oyster-dredges, fishing-nets, or sand-elevators may be operated, as described.

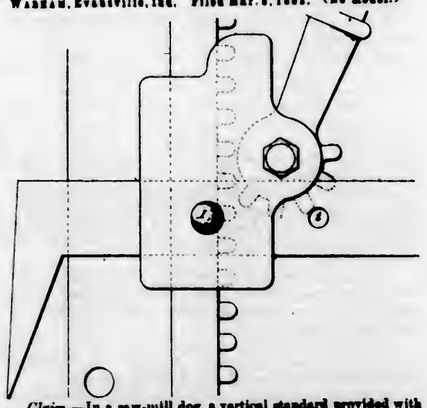
259,144.



2. The combination, with beam having blocks *g* and carrying-shaft *a*, of a submerged wheel, D, having its axle suspended both from shaft *a* by the rods *f* and by hooks and eyes from the floats, and held in any desired position by the rods *d*, passing through loops *e* on said blocks *g*, as shown and described.

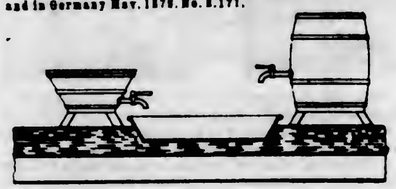
3. In combination with the boats or floats A A, skeleton-wheel C, journaled upon the boats, the submerged wheel D, hung on the rods *f f*, and the endless chains E, provided with the fish-nets F, the submerged wheel being adjustable by means of the braces *b b* and the rods or chains *d d*, substantially as and for the purposes described.

259,144. SAW-MILL DOG. DANIEL HEILMAN and HARRY WARHAM, Evansville, Ind. Filed Mar. 8, 1882. (No model.)



Claim.—In a saw-mill dog, a vertical standard provided with a vertical rack, a carriage capable of vertical movement on said standard, an operating-lever pivoted in the carriage and provided with a mutilated gear to engage or pass by said rack, as desired, and an adjustable dog mounted in the carriage, substantially as and for the purpose set forth.

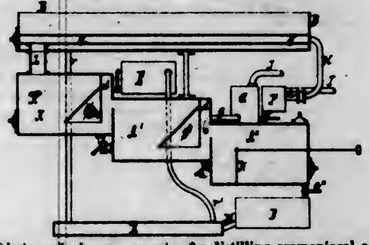
259,145. PROCESS OF TREATING AMMONIACAL LIQUORS. HENRI JOSEPH ERNEST HENRIQUET, Anglet, and CHARLES JULY FÉLIX RAOUL DE JAUREL MENARD, Vicomte de Vauréal, Biarritz, France, assignors to the Société Anonyme des Produits Chimiques du Sud Ouest, Paris, France. Filed Nov. 9, 1881. (No specimens.) Patented in France Apr. 27, 1878, No. 124,157; in England Oct. 29, 1878, No. 4,353, and July 19, 1880, No. 3,066, and in Germany May, 1879, No. 3,171.



Claim.—1. The herein-described process of treating ammoniacal liquors by exposing said liquors to the action of the mixed chlorides of calcium and iron, decanting or collecting the resulting liquor, and evaporating or concentrating the same, substantially as and for the purpose set forth.

2. The herein-described process of treating ammoniacal liquors by exposing said liquors to the action of reagents, forming a soluble salt or salts of ammonia, decanting or collecting the liquor holding said salt or salts in solution, and evaporating or concentrating the same in a sheet-metal vessel or boiler in the presence of mixed chlorides of ammonium and lead, substantially as and for the purpose described.

259,146. APPARATUS FOR DISTILLING AMMONIA. HENRI JOSEPH ERNEST HENRIQUET, Anglet, and CHARLES JULY FÉLIX RAOUL DE JAUREL MENARD, Vicomte de Vauréal, Biarritz, France, assignors to the Société Anonyme des Produits Chimiques du Sud-Ouest, Paris, France. Filed Dec. 1, 1881. (No model.) Patented in France Jan. 16, 1879, No. 130,575, and in England July 16, 1880, No. 3,064.



Claim.—1. In an apparatus for distilling ammoniacal and other liquors, the combination, with a receiver, B, of a retort communicating with said receiver, said retort being divided into several compartments, and a condenser, C, having a tube or other means for carrying off the vapors, substantially as set forth.

2. In an apparatus for distilling ammoniacal and other liquors, the combination, with a receiver, B, and condenser C, of a retort, said retort being divided into compartments communicating with each other and provided with partitions *a'*, substantially as and for the purpose set forth.

3. In an apparatus for distilling ammoniacal and other liquors, the combination, with a receiver, B, and a condenser, C, of a retort, said retort being divided into compartments communicating with each other and provided with partitions *a'*, having inverted-bell-shaped receivers S S', substantially as set forth.

4. In an apparatus for distilling ammoniacal and other liquors, the combination, with a receiver, B, of a heating-chest, R, a retort, and a condenser, C, substantially as set forth.

5. In an apparatus for distilling ammoniacal and other liquors, the combination, with a receiver, B, of a heating-chest, R, reservoir E, a retort communicating with said reservoir, and a condenser, C, substantially as described.

6. In an apparatus for distilling ammoniacal and other liquors, the combination, with a receiver, B, of a heating-chest, R, a retort, a cleansing apparatus, D, communicating with said retort, and a condenser, C, substantially as set forth.

7. In an apparatus for distilling ammoniacal and other liquors, the combination, with a receiver, B, and a retort communicating with said receiver, of a condenser, C, and drying-chests F G, communicating with said condenser, substantially as set forth.

8. A retort consisting of two or more compartments, A A' A'', communicating with each other, and provided with partitions *a'*, having inverted-bell-shaped receivers, substantially as described.

259,147. HAND DRILLING-MACHINE. FREDERICK LEE HUSCHKE, Rochester, N. Y. Filed Jan. 14, 1882. (No model.)

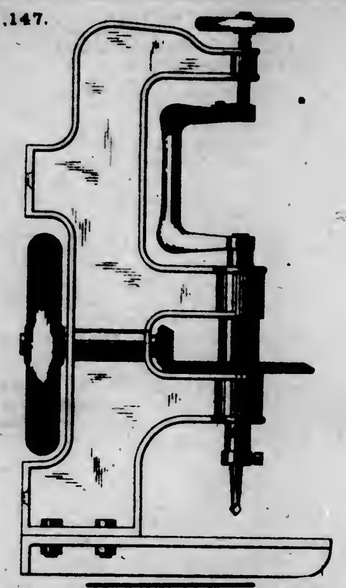
Claim.—1. In combination with the standard, the drill-spindle, hand-crank, and adjustable screw, the gear-wheel, pinion, and fly-wheel, arranged as described and shown.

2. In a hand-drill, the combination of the drill stock or spindle, a hand-crank connected therewith, and a fly-wheel gearing directly to and driven by the spindle, as described and shown.

3. The standard A, provided with the three overhanging arms *a*, *b*, and *c*, in combination with the vertical spindle, the hand-crank, the gear-wheel, pinion, screw, and fly-wheel, said parts constructed and arranged as described and shown.

4. In a drilling-machine, the combination of the crank having the tapered seat, the screw having the grooved tapered end, arranged to bear only at its extreme point, and the plate H, applied as shown.

259,147.



259,148. BUTTER-DISH. ROWLAND HILL, Meriden, Conn. Filed Apr. 17, 1882. (No model.)

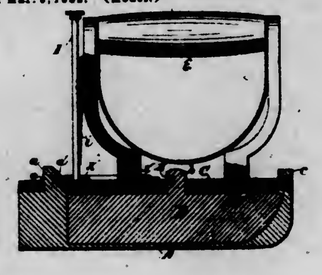


Claim.—1. The combination of the stationary body, the cover arranged between vertical guides, the said guides tubular, with a shaft across above the dish carrying a pulley in each of said guides, with weights within said guides connected with the cover over said pulleys, substantially as described.

2. A covered dish consisting of a stationary body, a cover hung and guided between uprights so as to be moved vertically up and down, combined with a device within said uprights overbalancing said cover, whereby the cover, when free, will be automatically raised, the said cover provided with a holder with a removable counterbalancing-weight, substantially as described.

3. The combination of the stationary body, the cover arranged between vertical guides, the said guides tubular, with a shaft across above the dish carrying a pulley in each of said guides, with weights within said guides connected with the cover over said pulleys, the said cover provided with a holder with a removable counterbalancing-weight, substantially as described.

259,149. SAD-IRON. WILLIAM HILTON, Agency City, Iowa. Filed Mar. 3, 1882. (Model.)



Claim.—In a smoothing-iron, the body A *a c*, cover C *c'*, and lever I, spring *i*, and bolt K, in combination with the removable heater B, having stud *b*, provided with slot *b'*, the whole constructed and operating substantially as and for the purpose set forth.

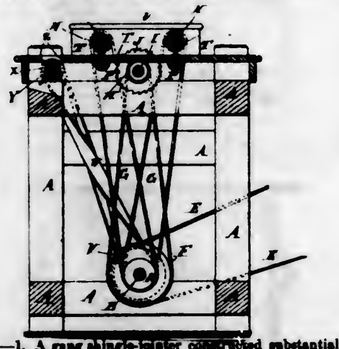
260,150. PROCESS OF OBTAINING MAGNESIUM SULPHATE FROM CRUDE MINERAL. FREDERICK HOELWEG, San Francisco, Cal. Filed July 27, 1881. (No specimens.)

Claim.—1. The process of obtaining magnesium sulphate from crude mineral—such as dolomite or magnesian silicates—by treating the powdered mineral with a solution of sodium bisulphate and separating the magnesium sulphate by crystallization, substantially as described.

2. The process of obtaining carbonate of magnesia from its crude mineral—such as dolomite or magnesian silicates—which consists in reducing the same to a fine powder and mixing with it the bisulphate of soda in solution, from which the magnesia is precipitated as carbonate in the usual manner, substantially as specified.

260,151. GANG SHINGLE-JOINTER. ROBERT HOLMES, Alpena, Mich., assignor to himself and Franklin E. Northup, same place. Filed Mar. 9, 1882. (No model.)

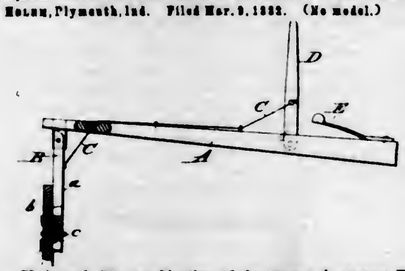
Brief.—The saws and feed-rolls are extended on both sides of the driving mechanism, the lower rolls only extending as far as the efficient portions of the upper. A shaft carrying radial arms throws the finished shingles from the machine.



Claim.—1. A gang shingle-jointer constructed substantially as herein shown and described, and consisting of the frame A, the drive-shaft B and its pulleys, the saw-mandrel I, the saws J, the long feed-rollers N N and their pulleys, the short feed-rollers P, and rear roller, Y, having pulley X and radial arms Z, as set forth.

2. In a gang shingle-jointer, the combination, with the frame A, the table T, and the saw-mandrel I and saws J, of the long roughened upper feed-rollers, N, and the short spring-pressed lower feed-rollers, P, substantially as herein shown and described, whereby the lumber is carried through the machine, as set forth.

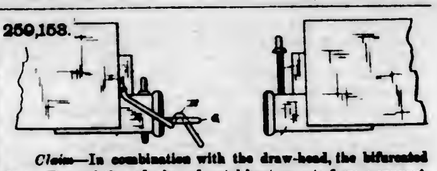
260,152. TONGUE-SUPPORT FOR VEHICLES. JONATHAN N. HOLM, Plymouth, Ind. Filed Mar. 9, 1882. (No model.)



Claim.—1. The combination of the tongue A, support B, hinged thereto, lever D, having pin *d*, chain C, connecting said lever and support, and the snap-catch E, for holding the lever back, substantially as described.

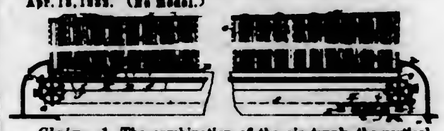
2. The combination, with the tongue A, of the adjustable support B, composed of the parts *a b*, connected substantially as and for the purpose described.

260,153. CAR-COUPLING. GEO. W. HOLMES, Council Bluffs, Iowa. Filed Mar. 23, 1882. (Model.)



Claim.—In combination with the draw-head, the bifurcated frame B, consisting of a bar of metal bent so as to form a support, E, for the link G, and inclined arm to guide the link to the draw-head, and the transverse block to which the frame is pivoted, the frame being provided with arms I, to limit its movement, substantially as specified.

260,154. DUST-COLLECTOR. NOAH W. HOLT, Buffalo, N. Y., assignor to Charles R. Knickerbocker, Jackson, Mich. Filed Apr. 18, 1882. (No model.)



Claim.—1. The combination of the air-trunk, the vertical cloths arranged to form stationary chambers, and traveling devices which cut the air off from the collecting-chambers successively to permit the dust to be dislodged, substantially as set forth.

2. The combination of the vertical cloths arranged to form stationary collecting-chambers, the air-trunk which supplies the dust-laden air, an intermediate chamber between the air-trunk and the collecting-chambers, and arranged to guide the air into the ends of the collecting-chambers, air-stopping devices at the ends of the collecting-chambers opposite to those ends which receive the air, and a traveling cut-off adapted to intermittently stop the air from passing through the walls of the stationary collecting-chambers, substantially as set forth.

3. The combination of the vertically-arranged stationary cloths, the air-trunk which conducts the dust-laden air to the cloths, the devices which guide the air from the trunk through the cloths, mechanism which intermittently shuts the air off from the cloths, the devices which dislodge the dust, and a traveling pocket or chamber which receives the dislodged dust and carries it away from the filtering-chamber, substantially as set forth.

4. The combination of the vertical cloths, forming substantially stationary vertical chambers, the devices which guide the air into the chambers on vertical lines, a cam or incline which moves the cloths at the lower ends, and a traveling dust-carrying device connected to and traveling with the cloth-moving mechanism, substantially as set forth.

5. The combination of the vertical cloths forming stationary vertical chambers, the devices which guide the air into the chambers on vertical lines, a traveling cam or incline for lifting the cloths at the inner ends, and a traveling dust-carrying device connected to the cloth-moving mechanism and arranged to have the cloth-moving mechanism in advance of the dust-carrying devices, substantially as set forth.

6. The combination of the main frame, the vertical cloths, the vibratable frame-pieces attached independently of each other to the cloths, devices for lifting the vibratable frame-pieces independently of each other, and a series of elastic devices respectively attached to the vibratable frame-pieces and arranged to return the cloths successively after they have been lifted, whereby the cloths are one after another snapped or jerked for dislodging the dust, substantially as set forth.

7. The combination of the air-trunk, the vertical cloths arranged to form stationary chambers, an inclosing intermediate chamber between the air-trunk and collecting-chambers, and traveling devices which cut the air off from the collecting-chambers successively to permit the collected dust to be dislodged, substantially as set forth.

8. The combination of the vertically-arranged cloths forming chambers which receive the air on vertical lines, a chamber below the collecting-chambers, into which the dislodged dust drops, the mechanism which shuts off the air from one or more chambers independently of the others, and a traveling pocket or receptacle mounted in said lower chamber below the collecting-chambers and moving from one to the other, substantially as set forth.

9. In a dust-collector, the combination of a series of collecting-chambers, an air-trunk arranged to supply air to several of the chambers simultaneously, and flexible extensions which are connected to the ends of the main collecting-chambers opposite to the air-trunk, and which permit the cloth-moving frame to be moved relatively to the main frame, but prevent the dust-laden air from escaping at points beyond said cloth-moving frame, substantially as set forth.

10. In a dust-collecting machine having a series of chambers, the combination of an air-conduit which supplies air to several chambers simultaneously, filtering-cloths arranged to form said chambers, vibratable bars or frames connected to the cloth, and flexible extensions attached to said vibratable bars or frames and situated at the ends of the chambers opposite to the air-conduit, substantially as set forth.

11. The combination, with the vertically-arranged cloths adapted to have the dust drop below them when it is dislodged, of a cam arranged to travel from chamber to chamber in horizontal planes to lift a portion of each of the cloths preparatory to dislodging the dust, substantially as set forth.

12. The combination of the frame D B E' with the vertical cloths arranged in pairs and made stationary at their outer edges, and secured at their inner edges to the vertically-movable rods D, at their upper edges to the swinging bars E', and at their lower to the swinging bars B, substantially as set forth.

13. The combination of the main frame-work, the collecting-chambers extending inwardly from both the opposite edges or sides of the main frame, and having vertically-movable supports on substantially the central line of the frame-work, and mechanism for jarring simultaneously the two opposite chambers, substantially as set forth.

14. In a dust-collector, the combination of a series of collecting devices, each having two vertically-arranged cloths secured to a vibrating bar at the lower ends and between the cloths, an opposing vibrating bar at the upper ends, a rising and falling bar at the inner edges, connected to the top and bottom vibrating bars, and stationary supports for the outer edges of the cloth, substantially as set forth.

15. In a dust-collector, the combination of a main frame, collecting-chambers arranged in pairs, the chambers of each pair being on opposite sides of the central line of the main frame, the filtering-cloths which form the collecting-walls of said chambers, vertically-movable bars attached to the inner edges of the cloths, and cloth-lifting devices which are mounted on substantially the central line of the main frame and elevate the vertically-movable bars at the inner ends of the collecting-chambers, substantially as set forth.

16. In a dust-collector, the combination of the main frame, the chambers extending inwardly from the sides or edges of the frame and arranged in pairs, the cloths having their vertical inner edges attached to vertically-movable bars, the bottom vibrating bars, B, each attached to the lower end of two adjacent cloths, and the upper supporting-bars, B', respectively, opposite to the bars B, said bars B and B' being arranged, substantially as set forth, to have the air pass out horizontally or laterally between them.

260,155. SASH-CORD PULLEY. CASSIUS HOLTON, Reading, Pa. Filed Mar. 28, 1882. (Model.)



Claim.—1. In a window-pulley, the shell provided with a shank at its rear, adapted to set in an aperture in the rear wall of the window-frame and weight-box to hold the shell in place, substantially as specified.

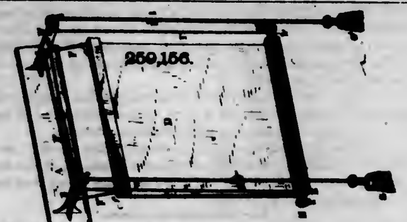
2. In a window-frame pulley, the shell provided with a shank adapted to set in an aperture in the window-frame and weight-box, and with longitudinal projections, substantially as and for the purpose specified.

260,156. CURTAIN-FIXTURE. TRUMAN P. HOPKINS, Milwaukee, Wis. Filed May 2, 1881. (No model.)

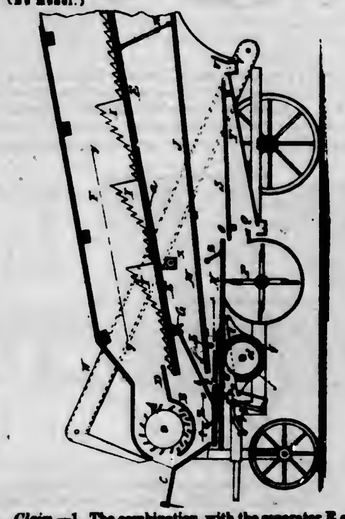
Brief.—The cords which raise and lower the shade pass through perforations and the bent outer ends of the bracket, making three rectangular frictional bends.

Claim.—1. In a curtain-fixture, the brackets B B', having bent outer ends provided with eyes *b b'*, and each bracket having three smaller perforations, *a*, *a'*, and *a²*, formed therein, as set forth.

2. In a curtain-fixture, the combination of the brackets B B', each having bent ends, with eyes *b* and *b'*, respectively, formed therein, and three smaller perforations, *a*, *a'*, and *a²*, with the described system of cords F F' and I I', the tassels G G', and a window-shade formed with top slot and bottom roller and buttons, all substantially as set forth.



260,157. GRAIN-THRASHER AND CLOVER-SEED HULLER. CHARLES H. HOSTER, Wellington, Ohio. Filed Mar. 21, 1882. (No model.)



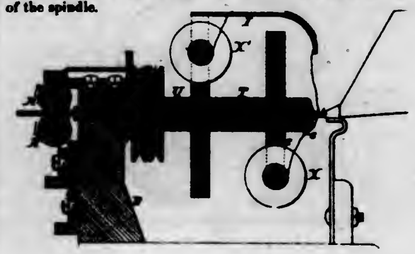
Claim.—1. The combination, with the separator E and shaker N, of the vibrating bottom J, constructed with a removable perforated section, M, as and for the purpose specified.

2. The combination, with a threshing-cylinder and concave, of the shaker N, having the ways *u*, the clover-screen *t*, mounted thereon, and the clover-huller *d f*, substantially as and for the purpose set forth.

3. The combination, with the frame, of a clover-huller, *d f*, adjustably connected therewith, a shaker, N, having an aperture, and a removable section, *e*, for covering said aperture, as shown and described.

260,158. MACHINE FOR THE MANUFACTURE OF CORSET-STIFFENERS. JAMES A. HOUSE, Bridgeport, Conn., assignor to Warner Brothers, same place. Filed Feb. 16, 1881. (No model.)

Brief.—Two hollow spindles carrying bobbins are revolved in opposite directions. The threads from the bobbins are guided to the end of the outer spindle, where they are wound around the fibers, which are supplied from a trough arranged opposite the end of the spindle.

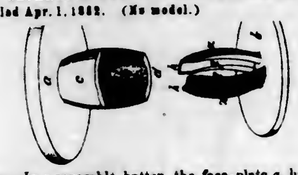


Claim.—1. The combination, with the hollow spindles carrying bobbins X X′ and driven in opposite directions, of guides for carrying both threads to the end of the outer spindle and a trough arranged opposite the end of said spindle to direct the fibers thereto, substantially as set forth.

2. The combination, with the hollow spindles carrying bobbins and devices for driving them in opposite directions, of feed-rolls arranged and operating substantially as set forth.

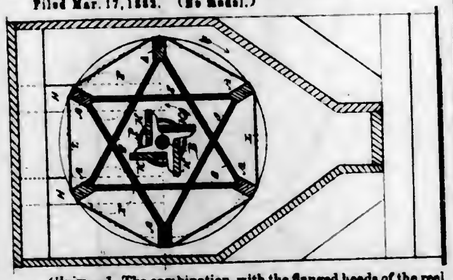
3. The combination, with the hollow spindles T and U, carrying the bobbins and revolving in opposite directions, of the feed-rolls H H′ and appliances for adjusting the same to and from each other, substantially as set forth.

259,159. SEPARABLE BUTTON. DAVID HUMPHREYS, Norfolk, Va. Filed Apr. 1, 1882. (No model.)



Claim.—In a separable button, the face-plate *a*, having the hollow convex or barrel-shaped stem *c*, open at its lower end and roughened on its interior, in combination with the back plate, *b*, provided with the outwardly-bowed prongs *g*, having converging free ends *h* and roughened exterior faces, *x*, substantially as described.

259,160. BOLTING-REEL. HOSEA ISHAM, Dadeville, Mo. Filed Mar. 17, 1882. (No model.)



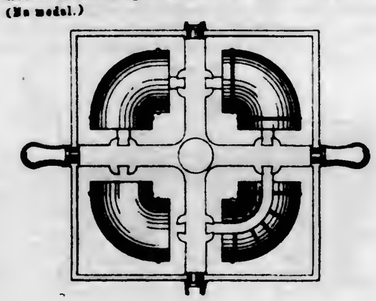
Claim.—1. The combination, with the flanged heads of the reel and the reel-shaft provided with a driving-wheel, of the wheels E F and means, substantially as described, for supporting the said wheels, as and for the purpose set forth.

2. The combination, with a reel provided with the flanged head B′, and the shaft B, provided with the wheel G, of the wheels E and the links I, substantially as and for the purpose set forth.

3. The combination, with the reel-head B′, provided with the flanged rim D and the shaft B, of the wheel G, provided with the flange M, the wheels E, and the links I, substantially as and for the purpose set forth.

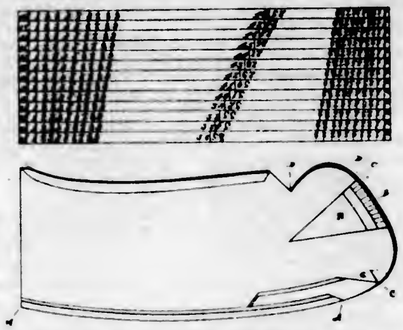
4. The combination, with the bars A of the reel, of the diagonal braces S, substantially as herein shown and described, whereby the reel is braced at its center without obstructing the central interior space, as set forth.

259,161. APPARATUS FOR CASTING PIPE-ELBOWS. J. HENRY ISHAM, Cuyahoga Falls, Ohio. Filed Apr. 17, 1882. (No model.)



Claim.—In combination with a molding-flask, a core-supporting frame held in position by the flask by devices such substantially as shown, and supporting the core-bars, substantially as and for the purpose hereinbefore set forth.

259,162. METHOD OF AND MEANS FOR DRAFTING AND CUTTING CLOTHING. H. AYRES JACKSON, Des Moines, Iowa. Filed Sept. 23, 1879.



Claim.—1. The process of drafting patterns for clothing by means of a series of scales bearing a uniform ratio of length to a corresponding series of bust-measures, and varying from each other in length by a uniform progression, with a common difference of about one-tenth of an inch, and each having about one-tenth of the length of the corresponding bust-measure laid off on one end of it and subdivided by parallel lines into a uniform number of equal parts, for the purpose of laying off by fixed proportions other lines and distances to determine the shape in which the material shall be cut, substantially as described.

2. In the process of cutting clothing, the mode of determining the directions of the several curves in every case by a chart combining in its outline the bust-curve, front and back arm-size curves, neck-curve, and dart-curve, each distinct from all the others, substantially as shown and described.

3. The chart or form shown in Fig. 2, presenting in combination distinct guide-lines for drawing the bust, front and back arm-size, neck and dart curves for any garment, substantially as shown and described, and for the purposes set forth.

4. The process of measuring, drafting, and cutting clothing hereinabove described, consisting in taking measurements of the bust, waist, chest, width of back, length of back, length under arm, arm-size, shoulder, circumference of neck, and neck and front in determining the length of subsidiary lines by laying off fixed parts or multiples on a scale whose length is about one-fourth the number of inches in the bust-measure, and on which about one-tenth of the length of the bust-measure is laid off and divided by parallel lines into a uniform number of equal parts, and in determining the directions of the several lines by a prescribed set of curves uniform for all shapes and sizes.

5. In the drafting of patterns for clothing, the mode hereinbefore described of distributing the surplus to be removed, which consists in constructing and locating the triangles Y 3 4, 2 O 5, and 9 10 11 and the doubly-convex figure 12 13, substantially as described and shown.

259,163. BOOT OR SHOE. ASA JOHNSON, New York, N. Y., assignor to the American Boot, Shoe, and Last Company, same place. Filed Apr. 2, 1880. (Model.)



Claim.—1. A boot or shoe having its counter made of sheet metal and the upper of flexible metallic material.

2. A boot or shoe having its counter made of sheet metal and the upper of wire-gauze.

3. The combination of the wires or pins, connected by solder, in the manner described, with the filling of leather, papier-maché, or equivalent material, as and for the purpose set forth.

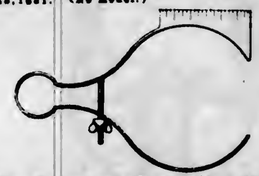
4. The combination of the metallic insole with the upper sole, formed of the metal-plate instep, the metallic rims, and the filling of papier-maché or equivalent material, as set forth.

5. The metallic rim or flange having the enlarged integral heel-flange N′, as set forth.

6. The combination, with the wire-gauze upper, connected to the sole by solder or equivalent means, of the sheet-metal counter and the adjustable strap, with its screw-clamp, as set forth.

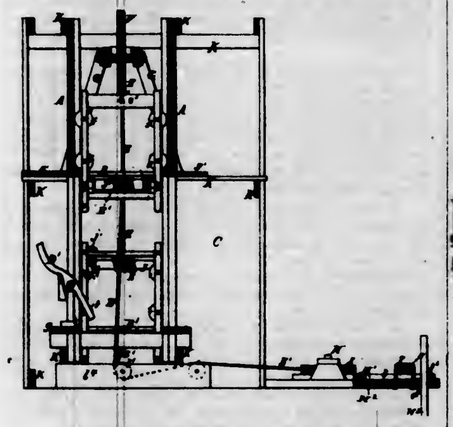
7. The combination, with the wire-gauze upper, of the elastic lacing, as and for the purposes set forth.

259,164. CALIPERS. GEO. W. JONES, Meriden, Conn. Filed Nov. 28, 1881. (No model.)



Claim.—A curved-leg caliper having a projection upon the outside of the leg presenting a straight graduated edge, substantially as described.

259,165. BRICK AND MORTAR ELEVATOR. WILLIAM A. JORDAN, New Orleans, La. Filed Apr. 5, 1882. (No model.)



Claim.—1. The combination of the pulley I, rope E′, and windlass J′, arranged as shown, platforms B B′, pulley F, rope E, and windlass J, arranged as shown, the whole operating substantially as and for the purpose described.

2. The combination of the adjustable slotted pulley-support H′, with pulley I attached, the anchoring-post H², the rope E′, and windlass J, arranged as shown, platforms B B′, rope E, and windlass J′, arranged as shown, and pulley F, attached to a portable frame, G, and the whole operating substantially as described.

3. The frames of the platforms B B′, provided with sliding slotted straps *h h* and elastic cushions *m m′*, substantially as and for the purpose described.

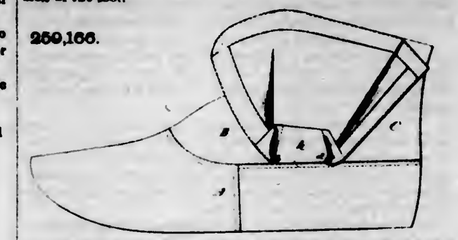
4. In combination with the platforms B B′, the stops D′, arranged partly across the passage-ways of the platforms, so as to be moved on their pivots as the platforms descend, and operating to hold the platforms down after they have descended, substantially as described.

5. In a brick and mortar elevator, the rope E′, attached to the windlass J′ of platform B, and then carried down through a cross-bar of the frame of said platform, then around the pulley I, then fastened to a cross-bar of the frame of platform B′, in combination with the cord E, attached to a cross-bar of the frame of platform B, and then passed round pulley F, then through a cross-bar of the frame of the platform B′, and fastened to windlass J, substantially as and for the purpose described.

259,166. SHOE-UPPER. JOSEPH L. JOYCE, New Haven, Conn. Filed Feb. 27, 1882. (No model.)

Brief.—The shoe is open at the side and provided with two flaps above the foxing-line, at which point they are separated some distance from each other, instead of meeting, as is usual, the change admitting of the flaps being widely opened for the admission of the foot.

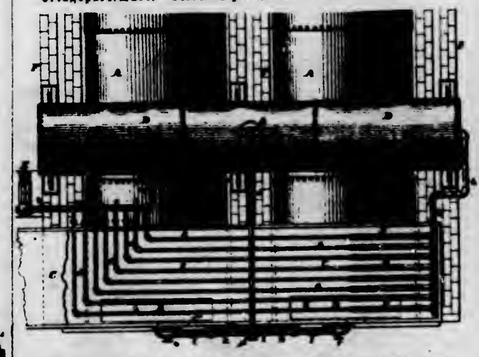
259,166.



Claim.—1. A shoe provided with a side opening having the two parts or flaps B C, separated at the foxing-line and adapted to be opened respectively to the front and rear, with a tongue inside, substantially as described.

2. A shoe provided with a side opening having the two parts or flaps B C, separated at the foxing-line and adapted to be opened respectively to the front and rear, with a tongue-piece, A, extending up between the two flaps and connected at its front and rear edges to the respective edges of the said flaps and so as to fold inside the flaps, substantially as described.

259,167. FEED-WATER HEATER. EDWARD KENDALL, Cambridgeport, Mass. Filed July 30, 1881. (No model.)



Claim.—1. The smoke-flue C, connected with a boiler and chimney, in combination with a series of water pipes arranged within said flue in positions to be acted upon by the hot gases in their passage to the chimney, a pump connected by its discharge-pipe with said series of pipes and adapted to force water through them, and a pipe or pipes leading from said series of heating-pipes to the interior of the boiler or other receptacle, substantially as described.

2. In combination with a steam-boiler, the smoke-flue C, connected with the boiler by a suitable passage, B, and provided with one or more doors, C′, a series of tubes located in said flue C and communicating with a single tube at each end located outside of said flue, a pump connected to one of said single tubes, a reservoir connected to the other of said single tubes, and a pipe leading from said reservoir to the interior of the boiler or other receptacle, substantially as described.

3. In combination with a steam-boiler, the reservoir D, the flue C, connected by a suitable passage with the boiler, a series of tubes arranged within the flue C in positions to be acted upon by the hot gases, a pump connected with and adapted to force water through said series of tubes, a pipe connecting said series of tubes with said reservoir, the pipes *i* and *k*, check-valve *l*, and globe valve or gate *o*, all arranged and adapted to operate substantially as described.

4. In combination with a steam-boiler, the flue C, connected with the boiler, a series of tubes located in said flue in positions to be acted upon by the hot gases in their passage to the chimney, a reservoir located at a higher level than the flue C, a pump connected with and adapted to force water through said series of heater-pipes, the pipes *h* and *m*, each connecting one end of said series of heater-pipes with said reservoir, and the check-valve *n*, all arranged and adapted to operate substantially as described, for the purposes specified.

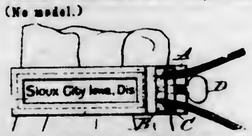
5. The combination of the boiler A, flues B and C, the reservoir D, pump E, pipes *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *k*, and *m*, check-valves *l* and *n*, and globe valves or gate *j* and *o*, all arranged and adapted to operate substantially as and for the purposes described.

6. The combination of the boiler A, flues B and C, the reservoir D, pump E, pipes *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *k*, *m*, and *p*, the check-valves *l* and *n*, and the globe valves or gates *j* and *q*, all arranged and adapted to operate substantially as and for the purposes described.

7. In a feed-water heater, the combination of the flue C, a series of small tubes composed of parts *d*, *e*, and *f*, connected together by quarter-bends of elbow-pipes at right angles to each other, and suitable pipes connecting said heater-pipes with a source of water-supply and with a receptacle to receive the heated water, substantially as and for the purposes described.

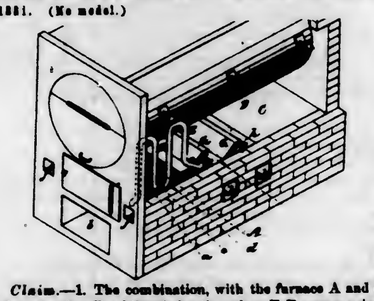
8. In a feed-water heater, the combination of a smoke-flue, a cluster or series of small tubes, each provided with one or more right-angled bends and arranged within said flue in positions to be acted upon by the hot gases in their passage to the chimney, a single supply-pipe of larger capacity connected with and adapted to supply water to each of the tubes in said cluster or series of small tubes, and a single discharge-pipe connected with and adapted to receive the water from each of said small tubes, substantially as described.

259,168. COMBINED MAIL-BAG FASTENER AND LABEL-HOLDER. JAMES L. KENNEDY, Sioux City, Iowa. Filed Feb. 16, 1882. (No model.)



Claim.—The combined tie-sack fastener and label-holder herein described, consisting of the slotted and recessed plate A, having the fixed bar or jaw B, movable jaw C, openings *f f*, formed through the plate between said jaws, set-screw D, adapted to open and close the jaws, and the perforated lug or projection E, all constructed and arranged as and for the purpose specified.

259,169. SMOKE AND GAS CONSUMING FURNACE. PETER KILBOY and JULIUS A. FLICK, Boston, Mass. Filed Dec. 23, 1881. (No model.)

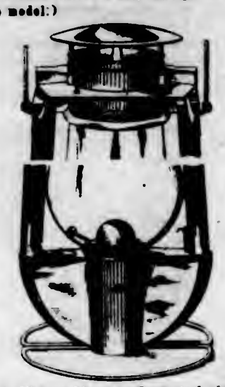


Claim.—1. The combination, with the furnace A and combustion-chamber D, of the air-heating pipes E E, communicating with the atmospheric air and arranged in a serpentine form within the furnace, and arranged on each side only thereof and in close proximity with its walls, and then extending backward in the rear thereof, and provided with transverse portions, *g*, extending across the flame-bed C, and having outlets or discharge-orifices *i*, through which the highly-heated air is emitted in jets or fine streams, so as to impinge upon and commingle with the smoke and gaseous products of combustion within the chamber D, all constructed and arranged to operate substantially in the manner and for the purpose set forth.

2. In a smoke and gas consuming furnace, the combination, with the removable air-superheating pipes E E, arranged as described, of the ledges *d*, projecting from the inner walls of the furnace A, and provided with grooves or recesses *e*, for receiving and supporting the bends of the pipes E, substantially as set forth.

3. In a smoke and gas consuming furnace, the combination, with the transverse perforated portions *g* of the pipes E, through which the superheated air is discharged into the combustion-chamber D, of the angular guards G, projecting rearwardly over the portions *g* of the pipes for the purpose of protecting them from the dust and cinders, and thereby preventing their air-apertures *i* from becoming clogged or obstructed, substantially as described.

259,170. LANTERN. CHARLES A. KIMBY, Meriden, Conn., assignor to Edward Miller & Co., same place. Filed Mar. 30, 1882. (No model.)



Claim.—1. The combination of a central wick-chamber, a surrounding air-chamber, a burner set into said wick-chamber, opening to said air-chamber, and tubes leading from above to conduct air to the said air-chamber, the space between said air-tubes and outer wall of the air-chamber inclosed to form an oil-fount at each side, communicating with the wick-chamber, substantially as described.

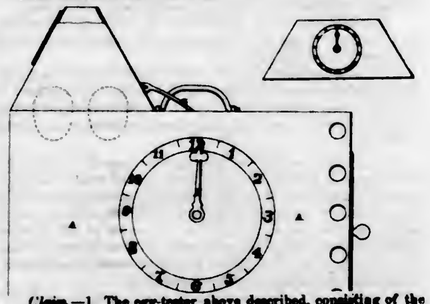
2. The combination of the central wick-chamber, surrounding air-chamber, a burner upon said wick-chamber, constructed to receive air from said chamber into the combustion-chamber and also into the chimney, and air-conducting tubes arranged to lead air from above downward and into said combustion-chamber, the space at each side between the outer wall of said air-chamber and the tubes inclosed to form an oil-fount communicating with the wick-chamber, substantially as described.

3. The combination of a central wick-chamber, a surrounding air-chamber, a burner set into said wick-chamber, and tubes leading from above to conduct air to the said air-chamber, the space between said air-tubes and outer wall of the air-chamber inclosed to form an oil-fount at each side, communicating with the wick-chamber, with an open base upon which the said parts rest, substantially as described.

4. The combination of a central wick-chamber, a surrounding air-chamber, a burner set into said wick-chamber, opening to said air-chamber, and tubes leading from above to conduct air to the said air-chamber, the space between said air-tubes and outer wall of the air-chamber inclosed to form an oil-fount at each side, communicating with the wick-chamber, with a base made from wire and upon which the parts rest, substantially as described.

5. In a lantern, the combination of the central wick-chamber, surrounding air-chamber, and tubes arranged to conduct air to the said air-chamber, with a fount constructed in wing-like projections on opposite sides of the air-chamber, substantially as described.

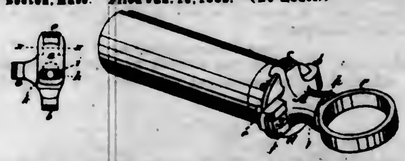
259,171. EGG-TESTER. WALLACE KIRKPATRICK, Adna, Ill. Filed Mar. 18, 1882. (Model.)



Claim.—1. The egg-tester above described, consisting of the combination of the frame having the perforated plate, upon which the eggs are placed, with a hinged dome made to close down over the eggs, and which dome has connected to it a dog and lever for operating a counting mechanism, substantially as shown.

2. The egg-tester above described, consisting of the combination of the frame A, a lamp, B, a hinged dome which is to be closed down over the opening C, upon which the eggs are to be placed, a lever which is pivoted to the dome, a ratchet-wheel having connected to one end of its shaft an index-hand and at the other an arm or lever which operates the striker of the bell, substantially as described.

259,172. HAND CARTRIDGE-EXTRACTOR. DAVID KIRKWOOD, Boston, Mass. Filed Jan. 16, 1882. (No model.)

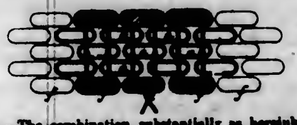


Claim.—1. In a hand cartridge-shell extractor, the combination, with one or more stationary hooked jaws, of an adjustable hooked jaw operated by an eccentric pin or projection, *i*, at the inner end of the stem *h* of the revolving handle C, working in a transverse slot in the adjustable jaw, substantially as set forth.

2. In a hand cartridge-shell extractor, the stock A, provided with a rotating handle, C, and having one or more stationary hooked jaws, in combination with the adjustable hooked jaw *e*, sliding on a guide, *g*, and having a slot, *h*, for the reception of an eccentric pin or projection, *i*, at the end of the stem *h* of the handle C, by which it is operated, substantially in the manner and for the purpose described.

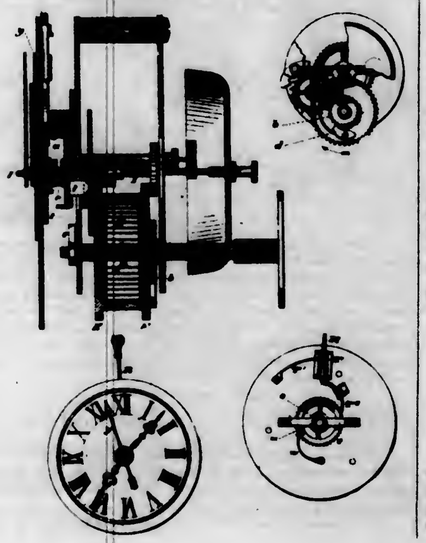
259,173. ORNAMENTAL CHAIN. HENRY KNICKMANN, East New York, N. Y. Filed Apr. 4, 1882. (No model.)

Brief.—The wires are twisted and bent into the grooves in the beads. The caps cover the beads and present a finished appearance.



Claim.—The combination, substantially as hereinbefore described, with the rings and the transverse wires for connecting said rings, of beads for retaining said wires, and of caps for covering the beads and the wires.

259,174. ALARM-CLOCK. EDMUND KUHN, New York, N. Y., assignor to the Jerome Clock Company, New Haven, Conn. Filed Jan. 9, 1882. (Model.)

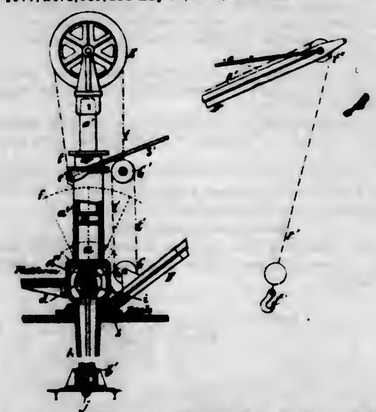


Claim.—1. In a combined time and alarm clock movement, the combination of the time main wheel and the alarm main wheel, both loose upon the main shaft, the mainspring, one end of which engages the time-wheel and the other the main shaft, a pawl and ratchet between said shaft and alarm main wheel, a stop, and mechanism, substantially such as described, between said stop and main shaft to cause said shaft to turn the said stop one point at each of the first two or more revolutions in winding, and a device to hold said stop during the completion of the winding, substantially as described.

2. In a combined time and alarm clock movement, the combination of the time main wheel and the alarm main wheel, both loose upon the main shaft, the mainspring, one end of which engages the time-wheel and the other the shaft, a pawl and ratchet between said shaft and main alarm-wheel, which permits the revolution of the shaft in one direction independent of the alarm-wheel, a finger attached to said main shaft and revolving with it, the toothed wheel *f*, constructed with a projection, *h*, and the spring-dog *i* substantially as described.

3. The combination of the toothed wheel *f*, arranged concentric with the hour-wheel and carrying the pointer, and also carrying the cam *e*, with the sliding rod R, provided with a finger, T², to engage the teeth of the wheel *f*, and mechanism, substantially such as described, between the said cam *e* and the alarm mechanism, substantially as and for the purpose described.

259,175. HYDRAULIC HOISTING MACHINERY. ALPHONSE LAPARDUS, Kensington, County of Middlesex, England. Filed May 11, 1881. (No model.) Patented in England May 25, 1877, No. 2,048, and May 25, 1880, No. 2,122.



Claim.—1. The combination, with the cylinder *a* and piston *c*, having its two sides of different area, of the valve *d*, pipes leading therefrom to said cylinder on both sides of said piston, and the valve *h* in the pipe leading to the cylinder on the side of the piston which is of smaller area, and adapted to be closed to allow liquid to escape from the cylinder on that side of the piston, or opened to permit the pressure to act on both sides of said piston, substantially as specified.

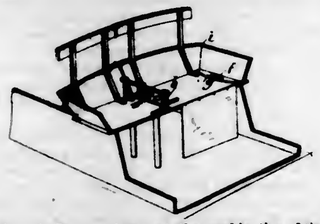
2. The combination of the cylinder *a*, the piston *c*, the extensible column *a'*, the sheave E, carried thereby, the valves *d h*, the boom or jib F, adapted to be adjusted around said column, the block G in the boom or jib, the cable *t*, passing over the sheave E, the movable block G', suspended by said cable, and the cable *t'*, rove upon the blocks G G', all substantially as specified.

259,176. GATE-HINGE. ISRAEL L. LANDIS, Lancaster, Pa. Filed Mar. 28, 1882. (Model.)



Claim.—A hinge leaf or wing consisting of a flat plate or strip of metal, having an eye adapted to set over the pintle of the opposite leaf, and two grasping-pieces, *c c*, extending at about right angles to the leaf proper and turned inwardly to grasp the batten, substantially as specified.

259,177. CARRIAGE-SEAT. PIERRE A. LARIVIERE, Ottawa Ontario, Canada. Filed Mar. 23, 1882. (No model.)



Claim.—1. In a carriage-seat, the combination of the stationary section and the movable section and connecting devices, substantially such as described, whereby the movable section is permitted to slide backward and subsequently turned upward, as set forth.

2. The combination of the stationary seat-section provided with the back-support, the movable seat-section, also provided with the back-support, and a sliding hinge-connection between the parts, substantially as shown, whereby the movable section is permitted to move backward and subsequently swing upward to a vertical position.

3. The combination of the stationary section, the sliding and swinging section, and a locking device, substantially such as shown, with which the movable section engages by a vertical motion.

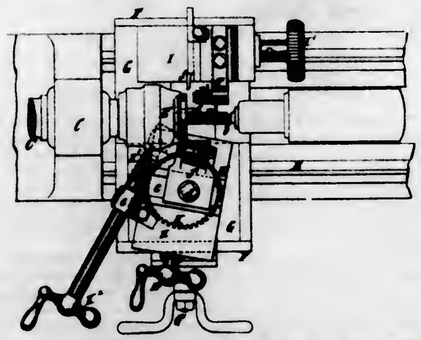
4. In combination with the movable seat-section and its curtain, a lever and connecting-cords, as described and shown, whereby the curtain is automatically folded against the movable section as the latter is raised.

5. In combination with the stationary seat-section and the movable section, having a horizontal sliding and a vertical swinging movement, the flange or lip *i*.

6. The combination of the stationary and movable sections, arranged to operate as described, with the notched plate *g* and stud *f*.

7. In combination with the stationary section, the horizontal sliding and vertically-swinging section provided with the overlapping plate, as and for the purpose described.

259,178. MACHINE FOR FORMING SNAPS ON WATCH-COVERS. JACQUES LAURENT, Philadelphia, Pa. Filed Feb. 9, 1882. (No model.)



Claim.—1. The combination, with a chuck and spindle for holding and rotating a cover, of a compound rest carrying a roller for turning in the lip or rim of the cover, and a roller having a shoulder and a tapered portion of reduced diameter for upsetting and beveling such turned-in portion, said rest being organized so that said rollers can be separately applied to the cover, substantially as herein described.

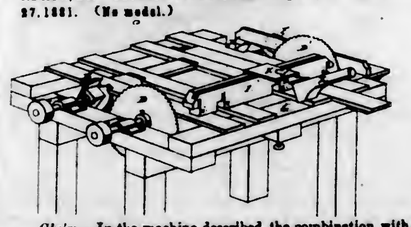
2. The combination, with a chuck and spindle for holding and rotating a cover, of the rest G, the supplemental rests H I, the worm-wheel K and worm K', the roller J, and the roller P, all arranged and operating substantially as and for the purpose herein described.

259,179. BRAKE-SHOE. SAMUEL B. LONG, Shallsburg, Pa. Filed Apr. 17, 1882. (No model.)

Claim.—The brake-shoe G, attached to the face-plate C, having pointed projections D, and brake block or beam A, by the clamp-bolts E E, united to the back plate, F, of the brake-beam, as shown and specified.



259,180. MACHINE FOR MAKING RAIL-PIECES FOR BUREAUS, &c. OSCAR LUPPERT, Williamsport, Pa. Filed Aug. 27, 1881. (No model.)

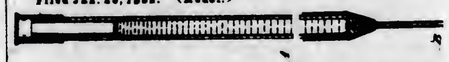


Claim.—In the machine described, the combination, with the cutter-heads E E', adjustable at any point on their mandrel, substantially as described and shown, of the saws D D', provided on each side of their centers with the elongated slots *d d*, whereby the said saws may be adjusted on the blades of said cutter-heads, substantially as described, shown, and for the purpose set forth.

259,181. ADHESIVE CEMENT FOR UNITING VENEERS AND OTHER FABRICS. WM. MARTIN, Baltimore, Md., assignor to George O. Manning and Joshua Lovering, Trustees, same place. Filed Nov. 3, 1881. (No specimens.)

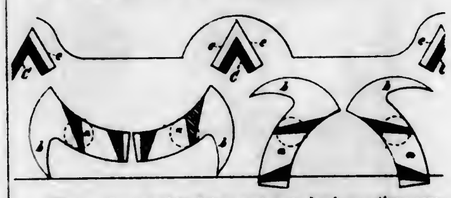
Claim.—The cement herein described, consisting of yellow-dip and tar, with or without diluents, substantially as set forth.

259,182. WATCH-OILER. WILLIAM W. MARTIN, Salem, Oreg. Filed Jan. 25, 1882. (Model.)



Claim.—A watch-oiler formed of the fountain A and hair-tube B, substantially as shown and described.

259,183. GRATE FOR RANGES. JOHN MARTIUS, Philadelphia, Pa., assignor to Charles Williams' Sons, same place. Filed Aug. 23, 1881. (No model.)



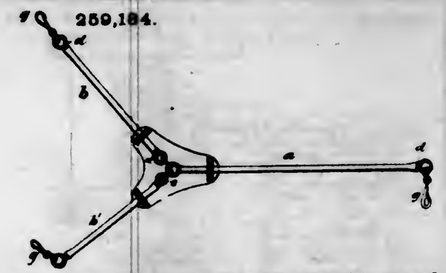
Claim.—In a combined two-part grate having sections composed of middle bars, *a*, which form a concave bed for holding the live coals, and end bars, *b*, concentric with the journals *c* of the sections, the combination, with said end bars, *b*, of intermediate cross-bars C, arranged as described, whereby as the middle bars, *a*, are turned downward for the discharge of the clinkers and are returned to their normal position the end bars turn freely under the live coals as they pass under the bars C, whereby the jamming of the coals is prevented, substantially as described.

259,184. HARNESS. CHARLES B. MATTHEWS, Newark, N. J. Filed Apr. 11, 1882. (No model.)

Claim.—1. A metallic backing-strap consisting of parts *a b b'*, adapted to be secured to the harness and to the pole-strap, and to receive a portion of the strain from the horse in the process of backing a vehicle, substantially as set forth.

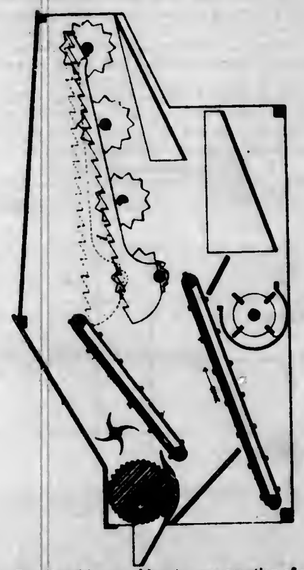
2. In harness, the combination, with the pole-chain or pole and the breeching *k*, of the metallic backing-strap *a b b'*, arranged and operating substantially as set forth.

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3. As an improved article of manufacture, a backing-strap consisting of the parts *a b b'*, composed of the metallic core *d*, having a suitable covering, joined together at one end, and having means, as *g*, for securing the same to the horse's harness at the other, and having the belly-pad cover said portions, substantially as and for the purposes set forth.

259,185. THRASHING-MACHINE. HUGH W. MATTHEWS, Baltimore, Md. Filed Sept. 27, 1881. (No model.)



Claim.—In a thrashing-machine, the combination of a crank-shaft, separating-rakes, each having one end mounted on said crank-shaft, and rollers, mounted also on the crank-shaft, but concentric with the bearings of said shaft, the rakes and rollers being placed alternately, as set forth.

259,186. ELECTRIC PUSH-BUTTON. GEORGE C. MAYNARD, Washington, D. C. Filed Apr. 5, 1882. (No model.)



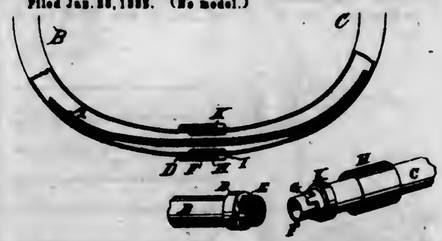
Claim.—1. The button B, countersunk centrally and on opposite sides, in combination with the core composed of the parts E G, screwed together, substantially as and for the purpose set forth.

2. In combination with the button B, constructed as described, and the core G E, made in two parts, and provided with the hollow head F, the interposed and concealed spiral spring H, having one end thereof arranged within the hollow head, substantially as and for the purpose set forth.

3. The bush A, provided with a central recess for the reception of the button B, and provided with screw-holes *b b* and wire conduits or channels *d d*, substantially as shown and described.

4. The bush A, constructed as described, in combination with the button B, adapted to cover and conceal the securing-screws of the bush, as hereinbefore set forth.

259,187. BRACELET. CHARLES MCINTIRE, Newark, N. J. Filed Jan. 28, 1882. (No model.)



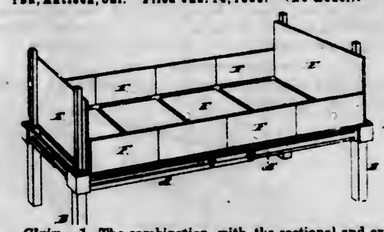
Claim.—1. In a bracelet, the combination of the section B, provided with the fixed collar D, and the section C, provided with the tube F and collar K, the spring A, and the slide H, having the flange I, adapted to slip onto the section C, so that the flange I shall engage the collar K, and the opposite end of said sleeve or slide be soldered fast to the collar K, all substantially as and for the purpose specified.

2. The combination of the section B, having the collar D and notch E, the section C, carrying the collar K and tube F, said tube supporting the stop-projection G, the slide H, with its flange I, and the spring A, all substantially as and for the purpose set forth.

259,188. HARNESS-OIL. EDGAR H. MCKIBBIN, Lathrop, Mo. Filed Apr. 19, 1882. (Specimens.)

Claim.—The herein-described composition of matter to be used as a harness-oil, composed of gum-shellac, alcohol, fish-oil, West Virginia oil, lamp-black, spirits of turpentine, and coal-oil, in about the proportions as stated.

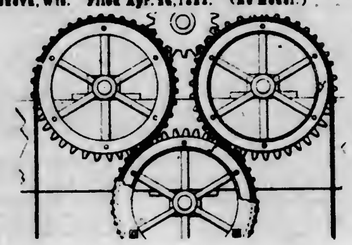
259,189. COMBINED BEDSTEAD, TABLE, &c. MARY A. MCMASTER, Antioch, Cal. Filed Jan. 14, 1882. (No model.)



Claim.—1. The combination, with the sectional and extensible legs B B' and the sectional and extensible rail-sections A A', of the rocker attachments C and the covering portion D, consisting of the main sections E, hinged together by their transverse edges, and the end sections, F, hinged to the ends of the main sections, substantially as specified.

2. The combination, with sectional and extensible leg-sections and sectional and extensible rail-sections, of the covering portion, consisting of main transverse sections hinged together and carrying hinged end sections, substantially as specified.

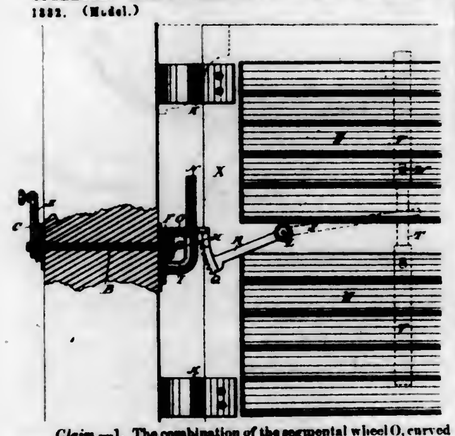
259,190. HOISTING APPARATUS. EDWARD B. MEATYARD, Geneva, Wis. Filed Apr. 24, 1882. (No model.)



Claim.—1. In hoisting machinery, in combination with a pinion and ropes, three or more friction-pulleys geared together by cog-rims, substantially as described and shown.

2. In hoisting machinery, in combination with a pinion, three or more spur-cog rims geared together and connected to friction-pulleys on one or both sides to move the ropes, substantially as set forth.

259,191. COMBINED SHUTTER-WORKER AND BLIND-SLAT OPERATOR. BELA G. MERRILL, Geneva, Wis. Filed Apr. 7, 1882. (Model.)

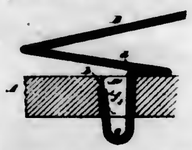


Claim.—1. The combination of the segmental wheel O, curved pintle H, toothed arc Q, slat-opening lever R S, and slat-operator T, with the blind and blind opening and closing crank C, shaft B, and pinions F G, substantially as specified.

2. The combination, with the shaft B, provided with the pinions F G, and the curved pintle H, of the sliding segmental wheel O, provided with the toothed arc Q, and the means, substantially herein shown and described, for connecting the said wheel to the blind and slats, as and for the purpose set forth.

3. The curved pintle H, having feather N, in combination with segmental wheel O, having notch P, and connected to slat-operating crank by toothed arc Q, substantially as specified.

259,192. BED-SPRING. GEORGE S. HOCK, Lebanon, Ky. Filed Apr. 24, 1882. (No model.)



Claim.—1. In combination with a bed-slat provided with a shouldered slot, a bed-spring provided with a resilient loop, having a shoulder or shoulders constructed thereon, the shoulders of the slat and loop engaging with each other and forming a lock, substantially as described.

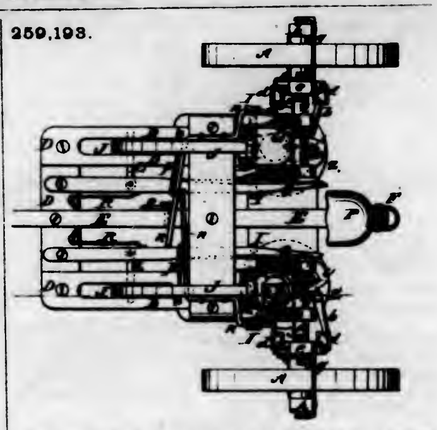
2. In combination with slat A, having slots *a* cut therein, and provided with shoulder or shoulders *b*, a bed-spring, B, having a protruding resilient loop, *c*, constructed therein, and provided with locking shoulder or shoulders *f*, substantially as described.

259,193. CHECK-ROW CORN-PLANTER. JOSEPH MORAVA, Castle Rock, Wis. Filed July 18, 1881. (Model.)

Claim.—1. In a corn-planter, the combination, with the carriage A B C D, of the tubular seed-boxes G, having flanges H, the curved bars J, having series of perforations M and N, the shoes K, the hinging-pins I, and the fastening-pins L, substantially as herein shown and described, whereby the shoes can be adjusted to plant the seed at any desired depth in the ground, and can be readily raised from the ground, as set forth.

2. In a corn-planter, the combination, with the shoes K, provided with seed-apertures S, seed-boxes G, mounted on said shoes, slides U, rings Z, spring-pressed bars Y, pivoted to the rings Z at one end and the seed-slides near their opposite ends, and arms *b*, pivoted to the bars Y, of the wheels A, cross-bars *c*, adjustable trip-

259,193.

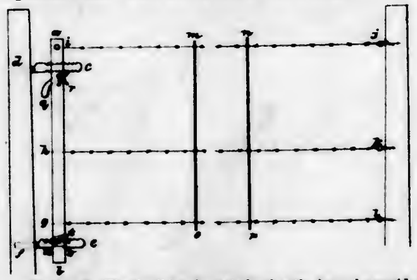


rods *d*, catch-wheels *i*, and spring-pressed catch-levers *j*, substantially as described, and for the purpose set forth.

3. The combination, with the cross-bar *c*, provided with the adjustable trip-rod *d*, seed-box G, and seed-slide U, of the spring-pressed bar Y, pivoted to the seed-slide, and arm *b*, pivoted to the bar Y, and provided with a stop, *b'*, whereby the bar Y is guarded from breakage should the wheel A be turned backward, substantially as described.

4. The combination of the seed-slide U, bar Y, pivoted thereto, arm *b*, pivoted to the bar Y, and provided with the stop *b'*, cross-bar *c*, catch-wheel *i*, and catch-levers *j l*, having arms *m*, and holding-levers *n*, substantially as described, and for the purpose set forth.

259,194. FLEXIBLE WIRE GATE. ANDREW T. MORROW, Tonganoxie, Kans. Filed Feb. 20, 1882. (No model.)



Claim.—1. The flexible wire gate having the bar *a b*, provided with an upper and a lower adjustable fastening device, substantially as shown and described, whereby the upper and lower wires may be equally stretched, and expansion of the wires and change in the relative positions of the gate-posts may be corrected.

2. The combination, with the gate-post having a lower latching device, of the upper catch, *c d*, having ratchet-teeth, and the latch *r s q* and the bar *a b*, substantially as shown and described.

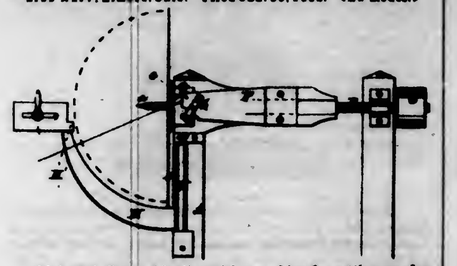
3. The combination, with the gate-post having an upper latching device, of the lower catch, *e f*, having retreating notches, and the stay-straps *e*, bolts *t* and *u*, and bar *a b*, substantially as shown and described.

259,195. DOOR-MAT FRAME. WILLIAM HENRY MULLER, Sowinkley, Pa. Filed Apr. 1, 1882. (No model.)



Claim.—As a new article of manufacture, a mat-frame consisting of the body A, provided with a scraper, *s*, and dirt-pan B, in combination with the inverted-V-shaped strip C, all constructed to operate substantially as and for the purpose set forth.

259,196. MACHINE FOR MAKING WOODEN BOWLS. CORNELIUS MEPP, Elmore, Ohio. Filed Jan. 23, 1882. (No model.)



Claim.—1. In combination with a machine for cutting wooden bowls, a crane provided with an arm tapering from the upper to its lower edge and carrying a cutting-tool, substantially as and for the purpose described.

2. In combination with the revolving spindle, the arm F and the arm H, provided with an adjustable brace-rest adapted to form a support for the said arm in a vertical and horizontal direction, said arms swinging from a common axis of motion, substantially as and for the purpose specified.

3. In combination with a machine for making wooden bowls, a facing-tool consisting of an arm, K, provided with a series of cutters arranged obliquely in the plane of the said arm, and having pivotal studs, whereby it is adjusted in the machine for operating in the manner as described, and for the purpose specified.

259,197. CORN-HUSKER. JACOB NIXON, Winfield, Kans. Filed Apr. 21, 1882. (No model.)



Claim.—A corn-husking implement consisting of a spiral pin, A, and the hooks B C, having flat inner surfaces, *d d*, flanges *c c*, and outwardly-bent ends *b b*, substantially as set forth.

259,198. PAPER BAG. HERBERT R. OLIVER, Baltimore, Md. Filed Mar. 22, 1882. (No model.)



Claim.—1. A paper bag having a fastening or securing device adjustable in position with reference to the end of the bag, substantially as specified.

2. A paper bag having a longitudinal flexible guide for a fastening device, whereby the position of the said fastener may be changed to suit the quantity of material placed in the said bag, substantially as specified.

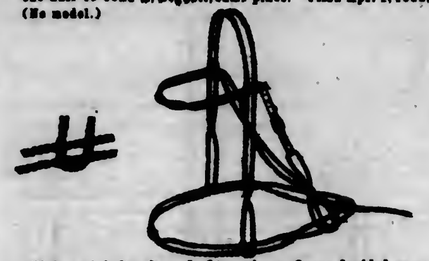
259,199. FRICTION-CLUTCH. JOHN H. OSBORN, Cleveland, Ohio. Filed May 4, 1882. (No model.)



Claim.—1. In combination with the shell A and shaft or spindle, the plate D, divided ring, and lever interposed between the ends of said ring and having its axis of vibration or fulcrum within the ring, and the contact of the ends of the ring with the lever at differential lengths from the said axis of vibration, substantially as set forth, and for the purpose specified.

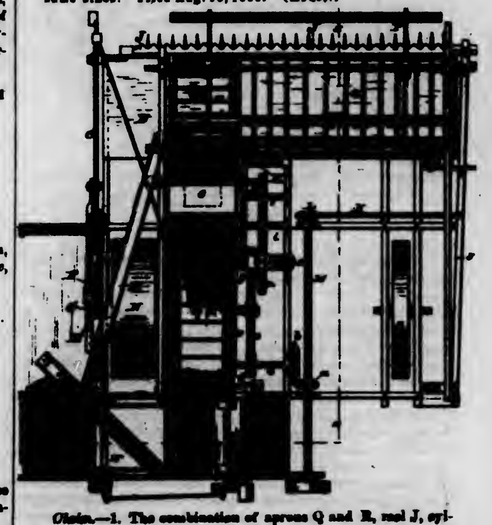
2. In a friction-clutch, a spring-ring with a lever, G, pivoted at one end and interposed between the free ends of said spring, in combination with the spring *c*, inclosed within the shell A, and plate, arranged substantially as and for the purpose set forth.

259,200. HALTER. ENOCH OSTRUM, Galva, Ill., assignor of one-half to John A. Bogsell, same place. Filed Apr. 1, 1882. (No model.)



Claim.—A halter formed of two pieces of rope doubled upon themselves and intertwined, as described and shown, to form cheek-pieces, crown-piece, brow-piece, throat-latch, and nose-piece, with rear loops passed through a loop on the throat-latch, and adapted to receive the hitching-strap, substantially as and for the purpose specified.

259,201. COMBINED HEADER AND THRASHER. WILLIAM H. PARRISH, Salem, Oreg., assignor of one-half to Geo. E. Aiken, same place. Filed Aug. 19, 1880. (Model.)



Claim.—1. The combination of aprons Q and R, reel J, cylinder O, trough I, roller H, located at one side and to the front of trough I, and grain-board A, at the other side of said trough and along the outer edge of apron R, whereby the grain is prevented from catching at the turn and is directed evenly to the cylinder O, substantially as set forth.

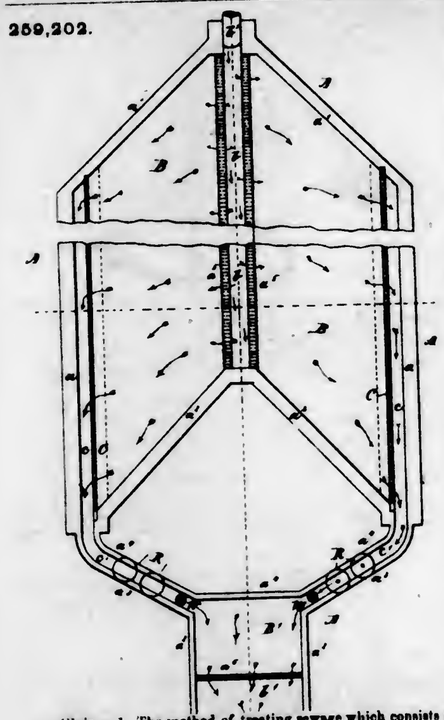
2. The combination of pole C, hinged to the side of the machine, the lever E F, jointed to said pole at its rear end, and provided with a spring-detent and a device for the detent to engage with, whereby the pitch of the machine may be adjusted, substantially as set forth.

3. The combination of the pole C, lever E F, notched bar G, connected at one end to pole C, and a spring-detent to engage with said bar, substantially as and for the purpose specified.

4. The combination of trough I, a separator at the top of and at right angles to said trough, a platform, U, located in the angle formed by said trough and separator, trough V, for delivering the grain from the separator to the platform, and pole C, pivoted or hinged to the front and side of the machine, and at its rear end to lever E F, whereby the operator will be within reach of the said several parts, substantially as set forth.

259,202. METHOD OF AND MEANS FOR TREATING SEWAGE. FRIEDRICH PEVAL, Berlin, Germany. Filed Dec. 9, 1881. (No model.) Patented in Belgium Dec. 9, 1881, No. 53,644; in France Dec. 9, 1881, No. 146,370; in England Dec. 9, 1881, No. 5,899, and in Italy Dec. 31, 1881, XXVII, No. 179.

259,202.



Claim.—1. The method of treating sewage which consists in the following successive steps; first, eliminating solid substances therefrom; second, passing it through a filtering and absorbent material composed of a porous or cellulose substance, such as described; third, subjecting the liquid so treated to a second filtering operation; fourth, acidulating the filtered liquid; fifth, neutralizing or eliminating the acid from the liquid; and, lastly, eliminating therefrom the neutralizing or acid-eliminating agent, substantially as described.

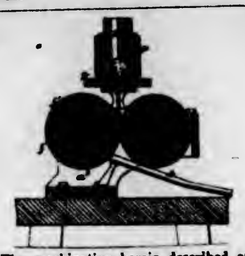
2. The method of treating sewage which consists in the following consecutive steps: first, eliminating therefrom the solid substances; second, passing the liquid through an absorbent filtering and antiseptic material, such as a porous or cellulose substance incorporated with antiseptic substances, as described; third, preventing fermentation of the absorbent material and binding the ammoniacal emanations by means of carbolic or analogous acid and potassium sulphate incorporated with substances such as described and applied as set forth; fourth, filtering the liquid a second time; fifth, acidulating the filtered liquid, or mixing therewith an alcohol chloride, as described; sixth, eliminating or neutralizing the acid or chloride; and, finally, eliminating the neutralizing agent by filtration, substantially as and for the purpose specified.

3. The herein-described plant, composed of a main basin, B, divided longitudinally by perforated walls or their equivalent to form the channel *b*, and by filter-walls C C, to form the channels *c c*, in combination with the auxiliary basin B' *b'* and channels *c' c'*, constructed and arranged for operation substantially as and for the purpose specified.

4. The combination, with the channels *c' c'* of the plant A, of the reservoirs R R, constructed and arranged for operation substantially as and for the purpose specified.

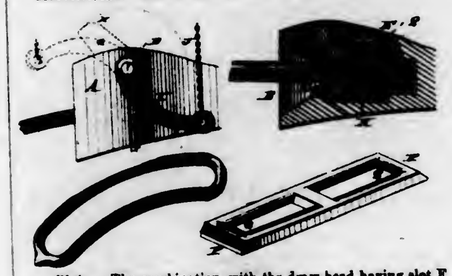
5. The combination, with the channels *c' c'* of the plant A and the reservoirs R R, of the water-wheels W W, all constructed and arranged for operation substantially as and for the purpose specified.

259,203.



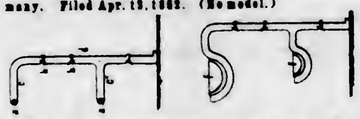
Claim.—The combination herein described of the recessed molding-disk *f* with the plain-edged pressure-disk *g*, and with mechanism for imparting intermittent motion to said disks, as specified.

259,204. CAR-COUPLING. ALEXANDER H. PICKEL, Carpentersville, Ind. Filed Mar. 31, 1882. (No model.)



Claim.—The combination, with the draw-head having slot F and provided in its bottom with the transverse plate I, having its front and rear edges, M N, beveled downwardly, as shown, of the transverse shaft D, on which is rigidly but removably fixed the coupling-pin G, having the outwardly and rearwardly curved lever I, as shown, and for the purpose specified.

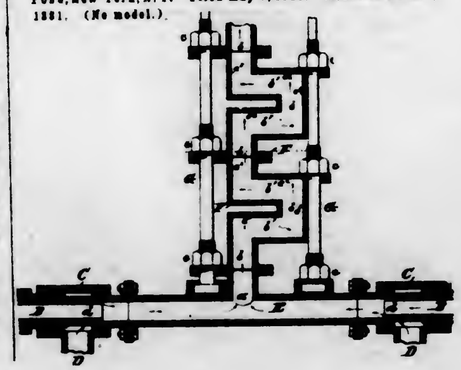
259,205. BARBED-WIRE FENCE. CARL PIEPER, Berlin, Germany. Filed Apr. 13, 1882. (No model.)



Claim.—1. The combination, with a barbed-wire fence, of one or more smooth guard-wires, *a*, fixed to an arm or arms projecting laterally from the fence-posts, substantially as and for the purpose described.

2. The combination, with a barbed-wire fence, the posts of which are provided with a laterally-projecting arm or arms carrying the wire or wires *a*, of one or more watering-troughs, *f f*, supported by the said arm or arms, as hereinbefore described.

259,206. REDUCING WOOD, &c., TO FIBER. GOLDSBURY H. PORE, New York, N. Y. Filed May 7, 1881. Renewed Nov. 17, 1881. (No model.)



259,208. APPARATUS FOR MOULDING FANCY ARTICLES IN GLASS, CRYSTAL, &c. CHAS. CASTOR PICARD, Paris, France. Filed Feb. 8, 1882. (No model.) Patented in France Dec. 23, 1881; in Belgium Jan. 10, 1882, and in England Jan. 10, 1882, No. 126.

Claim.—1. The herein-described process of disintegrating or reducing to fiber wood and other materials, which consists in forcing or impelling the materials to be disintegrated against a series of deflections or obstructions, arranged in a pipe or passage, by means of a jet of steam, the passage being so contracted as to prevent the lateral expansion of the jet, substantially as set forth.

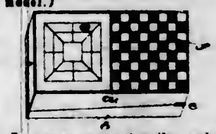
2. An apparatus for disintegrating and reducing to fiber wood and other materials, comprising a pipe with internal obstructions or deflectors and a steam-injector connected therewith, whereby the substance to be reduced is impelled with violence successively against said obstructions, the said pipe being of substantially the same size as the steam-pipe throughout, whereby lateral expansion of the steam is prevented, substantially as set forth.

3. An apparatus for disintegrating and reducing to fiber wood and other materials, comprising a pipe or tube of substantially uniform diameter throughout, and its bore made up of sections arranged at an angle to each other, so as to offer impinging and deflecting surfaces, and a steam-injector arranged to impel and force the materials through the said angular pipe or tube, substantially as set forth.

4. The combination, to form an apparatus for disintegrating and reducing to fiber wood and other materials, of a pipe, F, made up of sections forming an angular passage, *b b'*, an injector-chamber, C, connected with pipe E, a steam-jet pipe, D, connected with said chamber C, and a pipe, E, to lead the materials to the injecting-point *d*, substantially as set forth.

5. The combination, to form an apparatus for disintegrating wood and reducing it to fiber, of the hopper A, pipes B B, injector-chambers C C, steam-jet pipes D D, pipe E, having a lateral outlet, *e*, and the pipe F, provided with obstructions or deflectors, all arranged to operate substantially as and for the purposes set forth.

259,207. GAME APPARATUS. HENRY H. POOR, Franklin, Mass., assignor to James H. Mason, same place. Filed Apr. 1, 1882. (No model.)



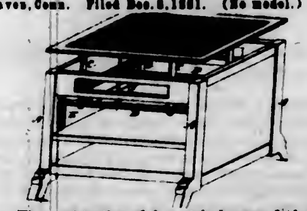
Claim.—1. In a game apparatus, the main box or case, consisting of two portions, *a b*, adapted, when opened, to form an alley, and having their sides marked with diagrams, as described, for different games, in combination with a box for containing the removable devices employed in the games, and means to secure the same in the interior of the main box or case when closed, substantially as described.

2. The main box consisting of two portions hinged together, and provided on its outside with diagrams of games to be played thereon when closed, and adapted, when opened, to form an alley, combined with removable bridge-piece *i*, pockets *l*, and the spring-gun *k*, substantially as described.

3. The alley *g*, provided with the pivotal socket, combined with the segments and elastic band *p*, and the spring-gun, adapted to be held pointing in any desired direction by the said band, substantially as described.

4. In a game apparatus, the ball-propelling gun, it consisting of the main chambered portion or barrel of the gun, with the plunger, breech-piece, and spring, and the guide-rod *v*, connected with the said breech-piece, and trigger, adapted to engage the said guide-rod, substantially as described.

259,208. ADJUSTABLE STOOL, TABLE, &c. JOHN PURSELL, New Haven, Conn. Filed Dec. 8, 1881. (No model.)



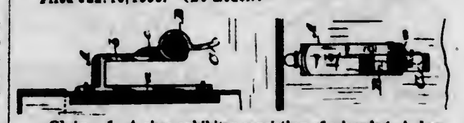
Claim.—The combination of the notched grooved plates E on the supports, the top B, and the vertical rods C C, hinged to the under side of the said top, and extending down through guides in the supports, with a stud or projection from the said rods into said notched grooves, which work up and down through the grooves, but engage with the notches, substantially as and for the purpose described.

259,209. TRAVELER FOR SAILS. JACOB RAND, Boston, Mass. Filed Feb. 25, 1882. (No model.)



Claim.—The cylindrical head D, having a cylindrical projection or axle, *c*, at right angles thereto, which projection or axle is surrounded by an anti-friction collar or roller, *d*, and has arms *f* outside of said collar, for attachment to the sail, which serve as a means for retaining the collar in place, substantially as and for the purpose set forth.

259,210. SHOE-EXHIBITOR. DAVID J. REX, Pittsburg, Pa. Filed Jan. 16, 1882. (No model.)



Claim.—1. A shoe-exhibitor consisting of a bracket, A, having a bed-piece, *a*, an angular projection, *b*, with lug *c*, in combination with the cam-lever B, substantially as shown.

2. In a clamping device for exhibiting shoes, the combination, with a bracket, A, having bed-piece *a*, angular projection *b*, and lug *c*, of the cam or eccentric lever B, provided with finger-bar C, substantially as shown and herein specified.

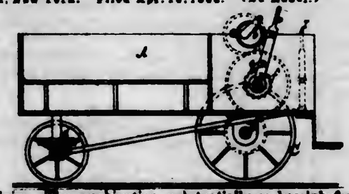
3. A clamping device for exhibiting shoes, consisting of a bracket provided with an angular projection and a lug, in combination with a cam-lever arranged substantially as specified.

259,211. WORK-BENCH ATTACHMENT. JONATHAN B. RICHARDS, Wager, Ark. Filed Mar. 14, 1882. (No model.)

Claim.—1. The combination of the frame A, having the lip *a* at its upper end, the saddle *b* at its lower end, and parallel bars having grooves *f* and teeth *g*, the sliding block B, carrying the pivoted pawl F and pins H I, and the bench D, grooved to receive lip *a*, and having rail J upwardly convexed to receive saddle *b*, as and for the purpose specified.

2. The frame A, formed with the holes *j*, in combination with the elevated support J, formed of the sleeve *k*, provided with the arm *k'*, and the adjustable T-bar *l*, substantially as described.

259,212. VELOCIPEDE. JULIUS RICHTER, Union Hill, N. J., assignor, by direct and mesne assignments, to George F. Freedman, New York. Filed Apr. 13, 1882. (No model.)

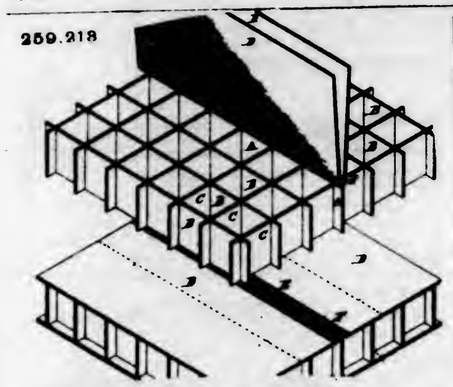


Claim.—The combination, substantially as hereinbefore described, of the body A, the axle D, the driving-wheels C C, mounted firmly on this axle, the crank-shaft E, which is geared together with the axle D, the eccentrics mounted on the crank-shaft, the lever-pawls detachably connected to said eccentrics, and the ratchet-wheels mounted on an intermediate shaft which is geared together with the axle D.

259,213. EGG-CARRIER. GEORGE T. RIDDLE, St. Louis, Mo. Filed Feb. 28, 1882. (No model.)

Claim.—1. An egg-carrier tray having cells open at bottom.

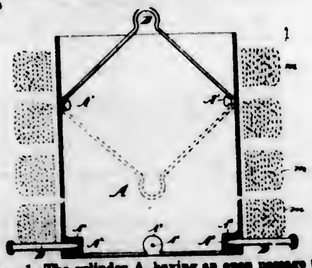
259,213



and provided with flaps D D, secured to the middle strip and adapted to form the bottom of another tray above, and when raised forming a handle by which the tray can be lifted away from the eggs, as set forth.

2. An egg-carrier tray consisting of strips B C, forming cells open at bottom, thick strip A, supporting the strips B C, the flaps D, and ties F, the flaps adapted to form a cover of the tray, or a bottom to another tray located thereon, and furnishing means for lifting the tray away from the eggs, as set forth, and the ties securing the flaps and strips to the thick strip A.

259,214. MEANS FOR HOLDING AND TRANSPORTING WIRE. HENRY ROBERTS, Pittsburg, Pa. Filed Apr. 27, 1882. (No model.)

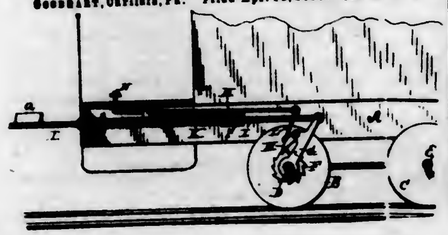


Claim.—1. The cylinder A, having an open passage through its interior, a smooth exterior, and an interior ball, B, in combination with the removable support or supports D, adapted to serve relatively to each other and to the coils of wire m, substantially as and for the purposes herein specified.

2. The cylinder A, having its interior open quite through, to facilitate heating and cooling, in combination with the removable support or supports D, to receive and discharge the wire coils m, as herein specified.

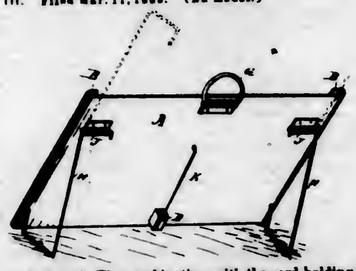
3. The cylinder A, with an ample passage through its interior, internal projections, A', to engage an internal ball, hollow reinforces A^2, and internal bottom rim, A^3, in combination with a hinged ball, B, extending across the interior, and having a quick bend at its center, and with pins D, adapted for ready withdrawal, all arranged to serve relatively to each other and to a series of coils of wire, m, as herein set forth.

259,215. CAR-STARTER. JACOB B. RUDDER and ALEXANDER GOODHART, Carlisle, Pa. Filed Apr. 13, 1882. (No model.)



Claim.—The frame A, wheel B, and axle D, provided with ratchet F and lever G, in combination with the pawl H, rod I, and foot-lever M N, as and for the purpose set forth.

259,216. SHOW-CARD HOLDER. WILLIAM C. REED, Quincy, Ill. Filed Mar. 11, 1882. (No model.)



Claim.—1. The combination, with the card-holding frame or plate A, provided with grooved flanges B, of the loop or socket D, the standard E, and the base F, substantially as herein shown and described, for the purpose set forth.

2. The combination, with the card-holding plate or frame A, of the loop or socket D, and the pivoted bent hooks H H, substantially as herein shown and described, and for the purpose set forth.

3. The combination, with the card-holding frame A, of the loop or socket D, the pivoted hooks H, and the pin K, substantially as herein shown and described, and for the purpose set forth.

4. The combination, with the card-holding frame A, of the loop or socket D, the pivoted hooks H, the pin K, and the ring G, substantially as herein shown and described, and for the purpose set forth.

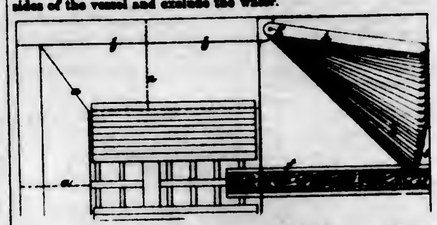
259,217. CHECKERS OR DRAUGHTS. FREDERICK SANDERSON, Friendville, Nebr. Filed Mar. 6, 1882. (No model.)



Claim.—A checker having an annular groove or recess, C, and a central knob, D, on its upper surface, and a socket, E, on its lower surface, the knob of one checker being adapted to fit closely in the socket of another, as and for the purpose described.

259,218. COFFER-DAM. RICHARD P. C. SANDERSON, New York, N. Y. Filed Feb. 4, 1882. (No model.)

Brief.—Independently-swinging arms, the outer ends of which are pivoted to the sides of the coffer-dam, serve to close against the sides of the vessel and exclude the water.



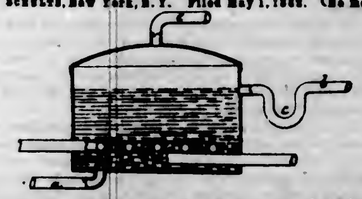
Claim.—1. The combination, with a coffer-dam adapted to receive the stem or stern of a vessel, of an upright series of arms or bars hinged at one end to the coffer-dam by an upright pivot or pivots, and adapted to be swung horizontally on their pivot or pivots independently of each other to bring their opposite ends against the side of the vessel, substantially as specified.

2. The combination, with the coffer-dam B, of two series of arms or bars, A, hinged at their outer ends to the sides of the coffer-dam, and adapted to swing horizontally independently of each other, the said arms or bars being of such length that when swung inward against the sides of a vessel they will be diagonal or oblique to the length of the vessel, substantially as and for the purpose specified.

3. The combination, with a coffer-dam adapted to receive the stem or stern of a vessel, of an upright series of separately-adjustable arms or bars arranged at each side of the coffer-dam, and adapted to have their ends brought against the sides of a vessel, and a covering of canvas, rubber, or other material applied to the outer sides of said arms or bars, substantially as and for the purpose specified.

4. The combination, with a coffer-dam comprising water-tight compartments and provided at each side with an upright series of separately-adjustable arms or bars, of valves for allowing water to flow from the inside of the coffer-dam into said compartments, substantially as and for the purpose specified.

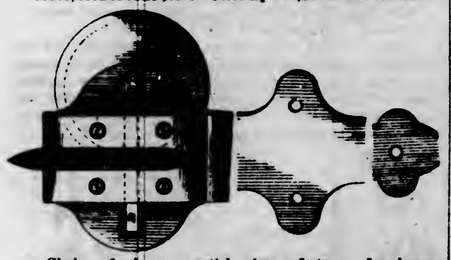
259,219. PROCESS OF COLLECTING AND UTILIZING CARBONIC-ACID GAS FROM ACIDULOUS SPRINGS. CARL H. SCHULTZ, New York, N. Y. Filed May 1, 1882. (No model.)



Claim.—1. The within-described process of obtaining carbonic-acid gas from acidulous mineral springs by expelling from such water the carbonic-acid gas by the action of heat and collecting such gas in a suitable gas-holder, substantially as and for the purpose set forth.

2. The within-described method of impregnating mineral waters with carbonic-acid gas, which consists in first driving out the said gas from the water either in the spring or already collected therefrom by the action of heat applied to such water, and then forcing the gas so collected into a quantity of water taken directly from the same source.

259,220. DOOR-HANGER. ALFRED L. SCRANTON, Rochelle, Ill., assignor of one-half to A. Herbert Scranton and Ada S. Jones, both of same place. Filed Apr. 13, 1882. (No model.)



Claim.—1. As a new article of manufacture, a door-hanger provided with bearing-pieces removably secured to the inner sides of the hanger, and having oblong slots therein, and a roller provided with spindles adapted to bear in said slots, substantially as set forth.

2. The combination, with a curved door-hanger, of bearing-pieces provided with oblong slots and adapted to be removably secured by screws between the opposite vertical portions of the hanger, and a roller whose spindles are adapted to bear in the slots of said bearing-pieces, substantially as set forth.

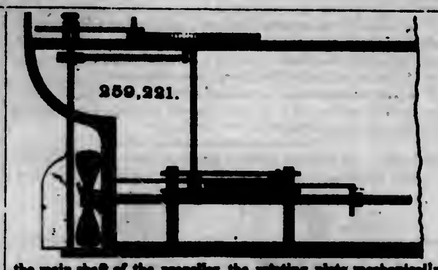
259,221. AUTOMATIC TOY. JOHN E. SELDEN, Hattenwan, N. Y. Filed Apr. 24, 1882. (No model.)

Claim.—1. The combination, substantially as hereinbefore set forth, of the main shaft of the propeller, the rotating plate impelled thereby, and the movable arm receiving motion from the plate during a determinate portion of the revolution of the latter.

2. The combination, substantially as hereinbefore set forth, of the main shaft of the propeller, the rotating plate impelled thereby, the movable arm, and means, substantially such as described, for adjusting the length of said arm.

3. The combination, substantially as hereinbefore set forth, of the rudder, the tiller, the main shaft of the propeller, and mechanism, substantially such as described, for communicating motion from said shaft to the tiller during a determinate period.

4. The combination, substantially as hereinbefore set forth, of



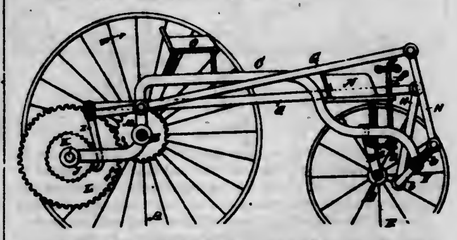
259,221.

the main shaft of the propeller, the rotating plate mechanically connected therewith, the pin or pins upon said disk, and the tiller projecting into the path of the pin or pins upon the rotating disk.

5. The combination, substantially as hereinbefore set forth, of the rudder, the tiller, and the yielding springs for restoring the tiller to its normal position after having been acted upon by the steering mechanism.

6. The combination, substantially as hereinbefore set forth, of the main shaft of the propeller, the rotating plate mechanically connected therewith, the movable pin or pins upon said plate, and the movable arm or tiller.

259,222. VELOCIPEDE. CYRUS SHELBURNE, Johnson City, Tenn. Filed Mar. 26, 1882. (No model.)

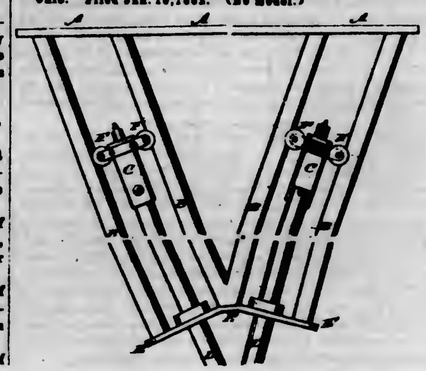


Claim.—1. In a velocipede, the combination, with the driving-wheel shaft, of cog-wheels and ratchet-wheels for rotating the same, rocking levers and pawls for acting on these ratchet and cog wheels, and a crank-shaft provided with treadles and connected with the rocking levers by means of pivoted connecting-bars, substantially as herein shown and described, and for the purpose set forth.

2. In a velocipede, the combination, with the driving-wheel shaft B, of the cog-wheels L and M, the ratchet-wheels J, the pawls I, the rocking levers G, the connecting-bars H, and the crank treadle-shaft F, substantially as herein shown and described, and for the purpose set forth.

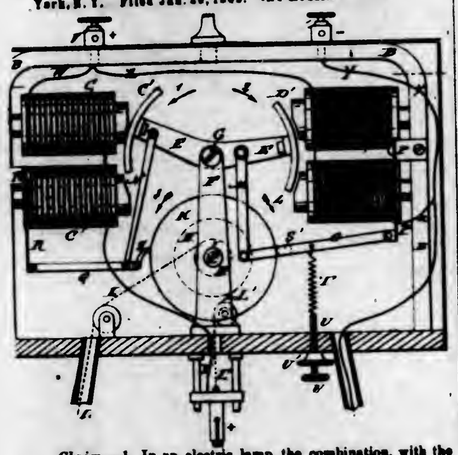
3. In a velocipede, the combination, with the front and rear axle, D B, and the side bars, C, extended beyond the said axles, of the cog-wheels L M, the ratchet-wheels J, the pawls I, the rocking levers G, the connecting-bars H, and the crank treadle-shaft F, substantially as and for the purpose set forth.

259,223. ELECTRIC LAMP. HENRY B. SHERIDAN, Cleveland, Ohio. Filed Jan. 10, 1882. (No model.)



Claim.—In an electric lamp, the combination, with the base-plate A, the inclined guides B, and the angular plate E, provided with apertures lined with insulating material, of the carbon-holders C, having the ends of their top plate slotted, and the rollers F, of non-conducting material, pivoted with the said slots, and having their faces grooved to fit upon the said guides, substantially as and for the purpose set forth.

259,224. ELECTRIC LAMP. HENRY B. SHERIDAN, Cleveland, Ohio, assignor to the Sheridan Electric Light Company, New York, N. Y. Filed Jan. 26, 1882. (No model.)



Claim.—1. In an electric lamp, the combination, with the lever E, carrying the armatures C' D', and interposed between the low-resistance coils C and the high-resistance coils D, and the toothed wheel K, rigidly connected with the cone-pulley H, carrying the carbon-supporting chains L L', of the pivoted connecting-bar M and the lever O, fulcrumed to a spring, P, and having a fixed pawl, S, substantially as herein shown and described, whereby the passage of an electric current through the coils of the low-resistance magnet will separate the carbons to form the voltaic arc, as set forth.

2. In an electric lamp, the combination, with the lever E, carrying the armatures C' D', and interposed between the low-resistance coils C and the high-resistance coils D, the toothed wheel K, rigidly connected with the cone-pulley H, carrying the carbon-supporting chains L L', the pivoted connecting-bar M, and the lever O, fulcrumed to the spring P and having fixed pawl S', of the pivoted connecting-bar N and the lever Q, pivoted to a spring, R, and having a pivoted pawl, S, substantially as herein shown and described, whereby the passage of an electric current through the coils of the high-resistance magnet will move the carbons toward each other after being separated by combustion, as set forth.

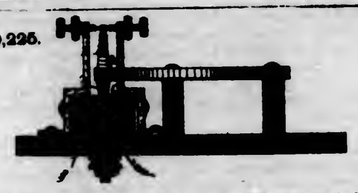
3. In an electric lamp, the combination, with the lever E, carrying the armatures C' D', and interposed between the low-resistance magnet C and the high-resistance magnet D, the connecting-bar M, and the lever O, of the spiral spring T and its adjusting-screw U, substantially as herein shown and described, whereby the resistance of the lever to the action of the electric current passing through the low-resistance coils is regulated, as set forth.

4. In an electric lamp, the curved armatures C' D', and the bent lever E, to which they are attached, in combination with the high and low resistance magnets C D, having concaved ends for operating the arc-regulating mechanism, substantially as specified.

259,225. TELEGRAPHIC RECEIVING-INSTRUMENT. GERRITT SMITH, Astoria, N. Y. Filed Feb. 20, 1882. (No model.)

Brief.—The relay-coil is in the main line, and has a core adapted to be rotated by clock-work or other mechanism. The armature-lever is made of non-magnetic material, and has attached to opposite sides a pair of small steel arms, which bear upon the face of the revolving core. These steel arms play vertically with the armature-lever in notches made in the opposite poles of a permanent magnet, and hence are permanently polarized, one plus and the other minus. As long as no current is passing through the coil there is no tendency for the armature to vibrate; but a current of one polarity attracts one of the steel arms and repels the other, and vice versa when a reverse current is sent, in which events the revolving-core carries the armature in opposite directions.

259,226.



Claim.—1. The combination, substantially as hereinbefore set forth, of a permanent magnet and two mechanically-united polarized armatures, which latter are maintained in permanent frictional contact with a moving surface of magnetic metal, and receive unlike polarity by induction from the respective poles of the permanent magnet.

2. The combination, substantially as hereinbefore set forth, of two mechanically-united polarized armatures having unlike polarity, maintained in permanent frictional contact with a surface of magnetic metal moving in opposite directions at their respective points of contact therewith, and a magnetizing-coil which acts to induce magnetic polarity in or upon said surfaces.

3. The combination, substantially as hereinbefore set forth, of a permanent magnet and two mechanically-united polarized armatures, which latter are maintained in permanent frictional contact with a surface of magnetic metal moving in opposite directions at their respective points of contact therewith, and a magnetizing-coil which acts to induce magnetic polarity in or upon said surface.

4. The combination, substantially as hereinbefore set forth, of two mechanically-united polarized armatures having unlike polarity, maintained in permanent frictional contact with a surface of magnetic metal moving in opposite directions at their respective points of contact therewith, a magnetizing-coil which acts to induce magnetic polarity in or upon said surface, an arm rigidly attached to both said armatures, and stops for limiting the movement of said arm and armatures in each direction.

5. The combination, substantially as hereinbefore set forth, with a moving surface of magnetic metal, of an armature or armatures in frictional contact therewith, and an axis for said armature or armatures movable in slotted bearings, constructed substantially as described.

259,226. AUTOMATIC TELEGRAPH. GERRITT SMITH, Astoria, N. Y., assignor to the American Rapid Telegraph Company, Boston, Mass. Filed Nov. 3, 1881. (No model.)

Brief.—When a perforation of the transmitting-strip is under the brush the larger battery is short-circuited, and a record is made at the receiving-station by the right-hand pen. When this short circuit is broken the larger battery overpowers the smaller, and a record is made on the other pen. Any polarized receiving-instrument may be substituted for the pen.



Claim.—The combination, substantially as hereinbefore set forth, of a pattern-strip having a single line of perforations, a circuit-closer brought into action by each perforation in said line in succession, two transmitting-batteries of unequal and contrary electro-motive forces, and a receiving-instrument which responds to the action of currents of alternate polarity.

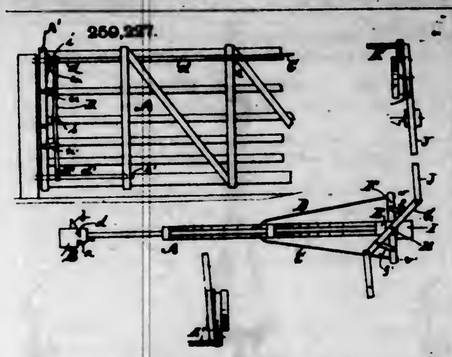
259,227. GATE. JOHN O. SMITH, Bringhurst, Ind., assignor of one-half to D. Randolph Barbour, same place. Filed May 13, 1881. (No model.)

Claim.—1. The gate A, having sliding latches *d d'*, pivoted and connected levers R R', and spring *m*, in combination with the headed rods C D and operating-bar F, the latter being adapted to slide on said rods, as and for the purpose set forth.

2. The pivoted bars F and H, having connecting-rods *f f'*, in combination with the headed and sliding rods C D, sliding latch *d*, and hinged rail E, substantially as shown and described.

3. The bar F, with holes in each end, combined with the rods C D, having heads *c c'*, and hinged rail E, as and for the purpose specified.

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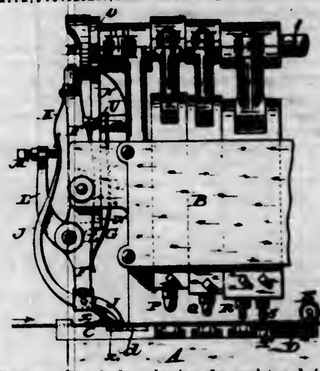


259,228. READY-MADE ROOFING-FELT OR OTHER MATERIAL. OSIAS A. SMITH, Atlanta, Ga., and FREDERICK L. KANE, Brooklyn, N. Y. Filed Mar. 22, 1882. (No model.)



Claim.—A prepared or ready-made roofing consisting of sheets of felt paper or cloth, or both, cemented together solidly except at one or both of the edges of the upper layer or layers, substantially as set forth, and for the purposes described.

259,229. MACHINE FOR MAKING EYELET-STOCK. STEPHEN N. SMITH, Providence, R. I. Filed Aug. 18, 1881. (No model.)



Claim.—1. In a feed mechanism for eyelet and similar machines, the combination of a vibrating lever provided with a finger engaging beneath the stock, a second lever-finger attached thereto, engaging above the stock, an arm pivoted to the lever to force the upper finger into engagement with the stock, and an operating-cam connected by intermediate devices, substantially such as shown, with said pivoted arm.

2. The combination of the vibratory lever F, feeding-fingers I and J, lever L, bar N, and cams H and O.

3. The combination of the vibratory lever F, the two feed-fingers mounted upon said lever and engaging with opposite faces of the stock, the second lever, L, pivoted upon the first-named lever, and cam O, connected with the lever L, substantially in the manner described and shown.

4. In combination with lever F, fingers I and J, and spring G, the lever L, rod N, and cams H and O.

5. In combination with the vibratory lever F, the fingers I and J, and spring K, a positively-acting device, substantially as shown, operating to force the finger J downward upon the stock during its forward movement.

6. In combination with the vibratory lever provided with the two feed-fingers, the positively-driven lever L, and the adjustable connection between said lever and the feed-finger.

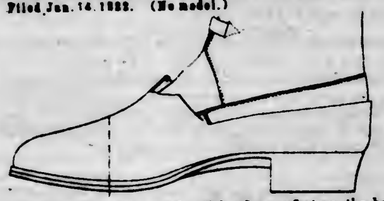
7. In a machine substantially such as described, a punch, S, constructed of angular cross-section, with cutting-edges at its lower end, as described and shown, and arranged for use in severing the tubular necks and cutting the bottoms therefrom, substantially as described and shown.

259,230. BOOT OR SHOE. ERWIN L. SPRAGUE, Boston, Mass. Filed May 22, 1881. (No model.)



Claim.—As an improved article of manufacture, a boot or shoe consisting of an upper, outer sole, and inner sole placed within the shoe above the inturned edges of the upper, the said inner sole being composed of metal and leather-board, the latter being extended at its edges beyond the edges of the metal, the sole-fastenings uniting the upper and the outer sole passing through both the metallic and leather-board portions of the inner sole, as shown and described.

259,231. BOOT OR SHOE. ERWIN L. SPRAGUE, Boston, Mass. Filed Jan. 14, 1882. (No model.)



Claim.—As an improved article of manufacture, the herein-described stiff or rigid casing, adapted to be placed over the upper to protect a part or the whole of the upper and leave an open space between the casing and upper, substantially as set forth.

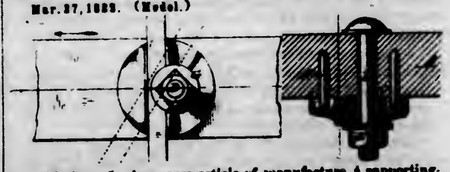
259,232. BAND-CUTTER AND FEEDER FOR THRASHING-MACHINES. BENJAMIN STALCUP and GEORGE W. STEWART, Worthington, Ind., assignors of one-third to D. A. Barrockman, same place. Filed Sept. 24, 1881. (No model.)



Claim.—1. In a band-cutting and feeding device for thrashing-machines, the combination, with the side bars, A, provided with the bearings *a' a'* and the brackets *d'*, of the bar J, provided with the teeth *j* and the end rods, *e*, the double crank K, hinged to the lower side of the said bar, the connecting-rod *k*, and the crank-wheel L, substantially as and for the purpose set forth.

2. In a band-cutting and feeding device for thrashing-machines, the combination, with the bars *f*, perforated through from edge to edge, of the U-shaped blanks adapted to be passed through the said perforations and their ends bent at an acute angle to form teeth, substantially as shown and described.

259,233. HARROW. GEORGE STEPHENS, Moline, Ill. Filed Mar. 27, 1882. (Model.)



Claim.—1. As a new article of manufacture, a supporting-plate for a harrow-tooth, provided with the transverse groove, the pivot-hole, and the stop groove or grooves in the back.

2. In combination with the beam or support, the pivot-bolt, the stop-pins, the tooth, and the tooth-supporting plate provided with a groove to receive the tooth, and with the grooves or shoulders to co-operate with the stop-pins.

3. In a harrow, the combination of a pivoted tooth-supporting plate and the stop-pins to limit the motion of said plate, having their ends covered and concealed thereby, substantially as shown.

4. In a harrow, the combination of a harrow-tooth, a rotary tooth-supporting plate, and a straight pivot-bolt passing through the plate by the side of the tooth, and provided with a head or washer bearing directly upon the face of the tooth, as described and shown.

5. The combination, with the beam and the stationary stop-pins thereon, of the free rotary plate provided with a tooth-receiving groove, and with shoulders permitting a limited rotary motion to the plate, and co-operating with the stops, the pivot-bolt, and the plate or washer.

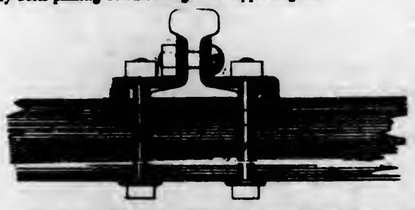
6. In a harrow, the beam A, inclined horizontally in relation to the line of travel, in combination with the plate pivoted to and having a free rotary motion to a limited extent upon the beam, said plate provided with the single tooth-receiving groove inclined sidewise in relation to the face of the plate, as set forth, whereby the tooth is permitted to swing forward and backward, but retained at all times in the line of draft.

7. In combination with a swinging harrow-tooth, a sustaining-plate located between the tooth and the beam or frame, a second plate located on the opposite or outer side of the tooth, and a clamping-bolt passed through the two plates past one side of the tooth, and serving to sustain the parts in place.

8. In a harrow, the combination of two plates, a tooth seated between said plates, and a bolt passed through the two plates and securing the same to a beam or frame.

259,234. RAIL-JOINT FOR RAILWAYS. WM. J. STEVENS, New York, N.Y. Filed Oct. 21, 1881. (No model.)

Brief.—Rails rest on a chair or channel-plate having upturned flanges and having a bearing on two or more ties, and plates having a bearing on the base of the rails fit snugly between the fish-plates and the flanges of the channel-plate, and are secured thereto by bolts passing down through the supporting-ties.



Claim.—1. The combination, with the rails, the fish-plates applied thereto, the cross-ties, and a long chair or channel-plate, upon which the rails rest, and which has a bearing on two or more cross-ties, of the plates fitting snugly between the fish-plates and the adjacent sides or flanges of the chair or channel-plate, having a bearing on the base of the rails, and bolted to said chair or channel-plate, so as to secure the rails thereto, substantially as specified.

2. The combination, with the rails, the fish-plates applied thereto, the cross-ties, and a long chair or channel-plate, on which the rails rest, and which has a bearing on two or more cross-ties, of plates fitting snugly between the fish-plates and the adjacent sides or flanges of the chair or channel-plate, having a bearing on the base of the rails, and serving to hold the fish-plates tightly against the sides of the rails throughout their entire length, substantially as specified.

3. The combination, with two rails, their fish-plates, and bolts, and a long chair or channel-plate, upon which the rails rest, of plates which fit snugly between the fish-plates and the adjacent flanges or sides of the chair or channel-plate, and which pass under the nuts of the said bolts for the purpose of locking the same, substantially as specified.

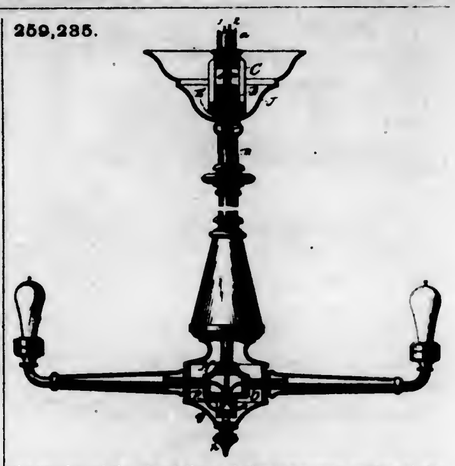
259,235. ELECTRICAL FIXTURE. LUTHER STIRLINGER, New York, N. Y., assignor of two-thirds to Charles F. Hanington, same place, and Richard N. Dyer, Menlo Park, N. J. Filed Mar. 18, 1882. (No model.)

Claim.—1. A fixture for electric lights, supported from the piping of a house and electrically insulated therefrom, substantially as set forth.

2. The combination, with the piping of a house, of an electric-light chandelier pendent therefrom and a connecting-joint permitting the chandelier to hang true, substantially as set forth.

3. The combination, with a pipe-support, of an electric-light chandelier provided with internal conducting-wires, a joint connecting the chandelier and pipe-support, and means for preventing

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the turning of the chandelier and the consequent cutting of the conducting-wires, substantially as set forth.

4. The combination, with a pipe-support, of an electric-light fixture and an open joint or section connecting the pipe-support and fixture and permitting the ready connection of the conducting-wires, substantially as set forth.

5. The combination, with a pipe-support and an electric-light fixture, of the open connecting joint or section C, composed of rings *b c* and connecting-arms *d d*, substantially as set forth.

6. The combination, with an internally-wired electric-light fixture having an open joint at its upper or inner end and outside connections, of an ornamental shell hiding the said open joint and connections, substantially as set forth.

7. In an electric-light fixture supported from the piping, the combination of an open and insulating joint connecting the fixture and pipe-support, and an ornamental shell hiding said joint from sight, substantially as set forth.

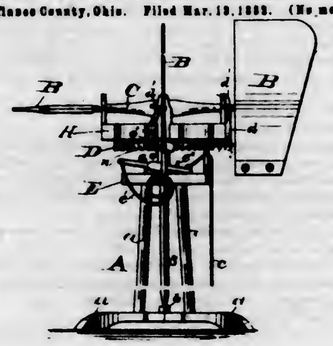
8. In an electric-light fixture, the combination, with the main stem or arm and the distributing-body carrying the lamp-arms, of an open section, cut through the sides of which the wires are passed from the stem or from both the stem and the body, and a central support from such open section for sustaining ornamental or other parts, substantially as described.

9. In an electric-light fixture, the combination, with the main stem or arm and the distributing-body, of the open section, outside of which the main and arm wires are connected, the central support from such open section for ornamental or other parts, and an ornamental shell hiding such connections, substantially as set forth.

10. In an electric-light fixture, the combination, with the distributing-body, of the main and arm wires passing therethrough and connected outside of said body, and an ornamental shell hiding such connections, substantially as set forth.

11. In an electric-light fixture, the combination, with the main stem or arm and distributing-body, of the section P, having slots *a a*, the screw plug or collar Q, and rod R, substantially as set forth.

259,236. WIND-ENGINE. JOHN STITZEL, Delaware Township, Defiance County, Ohio. Filed Mar. 13, 1882. (No model.)



Claim.—1. A wind-engine in which one paddle is horizontal while the opposite paddle is perpendicular, substantially as shown and described.

2. A combination, in a wind-engine, of a lever and keys, whereby the wings are locked and unlocked, substantially as described and set forth.

3. In a wind-engine, the combination of the spring *d'*, lever *e*, provided with projection *d'*, and the ropes *c*, substantially as shown and described.

4. In a wind-engine, the wing-shafts C C, provided with stops *y y*, or equivalent, and having at their ends the paddles B B, one paddle at one end being perpendicular and the other paddle at the other end being horizontal, in combination with the wheel-hub H, provided with projections or bearings *x x*, substantially as described, and for the purpose set forth.

5. In a wind-engine, the wheel-hub H, provided with projections *x x* and loops *c c*, in combination with wheel D, provided with ratchet *n*, projection *d'*, the shaft S, and key *d*, substantially as shown and described.

6. In a wind-engine, the combination of the key *d*, projection *d'*, projection *d'*, loop *c*, and wheel-hub H, substantially as described and shown.

7. In a wind-engine, the combination of the lever *e*, provided with projection *d'*, and cords *c*, with the wheel D, provided with ratchets *n* and projection *d'*, whereby a starting and stopping is secured, substantially as shown and described.

8. In a wind-engine, the combination of the key *d* and projection *d'*, substantially as described and shown.

9. In a wind-engine, the wheel D, provided with ratchet *n* and projection *d'*, substantially as shown and described.

10. In a wind-engine, the spring *d'*, secured at one end to frame E and at other end to lever *e*, substantially as described and shown.

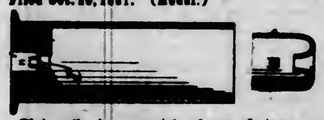
11. In a wind-engine, the lever *e*, provided with projection *d'*, substantially as shown and described.

12. In a wind-engine, the shafts C C, having paddles B B, the paddle B at one end of each shaft being secured horizontally to a paddle perpendicular on the end of the same shaft, substantially as described and shown.

13. In a wind-engine, the combination of the revolving shaft S with wheel-hub H, wheel D, top frame, E, and bottom frame, *d'*, provided with bearing *b*, substantially as shown and described.

14. In a wind-engine, the combination of the frame A, composed of uprights *a a*, bottom frame, *d'*, provided with journal *b*, and top frame, E, with revolving shaft S and spring *d'*, substantially as described and shown.

259,237. CARTRIDGE. EDGAR B. STOCKTON, Washington, D.C. Filed Oct. 20, 1881. (Model.)



Claim.—1. As an article of manufacture, a paper cartridge having an uncovered base and a metallic flange, the rear surface of which is in a common plane with the rear surface of said base, substantially as shown and described.

2. The method of attaching a cup-cent or anvil to a cartridge base or plug, which consists in simultaneously forming from the walls or sides of the cent tongues of a thickness equaling that of the walls or sides, and forcing said tongues into the base or plug, substantially as shown and described.

3. A method of attaching a flange to a cartridge, which consists in flattening it from a disk or conical shape, thereby laterally and inwardly compressing it into the body of the cartridge, substantially as and for the purpose set forth.

259,238. MANUFACTURE OF ENVELOPES. EDGAR B. STOCKTON, Washington, D.C. Filed Oct. 17, 1881. (No model.)

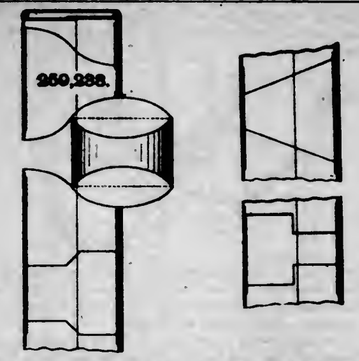
Claim.—1. A step in the art of making envelopes, which consists in severing a tube in or on transverse converging lines, substantially as and for the purpose set forth.

2. That improvement in the art of making envelopes which consists in forming the material into a tube and dividing said tube into blanks having oppositely-disposed outlines, substantially as and for the purpose set forth.

3. That improvement in the art of making envelopes which consists in forming the material into a tube, severing the tube in or on oppositely-disposed lines, and turning the blanks thus formed, substantially as and for the purpose set forth.

4. A method of making envelopes, which comprises the following steps: forming the material into a tube, severing the tube in

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or on oppositely-disposed lines, turning the tubular blank thus formed, and subsequently folding the same, substantially as shown and described.

5. The combination of a former and duplicated and oppositely-disposed transverse cutting mechanism, located, arranged, timed, and operating substantially as shown and described.

6. The combination of a former, feeding mechanism, transverse oppositely-disposed severing mechanism, and turning mechanism, all substantially as shown and described.

7. A laterally-curved turning-board, substantially as shown and described.

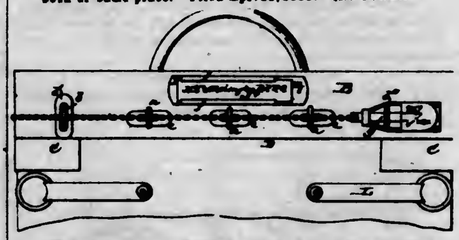
8. The combination of a laterally-curved turning-board and feeding mechanism, substantially as shown and described.

9. The combination of tube-forming mechanism, feeding mechanism, transverse oppositely-disposed severing mechanism, turning mechanism, and folding mechanism, comprising oppositely-arranged and co-operating folding devices, all substantially as shown and described.

10. The combination of tube-forming mechanism, folding mechanism arranged and operating to fold in opposite directions, with duplicate drying mechanisms, and with a deflecting-plate intermediate one of said drying mechanisms and said folding mechanism, all substantially as shown and described.

11. The combination of folding mechanism arranged and operating to fold in opposite directions, gumming mechanisms, and duplicate drying mechanisms, and a deflecting-plate arranged intermediate said folding mechanism and one of said drying mechanisms, all substantially as shown and described.

259,239. MAIL-BAG. WILLIAM J. STOWELL, Baltimore, Md., assignor to Daniel C. Heddinger of James, and J. W. Lindau, both of same place. Filed Apr. 25, 1882. (No model.)

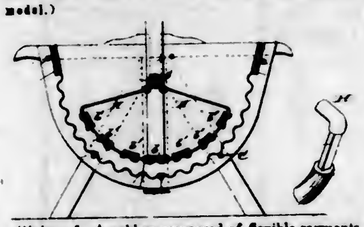


Claim.—1. In a mail pouch or bag, the combination of the single flap B, the double-lapped corners C C, formed as described, the eyelets *a b'*, the staples *b b'*, the eyes *a* on the breast D, a chain fastening, and means for securing the chain, substantially as and for the purposes described.

2. The combination, in a mail bag or pouch, of a flap, B, the double-folding corners C C, the breast D, the edge of which is below the said flap, the staples and eyelets for the corners, intermediate swivel-eyes, a chain or flexible strap and a lock thereto, which is permanently secured to the pouch and adapted to receive through its eyes the staple *b'*, substantially in the manner and for the purposes described.

3. In a mail bag or pouch having a lock permanently secured to it, the combination of the staple *b'* and the extension of the lock, having a slot or eye through it for the passage of the staple to receive the locking-chain, substantially as described.

259,240. WASHING-MACHINE. GEORGE H. STRAIN and ALEXANDER STRAIN, Harrodsburg, Ind. Filed Feb. 20, 1882. (No model.)



Claim.—1. A rubber composed of flexible segments H, flattened and shouldered, as described; in combination with the slats or rubbing-bars having kerfs which receive the flattened portions of the segments, substantially as specified.

2. The combination of the segments H, the bars applied thereto, as described, the hook-and-eye fastenings, and the springs S, substantially as described.

259,241. WIND-ENGINE. RANSOM E. STRAIT, Galesburg, Mich. Filed Jan. 14, 1882. (No model.)



Claim.—1. In a wind-engine, the cap L, having the rim *w*, the inclined way *c*, and the upwardly-extending rim W, and the head E A, having tube P and inclined ways *x'*, in combination with the intermediate rim, D, and the conical friction-wheels *r r* above and below its faces, substantially as specified.

2. In a wind-engine, the combination, with the cap L, having way *x*, rim D, and conical friction-wheels *r*, of the head E A, carrying the wind-wheel, the inclined chain-wheel and chain, and the pivoted weighted lever B, geared to the rim D, substantially as specified.

3. In a wind-engine, the combination, with the head E A, provided with projection *y* and adapted to revolve independently of the rim D, of the wheel-hub provided with the friction-plate *c'*, the spring *e*, having casting *f*, pivoted at *z*, and the vane T, provided with the block *y'*, substantially as specified.

4. In a wind-engine, the wind-wheel rim, formed from the recessed section *a'*, having angle 4 and 5, and the recessed section *a''*, having angle 1, 2, and 3, in combination with the slats *a*, substantially as specified.

259,242. VETERINARY TABLE. JAMES L. SENSENEOTT, Chambersburg, Pa. Filed Mar. 9, 1882. (No model.)



Claim.—1. The above-described table C, hinged at or near its longitudinal axis, whereby it may be easily tilted to the vertical and then to the horizontal position, and provided with means for holding the heifer animal thereto while she is in a standing position, substantially in the manner and for the purpose set forth.

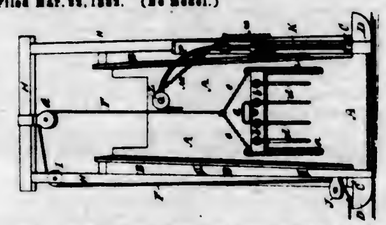
2. The hinged frame L, in combination with the tilting table C, arranged to be operated substantially as and for the purpose set forth.

259,243. SECONDARY BATTERY. JOSEPH WILSON SWAN, Newcastle-on-Tyne, County of Northumberland, England. Filed Jan. 18, 1882. (No model.) Patented in England May 24, 1881, No. 2,373.



Claim.—A perforated or cellular plate for secondary batteries, having the perforations or cells extending through the plate and the active material, or material to become active, packed in the said perforations or cells, substantially as described.

259,244. HAY-STACKER. JONAH C. TREYMAN, Wisner, Nebr. Filed Mar. 22, 1882. (No model.)

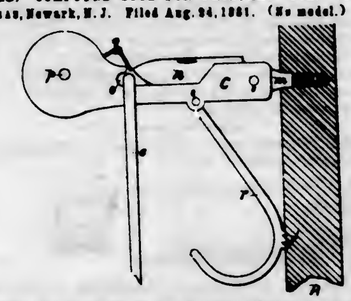


Claim.—1. The combination, with a rake, of the inclined way A, widening downwardly from the top, and the mechanism F G H I J, connected with the rake by a chain, *e*, as and for the purpose described.

2. The combination, with the way A and rake having ball Q, of the post P, crane K, chain M, and hook N, having handle O, as and for the purpose specified.

3. The rake constructed, substantially as herein shown and described, with bow-shaped rods *a*, having feet resting on the widened way and connected by a back or head, *b*, with fingers *d* attached, substantially as specified.

259,245. COMPOUND TOOL FOR PAINTERS' USE. JAMES THOMAS, Newark, N. J. Filed Aug. 24, 1881. (No model.)



Claim.—1. An adjustable support for paint-pails, comprising a body or handle, C, having a hook or recess, *e*, therein, a toothed hook, *r r'*, and a screw, *m*, arranged and operating substantially as and for the purposes set forth and shown.

2. The combined paint-pail support, pot-hook, and knife-blade as an article of manufacture, arranged and operating substantially as and for the purposes herein set forth and shown.

3. The combined paint-pail support, pot-hook, knife-blade, and tape-measure as a compound tool, substantially as and for the purpose herein set forth and shown.

4. The combined paint-pail support, pot-hook, and tape-measure, arranged and operating in a compound tool, substantially as and for the purposes set forth and shown.

5. The combination, in an adjustable support for paint-pails, of the handle C, having a hook or recess, *e*, therein, a toothed hook, *r r'*, pivoted upon the body at *e*, a screw, *m*, and knife-blade *n*, all arranged and operating substantially as and for the purposes set forth and shown.

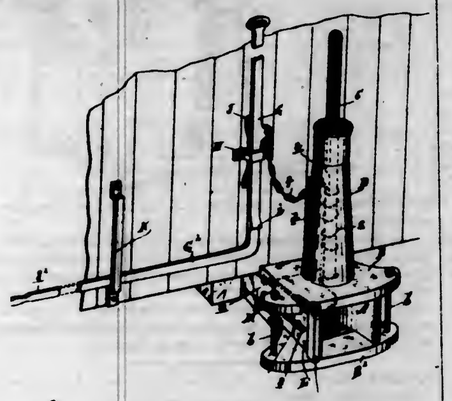
6. A paint-pail hook having a handle with a recess therein, adapted to receive the pail-bail, and a hook secured in said handle, adapted to engage with the rung of a ladder, substantially as and for the purposes set forth and shown.

7. A paint-pail support and pot-hook, combined and adapted to operate substantially as and for the purposes set forth and shown.

8. A paint-pail support having means thereon adapted to be secured to the vertical wood-work of a house, and an S-shaped hook, combined substantially as and for the purposes set forth and shown.

9. The combination, with the notched handle adapted to receive the pail-bail, and having means thereon adapted to be secured to the vertical wood-work of a house, of a hook having means thereon enabling said hook to brace said handle, all substantially as and for the purposes set forth.

259,246. CAR-COUPLING. THOMAS V. TUCKER, Henderson, Iowa. Filed Mar. 17, 1882. (No model.)



Claim.—1. In a car-coupling, the combination, with the draw-head A and the sleeve D, provided with the longitudinal slot *d*, of the coupling-pin provided with the laterally-projecting arm *e* and the spring *d*, surrounding the said pin, substantially as and for the purpose set forth.

2. The combination, with the coupling-pin C, provided with the arm *e* and chain *f*, of the arm G, provided with the shoulder *f* and horizontal arm G', the hooper H, and the pressure-spring J, substantially as and for the purpose herein described.

3. The latch L, provided with the horizontal lip *l*, chain M, and spring *m*, in combination with the draw-head A and coupling-pin C, substantially as and for the purpose described.

4. The link E, provided with lateral arms *r r*, in combination with the draw-head A and latch L, substantially as and for the purpose herein described.

5. The combination of a sleeve, D, provided with a slot, *d*, and lateral shoulder *d'*, and a pin, C, provided with a lug or stud, *d'*, as shown and described, for the purpose specified.

259,247. ATTACHMENT FOR WATCH-CHAINS. ALBERT HEBELE, Gmünd, Wirtemberg, Germany. Filed June 2, 1881. (Model.) Patented in Germany Feb. 13, 1881, No. 15,225; in France May 14, 1881, No. 142,253, and in Belgium May 21, 1881, No. 54,295.

Brief.—One-half the medallion contains a stamp of any desired design and the other half an ink-pad. When opened to a certain extent the parts may be separated so as to permit the part containing the stamp to be readily manipulated.



Claim.—1. An attachment for a watch-chain, consisting of a charm or locket having the two parts detachably connected together, one being provided with a suitable stamp and another with an ink-pad, substantially as specified.

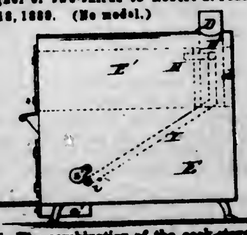
2. In combination with the halves of a locket, the pintle at one edge of one of said halves, and the barrel at the corresponding edge of the other half adapted to set upon said pintle, and the segmental ribs adapted to engage suitable grooves in the respective halves to hold the parts together and permit them to be separated when desired, substantially as specified.

259,248. DITCHING-MACHINE. WILLIAM T. WASSON, Thorntown, Ind., assignor of one-half to James A. Ball, same place. Filed Oct. 31, 1881. (No model.)

Brief.—A ditching-machine composed of a surface-smoothing plow, a gage, a mole or opener, a tile-chute, and a gravel-chute.

Claim.—1. A secondary chute or gravel-box, *j*, combined with the tile-chute of a tile-laying ditching-machine, substantially in the manner and for the purpose set forth.

259,249. PARLOR COOK-STOVE. HENLESS WATTS, Denver, Colo., assignor of two-thirds to Robert S. Platt, same place. Filed Dec. 18, 1880. (No model.)

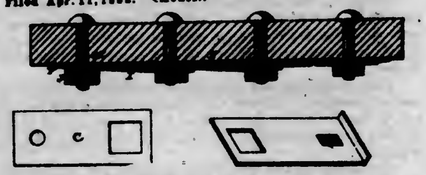


Claim.—1. The combination of the cook-stove A, as shown, with the oven B, dome F', and vent-tubes H H', as and for the purpose specified.

2. The dome F', vent-tubes H H', and vapor-tube I *i*, in combination with the flue D, as set forth, for the purposes specified.

3. In cooking-stoves, the combination of the pipes or flues I, *i*, I', H', and H, the dome over the stove, and the smoke flue or pipe D, substantially as and for the purpose described.

259,250. NUT-LOCK. WILLIAM WRAVEN, Phœnixville, Pa. Filed Apr. 11, 1882. (Model.)



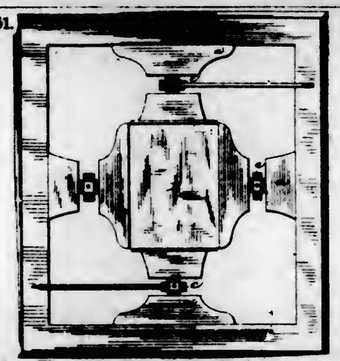
Claim.—In a nut-lock, the combination of the plate I, having a hole through one end to catch over a nut, and a slot through its other end to catch over a bolt, and having its slotted end turned upward so as to catch against the side of a nut, with the two bolts and their nuts, substantially as shown.

259,251. LOCKING-UP DEVICE FOR TYPE-FORMS. SAMUEL D. WEED, Washington, D. C., assignor of one-half to Hector McNeill, same place. Filed Feb. 16, 1882. (No model.)



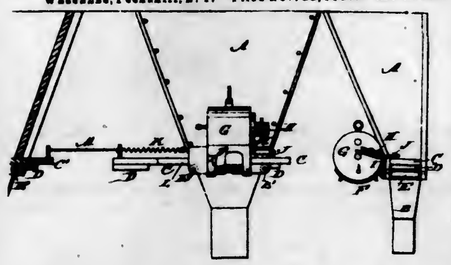
2. The combination, with the mole-plow *b c*, of the leveling-plow *f*, the tile-chute *d*, gravel-chute *j*, and beam *a*, substantially as shown and described.

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Claim.—The combination, with the adjusting-screw in a quoin, of two blocks having two bearing-surfaces each, all of which bearing-surfaces are of different lengths, and made reversible to adapt the quoin to type-forms of different sizes, as shown and described.

259,252. TIME MECHANISM FOR FEEDING STOCK. EUGENE WHEELER, Peekskill, N. Y. Filed Nov. 22, 1881. (No model.)



Claim.—1. In an automatic feeding mechanism, the combination, with the hopper A, the clock G, provided with the key H on the winding-post of its alarm mechanism, and means for supporting the clock at the side of the hopper, of the spring-actuated sliding bottom C, provided with the pin J, and the lever I, pivoted to the side of the hopper, substantially as and for the purpose set forth.

2. In an automatic feeding mechanism, the combination, with the hoppers A A', the clock G, provided with the key H on the winding-post, and means for supporting the clock at the side of one of the hoppers, of its alarm mechanism, of the sliding bottoms C C', connected together by the rod M, the bottom C being provided with the pin J, the bent lever I, pivoted to the hopper A, and the spring K, connected to the slide G and hopper A, substantially as and for the purpose set forth.

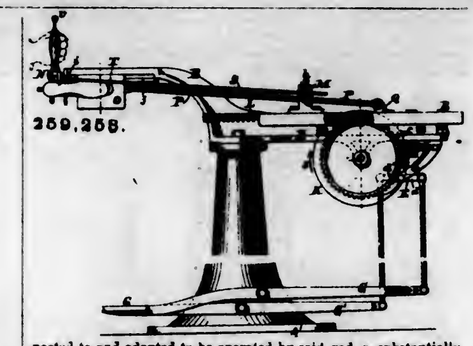
259,253. SOLE-TRIMMING MACHINE FOR BOOTS AND SHOES. BENJAMIN F. WHEELER, Malden, Mass. Filed Dec. 27, 1881. (No model.)

Claim.—1. The combination, in a sole-trimming machine, of the jack T, the carriage O, mounted and adapted to be reciprocated upon suitable slides, the spirally-grooved pulley S', and the cord U, all constructed, arranged, and adapted to operate substantially as described.

2. In a sole-trimming machine, the combination of the reciprocating carriage O, the shaft S, the spirally-grooved pulley S', the jack T, the cord U, the cam K, lever Q, and means of connecting the lever Q and the carriage O, substantially as and for the purposes described.

3. The combination of the movable carriage O, the spirally-grooved pulley S', the cord U, wound around said pulley and firmly secured by one end to a fixed portion of the machine, and the threaded shank U', secured to the opposite end of said cord and provided with the nut g, whereby the other end of said cord may be secured to a fixed portion of the frame and any slack therein may be taken up, substantially as described.

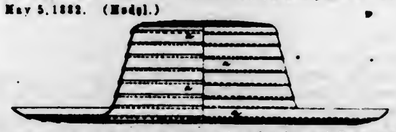
4. The combination, in a sole-trimming machine, of the rack L, the stand M, the ball *f*, the rod *g*, fitted to an opening through said ball, so as to be adjusted therein, and the edge-plane N, connected to and adapted to be operated by said rod *g*, substantially as described.



259,253.

5. The combination, in a sole-trimming machine, of an edge-plane, mechanism for imparting to said plane a reciprocating motion, a jack-carrying carriage mounted upon slides, mechanism for automatically imparting to said carriage an intermittent reciprocation in a right line, and mechanism for imparting to the jack a semi-rotation during each forward or backward stroke of said carriage, substantially as and for the purposes described.

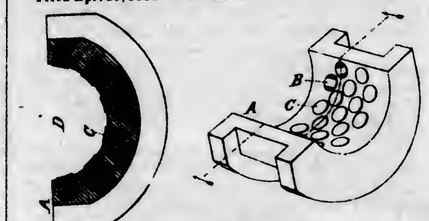
259,254. HAT. EDWARD WHITEHOUSE, Brooklyn, N. Y. Filed May 5, 1882. (Model.)



Claim.—1. A hat made of a strip or strips cut from grass-cloth, substantially in the manner above described.

2. A hat made of a strip or strips cut from grass-cloth and wound to form a spiral, one edge of the strip being folded upon itself and united to the plain edge of the succeeding coil, substantially as shown and described.

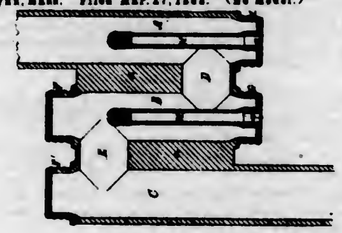
259,255. JOURNAL-BEARING. GEO. W. WILLIAMS, Winona, Minn., assignor of one-fourth to William E. Smith, same place. Filed Apr. 20, 1882. (No model.)



Claim.—1. A journal-bearing consisting of a metallic body portion, A, having the face recess or recesses B, and the asbestus filling C, compactly pressed into said recess or recesses and forming the bearing-surface D, substantially as specified.

2. A journal-bearing consisting of a recessed body portion and compressed asbestus and wire fillings, substantially as specified.

259,256. SINK OR HYDRAULIC TRAP. JOHN F. WITHEY, Lynn, Mass. Filed Mar. 27, 1882. (No model.)



Claim.—1. The three tubes A, B, and C, arranged with and joined by the tubular connections D E, as described, and having removable caps applied to them, (the said tubes,) as set forth.

2. The three tubes A, B, and C, arranged with and joined by the intervening joinings *a a*, and tubular connections D E, as described, and having removable caps applied to them, (the said tubes,) as set forth.

3. The three tubes A, B, and C, arranged with and joined by the tubular connections D E, as described, and provided with removable caps, and with elastic tubes H, closed at their upper ends and extending from the lowermost of such caps up within the tubes A and B, and open through the caps, all being substantially as and for the purposes and to operate as set forth.

259,257. FLOOR-CLOTH. JOS. H. WOOD, Akron, Ohio. Filed Mar. 2, 1882. (No specimens.)

Claim.—1. A floor-covering consisting of a layer of paper-board covered upon both sides with and adhering to a layer of woven fabric, the latter saturated with and finished in paint, substantially as hereinbefore described.

2. A floor-covering consisting of a layer of paper-board covered upon one side with and adhering to a layer of woven fabric, the latter saturated with and finished in paint, substantially as hereinbefore described.

259,258. SUPPORT AND HANDLE FOR BOOKS. EDWARD R. YOUNG, New York, N. Y. Filed Apr. 21, 1882. (No model.)



Claim.—1. The combination of the longitudinal strap A, for embracing the books, the strap B, extending from the lower edge of the embracing-strap, at right angles thereto, for supporting the books, and the handle C, having its two ends pivoted respectively to opposite portions of the embracing-strap, and of sufficient size to swing around the books when the latter are in position, substantially as and for the purpose described.

2. The combination, substantially as hereinbefore described, of the embracing-strap, the supporting-strap, and the swinging handle, all connected together by the pivots *a a*.

259,259. END-GATE FOR WAGONS. PETER YOUNG, West Charleston, Vt. Filed Apr. 3, 1882. (No model.)



Claim.—1. The wagon end-gate consisting of the laterally-hinged sections E F, their angle-hinges H, the overlapping perforated cross-bars I, and the catch-staples S, passing through the apertures or perforations of the cross-bars, substantially as specified.

2. The wagon end-gate consisting of the hinged lateral sections E F, abutting against the ends of the sides of the wagon, their angle-hinges H, the overlapping perforated cross-bars I, spring-latches N, and the notched staples S, passing through the apertures or perforations of the cross-bars, substantially as specified.

3. The combination, with the sectional laterally-hinged end-gate E F, the overlapping cross-bars I, and the loops or eyes T on the sides of the wagon, of the adjustable binding-chain Z, attached to said loops or eyes and extending around the sections of the end-gate transversely, substantially as specified.

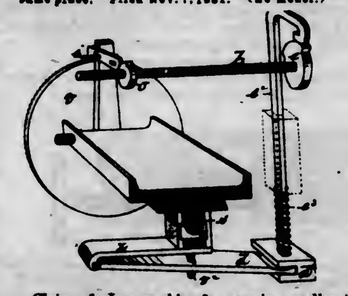
259,260. PROCESS OF MANUFACTURE OF INDIGO-BLUE. ADOLF BAEYER, Munich, Bavaria, assignor to Badische Anilin and Soda Fabrik, Mannheim, Germany. Filed May 8, 1882. (No specimens.)

Claim.—The within-described process of producing artificial indigo-blue by first producing an ether compound of orthonitrophenylpropiolic acid, then converting this ether compound into indogenic ether, then treating such indogenic ether with caustic alkalies followed by muriatic acid, and finally exposing the product obtained to an oxidizing action, substantially as set forth.

259,261. PROCESS OF MANUFACTURE OF INDIGO-BLUE. ADOLF BAEYER, Munich, Bavaria, assignor to Badische Anilin and Soda Fabrik, Mannheim, Germany. Filed May 8, 1882. (No specimens.)

Claim.—The within-described process of producing an artificial indigo-blue by first producing an ether compound of orthonitrophenylpropiolic acid, then converting this ether compound into indogenic ether, then converting such indogenic ether into indogenic acid by treatment with caustic alkalies followed by muriatic acid, then transforming the indogenic acid into indogen by the action of heat, and finally exposing the indogen to an oxidizing action, substantially as set forth.

259,262. MACHINE FOR GROOVING NEEDLES. JOHN HENRY, Springfield, Mass., assignor to the National Needle Company, same place. Filed Nov. 7, 1881. (No model.)

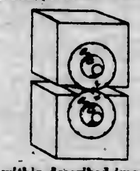


Claim.—1. In a machine for grooving needles, the combination, with the sliding bed thereof, the feed-screw actuating said bed, and the feed-nut *x*, of appliances, substantially as described, for supporting and lifting said feed-nut under said bed, the wheel *v*, connected to said feed-screw and provided with a stop-pin in its periphery, the cam-shaft *b*, cam *c*, lever *n*, and a suitable spring to force the end of said lever against said cam, all as set forth.

2. The combination, with the wheel *v*, connected to the feed-screw *e* and having the stop-pin *f* therein, of the stop-lever *n*, spring *m*, cam *c*, and shaft *b*, substantially as set forth.

3. The combination, with the feed-screw *e* and nut *x*, of lever *d*, hook *d'*, shaft *b*, cams *c* and *c*, lever *n*, spring *m*, and wheel *v*, having the stop-pin *f* therein, substantially as set forth.

259,263. DIE FOR FORGING AND SWAGING. JOHN HENRY, Springfield, Mass., assignor to the National Needle Company, same place. Filed Jan. 10, 1882. (No model.)

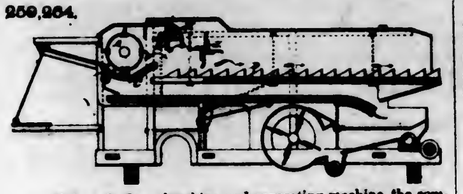


Claim.—1. The within-described improved forging die-block and supporting-case therefor, consisting of the cylindrical die-block having a series of matrices upon its peripheral surface, a die-block case enveloping nearly the entire periphery of said die-block and fitted tightly thereagainst, and an axial bolt for securing said die-blank firmly in a fixed position in said case and for turning it therein, all combined and operating substantially as set forth.

2. The within-described forging die-block and supporting-case therefor, namely: the cylindrical die-block having a series of matrices upon its peripheral surface, and a die-block case enveloping nearly the entire periphery of said die-block and fitted tightly thereagainst, they jointly operating substantially as set forth.

259,264. GRAIN THRASHER AND SEPARATOR. ORRIETO PERU BLISS, Springborough, assignor to Louis C. Royer, Dayton, Ohio. Filed Nov. 12, 1880. (No model.)

259,264.

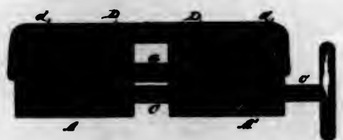


Claim.—1. In a threshing and separating machine, the combination of a revolving cylinder, a concave, a grate, a revolving beater arranged sufficiently near the cylinder to deflect the straw downward, a revolving rake, and a vibrating shaker and carrier, all constructed and arranged to operate substantially as set forth,

2. In a threshing and separating machine, the combination of a threshing-cylinder, a grate, a rotary beater, a deflector, a rotary beater which also acts as a rake, and a shaker, substantially in the manner and for the purposes described.

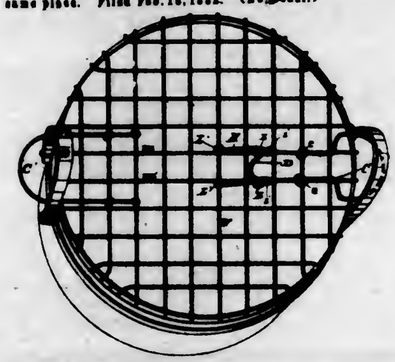
3. In a threshing-machine and separator, the combination of the following instrumentalities: a threshing-cylinder, a revolving beater directly in the rear of said cylinder, a deflector directly over said beater, a combined rake and beater directly in the rear of said deflector, and a vibrating shaker under said beater, deflector, and rake, substantially as and for the purpose specified,

259,265. MOLD FOR CARRIAGE OR BUGGY TOPS. HENRY W. BLOOD, Erie, Pa. Filed Mar. 13, 1882. (No model.)



Claim.—A mold for buggy and carriage tops, composed of two halves or sections, A and A', of the shape shown, with a concavity, D, between the parallel rounded side ribs, *d d*, and provided with the adjusting-screw C, guide-pins *a a*, and bores *b b*, to receive said guide-pins, substantially as and for the purpose set forth.

259,266. COVER FOR BASKETS. WILHELM E. BOEHREN, Chicago, Ill., assignor of one-half to Gotthold Fred Binder, same place. Filed Feb. 18, 1882. (No model.)

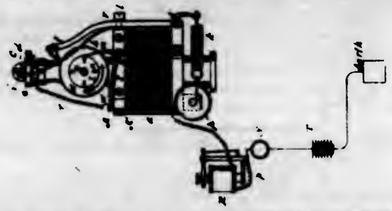


Claim.—1. The movable ear C, having the two ends of the wire of which it is composed bent nearly straight, and their ends bent into eyes *f* around wires *m* and guided by rings *e*, adapted to slide back and forth and fasten and unfasten the cover, substantially as described.

2. The latching device *H*, hinged to the cross-wire W by the eyes L' at one end and having the loop D and the two steps L at the other end, in combination with and adapted to lock the movable ear C in position in the handle of the containing vessel when required, substantially as described.

259,267. ELECTRIC DEVICE FOR TURNING ON, LIGHTING, AND EXTINGUISHING GAS-JETS. A. LIVINGSTON BOGART, Jamaica, N. Y., assignor to Abraham L. Bogart, same place. Filed Jan. 24, 1882. (No model.)

Brief.—The arm *m* being in contact with conductor *n* on the cock, gas is turned on by a succession of electric impulses moving the armature and pawl. This short circuit being broken by the escape of *m* from *n*, the current passes through the lighting-electrodes. Another series of impulses will shut off the gas and leave *m* in contact with *n*, as at the beginning.



Claim.—1. The magnet A', composed of the stem B of the burner and the helix *a*, said stem forming the core of the magnet, in combination with the fixed and insulated electrode *d*, the vibrating electrode *i*, secured to the armature of said magnet, as described, the pawl *f*, pivoted at the upper end of said armature, and the ratchet-wheel H, secured upon the plug *b* of the stop-cock, all as herein shown and described, for the purpose set forth.

2. In combination with the magnet A', constructed as described, and the ratchet-wheel H, attached to the plug of the cock and rotated by the pawl *f*, pivoted to the armature E, the circuit-breaker I, provided with the points *n*, the spring-arm *m*, and the wires *p*, *i*, and *r*, the whole being constructed to operate in the manner set forth for the purpose of shunting the current to the ground, and thus preventing the further movement of the plug *b* after it has reached a predetermined point in its rotation.

3. The combination, with a gas stop-cock in which the plug is rotated by means of a ratchet operated automatically by a pawl on the armature of a magnet by means of a series of electric impulses, of a circuit-breaker, I, provided with points *n*, to make contact with an insulated spring-arm, *m*, as described, an insulated fixed electrode, *d*, electrically connected with the magnet, a vibrating electrode, *i*, attached to the armature of the magnet, a battery-wire, *p*, and a shunting-wire, *t*, connecting said electrode *d* with said arm *m*, the whole being constructed as described, for the purposes set forth.

4. In a gas-burner, the plug *b*, provided with the ratchet-wheel H, operated by the pawl *f*, attached to the armature F, when said plug is set at an angle with the line of motion of said pawl, as described, for the purpose set forth.

259,268. SOAP-SHEET FOR GENERAL USE AND FOR DISINFECTING PURPOSES. HENRY BOSCHWITZ, Vienna, Austria-Hungary. Filed Jan. 24, 1882. (Specimens.) Patented in Germany Dec. 1, 1881; in England Dec. 2, 1881, No. 5,885; in Italy Dec. 3, 1881, XV, 18,803, XXVII, 143; in Austria Feb. 2, 1882, Nos. 26,770 and 26,927; in Hungary Feb. 2, 1882, Nos. 2,643 and 2,649, and in Belgium Feb. 26, 1882, No. 57,060.

Claim.—1. The described method or process of manufacturing material as a substitute for soap, consisting in treating sheets or leaflets of paper or fibrous or textile material by steeping or coating them with a soap solution or soap emulsion and subsequently drying the same.

2. The described method or process of manufacturing a disinfecting and washing material, consisting in treating sheets or leaflets of paper or other material, as set forth, with a soap solution or soap emulsion, and also with a disinfectant.

3. As a new article of manufacture, sheets or leaflets made of paper or other fibrous or textile material treated, as above set forth, with a solution or coating of soap, and then dried ready for use.

4. As a new article of manufacture, sheets or leaflets made of paper or other fibrous or textile material treated, as above set forth, with a solution or coating of soap and carbolic acid or other disinfectant, and then dried ready for use.

259,269. SELF-ADJUSTING HEAD-BLOCK FOR HAT-PRESSES. JOHN W. CHAMBERS, Boulder, Colo., assignor of one-half to Amanda E. Campbell, same place. Filed Apr. 19, 1882. (No model.)

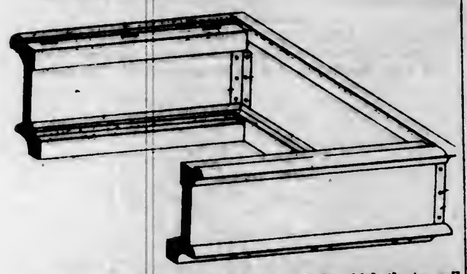
Claim.—1. The head-block or follower A A', composed of two parts adapted to slide upon rods or bolts, and held apart by springs, substantially as and for the purpose set forth.

2. The parts A and A' of a head-block, with the intervening spaces between them covered by guard-plates *d*, fastened only to one part, substantially as and for the purpose set forth.

259,269



259,270. BUGGY-BODY. JOS. L. DOLSON, Charlotte, Mich., assignor of one-half to Parilomer H. Thomas, same place. Filed Apr. 13, 1882. (No model.)



Claim.—A buggy or light wagon body in which the top rail is rabbeted on the bottom for receiving the panel and on the top for receiving the seat, and a panel with solid molding or bead, being part of the panel, thereby forming a solid and substantial bearing, substantially as described and set forth.

259,271. PREPARATION OF MATERIALS FOR USE IN ELECTRIC INSULATION. JOS. AMBROSE FLEMING, University College, Nottingham, County of Nottingham, England. Filed Mar. 14, 1882. (No specimens.) Patented in England Dec. 6, 1881, No. 5,899.

Claim.—The preparation of materials to be used for the purpose of electric insulation by the employment of wood or other vegetable fibrous material, as herein set forth, in a finely-divided condition, desiccated and saturated or impregnated with paraffine-wax, or with a mixture of paraffine-wax and resin, in conjunction or not with other substances, the whole being molded under pressure, all substantially as hereinbefore described.

259,272. DUMPING-CAR. THADDEUS M. HALL, Cameron, Mo., assignor of one-half to William McCallum, same place. Filed Mar. 23, 1882. (No model.)



Claim.—1. A dumping-car having the transverse end beams, C, the middle longitudinal platform, H, connected thereto, the lateral reversible rock-beams F, extending parallel to the platform and pivoted to bearings in the end beams, and the reversible dumping-boxes G, firmly bolted to the lateral rock-beams, substantially as specified.

2. A dumping-car having a middle platform and reversible rock-beams and dumping-boxes, and convertible into a flat car, substantially as specified.

259,273. BILLIARD-CUE TIP. JOHN B. HOWE, Danbury, Conn., assignor to himself and Frederick A. Hall, same place. Filed Apr. 18, 1882. (No model.)

Claim.—An attachment for billiard-cues, consisting of the ferrule B, formed with a plate, *b*, and recess C, and provided with one or more fastening-screws, F, in combination with the disk D, having the flat-faced pin E, and the flat piece of leather G, cemented upon the disk by points or pins *c*, said flat leather having glued thereto the tip H, substantially as and for the purpose specified.

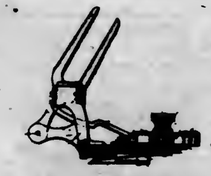
259,273.



259,274. PROCESS OF BRAZING. MELVIN JONES, Genesee Centre, assignor of one-half to Stephen R. Sherwood, South Livonia, N. Y. Filed Apr. 11, 1882. (No specimens.)

Claim.—The process of brazing cast-iron or steel with brass, the same consisting in first heating the parts to a red heat and applying prussiate of potash to the same; second, reheating until the prussiate of potash incorporates with the surfaces of the metal; third, applying borax to the surfaces; and, fourth, adding brass thereto and heating until the brass fuses, substantially as described.

259,275. RUFFLING ATTACHMENT FOR SEWING-MACHINES. ALLEN JOHNSTON, Ottumwa, Iowa. Filed July 26, 1881. (No model.)



Claim.—1. The combination, with a lever pivoted behind the needle, of a blade-carrier having its support wholly in front of the needle and operating-connections for moving said blade-carrier back and forth at each vibration of said lever, substantially as described.

2. The combination of a lever pivoted behind the needle, a blade-carrier supported in front of the needle, and a link extending past the needle and connecting said lever and blade-carrier, so that the latter is moved back and forth at each vibration of the lever, substantially as described.

3. A ruffler-frame provided with a socket for attaching the same to the presser-bar of a sewing-machine, in combination with a lever pivoted to said frame back of the socket, a sliding blade-carrier supported thereon directly in front of the needle, and operating-connections for communicating motion from the lever to the said carrier, substantially as described.

4. The combination of a lever pivoted back of the needle, a sliding blade-carrier supported in front of the needle, and a link jointed at the rear end to said lever and connected at the front end with the said carrier, substantially as described.

5. The combination, with an operating-lever and a blade-carrier, of a link directly connecting the said parts with each other, and adapted to impart from said lever to said blade-carrier positive motion in both directions, and adjusting means for varying at will the stroke of said blade-carrier with a uniform or constant vibration of said operating-lever, substantially as described.

6. The combination of an operating-lever, a sliding blade-carrier, and a link connecting said parts directly with each other and adapted to impart a positive back and forth motion to said sliding blade-carrier, and adjusting means for varying the stroke or throw of said carrier, substantially as described.

7. The combination, in a ruffling attachment, with a lever adapted to be operated in both directions by the needle-bar of a sewing-machine, of a link for imparting motion to the ruffler-blade, connected with said lever between the fulcrum and the point of application of the power and arranged to extend at its lower end outward away from the fulcrum, substantially as described.

8. The combination of the sliding blade-carrier supported in front of the needle, the lever pivoted behind the needle and adapted to be operated in both directions by the needle-bar, and the link connected with the blade-carrier at the front end and jointed at the rear end to the lever between the fulcrum and the point at which power is applied, substantially as described.

9. The combination, with an operating-lever and a blade-carrier and link arranged to convey positive motion back and forth from said lever to said carrier through a slot-and-pin connection, of an adjusting device for increasing or lessening at will the lost motion of said connection, substantially as described.

10. The combination of a sliding blade-carrier, a link jointed thereto by a slot-and-pin connection, and an adjusting device for increasing or lessening the lost motion between the pin and the ends of the slot, substantially as described.

11. The combination, with a projection or extension of the ruffler-frame directly in front of the needle, of a sliding blade-carrier supported on said projection or extension, a cross-piece below said carrier, and also below said projection or extension, and a ruffler-blade attached to said cross-piece, substantially as described.

12. The sliding blade-carrier having a top plate fastened thereto, and an adjusting-cam pivoted or journaled between said carrier and top plate, substantially as described.

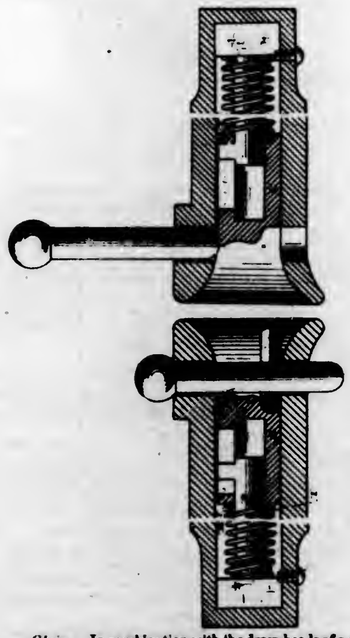
13. The combination of the blade-carrier, adjusting device, top plate, and set-nut, substantially as described.

14. The combination of a blade-carrier, top plate, adjusting device, link and pin or cross-head on the link, said pin or cross-head working between the carrier and top plate and in contact with the adjusting device, substantially as described.

15. The combination of a blade-carrier, graduated top plate, adjusting device between the top plate and carrier, and pointer or indicator, substantially as described.

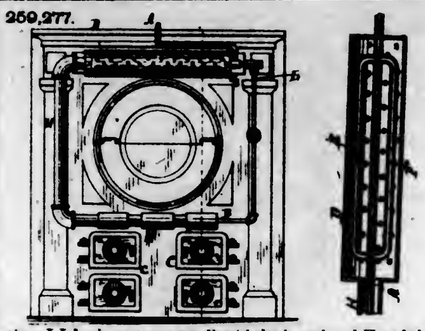
16. The combination, with the blade-carrier and top plate, of a link having its end movable in a slot in the top plate, and a pin or cross-head on the link working between the top plate and blade-carrier, substantially as described.

259,276. CAR-COUPLING. JESSE JORDAN and ELAM H. GILLON, Macon, Ga., assignors of one-half to Joseph E. Russell and Thomson Guernsey, same place. Filed Mar. 26, 1883. (No model.)



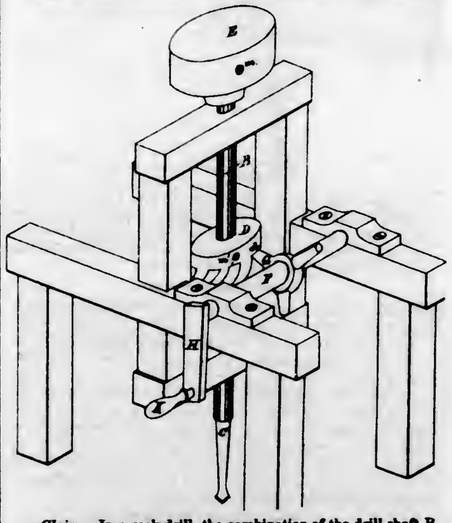
Claim.—In combination with the draw-heads of a car, the sliding block adapted to work upon a guide-pin located in the draw-head, and provided with a head secured by a set-screw, the key located on the guide-pin, and setting in a slot in the block to limit its movement, and the spiral spring fitting upon bosses on the block and at the base of the guide-pin, the block being provided with a shoulder and recess at its forward end to hold the pin and the link, substantially in the manner and for the purposes specified.

259,277. SMOKE-BURNER. THOMAS HURLEY, Chicago, Ill., assignor of one-half to Seneca D. Kimbark, same place. Filed Jan. 31, 1883. (No model.)



Claim.—In combination with a steam-boiler and its fire-chamber, the steam-pipes A and B, jacket-pipes H and L, and perforated drum D, all located outside of boiler, and steam-pipes I J I, the side pipes, I I, having one or more direct holes in each end K, and the central pipe, J, having one or more direct central holes and two diverging holes in end K, substantially as shown, and for the purpose described.

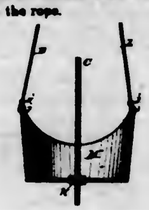
259,278. ROCK-DRILL. JAMES PEARSE, Bellefont, Va., assignor of three-fifths to R. D. H. Jones, same place, and George W. Dyer, Washington, D. C. Filed May 16, 1881. (No model.)



Claim.—In a rock-drill, the combination of the drill-shaft B, provided with an adjustable weight, E, and an adjustable spirally-grooved collar, D, with the shaft F, rotated by means of crank H K, and provided with tappet-wheel G, all the parts arranged and operating substantially as described and shown.

259,279. FIRE-ESCAPE. MAX L. ROSE and H. WHITFIELD SOUTH, Anderson, S. C.; said South assignor to said Rose. Filed Mar. 13, 1882. (No model.)

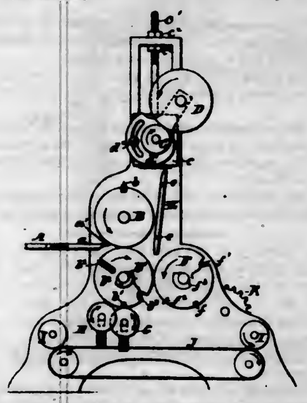
Brief.—Elbow-levers, to which the basket is suspended, are pivoted at the top of the frame, and have roughened edges to grasp the rope, which passes between them, down around a pulley on a shaft having handles projecting from the sides of the frame. Changing one's weight from the basket to the handles serves to relax the grip of the levers on the rope.



Claim.—1. In a fire-escape, the elbow-levers B B, having fluted and rough edges *b b*, adapted to grasp rope C, and holes *i i*, and pivoted at their upper ends in frame A, substantially as shown and described.

2. In a fire-escape, the combination, with frame A, of rope C, passing through openings E E in said frame and around pulley F on shaft G, elbow-levers B B, having fluted and rough edges adapted to grasp said rope, pivoted at their upper ends in said frame, and cords D D, attached to the outer ends of said levers and to the basket H, substantially as shown and described.

259,280. MANUFACTURE OF SATCHEL-BOTTOMED PAPER BAGS. EDGAR B. SPROUSE, Washington, D. C. Filed Oct. 25, 1881. (No model.)



Claim.—1. The method herein shown and described of forming the diamond fold by machinery, which consists in abruptly changing the direction of feed and rolling back one ply of the blank by two convergently-rotating rolls, substantially as shown and described.

2. The method herein shown and described of forming the diamond fold by machinery, which consists in feeding the tubular blank, cut substantially as described, in, on, or through a U-shaped line of feed, and by two convergently-rotating rolls rolling back one ply of said blank, substantially as shown and described.

3. The method of closing a diamond fold by machinery, which consists in reversing the direction of the feed of the rear point (the front point having been folded by suitable means) and forcing it separately from and independently of the body of the blank into the bight of convergently-rotating means, substantially as shown and described.

4. The combination of the roll C, means, substantially as described, for opening the tube, and the disk D, the latter located at about the longitudinal center of the former, and both rolls adapted by location and arrangement to be operative at their convergently-rotating peripheries, whereby a tube upon being passed between the same is opened and one of its plies is lifted and rolled back upon its body portion, all substantially as shown and described.

5. As a means for determining the fold-line of a point of the diamond fold, the rolls H H, in combination with a blank-supporting carrier or roll, B', substantially as shown and described.

6. As a means for folding a point of a diamond fold, the combination of the rolls H H and the rolls G G, substantially as shown and described.

7. In a paper-bag machine, the combination of means for folding the front point of the diamond with means for folding the rear point thereof and means for folding the body of the blank independently and separately from the rear point, and thereby reversing the direction of the movement of said rear point, and means for rolling down said point separately from the body of the blank, all substantially as shown and described.

8. The combination of a former provided with a central narrow knife-edged projection with rolls provided with a transverse severing-knife having a portion at its center removed, whereby said central portion co-operates with said projection to sever one ply of a tube, and allows the other ply thereof to pass between said roll uncut thereby, substantially as shown and described.

9. The combination of the rolls B and B', the diamond-rolls C D, and the roll F, substantially as shown and described.

10. The combination of the roll B' and the roll F, the former provided with the slot *b'*, blade *b²*, and jaw *b³*, and the latter provided with the blade *f'*, jaw *f²*, and knife *f*, and provided with the cams *b⁴* and *f³*, respectively, substantially as and for the purpose set forth.

11. The combination of the roll B', provided with blade *b²*, and the rolls G H, and the roll F, provided with the jaw *f'*, substantially as shown and described.

12. The combination of the rolls B', F, G, and H and the apron or belt J and roll I, substantially as shown and described.

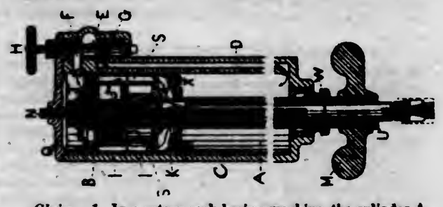
13. The combination of the roll B' and the adjustable rolls H H, yieldingly held against said roll B', substantially as shown and described.

14. The combination of the rolls B, B', and F with the adjustably-supported rolls C and D, substantially as shown and described.

15. The combination of the roll C, bearings *e*, rods *e'*, and nuts *e²* with the roll D, arms *d'*, slotted as shown, and the screws *d²*, as shown and described.

16. The combination of the roll B' and the rolls G H, adapted, substantially as shown and described, to be rotated in either direction, as and for the purpose set forth.

259,281. ROTARY DIAMOND ROCK-BORING MACHINE. JAS. BROWN JOHNSON, Boston, Mass. Filed Aug. 11, 1881. (No model.)



Claim.—1. In a rotary rock-boring machine, the cylinder A, constructed with the passage or port D, extending its whole length outside of its bore, entering at its lower end, and connected with its top end by the ports G and F, said passage D being enlarged at its upper end to form a seat, within which is fitted the semicircular-faced valve E, arranged to control the amount of air entering at the top or bottom of the cylinder A, all constructed substantially as described, and for the purpose set forth.

2. The piston B and the connected revolving spindle C, passing out through the lower head of the cylinder A, the piston B having a key fixed in it, working in the groove *a* in the cylinder A, to keep said piston from turning, but allow it to move freely in line of the axis of the cylinder A, the groove *b* in piston B, to allow a small portion of air to pass from its bottom to its top side, the whole so arranged that when air is at equal pressure above and below the piston B the air, acting on a larger surface above said piston B, causes the revolving spindle to be forced out through the lower head of the cylinder A, to produce feed of the boring-bit to the rock, as described and set forth.

3. In a rotary rock-boring machine constructed substantially as described, the hollow drill rod or pipe L, with its open end fixed within the hollow revolving spindle C, to receive and convey the exhaust air to the working-bit, to refrigerate said bit and to blow the reduced rock from the hole being bored, substantially as described and set forth.

4. In a rock-boring machine, the stationary water-pipe N, fixed in the back head, Q, and extending into the hollow spindle C, for the purpose set forth.

5. In a rotary rock-boring machine, the combination, with the main cylinder A, having the side passage, D, and the ports G and F, of the sliding piston B, containing the rotating device, and the revolving hollow spindle C, holding within it and revolving the hollow drill-rod L, substantially as specified and shown.

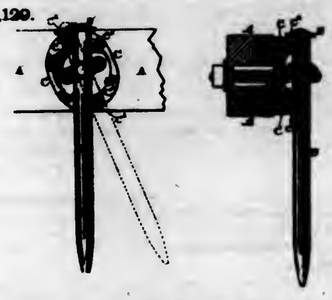
6. In a rotary rock-boring machine, the combination, with the main cylinder A, having a side passage, D, and ports F and G, of the double-faced valve E, worked by the wheel H, said valve E arranged to admit air to work the machine, regulate the pressure on the boring-bit, and withdraw it from the bore-hole, as set forth.

7. In a rotary rock-boring machine constructed substantially as described, the lower part of the sliding piston B, having a recessed or annular space, *d*, communicating with the holes K in the revolving spindle C, to receive from the rotating device the exhaust air and facilitate its passage to the interior of the revolving spindle, for the purpose as specified and set forth.

REISSUES.

10,129. NARROW-TEETH FASTENING. JAMES H. BARLEY and THOMAS K. BARLEY, Sedalia, Mo. Filed Oct. 31, 1881. Original No. 205,520, dated July 2, 1878.

10,129.



Claim.—1. The combination of the beam A, the plate C, provided with means on its outer side to regulate the movement of the adjustable tooth, a clamping screw-bolt which passes through both plate and beam, and a harrow-tooth, the outer end of the bolt being formed into an eye or loop through which the tooth passes, and which serves as a pivot in which the tooth turns, and to clamp both tooth and plate against the side of the beam, substantially as shown.

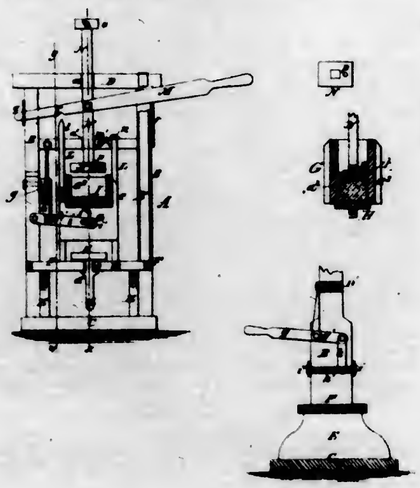
2. The combination of the beam A, the plate C, provided with the projections C', for catching in recesses in the side of the beam, and a clamping screw-bolt which passes through both plate and beam, and serves as a pivot for the tooth to turn on, the plate being provided with stops or shoulders to allow the tooth to reverse from a vertical to a slanting position, substantially as described.

3. The combination of a harrow-tooth, the beam A, the plate C, provided with projections or lugs C', for catching in the recesses in the beam, and having the stops C², formed on its outer side to allow the tooth to be used in either a vertical or slanting position, and a pivotal clamping-bolt with its outer end formed into an eye or loop through which the tooth passes, and which bolt holds the tooth and plate against the side of the beam, substantially as specified.

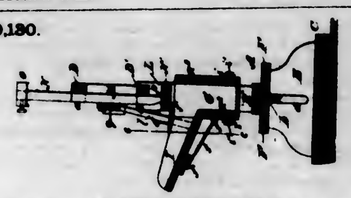
4. The combination of the beam A, the plate C, provided with the projections C' and the stops C², the harrow-tooth B, and the pivotal clamping-bolt provided with the wings D², substantially as specified.

5. The holder-plate C, made with the projections C' upon one of its sides, and provided with the stops C² and the bearing-surfaces C³, the clamping-bolt made with elongated eye D', and the wings D² upon opposite sides, in combination with the tooth B and the bar A, all arranged to operate substantially as shown.

10,130. BUTTER-PRINT PRESS. LEWIS COATES and JOEL T. CALDWELL, Callamer, Pa. Filed Mar. 25, 1882. Original No. 142,838, dated Sept. 16, 1873.



10,130.



Claim.—1. The butter-press consisting of frame A, sliding box G, with mouth I, and levers *g i*, block H, guide-posts L, follower N N', and lever M, substantially as and for the purpose described.

2. The combination of the printing-block H, having handle *d*, with guide-lugs *d'*, and the supporting-piece or platform F, provided with the slot *h*, as shown and described.

3. The sliding box G, having mouth I, guide-strips *e*, and lugs *i'*, the pivoted lever *g*, links *h*, rod *h'*, and levers *i*, combined as specified.

4. The combination of the follower-lever M, having notch *l'* with the upright bar *l*, and box G, as and for the purposes specified.

5. The cross-piece D, having recesses *m'* and button *n*, to lock post *L*, as described.

6. The pieces D D', with guide-recesses *a a'* and follower-shaft N, having the regulating-step *o*, combined as specified.

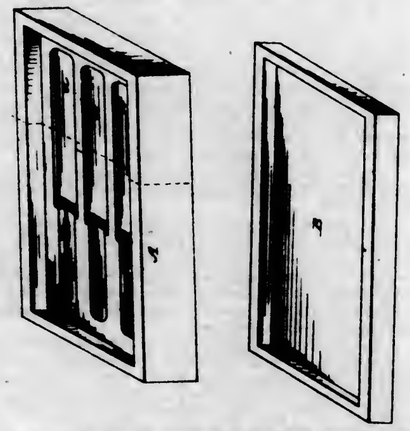
10,131. METHOD OF TREATING WOOD IN ORDER TO OBTAIN FIBER SUITABLE FOR PAPER-MAKING. CARL D. ECHAR, London, England. Filed May 11, 1882. Original No. 253,267, dated Feb. 7, 1882. Patented in England July 13, 1881, No. 3,082; in France Nov. 19, 1881, and in Belgium Nov. 19, 1881.

Claim.—1. The boiling of wood under pressure in a solution containing sulphurous acid and magnesia, substantially as hereinbefore described.

2. The boiling of wood under pressure in a solution containing sulphurous acid and magnesia, or alkaline substitutes, as specified, and discharging from time to time from the boiler during the boiling operation the sulphurous acid that is not free in the process.

3. The boiling of wood in a solution containing sulphurous acid and magnesia, or other alkaline substitutes, as specified, during successive periods in a close vessel, under pressures, which are increased for the several periods, substantially as described, until the wood is reduced to pulp-fiber, and discharging from time to time from the boiler during the boiling periods the sulphurous acid that is not free in the process, as set forth.

10,132. COMBINED BOX AND TRAY MOLDED FROM PULP. ELBERT D. LARAWAY and FRED O. ROCKWELL, Hartford, Conn.; said Laraway assignor of one-half of his right to J. Coolidge Hills, same place. Filed Oct. 21, 1881. Original No. 249,595, dated Apr. 26, 1881.

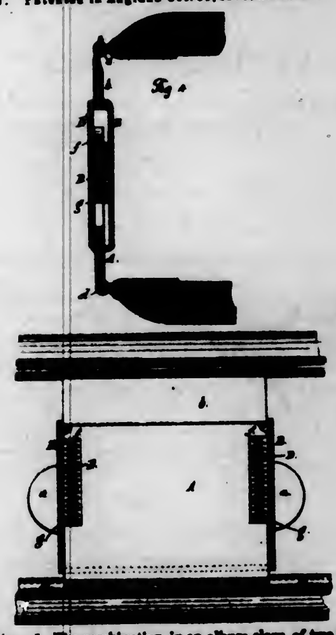


Claim.—1. A box or receptacle molded in one piece from pulp with sockets or depressions in its bottom, the contour or outline thereof being of irregular shape and varying in depth throughout their length to conform to the shape and varying thickness of the

article of table-cutlery placed therein, substantially as and for the purpose set forth.

2. A box or receptacle molded from pulp, having on its bottom sockets or depressions of the form substantially as shown, for adapting them to receive and hold articles of table-cutlery, in combination with a flanged cover, also molded from pulp, and disconnected or independent of said box or receptacle, substantially as and for the purpose specified.

10,133. CLASP FOR BOOKS. JULIUS HÜLLER and EDWARD HILPERT, Berlin, Germany, assignors to Koch, Sons & Co., Brooklyn, N.Y. Filed Jan. 23, 1882. Original No. 181,992, dated June 13, 1877. Patented in England Oct. 30, 1876, No. 4,197.



Claim.—1. The combination, in an album-clasp, of two parts, A B, one part sliding within the other, and springs to move said parts and apply a pressure to keep the covers of the album closed, substantially as set forth.

2. The combination, with the hinge and the catch upon the respective book-covers, of the two-part extensible clasp, one part sliding within the other, connected with each hinge and springs between the two parts of the clasp to apply pressure to the covers of the book or album, as set forth.

3. The combination, with the two-part book-clasps, one part sliding within the other, of springs introduced between the said two parts of the clasp to apply spring-pressure to shorten the clasp and draw the book-covers toward each other, as specified.

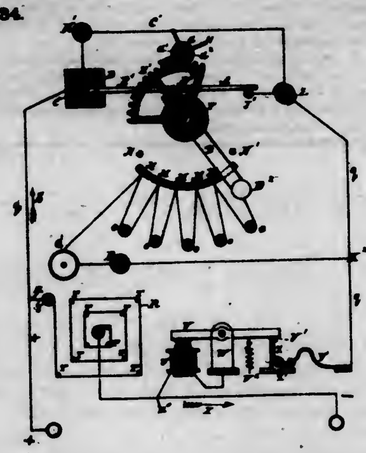
4. In a clasp for books and albums, the combination, with the plate A, having projections *f*, of the case B, projections *g*, springs D, and hook *e*, substantially as set forth.

10,134. ELECTRIC LIGHTING SYSTEM. WILLIAM E. SAWYER, New York, and ALBON MAN, Brooklyn, assignors to the Electro Dynamic Light Company, New York, N.Y. Filed May 16, 1881. Original No. 236,568, dated June 28, 1878.

Claim.—1. In an electric lighting system, the combination of a generator of electricity which is the common source of supply for the system, two or more conductors, and two or more electric lamps in each of said conductors, or in circuits derived therefrom, substantially as described, for the purpose specified.

2. In an electric lighting system, the combination with the circuit of resistance consisting of wire having great radiating-surface and having the several coils or convolutions composing the same held apart to facilitate the access of the air and the escape of the heat, substantially as described.

10,134.



3. In an electric lighting system composed of a number of lamps connected in circuit, an automatic electric safety-switch combined in the lighting-circuit of each lamp, and through which the current of said circuit flows to the other lamps in circuit, said safety-switch being connected to its own lamp and to the other lamps in circuit to disrupt the circuit of its particular lamp in case of an excess of current therein, leaving the circuit of the remaining lamps intact.

4. With each lamp-circuit B' of an electric lighting system, the combination of a shunt, *c'*, and an electric safety-switch, the shunt and lamp-circuit each providing a closed path for the current at the same time, one through and one around the lamp, and the safety-switch operating to cut the lamp out of circuit in case of an excess of current either in the lamp or in its shunt-circuit.

5. With the lamp-circuit, the combination of a closed shunt-circuit containing a resistance at least equal to the resistance of the lamp, and an automatic electric safety-switch with each lamp, the shunt to furnish a path for the current in case of an abnormal resistance in the lamp, the resistance to keep the current in the lamp when the flow is normal, and the safety-switch to cut the lamp out of circuit in case of an excess of current therein.

6. In combination with a constantly-closed lamp-circuit, B', having resistances O combined therewith, a constantly-closed shunt-circuit, *c'*, having resistances K L, and a lighting-switch, A D, the switch consting with the two closed circuits and the resistances thereof to gradually transfer the current from one closed circuit to the other for the purpose of gradually illuminating or extinguishing the lamp, substantially as described.

7. In an electric lighting system, a lighting-circuit conductor, *a*, divided at *x x*, between which points of division the lamps are placed, one branch of said divisions provided with a resistance, R, to divert the necessary current into the other divisions forming the lighting-circuit, said lighting-circuit consisting of a lamp-circuit, B', and a shunt-circuit, *c'*, containing a resistance at least equal to the resistance of the lamp-circuit, and combined with a lighting-switch, substantially as described.

8. In an electric lighting system, an electric lamp and a lamp-lighting switch combined in a divided conductor, forming two closed circuits, *q* and *a* or *q* and *p* for the current at the same time, one through and one around the lamp, the lamp-circuit B' being also provided with a shunt-circuit, *c'*, and combined with an electric safety-switch energized by a part of the current in the system, and that cuts the lamp out when from any cause there is an excess of current in the lamp or shunt circuit, or in both.

9. In an electric lighting system, the combination, with a main-circuit conductor, *a* or *p* of a shunt-circuit *q*, divided in two sub-circuits, B' and *c'*, both of which are provided with resistances, and are constantly closed for the passage of current, and with one of which the lamp is also combined.

10. In an electric lighting system, the means substantially herein described of cutting the lamp out of circuit when from any cause there is diverted from the lighting-circuit *a* or *p* an abnormally-great current in the shunt-circuit *q*, which means consist of an electric safety-switch combined with each shunt *q* and each lamp Q', and which is called into action to cut the lamp out of circuit by

any excess of current in the shunt-circuit sufficient to increase the attracting powers of the magnet of the switch until it overcomes a given counteracting force on the armature.

11. In an electric lighting system, a lighting-circuit *n* or *p*, in which are combined a resistance, R, and a divided shunt-circuit, B′ and *c*′, having equal resistances, and an electric lamp, Q, so that the resistance R will divert a portion of the current into each division of the shunt-circuit.

12. In an electric lighting system, a lighting-circuit in which are combined a divided shunt-circuit around the lamp, a by-circuit including the lamp, and a lighting-switch, substantially as described.

13. In an electric lighting system, a lighting-circuit in which are combined a divided shunt-circuit, an electric lamp, and a safety-switch, substantially as described.

THE ELIOTYPE PRINTING CO. BOSTON

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE McDOUGALL.

Decided April 24, 1882.

1. AMENDMENT OF APPLICATION—NEW MATTER—SUPPLEMENTAL OATH.

Under Rule 47 an applicant may introduce into his application by amendment a part of the invention originally made which was not incorporated into the application either as a part of the specification or claim, if he swears that the matter which he desires to introduce into his application and make a part thereof was a part of his original invention.

2. SAME—SAME—DATE OF COMPLETION OF APPLICATION CHANGED.

Under this practice, however, the Examiner will enter the date of the new oath on the face of the file-wrapper and change the date of the completion of the filing of the application to agree therewith.

TOW-BOAT.

INTERLOCUTORY appeal from the Primary Examiner.

Application filed December 24, 1881.

Messrs. Dyer & Wilber for the applicant.

MARBLE, *Commissioner:*

Appeal is taken from the action of the Examiner refusing to consider an amendment to the application as originally filed because the same contains new matter. Applicant swears that "whatever invention or claim is therein embraced (in the amendment) which was not in the invention or claim as originally presented the same was part of his invention, and was invented by him before he filed his original application." The affidavit thus made is in compliance, or supposed compliance, with Rule 47 of the Rules of Practice, which reads as follows:

> In case the applicant seeks by amendment to introduce any claim not substantially embraced in the statement of invention or claim originally presented, and therefore not covered by the original oath, he will be required to file a supplemental oath to the effect that the subject-matter of the proposed amendment was part of his invention, and was invented before he filed his original application, and such supplemental oath must be upon the same paper which contains the proposed amendment.

The Examiner in his answer says: "Rule 47 seems to have no bearing on the case, as that applies solely to new claims."

I think the construction which the Examiner places upon Rule 47 is too narrow. The rule reads: "In case the applicant seeks by amendment to introduce any claim not substantially embraced in the statement of invention," &c., he will be required to file a supplemental oath. The word "claim" there, I think, should be construed to mean not simply one of the claims which applicant may base upon his specification, but a part of the invention originally made but not incorporated into the application either as part of the specification or claims. It will be observed that the rule contemplates a case where not only matter sought to be introduced was not specifically described, but was not even substantially described, in the statement of invention. In other words, not described at all. In such a case if the applicant swears that the matter which he now desires to introduce into his application, and make it a part thereof, was a part of his original invention, then he may do it by amendment.

Rule 69, to which reference is made, seems to apply to a different class of cases. Under that rule, where a party seeks to amend either the drawing, model, or specification, or additions thereto, the amendment must conform to at least one of them—viz., either the model, the drawing, or the specification. If the matter which is sought to be incorporated into the application is not found in either, and the party cannot make oath that it was a part of his original invention, then he must embrace it in a new application. When the rule is so construed I do not think it is in conflict with Rule 47; nor do I think that it bars amendments like the one here presented. It is not alleged, nor do I find such to be the fact, that the amendment is not properly of subject-matter which might have been claimed in the original application. If the matter sought to be introduced into the application by this amendment were a part of the original invention, then I think that the applicant ought to be allowed so to introduce it at this time. In other words, he ought to be allowed to particularly describe the whole of his invention, and to claim it in one application, if it can be done before the case has passed beyond the control of the Office, and within two years from the filing of the first papers in the case. (Section 4894, Revised Statutes.)

The Examiner will, however, enter the date of the new oath on the face of the file-wrapper and change the date of completion of the filing of the case to agree therewith. With this modification, the decision of the Examiner is overruled.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

LEHNBEUTER *et al. v.* HOLTHAUS *et al.*

Decided March 6, 1882.

1. DESIGN PATENT—INFRINGEMENT.

An immaterial variation of the design—such as a slight inclination backward, hardly perceptible to the eye, of the glass constituting the front of the elevated parts of a show-case—does not relieve from the charge of infringement.

2. SAME—NOVELTY—COMPARATIVE BEAUTY.

It is immaterial to the patentability of a design whether it is more graceful or more beautiful than other designs. It is suffi-

cient if it is new and useful. The patent is *prima facie* evidence of both novelty and utility, and neither of these presumptions has been rebutted by the evidence.

APPEAL from the Circuit Court of the United States for the Eastern District of Missouri.

Mr. R. H. Parkinson for the appellants.

STATEMENT OF THE CASE.

The bill, which was filed in the circuit court by the appellants, charged infringement by defendants of Design Patent No. 8,814 for show-cases, granted to the complainants jointly, and dated November 30, 1875. The answer denied that the complainants were the first inventors of the design patented, denied its utility, and denied that the defendants infringed. To sustain these denials all the testimony offered by the defendants was directed. Upon final hearing the circuit court dismissed the bill because "said letters patent were not good and valid in law," and the complainants have brought the case to this court by appeal.

The record contained certain stipulations in respect to the evidence. These were—

That the following exhibits may be produced by either party at the hearing upon an appeal in the Supreme Court and used in evidence as a portion of the transcript herein, viz: "Defendants' Exhibit, Wiegal Catalogue," and "Defendants' Exhibit, Maw's Price Current;" also, "Design Patents Nos. 8,287, 8,813, and 8,814;" also, "Complainants' Exhibit Holthaus Circular;" that it shall be taken as admitted, for the purposes of this case, that said exhibits, "Wiegal Catalogue" and "Maw's Price Current," were issued prior to January, 1874; that the circular marked "Complainants' Exhibit Holthaus Circular" is a copy of circulars issued by the defendants in the month of July, 1877, and subsequently thereto; that the cuts therein correctly represent show-cases made and sold by the defendants in St. Louis, within said eastern district of Missouri, during and after January, 1877, and before the commencement of this suit, and still made and sold by them; also, that the circular marked "Complainants' Exhibit Claes & Co., Circular," is a copy of a publication issued and circulated by complainants in the month of September, 1875, and subsequently thereto; also, that the model marked on bottom "Complainants' Exhibit Model No. 1," under the hand of the same notary, correctly represents show-cases made and sold by defendant in said St. Louis during and after the month of January, 1877, and before the commencement of these suits.

The only witness in the case was Charles K. Pickles, who testified for the complainants that he made the original drawings from which the plates were made of the cuts 33, 34, and 36 of the Holthaus circular; that he made the drawings for Holthaus, the defendant, who gave him cuts from Claes & Co.'s circular, from which to make the plates or prints, and that there were slight changes suggested by Holthaus, which the witness followed in making the drawings.

The Wiegal catalogue, Maw's Price Current, the Holthaus circular, and the design patents, numbered respectively 8,287, 8,813, and 8,814, with their drawings, the first granted to Joseph Lehnbeuter and the other two to Lehnbeuter and Claes, the complainants, were put in evidence. The one last named was that on which this suit was brought.

Mr. Justice WOODS delivered the opinion of the Court.

A comparison of the drawing which is appended to Patent No. 8,814, with cut No. 34 of the Holthaus circular, which it is admitted represents show-cases manufactured and sold by the defendants during and since January, 1877, makes it clear that the latter is a servile copy of the former, excepting a slight inclination backward, hardly perceptible to the naked eye, of the glass constituting the front of the elevated portions of the case. We think therefore that the infringement is clearly established.

The attempt to prove that the complainants were not the first inventors of the design covered by their letters patent has entirely failed. The only evidence offered on this branch of the defense are the publications designated as "Maw's Price Current" and the "Wiegal Catalogue." The first of these bears date in 1869 and the latter in 1872. After a careful search through both we have been unable to find any design for a show-case which remotely resembles that described in the complainants' patent. The design patented by the complainants differs essentially from any other which has been called to our attention. It is not covered by the other patents which are set out in the record. Whether it is more graceful or beautiful than older designs is not for us to decide. It is sufficient if it is new and useful. The patent is *prima facie* evidence of both novelty and utility, and neither of these presumptions has been rebutted by the evidence. On the contrary, they are strengthened. No anticipation of the design is shown, although the attempt has been made to prove anticipation. The fact that it has been infringed by defendants is sufficient to establish its utility, at least as against them. (Swayne, Justice, in *Whitney* v. *Mowry*, 4 Fish., 207.)

Our conclusion is that the complainants have a valid patent, which the defendants have infringed. The decree of the circuit court dismissing their bill must, therefore, be reversed, and the cause remanded for further proceedings in conformity with this opinion.

U. S. Circuit Court—Southern District of New York.

SEARLS *v.* BOUTON *et al.*

Decided October Term, 1881.

1. REISSUED LETTERS PATENT NO. 9,297 SUSTAINED.
   Reissued Letters Patent No. 9,297, granted to Searls, for an improvement in whip-sockets, construed and sustained.
2. REISSUE—NEW MATTER—ORIGINAL PATENT NOT IN EVIDENCE.
   Where the original patent is not put in evidence there is nothing properly before the court by which to determine whether the original and the reissue are for the same invention or not. As the reissue was granted by the proper officer, the presumption is that it was properly granted, and there is nothing in the case to overcome that presumption.
3. SECTIONS 4886 AND 4920 REVISED STATUTES—PRIOR KNOWLEDGE AND USE.
   Section 4886 Revised Statutes, providing that a patent may be granted if the invention was not known or used by others, and section 4920 Revised Statutes, providing that in his notice of defenses the defendant shall state not only the names and residences of the persons alleged to have had prior knowledge of the invention, but "where and by whom it had been used," are to be construed together; and prior knowledge of an invention not accessible to the public did not defeat a patent. (*Gaylor* v. *Wilder*, 10 How., 477.)
4. WANT OF ALLEGATION IN ANSWER—AFFIRMATIVE DEFENSES.
   When the answer alleges knowledge by certain persons of a certain place, but not knowledge at that or any other place, proof cannot be received that such knowledge was at that place. Affirmative defenses, and especially this defense as provided and regulated by the statute, must be alleged as well as proved.
5. PERSONAL LICENSE NOT TRANSFERABLE.
   A license "to manufacture" at a certain place is a personal license not transferable.

Mr. J. P. Fitch for the plaintiff.

Mr. N. Davenport for the defendants.

WHEELER, *J.*:

This suit is brought upon Reissue Letters Patent No. 9,297 to the orator for an improvement in whip-sockets, and upon original Letters Patent No. 231,510 to John M. Underwood, assignor to the orator; also for an improvement in whip-sockets.

The defenses set up in the answer are to the former, that it was not properly reissued for the same invention described in the original; that the invention had been previously patented in several prior patents in

this country; that the invention was previously well known to, among others, Charles A. Fleschs, John Perpente, and E. E. Stevens, without saying that it had been used by any person, and that defendants have not infringed, and to the latter the defense is want of novelty.

Although this objection to the reissue is set up in the answer, the original patent is not put in evidence at all, and there is nothing properly before the court by which to determine whether the original and the reissue are for the same invention or not. As the reissue was granted by the proper officer, the presumption is that it was properly granted, and there is nothing in the case to overcome that presumption.

The patent is for a centrally-perforated rubber disk fitting loosely into an inner groove near the top of a whip-socket to steady the whip, and retained there by its expansive force, keeping its outer edge within the walls of the groove and permitting the insertion and withdrawal of the whip by its elasticity. The evidence shows that such disks had been for some time known and used for this purpose by being placed in the whip-socket near the top, and being clamped or held there by the outer edge placed firmly between the body and top of the socket, or between a shoulder in the socket and a closely-fitting ring, and by other similar arrangements for holding the outer edge tightly. These were patented in the prior patents set up in the answer. In the use of disks so fastened the insertion and withdrawal of the whip would bend the inner part up and down and cause it to break from the outer part at the edge of where it was firmly held. The invention of the orator obviated this breaking largely by allowing the outer edge of the disk to roll in the groove with the movement up and down of the interior. This kind of disk was not described in any of the prior patents. It could be used in a socket formed in one piece in that part, and the patent describes making its outer edge of harder rubber than its inner edge, to make it more secure in its place and still permit the insertion and withdrawal of the whip.

There are three claims. The first is of a whip-socket formed there in one piece with a groove, and such a disk inserted in it; the second is for the combination of such a disk, so held in place, with a whip-socket, and the third is for such a combination with a disk having its outer edge of harder rubber.

The second claim seems to cover the whole that the patent can be construed to cover. The whip-socket without the loosely-fitting disk in the groove would not be new, and such a fitting disk in a whip-socket would include one with a harder edge. This combination is not shown in any of the patents. The patents are all for comparatively-small differences, and this difference is small; but it exists, and is large enough to be patented.

The allegation in the answer as to knowledge without an allegation of use seems to have been made intentionally, in view of the evidence to support it, rather than inadvertently. The proof at most shows that but two sockets were made showing this invention, and that these were laid away with other specimens without the rubber disks being in the grooves. Fleschs, who made them, afterward took a patent, which is one of those set up as anticipations without this feature, and no use of them otherwise is shown. One of them, defendants' Exhibit L, is in evidence with a rubber disk made since in the groove. As so put together this exhibit does seem to show all the elements of this patent as construed. The evidence was seasonably objected to for the reason of the lack in the answer, and the question is whether such an answer supported by proof will defeat a patent. The section of the statute relating to the granting of patents provides that they may be granted if the invention was not "known or used" by others, as if either knowledge or use would prevent. (Rev. Stats., sec. 4886.) The section relating to defenses and the mode of making them provides for notice, stating not only the names and residences of the persons alleged to have had prior knowledge of the invention, but adds: "and where and by whom it had been used." In *Gaylor* v. *Wilder* (10 How., 477) it was held that these statutes were to be construed together and with others on the same subject, and that prior knowledge of an invention not accessible to the public would not defeat a patent. The knowledge might be acquired in a foreign country and the invention not be patented or described in a printed publication there, and such knowledge would not prevent or defeat a patent by another in this country.

The answer alleges knowledge by persons of New Haven, Connecticut, but not knowledge at New Haven or any other place. The proof goes beyond this and such knowledge as there was to have been at New Haven; but affirmative defenses, and especially this defense as provided and regulated by the statute, must be alleged as well as proved, and proof objected to for want of allegation will not help out the defense. (*Roome* v. *Simon*, 95 U. S., 214.) This defense cannot prevail as made.

The defense of non-infringement rests upon a license granted by the orator to John O. Merriam and Edwin Chamberlain "to manufacture" at their shop in Troy, New York, and no other place or places. This appears to be a personal license, not transferable, and a license to make only. Merriam and Chamberlain had a shop in Troy and constituted a firm. Merriam appears to have sold out to a new firm composed of Edwin Chamberlain and Perry D. Randall. Edwin Chamberlain has since died, and Edward Chamberlain has succeeded him in the firm of Chamberlain & Randall. Merriam appears to have ordered materials, or to have permitted Chamberlain & Randall to order them in his name, for use in making whip-sockets at that shop, but he does not appear to have been engaged himself in the manufacture. Sockets made under and pursuant to the license would be free to the trade, but sockets merely dealt in by the licensees would not thereby be made free. The defendants have not made it clear that the sockets they have sold, which would otherwise be an infringement, were made under and pursuant to the license. Therefore they must be adjudged to have infringed. The extent of the infringement unlawfully done must, of course, go to the master for determination.

There was some difficulty in having these rubber disks thick enough to well retain their places in the sockets and at the same time yielding enough to permit ready insertion and withdrawal of different-sized whips. Underwood invented cutting away portions of the disk at intervals around between the outer edge and the perforation, making them more yielding in the interior, whereby this difficulty was in some measure,

at least, overcome. His patent is for this improvement. The evidence of anticipating devices shows nothing like this.

As the case is made up and presented the patents must both be adjudged valid and to be infringed.

Let a decree be entered for the orator for an injunction and an account according to the prayer of the bill, with costs.

U. S. Circuit Court—District of Indiana.

HAPGOOD *et al.* *v.* HEWITT.

Decided March 22, 1882.

1. INVENTION BY EMPLOYÉ—RIGHTS OF.
   Persons are not deprived of the right to their inventions while in the service of others, unless they have been hired and paid to exercise their inventive faculties for their employers.
2. SAME—EMPLOYER NO RIGHT TO PATENT.
   A contract by which one person agrees to pay a sum of money for the time, labor, and skill of another for a given period gives the employer no right to an assignment of a patent that is issued to his employé for an invention made during the period of his employment.
3. SAME—LICENSE.
   If under such a contract of employment the employer has any right to the invention, it is a mere naked license to make and sell the patented improvement as a part of its business. This right, being a mere personal one, is not transferable, and is extinguished with the dissolution of the corporation which exercised it.

Mr. John G. Williams and *Mr. E. W. Pattison* for the plaintiffs.

Messrs. Wood & Boyd and *Messrs. Chapman & Hammond* for the defendant.

GRESHAM, *J.*:

This is a suit brought by Charles H. Hapgood, James H. Hesse, and John Parker, trustees of Hapgood & Company, a defunct corporation organized under the laws of the State of Missouri, and the Hapgood Plow Company, a corporation organized under the laws of the State of Illinois, against Horace L. Hewitt. The relief sought is a decree compelling the defendant to assign to the Hapgood Plow Company, as the successor of the Hapgood Company, or to the trustees of the last-named company, in trust for the Hapgood Plow Company, certain letters patent which the defendant caused to be issued to him for improvements in iron sulky-plows.

The bill is demurred to for want of equity. It avers, in substance, that the defendant represented to the Hapgood Company, which was organized at St. Louis, under the laws of Missouri, to manufacture and sell plows and other implements, that he had had large experience in the manufacture and sale of plows and in devising and making improvements of the same; that, if employed by the company, he would devote his time and services to getting up and perfecting plows and other goods in its line of business; that, relying upon the defendant's representations as to his skill in the manufacture of plows and in devising improvements of the same, he was given employment by the company; that after being so employed the defendant became the owner of some of the company's stock, and was made its superintendent; that in consideration of a salary of three thousand dollars a year the defendant agreed to devote his time to the service of the company and his skill in devising and making improvements in plows manufactured by it; that during his regular working hours, and with the aid of instructions, directions, and suggestions from the officers and employés of the company, the defendant succeeded in getting up an improved iron sulky-plow, the company paying for the labor and materials which were used in its construction; that the company manufactured plows after the model so gotten up by the defendant and other employés, and on the 26th of March, 1878, the defendant being no longer in the service of the company, a patent was issued to him, on his application, covering certain parts of the improved iron sulky-plow, and the defendant now claims the exclusive ownership of such patent; that after the granting of the patent to the defendant—viz., on the 1st of January, 1880—the corporation of Hapgood & Company was dissolved, and the trustees named were appointed, under the laws of Missouri, to wind up its affairs; that on the 27th of December, 1879, a corporation was organized, under the laws of Illinois, under the name of the "Hapgood Plow Company;" that in getting up said plow and the improvements which it embraced the defendant did no more than it was his duty to do under his employment, and his employer, Hapgood & Company, in equity became the owner of the right to manufacture said plow and of the right to a patent for anything which was patentable as an improvement of the same, and that the Hapgood Plow Company became the successor of the Hapgood Company and owner of all its assets of every kind and description, including its equitable right to said letters patent.

Persons are not deprived of the right to their inventions while in the service of others, unless they have been hired and paid to exercise their inventive faculties for their employers. A contract by which one person agrees to pay a sum of money for the time, labor, and skill of another for a given period gives the employer no right to an assignment of a patent that is issued to his employé for an invention made during the period of his employment. The defendant represented to Hapgood & Company that he had had large experience in the manufacture and sale of plows, and that he had a thorough knowledge of that business. It was the benefit of that knowledge and experience the defendant's employers desired and for which it contracted. The defendant was not expressly required by his contract with Hapgood & Company to exercise his inventive faculties for the benefit of the company, and there is nothing in the bill from which it can be fairly inferred that he was required or expected to do so. The bill avers that the defendant was aided and assisted by advice and suggestions from other officers and employés of the company in getting up the improved plow for which he obtained the patent. If the invention was the joint work of the defendant and his co-employés, he was not entitled to a patent as sole inventor. But, however this may have been, if Hapgood & Company had any right to the invention by virtue of the terms of the defendant's contract of employment, it was a mere naked license to make and sell the patented improvement as a part of its business. This right, if it existed, being a mere personal one, was not transferable, and it was extinguished with the dissolution of the corporation. (Curtis on Patents, 4 ed., sec. 213; *Continental Windmill Company* v. *Empire Windmill Company*, 4 Fisher's Patent Cases, 428.)

Demurrer sustained.

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[*BY AUTHORITY OF CONGRESS.*]

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Issue of June 13, 1882.

Patents	373	No. 259,282 to No. 259,656, inclusive.
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Trade-Marks	19	No. 9,446 to No. 9,464, inclusive.
Labels	1	No. 2,700
Reissues of patents	4	No. 10,135 to No. 10,138, inclusive.
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TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	3	....	Nebraska	1	....
Arizona Territory	....	....	Nevada	....	....
Arkansas	1	....	New Hampshire	6	....
California	6	....	New Jersey	20	2
Colorado	1	....	New Mexico Territ'y	....	....
Connecticut	13	1	New York	58	6
Dakota Territory	2	....	North Carolina	....	1
Delaware	....	....	Ohio	40	2
District of Columbia	3	....	Oregon	1	....
Florida	....	....	Pennsylvania	34	....
Georgia	4	....	Rhode Island	3	....
Idaho Territory	....	....	South Carolina	2	....
Illinois	35	....	Tennessee	3	....
Indiana	10	1	Texas	3	....
Indian Territory	....	....	Utah Territory	....	....
Iowa	10	....	Vermont	3	1
Kansas	4	....	Virginia	5	....
Kentucky	6	....	Washington Territ'y	....	....
Louisiana	2	....	West Virginia	1	....
Maine	3	....	Wisconsin	4	....
Maryland	6	1	Wyoming Territory	....	....
Massachusetts	35	1	United States Army	....	....
Michigan	27	....	United States Navy	....	....
Minnesota	4	....	Total to citizens of the United States	369	16
Mississippi	1	....			
Missouri	8	....			
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TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia	....	....	England	7	4
Austria	1	....	France	2	....
Barbadoes	....	....	Germany	3	....
Belgium	....	....	Italy	....	....
Bermuda	....	....	New Zealand	....	....
Brazil	....	....	Russia	....	....
Canada	5	....	Spain	....	....
Chili	....	....	Sweden	1	....
Columbia, U. S of	....	....	Switzerland	....	....
Cuba	....	....			
Denmark	....	....	Total to citizens of foreign countries	19	4
Ecuador	....	....			

DESIGNS.

12,965.—BOTTLE.—*James O. Davidson* and *Calvin O. Davidson*, Denver, Colo. Application filed April 12, 1882. Term of patent 14 years.

12,966.—FONT OF PRINTING-TYPE.—*Herman Ihlenburg*, Philadelphia, Pa., assignor to *MacKellar, Smiths & Jordan*, same place. Application filed April 11, 1882. Term of patent 14 years.

12,967.—FONT OF PRINTING-TYPE.—*Herman Ihlenburg*, Philadelphia, Pa., assignor to *MacKellar, Smiths & Jordan*, same place. Application filed April 24, 1882. Term of patent 14 years.

12,968.—FONT OF PRINTING-TYPE.—*Herman Ihlenburg*, Philadelphia, Pa., assignor to *MacKellar, Smiths & Jordan*, same place. Application filed April 11, 1882. Term of patent 14 years.

12,969.—ADVERTISING-DISK.—*Elhanan L. Meodis*, New York, N. Y., assignor of one-half to *Charles H. Gillespie*, same place. Application filed April 29, 1882. Term of patent 3½ years.

12,970.—FENCE-PICKET.—*Wilber Thomas*, Quincy, Ill. Application filed April 20, 1882. Term of patent 14 years.

12,971.—FENCE-PICKET.—*Wilber Thomas*, Quincy, Ill. Application filed April 21, 1882. Term of patent 14 years.

12,972.—FENCE-PICKET.—*Wilber Thomas*, Quincy, Ill. Application filed April 20, 1882. Term of patent 14 years.

12,973 and 12,974.—FENCE-PICKET.—*Wilber Thomas*, Quincy, Ill. Applications filed April 21, 1882. Term of patents 14 years.

12,975.—FONT OF PRINTING-TYPE.—*Henry H. Thorp*, Cleveland, Ohio, assignor to the *H. H. Thorp Manufacturing Company*, same place. Application filed April 24, 1882. Term of patent 14 years.

12,976.—CARPET.—*David G. Melville*, Medford, assignor to *The Roxbury Carpet Company*, Boston, Mass. Application filed May 1, 1882. Term of patent 3½ years.

12,977.—SPOON-HANDLE.—*Alfred W. Sperry*, Hartford, Conn. Application filed May 3, 1882. Term of patent 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

9,446.—CIGARS.—*Ramon Allones*, New York, N. Y. Application filed May 15, 1882.
"The fac-simile signature of registrant, 'RAMON ALLONES.'"

9,447.—MEN'S, YOUTHS', AND WOMEN'S SUSPENDERS AND BRACES.—*James Bowers*, Newark, N. J. Application filed May 13, 1882.
"The word-symbol 'MAGNETIC.'"

9,448.—INFANTS' FOOD.—*The Cereals Manufacturing Company*, New York, N. Y. Application filed May 22, 1882.
"The arbitrary words 'CEREAL MILK.'"

9,449.—WHISKY.—*P. W. Enge & Sons*, New York, N. Y. Application filed May 16, 1882.
"The arbitrarily-selected words 'MELLOW HORN.'"

9,450.—CUTLERY, SUCH AS SHEARS, SCISSORS, KNIVES, AND RAZORS. *Fuller Brothers*, New York, N. Y. Application filed May 11, 1882.
"The word 'PARAGON.'"

9,451.—LASTS.—*John Kimball*, Boston, Mass. Application filed February 3, 1882.
"The arbitrarily-selected letter 'N' inclosed by a circular figure, the whole forming a fanciful symbol."

9,452.—SMOKING-TOBACCO.—*Charles R. Messinger*, Toledo, Ohio. Application filed May 9, 1882.
"The arbitrarily-selected words 'OLD COMFORT.'"

9,453.—SMOKING-TOBACCO.—*Charles R. Messinger*, Toledo, Ohio. Application filed May 9, 1882.
"The letters 'F. G.'"

9,454.—MILLSTONES.—*North Carolina Mill Stone Company*, Westminster, Md. Application filed May 17, 1882.
"A pictorial representation of an eagle."

9,455.—MEDICINAL COMPOUND.—*Milton K. Paine*, Windsor, Vt. Application filed May 1, 1882.
"The pictorial representation of a celery-plant."

9,456.—CIGARS.—*Frederick Riebel*, Indianapolis Ind. Application filed May 18, 1882.
"The word and figures "No. 35.""

9,457.—DENTIFRICE.—*Rogers & Lyon*, New London, Conn. Application filed April 4, 1882.
"The word 'ODONTIQUE' and the monogram composed of the letters 'R & L.'"

9,458.—RED WINE.—*Charles Saalmann*, Egg Harbor City, N. J. Application filed May 1, 1882.
"The words 'BLACK ROSE' and the arbitrary symbol consisting of an eagle."

9,459.—MEDICINAL PLASTERS.—*Seabury & Johnson*, New York, N. Y. Application filed May 18, 1882.
"The word-symbol 'CAPCINE.'"

9,460.—WRITING-INKS OF ALL DESCRIPTIONS.—*Henry C. Stephens*, Finchley, county of Middlesex, England. Application filed February 1, 1882.
"The design in the shape of a truncated pyramid, within which is a frame inclosing lace-work."

9,461.—WRITING-INKS OF ALL DESCRIPTIONS.—*Henry C. Stephens*, Finchley, county of Middlesex, England. Application filed February 1, 1882.
"An oblong with bordering of spiral decoration, at the corners of which is a circle composed of engine turning."

9,462.—WRITING-INKS OF ALL DESCRIPTIONS.—*Henry C. Stephens*, Finchley, county of Middlesex, England. Application filed February 1, 1882.
"The word 'AEILYTON.'"

9,463.—CEMENT.—*Stuart & Co.*, Edinburgh, county of Mid-Lothian, Scotland. Application filed April 18, 1882.
"The fanciful word 'GRANOLITHIC.'"

9,464.—JET-GOODS OF ALL KINDS AND BUTTONS AND JEWELRY MANUFACTURED FROM JET.—*Veit & Nelson*, New York, N. Y. Application filed April 17, 1882.
"The representation of a cupid and a cornucopia."

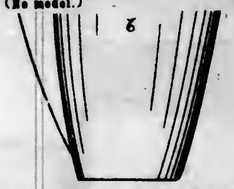
LABELS.

2,700.—Title: "JUNIPER WATER BOTTLING COMPANY."—*Ezra H. Bailey*, Plymouth, N. C. Application filed May 20, 1882.

PATENTS

GRANTED JUNE 13, 1882.

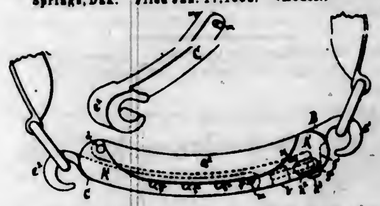
259,282. CRUCIBLE. JOHN BAVIER, Newark, N. J. Filed Mar. 14, 1882. (No model.)



Claim.—1. As an improved article of manufacture, a crucible composed of the body *b*, spout *a*, channel *c*, and semi-cover or top wall, *d*, extending horizontally part way across the top of the crucible, all the parts being homogeneous and integrant, and operating as herein described, for the purposes set forth.

2. In a crucible, the combination of the spout *a*, body *b*, channel *c*, semi-cover *d*, and open spout or spouts *e*, arranged and operating substantially as described.

259,283. NAME-FASTENER. WILLIAM W. BELL, Valley Springs, Dak. Filed Jan. 17, 1882. (Model.)



Claim.—1. The side plates, A' A^2, each having formed therein a longitudinal groove, *i*, and notches i^2, in combination with a bar, C, having a hook, c^2, at one end, and pins *m*, extending from both its sides near the other end, and fitted between the plates, whereby the parts are adapted to operate as set forth.

2. The casing A' A^2, having slots *i* and notches i^2, and provided with ribs G' G^2, in combination with bar C, provided with hook c^2, and pins *m*, connected to plates A' A^2, as set forth, for the purposes specified.

3. The combination of casing A' A^2, having slots *i* and notches i^2, bar B, provided with hook *c'*, and catch g' g^2, bar C, provided with hook c^2, and pins *m*, spring D, and spring-dog h' h^2, the several parts being arranged to operate as set forth.

259,284. TICKET-CLASP. LEONARD J. BLAUBS, Chicago, Ill. Filed Apr. 22, 1882. (No model.)

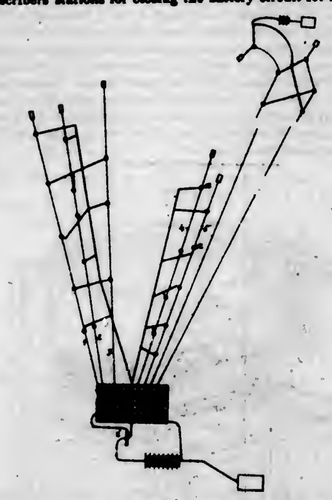


Claim.—1. An improved ticket-clasp consisting of the metal plate B, the spring or binding-piece *a*, cut from the outer edge of said plate, and the tongue C, cut from the central portion of the plate, all substantially as set forth.

2. An improved ticket-clasp composed of plate B, spring or binding-piece *a*, and tongue C, cut from the plate, and the upper projection, *s*, all substantially as set forth.

259,285. TELEPHONE SIGNALING-CIRCUIT. GEO. H. BLISS, Pittsfield, Mass. Filed Oct. 20, 1881. (No model.)

Brief.—A battery at central station has one pole connected with the switching and signaling apparatus of each subscriber's line and the other pole connected to a line from which branches extend to every subscriber's station. Means are provided at the subscribers' stations for closing the battery-circuit for signaling.



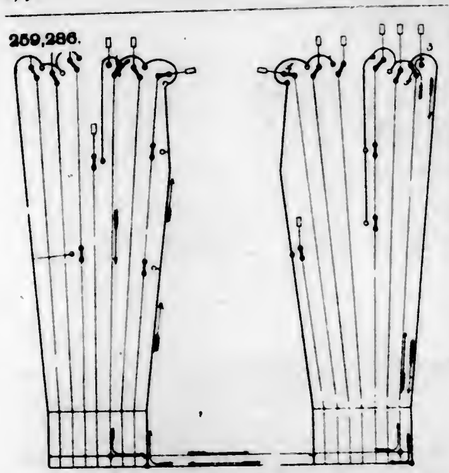
Claim.—1. In an exchange system, a series of subscribers' circuits all entering a common central office, and each passing through a signaling-instrument, and a battery having one pole normally connected through the said signaling-instruments with the said subscribers' wires, combined with a battery-wire leading in branches from the other pole of the said battery into all the stations on the said subscribers' circuits, and a device at each station for connecting the said subscriber's wire with the said branch entering the station, substantially as and for the purpose described.

2. In an exchange system, a group of subscribers' stations remote from others connected with the same central office, upon circuits entering the said office and passing through indicating-instruments to the ground, in combination with a battery located in the said group, and having one pole grounded and the other extended by normally-open branches into all the said stations, and means to connect the said branches at any station with the subscriber's wire, substantially as and for the purpose described.

259,286. TELEPHONE-CIRCUIT. GEO. H. BLISS, Pittsfield, Mass. Filed Nov. 12, 1881. (No model.)

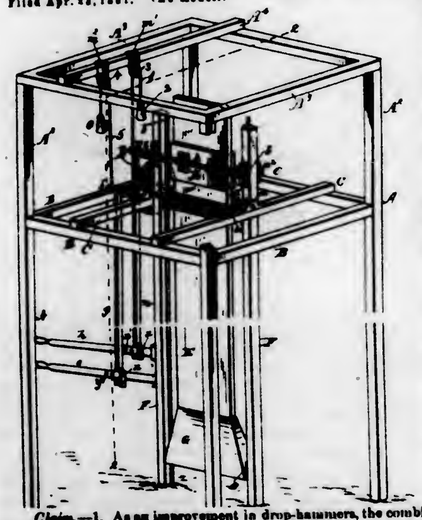
Brief.—In communication between subscribers connected with different central offices complete metallic circuits arranged to neutralize the effects of currents induced from neighboring lines. The return-wires are taken to all the subscribers' stations, and means are provided for connecting either with the return-wire or with ground.

259,286.



Claim.—In a telephone-exchange system, two central offices connected by a metallic circuit arranged to annul inductive disturbances, each office having connected with it subscribers' circuits and one or more lines extended into a large number of subscribers' stations, combined with means to connect the said line with the subscriber's circuit at the subscriber's station, and means to connect the said line and subscriber's circuit with the two portions of the metallic circuit connecting the central offices, substantially as and for the purpose described.

259,287. DROP-HAMMER. ABIJAH R. BURNETT, Troy, Ohio. Filed Apr. 22, 1881. (No model.)



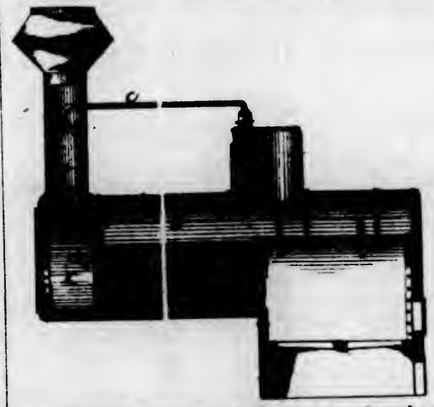
Claim.—1. As an improvement in drop-hammers, the combination, with the strap E and hammer or die G, and suitable mechanism for imparting vertical movement thereto, of the rigid clamp-plate J, clamp-plate K, having eccentric-axle *k c'*, rod *n*, and lever *h*, crank-arm *m*, strap *m'*, cord or chain 1, weight 2, and pulley 3, substantially as and for the purpose described.

2. The frame-work A B, cross-bars C, standards F A', cross-bars A', transverse bar A', rotatable roller H, roller I, having eccentric-axle *d e*, crank-arm *f*, rod *g*, and lever *o*, the journal-boxes *s o*, strap *m'*, pulley 4, cord or chain 5, and weight 6, as and for the purpose described.

3. In a drop-hammer or press, the combination, with the strap and die or hammer, of the roller H, secured fixedly in bearings, the roller I, mounted upon an eccentric-shaft, the rigidly-fixed clamp-plate J, the clamp-plate K, secured upon eccentric-shaft *k c'*, weighted cords or chains, pulleys, and suitable rolls or levers for actuating said eccentric-shafts, and suitable mechanism for rotating the roller H, substantially as and for the purpose set forth.

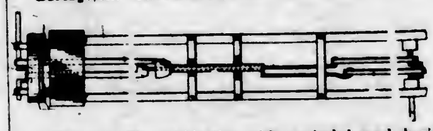
4. The combination, with the strap E, rollers H I, clamps J K, eccentric-axles *d e* and *k c'*, and crank-arms *f m*, of the rods *g n*, having forked and perforated ends, and the levers *h o*, having perforations, as and for the purpose described.

259,288. STEAM-BOILER. JOHN F. CARNEY and DONALD F. TOUCEY, Minneapolis, Minn. Filed Mar. 13, 1882. (No model.)



Claim.—The steam-pipe C, leading from the safety-valve to and through an opening in the stack, and being bent downward therein, the end or nozzle of said pipe flaring outward, and having an inner beveled-edge surface, in combination with a semi-spherical plug having a flat top with beveled edge, said edge being equidistant from the beveled edge of the nozzle, the plug being suspended in the mouth of the nozzle by braces riveted through the nozzle and projecting inward and downward to the center of the flat surface of the plug, at which point they meet and are united and secured to said plug, all arranged in the manner and for the purpose specified.

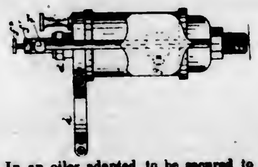
259,289. WIND-WHEEL MACHINERY. ALONZO S. CARMAN, Marengo, Ill. Filed Mar. 25, 1882. (No model.)



Claim.—1. The combination, with a swiveled crank having pitmen extending downward from the same, of the ball-and-socket joints operating on the same vertical center as said cranks, and pivoting said pitmen to the connecting-rods below, as hereinbefore fully described.

2. The combination of the two connecting-rods, the one reciprocating within the tubular upper portion of the other, and so arranged as to be pivoted to and operate the lower pitmen, which drive the transverse shaft, with the ball-and-socket joints, upper pitmen, the double cranks on the wind-wheel shaft, and the oscillating cap, substantially as and for the purpose set forth.

259,290. OILER. DANA L. COLUMBIA, Chicago, Ill. Filed Oct. 26, 1881. (No model.)

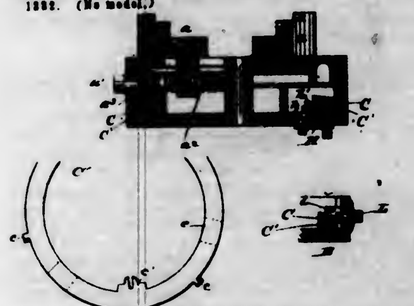


Claim.—1. In an oiler adapted to be secured to and move with the joint to be lubricated, the combination, with the valve and its stem extending through the top of the oiler, of a weighted fulcrumed lever to which said stem is jointed and by which it is raised and lowered, said lever being located outside the oiler, and being itself automatically thrown or actuated by the movement of the part to which the oiler is secured, substantially as specified.

2. The combination, with the valve-stem of an oiler, of the pivoted elbow or bent lever F, the stem being jointed to the horizontal portion of the lever, substantially as specified.

3. The oiler composed of the metal base, the cylindrical body, the metal top, the tube for uniting the top and base, the valve and its stem, and the lever for operating the valve, substantially as specified.

259,291. LATHE-CHUCK. THOMAS H. COCHRILL, Chicago, Ill., assignor of one-half to E. H. Gross, same place. Filed Feb. 27, 1882. (No model.)

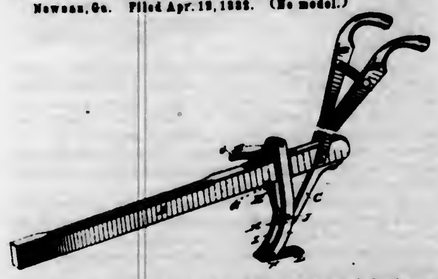


Claim.—1. The combination of the ring C', having the series of pins e upon its outer periphery, and the series of cam-slots *b* in part B as co-operating devices in the operation of forcing the circular rack C into and out of gear with pinions *a'*, substantially as described.

2. The lever H, having pin *r'* and operating upon shaft *v*, in combination with plate or part B, having holes *r r*, substantially as described.

3. The combination of the beaded pin L and its spring-disk in position over its slot in the flange of part B, and the tooth *l*, adapted to latch circular rack C in any position required or to unlatch the same at will, substantially as described.

259,292. PLOW. ANDREW S. COX and RICHARD A. JOHNSON, Newnan, Ga. Filed Apr. 19, 1882. (No model.)



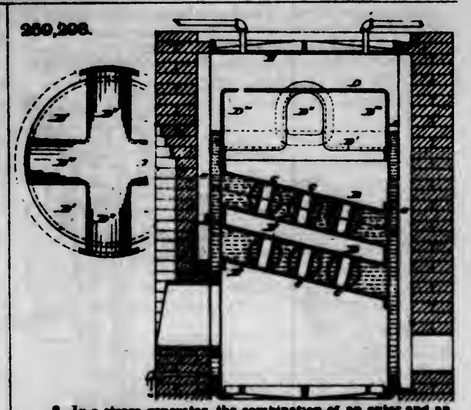
Claim.—1. The combination of the plow-beam A, having segmental block I', provided with recesses Q and V-shaped bracket C, the standard H, consisting of bars I, pivoted to the sides of bracket C, and the cam-lever M, pivoted between the upper ends of the bars I, and having handle O and tooth N, engaging the recessed block I', as set forth.

2. The combination, with the plow-beam, of the bracket C, having its rear end secured permanently to said beam and its forward screw-threaded end adjusted in a recess in said beam, and provided with a nut, G, and the standard H, pivoted to said bracket, and provided at its upper end with a toothed cam-lever engaging a segmental notched block on the upper side of the beam, as and for the purpose set forth.

259,293. STEAM-GENERATOR. WILLIAM P. COX, Philadelphia, Pa. Filed Jan. 7, 1882. (No model.)

Claim.—1. A horizontal flue extending across the crown-sheet and communicating with the space between the inner and outer shell, in combination with said shells and crown-sheet, substantially as set forth.

259,293.



2. In a steam-generator, the combination of an outer and an inner shell, the transverse water-tubes B, and a crown-sheet having a horizontal flue extending across the same and communicating with the space between the inner and outer shell, substantially as set forth.

3. In a steam-generator, the combination of an outer and an inner shell with transverse water-tubes B, having rings B' and flues C, and a crown-sheet having a horizontal flue extending across the same and communicating with the space between the inner and outer shell, substantially as set forth.

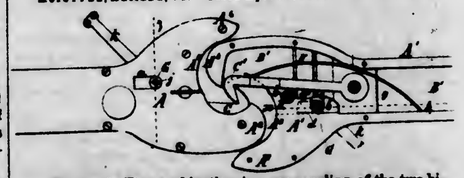
4. The horizontal flue D', having hollow lateral wings, in combination with the crown-sheet, the two shells and exterior wall having a space for the passage of air between it and the outer shell.

259,294. LOCOMOTIVE-FURNACE. ANDREW J. CROMWELL, Baltimore, Md. Filed Mar. 7, 1882. (No model.)



Claim.—In combination with the furnace having the rearwardly and upwardly inclined plates *c c'*, with draft-spaces at their horizontal edges, the air-hole *d'*, located opposite the draft-space between the plates, and adapted to supply air to the combustible gases on their escape between the plates in order to consume them in the furnace, as set forth.

259,295. CAR-COUPLING. NICHOLAS L. DAVIS and JOHN H. MCINTYRE, Rutland, Vt. Filed Apr. 17, 1882. (No model.)



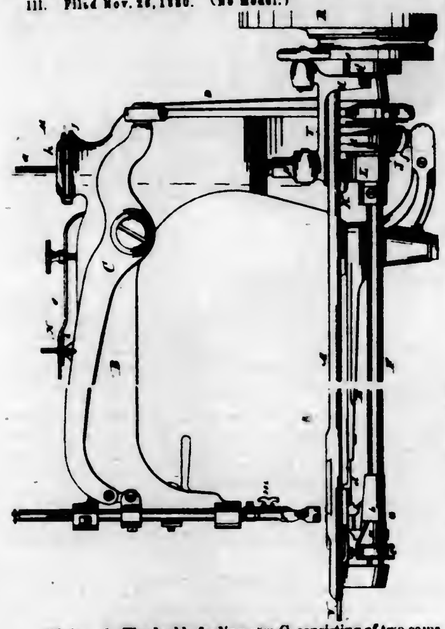
Claim.—1. The combination, in a car-coupling, of the two bifurcated draw-heads A A', formed respectively as follows: that, A, having the chambered prong A^2, the solid prong A^4, and the bumper-surface A^3, and the other, A', having the chambered prong A^4, the solid prong A^2, and the bumper-surface A^3, the long pivoted and laterally-vibrating spring coupling-hooks C C', applied within the chambers B B', and the vertical rods G G, having tumblers G' G', substantially as described.

2. The vertically-sliding and horizontally-vibrating tumbler-rod G G', in combination with the vibrating hook C, and the draw-head provided with the oblong slot *a*, space *c*, step *b*, and stops I I', substantially as and for the purpose described.

3. The tumbler-rods G G, provided with tumblers G' G' and under and upper extensions, *j j j' j'*, in combination with the verti-

cally-sliding and laterally-vibrating spring-hooks C C' and with the draw-heads A A', substantially as and for the purpose described.

259,296. SEWING-MACHINE. CHAS. A. DEARBORN, Chicago, Ill. Filed Nov. 26, 1880. (No model.)



Claim.—1. The double feeding-cam G, consisting of two cams, *a b*, adjustable together on the driving-shaft F for the purpose of giving the feed its forward and vertical movements, and at the same time automatically regulating the extent of its vertical movement as the length of the stitch is changed, substantially as specified.

2. The combination, with the vibrating needle-lever located on the standard above the bed-plate, of the forked lever I, pivoted at its upper end, the main shaft F, located below the bed-plate A, the eccentric J upon the main shaft F, the shuttle-lever H, and connecting devices between the main shaft and the vibrating needle-lever, all constructed and operated substantially as and for the purposes specified.

3. The combination, with a vibrating arm located above the bed-plate to move the needle-bar, a main driving-shaft located horizontally beneath the bed-plate, and connecting devices for operating the arm from the shaft, of a forked lever, I, provided with an arm or extension, *f*, and pivoted at its upper end above the main shaft, and a shuttle-lever provided at its rear end with a fork to receive the said arm or extension of the forked lever, substantially as and for the purposes specified.

4. A vertical spring-shaft, K, having a crank at its lower end and located at the rear of the machine, in combination with a cam located on the main shaft and engaging the crank of the vertical shaft, and a take-up arm located at the upper end of the shaft, substantially as and for the purposes specified.

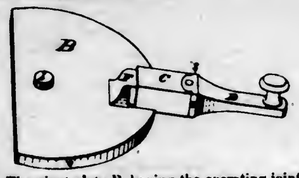
5. The tension-plate O and the disk N, in combination with a knife-like edge, k, transverse to the plate O, on which edge the disk rocks, substantially as and for the purpose specified.

6. The half-round presser-foot shank P, open upon one side, so as to fit upon a round foot-bar, and provided with an open slot, *l*, whereby the presser-foot can be adjusted laterally, and can be removed without removing the holding-screw *m*, substantially as and for the purpose specified.

7. The bobbin-winder T, provided with an arm, U, in combination with the collar Q, rigidly secured to the main shaft F, the dog W, pivoted upon the collar Q, and the fly-wheel R, placed loosely on the main shaft F, substantially as and for the purpose specified.

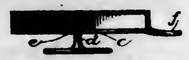
8. The spool-stand A, in combination with the standard *j* of the arm B, said spool-stand being located above the standard, whereby a space is provided between the two for the take-up arm, substantially as described.

259,297. TRANSOM-ADJUSTER. GILBERT J. DICKSON, Albany, N.Y. Filed Dec. 12, 1881. (Model.)



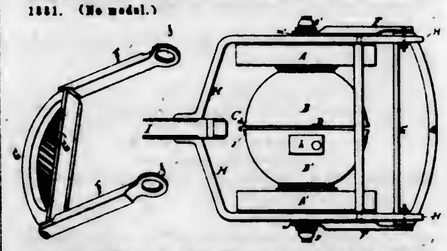
Claim.—The pivot-plate B, having the operating jointed arm F, provided with the handle-section D, and the locking-sleeve or slide C, having the toothed projection *t*, and spring k, in combination with the geared pivot-plate A, for the purpose and substantially as specified.

259,298. BUTTON. CHARLES W. EENAN, Chicago, Ill., assignor to Charles J. Cavenaugh, Medford, Mass. Filed Jan. 27, 1882. (No model.)



Claim.—The combination of the button A, having the slot *e* on its under side and the eye *f* near one end, and the button-holder B, having the shank *d*, with the head *c*, so arranged that the button may be fastened to one side of the garment and the button-holder to the other, and that the button, being fastened by means of the eye *f*, may be slightly raised or lifted off the cloth when it is desired to button or unbutton the garment, substantially as described, and for the purposes set forth.

259,299. COTTON-SEED PLANTER AND FERTILIZER-DISTRIBUTER. BENJAMIN S. EVANS, Acron, Ala. Filed Dec. 7, 1881. (No model.)



Claim.—1. The seed and fertilizer distributing machine herein described, consisting of the axle D, provided with radial stirring-rods E, and shoulders *e e'* on the inside of the hopper-sections, the wheels A A', provided with the hollow hemispherical sections B B' on their inner faces or sides and separated by a continuous space, *c*, and the framing-sections F and H, washers *b*, and screw-clamping caps *g g'*, all constructed and combined substantially as and for the purpose described.

2. The combination of the stationary axle D, radial stirring-rods E, revolving spaced hopper-sections B B', wheels A A', framing-sections F and H, and clamping cap-plugs *g g'*, the whole constructed substantially in the manner and for the purpose herein described.

3. The harrow having a swinging movement on the axle D, and also a swinging movement on the section F of the framing, in combination with the framing-section H, furrow-opener, wheels A A', and hopper-sections B B', substantially in the manner and for the purpose described.

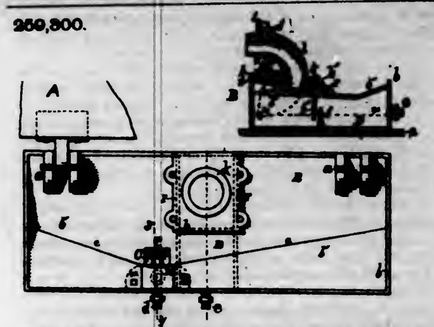
4. The furrow-opener stock *f*, made nearly in form of a skeleton triangle, in combination with the blade *j*, tongue I, framing-sections H F, wheels A A', spaced hopper-sections B B', axle D, stirrers E E, and harrow G, having covering or smoothing board G', substantially as described.

5. The cotton-seed planter provided with the two independently-hinged sections of framing H F and with the harrow G, having smoothing-board G', said harrow with smoothing-board being pivoted by horizontal pins to the section F of the framing, all substantially as and for the purpose described.

259,300. CABINET BATH-TUB. FRANKLIN H. PICKETT, Chicago, Ill. Filed Feb. 16, 1882. (No model.)

Claim.—1. In combination with a hinged and vertically-rising bath-tub provided with curved discharge-pipe *l*, a drip-pan, B, provided with trap D, substantially as specified.

259,300.



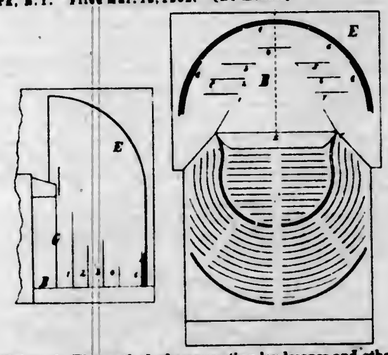
2. The combination, with a hinged bath-tub, A, provided with curved discharge-pipe *l*, of drip-pan B, provided with trap D, and the packings *j* and *k*, substantially as specified.

3. The drip-pan B, provided with separate traps D and C, and discharge-pipes *d* and *e*, substantially as specified.

4. In combination with a drip-pan, B, provided with traps C and D, the removable piece *n*, and valve *o*, substantially as specified.

5. In a cabinet bath-tub, the combination of the hinged bath-tub A and weight *w*, the suspending-cord *v*, and resisting-cord *v'*, arranged to operate substantially as specified.

259,301. THEATRICAL SCENERY. GEORGE F. FULLER, New York, N.Y. Filed Mar. 18, 1882. (No model.)



Claim.—1. The method of representing landscapes and other outdoor scenes upon the stage, herein described, which consists in dispensing with the usual suspended sky-borders, and in the employment of set scenes, or scenes having their edges trimmed to the contour of the objects painted upon them, in connection with a representation of the sky pictured upon the interior of a half-section of a rotunda surmounted by a half-section of a dome, forming a concave surface extending around the back and suitable portions of the sides of the stage, and arching over the stage from the rear and sides to a point over, or nearly over, the proscenium-opening.

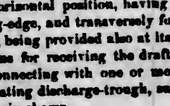
2. The concave sky-frame E, forming the interior of a half-section of a rotunda surmounted by a half-section of a dome extending around the back and suitable portions of the sides of the stage B, and arching over the stage, as and for the purpose set forth.

259,302. THILL-COUPLING. ANOS GIPE, Reuss, Ind. Filed Jan. 12, 1882. (No model.)



Claim.—The combination, with slotted bearing D, of the cylinder F, having wedge-shaped T-slot vertically and entirely through it, and shank G, having vertical wedge-shaped block H, substantially as and for the purpose specified.

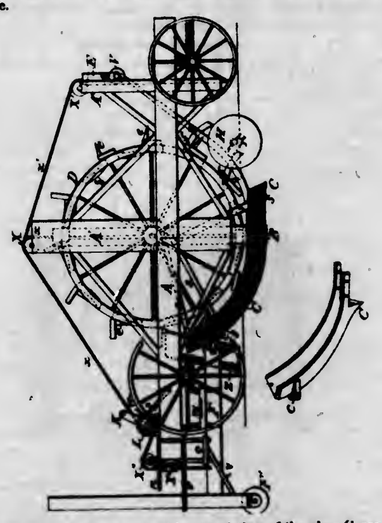
259,303. BUTTON. FRANK H. GOLDTHWAIT, Springfield, Mass. Filed Apr. 3, 1882. (No model.)



Claim.—The within-described improved button, consisting of the vegetable-ivory face *a*, having a projecting rim on its rear side provided with an undercut channel, *x*, and of the convex metallic back *c*, having a border to fit said channel *x*, and provided with perforations or other suitable means of attachment, substantially as set forth.

259,304. DITCHING-MACHINE. JAMES A. GRANT, THOMAS M. MCCLELLAND, and JAMES T. DRUMMOND, Mount Pleasant, Iowa. Filed Sept. 23, 1880. (No model.)

Brief.—Pivoted V-scrapers and check-braces secured on the periphery of the vertically-adjustable wheel carry the dirt out by the V-shaped plow up the curved trough. Hinged to the rear of the plow or trough is a leveler having an adjustable spirit-level, whereby to regulate the grade of the ditch. The scraper-wheel, plow, and leveler are adjustable from a windlass at the rear of the machine.



Claim.—1. A ditching-machine consisting of the plow C, segmental trough C', elevating-wheel D, provided with scrapers *e* and drop-braces *f*, pivoted to its periphery, chute Z, adjustable frame or stirrup B, adjustable draft-traveler E, connecting-bar I, pulleys X, X', X'', and X''', ropes *x*, *x'*, and *x''*, windlass L, and leveler F, in combination with a wagon having a frame, A, with upright frames A' and A'', attached thereto, all substantially as and for the purposes herein represented.

2. A plow, C, for cutting a ditch, made longitudinally in a curved form with its under part diverging near its forward or cutting edge to a horizontal position, having a dilated and slightly-drooping cutting-edge, and transversely formed in a centrally-depressed V shape, being provided also at its upper front edges with curved extensions for receiving the draft-connections and at its rear part for connecting with one or more additional segments forming an elevating discharge-trough, substantially for the purposes and as herein shown.

3. In combination with the plow C, forming part of an elevating discharge-trough, one or more additional detachable segments, C', as and for the purpose herein described.

4. In combination with the plow C and elevating discharge-trough C', the elevating-wheel D, having pivoted to its periphery, as herein represented, the scrapers *e* and check-braces *f*, substantially as shown, and for the purposes herein represented.

5. In combination with the wheel D, plow C, and trough C', the scrapers *e*, having an outward-projecting tapering point and forward-projecting stay or guide arms, one on each side thereof, said scrapers and arms being loosely pivoted to the periphery of the wheel D, substantially as shown, and for the purposes herein specified.

6. In combination with the wheel D, the check-braces *f*, loosely pivoted to the periphery of said wheel, substantially as and for the purpose shown.

7. In combination with the wheel D, plow C, trough C', upright frame A', rope *x*, pulley X, and windlass L, the adjustable stirrup or sliding frame B, constructed with its lower end extending under the plow, so as to serve not only as a bearing to the wheel D and the means of adjusting the height of said wheel, the plow C, and trough C', but also, by its fastenings and braces, as the adjustable center to which all of said parts are connected, supported, and held in their respective positions, substantially as herein shown.

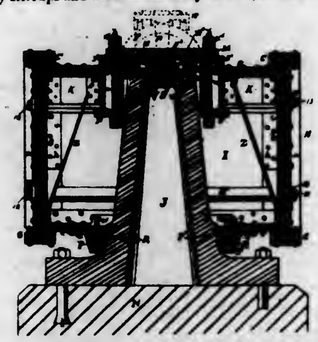
8. The adjustable draft-traveler E, in combination with the upright frame A'', bar I, plow C, pulleys X' and X, rope *x'*, and windlass L, all substantially as and for the purpose herein specified.

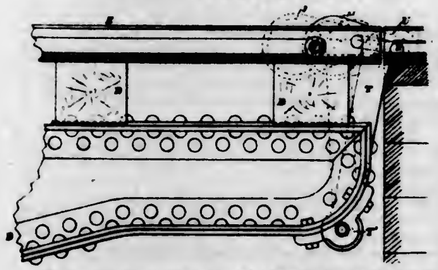
9. The leveler F, as herein provided with a track-wheel, F', for traveling in a ditch as it is being formed, and with the spirit-level *w*, in combination with a graduating-scale for indicating the degree of angle or grade of the bottom of said ditch, said leveler being so constructed as to be readily attached to the rear of a ditching-plow when needed, substantially as herein shown and described.

10. The windlass L, provided with a loose section which is made to clutch fast at will by means of the shifting-lever *u*, in combination with the ropes *x*, *x'*, and *x''*, pulleys X, X', X'', and X''', and the frames A, A', and A'', all arranged as herein shown, and for the purposes substantially as specified.

259,305. TURN-TABLE. CLEMENTS A. GREENLEAF, Indianapolis, Ind. Filed Jan. 17, 1881. (No model.)

Brief.—A turn-table with its load wholly supported on the center pivot by means of a central bracing and supporting box having bearing upon the top of said pivot, and also by means of friction-balls around the base of said pivot. When receiving or discharging its load the end of the turn-table is supported and locked by stirrups and bolts actuated by lever-operated eccentrics.





Claim.—1. The combination of a turn-table, provided with mechanism for enabling it to rotate on a central pedestal, and provided with brace 20, having groove P', rollers R, and said pedestal provided with surface *j*, substantially as and for the purposes specified.

2. The combination of a turn-table provided with mechanism for enabling it to rotate on a central pedestal and provided with brace 20, having groove P' and rollers R, and locking devices, and devices for supporting the turn-table while the load is passing off or on, substantially as and for the purposes specified.

3. The combination of a non-deflectable turn-table, provided with box H, and plate M, and ring *f'*, rollers *l*, pedestal J, and ring S, and rollers R, substantially as and for the purposes specified.

4. The combination of a non-deflectable turn-table and box H, and plate M, and ring *f'*, rollers *l*, pedestal J, and ring S, and rollers R, and devices for locking the turn-table and for supporting the turn-table while the load is passing on or off the turn-table, substantially as and for the purposes specified.

5. The device for supporting the turn-table while the load is passing on or off the latter, and consisting of the oscillating arms T, provided with projections U, mechanism for advancing and retracting said arms, and a pit provided with recesses V', substantially as and for the purposes specified.

6. The device for supporting the ends of the turn-table, consisting of the oscillating arms T, provided with projections U, pivoted at T' to the trusses B, eccentric yokes 21, eccentrics 3, shaft 4, and levers 7, substantially as and for the purposes specified.

7. The device for locking the turn-table, consisting of the oscillating arms T and locking-studs 10, substantially as and for the purposes specified.

8. In combination, the oscillating arms having projections U and locking-studs 10, mechanism for advancing and retracting said arms, and the pit provided with recesses V', substantially as and for the purposes specified.

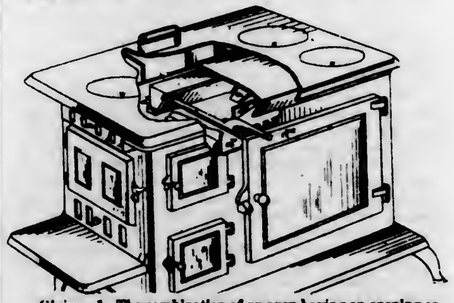
9. In combination, the oscillating arms pivoted at T' to the turn-table, and having projections U and locking-studs 10, and the eccentric yokes 21, eccentrics 3, shaft 4, and levers 7, substantially as and for the purposes specified.

10. In combination, a turn-table turning on a central pedestal, brace 20, anti-friction rollers R, and locking device consisting of the oscillating arms having projections U, and mechanism for advancing and retracting said arms, substantially as and for the purposes specified.

11. In combination, a turn-table turning on a central pedestal, brace 20, anti-friction rollers R, and device for supporting the ends of the turn-table when locked, and consisting of the oscillating arms having projections U, and mechanism for advancing and retracting said arms, substantially as and for the purposes specified.

12. In combination, a turn-table turning on a central pedestal, brace 20, anti-friction rollers R, oscillating arms T, provided with projections U, locking-studs 10, and mechanism for advancing and retracting said arms, substantially as and for the purposes specified.

259,306. STOVE. IVORY W. HARLOW, Plymouth, Mass., assignor to the Plymouth Foundry Company, same place. Filed Feb. 25, 1882. (No model.)



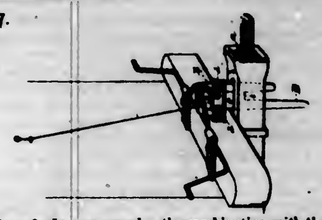
Claim.—1. The combination of an oven having an opening or flue connecting it with an escape-passage, a valve or damper controlling the same, the oven-door, and a connecting device, whereby the valve or damper is controlled as to its position by the oven-door, all substantially as and for the purposes described.

2. The combination of an oven having an opening or flue connecting it with an escape-passage, a valve or damper controlling the same, and a device for actuating it, adapted to be operated either by the oven-door or independently thereof, all as set forth.

3. The combination of an oven having an opening or flue connecting it with an escape-passage, a valve or damper controlling the same, and a device for actuating it, extended without the stove, in close proximity to the oven-door, all substantially as specified.

259,307. CAR-COUPLING. LYMAN HATFIELD, Boston, Mass. Filed Apr. 5, 1882. (No model.)

259,307.

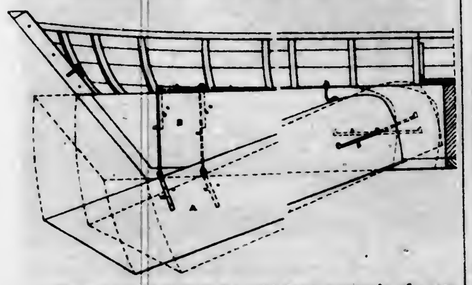


Claim.—1. In a car-coupler, the combination, with the slotted draw-head, of a pin, B, of inverted-U shape, a carrier secured to said pin, and provided with a shoulder, *c*, and shank D, and a crank secured to the upper end of the pin and adapted to hold the pin and carrier in position for coupling, substantially as set forth.

2. In a car-coupler, the combination, with a draw-head provided with a vertical slot, of a ∩-shaped pin and a carrier adapted to extend through said slot, said carrier being keyed to the upper end of the pin and provided with a shoulder and shank, and a crank secured within an elongated opening at the upper end of the pin, substantially as set forth.

3. In a car-coupler, the combination, with a pin, B, formed ∩-shaped at its upper end and provided with key-seats *c c*, of the carrier C, also provided with key-seats and the keys *d d*, whereby the pin is secured to the carrier, substantially as described.

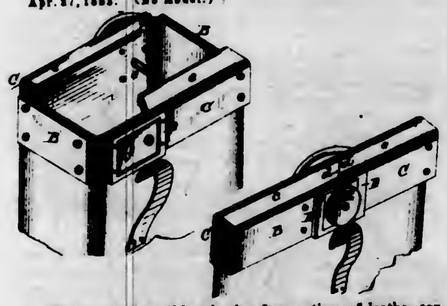
259,308. CENTER-BOARD FOR VESSELS. JOHN G. W. HAVENS, Metedeconk, N.J. Filed Feb. 21, 1882. (No model.)



Claim.—1. The combination, with boats or vessels, of a center-board so located as to extend aft beyond the dead-wood when said board is down or in use, substantially as described in Fig. 1.

2. The combination, with boats or vessels, of a center-board extending aft beyond the dead-wood, and mounted, as shown in Fig. 2, so as to be extended farther aft than the position shown in Fig. 1 by a sliding motion downward and aft by means of a slot in said board.

259,309. MAIL-BAG. WILLIAM HAWE, Knoxville, Tenn. Filed Apr. 27, 1882. (No model.)



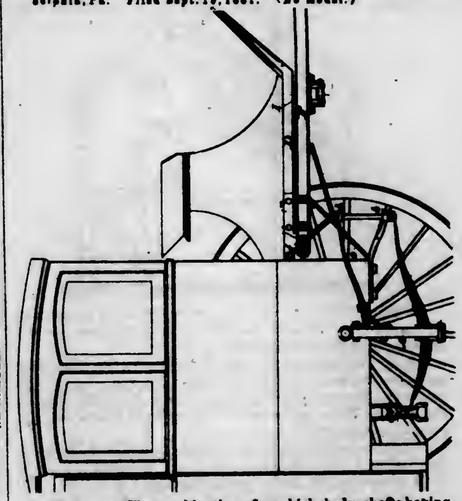
Claim.—1. A mail-bag having four sections of leather connected to its sides around its open end, substantially as shown, whereby the material from which the bag is composed between the ends of the sections will operate as hinges in closing the bag, substantially as and for the purpose set forth.

2. A mail-bag having leather sections secured around its sides at its open end, substantially as shown, the intervening spaces of the material from which the bag is composed serving as hinges in opening and closing the bag, two of the sections having overlapping flanges which cover the mouth of said bag when closed, substantially as and for the purpose specified.

3. In a mail-bag, the combination, with the leather sections B, of the leather sections C, formed with or having flanges *e* diagonally opposite and parallel with each other when opened, the sections B C being of such length and connected to the bag, as shown, that the material composing it or the leather of the bag between the ends of the sections will operate as hinges in opening and closing the bag, substantially as and for the purpose set forth.

4. In a mail-bag, the combination, with the bolt *e* and plate D, countersunk to form a guide and seat, *f*, of a suitable lock, E, removable therefrom, substantially as and for the purpose specified.

259,310. TWO-WHEELED VEHICLE. PETER HENRIC, Philadelphia, Pa. Filed Sept. 19, 1881. (No model.)



Claim.—1. The combination of a vehicle-body, shafts having pivotal connection therewith at their rear ends in advance of the axle, and the spring connecting the shafts and vehicle, substantially as and for the purpose hereinbefore set forth.

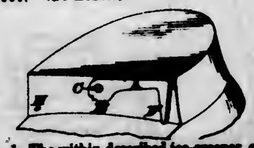
2. The combination of the axle, the springs, the body, the pivoted shafts, and the spring-connection between the vehicle and shafts in advance of the vehicle-body and shaft-pivots, substantially as and for the purpose hereinbefore set forth.

3. The combination of the vehicle-body, the seat-supporting framing, the shafts pivoted to said framing at their rear ends, and the spring connected with said framing and with the shafts in advance of their pivotal connection, substantially as and for the purpose hereinbefore set forth.

4. The combination of the shafts, the frame-beams, the lagged plates, the socketed plates, and the pivot-bolts, substantially as and for the purpose hereinbefore set forth.

5. The combination of the crambed axle, the vehicle-body, the supporting and bracing springs, the cross-bar provided with the upper and lower bearings or lugs at its end, the seat-supporting framing, the pivoted shafts, and the angle-braces pivoted to the shafts and connected with the seat-supporting framing, substantially as and for the purpose hereinbefore set forth.

259,311. ICE-CREEPER. ADOLPH HOROWITS, Cincinnati, Ohio, assignor of one-half to MARCUS SIMONTON, same place. Filed Oct. 25, 1881. (No model.)

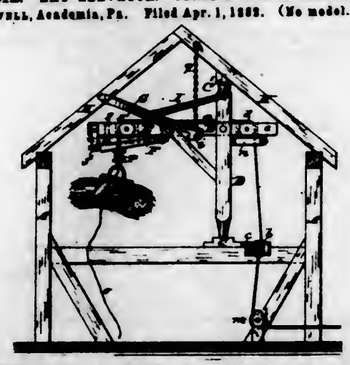


Claim.—1. The within-described ice-creeper, consisting of the lever A, provided at one end with a head, D, pivoted at B to admit a screw, C, wherewith the device is pivoted directly to the front face of a boot or shoe heel, in order that said creeper may be brought

into service when the lever is turned to one side of the heel, and may be rendered inoperative when said lever is turned to the opposite side of the heel, as set forth.

2. The within-described ice-creeper, consisting of the lever A, provided at one end with a head, D, and at the other end with a dog, F, said head being pierced at B to admit a screw, C, wherewith the device is pivoted directly to the front face of a boot or shoe heel, in order that said creeper may be brought into service when the lever is turned to one side of the heel, and may be rendered inoperative when said lever is turned to the opposite side of the heel, as set forth.

259,812. HAY-ELEVATOR. JAMES E. HOWELL and JOHN H. HOWELL, Academia, Pa. Filed Apr. 1, 1882. (No model.)



Claim.—1. In a hay-elevator, the combination of a crane with a hinged lock-bar and a pivoted latch or trap and suitable rope and pulleys, substantially as specified.

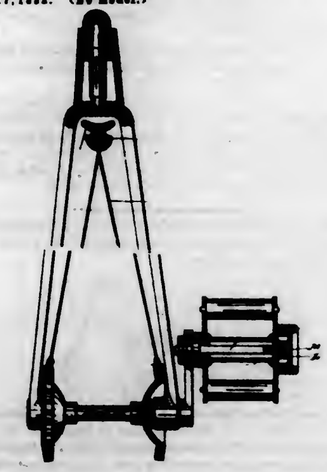
2. In a hay-elevator, the crane D, having the arm E arranged out of the perpendicular line of the crane-post, and provided with extension *e*, for obtaining sufficient leverage to revolve the crane by the obliquity of the rope *a* passing over pulleys *c d*, arranged substantially as set forth.

3. In combination with a crane, D, the hinged lock-bar G, having head *i* and notch *b* and slider *l*, and supported by a chain, *g*, all substantially as and for the purpose specified.

4. In an apparatus for elevating hay, &c., the combination of a crane, D, a hinged lock-bar, G, and pivoted latch F with pulleys *c d d'* and rope *a*, arranged substantially as shown and for the purpose set forth.

5. The combination of a crane, D, having arm E, pivoted latch F, and double-headed pin *g*, with the lock-bar G, brace I, pulleys *c d d' m*, friction-roller *n*, and rope *a*, all arranged substantially as shown and specified.

259,813. BICYCLE. THOMAS B. JEFFERY, Chicago, Ill. Filed Feb. 17, 1882. (No model.)



Claim.—1. In a metallic felly having a hollowed outer surface, a rubber tire having a corresponding hollowed outer surface of greater curvature, substantially as and for the purpose described.

2. The rubber tire, as described, having a hollowed face or tread, a single groove on each side, and a base adapted to fit a hollowed felly, substantially as and for the purpose described.

3. In a metallic suspension-wheel for vehicles, the improved spoke, consisting of a metallic wire, of circular section, enlarged at one end to form a head and having on the other screw-threads formed, the intervening portion being compressed or flattened, and adjusted in the wheel in such a way as to present the edge of the spoke to the direction in which the wheel will roll, substantially as and for the purpose described.

4. An annular rubber cushion attached to the pedal-case and surrounding the end of the pedal-pin, but removed from it, constructed and arranged substantially as and for the purpose described.

5. In combination with a series of balls, ball-case, foot-blocks, and pedal-spindle, the adjustable sleeve L and screw M, substantially as and for the purpose described.

6. The head containing the central pivot of a bicycle, formed with a vertical division extending through the portion holding the bushing, in combination with a clamping device that compresses the divided sides and the bushing, substantially as described.

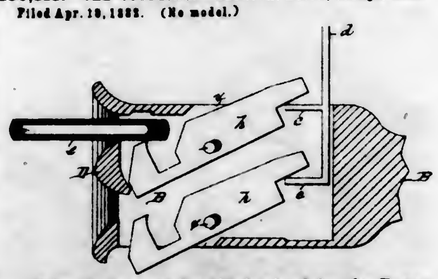
259,814. ADJUSTABLE HAMMOCK-SUPPORT. TIMOTHY L. JEFFERSON, Foxcroft, Me. Filed Mar. 23, 1882. (No model.)



Claim.—1. A hammock combined with a support or sling having knots or projections along its body portion, and provided at its ends with attaching mechanism, substantially as described, whereby the hammock can be adjusted to fixed positions.

2. An adjusting support or sling for hammocks, consisting of a rope knotted along its body portion, and provided at each end with an attaching-link whose opening is contracted at one end and expanded at the other, substantially as shown and described, for the purpose set forth.

259,815. CAR-COUPLING. HENRY M. KEITH, Orange, Mass. Filed Apr. 19, 1882. (No model.)

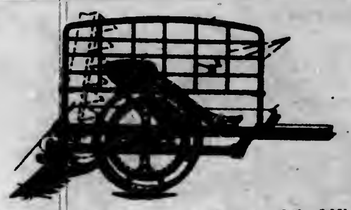


Claim.—In a car-coupling, the chambered draw-bar B, provided with the cross-bar D, the two link-hooks *h h*, pivoted in said draw-bar, one above the other, and adapted to operate independently of each other to engage with the link, and the vertically-operating link-lifter *d*, provided with the arms *c c*, combined and operating substantially as set forth.

259,816. LIFE-GUARD FOR REAPERS AND MOWERS. RICHARD A. KELLY, Manchester, Iowa. Filed Sept. 19, 1877.

Claim.—1. In combination with a harvester-frame carrying a driver's seat and having a folding cutter-bar attached thereto, a

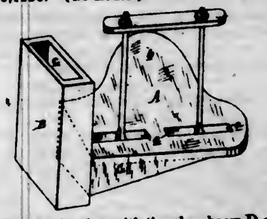
259,816.



life-guard located on the frame between the seat and the folding-bar, substantially as described.

2. In combination with a harvester-frame carrying a driver's seat and having a cutter-bar attached thereto, a guard, substantially as described, adapted to serve as a hand or foot rest for the driver.

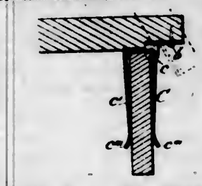
259,817. PLOW ATTACHMENT. PETER KETTERRING, Defiance, Ohio, assignor to the Defiance Machine Works, same place. Filed Mar. 28, 1882. (No model.)



Claim.—The combination, with the plow-beam D, of the plate A, provided with transverse slots *a*, adapted to receive a bolt on each side of the plow-beam, and having a rear extension, *b*, to fit under the beam, and the socket-plate B, formed integral with and at an angle to the plate B, and strengthened by a brace, G, substantially as and for the purpose specified.

259,818. HINGE FOR BOXES OR CRATES. HENRY KIRK, Minneapolis, Minn. Filed Apr. 28, 1882. (Model.)

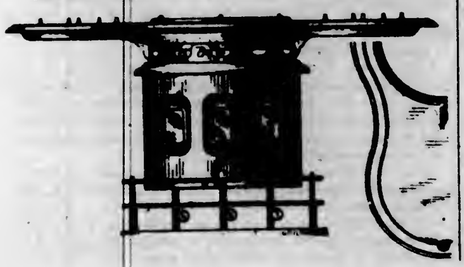
Brief.—One of the leaves of this hinge is made of spring metal, which permits the ready removal of the lid and hinge without removing screws or other fastening devices.



Claim.—1. A hinge formed by the combination of the wing B and the spring part C, having limbs *c' c'* and pivot-pin *c*, constructed to operate as described.

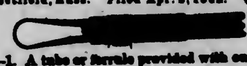
2. A hinge one wing of which is held in place upon the article to which it is attached by the force of the spring contained in the wing itself, substantially as described.

259,819. EXTENSION-TOP FOR OIL-STOVES. OSCAR H. KYLE, Florence, Mass., assignor to the Florence Machine Company, same place. Filed Mar. 30, 1882. (No model.)



Claim.—The detachable extension-top provided with the annular depending flange, in combination with the bracing-lugs projecting from the under side of the extension-top at opposite points and adjacent to said flange, substantially as described, whereby a lateral bearing is afforded against the inner and outer surfaces of a stove-turret, as set forth.

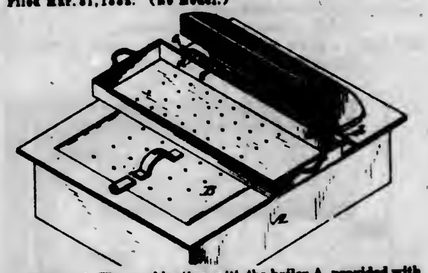
259,820. LOOP-FASTENING FOR WHIP-STOCKS. JAMES A. LAKIN, Westfield, Mass. Filed Apr. 3, 1882. (No model.)



Claim.—1. A tube or ferrule provided with one or more openings on opposite sides thereof, and adapted to co-operate with a whip to secure the loop thereto, substantially as described.

2. The combination of a tube or ferrule provided with one or more openings on opposite sides thereof, a loop, and a whip-stock to receive said ferrule, substantially as set forth.

259,821. SUGAR-BOILER. THOMAS W. LARNER, Oliver, Ga. Filed Mar. 31, 1882. (No model.)



Claim.—1. The combination, with the boiler A, provided with spout E, and having seats *a* upon its interior sides, of the removably-hinged cover B, provided with flanges *b*, resting in the said seats, to support the cover, substantially as and for the purpose set forth.

2. The boiler A, of the form substantially as shown, having the rectangular opening extending across its end, and surrounded by an upright collar, *f*, in combination with the removable cover B and hinged spout E, substantially as described.

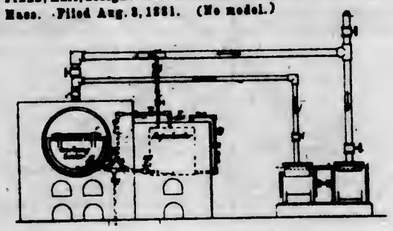
259,822. LUBRICATOR. JOHNSON LEONARD, Harrisburg, Pa. Filed Apr. 6, 1882. (No model.)



Claim.—1. In a lubricator, the reservoir or chamber to contain the lubricating material, combined with a flexible attaching-strip connected with the said reservoir, and a delivering orifice or passage, substantially as described.

2. The oil-reservoir and its flexible attaching-strip adapted to be bent into engagement with a piston-rod stuffing-box, or other mechanism to be lubricated, combined with a delivering-tube, extending from the interior of the said reservoir to the exterior thereof, provided with fibrous material to retard the flow of the lubricating material and distribute it upon the piston-rod or part to be lubricated, substantially as described.

259,823. UTILIZING EXHAUST-STEAM. HARVEY T. LITCHFIELD, Hull, assignor of one-half to David Ronchaw, Cohasset, Mass. Filed Aug. 3, 1881. (No model.)



Claim.—The combination, with an apparatus for utilizing the exhaust of engines, of the branch injecting-pipes, communicating with two or more boilers and with the water-tank, and adapted to force liquid from one to the other, or to either of them, in the manner shown and described.

259,324. CLOAK. IGNATZ LOJBA, New York, N. Y. Filed Jan. 3, 1882. (No model.)



Claim.—In combination with a cloak, A, a vest or bodice, B, formed of two separate and distinct parts, each attached to the inside of the cloak at two points only, one at *a*, near the collar in front, and the other at *b*, near the waist, toward the back, and unattached between these two points to allow free room for the passage of the arms back and outside of the vest parts, substantially as and for the purpose herein specified.

259,325. STEAM-BOILER FURNACE. JAMES MARONY, New York, N. Y. Filed Dec. 29, 1881. (No model.)

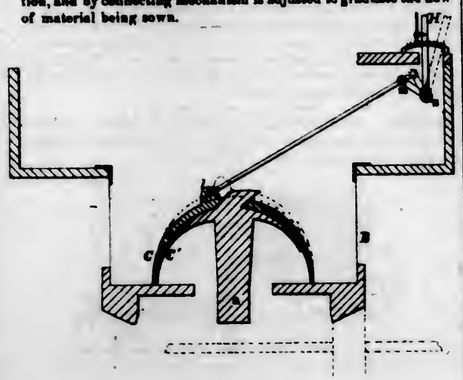


Claim.—1. The tubes P, extending into the ash-pit, and having perforations p^3, register P', live-steam pipe *p*, and valve p', combined as shown, and arranged to deliver air and steam in controllable quantities into the combustion-chamber in small jets, with the certainty that the surplus beyond what is drawn thus divided into the combustion-chamber will be delivered into the ash-pit under the grate, all substantially as herein specified.

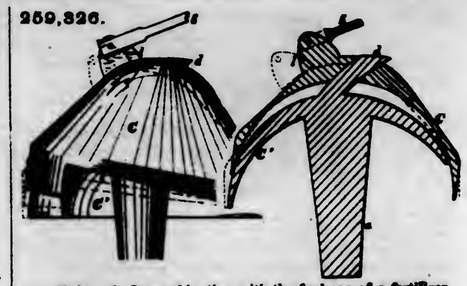
2. The combination of the masonry A^*, having the air-space *a*, and the openings A' into the ash-pit, the two fire-bridges C C', each with the shells M, connections for delivering hot air and steam therein, and the perforated pipes P p^3, with the steam-blowers and controlling means arranged for joint operation relatively to each other and to the grate B and boiler A as herein specified.

259,326. FERTILIZER-DISTRIBUTER. WALTER MARKS, Chaplaville, N. Y. Filed Mar. 16, 1881. (Model.)

Brief.—Within the hopper and over the discharge-hole is a stationary feed-shell having a projection on its top, over which is placed an adjustable shell having an orifice which fits said projection, and by connecting mechanism is adjusted to graduate the flow of material being sown.



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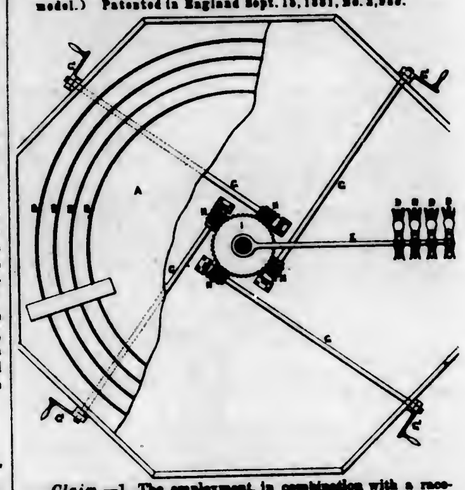


Claim.—1. In combination with the feed-cup of a fertilizer-distributer, the adjustable feed-shell C, substantially as and for the purposes set forth.

2. The combination, with the feed-cup B, of the stationary feed-shell C' and the adjustable feed-shell C, substantially as and for the purposes set forth.

3. The combination, with the adjustable feed-shell C, of the handle H and connection *g*, whereby the position of the feed-shell relatively to the bottom of the feed-cup may be controlled, substantially as and for the purposes set forth.

259,327. MECHANICAL GAME OR PARLOR RACE-COURSE. JOHN HAYFIELD, London, England. Filed Mar. 2, 1882. (No model.) Patented in England Sept. 15, 1881, No. 3,989.



Claim.—1. The employment, in combination with a race-course, of a series of figures representing equestrianism, pedestrianism, cycling, boating, hunting, or other sports, and adapted to be operated independently of each other by mechanical appliances controlled by a number of different persons or operators.

2. The combination, with the race-course A, provided with the concentric slots B, of the figure-carrying rods or arms E, attached to independent sleeves, the toothed wheels I upon the said sleeves, and the worms H and cranks or handles G', for operating the said toothed wheels independently of each other, all substantially as above set forth.

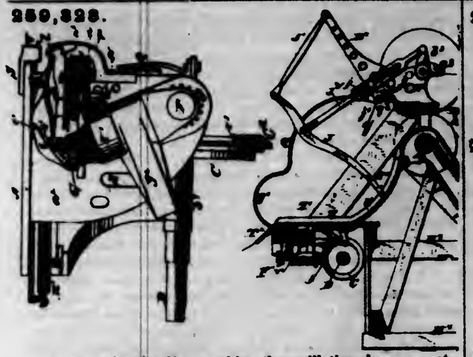
259,328. GRAIN-BINDER. LEWIS MILLER, Akron, Ohio. Filed June 30, 1879.

Claim.—1. In a harvester-binder, the combination of the needle J, its supporting-bars J' J^*, and their guides with the operating crank-shaft B', whereby the needle is caused to descend at the inner edge of the binding-table, sweep forward toward the outer edge, and rise and pass over the collecting grain in its return movement, substantially as described.

2. The sliding ejector W, its retracting-spring w^2, and swinging arm *w*, in combination with the arm *w'* upon the shaft B, substantially as described.

3. In a grain-binding machine, the combination of a shaft, F, with an oscillating sleeve containing a rotatory looping shaft or head driven by the shaft F, substantially as described.

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4. In a grain-binding machine, the oscillating sleeve or casting G and its contained shaft E, having the hooked jaw *d'*, in combination with the pivoted block or jaw I and mechanism for closing and opening said last-mentioned jaw by the rotation of the shaft E, substantially as described.

5. The combination of the oscillating casting or sleeve G, its contained shaft E, the hooked jaw *d'*, the pivoted jaw I, the stud d^2, the spring d^3, and the eccentric or cam surface I, substantially as described.

6. In a grain-binder, a rotating looper mounted in a box or casting which is pivoted to its own driving-shaft as its center of oscillation, and combined with mechanism for opening and closing its hand-gripping jaws while revolving to form the loop, substantially as described.

7. The needle J, constructed to pass down at the inner edge and sweep forward to the outer edge of the binding-table, in combination with a looping-head constructed to advance and seize the cord after the needle has swept it forward, rotate to form a loop therein, and recede to tighten the knot and slip it from the head, substantially as described.

8. In a grain-binder, the combination of a rotating clamping-wheel, M, and fixed concave N with the plate L, having the oblique arm *l*, and with the curved plate P, substantially as described.

9. In a grain-binding machine, the combination of the oscillating and rotating binding-head with the tubular case G, having the arm g^3, and with the oscillating lever D', substantially as described.

10. In a grain-binding machine, the combination of the large wheel C, the shaft F, the casting G, the rotating tying-head, and the lever D', substantially as described.

11. In a grain-binding machine, the combination of the rotating and oscillating tying-head, the concave N, the clamping-wheel M, the lever D', and the oscillating plate O, having a spring-dog, *o*, for the purpose of moving the clamping-wheel simultaneously with the oscillation of the binding-head, substantially as described.

12. In a grain-binding machine, a needle which passes down at or near the inner edge of the binding-table and sweeps outward to gather the grain and advance the band to the binding-head with an intermittent wheel-clamp which receives and holds the band thus carried outward, a rotating looping-head which advances to seize the cord and form the loop therein, and recedes to form and tighten the knot, and with a cutter to sever the band immediately after the loop is formed therein, substantially as described.

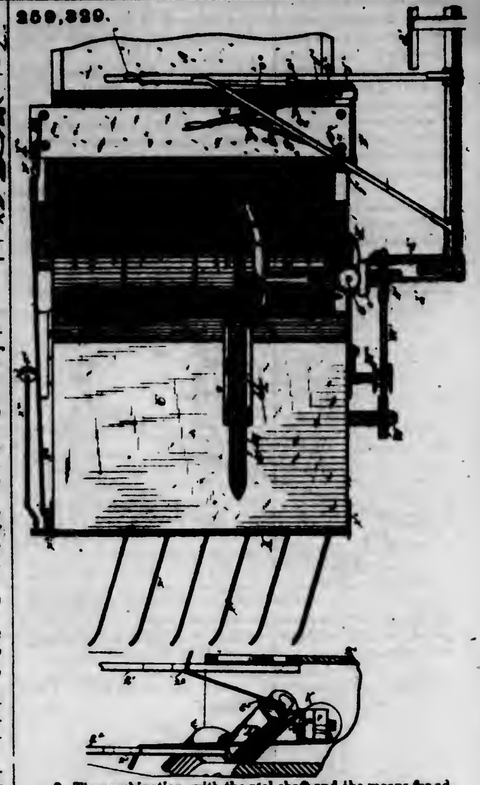
13. The combination of the arm *o'*, the slide-bar S, the wheel M, and the concave N, substantially as described.

14. The combination of the clamping-wheel M, concave N, horn N', and oscillating rotating binding-head with the oblique angular arm *l*, for guiding and presenting the cord properly to the jaws of the binding-head, substantially as described.

259,329. HARVESTER-BINDER. LEWIS MILLER, Akron, Ohio. Filed Oct. 17, 1880. (Model.)

Claim.—1. The bifurcated lever E, having the reel-shaft journaled in its outer ends and pivoted centrally to the vibratory fulcrum F, in combination with said vibratory fulcrum pivoted to brackets *f f*, the toothed sector f^* on the portion f^3 of said fulcrum, and the spring-bolt e^3, for engaging with said toothed sector, the secondary lever G, the rods g g, connecting said secondary lever to the said vibratory fulcrum, and the segment and locking-bolt for securing said secondary lever, the whole arranged substantially as described.

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2. The combination, with the reel-shaft and the means for adjusting it vertically and horizontally, of the sprocket-wheel rigidly secured to the end of said shaft, so as to rotate therewith, the two non-rotating arms A A, depending from the shaft on opposite sides of the sprocket-wheel, a second pair of arms, A' A', connected at one end to the first-mentioned pair by a pivotal bolt and at the other end to the casting I, the double sprocket-wheel A^*, mounted on said pivotal bolt between the arms, the sprocket-wheel A^4, connected to the bevel-wheel J and driven from the elevator-shaft, and the endless chains A^2 A^4, substantially as described, for the purpose specified.

3. In a harvester-binder, the looping and tying head, having its curved hook f^* normally projecting at substantially right angles to the movement of the horizontally-sliding bar, in combination with said horizontally-sliding bar, having the upper and lower notched arms, which move respectively above and below the looping and tying head and operate to carry the strands of cord over said head, in position for the latter to loop and tie them, substantially as described.

4. In a harvester-binder, the combination of the looping and tying head T, having the curved hook f^*, normally projecting at substantially right angles to the line of movement of the horizontally-sliding bar Z', in combination with the retracting-bar U, having the hooked end *u*, and with the said horizontally-moving bar Z', having the upper and lower notched arms, which move respectively above and below the tying-head and operate to carry both strands of the cord over the curved hook of the looping and tying head, substantially as described.

5. In a harvester-binder, the combination of the looping and tying head T, having the curved hook f^*, which normally projects at substantially right angles to the line of movement of the horizontally-sliding bar Z', in combination with the retracting-bar U, the said horizontally-moving bar Z' having the upper and lower notched arms, and with the clamp *v* V and the cutter v^2 v^3, substantially as described.

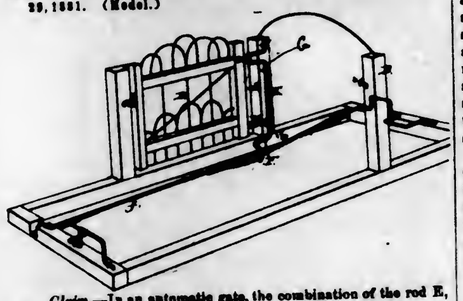
6. In a harvester-binder, the combination of the clamping-bar having the right-angled slot and carrying the cutter with the holder for said bar, the spring for retracting the bar, the crank-shaft hav-

ing the arm on its upper end and the crank on its lower end, and the cam on the side of the actuating-wheels, substantially as described.

7. The combination, with the binding-table, of the rock-shaft X, having the bundle-supporting fingers x', the arm x^2, carrying the counterbalance-weight x^3, the rod x^4, connected at one end to the crank on the rock-shaft and at the other to the hand-lever X^1, and the catch x^5, for automatically locking the handle when the bundle-supporting fingers are brought back to normal position, the whole arranged for operation substantially as described.

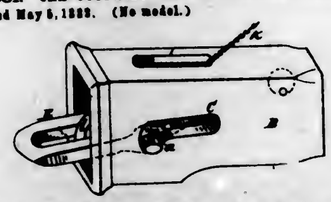
8. The combination, with the binding-table, of the rock-shaft X, journaled in bearings at the edge of said table, and having the bundle-supporting fingers x' inclined toward the rear of the machine and curved at their extreme ends in the same direction, substantially as described.

259,330. GATE. ORLANDO J. MILLER, Piqua, Ohio. Filed Sept. 29, 1881. (Model.)



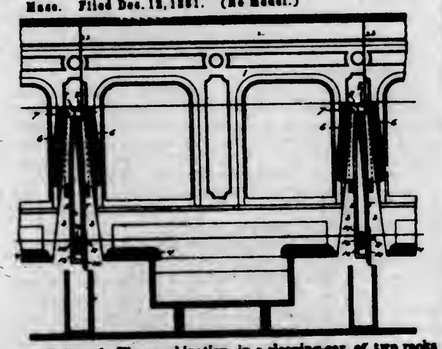
Claim.—In an automatic gate, the combination of the rod E, having the lower crank, F, and the double crank G near its upper end, forming the top hinge, with the gate, hinge-post, eyebolts, and draft-rods operated by treadles, substantially as specified.

259,331. CAR-COUPLING. MOSES MITCHELL, Boston, Mass. Filed May 5, 1882. (No model.)



Claim.—The improved car-coupler described, the same consisting of the draw-bar heads A B, links E, hooks G, pulley L, and chain K, when constructed and arranged to operate substantially as specified.

259,332. SLEEPING-CAR. WILLIAM H. PAIGE, Springfield, Mass. Filed Dec. 13, 1881. (No model.)



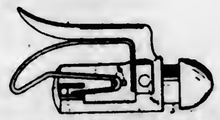
Claim.—1. The combination, in a sleeping-car, of two racks adapted to be moved vertically in fixed guideways between two adjacent seats, a tightening-roll located in bearings between two adjacent seats, and provided with pinions engaging with and adapted to move said racks in a vertical direction, flexible material or webbing for supporting one or more berth-beds, and adapted to be fastened at one end and connected at the other end with said racks, and a vertically-movable frame provided with a sustaining rail or bar at the upper portion to support the upper-berth webbing, whereby the webbing for the upper and the lower berths may both be supported and be tightened by the same vertical movement of the rack, substantially as described.

2. The combination, in a sleeping-car, of a frame adapted to be moved vertically in suitable guideways between two adjacent seats, two adjacent seat-backs with their upper portions detachably secured to the upper portion of said frame, and with the lower edges of said seat-backs adapted to have a bearing upon the upper portions of the end frames of the seats when said frame is raised to a position to support the upper berth, substantially as described.

3. The combination, in a sleeping-car, of a frame adapted to be moved vertically in suitable guideways between two adjacent seats, two adjacent seat-backs with their upper portions detachably secured to the upper portion of said frame, with a longitudinal space or opening between said seat-backs, and a series of bars adapted to support a flexible partition, and pivoted to the said movable frame, whereby when the said frame is in a position to support the upper berth the said bars and flexible partition may be secured to the upper portion of the car to serve as a partition between two adjacent upper berths, and when not in use may be swung down between said seat-backs, substantially as described.

4. In a sleeping-car, the combination, with a series of frames, each adapted to be moved vertically in suitable guideways between two adjacent seats, of a guard-rail made in two parts hinged together and adapted to be extended along the side of the upper berth and secured at the ends to two adjacent frames, substantially as described.

259,333. REIN-HOLDER. L. PRUTS, Canton, Ohio, assignor to Charles L. Paar, Henry W. Wertz, and John Lahm, same place. Filed Feb. 6, 1882. (No model.)



Claim.—1. In a rein-holder, the combination, with a body-piece provided with outwardly-projecting lugs, and an arm arranged at one side of the body-piece and parallel therewith, of a spring one end of which is bent to engage with said lugs, while the remaining portion of said spring is bent upwardly, then downwardly upon itself, and finally inwardly to rest upon the body-piece, and a plate provided with projecting lugs which are adapted to enter perforations of the body-piece, substantially as set forth.

2. In a rein-holder, the combination, with a body-piece provided with lugs for engaging a spring, and with an arm arranged at one side of and parallel with said body-piece, of a spring secured at one end within said lugs, then extending upwardly, and then curved downwardly to form a V-shaped opening between said spring and arm to receive the reins, and a plate adapted to be secured to said body-piece, substantially as set forth.

259,334. TENSION FOR SEWING-MACHINE SPOOLS. JOHN G. SANFORD, Watervan, N. Y., assignor to Robert Strain, same place. Filed Mar. 14, 1882. (No model.)

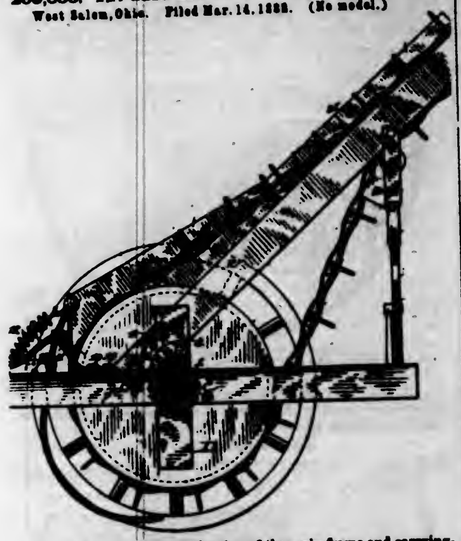


Claim.—1. The combination, with the stud B, upon which the spool to be unwound is set, of the pivot F, adapted to be inserted in the upper end of said spool, the arm projecting laterally from the pivot F and having the guide-eye E, the vertical extension G, having the lower arm, H, extending under the spool and connected to the stud B, the vertically-sliding guide-eye I, and a fixed guide, D, the whole adapted to operate to unwind the spool and keep the thread under proper tension, substantially in the manner described.

2. The combination of the stud B, the pivot F, having the arm with the guide E on it, the vertical extension G, and arm H, with

the vertically-sliding guide-eye I, and the springs J on the extension G, for arresting and limiting the movements of the guide-eye I, substantially as described.

259,335. HAY RAKE AND LOADER. THOMAS E. SHOEMAKER, West Salem, Ohio. Filed Mar. 14, 1882. (No model.)



Claim.—1. The combination of the main frame and carrying-wheels, the standard 19, and the pivoted bail having the pivoted lever provided with a rack, substantially as described.

2. The combination of the main frame, of the cross-bar 10, of the independent rake-teeth mounted or pivoted thereon, of the springs 12, and of the adjustable cross-bar 11, against the lower surface of which the said teeth bear, substantially as described.

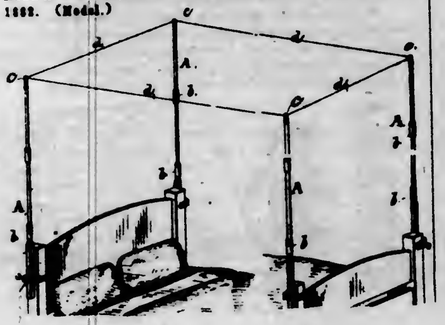
259,336. THILL-LUG. DEXTER M. SHALL, Providence, R. I. Filed Sept. 7, 1881. (Model.)



Claim.—1. A thill-lug composed of a loop for the shaft, and a buckle connected therewith by the short legs D and E, the shaft-loop being cut away at some portion to permit of their being shipped into said connection, substantially as described.

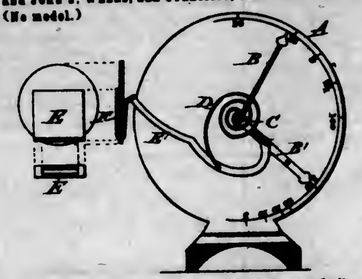
2. A thill-lug composed of a loop for the shaft, a buckle connected therewith by the short legs D and E, and a short immovable tongue for securing the back-band, all substantially as described.

259,337. FRAME OR SUPPORT FOR MOSQUITO-NETTING. ANNA M. D. SMITH, Gloucester Court-House, Va. Filed May 2, 1882. (Model.)



Claim.—The described apparatus for supporting mosquito-netting for bedsteads, &c., consisting of a system or set of standards, A, each being composed of a series of short rods removably connected by tubes b, as set forth, and provided with an eye, c, at the top of the standards to receive a cord, d, and adapted to be held in position by a securing-clamp.

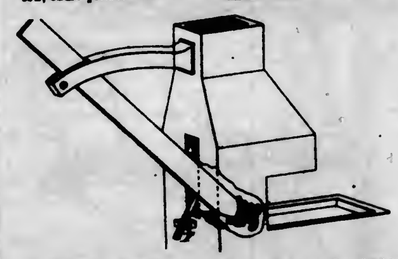
259,338. COIN TESTER AND INDICATOR. GILBERT SMITH and JOHN J. WELLS, San Francisco, Cal. Filed Nov. 14, 1881. (No model.)



Claim.—1. The dial A, provided with gold and silver numerals and scales, in combination with the hands, pointers, or indicators operated by a spring, so that when a weight or coin is placed upon the coin receiver or holder the hand will point to that numeral upon the dial that represents the value of the coin placed in the receiver or holder, substantially in the manner as herein set forth and specified.

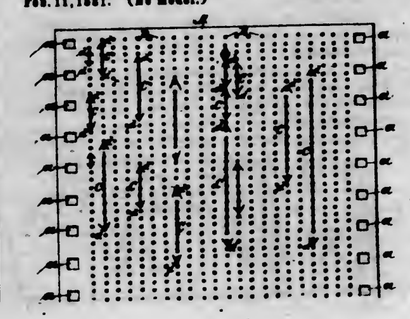
2. In a coin tester and indicator, the combination of the dial A with the hands or pointers B, spring D, and coin-holder E, constructed and operating substantially in the manner as herein set forth and specified.

259,339. DEVICE FOR HEATING LINKS. RICHARD SMITH, Cuyahoga Falls, Ohio, assignor of one-half to Myra B. Standish, same place. Filed Nov. 9, 1881. (No model.)



Claim.—In combination with a forge, a bar of such thickness as to permit unclosed chain-links to be placed thereon, having a width exceeding the longest internal diameter of such links, and passing through the heat escaping from the fire to the flue at such an angle as that unclosed links placed thereon will gravitate toward the fire, substantially as shown, and for the purpose specified.

259,340. ART OF PERFORATING MUSIC-PAPER FOR AUTOMATIC ORGANS. ROSWELL F. SMITH, Meeker, N. H. Filed Feb. 11, 1881. (No model.)

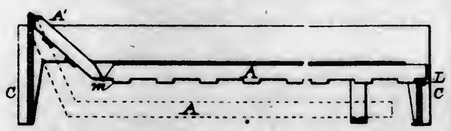


Claim.—1. As a new article of manufacture, a stencil-blank consisting of a sheet of suitable material having a rack cut therein and having a series of points marked upon its surface, in the manner and for the purpose set forth.

2. The stencil-blank A, having a rack, *a*, cut near its edges, and provided with a series of marked points, B, arranged in direct transverse lines and at equal intervals longitudinally, substantially as and for the purpose set forth.

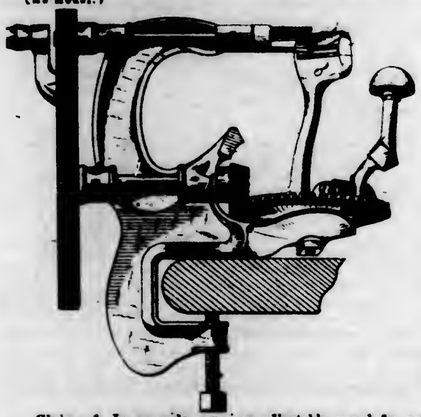
3. The method herein described of preparing stencil-sheets for perforating-machines, consisting in laying off the surface of the sheet into equal spaces, indicated by dots or points arranged in the manner set forth, cutting a rack in said sheet, indicating in each series of dots the spaces to be cut by a line and brackets, the former drawn partly through the space and the latter embracing the extreme points or dots to which the cutting is to extend, and finally cutting out the spaces as indicated by a mallet and punch, substantially as and for the purpose set forth.

259,341. BED-LOUNGE FRAME. WILLIAM H. STICKEL and JOHN STUCKEN, Dayton, Ohio. Filed Jan. 9, 1882. (Model.)



Claim.—In combination with a lounge or sofa frame, the bed-frame consisting of two parts, said parts being joined by hinges attached to the under side of the rails, and the part A′ being hinged to the cross-piece C of the lounge-frame as the head-support, and the pin D, or equivalent, to hold the bed in an elevated position, substantially as shown and set forth.

259,342. FRUIT AND VEGETABLE PARER. HENRY A. TRIPP and WALTER TRIPP, East Williamson, N.Y. Filed Mar. 9, 1882. (No model.)



Claim.—1. In an apple-parer, an adjustable guard for protecting the knife-head, constructed and arranged to be set up after grinding to maintain an even thickness of paring, substantially as shown and described.

2. In a fruit or vegetable parer, a doffer provided with a revolving head for preventing bruises by friction, substantially as shown and described.

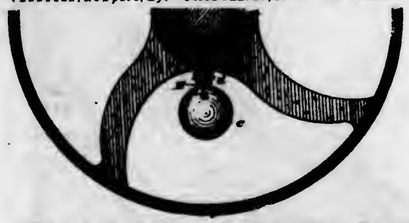
259,343. SHIPPING-TAG. WALTER S. UPSHUR, JOHN A. UPSHUR, and WILLIAM R. ROTHER, Richmond, Va. Filed Mar. 16, 1882. (Model.)



Claim.—1. A shipping-tag consisting of plates, the rear plate of contrasting colors, the front plate provided with suitable stenciled cuts or figures to designate lot, brand, quality, or shipper, and provided with suitable attaching devices, substantially as shown and described.

2. The combination of a shipping-tag consisting of a stenciled front plate and a rear plate of contrasting color with an attaching device, D, having barbs *d*, substantially as shown and described.

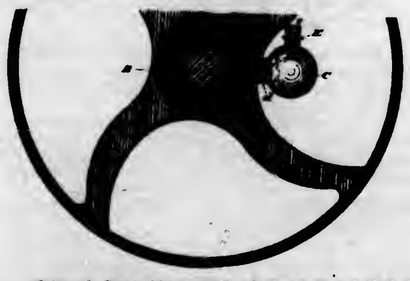
259,344. LUBRICATOR FOR LOOSE PULLEYS, &c. ERRA W. VANDUSEN, Newport, Ky. Filed Jan. 23, 1882. (No model.)



Claim.—1. The feeding-stem D, formed with plug E, having a filling orifice or opening, G, in the side thereof, as set forth.

2. The combined filling-plug and feeding-stem, having a filling orifice or opening, G, in the side of the plug, in combination with a shell, C, as set forth.

259,345. LUBRICATOR. ERRA W. VANDUSEN, Newport, Ky. Filed Jan. 7, 1881. (No model.)



Claim.—1. In combination with a hollow ball or shell, C, the plug E, having an opening or excavation, G, in its side, by which the oil is supplied to the chamber within the ball or shell without removing the plug, as set forth.

2. The combination, with a hollow ball or socket, C, having a screw-threaded orifice, of a plug having a screw-threaded hollow shank and a longitudinal filling opening or excavation, G, in its threaded portion, as set forth.

3. The plug E, formed with thumb-piece *e*, hollow inner end, *g*, and opening G through the shank, in combination with an oil-receptacle, C, as set forth.

259,346. ILLUMINATED STRUCTURE. ELIAS VENDER, New York, N.Y. Filed Mar. 20, 1882. (No model.)

Brief.—A frame has a series of openings containing detachable studs, having a head at one end and a shoulder at the other, with a washer contracted between the shoulder and the frame. The heads of the studs are flanged so as to meet and cover the face of the frame, and their shanks have a reflecting-surface.



Claim.—1. In articles constructed for illuminating purposes by the transmission of light through blanks or studs set in opaque supports or frames, a reflective surface around the stem of the stud at the parts not exposed directly to the light, substantially as set forth.

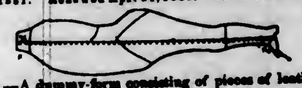
2. The studs having the shanks curved outward to meet the enlarged ends, and provided with a reflecting-surface around the shank, as specified.

3. The combination, with the frame, of a series of studs set therein, and each enlarged at the end to form a flange, shaped as specified, to meet those of the other studs and cover the entire face of the frame, substantially as described.

4. The combination of a frame having a series of openings, a series of studs adapted thereto, and provided each with a head at one end and shoulder *a* at the other beyond the face of the frame, and a washer contracted between said shoulder and the frame and securing the stud detachably, substantially as set forth.

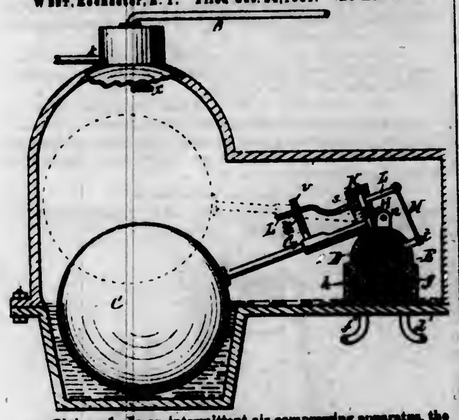
5. The combination, with a flexible continuous pliable non-transparent curtain or sheet, of transparent or translucent studs secured in openings in said sheet, substantially as set forth.

259,347. LEATHER DUMMY-FORM. ROBERT H. WEIR, Philadelphia, Pa., assignor to William Strauss, same place. Filed Aug. 3, 1881. Renewed Apr. 24, 1882. (No model.)



Claim.—A dummy-form consisting of pieces of leather having the configurations described and shown united to form a figure, substantially as and for the purpose set forth.

259,348. AIR-COMPRESSING APPARATUS. JONATHAN E. WEST, Rochester, N.Y. Filed Oct. 24, 1881. (No model.)



Claim.—1. In an intermittent air-compressing apparatus, the combination of the float C, the arm G, the cylinder D, and valve E, provided with the ports *g h*, and the shifting mechanism consisting of the rocker H, lever L, spring K, link M, and arm *i*, as herein shown and described.

2. The combination of the swinging arm G, provided with the slotted standard *w*, the rocker H, the lever L, resting in the slot of standard *r*, the spring K, and the link M, connecting the lever with the arm *i* of valve E, as herein shown and described.

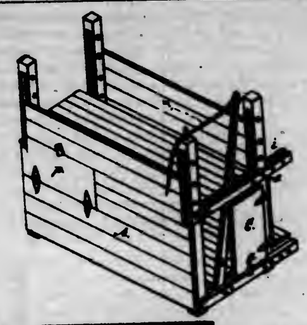
3. The combination, with the chamber *x* in the dome, having an air-inlet below and an air-exit above the chamber, of valve-stem *q*, provided with a float, *x*, at its lower end, and the two valves *i o*, one above and the other below the port *j* of the diaphragm *c*, as shown and described, and for the purpose specified.

259,349. DEVICE FOR HOLDING ANIMALS. JOHN B. WILSON and JOHN F. MONTGOMERY, Southport, Ind. Filed Jan. 30, 1882. (No model.)

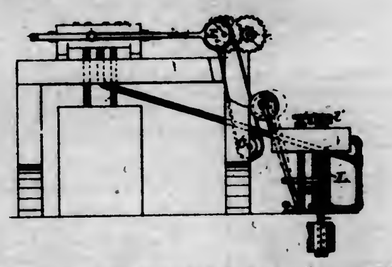
Claim.—1. In combination with pen A, lever *e*, door C, and door *p*, all arranged as shown and described, for the purpose set forth.

2. A pen for holding animals during the operation of castration or ringing, having laterally-adjustable sides and a vertically-adjustable top, substantially as described, and combined with a holding-lever, *r*, and exit-door C, substantially in the manner and for the purpose set forth.

259,349.



259,350. PRESSURE-REGULATOR FOR HYDROSTATIC PRESSES. CHARLES WINDHEIM and JAMES FIRTH, Amsterdam, N.Y. Filed Feb. 28, 1882. (No model.)



Claim.—1. A pressure-regulator for hydrostatic presses, composed of an auxiliary cylinder containing a movable plunger controlled by means of a weight or spring, in combination with and operating the connecting and disconnecting devices of the pump-driving mechanism, as herein set forth, the said auxiliary cylinder being connected to the feed-pipes for the presses in such manner that the same pressure will be found in the said cylinder and feed-pipes for the purpose of maintaining the pressure in a hydrostatic press or presses at the maximum point of pressure, as herein specified.

2. The auxiliary cylinder L, provided with a weight or spring governed plunger, *l*, adapted to automatically connect and disconnect the operating mechanism of the supply-pump for hydrostatic presses, in the manner and for the purpose herein specified.

259,351. CLAMP FOR HOLDING VEHICLE DASH-FRAMES. FRANK C. AYRE, Columbus, Ohio. Filed Nov. 16, 1881. (No model.)



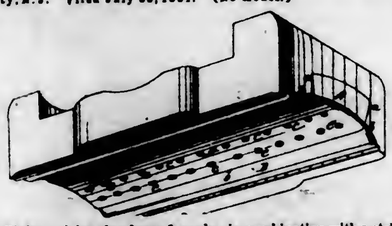
Claim.—1. The work-table having longitudinal slots and holes disposed in relation to each other, substantially as hereinbefore set forth, in combination with clamping devices operating in said slots at each end of the table for setting and holding the dash-frame thereon, holders inserted in said holes for setting and holding the cross-bars of said dash-frame in fixed relation to the table, and carrying-slides for operating the setting and holding devices upon the dash-frame to center it in relation to the cross-bars, substantially as described, for the purpose specified.

2. The combination of the work-table having longitudinal slots and holes disposed in relation to each other, substantially as hereinbefore set forth, with arms operating in said slots for setting and holding the dash-frame upon said table, pins fixed in said holes for setting and holding the cross-bars of said dash-frame in fixed relation to the table, carriers for operating the setting and holding arms against the ends of the dash-frame to center it in relation to the cross-bars, and means, substantially as described, for holding said

arms in clamping action upon the dash-frame when so centered, substantially as described, for the purpose specified.

3. In combination, the table *a*, having the longitudinal slots *c c* and holes *d*, the setting and holding right-angled arms *g g'*, their carrying-racks *h*, the cross-shafts *k k*, having gear *j j*, engaging with said racks, and gears *n n*, to give equal rotation to said shafts, the hand-wheel *s*, a brake device for the shaft of said hand-wheel, and the setting and holding pins *e e*, these several parts being constructed and arranged for use in setting and holding vehicle dash-frames and their cross-bars in the operation of fastening the same together, substantially as described.

259,852. CAR-AXLE BEARING. JACKSON R. BAKER, Jersey City, N.J. Filed July 30, 1881. (No model.)



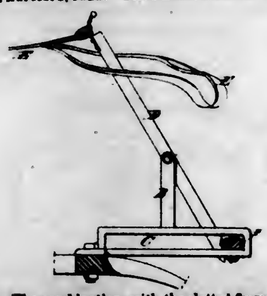
Claim.—A bearing-brass for axles, in combination with a strip of perforated soft lead soldered thereto and interposed between the axle and the crown of the bearing, the bearing on each side *b* of the leaden strip being left uncovered, substantially as and for the purpose described.

259,853. COLLAR. FREDERICK BRIGGMEISTER, Jr., Troy, N.Y. Filed Apr. 22, 1882. (No model.)



Claim.—A collar made of two or more parts or plies fastened together, and shaped to match along their upper edges and part way only across their ends, substantially as herein described, and for the purposes referred to.

259,854. VEHICLE DEVICE FOR CHECKING HORSES. EDWD. E. BOWERS, Springfield, Mass., assignor of one-half to Frank H. Adkins, Hartford, Conn. Filed Mar. 11, 1882. (No model.)

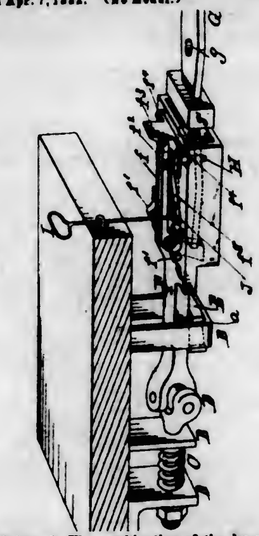


Claim.—The combination, with the slotted frame C, provided with the bearing B and secured to the whiffletree-bar, of the whiffle-tree F, held in said frame and adapted to slide therein, and the hinged lever D, arranged to have one end swing within the frame in operative contact with the whiffletree and to have its other end form a point of attachment for the reins E, provided with suitable eyes or rings to connect therewith, all operating for the purpose set forth.

259,855. INCRUSTATION-PREVENTIVE. CALEB B. BOYER, Chicago, Ill., assignor of one-half to John K. Pollard, same place. Filed Mar. 20, 1882. (No specimens.)

Claim.—A compound for cleaning steam-boilers, consisting of logwood, hemlock-bark, slippery-elm bark, sumac, and chloride of zinc, combined as and for the purpose stated.

259,856. CAR-COUPLING. SAMUEL R. BRADY, Granby, Mo. Filed Apr. 7, 1882. (No model.)

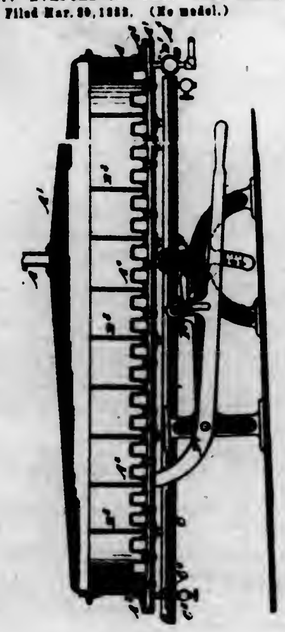


Claim.—1. The combination of the draw-bar F, pin H, lever *f*, catch *f'*, lever *f''*, rod I, and spring J with the link G, having the extended ends and central enlarged portion, *g'*, substantially as shown and described.

2. The combination of the draw-bar F, having the universal joint D, the bracket B, and the beveled mortised block R, substantially as shown and described.

3. The combination of the draw-head, the bell-crank lever, the catch-plate and the tripping-lever, the catch-plate being adapted to retain the pin in a depressed position, and the rear extension of the catch being adapted to lift the pin from the link, substantially as shown and described.

259,857. EVAPORATING PAN. ABEL BEDAL, Saugatuck, Conn. Filed Mar. 20, 1882. (No model.)



Claim.—1. The combination, with a vacuum-pan for evaporating saccharine and other substances, of an automatically-operating valve, the closing movement of which is produced by the pressure in said pan and its opening movement by the pressure of the atmosphere upon its under or outer surface, substantially as and for the purpose set forth.

2. The combination, in a vacuum-pan for evaporating saccharine and other substances, of the dividing-partitions and sliding valves or gates for dividing the evaporating-space into different compartments, substantially as and for the purpose set forth.

3. In a pan for evaporating saccharum and other substances, the combination of the heating-cups A', made of thin sheet metal, the dividing-partitions B', and valves or gates B², whereby provision is made for dividing the pan into separate and distinct compartments and heating the material in some compartments separately, substantially as set forth.

4. The combination of the evaporating-pan and the steam or air pipes for supplying steam or air thereto, the jointed pipes C', and couplings C², the parts being arranged substantially as described, whereby provision is made for tilting the pan without the use of flexible connections, or causing leakage in the pipes, substantially as described.

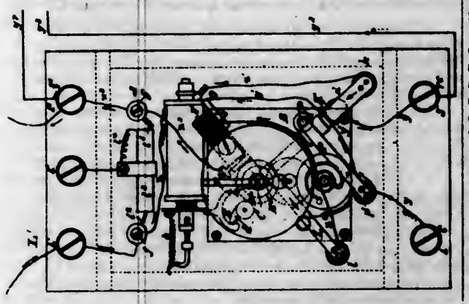
5. The combination, in a pan for evaporating saccharine and other substances, of a reservoir suspended at or near its center, having its tilting movement in the direction of its length, and a steam or air pipe connected therewith, arranged to tilt with the pan, substantially in the manner and for the purpose set forth.

259,858. CAR-COUPLING. JAMES E. BRESSON, Elyria, Ohio, assignor to himself, Thaddeus H. Rowland, and Frank H. Bronson, same place. Filed Mar. 1, 1881. Renewed Apr. 19, 1882. (No model.)



Claim.—The combination of the link *d* and plate *f*, the same being constructed in the manner and for the purpose substantially as described.

259,859. TELEPHONIC AND TELEGRAPHIC SIGNALING APPARATUS. ALFRED C. BROWN and HENRY A. C. SAUNDERS, London, England. Filed Feb. 2, 1882. (No model.) Patented in England July 7, 1881, No. 3,295.



Claim.—1. The combination, in a telephonic or telegraphic call apparatus, of, first, an electro-magnetic step-by-step or clock mechanism which operates step by step in response to each of a series of pulsations or breaks and makes in the line caused by direct signaling from any calling-station in the circuit; second, indicating devices, substantially such as described, to indicate any given signal or number of pulsations or makes and breaks at any distant station; third, a single key or push-button and its contacts for causing said pulsations or breaks and makes; and, fourth, locking mechanism, substantially such as described, which at the first signal or impulse from any calling-station on the circuit renders said key or button inoperative, substantially as and for the purpose set forth.

2. The combination, at a given station, of telegraphic or telephonic call apparatus, substantially such as set forth, capable of responding step by step to every signal or break and make in the line caused by direct signaling from any distant station; devices, substantially such as described, for indicating the number of such signals or breaks and makes; a single key or push-button for interrupting the circuit and producing such signals; and mechanism, such as described, which, when the given signal for the station has been received, will throw the transmitter, receiver, and call-bell into circuit, substantially as set forth.

3. The combination, substantially as set forth, at a given station, of telephonic or telegraphic call apparatus through which the main-line circuit normally passes, a receiver, a transmitter, a call-bell, a local circuit, a signaling key or button, and mechanism operated by the first movement of the signaling-button to automatically throw the receiver, transmitter, and call-bell into their respective circuits.

4. The combination, substantially as set forth, of, first, a main line; second, two or more stations thereon; third, a telephonic or telegraphic call apparatus, substantially such as described, of step-by-step or clock mechanism at each station, which apparatus is controlled step by step directly by the apparatus at any other station and moves step by step in response to each signaling pulsation or break and make in the line caused at any calling-station; fourth, a key or push-button at each station for producing such direct pulsations or breaks and makes in the line; and, fifth, locking mechanism, substantially such as described, operated by the first movement of the key or button in signaling at any station, which renders the keys at the other stations inoperative.

5. The combination, substantially as set forth, of a main line, and at each station thereon telephonic or telegraphic signaling apparatus capable of responding step by step to direct signals from any distant station; mechanism which automatically locks the signaling-keys at all but the calling-station at the first manipulation of the key or button at the calling-station; indicating devices at each station, which indicate step by step the number of signals made in calling at any station, and thus show that the line is in use; a receiver, transmitter, and call-bell at each station; mechanism, substantially such as described, at each station, which, when the signal from any one station to any other has been completed, will automatically complete the local circuit and sound the bell at the called station, and also throw the transmitter and receiver into their proper circuit or circuits; a signaling button or key at each station; and mechanism which at the first movement of the button automatically completes the local circuit through the call-bell and throws the transmitter and receiver into their proper circuits at the calling-station.

6. The combination, substantially as set forth, of a main line; a telephonic or telegraphic call apparatus capable of responding step by step to each signal of any series received over the line from any calling-station; a device for indicating step by step the signals received; a receiver, a transmitter, a call-bell, a local circuit, and induction-coil; mechanism, substantially such as described, which, when the given signal of the station has been received, automatically completes the local circuit through the transmitter, call-bell, and primary of induction-coil and throws the receiver and secondary of the induction-coil into the main line at the called station; and a telephone hook or switch, with its inner and outer studs or contacts, which, when in its normal position, (with the telephone thereon,) permits the local current to pass through the bell mechanism, but shunts the secondary of the induction-coil and the telephone out of the main line, and in its second position (when the telephone is removed) shunts the call-bell out of circuit and throws the secondary of induction-coil and telephone into line.

7. The combination of a main line a telephonic or telegraphic signaling apparatus capable of responding step by step, as set forth, to signals received from any distant station; a receiver, a transmitter, call-bell, and induction-coil; a button or key for signaling the other stations on the main line: mechanism operated by the manipulation of the signaling-key, which mechanism at the first manipulation of the key automatically completes the local circuit through the call-bell, transmitter, and primary of the induction-coil and throws the secondary of the induction-coil and receiver to line; and a telephone hook or switch and its studs or contacts, which in its normal position (with the telephone thereon) permits the current to pass through the call-bell, but shunts the secondary of induction-coil and receiver out of the main line, and in its second position (with the telephone removed) shunts the call-bell out of the local circuit and throws the telephone and secondary onto the main line.

8. The combination, substantially as set forth, of an electric circuit; two or more stations thereon, each of which responds to its given signal, and is capable of calling directly any other station without sounding the alarm at the other stations on the circuit; a signaling-button at the calling-station, which, when operated to call the distant station, throws its transmitter and receiver into

their proper circuits; mechanism, substantially such as described, at the receiving-station, which throws its receiver, transmitter, and call-bell into their proper circuits when the given number of signals, pulsations, or makes and breaks for that station have been received; like mechanism at the calling-station; and at the receiving-station a signaling-button and mechanism for throwing the transmitter and receiver into proper circuit when the button is used in calling the distant station, whereby any station on the circuit may call or respond to a call from any other station on the line.

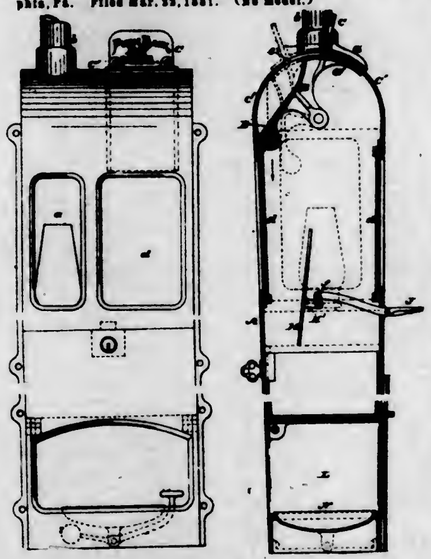
9. The combination, substantially as set forth, of the main line, the contact-springs K and L, the slotted disk H, the outer face of which is insulated and the inner face in connection with the electrical circuit.

10. The combination, substantially as set forth, of the main line, the local circuit, the contact-springs K and L, the slotted disk, constructed substantially as described, the cam I, the contact-springs N and O, and the contact-screw *c*.

11. The combination, substantially as herein set forth, of the main line, the local circuit, the contact-springs K and L, the push-button, the slotted disk H, constructed substantially as described, the contact-spring P, and its contact, for the purpose set forth.

12. The combination of a local circuit, a call-bell, transmitter, and the primary of an induction-coil included in said circuit, the main line, the secondary of the induction-coil and telephone in the main line, and a telephone hook or switch, which in its normal position (with the telephone thereon) shunts the secondary of the induction-coil and the telephone out of the main line and permits the local circuit to run through the call-bell, transmitter, and primary of induction-coil, and in its second position (with the telephone removed) shunts the call-bell out of circuit, thus concentrating the local current on the transmitter, and throws the secondary of the induction-coil and telephone into the main line.

259,360. FARE-BOX. WILLIAM H. BUCKLEY, Jr., Philadelphia, Pa. Filed Mar. 23, 1881. (No model.)



Claim.—1. The fare-box having a segmental top and a throat in said top, in combination with the pivoted tray B, having a finger-piece, C, and two concentric guards, G G', the guard G' being formed with the finger-piece on the inner side of the segmental top, and the guard G being attached to said finger-piece on the upper side of the segmental top, said guards serving as a double brace for the pivot of the tray.

2. The catch-plate H, having short arm H' pivoted out of its center of gravity, in order that it may return automatically to its closed position, in combination with lever J, link *f*, and casing A, substantially as set forth.

3. The inverted gong N, arranged as described, and serving both as an alarm and as a ticket and change receptacle, in combination with a hammer-lever and an open frame for the passage of change and tickets, substantially as set forth.

259,361. BREECH-LOADING FIRE-ARM. WILLIAM E. BRUCE Chatham, assignor of one-half to James Bryce, Jr., Madison, N. J. Filed June 16, 1881. (No model.)



Claim.—1. In a breech-loading fire-arm, the combination of a base-piece grooved upon its upper surface, a breech-block provided with a tongue fitting in said groove, a removable tongue fitting and secured in said groove, and a barrel or barrels having a groove fitting said removable tongue, substantially as specified.

2. In a breech-loading fire-arm, the combination of the base-piece A, provided with a groove, *a*, the removable tongue *c*, fitting and secured in said groove, the screw *d'*, for adjusting said tongue, and a barrel or barrels having the groove *d*, fitting said tongue, substantially as specified.

3. In a breech-loading fire-arm, the combination of the base-piece A, provided with a groove, *a*, the removable tongue *c*, fitting in said groove and provided with a head, *c'*, the barrels C, provided with a groove, *d*, and the catch *e*, substantially as specified.

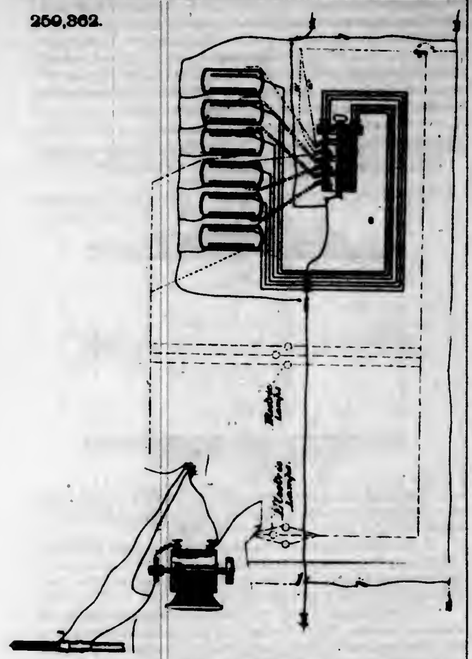
4. In a breech-loading fire-arm, the combination of the base-piece A, having in it the cavity A', in the bottom of which is the hole *h'*, the breech-block B, the lever E, and link F, for operating the breech-block, adapted to fit in the cavity A' when the breech is closed, and the horn *h*, projecting from said link and adapted to enter the hole *h'*, whereby the lever, its pivot, and the pivotal connection between said lever and link are relieved of all strain from the recoil, substantially as specified.

5. In a breech-loading fire-arm, the combination of a sliding breech-block, an extractor and indicator consisting of a lever, the movements of which are visible from the top of the breech-block, pivoted in said breech-block, so as to vibrate or tilt upward and downward, and having a hooked head, and a hammer adapted to bear upon the under side of said lever to depress its hooked head into engagement with the flanged head of a cartridge-shell and to indicate that the fire-arm is fired, substantially as specified.

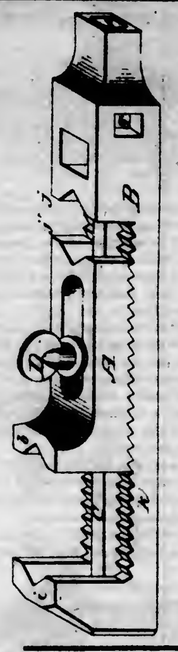
6. In a breech-loading fire-arm, the combination of the breech-block B, the hammers G, the pivoted levers *n*, having inclined upper edges, and the spring-actuated sliding bolt *o*, having arms *o'*, adapted to depress said levers when the breech-block is drawn back, substantially as specified.

259,362. SYSTEM OF ELECTRIC LIGHTING FOR RAILWAY-TRAINS. CHARLES E. BUELL, New Haven, Conn. Filed Apr. 19, 1882. (No model.)

259,362.



259,363.



Claim.—1. In a system of electric lighting for railway-trains, the combination of the following elements, namely: an electrical generating-machine mounted on the engine and propelled thereby, a main charging-circuit extending from the engine through the train, with circuit-connecting devices between the engine and the several cars, means for placing the generator in the charging-circuit, two series of secondary batteries and a normally-independent lamp-circuit in each car, and switching devices in each car, adapted to place one series of secondary batteries in the charging-circuit, coupled for quantity, and to simultaneously place the other series of secondary batteries in the lamp-circuit, coupled for intensity.

2. In a system of electric lighting for railway-trains, the combination of the following-named elements in the equipment of each car, viz: electrical conductors forming part of a main charging-circuit, with means for connecting and disconnecting said conductors to and from those of an adjoining car, two series of secondary batteries and an independent lamp-circuit, and switching devices for interposing said series of secondary batteries separately alternately in the charging-circuit, coupled for quantity, and the lamp-circuit, coupled for intensity, substantially as set forth.

3. In a system of electric lighting for railway-trains, the combination of the following-named elements in the equipment of each car, viz: electrical conductors forming part of a main charging-circuit, with means for connecting and disconnecting said conductors to and from those of adjoining cars, two series of secondary batteries, an independent lamp-circuit, switching devices for alternately connecting one series of secondary batteries into the charging-circuit, coupled for quantity, and for connecting the other series of said batteries into the lamp-circuit, coupled for intensity, and other switch devices for including at will one discharging-series of secondary batteries or the independent lamp-circuit in the main charging-circuit, substantially as described.

259,363. WRENCH. WILLIAM BUNDY, Vincennes, Ind. Filed Nov. 16, 1880. Renewed May 18, 1882. (Model.)

Claim.—1. In combination with the part B, having jaw *i*, guide-rib C, and serrations *h*, the slotted movable part A, having jaw *b*, serrations *h'*, and recess C', and the clamping-screw D, passing through the slotted part A and into the part B, substantially as and for the purpose set forth.

2. In combination with the part B, having guide-rib C, and jaws *i* and *j*, the slotted movable part A, having jaws *b* and *f* and recess C', and the clamping-screw D, passing through the slotted part A and into the part B, substantially as and for the purpose set forth.

259,364. PILL PACKING-BOX. FIRMAN CAUHAPÉ, Detroit, Mich. Filed Feb. 21, 1882. (No model.)



Claim.—1. A box the bottom, sides, and ends of which are lined with gelatine subdivided into separate cells by means of division-walls made of the same material, substantially as described.

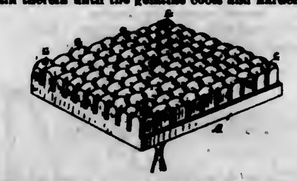
2. A box lined with soft gelatine having divisions to form cells, substantially as described.

3. A box lined with gelatine molded to form recesses and mixed with glycerine to keep it soft, substantially as described.

4. A box lined with soft gelatine molded to form separate cells having division-walls of the same height as the box, in combination with a cover, the inner side of which is also coated with soft gelatine, substantially as described.

259,365. PROCESS OF AND DIE FOR MAKING PILL-BOXES. FIRMAN CAUHAPÉ, Detroit, Mich., assignor to Fake, Davis & Co., same place. Filed Mar. 16, 1882. (Model.)

Brief.—The gelatine is run into a shallow box or mold, and while yet in a plastic condition the die is thrust into it and allowed to remain therein until the gelatine cools and hardens.

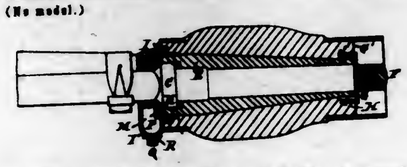


Claim.—1. The process herein described of forming the division-walls of chambers or cells of gelatinous matter in boxes by means of dies pressed into said gelatinous matter while in a soft condition, substantially as set forth.

2. The combination, with dies, substantially as described, of the feet *c*, as and for the purpose specified.

3. The plate A, provided with a series of dies or formers having rounded corners and with feet *c*, substantially as and for the purpose specified.

259,366. SPINDLE-PROTECTOR FOR CARRIAGE-AXLES. CHARLES CHAMBERLIN, Lowell, Mass. Filed Feb. 17, 1881. (No model.)



Claim.—1. The protector I I', provided with a downwardly-enlarged drip-receiver, P, as and for the purpose specified.

2. The protector I I', provided with a downwardly-enlarged drip-receiver, P, and a hole, R, as and for the purpose specified.

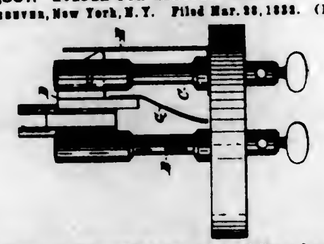
3. The protector I I', provided with a downwardly-enlarged drip-receiver, P, and a hole, R, in combination with the ping Q, as and for the purpose specified.

4. The ring M, closely fitting over the axle-box E, and provided at its inner end with an internal annular flange, N, in combination with said axle-box, as and for the purpose specified.

5. The ring M, closely fitting over the axle-box E, and provided at its inner end with an internal annuler flange, N, and an external annular flange, in combination with said axle-box and a protector, I I', provided with a downwardly-enlarged drip-receiver, P, as and for the purpose specified.

6. The ring M, provided at its inner end with an external annular flange, in combination with a protector, I I', having a downwardly-enlarged drip-receiver, P, as and for the purpose specified.

259,367. HOLDER FOR ELECTRIC CANDLES. CHARLES A. CHEEVER, New York, N. Y. Filed Mar. 30, 1882. (No model.)



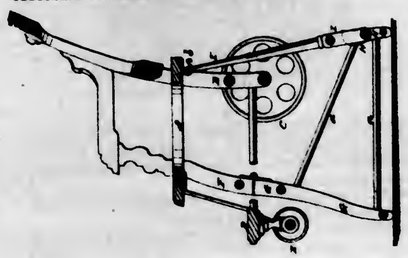
Claim.—1. The combination, substantially as described, with the spring holding-clamp for an electric candle, of a circuit-closing spring connected to one side of the clamp, and arranged, as described, so as to make contact with the opposite portion of the clamp when the candle is removed.

2. The combination, substantially as described, with the spring holding-clamp for an electric candle, of a circuit-closing spring or point attached to the movable portion of the clamp, and arranged so as to make contact with the opposite portion of the clamp when the candle is removed.

3. The combination, substantially as described, with the holding-clamp for an electric candle, of a circuit-closing spring attached to the movable pivoted clamping-jaw, and arranged so as to make contact with the post carrying the fixed jaw when the candle is removed.

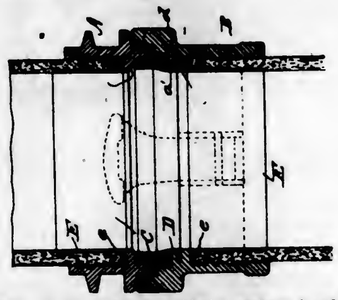
4. The combination of the fixed jaw mounted on post B, the movable pivoted jaw D, mounted on post C, and spring G, attached to the jaw D and arranged so as to come into contact with the flattened side of post B.

259,368. CONVERTIBLE CHILD'S CHAIR. LEMUEL A. CHICHESTER, Phœnicia, N. Y. Filed Feb. 24, 1882.



Claim.—In a convertible chair, the combination of the seat-frame, the projections B, the wheels C, attached directly to the lower ends of said projections, the foot-rest D, the wheels E, supported thereby, the projections F of the seat-frame, the legs G, hinged thereto, the terminals H, the braces *a*, connecting the said legs and terminals, the bowed handle I, hinged to the terminals, and catches *b c*, all constructed and arranged to operate as shown.

259,369. HOSE-COUPLER. JOHN H. CLAY and CLEMENS CLAY, Philadelphia, Pa. Filed Jan. 25, 1882. (No model.)



Claim.—1. In combination with the couplings A and B, the ring D, flanged at *d*, and a rubber or packing ring, C, beveled at *c*, substantially as and for the purpose set forth.

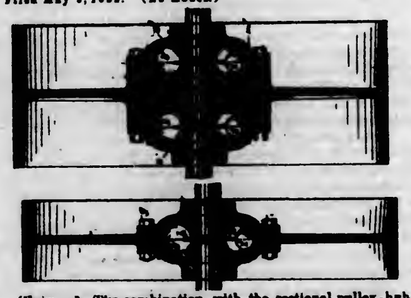
2. In combination with the coupling-section B and packing or rubber ring C, constructed substantially as shown and described, the seamless flanged sheet-metal ring D, formed separate from said coupling-section, substantially as set forth.

3. In combination with the coupling-sections A and B, the rubber or packing ring C, beveled at *c*, and means, substantially as set forth, for securing said ring in position within the section B, substantially as and for the purpose set forth.

4. In combination with the coupling-sections A and B, constructed substantially as shown and described, a packing or rubber ring, C, beveled at *c*, and arranged within the section B in such manner that the area of the passage-way through the coupling-sections will be equal to or greater than that through the attached hose, substantially as shown and described.

5. In combination with the coupling-sections A and B, the ring D, flanged at *d*, rubber or packing ring C, beveled at *c*, and ring E, capped at *e*, substantially as shown and described.

259,370. PULLEY. EDWARD J. F. COLEMAN, Providence, R. I. Filed May 9, 1882. (No model.)



Claim.—1. The combination, with the sectional pulley-hub formed with an annular lubricant reservoir or chamber and an annular passage leading therefrom to the hub-bearing, of the agitators loose within the chamber, substantially as and for the purpose hereinbefore set forth.

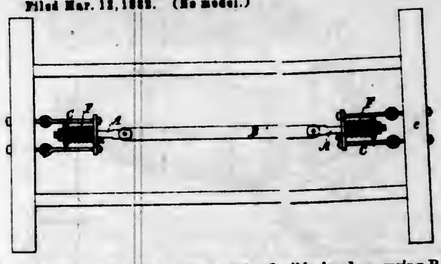
2. The conveyer disk or ring, in combination with the axle or shaft and the sectional pulley-hub formed with annular lubricant-chamber and annular passage leading therefrom to the shaft, substantially as set forth.

3. The combination, with the axle or shaft and the sectional pulley-hub formed with annular lubricant chamber or reservoir and passage leading therefrom to the shaft, of the agitators loose within the chamber and the conveyer encircling the shaft and extending through the passage into the chamber, substantially as set forth.

4. The hub-sections recessed on their contiguous faces, so as to form, when put together, the chamber *b* and passage *c*, in combination with the solid rim and spokes connecting the rim to the hub, substantially as hereinbefore set forth.

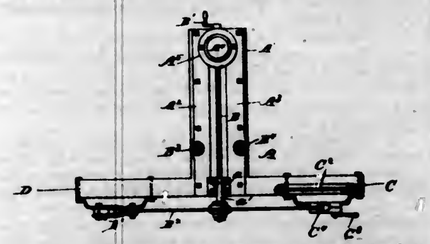
5. The pulley made substantially as shown and described with reference to Fig. 3, consisting of a central hub-section and two heads or external sections, constructed and put together substantially as specified, so as to form within the sectional hub two chambers, *b*, and passages *c*, in combination with the pulley-rim and spokes connecting the rim to the central section, substantially as set forth.

259,371. CARRIAGE-SPRING. ALFRED CORNER, Exeter, N. H. Filed Mar. 11, 1882. (No model.)



Claim.—The combination of the flexible band or spring B with the two yokes C, and with the two connection-slides A and two spiral springs, F, arranged within such yokes, as shown and described.

259,372. SAW JOINTING AND SWAGING DEVICE. HILO CAVEL, Chicago, Ill. Filed Feb. 20, 1882. (No model.)



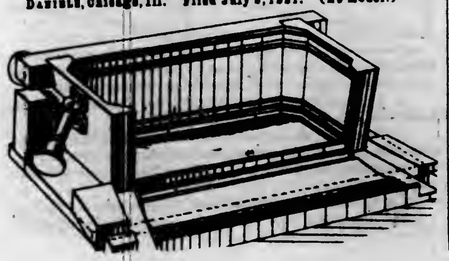
Claim.—1. The combination, in a saw-bench, of a trunk or main part, A, with the parts C D immovably attached at right angles thereto, with the removable anvil-block, adjustable leveling-screws, and adjustable arbor, as shown and described.

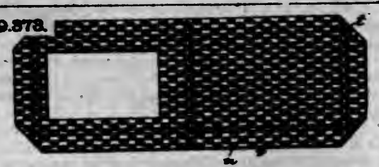
2. The combination, with the saw-bench A, as described, of the endless screw B, the traversing slide *a*, and the adjustable arbor or mandrel *a'*, pivoted thereto and adapted to hold a saw in either a vertical or horizontal position, substantially as and for the purpose set forth.

3. The combination, with arbor *a'*, of the collar a^2, provided with the sleeve a^3, the collar a^4, and the clamping-nut a^5, substantially as and for the purpose set forth.

4. The combination, with a saw-bench, as herein shown and described, of the detachable and adjustable upset *d'* and the detachable and adjustable jointer D', substantially as set forth.

259,373. CEMENT COFFINS. TAYLOR H. DANIELS, Chicago, Ill. Filed July 8, 1881. (No model.)

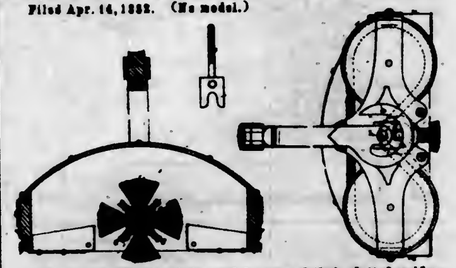




Claim.—1. In an embedded frame of a molded coffin, the bottom E, formed of corrugated and perforated sheet metal, having cross-strips *f* passing through slots in said corrugations, and longitudinal strips *r* lying in the channels of said corrugations and bolted to the said cross-strips, substantially as described.

2. The method herein described of molding a cement coffin without the use of a core, which consists in forming the sides and ends over a metal frame with the walls of the mold laid down, placing the said walls together and locking them, inserting and securing to the side frame the metal frame of the bottom, coating one side of the same with cement, and finally removing the coffin from the mold and coating the other side, substantially as described.

259,374. CARPET-SWEEPER. ROBERT H. RUDY, Chicago, Ill. Filed Apr. 14, 1882. (No model.)



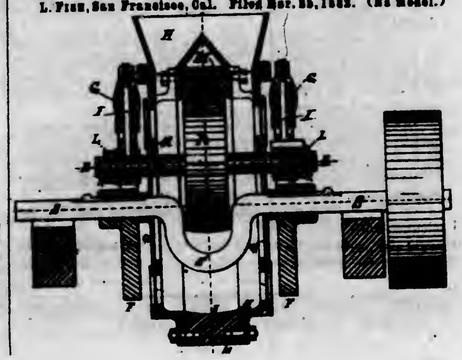
Claim.—1. The brush-journal boxes and their slotted guides or supporters, in combination with the ball pivoted to the said boxes and provided with hooks arranged therewith and to hook upon the journals of the brush, substantially as set forth.

2. The case, slotted at its ends and provided with the revolving brush and its driving-wheels and elastic belts, as set forth, in combination with the brush-journal boxes and their slotted guides or supporters, and with the ball pivoted to the said boxes and provided with hooks arranged therewith and to hook upon the journals of the brush, all being arranged and adapted substantially as set forth.

3. The combination of the adjusting-screws and nuts with the brush-journal boxes and their supporting-guides, the revolving brush, its driving-wheels and elastic belts, and with the ball pivoted to the said boxes and provided with hooks to hook upon the journals of the said brush, all being arranged with the case and adapted to operate substantially as set forth.

4. The revolving brush and its fan-blades, arranged as described, in combination with the case and its dust-receiving pans, such combined brush and fan-blades being provided with mechanism for revolving it in the case, as set forth.

259,375. MACHINE FOR PULVERIZING ORES, &c. ARTHUR L. FISH, San Francisco, Cal. Filed Mar. 25, 1882. (No model.)



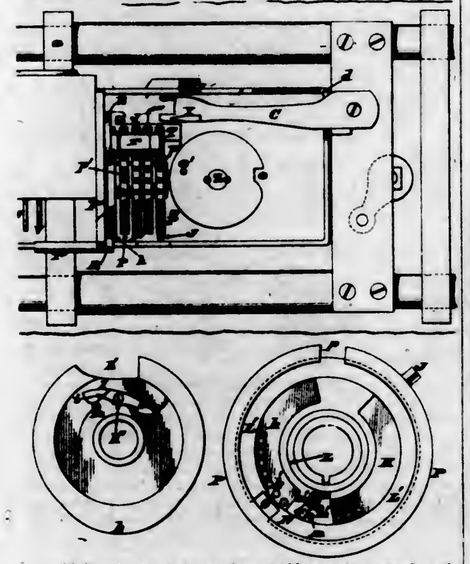
Claim.—1. In a pulverizing-machine, the combination of the crushing-roller R, shaft E, slotted disks F, sliding boxes K, rods I, and springs or buffers G, as and for the purpose specified.

2. In a pulverizing-machine, the combination of a crushing-roller, shaft E, slotted disks, means for rotating the same, sliding boxes, adjusting-rods, springs or buffers, and the ring-die, substantially as set forth.

3. A pulverizing-machine comprising casing N, annular die J, band M, slotted disks F, shafts S and E, sliding boxes K, rods I, and springs G, all arranged substantially as shown and specified.

259,376. PERMUTATION-LOCK. BENJAMIN F. FLINT, Cincinnati, Ohio. Filed Oct. 18, 1881. (Model.)

Brief.—Both sets of tumblers are operated by the same spindle, but one dog being used. The ring combination is set up first, the dog being held out of contact, then by manipulation of the spindle allowed to drop into the ring-gates. The disk combination is then set up and the dog descends into disk-gates.



Claim.—1. A gated secondary tumbler rotating around a primary tumbler, and provided with a series of sockets and a movable pin or their equivalents, whereby a combination of said secondary tumblers may be effected without shifting the primary tumblers, for the purpose described.

2. The combination, in a permutation-lock, of a gated secondary tumbler revolving around a gated primary tumbler, said primary and secondary tumblers being provided with independent combination-changing devices, as and for the purpose described.

3. A series of gated secondary tumblers arranged to rotate around a series of gated primary tumblers, said primary and secondary tumblers being provided with independent combination-changing devices and adapted to engage with a single dog, for the purpose specified.

4. In combination with a rotating lock-tumbler, the pivoted fly I *h*″, having two inclined planes, *i i*′, and a shoulder, *j*, in order that the driving-pin *n*, when moved in one direction, will actuate said tumbler, but will be inoperative when moved in the opposite direction, as herein described

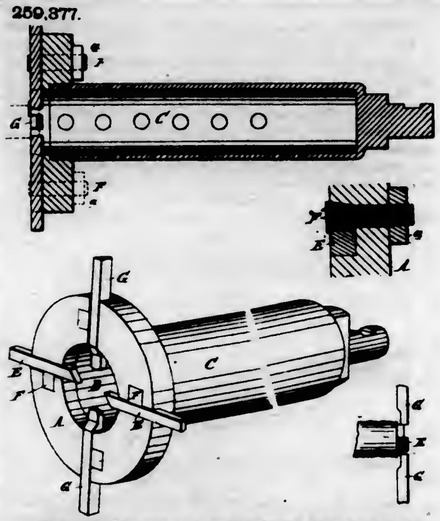
5. The combination, in a lock, of a series of gated secondary tumblers rotating around a series of gated primary tumblers, suitable devices for changing the combinations of one set of tumblers independently of the other set, a single dog for engaging with said tumblers, and a spindle to operate them, as described.

6. The combination of tongue C, lug Y, pivoted fence R *r*, and grooved dog T *t*, as specified.

7. The combination of disk-tumbler K, ring-tumbler P *p*, female threaded sockets *p*′, and screw-pin J, as and for the purpose specified.

259,377. RISING-TOOL FOR LATHES. JAMES FLOWER, Detroit, Mich. Filed Feb. 21, 1882. (No model.)

259,377.

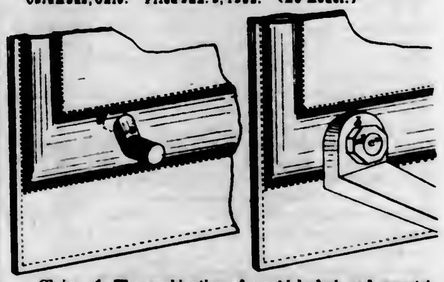


Claim.—1. The support C, provided with a face-plate, A, having recesses two of which are radial to the center and the other two one above and the other below said center, in combination with tools having cutting-edges on opposite sides to each other, and steadying-posts having smooth bearing-surfaces, both the cutters and the steadying-posts being firmly secured in the recesses in the face-plate, with the working-edges of the cutters in advance of the bearing-surfaces of the steadying-posts, substantially as and for the purpose specified.

2. The support C, having openings to allow of the escape of the turnings, in combination with the recessed face-plate A, cutters E, secured to said face-plate, and the steadying-posts G, also secured to the face-plate, and having their bearing-surfaces at the rear of the cutting-edges of the cutters E, substantially as and for the purpose specified.

3. The support C, provided with a face-plate, A, having recesses to receive the tools E G, and having a hole with one inclined side opening into each of the recesses, in combination with the tools E G, having an inclined side adjoining the holes in the face-plate, the sliding bolts F, having inclined sides to come in contact with the inclined sides of the tools and the holes adjoining the tool-recesses, and the nuts *a*, for operating said sliding bolts, substantially as and for the purpose specified.

259,378. VEHICLE-DASH ATTACHMENT. MARTIN P. FOSS, Columbus, Ohio. Filed Jan. 6, 1882. (No model.)



Claim.—1. The combination of a vehicle-dash and eccentrically-adjustable attachments, whereby the same may be connected to the fixed foot-irons of vehicle-bodies of different widths.

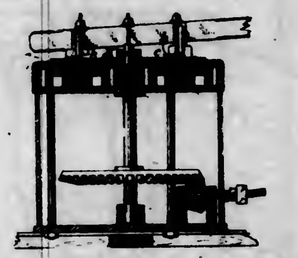
2. A vehicle-dash or dash-frame having adjustable eccentric screw-stems, for the purpose stated.

3. The combination of a vehicle-dash, independent or separate dash foot-irons, and an eccentric fastening device adapted for lateral adjustment in relation to each of the fixed foot-irons, for the purpose stated.

4. The combination substantially hereinbefore set forth of a dash, independent dash foot-irons, an eccentrically-adjustable attaching device for each foot-iron, and a fastening-nut for each attaching device, for the purpose described.

5. The particular fastening attachment for vehicle-dashes herein described, consisting of a bent stem screw-threaded at each end and adapted to be screwed into the dash-frame, the recessed dash foot-iron, and the screw-nut, substantially as and for the purpose set forth.

259,379. HORSE-POWER. WILLIAM O. FROST, Le Roy, N. Y. Filed Apr. 11, 1882. (No model.)



Claim.—1. The combination of the top plate, the planet-wheel having the central recess or socket, and the hub on the top plate having the oil-duct through it, and on which the planet-wheel turns, substantially as and for the purpose set forth.

2. The combination of the top plate, the sweep, the rests, and the movable cap which fits over the rests, substantially as and for the purpose set forth.

3. The combination of the top plate, the sweep, the rests or sockets on the plate for the sweep, and clamping devices for securing the sweep so as to permit its endwise adjustment, substantially as set forth.

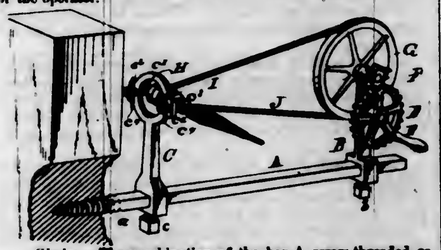
4. The combination of the top plate, the sweep, the brackets which hold the sweep, and the clamping straps or loops which embrace the outsides of the brackets and clamp the sweep in place, substantially as set forth.

5. In a horse-power, the combination of the top plate, the sweep, and clamping devices which bind the sweep to the plate, for the purpose set forth.

6. The combination of the top plate, the sweep, the rests or sockets for the sweep, and a clamping-strap between the rests for securing the sweep in place, substantially as set forth.

259,380. DOMESTIC SPINNING-MACHINE. JAS. P. GAINES, Kuttawa, Ky. Filed Mar. 27, 1882. (No model.)

Brief.—A bar adapted to sustain two adjustable standards, one of the same capable of sustaining the driving-wheel which meshes with a pinion upon the belt-wheel and the other sustaining bearings for the spindle driven by a band from said belt-wheel, is screw-threaded, so that the machine as a whole may be secured to the wall at different heights from the floor at the convenience of the operator.



Claim.—The combination of the bar A, screw-threaded, as shown, the standards B and C, adjustable thereon, the gear D, pinion F, belt-wheel G, and spindle H, and bearings *c*′, secured in the annular head *c*′, substantially as shown and described.

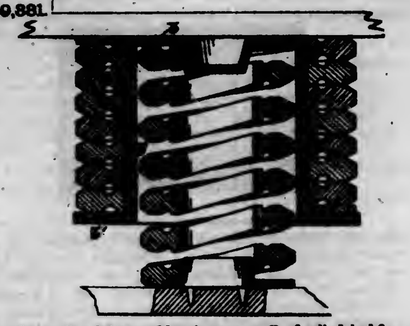
259,381. CAR-SPRING. GEORGE F. GODLEY, Philadelphia, Pa. Filed Dec. 16, 1881. (No model.)

Claim.—1. A railroad-car spring composed of edge-coiled springs, one within the other, and an interposed bearing between two opposite ends of such springs, whereby one of such springs is adapted and designed to carry the empty car and the other to carry the loaded car.

2. A railroad-car spring composed of coiled springs, one within the other, and an interposed bearing or case, B, of cylindrical form, flanged at *b*′, one of said springs being of a greater or different carrying capacity than that of the remaining spring or springs, substantially as and for the purpose set forth.

3. The cylindrical bearing or case B for railroad-springs, having flange *b*′, closed top *b*, and pin F, formed of two sections, *f f*′, of different diameters, each such section being of the same diameter or area throughout its length, substantially as shown and described.

259,381.



259,382. SPIKE. WILLIAM GOLDIE, West Bay City, Mich. Filed May 4, 1881. (No model.)



Claim.—A spike wherein the upper portion, near the head, is square and larger in cross-sections in area than the lower portion, and provided with a central web, beginning with said large portion and ending in a beveled lower end, said central web being provided on each side with two flanges having their outer sides parallel and their inner sides inclined toward each other and extending outward to the full width of the enlarged portion of the spike, substantially as shown, and for the purpose specified.

259,383. BOBBIN-WINDER FOR SEWING-MACHINES. JULIUS C. GOODWIN, Kalamazoo, Mich., assignor of one-half to William Notop, same place. Filed Mar. 21, 1882. (No model.)



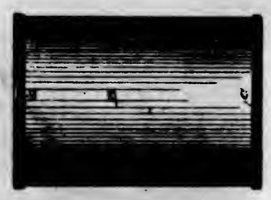
Claim.—1. In a sewing-machine, the combination, with the recessed pulley-shaft provided with the collar and locking-slide, the belt-pulley having the recesses to receive the locking-slide, and the bobbin-winder provided with the cam-lever, of the pivoted lever having the right-angled extension, bearing a spring, and slotted to receive said cam-lever, the upper end of said pivoted lever being adapted to operate the sliding lock, all substantially as set forth.

2. In a mechanism for causing the movements of the bobbin-winder to lock and unlock the belt-pulley, the combination, with the pulley-shaft having the recess in which the locking-slide is located, and the locking-slide having the end projections, of the shaft-supporting arm, provided with the recess in which said projections play when the shaft revolves, substantially as described and shown.

259,384. LINING FOR PRESERVING-CANS. WM. GOSSELIN, Biloxi, Miss., assignor to Lopez, Elmer & Co., same place. Filed Apr. 8, 1882. (No model.)

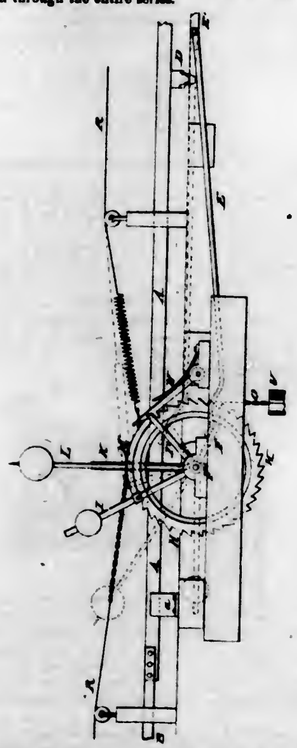
Claim.—The herein-described lining for preserving and shipping cans, consisting of wood treated with salt and soda, as and for the purpose herein specified.

259,384.



259,385. SIGNALING APPARATUS FOR RAILWAYS. EMANUEL GUNDRY, Cavaillon, France. Filed Nov. 16, 1880. (No model.) Patented in France Apr. 20, 1880, No. 136,263; in Germany Sept. 26, 1880; in Russia Oct. 9, 1880; in England Oct. 12, 1880, No. 4,134; in Italy Oct. 18, 1880; in Austria-Hungary Dec. 1, 1880; in Norway Apr. 1, 1881; in Spain Apr. 2, 1881; in Denmark Apr. 18, 1881; in Sweden June 10, 1881, and in Belgium Oct. 15, 1881.

Brief.—A block system operated through spring-held depression-levers, which elevate their respective signals to view when depressed, each signaling apparatus being connected to the next in advance by a yielding wire connection, whereby the setting of the third apparatus retains the second in position but releases the first, and so on through the entire series.

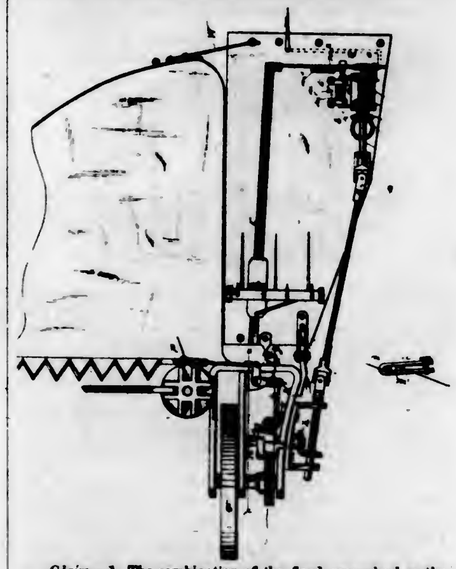


Claim.—1. In a series of signal-stations, the combination of the setting mechanism, the signaling devices, the locking mechanism for each apparatus, and the tension-wire, which is connected by a spring to a pawl of one station and is attached to a weighted chain of the sprocket-wheel of the next succeeding station, the said devices being arranged substantially as described, whereby the setting of the third apparatus releases the signaling devices of the first, the setting of the signals of the fourth those of the second apparatus, and so on.

2. The combination of the setting mechanism A B D E F and the axial turning shaft F', carrying the signaling devices I K L, with a loosely-sliding ratchet-wheel, H, pawls M N, and radial arm I', substantially as and for the purpose set forth.

3. The combination, with the shaft F', having the signaling devices I K L, ratchet-wheel H, having a side sprocket-wheel, H', and pawls M N, with a connecting-wire, R, said wire being provided with a compensatory weight, U, at one end and with a tension-spring, P, at the distant end, substantially as specified.

259,386. HARVESTER-BINDER. WILLIAM P. HALE, Brookport, N.Y. Filed Feb. 23, 1882. (No model.)



Claim.—1. The combination of the fixed gear-wheel on the main axle of the harvester, the loose gear-wheel on the counter-shaft, the lever-arm and spring for locking the loose gear-wheel to the counter-shaft, and the rocking cam for automatically throwing the lever-arm and spring out of connection with the loose wheel to stop the motion of the counter-shaft and arrest the operation of the binding mechanism, substantially as described.

2. The combination of the trip-lever P, operated from the harvester-rake, with the rocking cam, means for connecting the trip-lever to the rocking cam, the fixed gear, the loose gear, the lever-arm and spring, and the counter-shaft, substantially as described, for the purpose specified.

3. The combination of the slotted draft-bar on the harvester-frame, the bracket on the binding truck or carriage, and the cross-bolt passed through said bracket and working in the slot of the draft-bar, with the adjusting-chain and hook for holding the end of the truck at the desired elevation, substantially as described, for the purpose specified.

4. The hooks W, fastened to the binding-truck, in combination with the series of eyes or staples on the harvester-platform, whereby the rear end of the binding-truck is enabled to be brought nearer to or carried farther away from the harvester-platform, according to the length of grain to be bound, substantially as described.

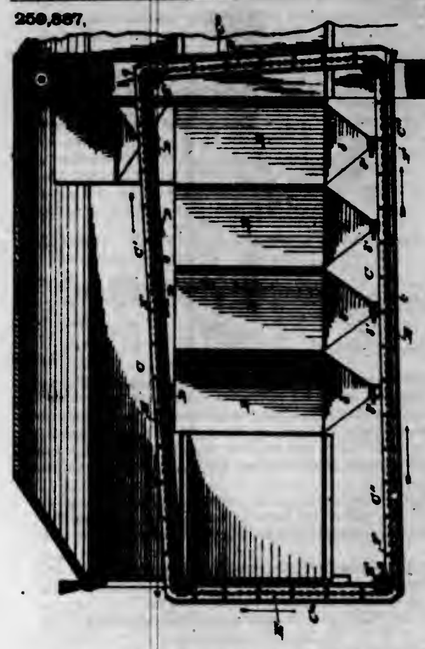
5. A tension device consisting of two substantially parallel rods arranged so as to allow the band to pass freely between them while the band-carrying arm is being elevated, and to be rotated to form a kink or bend in the band while the band-carrying arm is descending, whereby to take up the slack in the band and produce the requisite tension, substantially as described.

6. The combination, substantially as herein described, of the band-spool, the rod m, mounted in bearings in the arms a a, the movable frame carrying the rod m', and means for rocking said frame to create the tension on the band passing between said rods m and m', substantially as described.

7. The combination of the band-spool, the rod m, the movable frame carrying the rod m', the arm m' on the projecting end of rod m, and the cam-flange m^2 on the side of the band-carrying arm, substantially as described.

259,387. GRAIN-CONVEYER. HENRY HARRISON, Burlington, Iowa, assignor of one-half to Lewis R. Pix, same place. Filed Apr. 5, 1881. (No model.)

259,387.



Claim.—1. In combination with a series of grain-bins, a trough having a V-shaped bottom located above said bins, through which grain may be forced for delivery to the bins, and a similarly-constructed trough located below the bins for receiving grain therefrom to be forced through said trough to the delivery or to a receiver, substantially as and for the purpose specified.

2. In combination with a series of grain-bins, a trough located above said bins, through which grain may be forced by push-plates on an endless belt for delivery to said grain-bins, and a trough located below the bins for receiving grain therefrom, through which trough the grain is forced also by push-plates on an endless belt to the delivery or to a receiver, substantially as and for the purpose specified.

3. The combination, with a series of grain-bins, a trough located above said bins, and a trough located below said bins, of an endless belt passing lengthwise through both of said troughs, provided with push-plates adapted to force the grain forward through one trough for delivery to the bins and through the other trough for removal from the bins, substantially as and for the purpose specified.

4. In a grain-conveyer, the combination, with a series of bins, of an upper trough adapted to deliver the grain to the bins, a lower trough adapted to receive the grain from the bins, an endless belt provided with push-plates for forcing the grain through both of said troughs, and pulleys or sprocket-wheels adapted to guide and drive the endless belt through the troughs, substantially as and for the purpose specified.

5. The trough C', extending over the bins B and provided with openings which register with said bins, and trough C'', extending below said bins, provided with valved openings in their bottoms, in combination with an endless belt, E, provided with push-plates F, adapted to propel the grain forward in the troughs, substantially as and for the purpose specified.

6. In combination with the troughs C' C'', endless belt with push-plates for propelling the grain forward in the troughs, and sprocket-wheels driving and changing direction of the belt, the bucket-elevator and hopper-scale adapted to deliver grain to the trough C', substantially as and for the purpose specified.

7. In a conveyer apparatus, the combination, with the upper and lower troughs and a carrier-belt passing through said troughs, of push-plates having the belt arranged through the middle of each, and having the opposite edges of each the same in contour, whereby not only is the belt carried clear of the troughs, but the push-plates rendered capable of working in either the upper or lower trough with equal facility.

8. The combination, with the belt of a conveyer apparatus, of push-plates projecting at both sides of the belt and having V-shaped working-edges, substantially as set forth.

9. In combination with a grain-conveyer trough above the series of grain-bins and a trough below said bins, said troughs having bottoms lowest at their central parts in their cross-sections, an endless belt provided with push-plates adapted to traverse both of said troughs, and which project from both sides of said belt and conform to the shape of the bottom of the troughs in their cross-section.

10. Diamond-shaped push-plates for propelling grain through conveyer-troughs.

11. A chain belt provided at intervals with diamond-shaped push-plates for propelling grain through conveyer-troughs.

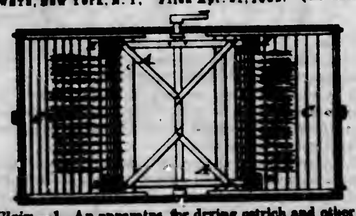
12. A belt provided at intervals with diamond-shaped push-plates connected with said belt in such manner that both top and bottom sides of the push-plate project from the belt, so as to adapt either side for use, substantially as and for the purpose specified.

13. In combination with an upper and lower trough, C' C'', and passing through both of said troughs, an endless belt having diamond-shaped push-plates attached thereto in such manner that they project from both the upper and lower sides of the belt, and are thereby adapted to push the grain forward in one direction in the upper trough and in an opposite direction in the lower trough, substantially as and for the purpose specified.

14. The troughs C' C'' and endless belt E, having diamond-shaped push-plates F, in combination with the pulleys or sprocket-wheels for changing the direction of the belt and driving it, and with grain-bins B, substantially as and for the purpose specified.

15. In combination with an endless belt having diamond-shaped push-plates attached thereto so as to project from the belt, pulleys or sprocket-wheels over which the belt runs, having depressions or grooves which receive the projecting sides of the push-plates as they pass around the pulleys, substantially as and for the purpose specified.

259,388. MACHINE FOR DRYING FEATHERS. JOHN HAWLOWATH, New York, N.Y. Filed Apr. 21, 1882. (No model.)



Claim.—1. An apparatus for drying ostrich and other feathers, consisting of a tightly-closed drying-chamber, fixed interior wire frames arranged at a suitable angle of inclination, and of intermediate oscillating beater-frames provided with means to attach the feathers to their opposite ends, substantially as set forth.

2. The combination of a closed drying-chamber having fixed interior wire frames, the latter being provided with rubber cushions, with oscillating beater-frames having means to attach the feathers to their opposite ends, substantially as set forth.

3. In an apparatus for drying ostrich and other feathers, a beater-frame, A, having transverse retaining-wires *a a* at opposite ends, and transverse binding-strings *b*, applied to the frame back of the retaining-wires, substantially as described.

259,389. DETERGENT COMPOUND. EDWARD HUDDLESON, New York, N.Y. Filed Apr. 26, 1882. (Specimens.)

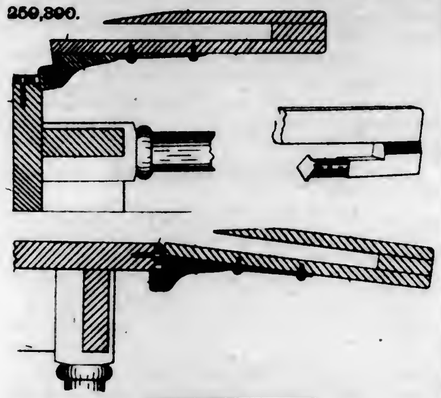
Brief.—The dried Yucca is crushed and the fiber separated from the powder, which latter is mixed with glycerine in equal proportions of each, and to each pound of the mixture four grains of boracic acid is added.

Claim.—The manufacture or composition formed of the extract from the cells of Yucca plants of saponin, sugar, and gum, together with a suitable menstruum or substance with which it may be incorporated or diffused, together with boracic acid, the whole being a new manufacture or composition, as hereinbefore described.

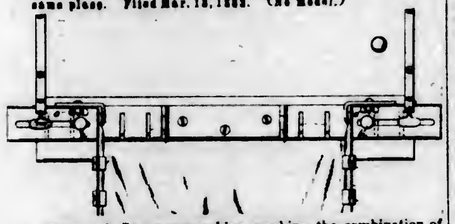
259,390. WRITER'S HAND-SUPPORT. GEORGE W. HESSLEY, Lawrence, Ind. Filed Mar. 7, 1882. (No model.)

Claim.—As a new article of manufacture, a hand-rest adapted to be secured to a writing table or desk, provided with an opening between the two parts thereof, into which the paper or other writing material may be inserted, and from which it will glide as the writing progresses, while the writer's hand rests upon the top of the top part of the rest, substantially as set forth.

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259,891. PAPER-MAKING MACHINE. BENJAMIN A. HICKOX, Windsor Locks, Conn., assignor of one-half to Arthur L. Beals, same place. Filed Mar. 18, 1882. (No model.)



Claim.—1. In a paper-making machine, the combination of the apron, the shoe, and an adjustable clamp-plate, substantially as described, and for the purpose specified.

2. In a paper-making machine, the combination of the shoe, the transversely-slotted clamp-plate, and mechanism for fastening and unfastening said plate upon the shoe, substantially as described, and for the purpose specified.

3. In a paper-making machine, the combination of the shoe, the clamp-plate having a solid middle portion and slotted end portions hinged thereto, the side slips, and mechanism for fastening and unfastening the said end portions and side slips, substantially as described, and for the purpose specified.

4. In a paper-making machine, the combination of the side slips and the adjustable angle-plate clamps *n n*, substantially as described, and for the purpose specified.

259,892. BALANCED VALVE. DANIEL HOGAN, Tomlinson, Ark. Filed Mar. 25, 1882. (No model.)



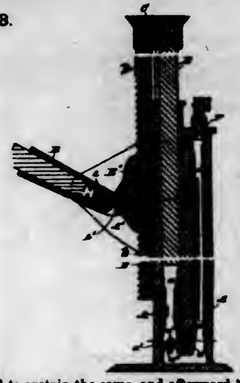
Claim.—1. The combination, with the steam-chest having transverse dovetailed cleats B, of the removable valve-seat C, having beveled sides, as set forth.

2. The combination of the steam-chest having dovetailed cleats B, the removable valve-seat C, the valve D, the shell or cap L, and suitable packing interposed between said valve and shell, as and for the purpose set forth.

259,893. LIFTING-JACK. ISRAEL HOGELAND, Indianapolis, Ind., assignor of one-half to George P. Anderson, same place. Filed Oct. 31, 1881. (No model.)

Claim.—1. In the main casting of a lifting-jack, a cylinder in which a piston moves, a second cylinder or receptacle containing a liquid, a check-valve located in the bottom of the first, or between the two cylinders, an orifice between said two cylinders above the valve, and a cock whereby said orifice may be either opened or closed, whereby when the piston is raised the liquid may

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be caused to sustain the same, and afterward by opening the cock the piston may be allowed to descend, substantially as set forth.

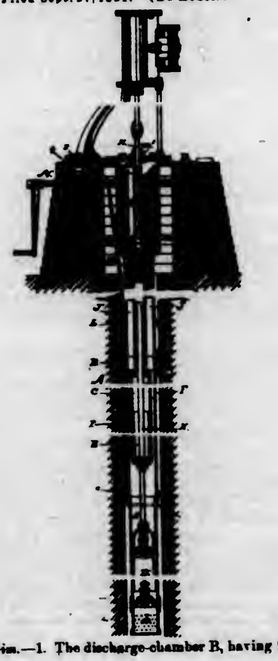
2. The combination of the two cylinders, the liquid contained therein, the valve, the cock, the piston, the rack-bar connected at the top to said piston, and the lever whereby said rack-bar may be forced upward, substantially as described, and for the purpose specified.

3. The combination of the casting A, the cylinders *a a'*, the valve *a²*, the cock *a³*, the piston B, head C, rack-bar D, lever E, and head E', substantially as described, and for the purposes specified.

4. In a lifting-jack, the piston B, adapted to be lifted by a lever and sustained or let down by the use of a liquid, substantially as described, and for the purpose specified.

5. In a lifting-jack, the combination, with the casting A, having wings A' A', of a lever, E, supported by a pivot, *e*, resting in elongated bearings in said wings, a head, E', having a recess into which the end of said lever enters, and a rack-bar connected with the lifting-head of the jack, with which said head E' engages, all substantially as shown and described, and for the purposes specified.

259,894. DEEP-WELL PUMP. WILLIAM D. HOOKER, Oakland, Cal. Filed Sept. 27, 1881. (No model.)



Claim.—1. The discharge-chamber B, having the rim *f* to re-

ceive the outer cylinder, F, and the flange *h* for the plunger-cylinder C, with the water-way *e* between them, the central socket, *g*, for the pump-rod, and the two sockets *h h* for the ends of the discharge-pipes.

2. The submerged bucket-plunger pump, the barrel of which is formed of the two cylinders A F, inclosing the valve-bucket D and plunger, and providing the water-way *e* between them, having the two separate discharge-pipes leading vertically upward from the water-way of the barrel to the surface, and connected with the air-chamber I at the top, and the yoke J, connecting or tying the said discharge-pipe at intervals, and having guide-apertures for the pump-rod, and the pump-rod H, supported and guided in and by the guide-sockets *g h'*, substantially as set forth.

259,895. BED-SPRING. WILLIAM A. HORSALL, Washington, Ind. Filed May 13, 1882. (No model.)



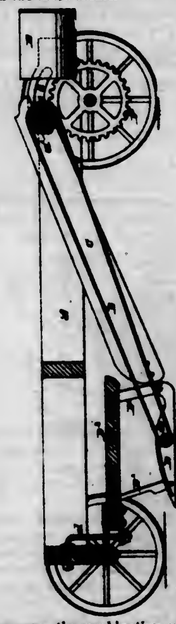
Claim.—1. A connection for bed-springs, comprising four coils arranged to form a rectangular supporting-surface between the springs, as set forth.

2. The herein-described connection for bed-springs, consisting in continuing the wire of one upright coil over to form a small coil, B, thence across to form an adjoining coil, C, from whence it is continued diagonally across to form corresponding coils, E F, and over to form the next upright spring, as set forth, and for the purpose specified.

3. The cross-slat on which the springs are adapted to rest or be hooked under, provided on one or more of its surfaces with a metallic plate or facing adapted to prevent injury to the slat by movement of the spring, as set forth.

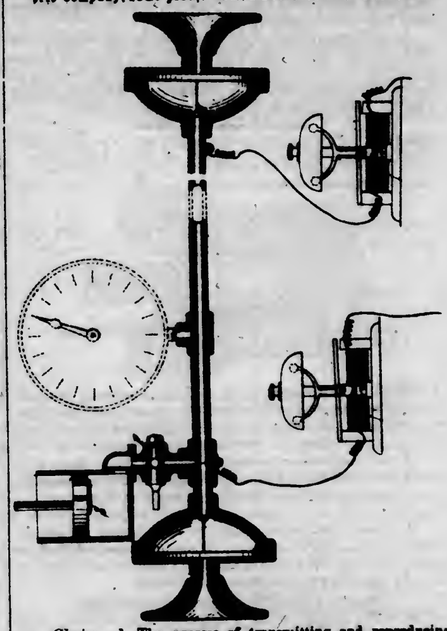
259,896. EXCAVATOR. SAMUEL P. HUNTER, Wellington, Ill. Filed July 19, 1881. (No model.)

Brief.—The plow-beam is vertically-adjustable upon a bolt at the front of the main frame, the lower end of elevator-frame being pivoted to the rear of the plow and its upper end being adjustable in a curved slot in the main frame.



Claim.—In an excavator, the combination, with the side pieces or frame, C, having the carrier B, the shaft of the upper roll thereof having a pinion, *b*, gearing with wheel F on the driving-wheel shaft, of the frame A, having curved slots *c*, and the plow D, connected by arms D' to a beam, D², adapted to move vertically upon a depending bolt, *d*, at the front end of the frame A, substantially as and for the purpose specified.

259,897. APPARATUS FOR TRANSMITTING AND REPRODUCING SPEECH. CHARLES A. HUSSEY, New York, N. Y., assignor, by direct and mesne assignments, to the Hussey Electric Company, same place. Filed Dec. 17, 1880. (No model.)



Claim.—1. The process of transmitting and reproducing speech, consisting in establishing and maintaining a pressure of air, gas, or other fluid in excess of the atmospheric pressure in a constantly-closed tube or conduit, in imparting to said air, gas, or fluid impulses from sound-waves, and in utilizing said impulses for reproducing sound-waves at a distant place, substantially as specified.

2. The combination of a tube, means for establishing and maintaining a pressure of air or other gas or fluid in excess of atmospheric pressure in the tube, and a diaphragm capable of a vibratory motion for transmitting impulses imparted to it through the tube to a receiver for reproducing the same, substantially as and for the purpose specified.

3. The combination, with a tube of electric conducting material, of a diaphragm capable of a vibratory motion for transmitting the impulses from sound-waves through the same, and an electric telegraphic apparatus connected with the tube and utilizing it as a line-conductor, substantially as and for the purpose specified.

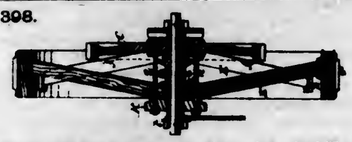
4. The combination of a tube for the transmission of impulses from sound-waves, diaphragms for transmitting the impulses from sound-waves through the same, and concentrators attached to the diaphragms for concentrating the effect of the sound-waves on the center of the diaphragms, substantially as and for the purpose specified.

5. The combination of a tube for the transmission of impulses for sound-waves, means for establishing and maintaining a pressure of air, gas, or fluid in excess of atmospheric pressure in the same, diaphragms for transmitting the impulses imparted to them, and a gage for indicating the pressure in the tube, substantially as specified.

259,898. DRIVING AND SUPPORTING WHEEL OF HARVESTERS. JOHN A. JOHNSON, Madison, Wis., assignor to Walter A. Wood Mowing and Reaping Machine Company, Hoosick Falls, N. Y. Filed July 14, 1879.

Claim.—1. The combination of the wheel, wooden rim, staggered metallic cup-like spoke-sockets secured thereto, staggered spokes, gear-wheel C, and projections *f* upon its rim to bear against

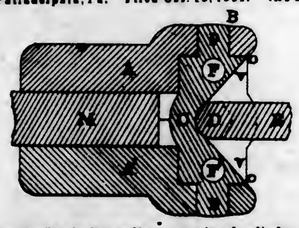
259,398.



the spokes, with central tube, A, and sprocket-wheel K, substantially as and for the purpose described.

2. The combination of the wheel, wooden rim, staggered metallic cup-like spoke-sockets secured thereto, staggered spokes, gear-wheel C, and projections *f* upon its rim to bear against the spokes, with central tube, A, its polygonal sleeve G, and sprocket-wheel K, substantially as and for the purpose described.

259,399. UNIVERSAL-JOINT COUPLING. WILLIAM JOHNSTON, Philadelphia, Pa. Filed Oct. 18, 1881. (No model.)



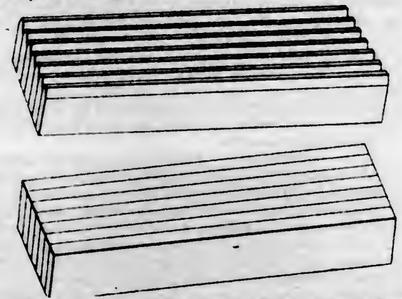
Claim.—1. In shaft-coupling, a sectional cylinder, in combination with a smaller cylinder which it incloses, and a head having a flaring mouth within which said cylinders turn in planes at right angles to one another, for the purpose set forth.

2. In combination with head B and shaft E, a cylinder, D, to which said shaft is attached, and a larger cylinder inclosing the same, said larger cylinder having a flaring or V-shaped opening to allow the play of said shaft, substantially as set forth.

3. A shaft and coupling head, the latter having a V-shaped opening, in combination with two or more cylinders, which form connections between them and allow said shaft to be inclined in as many different planes as there are cylinders.

259,400. ROOF. OSCAR W. KENDALL, Olmsted Ohio. Filed Mar. 3, 1882. (No model.)

Brief.—The edges of the roofing-boards are secured together side by side with their edges to the weather, and are then covered with a plastic coating.



Claim.—1. A sheathing or covering for a roof, consisting of thin narrow boards secured together, side to side, with their edges presented to the weather, substantially as described.

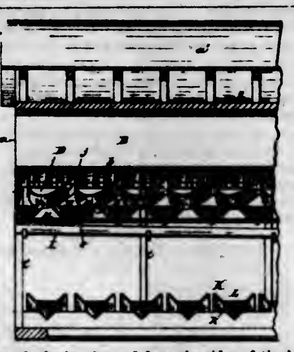
2. A roof-sheathing adapted to receive a plastic coating, consisting of thin narrow boards laid and secured side to side with their edges to the weather, and when so secured presenting grooves to receive and retain the coating, substantially as described.

259,401. REFRIGERATING-BUILDING. JOSEPH W. KEPLER, Chicago, Ill. Filed Apr. 10, 1882. (No model.)

Claim.—1. In a refrigerating structure, a tight ice-floor, above which the ice is located, in combination with a series of troughs containing a deliquescent arranged underneath the entire surface of the ice-floor, with open spaces between the several troughs and between the series and the ice-floor for the free circulation of air, substantially as and for the purposes set forth.

2. In a refrigerating structure, the ice-floor B, composed of

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two sections, *b*, sloping inward from the sides of the building, in combination with the troughs E, containing a deliquescent, arranged in separate series underneath and a little below the ice-floor sections and sloping inward to correspond with the inclination of said ice-floor, substantially as described.

3. In a refrigerating structure, the tight ice-floor, in combination with troughs containing deliquescent material arranged in series a little below the ice-floor and separated from each other, and drip-troughs arranged above the deliquescent-troughs and alternating therewith so as to cover the open spaces between them, substantially as and for the purposes set forth.

4. In a refrigerating structure, the tight ice-floor B, in combination with the series of deliquescent-troughs E and a series of drip-troughs, J, all arranged and operating substantially as described.

5. In a refrigerating structure, the troughs E, for holding a deliquescent, provided with a perforated false bottom, F, on which the deliquescent rests, substantially as and for the purposes set forth.

6. The deliquescent-troughs E, provided with offsets *e* in their sides, in combination with the perforated false bottoms F, substantially as and for the purposes set forth.

7. The troughs E, in combination with perforated false bottoms F, on which the deliquescent is placed, and the waste trough or troughs I, substantially as and for the purposes set forth.

8. The ice-floor B, in combination with the deliquescent-troughs E, drip-troughs J, and waste-troughs I, all arranged and operating substantially as described.

9. In a refrigerating structure, a tight ice-floor, B, in combination with a series of deliquescent-troughs E, arranged in the upper portion of the store-room and extending underneath the ice-floor, a series of similar deliquescent-troughs, K, arranged at the bottom of the room, a series of drip-troughs, J, and waste-troughs arranged to catch the waste and drip from the several series of troughs, substantially as and for the purposes set forth.

259,402. REVERSING-GEAR FOR ENGINES. GEORGE KNAYS, Evansville, Ind. Filed Feb. 27, 1882. (No model.)



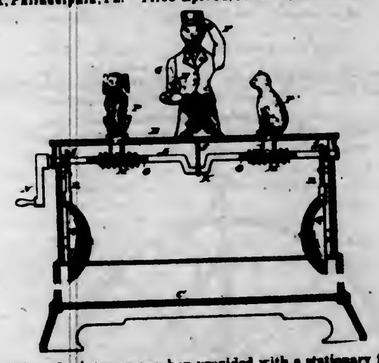
Claim.—1. In a reversing-gear in which the eccentric is shifted across the shaft, the combination, with a shaft provided with a key-way, of an eccentric having a suitable key, elongated slot, and toothed segment, constructed and arranged to operate substantially as and for the purpose set forth.

2. The sleeve C, having connected thereto the shifting-lever B, and carrying friction-roller A, in combination with the shaft A, sleeve D, having spiral slot *b* and teeth *c*, and the toothed eccentric E, arranged substantially as shown, whereby the eccentric is shifted across the shaft, substantially as and for the purpose described.

3. The sleeve D, having spiral slot *b* and cogs *c*, in combination with the eccentric E, having toothed segment *e*, and elongated slot or opening *d*, whereby the eccentric is shifted across the engine-shaft, substantially as and for the purpose set forth.

4. The shaft A, having keyway *k*, and the sleeve D, having spiral slot *b* and cogs *c*, in combination with the sleeve C, and eccentric E, having slot or opening *d*, key *i*, and toothed segment *e*, substantially as and for the purpose set forth.

259,403. TOY MONEY-BOX. LOUIS KYSER and ALFRED C. RUX, Philadelphia, Pa. Filed Apr. 15, 1882. (No model.)



Claim.—1. A toy money-box provided with a stationary figure having a movable hand and adapted to deposit the money through a slot in the box, and one or more figures which do not change their position upon the box but which move thereon, in combination with means to move the arm of said stationary figure to deposit the money and also move the other figure or figures, substantially as and for the purpose specified.

2. A toy money-box provided with a figure adapted to deposit the money, one or more figures supported upon said box and adapted to rotate, means to emit musical sounds upon operating the figures, and operating mechanism, substantially as set forth.

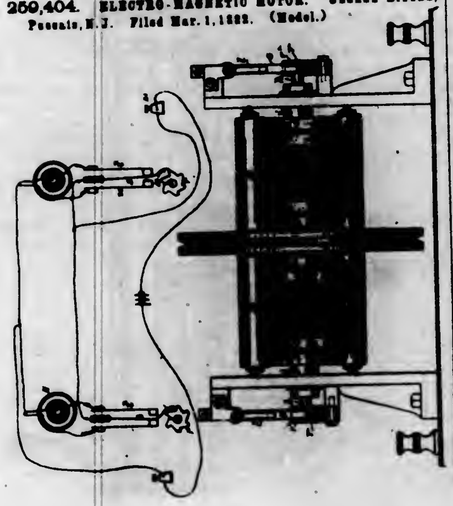
3. In a toy money-box, a receptacle or box provided with a slot, D, in combination with shaft L, provided with crank K, worms M, and pins S, worm-wheels O, figures P, P', and E, pivoted arms F G, crank I, rod J, hammers R, and balls Q, as set forth.

4. In a toy money-box, the combination of shaft L, provided with worms M, worm-wheels O, provided with figures P P', and the receptacle or box in which the money is deposited, as set forth.

5. In a toy money-box, the combination of shaft L, provided with worms M and pins S, worm-wheels O, figures P P', hammers R, and balls Q, substantially as set forth.

6. In a toy money-box, the box provided with a slot, D, in combination with figures E, provided with pivoted arms F and G, one of which holds a plate, H, and the other a bat, crank I, rod J, shaft L, provided with crank K, and pins S, hammers R, and balls Q, substantially as shown.

259,404. ELECTRO-MAGNETIC MOTOR. GEORGE LITTLE, Passaic, N. J. Filed Mar. 1, 1882. (Model.)



Claim.—1. The combination, with the magnet having heads and pole-faces, of a revolving armature the surface of which rolls in contact with the pole-faces and circuit-changing connections, substantially as specified, whereby reverse currents are employed to neutralize residual magnetism, substantially as specified.

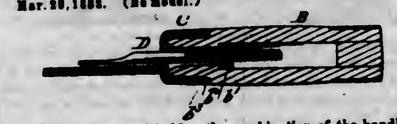
2. In an electro-magnet having circular ends, the V-shaped segmental pole-faces of such circular ends, in combination with the revolving cylindrical armatures, substantially as set forth.

3. In combination with the electro-magnets having circular ends and segmental pole-faces, the springs *s t u*, and wheel *r*, and circuit-connections, substantially as set forth.

4. In an electro-magnetic engine, the helix having circuit-connections to its ends and to an intermediate loop, in combination with circuit-closing springs and connections, substantially as set forth, whereby the residual magnetism is neutralized by a current passed in reverse direction through part of the helix, substantially as set forth.

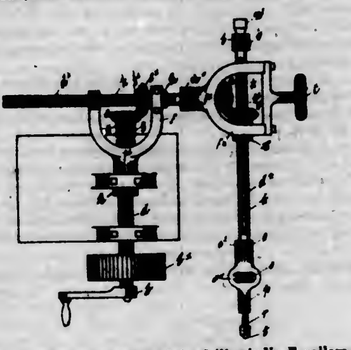
5. The combination, with the rolling armature and the magnet-heads with pole-faces, of the rings of brass or other non-magnetic metal surrounding the magnet-heads, substantially as specified.

259,405. TOOL-HOLDER. ALEXANDER LONG, Bairdstown, assignor of one-half to Andrew D. McClure, Gilboa, Ohio. Filed Mar. 29, 1882. (No model.)



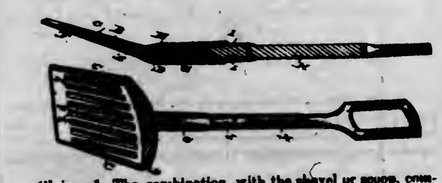
Claim.—In a tool-holder, the combination of the handles B, provided with fixed nuts *b'*, movable notched conical ferrule C, fixed conical ferrule *b'*, having the shoulder *b''*, and jointed connecting-rod D, substantially as shown and described.

259,406. TAPPING AND DRILLING MACHINE. GEORGE W. LONGMAN, Paterson, N. J. Filed Mar. 24, 1882. (No model.)



Claim.—The combination of the drill-spindle *d''*, collars *e*, set screws *e'*, sleeve *p*, screw *r*, and head *t*, substantially as described, and for the purpose shown and set forth.

259,407. SCOOP OR SHOVEL. W. CLAY LUTZ, Bedford, assignor of one-half to John Du Bois, Everett, Pa. Filed Apr. 19, 1882. (No model.)

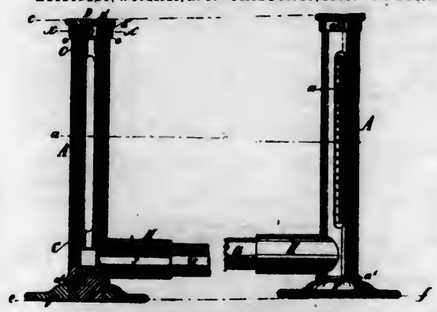


Claim.—1. The combination, with the shovel or scoop, comprising a plate having a back provided with a cylindrical socket, of the handle provided at its connecting end on opposite sides with flat springs adapted to bear against the posterior sides of the socket when the handle is inserted therein, as and for the purpose specified.

2. The combination, with the body or blade A of the shovel

comprising a flat plate, B, having forwardly-converging sides C C and rearwardly-curved back D, provided with auxiliary curved back E and cylindrical socket G, of the separable handle H, provided at its connecting end with flat springs I I, as and for the purpose specified.

259,408. HYDROSTATIC LEVELING-INSTRUMENT. JAMES MACDONALD, Woodside, N. Y. Filed Feb. 18, 1882. (No model.)



Claim.—1. A leveling-instrument consisting of the combination, with the flexible tube G, of standards formed of tubes A, capped at their upper end and provided with the foot-plate F, and the lateral tubular projection *f*, substantially as and for the purpose set forth.

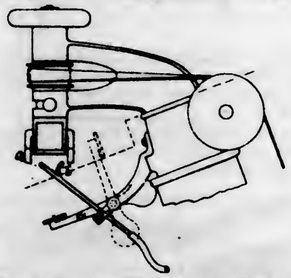
2. In a leveling-instrument, the standard formed of the combination of the tube A, having the tubular side projection *f*, the glass tube B, contracted at its ends and provided with the packing C, the perforated cap D, and the ring-valve E, provided with the perforation *e*, substantially as and for the purpose set forth.

3. In the standard of a leveling-instrument, the tube A, threaded outside at its lower end and inside at its upper end, and provided with a shoulder, *a'*, in combination with the detachable threaded foot-plate F and the screw-cap D, and adapted to apply above as well as below the points to be leveled, substantially as specified.

4. The tube A, having the lateral tubular projection *f*, grooved or threaded upon its outer surface, in combination with a flexible tube, G, and the exterior tightening-sleeve, H, as and for the purpose set forth.

5. In the standard of a leveling-instrument, the tube A, provided with the exterior circumferential rabbet *e*, in combination with a milled and perforated tubular screw-cap, D, and the perforated ring-valve E, fitted in the said rabbet below the head of the said screw-cap, for the purpose of preventing leakage and admitting air from and to the interior of said standard, as set forth.

259,409. SOLE-EDGE-BURNISHING MACHINE. JAMES W. HALEY, Somerville, Mass. Filed Apr. 6, 1882. (No model.)



Claim.—The combination, with the frame supporting a burnishing-tool, of a rest pivoted to a part of the frame at one side thereof, and adapted to be turned down to a horizontal position for use and to a vertical position out of the way, substantially as set forth.

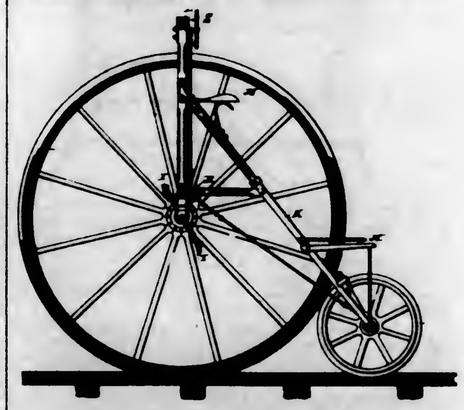
259,410. MAIL BUDGET OR POUCH. WILLIAM C. HARRADENE, Potomac Mills, Va. Filed Sept. 13, 1881. (Model.)

Claim.—A mail-package consisting of a suitable backing, having attached thereto a series of pockets to receive mail-matter, said pockets being arranged, as described, with alternate wide and narrow spaces between them, and the backing having side and end



flaps and fastening devices, the whole adapted to be folded and secured substantially in the manner and for the purpose specified.

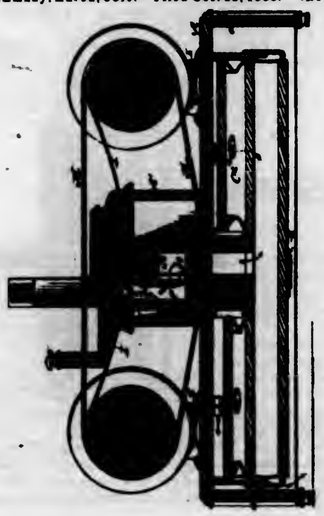
259,411. VELOCIPEDE. PAUL MCCOMBS, Beaumont, Tex. Filed Jan. 17, 1882. (No model.)



Claim.—1. The above-described construction and arrangement of skeleton frame, having the upright C and cross-bar E, and the four braces F and G, all having bearings on the driving-axle H, with the driver's seat M directly above the treadles I, or nearly so, substantially as and for the purpose set forth.

2. The arrangement of the brake in connection with the hind wheels, with the chains P and pulleys Q, in combination with the windlass-wheel S, above the driver's seat, substantially as and for the purpose set forth.

259,412. MECHANICAL MUSICAL INSTRUMENT. JOHN MCTAMMANY, Jr., Worcester, Mass., assignor to Alexander McTammany, Akron, Ohio. Filed Dec. 23, 1880. (No model.)



Claim.—1. In combination with a reservoir-bellows and two supply-bellows arranged above the latter, a reed-board having its bottom inclined and arranged on said reservoir-bellows and between the other two, substantially as set forth.

2. The recessed top of table A, in combination with the lower roll and its shaft, which bears on the top of said table, substantially as set forth.

3. In an automatic musical instrument, the combination of a casing top or table provided with openings to adapt it for operation with a traveling perforated music-sheet, and a reed-board arranged below said table and sheet, with a movable set of organ-pipes supported by the table and pressing said sheet down upon the latter by its weight, substantially as set forth.

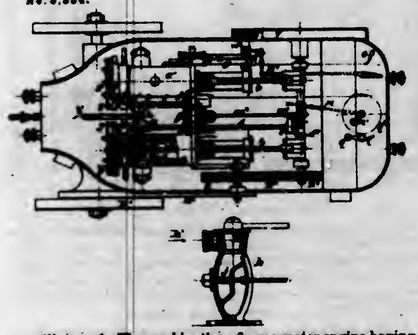
4. In an automatic musical instrument, the combination of a casing top or table provided with openings to adapt it for operation with a traveling perforated music-sheet, and a reed-board arranged below said table and sheet, with a movable set of organ-pipes supported by said table, and pressing said sheet down upon the latter by its weight, said pipes being provided with a spring or springs to aid in said pressure, substantially as set forth.

5. A pair of winding-rolls for a music-sheet, in combination with an endless elastic belt which passes around said sheet and said rolls, substantially as set forth.

6. A pair of winding-rolls provided with a belt which passes around said rolls and the music-sheet, said belt being provided with a buckle or equivalent tightening device, for the purpose set forth.

7. A pair of winding-rolls, in combination with bearings L, having L-shaped slots *l*, and elastic belt M, substantially as set forth.

259,413. GAS-LOCOMOTOR FOR VEHICLES, &c. J. H. ARMAND MONTCLAIR, Paris, France. Filed Feb. 15, 1882. (No model.) Patented in France Dec. 10, 1881, No. 146,290; in Belgium Dec. 15, 1881, No. 56,598, and in England Dec. 17, 1881, No. 5,586.

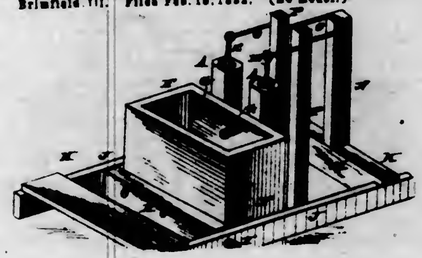


Claim.—1. The combination of a gas-motor engine having one or more cylinders, *a a'*, and main crank-shaft, with which the pistons of said cylinders connect, with an air-pump operated by the said crank-shaft to assist in starting the motor and adapted to operate the same, and with valve mechanism *i*, *j*, *j'*, and h^3, substantially as specified.

2. The gas-receiver *h*, having valves *j j'*, and combined with pipes *l l'*, substantially as and for the purpose specified.

3. The combination of the cylinders *a a'* of a gas-engine with a receiver, m^3, valves *j j'*, and pipes *l l'*, vessel *h*, and with cause *h'*, and valves h^3 and *r*, substantially as specified.

259,414. STOCK-WATERING TROUGH. SAMUEL H. MOORE, Brimfield, Ill. Filed Feb. 10, 1882. (No model.)



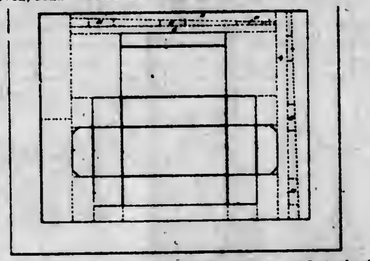
Claim.—In a device for watering stock, the combination of the tile drain or ditch B, having section C, provided with valves D D, with the cylinders A, having spouts G, the trough F, valve-rods E, swinging frame K, having platform L and upright N, and the brackets or uprights P, having lever O, connected to said upright N and to the valve-rods E, all arranged and operating substantially as and for the purpose shown and specified.

259,415. SAFE. ENOCH E. MORSE, Somerville, and FRANK H. CHARTER, Boston, Mass. Filed Nov. 9, 1881. (No model.)



Claim.—In combination, the door of a safe, provided with a cavity, *c*, the handle *b* of the bolt-throwing spindle located therein, and the auxiliary door A, for concealing and protecting said handle, substantially as set forth.

259,416. MANUFACTURE OF BOXES FROM PAPER, CARD-BOARD, &c. EDWARD B. MORSE and HARVEY B. MORSE, New Haven, Conn. Filed Mar. 22, 1882. (No model.)



Claim.—1. The improvement in the art of manufacturing box-blanks, the same consisting in simultaneously cutting the lines dividing the material into proper form and embossing their lines of ultimate folding, by pressing the same between a die composed of sharp cutting and blunt embossing-rules and a coacting counter-die, all substantially as described.

2. A die for forming box-blanks, constructed of cutting-rules disposed at various angles conforming to the direction of cuts required, and of similarly-disposed blunt embossing-rules for producing the necessary folding-lines, which rules are secured in a chase or frame by holding-blocks, all substantially as described.

3. A counter-die for forming box-blanks, consisting of a metal or other hard base and creasing or embossing channels the edges of which are raised above the plane of the hard base, substantially as described.

4. In the manufacture of paper-box blanks, a counter-die adapted to be removed from and adjusted upon the platen of a press, constructed of a sheet of metal or similar material affording a suitably-hard cutting-base, to the face of which is secured a covering or packing of paper or equivalent material to receive the embossing-rules of the coacting die, substantially as described.

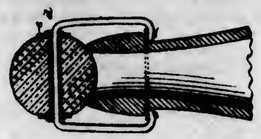
5. In the manufacture of box-blanks, the combination, with a die consisting essentially of cutting and creasing rules, of a counter-die having a hard cutting-base and embossing-channels above said base, whereby the material is simultaneously cut upon some lines and upset or creased upon other lines, which latter are stretched or conformed so as to readily bend in the folding operation, all substantially as described.

259,417. CAR-COUPLING. JAMES H. MURPHY, Port Jervis, N. Y. Filed Feb. 8, 1882. (Model.)



Claim.—The arrangement of the draw-head A, the coupling-bars B B, the hooks C C, the bolts *e e*, the grooves *o o*, the springs E E, the cam F, the crank H, with the block D and arms *d d*, and the brace K, substantially as described.

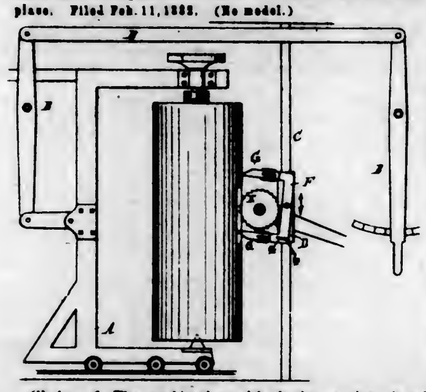
259,418. BOTTLE-STOPPER. WILLIAM W. MORRIS, (deceased,) Baltimore, Md.; Mary E. Morris, Administratrix. Filed Apr. 7, 1880. (No model.)



Claim.—1. The combination of a rubber ball, an internal tubular sleeve, *d*, and the yoke of a bottle-stopper passing through said sleeve, substantially as and for the purpose described.

2. The combination of a yielding elastic ball, an internal tubular sleeve, *d*, collars *e* upon the ends of said sleeve, and the yoke of a bottle-stopper, passing through said sleeve and collars, substantially as described.

259,419. HOOP-CUTTING MACHINE. WALTER B. MOYER, Saginaw, Mich., assignor of one-half to Willis E. Bender, same place. Filed Feb. 11, 1882. (No model.)

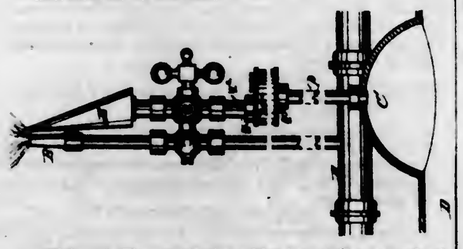


Claim.—1. The combination, with the log-carriage A and suitable devices for operating it, of a traveling cross-head or frame and a rotary cutter, E, and two independent cutters, G G, secured to said cross-head or frame, the independent cutters being adapted to cut alternately into the log at each reciprocation of the rotary cutter, substantially as and for the purpose specified.

2. The combination, with the log-carriage A, suitable devices for operating it, and the rotary cutter E, journaled in a cross-head constructed to travel longitudinally along the log, of the independent cutters G, each secured to a holder pivoted to the cross-head, and adapted to move on the pivotal point of the holder to and from the log as the cross-head reciprocates, substantially as described.

3. The combination, with the log-carriage A and suitable devices for operating it, of the reciprocating cross-head D, the rotary cutter E, and the yoke F, pivoted to said cross-head and carrying a knife, G, at each end, substantially as described.

259,420. APPARATUS FOR CONSUMING SEWER-GAS. WM. H. OGILVIE and WILLIAM L. RENSEN, Brooklyn, N. Y. Filed Mar. 18, 1882. (No model.)

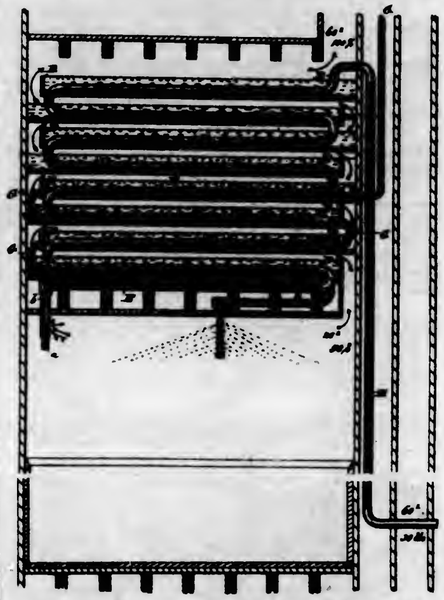


Claim.—1. The combination, with a burner, B, vacuum-head E, and supply-pipe of a sewer-gas-consuming device, of an impregnating or carbonizing chamber, W, substantially as and for the purposes as shown and described.

2. The combination, with a burner and a vacuum-head, E, of a sewer-gas-consuming device, of a chamber, W, provided with a diaphragm, W', filled with sponge or other analogous material impregnated with hydrocarbon or other suitable liquid, substantially as and for the purpose described.

3. The combination, substantially as described, of the sewer or drain pipe D, dome C', pipe P, impregnating or carbonizing chamber W, and a gas-consuming device, substantially as and for the purposes described.

259,421. METHOD OF COOLING AIR FOR MAKING ICE AND COOLING IN GENERAL. ORIN PARKER, Washington, D. C. Filed Nov. 21, 1881. (No model.)

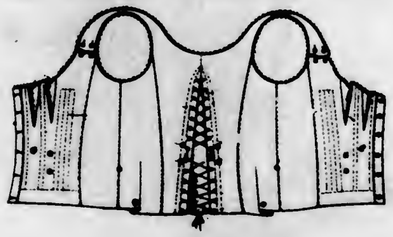


Claim.—1. In the process of cooling by expanding compressed air, the method of conserving waste energy, which consists in passing the expanded air from the freezing or cooling room over evaporating-surfaces to produce a reduction of temperature to be utilized for the purpose of lowering the temperature of the compressed air before expansion or for reducing the temperature of the water to be frozen, or for both, substantially as described.

2. The combination, with a freezing or cooling room, of the alternating tanks or evaporating-troughs D, filled with an evaporating-liquid, the compressed-air pipe E, immersed in said tanks and terminating in a pressure-regulator in the freezing-room, and the water-pipe G, also immersed in said evaporating-tanks, and terminating in the freezing-room in spray-orifices, as described.

3. A compressed-air-expanding device consisting of a pipe having an opening in its sides, a sliding plug arranged within the pipe and adapted to close the opening, and a spiral spring, also arranged within the pipe and connected to the plug, as described.

259,422. UNDERWAIST. EMMELINE W. PHILBROOK, Boston, Mass. Filed Jan. 16, 1881. (Model.)



Claim.—1. An underwaist of the character described, comprising an outer portion with a continuous lining, and having lacing applied to the outer portion, which is suitably cut away, and the lining formed full beneath the lacing, substantially as set forth.

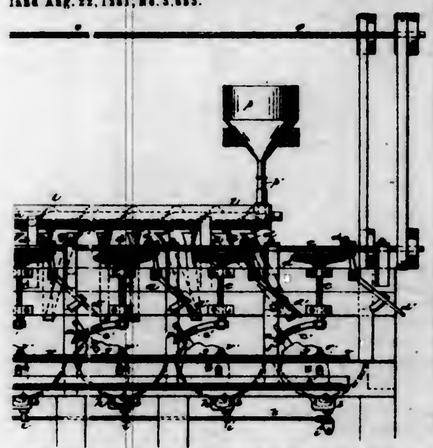
2. In an underwaist having lacing applied to the outer portion and a lining made full beneath the lacing, the bone-pockets on the inside of the laps or free edges of the lacing portion, between the same and the lining, substantially as described.

259,423. SAW-SWAGE. JAMES L. PITTS, Grand Rapids, Mich. Filed Jan. 11, 1882. (No model.)



Claim.—As a new article of manufacture, the saw-swage constructed of the part H H, provided with grooves *a a a*, and keyed swage-plate K, all constructed as and for the purposes described.

259,424. ORE GRINDING AND AMALGAMATING MACHINE. THOMAS A. READWIN, Bloomsbury Square, County of Middlesex, England. Filed Mar. 6, 1882. (No model.) Patented in England Aug. 22, 1881, No. 3,653.



Claim.—1. In a machine for grinding and amalgamating ore, the combination of the rotating pestle, the removable and adjustable pestle-axis *f*, the hooked slotted arm *d'*, and the vertical spindle, substantially as described.

2. In a machine for grinding and amalgamating ore, a pan formed with an internal recess at its bottom, in combination with a hard-metal cup to contain mercury for use in the amalgamating process, said cup being such as can be easily removed and renewed, substantially as described, and for the purpose specified.

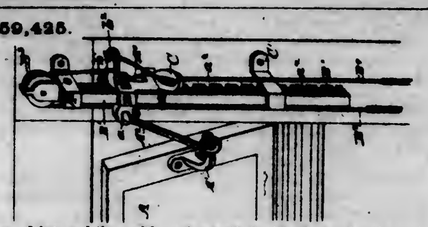
3. In a machine for grinding and amalgamating ore, a hard-metal cup to contain the mercury, provided with a tapping-hole for withdrawing matters from said cup, and suitable means, such as described, for closing said hole, in combination with the fastening device to secure said cup against unauthorized withdrawal of its contents, substantially as described.

4. In a machine for grinding and amalgamating ore, the combination, with pans *b*, pestles *g*, and means for operating the same, of a trough, *l*, screw-feeder *m*, chutes or spouts *q*, and means for regulating the quantity of ore delivered in a given time to each pan, substantially as described, and for the purpose specified.

5. In a machine for grinding and amalgamating ore, the combination of the trough *l*, screw-feeder *m*, chutes or spouts *q*, sliding shutters *r*, and overflow-pipes *s*, substantially as described.

259,425. TRANSOM AND SKYLIGHT LIFTER. FRANK A. EDSON, Chicago, Ill. Filed May 9, 1882. (No model.)

Claim—1. In a transom or skylight lifter, as described, the adjustable slide or block B, having the perforated lugs *a* and *b'*



formed integral therewith, and provided with the perforations *a'* and *a²*, substantially as and for the purpose set forth.

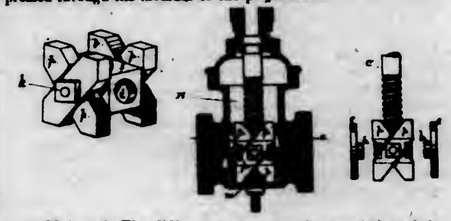
2. The combination, with the slide B, of the locking-bar B', provided with the notches *a'*, the rod A', the spring *b'*, the locking pin or catch *a'*, and the handle C, substantially as set forth.

3. The combination, with a transom or other part to which the appliance may be attached, of the connecting-rod A', the sleeve D, the slide B, and the locking-bar B', substantially as set forth.

4. The combination, with the slide B, of the locking-bar B', the cords B² B², the sheave or pulley B³, the handle C, the rod A', the locking-pin *a'*, and the spring *b'*, substantially as set forth.

259,426. STOP-VALVE. JOSEPH ROYLANCE, San Francisco, Cal. Filed Jan. 18, 1882. (No model.)

Brief.—The valves *e* are loosely connected to the block *f*, through which the operating-stem *c* passes. The ends of the cross-levers *p* (which levers are also pivoted to the block) bear against the valve-disks *e* and insure the closing of the valves when depressed through the medium of the projection *m*.

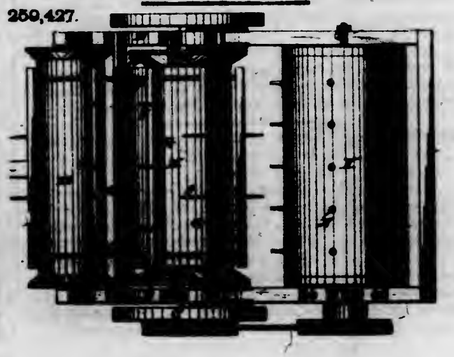


Claim.—1. The sliding gate or stop-valve consisting of the block *f*, traveling on and adapted to be moved by the valve-stem, the crossed levers carried by and pivoted to the said block, the disks or bearing-surfaces *e e*, having the ends of the said levers resting against and bearing on their inner faces, and means for spreading apart or extending the said levers when the gate or valve is in position between the valve-seats of the valve-chamber, substantially as described, to operate as set forth.

2. The combination, with the disks or bearing-surfaces *e e*, attached to the traveling block *f*, of the crossed levers *p p*, pivoted to the sides of the said block, and the wedge or projection *m*, adapted to spread apart and extend the said levers by the movement of the block *f*, substantially as described.

3. The improved valve consisting of the body A, with the way or passage having the seats *g*, the valve-stem, the block *f*, operated by said stem, as described, the disks or bearing-surfaces *e e*, loosely attached to and carried by said block, and the crossed levers *p* and the fixed stop or projection *m* within the chamber, forming the means for moving the bearing-surfaces against and holding them to the valve-seats *g*.

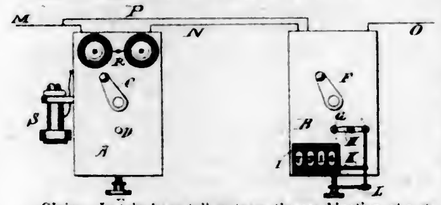
259,427.



259,427. COMBINED HAY RAKER AND LOADER. LEVI B. SAMPLE, Marseilles, Ill. Filed Dec. 8, 1881. (No model.)

Claim.—The herein-described improved rake-cylinder, provided with openings at regular intervals, and journaled at one end in a bearing on the supporting-frame, and having a rigid crank-shaft, on which are loosely mounted suitable teeth separated into series corresponding with the openings in the cylinder by washers, substantially as and for the purpose specified.

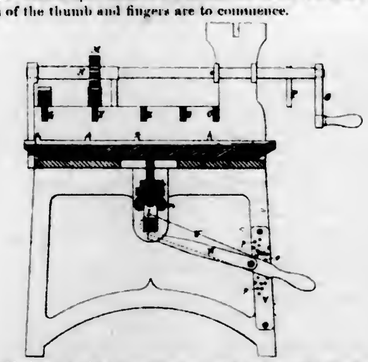
259,428. TELEPHONE CALL-REGISTER. JAS. W. SEE, Hamilton, Ohio, assignor to the Yale Lock Manufacturing Company, Stamford, Conn. Filed Oct. 22, 1881. (No model.)



Claim.—In telephone toll systems, the combination, at a station on a line, of a calling device having a register or counter attached, and an answering and ringing-off device independent of said register or counter, substantially as and for the purpose specified.

259,429. KNITTING-MACHINE. HERBERT C. SHAW, Needham, Mass., assignor to the Shaw Glove Company, of Massachusetts. Filed Mar. 20, 1882. (No model.)

Brief.—The improvement has reference to mechanism described in Letters Patent No. 241,162, dated May 10, 1881. Novel mechanism is provided by which the needle-carriers of the sets of needles may be moved simultaneously a like distance forward or backward to regulate the length of stitch. Furthermore, the needles are provided with additional studs or heels, and cams are constructed and arranged to operate thereupon when it is desired, by which the proper needles may be actuated, and a "marking-thread" be laid upon them and knit into the fabric where the knittings of the thumb and fingers are to commence.



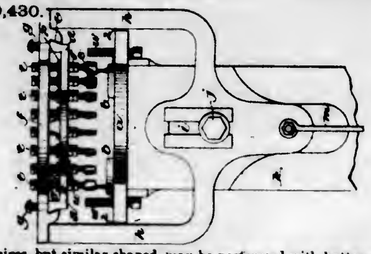
Claim.—1. The combination, with the needle-carriers, of mechanism, substantially as described, for effecting simultaneous and equal movements of them in order to vary the length of stitch, as set forth.

2. In combination with the needles and their main operative cam-bars and studs, the auxiliary studs and cam bar or bars, arranged and to operate substantially as set forth, to aid in effecting the knitting into the fabric of marking-threads, as explained.

259,430. BUTTON-HOLE CUTTER. DANIEL S. SMITH, Rockland, assignor of one-half to Maria W. Thayer, Boston, Mass. Filed Mar. 31, 1882. (No model.)

Claim.—1. The bed-plate to receive the leather being cut, combined with the platen and die-holding plate adjustably connected therewith, and provided with a series of dies independently adjustable in the said plate, substantially as and for the purpose set forth.

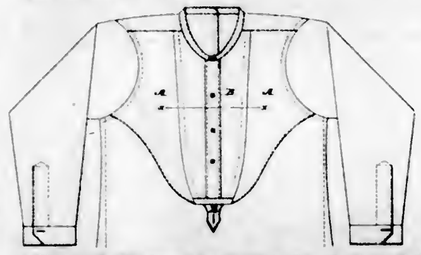
2. The die-plate curved to correspond with leather being cut, provided with a series of dies adjustable in lines substantially radial to the curvature of the said plate, the said dies being frictionally held in adjusted position in the said slots, whereby pieces of different sizes, but similar shaped, may be perforated with button-holes uniformly spaced, substantially as described.



3. The die-plate provided with a series of slots, combined with the dies, provided with stems passing through the said slots, and springs to retain the said dies in adjusted position until positively moved therefrom, substantially as described.

4. The die-plates provided with slots, combined with a series of dies movable in the said slots, and holding-arms rigidly connected to the said dies and adapted to be engaged by the said die-plate to positively retain the said dies in adjusted position, substantially as described.

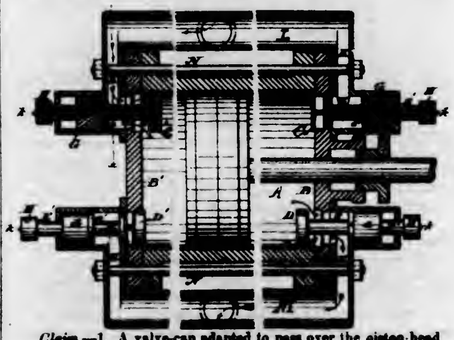
259,431. SHIRT. SAMUEL STRAUSSBURGER, Philadelphia, Pa. Filed May 1, 1882. (No model.)



Claim.—1. The bosom connected to the side pieces of the body by the rows of stitches *a* and the rows of stitches *d*, which latter are within the line of the former, producing the sprung-out sides of the bosom, the front edges, *c*, whereof are folded and formed of the material of the bosom, and the rear folded edges are formed of the material of the side pieces, the latter material backing the sprung-out sides of the bosom, substantially as and for the purpose set forth.

2. The sprung-out sides having the folded edges *c c'*, the front edges, *c*, overlapping the rear edges, *c'*, substantially as and for the purpose set forth.

259,432. VALVE AND VALVE-GEAR. WILLIAM W. ST. JOHN, St. Louis, Mo. Filed Nov. 18, 1881. (No model.)



Claim.—1. A valve-cap adapted to pass over the piston-head of a valve at intervals, as and for the purpose set forth.

2. A piston-valve having a cap provided with a stem projecting through the valve and adapted to pass over the piston-head at certain intervals, as described, and for the purpose specified.

3. A valve-cap having a stem projecting through the body of a piston-valve and arranged to receive the inner head of the valve when it is moved forward into the cylinder, substantially as and for the purpose described.

4. A valve-cap having an annular flange to embrace a piston-head with packing as said head moves into the cylinder at certain intervals, as and for the purpose set forth.

5. A valve-cap having an annular flange, which embraces a piston-head provided with packing as said head is moved into the cylinder, and returns with it until released by striking against a shoulder in the cylinder-head, substantially as and for the purpose described.

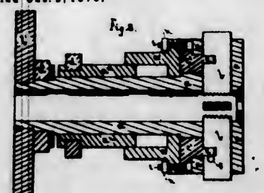
6. A valve consisting of a piston-head, *a*, embraced at proper intervals by a flanged cap, having a stem extending through the body of the valve, and a piston-head, *a'*, secured to the head *a* by a sleeve, E, substantially as specified.

7. The valve herein described, consisting of the piston-heads *a a'*, connected by a sleeve, E, containing a spring, F, the cap I, having stem *k*, and the extension E', for attachment to an operating-arm, all substantially as shown and specified.

8. In valve-gear, the combination of the piston-valves C C' D D', provided with caps I, the casings G, and pipes K L M, with operating valve-gear, substantially as specified, and for the purpose set forth.

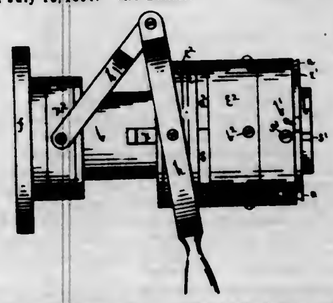
9. In valve-gear, the steam-valves C C' and exhaust-valves D D', the caps I, and the casings G, in combination with the rods P P', arms H, cross-bar O, journal-boxes *h*, and suitable rock-shaft, or equivalent means, substantially as and for the purpose set forth.

259,433. SCREW-THREADING MACHINE. LEVI W. STOCKWELL, Cleveland, Ohio, assignor to William H. Price, same place. Filed Oct. 9, 1876.



Claim.—The cutter-head *a*, provided with scroll *a'*, having a rotary motion to open and close the dies, and ring *a'*, formed with a cam-slot, a^3, a part of which is parallel with the axis of the cutter-head for the purpose of arresting the rotary motion of the scroll, in combination with the sliding collar a^2, having pin *f*, substantially as described.

259,434. SCREW-CUTTING MACHINE. LEVI W. STOCKWELL, Cleveland, Ohio, assignor to William H. Price, same place. Filed July 13, 1881. (No model.)



Claim.—1. The stock *b*, having the inclined grooves *c' c'*, in combination with collar a^2, levers a^3 a^3, grooved collar *b'*, and dies *a*, substantially as described.

2. The ring c^3, wedges *c c*, levers a^3 a^3, and springs *s s*, in combination with collars c^2 *b'*, dies *a*, and stock *b*, having the inclined grooves *c' c'*, substantially as described.

3. The collar c^2, having the rods *x x*, levers a^3 a^3, and springs *s s*, and the ring c^3, having the wedges *c c*, in combination with collar *b'*, having the inclined grooves *c' c'*, the dies *a*, and stock *b*, having the inclined grooves *c' c'*, substantially as described.

4. The stock *b*, formed with slots *s' s'*, of unequal length, in combination with collar *b'*, pins c^2 *s'*, and the cutting-dies, substantially as described.

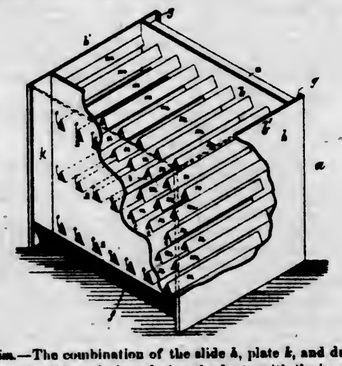
259,435. CAR-COUPLING. ALEXANDER STORY, Washington, Iowa. Filed Apr. 10, 1882. (No model.)



Claim.—1. The draw-head having a rectangular mortise in its top, with an undercut recess, *i*, and lugs *c*, in combination with the latch B, having projecting flanges upon its sides and rear, lip *b*, and side extensions, *b'*, substantially as described.

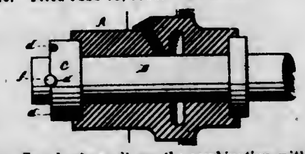
2. The lifting-rod *d*, step *k*, and cross-rod *e*, in combination with the keepers *g f*, pin *l*, and latch B, substantially as described.

259,436. GRAIN-DRIER. EDWARD THOMPSON, Hokah, Minn. Filed Mar. 3, 1882. (No model.)



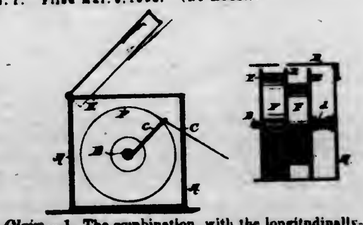
Claim.—The combination of the slide *h*, plate *k*, and ducts *p* and *q*, the said slide and plate closing the ducts, with the inverted-V-shaped tubes *m* and *n*, leading alternately into the ducts *p* and *q*, all arranged as set forth.

259,437. COLLAR FOR CAR-AXLES. JOHN THOMPSON, Bucyrus, Ohio. Filed June 13, 1881. (No model.)



Claim.—In a bank or pit car, the combination, with the axle and wheel, of a collar or washer between the linchpin and the face of the wheel, provided with notches or grooves of varying depth, substantially as and for the purposes set forth and described.

259,438. SNOW-BOX. WALTER C. THOMPSON, Williamsburg, N. Y. Filed Mar. 8, 1882. (No model.)



Claim.—1. The combination, with the longitudinally-slotted box, of the removable rod D and the brake or tension device, substantially as described.

2. The combination, with the longitudinally-slotted box, of

the removable rod D, carrying the loose plates or disks E, and the tension device or brake, substantially as described.

3. The combination, with the longitudinally-slotted box, of the loose removable rod D, carrying and supported by the loose plates E, and the spiral spring d, substantially as described.

259,439. SEWING-MACHINE SHUTTLE. JAMES THIPP and JOHN E. OSBORN, Cleveland, Ohio. Filed Apr. 7, 1882. (Model.)

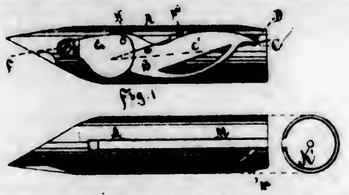


Fig. 1

Claim.—1. In shuttles for sewing-machines, a detachable bobbin-holder consisting of two heads connected together by a bar arranged to slide in a longitudinal slot in the shuttle-shell, and provided with pivotal bearings for said bobbin in the heads of the holder, substantially as and for the purpose set forth.

2. In combination with a sewing-machine shuttle-case and bobbin, a holder having a slotted and a pivotal head for carrying the said bobbin, and connected together by a bar, J, adjusted to the longitudinal slot in the case, arranged substantially as and for the purpose set forth.

3. The shell or case A, provided with a longitudinal slot, M, and spiral slot N, in combination with the bobbin and holder J, substantially as and for the purpose set forth.

4. In sewing-machine shuttles, the spring B, provided with a point, *e*, and opening *d*, in combination with the protector-plate G, having an indentation, *f*, for the said point, substantially as and for the purpose set forth.

5. A sewing-machine shuttle having a spiral slot, N, for the bobbin-thread, in combination with the spring B and protector-plate G, connected with the shell, substantially as and for the purpose set forth.

6. A sewing-machine shuttle consisting of the shell A, with a longitudinal and spiral slot therein, the bobbin and holder arranged within said shell, in combination with the spring B and protection-plate, substantially as and for the purpose set forth.

259,440. METALLIC SKIPPING-HOOP. WILLIAM F. TURNBULL, Hamston, Va. Filed Apr. 25, 1882. (No model.)

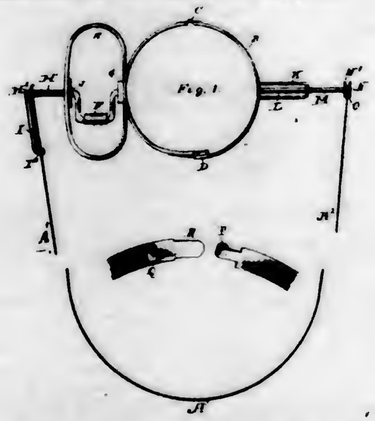


Fig. 1

Claim.—1. In a child's skipping-hoop, the belt B, provided with a hinge and clasp, the elliptical frame E, rigidly fixed to one side of said belt, and the rectangular frame K, rigidly attached to the opposite side, substantially as described, and for the purposes set forth.

2. In a child's skipping-hoop as herein specified, the combination of the belt B and frames E and K, the fixed rod L, having shoulders N' and N, the revolving rod H, with eye H', arm I, loop I', and crank F, all arranged in the manner and for the purposes set forth.

3. The hoop A, in combination with the side rods, H and M, the rod H having eye H', arm I, and loop I', the supporting-frames E and K, the crank F, and belt B, substantially as specified, and for the purposes set forth.

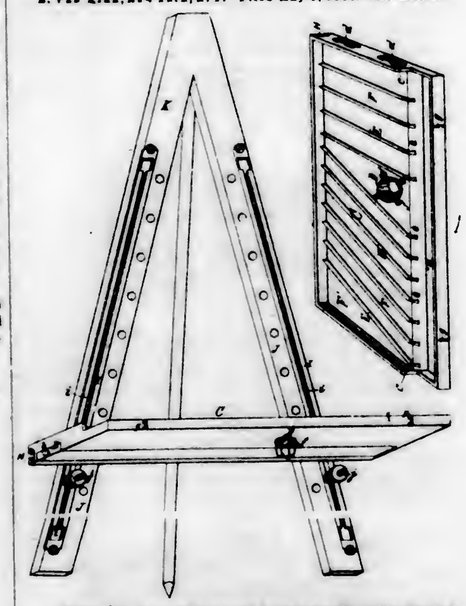
4. In combination with the belt B and strip G, the elliptical frame E, rigidly connected to said belt, the crank F, with inside axle working in a slot in strip G, the shoulder J, and rod H, said rod having an eye working in a slot in the outside rim of the frame, also the arm I and loop I', substantially as set forth, and for the purposes specified.

5. The combination of the belt B, frame K, rod L, with projection M, and shoulders N' N, all rigidly connected in the manner and for the purposes set forth.

6. The clasp D, consisting of the hook P, loop Q, and tongue R, arranged in the manner and for the purposes specified.

7. The belt, frames, and crank, as herein specified, in combination with the hoop A, having loop O, secured to and arranged to revolve around rod M between its shoulders N' and N, the hoop at the opposite side being adjustably attached to rod H by means of the eye in said rod, the arm I, and loop I', substantially as described, and for the purposes set forth.

259,441. COMBINED ARTIST'S CASE AND EASEL. AGNES E. VAN KIRK, New York, N. Y. Filed May 3, 1881. (No model.)



Claim.—1. An artist's case adapted to be adjustably attached to an easel, consisting of the color-board C, the trough G, and drawer B, substantially as described, and for the purpose set forth.

2. In combination with an easel, the color-board C, divided into spaces by the removable slats E E for the purpose of supporting the painting materials, substantially as described.

3. The combination of the color-board C, having dovetailed parallel grooves, and the adjustable slats E E, dovetailed to fit said grooves, dividing the board into sections, and longitudinally removable, substantially as described.

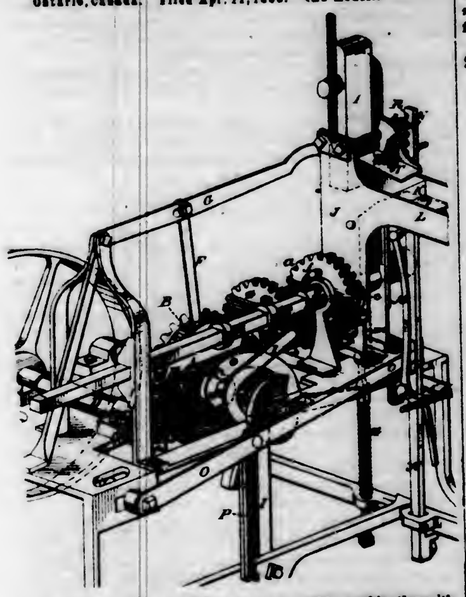
4. The combination of an easel and a case or board for supporting painting materials, the board being adjustable laterally and vertically, substantially as described.

5. In combination with an easel having the grooves *i i*, and slide *k*, an artist's case having the groove H and the slide A, the slides being connected to enable a lateral and vertical adjustment of the case, substantially as and for the purpose set forth.

6. The combination of the dovetailed grooves *i i* in an easel and the slides *k k*, having the thumb-screws *j j*, for securing an artist's case or board at any desired height, substantially as described.

7. An artist's case consisting of the color-board C, trough G, drawer B, and lid A, which, when closed, will hold the painting materials and may be carried.

259,442. CAN-FILLING APPARATUS. WM. WEST, Keene, Ontario, Canada. Filed Apr. 11, 1882. (No model.)



Claim.—1. In a can-filling apparatus, and in combination with the vertical fish-receiving chute J and the vertically-reciprocating plunger I, guided as shown, the cam E, adjustable upon the driving-shaft, the vertical rod F, the lever-arm G, and the connecting rod or link H, substantially as and for the purpose herein described.

2. The horizontal trough L, opening into the upper part of the chute J, in combination with the reciprocating carrier K, moving in said trough, so as to transfer the fish into the vertical chute, substantially as herein described.

3. In combination with the carrier K, moving in the trough L, the lever-arm M, connected with the carrier by a link, and having the fork or notch M', in combination with the vertically-reciprocating bar N, substantially as herein described.

4. The hinged swinging gate T, opening or closing the passage between the trough L and chute J, and having the toothed segment S, in combination with the reciprocating bar N, with its rack R engaging said segment, substantially as herein described.

5. The bar F, moving in guides, as shown, in combination with the lever O, cam Q, and spring P, substantially as and for the purpose herein described.

6. The cylindrical receiver having one side open and the edge forming a knife, V, so that a supply of fish may be forced through the opening from the chute J and cut off and formed to enter the can by the rotation of the knife, substantially as herein described.

7. The cylindrical knife and shaper V, turning within the chute J, and provided with the notched flange W, in combination with the curved lever Z and rotating gear-wheel *a*, substantially as herein described.

8. In combination with the cylindrical knife and shaper V with its notched flange W and curved operating-lever Z, the disk *i*, supporting the lever, and adjustable upon the gear *a* by slots and screws *f*, so as to regulate the movements of the knife, substantially as herein described.

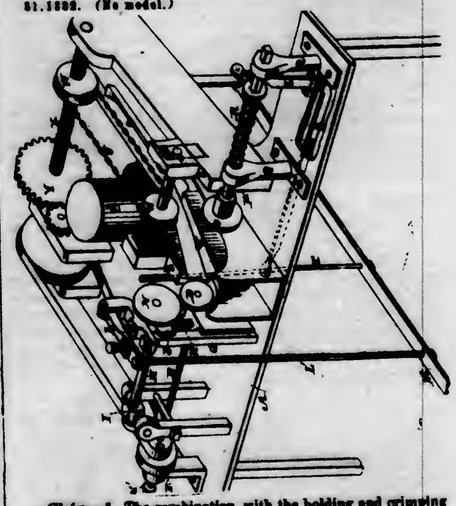
9. The cylindrical knife and shaper V, with its notched flange, and the curved pivoted lever Z and spring *h*, rotated by the gear-wheel *a*, in combination with the stationary pin *c*, whereby the pawl *y* is disengaged at each semi-revolution of the knife, substantially as herein described.

10. In combination with the hollow rotating knife and former V, operating within the chute J, as shown, the eccentric gears *a a'*, meshing with each other to drive the knife with a variable speed, substantially as herein described.

11. In combination with the hollow intermittently-rotating cylindrical knife and former V and the eccentric driving-gears *a a'*, the piston *g*, reciprocating through the cylindrical knife and the sleeve upon which the gear *a* turns, and the stem or extension *h*, operating lever and cam, substantially as herein described.

12. The hinged swinging gate T, toothed segments S, and vertically-moving bar N and rack R, in combination with the latch *r* and the arm *t*, connected with the plunger, substantially as and for the purpose herein described.

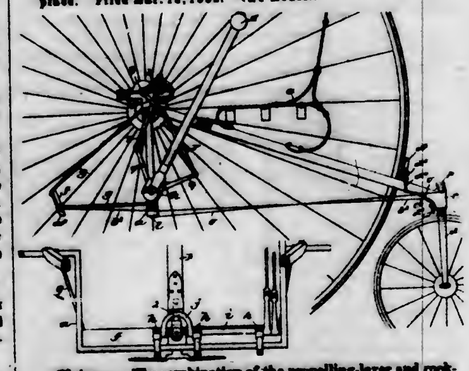
259,443. APPARATUS FOR CRIMPING THE ENDS UPON CIRCULAR CANS. WM. WEST, Keene, Ontario, Canada. Filed Jan. 31, 1882. (No model.)



Claim.—1. The combination, with the holding and crimping dicks, as shown, of the inclined track or ways U and the acid-trough *e*, through which the crimped joint may pass, substantially as herein described.

2. In combination with the way or track U and the endless chain moving above the track upon pulleys W, the boxes *a* of the shaft Z, having the vertically-movable elastic supports *b*, substantially as and for the purpose herein described.

259,444. VELOCIPEDE. FREDERICK WHITE, Westborough, Mass., assignor of five-twelfths to Charles B. Rogers, same place. Filed Mar. 18, 1882. (No model.)



Claim.—1. The combination of the propelling-lever and rock-shaft connected therewith, the cranks mounted on the said rock-shaft, the driving-wheel and shaft adapted to be operatively connected therewith, the cranks loose on the said shaft, and having a ratchet-and-pawl connection therewith, and also being connected with the cranks upon the rock-shaft, substantially as described.

2. In a tricycle, the combination of the driving-wheel, a shaft operatively connected therewith and having a series or cone of gears of different diameters, a second shaft, means to actuate it, and a series of gears loose thereon, meshing with the first-mentioned series, and a series of independent clutches splined on said shaft, and independent shippers therefor, whereby any of the said gears may be connected with the said shaft to propel the wheel substantially as described.

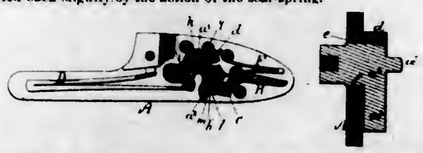
3. In a tricycle, a shaft having a series of gears loose thereon and a series of clutches splined thereon, combined with a series of independent shippers for said clutches, locking devices for retaining the said shippers with the clutches disengaged, and means to automatically throw the said clutches into engagement when released by their locking devices, substantially as described.

4. The actuating-lever and rock-shaft connected to oscillate therewith, the said lever being pivoted to have an axial rotary movement, combined with a spindle connected with the said lever by a universal joint, and also connected with the steering-wheel, whereby the said wheel is turned by the rotary movement of the said lever when at any position in its oscillating movement, substantially as described.

5. The propelling-lever and rock-shaft connected therewith, combined with the driving-wheel of the tricycle, the shaft adapted to be operatively connected therewith, and devices having a ratchet-and-pawl connection with the said shaft, operated by the said propelling-lever and rock-shaft, substantially as described.

259,445. LOCK FOR FIRE-ARMS. ANDREW E. WHITMORE, East Boston, Mass. Filed Mar. 18, 1880. Renewed Mar. 20, 1882. (No model.)

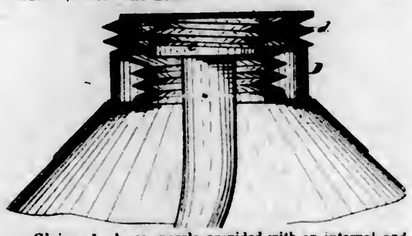
Brief.—A piece, denominated a "carrier," is pivoted in the lock-plate concentrically with the tumbler. It has shoulders on opposite sides of the tumbler so disposed as to allow the carrier to have slight independent movement in the carrier. The mainspring is attached to the carrier, and when the latter is arrested, just before the hammer completes its stroke, the hammer is carried forward by its own momentum, and after making the stroke is carried back slightly by the action of the sear-spring.



Claim.—1. In combination with a mainspring, tumbler, and sear, a plate or carrier pivoted concentrically with said tumbler and inclosing the same, said carrier having a flaring recess to allow the independent movement of said tumbler, substantially as set forth.

2. In combination with mainspring D, sear H, sear-spring F, and tumbler *h*, having an inclined face beyond the safety-notch, the carrier *d*, pivoted concentrically with said tumbler and inclosing the same, said carrier being provided with a projection, *i*, and stopped by a post, *q*, said devices causing the independent forward action of said tumbler and the immediate rebound thereof to the safety position, substantially as set forth.

259,446. CAN-SPOUT. F. CORYEZ WILSON, Chicago, Ill. Filed Mar. 18, 1881. (No model.)



Claim.—1. A can-nozzle provided with an internal and an external screw-thread, in combination with a reversible spout threaded to fit the internal thread of the nozzle, and a cap threaded to fit the external thread of the nozzle to close the can and protect the end of the reversed spout, substantially as described.

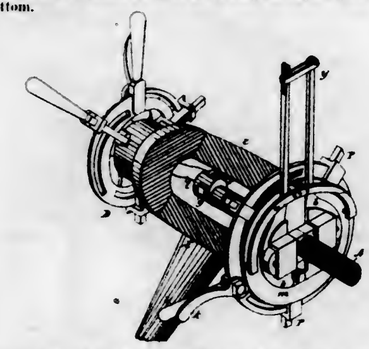
2. A can-top, in combination with a nozzle provided with threaded sections of unequal size and adapted to receive and inclose the enlarged end of the spout when reversed, a reversible spout provided with a threaded enlarged base fitting the smaller section of the nozzle, and a threaded cap adapted to the larger section of the nozzle, substantially as described.

3. The can-top A, in combination with the nozzle B, having two threaded sections, *b b'*, of different size but made of a single piece of metal, the spout C, provided with the threaded enlargement *c*, and the cap D, provided with the threaded section *d*, substantially as described.

4. A can-nozzle, in combination with a removable and reversible spout provided with a hollow enlargement at its base, in the upper and lower sides of which are vent-holes, whereby a chamber is provided at the base of the spout, closed except the vent-holes, and outside drip is prevented, substantially as described.

259,447. MACHINE FOR BORING AXLE-HOLES IN HUBS, &c. WILLIAM R. WOOD and SAMUEL BARR, Butler, Iowa. Filed Aug. 30, 1881. (No model.)

Brief.—The screw-shaft, which carries and advances the tool, is provided with an extension, which is bent to correspond with the form to be given to the hole, passing through a guide at the bottom.

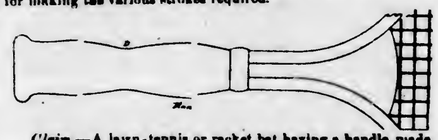


Claim.—1. In a machine for enlarging tubular borings, a guide-plate operating on a form-rod and feed-shaft, having a cutting-tool attached thereto, substantially as described, in combination with mechanism, substantially as described, for actuating the shaft and mechanism.

2. In combination with the feeding-shaft, the collars *b b*, having the followers *w w*, of wood, the latter being capable of adjustment to compensate for wear, substantially as described.

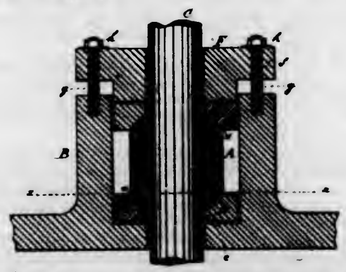
259,448. HANDLE FOR RACKETS OR LAWN-TENNIS BATS. OTWAY E. WOODHOUSE, 20 Upper Phillimore Gardens, Kensington, County of Middlesex, England. Filed May 8, 1882. (No model.) Patented in England Feb. 16, 1881, No. 668.

Brief.—The handle is made with three bulges, to enable the player to change the position of his hand with greater accuracy for making the various strokes required.



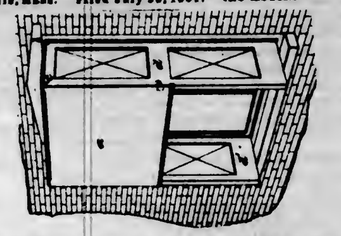
Claim.—A lawn-tennis or racket bat having a handle made in the form substantially as described, for the purposes set forth.

259,449. PISTON AND VALVE ROD PACKING. HENRY WOODBURN and NORCH C. COATS, Waverly, Iowa. Filed Apr. 1, 1882. (No model.)



Claim.—The combination, with the stuffing-box B and the gland F, of the diagonally-split ring A, having both ends conical, and the two split rings D E, each having a conical recess to receive the conical ends of the ring A, whereby the pressure of the gland F will contract the split ring A and expand both of the split rings D E, substantially as specified.

259,450. AWNING FOR WINDOWS. ALFRED WOODS, Granteville, Mass. Filed July 25, 1881. (No model.)

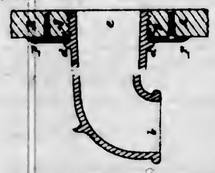


Claim.—1. The awning consisting of a flexible strip, *a*, and the stiffening-pieces *b c*, connected therewith, as described, and provided with sockets to engage the upper, inner, and outward corners of the window blinds or shutters with which it is to be used, substantially as described.

2. The awning to be used in connection with blinds or shutters, consisting of a flexible strip, combined with stiffening-pieces at one end to engage the upper and inner corners of the blind and stiffening-piece at its other end to engage the front or outer edge of the blinds, and an intermediate stiffening-piece to engage the upper and outer corner of the blinds, the said stiffening-pieces at the ends of the flexible strip being provided with fastening devices to attach them to the blinds, substantially as described.

3. The combination, with the hinged blinds or shutters, of the flexible strip provided with suitable stiffening-pieces to engage the upper, inner, and outward corners of the said blinds, and having a portion extended down the front edges of the said blinds and adapted to be fastened thereto near its lower ends, substantially as described.

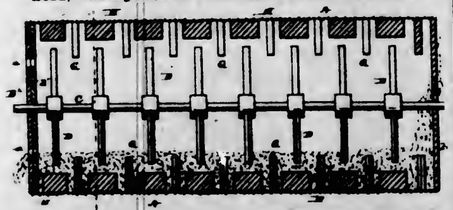
259,451. PUMP-SPOUT. S. JARVIS ADAMS, Pittsburg, Pa. Filed Apr. 5, 1882. (No model.)



Claim.—1. In combination with a pump-spout having an annular extension at the back thereof, an annular bracing-plate adapted to be secured from the back on the extension of the spout and be attached to the pump-body, substantially as and for the purposes set forth.

2. In combination with a pump-spout having at the back thereof an annular extension and shoulder, an annular bracing-plate adapted to screw from the back over the extension against the shoulder and be attached to the pump-body, substantially as and for the purposes set forth.

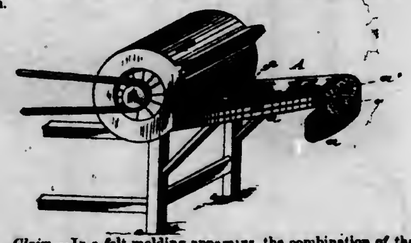
259,452. PROCESS OF DECORTICATING GRAIN. WILSON ABEL, Washington, D. C. Filed Apr. 24, 1882. (No model.)



Claim.—A process of decorticating grain, which consists in first subjecting the horizontally moving and rolling mass of grain contained in a suitable receptacle to the action of rasping or abrasive beaters; second, in maintaining a mass of grain in the receptacle or cylinder by a uniform feed and discharge that will make the weight of the mass a factor for keeping the grain against the abrading and beating surfaces with sufficient pressure to cause the removal of the impurities; and, third, in the withdrawal of the impurities by air-currents, substantially in the manner and for the purposes described.

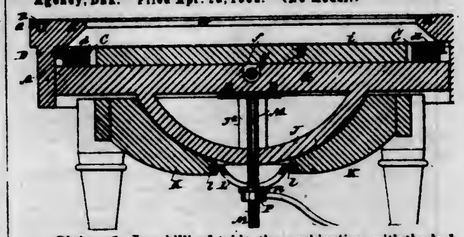
259,453. MOLD FOR MAKING ARTICLES OF FELT. SAMUEL G. ALEXANDER, Caro, Mich. Filed Apr. 7, 1882. (No model.)

Brief.—The invention is designed for the manufacture of felt head, hand, foot wear, &c., from fibrous feltable material. The fiber is thrown by an air-blast into the perforated former, which is provided with sectional lids, the one on the extreme end being raised first, so that the material may be conveyed by the blast to that part of the former, after which the other lids are opened in turn.



Claim.—In a felt-molding apparatus, the combination of the foraminated flanged plates *a a'*, provided with the hinged doors B and core-piece C, provided with the wires *b*, adapting said core-piece to be held in place between the flanged plates *a a'* by clamping the ends of the wires between the meeting flanges of the plates, as shown and set forth.

259,454. BILLIARD-TABLE. CHARLES W. ALLEN, Pine Ridge Agency, Dak. Filed Apr. 19, 1882. (No model.)



Claim.—1. In a billiard-table, the combination, with the bed B and cloth *i*, of the cleats C, provided with rabbets, and arranged as herein shown and described.

2. The combination, with the bed B, cloth *i*, and cleats C, of the cloth-covered bars D and screws *d*, substantially as and for the purpose herein described.

3. The combination, with the cleats C, provided with the screw-threaded lugs *f*, and the base G, provided with the groove *g*, of the rod H, provided with a right-hand and a left-hand thread, substantially as and for the purpose herein described.

4. The end cloth-holding cleats adapted for lateral movement, and provided with diagonally-placed brace-bars adapted to set in grooves of the side cloth-holding cleats, whereby both side and end cleats may be simultaneously spread to stretch the cloth over the bed, substantially as shown and described.

5. The end cleats, C, provided with screw-threaded lugs *f* and diagonally-placed brace-bars E, and side cleats, C, having seats *e* to receive the bars E, and the right and left screw H, combined for operation substantially as shown and described.

6. The combination, with the frame A and bed B, and the devices connected therewith, of the base G, provided with the semicircular bars J J', substantially as herein described.

7. The combination, with the semicircular bars J J', of the arc-shaped arms K K', substantially as herein described.

8. The combination, with the arms K K', having grooves in their ends, of the spherical segment or bowl-shaped skeleton frame L, provided with the flange *l*, as herein shown and described.

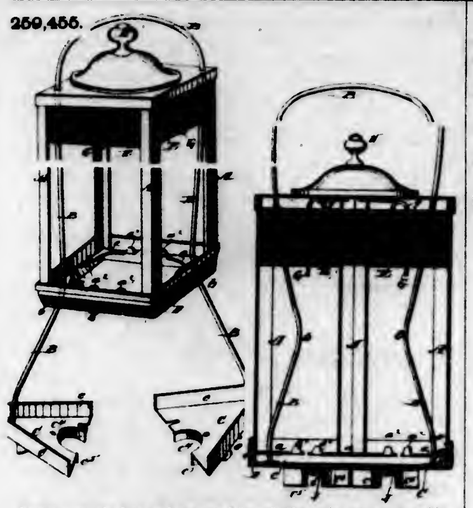
9. The combination, with the base G, bars J J', arms K K', and skeleton frame or bowl L, of the rod M, washer *n*, and nut P, substantially as and for the purpose herein described.

259,455. LANTERN. CHARLES F. ADDERSON, Bay City, Mich. Filed Mar. 3, 1882. (No model.)

Brief.—Produces a lantern in which any ordinary lamp can be used. The bottom is bisected, and to each half is pivoted a plate having rims to fit a lamp-collar. The bottom is connected to the frame by the bail, which also brings the parts together to clasp the lamp-collar.

Claim.—1. A lantern frame or body provided with a bisected

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bottom attached to and operated by a bail passing through guide-braces at the bottom of said frame, so as to separate said bisected bottom to allow it to grasp the collar of a lamp, substantially as herein described.

2. The combination, with the frame A, provided with the corner-braces *a*, of the bail B, bent as shown at *b b*, and the bisected bottom C, attached to and operated by said bail, substantially as and for the purposes herein described.

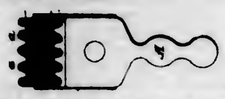
3. The combination, with the bisected bottom C, constructed as described, of the revolving plates *c*, provided with notches c^1 c^1 and rims c^2 c^2, substantially as herein described.

4. The combination, with the bottom C and revolving plate *c*, of the spring J, attached to said plate and bottom by the rivet or pivot *i*, substantially as and for the purpose shown and described.

5. The combination of the frame or body A, having the beveled bottom D, and the bisected bottom C, having the turned-up edges *e*, substantially as and for the purpose shown and described.

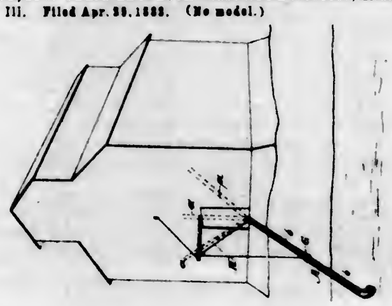
6. The combination, with the frame or body A, of the netting E, spring G, and lugs a^3, for holding the glass sides in place, substantially as shown and described.

259,456. APPARATUS FOR SELF-MASSAGE OR FLESH-KNEADING. CARL ARNDT ANDERSEN, Stockholm, Sweden. Filed Apr. 10, 1882. (No model.) Patented in Germany Aug. 15, 1881, No. 16,984; in England, Sept. 5, 1881, No. 3,850, and in Sweden Oct. 26, 1881, No. 880.



Claim.—An apparatus for massage treatment or flesh-kneading composed of a suitably-constructed handle, upon which is mounted one or more rollers having circumferential ribs or ridges *a*, as shown and set forth.

259,457. GRAIN-ELEVATOR. HEZEKIAH ARMINGTON, Atlanta, Ill. Filed Apr. 30, 1882. (No model.)



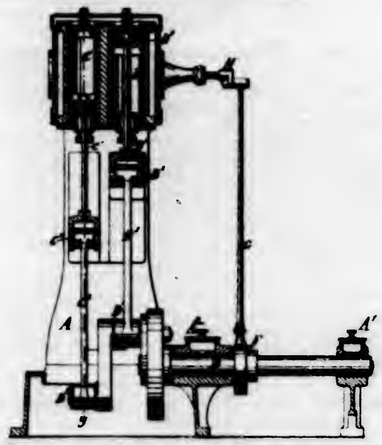
Claim.—1. The combination of sections having right-angular slots *e* and bolts *f*, substantially as shown, and for the purpose described.

2. The combination of the sections, bolts *f*, and swivel-jointed elbow C, substantially as shown, and for the purpose described.

3. The combination of the swivel-jointed elbow C, band G, and sections, substantially as shown, and for the purpose described.

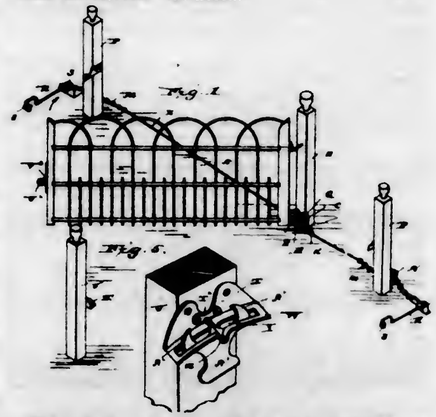
4. The combination of the sections *b b*, band G, and ring M, substantially as shown, and for the purpose described.

259,458. BALANCED STEAM-ENGINE. JAMES O. SAIRD, Brooklyn, N. Y. Filed Jan. 28, 1882. (No model.)



Claim.—An engine having two cylinders of unequal areas, with alternately-working pistons that have independent connections with the crank-shaft, said cylinders being constructed of such relative proportions that the pressures on their crank-pins are in inverse ratios to the distances of said crank-pins from the outboard-bearing, substantially as and for the purpose described, whereby the crank-shaft may be reversed without uneven motion, as set forth.

259,459. GATE. HARVEY C. BAKER, West Alexandria, Ohio. Filed Mar. 14, 1882. (No model.)



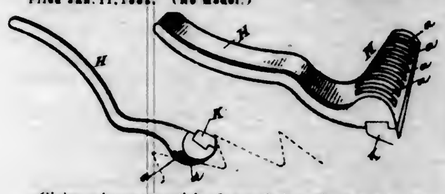
Claim.—1. In combination with the bracket C, provided with an angular slot, E, having rounded pintle-bearings F, and a pintle-bearing at the apex of the slot, the pintle secured to the gate, and the link pivoted to said pintle, and the connecting-bars, chains, and levers, all constructed and arranged to operate substantially as specified.

2. In combination with the gate and gate-post, the bracket secured to the post, provided with a shelf inclined in opposite directions, a slot and central bearing, and the double-weighted pawl

Claim.—1. An underwaist of the character described, comprising an outer portion with a continuous lining, and having lacing applied to the outer portion, which is suitably cut away, and the lining formed full beneath the lacing, substantially as set forth.

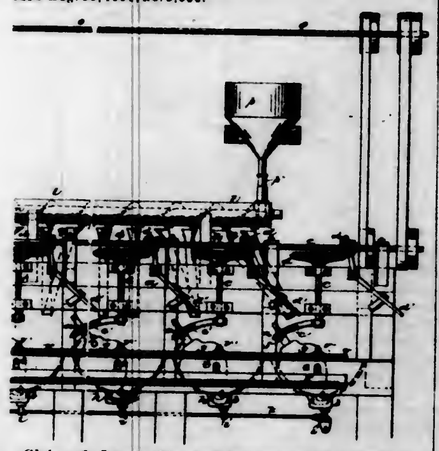
2. In an underwaist having lacing applied to the outer portion and a lining made full beneath the lacing, the bone-pockets on the inside of the flaps or free edges of the lacing portion, between the same and the lining, substantially as described.

259,423. SAW-SWAGE. JAMES L. PITTS, Grand Rapids, Mich. Filed Jan. 11, 1882. (No model.)



Claim.—As a new article of manufacture, the saw-swage constructed of the part H H, provided with grooves *a a a*, and keyed swage-plate K, all constructed as and for the purposes described.

259,424. ORE GRINDING AND AMALGAMATING MACHINE. THOMAS A. READWIN, Bloomsbury Square, County of Middlesex, England. Filed Mar. 6, 1882. (No model.) Patented in England Aug. 22, 1881, No. 3,653.



Claim.—1. In a machine for grinding and amalgamating ore, the combination of the rotating pestle, the removable and adjustable pestle-axis *f*, the hooked slotted arm *c'*, and the vertical spindle, substantially as described.

2. In a machine for grinding and amalgamating ore, a pan formed with an internal recess at its bottom, in combination with a hard-metal cup to contain mercury for use in the amalgamating process, said cup being such as can be easily removed and renewed, substantially as described, and for the purpose specified.

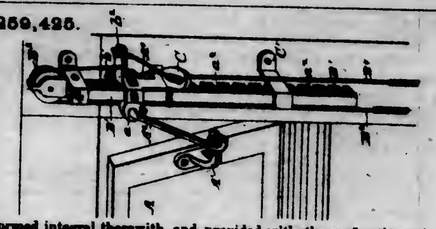
3. In a machine for grinding and amalgamating ore, a hard-metal cup to contain the mercury, provided with a tapping hole for withdrawing matters from said cup, and suitable means, such as described, for closing said hole, in combination with the fastening device to secure said cup against unauthorized withdrawal of its contents, substantially as described.

4. In a machine for grinding and amalgamating ore, the combination, with pans *b*, pestles *g*, and means for operating the same, of a trough, *l*, screw-feeder *m*, chutes or spouts *q*, and means for regulating the quantity of ore delivered in a given time to each pan, substantially as described, and for the purpose specified.

5. In a machine for grinding and amalgamating ore, the combination of the trough *l*, screw-feeder *m*, chutes or spouts *q*, sliding shutters *r*, and overflow-pipes *s*, substantially as described.

259,425. TRANSOM AND SKYLIGHT LIFTER. FRANK A. REDNA, Chicago, Ill. Filed May 3, 1881. (No model.)

Claim.—1. In a transom or skylight lifter, as described, the adjustable slide or block B, having the perforated lugs *a* and *b'*



formed integral therewith, and provided with the perforations *a'* and *a''*, substantially as and for the purpose set forth.

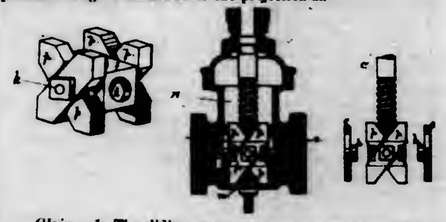
2. The combination, with the slide B, of the locking-bar B', provided with the notches *a''*, the rod A^1, the spring *b'*, the locking pin or catch *a'*, and the handle C, substantially as set forth.

3. The combination, with a transom or other part to which the appliance may be attached, of the connecting-rod A^1, the sleeve D, the slide B, and the locking-bar B', substantially as set forth.

4. The combination, with the slide B, of the locking-bar B', the cords B^2 B^3, the sheave or pulley B^2, the handle C, the rod A^1, the locking-pin *a'*, and the spring *b'*, substantially as set forth.

259,426. STOP-VALVE. JOSEPH ROYLANCE, San Francisco, Cal. Filed Jan. 18, 1882. (No model.)

Brief.—The valves *e* are loosely connected to the block *f*, through which the operating-stem *e* passes. The ends of the cross-levers *p* (which levers are also pivoted to the block) bear against the valve-disks *e* and insure the closing of the valves when depressed through the medium of the projection *m*.

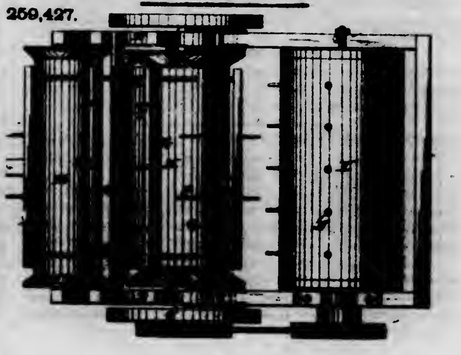


Claim.—1. The sliding gate or stop-valve consisting of the block *f*, traveling on and adapted to be moved by the valve-stem, the crossed levers carried by and pivoted to the said block, the disks or bearing-surfaces *e e*, having the ends of the said levers resting against and bearing on their inner faces, and means for spreading apart or extending the said levers when the gate or valve is in position between the valve-seats of the valve-chamber, substantially as described, to operate as set forth.

2. The combination, with the disks or bearing-surfaces *e e*, attached to the traveling block *f*, of the crossed levers *p p*, pivoted to the sides of the said block, and the wedge or projection *m*, adapted to spread apart and extend the said levers by the movement of the block *f*, substantially as described.

3. The improved valve consisting of the body *A*, with the way or passage having the seats *g*, the valve-stem, the block *f*, operated by said stem, as described, the disks or bearing-surfaces *e e*, loosely attached to and carried by said block, and the crossed levers *p* and the fixed stop or projection *m* within the chamber, forming the means for moving the bearing-surfaces against and holding them to the valve-seats *g*.

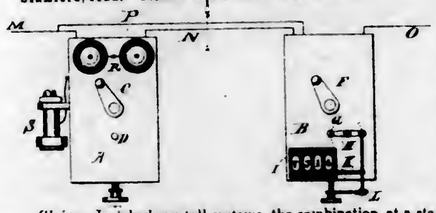
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259,427. COMBINED HAY RAKER AND LOADER. LEVI E. SAMPLE, Marseilles, Ill. Filed Dec. 3, 1881. (No model.)

Claim.—The herein-described improved rake-cylinder, provided with openings at regular intervals, and journaled at one end in a bearing on the supporting-frame, and having a rigid crank-shaft, on which are loosely mounted suitable teeth separated into series corresponding with the openings in the cylinder by washers, substantially as and for the purpose specified.

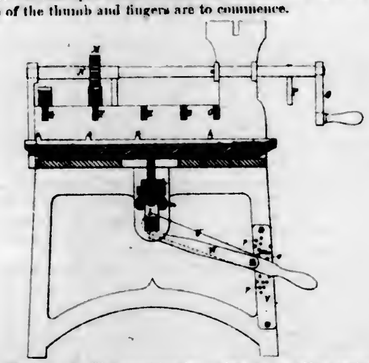
259,428. TELEPHONE CALL-REGISTER. JAS. W. SEE, Hamilton, Ohio, assignor to the Yale Lock Manufacturing Company, Stamford, Conn. Filed Oct. 22, 1881. (No model.)



Claim.—In telephone toll systems, the combination, at a station on a line, of a calling device having a register or counter attached, and an answering and ringing-off device independent of said register or counter, substantially as and for the purpose specified.

259,429. KNITTING-MACHINE. HERBERT C. SHAW, Needham, Mass., assignor to the Shaw Glove Company, of Massachusetts. Filed Mar. 20, 1882. (No model.)

Brief.—The improvement has reference to mechanism described in Letters Patent No. 241,162, dated May 10, 1881. Novel mechanism is provided by which the needle-carriers of the sets of needles may be moved simultaneously a like distance forward or backward to regulate the length of stitch. Furthermore, the needles are provided with additional studs or heels, and cams are constructed and arranged to operate thereupon when it is desired, by which the proper needles may be actuated, and a "marking-thread" be laid upon them and knit into the fabric where the knittings of the thumb and fingers are to commence.



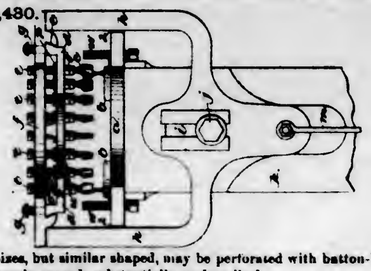
Claim.—1. The combination, with the needle-carriers, of mechanism, substantially as described, for effecting simultaneous and equal movements of them in order to vary the length of stitch, as set forth.

2. In combination with the needles and their main operative cam-bars and studs, the auxiliary studs and cam bar or bars, arranged and to operate substantially as set forth, to aid in effecting the knitting into the fabric of marking-threads, as explained.

259,430. BUTTON-HOLE CUTTER. DANIEL S. SMITH, Rockland, assignor of one-half to Maria W. Thayer, Boston, Mass. Filed Mar. 31, 1882. (No model.)

Claim.—1. The bed-plate to receive the leather being cut, combined with the platen and die-holding plate adjustably connected therewith, and provided with a series of dies independently adjustable in the said plate, substantially as and for the purpose set forth.

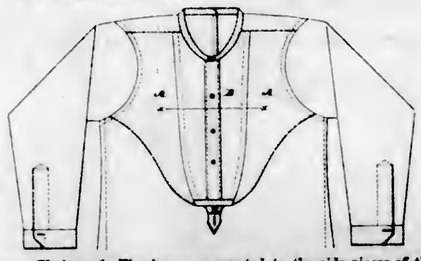
2. The die-plate curved to correspond with leather being cut, provided with a series of dies adjustable in lines substantially radial to the curvature of the said plate, the said dies being frictionally held in adjusted position in the said slots, whereby pieces of different sizes, but similar shaped, may be perforated with button-holes uniformly spaced, substantially as described.



3. The die-plate provided with a series of slots, combined with the dies, provided with stems passing through the said slots, and springs to retain the said dies in adjusted position until positively moved therefrom, substantially as described.

4. The die-plates provided with slots, combined with a series of dies movable in the said slots, and holding-arms rigidly connected to the said dies and adapted to be engaged by the said die-plate to positively retain the said dies in adjusted position, substantially as described.

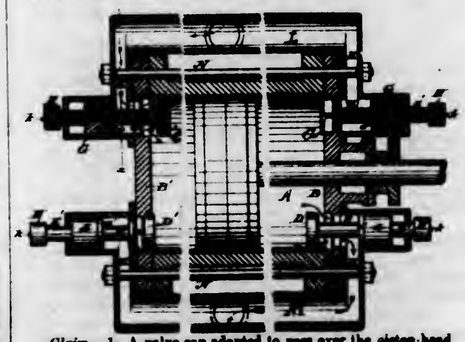
259,431. SHIRT. SAMUEL STERNBERGER, Philadelphia, Pa. Filed May 1, 1882. (No model.)



Claim.—1. The bosom connected to the side pieces of the body by the rows of stitches *a* and the rows of stitches *d*, which latter are within the line of the former, producing the sprung-out sides of the bosom, the front edges, *c*, whereof are folded and formed of the material of the bosom, and the rear folded edges are formed of the material of the side pieces, the latter material backing the sprung-out sides of the bosom, substantially as and for the purpose set forth.

2. The sprung-out sides having the folded edges *c'*, the front edges, *c*, overlapping the rear edges, *c'*, substantially as and for the purpose set forth.

259,432. VALVE AND VALVE-GEAR. WILLIAM W. ST. JOHN, St. Louis, Mo. Filed Nov. 19, 1881. (No model.)



Claim.—1. A valve-cap adapted to pass over the piston-head of a valve at intervals, as and for the purpose set forth.

2. A piston-valve having a cap provided with a stem projecting through the valve and adapted to pass over the piston-head at certain intervals, as described, and for the purpose specified.

3. A valve-cap having a stem projecting through the body of a piston-valve and arranged to receive the inner head of the valve when it is moved forward into the cylinder, substantially as and for the purpose described.

4. A valve-cap having an annular flange to embrace a piston-head with packing as said head moves into the cylinder at certain intervals, as and for the purpose set forth.

5. A valve-cap having an annular flange, which embraces a piston-head provided with packing as said head is moved into the cylinder, and returns with it until released by striking against a shoulder in the cylinder-head, substantially as and for the purpose described.

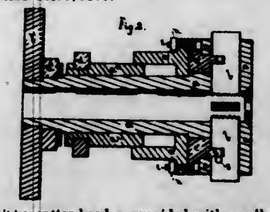
6. A valve consisting of a piston-head, *a*, embraced at proper intervals by a flanged cap, having a stem extending through the body of the valve, and a piston-head, *a'*, secured to the head *a* by a sleeve, E, substantially as specified.

7. The valve herein described, consisting of the piston-heads *a a'*, connected by a sleeve, E, containing a spring, F, the cap I, having stem *h*, and the extension E', for attachment to an operating-arm, all substantially as shown and specified.

8. In valve-gear, the combination of the piston-valves C C' D D', provided with caps I, the casings G, and pipes K L M, with operating valve-gear, substantially as specified, and for the purpose set forth.

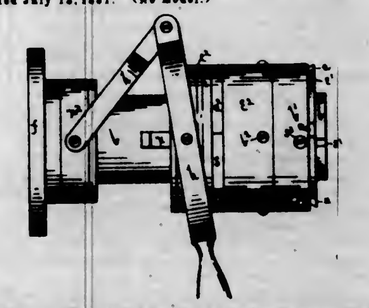
9. In valve-gear, the steam-valves C C' and exhaust-valves D D', the caps I, and the casings G, in combination with the rods P P', arms H, cross-bar O, journal-boxes *h*, and suitable rock-shaft, or equivalent means, substantially as and for the purpose set forth.

259,433. SCREW-THREADING MACHINE. LEVI W. BROCKWELL, Cleveland, Ohio, assignor to William B. Price, same place. Filed Oct. 9, 1879.



Claim.—The cutter-head *a*, provided with scroll *a'*, having a rotary motion to open and close the dies, and ring *a''*, formed with a cam-slot, *c'*, a part of which is parallel with the axis of the cutter-head for the purpose of arresting the rotary motion of the scroll, in combination with the sliding collar *a''*, having pin *f*, substantially as described.

259,434. SCREW-CUTTING MACHINE. LEVI W. STOCKWELL, Cleveland, Ohio, assignor to William B. Price, same place. Filed July 13, 1881. (No model.)



Claim.—1. The stock *b*, having the inclined grooves *c' c'*, in combination with collar *c''*, levers *a'' a''*, grooved collar *b'*, and dies *a*, substantially as described.

2. The ring *c''*, wedges *e e*, levers *a'' a''*, and springs *s s*, in combination with collars *c'' b'*, dies *a*, and stock *b*, having the inclined grooves *c' c'*, substantially as described.

3. The collar *c''*, having the rods *x x*, levers *a'' a''*, and springs *s s*, and the ring *c''*, having the wedges *e e*, in combination with collar *b'*, having the inclined grooves *c' c'*, the dies *a*, and stock *b*, having the inclined grooves *c' c'*, substantially as described.

4. The stock *b*, formed with slots *c' c''*, of unequal length, in combination with collar *b'*, pins *s' s'*, and the cutting-dies, substantially as described.

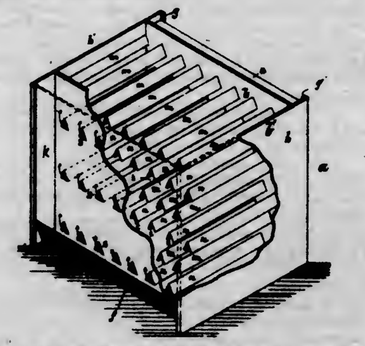
259,435. CAR-COUPLING. ALEXANDER STURY, Washington, Iowa. Filed Apr. 10, 1882. (No model.)



Claim.—1. The draw-head having a rectangular mortise in its top, with an undercut recess, *i*, and lugs *e*, in combination with the latch B, having projecting flanges upon its sides and rear, lip *b*, and side extensions, *b'*, substantially as described.

2. The lifting-rod *d*, step *k*, and cross-rod *a*, in combination with the keepers *g f*, pin *l*, and latch B, substantially as described.

259,436. GRAIN-DRIER. EDWARD THOMPSON, Hokah, Minn. Filed Mar. 3, 1882. (No model.)



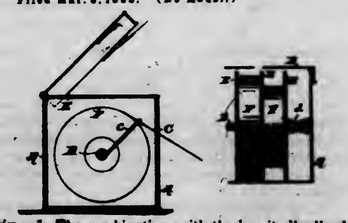
Claim.—The combination of the slide *h*, plate *k*, and ducts *p* and *q*, the said slide and plate closing the ducts, with the inverted-V-shaped tubes *m* and *n*, leading alternately into the ducts *p* and *q*, all arranged as set forth.

259,437. COLLAR FOR CAR-AXLES. JOHN THOMPSON, Bucyrus, Ohio. Filed June 13, 1881. (No model.)



Claim.—In a bank or pit car, the combination, with the axle and wheel, of a collar or washer between the linchpin and the face of the wheel, provided with notches or grooves of varying depth, substantially as and for the purposes set forth and described.

259,438. SHOW-BOX. WALTER C. THOMPSON, Williamsburg, N. Y. Filed Mar. 3, 1882. (No model.)



Claim.—1. The combination, with the longitudinally-slotted box, of the removable rod D and the brake or tension device, substantially as described.

2. The combination, with the longitudinally-slotted box, of

the removable rod D, carrying the loose plates or disks E, and the tension device or brake, substantially as described.

3. The combination, with the longitudinally-slotted box, of the loose removable rod D, carrying and supported by the loose plates E, and the spiral spring *d*, substantially as described.

259,439. SEWING-MACHINE SHUTTLE. JAMES TRIPP and JOHN H. OSBORN, Cleveland, Ohio. Filed Apr. 7, 1882. (Model.)

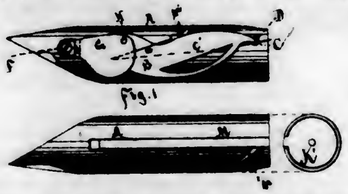


Fig. 1.

Claim.—1. In shuttles for sewing-machines, a detachable bobbin-holder consisting of two heads connected together by a bar arranged to slide in a longitudinal slot in the shuttle-shell, and provided with pivotal bearings for said bobbin in the heads of the holder, substantially as and for the purpose set forth.

2. In combination with a sewing-machine shuttle-case and bobbin, a holder having a slotted and a pivotal head for carrying the said bobbin, and connected together by a bar, J, adjusted to the longitudinal slot in the case, arranged substantially as and for the purpose set forth.

3. The shell or case A, provided with a longitudinal slot, M, and spiral slot N, in combination with the bobbin and holder J, substantially as and for the purpose set forth.

4. In sewing-machine shuttles, the spring B, provided with a point, *c*, and opening *d*, in combination with the protector-plate G, having an indentation, *f*, for the said point, substantially as and for the purpose set forth.

5. A sewing-machine shuttle having a spiral slot, N, for the bobbin-thread, in combination with the spring B and protector-plate G, connected with the shell, substantially as and for the purpose set forth.

6. A sewing-machine shuttle consisting of the shell A, with a longitudinal and spiral slot therein, the bobbin and holder arranged within said shell, in combination with the spring B and protection-plate, substantially as and for the purpose set forth.

259,440. METALLIC SKIPPING-HOOP. WILLIAM F. TURNBULL, Hampton, Va. Filed Apr. 25, 1882. (No model.)

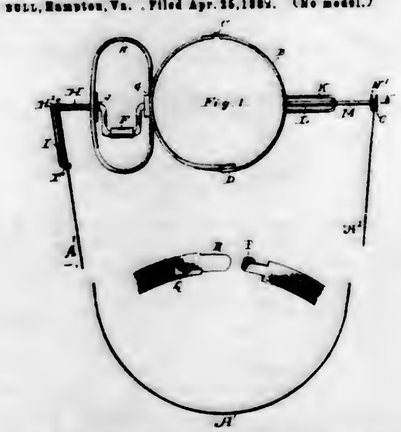


Fig. 1.

Claim.—1. In a child's skipping-hoop, the belt B, provided with a hinge and clasp, the elliptical frame E, rigidly fixed to one side of said belt, and the rectangular frame K, rigidly attached to the opposite side, substantially as described, and for the purposes set forth.

2. In a child's skipping-hoop as herein specified, the combination of the belt B and frames E and K, the fixed rod L, having shoulders N' and N, the revolving rod H, with eye H', arm I, loop I', and crank F, all arranged in the manner and for the purposes set forth.

3. The hoop A, in combination with the side rods, H and M, the rod H having eye H', arm I, and loop I', the supporting-frames E and K, the crank F, and belt B, substantially as specified, and for the purposes set forth.

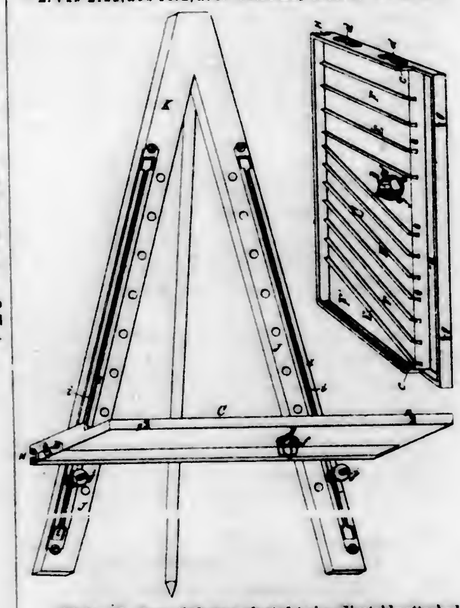
4. In combination with the belt B and strip G, the elliptical frame E, rigidly connected to said belt, the crank F, with inside axle working in a slot in strip G, the shoulder J, and rod H, said rod having an eye working in a slot in the outside rim of the frame, also the arm I and loop I', substantially as set forth, and for the purposes specified.

5. The combination of the belt B, frame K, rod L, with projection M, and shoulders N' N, all rigidly connected in the manner and for the purposes set forth.

6. The clasp D, consisting of the hook P, loop Q, and tongue R, arranged in the manner and for the purposes specified.

7. The belt, frames, and crank, as herein specified, in combination with the hoop A, having loop O, secured to and arranged to revolve around rod M between its shoulders N' and N, the hoop at the opposite side being adjustably attached to rod H by means of the eye in said rod, the arm I, and loop I', substantially as described, and for the purposes set forth.

259,441. COMBINED ARTIST'S CASE AND EASEL. AGNES E. VAN KIRK, New York, N. Y. Filed May 3, 1881. (No model.)



Claim.—1. An artist's case adapted to be adjustably attached to an easel, consisting of the color-board C, the trough G, and drawer B, substantially as described, and for the purpose set forth.

2. In combination with an easel, the color-board C, divided into spaces by the removable slats E E for the purpose of supporting the painting materials, substantially as described.

3. The combination of the color-board C, having dovetailed parallel grooves, and the adjustable slats E E, dovetailed to fit said grooves, dividing the board into sections, and longitudinally removable, substantially as described.

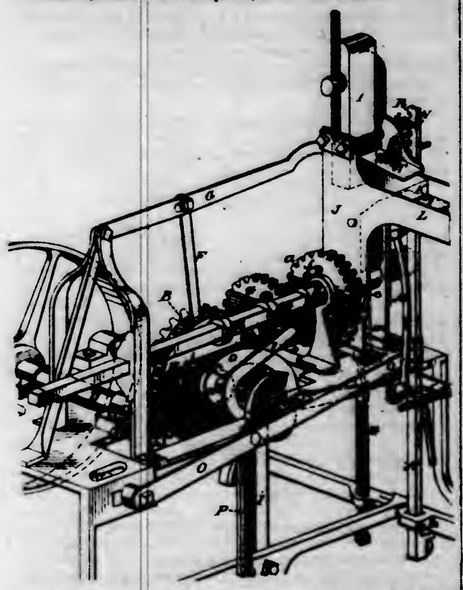
4. The combination of an easel and a case or board for supporting painting materials, the board being adjustable laterally and vertically, substantially as described.

5. In combination with an easel having the grooves *i i*, and slide *k*, an artist's case having the groove H and the slide k, the slides being connected to enable a lateral and vertical adjustment of the case, substantially as and for the purpose set forth.

6. The combination of the dovetailed grooves *i i* in an easel and the slides *k k*, having the thumb-screws *j j*, for securing an artist's case or board at any desired height, substantially as described.

7. An artist's case consisting of the color-board C, trough G, drawer B, and lid A, which, when closed, will hold the painting materials and may be carried.

259,442. CAN-FILLING APPARATUS. WM. WEST, Keene, Ontario, Canada. Filed Apr. 11, 1882. (No model.)



Claim.—1. In a can-filling apparatus, and in combination with the vertical fish-receiving chute J and the vertically-reciprocating plunger I, guided as shown, the cam E, adjustable upon the driving-shaft, the vertical rod F, the lever-arm G, and the connecting rod or link H, substantially as and for the purpose herein described.

2. The horizontal trough L, opening into the upper part of the chute J, in combination with the reciprocating carrier K, moving in said trough, so as to transfer the fish into the vertical chute, substantially as herein described.

3. In combination with the carrier K, moving in the trough L, the lever-arm M, connected with the carrier by a link, and having the fork or notch M', in combination with the vertically-reciprocating bar N, substantially as herein described.

4. The hinged swinging gate T, opening or closing the passage between the trough L and chute J, and having the toothed segment S, in combination with the reciprocating bar N, with its rack R engaging said segment, substantially as herein described.

5. The bar N, moving in guides, as shown, in combination with the lever O, cam Q, and spring P, substantially as and for the purpose herein described.

6. The cylindrical receiver having one side open and the edge forming a knife, V, so that a supply of fish may be forced through the opening from the chute J and cut off and formed to enter the can by the rotation of the knife, substantially as herein described.

7. The cylindrical knife and shaper V, turning within the chute J, and provided with the notched flange W, in combination with the curved lever Z and rotating gear-wheel *a*, substantially as herein described.

8. In combination with the cylindrical knife and shaper V with its notched flange W and curved operating-lever Z, the disk *i*, supporting the lever, and adjustable upon the gear *a* by slots and screws *f*, so as to regulate the movements of the knife, substantially as herein described.

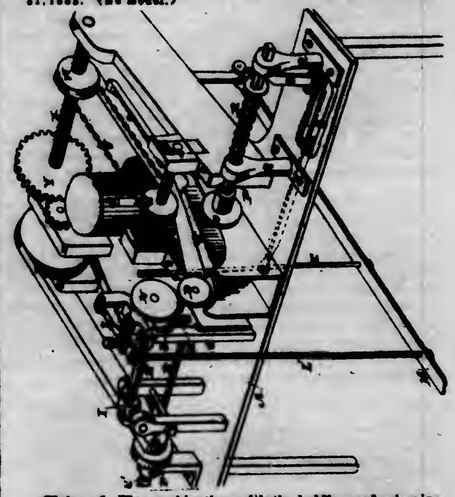
9. The cylindrical knife and shaper V, with its notched flange, and the curved pivoted lever Z and spring h, rotated by the gear-wheel *a*, in combination with the stationary pin *o*, whereby the pawl *y* is disengaged at each semi-revolution of the knife, substantially as herein described.

10. In combination with the hollow rotating knife and former V, operating within the chute J, as shown, the segments *a a'*, meshing with each other to drive the knife with a variable speed, substantially as herein described.

11. In combination with the hollow intermittently-rotating cylindrical knife and former V and the eccentric driving-gears *a a'*, the piston *g*, reciprocating through the cylindrical knife and the sleeve upon which the gear *a* turns, and the stem or extension h, operating lever and cam, substantially as herein described.

12. The hinged swinging gate T, toothed segments S, and vertically-moving bar N and rack R, in combination with the latch *r* and the arm *t*, connected with the plunger, substantially as and for the purpose herein described.

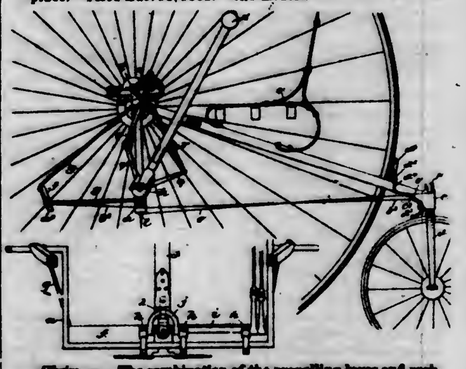
259,443. APPARATUS FOR CRIMPING THE ENDS UPON CIRCULAR CANS. WM. WEST, Keene, Ontario, Canada. Filed Jan. 31, 1882. (No model.)



Claim.—1. The combination, with the holding and crimping disks, as shown, of the inclined track or ways U and the solid trough *c*, through which the crimped joint may pass, substantially as herein described.

2. In combination with the way or track U and the endless chain moving above the track upon pulleys W, the boxes *a* of the shaft Z, having the vertically-movable elastic supports *b*, substantially as and for the purpose herein described.

259,444. VELOCIPEDE. FREDERICK WHITE, Westborough, Mass., assignor of five-twelfths to Charles E. Rogers, same place. Filed Mar. 16, 1882. (No model.)



Claim.—1. The combination of the propelling-lever and rock-shaft connected therewith, the cranks mounted on the said rock-shaft, the driving-wheel and shaft adapted to be operatively connected therewith, the cranks loose on the said shaft, and having a ratchet-and-pawl connection therewith, and also being connected with the cranks upon the rock-shaft, substantially as described.

2. In a tricycle, the combination of the driving-wheel, a shaft operatively connected therewith and having a series or cone of gears of different diameters, a second shaft, means to actuate it, and a series of gears loose thereon, meshing with the first-mentioned series, and a series of independent clutches splined on said shaft, and independent shippers therefor, whereby any of the said gears may be connected with the said shaft to propel the wheel substantially as described.

3. In a tricycle, a shaft having a series of gears loose thereon and a series of clutches splined thereon, combined with a series of independent shippers for said clutches, locking devices for retaining the said shippers with the clutches disengaged, and means to automatically throw the said clutches into engagement when released by their locking devices, substantially as described.

4. The actuating-lever and rock-shaft connected to oscillate therewith, the said lever being pivoted to have an axial rotary movement, combined with a spindle connected with the said lever by a universal joint, and also connected with the steering-wheel, whereby the said wheel is turned by the rotary movement of the said lever when at any position in its oscillating movement, substantially as described.

5. The propelling-lever and rock-shaft connected therewith, combined with the driving-wheel of the tricycle, the shaft adapted to be operatively connected therewith, and devices having a ratchet-and-pawl connection with the said shaft, operated by the said propelling-lever and rock-shaft, substantially as described.

259,445. LOCK FOR FIRE-ARMS. ANDREW E. WHITMORE, East Boston, Mass. Filed Mar. 18, 1880. Renewed Mar. 20, 1882. (No model.)

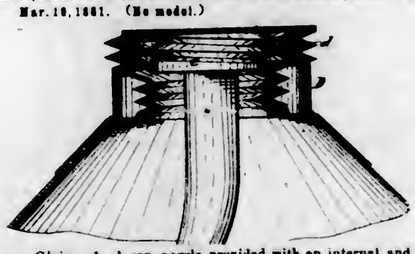
Brief.—A piece, denominated a "carrier," is pivoted in the lock-plate concentrically with the tumbler. It has shoulders on opposite sides of the tumbler so disposed as to allow the carrier to have slight independent movement in the carrier. The mainspring is attached to the carrier, and when the latter is arrested, just before the hammer completes its stroke, the hammer is carried forward by its own momentum, and after making the stroke is carried back slightly by the action of the sear-spring.



Claim.—1. In combination with a mainspring, tumbler, and sear, a plate or carrier pivoted concentrically with said tumbler and inclosing the same, said carrier having a flaring recess to allow the independent movement of said tumbler, substantially as set forth.

2. In combination with mainspring D, sear H, sear-spring F, and tumbler *h*, having an inclined face beyond the safety-notch, the carrier *d*, pivoted concentrically with said tumbler and inclosing the same, said carrier being provided with a projection, *i*, and stopped by a post, *q*, said devices causing the independent forward action of said tumbler and the immediate rebound thereof to the safety position, substantially as set forth.

259,446. CAN-SPOUT. F. CURTIS WILSON, Chicago, Ill. Filed Mar. 18, 1881. (No model.)



Claim.—1. A can-nozzle provided with an internal and an external screw-thread, in combination with a reversible spout threaded to fit the internal thread of the nozzle, and a cap threaded to fit the external thread of the nozzle to close the can and protect the end of the reversed spout, substantially as described.

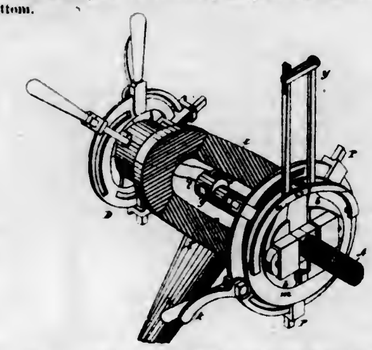
2. A can-top, in combination with a nozzle provided with threaded sections of unequal size and adapted to receive and inclose the enlarged end of the spout when reversed, a reversible spout provided with a threaded enlarged base fitting the smaller section of the nozzle, and a threaded cap adapted to the larger section of the nozzle, substantially as described.

3. The can-top A, in combination with the nozzle B, having two threaded sections, *b b'*, of different size but made of a single piece of metal, the spout C, provided with the threaded enlargement *c*, and the cap D, provided with the threaded section *d*, substantially as described.

4. A can-nozzle, in combination with a removable and reversible spout provided with a hollow enlargement at its base, in the upper and lower sides of which are vent-holes, whereby a chamber is provided at the base of the spout, closed except the vent-holes, and outside drip is prevented, substantially as described.

259,447. MACHINE FOR BORING AXLE-HOLES IN HUBS, &c. WILLIAM R. WOOD and SAMUEL BARR, Butler, Iowa. Filed Aug. 30, 1881. (No model.)

Brief.—The screw-shaft, which carries and advances the tool, is provided with an extension, which is bent to correspond with the form to be given to the hole, passing through a guide at the bottom.

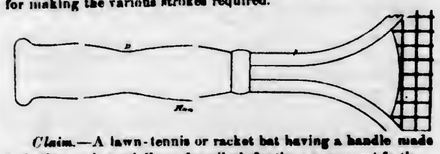


Claim.—1. In a machine for enlarging tubular borings, a guide-plate operating on a form-rod and feed-shaft, having a cutting-tool attached thereto, substantially as described, in combination with mechanism, substantially as described, for actuating the shaft and mechanism.

2. In combination with the feeding-shaft, the collars *b b*, having the followers *w w*, of wood, the latter being capable of adjustment to compensate for wear, substantially as described.

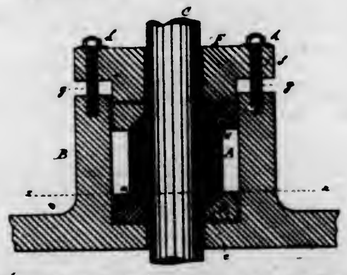
259,448. HANDLE FOR RACKETS OR LAWN-TENNIS BATS. OTWAY E. WOODHOUSE, 50 Upper Phillimore Gardens, Kensington, County of Middlesex, England. Filed May 8, 1882. (No model.) Patented in England Feb. 16, 1881, No. 662.

Brief.—The handle is made with three bulges, to enable the player to change the position of his hand with greater accuracy for making the various strokes required.



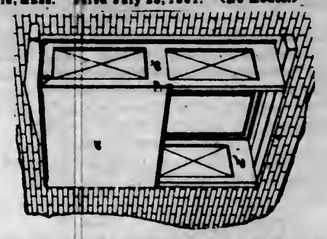
Claim.—A lawn-tennis or racket bat having a handle made in the form substantially as described, for the purposes set forth.

259,449. PISTON AND VALVE ROD PACKING. HENRY WOODRUFF and MOYCE C. COATS, Waverly, Iowa. Filed Apr. 1, 1882. (No model.)



Claim.—The combination, with the stuffing-box B and the gland F, of the diagonally-split ring A, having both ends conical, and the two split rings D E, each having a conical recess to receive the conical ends of the ring A, whereby the pressure of the gland F will contract the split ring A and expand both of the split rings D E, substantially as specified.

259,450. AWNING FOR WINDOWS. ALFRED WOODS, Graniteville, Mass. Filed July 25, 1881. (No model.)

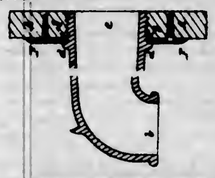


Claim.—1. The awning consisting of a flexible strip, *a*, and the stiffening-pieces *b c*, connected therewith, as described, and provided with sockets to engage the upper, inner, and outward corners of the window blinds or shutters with which it is to be used, substantially as described.

2. The awning to be used in connection with blinds or shutters, consisting of a flexible strip, combined with stiffening-pieces at one end to engage the upper and inner corners of the blind and stiffening-piece at its other end to engage the front or outer edge of the blinds, and an intermediate stiffening-piece to engage the upper and outer corner of the blinds, the said stiffening-pieces at the ends of the flexible strip being provided with fastening devices to attach them to the blinds, substantially as described.

3. The combination, with the hinged blinds or shutters, of the flexible strip provided with suitable stiffening-pieces to engage the upper, inner, and outward corners of the said blinds, and having a portion extended down the front edges of the said blinds and adapted to be fastened thereto near its lower ends, substantially as described.

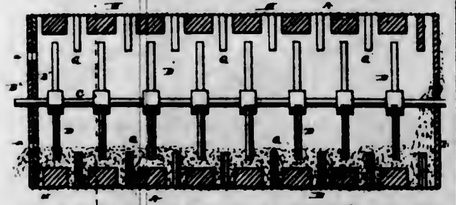
259,451. PUMP-SPOUT. S. JARVIS ADAMS, Pittsburg, Pa. Filed Apr. 5, 1882. (No model.)



Claim.—1. In combination with a pump-spout having an annular extension at the back thereof, an annular bracing-plate adapted to be secured from the back on the extension of the spout and be attached to the pump-body, substantially as and for the purposes set forth.

2. In combination with a pump-spout having at the back thereof an annular extension and shoulder, an annular bracing-plate adapted to screw from the back over the extension against the shoulder and be attached to the pump-body, substantially as and for the purposes set forth.

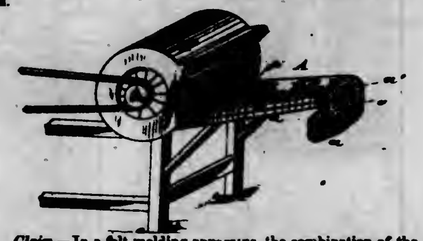
259,452. PROCESS OF DECORTICATING GRAIN. WILSON AGEE, Washington, D. C. Filed Apr. 24, 1882. (No model.)



Claim.—A process of decorticating grain, which consists in first subjecting the horizontally moving and rolling mass of grain contained in a suitable receptacle to the action of rasping or abrasive beaters; second, in maintaining a mass of grain in the receptacle or cylinder by a uniform feed and discharge that will make the weight of the mass a factor for keeping the grain against the abrading and beating surfaces with sufficient pressure to cause the removal of the impurities; and, third, in the withdrawal of the impurities by air-currents, substantially in the manner and for the purposes described.

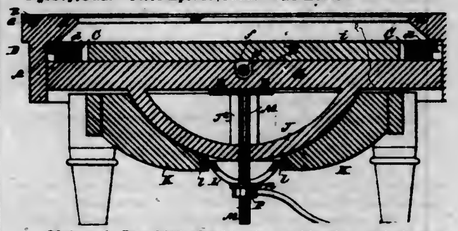
259,453. MOLD FOR MAKING ARTICLES OF FELT. SAMUEL S. ALEXANDER, Caro, Mich. Filed Apr. 7, 1882. (No model.)

Brief.—The invention is designed for the manufacture of felt hood, hand, foot wear, &c., from fibrous foldable material. The fiber is thrown by an air-blast into the perforated former, which is provided with sectional lids, the one on the extreme end being raised first, so that the material may be conveyed by the blast to that part of the former, after which the other lids are opened in turn.



Claim.—In a felt-molding apparatus, the combination of the foraminated flanged plates *a a'*, provided with the hinged doors B and core-piece C, provided with the wires *b*, adapting said core-piece to be held in place between the flanged plates *a a'* by clamping the ends of the wires between the meeting flanges of the plates, as shown and set forth.

259,454. BILLIARD-TABLE. CHARLES W. ALLEN, Pine Ridge Agency, Dak. Filed Apr. 19, 1882. (No model.)



Claim.—1. In a billiard-table, the combination, with the bed B and cloth *i*, of the cleats C, provided with rabbets, and arranged as herein shown and described.

2. The combination, with the bed B, cloth *i*, and cleats C, of the cloth-covered bars D and screws *d*, substantially as and for the purpose herein described.

3. The combination, with the cleats C, provided with the screw-threaded lugs *f*, and the base G, provided with the groove *g*, of the rod H, provided with a right-hand and a left-hand thread, substantially as and for the purpose herein described.

4. The end cloth-holding cleats adapted for lateral movement, and provided with diagonally-placed brace-bars adapted to act in grooves of the side cloth-holding cleats, whereby both side and end cleats may be simultaneously spread to stretch the cloth over the bed, substantially as shown and described.

5. The end cleats, C, provided with screw-threaded lugs *f* and diagonally-placed brace-bars E, and side cleats, C, having seats *e* to receive the bars E, and the right and left screw H, combined for operation substantially as shown and described.

6. The combination, with the frame A and bed B, and the devices connected therewith, of the base G, provided with the semicircular bars J J^1, substantially as herein described.

7. The combination, with the semicircular bars J J^1, of the arc-shaped arms K K^2, substantially as herein described.

8. The combination, with the arms K K^2, having grooves in their ends, of the spherical segment or bowl-shaped skeleton frame L, provided with the flange *l*, as herein shown and described.

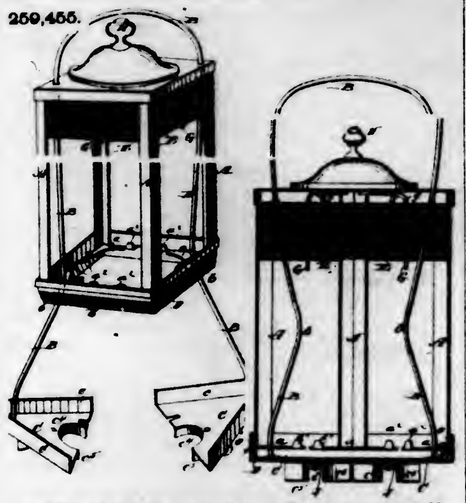
9. The combination, with the base G, bars J J^1, arms K K^2, and skeleton frame or bowl L, of the rod M, washer *n*, and nut P, substantially as and for the purpose herein described.

259,455. LANTERN. CHARLES F. ANDERSON, Bay City, Mich. Filed Mar. 8, 1882. (No model.)

Brief.—Produces a lantern in which any ordinary lamp can be used. The bottom is bisected, and to each half is pivoted a plate having rims to fit a lamp-collar. The bottom is connected to the frame by the bail, which also brings the parts together to clasp the lamp-collar.

Claim.—1. A lantern frame or body provided with a bisected

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bottom attached to and operated by a bail passing through guide-braces at the bottom of said frame, so as to separate said bisected bottom to allow it to grasp the collar of a lamp, substantially as herein described.

2. The combination, with the frame A, provided with the corner-braces a, of the bail B, bent as shown at *b b*, and the bisected bottom C, attached to and operated by said bail, substantially as and for the purposes herein described.

3. The combination, with the bisected bottom C, constructed as described, of the revolving plates *c*, provided with notches c^1 c^1 and rims c^2 c^2, substantially as herein described.

4. The combination, with the bottom C and revolving plate *c*, of the spring J, attached to said plate and bottom by the rivet or pivot *i*, substantially as and for the purpose shown and described.

5. The combination of the frame or body A, having the beveled bottom D, and the bisected bottom C, having the turned-up edges *e*, substantially as and for the purpose shown and described.

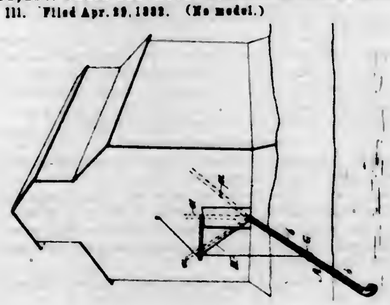
6. The combination, with the frame or body A, of the netting E, spring G, and lugs a^3, for holding the glass sides in place, substantially as shown and described.

259,456. APPARATUS FOR SELF-MASSAGE OR FLESH-KNEADING. CARL ARNDT ANDERSEN, Stockholm, Sweden. Filed Apr. 10, 1882. (No model.) Patented in Germany Aug. 13, 1881, No. 18,954; in England, Sept. 5, 1881, No. 3,858, and in Sweden Oct. 26, 1881, No. 330.



Claim.—An apparatus for massage treatment or flesh-kneading composed of a suitably-constructed handle, upon which is mounted one or more rollers having circumferential ribs or ridges *a*, as shown and set forth.

259,457. GRAIN-ELEVATOR. HENDRIAN ARMISTOTOR, Atlanta, Ill. Filed Apr. 29, 1882. (No model.)



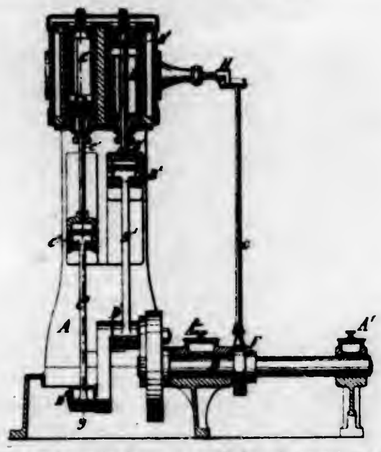
Claim.—1. The combination of sections having right-angular slots *e* and bolts *f*, substantially as shown, and for the purpose described.

2. The combination of the sections, bolts *f*, and swivel-jointed elbow C, substantially as shown, and for the purpose described.

3. The combination of the swivel-jointed elbow C, hand G, and sections, substantially as shown, and for the purpose described.

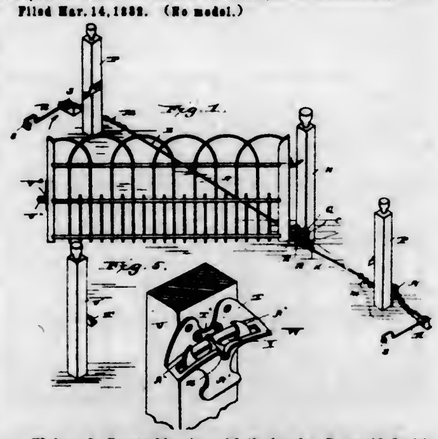
4. The combination of the sections *b b*, hand G, and ring M, substantially as shown, and for the purpose described.

259,458. BALANCED STEAM-ENGINE. JAMES O. BAIRD, Brooklyn, N. Y. Filed Jan. 26, 1882. (No model.)



Claim.—An engine having two cylinders of unequal areas, with alternately-working pistons that have independent connections with the crank-shaft, said cylinders being constructed of such relative proportions that the pressures on their crank-pins are in inverse ratios to the distances of said crank-pins from the outboard-bearing, substantially as and for the purpose described, whereby the crank-shaft may be reversed without uneven motion, as set forth.

259,459. GATE. HARVEY C. BAKER, West Alexandria, Ohio. Filed Mar. 14, 1882. (No model.)

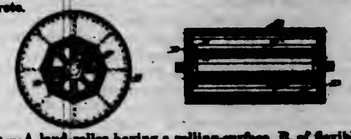


Claim.—1. In combination with the bracket C, provided with an angular slot, E, having rounded pintle-bearings F, and a pintle-bearing at the apex of the slot, the pintle secured to the gate, and the link pivoted to said pintle, and the connecting-bars, chains, and levers, all constructed and arranged to operate substantially as specified.

2. In combination with the gate and gate-post, the bracket secured to the post, provided with a shelf inclined in opposite directions, a slot and central bearing, and the double-weighted pawl pivoted in said bearing and adapted to automatically engage and release the bolt of the gate to lock and unlock the same, substantially as specified.

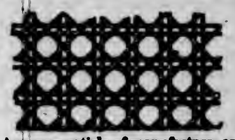
259,460. LAND AND LAWN ROLLER. ARAD BARROWS, Sr., Philadelphia, Pa. Filed July 19, 1881. (No model.)

Brief.—A land and lawn roller having an inner cylinder or tube, the space between said cylinder and outer roller being filled with concrete.



Claim.—A land-roller having a rolling-surface, B, of flexible metal, combined with heads D and an inner casing or box, F, said having the space between such rolling-surface B and box F and heads D filled with a concrete arranged to operate as a weight or load, substantially as and for the purpose set forth.

259,461. RETICULATED WORK FOR CARRIAGE-BODIES, &c. PETER BARRY, New York, N. Y. Filed Jan. 28, 1882. (Specimens.)



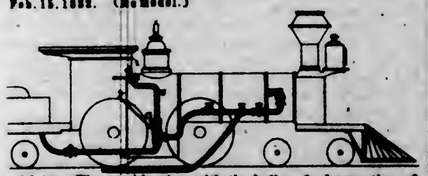
Claim.—1. As a new article of manufacture, an imitation of cane, wicker, or other woven or net work for carriage-bodies or for other purposes, consisting of a reticulated fabric or tissue of oil-paint or other analogous composition, substantially as and for the purpose herein described.

2. The method of making imitation cane-work fabric or tissue, consisting in first casting a mold with an adhesive substance soluble in water, then covering and filling the mold with a composition of which the fabric or tissue is to be made and allowing such composition to dry, then sandpapering off or otherwise removing all the composition except that contained in the grooved or intaglioed portions of the mold, and finally dissolving the adhesive substance by immersing the mold in water, and thereby releasing the reticulated fabric or tissue therefrom, substantially as and for the purpose herein described.

259,462. MATERIAL FOR THE DECORATION OF THE INTERIOR WALLS AND CEILINGS OF HOUSES. FREDERICK BECK, New York, N. Y. Filed Jan. 13, 1882. (No specimens.)

Claim.—A new article of manufacture, consisting of paper or an equivalent material coated with a compound of ground asbestus and adhesive substances, and either with or without a facing of paper and embossed, substantially as and for the purposes described.

259,463. MEANS FOR EXTINGUISHING FIRES ON RAILWAY-TRAINS. ROBERT C. BLACKALL, Albany, N. Y., assignor of three-fourths to Charles D. Hammond and J. White Sprong, Slingerlands, and Samuel Huntington, Albany, N. Y. Filed Feb. 15, 1882. (No model.)

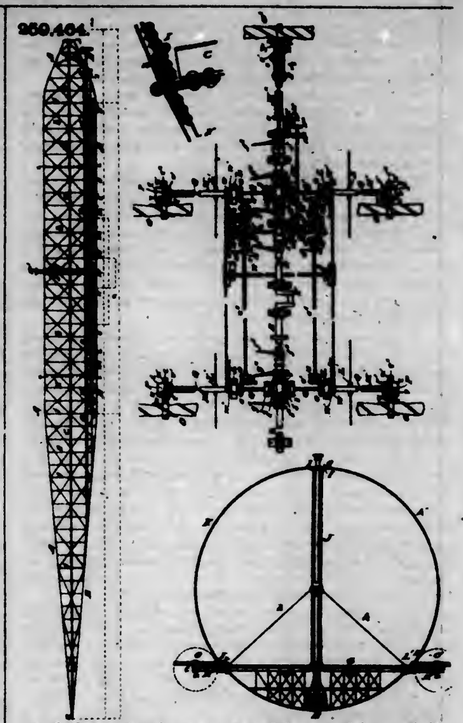


Claim.—The combination, with the boiler of a locomotive, of a feed-water injector, C, having a delivery-pipe, E, for connecting said injector with a check-valve, F, attached to said boiler, provided with a branch pipe, E', and stop-valves *d* and d^2, arranged as described, for the purpose of optionally discharging the entire volume of water passing through the injector either into or outside of said boiler, or for dividing the volume of water in the manner and for the purposes herein specified.

259,464. VESSEL FOR AERIAL NAVIGATION. ALBERT L. BLACKMAN, Nashville, Tenn. Filed July 19, 1881. (No model.)

Claim.—1. In a vessel for aerial navigation, constructed with a sharp long entering prow and a short abrupt after run, as shown,

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a gas-field involving the greater part of the area of the vessel, divided into compartments by lateral gas-tight metallic bulk-heads, substantially as shown and described.

2. Vessels for aerial navigation, constructed with a sharp long conical entering prow and a short abrupt run, all on one general frame of metal and under one cover or envelope, made air and gas tight and fire and water proof, provided with a rubber-packed gas and air tight hinge along the sides at each gunwale and on each side of the dome-ridge, said hinges forming a part of the envelope of the vessel, substantially as shown and described.

3. In combination, rubber-packed gas and air tight hinges and metal envelope or casing for vessels for aerial navigation, substantially as shown and described.

4. In combination, rubber-packed gas and air tight rubber hinges in and forming a part of vessels for aerial navigation, and revolving, raising, lowering, and propelling screws on the sides and a raising, lowering, propelling, and steering after screw, substantially as shown and described.

5. A vessel for aerial navigation, comprising a hull and a gas-field constructed on one general frame, preferably of steel tubing, inclosed with sheets of thin steel riveted and brazed together, the whole in the form of a cylinder with a long entering-cone forward and a short abrupt cone aft, having the gas-field divided into compartments by lateral metallic bulk-heads and the hull divided into floors near the center, and the floors divided into cabin, living-rooms, freight, store, engine, and other rooms for living and business, substantially as shown, and arranged as described.

6. A vessel for aerial navigation, constructed as shown and described, inclosed within one metal cover or envelope, having rubber-packed hinges therein arranged along the sides of the vessel at the gunwales and on each side of the dome-ridge, and doors, windows, ventilators, lookout-galleries, and dead-eyes arranged in the hull portion thereof, the interior of the vessel divided into gas-field and hull, the hull divided into cabin, store, freight, engine, living, and other rooms, the whole in combination with internally-arranged propulsive machinery and externally-adjusted raising, lowering, and propelling side screws and raising, lowering, steering, and propelling after screws, substantially as shown and described.

7. In combination with gas-compartments of vessels for aerial navigation, induct gas-pipes provided with automatic as well as manual valves leading from the gas-generator and gas-reservoir,

as well as educt-pipes provided with hand and automatic valves leading to the gas-receiver and to a general exhaust-pipe for inflating or collapsing any one or more of such compartments at one and the same time, substantially as shown and described.

8. Propelling-screws for vessels for aerial navigation, secured to a revolving shaft coming through from the inside and adjusted and sustained in bearings in brackets under the stern below what may be called the "stern-frame" of the vessel, substantially as shown and described.

9. In vessels for aerial navigation, constructed upon one general frame of metal, as shown, a gas-field involving the greater part of the area of the vessel, divided into compartments by lateral gas-tight metallic bulk-heads, in combination with induct-pipes provided with automatic and manual valves, and connecting with a gas-generator and gas-reservoirs, and with educt-pipes provided with automatic and manual valves and connecting with gas-condensers, and a general exhaust-pipe passing without the vessel aft, substantially as and for the purpose shown.

10. In vessels for aerial navigation, constructed on one general frame of metal and within one cover, a gas-field involving the greater part of the area of the vessel, divided into compartments by lateral or transverse gas-tight metallic bulk-heads, in combination with rubber-packed hinges in the envelope to admit of the inflation and collapsing thereof without danger of breaking the metal, substantially as and for the purpose shown and described.

11. In vessels for aerial navigation, constructed on one general metallic frame in the form of a cylinder, with a long-drawn-out cone forward and a short cone aft and all under one general cover, a gas-field involving the greater part of the area of the vessel, divided into compartments by gas-tight metallic lateral or transverse bulk-heads, in combination with a cabin, offices, state and other living rooms, store, engine, and other freight and business compartments internally arranged as shown, and also with passage-ways *e* and *e'*, substantially as shown and described.

12. In vessels for aerial navigation, constructed within one envelope or cover on one general metal frame in a cylindrical form with a long conic prow and an abrupt conical end aft, a gas-field involving the greater part of the area of the vessel, in combination with engine-boilers and other internally-arranged machinery for propelling, raising, lowering, and steering the vessel, substantially as shown and described.

13. In vessels for aerial navigation, constructed on one general metal frame within one cover or casing cylindrical in form, having a long conic entrance or prow and a short conic stern, a gas-field involving the greater part of the area of the vessel, in combination with propelling machinery internally arranged for actuating side screws for raising, lowering, and propelling the vessel and a screw aft for raising, lowering, steering, and propelling the vessel, substantially as shown and described.

14. In vessels for aerial navigation, constructed as shown, in combination with gas-generators, gas-condensers, and gas-reservoirs for supplying gas to the gas-field, or receiving, securing, or condensing any surplus occasioned by going into high altitudes, substantially as shown and described.

15. In vessels for aerial navigation, constructed in a cylindrical form on one metal frame, with a sharp conical prow and an abrupt conic stern within one general cover, dead-eyes in the lower part of the hull for the passage of the anchor-cables, in combination with anchor cables and winches internally arranged for hauling them in and paying them out, substantially in the manner and for the purpose described.

16. In vessels for aerial navigation, a pendulum-lever governed by a ball-weight, in combination with levers attached to collars on revolving cylinders, which carry the side screws for automatically revolving the cylinders in their bearings for keeping the vessel on a level keel, substantially as shown and described.

17. A vessel for aerial navigation, built in cylindrical form within one general envelope and on one general frame, having a long conic entrance or prow and a short conic stern, with a gas-field involving the greater part of the area of the vessel, divided into compartments by lateral or transverse gas-tight metal bulk-heads and into cabin, passage-ways, store, freight, and engine rooms within the vessel, the envelope of the vessel provided with rubber-packed hinges on the side and at dome-ridge, and actuated from within by propulsive machinery through side and after screws, substantially as shown and described.

18. A vessel for aerial navigation, constructed in cylindrical form, with a long conic entrance or prow and an abrupt conic stern on one general metal frame and within one general envelope, having a smoke-stack and steam-pipe chimney made water and fire proof and air and gas tight passing up through the gas-field, substantially as shown and described.

19. A vessel for aerial navigation, constructed in a cylindrical form, with a long conic prow and a short conic stern on one general frame of metal within one general envelope, having rubber-packed hinges on the sides and at the dome-ridge, as well as doors, windows, and dead-eyes in the lower part of the hull, and a smoke-stack and steam-pipe chimney passing up through the gas-field, provided with cabin, passage-ways, store and freight rooms, engine and machinery compartments within the vessel, substantially as shown and described.

20. A vessel for aerial navigation, built on one general frame and under one cover or envelope in a cylindrical form, carried to sharp conical prow forward and a short conic stern, having one or more side screws working in revolving cylinder-shafts coming through from the inside for raising, lowering, and propelling, also provided with an adjustable shifting, lowering, raising, propelling, and steering screw aft, working in looped stays forming part of a revolving cylinder passing through from the inside sternward, substantially as shown, and for the purpose described.

21. Revolving cylinder-shaft M^3, terminating at the outer end in a looped yoke, having ways in the periphery and carrying a ring, disk, or revolving carriage embedded therein, in combination with a sliding looped band secured to a collar and under control of a piston handled by a lever for changing the direction of flight of the after screw, substantially as shown and described.

22. Revolving cylinder-shaft M^3, terminating at the outer end in a looped yoke, having ways in its periphery, and having a circular carriage or disk embedded in a suitable recess therein, said disk having racked teeth on a segment of its periphery to mesh with teeth on the inner edge of a sliding looped band secured to a sliding collar operated by a piston handled by a lever for changing the direction of the flight of the after screw for vessels for aerial navigation, substantially as shown and described.

23. Revolving cylinder-shaft M^3, terminating at the outer end in a looped yoke, having ways in its periphery, as well as a recess therein for a circular carriage provided with a sleeve journal-bearing for securing and carrying the axle of the after screw, as well as racked teeth to mesh with similar teeth on the inner side of the sliding looped band secured to a sliding collar adjusted on the revolving cylinder and operated by a piston handled by a lever for changing the position of the after screw from right angles to a position perpendicular to the line of the cylinder, substantially as shown and described.

24. In combination, the after screw O^3, journal-sleeve y', circular carriage or disk $8'$, embedded and carried in recess 8 in the looped yoke 7, terminating the revolving cylinder M^3, the sliding strap-yoke or bow 6, provided with rack-teeth 10 on the inner edge of one side, and secured to a sliding collar, 5, adjusted on revolving cylinder M^3 and operated by a piston, 5^3, handled by a lever, 5^4, for handling and changing the direction of the screw O^3, substantially as shown and described.

25. In combination, the after screw O^3, journal-axle y', universal joint 2, actuating-shaft R, revolving cylinder M^3, terminating in a loop-yoke, 7, having ways in its periphery and a recess, 8, in the interior, the circular disk or carriage $8'$, having rack-teeth $7'$ on a segment of its periphery and a sleeve journal-bearing, y, the sliding strap-yoke 6, carrying rack-teeth 10 on the inner edge of one of the arms secured to a sliding collar, 5, adjusted on revolving cylinder M^3, piston 5^3, and lever 5^4, for carrying, rotating, and changing the after screw of vessels for aerial navigation, substantially as shown and described.

26. A pendulum attachment consisting of a ball, $8'$, lever 8, secured on a rocker-shaft, w^3, carrying two lateral levers w^4 w^4, secured thereto, one above and one below the rocker-shaft w^3, the latter levers by the other ends to lever-arms w' w', forming a part of collars or muffs w w, secured on revolving shafts M M, for carrying the side screws in vessels for aerial navigation, the whole adjusted near the center on the sides within the vessel, substantially as shown, and for the purpose described.

27. A pendulum attachment consisting of a lever, 8, suspended on a rocker-shaft, w^3, carrying a heavy ball, $8'$, dependent therefrom, and connected to two projecting levers, w^4 w^4, secured thereto, one above and one below the rocker-shaft w^3, in combination with lever-arms w' w', forming part of collars w w, secured on revolving cylinder M M, for automatically regulating the plane of flight of vessels for aerial navigation, substantially as shown and described.

28. A pendulum attachment consisting of a lever, 8, suspended within and near the side of the vessel on a rocker-shaft, w^3, and carrying a heavy ball, $8'$, dependent therefrom, and two branching levers, w^5 w^5, secured thereon, one above and one below the rocker-shaft w^3, in combination with lever-arms w' w', collars w w, secured on cylinder-shafts M M, which carry and change the positions of the raising, lowering, and propelling side screws, O O, in vessels for aerial navigation.

29. In combination, the main actuating-shaft R, provided with a double crank, R', secured in journal-bearings 21 and extending longitudinally through the vessel from forward of the cabin to the stern, segregated at intervals, but suitable by grip-clutches $f f' f^3$, and carrying grip-clutches $f f' f^3$, grip-clutches $g g' g^3 g^3$, bevel or miter gear wheels 3^3 3^3 3^3 3^3, and universal joint 2, axle y, and screw O^3, in vessels for aerial navigation, substantially as shown and described.

30. In combination, main driving-shaft R, having a double crank, R', therein, and secured in bearings 21 longitudinally through the vessel, beveled or miter gear wheels 3^3 3^3 thereon, beveled or miter gear wheels 3 on shaft Q, shaft Q, beveled or miter gear wheels V' V, shaft P, journaled in revolving cylinders M, and carrying side screws for raising, lowering, and propelling vessels for aerial navigation, substantially as shown and described.

31. In combination, main driving-shaft R, having a double crank, R', therein, and secured in bearings 21 longitudinally through the vessel within the hull under the gas-field, and segregated at intervals, but suitable by grip-clutches $f f' f^3$, carrying grip-clutches $g g' g^3 g^3$, arranged for throwing beveled or miter gear wheels 3^3 3^3 3^3 3^3 into and out of gear, beveled gear or miter wheel 3' on the inner end of shaft Q, journaled in boxing 3 at one end, and passing through revolving shaft M, carries a miter or beveled wheel, V', at the other, the shaft Q, journal-bearings within revolving cylinder M, beveled or mitered gear wheel V', beveled gear or miter gear wheel V, right-angle shaft P, carrying the side screw, O, and journaled in a cross-tube head, t, on the outer end, and forming part of revolving cylinder M, for raising, lowering, and propelling vessels for aerial navigation, substantially as shown and described.

32. In combination, main driving-shaft R, double crank R', bevel-gear wheels 3^3 3^3, clutches $f f' f^3$, clutches $g g' g^3 g^3$, levers f^3 and g^4, cylinder M^3, universal joint 2, revolving carriage 8, journal-sleeve y, after screw O^3, sliding loop-strap 6, collar 5, piston 5^3, lever 5^4, and beveled-gear wheel 3^3, shaft Q, beveled-gear wheel V', beveled-gear wheel V, right-angle shaft P, side screws, O, cross-tube head t, revolving cylinder-shaft M, collar w, lever-arm w', levers w^5, pendulum 8, ball $8'$, and rocker-shaft w^3, in machinery for propelling and handling vessels for aerial navigation, substantially as shown and described.

33. In combination, hand-wheel 14, shaft c^3, bevel gear or miter wheels c'' c''', bevel gear or miter wheels c'' c'', shafts c^4 c^5, miter or bevel gear wheels d d d d on the opposite ends of shafts c^4 c^5, beveled or miter gear bands on the inner end of revolving shafts M M' M M', revolving cylinder-shafts M M', and raising, lowering, and propelling side screws, O' O, for simultaneously changing the position of side screws, O O', in vessels for aerial navigation, substantially as shown and described.

34. In combination, hand-wheel 14, shaft c^3, beveled gear or miter wheel c c, beveled gear or miter wheel c c', shaft c c'', beveled gear or miter wheels 11^4 11^4, shaft $11''$, beveled gear or miter wheel $11'$, beveled gear or miter band 11, revolving cylinder-shaft M^3, terminating in a loop-yoke, 7, recessed for and carrying a revolving carriage, $8'$, journal-bearing y, after screw O^3, axle y', universal joint 2, main shaft R, and journal-bearings 12^3 12^3 a, in machinery for handling, steering, and propelling vessels for aerial navigation, substantially as shown and described.

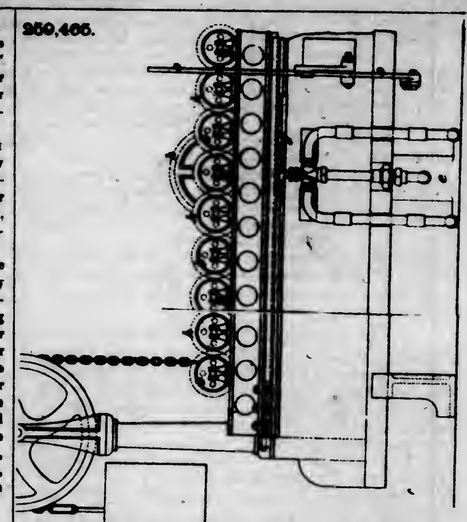
35. In combination, hand-wheel 14, shaft c^3, beveled gear or miter wheels c''' c''' thereon, beveled gear or miter wheels c'' c'' on shafts c^4 c^5, meshing therewith, longitudinal shafts c^4 c^5, secured in suitable bearings, beveled gear or miter wheels d d d d at the opposite ends thereof, beveled gear or miter bands on the ends of revolving cylinder-shafts M M M' M', revolving shafts M M', raising, lowering, and propelling side screws, O O' O O', also grip-clutch 15 and bevel gear or miter wheel c c on shaft c^3, beveled gear or miter wheel c d on shaft c c'' in suitable bearings, beveled gear or miter wheels 11^4 11^4, shaft $11''$, beveled gear or miter wheel $11'$, beveled gear or miter band 11, revolving cylinder-shaft M^3, sliding muff or collar 5, loop-straps 6, revolving carriage $8'$, adjustable after screw O^3, piston 5^3, hand-lever 5^4, in machinery internally and externally arranged for simultaneously changing the position of the screws, both on the sides and astern, for raising, lowering, propelling, and steering vessels for aerial navigation, substantially as shown and described.

259,465. APPARATUS FOR DYEING AND WASHING HANKS OF YARN, &c. ERWIN BODEN, Manchester, County of Lancaster, England. Filed Mar. 20, 1882. (No model.)

Claim.—1. The combination of a vat, roller-frame *c*, vertical guides, and balance-weights with a hydraulic ram, *a*, carrying said frame, as and for the purpose set forth.

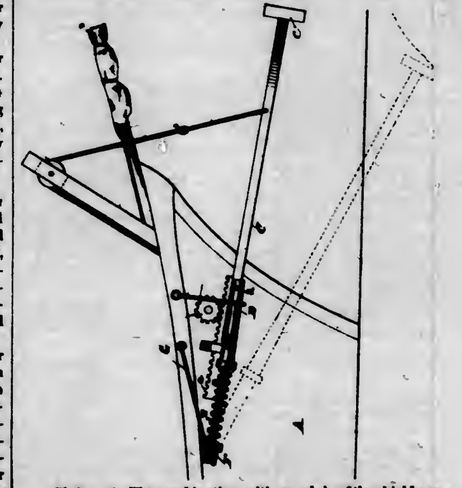
2. The combination of the rollers and a movable frame having

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bearings for the rollers at one side with a vat having pivoted bearings for the rollers at the other side, all substantially as and for the purpose set forth.

259,466. PEDDLE FOR VESSELS. JOHN BOSS, Brookeridge, Mo. Filed Aug. 6, 1881. (No model.)



Claim.—1. The combination, with vessel A, of the shield composed of bars C, held in shafts D, elastic cushions E, secured to shafts D, and shafts F, connected to cushions E and journaled as described, for the purpose specified.

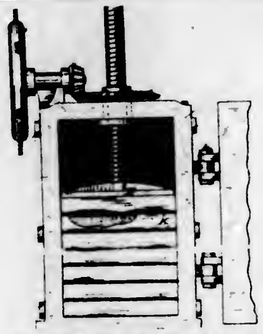
2. The combination of vessel A, a protecting-shield therefor projecting in front thereof, and sliding rack-bars L, secured to the vessel and provided with ways for the shield, the several parts being adapted to operate as set forth.

259,467. PROCESS OF AND APPARATUS FOR OBTAINING OIL. T. BRAY BOWERS, Chester, Pa. Filed Mar. 14, 1882. (No model.)

Claim.—1. The herein-described method of separating the oily or fatty matters from waste wash-liquor, it consisting in, first, treating said material with acid to cause a separation of the fatty materials, and, secondly, in subjecting the fatty matters to pressure in a steam-tight compartment and simultaneously applying steam directly thereto, substantially as set forth.

2. The herein-described method for obtaining oil from waste

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wash-liquor, it consisting in, first, treating said material with acid to cause a separation of the fatty materials, then filtering said materials, then dividing them into portable masses, then arranging two or more of said masses in a series, they resting upon each other, with metal sheets between them, and then subjecting them to pressure and heat, substantially as set forth.

3. The combination of the vertically-arranged door, the detachable cross-bars, the screws for clamping the door, and the pressing-chamber having the tight top and the tight back and sides, substantially as set forth.

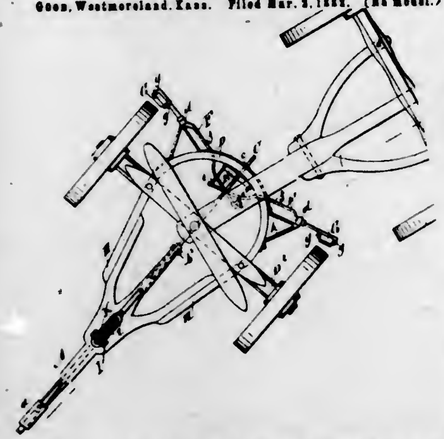
4. The combination of the platen, the pressing-chamber having an uninterrupted apartment below the platen and formed with the tight top, back, and sides, and the vertically-arranged door, adapted to be forced tightly against the chamber, substantially as set forth.

5. In a machine for compressing fatty matters, a compressing-chamber constructed and arranged, substantially as set forth, to provide below the platen an uninterrupted apartment for the material being subjected to pressure and above the platen a steam-tight apartment provided with a passage-way for the introduction of steam, substantially as set forth.

6. The combination of the compressing-chamber having an uninterrupted apartment above the platen and provided with a tight top permanently bolted to the tight back and sides, the screw-shaft passing vertically through said tight top, and a vertically-situated door through which the material is introduced on horizontal lines beneath the platen, and the screw-clamps arranged, substantially as set forth, for forcing the door tightly against the open side of the compressing-chamber.

7. The combination of the platen, the compressing-chamber having an uninterrupted apartment below the platen, and having also a side adapted to be entirely opened and a door which extends entirely across said open side and is adapted to be clamped against it, substantially as set forth.

259,468. WAGON-BRAKE. JAMES D. HEATTON and HENRY H. GOOD, Westmoreland, Kans. Filed Mar. 3, 1882. (No model.)



Claim.—1. The combination, with the draft-rod B C and the brake-levers F, of the lever E and the rods *e*, connecting the ends of the said lever with the inner end of the brake-lever controlling the opposite wheel, substantially as and for the purpose set forth.

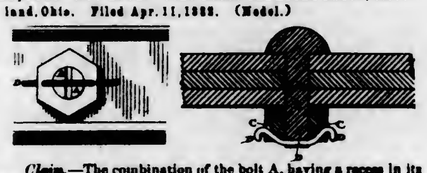
2. The combination, with the draft-rod B C and the curved bar D, of the brake-levers F, provided with the cranks *f*, the lever E, and the connecting-rods *e*, substantially as and for the purpose set forth.

3. The combination, with the curved bar D and the crank brake-levers F, of the lever E, the connecting-rods *e*, and the draft-rod B C, provided with the arm or bolt I, substantially as and for the purpose set forth.

4. The curved bar D, secured to the hounds and provided with keepers *c* and *d d*, substantially as herein described.

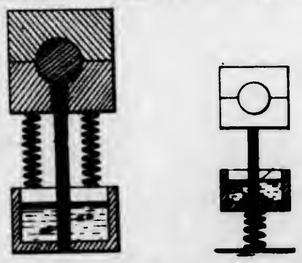
5. The combination, with the wagon-pole A, provided with the slot *i*, the hounds H, and the crank brake-levers F, of the draft-rod B C, provided with arm or bolt I, the curved bar D, the lever E, and the connecting-rods *e*, substantially as and for the purpose set forth.

259,469. NUT-LOCK. JOHN BAKER and EDGAR BAKER, Cleveland, Ohio. Filed Apr. 11, 1882. (Model.)



Claim.—The combination of the bolt A, having a recess in its end, a nut having diagonal openings C through opposite sides, and the locking-wire D, which has its ends passed through the holes and its central portion held by the recess in the end of the bolt, substantially as shown and described.

259,470. LUBRICATING MECHANISM. WARREN H. BAUMGARDNER, Auburn, N. Y. Filed Apr. 14, 1882. (No model.)

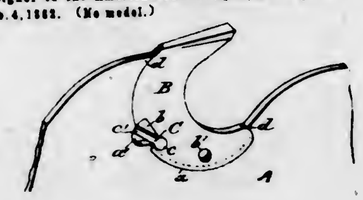


Claim.—1. In a lubricator for journals and shafting, in which the lubricant is conducted from the oil-cup to the shaft or journal by means of a wick, an oil-cup that is advanced toward the shaft or journal by spring-power or gravity as the wick becomes reduced by friction, substantially as described.

2. The combination, with a box or bearing for journals and shafting, of a movable oil-cup, a wick which is rigidly connected to the oil-cup, and a spring or springs connecting the oil-cup with the box or bearing, substantially as described, whereby the oil-cup will be simultaneously advanced toward the shaft or journal as the wick becomes reduced by friction, substantially as set forth.

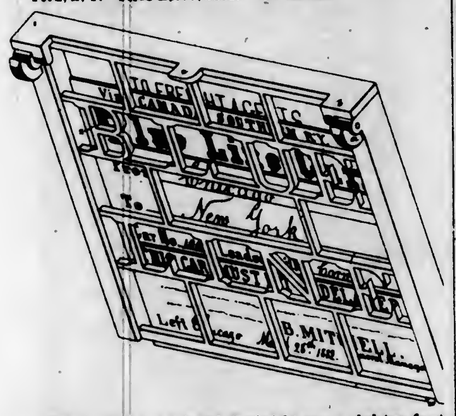
3. The combination, with a box or bearing for shafting, of the oil-cup, the wick secured to the oil-cup and extending to the shaft or journal, and a contractile or expansible spring or springs for advancing the oil-cup, and thereby feeding forward the wick as the latter becomes reduced by friction, substantially as described.

259,471. SAW-TEETH. WILLIAM E. BROOKS, Trenton, N. J., assignor to the American Saw Company, same place. Filed Feb. 4, 1882. (No model.)



Claim.—The combination of the saw-plate A, having recess *a* and sub-recess *a'*, the movable tooth B, having recess *b*, and the locking-latch C, consisting of the disk *c*, having an arm, *c'*, said latch being pivoted in a circular opening formed at the end of the recess *b* and capable of a partial rotation for the purpose of causing its arm *c'* to bear against the edge of the saw-plate in the recess *a'*, whereby the tooth is removably secured, substantially as shown and described.

259,472. LABEL-RACK FOR FREIGHT-CARS. EDWARD J. BROOKS, East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Filed Apr. 3, 1882. (No model.)

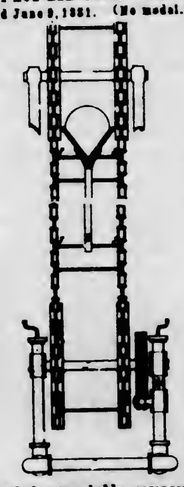


Claim.—1. In a label-rack for freight-cars, a skeleton front having the name of the freight-line or railroad to which a given car belongs formed in and constituting a part of said front, substantially as herein specified.

2. A label-rack for freight-cars, having a skeleton front, a close or substantially close bottom, close or substantially close lateral edges, and a self-closing lift or lid at the top, substantially as herein specified.

3. A label-rack for freight-cars, adapted by means of a skeleton back to be attached to a car side by concealed screws, and by means of a skeleton front indicating the freight-line or railroad to which a given car belongs to expose to view a loosely-inclosed destination-card, substantially as herein specified.

259,473. SAFETY HOD-ELEVATOR. GEORGE W. BROWN, New York, N. Y. Filed June 9, 1881. (No model.)



Claim.—1. A hod-elevating ladder composed of parallel endless chains connected with rounds, constructed and affixed substantially as specified.

2. A hod-elevating ladder composed of parallel endless chains connected with rounds, as described, and so located that one shall support the hod by its bowl and the next lower one afford a resting-place for its shank at the lower part thereof.

3. An endless hod-elevating ladder combined with a detachable hod having a notch in the bottom of the hod-bowl, near the middle of its length and the line of the center of gravity of the load, and suited to afford a seat for the hod-bowl on a round of the ladder.

4. A hod-elevating apparatus combined with and operated by worm-gearing and connecting mechanism.

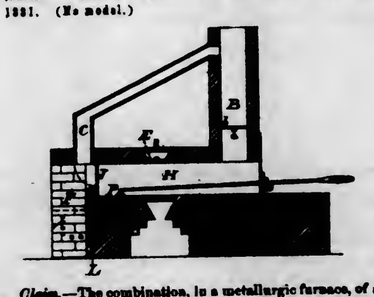
5. An endless hod-elevating ladder combined with motive mechanism suspended therein and thereby, substantially as described.

259,474. CHURN. MICHAEL BROWN, FRANCIS J. MCFARLAND, and JOSEPH BROWN, Wapakoneta, Ohio. Filed Feb. 7, 1882. (No model.)



Claim.—In a churn, the U-shaped metallic bottom having the outwardly-flanged ends *b*, in combination with the grooved end boards, A, bent packing-strips *c*, and fastening-bolts *d*, and nuts *e*, substantially as specified.

259,475. DESULPHURIZING AND OXIDIZING ORE-FURNACE. WILLIAM T. BROWNE, Stockton, Cal. Filed Oct. 18, 1881. (No model.)



Claim.—The combination, in a metallurgic furnace, of an ore-roasting chamber, H, a fire-place, F, and an intervening bridge-wall, K, inclosing a pipe, L, for injecting hot air into the roasting-chamber, a chimney, C, leading directly from the fire-box, a chimney, B, communicating with the roasting-chamber, and a valve, J, which on being moved in one direction closes chimney C, and on being moved in the other direction shuts off the fire-place from the roasting-chamber without closing the hot-air supply through pipe L, all constructed, arranged, and operated as set forth.

259,476. WINDMILL. WILLIAM M. BRYAN, Ada, Ohio. Filed Apr. 17, 1882. (Model.)

Claim.—1. The tower A, consisting of the tube *a*, through which the pump-rod operates, the tube being supported by the angle brace-irons *e* and the braces *f'*, the said braces *f'* being secured to the spider *c*, having radial arms *c'*, for supporting the platform, and resting upon the collar *d*, rigidly secured to the tube, substantially as shown.

2. The wind-wheel consisting of the wheel G, rigidly secured to the shaft C, and the second wheel, G', loosely mounted and adapted to slide on said shaft, and being provided with the pivoted radial arms *g*, having the fans *g'* secured thereto, the arms *g*, having the rods *g'* rigidly secured to them at the inner ends of the fans, the outer ends of the rods *g'* being pivoted to the rods *g''*, which are pivoted to the wheel G, whereby the rods *g*, carrying the fans, may be turned so as to present the fans at any desired angle to the wind by sliding the wheel G' in or out upon the shaft C, substantially as described.

3. The wind-wheel consisting of the wheel G, rigidly secured to the shaft C, journaled upon the pivoted bracket B, and the second wheel, G', loosely mounted and adapted to slide upon the shaft C, the said wheel G' being provided with the hub *g^4*, having the annular groove *g^5*, in combination with the strap *d^1*, the ends of which are pivoted in the bifurcated ends of the weighted bent lever D, pivoted to the bracket B, and controlled by the rope F, the wheel G' being provided with the pivoted radial arms *g*, having

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the rods g' rigidly secured to them at the inner ends of the fans, the outer ends of the rods g' being pivoted to the rods g', which are pivoted to the wheel G, whereby the fans may be turned at any desired angle to the wind by raising or lowering the inner end of the weighted lever D, substantially as shown and described.

4. The pump-rod H, extending through the tube *a*, secured at its upper end to the sleeve *h*, which encircles the upper end of the tube *a*, the said sleeve being provided with a bearing-lug, *h'*, adapted to slide up and down against the inner edge of the bracket B, motion being imparted to the sleeve *h*, and through it to the pump-rod, by means of the connecting-rod e^2 and crank-disk *e*, secured to the inner end of the shaft C, all combined to operate substantially as specified.

259,477. ELECTRIC ARC LAMP. FRANK H. DUNCAN, Plainfield, N. J. Filed Dec. 14, 1881. (No model.)

Claim.—1. In an electric lamp, the combination, with an adjustable carbon, of a rotary screw carrying the same, a non-rotary nut with which said screw engages, and which is composed of separable or expansible sections from which the screw may be readily disengaged when desirable, and an electric motor comprising a gear-wheel which is locked to said screw so that it will impart rotary motion thereto, and yet will not interfere with its longitudinal movement, substantially as specified.

2. In an electric lamp, the combination, with an adjustable carbon, of a rotary screw carrying the same, a non-rotary nut composed of separable or expansible portions which may be moved apart to release the screw, and a spring for holding said portions normally in engagement with the screw and for returning said portions when moved apart, substantially as specified.

3. The combination, with the screw B', of the non-rotary nut composed of portions C, each pivoted near one end and so arranged that when one portion is swung away from the screw its pivoted end will act upon the other portion forward of its pivot to swing it away also, substantially as specified.

4. The combination, with the screw B', of the non-rotary nut composed of portions C, each pivoted near one end and so arranged that when one portion is swung out away from the screw its pivoted end will act upon the other portion forward of its pivot to swing it away also, and a spring for bearing upon one portion forward of its pivot to keep both portions in engagement with the screw, substantially as specified.

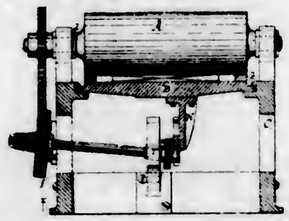
5. In an electric lamp, the combination, with means for adjusting or feeding a carbon, of the derived circuit N P, electro-magnet N' and its armature, electro-magnet P' and its armature and commutator, the circuit-breaker O O' O², the circuit-breaker Q Q', the catch *h*, and the stop *k'*, substantially as specified.

6. The combination, with the frame D D' D² and its attached suspending-rod F, and guides D², of the plate G, guided upon said rod, the rods G², fitting in said guides and supporting the lower carbon, the adjustable collars J on said rods G², the springs I, arranged between said guides and collars, and the electro-magnet H, all substantially as and for the purpose specified.

7. In an electric lamp, the combination, with a holder for one of the carbons, of a horizontal bar on which said holder fits, and on which the holder may be adjusted in the direction of the length of the bar to move its carbon laterally in one direction relatively to the other carbon, or turned to move its carbon laterally in another direction, and means for securing said carbon-holder upon said bar after adjustment, substantially as specified.

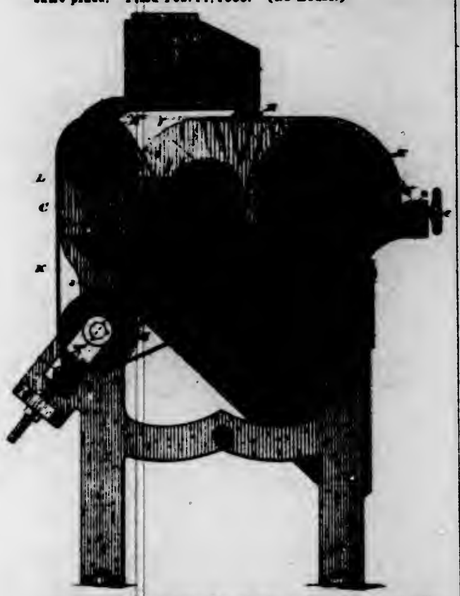
8. The combination of the bar D, containing a socket, the suspending-rod F, screwed into the upper side of said socket, and the screw F^2, forming a stop for said rod and adapted to be adjusted in said socket, so that the rod, when screwed down against it, will have its ring or eye standing at any desired angle, substantially as specified.

259,478. CYLINDER PRINTING-PRESS. ANDREW CAMPBELL, ANDREW C. CAMPBELL, and CHARLES H. CAMPBELL, Brooklyn, N. Y., assignors to Campbell Printing Press and Manufacturing Company. Filed Apr. 8, 1881. (No model.)



Claim.—In a cylinder printing-press, in combination with a gear-wheel attached to the impression-cylinder, constructed and adapted to be raised and lowered at alternate revolutions, a double-faced pinion mounted on an oscillating and rotary shaft whose point of oscillation lies without a plane equally dividing the face of the gear-wheel, whereby the teeth on each face of said pinion are caused to follow and alternately engage at a constant depth of engagement with the teeth of said gear-wheel in the raised and lowered positions of the cylinder in the operation of printing a sheet, substantially as set forth.

259,479. GRAIN-REDUCTION MACHINE. JOHN M. CASE, Columbus, Ohio, assignor to the Case Manufacturing Company, same place. Filed Feb. 11, 1882. (No model.)



Claim.—1. The combination of rolls, pulleys thereon of different diameters, a feeding device and a pulley operating said feeding device, and an endless belt common to all.

2. The combination, with the cracking or crushing rolls A B, of the driving-pulleys I J on their respective shafts, the feed driving-pulley L, the tightening-pulley S, and a belt, K, common to all.

259,480. GRAIN-REDUCTION MACHINE. JOHN M. CASE, Columbus, Ohio, assignor to the Case Manufacturing Company, same place. Filed Feb. 11, 1882. (No model.)



Claim.—1. The grinding-plate C, constructed with a yoke-shaped top, C', downwardly-projecting part c^4, and a chilled working-face, *c*, in combination with the casing and roll, the said grinding-plate being adapted to be hung on and lifted off the casing while the machine is in operation, substantially as herein described.

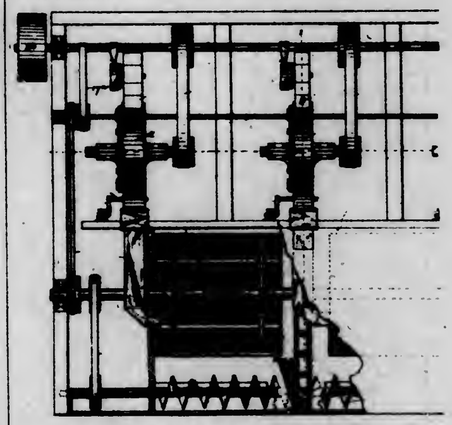
2. The saddle-piece I and support K, in combination with a grinding-roll and a grinding-plate, C, having yoke C', as set forth.

3. The saddle-piece I, formed with a rib or projection, *i*, in combination with means for supporting the same, grinding-plate C C', and set-screws J J, for transmitting the said grinding-plate relatively to the cracking-roll B, as set forth.

4. In a gradual-reduction machine, the combination of cracking-roll B and a series of two or more grinding-plates, C, having yokes C', means for independently adjusting said plates relatively to the cracking-roll, and a support common to all said grinding-plates, substantially as described.

5. The combination, with the grinding-plate C, having yoke C', saddle-piece I, and means for supporting said saddle-piece, of the rod M, spring N, and set-screw L, forming a stop to the grinding-plate, as set forth.

259,481. GRAIN-REDUCTION MACHINE. JOHN M. CASE, Columbus, Ohio, assignor to the Case Manufacturing Company, same place. Filed Mar. 29, 1881. (No model.)



Claim.—1. A series of independent reduction-machines arranged in horizontal line, a single frame therefor, a single driving-shaft, and separate driving mechanism for each machine connected with said single shaft, in combination with suitable screens arranged beneath said reduction-machines, and conveyers from said screens, as set forth.

2. A single portable frame, a series of reduction-machines mounted in horizontal line therein, a single driving-shaft, and gearing for operating said machines independently of each other from said single shaft, in combination with a series of screens arranged beneath said reduction-machines, a series of elevators connected with the single driving-shaft, and a conveyer, substantially as set forth.

3. A single portable frame, a single driving-shaft, and a bran-cleaning machine, in combination with a series of reduction-machines mounted in horizontal line, a series of screens, a series of elevators, and a conveyer, the whole being independently operated from said single driving-shaft, as set forth.

4. A single portable frame, a single driving-shaft, and a crushing-machine, in combination with a series of reduction-machines mounted in horizontal line, a series of screens, a series of elevators, and a conveyer, the whole being independently operated from said single driving-shaft, as set forth.

5. A single portable frame, a single driving-shaft, and a flouring-machine, in combination with a series of reduction-machines mounted in a horizontal line, a series of screens, a series of elevators, and a conveyer, the whole being independently operated from said single driving-shaft, as set forth.

259,482. GAG-RUNNER. WILLIAM H. CHAPMAN, Middletown, Conn. Filed Apr. 12, 1882. (No model.)

Claim.—The combination, with the curved frame C, having the central perforated bridge, B, of the loop A, provided with the spur D at its upper end, passing through the perforation of the

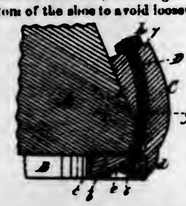
239,482.



frame and a bole in the bridle, whereby a single spur serves the double purpose of securing the loop to the frame and the frame to the bridle, substantially as herein shown and described.

259,483. TOE-WEIGHT. LUCIUS C. CRAIN, Boston, Mass. Filed Mar. 30, 1882. (No model.)

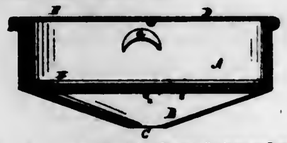
Brief.—The bolt which secures the weight has its head countersunk in the bottom of the shoe to avoid loosening the weight by concussion.



Claim.—1. The toe-weight C, provided at its lower end with a tang, *b*, adapted to be introduced between the shoe and the hoof, in combination with and held in place by a bolt passing through the shoe from its under side, and having its head countersunk, so that it will be above the lower surface of the shoe, and extending up through the tang and the body of the weight, and secured by a nut, A, applied to a thread at its upper end, and adapted to be screwed down upon or against the weight substantially in the manner and for the purpose described.

2. The combination, with the shoe B, of the toe-weight C, with its tang or projection *b*, fitting between the shoe and the hoof, and the curved bolt D, having its head countersunk in the shoe B, and adapted to extend upward through the shoe, tang *b*, and a curved aperture, *g*, in the weight C, and secured at its upper end by a nut, A, screwed down upon the end 7 or bottom of a recess in the weight C, substantially as and for the purpose set forth.

259,484. FLOUR-SIFTER. MARY E. CHAVERS, Covington, Mo. Filed Jan. 7, 1882. (No model.)



Claim.—1. As a new article of manufacture, a flour-sifter having a hinged cover and a contracted exit, as set forth.

2. In a flour-sifter, the casing A, cover D E, and conical bottom B, having the central orifice, C, as set forth.

259,485. CHAIR SLEEPING-CAR. MELVIN B. CHURCH, Grand Rapids, Mich. Filed Mar. 3, 1882. (No model.)



Claim.—1. In combination, in a sleeping-car, and in combination, a collapsible berth having side pieces, one of which is directly attached to the side of the car, movable end pieces for holding the outer side pieces in extended position, and devices, substantially as described, for supporting the outer side of the berth, all arranged as shown, whereby the berth may be collapsed by horizontal movement upon or into the side of the car, as described.

2. In a sleeping-car, and in combination, a collapsible lower berth having side pieces, and movable end pieces adapted to hold the outer side extended or to permit it to collapse upon the inner, devices for securing the inner side to the car, supporting devices for the outer side, and removable seats or backs, all as shown.

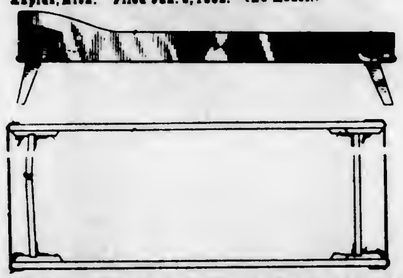
3. In a sleeping-car, a collapsible berth consisting of a side piece, *b*, attached to the car within the cavity of the wall thereof, hinged end pieces, and an outer movable side, *a*, in combination with a suitable cover and suitable supporting devices for the outer side, as set forth.

4. The combination, in a sleeping-car, of the upper berth adapted to collapse or fold sidewise against or into the wall of the car, supporting-cables, and end curtains attached thereto, forming the division between the sections for the upper berths, as set forth.

5. In a sleeping-car, the combination of a lower berth collapsible or folding into or upon the wall and supported upon adjustable legs, and an upper berth collapsible or folding against or into the wall and supported at its outer edge by cords attached to the ceiling, substantially as described.

6. In a sleeping-car, the combination of an upper and lower berth collapsible sidewise into or upon the wall of the car, and a flexible removable partition, E, held detachably to the berths by suitable fastenings, as set forth.

259,486. FOLDING SPRING-COT. MELVIN B. CHURCH, Grand Rapids, Mich. Filed Jan. 6, 1882. (No model.)

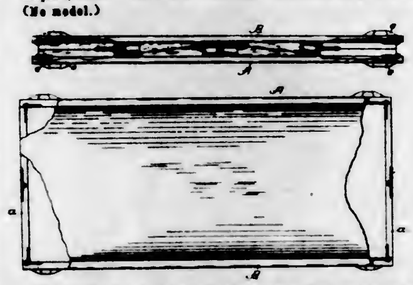


Claim.—1. In combination with the side piece of a cot-bed, bench, or light structure, the folding leg formed with a partly-rounded end, and the block *c*, fitted thereto, adapted to bear against the leg and limit its movement, substantially as described.

2. The combination of the side piece, the partly-rounded leg, and block fitted thereto, and the cross-pieces adapted to brace against the legs, substantially as described.

3. The combination of the spring-sides, folding transverse cross-pieces uniting said side pieces near the ends thereof, and the transverse cords adjustably attached to the lower corners, substantially as described.

259,487. FOLDING SPRING-COT. MELVIN B. CHURCH, Grand Rapids, Mich. Filed Oct. 10, 1881. Renewed May 8, 1882. (No model.)



Claim.—1. A frame for cot-beds and the like, consisting of spring side pieces formed of elastic board set on edge, end pieces adapted to hold said side pieces in vertical position, and a cloth or flexible covering attached to the upper edge of said side pieces, as set forth.

2. The side frames, A A, formed of elastic boards set on edge, hinged end pieces, *a a*, and covering of cloth or other flexible material attached to the edge of the side frames, substantially as set forth.

3. The combination of the side pieces, A A, formed of boards set on edge, end pieces adapted to extend said side pieces, flexible covering attached to the upper edge of said side pieces, and the removable legs adapted to the cleats on the outside, as set forth.

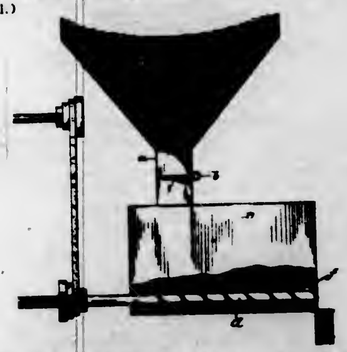
259,488. COATING AND PAINTING EXTERIOR SURFACES. MELVIN B. CHURCH, Grand Rapids, Mich. Filed Jan. 18, 1882. (No specimens.)

Claim.—The improved process of covering exposed surfaces or walls, consisting in first coating said surfaces or walls with the described mixture of pulverized gypsum and glue, and then painting them, substantially as described.

259,489. MANUFACTURE OF PAPER BLANKETS. MELVIN B. CHURCH, Grand Rapids, Mich. Filed Feb. 8, 1882. (No specimens.)

Claim.—A blanket formed of paper covered with a fibrous coating cemented thereon, as set forth.

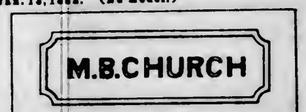
259,490. FEED-REGULATOR FOR GRINDING-MILLS. MELVIN B. CHURCH, Grand Rapids, Mich. Filed Oct. 7, 1881. (No model.)



Claim.—1. In a grinding-mill, a garner, a chamber, B, below the garner, a throat leading from the garner to said chamber, a feed-screw located in said chamber, properly driven, and having a close case covering it at the discharge end, said case leaving about one-half of the screw uncovered and exposed to contact with the material fed to the chamber, all the parts being combined substantially as described.

2. The combination of the screw *d*, the box or chamber containing the material to be fed, the casing *f*, open at both ends, and covering only part of the screw, as described, and suitable driving mechanism connected to that driving the stone, as set forth.

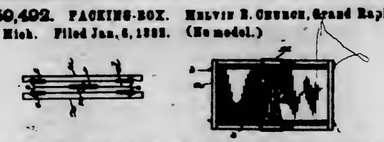
259,491. SIGN. MELVIN B. CHURCH, Grand Rapids, Mich. Filed Jan. 18, 1882. (No model.)



Claim.—1. The process of forming a sign of plastic material upon a board, consisting, first, in forming a roughened panel or surface on such board; further, in covering that portion of the board outside the panel with oil or other material to prevent adhesion; further, in making a mold having sunken letters or other objects to be transferred; further, in filling such sunken letters and covering the face of the mold with plastic material; and, lastly, in pressing the mold against the previously-prepared board, whereby the roughened panel receives the impression formed in the mold and also a background of smooth plastic material.

2. An improved sign, consisting of a board or panel and a coating of plastic material attached thereto by pressure, and having raised letters or other objects formed on it.

259,492. PACKING-BOX. MELVIN B. CHURCH, Grand Rapids, Mich. Filed Jan. 6, 1882. (No model.)



Claim.—1. The combination of the side pieces, *a a*, the end pieces divided into two equal parts and hinged at 6 and 7, and the cords or cables *b*, attached to the ends of the sides in the manner shown.

2. In a collapsible box, the combination of the top and bottom having the projections 10, the end pieces, the cord 11, connecting the top and bottom to such end pieces, and an intermediate device for straining the cord.

259,493. COVERING FOR WALLS. MELVIN B. CHURCH, Grand Rapids, Mich. Filed Jan. 13, 1882. (No specimens.)

Claim.—1. A coating for walls, consisting of a mixture of finely-pulverized calcined gypsum mixed with glue in substantially the proportions specified, the whole laid thickly upon the wall, and having a rubbed and polished surface, substantially as described.

2. A coating for walls, consisting of a mixture of finely-pulverized calcined gypsum mixed with glue in substantially the proportions specified, laid thickly on the wall and polished, in combination with a surfacing of beeswax, substantially as described.

259,494. AUTOMATIC DRAFT-REGULATOR AND VENTILATOR. MELVIN B. CHURCH, Grand Rapids, Mich. Filed Dec. 31, 1881. (No model.)



Claim.—A ventilator-pipe connected to the draft-pipe of the stove at the outside thereof, extending downward toward the floor and opening into the apartment only, in combination with the horizontal valves adapted to be opened upward by the draft and to close by gravity, substantially as described.

259,495. GRINDING-MILL. MELVIN B. CHURCH, Grand Rapids, Mich. Filed Dec. 15, 1881. (No model.)



Claim.—1. In a grinding-mill, a lower stone adapted to be driven and formed with its face perfectly plain from center to skirt, in combination with an upper stone, said stones having a substantially smooth dress, and the upper stone dished substantially from eye to skirt in the manner described, whereby the spaces between the stones in zones of a given width on any part from center to skirt are made of equal capacity, all as set forth.

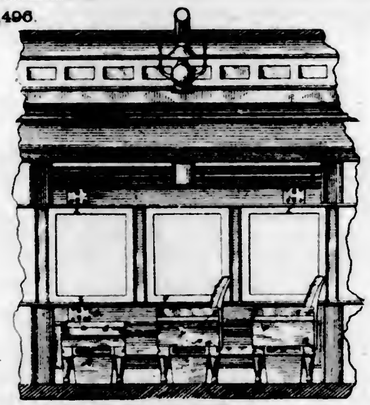
2. The improvement in the art of grinding, which consists in feeding the material to be ground between the stones, the lower one revolving and having a plain face and the upper one having a dished face, the dishing giving equal capacity to zones of equal width at different distances from the center in adjusting and regulating the feed to the speed of the stone, keeping them crowded full, in adjusting the speed of the stone to accord with the pressure necessary to the degree of fineness required, and in discharging the finely and uniformly ground material by centrifugal force, substantially as described.

259,496. SLEEPING-CAR. MELVIN B. CHURCH, Grand Rapids, Mich. Filed Mar. 3, 1882. (No model.)

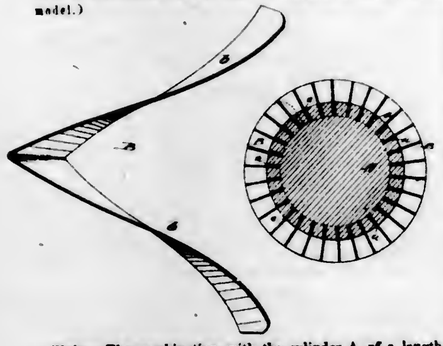
Claim.—1. In a railway-car, fixed seats having removable backs and hinged ends, in combination with the described collapsible bed or cot, having flexible covering, and adapted to rest on said seats and to extend over or beyond them, substantially as described.

2. In a railway-car, and in combination, fixed seats having removable backs, a lower berth consisting of the collapsible frame, having flexible covering, adapted to rest on said seats, and an upper berth composed of the collapsible frame and flexible covering, with legs and holes for connection with the car and cords to support the outer edge, substantially as described.

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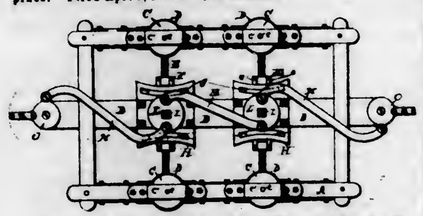


259,497. CUTTER FOR LEATHER-WHITENING MACHINES. JOHN E. CLEMENT, Peabody, Mass. Filed Feb. 27, 1882. (No model.)



Claim.—The combination, with the cylinder A, of a length slightly more than its diameter, and provided with V-shaped grooves, of the V-shaped cutters B, provided with spiral wings *b*, and secured in the grooves of the cylinder by the strips of soft metal *a*, substantially as herein shown and described, and for the purpose set forth.

259,498. CAR-TRUCK. ERASTUS L. CLEVELAND, Pittsburg, Pa., assignor of one-half to Allen Cunningham Milliken, same place. Filed Apr. 6, 1882. (No model.)



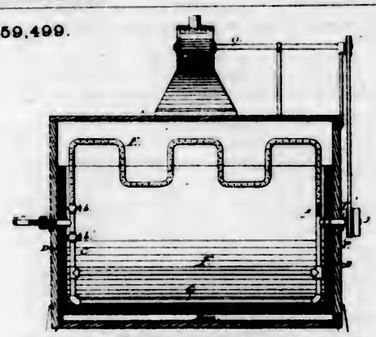
Claim.—1. In a car-truck, the wheels E', axles E, and cylindrical bearings C, in combination with the segmental guides G, lever K, shafts I, and connecting-rod M, substantially as set forth.

2. In a car-truck, the wheels and axles E' E, mounted in the cylindrical bearings C, in combination with the segmental guides G, levers K, shafts I, connecting-rods M N, and the coupler O, as and for the purpose set forth.

259,499. FEATHER-RENOVATOR. ELLIS D. COLE, Northampton, Mass. Filed Apr. 26, 1882. (No model.)

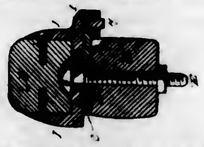
Claim.—1. In a feather-renovator, the stirrer composed of the portions E F G, formed of tubing provided with cocks *b b'*, the first-named portion being perforated and the other portions being without perforations, as and for the purpose specified.

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2. The stirrer E F G, arranged in part for steaming and in part for drying, substantially as described, in combination with the metallic lining provided with steam-space D, as and for the purpose set forth.

259,500. WHIFFLETREE-PLATE. JOHN H. COMBS, Stamford, Conn. Filed Feb. 8, 1882. (No model.)



Claim.—The plate C, provided with an extension or flange F, having a square hole for the reception of the bolt E, and the slot G, in combination with the plate I, provided with the screw-pin H, and having the round opening for the reception of the flange F, and the bolt E, provided with a shank, all constructed and arranged substantially as and for the purpose set forth.

259,501. COUPLING FOR TUBING. EDMUND C. CRAVENER, Pittsburg, Pa. Filed Mar. 31, 1882. (No model.)

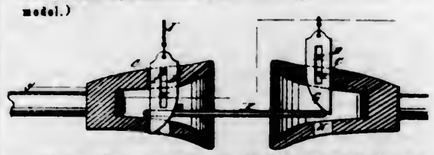


Claim.—1. In couplings for tubing, the combination of a coupling-collar having an annular recess at each end for the reception of calking material, and a series of wings extending across the mouth of each annular recess, with tubing having one or more lugs or projections at the end adapted to catch under the wings on the collar, substantially as and for the purposes set forth.

2. In couplings for tubing, the combination of the collar B, having central ring, *c*, annular calking-recesses *d*, and wings *e*, with the tubing A, provided with lugs *a*, having inclined edges *g*, substantially as and for the purposes set forth.

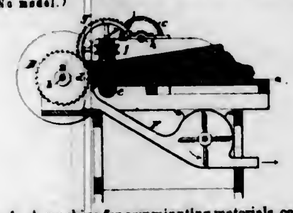
3. In a sleeve or collar for coupling tubing, having an inner central ring, *c*, and annular calking-recesses *d* at each end, the tapering inner faces, *b*, substantially as and for the purposes set forth.

259,502. CAR-COUPLING. ELMER A. CONVERSE and NATHANIEL T. GALVIN, Monticello, Ohio. Filed Apr. 18, 1882. (No model.)



Claim.—In a car-coupling, the flexibly-suspended plate-pin D, made flat, curved at the front lower edge, and slotted at H, in combination with a draw-bar having a cross-pin, I, in its top slot, and a lower slot of less length than the width of the plate, as shown and described.

259,503. STRAW-CUTTER. DANIEL M. CUMMINGS, Enfield, N. H., and NATHANIEL K. FRARY, Bradford, Vt. Filed Mar. 14, 1882. (No model.)

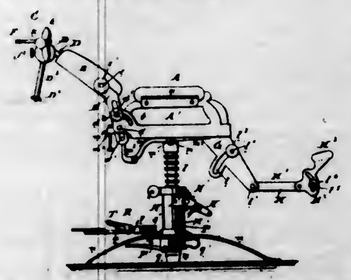


Claim.—1. A machine for comminuting materials, consisting of a gang of independent circular cutters arranged obliquely upon a shaft and parallel to each other, in combination with a bar or rest arranged opposite the cutting-edges, and with a platform supporting the material to be fed to the cutters, substantially as set forth.

2. The combination of the shaft *h*, gang B of independent circular cutters set obliquely, bar *d*, and feed-rolls *f e*, substantially as set forth.

3. The combination, with the cutters and means for driving the same and feeding the material thereto, of a blowing apparatus and conduits, whereby the material as fast as cut is carried away from the cutters, and is then conducted to the receptacle outside the machine by an air-blast, as specified.

259,504. ADJUSTABLE CHAIR. EMERY B. CUSHING, Lancaster, N. H. Filed Mar. 23, 1881. (Model.)



Claim.—1. The combination of the base, the seat-supporting spindle provided with the circular ribs or teeth, movable endwise and capable of turning or swiveling in said base, the pinion-wheel acting upon the spindle to elevate it, and the crank-shaft N', journaled in lugs *p'* on the upright M', as shown and described.

2. The combination, with chair-seat frame A, having slotted rearward projections, and the back B, pivoted on rod *c*, of the slotted arms B', pins *d*, rod *d'*, and nut *d'*, as and for the purpose specified.

3. The combination, with the chair-back and head-rest, substantially as described, of the slotted ring D, rod D', grooved blocks D', the sliding tube D', provided with jaw *g*, the adjustable rod D', provided with jaw *g'*, and the nuts *f' g'*, as and for the purpose specified.

4. In an adjustable chair, the combination, with the slotted side bars, G, of the foot-board-supporting angle-arms H, rods *f' F*, and nut *F'*, substantially as herein shown and described, whereby the foot-board may be adjusted and held in position, as set forth.

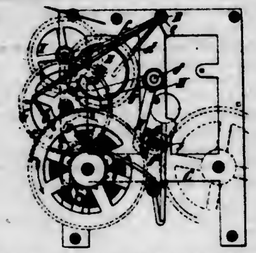
5. In an adjustable chair, the combination, with the foot-board-supporting arms H, of the slotted pivoted lugs H', rod *f'*, and nut *F'*, and foot-rest H', substantially as and for the purpose described.

259,505. STRIKING MECHANISM FOR CLOCKS. WALTER D. DAVIES, Brooklyn, N. Y., assignor of one-half to Henry J. Davies, same place. Filed Jan. 31, 1882. (No model.)

Claim.—1. The lever H, having the two arms *g g'*, in combination with the hook-lifter *a*, for acting upon the arm *g*, and the spindle B, provided with arms *b c d*, on the latter of which the arm *g'* of the said lever H acts, substantially as herein described.

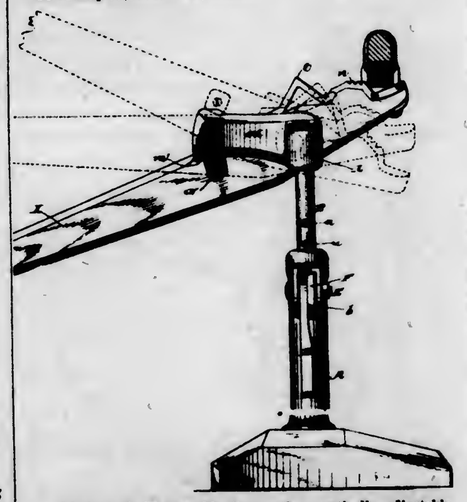
2. The combination, with the wheel J, provided with the pin *e*, and the spindle B, provided with the arms *b c d*, of the lever H, pivoted to one of the plates of the frame and having the arms *g g'*, the former of which is flexible laterally and the latter of which is

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adapted to act upon the arm *d* and to engage with the pin *e*, to serve as a lift-warning, and the hook-lifter *a*, for acting upon the arm *g*, substantially as herein described.

259,506. LIFTING-JACK. LEWIS H. DAVIS, West Chester, Pa. Filed May 19, 1882. (No model.)



Claim.—1. The combination, with a vertically-adjustable stock, of a locking device, a lifting-lever pivoted to said stock, and an arm extending from the latter and having one, or more than one, lip formed upon its edge or edges and adapted to engage with a catch upon the lever, substantially as described.

2. The combination, with a vertically-adjustable stock, of a locking device consisting of a slide-plate carrying a tooth or equivalent device and a cam-lever for operating said plate, a lifting-lever pivoted to said stock, and an arm extending from the latter and having one, or more than one, lip formed on its edge or edges to engage with a catch on the lever, substantially as described.

3. In a lifting-jack, the combination, with the standard and a stock moving vertically therein, of an eccentric locking device mounted upon an adjustable cam-bearing, whereby the throw of said locking device may be varied, substantially as set forth.

4. The combination, with the eccentric locking-lever, of the pivoted pin having a cam-shaped portion and provided with an arm adapted to engage with a series of detents upon the standard, substantially as described.

5. The combination, with the standard, the stock moving vertically therein, and the locking-lever having an eccentric, of the plate actuated by said lever and the pivot-pin upon which the latter turns, said pin having a cam portion and a locking-arm, substantially as set forth.

6. The combination, with the stock, of a head to which the lifting-lever is pivoted and an arm or extension formed on said head and provided with lips upon its upper and lower horizontal edges to engage with a catch upon the lever, substantially as set forth.

7. The combination, with the standard of the jack having lips formed upon its rear side, of the pivoted lever provided with a catch or projection at its end adapted to engage with said lips and hold the lever in a vertical position when not in use.

8. A standard for lifting-jacks, having on its interior cylindrical opening two plane-surfaced converging faces placed opposite the locking device, in combination with a stock moving vertically in said opening, substantially as described.

9. The combination, with the standard having the plane-surfaced converging faces *f' f'*, of the stock having perforations *a*, the locking-plate provided with a tost, *a'*, and the cam-lever for actuating said plate, substantially as described.

10. The combination, with the stock, of the head L, having an arm, M, provided with lips *m m'*, and lifting-lever I, having catch N, adapted to engage with said arm, substantially as described.

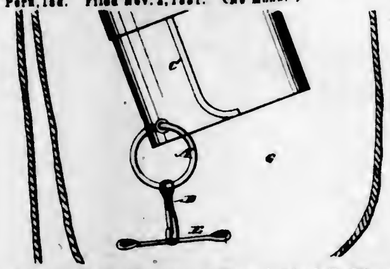
11. The combination of the standard A, having lips *l l'*, with the lifting-lever I, having catch *e*, substantially as described.

12. The combination of the standard A, having lips *l l'*, the stock B, the locking-plate C, and the lifting-lever I, provided with projection or catch *e*, substantially as described.

13. The combination, with the standard having ears *b b*, of the pivot-pin E, having a cam portion, *c*, the lever D, having an eccentric, *d*, the plate C, and the arm G, formed upon said pivot-pin and adapted to engage with notches or detents formed upon one of the ears on the standard, substantially as described.

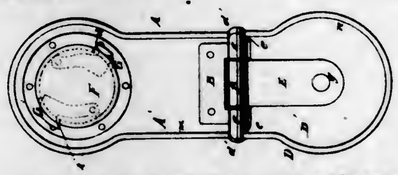
14. The combination of the standard, the stock moving therein, the locking-lever with its eccentric, the pivot-pin having a cam thereon, the extension-arm on the head of the stock having lips upon its edges, and the lifting-lever having a catch engaging with said lips, substantially as described.

259,507. **POCKET-BOOK SECURER.** THOMAS B. DENISTON, Penn, Ind. Filed Nov. 2, 1881. (No model.)



Claim.—The combination, with the pocket-book C, of the ring A, the snap-hook D, and the wire E, attached to the pocket G, substantially as herein shown and described.

259,508. **HASP-LOCK.** THOMAS DONAHUE and WILLIAM W. CONN, Terryville, Conn., assignors to the Eagle Lock Company, same place. Filed Feb. 13, 1882. (Model.)



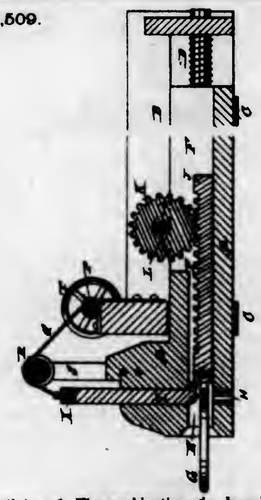
Claim.—1. The blank A' for the hasp of a hasp-lock made of sheet metal, and provided with the tongue B, having offsets *c*, the opening C, and the side lugs, *d*, substantially as herein shown and described.

2. The blank D', for making the hinge-plate D of a hasp-lock made of sheet metal, and provided with the projecting tongue E, having perforation *f*, the end projections, *e*, and the perforation *g*, substantially as herein shown and described.

3. In a hasp-lock, the combination, with the hinge-plate D, provided with the hinge-loop *p* and the curved pointed projections *r*, and the pintle I, of the hasp A, provided with the hinge-loops *o* and the jaws *d'*, for securing the pintle in the hinge-loops, substantially as herein shown and described.

4. In a hasp-lock, the combination, with the hinge-plate D, provided with the raised edges *n* on its inner surface, and the projections *r*, of the hasp A, provided with raised edges *m* and the lugs *d*, substantially as and for the purpose set forth.

259,509. **CAR-COUPLING.** WILLIAM C. DONALDSON, Atchison County, Kans. Filed Apr. 7, 1882. (No model.)



Claim.—1. The combination of a draw-bar having a groove, F, for the link and a sliding bar, J, in said groove, connected to the link and adapted to slide the link forward and backward in said groove, substantially as specified.

2. The combination of the draw-bar having a groove, F, for the link, a sliding bar, J, in said groove connected to the link, and a toothed wheel and shaft for sliding said bar, the shaft being extended to the sides of the car and provided with crank or other devices for turning it, substantially as specified.

3. The combination, with a draw-bar having a groove, F, as described, of a sliding bar, J, in said groove having the link attached, and arranged to slide the link out and into the draw-head of another car, also to draw said link into said groove, substantially as specified.

4. The combination, with a draw-bar having a groove, F, as described, of a sliding bar, J, in said groove, having the link attached and arranged to draw said link into said groove behind the hole H, for the coupling-pin to allow the link of another car to enter and be coupled, substantially as specified.

5. The combination, with the draw-head A, the shaft P, provided with the hand-wheels T, of the pin I, provided with the cross-head X, the chain Q, and the springs V, secured to the cross-head of the pin and to the draw-head, substantially as and for the purpose set forth.

6. The combination, with the draw-head A and the shaft P, of the coupling-pin I, provided with the head X, the chain Q, the guide-pulley B, the standards S, and the springs V, substantially as and for the purpose set forth.

259,510. **POTATO-DIGGER.** CHARLES W. DUTCHER, Milltown, St. Stephen, New Brunswick, Canada. Filed Sept. 8, 1881. (No model.)

Claim.—1. In a potato-digger, the combination, with the frame A and the tongue B, of the rod C, the armed lever E, the connecting-rods F, and the lever G, substantially as and for the purpose set forth.

2. In a potato-digger, the combination, with the frame A and the scoop N, of the scraper Q, hinged to the forward part of the scoop, the arched bar B, and the adjustable suspension-rods S, substantially as and for the purpose set forth.

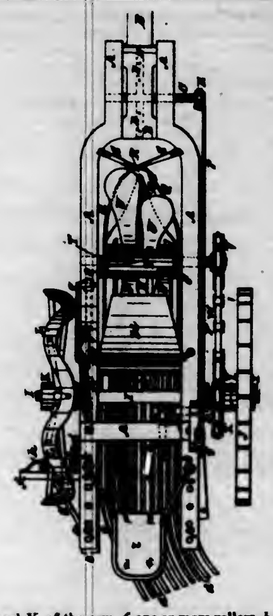
3. In a potato-digger, the combination, with the frame A, the share M, the scoop N, and the drive-wheel J, of the paddles U, the shaft T, carrying the paddles, and the chain and chain-wheels W V X, substantially as herein shown and described, whereby the potatoes are forced up the said scoop, as set forth.

4. In a potato-digger, the combination, with the frame A, the suspension-rods *i*, and the scoop N, of the shaker *c d*, curved to one side and provided with an offset in its bottom and a guard-strip at one side, substantially as and for the purpose set forth.

5. In a potato-digger, the combination, with the frame A, the hanger *c*, the scoop N, and the shaker *c d*, provided with the arm *f*, of the rod *b*, the bar *o*, and the lever *p*, substantially as and for the purpose set forth.

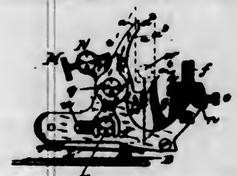
6. In a potato-digger, the combination, with the shaker *c d*,

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and the wheel K, of the arm *f*, one or more rollers, *h*, and the zig-zag rim L, substantially as herein shown and described, whereby the said shaker will be agitated by the revolution of the said wheel, as set forth.

259,511. **RUFFLER FOR SEWING-MACHINES.** EDWARD F. EDMCOMB, Mechanic Falls, Me. Filed Feb. 23, 1882. (No model.)



Claim.—1. A vibratory presser-foot constructed and arranged to rest upon the gathering-blade, and adapted to be raised from the blade by the needle-bar nut while said blade is drawn back.

2. A vibrating presser-foot having hinged front portion held against the goods by spring-pressure, and having a lever or arm whereby said hinged front portion is adapted to be raised from the goods by the action of the needle-bar, substantially as set forth.

3. A presser-foot having the band-guiding slot *l*, with braid-guide *l'*, the piping-guiding slot *m*, with corded-piping guide *m'* formed in advance of the needle-slot *k*, substantially as and for the purpose set forth.

4. In a ruffling attachment, a ruffler-operating lever hinged in front of the needle-bar, and having its face toward the bar, and against which the needle-nut operates, formed with straight faces at its upper and lower ends, and a central cam portion to permit of the motions of said lever being made in different lengths of time relatively to the motions of the needle-bar.

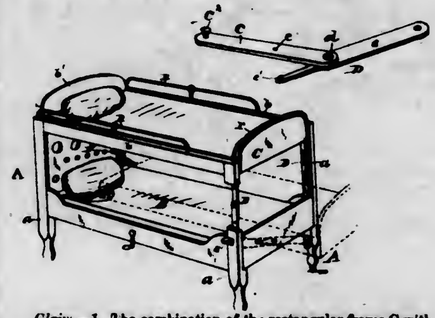
5. The combination, with the feed-cover B, secured to the cloth-slide A, of the cloth-guide *b c*, adapted to be secured to said feed-cover with capability of reversal, substantially as and for the purpose set forth.

6. The combination of ruffling-blade I, slotted slide K, having stud *r*, frame C, having stud *t*, forked lever H, having projection *c*, the operating-lever G, having lug or projection *z*, and stop *d'*, the adjusting-screw M, working within the projection *z*, and the set-screw N, passing through the end of said projection *z* and engaging with the screw M, substantially as and for the purpose set forth.

7. The combination, with the frame C, having slot *u*, and stud *t*, of the slotted slide K *p*, ruffler-blade I, secured thereto, stud *r*, and devices, substantially as shown and described, for operating said slide.

8. A ruffling attachment consisting of a presser-foot having hinged and slotted front portion, a spring-arm for actuating the same, operating cam-lever, a slotted slide carrying the ruffling-blade, slotted frame in which said slide works, a lever adapted to operate said slotted slide, an adjusting-screw for limiting the oscillatory movement of said slide-operating lever, and a feed-cover secured to the cloth-plate, and a cloth-guide secured to said feed-cover, substantially as and for the purpose shown and described.

259,512. **DOUBLE BED.** JOHN A. ELDRIDGE, Chicago, Ill. Filed Apr. 10, 1882. (No model.)



Claim.—1. The combination of the rectangular frame C with the hinged elevating-bars D, substantially as shown and described.

2. The bars D, composed of two parts, *c* and *e*, hinged at *d*, and provided respectively with an opening, *c'*, and projection *e'*, whereby the pieces may be held rigid, forming one continuous bar, or left free to turn at *d*, substantially as described and shown, and for the purpose set forth.

3. The bedstead A A, having extended posts *a*, connected at the top by pieces *b*, in combination with rectangular frame C and the hinged elevating-bars D, substantially as described and shown.

259,513. **ADJUSTABLE MOUTH-PIECE FOR CORNETS.** FERDINAND F. ELLIS and JOHN R. ROWLANDS, Oneida, N. Y.; said Rowlands assignor to said Ellis. Filed Dec. 27, 1881. (No model.)



Claim.—1. In a mouth-piece for musical instruments, the combination of an inner cup, B, and an outer lip-cup, A, adapted to slide inward and outward thereon, the two cups together forming an adjustable bell-shaped air-chamber of ordinary form, and having an open mouth, and a spring for pressing said lip-cup outward relatively to said inner cup and holding it with a yielding pressure, substantially as and for the purpose specified.

2. The combination, with the inner cup and its tube, having an external shoulder, of the lip-cup and its shouldered sleeve, fitting outside said inner cup and tube, and a spring arranged between said sleeve and tube, with its ends bearing against the shoulders thereon, substantially as and for the purpose specified.

3. The combination of the lip-cup A, its sleeve A', with the shoulder *a*, the inner cup, B, its tube B', the spring *d*, and the nut *e*, substantially as specified.

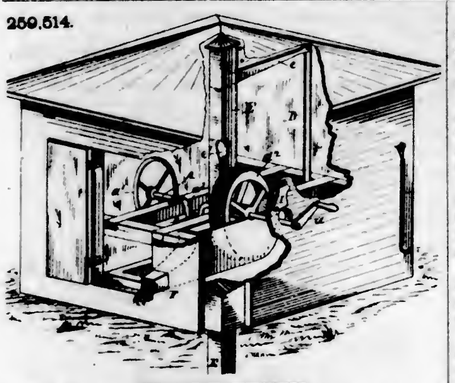
4. The combination of the lip-cup A, its sleeve A', with the shoulder *a*, the inner cup, B, its tube B', the spring *d*, and adjusting-nut *e*, and a stop for limiting the inward movement of said lip-cup upon said inner cup, all substantially as specified.

259,514. **PUMP.** ARNE HENON and JOHN A. ANDERSON, Augusta, Kans. Filed Mar. 17, 1882. (No model.)

Claim.—1. In combination with the main shaft having the wheel a^4 with buckets, and the crank a^3, intermediate mechanism, substantially as described, and a pump of proper construction, as and for the purpose set forth.

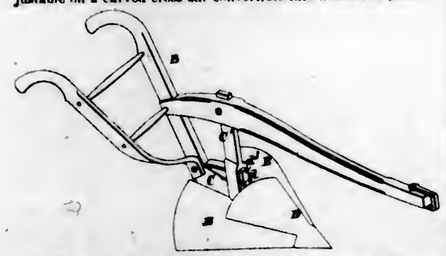
2. In combination with the main shaft A, having the cranks a a^3, and wheel a^4, the connecting-rods B D, the bar C, and pump E, as described.

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259,515. SHOVEL-PLOW. JOHN H. FELDMANN, St. Louis, Mo. Filed Dec. 7, 1881. (No model.)

Brief.—Convex mold-boards hooked under the share and adjustable on a curved cross-bar convertible into a side-hill plow.

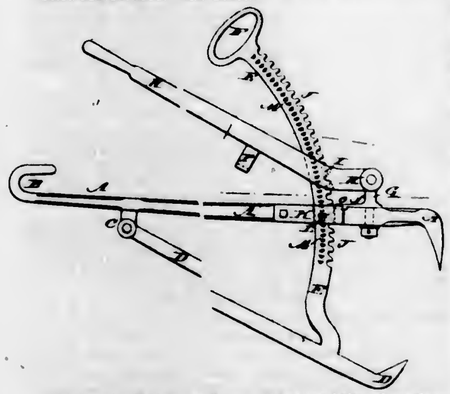


Claim.—1. The combination of the mold-boards E E, each formed with a sleeve, e^3, having set-screw f', the share D, and shoe C, having rigid cross-bar F, whose ends enter the sleeves e^3, the said mold-boards being hinged to the said share, as and for the purpose set forth.

2. The combination of shoe C, having projections d' d', the bow-shaped share D, having arm d, bifurcated standard C', and the wedge d^3, as set forth.

3. The combination of the adjustable mold-boards E E, each formed with a hook, e, the share D, having eyes c' c', the shoe C, and cross-bar F, as set forth.

259,516. SAW-MILL DOG. JAMES B. FISCH, Bozeman, Mont. Filed Jan. 14, 1882. (No model.)



Claim.—1. An improved saw-mill dog consisting of two dogs hinged together, a curved rack-bar attached to one dog and passing through the other, and pivoted lever provided with teeth engaging with the teeth of the said rack-bar, substantially as herein shown and described.

2. In a saw-mill dog, the combination, with the upper dog, A, and the rack-bar E, attached to the lower dog and passing through a slot in the said upper dog, of the lever H, provided with the teeth I, and pivoted to the swiveled stud G on the said upper dog, substantially as and for the purpose set forth.

3. In a saw-mill dog, the combination, with the upper dog, A, and the curved rack-bar E, provided with teeth M on its side, of the spring-pawl K L, secured to the side of the said upper dog and engaging the side teeth of the said rack-bar, substantially as and for the purpose set forth.

4. In a saw-mill dog, the combination, with the swiveled stud G, carrying the lever H, and the spring-pawl K L, of the arm N, having lip O, substantially as herein shown and described, whereby the spring-pawl can be thrown out of gear by the lateral movement of the operating-lever, as set forth.

5. In a saw-mill dog, the combination, with the upper dog, A, and the arm N of the swiveled stud G, of the lip Q, substantially as herein shown and described, whereby the lateral movement of the operating-lever is limited, as set forth.

6. In a saw-mill dog, the combination, with the upper dog, A, and the rack E, provided with the teeth J, of the lever H, swiveled to the said dog, and provided with the teeth I and the downwardly-projecting bent arm P, substantially as herein shown and described, whereby the lever can be locked out of gear with rack-bar, as set forth.

259,517. WATCH-PENDANT. EZRA C. FITCH, New York, N. Y. Filed Feb. 15, 1882. (No model.)



Claim.—1. A watch pendant bow or ring formed with flat stiffening webs or flanges extending around its inner circumference on either side of the crown, substantially as and for the purpose set forth.

2. A watch pendant ring formed with webs or wings extending from its inner circumference above the crown, and across, or nearly across, the interior of the ring, forming stops to prevent the movement of the chain-swivel against the crown, substantially as herein set forth.

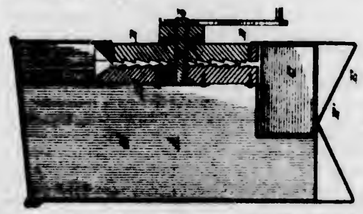
3. A watch pendant bow or ring formed with a flange or projection at or near its socketed end or ends adapted to underlie the edge of the crown when the ring is placed in its parallel position, and thereby form a stock or lock to hold the crown in its retracted position, substantially as and for the purpose set forth.

4. A watch pendant ring formed with the flanges f f extending around each half of the ring, circumscribing the crown and separated above the crown at or near the middle of the ring, substantially as and for the purposes set forth.

5. A watch pendant ring formed with a plain part at or near its middle opposite its cleft portion, with flanges extending around the interior of the ring from said plain portion to or near the cleft, substantially as herein shown and described.

6. A watch pendant ring formed with flanges projecting interiorly therefrom in a parallel plane therewith and solid or integral with the substance of the ring, substantially as herein shown and described.

259,518. COFFEE-MILL. WM. H. FLEMING, Thorp's Spring, Tex. Filed Oct. 31, 1881. (No model.)



Claim.—In a coffee-mill, the combination of the case A, having the chambers a' a^4 and the hopper a, the burr or grinding-disk B', fastened to the lower end of the inner side of the hopper a and to the upper side or top of the chamber a^4, the burr or grinding-disk B, shaft b, having a disk, b', revolving in a covered recess or chamber in the burr B', bridge c, screws d, and handle D, substantially as and for the purpose set forth.

259,519. BRICK-KILN. ANDREW H. FORBES, Camden, N. J., assignor to Hugh Hatch, Stockton Township, Camden County, and Joseph Hatch, Camden, N. J. Filed Jan. 3, 1882. (No model.)



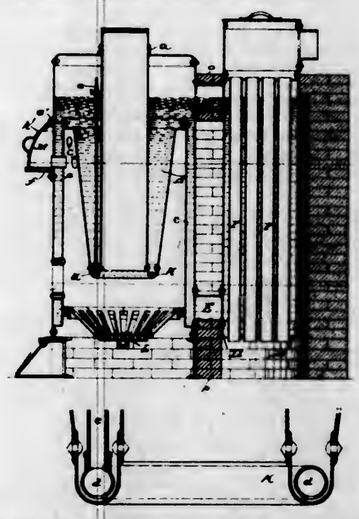
Claim.—1. The combination of the kiln having the central chamber, D, with the external fire-places, B, communicating with said chamber D through flues a, each consisting of a simple recess or depression in the inside of the wall of the kiln, as set forth.

2. The combination of the kiln having the central chamber, D, fire-places communicating therewith, and exit-flues G G, located at the opposite sides of the kiln, and communicating with the chamber D near the bottom, through independently-valved openings c, as set forth.

3. The combination of the kiln having the chamber D, the fire-places B, the flues a, the central discharge-flue, F, with openings b, and the side exit-flues, G, with their independently-valved openings c, as set forth.

4. The combination of the kiln having fire-places B and chamber D, the central outlet-flue, F, side outlet-flues, G G, end connecting-flues, H, and valves or dampers d and g, as specified.

259,520. BASE-BURNING BOILER. ARTHUR H. FOWLER, Newark, Ohio. Filed Nov. 22, 1881. (No model.)



Claim.—1. The combination of a boiler having a water-space, a central magazine surrounded by a water-space, an interior smoke-chamber surrounding the said water-space, and a connected exterior smoke-chamber between the boiler and its brick setting.

2. In combination with the water-jacket, the ring K, containing the pipe d, having the continuous opening in its lower side and connected to the blow-off pipe, as described.

3. In a boiler having double walls, a central magazine, a water-space surrounding the said magazine, an interior smoke-space, and a series of short tubes connecting the said smoke-space with an exterior chamber, M, arranged as shown.

4. In a boiler, the external chamber, M, formed of flanges e f, and having doors or covers b, in combination with brick-work extending partially around the boiler and forming a smoke-space, the said chamber being closed in front, but open at the sides for communication with said smoke-space.

5. The combination of the boiler having fire-place, fuel-magazine, inner and outer water-spaces, and exterior and interior connected smoke-spaces, of a secondary or auxiliary boiler having a water-space communicating with the main water-spaces of the principal boiler, vertical tubes, and a smoke-space communicating with the exterior smoke-space of the main boiler.

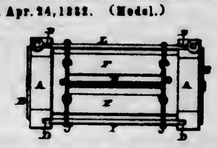
259,521. BOY'S CAP. AARON FRANKENBERG, New York, N. Y. Filed Apr. 20, 1882. (No model.)



Claim.—1. A boy's cap composed of a stiff band and of a crown that is attached to the upper edge of the band by the binding of the same, substantially as set forth.

2. A boy's cap composed of a stiff exterior band, of a crown secured directly to the upper edge of the band by the edge-binding, and of a lining that is attached to the lower edge of the band-covering and to the band, substantially as specified.

259,522. COOP OR CRATE. LEONHART P. FROESCHER, Bruce, Ky. Filed Apr. 24, 1882. (Model.)



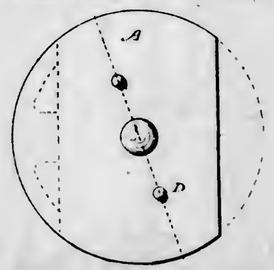
Claim.—1. A coop or crate composed of the grooved side pieces, the end pieces which are held between the side pieces by means of clamping-bolts, and the flexible top and bottom parts, which are slipped into the grooves made in the inner edges of the side pieces, substantially as shown and described.

2. In a crate or coop, the combination of the side pieces, A, provided with the grooves D E, end pieces, F, and bolts P, with the series of strips I L, secured to the cords or bands J, substantially as described.

3. In a coop or crate, the combination of the two series of strips I L, secured to the flexible connections J, the series of strips I secured adjacent to each other on the flexible connections, and the strips L secured apart from each other on the connections J, substantially as set forth.

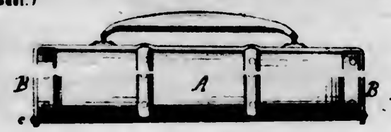
259,523. ROTARY BOLT. WILLIAM H. GAGE, Chicago, Ill., assignor of one-half to William R. Clark, same place. Filed Mar. 1, 1882. (No model.)

Brief.—A circular flat plate cut away at one side is pivoted at its center to a base, which carries spring-actuated pins for locking said cut-away plate in a fixed position.



Claim.—The combination, with the plate B, having the recesses a^3 a^3, of the springs b b', the locking-catches C' C', the push-pins D D, and the rotating plate A, substantially as described.

259,524. METALLIC VALISE. ALBINUS H. GARDNER, Darien, and JOHN NORTH, Middletown, Conn. Filed Apr. 27, 1882. (No model.)

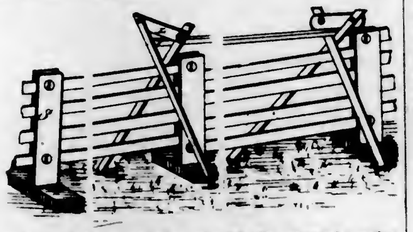


Claim.—1. A sheet-metal valise consisting of the body portion or portions, formed of a single sheet of metal, and provided with the heads or ends B, substantially as described.

2. The body portion A, formed of sheet metal, having transverse strengthening ribs or corrugations re-enforced by metal strips lying upon said ribs and secured thereto, substantially as described.

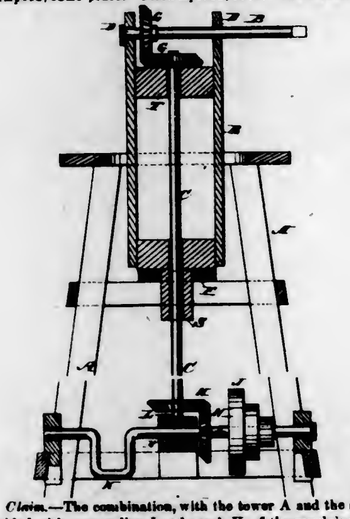
3. The improved article of manufacture, a sheet-metal valise having each part of its body formed of a single sheet of metal, with a flanged metal head or end slipped over its edge and secured thereto, the body portions being braced by flat elastic strengthening plates interiorly applied at suitable intervals and extending transversely throughout the entire inner face of each part, substantially as described.

259,525. FENCE. JOHN M. GARRISON, Stillwaterville, Ind. Filed Feb. 7, 1882. (No model.)



Claim.—A fence consisting of solid sills, of panels resting upon said sills, of automatically-adjusting non-pivoted cross-stakes resting upon the top of the panel at the point where they cross, and having their lower ends resting against pegs, of a rider resting in the crotch of the cross-stakes, and of a brace attached to the upper ends of the cross-stakes, and which, when the parts have been set in place, locks them together, substantially in the manner described, and for the purpose set forth.

259,526. WINDMILL ATTACHMENT. A. JUDSON GARY, Denison, Iowa, assignor to himself, Henry S. Gullick, and Edward S. Plimpton, same place. Filed Apr. 12, 1882. (No model.)

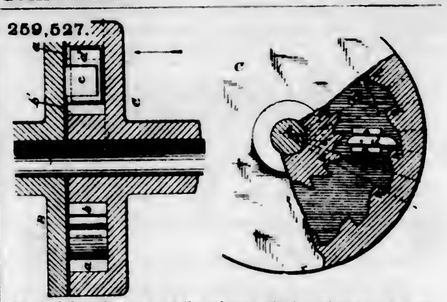


Claim.—The combination, with the tower A and the shaft I, provided with cone-pulley J and crank K, of the revolving frame E, provided with the sleeve-extension S and bearings D T, the wheel-shaft B, the vertical shaft C, and the gear-wheels G H, substantially as and for the purpose set forth.

259,527. CLUTCH. CHARLES J. GIBSON, Bergen Point, N. J. Filed May 13, 1882. (No model.)

Claim.—1. A clutch consisting of the combination of two rotary sections, one of which has two sets of ratchet-teeth, *a* and *b*, with the right-line faces of one set in different radial lines from

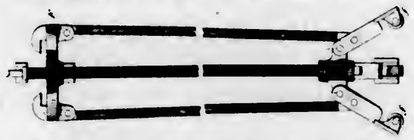
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those of the other set, and the other of which sections carries a radially-vibrating dog, *d*, arranged in the plane of the ratchet-teeth of the other section, as and for the purpose described.

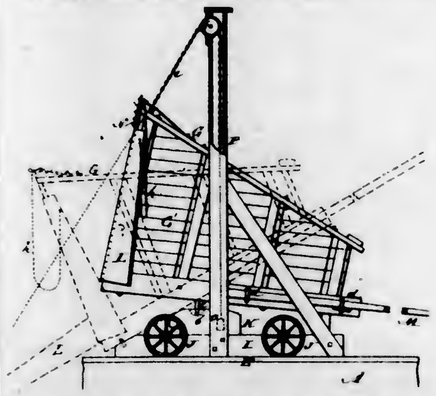
2. The clutch-section B, having guide-lugs *c c* and dog *d*, with beveled end faces, in combination with the clutch-section C, having two sets of ratchet-teeth, *a* and *b*, with the teeth of one set alternating radially with those of the other section, substantially as and for the purpose set forth.

259,528. WIRE-DASHER. JOSEPH F. GILPIN and ERNEST V. CLEMENS, Ansonia, Conn. Filed Mar. 6, 1882. (No model.)



Claim.—The combination of the central lifting-rod provided with arms hinged to its foot, and means, substantially as described, to secure the arms in substantially a horizontal plane and to release them, the arms being provided at their outer end with rolls *f*, substantially as described.

259,529. COALING LOCOMOTIVES AND CHUTE THEREFOR. CORNELIUS GORMAN, De Soto, and WINTHROP BARTLETT, St. Louis, Mo. Filed Apr. 27, 1882. (No model.)



Claim.—1. The method herein described of coaling locomotives by means of a portable chute hung to rock or tilt upon a truck by which it is carried, coaling-platforms having a track or tracks for the truck portion of the chute to run upon, and intersecting inclined tracks for conveying the coal to the platforms, said inclined tracks and platform-tracks being arranged at a higher elevation than the main track, essentially as herein set forth.

2. The combination, with the main track B, of the coaling-platforms A A, the tracks E E, arranged upon or crossing said platforms, the bridge-rails F, and one or more intersecting inclined tracks, C, substantially as and for the purpose herein set forth.

3. The coaling-chute G, constructed of a box or body part having a hinged apron, L, arranged to form when raised a closed end to said body and when lowered a delivery-spout or extension of

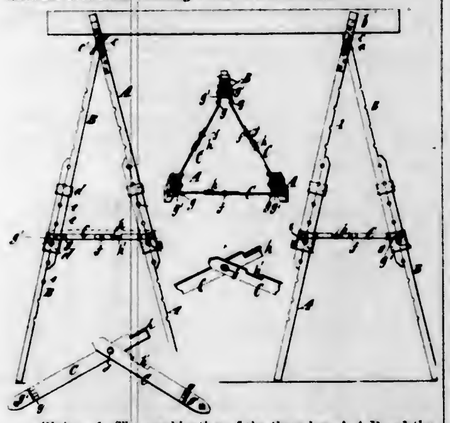
said chute, and a truck upon which the body of the chute is mounted with freedom to rock endwise, substantially as shown and described.

4. The body G of the chute, supported by rocker-arms *c* in bearings *b* on or in a truck by which said body is carried, in combination with the apron L, hinged below to said body, and made self-closing when relieved from the weight of coal on its interior surface, essentially as herein set forth.

5. The combination of the self-closing latch N with its attached operating-lever Q, and the hinged apron L at the end of the chute for operation in relation with each other, substantially as herein described.

259,530. SCAFFOLD-SUPPORT. JOSEPH GORMAN, Elizabeth, N. J. Filed Dec. 14, 1881. (No model.)

Brief.—The folding legs of a tripod scaffold-support are connected by braces, which consist of two sections pivoted together and hinged to end plates pivoted to said legs. The pivoted sections are held from buckling downward by a strap.



Claim.—1. The combination of the three legs A A B and the braces C, composed of sections pivoted together at *f*, and having stops *k*, substantially as specified.

2. The combination, with the legs of a tripod scaffold-support, of the braces C, each composed of two sections pivoted together, and the end pieces or plates, *g'*, to which the braces are hinged, and which are themselves pivoted to said legs, substantially as specified.

259,531. CURTAIN-POLE. GUSTAVE H. GRIMM, Hudson, Ohio. Filed Jan. 30, 1882. (No model.)

Brief.—Overhanging lips are formed on the curtain-pole, which screen the place of attachment of the curtain to the pole.



Claim.—1. A tubular curtain-pole having depending lips, rooted in or part of its body, overhanging and screening the edge of the curtain hung to such pole, substantially as and for the purpose set forth.

2. A tubular curtain-pole wherein the wooden body M, having embedded in it the metal tube D, forms overhanging lips to screen the edge of the curtain hung to such pole, substantially as and for the purpose set forth.

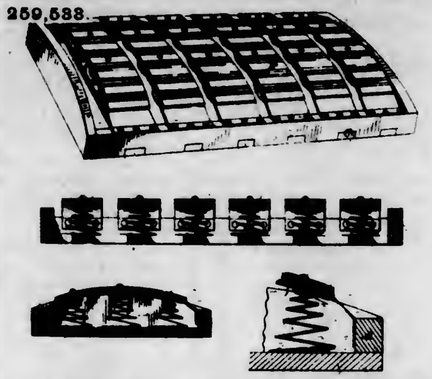
259,532. FIRE-PROOF COMPOSITION FOR SAFES, &c. THOS. GURNEY, Chelsea, Mass. Filed Mar. 13, 1882. (No specimens.)

Claim.—The fire-resisting composition substantially as described, consisting of infusorial earth, silica, asbestus, diluted sulphuric acid, and fire-clay, mixed or combined essentially as set forth.

259,533. SEAT. HENRY S. HALE, Philadelphia, Pa. Filed Jan. 3, 1882. (Model.)

Claim.—1. In a seat having a main frame, the combination of

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the following elements, viz: several independent spring-sections arranged transversely across the seat, several flexible bands of fibrous fabric respectively extended entirely across the top of the spring-sections and supported independently of each other, and wooden slats arranged in several independent transverse rows, which are respectively attached to the flexible band, substantially as set forth.

2. In a seat having a main frame, the combination of the following elements, viz: several independent spring-sections arranged transversely across the seat, several flexible metallic bands respectively secured to the tops of the spring-sections, several flexible bands of fibrous fabric respectively extended independently of each other across and beyond the tops of the spring-sections and fastened to the sides of the main frame, and wooden slats arranged in several independent rows which are transverse to the seat, the slats being transverse to the metallic bands, substantially as set forth.

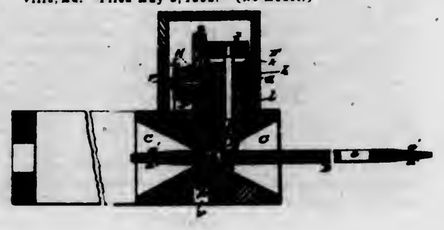
3. In a seat having a main frame, a series of removable spring-sections, each section having two or more springs, a separate band of flexible fibrous fabric extending over and secured to the tops of the springs of the series and adapted to have its ends secured independently of the other bands to the inside of the main frame, a series of wooden slats above the flexible fibrous fabric, and a removable bar below the series of springs attached to the lower side of the main frame, whereby the sections are removable downwardly independently of each other, substantially as set forth.

4. In a seat, two or more spring-sections, each formed of a single row of springs, a series of wooden slats supported by said single row of springs independently of the springs of the other sections and situated transversely to the row of springs below it, and intermediate connecting devices which secure said series of wooden slats to the springs below it, substantially as set forth.

5. A spring-section composed of a row of springs, a metallic spring-band supported wholly by said row of springs, a series of slats arranged contiguously to each other transversely to the metallic spring-band, fastening devices which pass through some of the slats and the metallic band, and means for holding the unperforated slats to prevent them from lateral or vertical displacement relatively to the spring-band, substantially as set forth.

6. A spring-section composed of a row of springs, a supporting-bar below them, a metallic spring-band across the tops of the springs, wooden slats supported entirely upon said row of springs and metallic band, and arranged contiguously to each other, and flexible connecting devices situated outside of the series of slats adapted to be fastened to the frame for steadying the upper portion of the spring-section, substantially as set forth.

259,534. CAR-COUPLING. GEORGE M. HARBAUGH, Sabillasville, Md. Filed May 3, 1882. (No model.)



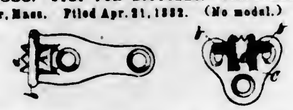
Claim.—1. In a car-coupling, a link-operated vertically-reciprocating trip, K, in combination with a pin-raising lever having a jointed arm, R, terminating in a prop-catch, *z*, substantially as specified.

2. In an automatic car-coupling, the abutment G, above the draw-head, having the guides *g*, passage *k*, and stop *s* at the upper end of said passage, the bevel-headed vertically-reciprocating trip K, the pin-slide H, the pin-lever L, having a raised arm, R, and the pivoted prop-catch *z*, substantially as specified.

3. In an automatic car-coupling, the combination, with a flat solid link-bar, D, having pin-slots near each end, and a draw-head having a narrow throat, *a*, of a pin-lever, L, a prop-catch, *z*, jointed thereto, a pin pivoted thereto, a vertically-reciprocating trip, K, and a stop, *s*, substantially as specified.

4. In a car-coupling, the removable abutment-guide G, having the arms *b'*, seated in apertures *c'*, extending downward into the draw-head, and in connection therewith the transverse horizontal passage *d'*, intersecting the apertures *c'*, the transverse horizontal pins *e'*, seated therein and passing through perforations in the arms of the abutment, and the end fastenings, substantially as specified.

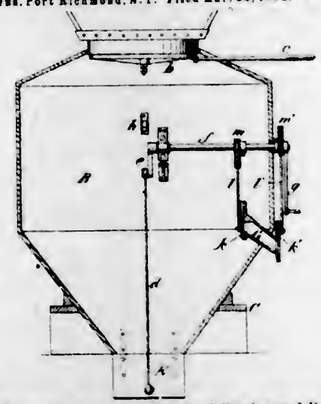
259,535. STEP FOR BICYCLES. GEO. F. HARWOOD, Worcester, Mass. Filed Apr. 21, 1882. (No model.)



Claim.—1. The step A, having the row of upward-projecting saw-like teeth *a* and the surrounding laterally-projecting guard-flange *b*, substantially as and for the purposes set forth.

2. The combination, with the back-frame in a bicycle, of a step consisting of the metal loop A, provided with attaching-plate C, and having upwardly-projecting teeth *a* and laterally-projecting guard-flange *b*, as shown and described.

259,536. AUTOMATIC GRAIN-SAMPLER. WASHINGTON HAWES, Port Richmond, N.Y. Filed Mar. 23, 1882. (No model.)



Claim.—1. In an apparatus for delivering or delivering and measuring grain and other substances in bulk, the combination, with the receptacle or chamber down through which the material being measured or delivered passes, of an automatic measuring sampler or toller arranged to tap said receptacle or chamber, and provided with reversely-operating valves at its opposite ends, and means for actuating the same at intervals, substantially as specified.

2. The combination, with a measuring-receiver having a discharge-valve at or near its lower end, of an automatic measuring sampler or toller arranged to tap said receiver, and provided with reversely-operating valves at its opposite ends, and mechanism for actuating the discharge-valve of the measuring-receiver and valves of the measuring-sampler in timely relation with each other and by the same application of power to a prime mover or shaft, essentially as and for the purposes herein set forth.

3. In apparatus for measuring grain and other substances, the combination, with a measuring-receiver having a discharge-valve at or near its bottom, and a platform-scale on which said receiver is carried, of an automatic measuring sampler or toller arranged to tap said receiver, and provided with reversely-operating valves at its opposite ends, and mechanism for actuating, by the same application of power, the discharge-valve of said receiver and valves of the measuring-sampler in timely relation with each other, substantially as specified.

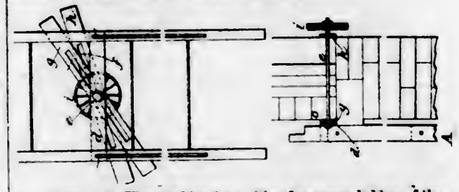
4. The combination, with the measuring-receiver B, provided with a discharge-valve, E, of the rock-shaft *f*, capable of operation from the exterior of said receiver, the rod or connection *d*, and the crank *e*, arranged in relation with said valve as herein described, and whereby the valve is held closed by the crank when reaching its upper dead-center, and is quickly released and opened in the back action of the crank, essentially as specified.

5. The measuring sampler or toller G, fitted with the slide-valves *k k'* at its opposite ends, in combination with the reversely-set eccentrics *m m'*, the rock-shaft *f*, and the rods or connections *l l'*, substantially as specified.

6. The combination, with the measuring-receiver B, provided with a discharge-valve, E, of the rock-shaft *f*, the rod *d*, and crank *e*, the reversely-set eccentrics *m m'* upon said shaft, the rods *l l'*, and the measuring sampler or toller G, with its opposite end valves, *k k'*, essentially as and for the purposes herein set forth.

259,537. FIRE-ESCAPE LADDER. WILLIAM H. HAWKINS, Albany, N. Y., assignor of one-half to Joseph Walter, same place. Filed Mar. 9, 1882. (No model.)

Brief.—Reversible ladder-sections are secured to the building by adjustable clamping-bars placed inside the window, and secured by a bolt passing through slots in them, and secured to a plate vertically adjustable on or in the ladder-rails.

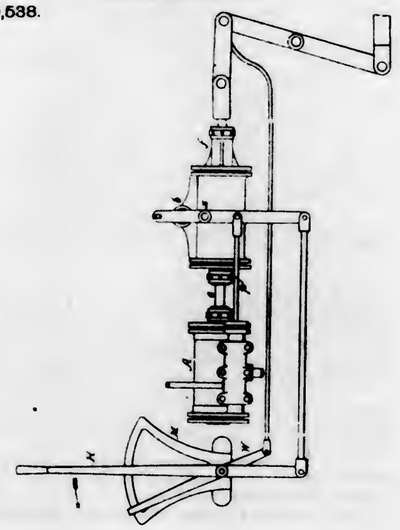


Claim.—1. The combination, with a fire-escape ladder, of the vertically-adjustable plate *d*, carrying the bolt *e*, adjustable clamping-bars *g h*, and adjustable hand-wheel *i*, all substantially as set forth.

2. The combination, in a fire-escape ladder, of one or more adjustable clamping-bars, *g h*, substantially as shown, for the purpose specified.

3. As a new article of manufacture, the reversible fire-escape ladder A, constructed and combined with means for securing it to the side of the building, substantially as shown, for the purpose specified.

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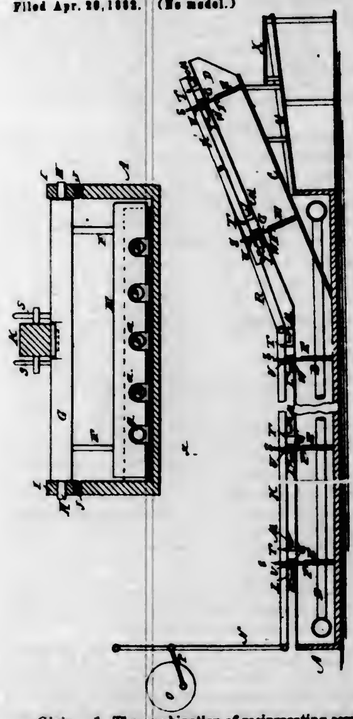


259,538. REVERSING-GEAR FOR LOCOMOTIVES. WILLIAM P. HUSSEY, Philadelphia, Pa. Filed Nov. 7, 1881. (No model.)

Claim.—1. The combination of the steam-cylinder A and its piston, a valve for admitting steam to and exhausting it from the said cylinder, the hydraulic cylinder having a piston connected to that of the steam-cylinder, a valve for opening and closing a communication between the opposite ends of the said hydraulic cylinder, and mechanism for operating both valves simultaneously, the two valves and the ports relating thereto being constructed substantially as herein set forth, so that on moving the valves in either direction that of the steam-cylinder will always act in advance of that of the hydraulic cylinder, as described.

2. The two cylinders and their connected pistons, the valves, and the hand-lever H, for operating the same, in combination with the stand M, its graduated segment, the pointing-lever W, and mechanism by which the piston-rod of the two cylinders is caused to actuate the said lever, all substantially as specified.

259,539. SALT-GRAINER. HENRY N. HOWLETT, Oscoda, Mich. Filed Apr. 20, 1882. (No model.)



Claim.—1. The combination of reciprocating scrapers E and an inclined discharging-way, C, with the evaporating and graining vat A, substantially as described.

2. The combination of reciprocating and oscillating scrapers E and an inclined discharging-way, C, with the evaporating and graining vat A, substantially as described.

3. The combination, with a graining or evaporating vat, A, having a steam heating-coil, B, of reciprocating scrapers E, having notches *a*, and straddling the pipes of the heating-coil, substantially as described.

4. The combination, with the graining-vat A, of scrapers E, rock-shafts G, and reciprocating bearings I, for said rock-shafts, arranged on ways J upon the sides of the vat, substantially as described.

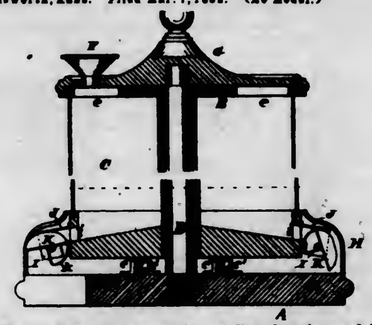
5. The combination of reciprocating bar K, having shoulders L and M, and pins T and V with the scrapers E, rock-shafts G, and stop-pins W, substantially as described.

6. The combination, with the vat A and inclined way C, of a series of scrapers in the vat and a series of scrapers on the said inclined way, substantially as described.

7. The series of scrapers on the inclined way, and the operating-bar K', connected to the operating-bar K of the series of scrapers in the vat, substantially as described.

8. The combination of table X and conductor Y with the vat A, having discharging-scrapers, and the discharging-way C, substantially as described.

259,540. REVOLVING SHOT-CASE. HERMAN F. HOSSMAN, Ellsworth, Kans. Filed Mar. 7, 1882. (No model.)

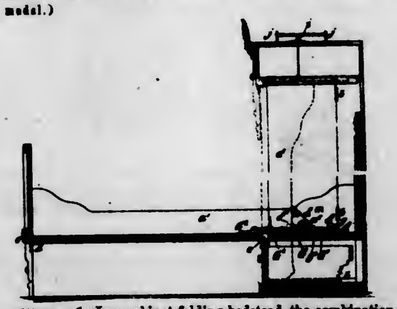


Claim.—1. In a receptacle for retailing shot, the revolving case C, divided into compartments provided with cut-offs, which are inclosed by a shield, H, secured to the base A, substantially as set forth.

2. The combination of base A, post B, case C, partitions D, friction-rollers *e*, cut-offs J, shield H, cover G, and funnel F, all constructed and arranged substantially as and for the purpose set forth.

3. The cut-off I, consisting of case J and chute K, pivoted within the case, and formed with downwardly-curved portion *k*, adapted to close the rear opening, *i*, of the case when the front end of the chute is depressed, as set forth.

259,541. CABINET FOLDING BEDSTEAD. JAMES H. HOLLY and JOHN C. KNAPP, Warwick, N. Y. Filed Mar. 22, 1882. (No model.)



Claim.—1. In a cabinet folding bedstead, the combination of a resting-surface composed of a stationary section and a section hinged to a stationary portion of the bedstead, both having sides whose adjacent ends are coincident when the hinged section of the resting-surface is extended for use, and the hinged section having its sides extending beyond the hinges which connect it with the stationary portion of the bedstead, and adapted to swing downward below the hinges when the said hinged section is folded upward, substantially as specified.

2. In a cabinet folding bedstead, the combination of a resting-surface composed of a stationary section and a section connected by hinges *c* to a stationary portion of the bedstead, the sides of said sections having their ends cut at double angles a^2 a^3 and a'^2 a'^3, and the slots *d'*, through which the sides of the hinged section work when the latter is folded, substantially as specified.

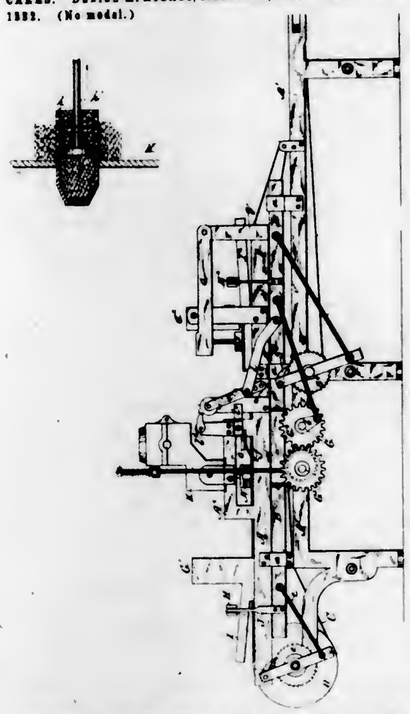
3. In a cabinet folding bedstead, the combination, with a resting-surface composed of a stationary section and a hinged section, of the spring G_1, the rod G', attached to the stationary section, a plate, G^1, on the hinged section, with which the rod is connected and bearings for the spring, substantially as specified.

4. In a cabinet folding bedstead, the combination, with a resting-surface composed of a stationary section and a hinged section, of the spring G, the rod G', attached to the stationary section,

plate P on the hinged section, with which the rod is connected, the bearing *f'*, and the nut *g'*, substantially as specified.

5. In a cabinet folding bedstead, the combination, with a resting-surface composed of a stationary section and a hinged section, of a top or hood hinged or having a front section hinged in place, and a spring or springs for aiding in raising the latter, substantially as specified.

259,542. MACHINE FOR JELLYING AND DECORATING CAKES. DANIEL M. HOLMES, Cincinnati, Ohio. Filed Jan. 25, 1882. (No model.)



Claim.—1. The combination of the main belt C, the series of cake-holders C', with subjacent plate *f*, the bar H, having push-plates *g*, and the slide-bars A, connected to the bar H, substantially as and for the purpose described.

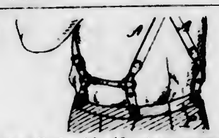
2. The paste-feeding devices consisting of a paste-box, a series of pockets opening into the paste-box and terminating in nozzles below, and a set of plungers arranged in said pockets; in combination with a feed-belt and a lift-plate arranged beneath the belt, as described, to lift a row of cakes against the nozzles, as and for the purpose described.

3. The combination, with the paste-box having pockets in the bottom of the same, of a set of plungers working in said pockets and arranged, as described, to alternately discharge paste through the nozzles at the bottom of said pockets and then cut off the supply in the box from the nozzles, as shown and described.

4. The combination, with the paste-box, of a receptacle, substantially as described, having an open upper end, and perforations in the side and a plunger fitting within the same and adapted, as described, to draw the paste in through the said perforations when the plunger rises, and to force it out in definite quantity and cut it off from the supply in the box when the plunger descends, as described.

5. The combination, with a feed-belt and means for supplying jelly to the cakes thereon, of a cake-feeding device, a table or plate located above the belt and having holes with flexible margins, and a set of plungers for forcing the cakes through said holes and on top of the jellied surfaces of cakes on the belt below, as described.

259,543. SUSPENDERS. JOHANN W. HÜLTHING, Barmen, Germany. Filed Apr. 15, 1882. (No model.)



Claim.—1. Suspenders constructed, substantially as herein shown and described, with side straps connecting the front and rear rings, to which the button-hole straps and the bands are attached, as set forth.

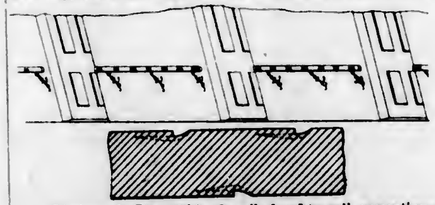
2. The combination, with the suspender-bands A, of the loops B, the rings C, the button-hole straps D, and the straps L, attached to the ring C and to the front ends of the bands or parts attached to the front ends of the bands, substantially as herein shown and described, and for the purpose set forth.

3. The combination, with the suspender-straps A, of the loops B, the rings C, the button-hole straps D, the straps L, the button-hole straps K, the rings J, the loops H, the buttons G, the tongues F, and the buckles E, attached to the same, substantially as herein shown and described, and for the purpose set forth.

4. Suspenders composed of crossed straps having their front and rear ends connected by intermediate straps at each side, and provided with four button-hole straps adapted to be secured on four buttons secured on the upper band of the pants equidistant to the front and rear of the side seam of the pants, substantially as herein shown and described, and for the purpose set forth.

259,544. MEANS FOR FACILITATING SPEEDY EXIT FROM BUILDINGS IN CASE OF FIRE OR ALARM. EDWIN H. HOWARD, Baltimore, Md. Filed Mar. 3, 1882. (No model.)

Brief.—Guide-rails are placed along corridors, stairways, &c., having a smooth surface when the hand is passed over it one way and a rough or obstructed surface when the hand is passed over it in the opposite way, as a guide to the exits in case of fire or alarm.

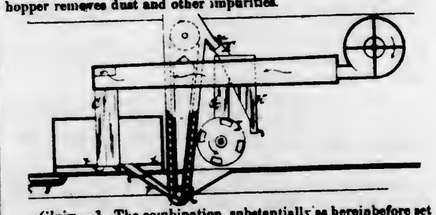


Claim.—1. The within-described safety-rail, presenting a smooth or rough or obstructed surface as the hand is passed over it in one direction or the other.

2. Combined with a building, corridor, avenue, or stairway, a safety-rail presenting a smooth or rough or obstructed surface as the hand is passed over it in one direction or the other, substantially as set forth.

259,545. MACHINE FOR TREATING AND BAGGING COFFEE. GEORGE W. HUSSENFORD and GEORGE S. HUSSENFORD, New York, N. Y. Filed Jan. 18, 1882. (No model.)

Brief.—The coffee-berries, after being treated in the passage A and in the bins, are passed to and through the elevator, whence they are discharged by means of the swival-spout either through the feed-hopper, which conveys them to the polishing-chamber, or through the bagging-hopper. A suction-flue attached to the feed-hopper removes dust and other impurities.



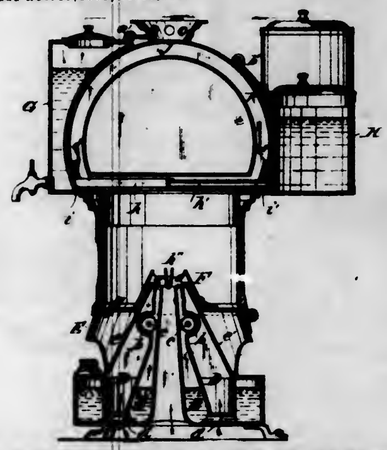
Claim.—1. The combination, substantially as hereinbefore set forth, of the coffee-bins having perforated false bottoms, the air-chamber communicating with the coffee-bins beneath their false bottoms, the fan-blower connected with the air-chamber, the elevator, a passage for conducting the coffee from the bins to the elevator, and devices, such substantially as set forth, for delivering the coffee from the elevator either to a miller or polisher or directly to a receiving-hopper.

2. The combination, substantially as hereinbefore set forth, of

the scourer or polisher and its feed-hopper, the bagging-hopper located adjacent to the feed-hopper, the elevator having a swivel-spout, whereby it is adapted to discharge into either the feed-hopper or bagging-hopper, the receiving-hopper at the discharge end of the scourer, connected to the elevator, and the coffee-bins connected to the elevator, for the purpose specified.

3. The combination, substantially as hereinbefore set forth, of the receiving-hopper, the suction-flue extending from the receiving-hopper, and the trap in the suction-flue with the scourer and elevator, for the purpose set forth.

259,546. OIL-STOVE. JAMES INDDALE, Toronto, Ontario, Canada. Filed Nov. 4, 1881. (No model.) Patented in Canada Nov. 10, 1881, No. 13,881.



Claim.—1. In an oil-stove, the combination, with the wick-tubes B, the air-passages D, and the housing E, provided with the shelf *g*, of the hinged cap F, substantially as and for the purposes set forth.

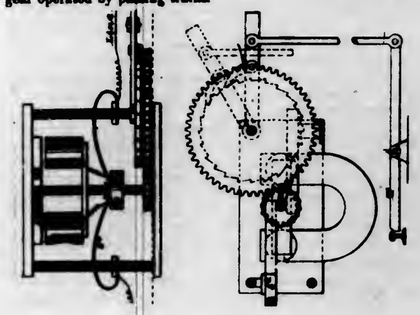
2. In an oil-stove, the combination, with the housing E, of the collar I and the oven J, provided with the jacket K and outlet-openings *j*, substantially as and for the purpose set forth.

3. In an oil-stove, the combination, with the jacket K, provided with the openings *i i'*, of the vessel H, provided with the hollow arm *h'*, and projecting into the combustion-chamber under the oven, substantially as and for the purpose set forth.

4. In an oil-stove, the combination, with semicircular jacket K, provided with the openings *i*, of the water-vessel G, made to conform in shape on one side to the said jacket, and provided with the hollow arm *h*, and secured thereto by the hooks and eyes *a'*, substantially as and for the purpose set forth.

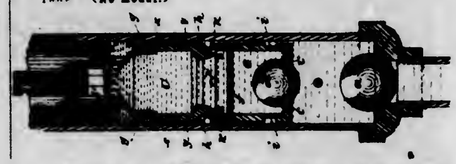
259,547. MAGNETO-ELECTRIC RAILWAY-SIGNAL. JOHN B. JOHNSON and ORVILLE B. JOHNSON, Boston, Mass. Filed Jan. 21, 1882. (No model.)

Brief.—A signal which is set mechanically for action by passing trains is unset or displayed by means of a merged or continuous current of electricity generated by a rotary magneto-machine in which the revolving armature is driven through multiplying-gear operated by passing trains.



Claim.—A rotary magneto-machine consisting of a revolving armature, with two induction-coils driven rapidly within the field of a set of permanent magnets by means of multiplying-gear, and devices connecting said gear with a railroad-track, and operated by passing trains of cars, in combination with a signaling mechanism set mechanically by the train, and adapted to be unset by means of a merged or continuous current of electricity generated by said magneto-machine, as hereinbefore described and shown.

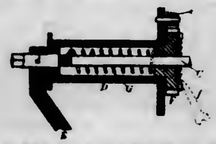
259,548. PUMP. HARRY JONES, Sterling, Ill. Filed Apr. 10, 1882. (No model.)



Claim.—1. In a pump, the hollow plunger C, of cylindrical shape, having valve *d*, valve-seat *e*, top and bottom channels, *g* and *i*, and central annular channel, *h*, and provided with oblique ducts *k*, slanting from the intermediate annular chamber or channel, *h*, in a downward direction toward the interior of the hollow plunger, substantially as and for the purpose herein shown and set forth.

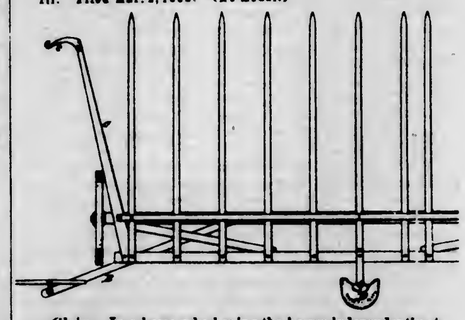
2. In a hollow pump-plunger having a valve and valve-seat of suitable construction, a series of ducts, *k*, opening obliquely from the inside of the hollow valve to an annular chamber or channel, *h*, on its outside, substantially as and for the purpose herein shown and set forth.

259,549. GAS-MACHINE. CLARENCE M. KEMP, Baltimore, Md. Filed Feb. 9, 1881. (No model.)



Claim.—In combination with the tank A, rotary shaft C, and winding-drum D, having the pawl *e*, the ratchet-wheel F, with teeth on its periphery and inner face to engage respectively with the pawls *e* and *f*, as described, and coiled spring G, the same being wound around the said shaft C and forming the connection between the outer end of the said shaft and the outer face of the said ratchet-wheel, substantially as and for the purpose specified.

259,550. HORSE HAY-RAKE. MARTIN H. KENAGA, Monmouth, Ill. Filed Mar. 2, 1882. (No model.)

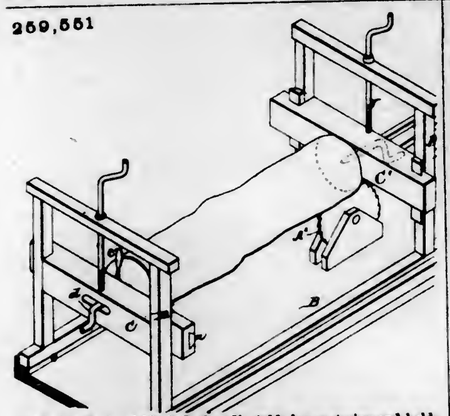


Claim.—In a horse-rake having the horses independently attached at the ends of the rake, the projecting draft-bars B B, in combination with the projecting poles C C, for hitching the horses forward, whereby they may back the rake from beneath its load, substantially as described

259,551. HEAD-BLOCK. CONRAD KUSTER, Weston, W. Va. Filed Jan. 14, 1882. (No model.)

Claim.—1. The combination of the vertically-adjustable head and foot blocks of the carriage B, the laterally-adjustable bar *a*,

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applied to the head-block C, the adjustable leg centering and holding device *d*, passing freely through the head-block and tapped through the bar *a*, the extension *b* on this bar, provided with a notch, and the lever *c*, for adjusting the bar endwise, substantially as described.

2. The combination of the saw mounted on a stationary bed, the rectilinear reciprocating carriage on this bed, the vertically-adjustable head and foot blocks, the adjustable head-center *d*, the laterally-adjustable bar *a*, and the lever *c*, for adjusting this bar, substantially as described.

259,552. NUT-LOCK. ALBA T. KINGSLEY, Millport, N. Y. Filed Apr. 26, 1882. (No model.)



Claim.—1. A nut-lock consisting of a nut provided with an interior annular groove, *a*, situated near its bearing-surface, and having said bearing-surface beveled from the edge of the hole to the sides of the nut, substantially as shown and described.

2. In a nut-lock, the combination of the nut A, provided with an interior annular groove, *a*, and having its bearing-surface beveled, with the bolt B and plates to be secured together, substantially as described.

259,553. METHOD OF AND APPARATUS FOR CURING TOBACCO. RICHARD KISSLING, Bremen, Germany, assignor to Fabrik Nicotin Freier Tabacke Patent, Dr. R. Kissling & Co., same place. Filed Nov. 19, 1881. (No model.)

Claim.—1. The method of denicotinizing tobacco which consists in decomposing the nicotine into a nicotine chloride and malic-acid calcium by means of chloride of calcium, as described.

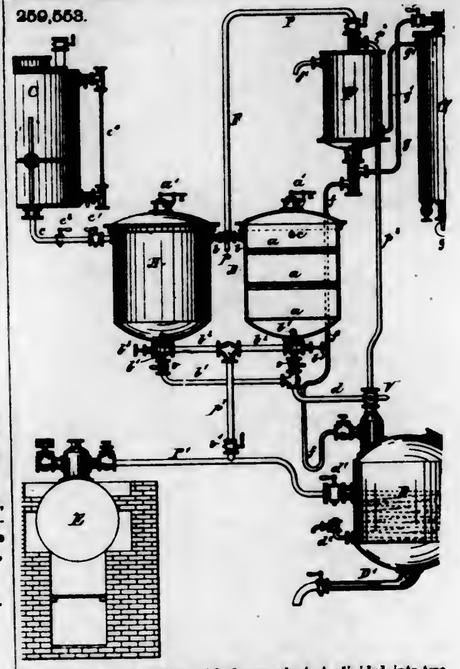
2. The method of denicotinizing tobacco which consists in first steeping the same in a solution of chloride of calcium and then subjecting it to the action of steam under pressure, as and for the purpose specified.

3. In an apparatus for denicotinizing tobacco by means of a calcium solution and steam, the combination of a solution-reservoir, one or more digesting-vessels divided into two or more chambers by perforated diaphragms, a steam-generator, and suitable valve-connecting pipes between the digesting vessel or vessels, the solution-reservoir, and the steam-generator, substantially as and for the purpose specified.

4. In an apparatus for denicotinizing tobacco by means of an alcoholic solution of chloride of calcium and steam, and for recovering the alcohol, the combination of a solution-reservoir, one or more digesting-vessels, a steam-generator, a still, a receiver for the water of distillation, a condenser, and suitable valved pipes connecting the digesting vessel or vessels with the reservoir, the generator, the still, the receiver for the water of distillation, and the condenser, substantially as and for the purpose specified.

5. The combination, with the vessels A A, of the pipes *b'*, having valves *c*, the pipe *d*, the pipe *p*', having three-way valve V, the still D, the receiver F, and condenser G, substantially as and for the purpose specified.

259,558.

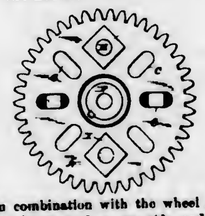


6. The combination, with the vessels A A, divided into two or more chambers by means of perforated diaphragms, the reservoir C, and suitable valved connecting-pipes, of the pipes *b'*, having valves *b'*, the pipe *p'*, having valve *v'*, the pipe P', and the generator E, substantially as and for the purpose specified.

7. The combination, with the vessels A A, of the pipes *b b*, having three-way valve *p*, the pipe P, receiver F, pipe *p'*, and condenser G, substantially as and for the purpose specified.

8. The combination, with the vessels A A, the pipe P, receiver F, condenser G, still D, and pipes *f p*', the latter having three-way valve V, of the valved pipes *b' d b' p'* P', and the generator E, all arranged for operation substantially as and for the purpose specified.

259,554. LOOM-GEAR. CHAS. S. KNIGHT, Selma, Ala. Filed May 1, 1882. (No model.)

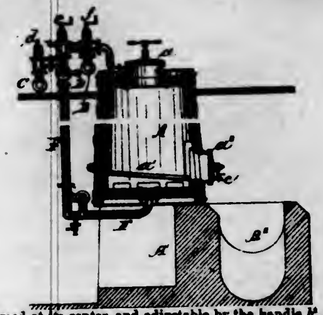


Claim.—In combination with the wheel A, provided with cogs on its periphery, recessed on one side, and having a central and a series of radial openings, the disk D, adapted to fit in the recess of the wheel A, having a hub, E, and apertures G, and adapted to be secured to the wheel by means of screw-bolts, substantially as specified.

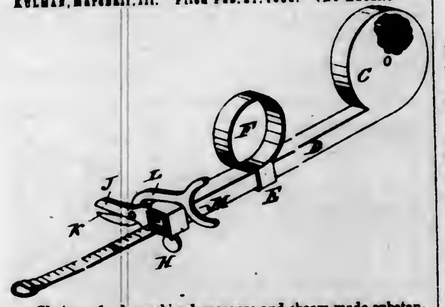
259,555. APPARATUS FOR EXTRACTING TANNIC ACID. OTTO KOHLRAUSCH, Vienna, Austria-Hungary. Filed Feb. 20, 1882. (No model.) Patented in Austria Aug. 8, 1878, No. 16,879; in Hungary Aug. 8, 1878, No. 2,089; in England Feb. 13, 1880, No. 627; in France Apr. 9, 1880, No. 134,979; in Belgium June 30, 1880, No. 51,756; in Luxemburg Jan. 6, 1881, No. 104; in Germany Jan. 28, 1881, No. 12,896, and in Italy Mar. 8, 1881, 15, 13,668, XXV, 249.

Claim.—The tank A, having the inclined screen *a'*, arranged a short distance above its bottom, and the door *a*', having the lever *b* fulcramed at its center, and adjustable by the handle *b'*, nut and screw *b'*, in combination with the arrangement of pipes E, D, C, B, and F, and their cocks, substantially as and for the purpose set forth.

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259,556. COMBINED TAPE-LINE AND SHEARS. JOHN C. KULMAN, Marshall, Ill. Filed Feb. 21, 1882. (No model.)



Claim.—1. A combined measure and shears made substantially as herein shown and described, and consisting of a tape-line case having a tubular projection, to the end of which projection shears are attached, whereby the tape-line can be withdrawn and a cut made in the edge of the material at the end of the desired measured length, as set forth.

2. The combination, with the tape-line case C and the tape-line A, of the tubular projection D of this case C, and the shears J K, attached to the end of this tubular projection, substantially as herein shown and described, and for the purpose set forth.

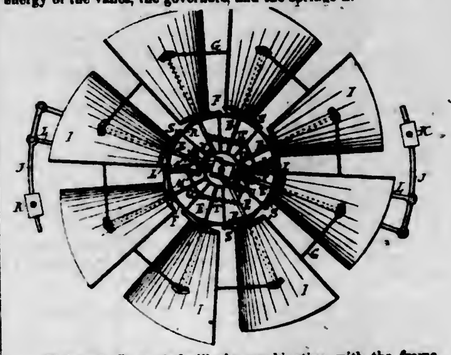
3. The combination, with the tape-line case C and the tape-line A, of the tubular projection D, the shears J K on the end of this tubular projection D, and the ring or finger-loop F on this projection D, substantially as herein shown and described, and for the purpose set forth.

4. The combination, with the tape-line case C and the tape-line A, of the tubular projection D, the ring or finger-loop F, and the sleeve G, detachably mounted on the end of the tubular projection D, and of the shears J K, attached to the sleeve G, substantially as herein shown and described, and for the purpose set forth.

5. The combination, with the tape-line case C and the tape-line A, of the projection D and the shears J K on the end of the projection D, and of the crutch M on the handle end of the pivoted blade K of the shears, substantially as herein shown and described, and for the purpose set forth.

259,557. WINDMILL. CORNELIUS KUSKEL, Oregon, Mo. Filed July 20, 1881. (Model.)

Brief.—The shaft C, which is suitably journaled on the turntable B in bearings B' B', has over the outer end of B' two concentric hubs, the inner being in rigid connection with the shaft only at its forward end, thus forming a counterrunk rear end, whereby the overhanging of the wheel is prevented. A sliding head, *y*, is mounted on the shaft between the forward end of bearing B' and the inner vertical wall of the hub D, which can be operated either from the ground through the cords *c* and levers *a* Z or by the wheel by means of the motion imparted by the governors K to the levers U V W X. The hub D carries the spokes E, which form a pivot-connection with the vanes I. The hub E carries spokes whose outer ends are attached to the inner ends of the vanes, thereby causing the loose wheel E to rotate independently on the hub D when the vanes are thrown out of the wind by the action of the centrifugal force on the governors. The movement of the loose wheel is accomplished against the force exerted by springs T, which connect the two spokes E R. Hence the loose wheel will only operate when the wind is strong enough to overcome the opposing energy of the vanes, the governors, and the springs T.



Claim.—1. In a windmill, the combination, with the frame D E F G, the wings I of the wind-wheel, and the shaft C, of the weighted levers J K, the connecting-rods L, the angle-levers M N P, the loose wheel R, the connecting-rods S, and the springs T, substantially as herein shown and described, whereby the wind-wheel will be made to revolve at a uniform velocity, as set forth.

2. In a windmill, the combination, with the frame D E F G and the wings I of the wind-wheel, and the shaft C, of the bent lever *a* and its connecting-rod Z, the sliding head Y and its connecting-rods X, the bent levers W, the connecting-rods V, and the bent levers U N P, the loose wheel R, the connecting-rods S, and the springs T, substantially as herein shown and described, whereby the wind-wheel can be readily stopped and started, as set forth.

3. In a windmill, the wind-wheel hub D, countersunk from its rear end, substantially as herein shown and described, whereby the weight of the wind-wheel can be brought over the main bearing and the overhanging of the wheel prevented, as set forth.

259,558. ELECTRIC SWITCH-BOARD. THOMAS W. LAWS, Boston, Mass., assignor to Charles Williams, Jr., same place. Filed Apr. 7, 1882. (No model.)



Claim.—1. An electric switch-board of the class described, having line-circuit strips perforated to receive plugs, and connecting-strips provided with springs, which are arranged in pairs, as described, said pairs coinciding with the holes in the line-circuit strips, the springs of each pair projecting from two independent connecting-strips, so that by semi-rotating a plug inserted in a perforation of a line-circuit strip the connection of said strip will be changed from one connecting-strip to the other, as set forth.

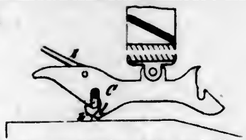
2. An electric switch-board of the class described, composed of the frame *a*, parallel supports *b*, perforated line-circuit strips *c*, connecting-strips *d*, and springs *e*, projecting from the connecting-strips and arranged to coincide in pairs with the perforations of the line-circuit strips, as set forth.

3. The combination of the perforated line-circuit strips, the springs projecting from the connecting-strips and arranged to coincide in pairs with the perforations of the line-circuit strips, and plugs, each having an insulating-surface on one side, whereby the plug is adapted to make mechanical but not electrical contact with one of the springs of each pair, as set forth.

4. An electric switch-board having perforated line-circuit strips and connecting-strips provided with springs projecting toward and coinciding with the perforations of the line-circuit strips, said connecting-strips being placed edgewise to the line-circuit strips, and thereby adapted to be arranged comparatively close together without liability of interference with each other by induction, as set forth.

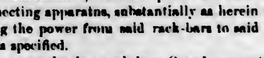
259,559. SHUTTER-FASTENER. THOMAS F. LANGLEY, East Kingston, N. H. Filed Dec. 9, 1881. (No model.)

259,559.



Claim.—The combination of the vertically-vibrating latch C, having the vertical slot *f*, and the gravitating locking-piece or hook E in the said slot, substantially as and for the purpose herein specified.

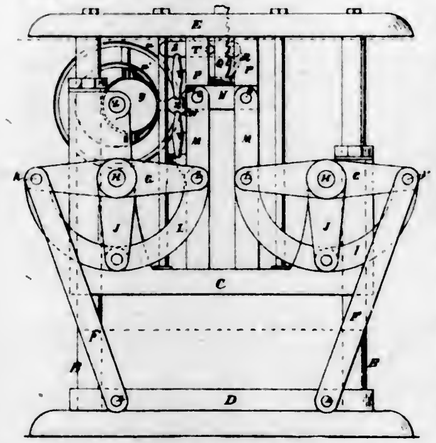
259,560. SASH-WEIGHT. CHRISTOPHER W. LEVALLEY, St. Paul, Minn. Filed Jan. 13, 1882. (No model.)



Claim.—1. A sash-weight composed of two tubular sections, one of which is longitudinally adjustable relatively to the other.

2. In a sash-weight, an outer tubular section provided with an internal screw-thread, in combination with an inner tubular section provided with an external screw-thread, substantially as set forth.

259,561. BALING-PRESS. AUSTIN LEYDEN, Atlanta, Ga. Filed Apr. 12, 1882. (No model.)



Claim.—1. The combination of the toggle-bars V and eccentric driver Y therefor with the toothed racks Q, pawl-lever S, and pawls R, the said rack-bars being connected with the follower of a press, substantially as described.

2. The follower D of a press, connected by rods F, levers G, rods M, and cross-head N, with toothed racks Q, for working said follower thereby, the said racks being provided with pawl and ratchet lever driving mechanism, substantially as specified.

3. The combination, with the press-follower D, of rack-bars Q and connecting apparatus, substantially as herein described, for transmitting the power from said rack-bars to said follower, substantially as specified.

4. In a press having rack-bars Q and apparatus connecting the follower thereto, the said rack-bars having pawls and a pawl-lever connected to and operated by a single eccentric driver, Y, substantially as specified.

5. The combination of rack-bars Q, cross-head N, guides I', and connecting-rods M with the rock-levers G, connecting-rods F, and press-follower D, substantially as specified.

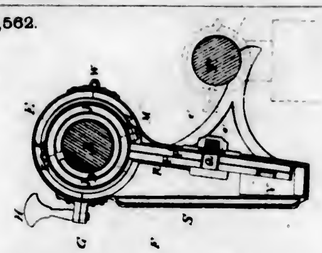
6. The combination, in a press, of the eccentric and toggle mechanism, and the pawl-lever, pawls, and rack-bars, to transmit the driving-power to the follower of the press, substantially as specified.

7. The combination, in a press, of the eccentric and toggle mechanism, pawl-levers, pawls, and rack-bars, and the cross-head, connecting-rods, and rack-levers, to transmit the driving-power to the follower, substantially as specified.

259,562. CYCLOMETER. HENRY S. LIVINGSTON, Cincinnati, Ohio. Filed Nov. 15, 1881. (No model.)

Claim.—1. The worm-sleeve J O, adapted for application to

259,562.



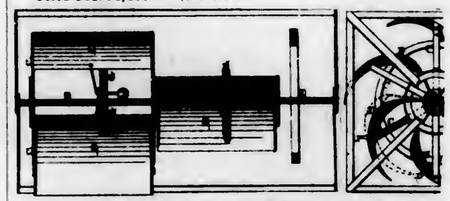
the axle B and provided with bearings J', in combination with the cyclometer case or housing E F, suspended on said bearings, substantially as herein set forth.

2. The combination of the divided worm-sleeve J J O, hinges K, clamps L M, and elastic bushing N, substantially as and for the purpose set forth.

3. The combination of the two-part housing E F, having semi-annular flanges E' F', the thumb-screws H H, sockets *e*, gaskets *f*, worm-sleeves J J O, hinges K, clamps L M, and elastic bushing N, substantially as and for the purpose set forth.

4. The rack or bar T at the rear of a cyclometer-housing for bicycles, &c., for suspension of a lamp or lantern, in the manner set forth.

259,563. WINDMILL. LORENZO D. LOWTHER, Seguin, Tex. Filed Feb. 14, 1882. (No model.)



Claim.—In a horizontal windmill, the combination of the vertical shaft, the supporting-arms projecting out from the shaft, the curved buckets pivoted between the arms, the central ring, against which the inner ends of the buckets bear, and a spring or weight for making the bucket self-adjusting, substantially as set forth.

259,564. CANT-DOG. EDWARD MASSFIELD, Orono, Me. Filed Dec. 13, 1881. (No model.)



Claim.—1. In a cant-dog, the improved pick-point having its shank formed of two substantially cylindrical portions adapted to be driven into the wood of the stock without previous boating, and held in place by the contraction of the fibers, in combination with said stock and surrounding ferrule, substantially as set forth.

2. In a cant-dog, the hook *c*, round, or nearly so, in cross-section, and formed with the triangular rib *f* upon its back, as and for the purposes described.

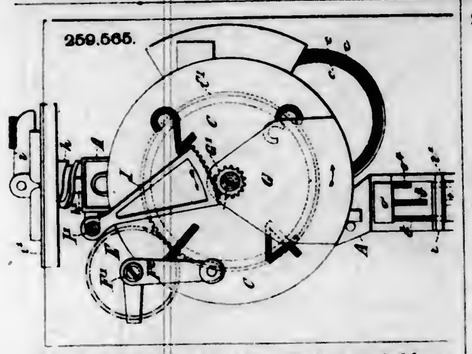
259,565. FARE-REGISTER. JOHN NEVIL MASKELYNE, Egyptian Hall, Piccadilly, County of Middlesex, England. Filed Mar. 15, 1882. (No model.) Patented in England Aug. 23, 1881, No. 3,077.

Claim.—1. The combination of the dial C, wheels C' and H, pinions E F, handle F', spring-pawls *n* and O, registering mechanisms J J', and gong mechanism, all arranged and operating substantially as herein shown and described.

2. The combination of the wheel H, stop-plate *d*, adjustable stop *e*, snail-cam *h*, pointer *i*, and dial *i'*, all arranged and operating substantially as shown and described.

3. The combination of the wheel H, stop-plate *d*, adjustable stop *e*, slide *l*, arm *j*, spring *k*, toothed sector I, and shutter G, all arranged and operating substantially as herein shown and described.

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4. The combination of the wheel H, pin *g*, cranked bar *p*, compound punch *o*, and counterparts *r r*, provided with a slit, *r'*, all arranged and operating substantially as herein shown and described.

5. The combination, in an apparatus for registering fares, of a punch block or carrier having attached to it two or more points or punches of different lengths, mechanism for operating such block or carrier, and a variable stop mechanism, whereby the movement of the said block or carrier may be regulated to produce the operation of one or more of said points or punches, substantially as and for the purpose herein set forth.

259,566. BOILER FOR HEATING PURPOSES. JOSHUA MASON, Paterson, N. J. Filed Feb. 20, 1882. (No model.)



Claim.—1. The combination, in a boiler, of an upper and a lower hollow annular water chamber or head, a series of water-tubes connecting and forming separate communications between said chambers or heads, a series of fire-tubes extending one through each of said water-tubes and through both of said chambers or heads, and forming the inner surfaces of annular water-spaces in the said water-tubes, and a fire-pot arranged below said lower chamber or head, and from which the products of combustion may pass upward around the chambers or heads and said water-tubes, and also through the said fire-tubes, substantially as and for the purpose specified.

2. The combination, in a boiler, of an upper and a lower hollow annular chamber or head, a series of water-tubes connecting said chambers or heads, a series of fire-tubes extending through said water-tubes and through both chambers or heads, and a fire-pot having double vertical walls, and an intervening water-space arranged below the lower chamber or head and in communication therewith, substantially as specified.

3. The combination of the water chambers or heads A B, the outer and inner tubes, C D, the fire-pot F, having water-spaces *f*, the tubes *g*, the casing H, and the magazine or cylinder I, all substantially as specified.

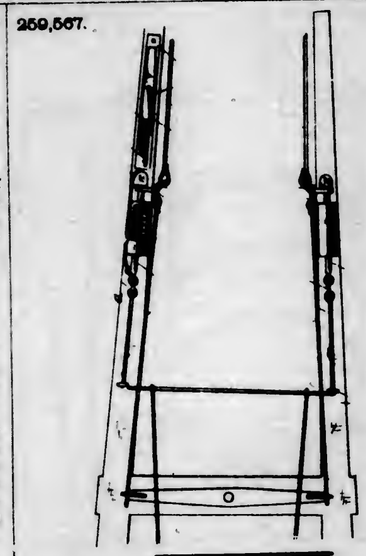
259,567. HORSE-DETACHER. JOHN P. MAY, Troy, Ala. Filed Apr. 4, 1882. (No model.)

Claim.—1. In combination with the shafts, the cylindrical inclosed casings, and the straight sliding bolts and spiral springs, the straps connected to the eyes at the rear of the springs, and the hame-straps and traces, adapted to be held by the bolts and abutments on the shafts and to be released therefrom, substantially as specified.

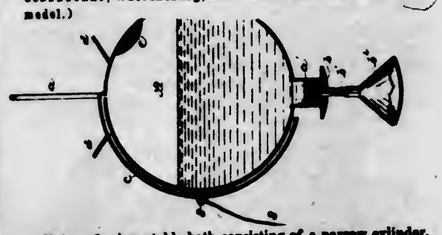
2. In combination with the shafts, the plate and lever fulcrumed thereto, and the tongue adapted to hold the tug in connection with the lever, substantially as specified.

3. In combination with the shafts, the casings, and the sliding bolts and springs and their harness-connections, the plates and levers and the tongues to which the tugs are adapted to be attached, substantially as specified.

259,567.



259,568. PORTABLE BATHING-MACHINE. THOMAS J. MCCONAUGHAY, Warrensburg, Mo. Filed Mar. 10, 1882. (No model.)



Claim.—1. A portable bath consisting of a narrow cylinder, A, journaled centrally between the arms of the bail *a*, provided with a vent-pipe, *c*, arranged around its circumference, with feet *d d*, hook *g*, and tilt-cord *g'*, nozzle *a'*, in which fits the plug *b*, provided with a flexible tube, *b'*, and sprinkler *b²*, said pipe and sprinkler being adapted to convey the contents of the cylinder to the person who is to receive the bath, substantially as described.

2. In a portable bath, the combination of the cylinder A, provided with a vent-pipe, *c*, nozzle *a'*, plug *b*, pipe *b'*, and sprinkler, feet *d*, weight *e*, and pins *f f'*, with the bail *a*, all arranged substantially as shown and described.

259,569. WIND-MOTOR. JOHN MCLACHLAN, New Orleans, La. Filed Sept. 14, 1881. (No model.)

Claim.—1. In a wind-motor, the combination, with the motor-wheel B, of the revolving turret A, provided with an opening at one side, and with the downwardly-curved deflectors *a*, and arranged above the said motor-wheel, substantially as and for the purpose set forth.

2. In a wind-motor, the combination, with the curb *f*, provided with the rollers *h*, and the wing-boards *g*, provided with rollers *h'*, of the turret A, provided with the rollers *i*, substantially as and for the purpose set forth.

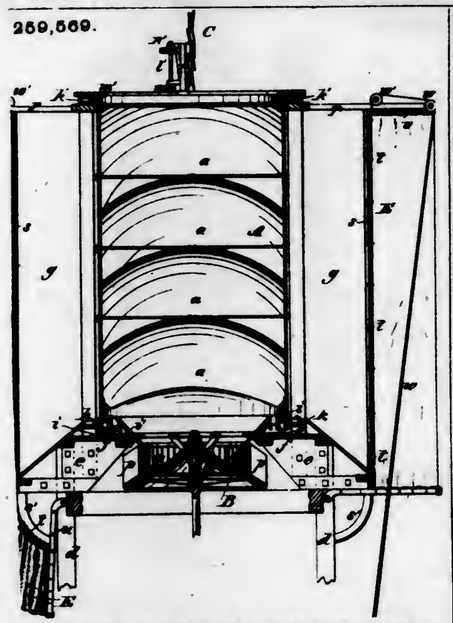
3. In a wind-motor, the combination, with the frame *l*, the shaft *l'*, the pinion *m*, the worm-wheel *n'*, and the vane-wheel C, of the turret A, provided with the cogged rim *m'*, substantially as and for the purpose set forth.

4. In a wind-motor, the combination, with the wing-boards *g*, provided with the T-shaped brackets *e*, of the sails E, provided with the loops *i*, substantially as and for the purpose set forth.

5. In a wind-motor, the combination, with the wing-boards *g* and the supports *d'*, provided with T-plates, of the sails E, provided with the loops *i*, the arms *n*, the bars *o*, and the ropes *w*, substantially as and for the purpose set forth.

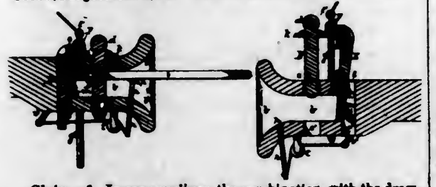
6. In a wind-motor, the combination, with the revolving-tur-

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ret A, provided with the deflectors *a*, of the motor-wheel B, provided with the fans *p* and the fixed curved guides *q*, arranged below the said turret, substantially as and for the purpose set forth.

259,570. CAR-COUPLING. HENRY B. MCMURRAY and LEVI SCOTT, Burgettstown, Pa. Filed Feb. 7, 1882. (No model.)



Claim.—1. In car-couplings, the combination, with the draw-head, of the lifting-frame F above the draw-head, vertically-moving guide *g*, rigidly secured thereto, coupling-pin D, removably supported in the lifting-frame, and tripping-rod E, pivoted at its head to the lifting-frame and extending through the draw-head back of the coupling-pin, substantially as and for the purposes set forth.

2. In car-couplings, the draw-head B, having the recess *m* back of its link-cavity for the reception of the tripping-rod, and the slot *F*, below the recess, adapted to hold the tripping-rod entirely back of the link-cavity, substantially as and for the purposes set forth.

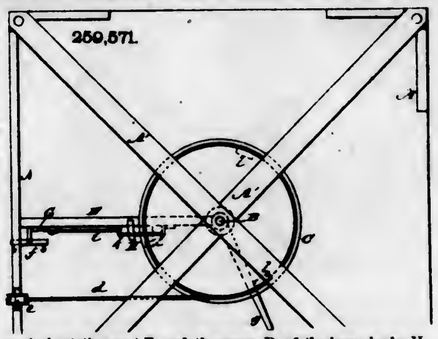
3. In car-couplings, the combination, with the draw-head having the recess *m* back of its link-cavity *b*, of the pivoted tripping-rod E, fitting within the recess, and adapted, when raised, to swing forward into the link-cavity and catch upon its base, substantially as and for the purposes set forth.

4. In car-couplings, the combination, with the draw-head, of the lifting-bar *r*, sliding freely through the lower part of the draw-head, and mechanism for raising and lowering the lifting-bar from the side of the car, substantially as and for the purposes set forth.

5. In car-couplings, the combination, with the draw-head, of the lifting-bar *r*, sliding through the lower part of the draw-head, pulley *t*, chain *u*, and crank-bar *v*, substantially as and for the purposes set forth.

259,571. VERTICAL WINDLASS. SYLVESTER J. MILLER and THEODORE B. BALLARD, Millersville, Ill. Filed May 1, 1882. (No model.)

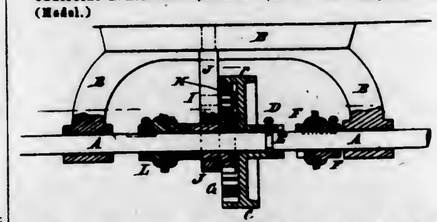
Claim.—1. The combination, with the loose drum C, having one or more driving-stops, *l*, on its bottom, near its periphery, the



vertical rotating post B, and the sweep D, of the lever-brake H, arranged to act upon the outer periphery of the drum, the locking-lever I, arranged to act upon the stops *l*, and the hand-lever G, with its connecting-rod *i*, all of said levers being pivoted to the sweep or brace therefrom, for operation in relation with each other and the drum, substantially as specified.

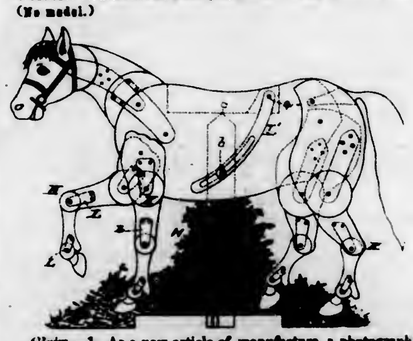
2. The combination, with the loose drum C and frame cross-braces A', of the vertical shaft or post B, constructed with three upper journals having shoulders *a b c*, whereby the weight of the drum is supported both above and below, and the cross-braces A' are restrained from resting on the drum, essentially as shown and described.

259,572. REVERSIBLE MECHANISM FOR COUNTER-SHAFTS. CHRISTIAN B. L. MORRIUS, New York, N. Y. Filed May 2, 1881. (Model.)



Claim.—The combination, with a counter-shaft journaled in a hanger, B, carrying a loose pulley, C, having clutch-teeth and provided with a sliding clutch, F, of the gear-wheels G H K, the gudgeon I, and the hanger-stud J, having a bearing at its lower end for the wheel K, as and for the purpose specified.

259,573. PHOTOGRAPHIC BACKGROUND OR ACCESSORY. WILLIAM H. MORRISON, Dubuque, Iowa. Filed Mar. 18, 1882. (No model.)



Claim.—1. As a new article of manufacture, a photographic background or accessory consisting of a life-size image of an animal cut from flat material, the members being jointed to the body and painted or covered in imitation of the natural parts, the joints having friction devices to hold them to various adjustments, the image having a suitable support for posing it and the person to be photographed, as set forth.

2. A life-size image of an animal for photographers' use, having the support B, cross-bar C, brace E, pivoted foot-bar F, and concealing scenery-piece H, substantially as specified.

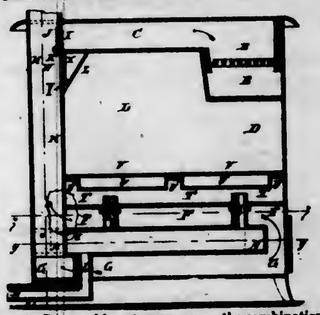
3. A life-size image of an animal for photographers' use, having jointed members, support B, pivoted cross-piece C, hinged brace E, and foot-bar F, slotted arm L, clamp-screw *b*, and concealing scenery-piece H, substantially as specified.

259,574. COMB. GEO. J. MORROCK, Binghamton, N. Y. Filed Nov. 26, 1881. (No model.)



Claim.—In a magnetic hair-comb, the vertical orifices C C, back of comb D, and magnets B, substantially as shown and specified.

259,575. COOKING-STOVE. HOSMER A. MICHELSON, Richwood, Ohio, assignor of one-fourth to Francis M. Dicks, same place. Filed Mar. 11, 1882. (Model.)



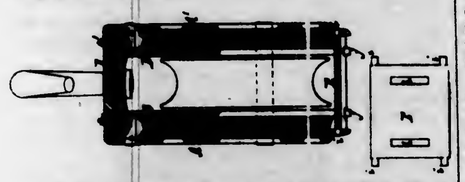
Claim.—1. In a cooking stove or range, the combination, with the smoke and distributing chambers, of the partitioned hot-air chamber arranged directly beneath the oven, as and for the purpose described.

2. In a cooking stove or range, the combination, with the oven D and the smoke-chambers F G, of the air-heating chamber M and the air-distributing chamber T, the inlet-pipe L, the connecting-pipes S, and the plate U, having perforated offsets U', substantially as herein shown and described, whereby cold air is heated and introduced into the oven, as set forth.

3. In a cooking stove or range, the plate U, interposed between the oven D and the air-distributing chamber T, and provided with upward offsets U', having perforated sides, substantially as herein shown and described, whereby the heated air is introduced into the oven, as set forth.

4. In a cooking stove or range, the combination, with the plate U, provided with upward offsets U', having perforated sides, of the perforated plate V, substantially as herein shown and described, whereby the heated air is distributed through the oven, as set forth.

259,576. SHACKLE-BLOCK. JOSEPH W. MORRISON, Lockport, N. Y. Filed Dec. 3, 1881. (No model.)



Claim.—1. The combination, in a snatch or pulley block, of the fixed metallic frame, provided at its upper end with eyes, the fixed pin, the shackle having one end secured to the fixed pin, on which said shackle can swing vertically, and the sliding pin arranged to connect the other end of the shackle with the fixed metallic frame, substantially as described.

2. The combination, in a snatch or pulley block, of the fixed metallic frame provided with eyes at its upper end, the fixed pin, the shackle having one end secured to the fixed pin, on which said shackle can swing vertically, the sliding pin arranged to connect the other end of the shackle with the fixed metallic frame, and a locking device for confining the sliding pin in position when drawn out to permit the shackle to swing, substantially as described.

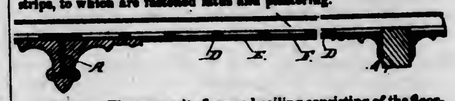
3. The combination, substantially as hereinbefore described, of the metallic frame, the eyes formed on said metallic frame, the shackle connected at one end to said eyes by a stationary pin and at the opposite end by a movable pin, the notches formed in the movable pin, and the spring-latch, constructed to engage with said notches, and to retain said pin when it is pushed in, and also when it is drawn out sufficiently far to release the shackle.

4. In a pulley-block, the combination, with the two sets of inner and outer metallic frames provided at their lower ends, respectively, with outwardly-projecting rivets *j* and transverse apertures, and at their upper ends with means for their suspension, of the wooden cheek-pieces interposed between the respective inner and outer metal frames, and the bottom plate, E, provided at its opposite edges with projecting rivets *i*, and within such edges with openings A, for connecting with the rivets and apertures of the metal frames to secure them upon the wooden cheek-pieces, substantially as described.

5. The combination, substantially as hereinbefore described, of the inside straps, B B', the outside frames, A A', the arms extending from the inside straps, the holes formed in said straps, and the two sheaves, the axles of which have their bearings in said holes.

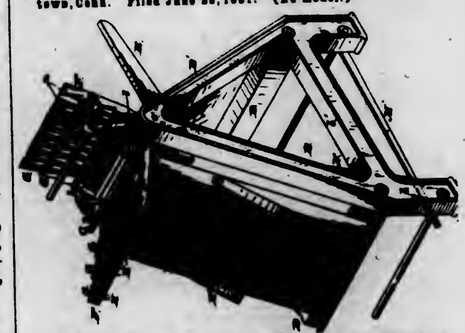
259,577. CONSTRUCTION OF FLOORING AND CEILING. GOTTFRIED L. MORRMAN, Atlanta, Ga. Filed Dec. 20, 1881. (No model.)

Brief.—To planking laid upon girders are secured furring-strips, to which are fastened laths and plastering.



Claim.—The composite floor and ceiling consisting of the flooring-planks, furring-strips D, laths E, plastering F, and supporting-girders A A, all constructed and arranged as set forth.

259,578. HAND TYPE-DISTRIBUTER. JOHN MORTH, Middletown, Conn. Filed June 29, 1881. (No model.)



Claim.—1. The combination, with the support for the type-case, of the elevated hinged tables F, provided with type-conducting-channels, and the books arranged to support said tables when they are raised to admit of the removal of the cases from the support, substantially as described.

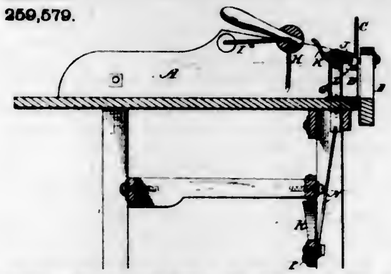
2. The combination, with the type-case-supporting frame adapted to maintain the type-cases in an inclined position, of the inclined swinging table provided with type-conducting channels, and hinged to the case-supporting frame with the discharge ends of its channels in position to deliver the type into the upper ends of the type-cases, substantially as described.

3. The combination of the type-case-supporting frame having inclined sides, and a rod, C, secured to the top ends of said frame, with the swinging tables F and the two-armed vibratory packers L, supported upon the said rod, the cross-bars M, rigid with the packers, the treadles, and the rods N, connected with said cross-bars, substantially as described.

259,579. STRAW-CUTTER. ELIAS C. NEATHERY, Forks Township, Sullivan County, Pa. Filed Mar. 14, 1882. (Model.)

Claim.—1. In a feed-cutter, the trough A, provided with metal head B, slotted extension C, and slotted plate E, with ribs *b*, in com-

259,579.

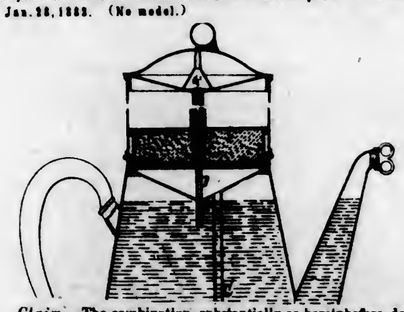


bination with the knife-beam D, having upon its inner side the spring F to bear against said ribs, substantially as and for the purpose set forth.

2. In a feed-cutter, the combination, with the frame I, pivoted to the sides of the trough A, of the rake H, loosely connected to said frame, whereby it is capable of movement at any angle from a perpendicular independent of the swinging motion of the pivoted frame, substantially as and for the purpose specified.

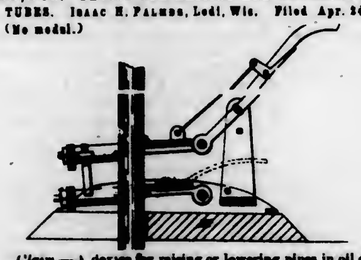
3. In a feed-cutter, the knife-beam D and beam J, carrying deflecting-plate K, constructed to operate as described, in combination with the rake H, loosely connected to the swinging frame, whereby said rake may be brought to any angle required with relation to said frame, substantially as and for the purpose described.

259,580. COFFEE-POT. FAITH ORM, Brooklyn, N. Y. Filed Jan. 26, 1882. (No model.)



Claim.—The combination, substantially as hereinbefore described, of the upper or decoction chamber and the lower or water chamber, the water-pipe extending from the bottom of the upper chamber into the lower chamber, the steam-pipe extending from the top part of the upper chamber into the lower chamber, the lower terminal of the water-pipe being near the bottom, and that of the steam-pipe near the top, of the lower chamber, the foraminous false bottom to the upper chamber, and the lid to the upper chamber, constructed with a whistle adapted to connect with the steam-pipe.

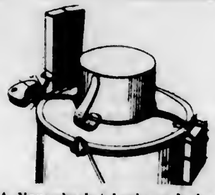
259,581. DEVICE FOR RAISING AND LOWERING WELL-TUBES. ISAAC H. PALMER, Ledi, Wis. Filed Apr. 24, 1882. (No model.)



Claim.—A device for raising or lowering pipes in oil or other wells, consisting of a pair of automatically-biting devices arranged in connection with pivot-bearings, the one above the other, and adapted one to grip and hold the pipe while the other is being adjusted for a new purchase, substantially as specified.

259,582. DINNER-BUCKET. JOHN B. PATTON, Chattanooga, Tenn. Filed Apr. 15, 1882. (No model.)

259,582

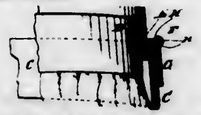


Claim.—1. A dinner-bucket having a device for locking the cover and condiment-box thereof, consisting of a hasp provided with an end hook and an end loop, in combination with the bucket-body having staples for receiving the hasp and a padlock, as and for the purpose set forth.

2. The divided or split hasp adapted to fit on the drinking-cup, in combination with the bucket having staples for receiving the hasp, as and for the purpose set forth.

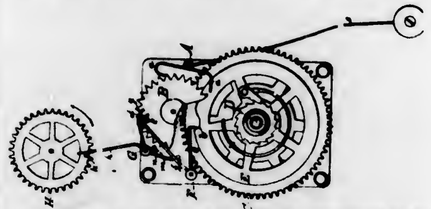
3. The supplementary hasp having openings for the passage of knife and fork, in combination with main hasp and the staple and padlock on the body of the bucket, as and for the purpose set forth.

259,583. NECKTIE AND COLLAR FASTENER. ADOLPH PLATKY and EMANUEL FINSTEHER, New York, N. Y. Filed Apr. 21, 1882. (No model.)



Claim.—In a necktie-fastener, the flat shank E, having a head, D, and an eye, F, with three notches, H, in combination with a U-shaped tapering and elastic link, G, open at one end, as shown and described.

259,584. TIME-ALARM. JOHN POMEROY and JOHN WISELOW, Jr., Bristol, Conn. Filed Aug. 16, 1881. (No model.)

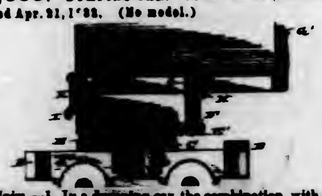


Claim.—1. In an alarm-movement, the combination of the main wheel, smooth-edge disk having a notch in its periphery, the escapement-wheel bearing pin *e*, the lock-work shaft bearing arms *c d*, and mechanism for tripping said arms once in twenty-four hours, substantially as described, and for the purpose specified.

2. The combination *of* the main wheel C, disk E, escapement-wheel B, pin *e*, lock-work shafts F *c d* G *f g*, lever A, and twenty-four-hour pin-wheel, substantially as described, and for the purpose specified.

3. In an alarm for an eight-day clock, the adjustable stop for acting upon the hammer-wire and holding the pallets from escaping when desired, substantially as described.

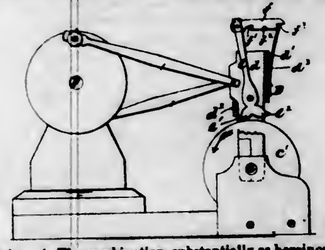
259,585. DUMPING-CAR. JOHN M. RICH, New Castle, Pa. Filed Apr. 21, 1882. (No model.)



Claim.—1. In a dumping-car, the combination, with the truck A, having platform C, provided with the circle E, of the box or hollow base F, adapted to form a receptacle for ballast, and provided with the circle E', center bolt, I, and hinged car-body G, substantially as described, for the purpose set forth.

2. In a dumping-car, the combination of the side sills, A, having the projecting ears O and slotted journal-bearings N, arranged on opposite sides thereof, detachable boxes M, having laterally-projecting wings or flanges *m* and shield or guard-plate *m'*, and detachable pin or bolt *o*, inserted through the part O and bearing against the guard-plate *m'*, all constructed and combined substantially as and for the purpose herein shown and specified.

259,586. DEVICE FOR CONVERTING MOTION. GEORGE W. RICHARDSON, Milton, Vt. Filed Mar. 16, 1882. (No model.)



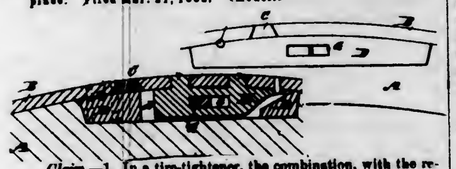
Claim.—1. The combination, substantially as hereinbefore set forth, of the wheel *c'*, the pawl-post D, pivoted and swinging concentrically with the wheel, and the pawl pivoted in the pawl-post and swinging therewith, and constructed with the points *c' c²*, and means whereby the said pawl is held with either of the said points bearing on or clear of the periphery of the said wheel, as and for the purposes described.

2. The combination, substantially as hereinbefore set forth, of the wheel *c'*, the pawl *e*, pivoted in a frame rocking on the shaft of the said wheel, and constructed with the points *c' c²*, and means whereby the said pawl may be held with one or the other of the said points *c' c²* bearing on the periphery of the wheel *c'*, as and for the purposes described.

3. The combination, with the shaft *c* and wheel *c'*, of the pawl-post D, the double-pointed pawl *e*, pivoted between the bars of said post, bar *f*, pivoted to the upper end of pawl *e* and provided with notches *f' f² f³*, and spring *d²*, having one of its ends fixed to the back board, *d'*, and its opposite end arranged to engage the notches in bar *f*, substantially as and for the purposes set forth.

259,587. WITHDRAWN.

259,588. TIRE-TIGHTENER. SYLVANUS H. ROBISON, Valparaiso, Nebr., assignor of one-half to Arthur H. White, same place. Filed Mar. 21, 1882. (Model.)



Claim.—1. In a tire-tightener, the combination, with the recessed wooden felly A and the tire B, of the iron felly D, secured to one end of the tire and provided with the slots *d d²*, the staple or bar E, secured to the other end of the said tire and provided with the slot *e*, and the wedge or key G, substantially as and for the purpose set forth.

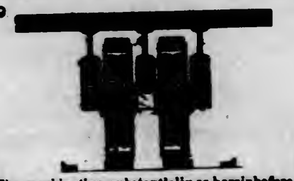
2. The combination, with the tire B, having its ends notched and pointed and beveled inward, of the block C, having its ends notched and pointed and beveled outward, substantially as herein described.

3. In a tire-tightener, the combination, with the recessed wooden felly A and the tire B, having its ends notched and pointed and beveled inward, of the notched and pointed beveled block C, the iron felly D, provided with the slots *d d²*, and the staple or bar E, provided with the slot *e*, and the wedge G, substantially as and for the purpose set forth.

259,589. ELECTRIC RAILWAY. CHARLES H. RUDD, Evanston, Ill., assignor to James W. White, James Clarence White, and H. H. Lewis, Trustees, Philadelphia, Pa. Filed Apr. 6, 1882. (No model.)

Claim.—1. The combination, substantially as hereinbefore set forth, of a carriage with one or more of its supporting-wheels divided at its periphery into electrically-insulated sections.

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2. The combination, substantially as hereinbefore set forth, of a wheel divided into electrically-insulated sections with electro-magnets carried by said wheel and electrically connected with said sections.

3. The combination, substantially as hereinbefore set forth, of a wheel divided into electrically-insulated sections, a non-rotating shaft around which said wheel turns, electro-magnets carried by said wheel and electrically connected with its insulated sections, an armature fixed upon the said non-rotating shaft, and circuit-connections, including a source of electricity, to convey current to excite said electro-magnets and cause them to act upon said armature.

4. A wheel composed of a body portion, a rim or felly of non-conducting material to insulate said body portion from a rail upon which the wheel runs, and a sectional conducting-tire, one or more of whose sections are in electrical connection with said body portion, and through it with the axle or shaft of said wheel.

5. The combination, substantially as hereinbefore set forth, of a non-rotating shaft, a hollow wheel fitted to turn around said shaft, electro-magnets carried by and inclosed within said wheel, and an armature fixed upon said shaft within said wheel, so as to be acted upon by said electro-magnets when excited.

6. The combination, substantially as hereinbefore set forth, of a carriage, a track upon which said carriage runs, two electromotors forming part of said carriage, one to move said carriage in a forward direction and the other to move said carriage in a backward direction, a generator of electricity, circuit-connections, and switch mechanism forming part of said connections to throw either one of said motors into action.

7. The combination, substantially as hereinbefore set forth, of a railway-carriage having two electromotors, separate insulated rails for the driving-wheels of said carriage, an electric generator to throw current upon either of said rails to propel said carriage, and a separate return or third conductor for the current traversing either one of said insulated rails.

8. The combination, substantially as hereinbefore set forth, of a vehicle, a shaft of said vehicle, an electromotor-wheel revolving around said shaft to propel the vehicle, and a rail between the main rails of the track upon which said motor-wheel travels.

9. The combination, substantially as hereinbefore set forth, of a vehicle, electro-magnetic mechanism mounted on said vehicle so as to propel it, a generator at a fixed station supplying electricity to said mechanism, and a switch device by which said propelling mechanism is controlled, so as to enable the operator at a fixed station to produce either forward or backward motion of the vehicle at will.

259,590. REMEDY FOR CATARRH. CHARLES W. SCHNELL, Philadelphia, Pa., assignor to Charles W. Schnell & Co., same place. Filed Apr. 11, 1882. (No specimens.)

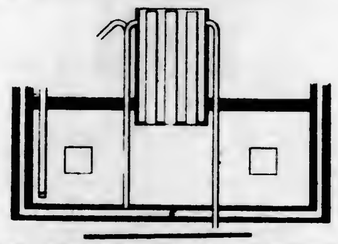
Claim.—The composition of matter consisting of powdered borax, bicarbonate of soda, sugar, burnt alum, salt, saffron, blood-root, sassafras-root, and cubebs in the proportions stated, forming a remedy for catarrh, as herein set forth.

259,591. COUCHING-CHAMBER FOR MALTING. HENRY B. SCHOLES and JAMES HAGERIAN, Brooklyn, N. Y. Filed Sept. 22, 1879.

Brief.—The couching-chamber is cooled externally by a body of water issuing from a water-receptacle located in the ceiling of the chamber and circulating between double side walls and flooring. The air within the couching-chamber is cooled by passing downward through vertical air-pipes open at both ends and located in the water-receptacle.

Claim.—The combination, with a couching-chamber for malting, having a water-space between its walls and under its flooring, and provided with a water-tank projecting above and slightly below its ceiling, with inclosed vertical air-pipes open at each end and extending through said water-tank, of pipes connecting with said tank, whereby it is filled with water and the surplus thereof discharged into the space surrounding such couching-chamber, substantially as and for the purpose set forth.

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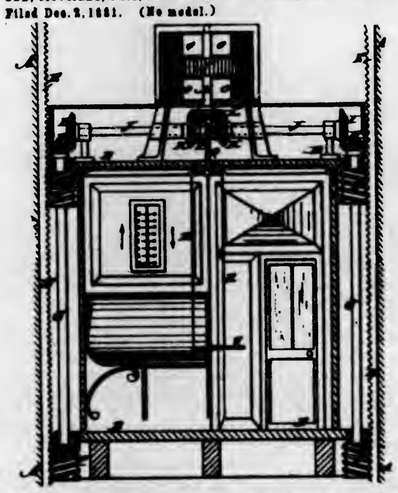


259,592. JACKETED CAN. ISAAC SUTTON, Somerville, Mass. Filed Apr. 24, 1882. (No model.)



Claim.—The combination, with a flanged can, of a sheet-metal jacket having a wooden hoop secured in its upper end, said hoop having a beveled upper edge, forming a seat for the flange of the can, and being provided with metallic bands folded over the hoop, riveted to the jacket, and presenting metallic surfaces on the upper edge of the hoop for the attachment of the flange of the can by solder, as set forth.

259,593. ELECTRIC SAFETY-ELEVATOR. HENRY B. SHERIDAN, Cleveland, Ohio, and HERMANN A. GOSS, New York, N. Y. Filed Dec. 2, 1881. (No model.)



Claim.—1. In an electric elevator, the combination, with the well A, provided with the racks E in diagonally-opposite corners, and the electric motor M N O, of the car B, the vertical shafts G, provided with worms E, pinions H, and journaled in bearings in diagonally-opposite corners, the horizontal shaft J, and the gear-wheels I K L, substantially as and for the purpose set forth.

2. In an electric elevator, the combination, with the car B, the electric motor M N O, and the driving-gearing K L K, of the clutch P, levers Q S, and connecting-rods R R, substantially as herein shown and described, whereby the movement of the car can be stopped and reversed, as set forth.

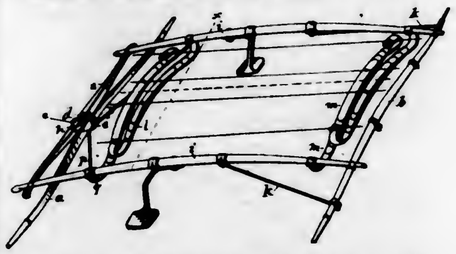
259,594. SPRING BED-BOTTOM. GEO. W. SHOTWELL, Brodhead, Wis., assignor of one-half to G. W. CRONK, same place. Filed Apr. 11, 1882. (No model.)

Claim.—In a spring bed-bottom, the combination of the bed-



stead, the slats B, the springs C, cover made of any textile material, and the coiled springs to which the edges of the cover are attached, substantially as shown and described.

259,595. SIDE-BAR VEHICLE. ANDREW F. SEBLER, Arcanum, Ohio. Filed Mar. 22, 1882. (No model.)

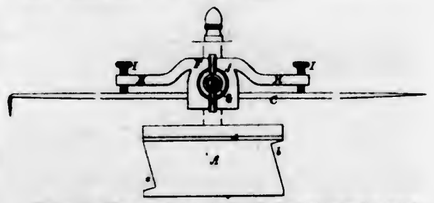


Claim.—1. The combination, with the side bars, *i i*, of the front springs, *l l*, and rear springs, *m m*, having a spring of each pair secured at one end to one of the side bars, and thence curved downwardly and upwardly and secured to the bottom of the baggy-body, and having the other two springs of each pair secured to the opposite side bar *i* at their outer ends, and thence curved downwardly and upwardly and secured to the baggy-bottom, substantially as described, and for the purpose set forth.

2. The combination, with the front axle, *a*, front cross-bar, *c*, having slot *h*, king-bolt *d*, clevis *e*, side bars, *i*, and front springs, *l*, secured to the opposite side bars at one end and to the baggy-body, of the brace-rod *p*, secured at its ends to the side bars, and passing through the clevis and around the king-bolt, substantially as described, and for the purpose set forth.

3. The combination of the front and rear axles, *a b*, slotted front cross-bar, *c*, king-bolt *d*, clevis *e*, side bars, *i*, brace-rod *p*, front and rear springs, *l l* and *m m*, constructed and arranged as shown, and brace-rods *k k*, substantially as described, and for the purpose set forth.

259,596. SURFACE-GAGE. CHARLES W. SMITH, Hyde Park, Mass. Filed Jan. 3, 1882. (No model.)



Claim.—1. The base A, provided with the right-angular notch *a*, arranged in it as represented.

2. The base A, provided with the right-angular notches *a b c*, arranged in it in manner as represented.

3. The base A, provided with the external right-angular notches, *a d e*, arranged as represented.

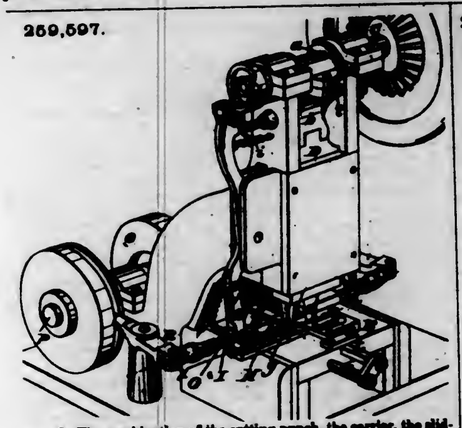
4. The base A, provided with the right-angle notches *a*, *b*, *c*, *d*, and *e*, arranged in it in manner as represented.

5. The revoluble needle-carrier F, having jaws and one or more arms, H, and screws I thereto, to operate with the needle as explained.

259,597. MACHINE FOR MAKING LACING-HOOKS FOR SHOES. STEPHEN H. SMITH, Providence, R. I. Filed July 28, 1879.

Claim.—1. In a machine for making lacing-hooks, the series of punches for scoring, indenting, and cutting, constructed as described, jointly with the feed mechanism, arranged to move the prepared stock from the first two punches to the last.

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2. The combination of the cutting-punch, the carrier, the sliding anvil, and the vertically and horizontally moving slides arranged to act successively and bend the blank over the anvil.

3. The combination of the anvil O and the two slides, arranged to act successively and double the blank thereon, as described.

4. In combination with the cutting-punch, the carrier-slide, the anvil, and a bending mechanism, substantially as described, the yielding presser-foot arranged to act upon and hold the blank.

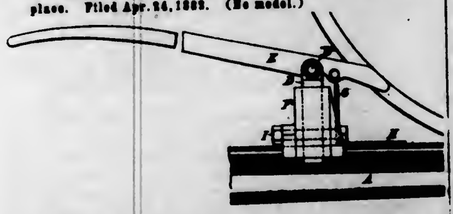
5. In combination with the blank-forming devices, as described, the presser-foot, the bar having a spring-connection with the foot, and means, substantially such as described, for imparting a reciprocating movement to the bar.

6. The blank-carrier having the notched end to receive the tubular necks of the blanks, in combination with the tongue adapted to close said notch and contain the blank.

7. In combination with the scoring and cutting punches and the feeding-finger, the grooved guide H, provided with the hole *g* and spring A.

8. In a lacing-hook machine for operating upon stock having tubular necks, the combination of the indenting devices, the cutting devices operating subsequently to the indentation, the carrier, and the bending devices, whereby the blank is folded across its middle into a U form, substantially as described and shown.

259,598. APPARATUS FOR MOVING CARS. PETER J. STOUT, Athens, Pa., assignor of one-half to Charles Kellogg, same place. Filed Apr. 24, 1882. (No model.)



Claim.—1. In a device for moving cars by hand-power, the combination, with an adjustable lever, E, of a slide, D, links C C, and claws B B, arranged and operating substantially as described.

2. In combination with the casing F, the claws B B, pivoted therein, the links C C, pivoted to said claws at their upper ends, the slide D, and adjustable lever E, beveled on its short end, all arranged for joint operation, substantially as described.

3. The combination, with the rail A, of claws B B, projecting under the head of said rail, said claws having a common pivotal point, I, and operated by an adjustable lever, E, substantially as set forth.

4. The combination, with the adjustable lever E, slide D, links C C, and claws B B, of a fulcrum-standard, G, and shoe H, all arranged substantially as described and shown.

259,599. REIN-HOLDER. JOSEPH C. W. STOUT, Farmingdale, N. J. Filed Apr. 1, 1882. (No model.)

Claim.—1. A rein-holder constructed substantially as herein shown and described, consisting of open frame A, spring-actuated

259,599.



toothed and bevel-tipped jaws D, and beveled horns or guides B' B', all arranged and operated as set forth.

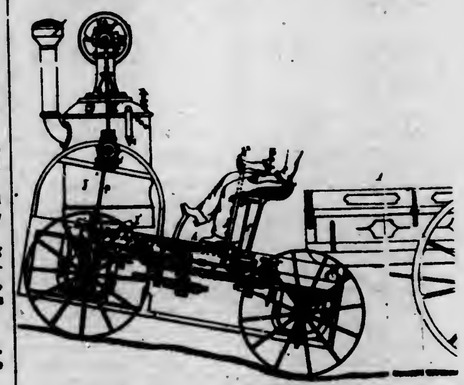
2. In a rein-holder, the jaws D, having beveled edges *p* and teeth of different lengths, combined with the frame A and springs, substantially as and for the purpose set forth.

3. The frame A, arms B B, and whip-socket F, formed of a single piece of metal, having a recess adapted to receive the pivoted beveled jaws D *p*, having teeth *l m n o* of different lengths, combined with said jaws D and springs *h*, as set forth.

4. The pivoted jaws D, having teeth *n*, combined with the springs *h*, and adapted to lock the reins between their inner surfaces against movement in one direction, as specified.

5. The jaws D, having teeth *l m n o* of varying lengths, combined with the removable beveled horns B' and the springs *h*, as set forth, for the purposes specified.

259,600. TRACTION-ENGINE. JOHN V. SPRIBLING, Westminster, S. C. Filed Mar. 29, 1882. (No model.)



Claim.—1. In machines for operating traction-engines, the combination of the vertical wheel E' and pinion E with the horizontal wheel F, supported in the gimbal, whose center of motion is in a line with the center of wheel E', whereby at any transverse tilting of the wheels the wheels E' and D' remain in gear, substantially as and for the purpose described.

2. The combination of the driving-wheels F' F, wheel and pinion E' E, wheel D', box D, with its loose wheels *b' b'*, and beveled wheels *b b* with the shafts or axles B B, substantially as and for the purpose described.

3. In machines for operating traction-engines, the combination of the sprocket-wheels P F' F', chain S, beveled wheels F' F, wheels E', E, and D', and the box D with interior loose wheels, *b' b'*, and beveled gears *b b* on the shaft or axles of the four traction-wheels, substantially as and for the purpose described.

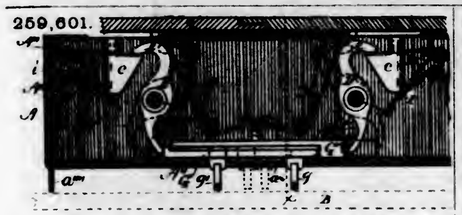
4. The combination of the sprocket-chain S, sprocket-wheel O, spur-gears *m* and *n*, friction-cones W, *c*, and *c'*, worm-gear *f f'*, and segment-rack I', whereby the wheels are turned in steering, substantially as and for the purpose described.

5. The combination of the sprocket-chain S, the sprocket-wheel O, spur-gears *m* and *n*, friction-cones W, *c*, and *c'*, cones *w* W' *w'*, and worm-gear whereby the rear wheels are steered, substantially as and for the purpose described.

6. The combination of the exterior wheel, Q, having in its tire a series of orifices, the interior wheel, Q', provided with a series of projecting turtle-heads, *g'*, to protrude through the orifices in exterior wheel, Q, and the adjustable eccentric Q' on the axle of a traction-engine, all substantially as and for the purpose described.

259,601. SHUTTER-FASTENER. SWAN E. SWANSON, Galesburg, Ill. Filed Mar. 9, 1882. (Model.)

259,601.



Claim.—1. In a window-shutter fastening, in combination with catches c, fixed to the shutters, and pivoted catches D, constructed substantially as described, and held by springs F, the slides G G', having thumb-pieces g g' projecting through the case A and adapted to operate the catches D, substantially as and for the purpose specified.

2. In a window-shutter fastening, in combination with the shutters having catches c, the swinging catches D D', having ends e e', as shown, springs F, stops e'', and slides G G', substantially as and for the purpose specified.

3. In combination with the shutters having catches c and the spring-actuated catches D D', the spring-actuated plates H, adapted to close the holes a' in the case A when the catches c are not therein substantially as and for the purpose specified.

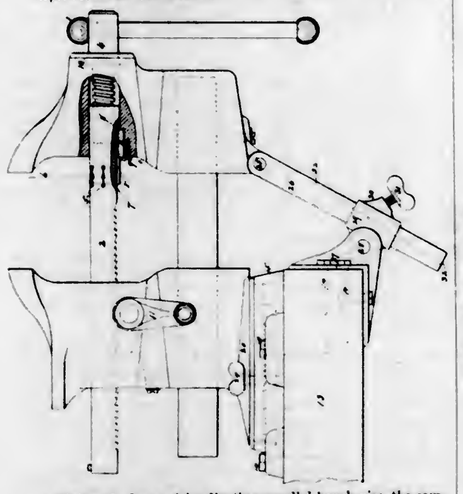
259,602. CUTTER-BAR FOR REAPING AND MOWING MACHINES. THEODORE TAYLOR, La Grande, Oreg. Filed Jan. 10, 1882. (No model.)



Claim.—1. The combination, with a cutter-bar provided with studs on its bottom plate, and knives having recessed edges, of hinged clamping-pieces adapted to be secured in the space between knives and cap-plate, substantially as herein shown and described, and for the purpose set forth.

2. The combination, with the cutter-bar A, having studs d on its bottom plate, a, and the knives c, having recessed edges, of the clamps f, hinged to the ends of the said cutter-bar, and having overlapping ends, and the fastening-bolt h, substantially as and for the purpose set forth.

259,603. BENCH-VISE. JOHN THOMSON, Brooklyn, N.Y. Filed Apr. 14, 1882. (No model.)



Claim.—1. In a quick-adjusting parallel bench-vise, the combination, with the front and back jaws, clamping-screw 4, spline 3, and locking-screw 9, of the ratchet-rod 2, in which is formed a slot, 1, having a solid terminus or stop, 8, for the purpose herein set forth.

2. In a quick-adjusting parallel bench-vise, the combination of the ratchet-rod 2, having a slot, 1, and solid terminus or stop 8, with the spline 3 and stop-screw 9, for the purpose herein set forth.

3. In a quick-adjusting parallel bench-vise, the combination of the front jaw, ratchet-rod 2, and screw 4 with the indicating-marks, as 5, for the purpose specified.

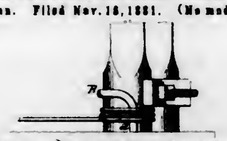
4. In a quick-adjusting parallel bench-vise, the combination, with the back jaw, on the bottom and outer circumference of which is formed an upright journal-bearing, 18 19, of the cone-shaped box 15, constructed as described and shown, and the annular clamping ring 22, when said ring is situated within the box and secured at its outer side to the bottom of the base by screws, as 23, and manually operated from above the base by means of hand-screws, as 24, for the purpose specified.

5. In a parallel bench-vise, the combination, with the front jaw and bench, 13, of a bearing, 29, secured to the bench, and a supplementary brace, 26, attached to the jaw, and means for locking said bearing and brace together when desirable, for the purpose set forth.

6. In a parallel bench-vise, the combination, with the front jaw and bench, 13, of the bracket 27, bearing 29, supplementary brace 26, and hand-screw, as 31, for the purpose specified.

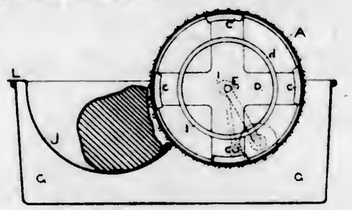
7. In a parallel bench-vise, the combination, with the front jaw and bench, 13, of the bracket 27, bearing 29, supplementary brace 26, in which is formed a tapering or wedge-shaped slot, 32, and hand-screw, as 31, for the purpose specified.

259,604. PIANO-TUNING-PIN LOCK. JAMES S. THORPE, Waterbury, Conn. Filed Nov. 18, 1881. (No model.)



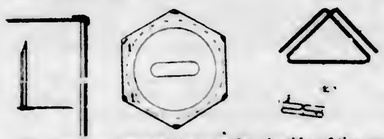
Claim.—The herein-described lock for piano-pins, consisting of the clamp B, taking a bearing upon the surface of the pin, with one end extending through a stationary bar, and with a clamping device, substantially such as described, on the opposite side of the said bar to draw the clamp into frictional contact with the pin, the other end of the clamp extending down on the surface of the pin, and between the pin and the wire thereon, substantially as described.

259,605. GRATER. JEFFERSON D. TODD, Williams, Cal. Filed Feb. 18, 1882. (No model.)



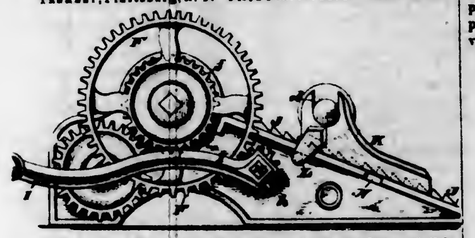
Claim.—The grater herein described, consisting of the cylinder A, supported and revolved by the detachable spiders D, secured on the spindle E, which is turned by the crank F, the whole being arranged and operated within the pan G, in connection with the swinging basket J, (swinging within the pan at the side in front of cylinder A,) in which the substance to be grated is held and gradually fed against the roughened surface of the cylinder, substantially as described.

259,606. METALLIC JOINING FOR BOXES, MICA LAMP-CHIMNEYS, &c. GILBERT TOWNSEND, 2d, Lodi, N. Y. Filed Mar. 1, 1881. (Model.)



Claim.—The ribs a, holding together the sides of the panels of boxes and other like articles, in combination with binding-plates b, which hold the ends of the ribs, said ends being inserted through and folded on said plates, as set forth.

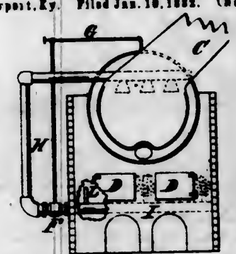
259,607. MACHINE FOR BENDING WAGON-TIRES. EDWD. C. TRUMBLY, Plattsburg, N. Y. Filed Feb. 16, 1881. (No model.)



Claim.—1. The inclined frame formed with ratchet-teeth J J and side flanges, the latter being slotted at N N, in combination with the adjustable roll-carrier K, provided with hooks L L and teeth M M, and the geared rolls, substantially as and for the purposes herein set forth.

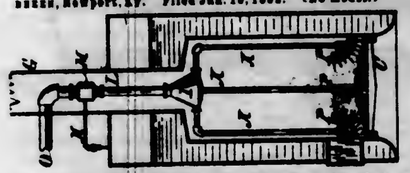
2. The inclined frame provided with ratchet-teeth J J and side flanges, in combination with the adjustable roll-carrier K, having hooks L L and teeth M M, and the geared rolls B C, substantially as described.

259,608. SMOKE-CONSUMING FURNACE. EZRA W. VANDUZEN, Newport, Ky. Filed Jan. 10, 1882. (No model.)



Claim.—In a boiler-furnace, the combination of the steam-injector pipe G, the gas-supply pipe H, tapping and terminating in the uptake C, the injector F, and the transverse distributing-pipe I, connected with the injector and arranged along the front of the grate in close proximity to the cluster of independent air-orifices pierced in the front wall of the furnace, substantially as and for the purposes described.

259,609. SMOKE-CONSUMING FURNACE. EZRA W. VANDUZEN, Newport, Ky. Filed Jan. 10, 1882. (No model.)

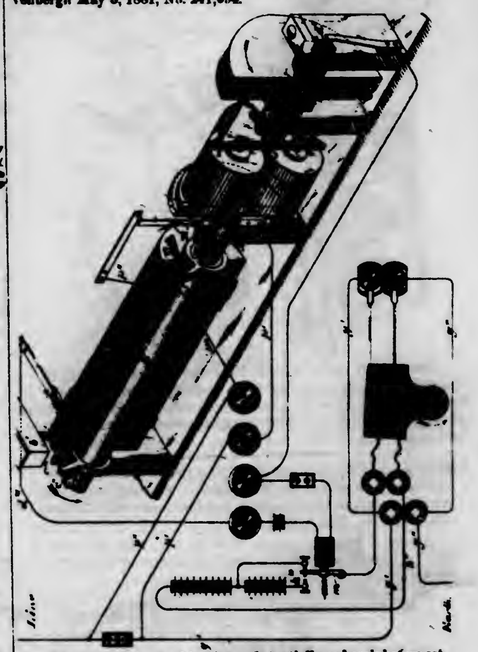


Claim.—1. In combination with the hollow air and steam-distributer I, suspended near the bottom of the flue of a vertical boiler by a depending supply-pipe inserted in the flue from a point above the boiler, one or more diffuser-pipes, K, tapping in and suspended by the diffuser and suspending pipe, and having nozzles P, for distributing the air in a furnace-chamber, substantially as herein set forth.

2. The combination of the air-distributing pipe O, steam-pipe N, suspending-pipe L, injector M, and series of distributing-pipes K, and nozzle P, suspended in the flue and furnace-chamber of a vertical boiler, substantially as described.

259,610. TRANSMITTER FOR PRINTING-TELEGRAPHS. HENRY VAN HOEVENBERGH, Elizabeth, N. J. Filed Nov. 27, 1880. (No model.) Patented in England Dec. 10, 1880, No. 5,163.

Brief.—An electro-magnetic clutch connects the motor to the key-cylinder. Depression of any key breaks the local-battery circuit of this clutch, releases an armature, which falls against its back stop, and puts additional battery to line for actuating the press mechanism. The type-wheel of the receiver is operated by currents of opposite polarity. At each revolution of the key-cylinder a resistance is automatically cut out of main line for the purpose of actuating the unison mechanism. This transmitter is peculiarly adapted to the printing-receiver patented to Van Hoevenbergh May 3, 1881, No. 241,094.



Claim.—1. The combination, substantially as hereinbefore set forth, of a series of pins or stops mounted upon a revolving cylinder, a series of keys corresponding with said pins, each one of which, when depressed, engages with its corresponding pin, and thereby arrests the motion of said cylinder at a determinate point in its revolution, a commutator or pole-changer actuated by the shaft of said cylinder, a continuously-revolving shaft which is normally coupled to the commutator-shaft by the attraction between an electro-magnet mounted upon one of said shafts and its armature mounted upon the other, and a circuit-breaker which is brought into action by the engagement of any one of the keys with its corresponding pin upon the cylinder to demagnetize said electro-magnet and disconnect the commutator-shaft from its motor.

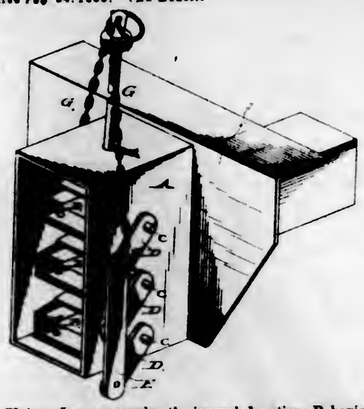
2. The combination, substantially as hereinbefore set forth, of a series of keys, an intermittently-revolving shaft the movements of which are controlled by said keys, a rock-shaft which performs a determinate number of oscillations during each revolution of said shaft, and two or more independent commutators for actuating separate circuits mounted upon said rock-shaft.

3. The combination, substantially as hereinbefore set forth, of a series of keys, an intermittently-revolving cylinder the movements of which are controlled by said keys, and a circuit-changer which is automatically actuated by said cylinder to momentarily augment the normal strength of current in the main line at one and the same determinate point in each and every revolution of the cylinder.

4. The combination, substantially as hereinbefore set forth, of a series of pins or stops mounted upon a revolving cylinder, a series of keys corresponding with said pins, each one of which, when depressed, engages with its corresponding pin, and thereby arrests the motion of said cylinder, a yielding mechanical connection between said cylinder and its driving-axis, and a ratchet-wheel and click for preventing a retrograde motion of the driving-axis.

5. The combination, substantially as hereinbefore set forth, of an intermittently-revolving cylinder, a key which, when depressed, arrests said cylinder at a determinate point in its revolution, a cam which acts to maintain said key in a position to arrest the cylinder, and a spring which automatically throws said cam out of position and releases said key when the latter is depressed by the operator.

259,611. CAR-COUPLING. WILLIAM WARD, Zanesville, Ohio. Filed Feb 24, 1882. (No model.)



Claim.—In a car-coupler, the journaled sections B, having V-shaped bottoms, and provided with the springs B and C, in combination with the lever-arms D, vertical bar E, chain G, and pin I, all constructed to operate substantially as and for the purpose set forth.

259,612. DEVICE FOR SUSPENDING ELECTRIC-ARC LAMPS. ADDISON G. WATENBOUGH, New York, N. Y., assignor to the United States Electric Lighting Company, same place. Filed Apr. 15, 1882. (No model.)



Claim.—1. A combined supporting and circuit-controlling apparatus for electric lamps, consisting of an insulating-plate to which are fixed a swivel-hook, contact-springs, and binding-posts in electrical connection with the said springs, these parts being so constructed and arranged that a lamp suspended from the swivel-hook and turned will be brought into circuit by contact of suitable terminal points thereon with the springs, as set forth.

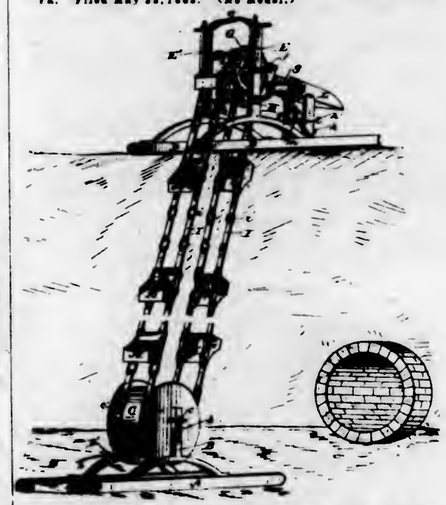
2. The combination, with an electric lamp, of two springs fixed to an insulating-support and connected with an electric circuit, electrically-connected contact-points upon which the springs bear, and a swivel-support between the springs, these parts being so arranged that a lamp suspended from the swivel-support and turned will be brought into circuit by the contact of terminal points thereon with the springs, as set forth.

3. The combination, with an electric lamp, of a tube inclosing the carbon-holder, and conductors leading to the regulating mechanism and carbons, and a block or support, L, provided with terminal points with which the said conductors are connected, these parts being constructed and arranged substantially as described, and for the purpose of facilitating the introduction of a current to the lamp from suitably-arranged circuit-terminals.

4. The combination, with an electric lamp having terminal contact-points N, of a plate, A, springs D E, electrically-connected stops F G, and swivel-hook B, substantially as described.

5. In a supporting and circuit-controlling apparatus for electric lamps, the combination, with the hook B, of the contact-springs D E, bent as described, for holding the terminal stops of an electric lamp.

259,613. HOD-ELEVATOR. EPHRAIM W. WATSON, Norfolk, Va. Filed May 23, 1882. (No model.)



Claim.—The base-frame A, provided with the drum C, having flanges c' c^2, and the top frame, D, drum F, gear G, pinion H, and adjustable trough L, in combination with the endless belt I i, having buckets K, as set forth.

259,614. SAFETY DEVICE FOR ELECTRIC CIRCUITS. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Jan. 5, 1882. (No model.)



Claim.—1. The combination, with a circuit or branch thereof, of a safety device which fuses at a temperature below the ignition-point of wood, paper, fabrics, or other like combustibles.

2. The combination, with an electrical conductor, of a strip or wire of higher resistance than the said conductor, and which fuses at a temperature lower than the ignition-point of wood, paper, fabrics, or other like combustibles, substantially as set forth.

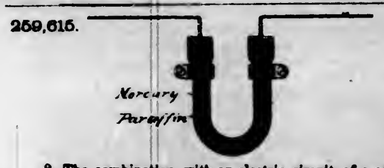
3. In a safety device for electric circuits, the combination, with a slab of wood, of a strip of fusible metal attached thereto by varnish or similar cement, and binding-posts in contact with the ends of the strip, as and for the purpose set forth.

259,615. SAFETY DEVICE FOR ELECTRIC CIRCUITS. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Jan. 10, 1882. (No model.)

Brief.—When an abnormal current melts the paraffine case by heat from the mercury the latter falls out, and thus breaks the circuit.

Claim.—1. The combination, with an electric circuit, of a fluid-conducting medium having a higher relative resistance than the conductors of the circuit, and a retaining-case composed partly or wholly of highly-fusible material, substantially as described.

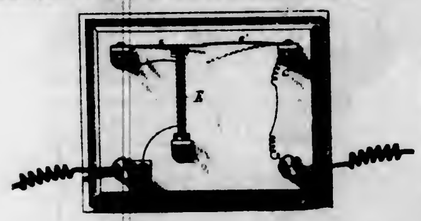
259,615.



2. The combination, with an electric circuit, of a column of conducting-liquid of higher relative resistance than the conductors of the circuit, and an inclosing tube or casing of highly-fusible material, substantially as described.

259,616. SAFETY DEVICE FOR ELECTRIC CIRCUITS. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Jan. 6, 1882. (No model.)

Brief.—When the paraffine E melts from the heat of the resistance F it allows the springs c and c' to separate and break the circuit before damage is done to the instruments in line.



Claim.—1. The combination, with an electric circuit, of a wire or similar conducting medium of higher relative resistance than the conductors with which it is connected, a circuit-interrupter, and a mass of fusible material surrounded by or in proximity to the wire of high resistance, and arranged to maintain the continuity of the circuit through the interrupter until softened by heat.

2. In a safety device for electric circuits, the combination, with a circuit-interrupter, of a mass of highly-fusible material for preventing the same from acting, and a resistance-wire included in the circuit with the interrupter and in proximity to the fusible material, substantially as set forth.

3. In a safety device for electric circuits, the combination of springs c c', a mass of fusible material for maintaining the same in contact, and a resistance-wire surrounding the fusible material, for the purpose set forth.

4. The rod E, or its equivalent, composed of a non-conducting substance, which softens at a low temperature, and powdered metal for rendering the same a better conductor of heat.

259,617. DYNAMO-ELECTRIC MACHINE. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Dec. 13, 1881. (No model.)

Brief.—Divides the armature-coils by taking loops from the middle of the coils to the plates of a second commutator.

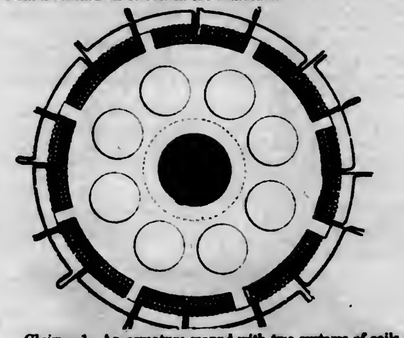


Claim.—1. A cylindrical armature for dynamo-electric machines, wound with a double system of continuous coils in separate divisions, in combination with two independent commutators, connected respectively with loops taken from diagonally-opposite portions of the said divisions, substantially as described.

2. An armature wound with a double system of continuous coils in separate divisions, in combination with two independent commutators, connected respectively with loops taken from the junctions of the several divisions of coils, and from the middle of each of said divisions, substantially as set forth.

259,618. DYNAMO-ELECTRIC MACHINE. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Dec. 13, 1881. (No model.)

Brief.—The armature is wound with two systems of coils, each section containing four coils, those of each system being alternately above and below. The terminals of the two systems are connected to form a continuous circuit in the armature.



Claim.—1. An armature wound with two systems of coils in diametrically-separate divisions, the divisions of one system being alternately under and over those of the other, and the said divisions being looped together and connected to the commutator, substantially in the manner described.

2. An armature for dynamo-electric machines, containing recesses or grooves wound with two systems of coils in diametrically-separate divisions, each recess containing four of such divisions, the divisions of one system being alternately under and over the divisions in the other, and all being looped together and connected to commutator-segments, substantially as shown and described.

259,619. WHEEL-FENDER FOR VEHICLES. H. WHEELER, Philadelphia, Pa., assignor to Benjamin F. Enoch, same place. Filed Mar. 6, 1882. (Model.)

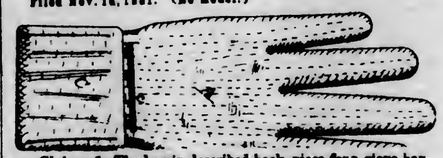


Claim.—1. The combination of the axle, with the arms which extend horizontally outward therefrom, with the fender and the braces, which serve both to brace the fender in place and act as guards to prevent the fender from striking against the body of the vehicle, substantially as described.

2. The combination of the fender with a U-shaped guard secured to its rear end, and the inwardly-flaring guard I, which serves to catch the dirt thrown up by the spokes of the wheels, substantially as set forth.

3. In a guard for wheels, the combination of the horizontal supporting-arms X, the guard G, secured thereto, the braces J K, and an apron or curtain which is buttoned to the guard, substantially as specified.

259,620. GLOVE. WILLIAM W. WHITAKER, Cloversville, N. Y. Filed Nov. 14, 1881. (No model.)



Claim.—1. The herein-described back-piece for a glove having a back for the hand and two or more two-ply back-pieces for fingers formed in one continuous piece, the two folds of each finger-back being closed and joined along the edges of the fingers, substantially as set forth.

2. The herein-described wrist and back-piece for a glove having a two-ply finger-back attached thereto and knit in one continuous piece, with the edges of the two folds closed and joined along the edges of the fingers, substantially as set forth.

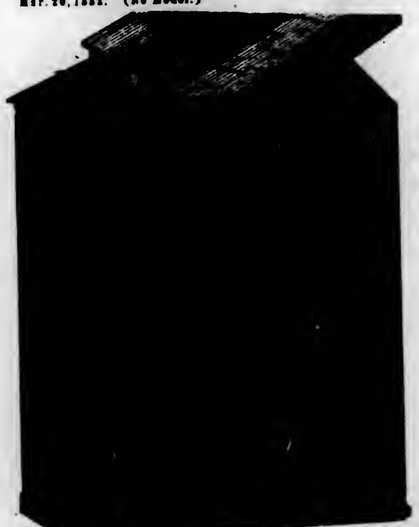
3. A glove having two or more back-pieces for fingers attached to the hand part when each finger-back is formed of a two-ply fabric the two folds of which are formed in one continuous piece and are joined and closed along the edges of the fingers, substantially as set forth.

4. A glove having two or more back-pieces for fingers attached to the hand part, each of said finger-backs having a knitted selvage edge along the edges of the finger adapted to have a front finger-piece secured to said edges, substantially as set forth.

5. A glove having a fibrous two-ply back for the hand and fingers, a leather palm and finger-fronts, and a forgette which unites the edges of the finger-backs with the leather finger-fronts, substantially as set forth.

6. A glove having a fibrous two-ply back for the hand and fingers, a leather palm and finger-fronts, a fibrous lining for the finger-fronts, and a forgette which unites the edges of the finger-backs with the leather finger-fronts and the fibrous linings of the finger-fronts, substantially as set forth.

259,621. FRUIT-DRIER. WILLIAM H. WILEY, Henderson, assignor of one-half to J. Allen Moore, Greensborough, Md. Filed Mar. 20, 1882. (No model.)



Claim.—1. As an improvement in fruit-driers, the combination, with a vertical casing, of an endless double chain or carrier supported wholly by and pendent from two combined carrying-wheels which are secured to and revolve with the same shaft within the upper portion of said casing; crates for trays of fruit, pivoted to and swinging upon said carrier; a groove at or within each side of said casing, adapted to receive the ends of the pivotal shafts of said crates and to guide and control the position of said carrier below said carrying-wheels; and means whereby the latter may be caused to rotate and to move said carrier longitudinally, substantially as and for the purpose specified.

2. The means employed for insuring the relative positions of and for moving the fruit-crates through the vertical drying-chamber, consisting of the shafts F, having pivoted thereon said crates, the links G, connecting together said shafts, the wheels E, secured upon the same shaft D, and provided with peripheral recesses *e*, and the grooves A, adapted to receive the ends of said pivotal shafts F and to guide and control the position of the endless carrier in its passage from said wheels downward through the lower end of said drying-chamber and upward again to said wheels, substantially as and for the purpose shown.

3. In combination with the shafts F, wheels E, and groove A, the rollers I, journaled upon the ends of said shaft and having their outer ends enlarged to form shoulders *i*, substantially as and for the purpose set forth.

4. In a fruit-drier having means for moving the fruit through a vertical casing, a central chamber provided with valves for regulating the temperature and currents of air, and adapted to receive and contain trays of fruit, substantially as and for the purpose shown and described.

5. The crates for containing trays of fruit, consisting of the plates K, provided with the grooves *k'*, slots *k²*, and pins *k³*, and combined by means of the connecting-rods *k*, substantially as and for the purpose shown.

6. The hereinbefore-described fruit-drier, in which is combined a vertical casing, an endless carrier, provided with swinging crates, that passes over and is wholly supported by a pair of combined carrier-wheels journaled by the same shaft within the upper portion of said casing, grooves that receive the edges of and guide said carrier while passing through the lower portion of said casing, and mechanism, substantially as described, whereby said parts are caused to operate in the manner and for the purpose substantially as set forth.

259,622. FIRE-ESCAPE. ALFRED WILLIAMS, Philadelphia, Pa., assignor of one-half to Isaac W. Heysinger, same place. Filed Nov. 1, 1881. (No model.)

Brief.—A ladder with safety platforms or balconies secured thereto is provided with pulleys outside of the vertical line of the ladder, whereby it is moved across the face of the building.



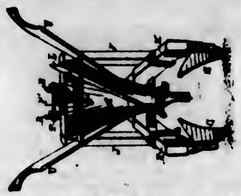
Claim.—1. In combination with the ladder B, provided with one or more platforms, C C, the supporting-rail K, permanently attached to the walls of a building, upon which the said ladder is supported and moved from side to side, substantially as and for the purpose described.

2. In combination with the safety-platforms C C, ladder B, and supporting-rail K, the friction-rollers I I, placed beyond the outside lines of the said ladder B, so as to overhang the said platforms C C and support the same, substantially as shown and described.

3. A fire-escape for buildings, consisting of a ladder provided with safety-platforms at different heights, the said ladder being hung from a supporting-rail permanently attached to the building and laterally movable upon the said rail by means of traction-chains, or their equivalent, worked from the surface of the ground, substantially as herein set forth.

4. A movable ladder for fire-escapes, provided with safety-platforms at various heights, said platforms being permanently attached to the said ladder and having openings therein to allow the descent of persons from the said platforms upon the said ladder, substantially as described.

259,623. SEED-PLANTER AND FERTILIZER-DISTRIBUTER. NOAH R. WILSON, Piedmont, S. C. Filed Dec. 19, 1881. (No model.)



Claim.—In a seed and fertilizer dropper, the combination of hopper A, having the perforated disk P, cone B, and movable disk or slide Q, lever L, connected to said disk Q, beams K, having the handles U, the graduated slotted cross-bar U', secured to and between the handles U and receiving the lever L, and nut W, substantially as and for the purpose set forth.

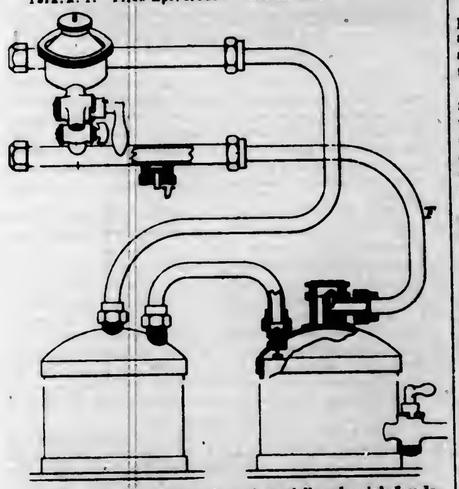
259,624. ANIMAL-POKE. LEWIS T. WIRE, Cambridge, Iowa. Filed Sept. 13, 1881. (No model.)



Claim.—1. The collar-coupling device *g*, having a barbed extension, *h*, and perforations *i i*, in combination with a jointed animal-collar, as and for the purposes set forth.

2. The improved animal-poke composed of the bar A, having a central bow, *b*, and hooks or elbows *c* at its ends, the half-collar D, and the barbed connecting devices *g h*, substantially as shown and described, to operate in the manner set forth.

259,625. BEER APPARATUS. LOUIS WINTERBARER, New York, N. Y. Filed Apr. 4, 1881. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, of the gas-reservoir, the service-pipe emanating from the reservoir, the receiver having a suction-valve and discharge-valve, the return-pipe terminating in the suction-valve of the receiver, and the coupling-pipe extending from the discharge-valve of the receiver to the reservoir.

2. The combination, substantially as hereinbefore set forth, of the receiver having a suction-valve and discharge-valve and the pumping attachment of the receiver with the reservoir, the coupling-pipe, the service-pipe, and the return-pipe.

3. The combination, substantially as hereinbefore described, of the receiver having a suction-valve, discharge-valve, and water-cock with the reservoir, the coupling-pipe, and the return-pipe.

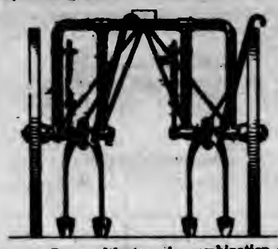
4. The combination, substantially as hereinbefore set forth, of the service-pipe, the return-pipe, and the two-way cock having both pipes connected therein with the reservoir, the receiver having a suction-valve and discharge-valve, the coupling-pipe extending from the discharge-valve of the receiver to the reservoir, the service-pipe emanating from the reservoir, and the return-pipe terminating in the suction-valve of the receiver.

5. The combination, substantially as hereinbefore set forth, of the service-pipe having arranged therein the check-valve E, the gas-pressure-regulating valve O, and the chamber common to both such valves with the reservoir and receiver.

6. The combination, substantially as hereinbefore set forth, of the return-pipe and the suction-valve arranged therein with the receiver having a suction-valve and discharge-valve, the return-pipe connected to the suction-valve, and the pumping attachment of the receiver.

259,626. CULTIVATOR. EDGAR A. WRIGHT, Hollis, Ill. Filed Apr. 6, 1882. (No model.)

Brief.—The wheels are loose upon the axles and the axles rotate in bearings in the frame. The spring-arms are attached to the axles direct, avoiding thus the use of a sleeve.



Claim.—1. In a cultivator, the combination of the frame, the wheels, the two axles rotating independently of the frame and wheels, the plow-beams coupled to the axles, substantially as described, and the arms applied to the axle and adapted to co-operate with springs, weights, or draft devices, substantially as described.

2. The combination of the arched frame, the wheels, the independently-rotating axles, each provided with an arm, the spring attachments co-operating with the arms, substantially as described, and the beams connected with the axles, substantially as shown, to swing vertically therewith.

3. In a cultivator, the combination of a draft-frame, an axle revolving freely in said frame, a ground-wheel revolving freely on the axle, a plow-beam vertically pivoted to the axle, and an arm or projection, substantially as described, secured to the axle, and a spring-connection interposed between the frame and arm, substantially as described, for the purpose of acting through the arm and axle upon the beam.

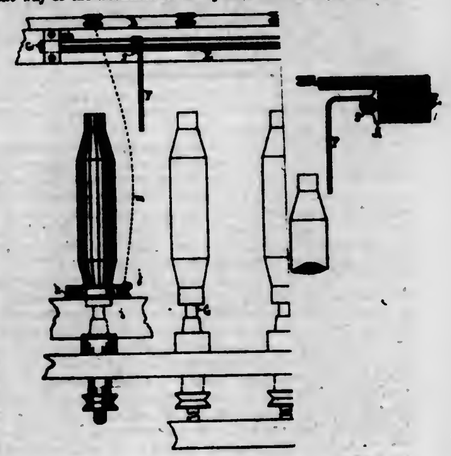
4. The combination of the arched frame *a* and standards *c*, provided with the axle-bearings, the two independent loose axles, the two loose wheels, the two beams connected with the axles by vertical axes, the arms rigidly secured to the beams, the rods pivoted at one end to the arms and sliding at the opposite ends in guides, and the springs mounted on the rods, as shown.

5. In combination with the rotating axle and the beam having a forked head, the coupling consisting of the tube, the bearing-block between the tube and axle, the clamping devices, and the vertical pivot.

6. The combination of the draft-frame, the ground-wheels, the rotating axle, the beam connected with the axle by a vertical axis, and the arm secured rigidly to the axle and extending downward therefrom.

259,627. THREAD-GUARD FOR SPINNING-MACHINES. WM. A. WRIGHT, Lowell, Mass. Filed Mar. 31, 1881. (No model.)

Brief.—The thread-guard is adapted to prevent snarls and kinks formed in the thread being spun upon one spindle from breaking the threads being spun upon adjacent spindles, and by the means detailed in the claim the guard may be readily swung out of the way to permit of the removal of the ring-rail for repairs. The construction is also such that the guard will be out of the way of the workman in the operation of doffing the bobbin.



Claim.—In a ring-spinning machine, the combination of the thread-board rail E, spindles C, and guards F with the rock-shaft G, which bears the guards, and is held by frictional contact in its bearings in whatever position of oscillation it is placed, substantially as described.

259,628. BRACE FOR PUMP-SPOUTS. S. JARVIS ADAMS, Pittsburg, Pa. Filed Apr. 5, 1882. (No model.)



Claim.—1. In braces for supporting pump-spouts, the combination of a ring adapted to fit around the spout and a supporting-strap adapted to fit within the ring and be held between the ring and the spout, substantially as and for the purposes set forth.

2. In braces for supporting pump-spouts, the combination of a ring adapted to fit around the spout, a supporting-strap adapted to fit between the ring and the spout, and means for preventing the movement of the ring on the strap, substantially as and for the purposes set forth.

3. In braces for supporting pump-spouts, the combination of the ring *c*, having the recess *e* and lug *k*, and the supporting-strap *d*, adapted to fit within the recess *e*, and provided with the slot *l*, for the reception of the lug *k*, substantially as and for the purpose set forth.

259,629. MANUFACTURE OF ARTIFICIAL INDIGO. ADOLPH BAEYER, Munich, Bavaria, assignor to Badische Anilin und Soda Fabrik, Mannheim, Germany. Filed May 11, 1882. (Specimens.)

Claim.—1. As a new product, an artificial indigo having the characteristics above set forth.

2. The within-described process of producing an artificial indigo by starting from toluene successively through benzyl chloride, benzyl cyanide, phenylacetic acid, oxindol, nitroso-oxindol, amido-oxindol, artificial isatine, and isatine chloride to the artificial indigo, substantially as set forth.

259,630. HORSESHOE. GEORGE B. BROWN, Boston, Mass. Filed Jan. 24, 1880.



Claim.—The new article of manufacture, consisting of a horse-shoe having a flat bearing-surface from the toe to the quarters, the sides gradually increasing in thickness vertically, but diminishing in thickness laterally, and having their upper parts inclined outwardly from the quarters to the heel and the inner upper surface concaved, as shown and described.

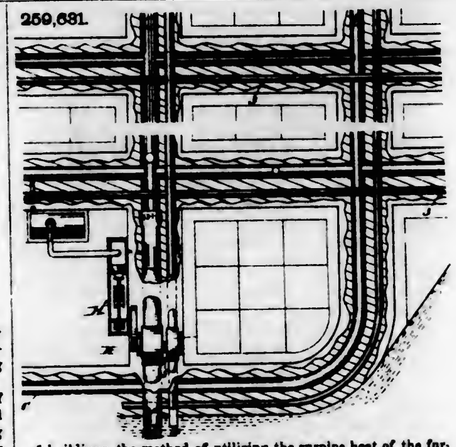
259,631. METHOD OF VENTILATION. JOHN COMSTOCK, Hudson, Wis., and THOMAS B. JEFFERSON, Boston, Mass. Filed Mar. 29, 1882. (No model.)

Claim.—1. In the art of ventilation, the method of utilizing the sewers of a city as main ventilating-conduits, whereby the discharge of the sewage is accelerated and the sewers rendered more efficient in their action, which consists in connecting the sewers by suitable branches to the buildings to be ventilated, inducing a powerful mechanically-produced draft toward the exits of the sewers, and automatically preventing the back flow of air-currents into the sewers and drains, substantially as set forth.

2. In ventilating the sewers of a city or district and the drains of a building or buildings, the method of utilizing the products of combustion of furnaces, stoves, &c., as an aid to the purification of the gases within the sewer and drains previous to their elimination from the same, which consists in connecting the flues of the heating apparatus to said drains and sewers and inducing a powerful mechanically-produced draft of air within said sewer, &c., whereby the said products of combustion are commingled with the noxious gases and vapors, and are finally discharged at a point beyond the inhabited portions of the city or district, as set forth.

3. In ventilating the sewers of a city or district and the drains

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of buildings, the method of utilizing the surplus heat of the furnaces or other heating apparatus of the buildings located within a defined district to prevent the sewer contents from freezing, and thus interfering with effective ventilation, which consists in connecting the heating apparatus with the sewers, mechanically inducing a powerful draft of air toward the exits of the sewers, and regulating the discharge from the heating apparatus to the sewers, as set forth.

4. In the art of ventilation, the combination, with a conduit rendered approximately air-tight, and means for inciting therein a powerful and continuous draft in the direction of its exit, of branches connecting said conduit with the apartments of buildings, and means whereby the back flow of sewer-gas from said conduit is automatically provided against, substantially as set forth.

5. The combination, with a conduit having suitable connections with apartments of buildings, and means for inducing a draft of air therein in the direction of its outlet, of check-valves or gates arranged at proper points in the conduit and connections, and adapted to automatically prevent the back flow of impure air into said apartments when the draft-inciting means are not in operation, or from other cause, as set forth.

6. The combination, with a suitable condnit and the draft-inducing means, of connections between apartments and said conduit, and devices within said connections, whereby the back flow of impure gas is automatically prevented, as set forth.

7. The combination, with an approximately air-tight sewer having inlets from the places to be ventilated, of the means for inducing a powerful draft of air toward the exit of the sewer, and means applied to the sewer whereby air-currents in the opposite direction are automatically prevented, as set forth.

8. The combination of the house-drains G, having check-valves S, with the main conduit, the fan H, and hood Y, as and for the purposes set forth.

9. The combination of the house-drains G, having check-valves S, and the main conduit C, having check-valves W, with the fan H, and the hood Y, as set forth, for the purposes specified.

10. The combination, with the main conduit, having check-valves W, and hood or gate Y, of the fan H, the connections between the main conduit and the heating apparatus, and the means X, for regulating the escape of the products of combustion from the latter to the main conduit, as set forth.

11. The combination, with the main conduit, having check-valves W, and hood or gate Y, of the fan H, the connections between the main conduit and the apartments, and heating apparatus, of the dampers X and ventilators R, for regulating the draft and ventilation, as set forth.

12. The combination, with the main conduit, the fan H, and hood Y, of the connections between the main conduit and the apartments to be ventilated, and means for controlling the draft and air currents within the main conduit, and within the connections between the apartments and the conduit, as set forth.

13. In the art of ventilation, the combination of the heating apparatus of buildings, the main ventilating-condnit, the fan H, and hood Y with connections between the said heating apparatus and the main conduit, valves within the connections, and regulators attached to the heating apparatus, whereby the impure air is conducted into the heating apparatus, from thence into the sewer, and finally discharged into the open air at a point away from the

inhabitants of a city, substantially in the manner and for the purposes set forth.

14. The combination, with the main conduit, the means for inducing a powerful draft therein toward its exit, and a hood, Y, of a supplemental valve located near the exit of the main conduit, between the hood or gate Y and fan, as set forth.

15. The combination of the main conduit and means for producing a powerful draft therein with the valve at or near the outlet of said conduit, adapted to slide up and down in guides, and provided with means for adjusting it, as set forth.

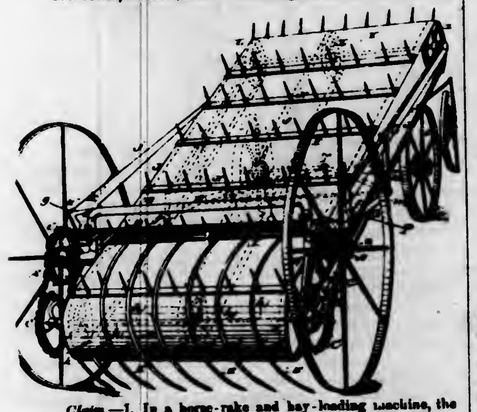
16. The combination, with two main ventilating-conduits, each provided with air-exhausting means at or near its exit, of a single motor arranged to impart motion to both exhausters, as set forth.

17. In the art of ventilation, a sewer-main having ventilating-connections through furnaces, stoves, &c., and an auxiliary main having ventilating-connections with apartments and buildings, combined with means for creating a powerful draft in each main in the direction of its outlet, and a motor common to both of said draft-inciting means, as set forth.

18. In the art of ventilation, a sewer and an adjacent main, the former having connections with stoves, furnaces, &c., the latter with ventilating-connections with apartments, buildings, &c., and both having means for preventing back flow and means for regulating amount of ventilation, combined with draft-inducing means for each main, operated simultaneously by a single motor, as specified.

19. The combination of the sewer C, having check-valves W and connections with heating apparatus, the auxiliary condnit 3, having check-valves and connections with apartments, and regulating means, with the suction-fans H 4, hung upon the same shaft, 5, and operated by a single motor, H', as and for the purposes set forth.

259,632. COMBINED HAY RAKE AND LOADER. SHERAN F. COON, Independence, Mich. Filed Aug. 11, 1881. (No model.)



Claim.—1. In a horse-rake and hay-loading machine, the combination, with the driving-wheels A, having extended hubs E, sprocket-wheels C, formed with clutch-teeth on their inner edges, clutch-rings *b*, pins *c*, springs *c*, and feather-keys *a a*, of the levers *d*, arms *n*, pins *d'*, rake-head D, lever H, and bent axle B, as shown and described.

2. In a combined horse-rake and loading-machine, in which the rake has a bent axle, the combination of lever H, striking plate or hook *i*, cord *j*, having a knot or button, *g*, and pulley *k*, substantially as described, and for the purposes set forth.

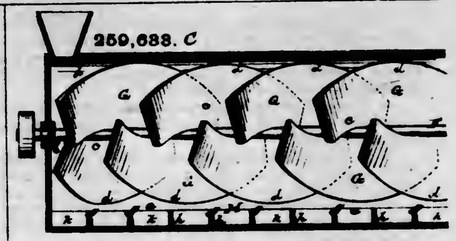
3. In a combined horse-rake and loading-machine, the combination of the shaft or pole G, supporting-fulcrum M, and lever O, having a ratchet-bar, P, secured at its short end, substantially as described, and for the purpose set forth.

259,633. AMALGAMATING ORE-SEPARATOR. DAY O. CRANE, Washington, D. C. Filed Feb. 31, 1882. (No model.)

Claim.—1. In an amalgamating ore-separator, the opposite series of inclined flume-blades G, having their faces coated with quicksilver, and arranged in parallel directions on opposite sides of a rotating shaft, in combination with said shaft, journaled at the ends of a cylinder-case, substantially as specified.

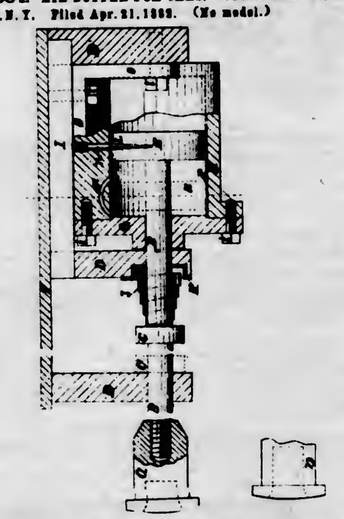
2. In an amalgating ore-separator, the combination, with the cylinder-case A, provided with the base-trough H, having the

259,633. C



grooves *g* and the removable transverse riffles *h*, of the inclined flume-blades G, coated with mercury, and arranged on opposite sides of a rotating shaft and in parallel inclined directions, and having the elliptically-curved margins *d*, working near the case-wall and near the upper edges of the riffles, substantially as specified.

259,634. AIR-BUFFER FOR CARS. WESLEY GROVER, Rochester, N. Y. Filed Apr. 21, 1882. (No model.)



Claim.—1. In a pneumatic car-buffer and draw-bar, the combination of an air-cylinder and a piston fitting within the cylinder and connected with the buffer or draw-bar, said cylinder being provided with a passage opening at one end into the cylinder close to the cylinder-head and at the other end at a distance from the head slightly greater than the thickness of the piston, whereby the air between the piston and the cylinder-head is subjected to compression until the piston reaches a point between the two openings of the passage, and is then permitted suddenly to pass to the other side of the piston, substantially as and for the purpose set forth.

2. In combination with a car-buffer, a piston connected therewith and arranged to move within an air-tight cylinder, substantially as shown and described, whereby the elasticity of the compressed air on one side of the piston and the force or effect of the partial vacuum on the opposite side are both utilized to take up the concussion of the buffer.

3. In a pneumatic car-buffer and draw-bar, the combination of a cylinder filled with air and a piston fitting closely within the cylinder and attached to the buffer or draw-bar, the cylinder or the piston being provided with a small passage through which the air can slowly pass from one to the other side of the piston, but so small as to have no appreciable effect upon the compression of the air, whereby a sudden movement of the piston is caused to compress the air, but a very slow and gradual movement is permitted without compressing the air.

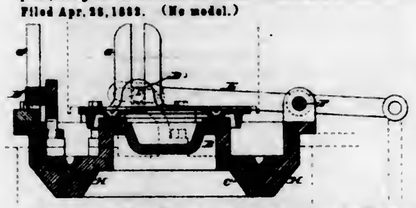
4. In combination with a draw-bar or buffer provided with a piston, a cylinder containing said piston, a passage through which air may slowly pass from one side of the piston to the other, and a spring applied to the draw-bar and arranged, substantially as described and shown, to return the piston to the middle of the cylinder after being forced from said position.

5. The herein-described combined draw-bar and buffer, consisting of draw-head A, draw-bar or piston-rod B, provided with collar C and piston E, cylinder H, provided with ports m m and channel I', beam or support D, and spring J, all combined and operating substantially as shown and described.

6. In combination with the cylinder having the oil-hole n and plug I, the piston E, provided with groove L, as and for the purpose explained.

7. In a car-buffer substantially such as shown and described, the combination of an air-cylinder, a piston arranged to move within said cylinder, and a collar applied to the piston-rod and arranged to come into contact with a stop outside of the cylinder, whereby the piston is prevented from coming into contact with the cylinder-heads.

259,635. SOLDERING-POT. JAMES W. FARRELL, Philadelphia, assignor of one-half to Frank W. Edwards, Thurlow, Pa. Filed Apr. 28, 1882. (No model.)



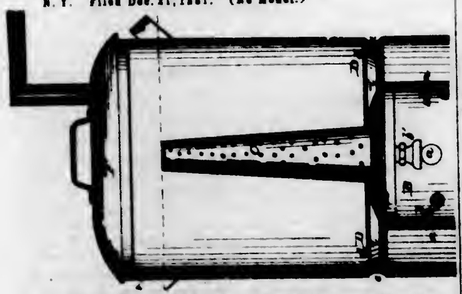
Claim.—1. The bed B, in combination with vertically-movable trough C, depressed below said bed and surrounding it, and provided with gudgeons D, the shaft F, the longitudinally-slotted arms E, and the vertically-slotted guides G, the said gudgeons sitting in the slots of said arms and said guides, substantially as set forth.

2. Slotted guides G and G', in combination with a vertically-movable trough having lugs which fit in the former guides and gudgeons which fit in the latter guides, the bed B, which supports the cans, the shaft F, and slotted arms E, substantially as set forth.

3. The trough, in combination with the pot formed with a groove in its bottom of a shape corresponding to the contour of said trough, in order that it may receive said trough when the latter is lowered, substantially as set forth.

4. The trough, in combination with the pot having a groove in its bottom, said groove being adapted to receive said trough, substantially as set forth.

259,636. WASHING-MACHINE. WILLIAM G. FLAGLER, Troy, N. Y. Filed Dec. 21, 1881. (No model.)



Claim.—In a wash-boiler as described, the combination of chamber B, having side openings, a, automatic valves b, and perforated pipe C, with a perforated screen or diaphragm, D, which fits close upon the top of B, all substantially as set forth.

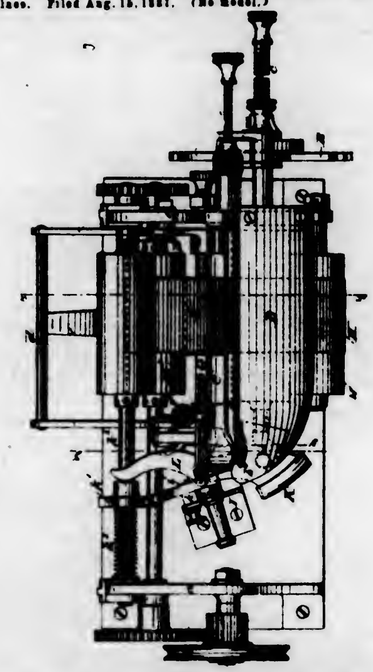
259,637. TRUSS FOR VEHICLE-AXLES. WILLIAM A. GALBRAITH, Flint, Mich., assignor of one-half to James Gillett Mallory, same place. Filed Mar. 31, 1882. (No model.)



Claim.—1. The combination, with the axle A, of the skeins B, having eyes G G, the transverse clips C, secured under the axle by the bound-bolts D, and having eyes E E, and the truss-rods F F, located in the eyes E G and secured by nuts, which also serve to hold the skeins upon the axle, as set forth.

2. The combination of the axle A, the skeins B, having eyes G, grooves I, and diagonal perforations J, the bound-bolts D, clips C, having eyes E E, the truss-rods F F, rods K, having eyes L, and nuts M, all arranged substantially as set forth.

259,638. CIGAR-MACHINE. FREDERIC HARENDL, New Orleans, La., assignor to the New Orleans Cigar Factory, same place. Filed Aug. 15, 1881. (No model.)



Claim.—1. In a cigar-machine, a bunch-holder provided with a removable adjustable conforming tip-former, c', in combination with a suitable spring, substantially as specified.

2. In a cigar-machine, the vibrating cutter i, having the angular slots i' and i'', and pivoted to a standard, I, and means for operating it intermittently, substantially as described.

3. In a cigar-machine, the vibrating cutter i, having the angular slots i' i'', and pivoted to a standard, I, provided with an adjustable stop, k, in combination with means for operating said knife intermittently, substantially as set forth.

4. In a cigar-machine, the curved plate K, attached to a curved lever, L, arranged on the shaft n, in combination with the sprocket-wheel K' and spring k' on the shaft k', for throwing the sprocket-wheel out of contact with the lever i', substantially as and for the purpose described.

5. In a cigar-machine, the table B, provided with a receptacle, b, and opening b', constructed and arranged as shown, in combination with a flexible tube and a paste-reservoir, D, all as shown, and for the purpose set forth.

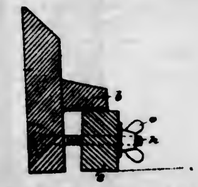
6. In a cigar-machine, the adjustable knife N, provided with a curved cutting-heel, constructed as shown, in combination with the bunch-holder O C' and vibrating knife i, all arranged substantially as specified.

7. In a cigar-machine, the vibrating cutter i on the lever i', operated by the sprocket-wheel K on shaft k', in combination with the stationary knife N, secured adjustably to the lower part, C, of the bunch-holder, and the part C', all arranged substantially as specified.

8. The vibrating cutter i, having rectangular slots i' i'', for adjusting said cutter to the lever i', which is pivoted to the standard I, in combination with the lever L on the vertical shaft n, the sprocket-wheel K on shaft k', the thumb-plate K, and the bunch-holder, all substantially as shown and specified.

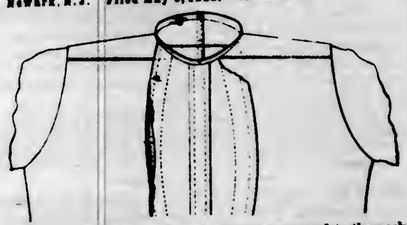
9. In a cigar-machine, the table B, provided with a receptacle, b, on its lower side and an elongated opening, b', in combination with a flexible tube and a paste-reservoir, D, for delivering the paste to the under side of the cigar-wrapper, substantially as shown and set forth.

259,639. DEVICE FOR TIGHTENING BOLTING-CLOTH. HILPORN HARMON, Jackson, Mich., assignor to the George T. Smith Middlings Purifier Company, same place. Filed Oct. 8, 1881. (No model.)



Claim.—The combination, with the shaker-frame, of the inwardly-projecting ribs b, the cloth-bars c, the bolts A, and thumb-nuts e, the bolts being arranged in the described relation to the ribs b and the cloth-bars, whereby said bolts and nuts are adapted to draw the cloth-bars toward the shaker-frame, and also to press the upper edges of the cloth-bars into close contact with the lower faces of the ribs b, substantially as set forth.

259,640. SHIRT. JOSEPH H. HARRISON and JAMES H. HARLEY, Newark, N. J. Filed May 8, 1882. (No model.)



Claim.—1. A shirt having the bosom connected to the neck-band and extended over and above the yoke, substantially in the manner and for the purpose described.

2. The loose-edge bosom, the neck-band having the bosom attached to it, and the yoke extended beneath the upper extended flaps or loose edges of the bosom, all in combination, substantially as described.

259,641. FIRE-PROTECTOR. ENOS HIBBS, Germano, Ohio, assignor of one-half to R. J. Patten, same place. Filed Mar. 16, 1882. (No model.)



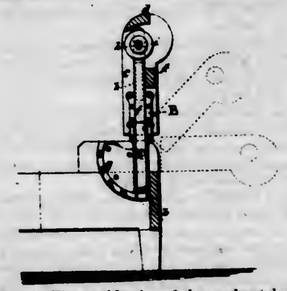
Claim.—1. The combination, substantially as hereinbefore set forth, of the plate a, the plate b, the wire web c, the edge of which is secured between the said plates, hooks e, bolts d, and thumb-nuts d', whereby the web is secured between the said plates, so that it can be easily replaced, as and for the purpose set forth.

2. The combination, with the blower b', of the plate or frame b, web c, bolts d, winged thumb-nuts d', cross-bar b', and pins b', extended from top of bar b', the said blower being adapted to be placed and fit snugly over the web c, and be secured thereto by the pins b' and wings of thumb-nut d', substantially as set forth.

3. The combination, with a screen for an open grate, of a shelf pivoted to the lower part of the said screen, and means whereby the said shelf is held at any desired angle to or away from the surface of the said screen, substantially as set forth, and for the purpose described.

4. The combination, with the bar b', provided with eyes f and notched bar f', of the shelf g, provided with hooks g', and pawl g', hinged to under side of shelf g, and arranged to engage the notches on bar f' and hold the shelf at any angle desired, substantially as and for the purposes set forth.

259,642. SOFA OR LOUNGE. THEODORE HOFSTATTER, Jr., New York, N. Y. Filed Nov 25, 1881. (No model.)



Claim.—1. The combination of the quadrantal ratchet-plate B, having the central pivot-socket and neck, with the latch-plate B, having pivot e and fulcrumed latch f, and the cam-shaft and cams i, substantially as and for the purpose specified.

2. In combination with the adjustable head of a lounge or sofa, duplicate quadrantal ratchet-plates B B, latch-plates and latches B f B f, and cams i i, substantially as set forth.

3. As a new manufacture, the quadrantal plate B and latch-plate and attached latch B f, formed to co-operate as and for the purpose set forth.

259,643. RUFFLING ATTACHMENT FOR SEWING-MACHINES. ALLEN JOHNSTON, Ottumwa, Iowa. Filed Mar. 29, 1882. (Model.)



Claim.—1. The combination, in a ruffling attachment, with the ruffler-blade adapted to move past the needle and blade-carrier, of operating mechanism adapted to reciprocate the blade and carrier at each reciprocation of the needle, and comprising means for regulating the stroke of said blade and carrier, so that the length of stroke is increased or diminished simultaneously at both ends, and the ruffler-blade moves farther past the needle for full than for scant gathers, but not to the extent of the increased fullness of the gathers, substantially as described.

2. The combination of a ruffler-frame, an operating device—such as a lever attached to or carried by said frame, and adapted to be vibrated at each stroke of the needle—a blade-carrier separate from the aforesaid device, but connected with the same so as to be operated thereby, a ruffler-blade adapted to move past the needle, and adjusting means for increasing or diminishing the blade-carrier's movement simultaneously and progressively at both ends, so that the carrier moves farther past the needle for full gathers than for scant ones, substantially as described.

3. The combination, with a blade-carrier, a reciprocating device, and steps through which motion is imparted from said device to said carrier, of an adjusting device connected with both said steps for moving them in opposite directions to increase or diminish the space between them, substantially as described.

4. The combination, with the operating-lever and a link connected therewith, of a sliding blade-carrier having two steps between which a pin or cross-head on said link works, so as to move said blade-carrier in both directions, said steps being adjustable toward and away from each other, substantially as described.

5. The combination of the operating-lever, link, and cross-head, blade-carrier, and steps on said blade-carrier for limiting the lost motion of said link, said steps being connected together so as to be simultaneously adjustable toward and away from each other, substantially as described.

6. The combination of the blade-carrier, movable top plate, and combined cam and eccentric, constructed and operating substantially as described.

7. The combination of the blade-carrier, reciprocating device for communicating motion thereto, movable top plate on said carrier, eccentric engaging with said plate, and cam attached to or in one piece with said eccentric, said eccentric and cam being adjustable, substantially as described.

8. The combination, with the cam for regulating the stroke of the ruffler-blade, of a lever or plate detachably connected with said cam, and provided with a handle for operating the same, substantially as described.

9. The combination, with the blade-carrier and the operating-lever, of a link jointed to said lever at one end, and having its opposite end guided by a groove in the body of the blade-carrier, substantially as described.

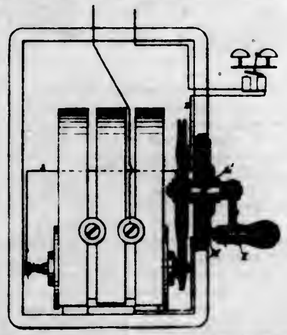
10. The operating-lever having its arms separable, in combination with a blade-carrier, devices connecting the blade-carrier and operating-lever, and adjusting means between the carrier and lever for regulating the stroke of the carrier independently of that of said lever, substantially as described.

11. In a ruffling attachment, an operating-lever with two branches or arms adapted to receive between them the needle screw, or like projection, one arm or branch being pivoted independently of the other, and combined with a catch for holding it parallel, or nearly parallel, with the other arm or branch, so as to leave a slot substantially the width of said screw or projection, as set forth.

12. In a ruffling attachment comprising a sliding blade-carrier supported on an extension or projection of the ruffler-frame, and a lever pivoted to said frame and connected with said blade-carrier, a detachable device such as the top plate, held in place by a set-nut, and forming part of the connection between the blade-carrier and lever, so that on removal of said device the blade-carrier may be removed from the ruffler-frame without disturbing the other parts of the attachment, substantially as described.

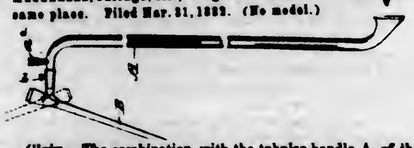
259,644. MAGNETO-GENERATOR. THOS. W. LAHR, Boston, assignor to Charles Williams, Jr., Somerville, Mass. Filed Feb. 28, 1882. (No model.)

Brief.—A pin capable of moving lengthwise in the crank-handle normally rests in contact with an annular plate surrounding the crank-shaft. An outward movement on the handle during rotation breaks the short circuit around the machine; but the crank may be rotated without breaking the short circuit.



Claim.—In a magneto-generator, the combination, with the annular plate H, metallic collar G, and electrical connections, as described, of the armature-rotating crank rigidly attached to its shaft and provided with the pin or handle I, adapted to move longitudinally, but incapable of lateral or rocking motion, whereby the generator is enabled to be operated either while the pin I is separated from the plate H or in contact therewith, as and for the purposes set forth.

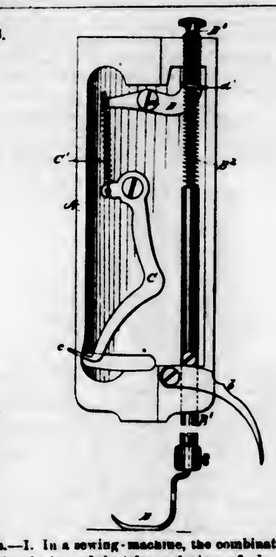
259,645. LAMP LIGHTER AND EXTINGUISHER. THOMAS S. MACARRELL, Chicago, Ill., assignor to Andrew P. W. Skinner same place. Filed Mar. 31, 1882. (No model.)



Claim.—The combination, with the tubular handle A, of the wick-tube B and the tubular extension *a'*, substantially as and for the purpose set forth.

259,646. TAKE-UP REGULATOR FOR SEWING-MACHINES. GEORGIUS A. MAYO, Erie, Pa., assignor to George H. Noble, same place. Filed Mar. 15, 1882. (No model.)

259,646.



Claim.—1. In a sewing-machine, the combination, with the cloth-pressing device and the take-up devices, of a lever or bar connecting the said devices in the manner substantially as described, and an adjusting device engaging said bar or lever, whereby said adjusting device is adapted to regulate the tension of said take-up and cloth-pressing device, as set forth.

2. In a sewing-machine, the combination, substantially as shown, of the following elements: the foot B, bar B', spring B², screw B³, lever D, spring C', lever C, and hook *e*, for the purposes mentioned.

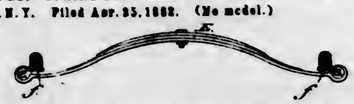
259,647. CAR-COUPLING. JAMES C. MITCHELL, Lancaster, N. H., assignor to himself, James A. Smith, and Alden R. Fishham, same place. Filed May 15, 1882. (No model.)



Claim.—1. The combination of the draw-bar B, provided with the inclined plane E, with the link-pin C and the elevating-pawl D, hinged thereto, all being arranged and to operate substantially as set forth.

2. The combination of the draw-bar provided with the two inclined planes E and F with the link-pin and its elevating-pawl D, all being arranged, adapted, and to operate substantially as set forth.

259,648. SPRING FOR VEHICLES. J. SIDNEY MUNN, Rochester, N. Y. Filed Apr. 25, 1882. (No model.)



Claim.—1. As an improved article of manufacture, the transverse semi-elliptic spring with its ends curved to nearly complete circles and bent inwardly parallel with the body of the spring, affording horizontal rests or supports for the side bars of a vehicle, as shown.

2. The combination, with the side bars of a vehicle, of the transverse semi-elliptic springs E, whose ends, projected unbroken in length, each is in a circular portion, *e*, curved slightly downward, then upward and inward, terminating in the supports *f*, for the attachment of the side bars by the clips, substantially as shown.

259,649. INJECTOR. HORACE B. HURDOCK, Detroit, Mich., assignor to James Jenks, same place. Filed Oct. 13, 1881. (No model.)

Claim.—1. In an injector, the screw-plug B, provided with a central nozzle, and cast with a recess, N, having dividing-partitions, *a*, substantially as shown and for the purpose specified.

2. In an injector, the plug C, provided with a central nozzle, and cast with a resting-flange, *b*, and projections *c* thereon, substantially as shown and for the purpose specified.

259,649.



259,650. BUCKLE. JAMES A. PARK, Lansing, Mich., assignor to Edward W. Sparrow, same place. Filed Mar. 30, 1882. (Model.)



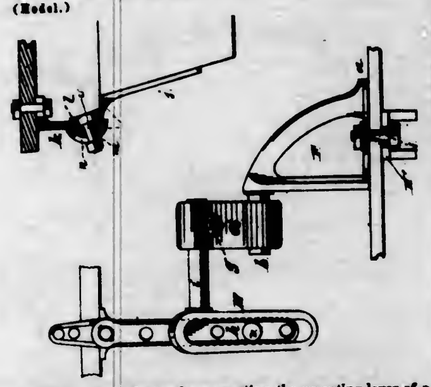
Claim.—A buckle consisting of the combination, with the loop K, provided with a semicircular portion, F, of the loop H, provided with a leg, E, and adapted to embrace the loop K, to which it is pivoted at one end, substantially as set forth.

259,651. DASH-BOARD. JOSEPH B. PLATT, Cleveland, Ohio. Filed Apr. 3, 1882. (Model.)



Claim.—The combination, with the dash A, having the curved channel-rail B, of the bevel-headed bolt C, slotted T-headed foot-piece D, curved washer E, and nut *a*, constructed and arranged for adjustment substantially as and for the purpose specified.

259,652. DEVICE FOR CONNECTING CHECK-ROWERS TO PLANTERS. WILLIAM B. RUSH, Decatur, Ill., assignor to Chambers, Boring & Quinlan, same place. Filed Nov. 7, 1881. (Model.)



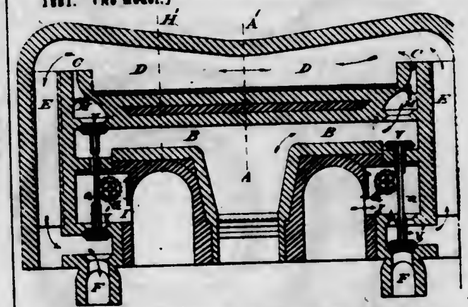
Claim.—1. A device for connecting the operating-lever of a check-rower with the shake-bar of a corn-planter, composed essentially of the three adjustable parts F, G, and H, the part F being secured to the shake-bar and the part H being capable of vertical adjustment on the operating-lever for changing the position of the part G and adapting the device to various machines, substantially as described.

2. A device for connecting the operating-lever of a check-rower with the shake-bar of a corn-planter, composed essentially of the part F, adapted to be secured to the shake-bar and having a projecting round arm, *b*, the part H, adapted to be attached to the lever and having a projecting round arm, *i*, and the intermediate part, G, having a hole in its upper and lower ends, in which are respectively arranged the arms *i* and *b*, substantially as described.

3. In a device for connecting the operating-lever of a check rower attachment with the shake-bar of a corn-planter, a clamping-piece, G, composed of two parts held by a bolt, and adapted to be used in connection with the parts F and H, substantially as and for the purposes specified.

4. The device herein described for connecting the check-rower attachments with the seed-box of a corn-planter, composed of the part *j*, having a half-round portion at its upper end, provided with the longitudinal slot *m*, the part *k*, having a concaved lower end provided with the vertical slot *n*, and the bolt *o*, passing through the slots in the half-round portion and the concaved end of the parts *j* and *k*, substantially as described.

259,653. METALLURGICAL GAS-FURNACE. WILLIAM W. WAPLINGTON, Halifax, Nova Scotia, Canada, assignor of one-half to Arthur C. McKee, Steubenville, Ohio. Filed June 23, 1881. (No model.)

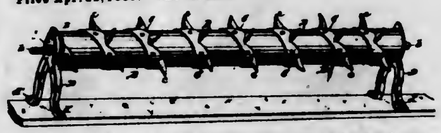


Claim.—1. In a metallurgical gas-furnace, the working-chamber D, provided on each side with the flues E C, and valves V V', also on each side, constructed and connected as described, whereby a movement of the same in one direction opens the induction-ports of the flues and a movement in the opposite direction closes the induction-ports and opens the port of eduction-flue F, in combination with the gas-producing chamber A, arranged under said working-chamber, flues B B, and air-chambers I, substantially as described.

2. In a metallurgical gas-furnace, the working-chamber D, provided on each side with the flues E C, valves V V', arranged on each side, as set forth, rack-bars *a*, and cog-gears G, in combination with gas-producing chamber A, arranged under the working-chamber, gas-flues B, air-chamber I, and spent-gas flues F substantially as described.

3. The working-chamber D, provided with the flues E C, alternately closing and opening valves V V', rack-bars *a*, and cog-gears G, in combination with the gas-producing chamber A, arranged under the working-chamber, gas-pipes B, air-chambers I, and spent-gas tubes F, adapted to receive said valves, substantially as described, and for the purpose set forth.

259,654. FENCE. THOMAS M. WORTHINGTON, New York, N. Y. Filed Apr. 22, 1882. (No model.)



Claim.—1. In combination with brackets D, adapted to be secured to the top of a fence, a barbed roll journaled therein, for the purpose set forth.

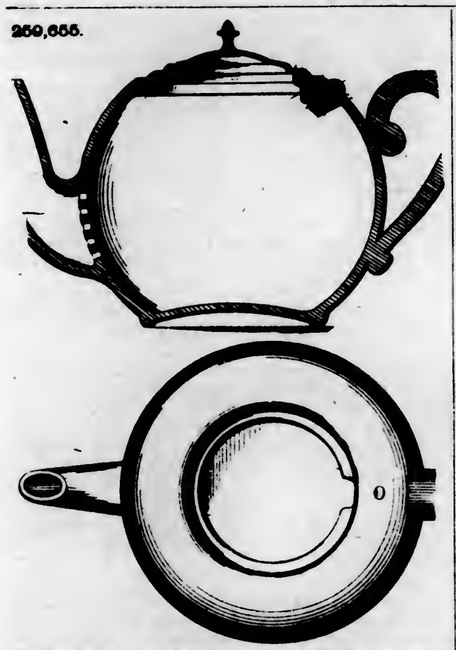
2. In combination with a fence and brackets thereon, a roller, B, having gudgeons or journals *b b*, which turn in said brackets, and a strip, C, which is wound on said roller and provided with barbs *c*, substantially as set forth.

259,655. DEVICE FOR ATTACHING COVERS TO VESSELS. HENRY WRIGHT, Pittsburg, Pa., and ISAAC W. KNOWLES, East Liverpool, Ohio. Filed Apr. 18, 1882. (No model.)

Claim.—1. The combination, with a stoneware, porcelain, earthenware, or glass vessel, of a metallic cover and a hinge pivotally secured to said cover and provided with a depending and rearwardly-extending arm resting against and secured to the inner face of the vessel, substantially as set forth.

2. The combination, with a stoneware, porcelain, earthenware,

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or glass vessel, of a metallic cover and a hinge pivotally secured to said cover and provided with a depending and rearwardly-extending arm adapted to conform to and resting against the inner face of the vessel, and screws (one or more) which pass through perforations in the vessel and into the arm of the hinge.

3. The combination, with a stoneware, porcelain, earthenware, or glass vessel, of a metallic cover, a hinge pivotally secured to said cover and provided with a vertical arm and a cross-bar, and screws which pass through perforations in the vessel and secure the said cross-bar to the inner face thereof.

4. The combination, with a vessel the open top of which is provided with a flange, of a metallic cover, a hinge pivotally secured to said cover and provided with a vertical arm and a cross-bar, the vertical arm of the hinge being received in a slot formed in the said flange, and screws which pass through perforations in the vessel and secure the cross-bar of the hinge to the inner face thereof.

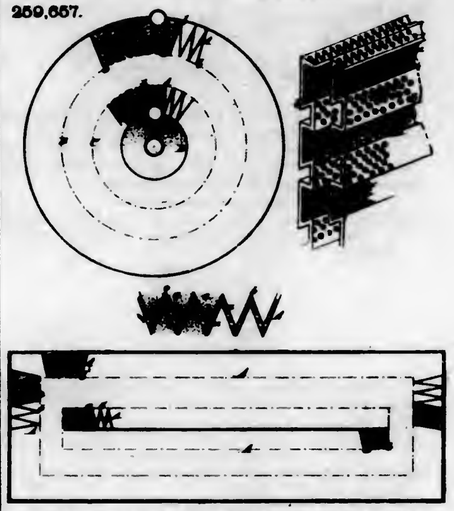
259,656. COMBINED BUTTON AND FASTENING. WILLIAM H. HAHL, New York, N.Y. Filed Mar. 21, 1882. (Model.)



Claim.—The button-fastener B, made of a single strip of metal bent to form a closed loop, c, about the shank of the button, and having depending prongs *b*, bent as described, whereby they are adapted for being clinched in the leather or fabric, with both prongs pointing in the same direction, as and for the purpose set forth.

259,657. SECONDARY BATTERY. JOHN S. SELLON, Hatton Garden, County of Middlesex, England. Filed Apr. 3, 1882. (No model.) Patented in England Sept. 19, 1881, No. 3,926.

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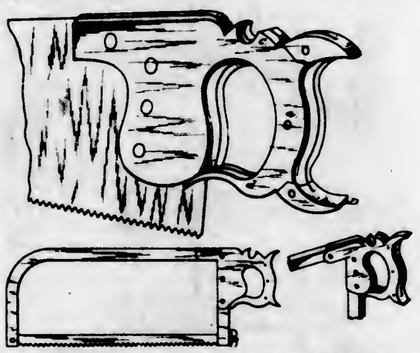


Claim.—1. An electrode for secondary batteries or accumulators having one or more receptacles wherein the active material, or material to become active, is packed, and provided with holes or perforations in the walls of said receptacles, substantially as described.

2. In a secondary battery or accumulator, a perforated battery-plate having formed therein recesses or receptacles, and having the active material, or material to become active, packed in said recesses or receptacles, substantially as described.

REISSUES.

10,185. SAW-HANDLE. EMANUEL ANDREWS, Williamsport, Pa. Filed Mar. 11, 1882. Original No. 159,140, dated Jan. 26, 1875.



Claim.—1. In combination with a grip-saw handle, the saw-blade extended centrally into the same to or beyond the grip-opening, for strengthening the handle, as set forth.

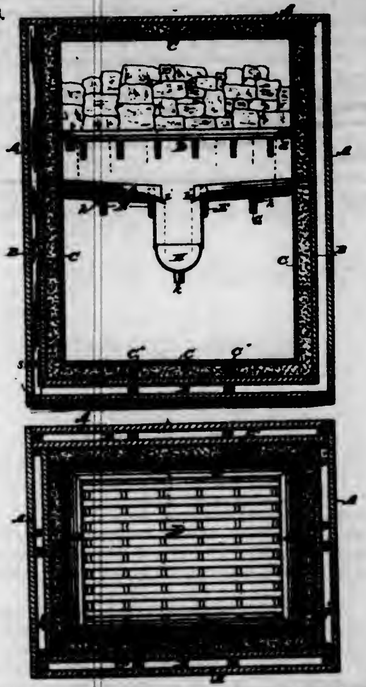
2. In a grip-saw wherein the blade extends centrally into the grip-handle for strengthening the same, the construction of the blade-butt, as described, whereby it is made to coincide in contour with that of the handle, as set forth.

3. In combination with a hand-saw handle, the saw-blade extending centrally through the same and conforming to the outlines thereof, substantially as described and shown.

4. In a saw-handle, the tips or horns D, substantially as described and shown.

10,186. ICE-HOUSE, ICE-BOX, AND REFRIGERATOR. JUSTUS BRAUER, Philadelphia, Pa. Filed May 22, 1882. Original No. 244,376, dated July 19, 1881.

10,186.



Claim.—1. In an ice-house or refrigerator having an air-space between its inner and outer walls, A B, a lining, C, forming a space to be filled with closely-packed granulated cork of nearly uniform size, substantially as specified.

2. An ice-house or refrigerator consisting of inner and outer walls, A B, forming an air-space, and a lining, C, forming a space to be filled with closely-packed granulated cork, a grated floor, and a drip-floor, constructed substantially as shown and specified.

3. In an ice-house or refrigerator having inner and outer walls, forming an air-space, and a supplementary space packed with closely-rammed granulated cork, the inclined ledge *d*, arranged as shown, and for the purpose herein specified.

4. In an ice-house or refrigerator provided with an air-space between its inner and outer walls, and having a supplementary space packed with closely-rammed granulated cork, a drip-floor consisting of girders supporting removable ledges, provided with gutters *f*, overhanging edges *e*, and recesses *g*, constructed substantially as shown and specified.

5. In an ice-house or refrigerator having inner and outer walls, forming an air-space, an inner space packed with closely-rammed granulated cork, a drip-floor constructed as described, and gutters for carrying off the drip-water, all arranged substantially as shown and specified.

6. The ice-house herein described, having inner and outer walls, A B, forming an air-space, lining C, forming a supplementary space packed with closely granulated cork, a grating, D, inclined ledge *d*, drip-floor E, provided with removable ledges F, and gutter H, all constructed and arranged as shown and specified.

7. An ice-house having inner and outer walls, A B, forming an air-space, and a lining, C, forming a space packed with closely-rammed granulated cork, in combination with a grated floor, D, inclined ledge *d*, drip-floor E, constructed substantially as described, and suitable gutters for carrying off the drip-water, all substantially as specified.

8. An ice-house, refrigerator, &c., having inner and outer walls, A B, forming an air-space, with an inner lining, C, the space between which and wall B is filled with granulated cork of nearly uniform size and packed by ramming to form a compact mass, substantially as herein specified.

9. An ice-house or refrigerator having walls, sides, top, and bottom made double, and the space filled in with closely-packed granulated cork of nearly uniform size, forming a practically solid mass, substantially as specified.

10. An ice-house or refrigerator having double walls, sides, top, and bottom, and filled with granulated cork of nearly uniform size, and so closely packed as to form a practically solid mass, substantially as set forth.

11. In ice-houses or refrigerators, an open drip-floor composed of independent ledges arranged in such manner as to leave an unobstructed air-passage between the edges of said ledges and allow a free circulation of air, substantially as shown and specified.

12. In ice-houses or refrigerators, an open drip-floor composed of removable ledges arranged on supports in such inclined manner that the adjoining edges overlap each other to prevent water dripping into the room below, while the spaces between the edges form unobstructed passages for the circulation of air, substantially as specified.

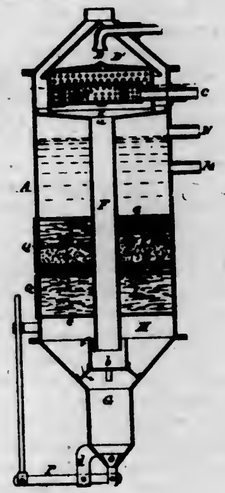
13. In ice-houses or refrigerators, the ledges F, consisting of boards *b*, having recessed sides *g*, and covered with suitable metal, *c*, bent over the edges, as at *e*, and forming a tongue, *i*, substantially as shown and described.

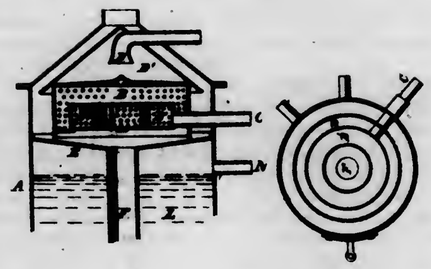
10,187. TREATING ANIMAL-FATS. COMMERCIAL MANUFACTURING COMPANY, CONSOLIDATED, New York, N.Y., assignee, by mesne assignments, of Hippolyte Mège, deceased. Filed May 26, 1882. Original No. 145,612, dated Dec. 30, 1873; Reissue No. 5,886, dated May 13, 1874; Reissue No. 6,436, dated Sept. 24, 1878.

Claim.—1. The improved material herein described, produced by treating animal-fats so as to remove the tissues and other portions named, with or without the addition of substances to change the flavor, consistency, or color, as set forth.

2. The process herein described of treating animal-fats in the production of oleomargarine.

10,188. FEED-WATER HEATER. ARCHIBALD KENNEDY and JOHN H. BRENNEMAN, Muscatine, Iowa, assignors of one-third to Charles Page, same place. Filed Apr. 15, 1882. Original No. 134,085, dated Feb. 27, 1873.





Claim.—1. In an apparatus for condensing steam and heating and purifying feed-water, the steam receiver and distributer B B', arranged in a tank under the cold-water-supply pipe, substantially as and for the purposes described.

2. The combination, in the tank A, with the receiver and distributer B B', of the diaphragm E and conducting-pipe F, constructed and arranged to conduct the heated water and condensed steam to the lower part of the tank for upward filtration, substantially as and for the purposes described.

3. The combination, with the pipe F, arranged below the diaphragm E, to conduct the water to the lower part of the tank A, of the vessel *b*, arranged below the filter-chambers K L and immediately above the mud-well G, to receive the descending water and allow it to ascend for filtration without coming in contact with the sediment below, substantially as described.

4. The combination, in the tank A, provided with the water-chambers and filter-chambers H I K L, located as set forth, of the receiver and distributer B B', the diaphragm E, the pipe F, the vessel *b*, and the mud-well G, substantially as and for the purposes described.

THE ELIOTYPE PRINTING CO. BOSTON

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

HARMET *v.* REESE *et al.*

Decided May 24, 1882.

1. PRIORITY OF INVENTION—ABANDONMENT AFTER REDUCTION TO PRACTICE—EX PARTE QUESTION.

When it appears that one of the parties to an interference has put the invention into actual operation before the appearance of the other inventors in the field, the question as to whether he has in any manner by his long delay lost his right to a patent therefor goes to the merits of his application, and is strictly *ex parte*.

2. SAME—LACHES—SUBSEQUENT INVENTOR.

An inventor who has perfected his invention cannot by neglect and laches forfeit his right to obtain a patent therefor in favor of a subsequent inventor.

3. SAME—LACHES AS AFFECTING FIRST AND SECOND INVENTOR.

No proof of laches on the part of the first and original inventor occurring subsequently to the perfection of the invention can avail a subsequent inventor, and no laches short of abandonment of the invention can defeat the right of the first inventor to the patent.

INTERFERENCE.—CASE A.

MANUFACTURE OF STEEL.

APPEAL from the Board of Examiners-in-Chief.

Application of Henri Harmet filed September 19, 1879. Application of Jacob Reese filed July 28, 1879. Application of Sidney G. Thomas filed May 20, 1879; patented July 29, 1879, No. 217,962.

Mr. Ellis Spear for Harmet.

Messrs. Bakewell & Kerr for Reese.

Mr. W. H. Finckel for Thomas.

MARBLE, *Commissioner:*

The invention in this case is defined in the following language, viz:

Desiliconizing the molten iron in a converter with a silicious lining and then removing the metal to and further refining it in a converter with a basic (calcareous) lining.

Thomas and Harmet appeal from the decision of the Board of Examiners-in-Chief awarding priority of invention to Reese. It appears from the testimony exhibited in behalf of Thomas and Harmet that their inventions were made in England and France, respectively. Thomas offers evidence to show that his invention was conceived in 1877; that it was shortly afterward communicated to others, and particularly to his agent, George H. Maynard, who arrived in this country March 29, 1879, and filed Thomas's application for a patent in this Office May 20, 1879. In behalf of Harmet it is shown that he is the inventor of the subject-matter of French Patent No. 129,111, taken out February 1, 1879, in the name of his father.

According to the rule made in this case by Mr. Commissioner Paine (*Thomas* v. *Reese*, 17 O. G., 195) Thomas's invention, for the purposes of this interference, must be held to date March 29, 1879, the date of its introduction into this country, and Harmet's invention must be held to date February 1, 1879, the date of his foreign patent.

The Examiner of Interferences and the Board of Examiners-in-Chief concur in finding that Reese practiced this invention as early as 1867. An examination of the testimony leaves no doubt that as early as 1866 Reese had a plant, illustrated in sketches offered in testimony, which consisted of the various appliances necessary to the practice of this invention. There was a cupola, beneath which was placed the first converter lined with a brick or silicious lining, and in convenient proximity a second converter lined with lime or basic lining, (Case A,) and also an open-hearth furnace lined with a basic lining, (Case B.) The workmen who were employed in operating this plant do not seem to have been informed of the rationale of the experiments, but they recall distinctly the actual operations performed, and their testimony fully substantiates the claim of Reese that he successfully practiced the invention in controversy at that time. At a later date, but before the dates given to the inventions of Thomas and Harmet, Reese recalled these circumstances to the recollection of some of the persons concerned, explained the nature of the invention, and announced his intention of obtaining a patent therefor. Various causes contributed to delay the filing of the application, but upon learning of the existence of rival claims Reese at once took steps to assert his rights. His application was filed July 28, 1879. Ordinarily evidence offered to show an invention at so remote a period as claimed by Reese in this case is accepted with great doubt. Owing, however, to the elaborate and costly appliances required for experiment in this line of invention and the number and character of assistants necessarily concerned in carrying them on, the testimony in this case is unusually satisfactory, and leaves no doubt as to the fact and nature of the invention.

It is urged that certain later patents taken out by Reese contain expressions which are inconsistent with the claim that he had then made the invention in controversy. A list of these supposed discrepancies is presented, but I am unable to conclude that the direct and circumstantial testimony as to facts should yield to these remote and insubstantial inferences. The patents referred to dealt, of course, with matters of public knowledge, and it was not incumbent upon Reese to disclose in those patents matters of private information, which were the fruit of his other inventions and discoveries.

Reese, then, having put the invention into actual operation before the appearance of the other inventors

in the field, the question arises whether he has in any manner by his long delay lost his right to obtain a patent therefor. This question goes to the merits of his application, and is, strictly speaking, *ex parte*. Counsel, however, have advanced the proposition that an inventor who has perfected his invention may by his neglect and laches forfeit his right to obtain a patent therefor in favor of a subsequent and independent inventor. This doctrine is, as I believe, foreign to the patent law. When a person has reduced an invention or discovery to a fixed, positive, and practical form, and made a full disclosure of its character to others his right to a patent is complete, (*Reed* v. *Cutter*, 1 Story, 590;) and if he foregoes that right no subsequent inventor can comply with the conditions upon which alone a patent can be granted. (*Pickering et al.* v. *McCullough et al.*, 13 O. G., 818.) If the first and original inventor abandons his invention to the public expressly or tacitly by neglecting seasonably to assert his exclusive right, he cannot recall that right, (*Mellus* v. *Silsbee*, 4 Mason, 108,) and still less can a later inventor appropriate it to himself. (*American Hide Company* v. *American Tool Company*, 4 Fish., 284.) Under these circumstances the first invention is not a waif or stray which can be reclaimed at will by its original owner or converted by a subsequent discoverer to his own use. It has passed into the public domain, and the public is already, therefore, in possession of the knowledge of the invention which would form the consideration of the grant of a patent to the second inventor. (*Consolidated Fruit Jar Company* v. *Wright*, 4 Otto, 92.) I decline, therefore, to rule, as requested, that there is a difference between the questions of laches and abandonment after the reduction of the invention to its final form. No proof of laches on the part of the first and original inventor occurring subsequently to the perfection of the invention can avail a subsequent inventor, and no laches short of abandonment of the invention can defeat the right of the first inventor to the patent.

In the case of *Rowley* v. *Mason* (2 Am. L. T., U. S. R., 106,) Mr. Justice Fisher, extending the application of the doctrine of diligence, said:

> The same sound policy seems to me to require that, as between two independent inventors, the one who has perfected his invention but chooses to sleep upon it for nine years, or even a less period, and is only aroused from his slumbers by the application of a subsequent inventor for his patent, has no right to complain if that application should meet with success.

This judgment was founded on those undoubted authorities that hold the first inventor to the exercise of a reasonable diligence in the development and perfection of his invention. The race of diligence, however, which is referred to in these decisions ends with a reduction of an invention to its final form, and no subsequent inventor can then engage in rivalry with an inventor who has already reached the goal. The same results follow from the express provisions of the statute. Section 4886 declares that the first and original inventor alone is entitled to the grant of a patent. This rule is subject to the implied exception that an invention made abroad unpatented and unpublished will not bar a second inventor. With this exception and the case of lost arts, where the prior invention has passed into oblivion, (*Gaylord* v. *Wilder*, 10 How., 477,) the rule is, so far as I am aware, universal. Section 4920 leads to the same conclusion. Under this section a patent granted to a second inventor may be invalidated by proof that the invention was known and used by others prior to the invention by the patentee, or, in the language of the fourth special matter, which may be given in evidence under the general issue, (section 4920, fourth clause,) "that he was not the original and first inventor or discoverer of any material or substantial part of the thing patented," and it is not necessary to show under this defense that such first inventor is still diligently following up his invention or that he intends or is in a position to obtain a patent therefor. In no decided case of which I am aware has such a question been raised under this defense. If, then, the perfected invention of the first inventor will defeat the grant of a patent to the second inventor, although such first invention has not been diligently prosecuted to a patent, it follows that no such patent should be granted to the second inventor as the result of an interference. (5 Opinions of the Attorneys-General, 18; *Chambers et al.* v. *Duncan et al.*, 10 O. G., 787.)

The case of *Kendall* v. *Windsor* (21 How., 322) has often been referred to in this connection as showing that a slothful inventor might forfeit his rights to his perfected invention in favor of a more diligent and meritorious inventor. (*Erbe* v. *Hill*, C. D., 1869, 29; *Hosea Ball*, C. D., 1870, 97; *Gray* v. *Hale et al.*, C. D., 1871, 129; *Farmer* v. *Brush*, 17 O. G., 150.) I do not consider the case as an authority for such a doctrine. A careful examination of the case shows that the only question was whether an inventor had forfeited to the public his right to a patent by secretly practicing his invention for a number of years, and there was no intimation in the case that a subsequent inventor had secured or might secure a monopoly of the same invention. The language of the court is:

> That which is once given to or is invested in the public cannot be recalled nor taken from them. * * * It is the unquestionable right of every inventor to confer gratuitously the benefits of his ingenuity upon the public, and this he may do either by express declaration or by conduct equally significant with language—such, for instance, as an acquiescence with full knowledge in the use of his invention by others—or he may forfeit his rights as an inventor by a willful or negligent postponement of his claims or by an attempt to withhold the benefit of his improvement from the public until a similar or the same improvement should have been made and introduced by others.

Upon the whole case I find that Reese is the prior inventor. In the further treatment of the case the Examiner will determine whether the facts disclosed in the accompanying record show that Reese has lost his right to obtain a patent by reason of abandonment or public use.

The decision of the Board of Examiners-in-Chief is affirmed.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Eastern District of New York.

SCHMIDT *v.* FREESE.

Decided May 10, 1882.

LETTERS PATENT NO. 197,328—DROPPING AN ELEMENT—INFRINGEMENT.

When the defendant dispensed with one element of the combination claimed in the patent and substituted another whereby the same result is accomplished in a manner different from that described in the patent, *Held* that there was no infringement.

Mr. F. v. Briesen for the complainant.
Mr. W. C. Hauff for the defendant.

BENEDICT, *J.*:

This action is for an injunction and account. It is based upon two letters patent for improvements in feed mechanism for button-hole sewing-machines. A form of machine conceded to be made and sold by the defendant is alleged to infringe both the patents set forth in the bill. The defendant denies the infringement and also disputes the validity of the patents.

The first patent set forth in the bill is No. 197,598, dated November 27, 1877. This patent has seven claims. Infringement of the second and fifth claims is charged; but the charge as to the fifth claim has been abandoned, leaving the second claim only to be considered here.

The object of the invention set forth in this claim is to simplify the mechanism for imparting motion to the feed-wheel of a button-hole sewing-machine. The specification refers to a former patent, No. 183,333, and states that, instead of the jointed lever described in such former patent as a means of transmitting to the feed-wheel the motion of a rotary shaft, the patentee has invented a system of independent levers. A particular description of these levers is given in connection with drawings attached. One of these levers, E, which is pivoted to the frame of the machine and subjected to the action of two toes that project from a rotary shaft, is termed the "operating-lever." When this lever is oscillated by means of the rotating shaft its motion is transmitted to another lever, D, termed the "intermediate lever." This intermediate lever, when oscillated by the action of the operating-lever, in turn transmits its motion to a sliding feed-dog, by which an intermittent rotary motion is imparted to the feed-wheel.

The words of the claim are as follows:

> The sliding feed-dog C, combined with the intermediate lever D, operating-lever E, and with the shaft F, having the toes *l* and *m*, substantially as specified.

This claim is for a combination of old devices. Friction-feeds as distinguished from ratchet-feeds moved by a rotating shaft have long been employed in sewing-machines. Similar devices to those employed by the plaintiff have often been used to produce similar results. All that is claimed to be new in the plaintiff's invention is the particular combination described in the patent.

In the machines made by the defendant the feed-wheel is made to rotate by the action of a sliding feed-dog, as in the plaintiff's machine. The motion of the feed-dog is effected by the action of a rotating shaft in connection with an operating-lever, as in the plaintiff's machine; but the defendant dispenses with the intermediate lever, which the plaintiff employs. By changing the relative position of the operating-lever and the feed-dog a sliding link is employed to transmit the motion of the operating-lever to the feed-dog instead of an intermediate lever. Here lies the point of the controversy. The plaintiff contends that the sliding link employed by the defendant is in fact a lever, and the intermediate lever of the plaintiff's combination, while the defendant insists that his sliding link is in no sense a lever, but a different thing, the employment of which changes the combination. Upon this question my opinion is in favor of the defendant's contention. I consider it plain that in the defendant's machine there is no lever intermediate the feed-dog and the operating-lever. There is a piece intermediate the feed-dog and the operating-lever employed to transmit the motion of the operating-lever to the feed-dog, but that piece is not a lever in any sense of the term. It has no fulcrum, and its slight vibratory motion is opposite to the direction in which the end of the lever by which it is operated moves. The plaintiff's expert disposes of this question adversely to the plaintiff when he says, (Plaintiff's Record, page 177:)

> The necessities of the motion of the feed-dog alone cause the vibration of the piece on its pivot.

This conclusion that the sliding link of the defendant's machine is not a lever is decisive of the case so far as the patent under consideration is concerned, for there is no evidence on which to found a conclusion that the defendant's sliding link, not being a lever, is nevertheless an equivalent for the plaintiff's intermediate lever. Indeed, reliance upon the doctrine of equivalents was expressly disclaimed at the argument, and the case, so far as the patent under consideration is involved, was made to depend upon the question whether the defendant's sliding link is a lever. My determination, therefore, is that the plaintiff has failed to prove infringement of the second claim of the plaintiff's patent of 1877.

The complainant's second patent, No. 219,656, dated September 16, 1879, relates to improvements on the mechanism described in the letters patent which have just been considered and in Patent No. 183,333, dated October 17, 1876.

The invention described in this 1879 patent is stated to consist in "a new mechanism for regulating the length of stitch." All the mechanism covered by the second claim of the patent of 1879 is retained, and the necessary change in motion of the feed-wheel from fast to slow is effected by the interposition between and its withdrawal from between the two contact-surfaces of the operating-lever E and the intermediate lever D of one arm of an elbow-lever, J, which is pivoted upon the face of the operating-lever next the face of the intermediate lever. The end of the operating-lever E in contact with the intermediate lever D is step-shaped, and the arm of the elbow-lever is interposed in such a manner that it partly closes or equalizes and fills out the step, whereby the outline of the contact-surface of the operating-lever is changed, and in consequence the vibration of the intermediate lever changed. This interposition and withdrawal of the arm of the elbow-lever is effected by vibrating the elbow-lever upon its pivot. To this end its second arm is by an elastic rod, I, connected to a lever, H, which is caused to swing by means of a pin, *t*, entering a groove, *a*, in the feed-wheel.

There are three claims. The first claim is as follows:

> 1. The combination of the lever E and lever D with the intermediate pivoted elbow-lever J, and with mechanism for vibrating the said parts on their respective pivots, substantially as herein shown and described.

The second claim is as follows:

> 2. The combination of the lever H, elastic rod I, with the pivoted elbow-lever J, and with the levers E and D, and with mechanism F *s m*, for oscillating the lever E, substantially as herein shown and described.

The third claim is as follows:

> 3. The lever E, having fixed contact portion *t* and elbow-lever J, in combination with the lever D, and with the spring-rod I, passing through the elbow-lever J, and with the lever H, grooved wheel B, and actuating-shaft F, substantially as herein shown and described.

It will be observed that each of these claims is for a combination one essential element whereof is the intermediate lever D, already noticed in considering the

plaintiff's patent of 1877. The conclusion already announced that the defendant's machine has no intermediate lever affords one ground, therefore, for holding that such machine does not infringe the patent of 1879 because it omits one element of the combination claimed in that patent by which motion is imparted to the feed-dog and substitutes another whereby the same result is accomplished in a manner different from that described in the patent. There are, besides, other grounds to be found in the difference between the mechanism employed by the plaintiff to secure a fast and slow motion of the feed-wheel and the mechanism employed by the defendant to secure the same result. As has been already noticed, the elbow-lever employed by the plaintiff to change the motion of the contact end of the operating-lever is pivoted upon the face of the operating-lever next the face of the intermediate lever and moves in the direction of the contact plane. From this method of construction two difficulties arise. One difficulty, not wholly insignificant, is that the elbow-lever, when so pivoted, is liable to work loose upon its pivot. Another, more important, is that the free arm of the elbow-lever may be moved by the lever H to interpose between the operating and the intermediate lever before those levers have separated sufficiently to permit such interposition, in which case breakage must result, unless provision be made for a yielding of the parts. To obviate this difficulty the plaintiff employs an elastic rod to transmit motion from the lever H to the elbow-lever. This rod, by springing where the contingency suggested arises, avoids breakage.

Both the difficulties alluded to are avoided in the defendant's machine. Instead of interposing one arm of an elbow-lever pivoted upon the operating-lever for the purpose of changing the outline of the contact surface of the operating-lever, the defendant employs an elbow-lever to move a sliding cam upon the operating-lever, which cam, by sliding in the direction in which the part to which it transmits motion moves, changes the outline of the contact end of the operating-lever, and thereby changes the speed of the feed-wheel. By this arrangement the interposing pieces or cam can be and is kept steady in its slide without danger of working loose, and all danger of any obstacle being presented to its action whenever moved by the lever H is removed. There is therefore no need in the defendant's machine of an elastic rod, I, such as is employed in the plaintiff's machine, and this feature, which is an essential element of the plaintiff's combination, is dispensed with.

The court has been pressed to say from an inspection of the defendant's machine that the connecting-rod employed to transmit motion from the lever H to the elbow-lever is so made as to be elastic; but this cannot be said, especially in view of the fact that there is no necessity requiring the rod to be elastic, and the positive testimony that the rod is not a spring-rod, and does not yield in the direction in which it transmits motion. These differences in the action of the two machines which I have thus endeavored to point out are, in my opinion, substantial and sufficient to compel the conclusion that the defendant's arrangement is not a colorable modification in form of the plaintiff's arrangement for regulating the length of stitch, but entitles the defendant's machine to be considered as substantially different from the plaintiff's, and not an infringement upon any of the claims of the patent under consideration.

The bill must therefore be dismissed, and with costs.

U. S. Circuit Court—Eastern District of Pennsylvania.

WALLICK *v.* CANTRELL *et al.*

Decided May 3, 1882.

LETTERS PATENT NO. 163,825 SUSTAINED.

Letters Patent No. 163,825, for an improvement in apparatus for enameling moldings, sustained.

Mr. Charles Howson for the complainant.
Mr. J. W. Shortledge for the defendants.

BUTLER, *J.*:

A very few lines will explain our views of this case. Letters Patent No. 163,825, for an improvement in apparatus for enameling moldings, were issued to the plaintiff, May 25, 1875, containing a single claim, as follows:

An enameling-box divided into two compartments by a slotted partition, and having openings at the end in a line with the slot in the partition, all substantially as and for the purpose set forth.

The bill charges infringement of this patent. The defenses set up and urged at the hearing were, first, that the patent is invalid, and, second, that the defendants have not infringed. The first was based principally on an allegation of prior use. As respects this it is sufficient to say that in our judgment the allegation is not sustained. A written review of the testimony would be of no value. A careful examination has satisfied us that its weight is against the defendants, while the burden of proof is on them.

The suggested objection to the claim is unfounded. The claim embraces nothing that should not have been included. It covers simply the peculiar enameling-box invented and constructed by the plaintiff and shown by the model.

That the defendants' device infringes the plaintiff's we cannot doubt. It was designed for the same purpose and accomplished it in the same way and substantially by the same means. The mechanical appliances are virtually undistinguishable, and the mode of operation and the result are identical. Without the expert testimony, which is very positive, this conclusion is fully sustained by inspection of the two boxes and their work.

A decree must be entered accordingly.

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[BY AUTHORITY OF CONGRESS.]

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Issue of June 20, 1882.

Patents	334	No. 259,658 to No. 259,991, inclusive.
Designs	25	No. 12,978 to No. 13,002, inclusive.
Trade-Marks	7	No. 9,465 to No. 9,471, inclusive.
Labels	3	No. 2,701 to No. 2,703, inclusive.
Reissues of patents	2	No. 10,139 to No. 10,140, inclusive.
Total issue	371	

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Cuba	.....	.....			
Denmark	.....	.....	Total to citizens of foreign countries	19	.....
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DESIGNS.

12,978 and 12,979.—CARPET.—*Eugene A. Crowe*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed May 12, 1882. Term of patents 3½ years.

12,980.—CARPET.—*William McCallum*, Yonkers, N. Y., assignor to *The Bigelow Carpet Company*, Clinton, Mass. Application filed April 22, 1882. Term of patent 3½ years.

12,981.—INKSTAND.—*John B. Davids*, New York, N. Y. Application filed April 24, 1882. Term of patent 14 years.

12,982.—ORNAMENTATION OF GLASSWARE.—*Philip MacDonald*, Corning, N. Y., assignor to *Thomas G. Hawkes*, same place. Application filed March 21, 1882. Term of patent 7 years.

12,983 to 12,989, inclusive.—CARPET.—*Edwin Fisher*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed May 12, 1882. Term of patents 3½ years.

12,990.—TOY PISTOL.—*Edward R. Ives*, Bridgeport, Conn., assignor to *Ives, Blakeslee & Co.*, same place. Application filed May 1, 1882. Term of patent 7 years.

12,991 and 12,992.—CARPET.—*Edward Poole*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed May 12, 1882. Term of patents 3½ years.

12,993.—CHAIR.—*Joseph Sutter*, New York, N. Y. Application filed May 8, 1882. Term of patent 14 years.

12,994 to 13,000, inclusive.—CARPET.—*Charles W. Scapp*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed May 12, 1882. Term of patents 3½ years.

13,001.—CARRIAGE-BODY.—*William P. Uhlinger*, Philadelphia, Pa. Application filed April 27, 1882. Term of patent 7 years.

13,002.—TABLE-MAT.—*Frank Westcott*, Seneca Falls, N. Y. Application filed May 6, 1882. Term of patent 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

9,465.—CIGARS.—*Julian Alvarez*, New York, N. Y. Application filed May 23, 1882.
"The portrait of Henry Clay."

9,466.—HAIR-TONIC.—*Henry Bauer*, Sedalia, Mo. Application filed May 3, 1882.
"The portrait of Hon. George G. Vest, United States Senator from Missouri."

9,467.—PLUG AND OTHER CHEWING-TOBACCO.—*Joel E. Carr* and *R. B. Dula*, Wentzville, Mo. Application filed April 24, 1882.
"A pick and the word 'PICK.'"

9,468.—CHEWING-TOBACCO.—*Harris, Sampson & Co.*, Reidsville, N. C. Application filed September 10, 1881.
"The name or portrait of Mary Anderson."

9,469.—HOMŒOPATHIC CHOCOLATE.—*Henry L. Pierce*, Boston, Mass. Application filed April 19, 1882.
"The obverse and reverse of the medal of the French Exposition of 1867, surmounted by an arabesque figure sustaining a scroll, upon which is printed, upon a background of black, the word 'HOMŒOPATHIC,' and on the lower part the words 'W. BAKER & Co.'"

9,470.—CEMENT OR PUTTY.—*Smith Bowen*, Philadelphia, Pa. Application filed April 22, 1882.
"The arbitrarily-selected word 'IRON.'"

9,471.—CIGARS.—*Carl Upmann*, New York, N. Y. Application filed May 13, 1882.
"The arbitrary words 'SERGEANT MASON.'"

LABELS.

2,701.—Title: "CHROMO LOZENGES."—*Goldschmidt & Co.*, New York, N. Y. Application filed April 20, 1882.

2,702.—Title: "E. WRIGHT'S COUGH BALSAM."—*Eunice L. Hoffman*, San Francisco, Cal. Application filed May 26, 1882.

2,703.—Title: "STORAGE ON BAGGAGE."—*Hugh A. Winter*, Chicago, Ill. Application filed May 27, 1882.

DISCLAIMER.

8,555, (Reissue.)—*George B. Dunham*, assignor to *John G. Buzzell & Co.*, of Lynn, Mass., patent dated January 2d, 1879. IMPROVEMENT IN BUFFING-MANDRELS. Disclaimer filed June 12, 1882, by the assignees.

Enter their disclaimer to the third and fourth claims of said letters patent, which are in the following words:

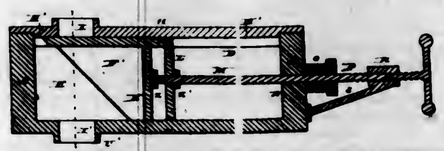
"3. In combination with the divided roller B, provided with conical ends, the nuts F, made concave upon their inner faces and fitted upon the threaded portions *a* of the shaft A, substantially as and for the purpose shown.

"4. The shaft A, provided with the threaded portions *a*, the divided roller B, having conical ends and covered with felt E and abrasive material G, and the nuts F, having conical inner faces, when said parts are constructed and combined substantially as and for the purposes specified."

PATENTS

GRANTED JUNE 20, 1882.

259,658. PAPER-PULP-DIGESTER SLIDING VALVE. THEOPHILUS ATCHESON, Philadelphia, Pa., assignor to himself and JOHN SAUNDERS, Wilmington, Del. Filed Mar. 23, 1882. (No model.)



Claim.—1. In a valve for paper-pulp digesters, the combination of chest A H, seat H', sliding valve F, with its inclined pieces F' F', full back K to the sliding valve, wedges E E, for throwing the upper surface of the valve F truly against the seat H', and a stem or rod, M, for opening and closing the valve, substantially as described.

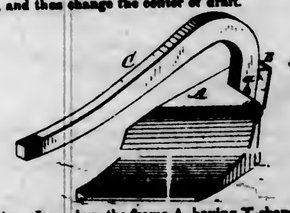
2. In a valve for paper-pulp digesters, the combination of chest A H, seat H', sliding valve F, with its inclined pieces F' F', full back K to the sliding valve, detachable adjustable guides D D, wedges E E, for the purpose described, and a stem or rod, M, to open and close the valve, substantially as described.

3. In a sliding valve for discharging the contents of vessels after the treatment of said contents, the combination of chest A H, seat H', sliding valve F, with its inclined pieces F' F', wedges E E, for throwing the valve and its seat into contact, and stem M, to open and close the valve, substantially as described.

4. In a sliding valve for discharging the contents of vessels after the treatment of said contents, the combination of chest A H, seat H', sliding valve F, with its inclined pieces F' F', wedges E E, for throwing the valve and its seat into contact, adjustable removable guides D D, and stem M, to open and close the valve, substantially as described.

259,659. PLOW. ALBERT BALL, Canton, Ohio. Filed Dec. 17, 1881. (No model.)

Brief.—The plow-beam can be attached to either side of the bracket, and thus change the center of draft.

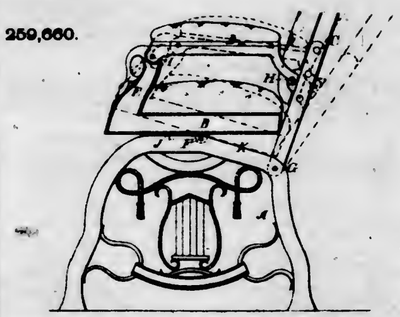


Claim.—In a plow, the frame A, having T-shaped bracket B at its rear, in combination with the adjustable plow-beam C, connected thereto, substantially as and for the purpose set forth.

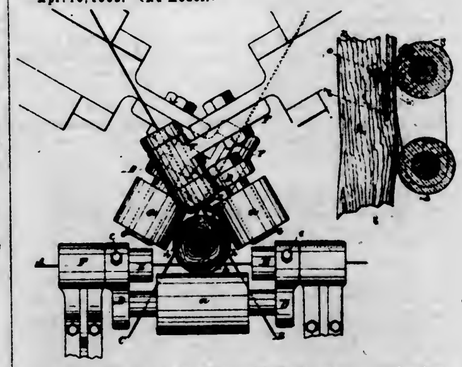
259,660. BARBER'S CHAIR. EUGENE BRENNEMANN, Cincinnati, Ohio. Filed Nov. 17, 1881. (No model.)

Claim.—In barber-chairs, the combination of the base, having on the upper side the horizontal surface J and rearwardly-sloping surface K, with the seat B, centrally hinged, as shown, having the upturned arms E at the front, and with the back C, having the lower side hinged to the base A, and the arm-rest D, connecting the standard E and back C, substantially as and for the purpose herein set forth.

259,660.



259,661. BAND-SAW GUIDE. WILLIAM BOWERS, Somerville, assignor to himself and ROBERT WILLIAMS, Boston, Mass. Filed Apr. 10, 1882. (No model.)

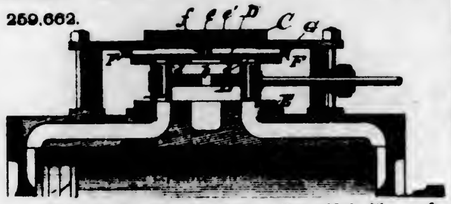


Claim.—1. In combination with the hand-saw, mechanism, substantially as described, for guiding it and bending it laterally, in order to cause it to cut in a pole a kerf in parallelism with the median longitudinal line of the surface of the hoop or portion separated by it from the pole, such mechanism consisting of the two rollers *a b*, their sustaining lever or levers D, and the grooved journal E to each of such levers, all being arranged with the saw and applied substantially as set forth.

2. The combination of the kerf spreader or opener H with the saw and the mechanism for guiding it and bending it laterally, such mechanism consisting of the grooved journal E, its carrying-lever D, and its pressure-rollers *a b*, all being arranged, applied, and operated essentially as set forth.

259,662. BALANCED SLIDE-VALVE. WESLEY S. BROWN, Richmond, Ind. Filed Dec. 24, 1881. (No model.)

259,662.



Claim.—1. The plate D and piston C, provided with a perforation, *e*, extending through both, in combination with the valve-chest cover G, provided with the cavity *e'*, substantially as and for the purpose specified.

2. The auxiliary balanced valve-seat D, in combination with the guide-lugs F of the valve-chest cover and the slide-valve, substantially as and for the purpose specified.

3. In combination with the valve and ordinary seat, the auxiliary seat D, piston C, and hollow neck *f*, connecting the seat and piston and establishing communication between the exhaust-cavity of the valve and the cylinder-cavity of the steam-chest cover, substantially as set forth.

259,663. VEHICLE-SPRING. JAMES H. BRADLEY, Plattsburg, N. Y., assignor to William E. Smith, same place. Filed Mar. 31, 1882. (No model.)



Claim.—1. The side springs arranged in pairs, as described, one spring of a pair being attached to one side of the transverse middle of the body and the other spring to the other side, as set forth.

2. The pair of springs *a a'*, each having a long and a short arm, the long arm of one coming by the short arm of the other, as and for the purpose set forth.

3. The shackle D, having the lip *d'* and the two rigid aligned eyes *e* extending from the stock *d* horizontally, in combination with the loose supporters or stirrups A, one secured to each eye, as set forth.

259,664. VEHICLE-SPRING. JAMES H. BRADLEY, Plattsburg, N. Y., assignor to William E. Smith, same place. Filed Mar. 31, 1882. (No model.)



Claim.—1. The shackle E, having perforated lugs *g g* and the slot *l*, as set forth.

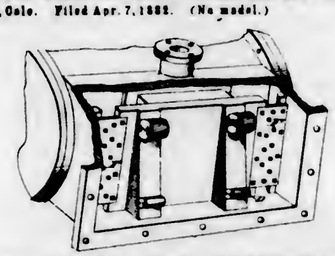
2. A pair of springs, in combination with the slide-shackles E, one end of each spring being secured and the other resting loosely in its shackle, as shown.

259,665. SPRING-WASHER. THOMAS W. BROOMALL, West Chester, and EVAN A. HENCHE, Christiana, Pa. Filed Apr. 27, 1882. (No model.)



Claim.—The serpentine spring-washer A, of the form substantially as shown, having outwardly-projecting bearing-points *a a*, *b b*, and *c* and inwardly-projecting points *d d*, *e e*, said washer being concave laterally and horizontally throughout its entire length, substantially as and for the purpose set forth.

259,666. BALANCED SLIDE-VALVE. ELA A. BURNAP, Denver, Colo. Filed Apr. 7, 1882. (No model.)



Claim.—1. In a balanced slide-valve, a balance-plate provided with elastic plates at its ends connected with the valve-chest, so as to prevent end or side thrust or displacement thereof, substantially as shown and described.

2. In a balanced slide-valve, a balance-plate held against end or side thrust or displacement by elastic plates arranged at its ends, and perforated to permit the escape of exhaust-steam, substantially as shown and described.

3. In a balanced slide-valve, a balance-plate and rolls acting thereupon by gravity to hold such plates steam-tight, substantially as shown and described.

4. In a balanced slide-valve, a balance-plate held against endwise or sidewise displacement, combined with gravitating rolls to keep it steam-tight, substantially as shown and described.

5. In a balanced slide-valve, the valve-chest provided with inclines and a balance-plate, combined with gravitating rolls interposed between them, substantially as and for the purpose set forth.

259,667. NOZZLE. THOMAS C. CHURCHMAN, Sacramento, Cal. Filed Jan. 30, 1882. (No model.)



Claim.—A nozzle for hose, having within a tapering core provided with flanges or leaves which terminate a short distance back of the muzzle, said core extending to and projecting slightly beyond the discharge end of the nozzle, terminating in an abrupt taper, substantially as and for the purpose herein shown.

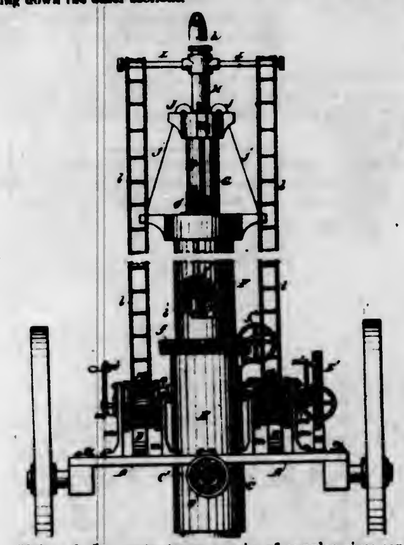
259,668. SNAP-HOOK. LUTHER A. CLARK, Strafford, Vt. Filed May 1, 1882. (Model.)



Claim.—The snap-hook for driving-reins, consisting of the metallic hook and its attached spring, as described, covered with leather throughout and over the whole extent, substantially as and for the purpose set forth.

259,669. PORTABLE WATER-TOWER. WILLIAM H. COGSWELL and THOMAS H. HULVIN, Chicago, Ill. Filed June 27, 1881. (No model.)

Brief.—The lower section of a series of pipes is set in a sleeve which is secured on a turn-table. The pipes are capable of rotation by cogs on the periphery of the lower section and a worm-wheel working therein. The second section is elevated by a rack and pinions, and carries up the third section with it by means of an arrangement of cords and sheaves. Flexible ladders wound upon drums on the base are secured to arms on the upper section and are carried up with it. Retracting cables are arranged so that when the top section is drawn in it causes the cables to contract, drawing down the other sections.



Claim.—1. In a water-tower, a series of annular pipes capable of longitudinal projection and retraction, forming at any point of extension one continuous pipe through which water received at the base of the lower section may be forced from the extremity of the upper section, in combination with means independent of the column of water for projecting and retracting the several pipes, substantially as described.

2. The combination, in a water-tower, of a series of annular pipes capable of longitudinal projection and retraction, and provided with mechanism for projecting and retracting the same, with a turn-table by means of which the tower may be rotated, substantially as and for the purposes described.

3. In a water-tower, an erectable stand-pipe so supported as to be capable of rotation, provided with a flange having cogs upon its periphery, in combination with mechanism for rotating the same, substantially as described.

4. In combination with a water-tower consisting of a series of longitudinally-adjustable sections, the cords *j* and K, with the sheaves J and *k*, so connected with the sections that the projection or retraction of a section shall project or retract the section contained within it, substantially as described.

5. The independent sleeve E, provided with trunnions, in combination with the tower and mechanism for rotating the tower within the sleeve, substantially as described.

6. The combination of the oscillating longitudinally-adjustable tower F G H with the sleeve E, provided with trunnions, the worm-wheel E', worm *c'*, rack *g*, pinion *g'*, worm O', cords *j* and K, flange *f*, screw *f'*, and turn-table B, constructed and arranged substantially as described.

259,670. BUCKWHEAT HULLING AND SEPARATING MACHINE. WILLIAM A. COWLEY, Stamford, N. Y. Filed Aug. 25, 1881. (No model.)

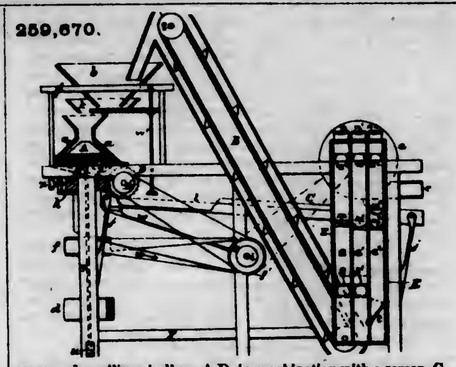
Claim.—1. The combination, in a buckwheat hulling and separating machine, of two separate and distinct hullers, being the primary huller, A, with case *a*, and the secondary or auxiliary huller, D, with stripping-block *h*, for the uses and purposes as herein set forth.

2. The vibratory screen C, in a buckwheat hulling and separating machine, with its sieves *l p*^{1} *p*^{2}, its spouts *m m'* *m*^{1} *m*^{2}, its diagonal bar *r*, and gate *s*, in combination with the compartmented draft-chest E, as specified and described.

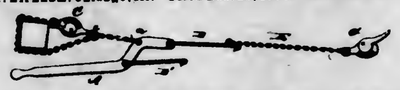
3. The compartmented draft-chest E, provided with air-passages *c' c*^{2} *c*^{3}, slides *n n'* *n*^{1} *o o'* *o*^{1}, spouts *s s'* *s*^{2}, and switch-valve *t*, in combination with the vibratory screen C, exhaust fan-blower *e*, and elevator B of a buckwheat hulling and separating machine, all substantially as and for the uses and purposes set forth and described.

4. In a buckwheat hulling and separating machine, the primary and auxiliary hullers, A D, in combination with a screen, C, draft-chest E, fan-blower *e*, and elevator B, arranged substantially as described, and for the purposes mentioned.

259,670.



259,671. WIRE-STRETCHER. GEORGE S. DEAN, Independence, Iowa, assignor, by mesne assignments, to H. H. Crandal and C. H. Kirkham, Chicago, Ill. Filed Dec. 30, 1881. (No model.)



Claim.—The combination of the angular lever A, the post-chain, its hook and clamp, the two hooks D D', pivoted directly to the lever A, on opposite sides of the angle *a*, the chain E, fastened permanently to the hook D, and the clamp G, fastened permanently to this chain, substantially as described.

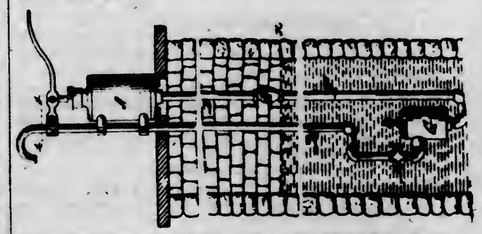
259,672. WAGON HANDLE AND SEAT SUPPORT. JOHN D. DENNIS, Lynn, Mass. Filed Apr. 3, 1882. (No model.)



Claim.—As a new article of manufacture for application to the side of a wagon, the handle and seat supporter constructed and combined substantially as set forth.

259,673. PUMP. JOHN DICKENS, Kingston, N. J. Filed Oct. 15, 1881. (No model.)

Brief.—The air which is compressed in the cylinder escapes through the valve C into reservoir D, and when the pressure within this reservoir is sufficient to overcome the pressure of the atmosphere upon the under side of the valve E and the force of a spring encircling the piston-rod the air passes into pipe F, where it exerts its force downwardly upon the column of water admitted through the inwardly-opening valve in the chamber G and elevates it through the pipe H, the check-valve *h* preventing back flow. The air is permitted to escape through the passages *c' c*^{2}, thereby relieving the pressure on the valve *g* and allowing the chamber G to fill.



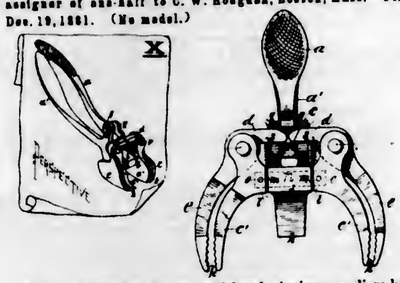
Claim.—1. The combination of an air-compressing cylinder or chamber, A, with a connecting-pipe, D, forming a reservoir for

a column of compressed air, a spring-valve, E, opening outwardly or downwardly, pipes F and H, and intermediate water-supply chamber, G, with valve *g*, substantially as shown and described.

2. The combination of an air-compressing cylinder or chamber, A, located above a fluid to be lifted, a downwardly-extending pipe, D, located below and communicating with said cylinder, a spring-valve, E, opening downwardly or outwardly and having ventages for admitting atmospheric pressure to its under side when closed, a water-pipe, F, connected to said valve, a supply-chamber submerged in the fluid to be lifted, and an ascending discharge-pipe having an upwardly-opening check-valve, said parts being constructed and combined for operation substantially as shown and described.

3. The valve E, having hollow stem *e'*, with lateral passages *e²*, and valve-body E', having corresponding passages, *e²*, whereby when said valve is closed on its seat external atmospheric pressure is admitted to its under side and when said valve is opened or unseated such external pressure is cut off, substantially as shown and described.

259,674. HAND-PINCHERS. MARTIN V. B. ETHERIDGE, Lynn, assignor of one-half to C. W. Hodgdon, Boston, Mass. Filed Dec. 19, 1881. (No model.)

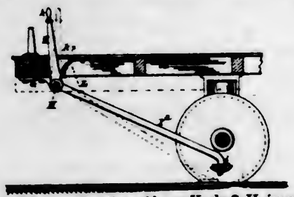


Claim.—1. The construction of hand pinchers or pliers having double clinching-jaws *c c'*, working simultaneously by one operation of the grip-handles *a a'*, in combination with the jaw-lever arms *d d*, the projecting arm *i*, and cam-lever *b*, constructed and arranged to operate substantially in the manner and for the purpose set forth.

2. The construction of the jaws *c c'*, provided with a rotating shaft, *a*, in combination with the elongated nose or bearing *l*, forming a part of the handle *a'*, essentially as specified.

259,675. STREET-CAR-SWITCHING SYSTEM. THOMAS B. ESTEP, Cincinnati, Ohio, assignor of one-half to Hiram M. Stephenson, Covington, Ky. Filed Oct. 13, 1881. (No model.)

Brief.—The cars are directed onto a siding through a flanged roller and curved and flanged guide-rail, the former, carried on the lower end of a frame, consisting of two converging bars secured at their upper ported ends to a cross-shaft, which turns in bearings on the under side of the car, a vertical handle extending therefrom up through the floor, the whole being held up out of operative position by a spring.



Claim.—1. The combination of lever K, shaft H, journaled in bearings secured to the car, spring L, converging bars I I, the stud *i*, attached to said bars at their junction, washer *j²*, and roller J, which is held to said stud by said washer, substantially as set forth.

2. The combination of lever K, shaft H, journaled in bearings secured to the car, spring L, converging bars I I, stud *i*, and roller J, with a fixed guide-rail adapted to engage said roller, substantially as and for the purpose set forth.

259,676. UMBRELLA OR PARASOL RUNNER. SAMUEL W. EVANS, Jr., Philadelphia, Pa. Filed Mar. 30, 1882. (No model.)

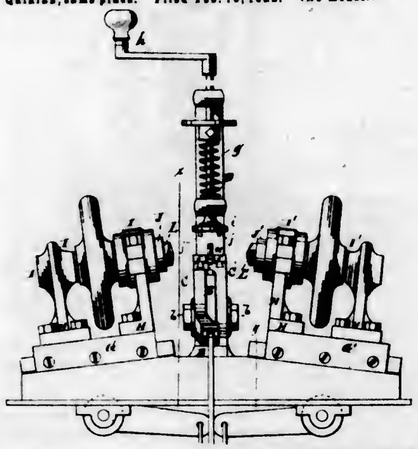
Brief.—A struck-up head surrounds the slot of the runner.

Claim.—The runner having a struck-up head surrounding the



slot, the edge of which is set out, whereby the runner is strengthened, and said edge does not project beyond either the inner or outer surface of the runner, substantially as and for the purpose set forth.

259,677. MACHINE FOR FORMING INTERLOCKING EYES. ROBERT FARIES, Decatur, Ill., assignor to Chambers, Boring & Quinlan, same place. Filed Feb. 10, 1882. (No model.)



Claim.—1. In a machine for forming interlocking eyes and knots on check-row chains for corn-planters, the inclined ways *f f'* and blocks G G', carrying the bearings I I', in combination with the shaft J J' and spindles L L', substantially as and for the purposes specified.

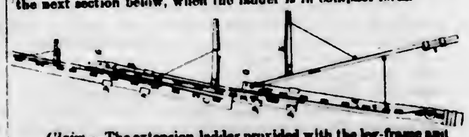
2. In a machine for forming interlocking eyes and knots on check-row chains for corn-planters, the combination of the hollow shafts J J', arranged opposite each other, the springs *s*, arranged therein, and the hollow spindles L L', arranged within the shafts and acted on by the said springs, and having their projecting ends constructed to turn the ends of the wires, said spindles having independent longitudinal movement within but revolving with the shafts, substantially as described.

3. In a machine for forming interlocking eyes and knots on check-row chains for corn-planters, the levers C C, provided with jaws *c c*, each jaw being provided with inclined grooves *d d*, in combination with the standard B, all constructed and operating substantially as and for the purpose specified.

4. In a machine for forming interlocking eyes and knots on check-row chains for corn-planters, the inclined hollow shafts J J' and the yielding spindles L L', located in such shafts and rotating therewith, in combination with the standard B and bell-crank levers C C', each provided with a jaw, *c*, all constructed, arranged, and operating substantially as and for the purposes specified.

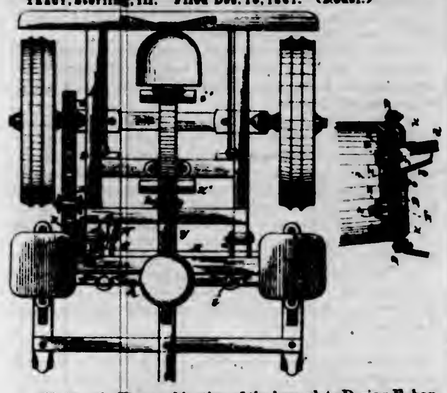
259,678. EXTENSION-LADDER. JAMES F. FLINT, West Danvers, Mass. Filed Mar. 13, 1882. (No model.)

Brief.—The extension-ladder has struts to support each section, the struts for the bottom section being hinged to the leg-frame, those for the other sections being hinged to the side bars of the ladder, and each strut being closed or shut up by a rod at the top of the next section below, when the ladder is in compact form.



Claim.—The extension-ladder provided with the leg-frame and its struts, and with the auxiliary struts, their supporting-lines, and tripping-rods *t*, all arranged and combined substantially in manner and to operate as shown and described.

259,679. CORN-PLANTER. THOMAS A. GALT and GEORGE S. TRACY, Sterling, Ill. Filed Dec. 16, 1881. (Model.)



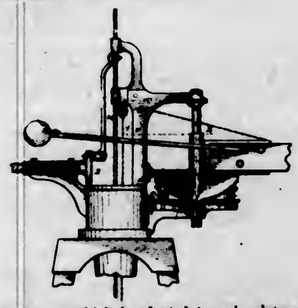
Claim.—1. The combination of the base-plate D, ring E, having the gear *h*, seed-plate F, cap-plate G, and the cut-off plate H, provided with the adjuster I, cut-off K, and discharger L, the latter being adapted to be operated by said seed-plate, substantially as and for the purpose described.

2. The combination of the seed-plate F, the cut-off plate H, the adjuster I, the cut-off K, and the discharger L, the seed-plate being both acted upon and actuating said discharger, substantially as and for the purpose specified.

3. The combination of the hand-lever *i*, reciprocating bar *h*, provided with the clutch *g*, the valve *d*, provided with the horizontal lever *f*, and the tube *b*, having the shelf *c*, in the manner substantially as shown, and for the purpose described.

4. The combination of the sleeve P, provided with the recess *g'*, axle M, head *d'*, provided with the wrist-pin *c'*, axle *c'*, and lever N, constructed and operating together, substantially as shown, and for the purpose mentioned.

259,680. WIND-ENGINE. GEORGE GARDNER, Kalamazoo, Mich. Filed Mar. 20, 1882. (No model.)



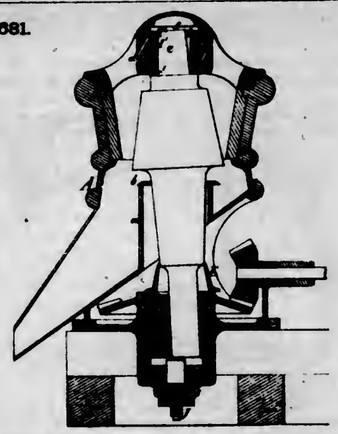
Claim.—1. A vane which is adapted to swing laterally and play vertically, provided with a screw-hinge consisting of the eye and the two spiral leaves or wings secured thereto, and having the downwardly-increasing pitch, in combination with the wheels adapted to traverse the under surface of said leaves, all substantially as set forth.

2. The engine-head provided with the rear arm, having the wheel-mortises and the wheels detachably located in said mortises, in combination with the vane provided with the screw-hinge consisting of the center eye and the integrally-connected spiral wings or leaves, all substantially as specified and shown.

259,681. JOURNAL-BEARING FOR STONE AND ORE CRUSHERS. PHILETUS W. GATES, Chicago, Ill. Filed Apr. 6, 1882. (No model.)

Claim.—1. A gyrating crusher-shaft having the tapering journal *c*, in combination with a journal-bearing, whereby only a portion of said tapering journal stands parallel and in contact with the vertical surface of said bearings during the gyration of the shaft, substantially as described.

2. The combination of the journal-bearing *d*, adjustable lining *d'*, and the gyrating crusher-shaft having a journal, *c*, only a



portion of which stands parallel and in contact with the journal-bearing during the gyration of the shaft, the whole constructed and operating substantially as and for the purpose described.

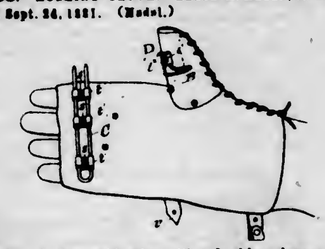
259,682. AIR-VENT FOR BEER-KEGS. JOHN P. GRUBER, Jersey City, N. J. Filed Apr. 11, 1882. (Model.)



Claim.—1. The combination, with the plug provided with an air-passage and a valve-recess in its end and a stopper to close said recess, provided with an air-passage and recesses, *j*, of the rubber valve C, provided with the protuberance *e* and perforated flange *g*, all constructed and arranged substantially as set forth.

2. The rubber valve C, made concave on its under side and provided with a protuberance, *e*, a plate, *i*, and a thin perforated flange *g*, in combination with a vent-plug having a recess to receive it, substantially as set forth.

259,683. HUSKING-GLOVE. REUBEN H. HAGER, Chicago, Ill. Filed Sept. 24, 1881. (Model.)



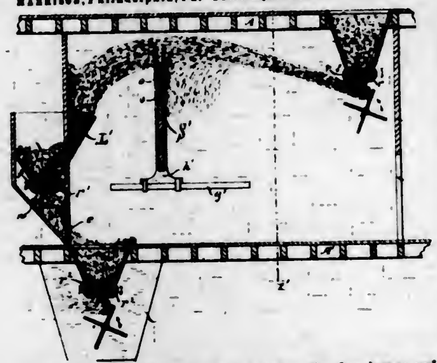
Claim.—1. In combination with a husking-glove, a pointed stripper extending across the face of the glove and rigidly secured thereto near the pointed end of the stripper, and one or more guides fixed to the face of the glove between the point of rigid attachment and the butt-end of the stripper, holding the said stripper to the face of the glove, and adapted to slide on the stripper, though not freely, substantially as and for the purpose set forth.

2. In combination with a husking-glove, the U-shaped stripper C, having inwardly-curved points, band *i*, secured to the face of the glove and tightly inclosing the stripper near its sharpened end, and one or more bands, *i'*, secured to the face of the glove toward the butt-end of the stripper and loosely inclosing the stripper, substantially as described.

3. In a husking-glove, the combination, with the thumb thereof, of the claws formed of a piece of wire, D, having its opposite ends bent toward each other, then outward parallel, or nearly so, with each other, and finally upward at a right angle, the device being secured to the face of the thumb at the outside bends of the wire, and also at the parallel parts, substantially as described.

4. A hooking-pin formed of wire bent to the shape of a U, and having its ends pointed and curved to form prongs, substantially as described.

259,684. APPARATUS FOR MIXING SUGAR. ALFRED C. HARRISON, Philadelphia, Pa. Filed Apr. 28, 1882. (No model.)



Claim.—1. An apparatus for separating the fine lumps and soggy particles from a sugar, consisting in the combination of an apparatus for throwing the sugar in a cloud or in a more or less finely divided condition, and a shield or deflecting-plate, fixed or adjustable, interposed in the path of the flying sugar, and operating to separate the same into two portions, substantially as specified.

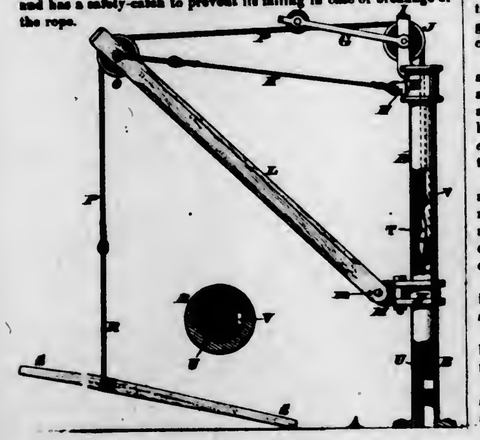
2. The combination, with a fixed or adjustable shield, or its equivalent, placed in the path of a flying sugar, and operating to separate the sugar into two portions, one lumpy and the other comparatively free from lumps, of an apparatus for receiving the said lumpy portion and washing the same, substantially as specified.

3. The combination, with an apparatus for throwing a sugar in a more or less finely divided condition, and with a shield, S, interposed in the path of the flying sugar, of a hopper, L, for receiving the portion of the sugar that flies over the top of the said shield, and a pair of rolls, r' r', for receiving the said portion of sugar from the hopper L and for washing the lumps in the same, substantially as specified.

4. In an apparatus for mixing sugars, the combination of, first, apparatus for throwing the sugar in a cloud or in a more or less finely divided condition; second, apparatus interposed in the path of the flying sugar and operating to separate it into two portions, a lumpy portion and one comparatively free from lumps; third, apparatus for washing the lumps of the said lumpy portion; and, fourth, apparatus for remixing the two portions of sugar, the combination operating substantially as and for the purpose specified.

259,685. STAGING FOR STEAMBOATS. JAMES L. HAVEN and JOHN B. MOONEY, Cincinnati, Ohio; said Mooney assignor to said Haven. Filed Apr. 5, 1882. (No model.)

Brief.—The counterbalance-weight slides inside the mast, and has a safety-catch to prevent its falling in case of breakage of the rope.



Claim.—1. In combination with a steamboat-staging, a counter-balance traversing the tubular mast or cage, to which latter is coupled the swinging boom that supports the platform, substantially as herein described and set forth.

2. The combination of tubular mast or cage B, rotatable cap E e I, swinging boom L M, sheaves J O, suspender P, staging S, and counter-balance U, which latter plays within said mast, as and for the purpose described.

3. The grooved mast B C c, surmounted with a rotatable cap, E e F, resting on the balls D, said cap being extended below the mast-head, and being furnished with a secondary set of balls, D', bearing against the exterior of said mast, for the purpose specified.

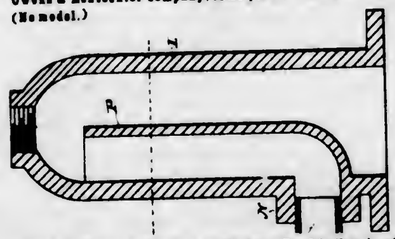
4. The combination, in a steamboat-staging, of tubular mast B, internal rack, V, counter-balance U, pivoted detent T *t*, spring W, and rope P, which latter passes over a pulley applied to the swinging boom, and has said counter-balance U and platform S secured to its opposite ends, as and for the purpose described.

5. The combination, in a steamboat-staging, of tubular mast B, internal rack, V, and weight U, said weight having a longitudinal groove, *u*, that surrounds the rack to prevent rotation of said weight, as herein described.

6. In a steamboat-staging, the rope P, traversing the tubular mast B, and supporting at one end the platform S and at the other end a counter-balance, U, the latter being provided with a pivoted detent, T *t*, that automatically engages with the internal rack, V, of the mast as soon as said rope breaks, substantially as described.

7. The combination, in a steamboat-staging, of rotatable cap E, sheave J, fair-leader G, and suspension-cable P, for the purpose specified.

259,686. STEAM-SEPARATOR FOR TRACTION-ENGINES. GEORGE H. HOLWAY, Hamilton, Ohio, assignor to the Reeves, Owens & Rentschler Company, same place. Filed Oct. 18, 1881. (No model.)



Claim.—The combination, with dome B of boiler A, of the body-casting L, attached to the dome B, and having partition P cast integrant with the body, and having steam-outlet N, substantially as and for the purpose set forth.

259,687. HEEL-NAILING MACHINE. HENRY A. HENDERSON, Lynn, Mass., assignor, by mesne assignments, to the National Heeling Machine Company, of Maine. Filed Apr. 17, 1882. (No model.)

Claim.—1. In an organized heel-nailing machine, the combination of a jack for holding the boot or shoe, the reciprocating cross-head B, and sliding carriage C, adapted to have a straight horizontal movement upon said cross-head imparted to it, and a gang or group of awls and a gang or group of drivers supported by said carriage, all substantially as described.

2. In an organized heel-nailing machine, the combination of a jack for holding and presenting the work to the nailing mechanism, a reciprocating cross-head, B, and a sliding carriage, C, adapted to have a straight horizontal movement upon said cross-head imparted to it, an awl-holding block, *c*, driver-holding block *c'*, and top-lift spanker *c²*, supported by said carriage, all substantially as and for the purposes described.

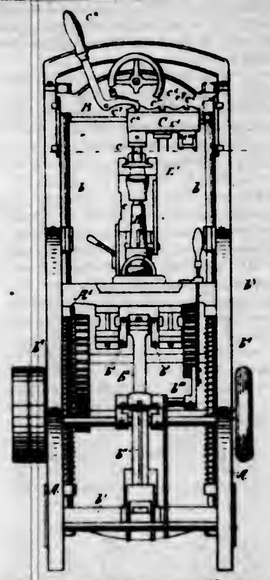
3. In an organized heel-nailing machine, the combination of a jack for presenting the work to the heel-nailing mechanism, the reciprocating cross-head B, the sliding carriage C, adapted to have a horizontal movement upon said cross-head imparted to it, and a driver-holding block, *c'*, and top-lift spanker *c²*, supported by said carriage, all substantially as and for the purposes described.

4. The combination of the reciprocating cross-head, the sliding block or carriage C, and the adjustable stop c^{11}, all substantially as and for the purposes described.

5. The combination of the cross-head B, the carriage C, the hand-wheel c^9, and mechanism, substantially as specified, for connecting it with the carriage C, all as and for the purposes set forth.

6. The combination, in an organized heel-nailing machine, of a jack for presenting and holding the work to the heel-nailing mechanism, the table or support E', the sliding templet E^2, adapted to be moved horizontally in a straight line upon said support into position over the jack, and a gang or group of awls adapted to be reciprocated by means substantially as specified, for the purpose described.

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7. The combination, in an organized heel-nailing machine, of a jack for presenting and holding the work to the nailing mechanism, the table or support E', the templet E^2, adapted to be moved horizontally in a straight line upon said support or table into position over the jack, and a gang or group of drivers adapted to be reciprocated by means substantially as specified, all as and for the purposes described.

8. The combination, in an organized heel-nailing machine, of a jack for presenting and holding the work to the nailing mechanism, a support or table, E', a templet, E^2, adapted to be moved horizontally on the said table into position over the jack, a gang or group of awls and a gang or group of drivers interchangeably arranged upon a cross-head, and means for reciprocating said cross-head, all substantially as and for the purposes described.

9. In an organized heel-nailing machine, the combination of a jack for presenting and holding the work to the nailing mechanism, a table or support, E', a templet, E^2, adapted to be moved horizontally in a straight line upon said table or support into a position over the jack, and a nail-holder adapted to be moved horizontally in a straight line into position over the templet, all substantially as and for the purposes described.

10. In an organized heel-nailing machine, the combination of a jack for presenting and holding the work to the heel-nailing mechanism, a table or support, E', a templet, E^2, adapted to be moved horizontally in a straight line upon said table or support into position over the jack, a nail-holder supported by the templet-plate e^2 and adapted to have a horizontal movement therewith, and to be moved into position over the templet E^2 after the templet-plate has come to rest, all substantially as and for the purposes described.

11. In an organized heel-nailing machine, the combination of a jack for presenting and holding the work to the heel-nailing mechanism, the vertically-movable table or support E', the templet E^2, supported by said table and adapted to be moved horizontally thereon in a straight line to a position over the jack, and then to be moved vertically with said support or table, all substantially as and for the purposes described.

12. In an organized heel-nailing machine, the combination of a jack for presenting the work to the heel-nailing mechanism, a heel-receiver, and a templet adapted to have horizontal and vertical movements imparted to it, all substantially as and for the purposes specified.

13. The combination of a jack for holding and presenting the work to the heel-nailing mechanism, a heel-receiver, a templet, and a nail-holder adapted to have a horizontal and vertical movement in relation to the heel-receiver, and a group or gang of awls and a group or gang of drivers adapted to be alternately reciprocated in line with the templet, all substantially as and for the purposes described.

14. The combination of the vertically-movable table E', and the templet-plate e^2, adapted to slide thereon in a straight line, all substantially as and for the purposes described.

15. The combination of the vertically-movable table E', the templet-plate e^2, adapted to slide thereon, and the nail-holder plate e^{21}, adapted to slide upon the templet-plate, and means, substantially as specified, for regulating the extent of the movements of said plates, all substantially as and for the purposes described.

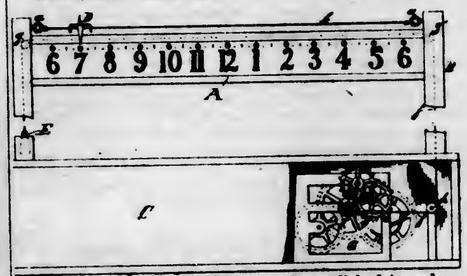
16. The combination of the heel-receiver E^4, its slotted standard e^{26}, the bracket or post E, and the set-screw e^{28}, all substantially as and for the purposes described.

17. The combination, in a heel-receiver, of the curved spring-arms e^{27}, fastened to the outer end thereof, as specified, and the curved spring e^{29}, fastened at the back thereof, as specified, all substantially as and for the purposes described.

18. The combination of the reciprocating connecting-rod b^3, the cross-bar b^7, the movable block b^9 and its pin b^{10}, the slotted arm b^{11}, and means for moving and locking the same, all substantially as and for the purposes described.

19. The combination of the horizontally-moving jack D, the heel-receiver E^4, a templet adapted to move horizontally and vertically upon the heel-blank, to clamp it in position and upon the work, and to lock it in that position prior to the reciprocation of the awls or drivers, and said reciprocating awls or drivers, all substantially as and for the purposes described.

259,688. CLOCK. THEODORE HELLARDER, Chicago, Ill. Filed Oct. 11, 1881. (No model.)



Claim.—1. The combination, with a linear dial-plate graduated in twelve hours, columns or supports B B, and wire *b*, of a single index-hand, D, having index-point *d*, saddle-plate *e*, and clamp-bar *e*, weighted thread or cord *f*, and suitable clock-work, substantially as and for the purpose set forth.

2. The combination, with the linear dial-plate A, of the index-hand D, composed of index-point *d*, saddle-plate *e*, and clamp-bar *e*, wire *b*, weighted thread *f*, sheaves *g g'*, and spool F, rotated by a clock-work, all substantially as and for the purpose set forth.

3. The combination of the linear dial A, posts B B, wire *b*, index-hand D, constructed and adapted to ride upon said wire, as described, and reciprocated by thread or cord *f*, winding upon the spool F, clock-work G, and weight E, all substantially in the manner described and shown.

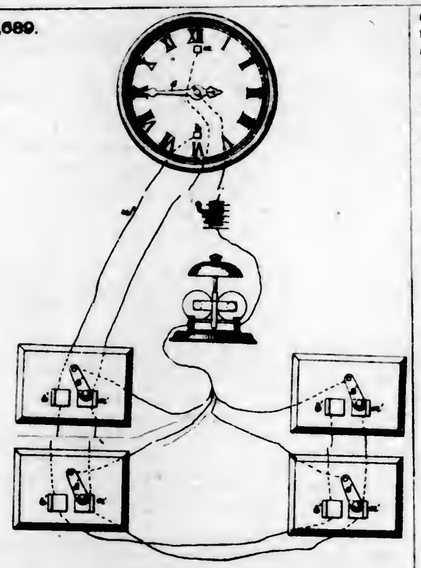
4. The combination, with the minute-spindle H, of a clock-work, G, pinion *i*, disk I, pawl *m*, with tail-projection *o*, and spring *n*, spool F, with ratchet-wheel *j*, and gears J, *k*, and L, with pin *p*, all substantially as and for the purpose shown and specified.

259,689. ELECTRIC DETECTING APPARATUS FOR WATCHMEN. CHAS. W. HUBBARD, Boston, Mass. Filed Dec. 5, 1881. (No model.)

Brief.—All the *a'* connection-points of the switches are in electrical connection with the contact-point *a* of the automatic circuit-closer; all the *b'* points with the contact-point *b*. An alarm is included in the circuit to prevent the pointer in its revolution from closing the circuit and sounding the alarm. The watchman must periodically reverse all the switches.

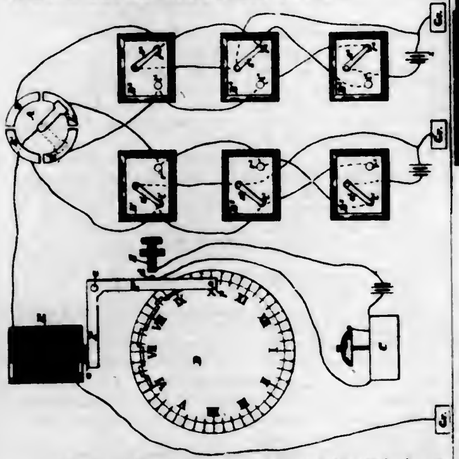
Claim.—The combination, with an alarm or recording instrument, an electric circuit, and an automatic circuit-closer closing the circuit at regular intervals, of suitable contact-points and a series of hand-switches, substantially as described, so that an alarm will be given or a record made periodically unless the periodic action of the circuit-closer is counteracted by a corresponding periodic movement of all the switches.

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259,690. ELECTRIC DETECTING APPARATUS FOR WATCHMEN. CHAS. W. HUBBARD, Boston, Mass. Filed Mar. 22, 1882. (No model.)

Brief.—Each of two series of switch-boards is electrically connected with two of four concentric contact-plates. A pointer connected through an electro-magnet to ground is caused to slide along the contact-plates successively. By periodically reversing the hand-switches a constant ground-circuit may be maintained through the electro-magnet and pointer and one or the other of the series of switch-boards with its battery. Otherwise the battery is short-circuited and a record is made on the dial.



Claim.—1. The combination, with a common ground-wire, an alarm or recording instrument in said common ground-wire, several electric circuits, and an automatic commutator causing the currents of said circuits to flow through said common ground-wire successively at regular intervals, of suitable contact-points and one or more series of hand-switches, substantially as described, so that an alarm will be given or a record made periodically, unless the periodic action of the automatic commutator is counteracted by a corresponding periodic movement of hand-switches.

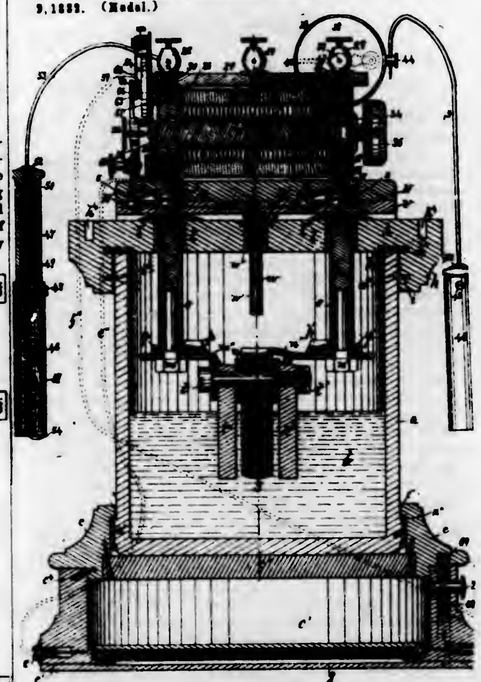
2. The combination, with two circuits, each containing a battery, and one or both containing a series of hand-switches and contact-points, of suitable wires, an alarm or recording instrument, and an automatic circuit-shifter adapted to periodically and alternately connect each circuit with a common ground through the alarm or recording instrument, substantially as described, for the purpose specified.

3. The recording-instrument herein described, consisting essentially of the automatically-revolving dial D, provided with a circular and radial lines, as shown, the electro-magnet E, the bell-crank lever P, armature *e*, and pencil *p*, in combination with an automatic commutator, suitable wires, and two branch circuits, substantially as described, to make records of the battery-circuit in which and of the time at which a break occurs.

4. The automatic commutator or circuit-shifter A, electro-magnet E, lever P, armature *e*, pencil *p*, and automatically-revolving dial D, in combination with two circuits, each provided with an independent battery, and one or both provided with hand-switches for short-circuiting the said battery or batteries, and the two normally making ground alternately through said commutator A and electro-magnet E, substantially as described.

5. The automatic commutator or circuit-shifter A, electro-magnet E, lever P, armature *e*, pencil *p*, automatically-revolving dial D, and relay-bell C, in combination with two circuits, each provided with an independent battery, and one or both provided with hand-switches for short-circuiting the said battery or batteries, and the two normally making ground alternately through said commutator A and electro-magnet E, substantially as described.

259,691. ELECTRICAL APPARATUS FOR MEDICAL PURPOSES. WILLIAM HUNARD, Cambridgeport, Mass. Filed Jan. 9, 1882. (Model.)



Claim.—1. In an electrical apparatus, the combination of coils 21 27, base-board 1, pole-changer board *v*, spring-rod *w*, posts *m n*, springs *p p'*, and battery-plates *r r' s*, as and for the purpose set forth.

2. In combination, the sliding base-board 1, carrying the coils 21 27, and having screws 2 3 and springs 4 5, adapted to connect respectively with the buttons M N' and M' N, so as to change the direction of current from one handle to the other connected to the terminals of coil 27 by sliding the said base-board 1 and its springs 4 5, as set forth.

3. In an electrical apparatus, the combination of the battery-plates *r r' s*, posts *m n*, coil 21, core 32, armature 57, wheel 24, spring-lever 62, pin 63, vibrating rheotome 25, and circuit-connection 26, as and for the purpose set forth.

4. In an electrical apparatus, the primary coil 21 and secondary coil 27, having one end of their wires connected to the screw-cap 28, in combination with the opposite end of secondary coil 27, connected to screw-cap 28, and opposite end of primary coil 21, connected to spring 4 and battery, as set forth.

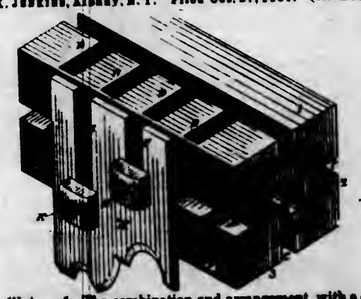
5. The electrode-handles as composed of metal shield 46, wooden shield 47, and internal spring, 51, as set forth.

6. In combination with cap 28, board 29, coils 21 and 27, the hand-interrupter as composed of hard-rubber disk 36, metal toothed ring 39, spring-lever 41, handle 42, spring 43, and shank 37, as described.

7. In combination, the battery-plates *r r' s*, brackets *m'' n''*, posts *m n*, springs *p p'*, cover A, spring *w*, pole-changing board *v*, coils 21 27, and electrical connections, as set forth.

8. In combination with a pair of electrode-handles 46, the insulated yoke 56 and pins 55 55, as described.

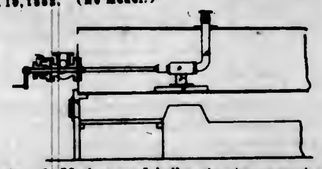
259,692. CUTTER-HEAD FOR MOLDING-MACHINES. EDWD. K. JENKINS, Albany, N. Y. Filed Oct. 27, 1881. (No model.)



Claim.—1. The combination and arrangement, with a cutter-head having longitudinal slots C and transversely-arranged slots D or D', made in opposite sides of said head, and attaching-bolts E E, adapted to fit in each said slots and hold with said head, of cutting-knives or bits K, each provided with slots *e* and *e'*, whereby said knives or bits will be held at two points in their lengths on the faces of said cutter-head, substantially in the manner and for the purpose set forth.

2. The combination, with a cutter-head having longitudinal slots C made in its four sides and in its two opposite sides transverse slots D, connecting with slots C of said opposite sides, and transverse slots D', made in its transverse sides, relatively staggering or dodging the first-mentioned transverse slots and communicating with slots C in said transverse sides, of attaching-bolts E, adapted to work in all of said slots, and also with slots *s s'*, made in the knives or cutting-bits, whereby said knives or bits may each be attached to said head at two points in their lengths, and be adjusted on two sides longitudinally on said head in either direction, and be capable of a similar attachment and adjustment on the transverse sides of said head, with the knives and head balanced, substantially as and for the purposes set forth.

259,693. APPARATUS FOR REMOVING SCALE, SEDIMENT, &c., FROM BOILERS. THOMAS J. JENNS, Sharon, Pa. Filed Apr. 10, 1882. (No model.)



Claim.—1. My improved boiler-cleaning apparatus, consisting of a blow-off pipe and an oscillating scraping-deflector, operated by a rod which passes through an automatic valve-chamber.

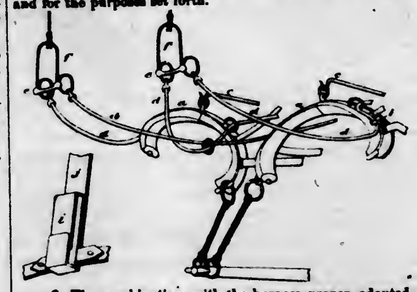
2. In a device for removing scale, &c., from boilers, the combination of a blow-off pipe, an oscillating sleeve mounted thereon and communicating therewith, and a deflector and scraper attached to the sleeve by a hollow arm, whereby the scale, &c., passes to the blow-off pipe from below the deflector and scraper, substantially as specified.

3. The combination of a boiler-scraper with a rod or handle which passes through an automatic valve-chamber.

4. In a device for removing scale, &c., from boilers, the combination of a blow-off pipe, a sleeve adapted to rotate on the blow-off pipe and provided with a scraper, a rod for actuating the sleeve, and an automatic valve, through the case of which the actuating-rod passes, substantially as and for the purpose specified.

259,694. HARNESS. WILLIAM H. JUDSELYN, Bridgeport, Conn. Filed Apr. 17, 1882. (No model.)

Claim.—1. In a harness, the bit provided with a bail adapted to engage in a snap or holdfast on the headstall, substantially as and for the purposes set forth.



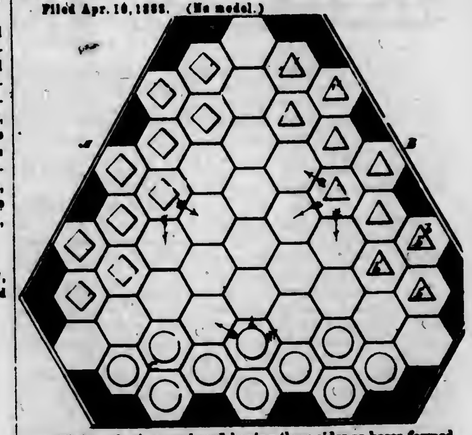
2. The combination, with the harness proper, adapted to be suspended as shown, of the reins *d*, the bit *c*, provided with a bail, *f*, and attached to the reins, and the headstall provided with a snap, *i*, all arranged substantially as set forth, and for the purposes specified.

3. The combination, with the bit provided with a rigid bail, of the headstall provided with an elongated snap, *i*, to engage the bail, substantially as and for the purposes set forth.

4. The hinged collar *a*, provided with a spring-clasp, *l*, to hold the rein, substantially as and for the purposes set forth.

5. The improvement in the art of ready hitching, which consists in attaching the bits permanently to the reins and providing the horse with a headstall without a bit, whereby in hitching it is only necessary to put the bit in the mouth and attach it to the headstall, substantially as set forth.

259,695. GAME-BOARD. JOHN F. KISSWELL, Chicago, Ill. Filed Apr. 10, 1882. (No model.)



Claim.—1. A game-board having three sides or bases formed by hexagonal or other spots or checks, from each side or base of which the play can be made, substantially as specified.

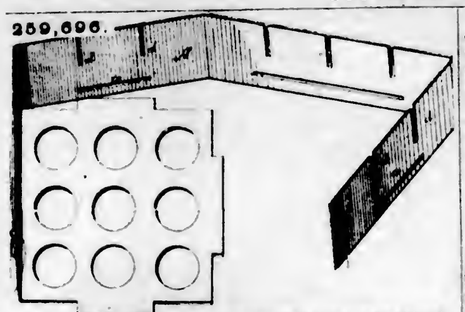
2. A game-board having three sides or bases and corresponding corners and formed with hexagonal or other spots or checks, substantially as and for the purposes specified.

3. As an improved article of manufacture, the herein-described board or card having the long triangular sides A, B, and C and playing spots or checks, arranged substantially as described.

4. A three-sided game in which the men of each set are played each from a separate and distinct base and move in lines away from the playing-base, substantially as specified.

259,696. EGG-CARRIER. JOEL H. LOUDER, Chicago, Ill. Filed July 14, 1881. (No model.)

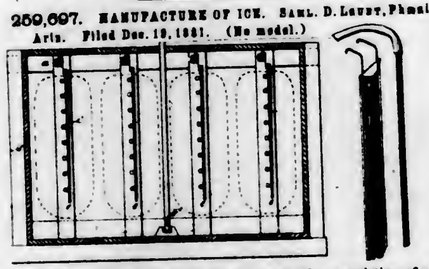
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Claim.—1. A knockdown box provided with a series of longitudinal and transverse division-boards, the surrounding rim of the box being connected at each of its sides to the bottom of the box and slotted at its upper edges to receive corresponding slots in the lower edges of the longitudinal and transverse boards, said transverse boards being slotted within the rim on their upper edges to receive the slots in the lower edges of the longitudinal boards, substantially as described.

2. A knockdown box having its bottom and entire upturned rim in one piece, in combination with transverse and longitudinal division-boards, respectively, locked together and to the rim, substantially as described.

259,697. MANUFACTURE OF ICE. SAML. D. LEVEY, Phœnix, Ariz. Filed Dec. 19, 1881. (No model.)



Claim.—1. A congealer for an ice-machine, consisting of one or more flat coils or rows of pipe attached to and supported by posts and placed in an upright position in a tank containing the water to be frozen, when so constructed and arranged that the blocks of ice which are formed upon it will be held in position by the posts which support the congealer, and will not come in contact with the tank or any other support, except at one end of the blocks, substantially as and for the purpose set forth.

2. The combination, with the congealer of an ice-machine which is placed in a tank containing the water to be frozen, but does not extend to the bottom of said tank, of an agitator placed within the tank and below the congealer and also below the blocks of ice formed upon it, substantially as described.

3. The process herein described for detaching the ice from the congealer, which consists in freezing tubes closed at one end in the blocks of ice along the line of the congealer, removing the tubes after the ice has attained sufficient thickness, and finally splitting the blocks of ice along the line of holes left by said tubes.

4. The method herein described for loosening the parting-tubes previous to drawing them from the ice, which consists in pushing a smaller tube inside the same and introducing a stream of water which is above the freezing temperature through this inside tube into the parting tube near the closed end, substantially as and for the purpose set forth.

5. The process of removing the ice from the congealer of an ice-machine which consists in making a line of holes in the block of ice along the line of the congealer, and then splitting the block of ice through this line of holes.

6. In combination with the congealer of an ice-machine, the parting-tube *e*, made with one flat side between two sharp edges, the flat side being in contact with the congealer.

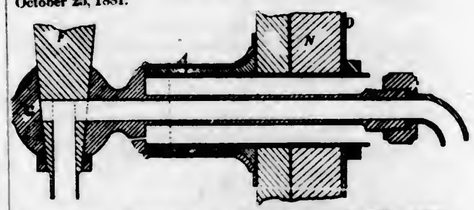
7. The method herein described for securing contact between the parting-tubes and congealer, which consists in suspending the parting-tubes from a point on one side of the center of gravity.

8. In combination with the congealer of an ice-machine and a row of parting-tubes placed along the line of said congealer, removable supports for the parting-tubes, substantially as herein described.

9. The combination, with the tank of an ice-machine which contains the water to be frozen and an agitator for keeping the water in motion, of suitable receptacles for catching the solid impurities which are suspended in the water, substantially as described.

259,698. BEER-FAUCET. MICHAEL HAGIN, Rochester, N. Y. Filed Mar. 29, 1882. (No model.)

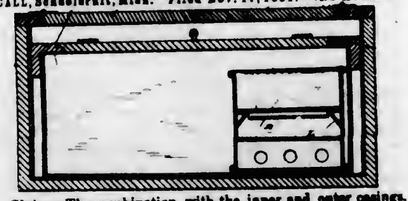
Brief.—Improvement on Letters Patent No. 248,646, dated October 25, 1881.



Claim.—1. In combination with an ice-box, a beer-faucet provided with an outer non-conducting jacket and an inner cold-air space, substantially as and for the purposes set forth.

2. In combination with an ice-box, a beer-faucet provided with an outer non-conducting jacket and an inner cold-air space having one or more orifices communicating with the external air, substantially as and for the purposes set forth.

259,699. REFRIGERATING BUTTER-SAFE. JAMES R. MCCALL, Schoolcraft, Mich. Filed Nov. 17, 1881. (No model.)



Claim.—The combination, with the inner and outer casings, constructed as described, of the vessel or vessels for containing milk or cream and the tray or trays located therein for containing butter, substantially as and for the purpose specified.

259,700. PAD FOR HORSE-COLLARS. EDWARD L. MCCLAIN, Greenfield, Ohio. Filed Apr. 24, 1882. (No model.)



Claim.—1. As attachments to a sweat or other horse-collar pad, the elastic springs *s s*, substantially as described, and for the purposes set forth.

2. The combination, in a sweat or other horse-collar pad, of the springs *s s* and of the choke-strap billet-loop *l* with the collar-pad, substantially as described, and for the purposes set forth.

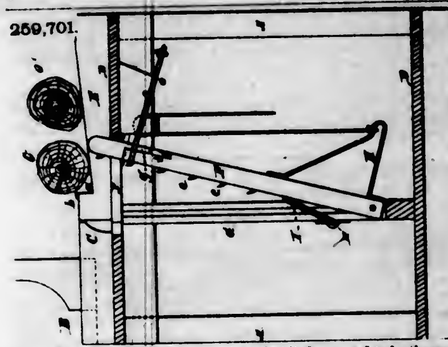
259,701. LOG-TURNER. FRANK MCDONOUGH, Eau Claire, Wis. Filed Oct. 3, 1881. (No model.)

Claim.—1. The log-turner F, arm or crank I, rock-shaft H, and arm or lever J, in combination with the rod or bar L, for operating the arm or crank I and throwing the log-turner out of perpendicular, substantially as and for the purposes specified.

2. The log-turner F, arm or crank I, rock-shaft H, and arm or lever J, in combination with the weighted rod or bar L and weighted rod or lever K, for bringing the arm or crank I into position to bear against the log-turner and return it to its normal position, substantially as and for the purposes specified.

3. The combination, with the carriage, log-ways, and the log turner or canter, pivoted at its lower end to swing out of perpendicular, and having a projection, *g*, at its upper portion, of a pivoted bar, *e*, having a catch, *f*, adapted to engage the projection on the log turner or canter when the latter is swung back, and to hold the same out of perpendicular for a portion of its vertical movement, and to then automatically release the said log turner or canter, substantially as described.

259,701.

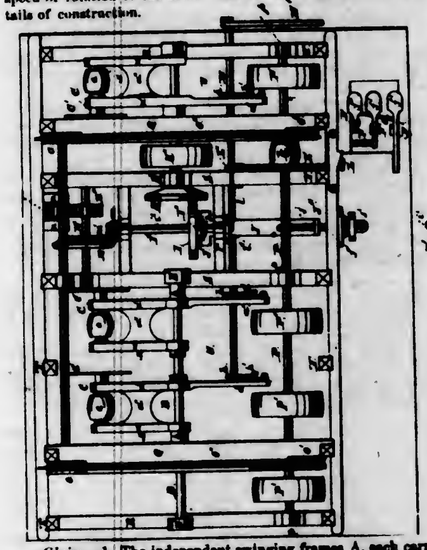


4. A log turner or canter pivoted at its lower end to be thrown out of perpendicular, and provided with a catch or projection, *g*, in combination with a lock or catch, *e f*, cord *h*, and weight *w*, in combination with the rope or chain M and arm N, for raising the log turner or canter, releasing it from the lock or catch, and throwing it forward, substantially as and for the purposes specified.

5. A log turner or canter pivoted at its lower end, and arm or crank arranged to have its free end bear against the turner or canter, in combination with an automatic lock or catch, *e f*, rope or chain M, and arm N, substantially as and for the purposes specified.

259,702. MACHINE FOR TRIMMING AND CUTTING LUMBER. FRANK MCDONOUGH, Eau Claire, Wis. Filed Sept. 10, 1881. (No model.)

Brief.—The lumber is fed to a series of edging-saws, which can be raised into position or lowered independently of each other by a feed mechanism operated by a face friction disk operating against a movable edge friction disk. Thus with a single source of power the feed may be varied in speed independently of the speed of rotation of the saws. The invention consists in the details of construction.



Claim.—1. The independent swinging frames A, each carrying a saw and having an arm or extension, in combination with the link or rod *d*, double crank D D′, connecting the link E, and crank-shaft F, for raising any one or more of the saws independently of the others, substantially as specified.

2. The independent swinging frames A, each carrying a saw and having an arm or extension, in combination with the link *d*, double crank D D′, link or rod E, arm *f*, shaft F, and foot-treadle F′, for bringing any one or more of the saws into position for use, substantially as specified.

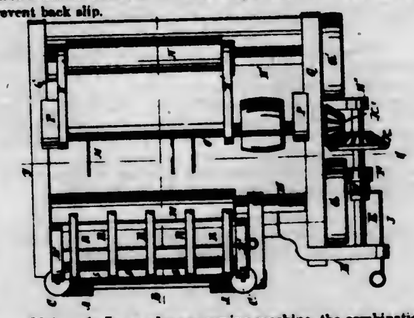
3. The independent swinging frames A, each carrying a saw and having an arm or extension, in combination with the link *d*, double crank D D′, rod or link E, crank-shaft F *f*, foot-treadle F′, hook *g*, and rod or bar G, for raising any one or more of the saws into position for use and locking it into position, substantially as specified.

4. The independent frames A, each carrying a saw and having an arm or extension, in combination with the rock-shaft H, having arms *h*, links or bars *h′*, and lever or arm H′, for simultaneously raising all of the saws into position for use, substantially as specified.

5. The wheel or disk I, mounted upon the shaft I′, journaled eccentrically in disk *l′*, and the connecting-link *l*, in combination with the crank-shaft L″ and L′, and lever or arm L, and wheel or disk K, for producing the necessary frictional contact between the disks for feeding purposes, substantially as specified.

259,703. EDGER SAWING-MACHINE. FRANK MCDONOUGH, Eau Claire, Wis. Filed Aug. 15, 1881. (No model.)

Brief.—The lumber is fed to a gang of saws by feed-rollers having variable speed of revolution as compared with the saws. A screw on one of the rollers causes the boards to bear against guide-rollers at the sides. Pointed hinged dogs above the lumber prevent back slip.



Claim.—1. In an edger or sawing machine, the combination of a rotary shaft provided at its end with a screw-thread or worm, with a gage-roller journaled to rotate in a horizontal plane at the outer portion of the screw-thread or worm, and constituting a rolling bearing for the material, which is drawn up against the same by the said screw-thread or worm, substantially as and for the purpose described.

2. In an edger or sawing machine, the combination of the shaft B, journaled directly at the receiving or front end of the machine, and provided with a screw-thread or worm, A, the gage-roller C, journaled to rotate in horizontal plane adjacent to the outer portion of the said screw-thread or worm, and the feed-rollers H, arranged in rear of the said shaft and driven independently of the same, said screw-threaded or worm shaft rotating at a greater speed than the feed-rollers, whereby the material is drawn up against the rotary gage, which affords a rolling bearing for the same, all substantially as described.

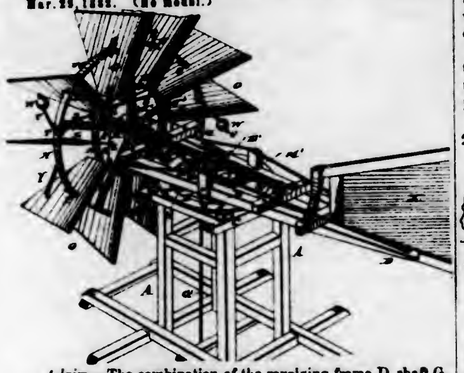
3. In an edger or sawing machine, the shaft B, journaled directly at the receiving or front end of the machine, and provided at each end with a screw-thread or worm, A, in combination with the gage-rollers C, journaled to rotate in horizontal planes at the outer portions of the screw-threads or worms, and the feed-rollers H, arranged in rear of the said screw-threaded or worm shaft and driven independently of the same, said shaft rotating at a greater speed than the feed-rollers, all substantially as and for the purposes described.

4. In an edger or sawing machine, the supports D D, arranged directly at the receiving or front end of the machine, at opposite sides thereof, in combination with the gage-rollers C C, journaled on the said supports to rotate in horizontal planes, and the shaft B, also journaled in said supports and provided at each end with a screw-thread or worm arranged adjacent to and coacting with the gage-rollers, all substantially as and for the purpose described.

5. In an edger or sawing machine, the combination, with the arbor carrying the circular saw or saws, and the feed-rollers located in front of said saw or saws, of the horizontal shaft E, journaled at its ends in bearings at one side of the machine-frame, pinions by which said horizontal shaft is rotated directly from the saw-arbor, a friction-wheel, G, fixed directly to the arbor of one of the feed-rollers, and the horizontally-adjustable friction-wheel F, for imparting motion directly from the said shaft to the said friction-wheel on the feed-roll, all substantially as shown and described.

6. The combination, with the feed-roller H, of the swinging fingers or pawls R, located upon the shaft T, and the sleeves S, arranged between said fingers or pawls, substantially as and for the purposes described.

259,704. WIND-ENGINE. TERON T. MILLER, Rico, Tex. Filed Mar. 29, 1882. (No model.)



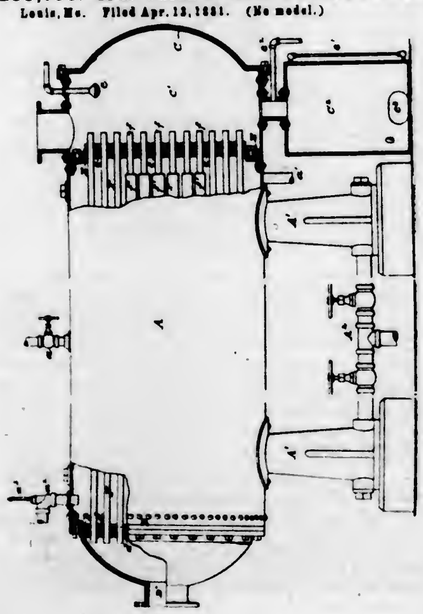
Claim.—The combination of the revolving frame D, shaft G, having wheel H, consisting of the hub J, spokes L, rim M, brace N, wings O, having slots P and pins Q R Z, ring A', forming bearings for the pins Z, rock-shafts T, having arms U V and weights W, connecting-rods X, and springs Y, the shaft E', having bell-crank lever F', chain G', rod H', sleeve B', having spiral slot C' to receive a stud, D', upon shaft G, the pulley K' upon one of the spokes, and the cord J', connecting the sleeve B' with one of the wings, as and for the purpose set forth.

259,705. LAMP-LIGHTING IMPLEMENT. ELIJAH MORRISON, Boston, Mass. Filed Sept. 30, 1881. (No model.)



Claim.—An implement for lighting lamps and the like having in combination the box-like receptacle, tube, and wick, as described, with the cushion, as described, and handle, all as set forth and described.

259,706. FEED-WATER HEATER. EDMUND L. MORSE, St. Louis, Mo. Filed Apr. 13, 1881. (No model.)



Claim.—1. The combination, in a feed-water heater, of a series of pipes, F, having reduced portions *f*, with the head D, provided with a series of stuffing-boxes, *d*, for the passage of said reduced portions, for the purpose set forth.

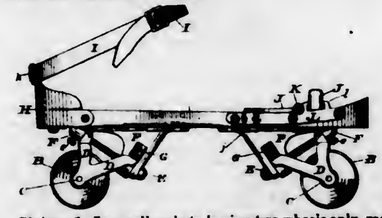
2. The combination, in a feed-water heater, of the heating-tubes F, shell A, and chamber C', provided with a spray pipe or nozzle, *e*, with a receiving-tank, C', substantially as and for the purpose set forth.

259,707. HARNESS. ALBERT MURRAY, Rockport, Mass. Filed Apr. 27, 1882. (No model.)



Claim.—The trace A, provided with the plate *d*, screw G, and loops L K, and having an end slot, in combination with the lift I and loop J, when constructed, combined, and arranged to operate substantially as and for the purpose specified.

259,708. ROLLER-SKATE. THADDEUS A. NEELY, Muncie, Ind. Filed Mar. 14, 1882. (Model.)



Claim.—1. In a roller-skate having two wheels only, rocking or oscillating bearings, the bearing-shafts being located centrally above said wheels and running from a point about vertically above the wheel-shafts on an angle toward the floor, substantially as shown and specified.

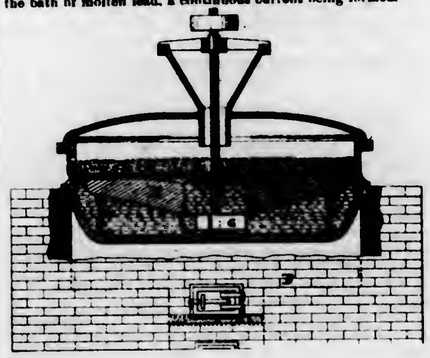
2. The combination, in a roller-skate, of the brackets F, the shafts E, the wheel-frames D, the single wheels B, and the wheel-shafts C, said several parts being arranged and operating substantially as shown and specified.

3. The combination, with a skate, of the heel-piece H, having turned-over lip A, and the strap I, said lip being clinched down upon said strap, which is thus secured, substantially as set forth.

4. The combination, with a skate, of the sole-clamps J, pivoted at *j*, and the screws K, whereby said clamps are operated, substantially as set forth.

259,709. APPARATUS FOR THE EXTRACTION OF PRECIOUS METALS FROM ORES. BUTLER O. NOBLE, Brooklyn, N. Y. Filed Oct. 19, 1881. (No model.)

Brief.—The wing-wheel below the suspended hollow cylinder being set in motion causes the supernatant silver ore to pass downward through the cylinder and outward and upward through the bath of molten lead, a continuous current being formed.

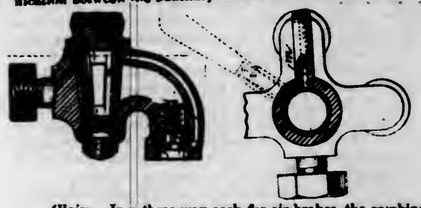


Claim.—1. In combination with a pan or other vessel for containing a bath of molten lead, a stationary block provided with a central vertical opening, and means for producing a vortex within such opening, substantially as and for the purpose described.

2. In combination with a pan or other vessel for containing a bath of molten lead, a well-block having the under surface inclined from the edge of the well upward toward the periphery of the block, and a displacer secured to a shaft passing through the well, substantially as and for the purpose described.

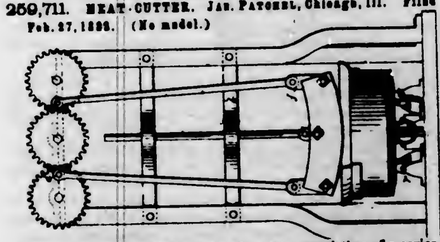
259,710. COCK FOR AIR-BRAKES. NORMAN J. PARADISE, Aurora, Ill. Filed Mar. 17, 1882. (No model.)

Brief.—To insure the quick release of the brakes a three-way cock is provided, one branch of which connects with the train-pipe, a second with the exhaust, and a third with the main reservoir, the latter branch having a spring-valve of resisting power equal to the reserve force which it is desired to retain in the main reservoir, and a supplementary passage leading around the valve from a point below it to the interior of the cock. By an additional turn of the handle the supplementary passage is opened into the train-pipe and the reserve force of compressed air thrown suddenly upon the triple valves under the several cars, cutting off communication between the auxiliary reservoir and brake-cylinders.



Claim.—In a three-way cock for air-brakes, the combination of a spring-valve in the interior of the reservoir branch thereof, and a supplementary air-passage leading from the interior of the reservoir branch, at a point below the spring-valve, to the interior of the body of the cock, the hollow plug being provided with a separate opening in a position to register with the supplementary air-passage without cutting off communication with the train-pipe, substantially as described.

259,711. MEAT-CUTTER. JAS. PATCHELL, Chicago, Ill. Filed Feb. 27, 1882. (No model.)

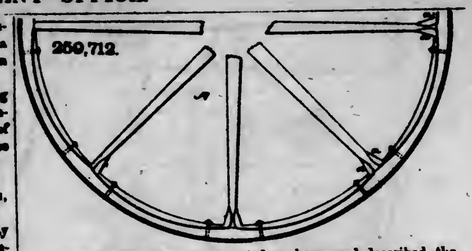


Claim.—1. The combination of a cutter consisting of a series of segmental-shaped knives arranged parallel to each other and operated by pitmen connected to lugs on either side of the same with a vertical shaft moving in suitable guides and pivoted to a central lug on said cutter, which point of connection forms the center of oscillation of the same, substantially as hereinbefore specified.

2. A meat cutting or chopping machine consisting of a drive-shaft driven through the medium of a speed-pulley, and having a gear-wheel at its forward end, which meshes with a gear-wheel of same diameter, said side gears having studs projecting from their outer faces, pitmen pivoted to and extending downward from said studs and connected to lugs extending upward from the ends of the oscillating cutter, said cutter having its oscillating center at its point of union with the vertical shaft located above and reciprocating in suitable guides, a horizontal shaft near the base of the machine, having suitable bearings placed under, extending in the same direction with, and operated by the driving-shaft through the medium of belt and pulleys, a segmental gear on the end of said horizontal shaft, a beveled gear meshing with and driven by said segmental gear, a bed-block mounted upon said bevel-gear, and a turn-table attached thereto, said block and turn-table having their pivotal center immediately under said vertical shaft, substantially as and for the purpose hereinbefore set forth.

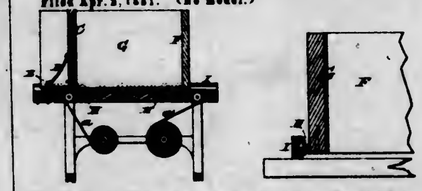
259,712. VEHICLE-WHEEL. JEFFERSON PEARCE, North Leasing, Mich. Filed Apr. 19, 1882. (No model.)

259,712.



Claim.—The plate constructed as shown and described, the body A, extending from spoke to spoke, snugly fitting the intersection of the same and the felloe, and provided at its ends with upwardly-extended right-angular lugs, concaved on their outer faces to conform to the shape of the spokes, for the purpose specified.

259,713. CARPET-EXHIBITOR. ADOLPHUS PETERSON, New York, N. Y., assignor of one-half to Silas C. Croft, same place. Filed Apr. 3, 1881. (No model.)



Claim.—1. In a device for exhibiting and multiplying patterns, a movable frame lined with mirrors forming three sides of a parallelogram, and arranged to travel on a table or support to and from and in combination with a single stationary mirror which forms the fourth side of the parallelogram, all working substantially as and for the purposes shown and described.

2. In a device for exhibiting patterns, the combination of an upright mirror, C, with three rigidly-connected mirrors, F G G, provided at the base with grooved wheels H H H H, arranged to run within or between rails I I, laid on the support or table A, substantially as shown and described.

259,714. HAND-RAKE. ALVAH T. PHILLIPS, Milford, Mich. Filed Jan. 14, 1882. (No model.)



Claim.—A hand-rake consisting of a rake-head and handle mortised into but not through the head, and, in combination therewith, one or more wire braces passed through the handle, thence in a straight line to and through the head, beyond which they are clinched, said wires being crimped by forcing them in against the sides of the handle adjacent to the points where they pass through the latter, substantially as described.

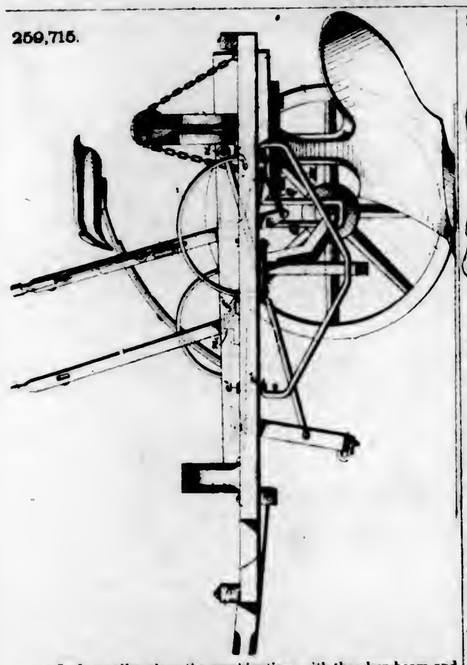
259,715. SULKY-PLOW. JAMES B. POLLOCK, Mansfield, Ohio. Filed Mar. 25, 1882. (Model.)

Brief.—From the land-wheel the axle extends oblique and horizontal across the frame where it rises to form a rocking seat for the side bar of the frame. The land side of the frame is raised and lowered from the axle by a lever that loosely rests upon the axle, and is locked to a segment on the frame. The plow-beam plays between guides above the frame, and has front and rear bell-crank levers, one of which is provided with a third arm and chain and pulley. Draft from the rear end.

Claim.—1. In a sulky-plow, the combination, with the frame, of a plow-beam supported between vertical guides projecting above the frame, the forward end of said beam being connected to one arm of a bell-crank lever, while its rear end is secured to a chain which passes over a pulley mounted in one of said vertical guides, and is connected to a lifting-lever, substantially as set forth.

2. In a sulky-plow, the combination, with the plow-beam working in guides above the frame, of a swinging draft-bail depending from the forward end of the frame, and inclined draft-rods secured at their forward ends to said bail and at their rear ends to the plow-beam, substantially as set forth.

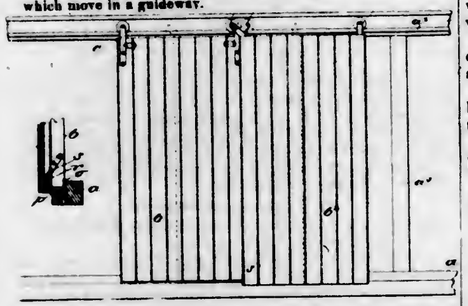
259,715.



3. In a sulky-plow, the combination, with the plow-beam and frame-guides, of a swinging draft-bail depending from the forward end of the frame, and two or more draft-rods having their forward ends secured on each side of said bail and their rear ends secured on either side of the plow-beam, substantially as set forth.

259,716. HANGING DOOR. ERWIN PRESCOTT, Arlington, Mass. Filed Apr. 3, 1882. (No model.)

Brief.—A pair of overlapping sliding doors are suspended by hangers which move on the same track. The extent of the lap and the separation of the doors are governed by stops. A finger on one door engages a cleat on the other, and one door has stays which move in a guideway.



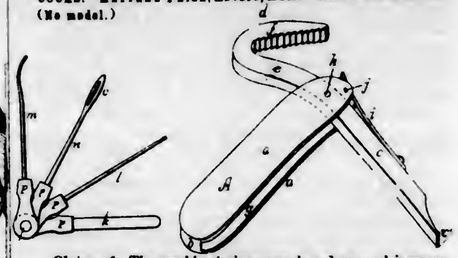
Claim.—1. The combination, with a single track, of two overlapping doors having their hangers arranged to run on the said track, to operate substantially as and for the purposes set forth.

2. The single track, a series or pair of doors, and hangers to support them from the said track and permit one door to overlap its mate, combined with a stop to regulate the extent of the lap of one door over the other, substantially as described.

3. The single track, a series or pair of doors, and hangers to support them from the said track and permit one door to overlap its mate, combined with a stop to prevent the passage of one door of the series or pair of doors from the other and the contact of their rollers or sheaves, substantially as described.

4. The door b^3, the cleat r, door b, and finger s, combined with a stay and a guide therefor, to prevent the movement of the doors outward from the line of posts, substantially as set forth.

259,717. COMBINATION INSTRUMENT FOR CLEANING GAS-COCKS. MATTHEW PRIOR, Revere, Mass. Filed Mar. 20, 1882. (No model.)



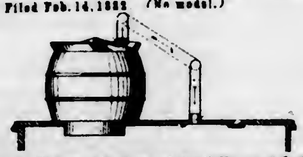
Claim.—1. The combined pipe-wrench and screw-driver consisting of the shank c, terminating at one end in the screw-driver c' and at the other in the U-shaped head, with its smooth and serrated jaws $e\,f$, in combination with the chambered handle A, the wrench being pivoted to the handle and constituting a cover to its chamber, substantially as explained.

2. The pipe-wrench composed of the shank c, with its U-shaped head d, in combination with the chambered handle A, when the said shank is pivoted to and constitutes a cover to the chamber of the handle, as explained.

3. The combined pipe-wrench and screw-driver consisting of the shank c, terminating at one end in the screw-driver c' and at the other in the U-shaped head, with its smooth and serrated jaws $e\,f$, in combination with the chambered handle A, the wrench being pivoted to the handle and constituting a cover to the chamber, and said chamber being adapted to receive supplemental pivoted tools, substantially as set forth.

4. The combination of a pivoted wrench with a chambered handle, the wrench being pivoted to the handle and constituting a cover to its chamber, substantially as set forth.

259,718. ATTACHMENT FOR COOKING-VESSELS. SILAS G. RANDALL, Greene, N. Y., assignor to Amelia A. Randall, same place. Filed Feb. 14, 1882. (No model.)



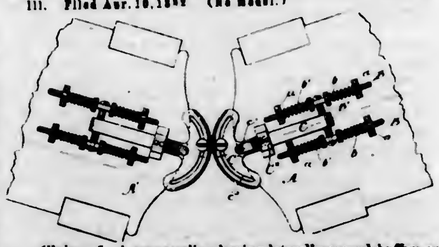
Claim.—1. The combination, substantially as set forth, of the vessel-cover, the stove-lid, and the connecting-pipe hinged to flex vertically, for the purpose set forth.

2. The combination of the vessel-cover, the stove-lid, and a connecting-pipe eccentrically connected with the lid and cover, substantially as described.

3. The combination of the vessel-cover, the stove-lid, and the hinged connecting-pipe, which fits over the nipples placed eccentrically on the cover and lid, substantially as described.

4. The stove-lid formed with a nipple for the reception of the pipe D, substantially as and for the purpose set forth.

259,719. CAR-COUPLING. CHARLES W. RASMUSEN, Chicago, Ill. Filed Apr. 10, 1882. (No model.)



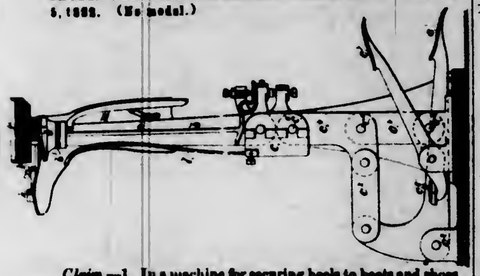
Claim.—1. A car-coupling having laterally-curved buffers or draw-heads, each with a slot or open space behind the face of the same, in combination with a connecting-link, and with mechanism for attaching said link to the draw-heads, adapted to travel in each slot or open space and to permit the free lateral movement of the link from side to side of the draw-heads without displacement, substantially as described.

2. A car-coupling having a connecting-link, rollers for said link, and buffers or draw-heads having laterally-curved rails upon which said rollers travel, substantially as described.

3. A car-coupling the buffers or draw-heads of which are provided with laterally-curved faces, having slots extending across said faces to receive the connecting link or bar and permit the free lateral movement of the same from side to side of the draw-heads without displacement, substantially as described.

4. The combination, with the draw-heads or buffers C' and their shanks C, of the yoke C^2 and spring c', the axle E', rods R, springs $b\,b'$, and yokes a, substantially as described.

259,720. MACHINE FOR SECURING HEELS TO BOOTS AND SHOES. FREDERICK RICHARDSON, Providence, R. I. Filed Feb. 6, 1882. (No model.)



Claim.—1. In a machine for securing heels to boots and shoes, the combination of the fixed die g, the sliding block a, the jack b, secured thereto, and a foot-lever arrangement, substantially as set forth, by which the jack is forced upward against the die to hold the boot or shoe and the heel in place, as described.

2. The combination, with the sliding block a and the jack b, of the bell-crank levers c' and c', and the links c^2 and c^2, constructed to force the jack against the die, and the lever c^3, constructed to release the levers and allow the jack to descend, as described.

3. The combination, with the sliding block a, of the hinged jack b, provided with the arm b', the stop b^4, and adjusting-screw d^3, constructed to adjust the jack with reference to the die, as described.

4. The combination, with the sliding block a, provided with the arm d and the adjusting-screw d', of the hinged jack b, provided with the arm b', and the stop b^4, provided with the adjusting-screw d^3, constructed to adjust the jack, as described.

5. The combination, with the hinged jack b, provided with the arm b', and the stop b^4, provided with the adjusting-screw d^3, of the spring b^5, interposed between the arm of the jack and the stop, as described.

6. In a machine for securing heels to boots and shoes, the swinging trays $a^4\,a^5$, pivotally secured near the die, as and for the purpose described.

7. The combination, with the jack operated by foot-power, substantially as described, and the die g, of the adjustable guides $k\,k'$, in advance of the die, to bear against the side edges of the sole of the boot or shoe, whereby the bottom of the boot or shoe is held in proper position with reference to the die g.

8. In a heeling-machine, the combination, with the jack b, heel-last b^6, and shanks b^8, for adjusting the length of the jack, of the die g, provided with holes through which the nails may be driven and with a projection constructed to receive the heel-shell, as described.

9. In a machine for securing metallic heels to boots or shoes, the combination, with the die g, provided with the holes g', having an enlarged countersunk recess at their upper end, of the driver i, provided with the enlargement g^3, forming a shoulder constructed to drive the nails and secure the heel-shell, as described.

10. The combination, substantially as before set forth, of the sliding block a, the jack pivoted thereto, and the guide l, rigidly secured to said sliding block.

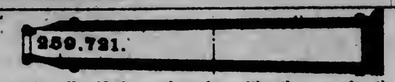
11. The combination of the jack b, pivoted guide m, and the adjusting-link n, adapted to adjust said guide with relation to the jack, substantially as and for the purpose described.

12. The combination, with the die g and the hinged jack b, of the wedges $o\,o$ and screws $o'\,o'$, constructed to adjust the jack with reference to the die, as described.

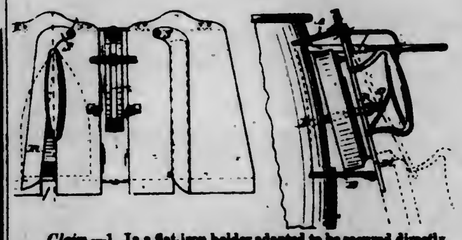
259,721. PROCESS OF SECURING RUBBER TO METAL. FREDERICK RICHARDSON, Providence, R. I. Filed Dec. 28, 1881. (No model.)

Claim.—The improved process substantially as herein set forth, the same consisting in preparing the metal surface by removing all oxidation, scale, or impurities, then covering the clean surface with liquid rubber, next securing a thin sheet of soft rubber by pressure and heat, then cementing the rubber to this thin sheet and subjecting the whole to vulcanization, as described.

259,721.



259,722. FLAT-IRON HEATER. GEORGE I. ROBERTS, Fort Wayne, Ind. Filed Mar. 18, 1882. (No model.)



Claim.—1. In a flat-iron holder adapted to be secured directly in front of an open doorway in the vertical wall of a stove, a fastening device which passes through said doorway and engages with the inside of the stove, substantially as set forth.

2. A detachable flat-iron holder upon which the iron rests and is supported, and which has attached thereto devices, substantially as described, for clamping it to a vertical or downwardly-projecting wall of a stove.

3. The combination, with the detachable flat-iron holder, of the clamping devices provided with the threaded shank, and a nut adapted to engage with said shank, substantially as set forth.

4. The combination, with the detachable flat-iron holder, of the clamping-hook arranged to swing vertically before it is fastened, and means, substantially as set forth, for clamping it against the stove.

5. The combination, with the detachable flat-iron holder, of the clamp which engages with the stove, the shank which carries the clamp, provided with a screw-thread adapted to receive a clamping-nut, and arranged, substantially as described, to prevent its being rotated.

6. The combination, with the detachable flat-iron holder having the upper and the lower plates or walls, A and B, of the supporting-piece G, the clamping device mounted in said supporting-piece, and the outwardly-projecting slotted supporting and guiding piece H, substantially as set forth.

7. A detachable flat-iron holder having at the bottom a horizontal supporting part, B, on which rests the heel of the iron, and the slotted vertically-arranged door extending below said support B, the iron-holder being open on the side opposite to the said door, substantially as set forth.

8. In a detachable flat-iron holder which closes and surrounds an open doorway in the vertical wall of a stove, a vertically-swinging slotted plate or door which closes the outside of the holder and prevents the escape of heat from said open doorway, substantially as set forth.

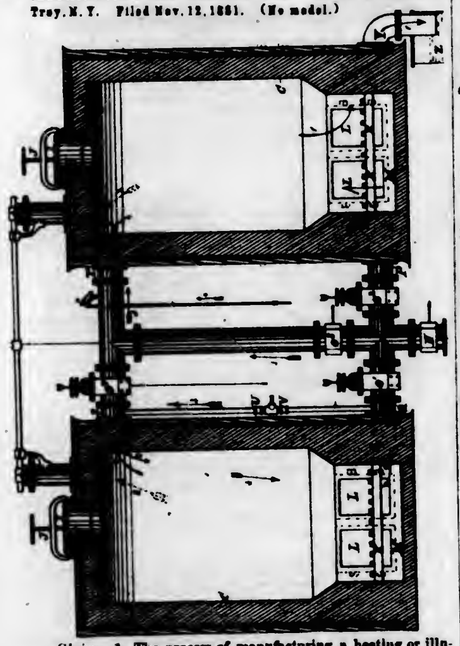
9. In a detachable flat-iron holder arranged to have the iron heated while resting on its heel, the combination, with a swinging door, of a stop attached thereto and arranged to bear against the bottom of the iron to prevent its moving inwardly, substantially as set forth.

10. In a flat-iron holder, the combination, with the bottom-support, B, upon which the heel of the iron rests, of the slotted door which swings toward and from the said support, and the stop attached to said slotted door to prevent the flat-iron from moving away therefrom, substantially as set forth.

11. In a flat-iron holder, the combination, with the swinging door, of a stop attached thereto which prevents the iron from moving inwardly from the door, and is adjustable relatively thereto, substantially as set forth.

12. In a flat-iron holder, the combination of a vertically-arranged outwardly-swinging door provided with a slot for the handle of the iron, and a laterally-swinging door or valve for said slot, pivoted to the outwardly-swinging door, and constructed, substantially as set forth, to be opened by the handle of the iron while the toe or body of the iron is swinging the main door outwardly, and arranged to automatically operate by gravity to close the slot after the iron has been withdrawn.

259,723. PROCESS OF AND APPARATUS FOR PRODUCING ILLUMINATING AND HEATING GAS. HENRY C. SHIELDS, Troy, N. Y. Filed Nov. 12, 1881. (No model.)



Claim.—1. The process of manufacturing a heating or illuminating gas which consists in heating independently the carbonaceous materials simultaneously in a generator and a superheater by separate blasts, and the direct internal combustion of the coal in each generator and superheater, then decomposing steam by passing it through one of the beds of the carbonaceous material, then carrying the escaping product—water-gas—forward and mingling it with hydrocarbon vapors, then passing the mixed gases through the other bed of carbonaceous material for fixing the gases, and finally conducting the same to the hydraulic main or seal, as hereinbefore set forth.

2. In combination with a gas-generator, the by-pass pipe R, pipes S and Q, and connecting steam-pipes U and V, with their connecting-valves, for the purpose of reversing the direction of steam into the generator and the escape of gas therefrom, substantially as set forth.

259,724. DECORATION OF CLAY-WARE. HENRY SIND, Hamilton, Ohio. Filed Feb. 1, 1882. (No model.)



Claim.—The improved process of making clay-ware with medallion decorations in colors, which consists in applying stains of the various colors to the decorative recesses of the mold before the mold is filled with the clay-liquid, substantially as set forth.

259,725. FILTER. JAMES S. SHARP, Salem, Mass. Filed Feb. 8, 1882. (No model.)

Brief.—The case *a* has projections *b* as bearings for filtering-plug *c*, which has a free way, *g*, for the water, and a filtering-way, *f*.

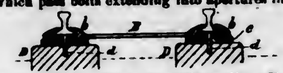
Claim.—The herein-described water-filter, consisting of the shell or case *a*, with internal divisions and bearing-surfaces *b b b* for the cylindrical or slightly-tapering hollow plug *c*, with its



strainers *f f*, filtering material *e*, and direct channel *g*, as and for the purpose set forth.

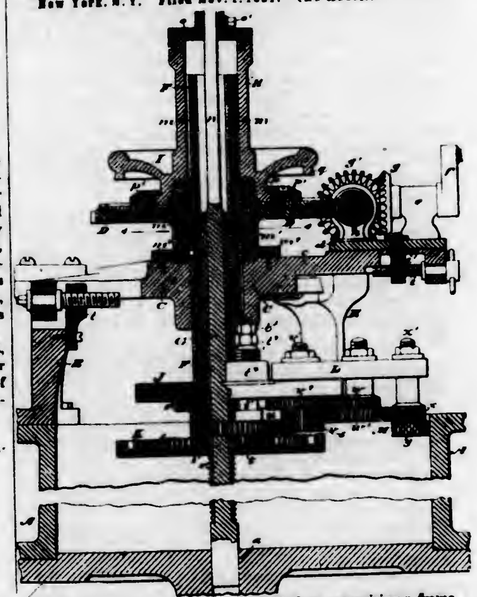
259,726. RAILWAY. DANIEL SMITH, Mabel, Pa. Filed Oct. 11, 1881. (No model.)

Brief.—Upon stone beds are placed wooden blocks and couplings having seats for the reception of rails, and through the center of which pass bolts extending into apertures in the stone.



Claim.—In a railway, the rail-couplings B, having seats *b* and bolts *d*, passing centrally down through said seats, in combination with blocks *c* and stones D, the said bolts extending into apertures in stones D, as herein shown and described.

259,727. TOOL FOR BORING CYLINDERS. JOSEPH H. SMITH, New York, N. Y. Filed Nov. 1, 1881. (No model.)



Claim.—1. A tool for dressing cylinders, comprising a frame to support the mechanism, a fixed axial screw, a tubular shaft mounted rotatively in the frame and bearing a nut which screws onto the said axial screw, a milling wheel or cutter mounted on an arm fixed to the tubular shaft, a toothed wheel mounted on the axial screw and arranged to slide longitudinally thereon, a pinion mounted on the cutter-bearing arm and arranged to mesh with the sliding toothed wheel on the axial screw, and a train of gears arranged between said pinion and the milling-wheel, whereby the latter is rotated, all combined and arranged substantially as set forth.

2. A tool for dressing cylinders, comprising a frame to support the mechanism, a tubular shaft, F, mounted rotatively in said frame, an axial screw-spindle, G, capable of being clamped fast to the frame and having a male screw to engage a female screw in the shaft F, a cutter, M, a pinion, *t*, and an intermediate train of gears mounted on an arm or plate on the shaft F, and a toothed wheel, K, mounted to slide on the axial spindle and to mesh with

the pinion *t*, whereby rotation of the shaft F imparts axial rotation to the milling-wheel and causes it to move in a spiral orbit, all combined and arranged substantially as set forth.

3. The combination of the axial screw-spindle, the tube H, provided with a hand-wheel, a clamp to fix said tube H to the fixed frame of the tool, a tubular shaft, F, mounted rotatively in the frame and provided with a longitudinal groove, *m*, a worm-wheel on said shaft, mounted rotatively in keepers on the frame and provided with a spline to engage the groove *m* in the shaft, a worm, A, to drive said worm-wheel, an axial spindle, G, fixed in the tube H and provided with a male screw to engage a female screw in the shaft F, a toothed wheel, K, mounted in keepers on the shaft F and provided with a spline, *s*, to engage a longitudinal groove in the axial spindle, a cutter, M, adjustable pinion *t*, and an intermediate train of gears mounted on an arm attached to the shaft F, all arranged to operate substantially as set forth.

4. The combination, with the supporting-legs of the frame and the adjusting-screws mounted rotatively therein, of the frame provided with guides arranged to slide in keepers on the supporting-legs, and provided with nuts to engage the adjusting-screws on said legs, whereby the axis of the frame may be properly adjusted to the axis of the cylinder, substantially as set forth.

5. The frame for supporting the operative mechanism of the tool, having three or more arms mounted adjustably in keepers on the supporting-legs, the said legs, the worm-wheel D, tubular shaft F, tube H, provided with a suitable clamping-flange, axial screw-spindle G, the worm A, toothed wheel K, plate J, pinion *t*, milling-wheel M, and the intermediate train of gears to drive said wheel, all combined and arranged to operate substantially as set forth.

6. The milling-wheel mounted rotatively on a plate or arm mounted on and arranged to turn on the same axis with the driving gear-wheel *v'*, the said wheel mounted on an arm or plate fixed to the shaft F, the wheel K, and the intermediate train of gears, all combined and arranged to operate substantially as set forth.

7. The combination, with the plate J, of the plate L, mounted thereon and provided with a curved rack, L', and the pinion *z*, all arranged to operate substantially as set forth.

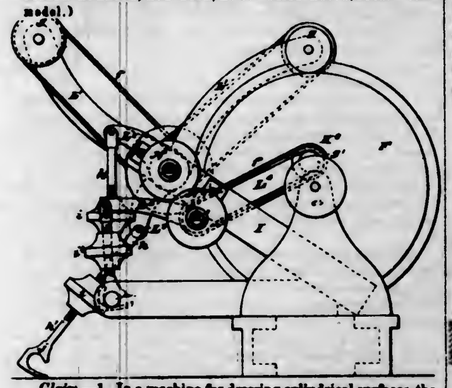
8. The combination of the pinion *t*, arbor *t'*, screw-threaded sleeve *t''*, mounted rotatively between shoulders formed on or fixed to said arbor, and the socket *t'*, all constructed and arranged to operate substantially as set forth.

9. The combination, to form a clamping device, consisting of the jaw *r'*, the sliding jaw, and the pin provided with an eccentric which has a bearing in the sliding jaw, all arranged to operate substantially as set forth.

10. The combination of sliding bed upon which the driving-worm is mounted, the said worm, the worm-wheel, means for adjusting the sliding bed to and from the worm-wheel, the jaw *r'*, fixed on said sliding bed, and the clamping-flange on the hand-wheel, the said jaw being arranged to stand out of contact with the clamping-flange when the worm is engaged with the worm-wheel, substantially as set forth.

11. The combination, with the clamping-flange *g*, of the sliding bed *d*, the clamping-jaw *r'*, mounted thereon, the sliding jaw *r''*, and mechanism for actuating the sliding jaw and the sliding bed, all arranged to operate substantially as set forth.

259,728. TOOL FOR DRESSING CAR WHEELS AND AXLES. JOSEPH H. SMITH, New York, N. Y. Filed Nov. 1, 1881. (No model.)



Claim.—1. In a machine for dressing cylindrical surfaces, the combination of the following elements, namely: a shaft mounted rotatively and a pulley fixed thereon, a sleeve mounted rotatively on said shaft and provided with a cutter-bearing arm and a cutter-moving arm, a cutter or dressing-wheel mounted rotatively on the cutter-bearing arm, and a pulley fixed on the cutter-arbor, a belt arranged to couple the driving-pulley with that on the cutter-arbor, mechanism for moving the cutter to and from the surface to be dressed, and mechanism for moving the cutter across the face of the work to be dressed, all constructed and arranged substantially as set forth.

2. A machine adapted for simultaneously dressing the two journals of a car-axle and the treads of the two wheels thereon, comprising bearings in which the axle is rotatively mounted, two diamond dressing-wheels for the wheel-treads, mounted on radial arms and driven from a shaft upon which said arms are mounted, two dressing-wheels for the axle-journals, mounted on radial arms and driven from a shaft upon which said arms are mounted, the shaft which bears and drives the axle-dressing mechanism being driven from the shaft which bears and drives the wheel-tread dressing mechanism, and mechanism for feeding the cutters up to and across the face of the work, all constructed, combined, and arranged to operate substantially as set forth.

3. A machine for dressing cylindrical surfaces, comprising two centers in which to rotatively mount the object to be dressed, a shaft, H, rotatively mounted, a sheave, K, fixed on the shaft H, a sleeve, L, mounted loosely on the said shaft and provided with means for adjusting it longitudinally, an arm, L', on the sleeve bearing the cutter-shaft, a cutter and sheave, K', on the shaft, arranged to be driven from the shaft H, an arm, L^3, on the sleeve L, and a rod adjustable as to length, arranged to couple the arm L^3 with a fixed part of the machine, all combined and arranged to operate substantially as set forth.

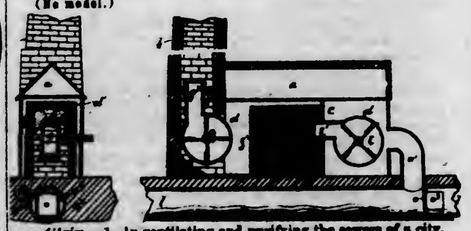
4. In a machine for dressing car-axle journals and the treads of the wheels fixed thereon, the combination, with the bed-plate and centers for rotatively mounting the axle, of a split pulley adapted to be fixed and adjusted on the axle, the driving-shaft H, driving-pulley J, gear-wheel O, sheaves G and K', belts *e f*, shaft H', gear-wheel O', sleeve L^2, arm L^4, bearing the cutter, the milling-wheel *g'*, sheaves K^2 K^3, belt *f''*, adjusting-nut N', arm L^5, and a rod adjustable as to length, arranged to couple the end of the arm L^5 with some fixed part of the machine, all arranged to operate substantially as set forth.

5. The combination, with a shaft, H, and a sheave, K, fixed thereon, of the sleeve L, nut N, dog *l*, bearing-arm I, arm L', cutter *g*, sheave K', arm L^2, nut *i*, section A, and section A', provided with a hook to engage a fixed part of the machine, all arranged substantially as and for the purposes set forth.

6. The combination, in a machine for dressing cylindrical surfaces, of a rotatively-mounted shaft, H, on which is fixed a sheave, K, the said sheave, a sleeve, L, bearing a radial arm, L', said arm having a bearing in its free end for the cutting-wheel, the said cutting-wheel, the sheave K', the belt *f*, the nut N, and the dog *l*, mounted on the sleeve-bearing and arranged to engage a groove in the nut, all arranged to operate substantially as and for the purposes set forth.

7. The combination, with the bed-plate and a bearing for the live center D, made movable along said bed-plate, the arm I, fixed on said bearing, the sleeve L, screw-threaded at its end and rotatively mounted in said arm, the nut N and dog *l*, the shaft H, extending through the sleeve L, and the cutting mechanism mounted on an arm projecting from said sleeve and arranged to be driven from the shaft H, all arranged substantially as shown, whereby the movement of the bearing of the center D imparts equal movement to the cutting mechanism, for the purposes set forth.

259,729. APPARATUS FOR VENTILATING AND PURIFYING SEWERS. JAMES STRATFORD, Buffalo, N. Y., assignor of one-half to Elias S. Hawley, same place. Filed Nov. 11, 1881. (No model.)



Claim.—1. In ventilating and purifying the sewers of a city, an apparatus consisting substantially of a disinfecting-chamber having double reticulated walls filled in with disinfecting mate-

rial, combined and operating in connection with a suction fan or fans, such disinfecting-chamber being connected both with the sewers and the open air, whereby the sewer-gases may be passed through the walls of such disinfecting-chamber by the action of the fan or fans, and thereby purified before being discharged into the open air, substantially as shown and described.

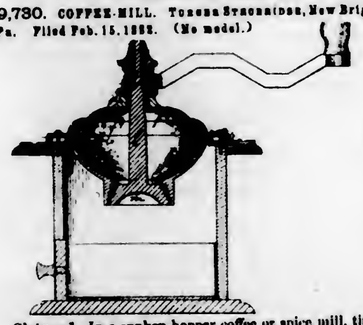
2. An apparatus for ventilating and purifying sewers, consisting of a disinfecting-chamber having double reticulated walls filled in with disinfecting material, as shown, and a suction fan or fans for drawing the obnoxious gases from the sewer and passing them through the walls of the disinfecting-chamber in order to remove their impurities, the whole being inclosed in a suitable building having connection with the sewer, and provided with a flue through which the purified gases are discharged into the open air, substantially as shown and described.

3. In an apparatus for ventilating and purifying sewers, the combination of the suction-fans *e* and *g* with the disinfecting-chamber *f*, all located and operating within the building *a*, provided with connection *a'* and flue *b* at its ends, substantially as shown and described.

4. In an apparatus for ventilating and purifying sewers, the combination, with the suction-fan *e* and disinfecting-chamber *f*, operating, as shown, within the building *a*, of the automatic valve *o*, located within the sewer, near its connection with the building *a*, to prevent the ingress of air from the mouth of the sewer, substantially as shown and described.

5. In an apparatus for ventilating and purifying sewers, the automatic valve consisting of the swinging gate *o* and wings o^2 o^3, operating as shown and described, and for the purpose stated.

259,730. COFFEE-MILL. THOMAS STACKHOUSE, New Brighton, Pa. Filed Feb. 15, 1882. (No model.)



Claim.—1. In a sunken-hopper coffee or spice mill, the combination, with the hopper and box, of a detachable box-top and detachable flanged hopper-cover having a series of registering holes, whereby the parts may be detachably united by a single set of fastening devices, together with a single set of fastening devices adapted to secure the several parts, substantially as and for the purpose specified.

2. In a sunken-hopper coffee or spice mill, the combination, with the box, of a detachable box-top, a detachable flanged hopper-cover, and a detachable hopper, the several parts having registering screw-holes, whereby the several parts may be secured to the box at one time and by the same fastening devices, together with a set of fastening devices for securing the several parts, substantially as and for the purpose specified.

3. In a sunken-hopper coffee or spice mill, the combination, with the box, of a detachable box-cover and a detachable hopper, said devices having registering screw-holes, whereby the parts may be secured by a single set of fastening devices, and a set of fastening devices adapted to secure the several parts, substantially as and for the purpose specified.

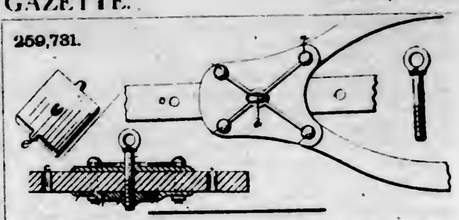
4. In a coffee or similar mill, the combination, with the grinding-nut shaft and crank, of a clutch-collar adapted to clutch both the crank and shaft, substantially as and for the purpose specified.

5. In a coffee or similar mill, the combination of the grinding-nut shaft, of irregular cross-section at its end, with a clutch-collar whose aperture corresponds to a cross-section of the shaft, a bridge or cover having an opening adapted to receive the clutch-collar, a crank-arm adapted to engage in a notch of the clutch-collar, and an adjusting-nut, substantially as and for the purpose specified.

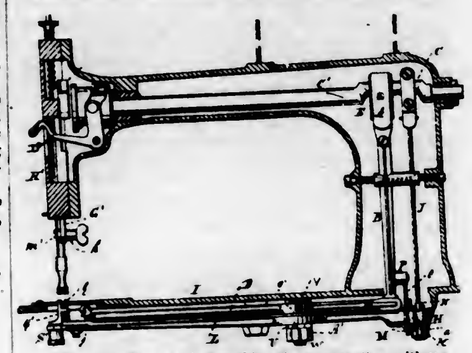
259,731. WAGON-REACH COUPLING. THOMAS C. THOMPSON, Baldwin, Wis. Filed Apr. 5, 1880. (No model.)

Claim.—In wagon-couplings, the combination of reach, screw-bolt, flat nut with dogs, and under plate with sockets, substantially as and for the purposes described.

259,731.



259,732. SEWING-MACHINE. JAMES TRIPP and JOHN H. OSBORN, Cleveland, Ohio, assignors of one-third to Samuel E. Henderson, Kansas City, Mo. Filed Apr. 13, 1882. (Model.)



Claim.—1. In a sewing-machine, the combination, with the driving-shaft C' and the crank C, of the bifurcated lever B, the self-adjusting blocks E and F, provided with longitudinal semicircular ribs adapted to fit and move freely in corresponding grooves in the bifurcations of said lever B, substantially as shown and described.

2. In a sewing-machine, the combination, with the cam H, having irregular and cylindrical portions, as described, of the feed-lever L, the block K, and mechanism for reciprocating the said block K, substantially as and for the purpose set forth.

3. In a sewing-machine, the combination, with the feed-cam H, having irregular and cylindrical parts, as described, of the feed-lever L, block K, rod J, crank C, and shaft C', substantially as and for the purpose set forth.

4. In combination with the feed-cam and feed-lever provided with a grooved roller, an adjustable feeding-block having an anti-friction facing, and the back of the said block being adapted to move in the groove of the said roller, substantially as set forth, and for the purpose specified.

5. In a sewing-machine with the feed-cam H and pinion *f'*, the combination of the rack M', pinion *g*, and thumb-piece or button N', substantially as and for the purpose set forth.

6. In combination with the feed-lever of a sewing-machine and bifurcated lever B and roller, the cam O, substantially as described, and for the purpose specified.

7. The bifurcated shuttle-lever D, secured to its rock-shaft, and adjustable thereon by means of a set-screw for regulating the height of the shuttle, in combination with the lever B and shaft C', substantially as and for the purpose set forth.

8. In a sewing-machine, the combination, with the shuttle-lever D, provided with a slit cylindrical socket, of the cross-head D', having a cylindrical shank and means for securing said shank in said socket, whereby the shank may be adjusted longitudinally and torsionally, substantially as set forth.

9. In combination with the cross-head D', the shuttle-cradle connected thereto by set-screws *f*, inserted in slotted openings *k*, for adjusting said cradle and shuttle therein, for the purpose specified.

10. The combination, with the face-plate H' and the needle-bar G', of the adjustable guide 1, having a gib or plate, L', formed integral therewith, and the stationary guide 2, said guides and needle-bar being arranged within the interior of the face-plate, substantially as and for the purpose set forth.

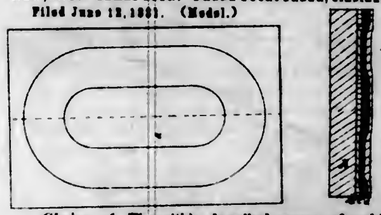
11. In a sewing-machine, the thumb-piece or button N', having on the surface or face thereof a numerical scale, *a'*, index or pointer *p*, and pinion *g*, in combination with the rack M', pinion *f'*, and feed-cam H, in the manner substantially as and for the purpose set forth.

12. In a sewing-machine, a combined needle-clamp and thread-guide, consisting of a bolt having a slit in the side of the head thereof parallel with the plane or top of said head, and a notch in the outer side of the slit, through which projects a pin fixed in the inner side of the slit, and secured to the needle-bar by a thumb-nut, substantially as herein shown and described.

13. In a sewing-machine, the combination of the center-pointed shaft U, carrying the adjustable shuttle-lever D, step V, adjusting-screw, step W, and clamp A', substantially as and for the purpose set forth.

14. The combination, with the feed-lever L, of the feed provided with a cylindrical shank or spindle, the sleeve S', having an arm, T', the collar or cap U', and pin O, substantially as and for the purpose set forth.

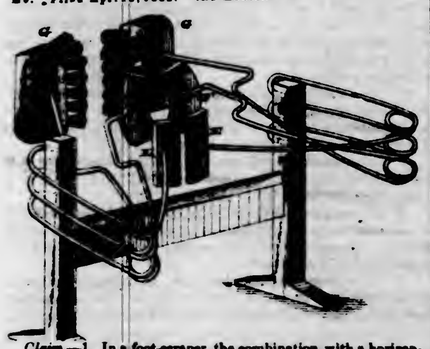
259,733. GLASS SIGN. FRANK TUCHFARBER, Cincinnati, Ohio. Filed June 13, 1881. (Model.)



Claim.—1. The within-described process of making glass signs and show-cards, consisting in first placing upon suitable transfer material all of the design, except the portions which are to appear of a polished gold or silver surface; secondly, transferring said design to glass; thirdly, covering the blank spaces intended for the reception of gold or silver leaf with a hard, glossy, transparent varnish; and, finally, applying the gold or silver leaf with water-size, substantially as and for the purposes specified.

2. As a new article of manufacture, a glass sign or show-card consisting of a foundation of glass carrying a transfer design provided with open spaces to allow a final backing of gold or silver leaf to be seen through the glass, and a layer of hard, glossy, transparent varnish interposed between the said leaf and the glass, substantially as described.

259,734. FOOT-SCRAPER. GEORGE P. TURNER, Meadville, Mo. Filed Apr. 19, 1882. (No model.)



Claim.—1. In a foot-scraper, the combination, with a horizontal scraping-blade, of a series of vertical scraping-blades and brushes mounted upon springs, substantially as set forth.

2. In a foot-scraper, the combination of a pair of uprights, a horizontal scraping-blade connecting said uprights, a series of curved springs secured to the upper ends of said uprights, and the vertical scrapers and brushes secured to the inner adjoining ends of said springs, as set forth.

3. In a foot-scraper, the combination, with the horizontal scraping-blade, of the vertical scrapers E F, having straight and concave edges, respectively, and the brushes G, all arranged, mounted upon springs, in nearly the same horizontal plane above said horizontal scraper, substantially as set forth.

259,735. FEEDING MECHANISM FOR PAPER-CUTTING MACHINES. JOSEPH WELKER, Jr., Pawtucket, R. I., assignor of one-half to Henry B. Cole, same place. Filed Apr. 1, 1882. (No model.)

259,735.

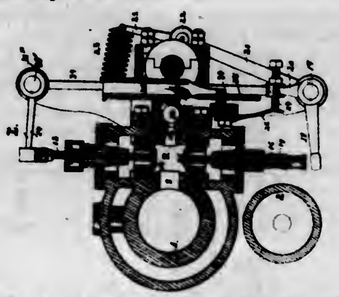


Claim.—1. In a machine for feeding and cutting paper, &c., the friction-wheels B, C, and D, (the latter having a circular slot, *d'*,) arranged to produce an intermittent feed, substantially as shown and described.

2. In a machine for feeding and cutting paper, &c., the combination of the friction-wheels B D C, dog E, brake-lever G, and spring S, all substantially as shown and described.

3. In a machine for feeding and cutting paper, &c., the combination of the friction-wheel C with the slotted friction-wheel D and bolt *d'*, said wheels having suitable friction-surface extending partially around their circumference, substantially as shown and described.

259,736. GAS-ENGINE. HERMANN WIEDLING, Baltimore, Md. Filed Aug. 1, 1881. (No model.)



Claim.—1. In a gas-engine, a cylinder and piston, a reservoir for compressed inflammable gas, and suitable inlet and exhaust valves and actuating mechanism, whereby the exhaust-port is closed previous to the completion of the stroke of the piston, and a portion of the burned gases from the previous stroke is compressed in the end of the cylinder, and a charge of combustible gas is introduced into the cylinder and exploded pending the return-stroke of the piston, substantially as set forth.

2. In a gas-engine, a cylinder and piston and a pair of valve-chambers having valves and actuating mechanism, substantially as described, whereby a charge of gas or vapor led from a suitable supply is intimately mingled with air and follows the piston in its stroke, and on the return-stroke is compressed in a suitable reservoir, a portion of the burned gases from a previous stroke being compressed in the cylinder, and on the return-stroke a charge of combustible gas is introduced into the cylinder with the said exploded gas and fired, substantially as set forth.

3. In combination with the disk-valve 6, seating upon the gas-inlet pipe, the annular valve 52, seating upon the air-inlet around the gas-valve and carried by the latter, as and for the purpose set forth.

4. In combination with the cone-faced disk-valve 6, the annular valve 52, carried thereby and located in the plane of the same, as set forth.

5. In combination with the inlet gas-chamber having gas and air valves and a reservoir into which the mixed gases are forced, a spring-seated valve in the passage connecting the said reservoir with the cylinder and subserving the end of a safety-valve to limit the pressure, as set forth.

6. In combination with the valve 6, having ports 77, the cylinder 70, having openings 51', whereby the flow of gas may be regulated independent of the air-supply, as set forth.

7. In combination with the gas-valve 6 and ring 52, connected therewith, the ports 54 48 51 and the tube 49, having orifices 51', as set forth.

8. In combination with the cylinder and piston and valve-chamber 9, the inlet and exhaust valves 10 11, cams 44 and 45, and intermediate mechanism for operating the valves, as set forth.

9. In combination with the cylinder and piston, the valve-chamber 9, having valves 10 11 and suitable actuating mechanism, the port 12, tubular valve 28, channel 29, and firing-jet 27, as set forth.

10. In combination with the cylinder and piston, the valves 9 and 10, curves 44 and 45, and shaft 33, combined and operating substantially as described, whereby the exhaust is cut off before the piston reaches the end of its stroke and the incoming compressed inflammable gas is mixed with a portion of the burned gas from the previous stroke.

11. In combination with the valve-chamber 9, having inlet and exhaust valves, the tubular valve 28, piece 26, spring 25, and mechanism for intermittently compressing and releasing the spring, as and for the purpose set forth.

12. In combination with the valve 28 and actuating-cam 46, the spring 71, eccentrically attached to the cam and connected with the valve-lever, as and for the purpose set forth.

13. In combination with the valve-chamber 9 and valves 11 10 28, the cams 44, 45, and 46, mounted upon the shaft 33 and actuating the valves, substantially as described.

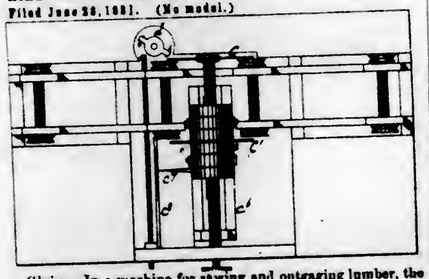
14. In combination with the inlet-valve and its actuating cam and roller 62, the circular plate 64, actuated by the governor, as set forth.

15. In combination with the valves 9 and 10, the levers 61 21, connected by a spring, 23, and having rollers 62 22, and the cams 44 45, as set forth.

16. In combination with the valves 9 and 10 and actuating-levers 61 21, the plate 70, having arms 74 75 and handle 73, as set forth.

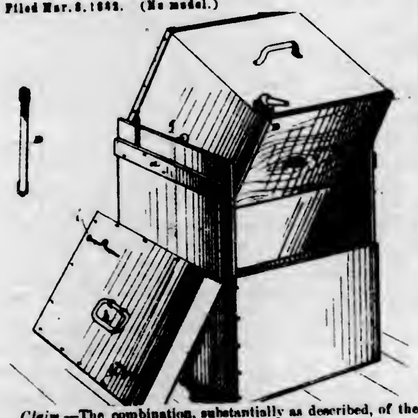
17. In combination with the cam 44, the disk 64, sliding upon the shaft 33 and actuated by a suitable governor, as set forth.

259,737. MACHINE FOR SAWING AND OUTGAGING MATERIAL FOR BARGES. GEORGE W. WILKINS, Brattonville, Pa. Filed June 26, 1881. (No model.)



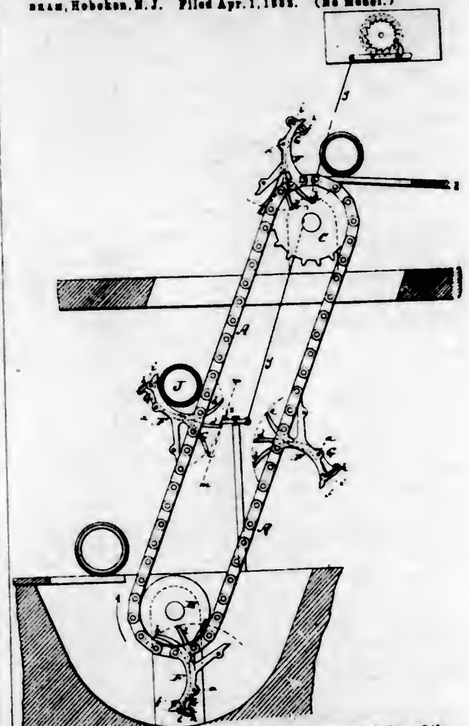
Claim.—In a machine for sawing and outgaging lumber, the combination of the fixed edging-saw C, for truing the edge of the plank, the rotating cutter *d*, arranged in line therewith and in rear thereof, for scarfing or outgaging the edge of the plank as it comes from the edging-saw, an adjustable edging-saw, C', for determining the width of the plank, together with suitable mechanism for actuating the saws and cutter, substantially as specified.

259,738. SWINGING CAN. F. CORTES WILSON, Chicago, Ill. Filed Mar. 8, 1881. (No model.)



Claim.—The combination, substantially as described, of the can provided on two opposite sides with protecting-pieces D, permanently secured thereto, with a case having two incomplete sides, the said protecting-pieces being of such size as to protect those parts of the can not covered by the incomplete sides of the case.

259,739. APPARATUS FOR REGISTERING THE SIZE AND NUMBER OF BARRELS AND PACKAGES. GEORGE W. WURSAM, Hoboken, N. J. Filed Apr. 1, 1881. (No model.)



Claim.—1. The barrel-recording mechanism consisting of the traveling hooks F and of the movable part or lever G, combined with them, all arranged so that said part or lever G will be brought into a different position by different-sized barrels placed on the hooks, and thereby into line with different recording mechanism, substantially as specified.

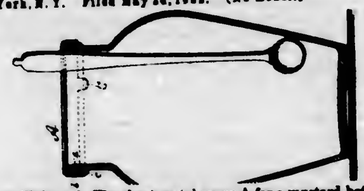
2. The endless chains A, combined with the hooks F and levers G, each lever G having two or more prongs, *b d*, and with two or more levers or triggers, *b' d'*, that are affected by said prongs in their order, substantially as specified.

3. In combination with the chain A, the hooks F, bolt *a*, lever G, having two or more prongs, *b d*, and upward projection *f*, substantially as described.

4. The lever G, made with projection *f* and slot *h*, and with two or more prongs, *b d*, for use in combination with the hooks F on endless carrier, and with two or more triggers or levers *b' d'*, substantially as described.

5. An endless carrier for barrels or packages, said carrier being provided with a movable plate or lever in such manner that said plate or lever will be brought into different positions by the different sizes of packages supported on the carrier, to indicate by its position the size of the package, substantially as specified.

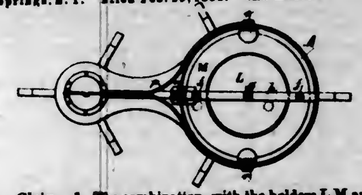
259,740. COVER FOR MUSTARD-BOTTLES. MAX ARB, New York, N. Y. Filed May 24, 1881. (No model.)



Claim.—1. The sheet-metal cover A for a mustard-bottle, having flange *b* and lugs *c* in one piece therewith, to engage beneath the neck of a mustard-bottle, substantially as specified.

2. The flanged sheet-metal cover A, having lugs *c* and a slot extending partly through its top plate and entirely through its flange, substantially as and for the purpose specified.

259,741. AIR-COMPRESSOR. JAMES H. HAMER, Saratoga Springs, N. Y. Filed Feb. 28, 1882. (No model.)



Claim.—1. The combination, with the holders L M and vessel A, of the air-tubes *b c d*, valves *c c'*, lever *p*, actuating-diaphragm, and inlet water-valve, substantially as set forth.

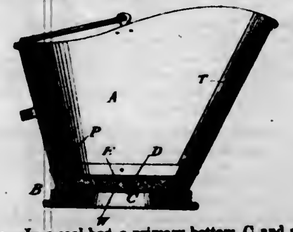
2. The combination, with the holders L M and vessel A, of the air-tubes and valves, the lever *p*, and the diaphragm *l*, the water-valve 9 and valve *a*, and diaphragm *s*, substantially as set forth.

259,742. SHOW-CASE FOR WATCH-CHAINS. HERBERT A. BLISS, Jersey City, N. J. Filed Jan. 28, 1882. (No model.)



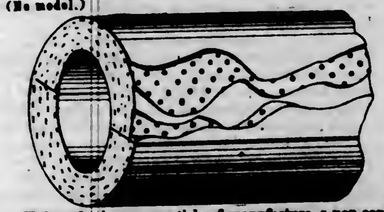
Claim.—A show-case for watch-chains, consisting of an upright casing having glass panels, and of an interior cylinder, B, covered with velvet, turning in bearings of the top and bottom of the casing, and being provided with one or more circumferential bands, C, having suspension devices for the watch-chains, substantially as set forth.

259,743. COAL-HOD. WILLIAM H. BOYD, Mount Lebanon, Pa. Filed Nov. 15, 1881. (No model.)



Claim.—In a coal-hod, a primary bottom, C, and a filling, D, composed of paper and sheet-metal scraps embedded therein, in combination with an interior lining, L, consisting of the secondary bottom, E, the front T, the beveled edge P, and the wire-cloth W, as set forth.

259,744. NON-CONDUCTING COVERING FOR STEAM-PIPES, &c. HENRY G. BRADLEY, Milwaukee, Wis. Filed Nov. 7, 1881. (No model.)



Claim.—1. As a new article of manufacture, a non-conducting covering for steam-pipes, boilers, and other surfaces, said covering being composed of two or more layers or wrappings of perforated material, the whole being cemented or pasted together, so as to form a series of confined air-spaces distributed throughout the entire material composing the covering.

2. A non-conducting covering for steam-pipes, boilers, and other surfaces, said covering being composed of two or more alternate layers or wrappings of perforated and non-perforated material, the whole being cemented or pasted together so as to form a series of confined air-spaces distributed throughout and within the material composing the covering.

259,745. SHOE-FASTENING. RICHARD P. BRYANT, San Francisco, Cal. Filed Mar. 4, 1882. (Model.)



Claim.—1. A shoe-fastening consisting of the raised plate *b*, having a V-shaped opening, *c*, cut in one side, and the dovetailed stud *e*, adapted to be inserted in the opening *c* and under the plate *b*, said parts *b* and *e* provided with suitable attaching means, substantially as set forth.

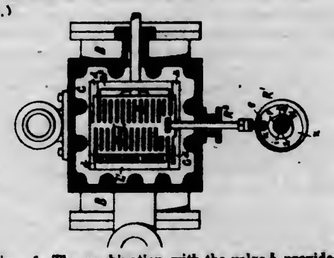
2. A shoe lacing or fastening consisting of the plate *b*, with its V-shaped slot secured on the under side of the overlapping edge, and the plate *d*, with its dovetail V-shaped stud *e* secured on the outside of the underlapping edge, in combination with the elastic strip F, interposed between the edge strip and the shoe-upper and its covering leather strip A, all combined and arranged substantially as described.

259,746. TOE-WEIGHT FOR HORSESHOES. CHAS. H. BURNHAM, Jr., West Hartford, assignor to himself and William W. Tucker, Hartford, Conn. Filed Apr. 14, 1882. (No model.)



Claim.—In combination with a toe-weight, as a means for attaching it to a horseshoe, the inclined fixed pin D, the inclined movable pin E, provided with the shoulder E' and screw-thread F, and the vertical pin G, operated by the pin E, substantially as described.

259,747. CUT-OFF VALVE AND GEAR. GEORGE F. BURTON and NOAH SHAW, Eau Claire, Wis. Filed Sept. 27, 1881. (No model.)

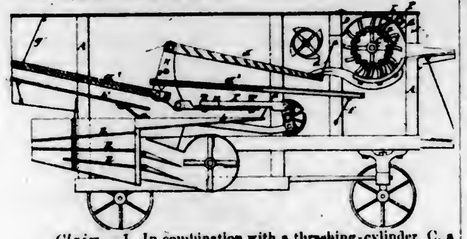


Claim.—1. The combination, with the valve *b*, provided with slats *c c*, which are in line with one another, of the auxiliary valve L, provided with slats *g g*, which are out of line with one another, and alternately correspond with the slats *c c* and with guides L' L', which hold it from moving lengthwise of the cylinder and with the main valve, while it is caused to move transversely upon said main valve, substantially as and for the purpose described.

2. The combination, with the valve *b*, provided with slats *c c*, which are in line with one another, of the auxiliary valve L, provided with slats *g g*, which are out of line with one another, and alternately correspond with the slats *c c* and with guides L' L', mechanism by which the valve L is operated, and the governor, substantially as and for the purpose described.

3. The combination of the valve *b*, having slats *c c*, the valve L, having slats *g g*, and guides L' L', steam-chest, stem R', slotted disk R', pin or roller *r*, cam-drum R', shaft N, sleeve I', gears *c' c' c' c'*, and shaft K, substantially as and for the purpose described.

259,748. THRASHING-MACHINE. RILEY H. COON, Oneida Lake, N. Y. Filed Feb. 3, 1882. (No model.)



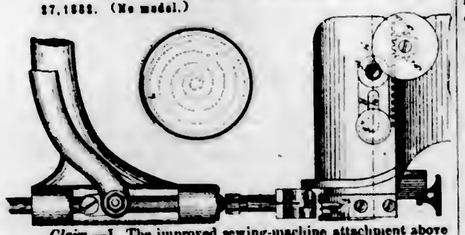
Claim.—1. In combination with a thrashing-cylinder, C, a longitudinal vibratory primary separating-rack, *a*, arranged to receive the delivery of the cylinder C, a secondary fine separating-rack, *a'*, arranged underneath the primary separator, to receive the grain, chaff, and fine straw, a tertiary separating-rack, *a²*, arranged under the rear or delivery end of both the primary and secondary separating-racks, to receive therefrom the straw and chaff, and grain-tables *b* and *b'*, arranged respectively under the secondary and tertiary separating-racks, and the sieves or riddles R R, all arranged and operating substantially as described, for the purpose specified.

2. In combination with the crank-shaft *c*, the racks *a a' a²*, rock-arm N, and the pitman P, formed with the adjusting-splice *n*, substantially as and for the purpose set forth.

3. The thrashing-cylinder C, formed with strips *s*, having teeth *t*, the slats *u*, removably inserted between the strips *s*, and set-screws *v*, as shown and described.

4. In combination with the cylinder C and its case D, the sliding gate G, the rack *r*, and the pinion *p*, arranged to operate as set forth and shown.

259,749. ATTACHMENT FOR USE IN SEWING WIRE INTO HATS. JOHN M. CURRY, South Framingham, Mass. Filed Apr 27, 1882. (No model.)

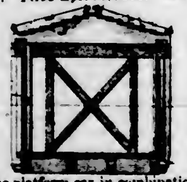


Claim.—1. The improved sewing-machine attachment above described, consisting of a base-plate provided with two parallel grooves, substantially as shown, and for the purposes set forth.

2. In a sewing-machine for wiring hat-brims, the combination of a double-grooved base-plate with an adjustable edge-guide, adapted when adjusted to be moved a limited distance, substantially as and for the purposes set forth.

3. For hat-wiring sewing-machines, an adjustable edge-guide having a double-slotted side plate, arranged, as described, so that the edge-guide, when adjusted by means of the longer slot, may be moved a distance limited by the shorter slot, substantially as and for the purposes set forth.

259,750. FREIGHT-CAR. JEAZMIR DAIGNEAU, St. Hyacinthe, Quebec, Canada. Filed Apr. 20, 1882. (No model.)



Claim.—1. The platform-car, in combination with the removable frame, the detachable side and roof boards, and means, substantially such as described, for securing said boards temporarily in place.

2. In a railway-car, the combination of the standards, the rabbeted corner-posts, and the clamping-bars to secure the side boards in place.

3. In combination with the rafters and the loose roof-boards, the presser-bars, substantially as described and shown, for holding the boards in place.

4. In combination with the roof-boards and the presser-bars, the rafters provided with points or studs to hold the boards, as set forth.

5. In a railway-car, the combination of a skeleton frame, loose side boards seated against the inside of the frame, and presser devices, substantially such as shown, acting against the inner sides of the boards to hold them temporarily in place.

6. The convertible railway-car consisting of a platform-car provided with a removable skeleton frame-work, sectional side walls and sectional roofing applied to said frame-work, and means, substantially as described, whereby the roof and the wall portions are secured in place independently of each other.

259,751. PICTURE-FRAME. JAMES H. DOWNES and LOUIS TURK, Brooklyn, N. Y., assignors of one-third to Edward McLaughlin, same place. Filed Apr. 1st, 1882. (No model.)



Claim.—As a new article of manufacture, a picture-frame adapted to be hung flatly against a wall, and provided with an overhanging bracket-shelf, substantially as described.

259,752. EXERCISING-CLUB. GEO. P. FISHER, Jr., Chicago, Ill. Filed Apr. 26, 1882. (No model.)



Claim.—1. As a new article of manufacture, a combined Indian club and dumb-bell, substantially as described.

2. An exercising-club having a handle or portion whereby the same may be grasped centrally for use as a dumb-bell and a handle or portion whereby the same may be grasped when swung as a club, substantially as described.

3. The combination, with an exercising-club or dumb-bell, of a weight or weights provided with a slot or its equivalent, to permit the same to be slipped over the club or dumb-bell from the side, substantially as described.

4. The combination, with an exercising-club or dumb-bell, of a removable weight or weights provided with a slot or its equivalent, to permit the same to be slipped over the club or dumb-bell from the side, and having a catch to retain said weights in place, substantially as described.

5. An exercising-club having a movable portion adapted to slide upon the handle of the club, said movable portion being provided with a latch affixed thereto to hold it in position, substantially as described.

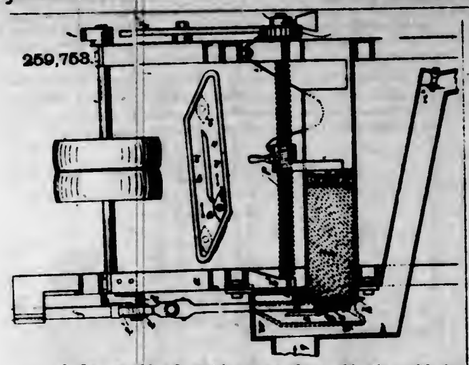
6. An exercising-club having a lower fixed portion, an upper movable portion, and intermediate removable weights, substantially as described.

259,753. MACHINE FOR GRANULATING SUGAR. EDWARD FOX, New York, N. Y., assignor to himself and Andrew Albright, Newark, N. J. Filed Apr. 10, 1882. (No model.)

Claim.—1. The combination, with the knife and knife-head, of the slide-rod *f*, yoke *e'*, actuating-shaft and crank-pin in the slot of the yoke, and mechanism moving the knife away from the sugar on the return-stroke, substantially as set forth.

2. In a machine for cutting sugar, the combination of a feeding trunk and screw, a knife and means for reciprocating the same, the knife-head, guide-slides with the grooves 4 and 5, and switch-gibs, substantially as set forth.

259,753.

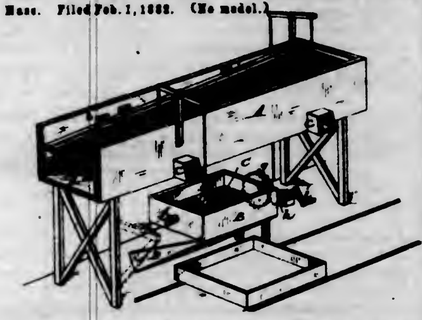


3. In a machine for cutting sugar, the combination, with the feeding trunk and screw of a knife, a crank for reciprocating the same, a knife-head, guide-slides, the ratchet-wheel, pawl, and actuating mechanism, substantially as set forth.

4. In a machine for cutting sugar, the combination of a knife, a knife-head carrying the said knife at an inclination to the surface of the sugar, and a stationary brush or scraper to clean the back of the knife and knife-head next to the sugar, substantially as set forth.

5. The combination, with the knife and the means for holding the sugar while being cut, of a chute, through which the sugar is conveyed by a current of air, and a revolving separator receiving its motion from said current of air, substantially as specified.

259,754. FILTERING APPARATUS FOR WATER AND SEWAGE. RUSTUS H. FULLER and JOHN D. SEARRAVE, Worcester, Mass. Filed Feb. 1, 1882. (No model.)



Claim.—1. In a filtering apparatus, a supply-flume provided with one or more outlets and with a filtering-top or overflow, substantially as shown.

2. The flume A, provided with outlets *c* and inclined filtering-top *b*.

3. A filter-box divided into compartments, as shown and described, whereby the filtering material may be kept in position, varied, or renewed at any point, as described.

4. The herein-described filter-box provided with a slotted or open bottom, divided into compartments and supplied with filtering materials, and furnished with a perforate plate above said compartments, as shown.

5. In a filtering apparatus, a filtering-box mounted upon trunnions, as shown and described, whereby it may be tipped to discharge the deposit therefrom.

6. In combination with the filter-box B, hung upon trunnions or journals *f*, the gear-wheel *g*, applied to one of said journals, and pinion A, meshing with said gear-wheel, and furnished with an operating crank or lever, substantially as shown and described.

7. A filter-box provided with a hinged perforate plate above the filtering material, substantially as and for the purpose set forth.

8. In combination with a tipping filter-box, a chute or board hinged thereto and extending to the receiving vessel or reservoir, substantially as and for the purpose explained.

9. In a filtering apparatus, the combination of a supply-flume, an outlet therefrom, a filter-box arranged to receive water from the outlet, a valve controlling said outlet, and a float located within the filter-box and connected with the valve, substantially as shown, whereby the float is caused to close the valve when the filter-box becomes choked or fails to permit the free escape of the water.

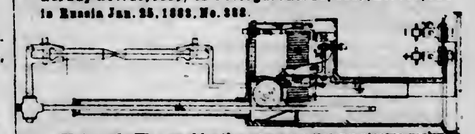
10. In a filtering apparatus, the combination of a supply-flume provided with an inlet-gate, a reservoir, and a float located within the reservoir and connected with the gate, substantially as shown, whereby it is adapted to control the supply of water to correspond with the demand.

259,755. MANUFACTURE OR TREATMENT OF SOAP. WILLIAM GREEN, St. Lawrence, County of Kent, England. Filed Jan. 10, 1882. (No specimens.) Patented in England June 18, 1881; No. 2,882.

Claim.—1. The described soap, made from mineral oils which have previously been treated with an alcoholic solution of chloride of potassium and caustic soda, then with about ten to twenty per cent. of animal or vegetable oil or fat, and the admixture of the soap so made with Castile or similar soap, substantially as described.

2. The soap described, made from mineral oils which have previously been treated with sea-weed, then with about five to ten per cent. of vegetable oil or fat, either with or without the addition to such oils of a saturated alcoholic solution of chloride of potassium and caustic soda, and the admixture of soaps so made with Castile or other soap possessing high lathering properties, substantially as described.

259,756. ELECTRIC-ARC LAMP. ROBERT J. GÜLCHER, Biala, Austria. Filed Nov. 17, 1881. (No model.) Patented in Germany Nov. 8, 1879, No. 10,333; in France Mar. 10, 1881, No. 141,633; in Austria Nov. 12, 1881, No. 35,431; in Hungary Nov. 12, 1881, No. 41,673; in Spain Nov. 22, 1881; in Italy Nov. 30, 1881, XV, 13,550, XXVII, 95; in Sweden Nov. 29, 1881; in Norway Nov. 29, 1881; in Portugal Jan. 12, 1882, No. 732, and in Russia Jan. 25, 1882, No. 332.



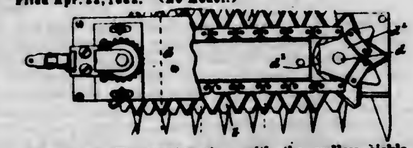
Claim.—1. The combination of an oscillating electro-magnet having enlarged poles with a fixed iron block below one pole and with the guide-rod of the upper-carbon holder being in contact with the opposite pole, substantially as set forth.

2. The combination of an oscillating electro-magnet having enlarged poles with a fixed iron block below one pole and with a magnetic brake at the same pole, for regulating the motion of the electro-magnet when starting the lamp, substantially as set forth.

3. The combination of an oscillating electro-magnet having enlarged poles with a fixed iron block below one pole, a spring-brake at the same pole, and a spring-stop above the pole, substantially as set forth.

4. The combination of an oscillating electro-magnet supported in a pivoted ring-frame with an adjustable elbow-lever having a contact-spring which engages a stop-screw at the outer end of the ring, substantially as specified.

259,757. HARVESTER-SICKLE. DAN GRIFFILL, Elgin, Ill. Filed Apr. 22, 1882. (No model.)



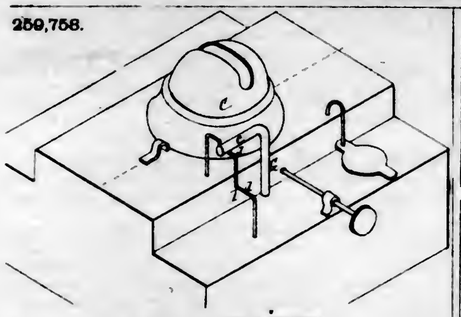
Claim.—1. The combination, with the endless sickle *a*, sprocket-wheel *g'*, shaft *g*, and bevel-gear wheel *f²*, of the endless sickle *b*, sprocket-wheel *f'*, shaft *f* and gear-wheel *f²*, and gear-wheel *h* and shaft *h'*, substantially as and for the purposes set forth.

2. The combination, with the sickles *a* and *b*, of plate *d'*, supported on block *c* and extended rearward therefrom between the said sickles, substantially as shown and described.

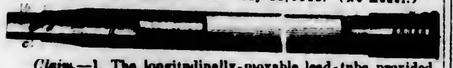
259,758. STREET-LAMP. CHARLES T. HAM, Rochester, N. Y. Filed Dec. 12, 1881. (No model.)

Claim.—In a lamp, the combination of the perforated cup or receptacle E, for holding the wick, the swiveled shaft G, provided with the handle *e*, and the gage I, provided with the successive steps *d d*, as shown and described, and for the purpose specified.

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259,759. LEAD AND CRAYON HOLDER. JOSEPH HOFFMAN, New York, N. Y., assignor to Joseph Rockenderfer, same place. Filed Sept. 29, 1881. Renewed May 23, 1882. (No model.)



Claim.—1. The longitudinally-movable lead-tube provided with rearwardly-inclined slots or undercut openings *a*, in combination with the sheath provided with the slotted tip or nozzle, and the cross-pin passing loosely through the slots of both tip and tube, as herein shown and described.

2. The longitudinally-movable lead-tube and the sheath, tip, or nozzle provided with reversely-inclined slots *a b*, as described, in combination with the loose cross-pin passing through said slots at their point of intersection, as and for the purposes herein shown and specified.

259,760. LUBRICANT. WILLIAM J. L. HOLLIS, London, England. Filed Jan. 27, 1882. (No specimens.)

Claim.—The improved lubricant described, consisting of a mixture of castor-oil with one of the vegetable oils described, and with mineral oil, and with tallow, if desired, in substantially the proportions named, to which is added another mixture composed of soda, silicate of soda, and water, and of caustic potash, if desired, in substantially the proportions named, the two mixtures being intermixed, as set forth.

259,761. LAMP-BURNER. RICHARD HUPPERTSBERG and BRUNO SCHWARZ, Berlin, Germany. Filed Apr. 10, 1882. (No model.)



Claim.—1. In a lamp-burner, a ventilating-casing with oblique slits in its body and serrated upper edge helically arranged, in combination with a central flue and chimney-support provided with air-openings below the gallery, substantially as described.

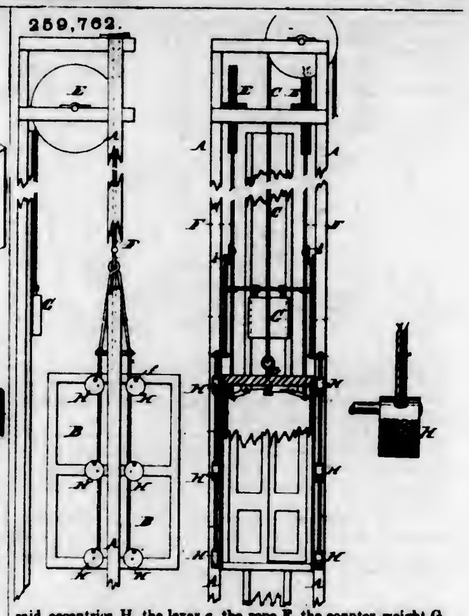
2. In a lamp-burner, the ventilator-casing with air-openings in its body above the bottom of the chimney and serrated edge above the burner, in combination with the chimney-support provided with air-openings *c* below the gallery *a*, whereby an air-flue is formed between the said casing and chimney, and air supplied to the interior of the casing, substantially as described.

3. The ventilator-casing having openings in its body above the bottom of the chimney and serrated upper edge, in combination with the flue between the casing and chimney, the chimney-support provided with air-openings *c*, a flue inside the burner, and a chimney contracted near the top of the burner and enlarged downwardly, leaving an air-space between it and the casing, substantially as described.

259,762. SAFETY APPARATUS FOR PASSENGER AND OTHER ELEVATORS. HERRILL M. HUTCHINSON, New York, N. Y. Filed Feb. 13, 1882. (No model.)

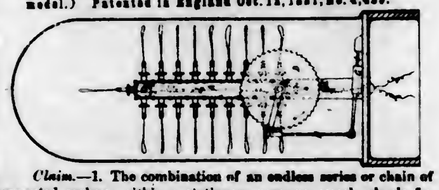
Claim.—The herein-described oppositely-arranged eccentrics H, attached to the car or cage B, the post A, arranged between

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said eccentrics H, the lever *a*, the rope F, the counter-weight G, and means, substantially as described, for connecting the rope F with the oppositely-arranged eccentric H, so that in the event of the breaking of the hoisting-rope the counter-weight will hasten and promote the gripping and compressing action of the eccentrics upon the post between them, all substantially as and for the purpose herein set forth.

259,763. INCANDESCENT ELECTRIC LAMP. JOHN JAMESON, Newcastle-upon-Tyne, England. Filed Feb. 1, 1882. (No model.) Patented in England Oct. 12, 1881, No. 4,636.



Claim.—1. The combination of an endless series or chain of mounted carbons within a stationary vacuous vessel, wheels for supporting such chain, stationary contacts, and means, substantially as described, whereby the carbons may be brought successively in operative connection.

2. The combination, within a stationary vacuous vessel, of standards A A, rollers B B', the endless series of mounted carbons, ratchet-wheel D, pawl E, lever and pawl F, armature G, an electro-magnet, connecting-rod H, and wires J' J² and K' K², substantially as shown and described.

259,764. JOINT FOR DRAIN AND OTHER PIPES. CARL JAPTOK, New York, N. Y. Filed Mar. 16, 1882. (No model.)



Claim.—1. A drain-pipe having an enlarged annular female portion contracted at the outer end and provided with a transverse segmental recess, substantially as set forth.

2. The combination of a pipe-section having an enlarged female portion, which is contracted at the outer end and recessed transversely at one side, with the male end of the adjoining pipe-section and a filling-layer of cement inserted into the space between the male and female portions of the pipe, substantially as described.

3. The combination of a pipe-section having an enlarged female portion, which is contracted at the outer end and provided with a transverse recess, with the male end of the adjoining pipe-

section, a cement filling, and a detachable section fitted into the recess of the female portion, substantially as specified.

4. The combination of a pipe-section, A, having an enlarged and recessed female portion, B, contracted at the outer end and provided with interior seats, *a' b'*, with a male portion, A', having a seat, *a*, a cement filling, and a detachable section or cover, B', fitting into the recess of the female portion B, substantially as set forth.

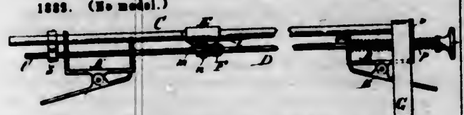
259,765. VEHICLE DEVICE FOR CHECKING HORSES. WM. P. KIRKLAND, Hanford, Cal. Filed Feb. 23, 1882. (No model.)



Claim.—1. The combination of the axle B, having journal-bases D E F, sheathered windlass-rod H, adapted to rotate and slide in said bases, and provided at one end with ratchet-teeth N, the recessed pinion L, journaled loosely on said shaft, and having internal pawls, P, adapted to engage with the ratchet, the internally-bent hand C, secured to the wheel-hub, bifurcated lever G, fulcrumed to an ears, *D'*, on the bearing D, and adapted to engage with the shaft H, and the strap Q, secured to said shaft, all constructed and arranged for joint operation, substantially as and for the purpose described.

2. The combination of the internally-toothed hub-band C, loosely-journaled pinion L, having internal pawls, P P P, arranged to engage during the forward motion of the vehicle with the ratchet-teeth N upon the end of the pinion-shaft or sliding windlass-rod H, having a strap, Q, and held in bearings J J J, secured upon the axle B, in which H is slid backward or forward by the pivoted hand-lever G, when constructed and arranged to operate substantially as shown and described.

259,766. LINE-INDICATOR. FRANK KITTELL and SAMUEL J. REINE, Chicago, Ill. Filed Apr. 3, 1881. Renewed Apr. 25, 1882. (No model.)



Claim.—1. In a line-indicator, the combination of a rod, mechanism for securing the same in position upon the page to be copied, a pointer adapted to slide upon the said rod, and mechanism to be operated by the hand adapted to carry the said pointer downward over uniform spaces, one space at a time, all substantially as described.

2. In a line-indicator, the combination of a rod, mechanism for securing the same in position upon the page to be copied, a pointer adapted to slide upon the said rod, mechanism to be operated by the hand adapted to carry the said pointer downward over uniform spaces, one space at a time, and adjusting mechanism for permitting the width of the spaces to be graduated at will, all substantially as described.

3. The combination of the stirrups A and A', rods C and D, thumb-nut *q*, spring *p*, pointer E, friction-pawl F, and mechanism for securing the device in position, the whole being constructed and arranged to operate substantially as described.

4. In combination with the stirrups A and A', rods C and D, thumb-nut *q*, spring *p*, pointer E, and friction-pawl F, combined and operating substantially as described, the graduating device, comprising the screw-nut *s* upon the outer end of the rod D, and provided with the extension *r*, entering a slot, *a*, in the rod C, as set forth.

259,767. SMOKE-CONSUMING FURNACE. MORTIMER D. LECOUNT, Cleveland, Ohio. Filed Mar. 13, 1882. (No model.)

Claim.—1. The combination, with a furnace, of a coking fuel feeder or hopper consisting of a solid or unperforated outer casing or shell provided with suitable registered air-inlets and a perforated inner casing or shell, the two shells being separated to form an intervening air-space, and a deflector placed above the mouth of said fuel feeder or hopper, substantially as set forth.

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2. The combination, with a furnace, of a coking fuel feeder or hopper externally projecting from the furnace, and provided with the solid outer shell and the perforated inner shell and the intervening air-space, *a*, substantially as and for the purpose shown.

4. The combination, with a furnace, of a fuel-coking feeder or hopper having its inner or perforated shell non-perforated beyond the partition *c*, substantially as and for the purpose shown.

5. The combination, with a furnace, of a fuel-coking feeder or hopper consisting of two casings or shells with an air-space separating them, the outer shell being non-perforated, but provided with suitable registered air-inlets, and the inner shell or fuel-holder proper, having perforations in front of but not beyond a partition, *c*, substantially as and for the purposes shown.

6. In combination with a furnace, a coking fuel feeder or hopper provided with a partition, *c*, interposed between the inner and outer shells, and located between the perforated and non-perforated sections of the inner shell, substantially as and for the purpose shown.

7. The combination, in a furnace, of a coking fuel feeder or hopper consisting of an imperforate outer casing or shell provided with suitable registered air-inlets and a perforated inner casing or shell, the two shells being separated to form an intervening air-space, and a door or inlet, D, opening to the interior of the furnace above its floor or grate, substantially as set forth.

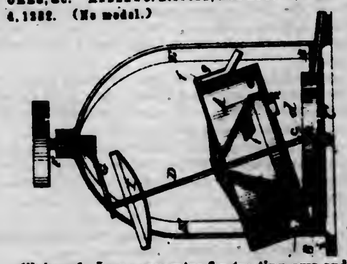
8. The combination, with a furnace, of a fuel-coking feeder or hopper consisting of two shells, one within the other and separated by an air-space, the outer shell constructed to supply a predetermined amount of air to the said air-space, and the inner shell, or fuel-holder proper, perforated to admit air from said air-space to the fuel, substantially as and for the purposes shown.

259,768. ILLUMINATING TILE-PLATE. WILLIAM A. LINDSAY, New York, N. Y., assignor of one-half to Charles E. Furman, same place. Filed Apr. 11, 1881. (No model.)



Claim.—The combination, with a rolled-metal plate, of re-enforcing cast-metal plates constructed with sockets *c*, carrying the lenses, substantially as and for the purposes described.

259,769. APPARATUS FOR TREATING AND REDUCING ORES, &c. ANDREW C. LIPPITT, New London, Conn. Filed Feb. 4, 1882. (No model.)



Claim.—1. In an apparatus for treating ores and other substances substantially as described, the combination of a pan or vessel supported at its center, and a track or bed located in a plane below the central support and supporting the pan at its circumference, whereby the weight of the vessel causes it to maintain an inclined position and to rest upon the track.

2. In an apparatus for treating ores and other substances, the combination of a pan or vessel, a raised central support, and a circumferential track, arranged as shown and described, whereby the operating mechanism is entirely relieved of the weight of the pan.

3. In combination with the base, having the central support and track B, the pan A, mounted thereon, and adapted to roll about the central support and to rest continuously upon the track, substantially as set forth.

4. In combination with the pan or vessel A and its central support, the sustaining-track B at its circumference, and means, substantially such as shown and described, for causing the pan to roll about the central support.

5. In combination with the pan supported in an inclined position, as explained, by a central support and a circumferential track, and provided with a central shaft, an arm arranged, substantially as shown, to revolve in a horizontal plane and to act against the shaft, whereby the pan is caused to roll about its central support upon the track or bed.

6. In combination with the track B and pan A, the adjustable central support, *a*, substantially as shown and described.

7. In combination with the pan or vessel A, constructed substantially as shown and described, the base provided with troughs *i*, as and for the purpose explained.

8. The pan or vessel A, supported and driven as herein described and shown and provided with outlets *f*, as and for the purpose specified.

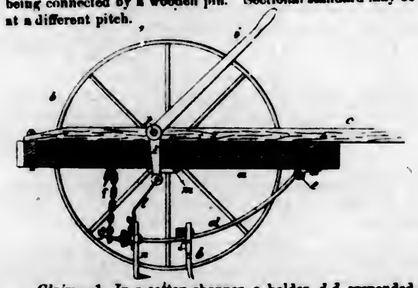
9. The pan or vessel A, mounted and driven as explained and shown, provided with screening-openings *f* and spouts *g h*, as and for the purpose explained.

10. The herein-described apparatus for treating and reducing ores and other substances, consisting of the pan or vessel A, supported by the central support and circumferential track, and operated substantially as described, and the rolling pounders and weights H, placed within said vessel, and operating substantially as explained.

11. The herein-described apparatus, consisting of the pan or vessel provided with shaft D, central support, *a*, track B, arm G, loosely connected with shaft D, and shaft F, provided with pulley or sweep, as explained.

259,770. COTTON-CHOPPER. JACOB B. LISLE, Springfield, Ohio, assignor to himself and William J. Irwin, same place. Filed Nov. 23, 1881. (No model.)

Brief.—The machine is to be drawn across the rows. Choppers in a slotted cross-head susceptible of being changed or set at any distance apart are suspended by hinged flexible bars, the hinge being connected by a wooden pin. Sectional standard may be set at a different pitch.



Claim.—1. In a cotton-chopper, a holder, *d d*, suspended by two drag-bars, *d*, the movable sockets *p*, and cutters *s s'*, in combination with a lever, *i*, link *l*, chain *f*, and hook *h*, as and for the purpose specified.

2. A cotton-chopper provided with a holder, *d d*, flexibly connected to the frame, having a longitudinal slot for the reception of a series of movable sockets, *p*, in combination with a series of cutters, *s s'*, as and for the purposes specified.

3. A cotton-chopper provided with the sockets composed of parts *p q r s*, in combination with a slotted holder, *d d*, suspended by hinged bars, and cutters *s s'*, substantially as and for the purpose specified.

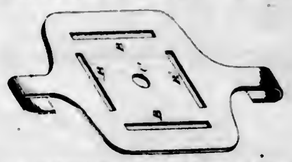
259,771. PICTURE-EXHIBITOR. REUBEN MCLOUGHLIN, Brooklyn, N. Y. Filed Apr. 18, 1882. (No model.)

Claim.—1. A series of picture-frames provided with backs which are ornamented and are united at their edges by flexible connections which permit them to be folded to either side, substantially as described, whereby said connected frames may be readily mounted upon and around a suitable stand or serve as an ornamental reversible screen, as set forth.



2. In combination with a polygonal stand, a series of flexibly-connected picture-frames corresponding in number to the sides of the stand, said frames being detachably mounted thereon, substantially as and for the purpose described.

259,772. TRACE-CARRIER. JOHN W. O'DANIEL and CHARLES E. WALLS, Cloverdale, Ind. Filed Apr. 22, 1882. (Model.)



Claim.—A trace-carrier composed of the flat metal plate provided with slots B B', for the passage of the back and hip straps, the central rivet-hole, C, and the invertedly-turned hooks A A, one at each side, constructed and adapted to be applied to harness, as set forth.

259,773. CAR-BRAKE. J. LAPE POALE, Philadelphia, Pa. Filed Apr. 22, 1882. (No model.)



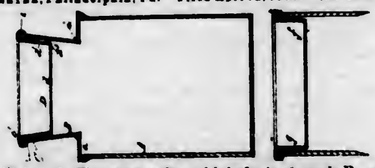
Claim.—1. The roller A, in combination with its fixed bearing B, said roller being movable vertically on said bearing, for the purpose set forth.

2. A vertically and laterally movable roller, in combination with a depressing and shifting lever and a fixed attachment of a car-truck, said truck and lever combining to wedge said roller against the rail of a track when said roller has been shifted into the proper position, as set forth.

3. The brake-shoe roller, in combination with the inclined face J of the hanger *b'*, the lever C, and operating mechanism of said lever, substantially as and for the purpose set forth.

4. The brake-shoe, in combination with elevating mechanism consisting of an inclined foot and a lever or arm which forces the shoe on and up said foot, substantially as and for the purpose set forth.

259,774. SHEET-METAL CAN. ISAAC PENTON and HARRY T. PENTON, Philadelphia, Pa. Filed Apr. 12, 1882. (No model.)

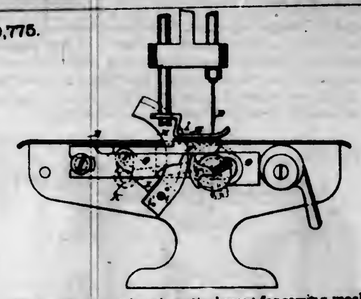


Claim.—1. The combination, with body A, of nozzle B, seamless ring C, soldered thereto and having internal shoulder, *c*, and flange *c'*, soft-metal cap D, and gasket or packing-ring *e*, the several parts being constructed and combined substantially as shown and described.

2. The combination, with the body of a can or nozzle, of seamless ring C, soldered thereto and having internal shoulder, *c*, and flange *c'*, and soft-metal cap D, substantially as shown, and for the purpose set forth.

259,775. TRIMMING ATTACHMENT FOR SEWING-MACHINES. R. WILLIAM RISSE, Philadelphia, assignor of one-half to John E. Jones, Germantown, Pa. Filed Feb. 15, 1882. (No model.)

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Claim.—1. In a trimming attachment for sewing-machines, a reciprocating curved cutter or knife which constantly presents a fresh cutting-edge to the goods to be cut, the cutting-edge of said cutter being concentric with its axis, in combination with means to reciprocate said cutter, substantially as and for the purpose specified.

2. In a trimming attachment for sewing-machines, a moving cutter which constantly presents new or fresh cutting-edges to the goods to be cut, said cutting-edge neither advancing nor receding during the act of cutting, in combination with means to move said cutter, and two feeds, one of which is arranged on each side of said cutter, substantially as and for the purpose specified.

3. The combination of cutter H, having the cutting-edge *h* concentric with its axis J, with the plate B, having slot *b*, and devices to rock said axis J and sew and feed the sewed goods against the cutting-edge *h*, substantially as and for the purpose specified.

4. The combination of the curved cutter H, having the cutting-edge *h* concentric with its axis J, with presser-foot E, having slot *e*, open in the rear, as shown and described.

5. The combination of the curved cutter H, having the cutting-edge *h* concentric with its axis J, with said axis, mechanism to rock said axis J, presser-foot E, having slot *e*, plate B, having slot *b*, and feeds F and P, one located on each side of said cutter H, as described.

6. The combination of shaft N, eccentric M, rod L, crank K, axle or shaft J, crank I, curved cutter H, having its cutting-edge *h* concentric with the axle J, presser-foot E, having slot *e*, and feeds F and P, one located on each side of said cutter H, substantially as and for the purpose specified.

259,776. CONNECTING-ROD. LOUIS SONNTS, Philadelphia, Pa. Filed Jan. 27, 1882. (No model.)



Claim.—1. In a connecting-rod, the combination of two or more parallel bars, the boxes or stub ends secured thereon, as shown, and means, substantially such as shown, to prevent the rotation of the rods within the boxes.

2. The combination of the two longitudinal rods or bars, the boxes applied thereon, the nuts, and the splines or feathers arranged, as shown, to prevent the rotation of the rods within the boxes, whereby a torsional motion of the parts is prevented.

3. As an improvement in connecting-rods, the combination of two or more rods having shoulders *c*, formed by reducing the ends of the rods, the detachable metallic collars *a* against the shoulders, the half-boxes seated against the collars, and means, substantially as shown, for securing the boxes in place.

4. The improved connecting-rod, consisting of the boxes or stub ends connected by two or more rods, each rod having its ends formed with reduced necks *b* and shoulders *c*, and being made of uniform diameter from one shoulder to the other, as described and shown, whereby their construction from rolled iron is permitted without the necessity of forging the same.

259,777. HARNESS-TUG. HENRY SMITH, New Haven, Conn. Filed Apr. 27, 1882. (No model.)

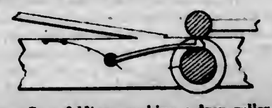
Claim.—The metal tug A, having its end *a* bent round the bar of the buckle, and provided with the slot *c*, through which the tongue of the buckle passes, also having its overlapping end *b*, provided with the slot *d*, through which the tongue of the buckle also passes, formed to make the space *e*, in which the leather loop B is clamped and riveted to the side of the tug, and also having the

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metal loop C fastened to the tug by the plate *a*, riveted to the tug, substantially as shown and set forth.

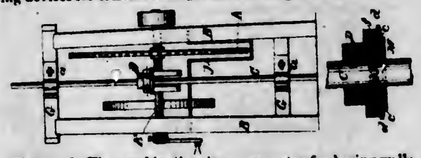
259,778. PAPER-FOLDING MACHINE. JOHN H. STODDARTS, Erie, Pa. Filed Nov. 23, 1880. (No model.)



Claim.—In a folding-machine, a drop-roller pivoted to the frame-work by arms which act as bearings for said roller, one of said arms being bent and pivoted, as shown, to form a lever, for the purpose set forth, in combination with a feed-roller having cylindrical grooves in its surface and a rock-shaft having gages attached thereto, a bent arm projecting from one end and in sliding contact with one of the journals of the drop-roller, which in dropping rocks the shaft and depresses the gages into the cylindrical grooves in the feed-roller, and a spring attached to the frame-work for reversing the action of the drop-roller upon the rock-shaft when said drop-roller has been lifted, substantially in the manner set forth.

259,779. ROCK-DRILL. THEO. H. STODER, Marion, Pa. Filed Feb. 15, 1882. (No model.)

Brief.—The drill-shaft is raised by a pair of cams of different lengths, one upon each side of the shaft. The longer of each cams bears upon the clutch on the drill-shaft after the shorter is out of contact, and by friction therewith imparts a rotary or turning movement to the drill. The cam-arms are provided with air-cushioning devices for lessening the jar in operating the machine.



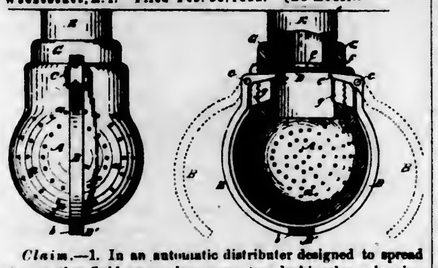
Claim.—1. The combination, in an apparatus for boring wells or rocks, consisting of the drill-shaft C, rotating cam-shaft E, provided with a pair of cams of different lengths, the said shaft having a clutch, whereby the cams are made by their rotating action to automatically turn the drill-shaft for a new cut, substantially as described.

2. In an apparatus for boring wells and rocks, the combination of the drill-shaft and the rotary cam-shaft, the latter being provided with cams of different lengths, as described, whereby the revolving motion of said cams imparts a turning movement to the drill-shaft, the said cams being provided with a combined spring and air-cushioning device in such manner that the thud or knock of the cams against the clutch is greatly lessened, all arranged and operating as shown.

3. The combination, in a well or rock boring machine, of the drill-shaft provided with a lifting clutch or chuck suitably attached thereto, the said chuck having in its face a cylindrical recess, a piston-head snugly fitting in said recess, a spring interposed between the piston-head and bottom of the recess, an air-duct, *f*, in the side of the clutch for induction and eduction of the air from said recess, the said piston-head forming a shoe or bearing for the cams to work against, and the spring and air forming a compound cushioning device, all arranged in the manner and for the purpose set forth and described.

4. In an apparatus for boring wells or rock, the drill-shaft C, provided with clutch D, hinged journals *a a*, rotating cam-shaft E, having cams F F, angle-iron J, having support or projection *b*, for the drill-shaft to rest upon when not in use, the said hinged journals being adapted for the ready removal of the drill-shaft, and the operating mechanism, all combined and arranged for joint operation in the manner set forth and described.

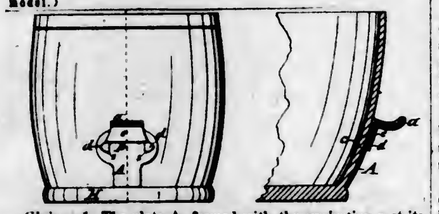
259,780. AUTOMATIC SPRINKLER. CHARLES W. TALCOTT, Woonsocket, R. I. Filed Feb. 28, 1882. (No model.)



Claim.—1. In an automatic distributer designed to spread water or other fluid over a large area, two locking-bows lapping their outer ends, and said ends sweated together with solder fusible at a low degree of heat, said locking-bows passing through the wall of the distributer at points exactly opposite each other and pivoted therein, their inner ends forming goose-neck levers, said goose-neck levers being so shaped and arranged as to enable them to pass into slots provided within the inner wall of the distributer, so that the edges of said levers may come flush with the inside surface of said inner wall to allow for the passage of the diaphragm when the distributer is in the act of opening, but said goose-neck levers to serve as a bearing for said diaphragm when the distributer is locked, substantially as described.

2. In an automatic distributer designed to spread water or other fluid over a large area, the combination of the rose A, provided with perforations *a*, the two locking-bows B, arranged so that their outer ends, B', lap, said bows being hung upon the pivots *c*, the fusible metal *b*, sweating said ends B' together, the two inner ends, C, of the locking-bows B forming goose-neck levers, the collar G, provided with the two slots *g*, the diaphragm D, with slots *d*, the annular soft-metal packing *f*, and the supply-pipe E, with beveled end *e*, the whole constructed and arranged substantially as described and shown, and for the purpose set forth.

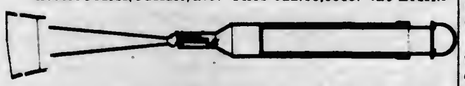
259,781. TOE-PIECE FOR THE HEELS OF RUBBER-SHOES. JUDSON L. THOMSON, Syracuse, N. Y. Filed Mar. 21, 1882. (No model.)



Claim.—1. The plate A, formed with the projection *a* at its upper end, and provided with the vertical slots *s s*, and having its base adapted to rest on the heel of the shoe, and the washer *e*, provided with clinches *d d*, all combined and adapted to be applied to the shoe, substantially in the manner described and shown.

2. The plate A, having its extension *a* adapted to rest upon the clinches *d d* when in place upon the shoe, substantially as described and shown, for the purpose set forth.

259,782. FOG-HORN. PETER TOPPEL, Jersey City, assignor to Robert Foulds, Passaic, N. J. Filed Jan. 18, 1882. (No model.)

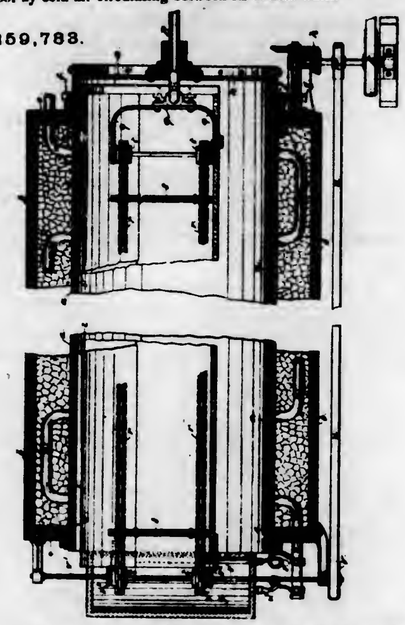


Claim.—1. The combination, with the fog-horn or trumpet and the vibrator, of a conical concentrator with its larger end soldered to the base of the vibrator and its smaller end to the small end of the horn, substantially as set forth.

2. The improved fog-horn, composed of the air-forcing cylinder, a close-ended plunger, a screw-connection, a vibrator, a horn, and a conical concentrator between the base of the vibrator and the small end of the horn, substantially as set forth.

259,783. COOLING AND REFRIGERATING BUTTER, &c. WILLIAM TUBBYILL, New York, N. Y. Filed Nov. 4, 1881. (No model.)

Brief.—Melted butter, &c., flows through central pipe, *p*, into cooling-cylinder *a*, which rotates in ice-box with stationary trough *l* inside, with scrapers *i* to remove butter as cooled and carried up on inside of cylinder to said trough, from which scrapers *s* on endless chains carry it out of cylinder and drop it into trough *y*, kept cool by cold air circulating between its double walls.



Claim.—1. The combination, with the ice-box, of the cylinder *a*, passing through the ice-box, and packings or bearings for such cylinder at the openings in the ice-box, and means for supplying the liquid to be cooled within the cylinder, and a scraper for removing the cooled material from the inner surface of the cylinder, as set forth.

2. The trough *l*, having a scraper at one edge thereof, in combination with the revolving cylinder *a*, means for supporting the trough, an ice-box around the cylinder, and means for revolving the cylinder, substantially as set forth.

3. The combination, with the revolving cylinder and ice-box, of a trough and scraper supported within the cylinder, and an endless belt or chain and scrapers to remove the material from the trough, substantially as specified.

4. The combination, with the revolving cylinder and surrounding ice-box, of a trough for receiving the material that is cooled by contact with the surface of the cylinder, substantially as set forth.

5. The hollow trough, and means for supplying cold air into the same, in combination with the revolving cooling-cylinder and surrounding ice-box, substantially as set forth.

6. The combination, with the ice-box, revolving cylinder, and hollow trough, of a coil of pipes in the ice-box, and connecting-pipe from such coil to the hollow trough, and air-escape openings in the bottom of the trough, substantially as set forth.

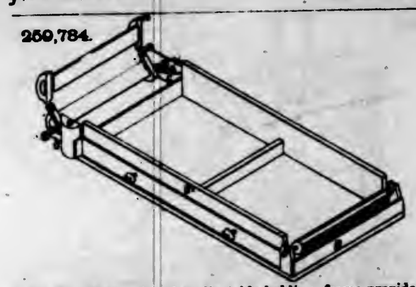
7. The combination, with the delivery-trough, of the ice-box, the revolving cylinder *a*, passing through such ice-box, and buckets *r'* upon the inside of the said cylinder, substantially as set forth.

259,784. MACHINE FOR ARRANGING AND PILING CLOTH. EDGAR D. WATERMAN, Boston, Mass., assignor to Abner J. Tower, same place. Filed Apr. 20, 1881. (No model.)

Brief.—The tension device consists of two hinged bars formed at their ends with guide-pieces for the edges of the cloth, and is supported by means of screw-pivots to provide for lateral adjustment. The opening between the bars is varied for different thickness of cloth by means of a screw-threaded spring-catch, which screws into the lower bar and engages with a pin of the upper bar when the bars are closed. A spring is provided to hold the tension device at the desired position and to relieve the tension.

Claim.—1. The combination of the adjustable tension-bars

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having a guide with the adjustable holding-frame provided with a roll, substantially as and for the purposes set forth.

2. The adjustable hinged tension-bars provided with a guide for the edge of the cloth and an adjustable spring-catch, substantially as described, as and for the purposes set forth.

3. The combination of the pivoted adjustable tension-bars having a guide and tension relief spring with the cloth holder or frame, substantially as described, as and for the purposes set forth.

259,785. SIDE PIECE FOR CARRIAGE-BOWS. FREDERIC A. WITTICK, Ashtabula, Ohio, assignor of two-thirds to Rufus B. Bullock and William Hubbard, both of same place. Filed Mar. 17, 1882. (No model.)



Claim.—1. The combination, with a casing formed from a single piece of sheet metal, the edges of said casing being separated at its upper end and converged and joined near its lower end, of a filler secured in position by rivets, the edges of the casing being free.

2. The combination, with a casing oval in cross-section and formed from a single piece of metal, the edges of said casing, which are brought in opposition on one side thereof, being separated at its upper end and converged and joined near its lower end, of a filler located in the casing, and rivets extending through the longer of the transverse axes of the casing and filler to secure the latter in position and to hold the side walls of the casing together, substantially as set forth.

3. The combination, with a casing formed from a single piece of metal, the opposing edges of which are separated, of a filler located in the casing and traversed by a groove, a flexible cover encircling the casing, the edges of the said cover being inserted in the groove in the filler through the opening between the separated edges of the casing, and a key inserted in the groove to retain the edges of the cover therein, said key being locked in position by the form of the groove.

4. The combination, with a casing, of a filler located in it and traversed by a groove, a flexible cover encircling the casing, the edges of the cover being received in said groove, and a key inclosed in a metallic case and adapted to fit in the groove, the approaching outer walls of which lock it in place.

5. In a side piece, the combination, with an oval casing formed from a single piece of sheet metal, the edges of said casing, which are brought in opposition on one side thereof, being separated at its upper end and converged and joined near its lower end, of a filler secured in said casing and having a slot extending through the longer of its transverse axes, said slot being located at that point where the side piece rests upon the prop, and a short piece of steel inserted in the slot in the filler and impinging on the opposite inner walls of the casing, substantially as and for the purpose set forth.

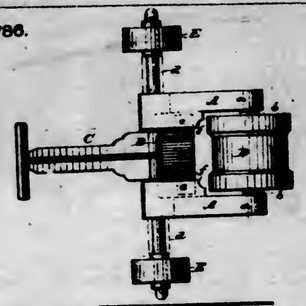
259,786. MACHINE FOR SEAMING SHEET-METAL ROOFS. SAMUEL WOODMAN, West Troy, N. Y. Filed May 15, 1882. (No model.)

Claim.—1. In combination with the seaming-rollers E E and axle B, the side frames, A, and weighted roller D, adapted to be lifted or vibrated upon the axle B, substantially as and for the purpose set forth.

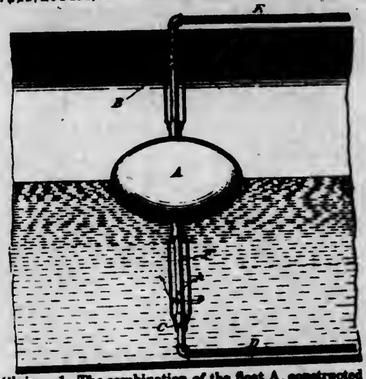
2. In combination with the rolls E, frames A, and weighted roller D, the handle C, pivoted to the axle and formed with the extension F, adapted to support the rolls E in an elevated position, as and for the purpose set forth.

3. The side frames, A, formed with the shoulders *f f*, in combination with the handle C, pivoted to the axle B, and provided with lateral wings *e e*, substantially as and for the purpose set forth.

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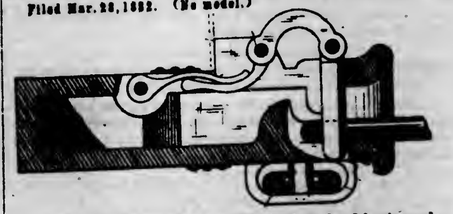
259,787. BOILER FEED-WATER REGULATOR. CHARLES C. WYMAN, Howard, Mo. Filed Mar. 2, 1882. (No model.)



Claim.—1. The combination of the float A, constructed upon the rod or pipe F, with the valves B and C, said valves regulating the steam which propels the pump that supplies the boiler, the inflow of water to the boiler, and the connection of the pump and boiler by the pipe E, which conducts steam from a valve in the boiler to the pump, substantially as set forth.

2. The combination, in steam-boilers, of a float with valves operating in connection with a pipe or pipes in the boiler, regulating the passage of steam from the boiler to the pump and the flow of water into the boiler, substantially as set forth, and for the purpose indicated.

259,788. CAR-COUPLING. GEORGE H. ADAM, Louisville, Ky. Filed Mar. 28, 1882. (No model.)



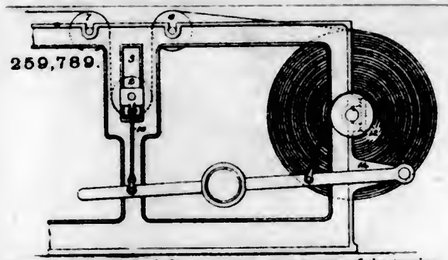
Claim.—1. In combination with the draw-head having a depressed seat for the coupling-pin and an abrupt front wall and a gradually-curving rear wall, the coupling-pin pivoted to a lever, and the lever bearing against the rear of the coupling-pin lever, the whole arranged to be operated to couple or uncouple the cars, substantially as specified.

2. The draw-head provided with receptacles for an extra link and pins, to be employed in case of injury to the ordinary links and pins, substantially as and for the purposes specified.

259,789. TENSION DEVICE FOR UNWINDING ROLLS OF PAPER. EDWIN ANTHONY, Hereford, County of Hereford, England, assignor to E. Hoe & Co., New York, N. Y. Filed Aug. 7, 1880. (No model.)

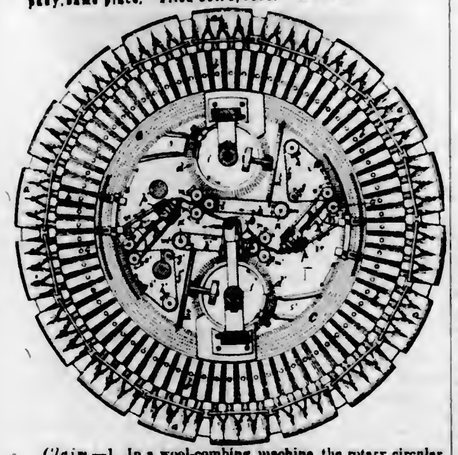
Claim.—The combination, with a shaft carrying a roll of paper and brake acting thereon, of a tension-roller connected to the brake-lever and freely movable in a guiding-slot, whereby varia-

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tions in the tension of the paper cause movements of the tension-roll, and the latter in turn acts upon the brakes, substantially as described.

259,790. WOOL-COMBING MACHINE. JOS. AUSTIN, Newton, Mass., assignor of one-half to the Nonantum Worsted Company, same place. Filed Oct. 5, 1881. (No model.)



Claim.—1. In a wool-combing machine, the rotary circular comb *a*, its rollers *c* E, and carrying-apron *f*, in combination with the intermediate rotary tunnel, *p*, the rotary rollers *l r*, and delivery-tunnel O, and suitable means for operating said members, as and for the purpose set forth.

2. In a wool-combing machine, the rotary circular comb *c* and internal rotary comb, *d'*, rollers *e* E, carrying-apron *f*, rotary tunnel *p*, apron *k'*, rollers *l'*, *n'*, *s'*, and *r*, and the delivery-tunnel O, and suitable means for operating said members, all combined and arranged as and for the purpose set forth.

259,791. DYNAMO-ELECTRIC MACHINE. CHARLES E. BALL, Philadelphia, Pa. Filed Nov. 21, 1881. (No model.)

Brief.—The armatures are revolved before one pole only of the field-magnet. Two armatures are mounted on independent shafts and connected in series with each other and the field-magnet coils, each armature rotating before one pole of the field-magnet.

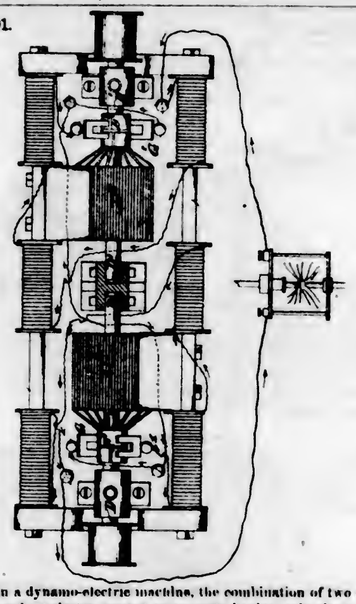
Claim.—1. In a dynamo-electric machine, a single electro-magnet and an armature located and adapted to rotate within the inductive field of only one of the poles of such magnet, substantially as set forth.

2. In a dynamo-electric machine, the combination of two armatures and an electro magnet or magnets, each of said armatures being arranged and adapted to rotate in the inductive field of only a single pole of such magnet or magnets, substantially as set forth.

3. In a dynamo-electric machine, the combination of two armatures and two poles of an electro magnet or magnets, each of said armatures rotating in the inductive field of only a single pole, and said armatures and magnet or magnets being in the same circuit, substantially as set forth.

4. In a dynamo-electric machine, the combination of two armatures on independent shafts, whereby they may be rotated in opposite directions, and an electro magnet or magnets in circuit therewith, each of said armatures being located and adapted to be rotated within the inductive field of only one pole of a magnet, substantially as set forth.

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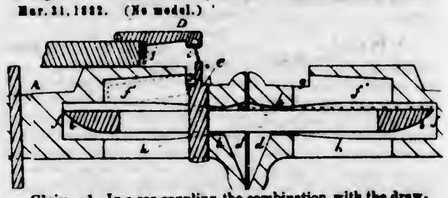


5. In a dynamo-electric machine, the combination of two armatures and an electro magnet or magnets having pole-pieces on opposite sides of the machines, said armatures and magnet or magnets being relatively arranged substantially as described, whereby each of said armatures is located and adapted to be rotated within the inductive field of only one magnetic pole, substantially as set forth.

6. The combination, in a dynamo-electric machine, of two armatures and an electro magnet or magnets having pole-pieces on opposite sides, each of said armatures being located and adapted to rotate in the inductive field of only one pole of a magnet, said armatures and electro-magnets being connected substantially as described, whereby the circuit is direct from one armature to the other and through all the helices of the magnets successively, substantially as shown and described.

7. The combination of two armatures on independent shafts and an electro magnet or magnets having pole-pieces on opposite sides of said armatures, the latter being located and adapted to rotate each within the inductive field of only one magnetic pole, said armature and magnet or magnets being in the same circuits, substantially as set forth.

259,792. CAR-COUPLING. JAMES BARRETT, Bucyrus, Ohio, assignor of one-third to Benjamin Dennis, same place. Filed Mar. 31, 1882. (No model.)



Claim.—1. In a car-coupling, the combination, with the draw-head A, provided with the tapering recess *f*, the recess *f'*, the slot *h*, and the passage *g*, of the coupling-pin C, the hinged lever D, the connecting-chain *i*, and the cross-bar *j*, substantially as and for the purpose set forth.

2. In a car-coupling, the combination, with the draw-head A, provided with the recess *f*, the recess *f'*, the slot *h*, and the passage *g*, the lever D, and connecting-chain *i*, of the coupling-pin C, having the flattened and extended head *c*, substantially as and for the purpose set forth.

259,793. HARNESS-SADDLE. GEO. E. BAUSER and CHAS. C. BAUSER, Bonaparte, Iowa. Filed Nov. 10, 1881. (Model.)

Claim.—In a saddle-tree, the combination, with the center piece, E, having slots D and grooves L, and the side pieces, A, having tenons C, cross-pins N, and grooves M, of the cap-plate J, hav-

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ing ribs K, substantially as herein shown and described, whereby the hinging connections of the center piece and side pieces are covered and protected, as set forth.

259,794. CRYSTALLIZED ANHYDROUS GRAPE-SUGAR. ANNO BERR, Jersey City, N. J. Filed Mar. 13, 1882. (No specimens.)

Brief.—The process of making this sugar is described in Letters Patent Nos. 250,333 and 250,334, dated December 6, 1881.

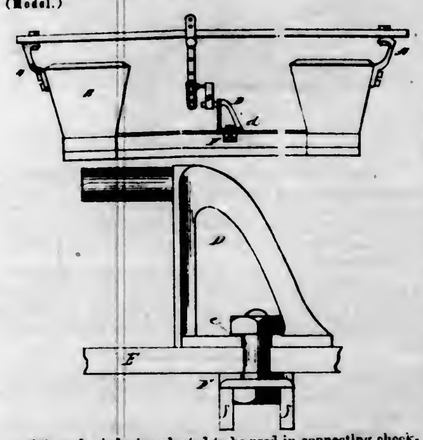
Claim.—As a new article of manufacture, crystallized anhydrous grape-sugar, free from any trace or flavor of alcohol or its impurities, produced from a watery solution of grape-sugar.

259,795. BAKER'S OVEN. JOHN BARDEN, Buffalo, N. Y. Filed Apr. 13, 1882. (No model.)



Claim.—The combination, with the oven C, provided with a front opening, *i*, having a door, I, of grates K K, arranged in the floor of the oven on opposite sides of the opening *i*, and provided with ash-pits *k*, having doors *k'*, flues *m*, provided with dampers *n*, and a chimney, H, having a damper, *o*, substantially as set forth.

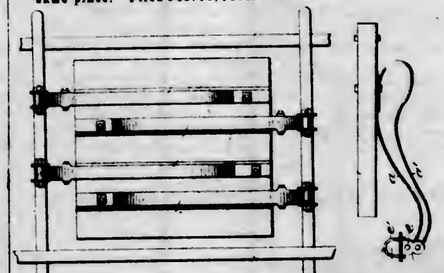
259,796. DEVICE FOR CONNECTING CHECK-ROWERS TO PLANTERS. JAMES E. BRAIRD, Decatur, Ill., assignor to Chambers, Boring & Quinlan, same place. Filed Nov. 3, 1881. (Model.)



Claim.—1. A device adapted to be used in connecting check-rower attachments to the seed-boxes of corn-planters, consisting of a single casting, A, the lower end of which can be bolted to the seed-box, and provided at its upper end with a rounded top, *b*, provided with a slot, *c*, substantially as and for the purposes specified.

2. The reversible plate F, provided with slots *i* for the passage of attaching-bolts, and on one side with projections *f*, the opposite side being plane or smooth for the purpose of attaching the casting D to shake-bars of varying thickness, said plate being reversible to bring either its plane or smooth face or its projections against the under side of the shake-bar, substantially as and for the purpose described.

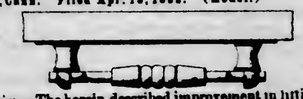
259,797. VEHICLE-SPRING. CHARLES C. BISHOP and JOSEPH A. BISHOP, Nashville, Tenn., assignors to Caswell C. Bishop, same place. Filed Feb. 16, 1882. (No model.)



Claim.—1. An equalizing trussed spring for side-bar and other vehicles, composed of an upper and a lower plate formed in one continuous piece, and having at its outer end an eye integral with both plates; substantially as described.

2. The combination, with a vehicle-spring composed of the plates *a a'*, of a bearing-plate, F, arranged between the outer ends of said spring-plates, and having flanges *f*, adapted to clasp the same, substantially as shown and described.

259,798. HANDLE. ELI J. BLACKMAN, Bridgeport, assignor to the Benedict & Burnham Manufacturing Company, Waterbury, Conn. Filed Apr. 15, 1882. (Model.)



Claim.—The herein-described improvement in lifting-handles, consisting of the bow-shaped handle, its ends turned to the right and left to form pivots, combined with sockets to receive the said pivots, one or both of said sockets constructed with a shoulder, *b*, at substantially right angles to the axis of the socket, and so as to form stops for the handle, substantially as specified.

259,799. HYDRAULIC AIR-COMPRESSING APPARATUS. JAMES M. BOIS, East Aurora, N. Y. Filed Feb. 14, 1882. (No model.)

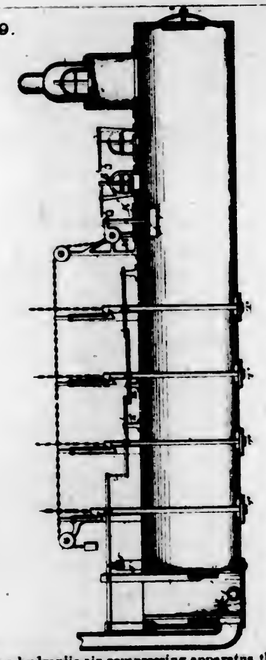
Claim.—1. In a hydraulic air-compressing apparatus, the combination, with two cylinders, of gates located between the cylinders and a water-supply, connection between said gates, floats located within the cylinders and arranged to actuate a system of levers to release the discharge-valves, and systems of levers actuated by the discharge-valves and arranged to close the gate of one cylinder and open the gate and close the discharge-valves of the other cylinder.

2. In a hydraulic air-compressing apparatus, the combination, with two cylinders, of gates located between the cylinders and a water-supply, connection between said gates, floats located within the cylinders and arranged to actuate a system of catch-levers, discharge-valves provided with stems adapted to engage with said catch-levers, and systems of levers actuated by the discharge-valves and arranged to close the gate of one cylinder and open the gate and close the discharge-valves of the other cylinder.

3. In a hydraulic air-compressing apparatus, the combination, with two cylinders, of gates located between the cylinders and a water-supply, connection between said gates, floats located within the cylinders and arranged to actuate a system of levers to release the discharge-valves, and a system of levers pivoted to the stems of the said discharge-valves and arranged to close the gate of one cylinder and open the gate and close the discharge-valves of the other cylinder, substantially as set forth.

4. In a hydraulic air-compressing apparatus, the combination, with two cylinders, of gates located between the cylinders and a water-supply, gate-levers to which the gates are attached, connection between said gate-levers, floats arranged to actuate a system of levers to release the discharge-valves, and a system of levers connecting the stems of the discharge-valves with the free ends of the gate-levers.

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5. In a hydraulic air-compressing apparatus, the combination, with two cylinders, of gates located between the cylinders and a water-supply, discharge-valves provided with valve-stems, and connections between the stems of the corresponding valves of the two cylinders.

6. In a hydraulic air-compressing apparatus, the combination, with a primary reservoir and a secondary reservoir located below it, of two cylinders, gates located between them and the secondary reservoir, and connection between said gates, of floats located within the cylinders and arranged to actuate a system of levers to release the discharge-valves, and systems of levers actuated by the discharge-valves and arranged to close in one impulse the gate of one cylinder and to open the gate and close the discharge-valves of the other cylinder.

259,800. MEANS FOR SECURING COVERS UPON CANS. EPAMINONDAS BOTTENBERG, Asteria, Ill. Filed Mar. 14, 1882. (Model.)



Claim.—1. The plate-attachment hooks E and the can having flange *d*, in combination with the cover B, having a central upward projection, as and for the purpose specified.

2. The plate D, formed with the lips *i*, in combination with the attachment-wires E, formed with the loops *h* and hooks *k k*, substantially as described.

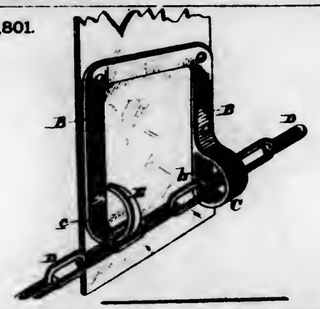
3. In a hermetically-sealing fruit-can, the cover B, plate D, looped and hooked attachment-wires E, packing C, and projection *d* on the body of the can, constructed and combined for joint operation substantially as shown and described.

259,801. BACK-STRAP FOR PLOW-HARNESS. GEORGE H. BOWEN, Talbott, Texas. Filed Dec. 13, 1881. (No model.)

Claim.—1. A back-strap attachment for plow-harness, consisting of a piece of metal adapted to be attached to the back-strap and provided with an eye at one end and with a hook at the other end.

2. The combination, with the back-strap A, made of any suitable material, of the metallic attaching devices B, each consisting of a rectangular frame, by which the device is secured to the back-strap, an eye or loop, C, for the passage of the chain, and a hook, E, adapted to engage the trace and hold the said back-strap in position.

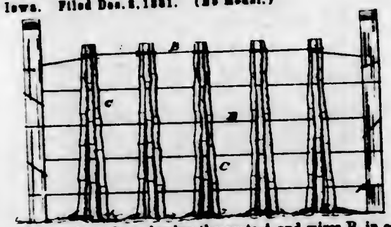
259,801.



259,802. PROCESS OF OBTAINING FERROCYANIDES FROM GAS-LIQUOR. HENRY BOWER and WILLIAM L. ROWLAND, Philadelphia, Pa.; said Rowland assignor to said Bower. Filed Apr. 22, 1882. (No specimens.)

Claim.—The improvement in the process of obtaining ferrocyanides from ammoniacal liquor treated with iron and lime, as described, which consists in extracting the ferrocyanides from the sediment of the liquid by the addition of an alkaline salt.

259,803. WIRE FENCE. LEVI HERSHEY, Mount Vernon, Iowa. Filed Dec. 8, 1881. (No model.)



Claim.—1. A fence having the posts A and wires B, in combination with rows of growing cornstalks C, substantially as set forth.

2. A fence having the posts A and wires B, in combination with rows of growing cornstalks C and rows of growing cornstalks bent over to form braces D for the rows of cornstalks C, substantially as herein shown and described.

259,804. CAR-COUPLING. EUGENE H. BROOKS, Jenkinsville, Ga. Filed Apr. 24, 1882. (No model.)



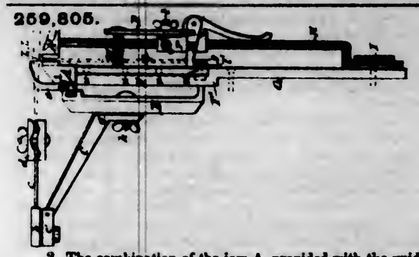
Claim.—1. The combination, with the draw-heads and the coupling-link, of the obliquely-moving pawls, grooved and beveled as described, and the coupling-pins, shouldered near their lower ends, the whole arranged, substantially as set forth, to drop and engage the coupling-pins and hold them when fully down against accidental removal.

2. In combination with the draw-heads, the obliquely-movable pawls or dogs grooved at their lower ends, and adapted to hold the pins in a partly-elevated position and the link in horizontal position during coupling, substantially as and for the purpose specified.

259,805. SAW SHARPENING AND CLAMPING DEVICE. ALBA W. BROUGHTON, Jordan, N. Y. Filed Mar. 9, 1882. (No model.)

Claim.—1. The combination, with a saw-filing clamp or vise, of an arm extended from the stationary jaw and adapted to slide bodily in a line parallel with the face of said jaw, a sleeve or guide connected to the free end of said arm, a rod or bar sliding longitudinally in said guide, and a file-clamp connected to said rod, all combined as set forth.

259,805.



2. The combination of the jaw A, provided with the guide *a*, the shank B, movably connected with said guide, the arm C, extended radially from said adjustable upon the shank B, the hinged extension *c'*, pivoted guide *b*, reciprocating rod *c*, and the file-clamp *d*, as shown and described.

3. The combination of the jaw A, provided with the guide *a*, the sliding shank B, provided with the vertical recess *e* and slot *f*, the arm C, having the rounded shoulder *g'*, resting in the recess *e*, the clamp-bolt *h*, the hinged arm-extension *c'*, pivoted guide *b*, reciprocating rod *c*, and the file-clamp *d*, all substantially as shown and set forth.

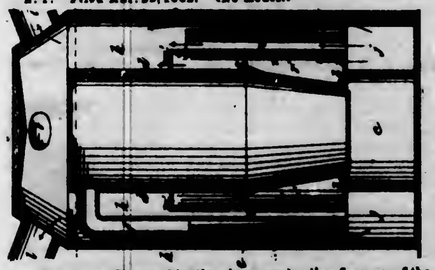
4. The combination, with the jaw A and the shank B, supporting the arm C, and file-guiding device connected therewith, of the nut *n*, connected to the shank B, and the screw-rod *l*, shouldered on the jaw A, as described and shown.

5. The combination, with the jaw A and the shank B, supporting the arm C, and file-guiding device connected therewith, of the nut *n*, pointer *o*, and adjusting-screw *l*, combined and operating as described, for the purpose set forth.

6. The combination, with the jaws A A', of the post *g*, provided with holes *u*, the sliding block *r*, clamp *m*, cam-lever *p*, and bolt *s*, as described and shown.

7. The combination, with the jaws A A', of the clamp *m*, adapted to be set at various heights on the supporting-arms of said jaws, the block *r*, provided with the stud-pin *t*, and the arm D, provided with the slot *v* and with the arbor *w*, all as described and shown, for the purpose set forth.

259,806. HEATING-FURNACE. GEORGE B. BROWN, Corning, N. Y. Filed Mar. 23, 1882. (No model.)



Claim.—1. The combination, in an air-heating furnace, of the auxiliary radiator *e* with the fender *m*, both supported upon the ash-pit casting *b*, and forming the spaces *n* and *n'*, opening directly into the bottom cold-air chamber, *j*, and directly into the top hot-air chamber, *k*, substantially as described.

2. The separate auxiliary radiator *e*, provided with the inner wall foot-brackets *o o*, in combination with the oblong ash-pit casting *b* and the outer casing, *h*, whereby the said separate auxiliary radiator is both supported and held in place over the bottom cold-air-inlet spaces, *r*, substantially as herein set forth.

3. The separate fender *m*, provided with the brackets *q*, in combination with the separate auxiliary radiator *e* and the oblong ash-pit casting *b*, the said fender being supported upon foot-brackets *o o* and upon the front part of the said ash-pit casting, and held in place, substantially as herein set forth.

4. The auxiliary radiator *e*, surrounding the fire-pot, tapering from its base to its top, closed at top and bottom, and communicating at one end with the combustion-chamber and at the other end with the smoke-pipe *g*, both said connections being made at the narrow top of said radiator, substantially as described, for the purpose specified.

5. The fender *m*, having the inward-projecting top plate, *m'*, in combination with the brackets *o o* and *q* and the ash-pit casting *b*, whereby said fender is loosely supported to form the air-heating spaces *n n'*, open at top and bottom, as described.

6. The combination of the fender *m*, having the cap-plate *m'*, and supported as described, with the ring-plate *s*, the fire-pot *e*, and the radiator-drum *d*, substantially as herein set forth, and for the purpose specified.

7. The combination, in an air-heating furnace, of the auxiliary radiator *e*, having separate entrance and exit connections with the fire-pot radiator *d*, and the smoke-pipe *g*, with the ash-pit casting *b*, and the valved communications of the said auxiliary radiator with the said ash-pit, substantially as described, for the purpose specified.

8. The auxiliary radiator ends and the top of the ash-pit casting, provided with corresponding openings, in combination with the valves *u*, arranged within said radiator ends, substantially as described, for the purpose specified.

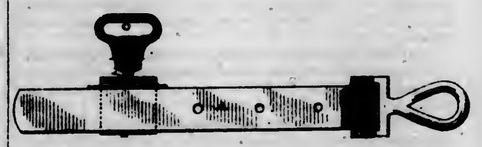
9. In combination, the auxiliary radiator *e* and the fender *m*, the oblong ash-pit casting *b*, the fire-pot radiator *d*, the outer casing, *h*, the valved communications between the auxiliary radiator and the ash-pit, and dampers arranged one in the ash-pit door and one in the smoke-pipe, and adapted to be controlled from the room above the furnace, substantially as described.

259,807. DUSTING-BRUSH. MARY S. W. BROWN, Boston, Mass. Filed Mar. 24, 1882. (No model.)



Claim.—In a knit duster, the combination, substantially as hereinbefore set forth, of the band A, knit with loops, as described, and made into a tubular shape, and the block B, adapted to receive a suitable handle, and to which the band A is secured with the loops outside, as and for the purposes set forth.

259,808. TRACE-SUPPORTER. JOHN BRUNSON, Berrien Springs, assignor of one-half to Abraham J. Kinsely, Benton Harbor, Mich. Filed Apr. 3, 1882. (Model.)



Claim.—1. In a trace-supporter, the combination of the trace, a metallic slide applied thereto, a fastening device for holding the slide in place, and a supporting-strap, substantially as shown.

2. The combination, in a trace-supporter, of a slide, a set-screw, and a ring or loop which is swiveled upon the upper end of the screw, substantially as set forth.

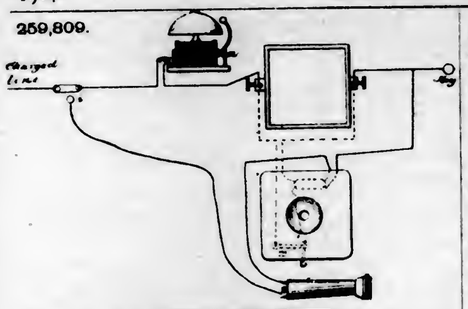
3. The combination, in a trace-supporter, of the slide, which is adjustable back and forth upon the trace, a set-screw which is passed through the upper part of the slide, and which is provided with a handle below its upper end, and a ring or loop which is swiveled upon the upper smooth portion of the screw, and which can be used to tighten or loosen the screw, substantially as specified.

4. The combination, in a trace-supporter, of a slide which is adjustable back and forth upon the trace, a set-screw fastening the slide in place, a plate which is interposed between the top of the trace and the lower end of the set-screw, a ring or loop which is swiveled upon the upper part of the set-screw, and a strap or other suspending device, substantially as shown and described.

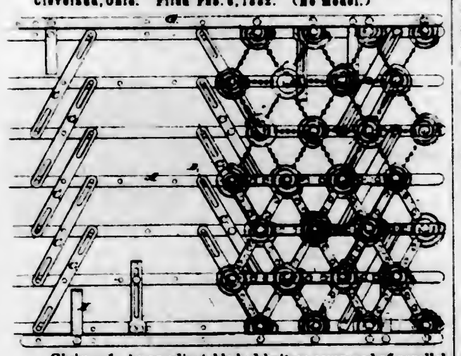
259,809. MEANS FOR UTILIZING SECONDARY BATTERIES ON TELEPHONE-CIRCUITS. CHARLES H. BUELL, New Haven, Conn. Filed Apr. 20, 1882. (No model.)

Claim.—A telephone-station apparatus provided with a transmitter and having its secondary circuit arranged for connection with the main line, a secondary electric pile or battery arranged for connection with a main line in a manner to be charged by an electric current flowing over said main line, and means for directing the current of said secondary electric pile or battery over the primary circuit of the transmitter.

259,809.



259,810. SPRING BED-BOTTOM. WORTHINGTON BULKLEY, Cleveland, Ohio. Filed Feb. 6, 1882. (No model.)



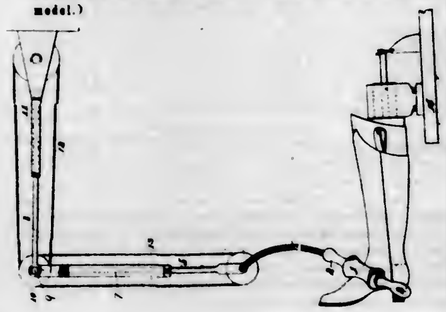
Claim.—1. In an adjustable bed-bottom composed of parallel supporting-slats connected by transverse strips, each confined to a slat, the combination of extended longitudinal slots formed in said strips at their intersection with the adjacent slats with pins projecting from said slats and fitted with rigid heads or adjustable nuts adapted to confine the strips, substantially as and for the purpose set forth.

2. In an adjustable bed-bottom, the combination, with its supporting-slats and one or more slotted transverse strips, of threaded pins and nuts, whereby the bed-bottom may be secured at any desired width, substantially as described.

3. In an adjustable bed-bottom, the combination with its parallel supporting-slats, of diagonal strips, each pivoted at its center to one of the slats and jointed to one or more of the adjacent slats at either end by means of a pin on the one passing into a longitudinal slot in the other, substantially as shown, and for the purpose set forth.

4. In an adjustable bed-bottom constructed of parallel slats carrying spiral springs, and made adjustable to and from each other, an upper outer rail, upheld over the longitudinal slats on each side of the bed-bottom upon interposed independent curved or C-shaped springs, substantially as described.

259,811. APPARATUS FOR TREEING BOOTS. JETHAM H. BURBANK, North Brookfield, Mass. Filed Oct. 29, 1881. (No model.)



Claim.—1. The combination of the toothed segments P, the perforated rim L, through which the teeth pass, the toggles R, connected by the segments P to the hub J and to the segments T, and means for protruding the teeth beyond the periphery of the rim and retracting the teeth, substantially as described.

2. In a traction or road engine, the reaches I, provided with cams and a toggle-connection for extending the reaches, in combination with transporting-wheels having radially-movable traction-teeth adjustable by means of said cams, substantially as described.

3. The combination of the perforated rim L, the traction-teeth N, fixed to radially-expansible segments P, the spokes K, having conical ends *d*, the springs coiled around these ends, the segments T, provided with projections *g*, the toggles R, and the cams on the adjustable reaches I, substantially as and for the purpose set forth.

Claim.—1. In an apparatus for treeing boots, the rub-stick having a central rotary portion or "rubber," and a handle at each end, whereon the said rubber has bearing independently of other support, in combination with universally-flexible driving mechanism for rotating the said rubber, substantially as and for the purpose set forth.

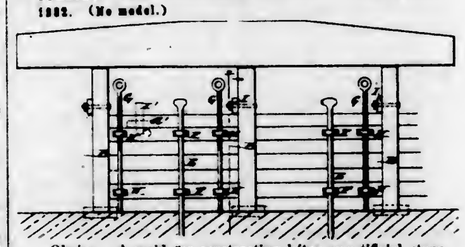
2. A rub-stick for finishing the uppers of boots and shoes, having a central revolving portion or rubber, a handle at each end, whereon the said rubber has bearing, and a rotary flexible driving shaft passing through one of the said handles and rigidly attached to the said rubber, substantially as and for the purpose set forth.

3. In combination with a rub-stick longitudinally flexible between its handles, a universally-flexible driving mechanism for rotating the said rub-stick, substantially as and for the purpose set forth.

4. In combination with a rotary rub-stick and its flexible driving-shaft, the universal jointed mechanism for transmitting motion from the counter-shaft, substantially as shown and described.

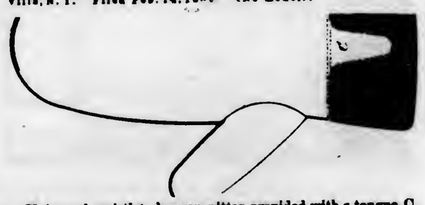
5. The mechanism for transmitting power from the counter-shaft to the tool being operated, consisting of a fixed bracket, 11, horizontal rod 8, swiveled therein, socket 7, hinged to rod 8, rod 5, swiveled in socket 7, spindle 4, flexible shaft 3, and suitable belts and pulleys, all arranged substantially as and for the purpose set forth.

259,812. CONSTRUCTING BÉTON OR ARTIFICIAL-STONE CURBING. JAMES BURNS, San Antonio, Tex. Filed Apr. 21, 1882. (No model.)



Claim.—A mold for constructing béton or artificial-stone curbing, which has sides held by clamps at top, at the sides by bolts and eyes E F, and made movable vertically by screw-bolts G, working in eyes H, as and for the purpose specified.

259,813. GLOVE OR MITTEN. HARVEY W. BURR, Gloversville, N. Y. Filed Feb. 14, 1881. (No model.)



Claim.—A wristlet glove or mitten provided with a tongue, C, extending from the middle of the rear edge of the palm to, or nearly to, the rear edge of the wristlet and sewed down to the latter, as and for the purpose specified.

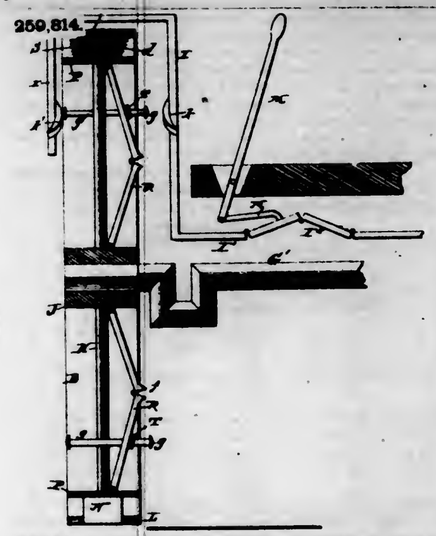
259,814. TRACTION-ENGINE. NEWTON W. BUSHNELL, Minoa, N. Y. Filed Feb. 14, 1882. (No model.)

Claim.—1. The combination of the toothed segments P, the perforated rim L, through which the teeth pass, the toggles R, connected by the segments P to the hub J and to the segments T, and means for protruding the teeth beyond the periphery of the rim and retracting the teeth, substantially as described.

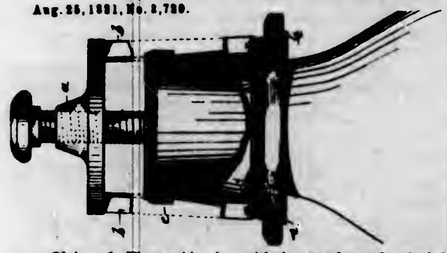
2. In a traction or road engine, the reaches I, provided with cams and a toggle-connection for extending the reaches, in combination with transporting-wheels having radially-movable traction-teeth adjustable by means of said cams, substantially as described.

3. The combination of the perforated rim L, the traction-teeth N, fixed to radially-expansible segments P, the spokes K, having conical ends *d*, the springs coiled around these ends, the segments T, provided with projections *g*, the toggles R, and the cams on the adjustable reaches I, substantially as and for the purpose set forth.

259,814.



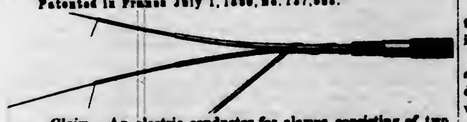
259,815. APPARATUS FOR STOPPING BOTTLES. PIERRE JACQUES CARNIER, Issy, near Paris, France. Filed Oct. 11, 1881. (No model.) Patented in France Apr. 13, 1881, No. 143,277; in Belgium Aug. 23, 1881, No. 55,618, and in England Aug. 25, 1881, No. 3,730.



Claim.—1. The combination, with the capsule *c* and swiveled screw *f*, of the cap-nut *a*, having elastic arms *b*, with end hooks, *b'*, and foot-pieces *b²*, and the bottle-neck ring *d*, having projections *i*, and an inclined interior surface between said projections, whereby the capsule may be clamped to the mouth of the bottle, as described.

2. The combination, with the hook-ended bands *b b'*, having foot-pieces *b²*, of the ring *d*, having a projection, *i*, between the adjacent ends of its interior inclines, whereby the hooks *b'* cannot escape from one incline to another.

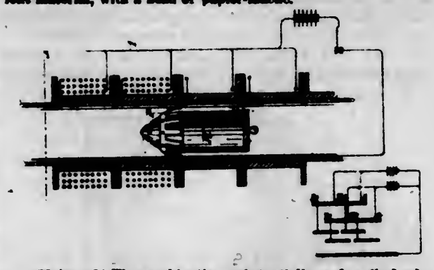
259,816. ELECTRIC CONDUCTOR FOR FIRE-ALARMS. P. A. CHARPENTIER, Paris, France. Filed Dec. 6, 1881. (No model.) Patented in France July 1, 1880, No. 137,568.



Claim.—An electric conductor for alarms, consisting of two insulated copper wires and an intermediate wire of tin or other easily-fusible metal, whereby the fusing of the tin wire will solder together the two copper wires connected with the two poles of a battery, thereby close the electric circuit and promptly sound an alarm in said circuit, as described.

259,817. ELECTRO-MAGNETIC DISPATCH-TUBE. CHARLES A. CHESMAN, New York, N. Y. Filed Feb. 25, 1882. (No model.)

Brief.—The tube is composed of a number of solenoids arranged end to end, with contact-strips inside of the tube so formed, one contact-strip being continuous and the other broken into sections of the same length as the solenoids. The continuous strip is connected with one pole of a generator and the broken strip has each section connected by a branch wire with the other pole. The carrier is provided at its forward end with a circuit-closer. The carrier is formed of a cylinder of sheet-iron, steel, or equivalent material, with a head of papier-maché.



Claim.—1. The combination, substantially as described, of a tube or guideway, a series of surrounding coils or helices, an electric generator one pole of which is connected by a series of branch wires, as shown, constantly connected to one end of each of the independent coils or helices, the other ends of said coils or helices being left open-circuited, a traveling carrier moving within the coils, and means, as described, for completing the circuit between the open end of each coil or helix as the carrier moves, and a common return wire or conductor permanently connected to the other pole of the battery.

2. The combination, substantially as described, of a tube or guideway, a series of surrounding coils or helices one end of each of which is permanently connected to a common wire leading from one pole of a galvanic battery or generator, contact plates, points, or strips upon the inside of the tube connected to the other ends of the coils, a traveling carrier provided with contact springs or brushes, and a conductor leading from the opposite pole of the battery and extending throughout the tube or guideway, between which conductor and the open end of each of the coils or helices in succession the circuit is completed as the carrier progresses.

3. The combination, substantially as described, of a series of coils or helices, contact plates or points in the magnetic field of said coils, a traveling carrier, and contact springs or brushes of a magnetizable material connected to said carrier.

4. The combination, substantially as described, of a tube or guideway, a series of surrounding coils or helices, insulated contact plates, points, or strips connected to said coils in succession, and arranged upon the inside of the tube or carrier, a continuous strip, plate, or surface, also arranged upon the inside of the tube, and a circuit-closing spring or brush mounted upon the traveling carrier for completing the circuit between the successive insulated plates and the continuous plate or surface.

5. The combination, substantially as described, of a tube or guideway, a series of surrounding helices, and a carrier moving within the same, consisting of a hollow cylinder of sheet-iron, steel, or equivalent material, provided with means whereby it may be opened and closed to allow of the insertion and retention of the articles to be transported.

6. The combination of the hollow sheet-iron cylinder, the conical head of non-magnetic material, and the circuit-closing springs or brushes attached to the head.

7. A cylindrical carrier for an electro-magnetic dispatch-tube, provided with circuit-closing springs or brushes completely encircling said carrier.

8. The combination of the hollow cylinder H, of steel or iron, the conical head I, of papier-maché, and the annular circuit-closing spring or brush P.

9. The combination, with an electro-magnetic dispatch-tube or carrier, of two or more sets of enveloping helices arranged, as described, so that the coils of one set will overlap or break joint with the coils of the others.

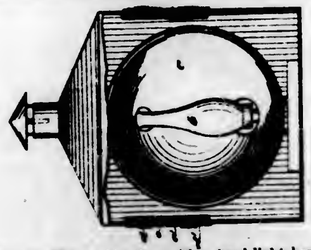
259,818.



259,818. COMBINED FOOT WIPER AND SCRAPER. ALFRED S. CLARK, New Orleans, La. Filed Feb. 28, 1882. (No model.)

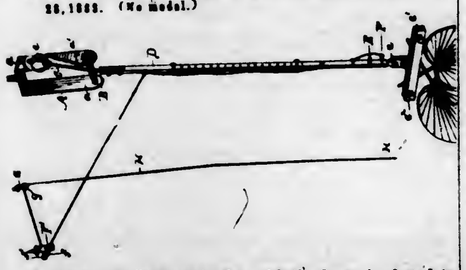
Claim.—The base B, combined by means of the pintles C C with the side brushes, A A, and scraper carrying double brush D, whereby the scraper and brushes may be held in the relative positions shown and the side brushes may be turned, as described.

259,819. HEAD-LIGHT FOR LOCOMOTIVES. GEORGE CLAY, Palatka, Fla. Filed Nov. 3, 1881. (No model.)



Claim.—The combination, with a head-light having a lamp and reflector, arranged as described, of the pairs of side-glasses, *d d d' d'*, provided with hinged shutters *e e'* and bolts *f*, the latter engaging with attachments on the head-light for keeping said glasses covered or uncovered, for the purpose specified.

259,820. FAN. MOSES COBBY, Hallettsville, Tex. Filed Mar. 28, 1882. (No model.)

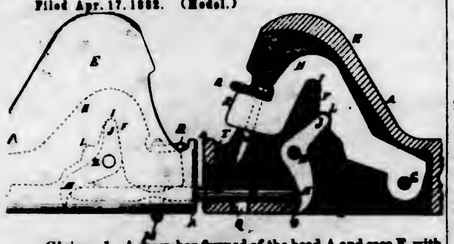


Claim.—1. The combination, with the frame A, adapted to be secured to a ceiling or frame-work, and provided with the pivot-bolt B, of the fan-bar D and rod C, provided with an adjustable weight, *c*, at its upper end, and passing through the pivot-bolt and secured to the upper end of the fan-bar at an angle thereto, substantially as described, and for the purpose set forth.

2. The combination, with the bar D, slotted at its lower end, arm *e*, pivoted in said slot by the bolt E, plate *d'*, secured to said arm, and plate *d''*, provided with set-screws, of the removable pin F, adapted to be inserted in holes in the lower end of the fan-bar, substantially as described, and for the purpose set forth.

3. The combination, with the frame A, provided with the pivot-bolt B, rod C, provided with the adjustable weight *c*, passing through the pivot-bolt and secured to the upper end of the fan-bar at an angle thereto, adjustable fan-bar D, arm *e*, clamp *d' d''*, and cord H, substantially as described.

259,821. CAR-COUPLING. STEPHEN C. COLLINS, Oregon, Mo. Filed Apr. 17, 1882. (Model.)



Claim.—1. A draw-bar formed of the head A and case E, with the chamber B and opening C, to adapt it to receive a tumbler and trip-dog, as shown and described.

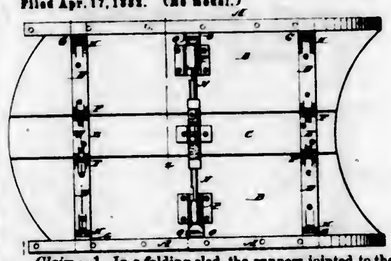
2. The tumbler H, pivoted at G in the rear of draw-bead chamber B, and having notches I L, in combination with the lever trip-dog having the arms J N, arranged as shown and described.

3. The draw-bar having vertically-extending tumbler-chamber B behind the opening C for the link, with front opening into said chamber above the shoulder T, and provided with tumbler H, having lifting-bar R, connected with said tumbler through said opening, substantially as described.

4. The combination of lifting-rod R, with the tumbler H, and coupling-pin M, substantially as described.

5. The setting and tripping dog K, having setting-arm J, and overbalancing-arm N, for self-setting and for tripping said arm J, and being combined with tumbler H, substantially as described.

259,822. FOLDING SLED. JOHN A. CRUWELL, Aurora, Ind. Filed Apr. 17, 1882. (No model.)



Claim.—1. In a folding sled, the runners jointed to the outer portions, B, of the top, and the said outer portions, B, jointed to the middle portion, C, of said top, to fold substantially in the manner described.

2. The combination, with the runners A and top B C, of beams having joints F and H, substantially as described.

3. The combination, with the top B C and the runners A of a folding sled, of knees G, jointed to the beams, substantially as described.

4. In a sled having the knees G jointed to the beams, the said knees having extension I, in combination with joint H and shoulder J of the beams, substantially as described.

5. In a sled having the knees G jointed to the beams, the runners A, having dowel-pins K, in combination with top B, having sockets for said pins, substantially as described.

6. In a sled having sectional beams D and E, connected by joints F, the said joints F having shoulders L, substantially as described.

7. In a sled having sectional beams D and E, connected by joints F, the said joints F having shoulders L, in combination with abutting edges of sections B C of the top, substantially as described.

8. The combination, with runners A, jointed to the top B, of elbows O, adjustably arranged with the said runners and top, substantially as described.

9. The combination, with runners A, jointed to the top B, of the adjustable elbows O and the stud-clip Q, substantially as described.

10. The combination, with runners A, jointed to the top, and the top B C, jointed together, of shaft N, having elbows O, and being jointed at M, substantially as described.

11. The combination, with runners A, jointed to top B C, jointed together, of shaft N, having elbows O and being jointed at M, and also being arranged to shift in its bearings P, substantially as described.

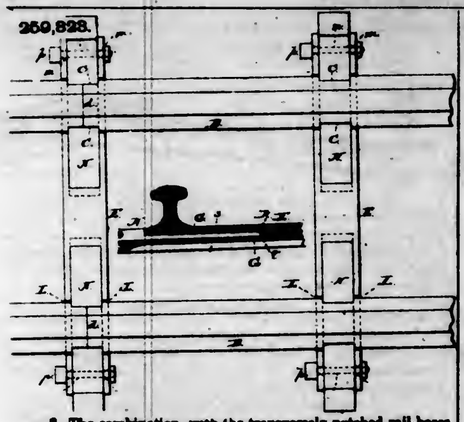
12. The shaft N, having elbows O and joints M, in combination with runners A, jointed to top B, and with top B C, jointed together, the said joints M being arranged to lock the top in the open condition, and the elbows to lock the runners open and to unlock the same, according as the said shaft is shifted from one position to another, substantially as described.

259,823. RAILROAD CROSS-TIE. ALFRED L. CUMBERLERY, Marshfield, Mo. Filed Jan. 23, 1882. (No model.)

Brief.—An under-recessed iron tie has longitudinal key-seats of dovetail form in cross-section in its upper surface and provided with transversely-notched rail-bearings. Longitudinal rail-keys having side channels are adapted to engage with the notched bearings. The keys are secured by a pin passing through perforations in the recessed walls.

Claim.—1. The under-recessed iron tie E, having longitudinal key-seats G in its upper surface, notched rail-bearings L in the walls of the key-seats, and longitudinal rail-keys N in said seats, engaging the bases of the rails, substantially as specified.

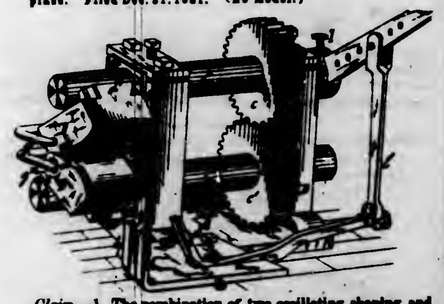
259,823.



2. The combination, with the transversely-notched rail-bases B and the iron ties having the longitudinal key-seats G and notched rail-bearings L, of the rail-keys N, having side channels, *c*, to engage the notches in the rail-bases and the fastening-pin *p*, substantially as specified.

3. The combination, with an iron tie, E, having a longitudinal key-recess, G, and transverse rail-seats L in the walls thereof, of a longitudinal key, N, in said recess engaging the rail-base, substantially as specified.

259,824. MACHINE FOR MAKING AXES. HENRY DANFEN, Pittsburg, Pa., assignor of one-half to Henry J. Danfen, same place. Filed Dec. 31, 1881. (No model.)



Claim.—1. The combination of two oscillating shaping and welding dies having the adjacent faces curved on arcs of circles whose centers are the same as their respective shafts and whose peripheries meet, each of said dies having a cavity or matrix corresponding to one-half of an ax-poll, substantially as and for the purpose specified.

2. The combination, with the two oscillating welding and shaping dies having matrices corresponding to an ax-poll or like article to be produced, of the mandrel-guide arranged between the axes of the dies to maintain and guide the mandrel parallel with the axes of the dies, substantially as and for the purpose specified.

3. The combination, with two oscillating shaping and welding dies having matrices adapted to form an ax-poll or like article, of a mandrel-guide having guide-arms which extend in a horizontal plane between the axes of the dies and on the two sides of the dies and are adapted to guide both ends of the mandrel, substantially as and for the purpose specified.

4. The combination, with oscillating dies D D, of forked mandrel-guide *g' g'*, having its tines bent outward, as at *g² g²*, substantially as and for the purpose specified.

5. The ax-poll stripper composed of the fork or uprights and pivoted elbow-lever, the several parts relatively arranged and combined to coact, substantially as and for the purpose specified.

6. The combination of the uprights *h h*, the elbow-lever L, pivoted in front of and between the same, the crank-arm adjustably attached to the die-shaft, and the interposed adjustable link for connecting the elbow-lever and crank-arm, substantially as and for the purpose specified.

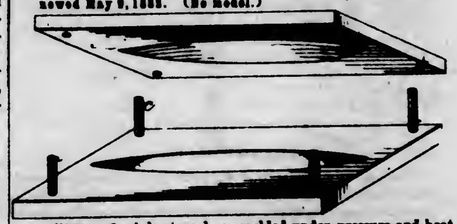
7. The combination of two oscillating shaping and welding dies having the adjacent faces curved on arcs of circles whose centers are the same as their respective shafts and whose peripheries meet, each of said dies having a matrix or cavity corresponding to one-half of an ax-poll, the walls of said matrices having mandrel-notches in the line of the eye of the ax-poll, substantially as and for the purpose specified.

259,825. ELECTRICAL CONNECTION FOR BURGLAR-ALARMS. JOB A. DAVIS, Philadelphia, Pa. Filed Nov. 11, 1881. (No model.)



Claim.—The recessed base-plate A, contact-plate B, grooved stem C *c*, and slotted contact-plate B', connected with the groove *c* of the stem C, all combined and operating substantially as and for the purpose set forth.

259,826. MOLDED BOAT AND OTHER ARTICLES FROM CELLULOID, CELLULOSE, AND OTHER PLASTIC MATERIALS. MICHAEL F. DAVIS, Portland, Me. Filed May 23, 1866. Renewed May 9, 1882. (No model.)



Claim.—1. A boat made or molded under pressure and heat from celluloid, cellulose, or other plastic materials, substantially in the manner and for the purposes set forth.

2. A boat made or molded under pressure and heat from wood, paper, celluloid, cellulose, linen or wood, and spermaceti, or a combination of these or any of them, substantially as described.

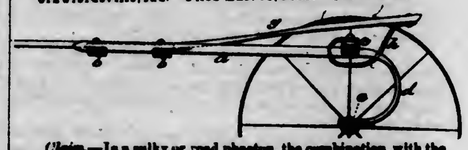
259,827. STEAM-VALVE. CLARENCE S. DEVES, Ashley, Pa. Filed Mar. 16, 1882. (No model.)



Claim.—1. The plug B, having a central groove, *c*, and supplementary grooves *c'*, adapted to admit steam into the space behind the plug, and with notches *c²*, arranged around its small end, substantially as and for the purpose set forth.

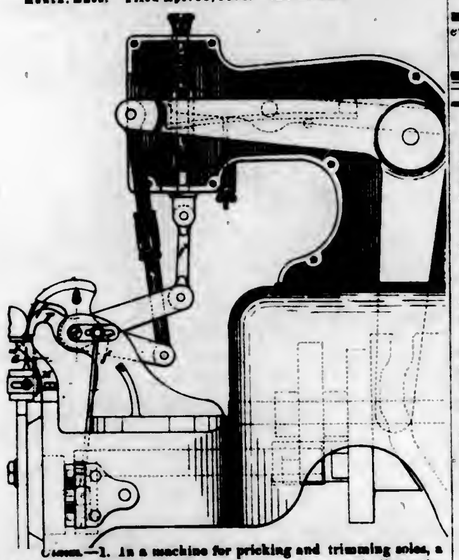
2. The combination of the casing A, having entrance-ports *a'*, inlet-ports *a²*, steam-space *a³*, cylinder-ports 2, and exhaust-cavity 3, head *a⁴*, stuffing-flange *a⁵*, and notches *c²* with the plug B, having a hollow head, *b'*, which projects from the large end of the cylinder and has attached to it the rocker-arm *b²*, which connects with the actuating machinery, having steam recess or inlet *b³*, cut-off ports *b⁴*, and exhaust-cavity *b⁵*, and notches *c*, *c'*, and *c²*, all arranged to operate substantially as shown and described.

259,828. SULKY. PIERRE DUBERTY and JAMES COLLINS, Crawfordsville, Ind. Filed Mar. 11, 1882. (No model.)



Claim.—In a sulky or road phaeton, the combination, with the boot side bars, *a a*, secured by their boot ends *d* to the axle, and the transverse bars *b b c*, of the inclined seat-supporting spring-bars *g g*, bolted to the bars *b b*, and the springs A, connecting said spring-bars to the rear transverse bar, substantially as specified.

259,829. MACHINE FOR PRICKING AND TRIMMING SOLES. HENRY L. DRAW, Rockland, assignor to John W. Hart, Weymouth, Mass. Filed Apr. 18, 1882. (No model.)



Claim.—1. In a machine for pricking and trimming soles, a presser-foot supported on journals attached eccentrically to the axle of the upper awl and knife, so that by turning this axle the presser-foot will be moved toward or from the awl and knife, substantially as and for the purposes hereinbefore set forth.

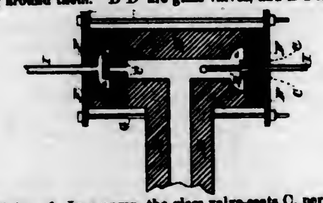
2. The combination, substantially as hereinbefore set forth, of the presser-foot journaled eccentrically to the axle of the upper awl and knife and the adjustable feed-regulating lever, to which the journals of the presser-foot are connected, so that the position of the presser-foot in relation to the upper awl will be changed when the length of the feed is changed, as and for the purposes specified.

3. The combination, substantially as hereinbefore set forth, of a straight awl and a straight knife and a curved awl and a curved knife, operating to puncture the soles and trim them nearly to their finished shape, as set forth.

4. In a machine for pricking and trimming soles, a sole-rest provided with a groove or slit to receive the lip of the channel, substantially as and for the purposes specified.

259,830. PUMP-VALVE GEAR. PIERRE C. DU BOIS, San Francisco, Cal. Filed Dec. 2, 1881. (No model.)

Brief.—C are glass valve-seats having elastic washers E sprung around them. D D′ are glass valves, and B a lead T.



Claim.—1. In a pump, the glass valve-seats C, perforated in the center, in combination with the inclosing elastic rings E, substantially as and for the purpose herein described.

2. In a pump, the valve mechanism consisting of the inlet and discharge passages B, formed in a T, as shown, in combination with the glass valve-seats C, inclosed by the elastic rings E, the disk H, and the end flanges, F, and securing-bolts G, substantially as herein described.

3. The improvement in pumps for moving corrosive gases under pressure, consisting of the perforated glass valve-seats C, and the glass valves D D′, in combination with the elastic rings E, surrounding the seats and forming a support and packing, so that the valve-seats may be secured in the chamber without breaking, substantially as herein described.

259,831. PIPE FOR UNDERGROUND ELECTRIC WIRES. PATRICK J. DUGGAN, Boston, Mass., assignor of one-half to George T. McLaughlin, same place. Filed Feb. 18, 1882. (No model.)



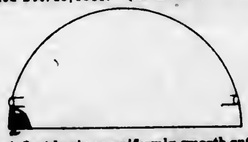
Claim.—In a pipe for underground electric wires, the combination of the main sections, man-hole pipes C A, having inclined terminals, and intermediate inclined sections, C′ C′ C′, connecting the said man-hole sections and the main sections, whereby a continuous conduit is secured free from all abrupt angles, substantially as described, and for the purpose set forth.

259,832. DISINFECTANT LAUNDRY BLUING. DANIEL DENSCOMB, New York, N. Y. Filed Mar. 3, 1882. (No specimens.)

Claim.—1. A bleaching, bluing, and disinfecting compound consisting of soluble blue, borax, gum-arabic, and a disinfecting agent, in substantially the proportions specified.

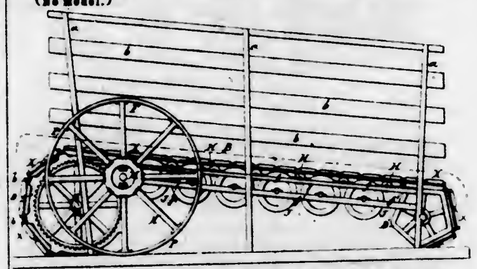
2. A bleaching, bluing, and disinfecting compound consisting of soluble blue, borax, gum-arabic, and carbolic acid, of substantially the proportion specified, mixed together, dried, and provided with an outer protective coating of some adhesive substance to prevent the evaporation of the carbolic acid, as set forth.

259,833. FLOAT FOR STEAM APPARATUS AND OTHER PURPOSES. FREDERICK C. DURANT and DAVID EDWARS, New York, N. Y. Filed Dec. 23, 1881. (No model.)



Claim.—A float having a uniformly-smooth outer surface, and composed of two half-shells, which are united by a male and female screw-thread, one of said half-shells being provided with an internal re-enforcing rim, *c*, substantially as shown and described.

259,834. HORSE-POWER. JOHN ELLIS, Pottstown, Pa., assignor to Ida K. B. Ellis, same place. Filed Apr. 24, 1882. (No model.)



Claim.—1. The combination of the chain the links of which have plates *d* with the supporting-wheels J, having grooved or U-shaped rims with flanges *h*, as set forth.

2. The combination of the chain the links of which have plates *d* with the supporting-wheels J, having grooved rims, and the intermediate supporting-wheels, H, as set forth.

3. The combination of the chain having links with plates *d* and ribs *i*, and the wheels adapted to support the plates *d* and form lateral guides for the ribs *i*, as set forth.

4. The combination of the links having interlocking lugs *p* and *s* with the connecting-pins having recesses *t*, as set forth.

5. The combination of the links having lugs *b* with the transverse lugs or strips X, bearing against said lugs *b*, as set forth.

6. The combination of the transverse lugs or strips X, having recesses in the under side, with the links having ribs *m*, adapted to said recesses, as set forth.

7. The combination of the endless chain with the sprocket-wheels having sprockets *b*, with guard-plates *w* on the outside, as set forth.

8. The fly-wheel having hollow spokes of V-shaped cross-section, as specified.

9. The combination, in a fly-wheel, of the hub M, having tapered and undercut recesses, the spokes N, having plates *x*, adapted to said recesses, and plates *y* at the outer ends, and the rim P, bolted to said plates *y*, as set forth.

10. The combination of the hub M, having tapered recesses and a rib, *z*, and the spokes N, having plates *x*, adapted to said recesses, and held in place therein by upturned portions of the rib *z*, as set forth.

259,835. LEAD-SHOT-POLISHING MACHINE. JOHN FARRELL, Pittsburg, Pa. Filed Apr. 13, 1882. (No model.)



Claim.—1. The horizontal rotary drum A, of conical form, in combination with segmental chute C, secured to the smaller end for continuous feed, a discharge-spout, E, at the larger end, and a series of pins, *a*, projecting into the interior of the drum in spiral direction around its surface, substantially as set forth.

2. A shot-polishing drum, A, of wood, in combination with a segmental chute, C, at the receiving end for continuous feed, a rim, *a*, partially closing the delivery end for retaining a definite body of shot within the drum at its discharge end, and a series of wooden pins, *s*, projecting into the interior of the drum at intervals over its surface, substantially as set forth.

3. A rotary shot-polishing drum, A, of conical form, having a series of spirally-arranged pins, *s*, projecting into its interior, in combination with segmental receiving-chute C at the smaller end, discharge-spout E at the larger end separate from the drum, and a rim, *a*, in the delivery end of the drum, for retaining a quantity of shot therein, substantially as set forth.

259,836. HILLSIDE-PLOW. JOHN H. FELDMANN, St. Louis, Mo. Filed Feb. 14, 1882. (No model.)

Brief.—A pair of shares hinged under the point and arranged to slide together to or from the standard, each forming alternately the landside and mold-board.



Claim.—1. In a hillside-plow, the combination of concave mold-boards E E, having straight landsides e^2 e^2 in one piece therewith, the mold-boards being over the landsides, as shown and described.

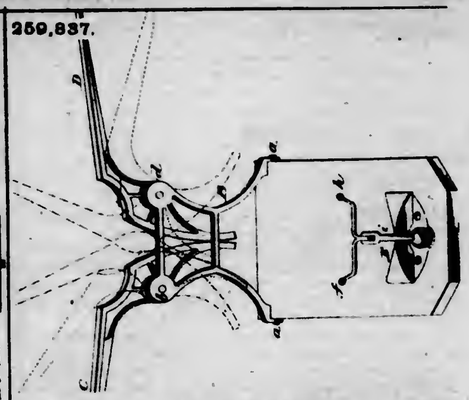
2. In a hillside-plow, the combination of concave mold-boards E E, having straight landsides e^2 e^2, the share D, shoe C, and rod F, the mold-boards with their landsides being hinged to the shoe, as set forth.

3. In a hillside-plow, the combination of mold-boards E E, having landsides e^2 e^2, share D, hinged to the mold-boards, rod F, sleeves e^3 e^3, and screw-bolt e^4, as set forth.

259,837. BOOK-SUPPORT. MYRON W. FILLEY, ALBERT S. TRAL, and ROBERT FIELDS, New Haven, Conn. Filed Feb. 14, 1882. (No model.)

Claim.—1. In a book-holder, the combination of the two arms C D, hinged to the standard independent each of the other, but to swing in substantially the same plane, and constructed with engaging surfaces between their hinging or turning points, substantially as described.

2. In a book-holder, the combination of the two arms C D, hinged upon a standard, B, independent each of the other, but to swing in substantially the same plane, and constructed with engaging surfaces between their hinging or turning points, the standard hinged to its base, substantially as described.

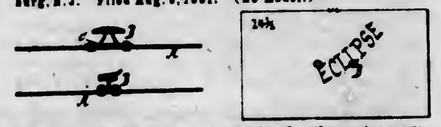


3. In a book-holder, the combination of the two arms C D, hinged to the standard independent each of the other, but to swing in substantially the same plane, and constructed with engaging surfaces between their hinging or turning points, and the rest E for the heel of the book, substantially as described.

4. In a book-holder, the combination of the two arms C D, hinged to the standard independent each of the other, but to swing in substantially the same plane, and constructed with engaging surfaces between their hinging or turning points, and the hinged bifurcated arm *f h*, substantially as described.

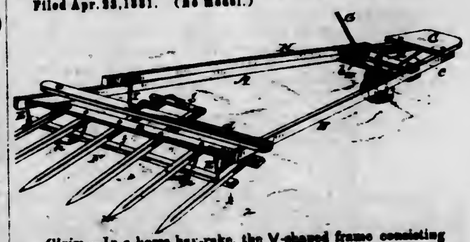
5. In a book-holder, the combination of the two arms C D, hinged to swing in substantially the same plane, and constructed with engaging surfaces between their hinging or turning points, and the arm *i*, hung by a ball-and-socket joint, and carrying the arm *f h*, substantially as described.

259,838. ADVERTISING-CARD. CORNELIUS H. FISCH, Jamesburg, N. J. Filed Aug. 9, 1881. (No model.)



Claim.—The card A, having suitable advertisements on one side, in combination with the stud or button B, secured to the other side of the card, said button being provided with a broad circular base, C, by which it is fastened to the card with rivets, substantially as described.

259,839. HAY-RAKE. PETER F. FLEMING, Salisbury, Md. Filed Apr. 22, 1881. (No model.)



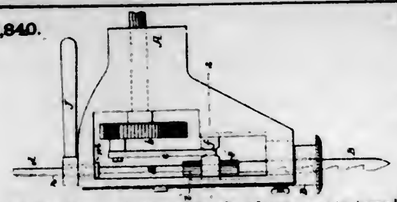
Claim.—In a horse hay-rake, the V-shaped frame consisting of the beams A B, braces *d a* *b*, and the central beam, H, having connected thereto crank-handle G, in combination with the rake F, connected to the beams A B by spring-brackets E and to the beam H by rod I, substantially as and for the purpose set forth.

259,840. CLOTH-CUTTING MACHINE. WILLIAM R. FOWLER, Philadelphia, Pa., assignor to Martin J. Myers, same place. Filed Nov. 21, 1881. (No model.)

Brief.—The knife and slotted plate in which it works turn together.

Claim.—1. The combination, in a cloth-cutting machine, of an arm or bar adapted to travel over the cloth, a slotted plate free to turn in or on said arm or bar, and a knife free to turn in bear-

259,840.



ings, and adapted to reciprocate through and to turn or be turned by the said slotted plate, all substantially as specified.

2. The combination, in a cloth-cutting machine, of a presser-bar vertically adjustable on the arm A, a slotted plate free to turn on or in said presser-bar, and a knife free to turn in bearings and adapted to reciprocate through and to turn or be turned by the said slotted plate, all substantially as set forth.

3. The combination of the arm or bar adapted to travel over the cloth, a slotted plate carried by but free to turn on or in said arm or bar, and a knife free to turn in bearings and adapted to reciprocate through and to turn the said slotted plate, as specified.

259,841. CAR-COUPLING. DAVID FRENCH, Cromwell, assignor of one-half to Edward Sheldon Norton, St. Paul, and Eugene Edwards Luce, Wadena, Minn. Filed Apr. 27, 1882. (No model.)

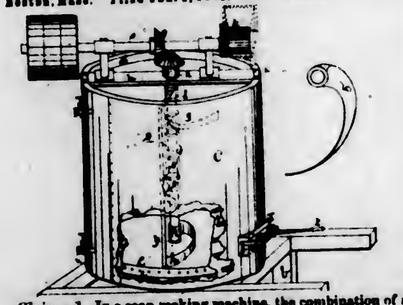


Claim.—1. In a car-coupling, the combination, with a head, B, formed with front inclined faces, *b b*, a hollow or space, D, and a semicircular seat, *b'*, as described, of the locking-piece C, elongated slot c^3, pin *c*, plate C', lug F^2, ring F^3, cord or chain F^4, and semicircular opening *c'*, the whole being constructed and adapted to operate in conjunction with a ball or knob ended link, E, substantially as shown and described.

2. The combination, with the head B of a car-coupling provided with a link-locking piece, C, operating substantially as set forth, of a locking-bolt, *f*, pivoted lever f^2, and a releasing-lever, H, all constructed and adapted to operate substantially as shown and described.

3. The combination, in a car-coupling, of a head, B, formed with inclined faces *b b*, a hollow or space, D, and seat *c'*, as described, and a pivoted locking-piece, C, having a semicircular opening, *c'*, and bearing-plate C', of the bolts f^2 H, lever F, plate F', and chain F^4, or equivalent operating means, constructed and adapted to operate substantially as shown and described.

259,842. SOAP-MAKING MACHINERY. ROBERT FERRLAND, Boston, Mass. Filed Jan. 3, 1882. (No model.)



Claim.—1. In a soap-making machine, the combination of an upright cylindrical jacketed tank and fluid-inlets, horizontal driving-shaft with feed-rolls attached or geared thereto, vertical centrally-located bridge, supported rotating shaft therein, and carved centripetal or centrifugal acting mixer-blades attached thereto, with the centrifugal emptying blade or blades and gate, constructed in the manner as and for the purpose substantially as described.

2. In a soap-making machine, the shell *e*, surrounded by the continuous pipe-coil jacket *v* and covering thereon, with the double bottom *s f* riveted to the said shell and strengthened by the bushing and flanges, as described.

3. In a soap-making machine, the shaft *p* and feed-rolls *w*, for the purpose described.

4. The angle-iron band *d* and the channel-iron bridge *m* and step *n*, with an upright cylindrical tank, constructed as set forth.

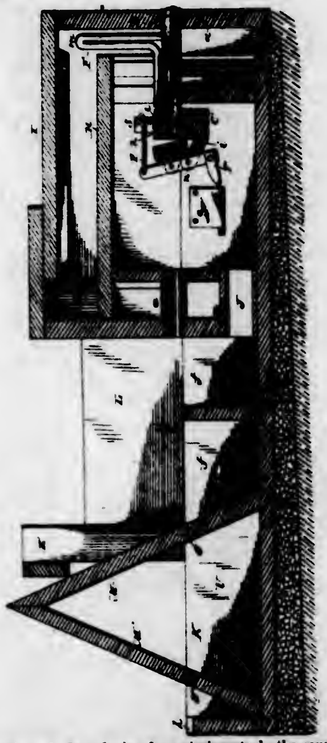
5. The carved sharp-edged centripetal and centrifugal acting mixer-blades *g*, with the upright rotating shaft *l*, constructed in the manner as and for the purpose described.

6. A vertical rotating shaft, centrifugal emptying-blade *h*, attached thereto, and scraper-blade *y*, with the emptying-gate *i* and cam-lever *k*, substantially as described.

7. The combination of the bushing *q* with the flanges *r* and *s* and packing *t*, constructed in the manner and for the purpose substantially as described.

8. The shaft *l* and holes or passages *a*, combined with the bushing *q* and cock *u*, for the purpose described.

259,843. DEVICE FOR WATERING STOCK. FRANK FUNK, Beverly, Ill. Filed Mar. 1, 1882. (No model.)



Claim.—1. In a device for watering stock, the combination, with a combined stationary and removable curbing, of a valve-chamber arranged within said curbing so as to leave a space between said chamber and curbing, as and for the purpose set forth.

2. In a device for watering stock, the combination, with a combined stationary and removable curbing and a valve-chamber within said curbing, the said curbing and valve-chamber being provided with removable covers, of a supply-pipe and automatic regulator for controlling the flow of water into the said valve-chamber, substantially as set forth.

3. In a device for watering stock, the combination, with the stationary and removable curbing, a valve-chamber within said curbing, and removable covers for the said curbing and valve-compartment, of a trough communicating with said valve-compartment and provided with curbing and removable side pieces, substantially as and for the purpose described.

4. In a device for watering stock, the combination, with a stationary and removable curbing and a valve-chamber situated inside said curbing, of a trough communicating with said valve-compartment and provided throughout part its length with curbing and removable side pieces and the inclined pieces for forming a separate drinking-compartment, substantially as set forth.

5. In a device for watering stock, the combination, with the supply-pipe, of an automatic regulator secured thereto and adapted to allow a limited constant flow of water from the said pipe, whether the valve be closed or not.

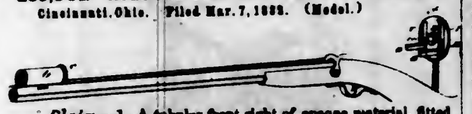
6. In a device for watering stock, the combination, with the supply-pipe screw-threaded on its outer end, of the mouth-piece of the regulator secured thereon, a valve automatically closed and opened by the rise and fall of the water in the valve-chamber, and a cam-valve for allowing the passage of a continuous stream of water from the said regulator when the valve is closed, substantially as set forth.

7. In a device for watering stock, the combination, with the supply-pipe A, mouth-piece C', provided with depending brackets for the support of the valve, valve P, lever P', float Q, cam R, arm E, and link *d'*, compartment or chamber, and trough, all of the above parts adapted to operate substantially as set forth.

8. In a device for watering stock, the combination, with the supply-pipe A, of the overflow-pipe F, the latter constructed and adapted to operate as described.

9. In a device for watering stock, the combination, with suitable curbing and trough, of a supply-pipe and an overflow-pipe connected thereto, and adapted to operate as described.

259,844. SIGHT FOR FIRE-ARMS. FREDERIC J. GARDNER, Cincinnati, Ohio. Filed Mar. 7, 1882. (Model.)

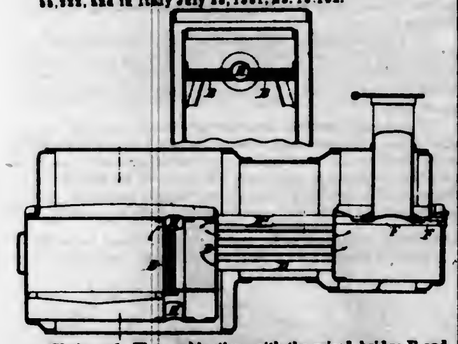


Claim.—1. A tubular front sight of opaque material, fitted with a transparent cross plate or disk of glass having a central sight-hole, substantially as specified.

2. A front sight for rifles and other guns, of opaque tubular construction, composed of an outer fixed tube and an inner slide or tube provided with a transparent cross plate or disk of glass having a central sight-hole in it, essentially as shown and described.

3. The combination of the eccentric *n*, the slotted plate or sight-body *f*, the adjustable cross-slide *i*, having a sight-hole, *k*, the partial tube *m*, the projections or finger-pieces *o o*, and the guards or springs *r r*, essentially as herein described.

259,845. TUBULAR BOILER AND FURNACE. RICHARD GARRETT and FRANK GARRETT, Leiston Works, Leiston, County of Suffolk, England. Filed June 18, 1881. (No model.) Patented in England Mar. 11, 1881, No. 1,060; in France July 7, 1881, No. 142,840; in Germany July 13, 1881, No. 16,761; in Austria July 9, 1881, No. 16,880; in Belgium July 21, 1881, No. 56,922, and in Italy July 30, 1881, No. 13,163.



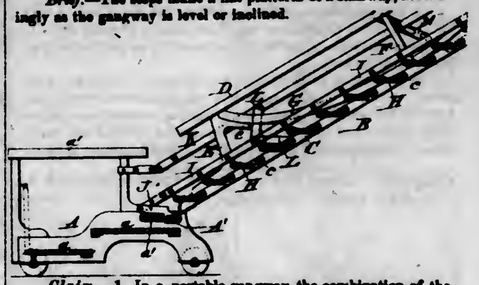
Claim.—1. The combination, with the raised bridge B and the tubes D', situated at or immediately above the level of the bridge and extending from the combustion-chamber to the smoke-box, of the tubes F, extending through the smoke-box and entering the tubes D', whereby the combustion-chamber is brought into communication with the open air and streams of heated air are caused to meet and mingle with the gases of combustion as they rise over the bridge to reach the combustion-chamber, substantially as specified.

2. The raised bridge B, constructed of abutting doors, which are hinged vertically on opposite sides of the furnace, and which afford, on being thrown back, ready access to the flue-tubes for cleaning and repair, substantially as specified.

3. The combination, with the furnace having the circulating-pipe H, extending from top to bottom thereof, of the bridge-wall B, composed of two doors hinged vertically at the opposite sides of the furnace and closing against said pipe, substantially as specified.

259,846. GANGWAY FOR SHIPS. JAMES P. GARRON, Jersey City, N. J. Filed Mar. 25, 1882. (No model.)

Brief.—The steps make a flat platform or a stairway, accordingly as the gangway is level or inclined.



Claim.—1. In a portable gangway, the combination of the truck A, having pivoted step *a*, with the adjustable bridge B, having pivoted steps H and the levers I J, substantially as shown and described.

2. In a portable gangway, the combination of the truck A with the adjustable bridge B, having sides C C, hand-rails D D, and pivoted steps H H, connected to levers I I, and the levers J J, substantially as shown and described.

3. In a portable gangway, the combination with the truck A, having steps *a a*, hand-rails *a' a'*, and cross-bar A', of the adjustable bridge B, composed of the sides C C, cross-bars *c c*, hand-rails D D, supported by the standards E E, having knees *e e*, and having pivoted steps H H and curved braces G G, the levers I J K L, and the slotted bars M M, all constructed and arranged substantially as shown and described.

259,847. RUBBER BUCKET FOR CHAIN-PUMPS. EDWARD W. GRANT, Ypsilanti, Mich. Filed Apr. 4, 1882. (No model.)

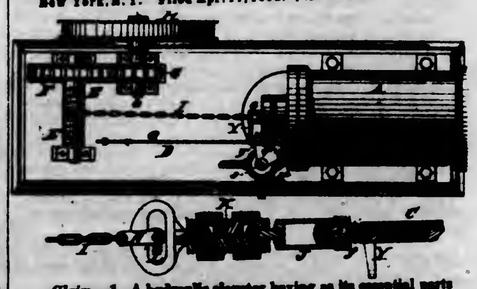


Claim.—1. The combination, in a pump-bucket, of the elastic body A, having bevels *c c* and an intermediate groove, *a*, with the parts B, *e*, *h*, and *f*, all arranged and adapted to operate in the manner and for the purpose substantially as described.

2. In a reversible chain-pump bucket, the combination of two elastic fronts of cones whose bases are of equal diameter, having flanges of equal diameter between their bases, and an annular groove, *a*, with a link-clamping device, substantially in the manner and for the purpose described.

3. A rubber chain-bucket consisting of the following elements in combination: a double-beveled annularly-grooved portion, A, having flanges *b* of equal diameter, the parts B *f*, the screw-stem on the part B, the prismatic nut h, and the washer *g*, all arranged and combined as an entirety, substantially as described.

259,848. HYDRAULIC ELEVATOR. ARTHUR GRANVILLE, New York, N. Y. Filed Apr. 17, 1882. (No model.)



Claim.—1. A hydraulic elevator having as its essential parts the cylinder A, piston B, piston-rod C, chain or rope I, spirally-grooved drum K, spur-wheel F, spur-pinion G, and hoisting-drum

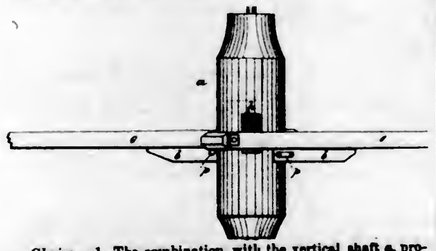
H, the whole constructed and combined for joint use and operation substantially as and for the purpose herein set forth.

2. The combination, with the rod C of the piston B, the cylinder A, chain or rope I, and spirally-grooved drum E, of the yoke J, and turn-buckle K, having the nuts *m*, all substantially as and for the purpose herein set forth.

3. The combination of the clevis L and link N and roller *u* with the piston-rod C, the chain or rope I, the spirally-grooved drum E, the piston B, and cylinder A, all substantially as and for the purpose herein set forth.

4. The rod Q, having the rack *r*, the arm Y, attached to the piston-rod C, and toothed sector *q*, in combination with the cock or valve of the cylinder A, chain I, and winding mechanism, substantially as described, for operation in connection with the said mechanism, all substantially as and for the purpose herein set forth.

259,849. HORSE-POWER. JAMES T. GRAVES, Wilson, N. C. Filed May 3, 1882. (No model.)



Claim.—1. The combination, with the vertical shaft *a*, provided with the arms *b*, having recesses *c* in their ends, terminating inwardly in the oppositely-beveled ends *d*, and arm *h*, provided with angular recesses *i i*, having ridges *m m*, of the lever *e*, provided with notch *n* and curved rod *p*, substantially as described, and for the purpose set forth.

2. The combination, with the lever *e*, provided with notch *s* in its outer end, of the draft-hook *t*, secured to the outer end of the lever, and provided with the legs *u v* and catch *w*, substantially as described, and for the purpose set forth.

259,850. METHOD OF MANUFACTURING RUBBER-COATED BELTING. JOHN W. GRAY, Hartford, Conn. Filed Apr. 28, 1882. (No model.)



Claim.—1. The herein-described method of forming rubber-surfaced belting, consisting in coating or saturating the woven or textile web or body of the belt with rubber composition, drying the same, vulcanizing the faces of the belt, and then coiling it and subjecting its edges to pressure in a vulcanizing-press, and thereby vulcanizing and finishing the edges, as set forth.

2. The herein-described method of finishing the edges of rubber-surfaced belting, consisting in coiling the belt into a compact body and subjecting the ends of the coil or the edges of the belt to pressure, as set forth.

259,851. WATER-ELEVATOR. FRANK A. GRENOW, New Orleans, La. Filed Jan. 28, 1882. (No model.)

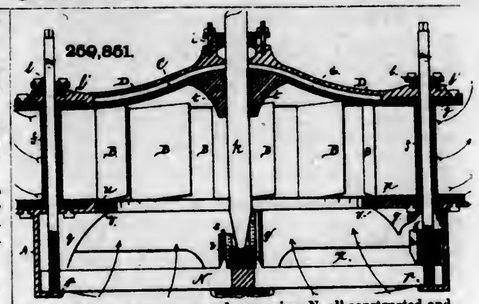
Brief.—The water-wheel is adjusted vertically by means of the elevating-rods *m*, whose lower ends are screw-threaded and enter the cross-bars M, which support the shaft *h*, to which the wheel is keyed. The dome D corresponds in shape to the solid top C of the water-wheel. There is a small vacuum-space between D and C, which admits of a slight elevation of the wheel caused by the action of the water on the concave inner surface of C, thereby diminishing the friction.

Claim.—1. In a water-elevator, a wheel having a solid top, C, and bottom ring, *u*, in combination with the angular knives connected to and supported by said top and ring, substantially as and for the purpose set forth.

2. In a water-elevator, the cylindrical section A, provided with seats *p* and ribs *q r*, to receive the outer ends of the cross-piece N, as described, and for the purpose set forth.

3. In combination with the running-wheel composed of top C, knives B, and annular ring *u*, the shaft *h*, cover D, lower section, A, elevating-screws *m*, and cross-piece N, all constructed and arranged to operate within a casing, for the purpose described.

259,851.



259,852. CLUTCH. WILLIAM P. HALE, Brookport, N. Y. Filed May 2, 1882. (No model.)



Claim.—1. A clutch consisting of a drum or barrel loosely mounted on the shaft, in combination with a sleeve secured to the shaft, a disk loosely mounted on said sleeve, and a pawl pivoted to an arm on the sleeve, the free end of the pawl being provided with a pin or stud that engages the inclined sides of an opening in the disk, substantially as set forth.

2. The combination, with a clutch drum or barrel loosely mounted on the shaft and provided with internal V-shaped notches, of a sleeve secured to the shaft, said sleeve having an arm provided with a circular groove, a pawl constructed with a circular bearing that fits in said groove, a disk loosely mounted on the sleeve, a spring for imparting a part rotary movement to the disk, and a stud on the pawl that extends through an irregular-shaped opening in the disk, substantially as set forth.

3. The combination, with the drum or barrel, sleeve, pawl, disk, and spring, constructed and arranged substantially as described, of the projection on the disk and the clutch-lever, substantially as set forth.

4. The combination, with the sleeve, pawl, and disk, the latter provided with a series of holes, of a spiral spring encircling the sleeve, and secured at one end in one of said holes and at the other to the sleeve or pin connecting the sleeve and shaft, substantially as set forth.

5. A clutch consisting essentially of a loosely-revolving barrel or drum, a sleeve secured to the shaft, a disk loosely mounted on the sleeve, a pawl arranged to lock the sleeve to the drum, a spring for imparting a part rotary movement to the disk, and a clutch-lever for engaging the disk and arresting its movement, said parts being constructed and arranged substantially as set forth.

259,853. VELOCIPEDE. WELCOME H. HULL and JAMES W. O'REAR, White Hall, Va. Filed Mar. 16, 1882. (No model.)



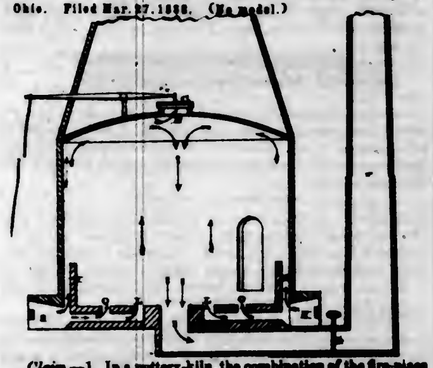
Claim.—1. The frame H, having the forked arms N connected to the hind axle, A, and supporting the seat J, having spring-extensions K, connected to said arms by links L, and standards M, substantially as specified.

2. A velocipede-saddle having the elastic side extension, K M, in combination with the link L, standard M, frame-branches N, and axle A, as shown and described.

3. The combination, with the front axle and the socket P on the main supporting-frame, and the frame Q, having a stem, S, passing up through said socket, of the arms T Y, rods U, upright V, having arms W, and the frame having socket X, as and for the purpose specified.

4. The combination, with the front axle having upright Q, with stem S, passing through a socket of the main supporting-frame, of the hand-lever *a*, pivoted to the top of said stem, the rod *d*, pivoted to the end of said lever, the brake on the end of said rod, and the slotted arm *e* on the socket P, as and for the purpose specified.

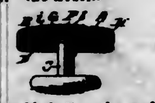
259,854. POTTERY-KILN. JOHN HARDWICK, East Liverpool, Ohio. Filed Mar. 27, 1882. (No model.)



Claim.—1. In a pottery-kiln, the combination of the fire-place H, the flues J, leading therefrom and connecting with the opening I, and the flues N, connecting with the opening O, substantially as shown.

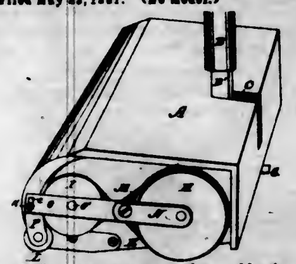
2. In a pottery-kiln, the combination of the two stacks D E, regulating-valves O G, fire-places H, flues J N, openings L O, and fire-bags I, substantially as specified.

259,855. BUTTON. FRANK S. HARRINGTON, Providence, R. I. Filed Nov. 29, 1881. (No model.)



Claim.—In a separable button, the perforated guide-plate D of the head A, recessed plate E, provided with the central elongated slot, *b*, tumbler-plate G, provided with the notches *f f'*, stop *h i*, and spring H, in combination with the shoe-post C, provided with the notched locking-spur F, substantially as described.

259,856. CARPET-SWEEPER. JOSIAS HINKLEY, Norwalk, Ohio. Filed May 23, 1881. (No model.)

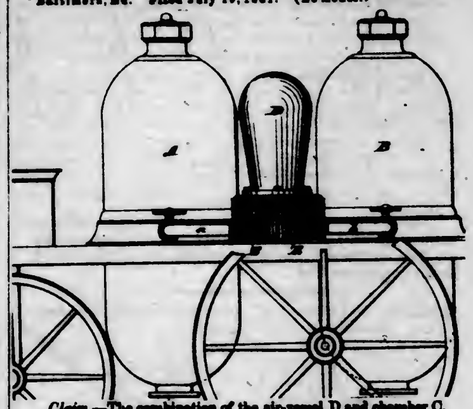


Claim.—1. In a carpet-sweeper, the combination, with the casing A, provided with the slot C, of the arm B', handle B, pin V, crank W W', slotted headed arm *z*, and spiral spring Y, substantially as described, and for the purpose set forth.

2. In a carpet-sweeper, the combination, with the grooved endless belt M, of the grooved wheels I H, having their planes inclined to each other, substantially as described.

3. The combination, with the casing A and brush-cylinder Q *j*, of the arms O, having slots *c*, and angular arms P, pivoted thereto, and having holes *d*, and pins P' and wheels L, substantially as described, and for the purpose set forth.

259,857. FIRE-EXTINGUISHER. CHARLES T. HOLLOWAY, Baltimore, Md. Filed July 19, 1881. (No model.)



Claim.—The combination of the air-vessel D and chamber C, provided with nozzles E and pipes *a b*, having valves, with the gas-tanks A B, all constructed and arranged substantially as shown, and for the purpose specified.

259,858. ROLLER-MILL. NOAH W. HOLT, Buffalo, N. Y., assignor of one-third to Richard K. Hoyt, same place. Filed Mar. 28, 1882. (No model.)



Claim.—1. A roller for roller-mills, provided on its cylindrical surface with alternating sharp and dull ribs, substantially as set forth.

2. In a roller-mill, the combination of two rollers provided on their cylindrical surfaces with alternating sharp and dull ribs, and means whereby the rollers are rotated with different peripheral speeds, substantially as set forth.

259,859. CLOCK. ARTHUR E. HOTCHKISS, Cheshire, Conn. Filed Dec. 24, 1881. (No model.)

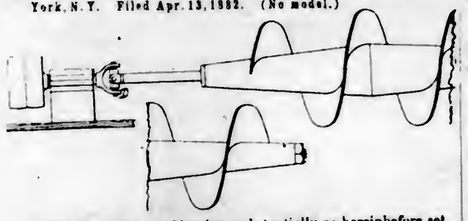


Claim.—1. In a clock-movement, the combination, with the mainspring located in the lower end of the case or frame and a mainspring-arbor arranged vertically, of the pinions of the train arranged vertically and supported in horizontal bridges attached to the opposite side, of the case or frame above the mainspring, and a center shaft arranged horizontally and extended through one side of the clock-frame, substantially as set forth.

2. The combination, with the mainspring arranged horizontally in a separate chamber at the bottom of the clock-frame or case, and a mainspring-arbor arranged vertically and extending through a horizontal partition-plate into an upper chamber, of the pinions of the train arranged vertically and supported in horizontal bridges attached to the opposite sides of the upper chamber of the case, and a center shaft arranged horizontally and extended through one side of the frame-case, substantially as set forth.

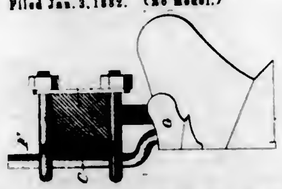
3. In a clock, the combination, with the mainspring arranged horizontally in the lower portion of the clock case or frame, and a mainspring-arbor arranged vertically, of the pinions of the train arranged vertically and supported in bridges attached to the opposite sides of the frame, above the mainspring and arbor, a horizontal center shaft, and dial-wheels and hands connected with the outer end of the center shaft and located on the outside of the frame or case, substantially as set forth.

259,860. TIDE-WAVE MOTOR. ROBERT HUMPHREYS, New York, N. Y. Filed Apr. 13, 1882. (No model.)



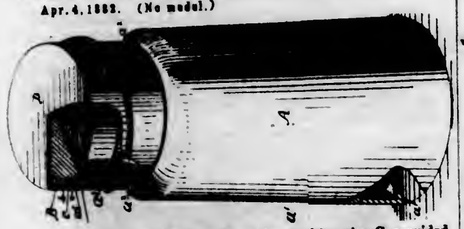
Claim.—The combination, substantially as hereinbefore set forth, of the screw having its body composed of a float, the driving-shaft, and the universal joint connecting the screw to the shaft, for the purpose specified.

259,861. PLOW-JOINTER. HORACE HUSTEMAN, Sacramento, Cal. Filed Jan. 3, 1882. (No model.)



Claim.—The combination of the crank-standard F, the jointer mold-board G, the bed-plate L, rivets J, clamping-bolts K, and plate N, substantially as shown and described.

259,862. FRUIT-JAR. JOHNSTON IRVIN, Elk City, Pa. Filed Apr. 4, 1882. (No model.)



Claim.—1. In a fruit-jar, the rubber packing-ring C, provided with inclined sides and a wedge-shaped circular groove, *c*, substantially as described, and for the purpose set forth.

2. The combination, with the jar A, provided with the wedge-shaped upper edge, *a'*, and rubber packing-ring C, having inclined sides and a wedge-shaped circular groove, *c*, of the cover B, provided with the wedge-shaped annular recess *b*, substantially as described, and for the purpose set forth.

3. The combination, with the jar A, provided with the wedge-shaped upper edge, *a'*, of the cover B, provided with the wedge-shaped annular recess *b*, and conical hub *b'*, rubber packing-ring C, provided with wedge-shaped groove *c*, and screw-cap D, substantially as described, and for the purpose set forth.

259,863. MANUFACTURE OF ARTIFICIAL STONE AND MARBLE. HENRY C. JEWELL, Georgetown, D. C. Filed Apr. 28, 1882. (No model.)

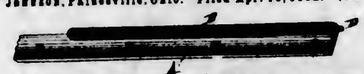


Claim.—1. The compound artificial stone or marble herein specified, composed of hydraulic cement, Roman cement, lime of Tiel, hydraulic lime, plaster-of-paris, and sand or marble-dust, and dcutcsulphate of copper, in about the proportions specified.

2. The solution or bath for the manufacture of artificial stone, composed of alum ammonia ferri, borate of soda, nitrate of potash, carbolic acid, muriate of ammonia, nitrate of ammonia, oxalic acid, and lime-water, in about the proportions set forth.

3. The method of inlaying artificial marble slabs and stone pavements by means of solid blocks of metal, wood, glass, or other suitable material, formed in any desired designs, to be employed substantially as specified.

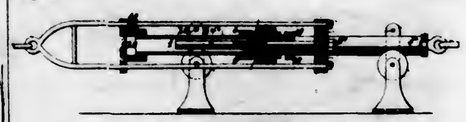
259,864. CARPET OR OIL-CLOTH FASTENER. EDWARD E. JOHNSON, Painesville, Ohio. Filed Apr. 13, 1882. (No model.)



Claim.—The metallic carpet-binding herein shown and described, consisting of a plain or flat portion, A, and a tubular or rolled portion, B, said tubular portion B having a stiffening-wire, D, of requisite thickness inserted through it, as an improved article of manufacture.

259,865. APPARATUS FOR OPERATING RAILWAY-SIGNALS. HENRY JOHNSON, Eccles, County of Lancaster, England. Filed Jan. 7, 1882. (No model.) Patented in England Dec. 27, 1879, No. 5,297; in France July 8, 1880, No. 137,595; in Belgium July 19, 1880, No. 53,064, and in Germany July 20, 1880, No. 14,147.

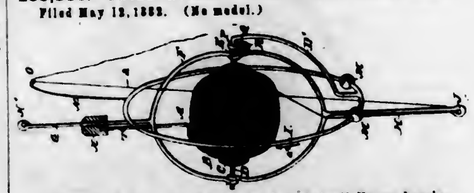
Brief.—One end of a section of a signal-operating rod or wire is secured to a cylinder containing liquid, and the meeting end of the other section is secured to a piston or plunger working in said cylinder, whereby the expansion and contraction of the rods or wires is compensated for by the expansion and contraction of the liquid.



Claim.—1. The combination, with a railway-signal and its actuating lever or device, of a wire, chain, or other connection extending between them, and composed of sections, a cylinder containing liquid, and to which one section of said connection is attached, and a piston or ram to which the other section of said connection is attached, and which is adapted to move relatively to the cylinder as the liquid expands or contracts, substantially as and for the purpose specified.

2. The combination, with a railway-signal and its actuating lever or device, of a sectional connection extending between them, a liquid-reservoir, and a cylinder communicating therewith, and to which one section of said connection is attached, and a piston or ram to which the other section of said connection is attached, and which is adapted to move relatively to the cylinder as the liquid in said reservoir and cylinder expands or contracts, substantially as and for the purpose specified.

259,866. TWINE-HOLDER. CHAS. W. JONES, Lowell, Mass. Filed May 12, 1882. (No model.)



Claim.—1. A twine-holder made substantially as herein shown and described, and consisting of a twine-spool mounted on a shaft journaled in a ring and having an outer ring attached to one end of this shaft, as set forth.

2. In a twine-holder, the combination, with the twine-spool B, of the ring F, the shaft D, and the external ring, L, attached eccentrically to an arm, D', of this shaft D, substantially as herein shown and described, and for the purpose set forth.

3. In a twine-holder, the combination, with the twine-spool B, of the ring F, the shaft D, the external ring, L, attached to an arm of the shaft D, and the weights M, substantially as herein shown and described, and for the purpose set forth.

4. In a twine-holder, the combination, with the twine-spool B, of the ring F, the shaft D, the external ring, L, attached to an arm of the shaft D, and the spring-arm N, attached to the ring L, and provided at its outer end with a loop or eye, O, substantially as herein shown and described, and for the purpose set forth.

5. In a twine-holder, the combination, with the twine-spool B, of the ring F, the shaft D, the ring L, the arm N, provided with a loop, O, the rod G, projecting upward from the ring F, the rod H, projecting downward from the ring F, and the loops J and K' at the lower and upper ends of the rods H and G, substantially as herein shown and described, and for the purpose set forth.

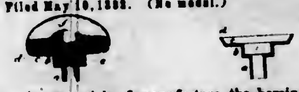
6. In a twine-holder, the combination, with the twine-spool B, of the ring F, the shaft D, provided with a notched disk, P, the hook R on the ring F, and of the ring L, substantially as herein shown and described, and for the purpose set forth.

7. In a twine-holder, the combination, with the rings F and L, of the shaft D, the tube B', and the adjustable heads C on this tube B', substantially as herein shown and described, and for the purpose set forth.

8. In a twine-holder, the combination, with the twine ball and the devices for carrying it, of a weighted wire resting on the twine ball and operating as a brake or check, substantially as set forth and described.

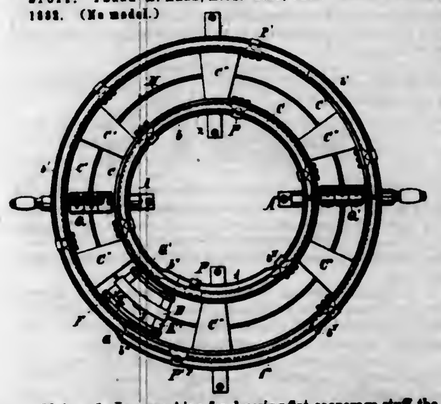
9. In a twine-holder, the combination, with the rings F and L, of the shaft D, the wire G, the sliding weight-block K, and the wire T, substantially as herein shown and described, and for the purpose set forth.

259,867. SHOE-LACING STUD. JOSEPH L. JOYCE, New Haven, Conn. Filed May 10, 1882. (No model.)



Claim.—As an article of manufacture, the herein-described shoe-stud, consisting of the metal back *c*, constructed with the upwardly-projecting flange *d*, body *b*, and tubular shank *a* in one and the same piece, combined with the head *f*, made from plastic material, closed over the flange of the back, substantially as described.

259,868. MACHINE FOR DRESSING FLAT COOPERAGE-STUFF. FRANK H. KANE, River Side, Ohio. Filed Feb. 23, 1882. (No model.)



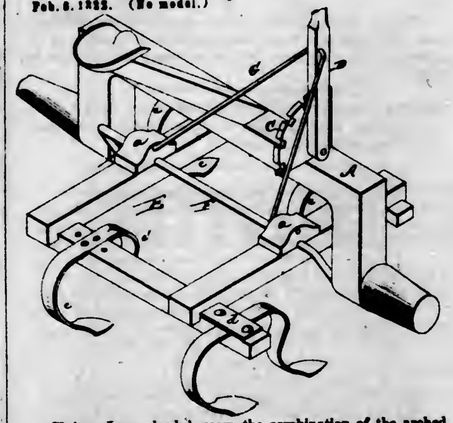
Claim.—1. In a machine for dressing flat cooperage-stuff, the following elements, constructed and combined substantially as set forth, to wit: two annular series of horizontal track-pieces, B B', stationary cam troughs or troughs, as *b b'*, a continuously-revolving turn-table, C C' C'', having radial slots *c*, containing one or more pairs of dogs, P P', whose shanks *p* occupy said cam-troughs, a horizontal rest, D, to receive the stuff flatwise, and one or more revolving cutters, Q Q', journaled radially of the track, respectively, so far below and above the same as to impart the desired thickness and flat dressing to the stuff, in the manner explained.

2. In a machine for dressing flat cooperage-stuff, the combination, with a continuously-revolving turn-table, of the rest consisting of fixed bar D for the middle and the two yielding bars G G' for the ends of the stuff, the said rest being constructed, arranged, and adapted to operate substantially as set forth.

3. In a machine for dressing flat cooperage-stuff, the described combination, with a continuously-revolving turn-table, of the rest D G G', having the stem I occupying dovetail socket *a* in the supporting-frame, and having adjusting-screw J and clamping-bolt K, substantially as and for the purpose set forth.

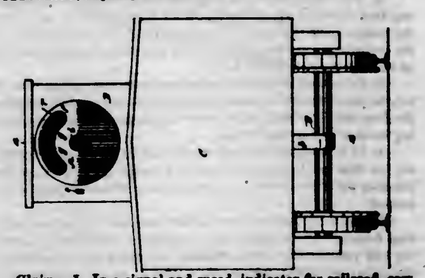
4. In a machine for dressing flat cooperage-stuff, the combination of horizontal vertically-adjustable rest D G G', adapted to support the stuff flatwise and present it to the cutters edgewise, the stuff clamping and forwarding table C C' C'', turning in its own plane and parallel with the plane of said rest, and the cutters Q Q', journaled radially of said table, one below and the other above, and one or both of them adjustable relatively to the same, substantially as set forth

259,869. HARROW. WILLIAM KELLY, Saranac, Mich. Filed Feb. 6, 1882. (No model.)



Claim.—In a wheel-harrow, the combination of the arched axle A, having the arms rigidly fixed to it, the locking-lever D on this axle, the bail G, pivoted to lever D, the blocks *a a* on the suspended frame E, having bail G pivoted to them, the bail F, pivoted to said frame directly below the pivotal ends of bail G, and also pivoted to the axle, the front and rear transverse bars of frame E, and the double harrow-teeth crossing the tops of said bars and secured to them by plates *d*, all substantially as described.

259,870. SIGNAL AND SPEED-INDICATOR FOR CARS. WALTER J. KIRK, Logansport, Ind. Filed Jan. 14, 1882. (No model.)



Claim.—1. In a signal and speed-indicator for railroad-cars or other vehicles or vessels, the combination, with a series of stationary lamps or lights of different colors, of a rotating target or disk having an arc-shaped slot formed in it, and means, substantially as herein described, for rotating the same from the car-axle, as set forth.

2. In a signal and speed-indicator for railroad-cars or other vehicles or vessels, the combination, with the disk or target A, provided with the arc-shaped slot *f*, and means for rotating the same, of the different-colored stationary lamps or lights *l m n*, arranged at equal distances apart behind the said disk and within the range of the slot of the disk, substantially as and for the purpose set forth.

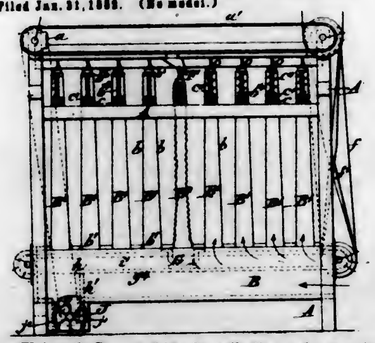
3. In a signal and speed-indicator for railroad-cars or other vehicles or vessels, the combination, with the axle B and the box D, carrying the stationary lights *l m n*, of the slotted target or disk A, the shaft *c*, the system of gearing *e d*, and belt *b*, substantially as and for the purpose set forth.

259,871. ARTIFICIAL FLOWER. EDWIN L. L. KIRK, Baltimore, Md. Filed Apr. 6, 1882. (Model.)



Claim.—Artificial flowers having their petals formed of sea-shells perforated near their bases and secured by wires, as described, whereby the petals are free to vibrate and move, as set forth.

259,872. MACHINE FOR COLLECTING DUST. ALVA H. KIRK, Minneapolis, Minn., assignor to Kirk & Pender, same place. Filed Jan. 31, 1882. (No model.)



Claim.—1. In a machine for collecting and separating dust from the air, the combination of the traveling wiper F, coiled springs d', the standing dust-catching bags B', and suitable supports for said springs and bags, whereby the dust-catching cloth b of the bags is wrinkled, and the springs, released from depression, act to throw off or clear the dust from said cloth, substantially as described.

2. The combination, in a machine for collecting and separating dust from the air, of the revolving shaft J, having dust-carrying wings j and india-rubber cushions j' at their extremities, and the concaves f', against which, at opposite sides, the cushions bear, as and for the purposes described.

3. In a machine for collecting and separating dust from the air, the combination of a traveling wiper, standing and compressible dust-catching bags, and a traveling dust-catching box, operating substantially as described.

4. In a machine for collecting and separating dust from the air, the dust-catching box G, having a hinged bottom, g''', in combination with the cut-off guideways g', as and for the purposes described.

5. The combination, in a machine for catching and separating dust from air, of standing and compressible dust-bags, a traveling and compressing wiper, suitable mechanism for operating it, springs to return the bags to their normal condition after being compressed, a reciprocating dust-catching box, mechanism for causing it to travel back and forth, and an automatic revolving dust-discharging device, substantially as and for the purposes described.

259,873. MACHINE FOR COLLECTING DUST. ALVA H. KIRK, Minneapolis, Minn., assignor to Kirk & Pender, same place. Filed Feb. 28, 1882. (No model.)

Claim.—1. In a machine for collecting dust, the combination of the frame A, the frame A', having the wire-gauze a on its outside and the cloth a' upon the inside, with devices inclosed within for catching and separating dust from the air, substantially as described.

2. In a machine for collecting dust, the dust-box G and means for causing it to travel intermittingly underneath the dust-collecting cloth, in combination with the pivoted lever O, having tripping devices supported upon the wheel independently of the teeth, whereby the teeth can be removed without removing the adjusting devices, substantially as set forth.

7. The herein-described detachable sprocket-teeth, having the projections b^2 extending laterally on both sides of the teeth and adapted to prevent the chain from coming in contact with the wheel, substantially as set forth.

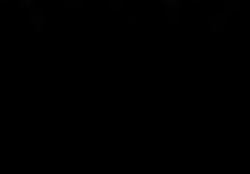
8. In a sprocket-wheel, a tooth which can be adjusted longitudinally in several positions relatively to the center of the wheel to vary the tension of a chain, in combination with clamping devices adapted to secure the tooth in said several positions, or relatively to the center of the wheel, substantially as set forth.

259,876. METHOD OR PROCESS OF DECORATING OR PRODUCING DESIGNS ON THE SURFACES OF EARTHENWARE TILES, &c. EDWARD LEE, Leeds, County of York, England. Filed Jan. 16, 1882. (No specimens.) Patented in England June 27, 1881, No. 3,018.

Claim.—1. The method of producing the said designs by setting off on the said surfaces prints or impressions which have been received from engraved blocks or plates or lithographic stones charged with the required pigments or material on blocks or cylinders having a yielding but practically non-extensible surface, essentially as hereinbefore described.

2. The method of breaking up the hard lines of designs produced as hereinbefore described and producing a tooled appearance in the said designs by rolling a cylindrical brush or roller over the surface on which the print or impression has been set off and while the varnish is fresh.

259,877. UNDER-GARMENT FOR INFANTS. CAROLINE E. LIGHTCAPP, Philadelphia, Pa. Filed May 1, 1882. (No model.)



Claim.—The within-described under-garment, comprising two disconnected drawer-legs, each constructed at the upper end for attachment to some other portion of the apparel, all substantially as set forth.

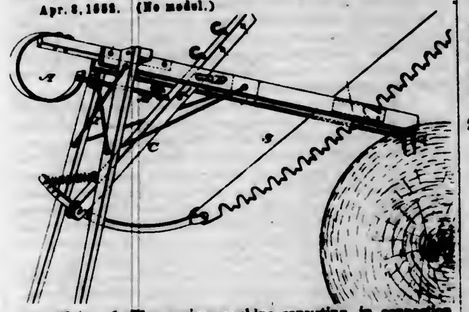
259,878. PLASTIC COMPOSITION FOR THE CORES OF BILLIARD-BALLS AND FOR OTHER PURPOSES. CHARLES B. Lockwood, Albany, N. Y., assignor to the Rosalate Company, (Limited), same place. Filed May 11, 1882. (No specimens.)

Claim.—1. An article of manufacture formed by agglutinating desiccated glue in a heated die or mold, substantially as set forth.

2. An article formed by agglutinating desiccated glue and bone, or its equivalent, with or without glycerine, by means of heat and pressure, substantially as described.

3. A core for billiard-balls, which consists essentially of glue agglutinated by pressure in a heated mold, substantially as set forth.

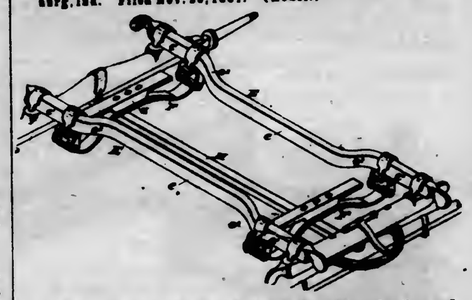
259,879. DRAG-SAW. THOMAS LOWDEN, Lowell, Mich. Filed Apr. 8, 1882. (No model.)



Claim.—1. The sawing-machine consisting, in connection with the standards and frame, of the C-spring secured to the rear end of the frame, the adjustable lever, its pivot-bolt, and series of hooks, the connecting-rod between the lever and spring, the pitman, and the spring connecting the rear extension of the pitman to the lever, substantially as specified.

2. In a sawing-machine, the combination, with the main spring A and saw S, of the adjustable saw-lever C and the adjustable rod B, connecting the main spring to the saw-lever, substantially as specified.

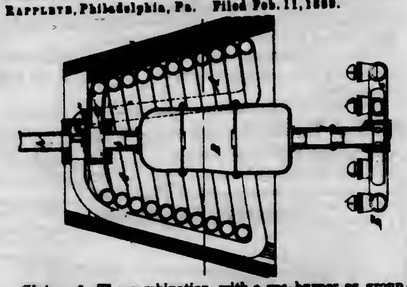
259,880. SIDE-BAR VEHICLE. PETER LUDENBELL, Greensburg, Ind. Filed Nov. 30, 1881. (Model.)



Claim.—1. The side bars, E E, parallel with each other and with the body throughout their mid-length, at a greater distance apart than the width of the body, and bent outward at their ends to allow of the application of a longer cross-spring for the suspension of the body, as set forth.

2. In combination with parallel side bars, E E, having portions e e at their mid-length, parallel with the body and end portions, e' e', bent outward, as shown, the cross-springs F F connecting corresponding out-bent portions of the side bars and supporting the body, as set forth.

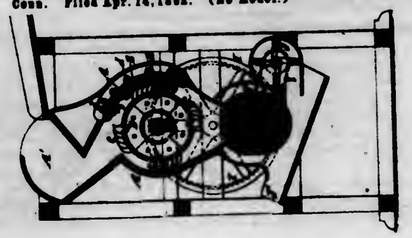
259,881. APPARATUS FOR BURNING ILLUMINATING-GAS. PHILIP W. MACKENZIE, Blauvelt ville, N. Y., and HANNIBAL W. RAPPLEYE, Philadelphia, Pa. Filed Feb. 11, 1882.



Claim.—1. The combination, with a gas-burner or group of burners, of a heater arranged above and to be heated by said burner or group, and composed of a chamber, B, divided at different heights by transverse perforated diaphragms, whereby a reverberatory action of the gas is produced in its passage through the heater to said burner or group, substantially as specified.

2. The combination, with a gas-burner or group of burners, of the annular coil-heater A and the cylindric heater B, comprising perforated transverse diaphragms or partitions, and into and through which the gas passes after it has been partly heated in said coil-heater and before it is supplied to the burner, substantially as specified.

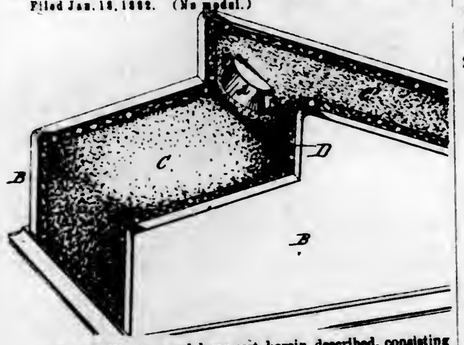
259,882. CORN-SHELLER. FRANCIS T. HALLOS, Pawcatuck, Conn. Filed Apr. 14, 1882. (No model.)



Claim.—1. In a corn-sheller, the combination, with the casing A and the cylinder D, provided with teeth set in spiral rows longitudinally thereof, of toothed hooks in the casing, set at a sufficient distance apart to enable the teeth to pass between them, and springs acting upon said hooks to press them inward independently of each other, substantially as herein described.

2. In a corn-sheller, the combination, with the casing A and cylinder D, of the hooked or curved teeth e, set in the cylinder, the toothed hooks E, pivoted in the casing and set a sufficient distance apart to enable the teeth e to pass between them, and springs *c*, applied to the hooks for pressing them inward, substantially as herein described.

259,883. FOOT-REST. GEORGE HARDER, Philadelphia, Pa. Filed Jan. 18, 1882. (No model.)

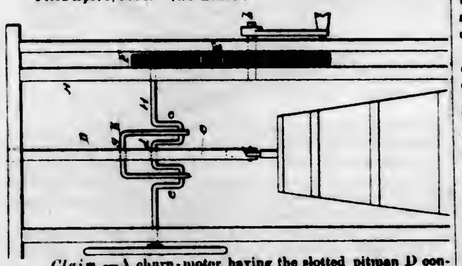


Claim.—The foot and knee rest herein described, consisting of the sides B B, the tread E for the knee, and the foot-tread C, the foot-tread C being set at an opposite angle to the knee-tread and elevated above said knee-tread so as to leave a riser or step, D, substantially as and for the purpose set forth.

259,884. HAIR-TONIC. WILLIAM E. HAROLD, Terre Haute, Ind. Filed Mar. 22, 1882. (No specimens.)

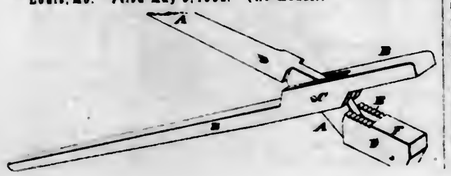
Claim.—A hair-restorative consisting of a filtered decoction in water of hop-root, grape-vine buds, and rosemary, in the proportions specified.

259,885. CHURN. ELIJAH H. MARSHALL, Cambria Mills, Mich. Filed Apr. 1, 1882. (No model.)



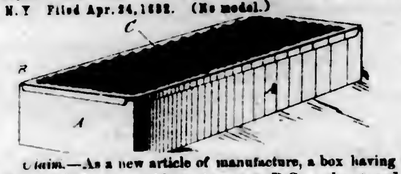
Claim.—A churn-motor having the slotted pitman D connected to the dasher-rod, the pinion-shaft H, having the central reverse bend, *d*, engaging the slot of the pitman and the crank-bends *c c* on each side of said pitman, and the bow-connection K, of greater length than the cranks, centrally engaging a bearing in the pitman and having its ends connected, one on each side thereof, to one of the cranks, substantially as specified.

259,886. UNIVERSAL TONGS. JEAN M. L. MATTHEY, St. Louis, Mo. Filed May 5, 1882. (No model.)



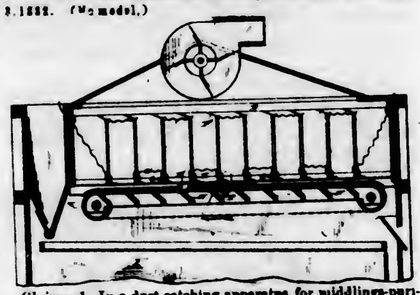
Claim.—The combination of arms A B, pivoted together at C, arm A being provided with an adjustable block, D, having teeth E and smooth portion F, as and for the purpose set forth.

259,887. CHOCOLATE-PACKAGE. HENRY MCCOBB, New York, N. Y. Filed Apr. 24, 1882. (No model.)



Claim.—As a new article of manufacture, a box having the body A and the removable grater-cover B C, as shown and described.

259,888. DUST-CATCHING APPARATUS FOR MIDDLINGS-PURIFIERS. JAS. MCDANIEL, Minneapolis, Minn. Filed Apr. 3, 1882. (No model.)



Claim.—1. In a dust-catching apparatus for middlings-purifiers, the combination, with vertical frames or diaphragms and a continuous dust-cloth attached closely to said frames, with slack portions of cloth intervening, said cloth being so arranged as to close the spaces between the frames alternately at top and bottom, of mechanism for jarring the frames separately, whereby they may be cleaned independent of each other, substantially as described.

2. In a dust-catching apparatus for middlings-purifiers, the combination, with the purifier-frame and vertical diaphragms arranged therein, of a continuous dust-cloth secured to the sides and ends of the purifier-frame and attached closely to the diaphragms, so as to close the spaces between said diaphragms, with slack portions of the cloth arranged alternately at the top and bottom of the spaces, whereby each frame or diaphragm is adapted to be moved or jarred independent of the others, substantially as described.

3. In a dust-catching apparatus for middlings-purifiers, the combination, with vertical moving frames having a continuous dust-cloth attached thereto, and a traveling apron arranged horizontally beneath said frames, of stationary horizontal bars placed between the apron and frames, and adapted to serve as supports for the vertical frames and provide a shut-off against the apron, whereby the passage of air-currents is prevented and the apron cleaned or scraped as it passes beneath said bars, substantially as described.

4. In a dust-catching apparatus for middlings-purifiers, the combination, with vertical frames supporting a dust-cloth, of a traveling apron having a cushion-pin adapted to work in an opening formed therein, and provided on its under side with a spring-knocker and mechanism for causing said knocker to strike against the cushion-pin at intervals, thereby jarring the vertical frames separately, substantially as described.

5. In a dust-catching apparatus for middlings-purifiers, the combination, with the cloth-supporting frames, a continuous dust-cloth secured to the sides and ends of the purifier, a traveling apron arranged beneath the cloth-supporting frames, and provided with a dust-receiving trough, and mechanism for jarring the frames separately and at intervals, of an endless carrying chain or chains, star-pulleys, and mechanism for actuating said pulleys, whereby the apron and its attachments are caused to shut off the air-currents, jar the dust-cloth and its supporting-frames, and convey the detached dust from the machine, substantially as described.

6. In a dust-catching apparatus for middlings-purifiers, the combination, with a traveling apron, of a trough attached thereto, and a series of bars arranged above the apron and adapted to scrape the dust therefrom and into the attached trough, substantially as described.

7. In a dust-catching apparatus for middlings-purifiers, the combination, with a traveling apron having a cushion-pin therein and a spring-knocker, of a longitudinal bar arranged beneath said apron, and provided with a series of inclined planes adapted to engage the spring-knocker and depress the same, thereby causing it to recoil against the cushion-pin arranged in the apron, whereby said pin is brought in forcible contact with one of the cloth-supporting frames, substantially as described.

8. In a dust-catching apparatus for middlings-purifiers, the combination, with vertical frames or diaphragms provided with continuous dust-cloth, of a longitudinal bar arranged above said frames, and provided with counter-springs adapted to bear upon the upper ends of the frames and hold them down against the action of the fan and jarring mechanism, substantially as described.

9. In a dust-catching apparatus for middlings-purifiers, the combination, with a fan and a sieve or shaker frame, of a series of vertical frames arranged between said fan and sieve, and provided with a continuous dust-cloth arranged to close the spaces between said vertical frames alternately at top and bottom, substantially as described.

10. In a dust-catching apparatus for middlings-purifiers, the combination of vertical frames provided with a continuous dust-cloth and metallic knee-pieces with horizontal stationary bars adapted to support said frames, a traveling apron, endless chains, a cushion-pin in said apron, a spring-knocker, a trough, inclined planes placed beneath the apron and adapted to engage with and actuate the knocker, thereby jarring the frames and raising them vertically, and counter-springs attached to a bar above the frames and adapted to force them down, substantially as described.

259,889. TOW-BOAT. ALEXANDER MCDOUGALL, Cleveland, Ohio. Filed Apr. 4, 1882. (No model.)



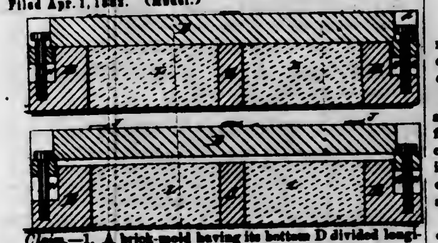
Claim.—1. A tow-boat having a flat bottom and vertical sides, except at the ends, a semi-cylindrical upper portion throughout its entire length, and having the bottom and sides toward the ends tapering in outwardly-curved lines to the extremities, so as to form a precisely similar conical bow and stern, substantially as described.

2. A tow-boat, substantially as described, having turrets rigidly secured to the same, each turret supporting a separate open working-deck, upon which is placed and worked the steering and hauling-in gear, substantially as described.

3. In a tow-boat, substantially as described, in combination with the turrets, and communicating with them, a water-tight cabin and forecastle arranged on the upper part of the hull and communicating with each other by means of a passage-way in the upper central portion of the hull and separated from the cargo-space, substantially as described.

4. The skeleton of a tow-boat, substantially as described, consisting of numerous rib-frames precisely alike in size and form, each with substantially flat lower parts and vertical sides and rounded tops throughout the body of the hull, bow and stern frames nearly annular and precisely alike in size and form at equal distances from the extreme ends, and cross-beams and stanchions secured together at their points of contact, whereby a keel, keelson, and stem and stern-post are dispensed with.

259,890. BRICK-MOLD. THOMAS MCNICHOLAS, Memphis, Mo. Filed Apr. 1, 1882. (Model.)

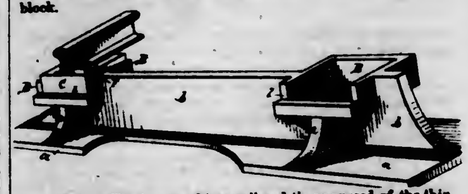


Claim.—1. A brick-mold having its bottom D divided longitudinally into narrow strips corresponding in number to the number of the cells and connected at the ends by bars, whereby the air is freely admitted under all parts of the bottom of mold and the easy rise thereof at the start greatly facilitated.

2. The combination of scraper-cleats J with brick-molds used in brick-machines, substantially as specified.

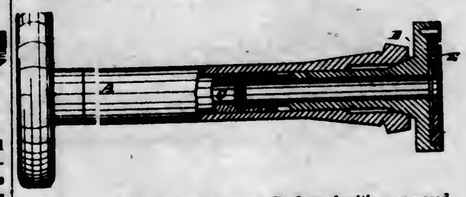
259,891. RAILROAD CROSS-TIE. JAMES M. HEACHAM, Petersburg, Va. Filed Feb. 9, 1882. (No model.)

Brief.—An iron tie made in one piece is composed of a flat horizontal base-piece cut out in its middle portion and a vertical web extending the entire length of the base and terminating at the ends, with boxes adapted to receive wooden blocks, on which are secured the rails by bolts passing through the box and wooden block.



Claim.—The improved iron railroad-tie composed of the thin flat horizontal base-piece *a*, cut out in its middle portion as described, the thin vertical web *b*, extending the entire length of the base, the lateral vertical flanges *c c*, and the boxes B B, formed in one piece with said parts *b c c* at the intersection thereof, for receiving the wooden blocks C, all as shown and hereinbefore set forth.

259,892. CHUCK FOR WATCH-MAKERS' LATHES. GEORGE E. HUTTER, Helena, Mont. Filed Mar. 8, 1882. (No model.)



Claim.—1. The clamping-chuck D, formed with a recessed face, and the stepped holding-disk E, combined for use, substantially as shown and described.

2. The chucking-disk E, having a step on each side, in combination with a lathe-chuck, substantially as shown and described.

259,893. SHAFT FOR MACHINERY. BRADFORD S. MILES, Gray's Summit, Mo. Filed Mar. 3, 1882. (No model.)



Claim.—A rotating shaft wrapped and re-enforced along its effective length by one or more spiral bands clasping and binding the same, each made fast thereto at one end and at the other to a sleeve, collar, or cap fitted upon the shaft to engage the same, after a partial independent rotary movement thereon, substantially as herein described.

259,894. PLOW. ORRIN E. MILES, Cedar Rapids, Iowa, assignor to Daniel H. Richards, same place. Filed Apr. 7, 1882. (No model.)

Brief.—An obliquely-set rotary cutter excavates under a furrow-slice cut by a rolling colter, causing it to drop into the bottom of the furrow, to be covered by the earth from the subsequent cuts of the revolving cutter.

Claim.—1. The improved method of plowing herein shown and described, the same consisting in cutting a triangular slice from the soil along the furrow to be made by a vertical cut and excavating underneath said slice, causing it to drop, right side up, into the trench or furrow being made, and spreading the excavated earth over the slices of soil deposited in the trenches last made, substantially as shown and set forth.

2. A plow adapted to cut off a slice of earth triangular in cross-section from the surface of the soil by a vertical cut and excavating underneath the same, causing the slice of earth to drop

259,894.

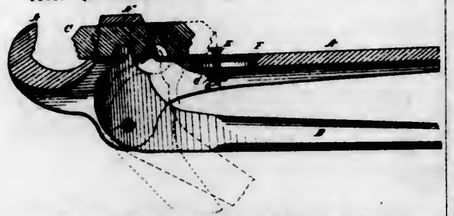


into the bottom of the trench or furrow right side up, substantially as set forth.

3. In a plow, the combination, with a rotary cutter or colter cutting in a vertical, or approximately vertical, plane, of an oblique cutter or cutter-head adapted to excavate earth in an oblique direction from the surface of the soil to its point of intersection with the cut made by the rotary cutter or colter, substantially as and for the purpose herein shown and set forth.

4. The combination, in a rotary plow, of the master-wheel C, shaft F, pinion E, bevel-wheel G, frame I, hung upon shaft F, and having the handle or lever I', shaft K, mounted in said frame and provided with the bevel-pinion N and rotary cutter-head L, and the rotary colter or cutting-disk O, all constructed and combined to operate substantially in the manner and for the purpose herein shown and specified.

259,895. PIPE-TONGS. CHARLES H. MILLER, Erie, Pa., assignor of one-half to E. S. Noyes, same place. Filed Mar. 24, 1882. (No model.)

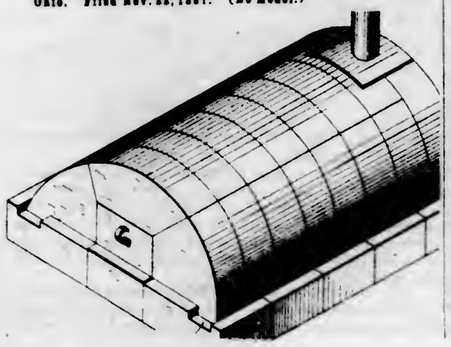


Claim.—1. In a pipe-tongs, the part A, having the stationary jaw A' thereon, and provided with a head, A'', which has an opening to receive the movable jaw, in combination with a cam-lever, pivoted thereto and connected therewith, back of said pivot, by a link, *a*, and the movable jaw C, having recesses *c c*, in which the point of the said cam-lever rests and operates, substantially as set forth.

2. In a pipe-tongs, the combination, with the parts A, B, and C, constructed substantially as shown, of the adjustable stop E, for the purposes mentioned.

3. In a pipe-tongs, the combination, with the parts A, B, and C, constructed substantially as shown, of the beveled slot F and beveled headed stop E, having a set-screw for holding the stop in place, said last-named parts operating together substantially as and for the purposes mentioned.

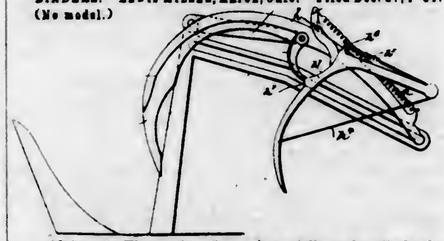
259,896. BAKING-OVEN. GEORGE L. MILLER, Youngstown, Ohio. Filed Nov. 22, 1881. (No model.)



Brief.—The bricks which form the bottom of the oven are grooved to hold the ends of the segmental bricks forming the top and sides, and the end bricks are made of a suitable fitting shape and size.

Claim.—The combination, in an oven, of the rectangular bricks arranged to form the bottom thereof and grooved or recessed, as described, the segmental bricks forming the main body of the oven, the segmental bricks forming the front of the oven, leaving a rectangular opening for the insertion of fuel or articles to be baked, and the rear segmental bricks closing the rear of the oven, the arched top of the oven being adapted to be covered with suitable cement, substantially as specified.

259,897. BUNDLE COMPRESSOR AND EJECTOR FOR GRAIN-BINDERS. LEWIS MILLER, Akron, Ohio. Filed Dec. 27, 1881. (No model.)

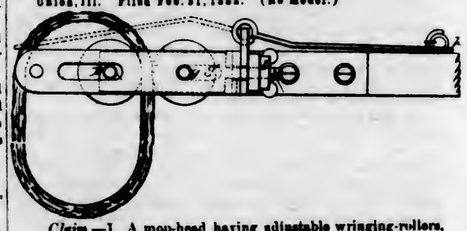


Claim.—1. The combination, substantially as described, of a rotating crank, a binding-arm mounted upon the wrist of said crank, means for controlling the movement of the binding-arm, a compressor supported wholly by the binding-arm and moving therewith, and an arm secured rigidly to the crank-wrist and adapted to strike the compressor and positively move it in advance of the binding-arm to eject the bundle.

2. The combination of the binding-arm, the compressor mounted upon and moving with the binding-arm and having the shoulder, the spring connected at one end to the binding-arm and at the other to the compressor, and the curved arm or cam on the crank-wrist, operating in connection with the shoulder on the compressor, substantially as described.

3. The combination, with the crank, of the binding-arm mounted thereon, the compressing-arm supported by the binding-arm and having the shoulder h^1 and curved portion h^2, the spring connecting the binding-arm with the compressing-arm, and the curved arm secured rigidly to the crank and operating in connection with the shoulder h^1 and the curved portion h^2 of the compressing-arm, as set forth.

259,898. MOP HOLDER AND WRINGER. JOSEPH S. MILLS, Union, Ill. Filed Feb. 21, 1882. (No model.)



Claim.—1. A mop-head having adjustable wringing-rollers, an endless mop-cloth, and a holding-wire arranged to bear on the mop-cloth while being wrung, substantially as specified.

2. A mop holder or rest consisting of a pail or tub having a bail, Z, formed with forked bearings *v v* and pivoted to the same, substantially as and for the purposes set forth.

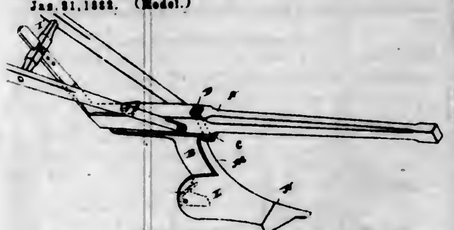
259,899. METALLIC CASE. DANIEL WOOD, Brooklyn, N. Y. Filed Apr. 26, 1882. (No model.)



Claim.—1. A cylindrical spirally-corrugated metallic case having a cap or cover of similar construction and provided with an adjustable locking-ring, substantially as described.

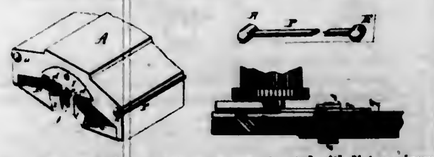
2. The combination of a cylindrical spirally-corrugated metallic case, a cap or cover of similar construction and having a stopper secured thereon, and an adjustable ring-lock, substantially as described.

259,900. PLOW. CHARLES L. MOSS, Carthage, Miss. Filed Jan. 31, 1882. (Model.)



Claim.—In combination with the plow-beam A, the curved standard B, having secured to its lower end a detachable point provided with an abutment, N, the curved mold-board L, resting against the abutment at its lower end, and provided with an extension, M, at its upper end, adapted to be secured to the standard by the bolt D, and the detachable heel-piece secured by the bolts S and G, substantially as specified.

259,901. CARPET-SWEEPER. HENRY A. MUELLER, New Haven, Conn., assignor to Maria Wiedersum, New York, N. Y. Filed June 6, 1881. Renewed Apr. 21, 1882. (No model.)

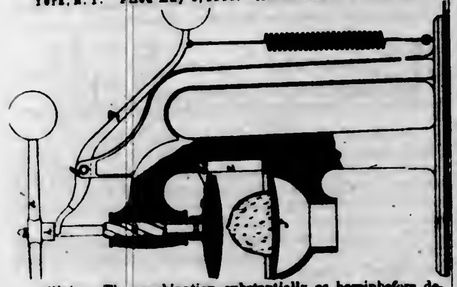


Claim.—1. In a carpet-sweeper constructed with dirt-receivers and open at one end, the plate I, secured to the box at the said end, constructed with a vertical slot, *f*, for the adjustment of the brush, and with arms *i* to support the dirt-receivers, combined with the flap H, hinged to the said plate, substantially as described.

2. In a carpet-sweeper, the vertically-slotted plate I, constructed with the seat *m* for the brush-pivot, and with a stud, *s*, on its opposite side, combined with a bolt, *r*, through the end A' of the box, and the slot in the plate, the said end A' of the box constructed with a vertical groove, *t*, on its inside to receive the stud *s*, substantially as described.

3. In a carpet-sweeper, an india-rubber guard consisting of a straight narrow strip, P, with a bead, R, at each end, the said strip introduced into a longitudinal groove on the side of the box, the said beads turned into the ends and inserted in corresponding recesses thereon, substantially as described.

259,902. LEMON-SQUEEZER. FREDERICK D. F. MELLER, New York, N. Y. Filed May 8, 1882. (No model.)



Claim.—The combination, substantially as hereinbefore described, of the follower B, loosely connected to its screw-stem, the projection *d*, for preventing said follower from turning with its stem, the handle for depressing the follower, and the reversing-lever D, for automatically raising the follower.

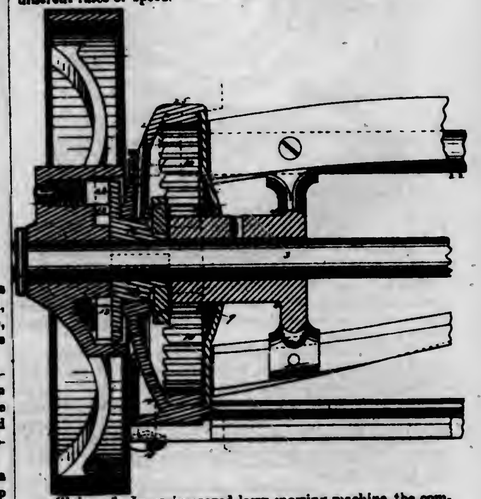
259,903. DEVICE FOR THREADING PLUGS. JAY H. NEWBURY and GORHAM A. CHAPMAN, Cohoes, N. Y. Filed Mar. 25, 1882. (No model.)



Claim.—The combination, with the lathe, dog, and rest I, of the shank or holder D, having centered recess E at one end and square recess J at the other, constructed as herein described, as and for the purpose set forth.

259,904. LAWN-MOWER. CYRUS NEWHALL, Hinsdale, N. H. Filed Apr. 1, 1882. (No model.)

Brief.—Cutting-cylinder and main axle upon which the cutting-cylinder is supported, each driven in same direction, but at different rates of speed.



Claim.—1. In an improved lawn-mowing machine, the combination of an axle supported by two driving-wheels, each provided with an actuating-dog, a clutch fixed to said axle inside of each driving-wheel and engaging with said dog, a stationary frame supported upon said clutch or axle at each end of the machine and provided with an internal gear, a saddle-piece secured to said clutch and provided with one or more toothed idler-wheels adapted to revolve thereon and engage with said internal gear, and a toothed wheel on the revolving knife-frame, adapted to engage with said idler-wheels, whereby said revolving knife is rotated by the movement of the driving-wheels, substantially as described.

2. An improved lawn-mowing machine, consisting of the combination of a main supporting axle or shaft, two driving-wheels secured thereon, a knife-frame supported by and adapted to revolve upon said main axle, and suitable mechanism for revolving said axle and said knife-frame both in the same direction and at different rates of speed, substantially as described.

259,905. VALISE. FAYETTE G. NICHOLS, Richmond, Vt., assignor of one-half to Emory L. Freeman, same place. Filed Apr. 27, 1882. (No model.)

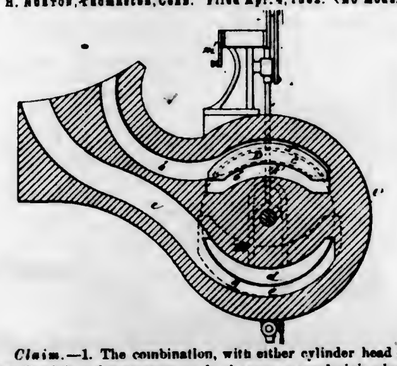
Claim.—1. In a valise, the halves or compartments C, composed of the parts D E F H, joined at the corners, as at G, and having extension-flaps I L P, substantially as shown, metal-bound, and provided with buckles and straps, as set forth.

2. The combination, with the halves or compartments C, the bottom and ends of which have extension-flaps L I, of the flaps P, extending from the upper edges of said sides and having box-edges Q, inclosing the other flaps when folded, and provided with suitable fastening devices, as set forth.

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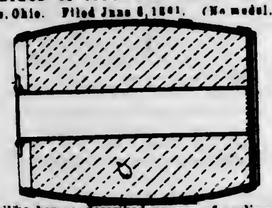
259,906. STEAM-ENGINE. WENDELL P. MORTON and CHARLES H. MORTON, Thomaston, Conn. Filed Apr. 4, 1882. (No model.)



Claim.—1. The combination, with either cylinder head or cover C, of the exhaust-passage *a*, having a concave draining-base within said head, the reversely-arched inlet and outlet ports *c d*, and the independent inlet and outlet slide-valves D E, for operation within the cylinder-heads and relatively to the ports, substantially as specified.

2. The combination, with a locomotive-engine cylinder and the independent slide-valves D E, of the heads C C, having the curved steam-inlet passages *b*, provided with the upper enlarged curved inlet-ports *c*, concaved on the upper side concentrically with the cylinder, and the reversely-arched exhaust-port *d*, having a passage, *a*, concaved on the upper side, the exhaust ports and passages being larger than the inlet ports and passages, as and for the purpose specified.

259,907. METHOD OF COOLING BUTTER. WALTER S. OGDEN, Toledo, Ohio. Filed June 6, 1881. (No model.)



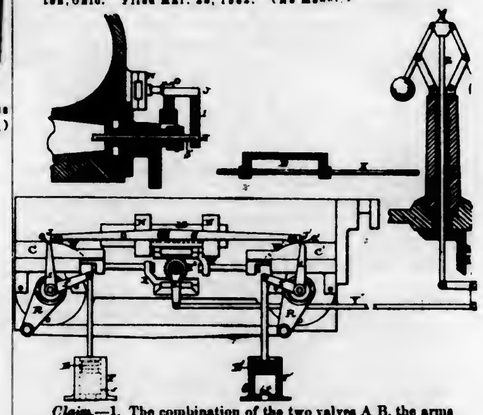
Claim.—The herein-described process of cooling butter in bulk, consisting in inserting vertically into the center of the mass of butter in the package a metallic cylinder or tube open at both ends, removing the butter incased in the tube, then removing the tube from the mass of batter, and then subjecting it to a temperature of about 53° Fahrenheit for a period of about twelve hours, substantially as specified.

259,908. PROCESS OF OBTAINING CYANIDES. CHARLES C. PARSONS and EDWARD F. CRUSÉ, New York, N. Y., assignors, by direct and mesne assignments, to HENRY BOWER, Philadelphia, Pa. Filed Oct. 7, 1879.

Claim.—1. The process of converting the cyanides of ammonium which are contained in ammoniacal gas-liquor into ferrocyanides of ammonia by adding iron in the form of a salt or in the insoluble form of hydrate, carbonate, oxide, or sulphide, or of metallic iron, and in the proportions above specified, to the said liquor in the absence of acid and without neutralizing the ammonia and before the ammonia is removed, substantially as specified.

2. The process herein described of treating gas-liquor for obtaining ammonia and Prussian blue by first adding iron in the form and proportions specified to said gas-liquor, thereby producing ferrocyanide of ammonia, then adding lime to free the ammonia and produce ferrocyanide of calcium, then distilling off the ammonia, and finally converting the ferrocyanide of calcium into Prussian blue by the addition of acid and a salt of iron, substantially as specified.

259,909. VALVE-MOTION. WILLIAM C. PENROCK, Cardington, Ohio. Filed Mar. 30, 1882. (No model.)



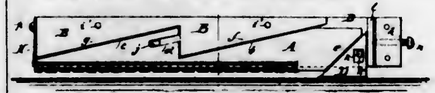
Claim.—1. The combination of the two valves A B, the arms 1 1′, weight, and cylinder, the valve A being provided with the crank R and the arm 1 being moved by the rod which is secured to the slide, substantially as shown.

2. The combination of the two rocking valves, each of which is provided with arms by means of which it may be moved, the slide M, carrying the two rods O O′, and the parts C C′, having curved surfaces and a suitable mechanism for moving them, substantially as specified.

3. The combination of the two parts C C′, connected together by the racks X X′, and pinion Y′, with the slide M, rods O O′, the governor, and the two valves, the valves B B′ being provided with the arms 1 1′ and weights to close them when left free to move, substantially as set forth.

4. The combination of the two parts C C′, connected together and operated by the governor, the valves, arms 1 1′, fastened to the valves B B′, the slide M, and arms or rods O O′, pivoted to the slide, the parts C C′ having curved surfaces, so that when the pressure of steam becomes too great the parts O O′ will be drawn together so as to prevent the rods O O′ from operating the valves B B′, substantially as specified.

259,910. PERFORATING DEVICE. EDWIN T. PETTIT, Marshalltown, Iowa, assignor to himself and George E. Keator, same place. Filed Dec. 29, 1881. (No model.)



Claim.—1. The perforator-blade having inclined faces *b c*, inclined slot *d*, and end incline, *e*, in combination with the plate B, having pins *i′ i′*, inclined faces *f g*, offset *h*, and stud *k*, the plate C, having perforations *i i*, the sliding triangular plate D, having hole *k′*, the metal strip *l*, and the set-screw *n*, as and for the purpose described.

2. In combination with the blade A, plates B, C, and D, and the spring N, the screw *n* and the bar *l*, for adjusting the blade, substantially as described.

259,911. PILLOW-SHAM HOLDER. AUGUSTUS H. PHELPS, East Saginaw, Mich. Filed May 11, 1882. (No model.)

Claim.—1. The combination of the hinged rod C, having spring-latch *d* and arms D′ D′, and swinging frame E F, having buttons *e*, substantially as and for the purpose herein shown and set forth.

2. The swinging frame composed of the parallel bars E E and cross-bars F, made of strap-iron or similar material, bent to form

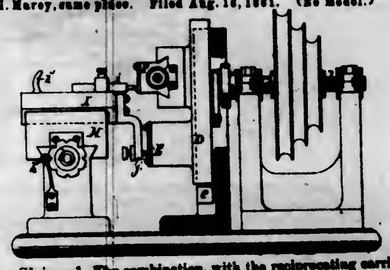
259,911.



the clasps or end loops, *g*, and eye *h* midway between said loops, substantially as and for the purpose herein shown and specified.

2. The combination, with the head-board or head-posts *a a* of a bedstead, having eyes *b b′*, one of which is notched at *c*, of the swinging frame composed of the rod C, having spring-latch *d* and bent wire D′ D D′, and posts E F, hinged upon said wire arms D′ D′, the whole constructed and arranged to operate substantially in the manner and for the purpose herein shown and described.

259,912. ENGRAVING AND CHASING MACHINE. ADDEL P. PHILLIPS, Providence, R. I., assignor of one-half to Frederick I. Marcy, same place. Filed Aug. 16, 1881. (No model.)



Claim.—1. The combination, with the reciprocating carriage D, provided with the work and pattern holders, of the slide I, provided with the graver and stylus holders, and having a movement toward and from the carriage, and capable of adjustment laterally with respect to said movement, substantially as described.

2. The combination, with the reciprocating carriage D, provided with the work and pattern holders, of the slide-rest H, having a movement in a plane parallel with the plane of movement of the carriage, and the slide I, mounted on said rest and having a movement toward and from the carriage, substantially as described.

3. The combination, with the reciprocating carriage D, provided with the work and pattern holders, of the slide-rest H, provided with an adjusting-screw and the index-plate A, and the slide I, provided with the graver *i* and the stylus *j*, constructed to operate as described.

4. The combination, with the pattern-plate *e*, of the marginal plate *f*, constructed to form, when secured together, the pattern by which the stylus guides the graver, as and for the purpose set forth.

259,913. WEAR-CLIP FOR HARNESS-IRONS. JAMES H. PHILPOTT, Rising City, Nebr., assignor of one-fourth to Henry Reinheimer, same place. Filed Apr. 10, 1882. (No model.)



Claim.—1. An improved wear-clip for rings, staples, cock-eyes, and other harness-irons adapted to fit the worn portion of the said irons and to be secured thereto, substantially as herein shown and described, and for the purpose set forth.

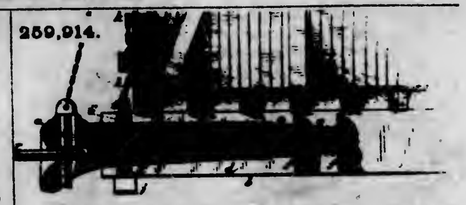
2. A wear-clip consisting of wear-iron C, filling-piece E, and attaching ear or wing clips D, constructed and arranged substantially as herein shown and described.

259,914. CAR-COUPLING. WILLIAM POWERS, Wyandotte, Mich., assignor of one-half to Richard Jones and John Allen, same place. Filed Apr. 17, 1882. (No model.)

Claim.—1. The draw-head provided with the opposite seats *n n*, opening into curved grooves *i* in its inner vertical walls, above its mouth, in combination with the coupling-pin *s*, having its lower end rounded or inclined on one side and provided with short side pins, *s′ s′*, adapted to fit the said groove-seats, substantially as described, whereby in raising the coupling-pin its side pins are automatically seated in the said groove-seats to support the coupling-pin in position within the mouth of the draw-head to be raised by the entering link, thus displacing the short side pins from their seats, and effect the release of the pin for automatic coupling.

2. In combination, in a car-coupling, the pivoted draw-head *a*, the draw-bar *e f g*, the fixed slotted plates *c c′*, for the pivot of the draw-head, the strap *i*, chain *k*, lever *h l*, pin *n*, and the longitudinal timbers *b b*, having the guide-grooves for the said strap, the grooves for the draw-bars *f f*, and the slotted pivot-plates *c c*, all constructed as shown and described.

259,914.



259,915. TEMPORARY BINDER. ARTHUR L. PRATT, Kalamazoo, Mich. Filed Jan. 16, 1882. (No model.)



Claim.—In a temporary binder, the combination of a removable cover, a series of independent packages composed of blank leaves and stubs, and index-leaves interposed between the packages, said packages having transverse lines of perforations separating the stubs from the other parts of the leaves, and the whole detachably secured together by a cord passing through holes in the cover, index-leaves, and stubs, substantially as described.

259,916. VEHICLE-HUB. FORREST H. PRINDLEY, Grand Rapids, Mich., assignor of one-half to William B. Fox, same place. Filed Dec. 17, 1881. (No model.)



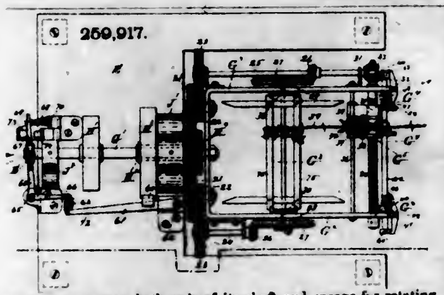
Claim.—1. A hub for vehicle-wheels, consisting of a sleeve, H, having the annular cast ring B, provided with semi-tubular standards, of the loose ring F, having corresponding standards, and adapted to fit upon the sleeve and the spoke S, each spoke being inclosed between a pair of such oppositely-placed standards.

2. The combination of the cast annular ring having the semi-tubular standards and the connecting-web, and provided with spurs P U, the spokes S, and the loose ring having corresponding standard and web, and spurs T X, each spoke being inclosed by the pressure of such standards and held by the spurs and by rivets passing through the web, as described.

259,917. MACHINE FOR TWISTING AND SPOOLING BARBED FENCE-WIRE. HENRY W. PRENTISS, LEVI BRADBURY, and LEWIS WILLIAMS, Bennington, Vt., assignors, by mesne assignments, to Washburn & Moen Manufacturing Company, Worcester, Mass., and Isaac L. Ellwood, De Kalb, Ill. Filed Sept. 30, 1881. (No model.)

Claim.—1. The combination, with a twisting-frame, of a reel

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having gears upon both ends of its shaft and means for rotating the said gears, a feeding mechanism, and automatically-adjusting tension mechanism, substantially as shown and for the purposes set forth.

2. The combination, with reel-frame G^3 and means for rotating the same, of sliding shaft G′ and frictional mechanism, substantially as and for the purposes set forth.

3. The combination, with sliding shaft G′ and friction-wheel H^3, of brake 60, levers 61 64, spring 63, and means for connecting lever 64 to shaft G′, substantially as and for the purposes set forth.

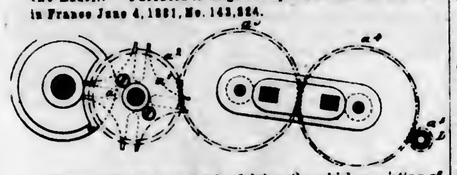
4. The combination, with sliding shaft G′, lever 64, spring 63, and lever 61, of bumpers 73 and 74, spring 68, and pin 69, substantially as and for the purposes set forth.

5. The combination, with frame G^3 and screw-shaft 34, of carriage G^2 and means for preventing said carriage from turning on said shaft, sliding shaft 42, provided with springs 46 and 47, collars 41, 43, 44, and 45, clutch 40, and gears 32 33, substantially as and for the purposes set forth.

6. The combination of clutch-rod 42, screw-shaft 34, and means for rotating the same with carriage G^2, provided with pins 50 and 51, and dogs 48 and 49, provided with springs 58, substantially as and for the purposes set forth.

7. The combination, with carriage G^2, adapted to traverse shaft 34, and provided with pins 50 and 51, holding and guiding rod 36, and sliding shaft 42, of spiral springs 46 and 47, collars 41, 43, 44, and 45, dogs 48 and 49, springs 58, clutch 40, and gears 32 33, substantially as and for the purposes set forth.

259,918. BOOT AND SHOE SEWING MACHINE. JOHN W. RAMSDEN, Leeds, County of York, England. Filed Sept. 8, 1881. (No model.) Patented in England Apr. 8, 1881, No. 1,546, and in France June 4, 1881, No. 143,824.



Claim.—The mechanism for driving the whirl, consisting of the combination of the driving-shaft A, the shaft D in the center of the horn-socket, the one-toothed wheel a on the driving-shaft, the star-wheel a', gearing with said wheel a, the pinion a^3, carried by said star-wheel, the pinion a^3 on said shaft D, and intermediate gearing between the said pinions a^3 and a^3, all substantially as herein described, for the purpose set forth.

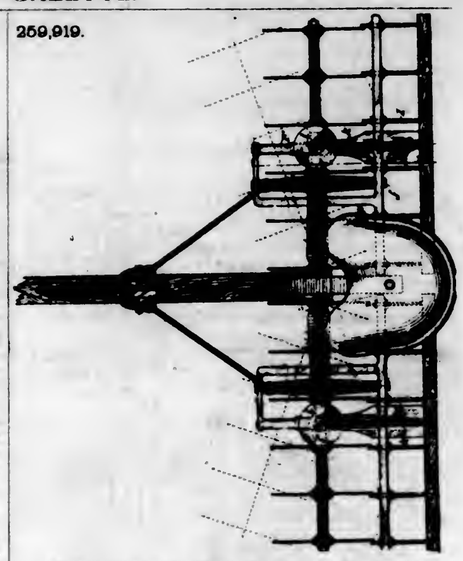
259,919. DISK HARROW OR CULTIVATOR. SILAS G. RANDALL, Groton, N. Y. Filed Feb. 14, 1882. (No model.)

Brief.—Main frame consisting of central portion and pivoted side sections carrying disk-gang frames, and mechanism for swinging said side sections on their pivots to change the angle of disks. A scraper which reciprocates automatically across the face of the disk and a cleaner for the scraper. Friction-wheel adapted to operate the scrapers and receive end thrust of entire gang of disks.

Claim.—1. The combination of a draft-pole or tongue, a main frame consisting of a central portion and two pivoted side sections, disk-gangs carried by the side sections, and mechanism for swinging the side sections on their pivots to adjust the angle of the disks relatively to the line of draft.

2. The combination, substantially as set forth, of a draft-pole the main frame consisting of the central portion or section and the side sections pivoted thereto, a lever on the pole or tongue, connecting-rods between the lever and the side sections of the frame, and the disk-gangs carried by the side sections.

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3. The combination, substantially as set forth, of the disk-gang frame, the gang-shaft having bearings therein, the main frame, and connections between the main and gang frames in front and in rear of the gang-shaft, the connections being at or about in the horizontal plane of the gang-shaft.

4. In a harrow or earth-treating machine, the combination of a rotating cutting-disk and an automatically-reciprocating scraper which reciprocates across the face of the disk, for the purpose set forth.

5. In a harrow or earth-treating machine, the combination, substantially as set forth, of a rotating cutting-disk and a reciprocating scraper which reciprocates radially across the face of the disk.

6. In a harrow or earth-treating machine, the combination, substantially as set forth, of a rotating cutting-disk and a scraper which automatically reciprocates in a rectilinear line across the face of the disk.

7. In a harrow or earth-treating machine, the combination, substantially as set forth, of a rotating cutting-disk, a reciprocating scraper, and a cleaner for the scraper.

8. In a harrow or earth-treating machine, the combination, substantially as set forth, of a rotating cutting-disk, a scraper, and a cleaner for the scraper.

9. In a harrow, the combination, substantially as set forth, of a gang of cutting-disks, a series of reciprocating scrapers adapted to clean the faces of the cutting-disks, and a series of cleaners for clearing the scrapers.

10. The combination, substantially as set forth, of a gang of disk-cutters, a laterally shifting or reciprocating bar arranged at or about parallel to the disk-gang shaft, mechanism for shifting it, a series of scrapers carried by the reciprocating bar, and a series of cleaning-eyes through which the scrapers reciprocate.

11. The combination, substantially as set forth, of a gang of disk-cutters, a gang-frame in which the disk-gang shaft has its bearings, a bar carried by the gang-frame in rear of the disk-gang, a series of cleaning-eyes carried by the bar, a laterally shifting or reciprocating scraper-bar, a series of scrapers carried thereby, which pass through the cleaning-eyes, and mechanism actuated by the rotation of a cutting-disk for reciprocating the scrapers.

12. The combination, substantially as set forth, of a gang of disk-cutters, the gang-frame in which the gang-shaft has its bearings, a bar carried by the gang-frame in rear of the disk-gang, a series of scraper-cleaning eyes carried by the bar, a laterally shifting or reciprocating scraper-bar, a series of scrapers carried thereby, which pass through the cleaning-eyes, a guide plate or arm on the shifting scraper-bar, a friction crank-wheel mounted on the gang-frame and adapted to be rotated by the friction of a cutting-disk, and a pitman connecting the crank-wheel and shifting scraper-bar.

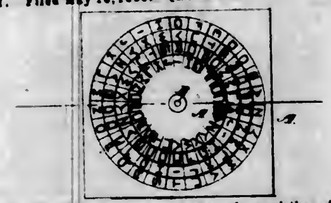
13. In a harrow, the combination, substantially as set forth, of a disk-gang shaft, its bearings, a gang of disk-cutters, and a rotating wheel or disk which receives the end-thrust of the entire gang.

14. In a harrow, the combination, substantially as set forth, of the gang-frame, the disk-gang shaft, its bearing in the frame, the gang of disk-cutters, and the disk on the frame which receives the end-thrust of the entire gang.

15. The combination, substantially as set forth, of a main frame, a disk-gang frame, a gang-shaft mounted therein, a gang of cutting-disks adapted to work at an angle to the line of draft, carried by said shaft, and a pivotal connection between the main frame and gang-frame at or about in the horizontal plane of the gang-shaft, which pivotal connection permits the latter to rock transversely to conform to the ground.

16. The combination, substantially as set forth, of a disk-gang frame, a gang-shaft mounted therein, and a series of bearings on the gang-frame for connection to the main frame, which bearings are at or about in the plane of the gang-shaft, for the purpose set forth.

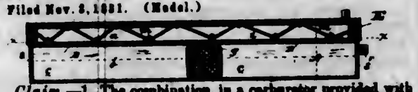
259,920. SPELLING TOY AND PUZZLE. WILLIAM H. RUFF, Philadelphia, Pa., assignor to Rogers, Peet & Co., New York, N. Y. Filed May 16, 1882. (No model.)



Claim.—1. The spelling toy and puzzle consisting of the lettered dials A_2 connected together for revolution one upon the other, substantially as shown and described.

2. The combination of the lettered dials A, attached together by the center pin or rivet, B, substantially in the manner and for the purposes set forth.

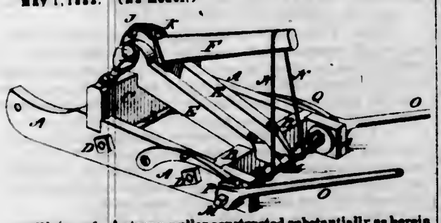
259,921. AIR-CARBURETOR. GEORGE RUNGE, Mercer, Pa. Filed Nov. 8, 1881. (Model.)



Claim.—1. The combination, in a carburetor provided with two horizontal chambers, a b, of the longitudinal vertical compartments d, communicating with the chamber a at their tops throughout their entire length, and the vertical chambers C, communicating with the compartments d at their bottoms and with the compartment b at their tops, the said compartments a, C, d, and b being provided with textile absorbent material arranged substantially in the manner and for the purpose specified.

2. In a carburetor, the combination of the upper and lower chambers constructed as described, and packed with textile material arranged substantially as specified, the upper chamber having partitions forming passages which communicate at alternate ends, and the textile absorbent material arranged in a zigzag course therein, substantially as and for the purpose specified.

259,922. STUMP-PULLER. OLIVER RICE, Enfield, Ill. Filed May 1, 1882. (No model.)



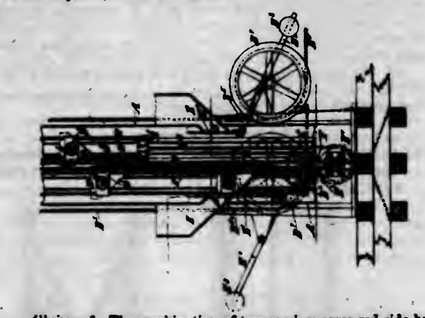
Claim.—1. A stump-puller constructed substantially as herein shown and described, and consisting of the frame A B C E, the lever F, having cam G, chain J, the shaft M, the rope or chain N, the levers O, and ratchet-wheels P and pawls Q, as set forth.

2. In a stump-puller, the combination, with the front cross-bar, C, of the frame, of the lever F, having cam G, and the chain J, substantially as herein shown and described, whereby a stump can be raised by operating the said lever, as set forth.

3. In a stump-puller, the combination, with the frame A B C E and the lever F, of the rope or chain N, the shaft M, and the levers O, substantially as herein shown and described, whereby the said lever can be readily operated, as set forth.

4. In a stump-puller, the combination, with the frame A B C E and the shaft M, of the ratchet-wheels P and pawls Q, substantially as herein shown and described, whereby the said shaft will be held against the strain of the rope or chain, as set forth.

259,923. ELEVATOR. JOHN D. RICHARDSON, New York, N. Y., assignor of one-half to Francis L. Manchester, same place. Filed Apr. 21, 1882. (No model.)



Claim.—1. The combination of two carriers arranged side by side, mechanism, substantially such as described, for imparting to them a direct rectilineal motion alternately in opposite directions, and two series of buckets attached to said carriers and arranged back to back, all being so organized that the buckets of each series, when in their highest position, will deliver their contents into the buckets of the other series, substantially as and for the purpose specified.

2. The combination, with two reciprocating carriers, two series of buckets attached thereto, and sliding gates or valves for said buckets, of carriers to which the gates or valves are attached, and means, substantially such as described, for arresting the movement of the gates or valves when the buckets approach the end of their upward movement, so as to allow the said buckets to move away from said gates or valves, substantially as described.

3. The combination, with two reciprocating carriers, buckets attached thereto, and sliding gates or valves for said buckets, of carriers to which said gates or valves are attached, and which are weighted to move the gates or valves upward, and stops for arresting said weights, and thereby stopping the gates or valves before the buckets reach the end of their upward movement, substantially as described.

4. The combination, with the elevator-tower having delivery-openings g, of two reciprocating carriers, two series of buckets attached thereto, the top buckets of the two series having delivery-openings in their sides, sliding gates or valves for said buckets, a reciprocating carrier to which said gates or valves are attached, and means, substantially such as described, for arresting the upward movement of the gates or valves before the completion of the upward movement of the buckets, substantially as described.

5. The combination, with two reciprocating carriers and two series of buckets attached thereto, of the feeders or feeding-hoppers E and the self-closing gates or valves E′, adapted to be opened by said buckets in their downward movement, substantially as described.

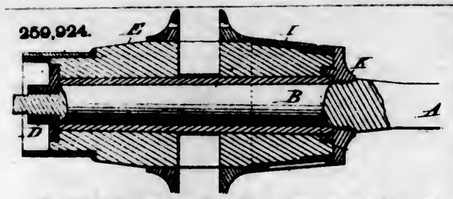
6. The combination of the tower A, provided on opposite sides with channels or guideways c, the two reciprocating carriers, each composed of a group of ropes, B, and cross-heads or frames B' B^2, the buckets D, the clamps D′, for attaching the buckets to said ropes, and the guide-rollers b on said clamps, substantially as specified.

7. The combination, with the two carriers connected at their lower ends and provided with buckets, of the ropes B^2, connected to the upper ends of said carriers, the sheaves B^3, over which said ropes pass, and the rotary wheels C, provided with crank-pins a, set diametrically opposite each other, and to which said ropes are attached, substantially as specified.

259,924. SAND-BAND. FRANK S. ROLFE and WILLIAM OOSLEY, Waterbury, Vt. Filed Apr. 18, 1882. (No model.)

Claim.—1. A metallic sand guard or protector consisting essentially of a perforated plate having an internal collar or annular projection adapted to receive the inner end of the axle-box, substantially as shown and described.

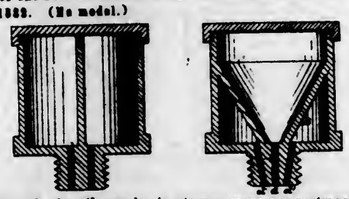
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2. The combination, with an axle, of a metallic sand guard or protector composed of a perforated plate, K, having an internal collar, *c*, with an annular recess inside to receive the round part of the axle-arm and square outside to receive the square part of the axle, substantially as shown and described.

3. The combination, with the axle A and its arm B, of the hub E, band I, and perforated plate K, having an internal collar, *c*, substantially as shown and described.

259,925. OIL-CUP. THOMAS D. RUSSELL, Kent, Ohio, assignor of one-half to Charles C. Byers, Meadville, Pa. Filed May 5, 1882. (No model.)



Claim.—1. An oil-cup having two or more compartments, each provided with a separate duct leading to the wearing-surfaces, substantially as and for the purpose hereinbefore set forth.

2. An oil-cup having two or more compartments, each provided with a separate duct, said ducts uniting before reaching the wearing-surfaces, substantially as hereinbefore described, and for the purpose specified.

259,926. FASTENING FOR GLOVES, &c. WILLIAM H. RUTTY, New York, N.Y. Filed Feb. 23, 1881. (No model.)



Claim.—1. The combination, with a lever adapted to be attached to any desired fabric, and to have an eyelet engaged with it, of arms to shield the lever when in its closed adjustment, substantially as set forth.

2. The combination, with a plate, of a lever pivoted thereto and provided with a long arm to engage with an eyelet, with a short arm, and with a lug, and a spring secured to the plate, said lever being held in closed adjustment by the engagement of an eyelet with its lug and by the impingement of the said spring upon its short arm, substantially as set forth.

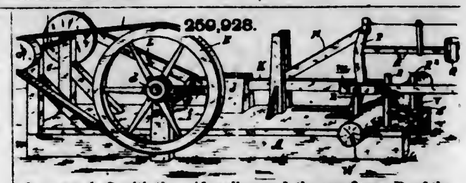
3. The combination, with a recessed plate, of a lever pivotally secured to it and provided with a long and with a short arm, and a spring secured to the plate, its free end being located over the recess therein, said spring operating to hold the lever in its closed and open adjustment by impinging against its short arm, substantially as set forth.

259,927. APPARATUS FOR TRANSMITTING MOTION. ANTONIO SAMPER, Paris, France. Filed Apr. 24, 1882. (No model.)



Claim.—A frame provided with a counter-balance on one end shaft, *f*, a pulley, D, on the other, and intermediately a driving-pulley on shaft *e*, in combination with a similar frame carrying a pulley, D, at one end, connected to a hook at the other, and carrying a pulley to be driven on an intermediate shaft, as and for the purpose specified.

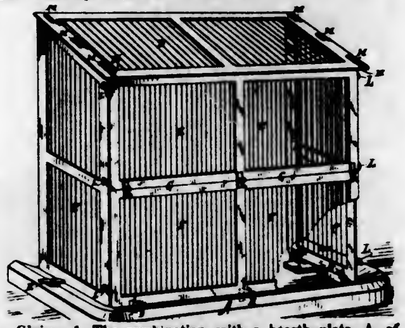
259,928. DRAG-SAW. JACOB F. SCHENCK, New Bremen, Ill. Filed Mar. 3, 1882. (No model.)



Claim.—1. In a sawing-machine, the combination, with the frame A, the drive-wheel E, the pulley *g*, the crank-wheel *h* on the same shaft with the said pulley, and the saw-frame P, of the pitman L, the reciprocating bar K, provided with the forked end *m*, and the brace-bar N, substantially as and for the purpose set forth.

2. In a sawing-machine, the combination, with the frame A and the driving mechanism, of the pitman L, the reciprocating bar K, the block J, the brace N, and the saw-frame P, provided with the adjustable weight Q, substantially as and for the purpose set forth.

259,929. FIRE-PLACE FENDER. ISAIAH W. SHOEMAKER, Royston, assignor to himself and John H. King, Saxonburg, Pa. Filed Apr. 13, 1881. (No model.)



Claim.—1. The combination, with a hearth-plate, A, of a fender constructed in side, front, and top sections, said side and front sections being hinged to and arranged to fold down within the said hearth-plate, substantially as specified.

2. The front section of a folding fender, hinged to the hearth-plate and jointed together, as at G, in two parts, E F, to fold within the hearth-plate, substantially as specified.

3. The hearth-plate A, constructed with supports I, in combination with side and front folding fender-sections, C F E, substantially as specified.

4. The combination, with hearth-plate A, having supports I, of folding side and front fender-sections, C F E, detachable top sections, B D, and buttons or equivalent fastening devices K, substantially as specified.

5. The combination, with the hearth-plate A, of folding front and side fender-sections, C F E, and fastening hooks and studs L, substantially as specified.

6. The combination of the folding side fender-sections, C, having tenons M, and the detachable top section having slots N, substantially as specified.

259,930. CAR-BRAKE. LOUIS H. SHELDEN, Cleveland, Ohio. Filed Feb. 13, 1882. (No model.)

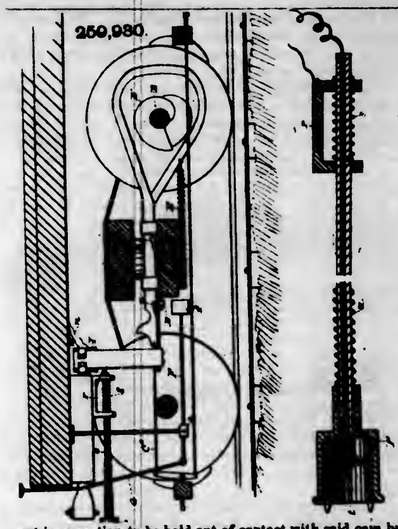
Claim.—1. In a car-brake, the combination, with the brake-beams and connecting rods or chains, of a cam secured to or operated by the car-axle, a reciprocating yoke encircling the cam, a notched bar connected with said yoke, a pawl and means for actuating the same, and a spring for retracting the yoke, substantially as set forth.

2. In a car-brake, the combination, with the brake-beams and connecting rods or chains, of a double spiral cam secured to the car-axle, a reciprocating yoke encircling the cam, and means, substantially as described, for throwing the yoke into and out of engagement with said cam, substantially as set forth.

3. In a car-brake, the combination, with the brake-beams and connecting rods or chains, of a double spiral cam attached to the car-axle, a reciprocating yoke encircling the cam, a notched bar connected with the yoke, a pawl adapted to engage the notched bar, and a weighted lever for releasing the pawl, substantially as set forth.

4. In a car-brake, the combination, with a notched bar adapted to be actuated by means of a cam secured to a car-axle and while

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not in operation to be held out of contact with said cam by means of a pawl engaging the notches of said bar, of a hammer or weighted lever adapted to disengage the pawl and permit the bar to come in contact with the cam, substantially as and for the purpose set forth.

5. In a car-brake, the combination, with a bar, said bar being adapted to be actuated by means of a cam secured to a car-axle, of the teeth *a* and *b* and a pawl for engaging with said notches, one of the said teeth acting while engaged with the pawl to hold the bar out of contact with the cam while the brake is off and the other adapted to hold the bar out of contact with the cam while the brake is set and hold the brake set, substantially as and for the purpose set forth.

6. In a car-brake, the combination, with the notched bar and yoke, of a weighted lever, F, and an actuating-bar, G, pivoted to one end of said lever and extending upward to a point above the car-platform or above the top of a car, substantially as and for the purpose set forth.

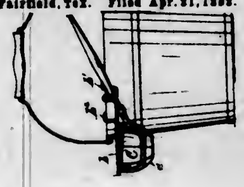
7. In a car-brake, the combination, with the brake-beams and connecting rods or chains, of a spiral cam attached to the car-axle, a reciprocating yoke encircling the cam and provided with a notched bar, a pawl adapted to engage said notched bar, a weighted lever, and an electro-magnet for actuating said lever, substantially as set forth.

259,931. REVERSIBLE COAT. JACOB SIMMONS, Baltimore, Md., assignor of one-half to Joseph Goldstine, same place. Filed Feb. 20, 1882. (No model.)



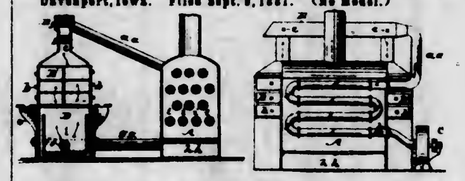
Claim.—As a new article of manufacture, a reversible coat which consists of two complete coats placed back to back and secured together at the edges, and provided with a reversible turn-down collar and lapels faced on each side, respectively, with the same material as the side of the coat exposed to view when in use, substantially as specified.

259,932. HOUSEHOLD UTENSIL. THOMAS W. SIMS and FRED FISCHER, Fairfield, Tex. Filed Apr. 21, 1882. (No model.)



Claim.—A dipper-holder consisting of the rim *b*, wire *c*, and disk *d*, arranged to form a cup-shaped support, the ends of the rim being bent into hooks b' b^2, and a recess, b^3, substantially as shown and described.

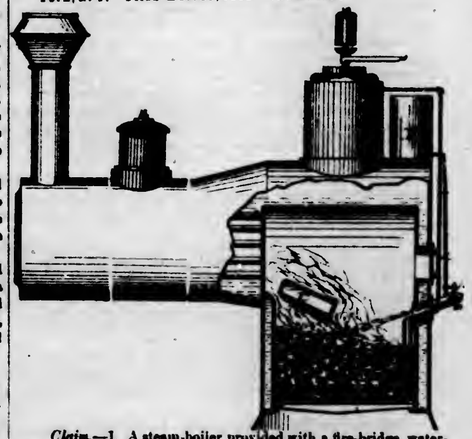
259,933. EVAPORATOR AND HEATER. ROBERT M. SEILES, Davenport, Iowa. Filed Sept. 8, 1881. (No model.)



Claim.—1. The combination of the heater A and drier B, arranged side by side, the sinuous air-flue, formed of pipes *i*, having inclined feed-pipe *a a*, fan C, and discharge-pipe *g g*, and the perforated distributing-pipe *f f* and drier B, having flues *e* and chamber E, for discharging moisture and supplying fresh air to the feed-pipe, substantially as shown and described.

2. The combination, with the heater A and its air-conducting pipes, of the drier B, having upright flues *e*, arranged at intervals apart, and the chamber E, having opening *d* for the admission of cold air and holes *e* for the escape of moisture, substantially as shown and described.

259,934. HYDROCARBON-FURNACE. BYRON SLOPER, New York, N.Y. Filed Mar. 21, 1882. (No model.)



Claim.—1. A steam-boiler provided with a fire-bridge, water-legs, and a bat-wing hydrocarbon-injector, slotted as described, whereby liquid fuel, in connection with superheated steam, may be projected into the fire-box, directly below the fire-bridge, in a broad thin stratum, so as to heat the boiler throughout, substantially as specified.

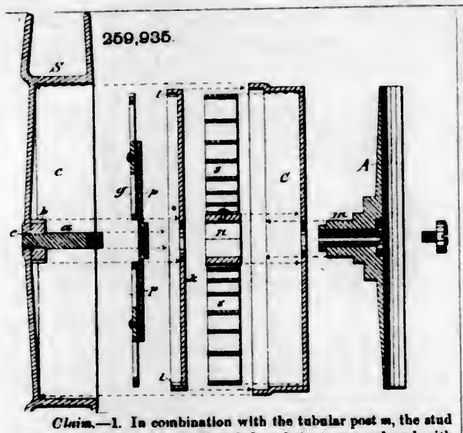
2. In combination with a bat-wing injector and the water-legs of the boiler, the steam-pipes covered with refractory material, and passing above the grate-bars back and forth horizontally directly through a body of incandescent material, whereby the steam is superheated and passed directly in a superheated state to the liquid-fuel injector, and discharged, in conjunction with the liquid hydrocarbon, in a broad thin sheet, forwardly and laterally immediately onto the incandescent fuel directly beneath the fire-bridge, substantially as and for the purposes specified.

3. The combination, with the outer cylindrical shell of the injector, of the inner cylindrical shell, the two having coincident transverse slots, as described, for the purpose of delivering the combustible gases in a lateral as well as forward direction, or in a bat-wing jet, to the water-legs, as specified.

4. In combination with the outer and inner shells of the injector, having coincident transverse slots, as described, the nut embracing the inner shell and secured by a screw-thread to the outer shell, and the interposed packing, arranged as set forth.

259,935. FISHERMAN'S REEL. FRANKLIN R. SMITH, Syracuse, N. Y., assignor of one-half to Willis S. Barnum, same place. Filed Feb. 13, 1882. (No model.)

259,935.



Claim.—1. In combination with the tubular post *m*, the stud *a*, provided with a female threaded socket at one end and with external screw-threads at the opposite end, the interchangeable spool S, provided with a screw-threaded eye, *e*, for the reception of the externally-threaded end of the stud *a*, and the attaching-screw fitted to the cavity in the opposite end of the stud *a*, all as shown and described, for the purpose set forth.

2. In combination with the attaching-plate A and the spool S, pivoted thereon as shown, the combined line-guide and brake, consisting of an arm, B, pivoted on the attaching-plate in eccentric relation to the pivot of the spool, and having its free end extended across the periphery of the spool and provided with an eye, *i*, the whole constructed and operating to control the motion of the spool and guide the line, substantially as set forth.

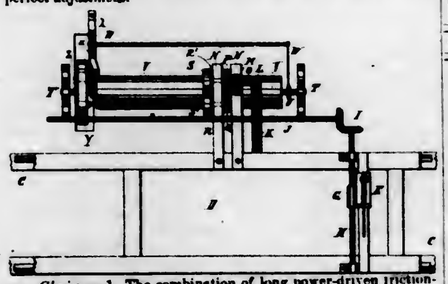
3. In combination with the spool S, the line-guide having a guarded lateral inlet, *o*, to the eye thereof, for the introduction and removal of the line to and from said eye, substantially as set forth.

4. The combination, with the pivoted spring-case C, of the geared plate K, rigidly attached to and closing the case, and provided with an axial bearing, substantially as described, for the purpose specified.

5. In combination with the spool S and case C, the post *m*, having inside of said case a square or polygonal form externally, the collar *n*, fitted detachably to the exterior of said post, and the spring *s*, connected at its inner end to the collar *n*, substantially as and for the purpose shown and set forth.

259,936. DEVICE FOR OPERATING SAW-MILL KNEES. SAMUEL R. SMITH and EDWARD MYERS, Cincinnati, Ohio, assignors to Smith, Myers & Schaler, same place. Filed Feb. 1, 1882. (No model.)

Brief.—Applicant employs a long friction-drum, with suitable connecting mechanism placed parallel to the carriage and extending from one end of its travel toward the other end, to communicate motion to the knees. This enables the connection to be made and the knees operated when the carriage is at any point approximating the end of its travel without loss of time in more perfect adjustment.

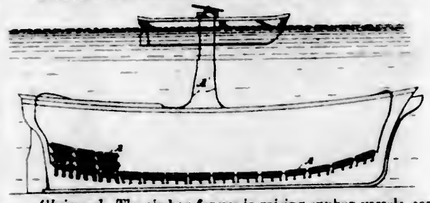


Claim.—1. The combination of long power-driven friction-drum V, parallel with the track, forwarding friction-wheel S, and retracting friction-wheel S', and suitable means, W, for bringing the drum and wheels into frictional contact, substantially as shown and described, for the purpose set forth.

2. The combination of long friction-drum V, forwarding and retracting friction-wheels S S', rock-arms U U, supporting said drum, and lever W, for engaging the drum with either friction-wheel, substantially as set forth.

3. The combination of long friction-drum V, parallel with main shaft, and friction-wheels S S' and spur-wheel Q on shafts R R', with spur-wheel P and pinion L on shaft O, located over said drum and forming the means for communicating motion from the drum to the spur-wheel on the main shaft, as set forth.

259,937. APPARATUS FOR RAISING SUNKEN SHIPS. JOHN F. SPEARING, New Orleans, La. Filed Jan. 4, 1883. (No model.)



Claim.—1. The air-bag for use in raising sunken vessels, consisting essentially of the bag proper, the canvas or other bands encircling it and stitched or otherwise secured to it, and the ropes *b*, encircling the bag and stitched or otherwise secured to the encircling bands.

2. The combination, substantially as set forth, of the air-bag, the ropes *b*, encircling it, the brace-rod for bracing the bag, and the lifting chains or ropes.

3. The combination, substantially as set forth, of the air-bag, the lifting-chains connected therewith, and the bolts or staples adapted to be secured directly in the sides of the hull.

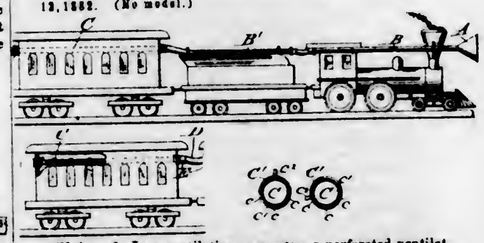
4. The combination of the air-bag, the end tube, the ring-aperature in the end of the air-bag, the funnel, and its flange, substantially as set forth.

5. The combination, substantially as set forth, of the series of air-bags, their connecting-tubes and coupling devices for connecting the bags directly to each other in connected series, the lifting-chains, the devices for connecting the lifting-chains of each bag directly to the hull of the vessel, and the inflating-tube A'.

6. The combination of one or more series of air-bags coupled together end to end in connected series by means of the connecting air-tubes, as set forth, one or more series being arranged on each side of the craft to be floated, lifting-ropes attached to the bags, devices for connecting the lifting-ropes of each bag directly with the hull of the vessel, and air-tubes connecting with the ends of each series of bags for introducing compressed air into them, substantially as shown and described.

7. The combination, substantially as set forth, of the air-bag, lifting-chains connected therewith, the bolts or staples constructed with pawls or dogs, as described, and adapted to be introduced into the hull of the vessel, and devices for connecting the lifting-ropes with the bolts or staples.

259,938. APPARATUS FOR VENTILATING RAILROAD-CARS. JOSEPH A. STEPHAN and JOHN GIBBIST, Fargo, Dak. Filed Mar. 13, 1882. (No model.)



Claim.—1. In a ventilating apparatus, a perforated ventilating-pipe provided with an exterior sliding section having bands or loops by which it is connected with said pipe, and adapted to be moved thereon for the purpose of covering or uncovering the perforations, substantially as described.

2. In a ventilating apparatus for railway-cars, the combination, with the horizontal pipes C C, having perforations *e e*, for the passage of air into the car, and slides C' and dampers *f*, for regulating the passage of air through said perforated pipes, of the flexible tubes or pipes D, having couplings E E, adapted to connect the opposite ends of the ventilating-pipes, substantially as described.

3. In an apparatus for ventilating railway-cars, the combination of the funnel A, having screw-conveyer *a* and valve *d*, provided with cord *d'*, conveying-pipes B' B', perforated ventilating-pipes C C, having slides C' and dampers *f*, and the flexible connecting-pipes D, having couplings E E, for connecting the conveying and ventilating pipes, substantially as shown and described.

259,939. FLESH-BRUSHING APPARATUS. MARY V. STRYKER and WILLIAM RUSSELL, New York, N. Y. Filed Apr. 4, 1882. (No model.)



Claim.—1. In a flesh-brushing apparatus, the combination of a series or system of substantially vertical brushes and a support for sustaining the person to be acted upon by the rotation of said brushes, all substantially as and for the purpose herein set forth.

2. The combination of a circular, or substantially circular, series of longitudinal brushes, an annular base-plate, a top ring, a base for supporting the base-plate, and a pedestal for supporting the person to be operated upon, all substantially as and for the purpose herein set forth.

3. The combination of the annular base-plate C, the base A, spheres or rollers D, and the annular system of longitudinal brushes arranged to rotate around the axis of the pedestal, all substantially as and for the purpose herein set forth.

4. The combination of the plate E, pedestal B, base A, rollers or spheres D, annular base-plate C, top ring, G, and the system of longitudinal brushes, all substantially as and for the purpose herein set forth.

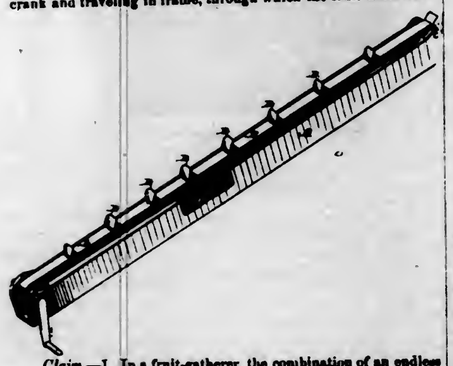
5. The combination, with the annular base-plate C, top ring, G, and bars F, of the longitudinal brushes, with the door composed of bars F', and sectors J and K, all substantially as and for the purpose herein set forth.

6. The combination of the bars F, which are provided with brushes and are curved outward at *d*, with the alternating straight bars F, which are devoid of brushes, the base-ring C, and the top ring, G, all substantially as and for the purpose herein set forth.

7. The top ring, G, constructed with the radial slots *a'*, the longitudinal series of bars F, provided with brushes, the base-ring C, and means, substantially as described, for fastening the upper ends of the bars F to the top ring, G, at a greater or less distance from the axis thereof, all substantially as and for the purpose herein set forth.

259,940. FRUIT-GATHERER. LEONARD STORR, San Luis Obispo, Cal. Filed Mar. 27, 1882. (No model.)

Brief.—Convexed cutters secured to endless belt turned by crank and traveling in frame, through which the fruit is carried.

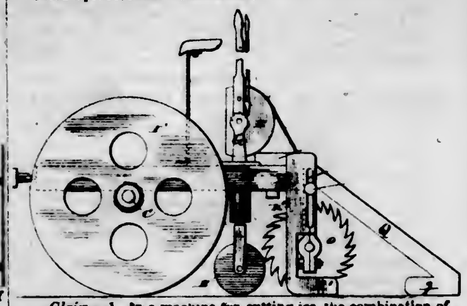


Claim.—1. In a fruit-gatherer, the combination of an endless traveling belt, a frame or conveyer, and cutting devices, substantially as and for the purpose specified.

2. In a fruit-gatherer, an endless belt, a frame or tube, and convex cutters D, in combination, substantially as and for the purpose set forth.

3. A fruit-gatherer consisting of the tube or conveyer A, endless belt B, and the cutting and gathering devices D, secured upon said belt, in combination, substantially as set forth.

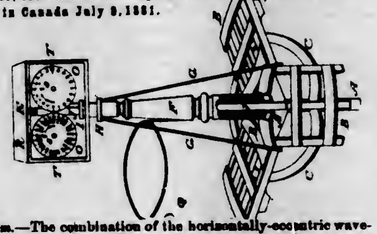
259,941. ICE-CUTTING MACHINE. JOHN STORK, Canton, Mo. Filed Apr. 15, 1882. (No model.)



Claim.—1. In a machine for cutting ice, the combination of the saws or cutters O, fixed guides or gages Q, for regulating the distance between the cuts or furrows, and vertically-adjustable gages R', for regulating the depth of the cuts, substantially as and for the purpose herein shown and described.

2. The combination of the platform A, drive-shaft C, drive-wheels I I', hinged frame H, carrying the saws O, guides Q, and depth-gages R', and mechanism for operating the saws, substantially as and for the purpose herein shown and described.

259,942. GRAIN-REGISTER. WESLEY STRINGER, Port Dover, Ontario, Canada. Filed Sept. 24, 1881. (No model.) Patented in Canada July 9, 1881.



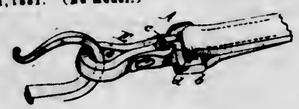
Claim.—The combination of the horizontally-eccentric wave-ring or cam, revolving on anti-friction wheels, with the triple platform B B B, and hollow vertical revolving shaft F, and vertical stationary shaft J, and slide-collar I, and pawl L, in combination with the dial-plates O O, graduated on their faces and ratcheted on their backs and secured by the click-spring N, substantially as and for the purpose hereinbefore set forth.

259,943. CULTIVATOR. ELDRED A. TABER, Hall's Mill, Tenn. Filed Jan. 30, 1882. (No model.)



Claim.—In a walking-cultivator, the combination, with the cultivator-frame composed of the beam or tongue A, slotted longitudinally at *a*, fixed and shouldered shovel-beams C C, and handles F F, braced by the yoke or stirrup H, straddling the rear end of the slotted beam A, and having perforations A A, of the vertically-adjustable middle beam, B, pivoted in the slotted tongue at *d* and adjustable by the bolt *i*, in the manner and for the purpose herein shown and specified.

259,944. CHECK-LOOP. ANTHONY THILLEN, Perry, N. Y. Filed Dec. 1, 1881. (No model.)



Claim.—A loop for overdraw check-reins, composed of a metallic portion, A, which consists of a horizontal loop, *b*, and a vertical loop, *c*, cast in one piece, the loop *b* being adapted to receive the check-rein, and a horizontal loop, E, of flexible material, secured to the loop *c* and adapted to engage over the saddle-hook, substantially as set forth.

259,945. PLANER-CHUCK. HUGH THOMAS, New York, N. Y. Filed Jan. 26, 1882. (No model.)



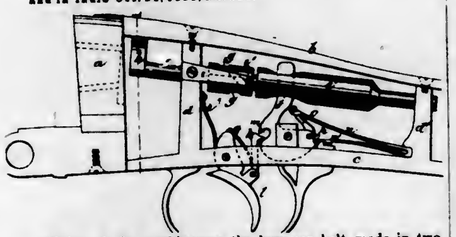
Claim.—1. The combination, in a planer-chuck, of a base-piece having a circular opening, a top piece provided with a sectional hub entering said opening, and devices for expanding the said sectional hub against the side of said opening, substantially as specified.

2. The combination, in a planer-chuck, of a base-piece having a circular opening the side of which is tapered or beveled upward, a top piece provided with a sectional hub entering said opening and correspondingly tapered or beveled, and devices for expanding said hub against the beveled side of said opening, substantially as specified.

3. The combination, in a chuck, of a base-piece having a circular opening, a top piece provided with a sectional hub entering said opening, and composed of two segments and an interposed wedge, and a screw for actuating said wedge to expand the segments, substantially as specified.

4. The combination of the base-piece A, having a tapered opening, A', the top piece, B, the segments C, the wedge C', tongued and grooved into the inner edges of the segments, and the screw D, substantially as specified.

259,946. GUN-LOCK. HENRY A. A. THORN, London, England. Filed Sept. 24, 1881. (No model.) Patented in England Mar. 21, 1881, No. 1,243; in Germany July 26, 1881, No. 17,097; in France July 28, 1881, No. 144,186; in Belgium Aug. 8, 1881, No. 55,399; in Austria Oct. 24, 1881, Nos. 24,075 and 38,994, and in India Oct. 24, 1881, No. 933.



Claim.—1. In combination, the hammer-bolt, made in two parts, connected by means of a reduced end of the part *e'* entering the bored-out part of part *e* and having the grooves *f g*, the tumbler *j*, trigger *l*, and trigger-lever *k*, and their respective springs, the combination operating substantially as and for the purposes described.

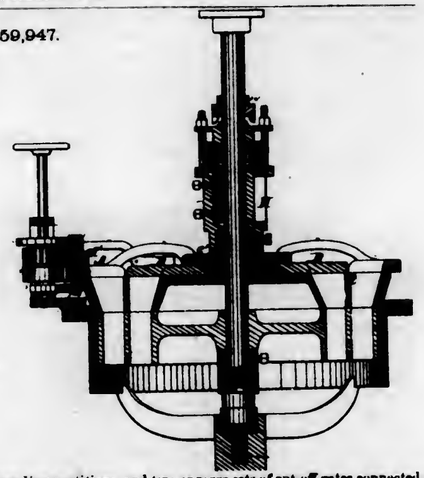
2. In a lock or action for breech-loading small-arms having several barrels and a single trigger, a hammer-bolt formed in two parts, *e e'*, the latter of which projects into the bored-out part *e*, and is also slotted to receive the upper end of the tumbler, and provided with a series of longitudinal slots, *f*, and with a corresponding number of inclined slots, *g*, between and opening into said slots *f*, as and for the purposes described.

3. In combination with the hammer-bolt, made in two parts, as described, one part being slotted and the two parts being connected together, as set forth, the trigger-lever *k*, having a nose at its upper end, tumbler *j*, provided with a curved slot, *m*, and projection *p*, lever or link *o*, and a spring, *n n'*, one end of which bears on the shoulder or projection of the tumbler and the other end on the link, the combination being and operating substantially as shown and described.

259,947. TURBINE WATER-WHEEL. CHARLES R. TOMPKINS, Rochester, N. Y. Filed July 26, 1880. (Model.)

Claim.—1. In a turbine water-wheel, the combination of a set of chutes divided in the direction of the course of the water by one or more partitions, a wheel the buckets of which have corresponding partitions, and two or more sets of cut-off gates connected to and working upon a central hub attached to the case of the wheel, substantially as shown and described.

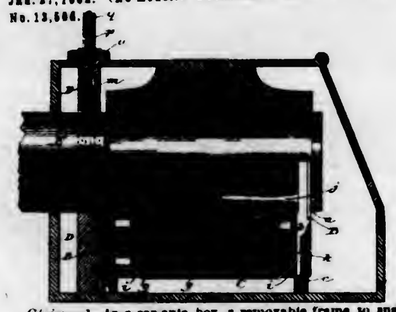
259,947.



2. In a turbine water-wheel, the combination of chutes divided into two or more compartments, wheel-buckets corresponding thereto, independent sets of cut-off gates operated by a single shaft, and automatic devices for locking each set of gates while the others are being moved, substantially as set forth.

3. In combination with the shaft of a turbine water-wheel, a fixed collar having suitable wings or projections upon the under side and placed just above the stuffing-box for the purpose of agitating the water and preventing sand and other sediment from accumulating around the shaft and being drawn into the bearing, substantially as specified.

259,948. CAR-AXLE BOX. LOUIS H. TOURVILLE, Chicago, Ill., assignor of one-third to Noah Paquette, same place. Filed Jan. 27, 1882. (No model.) Patented in Canada Oct. 19, 1881, No. 13,506.



Claim.—1. In a car-axle box, a removable frame to sustain the lubricating-roll, said frame having recessed end plates and separable section-pieces which directly fit and fill the recesses and support the journals of the roll, substantially as described.

2. In a car-axle box, a removable frame to sustain the lubricating-roll, said frame having recessed end plates and separable central section-pieces, *e'*, and side pieces, *e*, which directly fit and fill the recesses, substantially as set forth.

3. In a car-axle box, the combination, with the recessed check-plate, of a movable slide located within the recess and adapted to bear against the body of the car-axle, substantially as described.

4. In a car-axle box, the combination of the recessed check-plate D with the movable slide *l*, located within the recess and provided with the rods *n n*, substantially as set forth.

5. In a car-axle box, the combination, with the check-plate D, made in manner substantially as described, of the recessed plate *o*, which rests upon the exterior of the box, and the sustaining-spring *p*, all substantially as set forth.

6. In a car-axle box, the combination, with the check-plate D, slide *l*, and spring *m*, of the plate *o* and spring *p*, substantially as set forth.

259,949. FRUIT-SLICING MACHINE. FRANK H. TRUMBULL, Marion, N. Y., assignor of eight-twelfths to Lorenzo R. Potter, Lewis Smith, and Stephen Trumbull, same place. Filed Feb. 20, 1880.



Claim.—1. In a fruit-slicer, the combination of the reel and the wire, the wire being coiled loosely around the reel and allowing the reel to rotate freely therein, the ends of the wire projecting above and below, and the whole serving to allow automatic feeding of the fruit to the knife, as specified.

2. In a fruit-slicer, the wire D, resting upon the reel C and having its lower end enlarged in tapering or conical form, largest at the bottom, as and for the purpose specified.

259,950. OPTICAL TOY. HENRY VAN HOEVENBERGH, Elizabeth, N. J. Filed May 24, 1882. (No model.)

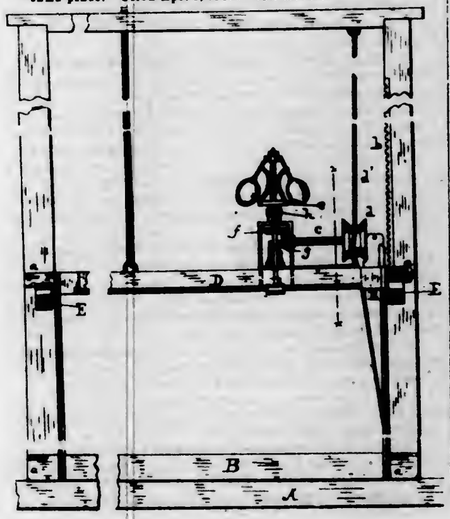
Brief.—Improvement on the invention in Letters Patent No. 258,164, dated May 16, 1872.



Claim.—1. The combination, substantially as hereinbefore set forth, of two or more series of superposed leaves, in which each successive leaf of each series bears a pictorial representation of an object in a different position, the leaves belonging to the different series being alternated, as described, and means, substantially such as described, for securing said leaves together bookwise by one margin thereof.

2. The combination, substantially as hereinbefore set forth, of two or more alternating series of superposed leaves united bookwise at one of their margins, each series bearing the pictorial representation of an object upon each of its leaves, and being provided with a corresponding projection upon the free end of each leaf, whereby one series may be exhibited without exposing another series.

259,951. SAFETY ATTACHMENT FOR ELEVATORS. FRANKLIN W. VERNON, Chicago, Ill., assignor to Peter J. Singer, same place. Filed Apr. 4, 1882. (No model.)



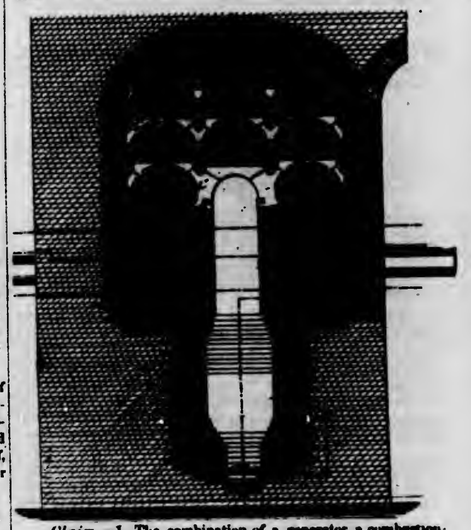
Claim.—1. The combination of a generator, a combustion-chamber vertically above the generator, a primary series of air-flues arranged in the side walls of the generator, a second series of air-flues arranged in the side walls of the combustion-chamber and connected with the first series of air-flues, a tier of heating-flues arranged in the walls of the combustion-chamber underneath the second series of air-flues, and connected with the combustion-chamber and with the chimney, and a third series of air-flues in the side walls of the combustion-chamber, adjacent to the inner face thereof, said third series being connected with the second series and provided with lateral channels for discharging the heated air into the combustion-chamber, substantially as described.

2. The combination of a generator, a combustion-chamber vertically above the generator, a primary series of air-flues arranged in the side walls of the generator, a second series of air-flues arranged in the side walls of the combustion-chamber and connected with the primary series of air-flues, a tier of heating-flues for the escaping gaseous products of combustion, connected with the combustion-chamber and arranged in the walls thereof over the second series of air-flues, a second tier of heating-flues arranged in the walls of the combustion-chamber, underneath the second series of air-flues, and connected with the said upper tier of heating-flues and with the chimney, and a third series of air-flues arranged in the side walls of the combustion-chamber, said third series being connected with the second series and provided with lateral channels for discharging the heated air into the combustion-chamber, substantially as described.

3. The combination of a gas-generator, a combustion-chamber above the generator, a retort-chamber above the combustion-chamber, a primary series of air-flues in the side walls of the generator, a second series of air-flues in the side walls of the combus-

259,952. GAS-GENERATING FURNACE FOR HEATING RETORTS. ADAM WEBER, New York, N. Y. Filed Mar. 24, 1882. (No model.)

Brief.—Gas for heating the retorts is generated in a furnace placed below their front ends. Air for supporting combustion of the gas is headed in flues in the walls of the generator and combustion-chamber, in the latter position the heating being effected to a large extent by waste products of combustion passing through contiguous flues to the chimney. Air to be heated passes through flues D D' D², while the waste products pass through flues E F.



Claim.—1. The combination of one or more levers or handles, *i*, with the cross-head *h*, shaft or shafts D, and eccentrics E, substantially as specified.

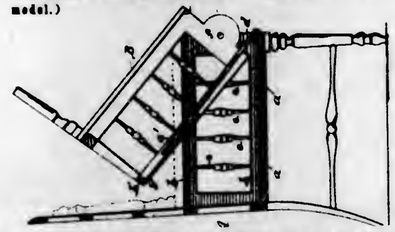
2. A non-rotating cross-head adapted to rise and fall, in combination with a ball-governor, shafts carrying eccentrics, and devices connecting the cross-head with the said shafts, substantially as and for the purpose described.

3. The springs *j*, or their equivalent, in combination with the levers *i* and shafts D, for rotating the shafts sufficiently to bring the eccentrics into action, substantially as specified.

tion-chamber, connected with the primary series, a third series of air-flues in the side walls of the combustion-chamber, adjacent to the inner face thereof, and connected with said chamber by lateral exit-channels, a tier of heating-flues for the escaping products of combustion over the second series of air-flues, a second tier of heating-flues under the second series of air-flues and connected with the first tier of heating-flues, and flues connecting said heating-flues with the retort-chamber and chimney, substantially as described.

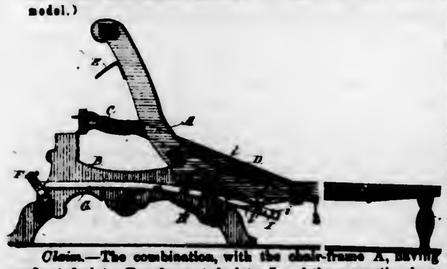
4. The combination of a generator, a combustion-chamber vertically above the generator, a primary series of horizontal air-flues arranged vertically in the side walls of the generator, a second series of horizontal air-flues connected with the first series and arranged horizontally in the side walls of the combustion-chamber, heating-flues for the escaping gaseous products of combustion, adjacent to the second series of air-flues, a third series of horizontal air-flues arranged vertically in the side walls of the combustion-chamber adjacent to the inner face thereof, the lower flue of said third series being connected with the second series of air-flues and the upper flue thereof having lateral exit-channels for discharging the heated air into the combustion-chamber, and flues connecting the heating-flues with the combustion-chamber and chimney, substantially as described.

259,953. COMBINED CHAIR AND CRIB. JOSEPH B. WELCH and HARRY TRUDELL, Richmond, Va. Filed Mar. 7, 1882. (No model.)



Claim.—The combination of the frame A, having upper and lower rails at the sides and back, the frame B, pivoted to the standards *d* of frame A, and having its upper and lower side rails provided with ledges on the inside thereof, and the extension-bottom *a'*, hinged to the bottom of frame A, substantially as shown and described, and for the purpose set forth, the frame B having its legs planed upon one side to adapt them to fit against and form facings for the back of the chair when the frames are folded together.

259,954. COMBINED CHAIR AND COUCH. JOSEPH B. WELCH and HARRY TRUDELL, Richmond, Va. Filed Mar. 3, 1882. (No model.)

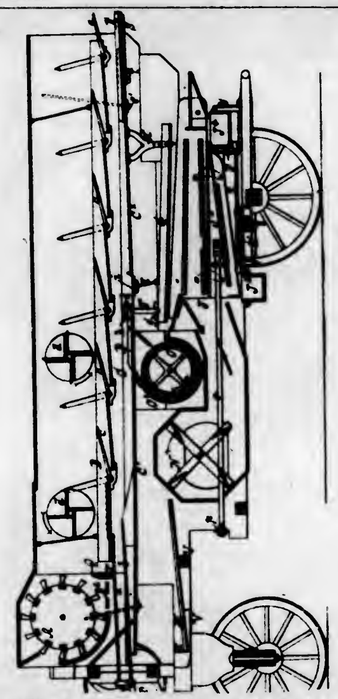


Claim.—The combination, with the chair-frame A, having perforated plates E and serrated plates J, and the supporting-bars B, of the spring-actuated bars G, connected at their forward ends with pivoted catches, which are adapted to engage with the said perforated plates, and connected at their rear ends with the supporting-levers I, which are provided with means for engaging with the said serrated plates, substantially as shown and described, and for the purpose set forth.

259,955. THRASHING-MACHINE. JAY WESTINGHOUSE and WILLIAM WEBBER, Schenectady, N. Y., assignors to G. Westinghouse & Co., same place. Filed May 21, 1881. (No model.)

Claim.—1. The combination, substantially as hereinbefore set forth, of the grain-carrier divided into a forward and back section, the swinging suspension-rods supporting the sections on the machine-frame at their outer ends, and the T-arms pivoted to the machine-frame and to both sections of the grain-carrier at the inner ends of the sections to support and connect them with each other at that point.

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2. The combination, substantially as hereinbefore set forth, of the grain-carrier swinging upon pivoted suspension-rods, and having a grain-delivery opening at or near its center, the perforated distributer, the hangers of the grain-carrier, having the distributer pivoted thereto, and the swinging rods pivoted to the machine-frame and to the distributer, whereby the distributer is caused to move with the grain-carrier, and its front and rear ends obtain, respectively, a compound rising and back movement and a compound falling and back movement.

3. The combination, substantially as hereinbefore set forth, of the grain-carrier divided into a forward and a back section, the suspension-rods supporting the sections of the carrier at their outer ends, the swinging T-arms pivoted to both sections of the grain-carrier at the inner ends of the sections, the distributer, the hangers fixed to the grain-carrier and pivoted to the distributer at the rear end, and the swinging suspension-rods carrying the forward end of the distributer.

4. The combination, substantially as hereinbefore set forth, of the grain-carrier divided into a forward and back section, and provided with a grain-delivery opening at the junction of the sections, the suspension-rods supporting the sections at their outer ends, the swinging T-arms pivoted to the sections at their inner ends, the sliding leaf supported by and capable of moving on the grain-carrier, and acting as a cover for partially closing its delivery-opening, the vibratory distributer having its forward end arranged beneath the delivery-opening in the grain-carrier, and the clover-huller in communication with said opening, for the purpose specified.

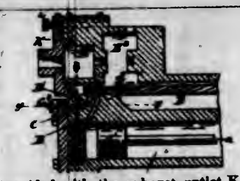
5. The rock-shaft *r*, provided with the deflector O, and capable of rotating to adjust the deflector from a vertical to an inclined position, and conversely, in combination with the thrashing-cylinder, the concave, and the grating, substantially as described, whereby the grain thrashed from the straw is directed through the grating, as and for the purpose set forth.

6. The combination, substantially as hereinbefore set forth, with the grain-carrier, of the sliding adjustable extension, having a slotted arm and thumb-nut at the rear end of such carrier.

259,956. COAL-MINING MACHINE. GEORGE D. WHITCOMB, Chicago, Ill. Filed Nov. 14, 1881. (No model.)

Claim.—In a mining-machine, the main piston-cylinder provided with an air-space between the piston and the rear cylinder-head, in combination with a sliding valve to regulate the admission and escape of air or steam, an auxiliary engine to operate the

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said valve, provided with the exhaust-outlet K, and a valve for regulating the escape of air or steam through this outlet, substantially as and for the purposes described.

259,957. BALL-AND-SOCKET JOINT. OTIS C. WHITE, Hopkinton, Mass. Filed May 8, 1882. (No model.)



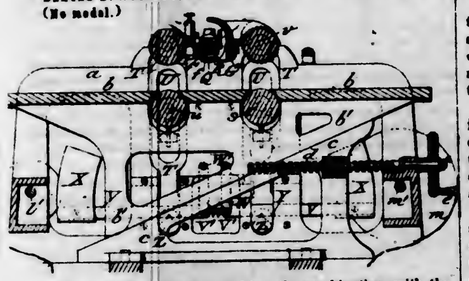
Claim.—1. The combination of the ball, made in sections as described, with the contractile socket-piece, provided with means of clamping or contracting it upon the ball.

2. The ball, contractile or made in sections and perforated diametrically, in combination with the slide-rod extended through the ball, and with the contractile socket-piece, provided with means of contracting or clamping it on the ball, as set forth.

3. The ball-socket provided with the annular or bolt-shaped bearings *e e* to rest against the ball, and with the intervening annular space to be out of contact with the ball.

4. The ball, made in sections and perforated diametrically to receive the slide-rod, in combination with the socket-piece, socketed to receive the ball, and having to the socket flaring mouths arranged therewith, as set forth.

259,958. BED AND PRESSER FOR PLANING-MACHINES. BAXTER D. WHITNEY, Winchenden, Mass. Filed Aug. 11, 1881. (No model.)



Claim.—1. In a planing-machine, the combination, with the cutting-cylinder *f* and its journal boxes or bearings, provided with curved grooves B, partly surrounding the journals of the cylinder and concentric, or nearly so, therewith, of the presser-bar G, having curved guides adapted to engage with and slide in the grooves B, whereby said bar is enabled to lift in a curved line substantially concentric with the cutting-edges of the revolving knives, substantially as shown and described.

2. The presser-bar G, provided with levers M M, curved guides H H, adapted to engage with and slide in curved grooves formed in or around the journal boxes or bearings of the cutter-cylinder concentrically with the journals of said cylinder, and a yielding presser-foot, G', consisting of an elastic plate or plates having an inductive bearing-surface adapted to regulate the pressure of the bar to correspond with the varying thickness of the advancing board, substantially as shown and described.

3. In a yielding presser-bar, the combination of a flexible pad or foot, G', with auxiliary supports G^2, to prevent undue deflection and injury of the flexible pad, substantially as shown and described.

4. In a planing-machine, the combination, with the cutting-cylinder having its journal boxes or bearings provided with curved grooves partly surrounding the journals of the cylinder and concentric therewith, of the pressure-bars G and P, having curved guides adapted to engage with and slide in the grooves, whereby said bars are enabled to lift in a curved line concentric with the cutting-edges of the revolving knives, substantially as shown and described.

5. In combination with the gears *d'*, *u'*, *q*, and *t*, the gears *v'* *w'*, and the central intermediate gear, *r*, connecting the wheels and arranged to admit of an adjustment of the feeding-rollers, substantially as shown and described.

6. The combination, with the gears of the upper and lower rollers and the gears *q r t*, of the gear *o* and pinion *o'* on stud *p* and the pinion *n* on shaft *n'*, substantially as and for the purpose shown and described.

7. The combination of the weighted levers V, having notches Y Y, with pivoted vibrating links or stirrups W, and with the bearings Z in the hangings T, or their equivalents, for adjusting the pressure of the feed-rolls, substantially as shown and described.

259,959. CAR-COUPLING LINK. JOHN T. WILSON, Pittsburg, Pa., assignor to Wilson, Walker & Co., (Limited,) same place. Filed Feb. 2, 1882. (No model.)



Claim.—A car-coupling link having a D form in cross-section of its sides and ends, with re-enforcement of the ends on their outer surface and rounded corners on their inner sides, substantially as set forth.

259,960. CAR-COUPLING. JOHN T. WILSON, Pittsburg, and JAMES H. SIMPSON, Millvale, assignors to Wilson, Walker & Co., (Limited,) Pittsburg, Pa. Filed Mar. 27, 1882. (No model.)



Claim.—1. A draw-car, A, having an interior link-opening therein, with shoulder-stops *e* raised on the inner face of its lower strap, in combination with a link, C, having shoulder-stops *d'* raised on the under face of its side bars and adapted to engage and form a draft-connection with the raised stops *e*, substantially as and for the purpose set forth.

2. The draw-bar A, having shoulder-stops *e* formed thereon, in combination with guide-pin B and link C, such link having openings C' in its front and rear parts, a hook, *s*, depending from the front part, and shoulder-stops *d'* on the rear part adapted to engage and form a draft-connection with the stops *e*, substantially as set forth.

3. The combination of draw-bar A, having two shoulder-stops, *e e*, formed on its lower strap, with passage *d* between them, and link C, having depending hook *s* in its central line and shoulder-stops *d'* on the under side of its side bars adapted to form draft-connection with stops *e e*, substantially as set forth.

4. The draw-bar A, having shoulder-stops *e e* formed thereon, in combination with link C, having stops *d'* on its under side adapted to form draft-connection with stops *e e*, and a check-stop on the draw-bar in rear of the link adapted, as described, to hold the link forward for coupling, substantially as set forth.

5. The draw-bar A, having recess *r'* and stops *e e* on the inner face of its bottom strap, each stops having rear vertical faces inclined inward and forward to a transverse line, in combination with link C, having a lug, *r*, and stops *d' d'* on its under side, the stops *d'* having inclined faces adapted to engage and afford side bearings on the stops *e e*, substantially as set forth.

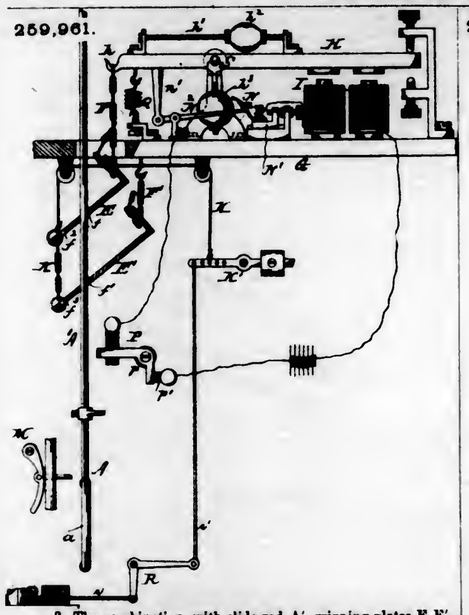
6. The jointed coupling-link C, having elongated openings C' in both the front and rear portions, a depending hook, *s*, forward of the joint, and shoulder-stops *d' d'* on the under side in rear of the joint, substantially as set forth.

259,961. RAILROAD TIME-SIGNAL. WILLIAM V. WILSON, Dayton, N. J. Filed Feb. 28, 1882. (No model.)

Claim.—1. The combination, with a vertically-moving signal-slide, of an electro-magnet for operating such slide, and intermediate mechanism, substantially as described, between such magnet and slide, whereby the movement of the slide operates to complete the electric circuit to energize the magnet, as set forth.

2. The combination, with a vertically-moving signal-slide, A, having an extension or rod, A', of the suspended L-shaped plates E E', and operating mechanism, substantially as described, for holding and feeding the same.

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3. The combination, with slide-rod A', gripping-plates E E', and armature H, attached to one of said plates, of a tripping device connected to both of said plates, such tripping device being adapted to be operated by a moving train, substantially as described.

4. The combination, with the rod A', passing through the suspended L-shaped feed-plates E E', of draft-chain K and a tripping device, substantially as set forth, for bringing said plates into a horizontal position, as specified.

5. The combination, with rod A' and suspended gripping-plates E E', of armature H, magnet I, and circuit-breaker N, whereby motion is communicated to the armature and the suspended gripping-plates, substantially as described.

6. The combination of a vertically-moving signal, an electro-magnet and armature, and suitable intermediate mechanism, substantially as described, for communicating motion from the armature to the signal, with a pendulum and compensating balance attached to the said armature, whereby the rate of movement of the signal may be regulated, substantially as described.

7. The combination of electro-magnet I, armature H, gripping-plates E E', attached to said armature, and rod A', passing through said plates, with a circuit-breaker operated by the said armature, substantially as described, whereby an intermittent movement is communicated by the magnet to the armature, and through one of said gripping-plates to the rod, as set forth.

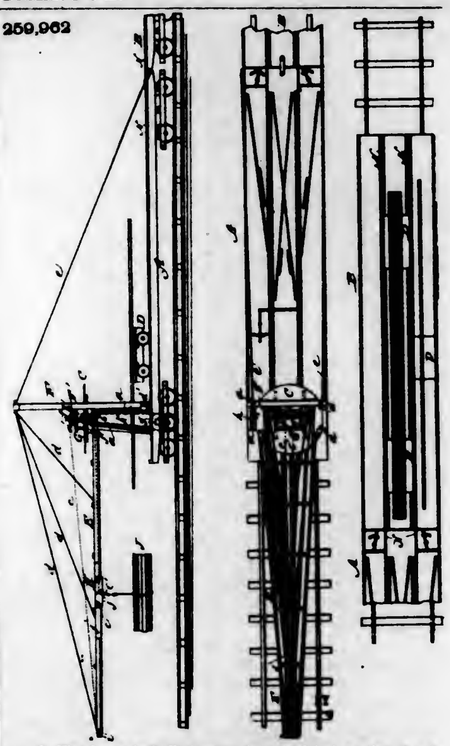
8. The combination of a vertically-moving signal-slide carrying a pointer, an exposed scale over which said pointer moves, a rod connected to and extending upwardly from said slide, a feed-movement for drawing said slide upwardly, an electro-magnet and generator, an armature with an automatic make and break, a contact maker or circuit between the battery or generator and magnet, and a tripping device connected to the feed-movement, whereby a passing train will cause the signal to be dropped, closing circuit on the magnet, thereby causing the armature to be vibrated, the feed-movement to be actuated, the slide to be raised, and the time since the train passed to be indicated, substantially as set forth.

259,962. CONSTRUCTION-TENDER FOR RAILROADS. E. N. WISE, Green Bay, Va. Filed Nov. 4, 1881. (No model.)

Brief.—The car is provided with a hinged truss-frame and a detachable derrick or boom. Suitable tracks are placed upon the car, on which trucks are adapted to run. Resting upon a platform supported on posts is a drum-shaft capable of longitudinal movement, and which has a cylindrical and square portion, on which is secured a rigid and a loose socketed drum adapted to operate a traveling block backward and forward upon the boom or derrick.

Claim.—1. The car A, provided with the hinged truss-frame F and the detachable derrick or boom E, substantially as and for the purposes set forth.

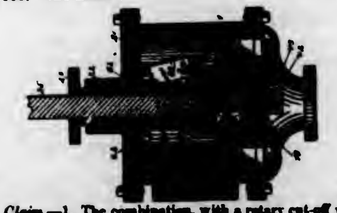
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2. The drum-shaft F, having the cylindrical portion *e* and square portion *g*, in combination with the drum *f* and loose socketed drum *f*, the shaft being capable of longitudinal movement, substantially as and for the purposes set forth.

3. The car A, having the derrick E and truss-frame F, and having the tracks, in combination with the car B and the hand-trucks D, substantially as and for the purposes set forth.

259,963. COMBINED ROTARY, CUT-OFF, AND GOVERNOR VALVE. LEANDER J. WISE, Lexington, Mass. Filed Feb. 18, 1882. (No model.)



Claim.—1. The combination, with a rotary cut-off valve, of a rotary valve seated upon the cut-off valve, the adjacent faces of the two valves being constructed to form intervening steam-spaces for balancing the rotary valve, substantially as shown and described, and for the purposes herein set forth.

2. The combination, with a rotary valve provided with a steam-space between its lower face and seat, of a rotary governor-valve seated on the rotary valve, the adjacent faces of the two valves being constructed to provide an intervening steam-space, substantially as shown and described, and for the purposes herein set forth.

3. The combination, with a rotary valve, of a rotary governor-valve seated on the rotary valve, the adjacent faces of the two valves being recessed or grooved to provide an intervening steam-space, and suitable devices for automatically actuating the governor-valve, substantially as shown and described, and for the purposes herein set forth.

4. The combination, with a steam-balanced rotary valve, of a steam-balanced cut-off valve serving as a seat for the rotary valve, and a steam-balanced governor-valve seated on the upper face of the rotary valve, substantially as shown and described, and for the purposes herein set forth.

5. The combination, with the head of the valve-cylinder, having ports formed therein communicating with a steam pipe or passage leading to the engine-cylinder, of a cut-off valve seated on the inner face of the valve-cylinder head, such cut-off valve being constructed with outwardly-projecting flanges or ribs which encircle the cut-off valve and the ports formed therein, substantially as shown and described, and for the purposes herein set forth.

6. The valve-cylinder head constructed with a steam-passage cast on the outer portion of the head, the ends of the steam-passage extending through the head and forming steam-ports on opposite sides thereof, substantially as shown and described, and for the purposes herein set forth.

7. The cut-off valve constructed with steam recesses or cavities on opposite sides of its ports, and of substantially the same size and form as said ports, substantially as shown and described, and for the purposes herein set forth.

8. The combination, with the rotary valve provided with through-ports, of the cut-off valve constructed with ports and with steam cavities or recesses on opposite sides of said ports, the construction being substantially as described, whereby the rotary valve is balanced and steam cut off at any point of its rotation, substantially as shown and described, and for the purposes herein set forth.

9. The combination, with the rotary valve provided with radial grooves or steam-passages and an annular steam-chamber connecting said grooves or passages, of a governor-valve provided with radial recesses or grooves closed at opposite ends, substantially as shown and described, and for the purposes herein set forth.

10. The combination, with the rotary valve provided with a number of holes for the passage of steam through the valve, and an annular groove on the opposite side with which said holes connect, of the rotary governor-valve having a groove or recessed portion formed therein that registers with said annular groove, substantially as shown and described, and for the purposes herein set forth.

11. The combination, with the governor-valve, of a worm-gear connected thereto by pins, and a worm engaging said gear, substantially as shown and described, and for the purposes herein set forth.

12. The combination, with the governor-valve provided with a hub, of a worm-gear mounted on said hub and attached to the governor-valve by pins, and a worm for actuating the valve, substantially as shown and described, and for the purposes herein set forth.

13. The combination, with the governor-valve provided with a hub, of a step secured to the head of the valve-cylinder and provided with a recess for receiving the hub of the valve, substantially as shown and described, and for the purposes herein set forth.

14. The combination, with the rotary valve having radial bearing-surfaces on the back of the valve surrounding the ports therein, of a governor-valve provided with radial grooves of less width than the width of the bearing-surfaces at the ends of the steam-ports in the rotary valve, substantially as shown and described, and for the purposes herein set forth.

15. A rotary valve constructed with outwardly-projecting flanges around its central opening and around its ports and on each end of the ports, to form steam cavities or recesses on opposite sides of the ports and a steam-chamber in the central portion of the valve, substantially as shown and described, and for the purposes herein set forth.

16. The combination, with a rotary valve having a recess formed in its periphery, of a link and yoke secured within said recess by a screw, and a rod secured to the yoke, substantially as shown and described, and for the purposes herein set forth.

17. The combination, with the rotary valve and revolving shaft connected therewith by spline and feather, of the cut-off valve and arbor or pivot extending through the cut-off valve and entering the end of said shaft, substantially as shown and described, and for the purposes herein set forth.

259,964. ROTARY ENGINE. LEANDER J. WISE, Boston, Mass. Filed June 10, 1880. (No model.)



Claim.—1. In a rotary engine, the combination, with an annular steam-chamber, of a rotary disk having a beveled periphery, forming two flat wearing-faces inclined toward each other, which extend only partly through said annular steam-chamber, substantially as shown and described, and for the purposes herein set forth.

2. In a rotary engine, the combination, with an annular steam-chamber, of a rotary disk having a beveled periphery, forming two flat wearing-faces inclined toward each other, which extend only partly through the annular steam-chamber, said disk being furnished with steam packing-rings located between its beveled periphery and the shaft to which it is secured, substantially as shown and described, and for the purposes herein set forth.

3. In a rotary engine, the combination, with an annular steam-chamber, of a rotary disk having a beveled periphery, forming two flat wearing-faces inclined toward each other, which extend only partly through said annular steam-chamber, and a radially-adjustable piston, substantially as shown and described, and for the purposes herein set forth.

4. In a rotary engine, the combination, with an annular steam-chamber and rotary disk provided with two flat wearing-faces on the periphery, of a sectional abutment constructed and adapted to fit said wearing-faces on the periphery of the disk, and to open and move outwardly from opposite sides of a piston connected with said disk, substantially as shown and described, and for the purposes herein set forth.

5. In a rotary engine, the combination, with an annular steam-chamber and rotary disk having two flat wearing-faces on its periphery, of a sectional abutment constructed to fit said wearing-faces on the periphery of the disk, and mechanism for imparting simultaneous movement to said sections and move them in opposite directions away from a piston connected with said rotary disk, substantially as shown and described, and for the purposes herein set forth.

6. In a rotary engine, the combination, with an annular steam-chamber and rotary disk having a piston connected therewith, of a sectional swinging abutment, the adjacent edges of said abutment being furnished with compensating slides to form a steam-tight joint, substantially as shown and described, and for the purposes herein set forth.

7. In a rotary engine, the combination, with an annular steam-chamber and rotary disk having a radially-movable piston connected therewith, of a two-part swinging abutment, the sections of which are adapted to move outwardly from said piston when the latter passes the abutment, substantially as shown and described, and for the purposes herein set forth.

8. In a rotary engine, the combination, with an annular steam-chamber and rotary disk having a beveled periphery, of a sectional swinging abutment the sections of which are adapted to move toward and away from each other, such sections provided with spring-pressed packing-sections to pack the joint between the two sections and between the abutment and beveled periphery of the rotary disk, substantially as shown and described, and for the purposes herein set forth.

9. In a rotary engine, the combination, with an annular steam-chamber and rotary disk having a beveled periphery, of a sectional swinging abutment provided with spring-pressed packing-sections, which fit steam-tight against said beveled periphery, substantially as shown and described, and for the purposes herein set forth.

10. In a rotary engine, the combination, with an annular steam-chamber having an abutment-chamber formed therein, of a sectional swinging abutment having ribs formed on its rear edges, said ribs snugly fitting within the walls of the abutment-chamber, substantially as shown and described, and for the purposes herein set forth.

11. In a rotary engine, the combination, with the half-sections of the annular steam-chamber, of the sectional swinging abutment and abutment-pockets secured at opposite sides of the abutment-chamber, substantially as shown and described, and for the purposes herein set forth.

12. In a rotary engine, the combination, with the half-sections of the annular steam-chamber, of abutment-pockets secured to opposite sides of the abutment-chamber and a cap located over said abutment-chamber, substantially as shown and described, and for the purposes herein set forth.

13. In a rotary engine, the combination, with the annular steam-chamber and rotary disk, of sectional swinging abutments attached to rock-shafts, cams on the main shaft, and suitable devices between the cams and rock-shafts for actuating the latter and imparting a swinging movement to the two sections of the abutment, substantially as shown and described, and for the purposes herein set forth.

14. In a rotary engine, the combination, with the annular steam-chamber, rotary disk, and sectional swinging abutment, of cams attached to the main shaft, pivoted levers provided with anti-

friction rollers which engage in the cam-grooves, and jointed arm for transmitting motion from the pivoted levers to the rock-shafts to which the abutments are attached, substantially as shown and described, and for the purposes herein set forth.

15. In a rotary engine, the combination, with the main shaft, of standards for supporting the same, said standards formed in two parts, the upper portion constituting the lower half of the shaft-bearing and provided with outwardly-projecting ears or flanges for the removable attachment of the cap of the journal-box, and secured to the lower section of the standard in a manner to prevent any longitudinal displacement, the upper portion of the standard made both vertically and laterally adjustable, substantially as shown and described, and for the purposes herein set forth.

16. The standards formed of upper and lower sections, the latter provided at its lower end with a perforated supporting-flange and at its upper end with a supporting-bracket, and wedges interposed between said sections of the standard, and set-screws for varying the adjustment of said wedges, and thereby raising or lowering the upper section of the standard, substantially as shown and described, and for the purposes herein set forth.

17. The combination, with the upper and lower sections of the main shaft standards, of wedges provided with elongated slots, bolts inserted through said slots for securing said sections together, and set-screws for varying the adjustment of said wedges, substantially as shown and described, and for the purposes herein set forth.

18. In a rotary engine, the combination, with the rotary disk, of a radially-movable piston provided with a split packing-ring, a right-and-left-hand screw, springs, and nuts for adjusting the packing-ring, substantially as shown and described, and for the purposes herein set forth.

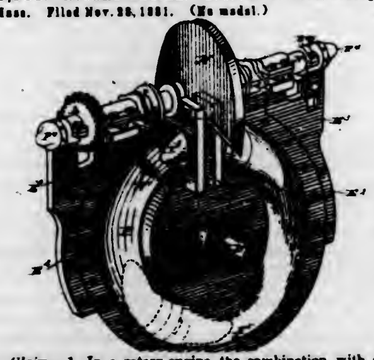
19. In a rotary engine, the combination, with the rotary disk, of a radially-movable piston provided with a split packing-ring, and screw-shaft extending partly through the packing-ring for expanding said ring, substantially as shown and described, and for the purposes herein set forth.

20. In a rotary engine, the combination, with an annular steam-chamber and sectional swinging abutment, of a rotary disk provided with a radially-moving piston and tapering piston-extensions on opposite sides of said piston, substantially as shown and described, and for the purposes herein set forth.

21. In a rotary engine, the combination, with the reversing-valve, of the rack-plate, segmental gears, and rotary valves, the latter having narrow and wide ports on opposite sides thereof, substantially as shown and described, and for the purposes herein set forth.

22. In a rotary engine, the combination, with the balanced reversing-valve Z, having the ports Z' Z^2 and intermediate recess, Z^3, of the cylinder provided with ports Y', Y^2, and Y^3, substantially as shown and described, and for the purposes herein set forth.

259,965. ROTARY ENGINE. LEANDER J. WING, Lexington, Mass. Filed Nov. 28, 1881. (No model.)



Claim.—1. In a rotary engine, the combination, with a revolving piston, of a rotary disk-abutment arranged at right angles to the rotary piston, and suitable mechanism for imparting a continuous rotary motion thereto, substantially as shown and described, and for the purposes herein set forth.

2. In a rotary engine, the combination, with a rotary piston-disk, of a rotary abutment-disk arranged at right angles to the rotary piston-disk, and suitable mechanism for imparting a continuous rotary motion thereto, and having the periphery of said abutment arranged to snugly fit against the periphery of the piston-disk, substantially as shown and described, and for the purposes herein set forth.

3. In a rotary engine, the combination, with a rotary piston-disk having a concave periphery, of a rotary disk-abutment arranged at right angles to the piston-disk, and provided with a concave periphery and suitable mechanism for imparting a continuous rotary motion thereto, substantially as shown and described, and for the purposes herein set forth.

4. In a rotary engine, the combination, with a revolving piston and tapered piston-extensions, of a rotary disk-abutment arranged at right angles to the piston-disk, substantially as shown and described, and for the purposes herein set forth.

5. In a rotary engine, the combination, with a self-adjusting piston, of a rotary disk-abutment arranged to revolve at right angles to the line of movement of said piston, substantially as shown and described, and for the purposes herein set forth.

6. In a rotary engine, the combination, with the cylinder provided with an annular bore made circular in cross-section, of a rotary disk-abutment arranged to rotate at right angles to the annular bore and to open and close the same, and with suitable mechanism for imparting a continuous rotary motion thereto, substantially as shown and described, and for the purposes herein set forth.

7. In a rotary engine, the combination, with a rotary piston-disk, of a rotary disk-abutment arranged at right angles to the piston-disk, and cylinder-extensions located at opposite sides of said abutment and extending toward the center of the cylinder, substantially as shown and described, and for the purposes herein set forth.

8. In a rotary engine, the combination, with a cylinder and revolving piston, of a revolving disk-abutment arranged at right angles to the revolving piston and cylinder extensions, provided with a self-regulating packing-ring, substantially as shown and described, and for the purposes herein set forth.

9. In a rotary engine, the combination, with a cylinder and revolving piston and piston-disk, of a rotary disk-abutment arranged at right angles to the revolving piston and cylinder extensions, provided with self-adjusting packing for packing the sides of the abutment and piston-disk, substantially as shown and described, and for the purposes herein set forth.

10. In a rotary engine, the combination, with a rotary piston-disk provided with piston-extensions, and self-adjustable piston located between the adjacent ends of said extensions, of a rotary disk abutment arranged at right angles to the rotary piston and provided with an irregularly-curved cut-away portion for the passage of said piston and piston-extensions, substantially as shown and described, and for the purposes herein set forth.

11. In a rotary engine, the combination, with a revolving piston, of a rotary disk-abutment mounted on a shaft and arranged at right angles with the revolving piston, and devices for imparting vertical adjustment to said shaft and rotary disk-abutment, substantially as shown and described, and for the purposes herein set forth.

12. In a rotary engine, the combination, with a revolving-piston, of a rotary disk-abutment mounted on a shaft, and devices for imparting longitudinal adjustment to said shaft, substantially as shown and described, and for the purposes herein set forth.

13. In a rotary engine, the combination, with a revolving-piston, of a rotary disk-abutment mounted on a shaft, and bearings for receiving the end-thrust of said shaft, substantially as shown and described, and for the purposes herein set forth.

14. In a rotary engine, the combination, with a rotary piston-disk, of a piston provided with an expansible packing-ring formed with a projection which fits into a recess in the piston-disk, substantially as shown and described, and for the purposes herein set forth.

15. In a rotary engine, the combination, with a rotary piston-disk, of a piston connected therewith, said piston being provided with an expansible packing-ring constructed with a projection that is split by vertical and horizontal walls, substantially as shown and described, and for the purposes herein set forth.

16. In a rotary engine, the combination, with the main driving-shaft and the shaft carrying the rotating abutment, arranged at right angles with the revolving piston, of intermediate gearing for transmitting a positive motion to the rotary abutment-shaft from the main driving-shaft, substantially as shown and described, and for the purposes herein set forth.

17. In a rotary engine, the combination, with the revolving piston-disk, of a self-adjusting piston and devices for counteracting the effect of centrifugal force exerted on the piston, substantially as shown and described, and for the purposes herein set forth.

18. In a rotary engine, the combination, with a rotary piston-disk, of a piston, a weight, lever, and connecting-links for counterbalancing the piston, substantially as shown and described, and for the purposes herein set forth.

19. In a rotary engine, the combination, with a rotary piston-disk and a hollow piston-extension, of a weight located in the hollow piston-extension, and links and a lever for connecting the piston and weight, substantially as shown and described, and for the purposes herein set forth.

20. In a rotary engine, the combination, with a rotary piston-disk and a lever provided with an adjustable fulcrum located within a slot or opening in said piston-disk, of a piston connected by a rod to one end of said lever and a weight connected by a rod to the other end of said lever, substantially as shown and described, and for the purposes herein set forth.

21. In a rotary engine, the combination, with a rotating piston-disk and a piston provided with two expansible rings, of devices connected with the inner expansible ring for counterbalancing the action of centrifugal force on the piston, substantially as shown and described, and for the purposes herein set forth.

22. In a rotary engine, the combination, with the driving-shaft and rotary piston-disk having conical recesses in the ends of its hubs, of split conical rings and bolts for securing the piston-disk to the shaft, substantially as shown and described, and for the purposes herein set forth.

23. In a rotary engine, one section of the cylinder having the projections E^2 cast solid therewith, said projections being constructed to receive the bearings of the rotary disk-abutment shaft arranged to revolve the said abutment at right angles with the revolving piston, substantially as shown and described, and for the purposes herein set forth.

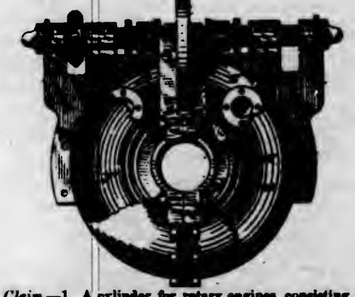
24. The combination, with the packing-rings of the cylinder-extensions, of devices for regulating the inward pressure on said packing-rings, substantially as shown and described, and for the purposes herein set forth.

25. The combination, with the packing-rings of the cylinder-extensions, of the springs L^2 and adjustable wedges L^3, substantially as shown and described, and for the purposes herein set forth.

26. The combination, with the packing-rings of the cylinder-extensions, of the block L', the springs L^2, wedges L^3, and set-screws L^4, substantially as shown and described, and for the purposes herein set forth.

27. The rotary abutment-disk, cut away on one side for the passage of the piston and cored out on its opposite side to balance the disk, substantially as shown and described, and for the purposes herein set forth.

259,966. ROTARY ENGINE. LEANDER J. WING, Lexington, Mass. Filed Feb. 20, 1882. (No model.)



Claim.—1. A cylinder for rotary engines, consisting of two sections having one or more abutment-recesses located at right angles to the bore, and flanges between the hub and abutment-recesses for the insertion of bolts for fastening the sections together, substantially as shown and described, and for the purposes herein set forth.

2. A cylinder for rotary engines, consisting of two sections, each provided with a semicircular bore for the piston and a connecting-chamber for the piston-disk, and furnished with abutment-flanges on one or both sides, and with flanges between the hub and abutment-flanges, through which are inserted bolts for securing the sections together, substantially as shown and described, and for the purposes herein set forth.

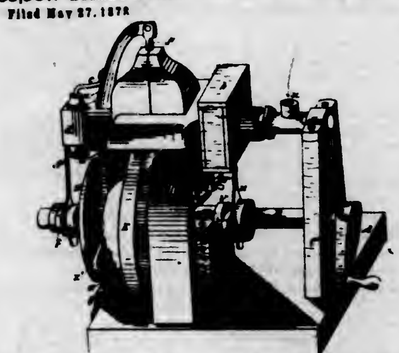
3. A cylinder for rotary engines, consisting of two sections, each provided with a semicircular bore for the piston, a packing-ring groove located on the inside of the bore, and with flanges between the hub and bore for the insertion of bolts for securing the sections together, substantially as shown and described, and for the purposes herein set forth.

4. A cylinder for rotary engines, consisting of sections provided with interlocking lugs, substantially as shown and described, and for the purposes herein set forth.

5. A cylinder for rotary engines, consisting of two sections provided with interlocking lugs or projections on the hub portions constructed to interlock and to allow the sections to be interchangeable, substantially as shown and described, and for the purposes herein set forth.

6. A cylinder for rotary engines, constructed in sections and provided with an annular bore for the piston and intervening space for the piston-disk, the end of the section being grooved around the bore, said groove extending to the opposite sides of the space for the piston-disk, and provided with a series of pockets for the reception of springs for keeping the packing-rings pressed outwardly against the revolving abutment, substantially as shown and described, and for the purposes herein set forth.

259,967. ROTARY ENGINE. LEANDER J. WING, Boston, Mass. Filed May 27, 1878.



Claim.—1. In a rotary steam-engine, the annular steam-chamber F, which is bisected by the beveled disk I, and in which disk the piston G, constructed as shown, is rigidly fixed, substantially as shown and described, and for the purposes herein set forth.

2. The sliding abutment N, provided with the sliding beveled sections N' and N' and springs O, constructed and arranged substantially as shown and described, and for the purposes herein set forth.

3. The sliding abutment N, provided with the sliding beveled sections N' and N', the springs O, and the beveled slot in said abutment, in combination with the rotating beveled disk I, substantially as shown and described, and for the purposes herein set forth.

4. The annular steam-chamber F, bisected by the beveled disk I, provided with the piston G, in combination with the sliding abutment N, substantially as shown and described, and for the purposes herein set forth.

5. The cams Z and Z' and the slotted slide *a*, interposed between the cams, in combination with the arm Q, the connecting-rod *p*, and the abutment N, substantially as shown and described, and for the purposes herein set forth.

6. The steam-cylinder *d*, the cam *f*, and the connecting-rods *g* and *e*, in combination with the arm Q and abutment, substantially as shown and described, and for the purposes herein set forth.

7. The cams Z and Z' and slotted slide *a*, interposed between the cams, in combination with the cylinder *d*, connecting-rods *g* and *e*, arm Q, connecting-rod *p*, and abutment N, substantially as shown and described, and for the purposes herein set forth.

8. The steam-chamber A, containing the reversing-valve *w*, which is provided with the diagonally-arranged concave recesses *q* and *q'* and with the diagonally-arranged ports *p* and *p'*, in combination with the sliding valve *s*, substantially as shown and described, and for the purposes herein set forth.

9. In a rotary engine, the diagonally-slotted and vertically-movable valve-plate *t*, interposed between the reversing-valve *w* and the sliding valve *s*, substantially as shown and described, and for the purposes herein set forth.

10. The steam-chamber A, containing the reversing-valve *w*, which is provided with the diagonally-arranged concave recesses *q* and *q'* and with the diagonally-arranged ports *p* and *p'*, in combination with the sliding valve *s* and the interposed valve-plate *t*, substantially as shown and described, and for the purposes herein set forth.

11. The reversing-valve *w*, provided with the concave recesses *q* and *q'* and the ports *p* and *p'*, in combination with the ports *i* and *i'* and the exhausts *k* and *k'*, diagonally opposite of the valve-seat, said concave recesses *q* and *q'* adapted, as shown, to form alternately a continuous passage from the annular steam-chamber F through the ports W or X and the passage *s'* or *s* to the exhaust *p*, substantially as shown and described, and for the purposes herein set forth.

12. The combination of the steam-chamber h, provided with the valves s and w, the interposed plate t, and the valve-seat provided with the ports i and i', arranged diagonally opposite, and the exhausts k and k', in combination with the passages n or n', the ports X X' and W W', and the annular steam-chamber F, as shown and described, and for the purposes herein set forth.

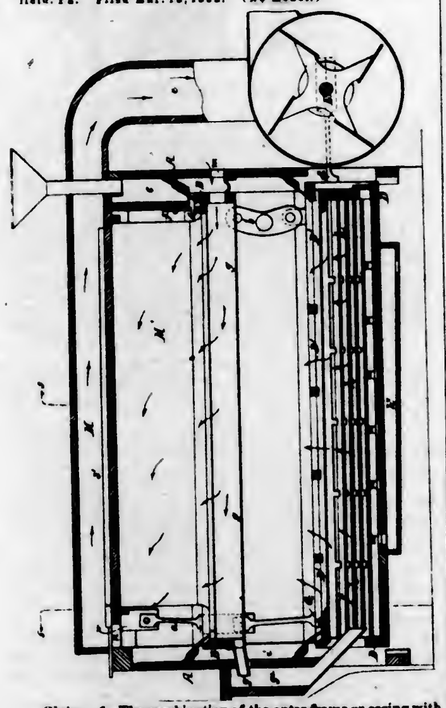
13. The reversing-valve w, provided with the concave recesses q and q' and the ports p and p', diagonally opposite, in combination with the valve-seat of steam-chamber h, as shown and described, and for the purposes herein set forth.

14. The steam-chamber h, provided with the valves w and s, cam v, and connecting-rod u, in combination with the abutment N, the beveled disk I, and the annular steam-chamber F, substantially as shown and described, and for the purposes herein set forth.

15. The steam-chamber h, provided with the valves w and s, cam v, and connecting-rod u, in combination with the abutment N, the beveled disk I, the annular steam-chamber F, the cylinder d, the connecting-rod g, and the cam f, substantially as shown and described, and for the purposes herein set forth.

16. The cams Z and Z' and the slotted slide a, interposed between the cams, the abutment N, the beveled disk I, and the annular steam-chamber F, in combination with the steam-chamber h and the cylinder d, substantially as shown and described, and for the purposes herein set forth.

259,968. MIDDLINGS-PURIFIER. AUGUSTUS WOLF, Allentown, assignor of one-half to David L. Hamaker, East Hempfield, Pa. Filed Mar. 13, 1882. (No model.)



Claim.—1. The combination of the outer frame or casing with a screen-frame hung to the casing, so as to be free to reciprocate therein, and a trough-casing, A, secured to said reciprocating frame and having grated sides, whereby air is admitted to the trough directly beneath the screen, as set forth.

2. The combination of the outer casing of the machine, the air-box M on the top of the same, the upper screen-frame, with air-passage therein, the lower screen-frame, and the tube M' above the air-passage of the upper screen, whereby communication is afforded between the air-box and the space between the upper and lower screens, as set forth.

3. The combination of the air-box M, the casing A, having a longitudinal opening, e, and the valve e', adjustable to any desired angle in respect to said opening e, whereby the area of the latter is regulated and the direction and force of the draft controlled, as set forth.

4. The combination of the upper screen having trough-casing and air-passage, the lower screen having trough-casing and air-inlet, the casing A, having an inlet, m, valved transverse outlet n, and valved longitudinal outlet s, the air-box M, and the tube M' above the upper screen and in line with the air-passage therein and with the outlet s, as set forth.

259,969. METHOD OF MAKING LATCH-NEEDLES. FRANK E. WOODWARD, Hill, N. H. Filed Feb. 21, 1882. (No model.)

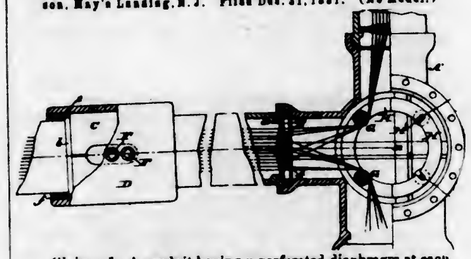
Claim.—The improvement in the method of making latch-needles for knitting-machines, which consists in upsetting at a short distance from the pointed end the wire from which the needle is being made, and thus forming a lug for the attachment of the latch, as described.

259,970. TRACE-BUCKLE. MELANCTHON E. ZELLER, Bluffton Ohio. Filed May 5, 1882. (No model.)



Claim.—In a harness or trace buckle, the combination, with a tug-bail, of a trace-frame having a lip or arm, a, provided with an inclined shoulder or elevation, A', the bail adapted to be passed over the projecting end of said plate, substantially as and for the purpose set forth.

259,971. UNDERGROUND CONDUIT FOR TELEGRAPH, TELEPHONE, AND OTHER WIRES. THOMAS J. AGNEW, Philadelphia, Pa., assignor of three-fourths to Harritt & Cattell and George W. Sheppard, Jr., same place, and Harrison A. Thompson, May's Landing, N. J. Filed Dec. 21, 1881. (No model.)



Claim.—1. A conduit having a perforated diaphragm at each end thereof, in combination with wires for conducting electricity, said wires being passed through the perforations in said diaphragms, and each of them having a stop, k, formed by solder on each wire outside of each of said diaphragms.

2. A pair of conduits or pipe-sections, in combination with a divided metallic sleeve inclosing their proximate ends, a coupling-cap which incloses said sleeve and extends beyond the ends of the latter, and packing-rings interposed between said cap and said pipe at the ends of said sleeve, substantially as set forth.

3. The conduits or pipes formed with an exterior bead near each end, in combination with a divided metallic sleeve inclosing their proximate ends and interposed between the exterior beads, b b, and a coupling-cap which incloses said sleeve and proximate conduit ends, substantially as set forth.

4. The combination of the bowed coupling-pieces B' with the line-wires, said coupling-pieces being detachable from said wires and bending more readily than the latter.

5. The coupling-cap D, constructed with openings provided with plugs F, in combination with sleeve C, having an opening below said plugs, and the conduit-sections, coupling-pieces, and line-wires, substantially as set forth.

6. The combination, with a conduit containing line-wires, of a chamber formed at the intersection of the pipes, constructed as described, and having posts provided with elastic cushions and located in said chamber, the line-wires passing partly around said posts in changing their direction, substantially as set forth.

7. The combination, with a conduit containing line-wires, of a chamber formed at the intersection of the pipes, having the slotted ring H and posts G, provided with elastic cushions and located in said chamber, the line-wires passing partly around said posts in changing their direction, substantially as set forth.

8. The line-wires, in combination with the posts G, the slotted rings H, bolts H', and elastic pieces m, constructed and operating substantially as set forth.

259,972. SEPARABLE BUTTON. ASAHEL H. ALDERMAN, Marietta, Ohio. Filed Jan. 31, 1882. (Model.)



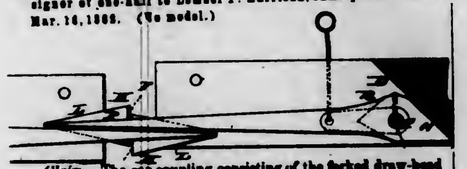
Claim.—1. In a separable button, the back or shoe E, having barbed shanks, needle-pointed so as to make their own perforations, in combination with the button-front having curved slots adapted to receive and removably hold the shanks, all substantially as set forth.

2. The spring-catch D d, combined with the back E, having barbed shanks e e', and front A a, having locking-recess b', as set forth.

3. The back E, having shanks e, beveled, as shown, to form shoulders e', points e', and flattened surfaces e, combined with the front A a, having cap B, with curved slots b b', and with a spring-catch, D, adapted to lock or liberate the said shanks at will, as specified.

4. The pivoted disk C, having apertures c c', the cap B, having curved slots b b', and spring-catch D, combined with the back E, having shanks e e' e', as set forth.

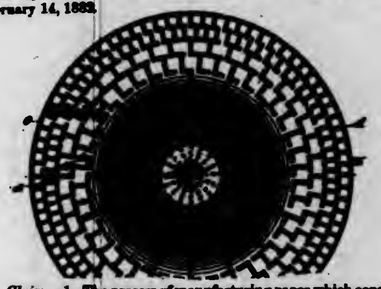
259,973. CAR-COUPLING. LEE ANDERSON, Paris, Tex., assignor of one-half to Lemuel P. Harrison, same place. Filed Mar. 16, 1882. (No model.)



Claim.—The car-coupling consisting of the forked draw-head having the lateral branches D and the rear under-beveled bearing, D, the pivotal shaft F, and the coupling-bar having the inclined rear end, H, the longitudinal slot S between the heel and point, and the central hook-lugs, K, of less width than the slot, and having the lateral bearings P, substantially as specified.

259,974. PROCESS OF AND MACHINE FOR REDUCING FIBERS IN THE MANUFACTURE OF PAPER, &c. DANIEL B. BURNS, Dayton, Ohio, assignor of one-half to Francis J. McCormick, same place. Filed May 20, 1882. (Model.)

Brief.—Improvement on Letters Patent No. 253,814, dated February 14, 1882.



Claim.—1. The process of manufacturing paper which consists in feeding the material through an eccentrically-arranged feed-opening between two disks having cutting-ribs, by which it is carried outwardly and is torn and separated into fibers, and is finally reduced between a peripheral rib, substantially as and for the purpose set forth.

2. A mill for reducing rags and fibrous substances, consisting essentially of two disks having concave faces with a series of radial annular and irregular ribs, with flat faces to form the drum of the disks, substantially as specified.

3. A mill for reducing fibrous substances, consisting of two disks having a series of flat-faced ribs which form cutting-edges, and a concave central part, gradually diminishing in depth toward the periphery, substantially as specified.

4. A mill for reducing substances, consisting of two disks having a series of ribs, as shown, to form cutting-edges, and a central concave part, in combination with a feed-opening arranged eccentrically to the central axis, substantially as and for the purpose described.

5. A reducing-mill for fibrous substances, consisting of two disks having a central concave part with radial ribs and their faces gradually diminishing in depth toward the periphery and provided with a series of cutting-edges and furrows near the periphery, substantially as shown and specified.

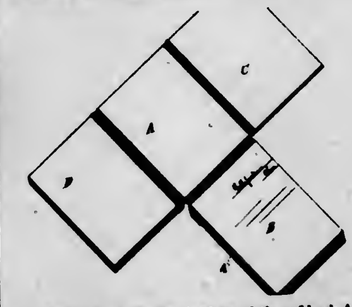
6. A mill for reducing fibrous substances, consisting of the disks A A', having a concave face gradually diminishing toward the periphery and provided with a series of radial annular and segmental flat-faced ribs, all arranged, as shown, to form cutting-edges, substantially as and for the purpose set forth.

7. A reducing-mill having disks A A', provided with a series of radial ribs, b, intersecting or radial ribs a, and irregular passages d, formed between them, all substantially as shown and specified.

8. A reducing-mill having disks A A', provided with a series of radial ribs, b, annular ribs a, and irregular passages d, one of the disks made stationary and the other revolving, and the feed-orifice arranged eccentrically, substantially as set forth.

9. The process of making paper from rags or equivalent material by reducing it in a mill in a dry state, as herein described, to a fibrous condition and converting the lint into pulp and finishing it by the usual and wet card-board mechanism, substantially as herein set forth.

259,975. COPYING-BOOK. CHARLES D. CAMPBELL, Bellefontaine, Ohio. Filed Apr. 5, 1882. (Model.)



Claim.—1. A copying-book consisting of book A and writing-pad B, copying-pad C, and copying-leaves D, secured to the edges of the back, as set forth.

2. A book having letter bill, or other paper for writing on secured to one of the backs, while to one edge of the other back are fastened a number of sheets of tissue-paper arranged to fold singly or in a body over on the back and on another edge of the back a sheet of tin, wood, or gilded board faced with an impression-pad arranged to fold over onto the back in such a manner that the copied tissue-sheets may be folded under the board, while a blank sheet for copying on is folded over on the top of the impression-pad preparatory to being wetted and copied on.

259,976. APPARATUS FOR HEATING RAILWAY-TRAINS. BLANCHARD CHAMBERLAIN, Bellefontaine, Ohio. Filed Apr. 7, 1882. (No model.)

Claim.—1. The combination of the fire-chamber 1, casings 2 4, and a coil, 11, passing through the annular fire-chamber between the fire-chamber 1 and casing 2, for the purpose of heating air, substantially as herein described.

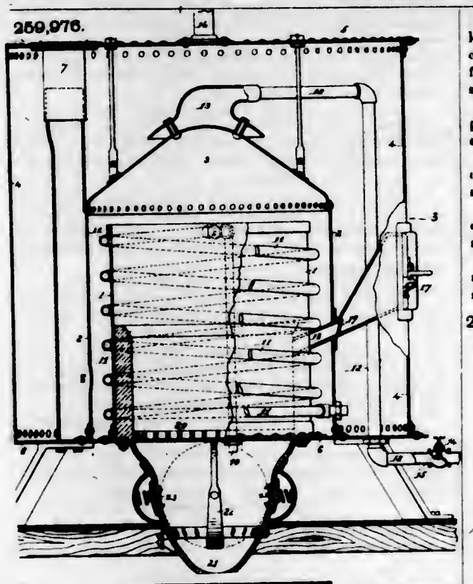
2. The combination of the fire-chamber 1, inner and outer casings, 2 and 4, forming a hot-air chamber between them, and the hood 13, forming the entrance to the discharge-pipe 12 and placed over the top 3 of the casing 2, so as to compel the discharged air to pass in contact with the said top 3, substantially as described.

3. In a railway-car heater, the safety-shutter 22 beneath the grate, adapted to close automatically in event of the upsetting of the car.

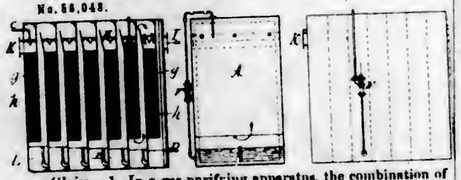
4. The combination, with a stove or furnace, of the weighted pivoted door 22 and automatic catches 23 to lock the same in closed position in event of upsetting, substantially as described.

5. The combination of the air-tight heater 1 2 3 4, outlet 12, check-valve 14, and safety-valve 16, substantially as and for the purposes set forth.

259,976.



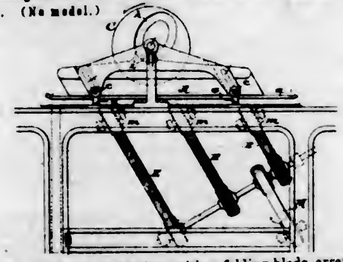
259,977. GAS-PURIFYING APPARATUS. SAMUEL CHANDLER and JOSIAH CHANDLER, London, England. Filed Nov. 2, 1881. (No model.) Patented in England Feb. 18, 1880, No. 728; in France Aug. 29, 1881, No. 144,616, and in Belgium Oct. 24, 1881, No. 56,048.



Claim.—1. In a gas-purifying apparatus, the combination of the series of partitions *g* and *h*, constructed and arranged, as described, with the series of vertical stationary scrubbing-plates A, substantially as and for the purpose set forth.

2. In a gas-purifying apparatus, the combination of the partitions *g* and *h*, clusters of scrubbing-plates A, distributers E, tank L, and overflow-pipes B, substantially as shown and described.

259,978. FOLDING-MACHINE. LUTHER C. CROWELL, Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Filed Nov. 28, 1881. (No model.)



Claim.—1. The combination, with a folding-blade arranged to move longitudinally with the sheet, of means for continuing the forward or longitudinal movement of the sheet during the folding, all substantially as described.

2. A folding-blade, as A, having an oblique reciprocation in the direction of its length, substantially as described.

3. The folding-rolls, as m n, set obliquely with respect to the folding-blade, substantially as described.

4. The combination of the series of folding-rolls, as m n, with a folding-blade arranged to enter the bite of said rolls at an angle to their axes, substantially as described.

5. The combination, with folding-rolls arranged to fold a sheet longitudinally—i. e., in the direction of its travel through the machine—and to carry it forward while being folded, of means for forcing the fold-line of said sheet into the bite of the rolls, all substantially as described.

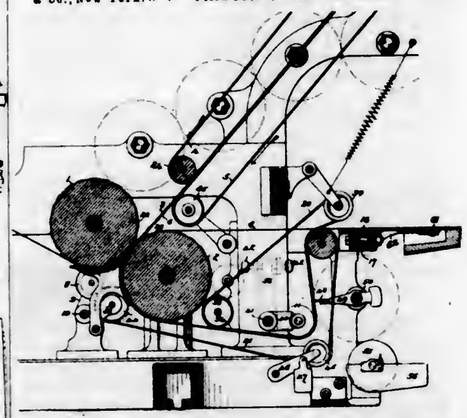
6. The series of foldjng-rolls, as m n, set obliquely to the path of the entering sheet, in combination with the oblique tapes, substantially as described.

7. The series of folding-rolls, as m n, set obliquely to the path of the entering sheet, in combination with the oblique tapes E F, and the single driving-shaft o, substantially as described.

8. The series of folding-rolls, as m n, set obliquely to the path of the entering sheet, in combination with the oblique tapes, as E F, and the supplemental tapes, as M, substantially as described.

9. The combination of the obliquely-arranged folding-rolls, as m n, and the vertically and longitudinally moving folding-blade, substantially as described

259,979. DELIVERY APPARATUS FOR WEB-PRINTING MACHINES. LUTHER C. CROWELL, Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Filed Feb. 1, 1882. (No model.)



Claim.—1. The combination, with a web-turner adapted to transfer a web laterally and place it either over or under another web, of means for varying the distance traveled by the web, so that said webs shall register together properly, all substantially as described.

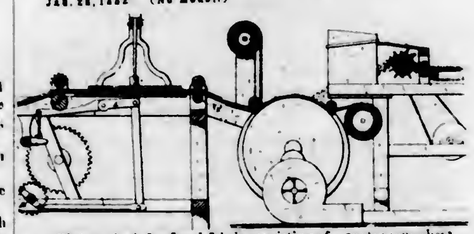
2. The combination, with a web-turner, as 7, of the adjustable roll, as 37, for varying the travel of one of the webs, substantially as described.

3. The combination, with the web-turner, as 7, of the leading-roll, as 37, rock-shaft, as 41, arm, as 58, and adjusting-screws, as 42, substantially as described.

4. The combination, with the web-turner, as 7, of the adjustable roll, as 37, and the series of tapes, as 20 21, provided with automatic devices, as 39 45, for keeping them taut, substantially as described.

5. The combination, with a web-turner adapted to transfer a web laterally, of web-severing mechanism and mechanism for varying the distance traveled by the web to bring it into proper register with said severing mechanism, all substantially as described.

259,980. FUR-FACED FABRIC. WILLIAM E. DOUBLEDAY, New York, N. Y., assignor to Ellen M. Doubleday, same place. Filed Jan. 28, 1882. (No model.)

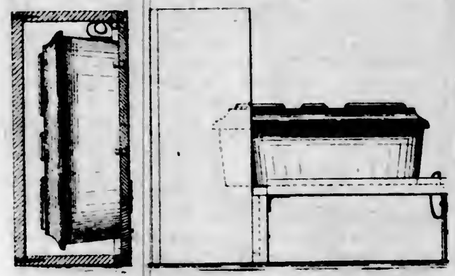


Claim.—1. A fur-faced fabric consisting of a continuous sheet of woven or felted fabric, consisting in whole or in part of felta-

ble fibers, and provided upon both sides with a loose flowing nap of fur, substantially as set forth.

2. A fur-faced fabric having upon opposite sides a loose flowing nap of different-colored fur, substantially as set forth.

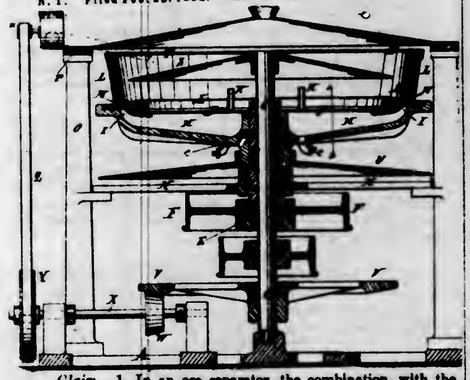
259,981. SHIPPING-BOX FOR BURIAL-CASES. GARDNER W. DOW, Marseilles, Ill., assignor of one-half to James Montgomery, same place. Filed Aug. 28, 1880. (No model.)



Claim.—1. A shipping-box for burial-cases, provided with the bottom A, consisting of the hinged sections *a* and *a'*, in combination with means for detachably affixing the burial-case to the section *a*, substantially as and for the purposes described.

2. A shipping-box provided with a bottom in two sections, one hinged upon the other, in combination with a burial-case arranged therein so that about one-fourth of its length shall be opposite the fixed section and detachably fastened to the swinging section, for the purpose of using the weight of the burial-case to facilitate the closing of the box and to keep it closed when the box is set on end, substantially as described

259,982. ORE-SEPARATOR. HORACE E. HUNWOOD, New York, N. Y. Filed Feb. 25, 1882. (No model.)



Claim.—1. In an ore-separator, the combination, with the shaft C, rotating sleeve E, and the amalgamating-pan L, having slots M in its bottom, of the hollow arms H, having slots I, substantially as herein shown and described, whereby quicksilver is projected from the interior of the said arms over the inner surface of the rim of the said pan, as set forth.

2. In an ore-separator, the combination, with the shaft C, carrying the amalgamating-pan, and the fan-blower *b*, of the friction-wheels V W, the horizontal shaft X, and the pulleys and belt Y a Z, substantially as herein shown and described, whereby the fan-blower will be driven from the shaft carrying the amalgamating-pan, as set forth.

259,983. ORE-CONCENTRATOR. BENJAMIN HERSHEY, Erie, Pa., assignor of three-fourths to Charles Hitchcock, Joseph A. Ege, and Benjamin Thornton, all of Bradford, Pa. Filed Feb. 25, 1882. (No model.)

Claim.—1. An apparatus for concentrating ores, combining in its structure a series of vibrating or oscillating troughs or tables arranged one above the other, and each provided at or near one end with a screen or sieve and at the other end with a separating-chamber having its discharge mouth or throat controlled by an automatically-operated gate or valve.

2. In an ore-concentrator, a vibrating or oscillating trough or

259,983.

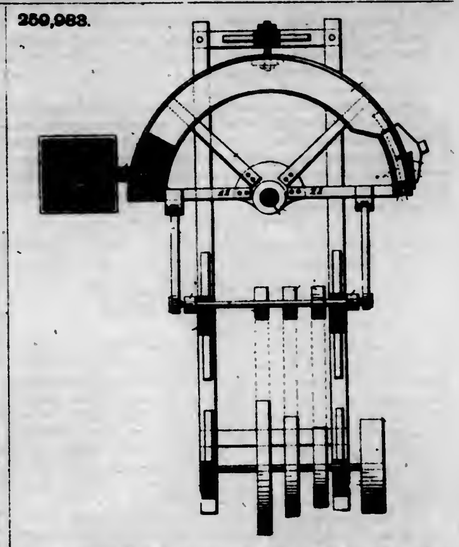


table having at or near its receiving end a screen or sieve and at its discharging end a separating-chamber, combined with a valve or gate adapted to open and close the delivery mouth or throat of the separating-chamber.

3. In an ore-concentrator, the combination of a trough or table having at or near its receiving end a screen or sieve and at its discharge end a separating-chamber, an automatically-operated valve or gate controlling the delivery mouth or throat of the separating-chamber, and mechanism for vibrating or oscillating the trough or table.

4. In an ore-concentrator, the combination of a trough or table having at one end a separating-chamber, a valve or gate for controlling the delivery mouth or throat of the separating-chamber, and devices operated by the accumulation of material in the separating-chamber to automatically open the valve or gate and permit the escape of the separated particles of material.

5. In an ore-concentrator, the combination of a series of troughs or tables having screens or sieves at or near one end and separating-chambers at the other end, and valves or gates automatically operated by the accumulation of material in the separating-chambers to open the delivery mouths or throats of the latter and permit the escape of the separated particles.

6. In an ore-concentrator, the combination of a series of troughs or tables having screens or sieves at or near one end and separating-chambers at the other end, valves or gates automatically operated by the accumulation of material in the separating-chambers to open the delivery mouths or throats of the latter, and mechanism for vibrating or oscillating the troughs or tables.

7. In an ore-concentrator, the combination of a series of inclined troughs or tables arranged one above the other, and provided with screens and separating-chambers, automatically-operated valves or gates controlling the delivery mouths or throats of the separating-chambers, and mechanism, substantially such as described, for imparting differential vibratory movements to the respective troughs or tables.

8. The combination, with the trough or table having a separating-chamber at one end, of a valve or gate in the delivery mouth or throat of the same, a float within the separating-chamber, and connecting devices between the float and the valve or gate.

9. The combination, with the series of troughs or tables having screens or sieves at one end and separating-chambers at the other end, valves or gates controlling the delivery mouths or throats of the separating-chambers, floats arranged in the latter, and connecting devices between the floats and the valves or gates.

10. In an ore-concentrator, a trough or table having one end contracted and depressed, combined with a float, valve or gate, and connecting devices between the float and valve or gate for controlling the delivery mouth or throat of the separating-chamber.

11. The combination of the driving-shaft, the crank-shaft, the oscillating trough, the vertical shaft, the hubs thereon, the arms connecting the trough with the hubs, and the pitmen connecting the arms with the crank-shaft.

259,984. PROCESS OF AND APPARATUS FOR MOLDING PLASTIC MATERIAL. JOHN W. HYATT, Newark, N. J., and CHARLES S. LOCKWOOD, Albany, N. Y., assignors to the Boneset Company, (Limited,) Albany, N. Y. Filed May 11, 1882. (No model.)

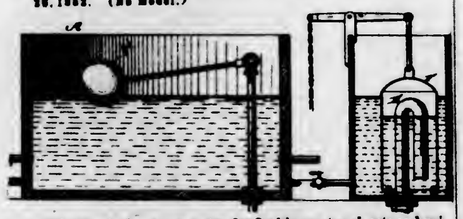
Brief.—The object of the invention is to provide a means of applying an exterior section or coating of expensive material to a core or interior part of inexpensive material, whereby an article is produced having substantially the same characteristics as one made entirely of the more desirable material, particularly in the production of billiard-balls, in the manufacture of which it will be found to be of especial value.



Claim.—1. The process herein described of forming articles of different materials or compounds, which consists in first introducing the core in a core-set and applying a shell or wall to confine the material out of which the outer section is to be made; second, introducing a proper quantity of material to form half of the exterior section and compressing it upon the core; third, removing the core-set and introducing a suitable quantity of material to cover the side of the core which has not been coated; fourth, effecting a compression of the material last introduced by means of a second plunger; fifth, finishing the article.

2. The apparatus for molding hereinbefore described, consisting of the core-set, shell or wall, and plungers, the whole operating substantially as described.

259,985. APPARATUS FOR FLUSHING WATER-CLOSETS AND URINALS. JAMES P. HYDE, New York, N. Y. Filed May 26, 1882. (No model.)



Claim.—1. In an apparatus for flushing water-closets and urinals, the combination, with a siphon located within the flushing-tank, of a bell inclosing the two legs of the siphon and provided with an open bottom and a closed top, and devices for raising the bell, whereby as the bell is lifted the atmospheric pressure upon the water in the tank around the bell will cause the water within the latter to rise above the bend in the siphon, substantially as described.

2. The combination, with the supply-cistern having a float-valve, of the flushing-tank connected with the cistern, the siphon located within the flushing-tank, a bell having an open bottom and inclosing the two legs of the siphon, and devices for raising the bell, whereby the water-level in the flushing-tank shall normally be above the water-level in the bell, in which latter the water-level is normally below the bend in the siphon, so that when the bell is raised the water within the same will rise over the siphon-bend, substantially as described.

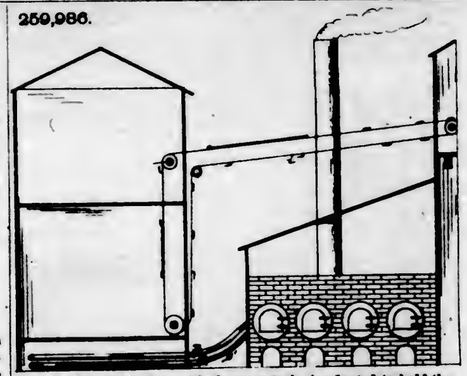
259,986. PROCESS OF AND APPARATUS FOR DRYING LUMBER. JOHN LYNCH, Portland, Me. Filed Nov. 17, 1881. (No model.)

Claim.—1. The herein-described process of drying lumber, namely: first, stacking it endwise in a suitable chamber or holder, and then treating it with live steam, or with live steam and finally with hot air, applied or admitted at the lower end of the lumber, all substantially in the manner set forth.

2. The herein-described process of treating lumber for purposes of drying, &c., namely: first, stacking or packing it endwise in a suitable receptacle, and then admitting therein to the lower end of the lumber live steam which has been duly saturated with some sap or pitch solvent, and afterward drying by hot air, all substantially as set forth.

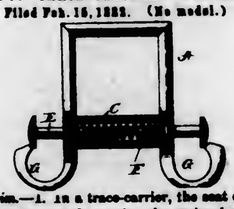
3. In combination with a steaming and drying structure, A, operated as set forth, a separating and holding piece, F, substantially as set forth.

259,986.



4. In combination with the receptacle A, adapted to hold the lumber when stacked, as described, the endless belt or carrier I, having catches *i*, whereby in a forward movement the lumber can be carried into the drier and in the reverse movement taken out, all substantially as and for the purposes set forth.

259,987. TRACK-CARRIER. WILLIAM H. HAIS, Bonesboil, Wis. Filed Feb. 15, 1882. (No model.)

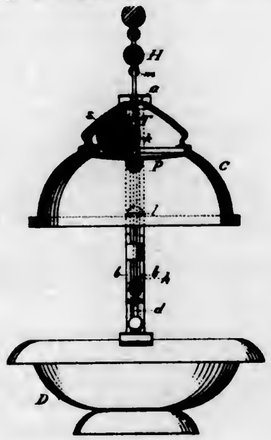


Claim.—1. As a trace-carrier, the seat or socket C, extending across the frame and carrying the spring-bolt E, constructed substantially as described, and adapted to be actuated alternately or simultaneously in relation with the side hooks, G, as and for the purposes set forth.

2. In combination with a trace-carrier frame having a socket, C, and side hooks, G, the spring-bolt E, made in two parts, so that said parts can slide on each other, substantially as set forth.

3. A trace-carrier consisting of the frame A, provided with two side bars, which are extended to form the hooks G, and having bolt E, surrounded by spring F, the ends of the bolt adapted to engage with the said hooks, substantially in the manner and for the purpose set forth.

259,988. BUTTER-DISH. WATSON J. HILLES and THOMAS L. I. BELLOSE, Birmingham, and HENRY HENRY, Huntington, assignors to the Derby Silver Company, Birmingham, Conn. Filed Apr. 17, 1882. (No model.)

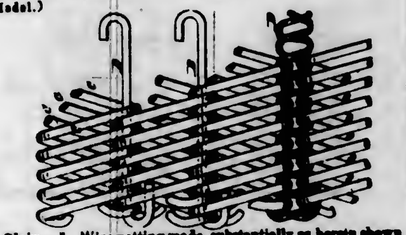


Claim.—1. In a butter or other dish, the combination, with a cover having a central aperture, *a*, of the detachable interior plate, P, carrying the operating-spring *c* and strap T, substantially as specified.

2. A dish or receptacle having the raised handle or frame H and its slide-guides, the automatic angle-dogs, and the gravitating handle or bow A, connected to arms of said dogs, substantially as specified.

3. As an improved article of manufacture, a dish or receiver having a raised handle or arm and automatic holding-dogs, a cover suspended from said handle or arm by a tape or connection passing through its central aperture, and connected to an interior spring-winding device, substantially as specified.

259,989. WIRE-NETTING. GUSTAV PICKHARDT, Hagen, assignor to Carl Kulp, Darmstadt, Germany. Filed Apr. 21, 1882. (Model.)

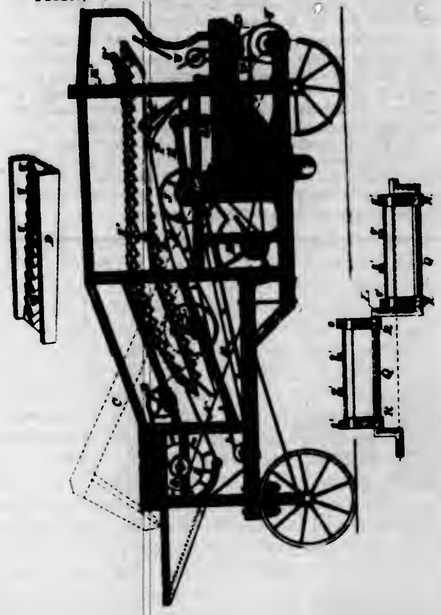


Claim.—1. Wire-netting made, substantially as herein shown and described, of a series of spirals screwed into each other and having connecting-wires passed through the loops formed by the overlapping parts of the spirals, as set forth.

2. Wire-netting made of spirals screwed into each other and united by wires passed through the loops formed by the overlapping parts of the spirals, the ends of the wires of the spirals and the ends of the connecting-wires being bent over against the ends of the link-sections formed of the spiral wires, substantially as herein shown and described, and for the purpose set forth.

3. The combination, with a wire-netting formed of sections made of spirals screwed into each other, of one or more spirals screwed into the meeting ends of two sections for the purpose of uniting them, substantially as herein shown and described, and for the purpose set forth.

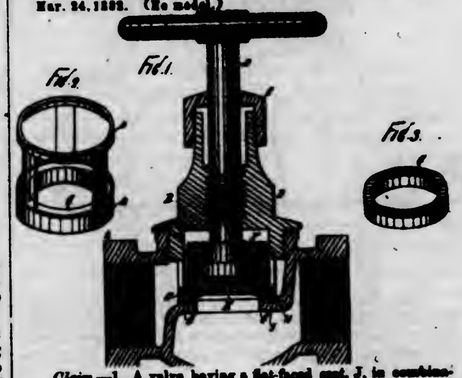
259,990. THRASHING-MACHINE. MICHAEL SULLIVAN, Milwaukee, Wis. Filed Oct. 9, 1881. (No model.)



Claim.—1. In thrashing-machines, the combination of the longitudinally-moving shoe and the transverse trough mounted thereon, the bottom of said trough being provided with angular or V-shaped steps or grooves, substantially as set forth.

2. The combination of saddles K K, double-crank shaft I, and springs P P, the lower ends of said saddles being respectively secured to the respective cranks on opposite sides of said shaft, and their upper ends pivoted at a distance from their rear ends to the upper ends of said springs, whereby the upper ends of the saddles are caused to rise and fall in a reverse order to that of their front ends, substantially as and for the purpose specified.

259,991. VALVE. EDWIN R. TORLINSON, Stratford, assignor to himself and Edward G. Burnham, Bridgeport, Conn. Filed Mar. 24, 1882. (No model.)



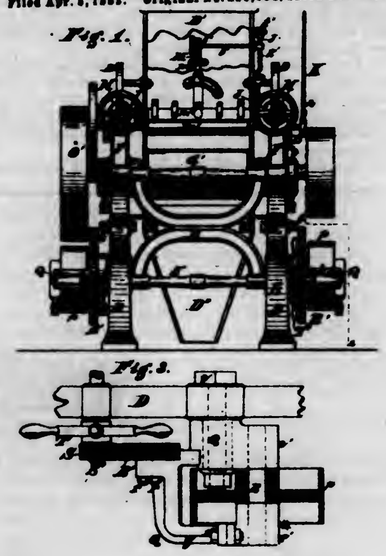
Claim.—1. A valve having a flat-faced seat, J, in combination with a flat disk, E, and a loose ring or removable seat, G, as and for the purpose set forth.

2. In globe or other valves having a flat seat, J, a flat-faced disk, E, in combination with a loose ring or removable soft-metal seat, G, and a guide, H, as and for the purpose described.

3. A valve having a flat seat, J, and provided with a cap, B, in combination with a stem, D, carrying a flat-faced disk, E, a loose ring or removable soft-metal seat, G, and a guide, H, as set forth.

REISSUES

10,189. ROLLER-MILL. ADOLPHE H. GOBLL, Dayton, Ohio. Filed Apr. 3, 1882. Original No. 250,954, dated Dec. 13, 1881.



10,139.

Fig. 2.

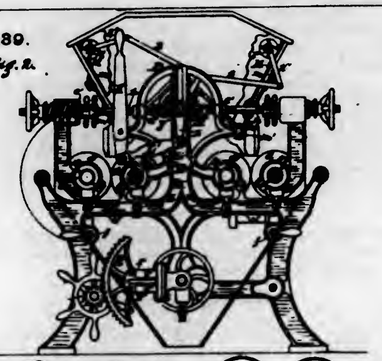


Fig. 1.

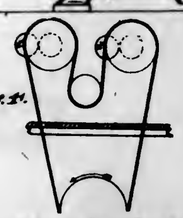
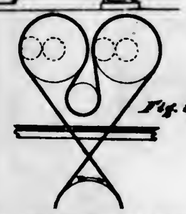


Fig. 3.



Claim.—1. In a roller-mill, the combination of the hopper-gate mechanism on both sides of the machine with a through-shaft, lever mechanism connecting the parts to operate the gates simultaneously, and a single hand-lever, substantially as and for the purpose described.

2. In a roller-mill, the combination, with the adjustable rolls and journals, of transverse shafts A, a through-shaft, J, link mechanism connecting the said shafts, and a single hand-lever, K, connected with the through-shaft, for simultaneously adjusting both sets of rolls by a single lever movement, substantially as described.

3. In a roller-mill, the combination of two sets of crushing or grinding rolls, belt and pulley driving devices, the tightener-pulleys, adjustable frames therefor, and mechanism for simultaneously raising and lowering the frames and tightener-pulleys to stop and start the machine, substantially as described.

4. In a roller-mill, the combination, with the adjustable crushing-rolls and the gates or slides which control the passage of grain from the hopper, of a single through-shaft, J, a single hand-lever, K, and mechanism connecting the crushing-rolls and the gates or slides with the through-shaft and hand-lever, substantially as described, whereby a single movement of the lever simultaneously adjusts the rolls and the gates or slides, as set forth.

5. In a roller-mill, the shaft J, provided with the rigidly-attached links I, having segmental slots *i*, combined with the shafts h, engaging the slots in said links, the pivoted arms F, carrying crushing or grinding rolls, the crank L, attached to the shaft J, the link L', and the swinging lever K, all substantially as and for the purpose described.

6. The combination, with the swinging lever K and mechanism, substantially as described, for adjusting the outer crushing-rolls, *d d'*, of the crank K', the links *h*, the crank-rods *h'*, the shafts *l*, pinions *r'*, the racks, and bars *m*, provided with the gates or slides *m'*, the construction and arrangement being such that a movement of the swinging lever simultaneously adjusts the crushing or grinding rolls and raises or lowers the gates or slides, for the purposes set forth.

10,140. FEED AND GIG WORKS FOR SAW-MILLS. JAMES H. WATSON, Tawas City, Mich. Filed July 12, 1880. Original No. 224,749, dated Feb. 17, 1880.

Brief.—The friction-gears are operated simultaneously by the mechanism described.

Fig. 1

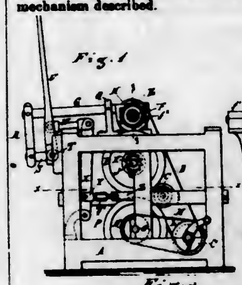


Fig. 2

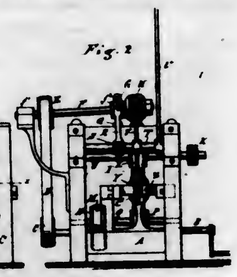


Fig. 3.

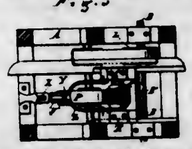


Fig. 4



Claim.—1. In a feed and gig mechanism for saw-mills, the combination, with the shafts J O and the friction-pulleys I P thereon, of the vertically-moving friction-wheel H, the horizontally-moving friction-wheel O', the rock-shaft T, having arms S V, and connections, substantially as described, between the arms S V and the friction-wheels H O', as and for the purpose specified.

2. In a feed and gig mechanism for saw-mills, the combination, with the shafts J O and the friction-pulleys I P thereon, of the friction-wheel C, journaled in sliding bearings A', the friction-wheel H, journaled in a bearing, *f*', the lever G, carrying the bearing *f*', the rock-shaft T, having arms S V and connections, substantially as described, between the arms S V and the lever G, and sliding bearings A', as and for the purpose specified.

3. In a feed and gig mechanism for saw-mills, the combination, with the shafts J and O and the friction-pulleys I P thereon, of the horizontally-sliding bearings A', the vertically-moving bearing *f*', the friction-wheels H O', and mechanism, substantially as described, for moving the bearings A' *f*' alternately to and from the friction-pulleys I P, as and for the purpose specified.

4. The combination of the two levers U X, the two arms S V, the three connecting-rods R W Y, and the U-bar Z with the sliding bearings of the lower friction-wheel, C', and with the lever G, that carries the feed friction-shaft F and the upper friction-wheel, H, substantially as herein shown and described.

THE
ELIOTYPE PRINTING CO.
BOSTON

DECISIONS
OF THE
COMMISSIONER OF PATENTS
AND OF
UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

BRIDGE, BEACH & CO. *v.* THE EXCELSIOR MANUFACTURING COMPANY *et al.*

Decided May 8, 1882.

LETTERS PATENT NO. 180,001 CONSTRUED—STATE OF THE ART—CLAIM RESTRICTED.

Letters Patent No. 180,001, for an improvement in cooking-stoves, claiming, "in combination with a stove-oven, a hinged shelf fitted to fall outward and down automatically when the oven-door is opened and to be raised up by closing the oven-door, adapted to operate upon it for that purpose," construed, in light of the state of the art, to cover only the specific devices for raising and lowering the hinged shelf, and that as the defendant used a different device for that purpose there was no infringement.

APPEAL from the Circuit Court of the United States for the Eastern District of Missouri.

Mr. R. H. Parkinson for the appellants.

Mr. S. S. Boyd for the appellees.

Mr. Justice BRADLEY delivered the opinion of the Court.

This case arises upon a bill in equity founded upon certain letters patent dated July 18, 1876, and numbered 180,001, granted to one Eseck Bussey for an improvement in cooking-stoves. The appellants, as assignees of the patentee, sue the defendants for alleged infringement, and pray an injunction, an account of profits, and an assessment of damages. The defendants filed an answer, denying infringement and alleging the patent to be invalid by reason of certain prior patents and public use of the alleged invention prior to the invention of Bussey. The patent relates to an oven-shelf placed on a level with the bottom of the oven when the door is open, and outside of the oven, to serve as a shelf for pans and other vessels to rest on when drawn out of or shoved into the oven. The claim of the patent is not for the shelf, as that is admitted to be old, but for an automatic device for raising the shelf upright and inclosing it within the door when the latter is closed and letting it down to a horizontal position when the door is opened. The device is a cam attached to the door, which passes under the edge of the shelf and gradually raises it to a nearly perpendicular position as the door shuts. The shelf falls back of its own weight when the door opens, resting on the cam.

The claim of the patent is as follows:

What I claim, and desire to secure by Letters Patent, is—

In combination with a stove-oven, a hinged shelf fitted to fall outward and down automatically when the oven-door is opened, and to be raised up by closing the oven-door, adapted to operate upon it for that purpose, substantially in the manner and for the purposes herein set forth.

The defendants made and sold stoves containing oven-shelves constructed and operated as described in letters patent granted to E. C. Little and D. H. Nation, dated July 9, 1878, and numbered 205,754. This shelf also has an automatic movement, being raised when the door shuts and lowered when it opens; but the device by which this is accomplished is different from that of Bussey. A cam or arm is used on the door, it is true, but it does not operate under the shelf, but upon a projection attached to the upper side of it, so arranged in relation to the arm on the door as to raise and lower the shelf. Both devices operate upon the same principle precisely as that which has been used for a long time in raising and lowering a carriage-step by shutting and opening the door and in other contrivances by which the same general effect is produced. Cam movements and others of like character prodncing simultaneous operations according to the needs of the case—such as opening valves in a steam-engine as the piston ascends and descends, and a thousand other things—are in such common use that it requires but very little invention to adapt them to a particular case, like the one under consideration.

We think with the court below that the patentee, if entitled to anything, is only entitled to the precise device which he has described and claimed in his patent; and as the defendants use a different device they are not guilty of infringement.

The decree of the circuit court is affirmed.

U. S. Circuit Court—Eastern District of Michigan.

SEARLS *v.* WORDEN *et al.*

Decided February 6, 1882.

1. REVIEW BY CIRCUIT COURTS OF FORMER DECISIONS.

In patent causes the circuit court will not review the findings of another court of co-ordinate jurisdiction except in a case of clear mistake of law or fact, of newly-discovered testimony, or upon some question not considered by such court.

2. INFRINGEMENT—WHIP-SOCKETS.

Letters Patent No. 5,400, reissued to Erastus W. Scott, for an improvement in whip-sockets, are valid, and are infringed by the device described in Letters Patent No. 8,381, reissued to Henry M. Curtis and Alva Worden, for an improvement in whip-holders.

3. REISSUES—IDENTITY OF INVENTION IN ORIGINAL AND REISSUE PATENTS—HOW DETERMINED.

A reissued patent is valid if for the same invention as the original. The identity of the inventions is determined by the drawings and specifications construed together and not separately.

Mr. J. P. Fitch for the complainant.

Messrs. Sprague & Hunt for the defendants.

STATEMENT OF THE CASE.

This was a bill in equity to establish the validity of

Reissued Letters Patent No. 5,400, dated May 6, 1873, to Erastus W. Scott, for an improvement in whip-sockets, and to recover damages for the infringement of the same by the defendants. Complainant was the assignee of the inventors. The alleged improvement consisted in the combination, with the whip-socket, of a lever swinging upon a fulcrum midway between the two ends of the lever, the office of which was to hold the whip upright and prevent its wabbling in the socket.

The three claims alleged to have been infringed were as follows:

1. The combination of the stationary part of a whip-socket and a lever, the lever being hinged or pivoted so that the lever bears against the whip at or near the ends of the lever, to hold the whip in position, for the purpose set forth.
2. The lever B, curved or inclined inward from its point of pivot, and used in connection with the stationary part A, substantially as and for the purpose specified.
3. The lever B, pivoted at a point inside of its center of gravity, so that when left free the upper part of the lever will fall outward, substantially as and for the purpose set forth.

The defendants insisted in their answer, first, that the reissued patent was not for the same invention as the original; second, that Scott was not the first and original inventor of the improved claim, but that he was anticipated by a large number of patents, which were offered in evidence to substantiate this defense; third, that the whip-sockets made and sold by the defendants do not infringe complainant's patent.

It appeared upon the hearing that in a suit brought by the complainant against certain persons in the city of New York who were selling the whip-sockets manufactured by the defendants these several defenses were set up and overruled; that complainant recovered a decree, and that the case was then in the hands of a master upon a reference to assess the complainant's damages.

BROWN, *J.:*

It would be quite sufficient authority for a decree in favor of the complainant in this cause to simply refer to the opinion of Judge Wheeler, sitting in the southern district of New York, declaring the validity of complainant's patent and the reissue, and pronouncing the device of the defendants in that case, who were vendees of the defendants in this case, an infringement. Except in some minor particulars the two cases are identical. While it is conceded that the decree in that case would not operate as an estoppel here, the opinion of the court is entitled to something more than respectful consideration. Upon general questions of law we listen to the opinions of our brother judges with deference and with a desire to conform to them if we can conscientiously do so; but we do not treat them as conclusive. In patent causes, however, where the same issue has been passed upon by the circuit court sitting in another district, it is only in case of a clear mistake of law or fact, of newly-discovered testimony, or upon some question not considered by such court that we feel at liberty to review its findings.

A division of opinion upon the same issue might give rise to litigation in a dozen different districts, to conflicting decrees, and to interminable contests between rival patentees. In case the defeated party is dissatisfied with the first decision it is his right to resort to the appellate court, where a final decision can be obtained, which all inferior courts are bound to respect. This subject was so elaborately discussed by the late Judge Emmons and the authorities so fully collated in the *Goodyear Dental Vulcanite Company* v. *Willis* (1 Flippin, 388) that it is unnecessary to consider it further. We are content simply to announce our adherence to his views; but the recent decision of this court upon a question of reissue (*Kells* v. *McKenzie*, 9 Fed. Reps., 284) would, perhaps, demand of us an interpretation of the reissue in this case which should seem consistent with the opinion in that.

In *Kells* v. *McKenzie* we held (following the later and, as we believed, the sounder judgments of the Supreme Court) that a reissued patent is not valid for everything which might have been claimed in the original, and that its validity does not depend wholly upon the fact that the new features attempted to be secured thereby were suggested in the models, drawings, or specifications of the original patent. Hence, as the patentee in that case claimed as his invention a particular part of a machine, and his claims were all limited to that part, we held that a reissue embracing other and distinct portions of the machine was not for the same invention, and was *pro tanto* void, although the designs accompanying the original patent showed all the features contained in the reissue. No such question arises in this case. The distinction between the two is substantial and clear. The validity of the reissue depends upon the fact whether the patents are for the same invention, and the identity of the invention must be determined by the drawings and specifications construed together.

In his original patent, No. 70,627, Scott claimed that his invention related to a new and improved fastening applied to a whip-socket in such a manner as to hold the whip firmly therein and prevent it from moving or shaking laterally, and at the same time not interfere in the least with its ready insertion in the socket and its withdrawal therefrom.

His claim was—

A whip-socket provided with a fastening composed of a lever arranged or applied, substantially as shown and described, to hold the whip steady or firm in its socket, as set forth.

In his reissue he describes his improvements as consisting in the use of a lever with the stationary or upright portion of the socket, abandoning the single claim of his original patent and setting forth in three new claims somewhat more in detail the lever and its combination with the whip-socket. A glance at the drawings and specifications will show that the patents are for the same invention, viz: a whip-socket arranged with a lever swung upon a central pivot and operating so as to admit the whip without difficulty and hold it firmly in position, and at the same time not preventing its easy withdrawal. So far from there being any attempt in the reissue to expand the claim of the original patent and embrace devices which might have come into use since the original patent was granted, its purpose was evidently only to make that definite which had before been obscure and to set forth in more precise and accurate terms the details of the invention. I regard the reissue in this case as a perfectly legitimate use of the privileges conferred by the act upon that subject.

Second. In support of the defense that Scott was not the original inventor of this whip-socket a large number of patents were introduced in evidence and claimed as anticipations, some of which were before Judge Wheeler and others not. A single observation will dispose of them all. Had complainant's patent been simply for a lever working upon a central pivot, with a function to be performed by each end of the lever, his invention would have been anticipated by most or all of these devices; but complainant's patent is for a combination of the stationary part of a whip-socket and a lever, and as none of these devices have any connection whatever with whip-sockets, and none of them

could be applied to a whip-socket without invention, it seems to me that they cannot be claimed as anticipations. (*Crandall* v. *Wallace*, 9 Fed. Reps., 650.) Certainly none of them would be infringements of complainant's patent.

Third. Upon the question of infringement I concur in the opinion expressed by Judge Wheeler. Defendants' device is undoubtedly an improvement upon complainant's, and I think so far an improvement as to show an exercise of the inventive faculty; but in the material points—viz., the use of the lever pivoted upon a central fulcrum and operating to receive the whip when inserted in the socket, to hold it firmly while remaining there, and to permit of its easy withdrawal by the alternate swinging backward and forward of the two arms of the lever—it seems to me they are essentially the same. In the complainant's device the lever is comparatively small and working in a narrow slot. In defendants' device it composes half the circumference of the whip-socket; but in both is found the essential feature of complainant's patent. There may be some doubt as to whether complainant's device is so far practicable as to fall within the definition of a "useful invention;" but as this point was not insisted upon I assume that it is. That defendants' socket is a great improvement over the one exhibited in the patent there seems to be little question.

A decree must be entered in favor of the complainant, with the usual reference to a master to assess damages.

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WORDEN *et al.* v. FISHER *et al.*

1. JOINT INVENTION NECESSARY TO JOINT PATENT.

If the facts show that a patent is the result of the mutual contributions of two persons, they should be treated as joint inventors and a joint patent should be taken out. Such patent stands for and must be supported by a joint invention; but the court would not be justified in annulling such patent without clear proof that the patentees are not joint inventors.

2. JOINT INVENTION DEFINED.

A mere suggestion, not acted upon by the person making it, but carried out and perfected by another, will not entitle the former to be considered a joint inventor. Nor is it necessary that exactly the same idea should have occurred to two persons at the same time, and that they should work out together the embodiment of this idea in a perfected machine to constitute them joint inventors. If an idea is suggested to one, and he even goes so far as to construct a machine embodying this idea, but it is not a completed and working machine, and another person takes hold of it, and by their joint labors, one suggesting one thing and the other another, a perfect machine is made, a joint patent may properly issue to them. If, upon the other hand, one person invents a distinct part of a machine and another person invents another distinct and independent part of the same machine, then each should obtain a patent for his own invention.

3. WHIP-HOLDERS—FOURTH CLAIM OF REISSUE NO. 8,581 VALID.

Letters Patent No. 8,581, reissued to Henry M. Curtis and Alva Worden, for an improvement in whip-holders, is valid except as to the fourth claim.

Messrs. Sprague & Hunt for the complainants.
Mr. J. P. Fitch for the defendants.

STATEMENT OF THE CASE.

This was a suit to recover for the infringement of Letters Patent No. 8,581, reissued to Henry M. Curtis and Alva Worden, for an improvement in whip-holders. The improvement consisted substantially of a whip-holder divided throughout its length into two parts, of a double conical shape, hinged together in the center by a pivotal joint, so that the holder will disclose a large opening for the reception of the whip, and will be closed at its top around the whip when the same is inserted into the holder.

The defenses were, first, that Curtis and Worden were not the first and joint inventors, but that Curtis alone, or in conjunction with one Nellis, was the inventor of said whip-holder; second, that the device was known and used long prior to complainant's patent by Erastus W. Scott, of Wauregan, Connecticut; third, that this patent is an infringement of Reissued Patent No. 5,400, issued to said Scott, and that the additions to or alterations in Scott's patent exhibit no exercise of the inventive faculty.

BROWN, *J.:*

This suit is prosecuted by the defendants in the case of *Searls* v. *Worden*, just decided, to recover damages of the defendants, who are selling whip-sockets made by Searls, and purporting to be constructed under the patent issued to Scott, but which were in almost exact imitation of the whip-sockets made by the complainants, and which are confessedly an infringement of their patent if the same be valid. In *Searls* v. *Worden* we held that the Scott patent was valid and that complainants were infringers, but it seems now that Searls has abandoned, to some extent at least, the manufacture of whip-sockets of the particular form shown in the specification and drawings of the Scott patent and is making them after the Worden patent, claiming the latter to be illegal and void. Now, although, as was held in *Searls* v. *Worden*, the Worden patent contains the underlying principle of the Scott patent, and is to that extent an infringement, still there are improvements in the Worden patent in splitting the entire socket into two parts and using one as a lever which I think are patentable, and would justify the charge of infringement against the defendants, provided the patent in other respects be valid.

The main ground upon which this case is contested is that Curtis and Worden were not the joint inventors of this device, but that the invention was made by Curtis alone, or by Curtis and one Nellis. There can be no doubt that if the circumstances are such as to show that two persons both contributed to an improvement, and such improvement is the result of mutual contributions of the two, they are to be treated as joint inventors, and a joint patent should be taken out. In such cases the joint patent stands for and must be supported by a joint invention, and as an error in this particular is fatal to the validity of the patent, I think it should be made clearly to appear that the patentees were not joint inventors before the court would be justified in annulling the patent upon that ground.

So far as the participation of Nellis in this invention is concerned the facts are substantially as follows: That in August, 1867, Curtis and Nellis, who were employed in the same shop in Ypsilanti as workmen in the manufacture of carriages, had a conversation together in relation to making an improvement upon whip-sockets; that in the course of that conversation Nellis, holding in his hand a whip-socket of the ordinary kind, (a short metal cylinder or tube closed at the bottom and provided with fastening devices for attaching it to the vehicle,) suggested that a lever might be connected with it to hold the whip upright, and he put into it a stick to show how the lever could be made to act by throwing it out at the bottom and in at the top. Curtis does not state it quite so strongly, but testifies that Nellis made the suggestion of getting up something

so "that when the whip struck the bottom it would be clamped at the top."

I did not speak but I acted, but the hint which he gave me was nothing to show how to make it until after I had experimented.

Curtis seems to have acted upon this hint and went on and made a model of iron in two parts hinged together with a wedge at the bottom. Upon the Sunday following this conversation they were together again in their shop in company with the hands, when Curtis exhibited the model, which Nellis says he recognized as embodying substantially the idea he had suggested to Curtis, but he evidently treated it as of little or no value, for whatever interest he had in the invention he gave up to Curtis on condition that he would furnish beer for the company.

Now there is nothing further in this testimony than a suggestion upon the part of Nellis that the whip might be held firmly by means of a lever in the socket, the very device for which Scott obtained his patent, and which is no part of the complainant's patent on this case. It was at best a mere suggestion, upon which Nellis never acted himself. It was as if some one had suggested to the inventor of the telephone the possibility of transmitting the human voice over a wire with the aid of electricity. It was rather a suggestion of a result to be accomplished than of the means of accomplishing it, and therefore not patentable. He had nothing to do with making either of the models in which the invention was afterward embodied. He made no suggestion of splitting the socket in two and using the outer half as the lever, and did not seem to regard himself as having anything to do with the invention of the whip-socket produced by Curtis. On the contrary, he saw the model which Curtis and Worden were preparing to send to Washington, stood by and allowed them to go on, make their application, and obtain their patent without objection. Under these circumstances it seems to me that he cannot be treated as a joint inventor of this device. His suggestion was rather of the lever which Scott was then working upon in Connecticut, and for which he shortly afterward obtained his patent.

Was Mr. Curtis the sole inventor of this device or did Worden participate with him? Upon this subject Curtis testifies that upon the Monday following the Sunday already spoken of he went into his shop to work, and threw the iron model he had constructed under the bench; but the more he thought of it the better he was satisfied that it could be made useful. He then went to work and made a copper model much like the one he had already constructed; but instead of inserting wedges to throw the bottom out as the whip was inserted he made it to bulge in the middle by hammering the copper, thus making it considerably larger in the middle than at either end. The effect of this was to bring the two halves together at the top as the whip was inserted. This model, however, showed that the sides were straight, that the ears were cut on one side and riveted to the other to form the joint by one side lapped over the other when the ends were brought together, and that no means were provided for fastening the socket to the dash-rail of the carriage. In fact it was far from being a complete or useful machine. In this condition he took it to Alva Worden, who was acquainted with the patent business and was considered a good judge of such matters. He looked it over and replied that if it could be perfected there might be something in it, and expressed a willingness to assist in completing it and getting it patented. Worden and he then began constructing wooden patterns together. At Worden's suggestion the sides were cut away, the hinges or ears were put upon both parts, and these parts were so constructed that they shut square against each other, instead of slipping by, and a bottom was inserted so that a whip could not pass through. Several of these models were made by them jointly, and after a satisfactory pattern had been worked out in wood Worden took it to Detroit to get a casting made for the Patent Office at Washington. Mr. Worden also suggested several methods of fastening it to the dashboard, although in the view I take of the loop this is not material. An arrangement was made between them that if Worden got it patented he was to pay the expense of the patent for a half interest in it. Under this state of facts the question arises whether Worden contributed anything which could be called inventive skill to this machine.

To constitute two persons joint inventors it is not necessary that exactly the same idea should have occurred to each at the same time and that they should work out together the embodiment of this idea in a perfected machine. Such a coincidence of ideas would scarcely ever occur to two persons at the same time. If an idea is suggested to one, and he even goes so far as to construct a machine embodying this idea, but it is not a completed and working machine, and another person takes hold of it and by their joint labors, one suggesting one thing and the other another, a perfect machine is made, a joint patent may properly issue to them. If, upon the other hand, one person invents a distinct part of a machine and another person invents another distinct and independent part of the same machine, then each should obtain a patent for his own invention. I am inclined to think that this last suggestion applies to the loop in this case. It appears to have been the sole invention of Worden. But when Mr. Curtis placed his two models in Worden's hands they were absolutely useless for the work for which they were designed, and the work subsequently done in completion of the device was, as it seems to me, with the exception of the loop, so far the joint product of their inventive skill that it would be difficult to say that each part was patentable in itself. Curtis could not have obtained a patent for the machine as it was when he first consulted Worden, nor could Worden have obtained a patent for anything he did irrespective of the labor previously bestowed by Curtis. Upon the whole, it seems to me, as it did to the Commissioner, that it was a proper case for a joint patent. The consequence of a different ruling would be the utter destruction of the patent upon a technicality. I should be unwilling to take this position without evidence of clear error on the part of the Commissioner.

The fourth claim of the reissued patent is for a whip-holder composed of two parts, of double conical shape, hinged together as described, and wherein one is provided with loops or fastenings, by means of which the holder is attached to the carriage or dash-board, substantially as specified. I feel constrained to hold that this claim is void for the following reasons: First, because there was no invention in attaching loops to the socket. These loops were old devices and had been in common use as fasteners upon whip-sockets long before 1867. Second, because the loops were added by Worden alone, without any agency of Curtis, and if there was any inventive skill in attaching them to the socket it was that of Worden alone. Third, there was no claim made for the loops in the original patent, and I am inclined to think the reissue to that extent is void. In other respects I think the reissue was valid. For the single claim in the original patent are substituted three claims in the reissued patent which are much more definite and particular. But it seems to me entirely clear that there is no such expansion of the original claim as should invalidate these.

There is no evidence that complainants' patent is anticipated except by the wooden devices of Scott, from which no definite results were obtained, and which was an abandoned experiment. He afterward constructed an entirely different model upon which he obtained the patent which we have already adjudged to be valid in the case just decided.

As there is no denial of the infringement in this case, it results that the complainants are entitled to an injunction and decree, with the usual reference to a master to assess damages.

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Issue of June 27, 1882.

Patents	358	No. 259,992	to No. 260,349	inclusive.
Designs	16	No. 13,003	to No. 13,018	inclusive.
Trade-Marks	28	No. 9,472	to No. 9,499	inclusive.
Labels	4	No. 2,704	to No. 2,707	inclusive.
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Brazil			Russia		
Canada	8		Spain		
Chili			Sweden		
Colombia, U. S. of			Switzerland	1	
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Denmark					
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DESIGNS.

13,003.—BADGE.—*Wescott Bailey* and *Charles E. Dubin*, Philadelphia, Pa., assignors to *The Sons of Veterans of Pennsylvania*. Application filed May 8, 1882. Term of patent 7 years.

13,004.—CASSIMERES.—*Frederick S. Bosworth*, Providence, R. I., assignor to *The Weybosset Mills*, same place. Application filed March 30, 1882. Term of patent 7 years.

13,005.—DINNER OR TEA SET.—*Elijah Chetwynd*, Trenton, N. J., assignor to *John Moses*, same place. Application filed May 3, 1882. Term of patent 7 years.

13,006.—FRINGE.—*Bernhard Dreyfus*, New York, N. Y. Application filed May 5, 1882. Term of patent 7 years.

13,007.—ORNAMENTING PAPER FOR COFFEE-PACKAGES.—*Owen A. Gill*, Baltimore, Md., assignor to *E. Levering & Co.*, same place. Application filed February 12, 1881. Term of patent 14 years.

13,008.—LANTERN.—*Charles A. Kinney*, Meriden, Conn., assignor to *Edw. Miller & Co.*, same place. Application filed May 1, 1882. Term of patent 14 years.

13,009.—WALL-PAPER.—*Edward Loissner*, New York, N. Y. Application filed April 21, 1882. Term of patent 3½ years.

13,010.—FIRE-BACK AND JAMB.—*William D. Hewitt*, Burlington, N. J., assignor to *William H. Harrison & Brother*, Philadelphia, Pa. Application filed March 20, 1882. Term of patent 7 years.

13,011.—DISPENSING-COLUMN.—*John Matthews*, New York, N. Y. Application filed December 12, 1881. Term of patent 14 years.

13,012.—TABLE-BELL.—*Edward L. Morris*, Boston, Mass. Application filed March 27, 1882. Term of patent 7 years.

13,013 and 13,014.—SETTER-FRAME.—*Ausborn F. Old*, Philadelphia, Pa., designor to *Baker, Pratt & Co.*, New York, N. Y. Applications filed March 28, 1882. Term of patents 7 years.

13,015.—DESK-FRAME.—*Charles Page*, Philadelphia, Pa. Application filed March 28, 1882. Term of patent 7 years.

13,016.—TOY MONEY-BANK.—*John H. Parmelee*, Bridgeport, Conn. Application filed April 8, 1882. Term of patent 3½ years.

13,017.—COFFIN-PEDESTAL.—*Nicholas Rappleyea* and *Leo Stein*, Rochester, N. Y. Application filed May 8, 1882. Term of patent 7 years.

13,018.—FLORAL PEDESTAL.—*Nicholas Rappleyea* and *Leo Stein*, Rochester, N. Y. Application filed May 8, 1882. Term of patent 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

9,472.—TABLE-SIRUP.—*George Boyd & Son*, Philadelphia, Pa. Application filed March 27, 1882.

"The designation 'QUEEN.'"

9,473.—GOLD, SILVER, AND PLATED WARE.—*William N. Boynton*, Manchester, Iowa. Application filed May 31, 1882.

"The letters and word 'U. S. J. GUILD' in engraved lines, so wrought in monogrammic device as to make the design or ornamentation as in fac-simile or copy shown."

9,474.—HOSIERY.—*Lewis S. Cox & Co.*, Philadelphia, Pa. Application filed January 30, 1882.

"The monogram composed of the letters 'L S C.'"

9,475.—BAKER'S CHOCOLATE.—*Henry L. Pierce*, Boston, Mass. Application filed April 19, 1882.

"A thick border of wreaths and leaves entwined with the shield, eagle, and flags surrounding the same, inclosing the word 'BAKER'S' before 'CHOCOLATE.'"

9,476.—EAGLE CHOCOLATE.—*Henry L. Pierce*, Boston, Mass. Application filed April 19, 1882.

"A medallion surmounting an irregular scroll, on which the word 'EAGLE' is printed, and underneath the words 'W. BAKER & Co.'"

9,477.—GERMAN SWEET CHOCOLATE.—*Henry L. Pierce*, Boston, Mass. Application filed April 19, 1882.

"The pictorial representation of a star with the word 'GERMAN' surrounded with arabesque figures."

9,478.—BAKER'S COCOA.—*Henry L. Pierce*, Boston, Mass. Application filed April 19, 1882.

"An ornamented border, inclosing in an oblong figure the word 'BAKER'S' before 'COCOA,' and 'W. BAKER'S' before 'PURE PREMIUM COCOA,' with the figure of an eagle."

9,479.—COCOA PASTE.—*Henry L. Pierce*, Boston, Mass. Application filed April 19, 1882.

"The word 'BAKER'S' before 'COCOA PASTE,' surmounting the eagle described, and the words 'W. BAKER & Co.'"

9,480.—CHAMPAGNE-WINE.—*Werlé & Co.*, Rheims, France. Application filed May 27, 1882.

"The words and letters 'V. CLICQUOT PONSARDIN À REIMS' inclosed within elaborate scroll-work."

9,481.—CHAMPAGNE-WINE.—*Werlé & Co.*, Rheims, France. Application filed May 27, 1882.

"The representation of a comet having above it the legend 'V. CLICQUOT P.'"

9,482.—CHAMPAGNE-WINE.—*Werlé & Co.*, Rheims, France. Application filed May 27, 1882.

"A representation of an anchor with the letters 'V C P' in the background."

9,483.—CHAMPAGNE-WINE.—*Werlé & Co.*, Rheims, France. Application filed May 27, 1882.

"The title or designation 'VEUVE CLICQUOT PONSARDIN.'"

9,484.—CIGARETTE-PAPER.—*Gaston D'Argy & Co.*, Paris, France. Application filed December 27, 1881.

"The shield bearing the lion rampant."

9,485.—MANUFACTURED CHEWING AND SMOKING TOBACCO.—*John J. Bagley & Company*, Detroit, Mich. Application April 3, 1882.

"The words 'LIME KILN CLUB.'"

9,486.—PLOWS.—*Francis A. Barrows*, Castleton, Vt. Application filed May 26, 1882.

"The numerals '76.'"

9,487.—CRUSHED OR PREPARED CEREALS.—*The Cereals Manufacturing Company*, New York, N. Y. Application filed May 22, 1882.

"The arbitrary words 'CEREAL CREAM.'"

9,488.—FRENCH SWEET CHOCOLATE.—*Henry L. Pierce*, Boston, Mass. Application filed April 19, 1882.

"The words 'W. BAKER & Co.'s' on a scroll and the obverse and reverse views of the medals of the French and Vienna Expositions, with a bar running between the two, on a ground of bright vermilion color, as shown and described."

9,489.—BAKER'S BROMA.—*Henry L. Pierce*, Boston, Mass. Application filed April 27, 1882.

"The words 'BAKER'S' and 'WALTER BAKER & Co.,' contained within the fine border described, together with the arrangement of oblong figures of three several designs set forth, the whole being upon a dark shade of purple with a reddish tint."

9,490.—WHISKY.—*Sperry, Wade & Co.*, Nashville, Tenn. Application filed May 18, 1882.

"The combination of the geometrical figures."

9,491.—MEDICINE.—*C. M. Briggs & Bro.*, Buffalo, N. Y. Application filed April 20, 1882.

"The representation of a furled strip having a plain portion exposed for the reception of printed matter."

9,492.—DISTILLED SPIRITS.—*Corning & Co.*, Peoria, Ill. Application filed May 2, 1882.

"The word 'SILENT.'"

9,493.—MUCILAGE AND WRITING INKS AND FLUIDS.—*William A. Davis*, Boston, Mass. Application filed May 1, 1882.

"The word 'TREASURY.'"

9,494.—NEEDLES FOR HAND AND MACHINE SEWING.—*David Evans*, Studley, county of Warwick, England. Application filed May 19, 1882.

"The word 'PARAGON.'"

9,495.—INDELIBLE INK.—*Adolf Kuttroff*, New York, N. Y. Application filed May 22, 1882.

"A star upon a globe or ball with rays emanating therefrom."

9,496.—ROASTED COFFEE.—*Franklin MacVeagh & Co.*, Chicago, Ill. Application filed June 9, 1882.

"The arbitrarily-selected word 'PANAMA,' in connection with the pictorial matter shown and described."

9,497.—INDELIBLE INK.—*Frederic A. Whiting*, Wellesley Hills, Mass. Application filed May 17, 1882.

"The fac-simile of the registrant's signature and the pictorial representation of a little child sitting on a box and extending a pen, and a stork standing on the box near the child, the stork's right leg held above a jar of ink."

9,498.—ROLLER-SKATES.—*Samuel Winslow*, Worcester, Mass. Application filed May 25, 1882.

"The word-symbol 'VINEYARD.'"

9,499.—MEDICINES.—*Roswell Van Buskirk*, Newark, N. J. Application filed May 11, 1882.

"The words 'POOR MAN'S ANTIDOTE.'"

LABELS.

2,704.—Title: "DYSPEPSIA CAKE MANUFACTURING COMPANY."—*Harold A. C. Dahl*, Brooklyn, N. Y. Application filed May 29, 1882.

2,705.—Title: "RING TRAVELLERS."—*Nathan P. Hicks*, Pawtucket, R. I. Application filed May 1, 1882.

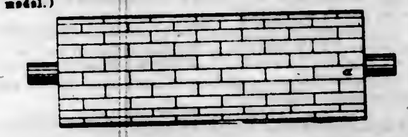
2,706.—Title: "ROBINSON'S PHOSPHORIZED EMULSION OF COD LIVER OIL WITH LACTO-PHOSPHATE OF LIME."—*James H. Robinson*, Cleveland, Ohio. Application filed May 18, 1882.

2,707.—Title: "HEART AND FEVER-DROPS."—*Henri Ulzinger*, New York, N. Y. Application filed September 24, 1881.

PATENTS

GRANTED JUNE 27, 1882.

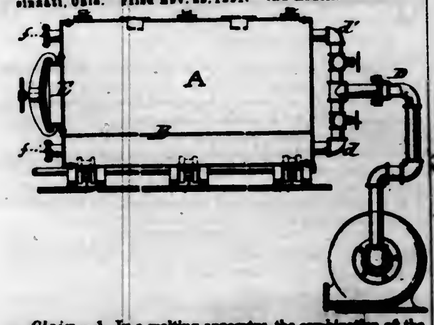
259,992. WOOD-GRINDER FOR MAKING PAPER-PULP. STEPHEN H. ALLEN, Duxbury, Mass. Filed May 15, 1882. (No model.)



Claim.—1. A wood-grinder for making paper-pulp having the grinding-surface composed of blocks with their edges in close contact and with the joints broken, substantially as described.

2. A wood-grinder having a grinding-surface of emery or artificial-stone blocks separately compacted and laid so as to break joints and cemented, substantially as described.

259,993. MALTING APPARATUS. WILLIAM ANDREW, Cincinnati, Ohio. Filed Nov. 25, 1881. (No model.)



Claim.—1. In a malting apparatus, the combination of the cylindrical malting-tank adapted to rotate upon its axis, a perforated partition or false bottom arranged in a fixed horizontal position within the tank, below its axis, and devices connected with one end of the tank for charging or exhausting air both above and below the said perforated partition or false bottom, substantially in the manner and for the purpose described.

2. In a malting apparatus, the combination of the malting-tank A, provided at one end with air-openings *f f'*, the perforated partition B, secured in a fixed horizontal position within the tank, the air-pipes *d* and *d'*, connected with one end of the tank, above and below the perforated partition, as described, the main D, connected with the extended axis of the tank and with the said air-pipes by a revolving air-tight joint, and means for charging and exhausting air through said main and pipes at both sides of the perforated partition, substantially in the manner and for the purpose described.

259,994. FILE-HOLDER. CHARLES H. BABBITT, Council Bluffs, Iowa. Filed Jan. 18, 1882. (No model.)

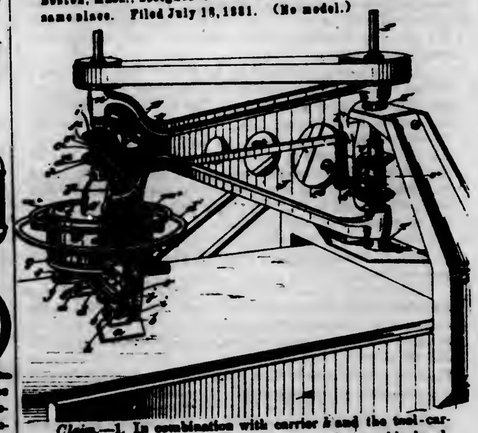
Brief.—The tightening-rod D is longitudinally movable in the bed-plate, and is squared near its handle. When the bands C have been drawn down sufficiently tight upon the papers, by turning said rod it is pushed inward to engage a corresponding square socket in the bed-plate, and thus firmly secured against rotation.

Claim.—1. In a file-holder, the combination of the slotted bed A, the longitudinally-tightening shaft or rod D, having near its outer end a polygonal or square section, a polygonal or square socket for the reception of the square portion of said rod, and bands C C', they being arranged for joint operation, substantially as described.



2. The combination of the longitudinally-adjustable shaft or rod D, the socket A' in the end of the plate or bed A, bands C C', and the binding-plate which rests upon the upper surface of the paper, all substantially as and for the purpose set forth.

259,995. LEATHER-DRESSING MACHINE. LORING J. BAKER, Boston, Mass., assignor of one-fourth to Frederick Curtis, same place. Filed July 18, 1881. (No model.)



Claim.—1. In combination with carrier *h* and the tool-carriage, the shaft *m*, on which said carrier is axially movable, hand-rail *d'*, movable ring *e*, provided with spur *g'*, and spring-pressed pivoted latches *f' f'*, connected to head *l'* of the tool-carriage and arranged to grip the periphery of a disk on said shaft *m*, substantially as set forth.

2. In a leather-dressing machine, the combination of fixed disk or head *x* with the tool-carriage capable of rotary adjustment, and the latches *f' f'*, connected to said tool-carriage and engaging the periphery of said head, substantially as set forth.

3. In a machine for treating hides or leather, the combination of a vertically-adjustable crane with a tool-carriage which is vertically adjustable as a whole by the mechanism, substantially as described, independently of the adjustment of said crane, substantially as set forth.

4. The combination of crane J and screw-threaded disk *t*, suspended therefrom, with the screw-threaded sleeve *w* and the tool-carriage suspended from said sleeve, the rotation of said sleeve on said disk serving to adjust said tool vertically, substantially as set forth.

5. In a leather-dressing machine, the combination of guide-beam *i* with tool-supporting beam *c* and slider or head *l'*, which is attached to beam *c*, and has motion on beam *i* longitudinally of the latter, substantially as set forth.

6. In combination with guide-beam *i*, tool-supporting beam *e*, and tubular head *f'*, provided with slotted plate *a'*, the disk or head *q*, attached to shaft *m* and provided with wrist-pin *r*, which enters the slot of said plate and causes the tool-carrying beam *e* to move backward and forward under beam *i* as the head *q* rotates.

7. The combination of beam *i*, adapted to rock in its bearings, with eccentrics *o' o'*, surrounding said beam and having spline-and-groove connections therewith, carriage *f*, provided with pockets for said eccentrics, horizontal rods *q' q'*, and beam *i*, substantially as set forth.

8. The combination of beam *i*, eccentrics *o' o'*, which surround the same, carriage *f*, provided with attachments which embrace said eccentrics, and head *d*, from which the tool-carrying beam is suspended by links, said head *d* being supported by said eccentrics, substantially as set forth.

9. The combination of the disk or crank-wheel *q* with its wrist-pin *r*, the tool-carriage *f*, mounted and sliding upon the beam *i*, which is supported by the yoke frame or carrier *h*, the head *d* constituting a suspensory to the dressing-tools, and upheld by the carriage *f* and the hub or slider *f'*, with its slotted plate or extension *a'*, in which the wrist-pin operates.

10. As a means of controlling the lateral adjustment of the swinging crane, a shaft swiveled at one end to the crane, and having at its opposite end or any convenient point a peripheral screw-thread adapted to be screwed through a nut swiveled to the machine-frame, the shaft being rotated in either direction by means under the control of the attendant, substantially as explained.

11. The combination of the suspended hand-lever *b'*, the shipper-rod *a'*, actuating the clutch mechanism which controls the traverse of the table, and the oscillating lever *c'*, which controls the clutch mechanism that effects the lateral adjustment of the crane, the hand-lever operating when swung in one or the other direction longitudinally of the crane to govern the movements of the table, and when swung in one or the other direction laterally of the crane operating to govern the swinging movements of the crane upon its support, and when moved both longitudinally and laterally operating to both swing the crane and move the table, substantially as stated.

12. The ring-plate *c'*, with its hand-rail *d'*, and containing a friction clutch or device to grasp the tool-carrier when the hand-rail is rotated and to seize hold of a disk or other stationary part of the crane when the hand-rail is at rest, substantially as herein-before described.

13. The hand-rail *d'* and a clutch operated thereby, in combination with the tool-carriage and a disk attached to the crane, said clutch being arranged to grasp the tool-carrier when the hand-rail is rotated and to seize hold of said disk when the hand-rail is at rest, substantially as set forth.

14. The conical bushings T T, in combination with the crane, the shaft P, and the standard D, substantially as and for the purpose set forth.

15. In combination with the crane and its shaft *m*, the rod or shaft *B'*, screwing at its rear end through a nut swiveled to a stationary bracket or post of the machine-frame, and at its front end mounted in bearings in the free end or head of the crane, and having affixed to it a bevel-pinion, the twin gears *i' i'*, clutch-sleeve *f'*, splined upon the said shaft *m*, and oscillating shipper-lever *c'*, operating such clutch, substantially as explained.

259,996. FEEDING MECHANISM FOR BUTTON-SEWING MACHINES. WALTER S. BARRETT, New Britain, Conn. Filed Feb. 16, 1882. (No model.)

Brief.—The metallic shanks of the buttons are attracted to magnets on a revolving disk within the button-receiving hopper, and the buttons are thus carried into the feeding-trough, which conducts them to the sewing mechanism.



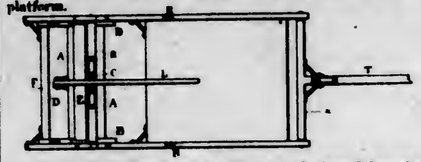
Claim.—1. The combination of the feeding-trough, the hopper, the magnet, and mechanism for moving the magnet within the hopper and presenting it to the trough, substantially as described, and for the purpose specified.

2. The combination of the feeding-trough, the wheel with magnets mounted thereon, and the hopper placed at one side of said wheel, substantially as described, and for the purpose specified.

3. The combination of the feeding-trough, the hopper, the magnet-carrier, and the wiper, substantially as described, and for the purpose specified.

259,997. ICE-SCRAPER. THOS. W. BOTTS, Peoria, Ill. Filed Apr. 10, 1882. (No model.)

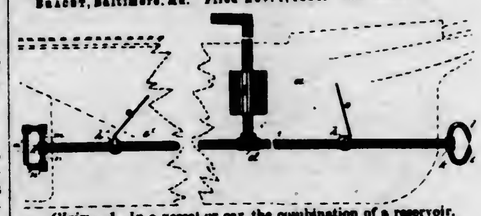
Brief.—The scraper is raised and lowered in inclined guides on solid runners by means of a lever pivoted to angle-irons on a cross-bar. The runners are joined by cross-beams and have a platform.



Claim.—1. The two solid runners B B, joined by suitable cross-beams, and having guide-bars B B, in combination with the scraper A, movable in said guides B B by means of the lever L, for the purpose set forth.

2. The solid runners B B, joined by cross-beams F, and having platform P, in combination with the scraper A, movable in guides B B, attached to said runners B B, and the lever L, pivoted to angle-irons C on the shaft S, substantially as and for the purpose specified.

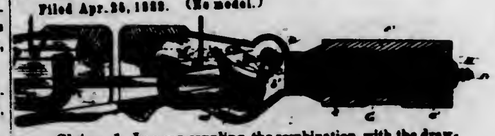
259,998. MEANS OF PROPELLING VESSELS. AUGUST BRACHT, Baltimore, Md. Filed Nov. 1, 1881. (No model.)



Claim.—1. In a vessel or car, the combination of a reservoir, as *b*, with pipes leading fore and aft therefrom, and provided at their ends with branch pipes diverging and then approaching each other, so that currents of steam or water escaping from said branch pipes will impinge upon each other, substantially as described.

2. The combination, with the vessel *a*, provided with the reservoir *b*, into which water is forced, of the tube *c*, pipe-coupling *d*, pipes *e e'*, having cocks *h h'*, curved branch pipes *l l'*, and pipes *m n m' n'*, having their open ends intersecting each other, substantially as described, and for the purpose set forth.

259,999. CAR-COUPLING. THOMAS BARRY, Knowlton, Pa. Filed Apr. 25, 1882. (No model.)



Claim.—1. In a car-coupling, the combination, with the draw-head apertured in its bottom, of the hook capable of movement, and having a shoulder and cam at its inner or pivoted end, the link-form lever, and its axis, having the short arm bearing on the cam of the link, substantially as and for the purpose specified.

2. The combination of the rod or draw-bar D, cushion-box F, nozzle E, spring G, cross-heads or washers *c* and *c'*, and nut H, substantially as shown, and for the purpose described.

260,000. GLOBE-VALVE. ALBERT P. BROCKELL, York, Pa., assignor to Frey & Brockell, same place. Filed Feb. 25, 1882. (No model.)



Claim.—1. The combination, in a globe-valve, of a casing, A, having a partition, *a*, seat *x*, and valve B, adapted to said seat and formed in one piece with the threaded and slotted stem C, and yoke D', receiving the nut I, adapted to the valve-stem, and the finger K, extending into the slot of the stem, substantially as set forth.

2. The combination of the valve-casing, threaded and slotted valve-stem, valve B, having faces *x h*, elevating-nut I, finger K, packing-box surrounding the valve stem, and seat *y* below the packing-box, substantially as specified.

3. The combination of the casing, valve-stem, packing-box, and follower having arms *e*, adapted to notches *i* in the yoke above the casing, as specified.

4. The combination of the case, its valve and elevating-nut having a fixed support, and valve-stem of a length to be flush with the face of the nut when the valve is on its seat, substantially as specified.

260,001. FIRE-ESCAPE. WILLIAM H. BURDUS and FREDERICK C. BURDUS, Cleveland, Ohio. Filed Mar. 25, 1882. (No model.)

Brief.—The lower ball for the guide-rope is secured to the bucket at right angles to the upper ball.



Claim.—In a fire-escape, the combination, with the car or basket having a ball at its top and a ball at its bottom, arranged at right angles to the one at its top, of the continuous elevating chain or rope secured to the top ball and passing up over a suitable hanger and down, and secured to the lower ball, so that the car can be conveniently guided and held from contact with the fire, as set forth.

260,002. HARROW ATTACHMENT. MORTIMER CAHILL, Jacksonville, Ill. Filed Mar. 7, 1882. (Model.)



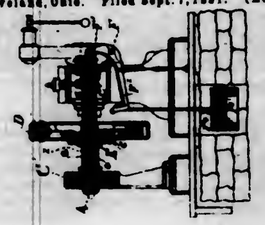
Claim.—1. The combination, with a plow, of the harrow formed of a series of metallic bars of unequal length, and bent as shown, their central portions secured together by bolts or otherwise, and having their ends arranged so as to flare laterally in an outward direction, and formed with knife-edges, substantially and for the purpose set forth.

2. The combination, with a plow, of the harrow, arranged and attached substantially as shown and described, said harrow being constructed of metallic bars bent as shown, and secured together centrally, and having their ends flaring laterally in an outward direction, substantially as and for the purpose set forth.

260,003. INCRUSTATION-PREVENTIVE. FRIEDRICH H. COLLET, Dubuque, Iowa. Filed Jan. 27, 1882. (No specimens.)

Claim.—The method of preventing incrustation in steam-boilers herein set forth, which consists in mixing with the steam-producing water within the boiler malted barley-sprouts, substantially as and for the purpose set forth.

260,004. GOVERNOR FOR STEAM-ENGINES. FRANKLIN D. CUMMER, Detroit, Mich., assignor to the Cummer Engine Company, Cleveland, Ohio. Filed Sept. 7, 1881. (No model.)



Claim.—1. In a governor, the combination, with a shaft arranged to operate a main steam-supply valve, of a sleeve and eccentric arranged to rotate upon said shaft, a pair of flying weights pivoted to a support projecting from said shaft, means for communicating a rocking motion to said sleeve from said weights, a thrust-rod arranged loosely and centrally within said shaft, means for imparting a longitudinal motion to the thrust-rod from the weights, and a variable resistance arranged to oppose the thrust of the thrust-rod, substantially as described.

2. The combination, with the centrally-bored shaft A, carrying the eccentric for operating the main valve, of the sleeve C, surrounding said shaft and provided with means for receiving rotary motion, the casing D, fixed upon said shaft, the flying weights pivoted in said casing, the thrust-rod E, arranged centrally within said shaft, means for communicating a rocking motion from said weights to said shaft and a longitudinal movement from said weights to the thrust-rod, the lever F, having its end provided with a stop in which said thrust-rod turns, and means for opposing a variable resistance to the movement of said lever, substantially as described.

3. The combination, with the lever F, having the stop on one arm and a weight attached to the other arm, the thrust-rod having one end in said stop, the flying weights, and means, substantially as described, for transmitting motion from said weights to the eccentric on the shaft and to said thrust-rod, of adjustable means for automatically varying the resistance of the said lever to the thrust of said thrust-rod.

260,005. LATHE-CHUCK. LOUISE R. DAVIS, Adrian, Mich., assignor of one-half to Sylvester P. Babcock, same place. Filed Sept. 26, 1880. (Model.)

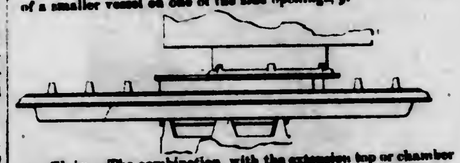


Claim.—1. In a lathe, the head A, inclosing a spring and provided with a back plate, B, fitting below the edge of rim *a*, in combination with a clamping-plate, F, located between the spring and back plate, and connected to a rod passed through a hollow spindle and operated on by a nut, substantially as set forth.

2. In a lathe, the head A, spring D, back plate, B, and face-plate H, in combination with threaded rod G, provided with plate F and feather *d*, spindle I, having groove *e*, and left-hand nut J, the several parts being arranged to operate as set forth.

260,006. OIL-STOVE. ALPHEUS S. DINSMORE, Boston, Mass. Filed May 1, 1882. (No model.)

Brief.—The hole *f* in the top of the head *d* is eccentric to the central opening of the stove-top. A large vessel may thus be supported far enough to one side to not interfere with the placing of a smaller vessel on one of the side openings, *g*.



Claim.—The combination, with the extension top or chamber for an oil or gas stove, it having central and lateral holes, of the detachable hood for the said central hole, having an opening in its upper side eccentric to the said central hole, substantially as and for the purpose described.

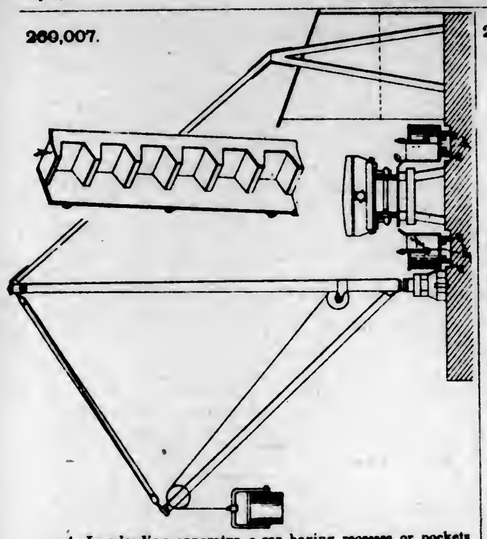
260,007. MACHINERY FOR LOADING VESSELS WITH COAL AND IRON. WILLIAM DUNN, Zanesville, and ANDREW BECKNER, Sandusky, Ohio. Filed Apr. 21, 1882. (No model.)

Claim.—1. In a loading apparatus, the combination, with a trestle provided with a track for a dump-car, of a car provided with dumping-buckets and placed on tracks parallel to but below the level and to one side of the trestle, substantially as set forth.

2. In a loading apparatus, the combination, with a trestle having a track for a dump-car, of a car provided with dumping-buckets and placed on tracks parallel to but below the level of the trestle, and of derrick provided with mechanism for lifting the buckets and transferring them to another point, substantially as described.

3. In a loading apparatus, a car having recesses or pockets adapted to receive buckets, for the purpose set forth.

260,007.

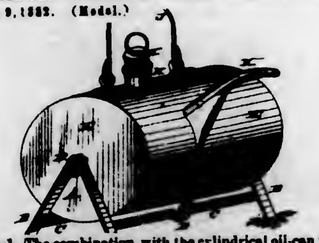


4. In a loading apparatus, a car having recesses or pockets adapted to receive buckets, and a lip, *e*, at the top of the recesses to serve as guides for the matter dumped in the buckets, for the purpose set forth.

5. In a loading apparatus, the combination, with a platform-car, of a cable working on four sheaves placed at the four corners of a square or rectangle and attached by its ends to the ends of the car, of a spool placed on the line of the cable, which is wrapped one or more times around said spool, and of mechanism for revolving the spool, for the purpose set forth.

6. In a loading apparatus, the combination, with a trestle having a track therein, of a bucket-carrying car on tracks below the trestle and to one side thereof, of a cable attached to each end of the car and having a spool provided with mechanism for reversing the motion and stopping the car, and of a derrick adapted to lift the buckets from the car, carry them to a place to be dumped, and return them to said car, for the purpose set forth.

260,008. OIL-CAN. WILLIAM G. DURHAM, Greensborough, Ga. Filed May 9, 1882. (Model.)



Claim.—1. The combination, with the cylindrical oil-can turning in bearings in the end standards of the frame, having connecting cross-strips, of the flat spring adapted to engage one of the cross-strips and retain the can in an upright position, as set forth.

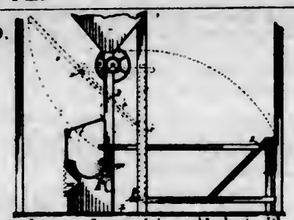
2. The combination, with the frame A, having end standards, B B, connected by longitudinal cross-strips C C, of the cylindrical oil-can E, having bearings G G in said standards, and provided with bail J and outlet spout or tube K, and on its under rear side with a flat spring, L, adapted to engage one of the cross-strips, as and for the purpose specified.

260,009. STOCK-CAR. JOHN EDWARDS, Kalamazoo, Mich. Filed Nov. 25, 1881. (No model.)

Claim.—1. A stock-car having an aisle or passage-way in front of the stalls, in combination with the manger and trough and the detachable guard-rack, for the purposes set forth, substantially as specified.

2. The manger, constituting th grain-chest and trough-support, and provided with the inclined door, substantially as described.

3. The combination, in a stock-car, of the manger, grain-chest, and hopper and spouts for supplying said chest with grain, substantially as set forth.



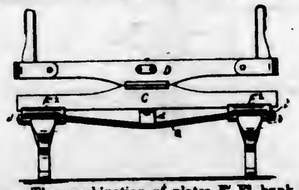
4. The manger and trough, in combination with the division-doors hinged to vertical rods, and the shaft and chains for operating them.

5. The trough and the doors adapted to fit therein, provided with the orifices, and hinged to the vertical rods and jointedly connected with their coupling-rod, all in combination substantially as shown and described.

6. The manger and trough, with its division-doors adapted to be raised, and its guard-rack adapted to be temporarily removed in supplying hay or in cleaning out the trough, all in combination substantially as specified and shown.

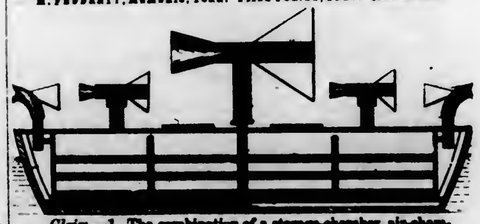
7. In a stock-car constructed with stalls, the adjustable gates composed of the horizontal bars, the end upright bar, and the oblique slotted brace, the inner end of the upper bar pivoted in said slot, and the opposite end of the lower bar pivoted to the car-post, all substantially as set forth.

260,010. SLED-KNEE. JOHN ERNSTER and WILLIAM GARDT, Lakeville, Minn. Filed Oct. 29, 1881. (No model.)



Claim.—The combination of plates F F', bunk C, rod G, and supporting-block *d*, interposed between the bunk and rod and bearing against the latter, whereby the rod is caused to act as a truss-brace, as and for the purpose specified.

260,011. MEANS FOR VENTILATING GRAIN IN BULK. JOHN H. PENDARVIS, Memphis, Tenn. Filed Feb. 25, 1882. (No model.)

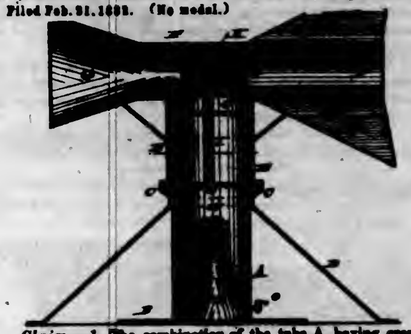


Claim.—1. The combination of a storage-chamber, air-chambers located at the ends of the same, perforated tubes passing longitudinally through the storage-chamber and connecting the air-chambers, and a suitably-constructed ventilating device connected centrally to the said longitudinal perforated tubes, and adapted to create a suction or draft therein tending to exhaust the air from said tubes, substantially as set forth.

2. The combination of a storage-chamber, air-chambers located at the end of the same, perforated tubes passing longitudinally through the storage-chamber and connecting the air-chambers, ventilators for admitting air into said air-chambers, and a suitable ventilating device connected centrally to the said longitudinal perforated tubes, and adapted to create a suction or draft therein tending to exhaust the air from said tubes, substantially as set forth.

3. The combination of a storage-chamber, air-chambers located at the ends of the same, perforated tubes passing longitudinally through the storage-chamber and connecting the air-chambers, ventilators for admitting air into said air-chambers, a suitable ventilating device connected centrally to said longitudinal perforated tubes, and adapted to create a suction or draft therein tending to exhaust the air from said tubes, and auxiliary ventilators connected direct to the storage-chamber and adapted to exhaust the air from the same, substantially as set forth.

260,012. VENTILATOR. JOHN H. PENDARVIS, Memphis, Tenn. Filed Feb. 21, 1882. (No model.)

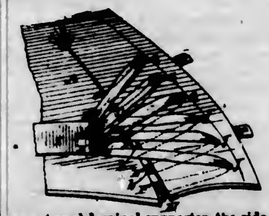


Claim.—1. The combination of the tube A, having cross-piece J, revolving tube E, horizontal tube F, having vanes H and funnel G, and the spindle I, having ring K, controling the inner end of funnel G, as herein described, for the purpose set forth.

2. In a ventilator, the tube A, having inverted funnel M, provided with valve N, substantially as and for the purpose set forth.

3. In a ventilator constructed substantially as described, the tube A, having inverted funnel M, provided with valve N, and the cock or faucet O, as and for the purpose set forth.

260,013. CORSET. CHARLES W. FOSTER, New Haven, Conn. Filed Apr. 18, 1882. (No model.)



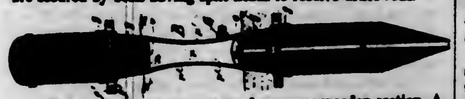
Claim.—In a corset or abdominal supporter, the side section, A, having slit E and eyelets G J in front of said slit, in combination with the strap I, having eyelets H, the cords or laces F, secured to the inner side of the side section back of the slit, and passing, as described, through the eyelets G H J, and the clasp K, connecting the strap I adjustably to the side of the corset, all substantially as and for the purpose set forth.

260,014. WELDING COMPOUND. EDWARD S. FRALEY, Forest Hill, Ind. Filed Oct. 1, 1881. (No specimens.)

Claim.—A compound consisting of refined borax and iron and steel filings, in combination with sal-ammoniac, copperas, cyanide of potash, sulphate of manganese, alcohol, and water, substantially as and for the purposes specified.

260,015. PILE FOR USE IN THE CONSTRUCTION OF WHARVES AND OTHER STRUCTURES. ROBERT H. FRANKLIN, Galveston, Tex. Filed Oct. 31, 1881. (No model.)

Brief.—A pile consisting of a hollow central metal and wood end sections, the lower one of the latter having an orifice connecting with the chamber in the metal section. Ferrules on the ends of the metal section receive the ends of the wooden sections, which are secured by bolts having split heads to receive brace-rods.



Claim.—1. A pile consisting of an upper wooden section, A, a lower wooden section, A', and a central metal section, B, having socket-ferrules *g* at each end, substantially as and for the purpose specified.

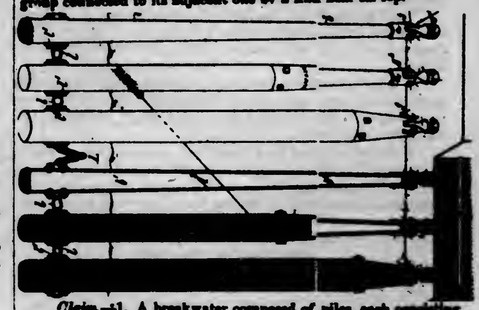
2. The lower wooden section, A, provided with a channel, *c*, in combination with the metal section B, having a chamber, *r*, provided with a communicating coupling, G, substantially as and for the purpose described.

3. The bolts F, provided with double lugs *f'* or their equivalent, in combination with the ferrules *g* of sections B, and the wooden section held therein by said bolts, substantially as and for the purpose described.

4. The middle section, B, cast in a single piece, with a ferrule, *g*, at each end, and with bolt-holes *f* re-enforced, and with a chamber, *r*, in combination with the wooden sections A A', substantially as and for the purpose described.

260,016. YIELDING AND BUOYANT PILE BREAKWATER. ROBT. H. FRANKLIN, Galveston, Tex. Filed Oct. 31, 1881. (No model.)

Brief.—A breakwater constructed from single piles hinged to a water-bed anchorage and grouped together in sections, each section being connected to the next by chains and each pile of a group connected to its adjacent one by a link near its top.

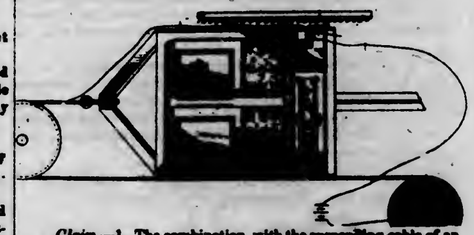


Claim.—1. A breakwater composed of piles, each consisting of a single column, as shown, connected together at or near their top by a link, I, and with their lower ends hinged to a water-bed anchor, substantially as and for the purpose described.

2. A breakwater having single-column piles erected upon hinging-connections which are anchored to a water-bed and grouped and connected together in sections of three or more piles, said sections being connected by a chain, L, so as to permit the several sections to sway in lateral opposite directions, as well as move in the direction of the line of the breakwater, without affecting the whole series of sections composing the line of the breakwater, substantially as described.

3. The piles of a breakwater, in combination with a concrete block, B, having rods for the attachment of the piles set in the concrete block during the act of casting the block, substantially as described.

260,017. AUTOMATIC SAFETY-STOP FOR ELEVATORS. JAS. F. FREEMAN, Chicago, Ill., assignor of one-fourth to Charles F. Pierce, same place. Filed Dec. 23, 1881. (No model.)



Claim.—1. The combination, with the suspending-cable of an elevator and with an electro-magnet, of a safety-stop held by direct contact with said magnet, substantially as described.

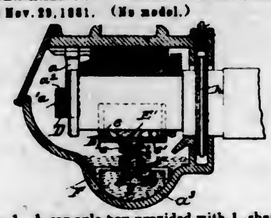
2. The combination, with the suspending-cable of an elevator and an electro-magnet, of a pivoted locking link or stop held against said magnet, substantially as described.

3. The combination, with the suspending-cable of an elevator, an electro-magnet, and a pivoted locking link or stop having contact with the magnet, of a detenting-spring, substantially as described.

4. In an elevator, the anchor-bars and locking-link pivoted thereto, in combination with the electro-magnet and the suspending-cable, substantially as described.

5. The anchor-bars, the safety-stop, the vertical rack-bar, and the suspending-cable, in combination with the electro-magnet and a battery connected direct with the magnet and with the sailing-drum or suspending-cable, substantially as described.

260,018. CAR-AXLE BOX. GEORGE F. GOBLET, Philadelphia, Pa. Filed Nov. 29, 1881. (No model.)



Claim.—1. A car-axle box provided with L-shaped slots or grooves *a a'*, parallel with the axle-journal, in combination with bar D, substantially as and for the purpose set forth.

2. In a car-axle box, the spider F, having arms *f f' f' f'*, and an attached pump or oiling device designed and adapted to lift oil from well *a²* to the axle-journal, substantially as shown and described.

3. In a car-axle box, the combination of trough or vessel E, provided with lug *e²* and spring *e³*, the spider or support F, formed with hollow nipple or bearing *f* and arms *f'*, *f'*, *f'*, and *f'*, substantially as set forth.

4. In combination with a car-axle box, the oval or oblong dust-shield I, made U shape in cross-section, and having a central circular aperture, through which the axle passes, said shield being arranged within the opening in the rear wall of said axle-box, so as to embrace the edge or edges of said opening, substantially as shown and described.

260,019. GAGE FOR SAWING ELLIPSES. WILLIAM H. GORDON and PHILIP J. BOOSY, Detroit, Mich. Filed Jan. 3, 1882. (No model.)



Claim.—1. In a machine for sawing ellipses, the combination, with a table having a gage and suitable guides, of duplicate sliding plates, each having a pivot and a bearing-plate superposed upon the plates, and having transverse and conjugate slots or grooves in which operate the pivots to determine the center of motion, substantially as and for the purpose specified.

2. The combination of the table A, having edge gage and central longitudinal guides, as shown, with the slides A', each bearing a pivot, C', and the plate D, having cross-grooves D' D² and spurs *d*, as specified, for the purposes set forth.

260,020. ART OF ATTACHING RUBBER TO METALS. STANLEY GRAGER, Rye, N. Y. Filed Dec. 6, 1881. (No specimens.)

Claim.—1. The process of first cleaning the surfaces of the articles of iron, steel, or other suitable metals, forming the proper deposit upon the articles so cleaned, and then driving this deposit into the surface of such articles before covering the same with rubber.

2. Articles of metal to which rubber is attached, when the same have been produced or made by first covering the surface of the metal with a coating of another alloy or metal, then driving such coating into and under the surface of such metal, and then covering said articles with rubber and vulcanizing the same, substantially as described.

260,021. SELF-EXTINGUISHING LAMP. JAMES HARRIS, Janesville, Wis. Filed Sept. 6, 1880. (No model.)



Claim.—1. In combination with the handle mechanism having the ring *c'*, adapted to actuate the extinguishing mechanism and the ring *c²*, the cap *c³*, the construction being such that by means of the handle the flame may be extinguished and the ring *c²* be removed from the horizontal plane of the filling-cap by the same movement, as described.

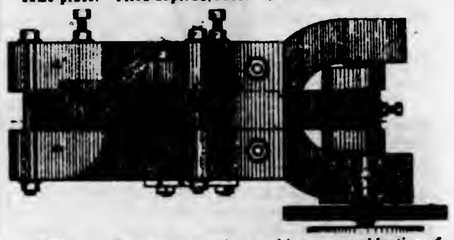
2. In combination with extinguishing mechanism, substantially as described, the main ring *c'*, for actuating the extinguishing mechanism, and the auxiliary ring *c²*, inclosing the filling-cap, the construction being as described, so that the cap cannot be elevated above the ring without actuating the extinguishing mechanism.

3. In a self-extinguishing lamp, a bowl having a recess in the bottom and a slot extending from the recess to the outside of the bowl, in combination with a handle constructed in the described manner, that its lower portion may move in said recess and slot for the purpose of actuating the extinguisher.

4. In combination with a lamp having extinguishing mechanism, substantially as described, an independent bracket-basket provided with means, substantially as described, adapted to actuate the extinguishing mechanism.

5. The lamp-supporting basket having the false bottom, spring, and actuating-ring, as and for the purpose described.

260,022. MACHINE FOR SHEARING METALS. URI HASKIN, Pittsburg, Pa., assignor of one-half to Wharton McKnight, same place. Filed Sept. 23, 1881. (No model.)



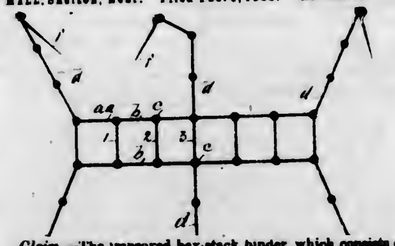
Claim.—1. In a metal-shearing machine, the combination of recessed side frames, one of which is provided with a stationary cutter, with a recessed sliding central frame provided with a cutter and arranged between the side frames, the recess of the sliding frame being shorter than those of the side frames, substantially as and for the purpose specified.

2. In a metal-shearing machine, the combination of recessed side frames, one of which is provided with a cutter, with a recessed sliding central frame provided with a cutter and with two adjustable bearing-plates, one in front and one in rear of the stationary cutter, substantially as and for the purpose specified.

3. In a metal-shearing machine, the combination, with a sliding cutter-frame having a recess to receive the article to be severed, of a fixed cutter on one side frame and a recess and guide-plate on the opposite side frame to retain the article in position while being operated on by the cutters, substantially as specified.

4. In a metal-shearing machine, the combination of side frames, one of which is provided with a cutter, a central sliding frame provided with a cutter, the cutters being relatively arranged to operate upon the inward stroke of the movable cutter, a shaft for actuating the sliding frame, and a breaker arranged on the sliding frame, substantially as and for the purpose specified.

260,023. HAY-STACK BINDER. JOHN A. HOOD and WILLIAM HALL, Shelton, Nebr. Filed Feb. 6, 1882. (No model.)

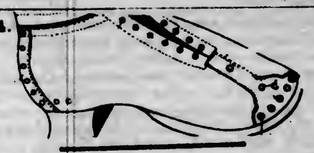


Claim.—The improved hay-stack binder, which consists of a flexible frame, *a b c*, composed of links and rings, and having a series of flexible transverse parts, 1 2 3, to produce a net, and a series of flexible branches, *d*, having pickets *f* at their ends, substantially as shown and described, to operate in the manner set forth when in use and adapted to be folded compactly when not in use, for the purposes specified.

260,024. BOOT OR SHOE. HENRY C. HOLBROOK, San Francisco, Cal. Filed Nov. 8, 1881. (No model.)

Claim.—A boot or shoe having a horizontal row of rivets around the point of the toe where abrasion mostly occurs, as a means of protecting the same and giving it increased durability, substantially as described.

260,024.

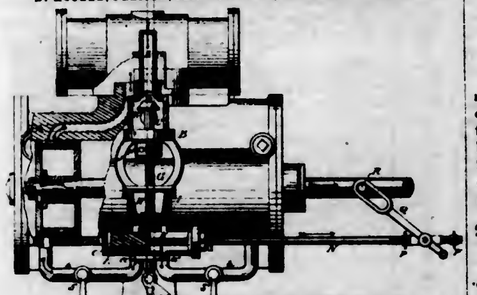


260,025. FISH-PLATE JOINT. FERRIS HOLTON, New Castle Pa. Filed May 1, 1882. (No model.)



Claim.—In a fish-plate joint, the combination of the bars, screw-bolt, recessed nut and key, the upper edge of the key resting in a recess of said nut and its lower edge in a groove in one of said bars, substantially as and for the purpose described.

260,026. ADJUSTABLE STEAM CUT-OFF VALVE. WILLIAM D. HOOKER, Oakland, Cal. Filed Sept. 16, 1881. (No model.)



Claim.—1. The cut-off valve I and its cylinder C, the piston H, and cylinder I, connected together by the yoke J, with the openings to connect the instrument with the boiler and steam-engine, substantially as described, and for the purpose specified.

2. The cut-off valve D and its cylinder C, the piston H and cylinder I, connecting-yoke J, and openings to connect the instrument with the boiler and steam-engine, combined with a controlling-valve, L, substantially as described, and for the purpose herein set forth.

3. In combination with a steam cut-off, B, the piston H, and controlling-valve L, the adjustable stops P P', substantially as described, and for the purpose specified.

4. In combination with the controlling-valve L and cylinder K, having the ports *a a'*, connecting it with the said valve, the small port *c*, passing through the controlling-valve, all substantially as and for the purpose specified.

5. In combination with a steam cut-off, B, having a valve, D, piston H, and controlling-valve L, the valves *e e'*, substantially as and for the purpose specified.

6. An adjustable steam cut-off as a separate instrument, adapted to be connected by pipes to a steam-engine and boiler, and having a valve, L, controlling the piston of the cut-off valve, said controlling-valve being operated by the main piston by suitable mechanism, substantially as described, and for the purpose set forth.

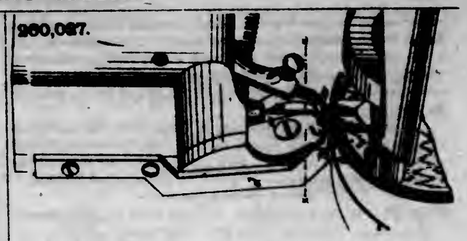
7. The cut-off instrument B and pipes A and E, in combination with the pipe T, constructed substantially as shown, for the purpose specified.

260,027. SEWING-MACHINE. JAMES S. REGNER, Gloversville, N. Y. Filed Mar. 9, 1881. (No model.)

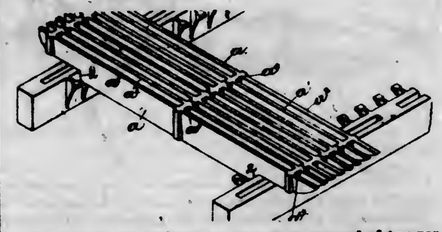
Claim.—1. In an over-edge-stitch sewing-machine, the combination, with the stitch-making mechanism, of the foot D, having the toe *d'*, constructed, arranged, and placed in relation to the devices composing such stitch-making mechanism as described, and for the purpose specified.

2. In an over-edge-stitch sewing-machine, the combination, with the stitch-making mechanism, of the foot D, having the toe *d'*, and provided with the channels *d²* and *d³*, all constructed, arranged, and placed in relation to the devices composing such stitch-making mechanism, as described, and for the purpose specified.

260,027.



260,028. FURNACE-GRATE. KINGSBURY H. JARVIS, Holden, assignor of one-half to Albert F. Upton, Newtonville, Mass. Filed Apr. 8, 1882. (No model.)



Claim.—The double-webbed grate-bar composed of two parallel webs, *a' a²*, shouldered at 2, and connected at intervals by cross-pieces *a³*, thus leaving free open spaces between the said webs for the passage of air and ashes, combined with the fixed bearing-bars on which rest the ends of the grate-bars beyond the shoulders 2, the said bearing-bars having laterally-projecting portions which enter the open spaces between the webs of each bar at the said shoulders, substantially as and for the purpose described.

260,029. ELECTRIC LIGHT. PHILIP O. JENKINS, Washington, D. C. Filed Sept. 30, 1881. (No model.)

Brief.—The object of the invention is to localize the source of heat within the shell of non-conducting refractory material.



Claim.—1. The combination of the inclosed carbon or other electrodes of like refractory and conducting capacity, their surrounding body of refractory non-conducting substance, the intermediate connecting-piece, which connects the two carbon points or electrodes, and the closely-fitting caps of conducting material placed in close contact with the carbons and carbon-investing body, whereby the ingress of air is prevented and electrical contact with the carbon ends is maintained.

2. The combination of the carbons and their inclosing-body, the former fitted air-tight within the latter and the latter provided with a small conical orifice, and the conical or wedge-shaped plug adapted to fit said orifice so as to exclude the air from contact with the carbons, substantially as and for the purposes set forth.

260,030. FAUCET. JOHN H. JOHNSON, Chicago, Ill. Filed Sept. 1, 1881. (No model.)



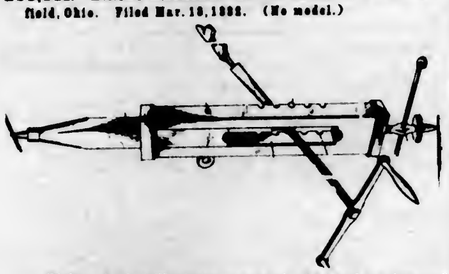
Claim.—1. In a faucet, the combination of the adjustable tubular plunger or valve-support and a ball-valve adapted to a seat in the end of said plunger or support, substantially as described, whereby the ball-valve will be held away from the walls of the casing when liquid is flowing through the faucet, as and for the purposes set forth.

2. In a faucet, the combination of a sliding tubular plunger

or valve-support provided with lateral apertures for the passage of liquid, and a valve-seat in advance of said lateral apertures, with a ball-valve adapted to said valve-seat, substantially as described, whereby the valve will be held from the walls of the valve-chamber when liquid is flowing through the faucet, as and for the purposes set forth.

2. In a faucet, a movable rest or holder for a ball-valve, provided with a continuous ring, *m*, forming a seat to receive the ball when the faucet is open and with openings *f* in the sides for the passage of water, substantially as and for the purposes specified.

260,031. MINING-MACHINE. XAVIER KERR, Jr., West Brookfield, Ohio. Filed Mar. 18, 1882. (No model.)

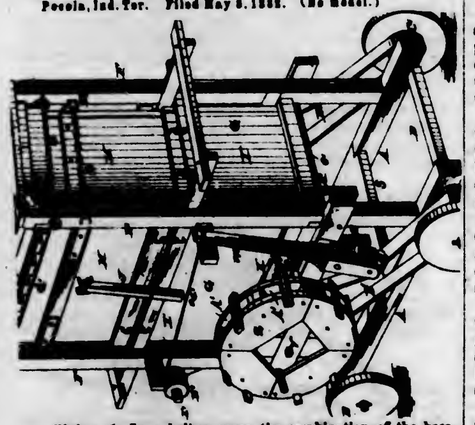


Claim.—1. A drill-clamp composed of hinged sections and provided with a screw-threaded passage-way for the passage of the drill-shank, one of the said sections being provided with screws or lugs adapted to be lengthened or shortened for the purpose of accurately adjusting the drill-shank therein.

2. In a drill-clamp, the combination, with the body portion provided with laterally-extending arms, a semicircular screw-threaded groove, and a tongue provided with an elongated slot, of a hinged portion pivotally secured to the said body portion and provided with a semicircular screw-threaded groove adapted to register with a similar groove in the body portion and arms adapted to rest, respectively, above and below the said tongue in the body portion, and a wedge for locking the two parts together.

3. In a drill-clamp, the combination, with the body portion provided with laterally-extending arms, a semicircular screw-threaded groove, a tongue provided with elongated slots, and lugs or screws for accurately adjusting the drill-shank in the clamp, of a hinged portion pivotally secured to the said body portion and provided with a semicircular screw-threaded groove adapted to register with a similar groove in the body portion and arms adapted to rest, respectively, above and below the said tongue, and a wedge adapted to pass through the elongated slot in the said tongue and hold the parts in locked position.

260,032. PORTABLE BALING-PRESS. JOHN W. KITCHEN, Peoria, Ind. Ter. Filed May 8, 1882. (No model.)



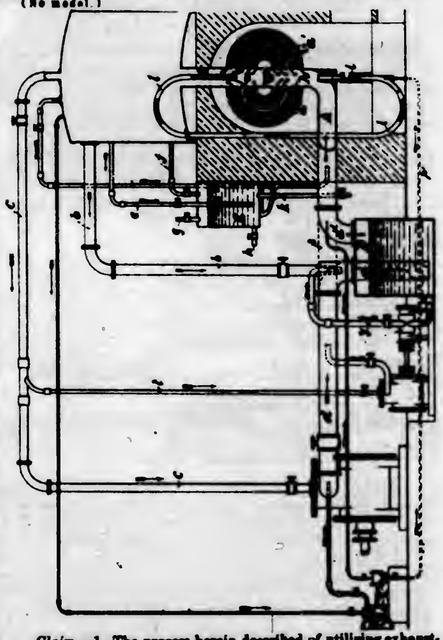
Claim.—1. In a baling-press, the combination of the base-frame A, the uprights F, connected by rod S, the press-box having hinged sides or half doors H, the chains Q, studs R, hinged top doors N, and hinged clamps P, substantially as set forth.

2. In a baling-press, the combination of the truck A, the frame F, the press-box, the follower, and mechanism for operating the latter by power taken from the revolving hind axle of the truck while the machine is being propelled over the ground, as set forth.

3. The combination of the truck A, the frame F, the follower, the press-box, the shaft V, having band-wheels X Y, axle D, having band-wheels C', shaft I', having drums J' L', shaft O', having lever N', and arm R', carrying-rollers Q' S', belts B' K', and the rope M', all arranged and operating substantially as set forth.

4. The combination of truck A, having sill S and uprights T, the frame F, the press-box, the follower F', having double-toothed racks E', the shafts U V, having pinions H', mechanism for conveying motion through belts B' to said shafts from the hind axle of the truck, and belt-tighteners N' R', adapted to bear upon the belts B' with increasing pressure as the pressure in the press-box increases, as set forth.

260,033. UTILIZING EXHAUST. HARVEY T. LITCHFIELD, Hull, and DAVID RENSHAW, Cohasset, Mass. Filed Nov. 8, 1881. (No model.)



Claim.—1. The process herein described of utilizing exhaust-steam by forcing the exhaust of an engine into water of the temperature and pressure equal to that of the working-steam by a jet of live steam, then conveying said exhaust and live steam into and through a superheater to be revivified, when it is again in condition to be conveyed to the engine, substantially as set forth.

2. The process herein described of utilizing exhaust-steam by forcing the exhaust of an engine into a tank of water of high temperature by a jet of live steam, then forcing the steam into a superheater from said tank to be revivified, and there mixed with a jet of air from a pump, then passing it into the steam-receiver, when it is in condition to be conveyed to the engine.

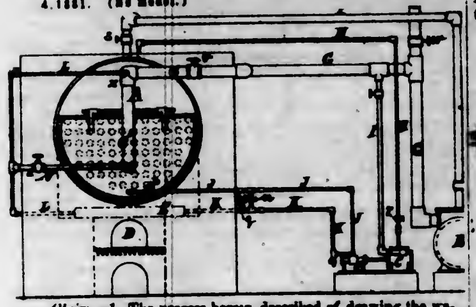
3. The process of utilizing exhaust, consisting in passing the exhaust-steam or steam and air through a superheater to a receiver, a portion of said exhaust being passed through the superheater two or more times, whereby it is more highly heated, substantially as and for the purpose set forth.

4. In an apparatus for utilizing exhaust-steam, the combination of the superheater or regenerator with the cylinder of an engine, tank D, and exhaust-pipe *d* of the live-steam jets *b* and *w*, arranged in such manner that the combined live steam and exhaust-steam is forced into the revivifying-vessel, substantially as set forth.

5. The combination, in an apparatus for utilizing exhaust-steam, of the superheater with the feeding-tank E, steam-pipes *e*, *f*, and *h*, and pipe *a*, for the supply of the superheater, and air-valve *g*, all arranged for joint operation for the starting of the apparatus and to supply any loss from leakage during operation, in the manner shown and described.

6. The process herein described of utilizing exhaust, the same consisting in forcing the exhaust into water of the temperature and pressure due to the working-steam by means of a jet of water of extraordinary velocity taken from the tank D, the said exhaust and water-jet being forced into tank D, and the resultant steam being carried into and through the superheater and revivified, when it is again in condition to be conveyed to the engine.

260,034. UTILIZING EXHAUST-STEAM. HARVEY T. LITCHFIELD, Hull, and DAVID RENSHAW, Cohasset, Mass. Filed Aug. 4, 1881. (No model.)

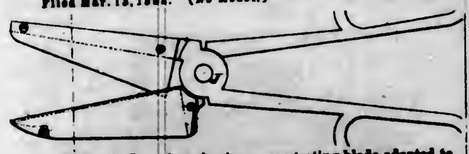


Claim.—1. The process herein described of drawing the water from a boiler under pressure by mechanical means, forcing it through an add-heater, then forcing it through a nozzle, when it comes in contact with the exhaust of an engine and forces it into the boiler.

2. The combination, in an apparatus for utilizing exhaust-steam, of the pump, the add-heater, the water-pipes and nozzle, and the exhaust-pipe of the engine with the boiler, whereby the water from the same boiler is made to force the exhaust of the engine into said boiler, substantially as set forth and described.

3. The combination, in an apparatus for utilizing the exhaust-steam of the boiler A, engine B, pump C, add-heater E, and water-pipes J, K, M, and L with the exhaust-pipe G, substantially in the manner shown and described.

260,035. SHEARS. ANDREW J. LYTLE, Hillsborough, Ohio. Filed Mar. 13, 1882. (No model.)

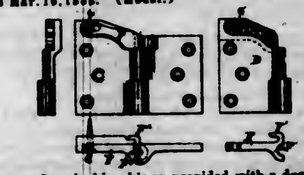


Claim.—1. In a shear having a penetrating-blade adapted to work into and cut against one side of a slot, the combination, with such blade, of an opposite jaw to form one side of the slot and a detachable bed-blade fixed alongside said jaw and set with its cutting-edge above the level of said jaw to form an opposite and higher side for said slot, substantially as and for the purpose set forth.

2. A shear-blade formed of sheet metal longitudinally bent into angle-section, and adapted to shear across the thin edge of the metal, as set forth.

3. In a shear having a detachable blade formed of sheet metal bent longitudinally into angle-section, the combination, with such blade, of an attaching-surface arranged to bear against the inner surface of such blade, and also against the under surface of the horizontal part of such blade, whereby the horizontal support of the blade, by means of the angle, tends to relieve the screws or rivets from downward strain, as set forth.

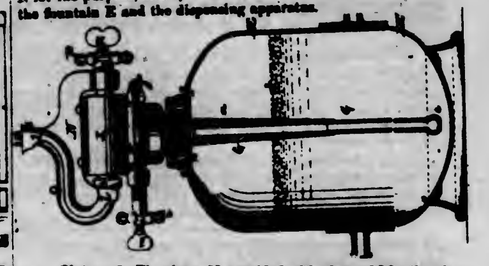
260,036. LOCK-HINGE FOR SHUTTERS. JOHN P. HAUBS, Reading, Pa., assignor of one-half to I. Ellis Kurtz, same place. Filed Mar. 10, 1882. (Model.)



Claim.—In a locking-hinge provided with a dog or pawl, F, abutting against an offset, F', on the pintle-cap of the shutter-leaf, and lying within a recess sunk in the jamb-leaf, the oblong slot G', whereby the contact of the shutter with the wall may be adjusted by the shifting of the fulcrum-screw G, substantially as shown, and for the purpose described.

260,037. SODA-WATER FOUNTAIN. JOHN MATTHEWS, New York, N. Y. Filed Feb. 14, 1881. (Model.)

Brief.—The valve-spindles are concealed, and are therefore not likely to be opened, except by the retailer, who has the clamp N for the purpose, and by which connection can be made between the fountain E and the dispensing apparatus.



Claim.—1. The clamp N, provided with channel *l* for the pipe Q, and with the fastening-screw P, substantially as described.

2. The clamp N, provided with means for attaching it to the pipe Q, and with clamping-screw P and valve-screw R, substantially as described.

3. The combination of the pipe Q with the clamp N, fountain-cock I, and fountain, the clamp carrying the means for opening the fountain-cock substantially as described.

4. The combination of the fountain E and fountain-cock I with the valves M and J, having spindles concealed within the shell of the cock, said shell having passages *h* and *g*, which are respectively closed by said valves and communicate with said fountain, substantially as described.

5. In combination with the fountain E, the fountain-cock I, having valve-spindle J and passage *g*, which leads into the upper part of the fountain, the stem of the valve-spindle J being concealed, substantially as described.

6. The combination of the clamps N with the fountain-cock having two concealed valve-spindles, substantially as specified.

7. A soda-water fountain combined with the gas-cock and the concealed spring-valve J thereof, and with the fountain-cock, substantially as herein shown and described.

8. A soda-water fountain combined with the valve M, and with the valve J, and with the springs *a* and *j* for operating said valves, all concealed in the shell I of the cock, substantially as herein shown and described.

9. In combination with a fountain having a gas-cock and a fountain-cock, the tube carrying clamps L and N, and their screws R and R for opening the valves in said cocks, substantially as herein shown and described.

10. The clamp N, having one or more guide-pieces, 7 and 9, and provided with a screw, P, at one end and tube-holding nozzle 3 at the other end, substantially as described.

11. The valve M, combined in the shell I, with its actuating-spring *a* at one end, and with the packing-piece 5 and follower 4 at the other end, substantially as described.

12. The tube G, suspended from the stop-cock, and constructed with the bulbous enlargement *c* at the lower end, as a means of protection for the said tube and said fountain, substantially as specified.

13. The tube G, suspended from the stop-cock and made with the enlarged and conical upper portion, *c*, and with the reduced lower portion, *b*, having bulb *c*, substantially as specified.

260,038. GAS-REGULATOR. LEWIS H. MCCULLOUGH, Richmond, Ind. Filed Dec. 31, 1881. (No model.)

Brief.—The valve is on an extension of the armature, and is opened by gravity when the current ceases. It allows, when closed, sufficient gas to flow to maintain a taper flame.



Claim.—1. An armature pivoted at one side of its center of gravity, but remote from either end, its heaviest end carrying a valve for controlling the flow of gas to the burner, whereby the gravitating valve automatically opens the outlet of the gas-induction pipe when the current of electricity ceases to flow through the magnet, the parts being constructed substantially as described.

2. In a gas-burner, the combination of a case or vessel having in it a gas-receiving chamber for receiving gas from an induction-pipe, an electro-magnet, and an insulating material for preventing injurious effects upon the magnet, substantially as described.

3. The combination, in a gas-burner, of the armature C, pivoted at one side of its center of gravity, its heaviest end carrying a valve for controlling the flow of gas to the burner, and a gas-induction pipe the outlet of which is controlled by the valve carried upon one end of the pivoted armature, substantially in the manner and for the purpose set forth.

4. In a gas-burner, the combination of the case or vessel A, having a gas-chamber in its upper end, the magnet B, the armature C, the gas-induction pipe A^1, and the insulating material, all substantially as described, and for the purpose set forth.

5. The combination of the case, magnet, armature and valve, and burner with a gas-supply tube provided with an opening to feed a taper flame when the valve is closed.

6. The combination of the case provided with a cover, a burner-tube, an armature and valve thereon, and a gas-supply tube extending into the upper part of the case and arranged to be closed by the valve, all substantially as set forth.

7. The combination of a case, an electro-magnet, a bracket to which is pivotally connected an armature bearing a valve, a gas-supply pipe extending above the bracket, and means for opening the valve when the current ceases.

260,039. GAS-REGULATOR. LEWIS H. MCCULLOUGH, Richmond, Ind. Filed May 1, 1882. (No model.)



Claim.—1. A gas-chamber constituting a portion of a gas-regulator, the upper wall or plate of which consists of a thin sheet of brass or other non-magnetizable metal, through which the magnetism passes from the magnet or magnets and operates to raise or attract an armature placed in said chamber, substantially as set forth.

2. In a gas-regulator the valve of which is operated partially by electro-magnetism and partially by gravity, the combination of a gas-chamber the upper wall or plate of which is of thin brass or other non-magnetizable metal, an armature which, when the circuit is closed, rests upon the under surface of said thin plate, and a magnet or magnets the core of which rests upon its upper surface, substantially as and for the purpose set forth.

3. The combination of the gas-chamber B, one of the walls of which is of thin brass or other non-magnetizable metal, the armature D, valve D', secured upon and moved by said armature, the gas-conducting pipe passing up between the magnets and through the heel-piece, and the burner I, the parts being arranged substantially as shown.

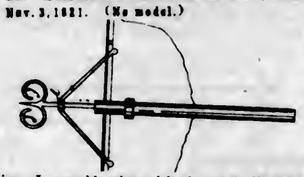
260,040. ELASTIC CUSHION FOR CUTTER-BARS. SIMEON C. MILL, Chicago, Ill. Filed Oct. 7, 1881. (No model.)



Claim.—1. In a mowing-machine, the elastic cushion A, in combination with the cutter-bar *f*, rod e, flanged collars *d d*, and bracket e, constructed and arranged to operate substantially as and for the purpose set forth.

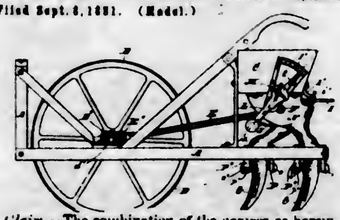
2. The coupling-arm, finger-bar, cutter-bar, pitman, and crank, in combination with the rod e, flanged collars *d d*, bracket *e*, and elastic cushion A, substantially as and for the purpose described.

260,041. REIN-HOLDER. JESSE MURPHY, Kendaskeag, Me. Filed Nov. 3, 1881. (No model.)



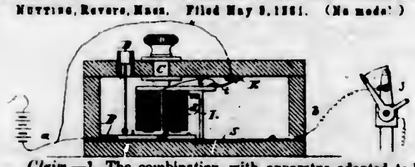
Claim.—In combination with the vertically-adjustable rein-support, the rein holder or clamp attached to said support and adjustable therewith, constructed substantially as herein described and shown.

260,042. GRAIN-DRILL. ALBERT M. MORRIS, Rushville, Ind. Filed Sept. 8, 1881. (Model.)



Claim.—The combination of the devices as herein described, consisting of the hopper C, seed-cups N, curved seed-slides J, moving in a corresponding groove, *j*, shaft or bar K, seed-wheels G, sliding bearing H, lever I, shafts E and F, and thumb-screw M, all constructed and arranged as specified.

260,043. TESTING AND BREAKING CIRCUITS. WILLIAM R. MOTTING, Revere, Mass. Filed May 9, 1881. (No model.)



Claim.—1. The combination, with apparatus adapted to be operated in connection with a series of temporary circuits from an open-circuit battery, of a circuit-seeker comprising an electro-magnet and a series of plates, A, and connections whereby the magnet is put in circuit when the main circuit is established, and, by the attraction of an armature to the magnet, breaks the main circuit, substantially as set forth.

2. The combination of a series of circuit-breakers, each in a circuit including an apparatus to operate in connection with temporary currents from an open-circuit battery, of a movable electro-magnet, connections whereby the same is put in circuit when in proximity to any one of the said circuit-breakers which is also in a completed circuit, and appliances whereby the movement of the armature is made the means of breaking such main circuit, substantially as set forth.

3. The combination, in a series of circuit-breakers, of an electro-magnet movable past the same, and constructed to open any circuit-breaker included in a circuit improperly closed, and a retainer whereby a circuit-breaker when so opened is prevented from closing on the removal of the magnet, substantially as set forth.

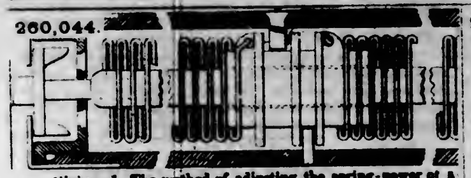
4. The combination of the movable electro-magnet and its connections and the bar B, armature-plate A, and spring-blades S, substantially as set forth.

5. The combination of the bar B, series of plates A, and blades S, retainers for said plates, bar E, and carrier supporting an electro-magnet, and arm L, and electric connections, substantially as set forth.

260,044. SPRING CURTAIN-ROLLER. JAMES H. OSGOOD, Somerville, Mass. Filed Aug. 6, 1881. (No model.)

Brief.—When a heavy shade is used the screw is inserted into the coupling so that one-half the spring is inoperative. For a light shade the screw or catch is removed and both springs used, the screw fixing or releasing a collar secured midway of the spring to or from the roller.

260,044.



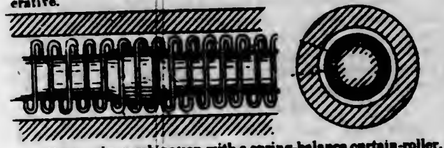
Claim.—1. The method of adjusting the spring-power of a balance shade-roller to the weight of the shade, which consists in modifying the increase of tension of the primary spring as it is wound by the coupling therewith, at will, of one or more additional springs, as set forth.

2. In a spring-balance roller, the combination, with the springs, of a coupling or center ring with flanges and notch or projection, and a detent upon the roller, in such a manner that the inner spring upon the spindle becomes inoperative in the movement of the heavy or opaque shade, substantially as set forth and described.

3. In combination with the spindle and roller, a coupling or center ring having flanges and notch, and a pin inserted from the outside of the roller, for holding the coupling and preventing an endwise movement of the spring in the roller, substantially as described.

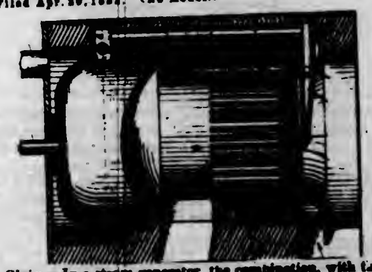
260,045. SPRING CURTAIN-ROLLER. JAMES H. OSGOOD, Somerville, Mass. Filed Nov. 25, 1881. (No model.)

Brief.—A ring or collar is secured to the spindle for the purpose of shortening the spring by rendering a portion of it inoperative.



Claim.—In combination with a spring-balance curtain-roller, a ring or collar firmly attached to the spindle for the purpose of shortening the spring, thereby making a portion of the spring inoperative while the roller is in motion, substantially as shown and described.

260,046. STEAM-HEATER. WILLIAM H. PAGE, Norwich, Conn. Filed Apr. 29, 1881. (No model.)



Claim.—In a steam-generator, the combination, with the annular water-chamber having heating-tubes, of the supply water-pipes leading to vertical pipe connected with a pipe arranged under the fire-grate and connected with the said water-chamber, substantially as and for the purpose set forth.

2. In a steam-generator, the combination, with the fire-pot and the surrounding water-chamber, of the steam-chamber superposed upon the water-chamber, and the water-tubes connecting the said chambers together at the rear below the fire-pot and in front at the top of said surrounding water-chamber, substantially as and for the purpose set forth.

3. The combination, with the steam-generator adapted to allow the return and upward passage of the products of combustion external to itself, of the vertical water-supply pipes having horizontal branch pipes extending beyond them, and the inclosing casing of masonry or other suitable material, having a combustion-space between itself and the generator, said space being subdivided by said branches of the supply-pipe from the rear to the front ends of said branch pipes, substantially as and for the purpose set forth.

260,047. RUNNING-GEAR FOR VEHICLES. ROBERT C. PARVIN, Vineland, N. J. Filed Oct. 4, 1881. (No model.)

260,047.



Claim.—1. The combination of the axle A, the truss G', fastened only at its ends thereto, the fifth-wheel supported on said truss, the head-block contained on said wheel, and the spring fastened thereto, substantially as shown and described.

2. The combination, with rear axle, B, of reaches C C, secured thereto by plates D and D', crotches E E, and truss G, the ends of said crotches and truss being fastened to said axle by clips H, which pass over the former and through the latter, substantially as shown and described.

3. The bolster-bar I, having a bow-shaped plate or bar secured to its under side, substantially as shown and described.

4. The metal head-block M, having lugs *m m* on its rear side for securing the reaches thereto, substantially as shown and described.

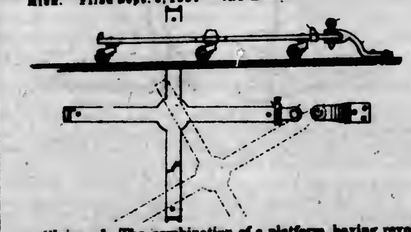
5. The combination, with the head-block M, having lugs *m m* of the angle-bar reaches secured thereto by bolts *m' m'*, substantially as shown and described.

260,048. HORSE-COLLAR FASTENING. OREN S. PITNY, Fulton, Mo. Filed Apr. 17, 1882. (No model.)



Claim.—The combination, with the curved plate A, having its side edges turned outwardly at nearly right angles to the body, and having a suitable fastening device, of the correspondingly-curved plate B, having like flange edges which are adapted to fit and slide inside the turned edges of the other plate, the latter thus forming a guide and re-enforce against lateral strain or displacement of the plates, and to be engaged by the fastening device on plate A, substantially as set forth.

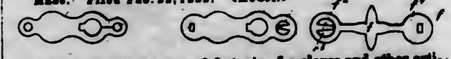
260,049. BARREL-ROVER. JAS. H. QUACKENBUSH, Kalkaska, Mich. Filed Sept. 6, 1881. (No model.)



Claim.—1. The combination of a platform having revolving casters with a stationary bracket, to which the platform is pivotally attached, as and for the purpose set forth.

2. In a barrel-mover consisting of a platform composed of crossed bars which are supported on revolving casters, the combination therewith of an attachment consisting of a hand fitted loosely on one of said bars and having an upwardly-projecting shoulder, and provided with a set-screw, as shown and described, and for the purpose set forth.

260,050. GLOVE-FASTENING, &c. WILLIAM S. RICHARDSON, Newton, assignor to Clarence John Blake, Trustee, Boston, Mass. Filed Feb. 23, 1882. (Model.)



Claim.—1. The improved fastening for gloves and other articles, consisting of two members, one of which is provided with a socket, B, having the spring yielding sides *d* about the circular opening to the socket and adapted to be fastened to the material, and the other of which consists of a ball and tongue, also adapted to be fastened to the material, and the ball of which is adapted to enter the socket of the other member of the fastening device and be held therein, as described, all as set forth.

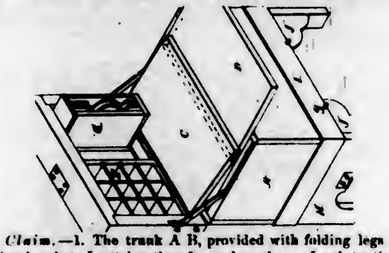
2. A member of a fastening device containing a socket, B, having an opening, C, and the yielding sides *d*, adapted to receive a suitable ball or other device, all substantially as and for the purpose described.

3. A member of a fastening device having the ball E, the straight tongue *e*, adapted to be used in connection with the other member of the fastening device described, and means for fastening the same to the material, substantially as specified, all struck up or formed from a sheet-metal blank, substantially as set forth.

4. As a means of fastening a member of a fastening device in place, a prong or projection, f^3, integral with the device and at or near the end of one arm thereof, and a hole, f^2, at or near the end of the other arm thereof, and a recess in the under surface of said arm adjacent thereto, the prong or projection being adapted to be passed through the hole and upset or clinched in the recess, all substantially as described.

5. In a member of a fastening device having two arms by which it is fastened to the material, the combination of the arm F, having the hole or aperture f^2, and the arm F', having the projection f^3, all substantially as described, and for the purposes set forth.

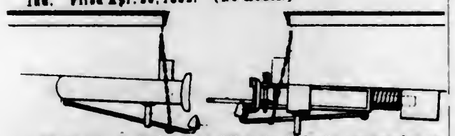
260,051. COMBINED TRUNK, DESK, TABLE, &c. JAMES A. RIGBY, Allegan, Mich. Filed Oct. 24, 1881. (Model.)



Claim.—1. The trunk A B, provided with folding legs H, folding brackets J, catches therefor, and a valance, I, substantially as described.

2. The trunk A B, provided with folding legs, a nest of pigeon-holes, a book-case, a cover, C, and an extension-lid, D, substantially as described.

260,052. CAR-COUPLING. SAMUEL J. ROSSMAN, Terre Haute, Ind. Filed Apr. 29, 1882. (No model.)

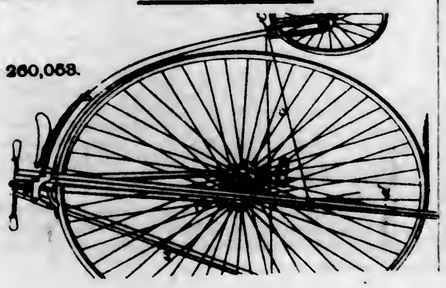


Claim.—1. A device for holding the link of a car-coupler on a horizontal line preparatory to coupling cars, consisting of a truncated cone or egg-shaped head affixed to the upright end of a lever adapted to automatically release said link when the draw-heads of two contiguous cars collide, in the manner hereinbefore described.

2. In a car-coupling, the combination, with a coupling-link, of a truncated cone or egg-shaped head affixed to the vertical end of a lever which is pivoted to a lug a distance back on the under side of the draw-head, substantially as and for the purpose hereinbefore described.

3. The combination, with a car-coupling in which a link is used, of a truncated cone affixed to the vertical end of a lever which pursues a short downward course, then horizontally and longitudinally to a point on the under side of the draw-head, a guide to direct the oscillations of said lever extending downward from said draw-head, and a chain to raise or lower said lever and cone, which passes through an eye or staple on the under surface of said lever, substantially as and for the purpose hereinbefore described.

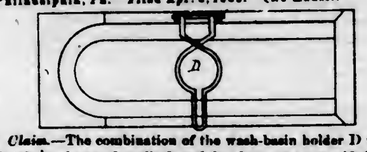
260,053.



260,053. BICYCLE-SUSPENDER. SYLVESTER SAWYER, Gardner, Mass. Filed Oct. 31, 1881. (No model.)

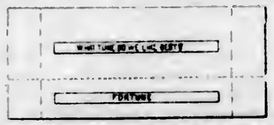
Claim.—As an improved article of manufacture, a bicycle-suspender consisting of the legs or supports *a a'*, united together at or near their upper ends, and having means for supporting the bicycle, substantially as specified, with a stay, rope, or brace, *c*, all substantially as and for the purposes set forth.

260,054. BATH-TUB ATTACHMENT. FREDERICK SCHUTTE, Philadelphia, Pa. Filed Apr. 3, 1882. (No model.)



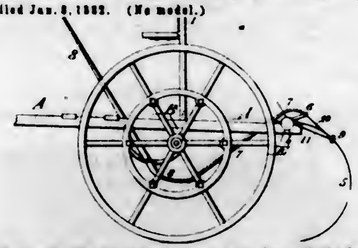
Claim.—The combination of the wash-basin holder D with a bath-tub, as shown, described, and for the purpose specified.

260,055. WRAPPER FOR CONFECTIONERY. AUGUST SCHWARZSCHILD, New York, N. Y. Filed Mar. 30, 1882. (No model.)



Claim.—An improved wrapper for candies and other articles sold in small packages, having printed or placed thereon a conundrum, enigma, or riddle, and the answer thereto, in such relative positions that when the wrapper is placed in position around the article or articles the conundrum, enigma, or riddle is exposed to view and the answer concealed.

260,056. HAY-RAKE. HAMILTON L. SHIELDS, Troy, N. Y. Filed Jan. 3, 1882. (No model.)



Claim.—1. The combination, in a hay-rake, with the bars A, which form the thills for the team, of the rake 4 5, extending laterally beyond the ground-wheels and removably secured to the thills, bar 9, extending parallel with the rake-head and through which the teeth pass, bars 11, connecting the ends of the rake-head and bar 9, and diagonal rods 10, by which the teeth through said bar 9 are lifted, as hereinbefore described, fo the purposes specified.

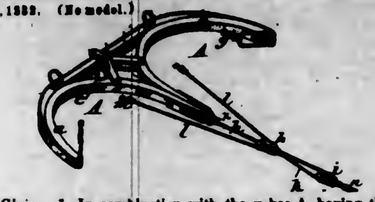
2. The combination, in a hay-rake, with the rake-head 4 and parallel-placed bar 9, of short lever-arm 6, attached to the rake-head, diagonal rods 10, connecting the bar 9 with the arm 6, and by which the raising of the rake-teeth is effected, pivoted hand-lever 8, and connecting-bar 7, as hereinbefore described, for the purposes specified.

260,057. HORSESHOE. GEORGE W. H. STOKES, Madison Court-House, Va. Filed July 8, 1881. (No model.)



Claim.—The combination of a horseshoe having upwardly and obliquely inclined heel-pieces G G, and conical studs *e e*, projecting therefrom, the band B, receiving through its ends the studs *e e*, and constructed with an ear, *e*, the toe-strap A', and the nut *f*, applied thereon, substantially as described.

260,058. DRAFT APPARATUS FOR HORSES. THEODORE J. SLATER, Freehold, N. Y. Filed Oct. 25, 1881. Renewed May 16, 1882. (No model.)

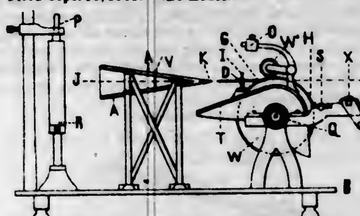


Claim.—1. In combination with the yoke A, having their ends provided with means for connection to the hames, the chain *a*, pulley *i*, chain A, pulley *k*, and chain *l*, having its ends provided with fastening devices.

2. As an improvement in the construction of harness-yokes, the combination of the continuous outer bow and the two inner bows, cobured to each other and to the outer bow, as described and shown.

3. A breast-yoke having two semicircular rigid ends, in combination with devices at the outer ends for attachment to the hames, and a central chain provided with attaching devices at its ends and connected by equalizing pulleys and chains with the middle of the yoke, substantially as described and shown.

260,059. MEASURING, RIGGING, TENTERING, AND FINISHING MACHINE. EDWARD STUBBS, West New Brighton, N. Y. Filed Sept. 30, 1881. (No model.)

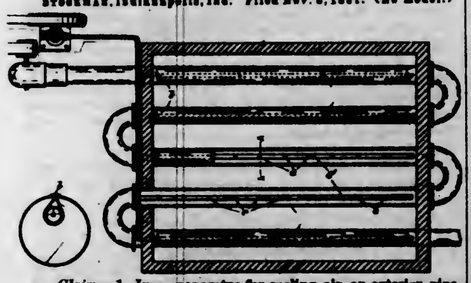


Claim.—1. The combination, with the spindle P, bridge A A, and guide D G H, of the wheel W, dampener E, drier F, roll S, and roll or board X, all constructed and operating substantially as shown and described.

2. The combination, with the spindle P, bridge A A, and guide provided with an edge, G, of the wheel W, roll S, and roll or board X, all constructed and operating substantially as shown and described.

3. The spindle P and means for supporting it perpendicularly to the plane of the goods when folded, and bridge A A, combined with a guide which is provided with an edge, G, and means for drawing the material from said spindle and over the bridge and guide, substantially as shown and described.

260,060. APPARATUS FOR COOLING AIR. GEORGE W. STOCKMAN, Indianapolis, Ind. Filed Nov. 5, 1881. (No model.)



Claim.—1. In an apparatus for cooling air, an exterior pipe for conducting a refrigerating-liquid, in combination with an air-pipe through which the air to be cooled is forced, and so arranged that the liquid shall enter the air-pipe through perforations in the latter.

2. In an apparatus for cooling air, an incasing-pipe through which air to be cooled is forced, in combination with an interior pipe having perforations and conveying refrigerating-liquid, for the purposes above set forth.

3. In an air-cooling apparatus, a pipe through which air is forced, in combination with a vat for submerging the air-pipe, and means for conducting a refrigerating-liquid into the air-pipe to prevent the moisture from congealing therein.

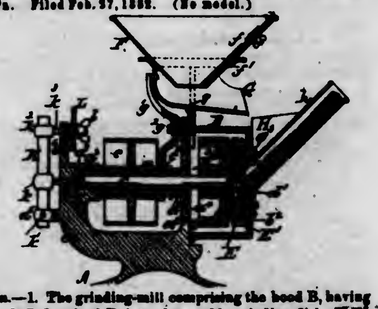
260,061. SEWING-MACHINE PRESSER-FOOT. HENRY C. STORR, Natick, Mass. Filed Mar. 27, 1882. (No model.)



Claim.—1. The presser-foot B, provided with the two vertical extensions *c c*, in combination with the body A, having in it the two vertical sockets to receive such extensions, and also having clamping-screws to confine the extensions in the sockets.

2. The presser-foot B, provided with the two vertical extensions *c c*, in combination with the body A, having in it the two vertical sockets to receive such extensions, and also having to open out of each socket at its lower end a notch, *g*, to receive the foot, each of such sockets being provided with a clamp-screw, and all being substantially as set forth.

260,062. GRINDING-MILL. ANDREW W. STRAUB, Philadelphia, Pa. Filed Feb. 27, 1882. (No model.)



Claim.—1. The grinding-mill comprising the hood B, having seat b^2, shaft C, fly-wheel D, interchangeable grinding-disks E E', base A, having spindle-bearings and vertical disk a^2, bridge-tree K, bracket a^3, rings b b^2, button I, stem or step *i*, rod b^3, bracket a^4, wheel L, and nut *l*, substantially as shown and described.

2. In a grinding-mill, the combination, with a spindle and grinding-disks E E', of a breakable bridge-tree, K, substantially as shown and described.

3. In a grinding-mill, the combination of base A, having brackets a^3 a^4, rings b b^2, bridge-tree K, rod b^3, wheel L, nut *l*, stem or step *i*, button I, shaft C, and grinding-disks E E', substantially as shown and described.

4. The combination, with spindle C, disks E E', plate or fly-wheel D, and cutters d' d^2, of hood B and hopper H, having inclined feed-trough *h* and semicircular opening b^4, substantially as and for the purpose set forth.

5. A cast-metal grinding-disk provided with a series of saw-teeth, a series of conveyer-flights, and two series of furrows, one of which has its sharp or cutting angles front and the other its inclined or crushing sides front, substantially as shown and described.

6. A breakable bridge-tree, K, in combination with a step, *i*, button I, spindle C, and grinding-disks, substantially as shown and described.

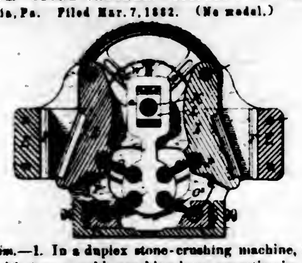
260,063. WATER-PROOF FABRIC. GEORGE STRAT, New York, N. Y. Filed Mar. 31, 1882. (Specimens.)

Claim.—1. As a new article of manufacture, a water-proof material composed of two cloths united by water-proof cement filling the depressions or hollows between them and having the projecting portions of their contiguous faces in contact, whereby the compound material is rendered water-proof without essentially increasing the thickness, substantially as described.

2. As a new article of manufacture, a sewed garment composed of water-proof material formed of two cloths having the projecting parts of their contiguous faces substantially in contact and the depressions filled with water-proof cement, substantially as described.

3. As a new article of manufacture, the sewed garment composed of a material formed of an outside cloth of cotton duck and the inside cloth of cotton flannel, cemented together, substantially as described.

260,064. STONE-CRUSHER. STEPHEN P. H. TASKER, Philadelphia, Pa. Filed Mar. 7, 1882. (No model.)



Claim.—1. In a duplex stone-crushing machine, the combination, with two movable crushing-jaws, operative in connection with fixed crushing-jaws, of a pitman and a double set of toggles, the arrangement being such that upon the vibration of the pitman in either direction one set of toggles is straightened and one movable jaw thrown into action and the other set of toggles crooked and the other movable jaw thrown out of action.

2. In a duplex stone-crushing machine, the combination, with two sets of toggles, adjustable toggle-seats, and movable crushing-jaws, of a toggle-lever or pitman common to and operative of both sets of toggles and the movable crushing-jaws and means for actuating said toggle-lever.

3. In a stone-crushing machine, in combination with the driving-shaft, a fly-wheel free to revolve upon said shaft, a band-wheel fixedly connected with the fly-wheel, and a friction-clutch device for connecting said band-wheel to the shaft.

260,065. PROCESS OF PRODUCING INDELIBLE PHOTOGRAPHS ON PORCELAIN. AUGUSTE TOURNEUX and FRANÇOIS SCHMALS, New York, N.Y.: said Schmals assignor of one-half his right to Jesse Dean, Trenton, N.J. Filed Feb. 1, 1881. (No specimens.)

Claim.—The process of producing an indelible photographic picture upon a porcelain tile, plaque, or other object in glass, china, or other kindred material hereinbefore described, which consists, first, in preparing a metal or other plate with a chemically-soluble solution consisting of bichromate of ammonia, borate of soda, sugar and glycerine, and water; second, in printing or transferring an image from a photographic positive by means of light upon said prepared plate; third, in covering or coating the imprinted image upon the prepared plate with vitrifiable color; fourth, in covering or coating said colored image upon the prepared plate with a film, tissue, or layer of collodion or other coagulable material; fifth, in first dissolving by saturation in water, and second by treatment with a solution of carbonate of potash, the chemical solution upon the plate and beneath the collodion; sixth, in lifting said coagulated film and the colored image adhering to the under side thereof from said plate and laying it upon a tile, plaque, or other object desired to be decorated; seventh, in subjecting such decorated object to heat sufficient to vitrify and render indelible the colored image on the object, substantially as set forth.

260,066. MOTOR FOR SEWING-MACHINES. WILLIAM TRAHUN, Louisville, Ky. Filed Apr. 24, 1882. (No model.)

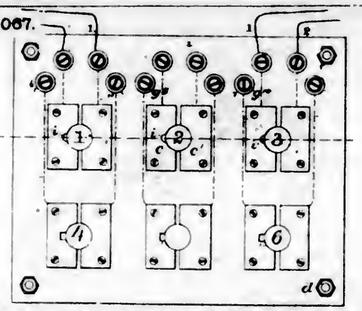


Claim.—The frame A, curved or bent over at the top and provided near the opposite end with an arm, D, in combination with the drum C, head G, pinion E, pulley F, brake N O, cord P, belt H, and weight and cord, substantially as and for the purpose described.

260,067. ELECTRICAL SWITCH-BOARD. FREDERICK M. VAIL, Boston, Mass. Filed Apr. 26, 1882. (No model.)

Claim.—1. A switch-board consisting, substantially as hereinbefore described, of a number of conducting connection-plates interleaved in a pile with non-conducting plates, a number of line-plates, each split in half, for the reception of both terminals of a metallic circuit or loop line, and provided with plug-holes in and through each line-plate, and extending also through all the connection and insulating plates, and a plug-connector having two conducting-plates attached thereon, for connecting simultaneously each half of the line-plates to a separate connection-plate, for the purpose specified.

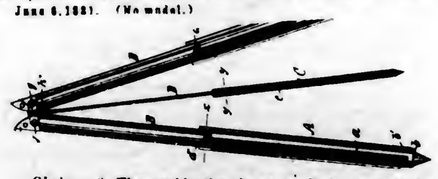
260,067.



2. In an electrical switch-board of the class indicated, the combination of the line plates or commutators, each divided into two contact-plates, to which the terminals of a metallic circuit are permanently attached, with the connection-plates, arranged in pairs and interleaved with non-conducting plates, and means, as indicated, whereby each division of the line-plate may be connected with one of a pair of connection-plates, for the purpose specified.

3. In a switch-board for metallic circuits, a double-contact plug-connector consisting of two strips extending on the sides of the plug and insulated from one another by a base or shank of non-conducting material, both of the said strips being provided at or near each end with a metal projection or flange, the flange at the upper or outer end being in both strips coincident in distance from the end of the plug, and the flanges or projections at the lower or inner end being unequal in distance from the end of the plug, whereby the plug is adapted to make contact at its outer end with the two line contact-plates which are on the same plane and at its inner extremity with any predetermined two connection-plates on different planes, as described.

260,068. EASEL. AGNES E. VAN KIRK, New York, N.Y. Filed June 6, 1881. (No model.)



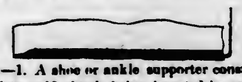
Claim.—1. The combination, in an easel, of several parts jointed at their upper ends, and carrying and sliding in semi-tubular parts adapted, when brought together, to conceal and inclose the other portions, and cap and end pieces, forming, with the folded parts, a walking-stick, substantially as set forth.

2. The combination of the parts A B, forming the front standards of an easel when connected together by means of the spring slide and catch d' in the groove a, substantially as set forth.

3. The combination, in an easel, of the semi-cylindrical parts A B, connected to slide one within the other, and the parts D C, forming the back standards of an easel, consisting of tubes sliding one within the other and adapted to be inclosed by the parts A B when the latter are together, substantially as described.

4. The clamp F, having the thumb-nut i, whereby it may be adjusted and secured at any desired height on the standards of an easel and serve the purpose of the ordinary pegs, and also be used for attaching a board or case for holding the paints and brushes, substantially as described.

260,069. ANKLE-SUPPORTER FOR SHOES. STEPHEN O. WALLACE, Camden, N.J. Filed Jan. 5, 1882. (Model.)



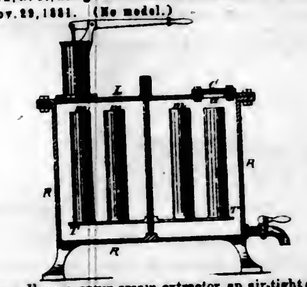
Claim.—1. A shoe or ankle supporter consisting of a shank and base-plate, said shank being inserted in and combined with an upper at a point parallel to the ankle and pivoted to a base-plate attached to the shoe, in the manner substantially as described, so that in walking the pivoted shank will move in unison with the foot, for the purpose set forth.

2. A shoe and ankle supporter consisting of a shank and base-plate, said shank being pivoted to the base-plate and inserted in the upper, and having rounded corners at its base, for the purpose set forth.

3. A shoe and ankle supporter consisting of a shank pivoted to a base-plate, said shank being curved to follow the contour of the foot, substantially as described, and for the purpose set forth.

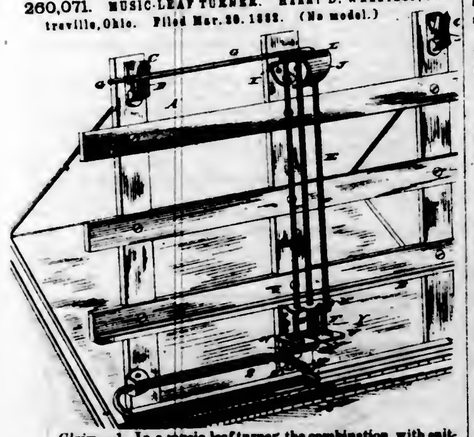
4. A shoe or ankle supporter consisting of a shank and base-plate, said shank being covered with a sheath, the whole inserted in a sleeve located in the shoe, and the shank pivoted to the base-plate, in the manner described, so that said shank will move in unison with the foot in walking.

260,070. VACUUM-CREAMER. ADDISON G. WATSHOUSE, New York, N.Y., assignor to Charles E. Gallatt, Portage, Wis. Filed Nov. 29, 1881. (No model.)



Claim.—For a vacuum cream-extractor, an air-tight chamber, R, provided with an air-tight cap, C, made to fit the opening d, said chamber R being provided with a turning floor, T, secured to an upright shaft made to revolve in bearings within the chamber R, said chamber being adapted to receive the milk-cans m, together with suitable refrigerating material, all arranged substantially as and for the purposes set forth.

260,071. MUSIC-LEAF TURNER. HARRY D. WHEATLEY, Centreville, Ohio. Filed Mar. 20, 1882. (No model.)



Claim.—1. In a music-leaf turner, the combination, with suitable leaf-turning mechanism, of the rack A, having ledge B, and provided at its upper corners with clamps C, having cushions D, as set forth.

2. The combination of the central leaf-turner, having its ends journaled in permanent bearings, with the outer leaf-turners, having their lower ends journaled permanently beside the central one and their upper ends in the side wings or flanges of a plate journaled upon the upper end of the central leaf-turner, as set forth.

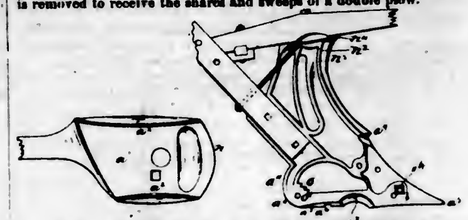
3. The trigger consisting of the rod M, mounted in flanges N O and having crank Y, in combination with the spring Q, secured to one of said flanges at one end, and having its other end intertwisted with an arm, P, formed by twisting a portion of rod M, as set forth.

4. The rod M, having twisted arm P, formed with the loop S, to receive the curved outer end of said rod, thus forming a handle, T, as set forth.

5. The combination, with the leaf-turners, constructed and arranged as described, of the trigger M P Y Q and the flange U, having slot V, provided with studs W and tongues X, as set forth.

260,072. PLOW. LEWIS B. WHITE, Norfolk, Va. Filed Mar. 22, 1880. (No model.)

Brief.—A removable block or foot fits and locks upon a cast standard, and is provided with recesses to receive projections upon mold-board and share and to form secure seats. These under projections have bolt-slots, so that no bolt-heads are in the wearing-surface of the plow. The standard is also adapted when the foot is removed to receive the shares and sweeps of a double plow.



Claim.—1. In a plow, the improved standard or stem a, having its lower end, a^2, reduced on its outer side to provide a shoulder, a^4, and having the rear extended base, a^1, the rear arch-brace, a^{11}, and suitable bolt-holes, all arranged and adapted to be used either for a single or a double turn-plow, substantially as set forth.

2. The combination, with the foot b, having the socket b^2 in its wing b^1, of the share c, having the projection c^2, T-slot c^3, and the rib or flange c^4, substantially as set forth.

3. The combination, with the foot b, constructed with the recesses b^4 b^5 and projection b^6, of the share c, having the projection c^4 and T-slot c^5, and provided with the flange c^7, having hooked end c^8, substantially as set forth.

4. The combination, with the foot b, constructed with the recess b^7, of the mold-board d, abutted against the share c, and having the projection d^4 and T-slot d^5, substantially as set forth.

5. The double-winged casting or foot b, composed of the landside-wing b', having mortise b^3 on its outer side to receive the landside c, and the mold-board wing b^8, furnished with recesses or sockets b^4 b^5, substantially as and for the purposes as set forth.

6. In a standard for plows, the improved foot b, formed of the landside-wing b', having the inner under flange, b^4, and the outer side mortise, b^3, to receive the landside C and the mold-board wing b^8, and cross-brace b^9, substantially as set forth.

7. In a plow, the herein-described means for securing the mold-board, consisting in a socket, b^5, on the standard-foot and the mold-board d, having on its under side a slotted projection, d^6, to receive the bolt-head, and adapted to fit in the socket b^5, and there be bolted to the foot, covering the socket and the bolt-head, substantially as and for the purposes set forth.

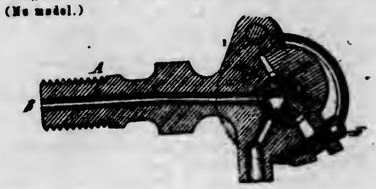
8. In a plow, the herein-described means for securing the share, consisting of the foot b, having the socket b^6, and the share c, having a projection, c^4, to fit in the socket b^6 in the standard-foot, and having the slot c^3, the share covering the bolt-head, as set forth.

9. In a plow-standard, a removable foot constructed with a longitudinal side recess or seat, b^3, to receive the landside C, and a wearing-surface between the said seat and the upper edge of said foot, substantially as shown.

10. In a plow, the standard a, provided with an abutting shoulder, a^4, on its landside, and shaped to fit in the removable foot b, and provided with a base or support, a^3, extended to the rear and adapted for either a single mold-board plow or for the sweeps and double mold-board of a cultivating-plow, substantially as set forth.

11. The combination of the removable foot b, having wings b' b^8, brace b^9, having one end made fast to the wing b', near the lower edge of the latter, and its other end inclined upward and extended to and made fast to wing b^8, and the stem a, having its lower end formed to slide into the angle between the wings b' b^8, the said brace b^9 being arranged to permit the easy insertion or removal of the stem a, as shown in Figs. 14 and 15, substantially as set forth.

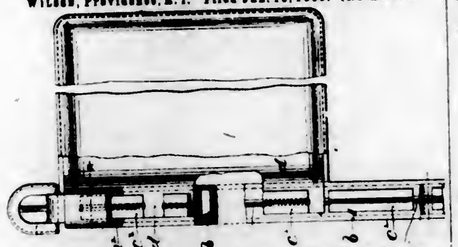
260,073. COCK AND FAUCET. SILAS S. WILLIAMS, Erie, Pa., assignor to John H. Ruth, same place. Filed Dec. 29, 1881. (No model.)



Claim.—1. A straight plug held in position at the end of the barrel by a hinged jaw, substantially as hereinbefore set forth, and arranged and operating so that the wear may be taken up by the hinged jaw, as described.

2. In combination, the barrel A, hinged jaws C and E, straight plug G, provided with a deflecting-passage, P Q, and a screw, F, substantially as shown and described.

260,074. BOX-LOOP AND BLIND FOR HARNESS. BAYCE A. WILSON, Providence, R. I. Filed Jan. 13, 1882. (No model.)

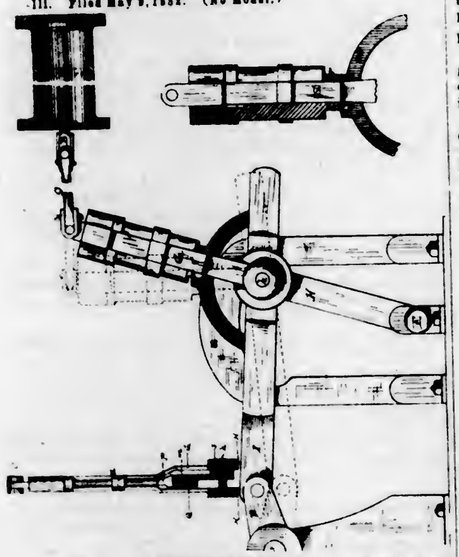


Claim.—1. The tube-frame a^2, with its slots c'', in combination with the notched and punctured metallic T-shaped piece c of the box-loop b, all substantially as described, and for the purpose specified.

2. The blinder-iron d, having slots c''' therein, in combination with the notched T-shaped piece c and slotted tube-frame a^2, substantially as described, and for the purpose set forth.

3. The frame a^2, together with its shank and flanges c, formed in one piece, in combination with the blinder-iron d, having slots c''' therein, the shank and flanges of the former passing through the slots of the latter, substantially as shown and described.

260,075. MECHANICAL MOVEMENT. NELSON ADAMS, Quincy, Ill. Filed May 9, 1882. (No model.)



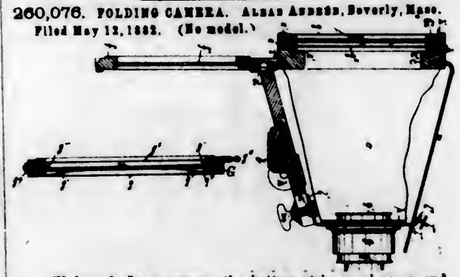
Claim.—1. A reciprocating motor, a connecting-rod, and a crank driven thereby, combined with means whereby at the beginning of each reciprocation and by the action of the motor said connecting-rod shall have imparted to its crank end a movement transverse to its line of reciprocation to force the crank over its dead-point.

2. A reciprocating motor, a connecting-rod capable of reciprocation and partial rotation on an axis parallel with the crank-shaft, and a crank driven thereby, combined with means whereby at the beginning of each reciprocation said connecting-rod may have imparted to it by the action of the motor a partial rotation on said transverse axis to force the crank over the dead-point.

3. A reciprocating motor, connecting-rods C and I, attached to the piston-rod and crank, respectively, and an interposed two-part jointed lever, G H, pivoted at one end to the frame and at the other end to the connecting-rod C, and at its center joint, *k*, pivoted to the connecting-rod I, combined with an arm, *m*, on said connecting-rod I and a latch or latches on the part G, whereby at the beginning of each reciprocation the connecting-rod I has imparted to it a partial rotation on the joint *k* to force the crank past the dead-point.

4. The connecting-rod I, jointed at one end to the crank and at the other end to the jointed lever G H, combined with an arm, *m*, latches *p*, and the cam Q, substantially as set forth.

260,076. FOLDING CAMERA. ALBAN ADDEN, Beverly, Mass. Filed May 12, 1882. (No model.)



Claim.—1. In a camera, the bottom strip or piece, *a*, and frame *c*, hinged together at *d d*, in combination with the lens-carrying bracket *l*, tube or bellows *e*, and the brace *n*, as and for the purpose set forth.

2. In a camera, the combination of bottom strip or piece, *a*, and frame *c*, hinged together, the adjustable and detachable lens-carrying bracket *l l'*, tube or envelope *e*, the adjustable brace or stay *n*, and set-screw *l'''*, the support *e d'*, and locking device *h' h*, as and for the purpose set forth.

3. In a camera, the bottom strip or piece, *a*, and frame *c*, hinged together, in combination with the lens-carrying bracket *l l'*, tube or envelope *e*, hinged focusing-frame *f f'*, support *e e*, and locking device *h h'*, and adjustable stay or brace *n*, as and for the purpose set forth.

4. In a camera, the bottom piece, *a*, and frame *c*, hinged together, in combination with the lens-carrying bracket *l l'*, tube or envelope *e*, adjustable brace or stay *n*, set-screw *m*, and slotted opening *a'* in the piece *a*, as set forth.

5. The herein-described dry-plate holder, consisting of frame G, with its back *g* and springs *g' g' g'*, in combination with the rabbet *g''*, projection *g'''*, locking device *g'''' g''*, and slide *g²*, as and for the purpose set forth.

260,077. CAN FOR COOKING PREPARED MEATS, &c. WILLIAM ARCHENBACH, Indianapolis, Ind. Filed Jan. 17, 1881. (No model.)



Claim.—1. A can for cooking canned or prepared meats, having a removable cover in which is an orifice for the insertion of the meat, adapted to be closed by a plug or stopper after the can is filled, and a closable vent for use during the process of cooking or preparing the meats, substantially as set forth.

2. The combination of the can A, cover B, plug D, and vent E, constructed, arranged, and operating as and for the purposes herein set forth.

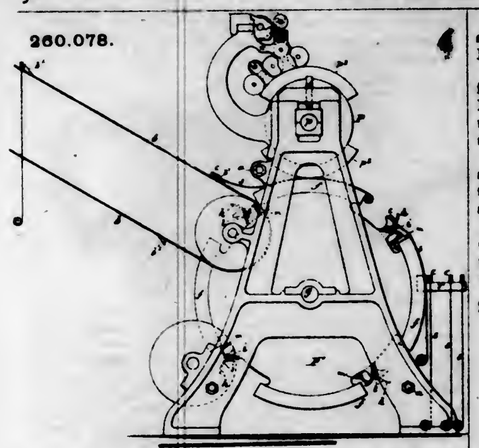
260,078. MACHINE FOR PRINTING WINDOW-SHADES. WILLIAM BAILEY, Brooklyn, N. Y. Filed Nov. 10, 1881. (No model.)

Claim.—1. In a machine for printing window-shades, the combination of the impression-roll F with the hooks h and the clamps c, as and for the purpose herein shown and set forth.

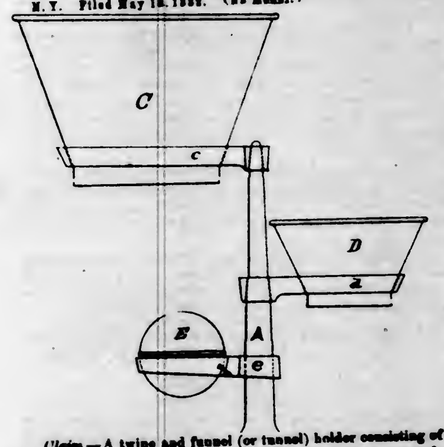
2. The combination of the design-roll P, impression-roll F, having hooks *h*, rack *r*, clamps *c*, and delivery-belts *b*, having projections b^2, substantially as shown and described.

3. In a machine for printing window-shades, the combination of the belts *b*, projections b^2, and impression-roll F, having hooks *h* and clamps *c*, constructed and operated substantially as herein shown and described.

260,078.



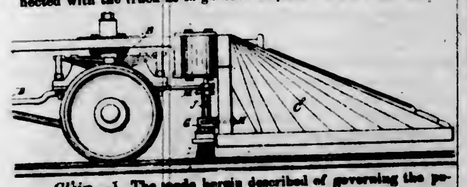
260,079. FUNNEL-HOLDER. CHARLES A. BARNES, Lockport, N. Y. Filed May 18, 1882. (No model.)



Claim.—A twine and funnel (or tunnel) holder consisting of a tapered standard, A, supports *c* and *d*, provided with correspondingly-tapered holes to fit standard A and free to swing around it, funnels (or tunnels) C D, and twine-holder E, all substantially as shown and described.

260,080. ATTACHING BROOMS TO LOCOMOTIVES. WILLIAM S. BARRIS and JAMES E. SHAVER, Denver, Colo. Filed Feb. 1, 1882. (No model.)

Brief.—Brooms or scrapers are arranged to receive lateral motion in a suitable supporting-frame by an operating-bar so connected with the track as to govern the position of the brooms.



Claim.—1. The mode herein described of governing the position of the brooms or scrapers on a locomotive by supporting them independently of the truck and giving them a lateral motion by means of a connection with said truck, substantially as described.

2. The combination, with a broom or scraper holder arranged to receive a lateral motion in a suitable supporting-frame, of an operating-bar connected with the truck, whereby the movement of the latter governs the position of the brooms, substantially as described.

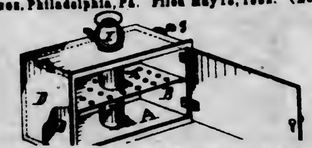
3. The combination, with the brooms or scrapers J L and the sliding bar F, moving in suitable guides, of the trunk B and arm E, substantially as described.

4. The guides G, bolted to the pilot, the sliding bar F, carrying the brooms or scrapers, and the arm E, attached to the trunk B and moving therewith, in combination with said trunk and the radius-bar D, all constructed and arranged substantially as shown and described.

5. The combination, with the bar F, moving in suitable guides and carrying the brooms or scrapers, of the arm E, connected with the trunk-frame and loosely fitted to the bar F, substantially as and for the purpose specified.

6. The combination, with the bar F, of the brackets I, saddles K, set-screws *k*, and broom or scraper handles J, all constructed and arranged substantially as described, and for the purpose specified.

260,081. COMBINED BAKER AND BOILER. WILLIAM B. BILLINGS, Philadelphia, Pa. Filed May 18, 1882. (No model.)



Claim.—1. As an article of manufacture, a combined baker and boiler comprising a jacketed oven having a central vertical flue, the lower end of which is adapted to be connected with a stove, as described, and the upper end of which terminates at the upper side of the oven and communicates thereat with a continuous flue extending about the oven, and a damper located over the said upper end of the flue, whereby the heat in said flue may be used directly at its upper end or radiated therefrom within and from the center of the baker, all substantially as shown and described.

2. The combination of the oven A B C, jacket D, central vertical flue, F, and damper G *g*, the lower end of said flue being adapted for connection to a stove, and communicating with the surrounding flue *e* when the opening *f* is closed by the damper, substantially as shown and described.

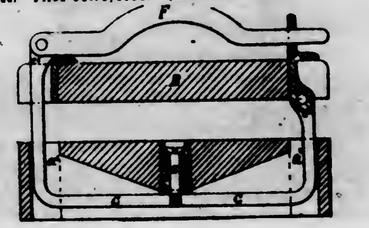
260,082. CORSET. LEWIS S. BENTARD, Toledo, Ohio. Filed Dec. 28, 1881. (No model.)



Claim.—1. In a corset provided with the usual busk adjustment and front fastening, and having at each side an arched hip-opening, the combination of non-yielding straps permanently secured at both ends to opposite sides of said openings, and independent means of adjustment on either side of said hip-openings, whereby independent side adjustments are secured without affecting the size of the hip-openings, substantially as and for the purpose specified.

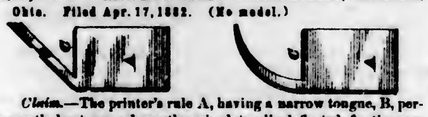
2. In a corset provided with an arched hip-opening, the combination of a non-yielding strap secured permanently at both ends to opposite sides of said hip-opening, an elastic gore, *b*, in the rear of said hip-opening, an adjusting-lacing, *a*, between the hip-opening and the front of the corset, and stiffening-bones between the hip-opening and the elastic gore, substantially as and for the purpose specified.

260,083. COPYING-PRESS. WILLIAM BOWERS, Somerville, Mass. Filed Oct. 6, 1881. (No model.)



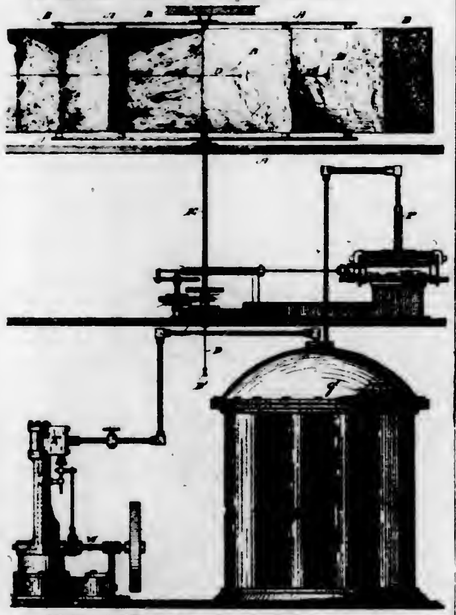
Claim.—The improved copying-press composed of the base A, the top B, the regulating-screw D, the screw E for securing the spring C, the spring C, the lever F, and the bracket G, in combination.

260,084. PRINTER'S RULE. JOSEPH B. BOYD, Cincinnati, Ohio. Filed Apr. 17, 1882. (No model.)



Claim.—The printer's rule A, having a narrow tongue, B, permanently bent, curved, or otherwise laterally deflected, for the purpose stated, sufficient space C being allowed beneath said tongue to clear the quads, as herein described.

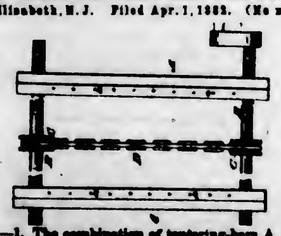
260,085. WIND-POWER MACHINE. HYRON COLONBY, New Haven, Conn. Filed Apr. 18, 1881. (No model.)



Claim.—1. The horizontal wind-wheel constructed, as herein shown and described, with connected wheels A A, gusseted pockets B, and stays D.

2. The horizontal wind-wheel constructed, as described, with connected wheels A A, gusseted pockets B, and stays D, in combination with shaft E and cord D', substantially as and for the purpose set forth.

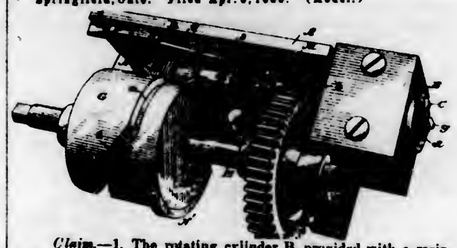
260,086. FRAME FOR STRETCHING FABRICS. EUGENE GERSON, Elizabeth, N. J. Filed Apr. 1, 1882. (No model.)



Claim.—1. The combination of tentering-bars A A, tentering-pins *a a* thereon, transverse screws B B, sprocket-wheels C C, fixed thereto, non-slipping flexible connection D, and crank E, substantially as and for the purpose set forth.

2. The combination of bars A A, each with two rows of tentering-pins, *a a*, on its opposite sides, with right and left screws B B, sprocket-wheels C C, each fixed on the center of one of said screws, non-slipping flexible connection D, arranged midway of said bars, and crank F, substantially as and for the purpose set forth.

260,087. CORD-KNOTTER FOR GRAIN-BINDERS. J. HENRY DEAN, Kalamazoo Mich., assignor to Whiteley, Pessler & Kelly, Springfield, Ohio. Filed Apr. 5, 1880. (Model.)



Claim.—1. The rotating cylinder B, provided with a reciprocating gripper and holder, C, and a non-revolving reciprocating knotter, D, and gripping looper-hook *g*, said knotter and looper being inclosed within said cylinder, combined with a rotating wheel, F, and cam-wheel G, mounted upon a shaft parallel with said cylinder, and suitable connecting devices, substantially as set forth.

2. The cylinder G, provided with the cam-groove *a* and cam N, combined with the slide H and rock-shaft O, provided with arms *o'* and *q'*, whereby the knotter and holder are actuated.

3. The rock-shaft O, provided with the annular arm *o'* and cam *p*, combined with the shaft *m*, having the block *n* and the rotating cam N.

4. The knotter-shaft D, perforated axially to receive the shaft of the hook *g*, combined with the slide I, spring J, and bell-crank K, all mounted on the slide H, whereby the hook *g* reciprocates with said shaft D, but is independently opened and closed.

5. The knotter-shaft D, mounted upon the slide H, which is actuated by the cam *a*, the slide I, and the bell-crank lever K, combined with the guideway L, provided with the switch *l*, as and for the purpose set forth.

6. The hollow cylinder B, provided at its inner end with the pinion *b* and with a longitudinal guideway for the holder C, combined with the reciprocating shaft D, slide H, actuating-wheel F, cam G, slide I, bell-crank K, guide L, and switch *l*, substantially as set forth.

7. The holders C and *g*, each provided with a retracting-spring, and having a rod protruding from the rear end of the cylinder B, combined with suitable devices whereby said holders may be operated independently of the rotation of said cylinder.

260,088. CHARM FOR WATCH-CHAINS. WELLINGTON P. DOLLOFF, Providence, R. I. Filed Apr. 25, 1882. (No model.)



Claim.—In a charm for watch-chains, the combination of the stones B B with the intervening material, C, adapted to hold the stones against the setting-rims, and the setting-rims A A', made to fit one within the other, and having the outer rim, *a'*, turned down over the inner rim, *a*, substantially as described.

260,089. MECHANISM FOR FORMING TYPE-CASES FROM PAPER-PULP OR OTHER PLASTIC MATERIAL. JULIUS T. ROSEN, Cleveland, Ohio. Filed Nov. 9, 1881. (No model.)

Claim.—1. In a machine for the manufacture of type-cases from paper-pulp, the combination, with the frame, of a movable reservoir, an upper and a lower platen, each adapted to be moved independently of the other, and means, substantially as described, for increasing or diminishing the pressure of the platen, substantially as set forth.

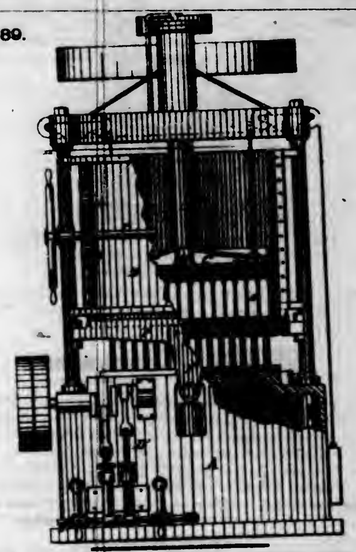
2. In a machine for the manufacture of type-cases from plastic material, the combination, with the frame, of an upper and a lower platen, each adapted to move independently of the other, and a reservoir for containing the plastic material, and within which the upper platen moves, substantially as set forth.

3. In a machine for the manufacture of type-cases from paper-pulp, the combination, with the platens and frame, of a movable reservoir adapted to contain the pulp before molding, and to be raised out of the way to permit the withdrawal of the type-case after it is molded, substantially as set forth.

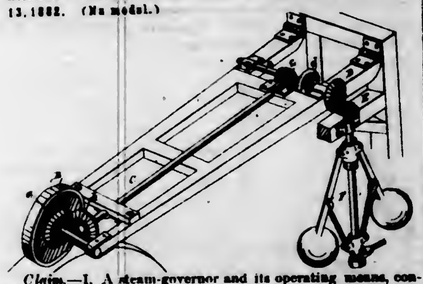
4. In a machine for the manufacture of type-cases from plastic material, the combination, with the forming-dies, of movable grooved casings, substantially as set forth.

5. In a machine for the manufacture of type-cases from paper-pulp, the combination, with the upper and lower casing, adapted to move independently of each other, of a series of forming-dies and grooved casings surrounding the latter, substantially as set forth.

260,089.



260,090. DEVICE FOR OPERATING STEAM-ENGINE GOVERNORS. WILLIAM M. FERRY, Park City, Utah. Filed Apr. 13, 1882. (No model.)



Claim.—1. A steam-governor and its operating means, consisting of a hinged frame having journaled therein a transverse shaft carrying two beveled gears, which mesh with and connect similar gears upon the governor-standard and upon a longitudinal shaft having a beveled gear, which meshes with and connects a friction-wheel journaled in the hinged frame, the gravity of said frame and carried mechanisms serving to hold the said friction-wheel in contact with a fly-wheel or the like, substantially as set forth.

2. The hinged frame D, carrying transverse shaft *e* and longitudinal shaft C, the beveled gears, and the friction-wheel B, combined with the governor F, fly-wheel A, and friction-wheel B, the latter being journaled in the hinged frame and held in contact with the said fly-wheel by the gravity of the frame D, as and for the purposes specified.

260,091. CARPET-LINING. EDWARD A. GALBRAITH, Boston, Mass. Filed Apr. 6, 1880. Renewed May 13, 1882. (Model.)

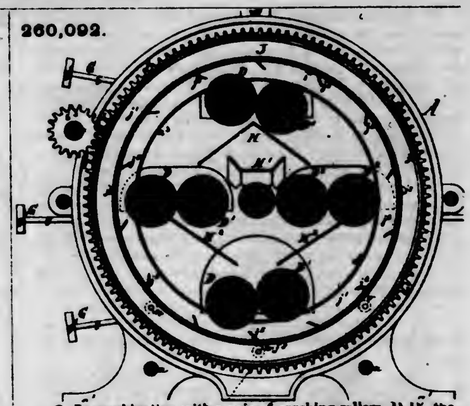
Claim.—1. A sewed carpet-lining composed of an elastic filling and covering thereto, both sides of the covering being connected together by a lock-stitch, substantially as set forth.

2. A sewed carpet-lining composed of a fibrous filling and covering thereto, held together by a lock-stitch, and having creases on both sides at intervals apart, as set forth.

260,092. PULVERIZING MACHINE. REUBEN D. GATES, Chicago, Ill. Filed Mar. 1, 1882. (No model.)

Claim.—1. In a grinding or pulverizing machine, the combination, with a surrounding inclosing-case provided with supply and discharge passages, of a revolving screen, *f*, having its periphery formed of suitable screening material, and a pair of crushing-rollers arranged within the revolving screen and out of contact with the screening-surface, substantially as and for the purpose described.

260,092.



2. In combination with a pair of crushing-rollers, D D', the frame A A', the bearing E', and means for adjusting the same on said frame of the bearing E, means for adjustably securing the same upon the bearing E', the frame F, inclosing the two bearings, the spring *f'*, nut *g'*, and adjusting-screw G, substantially as and for the purpose described.

3. The revolving cylindrical screen *f*, provided with elevating-partitions *f'*, and the escape-passages *f''*, in combination with a pair of crushing-rollers arranged within the screen *f*, and acting to crush the substances independent of any crushing action by any portion of the cylindrical screen, substantially as described.

4. The combination of the revolving screen *f*, two pairs of crushing-rollers, D D' D D', with a guide-sieve for conducting ground substances from the one pair of rollers to the other, substantially as described.

5. The combination of the revolving screen *f* and three pairs of crushing-rollers, D D' D D' D D', with a guide-sieve which conducts substances from the first to the second pair of rollers and a guide-sieve which conducts substances from the second to the third pair of rollers, the finished substances being screened by the joint action of the sieves and revolving screen *f*, substantially as described.

6. The combination of the revolving screen *f*, crushing-rollers D D', and guide-sieves H H', substantially as and for the purpose described.

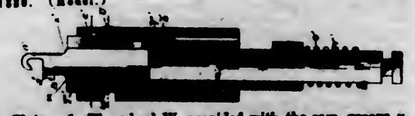
7. The combination of the distributing-chute H' with the upper sieve, H, and the upper pair of rollers, D D', substantially as and for the purpose described.

8. A revolving screen, *f*, having flanges *f'*, and friction-rollers *m*, in combination with an outer inclosing-case, A A', provided with guard-flanges *a'*, a supply-passage or hopper, K, and a discharge-passage, *a'*, substantially as described.

9. The combination of the revolving screen *f*, four pairs of crushing-rollers, D D' D² D³, guide-sieves H H', a central shaft, and gearing for revolving the rollers of the respective pairs in the proper directions, substantially as described.

10. The combination of an outer case, four pairs of crushing-rollers, D D' D² D³, the driving-gear C, and adjustable bearings outside the case with a revolving elevating-screen *f* within the case and surrounding the crushing-rollers, and suitable gearing for imparting motion to the respective pairs of rollers and to the screen, substantially as described.

260,093. AUTOMATIC GRAIN-BINDER. GEORGE F. GREEN, Kalamazoo, Mich., assignor to William H. Whiteley, Jerome Pessler, and Oliver S. Kelly, Springfield, Ohio. Filed Mar. 17, 1880. (Model.)



Claim.—1. The wheel W, provided with the cam-groove *y*, one part whereof is concentric to the axis and the remainder a long ellipse, and provided with the stud *d*, combined with the vibrating rack F', provided with stud *p*, to engage with said cam, the rotating barrel E', and the arm X, provided with the slot *e*, curved as described, and in engagement with the stud *d*, whereby the knotter and cord-carrier are operated with reference to the movements of each other.

2. The vibrating arm X, constructed with the longitudinal slot *e* in one end, said slot being curved with a radius equal to the radius of motion of its driving crank-pin *d*, whereby the cord-carrier is actuated, combined with the cam-wheel W, which carries said crank-pin *d*, the vibrating rack F', operated by the engagement of its stud with the cam on said wheel, whereby the cord-knotter is actuated in proper time, the stud *d'*, also carried by said wheel W, and the levers E' and M, whereby at the completion of the binding and delivery of a bundle the pinion D is uncoupled from the clutch *b* and the binding mechanism brought to rest.

3. In an automatic binder provided with a rotating knotting apparatus to fasten together the ends of the band, a train consisting of a driving-pinion, D, upon the driving-shaft, and a clutch, *b*, whereby said pinion is placed in or out of engagement with the shaft, an intermediate wheel, V, to diminish speed, a wheel, W, provided with a cam whereby to operate a vibrating rack, F', and actuate the pinion H', whereby the knotter is driven, a stud, *d*, in engagement with a slotted arm, X, on the shaft Y, whereby the band-carrier is driven, and a stud, *d'*, whereby the levers E' and M are actuated to move said pinion D out of engagement, as set forth.

4. In a cord-knotter for an automatic binder, the core W', bearing the looper-hook O', and provided with the pin *a'*, which projects in line with the gripper-hook N', whereby both of said hooks may be actuated by a single pusher-rod, I', as set forth.

5. The barrel T', to which is imparted a movement equal to one and one-half revolution, or thereabout, provided with a reciprocating holder-hook, N', to seize and hold the ends of the band, a neck, S', caused to reciprocate and rotate by the action of a stud traversing the concentric but dissimilar grooves *r w*, around which neck the turns of the band are made, the band being held at one side, and a looping-hook in the center of said neck and reciprocating in the center thereof.

6. A rotating knotting device for a cord-binder, combined with a reciprocating holder-hook, N', spring *b'*, and piston W', provided with a stud, *a'*, whereby said piston is made common to both the holder and looping hook, and the ends of the band are seized and carried with the said rotating device independent of the cutter and holder, which severs the cord and holds the end of the new band, as set forth.

7. The rotating barrel E', combined with the cylinder S', which has a rotation with said barrel during a part of the rotation of the same, and a reciprocation and pause during the remainder of the rotation of said barrel, and the looper-hook O', which rotates with said cylinder, but reciprocates independently thereof, as and for the purpose set forth.

8. The cylinder S', constructed with a neck and lip or flange, *s'*, and provided with a stud, U', combined with the sleeve T', which carries a clamp-hook, N', and is provided with a slot, *v*, as described, the stationary case V', provided with a groove, *w*, whereby the cylinder S' has imparted to it a rotation followed by a rectilinear movement, and the hook O', which rotates with said cylinder, but reciprocates independently.

9. The holder-hooks N' and O', each provided with a retracting-spring and terminating within the sleeve T', combined with a piston extending through said sleeve and protruding from its outer end, whereby said holder-hooks may be pushed forward or retracted at the proper times independent of the rotation of the sleeve, as set forth.

10. A device for knotting the cord of an automatic binder, constructed as a single structure and composed of an outer inclosing case, V', provided with the slot *w*, and adapted to be held in a proper seat in the frame of the machine, an inner rotary sleeve, T', provided with the slot *v* and bearing the hook N', and a central neck, S', provided with a stud, U', which engages with slots *v* and *w*, and is thereby intermittingly and alternately rotated, retracted, and left at rest, and the core W', bearing at its end the hook O', and provided with the pin *a'*, to engage the end of hook N', whereby both of said hooks may be simultaneously projected, the whole being bodily removable from the machine.

260,094. HOOD FOR STOVES. WILLIAM J. MAGUIRE, Connersville, Ind. Filed Apr. 28, 1882. (No model.)

Claim.—1. The combination, substantially as set forth, of the stove A, pipe D, with a hood resting upon the stove-top and communicating with the stove-pipe, and a sliding apron, F, adapted to slide in the side pieces of said hood and to completely or partially close the front of said hood.

2. The combination, substantially as specified, of stove A and pipe D with the hood composed of shelf and back piece, B, wings E, and apron F, and the pipe C, connecting said hood and stove-pipe.

3. The combination, as hereinbefore set forth, of back piece, B, hinged wings E, having inwardly-projecting grooved flanges,

260,094.



with the flexibly-jointed apron F, adapted to slide in said grooves, and the roller G, supported in the sides of piece B.

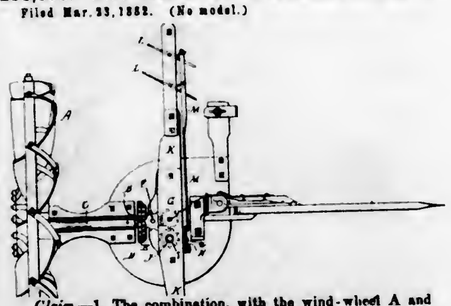
260,095. JEWELRY-STOCK. CARL F. HECKMANN, Plainville, Mass., assignor to Joseph T. Bacon & Co., same place. Filed Mar. 10, 1882. (No model.)



Claim.—1. As a new manufacture for the ornamentation of jewelry, sheet-metal stock embossed to represent the interlaced strands of a braid composed of parallel threads or wires and provided with quadrangular perforations at alternate spaces between the represented strands, whereby when applied to an article of jewelry a contrasting surface may be shown at the quadrangular perforations, thus serving to imitate an article of jewelry covered with openly-braided strands of parallel threads or wires, substantially as described.

2. As a new article of manufacture, a bar-pin covered with the above-described embossed and perforated imitation-braid stock, substantially as described.

260,096. WIND-ENGINE. HARVEY N. HILL, Pontiac, Mich. Filed Mar. 23, 1882. (No model.)



Claim.—1. The combination, with the wind-wheel A and turn-table D, of the arm K, the wind-wings L, and connections, substantially as described, between said wings, and a governor deriving its motion from the rotation of the wind-wheel, substantially as and for the purpose specified.

2. The combination, with the wind-wheel A, the shaft B, a governor for controlling the movement of the wheel and the gear-wheel E, of the pinions F G I, all meshing in the order given for the purpose of operating the governor and conveying power from the wheel, substantially as described.

3. The combination, with the wind-wheel A, of the turn-table D, arm K, pivoted wings L, rod M, bell-crank N, rod O, slide P, and a governor deriving its motion from the rotation of the wind-wheel.

4. The combination, with the wind-wheel A, the turn-table D, arm K, wings L, rods M O, bell-crank N, slide P, and a governor, of the guide-plate R, and the pin *c* on the slide P, moving in said guide-plate, substantially as described.

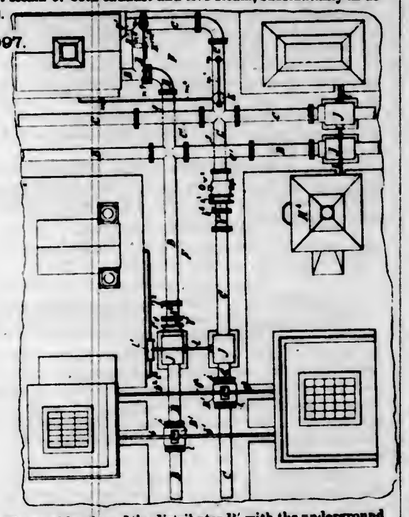
260,097. APPARATUS FOR SUPPLYING STEAM IN CITIES. RUSSELL HOLLY, Lockport, N. Y. Filed Apr. 18, 1881. (No model.)

Claim.—1. In a street steam-heating system, the combination of a steam-generator with a high and a lower pressure steam-main, and with a pipe conveying steam from the high-pressure main to an engine, a pipe to convey exhaust-steam from the engine to the lower-pressure main, and a pipe to convey exhaust steam from the exhaust-main to the place of use, substantially as described.

2. The combination of the regulator E' with the two lines of underground steam street-mains B C, and a general steam-generator which supplies high-pressure steam to the one line, B, of the

mains, while the other line, C, of the mains is supplied with either exhaust-steam or both exhaust and live steam, substantially as described.

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3. The combination of the distributer B' with the underground street-receiving steam-mains B, pipes *b b'*, and a general steam-generator which supplies high-pressure steam to said receiving-mains, substantially as described.

4. The steam-distributors B', in combination with the receiving steam-mains B, exhaust-steam mains C, pipes *b b²*, and a general steam-generator which supplies high-pressure steam to said receiving-mains B, while the exhaust-mains C are supplied with steam by the exhaust from engines worked by the steam supplied from the mains B, substantially as described.

5. The combination of the pipe *l* with main C, pipe *b²*, pipe *b*, and main B, substantially as and for the purpose described.

6. In combination with the underground street-main C and the feed-water works of the high-pressure-steam-supplying apparatus, the automatic regulator, as at E, substantially as and for the purpose described.

7. In a street steam-heating system, the combination of a steam-engine, a street-main receiving steam from the engine, and a heater receiving low-pressure steam from the main, substantially as and for the purpose described.

8. In a street steam-heating system, the combination of a steam-main, an engine, means for conveying exhausted steam from the engine to the main, and means for conveying steam from the main to apparatus adapted for the use of said steam, substantially as and for the purpose described.

260,098. ROLLS FOR LONGITUDINALLY SLITTING RAIL-ROAD-RAILS. JAY HOLDS, Nora, Wis. Filed Mar. 30, 1882. (No model.)



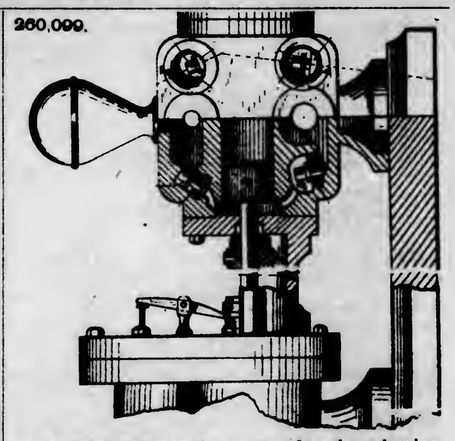
Claim.—The combination of rolls A and B, spaced, as at *s*, and provided with the grooves *c*, *d*, and *f* and cutters *a b* and *h i*, as specified, whereby at one heating and by two passes four bars can be produced from a T-rail, as set forth.

260,099. STEAM-PUMP. CHARLES H. HUDSON, Hinsdale, Ill., and EDWIN SHEDLEY, Dubuque, Iowa. Filed Feb. 10, 1882. (No model.)

Claim.—1. The removable valve-seat adapted to be slid to place in its bed and to be slid out from its bed through a side opening, substantially as shown and described.

2. In combination with the side openings for inserting and removing sliding valve-seats, the screw-caps for such openings having glasses or windows therein, all substantially as described, and for the purposes set forth.

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3. In combination with dovetailed valve-seats adapted to be slid into and removed from beds having corresponding dovetailed grooves, removable caps serving to confine such seats to their position in the pump and to permit the removal therefrom of the seats and the valves, as shown and described.

4. In combination with the removable valve-seat and the valve carried thereon, a removable screw-cap, which, besides permitting the insertion and removal of the seat and its valve, serves also to hold the seat to place, as shown and described.

260,100. DEVICE FOR LIGHTING THE STEPS OF CARS OR CARRIAGES. GEORGE W. HUNT, Philadelphia, Pa. Filed May 11, 1882. (No model.)



Claim.—1. The combination, in a device for illuminating the steps of railway or other cars, of the light A and holes and glasses B, substantially as and for the purposes set forth.

2. The combination, in a device for illuminating the steps of railway or other cars, of the light A and holes and glasses C, substantially as and for the purposes set forth.

3. The combination, in a device for illuminating the steps of railway or other cars, of the light A, holes and glasses B, and holes and glasses C, substantially as and for the purposes described.

260,101. BRICK-MACHINE. WILLIAM H. JUDSON, Brockville, Ontario, Canada, assignor of one-half to Joseph Martin West, same place. Filed Sept. 1, 1881. (No model.)

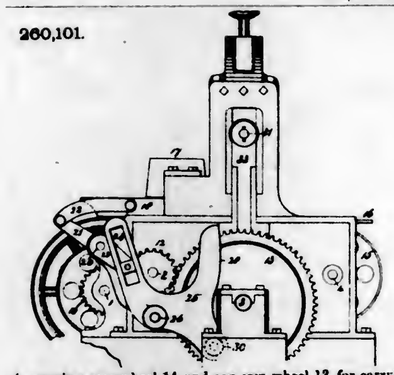
Claim.—1. In a brick-machine, the combination of the sliding frame 18, having arms 23, rocking shaft 20, having arms 21, crank-arm 23, cam 25, having slot 24, stud 26, wheel 13, having friction-rollers 27 and 30, and cam 29, substantially as and for the purpose set forth.

2. The cross-head 34, connected by a pipe, 46, with a steam-generator, and having steam-passages 41 jointly with the plungers 35, having steam-passages 42 at bottom to conduct steam to the molds, and steam-exits 44 on the sides for the purpose of lubricating the molds and giving plasticity to the clay while in said molds, substantially as set forth.

3. The combination of shaft 3, movable mold-bottoms 32, horizontal bar 36, sliding at each end in vertical grooves at the sides of the machine, movable mold-bottoms 32, mounted connectedly by said bar 36, friction-rollers 40, the cam-levers 37, carried by shaft 3, and having curved portion 45, cam-wheels 13, having cam-grooves 46 on their inner faces, and slides 33, having friction-roller at the lower end, and a journal-bearing, 31, jointly with cross-head 34, carrying plungers 35, and molds 17, substantially as and for the purpose set forth.

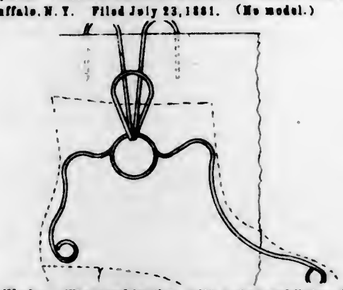
4. The combination of the belt-pulleys 15, mounted on shaft

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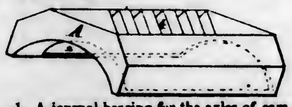
4, carrying gear-wheel 14, and cog cam-wheel 13, for carrying the bricks off table 16, as set forth.

260,102. SAMPLE-SHOE EXHIBITOR. OTTO F. LANGENBACH, Buffalo, N. Y. Filed July 23, 1881. (No model.)



Claim.—The combination, with a shoe-exhibitor, A, of the hook B, formed by bending a wire upon itself in the middle and then turning the bent end to form the front hook-loop, *d*, to receive the holder, the rear parallel prongs of the wire at the other end being bent backward and to the right and left to form the hooks *e e*, which are adapted to clamp the box on which they are suspended, substantially as set forth.

260,103. JOURNAL-BEARING. TUNIS V. LA ROY, Utica, N. Y. Filed Apr. 28, 1882. (Model.)

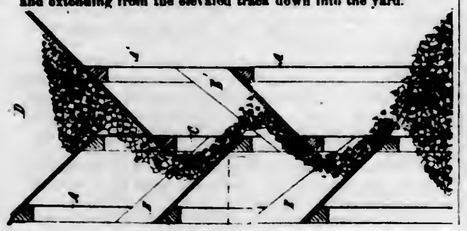


Claim.—1. A journal-bearing for the axles of cars or other vehicles, consisting of a shell, A, provided with the cavity *a* on its under side, and a series of openings, in combination with lead or other soft-metal filling.

2. A journal-bearing for car-axles, consisting of a shell, A, having a cavity, *a*, and a series of diagonal openings, *b*, in combination with soft-metal filling, the cavity, and diagonal openings, as and for the purpose set forth and described.

260,104. COAL-CHUTE. THOMAS H. LIPPARD, Brooklyn, N. Y. Filed Nov. 1, 1881. (No model.)

Brief.—The coal-chute is composed of inclined troughs alternately arranged one above another, supported on upright posts, and extending from the elevated track down into the yard.

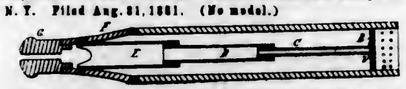


Claim.—1. The combination, with an elevated track for the coal-cars, of a coal-chute composed of a series of inclined troughs arranged in alternate order one above another, as shown, said chute extending from the track down into the yard, substantially as and for the purposes set forth.

2. The combination, with an elevated track, B, for the coal-cars, of the dumping-hopper D and the coal-chute composed of the supporting-posts and the inclined troughs E E', arranged in alternate order one above another and arranged to receive and deliver the coal from one into the other, substantially as and for the purposes set forth.

3. The combination, to form a chute, of the supporting-posts A, A', and C and the troughs E and E', said troughs being made tapering toward their discharging ends, and all arranged in the manner substantially as set forth.

260,105. TOBACCO-PIPE. GUSTAV LOCKHART, Tarrytown, N. Y. Filed Aug. 31, 1881. (No model.)

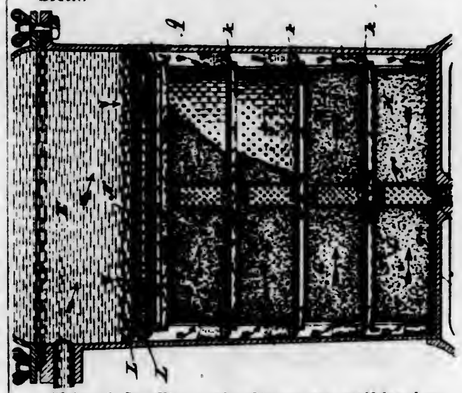


Claim.—1. In a pipe of the character herein set forth, the main exterior shell, the revolving end piece connected with said shell, the movable piston fitted to the interior bore, said piston being perforated, as explained, and carrying a screw-threaded section attached to and turning with the revolving end piece, and the washer *b*, all combined and arranged to operate substantially as shown and described.

2. The herein-described tobacco-pipe, composed of the main shell, the revolving end piece mounted thereon, the short screw-sections C D E, located in the tobacco-chamber, and the piston B, connected with the end piece and prevented from turning, substantially as shown and described.

3. In a tobacco-pipe of the character herein set forth, the main shell A, having perforations at the outer end, the section F, and mouth-piece G, perforated piston B, fitting the interior bore, screw-threaded sections C D E, and washer *b*, all combined and arranged to operate substantially as shown and described.

260,106. FILTER. OLIVER LODGE, Brooklyn, N. Y., assignor to Michael H. Hagerty, same place. Filed Nov. 8, 1881. (No model.)



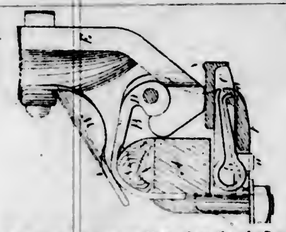
Claim.—1. In a filter, a series of two or more purifying-chambers having foraminated walls and central eduction-tubes, the spaces between such walls and tubes being filled with charcoal or equivalent medium, said chambers being placed one above another in a vessel, leaving intervening liquid-spaces between them and annular or surrounding liquid-spaces, separated by packing, whereby liquid passing through said vessel has to travel from the periphery to the center of each chamber, substantially as set forth.

2. In combination with vessel A and purifying-chambers I G, the felt disks L L, for clarifying the liquid before admitting it to the purifying-chamber, said disks being elevated above the top purifying-chamber, leaving a space, I, between them and said chamber, and fitting tightly in the vessel A, substantially as set forth.

260,107. THILL-COUPLING. HENRY A LOTTMANN, Paterson, N. J. Filed Dec. 9, 1881. (No model.)

Claim.—1. The pointed projection V at the end of spring-cover C, in combination with the thill-iron E, to keep the thill-iron from sliding out of the coupling when the shafts are raised or supported in a raised position.

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2. Spring S, when placed so as to induce a rocking motion of cover C, in combination with cover C and thill-iron E.

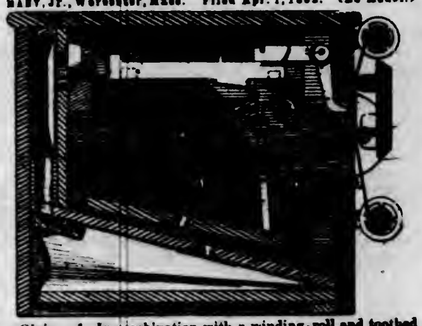
3. Cover C, formed with projections *a a*, in combination with coupling-box B.

260,108. EMERY-HOLDER. ABRAM N. MATTHEWS, Norwood, Mass. Filed May 20, 1882. (No model.)



Claim.—As an improved article of manufacture, the herein-described emery-holder, composed of the body *a*, having at one end a sieve and at its other end a head provided with an outlet, and of a cover to close the end of the body containing the sieve, and with a movable cap having a spout or discharge-passage applied to that end of the body, the head of which is provided with the outlet *c*, all as shown and described.

260,109. AUTOMATIC MUSICAL INSTRUMENT. JOHN MCTAMANY, Jr., Worcester, Mass. Filed Apr. 1, 1882. (No model.)



Claim.—1. In combination with a winding-roll and toothed wheel carried thereby, a reciprocating bar or bars arranged to operate said wheel, and forced against the same by spring-pressure, and means for retracting the said bar after its forward movement, substantially as and for the purpose set forth.

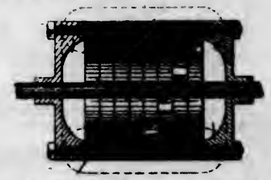
2. In combination with the winding and rewinding rolls of a music-sheet and a ratchet-wheel carried by the shaft or gudgeon of the former, a pair of reciprocating bars acting alternately on said ratchet, a pair of springs acting to force said bars against said ratchet, and a rotating block or wheel carrying teeth which alternately force said bars back against the resistance of their springs.

3. A pair of slotted toothed bars acting on the ratchet-wheel of the winding-roll, as stated, in combination with a fixed stud which enters the longitudinal slots of said bars, a pair of springs which force said bars forward, and a rotating block or toothed wheel which forces back said bars against the resistance of said springs, substantially as and for the purpose set forth.

4. The combination of a set of point-carrying levers or castings weighted at their rear ends, with sliding vertically-movable valve-operating bars on which said weighted ends rest, springs for raising the forward ends of said bars, and a fluted roll adapted to operate said bars when lowered by the weighted ends of said levers, substantially as set forth.

260,110. ARMATURE FOR DYNAMO-ELECTRIC MACHINES. JAMES J. MCTIGHE and THOMAS J. MCTIGHE, Pittsburg, Pa. Filed Mar. 28, 1882. (No model.)

Brief.—The armature-core is formed of a number of rings, each provided with a slit of sufficient width to permit a coil to pass therethrough. To place the coils on the core the slits are all brought into line, and after the coils have been placed thereon the rings are turned so as to bring the slits to different circumferential points. The coils are then locked into place, and by a proper adjustment of the rings the armature may be balanced. The whole is securely held by end plates and bolts.



Claim.—1. In an annular armature, a core composed of a number of slitted rings, each capable of independent adjustment around its axis, substantially as described.

2. In an annular armature, a core composed of a number of slitted rings of soft iron, each capable of independent adjustment around its axis, substantially as described.

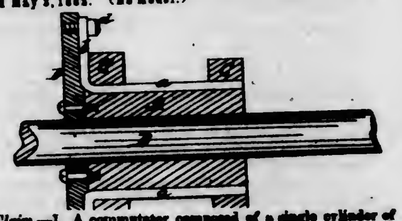
3. In an annular armature, a core composed of a number of incomplete rings, each having a single dividing-excision and being capable of independent adjustment around its axis, in combination with longitudinally-arranged rods or bars capable of locking said rings against movement around their axes, substantially as described.

4. An annular armature composed of a number of slitted rings circumferentially adjustable, a series of coils placed on said rings, and two or more longitudinal bars or rods binding said rings together, substantially as described, whereby the slits may be brought in line, the coils inserted, the rings adjusted circumferentially to throw the slits out of line, and then the rings locked in such position by the said bars or rods.

5. In an annular armature, a core composed of a number of incomplete rings, each having a single slit and circumferentially adjustable on its axis, in combination with diamagnetic heads and longitudinal rods or bars connecting said heads and rings together, substantially as described.

6. In an annular armature, a core composed of a number of incomplete rings, each having a single slit and circumferentially adjustable on its axis, in combination with longitudinal rods or bolts and heads having inward projections abutting against the rings and constituting spacing-blocks for the coils, substantially as described.

260,111. COMMUTATOR FOR DYNAMO-ELECTRIC MACHINES. JAMES J. MCTIGHE and THOMAS J. MCTIGHE, Pittsburg, Pa. Filed May 3, 1882. (No model.)



Claim.—1. A commutator composed of a single cylinder of insulating material, having one or more integral collars perforated longitudinally with a circular series of holes, in combination with a series of metal rods or bars placed in said perforations and retained by the collar or collars, substantially as specified.

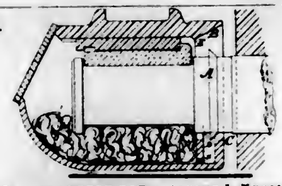
2. A commutator composed of a single cylinder of insulating material, A, having one or more integral collars, C, perforated longitudinally with a circular series of holes, in combination with a series of metal rods or bars, *a*, placed in said perforations, and having the extensions *b*, a head, D, of insulating material, clamping the extensions *b* against the cylinder A or collar C, and screws *d*, substantially as described.

260,112. CAR-AXLE BOX. HENRY HILDEBRAND, Cumberland, Md. Filed Apr. 10, 1882. (No model.)

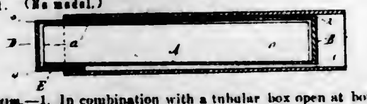
Claim.—1. The combination, with the journal-box having the upper inwardly-inclined surface, B, terminating in point B, of the axle provided with the collar A, whereby the lubricant thrown upon the surface B is conducted down upon the journal, as specified.

2. The combination, with the journal-box having the inwardly-inclined surfaces B C, cavity D, and hole *c*, of the axle provided with collar A, whereby the lubricant is returned to the journal and box, as specified.

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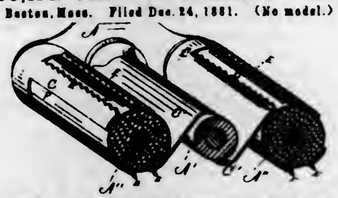
260,113. CIGARETTE-BOX. ALBERT L. MUNSON, New York, N. Y., assignor to Louis H. Todd, same place. Filed Dec. 7, 1881. (No model.)



Claim.—1. In combination with a tubular box open at both ends, an interior sliding box arranged to be folded from a flat blank, and provided with an overlapping cover extending from one end thereof over its entire length, around the other end, closing it, and secured underneath it by means of a short flap turned inwardly between its bottom and the bottom of the tubular box, all substantially as and for the purposes as herein shown and set forth.

2. In combination with the tubular cover C, open at both ends, the interior sliding box (formed from a flat blank,) having bottom A and sides *a b*, overlapping cover C C', extending from the closed end B, and provided with end piece, D, and securing-flap E, all substantially as and for the purposes as herein shown and set forth.

260,114. PEDAL FOR VELOCIPEDES. JOSEPH S. MURRAY, Boston, Mass. Filed Dec. 24, 1881. (No model.)



Claim.—The herein-described improved rat-trap pedal-slipper for bicycles, tricycles, and other velocipedes, consisting of the part C, adapted to embrace one of the rubber cushions A'', and provided with one or more openings D and sets of teeth E, and the part C', adapted to bear against the central bar, A', constructed substantially as and for the purpose set forth.

260,115. GRAIN-BINDER. JOHN D. NIX, Mount Vernon, Ill. Filed June 29, 1881. (Model.)

Claim.—1. In a grain-binder, the combination of a reciprocating divider and a reciprocating binder-arm moving together and located under the machine, a horizontally-traveling apron, a slightly upwardly inclined table having an opening for the passage of both the divider and the binder-arm, and a hatchway at the upper end of the table for the depositing of the sheaf under the machine, substantially as and for the purpose specified.

2. In a grain-binder, the combination of a horizontal traveling apron, a slightly-inclined table at the end of the apron, provided with an opening for the passage of a reciprocating divider and binder-arm, a ribbed roller between the apron and table, and fingers for carrying cut grain from the apron over the roller onto the table, substantially as set forth.

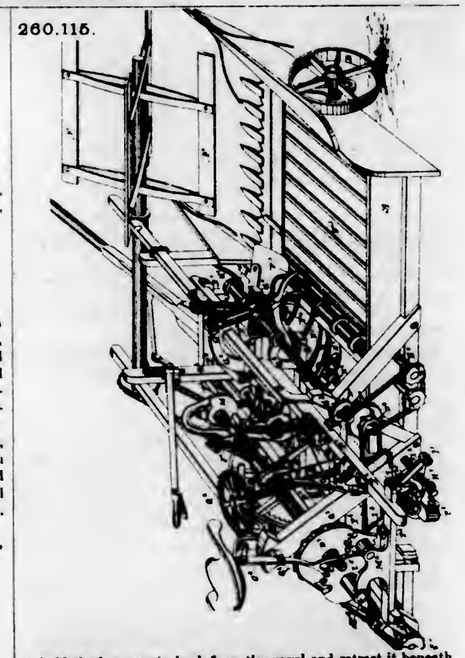
3. In a grain-binder, an elastic laterally-expansible finger for feeding the grain to the binder-arm, substantially as set forth.

4. In a grain-binder, the combination of a grain-feeding finger having a slot between its ends at an angle to its length, a boxing fitting within said slot and having connected thereto the shaft which operates the finger, and a spring acting on the finger to retract the same after it has been laterally expanded, substantially as set forth.

5. In a grain-binder, the combination of a series of grain-feeding fingers, each having a longitudinal slot near its upper end and a transverse slot, a boxing fitting within the transverse slot of the finger, and having connected thereto a shaft for operating the fingers so that they alternately will feed forward the grain, a spring acting on the finger to retract the same after it has been laterally expanded, and a rod passing through the upper ends of the fingers to serve as guides for the same, substantially as set forth.

6. In a grain-binder, a reciprocating divider for separating a gavel from the loose grain, located under the binding-table and operated by means which project it up above the face of the table

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to hold the loose grain back from the gavel and retract it beneath the table when another gavel has been formed, in combination with fingers for packing the grain against the divider, and when a gavel has been formed and the divider retracted moving the gavel forward, substantially as set forth.

7. The crank-shaft H' and slotted divider H, in combination with binder-arm H³ and shaft H', the divider H having a loose connection with shaft H', whereby the divider and binder-arm are adapted to operate as set forth.

8. The shafts H' H⁴, binder-arm H³, and divider H, in combination with gears I⁴ I³ and connecting-rods, whereby the binder-arm and divider are intermittently held stationary and reciprocated, substantially as set forth.

9. In a grain-binder, the combination of a table for receiving the grain, a guard for holding the grain down upon the table, a divider adapted at one time to check the progress of the grain and at another time to permit its progress, and fingers for packing the grain against the divider and afterward, when the divider is retracted, moving the grain forward, substantially as set forth.

10. In a grain-binder, the combination of a table for receiving the grain, a guard for holding the grain down upon the table, a divider adapted at one time to check the progress of the grain and at another time to permit its progress, fingers for packing the grain against the divider and afterward, when the divider is retracted, moving the grain forward, and a binder-arm for lifting and carrying the grain onward under the guards to the binder-head, substantially as set forth.

11. In a grain-binder, a series of fingers or dividers adapted to be projected between the gavel and sheaf and moved in opposite directions, so as to draw the gavel and sheaf apart from each other, substantially as set forth.

12. The shaft E², provided with a cam, O, and shaft N, carrying the compressor-finger N', in combination with dividers N² N³ and pitman N⁴, whereby as the compressor-finger is retracted the dividers will move away from each other, substantially as and for the purposes set forth.

13. The dividers N² N³ and compressor-finger N', operated as described, in combination with the sector-rack, twister, and cutter, binder-arm, and gears L³, M, I⁴, and I³, whereby as the binding-strand is twisted and cut the compressor-finger is retracted to let the sheaf pass from the machine and the dividers effect a division in the grain, and as the binder-arm recedes the compressor-finger and dividers return as they were, substantially set forth.

14. In a grain-binder, the combination of a reciprocating divider adapted to alternately hold back the grain and permit it to be moved forward, a binder-arm to carry the gavel from the divider to the binder-head while the divider remains at rest, a device to bind the strand about the gavel, a knife to sever the sheaf from the reel of binding-strand, and a divider for drawing the gavel and sheaf apart from each other, substantially as set forth.

15. In a grain-binder, the combination of an apron for receiving the cut grain, a table onto which the grain is passed from the apron, reciprocating fingers for feeding the grain over the table, a divider for holding back the grain packed against it by the fingers, and at times permitting the grain to move past it, a binder-arm for carrying the grain to the binder-head, a device for securing the binding-strand about the gavel, a knife for cutting the binding-strand, and a divider for drawing the gavel and sheaf apart from each other, substantially as set forth.

16. The hollow cylindrical twister K, provided with the tooth K', formed, as shown, with the pendent portion K*, on the opposite sides of which, in the top face of the twister, are the slots 1 and 2, substantially as and for the purposes set forth.

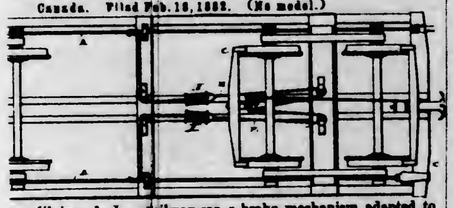
17. In a grain-binder, the combination of a slotted binder-head, a slotted twister housed therein, a knife adapted to slide across the twister and cut the strand, a rack for moving the twister and provided with an arm for moving the knife, and means for actuating the rack so that it will move one of the slots in the twister away from the slot in the binder-head and bring the other slot opposite thereto, and then revolve the twister so as to twist the strand and slide the knife so as to cut it, substantially as set forth.

18. In a grain-binder, the combination, with a slotted binder-head, of a slotted twister and means for turning the twister so as to move one of its slots away from the slot in the binder-head and bring the other slot opposite thereto, and then reverse the movement of the twister and revolve it so as to twist the binding-strand, substantially as set forth.

19. The combination of slotted twister K and knife K⁵, housed in the binder-head J⁴, sector-rack L, provided with pivoted and spring-actuated arms M² and studs M³, gear M, and gear I,³ and crank connecting it with the sector-rack, whereby the twister is operated and the wire cut, substantially as set forth.

20. The combination of gears L², M, I⁴, and I³, sector-rack L, twister K and knife K⁵, binder-arm H⁴, divider H, and their shafts, and the lever-rods which connect the sector-rack, divider, and binder-arm with the gears, whereby the respective parts will divide, carry forward, and bind the grain and sever the sheaf from the reel of binding-strand, substantially as set forth.

260,116. CAR-BRAKE. WILLIAM MURSH, Toronto, Ontario, Canada. Filed Feb. 18, 1882. (No model.)



Claim.—1. In a railway-car, a brake mechanism adapted to operate simultaneously all the brakes of the series of a train of cars, the horizontal rod A, chain E, and brake-levers, combined with the cushioning device I, composed of the spring *d*, set within the cage *a*, having a fixed base-plate, *b*, and a movable plate, *c*, and with the spindle *f*, all operating as and for the purposes specified.

2. In railway-car brakes, substantially as described, the rod A, chain E, and cushioning device I, combined with the bar *g*, connected by joint *h* to the rod A of one car, the sleeve *i*, having flaring interior and socket *i'*, the said socket adapted to receive the end of the rod A of the adjacent car, and the securing means *j*, all operating as and for the purpose set forth.

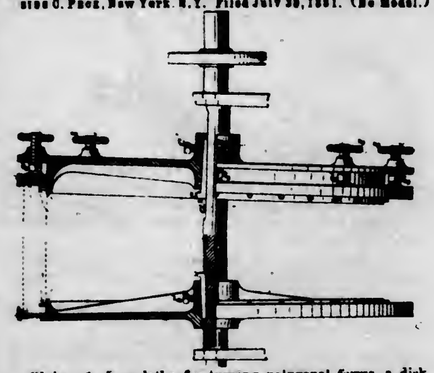
260,117. CIGAR-TIP CUTTER. RICHARD N. OAKMAN, Jr., Turner's Falls, Mass. Filed May 16, 1882. (No model.)



Claim.—1. The combination, with the angular telescoped tubes, of the expansive spring, the knife provided with one or more abutting shoulders, and an internal plate serving as an abutment for the spring and as a stop for preventing the separation of the tubes, substantially as described.

2. The combination, in a cigar-tip cutter, of the angular telescoped tubes, the spring, an interior sliding stop, and a concealed stop-plate, which serves as an abutment for the spring and internally connects said tubes against longitudinal separation, substantially as described.

260,118. LATHE FOR TURNING POLYGONAL FORMS. CARLOS C. PECK, New York, N.Y. Filed July 30, 1881. (No model.)



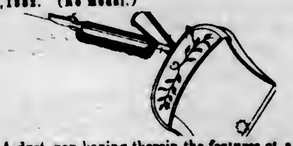
Claim.—1. In a lathe for turning polygonal forms, a disk adapted to receive the ends of a series of blanks, when provided with an elastic gasket for the purpose, and substantially in the manner designated, in combination with an opposing disk or abutment for receiving and supporting the opposite ends of the series of blanks, substantially as herein set forth.

2. In a lathe for turning polygonal forms, an adjustable securing ring or flange mounted upon a cylindrical shoulder formed upon a suitable disk, and adapted to receive the ends of a series of blanks, when provided with an elastic gasket for the purpose, and substantially in the manner described, in combination with an opposing disk or abutment for receiving and supporting the opposite ends of the series of blanks, substantially as herein set forth.

3. In a lathe for turning polygonal forms, provided with an adjustable securing-ring, mounted upon a cylindrical shoulder formed upon a suitable disk adapted to receive the ends of a series of blanks, a series of set-screws provided with bearings on said disk, with their longitudinal axes parallel with that of the lathe-center, for the purpose of forcibly adjusting and sustaining the securing-ring, substantially in the manner described, in combination with an opposing disk or abutment for receiving and supporting the opposite ends of the series of blanks, substantially as herein set forth.

4. The temporary sustaining device adapted to support the blanks during the operations of filling or removing the blanks from the apparatus, or while turning the blanks upon their longitudinal axes, substantially in the manner and for the purposes set forth, consisting essentially of an endless belt suspended upon a pulley attached to a weighted lever that automatically adapts itself to and renders the said belt taut when in use, and whereby the operations of filling, adjusting, and removing may be performed without reversing the motion of the apparatus, substantially in the manner and for the purposes described.

260,119. DUST-PAN. SAMUEL M. PERRY, Plainfield, N.J. Filed Mar. 17, 1882. (No model.)



Claim.—1. A dust-pan having therein the features of a bottom, sides, open front, and a short undetachable handle, in combination with an open socket, or socket recessed in such manner that when the pan rests upon the floor a straight detachable handle can be inserted in said recess, the said handle being entirely supported thereby in a nearly upright position, for purposes herein before set forth.

2. The combination of a spring or other gripping-fingers with the long detachable handle of a dust-pan, whereby a brush may be supported by the same in a convenient position, for purposes herein set forth.

3. A hood or cover for the back of a dust-pan, as formed and finished separate or detachable from the pan, consisting of the japanned or ornamented surface, with a portion of its side and back edge turned down and a portion of said edge turned under, substantially as hereinbefore set forth.

4. The combination of a movable suspension ring or hook with the front edge of a dust-pan, for purposes herein set forth.

260,120. DETACHABLE HANDLE AND LEG FOR DUST-PANS. SAMUEL M. PERRY, Plainfield, N. J. Filed Dec. 8, 1879.



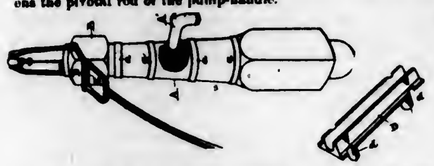
Claim.—1. A detachable handle for common household dust-pans, formed with a leg or legs to extend below the bottom of the back wall of pan when said handle is so arranged as to be clamped or buttoned to the outside of back wall of pan, substantially as hereinbefore set forth.

2. In combination with the rear part of an ordinary dust-pan, a detachable support or legs to raise the back portion of said pan, substantially as hereinbefore set forth.

3. The combination, with a detachable handle for dust-pans, of the legs or feet and handle, for purposes specified.

260,121. PUMP. CHARLES POWELL, Toronto, Ontario, Canada. Filed Jan. 28, 1882. (No model.)

Brief.—The tightening of the holdfast-bolts not only retains the bearing-box in its position, but simultaneously grasps and tightens the pivotal rod of the pump-handle.



Claim.—1. The tapering wooden stock A, provided with bands *a*, and with a detachable spout, A', in combination with the enlarged head B, adapted to carry the pivotal box of the pump-lever, and provided with a neck to fit into a recess in the top of the pump-stock, substantially as described.

2. The combination, with the wooden stock A, having a recess in its upper end, of the enlarged head B, provided with a neck to fit into the recess in the stock, and adapted to support the pump-handle, substantially as described.

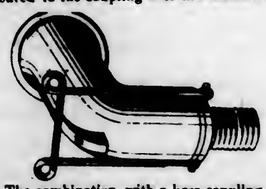
3. The combination, with a wooden pump and the bearing-box D, having a horizontal groove, of the hook-bolts F, handle-rod E, and means, substantially as described, to prevent the lateral movement of the bearing-box, as and for the purpose specified.

4. In a wooden pump provided with a swinging handle for operating the plunger-rod, a metal bearing-box having a horizontal groove formed in its front surface to receive the pivotal rod of the pump-handle, and projecting studs on its opposite side to fit into the wood-work of the pump, in combination with a fastening arranged to simultaneously hold the pivotal rod and bearing-box in their respective positions.

5. In a wooden pump provided with a swinging handle for operating the plunger-rod, a metal bearing-box having a horizontal groove formed in its front surface to receive the pivotal rod which supports the pump-handle, in combination with a fastening arranged to simultaneously hold the pivotal rod and bearing-box in their respective positions.

260,122. ATTACHMENT FOR CONNECTING HOSE TO PUMP-SPOUTS. CHARLES POWELL, Toronto, Ontario, Canada. Filed Jan. 26, 1882. (No model.)

Brief.—The hose-coupling is held to the spout by drawing the bail which is secured to the coupling over the inclined surface of the spout.

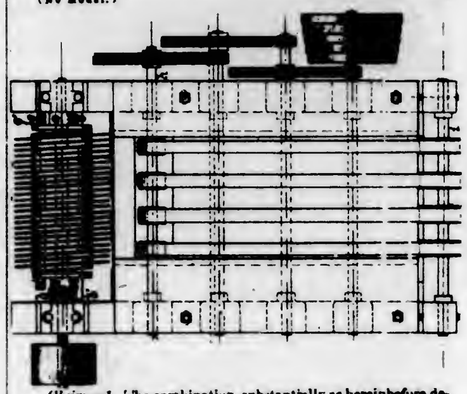


Claim.—1. The combination, with a hose-coupling, of a bail pivoted thereto, and a discharge-spout having a curved or inclined surface adapted to tightly draw the bail upward when said bail is pressed over the spout, substantially as and for the purpose specified.

2. In combination with a discharge-spout having an outwardly-inclined top surface, a bail pivoted to a coupling arranged to fit the mouth of the spout, the corner of the said bail being twisted or curled to permit the bail to spring while being pressed upon the spout, as and for the purpose herein specified.

3. In combination with a discharge-spout having an outwardly-inclined top surface, a bail with twisted or curled corners, and a roller placed on the bail between them, the ends of the bail being pivoted to a coupling arranged to fit the mouth of the spout.

260,123. GRANULATING-MACHINE. JACOB READ, Yonkers, N. Y., and SAMUEL C. BURDICK, Orange, N. J. Filed Dec. 30, 1881. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, of a gang of granulating-saws having splitting or ripping teeth and a bed for supporting the material to be granulated while presenting it to the saws.

2. The combination, substantially as hereinbefore described, of a gang of wabbling circular ripping-saws and a bed for supporting the material to be granulated while presenting it to the saws.

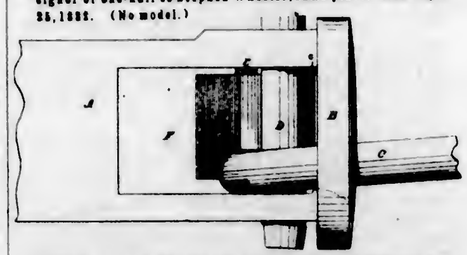
3. The combination, substantially as hereinbefore described, of a gang of wabbling ripping-saws and a bed provided with feeding mechanism for progressively presenting to the saws the material to be granulated.

4. The combination, substantially as hereinbefore described, of a gang of wabbling ripping-saws and a bed provided with variably-operated feeding mechanism, whereby the solid mass of material to be granulated may be fed to the saws with practical uniformity, regardless of its progressively-diminished weight.

5. The combination, substantially as hereinbefore described, of a gang of wabbling ripping-saws and a bed provided with side plates for laterally confining the mass of material to be granulated in presenting the same to the saws.

6. The combination of the arbor and the gang of wabbling circular ripping-saws simultaneously adjustable to any desired inclination on said arbor, substantially as described.

260,124. CAR-COUPLING. ALVAH RICH, Rochester, N. Y., assignor of one-half to Stephen Wheeler, same place. Filed Apr. 25, 1882. (No model.)



Claim.—1. The bumper-head A of a car-coupling device, provided with a bumper-ring, B, projecting laterally from the side of the bumper-head, and a gate, *b*, hung to said bumper-ring outside of the head and in such a manner that it may be swung into the opening F of the bumper-head, said gate being provided with the downward projection A, substantially as and for the purpose set forth.

2. In combination with the bumper-head A of a car-coupling device, having an opening, F, a link, C, and pin D, a gate, A, hung at one side of the head and so as to be swung into or out of the opening F, said gate being provided with a friction-piece, *r*, to bear against the head, substantially as shown, and for the purpose set forth.

3. The open bumper-head A of a car-coupling device, provided with a projecting bumper-ring, B, and a gate, A, hung to said bumper-ring at the rear side thereof and in such a manner that it may be swung into the opening F of the bumper-head, said gate being provided with the curtain or downward-projecting part A and friction-piece *r*, to bear against the head for the purpose of forming a tension for the gate, substantially as shown, and for the purpose set forth.

260,125. CURTAIN-HOLDER. WILLIAM B. BUNICK, Chicago, Ill. Filed Jan. 27, 1882. (No model.)

Brief.—A crescent-shaped piece of fabric suspended from loops attached at the ends to its inner margin.



Claim.—1. A curtain-holder consisting of a crescent-shaped piece of fabric provided with means for suspending the same from a suspending-hook, and applied thereto in such manner that the draft shall be along the inner margin of said crescent-shaped piece, substantially as described.

2. A curtain-holder consisting of a crescent-shaped piece of ornamental fabric suspended from loops connected to its inner coils or margin, substantially as described.

260,126. HINGED-SHOE BUTTON. MERRITT B. SCOTT and WILBER F. HILL, Manchester, Conn. Filed Apr. 26, 1882. (No model.)



Claim.—1. In a hinged-shoe button, a button, A, and shank B, permanently fastened to said button, and shoe C, pivoted at its center to a fixed pivotal bearing, combined with a locking-block having a movement to and from the shoe independent of the shank to lock and hold said shoe positively, substantially as set forth.

2. In a hinged-shoe button, a button-plate, A, a hollow shank, B, fixed permanently to said button, a pivotal stud, D, also fixed permanently to the button, and a shoe, C, pivoted at its middle to said stud, combined with a positive locking-block, E, with a notch, *f*, moving on said stud and in said shank as a bearing and guide, and an impelling-spring, whereby said shoe is locked in transverse position, as set forth.

3. The combination to constitute a hinged shoe-button—to wit, a button, A, a hollow shank, B, fixed permanently to said button, a stud, D, also fixed permanently to said button, central as to said shank, a shoe, C, pivoted to said stud, a block, E, with locking-notch *f*, and springs G G beneath said block, within said shank, substantially as set forth.

260,127. PROPORTIONAL BALANCE. CHARLES SETHOUS, Defiance, Ohio, assignor to Defiance Machine Works, same place. Filed Feb. 28, 1880.

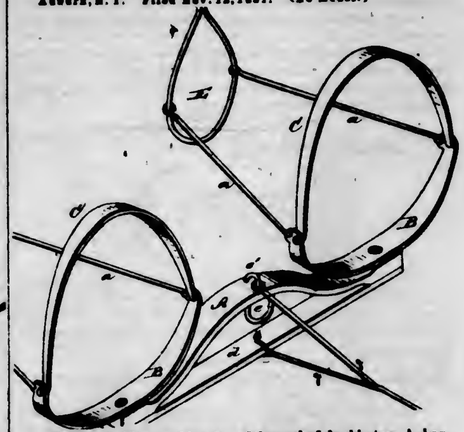
Brief.—The scale-pan is rigid with the beam and is adapted to hold knives for rotary cutter-heads in different positions, so that they may be not only made equal in weight but that the weight of their corresponding parts may be equalized also.



Claim.—1. The combination, with the scale-beam A and the frame *b c*, in which it is pivotally hung by a knife-edge, *a*, of the right-angle platform *d*, having a vertical wall above the beam, at one end of the beam, and the weights *e* at the opposite end of the same, substantially as and for the purpose specified.

2. The combination, with the scale-beam A, the supporting-frame *b c*, and the right-angle platform *d*, of the oblong weights *e e*, having holes near one end and adapted to be changed in their positions on the beam, whereby they may be secured above or below the beam, according to the weight of the articles being weighed, substantially as and for the purpose specified.

260,128. PLOW AND WORK HARNESS. ALLEN SHERWOOD, Auburn, N. Y. Filed Nov. 12, 1881. (No model.)



Claim.—1. The combination of the arched double-tree A, having auxiliary brace *d*, with single-trees B B, pivoted on top of the double-tree and adapted to oscillate on a plane parallel therewith, substantially as and for the purpose set forth.

2. The arched double-tree A, provided with the auxiliary brace *d* and staple *e*, in combination with double-trees B B, rods *a a*, connections *g g'*, and hames E E, all constructed and arranged to operate substantially as and for the purpose set forth.

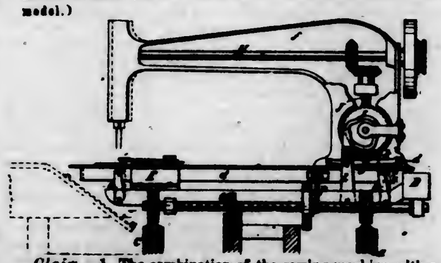
260,129. PRESSURE-REGULATOR. NATHANIEL SLEEMAN, Birmingham, Conn. Filed Mar. 18, 1882. (No model.)



Claim.—1. In a gas-pressure regulator, the combination of the shell A and the float B, having at its lower rim the inwardly-turned bottom plate, *b*, with the perforations *b²* and upwardly-extending annular flange *b'*, together with the tube D, the stem or rod C, the annular double valve G, and the diaphragm E' of the globe E, all substantially as described, and for the purpose specified.

2. In a gas-pressure regulator, the combination of the shell A, float B, tube D, stem or rod C, annular double valve G, and the globe E, having inlet *c'*, outlet *c²*, and diaphragm E', with the central orifice, *c*, and the surface *c³*, inclined as described, all as and for the purpose specified.

260,130. MACHINE FOR SEWING HEAVY MATERIALS. EARLE H. SMITH, New York, N. Y. Filed July 5, 1881. (No model.)



Claim.—1. The combination of the sewing-machine with a support, B, by means of links *a*, substantially as specified.

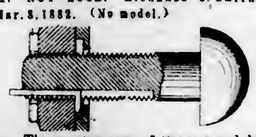
2. The combination, with a sewing-mechanism adapted to reciprocate laterally and a support, B, of a bridge, E, to sustain the seam-guides, substantially as and for the purpose specified.

3. The combination, with the sewing mechanism and a support, B, of a cam, I, and a lever, L, for imparting a lateral reciprocating movement, as set forth, whereby to carry the sewing de-

vices from side to side as the sewing progresses, for the purpose specified.

4. In combination, a sewing-machine carriage supporting a movable sewing mechanism, a cam and lever for reciprocating the sewing mechanism laterally as to the feed, seam-guides for presenting the work to the vibrating needle or needles, and means of supporting and holding the guides fixedly with respect to the lateral movement of the sewing mechanism.

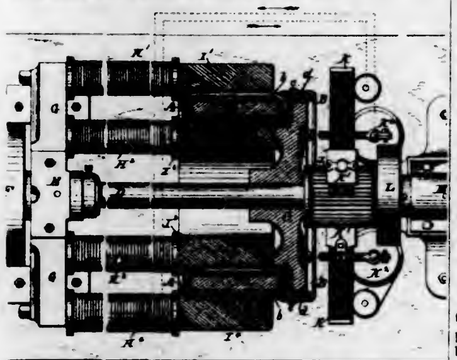
260,131. NUT-LOCK. RICHARDS C. SMITH, Baltimore, Md. Filed Mar. 3, 1882. (No model.)



Claim.—The combination of the grooved bolt, the locking-pin, the nut provided with recesses for engagement by the pin, and the washer having the recess around the bolt-hole to receive the shoulder at the inner end of the locking-pin, substantially as hereinbefore set forth.

260,132. DYNAMO-ELECTRIC MACHINE. ELMER A. SPERRY, Cortland, N. Y. Filed Dec. 22, 1880. (No model.)

Brief.—The field-magnets project from a common base, and are provided with polar extensions so arranged as to leave an annular space, within which a cylindrical armature of the Gramme type rotates. The field-magnets have like poles opposed to each other. The armature is attached by its edge to a disk fixed on the shaft of the machine, a ring of insulating material being interposed between the armature and disk. The position of the brushes is regulated by a centrifugal governor on the shaft.



Claim.—1. In a dynamo-electric machine, the combination, with the stationary helices H' H' H' H', having cores all projecting in the same direction from a common base or yoke, and provided with the separate curved pole-pieces, said pole-pieces being arranged in pairs of similar polarity, and one pole-piece of each pair partially embraced by but separated by an intervening space from its fellow, of the annular armature A, having its surface of greatest width parallel with its axis and wound with transverse coils, said armature being suitably supported and arranged to rotate between the pole-pieces of each pair, and a commutator connected with the coils of said armature, substantially as described.

2. In a dynamo-electric machine, the separate pole-pieces, arranged in pairs of similar polarity, the inner opposite margins of the pole-pieces of each pair projecting toward each other, in combination with the annular armature supported at one edge and projecting into the spaces between the pole-pieces of each pair, the arrangement being such that both sides and the greater portion of the free edge of the armature are presented to the pole-pieces, substantially as described.

3. In a dynamo-electric machine, the combination, with a transversely-wound annular armature, having an iron core, *a*, the disk C, and radial commutator-conductor B, of an insulating-ring, *d*, and binding-screw *e*, substantially as described.

4. In a dynamo-electric machine, the combination of the governor L, located on the shaft of the machine and provided with a system of weights and levers, as described, the rod *l* and spring *l'*, and the commutator-brushes and connecting mechanism, whereby the movement of the brushes is controlled, substantially as described.

5. In a dynamo-electric machine, the combination of the governor L, mounted on the shaft of the machine, the rod *l*, spring *l'*, lever *m*, rod m^4, bell-crank lever m^3, and rod m^5, with the commutator-brushes K and their clamps, all arranged substantially as set forth, for the purpose specified.

6. In a dynamo-electric machine, the combination of the transversely-wound annular armature, the insulating-ring, and the supporting-disk with the connecting-bolts, substantially as described

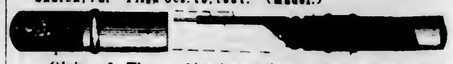
260,133. APPARATUS FOR BRAZING METALS. JOHN C. STEVENS, Natick, Mass. Filed May 12, 1881. (No model.)



Claim.—1. In an apparatus for brazing saw-blades and similar articles, the combination, with the bed-plate and clamps thereon, of a receptacle and support therein for the meeting ends of the blade, whereby the said ends are maintained in line with one another while acted upon by a flame to melt the soldering material, substantially as described.

2. The combination of the bed-plate and its guiding-ridge and the clamps thereon with a charcoal-receptacle and adjustable blade-support therein, substantially as and for the purpose set forth.

260,134. FOUNTAIN PEN-HOLDER. MARVIN C. STONE, Falls Church, Va. Filed Oct. 15, 1881. (Model.)



Claim.—1. The combination of the rigid or non-collapsible ink-reservoir closed at the top, the porous material in its lower end, the pen, and the feeding-plate lying close to the surface of the pen and extending from the ink-supply downward to a suitable point to deliver ink to the point of the pen, as set forth.

2. In a fountain-pen, the combination of the body wherein a column of ink is sustained mainly by atmospheric pressure, a writing-pen of ordinary form at the lower end of said body, one or more feeders with surfaces lying adjacent to the pen and extending from the ink-supply downward to the point of the pen, and an air-admission to the lower end of the reservoir, substantially as shown, whereby an automatic and constant feeding of the ink from the reservoir to the point of the pen is secured by capillary action.

3. The non-collapsible ink-reservoir, open at the lower end only, in combination with the detachable holder provided with the porous material, the writing-pen, and the capillary feed plate or plates, substantially as described and shown.

4. In a fountain-pen, the combination of a reservoir wherein the ink is sustained mainly by atmospheric pressure, a writing-pen, a feed-plate lying adjacent to said pen, with a thin passage between the two for the feed of the ink from the reservoir, and an air-admission at the foot of the reservoir distinct from the passage through which the ink descends to the pen.

260,135. SCREW-DRIVER. JAMES SWAN, Seymour, Conn. Filed Apr. 3, 1882. (No model.)

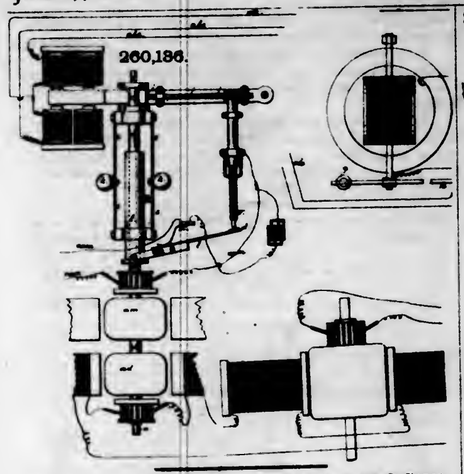


Claim.—As an improved article of manufacture, a screw-driver composed of the shank *a*, the handle, and the exteriorly screw-threaded socketed receiver inserted through it and intersecting the longitudinal central passage in the handle, the socket of the receiver being placed in the line of the axial center of the handle to receive the end a^3 of the shank *a*, inserted therein, to operate all as described.

260,136. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. RENÉ THURY, Geneva, Switzerland. Filed July 5, 1881. (No model.)

Claim.—The combination, with a motor and the governor and generator rotated by the motor, of a circuit-opener, a screw, mechanism for moving the screw, an electro-magnet to bring into action the devices that rotate the screw, and a galvanometer and circuit-connections, substantially as set forth, whereby the speed of the motor is varied to render the current upon the line uniform substantially as specified.

260,136.



260,137. WAGON-BOLSTER. DAVID B. TURNBULL, Defiance, Ohio. Filed Mar. 29, 1882. (No model.)



Claim.—1. In a wagon-bolster, a thimble having longitudinal ribs with beveled surfaces and oval aperture to receive the king-bolt and allow the bolster to rock to a limited extent, said thimble extending only a portion of the distance through the bolster and being flush with the upper surface thereof when in position, combined with said bolster and a bottom plate, as and for the purpose set forth.

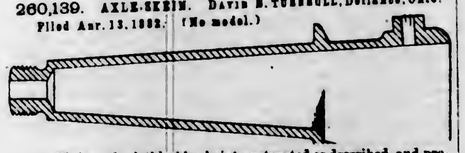
2. The combination of the bolster A *a*, as shown, and the bottom plate secured upon the lower surface thereof, with the thimble B, having ribs *b* with beveled portion *b'* and oval aperture b^2, as and for the purposes specified.

260,138. RUB-IRON FOR WAGONS. DAVID B. TURNBULL, Defiance, Ohio. Filed Mar. 29, 1882. (No model.)



Claim.—The rub-iron herein described, consisting of the vertical and horizontal securing-plates A B, the former having an oval or inclined outwardly-projecting wearing portion of chilled metal from *a* to *b*, an inclined portion from *c* to *d*, adapted to be sunk in the body of the vehicle, and a vertical bearing from *d* to *e*, the whole being constructed and adapted to serve as and for the purposes specified.

260,139. AXLE-SKEIN. DAVID B. TURNBULL, Defiance, Ohio. Filed Apr. 13, 1882. (No model.)



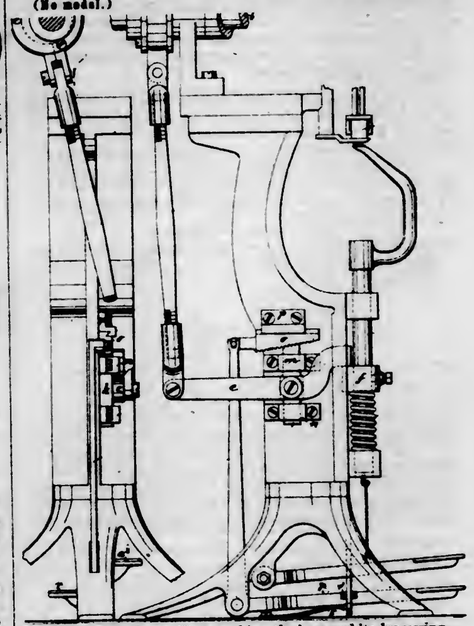
Claim.—1. A thimble-skein constructed as described, and provided with the boss for the purposes set forth.

2. A thimble-skein constructed as described, and provided with a boss for the purposes set forth, and with a screw-hole through said boss, substantially as and for the purposes set forth.

260,140. REMEDY FOR COUGHS, &c. H. JOSLIN TURNER, New York, N. Y. Filed Apr. 21, 1882. (No specimens.)

Claim.—The herein-described compound of medicine, consisting of blood-root, hyoscyamus, squills, lobelia, capsicum, sassafras, *ars ursi*, and sirup, to be used for coughs and all diseases of the throat, lungs, kidneys, and urinary organs, in the proportions specified.

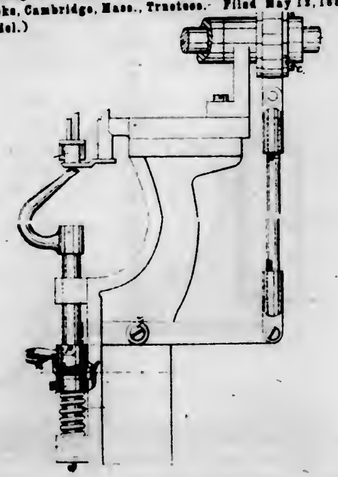
260,141. NAILING-MACHINE. ALBERT VAN WAGENEN, Boston, Mass., assignor to Gordon McKay, Newport, R. I., and James W. Brooks, Cambridge, Mass., Trustees. Filed May 5, 1882. (No model.)



Claim.—1. In a nailing-machine, the horn and its depressing-lever having a movable fulcrum and operated by the nailing mechanism, combined with the fulcrum-controlling device and means in connection therewith under control of the operator, whereby the said controlling device may be actuated by the operator independently of the regular mechanism of the machine while the machine is in motion, substantially as described.

2. The horn and its depressing-lever operated by the nailing mechanism, and the movable fulcrum-carriage for the said lever, and its controlling device, combined with an independent lever or treadle under the control of the operator, whereby he may at will vary the position of the controlling device to regulate the amount of depression of the horn, substantially as described.

260,142. NAILING-MACHINE. ALBERT VAN WAGENEN, Boston, Mass., assignor to Gordon McKay, Newport, R. I., and James W. Brooks, Cambridge, Mass., Trustees. Filed May 13, 1882. (No model.)



Claim.—1. In a nailing-machine, the combination, with the horn and horn-depressing mechanism, of a rotary cam interposed between the said horn and its depressing mechanism, and adapted by its change of position to regulate the extent to which the horn is depressed below the nail-tube, substantially as described.

2. The horn and annular cam-seat thereon, combined with the annular rotary cam co-operating with the said seat, substantially as and for the purpose described.

3. The horn, guides to direct it in its vertical movement, the cam-seat and movable cam adapted to rise and fall with the said horn, and a locking device to hold the cam and cam-seat in adjusted position, substantially as and for the purpose set forth.

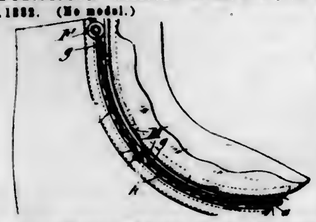
4. The horn having vertical motions, and the annular cam-seat, and the annular cam *p*, mounted thereon, combined with projection *o*, to prevent the rotation of the cam-seat with the horn, substantially as described.

260,143. GARMENT. FRANK WALLACH, New York, N. Y., assignor to E. Wallach's Sons, same place. Filed May 11, 1882. (No model.)



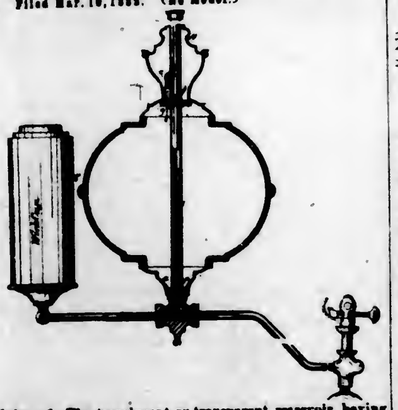
Claim.—In combination with the united and the unattached edges or portions of a garment, a strengthening device, D, composed of a double strip, the end portions thereof being secured in the side seam of the sleeve or other part of a garment, and the balance of the said device being doubled or folded on itself and secured to the unattached portions of the slit or opening of the sleeve or other part of the garment, substantially as and for the purpose set forth.

260,144. SHOE-FASTENING. WILLIAM WARNER, Chicago, Ill. Filed Mar. 27, 1882. (No model.)



Claim.—The shoe-fastening consisting of two independent laces, one of which is secured at the bottom of the lace-opening and the other near the center thereof, and adapted to be passed through the eyes *h g* on the quarters of the shoe and secured at their free ends by the screw-clamp F, substantially as described.

260,145. CHANDELIER. HENRY WELLINGTON, Green Point, N. Y. Filed Mar. 10, 1882. (No model.)

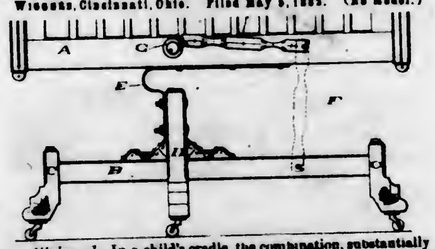


Claim.—1. The translucent or transparent reservoir, having a metallic base-piece and a central coupling-pipe carrying a feeding-funnel, said pipe being perforated at or near the base of the funnel and at or near the base of the reservoir for the purpose of conducting oil from the funnel down to and into the lower part of the reservoir, substantially as shown and described.

2. In combination with the reservoir, the central pipe carrying the feeding-funnel, and the packing-gasket interposed between the funnel and reservoir-top, substantially as and for the purposes explained.

3. The central pipe, perforated, as explained, for the reception and delivery of oil, and provided with a conduit which establishes communication between the interior of the reservoir and the upper part of the pipe for the escape of air and gases, substantially as shown and described.

260,146. CRADLE AND CRIB FOR CHILDREN. HENRY H. WIGGINS, Cincinnati, Ohio. Filed May 5, 1882. (No model.)



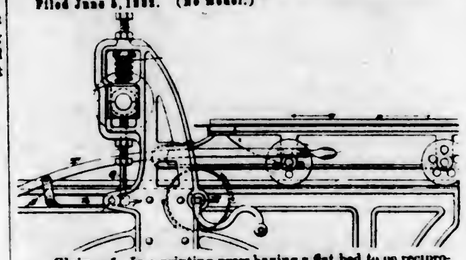
Claim.—1. In a child's cradle, the combination, substantially as set forth, of the stand or platform and springs, as E, secured to said stand, with cradle-body A, mounted at a point intermediate between its ends upon said springs, so as to rock or vibrate lengthwise thereon.

2. In a child's cradle, the combination of stand B C D, springs E, and cradle-body A, constructed and arranged to operate substantially as specified.

3. The combination, substantially as specified, of the rocking member A, stationary member B, and springs E, connecting said rocking and stationary members with swinging arm F, and button G to lock the parts to form a crib or hold the arm up to permit the cradle to be rocked.

4. In a child's cradle, the combination, substantially as specified, of the cradle-body A with the swinging arm H, said arm being hinged at one end to the upper rail of the body, and having a bolt or catch at the free end to hold the arm either against the top rail or across the cradle, as desired.

260,147. PRINTING-PRESS. GEORGE L. ADAMS, Fowlerville, Mich., assignor of one-half to John C. Hilsworth, same place. Filed June 5, 1882. (No model.)



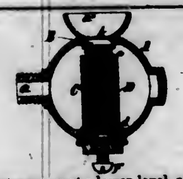
Claim.—1. In a printing-press having a flat bed to be reciprocated by hand-power under an impression-cylinder, the combination of said cylinder, journaled in movable bearings, with the pivoted hand-lever, connected, substantially as described, with said bearings, and having its handle in proximity to the handle for reciprocating the bed, whereby the impression-cylinder can be raised and lowered and the bed reciprocated by the operator, all without change in the latter's position.

2. The combination, with the impression-cylinder, journaled in movable bearings having springs above them, of the vertical lifting-rods, the rock-shaft, the cams P, the lever R, connecting-link S, and the hand-lever T, having its handle projecting in proximity to the handle by which the bed is reciprocated, the whole arranged for operation substantially as described.

260,148. AUTOMATIC AIR-VALVE FOR STEAM-RADIATORS. GEORGE L. ALLEN, Worcester, Mass. Filed Apr. 17, 1882. (No model.)

Claim.—1. An automatic air-valve mechanism for radiators and other steam apparatus, consisting of a hollow body or shell provided with an outlet-opening and valve-seat in the upper part

260,148.



thereof, and an inlet-passage at a lower level, a guard-tube extending upward within the shell to a position above the level of said inlet-passage, an expansion-rod coiled or arranged within said tube and supporting a valve adapted for stopping said outlet from the inner side, and a screw or means for adjusting said rod and valve in relation to the valve-seat, substantially as set forth.

2. The combination, with the globe or shell A, provided with the connecting-nipple *a* and valve-seat opening *b*, of the tube C, the expansion-rod D, and the valve B, arranged for operation substantially as hereinbefore set forth.

3. The combination, in an automatic valve mechanism, of the valve B, the valve-seat *b*, the coiled expansion-rod D, the disk E, and the screw F, substantially as and for the purposes set forth.

260,149. CAR-COUPLING. GEORGE T. ARNOLD, Lancaster, Ky. Filed Apr. 22, 1882. (Model.)



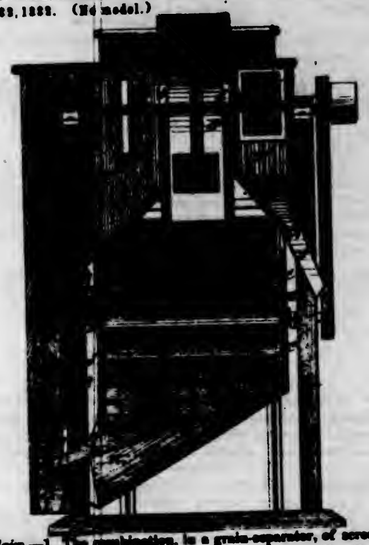
Claim.—1. The combination of a coupling-bar, A, having T-bars B, pivoted in the ends, as described, with the draw-bar having shoulder J and pin K, substantially as specified.

2. The combination of a spring-plate, H, with coupler A, having T-bars B, substantially as described.

3. A draw-head having the shoulders X J, the pivoted spring-plate H, the pin K, and the slot M, whereby it may be used in connection with bars B, as described.

4. The combination, with the draw-head, of the side-rod G, bent at right angles in reverse directions, and forming the part O to support the pin, part R to be struck by the link, and the part P extended out to one side of the draw-head, as and for the purpose specified.

260,150. GRAIN-SEPARATOR. HIRAM A. BARNARD and JOHN B. CORNWALL, Moline, and J. SILAS LOAR, Rock Island, Ill. Filed Mar. 29, 1882. (No model.)

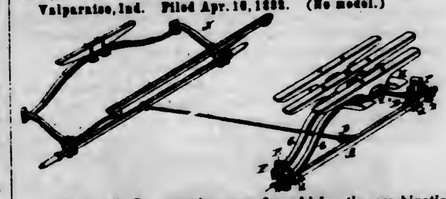


Claim.—1. The combination, in a grain-separator, of screening-shakers and means for vibrating them in opposite directions, with two independent air-chambers, each of said chambers being provided with a cut-off or valve, all substantially as and for the purpose set forth.

2. The combination, in a grain-separator, of a fan, a suitably-constructed fan-case, and wind separating-chambers provided with independent valves, with a set of screening-shakers and means for vibrating them in opposite directions, all substantially as and for the purpose described.

3. The combination, in a grain-separator, of sieves and means for vibrating them in opposite directions, with two separating-chambers, each provided with a screenings-box to collect and discharge the screenings automatically, and also a valve to regulate the force of the air-current, all constructed and arranged to operate substantially as and for the purpose set forth.

260,151. RUNNING-GEAR FOR VEHICLES. MICHAEL BARRY, Valparaiso, Ind. Filed Apr. 10, 1882. (No model.)



Claim.—1. In a running-gear for vehicles, the combination of the swinging hangers F, provided with large central opening, *f*, and smaller side openings, *g*, and constructed of one piece of metal, with the axle A, the brackets E, the springs G, and the transverse bolts or pins for connecting the brackets and springs with the hangers, as and for the purpose set forth.

2. The combination of the front supporting-frames, H, consisting of intersecting transverse and longitudinal bars, with the fifth-wheel plates I, king-bolt M, the clips *i*, and springs G, all constructed and relatively arranged as herein set forth, for the purpose set forth.

260,152. MATERIAL FOR THE DECORATION OF THE INTERIOR WALLS AND CEILINGS OF BUILDINGS. FREDERICK ESER, New York, N. Y. Filed Jan. 18, 1882. (No specimens.)

Claim.—As a new article of manufacture, a fabric consisting of a sheet of tin-foil and a backing or lining of paper or its equivalent material, the two united by an adhesive substance or substances and embossed, substantially as described.

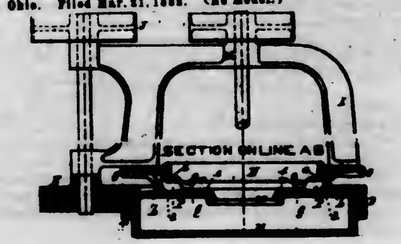
260,153. CARTRIDGE-PACKAGE. THOMAS G. BENNETT, New Haven, Conn., assignor to the Winchester Repeating Arms Company, same place. Filed May 19, 1882. (No model.)



Claim.—1. The method herein described for arranging cartridges for packing, consisting in the employment of a pair of plates of substantially the size of the package to be made, each perforated with series of holes corresponding in diameter to the body of the cartridges, the holes in one alternating with those of the other, the cartridges introduced through the holes in the said plates, and the two filled plates of cartridges set together, substantially as described.

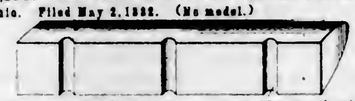
2. A cartridge-package consisting of a pair of plates, each perforated with series of holes corresponding in diameter to the body of the cartridge, the holes in one plate alternating with those of the other, the cartridges arranged through the perforations of the respective plates, and then the two plates of cartridges set together and inclosed to form the package, substantially as described.

260,154. HORSE-POWER. GOTTLEAB F. BETZ, Cleveland, Ohio. Filed Mar. 31, 1882. (No model.)



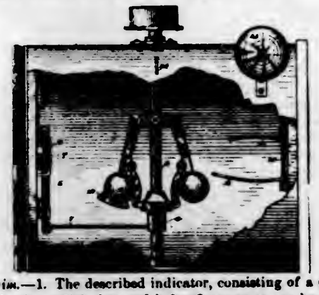
Claim.—In horse-power machines, the rotatory frame I and plate O, having the rollers I' rotating in the annular track Q, and provided with a central opening, N, through the plate O, gear D, and base C, for the passage of the driving-shaft, in combination with the stationary gear D and pinion E, substantially as described, and for the purpose specified.

260,155. FIRE-BRICK. WILLIAM G. BUTSELY, Portsmouth, Ohio. Filed May 2, 1882. (No model.)



Claim.—A fire-brick having curved sides terminating in a rounded upper edge, and provided on its flat under surface with transverse notches or grooves, substantially as described.

260,156. SPEED-INDICATOR. NELSON P. BOWSHER, South Bend, Ind. Filed Jan. 18, 1882. (No model.)



Claim.—1. The described indicator, consisting of a cylindrical case having a dial-plate and index-finger upon one head, a vertical shaft set centrally in bearings in said shell, the ball-governor and sleeve of said shaft, and intermediate connections, as described, between the sleeve and the index-finger, and the bell-sounding mechanism, adapted to be operated by the revolution of the balls to the side of the governor, the said balls being arranged upon the shaft so as to move when spread in the widest part of the case, all substantially as described.

2. In combination with the sleeve 4 of the governor, the rack-bar and the arm connecting said rack-bar to the sleeve, the spring for holding down said arm and bar, and the pinion upon the shaft of the index-finger, all substantially as described.

3. The combination of an indicator or dial-finger connected by suitable intermediate mechanism with a revolving shaft and adapted to show upon the dial-face the speed of said shaft, with a sounder adapted to be operated by centrifugally-moving arms adapted to come in contact with the sounding mechanism when exceeding certain limits of motion, substantially as described.

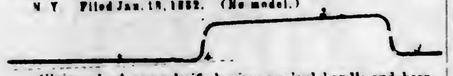
4. In combination with the shaft, the arms and balls, the arms 16 17, connected, as described, to the hammer which strikes the bell, whereby any variation from a given rate is made to give an alarm, substantially as described.

5. The combination of the shaft 15, the arms 16 and 17, and the wing upon the ball, said arms being arranged to permit the ball to pass between them, whereby any variation of speed, either of increase or diminution, will cause the alarm to be sounded, substantially as described.

6. In a dial speed-indicator, the combination of a dial-plate, an index-hand, a governor connected to such index-hand by mechanism substantially as described, and a sounder or alarm operated by such governor when its speed is increased or diminished to a certain extent.

7. In combination with a dial speed-indicator, the rack-bar 6, the pinion 7, the spring 10, and the adjustable pressure-roller, and the spring or arm 12, substantially as described.

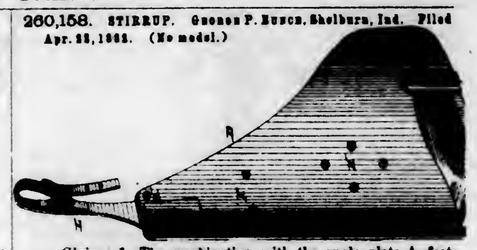
260,157. PAPER KNIFE. BLOOMFIELD BROWER, New York, N. Y. Filed Jan. 18, 1882. (No model.)



Claim.—1. A paper-knife having a raised handle and bearing-points, as 3 4, substantially as described.

2. A paper-knife having bearing-points, as 3 4, and a raised handle, as 2, between said points, and made of elastic material, so that pressure on the handle will elevate the point of the blade, substantially as described.

260,158. STIRRUP. GEORGE P. BUSCH, Shelburn, Ind. Filed Apr. 28, 1882. (No model.)

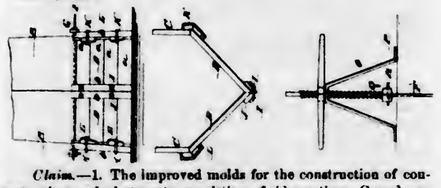


Claim.—1. The combination, with the angle-plate A, foot-rest C, and shield D, of the spring F, arranged substantially as described, to support the shield.

2. The combination, with the foot-rest C, of the shield D, attached, as described, to its inner and outer edges, an opening, E, being left between the shield and the toe of the foot-rest.

3. In a stirrup, the combination of the angle-plate A, foot-rest C, shield D, spring F, flexible strips I, covering-strip J, and the strap L, all arranged substantially as set forth.

260,159. METHOD OF AND APPARATUS FOR THE CONSTRUCTION OF CONCRETE ABUTMENTS, BRIDGE-PIERS, &c. JAMES BURNS, San Antonio, Tex. Filed Apr. 21, 1882. (No model.)



Claim.—1. The improved molds for the construction of concrete piers and abutments, consisting of side sections, C, end sections, D, and stay-rods F, said side and end sections being secured together by the battens *b*, clamps K, and keys L, substantially as specified.

2. The end sections, D, constructed in two parts, permanently connected by bolts I and clips J, and being detachably connected to the side sections by cleats *b*, clamps K, and keys L, substantially as specified.

3. The combination of stay-bolts F, nuts G, and key-clips H with battens *b* of the mold, having notches *d*, substantially as specified.

260,160. HAT-HOLDER. JOHN H. BUSSE, Springfield, Ill. Filed Apr. 14, 1882. (No model.)



Claim.—The combination, with the fastening-plate G, of the plates A, provided with the perforated lugs *a* at opposite edges, the pin *b*, the spring *d*, and the bar E, hinged to the upper edge of one of the plates A, and pivoted to the plate G by a pivot at right angles to the hinge-pivot, substantially as and for the purpose set forth.

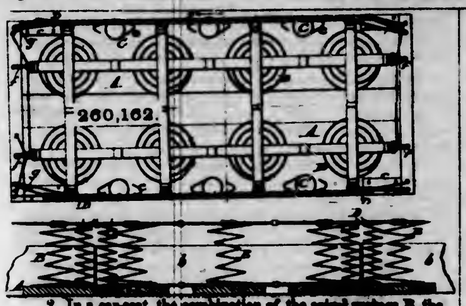
260,161. SASH-CORD FASTENER. CHARLES BUSH, New York, N. Y., assignor to himself and Lotan K. Hunt, same place. Filed Nov. 1, 1881. (No model.)



Claim.—As an improved article of manufacture, the herein-described knot-holder, consisting of the face-plate J and the curved eye-plate K, secured to the said face-plate, and having its eye elongated transversely, substantially as and for the purpose set forth.

260,162. CAR-SEAT. EDWIN L. BUSHNELL, Poughkeepsie, N. Y. Filed Feb. 18, 1882. (Model.)

Claim.—1. The combination of the base-frame A, elevated only at the ends *b*, the main springs B, having ears thereon, the secondary springs C, having the angular ends, the elastic wires or rods D, and the connections uniting the springs and wires with each other and with the end rails, substantially as described and shown.



2. In a car-seat, the combination of the spiral springs B, the longitudinal wires or rods D, secured to the upper outer edge of said springs, and the smaller secondary springs having angular ends secured to the wire, as shown.

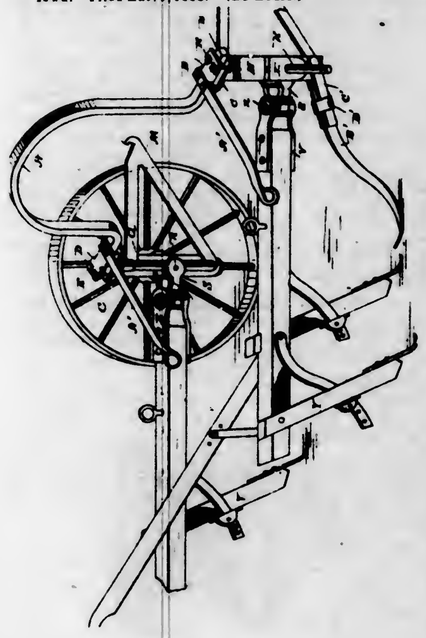
3. The improved bed or couch for railway-cars, consisting of two or more independent sections arranged side by side, each section composed of a base-frame elevated at the ends only in the manner described, the series of large and small spiral springs mounted on said frame, the flexible connections between the upper ends of the larger springs and the longitudinal wires attached to the edges of the springs, said wires and flexible connections being both attached to the raised ends of the frame, as described and shown.

260,163. MEASURING-TAPE. WILLIAM CHRISTMAN, Sheffield, County of York, England. Filed Aug. 16, 1880. (Specimens.) Patented in England Feb. 11, 1880, No. 611.



Claim.—As an improved article of manufacture, the measuring-tape herein described, consisting of a fabric wherein the warp-threads lie two or more together and the weft lies single alternately over and under the warp-threads, and the fabric graduated, as and for the purpose set forth.

260,164. SULKY-CULTIVATOR. JOHN B. CHRISTIAN, Hamburg, Iowa. Filed Mar. 6, 1882. (No model.)



Claim.—1. The combination, with the arch A, having horizontal extensions B and adjustable plates C, provided with vertical shafts F, of the frames H, the tubular bearings G, plates D, and bolts E, substantially as specified.

2. In combination with the connecting-arch A and the tubular bearings G, the bifurcated connections constructed in two parts and secured together by a bolt, Z, substantially as and for the purpose specified.

3. In combination with the connecting-arch A, the frames H, the tubular bearings G and their adjustable connections, the angular draft-frames M, provided with hooks at their ends, and the bifurcated connections S, to which the plow-beams are attached, substantially as and for the purpose specified.

260,165. TREATMENT OF EXCRETA FOR THE PRODUCTION OF FERTILIZING SUBSTANCES. HENRI COLLET, Paris, France. Filed Sept. 27, 1881. (No specimens.) Patented in France Apr. 8 and Sept. 1, 1880; in England May 9, 1881, No. 2,064, and in Belgium Aug. 3, 1881.

Claim.—The herein-described method of separating the solid and liquid constituents of excreta, and collecting the solid ingredients in a town by the application of nitrielle powder, prepared substantially as herein set forth.

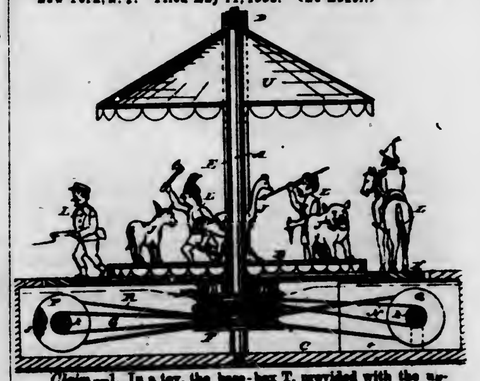
260,166. CAKE-PAN. JOHN R. CORSON, South Oil City, Pa. Filed Dec. 3, 1881. (No model.)



Claim.—1. A separable cake-pan consisting of an expansible rim, combined with an elastic bottom and two overlapping catches, which are adapted to be pressed into engagement with each other by means of a lever pivoted to one of the catches, substantially as shown and described.

2. The combination of the rim A, the expansible bottom C, the bevel-catches *a a*, having obtuse-angled notches, the strips of asbestus *b*, and the pivoted lever D, substantially as shown and described.

260,167. TOY MERRY-GO-ROUND. CHARLES F. CORNELIUS, New York, N. Y. Filed May 11, 1882. (No model.)



Claim.—1. In a toy, the base-box T, provided with the upright E, having arm D, in combination with the post A, platform B, having the images J J, and the platform K, having images L, the platforms B and K being adapted to be revolved in opposite directions, as set forth.

2. In a toy, the image-bearing platform K, having the pulley-sleeve M secured to its under side, in combination with the post A, having the platform B and pulley F secured to it, the platform K and post A being adapted to be revolved in opposite directions by the shafts H and O and bands G, H, and R, the latter passing over the pulleys P and Q, substantially as described.

3. The base-box T, having the shafts H and O journaled therein, and the post A journaled at its lower end in the box C of the box and at its upper end in the arm D, supported by the post E, and having the pulley F and platform B secured to it, in combination with the platform K, provided with the pulley-sleeve M, the platform K and post A being adapted to be revolved in opposite directions, substantially as described.

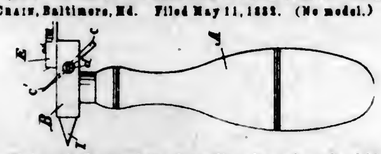
4. The platform B and canopy U, secured upon the post A, in combination with the platform K, the latter being adapted to be revolved in the opposite direction from that of the canopy and platform B, as set forth.

5. In a toy, the vertical post A, having secured to it the image-bearing platform B and canopy U, in combination with the image-bearing platform K, suitable mechanism being provided for revolving the post and platform K in opposite directions, substantially as described.

260,168. PROCESS OF CLEANING CLOTHS AND OTHER FABRICS. ELIZABETH I. COUCH, San Francisco, Cal. Filed Dec. 13, 1881. (No specimens.)

Claim.—The method herein described for cleaning woven and other fabrics, consisting in first applying to the goods an aqueous solution of lime, borax, borax-soap, soda, and beef-gall, and rubbing the same with a brush or scraper, then applying with a soft sponge or cloth a second solution, consisting of alum and fuller's earth, substantially as herein described.

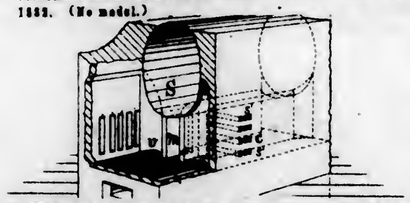
260,169. TOOL FOR CHANNELING SHOE-SOLES. WILLIAM CRAIN, Baltimore, Md. Filed May 11, 1882. (No model.)



Claim.—1. In a tool for channeling shoe-soles, a head-block, B, mounted on a suitable handle, a cutting-blade adjustable thereon, and provided with a circular guiding-disk, E, eccentrically pivoted upon said head-block, and having an operating-handle, *g*, for regulating the width of cut from the edge of the sole, all substantially as described, and for the purpose set forth.

2. A hand-tool for channeling shoe-soles, consisting of the handle A, head-block B, adjustable blade *c*, channel-opener I, and eccentrically-pivoted guiding-disk E, having an operating-handle, *g*, all substantially as set forth.

260,170. SMOKE-CONSUMING FURNACE. JAMES C. CULBERTSON and WILLIAM A. RUDALY, Cincinnati, Ohio. Filed May 24, 1882. (No model.)



Claim.—1. In a smoke-furnace, long narrow vertical influent air-ducts *s s*, situated in the side walls of the fire-box, the air passing through said ducts, regulated by a series of dampers, D D′, substantially as and for the purposes specified.

2. In a smoke-consuming furnace, long narrow vertical influent air-ducts *s s*, situated in the sides of the fire-box, in combination with a series of dampers, D D′, by means of which the inflow of air is regulated at different heights with relation to the fire-bed, substantially as and for the purposes specified.

3. In a smoke-consuming furnace, long narrow vertical influent air-ducts *s s*, situated in the sides of the fire-box, and the series of dampers D D′, in combination with the rear end walls of the fire-box, substantially as and for the purposes specified.

4. In a smoke-consuming furnace, long narrow vertical influent air-ducts *s s*, situated in the sides of the fire-box, and the series of dampers D D′, in combination with the concave side walls, *p p*′, of the fire-box, substantially as and for the purposes specified.

5. In a smoke-consuming furnace, long narrow vertical influent air-ducts *s s*, situated in the sides of the fire-box, the series of dampers D D′, and the concave rear end walls, *v v*, of the fire-box, in combination with the laterally-contracted flue, substantially as and for the purposes specified.

6. In a smoke-consuming furnace, long narrow vertical inflowing air-ducts *s s*, situated in the sides of the fire-box, the series of dampers D D′, and the concave side walls of the fire-box, in combination with the laterally-contracted flue, substantially as and for the purposes specified.

7. The combination, in a smoke-consuming furnace, of the long narrow vertical influent air-ducts *s s*, situated in the side walls of the fire-box, the series of dampers D D′, and the concave rear end and side walls of the fire-box, with the laterally-contracted flue extending to and within the expanded flue C, substantially as and for the purposes specified.

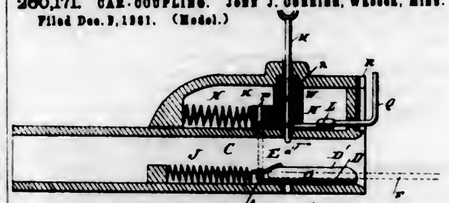
8. The combination, in a smoke-consuming furnace, of the long narrow vertical influent air-ducts *s s*, situated in the side walls of the fire-box, the series of dampers D D′, and the concave side walls of the fire-box, with the laterally-contracted flue and the winged walls, substantially as and for the purposes specified.

9. In a smoke-consuming furnace, the long narrow vertical influent air-ducts *s s*, the series of dampers D D′, the concaved rear end walls, *v v*, and the concave side walls, *p p*, of the fire-box, and the laterally-contracted flue M, in combination with the expanded flue or chamber C, together with vertical influent air-ducts *s′ s′*, substantially as and for the purposes set forth.

10. In a smoke-consuming furnace having a primary combustion-chamber, a rear combustion chamber or flue, and a dividing wall provided with a vertical elongated flue centrally contracted, in combination with winged walls arranged substantially as and for the purposes set forth.

11. In a smoke-consuming furnace having a front and rear combustion chamber or flue, a dividing-wall provided with a vertical elongated flue centrally contracted and flaring at both ends, the winged curved walls, and the rear air-ducts communicating with said rear flue, operating together substantially as and for the purposes mentioned.

260,171. CAR-COUPLING. JOHN J. CURRIER, Wacoca, Miss. Filed Dec. 9, 1881. (Model.)



Claim.—1. The combination, with the slotted draw-head C, of the crank-shaft A B and the horizontally-sliding and flanged plate D, rigidly secured to the said crank-shaft, substantially as and for the purpose set forth.

2. The combination, with the draw-head C, of the plate D, the crank-shaft A B, and the spring J, substantially as shown and described.

3. The combination, with the draw-head C, of the slotted sliding plate L, the spring N, the angularly-bent rod Q, and a guide for the coupling-pin, substantially as herein shown and described.

4. The combination, with the draw-head C, of the box K, the slotted sliding plate L, provided with a rear flange, P, the spring N, the guide-block W, and the angularly-bent rod Q, attached to the front end of the plate L, substantially as shown and described.

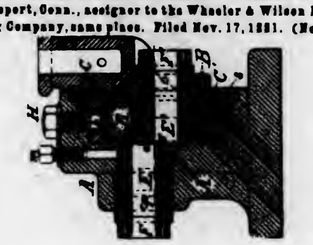
260,172. FOURDRINIER PAPER-MACHINE. FRANCIS CURTIS, Hyde Park, Mass. Filed Apr. 22, 1882. (No model.)



Claim.—1. In a Fourdrinier paper-machine, the combination of the woven-wire apron, the guide-roll E, and the suction box F with the stuff-vat A.

2. In a Fourdrinier paper-machine, the combination of the woven-wire apron, the guide-roll E, the stuff-vat A, a suction box or boxes properly located to drain the web formed upon the apron and the breast-roll C, adapted to drive the said apron.

260,173. METAL-CUTTING MACHINE. WILLIAM P. DURFEE, Bridgeport, Conn., assignor to the Wheeler & Wilson Manufacturing Company, same place. Filed Nov. 17, 1881. (No model.)

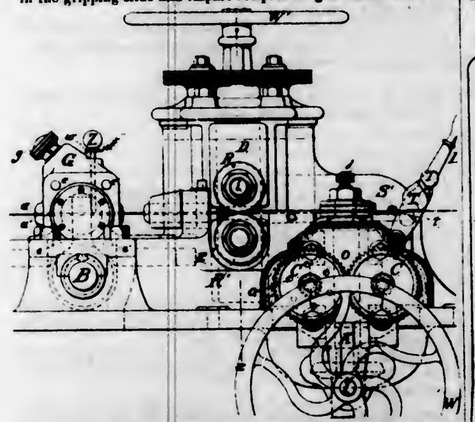


Claim.—1. In a metal-cutting machine, the combination, with the frame A, block B, and the hollow cutting-cylinders E E′, of the adjustable sleeves F F′, for receiving the thrust of the cylinders, and whereby the same may be adjusted longitudinally to compensate for wear of their cutting-edges, substantially as shown and described.

2. In a metal-cutting machine, the combination of the frame A, having opening K, movable block B, having slot or recess *h*, and lever L, half-rings C C′, for holding said block in position, stop-bolt H, adapted to engage with the recess *h* and limit the movement of the block, the hollow cutting-cylinders E E′, supported in said frame and block, respectively, and the sleeves F F′, for imparting a longitudinal adjustment to the cylinders, substantially as shown and described.

260,174. MECHANISM FOR REDUCING METAL STRIPS OR RODS. WILLIAM P. DURFEE, Bridgeport, Conn., assignor to the Wheeler & Wilson Manufacturing Company, same place. Filed Nov. 17, 1881. (No model.)

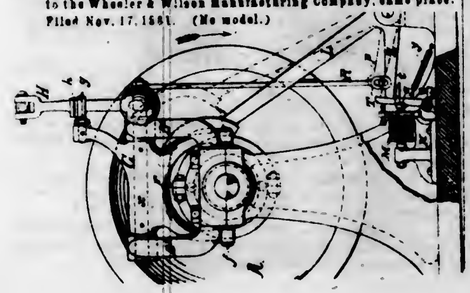
Brief.—Two pairs of reducing-rolls (mounted on vertical and horizontal axes, as shown) are revolved by hand-wheels and intermediate connecting-gears, and advance the cold rod until its end is entered between the gripping-jaws. Clutches are provided between the roll and hand-wheel shafts, and when the end of the rod is seized by the gripping-jaws the connection between said shafts is broken, and the gripping device pulls the rod through the rolls. On an oscillating shaft are arms, which enter recesses in the gripping-slide and impart reciprocating motion thereto.



Claim.—1. The combination of the lever L, having eccentric button T and curved projection *t*, the grooved rollers R R′ S S′, hand-wheels W W′, intermediate gearing connecting said rollers and hand-wheels, and the gripping mechanism consisting of the sliding block G and the gripping-jaws *a a*′, links *c d c d*′, spring *f*, hand-screw *g*, and pins *h h*, supported in said block, substantially as and for the purpose described.

2. The combination of the block G, the gripping mechanism, the blocks V V′, inclosed in recesses formed in the block G, the shaft R, and the levers F F′, connecting the blocks V V′ with said shaft, whereby a reciprocating movement is imparted to the gripping mechanism, substantially as described.

260,175. APPARATUS FOR STARTING AND STOPPING MACHINERY. WILLIAM P. DURFEE, Bridgeport, Conn., assignor to the Wheeler & Wilson Manufacturing Company, same place. Filed Nov. 17, 1881. (No model.)

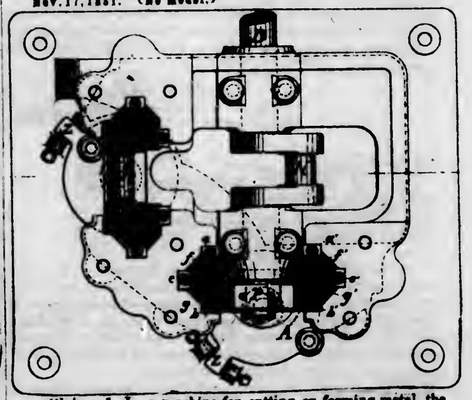


Claim.—1. In a machine for cutting or forming metal, the combination, with the gates A B, of the shaft D, having cranks N P and the vibrating lever M, provided with cam-slot *a*, substantially as shown and described.

2. In a machine for cutting or forming metal, the combination, with a gate, of a series of gibs, *f f*′ *g g*′, and wedges *a a*′, *b b*′, *c c*′, and means for operating the same, whereby the gate is adjusted, substantially as described.

3. In a machine for cutting or forming metal, the combination, with a gate, of the block B, die E, break-cup S, and the adjusting-screws T and *c*, substantially as shown and described.

260,176. MACHINE FOR CUTTING, PUNCHING, AND SWAGING. WILLIAM P. DURFEE, Bridgeport, Conn., assignor to the Wheeler & Wilson Manufacturing Company, same place. Filed Nov. 17, 1881. (No model.)



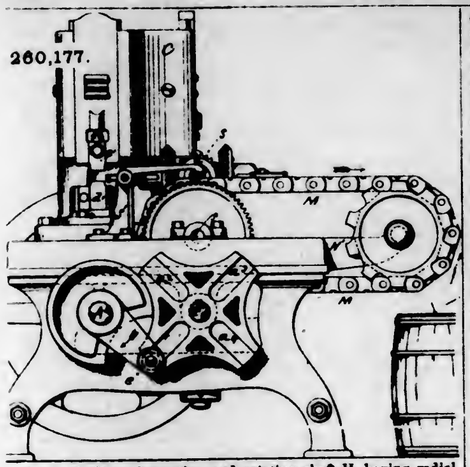
260,177. MACHINE FOR CUTTING AND FORMING HORSE-SHOE-NAIL BLANKS. WILLIAM P. DURFEE, Bridgeport, Conn., assignor to the Wheeler & Wilson Manufacturing Company, same place. Filed Nov. 17, 1881. (No model.)

Claim.—1. The combination, with the vertically-reciprocating and intermittingly-revolving conveyer, having radial arms provided with spring-jaws and a retaining-spring, of a carrying-chain having notches for the reception of the finished blanks, and means for forcing the blanks from the jaws of the conveyer into said notches, substantially as described.

2. The combination of a conveyer having radial arms provided with spring-jaws, a notched carrying-chain, M, for the reception of the blanks, a bell-crank lever, S, the horizontal arm of which is provided with downward-projecting lips adapted to bestride the chain, its pendent arm having a pin, *t*, and a cam, T, which intermittingly actuates said lever and causes the lips thereof to detach the blanks from the conveyer-arms and deposit them in the notched chain, substantially as described.

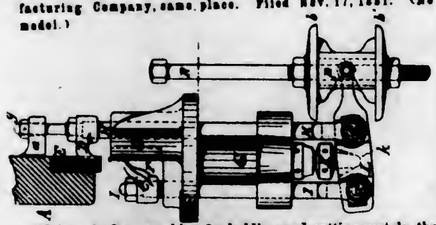
3. The combination of the cutting-dies *c d*, forming-dies *c′ d′*,

260,177.



the vertically reciprocating and rotating shaft H, having radial arms provided with spring-jaws *j*, the notched carrying-chain M, and lever S substantially as described.

260,178. DEVICE FOR CLAMPING AND HOLDING PLATES IN METAL-SHEARING MACHINES. WILLIAM F. DURFEE, Bridgeport, Conn., assignor to the Wheeler & Wilson Manufacturing Company, same place. Filed Nov. 17, 1881. (No model.)



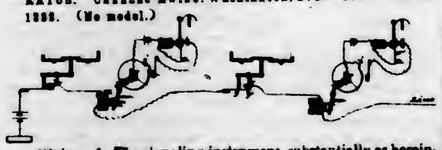
Claim.—1. In a machine for holding and cutting metals, the combination, with the vertically-reciprocating cutter-holder A and lower die-holder, G, of the rods H I, having clamping-fingers D C, arranged to bear upon the opposite sides of the metal to be cut, and the lever L, connected to the lower ends of the said rods and adapted to operate the same for the purpose of clamping and unclamping the metal, substantially as described.

2. In a machine for holding metal while being cut, the combination of the die-holders A G, the rods H I, having clamping-fingers C D, the bifurcated lever L, connected to the lower ends of said rods and provided with sliding blocks *p p'* and *e e'*, the latter having pins *o o'*, the rod R, having circular plates *b b'*, and the springs S, all arranged to operate substantially as and for the purpose described.

260,179. OLEAGINOUS COMPOUND USED IN MANUFACTURING CORDAGE. HENRY F. EVANS, New York, N. Y. Filed May 19, 1882. (No specimens.)

Claim.—An oleaginous compound to be used in the manufacture of cordage, consisting essentially of an amber-oil and fish or whale oil, combined as specified.

260,180. TELEPHONE SIGNALING AND RECEIVING APPARATUS. CHARLES EWING, Washington, D. C. Filed Mar. 24, 1882. (No model.)



Claim.—1. The signaling-instrument, substantially as hereinbefore set forth, consisting in the combination of the shaft, the movable collar, the circuit-breaking lever pivoted thereto, the pivoted levers for actuating the collar when snubbed, and mechanism for snubbing them.

2. The station-signaling apparatus, substantially as hereinbefore described, consisting in the combination of a disk having a contact-point or projection for closing the local circuit, a pawl rotating said disk, an electro-magnet operating the pawl, a circuit breaker and closer, a rotating arm by which it is operated, a local circuit, and a series of independent stops arranged within the circle of rotation of said arm, adapted to arrest its movement after the required number of makes and breaks for closing the local circuit.

3. The combination, substantially as herein set forth, of the shaft, the movable collar mounted thereon, the circuit-breaking lever pivoted thereto, the levers actuating the collar, means for snubbing said levers, the ratchet-wheel mounted on the shaft, and an electro-magnet and armature for causing the shaft to revolve.

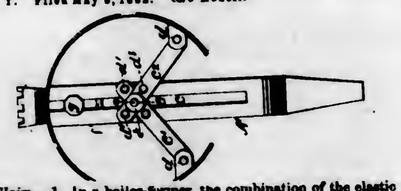
4. The combination, as hereinbefore set forth, of the main shaft, a device for giving one complete revolution to the same, a circuit-breaker operated thereby to make and break a local circuit, a device for arresting temporarily the revolution of the shaft at any point of its movement, a lever mounted on the shaft and turning with it in sight of the operator, and mechanism operated by said lever to make and break the main line a given number of times at each revolution of the shaft.

5. In a signaling-instrument, the combination, with the operating-gear, of the weighted rod carrying the pawls which engage with said gear.

6. The combination, substantially as hereinbefore set forth, of the shaft, the adjustable weight and mechanism operated thereby to revolve the shaft, the hand carried by the shaft, the circuit-breaking mechanism mounted on the shaft, and the push-button for arresting the hand and thereby leaving the completed local circuit unbroken until the station-call is operated.

7. The combination of the shaft, the weight and mechanism to revolve it, the circuit-breaking mechanism, the hand for operating it, the push-buttons, and the dial.

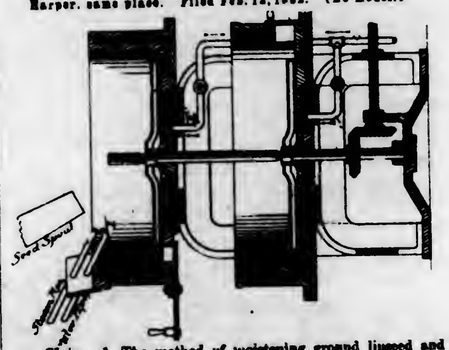
260,181. BOILER-FORMER. FREDERICK FELLOWES, Dunkirk, N. Y. Filed May 8, 1882. (No model.)



Claim.—1. In a boiler-former, the combination of the elastic former A, slotted bar A', bolt and nut *e e'*, and arms *d'*, substantially as and for the purposes set forth.

2. The slotted bar A' and former A, in combination with the bolt *e*, nut *e'*, and arms *d'*, provided with the holes *d' d'' d'''*, for the purposes specified.

260,182. MOISTENING OLEAGINOUS SEEDS AND MEAL FOR EXTRACTING THE OIL THEREFROM. JOSEPH B. FIELD, Ottumwa, Iowa, assignor to William Daggett and William T. Harper, same place. Filed Feb. 13, 1882. (No model.)



Claim.—1. The method of moistening ground linseed and other seed preparatory to expressing the oil by fine spray of water, substantially as described.

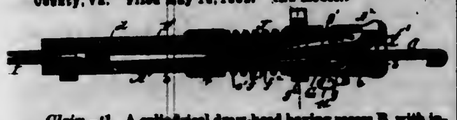
2. The method of moistening ground linseed and other seed preparatory to expressing the oil by spraying water on a stream of the seed flowing from a spout, substantially as described.

3. An apparatus, substantially as described, comprising, in combination, means for producing a fine spray of water and means for exposing to said spray the seed to be moistened.

4. The combination of the feed-spout and devices for spraying water, substantially as described.

5. The combination of the tempering vessels or bottles, the seed-spout, and devices for spraying water, substantially as described.

260,183. CAR-COUPLING. LEWIS H. PERDEW, Powhatan County, Va. Filed May 15, 1882. (No model.)



Claim.—1. A cylindrical draw-head having recess B, with inclined shoulder *b*, combined with a spring-tongue, a hooked coupling-link, C *c*, and with means for turning said draw-head one-fourth of a revolution to uncouple, as set forth.

2. The draw-head A, having shank A', enlarged portion A'', inclined or flaring mouth *a*, and recess B *b*, combined with the tongue F, springs *e e'*, and coupling-link C *c*, as and for the purpose set forth.

3. In a car-coupling, substantially as described, the tongue F, having dovetailed recesses *f f''* and inclined surface *f'''*, combined with the springs *e e'* and the draw-head A, the said tongue F being adapted to be readily removed for repairs, as set forth.

4. The shield G, composed of the vertical parts *g g'* and the horizontal portion *g''*, combined with the spring-tongue F, draw-head A, link C, and set-screw H, as and for the purposes specified.

5. The cylindrical draw-head A, having dovetailed lugs *a'*, combined with the sleeve M, having recesses *m* and shank *m'*, combined with the levers N O, bracket P, and link C *c*, as set forth.

6. In a car-coupling, a coupling-link having upon each end a coupling hook or shoulder, one of which is rounded at the corners and the other presenting a face upon a direct transverse plane, combined with the draw-head A, having recesses B *b*, spring-tongue F, and means for rotating the draw-head, substantially as set forth.

7. The set-screw H and draw-head A, combined with the tongue F and springs *e e'*, the said set-screw being adapted to take up lost power.

260,184. DRY-KILN. EDWARD H. FLANNERY, New Baltimore, Mich. Filed Feb. 20, 1882. (No model.)



Claim.—1. The combination, with a dry-kiln, of the perforated pipes G, the metal sections H, arranged above the pipes and in close proximity thereto, and the outlet J, the pipes and metal sections being located below the bents E of the kiln and the outlet above the same, all substantially as described, and for the purpose specified.

2. A drying-kiln provided with one or more trucks adapted to allow cars containing material to be dried to run into and out of said kiln, in combination with the door C, the hinged doors K at the top of the kiln, the outlets J at the bottom of the kiln, the perforated steam-pipes G under the truck or trucks, the metal sections H, arranged in close proximity to the pipes G and also under the truck or trucks, and means for opening and closing the hinged doors K, substantially as and for the purpose specified.

260,185. CAP OR HAT. DAVID FOX, New York, N. Y. Filed Apr. 3, 1882. (No model.)



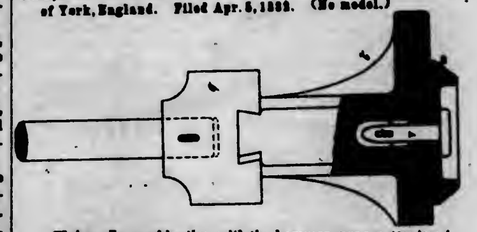
Claim.—1. In a reversible hat, the combination of the hat-body A and its brim with intermediate connecting-pieces E F, arranged substantially as shown and described.

2. The hat-body B, composed of sections A, each made up of double thicknesses or two folds of material united together and section to section by seams *a*, substantially as shown and described.

3. In a double or reversible cap, the body and band united to strips of tape or cloth, with an intervening space, *f*, between the edges of the united parts, substantially as and for the purpose described.

4. In a double or reversible cap, the combination of the reversible band C and body B with tapes or material E F, connecting the two at a distance from each other, substantially as and for the purpose described.

260,186. FLANGING-MACHINE. SAMUEL FOX, Leeds, County of York, England. Filed Apr. 5, 1882. (No model.)



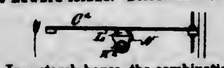
Claim.—In combination with the hammer-anvil *g*, the tap *f*, punch *n*, divided ring *a'*, and ring-die *m*, all constructed, combined, and arranged to operate in flanging flue-holes in boiler-plates, substantially as described.

260,187. MATCH-SAFE. GEORGE FRAHER, Baltimore, Md. Filed May 10, 1882. (Model.)



Claim.—The combination of a match box or safe having an opening through its top and the wooden plug B inserted in its bottom, with a pivoted figure provided with suitable sharp points for picking up the matches, substantially as shown and described.

260,188. STARCH-DRYING HOUSE. GEO. E. FELL, Charlottetown, Prince Edward Island. Filed June 3, 1881. (Model.)



Claim.—1. In a starch-house, the combination of the steam-heating pipes K, the standards E at each side of the steam-pipes, and a number of pivoted frames provided with pipes, substantially as shown and described.

2. In a starch-drying house, the combination, with the steam-heating pipes K', of the drying-frames O', pivoted thereon, substantially as herein shown and described, and for the purpose set forth.

3. In a starch-drying house, the combination, with the steam-heating pipes K', of blocks M, mounted thereon, and of the drying-frames O', resting on these blocks, substantially as herein shown and described, and for the purpose set forth.

4. In a starch-drying house, the combination, with the steam-heating pipes K', of the blocks M, mounted thereon, the drying-frames O', resting on these blocks, and the rail L', substantially as herein shown and described, and for the purpose set forth.

260,189. FLUE-CLEANER. RUDOLPH P. GERLACH, Cleveland, Ohio. Filed Feb. 25, 1882. (No model.)

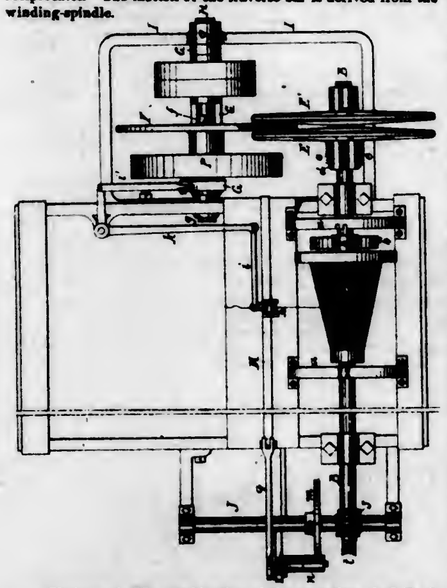


Claim.—An flue-cleaner, the ferrule G, with interior longitudinal ribs, H, forming an integral part thereof, a triangular-

shaped block, F, having a recess in the sides thereof to receive the edges of the spring-arms, and a stud, a, extending therefrom and through said arms, in combination with the nut I and stem, arranged substantially as and for the purpose set forth.

260,190. MACHINE FOR WINDING COPS OR BOBBINS. JAS. H. GUMBBALL, Philadelphia, Pa. Filed Nov. 28, 1881. (No model.)

Brief.—To wind conical cops or bobbins the speed of the winding-spindle is varied from fast to slow and slow to fast again as the yarn-guide moves from one end of the bobbin to the other and back again. For this purpose the movable disk of the frictional speed-changing device is mounted upon a swinging frame which is linked to the yarn-guide traverse-bar, so as to vibrate as the bar reciprocates. The motion of the traverse-bar is derived from the winding-spindle.

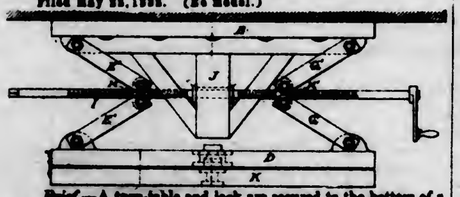


Claim.—1. The combination of the operating-shaft B of a winding-frame, a frictional speed-changing device, as described, a traverse-bar, and mechanism, substantially as described, connecting said traverse-bar and the movable disk of the speed-changing device, whereby a to-and-fro movement is imparted to the latter on each to-and-fro movement of the traverse-bar, as set forth.

2. The combination of the operating-shaft B of a winding-frame, a frictional speed-changing device, whereby a differential movement is imparted to said shaft, a traverse-bar, M, driven from the shaft B, and mechanism, substantially as described, connecting the traverse-bar and the movable disk of the speed-changing device, whereby a to-and-fro movement is imparted to the latter on each to-and-fro movement of the traverse-bar, as set forth.

3. The combination of the shaft B, having disks B E', the disk F, the driving-shaft H, and a lever, G, pivoted concentrically with the driving-shaft and carrying the journal of the disk F, as set forth.

260,191. COMBINED TURN-TABLE AND JACK FOR STREET-CARS. JOHN H. GOULD and JAMES G. GOULD, Philadelphia, Pa. Filed May 25, 1881. (No model.)



Brief.—A turn-table and jack are secured to the bottom of a car, and consist of two sets of links, forming knee-joints, pivoted to an upper strip and to a platform, below which the latter, in turn, is pivoted centrally to a base-plate. The links are operated by a screw-shaft having right and left handed threads adapted to corresponding threads in cross-bars secured to the strips.

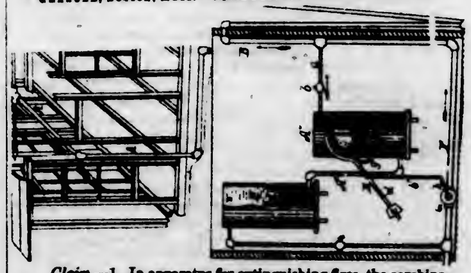
Claim.—1. The combination, with a street-car, of a combined turn-table and jack carried by said car, as set forth.

2. The within-described turn-table and jack for street-cars, the same comprising the two sets of links, the operating screw-shaft, a strip, B, a platform, D, and a base to which the platform is pivoted, as set forth.

3. A street-car in which the following elements are combined, namely: a base, K, a platform pivoted to the base, and mechanism whereby the said platform and base are suspended from the under side of the car, and whereby they can be raised and lowered, substantially as set forth.

4. The combination of the strip B, secured to the under side of the car, a platform, D, pivoted to a base, the system of links forming the knee-joints herein described, the cross-pieces H H', and a screw-shaft, I, having right and left handed threads adapted to corresponding threads in the said cross-bar, all substantially as specified.

260,192. FIRE-EXTINGUISHING APPARATUS. ALMON H. GRAGGUE, Boston, Mass. Filed Feb. 1, 1882. (No model.)



Claim.—1. In apparatus for extinguishing fires, the combination of a pipe with a valve located therein, a lever weighted at one end, which normally closes said valve, and devices whereby the other end of said lever is caused to preponderate, substantially as described, when the carbonic-acid gas on one side of said valve is set free, in order that the valve may open and allow a flow of water through said pipe, substantially as set forth.

2. A lever having a weight at one end and a bulb at the other end, in combination with pipes for distributing fire-extinguishing material, a valve governed by said lever for controlling such distribution, and tubes for conducting water into said bulb when the counteracting pressure is released, substantially as and for the purpose set forth.

3. In apparatus for extinguishing fires, the combination of a receiver and a series of pipes for containing carbonic-acid gas under pressure, with a water-supply pipe connected therewith, a valve interposed between the gas and the water, a weighted lever and connections for holding said valve closed, and a hollow bulb attached to said lever and acting in opposition to said weight, said bulb being provided with pipes, whereby it is supplied with gas so long as the superior pressure of the gas excludes the water from said receiver, but is supplied with water when said pressure is relieved by the escape of the gas, the said bulb then overcoming the weight on the other end of the lever and opening the valve for the flow of water, substantially as set forth.

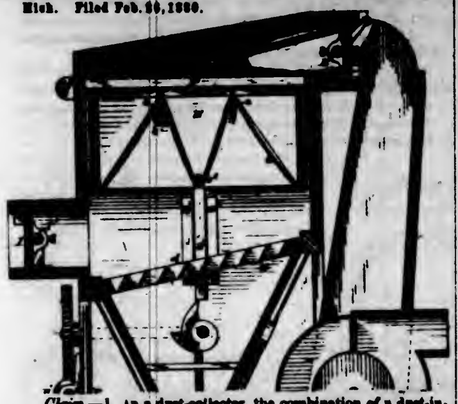
4. In apparatus for extinguishing fires, the combination of a water-tank with a gas-receiver, a main water-supply pipe, branch distributing-pipes, an offset pipe connecting the distributing-pipes with the receiver, and a valve in said offset pipe closing toward the receiver to exclude the main water-supply from the latter.

5. The combination of bulb D with lever E, from one end of which it is hung, weight *e*, operating on the other end of the lever, gas-receiver A'', pipes or tubes *f* and *g*, respectively, connecting said bulb to the upper and the lower parts of said receiver, valve G and connections with said lever, and a tank, C, communicating with said receiver, whereby the influx of water into said receiver will fill said bulb and cause its connections to open said valve, substantially as and for the purpose set forth.

260,193. GLASS MOLD FOR CASTING ORNAMENTAL PICTURE-FRAMES, &c. JONATHAN HALBY, Pittsburg, Pa. Filed Apr. 25, 1881. (No model.)

Claim.—Molds of glass for casting ornamental decorations for picture-frames, and for other ornamental and decorative purposes, substantially as and for the purpose set forth.

260,194. DUST-COLLECTOR. HILFORD HARMON, Jackson, Mich. Filed Feb. 16, 1880.



Claim.—1. In a dust-collector, the combination of a dust-intercepting cloth, a frame which holds one edge or part of the cloth or of the chamber formed thereby stationary relatively to a movable part of the cloth, a frame connected to said movable part of the cloth, mechanism which intermittently moves said frame toward the stationary part of the cloth to produce a slackening or loosening, and springs constructed independently of the movable frame to return the cloth to the tense condition, substantially as set forth.

2. In a dust-collector, the combination, with a dust-intercepting cloth having one part attached to a stationary frame or support and another part attached to a frame which moves toward and from the fixed part of the cloth, of metallic springs constructed independently of the cloth-moving frame and arranged to tighten the fibers of the cloth, and devices which lift the cloth-moving frame to slacken the cloth, substantially as set forth.

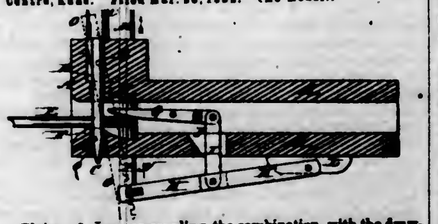
3. In a dust-collector, the combination, with a dust-intercepting cloth having one part attached to a stationary frame or support and another part which moves toward and from the fixed part of the cloth, of metallic springs constructed independently of the cloth-moving frame and arranged to carry the movable part of the cloth away from the stationary part to tighten it, a rod or bar moving longitudinally toward and from the stationary part of the cloth, and a cam engaging with said bar or rod to slacken the cloth on its support, substantially as set forth.

4. In a dust-collector, the combination of a dust-intercepting cloth having a stationary part and a part vertically movable to dislodge the dust with a bar which supports the upper part of the cloth, and springs engaging with said bar and operating to return the cloth to a tense condition, substantially as set forth.

5. In a dust-collector, the combination of a dust-intercepting cloth with a yielding rod from which said cloth is suspended, and the means which alternately slacken and tighten the cloth to dislodge the dust therefrom, substantially as set forth.

6. In a dust-catcher, a filter-frame, E, fitting closely within the vertical inclosing-walls of the dust-catcher and rising and falling freely therein, in combination with the cams and lugs which actuate said filter-frame, and the brackets below the frame for supporting it, arranged to permit said frame to be readily removed from the dust-intercepting chamber, substantially as set forth.

260,195. CAR-COUPLING. SAMUEL A. V. HARTWELL, Valley Centre, Kans. Filed Mar. 26, 1881. (No model.)



Claim.—1. In a car-coupling, the combination, with the draw-head A, provided with the rounded projection F upon the upper side of lower part, and the link E, of the hinged bar G, and means, substantially as herein shown and described, for operating said bar, as and for the purpose set forth.

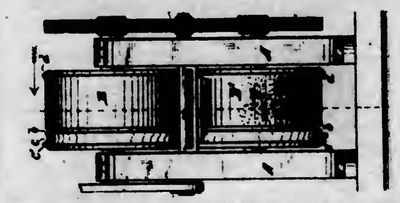
2. In a car-coupling, the combination, with the draw-head A, of the hinged bar G, the connecting-bar I, and the lever K, having a cross-bar, M, attached to its forward end, substantially as herein shown and described, whereby the coupling-link can be guided from the side of the track, as set forth.

3. In a car-coupling, the combination, with the draw-head A, the hinged bar G, the connecting-bar I, and the lever K, having a cross-bar, M, attached to its forward end, of the rod or chain N, substantially as herein shown and described, whereby the coupling-link can be guided from the top of the car, as set forth.

4. In a car-coupling, the combination, with the draw-head A, the hinged bar G, the connecting-bar I, and the hinged lever K, having cross-bar M, of the swinging notched bar O, substantially as herein shown and described, whereby the coupling-link can be supported with its forward end at any desired elevation, as set forth.

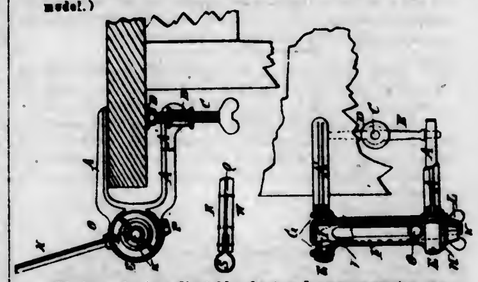
5. In a car-coupling, the combination, with the draw-head A, provided with the recess H in the lower side of its upper part, of the hinged bar G, having its forward end beveled upon the lower side, and means for operating said bar, substantially as and for the purpose set forth.

260,196. ROLLING-MILL. JAMES T. HASTINGS, Chicago, Ill. Filed Aug. 18, 1881. (No model.)



Claim.—The combination of the eccentric rolls B and B', having therein the grooves *b* and *c*, and the depression B'', and provided with the eccentric cutters *c' c'*, and the flanges *d d*, the rollers I I, grooved to correspond to the rolls B and B', the frame A, and rotating gearing, all adapted and arranged for operation together, substantially as and for the purpose specified.

260,197. ADJUSTABLE MAP AND CHART SUPPORTER. HENRY H. HAYNS, Brooklyn, N. Y. Filed Apr. 6, 1882. (No model.)



Claim.—1. An adjustable chart and map supporter, constructed substantially as herein shown and described, and consisting of the clamps A A', having cross-bar B, hand-screw C, and eyes E, the hollow cylinder F, having interior grooves, J, and holes and sockets O P, the slotted bar I, having screw K, the washers G H, and the hand-nut L, as set forth.

2. In an adjustable map and chart supporter, the combination, with the clamps A A, having eyes E and the rods N, of the cylinder F, having interior grooves, J, and holes and sockets O P, the slotted bar I, having screw K, the washers G H, and the hand-nut L, substantially as herein shown and described, whereby the said rods can be readily adjusted and securely held, as set forth.

3. In a map and chart supporter, the hollow cylinder F, constructed, substantially as herein shown and described, with interior grooves to receive the edges of the locking-bar and holes and sockets to receive the ends of the map-carrying rods, as set forth.

4. In a map and chart supporter, the combination, with the maps or charts Q, of the clamping-bars R, having eyes S at their ends, substantially as herein shown and described, whereby the said maps or charts can be readily suspended from the supporting-rods, as set forth.

260,198. SHOE-LACE FASTENING. EWEN C. C. HENDERSON, Pictou, and THOMAS A. MCDONALD, Durham, Nova Scotia, Canada. Filed Feb. 23, 1882. (No model.) Patented in Canada Jan. 30, 1882, No. 14,994.



Claim.—A single-lace shoe whose flaps or quarters are provided with holes and hooks D E or their equivalents, and above the hooks with three holes, *a b c*, arranged substantially as described, whereby the free end of the lace may be secured in the manner set forth.

260,199. VENTILATING ATTACHMENT TO HEARTHS. J. E. HOWARD, Grape Vine, Tex. Filed Dec. 30, 1881. (No model.)



Claim.—1. A ventilating attachment to the hearths of open fire places or grates, composed of a hollow box, *a*, set into the hearth and communicating with the room below, and provided with an ash-pan having an imperforate bottom at its lower end and an air-opening in its front face communicating with the room below, and lying above the ash-pan, and a top flange provided with an adjustable lid, substantially as described, and for the purpose set forth.

2. The combination, with the ventilating-box *a*, provided with the inclined flange *d*, having the area of a hearth-brick, lever *h*, and slot *m* in its front face above its lower end, of the hinged lid *c*, ash-pan *h*, arranged below the slot *m*, and rectangular box *n*, substantially as described, and for the purpose set forth.

260,200. APPARATUS FOR REMOVING SAND-BARS IN RIVERS, CUTTING CHANNELS IN HARBORS, &c. JOHN H. HUFFER, Jacksonville, Oreg. Filed Feb. 13, 1882. (No model.)

Brief.—A sectional vertically and horizontally adjustable hydraulic tube having a horizontal discharge-end is secured at one end of a scow, which is provided at its other end with propelling mechanism, whereby to hold the scow against the reaction of the ejected stream.



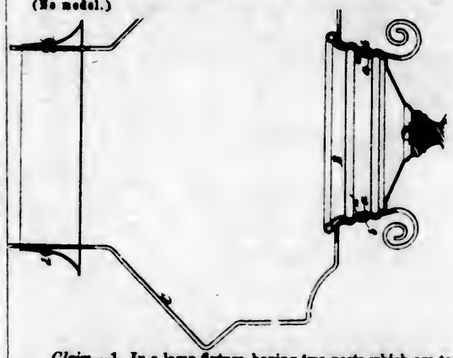
Claim.—1. The combination, with a boat, of a hydraulic tube arranged at one end thereof and adjustable into different angular positions, and with its delivery end bent, as described, means carried by said boat for forcibly ejecting the water through said tube for the purpose of operating upon a river or other water bottom, and a propeller at the opposite end of the boat for moving the boat from place to place and for staying it against the reactionary effect of the water discharged from the tube, substantially as specified.

2. The combination, with the boat and hydraulic tube arranged at the one end thereof and made capable of being raised and lowered and adjustable into different angular positions, as described, of a sheave or support to said tube, hinged or pivoted to the sides of the boat, and means on or in the boat for raising and lowering said support, essentially as herein set forth.

3. The hydraulic tube constructed with a removable lower section, I, having its outer discharging end bent at an obtuse angle, substantially as described, whereby the water will be ejected horizontally, as set forth.

4. The combination of the boat A, having a stern propeller, B, one or more engines, C, for driving said propeller, one or more boilers, D, the steam force-pump E, the swiveled hydraulic tube H I at the bow end of the boat, and means for raising and lowering the same, essentially as herein described.

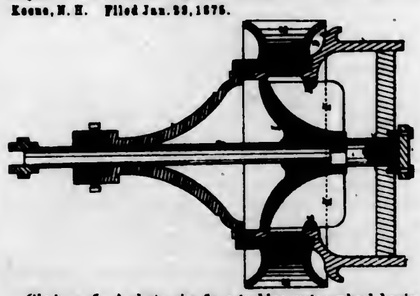
260,201. LAMP-FIXTURE. JOHN A. HULL, Ansonia, Conn., assignor to Wolcott A. Hull, New York, N. Y., and the Ansonia Brass and Copper Company, Ansonia, Conn. Filed Apr. 18, 1882. (No model.)



Claim.—1. In a lamp-fixture having two parts which are to be detachably connected, an eyelet inserted through the inner part, a smooth hole in the outer part adapted to be readily slipped on and off the protruding part of the eyelet, and a screw inserted from outside the outer part into the eyelet and bearing against said outer part, all being combined and organized so that the screw will secure said outer part on the eyelet and the eyelet will prevent the outer part from movement in a direction transverse to the axis of the eyelet, and so that on the removal of the screw the outer part may be detached by simply moving it or the eyelet in a direction lengthwise of the axis of the eyelet, substantially as herein described.

2. In a lamp-fixture, the combination, with the lamp-reservoir holder B, of the eyelet *a*, inserted through the same from the inside, the arm C, having a smooth hole slipped upon the protruding end of said eyelet, and the screw *b*, entering the eyelet and bearing against the outer side of said arm, substantially as herein described.

260,202. TURBINE WATER-WHEEL. JOHN HUMPHREY, Keene, N. H. Filed Jan. 28, 1875.



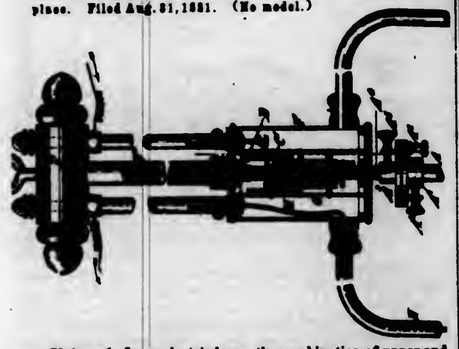
Claim.—1. A chute-rim for a turbine water-wheel having annular paraboliform crown, and a series of guide-vanes with inner surfaces nearly tangential to the periphery of the wheel, in combination with an inner casing having a corresponding series of apertures opened and closed by movable gates operated by rotating the chute-rim, substantially as shown and described.

2. In combination with a curved disk or crown-plate in an "inward-flow" turbine, a series of floats or pressure-vanes with surfaces for the action of the water, which in their extension inwardly from the line of impact at the periphery of the wheel have an inclination from the radii toward the impinging stream, and in their course from the surfaces of impact, near the upper and outer portions of the crown-plate, they trend at first slightly from a perpendicular to the plane of said crown-plate, and then with accelerating deflection and curvature until the discharge-line is reached, where the transverse curvature is such as to extend the discharge-orifices from the hub or lower central portion of the curved crown-plate to and upon a portion of the periphery of the wheel, thereby uniting a circumferential with the diametral discharge to increase the effective area for the escape of the inert water, substantially as specified.

260,203. COMPOUND FOR MAKING BRICK, TILE, &c. HENRY N. HUNT, San Antonio, Tex. Filed Apr. 18, 1882. (No specimens.)

Claim.—A compound for making brick, tile, &c., composed of hydraulic cement and the pulverized stone described, combined in the manner and about the proportions set forth.

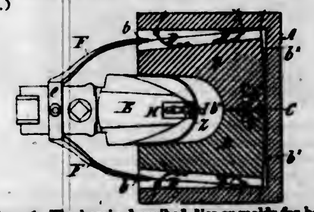
260,204. ELECTRIC-ARC LAMP. CHARLES A. HUSSEY, New York, N. Y., assignor to the Hussey Electric Company, same place. Filed Aug. 31, 1881. (No model.)



Claim.—1. In an electric lamp, the combination of upper and lower carbons, A B, the magnet G or a solenoid, the armature G' or a core directly supporting the lower carbon, B, the train of wheels C and brake-wheel C', for controlling the upper carbon, A, the solenoid E or an electro-magnet, the core E' or an armature, the brake D, attached to and entirely supported by said core or armature, a spring acting upon said core E' or armature to retract said brake, and means for varying the resilience of said spring, all arranged and operating substantially as herein described.

2. In an electric lamp, the combination, with one of the carbons and a rod for sustaining it, of a holder, A', a socket, A^2, a set-screw, A^3, and a screw, A^4, substantially as specified.

260,205. DIE FOR SHAPING HEEL-COUNTERS. MICHAEL HYNES, Montreal, Quebec, Canada. Filed Mar. 18, 1882. (No model.)



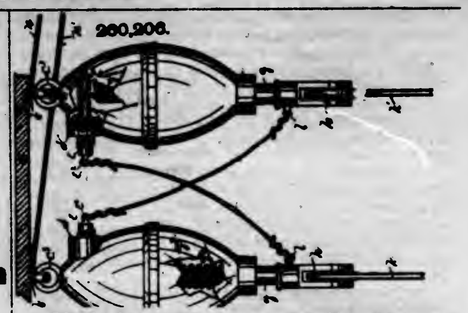
Claim.—1. The herein-described dies or molds for heel-counters, consisting essentially of the two sections B B, the sides and backs of which form obtuse angles, and with meeting edges b' b' beveled, so that their angle-point b' will form the pivot-point for said sections, in combination with a male die or former, substantially as described.

2. In combination with the female dies or molds B B, provided with beveled edges, as described, the former E, having attached thereto arms F F, substantially as and for the purpose described.

3. In combination with the former E, provided with tongue or cast-off G, the lever I, connected to and operating simultaneously with said tongue or cast-off, said lever having lip L, arranged substantially as and for the purpose set forth.

260,206. APPARATUS FOR SUSPENDING ELECTRIC LAMPS. CHARLES C. JESPERSON, Buffalo, N. Y. Filed May 11, 1882. (No model.)

Claim.—1. An apparatus for suspending electric lamps, consisting substantially of a pair of frames or shell-like casings having adjustable spring-pressed rods adapted to be connected with the lamp-suspending cables or wires, each frame or casing having

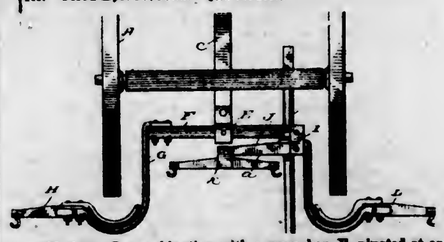


a rod insulated from such casing, one end of which rod being connected with the opposite side of the circuit and the other end thereof being adapted to receive contact with the spring-pressed rod when the tension on the spring-pressed rod is removed, the frames or casings being suitably connected to the ceiling or mast and to the line-wires of the circuit, all combined and operating as and for the purpose stated.

2. An apparatus for suspending electric lamps, consisting of the two hollow shell-like casings, each having the separable portion *c c'*, the rods *g g*, screw-threaded at g^2, and having the adjustable buttons g^3 g^3, for compressing or relaxing the springs g^4 g^4, encircling the rods *g g*, which rods are further provided with the pulleys h h, over which the lamp-suspending wires or cables pass, the removable rods *c c*, insulated from the portion *c* of the casing, and having their inner ends provided with the tapering sockets *a'*, adapted to receive the ends of the rods *g g*, and the conducting-wires *m m'*, adapted to carry the current of electricity from the outer ends of the rods *c* to the opposite sides of the circuit, all combined and operating substantially as shown and described, and for the purpose stated.

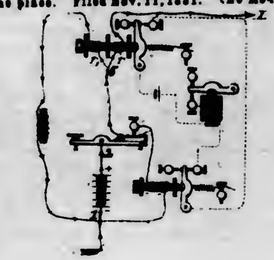
3. In an apparatus for suspending electric lamps, the combination of the hollow casing having the two separable portions *c c'*, and the insulated rod *c* in the portion *c*, with the rod *g*, provided with the pulley h, the spring g^4, and the button g^3, by means of which the broken current of electricity is restored and diverted in the proper direction, substantially as shown and described.

260,207. DRAFT-EQUALIZER. JAMES P. JOHNSON, Virden, Ill. Filed Apr. 18, 1882. (No model.)



Claim.—In combination with a cross-bar, F, pivoted at or near the axle of a wheel-plow, a rigidly-attached bent arm, G, extending to a point in front of and outside one of the driving-wheels, and an arm, J, pivoted to said cross-bar F, and having the whiffletrees K L, as described.

260,208. DUPLEX TELEGRAPH. FRANCIS W. JONES, New York, N. Y., assignor to the Union Electric Manufacturing Company, same place. Filed Nov. 11, 1881. (No model.)



Claim.—1. The combination, substantially as herein before set forth, of a key or transmitter, a battery included in the circuit between the resting-contact of said key and the earth, an electro-magnet for actuating a relay included in a circuit between the working-contact of said key and the earth, a second electro-magnet for actuating a relay between said key and the line, and a receiving-instrument included in a local circuit which traverses the armature-levers and resting-contacts of both of said relays at one and the same time.

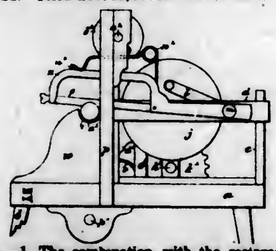
2. The combination, substantially as herein before set forth, of a main line extending to the distant station, a branch line returning directly to the earth at the home station, a battery, a key connecting said battery simultaneously to both the main and branch lines, and a receiving-magnet wound with two resisting-coils, one of which is included in the main and the other in the said branch circuit.

3. The combination, substantially as herein before set forth, of a main line extending to the distant station, a branch line returning directly to the earth at the home station, a battery, a key connecting said battery simultaneously to both the main and branch lines, a receiving-magnet wound with resisting-coils, one of which is included in the main and the other in the branch line, and an inductive core of soft iron surrounded by a coil, which is included in said branch line.

4. The combination, substantially as herein before set forth, of an electric conductor, a receiving-instrument included in the circuit of said conductor, two branch conductors, an inductive core enveloped in an electro-magnetic helix and included in one of said branches, an artificial resistance approximately equal to said helix included in the other branch, and a circuit-changer whereby the first-named conductor may be connected at will with either of the branches.

5. The combination, substantially as herein before set forth, of a series of independent electro-magnetic cores, each surrounded by a coil, a series of rheostats whose resistances are equal to those of the said coils, respectively, and circuit-changers for throwing either one of said coils or its equivalent resistance into an electric circuit at will.

260,209. SAWING-MACHINE. SAMUEL C. KENNEDY, Worthington, Ind. Filed Nov. 22, 1881. (No model.)

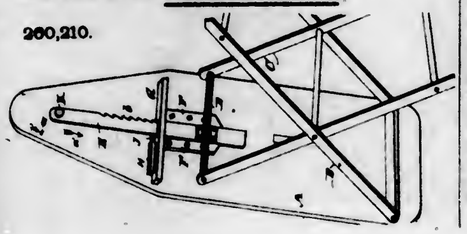


Claim.—1. The combination, with the reciprocating saw-frame *a*, supported by a guide and provided with a groove, *a'*, in its upper face, of the rectangular frame *c* and spring *a²*, secured at one end to the stationary frame, and having its opposite free end pressing in the groove of the saw-frame, substantially as described, and for the purpose set forth.

2. The combination, with the pivoted curved dog *d'*, provided with a cord, *m'*, of the shaft *p'*, having grooved pulley *o'* and ratchet-wheel *q'*, spring-pawl *r'*, lever *t'*, having pin *u'*, and spring *v'*, substantially as described, and for the purpose set forth.

3. The combination of the guide *s*, having the pin *p²*, and adapted to slide in grooves in the posts *p*, and carrying the saw-frame *a*, shaft *a²*, carrying the wheel *b²*, pulley *d²*, strap *h²*, eccentric wheel *f²*, rod *w²*, and double-crank rod *e²*, substantially as described, and for the purpose set forth.

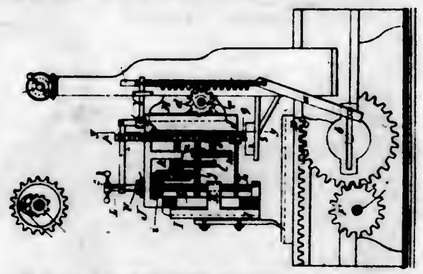
260,210.



260,210. IRONING-BOARD. JAMES T. KING, Fowler, Ind., assignor of one-half to Joseph H. and George B. Hartley and Isaac H. Phares, all of same place. Filed Apr. 24, 1882. (No model.)

Claim.—The combination, with the ironing-board A, of the crossed pivoted legs B and C, the ratchet-bar E, to which one pair of legs is pivoted, the guides F, the cross-bar G, forming a tooth, N, the longitudinal box or tube H, the spring I, and the pintle J, substantially as herein shown and described, and for the purpose set forth.

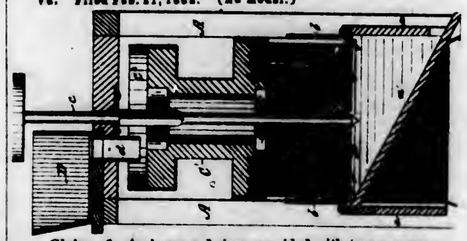
260,211. METAL-PLANER. CHARLES T. LANMAN, Brookline, Mass. Filed Feb. 18, 1882. (No model.)



Claim.—1. In a metal-planer, the combination, with the tool-holder I and the laterally-moving frame J, of the swiveled screw L, the rack-bar *p*, having wheel *g*, and the connecting gear-wheels, substantially as herein shown and described, whereby the tool will be raised and lowered automatically to give the required form to the work, as set forth.

2. In a metal-planer, the combination, with the rack-bar *p* and the frame J, of the rollers *t* and the pairs of rollers *r* and their bands *u*, substantially as herein shown and described, whereby the said rack is kept in position and made to move with the least possible friction, as set forth.

260,212. COCKLE-MACHINE. ABRAHAM LIPP, New Hampden, Va. Filed Feb. 21, 1882. (No model.)



Claim.—1. An improved sieve provided with two or more series of openings, connected together by ribs, and having grain-discharge openings near the outer edge thereof, substantially as herein shown and described.

2. The combination, with a revolving brush, of a sieve provided with two or more series of openings and ribs between the said series, substantially as and for the purpose set forth.

3. The combination, with a revolving brush, of a sieve having openings the diameters of which exceed the short diameters of the average kernels of wheat, but do not equal the long diameters of the same, substantially as herein shown and described, whereby the kernels of wheat are swept over the sieve with their long diameters in a horizontal plane and prevented from passing through the same, as set forth.

4. In combination with a sieve having openings, substantially as described, and ribs arranged at a tangent, as described, a brush, substantially as described, adapted to sweep over the sieve.

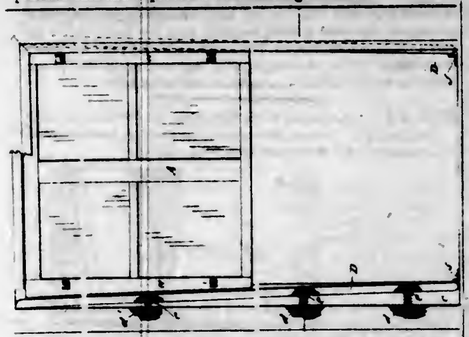
5. In combination with the sieve B, having the openings *b'* and ribs *b²*, the brush C, having a stem with central opening, as described.

6. The combination, with the revolving brush C, of the sieve B, provided with the openings *b'*, the ribs *b²*, and the discharge-openings *b³* near the edge, substantially as and for the purpose set forth.

7. The cockle-machine described, having the sieve B, brush C, hollow stem casing C', and hopper D, combined and arranged as and for the purpose set forth.

260,213. SASH HOLDER AND FRAME. CASPER LOEWENSTEIN, Columbus, Ohio. Filed Oct. 27, 1881. (No model.)

Brief.—A keystone-shaped sash slides between yielding pressure-bars and is provided with lateral guide-stops.



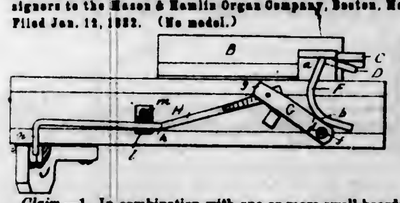
Claim.—1. The keystone-shaped sash A, in combination with the spring-supported side bars, D D, substantially as and for the purposes set forth.

2. In combination with a keystone-shaped sash, the spring-bars D D, arranged to exert the greater pressure below their longitudinal centers, substantially as and for the purposes set forth.

3. The bars D D and the springs *c*, in combination with the keystone-shaped sash, substantially as and for the purposes set forth.

4. The keystone-shaped sash A, provided with the stops *i i*, adapted to run against the edge of the jambs of the window-frame, in combination with the spring-supported bars D D, substantially as and for the purposes set forth.

260,214. SWELL-ACTION FOR REED-ORGANS. LOWELL MASON, Orange, N. J., and GEORGE B. KELLY, Boston, Mass., assignors to the Mason & Hamlin Organ Company, Boston, Mass. Filed Jan. 12, 1882. (No model.)

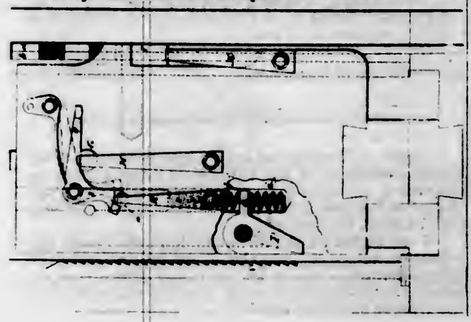


Claim.—1. In combination with one or more swell-boards of a reed-organ, a crank-rod, D, having a convex lever-arm, F, and a lever, G, connected by a rod, H, to an operating-lever or other device for opening the swell board or boards, substantially as described.

2. In combination with one or more swell-boards of a reed-organ, a crank-rod, D, having convex lever-arm F, and a lever, G, connected by a rod, H, to a knee-lever, J, for opening the swell board or boards, substantially as described.

260,215. DROP-HAMMER. WILLIAM MASON, Hartford, Conn., assignor to the Colts Patent Fire-Arms Manufacturing Company, same place. Filed Mar. 25, 1882. (No model.)

Brief.—At the instant of impact the momentum of a loose weight in the hammer throws a pawl into engagement with a stationary rack, by which means the hammer is caught in its rebound and a secondary blow prevented.



Claim.—1. In a drop-hammer, the pawl P, hung in the hammer, a weight arranged in the hammer so as to act upon said pawl by the momentum imparted to the weight by the descent of the hammer, and a stationary toothed rack into engagement with which the said weight forces the said pawl P, substantially as and for the purpose described.

2. In a drop-hammer, the pawl P, hung in the hammer, a weight arranged in the hammer so as to act upon said pawl by the momentum imparted to the weight by the descent of the hammer, and a stationary toothed rack into engagement with which the said weight forces the said pawl P, and the catch-bolt *n*, substantially as described.

3. In a drop-hammer, the pawl P, hung in the hammer, a weight arranged in the hammer so as to act upon said pawl by the momentum imparted to the weight by the descent of the hammer, and a stationary toothed rack into engagement with which the said weight forces the said pawl P, and the catch-bolt *n*, with the wedge-shaped lever S, substantially as described.

4. The combination of the hammer, the pawl P, hung in the hammer, with an arm, A, extending therefrom, a spring below and another above said arm, a loose weight resting upon the upper spring, and the stationary toothed rack, substantially as and for the purpose described.

260,216. OVEN-WAITER. JOSEPH T. MCFARLIN, Middleborough, Mass. Filed Apr. 20, 1882. (No model.)

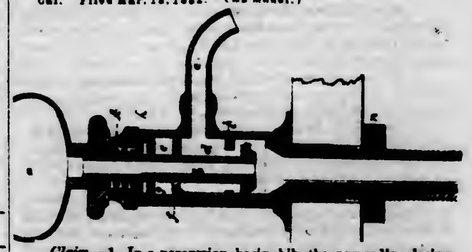


Claim.—1. In an oven-waiter, the combination, with the standard A, provided with bracket-projections B and with slots above them, of a series of bracket-frames, rings, or plates, D, provided with tongues E, fitting within the slots in the standard, substantially as herein shown and described, and for the purpose set forth.

2. In an oven-waiter, the combination, with the standard A, provided with bracket-projections B, having studs C on the upper surfaces, and with slots above the bracket-projections B, of the bracket plates, rings, or frames D, provided with apertures F for the studs C, and with tongues E, fitting into the slots in the standard, substantially as herein shown and described, and for the purpose set forth.

3. A cricket for pies, dishes, pans, and like articles, made substantially as herein shown and described, and consisting of a ring, G', fastened edgewise on a flat ring, G², the ring G' being provided with a series of slots, *a*, and the flat ring being provided with a corresponding number of studs, *b*, as set forth.

260,217. BASIN-BIB. EUGENE O. MCGLAUFLIN, San Jose, Cal. Filed Mar. 18, 1882. (No model.)

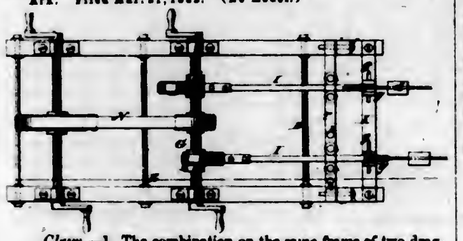


Claim.—1. In a percussion basin-bib, the upwardly-closing perforated valve *e*, having the hollow operating-stem *b* perforated at *g*, with its collar or piston *f* fitting the exterior cylinder, so as to form a chamber, *c*, above the piston, and having the passage *i*, substantially as and for the purpose herein described.

2. In a percussion basin-bib, the upwardly-closing perforated valve *e*, the hollow operating-stem *b*, perforated at *g*, and the perforated piston or collar *f* upon the stem and fitting the exterior cylinder, in combination with the air-chamber *a* upon the stem and opening into it, substantially as herein described.

3. In a percussion basin-bib, the air-chamber *a*, the hollow stem *b*, connecting the air-chamber with the perforated valve *e*, and having the collar *f*, forming the chamber *c*, the stem *b* and collar *f* being perforated at *g* and *i*, respectively, together with the exterior barrel, *d*, stuffing-box *h*, and spring *k*, substantially as herein described.

260,218. DRAG-SAW. GEORGE A. HOFFAT, Mineral Springs, Ark. Filed Mar. 21, 1882. (No model.)

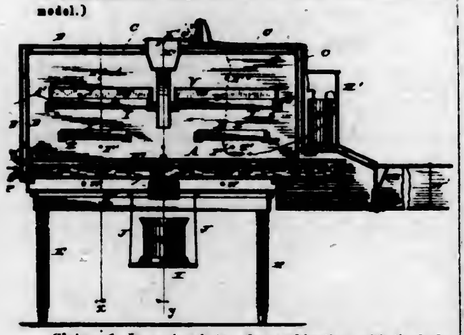


Claim.—1. The combination on the same frame of two drag-saws, connected by rods I, with two eccentrics adjustable on the same rotary shaft G, as and for the purpose specified.

2. The combination, with the saws connected with the driving-shaft G by eccentrics adjustable thereon, of an adjustable rest and adjustable roller-guides, substantially as shown and described.

3. The combination, in a sawing-machine, of the horizontally-reciprocating cross-cutting saws geared upon one shaft by eccentric devices, one or both saws being adjustable along the shaft for setting the saws toward and from each other, substantially as specified.

260,219. INCUBATOR. PAUL G. HUSCHINSON and GUSTAVE A. HUSCHINSON, Newport, R. I. Filed Mar. 17, 1882. (No model.)



Claim.—1. In an incubator, the combination, with the body or box A, having extension or chamber D, the bottom of which is lower than the bottom of said box, of the tank F, fitted closely between the sides and ends of said box a short distance above the bottom and extending into the chamber D, as set forth.

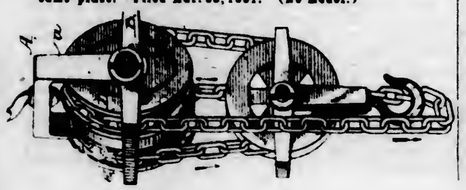
2. In an incubator, the combination, with the box A, having extension D, forming a separate chamber or compartment, of the run composed of the hinged and folding parts X' Y' Z' A', substantially as set forth.

3. The combination, with the incubator having the herein-described folding run and staples C^2, of the detachable rods or brackets B^2 and chains D^2, as set forth.

4. The incubator having compartment D, with openings F^2, folding door J^2, and curtains G^2, in combination with the herein-described folding and extensible run, as and for the purpose herein set forth.

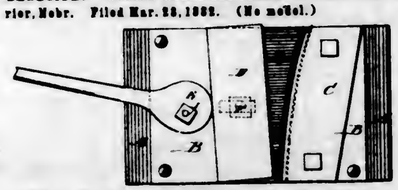
5. The combination, with the incubator having chamber or compartment D, provided with openings F^2, curtains G^2, and door J^2, and heating-tank F, extending from the incubator into said chamber D, of the folding and extensible run, as herein shown and specified.

260,220. DIFFERENTIAL PULLEY-BLOCK. PETER MURRAY, Jr., Newark, N. J., assignor of one-half to Thomas J. Doale, same place. Filed Mar. 30, 1881. (No model.)



Claim.—In a differential pulley-block, the frame A, in which is mounted the axle C, one end of which is smaller and formed eccentrically to the other, as shown, in combination with the wheels D E, having toothed rims upon their inner faces, by which they are connected together and have a simultaneous differential movement, the wheel E being mounted upon the larger end of the axle and the wheel D upon the smaller, whereby the two wheels are retained in gear at a single point and revolve together in one direction upon fixed centers, substantially as set forth.

260,221. MACHINE FOR WELDING PLOWSHARES AND LANDSIDES. JOSEPH HYDES and THOMAS B. SIMONTON, Superior, Nebr. Filed Mar. 28, 1882. (No model.)

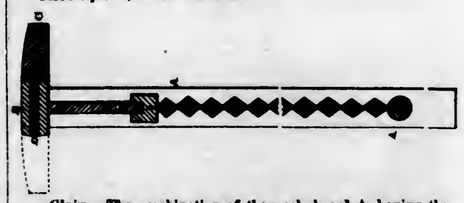


Claim.—1. The combination of stationary jaw C, having convex longitudinal and beveled transverse face with overhanging upper edge, and the movable jaw D, having straight and vertical face, and also with a locking-lever, E, substantially as specified.

2. A pair of welding-jaws, C and D, constructed and arranged for welding plowshares and landsides, as described, one of which jaws is permanently attached to a bed-plate and the other movable thereon, and being secured to the base by a sliding pivotal bolt, F, substantially as specified.

3. The convex and bevel-faced stationary jaw C, straight and square-faced movable jaw D, and working-lever E, in combination, said jaws being located and arranged relatively on the bed-plate B to clamp the tapered landside and mold-board, having one straight side and one longitudinally-concave and transversely-beveled side, substantially as specified.

260,222. WASH-BOARD. JACOB H. MELLIS, Canajoharie, N. Y. Filed Apr. 11, 1882. (Model.)



Claim.—The combination of the wash-board A, having the holes D made through the top piece, B, with the protector G, provided with the pins I, whereby it is adapted to be applied to either side of the board, substantially as shown.

260,223. UMBRELLA. GUSTAV NEU, London, England, assignor to Septimus Edmundus Carlisle and Alfred Portway, both of same place. Filed June 17, 1881. (Model.) Patented in England Mar. 19, 1881, No. 1,309; in France June 7, 1881, No. 143,347, and in Germany June 4, 1881, No. 17,494.

Brief.—The middle "gate" is formed of spring-steel, and on the inner side of said gate is formed a projection at right angles to the axis of the gate. The end of the stretcher, through which the joint passes, is formed on each side with a groove corresponding with the projection in the gate.

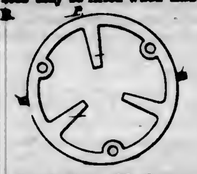


Claim.—1. The improved locking-joint for umbrella or like frames, consisting of the gate or middle-bit *a*, having transverse indentations or projections *b*, and of the stretcher *c*, having corresponding transverse grooves, and of joint-pin or rivet *e*, substantially as shown and described.

2. An umbrella or like article constituted with a frame provided with self-locking joints for the ribs and stretchers, such joints being constituted of a joint pin or rivet, *e*, of projections on the gate or middle-bit of the ribs, and of corresponding grooves on the inner ends of the pivoted stretchers.

260,224. GASOLINE-FURNACE. DENNIS NORTON, Chicago, Ill. Filed Jan. 30, 1882. (No model.)

Brief.—The pipe D extends to near the bottom of the reservoir. To the lugs *i* on the plate F is to be attached a bail, by means of which the apparatus may be lifted when said plate is substituted for the vessel B.

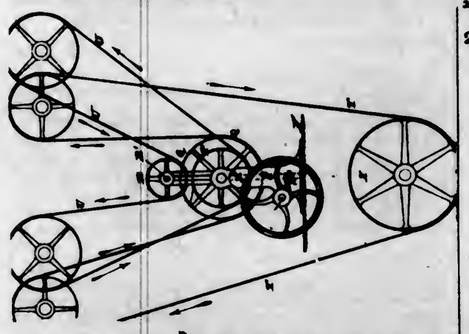


Claim.—1. The combination, with the reservoir, the standards, and the burner, of a cup supported by and between the standards, substantially as and for the purpose described.

2. The combination, with the reservoir, the standards, the burner, and the cup, of a supplemental plate, F, the converging arms of which are disconnected at the center of the plate, said plate having lugs, substantially as described.

3. The combination, with the reservoir, the burner, and the standards, of a cone-shaped heating-chamber having an open bottom and supported upon said standards, and provided with the horizontal converging grate-bars projecting over said bottom, substantially as described.

260,225. ROLLER-MILL. UDOLPHO H. ODELL, Dayton, Ohio. Filed Feb. 8, 1882. (No model.)



Claim.—1. In a roller-mill, the belt-driving mechanism consisting in the combination of the belts T and U, the driving and roller pulleys, and tightener-pulleys Q and R, arranged upon one side of the frame of the machine, substantially as described.

2. In a double roller mill, the combination of driving belts and pulleys, the tightener-pulleys Q and R, and an adjustable frame adapted to be raised and lowered for regulating the strain of the belts, substantially as described.

3. The combination, in a double roller mill, of the driving belts and pulleys, frame K, adjustable pulley-frame M, and mechanism for adjusting the latter, substantially as described.

260,226. CRUSHING-ROLL. UDOLPHO H. ODELL, Dayton, Ohio. Filed Mar. 18, 1882. (No model.)



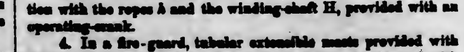
Claim.—1. In a machine for grinding grain, the combination of two co-operating rolls having the series of granulating-ribs, each rib being formed with a plain outer face, and on one side with the plane bevel 1, arranged at an angle to the radius of the roll, and on the opposite side with the concave 2, substantially as and for the purpose shown and described.

2. In a machine for grinding grain, the combination of two co-operating rolls having a series of granulating-ribs, one side of each rib being inclined or beveled and the opposite side concaved, and having a wide curved outer face, substantially as herein set forth.

3. In a grinding-mill, the combination of two co-operating grinding-rolls having ribs formed with the bevels, concaves, and plain outer faces, with belt-pulleys arranged on the ends of the roll-shafts, and adapted to be interchanged for shifting the relative speeds of the two co-operating rolls, substantially as herein set forth.

260,227. UMBRELLA AND PARASOL TIE. DAVID W. OSBORN, Elizabeth, N. J. Filed Dec. 27, 1881. (No model.)

Brief.—The parts, after passing through the ring, are folded back upon the body, secured by interlocked stitches, sewed through the fabric of the tie, and passed around the ring.

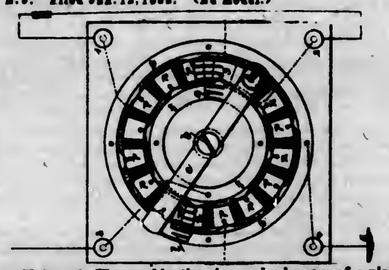


Claim.—1. The tie for umbrellas or parasols having a strip or tape passed through a ring and secured by threads passing through the material and within the ring similar to a button-hole stitch, substantially as set forth.

2. In an umbrella or parasol tie, the combination, with the strip of material and the ring through which it is passed, of a second strip in the form of a loop passed through the ring, and interlocked stitching through both strips and around the band of the fabric within the ring similar to button-hole stitching, substantially as set forth.

3. In an umbrella or parasol tie, a ring and a strip of material passing through the same, in combination with interlocked stitching similar to a button-hole passing through the material, and also forming a covering for the ring, as set forth.

260,228. POLE-CHANGER. DAVID W. OSBORN, Elizabeth, N. J. Filed Jan. 13, 1882. (No model.)



Claim.—1. The combination, in a pole-changer, of a plate of insulating material, the pivoted arm *c*, capable of being reversed, the contact-springs *l m o s* upon each arm, the rings *e f* and alternating contact-blocks *p n* upon each plate, and the circuit-connections, substantially as set forth.

2. In a pole-changer, a plate of insulating material with a circular range of contact-blocks upon one surface and two rings upon the other surface, and alternating connections from the contact-blocks to the respective rings, and the electric circuit connected to such rings, substantially as set forth.

260,229. FIRE GUARD AND ESCAPE. JOHN O'NEIL, Pakenham, Ontario, Canada. Filed Mar. 16, 1882. (No model.)

Brief.—Mounted upon the trunk are the tubular extensible masts, suitably braced, which support the independent shields or screens, which are rolled up by crank-shafts on their lower edges, and rest, when rolled up, in notches in the frame. Flexible ladders attached to the girders are held taut by hinged weighted attachments at the bottom. A single-masted trunk may be used in connection with the main one to elevate a screen.

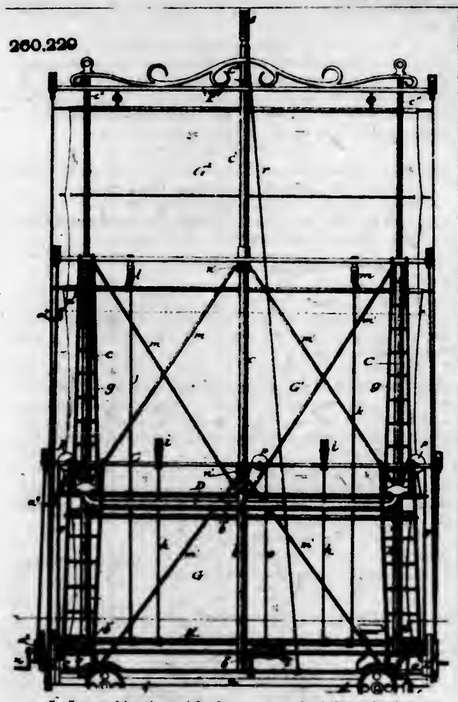
Claim.—1. In combination with the sustaining-frame provided with notches or shaft-bearings, the adjustable screens having their edges provided with crank-shafts, as described, whereby the screens may be wound into rolls for transportation on the frame.

2. In combination with the base-frame and the girder C, the ladders *d'*, secured at their upper ends to the girder, and attached at their lower ends to the frame by means of the hinged weighted connections, substantially as shown.

3. The base-frame, mast-sections *b*, and screen G, in combination with the ropes *h* and the winding-shaft H, provided with an operating-crank.

4. In a fire-guard, tubular extensible masts provided with appliances, substantially as shown, to sustain a curtain, and with openings at the top and bottom to permit the passage of water through them.

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5. In combination with the masts and girders, the intermediate braces, *s'*, and spring *s'*, as and for the purpose set forth.

6. In combination with the truck, its masts, and girders, pulleys mounted thereon and provided with endless ropes or chains *f'*, bearing appliances, as shown, for elevating and supporting the supplemental curtain.

7. The combination of the main wheeled truck, the three extensible masts mounted thereon, appliances for extending the masts, and the three flexible curtains and appliances, substantially as shown, for elevating said curtains independently of each other.

8. In combination with the base-frame, the extensible masts and the screens, the ropes or chains for elevating the masts and screens, winding-shaft H, winding-drums *g* and their shafts, the gear-wheels connecting the two shafts, and the hand-cranks, as shown.

9. In combination with the main wheeled truck, its masts, curtains, and belts *f''*, the supplemental single-masted truck provided with the elevating-ropes *f'*, as described, whereby it is adapted to co-operate with the main apparatus to elevate a curtain suspended between the two.

260,230. HAMMOCK AND TENT FRAME. GEO. A. PARENT, Marlborough, N. H. Filed Apr. 27, 1882. (No model.)

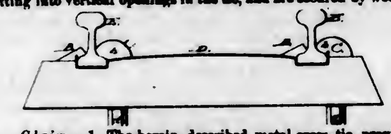
Brief.—The device forms a braced support for a hammock, and is convertible into a tent-frame.



Claim.—In a hammock and tent frame, the combination, with the posts A, having the perforated foot attachment B, bearings *d*, and buttons *e*, of the braces F, hinged to the posts A near their upper ends, substantially as specified.

260,231. METAL CROSS-TIE. JOHN PARR, Humboldt, assignor of two-fifths to Eugene A. Tucker, Richardson County, Nebr. Filed Mar. 25, 1882. (No model.)

Brief.—A metallic tie is provided with metallic bands projecting into recesses adapted to receive the base of the rails. The rails are secured by means of stationary clamps and removable clamps fitting into vertical openings in the tie, and are secured by wedges.

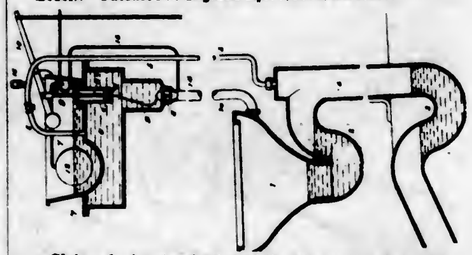


Claim.—1. The herein-described metal cross-tie, provided with the metallic bands or rods D, projecting into the recesses *a a*, and with the stationary clamps B and removable clamps C, substantially as and for the purpose specified.

2. In a metal cross-tie, the combination of the rails E with the ties having recesses *a a*, metallic bands or rods D, and clamps B and C, substantially as and for the purpose specified.

3. The herein-described cross-tie, provided with stationary clamps B, recesses *a*, and vertical openings *c*, in combination with the rails E, metallic bands D, and removable clamps C, having an enlarged head, *b*, and slots *c*, adapted to receive the wedges *d*, all substantially as and for the purpose specified.

260,232. WATER-CLOSET. STEWART PETERS and WILLIAM DONALD, Glasgow, Scotland, assignors, by mesne assignments, to Henry Huber, New York, N. Y. Filed Nov. 29, 1881. (No model.) Patented in England Apr. 7, 1874, No. 1,097.



Claim.—1. A water-closet consisting of a bowl, a fixed trap-bend in the passage leading therefrom, whereby a portion of water is retained in the bowl, a second trap in the discharge-passage leading from the first, whereby an air-space is formed between the two traps, and an orifice communicating with said air-space and adapted for the attachment of an air-pipe, all combined and arranged in substance as described.

2. A water-closet consisting of a bowl, a fixed trap-bend in the soil-passage leading therefrom, whereby a portion of water is retained in the bowl, and a second trap in said soil-passage below the first, whereby an air-space is formed between the two traps, in combination with means for rarefying the air in said space upon the flushing of the closet, substantially as set forth, and for the purposes described.

3. A water-closet consisting of a bowl, a trap leading therefrom, a second trap in the discharge-passage leading from the first, and an air-space between the two traps, in combination with a flushing-valve and means for operating the same to flush the closet, and means for drawing air from the space between the two traps, constructed to be set in operation by the act of opening said flushing-valve, substantially as set forth.

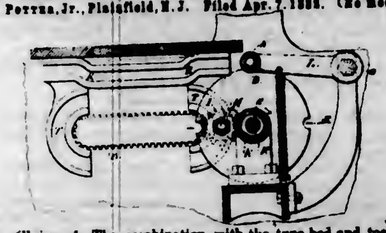
4. A water-closet having a trap leading from its bowl, a second trap in the discharge-passage leading from the first, and an air-space between the two traps, in combination with a flushing-pipe opening into said bowl, a flushing-chamber adapted to supply said pipe, a flushing-valve controlling the admission of water to said pipe, and an air-pipe leading from the air-space between the traps and terminating within the flushing-chamber at the top thereof, substantially as set forth.

5. A water-closet consisting of a bowl, a trap leading therefrom, a second trap in the discharge-passage leading from the first, and an air-space between the two traps, in combination with a pipe leading from said air-space to a flushing-chamber and terminating at the top thereof, the said chamber, an open-air pipe communicating with said pipe and chamber and containing a check-valve opening outwardly therefrom, a flushing-pipe leading from said chamber to the bowl, and a valve controlling the entrance of water to said pipe, substantially as set forth.

6. A water-closet consisting of a bowl, a trap leading therefrom, a second trap in the discharge-passage leading from the first, and an air-space between the two traps, in combination with an air-pipe leading from said space and terminating at the top of a flushing-chamber, the said chamber, a supply-tank, a supply-valve controlling the admission of water from said tank to said chamber, a flushing-valve controlling the escape of water from said chamber and arranged to open after and to close before the supply-valve, and a flushing-pipe leading from said flushing-valve to the bowl, substantially as set forth.

7. A water-closet consisting of a bowl, a trap leading therefrom, a second trap in the discharge-passage leading from the first, and an air-space between the two traps, in combination with an air-pipe leading from said space and terminating in the upper part of a flushing-chamber, the said chamber, a flushing-pipe leading from said chamber to the bowl, a flushing-valve controlling the admission of water to said pipe, a tank to supply said chamber, a float-valve to govern the admission of water from the service-pipe to said tank, and an after-flow pipe leading from said float-valve to the flushing-pipe below the flushing-valve, substantially as set forth.

260,233. RACK-MOTION FOR PRINTING-PRESSES. CHARLES POTTER, Jr., Plainfield, N. J. Filed Apr. 7, 1882. (No model.)

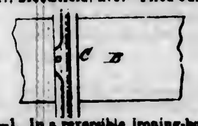


Claim.—1. The combination, with the type-bed and toothed rack, of the shaft C, disk or arm D, and the pinions I and K and automatic locking mechanism, substantially as set forth.

2. The combination, with the type-bed and toothed rack, of the driving-shaft C, disk D, crank-pin or gudgeon H, pinion I upon such gudgeon, the pinion K on the shaft C, the locking device, and the cams upon the bed A, for the purposes and as set forth.

3. The combination, with the toothed rack having semicircular ends, of the pinions I and K, actuating-shaft C, crank-pin or gudgeon H for the pinion I, and the semicircular grooves T and roller *u*, substantially as set forth.

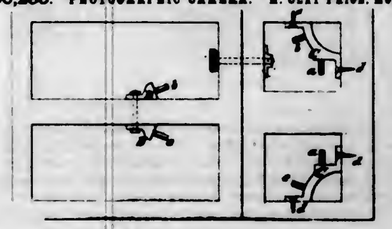
260,234. REVERSIBLE IRONING BOARD OR TABLE. C. W. POWERS, Jr., Bloomfield, N. J. Filed July 16, 1881. (Model.)



Claim.—1. In a reversible ironing-board, the combination, with the board A, of the press-board B, having supporting and connecting devices, and a bar, C, of a length greater than the width of the board and pivoted to one side, as shown and described, and for the purpose set forth.

2. The combination, with the detachable and reversible board A, constructed as shown and described, of the press-board B, having connected thereto bar C, and the hinged round *e*, with legs *d* and suitable brace, *c*, whereby either board, when in position for use, will be retained without the use of supports at its rear end, substantially as and for the purpose described.

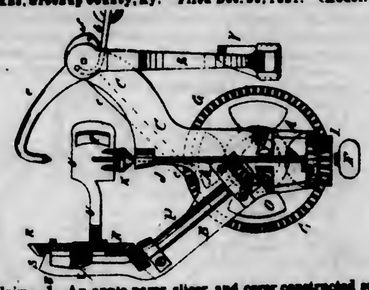
260,235. PHOTOGRAPHIC CAMERA. H. CLAY PRIOR, Montclair, N. J., assignor to the Scovill Manufacturing Company, Waterbury, Conn. Filed Jan. 11, 1882. (No model.)



Claim.—1. The combination, with a camera and detachable legs therefor, of the devices C, secured within and directly to the base-frame, and provided with the pivots *a*, substantially as specified.

2. The combination, with a camera and detachable legs therefor, of the devices C and D, secured within and directly to the base-frame, and provided with pivots *a* and *b* or *c*, substantially as specified.

260,236. APPLE PARER, CORER, AND SLICER. JOHN F. RAND, Greenup County, Ky. Filed Dec. 30, 1881. (Model.)



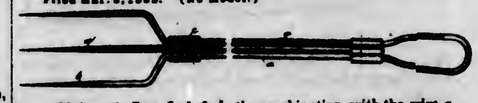
Claim.—1. An apple parer, slicer, and corer constructed substantially as herein shown and described, consisting of the frame A B C, the fork K and its shaft J, the paring-knife T and its holder U, the slicing and coring knife Y and its holder Z, the holding-bar *c* and the pawl *c*, and the driving mechanism, as set forth.

2. In an apple parer, slicer, and corer, the combination, with the frame A B C, the gear-wheels G I, the shaft J, and the fork K, of the gear-wheels L O Q R, the shaft P, the paring-knife T and its holder U, pivot V, spring X, and cam W, substantially as herein shown and described, whereby the apple is pared and rotated upon the fork, as set forth.

3. In an apple parer, slicer, and corer, the combination, with the frame A B C, the gear-wheels G I, the shaft J, and the fork K, of the slicing and coring knife Y, the holder Z, the crank *b* and crank-wheel *a*, and the pawl *c*, substantially as herein shown and described, whereby the apple is sliced and cored, as set forth.

4. In an apple parer, slicer, and corer, the combination, with the frame A B C and the fork K, shaft J, and gear-wheels G I, of the bent holding-bar *c*, substantially as herein shown and described, whereby the core is held while the apple is being sliced and cored, as set forth.

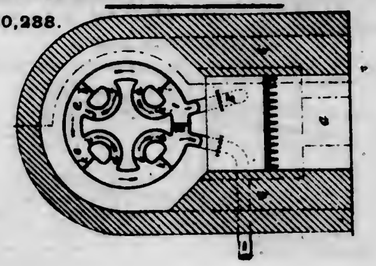
260,237. FLESH-FORK. WILLIAM A. RUDDICK, Niles, Mich. Filed Mar. 6, 1882. (No model.)



Claim.—1. In a flesh-fork, the combination, with the wire *a*, doubled upon itself to form a handle and two tines, of the wire *a'*, arranged between the parallel parts of the wire *a* to form an intermediate tine and a part of the handle, said parts being tinned together and bound by ferrules, substantially as shown and described.

2. In a flesh-fork, the combination, with the wires *a a'*, arranged to form the handle and tines of the fork, of the ferrules *c*, made of wire wrapped around said parts in such manner as to be self-binding, substantially as shown and described.

260,238.

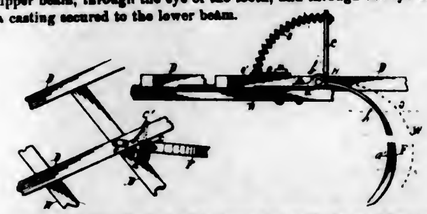


260,238. SUPERHEATER. DAVID RUSSHAW, Cohasset, assignor of one-half to Harvey T. Litchfield, Hull, Mass. Filed Sept. 15, 1881. (No model.)

Claim.—A superheater composed of one or more sections, D, each section being composed of a hollow ring having plates and flanges *k k'*, dividing such ring into compartments, the latter being connected together by semicircular pipes *b*, *d*, *f*, and *h*, and the several sections being connected together by pipes E E', &c., as shown.

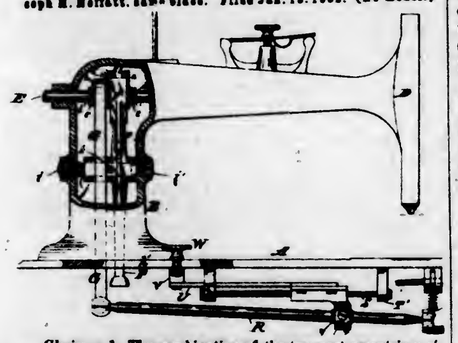
260,239. HARROW AND CULTIVATOR. BENJAMIN F. RIX, Kalamazoo, Mich. Filed Sept. 8, 1881. (No model.)

Brief.—The teeth are each formed with an eye at the junction of their vertical and curved portions, and are hinged in the angles formed at the intersections of the frame-beams, the hinged connection being effected by a bolt passing diagonally through the upper beam, through the eye of the tooth, and through the eye of a casting secured to the lower beam.



Claim.—In a harrow of the form described, the combination of the beam and casting B *a*, the perforated beam D, bolt *c'*, and hinged tooth, all constructed and adapted to operate as described.

260,240. SEWING-MACHINE. THOMAS B. ROBERTS, Pittsburg, Pa., assignor of two-thirds to David Hutchison and Joseph M. Moffatt, same place. Filed Jan. 13, 1882. (No model.)



Claim.—1. The combination of the two-part eccentric *a a'*, having bevels *b b'*, adjustable with relation to each other, with the forked lever F, having the inner faces of forks *f f* beveled, as described.

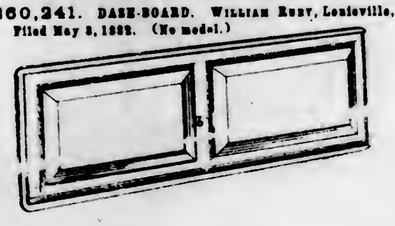
2. The combination of the eccentric *a*, having bevel *b*, sleeve *c*, and a suitable opening or socket, with eccentric *a'*, having bevel *b'*, sleeve *c'*, and stud *e*, bolt *g*, shaft E, and set-screws *d d'*, substantially as described.

3. The combination of lever F, pointed pin *j*, set-screw *k*, capped screws *i i'*, and post B, substantially as described.

4. The combination of bed A, having boss I, arm *p*, having stud *o* and capped top, screw *n*, and set-screw *r'*, with lever H, having pin *q*, and set-screw *r*, substantially as described.

5. The combination of lever R, sleeve *y*, bracket *z*, pivot-screw *y'*, rod S, lugs T T', bar U, head V, screw W, and slot *h'* in bed A, substantially as described.

260,241. DASH-BOARD. WILLIAM RUBY, Louisville, Ky. Filed May 8, 1882. (No model.)

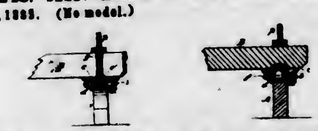


Claim.—A dash-board or fender provided with a stiff inner lining for the cover, composed of wood or other equivalent material, substantially as described.

260,242. MANUFACTURE OF COLORING-MATTER FROM NAPHTHYLAMINE. CARL RUMPFF, Aprath, near Elberfeld, Prussia, Germany. Filed Apr. 21, 1882. (Specimens.)

Claim.—The new brown dye-stuff or coloring-matter which is produced by the action of diazoazobenzolsulfonate of soda upon naphthylamine in an acid solution.

260,243. SLED. ALBERT SANFORD, Oshkosh, Wis. Filed Apr. 14, 1882. (No model.)



Claim.—1. The combination, with the runner, of the plate *b*, made broader than the runner and having the central projection, the plate *c* on the under side of the beam having the cavity corresponding to the projection on the plate *b*, and the cut-away portions *c'*, for the accommodation of the pins *p p*, the beam having the grooves *g g* in its sides, and the pins *p p*, for holding the parts together, substantially as described.

2. The bail *f*, in combination with the plate *b* and the runner, substantially as described, for the purpose specified.

260,244. METHOD OF SEPARATING SUGAR FROM MOLASSES, &c. CARL SCHEIBLER, Berlin, Germany. Filed May 27, 1882. (No specimens.)

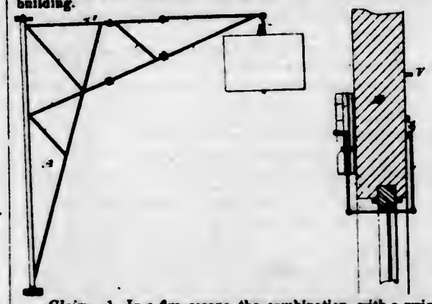
Claim.—1. The method of producing monosaccharate of strontia in molasses and sirup by introducing into the same, while at a temperature below the boiling-point, hydrate of strontia, by cooling the liquor, and by stirring it, in order to effect the formation of the saccharate of strontia at a low temperature and the separation thereof from the liquor, substantially as and for the purpose specified.

2. In combination with the method of producing monosaccharate of strontia in molasses and sirup by introducing into the same, while at a temperature below the boiling-point, hydrate of strontia, by cooling the liquor, and by stirring it, the addition to the liquor of saccharate of strontia previously obtained, in order to promote the separation of the saccharate of strontia formed in the liquor, as hereinbefore specified.

3. In combination with the process of producing monosaccharate of strontia in molasses and sirup, as hereinbefore described, the treatment of the mother-lye, resulting from such process, by adding thereto an additional quantity of hydrate of strontia and boiling in order to produce bibasic saccharate of strontia, as and for the purpose described.

260,245. FIRE-ESCAPE. DIEDRICH SCHMIDT, New York, N. Y. Filed Feb. 23, 1882. (No model.)

Brief.—A jointed derrick-frame to the end of which a box containing a flexible ladder is secured is pivoted to the inner wall, and when used is swung around out of the window and held in place by a spring upon a bracket secured to the outer wall of the building.



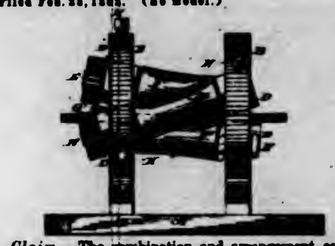
Claim.—1. In a fire-escape, the combination, with a swinging folding derrick-frame pivoted to the inner side of the wall, of a box suspended from the end of the arm of the frame, and of a folding ladder in this box, substantially as herein shown and described, and for the purpose set forth.

2. In a fire-escape, the combination, with a swinging folding derrick-frame pivoted to the inner side of the wall, of a bracket or hook projecting from the outer surface of the wall for supporting the end of the arm of the derrick-frame when the same is swung outward against the outer surface of the wall, substantially as herein shown and described, and for the purpose set forth.

3. In a fire-escape, the combination, with the swinging folding derrick-frame A, of the bracket T, projecting from the outer surface of the wall, and the spring catch or hook U above the bracket T, substantially as herein shown and described, and for the purpose set forth.

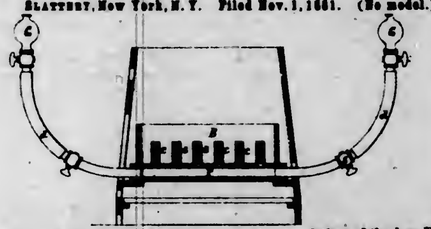
4. In a fire-escape, a derrick-frame made substantially as herein shown and described, and consisting of a pivoted standard provided with a fixed arm, to which one or more arms or sections are pivoted, whereby the end of the frame can be swung out through a window-opening against the outer surface of the wall, as set forth.

260,246. ROLLING-MILL. CYRUS B. SELL, Youngstown, Ohio. Filed Feb. 28, 1882. (No model.)



Claim.—The combination and arrangement, as herein described, of the housings B B, having seats C and set-screws H, the radially-adjustable boxes D, the concave-sided rolls F, having shafts E mounted in said boxes, all said boxes being independently adjustable, and the gear-wheels G, secured upon the ends of the shafts which project beyond the housings, as and for the purpose herein set forth.

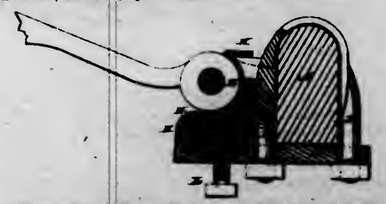
260,247. APPARATUS FOR MANUFACTURING CARBON FILAMENTS FOR INCANDESCENT LAMPS. HERMANUS N. H. SLATTERY, New York, N. Y. Filed Nov. 1, 1881. (No model.)



Claim.—1. A carbonizing apparatus consisting of the box B, having the passage P, in combination with the perforated nipples *c c*, substantially as described.

2. The combination of the bulb G with the box B, it being connected therewith by the pipe *d*, one end of which is secured in the passage P, substantially as described.

260,248. THILL-COUPLING. CHARLES H. SMITH and TIM MURPHY, Danville, Ky. Filed Nov. 8, 1881. (Model.)



Claim.—In a thill-coupling, the combination, with the bow B, the yoke C, provided with the upwardly-projecting flanges H, and the set-screw I, of the wedge-block I, having a concave inner surface, and provided with two upwardly-projecting and tapering flanges of unequal length, the rubber block J, and the fishing-plate K, having its upper edge bent to the rearward and its lower edge bent down between the flanges of the said yoke and wedge-block, substantially as and for the purpose set forth.

260,249. NUT-LOCK. RICHARDS C. SMITH, Baltimore, Md. Filed Mar. 8, 1882. (No model.)



Claim.—1. The nut constructed with the described alternate recesses *d* and shoulders D offset from its face, and extending neither to the top nor to the periphery, for engagement by the bent outer end of the locking-pin, as set forth.

2. A nut provided on its outer face with recesses for the locking-pin, and having in its inner face an annular recess surrounding and terminating in the top for the bend of the locking-pin, substantially as set forth.

3. The combination of the bolt having the longitudinal side groove, the locking-pin fitted lengthwise in said groove, and the nut provided with the alternate recesses *d* and shoulders D offset from its face, and extending neither to the top nor to the periphery, as and for the purpose set forth.

4. The combination of the grooved bolt, the locking-pin, and the nut having the annular recess on its inner face, and provided with a series of recesses on its outer face for engagement by the locking-pin, substantially as set forth.

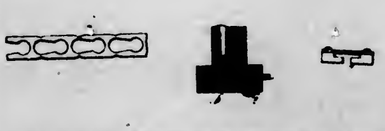
5. The nut having the annular recess and locking-notches *d* on its inner face, substantially as and for the purpose hereinbefore set forth.

6. The nut provided with locking-pin notches on its outer face, and having the annular recess provided with locking-notches on its opposite face, substantially as and for the purpose set forth.

7. The combination, substantially as hereinbefore set forth, of the grooved bolt, the locking-pin, and the nut provided with the annular recess and locking-pin notches on its inner face.

8. The combination of the grooved bolt, the locking-pin, and the nut having the locking-notches on its outer face and the annular recess and locking-notches on its inner face, substantially as and for the purpose set forth.

260,250. MACHINE FOR MANUFACTURING LACING-HOOKS. STEPHEN N. SMITH, Providence, R. I. Filed Aug. 11, 1881. (No model.)



Claim.—1. In a machine for making eyelets or lacing-hooks, the combination of a slotted guide for the necked stock, the punch arranged to descend upon the stock above the guide, and the reciprocating feed-dog arranged to operate against the projecting necks of the prepared stock beneath the guide.

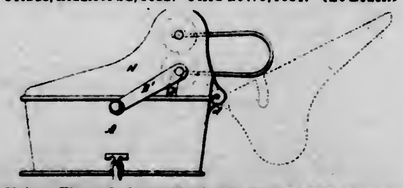
2. In combination with the guide slotted to receive the depending necks of the stock, the feeding-finger located thereunder to engage with said necks.

3. The combination of the slotted guide, lever F, dog E, and spring G, substantially as shown.

4. The cutting-punch provided with the removable protuberance, substantially as described.

5. The cutting-punch *f*, in combination with the protuberance *i*, having its neck or spindle secured by means of a binding-screw.

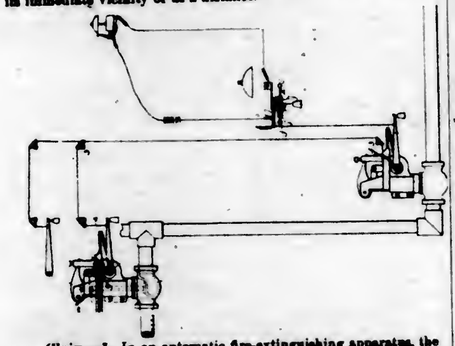
260,251. DAMPENING-BATH FOR PRESS-COPYING. NORMAN C. STILES, Middletown, Conn. Filed Nov. 8, 1881. (No model.)



Claim.—The tank A, combined with the rolls B B, arranged upon one edge of the tank, and the crank B', for imparting rotary movement thereto, with the cover H, arranged in rear of the rolls, and so as to serve both as a cover to the box and receiver for the cloths, substantially as described.

260,252. AUTOMATIC FIRE ALARM AND EXTINGUISHER. DANIEL C. STILLSON, Somerville, Mass. Filed Dec. 7, 1881. (No model.)

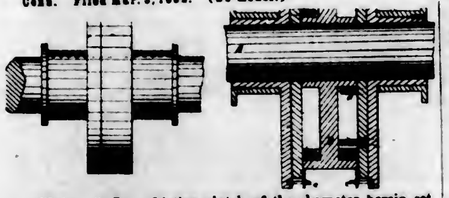
Brief.—Heat from a fire expanding the thermal bar T will open the valve at A and also by connection 2 will open the main valve M, which allows the flow of water throughout the entire system. In opening the valve M operates an alarm located either in its immediate vicinity or at a distance.



Claim.—1. In an automatic fire-extinguishing apparatus, the combination of a valve and operating mechanism therefor automatically controlled by a rise in temperature, with a main valve and operating mechanism, and releasing device therefor mechanically connected with and controlled by the operating mechanism of the valve that is controlled directly by rise in temperature, whereby operation of the main valve is directly dependent on that of the other valve, substantially as and for the purpose described.

2. The valve and its operating mechanism, the alarm and its motor, and detent therefor, connected with the said valve-operating mechanism, combined with an electric circuit and alarm therein, including the said detent as a circuit-closer, whereby the said electric alarm is set in operation simultaneously with the release of the mechanical alarm-motor, substantially as described.

260,253. FRICTION-CLUTCH. WILLIAM B. YATES, Hartford, Conn. Filed Mar. 3, 1882. (No model.)



Claim.—1. In a friction-clutch of the character herein set forth, the operating-lever held in place by a dovetailed or beveled head located between the ends of the divided ring, and arranged to spread the ring against the wall of the clutch, substantially as and for the purposes set forth.

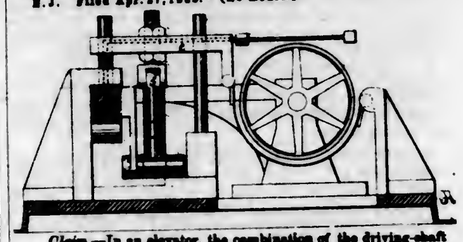
2. In combination with the operating-lever provided with a beveled or dovetailed head, arranged to spread the divided ring against the wall of the clutch, the two pins or projections for bearing against the free end and opposite sides of said lever, substantially as and for the purposes set forth.

3. In a friction-clutch of the character herein set forth, the combination, with the operating-lever arranged to spread the divided ring against the wall of the clutch, of adjustable pins or studs for bearing against either side of the free end of said lever, substantially as and for the purposes set forth.

4. In combination with the wall of the clutch, the movable plate bearing the two pins or studs which act upon either side of the free end of the operating-lever, the head of which is held between the ends of the divided ring, a spring-catch arranged to hold said plate in proper position upon the side of the clutch, substantially as and for the purposes set forth.

5. The herein-described double clutch having the two divided rings provided with spreading-levers, the heads of which are held between the ends of said rings, the pins or projections for bearing against the free ends of said levers, the movable or adjustable plates carrying said pins and serving to transfer the bearings from one side to the other of the free ends of the levers, the same being constructed and arranged to operate substantially as herein shown and described.

260,254. ELEVATOR. GEORGE S. TWEEDDALE, West Orange, N. J. Filed Apr. 27, 1882. (No model.)



Claim.—In an elevator, the combination of the driving-shaft brake and driving-pulleys mounted thereon, the shipper-rod connected to a sliding cross-head, and a brake-shoe connected to said cross-head, whereby the brake is operated by the movement of the shipper-rod in shifting the belt.

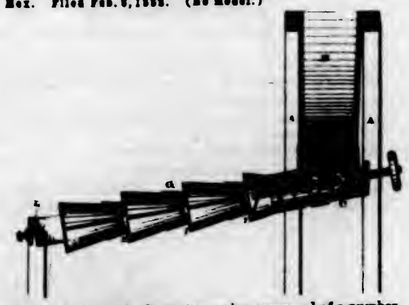
260,255. HEDGE-TRIMMER. WILLIAM F. TREGONNOTER, Adair, Ill. Filed Dec. 3, 1881. (No model.)



Claim.—1. The adjustable upright standard C, carrying at its upper end the yoke, which is provided with shoulder-pads *s s*, and at the lower end carrying the hip-brace J, in combination with the bar A, having the rigidly-attached projecting stirrups O and V, provided with perforations and adjusting-pins, for the purpose set forth, and substantially as described.

2. The frame-bar A, provided with handle *g* and adjustable yoke-standard C, in combination with the driving shaft or bar *y*, supported upon the frame-bar A and parallel therewith, carrying the fly-wheel at one end and operating the cutter-bar at the other, as set forth.

260,256. AMALGAMATOR. CHARLES H. TOPPING, Socorro, N. Mex. Filed Feb. 6, 1882. (No model.)

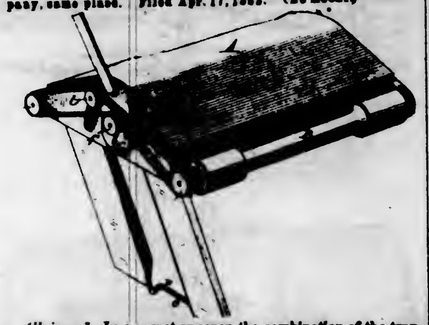


Claim.—1. In an amalgamator, a pipe composed of a number of interchangeable conical sections, each one of which has an enlargement or shoulder formed in it to hold mercury, and having one of its ends formed so as to catch over the end of the next adjoining section, in combination with a supporting-frame in which the pipe is made to revolve while the ore or earth is passing through it, a hopper, and a screw-conveyer, substantially as shown.

2. In an amalgamator, the combination of the frame A, hopper B, screw-conveyer, pipe G, and extensible frame, substantially as specified.

3. The combination of the frame A and its hopper with the adjustable frame L, and a pipe which is made in sections, as described, the outer end of the pipe being supported by the adjustable frame, substantially as shown and described.

260,257. CARPET-SWEEPER. CHARLES L. TRAVIS, Minneapolis, Minn., assignor to the Minneapolis Grain Binder Company, same place. Filed Apr. 17, 1882. (No model.)



Claim.—1. In a carpet-sweeper, the combination of the traveling body, a rotary brush therein, and dust-collecting pans hinged to the body at one end and arranged to swing downward endwise therefrom, substantially as described and shown.

2. In a carpet-sweeper, the combination of the traveling body, the rotary brush, and the dust-collecting pans, hinged at one end to the body and provided with a fastening device adapted to be disengaged by the foot, substantially as described and shown.

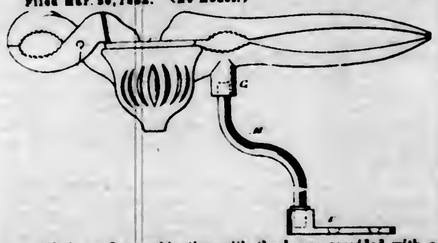
3. In combination with the traveling body A, the brush C therein, the dust-collecting pans sustained by means of the wire frame, hinged at one end to the body and provided at the opposite end with the extension *p*, substantially as shown.

4. In combination with the sweeper-body, the wire frame e, hinged thereto, and the two metal pans secured at their inner edges to said frame, and provided with the upturned edges adapted and arranged to bear, under the action of the frame, with a spring-pressure against the under edges of the body, as set forth.

5. The combination of the body, the non-rotating journals, and the rotary brush, supported as shown, with an annular space, *c*, around the journals.

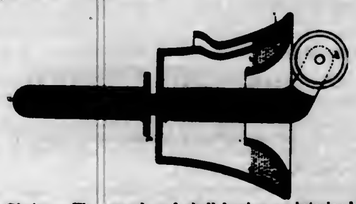
6. In combination with the body and the rotary brush, the tubular journals *b*, surrounded by the annular space *c*, and the driving-shaft extended through one of said journals and seated rigidly in the roll.

260,258. LEMON-SQUEEZER. JOSEPH TRICKEL, Reading, Pa. Filed Mar. 20, 1882. (No model.)



Claim.—In combination with the levers provided with a conoidal shell and perforated cup, respectively, and the removable perforated cup, the arm H, adapted to fit in a recessed lug, G, and the foot I, adapted to be secured to a table or other support, substantially as specified.

260,259. CASTER. CHARLES H. TUMEY, Austin, Tex. Filed Apr. 3, 1882. (No model.)



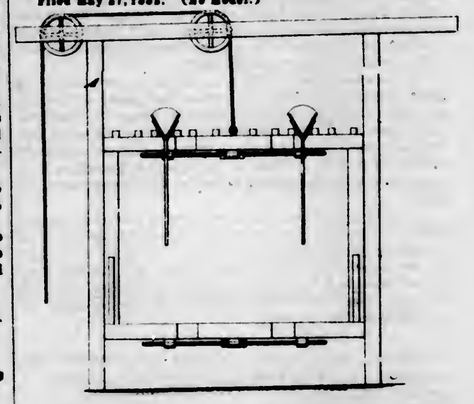
Claim.—The cup-shaped shell having an interior bowl or liquid-receptacle at its lower edge, an interior tube or socket at its top, and a passage extending through the shell in a downward direction and terminating at or near the bottom of the interior bowl, in combination with a caster and its shank or stem provided with a shoulder or stop, as and for the purpose herein set forth.

260,260. HORSESHOE. WILHELM VONDERSAAR, Indianapolis, Ind. Filed Mar. 16, 1882. (No model.)



Claim.—A horseshoe, B, provided with outs or spurs C D, all constructed integrally therewith, and arranged as shown, said spurs C being adapted to enter the bottom of the hoof a short distance, and said spurs D being adapted to be clinched down upon the outside of the hoof, and thus grip a portion of the substance of the hoof directly between the two spurs, in the manner shown and specified.

260,261. ELEVATOR. PETER H. WALSH, New York, N. Y. Filed May 27, 1882. (No model.)

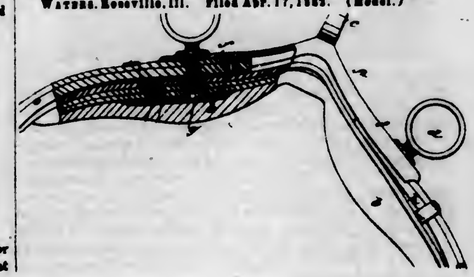


Claim.—1. The combination, with an elevator-car frame made in sections, of means whereby when they are adjusted in different relations to each other they may be secured together, substantially as specified.

2. The combination, with an elevator-car frame made in sections, of means whereby they may be adjusted and secured in different relations to each other, substantially as specified.

3. The combination, with a frame for the floor of an elevator-car made of sections adapted to be adjusted into different relations to each other, of beards having their ends fitted into grooves in opposite sides of the frame, so that one or more may be removed or inserted by sliding them along the grooves, substantially as specified.

260,262. HARNESS-SADDLE TREE AND PAD. EDWARD P. WATERS, Roseville, Ill. Filed Apr. 17, 1882. (Model.)



Claim.—1. The harness tree and pad consisting of the iron A, formed at its end with pockets *f*, the pads *b b*, and the adjustable skirts *c c*, combined together substantially as shown and described.

2. The combination of the skirts *c c*, having apertured ends, the tree A, formed with pockets *f*, the terrets *d*, and the nut *g*, substantially as described.

3. The combination of the nuts *g* and terrets *d* with the pockets *f* and skirts *c*, substantially in the manner shown and described.

260,263. COMPOUND RAILWAY-RAIL. DAVID D. WEIBELL, Fort Wayne, Ind. Filed July 26, 1881. (No model.)

Brief.—Bipartite rails have their webs arranged in contact with each other, one part having flanges and bottom bearing-surfaces extending laterally and the other provided with a horizontal grooved tread and foot the bearing-face of which extends laterally.

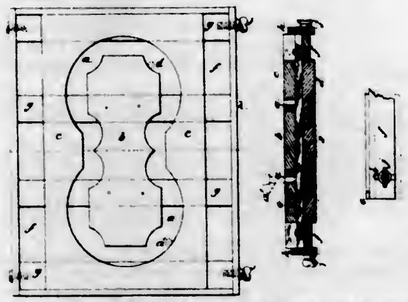


Claim.—1. In a compound or bipartite rail having webs arranged in contact with each other, the part A, provided with the flanges D D and bottom bearing, C, the surfaces of which are extended laterally in horizontal planes, and the part B, provided with the longitudinal groove, tread E, and foot H, the bearing-faces of which are also extended laterally in horizontal planes, substantially as and for the purposes described.

2. In a compound or bipartite rail having webs united together in contact by connecting devices which permit their expansion and contraction, the part A, having the flanges D D and bearing C extended laterally in horizontal planes, and the part B, provided with the longitudinal groove F, the tread E, and the foot H, the bearing-surfaces of which are also extended laterally in horizontal planes, all substantially as and for the purpose herein set forth.

3. A compound or bipartite railway-rail composed substantially of the part A, provided with the lateral flanges D D at its top and the lateral bearing C at the inner side of its bottom, and the part B, provided with the longitudinal groove F, lateral tread E, and lateral foot H, the bearing-faces of said flanges, tread, and foot being formed on horizontal planes, in the manner and for the purposes described.

260,264. TEMPLET FOR MOLDING AND PANELING MACHINES. LAURENCE WENCHEL, Baltimore, Md. Filed June 16, 1881. (No model.)

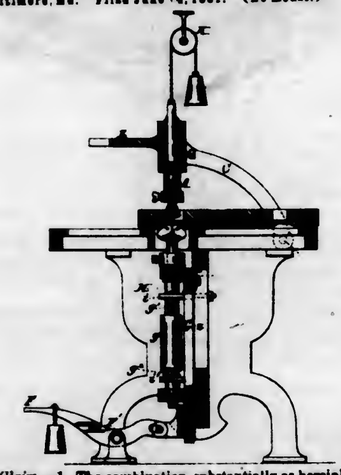


Claim.—1. The edge-patterns *b* and *c*, separated by an opening, *a*, having a width greater than the diameter of an insertible guide-pin, in combination with the frame *e f*, having the open-edge pattern *b* on one side and a holding-cent on its other side for the work, and means for supporting and bracing the edge-pattern *c* within the open-edge pattern, whereby the separate edge-patterns are secured in proper relation to each other for separate manipulation against the side of the pin, for the purpose described.

2. The templet herein described, consisting of the open-edge pattern *b* and the inner-edge pattern *c*, separated by an opening, *a*, having a width greater than the diameter of the guide-pin, a frame, *e f*, supporting the open-edge pattern on one side, having a recessed back for holding the work, and the cross supporting-braces *g g*, for the inner-edge pattern *c*, substantially as described, for the purpose specified.

3. In combination, the pattern or patterns, a holding-frame therefor and for the work, and adjusting leveling strips or bars attached to said frame, so as to ride upon the table in manipulating said holding-frame, substantially as described, for the purpose specified.

260,265. WOOD-MOLDING MACHINE. LAURENCE WENCHEL, Baltimore, Md. Filed June 14, 1881. (No model.)



Claim.—1. The combination, substantially as herein before set forth, in a machine for ornamentally working wood, of a cutter arranged to operate beneath the table, with a guide-pin holder, A, arranged to be raised and lowered independent of its carrying-frame, a counter-balance for said guide-pin, and a slotted pattern carrying the work over the cutter, as specified.

2. The combination, in a machine for ornamentally working wood, of a cutter arranged to operate beneath the table, with a guide-pin holder, A, arranged to be raised and lowered to be freed from and inserted within a slotted pattern independent of its carrying-frame C, and a counter-balance for said pin-holder, substantially as described.

3. In combination, the cutter, the fixed table, the slotted pattern carrying the work over the cutter, the guide-pin, its holder or support, the cord J', pulley K, and weight J, the said cord being connected to the upper end of the guide-pin stem, substantially as described, for the purpose specified.

4. In combination, the suspended treadle F, the treadle suspending rod D, the cutter-carrying slide G, connected with the suspended treadle, the spring *g*, and the work-holding device, the said suspending treadle-rod having a non-yielding connection with the said work-holding device, substantially as described, for the purpose specified.

5. The combination, in a rosette-cutting machine, of a treadle suspended by and having an unyielding connection with the work-holding device, and connected with the cutter-carrying slide G, substantially as herein set forth, with the spring *g*, and means whereby it is made adjustable to regulate its force according to the power required to hold the work under the action of the cutter, substantially as described.

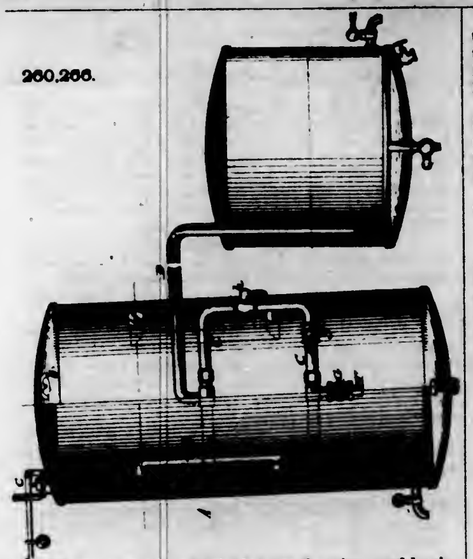
6. In a machine adapted for rosette and for panel work, the stem A, adapted to carry a guide-pin or a work-holder, the pivoted frame C, the treadle F, adapted for use with a fixed fulcrum, F', or with a suspending-rod, D, the cutter-carrying slide G, the spring *g* and its adjusting-screw *g'*, and nut *g²*, the said rod D being connected to the pivoted frame by nuts *D' D'*, and having the spring B arranged to elevate said rod, all constructed, arranged, and combined for use substantially as herein set forth.

260,266. RENDERING APPARATUS. ROBERT WHELAN, Chicago, Ill., assignor of one-half to John Arthur Atkinson, same place. Filed May 5, 1882. (Model.)

Brief.—The invention is designed to carry off the fat as quickly as rendered and to provide for an expeditious means of cleaning out the draining-pipes.

Claim.—1. In a rendering apparatus, the combination of a steam-pipe communicating with the kettle which receives the product of the rendering-vessel, provided with valves *g* and *h*, and a perforated pipe or body within the rendering-vessel, communicating with the steam-pipe at a point between the valves *g* and *h*, substantially as and for the purpose explained.

260,266.



2. In a rendering apparatus, a rendering-vessel provided with an internal perforated pipe or body, one or more, provided with a detachable cap or a cock at one end, and communicating at the opposite end with a steam-pipe, as and for the purpose set forth.

3. In a rendering apparatus, the combination of a tank or vessel, A, perforated pipes B, steam-pipes C D F, and valves or cocks *g h*, all arranged and operating as explained.

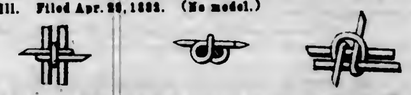
4. The herein-described rendering apparatus, consisting of vessels A and E, perforated steam-pipes B, provided with caps or cocks *f*, and communicating with pipe C, pipe C, provided with valves *g h*, discharge-pipe D, and steam-pipe F, all combined and arranged as shown and described.

260,267. BUTTON AND MEANS FOR ATTACHMENT. JOHN WILDE, North Attleborough, Mass. Filed Jan. 13, 1882. (No model.)



Claim.—A metallic button concaved on the upper side, convexed on the lower side, and having prongs cut within the outer margin of its body and connected therewith by the inner uncut ends, as described.

260,268. WIRE-FENCE BARB. ROBERT H. WILBE, Freeport, Ill. Filed Apr. 26, 1882. (No model.)



Claim.—The combination, with a two-strand cable, of a two-point barb consisting of a staple whose loop lies between the strands of said cable, while its two legs are wrapped about different strands and passed in opposite directions through said loop, substantially as shown and described.

260,269. DUMPING-WAGON. LORENZO WITHLOW, Rochester, N. Y. Filed Mar. 1, 1882. (No model.)

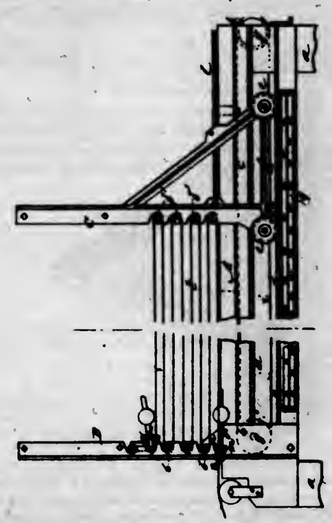


Claim.—1. In a dumping wagon or car, the combination of the jointed slats or wings B B', arranged in pairs, the links *d d*, the vertically-moving bar C, the links *h h*, the pivoted bell-cranks F E, and the longitudinally-moving bar D, operated by the hand-lever G, as shown and described, and for the purpose specified.

2. The combination, with the bar D, of the brace H and the lever I, the lever I having a projecting end, *e*, which reaches over and rests upon the end of the bar, forming a fulcrum by which the brace is lifted from behind the bar when the lever is raised, as herein shown and described.

260,270. CLOTH-FOLDING MACHINE. ALBERT WINTER, Plainfield, N. J. Filed Oct. 12, 1881. (No model.)

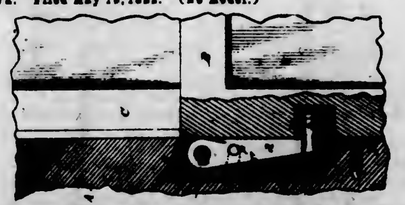
Brief.—The cloth is placed in layers over rollers carried by suitable standards. Two of said standards are stationary, while the other two are secured to a movable carriage. The carriage is moved outward until the folds are of sufficient length. The rollers are then removed from the standards and the cloth is laid in folds upon the table.



Claim.—1. The combination, with table A and fixed standards B, carrying rollers *b*, of the movable standards C, carrying rollers *b'*, substantially as shown and described, for operation as set forth.

2. The wheeled carriages *f* and slotted standards C, combined with table A, having side tracks, *d*, and the fixed standards B, substantially as shown and described.

260,271. SASH-FASTENER. NEWELL B. ATTWELL, Leesburg, Va. Filed May 19, 1882. (No model.)

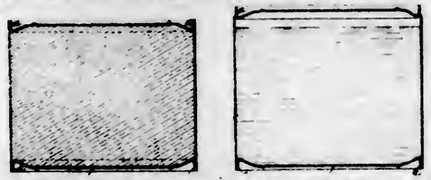


Claim.—1. The combination, as herein set forth, of a pair of individual sash-fasteners, F F, and a removable key, K, each of said individual sash-fasteners comprising a spring-projected fastener-dog, *d*, having an orifice, *o*, to receive and coact with the shaft of said key, and supplemental pivots *p*, working in slots *w* in a metallic bearing to support the individual fastener-dogs independently of said key, substantially as specified.

2. In a sash-fastener of the class herein set forth, the combination, with a pair of spring-projected fastener-dogs having flanged heads, of recessed tubular bushings *u*, within the socket-holes in the edges of the respective sashes, to prevent accidentally unfastening either sash, as herein specified.

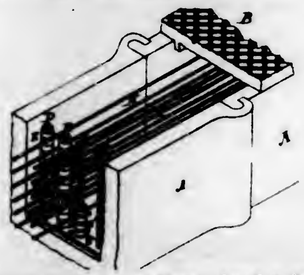
260,272. METHOD OF PUTTING UP CAUSTIC ALKALI. BENJAMIN T. BABBITT, New York, N. Y. Filed Mar. 4, 1882. (No model.)

Brief.—Cans composed of cylindrical body and both heads with outwardly-turned flanges fitting within the body.



Claim.—The method of putting up caustic alkali in cans of the kind above described, each composed of a cylindric body and heads having outwardly-turned flanges and inserted into the body, said method consisting in filling the cans with the molten alkali before the second heads are inserted, then inserting said heads into the bodies of the cans while the alkali is in a molten state and before it has set or solidified, and pressing the heads down upon the alkali, and finally, and after the alkali has set or hardened, soldering said heads in the cans, substantially as herein described.

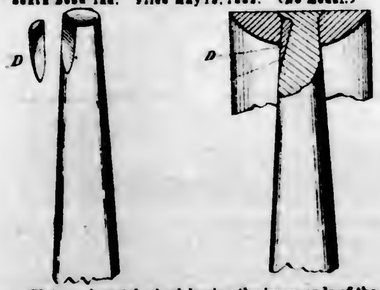
260,273. DEVICE FOR INSULATING AND PROTECTING TELEGRAPH-WIRES AND OTHER ELECTRICAL CONDUCTORS. WILLIAM H. BASTA, Springfield, Ohio, assignor of two-fifths to John M. Dodd and Abner M. Crothers, both of same place. Filed Nov. 9, 1881. (No model.)



Claim.—1. A street-pavement curb adapted to form a supporting and insulating case or inclosure for telegraph-wires and other electrical conductors, which consists of a series of troughs, A A, hermetically connected and hermetically closable by a coping, B, the said trough being provided interiorly with posts D and spools E, for support and insulation of the wires or conductors, substantially as set forth.

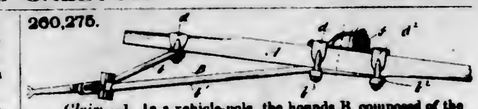
2. The combination, with suitable troughs, of the posts D, spools E, washers F, and wires G, adapted to support the electrical conductors, as set forth.

260,274. WHEEL FOR SULKY-PLOWS. THELUS H. BISSELL, South Bend Ind. Filed May 19, 1882. (No model.)



Claim.—A metal wheel having the inner ends of the spokes cast in the hub, and the outer ends secured to the rim by means of keys or wedges D, and the upset portions *e* of the spokes covering the ends of said keys or wedges, substantially as described.

260,275. VEHICLE-POLE. WILLIAM BUSHNELL, Caledonia, Ohio. Filed Apr. 27, 1882. (Model.)



Claim.—1. In a vehicle-pole, the hounds B, composed of the rods *b'*, extended forward and inclined inward and upward, and having their inner ends secured under the pole, and rods *b*, made shorter than rods *b'*, and connected at their outer ends to the latter, and extended upward and inward at a greater angle than the rods *b'*, and secured at their inner ends to the pole in a line directly in rear of and in the same plane with the point of connection of rods *b'* and the pole, substantially as described.

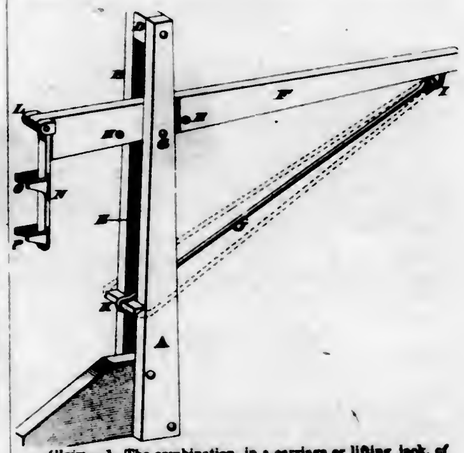
2. The combination, substantially as described, of the pole A, the hounds B, and the clips *d d' d''*, the hounds being secured to the pole by the clips alone, as and for the purposes set forth.

3. The combination, substantially as described, of the pole A, bar *c*, double-tree *f*, bolt *g'*, clevis *g*, and clips *d d''*, as set forth.

4. The combination of the rods *b'*, having their forward portions flattened, and constructed with the hook b^3 and shoulder b^4, the bar *c*, made equal length with the flattened portion of rods *b'*, and having its ends turned up, as shown, and adapted to support the clevis *g* and double-tree *f*, the clips *d d''*, and pole A, substantially as and for the purposes set forth.

5. The combination, substantially as set forth, of the hounds B, constructed with the slot b^5, the thill-iron A, provided with eye A^4, the clamping-bolt h', and clip h^5, as set forth.

260,276. CARRIAGE-JACK. GEORGE C. BOVEY, Chillicothe, assignor to Edward S. Bovey, Columbus, Ohio. Filed Dec. 14, 1881. (No model.)



Claim.—1. The combination, in a carriage or lifting jack, of slotted standard A B E, pivoted lever F G, swinging rod J, and dog K, which dog is adapted to engage with that side of said standard nearest the lever-heel, thereby dispensing with a special rack, substantially as herein described.

2. In combination with the operating-lever of a lifting-jack, the pivoted hanger L N, having projecting lugs, as and for the purpose stated.

3. An improved lifting-jack, consisting of the standard A B E, pivoted lever F G, swinging rod J, dog K, and hanger L N O, as and for the purpose herein described.

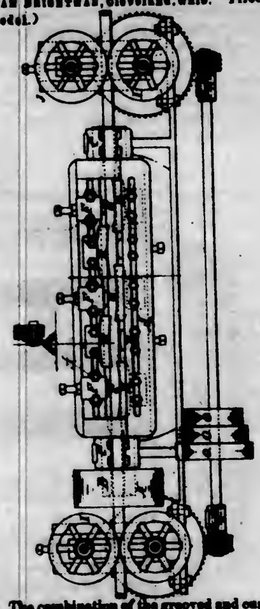
260,277. AXLE-LUBRICATOR. GEORGE BRENNAN, Franklin, Pa. Filed May 19, 1882. (No model.)



Claim.—1. An axle-box provided with the space or chamber F, having openings H and tapering plugs I, as set forth.

2. The combination and arrangement, as described, of the outer box, C, having openings G, the inner box, D, having flanges E, openings G, and the tapering plugs I, arranged in said openings and projecting slightly into the inner box, as set forth.

260,278. MACHINE FOR STRAIGHTENING ROUND BAR-IRON. LATHAM BRIGHTMAN, Cleveland, Ohio. Filed Aug. 20, 1881. (No model.)



Claim.—1. The combination of the grooved and curved guides H with the revolving frame A, having the adjustable dies G, as and for the purpose set forth.

2. The combination, with the revolving frame provided with adjustable dies, of independent guides for retaining the bar in position, substantially as set forth.

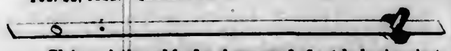
3. The combination, with the revolving frame provided with adjustable dies, of grooved guides, substantially as set forth.

4. The combination, with the revolving frame provided with adjustable dies, of guides arranged so that the end of one guide shall extend past the end of the next adjacent guide, substantially as set forth.

5. The combination, with the revolving frame provided with adjustable dies, of independent grooved guides, substantially as set forth.

6. The combination, with the revolving frame provided with adjustable dies, of independent curved guides, substantially as set forth.

260,279. METALLIC SEAL. EDWARD J. BROOKS, East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Filed Feb. 25, 1882. (No model.)



Claim.—A tin-and-lead seal composed of a strip having rivet-holes in its respective ends and a rivet-foot thereon having a stem which tightly fills one of said rivet-holes and is loosely fitted to the other, substantially as herein specified.

260,280. APPARATUS FOR GENERATING GAS AND PROMOTING COMBUSTION. WILLIAM FRANK BROWNE, New York, N. Y. Filed Feb. 4, 1882. (No model.)

Brief.—The invention consists in forcing combined oil and water together into a heated coil or coils located in a furnace, and wherein the oil and water form a gas, which is discharged into said furnace for immediate combustion, the heat from which produces a gas as generated, while the surplus heat is utilized for other purposes.

Claim.—1. The process of generating gaseous vapor and supplying heat to the steam-boiler of the locomotive, which consists in injecting oil by a jet of steam under high pressure into and through a heated coil arranged around the sides of the fire-box, and discharging the gaseous products of their decomposition directly into the fire-box, and there causing their combustion by a suitable supply of air.

2. In a device for heating steam-boilers, a steam-supply pipe, an injector, and an oil-supply pipe connecting therewith, in combination with a coil-generator located in the fire-box of the boiler, and a suitable perforated grate for burning the gaseous vapor generated in the coil-generator.

3. In a device for heating steam-boilers, a steam-supply pipe connecting with the exhaust pipe of a locomotive-engine, and with the injector, in combination with an oil-supply pipe, the injector, and the coil-generator within the fire-box.

4. In a device for heating locomotive steam-boilers, the oil-tank adapted to be carried by the tender, and the oil-supply pipe therefrom, having a spring-coil for permitting lateral movement, and the water and steam pipes, in combination with the gas generating and heating device in the fire-box of the boiler.

5. A water heating and circulating device consisting of a series of coils located in the fire-box of the boiler, and connected above and below the crown-sheet therewith, in combination with the coil gaseous-vapor generator, also located in the fire-box, and suitable connections, substantially as described.

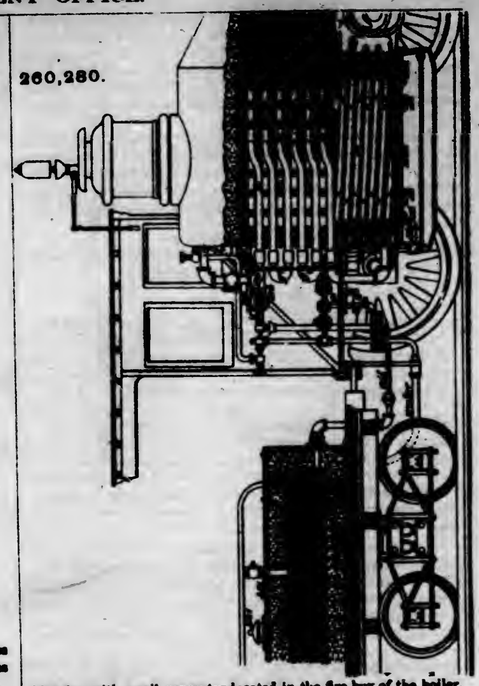
6. A water heating and circulating device consisting of a series of coils located in the fire-box of a steam-boiler, and having external circulating connections and their supporting-standards, the said coils being adapted to sustain the gas-generating coils, and connecting with the boiler below and above the water-line, substantially as described.

7. A water heating and circulating device consisting of a series of coils located in the fire-box of the steam-boiler, and having external circulating connections and their supporting-standards and cross-supporting circulating-pipes, which are adapted to sustain the gas-generating coils, and connecting with the boiler below the water-line, in combination with an injector connecting therewith for supplying water to the boiler.

8. In a device for heating steam-boilers, a burner-grate composed of tubular headers, and connecting tubular perforated grate-bars provided with open channels in their upper surfaces, in combination with an oil-supply pipe opening into the channels.

9. In a device for heating steam-boilers, a burner-grate composed of tubular headers, and connecting tubular perforated grate-bars provided with open channels in their upper surfaces, in combination with a gas-supply pipe connected to the tubular headers and bars, and an oil-supply pipe opening into the channels.

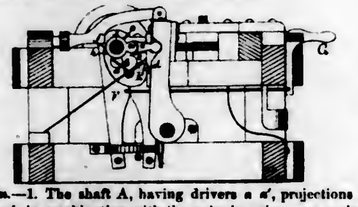
10. In a device for heating steam-boilers and heating and circulating liquids, the supporting-standards *s s*, extending vertically between the outer and inner shell of the boiler of the fire-box, and provided with suitable openings and packing-boxes for making a tight joint around the pipes which extend through the shell and standards, substantially as shown.



11. In a device for heating steam-boilers, the generating-coils extending around the four sides of the fire-box from near the bottom thereof up to the lower tubes of the boiler, and then extending backward and forward around three sides of the box to the desired height, whereby the passage between the box and tubes is left unobstructed for the passage of flame and hot products of combustion into the tubes of the boiler.

12. In an apparatus for generating gas or gaseous-vapor fuel, the process of forcing combined combustible liquid and water together into a heated coil or coils arranged in the fire-box, and discharging the gaseous products of their decomposition directly into the fire-box, whereby a complete combustion is effected in the manner set forth.

260,281. BOLT-HEADING MACHINE. JAMES B. CLARK, Plantsville, Conn. Filed Mar. 24, 1880. (Model.)



Claim.—1. The shaft A, having drivers *a a'*, projections *b*, and recess *b*, in combination with the swinging pieces *c c*, spring-table E, having arm *g*, and the trip F, substantially as described, and for the purpose specified.

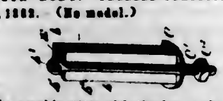
2. In a heading-machine, the combination of the gripping-dies, the header, mechanism for reciprocating the header, the shaft A, the driver *a*, for acting upon the mechanism which closes the gripping-dies, and the projection *e*, for acting upon the mechanism for opening the gripping-dies, the projection *e* being located on the shaft A relatively to the mechanism for moving the header forward to act as soon as the header reaches its most advanced position, substantially as described, and for the purpose specified.

3. In a heading-machine, the combination, substantially as shown and described, of the wedge M and the weighted lever with the mechanism which carries the header, as and for the purpose specified.

4. The combination of the weighted lever for releasing parts of the machine from undue strain, the arm S, secured against longitudinal movement, and mechanism for connecting said arm and lever with frictional contact to check a rapid movement of said lever, substantially as described, and for the purpose specified.

5. The weighted lever, made double, with spring sides for a portion of its length, and provided with set-screws *m m*, in combination with the arm S and shoes *o o*, substantially as described, and for the purpose specified.

260,282. WAGON-BODY. CHARLES COMSTOCK, Racine, Wis. Filed Apr. 25, 1882. (No model.)



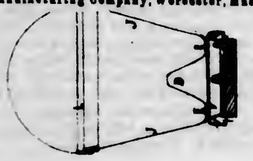
Claim.—1. In combination with the box or body of a wagon, having interior upper rail, *a*, the hollow metal triangular strengthening posts or standards B, the wooden blocks E, and suitable securing devices, as set forth.

2. In combination with the box and interior upper rail of a wagon, the triangular metal post B, having ring or perforated plate *b'*, bolt C', and nut C', as set forth.

3. In combination with the end-gate of a wagon and its interior upper rail, the hollow metal triangular post B, with plate C, depending hinge-arm, and wooden block E, as set forth.

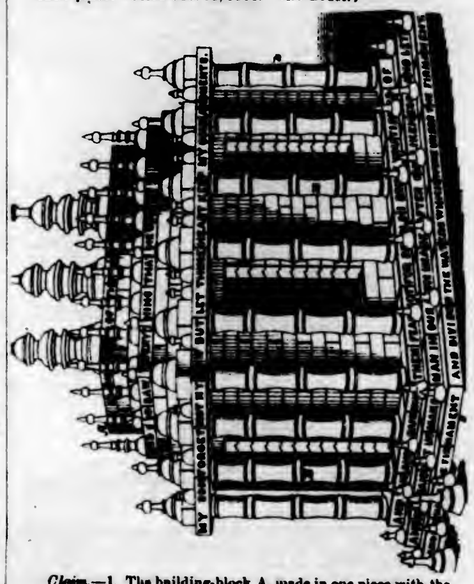
4. As a new article of manufacture, the described hollow metal triangular post B, having wooden filling E, and depending bolt or arm, as described, for securing said post to a wagon-body.

260,283. FLY-TRAP. SAMUEL H. COOK, Boston, assignor to the National Manufacturing Company, Worcester, Mass. Filed Mar. 31, 1879.



Claim.—In the construction of fly-traps, the conical outer body portion, J, having the connecting annular portion E and inner cone, D, composed of a single continuous piece of wire-cloth pressed up in the form shown, all being constructed and arranged substantially in the manner described, as and for the purpose set forth.

260,284. TOY BUILDING-BLOCKS. JESSE A. CRANDALL, Brooklyn, N. Y., assignor of one-half to Walter P. Denslow, same place. Filed Feb. 16, 1882. (No model.)



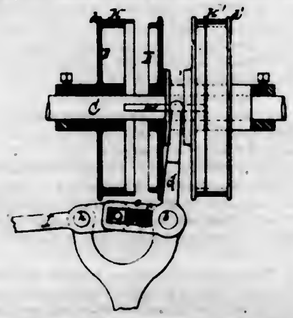
Claim.—1. The building-block A, made in one piece with the tapering rib *a*, and provided with the groove *b*, substantially as described.

2. The building-block A, made in one piece with the tapering rib *a*, and provided with the groove *b* and cross-groove *d*, substantially as described.

3. The combination of several building-blocks A A with each other, each building-block containing on its exposed face one or more words forming a portion of a sentence which will only match a portion of the same sentence that is inscribed on only one of the other blocks in the same series, substantially as specified.

4. The sectional pillar composed of detached blocks B, in combination with building-blocks A, having ribs *a* and grooves *b*, substantially as described.

260,285. MECHANISM FOR REVERSING MOTION. CHRISTIAN DANCEL, New York, N. Y. Filed Mar. 18, 1882. (No model.)



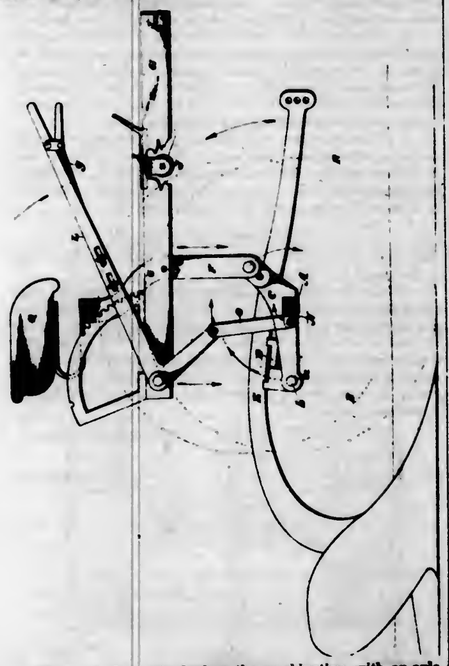
Claim.—1. The combination, substantially as hereinbefore described, of the driving-pulley, the loose pulley-sections, and the feathered pulley-sections mounted on the driven shaft, the cross-belt H and the open belt H', extending round the loose pulley-sections and projecting beyond their inner edges, and the shipping-lever acting on the feathered pulley-sections.

2. The combination, substantially as hereinbefore described, of the driving-pulley, the loose pulley-sections, and the feathered pulley-sections mounted on the driven shaft, the cross-belt H and the open belt H', extending round the loose pulley-sections and projecting beyond their inner edges, the shipping-lever acting on the feathered pulley-sections, and an automatic locking mechanism.

3. The combination, substantially as hereinbefore described, of the shipping-lever mounted on a pivot, *b*, the slide *c*, fitted to the arm *c* of said shipping-lever, the spring *f*, acting on the slide, the pin *a*, projecting from said slide, and the lever I, mounted on the pivot *h* and engaging with the pin *g*.

260,286. WHEEL-PLOW. FREDERICK S. DAVENPORT, Jerseyville, Ill. Filed Mar. 11, 1882. (No model.)

Brief.—Cross-bar rigid upon the axle. The plow-beam is seated upon one end and counterbalanced by the seat-frame upon the other end. The lever rocks the axle, thereby elevating the plow and lowering the wheel.



Claim.—1. In a wheel-plow, the combination, with an axle and wheels loosely mounted thereon, of levers secured rigidly to said axle and supporting at their rear ends an oscillating table upon which the plow-beam rests, and secured at their forward ends to the seat-arch, a tongue arranged on one side of said arch, and a brace arranged at the opposite side of the arch, a foot-rest secured upon said tongue and brace, and an anti-friction roller mounted in bearings on the under side of the foot-rest, substantially as set forth.

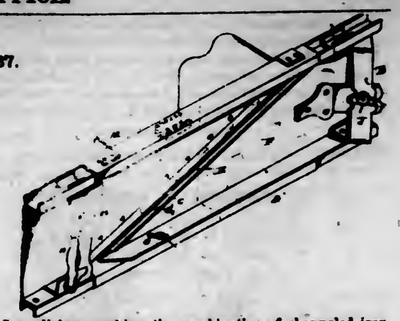
2. In a wheel-plow, the combination, with the axle A, wheels B, levers C, arm E, table D, and beam R, of the arch F, seat Q, tongue G, lever L, catch *g*, rack M, and link O, all of the above parts constructed and adapted to operate substantially as and for the purpose set forth.

3. In a wheel-plow, the combination, with axle A, wheels B, levers C, arm N, table D, and beam R, of the arch F, seat Q, tongue G, lever L, foot-rest I, and roller J, all of the above parts being constructed and adapted to operate substantially as and for the purpose set forth.

260,287. BREAD AND MEAT CUTTER. SAMUEL L. DERRY, Strasburg, assignor to Israel L. Landis, Lancaster, Pa. Filed May 1, 1882. (No model.)

Claim.—1. In a slicing-machine of the character described, the combination of the parallel channeled iron slides, bearing the slicing-knife and the guard or gage plate, with the channeled iron guides and means for securing them together, substantially as described.

260,287.



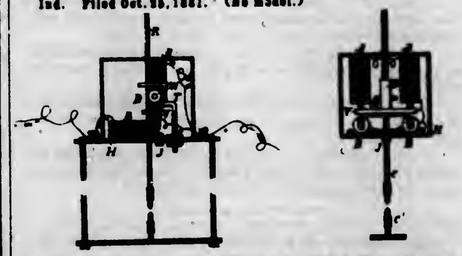
2. In a slicing-machine, the combination of channeled iron slides working in metal guides of a corresponding shape, the knife-bearing plate riveted to the slides, the end ties and supports, B B', also riveted to said slides, the adjustable metal guard or gage, and a clamping device for adjusting and holding this gage, substantially as described.

3. The knife-bearing plate having a knife secured into a depression formed in the diagonal edge of this plate by bending the sheet metal, substantially in the manner and for the purpose described.

4. The guard or gage plate F, having flanges formed on its upper and lower edges, in combination with a flange formed on its diagonal edge, and in combination with a slicing-machine constructed substantially as described.

5. The combination of the channeled iron slides, the channeled iron guides fitted therein, the flanged pieces M M', riveted to said guides, and a metal table, N, flanged and riveted to the bottom guide and to the two wings formed on said pieces M M', substantially as described.

260,288. ELECTRIC LAMP. JAMES DU SHANE, South Bend, Ind. Filed Oct. 25, 1881. (No model.)



Claim.—1. The combination, in an electric lamp, of the hollow helices and longitudinally-moving core, the clutch with an inclined bearing, the wheel and its shaft, and the trip adapted to rotate the wheel to permit the rod carrying the upper electrode to be operated by gravity and the shunt-magnet, substantially as specified.

2. In an electric lamp, the combination of the rod R, helices A A, core V, wheel W, clutch D, and trip T, constructed and arranged for joint operation as described.

3. In an electric lamp, the shunt-magnet B, hinged at one end, and the adjusting-screw J, in combination with rod R, core V, and helices A A, operating together substantially as described.

260,289. TOY FIRE-ARM. SPENCER W. KOPP, New Britain, Conn., assignor, by direct and mesne assignments, to Stephen S. Tallman, East Orange, and George D. Tallman, Long Branch, N. J. Filed Mar. 10, 1882. (No model.)

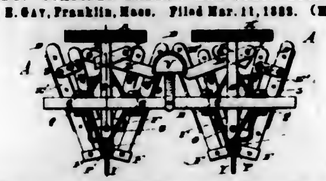


Claim.—1. The herein-described toy fire-arm, in which the barrel is provided at its rear end with the barrel-section containing a bore for the reception of the cartridge, and directly in front of said bore an obstruction to receive the charge, and one or more

discharge-passages which are out of alignment with said bore, substantially as described, and for the purpose specified.

2. The herein-described toy fire-arm, in which the barrel consists of the section containing the bore, the cylindrical case containing the perforated disk, and false barrel with its surrounding flange, substantially as described, and for the purpose specified.

260,290. COMBINED HARROW AND CULTIVATOR. TIMOTHY E. GAY, Franklin, Mass. Filed Mar. 11, 1882. (Model.)



Claim.—1. The combination of the frame-beam B, bails O, hinged harrow-sections A, having adjustable wings D, adjustable shields S, and reversible handles K, as set forth.

2. The combination of the harrow-sections A, having shields S and eyebolts N, the V-shaped bails O, having eyes P, to which said sections A are hinged, and eyes Q, and the frame-beam B, having perforations W, to which said bails are adjustably connected, as set forth.

260,291. TRIMMING ATTACHMENT FOR SEWING-MACHINES. BENJAMIN F. GILBERT, Philadelphia, Pa., assignor of one-half to Charles E. Spencer, same place. Filed Feb. 1, 1882. (No model.)



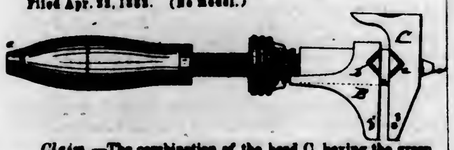
Claim.—1. The combination of a cutter and a slotted work-plate with face-pieces which project upwardly into the slot, substantially in the manner and for the purpose set forth.

2. The upwardly-projecting face-pieces arranged, substantially as described, in a slot of the work-plate and adjustable vertically therein.

3. The upwardly-projecting face-pieces arranged, substantially as described, in a slot of the work-plate and adjustable horizontally therein.

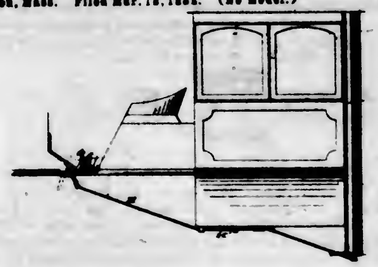
4. The combination, with a cutter, of elastic face-pieces arranged in substantially vertical planes and bearing against the adjacent sides of the cutter, for the purposes specified.

260,292. MONKEY-WRENCH. JESSE S. GREENLEAF, Fargo, Dak., assignor of one-half to Frank Scott Berry, Mercer, Me. Filed Apr. 22, 1882. (No model.)



Claim.—The combination of the head C, having the grasping-faces c' and c, with the sliding jaw B, having the grasping faces b' and b, substantially as and for the purposes described.

260,293. PASSENGER-VEHICLE. J. THEODORE GERDEY, Boston, Mass. Filed Mar. 18, 1882. (No model.)



Brief.—Levers on the bottom of self-closing doors are connected by cords with a rod operated by a crank and pedal on the foot-board of the driver's seat. The mechanism is beneath the vehicle. The cords are connected with the rod by an adjusting device.

Claim.—1. The combination, with the automatically-closing swinging doors, of means controllable by the driver for opening the door, and a pedal or device with which the driver can engage his foot, substantially as set forth.

2. The combination, with the automatically-closing swinging door, of the levers at the lower ends, and the devices for opening the door, connected with said levers and controllable by the foot of the driver, substantially as set forth.

3. The combination, with the automatically-closing doors, of the means for opening the same, situated beneath the vehicle, substantially as set forth.

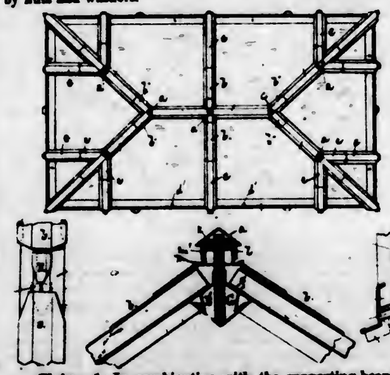
4. The combination, with the doors and the devices for opening the same, extending to the driver's platform, of the adjusting devices attached together by a screw-thread, for regulating the tension of the door-opening devices, substantially as set forth.

5. The combination, with the door and the devices for opening the same, extending to the driver's platform, and having between the door and the platform a threaded rod, of the threaded nut to engage with said rod, and connected with the devices which pull the doors, whereby the tension of the door-opening devices may be regulated, substantially as set forth.

6. The combination, with the doors and devices for opening the same, extending to the driver's platform, and having the part H′ between the door and the platform, of the part O, attached to the door-pulling devices, and arranged, substantially as set forth, to be secured to the part H′ at different points.

260,294. SKYLIGHT. CONRAD HEPFEL, Baltimore, Md. Filed Feb. 24, 1882. (No model.)

Brief.—The lower edges of the panes rest against the bent end of the cover-plates. Rods on the end of the ridge-beams project through the said bent ends and carry a clamping-nut. Clips are bent over the upper flanges of the bars and over one end of a cover-plate, which is beveled to engage the corresponding flanged end of the abutting adjacent cover-plate. Rods on the bars project up through tubes at the joints and caps are secured thereon by nuts and washers.



Claim.—1. In combination with the supporting-beams and panes, the cover-plates secured over the meeting edges of the panes and having downwardly-turned ends securing the panes at the eaves, as and for the purpose set forth.

2. In combination with the supporting-beams having screw-rods at the eaves, the cover-plates *c*, secured by nuts upon said rods, and having downwardly-turned ends serving to hold the panes in place, as set forth.

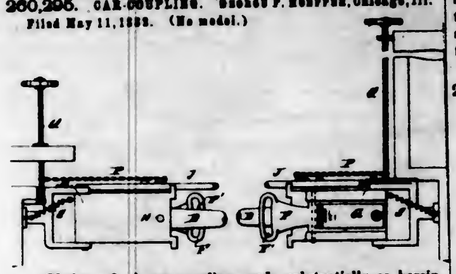
3. In combination with the supporting-beams having flanges *g*, the lips H, folded thereunder and adapted to hold the cover-plates down upon the panes, as set forth.

4. In combination with the supporting-beams having flanges *g*, the cover-plates *c* and *b*, having beveled edges *f* and flanges *j*, as set forth.

5. In combination with the supporting beams and rods G, the cover-plates having tubes *m* and the caps *a*, as set forth.

6. In combination with the supporting beams and rods G, the perforated cover-plates having tubes *m*, and the caps *a*, having nuts *b*, washers *l*, and tubes *m′*, as set forth.

260,295. CAR-COUPLING. GEORGE P. HOPPER, Chicago, Ill. Filed May 11, 1882. (No model.)



Claim.—1 A car-coupling made substantially as herein shown and described, and consisting of a draw-head divided into two longitudinal compartments, and provided with a plunger and a pivoted latch-wing adapted to catch on the opposite draw-head, as set forth.

2. In a car-coupling, the combination, with the draw-head A, of the plunger D, the swinging latch-wing F, and the spring G, acting on the same, substantially as herein shown and described, and for the purpose set forth.

3. In a car-coupling, the combination, with the draw-head A, of the plunger D, the spring E, the swinging latch-wing F, and the spring G, acting on the same, substantially as herein shown and described, and for the purpose set forth.

4. In a car-coupling, the combination, with the draw-head A, of the plunger D, the swinging latch-wing F, provided with a slot, F′, at the outer end, and the spring G, acting on the latch-wing F, substantially as herein shown and described, and for the purpose set forth.

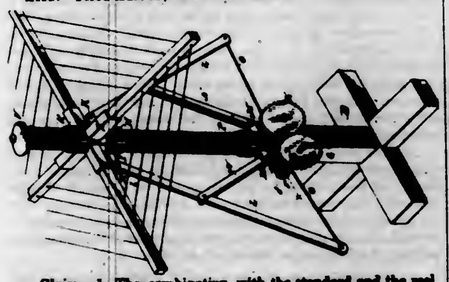
5. In a car-coupling, the combination, with the draw-head A, of the plunger D, the swinging latch-wing F, and the lever J, pivoted on the top of the draw-head and connected with the plunger D, substantially as herein shown and described, and for the purpose set forth.

6. In a car-coupling, the combination with the draw-head A, of the plunger D, the swinging latch-wing F, the lever J, pivoted on the draw-head and provided with a slot, K, and the screw or stud L, substantially as herein shown and described, and for the purpose set forth.

7. In a car-coupling, the combination, with the draw-head A, provided with slots M and O in its top, of the plunger D, the swinging latch-wing F, the lever J, pivoted on the draw-head, the stud or screw L, passed through the lever J into the plunger D, and the stud or rod N, passed through the lever J into the draw-head, substantially as herein shown and described, and for the purpose set forth.

8. In a car-coupling, the combination, with the draw-head A, of the plunger D, the swinging latch-wing F, the lever J, for withdrawing the plungers, the chain P, and the vertical shaft on the car, substantially as herein shown and described, and for the purpose set forth.

260,296. CLOTHES-REEL. GEORGE W. HOUGHTON, Saginaw, Mich. Filed Mar. 31, 1882. (No model.)



Claim.—1. The combination, with the standard and the reel adapted to receive the clothes, of a sliding sleeve arranged below said reel and provided with levers pivoted in lugs of said sleeve, and fulcrumed on brackets of the standard, the outer ends of said levers being connected by cords to winding-reels, substantially as set forth.

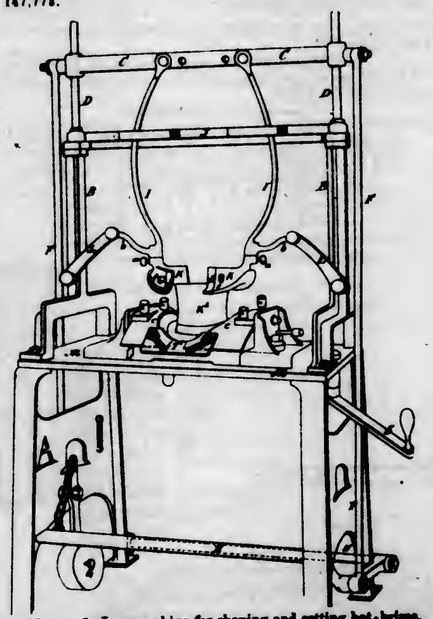
2. The combination, with the standard having the collar P and shoulder *a*, of the frame C, secured upon said shoulder and supporting the cord-reels D and D′, the gear-wheels E and E′, toothed pinion F, pawl *f*, and crank G, the clothes-reel Q, sliding sleeve H, levers L, braces N, and cords O, substantially as set forth.

260,297. CLOTHES-PIN. SAMUEL D. JOHNSTON, Paris, Ill. Filed Feb. 26, 1882. (No model.)



Claim.—The described clothes-pin, having the spiral spring B and the spring-loops C, each composed of the vertical bars *a* and *b*, the bars *b* being bent at their upper extremities into the horizontal loops *l*, to inclose the vertical bars *a*, adapted to grasp and hold the clothes line or wire at the upper end and resist its removal downward from between the said loops C at the lower end, substantially as described.

260,298. HAT-SHAPING MACHINE. JOHN R. KELSEY, Bristol, England. Filed May 10, 1882. (No model.) Patented in England July 7, 1881, No. 3,291, and in France Mar. 8, 1882, No. 147,778.



Claim.—1. In a machine for shaping and setting hat-brims, two suspended pressers, when brought into action mechanically by being depressed, and during each depression being acted upon by levers swinging on a stationary center, substantially as shown and described.

2. In a machine for shaping and setting hat-brims, the combination of the presser K, rod I, lever L, post B, cross-head C, guide D, rod F, and treadle E, or their equivalent, substantially as shown and described.

3. In an organized machine for shaping and setting hat-brims, the combination of the pressers K K with a disk or mold, M, substantially as shown and described.

4. A former or presser consisting of a divided ring, *d d*, having the shaper *g g* attached thereto, substantially as described.

5. The semicircular former K K, having its shaped parts *g g* divided in two or more parts for convenience of removal, substantially as described.

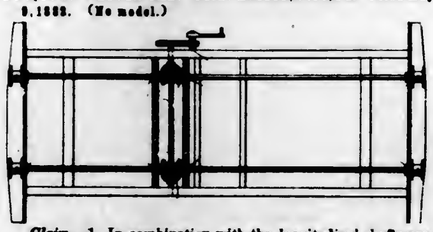
6. In an organized machine, the combination of back and front clamps, acting in conjunction with side flanges, a divided former, and a mold for producing mechanically a curling over at the sides

and a curling up at the back and front of the brim of a hat instantaneously and simultaneously, substantially as described.

7. In an organized machine, a disk or mold, a vertically-acting dividing presser or former, and horizontally-acting front and back and side curlers, when combined and operated for shaping and setting the brims of hats, substantially as described.

8. The process of curling and setting the brim of a hat by first heating and then by independent organized mechanism shaping and molding the same, substantially as described.

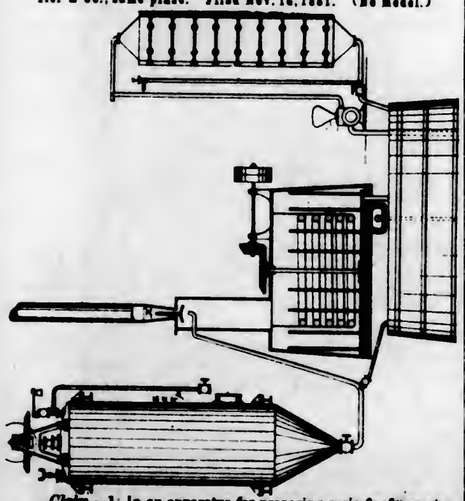
260,299. CATTLE-CAR. ELIAS KOHLER, York, Pa. Filed May 9, 1882. (No model.)



Claim.—1. In combination with the longitudinal shafts provided with barrels at their outer ends, connecting with the cords or chains for operating the movable floor, and with beveled-gear wheels at their inner ends, the transverse shaft and its operating-gear, and the beveled-gear wheels intergearing with the beveled-gear wheels on the longitudinal shafts, substantially as and for the purposes specified.

2. In combination with the water-conduits and their valves, the beveled gearing and longitudinal shaft for operating the same, substantially as set forth.

260,300. APPARATUS FOR PREPARING GRAIN FOR FERMENTATION. FREDERICK O. KUHN, Omaha, Nebr., assignor to Iler & Co., same place. Filed Nov. 14, 1881. (No model.)



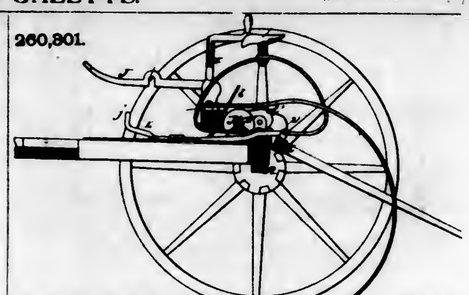
Claim.—1. In an apparatus for preparing grain for fermentation, the combination of a steam reducer or digester, a cooling-column, as described, a pipe or tube connecting the bottom of the reducer with the top of said cooling-column, a mash-tub below the cooling-column, and means, substantially as described, for creating an upward current of air in the cooling-column, substantially as herein set forth.

2. The combination of the reducer or digester with a cooling-column, as described, provided with a draft-stack, a mash-tub located below the cooling-column, and a pipe connecting the bottom of the reducer and the top of the cooling-column, as and for the purpose set forth.

260,301. COMBINED HAY RAKE AND TEDDER. ISRAEL L. LANDIS, Lancaster, Pa. Filed Jan. 3, 1882. (No model.)

Claim.—1. The combination of the rake-head, the standard secured thereto, and the reversible cranked handle, substantially as and for the purposes described.

260,301.



2. In a combined convertible rake and tedder, the rake-head adjustable forward and back of the axle, the rotary shaft N, provided with tappets, the standard I, fixed to the rake-head, and the reversible handle *e*, applied to this standard, substantially in the manner described.

3. In a convertible rake and tedder, the combination of the vibrating clearer, the endwise-movable rod L pivoted thereto, provided with a toe-loop or stirrup and perforations, the strap *h'*, provided with a pin, 2, and the spring, all substantially in the manner and for the purpose described.

4. The combination, with the rake-head, which is hung and supported as described, of the notched spring-actuated arm J, the wheel P, provided with pins *r*, the tappet-shaft N, bearing wheel P, the standard I on the rake-head, and a reversible handle, *e*, all arranged and operating substantially as described.

260,302. COMBINED COTTON-PLANTER, CULTIVATOR, AND DOUBLE-SHOVEL, SINGLE-SHOVEL, AND TURNING PLOW. CHARLES J. LE ROY and JOHN W. HENDEN, Dallas, Tex., assignors of four-fifths to Samuel J. Adams, Jack Leonard, J. T. Odell, Sidney Smith, and H. W. Godbold, same place. Filed Feb. 25, 1882. (No model.)



Claim.—1. The combination of two single-shovel stocks or plow-beams, each provided at its forward end with an independent clevis or means for attaching to it a single-tree or double-tree, a shackle for detachably connecting said two beams at their forward end, and a cross-bar detachably connecting the rear ends of said beams in a divergent position, substantially as described and shown, for the purpose specified.

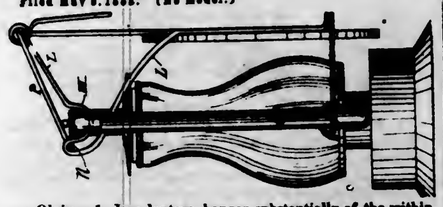
2. The within-described convertible cotton-planter, cultivator, and double-shovel, single-shovel, and turning plow, consisting in the combination of the two beams A A, each provided with a clevis, *c*, and with a standard, *f*, the shackle *g*, adjustable spread-rod *d*, detachable handle H, the journal-boxes K, detachably connected to the beams A A, the shaft *l*, wheels W, and gear *l*, fixed to said shaft, the crank-shaft *m*, detachably connected to the beams A A and provided with the pinion *n*, the pitman *o*, hopper B, provided with the slide *p* and with the spout A, and the forward standard *f'*, detachably secured between the beams A A, all as shown and described.

3. The combination, with the beams A A, of the curved standards *f*, provided with the eye *t* and with the head *t'*, having a series of bolt-holes, the bolt *s*, and the spread-rod *d*, passing through the beams and through the eye *t* of the standard, and provided with the adjustable clamp-nut *e*, whereby said spread-rod is made to serve the double purpose of tying the rear ends of the beams and securing the standard, as shown and set forth.

4. In combination with the beams A A, wheels W, gear *l*, pinion *n*, crank-shaft *m*, and pitman *o*, the hopper B, provided with the spout A, the sliding plate *p*, provided with transverse slots *u u*, and a plate, *v*, extended across the aforesaid slots and adjustably secured in vertical grooves in opposite ends of the hopper, substantially as and for the purpose set forth.

5. In combination with the hopper B and with the pitman *o* and its actuating mechanism, the reciprocating plate *p*, having upward-turned side edges provided with slots *u u* and spurs *w*, and the gage *v*, having the horizontal V-shaped projection *x* alternately at opposite sides, and extended across the slots *u u* and adjustably secured in vertical grooves in opposite ends of the hopper, all constructed and combined in the manner specified and shown.

260,303. LANTERN-HOLDER. EDWIN LUPKIN, Monroe, Mo. Filed May 9, 1882. (No model.)



Claim.—1. In a lantern-hanger substantially of the within-described construction, the wire L, having loops M M embracing the tube or bail from the bottom, and loops N N projecting slightly above said tube or bail, the lower ends of said wire being secured to the reflector K, substantially as and for the purposes set forth.

2. In a lantern-hanger provided with the wire L, having the loops M M N N therein, substantially as described, the spring-arms P P, having hooks Q Q at their ends adapted to be sprung into said loops N N, retaining said tube or bail between said arms and loops M M, substantially as set forth.

260,304. BOOT OR SHOE. HELEN MARIA MACDONALD, Boston, Mass. Filed Apr. 5, 1880. (No model.)



Claim.—1. A boot or shoe furnished with a series of protectors, located at the points substantially as shown and described, for the purpose stated.

2. A boot or shoe with the protectors B arranged on the back of the same, substantially at the points shown and described, for the purpose stated.

3. A boot or shoe furnished with a series of protectors of practically hard or inflexible material, located at the point or points substantially as shown, for the purpose set forth.

260,305. BOTTLE-STOPPER. PHILIPP MADLENER, Milwaukee, Wis. Filed Jan. 30, 1882. (No model.)



Claim.—As an improvement in bottle-stoppers, the bail composed of a single wire, recurved at D', crossed at *d*, and having its ends bent in from the points *d'* and both secured in the base B, as and for the purpose set forth.

260,306. TELEGRAPHIC RECEIVING-INSTRUMENT. WILLIAM H. MARKLAND, Brooklyn, assignor to James H. Chandler and Albert S. Wheeler, New York, N. Y. Filed Feb. 24, 1882. (No model.)

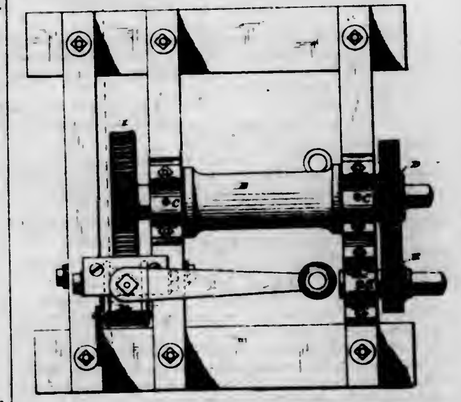
Claim.—1. In a telegraphic receiving-instrument, the combination, substantially as hereinbefore set forth, of an electro-magnet provided with a soft-iron core constructed in two sections, one stationary and the other pivoted and free to vibrate, and a non-magnetic plate uniting the free ends of said movable section.

2. In a telegraphic receiving-instrument, the combination, substantially as hereinbefore set forth, of an electro-magnet provided with a U-shaped soft-iron core constructed in two sections, one stationary and the other pivoted and free to vibrate, and a non-magnetic plate uniting the free ends of said movable section and provided with a projecting lip, and a stop for arresting the motion of said pivoted section.

4. In a telegraphic receiving-instrument, the combination, substantially as hereinbefore set forth, of an electro-magnet provided with a soft-iron core constructed in two sections, one stationary and one pivoted and free to vibrate, an independent stationary soft-iron plate within the magnetic field of said pivoted section, but out of magnetic contact therewith, and a stop for limiting the motion of said pivoted section.

5. In a telegraphic receiving-instrument, the combination, substantially as hereinbefore set forth, of an electro-magnet having a soft-iron core constructed in two sections, one stationary and the other pivoted and free to vibrate, an independent stationary soft-iron plate within the magnetic field of said pivoted section, but out of magnetic contact therewith, and means, substantially such as described, for controlling the angular position of said electro-magnet.

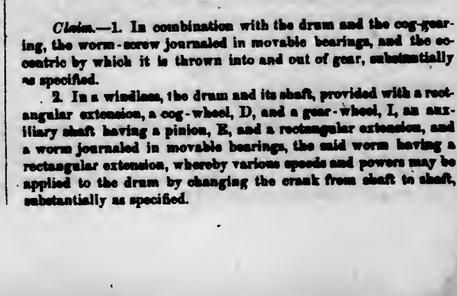
260,307. WINDLASS. THOS. MAHON, Dayton, Ohio, assignor of one-half to James W. Carpenter, same place. Filed Apr. 19, 1882. (No model.)



Claim.—1. In combination with the drum and the cog-gearing, the worm-screw journaled in movable bearings, and the eccentric by which it is thrown into and out of gear, substantially as specified.

2. In a windlass, the drum and its shaft, provided with a rectangular extension, a cog-wheel, D, and a gear-wheel, I, an auxiliary shaft having a pinion, E, and a rectangular extension, and a worm journaled in movable bearings, the said worm having a rectangular extension, whereby various speeds and powers may be applied to the drum by changing the crank from shaft to shaft, substantially as specified.

260,308. STOVE-PIPE SHELF. JOHN MAHONEY, Boston, Mass. Filed Feb. 24, 1882. (No model.)



Claim.—1. In a stove-pipe shelf, the combination of the shelf, the flanged plate, and the screw-bolt, substantially as described.

2. In a stove-pipe shelf, the combination of the shelf, the flanged plate, the screw-bolt, and the nut, substantially as described.

3. In a stove-pipe shelf, the combination of the shelf, the flanged plate, the screw-bolt, the nut, and the washer, substantially as described.

4. In a stove-pipe shelf, the combination of the shelf, the flanged plate, the screw-bolt, the nut, the washer, and the set-screw, substantially as described.

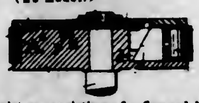
5. In a stove-pipe shelf, the combination of the shelf, the flanged plate, the screw-bolt, the nut, the washer, the set-screw, and the cap, substantially as described.

6. In a stove-pipe shelf, the combination of the shelf, the flanged plate, the screw-bolt, the nut, the washer, the set-screw, the cap, and the ornamental plate, substantially as described.

7. In a stove-pipe shelf, the combination of the shelf, the flanged plate, the screw-bolt, the nut, the washer, the set-screw, the cap, the ornamental plate, and the ornamental nut, substantially as described.

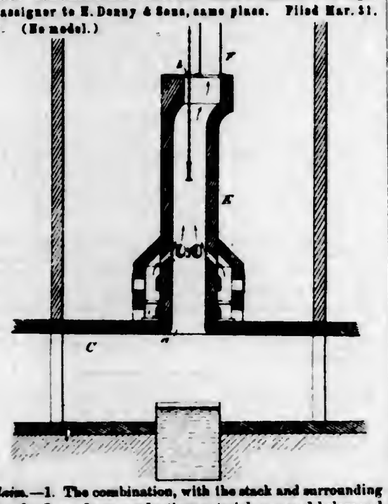
8. In a stove-pipe shelf, the combination of the shelf, the flanged plate, the screw-bolt, the nut, the washer, the set-screw, the cap, the ornamental plate, the ornamental nut, and the ornamental washer, substantially as described.

260,308. PISTON. PERSEUS MCFARREN, Baltimore, Md., assignor of one-half to Robert Eyrehart, same place. Filed Apr. 20, 1882. (No model.)



Claim.—A piston consisting of a flanged head provided with an annular groove concentric with its axis, and with radial grooves extending outward from the annular groove, a follower, a series of expansible packing-rings between the head and follower, laterally-sliding bars within the radial grooves, springs interposed between the sliding bars and packing-rings, a circular plate between the head and follower, provided with a central boss adapted to receive a wrench or key, and with a series of circularly-arranged downwardly-projecting inclined lugs or teeth, a series of wedges interposed between the circular plate and the laterally-sliding bars, and a ratchet mechanism for retaining the circular plate, substantially as described.

260,309. SMOKING APPARATUS. NEIL MCMILLAN, Chicago, Ill., assignor to H. Denny & Sons, same place. Filed Mar. 31, 1882. (No model.)



Claim.—1. The combination, with the stack and surrounding furnace, of a floor of non-conducting material arranged below and supporting the furnace, and having an opening, *a*, and a singeing-room below the furnace, all as specified.

2. The combination of the shaft communicating with the chamber C of the surrounding furnace and tank arranged in the chamber C below the shaft, as set forth.

3. The combination of the shaft E and the chimney F, communicating with the shaft at one side of the center and central opening, *b*, in the cap of the shaft, substantially as described.

260,310. BUTTER AND LARD CUTTER. PATRICK F. MORONEY, Rondout, N. Y. Filed Mar. 8, 1882. (No model.)

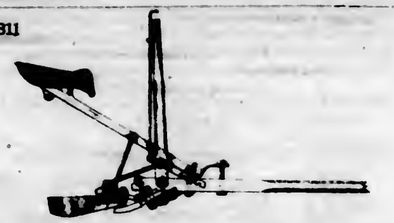


Claim.—A new article of manufacture consisting of a knife for cutting and handling lard, butter, tallow, and like substances, the blade of which is of uniform thickness having parallel edges beveled equally upon both sides its entire length, whereby the cutting-edges are formed centrally between the upper and lower parallel sides of the blade, and further provided with a bent shank adapted to permit the blade to pass close to the sides of the substance or its receptacle, and to secure additional leverage in detaching the substance cut, substantially as shown and described.

260,311. HARROW. FREDERICK MISHWITZ, Millington, N. J. Filed Jan. 23, 1882. (No model.)

Claim.—1. The combination, substantially as set forth, of the tongue or frame, the upwardly-inclined leveler or crusher-bar rigidly secured thereto, the transverse gang-bar in rear of the leveler and hinged thereto, harrow-teeth on the gang-bar, and the driver's seat supported directly on the gang-bar.

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2. The combination, substantially as set forth, of the tongue or frame, the leveler or crusher rigidly secured thereto, the gang-bar or harrow-frame carrying harrowing devices in rear of the leveler, and hinged thereto, and a driver's seat pivoted on the tongue or frame and supported upon the gang-bar.

3. The combination, substantially as set forth, of the tongue or frame, the leveler or crusher rigidly secured thereto, the gang-bar or harrow-frame carrying harrowing devices in rear of the leveler, a driver's seat pivoted on the tongue or frame and supported on the gang-bar, mechanism for adjusting the gang-bar and leveler relatively to each other, and a detent for holding them in their adjusted position.

4. The combination, substantially as set forth, of the tongue or frame, the leveler or clod-crusher rigidly secured thereto, the gang-bar carrying harrowing devices and hinged to the rear of the leveler, the seat-standard pivoted on the frame or tongue and supported on the gang-bar, a lever on the frame or tongue, a link-connection between the lever and gang-bar, and a detent for holding the lever in any desired position, whereby the relation of the gang-bar and leveler to each other and to the ground may be varied.

5. The combination, substantially as set forth, of the frame or tongue, the leveler or crusher rigidly secured thereto, the gang-bar hinged in rear of the crusher, and a pivoted coupling, which also serves as a seat-support between the gang-bar and frame, and which permits the frame and crusher, gang-bar, and coupling to flex vertically to vary their relation to each other.

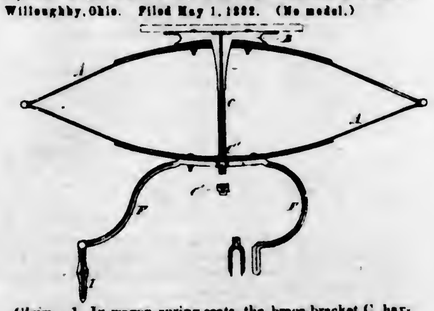
260,312. FOOT-MAT. ANTHONY W. O'BLENIS, New York, N. Y., assignor of one-half to Robert Dunlap, same place. Filed Mar. 21, 1882. (No model.)



Claim.—1. The combination, in a foot-mat, of a tray or box, A, a foot-scraper, C, composed of wire-netting or similar material, and the grate D, supporting the foot-scraper, substantially as shown and described.

2. The combination of a tray or box, A, a foot-scraper, C, the grate D, and the foot-wiper F, attached to the foot-scraper so as to deposit its dirt into the tray or box A, substantially as hereinbefore set forth.

260,313. SPRING-SEAT FOR WAGONS. SOLOMON E. OVIATT, Willoughby, Ohio. Filed May 1, 1882. (No model.)



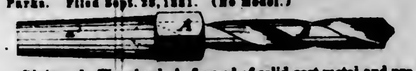
Claim.—1. In wagon spring-seats, the brace-bracket C, having a depending stem loosely fitted in an eye in the plate K of the riser, in combination with the spring A, substantially as and for the purpose set forth.

2. The clip-plates H I, provided with lugs or dowels, whereby the plates are secured to the wagon-sides by means of a screw-bolt and the riser and springs hinged thereto, substantially as and in the manner set forth.

3. The brace-bracket C and block B, forming an integral part thereof, in combination with the spring and riser, substantially in the manner as described, and for the purpose specified.

4. The riser F, having clip-plates provided with lugs hinged thereto, in combination with the brace-bracket C, as arranged in relation to said riser and spring A, substantially as described, and for the purpose set forth.

260,314. DRILL-CHUCK. JOHN A. PARKS and GARDNER V. SHEFFIELD, New York, N. Y.; said Sheffield assignor to said Parks. Filed Sept. 28, 1881. (No model.)



Claim.—1. The chuck A, formed of solid cast metal and provided with a socket, *a*, for the drill-tool and a shank, *a'*, for attaching it to the lathe or drill, substantially as described.

2. As a new article of manufacture, a socketed drill-chuck, A, in combination with a double-ended twist-drill, B, substantially as described and set forth.

260,315. FORCE-FEED GRAIN-DRILL. DAVID H. FARRY, Rushville, Ind. Filed Sept. 21, 1881. (Model.)



Claim.—The combination of the feed-cup A, feed-wheel B, horizontal shaft B' for said wheel, the several fingers C, and the horizontal rod or pivot C', on which said fingers are mounted, all substantially as shown and described, and for the purposes specified.

260,316. SHIRT. ALBERT E. PERKINS, Newton, assignor to Simons, Hatch & Whitton, Boston, Mass. Filed Feb. 27, 1882. (No model.)



Claim.—A shirt having its front an integral part of or in one piece with the body, and having a slit in the body from one or each shoulder downward, and also having along the slit or each of the slits a facing, C, fastened to the body and collar or neckband and extending under the front, all being substantially as set forth.

260,317. ACID TANNATE OF CHINOLINE. WILHELM PICKHARDT, New York, and HERMANN ERDMANN, Brooklyn, N. Y., assignors to said Pickhardt and Adolf Kuttroff, New York, N. Y. Filed May 3, 1882. (Specimens.)

Claim.—As a new article of manufacture, the acid tannate of chinoline having the properties above stated.

260,318. NEUTRAL TANNATE OF CHINOLINE. WILHELM PICKHARDT, New York, and HERMANN ERDMANN, Brooklyn, N. Y., assignors to said Pickhardt and Adolf Kuttroff, New York, N. Y. Filed May 3, 1882. (Specimens.)

Claim.—As a new article of manufacture, the neutral tannate of chinoline having the properties above stated.

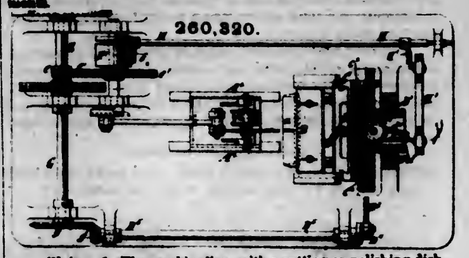
260,319. BASIC TANNATE OF CHINOLINE. WILHELM PICKHARDT, New York, and HERMANN ERDMANN, Brooklyn, N. Y., assignors to said Pickhardt and Adolf Kuttroff, New York, N. Y. Filed May 3, 1882. (Specimens.)

Claim.—As a new article of manufacture, the basic tannate of chinoline having the properties above stated.

260,320. MACHINE FOR CUTTING AND FINISHING THE TEETH OF COMBS. CONRAD PFEFFERBERG, Hamburg, Germany. Filed Dec. 10, 1881. (No model.) Patented in Germany Dec. 2, 1880; in England Mar. 18, 1881, No. 1,190; in Belgium Mar. 26, 1881; in France Mar. 30, 1881, and in Austria-Hungary June 11, 1881.

Brief.—The comb-blank is fed laterally, adjusted vertically, and oscillated transversely to the line of cut by the mechanism shown. The saw has only the rotary and direct reciprocating movements.

260,320.



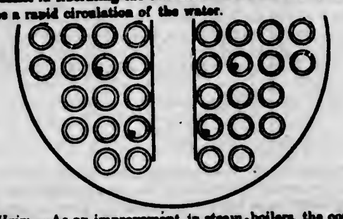
Claim.—1. The combination, with a cutting or polishing disk or tool and carriages providing for the adjustment of the comb or other article, of the support or holder D for said carriages, provided with the rearwardly-extending trunnion or journal D', the bearing A', receiving said journal or trunnion, and mechanism for oscillating said support or holder in a plane transverse to that in which said disk or tool operates, substantially as and for the purpose specified.

2. The combination, with the cutting or finishing disk or tool, of the carriages B' C, the holder or support D for said carriages, with its trunnion or journal D' and arm D^2, and the rod D^3 and crank D^4, connected with said arm, for swinging or oscillating said holder or support in a vertical plane transverse to that in which said disk or tool operates, substantially as and for the purpose specified.

3. The combination of the carriage B', the carriage C, on which the carriage B' may be adjusted vertically, the holder or support D, the spindle *e*, pinion *e'*, and rack e^2, for adjusting the carriage C horizontally in said holder or support; the hollow trunnion D' on the holder or support D, the pawl-lever *d*, passing through said trunnion and engaging with said pinion, and the shaft H, arm H', and connecting-rod H^2, for operating said pawl-lever, substantially as specified.

260,321. STEAM-GENERATOR. DAVID REDSHAW, Cohasset, Mass. Filed Apr. 22, 1881. (No model.)

Brief.—The thimbles retard the heat, by means of which a more rapid generation of steam takes place. The circulating-plates assist in liberating the said steam from the tubes, and thus produce a rapid circulation of the water.



Claim.—As an improvement in steam-boilers, the combination, with the circulating-plates forming the central water-space, of the plugs or thimbles having tapering openings for retarding and retaining the heat within the tubes, said circulating-plates serving to relieve the accumulated steam from said tubes by a constant circulation of water, in the manner set forth and shown.

260,322. PROCESS OF PREPARING A SOLUTION FOR TANNING HIDES AND SKINS. CHAS. RICHTER, St. Paul, Minn., assignor to Peter R. L. Hardenbergh, Ferdinand Willius, Gustav Willius, and A. O. Bailey, same place. Filed Jan. 9, 1882. (No specimens.)

Claim.—The process of preparing the solution aforesaid by mixing water, common salt, clay, sulphuric acid, brewers' yeast, and alum, substantially as set forth.

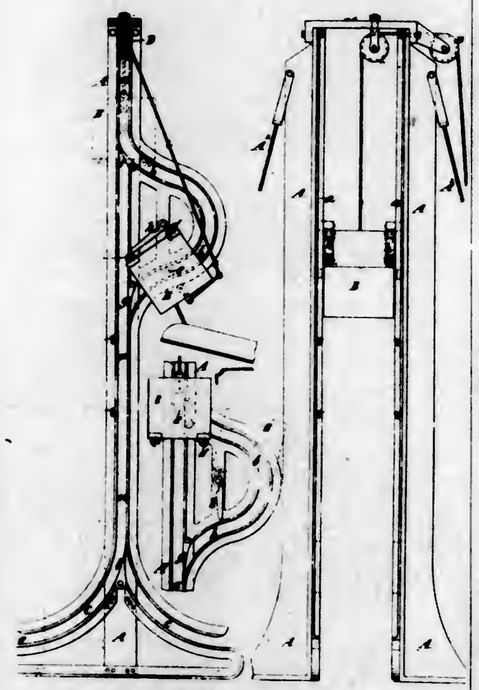
260,323. BOTTLE STOPPER AND FASTENER. JAMES D. ROBERTS, Boston, Mass. Filed May 5, 1882. (No model.)



Claim.—1. A bottle-stopper composed of the open cap A, having a collar to enter the neck of the bottle, and a cork driven into the said cap, combined with links and lever to operate the stopper, substantially as described.

2. The fastening-lever *d*, provided with pivots *d'*, and connected at its ends with the wire *c* about the neck of the bottle, combined with the fastening-links having eyes mounted on the said pivot *d'*, and the hollow open cap A, its ears, the collar *f*, and the small cork *e*, driven into the said cap, all substantially as shown and described.

260,324. HOISTING APPARATUS. WALTER S. ROCKWELL, New York, N. Y. Filed May 23, 1882. (No model.)



Claim.—1. In a hoisting apparatus, the combination, with a bucket provided with trunnions on opposite sides, and uprights provided with main channels or guides and turn-out channels or guides, of switches for directing the bucket through the main channels or guides in its ascent and through the turn-out channels or guides in its descent, and a stop or stops for tipping the bucket while in said turn-out channels or guides, substantially as herein described.

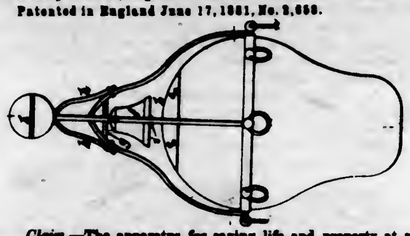
2. The combination of the uprights A, provided with the main channels or guides *a* and the turn-out channels or guides *b*, of the buckets B, provided with trunnions *c*, and the switches *f g*, all arranged substantially as and for the purpose herein described.

3. In a hoisting apparatus, the combination of uprights provided with main channels or guides and turn-out channels, switches at the junction of the turn-out channels or guides with the main channels or guides, a bucket provided with trunnions fitting said channels or guides, and the pivoted tipping-switches for tipping said bucket and for retaining it tipped during its return to the main channels or guides, substantially as herein described.

4. In a hoisting apparatus, the combination of the uprights provided with main and turn-out channels or guides, the bucket working therein, the tipping-switches, and the checking-rollers or devices for retarding the descent of the bucket, substantially as herein described.

5. In a hoisting apparatus, the combination, with the uprights provided with the main channels or guides *a* and laterally-extending branch channels or guides *c*, of the bucket provided with trunnions or rollers *e*, and the switches *l*, for compelling the return of the descending bucket to that side of the apparatus whence it ascended, substantially as described.

260,325. MARINE SAFE. AUGUSTUS D. ROTH, Blackheath, County of Kent, England. Filed Nov. 15, 1881. (No model.) Patented in England June 17, 1881, No. 2,668.



Claim.—The apparatus for saving life and property at sea, consisting of the receptacle *a*, having the removable section *b*, the compartments *c*, formed by the horizontal partitions *d*, provided with doors, combined with the standards A, secured to the receptacle *a*, crossing each other at their upper ends and having a rocking bar, *g*, and the bell *f*, hung upon said bar and provided with a clapper, *i*, suspended therein by a ball-and-socket joint, *j*, substantially as described.

260,326. METHOD OF CLOSING BLANK CARTRIDGES. GEO. P. SALISBURY, New Haven, Conn., assignor to the Winchester Repeating Arms Company, same place. Filed Mar. 13, 1882. (Model.)



Claim.—The method herein described of closing the mouth of cartridge-shells, consisting in first turning the shell inward at different points of its circumference, and later turning in the parts intermediate between said points, substantially as described.

260,327. PROCESS OF OBTAINING SUGAR FROM PLANT-JUICES. CARL SCHEIBLER, Berlin, Germany. Filed Mar. 1, 1882. (No specimens.) Patented in Belgium Jan. 26, 1882, No. 56,999; in France Jan. 26, 1882, No. 147,970; in Great Britain Jan. 26, 1882, No. 398; in Austria-Hungary, Mar. 7, 1882, Nos. 3,315 and 3,997, and in Luxemburg Mar. 13, 1882, No. 190.

Claim.—1. The application of caustic strontium for the separation or purification of the juices of beet-root and other sugar-containing plants.

2. The application of the saccharates of strontium, either the solid saccharate obtained at boiling-heat or the soluble saccharate obtained at the cooling after the removal of the crystallized hydroxide of strontium, for the separation or purification of the juices of beet-root and other sugar-containing plants.

3. The mode of transforming the strontian contained in the obtained slime of separation and saturation into caustic strontian—viz., by forming this slime, with or without admixture of reducing and binding materials, into compact pieces or bricks, which are dried and fired.

4. The mode of treating the parts which remain over in the water after the slaking or solution of the pieces named in the preceding or third claim—viz., with fixed alkali carbonates, with ammoniacal liquors, or with non-sugary dry ashes of beet-root—for the purpose of transforming the phosphate of strontium contained in the said remainders into carbonate of strontium.

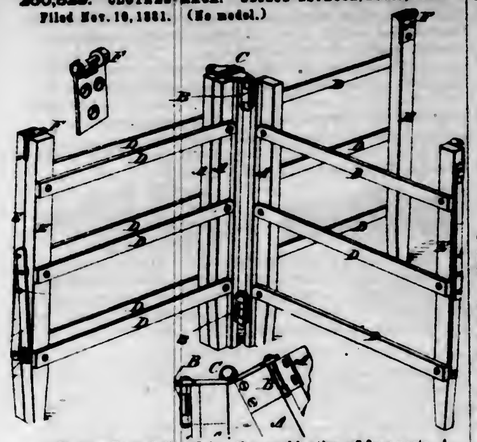
5. The dry distillation of the strontian-containing slimes of separation and saturation before their transformation into caustic strontium described in claim 3, for the purpose of obtaining ammonia-tar, combustible gases, and other products.

260,328. PROCESS OF OBTAINING SUGAR FROM THE JUICES OF PLANTS. CARL SCHEIBLER, Berlin, Germany. Filed Mar. 23, 1882. (No specimens.) Patented in England Jan. 26, 1882, No. 398; in France Feb. 24, 1882, and in Belgium Mar. 4, 1882, No. 57,236.

Claim.—1. The process of decomposing the hot precipitate of strontium saccharate after cooling which consists in the systematic lixiviation with water or cold saturated strontium solution by allowing the latter to become gradually concentrated in its passage from the most lixiviated saccharate to the least lixiviated saccharate in a battery of vessels containing such saccharate, as set forth.

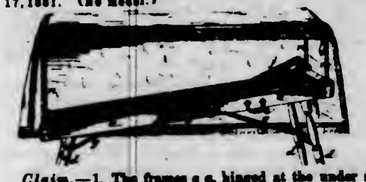
2. In the method of decomposing the strontium saccharates, forming the same into bricks or blocks while yet warm and plastic, allowing the bricks or blocks as formed to cool before lixiviating the same, as described.

260,329. CLOTHES-RACK. GEORGE SETHUSS, Boone, Iowa. Filed Nov. 10, 1881. (No model.)



Claim.—In a clothes-drier, the combination of four posts, A, connected in pairs by the hinges B, and having a top hinge, C, through which pass the pintles of hinges B, the posts E, connected in pairs by separable hinges F at their upper ends, and the bars D, pivoted to said posts A E, as and for the purpose specified.

260,330. EMBALMING AND COOLING BOARD FOR CORPSES. NOAH T. SHAW, Columbus, Ohio, assignor of two-thirds to William S. Carlile and John C. Sherwood, same place. Filed Aug. 17, 1881. (No model.)



Claim.—1. The frames *a a*, hinged at the under side, the braces *g g*, hinged on opposite sides of the frame-connecting hinges, and having at their free ends a grooved or recessed pin, *i i'*, and the round of the legs *d*, having a lipped socket, *f f'*, the said braces being adapted to be sprung into said socket over its locking-lip *f'*, and to exert thereby a firm upward bracing and supporting action upon the hinged ends of the frames and an outward force upon the legs and their abutments *c*, all constructed and combined for use substantially as described, for the purpose specified.

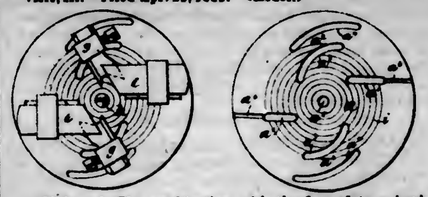
2. In combination, the hinged folding sections or frames, the hinged legs of unequal length, the hinged braces, and the safety-locking device, consisting of a grooved or recessed pin carried by the braces, and a lipped socket in the cross-bar of the legs, adapted to receive said grooved pin and form thereby an automatic lock for the legs and for the braces when the embalming and cooling board is in use, substantially as described.

3. The hinged folding frames *a a*, provided with the corner-abutments *c*, the legs of unequal length hinged to said frames and supported by said abutments, the braces *g*, hinged at the joining of said frames, the rounds of said legs provided with lipped sockets *i*, and the ends of said braces provided with recessed or notched pins *i*, constructed and combined for use in a folding embalming and cooling board, substantially as described.

4. The hinged folding frames *a a*, provided with the corner-irons *l*, formed with vertical tapering sockets *m*, adapted to receive removable button-posts *n*, having tapering ends and of unequal length, forming a canopy-support, substantially as described, in combination with hinged legs of unequal length and the braces for said legs, whereby the canopy is supported in horizontal and symmetrical relation with an inclined board.

5. A cooling-board consisting of the hinged sections *a a*, provided with hinged legs of unequal length braced from the middle of said board by automatic locking-braces *g g*, the tapering socket corner-irons *l m*, the corner-abutments *c*, the adjustable head-rest, and posts *n*, of unequal length, adapted to form a removable canopy-support, the legs having the greatest length supporting the head of the board and the posts having the least length supporting the head of the canopy.

260,331. TENONING-MACHINE. JEREMIAH SHEPLER, Taylorville, Ill. Filed Apr. 22, 1882. (Model.)

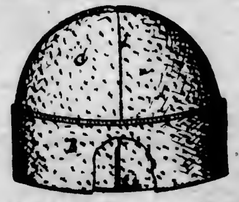


Claim.—1. The combination, with the face-plate *a*, having concentric lines *i* and slots a^2 a^3 a^4 a^5, of the bracket tool-posts *b c*, provided with bolts b^4 c^4 and pins b^5 c^5, and adapted to carry the tools *e f*, substantially as set forth.

2. In a tenoning-machine, the tool-post *b*, secured to the face-plate by bolt b^4 and pin b^5, and having its top bar b^2 provided with rib or flange b^3, projected upwardly therefrom, and its forward portion, b^1, cut away, as shown, and adapted to carry the shoulder-forming tool *e*, substantially as described.

3. The bracket tool-post *c*, secured to the face-plate by bolt c^4 and pin c^5, and having the forward side of its top bar c^2 and edge of bar c^3 cut away to form the shoulder c^1, against which rests the side planing tool *f*, clamped to bar c^2, substantially as described.

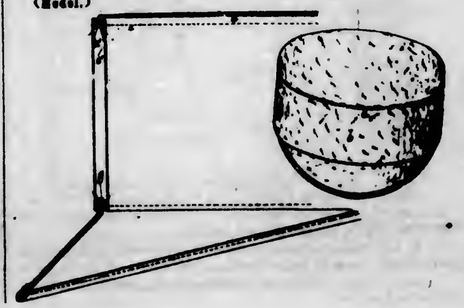
260,332. BAND-CAP. SALI SIMONSON, New York, N. Y., assignor to himself, William Finster, Brooklyn, and William B. Willis, New York, N. Y. Filed May 31, 1882. (Model.)



Claim.—1. The combination, substantially as hereinbefore described, of the folding annular band made of a textile covering and a water-proof lining, the main crown secured to said band and composed of two sections—one of textile material and the other of water-proof material—and the semi-crown made of textile covering and water-proof lining separate from the main crown and united therewith by the median seam which connects the adjacent edges of the two sections of said main crown.

2. The combination of the folding band made of a textile covering and a water-proof lining, the main crown secured to said band and composed of two sections united by a seam at their adjacent edges, one section composed of textile material and the other of water-proof material, the semi-crown made of textile covering and water-proof lining separate from the main crown and united therewith at the median seam which unites the two sections of the main crown, the lower portions of the semi-crown being detached, and the straps connecting the detached portions of the semi-crown with the main crown, substantially as and for the purpose described.

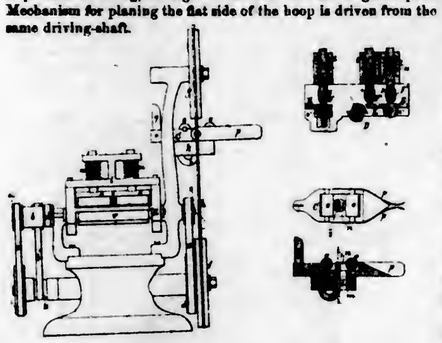
260,333. REVERSIBLE HAT OR CAP. SALI SIMONSON, New York, N. Y., assignor to himself, William Finster, Brooklyn, and William B. Willis, New York, N. Y. Filed May 27, 1882. (Model.)



Claim.—As a new article of manufacture, the hat or cap herein described, composed of a covering of textile fabric and a lining of water-proof material connected together with the raw edges of the united parts concealed between the textile fabric and water-proof lining, whereby the hat or cap can be turned inside out to expose the water-proof lining and present a finished appearance without the necessity of unfolding parts of the hat or cap, substantially as set forth.

260,334. MACHINERY FOR MANUFACTURING BARREL-HOLD HOOPS. NATHAN P. STEVENS, Concord, N. H., assignor to himself and Lorenzo D. Brown, same place. Filed Apr. 17, 1882. (No model.)

Brief.—The hoop-pole is fed to a band-saw over a table, which is pivoted on a ring, through which the saw and its guide pass. Mechanism for planing the flat side of the hoop is driven from the same driving-shaft.

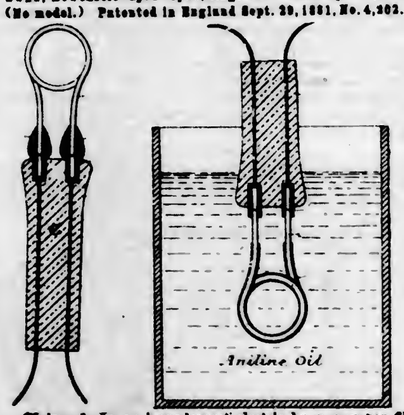


Claim.—1. The combination of the vibratory hoop-pole supporter C and its sustaining arm or bracket *h*, provided with the tubular journal *m*, with the stationary slitted post *i*, and with the endless band-saw arranged to extend into and down through such post and the supporter and its journal, as set forth.

2. The vibratory hoop-pole supporter C, provided with the springs *p p* and hoop-guide *q*, arranged with and adapted to it, substantially as set forth.

3. The combination of the stand and its driving-shaft, and mechanism for operating the endless saw, with the dressing mechanism applied to the said driving-shaft and stand, and having its cutter-cylinder supported by such shaft, all being substantially as set forth.

260,335. INCANDESCENT ELECTRIC LAMP. JOSEPH W. SWAN, Newcastle-upon-Tyne, England. Filed Apr. 17, 1882. (No model.) Patented in England Sept. 29, 1881, No. 4,202.



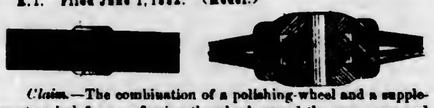
Claim.—1. In an incandescent electric lamp, a carbon filament united by a carbon deposit of the character described to the metallic conbuts, substantially as set forth.

2. The method of uniting the ends of the carbon filaments to the metallic conbuts by producing a local electrical heating, and thereby forming a coating or deposit over the junction, substantially as described.

3. In the production of a carbon deposit through electrical heating, the improvement consisting in immersing the article to be covered in aniline-oil and electrically heating it while so immersed, substantially as described.

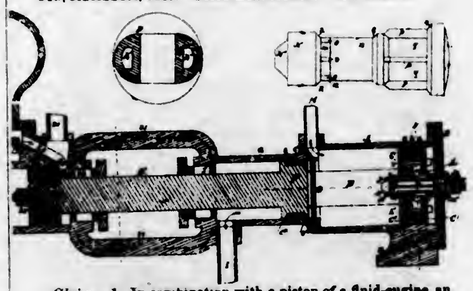
4. In producing the local carbon deposit above mentioned, the improvement consisting in applying a metallic deposit by electrical action to the part of the filament required to be kept cool, and on which the carbon deposit is not to take place.

260,336. POLISHING-WHEEL. ELLIS THAYER, Pawtucket, R. I. Filed June 1, 1882. (Model.)



Claim.—The combination of a polishing-wheel and a supplementary hub for re-enforcing the wheel around the core, composed of clamps indented in the sides of the wheel and united by a spindle formed of the shanks of the clamps, which slide one into the other, substantially as described and illustrated.

260,337. STEAM PUMPING-ENGINE. BENJAMIN C. VARDUZEN, Cincinnati, Ohio. Filed Aug. 6, 1881. (No model.)



Claim.—1. In combination with a piston of a fluid-engine, an automatic reciprocating valve located and operated entirely within the cylinder, the ports being arranged substantially as shown, by means of which the steam is admitted to the cylinder in front of the piston, and after the engine has made its first stroke the steam is admitted through the piston to the cylinder-space behind the rear face of the piston, (the cylinder-space in front of the piston at the same time continuing full of steam,) and after the engine has completed its return-stroke is exhausted through the piston-port, substantially as and for the purposes specified.

2. In combination with the main piston, the automatic reciprocating valve located and operating entirely within the cylinder, and exhaust-ports extending to supplemental piston, and final exhaust-ports in supplemental piston, substantially as and for the purposes specified.

3. The combination of steam-cylinder, piston provided with reciprocating valve located and automatically operated entirely within the cylinder, devices for softening the force of the impact of the meeting between valve and the part actuating said valve, exhaust-port combined with said piston and connected to exhaust-ports extending to supplemental piston, and final exhaust-port in supplemental cylinder, substantially as and for the purposes specified.

4. The combination of the cylinders A and G and supplemental piston F, and piston C, provided with reciprocating valve J and valve-shell L, and devices for softening the impact of either end of said valve, substantially as and for the purposes specified.

5. The combination of cylinders A and G and supplemental piston F, and bumper O, and piston C, provided with reciprocating valve J, having spring N', and cylinder end B, having spring M', substantially as and for the purposes specified.

6. The combination of reciprocating piston C, provided with reciprocating valve J, having spring N', and cylinder end B, screw-shell M, and spring M', and set-screw M', substantially as and for the purposes specified.

7. The reciprocating piston C, provided with reciprocating valve J, having spring N', and cylinder end B, screw-shell M, spring M', and set-screw M', substantially as and for the purposes specified.

8. The piston C, composed of the disk C', having projection A, and disk C', having projection *h'*, and devices for securing same together, in combination with valve-shell L, containing the reciprocating valve J, substantially as and for the purposes specified.

9. The piston C, composed of the disk C', having projection A, and disk C', having projection *h'*, secured together, and port K, in combination with valve-shell L, valve J, having ports *n n*, and exhaust-ports K' K', substantially as and for the purposes set forth.

10. The valve J, having seats 2 4 6 and ports *n* and *n*, wings *p*, and exhaust-ports *q*, substantially as and for the purposes specified.

11. The valve J, having seats 2 4 6 and ports *n* and *n*, wings *p*, exhaust-ports *q*, and end S, having spring N', substantially as and for the purposes specified.

12. The valve J, having seats 2 4 6, ports *n* and *n*, constructed in two sections, one section composed of end 10, wings *p*, and having spaces *q* and cylinder 11, and the other section composed of the end S, provided with spring N', and the pieces 9, substantially as and for the purposes specified.

13. The piston provided with reciprocating valve, located and automatically operated entirely within the cylinder, in combination with the exhaust-port K and exhaust-port K', extending longitudinally within the cylinder and connected to the supplemental piston having port K', substantially as and for the purposes specified.

14. The combination of the piston C, provided with reciprocating valve, provided with spring N', bumper O, and exhaust-port K, and the connection containing the exhaust-ports K' and slot D', supplemental piston containing port K', and supplemental cylinder containing port I, substantially as and for the purposes specified.

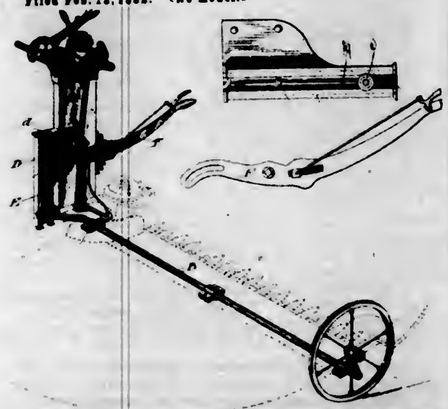
15. The combination of cylinder A, having inlet-port H, piston C, having reciprocating valve J, provided with seats 2 4 6, ports *n n*, and exhaust-ports *q*, spring N', sliding in shell L, having seats 3 5 7 and exhaust-ports *g* and the port K, and the connection D, containing ports K' and the slot D', supplemental piston F, having exhaust-port K', supplemental cylinder having exhaust-port I, bumper O, and cylinder end B, having spring M', substantially as and for the purposes specified.

16. The combination of cylinder A, supplemental cylinder G, pump-cylinder 20, and pistons C, F, and 21, arches 31, and reciprocating valve J, located and automatically operated entirely within the cylinder, substantially as and for the purposes specified.

17. The combination of cylinder A, supplemental cylinder G, and the piston C, provided with reciprocating valve J, connection D, and the supplemental piston F, and piston-rod E, the front disk of the piston C and connection D and supplemental piston F and piston-rod E being cast in one piece, substantially as and for the purposes specified.

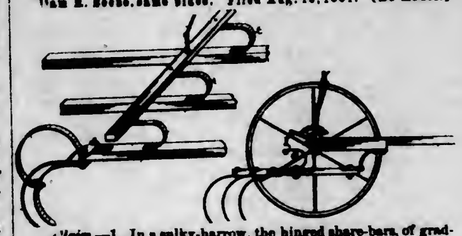
18. The combination of cylinder A, supplemental cylinder G, and the piston C, provided with reciprocating valve J, connection D, and the supplemental piston F, the front disk of the piston C and connection D and supplemental piston F being cast in one piece, substantially as and for the purposes specified.

260,338. HARVESTER. MARSH VAN MATTESON, Chicago, Ill. Filed Feb. 13, 1882. (No model.)



Claim.—The combination, in a grain-harvester, of the grain-wheel G, rock-shaft B, perpendicular guide D, having the slot *d*, adjustable slide E, arranged to move up and down in the guide D, and arm or lever F, for operating the adjustable slide, the whole being arranged and operating in such a way that the driver from his seat may raise or lower the outer end of the platform, substantially as described, and for the purposes set forth.

260,339. SULKY-HARROW. JAMES H. WELLER, Kalamazoo, Mich., assignor of one-half to Samuel H. Walbridge and William R. Roche, same place. Filed Aug. 18, 1881. (No model.)



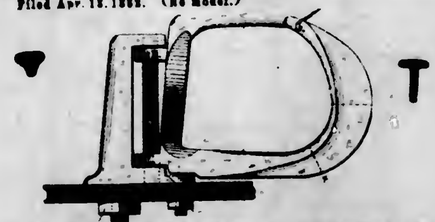
Claim.—1. In a sulky-harrow, the hinged share-bars, of graduated lengths, provided with the graduated springs, and the transverse bar connecting said springs with the lifting-lever, all in combination, substantially as set forth, to effect the purpose specified.

2. The combination, with the harrow-beam, of the curved tooth *a'*, attached to the rear end thereof, and at one side of said rear end, the auxiliary tooth having its shank laterally and rearwardly bent, for the purpose specified, substantially as shown.

260,340. METHOD OF EXTRACTING CRYSTALLIZABLE SUGAR FROM MOLASSES, &c. AUGUST WERNICKE, Halle-on-the-Saale, and WILHELM PFEIFFERER, Stasch, Prussia, Germany. Filed May 22, 1882. (No specimens.)

Claim.—The method of obtaining crystallizable or crystallized sugar from raw sugar, saccharine juices, strup, and molasses by adding concentrated acetic acid to the raw sugar or the saccharine liquor, allowing the sugar to separate or crystallize out, liberating the sugar from the mother-lye by mechanical means, and finally evaporating the residue of acetic acid or water or of acid and water, substantially as hereinbefore described.

260,341. OAR-LOCK. RICHARD D. WILLIAMS, Baltimore, Md. Filed Apr. 18, 1882. (No model.)

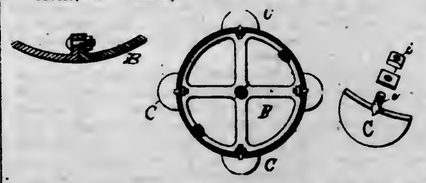


Claim.—1. A swiveled rowlock having a substantially-straight rowing-face inclined to the rear and a base substantially at right angles therewith, whereby a lifting-pull is secured during the stroke, and the blade of the oar is inclined to the surface of the water pending the recover, as set forth.

2. A swiveled rowlock having a forward extension of its rear face above the oar, and an arm or bar rigidly secured to or integral with its rowing-face, and extending diagonally outward from the plane of the lock and over the oar, as set forth.

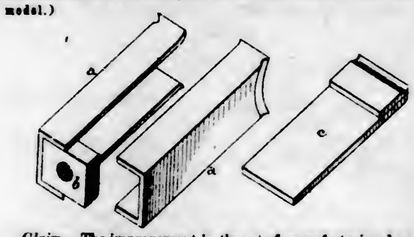
3. A swiveled rowlock having its rear portion curved substantially in the arc of a circle and overlapping the oar at the top, and provided with a rigid arm projecting outward over the oar, and secured to or integral with its forward portion or rowing-face, as set forth.

260,342. REVOLVING HARROW. CASPER WILLIAMSON, Fincastle, Va. Filed Apr. 5, 1882. (No model.)



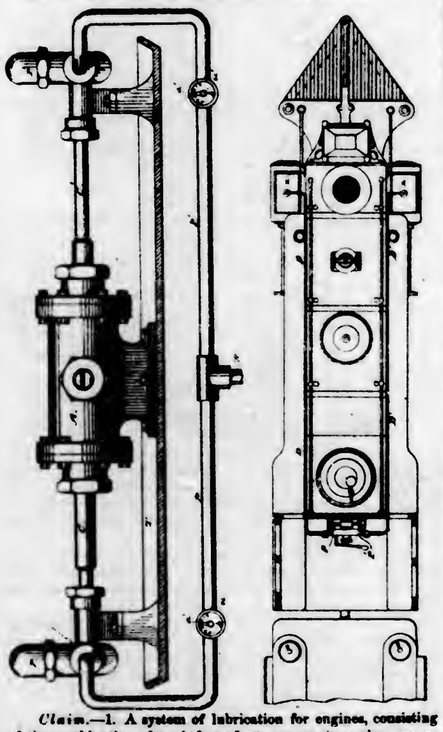
Claim.—In a revolving harrow, in combination with the cylinders B, the teeth C, having their cutting-edges made in the form of a half-circle, their bases curved to conform to the sides of said cylinders, and secured thereto by the studs *c* and nuts *d* substantially as shown and described.

260,843. MANUFACTURE OF DRAW-HEADS. LEVI YARDLEY and SAMUEL K. DUFF, Allegheny, Pa. Filed Feb. 11, 1882. (No model.)



Claim.—The improvement in the art of manufacturing draw-heads herein described, namely: forging and preparing the side pieces, *a*, end piece, *b*, re-enforcing-pieces *c*, and loop *d*, then welding these pieces together, and then compressing the article so made in a die and on a mandrel to impart to it proper form, substantially as set forth.

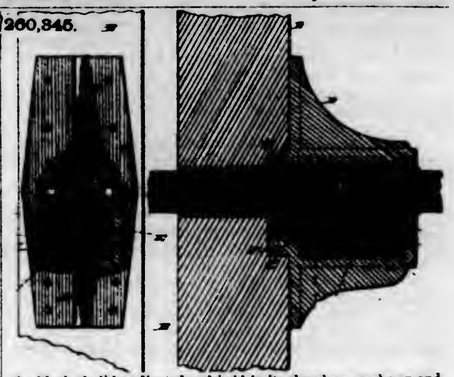
260,844. AUTOMATIC LUBRICATOR. CHARLES O. YALE, New York, N.Y. Filed Mar. 11, 1882. (No model.)



Claim.—1. A system of lubrication for engines, consisting of the combination of an independent or separate engine, one or more pumps, pipes leading thereto from a reservoir or source of supply of a lubricating material, and a pipe or pipes leading from the pumps to the points to be lubricated, arranged substantially as and for the purpose set forth.

2. The combination, in a system of lubrication, of an independent or separate engine, one or more pumps, a pipe or pipes leading thereto from a reservoir or source of supply of a lubricating material, and provided with graduated leak-cocks, and pipes leading from the pump or pumps to the points to be lubricated, arranged substantially as and for the purposes set forth.

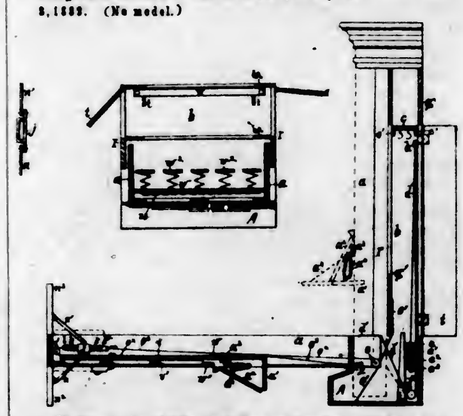
260,845. BEARING FOR PROPELLER-SHAFTS. GEORGE W. SASTROW, Baltimore, Md. Filed Mar. 16, 1882. (No model.)



Claim.—1. In a bearing for screw-propellers, the combination, with a housing, of a bearing-block having transverse grooves in its bottom, and a plate having ribs to fit into the grooves, whereby the block shall be adjusted and held in its chambers, as shown and described.

2. In a bearing for screw-propellers, the combination, with the stern-post, of the housing provided with an opening at one side, the bearing-block having its base made broader than the diameter of the shaft, and provided with transverse grooves in its under surface, the plate having ribs to fit in the grooves of the bearing-block, and means for closing the opening in the side of the housing, substantially as shown and described, and for the purpose set forth.

260,846. FOLDING BED. WILLIAM ZIMMERMAN, Chicago, Ill., assignor of one-half to Martin C. Burt, same place. Filed Jan. 3, 1882. (No model.)



Claim.—1. In a folding bed, the combination, with the rails *a*, hinged at *x*, of the cords a', pulleys *d*, weights $e\ e'\ e^2\ e^3$, and cords $f\ m\ m'\ m^1$, substantially as specified.

2. In a folding bed, the combination, with the rails *a*, hinged at *x*, of the cords a', pulleys *d*, weights $e\ e'\ e^2\ e^3$, cords $f\ m\ m'\ m^1$, and springs *i*, substantially as specified.

3. In a folding bed having side rails operating pivotally around a fixed point located between their ends, and provided with roller *o*, constructed to turn by mechanism operated by the motion of the side rails, the block *j* and mechanism constructed to operate the parts $n^2\ n^3$, substantially as specified.

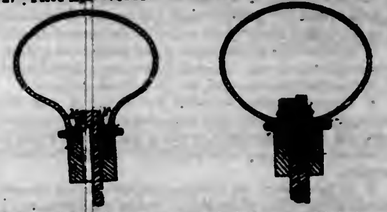
4. In a folding bed, the combination, with the block *j*, provided with hinged rods $n\ n'$, operating the hinged parts $n^2\ n^3$, pulleys l', and cords $o^2\ o^3$, of mechanism arranged to operate said parts by the motion of the rails *a*, substantially as specified.

5. In a folding bed, the rails *a*, provided with writing-desk and adjustable lid a^3, in combination with the chain a^4, provided with adjustable stud and socket-piece a^5, all constructed substantially as and for the purpose specified.

6. In a folding bed, the hinged rails *a* and ventilated frame g', in combination with the frame *g* and board *c*, forming closet *b*, and sides *r*, provided with doors *t*, substantially as specified.

7. In a folding bed, the hinged rails *a*, in combination with the frames $g\ g'$, forming a closet, *b*, extending the entire length of the rails *a*, and movable board *c*, substantially as specified.

260,847. DOOR-KNOB. JOHN SELLERS, Newark, N.J., assignor to the Hopkins & Dickinson Manufacturing Company, of New York. Filed Apr. 7, 1882. (No model.)



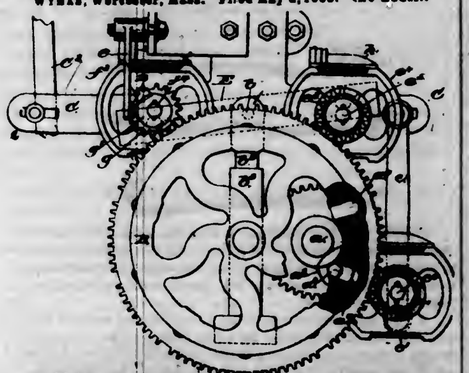
Claim.—A door-knob composed of a hollow metallic bulb perforated to receive a shank the end of which is slit longitudinally, and thereby formed into tongues, which, after the insertion of the shank into the opening in the bulb, are bent outwardly against the interior surface of the bulb, the shank being provided near its end with a shoulder which forms a bearing for the exterior of the bulb, and between which and the bent-over tongues portions of the shell of the bulb are securely confined, substantially as shown and described.

260,848. MOLE-TRAP. JAMES REID, Paterson, N.J. Filed Apr. 8, 1882. (No model.)



Claim.—The combination, in a mole-trap, of a frame terminating at the lower end as prongs to enter the earth, a weight sliding in that frame, a single range of spikes upon the weight, a tripper, and toggle-link at each side of the frame and weight, substantially as set forth, whereby the trap is discharged when the second tripper is moved, substantially as specified.

260,849. MECHANISM FOR CONVERTING MOTION. HORACE WYMAN, Worcester, Mass. Filed May 4, 1882. (No model.)



Claim.—1. A horizontally-sliding duplex gear, *d*, having two series of teeth, and teeth 6 7, removed one or more spaces therefrom to constitute toothless or blank spaces, as described, and shaft d^2, upon which the said gear is splined to be reciprocated, combined with the rotating master-gear to operate the said duplex gear and shaft d^2 half a revolution at a time, substantially as described.

2. The master-gear combined with the crank-shaft and a gear thereon having isolated teeth, or teeth removed one or more spaces from the main series of teeth of the latter gear, either of which isolated teeth may be placed in position to be engaged by the teeth of the master-gear to partially rotate the said crank-shaft, substantially as described.

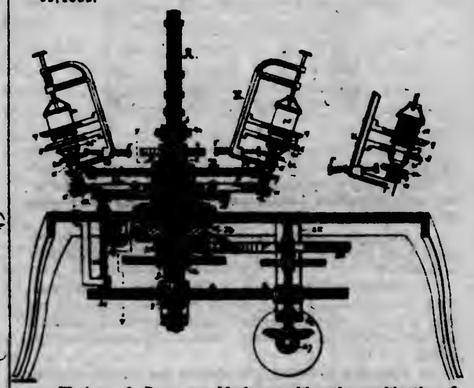
3. The shaft f^2 and the gear *g* thereon, combined with separate and independent teeth 12 14, adapted to be placed alternately in line with the teeth of gear *g* at suitable intervals, substantially as described.

4. The two pivoted levers C E, combined with the slide-rod b^2 and guide for it, to prevent the levers from tipping over, substantially as described.

5. The master-gear and two or more shafts having gears provided with two series of teeth, and with spaces next them from which the teeth have been removed, to permit the teeth of the master-gear to run out from mesh with and to subsequently engage the teeth of the said gear, substantially as described, and crank-pins carried by the said shafts, combined with levers connected with and actuated intermittingly by the said crank, substantially as described.

REISSUES.

10,141. CAN-SOLDERING MACHINE. WILLIAM D. BROOKS, Baltimore, Md., assignor to himself and D. D. Mallory, same place. Filed May 8, 1882. Original No. 234,948, dated Nov. 30, 1880.



Claim.—1. In a can-soldering machine, the combination of can-carrying devices, mechanism for supporting and revolving them intermittingly about a common axis, and mechanism for imparting to each of the can-carrying devices a positive rotary motion, continuing after the cans leave the point of heating, substantially as described.

2. In a can-soldering machine, a wheel supporting can-carrying devices, mechanisms for imparting to the wheel and said can-carrying devices an intermittent revolving motion about the axis of the wheel, and mechanism for imparting to the can-carrying devices a positive rotary motion after leaving the heating-point, substantially as described.

3. In a can-soldering machine, a wheel supporting rotary can-carrying devices in brackets fixed to said wheel, mechanism for imparting intermittent motion to the wheel, a pinion, 11, connected with the can-carrying devices, a gear-wheel, C, and mechanism for imparting constant movement thereto, whereby the cans are revolved independently of the motion of the wheel, substantially as described.

4. In a can-soldering machine, the combination, with a series of can-carrying devices, of mechanism for imparting to said devices intermittent revolution about a common axis, and a positive continuing rotation of each of the series about its own axis after the solder is applied, and a brake mechanism for arresting the revolution of one of the cans.

5. In a can-soldering machine, the combination of the supporting-post A, the lever sleeve 12, having the ratchet-wheel 15, means for imparting an intermittent rotary motion to such wheel 15, and the wheel B, supporting revolving can-holders, and means for imparting to the same a positive rotary movement after the solder is applied.

6. In combination, the sleeve 12, the shaft A, the ratchet-wheel 15, the lever 26, having spring-pawl 32 and loop 30, and the crank-arm 31.

7. In combination, the sleeve carrying wheel B, the pawl 32, wheel 15, and lever 26, with a ratchet, pawl, and cam for holding said wheel stationary.

8. The combination of the wheel 12 on sleeve 12, having teeth with V-shaped notches, with the pawl 32, having a correspondingly V-shaped tooth, the spring 37, and the cam 36 on shaft 35.

9. The combination of the sleeve 12, carrying wheel B, the pawl-and-ratchet mechanism for moving the same, and the brake 17, substantially as described.

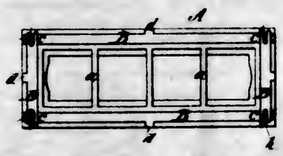
10. The combination of the wheel E, carrying can-holders, the cog-wheels C and D, and the shaft and pinions connecting said wheels with the wheel 1, whereby continuous-rotary motion is given the can-holders, substantially as described.

11. The combination, with the wheel E, of the fixed inclined bracket H, the shaft 14, rotating in hollow shank of said bracket, the pinion 11, and the spiders, substantially as described.

12. The combination of the cam 4, suspended block 30, brake-rod 5, spring 41, and wheel 42 with the can-supporting devices, substantially as described.

13. The can-supporting rim 7, in combination with removable bottom 46, substantially as described.

10,142. BALANCED SLIDE-VALVE. JOHN J. DE LANCEY, Binghamton, N. Y. Filed May 3, 1882. Original No. 179,603, dated June 26, 1876.



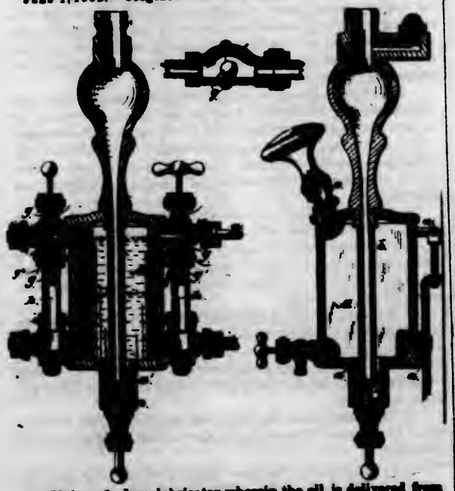
Claim.—1. The slide-valve A, formed with plane or flat sides combined together in a steam-chest, with the face or balance plate D fitting closely in the steam-chest, the lugs *a*, and bars *f*, the latter having projections *j*, which enter notches *k* in the balance-plate D, substantially as shown and described.

2. The square packing-bars B, connected at their ends by lap-joints *c*, and provided with lugs *d*, working in slots, substantially as described.

3. The face or balance plate D, fitting closely in the steam-chest, with openings *i* in the corners, lugs *e*, for supporting the plate in position, the adjusting-bars *f*, and set-screws *l m*, combined together and with the steam-chest, substantially as shown and described.

4. The valve A, formed with plane or flat sides, in combination with the square packing-bars B, connected at their ends by lap-joints, the lugs *d*, working in slots, substantially as described, and the face or balance plate D, substantially as shown and described.

10,143. LUBRICATOR. TIMOTHY HOLLAND, Troy, N. Y. Filed June 1, 1882. Original No. 243,900, dated July 5, 1881.



Claim.—1. In a lubricator wherein the oil is delivered from an oil-reservoir to a transparent feed-indicating vessel or tube in the form of drops, the combination, with said indicating vessel or tube, of a steam-pipe for delivering steam upon the oil and impelling or driving it through the vessel or tube in visible drops.

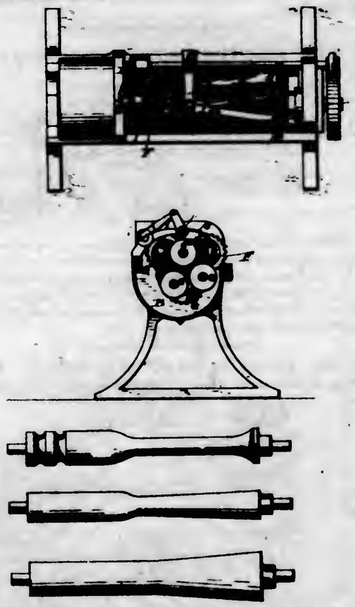
2. The combination, with the transparent feed-indicating tube of a lubricator through which the oil passes in its transit to the part to be lubricated, of a steam-pipe for delivering steam upon the oil as it enters or passes through said transparent feed-indicating vessel or tube, substantially as and for the purpose described.

3. In a lubricator, the nipple *g'*, extended down a short distance within tube *h* and cut out to form a steam-deflecting chamber, substantially as described, for the purpose set forth.

4. The combination, with two devices, one at each side, for conveying the oil separately to each chest, of an oil-reservoir, A, having the bottom chamber, *a'*, and a partition extending down into but not quite to the lower end of said chamber, as shown and described.

5. In lubricators, the combination, with an oil chamber or reservoir fitted with a steam-supply pipe, of two oil-conduit pipes and outflow-pipes for delivery of the oil to the separate chests of a locomotive, and a steam-pipe connecting the outflow-pipes directly to the boiler, substantially as shown and described.

10,144. MACHINE FOR FELTING HAT-BODIES. JAMES S. TAYLOR, Danbury, Conn. Filed May 6, 1882. Original No. 194,566, dated Aug. 28, 1877.



Claim.—1. The combination of rollers arranged to form a chamber unobstructed above for the convenient reception of goods to be felted, substantially as set forth, and whereby the same may be readily inserted without effecting change in the position of any part of the machine.

2. The combination, with a vat for holding hot water, of rollers suspended partially below the upper surface of the vat and arranged to form a receiving-chamber unobstructed above for the convenient reception of goods to be felted, substantially as set forth, and whereby the same may be readily inserted without effecting change in the position of any part of the machine.

3. The combination of the three rollers, *c d d'*, constructed as shown and described, and arranged with their axes diagonally crossing each other, for the purpose specified.

4. The combination of the felters F F with the rollers *c d d'*, arranged with their axes diagonally crossing each other, in the manner and for the purpose as described.

5. The rocking felter or felters F, in combination with the rollers *c d d'*, for the purpose of imparting to the material to be felted a positive, rotary, and felting motion in the process of felting, substantially as shown and described.

6. The combination of the springs *e e*, felters F F, and rollers *c d d'*, in the manner and for the purpose as described.

THE HELIOTYPE PRINTING CO 211 TREMONT ST BOSTON.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

THE WEBSTER LOOM COMPANY *v.* HIGGINS *et al.*

Decided May 8, 1882.

1. SPECIFICATION—DESCRIPTION OF INVENTION.
   A specification in letters patent is sufficiently clear and descriptive when expressed in terms intelligible to a person skilled in the art to which the invention belongs.
2. SAME—EVIDENCE MAY BE ADMITTED IN COURT TO EXPLAIN TERMS.
   Evidence is admissible to show the meaning of terms used in a patent, as well as the state of the art, for the purpose of enabling the court or jury to understand it.
3. SAME—PARTS OF THE INVENTION—HOW TO BE READ.
   If an improvement of a well-known appendage to a machine is fully described in a specification, it is not necessary to show the ordinary modes of attaching the appendage to the machine. The patent is to be read as if the machine and its appendage were present or in the mind of the reader, and he a person skilled in the art.
4. SAME—DEFENSE OF INSUFFICIENT DESCRIPTION.
   Query, whether the defense of insufficient description can be set up without alleging an intent to deceive the public?
5. INVENTION—NEW COMBINATIONS OF OLD DEVICES.
   A new combination of known devices producing a new and useful result (as that of greatly increasing the effectiveness of a machine) is evidence of invention, and may be the subject of a patent.
6. SAME—SAME—WEBSTER'S PATENT, NO. 130,961, GRANTED AUGUST 27, 1872, SUSTAINED.
   Webster's improvement in looms for weaving pile fabrics, which consisted in such a new combination of known devices as to give to a loom the capacity of weaving fifty yards of carpet a day, when before it could only weave forty, *Held* to be patentable, and his patent for the same, dated August 27, 1872, sustained.
7. PRIORITY OF INVENTION—PUBLIC USE.
   Of two original inventors the first will be entitled to a patent unless the other puts the invention into public use more than two years before the application for a patent.
8. SAME—DRAWINGS MAY ESTABLISH.
   An invention relating to machinery may be exhibited as well in a drawing as in a model, so as to lay the foundation of a claim to priority, if sufficiently plain to enable those skilled in the art to understand it.
9. PRIORITY OF INVENTION AS DEFENSE—PRACTICE IN THE COURTS.
   Though the defense of prior invention ought to be set out in the answer, yet if the omission to set it out is not objected to at the proper time in the court below it cannot be objected to in this Court.

APPEAL from the Circuit Court of the United States for the Southern District of New York.

Mr. E. N. Dickerson for the appellant.

Mr. Geo. Gifford and *Mr. Wm. M. Evarts* for the appellees.

Mr. Justice BRADLEY delivered the opinion of the Court.

The bill in this case was filed by the appellants to obtain relief for an alleged infringement by the defendants of certain letters patent for improvements in looms for weaving pile fabrics, &c., granted to one William Webster on the 27th day of August, 1872, and numbered 130,961, to which the plaintiff deraigns title. The defenses set up in the answer are, first, a denial of infringement; second, a denial that Webster was the first inventor of what was patented to him, under which denial various prior letters patent are specified as containing the invention or material parts thereof, including a patent granted to Erastus B. Bigelow in March, 1849, reissued in 1857, a patent granted to E. S. Higgins as assignee of William Weild in August, 1868, and a patent granted to E. K. Davis in February, 1869; third, that the invention was used by and known to E. K. Davis in the city of New York, and Thomas Crossley in New York and Bridgeport, Conn.; fourth, that the description in Webster's patent is obscure, and not sufficient to enable one acquainted with the art to which it belongs to construct or use the loom therein attempted to be described; fifth, that there is no description in the patent of the combination principally claimed and relied on. The answer also sets up an agreement between Webster and the defendants whereby they claim a right to use the alleged invention of Webster. Proofs being taken and the cause heard, the bill was dismissed by the circuit court, and the decree of dismissal is now here on appeal.

The patent, as before stated, is for improvements in looms for weaving pile fabrics, &c., and the nature and object of the invention are set forth in the specification as follows:

The first part of my invention relates to the combination and arrangement of the reciprocating or driving slide, sliding bar, withdrawing and inserting devices, and trough in such a manner that the trough shall be capable of oscillating between the points of withdrawal and insertion of the wire, the sliding bar receiving a horizontal motion at the same time that the pushing-slide is being reciprocated on the trough by the driving-slide. The advantage of this part of my invention is that a shuttle-box rigidly connected with the lay may be used.

The second part of my invention relates to the means for preventing the wire from bounding back from its position in the wire-box, and consists in a spring attached to the inner end of the wire-box, and fitting indentations or openings in the heads of the wires.

The third part of my invention relates to the combination of the vibrating trough directly with the lay.

The fourth part of my invention relates to a modification of the mechanism, and consists in having the oscillating-trough and reciprocating-slide pathway combined or made in one piece, and having the withdrawing and pushing devices combined or connected and reciprocated thereon by power applied directly thereto, the object of this part of my invention being to dispense with the driving-slide and stationary-slide pathway and sliding-bar.

The fifth part of my invention consists in the combination, with a lay having a rigid shuttle-box, of a pivoted vibrating wire-trough, a reciprocating driving-slide, and latch, the latter being operated by the wire-box to release the wire, and the slide and latch moving on the trough, all as set forth.

The specification then proceeds to describe the mechanism of the invention by a description and reference

to drawings, which exhibit a front view of the improvement, a top view, a wire-head, a sectional part, and end view of the wire-box, the oscillating trough connected to the shuttle-box or lay of a loom, the same connected to the breast-beam of a loom, &c., all which would be incomprehensible to a person unacquainted with looms for weaving pile fabrics, but very plain to one who understood their construction and operation at the date of the patent. A person skilled in the art of constructing or using such looms in their most advanced and improved form, such as those known as the "Bigelow loom" and the "Weild loom," and having one actually before him or in his mind, would readily appreciate the meaning of the terms and the character of the improvement described.

In weaving piled fabrics—such, for example, as Brussels carpet—the pile or loop is formed by inserting a wire alternately with the filling between the threads of the warp, immediately under the woolen or worsted threads, and afterward withdrawing it from the web of cloth. At first these wires were inserted and withdrawn by hand by the aid of an assistant, which made the process a very slow one, so that only a few yards could be woven in a day on a single loom.

The first great improvement was introduced about 1849–'50 by Erastus B. Bigelow, of Massachusetts, who invented a mechanical apparatus attached to the side of the loom, which automatically inserted the wires in the shed or opening between the warps and withdrew them from the web. About a dozen wires were used, and after they had all been inserted the device invented by Bigelow would vibrate forward and seize the head of the first wire, withdraw it from the web, and then vibrate back to the shed, and at the proper moment insert it; and so it would go on to operate as long as the loom was kept in motion. Its various motions were given and timed by means of cams of proper size and shape placed in connection with the principal movements of the loom itself. This attachment to pile-fabric looms became generally known as the "wire movement," and by its aid twenty-five yards a day could be woven on a single loom without the aid of any assistant. It is seldom that such a complete revolution in one of the useful arts is made at a single jump. Improvements, however, have been made on Bigelow's invention. Among others, one William Weild, of Manchester, England, in or about the year 1855, effected a decided improvement, which, after being perfected by succeeding improvements, enabled him to weave thirty or forty yards a day on a single loom. The means by which this was accomplished was the placing of a horizontal trough or grooved bar, called a "wire-trough" or "wire-bar," for the wire to rest on when drawn out of the web and thrust into the shed. In Bigelow's loom the wire simply rested on a fork placed close to the loom, and when it was fully drawn out by the clamp or dog's head, which seised it for that purpose, being slender and flexible, it would sag in the middle, and if driven rapidly into the shed the forward end would spring upward and get entangled in the upper warp-threads. This rendered a slow movement necessary, which impeded the rapidity of the work. By giving it a trough or grooved bar to lie in and keeping it straight, as was done by Weild, a quicker motion could be given to it and a much larger amount of work could be done in the same time. The only difficulty in the way of operating with the trough as arranged by Weild was that a certain part of the apparatus, called a "pusher," which was a cross-bar or yoke extending across and connecting the breast-beam and the wire-bar, and which was employed to push the wire into the shed, extended so far back toward the lathe or lay, which carries the reed and shuttle-box, as to come in contact with it and interfere with its motion. Weild obviated this difficulty by sawing off (so to speak) the outer end of the lay containing the shuttle-box, which being thus detached from the rest of the lay could be separately kept back while the reed was driving up the filling, and was thus prevented from striking the wire-trough and pusher. But, of course, this detached portion of the lay required additional cam work and complicated the machinery. There was also another matter that interfered with the perfect efficiency of Weild's loom. The pusher, after the wire was drawn out by a hook attached, did not seize the head of the wire, but simply pushed it forward into the shed. If this was done with too rapid a motion, the impetus given to the wire would throw it forward too far in case the loom had to be suddenly stopped on account of a broken thread or other cause. This made it necessary to work the loom more slowly than the other operations required.

This seems to have been about the state of the art when Webster began to devote his attention to the improvements which he claims to have invented, and which it is clearly shown, whether invented by him or some one else, resulted in giving to a loom the capacity of weaving fifty yards a day. The Bigelow looms were well known and in extensive use. The Weild looms were also well known. Some improvements, not necessary to notice, had also been made on both. Webster's first conception of his invention occurred and his original drawing was made in the winter of 1865–'66, but he did not apply for his patent until June 21, 1870, and it was not issued until August 27, 1872. Prior to that time the defendants, who had a large establishment in the city of New York, and were using Bigelow's loom under a license, had procured the control of Weild's patents in this country, and had applied Weild's improvements, with some modifications made by E. K. Davis, to a large number of their Bigelow looms. Davis was their head machinist, and in 1868 he obtained a patent for an improvement on Weild's loom, by which, instead of detaching the whole outer end of the lay, he only detached the shuttle-box and caused it to slide back on the lay so as to make room for the wire-trough. He also adopted, instead of the wire-trough, a pair of parallel bars between which to move the wire, the latter resting on a pin between the bars near to the loom. The loom itself was old. Every part of it was familiar to every loom-manufacturer and to every weaver. Its lathe, its treadles, its breast-beam, its shuttle-boxes, and shuttle-slide were as well known to all those concerned in the weaving of pile fabrics as the plow or the cultivator is to the farmer. The wire motion had also become well known. Its mode of attachment to the loom, the means of giving motion to its different parts, the parts themselves, the vibrating wire-support, whether a fork or a trough, and whether pivoted to the breast-beam or to a post or to the frame or floor, the reciprocating driving-slide, the dog's head for holding and the pusher for driving the wires, the wire-box that kept the wires in place, the rigid

lathe, the lathe whose outer end was detached, and the lathe with a detached shuttle-box—all these things were as well known as the alphabet to all those skilled in the art of pile weaving as it then stood. With this mass of previous knowledge and nomenclature in their minds, (as we must suppose it to have been,) the language, the explanations, the drawings, and the claims of Webster's patent must have been perfectly intelligible to them. When an astronomer reports that a comet is to be seen with the telescope in the constellation of Auriga, in so many degrees of declination, and so many hours and minutes of right ascension, it is all Greek to the unskilled in science, but other astronomers will instantly direct their telescopes to the very point in the heavens where the stranger has made his entrance into our system. They understand the language of their brother scientist. If a mechanical engineer invents an improvement on any of the appendages of a steam-engine, such as the valve-gear, the condenser, the steam-chest, the walking-beam, the parallel motion, or what not, he is not obliged, in order to make himself understood, to describe the engine, nor the particular appendage to which the improvement refers, nor its mode of connection with the principal machine. These are already familiar to others skilled in that kind of machinery. He may begin at the point where his invention begins, and describe what he has made that is new, and what it replaces of the old. That which is common and well known is as if it were written out in the patent and delineated in the drawings. Applying these remarks to the specification before us, and recurring to the extract already made, setting forth the nature and object of the invention, it is easy to conceive that its meaning may be plain to those for whose use it is intended. They know at once what is meant by the terms "reciprocating or driving slide," "sliding bar," "withdrawing and inserting devices," "trough," "wire," "wire-box," "lay," &c. They also understand the movements referred to and the objects to be attained by each device. In like manner, if we follow the specification in its description of the invention in detail, with the references to the drawings and the closing summary of the patentee's claims, the same method of interpretation will be applicable. And as it cannot be expected that the Court will possess the requisite knowledge for this purpose, it becomes necessary that it should avail itself of the light furnished by the evidence to enable it to understand the terms used in the patent and the devices and operations described or alluded to therein. This evidence, of which the record in this case furnishes an abundance, being resorted to, we have no difficulty in comprehending the patent or the nature of the invention therein described.

A great deal of testimony was introduced by the defendants to show that the patentee had failed to describe his invention in such full, clear, and exact terms as to enable persons skilled in the art to construct and use it. It seems to us that the attempt has failed. When the question is whether a thing can be done or not it is always easy to find persons ready to show how not to do it. But it stands confessed that the thing has been done—that is to say, the contrivance which Webster claims in his patent has been applied—and very successfully so, to pile-fabric looms, and, as the appellant's counsel well remarks, no one except Webster has ever appeared to claim a patent for doing it. If the thing could not be understood without the exercise of inventive power, it is a little strange that it should have been so easily adapted to the looms on which it has been used and produced such striking results.

It is worthy of remark in this connection that the defendants in their answer state it as a fact that prior to the alleged invention of Webster looms containing lays having shuttle-boxes rigidly attached were publicly known and described in certain English patents, which they specify, and that all the other parts and elements mentioned in the fifth claim of Webster's patent (being the claim relied on) were described in another English patent of one Birkbeck; and they aver and insist, as will be more fully noticed hereafter, that the application and use of the two things together—that is, the parts described in Birkbeck's patent with the rigid lay and shuttle-box described in the other patents—were obvious and required no invention; and that therefore the alleged invention of Webster was well known and constituted a part of the known state of the art. This averment in the answer, which, of course, is sworn to, does not seem to tally very well with the allegation that Webster has failed to point out in his patent how to use and apply his invention, and that it requires further invention to use and apply it.

The appellants, indeed, have raised the question whether evidence to show that the invention is not described in the patent in such full, clear, and exact terms as to enable a person skilled in the art to construct and use it is admissible, unless the defense is specially set up in connection with a charge that the description in the patent was made defective for the purpose of deceiving the public.

The twenty-sixth section of the act of 1870, under which the patent in question was issued, declares—

> That before any inventor or discoverer shall receive a patent for his invention or discovery he shall make application therefor in writing to the Commissioner, and shall file in the Patent Office a written description of the same, and of the manner and process of making, constructing, compounding, and using it in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which it appertains or with which it is most nearly connected to make, construct, compound, and use the same; and in case of a machine, he shall explain the principle thereof and the best mode in which he has contemplated applying that principle so as to distinguish it from other inventions; and he shall particularly point out and distinctly claim the part, improvement, or combination which he claims as his invention or discovery.

Such a specification must be filed before the inventor shall receive a patent, the law says; and the appellants' counsel argues that if it is the duty of the Commissioner to see that such a specification as the law requires is filed before granting a patent, not only is the patent when issued proof that he has done so, but his decision on the point cannot be questioned, except in the manner allowed by the law; else, instead of one tribunal for deciding a matter on which conflicting testimony can always be found, we shall have as many tribunals as there are courts and juries called upon to try patent causes.

On turning to the section which provides for certain defenses that may be made to an action for infringement we find it declared—

> That in an action for infringement the defendant may plead the general issue, and, having given notice in writing to the plaintiff or his attorney thirty days before, may prove on trial any one or more of the following special matters: First, that for the purpose of deceiving the public the description and specification filed by the patentee in the Patent Office was made to contain less than the whole truth relative to his invention or discovery or more than is necessary to produce the desired effect.

Then follows a statement of other special matters. In view of this specific defense allowed by the statute in reference to a defective specification, it is argued that no other is admissible under that head; and reference is made to some decisions under the former statutes bearing on that subject, namely: *Whittemore* v. *Cutter*, (1 Gallison, 434;) *Lewis* v. *Lewis*, (1 Mason;) *Gray* v. *James*, (Peters' Circuit Ct. Repa., 394;) *Grant* v. *Raymond*, (6 Peters, 218,) this Court in the last case holding, contrary to the decisions of Judges Story and Livingston in the other cases, that it was not necessary to aver a fraudulent intent, unless the defendants desired to avoid the patent—a result which was provided for in the law of 1793. The Court held that the plea of insufficient description was good as a defense without alleging a fraudulent intent, but not good as a ground for avoiding the patent. The laws of 1836 and 1870 omitted the clause for annulling the patent, but still retained in the definition of the defense allowed to be set up the qualification of a fraudulent intent. Counsel argues that as the law now stands the plea of insufficient description cannot be made unless made with that qualification, because the only purpose it has under the present law is that of a defense to the action, and it still requires the allegation of fraudulent intent to deceive the public. There is plausibility in this argument, and if it were necessary to the decision of this case, it might give us some embarrassment. But as we are satisfied that the terms of the patent are sufficiently clear and full in the description of the invention, we make no decision on the point.

Turning now to the invention claimed by Webster, and described in the patent under consideration, we find that, although it produced a great improvement in the art of weaving pile fabrics, yet as actually exhibited in conception and accomplishment it seems simple. The thing to be done was to combine the advantages of Bigelow's rigid lathe, divested of some of its defects, and his constant command of the wire with Weild's trough or wire-bar for supporting the wire. This Webster, or, if not Webster, some other person, effected by the devices and mechanism described in the patent. Stated in brief, as therein set forth, aided by the explanatory testimony before referred to, the problem was solved by substituting for Weild's pusher a latch which rides on the wire bar or trough without projecting beyond it, and which receives a reciprocating motion backward and forward on the bar either by being connected with a driving-slide moving on the breast-beam or by being directly connected with an upright reciprocating lever. The latch, when the end of the wire-bar next to the loom oscillates or vibrates to the front of the wire-box, drops upon a wire-head into a nick or notch made therein and withdraws the wire into the trough, and then, when the latter oscillates back to the shed without releasing its hold of the wire-head, drives the wire into the shed, and is then lifted out of the notch by striking the edge of the wire-box, sloped up for that purpose, and releases the wire, and then oscillates forward again to seize another wire, and so on. The lathe in the meantime works backward and forward without meeting any obstruction and without any detachment or separation of its parts. Very little modification had to be made in the cams, and the whole apparatus or "wire movement," as it is called, seems more simple than it was before either in Bigelow's or Weild's loom. This contrivance when actually applied to the looms worked to perfection and enabled the weaver to drive his loom to its utmost capacity.

The patent points out and the drawings illustrate various ways of arranging the wire-bar and the reciprocating slide which carries the latch. Thus, the outer end of the wire-bar having to be pivoted to some center for its oscillating motion, it is shown that it may be pivoted to the outer end of the lay or shuttle-box, or to the outer end of the breast-beam, or to a vertical shaft or post—all these devices except the first being in common use in the Bigelow or Weild looms and being mechanical equivalents of each other. So it is shown that the pushing-slide, which carries the latch and rides on the wire-bar like a saddle, may be operated either by being connected with a driving-slide on the extension of the breast-beam by means of a cross-bar passing through a mortise in the driving-slide or by being directly connected with the arm or lever producing the reciprocating movement.

The patent has five claims, only the fifth of which is relied on in this case, which is as follows:

> In combination, the lay and its rigid shuttle-box, the pivoted vibrating wire-trough, the reciprocating driving-slide, and the latch moving thereon, the latter being operated by the wire-box, the combination being and operating substantially as described.

With the explanation of the invention already given the meaning of this claim is quite obvious. If any explanation of it is needed, it can be readily derived from the body of the specification. The combination contains five elements: one, the rigid lay and shuttle-box; two, the pivoted oscillating or vibrating trough; three, the reciprocating slide riding on the trough; four, the latch for taking and holding the wire; five, the operation or lifting of the latch by striking the wire-box. Nothing further is necessary to be said in order to dispose of the defense, which was strenuously urged, and to which the court below attached much importance, that the specification was insufficient in its description of the invention sought to be patented and failed to show any means of applying it to existing looms, and that independent invention would have to be exercised to make it a practical working apparatus as an attachment of such looms. We shall therefore dismiss that branch of the argument. It is further argued, however, that, supposing the devices to be sufficiently described, they do not show any invention, and that the combination set forth in the fifth claim is a mere aggregation of old devices already well known, and therefore it is not patentable. This argument would be sound if the combination claimed by Webster was an obvious one for attaining the advantages proposed—one which would occur to any mechanic skilled in the art. But it is plain from the evidence and from the very fact that it was not sooner adopted and used that it did not for years occur in this light to even the most skillful persons. It may have been under their very eyes, they may almost be said to have stumbled over it, but they certainly failed to see it, to estimate its value, and to bring it into notice. Who was the first to see it, to understand its value, to give it shape and form, to bring it into notice and urge its adoption is a question to which we shall shortly give our attention. At this point we are constrained to say that we cannot yield our assent to the argument that the combination of the different parts or elements for attaining the object in view was so obvious as to merit no title to invention.

Now that it has succeeded, it may seem very plain to any one that he could have done it as well. This is often the case with inventions of the greatest merit. It may be laid down as a general rule, though perhaps not an invariable one, that if a new combination and arrangement of known elements produce a new and beneficial result never attained before, it is evidence of invention. It was certainly a new and useful result to make a loom produce fifty yards a day when it never before had produced more than forty, and we think that the combination of elements by which this was effected, even if those elements were separately known before, was invention sufficient to form the basis of a patent.

The next contention of the defendants which we shall consider is their allegation that Webster was not the first and original inventor of the thing patented, but that he was anticipated therein by E. K. Davis. On this point we think it very clearly made out, though we shall not go into much detail in commenting upon the evidence, that the whole substance of the invention was conceived by Webster, and exhibited by him in a drawing as early as the winter of 1865-'66, long before Davis entertained any idea of it. The original of this drawing is in existence and was produced in evidence, and is well authenticated. It exhibits the rigid lay, the wire-trough pivoted in two different positions on a post near the extremity of the breast-beam and to an arm projecting from the extremity of the lay, the driving or pushing slide, riding on the trough, with a projection indicating the latch, or other device, for operating the wire, and even the cams to give the requisite movements. It also shows the wire-box and the position of the end of the trough in relation thereto, the same as exhibited in the patent. In March, 1868, Webster exhibited this drawing to Davis and others and explained it to them as representing a lay having a rigid shuttle-box, a driving-slide, and latch moving upon a vibrating trough, the latch being operated by the wire-box. Davis was about that time engaged in making an improvement on the Weild loom, before referred to, with a sliding shuttle-box, and parallel bars instead of a trough for the wire to slide between, and a pin for it to rest on. In July, 1868, he applied for a patent for this improvement, and obtained a patent in February, 1869. In that year Webster sent drawings to Weild in England to get out a patent for his invention in that country; but Weild declined to undertake it. These drawings show the entire invention in detail. In November, 1869, Webster, having heard that the defendants were going to alter their Bigelow looms to Weild looms, sought an interview with them in order to induce them to adopt his improvement. He met one of the defendants and showed his original drawing, but without result. In April, 1870, he had another interview with them, and also with Davis, at their carpet-works in New York. He exhibited his original drawing and the drawings which he had prepared for England. Davis advised the defendants that Webster's plan was no improvement on the Weild loom. He was evidently anxious that they should adopt his improvement, for which he had already got a patent. Further interviews took place; but the defendants declined to adopt Webster's improvement, and adopted Davis's in part, so much of it, at least, as the sliding shuttle-box. It is clear from the facts that up to this time Davis did not pretend to be the inventor of Webster's arrangement. But in the spring of 1870 Davis commenced to make a new loom, which he did not get into complete operation until the latter part of 1871. This is called the "Sterling loom," and was made for the defendants. When completed it had in it the improvement claimed by Webster and shown in his patent. At what time this particular form was adopted is not shown.

It is contended by the defendants that Davis had conceived the idea of using a rigid lathe with his wire-bar in the early part of 1868, and that in the model which he prepared at that time for obtaining his patent he exhibited the same latch devised by Webster, and operated in the same way by contact with the wire-box, and that he showed to the witness Crossley, by pinning his sliding shuttle-box fast to the lay, how it could be used with a rigid lay and shuttle-box. Then, why did he not claim the whole device when Webster exhibited it to him? Why did he advise the defendants that Webster's arrangement was no improvement on Weild's? But if it were true that he did show these things in his model, and had he shown a trough instead of parallel bars, and if it were true that he regarded the idea as anything more than a possibility, and that he did in fact contemplate it as a perfected and practicable arrangement so as to amount to invention, the question would still remain whether he or Webster was the first inventor. Both may have been original inventors, but only one of them could be the first. If Davis had put the invention into practical form and operation more than two years before Webster applied for his patent, then the patent would be void by reason of prior use. But the evidence is conclusive that he never undertook to put it into practical form until he made the Sterling loom, which was only commenced in 1870. Webster's application for his patent was made in June, 1870. Though this was proved without objection, and substantially conceded, the defendants say that it does not appear what the application was nor how much it was altered before the patent was issued. This argument cannot avail, for the application is a public record, the contents of which the defendants and all others are presumed to know; and since they had it in their power to produce it and did not, it must be presumed that it would not have served their purpose, but corresponded with the patent. The defense of prior use for two years, therefore, is not sustained, and the question comes back to simple priority of invention. Conceding that Davis was an original inventor, the earliest point of time that he can be regarded as such was in the spring of 1868. But Webster had invented it before that time, and had made a drawing of it, which, in March, 1868, he exhibited and explained to Davis. An invention relating to machinery may be exhibited either in a drawing or in a model, so as to lay the foundation of a claim to priority, if it be sufficiently plain to enable those skilled in the art to understand it. There is no doubt that Davis understood Webster's drawing, and he did not then claim that the invention belonged to himself. The evidence relating to loom No. 50 leads in the same direction. This was a loom of the defendants which they commenced to alter in the latter part of 1870. Davis was not employed to make the alterations on this loom. According to Webster's testimony, which must, of course, from his relation to the case be received with caution, but which

seems to be corroborated by subsequent circumstances, Davis informed Webster, at the latter's house, on Christmas day, 1870, that loom No. 50 had been taken down to be changed to what they had seen and explained to them in the office, referring to Webster's previous explanation of his drawings, and that he, Davis, had told Higgins that if he took that loom down and changed it to what they had seen Webster have and explained in the office, it would be a Webster wire motion. In April Webster called, as he says, at the defendants' store and saw N. D. Higgins, and they talked about this loom, and Webster claimed it as his invention, and told Higgins that he (Higgins) had seen the drawing of it at his house and mill. It is not seriously denied that this loom was made substantially on Webster's plan.

Another circumstance seems to us as having much weight in this connection. It was found that the loom No. 50 and the Sterling loom, when completed in 1871, worked with wonderful success, sometimes as many as sixty yards being woven on one loom in ten hours. If Davis was the inventor of the wire motion applied to these looms, why did he never apply for a patent for it? He was already a patentee of a different and inferior apparatus. He knew all about the method of going about to get a patent. He belonged to a profession which is generally alive to the advantages of a patent-right. On the hypothesis of his being the real inventor his conduct is inexplicable.

There is a great deal of evidence *pro* and *con* to which we have not adverted. It must suffice to say that we are satisfied from the examination we have given to it that Webster is entitled to the claim of being the first inventor.

The appellants' counsel has raised the question whether the defense of prior invention can be set up under the answer, which does not state it in the manner required by the statute. It denies, generally, it is true, that Webster was the original and first inventor of the improvement claimed in the patent, and specifies certain letters patent issued in this country and in England, in which it is alleged that the said invention or material and substantial parts thereof, was described before any invention made by Webster, which is sufficient foundation for adducing such patents in evidence; but it does not give the name and residence of any person alleged to have invented the thing patented prior to Webster. It only states that it was used by and known to Davis. It is possible that this objection to the evidence would have been available if it had been taken in season. But we are not referred to anything to show that it was taken in the court below or before the examiner when the witnesses were examined. In *Reemer* v. *Simon* (95 U. S., 220) we held that the failure to interpose such objection before the final hearing is a waiver of the required notice in an equity suit.

It remains to consider the question of infringement. The defendants deny that they infringe the fifth claim of the patent, which is relied on by the complainants. At the commencement of the cause, when a preliminary injunction was applied for, the defendants put in affidavits contesting the charge of infringement, but upon a very different ground from that on which the defense is now based. Then they relied on a non-user of the last element of the combination—the operation of the latch by contact with the wire-box—now they rely on a different construction of the third element (the reciprocating driving-slide) from that given to it by the complainants. They say that they do not use that element, construed as they construe it. The position originally taken is abandoned. Nevertheless, it will throw light on the subject to see what the defendants said on the occasion referred to. It will at least bring their present position to the test of a first judgment formed by themselves at a time when it was very much to their interest to find discrepancies between what they used and what the patent contained. Two affidavits were put in by the defendants at that time, one made by both the defendants jointly and one by their superintendent, Mr. Duckworth. A previous suit brought on Webster's patent against the New Brunswick Carpet Company, in which the defendants, or, at least, their machinist, Davis, had taken much interest, had just terminated in a decree sustaining the patent, rendered by Judge Nixon in the Circuit Court for the District of New Jersey. The defendants in their affidavit, dated June 24, 1874, say:

> That at the time defendants procured the looms referred to in the affidavits on the part of complainants in this suit, and used thereon tops of wire-boxes as cams to disengage the latches from shoulders on the heads of the wires, they did not know or suppose that Wm. Webster, or any one else, except themselves and E. K. Davis, had a patent covering any part or combination of parts contained in said looms. * * * The Sterling loom, the No. 50 loom, and the three other Bigelow looms mentioned in the affidavits on the part of the complainants were all procured and put in operation with the tops of the wire-boxes as cams to disengage the latches from the wire-heads a long time prior to the issuing of the Webster patent on which this suit is brought, and before defendants knew that said Webster had applied for said patent. The first that said defendants knew or supposed that there was anything in any of said looms covered by letters patent granted to said Webster was during the progress of this suit against the New Brunswick Carpet Co., referred to in said affidavits, and while the testimony was being taken therein, when they heard that a claim of that kind was being made, and on further inquiry were informed that said Webster would probably sustain his right to the combination mentioned in the fifth claim of his patent, on which said suit was pending, and that the use of the top of the wire-box as a cam to disengage the latch from the shoulders of the wire-heads was one of the elements or parts of that combination. After consulting counsel on the subject, they concluded that to avoid any question of doubt on that subject they would have all their looms which contained such tops to the wire-boxes altered by having such tops entirely removed and having other provision made for operating the wires. They accordingly had such alterations made, which were all completed by the middle of May, 1874, since which time they have not had any looms or used any looms employing the top of the wire-box as a cam to disengage a latch from a wire-head, or for opening a latch to disengage from a wire-head, or to support a latch away from or out of contact with the wire-heads in its journey from one end of the box to the other, or to permit a latch to descend and catch a wire-head in any way, or for any other purpose. That they have not since the time of said alterations used in any loom or looms the top of a wire-box to lift or support, or to in any way operate or participate in the operation of a latch, and that they do not expect to use any such top of a wire-box hereafter, but intend not to do so.

The fact that this mode of resisting the charge of infringement is now abandoned furnishes very fair presumptive evidence of two things: first, that the substituted device for operating the latch was a mere equivalent of the wire-box in that regard, and, secondly, that the construction of the fifth claim, on which they now take their stand, could not have been a very obvious one. That construction is that the third element in the combination of the fifth claim of Webster's patent, and which is there called the "reciprocating driving-slide," refers not to the slide which rides upon the trough or wire-bar and carries the latch, (which they do use,) but to the slide which rides upon the breast-beam and communicates the reciprocating motion to the other, (which they do not use.) It is undoubtedly true that in the body of the specification, where the patentee is describing the joint use of these slides, he does designate the slide on the breast-beam

as the "reciprocating or driving slide" and that on the trough as the "withdrawing and pushing slide." But it is apparent that both of these slides are in fact, reciprocating and driving slides. The one on the trough has a reciprocating motion and drives the wire into the lay. And when, as the patent points out, the other slide is not used—that is to say, when the slide on the trough is directly connected with the motive power or device which gives the reciprocating motion—it takes the place of both. The specification states this in so many words. It says:

> Fig. 4 represents a modification of the invention. The withdrawing and pushing slide B^1 in this case becomes the driving-slide.

Again:

> Fig. 7 represents a side view of the driving-slide B^1, its pin B^2, to which power is applied, and the withdrawing and transfer latch C and pusher C^1, attached to the slide.

These figures relate to that form of the invention in which the slide on the breast-beam is not used. Now, if we examine the language of the claim, it seems to us that all doubt as to its meaning is removed. It reads thus:

> In combination, the lay and its rigid shuttle-box, the pivoted wire-trough, the reciprocating driving-slide, and the latch moving thereon, the latter being operated by the wire-box, &c.

Obviously the reciprocating driving-slide here referred to is that slide on which the latch moves, and that is the slide which rides on the trough, and which is the only slide used in one modification of the invention. It can hardly be supposed that the patentee intended to make the other slide, which he showed could at any time be dispensed with, an indispensable element in his claim. It would have rendered the claim a practical nullity. The important thing was the slide which rides on the trough. The argument of the defendants' counsel on this subject is very ingenious and plausible; but we are forced to the conviction that the slide intended in the combination is that which is indispensable to the operation of the apparatus. And this must have been the conviction of the defendants themselves, as well as of their counsel, when they made the affidavit before referred to.

In conclusion, our judgment is that Webster invented the combination described in the fifth claim of the patent; that the invention is sufficiently described in the specification to meet the requirements of the law; that it was not anticipated by any prior patent or invention; that it was never in public use or on sale for more than two years before the patent was applied for, and that the defendants have infringed it.

The decree of the circuit court must be reversed and the cause remanded, with instructions to enter a decree in favor of the complainants, and to take such further proceedings as law and justice may require.

Supreme Court of the United States.

BANTZ *v.* FRANTZ *et al.*

Decided March 20, 1882.

REISSUE—NEW MATTER—DELAY—ABANDONMENT.

If the specification of the original patent was defective or insufficient in claiming a combination of several devices instead of making distinct claim for every device which entered into the combination, the fact was instantly discernible, even by an unpracticed eye, as soon as the patent was read. The correction, if any was to be made under such circumstances, should have been applied for immediately. The right to the correction was lost by unreasonable delay of thirteen and a half years. (*Miller* v. *The Bridgeport Brass Company.*)

APPEAL from the Circuit Court of the United States for the District of Kentucky.

Mr. Arthur Stern for the appellant.

Mr. Wm. A. Maury and *Mr. L. N. Dembitz* for the appellees.

STATEMENT OF THE CASE.

On June 22, 1858, there was issued to Gideon Bantz, the appellant, who was complainant in the court below, an original patent of that date for an improvement in furnaces for heating steam-boilers. On February 6, 1872, Bantz obtained a reissue, and on June 22, 1872, an extension for seven years of his reissued patent. The bill in this case was filed by him on May 4, 1876, to restrain infringement by the defendant, David Frantz, of the extended reissue. The answer denied the novelty and utility of the invention; denied infringement, and asserted the invalidity of the reissue. The circuit court dismissed the bill, and the case is brought here by the appeal of the complainant.

The specification of the original patent declared—

> The object of this invention is the more perfect combustion of tan, sawdust, bagasse, and all other kinds of refuse fuel in a wet or dry state, as well as of wood or coal. It is, however, with particular advantage to the burning of wet fuels.
>
> My invention consists in the arrangement embracing, for united use in the manner and for the purposes hereinafter specified, the following features, to wit: First, two or more arched fire-chambers with throats of less area than their capacity; second, an auxiliary combustion reservoir or chamber with *cima-reverso*-shaped bottoms and side draft-door; third, a series of reverberatory chambers with side draft doors and passages at top for communication with each other; and, fourth, a diving or direct flue leading into the chimney or smoke-stack.
>
> To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.
>
> A A are two arched fire-chambers, arranged side by side, furnished with grates *a a*, having ash-pit B B provided below the said grates. These fire-chambers are not placed below the boiler H, but directly in front thereof and longitudinally parallel therewith. They may, however, be placed at one side of the boiler or at any angle to it. Each is provided with the usual door, *b*, but these are only used for lighting the fires; and the ash-pits are provided with doors *c* to regulate the supply of air through the grates and permit the cleaning out of ashes. On the top of each chamber there are feeders *d d*, for supplying the fuel; but as these feeders are the same as used in other furnaces no particular description of them is necessary. The fire-chambers are covered with a flat floor built over the arches that the fuel may be wheeled to the feeders in barrows or brought in any other convenient manner. At the rear end of each fire-chamber there is a throat-like aperture, *e*, communicating with what I term the "reservoir" C, which is built of brick, lined with fire-brick, under the front portion of the boiler, and which has a concave bottom, *m*, and convex back *n*, which are formed by a *cima-reverso*-shaped plate. By having the bottom and back of the reservoir formed by a *cima-reverso*-shaped plate the throat *e* is not partially closed up, as it would be if the plate were straight and set inclined; and, besides this, the heated products of combustion are made to hug the bottom of the boiler, and as the draft is at this point, the perfect combustion of partially-ignited gases is insured. The convex back of the reservoir terminates in and serves as a bridge-wall, and has a concave top, so formed as to leave a space, *o*, of but three or four inches between it and the boiler.
>
> The purpose of the reservoir will be presently explained. In rear of the bridge-wall *f* there is a series of reverberatory chambers, D D D, two, three, or more, one behind the other, the series extending nearly as far as the rear end of the boiler, and the said chambers being severally separated by bridge-walls *g g*, and each chamber being provided with one or more doors *h* in either or both sides, for the purpose of admitting air in sufficient quantities either to complete the combustion of the gases from the fire-chambers or to check the draft. The reservoir is furnished with a door, h^1, for a similar purpose as those *h h* in the reverberatory chamber. At the rear of the hindmost reverberatory chamber there is a wall, g^1, like *g g*, behind which there is a diving or drop flue, E, leading to the chimney.
>
> The operation of the furnace is as follows: The gaseous products of the combustion in the fire-chamber A A escape by the throats *e e* into the reservoir C, where they mingle together, and the combustible portion thereof becomes ignited, and where their heat acts upon the boiler, and from whence they pass into one after another of the reverberatory chambers, in each of which a portion of their heat is abstracted by contact with a portion of the boiler, and finally they descend the flue E to the chimney. The effect of the principal portion of my improvement, which consists in the employment of the reservoir C, connected with the fire-chambers by the throats *e e*, of much smaller transverse area than the fire-chamber, is that the products of combustion and heat are prevented leaving the fire-chamber too rapidly, and the said chambers are consequently caused to be heated to an intense degree, and a very nearly perfect combustion of the fuel is obtained therein,

and when the gaseous products of combustion leave the fire-chambers by the said throats and arrive in the reservoir C, the side walls and curved bottom and back of which are kept at a white heat, the still combustible portion of the gaseous products is ignited under the boiler.

The claim was thus stated:

What I claim as my invention, and desire to secure by letters patent, is—

The arrangement of fire-chambers A A, contracted throats *e e*, auxiliary combustion-reservoir C, with the *cima-reversa* bridge-plate *m n*, and the door A^1, reverberatory chambers D D, with doors A A, and the diving or direct flue E, substantially as and for the purposes set forth.

The description of the invention in the specification of the reissued patent is substantially the same as that in the specification of the original patent. The drawings are identical. In the reissue the invention is called "a new and useful improvement in furnaces for burning wet fuel."

The claim is thus set forth:

I do not claim a furnace for burning wet fuel broadly, nor the use of a series of fire-chambers connecting with the common flue arranged between the furnace and the boiler, as I am well aware that this has been done before.

Having described my invention, I claim—

1. In a furnace for burning wet fuels, having two or more single fire-chambers not arranged under the boiler, the combustion chamber or reservoir C, arranged above the top of said fire-chambers, and located directly under the front end of the boiler, essentially as described.

2. The *cima-reversa* bottom *m n* of the combustion chamber or reservoir C, in combination with the narrow throats *e* of the separate fire-chambers, and the narrow exit-flue *e* of the bridge-walls *f*, for the purpose essentially as described.

3. In combination with the combustion-chamber or reservoir C, arranged and located as described, I claim the side door or doors A^1, for the admission of atmospheric air, for the purpose described.

4. In combination with a series of fire-chambers A, and the combustion chamber or reservoir C, located and arranged directly beneath the front end of the boiler, and above the crown of said fire-chamber, I claim a series of reverberatory chambers, D, provided with side doors, A, and a diving-flue, E, at the rear end of the boiler to hold the heat beneath the same throughout its entire length and to arrest and deaden the sparks, as described.

5. In a furnace for burning wet fuels in which the fire-chambers are not arranged under the boiler, I claim the arrangement of the boiler upon the rear wall of the furnace and the rear wall of the diving-flue E, for the purpose of obtaining the full advantage of the heat of the walls of the furnace and of the diving-flue, as described.

6. In a furnace for burning wet fuels, having a flat top, and supplied through openings therein, I claim the dead-chambers, arranged between the floor and the arches of the fire-chambers, for the purpose of maintaining the top of the furnace cool for the workingmen, as described.

Mr. Justice WOODS delivered the opinion of the Court.

We are clearly of opinion that the reissued patent is void. It is evident, on a cursory reading of the specification and claim of the original patent, that it was meant to cover a combination of the several contrivances therein described, and not to cover the several parts of the former as distinct inventions. No claim is made for the several parts of which the former is constructed, but for the "arrangement embracing, for united use in the manner and for the purposes specified, the following features," &c. If the claim of the original patent had been for the several distinct contrivances of which the furnace is composed, as claimed in the reissued patent, it would not have been granted, because the evidence in the record shows that at least the sixth claim in the reissued patent, for dead-chambers over the arches of the fire-chambers, was distinctly covered by the patent of Moses Thompson, dated April 10, 1855, for an improvement in burning tan-bark, bagasse, sawdust, or other kinds of fuel in a wet state, for the purpose of creating heat to generate steam, &c. This the drawings accompanying the specifications of Thompson's patent clearly show. It is evident, therefore, that if the appellant had in his application for the original patent claimed as his own invention all the distinct devices described in the specification, he could not have obtained his patent in its present form. It could have been only on the ground that his claim was for a combination that it was allowed and the patent issued.

If the reissued patent is valid, the appellant could maintain an action against any person who infringed any one of the separate claims covered by it. Under the original patent suit could be maintained only against those who employed the combination embracing all the distinct contrivances described in the reissued patent. The reissue is, therefore, broader than the original patent, and is, under the circumstances of this case, void. The act of July 8, 1870, (16 Stats., 205,) was in force when the reissue was granted. That act (section 53, Rev. Stats., section 4916) declared that—

> Whenever any patent is inoperative or invalid by reason of a defective or insufficient specification or by reason of the patentee claiming as his own invention or discovery more than he had a right to claim as new, if the error has arisen by inadvertence, accident, or mistake, and without any fraudulent or deceptive intention, the Commissioner shall, on the surrender of such patent and the payment of the duty required by law, cause a new patent for the same invention, and in accordance with the corrected specification, to be issued to the patentee.

In this case the original patent bore date June 22, 1858. The reissue bore date February 6, 1872, more than thirteen years and six months after the date of the original patent and less than five months before its expiration. If the specification in the original patent was defective or insufficient in claiming a combination of several devices instead of making a distinct claim for every device which entered into the combination, the fact was instantly discernible, even to an unpracticed eye, as soon as the patent was read. Therefore, as said by Mr. Justice Bradley in delivering the opinion of this Court in a similar case, *Miller* v. *The Bridgeport Brass Company*, decided at the present term, if any correction was desired, it should have been applied for immediately. The right to have the correction made was abandoned and lost by unreasonable delay. The case referred to is apposite and is conclusive of this.

Judgment affirmed.

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DIGEST OF DECISIONS.

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ABANDONED APPLICATIONS.

SECTION 4894 REVISED STATUTES—APPLICATION, NOT INVENTION, ABANDONED.

Section 4894 Revised Statutes, which provides that upon failure to prosecute an application within two years after action is had thereon by the Patent Office it shall be regarded as abandoned, refers to the application, not the invention, and does not prevent a subsequent application for the same invention.

[*Linsay v. Stein, 1613.

ABANDONED EXPERIMENTS.

(See Particular Patents; Spring, 27.)

ABANDONED INVENTIONS.

(See Abandoned Applications, 1.)

ABANDONMENT.

(See Abandoned Applications, 1; Priority of Invention, 1, 2, 3; Reissues, 2, 23.)

ACCOUNT OF PROFITS.

(See Bill in Equity, 1, 3, 4; Damages.)

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(See Practice in the Courts, 1.)

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(See Bill in Equity, 1, 2; Construction of Statutes, 1, 2.)

ADMISSION OF TESTIMONY.

See Construction of Specifications and Patents, 7; Defenses, 2; Testimony.)

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(See Contracts, 1, 2.)

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(See Combinations, 2, 4; Construction of Specifications and Patents, 6; Non-Patentability, 1.)

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(See Construction of Claims, 2.)

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(See Applications, 2.)

ANALOGOUS DEVICES.

(See Infringement, 2, 3, 4, 5, 6.)

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(See Defenses, 2; Demurrer, 1.)

ANTICIPATION.

(See Particular Patents: 17 Hibbard, 19 Miller *et al.*, 23 Rice, 28 Stow, 30 Vinton.)

APPEALS.

(See Costs of Suit, 1.)

APPLICATION.

(See Abandoned Applications, 1; Date of Application, 1; Interferences, 2; Renewed Applications, 1.)

1. CONTINUOUS APPLICATION—PUBLIC USE.

Where a second application is filed for a certain part of an invention disclosed in a prior application the two applications will be regarded as a continuous proceeding, and public use of the invention, to defeat a patent granted upon such second application, must be shown to have occurred more than two years prior to the first application.

[*Graham v. McCormick *et. al.*, 1533.

2. AMENDMENT OF APPLICATION—NEW MATTER—SUPPLEMENTAL OATH.

Under Rule 47 an applicant may introduce into his application by amendment a part of the invention originally made which was not incorporated into the application either as a part of the specification or claim, if he swears that the matter which he desires to introduce into his application and make a part thereof was a part of his original invention.

[*Ex parte* McDougall, 1783.

3. SAME—SAME—DATE OF COMPLETION OF APPLICATION CHANGED.

Under this practice, however, the Examiner will enter the date of the new oath on the face of the file-wrapper and change the date of the completion of the filing of the application to agree therewith.

[Ibid.

ASSIGNMENTS.

(See Contracts, 1, 2; Date of Application, 1; Employés, 2, 3; Public Use, 5; Sale of Patent by Order of Court, 2, 3.)

1. EQUITY.

Between equal equities the law will prevail.

[*Wright, Jr., v. Randel *et al.*, 493.

2. Assignees—Superior Title.
Bona fide purchasers, for value, without notice, under an instrument of assignment which was duly recorded, whereby interests are assigned in an unpatented invention, and wherein the Commissioner is requested to issue the patent to such assignees, as was duly done, can convey a good title to such patent as against prior assignees of a prior patent which was issued to the same inventor, to whom such inventor at the same time assigned interests in new inventions which he had made, of which the invention above referred to was one, the prior instrument of assignment having been executed and recorded first, and the invention the nature of which was definitely referred to in such prior instrument having been made before any of such assignments.
[*Ibid.

3. Revised Statutes, Section 4898, Construed—Records.
Section 4898 of the Revised Statutes does not provide for the recording of assignments, grants, and conveyances of interests in patents not yet issued.
[*Ibid.

4. Revised Statutes, Section 4895, Construed—Constructive Notice—Records.
Section 4895 of the Revised Statutes makes no provision for the recording of an assignment of an unpatented invention on which the patent is not to be issued to the assignee; therefore its record is not constructive notice of its contents to one who subsequently deals with a party to it in respect to its subject-matter.
[*Ibid.

5. Assignments of Patents—Not Under Seal.
Assignments of patents are not required to be under seal. The statute simply provides that "every patent or any interest therein shall be assignable in law by an instrument in writing."
[*Gottfried v. Miller, 711.

6. Same—Same—Particular Contract.
An assignment therefor, purporting on its face to be the contract of the corporation therein named, declaring that the consideration has been received by the company, that it is executed in pursuance of a resolution passed by the company and purporting to be signed by Smith, president of the company, who declares that he signs it as the act of the company, is transfer of said company and not the personal deed of Smith.
[*Ibid.

ASSIGNMENT OF UNPATENTED INVENTIONS.

(See Assignments, 2, 3, 4.)

ATTACHMENT.

(See Motion for Attachment, 1; Title to Patent, 1.)

BAR TO A PATENT.

(See Priority of Invention, 4.)

BENEFITS.

(See Patents, 1.)

BILL IN EQUITY.

(See Injunction, 6; Practice in the Courts, 1; Sale of Patent by Order of Court, 1, 2.)

1. Bill in Equity for Naked Account of Profits Dismissed.
A bill in equity brought under law of 1870 after the expiration of the patent, and not asking therefore for an injunction or other equitable relief, but for a naked account of profits, and it not appearing from the allegations of the bill that there were any circumstances that would render an action at law for the recovery of damages an inadequate remedy for the wrongs complained of, was dismissed.
[*Root v. Lake Shore and Michigan Southern Railway Company, 1112.)

2. Bill in Equity Under Law of 1870.
A bill in equity therefore brought under the provisions of the law of 1870 must find support in the general doctrines of equity.
[*Ibid.

3. Account of Profits not a Ground of Equitable Relief Unless Remedy at Law Insufficient.
Bill in equity seeking only an account of profits cannot, therefore, generally speaking, be maintained, "nor can the Court retain the bill under an impression that a court of chancery is better adapted for the adjustment of the account for rents, profits, and improvements. The rule of the Court is that when a suit for the recovery of the possession can be properly brought in a court of equity and a decree is given that court will direct an account as an incident in the cause; but when a party has a right to a possession which he can enforce at law, his right to the rents and profits is also a legal right, and must be enforced in the same jurisdiction." (*Hipp* v. *Babin*, 91 Howard, 271.)
[*Ibid.

4. Application of Foregoing Rule to Infringement of Patent—Infringer not a Trustee *de son tort*.
A bill for the infringement of a patent is not saved from the application of this principle by the fact that the courts have adopted the rule in ascertaining the profits of the infringer that the infringer is to be treated as though he were a trustee for the patentee in respect to profits. The case is not within the principle according to which in certain circumstances a court of equity decrees a wrong-doer to be a trustee *de son tort*, and exerts its jurisdiction over him in that character. The principle only applies where the defendant has wrongfully intermeddled with property already impressed with a trust, and he will then be required as a trustee to account, for the reason that trust property may be followed wherever it can be traced, into whosesoever possession it comes, except that of a *bona fide* purchaser, without notice.
[*Ibid.

BURDEN OF PROOF.

(See Licenses, 2.)

CASES COMMENTED UPON.

(See Damages, 6; Designs, 4; Particular Patents: 7 Demartini and Chertizza, 8 Graham, 12 Green, 27 Spring; Reissues, 8, 11.)

CHANGE OF FORM.

(See Change of Structure; Change of Process; Construction of Specifications and Patents, 4, 6; Infringement, 3, 5.)

CHANGE OF MATERIAL.

(See Particular Patents, 20; Nimmo.)

CHANGE OF PROCESS.

(See Construction of Specifications and Patents, 1, 4, 5, 6.)

CHANGE OF STRUCTURE.

(See Combinations, 6; Infringement, 2; Injunction, 2; Invention, 1; Particular Patents: 2 Bussey, 15 Guidet, 16 Hart, 18 Lindsay, 27 Spring; Reissues 1, 13, 14.)

1. Buckle-Fasteners—Infringement—Colorable Changes—Mechanical Skill.
Attaching the buckle to a separate plate which is itself attached to the bottom plate of the case, instead of attaching the buckle directly to the bottom plate, does not change the nature of the invention. The plate which carries the buckle, being an additional separate plate, must be fastened in some way to the bottom plate of the case. The severance makes the reunion necessary and promotes no useful result. It is a mere mechanical change within the scope of the invention.
[*Loercher *et al.* v. Crandal, 863.

2. Same—Same.
The fact that the fastening-pins are integral with a longitudinal piece of metal on the other side of the fabric, instead of with the bottom plate of the case, does not alter the invention, the operation being substantially the same.
[*Ibid.

CIRCUIT COURTS.

(See Review of Former Decisions, 1.)

CLAIMS.

(See Construction of Claims; Construction of Specifications and Patents, 1, 2, 4, 5; Invention Described but not Claimed.)

COMBINATIONS.

(See Construction of Claims, 1, 2; Construction of Specifications and Patents, 1; Infringement, 3, 4, 5; Injunction, 2; Non-Patentability, 1; Particular Patents: 32 Webster; Reissues, 3, 13, 14, 23.)

1. Patentable Combination—Mechanical Juxtaposition.
In a patentable combination of old elements all the constituents must so enter into it as that each qualifies every other, and together form either a new machine of a distinct character and function or produce a result due to the joint and co-operating action of all the elements, and which is not the mere adding together of separate contributions. Otherwise it is only a mechanical juxtaposition and not a vital union.
[*Pickering *et al.* v. McCullough, Dalsell & Co., 73.

2. Combination—Aggregation.
There is a combination between two or more elements if there is a concert of action between them for a definite time to accomplish a result due to their conjoint action, even though the device may then be separated and perform other functions.
[*McKesson *et al.* v. Carndick, 137.

3. Combinations—Parts Disconnected and Inoperative do not Constitute Valid.
Parts wholly disconnected from each other and from the machine, and which are inoperative for any purpose as enumerated in the combination claimed, do not constitute a valid combination.
[*Edgarton *et al.* v. Furst & Bradley Manufacturing Company *et al.*, 261.

4. Combination—Aggregation.
It appearing that some of the elements of the combination claim formed a new combination of parts to secure a useful result, it became immaterial to inquire whether all the elements of the claim are strictly in combination and not merely aggregated.
[*Strobridge v. Landers *et al.*, 1027.

5. Letters Patent No. 197,528—Dropping an Element—Infringement.
When the defendant dispensed with one element of the combination claimed in the patent and substituted another whereby the same result is accomplished in a manner different from that described in the patent, *Held* that there was no infringement.
[*Schmidt v. Freese, 1876.

6. Invention—New Combinations of Old Devices.
A new combination of known devices producing a new and useful result (as that of greatly increasing the effectiveness of a machine) is evidence of invention, and may be the subject of a patent.
[*Webster Loom Company v. Higgins *et al.*, 2031.

COMMISSIONER OF PATENTS.

(See Reissues, 10, 11.)

COMMON USE.

(See Designs, 1, 2; Disclaimers, 1; Public Use.)

COMPARISON OF PATENTS.

(See Reissues, 5, 21.)

CONFLICTING APPLICATIONS.

(See Interferences, 2.)

CONSENT OF INVENTOR TO USE OF INVENTION.

(See Void Patents, 1.)

CONSTRUCTION OF CLAIMS.

(See Construction of Specifications and Patents, 1, 2, 4, 5, 7.)

1. Statement of Invention Distinguished from Claims.
Where in the specification an invention was stated to consist of four (4) elements in combination, and in the claims there are two combinations of less number of elements and no claim for the combination of all four elements, *Held* that the claims, if clear and distinct, must control.
[*McKesson *et al.* v. Caradick, 137.

2. Certain Combinations Void for Uncertainty.
A combination claim naming two independent sets of devices used for producing different operations or results, and containing the words "or either, in relation to each other" and to another part not affected by either of them, is void for uncertainty.
[*Edgarton *et al.* v. Furst & Bradley Manufacturing Company *et al.*, 261.

CONSTRUCTION OF SPECIFICATIONS AND PATENTS.

(See Change of Structure, 1, 2; Combinations, 1, 2, 4; Construction of Claims; Infringement, 1, 4, 5; Invention, 1; Joint Invention Necessary to Joint Patents; Non-Invention, 1; Particular Patents: 2 Bussey, 4 Curtis & Worden, 6 Demartini & Chertizza, 10 Gray, 14 Guidet, 18 Lindsay, 24 Schnessler, 30 Vinton, 31 Wallick, 32 Webster, 34–36 Wilson, 38 Worley & McCabe; Patents, 1; Priority of Invention, 4, 5, 6; Reissues, 3, 5, 7, 13, 14, 22; Specifications, 1.)

1. Improvement in Pill-Machines—Construction of Patent.
An improvement described as consisting in the employment, either in a combination with a molding device for shaping pills or other holder for them, of a comb-bar with pins or needles adapted for inserting a pin in each mold-cavity for taking the pills and dipping them in a coating solution, and a clamp and stripper for taking them from the needles and redipping them for filling and covering the cavities formed by the pins, claimed as "the combination of the molds A with the comb-bar B, substantially as and for the purpose specified," *Held* to cover any suitable holder of pills co-operating with a comb-bar, whether the pills are formed in it or in another mold.
[*McKesson *et al.* v. Carndick, 137.

2. Claims for Things Claimed or Described in Prior Patents.
A patentee cannot claim in a patent the same thing claimed by him in a prior patent, nor what he omitted to claim in a prior patent in which the invention was described, he not having reserved the right to claim it in a separate patent and not having seasonably applied therefor.
[*James v. Campbell *et al.*, 337.

3. Sales of Product of Patented Process—Evidence of Validity.
In all doubtful cases involving the validity of a patent the fact that the article made by the use of the process described in the patent has been extensively sold is a consideration of great weight with the court, but it is not enough *per se* to sustain the patent.
[*Wilson Packing Company *et al.* v. Chicago Packing and Provision Company, 411.

4. Process Claim—Change of Machinery—Omission of Steps.
The position that the process claim of the patent in question covers all methods of making waxed paper by machinery, whether by complainant's method or by a new mode devised by themselves, and which dispenses with some of the steps used by the plaintiff in his particular mode, cannot be adopted.
[*Hammerschlag v. Garrett *et al.*, 1199.

5. Same—Infringement.
Construing the claim in question as for a process, every successive step enumerated must be regarded as an essential part, and must be employed by defendants to render them liable for infringement.
[*Ibid.

6. Mere Change—Aggregation.
All the other parts of a process of preserving meats remaining unchanged, a mere change in the mode of cooking the meat from broiling, roasting, or steaming to boiling cannot be called invention and entitle the party who suggests the change to a patent for the process. It is a mere aggregation of old elements, bringing out no new product nor any old product in a cheaper or otherwise more advantageous way.
[*The Wilson Packing Company *et al.* v. Hunter *et al.*, 1689.

7. Evidence May be Admitted in Court to Explain Terms.
Evidence is admissible to show the meaning of terms used in a patent, as well as the state of the art, for the purpose of enabling the court or jury to understand it.
[*Webster Loom Company v. Higgins *et al.*, 2031.

8. Parts of the Invention—How to be Read.
If an improvement of a well-known appendage to a machine is fully described in a specification, it is not necessary to show the ordinary modes of attaching the appendage to the machine. The patent is to be read as if the machine and its appendage were present or in the mind of the reader, and he a person skilled in the art.
[*Ibid.

CONSTRUCTION OF STATUTES.

(See Abandoned Applications, 1; Assignment, 3, 4; Bill in Equity, 2; Damages, 2; Designs, 1; Oath with Regard to Foreign Patents, 1; Public Use, 6; Reissues, 4, 9, 21.)

1. Law of 1870 (Sections 55, 59, and 61) does not Abolish Distinction Between Law and Equity in Patent Cases.
The language of the act of July 8, 1870, (sections 55, 59, and 61,) similar in that respect to the provisions of the acts of 1819 and 1836, conferring jurisdiction in patent cases in equity as well as in law, was not meant to obliterate the distinction between these two jurisdictions or even to confuse the boundaries between them. Indeed, it is the well-settled doctrine of this Court that this distinction of jurisdiction between law and equity is constitutional to the extent to which the seventh amendment forbids any infringement of the trial by jury as fixed by the common law, and the doctrine applies in patent cases as well as others.
[*Root v. Lake Shore and Michigan Southern Railway Company, 1112.

2. Section 61 Provides Appropriate Modes in Equity Pleadings for Trial of Questions Arising Out of the Right Conferred by Section 55 to Recover Damages.
The plain and obvious purpose of the provision of the sixty-first section of the said statute that "the like defenses may be pleaded in any suit in equity for relief against any alleged infringement, and proofs of the same may be given upon like notice in the answer of the defendant and with the like effect," is to furnish appropriate modes in equity pleading for the trial of all issues both of fact and law relating both to the alleged infringement and the validity of the patent without the necessity of framing special issues out of chancery for trial by jury or sending the parties to a court of law for the trial of an action in that forum in order to determine their legal right.
[*Ibid.

CONSTRUCTION OF RULES.

(See Applications, 2; Interferences, 1, 2, 3; Oath with Regard to Foreign Patents, 1, 2.)

CONTEMPT OF COURT.

(See Motion for Attachment, 1.)

CONTINUOUS APPLICATION.

(See Applications, 1.)

CONTRACTS.

(See Employés, 2, 3.)

1. Contracts of Corporations—Corporate Seal.
A corporation may bind itself by a contract not under its corporate seal when the law does not require the contract to be evidenced by a sealed instrument.
[*Gottfried v. Miller, 711.

2. Same—Agents.
Such contracts may be executed by an agent, and the rule is that the agent should in the body of the contract name the corporation as the contracting body, and sign as its agent or officer.
[*Ibid.

3. Release in præsenti—Subsequent Infringement.
When an infringer, by agreement with the owners of a patent, agrees not to make any articles infringing a certain reissued patent, and that engagement, in conjunction with his contract to pay royalty for certain infringing articles before made, formed the consideration for his release from liability for the making and selling of those articles, it appearing that the release was an absolute release *in præsenti*, *Held* that such release, until set aside, relieves from all accountability for subsequent infringement by the making and selling of articles like those specified in the release.
[*Loercher *et al.* v. Crandal, 863.

CONVEYANCE.

(See Assignments; Employés; Extended Term of Patent, 1; License.)

CORPORATIONS.

(See Assignments, 6; Contracts, 1, 2; Title to Patent, 1.)

COSTS OF SUIT.

Settling Costs.
The decree will not be reviewed on appeal for the mere purpose of settling the costs.
[*The Union Paper Bag Machine Company *et al.* v. Nixon *et al.*, 1275.

COURT OF CLAIMS.

(See Suit Against Government Officers.)

DAMAGES.

(See Bill in Equity, 1, 3, 4; Construction of Statutes, 1; Injunction, 6; Jurisdiction in Equity, 1; Suit Against Government Officers, 1; Use by the Government of the United States.)

1. Amount of Recovery.
When a part owner of a patent sues a co-owner for using an infringing device, the recovery, if any, will be in proportion to their respective interests.
[*Herring v. Gas Consumer's Association, 209.

2. Section 55 Gives Damages in Equity in Addition to Account where Court has Jurisdiction.
The whole force of the change in the law contained in the fifty-fifth section of the said statute, whereby the complainant is entitled to recover, in addition to the profits to be accounted for by the defendant, the damages the complainant has sustained thereby, consists in conferring upon courts of equity, in the exercise of their jurisdiction in administering relief which they are accustomed and authorized to give, the power, not merely to give that compensation for the past which consists in the profits of the infringer, but to supplement it when necessary with the full amount of damage suffered by the complainant. In other words, the power to award damages and to multiply them is added as an incident to the right to an account.
[*Root v. Lake Shore and Michigan Southern Railway Company, 1112.

3. Ascertainment of Damages.
In cases of wilful infringement respondents ought to be held to the most rigid accountability, and no intendment ought to be made in their favor founded upon the alleged inconclusiveness of the complainant's proof of loss. Such proof ought to be interpreted most liberally in favor of complainants within the limit of an approximately accurate ascertainment of their damages.
[*The Bigelow Carpet Company v. Dobson. Same v. Same. The Hartford Carpet Company v. Same, 1200.

4. Same.
Where in a suit for infringement of a patent for a carpet design the evidence showed the quantity of complainants' carpet sold during the season of its first introduction, its cost, the profit upon it, the quantity of the infringing carpet sold by respondents during the following season, and that there was a decline in complainants' sales, the measure of damages is the profits which would have accrued to complainants upon the quantity of carpets sold by respondents. This latter quantity must under the circumstances be presumed to have displaced an equal quantity of complainants' carpets.
[*Ibid.

5. Measure of Damages.
Where there is a limited and local demand for a patented device which is the only one salable for a particular purpose, and the patentees consequently have control of the market, the measure of damages for infringement is all the profits made by the infringers upon their entire sales.
[*The Goulds Manufacturing Company v. Cowing *et al.*, 1277.

6. Estimating Profits.
In estimating profits the use of tools, machinery, power, and other facilities employed in the manufacture should be taken into account, as well as material, labor, wastage, and expenses of marketing. *Mowry* v. *Whitney* (14 Wall., 620) commented on and approved.
[*Ibid.

DAMAGES AND PROFITS.

(See Damages.)

DATE OF APPLICATION.

Date of Application, in Absence of Proof, Date of Patent.
In the absence of all other proof the date of the patent will be taken as the date of application and the date of assignment.
[*Worley *et al.* v. The Loker Tobacco Company *et al.*, 559.

DATE OF ASSIGNMENT.

(See Date of Application, 1.)

DATE OF FILING APPLICATION.

(See Application, 3; Renewed Applications, 3.)

DEBTS OF PATENTEES.

(See Sale of Patent by Order of Court, 2.)

DECLARATION TO THE PUBLIC.

(See Reissues, 12.)

DECISION OF THE COMMISSIONER CONCLUSIVE.

(See Reissues, 10.)

DECREE.

(See Costs of Suit, 1.)

DEDICATION TO THE PUBLIC.

(See Reissues, 3.)

DEFECTIVE CLAIMS.

(See Construction of Claims, 2.)

DEFECTIVE SPECIFICATIONS.

(See Defenses; Reissues, 3, 6, 10, 16, 17, 18, 19.)

DEFENSES.

(See Injunction, 3; License, 2; Priority of Invention, 6; Public Use, 7; Renewed Applications, 1.)

1. Legal Title—Equitable Interest not Examined Collaterally.
The legal title to the patent being in the plaintiff, it constitutes no defense to the action to make a showing of equitable interests in other parties.
[*Graham v. McCormick *et al.*, 1533.

2. Want of Allegation in Answer—Affirmative Defenses.
When the answer alleges knowledge by certain persons of a certain place, but not knowledge at that or any other place, proof cannot be received that such knowledge was at that place. Affirmative defenses, and especially this defense as provided and regulated by the statute, must be alleged as well as proved.
[*Sears v. Bouton *et al.*, 1784.

3. Defense of Insufficient Description.
Query, whether the defense of insufficient description can be set up without alleging an intent to deceive the public?
[*Webster Loom Company v. Higgins *et al.*, 2031.

DELAY.

(See Laches.)

DEMURRER.

1. Pleadings—Cannot Demur and Answer to Whole Bill.
By Rule 32 in equity a defendant may demur to the whole bill, and may demur to a part of the bill and answer as to the residue; but there is nothing that allows him to demur to the whole bill and at the same time to answer the whole bill, especially where the answer sets up everything that is in the demurrer. Putting in such an answer is a waiver of such demurrer.
[*Adams *et al.* v. Howard *et al.*, 264.

2. Circumstances Excuse Failure to Go Ahead.
Failure on part of complainant to set down demurrer for argument or to take testimony within three months after filing replication not ground for dismissing bill if sufficiently explained.
[*Ibid.

DESCRIPTION.

(See Construction of Specifications and Patents, 8; Defenses, 3; Reissues, 10, 16, 17, 18, 19; Specifications, 1.)

DESIGNS.

(See Infringement, 6.)

1. Design Patent No. 7,914—Pearl Buttons Arranged by Dozens, on Cards, in Three Rows of Four—Revised Statutes, Section 4929.
A design for a card of buttons divided into spaces covered with foil by narrow bands, with a dozen of pearl buttons in rows of three by four to each space, is not a "new, useful, and original shape or configuration of an article of manufacture" within the meaning of section 4929 of the Revised Statutes, relating to the granting of patents.
[*Pratt *et al.* v. Rosenfeld *et al.*, 886.

2. Same—Same—Invention.
Cards for buttons, faced with foil and divided into spaces by bands, were well known and in common use prior to such design, and there was therefore nothing in this arrangement rising to the level of inventive skill.
[*Ibid.

3. Designs—Previous Mechanical Patents Showing.
A previous mechanical patent is of itself no bar to the grant of a patent to the patentee therein for a design shown in such patent.
[*Ex parte* Palmer, 1111.

4. Same—Same.
Former decisions commented on and disapproved.
[Ibid.

5. Same—Novelty—Comparative Superiority.
It is immaterial to the patentability of a design whether it is more graceful or more beautiful than older designs. It is sufficient if it is new and useful. The patent is *prima facie* evidence of both novelty and utility, and neither of these presumptions has been rebutted by the evidence.
[*Lehnbeuter *et al.* v. Holthaus *et al.*, 1783.

DIFFERENT INVENTIONS.

(See Reissues, 8, 16, 19, 20.)

DILIGENCE.

(See Reissues 2, 3, 15, 23.)

DISCLAIMERS.

(See Construction of Specifications and Patents, 2.)

Disclaimer—Admission of Common Use Amounts to.
The statement in an original specification that certain described parts or combinations of parts "are in quite common use" amounts to a disclaimer, and is a statement of fact which prevents the reclaiming of such parts by a reissue.
[*Edgarton *et al.* v. Furst & Bradley Manufacturing Company *et al.*, 261.

DOUBLE USE.

(See Non-Invention, 1.)

DRAWINGS.

(See Priority of Invention, 5; Reissues, 9, 17, 22.)

DURATION OF A PATENT.

(See Oath with Regard to Foreign Patents.)

EMPLOYÉS.

(See Void Patents, 2.)

1. Invention by Employé—Rights of.
Persons are not deprived of the right to their inventions while in the service of others, unless they have been hired and paid to exercise their inventive faculties for their employers.
[*Hapgood *et al.* v. Hewitt, 1786.

2. Same—Employer no Right to Patent.
A contract by which one person agrees to pay a sum of money for the time, labor, and skill of another for a given period gives the employer no right to an assignment of a patent that is issued to his employé for an invention made during the period of his employment.
[*Ibid.

3. Same—License.
If under such a contract of employment the employer has any right to the invention, it is a mere naked license to make and sell the patented improvement as a part of its business. This right, being a mere personal one, is not transferable, and is extinguished with the dissolution of the corporation which exercised it.
[*Ibid.

ENLARGEMENT OF CLAIMS.

(See Reissues, 2, 3, 4, 6, 13, 14, 15, 16, 17, 19, 20.)

ENTRIES ON FILE-WRAPPER.

(See Applications, 3.)

EQUITY.

(See Assignments, 1; Bill in Equity; Construction of Statutes, 12; Damages, 2; Jurisdiction in Equity, 1.)

EQUIVALENTS.

(See Infringements, 2, 3, 5.)

ERROR OF JUDGMENT.

(See Reissues, 4.)

ESCROW.

(See Licenses, 2.)

ESTOPPEL.

(See Reissues, 9, 12.)

ESTOPPEL.

A wife cognizant of the fact that the husband has applied for and obtained a patent, and a party to the sale thereof, so far concedes or admits him to be the original inventor as to be estopped from obtaining a patent to herself for the same invention.

[*National Feather Duster Company v. Hibbard, 635.

EVIDENCE.

(See Witnesses.)

INFRINGEMENT—SINGLE WITNESS NOT REBUTTED SUFFICIENT.

The testimony of a single witness that defendant used machines substantially like complainants' not rebutted. *Held* to be sufficient proof of infringement upon authority. (*Bennett* v. *Fowler*, 8 Wall., 445.)

[*Spring *et al.* v. The Domestic Sewing Machine Company, 633.

EVIDENCE OF VALIDITY OF A PATENT.

(See Construction of Specifications and Patents, 3.)

EXAMINERS.

(See Application, 3.)

EX PARTE QUESTIONS.

(See Priority of Invention, 1.)

EXPERIMENTAL USE.

(See Public Use, 6.)

EXTENDED TERM OF PATENT.

1. OWNER OF PATENTED MACHINE—EXTENDED TERM.

The right of an owner of a patented machine, without any conditions attached to his ownership, to continue the use of his machine during an extended term of the patent is well settled, and power to sell the machine and transfer the accompanying right of use is an incident of this unrestricted ownership.

[*The Union Paper Bag Machine Company *et al.* v. Nixon *et al.*, 1275.

2. SAME—SAME—LICENSE.

Whatever may be the effect of an exclusive license within a district upon the right of an owner of a patented machine before the end of the original term of the patent, as that license ceases when the term expires, it follows that during the extended term no question can arise under the license.

[*Ibid.

3. OWNERS' EXTENDED TERM—LICENSES.

The owners of an extended term of a patent take their title subject to rights of the unrestricted owners of patented machines, and their licensees take their interests, subject to the same rights.

[*Ibid.

FIRST AND ORIGINAL INVENTOR.

(See Estoppel, 1; Injunction, 1, Priority of Invention, 2, 3, 4.)

FOREIGN PATENTS.

(See Oath with Regard to Foreign Patents, 1, 2.)

FUNCTION.

(See Combinations, 1, 2.)

GOVERNMENTAL USE.

(See Use by the Government of the United States.)

HUSBAND AND WIFE.

(See Estoppel.)

IDENTITY OF INVENTION.

(See Reissues, 18, 19.)

IDENTITY OF INVENTION IN ORIGINAL AND REISSUED PATENT.

(See Reissues, 18, 22.)

IMMATERIAL VARIATIONS.

(See Infringement, 6.)

IMPEACHMENT OF WITNESSES.

(See Witnesses.)

IMPROVEMENTS.

(See Construction of Specifications and Patents, 1; Infringment, 2.)

INFRINGEMENT.

(See Bill in Equity, 1, 3, 4; Change of Structure, 1, 2; Construction of Specifications and Patents, 4, 5; Construction of Statutes, 2; Contracts, 3; Damages, 3, 4, 5, 6; Defenses, 1; Evidence, 1; Injunction, 6; Particular Patents: 2 Bussey, 16 Hart, 17 Hubbard, 26 Searl.)

1. INFRINGEMENT OF PATENT BY JOINT OWNER.

A part owner of a patent has no right to use an infringing device. If he does, he is liable to his co-owner for the wrong done.

[*Herring v. Gas Consumers' Association, 203.

2. LIABILITY OF MERE IMPROVERS.

Features of construction may well be and are often equivalents of prior patented features because involving their construction and mode of operation, though going further and containing their own patentable features; and for that very reason, when the question of the novelty and patentability of such further features comes up, the prior existence of such prior patented features does not make them the equivalents of the further features so subsequently patented in such sense as to anticipate the latter, but such subsequent patentee will be held liable for infringement so far as he uses the prior invention.

[*Loercher *et al.* v. Crandal, 863.

3. COMBINATION—SUBSTITUTING NEW ELEMENT.

Defendant having dispensed with one of the essential elements of the combination, and having substituted therefor a new mode of accomplishing the same object, not a mechanical equivalent, and not similar in principle of operation, there is no infringement.

[*The American Ballast Log Company of New York v. Barnes *et al.*, 1029.

4. STATE OF THE ART.

When, in view of the state of the art, the patentee's claim must be construed to be for the specific arrangement of devices invented by him, the defendants do not infringe unless their devices are in the same specific form.

[*Matthews *et al.* v. The Boston Machine Company *et al.*, 1349.

5. EQUIVALENTS.

The various parts of the defendant's machine exhibit mechanical parts equivalent to those in complainant's machine and produce the same result, and therefore infringe, notwithstanding the two machines in various particulars are unlike in form.

[*Graham v. The Geneva Lake Crawford Manufacturing Company, 1536.

(See Combinations, 6.)

6. DESIGN PATENT.

An immaterial variation of the design—such as a slight inclination backward, hardly perceptible to the eye, of the glass constituting the front of the elevated parts of a show-case—does not relieve from the charge of infringement.

[*Leinbeuter *et al.* v. Holthaus *et al.*, 1783.

INJUNCTION.

(See Jurisdiction, 1; Motion for Attachment, 1.)

1. MOTION FOR PRELIMINARY INJUNCTION—REASONABLE DOUBT.

Whenever upon a motion for preliminary injunction a fair and reasonable doubt exists upon the facts presented as to whether defendant has actually been guilty of an infringement, or when it does not satisfactorily appear that the complainant is the first and sole inventor of the improvements claimed, a preliminary injunction will be refused.

[*Crose v. Livermore, 139.

2. SAME—CHANGES IN THE COMBINATION.

Motion for preliminary injunction will also be refused if it appears that the alleged infringer uses less than all the elements of the combination and substitutes something for the part which he omits, unless the substitute is a mere mechanical equivalent.

[*Ibid.

3. SAME—PATENT—LONG POSSESSION—INFRINGEMENT.

While it is unquestionably true that, three things being proved—namely, a patent, long possession, and infringement—the party is entitled *prima facie* to an injunction, yet even where this is shown the question will be, in cases of opposing evidence, whether this right has been displaced by the respondent.

[*Ibid.

4. SUSPENSION OF INJUNCTION—AFFIDAVIT.

Motion for a further suspension of the issuance of an injunction denied for the insufficiency of the affidavit.

[*Macaulay v. The White Sewing Machine Company *et al.*, 204.

5. VIOLATION OF INJUNCTION.

It was a violation of the injunction granted against defendant in this case to sell machines at Cleveland, whether or not they were sent within the territorial jurisdiction of the court.

[*Macaulay v. The White Sewing Machine Company *et al.*, 496.

6. GROUNDS OF RELIEF OTHER THAN INJUNCTION—INADEQUACY OF REMEDY AT LAW—SPECIAL GROUNDS MUST BE ALLEGED AND PROVED.

Grounds of equitable relief may arise other than by way of injunction, as where the title of the complainant is equitable merely, or equitable interposition is necessary on account of the impediments which prevent a resort to remedies purely legal, and such an equity may arise out of and inhere in the nature of the account itself, springing from special and peculiar circumstances which disable the patentee from a recovery at law altogether, or render his remedy in a legal tribunal difficult, inadequate, and incomplete, and as such cases cannot be defined more exactly each must rest upon its own particular circumstances as furnishing a clear and satisfactory ground of exception from the general rule.

[*Root *v.* Lake Shore and Michigan Southern Railway Company, 1112.

INOPERATIVENESS OF AN INVENTION.

(See Reissues, 6, 10, 17.)

INSUFFICIENT DESCRIPTION.

(See Defenses, 3; Reissues, 10, 16, 17, 18, 19.)

INTERFERENCES.

1. INTERFERENCE NUNC PRO TUNC—RULE 93.

Where one of two conflicting applicants has inadvertently obtained a patent without notice to the other an interference may then be declared *nunc pro tunc* between the application and the patent, under authority of the first clause of Rule 93.

[*Ex parte* Marston, 633.

2. CONFLICTING APPLICATIONS—PATENT PREMATURELY ISSUED.

Conflicting applications under the law and the rules sustain a hostile relation each to the other, irrespective of their relative dates of filing, and the premature issue of a patent to one applicant is not conclusive either for or against the right of the other.

[Ibid.

3. MEANING OF "PATENT" IN RULE 93.

The second clause of Rule 93 has no application to such a case, the patent there referred to being one which was granted before the pending application was filed.

[Ibid.

INVALIDITY OF PATENTS.

(See Void Patents, 1.)

INVALID PATENTS.

(See Void Patents.)

INVENTION.

(See Combination, 7; Designs, 1, 2; Employés, 1; Inventor; Non-Invention; Particular Patents, 18 Lindsay.)

LETTERS PATENT NO. 134,404—WANT OF INFRINGEMENT.

When every other part of the invention described in Letters Patent No. 134,404 was shown to be old, doubted whether it can be called invention to have the ground in the spaces between the blocks more compactly rammed, so as to drive it below the under surface of the pavement into the earth foundation; but the evidence failing to show that the defendant used this feature of the invention the bill is dismissed.

[*Stow v. The City of Chicago, 790.

INVENTION BY EMPLOYÉS.

(See Employés, 1.)

INVENTION DESCRIBED BUT NOT CLAIMED.

(See Construction of Claims, 1; Construction of Specifications and Patents, 3; Reissues, 3.)

TWO PATENTS FOR PARTS OF SAME INVENTION.

Where a person has within the meaning of the patent law made an invention which he has described in specifications, including other matter of invention, for which last a patent has been issued, he should not be precluded for that reason alone from applying for and obtaining a patent for that which was not claimed in the first patent.

[*Graham v. McCormick *et al.*, 1533.

INVENTOR.

(See Employés, 1; Estoppel, 1; Joint Invention, 1.)

INVENTOR.

One who made a valuable suggestion to the conceiver of the idea of substituting in a feather duster feathers of the common domestic fowls in place of ostrich-feathers while he was engaged in a series of experiments with a view to discover some means whereby such feathers might be made pliable, did not thereby become the inventor of the duster.

[*National Feather Duster Company v. Hibbard, 635.

JOINDER OF INVENTIONS.

(See Joint Invention.)

JOINT INVENTION.

1. JOINT INVENTION DEFINED.

A mere suggestion, not acted upon by the person making it, but carried out and perfected by another, will not entitle the former to be considered a joint inventor. Nor is it necessary that exactly the same idea should have occurred to two persons at the same time, and that they should work out together the embodiment of this idea in a perfected machine to constitute them joint inventors. If an idea is suggested to one, and he even goes so far as to construct a machine embodying this idea, but it is not a completed and working machine, and another person takes hold of it, and by their joint labors, one suggesting one thing and the other another, a perfect machine is made, a joint patent may properly issue to them. If, upon the other hand, one person in-

vents a distinct part of a machine and another person invents another distinct and independent part of the same machine, then each should obtain a patent for his own invention.
[*Worden *et al. v.* Fisher *et al.*, 1957.

2. JOINT INVENTION NECESSARY TO JOINT PATENT.
If the facts show that a patent is the result of the mutual contributions of two persons, they should be treated as joint inventors and a joint patent should be taken out. Such patent stands for and must be supported by a joint invention; but the court would not be justified in annulling such patent without clear proof that the patentees are not joint inventors.
[*Ibid.

JOINT OWNERS.

(See Damages, 1; Infringement, 1.)

JOINT PATENT.

(See Joint Invention, 2.)

JUDGMENT.

(See Sale of Patent by Order of the Court, 1, 2.)

JURISDICTION.

(See Bill in Equity, 3, 4; Construction of Statutes, 1; Damages, 2; Injunction, 5, 6; Reissues, 5, 10, 11; Suit Against Government Officers.)

WANT OF JURISDICTION CURED BY APPEARANCE.
A party becomes amenable to the jurisdiction of the court by appearing in the suit.
[*Macaulay *v.* The White Sewing Machine Company *et al.*, 496.

JURISDICTION IN EQUITY.

(See Construction of Statutes, 1.)

JURISDICTION IN EQUITY—REMEDY AT LAW EXCLUSIVE.
It is the fundamental characteristic and limit of the jurisdiction in equity that it cannot give relief when there is a plain and adequate and complete remedy at law, and hence it has no original, independent, and inherent power to afford redress for breaches of contract or torts by awarding damages, for to do that was the very office of proceedings at law.
[*Root *v.* Lake Shore and Michigan Southern Railway Company, 1112.

LACHES.

(See Demurrer, 2; Priority of Invention, 1, 2, 3; Reissues, 2, 5, 12, 15, 23.)

LAW AND EQUITY.

(See Construction of Statutes, 1.)

LIABILITY.

(See Assignments, 6; Contracts, 1, 2, 3; Sale of Patent by Order of the Court.)

LICENSEES.

(See Extended Term of Patent, 3.)

LICENSES.

(See Employés, 3; Extended Term of Patent, 2, 3.)

1. SALE OF MACHINE—IMPLIED LICENSE.
Where Stromberg sold to Miller a machine and the right to use the same and Stromberg subsequently acquired an interest in the patent covering the machine, *Held* that such sale was a license to Miller to use the machine so far as Stromberg could grant a license.
[*Gottfried *v.* Miller, 711.

2. LICENSE ALLEGED TO HAVE BEEN DELIVERED AS AN ESCROW—BURDEN OF PROOF.
Where a license executed by the complainant is in the possession of the defendant and is produced by it on the trial, and on its face is absolute and without any limitation or condition, the burden of proof is upon the complainant to show that it was delivered as an escrow.
[Mellon *et al. v.* The Delaware, Lackawanna, and Western Railroad Company, 1616.

3. PERSONAL LICENSE NOT TRANSFERABLE.
A license "to manufacture" at a certain place is a personal license not transferable.
[*Searls *v.* Bouton *et al.*, 1784

LIMITATION OF UNITED STATES PATENTS BY A FOREIGN PATENT PREVIOUSLY OBTAINED.

(See Oath with Regard to Foreign Patents, 1.)

MEASURE OF DAMAGES.

(See Damages, 3, 4, 5, 6.)

MECHANICAL CHANGE.

(See Change of Structure, 1, 2; Combinations, 1.)

MECHANICAL CONSTRUCTION.

(See Change of Structure.)

MECHANICAL PATENT NO BAR TO DESIGN PATENT.

(See Designs, 3, 4.)

MECHANICAL SKILL.

(See Particular Patents: 18 Lindsay, 20 Nimmo.)

MECHANICAL SUBSTITUTE.

(See Change of Structure; Injunction, 1.)

MECHANICAL TERMS.

MECHANICAL TERMS—CERTAIN NOT SYNONYMOUS.
In a limited state of the art "mounted on" is not the same as "suspended from."
[*Edgarton *et al. v.* Furst & Bradley Manufacturing Company *et al.*, 261.

MISTAKES.

(See Reissues, 2, 3, 4.)

MISTAKE OF LAW OR FACT.

(See Review of Former Decisions.)

MODEL.

(See Priority of Invention, 5.)

MODE OF OPERATION.

(See Change of Structure, 2; Infringement, 3.)

MODIFICATIONS.

(See Change of Form; Change of Material; Change of Process; Combinations, 6; Infringement, 2, 3, 4, 5, 6.)

MOTION FOR ATTACHMENT.

MOTION FOR ATTACHMENT—PROCESS—OMISSION OF STEP.
Motion for attachment for contempt dismissed, it appearing that defendants omitted in their method the first step in the plaintiff's process.
[*Hammerschlag *v.* Garrett *et al.*, 1190.

MOTIONS.

(See Injunction, 1.)

NEW CLAIMS.

(See Reissues, 9, 13.)

NEWLY-DISCOVERED EVIDENCE.

(See Review of Former Decisions, 1.)

NEW MATTER.

(See Applications, 2; Reissues, 1, 16, 17, 19, 21, 23.)

NON-INVENTION.

(See Construction of Specifications and Patents, 6; Invention, 1; Particular Patents: 14 Guidet, 34 Wilson.)

NON-INVENTION—DOUBLE USE.
In a process of reducing slag, the application for the first time to a cupola-furnace of the cinder-notch previously used in the blast-furnace to accomplish the same end is devoid of invention. When applied to a cupola-furnace, the cinder-notch performed the same function in the same way.
[*Vinton *et al. v.* Hamilton *et al.*, 557.

NON-PATENTABILITY.

(See Combinations, 3; Construction of Specifications and Patents, 2; Designs, 2; Particular Patents, 24 Wilson.)

IMPROVEMENT IN MOLDING CRUCIBLES—AGGREGATION OF OLD DEVICES—PATENTABLE NOVELTY.
The alleged invention covered by the Nimmo patent of an improvement in molding crucibles, which consists of combining an old mode of presenting the "ball" to and supporting it under the action of the forming tool and an old mode of shaping the inside of the crucible, *Held* to be a mere aggregation of old agencies and devoid of patentable novelty.
[*Pickering *et al. v.* McCullough, Dalzell & Co., 73.

NOVELTY.

(See Designs, 5; Non-Patentability, 1; Particular Patents, 24 Wilson.)

OATH.

(See Applications, 2; Oath with Regard to Foreign Patents, 1.)

OATH WITH REGARD TO FOREIGN PATENTS.

1. SECTION 4887 OF THE REVISED STATUTES CONSTRUED.
Under section 4887 of the Revised Statutes the Commissioner of Patents should limit the duration of patents issued by him to the term of foreign patents previously issued for same invention.
[Opinion of Secretary of the Interior, 1179.

2. RULE 39 OF PRACTICE IN THE UNITED STATES PATENT OFFICE.
To this end he may require of the applicant, under oath, all his knowledge upon the subject.
[Ibid.

OBJECTIONS.

(See Priority of Invention, 6.)

OLD ELEMENTS.

(See Combinations, 1, 4, 6, 7; Construction of Specifications and Patents, 6; Infringement, 2, 5; Non-Patentability; Particular Patents, 14 Guidet.)

OMISSION IN REISSUE OF CERTAIN PARTS OF ORIGINAL PATENT.

(See Reissues, 16, 19.)

ORIGINAL INVENTOR.

(See Estoppel, 1; Injunction, 1; Priority of Invention, 2, 3.)

OWNERSHIP.

(See Assignments; Employés; Extended Term of Patent, 1, 3; Infringement, 1; Parties to Suit; Title to Patent.)

PARTICULAR PATENTS.

(See Infringement, 5; Invention, 1.)

1. AMBROSE—LAMPS.
Letters Patent No. 3,036 granted to Joshua E. Ambrose, October 16, 1860, for an improvement in lamps, declared void by reason of enlargement of the scope of the original.
[*Edward Miller & Company *v.* The Bridgeport Brass Company, 201.

2. BUSSEY—COOKING-STOVES.
Letters Patent No. 189,001, granted to Essek Bussey, July 18, 1876, for an improvement in cooking-stoves, claiming, "in combination with a stove-oven, a hinged shelf fitted to fall outward and down automatically when the oven-door is opened and to be raised up by closing the oven-door, adapted to operate upon it for that purpose," construed, in light of the state of the art, to cover only the specific devices for raising and lowering the hinged shelf, and that as the defendant used a different device for that purpose there was no infringement.
[*Bridge, Beach & Co. *v.* The Excelsior Manufacturing Company *et al.*, 1955.

3. CAUHAPE—PILL-MACHINE.
Letters Patent No. 110,630, granted to Pierre Cauhape, January 3, 1871, for an improvement in pill-machines, construed and sustained.
[*McKesson *et al. v.* Carndick, 137.

4. CURTIS AND WORDEN—WHIP-HOLDER.
Reissue Letters Patent No. 8,581, granted to H. M. Curtis and A. Worden, February 18, 1878, for an improvement in whip-holders, is valid except as to the fourth claim.
[*Worden *et al. v.* Fisher *et al.*, 1957.

5. DAVIS—BOX-LOOPS.
The validity of Reissue Letters Patent No. 6,974, granted to Charles H. Davis, March 7, 1876, for an improvement in box-loops for carriage-tops, sustained, it appearing that it required ingenuity and invention to pass from the prior devices to the box-loop of the patentee.
[*Crandal *v.* Walters *et al.*, 945.

6. DEMARTINI AND CHERTIZZA—BALLAST-LOGS.
Letters Patent No. 126,938, granted May 21, 1872, to Demartini and Chertizza, for improvement in methods of ballasting vessels in port, is essentially a combination of two counterbalance-weights, and cannot be construed to cover all methods by which vessels may be kept in an upright position while in port, by means of contrivances fastened on the outside and floating in the water, but only such as are substantially identical with the device described in a patent in construction, form, and principle of operation.
[*The American Ballast Log Company of New York *v.* Barnes *et al.*, 1039.

7. SAME.
The conclusions of the Circuit Court for the Eastern District of New York and the Circuit Court for the District of Maryland, with respect to the patentability of the invention, adopted, and the validity of the patent sustained, notwithstanding certain testimony offered to show the prior use of the invention.
[*The American Ballast Log Company *v.* Cotter, 1030.

8. GRAHAM—HARVESTERS.
The rulings in *Graham* v. *McCormick* upon the validity of Letters Patent No. 74,342, granted to A. B. Graham, February 11, 1868, for an improvement in harvester, and title of plaintiff approved and adopted.
[*Graham *v.* The Geneva Lake Crawford Manufacturing Company, 1536.

9. SAME.
The Ball patent and the Zug machine examined and held not to anticipate the combination in controversy.
[*Graham *v.* McCormick *et al.*, 1533.

10. GRAY—HEAD-COVERING.
Letters Patent No. 219,462, granted to Robert Gray, September 9, 1879, for an improvement in head-covering, is held to cover (1) a layer of flock on a support of buckram or the like; (2) a support of buckram or the like next the flock, with a coating of adhesive substance on the buckram, on which the flock is strewn; (3) a canton-flannel or other similar lining on the face of the buckram, to which the flock is not applied, with the napped face of the canton-flannel exposed and not next to the buckram; and held not to be anticipated by prior hats lacking any one of these elements.
[*Bernard *et al. v.* Heimann *et al.*, 140.

11. GREEN—WELLS.
Reissue Letters Patent No. 4,372, granted to Nelson W. Green, May 9, 1871, for an improvement in Artesian well, sustained.
[*Green *v.* French, 1351.

12. PRIOR DECISIONS FOLLOWED.
In view of numerous decrees in other circuit courts sustaining the validity of the Green patent for driven wells, in only one of which appeal has been taken to the Supreme Court, the court declined to hear argument except as to new features of the particular case.
[*Ibid.

13. PRIOR INVENTION.
Evidence offered to show the existence of a driven well at Warsaw in the year 1859 discredited.
[*Ibid.

14. GUIDET—PAVEMENT.
Letters Patent No. 85,814, granted to Charles Guidet, January 12, 1869, for an improvement in stone pavements, declared invalid.
[*Guidet *v.* The City of Brooklyn, 1692.

15. SAME.
Where a firm bed and an open joint for foothold had been before obtained by using parallelopipeds with rough side surfaces in conjunction with a filling of sand it required no invention to secure the entire result by selecting stones with rougher side surfaces and dispensing with artificial means for keeping the stones apart. The change was only of degree and not patentable.
[*Ibid.

16. HART—NECKTIES.
The improvement in neckties set forth in Reissued Letters Patent No. 7,909, granted to Wm. H. Hart, October 9, 1877, which consists in securing a straight pin to the shield by means of metallic fastenings—i. e., metallic rivets either separate from or struck out from the body of the pin, which pass through the shield and are clinched or headed on the opposite side—is not infringed by a mode of securing pins to the shield, which dispenses with separate fastenings, and which consists in forming two bends in the length of the pin, so that by passing through suitable holes in the shield the pin may fasten itself.
[*Hart *v.* Thayer, 791.

17. HIBBARD—FEATHER DUSTERS.
Letters Patent No. 177,933, dated May 30, 1876, and issued to Susan M. Hibbard, for an improvement in feather dusters, *Held* to interfere with Letters Patent No. 154,985 and set aside.
[*National Feather Duster Company *v.* Hibbard, 635.

18. LINDSAY—SLEEVE-SUPPORTER.
The invention described in Letters Patent No. 202,735, granted to J. P. Lindsay, April 23, 1878 for an improvement in sleeve-supporters, which consists of two of the clasps described in No. 156,429, one being at each end of a connecting web or strap, is not merely a duplication of the clasp or a new application thereof. As a structure the two clasps with the uniting-strap will do what one clasp, or one clasp with an attached webbing, cannot do, and involved invention beyond what the clasp alone indicated.
[*Lindsay *v.* Stein, 1613.

19. MILLER AND WORLEY—TOBACCO.
Reissue Letters Patent No. 8,060, granted to Anton Miller and Christian Worley, January 29, 1878, for a process of marking plug-tobacco with an ineffaceable identifying-impression by one and the same pressure by means of compress-plates with draws in relief, *Held* to be anticipated by the invention of Ed. F. Smith.
[*Miller *et al. v.* Force *et al.*, 947.

20. NIMMO—MOLDING CRUCIBLES.
Reissue Letters Patent No. 6,166, granted to George Nimmo, December 8, 1874, for an improvement in molding-crucibles, declared invalid for want of novelty.
[*Pickering *et al. v.* McCullough, Dalzell & Co., 73.

21. SAME—ANTICIPATED BY PATENTS OF WISE AND SMITH—CHANGE OF MATERIAL—MECHANICAL SKILL.
The alleged invention of Nimmo is also anticipated by prior patents to Wise and to Smith, embodying the principle of a former used in combination with a mold connected so that the former can be withdrawn in cases of vessels having a bilge without injury, although the machines described in said patents are mere paper-machines, it appearing that the machines could be made practically successful by mere mechanical skill without the exercise of the faculty of invention.
[*Ibid.

22. NORTON—STAMP-CANCELING DEVICE.
Marcus P. Norton's Reissue Letters Patent, dated October 4, 1870, No. 4,143, for an improved post-office stamp for printing the postmark and canceling the postage-stamp at one blow, *Held* to be void by reason of not being for the same invention specified in the original.
[*James *v.* Campbell *et al.*, 337.

23. RICE—STEAM-BOILERS.
The invention in Reissue Letters Patent No. 6,422, granted to Harvey W. Rice, May 4, 1875, for an improvement in steam-boilers, is anticipated in Morey's patent, which, in covering the combination of the feeding-tube with any kind of thrashing engine or boiler, necessarily includes the combination of the feeding-tube with the return-flue boiler. This particular application of the feeding-tube to the return flue boiler is within the scope and provision of Morey's invention, whether it had been tested by his experience or was anticipated by his foresight or not.
[*Heald *v.* Rice, 1443.

24. SCHUESSLER—BUCKLE-FASTENINGS.
Reissue Letters No. 7,129, granted to Charles Schuessler, May 23, 1876, for an improvement in buckle-fastenings, held not to be open to objection as to their validity so far as any question affecting the defendant's structures is concerned.
[*Loercher *et al. v.* Crandal, 863.

25. SCOTT—WHIP-SOCKETS.
Reissue Letters Patent No. 5,400, granted to Erastus W. Scott, May 6, 1873, for an improvement in whip-sockets, are valid, and are infringed by the device described in Letters Patent No. 8,581, reissued to Henry M. Curtis and Alva Worden, for an improvement in whip-holders.
[*Searls *v.* Worden *et al.*, 1955.

26. SEARLS—WHIP-SOCKETS.
Reissued Letters Patent No. 9,297, granted to Anson Searls, July 13, 1880, for an improvement in whip-sockets, construed and sustained.
[*Searls *v.* Bonton *et al.*, 1784.

27. SPRING-LATHES FOR TURNING IRREGULAR FORMS.
The validity of Letters Patent No. 23,957, granted to Charles and Andrew Spring May 10, 1859, for an improvement in lathes for turning irregular forms not anticipated by the Pernot machine, the evidence showing that the devices for modifying the movement of the cutting-tool were added to the machine after the invention of the Springs, or that these devices, if originally present in the machine, accomplished their work so imperfectly that the inventor laid no stress upon them, and their existence was so fitful and uncertain that they must be put in the category of abandoned experiments. (*Spring* v. *Packard*, 7 O. G., 341.)
[*Spring *et al. v.* The Domestic Sewing Machine Company, 633.

28. STOW—PAVEMENT.
Reissue Letters Patent No. 3,274, granted to Henry M. Stow January 19, 1869, for an improvement in pavement: *Held* to be anticipated by the patent of Stead, which does not in terms say that the purpose of driving the wedge-shaped block or pile through the space left by the octagonal blocks is to pack the earth or sand foundation, it appearing that such a result must follow from the construction described.
[*Stow *v.* The City of Chicago, 790.

29. STROBRIDGE—COFFEE-MILL.
Reissue Letters Patent No. 7,583, granted to T. Strobridge, March 27, 1877, for an improvement in coffee-mills, sustained.
[*Strobridge *v.* Landers *et al.*, 1027.

30. VINTON—MANUFACTURE OF IRON FROM FURNACE-SLAG.
Letters Patent No. 143,600, granted October 14, 1873, to John J. Vinton, for an improvement in the manufacture of iron from furnace-slag, *Held* to be invalid in view of facts developed by the testimony as to knowledge and use of the invention therein claimed by others prior to the invention or discovery of the patentee.
[*Vinton *et al. v.* Hamilton *et al.*, 557.

31. WALLICK—APPARATUS FOR ENAMELING MOLDINGS.
Letters Patent No. 163,825, granted to W. Wallick, May 25, 1875, for an improvement in apparatus for enameling moldings, sustained.
[*Wallick *v.* Cantrell *et al.*, 1878.

32. WEBSTER—LOOM.
Letters Patent No. 130,961, granted to William Webster, August 27, 1872, for an improvement in looms for weaving pile fabrics, which consisted in such a new combination of known devices as to give to a loom the capacity of weaving fifty yards of carpet a day, when before it could only weave forty, *Held* to be patentable, and his patent for the same, dated August 27, 1872, sustained.
[*The Webster Loom Company *v.* Higgins *et al.*, 2031.

33. WHITCOMB—HAY-RAKE.
Reissue Letters Patent No. 2,994, granted to George Whitcomb, October 5, 1872, for an improvement in hay-rakes, declared void, because the improvement claimed had been in public use for more than two years prior to the original application for a patent.
[*Edgarton *et al. v.* The Furst & Bradley Manufacturing Company *et al.*, 261.

34. WILSON—PACKING COOKED MEATS.
Reissued Letters Patent No. 6,370, granted to William J. Wilson, April 6, 1875, for improvements in processes of preserving and packing cooked meats as limited by the two disclaimers filed October 26, 1880, construed and held to be void for want of novelty and invention.
[*Wilson Packing Company *et al. v.* Chicago Packing and Provision Company *et al.*, 1669.

35. SAME.
Reissued Letters Patent No. 6,370, dated April 6, 1875, and issued to William J. Wilson, for a new and useful improvement in the process for preserving and packing cooked meats for transportation, consisting in thoroughly cooking the meat by boiling it in water, removing the bone and gristle, then placing it while yet warm with cooking into a box or case, and pressing it by some suitable apparatus with sufficient force to remove the air and all superfluous moisture and make the meat form a solid cake, and finally closing the box or case air-tight upon the meat, are void for want of novelty.
[*Wilson Packing Company *et al. v.* Chicago Packing and Provision Company, 411.

36. WILSON—SHEET-METAL CASES.
Reissued Letters Patent No. 7,923, granted to William J. Wilson, October 23, 1877, for an improvement in sheet-metal cases, held to be void for want of novelty.
[*The Wilson Packing Company *et al. v.* The Chicago Packing and Provision Company *et al.*, 1669.

37. SAME.
Claim 1 of Reissue No. 7,923, dated October 23, 1877, and issued to John A. Wilson, for an improvement in metallic cases for containing cooked meats, which is for a can for packing food hermetically sealed, and constructed of pyramidal form, with rounded corners and offset ends to support the heads, and claim 3, which is a claim, as an improved article of manufacture, of solid meat compressed and secured within a pyramidal case or can, so that said can forms a mold for the meat and permits its discharge as a solid cake, are also void for want of novelty.
[*Wilson Packing Company *et al. v.* Chicago Packing and Provision Company, 411.

38. WORLEY AND MCCABE—TOBACCO.
Letters patent No. 185,119, granted to Christian Worley and Henry McCabe, August 22, 1876, for an improvement in the mode of finishing plug-tobacco, applied for on same date, *Held* to be invalid the evidence showing that the invention had been in open and public use for more than two years prior to the filing of the application.
[*Worley *et al. v.* The Loker Tobacco Company *et al.*, 559.

PARTIES TO SUIT.

(See Defenses, 1; Jurisdiction, 1.)

TITLE TO SUE.
The granting of the reissue to the plaintiff is sufficient proof of his title to sue.
[*Wooster *v.* Clark *et al.*, 964.

PARTS OF INVENTION.

(See Construction of Specifications and Patents, 8.)

PATENTABILITY.

(See Combinations, 1, 2; Designs, 5; Particular Patents: 18 Lindsay, 39 Webster.)

PATENTEES.

(See Patents.)

PATENT RIGHTS LIABLE FOR DEBTS OF PATENTEES.

(See Sale of Patent by Order of Court, 1, 2.)

PATENTS.

(See Construction of Claims, 1; Designs, 3, 4, 5; Employés, 1; Extended Term of Patent, 1, 2, 3; Invention Described but not Claimed, 1; Public Use, 1; Reissues, 5; Sale of Patent by Order of Court, 1, 2; Void Patents, 1.)

PATENTEE ENTITLED TO ALL USES OF INVENTION.
A patentee who is the first to make an invention is entitled to his claim for all the uses and advantages which belong to it, and it is immaterial whether he perceived and stated such advantages in his patent.
[*Stow *v.* The City of Chicago, 790.

PERSONAL DEBTS.

(See Title to Patent.)

PLEADINGS.

(See Demurrer, 1; Practice in the Courts.)

PLEADINGS IN EQUITY.

(See Construction of Statutes, 1; Practice in the Courts.)

PRACTICE IN THE COURTS.

(See Assignment, 1; Bill in Equity, 2, 3, 4; Construction of Specifications and Patents, 3, 7; Construction of Statutes, 1, 2; Costs of Suit, 1; Damages, 3, 4; Defenses, 2; Demurrer, 1, 2; Injunction, 6; Jurisdiction in Equity, 1; License, 2; Public Use, 7; Reissues, 19, 21; Review of Former Decisions; Testimony, 1.)

1. PLEADINGS—NEW BILL.
Where parties acquiesce in going on in a circuit court under complaint and answer filed in the State court, it will not be necessary to file a new bill in equity in the circuit court.
[*Gardner *v.* Crossman *et al.*, 204.

2. RULE OF COMITY.
When the record is substantially the same as that in a prior case the rule of comity prevails and the findings of the court will be followed; but when the defenses and proofs are not the same the rule does not apply.
[*Edgarton *et al. v.* Furst & Bradley Manufacturing Company *et al.*, 261.

PRACTICE IN THE PATENT OFFICE.

(See Applications, 2, 3; Designs, 3, 4; Interference, 1, 2, 3; Priority of Invention, 1.)

PRESUMPTIONS.

(See Reissues, 21.)

PRIMA FACIE EVIDENCE.

(See Designs, 5.)

PRIOR DECISIONS.

(See Particular Patents, 11 Green; Practice in the Courts, 2.)

PRIORITY OF INVENTION.

(See Applications, 1; Estoppel, 1; Injunction, 1; Interference, 2; Invention, 1; Joint Invention, 1; Particular Patents, 27 Spring; Public Use, 7; Renewed Application, 1.)

1. PRIORITY OF INVENTION—ABANDONMENT AFTER REDUCTION TO PRACTICE—EX PARTE QUESTION.
When it appears that one of the parties to an interference has put the invention into actual operation before the appearance of the other inventors in the field, the question as to whether he has in any manner by his long delay lost his right to a patent therefor goes to the merits of his application, and is strictly *ex parte*.
[Harmet *v.* Reese *et al.*, 1875.

2. SAME—LACHES—SUBSEQUENT INVENTOR.
An inventor who has perfected his invention cannot by neglect and laches forfeit his right to obtain a patent therefor in favor of a subsequent inventor.
[Ibid.

3. SAME—LACHES AS AFFECTING FIRST AND SECOND INVENTOR.
No proof of laches on the part of the first and original inventor occurring subsequently to the perfection of the invention can avail a subsequent inventor, and no laches short of abandonment of the invention can defeat the right of the first inventor to the patent.
[Ibid.

4. PRIORITY OF INVENTION—PUBLIC USE.
Of two original inventors the first will be entitled to a patent unless the other puts the invention into public use more than two years before the application for a patent.
[*Webster Loom Company *v.* Higgins *et al.*, 2031.

5. SAME—DRAWINGS MAY ESTABLISH.
An invention relating to machinery may be exhibited as well in a drawing as in a model, so as to lay the foundation of a claim to priority, if sufficiently plain to enable those skilled in the art to understand it.
[*Ibid.

6. PRIORITY OF INVENTION AS DEFENSE—PRACTICE IN THE COURTS.
Though the defense of prior invention ought to be set out in the answer, yet if the omission to set it out is not objected to at the proper time in the court below it cannot be objected to in this Court.
[*Ibid.

PRIOR USE.

(See Public Use, 2, 3, 4.)

PROCEEDINGS IN THE PATENT OFFICE.

(See Practice in the Patent Office.)

PROCESS.

(See Construction of Specifications and Patents, 4, 5, 6; Reissues, 20.)

PROCESS AND PRODUCT.

(See Reissues, 8.)

PROFITS.

(See Damages, 5, 6.)

PROOF OF INFRINGEMENT.

(See Evidence, 1.)

PROPERTY RIGHTS.

(See Employés, 3; Title to Patent, 1.)

PUBLIC USE.

(See Applications, 1; Common Use, 1; Particular Patents: 33 Whitcomb, 38 Worley and McCabe; Priority of Invention, 4; Void Patents, 1, 2.)

1. A SINGLE USE SUFFICIENT.
To constitute the public use of a patent it is not necessary that more than one of the patented articles should be publicly used. The use of a great number may tend to strengthen the proof of public use, but one well-defined case of public use is just as effectual to annul the patent as many.
[*Egbert v. Lippmann *et al.*, 75.

2. SAME.
Whether the use of an invention is public or private does not necessarily depend upon the number of persons to whom its use is known.
[*Ibid.

3. USE WITHOUT RESTRICTION.
If an inventor, having made his device, gives or sells it to another, to be used by the donee or vendee without limitation or restriction or injunction of secrecy, and it is so used, such use is public within the meaning of the statute, even though the use and knowledge of the use may be confined to one person.
[*Ibid.

4. CHARACTER OF THE INVENTION.
A use of an invention is a public use within the meaning of the law if the inventor sells a machine of which his invention forms a part and allows it to be used without restriction of any kind, although, owing to the character of the invention, it can only be used when it cannot be seen or observed by the public eye.
[*Ibid.

5. USE BY ASSIGNEE.
The inventor cannot relieve himself of the consequences of the prior public use of his patented invention by assigning an interest in his invention or patent to the person by whom the invention was thus used.
[*Worley *et al.* v. The Loker Tobacco Company *et al.*, 559.

6. EXPERIMENTAL USE AND SALE.
The law permits an inventor to make practical tests of his invention, and when an invention is used in public in the way of experiment or trial, or when a machine is sold on trial and warranted, it is not such a public use or sale as is contemplated by the statute.
[*Graham v. McCormick *et al.*, 1533.

7. SECTIONS 4886 AND 4920 REVISED STATUTES—PRIOR KNOWLEDGE AND USE.
Section 4886 Revised Statutes, providing that a patent may be granted if the invention was not known or used by others, and section 4920 Revised Statutes, providing that in his notice of defenses the defendant shall state not only the names and residences of the persons alleged to have had prior knowledge of the invention, but "where and by whom it had been used," are to be construed together; and prior knowledge of an invention not accessible to the public did not defeat a patent. (*Gayler* v. *Wilder*, 10 How., 477.)
[*Searls v. Bouton *et al.*, 1784.

PUBLIC USE AND SALE.

(See Construction of Specifications and Patents, 3.)

REDUCTION TO PRACTICE.

(See Priority of Invention, 1, 2, 3.)

REHEARING.

(See Particular Patents, 11 Green.)

REISSUES.

(See Disclaimers, 1; Parties to Suit, 1; Particular Patents, 34-36 Wilson.)

1. AMBROSE'S REISSUE—LAMPS—NEW MATTER.
The invention specified in the second claim of the reissued patent (which is the one in question here) is not the same invention which was described and claimed in the original patent. The latter was for a double dome without a chimney, the peculiarity of the supposed invention being the use of the double dome as a means of dispensing with the chimney. It is not only obviously a different thing, but it is the very thing which the patentee professed to avoid and dispense with.
[*Edward Miller & Co. v. Bridgeport Brass Company, 201.

2. BROADENING THE CLAIM—ACTUAL MISTAKE—LACHES.
Dictum, also, that where the only mistake suggested is that the claim of the original patent is not so broad as it might have been, the mistake, if it was a mistake, was apparent upon the first inspection of the patent, and if any correction was desired it should have been applied for immediately, and the right to have it corrected was abandoned and lost by unreasonable delay.
[*Ibid.

3. SAME—SAME—MAY ENLARGE CLAIM—DEDICATION TO PUBLIC.
Dictum, also, that if a patentee who has no corrections to suggest in his specification, except to make his claim broader and more comprehensive, uses due diligence in returning to the Patent Office and shows how such mistake occurred, his application may be entertained; but it must be remembered that the claim of a specific device or combination and an omission to claim other devices and combinations apparent upon the face of the patent are in law a dedication to the public of that which is not claimed, and the legal effect of the patent cannot be revoked unless the patentee surrenders it and proves that the specification was so framed by real inadvertence, accident, or mistake, without any fraudulent or deceptive intention, and this should be done with all due diligence and speed.
[*Ibid.

4. PURPOSE OF REISSUE LAW—NOT FOR ENLARGING CLAIMS SPECIALLY.
Dictum, also, that it was not the special purpose of the legislation upon reissues to authorize the surrender of patents for the purpose of reissuing them with broader and more comprehensive claims, although under the general terms of the law such a reissue may be made when it clearly appears that an actual mistake has inadvertently been made, not from a mere error of judgment, but a real *bona fide* mistake, such as a court of chancery in cases within its ordinary jurisdiction would correct.
[*Ibid.

5. COMPARISON OF THE INSTRUMENTS—COURTS HAVE JURISDICTION OF QUESTION OF MISTAKE.
Dictum, also, that when the matter is apparent on the face of the instrument upon a mere comparison of the original patent with the reissue, it is competent for the courts to decide whether the delay was unreasonable and whether the reissue was therefore contrary to law and void.
[*Ibid.

6. EXPANDING CLAIMS.
If a patent fully and clearly describes and claims a specific invention, complete in itself, so as not to be inoperative or invalid by reason of a defective or insufficient specification, a reissue cannot be had for the purpose of expanding and generalizing the claim so as to embrace an invention not specified in the original. *Burr* v. *Duryee* (1 Wall., 531) reaffirmed.
[*James v. Campbell *et al.*, 337.

7. EXPLORATION OF HISTORY OF ART BY COURT—HOW PATENTEE IS BOUND.
In such case the court ought not to be required to explore the history of the art to ascertain what the patentee might have claimed. He is bound by his statement of what his invention was.
[*Ibid.

8. REISSUE OF MACHINE PATENTS TO COVER PROCESSES.
A patent for a machine cannot be reissued for the purpose of claiming the process of operating that class of machines, because, if the claim for the process is anything more than for the use of the particular machine patented, it is for a different invention. *Powder Company* v. *Powder Works* (98 U. S., 130) reaffirmed.
[*Ibid.

9. LAW OF 1870—NEW CLAIMS—ESTOPPEL.
The statute of 1870, relating to reissues, authorizes the insertion of new claims, founded upon the original invention as exhibited by the specifications or drawings, in reissues when the omission results from "inadvertence, accident, or mistake," and where the claimant has not by some act or omission estopped himself from exercising the right to amend.
[*Combined Patents Can Company v. Lloyd, 713.

10. MISTAKE—DECISION OF COMMISSIONER CONCLUSIVE.
The question whether a patent is "inoperative or invalid by reason of defective or insufficient description or specification," and whether such defect has arisen by "inadvertence, accident, or mistake, and without any fraudulent or deceptive intention," appears from the decisions of the Court to be submitted finally to the judgment of the Commissioner wherever the circumstances bring it within the jurisdiction conferred upon him by the statute.
[*Ibid.

11. ADDITIONAL CLAIMS—QUESTION OF ERROR.
Where additional matter is claimed, however, which does not appear by reference to the patent or contemporary records to be embraced in the invention, or where it appears by such reference that the alleged omission "could not have occurred through inadvertence or mistake," as said by the Court in *James* v. *Campbell et al.*, the case is not within the jurisdiction of the Commissioner, and a reissue for additional claims may be declared void.
[*Ibid.

12. DELAY THIRTEEN YEARS—ESTOPPEL.
Where the only mistake suggested is an omission of a claim, and the patentee neglects for thirteen years to file his application for reissue, *Held* that he must be regarded, in view of his conduct, as intending to dedicate such invention to the public, and he is estopped from asserting his claim to such invention in a reissue.
[*Ibid.

13. NEW MATTER—CLAIM—ADJUNCT.
When the real invention was a box-loop for carriage-tops of a particular construction and the claim of the original patent was limited to the use of the box-loop in connection with an adjunct—a new strengthening or stiffening plate—*Held* that the patent might be reissued for the purpose of inserting a claim for the loop itself, without reference to the strengthening-plate.
[*Crandal v. Walters *et al.*, 945.

14. EXPANSION OF CLAIM.
The patentee having described and claimed a box-loop with an open frame or bottom, from the edges of which lugs project through the material to be clinched on the other side, it is an immaterial variation to employ a closed bottom and make the lugs project from it, and it is not a departure from the original patent to claim upon reissue a box-loop with lugs projecting from it.
[*Ibid.

15. EXPANDED CLAIM—LACHES.
Where the original patent shows upon its face that certain broad claims were not made, the patentees, if they are the inventors of such subject-matter, when apprised that it was not claimed in the patent, should use due diligence in surrendering the patent and having the mistake corrected. Fourteen years is too long a period of delay.
[*Matthews *et al.* v. The Boston Machine Company *et al.*, 1349.

16. DIFFERENT INVENTION.
In this instance the reissue held to be not merely for a broader claim made many years after the original was granted, but for a different invention. By suppressing the description of certain parts of the device the reissued patent is made to cover by implication an invention described and claimed in a subsequent patent.
[*Ibid.

17. PATENT WITH DRAWING—NEW MATTER.
In cases of reissues of patents, inoperative or invalid by reason of a defective or insufficient specification, or by reason of the patentee claiming as his own invention or discovery more than he had a right to claim as new, it is imperative that the new patent, when issued, shall be for the same invention, and that no new matter shall be introduced into the specification when, as in the present case, there is a drawing, with reference to which the invention is described.
[*Heald v. Rice, 1443.

18. COMPARISON OF PATENTS—QUESTION FOR COURT.
If it appears from the face of the instruments that extrinsic evidence is not needed to explain terms of art or to apply the descriptions to the subject-matter, so that the court is able from mere comparison to say what are the inventions described in each, and to affirm from such mere comparison that they are not the same but different, then the question of identity is one of pure construction and not of evidence, and consequently is matter of law for the court without any auxiliary matter of fact to be passed upon by a jury if the action be at law.
[*Ibid.

19. SAME—STEAM-BOILERS—DIFFERENT INVENTIONS.
In the present case it appears from the mere reading of the two specifications that the invention described in the first is for the return-flue boiler, while that described in the second, abandoning the claim for the boiler itself, is for a particular mode of using it with straw as a fuel by means of an attachment to the furnace-door for that purpose. These two inventions are distinct, and a patent originally issued for one cannot lawfully be surrendered as the basis for the reissue for the other.
[*Ibid.

20. SAME—EXPANSION OF CLAIM.
The rule reiterated that a patent for a machine cannot be reissued for the purpose of claiming the process of operating that machine, because if the claim for the process is anything more than for the use of the particular machine patented it is for a different invention. (*Campbell* v. *James*, 337.)
[*Ibid.

21. NEW MATTER—ORIGINAL PATENT NOT IN EVIDENCE.
Where the original patent is not put in evidence there is nothing properly before the court by which to determine whether the original and the reissue are for the same invention or not. As the reissue was granted by the proper officer, the presumption is that it was properly granted, and there is nothing in the case to overcome that presumption.
[*Searls v. Bouton *et al.*, 1784.

22. IDENTITY OF INVENTION IN ORIGINAL AND REISSUE PATENTS—HOW DETERMINED.
A reissued patent is valid if for the same invention as the original. The identity of the inventions is determined by the drawings and specifications construed together and not separately.
[*Searls v. Worden *et al.*, 1955.

23. NEW MATTER—DELAY—ABANDONMENT.
If the specification of the original patent was defective or insufficient in claiming a combination of several devices instead of making distinct claim for every device which entered into the combination, the fact was instantly discernible, even by an unpractised eye, as soon as the patent was read. The correction, if any was to be made under such circumstances, should have been applied for immediately. The right to the correction was lost by unreasonable delay of thirteen and a half years. (*Miller* v. *The Bridgeport Brass Company*, 201.)
[*Bantz v. Frantz *et al.*, 2037.

RELEASE.

(See Contracts, 3.)

REMEDY AT LAW.

(See Bill in Equity, 3, 4; Injunction, 6; Jurisdiction, 1.)

RENEWED APPLICATION.

SECOND APPLICATION INDEPENDENT.
Such second application when made can derive no aid as to time from the prior abandoned application, and the applicant must stand as to defenses in suits on the patent as if the new application were the first application.
[*Lindsay v. Stein, 1613.

RES ADJUDICATA.

(See Review of Former Decisions, 1.)

RESULTS.

(See Combinations, 1, 2, 6, 7.)

REVIEW OF FORMER DECISIONS.

REVIEW BY CIRCUIT COURTS OF FORMER DECISIONS.
In patent causes the circuit court will not review the findings of another court of co-ordinate jurisdiction except in a case of clear mistake of law or fact, of newly-discovered testimony, or upon some question not considered by such court.
[*Searls v. Worden *et al.*, 1955.

RIGHT TO USE.

(See Employés, 1; Extended Term of Patent; Infringement, 1; Licenses, 1, 3.)

ROYALTY.

(See Use by the Government of the United States.)

RULE OF COMITY.

(See Practice in the Courts, 2.)

RULES OF PRACTICE.

(See Construction of the Rules.)

SALE OF PATENT BY ORDER OF COURT.

1. PATENT RIGHTS LIABLE FOR DEBTS OF PATENTEES.
A patent right may be subjected by bill in equity to the payment of a judgment debt of the patentee.
[*Ager *et al.* v. Murray, 1197.

2. SALE BY ORDER OF COURT—TRUSTEE TO ASSIGN.
The decree below, appointing a trustee to execute an assignment, if the patentee should not himself execute one, being clearly within the chancery powers of the court, affirmed.
[*Ibid.

SALE OF PATENTED ARTICLES.

(See Construction of Specifications and Patents, 3.)

SCOPE OF AN INVENTION.

(See Change of Structure; Construction of Specifications and Patents, 7; Infringement, 2, 4.)

SCOPE OF A PATENT.

(See Construction of Claims, 1; Construction of Specifications and Patents, 4; Infringement, 2.)

SEAL OF CORPORATION.

(See Contracts, 1, 2.)

SEAL TO ASSIGNMENTS.

(See Assignments, 5.)

SECOND APPLICATION.

(See Renewed Applications, 1.)

SECOND INVENTOR.

(See Priority of Invention, 2, 3.)

SEPARATE PARTS.

(See Combinations, 3, 4.)

SIMILAR DEVICES.

(See Infringement, 5.)

SIMILARITY OF SHAPE.

(See Change of Structure; Infringement, 6.)

SPECIFICATIONS.

(See Invention Described but Not Claimed.)

DESCRIPTION OF INVENTION.
A specification in letters patent is sufficiently clear and descriptive when expressed in terms intelligible to a person skilled in the art to which the invention belongs.
[*Webster Loom Company v. Higgins *et al.*, 2031.

SPECIFIC CLAIMS.

(See Construction of Claims, 1; Infringement, 4; Reissues, 2, 3.)

STATE COURTS.

(See Practice in the Courts, 1.)

STATE OF THE ART.

(See Construction of Specifications and Patents, 7; Infringement, 4; Mechanical Terms, 1.)

STATUTES.

(See Construction of Specifications and Patents, 7; Construction of Statutes; State of the Art.)

SUBSTITUTION OF MATERIAL.

(See Injunction, 2.)

SUBSTITUTION OF MECHANICAL CONTRIVANCES.

(See Change of Structure; Infringement, 3, 5; Injunction, 2; Reissues, 1.)

SUBSTITUTION OF PARTS.

(See Injunction, 2.)

SUIT AGAINST GOVERNMENT OFFICERS.

SUITS AGAINST GOVERNMENT OFFICERS—COURT OF CLAIMS.
Query, whether an officer of the Government can be sued for using an invention only for and in behalf of the Government, and whether the Court of Claims is not the only tribunal in which the claim for compensation can be prosecuted.
[*James v. Campbell *et al.*, 337.

SUIT FOR DAMAGES AFTER EXPIRATION OF PATENT.

(See Bill in Equity, 1.)

SUITS AT LAW.

(See Bill in Equity, 3, 4; Construction of Statutes, 1, 2; Injunction, 6; Jurisdiction in Equity, 1.)

SUITS FOR INFRINGEMENT.

(See Construction of Statutes; Injunction; Infringement; Practice in the Courts.)

SUSPENSE OF AN INJUNCTION.

(See Injunction, 4.)

SYNONYMOUS TERMS.

(See Mechanical Terms, 1.)

TECHNICAL TERMS.

(See Construction of Specifications and Patents, 7; Mechanical Terms, 1.)

TESTIMONY.

(See Witnesses.)

TESTIMONY TAKEN AFTER TIME.
Rule 69 is imperative that no testimony taken after time shall be allowed to be read at the hearing.
[*Wooster v. Clark *et al.*, 264.

TITLE.

(See Defenses, 1; Employés, 1; Extended Term of Patent, 1, 3; Parties to Suit, 1.)

TITLE TO PATENT.

(See Assignments, 2; Employés, 3.)

STOCK COMPANY—ATTACHMENT OF STOCKS—ENCUMBRANCE.
The fact that a person holds stock in a company gives him no title to its property, and the attachment of such stock in the hands of a stockholder for a personal debt of the stockholder does not in any way encumber the property of the company.
[*Gottfried v. Miller, 711.

TRADE-MARKS.

PROPER NAME OF APPLICANT.
The mere name of a person does not form a proper subject for trade-mark registration, although it appears that such name, by long association with a certain line of goods, has come to be applied as a name or title to such goods.
[*Ex parte* Fairchild, 789.

TRIAL BY JURY.

(See Construction of Statutes, 1, 2.)

TRIAL OF ISSUE.

(See Construction of Statutes, 2.)

TRUSTEE.

(See Sale of Patent by Order of Court.)

UNITARY RESULT.

(See Infringement, 5.)

USE.

(See Public Use; Suit Against Government Officers, 1.)

USE BY THE GOVERNMENT OF THE UNITED STATES

(See Suit Against Government Officers, 1.)

RIGHT OF GOVERNMENT TO USE PATENTED INVENTIONS.
The Government of the United States has no right to use a patented invention without compensation to the owner of the patent.
[*James v. Campbell *et al.*, 337.

UTILITY.

(See Designs.)

VALIDITY OF PATENTS.

(See Construction of Specifications and Patents, 3; Construction of Statutes, 2; Particular Patents: 4 Curtis *et al.*, 5 Davis, 6 Demartini and Chertizza, 16 Hart, 24 Schoeussler, 26 Searls, 27 Spring, 29 Strobridge, 31 Wallock, 32 Webster; Reissues, 22.)

VIOLATION OF INJUNCTION.

(See Injunction, 5.)

VOID PATENTS.

(See Construction of Claims, 2, Particular Patents: 14 Guidet, 17 Hibbard, 19 Miller *et al.*, 22 Norton, 26 Stow, 30 Vinton, 33 Whitcomb, 34-36 Wilson, 38 Worley *et al.*)

1. CORSETS—PATENT INVALIDATED.
When the inventor made and gave to a person for use two pairs of corsets, imposing no obligation of secrecy or any condition or restriction whatever, and it appeared that the invention was at that time complete, and the donee used them for a series of years before the filing of the application for a patent in the manner and for the purpose designed by the inventor, *Held* that the patent was invalidated by virtue of the public use with the consent and allowance of the inventor for more than two years prior to the filing of the application.
[*Egbert v. Lippmann *et al.*, 75.

2. SAME—SAME—EMPLOYER'S USE.
If a person employed in the manufactory of another, while receiving wages makes experiments at the expense and in the manufactory of the employer, has his wages increased in consequence of the useful results of his experiments, makes the article invented, and permits his employer to use it, no compensation for its use being paid or demanded, and then obtains a patent for it, the patent is invalid and void. (*McCluny v. Kingsland*, 1 How., 202.)
[*Worley *et al.* v. The Loker Tobacco Company *et al.*, 559.

WAIVER.

(See Demurrer, 2.)

WIFE AND HUSBAND.

(See Estoppel.)

WITNESSES.

(See Evidence 1.)

IMPEACHING WITNESSES—GENERAL CHARACTER—ADMISSIBILITY.
A successful assault upon the general character of a witness does not necessarily exclude his testimony from consideration. The law recognizes the possibility of a witness of general bad character telling the truth, and thereupon permits such witnesses to testify, their evidence to be received for whatever, under the circumstances of the particular case, the tribunal charged with the duty of passing on and deciding the facts may deem it worth.
[*Miller *et al* v. Force *et al.*, 947.

ALPHABETICAL LIST OF PATENTEES

FOR

THE HALF YEAR, JANUARY TO JUNE, 1882, INCLUSIVE.

[Claims and drawings of Designs do not appear in the Monthly Volumes or the Gazette. Separate indexes for Designs, Trade-Marks, Labels, and Disclaimers follow this.]

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Specification.	Drawing.	Volume.	Page.
Abbe, John R., South Windham, Conn. Paper-pulp engine	254,251	Feb. 28	1206	361	21	591
Abbey, Albian L., North Springfield, Pa. Clothes-drier	257,531	May 9	616	173	21	1296
Abbot, Walter F. (See Chase, Joseph H., assignor.)						
Abbott, Arthur A., Chicago, Ill. Vehicle-spring	255,403	Mar. 28	1321	367	21	899
Abbott, Charles H., and A. W. Harrington, Chaffee, Colo. Clip for rope-tramways	255,758	Apr. 4	1	1	21	951
Abbott, Frank, New York, N. Y., assignor to S. S. White Dental Manufacturing Company, Philadelphia, Pa. Dental plugger	257,264	May 2	140	30	21	1205
Abbott, Jeremiah F., Revere, assignor of one-half to M. B. Robbins, Boston, Mass. Automatic elevator-guard	253,178	Feb. 7	1	1	21	247
Abbott, William T., Fort Wayne, Ind. Stock-car	259,071	June 6	950	67	21	1736
Abbott, William W., assignor to National Sewing Machine Company, (limited,) Philadelphia, Pa. Button-hole sewing-machine	258,964	Jan. 31	1564	440 441	21	993
Abel, George. (See Delano and Abel.)						
Abel, William H., Laconia, N. H., assignor of one-half to H. W. Boardman, Lowell, Mass. Knitting-machine. (Reissue)	10,112	May 16	1303	369 370 371	21	1581
Abele, Christian, New York, N. Y. Coffee-roaster	254,568	Mar. 7	168	41	21	607
Abernathy, Sidney. (See Purvey, Addison F., assignor.)						
Achard, Ferdinand A., Paris, France. Electric apparatus for working railway-brakes	253,148	Jan. 31	1794	466	21	389
Acheson, Leonard, assignor to Helmbacher Forge and Rolling Mills Company, St. Louis, Mo. Link-bending machine	254,696	Mar. 14	506	138 153	21	743
Adair, William R. (See Burton, Edmund L., assignor.)						
Adam, George H., Louisville, Ky. Car-coupling	259,766	June 20	1157	306	21	1969
Adam, Robert M., Charleston, S. C. Attachment for dredging-pumps	257,633	May 9	620	173	21	1296
Adam, William H. (See Deicher and Adam.)						
Adams, Allen W., New York, N. Y. Folding opera-chair	258,668	May 30	1910	530	21	1622
Adams, Benjamin F., Springfield, Mass. Kitchen utensil	254,427	Feb. 28	1500	411	21	606
Adams, Charles. (See Frothingham, Adams, and Longmore.)						
Adams, Charles, Brooklyn, N. Y. Rubber-cutting machine	257,632	May 9	617	173	21	1296
Adams, Charles M. (See Moulton and Adams.)						
Adams, George E., Providence, R. I. Button or stud	254,228	Feb. 28	1397	388	21	558
Adams, George L., assignor of one-half to J. C. Ellsworth, Fowlerville, Mich. Printing-press	260,147	June 27	1610	434	21	1960
Adams, Henry A., Sandwich, Ill. Corn-sheller	253,504	Jan. 24	1109	341	21	327
Adams, Henry A., Sandwich, Ill. Adjusting mechanism for harvester-frames	256,813	Apr. 25	1315	371	21	1263
Adams, J. Phelps. (See Low, Charles H., assignor.)						
Adams, James A., assignor of one-half to P. E. Roberts, Austin, Tex. Steam, air, or water engine	257,452	May 9	570	167	21	1255
Adams, James M., Strasberry, Mo. Joint for railway-rails	255,905	Apr. 4	168	49	21	892
Adams, James N., Sterling, Kans. Windmill	253,651	Feb. 14	565	159	21	451
Adams, John, Philadelphia, Pa. Stocking and the method of manufacturing the same	251,976	Jan. 3	1	1	21	3
Adams, John F. (See Brewer and Adams.) (Reissue.)						
Adams, John F., Irvington, assignor to B. Brewer, New York, N. Y. Permanent letter-file. (Reissue)	10,078	Apr. 4	453	122	21	1056
Adams, John Q., Macon City, Ill. Corn-sheller	256,261	Apr. 11	669	178 179	21	1057
Adams, John Q., Macon City, Ill. Stalk-cutter	257,908	May 16	1045	280 281	21	1403
Adams, John S., Boston, Mass. Clamp	256,890	Apr. 18	997	270	21	1139
Adams, Luther J., Leominster, Mass. Scissors	253,271	Feb. 14	468	133	21	427
Adams, Nelson, Quincy, Ill. Mechanical movement	258,075	June 27	1620	440	21	1970
Adams, Orrin O., Lowell, Mich. Automatic slop and swill carrier	259,073	June 6	938	67	21	1737
Adams, Peter, Jr. (See Shepard and Adams.)						
Adams, S. Jarvis, Pittsburg, Pa. Method of and apparatus for forming molds for castings	257,891	May 16	1040	280	21	1402
Adams, S. Jarvis, Pittsburg, Pa. Forming molds for castings	257,892	May 16	1043	280	21	1402
Adams, S. Jarvis, Pittsburg, Pa. Apparatus for forming molds for casting	258,266	May 23	1321	373	21	1541
Adams, S. Jarvis, Pittsburg, Pa. Apparatus for forming molds for casting	258,688	June 13	936	256	21	1066
Adams, S. Jarvis, Pittsburg, Pa. Brake for pump-spouts	259,451	June 13	717	191	21	1067
Adams, Samuel J., et al. (See Le Roy and Hosken, assignors.)						
Adams, Silas, Gardner, Mass. Spring-plow	256,451	Apr. 18	997	251	21	1133
Adams, Stephen J., Willett, N. Y. Stanchion	255,231	Mar. 21	906	297	21	684

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Adams & Westlake Manufacturing Company. (See Van Hagen, Isaac, assignor.)						
Adcock, Joel J., G. J. Lumpkin, and M. White, Subligna, Ga. Plow	253,489	Feb. 14	381	105	21	423
Adcock, Thomas, Adelaide, South Australia. Machinery for untwisting and carding curled horse-hair	254,583	Mar. 7	109	42	21	667
Ader, Clement, Paris, France. Electrical relay	256,962	Apr. 11	662	179	21	1068
Ader, Clement, Paris, France. Telephonic transmission of sound from theaters	257,453	May 9	383	107 / 108	21	1355
Adjustable Grate Manufacturing Company. (See Kearns, Thomas, assignor.)						
Adkins, Frank H. (See Bowers, Edward R., assignor.)						
Adler, Charles, Alameda, Cal. Overalls	252,985	Jan. 31	1567	441	21	293
Adler, Max. (See Gilbert, Thomas S., assignor.)						
Adler, Max, assignor to Mayer, Strouse & Co., New Haven, Conn. Corset	257,909	May 9	925	231	21	1434
Adriance, Benjamin. (See Curtis and Adriance.)						
Adsit, John C., Olean, N. Y. Filter	252,858	Jan. 31	1433	401	21	267
Agee, George S., Mint Hill, Mo. Shovel-plow	253,331	Feb. 7	179	51	21	376
Ager, Wilson, Washington, D. C. Grain-decorticating apparatus	258,339	May 23	1478	421	21	1569
Ager, Wilson, Washington, D. C. Grain-decorticating apparatus	258,340	May 23	1479	421	21	1569
Ager, Wilson, Washington, D. C. Grain-decorticating apparatus	258,341	May 23	1480	421	21	1569
Ager, Wilson, Washington, D. C. Decorticating grain	250,458	June 13	718	191	21	1827
Agnew, Thomas J., assignor of three-fourths to Barritt & Cattell and G. W. Sheppard, Jr., Philadelphia, Pa., and H. A. Thompson, May's Landing, N. J. Underground conduit for telegraph, telephone, and other wires	259,971	June 20	1367	373	21	1948
Ahearn, Thomas, Ottawa, Ontario, Canada. Lightning-arrester	252,859	Jan. 31	1434	401	21	267
Ahlert, Joseph, San Francisco, Cal. Velocipede	258,307	May 23	1394	373	21	1541
Aiken, George E. (See Parrish, William H., assignor.)						
Aiken, Walter, Franklin Falls, N. H. Knitting-machine	253,652	Feb. 14	556	159	21	451
Aiken, Walter, Franklin, N. H. Stocking and method of manufacturing the same	255,753	Apr. 4	2	1	21	951
Aikman, Peter A., Windsor, Ontario, Canada, assignor to himself and W. R. Merwin, Detroit, Mich. Car-coupling	256,531	Apr. 18	988	278	21	1138
Aitken, James C. (See Day, Jeremiah E., assignor.)						
Aitken, Robert W., and D. Farquhar, assignors to Pitts Agricultural Works, Buffalo, N. Y. Valve-gear for steam-engines	257,994	May 16	1047	291	21	1483
Akley, James D., Allegheny city, Pa. Spark-arrester	255,558	Mar. 28	1404	379	21	900
Akron Stoneware Company. (See Cook, Joseph, assignor.)						
Albee, Theodore F. (See Freeman, George W., assignor.)						
Albert, Charles, and J. G. Dinkelbihler, Cincinnati, Ohio. Rotary brush	255,906	Apr. 4	189	49	21	962
Albright, Andrew. (See Fox, Edward, assignor.)						
Albright, John W., Yarmouth, Iowa. Horse-collar fastening	258,342	May 23	1480	421	21	1569
Alden, Dana K., Sterling, Mass. Stove or oven door	258,308	May 23	1395	373	21	1541
Alden, Henry P., *et al.* (See Alexander, Richard, assignor.)						
Alderman, Asahel H., Marietta, Ohio. Separable button	259,972	June 20	1389	373	21	1949
Alderman, Olinthus G., Traer, Iowa. Mechanical movement	254,186	Feb. 28	1225	341	21	578
Aldom, Edward, Brooklyn, N. Y. Bottle-stopper	252,006	Jan. 10	413	113	21	79
Aldom, Edward, Brooklyn, N. Y. Toy cap-exploder	258,972	June 6	198	33	21	1716
Aldrich, George H., *et al.* (See Aldrich, Harvey C., assignor.)						
Aldrich, Harvey C., assignor of eleven-twelfths to W. H. Babcock, Norwich, Conn., G. H. Aldrich and E. V. D. Wood, Orangetown, and H. C. Townsend, New York, N. Y. Lock	256,963	Apr. 11	664	180	21	1068
Aldridge, Daily C., *et al.* (See Mullen, Francis M., assignor.)						
Aldridge, Hiram, assignor, by mesne assignments, to Chicago Car Roofing Company, Chicago, Ill. Car-roof. (Reissue)	10,006	Jan. 10	750	211	21	135
Aldridge, Marshall H., *et al.* (See Mullen, Francis M., assignor.)						
Ale, Ezra, Altoona, Pa. Spring-hinge	257,965	May 2	142	40	21	1306
Alexander, Alexander G., assignor to Alexander Manufacturing Company, Detroit, Mich. Water-closet	254,086	Feb. 21	1110	310	21	552
Alexander, Carl G. A., Alden, Iowa. Car-coupling	256,943	Apr. 25	1469	412	21	1229
Alexander, John W. (See Brock, William H., assignor.)						
Alexander Manufacturing Company. (See Alexander, Alexander G., assignor.)						
Alexander, Ralph W., Galesburg, Ill. Corn-planter check-rower	256,610	Apr. 18	1074	302 / 303	21	1151
Alexander, Richard, assignor to G. Leve, New York, N. Y., and H. P. Alden, Montreal, Canada. Railway time-table	257,836	May 16	859	241	21	1451
Alexander, Robert E., Niagara, Pa. Machine for upsetting and stretching tires	256,944	Apr. 25	1470	412	21	1229
Alexander, Robert L., New Liberty, Ky. Tobacco-press	257,454	May 9	386	108	21	1356
Alexander, Samuel G., Caro, Mich. Mold for making articles of felt	259,453	June 13	719	191	21	1827
Alexander, William G., Oskaloosa, Iowa. Gate-hanger	253,898	Feb. 21	709	225	21	499
Alexandre, Gustave. (See Levy and Alexandre.)						
Alker, John H., Pittsburg, Pa. Machine for bending car-coupling links	253,653	Feb. 14	557	159	21	451
Allderdice, Winslow, and R. D. Williams, Baltimore, Md. Pump	254,584	Mar. 7	109	42	21	667
Allen, Alfred W., assignor to D. M. Crosby, Grand Rapids, Mich., and J. Mann, Chicago, Ill. Device for marking cloth, &c	253,490	Feb. 14	382	105	21	423
Allen, Benjamin F., Boston, Mass. Boring-machine	251,686	Jan. 3	2	1	21	3
Allen, Charles, Rochester, N. Y. Fruit-picking implement	258,846	May 30	2081	568	21	1692
Allen, Charles O., Grand Rapids, Mich. Carpet-sweeper	258,343	May 23	1481	422	21	1569
Allen, Charles W., Pine Ridge Agency, Dak. Ter. Billiard-table	259,454	June 13	720	191	21	1827
Allen, Chauncey F., Waterbury, Conn. Corset. (Reissue)	10,019	Jan. 31	1846	508	21	335
Allen, Edwin, and J. H. Morrison, assignors to Allen Spool and Printing Company, Norwich, Conn. Machine for turning spools	256,945	Apr. 25	1471	413	21	1229
Allen, Frederick W. (See Boyce, Allen, and Fuller.)						
Allen, George H., Ayer, Mass. Bearing for spinning-spindles	254,596	Mar. 7	98	25	21	655
Allen, George L., Worcester, Mass. Automatic air-valve for steam-radiators	260,148	June 27	1611	434	21	1990
Allen, James W. (See Sebenck, Peter V., assignor.)						
Allen, John, *et al.* (See Powers, William, assignor.)						
Allen, John F., New York, N. Y. Rock-drill	252,920	Jan. 31	1507	419	21	280
Allen, John W., and A. B. Peynor, Franklin, Tenn. Car-coupling	255,907	Apr. 4	191	49	21	962
Allen, Leicester, assignor to H. T. Brown, trustee, New York, N. Y. Process of and apparatus for dynamic cooling	252,921	Jan. 31	1509	420	21	280
Allen, Morris S., assignor to himself and J. S. Sisey, Brooklyn, N. Y. Reclining-chair	255,908	Apr. 4	191	50	21	962
Allen, Perry, Flint, Mich. Bag-holder	252,640	Jan. 24	1157	324	21	215
Allen Spool and Printing Company. (See Allen and Morrison, assignors.)						
Allen, Stephen M., Duxbury, Mass. Apparatus for reducing wood and other material to pulp for paper	253,654	Feb. 14	562	159	21	452
Allen, Stephen M., Duxbury, Mass. Manufacture of paper-pulp	253,655	Feb. 14	564	160	21	452
Allen, Stephen M., Duxbury, Mass. Manufacture of paper-pulp, &c	253,656	Feb. 14	566	.....	21	453
Allen, Stephen M., Duxbury, Mass. Wood-grinder for making paper-pulp	259,999	June 27	1419	363	21	1961

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Allen, Walter J., Erie, Pa. Steam-engine cylinder	251,889	Jan. 3	159	46	21	26
Allen, William D., *et al.* (See Mathieson, Joseph, assignor.)						
Allen, William H., New York, N. Y. Grain weighing and registering machine	255,838	Apr. 4	67	26	21	967
Allen, William S., Hillsdale, Mich. Corset	257,911	May 16	949	264	21	1466
Allen, William S., Hillsdale, assignor to C. W. Higby, Jackson, Mich. Corset	259,682	May 30	1821	514	21	1636
Allis, Edward P. (See Birkbeck, Richard, assignor.)						
Allis, George B., Little Rock, Ark. Wood and coal elevator	256,498	Apr. 18	986	251	21	1123
Allison, Charles H., Elmira, Cal. Gate	255,681	Mar. 28	1317	335	21	894
Allison, Joseph W., assignor to C. F. Snyder, Dayton, Ohio. Table-leaf support	257,288	May 2	143	40	21	1306
Allison, William C., Philadelphia, Pa. Support for electric wires and lamps in cities. (Reissue)	9,999	Jan. 3	400	108	21	69
Altemiller, Charles, New York, N. Y., assignor of one-half to M. A. Stein. Shutter-fastener	256,344	May 23	1469	423	21	1569
Altmann, Frank G., and F. Pommer, Edina, Mo. Needle-threader for sewing-machines	258,607	Jan. 10	414	113	21	79
Altmann, Frank G., and F. Pommer, Edina, Mo. Needle-threading attachment for sewing-machines	258,345	May 23	1483	423	21	1569
Altmann, Frank G., and F. Pommer, Edina, Mo. Needle-threading attachment for sewing-machines	256,870	June 6	1	1	21	1695
Altmann, Moritz, Camden, N. J. Suspender-trimming	255,404	Mar. 28	1221	307	21	899
Alvord, Williston I. (See White, George A., assignor.)						
Amann, Charles H., *et al.* (See Harker, Lewis A., assignor.)						
American Arms Company. (See Fox, George H., assignor.)						
American Automatic Organ Company. (See Johnson, Willis, assignor.)						
American Bell Telephone Company. (See Anders, George L., assignor.)						
American Bell Telephone Company. (See Cossens, Henry W., assignor.)						
American Bell Telephone Company. (See Watson, Thomas A., assignor.)						
American Boot, Shoe, and Last Company. (See Johnson, Asa, assignor.)						
American Brake Company. (See Randolph, David S., assignor.)						
American Buttonhole, Overseaming and Sewing Machine Company. (See Rehfuss, George, assignor.) (Reissue.)						
American Buttonhole, Overseaming and Sewing Machine Company. (See Reninger, George S., assignor.)						
American Diamond Rock Boring Company. (See Douglass, Samuel W., assignor.)						
American Electric Company. (See Houston, Edwin J., assignor.)						
American Electric Company. (See Thomson, Elihu, assignor.)						
American Electrophore Company. (See Maloney and Burger, assignors.)						
American Electrophore Company. (See O'Sullivan, Michael J., assignor.)						
American Fire Hose Manufacturing Company. (See Callahan, Cornelius, assignor.)						
American Freight Car Heater Company. (See Eastman, William R., assignor.)						
American Gas Fuel and Light Company. (See Pierson, James S., assignor.)						
American Heating and Power Company. (See Buel, Richard H., assignor.)						
American Heating and Power Company. (See Hill and Lee, assignors.)						
American Paper Barrel Company. (See Laraway and Slate, assignors.)						
American Rail Road Ballast Unloader Company. (See Relph, George W., assignor.)						
American Railway Signal Company. (See Tisdale, Charles D., assignor.)						
American Rapid Telegraph Company. (See Smith, Gerrit, assignor.)						
American Reel Company. (See Obaver and O'Bannon, assignors.)						
American Saw Company. (See Brooke, William L., assignor.)						
American Screw Company. (See Rogers, Charles D., assignor.)						
American Stove Manufacturing Company. (See Vining and Quesnel, assignors.)						
American Tool and Machine Company. (See Norton, Alexander W., assignor.)						
American Tube Works. (See Buckingham, Edwin B., assignor.)						
American Turning Company. (See Hansen, Freeman, assignor.)						
Ames, Charles L., *et al.* (See Reda, William J., assignor.)						
Ames, Charles L., and A. H. Frost, Chicago, Ill. Adjustable connection for woven-wire bed-frames	255,405	Mar. 28	1223	307	21	899
Ames, Cheney, Oswego, N. Y. Snow-shovel	255,406	Mar. 28	1223	307	21	899
Ames Iron Works. (See Mathesser, William R., assignor.)						
Amesbury, George W., Philadelphia, Pa. Saw-setting machine	257,901	May 2	61	19	21	1292
Amet, Edward H., La Grange, and W. S. D. Hunt, Irving Park, Ill. Telephone	255,754	Apr. 4	3	1, 2	21	951
Ammerman, Dora T. Baird, and E. M. Foreman, Fairmount, Ill. Tire-cooler	254,697	Mar. 14	568	153	21	742
Amos, Alexander M., Syracuse, N. Y. Steam-cooker	255,938	Mar. 21	998	267	21	894
Ampblett, Thomas, Kiev, Russia. Water-gage and alarm	259,264	Apr. 11	685	180	21	1068
Ams, Max, New York, N. Y. Cover for mustard-bottles	259,749	June 20	1101	294	21	1900
Amsden, Charles M., Worcester, Ohio. Sled	253,332	Feb. 7	179	51	21	376
Amwake, William F. H., Lancaster, Pa. Door-spring	253,173	Feb. 7	2	1	21	347
Anders, George L., assignor to American Bell Telephone Company, Boston, Mass. Magneto-electric machine for telephone-signaling	251,758	Jan. 3	83	25	21	17
Anders, George L., assignor to American Bell Telephone Company, Boston, Mass. Telephone-signal	251,810	Jan. 3	153	43	21	26
Anders, George L., assignor to American Bell Telephone Company, Boston, Mass. Telephone-receiver	253,491	Feb. 14	382	105	21	423
Anders, George L., London, county of Middlesex, England, assignor to American Bell Telephone Company, Boston, Mass. Compound telephone	252,641	Jan. 24	1157	324	21	215
Anders, George L., London, county of Middlesex, England, assignor to American Bell Telephone Company, Boston, Mass. Telephone-exchange apparatus	252,986	Jan. 31	1566	441	21	294
Anderson, Charles A., Mineral Ridge, assignor of one-half to C. Nelson, Kingston, Iowa. Corn planter and marker	257,429	May 2	344	96	21	1342
Anderson, Charles F., Bay City, Mich. Lantern	259,455	June 13	721	192	21	1827
Anderson, Charles H. (See Marshall and Anderson.)						
Anderson, Christian, and T. Patten, Neenah, Wis. Washer for paper-pulp and other fibrous material	258,989	May 23	1396	374	21	1541
Anderson, Eli, Carpentersville, Ind. Lock	257,995	May 16	1049	291	21	1483
Anderson, George P. (See Hegeland, Israel, assignor.)						
Anderson, James, and J. McDonald, Canastelegport, Mass. Steam-engine	257,996	May 16	1049	292	21	1483
Anderson, James R. (See Knox, William H., assignor.)						
Anderson, James W., Modin, Cal. Body-brace	253,851	Feb. 7	62	26	21	360
Anderson, John, Rensville, Ill. Combined soap and buckle	257,143	May 9	1	1	21	1281
Anderson, John A. (See Rehem and Anderson.)						
Anderson, John G., Ivy, N. C. Hillside-plow	254,585	Mar. 7	171	42	21	667
Anderson, John H., *et al.* (See Scott, James, assignor.)						
Anderson, John W., Lancaster, Pa. Device for converting motion	252,831	Jan. 24	1202	309	21	254
Anderson, John W., assignor to A. B. Groff, Lancaster, Pa. Vegetable-slicing machine	252,985	Jan. 24	1110	311	21	267
Anderson, Jonas A., Lake View, Ill. Photographer's chair	253,889	Feb. 21	700	225	21	499
Anderson, Lee, assignor of one-half to L. P. Harrison, Paris, Tex. Car-coupling	259,973	June 20	1389	373	21	1949

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Anderson, Leonard, assignor to himself and E. Jenkins, Painesville, Ohio. Locomotive valve-gear	254,586	Mar. 7	179	42, 43	21	608
Anderson, Philander, New York, N. Y. Animal-shears	250,073	June 6	253	67	21	1737
Anderson, Sallie J., Bartlett, Tenn. Dish-washing machine	254,698	Mar. 14	359	153	21	743
André, Alexandre, Bakersfield, Cal. Animal-trap	253,907	Feb. 21	884	249	21	515
Andrén, Alban, Beverly, Mass. Folding camera	260,076	June 27	1521	408	21	1976
Andrew, George H., Brooklyn, Wis. Windmill	254,527	Mar. 7	98	25	21	655
Andrew, William, Cincinnati, Ohio. Malting apparatus	259,903	June 27	1420	383	21	1961
Andrews, Adolphus Y., and H. Burk, assignors to Burk Manufacturing Company, (limited,) Philadelphia, Pa. Blank for pocket-books	256,094	Apr. 4	414	112	21	1090
Andrews, Benjamin, Philadelphia, Pa., assignor to J. H. Sessions, Bristol, Conn. Trunk-fastener. (Reissue)	10,089	Apr. 25	1703	478	21	1271
Andrews & Co., A. H. (See Costello, Thomas H., assignor.)						
Andrews, Cyrus N., San Francisco, Cal. Electro-magnetic action for musical instruments	258,671	June 6	2	1	21	1695
Andrews, Edward W., assignor of one-third to J. H. Eakins, Detroit, Mich. Fare-collector for street-cars	258,271	May 23	1402	397	21	1555
Andrews, Edwin F., St. Louis, Mo. Hammer brick-machine	257,126	Apr. 25	1675	469, 470	21	1986
Andrews, Emanuel, Williamsport, Pa. Saw-handle. (Reissue)	10,135	June 13	978	261	21	1872
Andrews, Fitzhugh S., *et al.* (See Stone, Frank W., assignor.)						
Andrews, Frederick S., *et al.* (See Stone, Frank W., assignor.)						
Andrews, George P., Staffordville, Conn. Fishing-rod	252,008	Jan. 10	415	113	21	79
Andrews, James C., and J. F. Sunderland, Philadelphia, Pa. Steam-radiator	255,071	Mar. 14	194	213	21	782
Andrews, Lee W., Live Oak, Cal. Steam-engine governor	256,946	Apr. 25	1475	413	21	1229
Andrews, Richard J. (See Prescott, Joseph R., assignor.)						
Andrews, Thomas A., Scagoville, Tex. Coffee and spice mill	255,539	Mar. 28	1405	379	21	900
Andrews, William, Buffalo Grove, Iowa. Horse hay-fork	253,657	Feb. 14	567	160	21	453
Andrews, William, Madden, assignor of one-half to Z. H. Williams, Beach Springs, Miss. Ax	255,711	Mar. 28	1392	429	21	934
Andrus, Marshall D., assignor to Victor Sewing Machine Company, Middletown, Conn. Sewing-machine shuttle	258,346	May 23	1484	423	21	1570
Andrus, Thomas O., and N. B. Prior, North Wolcott, Vt. Cow-tail holder	253,263	Mar. 21	1000	267	21	824
Angell, Ida E., Delphos, Ohio. Flat-iron heater	258,689	May 30	1911	539	21	1652
Angström, Carl A., Stockholm, Sweden. Apparatus for self-massage or flesh-kneading	258,456	June 13	723	192	21	1828
Angus, James W., Macon City, Mo. Miter-box	252,987	Jan. 31	1583	442	21	295
Angus, James W., assignor of one-half to J. Shepherd, Macon, Mo. Hay and grain cap	252,168	Jan. 10	598	168	21	109
Angus, William T., Sydney, New South Wales, Australia. Adjustable buggy	258,411	Jan. 17	895	248	21	161
Annable, Edward, *et al* (See Decker, William, assignor.)						
Annas, Edward, Brooklyn, N. Y. Grain-bin	257,997	May 16	1050	292	21	1484
Annin, Joseph. (See Moore, John R., assignor.)						
Ansonia Brass and Copper Company *et al.* (See Hull, John A., assignor.)						
Ansonia Brass and Copper Company. (See Hull, Wolcott A., assignor.)						
Antholne, Joseph H. (See Tucker and Antholne.)						
Anthony & Co., E. & H. T. (See Barker, Erastus B., assignor.)						
Anthony & Co., E. & H. T. (See Hufeland, Philip, assignor.)						
Anthony, E. & H. T. (See Laighton, William S., assignor.)						
Anthony, Edwyn, Hereford, county of Hereford, England, assignor to R. Hoe & Co., New York, N. Y. Tension device for unwinding rolls of paper	259,789	June 20	1158	308	21	1909
Anthony, John B. (See Brown, Daniel W., assignor.)						
Anunsen, Kittil, Winchester, Wis. Auxiliary power-wheel for ships	255,560	Mar. 28	1406	380	21	900
Anunsen, Kittil, Winchester, Wis. Washing-machine	257,267	May 2	144	40	21	1306
Appel, Daniel, assignor to N. W. Taylor, Cleveland, Ohio. Folding mechanism for paper-bag machines	252,412	Jan. 17	896	248, 249	21	164
Appel, Daniel, Cleveland, Ohio, assignor to Eastern Paper Bag Company, Hartford, Conn. Manufacturing paper bags	258,972	May 23	1403	397	21	1556
Appleby, John F., Beloit, Wis. Tension device for grain-binders	252,988	Jan. 31	1594	442	21	295
Appleby, John F., Beloit, Wis. Grain-binder	257,837	May 16	990	241	21	1451
Appleby, John F., Beloit, Wis., assignor to Minneapolis Harvester Works, of Minnesota. Grain-binder	255,712	Mar. 28	1593	429	21	935
Appleby, John F., Minneapolis, Minn., assignor to Minneapolis Harvester Works, of Minnesota. Grain-binder	256,188	Apr. 11	558	152, 153	21	1050
Appleby, John F., Minneapolis, Minn., assignor to Minneapolis Harvester Works, of Minnesota. Harvester	257,268	May 2	145	40, 41	21	1306
Applegate, Samuel S., Camden, N. J. Device for waking persons from sleep	256,265	Apr. 11	606	180	21	1068
Appleton, Robert M., Lake Village, N. H. Drawers or tights	256,539	Apr. 18	989	278	21	1138
Appleton, Robert M., Lake Village, N. H. Stop-motion for circular-knitting machines	256,533	Apr. 18	989	279	21	1138
Arapian, Edward, assignor to himself and B. K. Moscopulos, New York, N. Y. Sponge-fishing net	255,561	Mar. 28	1407	380	21	900
Arbuckle, John, Brooklyn, N. Y. Fire-proof building	253,658	Feb. 14	568	160	21	453
Archdeacon, William, Indianapolis, Ind. Can for cooking prepared meats, &c	260,077	June 27	1523	409	21	1976
Archer, George W., Rochester, N. Y. Gynecological chair	252,160	Jan. 10	599	168, 169	21	109
Archer and Pancoast Manufacturing Company. (See Brown, James E., assignor.)						
Arey, Albert L., Cleveland, Ohio. Electric lamp	253,811	Feb. 14	763	217, 218	21	488
Arey, Albert L., Cleveland, Ohio. Electric light	253,826	Feb. 14	781	222	21	491
Arkell, James, Canajoharie, N. Y. Apparatus for ventilating cars, &c	253,149	Jan. 31	1708	460	21	328
Armington, Hezekiah, Atlanta, Ill. Grain-elevator	259,457	June 13	723	192	21	1828
Armor, Alfred H., Chicago, Ill. Air-pump	258,347	May 23	1485	423	21	1570
Armstrong, Andrew N., Blue Mound, Ill. Car-coupling	251,811	Jan. 3	157	43	21	99
Armstrong, Edward. (See Gibson and Armstrong.)						
Armstrong, Edwin A., Detroit, Mich. Rock-drill	258,683	May 30	1881	514, 515	21	1636
Armstrong, Frank, Bridgeport, Conn. Pipe-cutting machine	258,973	June 6	126	33, 34	21	1716
Armstrong, William, Chicago, Ill. Folding invalid-chair	253,333	Feb. 7	199	51	21	377
Arndt, William J., Detroit, Mich. Adjustable shaft for grindstones and the like	256,110	Apr. 11	455	123	21	1033
Arnim, Charles A., *et al.* (See Nitschmann, Franz, assignor.)						
Arnold, George T., Lancaster, Ky. Car-coupling	260,149	June 27	1612	435	21	1991
Arnold, Henry W., Utica, N. Y. Heel-plate for boots and shoes	255,234	Mar. 21	1000	267	21	824
Arnold, James G., Worcester, Mass. Magneto-electric generator for signaling purposes	256,188	Apr. 11	560	153	21	1050
Arnold, James G., Worcester, Mass. Annunciator	253,199	Apr. 11	562	153	21	1050
Arnold, John D., Holley, N. Y. Oil-tank	253,334	Feb. 7	161	53	21	377

Alphabetical list of patentees, January to June, inclusive—Continued.

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Arnold, Thomas H., *et al.* (See Morton, George B., assignor.)						
Arnold, William D. (See Showalter, Abraham, assignor.)						
Arnold, William E., assignor to W. Castle, Rochester, N. Y. Boiler for cooking grain	257,819	May 9	688	231	21	1436
Arras, John D. (See Beaver, Oliver F., assignor.)						
Arrowsmith, George, St. Louis, Mo. Fence-wire stretcher	254,567	Mar. 7	174	43	21	608
Arter, Francis G., assignor of one-half to G. Hall, Lima, Ohio. Flue-stopper	255,735	Apr. 4	5	2	21	961
Arthur, James, Jersey City, assignor of one-half to W. S. Carr, Paterson, N. J. Straight-way valve	257,634	May 9	681	173	21	1397
Arthurs, Josiah W., and J. C. Fick, Bull's City, Kans. Wind-engine	252,989	Jan. 31	1436	401	21	297
Ash, William H., Jordan township, Monona county, Iowa. Horizontal windmill	255,128	Mar. 21	821	221	21	821
Ashcroft, Edward H., Lynn, Mass. Automatic fire-extinguisher	254,253	Feb. 28	1382	382	21	822
Ashcroft, Edward H., Lynn, Mass. Cleaner for steam-boilers	254,446	Mar. 7	1	1	21	608
Ashcroft, Edward H., Lynn, Mass. Mercury pressure-gage	258,614	Apr. 25	1316	371	21	1263
Ashcroft, Edward H., Lynn, Mass. Water and steam separator	258,672	June 6	3	1	21	1695
Ashe, Robert, Somerville, assignor to G. W. Copeland, Malden, Mass. Edge setting and burnishing machine	254,530	Mar. 14	396	135	21	731
Ashe, Robert, Somerville, assignor to G. W. Copeland, Malden, Mass. Edge-burnishing machine	254,609	Mar. 14	396	136	21	731
Asher, Dadiel E., Gosport, Ind. Harrow	257,998	May 16	1033	293	21	1494
Asher, George, Birmingham, county of Warwick, England. Carriage-top joint	254,447	Mar. 7	2	1	21	639
Asher, James, Fort Erie, Ontario, Canada. Compensating-pendulum	255,909	Apr. 4	192	50	21	969
Ashworth, Elijah. (See Ashworth, George and E.)						
Ashworth, George and E., Manchester, county of Lancaster, England. Apparatus for hardening and tempering wire for cards	258,413	Jan. 17	898	249	21	165
Ashworth, John, Wedgewoodville, Md. Heddle-frame	253,385	Feb. 7	189	58	21	377
Ashworth, John, and C. S. Petrie, Chicago, Ill. Extension-pipe for fire apparatus	257,635	May 9	688	174	21	1397
Askew, Benjamin, Edinburgh, county of Mid-Lothian, Scotland. Car-coupling tool	256,611	Apr. 18	1076	308	21	1139
Askin, John H., Ohktomo, Mich. Treating fruit-trees	254,247	Apr. 25	1476	.....	21	1289
Askins, Joseph, Westfield, Mass. Burial-case	258,170	Jan. 10	600	169	21	109
Asterita, Guiseppe A., New York, N. Y. Railway danger-signal apparatus	251,818	Jan. 3	156	43	21	99
Atcheson, Theophilus, Philadelphia, Pa., assignor to himself and J. Saunders, Wilmington, Del. Paper-pulp-digester sliding valve	259,658	June 20	985	283	21	1961
Athearn, William E., New York, N. Y. Pole-changing key	258,346	Jan. 17	899	285	21	180
Athey, Franklin P., assignor to himself and B. C. Roberts, Middleway, W. Va. Horse-poke	253,336	Feb. 7	188	58	21	377
Atkins, Elijah, Birmingham, county of Warwick, England. Fastening for bracelets and scarf-rings	257,636	May 9	684	174	21	1397
Atkinson, Anthony, New York, N. Y. Apparatus for the manufacture of starch	253,357	Feb. 7	183	53	21	377
Atkinson, John A. (See Whelan, Robert, assignor.)						
Atkinson, William B., assignor of one-half to W. R. Jackson, Franklin, Ky. Jeweling-tool	256,699	May 30	1913	540	21	1652
Atkins, James, Brooklyn, N. Y. Machine for slotting soap	258,711	Jan. 24	1233	346	21	989
Atlantic and Pacific Electric Manufacturing Company. (See Hunter, Rudolph M., assignor.)						
Atlas Works. (See Haskin, Uri, assignor.)						
Atterbury, Thomas B., Pittsburg, Pa. Roofing-tile	253,174	Feb. 7	3	1	21	347
Atterbury, Thomas B., Pittsburg, Pa. Support for underground telegraph-lines	258,210	May 23	1397	374, 375	21	1548
Attrill, Henry Y., and W. Farmer, New York, N. Y.; said Farmer assignor to said Attrill. Process of and apparatus for manufacturing gas for heating and illuminating purposes. (Reissue)	10,056	Mar. 7	413	110	21	709
Attwell, Ewell B., Leesburg, Va. Sash-fastener	260,271	June 27	1759	476	21	2013
Atwater, H. William, Boston, Mass. Water-closet	251,513	Jan. 3	160	44	21	99
Atwater, John B., Chicago, Ill. Weighing-scales	253,650	Feb. 14	560	151	21	453
Atwater, John B., Chicago, Ill. Wash bowl and stand	259,074	June 6	254	67	21	1737
Atwater, John B., assignor to P. J. Singer, Chicago, Ill. Elevator	256,111	Apr. 11	455	123	21	1033
Atwater, John B., assignor to P. J. Singer, Chicago, Ill. Safety-elevator for hatchways	258,211	May 23	1398	375, 376	21	1548
Atwater, John H., Medford, Minn. Washing-machine	255,568	Mar. 28	1406	380	21	901
Atwood, Benjamin S., South Abington Station, Mass. Shipping-case for jars and bottles	254,899	Mar. 14	370	153	21	743
Atwood, Benjamin S., South Abington Station, Mass. Box-fastener	254,900	Mar. 14	371	154	21	743
Atwood, Eugene. (See Atwood, John E. and E.)						
Atwood, James B. (See Tyler and Atwood.)						
Atwood, John E., Stonington, Conn. Machine for doubling and winding silk and other fibrous materials	256,946	Apr. 25	1476	414	21	1230
Atwood, John E., Stonington, Conn. Machine for winding silk	256,949	Apr. 25	1476	414	21	1230
Atwood, John E., Stonington, Conn., assignor to G. Draper, Hopedale, Mass., and S. A. Jenks, Lincoln, R. I. Support for spindles for spinning-machines	253,372	Feb. 14	469	133	21	457
Atwood, John E. and E., Stonington, Conn. Machine for winding silk and other fibrous materials	257,269	May 2	147	41, 42	21	1307
Atwood, Montraville W., Clayton, N. Y. Center-board for boats. (Reissue)	10,105	May 9	650	237	21	1449
Auble, Conrad G. (See Riddle, John H., assignor.)						
Anchey, David G., assignor to B. C. Taylor, Dayton, Ohio. Horse hay-rake	254,787	Mar. 14	421	113	21	717
Auchincloss, William S., Philadelphia, Pa. Averaging-machine	257,430	May 2	145	97	21	1243
Audemars, Charles H., Brassus, Switzerland. Stop-watch	253,336	Feb. 7	184	53	21	377
Aurora Manufacturing Company. (See Stolp, Myron G., assignor.)						
Austin, Adrian H., assignor to himself, J. F. Tobin, and J. G. Griffith, New York, N. Y. Check-register	256,534	Apr. 18	990	279	21	1139
Austin, Albert W. (See Spencer, Daniel, assignor.)						
Austin, Armamons B., Fort Wayne, Ind. Locomotive ballast-crushing machine	253,486	Feb. 14	564	165, 166	21	483
Austin, Charles, Lowell, Mass. Reed-organ	253,466	Feb. 7	201	109	21	497
Austin, Edwin, Winters, assignor of one-half to W. Cantelow, Vacaville, Cal. Box-cover press	258,414	Jan. 17	899	249	21	165
Austin, Harry, and L. J. Kimball, San Francisco, Cal. Photograph-coloring	257,811	May 9	687	.....	21	1435
Austin, Joseph, assignor of one-half to Nonantum Worsted Company, Newton, Mass. Wool-combing machine	259,789	June 20	1159	309	21	1910
Austin, Josiah. (See Chamberlain and Austin.)						
Austin, William, Philadelphia, Pa. Sheet-metal pipe	253,493	Feb. 14	567	166	21	494
Autenrieth, William. (See Jones, George E., assignor.)						
Autenrieth, William, Cincinnati, Ohio, and J. M. Thurston, Hagerstown, Ind. Speculum	255,756	Apr. 4	6	2	21	969
Automatic Carpet Sweeper Company. (See Soper, Robert, assignor.)						
Autophone Company. (See Morris and Brett, assignors.)						
Averhoff, Jacinto, Havana, Cuba. Medical compound	254,448	Mar. 7	2	.....	21	639
Averill, Benjamin F., assignor of one-half to T. Pike, Dunkirk, N. Y. Device for treating the walls and tubing of oil-wells	257,127	Apr. 25	1678	479	21	1286

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Avers, Frank G. (See Scott and Avers.)						
Avers, Herbert M. (See Scott and Avers, assignors.)						
Avery, Cyrus M. (See Avery, Robert H., assignor.)						
Avery, Dexter, assignor to Textile Manufacturing Company, Westfield, Mass. Casket trimming or ornament	257,455	May 9	387	108	21	1356
Avery, George C., Louisville, Ky. Bending plow-handles	252,712	Jan. 24	1234	346	21	298
Avery, Nicholas. (See Garrity and Avery.)						
Avery, Robert H., assignor of one-half to C. M. Avery, Galesburg, Ill. Cultivator	256,612	Apr. 18	1076	303	21	1158
Avery, William G. (See Lemon, William T., assignor.)						
Axford, Harris W., Chicago, Ill. Thermostatic coil	252,069	Jan. 10	469	133	21	90
Ayer, Frank C., Columbus, Ohio. Combined foot-rail and dash attachment	255,563	Mar. 28	1469	380	21	991
Ayer, Frank C., Columbus, Ohio. Clamp for holding vehicle-dash frame	256,351	June 13	590	156	21	1803
Ayers, John H. (See Devoe, Benjamin G., assignor.)						
Ayling, William, Chicago, Ill. Liquid water-proof stove-polish	257,456	May 9	388	.....	21	1356
Ayres, James, and A. C. Decker, Bushnell, Ill., assignors to Washburn & Moen Manufacturing Company, Worcester, Mass. Machine for barbing wire	253,660	Feb. 14	570	161	21	453
Ayres, Ruben B., St. Louis, Mo. Kitchen-safe	254,449	Mar. 7	3	1	21	639
Babbitt, Benjamin T. (See Tracy, Harriet R., assignor.)						
Babbitt, Benjamin T., New York, N. Y. Combination of elevated railway and canal	255,235	Mar. 21	1001	268	21	895
Babbitt, Benjamin T., New York, N. Y. Putting up caustic alkali	256,095	Apr. 4	415	113	21	1029
Babbitt, Benjamin T., New York, N. Y. Extracting glycerine and apparatus therefor	256,613	Apr. 18	1078	304	21	1153
Babbitt, Benjamin T., New York, N. Y. Extracting glycerine from salt soap-lye	256,614	Apr. 18	1079	304	21	1153
Babbitt, Benjamin T., New York, N. Y. Putting up caustic alkali	260,272	June 27	1761	476	21	2014
Babbitt, Charles H., Council Bluffs, Iowa. File-holder	259,994	June 27	1421	383	21	1961
Babbitt, Seth W., Meriden, Conn. Caster	257,270	May 2	149	42	21	1307
Babbitt, Seth W., Meriden, Conn. Butter-dish	259,075	June 6	255	68	21	1737
Babcock, Albert L. (See Gates, William, assignor.)						
Babcock, Erskine L. (See Johnson, Andrew J., assignor.)						
Babcock, Erskine L., Cuyahoga Falls, Ohio. Rivet	253,494	Feb. 14	388	106	21	424
Babcock, Erskine L., Cuyahoga Falls, Ohio. Caster	257,144	May 2	2	1	21	1281
Babcock, J. Frederick, assignor of one-half to C. P. Wiggin and W. H. Bradford, Bangor, Me. Device for securing, &c., the cloth of billiard-tables	257,541	May 9	487	136	21	1374
Babcock, Sylvester P. (See Davis, Loring R., assignor.)						
Babcock & Wilcox Company. (See Palmer, George E., assignor.)						
Babcock & Wilcox Company. (See Palmer, Worthington, and Rowell, assignors.)						
Babcock, William A., South Coventry, Conn., assignor to Bishop & Babcock, Cleveland, Ohio. Hydraulic air-compressor	253,830	Feb. 24	791	225	21	499
Babcock, William H., *et al.* (See Aldrich, Harvey C., assignor.)						
Babson, N. H. (See Haskins, Joseph T., assignor.)						
Bachelder, Allen M., *et al.* (See Curtis, Andrew J., assignor.)						
Bachner, Joseph, New York, N. Y. Alarm-watch	254,901	Mar. 14	573	154	21	744
Bachtel, William H., assignor of one-fourth to H. Zerba, Canton, Ohio. Railway signaling apparatus	256,266	Apr. 11	668	180 / 181	21	1069
Back, John R., assignor of one-half to F. E. Reed, Worcester, Mass. Friction-clutch	253,175	Feb. 7	4	1	21	347
Backmire, George H., assignor of one-half to H. R. Shoch, Philadelphia, Pa. Vegetable-cutter	252,713	Jan. 24	1235	346	21	299
Backus, Absalom, Jr., Detroit, Mich. Dust-arrester for wood-working factories	257,271	May 2	150	49	21	1308
Bacon, Anson J., Hallowell, Me. Holdback for vehicles	251,814	Jan. 3	161	44	21	29
Bacon & Co., Joseph T. (See Heckmann, Carl F., assignor.)						
Bacon, Frank M., assignor to himself, J. Fowler, and C. Parse, Plainfield, N. J. Fodder-press	252,922	Jan. 31	1510	430	21	280
Bacon, Frank M., assignor to himself, J. Fowler, and C. Parse, Plainfield, N.J. Cornstalk-fodder	256,273	May 23	1403	397	21	1556
Bacon, William F., *et al.* (See Huffnagle, Alfred, assignor.)						
Bacon, William J., Addison, Mich. Fruit-drier	256,615	Apr. 18	1080	304	21	1153
Badia, Joseph S., Philadelphia, Pa. Shears for cutting flowers, plants, &c.	253,252	Feb. 7	83	26	21	361
Badische Anilin and Soda Fabrik. (See Baeyer, Adolf, assignor.)						
Badische Anilin and Soda Fabrik. (See Baeyer, Adolph, assignor.)						
Badische Anilin and Soda Fabrik. (See Baeyer and Drewsen, assignors.)						
Badische Anilin and Soda Fabrik. (See Brunck, Heinrich, assignor.)						
Baer, George W., Dayton, Ohio. Bracket	257,302	May 2	64	19	21	1292
Baeyer, Adolf, Munich, Bavaria, assignor to Badische Anilin and Soda Fabrik, Mannheim, Germany. Manufacture of indigo-blue	259,260	June 6	468	.....	21	1775
Baeyer, Adolf, Munich, Bavaria, assignor to Badische Anilin and Soda Fabrik, Mannheim, Germany. Manufacture of indigo-blue	259,261	June 6	469	.....	21	1775
Baeyer, Adolf, and V. B. Drewsen, Munich, Bavaria, assignors to Badische Anilin and Soda Fabrik, Mannheim, Germany. Preparation of material for the manufacture of artificial indigo	257,812	May 9	898	.....	21	1435
Baeyer, Adolf, and V. B. Drewsen, Munich, Bavaria, assignors to Badische Anilin and Soda Fabrik, Mannheim, Germany. Preparation of material used in the manufacture of artificial indigo	257,813	May 9	899	.....	21	1435
Baeyer, Adolf, and V. B. Drewsen, Munich, Bavaria, assignors to Badische Anilin and Soda Fabrik, Mannheim, Germany. Manufacture of artificial indigo	257,814	May 9	899	.....	21	1435
Baeyer, Adolf, and V. B. Drewsen, Munich, Bavaria, assignors to Badische Anilin and Soda Fabrik, Mannheim, Germany. Artificial indigo	257,815	May 9	900	.....	21	1435
Baeyer, Adolph, Munich, Bavaria, assignor to Badische Anilin and Soda Fabrik, Mannheim, Germany. Manufacture of artificial indigo	259,629	June 13	939	.....	21	1866
Baglin, William A., Brooklyn, N. Y., assignor of one-fourth to G. Yule, Newark, N. J. Making and uniting bats to hat-bodies	251,750	Jan. 3	88	25	21	18
Bagot, Joseph, Brooklyn, N. Y. Bird-cage perch	254,254	Feb. 28	1308	302	21	502
Bahr, Daniel. (See Bahr, Frederick A. and D.)						
Bahr, Frederick A. and D., Brooklyn, N. Y. Covering for demijohns	256,267	Apr. 11	669	181	21	1069
Bailey, A. O., *et al.* (See Richter, Charles, assignor.)						
Bailey, Alanson, Toledo, Ohio. Car-brake	255,482	Mar. 28	1318	355	21	984
Bailey, Charles E., and W. R. Talbot, Providence, R. I. Button	253,573	Feb. 14	471	133	21	437
Bailey, Fred E., assignor to himself and J. F. Bailey, Manchester, N. H. Sash-fastener	257,145	May 2	2	1	21	1281
Bailey, James M., Pittsburg, Pa. Car-coupling	256,541	May 30	1723	467	21	1619
Bailey, Joel F. (See Bailey, Fred E., assignor.)						
Bailey, Leonard, Hartford, Conn. Copying-press	256,815	Apr. 25	1318	371	21	1203
Bailey, Luther B., London, Ontario, Canada. Lubricator	256,869	Apr. 25	1361	389	21	1215
Bailey, Selden A., New York, N. Y. Nut-lock	258,873	June 6	4	2	21	1695
Bailey, Walter M. (See Johnson and Bailey.)						
Bailey & Whitmore. (See Weiser, Michael, assignor.)						
Bailey, William, Brooklyn, N. Y. Machine for printing window-shades	260,078	June 27	1594	409	21	1976

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Bailey, William C., South Stillwater, Minn. Spring bed-bottom	256,288	Apr. 11	670	181	21	1069
Bainbridge, William W., Brooklyn, N. Y. Card-case	259,076	June 6	256	68	21	1736
Baird, James O., Brooklyn, N. Y. Balanced steam-engine	259,456	June 13	794	198	21	1888
Baird, Selah M., Holly, Mich. Lifting-jack	254,255	Feb. 28	1309	302	21	502
Baird, Thomas. (See Ammerman, Baird, and Foreman.)						
Baker, Allen S., Evansville, Wis. Mechanism for transmitting power from windmill-shafts	256,616	Apr. 18	1080	304 / 305	21	1153
Baker, Caleb J. (See Murray and Baker.) (Reissue.)						
Baker, Edgar. (See Breen and Baker.)						
Baker, Francis R. (See Hinks, Hooper, and Baker.)						
Baker, Franklin P., Boston, Mass. Picture-hook	257,457	May 9	389	109	21	1356
Baker, George C., Des Moines, Iowa. Barbed metallic fence-rail	256,535	Apr. 18	992	280	21	1130
Baker, George D., Lovettsville, assignor of one-half to G. Wire, Loudoun County, Va. Fertilizer-distributer for grain-drills	253,330	Feb. 7	186	53	21	378
Baker, George W., assignor to White Sewing Machine Company, Cleveland, Ohio. Take-up for sewing-machines	254,709	Mar. 14	428	113	21	717
Baker, Halsey H., Plainfield, N. J. Manufacture of friction-matches	255,695	Mar. 21	999	261	21	795
Baker, Harvey C., West Alexandria, Ohio. Gate	259,450	June 13	725	183	21	1888
Baker, Jackson R., Jersey City, N. J. Car-axle bearing	259,338	June 13	691	156	21	1694
Baker, Jacob, Greenville, Ohio. Canal-boat	253,945	Feb. 21	984	267	21	588
Baker, James H., Saratoga Springs, N. Y. Air-compressor	259,741	June 20	1102	294	21	1901
Baker, James T., Fairfield, assignor to M. Conrad, Chicago, Ill. Shaft-prop for buggies. (Reissue)	10,079	Apr. 11	668	247	21	1107
Baker, Loring J., assignor of one-fourth to F. Curtis, Boston, Mass. Leather-dressing machine	259,995	June 27	1422	363 / 364	21	1961
Baker, William A., Cohoma, Mich. Wagon-yoke	256,617	Apr. 18	1080	305	21	1153
Baker, William C., New York, N. Y. Heater for railway-cars	253,253	Feb. 7	84	26	21	361
Baker, William C., New York, N. Y. Steam cooking, heating, and baking apparatus	257,912	May 16	950	245	21	1466
Baker, William R., assignor to McCormick Harvesting Machine Company, Chicago, Ill. Harvester-binder. (Reissue)	10,106	May 9	658	236 / 237	21	1440
Baker, William R., assignor to McCormick Harvesting Machine Company, Chicago, Ill. Grain-binder	256,274	May 23	1404	397 / 398	21	1556
Baldwin, Arthur A., Louis, Mich. Galvanic belt	254,789	Mar. 14	493	113	21	717
Baldwin, Byron, Chicago, Ill. Corset	257,816	May 9	830	231	21	1435
Baldwin, Charles E., Albany, assignor to A. J. Bayless, New York, N. Y. Whistling return-ball	257,458	May 9	390	109	21	1356
Baldwin, Charles S. (See Baldwin, John H. and C. S.)						
Baldwin, Cyrus W., Chicago, Ill. Elevator. (Reissue)	10,017	Jan. 31	1243	308	21	334
Baldwin, Cyrus W., Chicago, Ill. Safety apparatus for elevators	256,601	May 30	1913	540	21	1658
Baldwin, Frank S., St. Louis, Mo. Permutation-lock	254,450	Mar. 7	4	1	21	639
Baldwin, John H., Port Jefferson, and C. S. Baldwin, New York, N. Y. Vehicle-spring	256,269	Apr. 11	670	181	21	1069
Baldwin, Joseph F., Cambridge, Mass. Mangle	253,681	Feb. 14	578	168	21	454
Baldwin, Judson A., Shelburne, Vt. Barrel-swing	253,405	Feb. 14	389	107	21	424
Baldwin, Ransom G., Oskaloosa, Iowa. Washing-machine	254,568	Mar. 7	174	43	21	662
Baldwin, William, Marion, Ind. Planked-hedge fastening	254,187	Feb. 28	1236	341	21	579
Baldwin, William H., assignor of one-half to H. C. Whitney, Chicago, Ill. Lamp-extinguisher	257,636	May 16	893	241	21	1451
Baldwin, William H., assignor of one-half to H. C. Whitney, Chicago, Ill. Car-stove	258,542	May 30	1794	487	21	1619
Ball, Albert, Canton, Ohio. Plow	259,650	June 20	986	263	21	1881
Ball, Albert, assignor to Sullivan Machine Company, Claremont, N. H. Device for clearing cylindrical rock-drills	256,790	Apr. 18	1081	361	21	1189
Ball, Charles E. (See Pomeroy, Henry N., assignor.)						
Ball, Charles E., Philadelphia, Pa. Process of and apparatus for amalgamating ores	253,254	Feb. 7	85	27	21	361
Ball, Charles E., Philadelphia, Pa. Amalgamator	253,255	Feb. 7	86	27	21	361
Ball, Charles E., Philadelphia, Pa. Armature for dynamo-electric machines	257,980	May 16	1054	293	21	1484
Ball, Charles E., Philadelphia, Pa. Dynamo-electric machine	259,077	June 6	257	68	21	1736
Ball, Charles E., Philadelphia, Pa. Dynamo-electric machine	259,791	June 20	1161	309 / 310	21	1910
Ball, Charles E., Philadelphia, Pa., assignor to C. A. Cheever, trustee, New York, N. Y. Electric drill	255,226	Mar. 21	1002	268	21	895
Ball, Charles W., and T. Davis, Macon, Ill. Vehicle-wheel. (Reissue)	9,904	Jan. 3	383	106	21	68
Ball, Charles W., and T. Davis, Macon, Ill. Vehicle-wheel. (Reissue)	9,905	Jan. 3	384	106	21	68
Ball, Clinton M., assignor to himself and J. B. Tibbits, Troy, N. Y. Circuit-regulating device for electric lights	252,247	Jan. 17	811	226	21	150
Ball, James A. (See Wasson, William T., assignor.)						
Ball, William H., Newark, N. J. Bracelet	254,256	Feb. 28	1310	303	21	502
Ballard, Charles W., New York, N. Y. Fastening for sample envelopes	258,348	May 23	1406	403	21	1570
Ballard, Theodore M. (See Miller and Ballard.)						
Balkus, Hiram P. (See Nye, George E., assignor.)						
Balsbaugh, Henry C., Hudson, Wis. Turning-lathe	258,009	May 16	1055	293	21	1484
Balster, Joseph, Chemnitz, Saxony, Germany. Softening yarns after dyeing	255,833	Apr. 4	99	26	21	987
Baltzell, Frank. (See Burdine and Brewer, assignors.)						
Baltzell, Frank. (See Locke, Elias H., assignor.)						
Bancroft, George W., Lynn, Mass. Machine for waxing paper	255,129	Mar. 21	988	261	21	891
Bancroft, John R. (See Burgess and Bancroft.)						
Bancroft, Joseph B., Hopedale, Mass. Spindle for twister-frames	251,815	Jan. 3	162	44	21	30
Bases, Howard. (See McGrory, Thomas, assignor.)						
Bangs, Algernon S., Annapolis, Md. Window-frame pocket	257,637	May 9	895	175	21	1307
Bangs, George H., New York, N. Y. Dynamo-electric machine	256,618	Apr. 18	1083	305	21	1153
Banister, George, assignor of one-half to Stafford & Holden Manufacturing Company, Barre, Vt. Fork	259,078	June 6	256	68	21	1736
Banister, Isaac, Newark, N. J., and R. B. Banister, Providence, R. I. Shoe-fastener	258,453	Apr. 18	899	251	21	1153
Banister, Robert B. (See Banister, Isaac and R. B.)						
Banker, George W., Brooklyn, N. Y. Manufacture of oil	253,696	Mar. 21	989	.....	21	795
Banks, Charles W. (See Ludwig, John C., assignor.)						
Banta, William E., assignor of two-fifths to J. M. Dodd and A. M. Crothers, Springfield, Ohio. Device for insulating and protecting telegraph-wires and other electrical conductors	260,273	June 27	1768	476	21	2014
Barbee, William T., *et al.* (See Harding, Thomas, assignor.)						
Barber, Frank H., Holyoke, Mass. Automatic lubricator	254,902	Mar. 14	573	154	21	744
Barber, Joseph. (See Wolf, Abraham N., assignor.)						
Barber, William J., Wallingford, Conn. Skating-shoe	254,227	Feb. 28	1311	303	21	502
Barber, William J., Covington, Ind. Rock-drill	255,237	Mar. 21	1004	269	21	895

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Barbour, D. Randolph. (See Smith, John O., assignor.)						
Barbour, Thomas. (See Dimmick, Chauncey W., assignor.)						
Barbour, Thomas, Paterson, N. J. Desk for making macramé lace	254,258	Feb. 28	1311	363	21	563
Barclay, John, Toronto, Ontario, Canada. Machine for drying grain	254,903	Mar. 14	573	155	21	744
Barclay, John, Toronto, Ontario, Canada. Apparatus for drying grain	255,564	Mar. 28	1410	361	21	901
Bard, William W., Elizabethtown, Ky. Cider-mill	256,349	May 23	1467	423	21	1570
Barden, Merritt C., Pawlet, Vt. Automatic sap-feeding apparatus	255,565	Mar. 28	1412	381	21	901
Bardsley, Joseph, Newark, N. J. Door-knob	253,631	Feb. 21	795	236	21	500
Bare, Martin. (See Fischer, Joseph B., assignor.)						
Bare, Martin. (See Wassmer, Ulrich, assignor.)						
Bard, Frederick S., Kilburn, county of Middlesex, England. Preserving compound	256,001	May 16	1056	.....	21	1484
Barker, Cyrus I. (See Woodman, Alvin, assignor.)						
Barker, Edward D. (See Fleury and Barker.)						
Barker, Erastus B., assignor to E. & H. T. Anthony & Co., New York, N. Y. Photographic-plate holder	255,566	Mar. 28	1414	381	21	902
Barker, Erastus B., assignor to E. & H. T. Anthony & Co., New York, N. Y. Camera-box	255,567	Mar. 28	1415	{381 / 382}	21	902
Barker, Erastus B., assignor to E. & H. T. Anthony & Co., New York, N. Y. Focusing attachment for photographic cameras	258,350	May 23	1468	424	21	1571
Barker, Frank W., Belmont, N. H. Cradle	257,459	May 9	390	109	21	1356
Barker, Henry C., Sedalia, assignor to T. T. Clifford, Pettis County, Mo. Contour gage and tool	255,130	Mar. 21	863	232	21	801
Barker, Henry C., Sedalia, assignor to E. Hurley, Pettis County, Mo. Brick-machine	257,460	May 9	391	{109 / 110}	21	1357
Barker, John, Whittenton, Mass. Shuttle-box motion for looms. (Reissue)	10,119	May 23	1716	{484 / 485}	21	1610
Barker, John F., Springfield, Mass. Apparatus for mixing aeriform fluids	252,009	Jan. 10	415	113	21	79
Barker, John F., Springfield, Mass. Apparatus for mixing aeriform fluids	254,589	Mar. 7	175	44	21	668
Barker, John L., and W. D. Slauson, Racine, Wis. Wagon-brake lever	253,662	Feb. 14	575	162	21	454
Barker, John L., and W. D. Slauson, Racine, Wis. Car-starter	255,238	Mar. 21	1005	269	21	685
Barker, Joseph G., Watertown, assignor to March Brothers, Pierce & Co., Boston, Mass. Shirt	253,256	Feb. 7	88	27, 28	21	362
Barker, Peter, Ansonia, Conn. Float-ball for steam-traps, &c.	256,270	Apr. 11	671	182	21	1069
Barker, Robert, East Attleborough, Mass. Ornamental chain	253,906	Feb. 21	864	238	21	526
Barker, William B., Hoboken, N. J. Marine signaling-code	257,913	May 16	958	265	21	1466
Barksdale, Armistead, Statesville, N. C. Folding barrel	254,259	Feb. 28	1313	363	21	563
Barley, James H., Sedalia, Mo. Harrow	253,340	Feb. 7	188	54	21	378
Barley, James H., Sedalia, Mo. Harrow	256,619	Apr. 18	1064	306	21	1154
Barley, James H. and T. K., Sedalia, Mo. Harrow-tooth fastening. (Reissue)	10,129	June 6	495	139	21	1779
Barley, Thomas K. (See Barley, James H. and T. K.) (Reissue.)						
Barlow, Henry B. (See Harrison, Joseph, assignor.)						
Barlow, Thomas J., Bald Knob, Tex. Grain-feeder and band-cutter for thrashing-machines	256,630	Apr. 18	1066	{306 / 307}	21	1154
Barnard, Edward, Rome, N. Y. Sarcingle	255,757	Apr. 4	7	2	21	958
Barnard, Edward, assignor of one-half to H. C. Maxwell, Rome, N. Y. Halter	258,543	May 30	1725	407	21	1619
Barnard, Heman A., J. B. Cornwall, Moline, and J. S. Leas, Rock Island, assignors to Barnard & Leas Manufacturing Company, Moline, Ill. Grain-separator	256,097	Apr. 4	417	{113 / 114}	21	1020
Barnard, Heman A., Moline, and J. S. Leas, Rock Island, assignors to Barnard & Leas Manufacturing Company, Moline, Ill. Flour-packer	256,098	Apr. 4	415	113	21	1020
Barnard, Heman A., J. B. Cornwall, Moline, and J. S. Leas, Rock Island, Ill. Grain-separator	260,150	June 27	1613	{435 / 436}	21	1901
Barnard, James B., Garrettsville, Ohio. Paint for roofs	252,171	Jan. 10	901	.....	21	109
Barnard & Leas Manufacturing Company. (See Barnard, Cornwall, and Leas, assignors.)						
Barnard & Leas Manufacturing Company. (See Barnard and Leas, assignors.)						
Barnard, Obed W., Harlan, Iowa. Washing-machine gear	252,416	Jan. 17	901	250	21	165
Barnes, Amos, assignor to himself, J. Ten Eyck, and T. B. Dunstan, Pontiac, Mich. Running-gear for wagons	251,687	Jan. 3	4	1	21	3
Barnes, Benjamin F., Campbellton, Fla. Combined planter and fertilizer-distributer	254,198	Feb. 28	1296	349	21	579
Barnes, Charles A., Lockport, N. Y. Funnel-holder	260,079	June 27	1525	409	21	1977
Barnes, Eugene R., Oskaloosa, Iowa. Washing-machine	257,839	May 16	963	248	21	1451
Barnes, Howard C. (See Randall, George S., assignor.)						
Barnes, John A., Laclede, Mo. Neck-yoke adjuster	258,692	May 30	1914	541	21	1653
Barnes, John H., assignor to Barnes Manufacturing Company, New Haven, Conn. Lock-escutcheon	253,663	Feb. 14	576	163	21	454
Barnes Manufacturing Company. (See Barnes, John H., assignor.)						
Barnes, N. A., *et al.* (See Pearce, William, assignor.)						
Barnes, Reon. (See Tayler, William H., assignor.)						
Barnes, Samuel M. (See Jones, Thomas A., assignor.)						
Barnes, Wallace, Bristol, Conn. Machine for rolling blanks for clock-springs	254,101	Feb. 21	1121	313	21	554
Barnes, Wesley W., assignor to Stirn & Lyon, New York, N. Y. Toy or doll house	256,191	Apr. 11	563	154	21	1051
Barnes, Wesley W., assignor to Stirn & Lyon, New York, N. Y. Toy circus or arena	256,192	Apr. 11	565	155	21	1051
Barnes, Wesley W., assignor to McLoughlin Brothers, New York, N. Y. Combination toy house or structure	258,212	May 23	1330	376	21	1542
Barney, Everett H., *et al.* (See Hunter, Alpheus S., assignor.) (Reissue.)						
Barnum, Russel S. (See Goodrich and Barnum.)						
Barnum, Willis S., *et al.* (See Smith, Franklin R., assignor.)						
Baron, Alfred L., W. T. Rufer, and B. F. Cockayne, Bellaire, Ohio. Lantern	252,642	Jan. 24	1160	{324 / 325}	21	215
Baron, Alfred L., assignor to himself, B. F. Cockayne, and W. T. Rufer, Bellaire, Ohio. Lamp-burner	257,372	May 2	152	43	21	1308
Barr, Alexander. (See Halley and Barr.)						
Barr, Joseph H. (See Cornoyer, Oscar J., assignor.)						
Barr, Samuel. (See Wood and Barr.)						
Barr, William C., Jersey City, N. J. Punching-machine	252,969	Jan. 31	1296	442	21	295
Barrackman, D. A. (See Stalcup and Stewart, assignors.)						
Barrett, James, assignor of one-third to B. Dennis, Bellaville, Ohio. Car-coupling	259,792	June 20	1162	310	21	1910
Barrett, Jefferson E., Mount Vernon, Iowa. Car-coupling	254,269	Feb. 28	1313	364	21	563
Barrett, Rockwood, *et al.*, administrators. (See Ross, Thomas and C. D.)						
Barrie, William S., and J. R. Groves, Denver, Colo. Attaching brooms to locomotives	260,060	June 27	1525	410	21	1977
Barritt & Cattell, *et al.* (See Agnew, Thomas J., assignor.)						
Barredy, John B., Woodhaven, N. Y. Adjustable eccentric	258,693	May 30	1915	541	21	1653
Barron, William H. (See Macomber, Zebedee R., assignor.)						
Barrow, Marion J., Barrow, assignor of one-half to A. E. Freeto and G. W. Fisk, Reedhouse, Ill. Gate-hinge	258,602	May 16	1057	294	21	1484

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Barrows, Arad, Sr., Philadelphia, Pa. Land and lawn roller	259,469	June 13	736	193	21	1639
Barrows, Henry F. (See Champlin, George W., assignor.)						
Barrows, Horatio. (See Langmaid, Charles E., assignor.)						
Barry, Michael, Valparaiso, Ind. Reaching-gear for vehicles	260,151	June 27	1615	436	21	1901
Barry, Patrick H., New York, N. Y. Pocket for billiard-tables	253,664	Feb. 14	576	163	21	454
Barry, Patrick F., assignor of one-half to H. E. Vandercook, Chicago, Ill. Channel and feather cutter	256,454	Apr. 18	909	238	21	1123
Barry, Peter, New York, N. Y. Reticulated work for carriage-bodies, &c	259,461	June 13	736	193	21	1639
Barsaker, Vinal B., and S. H. Mallory, Westfield, Mass. Whip-core	255,131	Mar. 21	864	236	21	800
Barthelemew, Miles M., Belleville, Ill. Stenographic machine	255,910	Apr. 4	183	50	21	902
Bartlett, George, assignor to himself and A. W. Eaton, Boston, Mass. Photograph and autograph album	257,269	May 2	65	20	21	1293
Bartlett, George S., Leon, Iowa. Pump	253,643	Jan. 24	1162	325	21	216
Bartlett, James F., Cleveland, Ohio. Brush	256,514	June 6	5	2	21	1026
Bartlett, John, Oshawa, Ontario, Canada. Skate	256,003	May 16	1056	294	21	1485
Bartlett, Samuel H., and H. E. Waite, assignors to C. F. Livermore, New York, N. Y. Transmitter for telephones	252,714	Jan. 24	1236	347	21	220
Bartlett, Samuel H., and H. E. Waite, assignors to C. F. Livermore, New York, N. Y. Transmitter for telephones	253,665	Feb. 14	577	163	21	454
Bartlett, Samuel H., and H. E. Waite, Bridgeport, Conn., assignors to C. F. Livermore, New York, N. Y. Telephone-receiver	253,612	Feb. 14	766	216	21	468
Bartlett, Winthrop. (See Gorham and Bartlett.)						
Barton, John W., Emporia, Kans. Convertible crib	256,694	May 30	1918	{541 / 542}	21	1653
Bartram, Charles E., Fredonia, N. Y. Fruit-basket	255,911	Apr. 4	194	50	21	903
Bartram, Ferdinand S., Newtown, Conn. Cigarette-machine	255,508	Mar. 28	1416	368	21	902
Bascom, H. Clay, assignor to N. S. Vedder Pattern Works, Bascom, Galbraith & Co., Troy, N. Y. Stove-support	256,351	May 23	1469	424	21	1571
Bass, George H., Wilton, Me. Shoe	252,715	Jan. 24	1238	347	21	220
Bass, George H., Wilton, Me. Shoe	256,271	Apr. 11	671	182	21	1070
Bassett, James A., Windsor, Cal. Trace-lock	257,273	May 2	153	43	21	1306
Bassler, Joseph, San José, Cal. Riding-saddle	251,900	Jan. 3	370	{100 / 101}	21	64
Batcheldor, Greenleaf W., Boston, Mass. Baling-press						
Batcheldor, Charles W. (See Batcheldor, Edwin S., assignor.)						
Batcheldor, Edwin S., assignor to himself and C. W. Batcheldor, Pittsburg, Pa. Electric governor and indicator for fluid-pressure brakes	251,901	Jan. 3	373	101	21	64
Bate, Wallace H., Boston, assignor to J. W. Tufts, Medford, Mass. Tumbler-washer	256,573	Jan. 17	1081	302	21	106
Bate, Wallace H., Boston, assignor to J. W. Tufts, Medford, Mass. Tumbler-washer	256,193	Apr. 11	567	{155 / 156}	21	1052
Bates, William S., Brooklyn, N. Y. Producing barbed fencing material	254,904	Mar. 14	574	155	21	744
Bates, M. L., *et al.* (See Brooks, Rhodom M. and J. M., assignors.)						
Bates, Theodore C. (See Williams, Charles H., assignor.)						
Bates, Thomas, Janesville, Wis. Tool-handle	259,979	June 6	230	60	21	1739
Bates, Thomas S., Boston, Mass. Plate-printing press. (Reissue)	10,069	Apr. 11	684	247	21	1197
Batson, Smith A., Batson's Store, Tenn. Cultivator	256,455	Apr. 18	901	238	21	1124
Battershall, Jesse P., New York, N. Y. Manufacturing glycerine from soap-liquor	251,993	Jan. 3	376	.....	21	65
Bascum, Samuel C., Waco, Tex. Sulky-plow and cotton-scraper	257,914	May 16	954	{385 / 386}	21	1466
Bander, Charles C. (See Bander, George E. and C. C.)						
Bander, David B., Menominee, Mich. End-gate for wagons	258,415	Jan. 17	891	250	21	165
Bander, George E. and C. C., Bonaparte, Iowa. Harness-saddle	259,720	June 20	1163	310	21	1910
Bauer, John, New York, assignor of one-half to M. Dillmeier, Brooklyn, N. Y. Cleaning attachment for fermenting and storage tanks	257,621	May 2	347	97	21	1342
Bauer, Nicklas, Springfield, Ohio. Extension-table	257,374	May 2	153	43	21	1309
Baugh, William S., Farmers' Institute, Ind. Windmill	251,668	Jan. 3	4	1, 2	21	4
Baughman, Henry, Columbus, Ohio. Mop-holder	257,638	May 9	685	175	21	1399
Baughman, John W., Wooster, Ohio. Straw-cutter	254,905	Mar. 14	575	155	21	744
Baumann, Clement L., *et al.* (See Will, Theodore, assignor.)						
Baumann, Edward. (See Lotz, William H., assignor.)						
Baumann, Edward, *et al.* (See Holmes, Ebenezer, assignor.)						
Baumann, Edward, *et al.* (See Roberts, Elias, assignor.)						
Baumgardner, John H., Lancaster, Pa. Gas-stove	255,912	Apr. 4	185	51	21	903
Bausch, Edward. (See Lomb and Bausch.)						
Bavier, John, Newark, N. J. Crucible	259,998	June 13	807	123	21	1789
Baxter, Alfred, Grand Rapids, Mich. Shirt	253,574	Feb. 14	478	{123 / 124}	21	457
Bayha, George, St. Louis, Mo. Rendering apparatus	254,103	Feb. 28	1131	317	21	563
Bayless, Albert J. (See Baldwin, Charles E., assignor.)						
Bayley, William. (See Whiteley and Bayley.)						
Bayley, William. (See Whiteley, Bayley, and Hurd.)						
Bayley, William, assignor to Whiteley, Frazier & Kelly, Springfield, Ohio. Grain-packer	255,569	Mar. 28	1416	{262 / 263}	21	902
Baylis, Benjamin, Jr., Pittsburg, Pa. Heating-furnace	253,159	Jan. 31	1799	499	21	366
Bayler, Peter S. (See Whitney, Raul W., assignor.)						
Beach, Alexander H., Linden, assignor to Beach Platform Gear Company, Flint, Mich. Platform-gear	255,634	Apr. 4	199	50	21	907
Beach, Allen J., Linden, Mich. Running-gear for vehicles	254,104	Feb. 28	1132	317	21	563
Beach Platform Gear Company. (See Beach, Alexander H., assignor.)						
Beal, George, Gilman, Iowa. Flaxseed-cleaner	254,580	Mar. 7	177	44	21	668
Beal, Moses, Elyria, Ohio. Machine-brace	253,497	Feb. 14	391	107	21	474
Beale, Joseph H. (See Smith and Beale.)						
Beals, Arthur L. (See Hickox, Benjamin A., assignor.)						
Beals, Augustus, North Weymouth, Mass. Meshed or netted fabric	255,497	Mar. 28	1234	326	21	889
Beamer, James C., and J. M. Richardson, Carthage, Mo. Nut-lock	252,716	Jan. 24	1236	347	21	220
Bean, Edwin E. (See Bean, Frank and E. E.)						
Bean, Frank and E. E., Boston, Mass., assignors to National Sewing Machine Company, of Connecticut. Wax-thread sewing-machine	255,713	Mar. 28	1396	439	21	935
Bean, John and R., Springfield, Ohio. Pump	256,989	Apr. 25	1469	{414 / 415}	21	1580
Bean, Joseph H., Bond Hill, Ohio. Vapor-burner	253,498	Feb. 14	392	106	21	454
Bean, Joseph H., Bond Hill, Ohio. Gas cook-stove	253,499	Feb. 14	393	106	21	455
Bean, Joseph H., Cincinnati, assignor of one-half to C. N. Davis, Hamilton County, Ohio. Combined hemmer and tucker for sewing-machines	254,891	Mar. 7	178	44	21	668

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Bean, Roscoe. (See Bean, John and R.)						
Bean, Samuel L., Washington, D. C. Dust-collector for grinding-mills	256,875	June 6	5	2	21	1696
Bean, Samuel L., Washington, D. C. Flour-dust-collecting balloon	256,876	June 6	6	2	21	1696
Bean, Samuel L., Washington, D. C. Roller grinding-mill	256,877	June 6	8	3	21	1696
Bean, Samuel L., Washington, D. C. Dust-collector for flour-mills	256,878	June 6	9	3	21	1696
Beard, George M., Angola, Ind. Windmill	256,338	May 23	1491	494	21	1571
Beard, Matthew M., Holmes County, Miss. Plow	257,639	May 9	686	175	21	1396
Beasley, Maria E., Philadelphia, Pa. Life-raft	256,191	May 16	1279	362	21	1587
Beasley, Maria E., assignor of one-half to W. R. Thompson, Philadelphia, Pa. Machine for driving hoops upon casks	256,251	Apr. 25	1483	415, 416	21	1238
Beasley, Maria E., and S. L. Wiegand, Philadelphia, Pa., said Wiegand assignor to said Beasley. Machine for pasting shoe-uppers	256,094	May 16	1059	394, 395	21	1485
Beattie, Arthur E., Brooklyn, N. Y. Car-brake	256,353	May 23	1492	425	21	1571
Beatty, Robert J. (See Fox, William, assignor.)						
Beaumont, Richard, Kankakee, Ill. Stop-valve	257,275	May 2	154	43	21	1306
Beasley, Joseph O., Urbana, Va. Fruit-drier	253,257	Feb. 7	90	28	21	302
Bechem, Julius A., assignor of one-half to C. J. D. W. Post, Hagen, Westphalia, Germany. Apparatus for heating buildings	256,838	Apr. 25	1485	416, 417	21	1238
Beck, Charles, Philadelphia, Pa. Picture and card supporter	257,543	May 9	489	136	21	1374
Beck, Frederick, New York, N. Y. Material for the decoration of the interior walls and ceilings of houses	250,402	June 13	798	.....	21	1629
Beck, Frederick, New York, N. Y. Material for the decoration of the interior walls and ceilings of buildings	260,152	June 27	1616	.....	21	1991
Beck, Gebhard, assignor of one-half to G. D. Streeter, Waco, Tex. Lamp-wick	253,606	Feb. 14	578	164	21	454
Beck, John G., Mechanicsburg, Ill. Hinge	256,816	Apr. 25	1318	372	21	1203
Beck, Marshall, *et al.* (See Le Vin, George W., assignor.)						
Becker, August H., St. Louis, Mo. Plastered wall	256,456	Apr. 18	902	232	21	1124
Becker, August H., St. Louis, Mo. Plastered wall	257,840	May 16	864	242	21	1458
Becker, Charles C., and P. Jacob, Chicago, Ill. Liquid measure and scales	255,138	Mar. 21	865	232	21	808
Becker, Francis L., New York, N. Y. Shoulder-rest for violins	254,923	Jan. 31	1511	420	21	220
Becker, Frank, Norwalk, Ohio. Sewing-machine shuttle	257,304	May 2	65	20	21	1293
Becker, Henry, New York, N. Y. Reversible window	250,060	June 6	260	69	21	1730
Becker, Jakob and J. P., Detroit, Mich. Piano-case	252,717	Jan. 24	1239	348	21	229
Becker, John P. (See Becker, Jakob and J. P.)						
Becker, Leander, York, Pa. Vegetable masher and strainer	255,570	Mar. 28	1419	383	21	903
Becker, Louis, Baltimore, Md. Manufacture of root or tonic beer	256,536	Apr. 18	993	.....	21	1139
Becker, Max, New York, N. Y. Bed-lounge	257,640	May 9	627	175, 176	21	1396
Beckert, Andrew. (See Dunn and Beckert.)						
Beckert, Andrew, Sandusky, Ohio. Coal and iron unloader	257,128	Apr. 25	1660	470, 471	21	1967
Beckwith, Edwin, Butler, Pa. Grass-mower	255,913	Apr. 4	196	51	21	983
Beckwith, Walter C., Norwalk, Ohio. Velocipede	256,870	Apr. 25	1362	369	21	1215
Bedell, Harry E. (See Marsh and Bedell.)						
Bedell, William. (See Stetson and Bedell.)						
Bedford, Joseph T., New York, N. Y. Mode of and machine for waxing paper	254,105	Feb. 28	1124	317	21	563
Bedford, Lyman N., Sioux Falls, Dak. Car-coupling	250,081	June 6	261	69	21	1739
Beebe, George F., Hornellsville, N. Y. Pump	256,275	May 23	1405	398	21	1556
Beebe, George H. (See Wilgus and Beebe.)						
Beebe, Henry, Jersey City, N. J. Coffee-percolator	257,641	May 9	627	176	21	1396
Beebe, William R., *et al.* (See Weller, James E., assignor.)						
Beecher, Charles, Meriden, Conn. Bottle-stopper	254,598	Mar. 7	99	25	21	655
Beecher, Henry M., assignor of one-half to C. S. Mersick, New Haven, Conn. Fence-post	255,714	Mar. 28	1506	430	21	935
Beecher Manufacturing Company. (See Kent, Silas W., assignor.)						
Beem, Martin. (See Weaver, James H., assignor.)						
Beeman, Marcus M. (See Prescott, Daniel P., assignor.)						
Beers, Franklin H., Newark, N. J., assignor, by mesne assignments, to Metropolitan Electric Light and Power Company of the United States, New York. Electric lamp	254,981	Feb. 28	1315	384	21	563
Beers, Franklin H., Newark, N. J., assignor, by mesne assignments, to Metropolitan Electric Light and Power Company of the United States, New York. Armature for magneto-electric machines	257,439	May 2	348	97	21	1343
Beers, Philo M., Bridgeport, Conn. Mechanism for grooving sewing-machine-needle blanks	256,695	May 30	1919	542, 543	21	1653
Beeson, William, Miles City, Mont. Ter. Balloon-support for telegraph-wires, &c	256,695	May 16	1069	295	21	1486
Beetle, Benjamin F., *et al.* (See Nott, Aaron B., assignor.)						
Begbie, Elphinstone W., Bangalore, India. Heliotrope	254,799	Mar. 14	494	113	21	717
Begbie, Elphinstone W., Bangalore, India. Signaling-lantern	254,791	Mar. 14	425	114	21	717
Begg, James, Paterson, N. J. Atomizer	256,681	Apr. 18	1090	307	21	1154
Behn, Henry A., Jr., Weehawken, N. J. Sun-dial	252,418	Jan. 17	910	251	21	166
Behr, Arno. (See Chiesa, Luigi, assignor.)						
Behr, Arno. (See Matthiessen and Behr.)						
Behr, Arno, Jersey City, N. J. Manufacturing crystallised anhydride of grape-sugar from a watery solution of grape-sugar	256,082	Apr. 18	1091	.....	21	1155
Behr, Arno, Jersey City, N. J. Manufacturing crushed anhydrous grape-sugar	256,083	Apr. 18	1093	.....	21	1155
Behr, Arno, Jersey City, N. J. Crystallized anhydrous grape-sugar	259,704	June 20	1164	.....	21	1911
Behrens, Henry J., New York, N. Y. Earth-closet	258,008	May 16	1063	295	21	1486
Beihl, Jonathan, Slippery Rock, Pa. Lifting-jack	254,262	Feb. 28	1317	364	21	593
Beiermeister, Frederick, Jr., Troy, N. Y. Collar	250,353	June 13	592	157	21	1804
Beiser, Charles, Toledo, Ohio. Paper and other boxes	254,592	Mar. 7	179	44	21	668
Beitenman, Elizabeth O., administratrix. (See Perot and Beitenman.) (Reissue.)						
Beitenman, Harry C. (See Perot and Beitenman.) (Reissue.)						
Beitzell, Anna M. (See Vogel and Beitzell, assignors.)						
Beitzell, Henry. (See Vogel and Beitzell.)						
Bélanger, Maxime, *et al.* (See Thibault, Magloire, assignor.)						
Belcher, Frank S. (See Belcher, John B., assignor.)						
Belcher, Frank S., *et al.* (See Lowell, Seth W., assignor.)						
Belcher, John B., *et al.* (See Lowell, Seth W., assignor.)						
Belcher, John B., Charlotte, Mich. Boot-strap	256,113	Apr. 11	457	123	21	1033
Belcher, John B., assignor of one-half to F. S. Belcher, Charlotte, Mich. Boot-strap	254,906	Mar. 14	576	155	21	744
Belding, Arthur, Chicago, Ill. Pocket door-fastening	256,697	May 16	1065	296	21	1486
Belding, Thomas C. (See Jones and Belding.)						
Belduke, Joseph, San Francisco, Cal. Screw-propeller	253,258	Feb. 7	91	29	21	302
Belknap, Willis H., New York, N. Y. Retention-spring for umbrellas	252,980	Jan. 31	1506	442	21	295

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Belknapp, Willard W. W., and G. H. Robillard, Brushton, N. Y. Addressing-machine	256,544	May 30	1726	488	21	1619
Bell, Alexander H. (See Booth and Bell.)						
Bell, Andrew, Manchester, county of Lancaster, England. Water-filter	258,718	Jan. 24	1240	346	21	220
Bell, Asel H., and W. L. Hess, Belle Plaine, Iowa. Washing-machine	256,113	Apr. 11	457	124	21	1033
Bell, Caleb W. (See Prewitt, William P., assignor.)						
Bell, Charles S., Beaver Falls, Pa. Attachment for chairs	258,354	May 23	1494	425	21	1571
Bell, George W., Brooklyn, N. Y. Elliptic spring	257,285	May 2	67	20	21	1293
Bell, Henry, Baltimore, Md. Bottle-wrapper	257,648	May 9	686	176	21	1396
Bell, John E., Akron, assignor of one-half to W. J. Bell, Toledo, Ohio. Carriage-spring	255,375	Mar. 21	1178	316	21	955
Bell, Jonathan, New York, N. Y. Smelting-furnace	253,259	Feb. 7	92	29	21	302
Bell, William J. (See Bell, John E., assignor.)						
Bell, William T., New York, N. Y. Steam rock-drill	256,974	June 6	127	34	21	1716
Bell, William W., Valley Springs, Dak. Ter. Hame-fastener	259,263	June 13	500	133	21	1769
Belle Patent Button Fastener Company. (See Davis, Jasper W., assignor.)						
Belle Patent Button Fastener Company. (See Farnsworth, Frank H., assignor.)						
Bellinger, Albert D., Minneapolis, Minn. Centrifugal separator	257,841	May 16	864	242	21	1458
Bellingrath, Leonard, (Battleberry, Ala. Turpentine-still	251,816	Jan. 3	163	45	21	30
Belloll, Joseph A. (See Thorpe, James M., assignor.)						
Bement, Ernest M., Port Richmond, assignor to E. L. Russell, New York, H. Jordan, Jr., Nyack, and R. D. Bement, Port Richmond, N. Y. Folding bed	256,847	May 30	2088	588	21	1658
Bement, Rose D., *et al.* (See Bement, Ernest M., assignor.)						
Bemis, Judson M., *et al.* (See Hine, Charles M., assignor.)						
Bemis, Stephen A., *et al.* (See Hine, Charles M., assignor.)						
Bemis, Sumner A., Springfield, Mass. Car-axle box. (Reissue)	10,081	Apr. 11	866	248	21	1167
Benas, Benjamin, and J. Flügel, Brooklyn, N. Y. Decorating glassware	257,643	May 9	639	176	21	1396
Bender, Adam P. (See Huppe, Valentin, assignor.)						
Bender, Henry C., Montgomeryville, and H. C. Bruner, Lansdale, Pa. Lawn-mower	256,537	Apr. 18	994	289	21	1139
Bender, John, Buffalo, N. Y. Baker's oven	259,795	June 20	1165	310, 311	21	1911
Bender, Willis R. (See Noyes, Walter B., assignor.)						
Benedict & Burnham Manufacturing Company. (See Blackham, Eli J., assignor.)						
Benedict, Charles E., *et al.* (See Orens, Walter S., assignor.)						
Benedict, Charles E., *et al.* (See Rice and Orens, assignors.)						
Benedict, Lanric D. (See Woodard and Benedict.)						
Benjamin, Edwin, *et al.* (See Halladay, William H., assignor.)						
Bennem, William L. (See Ogilvie and Bennem.)						
Bennett, Charles E., Birch Vale, near Stockport, county of Derby, England. Apparatus for bleaching yarns, &c	258,355	May 23	1495	425	21	1572
Bennett, Daniel, Baldwin township, Allegheny county, Pa. Lamp	256,694	Apr. 18	1083	306	21	1155
Bennett, Edwin, Hornellsville, N. Y. Paint	258,975	June 6	128	.....	21	1716
Bennett, Harnell L. (See Moesman, James, assignor.)						
Bennett, Isaac E., Newton, Iowa. Running-gear for wagons	256,545	May 30	1727	488	21	1620
Bennett, James D. (See Parker and Bennett.)						
Bennett, Josiah C., Lynn, Mass. Shoe	255,133	Mar. 21	806	230	21	808
Bennett, Thomas G., assignor to Winchester Repeating Arms Company, New Haven, Conn. Cartridge-package	260,153	June 27	1616	436	21	1991
Bennett, Walter E., New Britain, Conn. Feeding mechanism for button-sewing machines	258,996	June 27	1627	385	21	1948
Bennor, Joseph, Philadelphia, Pa. Commode	253,532	Feb. 21	796	228	21	500
Bennor, Joseph, assignor of one-half to H. Loth, Philadelphia, Pa. Check-register	256,696	May 16	1066	296	21	1487
Benoist, Sanguinet H., St. Louis, Mo. Cuff-button, &c	257,644	May 9	630	177	21	1396
Bensinger, Moses, Chicago, Ill. Billiard-table	256,114	Apr. 11	458	124	21	1033
Benson, Benjamin S., Baltimore, Md. Gang-plow	251,817	Jan. 3	164	45, 46	21	30
Benson, Benjamin S., Baltimore, Md. Traction-wheel	252,348	Jan. 17	819	226	21	171
Benson, Benjamin S., Baltimore, Md. Plow	252,991	Jan. 31	1507	443	21	296
Bent, Charles. (See Goodell, George F., assignor.)						
Bent, Roderic L., Gardner, Mass. Tray for children's chairs	256,972	Apr. 11	979	162	21	1070
Bently, Henry. (See Plush, Samuel M., assignor.)						
Benton, John B., New York, N. Y. Fare-register	259,417	Jan. 17	909	250, 251	21	165
Benton, Linn B., Milwaukee, Wis. Mold for casting printers' leads	254,792	Mar. 14	496	114	21	718
Bentzen, Charles A., Chicago, Ill. Mechanical movement	254,907	Mar. 14	577	156	21	744
Beovide, Eugenio, Mineral de Catorce, Mexico. Machine for cleaning and separating the fibers of leaves	251,818	Jan. 3	165	46, 47	21	30
Bergan, Michael, Mesa township, Ford county, Ill. Car-coupling	256,953	Apr. 25	1467	417	21	1238
Bergen, Jerome L., Flatlands, assignor to himself and G. B. Forrester, Brooklyn, N. Y. Fertilizer-distributer	256,695	Apr. 18	1085	308	21	1155
Bergen, Louis, New York, N. Y. Faucet	253,914	Apr. 4	196	51	21	983
Berger, Henry L. (See Billon and Berger.)						
Berger, Henry L., assignor of one-half to A. J. Billon, St. James, La. Valve-gear	255,915	Apr. 4	197	51, 52	21	983
Berger, Herman, Milwaukee, Wis. Manufacture of feather pillows, bolsters, &c	253,533	Feb. 21	797	226	21	500
Berger, Thron N., Elgin, Iowa. Apparatus for retouching negatives	253,534	Feb. 21	797	227	21	500
Bergfels, Julius, Newark, N. J. Setting pearls on finger-rings, &c	253,067	Feb. 14	579	164	21	455
Bergmann, Johan J., and C. E. Hüttemeier, Copenhagen, Denmark. Machine for changing speed	256,973	Apr. 11	973	182	21	1070
Bergmann, Sigmund, New York, N. Y. Shade-holder for electric lamps	257,146	May 2	3	1	21	1221
Bergmann, Sigmund, New York, N. Y. Switch for electric-light circuits	257,276	May 2	154	44	21	1306
Bergmann, Sigmund, New York, N. Y. Socket for electric lamps	257,277	May 2	156	44	21	1306
Bergner, Rudolf, Gera, Reuss, Germany. Accordion	252,010	Jan. 10	417	114	21	79
Bergstresser, Samuel, assignor of one-half to J. H. Kern, Philadelphia, Pa. Heel-protector for boots and shoes	257,433	May 2	349	97	21	1343
Bergstrom, Olof, Fiskbyttan, Sweden. Rake	254,593	Mar. 7	180	45	21	669
Bering, James E., assignor to Chambers, Bering & Quinlan, Decatur, Ill. Device for connecting check-rowers to planters	259,796	June 20	1166	311	21	1911
Berkshire, John H. (See Kennedy and Berkshire.) (Reissue.)						
Berland, Alexandre, St. Petersburg, Russia. Hydrogen-gas generator	254,169	Feb. 28	1287	342	21	579
Berliner, Emile, Boston, Mass. Telephone-transmitter	254,190	Feb. 28	1289	343	21	579
Berliner, Emile, Boston, Mass. Telephone system	255,329	Mar. 21	1004	269	21	226
Berliner, Emile, Boston, Mass. Harmonic telegraph	258,256	May 23	1496	425	21	1572
Berliner, Emile, Boston, Mass. Electric incandescent lamp	258,546	May 30	1727	488	21	1620
Bernd, Adolph, assignor to Bernd Brothers, Macon, Ga. Snap-hook	252,532	Jan. 24	1284	369	21	254
Bernd Brothers. (See Bernd, Adolph, assignor.)						
Bernhart, George, Arcana, Iowa. Carding-machine	253,260	Feb. 7	93	29	21	302
Bernhart, Henry S., and I. R. Ritter, Reading, Pa. Dumping-wagon	256,357	May 23	1497	426	21	1572
Beninghaus, Eugene, Cincinnati, Ohio. Barber's chair	259,660	June 20	987	283	21	1691

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Bernstein, Alex, New York, N. Y. Electric incandescent lamp	258,976	June 6	129	35	21	1717
Bernstein, Harry, *et al.* (See Perrette, Justin, assignor.)						
Bernstein, Samuel. (See Henius, David, assignor.)						
Berrell, George S., Abington, Pa. Reducing and mixing machine for fertilizers	256,115	Apr. 11	459	194	21	1034
Berry, David, Bolinas, Cal. Self-closing stopper for bottles	251,819	Jan. 3	168	47	21	31
Berry, Frank S. (See Greenleaf, Jonas S., assignor.)						
Berry, Henry. (See Miller and Berry.)						
Berry, Henry. (See Miller, Bullens, and Berry.)						
Berry, John, assignor to National Needle Company, Springfield, Mass. Machine for swaging needle-blanks	257,645	May 9	630	177	21	1399
Berry, John, assignor to National Needle Company, Springfield, Mass. Machine for grooving needles	259,302	June 6	469	194	21	1775
Berry, John, assignor to National Needle Company, Springfield, Mass. Die for forging and swaging	259,303	June 6	471	194	21	1775
Berry, John B. N., Baltimore, Md. Car-spring	255,835	Apr. 4	101	27	21	968
Berry, Wilbur F., Martinsburg, W. Va. Door-hanger	256,547	May 30	1798	469	21	1690
Berryhill, Albert, Pittsburg, Pa. Nut-lock	252,719	Jan. 24	1241	348	21	230
Berstler, John A., Marion, Pa. Temporary binder	256,036	Apr. 18	1096	306	21	1156
Bertram, Frederick. (See Maasch and Bertram.)						
Bertrand, Eli, Boston, Mass. Boot or shoe holding jack	256,696	May 30	1924	543	21	1654
Bertrand, Eli, assignor to Goodyear & McKay Sewing Machine Company, Boston, Mass. Lasting and uniting the uppers and soles of boots and shoes	254,594	Mar. 7	181	45	21	669
Besseler, Carl, New York, N. Y. Laryngoscope	257,646	May 9	633	177	21	1399
Besser, Anton, Vienna, Austria-Hungary. Apparatus for cleaning grits	256,954	Apr. 25	1469	417	21	1232
Bessette, Michel A., Iberville, Quebec, Canada. Car-coupling	253,575	Feb. 14	473	134	21	437
Best, Louis D., Canal Dover, Ohio. Nut-lock	252,924	Jan. 31	1512	420	21	281
Bethune, John H., Fayetteville, N. C. Cotton-chopper	251,820	Jan. 3	169	47	21	31
Betjemann, John, 36 and 38 Pentonville Road, county of Middlesex, England. Means or apparatus for securing or locking up the contents of bottles and other hollow articles	253,261	Feb. 7	96	29	21	363
Bettencourt, George T., Providence, R. I. Spring curtain-roller	255,571	Mar. 28	1420	363	21	903
Betts, Lewis F., Morton, Pa. Sheet-metal pipe	256,935	Apr. 25	1490	418	21	1233
Betts, Lewis F., Morton, Pa., assignor of one-half to R. E. Dietz, New York, N. Y. Car-lamp	257,842	May 16	866	242 / 243	21	1452
Betts, Lewis F., assignor to J. H. Irwin, Morton, Pa., and R. E. Dietz, New York, N. Y. Broiler for oil or gas stoves	258,977	June 6	130	35	21	1717
Betts, Gottlieb F., Cleveland, Ohio. Horse-power	260,154	June 27	1618	437	21	1991
Beukler, William, New Haven, Conn. Rudling-machine	255,916	Apr. 4	900	52, 53	21	964
Bevin Brothers Manufacturing Company. (See Kirby, Samuel, assignor.)						
Bevington, Samuel, Philadelphia, Pa. Portable furnace for burning the enameling on porcelain, &c.	251,821	Jan. 3	169	47, 48	21	31
Bevis, Daniel, Marion, Ohio. Car-coupling	251,760	Jan. 3	92	25, 26	21	18
Beyerle, Frank, North Branch, N. Y. Shank-lasting apparatus for boots and shoes	259,062	June 6	208	60	21	1739
Beyerly, William G., Portsmouth, Ohio. Fire-brick	260,155	June 27	1618	437	21	1992
Beymer, Henry B. (See Robinson, Edgar, assignor.)						
Bickelhoupt, Adam and G., New York, N. Y. Turret for skylights	258,978	June 6	131	35	21	1717
Bickelhoupt, George. (See Bickelhoupt, Adam and G.)						
Bickerman, Theodore. (See Schrock, Emanuel M., assignor.)						
Bickford, John E., South Abington, Mass. Horn and peg cutter	253,134	Mar. 21	867	233	21	803
Bickley, Samuel W., Mexico, Me. Brick and other kilns	252,011	Jan. 10	417	114	21	79
Bicknell, Henry O., Chicago, Ill. Wardrobe-bedstead	253,576	Feb. 14	474	134	21	438
Bidwell, William F., *et al.* (See Norris, George E., assignor.) (Reissue.)						
Biesefeld, William H., and D. C. Hinkle, Moulton, Ohio. Wrench	253,500	Feb. 14	394	108	21	425
Bigelow, Denison P., assignor to Gale Manufacturing Company, Albion, Mich. Plow	252,419	Jan. 17	911	251	21	167
Bigelow, John, Philadelphia, Pa. Welting or hemming fabrics	257,278	May 2	157	44	21	1309
Bill, Edward L. (See Ewing and Bill.)						
Billings, George W., Cleveland, Ohio. Process of and machine for casting steel ingots	253,176	Feb. 7	5	2	21	347
Billings, George W., Cleveland, Ohio. Coal-oil stove	254,589	Mar. 7	100	26	21	656
Billings, George W., Cleveland, Ohio. Process of and machine for casting steel ingots. (Reissue)	10,092	Apr. 11	887	248	21	1108
Billings, James E. (See Story, Herbert, assignor.)						
Billings, William B., Philadelphia, Pa. Combined baker and boiler	260,021	June 27	1598	410	21	1977
Billon, Arthur J. (See Berger, Henry L., assignor.)						
Billon, James. (See Billon and Berger.)						
Billon, Jean and J., and H. L. Berger, St. James, La. Car-coupling	255,240	Mar. 21	1007	269	21	886
Binder, Charles F., Camden, N. J. Device for mixing pulverized substances with liquids	256,274	Apr. 11	674	183	21	1070
Binder, Gotthold F. (See Boerner, Wunibald R., assignor.)						
Bindseil, Hermann F., New York, N. Y. Reversible cloak	256,697	May 30	1925	544	21	1654
Bingaman, John W., Aberdeen, Ohio. Feather-renovator	256,979	June 6	133	35	21	1717
Binns, Robert, South Windham, Conn. Machine for cutting paper	253,267	Feb. 21	965	268 / 269	21	587
Binns, William H., Newport, Ky. Device for transmitting motion	256,697	Apr. 18	1087	308	21	1156
Bintliff, Thomas. (See Wright and Bintliff.)						
Bioren Brothers. (See Bioren, Fredrick F., assignor.)						
Bioren, Fredrick F., assignor to Bioren Brothers, Newark, N. J. Sleeve-button	254,087	Feb. 21	1110	310	21	552
Biow, Gabriel L., New York, N. Y. Ruler or guide for cutting furs or fur-trimmings	256,956	Apr. 25	1492	418	21	1233
Birch, Edward. (See Catterall and Birch.)						
Birch, William, Salford, county of Lancaster, England. Apparatus for bleaching woven fabrics, &c.	256,957	Apr. 25	1492	418	21	1233
Birdsell, J. Benjamin, South Bend, Ind. Combined clover thrashing and hulling machine	255,097	Mar. 21	830	221	21	795
Birdseye, Isaac W. (See Bray, Morris P., assignor.)						
Birdseye, Isaac W., Birmingham, Conn. Corset	253,341	Feb. 7	189	54	21	378
Birgé, Isidore, Philadelphia, Pa. Show-box	257,915	May 16	956	266	21	1467
Birge, William H., Franklin, Pa. Oil-well bailer	255,917	Apr. 4	894	54	21	984
Birgler, Lemen J., assignor to F. C. Deckebach, Cincinnati, Ohio. Beer-cooler	255,756	Apr. 4	8	3	21	952
Birkholz, Richard, Milwaukee, Wis. Roller grinding-mill	255,715	Mar. 28	1597	430 / 431	21	935
Birkholz, Richard, assignor to E. P. Allis, Milwaukee, Wis. Roll for grinding-mills	256,098	Apr. 18	1097	309	21	1156
Birkholz, Richard, Milwaukee, Wis. Grinding-roll and method of manufacturing the same	257,647	May 9	634	178	21	1399
Birss, William, Long Cove, Tennant's Harbor, Me. Stone-cutting machine	252,173	Jan. 10	601	169	21	109
Bishee, Wisner B., assignor of one-half to F. Taylor, Lowell, Mass. Coat-hanger	254,451	Mar. 7	5	2	21	639
Bishop & Babcock. (See Babcock, William A., assignor.)						
Bishop, Caswell C. (See Bishop, Charles C. and J. A., assignors.)						
Bishop, Charles C. and J. A., assignors to C. C. Bishop, Nashville, Tenn. Vehicle-spring	252,173	Jan. 10	602	169	21	110

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Bishop, Charles C. and J. A., assignors to C. C. Bishop, Nashville, Tenn. Vehicle-spring	259,797	June 20	1187	311 / 319	21	1911
Bishop, Francis A., San Francisco, Cal. Faucet for regulating the overflow from basins	255,918	Apr. 4	906	54	21	964
Bishop, Frederick. (See Miller and Bishop.)						
Bishop, Joseph A. (See Bishop, Charles C. and J. A.)						
Bishop, Richard T., assignor of one-half to T. Hunt, St. Louis, Mo. Blow-lamp	251,983	Jan. 3	378	101	21	65
Bissell, Francis M., assignor of one-half to J. Stearns and A. J. McGowan, Coldwater, Mich. Fanning-mill	253,966	Feb. 21	967	269 / 270	21	587
Bissell, Melville R., assignor to Grand Rapids Felt Boot Company, Grand Rapids, Mich. Seamless felt-boot	258,536	Apr. 18	995	269	21	1140
Bissell, Theine M., South Bend, Ind. Bolt for chilled plows	256,275	Apr. 11	675	183	21	1070
Bissell, Theine M., South Bend, Ind. Wheel for sulky-plows	258,698	May 30	1926	544	21	1654
Bissell, Theine M., South Bend, Ind. Wheel for sulky-plows	260,274	June 27	1742	476	21	2014
Bissell, Thomas A., *et al.* (See Smith, Peter, assignor.)						
Bisson, Hippolyte, Henderson, Minn. Draft-regulator	254,505	Mar. 7	103	45	21	669
Bitter, Charles F. (See Daul, Louis, assignor.)						
Bitterlin, Paul, Jr., Paris, France. Compound for etching vitreous surfaces	254,963	Feb. 28	1318	.....	21	584
Blackall, Robert C., Albany, assignor of three-fourths to C. D. Hammond, J. W. Sprong, Slingerlands, and S. Huntington, Albany, N. Y. Extinguishing fires on railway-trains	260,463	June 13	738	183	21	1889
Blackburn, George, Columbus, assignor of three-fourths to L. E. Hartmann, Cincinnati, Ohio. Boiler-furnace	256,587	May 23	1666	469	21	1667
Blackburn, O. T. (See Hogue and Davis, assignors.)						
Blackhall, Edward W., Toronto, Ontario, Canada. Ruling-machine	255,572	Mar. 28	1422	363	21	903
Blackham, Eli J., Bridgeport, assignor to Benedict & Burnham Manufacturing Company, Waterbury, Conn. Drawer-pull	258,009	May 16	1667	396	21	1467
Blackham, Eli J., Bridgeport, assignor to Benedict & Burnham Manufacturing Company, Waterbury, Conn. Handle	259,798	June 20	1109	312	21	1911
Blackman, Alanson A., E., and H., Snohomish, Wash. Ter. Car-truck	254,096	Mar. 14	578	156	21	745
Blackman, Albert L., Nashville, Tenn. Vessel for aerial navigation	259,464	June 13	730	194	21	1889
Blackman, Ebenezer, Brooklyn, N. Y. Cap for chimney-flues	256,194	Apr. 11	570	156	21	1052
Blackman, Ephanan. (See Blackman, Alanson A., E., and H.)						
Blackman, Frank H., *et al.* (See Hidden, Oliver M., assignor.)						
Blackman, Henry, New York, N. Y. Disinfecting apparatus for water-closets	258,099	May 30	1927	544	21	1654
Blackman, Hyrcanus. (See Blackman, Alanson A., E., and H.)						
Blackmer, Napoleon B., Portage, Wis. Air-pump	256,276	Apr. 11	675	183	21	1070
Blackstock, John L., Stephenville, Tex. Churn	254,089	Mar. 14	579	156	21	745
Blackwell, Edward D., Montpelier, Vt. Writing-pen	256,938	Apr. 25	1494	419	21	1233
Bladen, Leonard J., Chicago, Ill. Ticket-clasp	260,284	June 13	569	133	21	1789
Blain, James. (See Neilly, Daniel, assignor.)						
Blair, James W., and E. H. Wilder, Brooklyn, Wis. Cheese-draining table and mold	253,235	Feb. 21	798	227	21	500
Blair, John B., assignor of six-tenths to A. P. M. Jeffers and W. S. Coffman, Chicago, Ill. Magneto-electric machine	253,577	Feb. 14	475	134 / 135	21	438
Blair, Llewellyn P., Baltimore, Md. Gas-regulator	251,822	Jan. 3	172	48	21	32
Blair, Thomas H., Cambridge, assignor to Blair Tourograph and Dry Plate Company, Boston, Mass. Photographic camera	257,206	May 2	68	20	21	1309
Blair Tourograph and Dry Plate Company. (See Blair, Thomas H., assignor.)						
Blaisdell, John H. (See Warren, Daniel W., assignor.)						
Blaisdell, Joseph W., Brooklyn, N. Y. Fire-kindler	258,480	Jan. 17	913	228	21	167
Blake, Clarence J., trustee. (See Richardson, William S., assignor.)						
Blake, H. A. (See Bliss, Charles W., assignor.)						
Blake, John A., Watertown, N. Y. Vise	258,909	June 6	134	36	21	1718
Blake, Rufus W., Derby, Conn. Bell attachment for organs	254,210	Mar. 14	579	156	21	745
Blake, Theodore A., New Haven, Conn. Stone-crusher	256,959	Apr. 25	1495	419	21	1234
Blake, Theodore A., New Haven, Conn. Pig-iron breaker	256,940	Apr. 25	1496	419	21	1234
Blake, Thomas J., assignor of one-half to J. Rath, Pittsburg, Pa. Grain-scoop	255,483	Mar. 28	1319	256	21	884
Blake, William B., Bedford, Ohio. Vapor-burner	254,011	Mar. 14	580	157	21	745
Blake, William B., Canton, Ohio, assignor of one-third to G. Myers, Pittsburg, Pa. Vapor-stove	253,578	Feb. 14	476	135	21	438
Blakeslee, Cornelius, *et al.* (See Crandell, Jesse A., assignor.)						
Blakeslee, Cornelius, *et al.* (See Ritchel, Charles F., assignor.)						
Blakeslee, Harvey D., *et al.* (See Latta, Emmit G., assignor.)						
Blanchard, Emory W., *et al.* (See Mosher and Crane, assignors.)						
Blanchard, George A., Concord, N. H. Batter-worker	254,008	Feb. 21	1111	310	21	552
Blanchard, Helen A., Philadelphia, Pa. Sewing-machine needle	252,992	Jan. 31	1660	443	21	296
Blanchard, Virgil W., New York, N. Y. Electric lamp	254,912	Mar. 14	581	157	21	745
Bland, Henry, Luton, county of Bedford, assignor to W. B. Lascelles, London, England. Ice-creeper, &c.	252,349	Jan. 17	814	227	21	151
Bland, Henry, Luton, county of Bedford, assignor to W. B. Lascelles, London, England. Horseshoe	255,919	Apr. 4	907	54	21	965
Blandy, H. & F. J. L. (See Parker, Ezra and I. D., assignors.)						
Blaney, William H., assignor of one-half to Sturdy, Brothers & Co., Attleborough, Mass. Locket	253,668	Feb. 14	589	164	21	495
Blanke, Ferdinand J., Whitewater, Wis. Car-coupling	250,277	Apr. 11	676	184	21	1071
Blasendorff, Carl, Berlin, Germany. Pump	254,350	Jan. 17	915	227	21	158
Blatchford & Co., E. W. (See Robertson, John, assignor.)						
Blatchly, Ambrose, San Francisco, Cal. Desulphurizing-furnace	255,125	Mar. 21	887	233	21	802
Blatchly, Ambrose, and G. Knatel, San Francisco, Cal. Ore-concentrator	256,879	June 6	11	3, 4	21	1697
Blatchly, Ambrose, and G. Knatel, San Francisco, Cal. Ore-concentrator	257,239	May 2	156	44	21	1309
Blatt, John B., Reading, Pa. Felly-plate	257,454	May 2	349	90	21	1343
Blayney, Arthur C., Riverside, Ill. Lamp-shade	255,573	Mar. 28	1423	364	21	903
Bled, Edouard, Paris, France. Lock for fire-arms	255,241	Mar. 21	1008	270	21	695
Bled, Edouard, Paris, France, and J. Warnant, Liege, Belgium. Lock for fire-arms	256,541	Apr. 18	998	281	21	1140
Bleach, August F., Columbus, Ohio. Water-closet	257,229	May 2	159	45	21	1309
Blessing, James H., Albany, N. Y. Automatic steam-valve	255,408	Mar. 28	1294	368	21	880
Blessing, James H., Albany, and R. R. Osgood, Troy, N. Y. Friction-clutch						
Blinn, Christopher, Springborough, assignor to L. C. Reyer, Dayton, Ohio. Grain thrasher and separator	259,254	June 6	473	194	21	1778
Blinsler, George J. (See Snyder and Blinsler.)						
Bliss, Charles W., assignor to himself and H. A. Blake, Wilmington, Del. Smelting-furnace	255,730	Apr. 4	9	3	21	952
Bliss, Egerton A., Jersey City, N. J. Show-case for watch chains	259,742	June 20	1108	294	21	1901
Bliss, George H., Pittsfield, Mass. Telephone signaling-circuit	259,263	June 13	510	133	21	1789
Bliss, George H., Pittsfield, Mass. Telephone-circuit	259,266	June 13	511	134	21	1789
Blocher, John C., assignor of three-fourths to G. W. James, B. Bowers, and J. Irvine, Lima, Ohio. Car-coupling	256,948	May 30	2004	568	21	1663

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Block, Berthold, New York, N. Y. Button	254,913	Mar. 14	583	157	21	746
Block, Siegfried. (See Humphrey, Henry C., assignor.)						
Block, Williard T., Hannibal, Mo. Welding Bessemer steel	256,358	May 23	1499	426	21	1572
Blodgett, John W., Chicago, Ill. Upper-feed and button-hole attachment for sewing-machines	256,871	Apr. 25	1383	359 300	21	1215
Blood, Aretas, Manchester, N. H. Valve-seat for steam-engines	252,012	Jan. 10	418	114	21	79
Blood, Henry W., Erie, Pa. Mold for carriage or buggy tops	259,285	June 6	474	125	21	1776
Bloomburg, Axell E., Hackett City, Ark. Baling-press	258,860	June 6	13	4	21	1617
Blosser, Jacob, Bloomdale, Ohio. Combined harrow and pulverizer	253,342	Feb. 7	190	54	21	378
Blowers, Azor, Cambridge, Mich. Bolt-cutter	257,016	May 16	956	266	21	1467
Blum, J. Heinrich, Zurich, Switzerland. Measuring-faucet	252,044	Jan. 24	1163	325 326 327	21	216
Blumenthal, Isaac, Chicago, Ill. Railway-car	257,843	May 16	867	243	21	1452
Blundell, Henry, Providence, R. I. Polishing-head	251,689	Jan. 3	6	2	21	4
Blunt, Catharine S. (See Blunt, William S., assignor.)						
Blunt, George G., Chicago, Ill. Grain-drill	254,452	Mar. 7	6	2	21	640
Blunt, William S., assignor to C. S. Blunt, New York, N. Y. Stand-frame for hoisting	256,548	May 30	1730	489	21	1690
Blynn, George I., Memphis, Mich. Farm-gate	258,624	May 30	1823	515	21	1637
Blyth, Phillip T. (See Laurence, Godfrey G., assignor.)						
Blythe, William L., Mokelumne Hill, Cal. Pick	258,276	May 23	1406	398	21	1556
Boardman, H. W. (See Abel, William H., assignor.) (Reissue.)						
Boatwright, Thomas, Bryan, Tex. Cotton-gin	256,195	Apr. 11	571	156	21	1052
Bock, Joseph, *et al.* (See Garner, Samuel R., assignor.)						
Boda, William J., Columbus, Ohio, assignor to C. L. Ames and A. H. Frost, Chicago, Ill. Bed-bottom	257,543	May 9	490	136	21	1374
Boden, Edwin, Manchester, county of Lancaster, England. Apparatus for dyeing and washing hanks of yarn, &c	259,465	June 13	737	194 195	21	1831
Bodine, Francis, Plymouth, assignor to M. D. Harter, Mansfield, Ohio. Treating pulp and the resultant material	256,872	Apr. 25	1387	.....	21	1215
Boerner, Wunibald R., assignor of one-half to G. F. Binder, Chicago, Ill. Cover for baskets	259,366	June 6	474	125	21	1776
Bogart, Abraham L. (See Bogart, A. Livingston, assignor.)						
Bogart, A. Livingston, assignor to A. L. Bogart, Jamaica, N. Y. Electric device for turning on, lighting, and extinguishing gas-jets	259,367	June 6	475	125	21	1776
Bogert, John L., Flushing, N. Y. Steam-boiler	255,484	Mar. 28	1390	356	21	865
Böhm, Ludwig K., assignor to United States Electric Lighting Company, New York, N. Y. Apparatus for the preparation of carbon conductors	252,351	Jan. 17	816	227	21	151
Bohren, Ulrich, New York, N. Y. Faucet	256,873	Apr. 25	1388	390	21	1216
Boies, Samuel J. (See Kittell and Boies.)						
Boileau, Etienne, assignor of one-half to W. Somerville, St. Louis, Mo. Lamp-burner	258,010	May 16	1068	297	21	1467
Bois, James M., East Aurora, N. Y. Hydraulic air-compressing apparatus	259,799	June 20	1169	312 313	21	1911
Bolas, Thomas. (See Heaton and Bolas.)						
Boldt, Friedrich W., and P. C. A. Vogel, Hamburg, Germany. Door-check	252,963	Jan. 31	1601	444	21	296
Bolles, Reuben S. (See Butterworth and Bolles.)						
Bolton, Charles E., Cleveland, Ohio. Device for handling filled boxes or packages	258,981	June 6	136	36	21	1718
Bolton, James, Chicago, Ill. Lubricator for shuttle-races	252,013	Jan. 10	419	115	21	79
Bolton, Reginald P., Cambridgeport, Mass. Engine-governor	255,760	Apr. 4	10	3	21	958
Bolton, Thomas, San Francisco, Cal. Tool-handle	254,861	Mar. 14	507	136	21	732
Boman, Claes W. (See Reckendorfer and Boman.)						
Boman, Claes W., assignor to J. Reckendorfer, New York, N. Y. Combined pencil-point protector and twine-cutter	256,649	Apr. 18	1099	309	21	1156
Bomans, Claes W., assignor to J. Reckendorfer, New York, N. Y. Lead and crayon holder	256,961	Apr. 25	1497	419	21	1234
Bonebreyer, Christopher C., Crocker Station, Mo. Windmill	254,264	Feb. 28	1318	364	21	584
Bond, Edwin, deceased, S. A. Bond, Brooklyn, N. Y., administratrix. Hoisting apparatus for elevators	258,011	May 16	1069	297	21	1467
Bond, George F., Troy, N. Y. Car-coupling	255,242	Mar. 21	1009	270	21	896
Bond, Susan A., administratrix. (See Bond, Edwin.)						
Bone, Edwin J., South Boston, Mass. Elastic water-bed	254,265	Feb. 28	1319	365	21	594
Bone, John, Breckenridge, Mo. Fender for vessels	259,466	June 13	738	195	21	1831
Bonelli, Frank, Vicksburg, Miss. Hitching-strap	255,574	Mar. 28	1423	384	21	903
Bonhack, Charles F., New York, N. Y. Machine for unloading friction-matches after drying	254,191	Feb. 28	1320	342	21	579
Bonhack, Charles F., New York, N. Y. Machine for setting match-sticks	254,192	Feb. 28	1321	343	21	579
Bonham, Thomas H., assignor of one-half to W. F. Hartwig, Grand Rapids, Mich. Sash-balance	257,142	Apr. 25	1703	477	21	1271
Bonnefin, François A., Mauritius Island, assignor of one-half to B. F. Stevens, London, England. Machine for cutting sugar-cane	254,914	Mar. 14	586	157 158	21	746
Boner, Samuel, Dover, N. H. Portable force-pump	254,266	Feb. 28	1320	365	21	594
Boustlate Company. (See Hyatt, John W., assignor.)						
Boustlate Company. (See Hyatt and Lockwood, assignors.)						
Boustlate Company. (See Lockwood, Charles S., assignor.)						
Booker, James T. (See Montague, Booker, and Dinning.)						
Bookwalter, Francis M. (See Croft, Henry, Jr., assignor.)						
Bookwalter, Francis M., Springfield, Ohio. Power-converter	257,461	May 9	392	110	21	1357
Bookwalter, Francis M., Springfield, Ohio. Power-converter	257,462	May 9	393	110	21	1357
Boola, Zaviock H. (See Wilson and Boola.)						
Boomer, George B., New York, N. Y. Steam-trap	253,670	Feb. 14	582	164	21	455
Boost, Philip J. (See Gordon and Boost.)						
Booth, Ebenezer H., West Colesville, N. Y. Wagon-seat lock	256,962	Apr. 25	1497	420	21	1234
Booth, Ossian O., Brimfield township, Peoria county, Ill. Cultivator	252,174	Jan. 10	603	170	21	110
Booth, William T., and A. H. Bell, New York, N. Y.; said Bell assignor to said Booth. Separator for starch	256,630	Apr. 18	1099	309	21	1156
Bopp, Charles J., Boston, Mass. Beer-cooler	255,575	Mar. 28	1424	384	21	904
Borchardt, Albert, Weehawken, N. J. Machine for sewing buttons to fabrics	256,978	Apr. 11	677	184	21	1071
Borchardt, Hugo, Bridgeport, Conn., assignor to J. W. Frazier, New York, N. Y. Magazine for fire-arms	254,453	Mar. 7	8	3	21	640
Borchardt, Hugo, assignor to Union Metallic Cartridge Company, Bridgeport, Conn. Bullet-patching machine	258,598	May 23	1699	480 481	21	1607
Borel, François, Cortaillod, Switzerland, assignor to Société Anonyme de Câbles Électriques, Paris, France. Insulating material for electrical conductors	256,549	May 30	1730	.....	21	1690
Boren, Nic., Jr., Haubstadt, Ind. Cutter-bar for harvesters	256,279	Apr. 11	678	184	21	1071
Borgfeldt, Nicholas H., New York, N. Y. Fire-escape	256,874	Apr. 25	1388	390	21	1216

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Boris, Pierre J., *et al.* (See Chaudier, Jean, assignor.)						
Borland, Joseph, assignor of one-half to W. E. Ross, Valencia, Pa. Chimney-cap	258,988	June 6	137	36	21	1718
Borland, Severin, Manchester, county of Lancaster, England. Injector for steam-engines	256,889	Apr. 4	289	54, 55	21	965
Borne, Adam, assignor of one-half to J. J. A. Shelin, Grand Rapids, Mich. Lifting device	257,261	May 2	160	45	21	1319
Borton, Stockton, Philadelphia, Pa., and C. H. Willcox, assignors to Willcox & Gibbs Sewing Machine Company, New York, N. Y. Machine for sewing welts or hems on fabrics	255,576	Mar. 28	1425	384	21	904
Borton, Stockton, Philadelphia, Pa., and C. H. Willcox, assignors to Willcox & Gibbs Sewing Machine Company, New York, N. Y. Feed mechanism for sewing-machines	255,577	Mar. 28	1426	385	21	904
Borton, Stockton, Philadelphia, Pa., and C. H. Willcox, assignors to Willcox & Gibbs Sewing Machine Company, New York, N. Y. Trimmer for sewing-machines	255,578	Mar. 28	1426	385 386	21	904
Borton, Stockton, Philadelphia, Pa., and C. H. Willcox, assignors to Willcox & Gibbs Sewing Machine Company, New York, N. Y. Manufacturing hosiery	255,579	Mar. 28	1434	386	21	905
Borton, Stockton, Philadelphia, Pa., and C. H. Willcox, assignors to Willcox & Gibbs Sewing Machine Company, New York, N. Y. Machine for sewing welts or hems on fabrics	255,580	Mar. 28	1436	386	21	906
Borton, Stockton, Philadelphia, Pa., and C. H. Willcox, assignors to Willcox & Gibbs Sewing Machine Company, New York, N. Y. Thread-controlling apparatus for sewing-machines	255,581	Mar. 28	1436	387	21	906
Bortree, Lewis S., Toledo, Ohio. Corset	260,088	June 27	1527	410	21	1977
Bonchea, Henry, New York, N. Y. Billiard and pool table pocket	257,917	May 16	957	266	21	1467
Boss, Charles, Bathurst, New Brunswick, Canada. Refrigerator	253,626	Feb. 21	709	207	21	380
Bossbard, Albert, San Francisco, Cal. Valve for collapsible floats	256,091	June 6	14	4	21	1607
Bostel, Daniel T., Brighton, county of Sussex, England, assignor to H. C. Meyer, S. F. Sailfen, New York, and F. R. Smart, Bay Side, N. Y. Water-closet	253,151	Jan. 31	1601	499	21	388
Bostel, Daniel T., Brighton, county of Sussex, England, assignor to H. C. Meyer, S. F. Sailfen, New York, and F. R. Smart, Bay Side, N. Y. Water-closet	253,152	Jan. 31	1602	499	21	389
Boston Petroleum Heating Company. (See Martin, Pearl, assignor.)						
Bostwick, Edward E., Union City, Mich. Cultivator	256,548	Apr. 18	1090	293	21	1140
Bosworth, Charles F., Milford, Conn. Wax-thread sewing-machine	249,063	June 6	863	70	21	1740
Bosworth, Lycurgus J., assignor to himself, A. Clippinger, and J. B. Clark, Monmouth, Ill. Check-row corn-planter	254,267	Feb. 28	1321	365	21	594
Botsford, Nathan, Lockport, N. Y. Wagon-spring	251,994	Jan. 3	379	101	21	65
Bottenberg, Epenetus, Astoria, Ill. Securing covers upon cans	259,500	June 20	1172	313	21	1912
Botts, Thomas W., Peoria, Ill. Ice-scraper	259,997	June 27	1498	395	21	1968
Bouchard, Henry, St. Elmo, Ala. Car-axle box	257,648	May 9	536	176	21	1400
Bouchet, Michael, assignor of one-half to B. D. Mattingly, Louisville, Ky. Adding-machine	251,893	Jan. 3	173	48, 49	21	32
Bouck, Peter C., Pittsfield, Mass. Safety-signal for railways	253,343	Feb. 7	190	55	21	378
Boughton, William, Caledonia, Ohio. Vehicle-pole	260,275	June 27	1743	477	21	2014
Bourke, Martin, Youngstown, Ohio. Boat-detaching apparatus	251,600	Jan. 3	7	2	21	4
Bourne, Edward, Allegheny, Pa. Sportsman's game-ring	253,501	Feb. 14	394	169	21	465
Bouton, N. S. (See Lane, John, assignor.)						
Boutwell, Charles M., Leominster, Mass. Cradle and crib combined	253,502	Feb. 14	395	169	21	465
Bovey, Edward S. (See Bovey, George C., assignor.)						
Bovey, George C., Chillicothe, assignor to E. S. Bovey, Columbus, Ohio. Carriage-jack	260,276	June 27	1764	477	21	2014
Bow, Lafayette T., Jeffersonville, Ky. Ventilator for grain, fruit, &c	256,983	Apr. 25	1496	420	21	1234
Bowden, Alfred R., Barrington, assignor to M. T. Kinyon, Pawtucket, and C. B. Parker, Warwick, R. I. Steam-discharging apparatus for cooking-stoves	254,123	Feb. 28	1338	343	21	589
Bowen, C. W. (See Nolan, William, assignor.)						
Bowen, Frederick, Barnhart's Mills, Pa. Tuyere	256,984	Apr. 25	1499	420	21	1234
Bowen, George M., Talbot, Tenn. Back-strap for plow-harness	259,891	June 20	1173	313	21	1912
Bowen, Philip A. (See Brooks and Bowen.)						
Bower, Henry. (See Parsons and Cruse, assignors.)						
Bower, Henry, and W. L. Rowland, Philadelphia, Pa.; said Rowland assignor to said Bower. Obtaining ferrocyanides from gas-liquor	259,902	June 20	1173	.....	21	1912
Bower, Isaac G., assignor of one-half to B. R. Dudrow, Fremont, Ohio. Thill-coupling	256,700	May 30	1938	544	21	1635
Bower, Thomas, Waterburg, N. Y. Tree-protector	256,701	May 30	1939	545	21	1635
Bowers, Byron, *et al.* (See Bleecher, John C., assignor.)						
Bowers, Edward R., Springfield, Mass., assignor of one-half to F. H. Adkins, Hartford, Conn. Vehicle device for checking horses	259,354	June 13	592	157	21	1804
Bowers, George E., Fitchburg, Mass. Striking mechanism for electric bells	252,175	Jan. 10	605	170	21	110
Bowers, Samuel, Braddock, Pa. Wagon-seat	252,094	Jan. 31	1602	444	21	298
Bowers, T. Bray, Chester, Pa. Process of and apparatus for obtaining oil	259,467	June 13	739	195	21	1831
Bowers, William C., *et al.* (See Cheney, Charles W., assignor.)						
Bowie, John, and W. C. Brown, assignors to Douville & Gleasman, Manistee, Mich. Lubricating-pump	254,506	Mar. 7	183	45, 46	21	630
Bowker, William, Somerville, Mass. Copying-press	260,063	June 27	1526	410	21	1977
Bowker, William, Somerville, assignor to himself and R. Williams, Boston, Mass. Machine for sawing barrel-hoops from poles	257,918	May 16	958	267 268	21	1467
Bowker, William, Somerville, assignor to himself and R. Williams, Boston, Mass. Band-saw guide	259,061	June 20	987	283	21	1691
Bowman, Albert B. (See Welch, James E., assignor.)						
Bowman, Charles, and F. W. Throne, Hanover, Pa. Machine for coloring and flavoring cigars	255,921	Apr. 4	213	55	21	965
Bowman, Joseph M., Jersey City, N. J. Perforating attachment for printing-presses	255,243	Mar. 21	1010	271	21	847
Bowman, John, and O. Klinck, Princeville, Ill. Compound for roofing	257,544	May 9	491	.....	21	1375
Bowne, Henry A., Lexington, Ky. Billiard-cue	256,702	May 30	1939	545	21	1635
Bowne, Samuel W., assignor to Scott & Bowne, New York, N. Y. Apparatus for dissolving and digesting meat	256,239	May 23	1499	426	21	1573
Bowsher, Nelson F., South Bend, Ind. Speed-indicator	260,156	June 27	1619	437	21	1968
Bowslaugh, Edward W., Grimsby, Ontario, Canada. Inside window-blind	254,653	Jan. 24	1395	369	21	254
Boyce, Caleb B., assignor of one-half to J. K. Pollard, Chicago, Ill. Incrustation-preventive	259,355	June 13	593	.....	21	1804
Boyd & Co., George W. (See Winchell, James F., assignor.)						
Boyd, John, Galveston, Tex. Frame house	252,302	Jan. 17	765	213	21	142
Boyd, Jonathan, Providence, R. I. Producing water-proof gum from flax	256,277	May 23	1497	.....	21	1556
Boyd, Joseph B., Cincinnati, Ohio. Printer's rule	260,084	June 27	1508	411	21	1978
Boyd, William A., assignor of one-half to M. E. Ketchum, Strathroy, Ontario, Canada. Ladder	257,463	May 9	394	119	21	1297
Boyd, William M., Mount Lebanon, Pa. Coal-bed	259,743	June 20	1163	294	21	1901
Boyden, Theodore W. (See Hobbs, Boyden, and Richards.)						
Boyland, Joplin G., assignor of one-half to P. Hughes, Crawfordsville, Ind. Hay-press	258,198	May 16	1089	293	21	1382
Boyle, James E., Brooklyn, N. Y. Water-closet	255,425	Mar. 28	1381	338	21	885
Boyle, Thaddeus W., Augusta, Ga. Weighing attachment for hand-trucks	253,070	Jan. 10	466	123	21	90
Boynton, Alonzo M., and W. C. Locke, assignors to Driggs, Meaher & Co., Auburn, N. Y. Device for making button-making molds	257,464	May 9	394	111	21	1298

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Boynton, Eben M., West Newbury, Mass. Crosscut-saw	253,671	Feb. 14	563	165	21	455
Boynton, Edward S., Bridgeport, Conn. Station-indicator	257,292	May 2	161	45, 46	21	1310
Boynton, Edward S., Bridgeport, Conn. Information-tablet	256,599	May 23	1708	461 462	21	1699
Boys, Charles V., Wing, near Oakham, county of Rutland, England. Electric meter	254,597	Mar. 7	184	46	21	669
Boys, Charles V., Wing, near Oakham, county of Rutland, England. Electric meter	256,965	Apr. 25	1420	490	21	1234
Boys, Charles V., Wing, near Oakham, county of Rutland, England. Integrating apparatus	256,369	May 23	1501	426 427	21	1573
Boys, Henry R. A., Barrie, Ontario, Canada. Lubricator	254,598	Mar. 7	185	46	21	670
Bracelin, Patrick M., Davenport, Iowa. Car-coupling	256,550	May 30	1731	489	21	1630
Bracher, Thomas W. (See Smith, Frank W., assignor.)						
Bracht, August, Baltimore, Md. Propelling vessels	256,998	June 27	1499	385	21	1902
Brackelsberg, Ernst W., Hagen, Westphalia, Prussia, Germany. Type setting and distributing apparatus	253,153	Jan. 31	1804	500	21	320
Bracklo, William E. (See Mochall, Charles W., assignor.)						
Bradbury, Levi. (See Putnam, Bradbury, and Williams.)						
Bradford, Charles K., Lyanfield, Mass. Fire-kindler	258,014	Jan. 10	490	115	21	80
Bradford, Charles S., Jr. (See Connolly, M. Daniel, assignor.)						
Bradford, Charles W., Belfast, Me. Bag-fastener	255,929	Apr. 4	213	55	21	986
Bradford, Edward F., *et al.* (See Mooney, John B., assignor.)						
Bradford, John, Nelson, Ind. Revolving harrow	258,013	May 16	1070	297	21	1487
Bradford, John H., Belleville, Kans. Permanent window-screen	258,551	May 30	1732	490	21	1691
Bradford, William H., *et al.* (See Babcock, J. Frederick, assignor.)						
Bradley, Caleb H., West Chester, Pa. Railway-car	256,631	Apr. 18	1100	309	21	1156
Bradley, Carles D. (See Myers and Bradley.)						
Bradley, George H., assignor of five-sixths to J. W. Goldsmith, R. J. Lowry, J. M. Goldsmith, T. D. and C. D. Meador, Atlanta, Ga. Seed-cotton cleaner	255,486	Mar. 28	1394	356 357	21	865
Bradley, Henry C. (See Pierce, James D., assignor.)						
Bradley, Henry C., Milwaukee, Wis. Non-conducting covering for steam-pipes, &c	259,744	June 20	1104	305	21	1901
Bradley & Hubbard Manufacturing Company. (See Evarts, John A., assignor.)						
Bradley & Hubbard Manufacturing Company. (See Jones, Augustus H., assignor.)						
Bradley & Hubbard Manufacturing Company. (See Nichols, Jacob J., assignor.)						
Bradley, Jerome, New York, N. Y. Hydraulic air-compressor	254,915	Mar. 14	567	158	21	746
Bradley, John. (See Pearson and Bradley.)						
Bradley, John, Newark, N. J. Car-coupling	257,617	May 9	831	231	21	1435
Bradley, Kurts & Co. (See Kurts, Charles W., assignor.)						
Bradley, Kurts & Co. (See Sandford, Timbrook, assignor.)						
Bradley, Luther. (See Caldwell and Burgess, assignors.)						
Bradley, Thomas H. (See Shepard, George, assignor.)						
Bradley, William H., New York, N. Y. Manufacturing water-gas	257,545	May 9	491	.....	21	1375
Bradner, John J., Findlay, Ohio. Grocer's scoop	255,923	Apr. 4	214	55	21	986
Brady, Charles N. (See Fourbake and Brady.)						
Brady, Gilbert A., Chicago, Ill. Bobbin-winding attachment for sewing-machines	257,844	May 16	868	243	21	1453
Brady, James, Brooklyn, N. Y. Machine for stretching belting	251,824	Jan. 3	175	49	21	38
Brady, James, Brooklyn, N. Y. Main for conveying fluids	253,908	Feb. 21	985	249	21	515
Brady, James, Brooklyn, N. Y. Main for conveying fluids	259,356	June 13	594	157	21	1804
Brady, Samuel R., Granby, Mo. Car-coupling	257,649	May 9	836	178	21	1400
Bragdon, Benjamin J., Beloit, Kans. Windmill	259,015	Jan. 10	421	115	21	80
Bragg, Andrew N., Pine Meadow, Conn. Snap-hook	253,944	Mar. 21	1011	271	21	897
Brainard, Adalbert M., Chicago, Ill. Apparatus for supplying hydrocarbon to burners	255,945	Mar. 21	1013	271	21	897
Brainard, Adelbert M., Chicago, Ill. Hydrocarbon-gas stove	256,875	Apr. 25	1390	300	21	1216
Brainard, Adelbert M., Chicago, Ill. Check-valve	255,409	Mar. 28	1227	388 389	21	870
Brainard, Amos H., Hyde Park, Mass. Gear-cutting machine						
Brammall, Edward. (See Colby and Brammall.)						
Brammer, George, and J. R. Swarts, Livermore, Cal. Device for forming shoulders upon vehicle-axles	256,279	May 23	1410	390	21	1557
Bramow, Christopher C., Racine, Wis. Quilting-frame	257,993	May 2	163	46	21	1310
Brandau, Emile A., Los Angeles, Cal. Mail-bag fastening	256,539	Apr. 19	998	279 281	21	1140
Brandon, Francis L., Hicksville, Ohio. Pitchfork	256,638	Apr. 18	1101	310	21	1156
Brandt, August, Fort Wayne, Ind. Feed-cutter	258,013	May 16	1070	298	21	1487
Brant, Thornton A., and C. D. Harris, Mattoon, Ill. Car-frame	258,703	May 30	1330	545	21	1655
Brass, Robert. (See Chapman and Brass.)						
Bratton, George W. (See Geebel, Christian H., assignor.)						
Bratton, James D., and H. H. Good, Westmoreland, Kans. Wagon-brake	259,468	June 13	741	196	21	1892
Bremer, James, Philadelphia, Pa. Ice-house, ice-box, and refrigerator. (Reissue)	10,126	June 13	979	262	21	1872
Bremer, Louis, Philadelphia, Pa. Music-sheet for orguinettes	255,946	Mar. 21	1015	271	21	897
Brenn, Mathias, Philadelphia, Pa. Lawn-mower	259,358	Jan. 17	817	227	21	151
Bray, James B., Waverly, N. Y. Mechanical movement	256,633	Apr. 18	1102	310	21	1157
Bray, James B., Waverly, N. Y. Velocipede-sleigh	256,634	Apr. 18	1103	310	21	1157
Bray, James B., Waverly, N. Y. Car-brake	256,635	Apr. 18	1104	310	21	1157
Bray, Mellen, Newton, Mass. Reed for musical instruments	253,392	Feb. 7	97	30	21	383
Bray, Mellen, Newton, Mass. Making lacing-studs	256,116	Apr. 11	461	125	21	1034
Bray, Mellen N., Boston, Mass. Manufacture of tabular rivets	256,117	Apr. 11	462	125	21	1034
Bray, Morris P., Worcester, Mass. Corset-stay	259,664	June 6	965	70	21	1740
Bray, Morris P., New Haven, assignor to I. W. Birdseye, Bridgeport, Conn. Corset	255,924	Apr. 4	215	56	21	988
Bray, Sanford, Boston, Mass. Car-coupling	253,761	Apr. 4	11	4	21	953
Bray, Sanford, Boston, Mass. Car-coupling	256,704	May 30	1930	545	21	1655
Bray, Thomas J., assignor to Oliver Bros. & Phillips, Pittsburg, Pa. Shearing attachment for heading-machines	258,705	May 30	1932	546	21	1655
Brayer, John F., Rochester, N. Y. Tinner's shears	257,495	May 9	306	111	21	1358
Brayton, A. P., *et al.* (See Duncan, Joseph S., assignor.)						
Brazelle, Benjamin, St. Louis, Mo. Cut-off valve	255,138	Mar. 21	870	233 234	21	869
Brear, Abel, Saugatuck, Conn. Evaporating-pan	259,357	June 13	595	157 158	21	1804
Brearley, William H., Detroit, Mich. Organ-case	256,983	June 6	136	36, 37	21	1718
Breaker, Philip, Louisville, Ky. Heater	253,989	Feb. 21	988	270	21	597
Breckenridge, Henry W., Providence, R. I. Switch for telephone-exchanges	259,421	Jan. 17	912	258	21	167
Breckenridge, Henry W., Providence, R. I. Switch for telephone-exchanges	259,176	Jan. 10	686	170	21	110
Bread, Richard E., Pittsburg, Pa. Mechanical movement	259,469	June 13	742	196	21	1838
Breen, John, and E. Baker, Cleveland, Ohio. Nut-lock	252,177	Feb. 7	7	2, 3	21	347
Breen, Thomas, Knowlton, Pa. Railway-frog	253,672	Feb. 14	564	165	21	455
Breen, Thomas, Knowlton, Pa. Seat-cord pulley						
Breen, Thomas, Knowlton, Pa. Car-coupling	259,980	June 27	1429	365 366	21	1908

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Breer, Caroline H. (See Breer, Henry, assignor.)						
Breer, Henry, De Witt Centre, assignor to C. H. Breer, Syracuse, N. Y. Apparatus for desiccating animal matter for fertilizers	255,985	Apr. 4	215	56	21	986
Breisler, Levi, Mount Vernon, Iowa. Wire fence	259,693	June 20	1174	313	21	1912
Brennan, George, Franklin, Pa. Axle-lubricator	259,277	June 27	1785	477	21	2014
Brenot, Rémi T., Paris, France. Cauterizing apparatus	255,569	Mar. 28	1441	387	21	907
Brett, Julius W., *et al.* (See Myrick, Israel R., assignor.)						
Breul, Richard, assignor to Smith & Egge Manufacturing Company, Bridgeport, Conn. Drawer-pull	258,668	June 6	15	4	21	1697
Brewer, Benjamin B., and A. G. Waterhouse, assignors of one-fourth to W. S. Johnston, Sacramento, and R. W. Tully, Stockton, Cal. Electric-lamp regulator	254,702	Mar. 7	362	101	21	702
Brewer, Horatio J., New York, N. Y. Battery-cell	256,213	May 23	1332	377	21	1543
Brewer, Horatio J., New York, N. Y. Zinc for batteries	256,361	May 23	1504	427	21	1573
Brewer, Jester R. (See Burdine and Brewer.)						
Brewer, Thomas A., Oliver, Ga. Horse-power	255,583	Mar. 28	1443	387	21	907
Brewer, Wesley S., Richmond, Ind. Balanced slide-valve	259,698	June 20	998	264	21	1894
Brewin, William P., Camden, N. J. Hot-air furnace	258,016	Jan. 10	492	115 116	21	80
Brewster, Francis W., Westminster, England. Life-preserver	254,590	Mar. 7	187	46	21	670
Brewster, Samuel W., and L. Sherwood, Southeast, N. Y.; said Sherwood assignor to S. E. Sherwood. Dog-cutter	255,376	Mar. 21	1179	316	21	855
Bride, William J. (See Morrison, Angus, assignor.)						
Bridenthal, Harry H., Latrobe, Pa. Road-engine	258,720	Jan. 24	1048	348 349	21	230
Bridewell, Richard F., San Francisco, Cal. Gripe for propelling cars	253,673	Feb. 14	565	165	21	455
Bridewell, Richard F., San Francisco, Cal. Fire-escape ladder	255,564	Mar. 28	1444	388	21	907
Bridewell, Richard F., San Francisco, Cal. Advertising device for street-cars	258,494	Apr. 11	647	235	21	1101
Bridges, Appleton S. (See Price, Jorum, assignor.)						
Bridgman, Elisha B., Boston, Mass. Reversible seat	253,637	Feb. 21	980	267	21	581
Bridgman, Robert S., Charleston, Ark. Churn-dasher	259,995	Jan. 31	1068	444	21	294
Briggs, Alfred O., Columbia City, Ind. Stove-pipe retainer	255,536	Apr. 4	108	27	21	988
Briggs, Arthur E., Bond Hill, assignor to Post & Co., Cincinnati, Ohio. Elastic pulley-band	254,089	Feb. 21	1112	311	21	552
Briggs, George D. (See Phillips, Thomas S., assignor.)						
Briggs, George H., Amesbury, Mass. Portable folding clothes-drier	253,503	Feb. 14	396	109	21	485
Briggs, Orlando P., Chicago, Ill. Warning-strip for barbed fences	258,071	Jan. 10	484	134	21	91
Briggs, Thomas, Manchester, county of Lancaster, England. Machinery or apparatus for spinning and doubling yarn or thread	257,264	May 2	163	46	21	1310
Briggs, Van Rensselaer T., De Witt township, Clinton county, Mich. Stone-sled	256,423	Jan. 17	914	258	21	167
Briggs, Warren W., assignor to S. & H. Lederer, Providence, R. I. Ornamental chain	257,496	May 9	306	111	21	1358
Brigham, Dan, Chatsworth, Ill. Apparatus for watering stock	254,699	Mar. 7	188	47	21	670
Brigham, Erastus F., St. Paul, Minn. Bed and foot warmer	259,861	Jan. 31	1437	408	21	308
Brigham, Levi, Osseo, Minn. Rail for railway-curves	254,793	Mar. 14	487	115	21	718
Brightman, Latham, Cleveland, Ohio. Machine for straightening round bar-iron	260,378	June 27	1766	477	21	2015
Brill, Augustus H., Oxford, N. Y. Milk-cooler	253,178	Feb. 7	8	3	21	346
Brinckmann, Alexander, Astoria, assignor to himself and G. H. Wooster, New York, N. Y. Apparatus for electroplating	256,214	May 23	1332	377	21	1543
Bringier, Louis A., Donaldsonville, La. Tail-board for wagons	259,906	Jan. 31	1403	444	21	296
Brinkerhoff, Alexander W., Upper Sandusky, Ohio. Hand corn-husker	253,970	Feb. 21	971	270	21	596
Brinkerhoff, Clara M. (See Cumming and Brinkerhoff.)						
Brinkerhoff, Jacob, Auburn, N. Y. Lubricating mechanism for journals, hangers, axles, &c.	259,695	June 6	966	70	21	1740
Brinkerhoff, Jacob and W. M., Auburn, N. Y. Barbed fence	256,014	May 16	1071	298	21	1488
Brinkerhoff, Jacob and W. M., Auburn, N. Y. Barbed fence	256,706	May 30	1933	546	21	1656
Brinkerhoff, Warren M. (See Brinkerhoff, Jacob and W. M.)						
Brinkerhoff, Warren M., Auburn, N. Y. Lubricating mechanism	259,470	June 13	743	196	21	1838
Brintnal, Dwight, and W. Harrison, Dysart, Iowa. Animal-poke	257,147	May 2	4	2	21	1261
Broadbent, James. (See Fleming and Broadbent.)						
Brock, Matthias. (See Copeland and Brock.)						
Brock, Robert G., Cedar Rapids, Iowa. Wood-splitting machine	256,495	Apr. 11	640	235	21	1101
Brock, William E., New York, N. Y., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass., and I. L. Ellwood, De Kalb, Ill. Barbed metal fencing-strip	255,762	Apr. 4	12	4	21	953
Brock, William E., New York, N. Y., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass., and I. L. Ellwood, De Kalb, Ill. Barbed metal fencing-strip	255,763	Apr. 4	13	4	21	953
Brock, William H., Corsna, assignor of one-fourth to J. W. Alexander, New York, N. Y. Chain-wrench	254,592	Mar. 14	508	136	21	730
Brock, Willis J. (See Padgett and Brock.)						
Brockelsper, Fredrick W., assignor to Sargent & Co., New Haven, Conn. Gong-bell	252,177	Jan. 10	606	170	21	110
Brookway, James W. (See Jackson and Brookway.)						
Brokaw, Joseph M., Grand Rapids, Mich. Fence-post	254,194	Feb. 28	1223	343	21	969
Bromberg, Samuel, *et al.* (See Mansfield and Moore, assignors.)						
Bromley, James M., assignor to W. E. Smith, Plattsburg, N. Y. Vehicle-spring	259,663	June 20	999	264	21	1893
Bromley, James M., assignor to W. E. Smith, Plattsburg, N. Y. Vehicle-spring	259,664	June 20	999	264	21	1893
Bronson, Frank H., *et al.* (See Bronson, James E., assignor.)						
Bronson, James E., assignor to himself, T. H. Rowland, and F. H. Bronson, Elyria, Ohio. Car-coupling	259,358	June 13	567	156	21	1805
Brooke, Homer, New York, N. Y. Attaching caps to bottles	253,487	Mar. 28	1394	357	21	865
Brooke, William E., assignor to American Saw Company, Trenton, N. J. Detachable saw-tooth	258,368	May 23	1505	428	21	1573
Brooke, William E., assignor to American Saw Company, Trenton, N. J. Saw-tooth	259,471	June 13	744	196 197	21	1838
Brooks, Alva O., and P. A. Bowen, Milwaukee, Wis. Oiler for locomotives	253,579	Feb. 14	478	135	21	430
Brooks & Co., E. J. (See Brooks, Edward J., assignor.)						
Brooks, David, Philadelphia, Pa. Underground-telegraph line	254,988	Feb. 28	1223	345	21	294
Brooks, David, Philadelphia, Pa. Underground-telegraph line. (Reissue)	10,123	May 30	2166	395	21	1687
Brooks, David W., Frederick, Md. Step-ladder	257,207	May 2	60	21	21	1263
Brooks, Edward J., East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Metallic seal	253,674	Feb. 14	567	166	21	456
Brooks, Edward J., East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Sealing-press	254,601	Mar. 7	189	47	21	670
Brooks, Edward J., East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Seal-lock	256,791	Apr. 18	1262	361 362	21	1189
Brooks, Edward J., East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Seal and tag	256,278	May 23	1498	398 399	21	1557
Brooks, Edward J., East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Label-rack for freight-cars	259,472	June 13	745	197	21	1838

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Brooks, Edward J., assignor to E. J. Brooks & Co., East Orange, N. J. Metallic seal	260,279	June 27	1767	478	21	2015
Brooks, Edwin A. (See Shankland and Brooks.)						
Brooks, Frederick W., Sandusky, Ohio. Pocket-guard	258,907	Jan. 31	1604	445	21	296
Brooks, James M. (See Brooks, Rhodom M. and J. M.)						
Brooks, James W., trustee. (See Fisher, Edwin, assignor.)						
Brooks, James W., *et al.*, trustees. (See Van Wagenen, Albert, assignor.)						
Brooks, John, Plainfield, N. J., assignor, by mesne assignments, to himself and C. Potter, Jr., & Co., New York, N. Y. Cushioning device for printing-presses	256,363	May 23	1506	426	21	1573
Brooks, Rhodom M., Jenkinsville, Ga. Cotton-gin	255,926	Apr. 4	217	56	21	986
Brooks, Rhodom M., Jenkinsville, Ga. Car-coupling	257,148	May 2	5	2	21	1398
Brooks, Rhodom M., Jenkinsville, Ga. Car-coupling	259,804	June 20	1175	314	21	1912
Brooks, Rhodom M. and J. M., Jenkinsville, Ga. Cotton-seed planter	255,585	Mar. 28	1445	388	21	908
Brooks, Rhodom M. and J. M., Jenkinsville, assignors of one-third to M. L. Bates and J. M. Williams, Griffin, Ga. Car-coupling	255,672	Mar. 14	705	213	21	782
Brooks, William B., West Dennis, Mass. Shaft-tug	257,546	May 9	492	126	21	1375
Brooks, William D., Baltimore, Md. Can-soldering machine	256,098	Apr. 4	490	{115 116	21	1091
Brooks, William D., assignor to himself and D. D. Mallory, Baltimore, Md. Can-soldering machine. (Reissue)	10,141	June 27	1856	{501 502	21	2029
Brookshier, James M. (See Penland, Wren C., assignor.)						
Broomall, Thomas W., West Chester, and E. A. Mercer, Christiana, Pa. Spring-washer	259,665	June 20	991	264	21	1882
Broomell, Albert P., assignor to Frey & Broomell, York, Pa. Globe-valve	260,000	June 27	1430	386	21	1962
Brophy, James J., New York, N. Y. Fire-alarm-box apparatus	259,086	June 6	268	71	21	1740
Brotherton, Jacob, Ames, Iowa, assignor, by mesne assignments, to Washburn & Moen Manufacturing Company, Worcester, Mass., and I. L. Elwood, De Kalb, Ill. Machine for barbing fence-wire	253,675	Feb. 14	588	166	21	456
Brott, Lucien A. (See Morris and Brott.)						
Broughton, Alba W., Jordan, N. Y. Saw sharpening and clamping device	259,805	June 20	1175	314	21	1912
Brower, Bloomfield. (See Adams, John F., assignor.) (Reissue.)						
Brower, Bloomfield, New York, N. Y. Paper-knife	260,157	June 27	1691	438	21	1998
Brower, Bloomfield, New York, and J. F. Adams, Irvington, N. Y.; said Adams assignor to said Brower. Temporary binder. (Reissue)	10,073	Apr. 4	445	{120 121	21	1095
Brower, Henry J. (See Wood and Brower.)						
Brower, Henry J., Brooklyn, and F. B. Wood, New York, assignors of one-fourth to B. E. Valentine, Brooklyn, N. Y. Automatic electric signaling apparatus	259,353	Jan. 17	617	228	21	152
Brown, Albert, Schoharie, N. Y. Thill-coupling	255,987	Apr. 4	217	56	21	986
Brown, Alfred C., and H. A. C. Saunders, London, England. Telephonic and telegraphic signaling apparatus	259,350	June 13	598	{158 159	21	1805
Brown, Alva P., Texas, Ohio. Bedstead	258,354	Jan. 17	590	228	21	152
Brown, Alvin K., Newton, Iowa. Apparatus for heating air and water for buildings	257,650	May 9	637	178	21	1400
Brown, Benjamin F., Houghton, Mich. Sleigh-knee	257,651	May 9	638	179	21	1401
Brown, Calvin, Vallejo, Cal. Slab or block for pavements or floors	254,269	Feb. 28	1343	366	21	505
Brown, Charles, St. Louis, Mo. Middlings-detacher	258,552	May 30	1732	490	21	1691
Brown, Clarence S. (See Tucker, George W., assignor.)						
Brown, Daniel W., assignor to J. B. Anthony, Providence, R. I. Tension device for sewing-machines	254,603	Mar. 7	191	47	21	670
Brown, Edmund D., assignor to Nichols, Shepard & Company, Battle Creek, Mich. Grain-separator	257,435	May 2	350	98	21	1344
Brown, Elbridge M. (See Whitman and Brown.)						
Brown, Elmer E., Portland, Me. Adjustable horse-blanket fastener	258,215	May 23	1333	377	21	1543
Brown, F. Barton, Boston, Mass. Halter-hook	254,602	Mar. 7	190	47	21	670
Brown, Felix, New York, N. Y. Coupling	256,280	Apr. 11	679	184	21	1071
Brown, George, *et al.* (See Stamour, John B., assignor.)						
Brown, George A., and B. Holt, assignors of one-third to A. F. Holt, Concord, N. H. Machine for sandpapering wheel rims or fellies and other articles	258,553	May 30	1733	{490 491	21	1691
Brown, George E., Boston, Mass. Horseshoe	259,630	June 13	941	250	21	1866
Brown, George H., New Windsor, Md. Fruit-jar cover	258,721	Jan. 24	1246	349	21	230
Brown, George H., assignor to C. A. Cheever, New York, N. Y. Armature for dynamo-electric machines	255,137	Mar. 21	672	234	21	803
Brown, George R., Corning, N. Y. Heating-furnace	259,806	June 20	1177	{314 315	21	1913
Brown, George W., Galesburg, Ill. Corn-planter	253,580	Feb. 14	479	{135 136	21	438
Brown, George W., Galesburg, Ill. Corn-planter check-rower	258,216	May 23	1334	378	21	1543
Brown, George W., Galesburg, Ill. Corn-planter check-rower	258,217	May 23	1337	378	21	1544
Brown, George W., New York, N. Y. Safety hod-elevator	259,473	June 13	747	197	21	1833
Brown, Gilman W., West Newbury, assignor to Crosby Steam Gage and Valve Company, Boston, Mass. Spring-connection for indicator-pistons	256,981	Apr. 11	680	185	21	1071
Brown, Henry T., trustee. (See Allen, Leicester, assignor.)						
Brown, Homer F., assignor to himself and W. Forward, Elkhart, Ind. Feed-regulating device	258,193	May 16	1982	{363 364	21	1527
Brown, Isaac, Elm Croft Grange, Edinburg, Scotland. Fertilizer	253,971	Feb. 21	971	.....	21	598
Brown, James E., Brooklyn, assignor to Archer and Pancoast Manufacturing Company, New York, N. Y. Extension-chandelier	257,547	May 9	493	137	21	1375
Brown, James O., Bangor, Me. Velocipede	256,118	Apr. 11	463	125	21	1034
Brown, James W., *et al.* (See Cuttries and Milliken, assignors.)						
Brown, John F. (See Brown, Robert A. and J. F.)						
Brown, John F., Brooklyn, assignor to Oxley & Giddings, New York, N. Y. Clamp for extension gas-fixtures	256,496	Apr. 11	649	236	21	1101
Brown, John W. (See Dillon and Brown.)						
Brown, Johnathan S., Racine, Wis. Station-indicator	256,282	Apr. 11	681	185	21	1071
Brown, Joseph. (See Brown, McFarland, and Brown.)						
Brown, Joseph R., Providence, R. I. Automatic fire-extinguisher	257,548	May 9	494	137	21	1375
Brown, Joseph R., Providence, R. I. Automatic fire-extinguisher	257,549	May 9	495	137	21	1375
Brown, L. D., *et al.* (See Farley, Michael, assignor.)						
Brown, Lorenzo D. (See Stevens, Nathan P., assignor.)						
Brown, Lucian, *et al.* (See Stamour, John B., assignor.)						
Brown, Mary S. W., Boston, Mass. Dusting-brush	259,807	June 20	1179	315	21	1913
Brown, Michael, F. J. McFarland, and J. Brown, Wapakoneta, Ohio. Churn	259,474	June 13	748	198	21	1833
Brown, Morgan W., Brooklyn, N. Y. Writing-tablet	258,984	June 6	138	37	21	1718
Brown, Norman E. (See Wilcox and Brown.)						
Brown, P. Strode, Guthriesville, Pa. Middlings-purifier	254,604	Mar. 7	192	48	21	671
Brown, Robert A. and J. F., Washington, Ind. Tile-kiln	255,247	Mar. 21	1016	272	21	838
Brown, Seth, Richmond, Ind. Machine for crushing flax-bolls	251,691	Jan. 3	8	2	21	4

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Brown, W. H. A. (See Levin, George W., assignor.)						
Brown, Wallace C., Monson, Me. Derrick-swinger	257,140	May 2	5	2	21	1393
Brown, Watson N., Madison, Ind. Boring-machine	257,919	May 16	859	208	21	1467
Brown, Wilfred L., Mare Island, Cal. Camera attachment	256,988	Apr. 25	1509	421	21	1234
Brown, William, St. Louis, Mo. Stave-jointing machine	257,632	May 9	629	179	21	1401
Brown, William C. (See Bowie and Brown.)						
Brown, William H., Grand Forks, Dak. Ter. Hand-anvil	254,195	Feb. 28	1234	343	21	589
Brown, William P., Zanesville, Ohio. Plow-handle	258,788	Jan. 24	1247	349	21	230
Browne, Oliver L. F., Syracuse, N. Y. Process of and apparatus for manufacturing salt	254,916	Mar. 14	569	156	21	747
Browne, Thomas W., Delhi, N. Y. Dental flask	255,698	Mar. 21	630	221	21	795
Browne, William F., New York, N. Y. Process of and apparatus for generating gases for motive power, heating, and illuminating purposes	257,550	May 9	496	{137 138 139 140	21	1375
Browne, William F., New York, N. Y. Apparatus for generating gas and promoting combustion	260,269	June 27	1788	{478 479	21	2015
Browne, William G., Ansonia, Conn. Clasp	256,364	May 23	1507	426	21	1574
Browne, William T., Stockton, Cal. Amalgamator	256,983	Apr. 11	682	185	21	1072
Browne, William T., Stockton, Cal. Desulphurizing and oxidizing ore-furnace	259,475	June 13	749	198	21	1833
Browne, William T., Stockton, Cal., assignor of one-half to T. W. Sterling. Adjustable rest for rock-drills	256,540	Apr. 18	997	261	21	1140
Brownell, William H., Brooklyn, N. Y. Artist's box	257,985	May 2	164	47	21	1310
Brownell, William H., Brooklyn, N. Y. Easel	257,653	May 9	640	{179 180	21	1401
Brownfield, James A., Newport, Ky. Laying-out machine	256,015	May 16	1073	286	21	1488
Browning, Clinton, Sheesetown, assignor of one-half to Lindsay & McCutcheon, Allegheny city, Pa. Car-coupling	254,106	Feb. 28	1137	317	21	564
Browning, Clinton, assignor of three-eighths to Lindsay & McCutcheon, Allegheny city, Pa. Car-coupling	254,107	Feb. 28	1138	318	21	564
Browning, Sarah E., Worcester, Mass. Hat-holder	252,025	Jan. 31	1513	421	21	981
Brownlow, Loretta, East Paw Paw, Ill. Colander and fruit-press combined	256,707	May 30	1934	546	21	1656
Bros, Frank, San Francisco, Cal. Compound for flavoring coffee	258,723	Jan. 24	1248	.....	21	231
Brubaker, John D., Manor township, Lancaster county, Pa. Device for sizing tobacco-leaves	255,764	Apr. 4	13	4	21	958
Bruce, Matthew W., White Stone, Va. Car-coupling	255,598	Mar. 28	1446	369	21	908
Bruce, Norman H., West Troy, N. Y. Machine for trimming the seams of garments, &c.	257,998	May 2	165	47	21	1311
Bruce, Samuel, *et al.*, executors. (See Thompson and Williamson.)						
Brueck, Gustav, New York, N. Y. Fan	256,706	May 30	1935	546	21	1656
Brueck, John T., Brooklyn, N. Y. Extension-chandelier	253,676	Feb. 14	590	168	21	456
Brühl, Christopher, Green Point, N. Y. Cattle-tongs	251,885	Jan. 3	177	40	21	38
Brunck, Heinrich, Ludwigshafen-on-the-Rhine, Bavaria, assignor to Badische Anilin and Soda Fabrik, Mannheim, Germany. Manufacture of anthracene-blue	258,530	May 23	1704	.....	21	1606
Brunck, Heinrich, Ludwigshafen-on-the-Rhine, Bavaria, assignor to Badische Anilin and Soda Fabrik, Mannheim, Germany. Production of blue colors upon textile fabrics	258,531	May 23	1705	.....	21	1606
Brundrett, Alexander B., Dayton, Ohio. Mechanism for automatically fastening or locking a series of drawers	256,119	Apr. 11	464	126	21	1034
Bruner, Hiram C. (See Bender and Bruner.)						
Bruner, Orange L., and W. Lewis, Malta Bend, Mo. Churn	256,967	Apr. 25	1502	421	21	1235
Brunner, William, North Lewisburg, Ohio. Earth-auger	256,457	Apr. 18	988	258	21	1194
Brunson, John, Berrien Springs, assignor of one-half to A. J. Knisely, Benton Harbor, Mich. Trace-supporter	259,806	June 20	1180	315	21	1913
Brunswick & Blake Company, J. M. (See Ryan, Patrick, assignor.)						
Brunswick, Siegmund, and J. Engel, New York, N. Y.; said Engel assignor to said Brunswick. Combined finger-ring and bracelet	259,808	Jan. 31	1604	445	21	296
Brunt, William, Jr. (See Young, John W., assignor.)						
Brunton, David W., Leadville, Colo. Mining-pump	255,998	Apr. 4	218	57	21	987
Brunton, John D., and F. H. J. Trier, Westminster, county of Middlesex, England. Machinery for dressing stone	258,734	Jan. 24	1248	349	21	231
Brunton, John D., and F. H. J. Trier, Westminster, county of Middlesex, England. Machinery for dressing stone	258,735	Jan. 24	1250	{350 351	21	231
Brunton, John D., and F. H. J. Trier, Westminster, county of Middlesex, England. Turning or shaping stone	258,736	Jan. 24	1252	351	21	231
Brunton, John D., and F. H. J. Trier, Westminster, county of Middlesex, England. Turning or shaping stone	258,737	Jan. 24	1252	351	21	231
Brunton, John D., and F. H. J. Trier, Westminster, county of Middlesex, England. Apparatus or means for turning or shaping stone	258,738	Jan. 24	1253	352	21	231
Brush, John, Albany, Oreg. Grain-separator	254,870	Feb. 28	1394	366	21	585
Brutschke, Fritz, Berlin, Germany. Steam-plowing	255,567	Mar. 28	1447	369	21	908
Bryan, William M., Ada, Ohio. Windmill	259,476	June 13	750	{198 199	21	1833
Bryant, Edson L., assignor of one-half to Wallace & Sons, Ansonia, Conn. Shade-holder	255,568	Mar. 28	1449	369	21	908
Bryant, Edson L., assignor to Wallace & Sons, Ansonia, Conn. Lamp-burner	255,989	Apr. 4	219	57	21	987
Bryant, Edson L., assignor of one-half to Wallace & Sons, Ansonia, Conn. Weight for extension-lamps	256,908	Apr. 25	1503	422	21	1235
Bryant, Edson L., assignor of one-half to Wallace & Sons, Ansonia, Conn. Lamp-burner	258,365	May 23	1508	426	21	1574
Bryant, Edson L., assignor of one-half to Wallace & Sons, Ansonia, Conn. Hanging lamp	259,067	June 6	269	71	21	1741
Bryant, Richard P., San Francisco, Cal. Shoe-fastening	259,745	June 20	1105	296	21	1961
Bryant, Silas B. J., Atlantic, Iowa. Organ case and pedal	255,410	Mar. 28	1289	338	21	670
Bryce, James, Jr. (See Budd, William E., assignor.)						
Bryce, Peter F., Indianapolis, Ind. Bread-making machine	255,411	Mar. 28	1291	339	21	670
Bryden, Andrew C. (See Murray, Thomas, assignor.)						
Bryden, George, Hartford, Conn. Device for fastening horseshoes	255,765	Apr. 4	15	5	21	958
Bryon, William J. O., Jr., New York, N. Y. Exercising apparatus	254,109	Feb. 28	1140	318	21	564
Bryson, Ryon P., Burnt Chimney, assignor of one-half to G. E. Young, G. B. Horn, and M. McBrayer, Rutherford County, N. C. Road-locomotive	256,120	Apr. 11	465	126	21	1034
Bucher, John R., *et al.* (See Gibbs, Lewis, assignor.)						
Buck, C. Elton, assignor to W. Whann & Co., Wilmington, Del. Bag or sack for storing or transporting fertilizers	256,072	Jan. 10	465	.....	21	91
Buck, Frank R., Philadelphia, Pa. Paper cap	251,985	Jan. 3	360	102	21	65
Buck, Isaac N., Elgin, Ill. Alarm-lock	257,845	May 16	889	243	21	1453
Buck, M. M. (See Stephenson, William O., assignor.)						
Buck, Son & Co., W. J. (See Schmucker, George P., assignor.)						
Buckingham, Charles L., Elizabeth, N. J., assignor to Western Union Telegraph Company, New York, N. Y. Duplex telegraph	233,154	Jan. 31	1698	501	21	349

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Buckingham, Charles L., Elizabeth, N. J., assignor to Western Union Telegraph Company, New York, N. Y. Duplex telegraph	256,366	May 23	1506	420	21	1574
Buckingham, Charles L., Elizabeth, N. J., assignor to Western Union Telegraph Company, New York, N. Y. Duplex telegraph	256,367	May 23	1510	420	21	1574
Buckingham, Edwin B., Brookline, assignor to American Tube Works, Boston, Mass. Device for drawing metal tubes	252,423	Jan. 17	914	238	21	167
Buckingham, Hiram, Hartford, Conn. Bed	254,089	Apr. 25	1503	422	21	1235
Buckingham, Hiram, Hartford, Conn. Bed	256,970	Apr. 25	1504	422	21	1235
Buckland, George G., Tulare, Cal. Vehicle-spring	256,264	Apr. 11	663	166	21	1072
Buckland, Thomas A., St. Louis, Mo. Locomotive-furnace	252,803	Jan. 21	1436	408	21	268
Buckland, Thomas A., St. Louis, Mo. Locomotive-furnace	253,179	Feb. 7	9	3	21	342
Buckland, Thomas A., St. Louis, Mo. Locomotive-furnace	258,709	May 30	1938	547	21	1656
Buckler, David, and W. Keyes, Ionia, Mich. Running-gear	256,999	Jan. 31	1065	445	21	297
Buckley, Edmond, Swan, Iowa. Wind-wheel	255,138	Mar. 21	874	235	21	803
Buckley, William H., Jr., Philadelphia, Pa. Fare-box	259,360	June 13	693	189	21	1806
Buckley, William N., Meriden, Conn. Milling-tool	255,589	Mar. 28	1450	390	21	908
Buckman, Alexander. (See Burns and Buckman.)						
Buczkowski, Henry, Vienna, Austria-Hungary. Soap-sheet for general use and for disinfecting purposes	259,208	June 6	477	.....	21	1776
Budd, James, Boston, Mass., assignor to Glass Veneer Company, of Maine. Ornamental glass to imitate wood	251,692	Jan. 3	9	.....	21	4
Budd, William E., Chatham, assignor of one-half to J. Bryce, Jr., Madison, N. J. Breech-loading fire-arm	259,361	June 13	665	160	21	1806
Budde, Joseph, San Francisco, Cal. Water-closet	253,677	Feb. 14	592	167	21	456
Bude, Volnain, East Saginaw, Mich. Fire-pot	256,016	May 16	1074	299	21	1428
Bude, Volnain, East Saginaw, Mich. Air-heating furnace	256,017	May 16	1075	299	21	1428
Budlong, David H., St. Louis, Mo. Sea-wall	254,454	Mar. 7	10	3	21	640
Budlong, David H., St. Louis, Mo. Manufacture of artificial stone and marble	254,530	Mar. 7	101	.....	21	656
Budlong, William G., assignor to Eureka Nailing Machine Company, Providence, R. I. Boot and shoe nailing machine	255,716	Mar. 28	1000	431 438	21	936
Buel, J. Frederick. (See Buell and Buel.)						
Buel, Richard H., New York, N. Y., assignor to American Heating and Power Company, of New York. Hot-water or steam main or pipe	256,543	Apr. 18	1001	282	21	1140
Buell, Charles E. (See Smith and Buell.)						
Buell, Charles E., et al. (See Smith, James G., assignor.)						
Buell, Charles E., New Haven, Conn. Electrical illumination	252,178	Jan. 10	607	171	21	111
Buell, Charles E., New Haven, Conn. Charging secondary batteries	255,248	Mar. 21	1017	278	21	828
Buell, Charles E., New Haven, Conn. Charging and discharging secondary batteries	255,249	Mar. 21	1018	272 273	21	828
Buell, Charles E., New Haven, Conn. Pneumatic elevator	256,089	Apr. 4	422	116	21	1021
Buell, Charles E., New Haven, Conn. Device for charging and discharging secondary batteries	256,450	Apr. 11	879	245 246	21	1106
Buell, Charles E., New Haven, Conn. System of electric lighting for railway-trains	259,362	June 13	608	160 161	21	1806
Buell, Charles E., New Haven, Conn. Utilizing secondary batteries on telephone-circuits	259,809	June 20	1181	315	21	1913
Buell, Charles E., New Haven, Conn., assignor of two-thirds to J. G. Smith, Hackensack, N. J., and G. W. Coy, Milford, Conn. Utilizing secondary batteries on telephone-circuits	255,377	Mar. 21	1160	316	21	856
Buell, Charles E., New Haven, Conn., and J. F. Buel, Woburn, Mass.; said Charles E. Buell assignor, by mesne assignments, to United States Telephone Manufacturing Company, New York, N. Y. Electrical signaling apparatus	259,988	Jan. 10	741	206	21	132
Buell, Charles E., New Haven, Conn., assignor of two-thirds to J. G. Smith, Hackensack, N. J., and G. W. Coy, Milford, Conn. Telephone-exchange apparatus	255,766	Apr. 4	16	5	21	933
Buell, Charles E., New Haven, Conn., assignor, by mesne assignments, to United States Telephone Manufacturing Company, New York, N. Y. Electric individual signaling apparatus	258,625	May 30	1923	515	21	1637
Buell, Charles E., New Haven, Conn., assignor, by mesne assignments, to United States Telephone Manufacturing Company, New York, N. Y. Individual signaling apparatus for telephone systems	258,626	May 30	1925	515	21	1638
Buell, Charles E., New Haven, Conn., assignor, by mesne assignments, to United States Telephone Manufacturing Company, New York, N. Y. Electric individual signal apparatus	258,627	May 30	1927	516	21	1638
Buell, Henry C., Rome, N. Y. Check-hook for harness	252,073	Jan. 10	485	134	21	91
Buell, Madison, Buffalo, N. Y. Rheostat for multiple telegraphy	256,458	Apr. 18	993	253	21	1124
Buffington, Frank. (See Moore, Samuel, assignor.)						
Bugbee, George W. (See Doane and Bugbee.)						
Buhl & Co., F. (See Parker, George W., assignor.)						
Bulger, Thomas E., Baltimore, Md. Whistling toy	255,250	Mar. 21	1020	273	21	828
Bulkeley, Worthington, Cleveland, Ohio. Spring bed-bottom	259,810	June 20	1182	316	21	1914
Bull, George M., New Baltimore, N. Y. Stove	255,930	Apr. 4	290	57	21	987
Bullard, Charles W., Chicago, Ill. Door-hanger	254,005	Mar. 7	193	49	21	671
Bullock, Charles K. (See Harton, Pembroke D., assignor.)						
Bullock, Milan C. (See Waring, John B., assignor.)						
Bullock, Milan C., Chicago, Ill. Hoisting apparatus for steam rock-drills	258,985	June 6	159	37, 38	21	1718
Bullock, Rufus B., et al. (See Wittich, Frederic A., assignor.)						
Bullock, Thomas H., Cleveland, Ohio. Tuyere	251,701	Jan. 3	93	26	21	18
Bullock, William F., Boston, assignor to himself and H. A. Lothrop, Sharon, Mass. Sole-edge plane	253,180	Feb. 7	10	3	21	348
Bulluss, Thomas L. I. (See Miller, Bulluss, and Berry.)						
Bulluss, Thomas L. I., Birmingham, Conn. Water-pitcher	259,088	June 6	270	71	21	1741
Baltmann, Frederick H., Cleveland, Ohio. Combined drill and reamer	253,963	Feb. 7	97	30	21	353
Bunce, George P., Shelburn, Ind. Stirrup	260,156	June 27	1022	438	21	1909
Bunch, Henry, Garrettsville, Ohio. Combined whip and rein holder	252,720	Jan. 24	1254	338	21	231
Bunch, John W., Commercial Point, Ohio. Cultivator	254,006	Mar. 7	194	49	21	671
Bunch, John W., Commercial Point, Ohio. Seed-planter	254,007	Mar. 7	194	49	21	671
Bungars, Gottfried, Brooklyn, N. Y. Carlole	254,196	Feb. 28	1234	344	21	800
Bunnell, Jesse H., Brooklyn, N. Y. Electric generator and motor	255,931	Apr. 4	321	57, 58	21	987
Bunnell, Jesse H., New York, N. Y. Mechanical telegraph-sounder	255,932	Apr. 4	323	58	21	987
Bunting, William, Jr., Boston, Mass., assignor to H. C. Meyer & Co., New York, N. Y. Water-closet	255,933	Apr. 4	294	58	21	988
Burbank, H., et al. (See Farley, Michael, assignor.)						
Burbank, Jotham H., North Brookfield, Mass. Apparatus for treeing boots	259,811	June 20	1183	316	21	1914
Burbidge, Charles H., Jr., West Hartford, assignor to himself and W. W. Tucker, Hartford, Conn. Toe-weight for horseshoes	259,746	June 20	1105	295	21	1901
Burchfield, James R., Sharon, Pa. Tailor's stove	255,767	Apr. 4	19	5	21	954

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Barckas, I. Hugo, Leipsic, Germany. Fountain-pen	251,693	Jan. 3	10	3	21	4
Burden, Frederick C. (See Burden, William H. and F. C.)						
Burden, William H. and F. C., Cleveland, Ohio. Fire-escape	260,001	June 27	1431	396	21	1943
Burdick, Charles, Cleveland, Ohio. Eaves-trough hanger	253,251	Mar. 21	1021	273	21	889
Burdick, Edwin A., Springfield, Mass., assignor to C. S. Philips, New York, N. Y. Apparatus for curing tobacco	252,926	Jan. 31	1514	421	21	981
Burdick, Horace R., et al. (See Heffernan, William J., assignor.)						
Burdick, Samuel C. (See Read and Burdick.)						
Burdick, Theodore, Grand Haven, Mich. Spring bed-bottom	255,837	Apr. 4	103	27	21	988
Burdict, Orrin C., Buffalo, N. Y. Manger	256,636	Apr. 18	1105	311	21	1157
Burdine, William B., and J. E. Brewer; said Burdine assignor to F. Baltzell, Troy, Ala. Cotton-gin condenser	258,849	May 30	2065	568	21	1669
Burgdorf, John F., Buffalo, N. Y. Label-holder	256,883	June 6	16	5	21	1697
Burger, Frank H., Plainfield, N. J. Electric-arc lamp	259,477	June 13	736	199	21	1834
Burger, Franz. (See Maloney and Burger.)						
Burger, Henry R., and J. B. Simpson, Pincastle, Va. Harrow	255,834	Apr. 4	285	58	21	988
Burger, Henry R., and J. B. Simpson, Pincastle, Va. Harrow	259,069	June 6	270	71	21	1741
Burgess, Andrew, Owego, N. Y. Magazine fire-arm	251,694	Jan. 3	10	3	21	4
Burgess, Edward C. (See Flower and Burgess.)						
Burgess, Edward C., Philadelphia, Pa. Gas-machine	255,673	Mar. 14	795	213	21	799
Burgess, George W., Boston, Mass. Sewing-machine tension device	254,794	Mar. 14	498	115	21	718
Burgess, John H., and J. R. Bancroft, Vassar, Mich. Revolving caddy	257,846	May 16	870	244	21	1453
Burgess, Jordan. (See Caldwell and Burgess.)						
Burgess, Thomas M., Big Rapids, Mich. Curtain-fixture	251,703	Jan. 3	93	26	21	19
Burgess, Thomas M., Big Rapids, Mich. Curtain-fixture	255,708	Apr. 4	21	5, 6	21	954
Burghardt, John M., Smethbridge, Mass. Fruit-drier						
Bargit, John M., et al. (See Scott, William W., assignor.)						
Burk, Henry. (See Andrews and Burk.)						
Burk, John J., assignor of one-half to E. M. Jewett, Buffalo, N. Y. Nail-driving machine	252,834	Jan. 24	1306	360	21	235
Burk Manufacturing Company, (limited.) (See Andrews and Burk, assignors.)						
Bürk, Richard, Schwenningen, Würtemberg, Germany, assignor to M. Micoline, New York, N. Y. Locking-latch	256,986	June 6	141	36	21	1719
Burke, Anthony W., Stayner, Ontario, Canada. Washing-machine	257,551	May 9	585	140 141	21	1376
Burke, Charles G., New York, N. Y. Relay and sounder	252,927	Jan. 31	1515	421 422	21	981
Burke, Charles G., New York, N. Y. Relay and sounder	256,427	Apr. 11	850	236	21	1161
Burke, John A. (See Williams, Francis A., assignor.)						
Burke, John C., Great Falls, assignor of one-half to E. N. Higley, Somersworth, N. H. Weft-fork for looms	253,813	Feb. 14	767	218	21	489
Burke, Peter N., Brooklyn, N. Y. Stationary wash-stand and fixtures	252,074	Jan. 10	486	134	21	91
Burkett, David P., deceased, (E. M. Burkett, administratrix,) assignor of one-third to R. R. Case, Elmo, Ark. Hay and cotton press	258,368	May 23	1512	420	21	1574
Burkett, Keziah M., administratrix. (See Burkett, David P.)						
Burkhardt, Charles G., Buffalo, N. Y. Roller-mill for grinding grain	251,696	Jan. 3	177	49, 50	21	28
Burkhardt, Gottfried, Buffalo, N. Y. Method of and apparatus for obtaining starch from grain	251,697	Jan. 3	180	50	21	33
Burkhardt, Gottlieb F., Boston, Mass. Apparatus for drying malt	255,760	Apr. 4	22	6	21	954
Burks, Jesse H., Los Angeles, Cal. Car-brake	256,876	Apr. 25	1391	301	21	1216
Burland, William H., et al. (See Taylor, Charles, assignor.)						
Burley, Alvin L., Montville, Conn. Machine for filling mattresses, bed-quilts, &c.	254,455	Mar. 7	11	3	21	640
Barley, Bennet B., et al. (See Mackay, Peter, assignor.)						
Burley, Franklin G., Boston, Mass. Saddle for bicycles	253,504	Feb. 14	387	110	21	485
Burmeister and Wain's Maskin and Skibsbyggeri. (See Petersen and Nielsen, assignors.)						
Burnap, Ela A., Denver, Colo. Balanced slide-valve	259,606	June 20	999	265	21	1862
Burnett, Charles M., Turner's Falls, assignor of one-half to J. Keith, Greenfield, Mass. Manufacture of paper	258,710	May 30	1937	547	21	1656
Burnett, James D., and L. C. Hill, Myrtle Creek, Oreg. Fruit-drier	256,459	Apr. 18	994	253	21	1124
Burnham, Alfred S., Parkersburg, Iowa. Bed-bottom	253,678	Feb. 14	593	167	21	457
Burnham, Edward G. (See Tomlinson, Edwin R., assignor.)						
Burns, Daniel R., assignor of one-half to F. J. McCormick, Dayton, Ohio. Manufacture of paper	253,814	Feb. 14	768	219	21	489
Burns, Daniel R., assignor of one-half to F. J. McCormick, Dayton, Ohio. Straight-way valve	255,717	Mar. 28	1008	433	21	936
Burns, Daniel R., assignor of one-half to F. J. McCormick, Dayton, Ohio. Process of and machine for reducing fibers in the manufacture of paper, &c.	259,274	June 20	1391	374	21	1949
Burns, Edward J. Dayton, Ohio. Car-coupling	257,206	May 2	69	21	21	1394
Burns, James, San Antonio, Tex. Constructing béton or artificial-stone curbing	259,812	June 20	1184	316	21	1914
Burns, James, San Antonio, Tex. Method of and apparatus for the construction of concrete abutments, bridge-piers, &c.	260,150	June 27	1062	438	21	1908
Burns, James, Brooklyn, and A. Buckman, Schodack Depot, N. Y. Cigarette-machine	259,090	June 6	271	72	21	1741
Burns, James W., Springfield, Ohio. Fire-kindler mold	256,360	May 23	1513	420	21	1575
Burns, John H., Springfield, Ill. Hat-holder	260,160	June 27	1064	438	21	1908
Burns, Samuel A., et al. (See Preston, James, assignor.)						
Burns, Wilson C., Somerville, assignor of four-fifths to F. Hasey, J. W. Smith, W. E. Woodbury, and J. L. Smith, Boston, Mass. Adjustable rope-clamp	254,795	Mar. 14	499	115	21	718
Burr, George S., Brecktinridge, Colo. Ore-concentrator	251,698	Jan. 3	181	51	21	33
Burr, Harvey W., Gloversville, N. Y. Glove or mitten	259,813	June 20	1185	317	21	1914
Burr, Henry W., Cambridgeport, Mass. Curing rubber-coated fabrics	255,139	Mar. 21	877	235	21	804
Burr, Remus D., Kingsborough, N. Y. Glove	252,972	Feb. 21	972	271	21	569
Burr, Sanford S., Wilmotka, Ill. Interconvertible crib and table	252,720	Jan. 24	1254	352	21	228
Barrell, David H., Little Falls, N. Y. Dairy-vat	252,574	Jan. 17	1068	308	21	196
Burritt, Albert M., assignor to A. Burritt Hardware Company, Waterbury, Conn. Valve for fire-extinguishers	255,800	Mar. 28	1451	390	21	908
Burritt, Albert M., assignor to A. Burritt Hardware Company, Waterbury, Conn. Fire-extinguisher	257,654	May 9	641	180	21	1401
Burritt, Albert M., assignor to A. Burritt Hardware Company, Waterbury, Conn. Fire-extinguishing nozzle	259,691	June 6	274	73	21	1741
Burritt, Albert M. and A. C., assignors to A. Burritt Hardware Company, Waterbury, Conn. Fire-extinguisher	254,271	Feb. 28	1225	306	21	595
Burritt, Angelo C. (See Burritt, Albert M. and A. C.)						
Burritt Hardware Company, A. (See Burritt, Albert M., assignor.)						
Burritt Hardware Company, A. (See Burritt, Albert M. and A. C., assignors.)						
Burritt, Harvey H., Newark, N. J. Gas-motor engine	259,864	June 6	17	5	21	1697
Burroughs, William S., assignor of one-half to A. E. Colby, St. Louis, Mo. Folding coop	255,486	Mar. 28	1325	357	21	888

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Burrows, Joseph H., Boise City, Idaho Ter., assignor of one-half to B. E. Light. Nut-lock	256,971	Apr. 25	1504	492	21	1235
Burrows, William C., Stockton, N. Y. Churn	255,770	Apr. 4	23	7	21	934
Burt, Leonard H. (See Sherman, John, assignor.)						
Burt, Martin C. (See Zimmerman, William, assignor.)						
Burton, Allen. (See Thomas, Nicholas, assignor.)						
Burton, Edmond I., assignor of one-half to W. R. Adair, Washington, D. C. Automatic wagon-brake	255,140	Mar. 21	878	236	21	804
Burton, George D., New Ipswich, N. H., assignor of one-half to J. M. Holden, Boston, Mass. Stock-car	251,695	Jan. 3	13	3, 4	21	5
Burton, George F., and N. Shaw, Eau Claire, Wis. Cut-off valve and gear	259,747	June 20	1106	{295	21	1901
				{296		
Burton, Oscar F., Brooklyn, N. Y. Steam-generator	253,000	Jan. 31	1606	445	21	297
Buscall, Charles, New York, N. Y. School-desk	251,899	Jan. 3	182	51	21	33
Busch, George W. (See Crongeyer, Charles A., assignor.)						
Busell, James H. (See Busell, Luther D., assignor.)						
Busell, Luther D., assignor of one-half to J. H. Busell, Boston, Mass. Edge-plane	258,698	May 30	1829	516	21	1638
Bush, Charles, assignor to himself and A. L. Whitelaw, New York, N. Y. Compass-saw	252,179	Jan. 10	609	171	21	111
Bush, Charles, assignor to himself and L. K. Hunt, New York, N. Y. Sash-cord fastener	260,161	June 27	1694	439	21	1902
Bush, Guilford H., *et al.* (See Yokom, Wilford W., assignor.)						
Bush, Ira I., Janesville, Wis. Combined sad-iron and fluter	253,973	Feb. 21	974	271	21	598
Bush, Jonathan D., Lebanon, Mo. Fanning-mill	256,978	Apr. 25	1505	493	21	1235
Bush, Thomas J., Lexington, Ky. Locking-bolt	257,287	May 2	167	47	21	1311
Bush, Thomas J., Lexington, Ky. Boring-gage	257,288	May 2	168	48	21	1311
Bushey, William, Vincennes, Ind. Wrench	259,383	June 13	611	{161	21	1807
				{168		
Bushnell, Edwin L., Poughkeepsie, N. Y. Car-seat	260,162	June 27	1625	430	21	1902
Bushnell, Newton W., Nineveh, N. Y. Traction-engine	258,814	June 20	1186	{317	21	1914
				{318		
Bushnell, Samuel E., Brooklyn, N. Y. Safety-pocket	256,196	Apr. 11	572	156	21	1052
Busing, Hugo B., *et al.* (See Cline, George J., assignor.)						
Büssing, Heinrich, Brunswick, Brunswick, Germany. Anti-friction roller bearing	253,679	Feb. 14	594	167	21	457
Bussong, Charles D., St. Jacob's, Ill. Traction-wheel	257,467	May 9	397	111	21	1358
Butler, Calvin L., Greenfield, Mass. Vise	253,581	Feb. 14	4c0	136	21	439
Butler Door Spring Company. (See Butler, Theodore, assignor.)						
Butler, Francis G., West Hartford, Conn., assignor to Vermont Farm Machine Company, Bellows Falls, Vt. Separating cream from milk	253,155	Jan. 31	1810	501	21	330
Butler, George, Cincinnati, Ohio. Car-coupling	253,838	Feb. 21	801	228	21	501
Butler, Henry D. (See Corwin and Butler.)						
Butler, John, New York, N. Y. Electrical apparatus for medical use	252,180	Jan. 10	610	171	21	111
Butler, Manlove, Vernon, assignor to P. C. McGannon, North Vernon, Ind. Hay-rake	252,586	Jan. 17	1096	306	21	198
Butler, Orange. (See Harrison, Jonathan W., assignor.)						
Butler, Theodore, assignor to Butler Door Spring Company, Cleveland, Ohio. Spring-hinge	254,109	Feb. 28	1142	319	21	564
Butterfield, George F., Stoneham, Mass. Air-cushion for boot and shoe soles	259,092	June 6	274	73	21	1742
Butterfield, John S., Chicago, Ill. Stock-car	252,803	Jan. 31	1439	402	21	958
Butterworth, Robert, and R. S. Bolles, Nashville, Tenn. Carriage-top	254,608	Mar. 7	195	49, 50	21	671
Butzel, Martin J., Boulder, Colo. Apparatus for concentrating and separating ores	252,731	Jan. 24	1255	{352	21	932
				{353		
Buys, Antoine L. G., Geneva, Switzerland. Click-spring for watches	258,645	Jan. 24	1165	327	21	216
Buzzell, John G., Lynn, Mass. Machine for shaving and whitening leather	258,998	Jan. 31	1517	423	21	262
Bye, Martin. (See Johnson and Bye.)						
Byers, Anthony W., and J. C. Dorner, Sherman, Tex. Cotton-planter	252,732	Jan. 24	1256	353	21	932
Byers, Charles C. (See Ruggles, Thomas D., assignor.)						
Byers, Samuel W., and H. W. Knight, Nashua, Iowa. Planter	258,554	May 30	1735	491	21	1621
Byfield, John, Georgetown, Ontario, assignor to E. R. C. Clarkson, Toronto, Canada. Knitting-machine	252,864	Jan. 31	1440	{402	21	968
				{403		
Byington, Eugene M. (See Randall and Byington.)						
Bylleaby, Henry M. (See Stern and Bylleaby.)						
Bynell, August, Grantsburg, Wis. Cattle-tie	252,424	Jan. 17	916	253	21	167
Byram, Norman S., *et al.* (See Wittenberg, Charles, assignor.)						
Byrkett, Ahijah R., Troy, Ohio. Drop-hammer	259,287	June 13	512	134	21	1790
Byrne, John, *et al.* (See Scott, William W., assignor.)						
Cable, Wheeler, Boston, Mass. Rubber boot or shoe	256,544	Apr. 18	1002	262	21	1141
Cade, George, Milan, Tenn. Car-coupling	254,609	Mar. 7	196	50	21	671
Cadman, Isaac P., assignor of one-half to L. H. Parker and F. A. Dennett, Beloit, Wis. Elevator-frame of grain-binders	254,456	Mar. 7	13	4	21	641
Cadwell, Alexander, Petaluma, Cal. Buckle	253,838	Apr. 4	103	27	21	968
Cady, Frank P. (See Converse and Cady.)						
Cady, Frank P., Cleveland, Ohio, assignor to Washburn & Moen Manufacturing Company, Worcester, Mass., and I. L. Ellwood, De Kalb, Ill. Machine for barbing fence-wires	256,121	Apr. 11	466	{126	21	1035
				{127		
Cady, Henry G., Pine Bluff, Ark. Stalk-cutter	252,181	Jan. 10	610	171	21	111
Caesar, August, assignor to Caesar Bros., New York, N. Y. Key for musical instruments	256,973	Apr. 25	1507	493	21	1236
Caesar Bros. (See Caesar, August, assignor.)						
Cahill, Robert M., assignor of one-half to T. Hunt, St. Louis, Mo. Process of and apparatus for applying waterproofing material	253,505	Feb. 14	396	110	21	496
Cahill, Mortimer, Jacksonville, Ill. Harrow attachment	260,002	June 27	1432	347	21	1903
Cain, Homer C., Cleveland, Ohio. Ice-floor for cold storage-houses	255,489	Mar. 28	1326	357	21	866
Cairns, Irving, Jersey City, N. J. Fireman's hat	256,985	Apr. 11	664	188	21	1072
Caldwell, Samuel, and J. Burgess, Greenfield, assignors of one-third to L. Bradley, Ross County, Ohio. Band-cutting and feeding attachment for thrashers	253,815	Feb. 14	770	219	21	489
Calhoun, Samuel, Edinburg, Ohio. Wire fence	254,796	Mar. 14	430	115	21	718
Calkins, George W., and J. Woodhill, Cleveland, Ohio; said Woodhill assignor to said Calkins. Elevator-bucket	256,160	Apr. 4	424	116	21	1022
Calkins, James B., Pacific, Mo. Stock-car	256,877	Apr. 25	1392	391	21	1216
Callahan, Amos, assignor to himself and W. J. Davis, Maryville, Tenn. Millstone-driver	253,681	Feb. 14	396	108	21	457
Callahan, Cornelius, assignor to American Fire Hose Manufacturing Company, Chelsea, Mass. Hose-carrier	251,996	Jan. 3	361	102	21	66
Callins, Fredrick L. (See Signor, Alfred J., assignor.)						
Calo, Christopher G., Albany, N. Y. Horse-collar. (Reissue)	10,088	May 2	368	103	21	1347
Caltrider, Myren F., Bryan, Ohio. Swinging and sliding gate	252,586	Jan. 24	1111	311	21	207
Cameron, Angus N., Greenville, Cal. Ore-crusher	253,935	Apr. 4	226	30	21	968
Cameron, John D., Bradford, Pa. Tempor-screw box for oil-wells	255,591	Mar. 28	1452	360	21	909
Camp, William S. (See Roehl, Carl, assignor.)						
Campbell, Abraham D., assignor of one-half to W. Cronkright, Hackensack, N. J. Toy or puzzle	257,655	May 9	642	180	21	1401

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Campbell, Alexander, Brooklyn, N. Y. Hanging device for pictures	256,460	Apr. 18	985	253	21	1194
Campbell, Alexander, Brooklyn, N. Y. Bracket	256,865	June 6	20	6	21	1698
Campbell, Alexander H., Hartford, Conn. Milling-machine	253,974	Feb. 21	975	{271	21	596
				{272		
Campbell, Amanda E. (See Chambers, John W., assignor.)						
Campbell, Andrew, Andrew, A. C., and C. H., Brooklyn, N. Y., assignors to Campbell Printing Press and Manufacturing Company. Cylinder printing-press	250,478	June 13	754	199	21	1834
Campbell, Andrew C. (See Campbell, Andrew, A. C., and C. H.)						
Campbell, Andrew C., Bridgeport, Conn., assignor to Campbell Printing Press and Manufacturing Company, of New York. Gripper mechanism for printing-presses	257,129	Apr. 25	1663	471	21	1287
Campbell, Augustine, Metuchen, N. J. Protecting underground pipes and wires	253,181	Feb. 7	11	4	21	349
Campbell, Charles B., assignor to J. T. Noye Manufacturing Company, Buffalo, N. Y. Feed mechanism for roller-mills	256,878	Apr. 25	1393	391	21	1216
Campbell, Charles D., *et al.* (See Tanger, David B., assignor.)						
Campbell, Charles D., Bellefontaine, Ohio. Copying-book	259,975	June 20	1393	374	21	1949
Campbell, Charles H. (See Campbell, Andrew, A. C., and C. H.)						
Campbell, Charles O. (See Webber and Campbell.)						
Campbell Desulphurizing Company. (See Campbell, John, assignor.)						
Campbell, Dudley L., Denver, Colo. Spring bed-bottom	258,695	Jan. 17	917	253	21	169
Campbell, Duncan H., assignor of three-fourths to H. B. Metcalf, F. E. Comey, and D. McNiven, Pawtucket, R. I. Wax-thread sewing-machine	253,156	Jan. 31	1811	{502	21	330
				{503		
Campbell, Duncan H., assignor of three-fourths to H. B. Metcalf, F. E. Comey, and D. McNiven, Pawtucket, R. I. Wax-thread sewing-machine	253,157	Jan. 31	1480	503	21	331
Campbell, George, and J. Clute, Cohoes, N. Y. Machine for winding bobbins	256,197	Apr. 11	572	157	21	1052
Campbell, Henry F., Concord, N. H. Mechanism for and method of forming hoop-splints	255,412	Mar. 28	1231	331	21	870
Campbell, Howard. (See Land and Campbell.)						
Campbell, James, and G. Simonson, Harrison, Ohio. Sash-holder	256,637	Apr. 18	1166	311	21	1157
Campbell, John, Windsor, Ontario, Canada. Circular-saw mill	254,110	Feb. 28	1142	319	21	565
Campbell, John, Allegheny city, Pa., assignor to Campbell Desulphurizing Company, New York, N. Y. Roasting or reroasting furnace	255,592	Mar. 28	1453	{300	21	909
	253,182	Feb. 7	12	{301	21	349
				4		
Campbell, Joseph H., Pittsburg, Pa. Apparatus for extinguishing fires in coke-ovens	254,272	Feb. 28	1325	367	21	595
Campbell, Joseph H., New York, N. Y., assignor of one-fourth to J. McLain, Washington, D. C. Method of and apparatus for annealing and tempering glass	253,506	Feb. 14	398	{110	21	496
				{111		
Campbell, Michael, Boston, Mass. Cash-registering apparatus	253,158	Jan. 31	1823	.....	21	331
Campbell, Milton H., assignor of one-half to N. Green, New York, N. Y. Flux for alloying platinum	253,159	Jan. 31	1824	.....	21	331
Campbell, Milton H., assignor of one-half to N. Green, New York, N. Y. Electroplating with platinum and silver						
Campbell Printing Press and Manufacturing Company. (See Campbell, Andrew C., assignor.)						
Campbell Printing Press and Manufacturing Company. (See Campbell, Andrew, A. C., and C. H., assignors.)						
Campbell, Thomas H., Allegheny, Pa. Apparatus for removing tin and galvanized coating	255,258	Mar. 21	1021	{273	21	829
				{274		
Campbell, William R., and W. J. Chambers, Warren County, Ill. Corn-planter check-rower	251,680	Jan. 3	183	51	21	33
Camper, James, Saguache, Colo. Spittoon-holder	256,370	May 23	1514	430	21	1575
Campfield, Matthew E., Cleveland, Ohio. Wrench	257,468	May 9	398	112	21	1256
Cance, Alexis J. B., Paris, France. Electric lamp	258,182	Jan. 10	611	172	21	111
Cancio, José R., New York, N. Y. Horseshoe	254,531	Mar. 7	102	28	21	656
Candee, Charles E., New York, N. Y. Car-axle box	253,362	Feb. 14	481	136	21	499
Candler, Claude H., and J. Whitehead, Detroit, Mich. Steam-generator furnace	258,371	May 23	1515	430	21	1575
Canet Jean B. G. A., Paris, France. Hydraulic buffer for vehicles	254,917	Mar. 14	501	139	21	747
Canney, John F., and D. F. Tenney, Minneapolis, Minn. Steam-boiler	259,288	June 13	515	135	21	1790
Cannon, Fred C., New Haven, Conn. Manufacture of coach-lamps and dies therefor	254,273	Feb. 28	1327	367	21	595
Cantelou, Rainsford, Edgefield, S. C. Cotton-seed dropper	253,593	Mar. 28	1455	391	21	949
Cantelow, William. (See Austin, Edwin, assignor.)						
Capewell, William H., Philadelphia, Pa. Insulator for telegraph-wires	254,610	Mar. 7	197	50	21	671
Capo, John E., Cincinnati, Ohio. Speculum	254,457	Mar. 7	14	4	21	641
Car-Skaaden, Delos, Chicago, Ill. Ore-separator	257,470	May 9	400	113	21	1359
Car-Skaaden, Delos, Chicago, Ill. Ore-separator	257,471	May 9	402	113	21	1360
Carbutt, John, Philadelphia, Pa. Photographic lantern	256,974	Apr. 25	1508	{493	21	1236
				{494		
Card, Joseph P., St. Louis, Mo. Preserving wood	254,274	Feb. 28	1329	.....	21	596
Card, Milton E., Canaseria, N. Y. Ball-trap	257,469	May 9	399	112	21	1256
Carey, Eustace, H. Gaskell, Jr., and F. Harter, Widnes, county of Lancaster, England. Purification of alkaline solutions	254,918	Mar. 14	501	.....	21	748
Carey, Eustace, H. Gaskell, Jr., and F. Harter, Widnes, county of Lancaster, England. Purification of alkaline solutions	254,919	Mar. 14	502	150	21	748
Carey, Eustace, H. Gaskell, Jr., and F. Harter, Widnes, county of Lancaster, England. Purification of alkaline solutions obtained in the manufacture of soda	258,850	May 30	2066	.....	21	1663
Carey, John B., assignor of one-half to W. V. Hutchings, Boston, Mass. Railway-switch	254,797	Mar. 14	431	116	21	719
Carlès, Jean A., Toulouse, France. Mowing-machine	255,718	Mar. 28	1094	{433	21	936
				{434		
Carley, Andrew B., *et al.* (See Carley, John W., assignor.) (Reissue.)						
Carley, John W., assignor of part interest to J. W. Storey and A. B. Carley, Cotton Gin, Tex. Earth borer and excavator. (Reissue)	10,027	Feb. 7	363	101	21	407
Carley, Timothy L., Syracuse, N. Y. Saw-mill dog	254,458	Mar. 7	14	4	21	641
Carlile, William S., *et al.* (See Shaw, Noah T., assignor.)						
Carlisle, Septimus R., *et al.* (See Nee, Gustav, assignee.)						
Carlos, Luke. (See Frey, Francis E., assignor.)						
Carlton, Charles C. B., and H. W. Clapp, Springfield, Mass. Button-hole cutter	257,289	May 2	170	48	21	1313
Carman, Alsace G., Marengo, Ill. Wind-wheel machinery	259,289	June 13	516	135	21	1790
Carmien, Pierre J., near Paris, France. Apparatus for stopping bottles	259,815	June 20	1167	318	21	1915
Carmoli, James E. (See Thurber, Milton E., assignor.)						
Carnes, Frank A., Brooklina, Mass. Carriage-axle box	252,733	Jan. 24	1257	353	21	933
Carney, Martin J., assignor of one-half to J. H. Wheeler, Toledo, Ohio. Telephone central-office switch	258,696	June 6	21	6	21	1696
Carpenter, Edward H. (See Jackson and Brockway, assignors.)						
Carpenter, Francis W., Harrison, N. Y. Toy railway-train. (Reissue)	10,083	Mar. 14	627	220	21	768
Carpenter, Francis W., Harrison, N. Y. Toy building-blocks	251,763	Jan. 3	94	26	21	19
Carpenter, Francis W., Harrison, N. Y. Toy building-blocks	253,975	Feb. 21	977	272	21	569
Carpenter, George E., Moorefield, W. Va. Medical saddle-bags	256,867	June 6	25	6	21	1699
Carpenter, James, Moravia, N. Y. Bar bed-fence strap						

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Carpenter, James, Moravia, N. Y. Barbed fence	258,868	June 6	98	7	21	1000
Carpenter, James A. (See Halstead and Carpenter.)						
Carpenter, James W. (See Maxon, Thomas, assignor.)						
Carpenter, Lauren, St. Joseph, Mich. Machinery for forming and fastening boxes and dishes	253,639	Feb. 21	802	228	21	501
Carpenter, Marvin H., Jersey City, N. J. Dental flask	256,879	Apr. 25	1393	391	21	1217
Carpenter, Robert P., Philadelphia, Pa. Seed-case	255,771	Apr. 4	94	7	21	954
Carpenter, William B., Newark, N. J. Cigar and cigarette wrapper	253,641	Feb. 21	806	.....	21	501
Carpenter, William B., Newark, N. J. Glove or shoe fastener	256,198	Apr. 11	573	157	21	1053
Carpenter, William B., Newark, N. J., assignor to himself and Celluloid Novelty Company, New York, N. Y. Water-proof paper	253,840	Feb. 21	805	.....	21	501
Carpenter, William L. (See Patterson, Floyd E., assignor.)						
Carr, Clara E., executrix. (See Carr, William S.)						
Carr, Dallas, Chandlerville, Ill. Draft-equalizer	256,372	May 23	1516	430	21	1575
Carr, Fred S., West Newbury, Mass. Machine for upsetting tires	252,865	Jan. 31	1442	403	21	269
Carr, Judson A., Monmouth, Ill. Device for opening furnace-doors	252,183	Jan. 10	613	178	21	112
Carr, Lewis T., assignor to Godfrey & Gardiner, Providence, R. I. Chasing and engraving machine	254,000	Feb. 21	1113	311	21	552
Carr, Robert S. (See Sohn, Richter, and Carr.)						
Carr, William H., Lansingburg, assignor to F. W. Ostrom, Troy, N. Y. Button-hole attachment for sewing-machines	256,817	Apr. 25	1319	{378 373}	21	1203
Carr, William S. (See Arthur, James, assignor.)						
Carr, William S., deceased, C. E. Carr and G. D. Scott, New York, N. Y., executrix and executor. Valve for water-closet cisterns	252,734	Jan. 24	1257	353	21	232
Carr, William S., deceased, C. E. Carr and G. D. Scott, New York, N. Y., executrix and executor. Valve for water-closet cisterns	252,735	Jan. 24	1258	354	21	232
Carrier, Lucius, Providence, R. I. Thrashing-machine	252,496	Jan. 17	918	253	21	168
Carroll, William T., Worcester, assignor to (J. Draper & Sons, Hopedale, Mass. Spindle	255,674	Mar. 14	797	213	21	783
Carroll, William T., Worcester, assignor to G. Draper & Sons, Hopedale, Mass. Spindle for spinning-machines and support therefor	256,798	Apr. 18	1284	368	21	1190
Carroll, William T., assignor to H. W. Mason, Worcester, and W. F. Draper, Hopedale, Mass. Spindle and bearing therefor	256,122	Apr. 11	469	127	21	1035
Carson, Leonidas W., Manson, Iowa. Hay-stacker	252,497	Jan. 17	919	253	21	168
Carson, Robert J., Detroit, Mich., assignor of one-fourth to E. S. Norton, St. Paul, Minn. Server	256,638	Apr. 18	1107	311	21	1157
Carter, John R., Toronto, Ontario, Canada. Manifold copying-book	252,646	Jan. 24	1165	307	21	217
Carter, Robert, New York, N. Y. Circuit for fire-alarm telegraphs	254,611	Mar. 7	197	50	21	672
Carter, Thomas W., New Orleans, La. Beam-truss	252,989	Jan. 31	1518	423	21	288
Carter, William D., Brooklyn, assignor to L. and H. C. Valentine and C. S. Homer, Jr., New York, N. Y. Screw-press	252,075	Jan. 10	487	134	21	91
Carter, William D., Brooklyn, assignor to L. and H. C. Valentine and C. S. Homer, Jr., New York, N. Y. Can for ivory-black, &c	252,076	Jan. 10	488	135	21	91
Cartmell, Robinson, assignor of one-fourth to A. H. Fisher, Bellows Falls, Vt. Wood-pulp machine	257,436	May 2	351	98	21	1344
Carvalho, Jacob S. (See Carvalho, Solomon N., assignor.) (Reissue.)						
Carvalho, Solomon N., assignor to J. S. Carvalho, New York, N. Y. Apparatus for superheating steam or heating air. (Reissue)	10,124	May 30	2107	595	21	1667
Carver, James W., Lynn, Mass., assignor to Cocheco Heeler Company, Biddeford, Me. Heel-burnishing machine	253,642	Feb. 14	597	168	21	457
Cary, Edgar, New York, N. Y. Machine for creasing, bending, and shaping celluloid collars	253,001	Jan. 31	1066	446	21	297
Cary, Edgar, New York, N. Y. Machine for folding and pasting the ends of paper collars	258,711	May 30	1937	547	21	1656
Casaday, William L., South Bend, Ind. Jointed plow-tongue	256,806	Jan. 31	1463	403	21	269
Casaday, William L., New Carlisle, Ind. Sulky-plow	258,067	June 6	149	38, 39	21	1719
Case, Constantine G., Battle Creek, Mich. Thrashing and clover-hulling machine frame	258,077	Jan. 10	489	135	21	92
Case, Edwin, East Toledo, Ohio. Fruit-picker	256,818	Apr. 25	1393	373	21	1204
Case, George, assignor to L. E. Sunderland, De Kalb, Ill. Barbed fence-wire	256,860	Apr. 25	1395	393	21	1217
Case, George F., assignor to Sullivan Machine Company, Claremont, N. H. Core-lifter for annular rock-drills	255,719	Mar. 28	1605	434	21	936
Case, Henry J., Auburn, N. Y. Grain-binder	253,567	Feb. 14	499	111	21	426
Case, John M., assignor to Case Manufacturing Company, Columbus, Ohio. Grain-reduction machine	250,479	June 13	756	200	21	1635
Case, John M., assignor to Case Manufacturing Company, Columbus, Ohio. Grain-reduction machine	250,480	June 13	757	201	21	1635
Case, John M., assignor to Case Manufacturing Company, Columbus, Ohio. Grain-reduction machine	250,481	June 13	758	201	21	1635
Case Manufacturing Company. (See Case, John M., assignor.)						
Case, Philip H., assignor of one-half to R. J. McNeil, Alexandria, Minn. Harness-pad	257,209	May 2	70	21	21	1294
Case, Robert R. (See Burkett, David P., assignor.)						
Case, William S., New Britain, Conn. Bench-plane	258,998	June 6	144	39	21	1720
Cassebelt, Henry, San Francisco, Cal. Underground cable-way	256,881	Apr. 25	1395	{392 393}	21	1217
Casey, Frederick D., West Deer Park, N. Y. Potato-bug-catching machine	254,459	Mar. 7	15	4, 5	21	641
Casey, Peter, Providence, R. I. Shaft-loop for harness	254,930	Mar. 14	594	159	21	748
Casben, William J., Portland, Conn. Cake-pan frame	252,498	Jan. 17	919	254	21	168
Caspar, Frederick, Plainfield, N. J. Spring-gun	253,141	Mar. 21	679	236	21	804
Cass, Charles H. (See Gosselin, Rodolphe T., assignor.)						
Cassa, Frederik, Haarlev, Denmark. Railway weighing-scales	258,083	June 6	975	73	21	1742
Cassel, Henry R., assignor, by mesne assignments, to himself and C. Hanfeld, Jr., New York, N. Y. Producing metallic panels with artistic designs	256,986	Apr. 11	685	.....	21	1072
Cassey, Olive M., Leavenworth, Kans. Domestic steamer	257,528	May 9	508	141	21	1376
Cassidy, John, Cambridge, Mass. Clog	256,818	May 23	1338	379	21	1544
Cassill, William, Hamden Junction, assignor to himself and J. T. Ogier, Hamden, Ohio. Corn-planter and fertilizer-distributer	252,736	Jan. 24	1259	354	21	238
Castell, James, assignor to J. B. Melone and T. E. Sharp; said Melone and Sharp assignors of one-third to J. Shepherd, Macon City, Mo. Refrigerator	255,148	Mar. 21	809	226	21	894
Casterline, William, Concordia, Kans. Wind-engine	257,210	May 2	70	21	21	1294
Castle, Wilmot. (See Arnold, William E., assignor.)						
Catrow, James H., R. Foster, and W. R. Graham, Nebraska City, Nebr. Grain-drier	255,699	Mar. 21	831	221	21	795
Catterall, Peter J., and E. Birch, Manchester, county of Lancaster, England. Apparatus for raising beer, &c	253,683	Feb. 14	598	169	21	458
Canhagé, Pierre, Detroit, Mich. Pill packing-box	250,364	June 13	611	162	21	1667
Canhagé, Pierre, assignor to Pake, Davis & Co., Detroit, Mich. Process of and die for making pill-boxes	250,365	June 13	616	162	21	1667

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Cavenaugh, Charles J. (See Ehman, Charles W., assignor.)						
Cavnah, Henry A., *et al.* (See Gibbs, Lewis, assignor.)						
Celluloid Manufacturing Company. (See Hyatt, John W., assignor.)						
Celluloid Manufacturing Company. (See Pool, Frank V., assignor.)						
Celluloid Manufacturing Company. (See Reid and Eastwood, assignors.)						
Celluloid Manufacturing Company. (See Sanborn, Albert A., assignor.)						
Celluloid Novelty Company. (See Carpenter, William B., assignor.)						
Cessna, Daniel. (See Mossbey and Cessna.)						
Chabot, Cyprien, Philadelphia, Pa. Shoe-sole-channeling machine	254,612	Mar. 7	209	51	21	672
Chadwick, Charles E., Brooklyn, N. Y. Corset	255,504	Mar. 28	1456	391	21	909
Chadwick, Sager, Philadelphia, Pa. Making photographic copies or fac-similes of drawings, &c	259,094	June 6	977	74	21	1742
Chambard, Peter F., Fayette, Ohio. Hay-elevator	254,981	Mar. 14	695	169	{374 375}	21	1949
Chamberlain, Blanchard, Bellefontaine, Ohio. Apparatus for heating railway-trains	259,976	June 20	1383			21	1949
Chamberlain, Blanchard, assignor to J. H. Wilson, Bellefontaine, Ohio. Windmill-motor	258,737	Jan. 24	1261	354	21	223
Chamberlain, Blanchard, assignor to J. H. Wilson, Bellefontaine, Ohio. Windmill	258,835	Jan. 24	1306	380	21	255
Chamberlain, John W., Peotone, Ill. Device for converting reciprocating into rotary motion	256,718	May 30	1988	547	21	1636
Chamberlain, Orville T. (See Straw and Signor, assignors.)						
Chamberlain, Roscoe, and J. Austin, East Liberty, Ohio. Knot-tying device for grain-binders	253,602	Jan. 31	1067	446	21	297
Chamberlain, William E., assignor of one-half to E. G. Windsor, Providence, R. I. Apparatus for lighting the platforms and steps of railway-cars	254,091	Feb. 21	1114	311	21	552
Chamberlin, Charles, Lowell, Mass. Spindle-protector for carriage-axles	259,366	June 13	613	162	21	1666
Chamberlin, George W., and A. S. Commeyer, Sterling, Ill. Artificial stone	255,936	Apr. 4	927	.....	21	966
Chambers, Baring & Quinlan. (See Baring, James E., assignor.)						
Chambers, Baring & Quinlan. (See Porter, Robert, assignor.)						
Chambers, Baring & Quinlan. (See Quincy, Edmund W., assignor.)						
Chambers, Baring & Quinlan. (See Rush, William B., assignor.)						
Chambers, James H., *et al.* (See Lockey, Andrew M., assignor.)						
Chambers, James W., Baltimore, Md. Reverse-seaming guide for sewing-machines	257,656	May 9	643	181	21	1468
Chambers, John W., assignor of one-half to A. E. Campbell, Boulder, Colo. Self-adjusting head-block for hay-presses	259,969	June 6	978	195	21	1776
Chambers, Josephus C., Cincinnati, Ohio. Attachment for telephones	258,969	June 6	145	39, 40	21	1719
Chambers, Robert W., assignor of one-half to P. Smith, Brother & Co., Sidney, Ohio. Earth-scraper	258,373	May 23	1517	431	21	1575
Chambers, William J. (See Campbell and Chambers.)						
Chamness, Edward B., Alexandria, Ind. Coffee-pot	251,606	Jan. 3	14	4	21	5
Champion Corn Husker Company. (See Webber, Josiah, Jr., assignor.)						
Chandler, Clarence A., East Bridgewater, Mass. Paper-bag machine	251,997	Jan. 3	361	{102 103}	21	96
Chandler, Clarence A., East Bridgewater, Mass. Hydraulic elevator	253,642	Feb. 21	807	229	21	502
Chandler, Clarence A., East Bridgewater, Mass., assignor to Eastern Paper Bag Company, Hartford, Conn. Paper-bag machine	256,123	Apr. 11	469	{127 128}	21	1035
Chandler, Clarence E. (See English, Amaldo M., assignor.)						
Chandler, George E., Jacksonburg, Ind. Gate-latch	253,276	Feb. 21	979	273	21	569
Chandler, James E., *et al.* (See Markland, William H., assignor.)						
Chandler, John, Brooklyn, N. Y. Railway draw-bridge appliance	254,883	Mar. 14	598	{136 137}	21	738
Chandler, Josiah. (See Chandler, Samuel and J.)						
Chandler, Samuel and J., London, England. Gas-purifying apparatus	259,977	June 20	1385	375	21	1950
Channon, Henry, Chicago, Ill. Wire-rope-splicing bench	253,980	Feb. 21	886	250	21	515
Chantrell, Felix, Bridgeport, Conn. Adjustable socket-wrench	254,875	Feb. 28	1330	367	21	906
Chapin, M. D. (See Richardson, Edwin C., assignor.)						
Chapleau, Samuel E. St. O., Ottawa, Ontario, Canada. Magnetic ore-separator	256,630	Apr. 18	1107	{311 312}	21	1156
Chapleau, Samuel E. St. O., Ottawa, Ontario, Canada. Nut-lock	257,220	May 2	139	42	21	1319
Chaplin, Ortil E., Boston, Mass. Axle-box	252,017	Jan. 10	488	116	21	69
Chapman, Charles H., Joplin, Mo. Heating-drum	256,842	Apr. 25	1397	393	21	1217
Chapman, Charles R., Shirley, Mass., assignor to Sawyer Spindle Company, of Massachusetts. Spindle and device for lubricating the same	256,998	Apr. 11	692	188	21	1073
Chapman, Edward G. (See Harris, David H., assignor.)						
Chapman, Emery J. (See Stewart and Chapman.)						
Chapman, Frank. (See Cortelyou, Henry, assignor.)						
Chapman, Frank H., assignor to C. Parker Company, Meriden, Conn. Coffee-mill	253,964	Feb. 7	99	30	21	363
Chapman, George A. (See Newbury and Chapman.)						
Chapman, John, and R. Brass, Brooklyn, N. Y. Steam-radiator	258,374	May 23	1518	431	21	1576
Chapman, Matthew T., Aurora, Ill. Pipe-wrench	254,469	Mar. 7	16	5	21	642
Chapman, Matthew T., Aurora, Ill. Winding-drum	256,869	June 6	97	7	21	1699
Chapman, Thomas M., Old Town, Me. Friction-roll	253,163	Feb. 7	13	4	21	349
Chapman, William M., Middletown, Conn. Gag-runner	259,488	June 13	760	208	21	1635
Chappel, Alonzo, Brooklyn, N. Y. Combination-easel	258,990	June 6	146	40	21	1720
Charmbury, Henry, Newark, N. J. Button-hole sewing-machine	255,143	Mar. 21	801	227	21	894
Charnley, James A., Providence, R. I. Ornamental wire	253,184	Feb. 7	14	4	21	349
Charnley, James A., Providence, R. I. Machine for ornamenting wire	254,197	Feb. 28	1325	344	21	549
Charpentier, Paulin A., Paris, France. Electric conductor for fire-alarms	259,416	June 20	1188	318	21	1915
Charter, Frank H. (See Morse and Charter.)						
Chase, Andrew J., Boston, Mass. Construction of buildings	256,595	Mar. 28	1457	391	21	909
Chase, George. (See Smith and Chase.)						
Chase, Henry A., Lynn, Mass. Apparatus for sustaining telegraph-wires	256,819	Apr. 25	1393	374	21	1204
Chase, James B. T., Pueblo, Colo. Prospecting-tool for miners, &c	252,184	Jan. 10	613	178	21	112
Chase, John F., assignor of one-fourth to H. Sewall, Augusta, Me. Can-labeling machine	254,884	Mar. 14	611	137	21	738
Chase, Joseph H., Montreal, Quebec, Canada, assignor to W. F. Abbot, New York, N. Y. Mechanical musical instrument	258,101	Apr. 4	625	117	21	1020
Chase, Leo L., assignor to F. Tarble, Swanton, Vt. Car-coupling	254,111	Feb. 28	1143	310	21	565
Chase, Lewis C., Waupun, Wis. Plaiting and plaiting board	254,982	Mar. 14	696	169	21	749
Chase, Lewis C., Waupun, Wis. Hay-fork	257,159	May 2	6	2	21	1292
Chase, Lucius C., Boston, Mass. Tee-weight	259,463	June 13	760	208	21	1636
Chaunier, Jean, Lyons, France, assignor to P. J. Berla, Boston, F. G. Kincaid, Somerville, and O. A. Whitmore, Malden, Mass. Machine for making fish-nets	256,987	Apr. 11	686	{186 187 188}	21	1073
Chauvet, A. B., *et al.* (See Scott, William W., assignor.)						
Chavore, Mary E., Covington, Mo. Flour-sifter	259,484	June 13	760	208	21	1636
Cheever, Charles A. (See Brown, George H., assignor.)						

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Cheever, Charles A. (See Rose and Cheever.)						
Cheever, Charles A., trustee. (See Ball, Charles E., assignor.)						
Cheever, Charles A., trustee. (See Rose, Allen W., assignor.)						
Cheever, Charles A., trustee. (See Woolson, Oroseo C., assignor.)						
Cheever, Charles A., New York, N. Y. Electric lamp	258,991	June 6	146	40, 41	21	1720
Cheever, Charles A., New York, N. Y. Holder for electric candles	259,367	June 13	614	163	21	1908
Cheever, Charles A., New York, N. Y. Electro-magnetic dispatch-tube	259,817	June 20	1186	318	21	1915
Cheever, John D., New York, N. Y. Water-proof composition	254,461	Mar. 7	17	.....	21	641
Cheever, John D., New York, N. Y. Water-proof and plastic composition	254,462	Mar. 7	18	.....	21	642
Cheever, John D., New York, N. Y. Water-proof and plastic compound	254,463	Mar. 7	19	.....	21	642
Cheever, John D., New York, N. Y. Apparatus for applying solutions of chloride of sulphur in bisulphide of carbon to sheets of plastic compounds	254,464	Mar. 7	20	5	21	642
Cheever, John D., New York, N. Y. Water-proof and plastic compound	254,465	Mar. 7	21	5	21	642
Cheever, John O., *et al.* (See Pearson, William E., assignor.)						
Chelini, Giacomo, Washington, D. C. Reclining-chair	256,793	Apr. 18	1286	382	21	1190
Cheney, Charles W., Athol, Mass., assignor of a part to C. W. Knowlton and W. C. Bowers, Brooklyn, N. Y. Mowing-machine	258,535	May 30	1736	491	21	1691
Cheney, Flavius, Seneca Falls, N. Y. Mounting for globes	253,508	Feb. 14	401	111	21	426
Cheney, Fred N., *et al.* (See Cheney, Frederick P., assignor.)						
Cheney, Frederick P., Glover, Vt., assignor to Dauntless Manufacturing Company, Norwalk, Ohio, and F. N. Cheney. Ruffler for sewing-machines	252,355	Jan. 17	821	228	21	152
Cheney, Moses. (See Cheney, Nathan and M.)						
Cheney, Nathan, Fairmount, Ill., and M. Cheney, Coshocton, Ohio. Board and wire fence	257,847	May 16	871	244	21	1453
Cheney, Person C. (See Hill, Henry T., assignor.)						
Chenoweth, James D., Alvin, Ill. Stamp-extractor	254,613	Mar. 7	201	51	21	672
Cherry, John G., Cedar Rapids, Iowa. Portable case for transporting cream	251,831	Jan. 3	184	52	21	33
Chesbro, Ernest P., Willimantic, Conn. Device for crushing sugar, salt, &c	258,736	Jan. 24	1202	354	21	233
Chesebrough, Robert A., New York, N. Y. Harbor defense	254,112	Feb. 28	1144	319	21	565
Cheseman, Henry C., Providence, R. I. Machine for packing crackers	251,697	Jan. 3	14	4	21	5
Chester, Hubbard C., Noank, Conn. Croquet-stand	255,396	Mar. 28	1456	392	21	909
Chester, John, Providence, R. I. Stove-knob	253,509	Feb. 14	402	112	21	427
Chesterman, William, Sheffield, county of York, England. Measuring-tape	260,163	June 27	1697	430	21	1993
Cheswright, Charles, London, England. Machine for capsuling bottles	258,899	June 6	20	7	21	1699
Chew, Joseph K., Salem, N. J. Spring for vehicles	251,764	Jan. 3	95	27	21	19
Chicago Car Roofing Company. (See Aldridge, Hiram, assignor.) (Reissue.)						
Chicago Rawhide Manufacturing Company. (See Krueger, August C., assignor.)						
Chicago Sugar Refining Company. (See Matthiessen and Behr, assignors.)						
Chicago Sugar Refining Company. (See Matthiessen and Quimby, assignors.)						
Chicago Sugar Refining Company. (See Tonkin, John J., assignor.)						
Chichester, Lemuel A. (See Worch, Emil, assignor.) (Reissue.)						
Chichester, Lemuel A., Phœnicia, N. Y. Convertible child's chair	259,368	June 13	615	163	21	1908
Chichester, Lewis S., Jersey City, N. J., assignor to C. G. Francklyn and W. Foster, Jr., New York, N. Y. Apparatus for pulverizing grain, ores, &c	253,344	Feb. 7	192	55	21	379
Chichester, Sylvester. (See Moffatt and Chichester.)						
Child, F. Linus. (See Rockwood, Levi R., assignor.)						
Childers, William, and M. M. Eberly, Philadelphia, Pa. Bed-spring	258,018	May 16	1078	299	21	1489
Children, Arthur G. (See Children, Edwin and A. G.)						
Children, Edwin and A. G., East Dubuque, Ill. Machine for making fence-barbs	255,413	Mar. 28	1233	331 and 332	21	870
Childs, George T., Lookout, Cal. Cutter and punch attachment for anvils	254,532	Mar. 7	103	26	21	656
Childs, William A., Englewood, N. J., and F. Shaw, New York, N. Y. Galvanic battery	255,597	Mar. 28	1459	392	21	910
Chillingworth, Felix, New Haven, Conn., assignor to A. M. Leslie, Chicago, Ill. Cartridge-box. (Reissue)	10,190	May 23	1717	485	21	1611
Chimneck, George H. (See Taylor, Henry S., assignor.)						
Chiozza, Luigi, Cervignano, Austria, assignor to A. Behr, Jersey City, N. J. Substitute for coffee	252,429	Jan. 17	990	.....	21	168
Chisholm, Samuel S., *et al.* (See Mills, Jonathan, assignor.)						
Chisholm, Wellington P., *et al.* (See Mills, Jonathan, assignor.)						
Chittenden, Morgan, Danbury, Conn. Hat-sizing machine	256,461	Apr. 18	906	254	21	1194
Christ, John, Hoboken, N. J. Globe-valve	258,019	May 16	1078	300	21	1489
Christey, Arthur, Buffalo, N. Y. Mailing-packet	255,414	Mar. 28	1235	392	21	871
Christey, Arthur, Buffalo, N. Y. Mailing-package	255,415	Mar. 28	1236	392	21	871
Christian, John B., Hamburg, Iowa. Sulky-cultivator	260,164	June 27	1627	440	21	1993
Christian, William B. (See McEnnaney, John T., assignor.)						
Christmiller, Mathias, Washington, D. C. Implement for bleeding trees	253,185	Feb. 7	15	5	21	349
Christman, Augustus G., Reading, Pa. Plow	254,573	Mar. 7	103	26, 27	21	656
Christmas, Charles T., Lake Beulah, Miss. Wire-stretcher	252,185	Jan. 10	614	172	21	112
Christy, George H., trustee. (See Greer, Howard, assignor.)						
Christy, William T. and E. C. Sheridan; said Sheridan assignor to said Christy; said Christy assignor of one-third to W. J. Greason, Jr., Newark, N. J. Water-wheel	255,720	Mar. 28	1606	434	21	937
Church, Dwight M., assignor of two-thirds to L. H. and A. F. Loomer, Birmingham, Conn. Steel for corsets	254,113	Feb. 28	1145	320	21	565
Church, Henry A. (See Halkyard, William, assignor.)						
Church, James, St. Louis, Mo. Lifting-jack	258,536	May 30	1737	492	21	1692
Church, John F., Albion, Mich. Vapor-burner	253,003	Jan. 31	1606	446	21	297
Church, Melvin B., Grand Rapids, Mich. Plastic material	255,377	Apr. 4	228	.....	21	908
Church, Melvin B., Grand Rapids, Mich. Chair sleeping-car	259,485	June 13	762	203 and 204	21	1836
Church, Melvin B., Grand Rapids, Mich. Folding spring-cot	259,486	June 13	765	203	21	1836
Church, Melvin B., Grand Rapids, Mich. Folding spring-cot	259,487	June 13	767	204	21	1836
Church, Melvin B., Grand Rapids, Mich. Coating and painting exterior surfaces	259,488	June 13	769	.....	21	1837
Church, Melvin B., Grand Rapids, Mich. Manufacture of paper blankets	259,489	June 13	770	.....	21	1837
Church, Melvin B., Grand Rapids, Mich. Feed-regulator for grinding-mills	259,490	June 13	770	204	21	1837
Church, Melvin B., Grand Rapids, Mich. Sign	259,491	June 13	771	204	21	1837
Church, Melvin B., Grand Rapids, Mich. Packing-box	259,492	June 13	772	204	21	1837
Church, Melvin B., Grand Rapids, Mich. Covering for walls	259,493	June 13	774	.....	21	1837
Church, Melvin B., Grand Rapids, Mich. Automatic draft-regulator and ventilator	259,494	June 13	775	205	21	1837
Church, Melvin B., Grand Rapids, Mich. Grinding-mill	259,495	June 13	776	205	21	1837
Church, Melvin B., Grand Rapids, Mich. Sleeping-car	259,496	June 13	778	205 and 206	21	1837
Church, Moses J. (See Hill and Church.)						
Churchill, Charles D. (See McCord and Churchill.)						
Churchill, James D., Upper Holloway, county of Middlesex, England. Safety-valve apparatus for steam-boilers	256,863	Apr. 25	1398	384	21	1218
Churchill, Samuel M., State Centre, Iowa. Nut-lock	255,530	Apr. 4	104	28	21	908

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Churchman, Thomas C., Sacramento, Cal. Nozzle	259,867	June 20	993	265	21	1988
Chynoweth, John T., Appleton, Wis. File for bills, &c	252,356	Jan. 17	822	228 and 229	21	152
Cilley, George W., Norwich, Conn. Revolving fire-arm	254,786	Mar. 14	432	116	21	719
Cincinnati and Newport Iron and Pipe Company. (See Dimmick, Jacob K., assignor.)						
Clacel, Richard S. T., Elizabeth, N. J. Hot and cold air register	258,689	May 30	1630	516	21	1630
Clabaugh, Andrew, and M. B. McDowell, Altoona, Pa. Furnace	255,253	Mar. 21	1083	275	21	689
Clabrough, John B. (See Rogers, John T. and J., assignors.)						
Clabrough, John P. (See Scott, Henry, assignor.)						
Cladis, Arthur B. (See Sawyer, William A., assignor.)						
Cladis, George, Miller's Corners, N. Y. Scoop and fork	255,254	Mar. 21	1084	275	21	689
Claggett, George W., Attleborough, assignor to H. F. Barrows, North Attleborough, Mass. Chain for watches. (Reissue)	10,089	Jan. 3	401	108	21	69
Clanahan, William J. (See Farra, Clanahan, and Elliss.)						
Clancey, William, assignor of one-half to B. McTiernan, Providence, R. I. Automatic gas-light extinguisher	254,198	Feb. 28	1136	344	21	1e9
Clapham, Thomas, Roslyn, N. Y. Center-board boat	256,375	May 23	1519	431	21	1576
Clapp, Homan W. (See Carlton and Clapp.)						
Clapp, Thomas C., Gouverneur, N. Y. Towel-rack	252,383	Feb. 14	402	126	21	429
Clara, Allen J., Norwich, N. Y. Stereoscope-view case	253,510	Feb. 14	402	113	21	427
Clark, Albert E., Amite City, La. Locking nuts upon bolts	252,186	Jan. 10	615	173	21	113
Clark, Alfred S., New Orleans, La. Combined foot wiper and scraper	259,618	June 20	1191	319	21	1916
Clark, Augustus, *et al.* (See Harvey, Peter L., assignor.)						
Clark, Byron. (See Clark, John J. and B.)						
Clark, Charles B., Detroit, Mich. Door-spring	252,188	Jan. 10	616	173	21	113
Clark, Charles B., Philadelphia, Pa. Spring-hinge	253,948	Apr. 4	229	59	21	908
Clark, Charles H., Rochester, N. Y. Bedstead-lock	256,289	Apr. 11	983	188	21	1073
Clark & Co. (See Ryther, William H., assignor.)						
Clark, Edward, New York, N. Y. Platform-gear for wagons	252,187	Jan. 10	615	173	21	113
Clark, Ezra E., Worcester, Mass. Elliptograph	256,488	Apr. 18	907	254	21	1194
Clark, Francis L., Sewickley, Pa. Oil-can	251,832	Jan. 3	188	28	21	34
Clark, George, New York, N. Y. Method of and apparatus for treating tobacco	253,564	Feb. 14	422	137	21	430
Clark, George B., assignor of one-half to P. G. Eaton, Springville, N. Y. Shingling-gage	253,816	Feb. 14	771	219	21	449
Clark, George B., assignor of one-half to P. G. Eaton, Springville, N. Y. Hand-truck	253,894	Jan. 31	1089	446	21	297
Clark, George P., Windsor Locks, Conn. Hand-truck						
Clark, George W. (See Pindar and Clark.)						
Clark, Henry. (See McBean and Watson, assignors.)						
Clark, Henry A., Boston, Mass. Vulcanizing india-rubber and gutta-percha coverings and coatings of telegraphic cables	258,730	Jan. 24	1202	355	21	233
Clark, Herbert M., *et al.* (See Lee, Charles E., assignor.)						
Clark, Horace M. (See Grimm and Clark.)						
Clark, J. Mehr. (See O'Neil, Robert, assignor.)						
Clark, James, Clebutne, Tex. Wagon-jack	255,490	Mar. 28	1327	358	21	8c6
Clark, James B. (See Clark, William R., J. B., and W. N., Jr.)						
Clark, James B., *et al.* (See Bosworth, Lycurgus J., assignor.)						
Clark, James B., Plantsville, Conn. Bolt-heading machine	260,161	June 27	1775	486	21	2016
Clark, James L., *et al.* (See Lee, Charles E., assignor.)						
Clark, James W., Elyn, Ohio. Telephone	256,891	June 6	20	7, 8	21	1700
Clark, Joel C. (See Leland, Harry W., assignor.)						
Clark, John J. and B., Elgin, Ill. Grinding-mill	253,772	Apr. 4	95	7	21	955
Clark, John K., Buffalo, N. Y. Sash-cord pulley	253,005	Jan. 31	1610	447	21	298
Clark, Joseph, Green Point, N. Y. Railway-tie	254,199	Apr. 11	575	157	21	1053
Clark, Joseph, Green Point, N. Y. Metallic railway-tie	259,095	June 6	278	74	21	1742
Clark, Luther A., Stamford, Vt. Snap-hook	259,699	June 20	994	265	21	1942
Clark, Nathan B., Philadelphia, Pa. Armor-clad ship	255,144	Mar. 21	985	237 and 238	21	895
Clark, Nathan B., Philadelphia, Pa. Shield for ship's guns	256,194	Apr. 11	473	125 and 126	21	1036
Clark, Norman, Sterling, Ill. Barbed fence-wire	254,922	Mar. 14	398	100	21	748
Clark, Norman, Sterling, Ill. Case or cabinet for the display of watch-crystals	254,640	Apr. 10	1160	312	21	1156
Clark, Norman, Sterling, Ill. Hub-fastener	256,537	May 30	1737	492	21	1692
Clark, Oliver F., St. Louis, Mo. Egg-carrier	259,606	June 6	278	74	21	1743
Clark, Orson E., Detroit, Mich. Oil-stove	256,630	May 30	1631	516 and 517	21	1630
Clark, Theodore M., Boston, Mass. Self-closing elevator-door	253,845	Feb. 7	199	55	21	379
Clark, William, Pittsburg, Pa. Cambering-machine	256,376	May 23	1280	430 and 431	21	1576
Clark, William, Pittsburg, Pa. Rolling-mill rail-carrier	256,377	May 23	1281	430	21	1576
Clark, William D. (See Dobbs, Seneca, assignor.)						
Clark, William H., Greece, N. Y. Implement for cutting weeds and beans	251,765	Jan. 3	98	27	21	19
Clark, William H., Chicago, Ill. Self-adjusting crank	253,265	Feb. 7	109	30, 31	21	362
Clark, William L., Webster City, Iowa. Journal-bearing	256,463	Apr. 18	909	254	21	1195
Clark, William N., J. B., and W. R., Jr., Chester, Conn. Dust-pan	256,631	May 30	1638	517	21	1639
Clark, William P., Medford, Mass. Draft-tube for soda-water and other beverages	257,472	May 9	693	113	21	1350
Clark, William R. (See Gage, William H., assignor.)						
Clarke, Alexander D., Omaha, Nebr. Amalgamating apparatus	253,843	Feb. 21	660	289	21	502
Clarke, George D. (See Scribner and Clarke.)						
Clarke, George D., Chicago, Ill. Carbon telephone-transmitter	253,977	Feb. 21	979	273	21	889
Clarke, Greville E., Racine, Wis. Brake-lock	257,291	May 2	171	46, 49	21	1312
Clarke, John B., Pittsburg, Pa. Lid for tea or coffee pots	255,040	Apr. 4	105	28	21	908
Clarke, John N., assignor of one-half to H. McNicoll, Cincinnati, Ohio. Horseshoe	254,334	Mar. 7	105	27	21	656
Clarkson, Edward M. C. (See Byfield, John, assignor.)						
Clarkson, Francis A., Black Brook, Vt. Hoisting and conveying apparatus	252,740	Jan. 24	1203	355	21	233
Clava, Myron, Eastford, N. Y. Harness-fastener	255,416	Mar. 28	1237	393	21	871
Clausen, Joseph E. (See Gross, Charles H., assignor.)						
Clausen, Peter H. (See Herberg and Clausen.)						
Clay, Clemens. (See Clay, John H. and C.)						
Clay, John H. and C., Philadelphia, Pa. Hose-coupler	259,889	June 13	616	163	21	1908
Clay, Robert J., Arlington, N. J. Toy watch	258,259	May 23	1411	399	21	1357
Claypool, Wallace, North Buffalo, Pa. Vehicle-brake	256,713	May 30	1629	516	21	1627
Clayton, Henry, assignor of one-half to W. O. McCabe, Dayton, Ohio. Pump attachment	258,125	Apr. 11	975	190	21	1068
Clayton, Herbert, Cincinnati, Ohio. Stove-pipe shelf	258,209	Apr. 11	984	189	21	1073
Cleaveland, Elias A., Belvidere, Ill. Spring bed-bottom	256,967	Jan. 31	1444	404	21	299
Cleaveland, Wallace W., Marshall, Mich. Milksteno-dressing machine	253,511	Feb. 14	402	113	21	427
Clef, George, Palatka, Fla. Head-light for locomotives	259,819	June 20	1192	319	21	1916

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Clemens, Ernest V. (See Gilpin and Clemens.)						
Clement, Edwin B., Barnet, Vt. Creaming-can	258,714	May 30	1940	548	21	1657
Clement, Horatio C., Albany, Oreg. Curtain-bracket	255,773	Apr. 4	96	7	21	955
Clement, John E., Peabody, Mass. Cutter for leather-whitening machines	259,497	June 13	780	206	21	1838
Clemson, William, assignor to Wheeler, Madden & Clemson Manufacturing Company, Middletown, N. Y. Saw-handle	257,657	May 9	645	161	21	1402
Clemson, William, assignor to Wheeler, Madden & Clemson Manufacturing Company, Middletown, N. Y. Saw-handle	257,920	May 16	900	268	21	1468
Cleveland, Erastus L., assignor of one-half to A. C. Milliken, Pittsburg, Pa. Car-truck	259,498	June 13	781	206	21	1838
Cleveland, George N., Oaktown, Ind. Churn	254,614	Mar. 7	209	58	21	672
Cleveland, Orestes, assignor to E. F. C. Young, receiver, Jersey City, N. J. Method of and machine for ornamenting rods of wood	254,535	Mar. 7	106	27	21	656
Clevenger, Samuel N., Rayville, Mo. Device for inclosing and protecting stacks	254,276	Feb. 28	1330	367	21	596
Click, Benjamin F., Grenola, Kans. Nut-lock	253,647	Jan. 24	1106	308	21	217
Clifford, James P., Brooklyn, N. Y. Air-gas machine	257,848	May 16	872	244	21	1453
Clifford, Thomas T. (See Barker, Henry C., assignor.)						
Clifton, Charles H. (See Hanbury and Clifton.)						
Cline, George J., Goshen, Ind. Paint for roofing, &c.	253,978	Feb. 21	960	.....	21	589
Cline, George J., assignor of two-thirds to S. Harding, Goshen, Ind., and H. B. Busing, Rockford, Ill. Stock-car	252,289	Jan. 10	743	207	21	133
Cline, William, Plainfield, Ind. Fence-post	256,864	Apr. 25	1400	394	21	1218
Clingman, John, Dayton, Ohio. Meat and vegetable preserving chest	257,211	May 2	71	22	21	1294
Clinton, Henry E., Augusta, Ga. Label-holder	252,169	Jan. 10	617	173	21	112
Clinton, Henry E., Augusta, Ga. Heel for boots and shoes	253,844	Feb. 21	810	230	21	508
Clippinger, Anthony, *et al.* (See Bosworth, Lycurgus J., assignor.)						
Close, Oscar, Worcester, Mass. Child's carriage	256,219	May 23	1339	379	21	1544
Cloud Manufacturing Company. (See Cloud, William H., assignor.)						
Cloud, William H., Detroit, Mich., assignor, by mesne assignments, to Cloud Manufacturing Company, of Michigan. Pump	256,196	Apr. 11	476	129	21	1036
Cloud, William H., assignor, by mesne assignments, of one-half to W. H. Jackson, Detroit, Mich. Lifting and force pump	257,473	May 9	405	113	21	1360
Clough, John, Haincliffe, near Keighley, county of York, England. Wool-washing machine	251,833	Jan. 3	187	52	21	34
Cluley, John F., Pittsburg, Pa. Making depressed letters or designs in metal for signs	259,097	June 6	279	74	21	1743
Clute, John. (See Campbell and Clute.)						
Clute, Nicholas, Schenectady, N. Y. Feed-water regulator. (Reissue)	10,107	May 9	653	238	21	1440
Clutho, Charles, Toronto, Ontario, Canada. Truss	254,865	Mar. 14	512	137	21	732
Coan, Sanford P., Medicine Lodge, Kans. Windmill	257,292	May 2	173	49	21	1312
Coates, Charles E., *et al.* (See Rorebeck, Henry, assignor.)						
Coates, Lewis, and J. T. Criswell, Collamer, Pa. Butter-print press. (Reissue)	10,130	June 6	407	129	21	1780
Coats, Noyce C. (See Woodring and Coats.)						
Coats, William R., and W. H. Vibbard, Kalamazoo, Mich. Jack-screw	251,698	Jan. 3	16	5	21	5
Cobb, Henry B., Wilmington, Del. Elastic material for seats, window-blinds, &c.	254,994	Mar. 14	599	161	21	748
Cobb, Oliver P., Aurora, Ind. Pile for nail-plates	251,834	Jan. 3	188	52	21	34
Cocheco Heeler Company. (See Carver, James W., assignor.)						
Cocheco Heeler Company. (See Pease, Frank, assignor.)						
Cochran, Frederic B., Boston, Mass. Sash-balance	255,721	Mar. 28	1607	434	21	937
Cochran, John, Jr., Millwood, Mo. Churn	256,975	Apr. 25	1509	434	21	1236
Cochran, Samuel H., Everett, Mass. Compound to be used in the place of butter for cooking purposes	258,992	June 6	149	.....	21	1790
Cochrane, George A., Liverpool, county of Lancaster, England. Safe for preserving fruit and vegetables	258,090	May 16	1079	300	21	1469
Cochrane, George A., Liverpool, county of Lancaster, England. Fruit or vegetable crate or carrier	258,290	May 23	1340	{319 {320	{21	1544
Cochrane, George A., New York, N. Y. Darning-last	258,378	May 23	1523	433	21	1577
Cochrane, William F., Indianapolis, Ind. Mowing-machine	255,939	Apr. 4	930	59, 60	21	989
Cockayne, Benjamin F. (See Baron, Rufer, and Cockayne.)						
Cockayne, Benjamin F., *et al.* (See Baron, Alfred L., assignor.)						
Cockcroft, Thomas, Birkenhead, county of Chester, England. Packing bottles and other articles	258,379	May 23	1524	433	21	1577
Codding, James H., North Dighton, Mass. Range	256,885	Apr. 25	1400	394	21	1218
Codman, John, Boston, Mass. Suspensory-bandage	254,799	Mar. 14	433	116	21	719
Coes, Frederick L. (See Coes, John H. and F. L.)						
Coes, John H. and F. L., Worcester, Mass. Screw-wrench	259,597	Jan. 24	1112	311	21	907
Coffield, Peter T., assignor of one-half to C. H. Paxson, Springfield, Ohio. Mechanical movement	253,660	Feb. 14	505	168	21	457
Coffin, Charles F. (See Ryder, Benjamin P., assignor.)						
Coffin, John, Syracuse, N. Y. Averagecometer or instrument for measuring the average breadth of irregular planes	258,993	June 6	150	41	21	1790
Coffman, Walter M., Elizabethton, Tenn. Current-wheel	259,098	June 6	280	75	21	1742
Coffman, William S., *et al.* (See Blair, John B., assignor.)						
Cogger, William B., assignor of one-half to H. A. Hamlin, Minneapolis, Minn. Door-hanger	253,471	Feb. 7	339	94	21	403
Coggin, Richard R., assignor of one-half to J. A. Scollay, Brooklyn, N. Y. Automatic storage pressure reservoir	256,291	Apr. 11	606	169	21	1074
Coggswell, Henry D., San Francisco, Cal. Ornamentation of grounds	253,186	Feb. 7	15	5	21	349
Cogswell, William A. (See Judson and Cogswell.)						
Cogswell, William H., and T. H. Melvin, Chicago, Ill. Portable water-tower	259,669	June 20	994	{265 {266	{21	1882
Cohen, Adolph. (See Nathan, Joseph, assignor.)						
Cohen, Mayer, assignor of one-half to S. Cohen, Newark, N. J. Roach-trap	254,860	Mar. 14	434	116	21	719
Cohen, Moses, Hallettsville, Tex. Barber's paper-clip	258,430	Jan. 17	921	254	21	168
Cohen, Moses, Hallettsville, Tex. Fan	259,880	June 20	1195	319	21	1916
Cohen, Samuel. (See Cohen, Mayer, assignor.)						
Cohen, Solomon L., New York, N. Y. Playing-card	253,910	Feb. 21	867	250	21	515
Cohn, Moritz. (See Hilborn, Julius, assignor.)						
Cokely, Benjamin F., Vinton, Iowa. Washing-machine	255,598	Mar. 28	1469	362	21	910
Cokshan, Charles, Cleveland, Ohio. Tension for grain-binders	252,012	Jan. 16	423	116	21	60
Colbeth, Charles. (See Hill, Thomas, assignor.)						
Colborne, Levi H. (See Holcombe and Colborne.)						
Colby, Amos E. (See Burroughs, William S., assignor.)						
Colby, Charles, and E. Brunsmall, Boston Harbor, Mich. Milk-cooler	256,976	Apr. 25	1510	434	21	1236
Cole, Charles L., assignor of one-half to J. R. Kay, Bushnell, Ill. Coffee and peanut roaster	256,428	Apr. 11	851	237	21	1101
Cole, Ellis D., Northampton, Mass. Feather-renovator	259,499	June 13	781	206	21	1838
Cole, Elwood M., Lewisburg, Mo. Weft stop-motion for looms	251,619	Jan. 3	17	5	21	5

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Cole, Frank F. (See Smallwood, Scott, assignor.)						
Cole, George P., assignor of one-fourth to P. Hadden, Johnstown, N. Y. Horse-collar	256,977	Apr. 25	1512	404	21	1237
Cole, Henry S. (See Welker, Joseph, Jr., assignor.)						
Cole, Jacob H., Danville, Pa. Car-propeller	256,289	Apr. 11	697	{189 {190	{21	1074
Cole, James, St. Louis, Mo. Smoking-pipe	253,519	Feb. 14	494	113	21	457
Cole, James, St. Louis, Mo. Smoking-pipe	254,114	Feb. 28	1146	289	21	585
Cole, James A., Northville, N. Y. Carpet-fastener	256,978	Apr. 25	1512	403	21	1237
Coleman, Edward J. F., Providence, R. I. Pulley	259,370	June 13	617	169	21	1686
Coles, Jacob L., Newark, N. J. Plaiting attachment for sewing-machines	254,536	Mar. 7	107	27	21	657
Colgrove, Clinton S., Winchester, Tenn. Spring-bed	254,277	Feb. 28	1231	308	21	596
Collamore, Peter. (See Valentine, Richard P., assignor.)						
Collet, Friedrich M., Dubuque, Iowa. Incrustation-preventive	259,063	June 27	1433	.....	21	1963
Collet, Henri, Paris, France. Treatment of excreta for the production of fertilising substances	259,165	June 27	1698	.....	21	1963
Collier, James M., Gadsden, Ala. Grinding-mill	257,636	May 9	646	161	21	1402
Collier, Peter, Washington, D. C. Extracting juices from begasse, plants, &c.	251,701	Jan. 3	19	5	21	6
Collignon, Claudian C., Harrington township, Bergen county, N. J. Wheel or nursery chair	259,431	Jan. 17	989	254	21	168
Collin, John B., Altoona, Pa. Steam-lever	258,586	Jan. 24	1112	312	21	907
Collin, John B., Altoona, Pa. Coal-car	253,565	Feb. 14	495	{137 {138	{21	440
Collin, John B., Altoona, Pa. Railway turn-table	257,553	May 9	597	141	21	1370
Collins, Arthur, Brooklyn, N. Y. Wire screen-work	253,979	Feb. 21	960	273	21	589
Collins, Charles P., San Marcos, Tex. Cotton-picker's wagon	253,980	Feb. 21	961	273	21	589
Collins, Edward. (See Hoxie and Collins.)						
Collins, Erasmus B. (See Converse, Lyman P., assignor.)						
Collins, Erasmus B., and L. P. Converse, Chicago, Ill. Water-proof cloth	256,289	May 23	1365	.....	21	1577
Collins, Eugene F., Anson, Me. Cabinet bathing-tub	256,868	Apr. 25	1401	395	21	1219
Collins, Frank W., Moravia, N. Y. Stand for displaying scarfs	259,190	Jan. 10	617	174	21	112
Collins, La Fayette, Bay City, Mich. Car-shunter	256,545	Apr. 18	1094	282	21	1141
Collins, James. (See Doherty and Collins.)						
Collins, John, Newark, N. J., assignor to Hopkins & Dickinson Manufacturing Company, of New York. Door-knob	260,347	June 27	1853	500	21	2029
Collins, Paul E., Lynn, assignor of one-twentieth to H. J. Downing, Chelsea, Mass. Tricycle	259,689	June 6	281	75	21	1743
Collins, Stephen C., Oregon, Me. Car-coupling	259,821	June 20	1194	319	21	1916
Collinson, Mark, Quincy, Ill. Wardrobe-bedstead	253,606	Jan. 31	1613	447	21	906
Collinson, Mark, Quincy, Ill. Cradle-bed	253,607	Jan. 31	1613	{447 {448	{21	906
Colne, Charles. (See Vander Weyde, Peter H., assignor.)						
Colonay, Myron, New Haven, Conn. Wind-power machine	260,085	June 27	1589	411	21	1976
Colorado Gold Saving Sluice Box Company. (See Wood, William S., assignor.)						
Colton, Arthur L., Hammond, N. Y. Portfolio scrap-book	251,898	Jan. 3	368	103	21	68
Colton, George A., Oneida, N. Y. Tile-drain	255,145	Mar. 21	887	236	21	805
Colton, William L., Watertown, Ill. Neck-yoke	254,925	Mar. 14	600	161	21	749
Colts Patent Fire-Arms Manufacturing Company. (See Lord, Horace, assignor.)						
Colts Patent Fire-Arms Manufacturing Company. (See Mason, William, assignor.)						
Columbia, Dana L., Chicago, Ill. Oiler	259,290	June 13	516	135	21	1790
Colvin, Henry F., Philadelphia, Pa. Steam-valve for injectors	254,615	Mar. 7	208	58	21	672
Colvin, Isaac, Hillsborough, Ohio. Fence	256,151	Jan. 10	618	174	21	113
Colvin, Robert J., Lancaster, Pa. Gate	255,940	Apr. 4	938	60	21	989
Colvin, Robert J., assignor of one-half to I. L. Landis, Lancaster, Pa. Combined rake and tedder	251,635	Jan. 3	189	53, 54	21	34
Combs, John H., Stamford, Conn. Whiffletree-plate	259,500	June 13	783	207	21	1838
Comerer, Andrew S. (See Chamberlin and Comerer.)						
Comey, Frank E., *et al.* (See Campbell, Duncan H., assignor.)						
Comey, Willard, Westborough, assignor to Improved Sole Sewing Machine Company, Boston, Mass. Turned shoe	253,187	Feb. 7	16	5	21	349
Comey, Willard, Westborough, assignor to Improved Sole Sewing Machine Company, Boston, Mass. Boot or shoe	253,586	Feb. 14	496	139	21	449
Comey, Willard, Westborough, assignor to Improved Sole Sewing Machine Company, Boston, Mass. Shoe	257,849	May 16	873	244	21	1453
Commercial Manufacturing Company, Consolidated. (See Mège, Hippolyte, assignor.) (Reissue.)						
Comstock, Charles, Racine, Wis. Support for vehicle-bodies	256,889	Apr. 25	1395	374	21	1204
Comstock, Charles, Racine, Wis. Corner-iron for wagon-bodies. (Reissue)	10,111	May 9	658	239	21	1441
Comstock, Charles, Racine, Wis. Wagon-body	260,992	June 27	1777	481	21	2016
Comstock, Frank A., Columbus, Ohio. Vehicle-seat	254,115	Feb. 28	1147	289	21	585
Comstock, George W., New York, N. Y. Steam-generator	256,892	June 6	33	6	21	1790
Comstock, John, Hudson, Wis., and T. E. Jefferson, Boston, Mass. Ventilation	259,631	June 13	941	{251 {258 {253	{21	1886
Conant, George F., assignor of two-thirds to A. E. Lytle, Geneva Lake, Wis., and C. A. Cook, Chicago, Ill. Car-mover	254,691	Mar. 14	435	117	21	719
Conant, George P., Geneva, assignor of two-thirds to A. E. Lytle, Geneva Lake, Wis., and C. A. Cook, Chicago, Ill. Burglar-alarm	255,722	Mar. 28	1607	435	21	937
Conden, James F., Detroit, Mich. Ash-sifter	254,616	Mar. 7	204	58	21	672
Cone, William W. (See Donahue and Cone.)						
Conkling, Addison. (See Link, William, assignor.)						
Conkling, Stephen S., Middletown, N. Y. Load-binder	255,941	Apr. 4	935	60	21	989
Conlee, Thomas A., and J. H. Kenneth, assignors to Grand Detour Plow Company, Dixon, Ill. Sulky-plow	251,709	Jan. 3	97	27, 28	21	16
Conley, John, New Buffalo, assignor of one-half to L. V. Moulton, Grand Rapids, Mich. Railway-tie	254,608	Mar. 14	436	117	21	719
Conlon, William J., and H. B. King, Paterson, N. J. Spinning, doubling, and twisting machine	255,417	Mar. 28	1237	333	21	871
Connell, James R., Portsmouth, N. H. Trace-lock	259,619	Jan. 16	625	138	21	60
Connell, John. (See Dougherty, John B., assignor.)						
Connell, John, and V. Dengler, Rochester, N. Y. Swing-saw	258,513	Feb. 14	495	113	21	457
Connelly, Joseph H., Pittsburg, Pa. Electric-wire fence	259,269	Jan. 24	1113	312	21	907
Connelly, Joseph H., Pittsburg, Pa. Barbed fence	254,270	Feb. 28	1229	309	21	595
Conner, Alfred, Exeter, N. H. Carriage-spring	259,371	June 13	619	164	21	1689
Conner, Charles, New York, N. Y. Rubber compound	258,661	May 16	1069	.....	21	1469
Connolly, Julia. (See Connolly, Patrick, assignor.)						

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Connolly, M. Daniel, Philadelphia, Pa., assignor to C. S. Bradford, Jr., West Chester, Pa. Protector for telegraphic instruments	255,378	Mar. 21	1181	317	21	856
Connolly, Patrick, assignor, by mesne assignments, to J. Connolly, Brooklyn, N. Y. Plumber's trap	253,845	Feb. 21	810	230	21	502
Consor, John R., South Oil City, Pa. Cake-pan	260,166	June 27	1629	440	21	1983
Connors, Edward O., Lorain, Ohio. Car-ventilator	253,189	Feb. 7	17	6	21	349
Conord, Eugene, Elizabeth, N. J. Frame for stretching fabrics	260,086	June 27	1530	411	21	1978
Conrad, August R., assignor of one-half to A. J. Weideper, Philadelphia, Pa. Argand lamp-burner	256,281	May 23	1413	409	21	1557
Conrad, Martin. (See Baker, James T., assignor.) (Reissue.)						
Conrad, William J., Gainesville, Tex. Store-counter	253,981	Feb. 21	982	274	21	529
Conradt, Augustus, Middletown, Conn. Covered dish	258,221	May 23	1342	360	21	1545
Converse, Edmund. (See Cutter, Charles N., assignor.)						
Converse, Edmund C., Pittsburg, Pa. Coupling for tubing	259,020	Jan. 10	496	117	21	81
Converse, Edmund C., Pittsburg, Pa. Coupling for tubing	259,501	June 13	783	207	21	1836
Converse, Elmer A., and N. T. Griffin, Monticello, Ohio. Car-coupling	259,502	June 13	785	207	21	1836
Converse, Lyman P. (See Collins and Converse.)						
Converse, Lyman P., assignor of one-half to E. B. Collins, Chicago, Ill. Toy	256,361	May 23	1385	433	21	1577
Converse, Maurice, and F. P. Cady, Cleveland, Ohio, assignors to Washburn & Moen Manufacturing Company, Worcester, Mass., and I. L. Ellwood, De Kalb, Ill. Machine for making barbed fence-wires	256,794	Apr. 18	1287	362 / 363	21	1190
Conway, George O. S., Stonefield, assignor of one-half to J. Cooper and F. Fairman, Montreal, Canada. Car-coupling	257,630	May 9	646	181	21	1403
Conway, George O. S., Stonefield, assignor of one-half to J. Cooper and F. Fairman, Montreal, Canada. Car-brake	257,680	May 9	649	182	21	1403
Conwell, John A., Aurora, Ind. Folding sled	259,922	June 20	1195	320	21	1016
Cook, Asa S., Hartford, Conn. Wood-screw machine	256,127	Apr. 11	477	130	21	1037
Cook, Asa S., Hartford, Conn. Wood-screw machine	256,546	Apr. 18	1004	283	21	1141
Cook, C. A., *et al.* (See Preston, James, assignor.)						
Cook, Carlos A., *et al.* (See Conant, George P., assignor.)						
Cook, Charles, Winsted, Conn. Vehicle-axle	254,466	Mar. 7	22	6	21	642
Cook, Eugene, Nashville, Mich. Carriage-painter's jack	256,558	May 30	1736	492	21	1922
Cook, George S., Windsor, Nova Scotia, Canada. Spark-arrester	253,346	Feb. 7	194	54	21	379
Cook, John, Chicago, Ill. Water-gage	252,648	Jan. 24	1167	328	21	217
Cook, John C. (See Whittlesey and Cook.)						
Cook, Joseph, assignor of one-half to Akron Stoneware Company, Akron, Ohio. Jug	252,649	Jan. 24	1168	328	21	217
Cook, Leeds A., Hanover, Mich. Rowing-gear	252,432	Jan. 17	983	255	21	109
Cook, Mansfield J., assignor of one-half to J. I. Freeman, Syracuse, N. Y. Combined portable ash safe and sifter	254,116	Feb. 28	1148	320	21	565
Cook, Margaret J., Baltimore, Md. Bread-making utensil	255,255	Mar. 21	1025	275	21	699
Cook, Milo S., Elwood, assignor to A. H. Shreffler, Joliet, Ill. Corn-sheller	255,160	Mar. 21	838	228	21	796
Cook, Richard, Sheffield, England. Machine for reducing coal, corn, &c	257,681	May 9	650	182	21	1403
Cook, Richard, Sheffield, England. Grinding-machine	258,194	May 16	1283	364	21	1527
Cook, Samuel M., Boston, assignor to National Manufacturing Company, Worcester, Mass. Fly-trap	260,283	June 27	1778	481	21	2016
Cook, Stephen S., Philadelphia, Pa. Friction-clutch	258,198	Jan. 10	619	174 / 175	21	113
Cook, William F., Ivy Mills, Pa. Door-knob alarm	253,088	Jan. 31	1614	448	21	296
Cooke, C. A., *et al.* (See Preston, James, assignor.)						
Cooke, Daniel S., Providence, R. I. Drawing-slate attachment	253,514	Feb. 14	406	113	21	427
Cooke, Daniel S., and J. Hagerty, Providence, R. I.: said Hagerty assignor to said Cooke. Machine for combining the backs and fronts of articles of jewelry	254,117	Feb. 28	1148	321	21	565
Coolbaugh, Frank W., Hoboken, N. J. Lock and signal for turn-bridges	251,836	Jan. 3	192	54	21	34
Cooledge, William H., Portland, Mich. Gig-saddle	256,893	June 6	34	8	21	1700
Cooley, Charles A., New Britain, Conn. Commutator for dynamo-electric machines	258,029	May 16	1083	301	21	1490
Cooley, Newton C., Corning, Iowa. Gate	252,433	Jan. 17	924	255	21	169
Cooley, William. (See Rolfe and Cooley.)						
Coombs, James L., Bangor, Me. Moccasin-boot	251,837	Jan. 3	194	54	21	35
Coon & Co. (See Turner, Isaac P., assignor.)						
Coon, George F., Independence, Mich. Combined hay rake and loader	259,638	June 13	947	253	21	1987
Coon, Riley H., Oneida Lake, N. Y. Thrashing-machine	259,748	June 20	1108	296	21	1902
Cooper, Charles B. (See Walter, John, assignor.)						
Cooper, Edward. (See Ulmann, Hermann, assignor.)						
Cooper, Edward A., assignor of one-fourth to Pratt & Letchworth, Buffalo, N. Y. Buckle	256,715	May 30	1941	548	21	1657
Cooper, Francis E., and J. Lemmon, Colerain, Ohio. Plow	253,347	Feb. 7	195	56	21	379
Cooper, James, *et al.* (See Conway, George O. S., assignor.)						
Cooper, James T. (See Williams and Rundle, assignors.)						
Cooper, Jennie R. (See Richardson, John C., assignor.)						
Cooper, Jennie R., Union City, Pa. Car-axle box	252,357	Jan. 17	823	220	21	153
Cooper, John, Boston, Mass. Bow or scarf holder	258,994	June 6	152	41	21	1721
Cooper, John W., Philadelphia, Pa. Extension-bit and washer-cutter	256,979	Apr. 25	1514	425	21	1237
Cooper, Mark, Spartanburg, S. C. Plow. (Reissue.)	10,007	Jan. 10	761	211	21	133
Cooper, Regina, *et al.* (See Horne, John B., assignor.)						
Cooper, Sherman, Westfield, N. J., and E. Dennis; said Dennis assignor to C. Hilbert, Sing Sing, N. Y. Administering anaesthetics	256,639	May 30	1833	517	21	1639
Cooper, William E., assignor of one-half to H. K. Dow, Dunkirk, N. Y. Coupling-pin for connecting rods, &c	256,993	Apr. 11	498	190	21	1074
Copeland, George W. (See Ashe, Robert, assignor.)						
Copeland, George W. (See Woodward, Erastus, assignor.)						
Copeland, George W., Malden, and M. Brock, Boston, Mass., assignors to Copeland Lasting Machine Company, Hartford, Conn. Boot and shoe lasting machine	254,617	Mar. 7	905	58, 59	21	673
Copeland Lasting Machine Company. (See Copeland and Brock, assignors.)						
Copeland Tacking and Lasting Company. (See Crisp, Joseph E., assignor.)						
Copeland Tacking and Lasting Company. (See Woodward, Erastus, assignor.)						
Copeland, William A., *et al.* (See Gorman, Henry, assignor.)						
Coppin, William, London, England. Construction of vessels	255,599	Mar. 28	1461	383	21	910
Coppin, William, London, England. Propulsion of ships	256,923	May 16	1084	301	21	1490
Coppock, John F., West Newton, Ind., assignor of one-half to T. A. Hill, Pleasant Plain, Iowa. Gate	253,968	Feb. 21	963	274	21	530
Corbin, Jason G. (See Dykeman and Corbin.)						
Corbin, P. & F. (See Sparks, William E., assignor.)						
Cordesman, Egan & Co. (See Richmond and Cordesman, assignors.)						
Cordesman, Henry J., Jr. (See Richmond and Cordesman.)						
Cordin, Antoine, Elgin, Ill. Cannon-pinion for watches	256,891	Apr. 25	1395	374	21	1204

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Cordrey, Charles K., Bellefontaine, Ohio. Car-coupling	256,892	Apr. 25	1396	375	21	1205
Corey, William. (See Gilford, Frederick E., assignor.)						
Cormack, George H., Rockford, Ill. Dumping-platform	257,554	May 9	597	148	21	1377
Corman, Charles A., Cochituate, Mass. Eyeleting-machine	259,109	June 6	288	75, 76	21	1743
Cornelius, Charles F., New York, N. Y. Toy merry-go-round	260,167	June 27	1630	440	21	1983
Cornelius, Edward G., *et al.* (See Wittenberg, Charles, assignor.)						
Cornell, Frank W., *et al.* (See Wolfe, Horace S., assignor.)						
Cornell, William F., and W. Smith, Adrian, Mich. Safety attachment to harvesters	257,555	May 9	510	143	21	1377
Cornely, Joseph, and J. Wagner, Detroit, Mich. Baker's oven	258,995	June 6	132	41	21	1721
Corneyer, Oscar J., assignor of one-half to J. H. Barr, St. Louis, Mo. Rotary colter	257,012	May 9	651	162	21	1403
Cornwall, John B. (See Barnard, Cornwall, and Lane.)						
Cortelyow, Henry, assignor of one-half to F. Chapman, Fairland, Ind. Straw-stacker	257,556	May 9	512	143 / 144	21	1377
Corthell Manufacturing Company. (See Corthell, Samuel N., assignor.)						
Corthell, Samuel N., Quincy, Mass., assignor to Corthell Manufacturing Company, of New Hampshire. Combined side-edge trimmer and trimming-tool grinder	253,911	Feb. 21	888	230	21	515
Corwin, John M., and H. D. Butler, Brooklyn, N. Y. Hair-crimper	255,101	Mar. 21	834	223	21	796
Corwin, Reeves. (See Denison, Thomas N., assignor.)						
Corwin, Theodore L., Marathon, N. Y. Compound for preserving food	253,903	Feb. 21	863	.....	21	530
Corwin, Theodore L., Marathon, N. Y. Compound for preserving food	258,996	June 6	153	42	21	1721
Cory, Mary E., Richmond, Ind. Logging	257,293	May 2	175	50	21	1312
Cory, Phoebe S., and M. H. Moore, Westfield, N. J. Slate-cleaner	10,090	Apr. 25	1705	478	21	1271
Cosgrove, James, and S. F. Welch, Mount Pleasant, Iowa. Drag-scraper. (Reissue)						
Cosgrove, William F., Jersey City, N. J., assignor, by mesne assignments, to J. K. Taylor Company, Concord, N. H. Smoke-stack and spark-arrester. (Reissue)	10,013	Jan. 24	1429	398	21	999
Cosgrove, William N., Faribault, Minn. Preparing the surfaces of grinding-rolls	254,199	Feb. 28	1227	344	21	580
Cosine, Garret, New York, N. Y. Method of and apparatus for rendering and bleaching animal-fats	254,279	Feb. 28	1333	368	21	590
Costello, Patrick H., Boston, Mass. Fire-escape	257,663	May 9	658	183	21	1403
Costello, Thomas H., assignor to A. H. Andrews & Co., Chicago, Ill. Tellurian	255,491	Mar. 28	1388	356	21	884
Costello, Thomas H., assignor of one-half to H. H. Gross, Chicago, Ill. Lathe-chuck	259,891	June 13	518	135 / 136	21	1791
Costello, Timothy J., Cleveland, Ohio. Signal	251,700	Jan. 3	18	5	21	6
Cotter, Cyrus H., *et al.* (See Lettridge, William, assignor.)						
Cottle, Freeman M., Walpole, Mass. Sewing-machine for quilting, &c	254,986	Mar. 14	691	161 / 162	21	749
Cotton, Patrick H., Dallas, Tex. Lamp and reflector for same	256,860	Apr. 25	1515	425	21	1237
Cottrell, Calvert B. (See Henry, John, assignor.)						
Cottrell, Calvert B., Westerly, R. I. Machine for dressing printers' chases	258,200	Jan. 10	743	207	21	153
Cottrell, Calvert B., Westerly, R. I. Delivery apparatus for printing-presses	256,041	Apr. 18	1120	312 / 313	21	1159
Cottrell, Frederick W., London, county of Middlesex, England. Manufacture of material to form artificial ivory	254,269	Feb. 28	1234	.....	21	597
Couch, Elisabeth I., San Francisco, Cal. Cleaning clothes and other fabrics	260,168	June 27	1631	.....	21	1994
Coues, Samuel F., Brooklyn, assignor of one-half to J. J. Walton, New York, N. Y. Sick-room refrigerator	254,498	Feb. 28	1301	411	21	636
Coulson, John, St. Petersburg, Russia. Manufacture and treatment of line, cord, ropes, cables, and oakum	255,600	Mar. 28	1462	.....	21	910
Coulthard, Thomas, Preston, county of Lancaster, England. Ring-holder for spinning and twisting machines	254,616	Mar. 7	907	54	21	673
Court, Charles. (See Geest and Court.)						
Courtenay, John M., deceased, (M. J. Courtenay, executrix,) Cornwall-on-the-Hudson, N. Y. Ore-crusher	253,089	Jan. 31	1616	448	21	299
Courtenay, Margaret J., executrix. (See Courtenay, John M.)						
Courtenay, William, New York, N. Y., assignor to Gelatinized Fibre Company, of New York. Nut-lock	256,642	Apr. 18	1113	313	21	1159
Covel, Milo, Chicago, Ill. Saw-sharpening machine. (Reissue)	10,099	May 2	369	102 / 104	21	1347
Covel, Milo, Chicago, Ill. Saw jointer and gage	257,212	May 2	78	23	21	1304
Covel, Milo, Chicago, Ill. Saw jointing and swaging device	259,573	June 13	619	164	21	1989
Covell, Frank M., Glenwood, assignor to A. Germon, San Francisco, Cal. Machine for sawing and grooving shakes	256,464	Apr. 18	910	254 / 255	21	1125
Cowan, Frank. (See Johnson and Cowan.)						
Cowan, Jackson D., and R. E. Lee, McKeesport, Pa. Barge-pump	255,698	Mar. 28	1389	359	21	886
Cowan, Jacob P. (See Johnson and Cowan.)						
Cowdrey, Charles H., Fitchburg, Mass. Self-oiling pulley	255,418	Mar. 28	1328	333	21	871
Cowell, John J., Newark, N. J. Trunk-caster	258,078	Jan. 10	699	135	21	93
Cowell, John J., Newark, N. J. Trunk-caster	256,643	Apr. 18	1114	313	21	1159
Cowell, William H. (See Greenwood and Cowell.)						
Cowles, Eugene H., Cleveland, Ohio. Electrical railway	258,193	Jan. 10	619	175	21	113
Cowles, James A., Chicago, Ill. Heat-feeder for stoves	254,988	Mar. 14	457	117	21	719
Cowley, William A., Stamford, N. Y. Buckwheat hulling and separating machine	259,670	June 20	996	294	21	1982
Cowman Manufacturing Company. (See Side, Edgar, assignor.)						
Cox, Andrew G., and R. A. Johnson, Newnan, Ga. Plow	259,892	June 13	519	136	21	1791
Cox, Henry F., Altoona, Pa. Interlocking lever	255,774	Apr. 4	27	8	21	955
Cox, James L., Moore's Salt Works, Ohio. Safety-stirrup	259,101	June 6	285	76	21	1743
Cox, John F., Brooklyn, N. Y. Window-sash	256,644	Apr. 18	1115	313	21	1159
Cox, Joshua H., and J. F. Morrisey, assignors to A. N. Klinefelter and A. Dillman, Joliet, Ill. Check-row attachment	256,547	Apr. 18	1005	283	21	1141
Cox, Vincent, New Vienna, Ohio. Boring-machine	258,116	May 30	1941	548	21	1657
Cox, William P., Philadelphia, Pa. Steam-generator	259,893	June 13	519	136	21	1791
Coy, George W. (See Smith and Buell, assignors.)						
Coy, George W., *et al.* (See Buell, Charles E., assignor.)						
Coy, George W., *et al.* (See Smith, James G., assignor.)						
Coy, George W., Milford, Conn., assignor, by mesne assignments, to United States Telephone Manufacturing Company, New York, N. Y. Telephone-station apparatus	253,912	Feb. 21	889	250	21	515
Coy, George W., Milford, Conn., assignor, by mesne assignments, to United States Telephone Manufacturing Company, New York, N. Y. Telephone-exchange system	257,054	May 9	653	183	21	1403
Cozzens, Henry W., Newport, R. I., assignor to American Bell Telephone Company, Boston, Mass. Telephonic switch apparatus	258,994	June 6	35	8	21	1700
Crabtree, John, Philadelphia, Pa. Brick-press	255,146	Mar. 21	889	239	21	826
Craig, Hugh H., Baltimore, Md. Ventilator for windows	256,988	May 23	1414	409	21	1557
Craig, Mary E. (See Craig, William R., assignor.)						
Craig, William, Jamestown, N. Y. Revolving boot-heel	253,340	Feb. 7	196	56	21	379
Craig, William R., assignor to M. E. Craig, De Witt, Nebr. Kitchen-cabinet	256,651	May 30	2067	569	21	1683

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Craighead & Elwell Manufacturing Company. (See Maschmeyer, Charles, assignor.)						
Craik, James, Hawley, Minn. Machine for bolting and purifying flour and middlings	253,419	Mar. 28	1239	333, 334	21	872
Crain, A. D. (See Miller and Eason, assignors.)						
Crain, William, Baltimore, Md. Tool for channeling shoe-soles	260,169	June 27	1631	441	21	1004
Cralle, Leonidas J., Santa Rosa, Cal. Car-coupling	255,601	Mar. 28	1463	503	21	910
Cramp & Sons Ship and Engine Building Company, William. (See See, Horace, assignor.)						
Crandal, E. M., *et al.* (See Dean, George S., assignor.)						
Crandal, Edward M. (See Irwin, George W., assignor.)						
Crandal, George L., Binghamton, N. Y. Seat-lock for vehicles	258,997	June 6	154	42	21	1721
Crandall, Charles M., assignor to C. M. Crandall Company, Montrose, Pa. Toy or child's carriage in combination with a musical box	254,429	Feb. 28	1502	411	21	626
Crandall, Charles M., assignor to C. M. Crandall Company, Montrose, Pa. Jack-straws	254,430	Feb. 28	1502	412	21	627
Crandall Company, C. M. (See Crandall, Charles M., assignor.)						
Crandall, Cyprian U., Sterling, Ill. Corn-planter	252,194	Jan. 10	690	175, 176	21	113
Crandall, Cyprian U., Sterling, Ill. Corn-sheller	254,221	Feb. 28	1336	368, 369	21	597
Crandall, Jesse A., Brooklyn, N. Y., assignor to Ives, Blakeslee & Co., Bridgeport, Conn. Toy wheelbarrow	253,846	Feb. 21	812	230	21	502
Crandall, Jesse A., Brooklyn, N. Y., assignor to E. R. Ives, Bridgeport, Conn, C. Blakeslee and E. G. Williams, Brooklyn, N. Y. Target	254,260	Feb. 28	1238	345	21	581
Crandall, Jesse A., Brooklyn, assignor to E. I. Horsman, New York, N. Y. Toy elevated railway	254,537	Mar. 7	108	28	21	657
Crandall, Jesse A., assignor of one-half to W. P. Denslow, Brooklyn, N. Y. Toy building-blocks	260,284	June 27	1779	481, 482	21	2016
Crane, Augustus S., Newark, N. J. Jeweler's braided metallic stock	253,587	Feb. 14	486	138	21	440
Crane, D. O., *et al.* (See Curtis, Thomas, assignor.)						
Crane, Day O., Washington, D. C. Amalgamating ore-separator	259,833	June 13	948	253	21	1667
Crane, George E. (See Meaker and Crane.)						
Crane, George E., East Somerville, Mass. Box-fastener	256,893	Apr. 25	1387	375	21	1205
Crane, John S., Cohoes, N. Y. Check-case	256,117	May 30	1049	549	21	1657
Crane, Moses G., Newton, Mass. Non-interfering fire-alarm system	253,647	Feb. 21	813	230	21	502
Crane, Moses G., Newton, Mass. Bicycle	256,559	May 30	1740	492	21	1022
Crane, Moses G., Newton, Mass. Milling cutter-blank	256,560	May 30	1741	493	21	1022
Crane, Oscar N. (See Hudson, Miller B., assignor.)						
Crane, Stephen. (See Mabar, Michael W., assignor.)						
Crane, Thomas, Fort Atkinson, Wis. Gate	254,201	Feb. 28	1239	345	21	581
Craney, Thomas, Bay City, Mich. Boiler-cleaner and circulating apparatus	254,118	Feb. 28	1150	391	21	566
Crannell, Giles S., Silver Creek, N. Y., assignor, by mesne assignments, to R. L. Downton, St. Louis, Mo. Buckwheat-hulling apparatus. (Reissue)	10,091	Apr. 25	1706	478	21	1971
Crary, Cushman W. (See Winter and Crary.)						
Crawford, James G., Boston, Mass. Mangle	254,987	Mar. 14	603	168	21	749
Crawford, Jethro B., Rochester, N. Y. Bottle-stopper	251,838	Jan. 3	195	55	21	35
Crawford, John L., Pine Grove, Miss. Whip attachment for horse-powers	254,619	Mar. 7	208	54	21	673
Crawford, Moses. (See Lowry and Crawford.)						
Crawley, Edwin, Newport, Ky., assignor to Simpson & Gault, Cincinnati, Ohio. Automatic liquid-weighing machine	257,474	May 9	406	114	21	1360
Crawshaw, John and J. M., Central Falls, R. I. Starch-mangle	258,895	June 6	35	9	21	1701
Crawshaw, John M. (See Crawshaw, John and J. M.)						
Creagan, John, and C. D. Tyler, Jr., Cleveland, Ohio. Spring-setter	258,368	May 23	1526	433, 434	21	1577
Creager, Jonathan, assignor of one-half to W. Pieper, Cincinnati, Ohio. Brick-machine	257,665	May 9	655	183	21	1404
Creglar, Dewitt C., Chicago, Ill. Pressure-regulator for water-supply mains	257,557	May 9	514	144	21	1378
Cremer, Francis, St. Louis, Mo. Combined plow and cultivator	254,690	Mar. 7	209	54	21	674
Creque, Allen P., New York, N. Y. Boiler	255,403	Mar. 28	1330	359	21	886
Crisp, Joseph E., Boston, Mass., assignor to Copeland Tacking and Lasting Company, Patterson, N. J. Tacking-machine	254,621	Mar. 7	212	55	21	674
Criswell, Joel T. (See Coates and Criswell.) (Reissue.)						
Critchlow, Thomas, Steelton, Pa. Metal-rolling mill	258,195	May 16	1265	364, 365	21	1527
Crittenden, James H., Fall River, Mass. Dumping-cart	254,268	Feb. 28	1338	360	21	
Croak, James, and E. J. Morse, Davenport, Iowa. Combined label-holder and handle for boxes	255,841	Apr. 4	105	28	21	903
Crocker, John B., Chicago, Ill. Bathing apparatus	257,151	May 2	7	3	21	1229
Croft, Henry, Jr., Springfield, Ohio. Ratchet-pawl for power-converters	256,465	Apr. 18	911	255	21	1125
Croft, Henry, Jr., assignor of one-half to F. M. Bookwalter, Springfield, Ohio. Power-converter for converting reciprocating into rotary motion	253,515	Feb. 14	406	113	21	427
Croft, Silas C. (See Peterson, Adolphus, assignor.)						
Cromwell, Andrew J., Baltimore, Md. Locomotive-furnace	259,294	June 13	921	136	21	1791
Cronmeyer, Charles A., Detroit, Mich., assignor to himself and G. W. Busch, Walkerville, Canada. Portable door-securer	256,024	May 16	1064	301	21	1490
Crook, G. W. (See Shotwell, George W., assignor.)						
Crookright, William. (See Campbell, Abraham D., assignor.)						
Crooke, Henry S., New York, N. Y. Sign	258,896	June 6	37	9	21	1701
Crosby, Arthur M., Boston, Mass. Self-leveling berth	258,079	Jan. 10	491	136	21	99
Crosby, Danford M., *et al.* (See Allen, Alfred W., assignor.)						
Crosby, George H., Somerville, Mass. Steam-engine recorder	256,294	Apr. 11	699	190	21	1074
Crosby, George H., Somerville, Mass. Steam-engine recorder	256,295	Apr. 11	700	190	21	1074
Crosby Steam Gage and Valve Company. (See Brown, Gilman W., assignor.)						
Cross, Benjamin C., Dewsbury, county of York, England. Drain-pipe	258,228	May 23	1343	360	21	1545
Cross, Christopher, Manchester, county of Lancaster, England. Loom	253,010	Jan. 31	1617	449, 450	21	899
Cross, Christopher G., Chicago, assignor to Williams, White & Co., Moline, Ill. Machine for bending and punching arch-bars	252,741	Jan. 24	1306	355, 356	21	833
Cross, Daniel E. (See Cross, Samuel S., assignor.)						
Cross, Richard, and J. Gabriel, Cleveland, Ohio. Device for casting metals	257,558	May 9	517	144	21	1378
Cross, Samuel S., assignor to D. E. Cross, Beverly, Mass. Ticket-case	258,196	May 16	1287	385	21	1528
Cross, William C., Boston, Mass. Paper-bag machine	254,988	Mar. 14	604	168, 169	21	749
Crossetta, Charles H., Chicago, Ill. Neckscarf	257,859	May 16	873	245	21	1454
Crossman, Samuel, Middleville, Mich. Bed-spring	257,851	May 16	874	245	21	1454
Crothers, Abner M., *et al.* (See Beata, William E., assignor.)						
Crouch, Wesley, Rochester, N. Y. Air-buffer for cars	259,634	June 13	949	253	21	1667

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Crowell & Co., J. B. (See Scott, Henry W., assignor.)						
Crowell, Isaac G., *et al.* (See Lagmayr, Louis C., assignor.)						
Crowell, John H., assignor to Kendrick Loom Harness Company, Providence, R. I. Machine for making weaver's harness	253,848	Feb. 21	814	231	21	503
Crowell, Julius A., *et al.* (See Lagmayr, Louis C., assignor.)						
Crowell, Luther C., Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Web-printing mechanism	255,782	Mar. 28	1609	435, 436, 437	21	837
Crowell, Luther C., Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Folding-machine	259,978	June 20	1396	375	21	1950
Crowell, Luther C., Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Delivery apparatus for web-printing machines	259,979	June 20	1396	376, 377	21	1950
Crowell, Pearl K., Little Rock, Ark., assignor of one-fourth to E. K. Williams, Washington, D. C. Combined cotton gin and press	256,699	Apr. 11	853	326	21	1102
Crowley, Daniel, Boston, Mass. Combined cane, cigar-case, pipe-bowl, &c	253,011	Jan. 31	1620	450	21	899
Crowson, William L., St. Louis, Mo. Machine for hulling and ginning cotton, &c	255,942	Apr. 4	220	60, 61	21	899
Crowson, William L., St. Louis, Mo. Cotton-gin	255,943	Apr. 4	220	61, 62	21	899
Crump, John W., West Point, Miss. Levee	256,025	May 16	1065	302	21	1490
Crusé, Edward F. (See Parsons and Crusé.)						
Crush, D. P. (See Crush, John T., assignor.)						
Crush, John T., assignor of one-half to D. P. Crush, Pincastle, Va. Head-block for sawmills	259,102	June 6	986	76	21	1744
Cubberley, Alfred L., Marshfield, Me. Railway cross-tie	259,863	June 20	1196	320	21	1916
Cubley, Edwin J., Ravenswood, Ill. Banjo	253,849	Feb. 21	816	231	21	503
Culbertson, Andrew J., San Andreas, Cal. Store-counter seat	253,940	Feb. 7	197	56	21	379
Culbertson, Andrew J., San Andreas, Cal. Tack	257,213	May 2	73	22	21	1294
Culbertson, James C., and W. A. Endaly, Cincinnati, Ohio. Smoke-consuming furnace	260,170	June 27	1638	441	21	1994
Culbertson, W. W. (See Roberts, Edward J., assignor.)						
Cullam, Walter B., Rosewood, W. Va. Cultivator	255,256	Mar. 21	1026	276	21	880
Cultam, August, Renville, Minn. Bag-holder	257,214	May 2	74	22	21	1294
Culver, Eber. (See Hinckley and Culver.)						
Cummer Engine Company. (See Cummer, Franklin D., assignor.)						
Cummer, Franklin D., Detroit, Mich., assignor to Cummer Engine Company, Cleveland, Ohio. Governor for steam-engines	260,084	June 27	1434	387	21	1963
Cumming, George, New York, N. Y. Telegraph-key	256,645	Apr. 18	1116	314	21	1159
Cumming, George, and C. M. Brinkerhoff, New York, N. Y. Telegraphic electrode	256,646	Apr. 18	1117	314	21	1159
Cummings, Albert G., Harrisburg, Pa., assignor to Pennsylvania Steel Company, of Pennsylvania. Switch-operating device	256,109	Apr. 4	427	117, 118	21	1022
Cummings, Daniel M., Enfield, N. H., and N. E. Frary, Bradford, Vt. Straw-cutter	259,583	June 13	765	207	21	1639
Cummings, Mark C., Des Moines, Iowa. Washing-machine	253,588	Feb. 14	467	136	21	440
Cummings, Nathaniel. (See Holt, George F., assignor.)						
Cuningham, Sarah A., New York, N. Y. Lunch-receptacle and muff	255,490	Mar. 28	1340	334	21	872
Cunningham, Alexander. (See Cyrus, Edinboro, assignor.)						
Cunningham, Herman E., *et al.* (See Stanwood, John B., assignor.)						
Cunningham, Herman E. (See Kershaw and Cunningham.)						
Cunningham, John, Cincinnati, Ohio. Hog-holst	256,200	Apr. 11	576	158	21	1053
Cunningham, Patrick, New Bedford, Mass. Bomb-gun	256,546	Apr. 18	1006	284	21	1141
Cunningham, Peter H., Allentown, Pa. Turning-gear for vehicles	252,434	Jan. 17	985	255	21	169
Cunningham, Thomas, *et al.* (See Stanwood, John B., assignor.)						
Cuppia, Henry A., assignor to Kinney Tobacco Company, New York, N. Y. Cigarette	258,358	Jan. 17	894	229	21	153
Curley, Thomas J. (See Woods and Curley.)						
Curran, Charles A., Albany, Oreg. Fruit-drier	255,608	Mar. 28	1464	393	21	910
Currey Edward C., *et al.* (See Davies, James, assignor.)						
Currier, Augustus S., Hillsborough, Ill. Revolving letter-case	258,296	Apr. 11	701	191	21	1075
Currier, John J., Wasoca, Minn. Car-coupling	260,171	June 27	1634	441	21	1994
Currier Telephone Bell Company. (See Rice, David H. and L. C., assignors.)						
Curry, John M., South Framingham, Mass. Attachment for use in sewing wire into hats	259,749	June 20	1111	296	21	1902
Curtis, Andrew F., Medford, Mass. Bicycle	255,775	Apr. 4	28	8	21	1055
Curtis, John A., New Britain, Conn. Sash-fastener	256,026	May 16	1065	302	21	1490
Curtis, Andrew J., Monroe, Me., assignor of one-half to F. L. Palmer and A. M. Batchelder. Lantern-carrier	256,647	Apr. 18	1119	314	21	1159
Curtis, Charles L., and B. Adriance, Brooklyn, N. Y. Machine for opening and feeding tobacco	255,494	Mar. 28	1332	350, 360	21	867
Curtis, Edwin P., assignor to Richardson Manufacturing Company, Worcester, Mass. Cutting apparatus for harvesters	259,575	Jan. 17	1065	302	21	196
Curtis, Francis, Hyde Park, Mass. Fourdrinier paper-machine	260,172	June 27	1635	442	21	1994
Curtis, Frederick. (See Baker, Loring J., assignor.)						
Curtis, James M., St. Paul, Minn. Harvester-elevator	255,603	Mar. 28	1463	394	21	911
Curtis, John D., Worcester, Mass. Spool for winding barbed fencing	256,147	Mar. 21	899	239	21	906
Curtis, Leonard E. (See Weston and Curtis.)						
Curtis, Leonard E., New York, N. Y., and E. Weston, Newark, N. J., assignors to United States Electric Lighting Company, New York, N. Y. Electric lamp	255,148	Mar. 21	891	239	21	906
Curtis, Nelson, Newton, Mass. Steam-trap	253,944	Feb. 21	864	274	21	530
Curtis, Nelson, Newton, Mass. Steam-trap	253,965	Feb. 21	865	274	21	530
Curtis, Thomas, Ocala, Fla., assignor of one-half to D. O. Crane and A. A. Thomas, Washington, D. C. Incombustible self-igniting signal-lamp	253,350	Feb. 7	197	57	21	380
Cushing, Emery B., Lancaster, N. H. Adjustable chair	259,504	June 13	786	208	21	1639
Cushing, James, Dubuque, Iowa. Automatic gate for elevators	254,961	Apr. 25	1316	425, 426	21	1237
Cushman, Henry T., North Bennington, Vt. Preparing vulcanized rubber for erasive purposes	254,698	Mar. 7	213	55	21	674
Cussons, John, Glen Allen, Va. Calender	258,297	June 6	38	9	21	1701
Cutler, Abner, Buffalo, N. Y. Automatic locking mechanism for the drawers of desks, &c.	257,475	May 9	409	115	21	1360
Cutler, Fred H., Buffalo, N. Y. Adjustable pigeon-hole for desks, &c.	256,694	Apr. 25	1388	375	21	1205
Cutter, Charles N., assignor of one-half to E. Converse, Worcester, Mass. Ice-cutting machine	254,431	Feb. 28	1503	412	21	627
Cutter, Charles W., assignor of one-half to U. E. Lemon, Erie, Pa. Countersink attachment for augers	258,650	Jan. 24	1149	388	21	217
Cuttriss, Charles, Duxbury, and G. F. Millliken, assignors to J. W. Brown and H. D. Hyde, Boston, Mass. Telephonic receiver	256,795	Apr. 18	1209	363	21	1191
Cyrus, Edinboro, assignor to himself and A. Cunningham, Augusta, Ohio. Milestone-dress	259,103	June 6	987	77	21	1744
Cziner, Matyas, New York, N. Y. Lamp	251,788	Jan. 3	98	6	21	6
Daboll, Charles M., New London, Conn. Pulley-sheave	255,734	Mar. 28	1619	437	21	939
Daboll, Charles M., New London, Conn. Hardening metals	255,735	Mar. 28	1620	.....	21	939

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
D'Costa, Augustine V., Matanzas, Cuba. Cigarette-paper	252,437	Jan. 17	929	256	21	169
Da Costa, James S. (See Letchford, Silas, assignor.)						
Daft, Leo, Greenville, N. J. Electric motor	258,383	May 23	1527	434	21	1577
Daggett, John C., Nepeuset, assignor of one-half to J. B. Farrar and A. L. Kimball, Bradford, Mass. Water-closet	251,999	Jan. 3	383	103	21	66
Daggett, William, *et al.* (See Field, Joseph B., assignor.)						
Dahlberg, Charles L., Des Moines, assignor of one-half to R. N. Dahlberg, Keosauqua, Iowa, Car-coupling	251,839	Jan. 3	196	55	21	35
Dahlberg, Robert N. (See Dahlberg, Charles L., assignor.)						
Daigneau, Jérémie, St. Hyacinthe, Quebec, Canada. Freight-car	259,750	June 20	1112	296	21	1902
Dail, William H. (See Pate, Mason, and Dail.)						
Dailey, Parley A., New York, N. Y. Ornamenting textile fabrics	257,921	May 16	961	288	21	1468
Dain, Joseph, Jr., Meadville, Me. Hay elevator and stacker	256,303	Jan. 17	766	213	21	143
Dalton, George, Leeds, county of York, England. Machinery for crushing ores, &c	258,000	Jan. 10	402	{136 137	21	92
Dalton, Henry N., Oakland, Cal. Thrashing-machine	257,922	May 16	962	269	21	1468
Daly, Hugh P., assignor of two-thirds to R. Stalnaker, Jr., Wheeling, W. Va. Car-coupling	251,703	Jan. 3	21	6	21	6
Dame, W. Fred. (See Mitchell and Dame.)						
Damon, George L., Boston, Mass. Burglar-proof safe	252,435	Jan. 17	926	{255 256	21	169
Dana, Lester D., Waupaca, Wis. Friction-clutch	254,283	Feb. 28	1338	369	21	597
Dana, Sumner W., Crisfield, Md. Dredge-winder	253,012	Jan. 31	1022	450	21	299
Dancel, Christian, New York, N. Y. Mechanism for reversing motion	260,285	June 27	1780	488	21	2016
Danheim, Sandor, assignor of one-fourth to J. S. Heinson, New York, N. Y. Cutting mechanism	255,102	Mar. 21	834	223	21	796
Daniel, Johnson B., Philadelphia, Pa. Tea and coffee pot	255,776	Apr. 4	20	9	21	955
Daniell, William H., Pottsville, Pa. Water-closet	251,767	Jan. 3	99	28	21	19
Daniell, William H., Pottsville, Pa. Culinary apparatus	254,119	Feb. 28	1151	331	21	596
Daniell, William H., Pottsville, Pa. Water-closet and garbage sink	256,549	Apr. 18	1007	284	21	1141
Daniell, William H., Pottsville, Pa. Culinary vessel	256,648	Apr. 18	1119	314	21	1160
Daniels, Charles B., Haverhill, Mass. Shoe	255,495	Mar. 28	1314	360	21	987
Daniels, Ira W., *et al.* (See Smith, Franklin R., assignor.)						
Daniels, John F., Decatur, Ill. Vapor-burner	258,633	May 30	1835	517	21	1639
Daniels, Taylor E., Chicago, Ill. Manufacture of cement coffins	259,373	June 13	620	{164 165	21	1809
Dansala, William R., Philadelphia, Pa. Separator for squaring-shears for cutting sheet metal	253,986	Feb. 21	998	275	21	530
Danner, John, Canton, Ohio. Revolving shelf or stand	258,283	May 23	1414	400	21	1557
Dansereau, Pierre, Montreal, Quebec, Canada. Carriage-top	251,704	Jan. 3	22	6	21	6
Darby, Henry C., Wyandotte, Kans. Furnace-sheet for steam-boilers	253,516	Feb. 14	407	{113 114	21	427
Darby, Thomas, assignor of one-half to C. A. Gerlach, Buffalo, N. Y. Fire-escape	255,379	Mar. 21	1183	317	21	856
Darcy, P. J. (See Long, George S., assignor.)						
Darcy, Patrick J., Hartford, Conn. Beer-cooler	254,120	Feb. 28	1152	321	21	566
Dare, Lee, North Manchester, Ind. Harness-saddle loop	253,684	Feb. 14	509	169	21	458
Darelaar, Martin. (See Johnson, James, assignor.)						
D'Argy, Edmond A. G., Paris, France. Cigarette-wrapper	254,998	Mar. 14	606	163	21	750
Darling, Joseph, Peachville, and A. J. Nicholson, Fairview, Pa. Curtain-fixture	252,359	Jan. 17	826	229	21	153
Darling, Joseph, and B. H. Griswold, Fairview, Pa. Curtain-fixture	252,743	Jan. 24	1988	356	21	234
Darling, Samuel, Providence, R. I. Metallic try-square	252,436	Jan. 17	928	256	21	169
Darling, Samuel, Providence, R. I. Screw-nut	253,966	Feb. 7	102	31	21	364
Darling, Samuel, Providence, R. I. Gas heating apparatus	253,850	Feb. 21	817	{231 232	21	503
Darnell, David E., Masonville, N. J. Distributer for insect-poison and fertilizers	254,804	Mar. 14	438	118	21	720
Darrow, Amelia W., *et al.*, administrators. (See Wait, Oscar E., assignor.)						
Daufen, Henry, assignor of one-half to H. J. Daufen, Pittsburg, Pa. Machine for making axes	259,824	June 20	1197	320	21	1917
Daufen, Henry J. (See Daufen, Henry, assignor.)						
Daul, Louis, assignor of one-half to C. F. Bitter, Buffalo, N. Y. Apparatus for rectifying petroleum	258,284	May 23	1416	400	21	1558
Dauntless Manufacturing Company *et al.* (See Cheney, Frederick P., assignor.)						
Davenport, Frederick S., Jerseyville, Ill. Wheel-plow	260,286	June 27	1781	{482 483	21	2016
Davenport, Nelson. (See Mosher, George A., assignor.)						
Davey, Thomas. (See Patten and Davey.)						
David, Jacob, Brooklyn, N. Y. Mechanical movement for ore-crushing machines	257,852	May 16	875	{245 246	21	1454
David, Jacob, Brooklyn, assignor of one-half to W. H. Johnson, New York, N. Y. Dinner-plate	255,726	Mar. 28	1021	437	21	938
Davidson, James W. T., Brownsville, Ala., and D. Green, Columbus, Ga. Loom stop-motion	256,962	Apr. 25	1518	{426 427	21	1238
Davidson, John M., New York, N. Y. Ozone-generator	254,930	Mar. 14	807	163	21	750
Davidson, Royal N., Weaverville, Cal. Water-wheel	253,987	Feb. 7	104	31	21	364
Davidson, Salomon, New York, N. Y. Ornamental chain	253,013	Jan. 31	1023	451	21	300
Davidson, Salomon, New York, N. Y. Ornamental chain-link	254,251	Feb. 7	198	57	21	380
Davidson, Salomon, New York, N. Y. Chain cross-bar	254,931	Mar. 14	608	164	21	750
Davidson, Salomon, New York, N. Y. Chain cross-bar	256,649	Apr. 18	1120	315	21	1160
Davidson, William J., Big Spring, Va. Cultivator	254,932	Mar. 14	608	164	21	750
Davies, Henry J. (See Davies, Walter D., assignor.)						
Davies, James, assignor of one-half to J. M. Washburn and E. C. Currey, Mitchell, Dak. Ter. Snow loader and dumper	257,559	May 9	517	{144 145	21	1378
Davies, Joseph D., Bond Hill, Ohio. Differential chain-block	253,189	Feb. 7	17	6	21	350
Davies, Thomas. (See Fleury and Barker, assignors.)						
Davies, Walter D., assignor of one-half to H. J. Davies, Brooklyn, N. Y. Striking mechanism for clocks	259,505	June 13	788	208	21	1839
Davin, Michael. (See Probert and Davin.)						
Davis, Andrew J., Hartford, Mich. Combined sash holder and fastener	258,898	June 6	39	10	21	1701
Davis, Charles C., and W. H. Mercer, Mercer, S. C. Cotton-scraper	257,606	May 9	656	183	21	1404
Davis, Charles E. (See Davis, Thomas and C. E.)						
Davis, Charles N. (See Bean, Joseph H., assignor.)						
Davis, Daniel. (See Davis, Robert W. and D.)						
Davis, David E., Marion, Va. Churn-dasher	255,604	Mar. 28	1466	394	21	911
Davis, David E., Marion, Va. Chicken-coop	256,718	May 30	1943	549	21	1657

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Davis, David W., Detroit, Mich. Cooling beer	256,550	Apr. 18	1008	284	21	1142
Davis, Elijah D., Brooklyn, N. Y. Boring-machine	253,913	Feb. 21	891	251	21	516
Davis, Eugene H. (See Wilson, Thomas L., assignor.)						
Davis, Francis V., Worcester, Mass. Stamp-moistener	257,295	May 2	176	50	21	1313
Davis, Frank, North Adams, Mass. Mop-holder	257,294	May 2	176	50	21	1313
Davis, Henry T., Sherman, Tex. Quilting-frame	253,359	Feb. 7	109	27	21	360
Davis, Henry T., Sherman, Tex. Reciprocating churn	254,121	Feb. 28	1153	322	21	566
Davis Improved Wrought Iron Wagon Wheel Company. (See Davis, Robert W. and D., assignors.)						
Davis, Ira S., assignor to Edwards Manufacturing Company, Detroit, Mich. Spring-hinge	254,438	Feb. 28	1506	412	21	627
Davis, Ira S., assignor to Edwards Manufacturing Company, Detroit, Mich. Spring-hinge	255,257	Mar. 21	1686	276	21	690
Davis, Jasper W., assignor to Belle Patent Button Fastener Company, Detroit, Mich. Instrument for attaching buttons	256,227	Apr. 11	702	191	21	1075
Davis, Job A., Philadelphia, Pa. Electrical connection for burglar-alarms	259,585	June 20	1199	321	21	1917
Davis, John E., Jr., Neenah, Wis. Roller-mill	258,067	May 16	1087	302	21	1491
Davis, John S., assignor to Toledo Mower and Reaper Company, Toledo, Ohio. Grain-carrier	258,681	Jan. 10	404	127	21	90
Davis, John W., Marion, S. C. Detachable handle for tea-cups, &c	256,963	Apr. 25	1280	427	21	1236
Davis, Joseph R. (See Hogue and Davis.)						
Davis, Josiah R., Greensburg, Pa. Coke-crusher	258,743	Jan. 24	1209	356	21	234
Davis, Levis H., West Chester, Pa. Lifting-jack	259,586	June 13	789	{208 209	21	1839
Davis, Loring R., assignor of one-half to S. P. Babcock, Adrian, Mich. Lathe-chuck	259,065	June 27	1435	367	21	1963
Davis, Michael F., Portland, Me. Molded boat and other articles from celluloid, cellulose, and other plastic materials	259,686	June 20	1200	321	21	1917
Davis, Nicholas L., and J. H. McIntyre, Rutland, Vt. Car-coupling	259,705	June 13	821	137	21	1791
Davis, Nicholas L., Racine, Wis., assignor to himself and P. Grace, Chicago, Ill. Air-blower	254,538	Mar. 7	109	28	21	657
Davis, Robert W. and D., assignors to Davis Improved Wrought Iron Wagon Wheel Company, Elmira, N. Y. Wheel-hub	251,840	Jan. 3	197	55	21	35
Davis Sewing Machine Company. (See Fellows, Edgar D., assignor.)						
Davis, Stillman C., *et al.* (See Lothrop, Chauncey M., assignor.)						
Davis, Thomas. (See Ball and Davis.) (Reissue.)	252,021	Jan. 10	407	117	21	81
Davis, Thomas and C. E., Indianapolis, Ind. Ice-machine and refrigerating apparatus						
Davis, Thomas and C. E., Indianapolis, Ind. Apparatus for utilizing waste heat in ammonia refrigerating apparatus	256,650	Apr. 18	1121	315	21	1160
Davis, Thomas and C. E., Indianapolis, Ind. Ice-machine and refrigerating apparatus	257,476	May 9	410	115	21	1361
Davis, Walter S. (See Hecht and Davis.)						
Davis, William C. (See Tatman and Davis.)						
Davis, William H., Verona, Miss. Driving machinery for cotton-gins	257,667	May 9	657	184	21	1404
Davis, William J. (See Callahan, Ames, assignor.)						
Davis, Zebulon, Canton, Ohio. Vapor-burner	254,693	Mar. 7	214	55	21	675
Davis, Zebulon, Canton, Ohio. Oven	256,384	May 23	1529	434	21	1578
Davis, Zebulon, Canton, Ohio. Vapor-burner	256,385	May 23	1530	434	21	1578
Davis, Zebulon, Canton, Ohio. Vapor-burner	256,386	Apr. 11	702	191	21	1075
Davies, Horatio F., Fairfield, Tex. Fence	256,964	Apr. 25	1280	427	21	1236
Dawley, William W., Mount Holly, Vt. Railway-chair	256,965	Apr. 25	1281	427	21	1236
Dawley, William W., Mount Holly, Vt. Railway-rail	253,517	Feb. 14	406	114	21	428
Dawson, John, Colfax, Ind. Kiln for burning articles manufactured from clay	257,477	May 9	412	115	21	1361
Dawson, Walter, Scranton, Pa. Valve rod and stem for steam-engines						
Day, Benjamin F. (See Tallman and Day.)						
Day, Edmund O., London, England. Nursing-bottle	253,014	Jan. 31	1024	451	21	300
Day, Horace H., deceased, and S. G. Day, executrix, and assignor, by mesne assignments, to Otis Brothers & Company, Yonkers, N. Y. Hydraulic and pneumatic elevator. (Reissue)	10,031	Feb. 7	360	102	21	402
Day, James, San Francisco, Cal. Quartz-mill	254,805	Mar. 14	439	118	21	720
Day, Jeremiah E., assignor of one-half to J. C. Altken, San Francisco, Cal. Tuyere	255,842	Apr. 4	106	28	21	908
Day, Robert E. (See Lord and Day.)						
Day, Sarah G., executrix. (See Day, Horace H.) (Reissue.)	256,825	Apr. 25	1339	375	21	1205
Day, William, Brooklyn, N. Y. Lamp-shade						
Dayton, George H. (See Phillips, Francis V., assignor.)						
De Beauvais, Jules. (See Schreder and De Beauvais.)	256,966	Apr. 25	1283	426	21	1236
De Bus, Henry, Riverside, Ohio. Stave-bending machine						
De Caindry, William A., assignor of one-half to W. H. Pearce, Washington, D. C. Envelope-opener	258,630	Jan. 31	1519	423	21	998
De Carly, Joseph, Smith's Ranch, Cal. Butter-mold	256,467	Apr. 18	913	255	21	1125
De Courcy, Bolton W., Winchester, assignor of one-half to J. C. Ernst, Covington, Ky. Key for bolts, &c	255,843	Apr. 4	107	28	21	909
De Figaniére, Affonso, Philadelphia, Pa. Treatment of ores	250,104	June 6	286	77	21	1744
De Forest, David W., Brooklyn, assignor to Donaldson Brothers, New York, N. Y. Labelling plug-tobacco	254,985	Feb. 28	1240	370	21	597
De Guerra, Frank H., and W. W. De Lano, San Francisco, Cal. Adjustable stove-grate	256,130	Apr. 11	699	190	21	1037
De Lancey, John J., Binghamton, N. Y. Balanced slide-valve. (Reissue)	10,149	June 27	1880	502	21	2020
De Lano, Willis W. (See De Guerra and De Lano.)						
De La Vergne & Mixer Refrigerating Company. (See Mixer, William M., assignor.)						
De Long, William C., and A. A. Schreder, Warren, Ill. Door-spring	253,851	Feb. 21	818	232	21	504
De Mar, Piotr E., New York, N. Y., assignor to Van Heaten, Sayre & Co., Newark, N. J. Ear-wire lock	253,472	Feb. 7	340	95	21	404
De Naeyer, Louis, assignor to Naeyer & Co., Brussels, Belgium. Pipe-coupling	253,988	Feb. 21	988	275	21	530
De Pass, S. C., *et al.* (See Merten, George B., assignor.)						
De Quillfeldt, Charles, New York, N. Y. Spring curtain-roller. (Reissue.)	10,026	Feb. 7	362	101	21	407
Dé Souchet, Augustus M. (See Johnson and Dé Souchet.)						
De Tray, Truman W., Kenton, assignor of one-half to W. Harman, Malta, Ohio. Whiffle-tree-hook	251,769	Jan. 3	183	99	21	99
De Vourney, Abraham P., Montclair, N. J. Lamp and chandelier	257,478	May 9	413	115	21	1361
De Witt, Francis B. (See Lee, Alfred, assignee.)						
De Witt, Julian F., Buffalo, N. Y. Box-trimming cutter	258,388	May 23	1534	435	21	1578
De Young, Joseph B. (See Ingram, Amer, assignor.)						
De Young, Joseph B., Philadelphia, Pa. Machine for disintegrating corn-husks, &c	254,697	Mar. 14	441	118	21	720
De Young, Joseph B., Philadelphia, Pa. Machine for disintegrating corn-husks, &c	257,437	May 2	352	99	21	1344
De Zavala, Henry, Brooklyn, N. Y. Metallic railway tie and fastening	253,518	Feb. 14	410	114	21	428
Deacon, Henry L., Scranton, Pa. Calf holder and adjuster						
Deady, M. J. (See Pike, Daniel, assignor.)						
Dean, Charles W., South Wareham, Mass. Wire-fence nail	256,468	Apr. 18	912	255	21	1125
Dean, George S., Independence, Iowa, assignor, by mesne assignments, to E. M. Crandal and C. H. Kirkham, Chicago, Ill. Wire-stretcher	259,671	June 20	908	287	21	1863
Dean, Gilbert S., San Francisco, Cal. Tester for explosives	253,914	Feb. 21	893	251	21	516

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Name, residence, and invention	No.	Date.	Monthly volume. Spec.	Monthly volume. Drf.	Official Gazette. Vol.	Official Gazette. Page.
Dean, J. Henry, Kalamazoo, Mich., assignor to Whiteley, Fassler & Kelly, Springfield, Ohio. Cord-tyer for grain-binders	255,944	Apr. 4	240	62	21	980
Dean, J. Henry, Kalamazoo, Mich., assignor to Whiteley, Fassler & Kelly, Springfield, Ohio. Cord-knotter for grain-binders	260,067	June 27	1531	412	21	1978
Dean, James E., Fishkill, N. Y. Permutation-padlock	254,264	Feb. 28	1350	369	21	597
Dean, Jesse. (See Touraoux and Schmalz, assignors.)						
Dean, Samuel B., Boston, Mass. Breech-loading ordnance	258,386	May 23	1531	435	21	1578
Dean, William E., New York, N. Y. Fruit-squeezer	253,353	Feb. 7	200	57	21	360
Deane, Charles P., Springfield, Mass. Steam-condenser	256,651	Apr. 18	1122	315	21	1160
Dearborn, Charles A., Chicago, Ill. Sewing-machine	259,296	June 13	523	{137 138	{21	1792
Dearing, Fountain P., Bellbuckle, Tenn. Car-coupling	256,198	Apr. 11	478	130	21	1037
Deby, Julius, London, county of Middlesex, England. Extracting copper and silver from their ores	252,593	Jan. 17	1102	.....	21	199
Decastro, Jacob W., Mahwah, N. J. Tonic beverage	256,129	Apr. 11	479	.....	21	1057
Decauville, Paul, Paris, France. Self-lubricating bearing for axles	253,015	Jan. 31	1646	451	21	300
Deckebach, F. C. (See Birgler, Lemen J., assignor.)						
Decker, Alexander. (See Ayres and Decker.)						
Decker, Alexander C., Highwood, Ill., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass., and I. L. Ellwood, De Kalb, Ill. Barbed wire	254,539	Mar. 7	111	28	21	657
Decker, Daniel D., St. Catherine, Mo. Draft attachment for vehicles	257,296	May 2	177	50	21	1313
Decker, Helen M., New York, N. Y. Fire-escape	258,028	May 16	1069	303	21	1461
Decker, William, Colfax, assignor of three-fourths to J. H. Hudgin, E. Annable, and D. Travis, Fairbury, Ill. Valve	252,195	Jan. 10	623	176	21	114
Dederick, Peter K., Albany, N. Y. Baling-press	254,768	Jan. 3	100	28, 29	21	20
Dederick, Peter K., Albany, N. Y. Baling-press	257,178	May 2	9	3	21	1282
Dederick, Peter K., Albany, N. Y. Baling-press	257,153	May 2	11	4	21	1281
Dee, George, Dixon, Ill. Stove-lifter	254,033	Mar. 14	609	164	21	770
Deeble, John, Southington, Conn. Manufacture of ox-shoes	258,098	June 6	154	42, 43	21	1721
Deere and Company. (See Moore, Gilpin, assignor.)						
Deering, Mark L., Cleveland, Ohio, assignor to Union Paper Bag Machine Company, Philadelphia, Pa. Manufacture of paper bags. (Reissue)	10,083	Apr. 11	889	249	21	1108
Deering, Mark L., Cleveland, assignor to G. H. Hopper, Unionville, Ohio. Horizontal hoop-driving machine	257,130	Apr. 25	1685	{472 473	{21	1968
Deering, William. (See Hodges, Pliny F., assignor.)						
Deering, William, Louisville, Ky. Horse-power	254,694	Mar. 7	215	55	21	675
Defiance Machine Works. (See Kettenring, Peter, assignor.)						
Defiance Machine Works. (See Seymour, Charles, assignor.)						
Degener, Paul. (See Yates and Degener.)						
Delninger, August, Berlin, Germany. Apparatus for the manufacture of alcohol	256,029	May 16	1070	301	21	1491
Dela, Charles, Buffalo, N. Y. Egg and sugar beater	254,540	Mar. 7	112	28	21	657
Delaber, Alfred, and W. H. Adam, Fleetwood, Pa. Vehicle-axle	254,695	Mar. 7	217	56	21	675
Deitzler, George W., San Francisco, Cal. Apparatus for utilizing solar heat	257,509	May 9	519	145	21	1378
Delamater, Cornelius H., *et al.* (See Reynolds and Rider, assignors.)						
Delano, Samuel, New Orleans, La., and G. Abel, Killbuck township, Allegheny county, Pa. Machine for making drill-teeth	257,297	May 2	178	51	21	1313
Delanoy, Alfred G., assignor to himself and C. Scheuing, New York, N. Y. Deep-sea-sounding apparatus	257,154	May 2	12	4	21	1283
Delker, John, St. Louis, Mo. Screw-cutting machine	253,987	Feb. 21	987	275	21	530
Dellenbaugh, Frederick S., New York, N. Y. Hollow auger	254,226	Feb. 28	1341	370	21	598
Demain, William C., Jr. (See Tregurtha, James, assignor.)						
Demarest, Cornelius B., Brooklyn, N. Y. Folding settee	253,825	Feb. 14	780	222	21	491
Demars, Frederick. (See Tucker, Charles N., assignor.)						
Demmler, Albert J., Pittsburg, Pa. Machine for rolling sheet metal	256,622	Apr. 18	1123	{315 316	{21	1160
Demorest, Ellen L., New York, N. Y. Automatic floor for elevator-shafts	259,105	June 6	290	77	21	1745
Dengler, Valentine. (See Connell and Dengler.)						
Denis, Thomas J. (See Murray, Peter, Jr., assignor.)						
Denison, Charles H., New York, N. Y. Nut-lock	252,868	Jan. 31	1446	404	21	309
Denison, Charles H., New York, N. Y. Basin and sink trap	253,852	Feb. 21	819	232	21	514
Denison, Thomas N., Newfane, assignor of one-half to R. Corwin, Cooper, N. Y. Rotary engine	256,131	Apr. 11	481	130	21	1037
Denleton, Thomas B., Peru, Ind. Pocket-book scraper	259,507	June 13	791	209	21	1840
Dennett, Fred. A., *et al.* (See Cadman, Isaac P., assignor.)						
Denney, Leonzo N., and A. C. Johnson, Wilmington, Del. Apparatus for drawing and replacing boiler-tubes	254,287	Feb. 28	1341	370	21	598
Denney, Samuel L., Gap, assignor to I. L. Landis, Lancaster, Pa. Bread and meat slicer	252,360	Jan. 17	887	230	21	153
Denney, Samuel L., Strasburg, assignor to I. L. Landis, Lancaster, Pa. Bread and meat cutter	260,287	June 27	1783	483	21	2017
Denney, Shad B., Summit, Miss. Rice-hulling machine	256,653	Apr. 18	1125	316	21	1160
Dennis, Benjamin. (See Barrett, James, assignor.)						
Dennings, William, National Military Home, Ohio. Game-wheel	258,367	May 23	1534	435	21	1578
Dennis, Edward. (See Cooper and Dennis.)						
Dennis, John D., Lynn, Mass. Wagon handle and seat support	259,672	June 20	999	267	21	1987
Dennison, Anna M., Chicago, Ill. Clothes-strainer	253,089	Feb. 21	989	275	21	531
Denny, Charles E., Chicago, Ill. Packing meat for transportation	258,719	May 30	1044	549	21	1658
Denny & Sons, H. (See McMillan, Neil, assignor.)						
Dennys, Nicholas B., Singapore, Straits Settlements. Violin	252,744	Jan. 24	1270	357	21	274
Denslow, Walter P. (See Crandall, Jesse A., assignor.)						
Denton, James, assignor of one-fourth to J. K. Warnick, Amsterdam, N. Y. Knitting-machine	255,945	Apr. 4	241	62	21	969
Denton, Joseph, Paterson, N. J. Shedding mechanism for looms	252,438	Jan. 17	930	{256 257	{21	169
Denton, Leni B., assignor of one-half to A. J. Holt, Grand Rapids, Mich. Windmill for pumping	253,016	Jan. 31	1026	451	21	300
Denver, James, New Haven, Conn. Brake-shoe	255,285	May 23	1417	401	21	1558
Denver, James W. (See Pendleton, Philip, assignor.)						
Denver, William J., and W. W. Sawyer, Springfield, Mass. Call-register for telephones	251,853	Feb. 21	821	232	21	504
Depp, Hezekiah E., Sedalia, Mo. Car-propeller	255,496	Mar. 28	1335	360	21	887
Depp, Hezekiah E., Sedalia, Mo. Combined steam and compressed air engine	256,886	Apr. 25	1389	376	21	1205
Derby Silver Company. (See Miller, Bullens, and Berry, assignors.)						
Deschamps, Francis O., Philadelphia, Pa. Shaft-coupling	255,103	Mar. 21	836	223	21	797
Deschamps, Octave L., Paris, France. Machine for purling manufactured laces, &c	253,915	Feb. 21	894	251	21	516
Detrick, Calvin. (See Murray, William B., assignor.)						

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drf.	Official Gazette. Vol.	Official Gazette. Page.
Detro, Clarence S., Ashley, Pa. Steam-valve	259,827	June 20	1301	{321 322	{21	1917
Devault, George W. (See Walenta, Wesley A., assignor.)						
Devoe, Benjamin G., Kenton, assignor of one-half to A. C. Ramsay, Bellefontaine, Ohio. Iron fence	254,606	Mar. 14	513	136	21	733
Devoe, Benjamin G., Kenton, assignor of one-half to J. H. Ayers, Urbana, Ohio. Safety-vault for coffins	255,149	Mar. 21	883	239	21	906
Dewar, Duncan, Indianapolis, Ind. Electric switch board and plug	256,561	May 30	1742	483	21	1662
Dowe, John, Ottawa, Ontario, Canada. Exhibiting photographs	254,606	Mar. 14	449	118	21	730
Dexter, Charles L., Philadelphia, Pa. Ice-cream freezer. (Reissue)	10,036	Feb. 21	1125	314	21	554
Dexter, John M., Elmira, N. Y. Lamp	258,022	Jan. 10	627	157	21	93
Dexter, John M., Elmira, N. Y. Coal-oil lamp	258,223	May 23	1343	360	21	1545
Dexter Woolen Mills. (See Robinson and Shaw, assignors.)						
Deyell, Isaac, St. Thomas, Ontario, Canada. Spark-extinguisher	254,122	Feb. 28	1153	322	21	566
Diamond, Patrick, Philadelphia, Pa. Dredge-box for spices, &c	254,606	Mar. 14	449	119	21	730
Dibble, John L., Brooklyn, N. Y. Air-valve for water-pipes	257,653	May 16	977	246	21	1454
Dickens, John, Kingston, N. J. Pump	259,673	June 20	1000	267	21	1983
Dickerson, Edward N., Jr., New York, N. Y. Refrigerating and preserving meat and other articles	256,299	Apr. 11	703	.....	21	1075
Dickerson, Edward N., Jr., New York, N. Y. Hydrocarbon-burner	256,551	Apr. 18	1009	285	21	1142
Dickerson, Edward N., Jr., New York, N. Y. Wheel for electro-magnetic locomotives	257,398	May 2	179	51	21	1313
Dickert, Charles P., and E. M. Heller, Walton, S. C. Implement for siding and thinning cotton	255,256	Mar. 21	1027	276	21	830
Dickinson, Abram, and J. Warden, Pittsburg, Pa. Tire for vehicle-wheels	258,304	Jan. 17	767	214	21	143
Dickinson, Asa W. (See Lake, Stephen D., assignor.)						
Dickinson, Charles W., Belleville, and G. Bowden, South Orange, N. J. Chromatic-printing press	258,080	Jan. 3	364	{103 104	{21	66
Dickinson, George F., Orland, Ind. Butchering apparatus	258,083	Jan. 10	627	158	21	93
Dickinson Hard Rubber Company. (See Nickerson, Fred. A., assignor.)						
Dickinson, Henry, Lowell, assignor to L. C. Warner, Crown Point, Ind. Water-elevator	255,946	Apr. 4	243	63	21	990
Dickinson, John C. (See Kearsing, John G., assignor.)						
Dicks, Francis M. (See Nicholson, Morenus A., assignor.)						
Dickson, Gilbert J., Albany, N. Y. Transom-adjuster	259,297	June 13	596	156	21	1792
Dickson, Hugh S., La Harpe, Ill. Work-box	258,720	May 30	1045	549	21	1658
Dickson, John N., New Castle, Pa. Vaccinator	257,686	May 9	657	184	21	1404
Didier, Nicolas, Pittsburg, Pa. Tuyere	253,305	Jan. 17	768	214	21	144
Didier, Nicolas A., Pittsburg, Pa. Tuyere	254,423	Feb. 28	1367	413	21	627
Dieckmann, Ferdinand, Cincinnati, Ohio. Gas-furnace	256,132	Apr. 11	492	131	21	1038
Diefenthaler, John V., Newark, N. J. Bracelet	253,017	Jan. 31	1027	452	21	300
Diefienbacher, John E., Edwardsburg, Mich. Harness attachment for vehicle-shafts	255,497	Mar. 28	1327	361	21	887
Diehl, Philip, Elizabeth, N. J. Incandescent electric lamp	256,439	Jan. 17	934	257	21	170
Diesselorff, William A., Coban, Guatemala. Apparatus for drying coffee-beans	253,090	Feb. 21	949	276	21	531
Dieterichs, Ernest F., Cleveland, Ohio. Apparatus for fractional distillation	256,897	Apr. 25	1402	393	21	1218
Dieterichs, William F., *et al.* (See Wright, Parvin, assignor.)						
Dietrich, Frederick A., Freeport, Ill. Shirt	256,899	Apr. 25	1403	396	21	1218
Dietrich, Frederick A., Freeport, Ill. Combined corset and abdominal and skirt supporter						
Dietz, Robert E. (See Betts, Lewis F., assignor.)						
Dietz, Robert E., New York, N. Y. Broiler for oil or gas stoves	258,009	June 6	156	43	21	1721
Diffendafer, James M., assignor to himself and D. A. Leitch, Green Centre, Ind. Hay-rack	252,196	Jan. 10	624	176	21	114
Dight, William M. (See McCutchen, James A., assignor.)						
Dill, Daniel, Fletcher, Ohio. Car-coupling	257,923	May 16	965	269	21	1403
Dillman, Andrew. (See Westphal, Henry, assignor.)						
Dillman, Andrew, *et al.* (See Cox and Merricey, assignors.)						
Dillmeier, Michael. (See Bauer, John, assignor.)						
Dillon, Benjamin F., Savannah, and J. W. Brown, Augusta, Ga. Duplex telegraph	259,106	June 6	291	78	21	1745
Dillon, Washington M. (See Easterbrooks, Rollin, assignor.)						
Dillon, William S. F., Madeira, Ohio. Nut-lock	257,854	May 16	979	246	21	1454
Dimmick, Chauncey W., Milford, Pa., assignor to T. Barbour, Paterson, N. J. Desk for making macramé lace	254,288	Feb. 28	1342	370	21	598
Dimmick, Jacob K., Newport, Ky. Pipe-joint	252,001	Jan. 3	367	105	21	67
Dimmick, Jacob K., assignor to Cincinnati and Newport Iron and Pipe Company, Newport, Ky. Flask for casting	253,654	Feb. 21	988	223	21	504
Dinkelbihler, John G. (See Albert and Dinkelbihler.)						
Dinkelbihler, John G., Cincinnati, Ohio. Washing-machine	255,947	Apr. 4	244	63	21	990
Dinning, Enoch C. (See Montague, Booker, and Dinning.)						
Dinse, Oswald, *et al.* (See Reiter and Sander, assignors.)						
Dinse, Paul, *et al.* (See Reiter and Sander, assignors.)						
Dinsmoor, Gordon, Kirksville, Mo. School-desk	258,721	May 30	1046	550	21	1662
Dinsmore, Alfred S., Boston, Mass. Oil-stove	260,086	June 27	1436	357	21	1963
Dinsmore, John V., Norwood, Mass. Car-wheel	258,745	Jan. 24	1271	327	21	236
Dion Last Company. (See Sherman, Cyrus P., assignor.)						
Dirkes, Henry A., New York, N. Y. Bale and box hook	254,289	Feb. 28	1343	371	21	598
Dittmar, Carl, New York, N. Y. Explosive compound	258,080	Jan. 24	1114	.....	21	989
D'Iverneis, Hardley L. C., Paris, France. Process of and apparatus for carbureting air	255,948	Apr. 4	245	63	21	991
Divers, John K. (See Hill, Nathan, assignor.)						
Dixon, Charles E., Pittsburg, Pa. Edge-tool-tempering pot	256,201	Apr. 11	577	158	21	1053
Dixon, Robert H., and J. F. Steward, Chicago, Ill. Harvester	257,588	May 9	581	146	21	1379
Dizer, Silas C., Brookline, Mass. Boot or shoe	254,686	Mar. 7	217	56	21	675
Doane, A. Sidney, *et al.* (See Thompson, Uldric, assignor.)						
Doane, William H., and G. W. Bagbee, Cincinnati, Ohio. Spoke tenoning and chamfering machine	256,698	May 30	2088	{569 570	{21	1663
Doane, William H., and G. W. Bagbee, assignors to J. A. Fay & Co., Cincinnati, Ohio. Spoke-throating machine	256,691	May 16	1692	{303 304	{21	1403
Doane, William H., and G. W. Bagbee, assignors to J. A. Fay & Co., Cincinnati, Ohio. Mortising-machine	259,089	June 6	157	43, 44	21	1721
Dobbie, Archibald, Thorold, Ontario, Canada. Hoisting-machine	255,644	Apr. 4	108	29	21	969
Dobbs, Joseph L., Chicago, Ill. Motor	252,685	Feb. 14	669	169	21	458
Dobbs, Seneca, assignor of one-half to W. D. Clark, Rochester, N. Y. Salt-evaporator	255,075	Mar. 14	708	214	21	763
Dobel, Luke. (See Schipper and Dobel.)						
Dobelmann, Adele L. (See Dobelmann, John B., assignor.)						
Dobelmann, John B., assignor to A. L. Dobelmann, Brooklyn, N. Y. Lamp-chimney	256,706	Apr. 18	1201	303	21	1191
Dobson, Benjamin A. (See Marsh, James and J. A., assignors.)						
Dobson, Henry C., New York, N. Y. Snare-drum	258,809	June 6	40	10	21	1701

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Dobson, James, *et al.* (See Greaves, James, assignor.) (Reissue.)						
Dobson, John, *et al.* (See Greaves, James, assignor.) (Reissue.)						
Dodd, John M., *et al.* (See Banta, William E., assignor.)						
Dodd, Thomas. (See Whitehead and Dodd.)						
Dodé, Paul A., Rheims, assignor to Société Francaise D'Inoxydation et de Platinage, Paris, France. Gilding metals	255,421	Mar. 28	1241	.....	21	872
Dodge, James M., Chicago, Ill. Drive-chain	255,949	Apr. 4	248	64	21	991
Dodge, James M., Chicago, Ill. Chain	255,950	Apr. 4	249	64	21	991
Dodge, James M., Chicago, Ill. Drive-chain	256,552	Apr. 18	1010	285	21	1142
Dodge, James M., Chicago, Ill. Attachment-link for conveyers	258,030	May 16	1091	303	21	1491
Dodge, James M., Chicago, Ill. Attachment-link	258,723	May 30	1947	550	21	1658
Dodge, Thomas F., Lawton, Mich. Grain measure and tally	254,934	Mar. 14	609	164 / 165	21	750
Dodge, Thomas F., Lawton, Mich. Ballot-box	255,951	Apr. 4	250	64	21	991
Dodge, Thomas H., and C. G. Washburn, Worcester, Mass. Manufacturing barbed wire	252,746	Jan. 24	1272	357	21	235
Dodge, William F., Wilkes-Barré, and T. M. Righter, Sandy Run, Pa. Coal-screen	258,967	Apr. 25	1529	426	21	1238
Dodge, William W., Washington, D. C. Watch-charm	258,723	May 30	1948	550	21	1658
Dodson, Wilson P., assignor to F. H. Eldridge, Philadelphia, Pa. Broiler	255,360	Mar. 21	1185	318	21	856
Dodson, Wilson P., Philadelphia, assignor of one-half to A. H. Ege, Mechanicsburg, Pa. Railway-switch	257,299	May 2	180	51, 58	21	1313
Dodson, Wilson P., Philadelphia, assignor of one-half to A. H. Ege, Cumberland County, Pa. Railway-switch	259,001	June 6	161	44	21	1782
Dodsworth, Thomas C., Ottawa, Kans. Cultivator	256,784	May 30	1949	550 / 551	21	1658
Doemling, George F., Detroit, Mich. Dressing-case	257,300	May 2	169	52	21	1314
Doherty, Fisher, and J. Collins, Crawfordsville, Ind. Sulky	259,928	June 20	1202	322	21	1917
Doherty, William C., Albany, Oreg. Fruit-drier	258,386	May 23	1417	401	21	1558
Doig, William S. (See Smith and Doig.)						
Dolan, John N., Butte City, Mont. Ter. Car-coupling	256,202	Apr. 11	577	158	21	1054
Dolbear, A. E. (See Hieatzman, A. Howard, assignor.)						
Dolbeare, William L., West Newton, Mass. Floor	258,900	June 6	41	10	21	1701
Dolbeer, John. San Francisco, Cal. Logging-engine	256,553	Apr. 18	1011	285	21	1142
Dolan, John M., assignor to himself, W. H. Thomas, and J. J. Kerwin, Wiconisco, Pa. Safety-lamp for miners' use	257,670	May 9	650	184	21	1405
Dolleff, Wellington P., Providence, R. I. Charm for watch-chains	260,088	June 27	1534	412	21	1978
Dolleff, Wellington P., assignor to Vose & Southwick, Providence, R. I. Button	255,737	Mar. 28	1022	438	21	939
Dolph, Alexander M., Cincinnati, Ohio. Reversing mechanism for washing-machines	255,422	Mar. 28	1242	334	21	872
Dolph, John, Bay City, Mich. Barrel-scales	259,287	May 23	1418	401	21	1558
Dolson, John L., assignor of one-half to P. M. Thomas, Charlotte, Mich. Buggy-body	259,270	June 6	479	196	21	1777
Dom, Alexander, Mount Healthy, Ohio. Device for displaying maps, charts, and illustrations	256,697	Apr. 25	1330	376	21	1905
Dom, Alexander, Mount Healthy, Ohio. Map and chart exhibitor	257,671	May 9	660	185	21	1405
Domschke, Charles, Austin, Tex. Plow	259,022	Jan. 10	429	117	21	81
Donahue, Thomas, and G. N. Waterbury, assignors to Eagle Lock Company, Terryville, Conn. Trunk-lock	256,389	Apr. 11	704	191	21	1075
Donahue, Thomas, and W. W. Cone, assignors to Eagle Lock Company, Terryville, Conn. Hasp-lock	259,508	June 13	792	209	21	1840
Donald, William. (See Peters and Donald.)						
Donaldson Brothers. (See De Forest, David W., assignor.)						
Donaldson, William C., Atchison County, Kans. Car-coupling	259,509	June 13	793	209	21	1840
Donihue, James W. (See Duchemin, William, assignor.)						
Donnell, Edward P. (See Nolin, Ernest J., assignor.)						
Donnelly, Daniel, Sutter Creek, Cal. Water-wheel	255,259	Mar. 21	1029	276	21	830
Donnelly, James E., New York, N. Y. Match-igniter	255,605	Mar. 28	1467	394	21	911
Doolittle, George, Bridgeport, Conn. Sewing-machine attachment	254,935	Mar. 14	611	165	21	750
Doolittle, George, Bridgeport, Conn. Furniture-tuft and method of making the same	254,936	Mar. 14	613	165	21	751
Doolittle, Thomas B., Bridgeport, Conn., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass. Machine for making metal fence-barbs	255,493	Mar. 28	1245	334 / 335	21	872
Doolittle, Thomas C., New Hartford, Conn. Bale-band cutter	256,301	Apr. 11	705	192	21	1075
Dormitzer, Anna, New York, N. Y. Combined window-cleaning chair and fire-escape	256,654	Apr. 18	1129	316	21	1161
Dorsch, John. (See Lindner and Dorsch.)						
Dorser, James C. (See Byers and Dorser.)						
Doty, Alphonse H., Marshland, Wis. Rotary harrow	254,937	Mar. 14	614	166	21	751
Doubleday, Alfred, Cincinnati, Ohio. Combined ink-fountain and pen-holder	251,705	Jan. 3	23	7	21	7
Doubleday, Ellen M. (See Doubleday, William E., assignor.)						
Doubleday, William E., assignor to E. M. Doubleday, Bay Ridge, N. Y. Sticking fur to fibrous goods	253,160	Jan. 31	1925	504	21	331
Doubleday, William E., assignor to E. M. Doubleday, New York, N. Y. Machine for beating up the nap of fur-faced articles	253,161	Jan. 31	1927	504	21	331
Doubleday, William E., assignor to E. M. Doubleday, New York, N. Y. Making fur hats	253,169	Jan. 31	1928	504	21	332
Doubleday, William E., assignor to E. M. Doubleday, Bay Ridge, N. Y. Manufacture of fur-faced fabrics	254,938	Mar. 14	615	.....	21	751
Doubleday, William E., assignor to E. M. Doubleday, New York, N. Y. Manufacturing hats and other fur-faced fabrics	255,360	Mar. 21	1030	277	21	830
Doubleday, William E., assignor to E. M. Doubleday, New York, N. Y. Scalding fur-napped fabrics	255,361	Mar. 21	1032	277	21	830
Doubleday, William E., assignor to E. M. Doubleday, New York, N. Y. Making fur-faced fabrics	255,381	Mar. 21	1185	318	21	856
Doubleday, William E., assignor to E. M. Doubleday, New York, N. Y. Fur-faced fabric	259,980	June 20	1400	377	21	1950
Doudna, Lindley M., Chester Hill, Ohio. Well-curb and water-drawer	255,606	Mar. 28	1467	394	21	911
Dougherty, John B., assignor, by mesne assignments, to J. Connell, Rochester, N. Y. Hoop-making machine	256,468	Apr. 18	914	256	21	1125
Douglas, Silas H., Ann Arbor, Mich. Burner for liquid hydrocarbons	256,133	Apr. 11	483	131	21	1038
Douglass, Samuel W., assignor to American Diamond Rock Boring Company, New York, N. Y. Core lifter and guide for annular rock-drills	254,939	Mar. 14	616	166	21	715
Douville & Gleasman. (See Bowie and Brown, assignors.)						
Dover Stamping Company. (See Whitney, Edward H., assignor.)						
Dow, Gardner W., assignor of one-half to J. Montgomery, Marseilles, Ill. Shipping-box for burial-cases	259,981	June 20	1401	377	21	1951
Dow, George E. San Francisco, Cal. Direct-acting engine	258,684	Jan. 10	498	138	21	99
Dow, Henry K. (See Cooper, William E., assignor.)						
Dowlin, Marshall R., North Adams, Mass. Horse-collar	254,980	Feb. 28	1343	371	21	506
Dowlin, Marshall R., North Adams, Mass. Surcingle	257,672	May 9	661	185	21	1405

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Dowling, James, Wilkes-Barré, Pa. Pot for cooking purposes	253,988	Feb. 7	105	31	21	304
Dowling, James, Wilkes-Barré, Pa. Lifter for pots	253,989	Feb. 7	105	32	21	3 4
Dowling, Robert H., assignor to himself and C. H. Follett, Newark, N. J. Car-coupling	258,197	Jan. 10	695	177	21	114
Downes, James H., and L. Tark, assignors of one-third to E. McLoughlin, Brooklyn, N. Y. Picture-frame	259,751	June 20	1113	297	21	1902
Downie, Robert M., Allegheny, Pa. Portable drilling-machine for oil-wells, &c	251,841	Jan. 3	198	56	21	36
Downie, William, *et al.* (See Marchant, Robert M., assignor.)						
Downing, Huldah J. (See Collins, Paul E., assignor.)						
Downton, Robert L. (See Cranson, Giles S., assignor.) (Reissue.)	255,150	Mar. 21	894	240	21	807
Downton, Robert L., St. Louis, Mo. Manufacture of flour	257,315	May 2	74	23	21	1295
Doyle, John H., Hillsborough, Ohio. Dental cheek-holder	258,991	June 6	41	10	21	1701
Doyle, Thomas H., Norwich, N. Y. Safety-step for cars						
Drake, Charles H. (See Drake, James B. and C. H.)						
Drake, Charles S., San Francisco, Cal. Guide-rail for rope railway clutches	258,502	May 30	1744	493	21	1622
Drake, Charles S., San Francisco, Cal. Attachment for wire-rope railways	258,563	May 30	1745	494	21	1623
Drake, Charles S., San Francisco, Cal. Apparatus for covering slots in cable railways	258,564	May 30	1746	494	21	1623
Drake, Charles S., San Francisco, Cal.	253,018	Jan. 31	1927	458	21	309
Drake, Edgar H., Newfield, N. Y. Motive power	259,107	June 6	293	78	21	1745
Drake, James B. and C. H., Watkins, N. Y. Station-indicator	255,494	Mar. 28	1248	335	21	873
Drake, John H., Warren, Ohio. Device for checking the draft in fires						
Draper, George, *et al.* (See Atwood, John E., assignor.)						
Draper, George, Hopedale, Mass. Spindle-bolster	251,842	Jan. 3	199	56	21	36
Draper, George, Hopedale, Mass. Spindle-bearing	253,019	Jan. 31	1629	452	21	301
Draper, George, Hopedale, Mass.	251,843	Jan. 3	200	56	21	36
Draper, John, Whitby, Ontario, Canada. Walking-stick	254,467	Mar. 7	23	6	21	642
Draper, John M., Philadelphia, Pa. Saw-set						
Draper & Sons, George. (See Carroll, William T., assignor.)						
Draper & Sons, George. (See Fay, Rimmon C., assignor.)						
Draper & Sons, George. (See Ladin, Perley, assignor.)						
Draper & Sons, George. (See Stimpson, Edward S., assignor.)						
Draper & Sons, George. (See Swift, Horace E., assignor.)						
Draper, William F., *et al.* (See Carroll, William T., assignor.)						
Draper, William F., Hopedale, Mass. Packing for spindle-bearings	253,020	Jan. 31	1630	452	21	301
Draper, William F., Hopedale, Mass. Spindle and bolster for spinning-machines	253,021	Jan. 31	1631	453	21	301
Dreifus, Isaac, *et al.* (See Finley, James B., assignor.)						
Dresser, Solomon R., Bradford, Pa. Adjuster for oil-well pumps	255,151	Mar. 21	896	240	21	807
Dresser, Solomon R., Bradford, Pa. Oil-well packer	258,565	May 30	1746	495	21	1623
Drew, Henry L., Rockland, assignor to J. W. Hart, Weymouth, Mass. Machine for pricking and trimming soles	259,899	June 20	1393	393	21	1918
Drew, James W., Boston, Mass. Portable commode and slop-pail combined	253,519	Feb. 14	410	114	21	428
Drew, John, Old Mission, Mich. Flower-tray	258,369	May 23	1535	435	21	1579
Drewsen, Viggo B. (See Bacyer and Drewsen.)						
Dreyfus, Auguste, Catford, county of Kent, England. Drying and heating apparatus	256,655	Apr. 18	1128	316 / 317	21	1161
Driesbach, David M. (See Wagner, Daniel B., assignor.)						
Driggs, Mosher & Co. (See Boynton and Locke, assignors.)						
Driggs, Mosher & Co. (See Van Patten, Frederick, assignor.)						
Drnecker, John, Chicago, Ill. Limekiln	258,725	May 30	1950	551	21	1659
Drummond, George A., Montreal, Quebec, Canada. Refining sugar	257,673	May 9	662	.....	21	1405
Drummond, James T. (See Grant, McClelland, and Drummond.)						
Drummond, James T., Mount Pleasant, Iowa. Chain-propeller	254,468	Mar. 7	24	6, 7	21	643
Dryden, George, Boston, Mass. Device for stopping the revolutions of the drum in elevating machinery	258,085	Jan. 10	499	139	21	93
Dryden, George, Boston, Mass. Device for rendering a pulley tight or loose upon a shaft	258,086	Jan. 10	501	139	21	93
Dryfoos, Henry, S. and R. Strauss, Chicago, Ill. Rocking-chair	255,104	Mar. 21	837	223	21	797
Du Barry, Edward L. (See Stevens and Du Barry.)						
Du Bois, Delafield. (See Pettier, Napoleon B., assignor.)						
Du Bois, John. (See Lutz, W. Clay, assignor.)						
Du Bois, John, Du Bois, Pa. Lock and dam	251,771	Jan. 3	105	30	21	30
Du Bois, John, Du Bois, Pa. Coal-mining machine	259,108	June 6	295	79	21	1746
Du Bois, Josiah S., Haddonfield, N. J. Adjustable ventilating-door	253,580	Feb. 14	411	115	21	428
Du Bois, Pierre C., San Francisco, Cal. Pump-valve gear	259,859	June 20	1204	323	21	1918
Du Bral, Napoleon, Cincinnati, Ohio, assignor to B. T. Smith, Covington, Ky. Combined flour and meal sifter	254,434	Feb. 28	1308	413	21	627
Du Shane, James, South Bend, Ind. Vehicle-axle	259,114	June 6	302	80	21	1747
Du Shane, James, South Bend, Ind. Electric lamp	260,268	June 27	1784	483	21	2017
Dubler, John B., Philadelphia, Pa. Oil-still and attachment	251,770	Jan. 3	104	29	21	29
Dubreuil, George A., assignor of one-half to himself, J. and S. J. Hecht, Baltimore, Md. Device for opening eyelet-holes	257,301	May 2	168	50	21	1314
Duc, Henry A., Jr., Charleston, S. C., assignor of one-half to T. F. Rowland, Brooklyn, N. Y. Attrition-mill	258,361	Jan. 17	888	230 / 231	21	153
Duchemin, William, Boston, Mass. Tension device for sewing-machines	257,543	May 9	561	146	21	1279
Duchemin, William, assignor to J. W. Donihue, Boston, Mass. Safety-valve	259,109	June 6	296	79	21	1746
Ducker, William M., Brooklyn, N. Y. Box-fastener	255,952	Apr. 4	252	65	21	992
Ducker, William M., Brooklyn, N. Y. Machine for washing currants	259,110	June 6	297	79	21	1746
Duckett, William G. (See Selden and Duckett.)						
Duckworth, John C. Worcester, Mass. Bolt-heading machine	258,449	Jan. 17	932	257 / 258	21	170
Dudley, George J., St. Peters, Ind. Willow-peeler	257,438	May 2	353	99	21	1244
Dudley, George W., Waynesborough, assignor to himself and J. M. McCue, Afton, Va. Reamer	258,390	May 23	1537	436	21	1579
Dudley, George W., assignor to Elastic Wheel and Manufacturing Company, Waynesborough, Va. Rotary engine	259,111	June 6	299	79	21	1746
Dudley, George W., assignor to Elastic Wheel and Manufacturing Company, Waynesborough, Va. Rotary engine	259,112	June 6	300	80	21	1746
Dudley, Myrick, assignor to himself and R. R. Nickerson, Lynn, Mass. Machinery for burnishing the sole-edges of boots and shoes	255,152	Mar. 21	897	240	21	807
Dudley, Sumner A., Wilkinsonville, Mass. Loom-shuttle	255,953	Apr. 4	254	65	21	992
Dudley, Thomas K., assignor of one-half to J. Grant, Boston, Mass. Oil-gas stove	258,798	May 30	1951	561	21	1659
Dudrow, Byron R. (See Bower, Isaac G., assignor.)						
Duff, Samuel K. (See Yakel and Duff.)						
Duffey, William C., Calhoun, Ga. Guide for sewing harness	256,988	Apr. 25	1521	488	21	1220
Duffy, James F., Chicago, Ill. Manufacture of blacksmiths' swages	259,113	June 6	301	80	21	1747
Duffy, James F., South Chicago, assignor of one-half to A. D. Lamb and F. W. Newland, Chicago, Ill. Reheating-furnace	253,916	Feb. 21	695	251	21	516

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Duffy, M. J., *et al.* (See Levi, George W., assignor.)						
Duffy, Terrence, San Francisco, Cal. Cable railway	257,074	May 9	663	185	21	1405
Dugar, Edelbert, Somerville, Mass. Valve-gear for steam-engines	252,651	Jan. 24	1170	329	21	217
Duggan, John A., Quincy, Mass. Chemical fire-engine	257,479	May 9	415	116	21	1361
Duggan, Patrick J., Boston, Mass. Mechanical organette	253,655	Feb. 21	894	223	21	504
Duggan, Patrick J., assignor of one-half to G. T. McLaughlin, Boston, Mass. Pipe for underground electric wires	259,831	June 20	1205	323	21	1918
Dulaney, Henry R., Alexandria, La. Suction-elevator	251,844	Jan. 3	200	56	21	36
Dunbar, Henry D. (See Willard and Dunbar.)						
Dunbar, John C. (See James and Dunbar.)						
Dunbar, Robert, Buffalo, N. Y. Elevator	254,201	Feb. 28	1346	371	21	508
Dunbar, Robert, Buffalo, N. Y. Grain-conveyer	257,855	May 16	860	246	21	1455
Dunbar & Son, R. (See Gardner, Frederick A., assignor.)						
Dunbar, William O., Altoona, Pa. Speed indicator and recorder	257,480	May 9	416	116	21	1362
Duncan, David E., assignor to himself and H. F. Moore, New Richmond, Ohio. Car-coupling	257,675	May 9	664	186	21	1406
Duncan, Joseph S., assignor to A. P. Brayton and J. N. Wells, San Francisco, Cal. Ore-concentrator	254,123	Feb. 28	1154	322	21	507
Dunham, John W., Albany, N. Y. Machine for beveling cloth-boards	257,564	May 9	523	146	21	1379
Dunkel, Charles C., and A. Tschop, Harrisburg, assignors of one-third to C. N. Owen, Mechanicsburg, Pa. Swathing attachment for harvesters	251,845	Jan. 3	201	57	21	36
Dunks, Charles H. (See Pitt and Dunks.)						
Dunlap, Robert. (See O'Blenus, Anthony W., assignor.)						
Dunn, James C., *et al.*, administrators. (See Ross, Thomas and C. D.)						
Dunn, Patrick, and T. Harris, Côte Saint Paul, Quebec, Canada. Wire staple	257,565	May 9	594	147	21	1379
Dunn, Wesley H., Bellwood, Pa. Lamp-chimney protector	256,632	May 16	1094	304	21	1492
Dunn, William, Zanesville, and A. Beckert, Sandusky, Ohio. Machinery for loading vessels with coal and iron	260,007	June 27	1437	388	21	1963
Dunning, Gerard, Chicago, Ill. Die for making horseshoes	257,924	May 16	966	{260 270}	{21 21}	1468
Dunning, William B., Geneva, N. Y. Steam-boiler	255,954	Apr. 4	255	65, 66	21	902
Dunscomb, Daniel, New York, N. Y. Disinfectant laundry lining	259,832	June 20	1206	.....	21	1918
Dunstan, Thomas B., *et al.* (See Barnes, Amos, assignor.)						
Dupee, Henry D. (See Sansone, Antonio, assignor.)						
Dupee, John C., Decatur, Ill. Band-cutting attachment for thrashers	253,501	Feb. 14	489	130	21	440
Dupee, John C., Decatur, Ill. Calf-weaner	257,481	May 9	417	116	21	1362
Dupuis, Joseph A., Montreal, Quebec, Canada. Brick	257,155	May 2	13	4, 5	21	1283
Durrall, William F., assignor to himself and J. D. Kite, Blanchard, Iowa. Washing-machine	256,033	May 16	1084	304	21	1492
Durand, Edwin C., Greenwich, Ohio. Belt-shifter	253,607	Mar. 28	1468	395	21	911
Durand, Elias W., Irvington, N. J. Crate for fruit	257,482	May 9	418	{116 117}	{21 21}	1362
Durant, Frederick C., and D. Edward, New York, N. Y. Float for steam apparatus and other purposes	259,833	June 20	1207	323	21	1918
Durbon, Samuel S., assignor to himself and W. A. Piers, Junction City, Kans. Gate	255,498	Mar. 28	1337	361	21	888
Durfee, William F., assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Metal-cutting machine	260,173	June 27	1636	442	21	1904
Durfee, William F., assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Mechanism for reducing metal strips or rods	260,174	June 27	1637	{442 443}	{21 21}	1995
Durfee, William F., assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Apparatus for starting and stopping machinery	260,175	June 27	1639	{443 444}	{21 21}	1995
Durfee, William F., assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Machine for cutting, punching, and swaging	260,176	June 27	1641	{444 445}	{21 21}	1995
Durfee, William F., assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Machine for cutting and forming horseshoe-nail blanks	260,177	June 27	1643	{445 446 447}	{21 21}	1905
Durfee, William F., assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Device for clamping and holding plates in metal-shearing machines	260,178	June 27	1646	447	21	1996
Durfee, William H., Fall River, Mass. Side-hill plow	258,268	May 23	1419	402	21	1558
Durham, Caleb W., Chicago, Ill. Elbow-fitting for drainage-pipes	258,301	May 23	1537	436	21	1579
Durham, William G., Greensborough, Ga. Oil-can	260,096	June 27	1439	388	21	1964
Durkee, Alonzo, assignor to M. Harris, New York, N. Y. Pneumatic lever for mechanical musical instruments	251,796	Jan. 3	24	7	21	7
Durkee, Alonzo, assignor to M. Harris, New York, N. Y. Mechanical musical instrument	251,846	Jan. 3	202	57	21	37
Durkee, George B., Chicago, Ill. Planer-chuck	256,656	Apr. 18	1159	317	21	1161
Duryea, Wright, *et al.* (See Ennis, William, assignor.)						
Duryea, Wright, Glen Cove, N. Y. Machine for drying starch refuse and other substances	251,847	Jan. 3	205	57	21	37
Duryea, George, Rahway, N. J. Crushing and grinding machine	251,848	Jan. 3	207	58	21	37
Duryea, George, New York, N. Y. Hydrocarbon-furnace	253,270	Feb. 7	106	32	21	364
Dusenbery, William W., Brooklyn, N. Y. Manufacture of ice	258,566	May 30	1748	495	21	1694
Dutcher, Charles W., Milltown, St. Stephen, New Brunswick, Canada. Potato-digger	259,510	June 13	794	210	21	1840
Dutton, Charles. (See Hantreen, John H., assignor.)						
Dutton, Josiah, Norway, Me. Book-rest attachment for school and other desks	254,040	Mar. 14	617	166	21	758
Duval, Louis, Longueuil, Quebec, Canada. Derrick	254,941	Mar. 14	618	166	21	758
Dyer, George W., *et al.* (See Perdue, James, assignor.)						
Dyer, Richard N., *et al.* (See Seely, Henry W., assignor.)						
Dyer, Richard N., *et al.* (See Stierlinger, Luther, assignor.)						
Dyer, Richard N., and H. W. Seely, assignors of one-third to S. Insull, New York, N. Y. Electric toy	259,115	June 6	303	80	21	1747
Dykeman, John, and J. G. Corbin, Rondout, N. Y. Piston	255,909	Mar. 21	1033	277	21	831
Eads, James B., St. Louis, Mo. Ship-railway and dry-dock	258,727	May 30	1951	551	21	1650
Eagle, Albertis, Newtown, Pa. Hay rake and tedder	256,134	Apr. 11	484	131	21	1038
Eagle Cotton Gin Company. (See Keith, Edwin H., assignor.)						
Eagle Knitting Company. (See Witherell, Hermon O., assignor.)						
Eagle Lock Company. (See Donahue and Cone, assignors.)						
Eagle Lock Company. (See Donahue and Waterbury, assignors.)						
Eagle Lock Company. (See Mix, Frank W., assignor.)						
Eakins, John H. (See Andrews, Edward W., assignor.)						
Earle, Edward J. V., Berners Street, Oxford Street, county of Middlesex, England. Case for embroidery	256,034	May 16	1095	305	21	1492
Earle, Reginald H., St. Johns, Newfoundland. Apparatus for raising and lowering boats	252,198	Jan. 10	626	177	21	114
Earley, Edward, Newton, Iowa. Fire-alarm	252,362	Jan. 17	830	231	21	154
Earnest, Robert R., assignor of one-half to W. P. Murray, Mechanicsburg, Ohio. Drag-saw	256,469	Apr. 18	917	257	21	1125

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Earnest, William H., Parkersburg, W. Va., assignor, by mesne assignments, to C. Streit and H. Schmit, Cincinnati, Ohio. Cradle. (Reissue)	10,626	Feb. 14	785	223	21	491
Eason, George L. (See Miller and Eason.)						
East Hampton Bell Company. (See Goff, George W., assignor.)						
Eastabrooks, Rollin, Rock Falls, assignor to W. M. Dillon, Sterling, Ill. Windlass for wire-stretchers	256,634	May 30	1635	518	21	1639
Eastern Paper Bag Company. (See Appel, Daniel, assignor.)						
Eastern Paper Bag Company. (See Chandler, Clarence A., assignor.)						
Eastman, Frank S., Washington, D. C. Refrigerator-car	257,216	May 2	75	23, 24	21	1285
Eastman, George, Rochester, N. Y. Photographic paper	253,354	Feb. 7	201	58	21	360
Eastman, John J., Media, Pa., assignor to W. L. Keller, Baltimore, Md. Measuring bottle-stopper	256,635	May 16	1006	285	21	1489
Eastman, William E., Boston, Mass., assignor to American Freight Car Heater Company, Portland, Me. Apparatus for heating freight-cars	253,561	Feb. 14	412	115	21	439
Eastwood, John. (See Reid and Eastwood.)						
Eastwood, John, *et al.* (See McAndrew, William J. G., assignor.)						
Eaton, Arthur W. (See Bartlett, George, assignor.)						
Eaton, Eugene R., and C. Tufts, assignors of one-third to D. H. Royce, Columbus, Ohio. Steam-pump	253,666	Feb. 14	601	{169 170}	{21 21}	458
Eaton, George A. (See Faas, Charles A., assignor.)						
Eaton, Hiram A., Manchester, Me. Alarm-signal	253,667	Feb. 14	602	170	21	438
Eaton, Nathaniel, Mount Vernon, N. Y. Railway-switch	253,871	Feb. 7	105	32	21	364
Eaton, Oliver N., New York, N. Y. Endless package carrier or elevator	252,931	Jan. 31	1390	{423 494}	{21 21}	368
Eaton, Oliver N., New York, N. Y. Motive mechanism or gearing	256,798	May 30	1962	536	21	1639
Eaton, P. G. (See Clark, George B., assignor.)						
Eaton, Peregrine G., Springville, N. Y. Construction of houses for purposes of ventilation, &c.	255,668	Mar. 28	1468	395	21	912
Eaton, Thomas W., Chicago, Ill. Bark-holding device	254,292	Feb. 28	1347	371	21	509
Eberhard, George F., assignor to Eberhard Manufacturing Company, Cleveland, Ohio. Trace-carrier	255,382	Mar. 21	1167	319	21	857
Eberhard Manufacturing Company. (See Eberhard, George F., assignor.)						
Eberhard Manufacturing Company. (See Wilkins, J. J., assignor.) (Reissue.)						
Eberhard, William, and R. Turner, assignors to S. Hower, Akron, Ohio. Oatmeal-machine. (Reissue)	10,624	Apr. 11	891	249	21	1166
Eberly, Martin M. (See Childers and Eberly.)						
Ebi, Edward, Cedar Rapids, Iowa. Dental plugger	255,955	Apr. 4	226	66	21	893
Ecaubert, Frédéric, New York, N. Y. Watch-maker's lathe	250,697	Jan. 10	568	159	21	94
Ecaubert, Frédéric, New York, N. Y. Device for making watch-case centers	253,355	Feb. 7	202	58	21	360
Ecaubert, Frédéric, New York, N. Y. Metal-working lathe	257,676	May 9	665	186	21	1406
Eccles, William M., St. Louis, Mo., and J. C. O'Melveny, East St. Louis, Ill. Railway-frog	258,739	May 30	1954	552	21	1650
Echols, Samuel L., Memphis, Tenn. Plaiting-machine	256,302	Apr. 11	705	198	21	1076
Eck, James L., Kutztown, Pa. Sewing-machine	256,888	Apr. 25	1338	377	21	1906
Eckart, John, Munich, Bavaria, Germany. Compound for preserving meats and fish	251,772	Jan. 3	197	.....	21	21
Eddy, Arthur H., Hartford, Conn. Commutator for magneto-electric machines	257,366	May 9	594	147	21	1379
Eddy, Carroll C., and A. A. Levan, Pekin, N. Y. Framing-mill	254,469	Mar. 7	428	7, 8	21	643
Eddy, George W., Waterford, N. Y. Whip-socket	253,190	Feb. 7	19	6	21	330
Eddy, George W., New Britain, Conn., assignor to S. S. Tallman, East Orange, and G. D. Tallman, Long Branch, N. J. Toy fire-arm	260,269	June 27	1785	484	21	2017
Eddy, Robert H., Chicago, Ill. Carpet-sweeper	259,374	June 13	621	165	21	1690
Edelmeyer, John H., *et al.* (See Powers, Jesse, assignor.)						
Edge, James, Paterson, N. J. Mole-trap	260,368	June 27	1654	860	21	2020
Edge, William C., Newark, N. J. Bracelet and clasp	252,441	Jan. 17	825	220	21	170
Edgecomb, Edward F., Mechanic Falls, Me. Ruffler for sewing-machines	259,511	June 13	797	210	21	1841
Edison, Thomas A. (See Stern and Bylleshy, assignors.)						
Edison, Thomas A., Menlo Park, N. J. Telephone	258,448	Jan. 17	826	220	21	171
Edison, Thomas A., Menlo Park, N. J. Telephone	257,677	May 9	669	186	21	1407
Edlebluto, Lucius S., assignor of two-thirds to R. P. White and H. W. Smith, Cincinnati, Ohio. Trace-fastening for single-trees	254,288	Feb. 28	1346	372	21	509
Edmands, John, Kalamazoo, Mich. Stock-car	260,060	June 27	1429	369	21	1964
Edmondson, George D., Detroit, Mich. Spectacle-lens case	253,356	Feb. 7	204	58	21	365
Edmondson, George D., Detroit, Mich. Optometer	255,845	Apr. 4	169	39	21	899
Edmunds, John M., assignor to himself and G. M. Forbes, Salt Lake City, Utah Ter. Sad-iron	256,657	Apr. 18	1139	317	21	1161
Edson, Jacob, Boston, Mass. Truss	259,116	June 6	305	81	21	1747
Edson, Julius T., Cleveland, Ohio. Mechanism for forming type-cases from paper-pulp or other plastic material	260,060	June 27	1535	413	21	1978
Edward, David. (See Durant and Edward.)						
Edwards, Alonzo J., Dayton, Wis. Pump	256,689	Apr. 25	1403	396	21	1216
Edwards, Daniel W., Beloit, Wis. Alterative and tonic bitters	252,022	Jan. 24	1171	.....	21	217
Edwards, Edgar A., Cincinnati, Ohio. Electric light	257,678	May 9	669	187	21	1407
Edwards, Edgar A., Cincinnati, Ohio. Mercury air-exhauster	257,679	May 9	673	187	21	1407
Edwards, Edward C. (See Wiard, George L., assignor.)						
Edwards, Elias, Batavia, Mich. Velocipede	256,303	Apr. 11	706	198	21	1076
Edwards, Ernest. (See Zinn and Edwards.)						
Edwards, Evan A., San Buenaventura, Cal. Hydrocarbon-burner	251,949	Jan. 3	207	58	21	37
Edwards, Evan A., Los Angeles, Cal. Hydrocarbon-burner	256,304	Apr. 11	707	198	21	1076
Edwards, Frank W. (See Farrell, James W., assignor.)						
Edwards, George H., Chicago, Ill. Apparatus for separating the skins from the pulp of potatoes	258,730	May 30	1955	{538 553}	{21 21}	1650
Edwards, James F., Washington, D. C. Angle-brick and mold	258,747	Jan. 24	1373	356	21	935
Edwards, John P., New York, N. Y. Station-indicator	251,767	Jan. 3	25	7	21	7
Edwards, Joseph, and J. R. F. Kelly, Brooklyn, N. Y. Draw-bridge	254,627	Mar. 7	219	56, 57	21	675
Edwards Manufacturing Company. (See Davis, Ira S., assignor.)						
Ege, Alexander H. (See Dodson, Wilson F., assignor.)						
Ege, Joseph A., *et al.* (See Hershey, Benjamin, assignor.)						
Egerton, C. Calvert, Baltimore, Md. Curry-comb	253,888	Feb. 14	415	115	21	439
Egerton, C. Calvert, Baltimore, Md., assignor of one-fifth to G. F. Gunther, Louisville, Ky. Stamp-canceler	254,541	Mar. 7	112	29	21	657
Eggers, Anton, New York, N. Y. Mixing and straining cup	251,773	Jan. 3	147	39	21	21
Eggers, Ferdinand, Rock County, Wis. Whiffletree-hook	258,302	May 23	1538	436	21	1579
Eggleston, Hiram, assignor to C. F. Orvis, Manchester, Vt. Reel-seat for fishing-rods	256,989	June 6	42	11	21	1702
Ehman, Charles W., Chicago, Ill., assignor to C. J. Cavenaugh, Medford, Mass. Button	259,209	June 13	567	136	21	1792

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Ehnert, Jodocus. (See Felsing, Jacob, assignor.)						
Eickemeyer, Rudolph. (See Goodyear, James, assignor.)						
Eickemeyer, Rudolf, Yonkers, N. Y. Hat-stretching machine	256,303	Apr. 11	578	158, 159	21	1054
Eickemeyer, Rudolf, Yonkers, N. Y. Ribbed former for hat-stretching machines	256,304	Apr. 11	583	160	21	1054
Eickemeyer, Rudolf, Yonkers, N. Y. Hat-stretching machine	256,305	Apr. 11	709	193, 194	21	1076
Eilles, John. (See Farra, Clanahan, and Eilles.)						
Einaigl, Victor, assignor to Hoopes Artificial Stone, Cement, and Paint Company, Baltimore, Md. Manufacture of artificial stone	256,103	Apr. 4	429	.....	21	1023
Eirich, John M., Marysville, Ohio. Apparatus for watering stock	256,036	May 16	1097	305	21	1402
Eisenhart, Henry W. (See Farquhar, Jones, and Eisenhart.)						
Ekman, Carl D., 57½ Old Broad Street, London, England. Treating wood in order to obtain fiber suitable for paper-making, &c	253,357	Feb. 7	205	.....	21	381
Ekman, Carl D., London, England. Treating wood in order to obtain fiber suitable for paper-making. (Reissue)	10,131	June 6	408	.....	21	1780
Elastic Wheel and Manufacturing Company. (See Dudley, George W., assignor.)						
Elcoate, Thomas, Newcastle-upon-Tyne, county of Northumberland, England. Condenser	252,932	Jan. 31	1521	424	21	982
Eldredge, John V. D., Detroit, Mich. Sewing-machine take-up	255,425	Mar. 28	1248	336	21	673
Eldridge, F. Howard. (See Dodson, Wilson P., assignor.)						
Eldridge, John A., Chicago, Ill. Double bed	259,512	June 13	799	210	21	1841
Electrical Supply Company. (See Taylor, James, assignor.)						
Electro Dynamic Light Company. (See Sawyer and Man, assignors.) (Reissue.)						
Elkins, Arthur W., Sherbrooke, Quebec, Canada. Transit-compass	253,856	Feb. 21	825	234	21	504
Elkins, Frank M., *et al.* (See Gallagher, Bernard, assignor.)						
Ellcott, Charles R., Montreal, Quebec, Canada. Machine for forging horseshoe-nails	257,302	May 2	183	52	21	1314
Elliot, John W., Toronto, Ontario, Canada. Tally-machine	251,850	Jan. 3	209	58	21	38
Elliot, John W., assignor of one-half to T. H. Sheppard, Toronto, Ontario, Canada. Coin holder and counter	253,979	Feb. 7	107	32	21	365
Elliot, William H., New York, N. Y. Magazine fire-arm	255,153	Mar. 21	898	241	21	807
Elliot, William H., New York, N. Y. Magazine fire-arm	258,731	May 30	1955	553	21	1660
Elliott, Asa C., New Jerusalem, Ohio. Combined blackboard and map-case	256,635	May 30	1836	518	21	1639
Elliott, E. O. (See Hefner, Lewis S., assignor.)						
Elliott, George A., North Grosvenor Dale, Conn. Spring-wagon	259,443	Jan. 17	936	259	21	171
Elliott, Gilbert R., Moncton, New Brunswick, Canada, assignor of one-half to J. A. Harris, Boston, Mass. Key-board attachment for musical instruments	255,609	Mar. 28	1470	395	21	912
Elliott, James, Montreal, Quebec, Canada, assignor to himself, H. A. Hogel, Yonkers, N. Y., and R. A. Kellond, Montreal, Quebec, Canada. Boiler-furnace. (Reissue)	10,044	Feb. 28	1521	416	21	630
Ellis, De Witt C. (See Page, Clark D., assignor.)						
Ellis, Ferrand F., and T. R. Rowlands, Oneida, N. Y.; said Rowlands assignor to said Ellis. Adjustable mouth-piece for cornets	259,513	June 13	800	211	21	1841
Ellis, George A., Gardner, Mass. Wicker or rattan chair	257,439	May 2	354	99	21	1344
Ellis, Hiram R., assignor of one-half to B. R. Pierce, Grand Rapids, Mich. Combined fluting and sad iron	253,163	Jan. 31	1829	505	21	332
Ellis, Ida K. B. (See Ellis, John, assignor.)						
Ellis, John, assignor to I. K. B. Ellis, Pottstown, Pa. Horse-power	259,634	June 20	1267	394	21	1918
Ellis, Thomas B., Dayton, Wis. Fifth-wheel for vehicles	259,117	June 6	396	81	21	1747
Ellison, James E., Sciotoville, Ohio. Ironing-board	259,118	June 6	396	81	21	1748
Ellithorpe, Albert C., Chicago, Ill. Safety device for hoisting apparatus	253,956	Apr. 4	257	66	21	992
Ellsworth, Erastus W., East Windsor Hill, Conn. Rotary steam-engine	258,739	May 30	1956	554	21	1660
Ellsworth, John C. (See Adams, George L., assignor.)						
Ellwood, Abram, Sycamore, Ill. Barbed fence-wire strand	253,029	Jan. 31	1632	453	21	301
Ellwood, Isaac L., *et al.* (See Brock, William E., assignor.)						
Ellwood, Isaac L., *et al.* (See Cady, Frank P., assignor.)						
Ellwood, Isaac L., *et al.* (See Converse and Cady, assignors.)						
Ellwood, Isaac L., *et al.* (See Decker, Alexander C., assignor.)						
Ellwood, Isaac L., *et al.* (See Evans, Lemuel E., assignor.)						
Ellwood, Isaac L., *et al.* (See Putnam, Bradbury, and Williams, assignors.)						
Ellwood, Isaac L., *et al.* (See Stevens, Sidney M., assignor.)						
Ellwood, Isaac L., *et al.* (See Watkins and Scott, assignors.) (Reissue.)						
Elmasser, Isaac, Houston, Tex. Fertiliser	253,991	Feb. 21	901	.....	21	531
Eltzner, Robert W., New York, N. Y. Parquet-floor	256,306	Apr. 11	714	194	21	1077
Elward, John H., Stillwater, Minn. Traction-engine	253,023	Jan. 31	1634	453, 454	21	301
Elward, John H., Stillwater, Minn. Car-axle box	253,666	Feb. 14	603	171	21	459
Elwell, James T., Minneapolis, Minn. Spring-bed	257,303	May 2	185	53	21	1314
Elwood, Isaac L., *et al.* (See Brotherton, Jacob, assignor.)						
Ely, William I., Freehold, N. J. Cornstalk-harvester	253,358	Feb. 7	207	59	21	381
Emerson, Howard B., Charlestown, Mass. Razor-strop	258,199	Jan. 10	627	177	21	114
Emerson, James, Williamsett, Mass. Piano-stool	257,304	May 2	186	53	21	1314
Emerson, Ralph, *et al.* (See Jones, J. Herva, assignor.)						
Emery, Arthur P., assignor of one-half to C. P. Haughian, Brooklyn, N. Y. Piston for water-meters, &c	256,554	Apr. 18	1012	288	21	1142
Emery, Charles E., Brooklyn, N. Y. Apparatus for supplying cities with steam, &c	253,917	Feb. 21	896	252	21	516
Emery, Charles L. L., Biddeford, Me. Umbrella-dripper	257,305	May 2	187	53	21	1314
Emery, Samuel A., East Liverpool, Ohio. Combined commode and slop-jar	254,948	Mar. 14	619	167	21	752
Emery, Stephen A., Newton, Mass. Legato monitor for piano-forte players	253,837	Feb. 21	826	234	21	505
Emmenegger, Frank, Jr., St. Louis, Mo. Combination-tool	251,851	Jan. 3	210	58	21	38
Emmerich, Francis J., New York, N. Y. Machine for cleaning paper, &c	253,992	Feb. 21	901	276	21	531
Emmert, Esra, Dixon, Ill. Animal-trap	254,943	Mar. 14	620	167	21	752
Enbom, Andro, and J. A. Anderson, Augusta, Kans. Pump	259,514	June 13	801	211	21	1841
Endemann, Hermann. (See Pickhardt and Endemann.)						
Endicott, Francis, Clifton, assignor to C. F. Imbrie, New York, N. Y. Fly-book	256,393	May 23	1539	436	21	1579
Engel, Abraham H., New York, N. Y. Spring-hinged bracelet	259,444	Jan. 17	937	259	21	171
Engel, Charles R., assignor to Society of Carbonate of Potash, Montpellier, (Hérault,) France. Manufacture of carbonate of potassium	253,653	Jan. 24	1172	.....	21	217
Engel, Johannes. (See Brunswick and Engel.)						
Engi, Andreas, New Glarus, Wis. Cheese-turner	254,294	Feb. 28	1350	372	21	599
English, Amaldo M., Providence, R. I., assignor of one-fourth to C. E. Chandler, Meriden, Conn. Friction-clutch	255,857	Apr. 4	259	67	21	993
English & Merwick. (See Parker, William K., assignor.)						
English, Thomas, Hawley, Dartford, county of Kent, England. Apparatus for subaqueous boring	256,638	Apr. 18	1131	318	21	1162

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Ennis, Phebe L., administratrix. (See Ennis, William.)						
Ennis, William, deceased, P. L. Ennis, administratrix, and assignee of two-thirds to W. Duryee, Glen Cove, and W. R. Taylor, Brooklyn, N. Y. Boiler-furnace	252,445	Jan. 17	938	260	21	171
Enoch, Benjamin F. (See Wheeler, Marshal, assignee.)						
Ensinger, Louis, Little Elm, Tex. Baling-press	255,777	Apr. 4	30	9	21	956
Enticott, William, Allegheny, Pa. Shovel for lifting and sifting ashes	252,068	Jan. 10	503	139	21	94
Entrikin, Davis W., Kennett Square, Pa. Harvesting-machine						
Entwistle, Thomas C., Lowell, Mass. Expansion comb or reed for warping or beaming machines, &c	252,069	Jan. 10	504	140	21	94
Entwistle, Thomas C., assignor to Phenix Machine Company, Lowell, Mass. Warper	256,305	Apr. 11	585	160	21	1055
Entwistle, Thomas C., assignor to Phenix Machine Company, Lowell, Mass. Drop-wire for warping and beaming machines	257,131	Apr. 25	1600	473	21	1268
Entwistle, Thomas C., assignor to Phenix Machine Company, Lowell, Mass. Bobbin-holder for spooling-machines	258,567	May 30	1750	495	21	1694
Epperson, David A., Haubstadt, Ind. Clothes-rack	254,470	Mar. 7	27	8	21	643
Eppler, Andrew, Jr. (See Whittemore and Eppler.)						
Eppler, Andrew, Jr., assignor to D. Whittemore, Quincy, Mass. Machine for feeding and setting lacing-hooks	255,076	Mar. 14	799	214	21	783
Eppler, Andrew, Jr., assignor to D. Whittemore, Quincy, Mass. Machine for setting buttons	256,650	Apr. 18	1132	318	21	1163
Erdley, Jacob B., and C. S. Smith, Akron, Ohio. Fabric for aprons of harvesters	259,119	June 6	397	81	21	1748
Ericsson, Oscar. (See Houts and Ericsson.)						
Erie and Western Transportation Company. (See Firth, Frank J., assignor.)						
Ernst, James C. (See De Courcy, Bolton W., assignor.)	260,010	June 27	1441	369	21	1964
Eraster, John, and W. Gardt, Lakeville, Minn. Sled-knee	253,034	Jan. 31	1636	454	21	302
Ertell, William H., New York, N. Y. Portable trunk-rack	252,860	Jan. 31	1447	404	21	969
Erwin, Arthur J., Cleveland, Ohio. Sewer-trap	252,363	Jan. 17	831	231	21	154
Esch, John, Milwaukee, Wis. Track	251,852	Jan. 3	211	59	21	38
Estaver, William A., Cambridge, Mass. Fringing attachment for sewing-machines						
Estell, Samuel F., *et al.* (See Morrison, Enoch R., assignor.)						
Estell, William S., *et al.* (See Morrison, Enoch R., assignor.)						
Estep, Thomas B., Cincinnati, Ohio, assignor of one-half to H. M. Stephenson, Covington, Ky. Street-car-switching system	259,675	June 20	1601	398	21	1884
Estes, William A., Vassalborough, assignor of three-eighths to A. Webber and H. B. Haskell, China, Me. Plow	252,991	Jan. 10	745	207	21	133
Estrade, Auguste, near Perpignan, France. Railway-vehicle	253,502	Feb. 14	490	139, 140	21	441
Estrade, Auguste, Perpignan, France. Railway-car	253,993	Feb. 21	904	276, 277, 278	21	531
Estrade, Auguste, Perpignan, France. Apparatus for superheating steam	254,698	Mar. 7	221	57, 58	21	676
Ethridge, Martin V. B., Lynn, assignor of one-half to C. W. Hodgdon, Boston, Mass. Hand-pinchers	259,674	June 20	1601	397	21	1884
Eubank, Thomas, Sedalia, Mo. Car-door	257,680	May 9	674	187	21	1407
Eudaly, William A. (See Culbertson and Eudaly.)						
Eureka Nailing Machine Company. (See Badlong, William G., assignor.)						
Euston, Alexander, St. Louis, Mo. Circular-sawing machine	254,902	Feb. 28	1340	345	21	581
Evans, Annie S., Kingston, Ontario, Canada. Invalid-bedstead	257,463	May 9	491	117	21	1262
Evans, Austin C., Springfield, Ohio. Corn-planter	257,156	May 2	14	5	21	1262
Evans, Austin C., Springfield, Ohio. Corn-planter	258,037	May 16	1096	305	21	1493
Evans, Austin C., Springfield, Ohio. Corn-planter	259,299	June 13	598	139	21	1792
Evans, Benjamin S., Acroa, Ala. Cotton-seed planter and fertilizer-distributer						
Evans, George R., assignor of two-thirds to A. Lewthwaite and S. P. Taylor, San Francisco, Cal. Amalgamating and concentrating rifle	256,535	Apr. 18	1014	288	21	1143
Evans, George S., New York, N. Y. Plastic composition and vulcanite	256,470	Apr. 18	918	.....	21	1126
Evans, George S., New York, N. Y. Plastic compound and vulcanite	256,471	Apr. 18	919	.....	21	1126
Evans, Henry F., New York, N. Y. Oleaginous compound used in manufacturing cordage	260,179	June 27	1647	.....	21	1996
Evans, John B. (See Weber, John J., assignor.)						
Evans, K. S. (See Lobgea, John, assignor.)						
Evans, Lemuel E., East Orange, N. J., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass., and I. L. Ellwood, De Kalb, Ill. Barbed fence-wire	255,798	Mar. 28	1623	438	21	939
Evans, Lindley M., Cass township, (Reeder's Mills P. O.,) Harrison county, Iowa. Swinging gate	253,503	Feb. 14	491	140	21	441
Evans, Quimby N., assignor of one-half to H. A. Juelis, Brooklyn, N. Y. Automatic regulator for tanks and reservoirs	254,944	Mar. 14	621	167	21	752
Evans, Richard, Jr. (See Evans, Robert K., assignor.)						
Evans, Robert K., assignor to himself and R. Evans, Jr., Dover, Minn. Lever for starting and moving cars	256,689	Apr. 25	1334	377	21	1268
Evans, Robley D., and R. M. Green, Washington, D. C. Machine for bending metal links	254,104	Apr. 4	429	118	21	1023
Evans, Samuel W., Jr., Philadelphia, Pa. Umbrella or parasol runner	259,676	June 20	1602	398	21	1884
Evans, William, Philadelphia, Pa. Rolling-mill for tapering spring-points	255,956	Apr. 4	260	67	21	993
Evans, William, Chester, Pa. Die for making hatchets	258,568	May 30	1751	495, 496	21	1694
Evans, William, Chester, Pa. Machine for forging hammers	258,569	May 30	1752	496	21	1694
Evans, William, Chester, Pa. Die for making adzes	258,570	May 30	1754	496, 497	21	1695
Evarts, James M., assignor to National Pipe Bending Company, New Haven, Conn. Machine for bending pipe	256,699	Apr. 25	1404	396	21	1218
Evarts, John A., assignor to Bradley & Hubbard Manufacturing Company, Meriden, Conn. Lamp-chandelier	256,660	Apr. 18	1134	318	21	1163
Evarts, John A., assignor to Bradley & Hubbard Manufacturing Company, Meriden, Conn. Extension lamp-fixture	256,698	May 16	1099	306	21	1463
Eveleigh, Elford E., Hamilton, Ontario, Canada. Safety attachment to railway-frogs	256,135	Apr. 11	605	139	21	1026
Everhard, Charles J., Canton, Ohio. Bier	256,473	Apr. 18	920	257	21	1126
Everit, William L., New Haven, Conn. Car-coupling	256,699	May 16	1100	306	21	1463
Everson, Charles R., assignor of one-half to L. J. Woolsey, Macedon, N. Y. Tinman's bongs	256,556	Apr. 18	1016	286	21	1143
Ewan, John P., Donovan, Ill. Hog-ringing device	255,165	Mar. 21	838	234	21	797
Ewart, William D., Chicago, Ill. Chain-wheel	253,990	Feb. 21	905	276	21	532
Ewart, William D., Chicago, Ill. Drive-chain	255,859	Apr. 4	261	67	21	993
Ewart, William D., Chicago, Ill. Drive-chain	255,960	Apr. 4	262	68	21	993
Ewart, William D., Chicago, Ill. Drive-chain	258,570	Jan. 31	1447	405	21	909
Ewers, Orlando, De Soto, Wis. Latch and lock	256,040	May 16	1101	306	21	1493
Ewing, Charles, Washington, D. C. Telephone-transmitter	260,180	June 27	1648	447, 448	21	1996
Ewing, Charles, Washington, D. C. Telephone signaling and receiving apparatus						

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Ewing, John H., and E. L. Bill, Wheeling, W. Va. Shade for lamps and lanterns	254,909	Mar. 14	443	119	21	730
Ewing, Orville, Decatur, Ill. Tendon-cutting implement	238,306	Jan. 17	769	214	21	144
Ewing, Orville, Decatur, Ill. Hog-tendon cutter	233,339	Feb. 7	906	59	21	381
Ewing, William, *et al.* (See Harker, Lewis A., assignor.)						
Ewing, William, Frankford, Philadelphia, Pa. Hat-clasp	251,853	Jan. 3	212	59	21	38
Ewins, Philo S., West Berkshire, Vt., and F. A. Wiswell, Beebe Plain, Quebec, Canada. Car-heater	238,304	May 23	1539	437	21	1579
Eyler, George W. (See Lyan and Eyler.)						
Ezard, Charles, Manchester, county of Lancaster, England. Handle for saucepans	256,733	May 30	1960	554	21	1661
Ezell, Francis L., Nashville, Tenn. Fifth-wheel	254,295	Feb. 28	1351	373	21	509
Faas, Charles A., Brooklyn, N. Y. Cigar-cutter	237,925	May 16	967	276	21	1409
Faas, Charles A., Brooklyn, assignor to himself and G. A. Eaton, New York, N. Y. Bracelet	253,610	Mar. 28	1473	395	21	912
Faber, Eberhard. (See Fiske, Bradley A., assignor.)						
Faber, Eberhard, Port Richmond, N. Y. Pen-holder	255,961	Apr. 4	263	68	21	903
Fabrik Nicotin Freier Tabacke Patent, Dr. R. Kissling & Co. (See Kissling, Richard, assignor.)						
Fadler, Phillip A., St. Louis, Mo. Fruit-gatherer	256,305	May 23	1541	438	21	1580
Fagan, Michel G., Troy, N. Y. Device for burning air and hydrocarbon vapors	252,307	Jan. 17	770	214	21	144
Fahlberg, Constantine, and C. Semper, assignors to J., G. L., Jr., and T. S. Harrison, Philadelphia, Pa. Removing iron from ferruginous saline solutions	257,567	May 9	525	.....	21	1379
Fahlberg, Constantine, and C. Semper, assignors to J., G. L., Jr., and T. S. Harrison, Philadelphia, Pa. Recovery of plumbic dioxide from ferruginous solutions	257,568	May 9	527	.....	21	1379
Fahrney, Josiah, Waynesborough, Pa. Straw carrier and shaker for thrashing-machines	254,810	Mar. 14	444	119 / 120	21	731
Fair, John M. (See Meyers, Nicholas, assignor.)						
Fairbanks, Crawford M., Pawtucket, R. I. File	253,658	Feb. 21	827	234	21	505
Fairbrother, Henry L., *et al.* (See Westland, Charles S., assignor.)						
Fairlamb, Charles C. (See Patterson, George F., assignor.)						
Fairlamb, Charles C., Chicago, Ill. Milk-pan cover	255,263	Mar. 21	1034	277	21	831
Fairman, Frederick, *et al.* (See Conway, George O. S., assignor.)						
Fairrington, Charles W. (See Lerow, Jacob H., assignor.)						
Falea, Amos, Denver, Colo. Variable bench-plane	254,542	Mar. 7	114	29	21	659
Falke, Henry, Buffalo, N. Y. Baker's oven	255,234	Mar. 21	1036	278	21	831
Fanning, Josephine P., *et al.* (See Fanning, John, assignor.)	252,871	Jan. 31	1449	405	21	270
Farbwerke, vormals Meister, Lucius & Brüning. (See Rudolph, Christian H., assignor.)						
Faries, Robert, assignor to Chambers, Bering & Quinlan, Decatur, Ill. Machine for forming interlocking eyes	259,677	June 20	1004	268 / 269	21	1884
Farley, Hugh, Philadelphia, Pa. Curtain-roller support	252,023	Jan. 10	499	117	21	81
Farley, Hugh, Philadelphia, Pa. Curtain-fixture	256,557	Apr. 18	1017	287	21	1143
Farley, Michael, assignor to L. D. Brown and H. Burbank, Portland, Oreg. Station-indicator	257,366	May 2	187	53	21	1315
Farmer, George P. (See Jenkins, Joel, assignor.)						
Farmer, George P., *et al.* (See Fest, Charles P., assignor.)						
Farmer, Moses G., Newport, R. I. Electric lamp	252,364	Jan. 17	892	228	21	154
Farmer, Moses G., Newport, R. I. Electric lighting system	252,536	Jan. 24	1389	361	21	255
Farmer, Moses G., Newport, R. I., assignor to United States Electric Lighting Company, New York, N. Y. Electric lighting apparatus	252,748	Jan. 24	1375	356 / 359	21	235
Farmer, Moses G., Newport, R. I., assignor to United States Electric Lighting Company, New York, N. Y. Electric lighting apparatus	253,817	Feb. 14	771	200	21	489
Farmer, Moses G., Newport, R. I., assignor to United States Electric Lighting Company, New York, N. Y. Electric incandescent lamp	256,003	June 6	43	11	21	1702
Farmer, William, *et al.* (See Attrill and Farmer.) (Reissue.)						
Farmers Friend Manufacturing Company. (See Mead, Edwin D., assignor.) (Reissue.)						
Farmers Friend Manufacturing Company. (See Runstetler, Andrew, assignor.)						
Farnham, Greenlief, and J. T. Farwell, Lynn, Mass. Machine for making shoe-heel rands	256,830	Apr. 25	1335	377 / 378	21	1206
Farnsworth, Frank H., assignor to Belle Patent Button Fastener Company, Detroit, Mich. Instrument for setting buttons	256,307	Apr. 11	715	194	21	1077
Farnsworth, George, *et al.* (See Moore, Henry E., assignor.)						
Farnsworth, James L., Dalton, Ga. Cotton-scraper	254,639	Mar. 7	229	58	21	676
Farnsworth, Marshall H., Brooklyn, assignor to Ohio Wooden Ware Manufacturing Company, Cleveland, Ohio. Metallic wash-board plate	256,386	May 23	1542	438	21	1580
Farnsworth, Marshall H., Brooklyn Village, assignor to Ohio Wooden Ware Manufacturing Company, Cleveland, Ohio. Wash-board protector	256,904	June 6	44	11	21	1702
Farquhar, Arthur B., J. A. Jones, and H. W. Eisenhart, York, Pa., assignors to said Farquhar and Jones. Fertiliser-distributor and planter	256,430	Apr. 11	856	238 / 239	21	1102
Farquhar, David. (See Aitken and Farquhar.)						
Farr, George. (See Harris and Farr.)						
Farra, Walter H., W. J. Clanahan, and J. Elles, Mount Jackson, Va. Car-coupling	253,154	Mar. 21	901	241	21	609
Farrar, Edgar H., New Orleans, La. Device for securing grain, guano, coal, &c., from shifting in vessels	254,630	Mar. 7	223	58	21	676
Farrar, John B., *et al.* (See Daggett, John C., assignor.)						
Farrell, James W., Philadelphia, assignor of one-half to F. W. Edwards, Thurlow, Pa. Soldering-pot	259,635	June 13	952	254	21	1868
Farrell, John, Pittsburg, Pa. Kettle for making drop-shot	259,139	June 6	308	82	21	1748
Farrell, William R. (See Thompson and Farrell.)	259,635	June 20	1200	324	21	1919
Farrington, George K. and H. C., Kirksville, Mo., assignors of one-third to B. S. Potter, Shippensburg, Pa. Mechanical telephone	252,884	Jan. 10	490	118	21	81
Farrington, Homer C. (See Farrington, George K. and H. C.)						
Farrington, Thomas B., Minneapolis, Minn. Under-garment	252,201	Jan. 10	630	178	21	115
Farrow, Edward S., U. S. Army. Tent	255,106	Mar. 21	848	224	21	797
Farwell, Fay G., Cresco, Iowa. Ruffling and shirring attachment for sewing-machines	254,543	Mar. 7	116	29	21	658
Farwell, James T. (See Farnham and Farwell.)						
Farwell, Willard B., New York, N. Y. Dry-ore concentrator	257,661	May 9	675	188	21	1408
Fasnacht, Jerome, *et al.* (See Green, George F., assignor.)						
Fate, Christian, Lancaster, Pa. Sewing-machine shuttle	257,926	May 16	967	270	21	1409
Faught, Luther E., Philadelphia, Pa. Boring-bar	253,583	Feb. 14	815	116	21	489
Faught, Luther E., Philadelphia, Pa. Boring-bar	255,846	Apr. 4	110	30	21	909
Faught, Luther E., Philadelphia, Pa. Clamp for stationary spindles	257,157	May 2	15	5	21	1284
Faulder, Henry, Stockport, county of Lancaster, England. Coffee-roasting apparatus	252,283	Jan. 31	1523	424 / 425	21	283
Faulkner, Leroy A., Scandia, Kans. Clothes-pounder	254,296	Feb. 28	1351	372	21	509

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Faulkner, William P., McMinnville, Tenn. Cotton opener or lapper	256,397	May 23	1543	438	21	1580
Faure, Camille A., Paris, France, assignor to Société Anonyme la Force et la Lumière, Brussels, Belgium. Polarization or secondary electric battery	252,002	Jan. 3	209	105	21	67
Favour, Charles E. (See Norwood, John E., assignor.)						
Faxon, George F., Watertown, assignor to Simons, Hatch & Whitten, Boston, Mass. Shirt	258,041	May 16	1163	307	21	1494
Fay & Co., J. A. (See Deane and Bugbee, assignors.)						
Fay, Ebenezer C., Milford, assignor to G. Draper & Sons, Hopedale, Mass. Spindle for spinning-frames	253,625	Jan. 31	1637	454	21	302
Fay, Ebenezer C., Milford, assignor to Hopedale Machine Company, Hopedale, Mass. Device for retaining spinning-spindles in and assisting in removing them from their sockets	253,626	Jan. 31	1637	454 / 455	21	302
Fay, Sylvester C. (See Tucker and Antholse, assignors.)						
Fearon, Thomas, Yonkers, N. Y. Sliding seat for row-boats	255,265	Mar. 21	1037	278	21	831
Feder, Augusta, *et al.* (See Feder, Simon, assignor.)						
Feder, Simon, assignor to A. Feder, L. S. and L. A. Warner, E. Jellinek, and L. A. Warner, Jr., Buffalo, N. Y. Overalls, pantaloons, &c	254,544	Mar. 7	117	30	21	656
Feeley, James R., Providence, R. I. Manufacturing gem-settings	253,394	Feb. 14	417	116	21	429
Feichter & Sons, John. (See Weber, Jean, assignor.)						
Feichter & Sons, John. (See Weber, John, assignor.)						
Feister, Henry P., Philadelphia, Pa. Paper-cutting machine	257,662	May 9	677	188	21	1408
Feister, Henry P., assignor of one-half to I. Fine; said Feister and Fine assignors of one-third to I. S. Sharp, Philadelphia, Pa. Printing, binding, and trimming machine	256,662	Apr. 18	1136	319	21	1162
Feldmann, John H., St. Louis, Mo. Shovel-plow	259,515	June 13	902	251	21	1842
Feldmann, John H., St. Louis, Mo. Hillside-plow	259,836	June 20	1210	334	21	1919
Feldmier, John, Oskaloosa, Kans. Corn-planter	255,962	Apr. 4	264	68	21	903
Felker, George J. (See Keiser, Florens, assignor.)						
Fell, Ambrose G., New York, N. Y., assignor to W. H. Smith, Urbana, Ill. Bleaching cane-juice, syrup, and other materials with sulphuric acid, &c	254,471	Mar. 7	28	.....	21	643
Fellinger, Frederick, Dunkirk, N. Y. Boiler-former	260,181	June 27	1651	448	21	1956
Fellows, A. Clark. (See Turner, Isaac P., assignor.)						
Fellows, Charles F., Chelmsford, Mass. Lifter	258,625	Jan. 16	431	118	21	81
Fellows, Edgar D., Watertown, N. Y., assignor to Davis Sewing Machine Company. Ruffling or plaiting attachment for sewing-machines	258,446	Jan. 17	939	260	21	171
Fellows, Edgar D., Watertown, N. Y., assignor to Davis Sewing Machine Company. Ruffling or plaiting attachment for sewing-machines	258,447	Jan. 17	940	260	21	171
Fellows, John H. (See Stephenson, John, assignor.)						
Felsberg, Amelia C., Newark, N. J. Spoon	256,949	Apr. 25	1504	429	21	1230
Felsing, Jacob, West Granville, assignor of one-half to J. Ehnert, Granville, Wis. Grain-separator or sizer	253,208	Mar. 21	1039	278	21	832
Felthousen, Edward G., Buffalo, N. Y. Check-valve indicator	258,388	May 23	1544	439	21	1580
Felton, Alexander C., Warwick, Mass. Furnace	253,191	Feb. 7	29	6	21	350
Felton, Alexander C., Warwick, Mass. Furnace	253,192	Feb. 7	31	7	21	350
Felton, Alexander C., Warwick, Mass. Furnace	253,193	Feb. 7	33	7	21	351
Felton, Alexander C., Warwick, Mass. Furnace	257,494	May 9	623	117	21	1363
Fenn, George, Melrose, Mass. Ventilator	256,698	May 30	1657	518	21	1640
Fenn, Joseph E., Elizabeth, N. J. Duplex telegraph	252,894	Jan. 31	1502	425	21	263
Fennell, Timothy, Syracuse, N. Y. Railway-switch	253,399	Feb. 7	289	59	21	381
Fenner, Byron, Westfield, N. Y. Combined percolator and still						
Fenner, Henry W. (See Trowby and Fenner.)						
Fennerty, John M., Memphis, Tenn. Ventilating grain in bulk	260,011	June 27	1441	369	21	1904
Fennerty, John M., Memphis, Tenn. Ventilator	260,013	June 27	1442	369	21	1905
Fenske, Ferdenand, Milwaukee, Wis. Plow	255,155	Mar. 21	908	242	21	688
Fenton, Charles, New York, N. Y. Pipe-cutter	252,749	Jan. 24	1378	360	21	235
Fenton Green, Streetsborough, Ohio. Neck-yoke	257,156	May 2	17	5	21	1284
Ferguson, Harvey, Lestaville, Mich. Saw-jointing device	258,689	Jan. 10	506	140	21	94
Ferguson, James, Lake township, Mercer county, Pa. Gate	255,987	Mar. 21	1040	279	21	832
Ferguson, James F., Burlington, Vt. Churn	258,691	Jan. 10	505	140	21	94
Ferguson, Thomas, Parkersburg, Iowa. Vent for oil-cans	256,224	May 23	1344	381	21	1345
Ferguson, Thomas J., Pikesville, Md. Hemp-washer	258,385	Jan. 17	834	238	21	154
Ferguson, Thomas J., Pikesville, Md. Hemp-beater	253,194	Feb. 7	25	6	21	351
Ferguson, Thomas J., Pikesville, Md. Machine for cleaning hemp	253,195	Feb. 7	26	6	21	351
Ferguson, Thomas J., Pikesville, Md. Machine for cleaning hemp	258,673	Jan. 31	1450	405	21	270
Ferrall, Thomas R., Boston, Mass. Anti-frictional bearing	255,486	Mar. 28	1040	330	21	813
Ferrall, Thomas R., Boston, Mass. Anti-frictional bearing	256,042	May 16	1104	307	21	1404
Ferrall, Thomas R., Boston, Mass. Anti-frictional bearing						
Ferry, Charles A., New Haven, Conn. Machine for excavating earth in trenches	253,995	Feb. 21	906	273 / 278	21	532
Ferry, William M., Park City, Utah Ter. Device for operating steam-engine governors	260,009	June 27	1338	413	21	1870
Fest, Charles P., Philadelphia, Pa. Balloon	255,903	Apr. 4	206	60	21	904
Fest, Charles P., Philadelphia, Pa., assignor to G. P. Farmer, Montclair, N. J., and W. Pratt, Philadelphia, Pa. Making inlaid jewelry, &c	254,845	Mar. 14	603	167	21	733
Fetters, David, Baltimore, Md. Car-coupling	254,472	Mar. 7	30	8	21	643
Feurhake, Henry, and C. N. Brady, Wellsburg, W. Va. Glass strap-can and mold for making the same	258,663	Apr. 18	1139	320	21	1163
Fick, John C. (See Arthurs and Fick.)						
Fickett, Franklin H., Chicago, Ill. Bath-tub	254,946	Mar. 14	604	166	21	733
Fickett, Franklin H., Chicago, Ill. Cabinet bath-tub	260,360	June 13	849	139	21	1798
Field, Joseph B., assignor to W. Daggett and W. T. Harper, Ottumwa, Iowa. Moistening oleaginous seeds and meal for extracting the oil therefrom	260,193	June 27	1638	446	21	1956
Field, Mary E., New Haven, Conn. Corset	253,092	Jan. 31	1394	425	21	253
Field, Stephen D., New York, N. Y. Quadruplex telegraph	253,627	Jan. 31	1436	455	21	288
Field, Stephen D., New York, N. Y. Quadruplex telegraph	254,297	Feb. 28	1388	373	21	880
Fields, Robert. (See Tilley, Teal, and Fields.)						
Fifield, John W. D., North Brookfield, Mass. Plow-shoe	255,988	Mar. 21	1041	279	21	832
Fifield, John W. D., North Brookfield, Mass. Crimping-machine	256,126	Apr. 11	688	188	21	1049
Fifield, John W. D., North Brookfield, Mass. Crimping-machine for boots and shoes	256,734	May 30	1961	554	21	1661
Fifield, John W. D., North Brookfield, Mass. Crimping-machine for boots and shoes	257,927	May 16	968	271	21	1409
Figer, Benedict, San Francisco, Cal. Carpet-sweeper	259,837	June 20	1211	365	21	1919
Filley, Myron W., A. S. Teal, and R. Fields, New Haven, Conn. Book-support	259,838	June 20	1212	365	21	1919
Finck, Cornelius M., Jamesburg, N. J. Advertising-card	252,750	Jan. 24	1379	360	21	236
Finch, James B., Bozeman, Mont. Ter. Horseshoe	259,516	June 13	903	251	21	1842
Finch, James B., Bozeman, Mont. Ter. Saw-mill dog	255,136	Mar. 21	903	242	21	688
Finck, Nicholas, Elizabeth, N. J. Manufacture of scissors						
Fine, Isaac, *et al.* (See Feister, Henry P., assignor.)						
Finger, Howard. (See Van Kouren, Thomas F., assignor.)						
Finger, Lewis, Melrose, assignor of one-half to L. S. Judd, New Bedford, Mass. Alarm for detecting defects in insulating conductors	257,663	May 9	679	189	21	1409

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Finisterer, Emanuel. (See Platky and Finisterer.)						
Finley, George T., Webster Pa. Sifter	257,928	May 16	989	271	21	1469
Finley, James R., assignor to W. F. Lytle and I. Dreifus, Delphi, Ind. Neck-yoke	257,440	May 2	354	99	21	1344
Finney, Lewis H., Powhatan County, Va. Car-coupling	260,183	June 27	1653	449	21	1997
Finster, William, *et al.* (See Simonson, Sall, assignor.)						
Firman, Henry S., New York, N. Y. Apparatus for reducing material to a pulverulent fertiliser	255,269	Mar. 21	1041	279	21	832
Firman, Leroy B., assignor to Western Electric Manufacturing Company, Chicago, Ill. Multiple switch-board for telephone-exchanges	258,576	Jan. 17	1086	302	21	196
Firth, Edwin, Auburn, N. Y. Lubricator for vehicle-axles	256,964	Apr. 18	1141	320	21	1164
Firth, Frank J., assignor to Erie and Western Transportation Company, Philadelphia, Pa. Grain-elevator	258,043	May 16	1105	307 308	21	1494
Firth, Frank J., assignor to Erie and Western Transportation Company, Philadelphia, Pa. Grain-elevator	258,044	May 16	1106	308	21	1494
Firth, James. (See Windbiel and Firth.)						
Fischbeck, Frederick, Chicago, Ill. Bed-lounge	257,856	May 16	881	247	21	1455
Fischer, Beno, Stuttgart, Würtemberg, Germany. Button	258,853	May 30	2001	560	21	1684
Fischer, Englebert, *et al.* (See Halladay, William H., assignor.)						
Fischer, Fred. (See Sims and Fischer.)						
Fischer, Hermann H. (See Tanner and Fischer.)						
Fischer, Hermann H., Osage, Nebr. Harrow-evener	252,751	Jan. 24	1220	300	21	236
Fischer, John G., Flemingsburg, Ky. Adding-machine	255,270	Mar. 21	1044	280	21	833
Fischer, Joseph B., Hamilton, assignor of two-thirds to M. Bare, Cincinnati, Ohio. Ice marker and plow	256,637	May 30	1838	518	21	1640
Fischer, Otto, Munich, Germany. Rosaniline-red coloring-matter	252,202	Jan. 10	631	.....	21	115
Fischer, Otto, Munich, Germany. Preparation of rosaniline-blue coloring-matter	252,203	Jan. 10	632	.....	21	115
Fish, Arthur L., San Francisco, Cal. Machine for pulverizing ores, &c.	259,375	June 13	923	165	21	1809
Fish, Frank P., New York, N. Y. Fire-escape	256,990	Apr. 25	1524	429	21	1239
Fish, H. Clay, Philadelphia, Pa. Coffee-pot	250,121	June 6	310	82	21	1748
Fish, John, Summit, N. J. Superheater	255 271	Mar. 21	1045	280	21	833
Fish, Martin M., David City, Nebr. Blacksmith's forging-hammer	253,689	Feb. 14	604	171	21	459
Fisher, Albert H. (See Cartmell, Robinson, assignor.)						
Fisher, Alfred A., and A. Hart, San Francisco, Cal. Sewing-machine attachment	256,902	Apr. 25	1527	429	21	1239
Fisher & Co., S. E. (See Goff and Lenau, assignors.)						
Fisher, Edwin, Worcester, assignor to J. W. Brooks, trustee, Cambridge, Mass. Boot and shoe heeling machine	258,905	June 6	45	11	21	1702
Fisher, Frank E., Detroit, Mich. Electrical annunciator	258,735	May 30	1962	555	21	1661
Fisher, George P., Jr., Chicago, Ill. Exercising-club	259,752	June 20	1114	297	21	1902
Fisher, Henry, Canton, Ohio. Combustion-tool	254,631	Mar. 7	225	59	21	676
Fisher, Henry J., Jr., Point Pleasant, W. Va. Shutter-fastener	251,854	Jan. 3	213	59	21	38
Fisher, Horace, Troy, N. Y. Gage attachment for sewing-machines	258,736	May 30	1963	555	21	1661
Fisher, John H., and C. C. Peck, New York, N. Y.; said Fisher assignor to said Peck. Lathe for turning polygonal bodies	256,991	Apr. 25	1525	429	21	1239
Fisher, John W., New York, assignor of one-half to M. W. Hamma, Brooklyn, N. Y. Culinary vessel	254,947	Mar. 14	625	168	21	753
Fisher, S. Brownlee, Pittsburg, Pa. Cross section rod	255,778	Apr. 4	30	9	21	956
Fisk, Asa B., Lyndonville, N. Y. Fruit-package	258,906	June 6	46	12	21	1702
Fisk, George W., *et al.* (See Barrow, Marion J., assignor.)						
Fisko, Bradley A., New York, N. Y. Handle for pocket-knives and other implements	255,847	Apr. 4	112	30	21	909
Fisko, Bradley A., Naperville, Ill., assignor to E. Faber, Port Richmond, N. Y. Pencil-holder	255,272	Mar. 21	1046	280	21	833
Fitch, Calvin H., Middletown Springs, Vt. Bed-bottom	252,654	Jan. 24	1174	329	21	218
Fitch, Charles T., assignor of one-half to H. C. Palmer, Buffalo, N. Y. Protector for lightning-arresters	258,289	May 23	1420	402	21	1550
Fitch, Ezra C., New York, N. Y. Watch-pendant	259,517	June 13	804	212	21	1842
Fitch, Thomas W. (See King, William H., assignor.)						
Fitch, Washington I., *et al.* (See Horton, Theodore, assignor.)						
Fitts, Benaiah, assignor to Union Water Meter Company, Worcester, Mass. Rotary water-meter	258,197	May 16	1287	366	21	1528
Fitts, Leverett E. (See Foster, William G., assignor.)						
Fitzgerald, Edwin M., New York, N. Y. Advertising apparatus	251,635	Jan. 3	213	60	21	39
Fitzgerald, John, Brooklyn, N. Y. Cooling mechanism for grinding-mills	255,964	Apr. 4	267	69	21	904
Fitzgerald, Michael D., assignor to M. R. Flagg, Bloomington, Ill. Heating and ventilating cars	252,752	Jan. 24	1221	360 361	21	236
Fitzgerald, William J. (See Gaynor and Fitzgerald.)						
Fitzgerald, William J., assignor to H. B. Ives, New Haven, Conn. Cigar-holder	252,753	Jan. 24	1222	361	21	236
Fitzpatrick, Hugh F., New York, N. Y. Pneumatic-pressure regulator	252,754	Jan. 24	1223	361	21	236
Fitzsimons, Patrick J., Newark, N. J. Mold for casting compound ingots	257,307	May 2	188	54	21	1315
Fitzsimmons, Thomas, Burlington, Vt. Cutter-head for wood-working machines	253,273	Feb. 7	108	33	21	365
Fitzwater, William M., assignor to L. T. McClure, Louisa, and T. B. McClure, Catlettsburg, Ky. Crib	258,198	May 16	1289	366	21	1528
Fix, Lewis R. (See Harrison, Henry, assignor.)						
Fixary, Edouard, Paris, France. Ice-machine	254,203	Feb. 28	1241	346	21	581
Fladvad, Halvor O. (See Williamson and Fladvad.)	253,361	Feb. 7	210	60	21	382
Flagg, George H. P., Boston, Mass. Roll for buffing or polishing machines	254,811	Mar. 14	445	120	21	721
Flagg, George H. P., Boston, Mass. Roll for buffing and polishing machines	257,308	May 2	189	54	21	1315
Flagg, George H. P., and W. Gordon, Boston, Mass.; said Gordon assignor to said Flagg. Abrasive belt	253,196	Feb. 7	26	8	21	351
Flagg, Maggie R. (See Fitzgerald, Michael D., assignor.)						
Flagga, William F. (See Franklin and Flagga.)						
Flagstad, Ole, Hamar, Norway. Door lock and latch	256,665	Apr. 18	1142	320 321	21	1164
Flaherty, Edward M., New Baltimore, Mich. Dry-kiln	260,184	June 27	1655	449	21	1997
Flammang, Mathias, Newark, N. J. Shutter for photographic cameras	258,190	May 16	1290	366	21	1528
Flanders, William G., Troy, N. Y. Washing-machine	270,636	June 13	953	254	21	1868
Flannery, Joseph, Philadelphia, Pa. Furnace	251,856	Jan. 3	215	60	21	39
Flatau, Louis S., Pittsburg, Tex. Pistol and carbine holder	259,448	Jan. 17	942	260	21	172
Fleischauer, Heinrich, Berlin, Germany. Horse-detacher	253,690	Feb. 14	606	171	21	459
Fleischmann, Charles L., Washington, D. C. Treatment of prairie soil to obtain useful products therefrom	256,737	May 30	1905	.....	21	1661
Fleischman, Henry. (See Meissner, John, assignor.)						
Fleisher, Simon B. Philadelphia, Pa. Tag	253,274	Feb. 7	109	33	21	365
Fleming, Edward H., Thorp's Spring, Tex. Hedge	253,392	Feb. 7	211	60	21	382

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Fleming, Henry J. (See Fleming and Broadbent.)						
Fleming, James H. (See Fleming, William R., assignor.)						
Fleming, John and H. J., and J. Broadbent, Grand Junction, Iowa. Steam generator and agricultural boiler	252,066	Jan. 10	438	118	21	68
Fleming, John A., University College, Nottingham, county of Nottingham, England. Preparation of materials for use in electric insulation	259,271	June 6	499	.....	21	1777
Fleming, Peter F., Salisbury, Mo. Hay-rake	259,539	June 20	1212	325	21	1919
Fleming, William B. (See Negrotto and Fleming.)						
Fleming, William H., Thorp's Spring, Tex. Coffee-mill	259,518	June 13	806	212	21	1842
Fleming, William R., Belvidere, assignor to J. H. Fleming, Newark, N. J. Lamp	259,123	June 6	311	82	21	1748
Fletcher, Moore E., Bristol, N. H., assignor to New Hampshire Chemical Pulp Company, Boston, Mass. Paper-pulp engine	256,399	May 23	1545	430	21	1580
Fleury, Francis G., and E. D. Barker, assignors of one-third to T. Davies, London, England. Process of and apparatus for roasting coffee	255,965	Apr. 4	970	69, 70	21	994
Flick, Julius A. (See Kilroy and Flick.)						
Flinn, Thomas F., Flatbush, N. Y. Steam-engine	254,631	Apr. 25	1336	378	21	1206
Flint, Benjamin F., Cincinnati, Ohio. Permutation-lock	259,376	June 13	924	166	21	1810
Flint, Eber C., Saginaw, Mich. Folding chair	252,204	Jan. 10	633	178	21	115
Flint, James F., West Danvers, Mass. Extension-ladder	259,678	June 20	1006	269	21	1694
Flint Moses C., assignor to L. R. Goldsmith, Haverhill, Mass. Band and welt crimping machine	252,366	Jan. 17	835	238	21	155
Flügel, Josef. (See Benas and Flügel.)						
Flohr, Andrew, Sacramento, Cal. Stove-pipe	251,857	Jan. 3	217	61	21	39
Flood, Harry W., and H. Kronwell, Hoboken, N. J. Insect-guard	255,499	Mar. 28	1338	361	21	869
Flood, Henry S., San Francisco, Cal. Glove	256,538	Apr. 18	1018	287	21	1143
Flood, John F. (See Woodward, T. Trask, assignor.)						
Florence Machine Company. (See Kyle, Oscar N., assignor.)						
Flournoy, Parke P., Bethesda, Md. Stud and button fastening	265,273	Mar. 21	1047	280	21	833
Flournoy, Parke P., Bethesda, Md. Fountain-pen	256,206	Apr. 11	587	161	21	1055
Flournoy, Parke P., Bethesda, Md. Fountain-pen	258,907	June 6	47	12	21	1703
Flower, James, Detroit, Mich. Sizing-tool for lathes	259,377	June 13	688	166	21	1810
Flower, James, Detroit, Mich. Sizing-tool for lathes						
Flower, Reese W., Jr., and E. C. Burgess, Philadelphia, Pa., assignors to United States Automatic Gas Machine Company, of New Jersey. Gas-machine	253,698	Jan. 31	1442	455	21	393
Flowers, Martin L. (See Talmage and Flowers.)						
Flowers, Martin L., and D. Talmage, New Orleans, La. Fanning-machine	252,367	Jan. 17	836	233	21	155
Flowers, Martin L., and D. Talmage, New Orleans, La.	252,092	Jan. 10	507	140	21	95
Flück, Peter, Cleveland, Ohio. Strap-holder	256,045	May 16	1109	300	21	1494
Flynt, Chester D., assignor to himself and F. B. Tracy, Brooklyn, N. Y. Car-axle lubricator	253,363	Feb. 7	211	60	21	382
Foard, Jeremiah W., San Francisco, Cal. Fish-book extractor	258,225	May 23	1345	321	21	1545
Foerster, Henry, Newark, N. J. Calipers	258,046	May 16	1109	309 316	21	1494
Fogarty, James H., New York, N. Y. Steam-plow	254,204	Feb. 28	1243	346	21	582
Fogarty, Thomas B., Brooklyn, N. Y. Process of and apparatus for manufacturing gas	256,908	June 6	48	12, 13	21	1703
Fogelberg, Carl, and G. W. Graves, Cambridgeport, Mass. Organ	253,364	Feb. 7	212	60	21	382
Fogelquist, Carl M., New York, N. Y. Folding bracket for carriage-tops	258,449	Jan. 17	943	261	21	173
Foley, William, Keokuk, Iowa. Piston-valve	258,450	Jan. 17	944	261	21	173
Foley, William, Keokuk, Iowa. Piston-valve	257,929	May 16	970	271	21	1469
Folk, Edgar M., Brooklyn, N. Y. Exercising-club						
Follett, Charles H. (See Dowling, Robert H., assignor.)						
Folliard, Michael. (See Harrison and Folliard.)						
Folsom, John S. (See Folsom, Nehemiah T., assignor.)						
Folsom, Nehemiah T., assignor to J. S. Folsom, Boston, Mass. Thill-lug	254,763	Mar. 7	384	101	21	783
Foose, Jacob, Lancaster, Pa. Steamer	255,157	Mar. 21	904	249	21	808
Foote, Catharine G., New York, N. Y. Stocking-supporter	257,465	May 9	494	118	21	1363
Foote, Horace M., Lansing, Minn. Car-seal set, cutter, and extractor	254,635	Feb. 28	1509	413	21	688
Foote, Mary T., Boston, Mass. Hair-pin	251,658	Jan. 3	217	61	21	39
Foote, Myron G., Gold Hill, Nev. Governor for direct-acting engines	257,466	May 9	495	118	21	1363
Forbes, Andrew H., Camden, assignor to H. Hatch, Stockton township, Camden county, and J. Hatch, Camden, N. J. Brick-kiln	259,519	June 13	806	212	21	1843
Forbes, Governeur M. (See Edmunds, John M., assignor.)						
Forbes, John A., assignor of one-half to F. A. Williams, Dover, Del. Automatic soldering-machine	254,194	Feb. 28	1156	322 323	21	567
Forbes, Lewis, San Francisco, Cal. Hair-tonic	253,594	Feb. 14	492	.....	21	441
Forbes, Lycurgus D., Stranger, Tex. Governor for cotton-gins	251,659	Jan. 3	218	61	21	39
Forbes, William D., Bridgeport, Conn. Screw-cutting die	253,996	Feb. 21	998	279	21	838
Ford, Clara L. (See McFarland and Ford.)						
Ford, Edward C., Laurel, Md. Hanger for plumbers' pipes	256,638	May 30	1839	519	21	1640
Ford, Frederick G., Rexborough, Pa. Bedstead	256,666	Apr. 18	1144	321	21	1164
Ford, George A., Cleveland, Ohio. Pulley-block	253,659	Feb. 21	998	234	21	505
Ford, George A., Cleveland, Ohio. Pulley-block	259,378	June 13	927	166	21	1810
Ford, Martin P., Columbus, Ohio. Vehicle-dash attachment	257,309	May 2	190	54	21	1315
Ford, William, Brooklyn, N. Y. Scroll-sawing machine	257,467	May 9	495	118	21	1363
Ford, William F., New York, N. Y. Stethoscope	256,473	Apr. 18	923	257	21	1127
Forder, Frederick, London, England. Cab						
Foreman, Ebenezer M. (See Ammerman, Baird, and Foreman.)						
Forester, William R., Bakerville, Tenn. Carpenter's flooring-tongs	258,738	May 30	1966	555	21	1661
Forg, Peter, Somerville, Mass. Adjustable spring-bolt	256,539	Apr. 18	1018	287	21	1143
Forg, Peter, Somerville, Mass. Bed-fastening	256,540	Apr. 18	1019	287	21	1143
Forman, William, Bradford, Pa. Pipe-joint	255,427	Mar. 28	1230	336	21	673
Forrester, George B. (See Bergen, Jerome L., assignor.)						
Forsaith, James L., and A. S. Kreiter, Sharpsburg, Pa.; said Kreiter assignor to said Forsaith. Mill-lamp	257,857	May 16	882	247	21	1455
Forster, Charles, Pittsburg, and B. Weaver, Allegheny, Pa. Mill for rolling iron	253,395	Feb. 14	493	140 141	21	441
Forster, Joseph, Vienna, Austria-Hungary. Umbrella or parasol support	256,308	Apr. 11	715	194	21	1077
Forsyth, Manuel T., Sr., Baltimore, Md. Packing snuff	259,205	Jan. 10	633	179	21	115
Fort Wayne Electric Light Company. (See Jenney, Charles D., assignor.)						
Forward, William. (See Brown, Homer F., assignor.)						
Fosburgh, Henry, Howard City, Mich. Bed-spring	256,431	Apr. 11	656	230	21	1163
Foshay, Frederick, Beaver Falls, Pa. File-cutting machine	253,197	Feb. 7	26	8, 9	21	351
Foshay, Frederick, Beaver Falls, Pa. Machine for stripping files	253,198	Feb. 7	26	9, 10	21	351
Foshay, Frederick, Beaver Falls, Pa.	258,739	May 30	1966	555	21	1661
Foss, William, Mansfield, Ohio. Apparatus for sweating tobacco	256,909	June 6	49	13	21	1703
Fossler, Samuel, Eagle City, Iowa. Rotary churn						
Foster, A. F., *et al.* (See Taylor, Charles, assignor.)						
Foster, Charles W., New Haven, Conn. Power-transmitter for sewing-machines	255,363	Mar. 21	1187	319	21	857
Foster, Charles W., New Haven, Conn. Corset	260,013	June 27	1443	369	21	1965

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Foster, Horace, *et al.* (See Prescott, Joseph R., assignor.)						
Foster, J. W. (See Keeler, William H., assignor.)						
Foster, Oscar S. and W. S., Utica, N. Y. Spring bed-bottom	258,601	Jan. 24	1115	312	21	208
Foster, Reuben, (See Catron, Foster, and Graham.)						
Foster, William, Jr., *et al.* (See Chichester, Lewis S., assignor.)						
Foster, William A., Chester, assignor of one-half to S. H. Jennings, Deep River, Conn. Carriage-jack	256,309	Apr. 11	717	195	21	1078
Foster, William G., assignor of one-half to L. E. Fitts, Chicago, Ill. Wardrobe-hook	253,918	Feb. 21	908	253	21	517
Foster, William S. (See Foster, Oscar S. and W. S.)						
Fouhy, John B., *et al.* (See Haynes, Edgar K., assignor.)						
Foulds, Robert. (See Toppel, Peter, assignor.)						
Foulger, George W., assignor of one-half to W. J. Huffman, Newman, Ill. Farm and yard gate	253,487	Feb. 7	360	100	21	406
Fountain, Joseph G. (See Roth, Henry, assignor.)						
Fountain, Seth H., Amite City, La. Coffee-mill	251,960	Jan. 3	219	62	21	30
Fournier, Joseph, Jr., New York, N. Y. Folding cabinet-bed	254,688	Mar. 7	226	50	21	677
Fournier, Joseph, Jr., New York, N. Y. Bread-box	255,611	Mar. 28	1473	306	21	912
Foust, Morgan. (See Payne, Foust, and Thomas, assignors.)						
Foust, William P. (See Payne, Foust, and Thomas.)						
Fowler, Arthur H., Newark, Ohio. Base-burning boiler	250,580	June 13	907	213	21	1843
Fowler, Asro, assignor to M. Harris, New York, N. Y. Mechanical musical instrument	254,951	Jan. 3	220	62	21	40
Fowler, George A., Philadelphia, Pa. Temporary stopping for teeth	254,205	Feb. 28	1250	.....	21	582
Fowler, George B., Brooklyn, N. Y. Egg beater and mixer	256,310	Apr. 11	718	195	21	1078
Fowler, George B., Brooklyn, N. Y. Egg beater and mixer	253,691	Feb. 14	608	172	21	450
Fowler, John W., Brooklyn, N. Y. Metallic stopper for boiler-tubes	257,684	May 9	668	189	21	1409
Fowler, Jonathan O., Jr., New York, N. Y. Advertising apparatus				190		
Fowler, Joseph, *et al.* (See Bacon, Frank M., assignor.)						
Fowler, Joseph C., assignor of one-half to S. Taliaferro, Houston, Tex. Car-coupling	252,992	Jan. 10	747	208	21	134
Fowler, William R., assignor to M. J. Myers, Philadelphia, Pa. Cloth-cutting machine	256,840	June 20	1213	325	21	1919
Fox, David, New York, N. Y. Cap or hat	260,185	June 27	1656	449	21	1907
Fox, Edward, New York, N. Y., assignor to A. Albright, Newark, N. J. Manufacture of glucose or grape-sugar	257,030	May 16	970	271	21	1469
Fox, Edward, New York, N. Y., assignor to himself and A. Albright, Newark, N. J. Machine for granulating sugar	259,753	June 20	1115	297	21	1902
Fox, Frederick W., Windhill, county of York, England. Drawing, spinning, and twisting apparatus	255,612	Mar. 28	1473	306	21	912
Fox, George H. (See Hood and Fox.)						
Fox, George H., assignor to American Arms Company, Boston, Mass. Lock for fire-arms	255,274	Mar. 21	1047	281	21	833
Fox, John, Oskaloosa, Iowa. Washing-machine	254,206	Feb. 28	1250	346	21	582
Fox, Lewis, and G. Weenink, Cleveland, Ohio. Awning	252,093	Jan. 10	508	141	21	95
Fox, Patrick H., New York, N. Y. Rheostat for electric lamps	254,764	Mar. 7	364	101	21	704
Fox, Samson, Leeds, county of York, England. Machine for making metal tubes and pipes	258,740	May 30	1967	556	21	1662
Fox, Samson, Leeds, county of York, England. Flanging-machine	260,186	June 27	1657	449	21	1907
Fox, St. George L., London, England. Electric lamp	251,774	Jan. 3	108	30, 31	21	21
Fox, St. George L., London, England. Distribution of energy by electricity	254,948	Mar. 14	626	168	21	753
				169		
Fox, William, assignor to himself and R. J. Beatty, Steubenville, Ohio. Chuck for holding bottles	255,384	Mar. 21	1180	319	21	857
Fox, William R. (See Priestley, Forrest M., assignor.)						
Fraley, Edward S., Forest Hill, Ind. Welding compound	260,014	June 27	1444	.....	21	1965
Frambach, Henry A., Kaukauna, Wis. Apparatus for and process of pulping wood	258,400	May 23	1548	439	21	1361
France, David, Cromwell, assignor of one-half to E. S. Norton, St. Paul, and E. E. Luce, Wasioma, Minn. Car-coupling	259,841	June 20	1214	326	21	1920
France, Simon W., Brooklyn, N. Y. Nursing-bottle	252,936	Jan. 31	1525	426	21	283
Francis, Allan E., Cleveland, Ohio. Steam-generating tube	257,931	May 16	972	272	21	1469
Francis, Henry H., Nangatuck, Conn. Apparatus for riveting knife-scales	257,665	May 9	664	190	21	1409
Franck, Henry. (See Pfaunts and Franck.)						
Francklyn, Charles G., *et al.* (See Chichester, Lewis S., assignor.)						
Frank, Abraham L., *et al.* (See Frank and Galligan, assignors.)						
Frank, Augustus J., Warsaw, Ill. Sifter	255,275	Mar. 21	1048	281	21	833
Frank, George, and J. Galligan, Kalamazoo, Mich., assignors of one-half to A. L. and J. H. Frank, Chicago, Ill. Overalls	254,092	Feb. 21	1115	312	21	553
Frank, Henry C., New York, N. Y. Clasp or dress supporter	259,009	June 6	164	44	21	1722
Frank, Joseph H., *et al.* (See Frank and Galligan, assignors.)						
Franke, George, Baltimore, Md. Match-safe	260,187	June 27	1656	450	21	1907
Frankenberg, Aaron, New York, N. Y. Boy's cap	250,521	June 13	909	213	21	1843
Franklin, Frederick W., and W. F. Flagg, Baltimore, Md. Stock-car	254,949	Mar. 14	630	169	21	754
				170		
Franklin, James J., Tyler, Tex. Device for cutting boiler-tubes	256,474	Apr. 18	983	257	21	1127
Franklin, Robert M., Galveston, Tex. Pile for use in the construction of wharves and other structures	260,015	June 27	1444	300	21	1965
Franklin, Robert M., Galveston, Tex. Yielding and buoyant pile breakwater	260,016	June 27	1446	300	21	1965
Franta, Jeremiah, Centre Square, Pa. Combined corn-planter and fertilizer-distributer	254,207	Feb. 28	1251	347	21	583
Frantzman, Jacob, assignor of one-half to H. Varwig, Cincinnati, Ohio. Bung cutting and compressing machine	254,998	Feb. 28	1356	373	21	600
				374		
Frary, Nathaniel E. (See Cummings and Frary.)						
Fraser & Chalmers. (See Scoville, Hiram H., assignor.)						
Fraser, Fred, Syracuse, N. Y. Snap-hook	251,869	Jan. 3	221	62	21	40
Fraser, Fred, Syracuse, N. Y. Hame-clip	254,200	Feb. 28	1350	374	21	600
Frazier, Joseph W. (See Borchardt, Hugo, assignor.)						
Frazier, Walter S., Aurora, Ill. Sulky	253,275	Feb. 7	110	33	21	365
Frazier, Walter S., Aurora, Ill. Sulky	253,276	Feb. 7	111	33	21	365
Frederick, Charles. (See Frederick, John, assignor.)						
Frederick, Christian. (See Trump and Frederick.)						
Frederick, John, assignor of one-fourth to C. Frederick, Pittsburg, Pa. Nut-lock	252,655	Jan. 24	1175	329	21	918
Frederick, William H., *et al.* (See Marshall, John C., assignor.)						
Freeborn, De Lancy, and R. B. Perkins, Hornellsville, N. Y. Metallic corner for boxes	254,436	Feb. 28	1510	413	21	638
Freedman, George F. (See Richter, Julius, assignor.)						
Freedman, George F., New York, N. Y. Feathering paddle-wheel	253,977	Feb. 7	111	34	21	365
Freeland, Robert, Boston, Mass. Soap-making machinery	259,842	June 20	1216	326	21	1920
Freeman, Argus L. (See Wiltse, Charles G., assignor.)						
Freeman Brothers. (See O'Brien, Simpson, assignor.)						
Freeman, Emory L. (See Nichols, Fayette G., assignor.)						
Freeman, George W., assignor of one-half to T. F. Albee, Frankfort, Ind. Fastening for leather	257,818	May 9	832	238	21	1436

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Freeman, James P. (See Prosser and Freeman.)						
Freeman, James P., Chicago, Ill., assignor to Home Telephone Company, of Illinois. Electric telephone	257,666	May 9	665	190	21	1469
Freeman, James P., T. T., and H. B. Prosser, Chicago, Ill., assignors to Home Telephone Company, of Illinois. Telephone-transmitter	257,667	May 9	666	190	21	1469
Freeman, James P., assignor of one-fourth to C. F. Pierce, Chicago, Ill. Automatic safety-stop for elevators	260,017	June 27	1448	300	21	1905
Freeman, Jesse I. (See Cook, Mansfield J., assignor.)						
Freese, John D., Chicago, Ill. Window-blind	252,813	Jan. 31	1451	406	21	270
Freese, John F., *et al.* (See Lothrop, Chauncey M., assignor.)						
Freese, Albert E., *et al.* (See Barrow, Marion J., assignor.)						
Fremont Cultivator Company. (See Stahl, Harlow C., assignor.)						
French, Brooks, Fort Wayne, Ind. Step-action for reed-organs	254,930	Mar. 14	631	170	21	754
French, Michael, French, Texas. Fence	257,009	May 9	666	191	21	1469
French, William A., Camden, N. J. Insulator and protector for underground lines	253,030	Jan. 31	1643	456	21	303
Freshney, Samuel J., New York, N. Y. Board or tablet for artists' use	253,030	Jan. 31	1644	.....	21	303
Frey & Broomall. (See Broomall, Albert P., assignor.)						
Frey, Charles. (See Keller and Frey.)						
Frey, Francis E., assignor of one-half to L. Carles, Springfield, Ohio. Lamp attachment for sewing-machines	251,883	Jan. 3	222	62	21	40
Frisco, John F., *et al.* (See Lothrop, Chauncey M., assignor.)	258,451	Jan. 17	945	261	21	179
Frisco, Albert E., *et al.* (See Barrow, Marion J., assignor.)	252,306	Jan. 17	771	215	21	144
Fremont Cultivator Company. (See Stahl, Harlow C., assignor.)						
French, Brooks, Fort Wayne, Ind. Step-action for reed-organs	254,930	Mar. 14	631	170	21	754
French, Michael, French, Texas. Fence	257,009	May 9	666	191	21	1469
French, William A., Camden, N. J. Insulator and protector for underground lines	253,030	Jan. 31	1643	456	21	303
Freshney, Samuel J., New York, N. Y. Board or tablet for artists' use	253,030	Jan. 31	1644	.....	21	303
Frey & Broomall. (See Broomall, Albert P., assignor.)						
Frey, Charles. (See Keller and Frey.)						
Frey, Francis E., assignor of one-half to L. Carles, Springfield, Ohio. Lamp attachment for sewing-machines	251,883	Jan. 3	222	62	21	40
Frisco, John F., *et al.* (See Lothrop, Chauncey M., assignor.)	258,451	Jan. 17	945	261	21	179
Frisco, Albert E., *et al.* (See Barrow, Marion J., assignor.)	252,306	Jan. 17	771	215	21	144
Fritberg, Charles, Rockford, Ill. Hay-fork						
Frick, Abraham O. (See Moore and Frick.)						
Frick, Abraham O., Waynesborough, Pa. Traction-engine	256,983	Apr. 25	1589	430	21	1230
Frick, Abraham O., Waynesborough, Pa. Traction-engine	256,461	May 23	1549	439	21	1361
				440		
Friedeborn, Charles, Clare, Mich. Churn-dasher	256,667	Apr. 18	1146	321	21	1164
Friedemann, August. (See Friedemann, Johann G., assignor.)						
Friedemann, Johann G., Waverly, assignor to A. Friedemann, Bremer County, Iowa. Harrow or drag	257,441	May 2	355	100	21	1345
Friedrich, Alphonse. (See King, John B., assignor.)						
Friedrich, Alphonse, Brooklyn, N. Y. Manufacturing glass for use in illuminated windows	258,408	May 23	1553	.....	21	1561
Friel, George W., Rockland, Mass. Car-brake	253,031	Jan. 31	1645	456	21	303
Frink, Isaac P. (See Jacobson, Charles F., assignor.) (Reissue.)						
Frisbie, Mark, Orland, Ind. Crane	258,403	May 23	1553	440	21	1561
Fritsche, Edward J., assignor of one-half to J. Twiss, New Haven, Conn. Guiding attachment for sewing-machines	257,932	May 16	973	272	21	1470
Fritzner, Nicolay. (See Pfaff, Emil, assignor.)						
Frosscher, Leonhart F., Bruce, Ky. Coup or crate	259,582	June 13	810	213	21	1843
Frost, Abel H. (See Ames and Frost.)						
Frost, Abel H., *et al.* (See Beals, William J., assignor.)						
Frost, Abel H., Chicago, Ill. Fed-bottom	255,613	Mar. 28	1474	306	21	912
Frost, Edward J. (See Lawrance and Frost.)						
Frost, William O., Le Roy, N. Y. Horse-power	259,379	June 13	629	167	21	1811
Fry, Joseph, Ligonier, Pa. Truss	258,854	May 30	2091	500	21	1664
Fryer, John O., Lowell, Mass. Jacquard loom	257,668	May 9	668	191	21	1410
Fryer, John O., Lowell, Mass. Jacquard mechanism for looms	257,669	May 9	691	198	21	1410
Frykberg, Erik G., Newark, N. J. Steam-engine	254,193	Feb. 28	1158	323	21	567
Frykberg, Erik G., Newark, N. J. Steam and hot-air engine	255,778	Apr. 4	32	9, 10	21	856
Fuchs, Benjamin F., Tiger Mill, Tex. Washing-machine	256,741	May 30	1969	558	21	1662
Fuhrmann, Albert V. (See Hofmann, Konrad, assignor.)						
Fulcher, Valentine M., Hughes Springs, Tex. Indicator for scales	252,458	Jan. 17	946	261	21	179
Full, George E., Charlottetown, Prince Edward Island. Starch-drying house	260,188	June 27	1650	450	21	1907
Fuller Electrical Company. (See Fuller, Jim B., assignor.)						
Fuller Electrical Company. (See Keith, Nathaniel S., assignor.)						
Fuller, Eugene S., Hartford, Conn. Lathe-rest	258,910	June 6	50	13	21	1703
Fuller, Eustis R., and J. D. Seagrave, Worcester, Mass. Filtering apparatus for water and sewage	259,154	June 20	1117	297	21	1893
Fuller, George F., New York, N. Y. Theatrical scenery	259,301	June 13	630	140	21	1793
Fuller, Jim B., deceased; S. L. Fuller, administratrix, and assignor to Fuller Electrical Company, New York, N. Y. Electric lighting apparatus	253,032	Jan. 31	1646	457	21	303
Fuller, Jim B., deceased; S. L. Fuller, administratrix, and assignor to Fuller Electrical Company, New York, N. Y. Electric lamp	253,033	Jan. 31	1648	457	21	304
Fuller, Myron H. (See Royce, Allen, and Fuller.)						
Fuller, Orange M., Catasauqua, Pa. Tree-protector or insect-barrier	256,561	Apr. 18	1080	268	21	1143
Fuller, Sarah L., administratrix. (See Fuller, Jim B.)						
Fuller, Thomas. (See Hazard, Frederick J., assignor.)						
Fuller, William J. (See Thomas, Fuller, and King.)						
Fullerton, George A., Boston, Mass. Sole-edge-burnishing machine	252,674	Jan. 31	1451	406	21	270
Fulton, Haskal B. (See Fulton, James, assignor.)						
Fulton, Jewton, assignor to H. B. Fulton, Great Bend, N. Y. Mowing-machine seat	254,300	Feb. 28	1360	374	21	600
Fulton, Lavinia, administratrix. (See Howe, Tyler.) (Reissue.)						
Funck, John W., Stapleton, N. Y. Automatic damper-regulator	258,639	May 30	1640	519	21	1640
Funk, Frank, Beverly, Ill. Device for watering stock	259,843	June 20	1218	326	21	1920
Fuss, Adolph H. (See Hornung and Fuss.)						
Furbush, Charles A. (See Furbush, Merrill A., assignor.)						
Furbush, Merrill A., assignor to himself and C. A. Furbush, Philadelphia, Pa. Creel-frame for carding-machines	254,301	Feb. 28	1360	374	21	601
				375		
Furman, Charles E. (See Lindsay, William A., assignor.)						
Fussell, Mordecai T., New York, N. Y. Non-conducting envelope for ice-cream, &c	258,640	May 30	1642	519	21	1641
Gaar, Scott & Company. (See Land and Campbell, assignors.)						
Gaar, Scott & Company. (See Tennant, Hanson P., assignor.)						
Gabbs, Albert S. I., San Francisco, Cal. Sofa-bed and lounge	253,396	Feb. 14	604	141	21	441
Gabriel, James. (See Cross and Gabriel.)						
Gage, Alfred, Philadelphia, Pa. Ink-fountain	258,899	May 23	1461	402	21	1539
Gage, Robert. (See Johns and Gage.)						
Gage, William H., assignor of one-half to W. R. Clark, Chicago, Ill. Rotary belt	259,383	June 13	611	214	21	1843
Gager, Edwin, Norwalk, Ohio. Machine for making dowel-pins	253,987	Feb. 21	989	279	21	552
Gaines, Charles, New York, N. Y. Loom	257,310	May 2	191	54, 55	21	1315
Gaines, Hiram F., Rouse's Point, N. Y. Bung	252,987	Jan. 31	1526	426	21	283
Gaines, Hiram F., Rouse's Point, N. Y. Fire-escape	252,988	Jan. 31	1527	426	21	284
Gaines, James P., Kuttawa, Ky. Domestic spinning-machine	259,389	June 13	630	167	21	1831
Gairing, Adolf, Cleveland, Ohio. Belt-lifter	252,453	Jan. 17	947	262	21	179
Galbraith, Edward A., Boston, Mass. Carpet-lining	260,091	June 27	1536	414	21	1879

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Galbraith, Robert, assignor to N. S. Vedder Pattern Works, Bascom, Galbraith & Co., Troy, N. Y. Stove-grate	254,765	Mar. 7	385	101	21	704
Galbraith, William A., assignor of one-half to J. G. Mallery, Flint, Mich. Truss for vehicle-axles	259,637	June 13	954	254	21	1668
Gale Manufacturing Company. (See Bigelow, Denison P., assignor.)						
Gallagher, Bernard, Lynn, Mass., assignor, by mesne assignments, to E. C. Hine, Brooklyn, N. Y., and F. M. Elkins, Washington, D. C. Cork-shell-cutting machine	257,311	May 2	195	55	21	1316
Gallagher, John A., Chinese Camp, Cal. Chair-brace	258,582	Apr. 18	1091	248	21	1143
Gallaher, Thomas M., Belmont County, Ohio. Mining implement	252,206	Jan. 10	634	179	21	115
Gallati, Charles R. (See Waterhouse, Addison G., assignor.)						
Galligan, John. (See Frank and Galligan.)						
Gallinger, Nelson, Rapid City, Dak. Ter. Muzzle	254,302	Feb. 28	1361	375	21	601
Galloway, Charles J., Manchester, county of Lancaster, England. Steam-boiler	253,365	Feb. 7	213	61	21	362
Galloway, James M. (See Galloway, Joseph E. and J. M.)						
Galloway, Joseph E. and J. M., Concordia, Kans. Windmill	250,123	June 6	312	82, 83	21	1748
Gallup, Carroll, Norwalk, Ohio. Chair	251,708	Jan. 3	26	7, 8	21	7
Galt, Thomas A., and G. S. Tracy, Sterling, Ill. Corn-planter	250,619	June 20	1006	289	21	1685
Gamble, William, *et al.* (See Remy, Noah T., assignor.)						
Gamewell Fire Alarm Telegraph Company. (See Gardiner, James M., assignor.)						
Garber, John L., Greenville, Ohio. Revolving telegraph-table	253,366	Feb. 7	214	61	21	362
Garceau, Treffé, Boston, Mass. Lamp-stand	258,571	May 30	1755	497	21	1025
Gard, Walter E., Baltimore, Md. Brick-machine	255,385	Mar. 21	1190	320	21	856
Gard, William P., Parsons, Kans. Cane-stripper	258,047	May 16	1112	310	21	1405
Gardiner, Heman, New York, N. Y. Elliptic spring	257,589	May 9	587	147	21	1379
Gardiner, James M., Hackensack, N. J., assignor to Gamewell Fire Alarm Telegraph Company, New York, N. Y. Electro-magnetic escapement mechanism	256,994	Apr. 25	1529	430	21	1340
Gardner, Albinus M., Darien, and J. North, Middletown, Conn. Metallic valise	256,524	June 13	812	214	21	1643
Gardner, Edward C., Abington, Mass. Heel-plate for boots and shoes	256,311	Apr. 11	720	195	21	1078
Gardner, Frederic J., Cincinnati, Ohio. Sight for fire-arms	259,844	June 20	1229	327	21	1921
Gardner, Frederick A., assignor to himself and R. Dunbar & Son, Buffalo, N. Y. Hoisting and winding drum	253,585	Feb. 14	418	116	21	429
Gardner, Frederick N., assignor to himself and J. E. Woodbridge, Hartford, Conn. Cutter-holder for lathes	256,668	Apr. 18	1147	322	21	1164
Gardner, Henry W. (See Johnson, Henry J., assignor.)						
Gardner, Jesse T., assignor of one-half to R. Thompson, Vaiden, Miss. Axle-box for vehicle-wheels	255,077	Mar. 14	808	215	21	784
Gardner, John M. and S. H., New York, N. Y. Box or basket	252,027	Jan. 10	433	118	21	92
Gardner, Robert A., Providence, R. I. Automatic draft-regulator for oil and gas stoves	254,633	Mar. 7	299	59	21	677
Gardner, Samuel H. (See Gardner, John M. and S. H.)						
Gardner, Theodore A., South Vineland, N. J. Meat-roaster	252,577	Jan. 17	1067	303	21	197
Gardner, William, assignor of one-half to M. C. Jones, Troy, N. Y. Valve	252,094	Jan. 10	509	141	21	95
Gardt, William. (See Ernster and Gardt.)						
Garey, Caleb E., New York, N. Y. Window-shutter	255,848	Apr. 4	113	30	21	969
Garland, Ezra O., New Bedford, Mass. Vapor-burner	251,709	Jan. 3	27	8	21	7
Garland, James S. (See Garland, Nathan M., assignor.)						
Garland, Nathan M., assignor of one-half to J. S. Garland, St. Louis, Mo. Gas-governor	251,804	Jan. 3	222	63	21	40
Garner, Allen, Americus, Miss. Apparatus for the manufacture of turpentine and rosin	251,885	Jan. 3	223	63	21	40
Garner, Samuel R., assignor to himself, J. Bock, A. Huntemer, and O. Reinke, Casaville, Wis. Machine for dressing hoops	252,207	Jan. 10	635	179	21	115
Garretson Ruffler Company. (See Garretson, Thomas B., assignor.)						
Garretson, Thomas B., assignor to Garretson Ruffler Company, Oskaloosa, Iowa. Ruffler for sewing-machines	259,124	June 6	313	83	21	1749
Garrett, Frank. (See Garrett, Richard and F.)						
Garrett, George S. (See Wright, John J., assignor.)						
Garrett, Hugh D., Philadelphia, Pa. Piston-head	254,951	Mar. 14	633	170, 171	21	755
Garrett, Hugh D., Philadelphia, Pa. Piston-head	256,312	Apr. 11	720	195, 196	21	1078
Garrett, James H., Terre Haute, Ind. Edge-blacking powder for leather	258,404	May 23	1354	.....	21	1582
Garrett, Richard and F., Leiston Works, Leiston, county of Suffolk, England. Tubular boiler and furnace	259,845	June 20	1221	327	21	1921
Garrett, Sylvester, Philadelphia, Pa. Fringed fabric	252,573	Jan. 31	1453	408	21	271
Garrigues, Edmund, Massillon, Ohio. Universal joint	252,208	Jan. 10	636	179	21	116
Garrison, John M., Stilesville, Ind. Fence	259,525	June 13	813	215	21	1644
Garrity, William, Malden, and N. Avery, Cambridge, Mass. Coating metallic articles with vulcanized rubber	251,866	Jan. 3	224	.....	21	40
Garside, George, Kalamazoo, Mich. Wind-engine	259,660	June 20	1009	270	21	1685
Garside, Irad L., Paterson, N. J. Bracelet	255,614	Mar. 28	1475	397	21	913
Garson, William H., assignor to Hastings & Garson, Philadelphia, Pa. Hernial truss	252,209	Jan. 10	637	180	21	116
Garth, Walter W. (See Iglehart, Joseph J., assignor.)						
Garton, James P., Jersey City, N. J. Gangway for ships	259,846	June 20	1223	327	21	1921
Gartrell, John H., Penzance, county of Cornwall, England. Fluid-pressure regulating and indicating apparatus for vulcanizing heaters, &c	253,698	Feb. 14	008	172, 173	21	459
Garver, Wesley B., and E. Varian, Philadelphia, Pa. Frame for canopies, awnings, and tents	256,911	June 6	51	13	21	1703
Garvin, John, assignor to W. H. Myers, Philadelphia, Pa. Ore concentrator and separator	255,109	Mar. 21	907	243	21	809
Gary, Albert J., assignor to himself, H. S. Gulick, and E. S. Plimpton, Denison, Iowa. Windmill attachment	259,386	June 13	814	215	21	1644
Gary, Wesley W., Boston, Mass. Railway-signal	257,819	May 9	583	232	21	1436
Gary, Wesley W., Boston, Mass. Automatic railway-signal	257,933	May 16	974	272	21	1470
Gary, Wesley W., Boston, Mass. Magneto-generator for railway-signals	258,749	May 30	1971	556	21	1662
Gaskell, Holbrook, Jr. (See Carey, Gaskell, and Hurter.)						
Gassett, Oscar, Boston, Mass., assignor to Union Switch and Signal Company, Pittsburg, Pa. Electric block signaling apparatus	251,867	Jan. 3	225	63	21	41
Gassett, Oscar, Boston, Mass., assignor to Union Switch and Signal Company, Pittsburg, Pa. Switch and signal locking apparatus	256,797	Apr. 18	1292	364	21	1191
Gassmann, John, Jackson, Mo. Horse-detacher	253,367	Feb. 7	215	61	21	362
Gassmann, John, assignor of one-half to A. Hoffmann, Jackson, Mo. Die and die-stock	256,069	Apr. 18	1147	322	21	1165
Gaston, Ira, Schoolcraft, Mich. Gate-hinge	256,670	Apr. 18	1149	322	21	1165
Gatchell, Albert E., Newport, Ky. Crank for machinery	257,691	May 9	692	198	21	1410
Gates, Charles, Brooklyn, Ohio. Roller-mill	258,755	Jan. 24	1264	361, 362	21	236
Gates, John, Portland, Oreg. Rope-clamp	254,473	Mar. 7	31	8	21	643

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Gates, Lloyd W., Calhoun, Ky. Car-coupling	253,898	Feb. 21	1001	260	21	533
Gates, Philemon T., New York, assignor *pro* one-half to J. H. Nellis, Canajoharie, N. Y. Wash-board	251,710	Jan. 3	26	6	21	7
Gates, Philetus W., Chicago, Ill. Journal-bearing for stone and ore crushers	259,681	June 20	1010	270	21	1685
Gates, Ryerson D., Chicago, Ill. Pulverizing-machine	260,092	June 27	1537	414, 415	21	1979
Gates, William, assignor of one-half to A. L. Babcock, New Haven, Conn. Latch for carriage-doors	258,201	May 23	1429	403	21	1359
Gathmann, Louis, Chicago, Ill. Machine for splitting grain	254,812	Mar. 14	445	120	21	731
Gathmann, Louis, Chicago, Ill. Grinding mill	254,813	Mar. 14	446	120	21	731
Gathmann, Louis, Chicago, Ill. Mill-disk	254,814	Mar. 14	448	121	21	731
Gathright, Albert P., and A. W. Potts, Cooper, Ga. Tire-tightener	256,137	Apr. 11	698	133	21	1036
Gathright, Albert P., and A. W. Potts, Cooper, Ga. Machine for sharpening gin-saws	259,125	June 6	314	83	21	1740
Gathright, Josiah B., Louisville, Ky. Faucet	251,775	Jan. 3	110	31	21	31
Gathright, Josiah B., Louisville, Ky. Fastener for straps	251,776	Jan. 3	111	31	21	31
Gault, Samuel C., Cincinnati, Ohio. Skate	255,161	Mar. 21	910	243	21	800
Gause, William, Kokomo, Ind. Mowing-machine	257,858	May 16	883	247	21	1455
Gause, William, Kokomo, Ind., and J. F. Seiberling, Akron, Ohio, assignors to said Seiberling. Grain-binder	257,934	May 16	975	272, 273, 274	21	1470
Gautier, Fernando, Pascagoula, Miss. Plow	254,859	Mar. 14	634	171	21	755
Gay, Timothy E., Franklin, Mass. Combined harrow and cultivator	260,080	June 27	1788	484	21	2018
Gayman, Moses, assignor to himself and O. P. Gayman, Canal Winchester, Ohio. Pump	255,966	Apr. 4	272	70	21	985
Gayman, O. P. (See Gayman, Moses, assignor.)						
Gaynor, Thomas F., and W. J. Fitzgerald, New Haven, Conn. Self-feeding brush	257,319	May 2	197	55	21	1316
Gear, Alonzo S., assignor to Perpetual Tension Propelling Belt Company, New York, N. Y. Flexible gearing	258,088	Jan. 10	434	119	21	92
Geary, Michael. (See Pimpton, James W., assignor.)						
Gebert, Charles, Trenton, N. J. Drop-bottle	258,454	Jan. 17	948	262	21	173
Gebhard, Julius, assignor of five-eighths to S. Heilpern and J. S. Lockwood, New York, N. Y. Utilizing spent hops in the manufacture of malt liquors	257,935	May 16	980	.....	21	1471
Geese, David M., and J. Sants, Philadelphia, Pa. Car-coupling	254,933	Mar. 14	636	178	21	755
Geiger, John J., Chicago, Ill. Gage for book-binders and others	253,586	Feb. 14	419	117	21	430
Geisel, Adalbert W., St. Louis, Mo. Wash-board	258,405	May 23	1354	441	21	1582
Geist, William, Pittsburg, Pa. Wall-paper-hanging device	258,406	May 23	1355	441	21	1582
Gelatinized Fibre Company. (See Courtenay, William, assignor.)						
Genin, John B., Worcester, Mass. Planer-tooth for saws	257,936	May 16	981	274	21	1471
Gent, Alfred, Sherman, Tex. Grave-guard	257,859	May 16	885	248	21	1455
George, John S. (See Gross and George.)						
George, Joseph, Fayetteville, Ark. Plow	254,634	Mar. 7	299	59	21	677
Gerald, Amos F., Fairfield, Me. Table or stand for machines, &c	256,671	Apr. 18	1130	303	21	1165
Gerber, Joseph, Fremont Centre, Mich. Boiler-furnace	252,656	Jan. 24	1176	300	21	218
Gergens, Frank, Brooklyn, assignor to E. Gillet, New York, N. Y. Apparatus for making clear ice	258,226	May 23	1346	381	21	1545
Gergens, Frank, Brooklyn, assignor to E. Gillet, New York, N. Y. Ice-machine	258,227	May 23	1347	201	21	1545
Gering, Peter, Burrton, Kans. Wind-engine	254,303	Feb. 28	1262	375	21	691
Gerlach, Charles A. (See Derby, Thomas, assignor.)						
Gerlach, Rudolph P., Cleveland, Ohio. Fire-cleaner	260,189	June 27	1689	459	21	1997
Germer, John A. C. (See Troup and Germer.)						
Germoull-Bounand, Jean B., Paris, France. Producing colored photographs	253,669	Feb. 14	561	.....	21	455
Germon, Adolphus. (See Covell, Frank M., assignor.)						
Gerow, Dan, Macon City, Mo. Shelving-bracket	256,672	Apr. 18	1152	303	21	1165
Gerrard, Frank, assignor of one-half to E. B. Sherwood, Scranton, Pa. Railway-torpedo and detonating signal	251,868	Jan. 3	226	63	21	41
Gerry, James H., Newark, N. J. Watch train-plate	253,999	Feb. 21	1001	260	21	533
Gerwig, Lewis D., Terre Haute, Ind. Chair	257,937	May 16	981	274	21	1471
Gessner, Ernst, Aue, Saxony, Germany. Feeding device for carding-machines	257,313	May 2	196	56	21	1316
Gibbins, James Springfield, Mass. Clutch for shafting	257,488	May 9	497	118, 119	21	1363
Gibbon, Thomas H., Adamsville, N. Y., assignor of one-fourth to A. P. Law, trustee, Marshall, Tex. Railway alarm-signal	252,578	Jan. 17	1068	303	21	197
Gibboney, Adolphus F., Belleville, Pa. Grain and grass-seed distributer	258,407	May 23	1357	441	21	1582
Gibbons, John F., and G. A. Liebig, Baltimore, Md. Treating phosphates for fertilizers	252,029	Jan. 10	434	.....	21	92
Gibbs, George W., Salem, Ohio. Fire-escape	256,907	Apr. 11	589	161	21	1055
Gibbs, Lewis, Canton, Ohio, assignor to himself, J. R. Bacher, and H. A. Cavash. Plow	259,126	June 6	315	83	21	1740
Gibbs, William W. (See Hanlen, John, assignor.)						
Gibson, Charles J., Bergen Point, N. J. Clutch	259,527	June 13	814	215	21	1644
Gibson, Edward T., Fort Washakie, Wyo. Ter. Tracing-desk	253,368	Feb. 7	216	62	21	363
Gibson, Everett G., Providence, R. I. Shaft-hanger	258,572	May 30	1756	497	21	1025
Gibson, John N., Cincinnati, Ohio. Flue-brush	253,034	Jan. 31	1450	457	21	304
Gibson, Robert, *et al.* (See Hunter, Alpheus S., assignor.) (Reissue.)						
Gibson, Thomas, and E. Armstrong, Brooklyn, assignors to Hitchcock, Dermody & Co., New York, N. Y. Machine for cutting up palm	257,314	May 2	200	56	21	1317
Gibson, Thomas H., Fremont, Nebr. Power mechanism	259,127	June 6	316	84	21	1749
Gielow, John, Chicago, Ill. Faucet	255,109	Mar. 21	911	244	21	809
Gierlot, John. (See Stephan and Gierlot.)						
Giese, James A., assignor to Union Brass Manufacturing Company, Chicago, Ill. Knob attachment	254,099	Feb. 21	1002	260	21	533
Gieseeke, Adolph, Buffalo, N. Y. Manufacture of baking-powder	256,832	Apr. 25	1237	.....	21	1206
Gieseeke, Adolph, and H. Hamlin, Buffalo, N. Y.; said Gieseeke assignor to said Hamlin. Manufacturing corn-syrup	253,919	Feb. 21	998	253	21	517
Gieseeke, Adolph, and H. Hamlin, Buffalo, N. Y.; said Gieseeke assignor to said Hamlin. Composite corn-syrup	253,920	Feb. 21	998	253	21	517
Gifford, Charles H., Norwood, N. Y. Sewing-machine	255,560	Mar. 28	1330	361	21	988
Gifford, John, Watertown, N. Y. Churn	257,570	May 9	589	147, 148	21	1380
Gifford, John Z., New York, N. Y. Packing-head	254,635	Mar. 7	299	60	21	677
Gifford, William, Schenectady, N. Y. Sleeve-fastening	258,408	May 23	1357	441	21	1582
Gilbert, Andrus L., Albany, N. Y. Machine for sawing off and tenoning piles	254,954	Mar. 14	637	179	21	755
Gilbert, Andrus L., Albany, N. Y. Pile-driver	254,955	Mar. 14	638	179, 173	21	756
Gilbert, Benjamin F., assignor of one-half to C. H. Spencer, Philadelphia, Pa. Trimming attachment for sewing-machines	260,091	June 27	1787	484	21	2018
Gilbert, John S., New York, N. Y. Discharge-pipe plug for wash-basins	258,048	May 16	1112	310	21	1405

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Gilbert, Sylvester P., *et al.* (See Horton, Jacob C., assignor.)						
Gilbert, Thomas S., assignor to M. Adler, New Haven, Conn. Corset-stay	259,128	June 6	316	84	21	1749
Gilbert, William F., assignor to A. E. Hewitt, Birmingham, Conn. Corset-clasp	252,756	Jan. 24	1285	302	21	257
Giles, Isaac W., South Abington, Mass. Tobacco-pipe	252,876	Jan. 31	1453	407	21	271
Giles, Jerome, South Bend, Ind. Burglar-alarm	252,005	Jan. 10	510	141	21	95
Giles, Jerome, South Bend, Ind. Waste-valve for pumps	255,276	Mar. 21	1049	281	21	853
Giles, William W., Washington, D. C. Velocipede	252,455	Jan. 17	948	262	21	173
Gilford, Frederick E., assignor to W. Corey, Manchester, N. H. Knitting-machine needle	253,800	Feb. 21	889	235	21	505
Gill, Jabez H., Philadelphia, Pa. Implement for capping and decapping cartridges	257,890	May 16	896	248	21	1456
Gill, William A. (See Simpson, Joseph, assignor.)						
Gillespie, James E., Warwick, N. Y. Waterproofing and preservative compound	253,369	Feb. 7	216	.....	21	383
Gillespie, James E., Warwick, N. Y. Waterproofing compound	255,615	Mar. 28	1477	.....	21	913
Gillet, Etienne. (See Gergens, Frank, assignor.)						
Gillett, Egbert W., Chicago, Ill. Lining-package	256,995	Apr. 25	1531	430	21	1240
Gillett, Harrison, assignor of one-half to J. H. Gillett, Lake City, Minn. Fire-box attachment for farm-engine boilers. (Reissue)	10,016	Jan. 24	1431	399	21	260
Gillett, James H. (See Gillett, Harrison, assignor.) (Reissue.)						
Gilliam, Andrew J. (See Smith, William F., assignor.)						
Gilligan, John E., Elko, Nev. Oil-cup	258,049	May 16	1113	310	21	1495
Gilliland Electric Manufacturing Company. (See Gilliland, James F., assignor.)						
Gilliland, James F., assignor to Gilliland Electric Manufacturing Company, Indianapolis, Ind. Telephone-signal generator	253,597	Feb. 14	405	141	21	441
Gillon, Elam H. (See Jordon and Gillon.)						
Gilpin, Joseph F., and E. V. Clemens, Ansonia, Conn. Wire-dasher	259,528	June 13	815	215	21	1844
Gilson, Walter H. (See Rankin, Abram G. W., assignor.)						
Gimingham, Charles H., Newcastle-upon-Tyne, county of Northumberland, England. Electric lamp	255,277	Mar. 21	1050	281 288	21	834
Ginn, Frederick B., Oakland, Cal. Fruit-can	253,035	Jan. 31	1651	457	21	304
Ginn, Frederick B., Oakland, Cal. Sealing cans	253,036	Jan. 31	1652	458	21	304
Gipe, Ames, Roann, Ind. Thill-coupling	259,302	June 13	532	149	21	1753
Girard, Howell H. (See McCabe, Patrick, assignor.)						
Gissinger, Samuel, Pittsburg, Pa. Nut-lock	255,780	Apr. 4	33	10	21	956
Githens, George M., Brooklyn, N. Y. Steam rock-drill	257,938	May 16	962	274	21	1471
Githens, Joseph C., New York, N. Y. Pipe-coupling	252,657	Jan. 24	1177	330	21	218
Given, John L., Cambridge, Mass. Mechanical toy	258,743	May 30	1973	557	21	1663
Glasgow, William H. (See McNally and Glasgow.)						
Glaskin, Edwin E., Lower Cape, New Brunswick, Canada. Fire-kindler	252,757	Jan. 24	1286	.....	21	237
Glass, Gilbert, White Oaks, N. Mex. Ter. Centrifugal machine for separating ores	255,967	Apr. 4	973	71	21	995
Glass Veneer Company. (See Budd, James, assignor.)						
Gleason, George R., assignor to Union Brass Manufacturing Company, Chicago, Ill. Soldering-machine	254,298	Feb. 28	1252	347	21	583
Gleason, John B., Dayton, assignor to himself and C. M. Gleason, Cleveland, Ohio. Car-coupling	259,129	June 6	317	84	21	1749
Gleason Manufacturing Company, E. P. (See Orpen, Charles N., assignor.)						
Gleason, Miner T., Brodhead, Wis., assignor of one-half to E. F. Warren. Fence-post	254,304	Feb. 28	1363	376	21	601
Gleason, Catharine M. (See Gleason, John B., assignor.)						
Glick, George W., Paris, assignor of one-third to C. A. Minor, Edgar, Ill. Washing-machine	258,409	May 23	1558	442	21	1582
Gloger, Anton F., Jr., and J. P., Columbus, Tex. Composition for staining wood	258,050	May 16	1114	.....	21	1495
Gloger, Joseph P. (See Gloger, Anton F., Jr., and J. P.)						
Glover, Albert G. (See Purdy, Zachariah V., assignor.)						
Glover, Amasea S., Brockton, Mass. Apparatus for the disposal of sewage	258,744	May 30	1974	557	21	1663
Glover, Elliot, Cortland, N. Y. Car-coupling	254,001	Feb. 21	1003	280	21	533
Glover, John J., assignor of one-half to L. C. Hall, Dardanelle, Ark. Combined anvil and vise	258,855	May 30	2002	580	21	1694
Glover, Newton J., Waveland, Ind. Car-coupling	256,096	Apr. 25	1533	430	21	1240
Glover, Walter T., and G. F. James, Manchester, county of Lancaster, England. Machinery for twisting wire, &c.	258,292	May 23	1423	403 404	21	1559
Gmehlin, Paul, New York, N. Y. Upright-piano action-frame	252,370	Jan. 17	841	234	21	156
Gmehlin, Paul, New York, N. Y. Wrest-block bridge for pianos	254,209	Feb. 28	1254	347	21	583
Gobeille, Joseph L., Cleveland, Ohio. Stove	256,208	Apr. 11	590	161	21	1055
Godbold, N. W., *et al.* (See Le Roy and Henson, assignors.)						
Goddard, Robert L. (See Plumb and Marchant, assignors.)						
Geddu, Louis, Winchester, assignor of one-half to A. Van Wagenen, Boston, Mass. Blank for lacing-studs	258,538	May 23	1706	468	21	1608
Godfrey & Gardiner. (See Carr, Lewis T., assignor.)						
Godfrey, William E., Sidney, Nebr. Adjustable wrench	254,210	Feb. 28	1255	348	21	583
Godley, George F., Philadelphia, Pa. Car-axle box	251,880	Jan. 3	229	64	21	41
Godley, George F., Philadelphia, Pa. Car-axle box	256,997	Apr. 25	1534	431	21	1240
Godley, George F., Philadelphia, Pa. Car-spring	259,381	June 13	631	167	21	1811
Godley, George F., Philadelphia, Pa. Car-axle box	260,018	June 27	1449	391	21	1908
Goebel, Christian H., Philadelphia, Pa. Chain-bolt	252,309	Jan. 17	779	215	21	144
Goebel, Christian H., Philadelphia, Pa. Bolt	258,310	Jan. 17	773	215	21	144
Goebel, Christian H., assignor of one-half to G. W. Bratton, Philadelphia, Pa. Underground conduit for electric wires	259,130	June 6	318	84	21	1750
Goebel, Henry, New York, N. Y. Vacuum-pump	252,658	Jan. 24	1178	330	21	218
Goessling, Gustavus O., Jersey City, N. J. Apparatus for disintegrating vegetable substances	258,912	June 6	52	14	21	1704
Goetz, Albert, Hoboken, N. J. Lead and crayon holder	257,315	May 2	802	57	21	1317
Geewey, George, assignor of one-half to W. W. Thomason, Philadelphia, Pa. Aging and purifying whisky	257,469	May 9	499	119	21	1364
Goff, Gamaliel B., and G. Leman, assignors to S. E. Fisher & Co., Attleborough, Mass. Bracelet	255,278	Mar. 21	1052	282	21	834
Goff, George W., assignor to East Hampton Bell Company, East Hampton, Conn. Bell	254,002	Feb. 21	1004	281	21	533
Goff, Lyman B., Pawtucket, R. I. Clip for braid, tape, &c., in rolls	253,278	Feb. 7	119	34	21	365
Gogerty, John, assignor of one-half to G. B. Peake, Decatur, Ill. Safety device for railways	252,368	Jan. 17	836	233	21	155
Golcher, George and J. T., Reading, Pa. Machine for forging carriage-bolts	258,641	May 30	1843	520	21	1641
Golcher, John T. (See Golcher, George and J. T.)						
Gold, Edward E., Brooklyn, N. Y. Steam-heater	253,683	Feb. 14	610	173	21	490
Gold, Edward E., New York, N. Y. Heater	255,849	Apr. 4	114	31	21	970
Gold Medal Sewing Machine Company. (See Thomas, Eddy T., assignor.)						
Goldberg, Jacob, assignor of three-fourths to L. Silverman and I. Noar, New York, N. Y. Necktie-fastener	252,456	Jan. 17	951	263	21	173
Golden Butter Company. (See Kendall and Roberts, assignors.)						
Golden, Theodore E., Columbus, Ga. Plow	257,861	May 16	887	248	21	1456

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Goldie, William, West Bay City, Mich. Spike	259,382	June 13	638	168	21	1811
Golding, William H., Chelsea, Mass. Printing-press	256,891	Apr. 25	1406	396 397	21	1219
Goldsborough, Dion C., *et al.* (See Spencer, George N., assignee.)						
Goldschmid, Theodore J., Philadelphia, Pa. Pipe-coupling	255,163	Mar. 21	912	244	21	810
Goldsmith, Benjamin L., Baltimore, Md. Window-shade	258,410	May 23	1550	442	21	1583
Goldsmith, J. M., *et al.* (See Bradley, George H., assignor.)						
Goldsmith, J. Sidney, and H. H. Smith, New York, N. Y. Combined shade and concentrator for artificial light	251,711	Jan. 3	99	8	21	7
Goldsmith, J. Sidney, and H. H. Smith, New York, N. Y. Concentrator for artificial light	251,712	Jan. 3	99	9	21	8
Goldsmith, J. W., *et al.* (See Bradley, George H., assignor.)						
Goldsmith, Lewis G., Fort Chester, assignor to J. L. Mott Iron Works, New York, N. Y. Making cores for castings	256,989	Apr. 11	591	161	21	1055
Goldsmith, Lucius R. (See Flint, Moses C., assignor.)						
Goldsmith, Rose H., Charleston, S. C. Cotton-whipper	255,979	Mar. 21	1063	283	21	834
Goldstine, Joseph. (See Simmons, Jacob, assignor.)						
Goldsworthy, John E. (See Upham, Saunders, and Sheldon, assignors.)						
Goldthwait, Frank H., Springfield, Mass. Button	259,363	June 13	538	149	21	1793
Golinsch, Gustav, Berlin, Germany. Cigarette-box	256,673	Apr. 18	1153	323	21	1166
Gomersall, James H., Philadelphia, Pa. Machine for winding cops or bobbins	260,190	June 27	1661	450 451	21	1966
Gondolo, Paul, Paris, France, assignor to Gondolo Tannin Company, Huntingdon, Pa. Manufacturing tannin extracts	256,573	May 30	1757	.....	21	1665
Gondolo, Paul, Paris, France, assignor to Gondolo Tannin Company, Huntingdon, Pa. Process of and apparatus for the manufacture of tannin extracts	256,574	May 30	1757	497	21	1665
Gondolo Tannin Company. (See Gondolo, Paul, assignor.)						
Gontard, Adolph, Mockau, near Leipsic, Saxony, Germany. Evaporating and cooling apparatus	254,003	Feb. 21	1005	281 282	21	534
Gonzenbach, Charles A. v., New York, N. Y. Embroidering-machine	258,659	Jan. 24	1179	330	21	219
Good, Henry H. (See Bratton and Good.)						
Good, William E., Reading, Pa. Reversing apparatus for steam-engines	253,189	Feb. 7	99	10	21	358
Goodall, John W., Hayes, Kans. Breech-loading fire-arm	256,051	May 16	1115	311	21	1495
Goodchild, Robert A., New York, N. Y. Manufacture of shears and scissors	252,096	Jan. 10	511	141	21	95
Goodell, George F., assignor of one-third to C. Best, Morrison, Ill. Calendar	255,078	Mar. 14	962	245	21	794
Goodell, Henry C., Atchison, Kans. Refrigerator	252,097	Jan. 10	511	142	21	95
Goodenough, Rollin A., assignor of one-half to C. W. Russell, New York, N. Y. Harness-hook	252,210	Jan. 10	537	160	21	116
Goodhart, Alexander. (See Rehrer and Goodhart.)						
Goodman, John M., Mill Creek, Pa. Hoof-protector	252,758	Jan. 24	1287	308	21	237
Goodman, William, Boston, Mass. Leather-dressing machine	252,369	Jan. 17	837	223 234	21	155
Goodrich, Edward P., Ypsilanti, Mich. Car-coupling	258,698	Jan. 24	1116	313	21	398
Goodrich, Harry C., Chicago, Ill. Tuck-marker for sewing-machines	256,883	Apr. 25	1536	379	21	1207
Goodrich, Harry C., and M. S. Barnum, Chicago, Ill., assignors to said Goodrich. Ruffling attachment for sewing-machines	256,884	Apr. 25	1341	379	21	1207
Goodwin, Charles H., assignor to Waterbury Button Company, Waterbury, Conn. Button	253,370	Feb. 7	217	68	21	383
Goodwin, Julius C., assignor of one-half to W. Hotop, Kalamazoo, Mich. Bobbin-winder for sewing-machines	259,363	June 13	633	150	21	1811
Goodyear, David F., Memphis, Tenn. Canister or store-can	252,750	Jan. 24	1287	308	21	237
Goodyear, James, assignor of one-half to R. Eickemeyer, Yonkers, N. Y. Automatic feeding and discharging mechanism for hominy-mills, &c.	258,980	May 16	1201	306	21	1389
Goodyear & McKay Sewing Machine Company. (See Bertrand, Eli, assignor.)						
Goodyear, Robert B., Philadelphia, assignor of one-half to Wolfenden, Shore & Co., Carding-tea, Pa. Loom-shedding mechanism	255,850	Apr. 4	115	31	21	970
Gordon, Alexander, Detroit, Mich. Cigar-machine	257,316	May 2	803	57	21	1317
Gordon, Alexander, Cincinnati, Ohio. Railway-car-axle lathe	258,690	Jan. 10	435	119	21	68
Gordon, Alexander, Cincinnati, and G. T. Reiss, assignors to Niles Tool Works, Hamilton, Ohio. Adjusting-gearing	258,533	May 23	1707	468	21	1608
Gordon, Fred. W., Pittsburg, Pa. Tuyere	257,571	May 9	831	148	21	1360
Gordon, Frederick W., Pittsburg, Pa. Tuyere for furnaces	253,387	Feb. 14	469	117	21	490
Gordon, Henry R., Detriot, Mich. Attachment to bakers' ovens	256,313	Apr. 11	782	196	21	1078
Gordon, William. (See Flagg and Gordon.)						
Gordon, William, Boston, Mass. Sole-edge protector for boots or shoes	258,296	May 23	1350	368	21	1546
Gordon, William H., and P. J. Boost, Detroit, Mich. Gage for sawing ellipses	260,019	June 27	1450	391	21	1906
Gordon, William J. (See Mundell and Gordon.)						
Gordon, William S., Princetown, N. Y. Hay and cotton baling band	255,948	Apr. 4	974	71	21	995
Gore, Charles L., assignor of one-fourth to J. D. Tayrsend, New York, N. Y. Insulator for telegraph-wires	252,857	Jan. 24	1427	398	21	299
Gorenflo, William, assignor to Lopez, Elmer & Co., Biloxi, Miss. Lining for preserving-cans	259,384	June 13	634	168	21	1811
Gorham, Cornelius, De Soto, and W. Bartlett, St. Louis, Mo. Coaling locomotives and chute therefor	259,589	June 13	616	216	21	1844
Gorlick, Thomas J., *et al.* (See Shetter, Solomon, assignor.)						
Gorman, Henry, assignor of three-fourths to S. G. Martin, W. A. Copeland, and E. W. Martin, Providence, R. I. Chain-link	258,411	May 23	1560	442	21	1583
Gorman, Joseph, Elizabeth, N. J. Extension-leg for scaffold-supports	254,299	Apr. 25	1535	431	21	1241
Gorman, Joseph, Elizabeth, N. J. Scaffold-support	259,530	June 13	618	216	21	1845
Gorn, Hermann A. (See Sheridan and Gorn.)						
Gornall, Richard, assignor of one-half to W. A. Roberts, Baltimore, Md. Vent for casks	257,692	May 9	494	193	21	1411
Gorton, Charles, Albany, N. Y. Steam-generator	255,167	Mar. 21	839	234	21	797
Gorton, Charles, Philadelphia, Pa. Steam-generator	257,217	May 9	81	24	21	1295
Gorton, William E., Eau Claire, Wis. Cockle-separating machine	256,674	Apr. 18	1153	308 304	21	1166
Goso, Lysander T., assignor of one-half to H. Vickrey, Rose, Ind. Car-coupling	254,796	Mar. 7	366	102	21	704
Goss, Leonard W., and H. Walter, Cincinnati, Ohio, assignors, by mesne assignment, to Waldumar Electro Magnetic Brake Company, of Ohio. Electro-magnetic brake	258,383	Jan. 10	748	206	21	134
Gosselin, Rodolphe T., assignor to himself and C. H. Cass, Boston, Mass. Spittoon	256,210	Apr. 11	592	162	21	1055
Gotthberg, Edwing H., Greenville, N. J. Lamp-shade holder	254,636	Mar. 7	231	60	21	677
Gotthelf, Joseph B. (See Starr, George W., assignor.)						
Goubert, Auguste A., Jersey City, N. J. Automatic discharging apparatus for bone-black kilns, &c.	254,474	Mar. 7	38	9	21	643
Gough, George, Brooklyn, assignor to E. G. and A. A. Webster, New York, N. Y. Jewel-box	253,473	Feb. 7	341	95	21	404
Gould, Charles H., New York, N. Y. Step or stair	251,713	Jan. 3	39	9	21	8

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Gould, James G. (See Gould, John H. and J. G.)						
Gould, John H. and J. G., Philadelphia, Pa. Combined turn-table and jack for street-cars	260,191	June 27	1662	451	21	1998
Gould, Philetus W., *et al.* (See Wait, Oscar E., assignor.)						
Gould, Samuel A., Chicago, Ill., assignor to H. B. Poladorfer, Evansville, Ind. Crimping-machine	256,475	Apr. 18	994	258	21	1127
Gould, Thomas, Wakefield, assignor of one-half to O. I. Stowell, Lynnfield, Mass. Nozzle for hose-pipes	259,131	June 6	319	85	21	1750
Goulding, George P. (See Redmond, Owen, assignor.)						
Goulding, Lewis, assignor to himself and C. E. Phillips, Abington, Mass. Spring-button	259,311	Jan. 17	773	215	21	144
Gourley, John S., Syracuse, N. Y. Folding clothes-bar	256,745	May 30	1975	557	21	1663
Gove, Charles E. (See Gove, Charles H., assignor.)						
Gove, Charles H., assignor of one-half to C. E. Gove, Norwalk, Ohio. Adjustable clamp	257,939	May 16	983	275	21	1471
Gowan, John E. (See Teal, B. Frank, assignor.)						
Grace, Parker. (See Davis, Ossian C., assignor.)						
Gracey, Charles, Contention, Ariz. Ter. Lifting-jack	254,815	Mar. 14	450	121	21	722
Gracey, Joseph, Chicago, Ill. Folding leg-fixture for extension-lounges	255,781	Apr. 4	34	10	21	956
Graessler, Friedrich, Cannstadt, Germany. Manufacture of yellow coloring-matters	253,398	Feb. 14	496	.....	21	442
Graff, Martin, Terre Haute, Ind. Grain-car door	253,280	Mar. 21	1053	283	21	834
Graff, Thomas J. (See Schlag, Graff, and McKee.)						
Grah, Emil, Toledo, Ohio, assignor, by mesne assignments, to J. Tremleit and A. S. Mann, St. Louis, Mo. Sign. (Reissue)	10,014	Jan. 24	1429	398	21	260
Graham, Amelia L. (See Graham and Ransch.)						
Graham, Charles H., assignor to Union Nut Company, Unionville, Conn. Machine for threading bolts	256,675	Apr. 18	1156	325	21	1166
Graham, James, Detroit, Mich. Nut-lock	255,428	Mar. 28	1250	337	21	873
Graham, John A. and A. L., and E. C. Ransch, Red Wing, Minn. Combined register and ottoman	254,867	Mar. 14	517	138	21	733
Graham, John C., Philadelphia, Pa. Chenille fringe	255,501	Mar. 28	1340	362	21	888
Graham, Thomas J., Mobile, Ala. Paper-bag holder	256,138	Apr. 11	489	133	21	1039
Graham, William R. (See Catron, Foster, and Graham.)						
Grand Detour Plow Company. (See Conles and Kenneth, assignors.)						
Grand Rapids Felt Boot Company. (See Bissell, Melville R., assignor.)						
Granger, Almon M., Boston, Mass. Bottle-breaking fire-extinguisher	256,393	May 23	1425	404	21	1560
Granger, Almon M., Boston, Mass. Fire-extinguishing apparatus	260,192	June 27	1663	452	21	1998
Granger, Niles, Saratoga Springs, N. Y. Frame and treadle for glass molds	254,637	Mar. 7	231	60	21	677
Grannis, Charles M., and J. L. Thomson, Syracuse, N. Y. Rein-holder	254,543	Mar. 7	118	30	21	658
Grannis, Sidney S., Red Wing, Minn. Detachable clasp-hook for shirt-collars	256,314	Apr. 11	723	197	21	1079
Grannise, Charles E., New Haven, Conn. Safety car-lamp	258,098	Jan. 10	513	142	21	95
Grant, Charles, Jr. (See Nichols, Andrew, assignor.)						
Grant, Duane A., Nyack, N. Y. Car-coupling	257,317	May 2	205	57	21	1318
Grant, Edward W., Ypsilanti, Mich. Car-coupling	256,746	May 30	1976	557	21	1663
Grant, Edward W., Ypsilanti, Mich. Rubber bucket for chain-pumps	259,847	June 20	1223	328	21	1921
Grant, Frank S., *et al.* (See Sanford, Aaron C., assignor.)						
Grant, James A., T. M. McClelland, and J. T. Drummond, Mount Pleasant, Iowa. Ditching-machine	259,304	June 13	533	140 141	21	1793
Grant, Jott. (See Dudley, Thomas E., assignor.)						
Grant, Jott, Boston, Mass. Filter	254,475	Mar. 7	32	9	21	644
Grant, Sidney A., Malden, Mass. Paper-cutting device for printing-presses	255,616	Mar. 28	1477	397	21	913
Grant, Sidney A., Springfield, Mass. Ruling-machine	258,642	May 30	1844	500	21	1641
Grant, William. (See Watson, John W., assignor.)						
Granville, Arthur, New York, N. Y. Hydraulic elevator	259,846	June 20	1224	328	21	1921
Graves, George W. (See Fogelberg and Graves.)						
Graves, George W., assignor of one-half to C. E. Potter, Troy, N. Y. Parlor heating-stove	258,319	Jan. 17	774	216	21	144
Graves, Gilbert S., Buffalo, N. Y., and J. Heede, Peoria, Ill. Feed-regulator for grinding-mills	252,211	Jan. 10	539	180	21	116
Graves, Gilbert S., Buffalo, N. Y., and J. Heede, Peoria, Ill. Starch-separator	256,315	Apr. 11	794	197	21	1079
Graves, James T., Wilson, N. C. Horse-power	259,649	June 20	1226	329	21	1922
Graves, John, Green Point, assignor to H. Miller, New York, N. Y. Ash-sifter	254,636	Mar. 7	352	66	21	678
Graves, Samuel. (See Newton, Joseph L., assignor.)						
Graves, Socrates R., and D. J. Kirkman, Winchester, Ill. Station-indicator	255,989	Apr. 4	275	71	21	996
Gray & Co., George A., Jr. (See Gray, George A., Jr., assignor.)						
Gray, George A., Jr., Covington, Ky., assignor to G. A. Gray, Jr., & Co., Cincinnati, Ohio. Engine-lathe	259,760	Jan. 24	1288	363	21	237
Gray, John W. (See Marker, Stephen A., assignor.)						
Gray, John W., Hartford, Conn. Manufacturing rubber-coated belting	259,850	June 20	1227	328	21	1922
Gray, Josiah, and W. Hollenback, assignors to themselves, C. B. Shafer, and J. R. Reed, Chicago, Ill. Railway-switch	256,788	Apr. 18	1283	364	21	1191
Gray, Peter, Cambridge, assignor to Pope Manufacturing Company, Boston, Mass. Lantern for bicycles	259,371	Jan. 17	842	234 235	21	156
Gray, Robert, Jr., *et al.* (See Jones, Alfred E., assignor.)						
Greacen, Stanley, Rye, N. Y. Attaching rubber to metals	260,090	June 27	1451	.....	21	1966
Greacon, William J., Jr. (See Christy and Sheridan, assignors.)						
Greaves, James, assignor of one-half to J. and J. Dobson, Philadelphia, Pa. Condensing-cylinder for carding-engines. (Reissue)	10,054	Mar. 7	411	109	21	708
Greely, Benjamin J., Boston, Mass. Button-hole device for suspenders	254,956	Mar. 14	639	173	21	756
Green, Charles H., assignor of one-half to J. R. Clauson, Philadelphia, Pa. Thread-cutter for sewing-machines	253,474	Feb. 7	342	95	21	404
Green, Douglass. (See Davidson and Green.)						
Green, George F., Kalamazoo, Mich., assignor to W. N. Whiteley, J. Fassler, and O. S. Kelly, Springfield, Ohio. Automatic grain-binder	260,093	June 27	1540	415 416	21	1959
Green, George G., Woodbury, N. J. Almanac	256,316	Apr. 11	725	197	21	1079
Green, James O. (See Green, Joseph, assignor.)						
Green, Jeremiah D., Troy, N. Y. Composition for sewer, drain, and water pipes, &c	255,981	Mar. 21	1054	.....	21	834
Green, Joseph, assignor to J. O. Green, Whitewater, Wis. Chair	253,921	Feb. 21	907	253	21	518
Green, Norvin. (See Campbell, Milton H., assignor.)						
Green, Paul W., and A. E. Turner, Philadelphia, Pa. Governor-valve	254,094	Feb. 21	1007	992	21	534
Green, Richard M. (See Evans and Green.)						
Green, Shepherd, Nashville, Tenn. Harvester-dropper	257,318	May 2	206	58	21	1318
Green, Thomas, Northampton, county of Northampton, England. Fastening for laces	256,999	Apr. 25	1536	431	21	1241
Green, William, St. Lawrence, county of Kent, England. Manufacture or treatment of soap	259,755	June 20	1119	.....	21	1903
Green, William J. (See Mahon and Green.)						
Greenaway, Alfred, Louisville, Ky. Franklin stove and fire-grate	258,575	May 30	1760	498	21	1626
Greene, Albert C., deceased, (W. B. Wightman, administrator,) Providence, R. I. Garment-supporter	255,108	Mar. 21	840	224	21	797

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Greene, Albert C., deceased, Providence, R. I., (W. B. Wightman, administrator.) Button or stud	256,211	Apr. 11	503	142	21	1056
Greene, Edward C. (See Phillips and Greene.)						
Greene, Thomas W., Lansing, Mich. Horse hay-rake	259,603	June 6	165	45	21	1782
Greenfield, Edwin T., Brooklyn, N. Y., assignor of one-half to Holmes Burglar Alarm Telegraph Company, of New York. Telephone	256,294	Jan. 10	749	208	21	134
Greenfield, Edwin T., Brooklyn, N. Y., assignor of one-half to Holmes Burglar Alarm Telegraph Company of New York. Telephone-exchange system	256,432	Apr. 11	859	239 240	21	1163
Greenfield, Harry, Hatrison, N. J. Seah fastener and holder	253,936	Mar. 21	1055	283	21	834
Greenleaf, Clement A., Indianapolis, Ind. Turn-table	258,365	June 13	536	141	21	1794
Greenleaf, Jonas B., Fargo, Dak. Ter., assignor of one-half to F. S. Berry, Mercer, Me. Monkey-wrench	260,294	June 27	1766	494	21	2018
Greenough, John J., Syracuse, N. Y. Universal joint	256,576	May 30	1761	498	21	1626
Greenwald, Kasper J., Newark, N. J. Boot-jack	254,816	Mar. 14	451	121	21	722
Greenwood, Herbert, East Templeton, assignor to himself and M. Keating, Boston, Mass. Folding crib	257,490	May 9	431	119	21	1364
Greenwood, John H., and W. H. Cowell, Logan, Ohio. Railway switch-stand	253,861	Feb. 21	839	235	21	505
Greenwood Machine Company. (See Richardson, Julius C., assignor.)						
Greer, Alfred M. (See Nowell, John H., assignor.)						
Greer, Caleb F. (See Harris and Greer.)						
Greer, Chauncey F., *et al.* (See Greer, Laughlin B., assignor.)						
Greer, Howard, Chicago, Ill., assignor of one-half to G. H. Christy, trustee, Sewickley, Pa. Railway-spike	256,056	May 16	1116	311	21	1496
Greer, Laughlin B., assignor to C. F. Keys, M. and C. F. Greer, Washington, D. C. Reciprocating engine	256,570	Jan. 17	1069	303 304	21	197
Greer, Laughlin B., assignor to C. W. Hayes, C. F. and M. Greer, Washington, D. C. Wrist-pin turner	256,053	May 16	1116	311 312	21	1496
Greer, Marcus, *et al.* (See Greer, Laughlin B., assignor.)						
Gregerson, George J., Millburn, N. J. Treating animal hair for manufacturing felt	254,811	Feb. 28	1255	.....	21	563
Gregerson, George J., Millburn, N. J. Treating animal hair for manufacturing felt	257,882	May 16	888	248	21	1456
Gregg, Frank M., Ottawa, Ill. Limb-rest for railway travelers	255,970	Apr. 4	276	73	21	996
Gregg, Norris B., St. Louis, Mo. Apparatus for the manufacture of red lead	256,413	May 23	1561	442	21	1563
Gregg, Samuel H., Crawfordsville, Ind. Manufacture of barbed strips for fences						
Gregory, George W., Boston, Mass., assignor to Weed Sewing Machine Company, Hartford, Conn. Treadle-support for sewing-machines	256,563	Apr. 18	1021	288	21	1144
Gregory, Harry T. (See Pickford and Gregory.)						
Grellner, Christopher J., St. Louis, Mo. Hammer	253,879	Feb. 7	113	34	21	385
Griffin, Archibald D., Woodbury, Pa. Tuyere	257,883	May 16	869	249	21	1456
Griffin, Daniel C., Burlington, Iowa. Laundry-heater	259,138	June 6	320	85	21	1750
Griffin, James L., Cassata, Tex. Car-coupling	253,637	Jan. 31	1058	258	21	304
Griffin, Nathaniel T. (See Converse and Griffin.)						
Griffin, P. Henry, Detroit, Mich. Cord for sash-weights	254,126	Feb. 28	1139	294	21	589
Griffith, Alexander L., Beallsville, Ohio. Triangular road scraper and grader	259,654	May 16	1117	313	21	1496
Griffith, James, Flint River township, Des Moines county, Iowa. Grain-tally	254,065	Feb. 21	1007	262	21	534
Griffith, James E. (See Lawrence, James D., assignor.)						
Griffith, Joseph G., *et al.* (See Austin, Adrian H., assignor.)						
Griffith, Nathaniel A., Austin, Nev. Journal-bearing	256,413	May 23	1562	443	21	1563
Griffith, Thomas E. (See Richter and Griffith.)						
Grill, Gottfried, Baltimore, Md. Guard for variety molding-machines	258,313	Jan. 17	775	216	21	145
Grimes, Franklin T., Liberty, Mo., assignor, by mesne assignments, to M. Hicks and T. Smith, New York, N. Y. Lamp. (Reissue)	10,050	Mar. 7	408	108	21	708
Grimm, Gustave H., Hudson, Ohio. Curtain-pole	259,531	June 13	619	216	21	1845
Grimm, Gustave H., and H. M. Clark, Hudson, Ohio. Sugar-evaporator	254,476	Mar. 7	34	9	21	644
Grinnell, Adalbert J., Detroit, Mich. Manufacture of paper pails	254,127	Feb. 28	1160	304	21	589
Griscom, Joseph T. and W. H. H., Nashville, Tenn. Tube-expander	257,319	May 2	208	58	21	1318
Griscom, Lewis, Pottsville, Pa. Oscillating engine	253,638	Jan. 31	1058	258	21	304
Griscom, William H. H. (See Griscom, Joseph T. and W. H. H.)						
Grisel, George, San Francisco, Cal. Sewing-machine	257,940	May 16	986	275	21	1471
Griswold, Bradford M. (See Darling and Griswold.)						
Griswold, Henry J., London, county of Middlesex, England. Knitting-machine	255,971	Apr. 4	277	72	21	996
Griswold, William F., New York, N. Y. Reeling cells	253,371	Feb. 7	318	68	21	383
Groff, Adam B. (See Anderson, John W., assignor.)						
Grosche, Charles W., New York, N. Y. Stem-winding watch	258,761	Jan. 24	1290	363	21	237
Gross, Conrad and G., Richmond, Va. Carriage-top	258,055	May 16	1118	313	21	1496
Gross, Gottfried. (See Gross, Conrad and G.)						
Gross, H. H. (See Costello, Thomas H., assignor.)						
Gross, Henry, Tiffin, Ohio. Gate-closer	257,491	May 9	438	119	21	1364
Gross, Henry, Tiffin, Ohio. Fire and burglar proof safe	258,577	May 30	1768	498 499	21	1626
Gross, John. (See Mueller and Gross.)						
Gross, Walter R., and J. S. George, Bridgeport, Conn. Slate-washer	255,851	Apr. 4	116	31	21	970
Grossiord, Jules A., Jeune, Paris, France, assignor to E. E. Kipling, New York, N. Y. Imitation diamond	254,305	Feb. 28	1264	.....	21	601
Grossmann, George. (See Nelder and Grossmann.)						
Grout, Charles P., New York, N. Y. Permutation-padlock	255,164	Mar. 21	913	244	21	810
Grout, Frank E., Chicago, Ill. Paint and other cans and tubes	253,980	Feb. 7	114	34	21	386
Grout, William H. F., South Hornsey, county of Middlesex, England. Differential gear for velocipedes	254,639	Mar. 7	233	61	21	678
Groves, James E. (See Barrie and Groves.)						
Grow, Frank J., Alpha, Ind. Wheat-feeder	254,957	Mar. 14	640	174	21	756
Grube, Jefferson, Auburn, Ind. Grain-separator	258,314	Jan. 17	776	216	21	145
Gruber, John P., Jersey City, N. J. Air-vent for beer-kegs	259,698	June 20	1011	270	21	1685
Grunow, Frank A., New Orleans, La. Water-elevator	259,851	June 20	1226	329	21	1922
Gubbins, John F., Chicago, Ill. Apparatus for drying and pulverizing offal, &c	255,858	Apr. 4	117	31	21	970
Gubbins, John F., Chicago, Ill. Drying apparatus	257,139	May 2	18	6	21	1264
Gudgeon, Robert H., Winchester, county of Hants, England. Adjustable mantel	254,888	Mar. 14	518	139	21	753
Guelph Carriage Goods Company. (See Woodyatt, Augustus R., assignor.)						
Guende, Emanuel, Cavaillon, France. Signaling apparatus for railways	259,365	June 13	635	166	21	1812
Guernsey, Thomson, *et al.* (See Jordan and Gillen, assignors.)						
Guernsey, William B., Norwich, and W. D. Turner, New York, N. Y., assignors of one-third to Terrey Automatic Brake Company, New York. Locomotive-brake	259,604	June 6	168	45	21	1783
Guernsey, William B., Norwich, and W. B. Turner, New York, N. Y., assignors of one-third to Terrey Automatic Brake Company, New York. Locomotive-brake	259,605	June 6	167	45	21	1783
Guernsey, William B., Norwich, N. Y., assignor of one-third to Terrey Automatic Brake Company, New York. Locomotive-brake	259,606	June 6	168	46	21	1783

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Guest, John H., Brooklyn, N. Y. Regulator for electric lights	254,546	Mar. 7	119	30	21	656
Guest, John H., Brooklyn, N. Y. Electric lamp	254,641	Mar. 7	235	64	21	678
Guest, John H., Brooklyn, N. Y. Draw-plate for preparing fibrous filaments for electrical carbons	256,218	Apr. 11	594	169	21	1036
Guest, John H., Brooklyn, N. Y. Forming and treating electrical carbons	256,213	Apr. 11	596	168	21	1036
Guest, John H., Brooklyn, N. Y. Electric incandescent lamp	256,747	May 30	1977	556	21	1663
Guest, John H., Brooklyn, N. Y. Electric-arc lamp	259,607	June 6	169	46	21	1794
Guest, John H., Brooklyn, N. Y. Electric incandescent lamp	259,608	June 6	171	46	21	1794
Guest, William, Deptford, county of Kent, and C. Coart, Rotherhithe, county of Surrey, England. Treating tan-bark, &c., to render the same suitable for use in manufacturing paper	254,956	Mar. 14	641	174 / 175	21	756
Guignon, Joseph F., St. Louis, Mo. Cuff-holder	258,089	Jan. 10	514	142	21	95
Guilford, Timothy, New York, N. Y. Composition for buttons, &c	253,300	Feb. 7	30	.....	21	359
Guilford, Timothy, New York, N. Y. Manufacture of articles from plastic materials	256,476	Apr. 18	928	258	21	1137
Gulcher, Robert J., Biala, Austria. Electric-arc lamp	259,756	June 20	1181	298	21	1903
Gulick, Henry S., *et al.* (See Gary, Albert J., assignor.)						
Gunmaer, Albert, Omro, Wis. Vehicle-spring	253,291	Feb. 7	31	10	21	352
Gump Alexander, assignor of one-half to J. Gump, Fletcher, Ohio. Cultivator	252,837	Jan. 24	1463	391	21	256
Gump, Jacob. (See Gump, Alexander, assignor.)						
Gundorph, Ferdinand, Portland, Oreg. Pin-jewel holder	252,089	Jan. 24	1180	331	21	219
Gunn, C. A. (See Lee, David, Jr., assignor.)						
Gunn, John C., Knoxville, Tenn. Wrench	255,853	Apr. 4	119	32	21	970
Gunn, Joseph H., Brooklyn, Pa. Butter-pail ear and cover fastening	254,959	Mar. 14	642	175	21	756
Gunning, James F. J., New Haven, Conn. Sewing-machine guide	253,378	Feb. 7	219	62	21	363
Gunning, James F. J., New Haven, Conn. Sewing-machine guide	255,617	Mar. 28	1479	377	21	913
Gunning, James F. J., New Haven, Conn. Gage for setting sewing-machine guides	258,056	May 16	1119	313	21	1496
Günther, Emil C. F., assignor to himself and A. Schwencke, New York, N. Y. Leather substitute	258,057	May 16	1120	314	21	1496
Gunther, George F. (See Egerton, C. Calvert, assignor.)						
Günther, Hugo, assignor of one-half to M. Herfurth, Chemnitz, Saxony, Germany. Knitting-machine	253,922	Feb. 21	908	254	21	518
Guptill, Dan, Elgin, Ill. Harvester-sickle	259,757	June 20	1182	296	21	1903
Gurd, William J., Sarnia, Ontario, Canada. Motor	257,864	May 16	891	249	21	1456
Gurney, J. Theodore, assignor of one-half to S. Little, Boston, Mass. Sleigh	253,694	Feb. 14	613	173	21	460
Gurney, J. Theodore, Boston, Mass. Passenger-vehicle	260,383	June 27	1780	485	21	2018
Gurney, Thomas, Chelsea, Mass. Fire-proof composition for safes, &c	259,532	June 13	890	.....	21	1845
Gustaveson, Charles J., Salt Lake City, Utah Ter. Hopple	253,373	Feb. 7	220	63	21	363
Gwyer, Frederick S. (See Mott, Fannie C., assignor.)						
Haas, Levi, Chester, Pa. Railway-chair	253,374	Feb. 7	220	63	21	363
Haas, Levi, Chester, Pa. Railway chair and tie	257,572	May 9	532	148	21	1360
Haas, Phillip M., *et al.* (See Ostrander, Jonathan, assignor.)						
Haberstick, Jacob, Ocean Beach, N. J. Carburetor	253,909	Feb. 7	31	10	21	352
Hacke, Friedrich, De Soto, Mo. Plow-handle	259,133	June 6	381	85	21	1750
Hackett, Michael, New York, N. Y. Shoe-polish	259,009	June 6	174	.....	21	1794
Haddan, Potter. (See Cole, George P., assignor.)						
Haehnel, Frederic, assignor to New Orleans Cigar Factory, New Orleans, La. Cigar-machine	259,636	June 13	954	254 / 255	21	1868
Hafely, Alfred C., New York, N. Y. Album-clasp	253,281	Feb. 7	115	35	21	366
Hafely, Alfred C., New York, assignor to W. C. Horn, Brooklyn, N. Y. Adjustable clasp for books	258,100	Jan. 10	515	143	21	96
Haff, Edward P., Brooklyn, N. Y. Pocket tape-measure	258,101	Jan. 10	515	143	21	96
Hafner, Adam, Katonton, Ga. Governor attachment for elevators	253,695	Feb. 14	614	174	21	460
Hafner, John A., Pittsburg, Pa. Driving-wheel	252,457	Jan. 17	951	263	21	173
Hageman, Randolph F., New Madison, Ohio. Automatic gate	251,870	Jan. 3	230	64	21	41
Hagen, Brede H., Chicago, Ill. Husking-glove	259,663	June 20	1012	270	21	1885
Hager, Henry, Elizabeth, N. J. Drilling-machine	255,618	Mar. 28	1480	397	21	913
Hagerty, John. (See Cooke and Hagerty.)						
Haggerty, Michael H. (See Long, Oliver, assignor.)						
Haggerty, Timothy, Fall River, Mass. Sail-hank	253,598	Feb. 14	621	117	21	430
Haggett, James P., New Castle, Me. Weighing-scales	256,802	Apr. 25	1410	367	21	1219
Hague, Charles A., Chicago, Ill. Drop-hammer	256,619	Mar. 28	1481	398	21	914
Hahn, Adam, assignor of one-half to J. J. Hobiltsell, Keystone Junction, Pa. Mold for making tubular bricks	255,972	Apr. 4	979	72	21	996
Hahn, Carl I., Philadelphia, Pa. Artificial leaf and plant	252,702	Jan. 24	1291	363	21	236
Hahn, Joseph J., Canton, Ohio. Steam-governor	255,973	Apr. 4	980	73	21	996
Haight, George E., Hartford, Conn., assignor, by mesne assignments, of one-half to W. E. Winsor, New York, N. Y. Current-controlling device for torpedo-boats	257,693	May 9	695	193 / 194	21	1411
Haight, George E., Hartford, Conn., assignor of one-half to W. E. Winsor, New York, N. Y. Device for controlling torpedo-boats	257,694	May 9	701	194	21	1411
Haight, George E., Hartford, Conn., assignor of one-half to H. D. Winsor, New York, N. Y. Electrical device for operating submerged mines, &c	257,695	May 9	702	194 / 195	21	1412
Hailes, William, Albany, N. Y. Coal-oil stove	253,939	Jan. 31	1654	456 / 459	21	305
Hake, Francis A., Cuero, Tex. Saddle-pad	258,748	May 30	1979	558	21	1664
Hake, Frans D., Milwaukee, Wis. Bouquet support and former	254,005	Feb. 21	1089	283	21	534
Haldeman, John, Philadelphia, Pa. Heating piles	253,309	Feb. 14	607	.....	21	442
Hale, D. Frank, Springfield, Mass. Clasp	255,620	Mar. 28	1498	396	21	914
Hale, Elias J., Foxcroft, Me. Tubular lantern	258,345	Jan. 17	777	217	21	145
Hale, Henry S., Philadelphia, Pa. Seat	256,676	Apr. 18	1150	305	21	1167
Hale, Henry S., Philadelphia, Pa. Seat	259,533	June 13	891	217	21	1845
Hale, John C., Stephens City, Va. Piston	254,040	Mar. 14	643	175	21	757
Hale, Joseph, Cheboygan, Mich. Sheet-metal vessel	255,165	Mar. 21	915	244	21	810
Hale, Spencer A., Morrison, assignor of one-half to C. Kelley, Harrisonville, Mo. Clasp-rest for ribbons, &c	251,671	Jan. 3	231	64	21	42
Hale, William E., Washington, D. C., assignor to United States Telephone Manufacturing Company, New York, N. Y. Telephonic receiving-instrument	254,643	Mar. 7	226	66	21	678
Hale, William E., Chicago, Ill. Hydraulic elevator	253,040	Jan. 31	1658	459	21	305
Hale, William P., Brookport, N. Y. Harvester-binder	259,366	June 13	837	149	21	1812
Hale, William P., Brookport, N. Y. Clutch	259,852	June 20	1259	309	21	1902
Haley, Jonathan, Pittsburg, Pa. Glass mold for casting ornamental picture-frames, &c	260,193	June 27	1086	.....	21	1906
Haley, William S., Columbia, Tenn. Fruit-drying scaffold	254,306	Feb. 28	1364	376	21	602
Halkyard, William, assignor of one-half to H. A. Church, Providence, R. I. Machine for covering electrical conducting-wires with metallic armor	253,389	Feb. 14	621	117	21	430

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Hall, Albert E. (See Hall, Milan W., assignor.)						
Hall, Albert E. and M. W., Plainfield, N. J. Dredging apparatus	256,913	June 6	84	14, 15	21	1704
Hall, Charles, New York, N. Y. Manufacture of belts	252,661	Jan. 24	1181	331	21	219
Hall, Charles E. (See Smith and Hall.)						
Hall, Cofran L., San Francisco, Cal. Steam-boiler furnace	257,690	Apr. 25	1397	431	21	1241
Hall, Cyrus J., Belfast, Me. Machine for dressing or polishing stone	259,134	June 6	382	85	21	1751
Hall, Edward G., Healdsburg, and M. D. Haskins, Guerneville, Cal. Furnace for treating the ores of mercury	256,077	Apr. 10	1161	286	21	1167
Hall, Frank W. (See Hall, Maxcy R., assignor.)						
Hall, George. (See Arter, Francis H., assignor.)						
Hall, George P., Baltimore, Md. Mustache-guard	260,294	May 23	1497	404	21	1899
Hall, Henry M., Philadelphia, Pa., assignor of one-half to W. Huey, Camden, N. J. Bearing pin or stud for machinery	253,375	Feb. 7	221	63	21	363
Hall, Henry P., Danvers, Ill. Corn-planter and check-rower	254,122	Feb. 28	1161	284	21	588
Hall, Isaac, Boston, Mass. Lasting-jack	251,714	Jan. 3	21	9	21	6
Hall, John F., Bluffton, Ind. Saw-guide	254,212	Feb. 28	1266	340	21	563
Hall, Joseph J., Chicago, Ill. Smoke-consuming furnace	254,097	Feb. 21	1010	253	21	534
Hall, Lewis, Metamora, assignor of one-fourth to A. G. Scherer, Peoria, Ill. Traction-wheel	259,135	June 6	382	85	21	1751
Hall, Louis C. (See Glover, John J., assignor.)						
Hall, Maxcy R., Fair Mount, assignor of one-half to F. W. Hall, Dahlonega, Ga. Steam-pump	259,136	June 6	384	86	21	1751
Hall, Milan W. (See Hall, Albert E. and M. W.)						
Hall, Milan W., assignor of one-half to A. E. Hall, Plainfield, N. J. Steam-engine	253,696	Feb. 14	615	174	21	460
Hall, Milan W., assignor of one-half to A. E. Hall, Plainfield, N. J. Steam-engine	255,654	Apr. 4	120	30	21	971
Hall, Milan W., assignor of one-half to A. E. Hall, Plainfield, N. J. Steam-engine	254,961	Mar. 14	644	175	21	757
Hall, Oliver L., Parsons, Kans. Check-row planter	257,691	Apr. 25	1536	432	21	1241
Hall, Samuel, Chicago, Ill. Enamel oven	259,372	June 6	461	120	21	1717
Hall, Theddeus M., assignor of one-half to W. McCallum, Cameron, Mo. Dumping-car	19,088	Feb. 7	305	101	21	407
Hall, Thomas G., New York, N. Y., assignor, by mesne assignments, to Interchangeable Tool Company, of New York. Cutting-nippers. (Reissue)						
Hall, Walter F. (See Roe, David A., assignor.)						
Hall, Willard M., Worcester, assignor to E. A. Hildreth, Harvard, Mass. Cutter for wood-splitting machines	259,010	June 6	174	47	21	1794
Hall, William. (See Hogg and Hall.)						
Hall, William H., Tiffin, Ohio. Horse hay-rake	256,893	Apr. 25	1411	397	21	1219
Hall, William H., New York, N. Y. Horse-collar	257,692	Apr. 25	1536	432	21	1241
Hall, William J., Syracuse, N. Y., assignor to himself and W. J. Hutchins, Joliet, Ill. Protector for oil-tanks	258,749	May 30	1980	558	21	1664
Hall, William L., Troy, N. Y. Ironing-machine	258,220	May 23	1259	309	21	1546
Hall, William N., Newark, N. J. Belting	259,137	June 6	385	86	21	1751
Halladay, William H., assignor of one-half to E. Benjamin, J. E. Mallery, and E. Fischer, Chicago, Ill. Saw-sharpening machine	254,039	Mar. 14	519	139	21	734
Hallenbeck, Joseph P. (See Morris and Hallenbeck.)						
Haller, Joseph P., assignor of one-half to S. Wangenheim, San Francisco, Cal. Endless track for scouring cylinders for cans	257,219	May 2	84	25	21	1296
Hallett, William, Truro, Nova Scotia, Canada. Car-coupling	256,656	May 16	1121	314	21	1496
Halley, John, and A. Barr, Glasgow, county of Lanark, Scotland. Apparatus for holding and carrying eggs	253,697	Feb. 14	617	174	21	461
Hallheimer, Max, Brooklyn, N. Y. Folding bed and closet	256,659	May 16	1123	314	21	1497
Hallock, William H., and A. N. Smith, Racine, Wis. Feed-cutter	255,669	Mar. 28	1851	357	21	873
Halsey, Andrew J., Newark, N. J. Cuff adjuster and support	258,102	Jan. 10	516	143	21	96
Halstead, Clark B., and J. A. Carpenter, Marion, Ohio. Log-sawing machine	251,872	Jan. 3	228	64	21	42
Halsted, Augustus M., Rye, N. Y. Incubator	256,295	May 23	1496	405	21	1360
Ham, Charles T., Rochester, N. Y. Street-lamp	259,758	June 20	1183	298	21	1903
Ham, Robert, assignor to G. H. Phillips & Co., Troy, N. Y. Device for attaching plates or tablets to stoves	253,600	Feb. 14	620	142	21	442
Hamaker, A. W. (See Lewis, Samuel, assignor.)						
Hamaker, David L. (See Wolf, Augustus, assignor.)						
Haman, Magdalene, executrix. (See Haman, William H.)						
Haman, William H., deceased, (M. Haman, executrix,) Philadelphia, Pa. Rocking-chair	252,631	Jan. 10	436	119	21	92
Hambleton, David, Mathus, N. H. Bobbin	255,568	Mar. 28	1241	368	21	769
Hambleton, William P., Winchester, Ill. Self-opening gate	256,750	May 30	1961	559	21	1664
Hamilton, Charles H., Three Mile Bay, N. Y. Combined axle cleaner and wrench	254,643	Mar. 7	226	66	21	679
Hamilton, James E., New York, N. Y., assignor to E. F. Phillips, Providence, R. I. Tip for flexible cords	257,685	May 16	892	249	21	1457
Hamilton, James R., Milo, Iowa. Combined shoulder and neck pad for horse-collars	252,038	Jan. 10	437	119	21	93
Hamilton, James T., Moline, Ill., assignor to himself and W. K. Hoagland, Council Bluffs, Iowa. Coupling for cultivator-beams	252,763	Jan. 24	1292	363	21	236
Hamilton, Milo A. (See Taylor and Hamilton.)						
Hamilton Reduction Company. (See Hamilton, Walter, assignor.)						
Hamilton, Walter, New York, N. Y., assignor to Hamilton Reduction Company, of New York. Apparatus for amalgamating gold and silver ores	258,578	May 30	1764	490	21	1666
Hamilton, William. (See Lalor, Thomas, assignor.)						
Hamlin, Harry. (See Giesecke and Hamlin.)						
Hamlin, Harry. (See Rost, Edwin, assignor.)						
Hamlin, Harry. (See Rost and Hamlin.)						
Hamlin, Harry. (See Rost, McKee, and Hamlin.)						
Hamlin, Harry Buffalo, N. Y. Manufacturing starch	253,983	Feb. 21	909	.....	21	518
Hamlin, Harry, Buffalo, N. Y. Process of and means for purifying glucose	256,535	Apr. 25	1344	379	21	1207
Hamlin, Henry A. (See Cooper, William R., assignor.)						
Hamlin, John K., Philadelphia, Pa. Butter-cans	255,974	Apr. 4	981	73	21	997
Hamm, Michael W. (See Fisher, John W., assignor.)						
Hammelmann, Charles, Buffalo, N. Y. Portable forge	258,183	Jan. 10	517	143 / 144	21	96
Hammond, Andrew H., Worcester, Mass. Mechanical musical instrument	254,644	Mar. 7	226	62, 63	21	679
Hammond, Andrew H., Worcester, Mass. Mechanical musical instrument	254,645	Mar. 7	243	63	21	679
Hammond, Charles D., *et al.* (See Blackall, Robert C., assignor.)						
Hammond, James B., New York, N. Y. Type-writer	253,475	Feb. 7	242	96, 98	21	404
Hammond, John W., Osceola, Pa. Tanning	254,988	Mar. 14	645	.....	21	757
Hanshaw, Charles and T., Holden, Mo. Clothes-pounder	258,843	May 30	1846	360 / 361	21	1641
Hanshaw, Thomas. (See Hanshaw, Charles and T.)						
Hanbury, John D., and C. H. Clifton, New York, N. Y.; said Clifton assignor to said Hanbury. Combined shoulder-brace and suspenders	257,466	May 9	704	195	21	1413

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'gs.	Official Gazette. Vol.	Official Gazette. Page.
Hancock, Milton T., Thomasville, Ga. Plow	255,283	Mar. 21	1656	283	21	835
Hancock, Milton T., assignor to J. P. Turner, Thomasville, Ga. Cultivator	253,164	Jan. 31	1530	505	21	332
Handayayde, John W., Floral, assignor of five-eighths to J. D. Pryor, Winfield, Kans. End-gate	258,458	Jan. 17	953	983	21	174
Hanfeld, Christian, Jr. (See Cassel, Henry R., assignor.)						
Hanford, James, *et al.* (See Fanning, John, assignor.)						
Hanhart, John J. (See Wensch, Eduard, assignor.)						
Hanifen, John E. (See Holton, Thomas J., assignor.)						
Hanington, Charles F., *et al.* (See Stieringer, Luther, assignor.)						
Hankins, William J., Connersville, Ind. Hood for stoves	260,094	June 27	1543	416	21	1960
Hanlon, John, assignor to W. W. Gibbs, New York, N. Y. Gas apparatus	254,213	Feb. 28	1257	{348 / 349}	21	564
Hanna, Cyrus T., Allegheny, Pa. Roller grinding-mill	253,698	Feb. 14	617	{174 / 175}	21	461
Hanna, Cyrus T., Pittsburg, Pa. Wheat steamer and heater	254,308	Feb. 28	1266	377	21	602
Hanna, David, Ogdensburg, N. Y. Sediment-collector for boilers	254,307	Feb. 28	1266	376	21	602
Hanna, John T. (See Hobert, Heaston H., assignor.)						
Hanna, William, Gilroy, Cal. Steam cylinder and piston	254,309	Feb. 28	1267	377	21	602
Hanson, Frank B., New York, N. Y. Pump	254,129	Feb. 28	1162	325	21	568
Hanson, Freeman, Hollis, assignor, by mesne assignments, of four-fifths to American Turning Company, Portland, Me. Lathe for turning fluted and similar work	257,451	May 2	366	103	21	1347
Hanson, John L. See Mason and Hanson.)						
Hanson, Paul, Salem, Minn. Harvester-frame	256,477	Apr. 18	987	{258 / 259}	21	1128
Hanson, Paul, Rochester, Minn. Knot-tyer for grain-binders	257,573	May 9	538	148	21	1361
Hanson, Paul G., Rochester, Minn. Safety railway-switch	254,870	Mar. 14	591	139	21	734
Hanson, Thomas, New York, N. Y. Water-closet	255,975	Apr. 4	283	73	21	997
Hapgood, Herbert L., assignor to Hapgood & Smith, Athol, Mass. Machine for cutting match-splints	258,414	May 23	1563	{443 / 444}	21	1563
Hapgood Plow Company. (See Fates, Thomas, assignor.)						
Hapgood Plow Company. (See Young, William B., assignor.)						
Hapgood & Smith. (See Hapgood, Herbert L., assignor.)						
Happe, John, and W. Newman, New York, N. Y.; said Newman assignor to said Happe. Quilting-machine. (Reissue)	10,009	Jan. 17	1103	308	21	199
Haralson, Herndon W., La Grange, Ga. Grain-cradle	258,230	May 23	1354	383	21	1547
Harbaugh, George M., Sabillasville, Md. Car-coupling	259,534	June 13	893	217	21	1845
Harbaugh, Simon P., Cumberland, Md. Wire-stretcher	258,104	Jan. 10	518	144	21	96
Hard, Charles H., Oneida, N. Y. Cot-bed	252,459	Jan. 17	954	264	21	174
Hardegger, Albert, New York, N. Y. Embroidering-machine	255,284	Mar. 21	1057	{283 / 284 / 285 / 286}	21	835
Hardenbergh, Peter R. L., *et al.* (See Richter, Charles, assignor.)						
Hardie, Robert W., Albany, N. Y. Handle-fastener	255,166	Mar. 21	916	245	21	810
Harding, Barbee & Co. (See Spears, Emanuel, assignor.)						
Harding, Stanley, *et al.* (See Cline, George J., assignor.)						
Harding, Thomas, assignor of two-thirds to W. T. Barbee and C. B. Simpson, Lafayette, Ind. Tubular sectional boiler	258,415	May 23	1565	444	21	1584
Hardman, Dowling & Peck. (See Hardman, John, assignor.)						
Hardman, John, assignor to Hardman, Dowling & Peck, New York, N. Y. Repetition action for pianos	258,751	May 30	1962	550	21	1664
Harda, Henry, J. and E. Phillips, Ottawa, Ill. Machine for blowing window-glass	255,503	Mar. 28	1342	362	21	888
Hardwick, John, East Liverpool, Ohio. Pottery-kiln	259,854	June 20	1231	330	21	1923
Hardy, Dexter D., Havana, Ill. Orbital rotary engine	256,534	May 23	1707	482	21	1609
Hardy, Dexter D., assignor of one-half to C. G. Krebaum, Havana, Ill. Rotary engine	252,378	Jan. 17	844	235	21	156
Hardy, Emery E., Kendall Creek, Pa. Coupling for drill-rods	254,417	Mar. 7	38	10	21	644
Hardy, Marcus A. (See Hubbe and Hardy.)						
Hardy, Marcus A., Newport, R. I. Magneto-electric machine	253,699	Feb. 14	619	175	21	461
Hardy, Thomas P., New York, N. Y. Steam-radiator	258,560	Jan. 17	1091	304	21	197
Hare, Christopher C., Kansas City, Mo. Grate and shaker	256,604	Apr. 25	1413	398	21	1219
Hare, Euphrates A., Farlinville, Kans. Upright drill	259,138	June 6	396	86	21	1751
Harger, Joel P. (See Keith, Horace M., assignor.)						
Hargreaves, George, Detroit, Mich. Match-card machine	255,621	Mar. 28	1482	398	21	914
Haring, Charles, Watkins, N. Y. Furniture-socket	254,310	Feb. 28	1267	377	21	602
Harker, Lewis A., assignor of two-thirds to C. H. Amann and W. Ewing, Columbus, Ohio. Oil-can	255,109	Mar. 21	841	225	21	798
Harkins, Fred. A., New York, N. Y. Diamond-cutting machine	254,817	Mar. 14	452	122	21	722
Harkrader, David M., Pittsfield, Ill. Draft-equalizer	252,212	Jan. 10	640	180	21	116
Harley, Archibald, Topeka, Kans. Railway-switch	254,008	Feb. 21	1011	283	21	534
Harley, Howard W., Philadelphia, Pa. Knitting-machine	253,530	Feb. 14	428	118	21	430
Harlow, Ivory W., assignor to Plymouth Foundry Company, Plymouth, Mass. Stove	259,306	June 13	539	141	21	1794
Harman, C. Wesley, Cincinnati, Ohio. Watch-case	254,646	Mar. 7	247	63	21	680
Harman, William. (See De Tray, Truman W., assignor.)						
Harmon, Charles S. (See Jeanne and Harmon.)						
Harmon, Daniel B., assignor of one-half to I. T. Van Duzer, Palmyra, N. Y. Ballast-car	257,160	May 2	19	6	21	1294
Harmon, Milford, Jackson, Mich. Dust-collector	260,194	June 27	1666	452	21	1999
Harmon, Milford, assignor to G. T. Smith Middlings Purifier Company, Jackson, Mich. Device for tightening bolting-cloth	259,639	June 13	856	255	21	1869
Harmon, William S., Owensville, Ind. Mole-trap	254,043	Mar. 14	646	176	21	757
Harper, William G., Unionville Centre, Ohio. Wagon-hound	259,130	June 6	397	87	21	1751
Harper, William T., *et al.* (See Field, Joseph B., assignor.)						
Harraea, Bruno, Böhlen, near Gross Breitenbach, Schwarzburg-Rudolstadt, Germany. Plastic compound	254,964	Mar. 14	646	.....	21	757
Harrer, Gus J., Louisville, Ky. Refrigerator	258,752	May 30	1963	{550 / 560}	21	1664
Harrington, Albert W. (See Abbott and Harrington.)						
Harrington, Edwin, Manchester, N. Y. Hay elevator and carrier	257,161	May 2	21	6	21	1295
Harrington, Frank S., Providence, R. I. Button	260,855	June 20	1239	330	21	1923
Harrington, Timothy, Boston, Mass. Baker's oven	258,416	May 23	1566	444	21	1584
Harris, Abraham W. (See Harris, Elisha, assignor.)						
Harris, Andrew J., Providence, R. I. Ornamental chain	253,903	Feb. 7	33	11	21	332
Harris, Calvin D. (See Brant and Harris.)						
Harris, David H., assignor of one-half to E. G. Chapman, Detroit, Mich. Corner iron for wagon-seats	253,370	Feb. 7	222	64	21	383

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'gs.	Official Gazette. Vol.	Official Gazette. Page.
Harris, Elisha, assignor to himself and A. W. Harris, Providence, R. I. Ring-spinning frame	257,389	May 9	939	86, 89	21	1216
Harris, Frank L., Harrisonburg, Va. Manufacture of fertilizing material	259,149	June 6	389	87	21	1751
Harris, George F. W., Woodbury, Ill. Grader for drains	251,973	Jan. 3	233	65	21	42
Harris, George F. W., Woodbury, Ill. Grader for drains	260,661	June 27	1458	391	21	1966
Harris, James, Janesville, Wis. Self extinguishing lamp	255,976	Apr. 4	284	74	21	997
Harris, John, Columbus, Nebr. Rope-machine						
Harris, John, assignor to A. Harris, Son & Co., (limited,) Brantford, Ontario, Canada. Reaping-machine	252,764	Jan. 24	1394	364	21	336
	255,682	Mar. 28	1484	389	21	914
Harris, John K., Springfield, Ohio. Button-hole attachment for sewing-machines						
Harris, Joseph A. (See Elliott, Gilbert R., assignor.)						
Harris, Joseph J., Pottsburg, Mich. Chain-pump bucket	257,321	May 2	311	59	21	1319
Harris, Mile, assignor of one-half to W. H. Truesdale, Jamestown, N. Y. Corn-planter	255,788	Apr. 4	35	10	21	956
Harris, Moses. (See Durkee, Alonzo, assignor.)						
Harris, Moses. (See Fowler, Azro, assignor.)						
Harris, Moses. (See Pain, Robert W., assignor.)						
Harris, Son & Co., A. (See Harris, John, assignor.)						
Harris, Noah, Vincennes, Ind. Coffee-roaster	254,120	Apr. 11	499	133	21	1039
Harris, Robert, Peekskill, N. Y. Bag or satchel	257,093	Apr. 25	1539	432	21	1941
Harris, Thomas. (See Dunn and Harris.)						
Harris, Thomas J., and C. F. Greer, Sardis, Miss. Churn-motor	256,896	May 23	1630	465	21	1560
Harris, William E., St. Louis, Mo. Rolling-mill	252,469	Jan. 17	955	{264 / 265}	21	174
Harris, William E., New York, N. Y. Ore grinding and amalgamating machine	259,011	June 6	175	47	21	1794
Harris, William E., New York, N. Y. Extracting gold from ores	259,141	June 6	349	.....	21	1703
Harris, William E., assignor to himself and H. C. Hepburn, New York, N. Y. Ore-grinding mill	253,476	Feb. 7	248	96, 97	21	404
Harris, William H., Brooklyn, and G. Farr, New York, N. Y. Steam-boiler for locomotives	256,213	Jan. 10	641	181	21	116
Harris, William H., Brooklyn, and G. Farr, New York, N. Y. Furnace for stationary boilers	256,214	Jan. 10	643	181	21	117
	256,214	June 6	55	15	21	1704
Harris, William M., Menlo, Iowa. Barb-fence	259,684	June 20	1013	271	21	1866
Harrison, Alfred C., Philadelphia, Pa. Apparatus for mixing sugar						
Harrison Brothers & Co. (See Harrison, Thomas S., assignor.)						
Harrison, Charles. (See McCormick, Edward W., assignor.)						
Harrison, George L., Jr., *et al.* (See Fahlberg and Semper, assignors.)						
Harrison, Henry, assignor of one-half to L. R. Fix, Burlington, Iowa. Grain-conveyor	256,367	June 13	639	{169 / 170}	21	1812
Harrison, Henry J., Liverpool, county of Lancaster, England. Column, shaft, girder, &c.	256,478	Apr. 18	989	{239 / 240}	21	1198
Harrison, John, *et al.* (See Fahlberg and Semper, assignors.)						
Harrison, John, and M. Folliard, Brooklyn, N. Y. Fire-escape	256,317	Apr. 11	786	198	21	1079
Harrison, John W., *et al.* (See Shickle, Frederick, assignor.)						
Harrison, Jonathan W., assignor of one-half to O. Butler, Wayne, Mich. Wagon-spring	256,564	Apr. 18	1088	268	21	1144
Harrison, Joseph, assignor to H. B. Barlow, Manchester, county of Lancaster, England. Expanding mandrel	257,220	May 2	85	25	21	1296
	258,640	June 13	957	255	21	1869
Harrison, Joseph E., and J. H. Marley, Newark, N. J. Shirt						
Harrison, Lemuel P. (See Anderson, Lee, assignor.)						
Harrison, Thomas B., Philadelphia, Pa. Valve	254,130	Feb. 28	1164	325	21	568
Harrison, Thomas S., *et al.* (See Fahlberg and Semper, assignors.)						
Harrison, Thomas S., assignor to Harrison Brothers & Co., Philadelphia, Pa. Manufacture of aluminous cake	253,377	Feb. 7	223	.....	21	384
	258,930	Jan. 31	1587	{426 / 427}	21	384
Harrison, Thomas T., Bristol, county of Bristol, England. Bicycle	255,977	Apr. 4	285	74	21	997
Harrison, Thomas T., Aubrey, Kans. Sulky-plow						
Harrison, William. (See Bristnal and Harrison.)						
Harrub, Charles H., assignor to Waterbury Brass Company, Waterbury, Conn. Lubricator	253,292	Feb. 7	115	35	21	306
Hart, Albert. (See Fisher and Hart.)						
Hart, Charles E. (See Tracy and Hart.)						
Hart, Edward B., Strandtown, Belfast, Ireland. Recovering volatile solvents which have been used in extracting soluble matter	253,378	Feb. 7	223	64	21	384
Hart, Edward B., Strandtown, Belfast, Ireland. Extracting by volatile solvents soluble matter from substances containing it, and apparatus therefor	253,379	Feb. 7	225	64	21	384
	257,322	May 2	312	89	21	1319
Hart, Edwin J., Butler, Pa. Gate-post	254,965	Mar. 14	648	176	21	757
Hart, Henry C., Detroit, Mich. Window-screen						
Hart, John W. (See Drew, Henry L., assignor.)						
Hart, Walter, New York, N. Y. Flag-staff holder	260,142	June 6	389	87	21	1753
Harter, M. D. (See Bodine, Francis, assignor.)						
Hartford Sanitary Plumbing Company. (See Lord and Day, assignors.)						
Hartley, D. Bert, Chicago, assignor of one-half to F. F. Peets, Rockford, Ill. Drilling-machine	255,979	Mar. 14	894	215	21	784
Hartley, George S., *et al.* (See King, James T., assignor.)						
Hartley, Henry C., Springfield, Ohio. Belt-replacing device	257,323	May 2	313	89	21	1319
Hartley, Joseph H., *et al.* (See King, James T., assignor.)						
Hartman, John M., Philadelphia, Pa. Flue-cleaner	253,668	Feb. 21	831	235	21	565
Hartman, John M., Philadelphia, Pa. Hot-blast stove	254,131	Feb. 28	1165	{265 / 266}	21	569
Hartman, John M., Philadelphia, Pa. Regenerative stove for heating air	257,574	May 9	534	149	21	1361
Hartmann, Lemuel R. (See Blackburn, George, assignor.)						
Harton, Pembroke D., assignor of two-thirds to C. K. Bullock, Philadelphia, Pa. Safety attachment for elevators	255,110	Mar. 21	843	225	21	798
Hartsell, Ephram A., Big Lick, N. C. Coffee roaster	254,547	Mar. 7	121	30	21	650
Hartsell, Ephram A., Big Lick, N. C. Coffee roaster	254,311	Feb. 28	1398	377	21	602
Hartson, La Fayette, Wyoming, Iowa. Buckle attachment for straps						
Hartung, George A. (See Taylor, Benjamin, assignor.)						
Hartwell, Samuel A. V., Valley Centre, Kans. Car-coupling	255,683	Mar. 28	1486	399	21	915
Hartwell, Samuel A. V., Valley Centre, Kans. Car-coupling	260,195	June 27	1666	452	21	1999
Hartwell, Samuel S. (See Thomson, Judson L., assignor.)						
Hartwig, William F. (See Boehme, Thomas H., assignor.)						
Harvey, Hayward A., Orange, N. J. Machine for rolling threads of screws or bolts	251,674	Jan. 3	234	65	21	42
Harvey, Hayward A., Orange, N. J. Machine for tapping nuts	251,675	Jan. 3	237	65, 66	21	42
Harvey, Hayward A., Orange, N. J. Machine for tapping nuts	255,976	Apr. 4	286	75	21	997
Harvey, John, Woodly's Corner, Ind. Combined harrow and roller	254,660	Feb. 21	1013	294	21	535
Harvey, John, Brooklyn, N. Y. Stove-cleaning attachment	257,697	May 9	705	196	21	1412
Harvey, Patrick, Chicago, Ill. Water-pressure regulator	253,531	Feb. 14	423	{119 / 119}	21	430
Harvey, Peter I., assignor of one-half to A. Clark and P. Kline, Amsterdam, N. Y. Circular-knitting machine	258,585	June 13	864	247	21	1846
Harwood, George P., Worcester, Mass. Step for bicycles						

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hasbrouck, Frederick S., New York, N. Y. Writing-tablet	256,836	Apr. 25	1346	360	21	1007
Haselton, Daniel B., Charleston, S. C. Cleaning attachment to cotton-pickers	256,060	May 16	1194	314 315	21	1407
Hasey, Frank, *et al.* (See Burns, Wilson C., assignor.)						
Haskell, Hartwell B., *et al.* (See Estes, William A., assignor.)						
Haskin, Uri. (See Hunter and Haskin.)						
Haskin, Uri, assignor of one-half to Atlas Works, (limited,) Pittsburg, Pa. Spiral bevel-gear	253,863	Feb. 21	832	236	21	506
Haskin, Uri, assignor of one-half to W. McKnight, Pittsburg, Pa. Machine for shearing metals	260,022	June 27	1454	392	21	1906
Haskins, Charles D., assignor to Union Electric Manufacturing Company, New York, N. Y. Electric gas-lighter	251,777	Jan. 3	111	31	21	21
Haskins, James B. (See Robertson, Herbert L., assignor.)						
Haskins, Joseph T., assignor of one-half to N. H. Babson, Rockport, Mass. Clothes-pin	258,644	May 30	1647	531	21	1642
Haskins, Myron D. (See Hall and Haskins.)						
Haslup, William, Sidney, Ohio. Earth-scraper. (Reissue)	10,045	Feb. 28	1503	416	21	630
Hastings & Garson. (See Garson, William H., assignor.)						
Hastings, James L., and J. S. Stewart, Philadelphia, Pa. Steam-trap	256,915	June 6	56	15	21	1704
Hastings, James T., Chicago, Ill. Rolling-mill	260,196	June 27	1669	453	21	1909
Hatch, Hugh, *et al.* (See Forbes, Andrew H., assignor.)						
Hatch, Joseph, *et al.* (See Forbes, Andrew H., assignor.)						
Hatch, Warner, Plainfield, Ill. Eaves-trough hanger	252,033	Jan. 10	438	120	21	82
Hatch, Willis D., Bath, Me. Log-dressing machine	257,492	May 9	433	120	21	1364
Hatcher, I. M. (See Nelson, James S., assignor.)						
Hatfield, James F., Dublin, Ind. Grain-separator	255,985	Mar. 21	1064	266	21	836
Hatfield, James F., Dublin, Ind. Grain-separator	257,394	May 2	213	60	21	1319
Hatfield, Lyman, Boston, Mass. Car-coupling	259,397	June 13	540	142	21	1794
Hathaway, Frank N., and C. A. Loomis, Springfield, Mass. Sewing-machine shuttle	256,318	Apr. 11	737	198	21	1079
Hathaway, George M., Jersey City, N. J. Permutation-lock	251,876	Jan. 3	236	66	21	43
Hathaway, George M., Jersey City, N. J. Permutation-lock	251,877	Jan. 3	239	66	21	43
Hathaway, James J., assignor of one-half to J. H. McMahon, Beaver Falls, Pa. Wire-barb-ing machine	254,767	Mar. 7	387	102 103	21	704
Hathaway, Marvin P., Decorah, Iowa. Steam heating apparatus	255,167	Mar. 21	916	245	21	810
Haughian, Charles P. (See Emery, Arthur P., assignor.)						
Haughian, James. (See Scholes and Haughian.)						
Hausberg, Otto, Brooklyn, N. Y. Watchman's time-detector	256,837	Apr. 25	1346	360	21	1008
Hauschel, Charles H., New York, N. Y. Music scale and chord indicator	255,979	Apr. 4	287	75	21	998
Hause, Jacob, Chewsville, Md. Machine for crushing and grinding limestone-rock, &c.	256,678	Apr. 18	1162	306	21	1168
Hautin Sewing Machine Company. (See Hurtu and Hautin, assignors.) (Reissue.)						
Hautin, Victor J. (See Hurtu and Hautin.) (Reissue.)						
Haven, Egbert D., Albany, Oreg. Cable-power wheel	258,645	May 30	1648	531	21	1542
Haven, James L., and J. B. Mooney, Cincinnati, Ohio; said Mooney assignor to said Haven. Staging for steamboats	256,685	June 20	1615	371	21	1886
Havens, John G. W., Metedeconk, N. J. Center-board for vessels	259,308	June 13	541	142	21	1795
Haviland, Andrew J., Fort Dodge, Iowa. Screw for fastening telegraph-wires	256,061	May 16	1125	315	21	1407
Hawes, Harry L., Whitewater, Wis. Lamp-chimney	256,679	Apr. 18	1163	306	21	1168
Hawes, Washington, Fort Richmond, N. Y. Automatic grain-sampler	259,536	June 13	885	218	21	1846
Hawkes, George F., New York, N. Y. Fountain-pen	253,983	Feb. 7	117	35	21	366
Hawkes, Gilbert, Lynn, Mass. Lasting boots and shoes	254,966	Mar. 14	649	178	21	758
Hawkins, Hiram A., Chicago, Ill. Corn-sheller	258,373	Jan. 17	846	235	21	156
Hawkins, John T., Taunton, Mass. Sheet-delivery apparatus for printing-presses	257,575	May 9	535	149	21	1381
Hawkins, John T., Taunton, Mass. Cylinder printing-press	257,576	May 9	538	150	21	1382
Hawkins, John T., Taunton, Mass. Sheet-delivery apparatus for printing-presses	257,577	May 9	541	150 151	21	1382
Hawkins, John T., Taunton, Mass. Cylinder printing-press	257,578	May 9	543	151 152	21	1382
Hawkins, John T., Taunton, Mass. Cylinder printing-press	257,579	May 9	547	152 153	21	1383
Hawkins, John T., Taunton, Mass. Double-cylinder printing-press	257,580	May 9	549	153 154	21	1383
Hawkins, John T., Taunton, Mass. Perfecting printing-press	257,581	May 9	553	154 155	21	1384
Hawkins, Westel E., assignor of one-half to W. J. Leavenworth, Wallingford, Conn. Adjustable pitman	257,004	Apr. 25	1539	439	21	1941
Hawkins, William H., assignor of one-half to J. Walter, Albany, N. Y. Fire-escape ladder	256,537	June 13	827	218	21	1846
Hawley, Agnes. (See Hawley, Benjamin R., assignor.)						
Hawley, Alfred A., Merrimac, assignor to Merino Shoe Company, Boston, Mass. Apparatus for lasting and tracing wool felt	258,916	June 6	57	15, 16	21	1704
Hawley, Alfred A., Merrimac, assignor to Merino Shoe Company, Boston, Mass. Former for supporting hollow felted articles	256,917	June 6	59	16	21	1705
Hawley, Anna K., Delhi, La. Separable button	257,696	May 9	707	195	21	1412
Hawley, Benjamin R., assignor to A. Hawley, Chicago, Ill. Heating system	258,918	June 6	60	16	21	1705
Hawley, Elias S. (See Stratford, James, assignor.)						
Hawley, James M., Odin, Ill. Machine for cleaning, separating, and grading grain	253,380	Feb. 7	298	64, 65	21	364
Hawley, James M., Odin, Ill. Carpet-stretcher	258,417	May 23	1567	445	21	1584
Hawley, Melville C. (See Kearney and Hawley.)						
Hawlowets, John, New York, N. Y. Ostrich-feather trimming	258,374	Jan. 17	847	235	21	157
Hawlowets, John, New York, N. Y. Machine for drying feathers	259,388	June 13	641	170	21	1813
Hawn, William, Knoxville, Tenn. Mail-bag	259,309	June 13	542	142	21	1795
Haworth, George D., Decatur, Ill. Check-line guide for corn-planters	253,532	Feb. 14	425	119	21	431
Haworth, Joseph. (See Kerr and Haworth.)						
Hay, William H., Prospect, Pa. Portable fence	254,214	Feb. 28	1258	349	21	584
Hayden Company. (See Whiting, Arthur N., assignor.)						
Hayden, Harris H. (See Kennelly, Patrick, assignor.)						
Hayden, Harris H., New York, N. Y. Store-service carrier	253,700	Feb. 14	621	175	21	461
Hayden, Harris H., New York, N. Y. Store-service appliance	255,634	Mar. 28	1487	369	21	915
Hayden, Henry F., assignor to International Vapor Fuel Carbon Iron and Manufacturing Company, Washington, D. C. Apparatus for generating vapor from liquid hydrocarbons	254,871	Mar. 14	583	140	21	735
Hayden, Joel B., Hempstead, assignor, by mesne assignments, to Universal Beer Keg Company, New York, N. Y. Lager-beer keg. (Reissue)	10,061	Mar. 14	883	219	21	787
Hayden, Marshall, New Milford, Pa. Car-axle box	257,592	May 9	559	156	21	1384
Hayden, Randolph, Haddam, Conn. Wardrobe-hook	252,940	Jan. 31	1349	427	21	284
Hayden, Randolph, Haddam, Conn. Cigar-reamer	258,919	June 6	61	16	21	1705

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hayden, Randolph, Haddam, Conn. Tack-puller	258,920	June 6	61	17	21	1705
Hayden, William B., Columbus, Ohio. Hame	257,690	May 9	707	196	21	1413
Hayden, William B., Columbus, Ohio. Buckle	257,709	May 9	708	196	21	1413
Hayes, Calvin Q., Sedalia, Mo. Shaft-coupling	251,878	Jan. 3	241	67	21	43
Hayes, Charles W., *et al.* (See Greer, Laughlin B., assignor.)						
Hayes, Charles W., Washington, D. C. Bill-file	253,041	Jan. 31	1350	450	21	385
Hayes, George, New York, N. Y. Photographic skylight	252,376	Jan. 17	848	236	21	157
Hayes, George W. (See Thayer and Hayes.)						
Hayes, Henry E., Brooklyn, N. Y. Adjustable map and chart supporter	260,197	June 27	1670	453	21	1909
Hayes, Henry E., Brooklyn, N. Y. Adjustable map and chart supporter	257,563	May 9	560	156	21	1384
Hayes, James H., Cerro Gordo, Ill. Signaling apparatus for railway-crossings	257,686	May 16	894	249	21	1457
Hayes, Samuel J., Pittsburg, Pa. Process of and apparatus for administering anæsthetics						
Hayes, Samuel J., H. Schlacks, and G. F. Starkweather, Chicago, Ill. Throttle-valve for locomotives	254,672	Mar. 14	594	149	21	736
Haynes, Edgar K., assignor to J. B. Fouby and J. P. Lowell, Boston, Mass. Toy ball	254,768	Mar. 7	390	103	21	705
Hays, Charles B. and J. M., Newark, N. J. Slate	253,864	Feb. 21	833	236	21	506
Hays, James M. (See Hays, Charles B. and J. M.)						
Hazard, Frederick J., assignor of one-half to T. Fuller, Belleville, Ontario, Canada. Reaper and mower	253,477	Feb. 7	348	97	21	495
Hazard, George P., Providence, R. I. Ring-spinning machine	257,168	May 2	22	7, 8	21	1320
Hazel, William M., New York, N. Y. Combined button and fastening	259,656	June 13	974	250	21	1870
Hazelip, Joseph N., Baltimore, Md. Child's carriage	253,001	Feb. 14	420	142	21	442
Hazelrigg, William A., Napoleon, Ind. Corn-planter	251,879	Jan. 3	242	67	21	43
Head, Joseph, Hornellsville, N. Y. Tanning hides	257,448	May 2	206	.....	21	1345
Heald, Derr. (See Matteson, Alfred B., assignor.)						
Hearn, Edwin E., assignor to P. Lorillard & Co., Jersey City, N. J. Machine for attaching tags and labels to plug-tobacco	253,924	Feb. 7	119	35	21	366
Hearson, Thomas A., Greenwich, county of Kent, England. Reservoir pen-holder	252,034	Jan. 10	439	120	21	82
Heath, Frank S., Corry, Pa. Car-heater	257,325	May 2	215	60, 61	21	1319
Heath, George A., Waupun, Wis. Treadle for sewing-machine motors	257,605	Apr. 25	1541	433	21	1942
Heath, Wilbur F., Fort Wayne, Ind. Steam-whistle blank	253,701	Feb. 14	602	175 176	21	462
Heaton Button Fastener Company. (See Prentice, George W., assignor.)						
Heaton Button Fastener Company. (See Smith, Franklin A., Jr., assignor.)						
Heaton Button Fastener Company. (See Sweet, Parker H., Jr., assignor.)						
Heaton, Charles W., Lessees Heath, county of Kent, and T. Bolas, Chiswick, county of Middlesex, assignors to Ibbes & Horne, London, England. Production of vitrified coverings on earthenware, glass, &c	254,319	Feb. 28	1309	.....	21	662
Heaton, Thomas, Cornwall, N. Y. Automatic fan	258,753	May 30	1603	500	21	1664
Heaton, Thomas, Vancouver, Wash. Ter. Mechanical device for catching fish	259,143	June 6	230	67	21	1752
Heaven, Alfred, Manchester, county of Lancaster, England. Embroidering-machine	254,997	Mar. 14	651	176	21	750
Heberle, Albert, Ueberlingen, Baden, Germany. Watch	253,041	Jan. 31	1349	427	21	284
Heberle, Albert, Ueberlingen, Germany. Watch-escapement	256,646	May 30	1649	531	21	1642
Hebert, Oliver, Oswego, Ill. Two-wheeled vehicle	253,040	Jan. 31	1350	450	21	398
Hechinger, Ludwig, Rochester, N. Y. Galvanic pad	252,785	Jan. 24	1296	364	21	230
Hecht, C. Edward, Easton, and W. S. Davis, Reading, Pa. Calcimine	254,647	Mar. 7	340	.....	21	680
Hecht, Jacob, *et al.* (See Dubreuil, George A., assignor.)						
Hecht, Solomon J., *et al.* (See Dubreuil, George A., assignor.)						
Heckart, John, Jr. (See Miller, Martin D., assignor.)						
Heckel, Henry, Cincinnati, Ohio. Apparatus for decomposing fats and oils	255,504	Mar. 28	1343	364	21	889
Heckel, Henry, Cincinnati, Ohio. Making soap from fats	255,505	Mar. 28	1345	363	21	889
Heckmann, Carl F., assignor to J. T. Bacon & Co., Plainville, Mass. Jewelry-stock	260,095	June 27	1544	416	21	1909
Heddinger of James, Daniel C., *et al.* (See Stowell, William J., assignor.)						
Hedenberg, Jacob H., Brooklyn, N. Y. Burial-case	256,565	Apr. 18	1088	289	21	1144
Heede, Jacob. (See Graves and Heede.)						
Heessler, William, Hoboken, N. J. Gymnastic apparatus	254,215	Feb. 28	1259	349	21	584
Hefele, Conrad, Baltimore, Md. Skylight	260,294	June 27	1700	465	21	1913
Heffernan, William J., Lynn, assignor of fifty-seven one-hundredths to H. E. Burdick, N. J. Meeney, E. L. Morris, W. D. Robertson, and W. M. Tomlinson, Boston, Mass.; said Morris assignor to said Burdick, Meeney, Robertson, and Tomlinson. Boot and shoe heeling machine	252,165	Jan. 10	519	144	21	96
Heffley, Joseph, Sr., assignor to W. Rush, Philadelphia, Pa. Refrigerating-can	256,566	Apr. 18	1084	289	21	1144
Heffner, Henry R., Circleville, Ohio. Grain-drier	254,998	Mar. 14	638	177	21	751
Hefner, Lewis S., assignor to himself and E. O. Elliott, Sparkling Catawba Springs, N. C. Seed-planter, coverer, and fertilizer-distributer	255,998	Mar. 21	1066	267	21	836
Heibler, Peter. (See Schmidt, Balthazar, assignor.)						
Heider, John W., assignor to T. F. Lawrence, Chicago, Ill. Bronzing-machine	258,691	May 16	1204	307	21	1260
Heilman, Daniel, and H. Wadham, Evansville, Ind. Saw-mill dog	259,144	June 6	231	66	21	1752
Heilpern, Sol, *et al.* (See Gebhard, Julius, assignor.)						
Heilprin, Angelo, New York, N. Y. Music-leaf turner	253,043	Jan. 31	1349	419	21	398
Heim, Adam, San Francisco, Cal. Child's carriage	255,705	Apr. 4	122	33	21	971
Heim, George M., Brownsville, Ind. Combined roller, harrow, and cultivator	258,418	May 23	1567	445	21	1584
Heine, Aug., *et al.* (See Middleton, William R., assignor.) (Reissue.)						
Heinig, Frederick E., Louisville, Ky. Flue-cap for stove-pipes	255,783	Apr. 4	36	11	21	956
Heinig, Frederick E., Louisville, Ky., and M. Lindenthal, New York, N. Y.; said Heinig assignor to said Lindenthal. Stair-rod	258,942	Jan. 31	1330	407	21	994
Heinsen, John S. (See Danheim, Sander, assignor.)						
Heins, Anton, Muscatine, Iowa. Oatmeal-machine	258,257	Mar. 21	1067	267	21	838
Heisley, Charles W., Tuckahoe, N. J. Cranberry reaper and dotacher	258,754	May 30	1604	500	21	1664
Heitzmann, C. Raymond, assignor to Penn Hardware Company, Reading Pa. Apple parer, corer, slicer, and quartercer	255,656	Apr. 4	128	33	21	972
Heitzmann, C. Raymond, assignor to Penn Hardware Company, Reading, Pa. Apple parer, corer, and slicer	256,214	Apr. 11	206	103	21	1036
Helfrich, George P., assignor to L. Prang, Boston, Mass. Manufacture of paper plaques	255,169	Mar. 21	917	245	21	810
Heller & Bardel. (See Maison, Léon, assignor.)						
Heller, Emanuel M. (See Dickert and Heller.)						
Heller, James E., Indianapolis, Ind. Vehicle	254,673	Mar. 14	587	141	21	735
Helm, Ludwig, Berlin, Germany. Car-starter	253,044	Jan. 31	1351	429	21	398
Helmbacher Forge and Rolling Mills Company. (See Acheson, Leonard, assignor.)						
Helvey, George H., assignor to Hooven, Owens & Rentschler Company, Hamilton, Ohio. Steam-separator for traction-engines	259,698	June 20	1617	371 372	21	1886
Hemingway, David M., Newport, Miss. Flood-gate	258,689	Apr. 18	1163	307	21	1168
Hemje, Charles, Washington, D. C. Tobacco-stem-crushing machine	254,969	Mar. 14	653	177	21	752
Hemmer, Frederick L., East Arlington, Vt. Frame for hook-eaves	257,701	May 9	710	196	21	1413

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Hemmich, Thomas F., assignor of one-half to J. G. Kalbach, Reading, Pa. Pedestal, box, and bearing for axles, shafts, and spindles	254,970	Mar. 14	654	177, 178	21	756
Hemmich, Thomas F., assignor of one-half to J. G. Kalbach, Reading, Pa. Car-axle box	254,971	Mar. 14	657	178	21	759
Hemmich, Thomas F., assignor of one-half to J. G. Kalbach, Reading, Pa. Step and bush for spindles, &c.	254,972	Mar. 14	658	178, 179	21	759
Hemming, William E., Redditch, county of Worcester, England, assignor to C. F. Imbrie, New York, N. Y. Fish-hook	254,313	Feb. 28	1370	378	21	602
Hempstead, Charles S., assignor to himself and I. P. Kendall, Masontowu, Pa. Cowl	254,314	Feb. 28	1370	378	21	603
Hempstead, Edward, *et al.* (See Stevens, John L., assignor.)						
Henderson, Charles C., Arkadelphia, Ark. Shot-case	251,860	Jan. 3	243	67	21	44
Henderson, Edward, New York, N. Y. Detergent compound	250,369	June 13	642	.....	21	1813
Henderson, Ewen C. C., Pictou, and T. A. McDonald, Durham, Nova Scotia, Canada. Shoe-lace fastening	260,198	June 27	1672	453	21	2000
Henderson, George A., Decatur, Ill. Water-motor	252,106	Jan. 10	521	144, 145	21	97
Henderson, Henry A., Lynn, assignor to F. F. Raymond, 2d, trustee, Newton, Mass. Heel-nailing machine	252,215	Jan. 10	644	181, 186	21	117
Henderson, Henry A., Lynn, Mass., assignor, by mesne assignments, to National Heeling Machine Company, of Maine. Heel-nailing machine	259,687	June 20	1018	272	21	1886
Henderson, Leonard. (See White and Henderson.)						
Henderson, Samuel E. (See Tripp and Osborn, assignors.)						
Henderson, Thomas, Birkenhead, county of Chester, England. Furnace front and door	255,784	Apr. 4	37	11	21	957
Henderson, William E., Iron Mountain, Mo. Carpet-stretcher	256,836	Apr. 25	1347	380	21	1908
Henderson, William E., Iron Mountain, Mo. Carpet-stretcher	256,839	Apr. 25	1348	380	21	1909
Henderson, William E., Iron Mountain, Mo. Carpet-fastener	257,163	May 2	94	8	21	1385
Henderson, William M., Steelton, Pa. Bessemer-steel plant	253,046	Jan. 31	1063	460, 461	21	306
Hendricks, Hiram W., Portland, Oreg. Elastic compound for truss-pads	252,216	Jan. 10	647	.....	21	118
Hendricks, James C., Indianapolis, Ind. Fire-escape	257,867	May 16	895	250	21	1457
Hendryx, Wilbur A., Big Rapids, Mich. Thill-coupling	252,316	Jan. 17	778	217	21	145
Henius, David, assignor of one-half to S. Bernstein, New York, N. Y. Device for and method of forming braid trimming	256,895	Apr. 25	1414	388	21	1299
Henkle, Leonard, Rochester, N. Y. Hand-lantern	253,865	Feb. 21	634	236	21	506
Henn, Alfred S., New Haven, Conn. Snap-hook	257,006	Apr. 25	1549	433	21	1942
Henn, Alfred S., and G. H. Jennings, New Haven, Conn. Pool-rack	255,625	Mar. 28	14×9	400	21	915
Hennebutte, Henri J. E., Anglet, Basses-Pyrénées, France. Treating ammoniacal salts	253,045	Jan. 31	1062	.....	21	306
Hennebutte, Henri J. E., Anglet, and C. J. F. R. de J. Menard, Biarritz, assignors to Société Anonyme des Produits Chimiques du Sud-Ouest, Paris, France. Treating ammoniacal liquors	259,145	June 6	331	88	21	1752
Hennebutte, Henri J. E., Anglet, and C. J. F. R. de J. Menard, Biarritz, assignors to Société Anonyme des Produits Chimiques du Sud-Ouest, Paris, France. Apparatus for distilling ammonia	259,146	June 6	333	88	21	1753
Henrich, John, and G. Schaefer, Buffalo, N. Y. Ash sifter and receptacle	256,840	Apr. 25	1349	381	21	1906
Henria, John E., Dixon, Cal. Seeder and cultivator	253,985	Feb. 7	190	36	21	367
Henry, John, Jersey City, N. J., assignor to C. B. Cottrell, New York, N. Y. Printing-press	252,838	Jan. 24	1403	391, 392	21	256
Henshaw, Charles W., Middleway, W. Va. Machine for sharpening mower and reaper knives	255,989	Apr. 4	988	75	21	998
Hensley, Charles S., Lawrence, Ind. Animal-trap	258,647	May 30	1850	502	21	1642
Hensley, George W., Lawrence, Ind. Writer's hand-support	259,300	June 13	643	170	21	1813
Henson, John W. (See Le Roy and Henson.)						
Hennsey, William P., Philadelphia, Pa. Reversing-gear for locomotives	259,538	June 13	688	218	21	1847
Henthorn, Allen B., Burdensville, Kans. Evaporating-pan	256,088	May 16	1198	315	21	1497
Henwood, Horace R., Kansas City, Mo. Gold-separator	254,315	Feb. 28	1371	378	21	603
Henwood, Horace R., New York, N. Y. Ore-separator	259,989	June 20	1402	377	21	1951
Hepburn, Henry C. (See Harris, William E., assignor.)						
Hepe, Theodor, New York, N. Y. Kitchen-range boiler	254,973	Mar. 14	659	179	21	759
Herberg, Paul P., and P. H. Claussen, Gale, Wis. Plow attachment	255,991	Apr. 4	990	75	21	998
Herberg, Paul P., and P. H. Claussen, Gale, Wis. Grain-separator	255,992	Apr. 4	991	76	21	998
Herbert, Joseph P., and P. Wris, Woonsocket, R. I. Ice-creeper	256,419	May 23	1568	446	21	1585
Herbet, Auguste, Paris, France. Iron bed	254,548	Mar. 7	122	31	21	650
Herbet, Charles F., Brenham, Tex. Railway-tie	253,361	Feb. 7	239	65	21	365
Herder, Charles, Philadelphia, Pa. Roller-skate	257,941	May 16	967	275	21	1472
Herdic, Peter, Philadelphia, Pa. Two-wheeled vehicle	259,310	June 13	543	142, 143	21	1795
Herfarth, Matthée. (See Günther, Hugo, assignor.)						
Herfarth, Paul M. (See Türk, Carl M. assignor.)						
Herman, John C., St. Louis, Mo. Blank for wagon-box staples	257,164	May 2	25	8	21	1385
Herman, Ludwig, Union, N. J., assignor to himself and J. Jonson, New York, N. Y. Magneto-electric machine	253,362	Feb. 7	231	65	21	365
Herman, Rudolph, Cleveland, Ohio. Billiard-table	254,549	Mar. 7	123	31	21	650
Herrens, Michael, St. Louis, Mo. Car-coupling	253,204	Feb. 7	33	11	21	358
Herrick, Frank J., assignor of one-half to H. C. Noble, New Britain, Conn. Clasp for gloves or shoes	255,857	Apr. 4	124	33	21	971
Herrington, Henry D., Hoosac, N. Y. Potato-digging machine	253,602	Feb. 14	500	142, 143	21	442
Herrmann, John and P., Evansville, Ind. Axle-skein	256,661	Apr. 18	1164	387	21	1168
Herrmann, Peter. (See Herrmann, John and P.)						
Herrschaft, Christopher, Brooklyn, N. Y. Mechanical movement	254,648	Mar. 7	250	64	21	680
Herse, Paulina M. L., assignor, by mesne assignments, to J. Y. Howell, Buffalo, N. Y. Grain and cockle separator	258,297	May 23	1431	405, 406	21	1581
Hersey, David W., Pembroke, Me. Window-screen	253,047	Jan. 31	1065	461	21	306
Hersey, Francis C. (See Tilden, James A., assignor.)						
Hershey, Benjamin, Erie, assignor of three-fourths to C. A. Hitchcock, J. A. Ege, and B. F. Thornton, Bradford, Pa. Machine for reducing ores	257,138	Apr. 25	1691	473, 474	21	1989
Hershey, Benjamin, Erie, assignor of three-fourths to C. Hitchcock, J. A. Ege, and B. Thornton, Bradford, Pa. Ore-concentrator	259,963	June 20	1403	378	21	1951
Hesler, Lawrence C. (See Sowles, George W., assignor.)						
Hess, Daniel, Wheeze, Miss. Steam-generator	256,662	Apr. 18	1165	387	21	1168
Hess, William L. (See Ball and Hess.)						
Hesse, Frederick W., Santa Rosa, Cal. Undershoe	257,702	May 9	710	196	21	1413
Hessel, Richard, Berlin, Germany. Cork-screw	256,490	May 23	1569	446	21	1585
Hessels, Anthony, New York, N. Y. Machine for grinding the laps of polishing-machines	258,943	Jan. 31	1531	498	21	985

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Hessler, Jacob, assignor to W. W. Kimball, Chicago, Ill. Cabinet-organ lid	253,603	Feb. 14	508	143	21	442
Hetfield, Levi, Plainfield, N. J. Apparatus for delivering coal from cars	255,169	Mar. 21	918	245	21	819
Hettinger, Francis W., Reading, Pa. Window frame and sash	251,778	Jan. 3	112	38	21	31
Heughes, Frederick L., Rochester, N. Y. Hand drilling-machine	259,147	June 6	335	88	21	1733
Heulings, Joseph M., Ellisburg, N. J. Fertilizer-distributer	256,790	Apr. 18	1205	364	21	1191
Heuser, William L., Indianapolis, Ind. Rotary stove	252,217	Jan. 10	648	189	21	118
Hewes, Shubael E., Hoopeston, Ill., assignor to J. Jenks, Detroit, Mich. Steam and air ejector. (Reissue)	10,080	Jan. 31	1847	509	21	335
Hewitt, Alvin E. (See Gilbert, William F., assignor.)						
Hewitt, Jackson W., Jackson, Mich. Shifting seat for vehicles	256,663	Apr. 18	1166	387	21	1169
Hewitt, William, assignor to Trenton Iron Company, Trenton, N. J. Apparatus for cleaning iron wire and collecting the waste hydrogen gas	254,478	Mar. 7	30	10	21	645
Hewlett, Henry N., Oscoda, Mich. Salt-grainer	259,539	June 13	650	219	21	1847
Heydrick, Jesse A., Barnhart's Mills, Pa. Pump	254,010	Feb. 21	1014	294	21	535
Heydrick, Jesse A., Barnhart's Mills, Pa. Packing for oil-wells	254,540	Mar. 7	251	64	21	680
Heyna, Henry, assignor of one-half to J. Richey, Cincinnati, Ohio. Cutter-head	259,912	June 6	176	47	21	1725
Heys, Robert, *et al.* (See Mackay, Peter, assignor.)						
Heysinger, Isaac W. (See Williams, Alfred, assignor.)						
Heywood, Charles L., Boston, Mass. Track-clearing car	256,140	Apr. 11	491	133, 134	21	1089
Heywood, Levi, Gardner, Mass. Base rocking-chair	257,881	May 2	86	25	21	1396
Hiatt, Leslie P., Peru, Iowa. Cultivator	255,003	Apr. 4	991	76	21	998
Hibbard, Jerome, South Butler, N. Y. Basket	254,479	Mar. 7	40	10	21	645
Hibbard, Thomas J. (Conway, Ark. Car-coupling	259,641	June 13	956	256	21	1889
Hibbs, Enos, assignor of one-half to R. J. Patton, Germano, Ohio. Fire-protector	257,948	May 16	966	276	21	1473
Hickman, Peter S., Mount Pleasant, Mich. Quilting-frame						
Hickman Trunk Manufacturing Company. (See Jenkins, Charles, assignor.)						
Hickok, Alonzo D., Columbus City, Iowa. Head-block for side-bar buggies	256,388	Mar. 21	1069	287	21	936
Hicker, Benjamin A., assignor of one-half to A. L. Beals, Windsor Locks, Conn. Paper-making machine	259,391	June 13	644	170	21	1814
Hicks, Horace B., Hartford, Conn., assignor to Pope Manufacturing Company, Boston, Mass. Die for forging bicycle-head blanks	252,461	Jan. 17	956	265, 266	21	174
Hicks, Michael, *et al.* (See Grimes, Franklin T., assignor.) (Reissue.)						
Hidden, Oliver M., assignor to himself, G. Watkins, and F. H. Blackman, Detroit, Mich. Knob attachment	255,898	Apr. 4	122	33	21	971
Hiestraman, A. Howard, Baltimore, Md., assignor of one-fourth to A. E. Dolbear, College Hill, Mass. Telephone	257,133	Apr. 25	1604	474	21	1989
Higby, Charles W. (See Allen, William S., assignor.)						
Higby, Luther E., Brattleborough, Vt. Sewing-machine	256,141	Apr. 11	493	134	21	1089
Higgins, Bryant. (See Randall, Isaac H., assignor.)						
Higham, Charles, Watertown, N. Y. Car-brake	252,602	Jan. 24	1169	331	21	219
Higley, Eben N. (See Barks, John C., assignor.)						
Hilbers, Henry, Flushing, N. Y. Apparatus for drying wall-paper	257,703	May 9	711	197	21	1413
Hilbert, Charles. (See Cooper and Dennis, assignors.)						
Hilborn, Julius, assignor to M. Cohn, New York, N. Y. Corset	254,316	Feb. 28	1373	378	21	603
Hilborn, Julius, assignor to M. Cohn, New York, N. Y. Corset	254,650	Mar. 7	258	64	21	681
Hildreth, Edwin A. (See Hall, Willard M., assignor.)						
Hill, Andrew L., and G. B. Simpson, Decatur, Ill. Egg-pail	253,884	Feb. 21	637	256	21	506
Hill, Ebenezer, South Norwalk, Conn. Dynamic dry-air refrigerating apparatus	252,766	Jan. 24	1207	264	21	239
Hill, Edward A., Chicago, Ill. Insulating underground lines	257,165	May 2	25	9	21	1385
Hill, Edwin H., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass. Apparatus for galvanizing wire	255,705	Apr. 4	38	11	21	957
Hill, Erwin D., Marietta, Ohio. Insecticide for poultry, nests, &c	254,317	Feb. 28	1374	.....	21	603
Hill, Frank A., Benicia, Cal. Bookboard-wagon	256,063	May 16	1197	316	21	1497
Hill, Frank A., Benicia, and M. J. Church, Fresno, Cal. Ditching and grading plow	256,064	May 16	1197	316	21	1498
Hill, George B., Detroit, Mich. Nut-lock	252,469	Jan. 17	959	267	21	175
Hill, George W., Ocean, N. Y. Surveying-instrument	258,149	Apr. 11	494	135	21	1040
Hill, Harvey N., Pontiac, Mich. Wind-engine	260,686	June 27	1545	417	21	1969
Hill, Henry T., assignor of one-half to P. C. Cheney, Manchester, N. H. Grate	256,991	June 6	68	17	21	1705
Hill, Homer C., Clinton, Ill. Hog-ring	257,088	May 16	897	250	21	1457
Hill, Jonathan, New York, N. Y. Spinning-top	253,709	Feb. 14	628	176	21	468
Hill, Joseph G., Newark, N. J., and J. L. Lee; said Hill assignor to American Heating and Power Company, New York, N. Y. Packing for underground steam-mains	258,085	May 16	1189	317	21	1499
Hill, Louis C. (See Barnett and Hill.)						
Hill, Nathan, Clyde, assignor of three-fourths to J. K. Divers, Bangor, Mich. Whiffletree-hook	253,648	Jan. 31	1060	461	21	305
Hill, Rowland, Meriden, Conn. Butter-dish	259,148	June 6	338	89	21	1753
Hill, Samuel G., Muscatine, Iowa. Wagon-spring	252,035	Jan. 10	440	120	21	83
Hill, Terilus A. (See Coppock, John F., assignor.)						
Hill, Thomas, Troy, assignor of one-half to C. Colbeth, Kinnickinnick, Wis. Man-power	253,206	Feb. 7	121	36	21	367
Hill, Thomas B. (See Wright and Hill.)						
Hill, Wilber F. (See Scott and Hill.)						
Hill, William E., Big Rapids, Mich. Saw-guide	257,704	May 9	712	197	21	1413
Hiller, Louis C., assignor to Meriden Silver Plate Company, Meriden, Conn. Pitcher	253,703	Feb. 14	625	176	21	468
Hilliard, Thomas J. (Conway, Ark. Car-coupling	255,994	Apr. 4	994	76	21	999
Hills, Edwin A., Wethersfield, Conn. Combined hay rake and tedder	254,138	Feb. 28	1166	388	21	569
Hills, J. Coolidge. (See Laraway and Rockwell, assignors.) (Reissue.)						
Hilpert, Edward. (See Müller and Hilpert.) (Reissue.)						
Hilten, William, Agency City, Iowa. Sad-iron	259,149	June 6	337	89	21	1733
Hilton, William A., Battle Creek, Mich. Bosom-board	257,705	May 9	713	197	21	1414
Hinckley, Edward C., assignor of one-half to L. W. Parker, Delmar, Iowa. Grain-elevator	252,276	Jan. 17	949	236	21	157
Hinckley, Hermon, and E. Culver, assignors, by mesne assignments, of one-fourth to M. W. Page, Philadelphia, Pa. Car brake and starter	259,013	June 6	177	47, 48	21	1725
Hine, Charles M., St. Louis, Mo., assignor to J. M. Bemis, Boston, Mass., and S. A. Bemis, St. Louis, Mo. Sewing-machine hook	254,215	Apr. 11	999	168	21	1657
Hine, Ethel C., *et al.* (See Gillagher, Bernard, assignor.)						
Hine, L. G., *et al.* (See Rogers, James H., assignor.)						
Hines, Dauphin S., Brooklyn, N. Y. Duplex pumping-engine	253,694	Feb. 14	588	143, 144	21	442
Hinkle, David C. (See Bielefeld and Hinkle.)						
Hinkle, Philip, San Francisco, Cal. Elevator	257,843	May 16	966	276	21	1473
Hinkley, Jonas, Norwalk, Ohio. Carpet-sweeper	259,856	June 20	1233	331	21	1983
Hinks, John, T. Hooper, and F. R. Baker, Birmingham, county of Warwick, England; said Baker assignor to said Hinks and Hooper. Fastening for cravats, neckties, &c	253,478	Feb. 7	349	97, 98	21	405

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hinman, Charles M., Sauk Centre, Minn. Sled	252,107	Jan. 10	522	145	21	97
Hinson, Asa C., Pilcook Ranch, Tex. Stock for plow-trucks	252,218	Jan. 10	649	182	21	118
Hippchen, Anthony, Minneapolis, Minn. Clothes-drier	253,369	Feb. 7	233	66	21	395
Hipwell, Thomas, New Brunswick, N. J., assignor to Manhattan Brass Company, New York, N. Y. Argand burner for lamps	256,216	Apr. 11	601	163	21	1057
Hitchcock, Charles A., *et al.* (See Hershey, Benjamin, assignor.)						
Hitchcock, Dermody & Co. (See Gibson and Armstrong, assignors.)						
Hitchcock, Hiram H., Ionia, Mich. Saw-set	256,217	Apr. 11	601	163	21	1057
Hitchcock, Reuben A. (See Kenna, Joseph W., assignor.)						
Hix, James C. (See Overbey, Hugh L. T., assignor.)						
Hoag, Sidney W., Sr., assignor of one-half to H. B. Piper. New York, N. Y. Piston water meter and register	255,269	Mar. 21	1069	267 / 268	21	637
Hoagland, William K (See Hamilton, James T., assignor.)						
Hobbs, Alfred C., assignor to Union Metallic Cartridge Company, Bridgeport, Conn. Bullet-patching machine	257,584	May 9	562	157	21	1365
Hobbs, Alfred C., T. V. Boyden, and C. R. Richards, assignors to Union Metallic Cartridge Company, Bridgeport, Conn. Bullet-patching machine	257,585	May 9	563	157 / 158	21	1365
Hobbs, Alfred J., assignor to Union Metallic Cartridge Company, Bridgeport, Conn. Primer for cartridges	256,664	Apr. 18	1168	288	21	1169
Hobert, Heuston H., Atlantic, assignor of one-half to J. T. Hanna, Cass County, Iowa. Escapement for meters	252,561	Jan. 17	1091	304	21	197
Hoblitzell, James J. (See Hahn, Adam, assignor.)						
Hochhausen, William, New York, N. Y. Short-circuiting switch for dynamo-electric machines	252,663	Jan. 24	1183	331	21	219
Hochhausen, William, New York, N. Y. Magneto-electric machine	252,664	Jan. 24	1184	332	21	219
Hochhausen, William, New York, N. Y. Polarity-protector for dynamo-electric machines	252,665	Jan. 24	1186	332	21	220
Hochhausen, William, New York, N. Y. Dynamo-electric machine	257,007	Apr. 25	1542	433	21	1242
Hockert, Siegefried L., Cincinnati, Ohio. Child's toy	254,709	Mar. 7	301	103	21	705
Hodgdon, Benus L., Levant, Me. Harrow and pulverizer	253,384	Feb. 7	234	66	21	396
Hodgdon, C. W. (See Ethridge, Martin V. B., assignor.)						
Hodgdon, George C., Allegheny, Pa. Refrigerator	251,881	Jan. 3	244	68	21	44
Hodges, Charles C., *et al.* (See McCoy, Elijah, assignor.)						
Hodges, David W., Washington, Ind. Car-coupling	259,014	June 6	179	48	21	1725
Hodges, Henry C., *et al.* (See McCoy, Elijah, assignor.)						
Hodges, James W., assignor to International Gas Company, New York, N. Y. Process of and apparatus for manufacturing gas	255,786	Apr. 4	39	12	21	957
Hodges, Pliny F., Davenport, Iowa. Grain-binder	255,985	Apr. 4	283	77	21	999
Hodges, Pliny F., assignor to himself and W. Deering, Chicago, Ill. Automatic grain-binder	252,463	Jan. 17	960	267	21	175
Hodgkin, John E., director. (See Perrett, Edward, assignor.)						
Hoe & Co., R. (See Anthony, Edwyn, assignor.)						
Hoe & Co., R. (See Crowell, Luther C., assignor.)						
Hoefler, George F., Chicago, Ill. Bottle-stopper	251,779	Jan. 3	114	32	21	22
Hoefler, George F., Chicago, Ill. Bottle-stopper fastener	255,506	Mar. 28	1347	363	21	889
Hoefler, George F., Chicago, Ill. Car-coupling	260,285	June 27	1791	485	21	2019
Hoefler, John, Ilion, N. Y. Sewing-machine shuttle	256,896	Apr. 25	1415	398	21	1299
Hoenack, Carl P., New York, N. Y. Electric lamp	256,665	Apr. 18	1168	288	21	1169
Hoenack, Carl P., New York, N. Y. Electric light	256,666	Apr. 18	1170	288 / 289	21	1169
Hoesman, Herman F., Ellsworth, Kans. Revolving shot-case	259,540	June 13	831	219	21	1847
Hoey, John J., Lawrence, Mass. Joining doffer-rings for card-setting machines	254,651	Mar. 7	253	64	21	691
Hoey, John J., Lawrence, Mass. Card-grinding machine	256,657	Apr. 18	1172	289	21	1169
Hoff, Augustus and H., Brooklyn, N. Y. Leather box	253,605	Feb. 14	505	144	21	443
Hoff, Henry. (See Hoff, Augustus and H.)						
Hoffheins, Reuben, York, Pa. Seed-planter	254,618	Mar. 14	453	122	21	722
Hoffman, Jacob, Chippewa Falls, Wis. Fence	257,944	May 16	969	276	21	1472
Hoffman, Joseph, assignor to J. Rechsendorfer, New York, N. Y. Lead and crayon holder	259,720	June 20	1124	298	21	1904
Hoffman, Michael, Loretto, Pa. Sled-brake	254,318	Feb. 28	1375	379	21	693
Hoffman, Ross J., assignor to himself, O. A. Jenks, G. W. and R. W. Lester, Binghamton, N. Y. Lubricator	257,326	May 2	916	61	21	1389
Hoffman, William H. (See Kelly and Hoffman.)						
Hoffmann, Adam. (See Gassmann, John, assignor.)						
Hoffmann, Max, assignor to U. D. Vonwiller, St. Galle, Switzerland. Embroidering	252,377	Jan. 17	851	236	21	157
Hofmann, Otto V. (See Schmeiser, Henry J., assignor.)						
Hofmann, Konrad, Cincinnati, Ohio, assignor of one-half to A. V. Fuhrmann, Belleview, Ky. Bottle-washing machine	258,579	May 30	1765	490	21	1697
Hofstad, Martin, San Leandro, Cal. Elastic-center emery grinding and polishing wheel	254,011	Feb. 21	1015	284	21	535
Hofstatter, Theodore, Jr., New York, N. Y. Sofa or lounge	259,643	June 13	959	256	21	1869
Hogan, Benjamin, Saginaw, Mich. Belt-fastener	259,015	June 6	180	48	21	1725
Hogan, Daniel, Texarkana, Ark. Balanced valve	259,392	June 13	645	171	21	1814
Hogel, Hascal A., *et al.* (See Elliott, James, assignor.) (Reissue.)						
Hogeland, Israel, assignor of one-half to G. P. Anderson, Indianapolis, Ind. Lifting-jack	259,393	June 13	646	171	21	1814
Hogue, John A., and W. Hall, Shelton, Nebr. Hay-stack binder	260,083	June 27	1456	392	21	1996
Hogg, William S., Washington, D. C. Ship's log	253,597	Feb. 7	152	36	21	397
Hogue, William, and J. R. Davis, Bellaire, Ohio; said Davis assignor of one-half to O. T. Blackburn. Nut-lock	258,693	Jan. 3	391	105	21	67
Hohlweg, Frederick, San Francisco, Cal. Obtaining magnesium sulphate from crude mineral	259,159	June 6	327	.....	21	1754
Holt, Lora B., Worcester, Mass. Wagon or lifting jack	251,868	Jan. 3	245	68	21	44
Hohe, John L., South Bend, Ind. Tongue for agricultural implements	253,704	Feb. 14	494	176	21	402
Hohe, John L., South Bend, Ind. Sulky-plow	257,327	May 2	217	61, 62	21	1389
Hohe, John L., South Bend, Ind. Sulky-plow	256,260	May 16	1396	362	21	1329
Holahan, James, Ansonia, Conn. Register for guns	252,944	Jan. 31	1532	426	21	325
Holahan, James, Ansonia, Conn. Portable shooting-gallery	254,819	Mar. 14	455	123	21	722
Holben, Robert, assignor to himself and F. H. Northup, Alpena, Mich. Gang shingle-jointer	259,151	June 6	326	89	21	1754
Holbrook, Henry C., San Francisco, Cal. Boot or shoe	260,084	June 27	1456	392	21	1996
Holcomb, Clifford A. (See Holcomb, William H. and C. A.)						
Holcomb, William H. and C. A., Beloit, Wis. Mechanical movement	257,386	May 2	219	60	21	1390
Holcombe, A. P., *et al.* (See Middleton, William R., assignor.) (Reissue.)						
Holcombe, Alfred G., Granby, Conn. Electric lamp	252,819	Jan. 10	649	183	21	118
Holcombe, Alfred G., Danielsonville, Conn., assignor to Standard Electric Light Company, New York, N. Y. Electric lamp	253,695	Feb. 7	34	11	21	358
Holcombe, Alfred G., assignor to Standard Electric Light Company, New York, N. Y. Electric lamp	255,170	Mar. 21	919	246	21	811

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Holcombe, Alfred G., and L. H. Colborne, assignors to Standard Electric Light Company, New York, N. Y. Electric lamp	255,171	Mar. 21	921	246	21	811
Holden, Joel M. (See Burton, George D., assignor.)						
Holden, S. W. (See Linn, Sylvester J., assignor.)						
Holderman, Edmund, North Manchester, Ind. Saw-jointing machine	258,735	May 30	1695	500	21	1695
Holdridge, S. W. (See Springer, Amos C., assignor.)						
Holes, Jonathan N., Plymouth, Ind. Tongue-support for vehicles	259,158	June 6	329	89	21	1764
Holladay, S. W. (See Springer, Amos C., assignor.)						
Holland, Benjamin, Jr., Newport, R. I., assignor to T. S. Nowell, trustee, Boston, Mass. Stand hose-pipe	255,430	Mar. 28	1293	327 / 328	21	873
Holland, Benjamin, Jr., Newport, R. I., assignor to T. S. Nowell, trustee, Boston, Mass. Packing for pump-pistons, &c	255,729	Mar. 28	1694	430	21	889
Holland, Benjamin, Jr., Newport, R. I., assignor to T. S. Nowell, trustee, Boston, Mass. Hose-pipe	255,730	Mar. 28	1695	430 / 431	21	889
Holland, Charles, Chicago, Ill. Fire-place	258,022	June 6	62	17	21	1705
Holland, John, Cincinnati, Ohio. Pencil-case	258,296	May 23	1432	362	21	1551
Holland, John, Cincinnati, Ohio. Writing-point for stylographic pens	258,299	May 23	1434	367	21	1551
Holland, John M., Utica, Ill. Nut-lock	256,022	Apr. 18	1172	289	21	1170
Holland, Timothy, Troy, N. Y. Lubricator. (Reissue)	10,142	June 27	1691	502	21	2020
Holland, Wallace S., Burlington, Vt. Planing-machine for planing thin pieces of wood	253,727	Apr. 4	42	13	21	958
Holland, William S., Pasco Dale, R. I. Securing rolls or packages of fabrics from unrolling	258,360	May 23	1435	367	21	1551
Hollander, Theodore, Chicago, Ill. Clock	259,022	June 20	1692	373	21	1697
Hollely, Emma C., Brooklyn, N. Y. Combined marking and cutting instrument	256,020	Apr. 18	1170	289	21	1170
Hollenback, Wesley. (See Gray and Hollenback.)						
Hollenbeck, Frank A., Syracuse, N. Y. Breech-loading fire-arm	258,982	June 6	64	17, 18	21	1705
Hollender, Frederick, New York, N. Y. Cork-protector	251,709	Jan. 3	115	33	21	22
Holley, Alexander L., Brooklyn, N. Y. Bessemer-converter plant	253,649	Jan. 31	1695	461	21	397
Holliday, Robert. (See Holliday, Thomas and R.)						
Holliday, Thomas, Huddersfield, county of York, England. Producing azo colors upon vegetable fiber	258,317	Jan. 17	770	.....	21	145
Holliday, Thomas and R., Huddersfield, county of York, England. Dyeing colors on textile fabrics	254,550	Mar. 7	194	.....	21	630
Holliday, William P., Detroit, Mich. Shoe-holder	255,906	Apr. 4	284	77	21	999
Hollingsworth, John, New York, N. Y. Machine for reducing grain, &c	254,974	Mar. 14	469	179	21	729
Hollingsworth, John, New York, assignor of one-half to J. A. Whitney, Dobb's Ferry, N. Y. Manufacture of flour	256,984	June 6	67	.....	21	1705
Hollis, William J. L., London, England. Lubricant	259,700	June 20	1125	.....	21	1904
Hollister, George E., Washington, D. C. Car-coupling	255,987	Apr. 4	285	77	21	999
Hollister, James D., Savannah, Ga., assignor of one-half to Hooks Smelting Company, Philadelphia, Pa. Car-door burglar-alarm	255,988	Apr. 4	287	78	21	999
Holloway, Charles T., Baltimore, Md. Electric lamp	256,699	Apr. 18	1174	289	21	1170
Holloway, Charles T., Baltimore, Md. Fire-extinguisher	259,257	June 20	1234	321	21	1823
Holly, Birdsill, Lockport, N. Y. Apparatus for supplying steam in cities	259,697	June 27	1546	417	21	1993
Holly, George W., Comanche, Iowa. Combined end-gate and shoveling-board	257,329	May 2	220	60, 61	21	1389
Holly, James H., and J. G. Knapp, Warwick, N. Y. Cabinet folding bedstead	259,541	June 13	832	219	21	1847
Holman, John F. (See Jerolaman, Nicholas, assignor.)						
Holmes, Booth & Haydens. (See Mariner, Stephen A., assignor.)						
Holmes, Britain, assignor to himself and E. Holmes, Buffalo, N. Y. Incasing knots or other defects in wood	256,567	Apr. 18	1084	269	21	1144
Holmes, Britain, assignor to himself and E. Holmes, Buffalo, N. Y. Closing the pores of knots in staves, &c	256,568	Apr. 18	1085	269	21	1144
Holmes Burglar Alarm Telegraph Company. (See Greendald, Edwin T., assignor.)						
Holmes, Charles E. L., New York, N. Y. Sewing-machine	254,975	Mar. 14	463	180	21	729
Holmes, Christian E., Urbana, Ohio. Spoke-tenoning machine	256,697	Apr. 25	1417	399	21	1299
Holmes, Daniel M., Cincinnati, Ohio. Machine for jellying and decorating cakes	259,542	June 13	834	220 / 221	21	1849
Holmes, Ebenezer, assignor of one-half to E. Bowmann and W. H. Lotz, Chicago, Ill. Grain-bin	255,997	Mar. 28	1349	363	21	889
Holmes, Edward. (See Holmes, Britain, assignor.)						
Holmes, George F., Syracuse, N. Y. Drip-pan for refrigerators	255,959	Mar. 21	1073	288	21	837
Holmes, George W., Council Bluffs, Iowa. Car-coupling	259,153	June 6	340	93	21	1754
Holmes & Ide. (See Turner, Isaac P., assignor.)						
Holmes, Jesse H., St. Louis, Mo. Paper and other bags	255,925	Mar. 28	1491	400	21	916
Holmes, John M., Glens Falls, N. Y. Aerobatic toy	258,726	May 30	1686	501	21	1695
Holmes, Kirk. W., Columbus, Ohio. Vehicle-cushion	251,873	Jan. 3	246	68	21	44
Holmes, William C., Indianapolis, Ind. Grain-cleaner	255,509	Mar. 28	1349	363	21	889
Holstein, Augustus E., Cincinnati, Ohio. Machine for copying sculpture, statuary, &c	255,509	Mar. 28	1349	363	21	889
Holt, Amos F. (See Brown and Holt, assignors.)						
Holt, Arthur J. (See Denton, Lemi B., assignor.)						
Holt, Arthur J., assignor of two-thirds to W. H. Jones and J. J. Soura, Grand Rapids, Mich. Apparatus for immersing galvanic-battery plates	252,165	Jan. 31	1531	395	21	309
Holt, Benjamin. (See Brown and Holt.)						
Holt, George F., assignor to M. Cummings, Boston, Mass. Reclining-chair	254,133	Feb. 28	1168	287	21	669
Holt, Hiram. (See Weymouth, George F., assignor.) (Reissue.)						
Holt, John, Lowell, Mass. Device for attaching stars to flags	257,228	May 2	57	55, 56	21	1295
Holt, Leonard, Concord, N. H. Heap-cutting machine	258,695	Jan. 24	1149	320	21	221
Holt, Noah W., Buffalo, N. Y. Roller-mill	253,945	Jan. 21	1382	408	21	605
Holt, Noah W., Buffalo, N. Y. Process of and machinery for gradual reduction of grain to flour and middlings	254,013	Feb. 21	1018	284 / 285	21	536
Holt, Noah W., Buffalo, N. Y. Roller-mill	255,859	Apr. 4	126	34	21	972
Holt, Noah W., Buffalo, N. Y. Roller-mill	255,860	Apr. 4	128	34	21	972
Holt, Noah W., Buffalo, N. Y., assignor to C. E. Knickerbocker, Jackson, Mich. Dust-collector	259,154	June 6	341	93	21	1754
Holt, Noah W., assignor of one-third to R. K. Noye, Buffalo, N. Y. Roller-mill	259,698	June 20	1695	501	21	1823
Holt, Noah W., assignor to R. K. and R. H. Noye, Buffalo, N. Y. Roller-mill	255,989	Apr. 4	289	78	21	1000
Holton, Cassius, Reading, Pa. Rock-cord pulley	259,155	June 6	344	94	21	1755
Holton, Cassius, assignor of one-half to B. F. Seltzinger, Reading, Pa. Apple parer, corer, and slicer	256,669	Apr. 18	1290	335	21	1199
Holton, Forbes, New Castle, Pa. Fish-pole joint	260,085	June 27	1457	393	21	1997
Holton, Thomas J., assignor of one-half to J. E. Hamilton, Philadelphia, Pa. Trimmer for sewing-machines	254,989	Feb. 28	1378	379	21	694
Hölting, Johann W., Bergen, Germany. Suspenders	259,543	June 13	835	221	21	1849
Holub, Frank, assignor of one-half to C. S. Locke, Joliet, Ill. Roll for rolling metal	253,464	Jan. 17	994	267	21	175
Holub, Jan, Nora, Wis. Roll for longitudinally slitting railway-rails	260,086	June 27	1559	417	21	1998

Alphabetical list of patentees, January to June, inclusive—Continued.

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Home Telephone Company. (See Freeman, James P., assignor.)						
Home Telephone Company. (See Freeman and Prosser, assignors.)						
Home Telephone Company. (See Prosser and Freeman, assignors.)						
Hosmer, Charles S., Jr., *et al.* (See Carter, William D., assignor.)						
Hood, Cornelius, Cleveland, Ohio. Combined step-ladder and wash-bench	257,493	May 9	434	120	21	1365
Hood, Ledner H., and G. H. Fox, Grand Haven, Mich. Spring bed-bottom	254,658	Mar. 7	253	65	21	881
Hooker, Frank A. (See Lowell and Hooker.)						
Hooker, William C., Abingdon, Ill. Gate	257,330	May 2	222	63	21	1361
Hooker, William D., Oakland, Cal. Hand-lever attachment for steam-pumps	251,715	Jan. 3	32	9	21	8
Hooker, William D., Oakland, Cal. Steam-generator	255,509	Mar. 28	1351	364	21	880
Hooker, William D., Oakland, Cal. Balanced valve	253,166	Jan. 31	1833	505	21	332
Hooker, William D., Oakland, Cal. Pump	255,900	Apr. 4	220	78	21	1000
Hooker, William D., Oakland, Cal. Condenser	256,479	Apr. 18	931	261	21	1198
Hooker, William D., Oakland, Cal. Deep-well pump	259,304	June 13	647	171	21	1814
Hooker, William D., Oakland, Cal. Adjustable steam cut-off valve	260,026	June 27	1456	303	21	1967
Hooks Smelting Company. (See Hollister, James D., assignor.)						
Hooper, Thomas. (See Hinks, Hooper, and Baker.)						
Hoopes Artificial Stone, Cement and Paint Company. (See Einaigl, Victor, assignor.)						
Hoopes, William H., Baltimore, Md. Manufacture of artificial stone	255,991	Apr. 4	302	79	21	1000
Hoopes, William H., Baltimore, Md. Manufacture of artificial stone	255,992	Apr. 4	302	79	21	1000
Hooton, Marcena M., Centralia, assignor to S. A. Hooton, Clinton County, Ill. Raking mechanism for harvesters	255,510	Mar. 28	1352	364	21	880
Hooton, Susan A. (See Hooton, Marcena M., assignor.)						
Hoover, Owens & Rentschler Company. (See Helvey, George H., assignor.)						
Hoover, Abel, *et al.* (See Remy, Noah T., assignor.)						
Hoover, Oliver F., assignor of one-half to J. D. Arras, Dayton, Ohio. Billiard-table adjuster and leveler	252,378	Jan. 17	238	236	21	157
Hoover, William L., Norway, Iowa. Strap splice or clasp	257,945	May 16	990	276	21	1478
Hopedale Machine Company. (See Fay, Rimmon C., assignor.)						
Hopf, Frank, Allegheny, Pa. Whip-holder	250,021	June 6	187	50	21	1727
Hopfen, Anton, New York, N. Y. Fastener for gloves, gaiters, &c	254,013	Feb. 21	1020	285	21	536
Hopkins, Addison S., Pascoag, R. I. Spindle and bearing therefor	259,016	June 6	181	49	21	1725
Hopkins, Albert J., *et al.* (See Woodruff, Leslie B., assignor.)						
Hopkins & Dickinson Manufacturing Company. (See Collins, John, assignor.)						
Hopkins, Ewin, *et al.* (See Le Vin, George W., assignor.)						
Hopkins, George M., New York, N. Y. Telephone central-office system	257,331	May 2	223	63	21	1391
Hopkins, George M., Brooklyn, N. Y. Galvanic battery	256,691	Apr. 18	1174	330	21	1170
Hopkins, George M., Brooklyn, N. Y. Telephone-transmitter	258,757	May 30	1987	561	21	1665
Hopkins, George M., Brooklyn, N. Y., assignor, by mesne assignments, to People's Telephone and Telegraph Company, of New York. Telephone-transmitter	257,332	May 2	225	63, 64	21	1392
Hopkins Improved Scale Company. (See Hopkins, William W., assignor.)						
Hopkins, John M., assignor to R. L. Hopkins, Edgewood, Md. Corn-silking machine	254,134	Feb. 28	1169	327	21	569
Hopkins, Rachel L. (See Hopkins, John M., assignor.)						
Hopkins, Truman P., Milwaukee, Wis. Curtain-fixture	259,136	June 6	345	91	21	1755
Hopkins, William W., assignor to Hopkins Improved Scale Company, Thorntown, Ind. Platform-scales	256,692	Apr. 18	1175	330	21	1170
Hopper, George H. (See Deering, Mark L., assignor.)						
Hopper, George H., Unionville, Ohio. Method of and apparatus for gluing barrels	255,861	Apr. 4	199	34, 35	21	972
Horack, Charles L., Brooklyn, N. Y. Car-coupling	252,767	Jan. 24	1220	364	21	339
Horack, Charles L., Brooklyn, N. Y. Car-coupling	253,059	Jan. 31	1667	492	21	397
Horan, Thomas F., Cleveland, Ohio. Grain-transporting device	256,319	Apr. 11	798	196	21	1069
Horn, G. B., *et al.* (See Bryson, Ryon P., assignor.)						
Horn, George A., Newark, N. Y. Fence	256,433	Apr. 11	888	240	21	1103
Horn, John W., Rhea's Mills, Tex. Fire-place	254,216	Feb. 28	1250	349	21	584
Horn, William C. (See Hafely, Alfred C., assignor.)						
Hornbostel, Charles, Brooklyn, N. Y. Apparatus for roasting ores	256,569	Apr. 18	1086	290	21	1144
Horne, John B., assignor of two-thirds to T. C. Lean and R. Cooper, Chicago, Ill. Combined folding bed and wardrobe	254,380	Feb. 28	1377	379	21	604
Horne, John H., Lawrence, Mass. Roll-bar for pulp-engines	253,606	Feb. 14	506	145	21	443
Horne, William C., Bexley, county of Kent, England. Crayon	257,708	May 9	714	.....	21	1414
Horne, William L., Meriden, Conn. Lamp-burner	256,736	May 30	1988	561	21	1065
Hornig, Julius, Jersey City, N. J. Mechanism for converting rotary into oscillating motion	252,766	Jan. 24	1301	365	21	340
Hornum, William H., New York, assignor to Railway Register Manufacturing Company, Buffalo, N. Y. Fare register and recorder	256,389	Apr. 11	799	{198 / 199}	{21 / 21}	1069
Hornung, August, and A. H. Face, Castroville, Tex. Tree-protector	254,135	Feb. 28	1169	367	21	589
Horowitz, Adolph, assignor of one-half to M. Simonton, Cincinnati, Ohio. Ice-creeper	259,311	June 13	545	143	21	1785
Horrall, William A., Washington, Ind. Bed-spring	259,365	June 13	649	171	21	1815
Horrigan, Jeremiah, Solomon, Iowa. Draft-equalizer	252,667	Jan. 24	1190	338	21	281
Horsman, Edward I. (See Crandall, James A., assignor.)						
Horsman, Edward I. (See Strauders, Walter, assignor.)						
Hortman, John H., Hopewell, N. J. Railway-switch	257,668	Apr. 25	1544	433	21	1942
Horton, Charles H., Wellington, Ohio. Grain-thrasher and clover-seed huller	259,157	June 6	346	91	21	1755
Horton, Jacob C., assignor of one-half to H. Weil and S. P. Gilbert, New York, N. Y. Unlocking and opening shutters	258,068	May 16	1130	317	21	1498
Horton, James A., New Castle, Pa. Cooking-stove	253,206	Feb. 7	37	12	21	353
Horton & Son Company, E. (See Kirk, Samuel J., assignor.)						
Horton, Theodore, assignor to himself, W. I. Fitch, and W. W. Widdl, Sr., Bluffton, Ind. Hand corn-planter	257,890	May 9	834	238	21	1436
Horton, Theodore, assignor to himself, W. I. Fitch, and W. W. Widdl, Sr., Bluffton, Ind. Hand corn-planter	257,891	May 9	835	238	21	1436
Hosch, Ferdinand, Brooklyn, N. Y. Machine for cleaning fur robes	257,767	May 9	714	1?8	21	1414
Hosmer, James S., Gloversville, N. Y. Sewing-machine	260,027	June 27	1459	{363 / 364}	{21 / 21}	1967
Hosmer, James S., and P. C. Lathrop, Gloversville, N. Y., assignors to said Hosmer. Hat-sweat and other corded-edged fabrics	255,983	Apr. 4	303	79	21	1000
	10,008	Mar. 14	894	220	21	788
Hotchkiss, Arthur E., Cheshire, Conn. Clock-movement. (Reissue)	252,466	Jan. 17	864	269	21	175
Hotchkiss, Arthur E., Cheshire, Conn. Clock-movement	252,606	Jan. 24	1191	333	21	221
Hotchkiss, Arthur E., Cheshire, Conn. Clock-movement	253,268	Feb. 7	134	36	21	367
Hotchkiss, Arthur E., Cheshire, Conn. Clock-pendulum	256,421	May 23	1576	446	21	1565
Hotchkiss, Arthur E., Cheshire, Conn. Clock	259,859	June 20	1225	331	21	1923
Hotchkiss, Arthur E., Cheshire, Conn. Clock	253,934	Feb. 21	911	254	21	518
Hotchkiss, Benjamin B., New York, N. Y. Machine-gun						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hotchkiss, Nellie L. (See Robinson, Charles K., assignor.)						
Hotop, Frederick. (See Trumble and Ketcham, assignors.)						
Hotop, William. (See Goodwin, Julius C., assignor.)						
Hottmann, Louis, Grunbach, Würtemberg, Germany. Grain-mill	254,851	Mar. 7	194	31	21	839
Houchens, John T., assignor of one-half to I. H. Wright, Baltimore, Md. Relief-cock for fire-engines	258,479	Feb. 7	350	98	21	485
Houchin, Joshua E. (See Houchin, Joshua W. and J. E.)						
Houchin, Joshua W. and J. E., Brooklyn, N. Y. Glass-furnace	254,653	Mar. 7	254	65	21	881
Houchin, Joshua W. and J. E., Brooklyn, N. Y. Continuous glass-melting furnace	254,654	Mar. 7	256	65, 66	21	881
Houchin, Joshua W. and J. E., Brooklyn, N. Y. Continuous glass-melting furnace	259,895	June 27	1798	485	21	2039
Houdlette, George W., Saginaw, Mich. Clothes-reel						
Hough, Gershom B. (See Johnson and Hough.)						
Hough, Gershom B., Erie, Pa. Foot-scraper	252,689	Jan. 24	1192	333	21	281
Hough, Robert B., Erie, Pa. Foot-scraper	254,281	Feb. 28	1376	380	21	604
Houpt, John, Springtown, Pa. Feed-pump for steam-boilers	251,864	Jan. 3	247	62, 63	21	44
House, James A., Bridgeport, Conn. Apparatus for forming and shaping corsets	259,159	June 6	349	92	21	1785
House, James A., assignor to Warner Brothers, Bridgeport, Conn. Machine for the manufacture of corset-stiffeners						
Housel, George W. (See Shuster, Jacob, assignor.)						
Houston, Edwin J., Philadelphia, Pa., assignor to American Electric Company, New Britain, Conn. Electric lamp	256,693	Apr. 18	1176	330	21	1170
Houston, Edwin J., Philadelphia, Pa., assignor to American Electric Company, New Britain, Conn. Dynamo-electric machine	259,649	May 30	1852	522	21	1642
Houston, Edwin J., Philadelphia, Pa., assignor to American Electric Company, New Britain, Conn. Dynamo-electric machine	256,649	May 30	1855	523	21	1643
Houston, Edwin J., Philadelphia, Pa., assignor to American Electric Company, New Britain, Conn. Electric incandescent lamp	259,017	June 6	188	49	21	1726
Houts, John Q., and O. Ericsson, Sioux Falls, Dak. Ter., assignors of two-thirds to said Houts. Bottle-stopper	255,627	Mar. 28	1491	420	21	916
Hovenden, Thomas H., Ingersoll, Ontario, Canada. Calendar	254,014	Feb. 21	1021	282	21	536
Hovenden, Thomas H., Ingersoll, Ontario, Canada. Calendar	254,015	Feb. 21	1024	{282 / 287}	{21 / 21}	537
Hovey, John H., Woburn, Mass. Leather boarding and graining machine	253,533	Feb. 14	486	{119 / 120}	{21 / 21}	421
Howard, Charles, Scircleville, Ind. Bee-hive	251,716	Jan. 3	34	10	21	8
Howard, Charles A., Pontiac, Mich. Bolster-spring	253,636	Jan. 10	449	120	21	63
Howard, Charles P., Hartford, Conn. Lamp for railway-cars, &c	253,897	Feb. 7	37	12	21	338
Howard, Clarence R. (See Howard, John E. and C. R.)						
Howard, Edwin H., Baltimore, Md. Means for facilitating speedy exit from buildings in case of fire or alarm	259,544	June 13	637	221	21	1849
Howard, James, Toronto, Ontario, Canada. Stock-car	257,708	May 9	716	{188 / 189}	{21 / 21}	1414
Howard, John E., Reading, Mass. Sash-fastener	253,534	Feb. 14	489	120	21	421
Howard, John E., and C. R. Howard, deceased, (said John E. Howard administrator,) Reading, Mass. Wire-brush machine	254,655	Mar. 7	250	66	21	881
Howard, Joshua E., Grape Vine, Tex. Ventilating attachment to hearths	259,139	June 27	1672	454	21	2000
Howard, Josiah R., Clinton, N. C. Cotton-cultivator	257,669	Apr. 25	1545	434	21	1942
Howard, Thomas, *et al.* (See Shields, Frederick, assignor.)						
Howard, William C., Brooklyn, N. Y. Pin-package	259,618	June 6	185	49	21	1726
Howe, Charles P., Galveston, Tex. Combined mesquite-bar frame and canopy	259,703	Jan. 24	1302	365	21	340
Howe, Eugene L., Chicago, Ill. Drive-chain	255,904	Apr. 4	304	80	21	1001
Howe, George H. (See Tuck and Howe.)						
Howe, John B., assignor to himself and F. A. Hull, Danbury, Conn. Billiard-cue tip	259,573	June 6	402	126	21	1777
Howe, Otis. (See Howe, Tyler, assignor.) (Reissue.)						
Howe Scale Company. (See Reynolds, William W., assignor.)						
Howe, Tyler, deceased, L. Fulton, administratrix, assignors to O. Howe, Cambridgeport, Mass. Spring bed-bottom. (Reissue)	10,191	May 23	1716	495	21	1611
	254,328	Feb. 28	1379	380	21	604
Howell, George, Philadelphia, Pa. Reclaiming low lands	255,703	Apr. 4	44	13	21	999
Howell, George W., Covington, Ky. Door	259,312	June 13	546	143	21	1786
Howell, James E. and J. M., Academia, Pa. Hay-elevator						
Howell, Jane Y. (See Heron, Pauline M. L., assignor.)						
Howell, John M. (See Howell, James E. and J. M.)						
Howell, Martin A., Jr., Chicago, Ill. Manufacture of files	256,301	May 23	1436	.....	21	1561
Howell, William E., Albany, Mo. Burglar-alarm	256,281	Apr. 11	794	200	21	1081
Hower, Susan. (See Eberhard and Turner, assignors.) (Reissue.)						
Howes, John, Worcester, Mass. Faucet	256,699	Apr. 18	938	261	21	1139
Howes, John, Worcester, Mass. Faucet	256,671	Apr. 18	934	261	21	1139
Howland, Ephraim, Pontiac, Mich. Wind-engine	258,650	May 30	1857	508	21	1643
Howland, James E. (See Howland, William M. and J. E.)						
Howland, William M. and J. E., Topsham, Me. Bench-dog	258,067	May 16	1121	317	21	1499
Howson, Henry, Philadelphia, Pa. Spring-hinge	258,770	Jan. 24	1303	365	21	340
Howson, Henry, assignor to A. Middleton, Philadelphia, Pa. Lock-nut	258,682	May 23	1578	447	21	1565
Hoxie, Albert N., Foxborough, Mass., and E. Collins, New York, N. Y. Fish-trap	258,466	Jan. 17	985	269	21	175
Hoxie, Elias, Red Creek, N. Y. Thill-coupling	254,016	Feb. 21	1029	287	21	537
Hoxie, W. H. (See Patterson, William W., assignor.)						
Hoyle, Ellis J., Martin's Ferry, Ohio. Grain-separator	254,089	Mar. 14	456	128	21	788
Hoyle, George H. (See Quick, George, assignor.)						
Hoyt, Frederick J., New York, N. Y., and W. H. Hoyt, Jersey City, N. J. Ore pulverizer and amalgamator combined	253,651	Jan. 31	1670	492	21	397
Hoyt, Frederick J., New York, N. Y., and W. H. Hoyt, Jersey City, N. J. Machinery for crushing ores, &c	255,882	Apr. 4	121	35	21	972
Hoyt, Frederick J., New York, N. Y., and W. H. Hoyt, Jersey City, N. J. Machinery for pulverizing ore, &c	256,282	Apr. 11	794	200	21	1081
Hoyt, Frederick J., New York, N. Y., and W. H. Hoyt, Jersey City, N. J. Machinery for reducing ore, &c	256,570	Apr. 18	1027	290	21	1144
Hoyt, Frederick J. and W. H., New York, N. Y. Grinding-surface of ore and other pulverizers	257,669	May 16	997	290	21	1497
Hoyt, Jonathan J., Charlestown, Mass. Case for preserving food	257,010	Apr. 25	1546	434	21	1943
Hoyt, Lucien H., Danbury, Conn. Apparatus for shaping hat-brims	253,618	Feb. 14	774	220	21	469
Hoyt, William H. (See Hoyt, Frederick J. and W. H.)						
Hubbard, Charles W., Boston, Mass. Electric detecting apparatus for watchmen	259,699	June 20	1682	473	21	1937
Hubbard, Charles W., Boston, Mass. Electric detecting apparatus for watchmen	259,699	June 20	1684	473	21	1938
Hubbard, Charles W., Boston, Mass. Electric detecting apparatus for watchmen	258,370	Jan. 17	853	237	21	156
Hubbard, George W., Windsor, Vt. Machine for cutting glaziers' points	257,233	May 2	226	64	21	1392
Hubbard, Moses G., Norristown, Pa. Grain-binder	256,221	May 23	1525	363	21	1547
Hubbard, Moses G., Norristown, Pa. Gleaner and binder						

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Name, residence, and invention	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Hubbard, William, *et al.* (See Wittich, Frederic A., assignor.)						
Hubbe, Martin, Bayonne, N. J., and M. A. Hardy, Newport, R. I., assignors to F. H. Snyder, Jersey City, N. J. Submarine torpedo	255,386	Mar. 21	1195	289	21	859
Hubbell, David T., Bethel, Conn. Car-coupling	257,011	Apr. 25	1547	434	21	1243
Huber, Edward, Marion, Ohio. Water-jacket smoke-box	253,385	Feb. 7	235	66	21	396
Huber, Edward, Marion, Ohio. Revolving hay-rake	255,391	Mar. 21	1074	289	21	837
Huber, Edward, Marion, Ohio. Car-axle box	257,709	May 9	719	199	21	1415
Huber, Edward, Marion, Ohio. Reversible link-motion	257,710	May 9	720	200	21	1415
Huber, Henry. (See Peters and Donald, assignors.)						
Husk, Louis C., Chicago, Ill. Malt-house	257,586	May 9	566	156	21	1398
Hudgens, John A., Pine Bluff, Ark. Wagon-hub	253,038	Jan. 24	1670	462	21	397
Hudgins, John H., *et al.* (See Decker, William, assignor.)						
Hudnut, Theodore, Terre Haute, Ind. Hominy-mill. (Reissue)	10,057	Mar. 7	426	110	21	709
Hudson, Benjamin F., Bear Creek, Tex. Locomotive	253,249	Feb. 7	195	37	21	387
Hudson, Charles H., Hinsdale, Ill., and E. Smedley, Dubuque, Iowa. Steam-pump	255,000	June 27	1553	418	21	1961
Hudson, Frederick W., Leominster, Mass. Apple-parer	252,670	Jan. 24	1193	333	21	921
Hudson, John L., Cummings, Ga. Hoe	253,053	Jan. 31	1671	462	21	397
Hudson, John W., Wellington, Ill. Hame	252,230	Jan. 10	652	163	21	119
Hudson, John W., Wellington, Ill. Hame	252,318	Jan. 17	779	217	21	145
Hudson, Lyman O., Stockton, Cal. Combined portable pantry, dresser, and sideboard	251,885	Jan. 3	248	69	21	44
Hudson, Miller B., assignor of one-half to O. N. Crane, Canandaigua, N. Y. Gate-hinge						
Hudson, Robert S. (See Pritchard, George, assignor.)	255,038	Mar. 28	1492	{400 401}	21	916
Hudson, Samuel W., Hudsondale, Pa. Ventilating apparatus	258,560	May 30	1788	500	21	1087
Hudson, Samuel W., Hudsondale, Pa. Steam-motor	258,771	Jan. 24	1304	.....	21	949
Huet, Alfred J., Paris, France. Manufacture of gelatine and glue from animal refuse or offal	255,963	Apr. 4	132	.....	21	973
Huey, William. (See Hall, Henry M., assignor.)						
Hufeland, Philip, assignor to E. & H. T. Anthony & Co., New York, N. Y. Album-clasp	257,912	Apr. 25	1549	435	21	1243
Huffer, Isaac, assignor of two-thirds to J. W. Moore and J. C. McBride, Christian County, Ill. Soil-pulverizer	256,891	Apr. 18	1296	365	21	1192
Huffer, John H., Jacksonville, Oreg. Apparatus for removing sand-bars in rivers, cutting channels in harbors, &c	260,200	June 27	1673	454	21	2000
Huffman, Orlando, assignor of one-half to F. Sanderson, Friend, Nebr. Rotary cloth-measuring apparatus	254,874	Mar. 14	509	141	21	735
Huffman, William J. (See Foniger, George W., assignor.)						
Huffnagle, Alfred, assignor of two-thirds to J. S. B. Nagle and W. F. Bacon, Philadelphia, Pa. Photographic camera	257,946	May 16	991	277	21	1473
Hugg, George C., Philadelphia, Pa. Valve for musical wind-instruments	254,136	Feb. 28	1170	327	21	570
Hughes, Alfred, Glasgow, Scotland. Rolling-mill for rolling wire and rods	252,467	Jan. 17	906	{268 269}	21	176
Hughes, John, *et al.* (See Shoemaker, David L., assignor.)						
Hughes, Josiah L., Cleveland, Tenn. Cotton-chopper	252,221	Jan. 10	653	183	21	119
Hughes, Marshall J., Jersey City, N. J. Combined printing-press and stereotype casting-box	253,398	Feb. 7	235	66	21	396
Hughes, Paul. (See Boyland, Joptha G., assignor.)						
Hughes, William H., Johnston, and P. O'Rielly, Providence, R. I. Preparing phosphoric acid from bones	256,493	May 23	1572	447	21	1585
Hughes, William S., Long Island City, N.Y. Slide-valve	254,383	Feb. 28	1361	381	21	695
Hugill, James, Woodbridge, Cal. Draft-adjusting device for harness	254,558	Mar. 7	125	28	21	650
Huguenin, Williams E., Locle, Switzerland. Repeating-movement for watches	256,218	Apr. 11	608	164	21	1057
Hull, Elias H., Warren, Ohio. Revolving shuttle for sewing-machines	254,217	Feb. 28	1360	350	21	584
Hull, Ellsworth B., Clinton, Ill. Bed-bottom	256,484	Apr. 18	1178	331	21	1171
Hull, Frederick A. (See Howe, John B, assignor.)						
Hull, George D., Poughkeepsie, N. Y. Shirt	255,984	Apr. 4	134	35	21	973
Hull, James. (See Whitaker and Hull.)						
Hull, John A., Ansonia, Conn., assignor to W. A. Hull, New York, N. Y., and Ansonia Brass and Copper Company, Ansonia, Conn. Lamp-fixture	260,201	June 27	1675	454	21	2000
Hull, John W., Alquina, assignor of one-half to W. Newkirk and W. H. Wherrett, Connersville, Ind. Harvesting-machine	253,705	Feb. 14	625	177	21	462
Hull, Martin L., Cleveland, Ohio. Oven	255,985	Apr. 4	134	35, 36	21	973
Hull, Welcome H., and J. W. O'Rear, White Hall, Va. Velocipede	259,853	June 20	1230	{329 330}	21	1923
Hull, Wesley, Fort Wayne, Ind., assignor to Scovill Manufacturing Company, Waterbury, Conn. Spring-hinge. (Reissue)	10,024	Jan. 31	1851	510	21	336
Hull, Wolcott A., *et al.* (See Hull, John A., assignor.)						
Hull, Wolcott A., assignor of one-half to Ansonia Brass and Copper Company, New York, N. Y. Lamp-fixture	253,706	Feb. 14	626	177	21	463
Hull, Wolcott A., assignor of one-half to Ansonia Brass and Copper Company, New York, N. Y. Lamp-fixture, &c	253,707	Feb. 14	626	178	21	463
Hull, Wolcott A., New York, N. Y., assignor of one-half to Ansonia Brass and Copper Company, Ansonia, Conn. Lamp	255,039	Mar. 28	1483	401	21	916
Hull, Wolcott A., New York, N. Y., assignor to Ansonia Brass and Copper Company, Ansonia, Conn. Shade-holder for lamps	255,731	Mar. 28	1487	430	21	959
Hull, Wolcott A., assignor of one-half to Ansonia Brass and Copper Company, New York, N. Y. Counter-balance for extension-chandeliers	256,383	Apr. 11	735	200	21	1081
Hull, Wolcott A., assignor of one-half to Ansonia Brass and Copper Company, New York, N. Y. Chandelier	256,668	May 16	1132	317	21	1499
Hults, David, Philadelphia, Pa. Manufacture of open links	255,988	Apr. 4	135	36	21	973
Humans, William, Cambridgeport, Mass. Electrical apparatus for medical purposes	259,691	June 20	1668	{272 274}	21	1988
Hume, Frank, *et al.* (See Rogers, James H., assignor.)						
Hume, John C., and T. A. Tate, Leadville, Colo. Miner's candlestick	255,995	Apr. 4	305	80	21	1001
Hummel, Ferdinand, Sr., Paducah, Ky. Breech-loading fire-arm	256,750	May 30	1969	561	21	1065
Humphreville, Henry, Mountville, Pa. Air-pump	251,898	Jan. 3	249	68	21	45
Humphrey, Frank A., Worcester, Mass. Cavity-plane	257,870	May 16	898	250	21	1457
Humphrey, Henry C., New York, assignor to F. O. Matthiessen, Irvington, and W. A. Wiechers, New York, N. Y. Treating maize or other grain in the manufacture of beer, spirits, glucose, grape-sugar, &c	251,897	Jan. 3	250	.....	21	45
Humphrey, Henry C., assignor of three-fourths to S. Block, New York, N. Y. Lathe-chuck for turning polygonal bodies	255,069	Mar. 14	804	215	21	784
Humphrey, John, Keene, N. H. Turbine water-wheel	260,203	June 27	1676	454	21	2000

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Humphreys, David, Norfolk, Va. Separable button	259,139	June 6	348	98	21	1756
Humphreys, Robert, New York, N. Y. Tide-wave motor	259,669	June 20	1227	338	21	1984
Humphry, James, Brooklyn, N. Y. Printing-press	251,886	Jan. 3	251	69, 70	21	45
Humphryes, John, Jr., assignor to Silver and Deming Manufacturing Company, Salem, Ohio. Pump	257,871	May 16	899	251	21	1460
Hungerford, George S. (See Hungerford, George W. and G. S.)						
Hungerford, George W. and G. S., New York, N. Y. Machine for scouring coffee, &c	253,654	Jan. 21	1672	463	21	397
Hungerford, George W. and G. S., New York, N. Y. Machine for treating and bagging coffee	259,545	June 13	838	232	21	1849
Hungerford, John M. (See Veile, Orvell C., assignor.)						
Hunt, Charles V., Philadelphia, Pa. Grinding or polishing wheel	259,769	May 30	1389	382	21	1665
Hunt, Charles W., West Brighton, N. Y. Car-truck	256,571	Apr. 18	1293	359	21	1145
Hunt, Franklin E., Richmond, assignor of one-half to D. B. Robbins, Economy, Ind. Plow	253,055	Jan. 31	1673	463	21	396
Hunt, Franklin E., Richmond, assignor of one-half to D. B. Robbins, Economy, Ind. Draft-equaliser	253,056	Jan. 31	1674	463	21	396
Hunt, Franklin E., Richmond, Ind., assignor of one-half to D. B. Robbins. Sulky-plow	254,601	Mar. 7	48	11, 12	21	645
Hunt, Franklin E., Richmond, assignor of one-half to D. B. Robbins, Economy, Ind. Rolling coulter	256,601	Mar. 14	806	216	21	794
Hunt, Franklin E., assignor to L. L. Lawrence and H. E. Moss, Richmond, Ind. Sulky-plow	256,695	Apr. 18	1179	331	21	1171
Hunt, George W., Philadelphia, Pa. Device for lighting the steps of cars or carriages	260,189	June 27	1554	418	21	1961
Hunt, Henry H., San Antonio, Tex. Compound for making brick, tile, &c	260,202	June 27	1676	.....	21	2000
Hunt, John F., Philadelphia, Pa. Preparing type-forms	253,057	Jan. 31	1675	463	21	396
Hunt, Lotus R. (See Rush, Charles, assignor.)						
Hunt, Marcus A., Cincinnati, Ohio. Spring bed-bottom	258,772	Jan. 24	1305	365	21	949
Hunt, Theodore. (See Bishop, Richard T., assignor.)						
Hunt, Theodore. (See Cadkill, Robert M., assignor.)						
Hunt, William S. D. (See Ament and Hunt.)						
Huntemer, Augustus, *et al.* (See Garner, Samuel R., assignor.)						
Hunter, Alpheus S., Newburg, N. Y., assignor to E. H. Barney and R. Gibson. Skate. (Reissue)	10,026	Apr. 4	439	119	21	1001
Hunter, George R., Hawkeyville, Iowa. Pump	258,468	Jan. 17	908	269	21	176
Hunter, George W., Merced, Cal. Harness and trace coupling	252,108	Jan. 10	562	145	21	97
Hunter, James, and U. Hankin, assignors of one-third to S. T. Owens, Pittsburg, Pa. Oiling-box for rolls and pinions	257,947	May 16	902	277	21	1473
Hunter, John E., Mechanicsburg, assignor of one-half to J. H. Smith, Delaware, Ohio. Case for displaying wares	253,220	Feb. 7	196	37	21	382
Hunter, Rudolph M., Philadelphia, Pa. Electric signal	257,946	May 16	903	277	21	1473
Hunter, Rudolph M., Philadelphia, Pa., assignor to Atlantic and Pacific Electric Manufacturing Company, Camden, N. J. Electric lamp	252,037	Jan. 10	441	122	21	69
Hunter, Samuel P., Wellington, Ill. Excavator	259,306	June 13	649	178	21	1815
Huntington, Lawson G., New York, N. Y. Signal-lantern	251,781	Jan. 3	196	53	21	38
Huntington, Samuel, *et al.* (See Blackall, Robert C., assignor.)						
Huntington, William S., Brooklyn, N. Y. Lathe for turning irregular forms	254,469	Mar. 7	41	11	21	645
Huntley, W. W., *et al.* (See Middleton, William R., assignor.) (Reissue.)	258,877	Jan. 31	1454	.....	21	971
Huntoon, Benjamin B., Louisville, Ky. Paper matrix for stereotyping	257,711	May 9	721	{399 399}	21	1415
Huntoon, Lafayette, Natick, assignor to Huntoon Manufacturing Company, Boston, Mass. Shutter-worker						
Huntoon Manufacturing Company. (See Huntoon, Lafayette, assignor.)						
Huntoon, Reuben K., Franklin, Mass. Gas-exhaust regulator	257,494	May 9	435	120	21	1395
Huntress, John H., assignor of two-thirds to C. Dutton and H. Merrill, Janesville, Wis. Buckle	257,443	May 2	357	100	21	1345
Huntress, John H., assignor of one-half to C. Dutton, Janesville, Wis. Whiffletree-hook	258,654	May 30	2003	561	21	1681
Huntsman, Horace, Sacramento, Cal. Plow-jointer	259,981	June 20	1287	338	21	1934
Huppe, Valentin, assignor to himself and A. P. Bender, Offenbach-on-the-Main, Germany. Lock for traveling-bags	257,334	May 2	289	68	21	1339
Hupperstberg, Richard, and B. Schwarz, Berlin, Germany. Lamp-burner	259,761	June 20	1198	299	21	1904
Hurd, Asa. (See Whiteley, Bayley, and Hurd.)						
Hurd, Asa, assignor to W. N. Whiteley, Springfield, Ohio. Harvesting-machine	256,494	Apr. 11	603	161	21	1104
Hurd, Charles L., Newburyport, Mass. Folding umbrella	254,218	Feb. 28	1361	350	21	695
Hurd, Charles T., Peoria, Ill. Pie-baking plate	254,770	Mar. 7	202	149	21	725
Hurd, George H., Kiowa, Kans. Refrigerator	254,976	Mar. 14	615	159	21	769
Huribut, Henry W., *et al.* (See Richards, Hezekiah H., assignor.)						
Hurley, Edward. (See Barker, Henry C., assignor.)						
Hurter, Ferdinand. (See Carey, Geakell, and Hurter.)						
Hurtle, Fredric M., Dowagiac, Mich. Vehicle-hub	257,323	May 2	68	28	21	1326
Hurtu, Auguste J.	256,701	May 30	1991	568	21	1669
Hurtu, Auguste J., and V. J. Heatin, Paris, France, assignors, by mesne assignments, to Heatin Sewing Machine Company, of New York. Sewing-machine. (Reissue)	10,135	May 30	2108	{395 396}	21	1687
Huse, Warren D., Laconia, N. H. Knitting-machine	255,990	Apr. 4	306	80, 81	21	1001
Hussey, Blane & Co. (See Smith, Ephraim, assignor.)						
Hussey, Charles A., assignor to Hussey Electric Company, New York, N. Y. Dynamo-electric machine	252,360	Jan. 17	654	237	21	189
Hussey, Charles A., assignor to Hussey Electric Company, New York, N. Y. Dynamo-electric machine	253,367	Feb. 7	226	67	21	396
Hussey, Charles A., assignor to Hussey Electric Company, New York, N. Y. Electric-arc lamp	256,381	May 30	1779	{389 391}	21	1687
Hussey, Charles A., assignor to Hussey Electric Company, New York, N. Y. Apparatus for transmitting and reproducing speech	259,397	June 13	650	178	21	1815
Hussey, Charles A., assignor to Hussey Electric Company, New York, N. Y. Electric-arc lamp	260,204	June 27	1676	455	21	2001
Hussey, Charles A., and W. H. Lyman, New York, N. Y. Hair-pin	256,388	Mar. 21	1075	289	21	897
Hussey Electric Company. (See Hussey, Charles A., assignee.)						
Hutchings, William V. (See Carey, John B., assignor.)						
Hutchins, George W., Dover, N. H. Lasting-jack	254,427	Feb. 28	1340	414	21	688
Hutchins, George W., Dover, N. H. Shoemaker's jack	254,428	Mar. 7	45	12	21	649
Hutchins, Henry H., Pennville, Mich. Wire-stretcher	253,056	Jan. 31	1676	464	21	396
Hutchins, William J. (See Hall, William J., assignor.)						
Hutchinson, Alexander, Paris, France. Rubber shoe	251,702	Jan. 3	196	53	21	38
Hutchinson, Edwin L., New York, N. Y. Automatic telegraphic transmitter	254,977	Mar. 14	668	180	21	769
Hutchinson, Hedworth, Burlington, Iowa. Burial-casket	253,702	Feb. 14	629	178	21	463
Hutchinson, Merrill N., New York, N. Y. Safety apparatus for passenger and other elevators	259,619	June 6	185	49	21	1736
Hutchinson, Merrill N., New York, N. Y. Safety apparatus for passenger and other elevators	259,702	June 20	1127	299	21	1904

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Hutchinson, Richard, London, England. Gas-engine	253,709	Feb. 14	630	178 179 180	21	464
Hutchison, David, *et al.* (See Roberts, Thomas B., assignor.)						
Hutchison, Ebenezer N., Charlotte, N. C. Brick-kiln	258,319	Jan. 17	780	217	21	146
Hutinet, Jean J. D., and P. E. Lamy, Paris, France. Preparation of photographic paper for making gelatine-bromide of silver prints	253,827	Feb. 14	784	.....	21	491
Hutson, William L., St. Lawrence, N. C. Corn-planter	255,630	Mar. 28	1495	401	21	917
Hüttemeier, Carl E. (See Bergmann and Hüttemeier.)						
Hutton, David W. J., Camden, N. J. Bathing-garment	259,689	June 6	167	50	21	1726
Hutton, Robert, Holyoke, Mass. Adjustable dandy-roll stand	255,867	Apr. 4	130	36	21	973
Hyams, William, New York, N. Y. Pantaloons	255,631	Mar. 28	1496	401	21	917
Hyatt, Elizabeth A. L. (See Hyatt, Thaddeus, assignor.)						
Hyatt, John W., Newark, N. J. Steam-table	258,768	May 30	1983	562	21	1666
Hyatt, John W., Newark, N. J., assignor to Boosalate Company, (limited,) Albany, N. Y. Making key-boards for musical instruments	254,438	Feb. 28	1512	414	21	638
Hyatt, John W., Newark, N. J., assignor to Celluloid Manufacturing Company, New York, N. Y. Drying sheets of plastic material	254,439	Feb. 28	1513	414	21	638
Hyatt, John W., Newark, N. J., and C. S. Lockwood, assignors to Boosalate Company, (limited,) Albany, N. Y. Process of and apparatus for molding plastic material	259,864	June 20	1407	379	21	1908
Hyatt, Thaddeus, assignor to E. A. L. Hyatt, New York, N. Y. Illuminating-grating	254,656	Mar. 7	958	67	21	682
Hyatt, Thaddeus, Brooklyn, N. Y., assignor to E. A. L. Hyatt, Hyattsville, Md. Illuminating-grating	255,511	Mar. 28	1353	364	21	890
Hyatt, Thaddeus, assignor to E. A. L. Hyatt, New York, N. Y. Constructing and repairing illuminating-roofs, &c	257,712	May 9	722	201	21	1415
Hyatt, Thaddeus, assignor to E. A. L. Hyatt, New York, N. Y. Illuminating grating or vault-cover	257,713	May 9	725	202	21	1416
Hyatt, Thaddeus, assignor to E. A. L. Hyatt, New York, N. Y. Illuminating vault-cover or grating	257,714	May 9	725	202	21	1416
Hyatt, Thaddeus, assignor to E. A. L. Hyatt, New York, N. Y. Pavement-plate or vault-cover	257,715	May 9	726	202	21	1416
Hyatt, Thaddeus, assignor to E. A. L. Hyatt, New York, N. Y. Illuminating-grating and building lighted thereby	257,882	May 9	836	233	21	1436
Hyatt, William F., Brooklyn, N. Y. Safety-pin	255,293	Mar. 21	1075	299	21	837
Hyde, Andrew, Hatfield, Mass. Tail-stock for turning-lathes	258,598	May 30	1773	501	21	1698
Hyde, Clarence L., *et al.* (See Richards, Francis H., assignor.)						
Hyde, Elwin R., *et al.* (See Richards, Francis H., assignor.)						
Hyde, Henry D., *et al.* (See Cuttriss and Milliken, assignors.)						
Hyde, James C., assignor to West Haven Buckle Company, West Haven, Conn. Suspender-end	256,763	May 30	1984	563	21	1666
Hyde, James P., New York, N. Y. Apparatus for flushing water-closets and urinals	259,985	June 20	1408	379	21	1952
Hyden, Peter T., and A. Larson, Chicago, Ill. Rotary steam-engine	258,773	Jan. 24	1306	366	21	240
Hynes Michael, Montreal, Quebec, Canada. Die for shaping heel-counters	260,935	June 27	1660	455	21	2001
Hyre, Wesley, Thorn Creek township, Whitley county, Ind. Corn-husking platform for wagons	258,361	Jan. 17	857	237	21	158
Hyslop, John, Jr., Abington, Mass. Making shoe-nails	255,897	Apr. 4	308	81	21	1001
Iannarone, Francisco P., Washington, D. C. Seal-lock	253,366	Feb. 7	237	67	21	366
Iehl, Alphonse, Massanet, France. Umbrella or parasol	257,873	May 16	909	251	21	1458
Iglehart, Joseph J., assignor to himself and W. W. Garth, Columbia, Mo. Automatic looking-stay for desk-lids	254,394	Feb. 28	1361	381	21	605
Ihlee & Horne. (See Heston and Belas, assignors.)						
Iler & Co. (See Kuns, Frederick O., assignor.)						
Ilett, William, Chicago, Ill. Apparatus for unloading coal	258,638	Jan. 10	444	121	21	84
Illfelder, Bernhard. (See Illfelder, Joseph, assignor.)						
Illfelder, Joseph, deceased, (L. Illfelder, administrator.) Fürth, Bavaria, Germany; said administrator assignor to B. Illfelder, New York, N. Y. Lead and crayon holder	256,808	Apr. 18	1297	365	21	1192
Illfelder, Leopold, administrator. (See Illfelder, Joseph.)						
Illingworth, John, Newark, N. J. Machine for straightening and polishing iron, steel, and other metal rods	253,710	Feb. 14	634	160	21	464
Imbrie, Charles F. (See Endicott, Francis, assignor.)						
Imbrie, Charles F. (See Hemming, William E., assignor.)						
Imbrie, Charles F. (See Vom Hofe, Julius, assignor.)						
Immisch, Moritz, London, county of Middlesex, England. Volute-tube thermometer	251,889	Jan. 3	254	70	21	45
Improved Sole Sewing Machine Company. (See Comey, Willard, assignor.)						
Ingalls, Gustavus W., Worcester, Mass. Mechanical musical instrument	256,219	Apr. 11	604	164	21	1057
Ingalls, Joshua K., New York, N. Y. Illuminating-tile	256,239	May 23	1356	363	21	1547
Ingalls, P. P. (See Jackson, John T., assignor.)						
Ingersoll, John E. (See Smith, Joseph, assignor.)						
Ingersoll, John E. (See Vuillier, Aimé, assignor.)						
Ingersoll, Richmond H. (See Sherman, Ingersoll, and Moore.)						
Ingerson, Albert P., Elbridge, N. Y. Elevated railway	258,388	May 23	1437	407	21	1561
Ingraham, Monroe, Dadeville, Mo. Belting-reel	259,160	June 6	349	92	21	1756
Ingram, Amer, assignor of one-half to J. B. De Young, Philadelphia, Pa. Tobacco-scrap cutter	255,512	Mar. 28	1354	364	21	890
Ingram, Matthew, Manchester, county of Lancaster, England. Fire-place or stove	257,716	May 9	727	202	21	1416
Inman, Gilbert H., Amsterdam, N. Y. Trimming attachment for sewing-machines	258,089	May 16	1133	318	21	1499
Inman, Horace, Amsterdam, N. Y. Paper-box covering and trimming machine	253,711	Feb. 14	635	160 161	21	464
Innis, William J., and P. H. Kane, Oil City, Pa. Pattern-lifter	258,368	Jan. 17	858	238	21	158
Insemde, J. Henry, Cuyahoga Falls, Ohio. Apparatus for casting pipe-elbows	259,161	June 6	350	93	21	1756
Insull, Samuel. (See Dyer and Sealy, assignors.)						
Insull, Samuel, *et al.* (See Sealy, Henry W., assignor.)						
Interchangeable Tool Company. (See Hall, Thomas G., assignor.) (Reissue.)						
International Gas Company. (See Hodges, James W., assignor.)						
International Vapor Fuel Carbon Iron and Manufacturing Company. (See Hayden, Henry T., assignor.)						
Iosis Manufacturing Company. (See Smith, Edward B., assignor.)						
Iredale, James, Toronto, Ontario, Canada. Oil-stove	259,546	June 13	840	228	21	1849
Irelan, William, Oak Springs, assignor of one-half to C. W. Bowen, Centerville, Iowa. Truss-bridge	254,978	Mar. 14	669	169	21	749
Ireland, George H., Springfield, Mass. Dissected toy picture	256,651	May 30	1858	584	21	1644
Iron Monster Wind Engine and Manufacturing Company. (See Shellabarger, Flavius W., assignor.)						
Irvin, Johnston, Elk City, Pa. Fruit-jar	259,869	June 20	1236	339	21	1924

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Irvine, James, *et al.* (See Blocher, John C., assignor.)						
Irvine, Robert, Royston Grantos, county of Mid-Lothian, Scotland. Treating mineral oils, &c	254,289	Apr. 11	605	.....	21	1058
	255,789	Apr. 4	45	13	21	966
Irving, Joseph, Chicago, Ill. Paint-burner						
Irwin, George W., Ottawa, Kans., assignor to himself and E. M. Crandal, Chicago, Ill. Corn-harvester	255,790	Apr. 4	46	13	21	939
Irwin, John E., *et al.* (See Potts, Lewis F., assignor.)						
Irwin, John H., trustee. (See Voelker, William L., assignor.)						
Irwin, John H., Morton, Pa. Oil-stove	253,807	Feb. 14	597	145	21	443
Irwin, John H., Morton, Pa. Lamp or gas stove	254,979	Mar. 14	671	161	21	761
Irwin, Samuel, Lindsay, Ontario, Canada. Car-lock	254,304	Apr. 11	736	201	21	1061
Irwin, William J. (See Lisle, Jacob B., assignor.)						
Isaacson, Alfred H., New Orleans, La. Manufacture of sirup from cane-juice	253,712	Feb. 14	637	.....	21	464
Isbell, Thomas D., Bentonville, Ark. Combined tool	258,513	Mar. 28	1355	365	21	891
Isbister, Thomas. (See Mills and Isbister.)						
Ishe, Albert. (See Ishe, Anthony and A.)						
Ishe, Albert, assignor of one-half to A. Ishe, Lancaster, Pa. Motor	253,887	Feb. 21	866	227	21	597
Ishe, Anthony. (See Ishe, Albert, assignor.)						
Ishe, Anthony and A., Lancaster, Pa. Motor	253,888	Feb. 21	866	227	21	597
Ishe, Anthony and A., Lancaster, Pa. Motor	254,402	Apr. 18	936	263 265	21	1139
Ishe, Anthony and A., assignors to I. L. Landis, Lancaster, Pa. Meat-slicer	253,619	Feb. 14	775	200	21	469
Itin, Matthias, St. Paul, Minn. Implement for driving drive-well tubes	258,678	Jan. 31	1455	407	21	971
Ivers & Pond Piano Company. (See Ivers, William H., assignor.)						
Ivers, William H., Dedham, Mass., assignor to Ivers & Pond Piano Company, of Massachusetts. Music-rest for musical instruments	258,567	Jan. 17	1697	396	21	189
Ives, Blakeslee & Co. (See Crandall, James A., assignor.)						
Ives, Edward R., *et al.* (See Crandall, James A., assignor.)						
Ives, Edward R., *et al.* (See Ritchel, Charles F., assignor.)						
Ives, Hobart B. (See Fitzgerald, William J., assignor.)						
Ivee, William A., New Haven, Conn. Bit-stock	259,764	May 30	1994	562	21	1666
Ivey, Robert F., Cuthbert, Ga. Vehicle-axle	257,395	May 2	620	65	21	1288
Jablochkoff Electric Lighting Company. (See Seligmen, Louis, assignor.)						
Jack, Thomas, Auburn, N. Y. Driving-belt	252,169	Jan. 10	884	145	21	97
Jackson, Andrew, San Francisco, Cal. Dental plugger	256,494	May 23	1374	447	21	1548
Jackson, Caleb H., Allegheny, Pa. Railway switch and signal locking apparatus	255,986	Apr. 4	308	81	21	1001
Jackson, Charles P., Chicago, Ill. Refrigerating-bedstead	253,620	Jan. 31	1678	464	21	360
Jackson, George, Bonnebel, Wis. Harrow	254,017	Feb. 21	1089	287	21	597
Jackson, George, assignor to United States Electric Lighting Company, New York, N. Y. Journal-lubricator	254,771	Mar. 7	398	104	21	785
Jackson, H. Ayers, Des Moines, Iowa. Drafting and cutting clothing	259,169	June 6	351	93	21	1756
Jackson, James, and J. W. Brookway, assignors of one-third to E. H. Carpenter, New York, N. Y. Fastening for freight-car doors	254,881	Mar. 14	657	164	21	783
	254,791	Apr. 4	47	13	21	939
Jackson, Jobiel, Fort Atkinson, Wis. Sleigh	254,395	Feb. 28	1263	351	21	605
Jackson, John, Clinton, Iowa. Folding opera-chair	256,579	Apr. 18	1089	.....	21	1145
Jackson, John T., assignor of one-half to P. P. Ingalls, Des Moines, Iowa. Artificial foot						
Jackson, R. (See Lidyon, Christopher, assignor.)						
Jackson, Thomas M., Clarksburg, W. Va. Surveyor's self-reading level-rod	254,980	Mar. 14	673	161	21	761
Jackson, Walter M., Providence, R. I. Oil-distributing mechanism for carburetors	253,715	Feb. 14	638	161	21	465
Jackson, William H. (See Cloud, William H., assignor.)						
Jackson, William R. (See Atkinson, William B., assignor.)						
Jacob, Philipp. (See Becher and Jacob.)						
Jacobs, Henry. (See Jacobs, John, assignor.)						
Jacobs, Henry L. (See Jacobs, William R. and H. L.)						
Jacobs, Henry M., Waynesburg, Pa. Wagon-seat support	258,203	May 23	1438	406	21	1562
Jacobs, John, assignor of one-half to H. Jacobs, Sandusky, Ohio. Apparatus for shaping and holding metal while being tempered	258,880	Apr. 25	1417	399	21	1269
Jacobs, William R. and H. L., Columbus, Ohio. Road-scraper	254,127	Feb. 28	1171	326	21	570
Jacobsen, Charles F., New York, N. Y., assignor of one-half to I. P. Frink, Newark, N. J. Chandelier. (Reissue)	10,606	Jan. 10	702	211	21	126
Jacobsen, Emil, Berlin, Prussia, Germany. Manufacture of red coloring-matter	257,717	May 9	722	.....	21	1416
Jacoby & Co., S. (See Solomon, Wolf, assignor.)						
Jacoby, Sigmund, New York, N. Y. Cigarette	256,453	Apr. 18	930	260	21	1130
Jadwin, Orlando H., Brooklyn, N. Y. Cable-traction for street-cars	256,455	May 23	1376	449	21	1506
Jaeger, Gustav L. (See Schroeder and De Beauvais, assignors.)						
Jaeger, Gustav L., New York, N. Y. Compacting paper-stock and other vegetable fibers for transportation	254,386	Feb. 28	1364	368	21	605
Jaeger, Gustav L., New York, N. Y. Making paper-pulp from straw, stalks, and other fibrous material	254,387	Feb. 28	1365	368	21	605
Jaeger, Gustav L., New York, N. Y. Machine for crushing and compacting paper-stock, &c	254,388	Feb. 28	1366	368	21	606
	255,668	Mar. 28	1496	402	21	917
Jaeger, Gustav L., New York, N. Y. Machine for cutting and scoring pasteboard, &c	257,166	May 2	27	2	21	1288
Jamen, David R., San Francisco, Cal. Water and air wheel						
Jamen, George F. (See Glover and Jamen.)						
Jamen, George W., *et al.* (See Blocher, John C., assignor.)						
Jamen, Henry H., and J. C. Dunbar, Bangor, Me. Sliding-grate	256,494	Apr. 18	1168	301	21	1171
Jamen, John, New York, N. Y. Cut-off-valve gear for steam-engines	254,468	Mar. 7	47	12	21	646
Jamen, John, deceased, (A. S. Sullivan, New York, N. Y., administrator.) Balancing slide-valves	255,691	Mar. 28	1359	433	21	889
Jamieson, John, Newcastle-upon-Tyne, England. Incandescent electric lamp	259,763	June 20	1189	299	21	1894
Jamieson, Henry A., Brooklyn, N. Y. Pumping-engine	252,110	Jan. 10	884	145	21	97
Janes, John, assignor of one-half to G. Woods, Cambridgeport, Mass. Reed-organ	253,591	Feb. 7	198	37	21	389
Janeway, George, Junction City, Ohio. Air-vent for vessels containing liquids	256,697	Apr. 18	1188	303	21	1172
Janney Car Coupling Company. (See Janney, Eli H., assignor.)						
Janney, Eli H., Fairfax County, assignor to Janney Car Coupling Company, Alexandria, Va. Car-coupling	254,669	Feb. 21	1115	289	21	583
Jansen, Diederich W., assignor of one-half to G. Schmierer, Joplin, Mo. Spelter retort-furnace	256,165	Apr. 4	620	159	21	1063
Jansen, John W., London, county of Middlesex, England. Machine for treating hides and skins	257,495	May 2	625	161	21	1285
	259,704	June 20	1130	290	21	1904
Japtok, Carl, New York, N. Y. Joint for drain and other pipes	253,714	Feb. 14	639	161	21	465
Jarboe, Vernon C., Wyandotte, Kans. Hoisting-machine	253,671	Jan. 24	1194	304	21	361
Jarecki, Albert H., Erie, Pa. Pipe-cutting attachment for screw-cutting die-stocks	260,923	June 6	166	50	21	1787
Jarecki, Friderich, Erie, Pa. Lubricator for steam-engines						

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Jarrett, Joshua V., Valley Mills, Tex. Bed-bottom spring	252,469	Jan. 17	969	969	21	176
Jarvis, Kingsbury M., Malden, assignor of one-half to A. F. Upton, Newtonville, Mass. Furnace-grate	260,098	June 27	1461	394	21	1967
Jauss, David L. (See Patten, William P., assignor.)						
Jebb, Thomas A. and W. T., Buffalo, N. Y. Method of and apparatus for manufacturing distilled spirits from grain	254,389	Feb. 28	1367	368	21	606
Jebb, Thomas A. and W. T., Buffalo, N. Y. Starch-table	256,321	Apr. 11	696	164	21	1056
Jebb, Thomas A. and W. T., Buffalo, N. Y. Method of and apparatus for obtaining starch from grain, &c.	256,670	May 16	1134	318	21	1439
Jebb, William T. (See Jebb, Thomas A. and W. T.)						
Jebb, William T., Buffalo, N. Y. Method of and apparatus for manufacturing distilled spirits from grain	254,339	Feb. 28	1368	363	21	606
Jeffers, Aaron P. M., *et al.* (See Blair, John B., assignor.)						
Jeffers, Wallace W. D., Ticonderoga, N. Y. Pulp-engine	256,690	Apr. 18	1184	338	21	1172
Jefferson, Thomas E. (See Comstock and Jefferson.)						
Jeffery, Thomas B., Chicago, Ill. Bicycle	256,313	June 13	547	143	21	1796
Jellinek, Edmund, *et al.* (See Feder, Simon, assignor.)						
Jellinek, Samuel. (See O'Donnell and Jellinek.)						
Jenkins, Charles, assignor to Hickman Trunk Manufacturing Company, St. Louis, Mo. Trunk-handle	256,660	Apr. 18	1185	332	21	1172
Jenkins, Edgar. (See Anderson, Leonard, assignor.)						
Jenkins, Edward K., Albany, N. Y. Cutter-head for molding-machines	259,692	June 20	1030	275	21	1669
Jenkins, Henry S., trustee. (See Kimball, Joseph E., assignor.)						
Jenkins, Joel, assignor of one-half to G. P. Farmer, Montclair, N. J. Safety-pin	254,657	Mar. 7	359	67	21	662
Jenkins, Joel, assignor of one-half to G. P. Farmer, Montclair, N. J. Safety-pin guard	254,658	Mar. 7	360	67	21	662
Jenkins, Nicholas, New Haven, Conn. Braiding-machine	254,768	Mar. 14	456	124	21	721
Jenkins, Philip O., Washington, D. C. Electric light	260,029	June 27	1463	394	21	1967
Jenks, Charles W., Boston, assignor of one-half to E. B. Welch, Cambridge, Mass. Reflector	258,652	May 30	1359	544 / 585	21	1644
Jenks, James. (See Howes, Shubael E., assignor.) (Reissue.)						
Jenks, James. (See Murdock, Horace B., assignor.)						
Jenks, Orson A., *et al.* (See Hoffman, Rees J., assignor.)						
Jenks, Stephen A., *et al.* (See Atwood, John E., assignor.)						
Jenne, Thomas J., and C. S. Harmon, Chicago, Ill. Lifting-jack	254,923	Mar. 14	460	194	21	793
Jenney, Charles D., South Bend, assignor to Fort Wayne Electric Light Company, Fort Wayne, Ind. Electric lamp	255,999	Apr. 4	311	61, 88	21	1002
Jennings, Charles C., Buffalo, N. Y. Apparatus for suspending electric lamps	260,206	June 27	1081	455 / 456	21	2001
Jennings, George H. (See Hean and Jennings.)						
Jennings, Ralph S., Baltimore, Md. Air-cooling apparatus	254,981	Mar. 14	674	181	21	761
Jennings, Ralph S., assignor to J. Levering, Baltimore, and G. O. Manning, Baltimore County, Md., trustees. Packing-case. (Reissue)	10,109	May 2	371	104	21	1347
Jennings, Ralph S., assignor to J. Levering, Baltimore, and G. O. Manning, Baltimore County, Md., trustees. Packing-case. (Reissue)	10,195	May 30	2110	596	21	1667
Jennings, S. H. (See Foster, William A., assignor.)						
Jennison, Timothy L., Foxcroft, Me. Adjustable hammock-support	259,314	June 13	548	144	21	1796
Jerabman, Nicholas, assignor to himself and J. F. Holman, Grand Rapids, Mich. Folding table	258,879	Jan. 31	1456	407	21	271
Jerome Clock Company. (See Kuhn, Edmund, assignor.)						
Jewell, Henry C., Georgetown, D. C. Manufacture of artificial stone and marble	259,863	June 20	1239	338	21	1984
Jewell, Lucien B., *et al.* (See Marshall, John C., assignor.)						
Jewell, Omar H., Chicago, Ill. Boiler-flue cleaner	256,426	May 23	1578	446	21	1585
Jewell, Omar H., assignor of one-half to G. A. Stannard, Chicago, Ill. Lubricator	259,023	June 6	169	50, 51	21	1787
Jewell, Omar H., assignor of one-half to G. A. Stannard, Chicago, Ill. Lubricator	259,024	June 6	191	51	21	1787
Jewell, Thomas, Alexandria County, Va. Manufacture of artificial stone and marble	256,000	Apr. 4	311	.....	21	1002
Jewett, Edward M. (See Burk, John J., assignor.)						
Jewett, George M., Unionville, Conn. Spring-hinge	252,470	Jan. 17	969	970	21	176
Jewett, Luther K., Fitchburg, Mass. Wrecking and construction car for railways	252,672	Jan. 24	1194	334 / 335	21	221
Jincks, Melvin, Conesus Centre, N. Y. Skinning-knife	256,700	Apr. 18	1186	338	21	1172
Jincks, Melvin, Conesus Centre, assignor of one-half to S. E. Sherwood, South Livonia, N. Y. Brazing	259,874	June 6	462	.....	21	1777
Johns, Henry W., New York, N. Y. Steam-packing	257,167	May 2	27	9	21	1026
Johns, Thomas M., and R. Gage, Jackson, Mich. Pump	252,946	Jan. 31	1534	428	21	295
Johns, Will R., Rockford, Ill. Combined hay fodder and rake	255,394	Mar. 21	1076	220	21	538
Johnson, Charles G., New Orleans, La. Sugar-mill	252,774	Jan. 24	1308	366 / 367	21	241
Johnson, Albert C. (See Denney and Johnson.)						
Johnson, Albert F. and F. B., assignors to Johnson Manufacturing Company, Brooklyn, N. Y. Secret-message telegraph	253,060	Jan. 31	1679	464 / 465	21	309
Johnson, Albert F. and F. B., assignors to Johnson Manufacturing Company, Brooklyn, N. Y. Apparatus for preparing and transmitting secret telegraphic messages	253,061	Jan. 31	1665	465	21	309
Johnson, Albert F. and F. B., assignors to Johnson Manufacturing Company, Brooklyn, N. Y. Secret-printing telegraph	253,062	Jan. 31	1666	465 / 466	21	309
Johnson, Albert F. and F. B., assignors to Johnson Manufacturing Company, Brooklyn, N. Y. Secret-printing telegraph	253,063	Jan. 31	1680	466 / 467	21	309
Johnson, Albert F. and F. B., assignors to Johnson Manufacturing Company, Brooklyn, N. Y. Instrument for preparing and transmitting secret telegraph-messages	253,064	Jan. 31	1682	467	21	310
Johnson, Alfred, and G. B. Hough, New Geneva, Pa. Dental plugger	256,143	Apr. 11	695	135	21	1040
Johnson, Alonzo, Springfield, Mass. Seal-fastener	256,144	Apr. 11	696	135	21	1040
Johnson, Andrew J., assignor to E. L. Babcock, Cuyahoga Falls, Ohio. Machine for punching metal	253,008	Feb. 14	509	145	21	443
Johnson, Asa, assignor to American Boot, Shoe, and Last Company, New York, N. Y. Boot or shoe	260,163	June 6	354	94	21	1756
Johnson, Claude M., Lexington, Ky. Rack for storing and aging whisky	252,471	Jan. 17	971	970	21	176
Johnson, Daniel, J. P. and P. Cowan, Ashland, Ohio. Pump	255,793	Apr. 4	48	13, 14	21	850
Johnson, Edward E., Painesville, Ohio. Carpet or oil-cloth fastener	259,464	June 20	1240	353	21	1984
Johnson, Edward H., New York, N. Y. Combined gas and electric-lamp fixture	256,701	Apr. 18	1186	333	21	1172
Johnson, Ernest V. (See Moulton and Johnson.)						
Johnson, Ferdinand, Toledo, Ohio. Car-coupling	252,775	Jan. 24	1309	367	21	241
Johnson, Frank B. (See Johnson, Albert F. and F. B.)						
Johnson, Frank G., Brooklyn, N. Y. Automatic grappling-bucket	254,894	Mar. 14	661	125	21	793
Johnson, Frank G., Brooklyn, N. Y. Automatic grappling-bucket	255,178	Mar. 21	823	246	21	811
Johnson, Frank P., Waltham, Mass. Dumping-car	254,136	Feb. 28	1172	368	21	510

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Johnson, George, Cincinnati, Ohio, and W. M. Bailey, New York, N. Y. Hydraulic and pneumatic elevator	256,702	Apr. 18	1167	333	21	1172
Johnson, George F., Philadelphia, Pa. Lawn-mower	251,699	Jan. 3	255	70	21	45
Johnson, George W., Wyerton, Ill. Watch-maker's tool	252,288	Jan. 10	654	184	21	119
Johnson, George W., Newton, Ill. Watch-maker's tool	257,013	Apr. 25	1550	495	21	1543
Johnson, Henrie E., Pekuah, Ky. Fence	259,665	June 20	1241	353	21	1924
Johnson, Henry, Eccles, county of Lancaster, England. Apparatus for operating railway-signals	257,940	May 16	985	277	21	1474
Johnson, Henry, assignor to M. M. Johnson, New York, N. Y. Paper-cutter						
Johnson, Henry C. (See McMillan and Johnson.)						
Johnson, Henry J., assignor to H. W. Gardner, Providence, R. I. Combined steam and hand power capstan	252,639	Jan. 10	446	121 / 122	21	84
Johnson, Henry J., Providence, R. I., assignor, by mesne assignments, to Plumb, Burdict & Barnard, Buffalo, N. Y. Belt-heading machine	254,484	Mar. 7	49	19	21	646
Johnson, Herbert A., Medina, N. Y. Apparatus for making paper vessels	256,671	May 16	1136	316 / 317	21	1469
Johnson, Iver, and M. Bye, Worcester, Mass. Breech-loading fire-arm	252,280	Feb. 7	199	37	21	366
Johnson, James, Bay View, assignor of one-half to M. Darvelaar, Milwaukee, Wis. Kiln for burning brick	258,563	May 30	1774	501	21	1668
Johnson, James B., Boston, Mass. Rotary diamond rock-boring machine	259,281	June 6	483	129	21	1179
Johnson, James P., Virden, Ill. Draft-equalizer	260,207	June 27	1083	456	21	2001
Johnson, Jeremiah, assignor of one-third to W. A. Stearns, Mount Pleasant, Iowa. Dirt-scraper	254,665	Mar. 7	49	13	21	647
Johnson, Jeremiah P., Toronto, Ontario, Canada, assignor, by mesne assignments, to Johnson, Rees & Co., Detroit, Mich. Platform-spring for wagons	254,219	Feb. 28	1366	360	21	585
Johnson, John A., Madison, Wis., assignor to W. A. Wood Mowing and Reaping Machine Company, Hoosick Falls, N. Y. Driving and supporting wheel of harvesters	259,398	June 13	659	172	21	1615
Johnson, John B. and O. B., Boston, Mass. Magneto-electric railway-signal	259,547	June 13	841	222 / 223	21	1649
Johnson, John H., Chicago, Ill. Faucet	260,630	June 27	1463	394	21	1967
Johnson, Jonathan, Lowell, Mass. Car-heater	253,369	Feb. 7	199	67	21	367
Johnson, Julius Y. (See Johnson, William W. and J. Y.)						
Johnson, Louis K., New York, N. Y. Printer's composing-rule	254,018	Feb. 21	1030	269	21	536
Johnson, Louis K., New York, N. Y. Type and space holder	254,019	Feb. 21	1031	269	21	536
Johnson, M. Nichols. (See Johnson, Henry, assignor.)						
Johnson Manufacturing Company. (See Johnson, Albert F. and F. B., assignors.)						
Johnson, Marshall E., Robinson, Ill. Trace-buckle	257,326	May 2	221	65	21	1388
Johnson, Olof P., New York, N. Y. Cow-catcher for locomotives	253,206	Feb. 7	30	13	21	353
Johnson, Orville S. (See Johnson, John B. and O. B.)						
Johnson, Richard A. (See Cox and Johnson.)						
Johnson, Rees & Co. (See Johnson, Jeremiah P., assignor.)						
Johnson, Samuel W., *et al.* (See Messervey, Reuben A., assignor.)						
Johnson, Sidney N., and A. M. Dé Senchet, assignors of one-third to W. H. Thomas, Indianapolis, Ind. Opera-chair	255,986	Apr. 4	126	36, 37	21	973
Johnson, Walter B., Waterloo, Ind. Nut-lock	257,914	Apr. 25	1529	495	21	1543
Johnson, Willet A., Phenix, assignor to himself and P. & A. Linton, Providence, R. I. Bracelet	253,613	Feb. 14	513	147	21	444
Johnson, William, Haverhill, Mass. Sewing-machine	254,496	Mar. 7	32	13	21	647
Johnson, William H. (See David, Jacob, assignor.)						
Johnson, William T., Washington, D. C., assignor of one-half to C. H. Miller, Eureka, Ark. Vehicle-brake	257,237	May 2	220	65	21	1388
Johnson, William W. and J. Y., Nicholson, Pa. Folding and reclining rocking-chair	251,783	Jan. 3	117	33	21	98
Johnson, Willis, Waterbury, Conn., assignor to American Automatic Organ Company, Boston, Mass. Perforated music-sheet	258,078	May 16	1126	319	21	1390
Johnston, Abner, Bainbridge, N. Y. Mail-bag fastening	254,773	Mar. 7	383	104	21	705
Johnston, Allen, Ottumwa, Iowa. Thread-cutter for sewing-machines	257,716	May 9	778	220	21	1416
Johnston, Allen, Ottumwa, Iowa. Ruffling attachment for sewing-machines	259,375	June 6	483	128	21	1777
Johnston, Allen, Ottumwa, Iowa. Binding attachment for sewing-machines	260,643	June 13	900	226	21	1959
Johnston, Edward H., assignor to Wharton Railroad Switch Company, Philadelphia, Pa. Machine for bending links	253,399	Feb. 7	240	66, 69	21	367
Johnston, Edward H., assignor to Wharton Railroad Switch Company, Philadelphia, Pa. Interlocking switch and signal mechanism	253,391	Feb. 7	242	69	21	367
Johnston, George, Detroit, Mich. Optometer	254,139	Feb. 28	1174	369	21	570
Johnston, George, Detroit, Mich. Mailing-box	256,689	Apr. 25	1418	360	21	1220
Johnston, James J., Columbiana, Ohio. Fruit-drier	253,609	Feb. 14	510	146	21	444
Johnston, James J., Columbiana, Ohio. Door-bell	253,610	Feb. 14	511	146	21	444
Johnston, James J., Columbiana, Ohio. Monumental vase for flowers	253,611	Feb. 14	512	146 / 147	21	444
Johnston, James J., Columbiana, Ohio. Vase for cultivating strawberry and other plants	253,715	Feb. 14	640	152	21	495
Johnston, James J., Columbiana, Ohio. Flower-vase for window-gardening	253,716	Feb. 14	641	153	21	495
Johnston, James J., Columbiana, Ohio. Farm-gate	254,089	Feb. 21	1029	269	21	535
Johnston, John, New York, N. Y. Elevator and dumb-waiter	256,675	May 16	1135	319	21	1389
Johnston, Melville M. (See Thompson, John S., assignor.)						
Johnston, Philip P., Lexington, Ky. Label for animals	255,793	Apr. 4	49	14	21	989
Johnston, Samuel D., Paris, Ill. Clothes-pin	259,297	June 27	1794	466	21	2019
Johnston, Thomas A. (See Loring, Gustavus E., assignor.) (Reissue.)						
Johnston, W. S., *et al.* (See Brower and Waterhouse, assignors.)						
Johnston, Wilbur F., Clifton, N. Y. Apparatus for propelling torpedoes	254,681	Feb. 21	1063	269	21	539
Johnston, William, Philadelphia, Pa. Universal-joint coupling	259,289	June 13	650	173	21	1616
Johnston, William W. (See Pierce, Horatio L., assignor.)						
Johntry, Jacob A., assignor of one-half to I. S. Reamer, Brooklyn, N. Y. Shovel	256,325	Apr. 11	737	201	21	1061
Johns, Joseph A., New York, N. Y. Mechanical movement	260,688	May 30	1661	595	21	1644
Jones, Ada S., *et al.* (See Scranton, Alfred L., assignor.)						
Jones, Alfred E., assignor to himself, J. T. Rowland, and R. Gray, Jr., Newark, N. J. Setting-tank	251,717	Jan. 3	35	10	21	6
Jones, Alfred E., assignor to himself, J. T. Rowland, and R. Gray, Jr., Newark, N. J. Apparatus for separating gold from quartz and rock-tailings	251,718	Jan. 3	36	10, 11	21	9
Jones, Alfred W., and A. H. Smith, Burlington, Kans. Windmill	260,247	Jan. 24	1535	429	21	295
Jones, Augustus H., Meriden, Conn. Study-lamp	258,497	May 23	1579	449	21	1587
Jones, Augustus H., assignor to Bradley & Hubbard Manufacturing Company, Meriden, Conn. Extension lamp-fixture	254,022	Feb. 21	1030	269	21	536
Jones, B. D. M., *et al.* (See Perdue, James, assignor.)						
Jones, Charles T. (See Jones, John T. and C. T.)						
Jones, Charles W., Lowell, Mass. Twine-holder	259,608	June 20	1242	353	21	1924
Jones, David C., Detroit, Mich. Form for making paper-pulp pails	260,654	May 30	1661	595	21	1644

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Jones, Elias, Pierrepont, N. Y., assignor to J. A. Miller, Jr., Providence, R. I. Fire-extinguisher. (Reissue)	10,051	Mar. 7	409	109	21	706
Jones, Francis W., New York, N. Y. Sextuplex telegraph	254,220	Feb. 28	1363	250 / 251	21	585
Jones, Francis W., New York, N. Y. Quadruplex telegraph	255,285	Mar. 21	1077	299	21	838
Jones, Francis W., New York, N. Y. Duplex telegraph	254,429	May 23	1560	446	21	1567
Jones, Francis W., assignor to Union Electric Manufacturing Company, New York, N. Y. Duplex telegraph	260,206	June 27	1694	456	21	2091
Jones, Frank, and W. Wesley, Ypsilanti, Mich. Shaft attachment for sleighs	256,691	Apr. 4	712	84	21	1068
Jones, George E., assignor to W. Autenrieth, Cincinnati, Ohio. Surgical-needle holder	253,388	Feb. 7	40	13	21	353
Jones, Harry, Sterling, Ill. Pump	259,548	June 13	843	223	21	1849
Jones, Henry M., Santa Fé, N. Mex. Ter. Amalgamator	256,499	May 23	1563	449	21	1567
Jones, Horace K., Hartford, Conn. Chuck for screw-machines	252,946	Jan. 31	1538	430	21	986
Jones, Horace K., Hartford, assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Metal-screw machine	252,949	Jan. 31	1540	430	21	988
Jones, Isaac V., Salado, Tex. Baling-press	255,297	Mar. 21	1068	291	21	839
Jones, J. Herva, assignor to R. Emerson and W. A. Talcott, Rockford, Ill. Harvester-rake	257,284	May 2	89	26, 27	21	1296
Jones, James. (See Pearce and Jones.)						
Jones, James H., Rockford, Ill. Cultivator	253,869	Feb. 21	841	237 / 238	21	507
Jones, James H., Rockford, Ill. Corn-planting machine	254,331	Feb. 28	1360	363	21	607
Jones, John A. (See Farquhar, Jones, and Eisenhart.)						
Jones, John E. (See Rees, R. William, assignor.)						
Jones, John M., Palmyra, N. Y. Printing-press	252,950	Jan. 31	1543	430	21	987
Jones, John M., Wrexham, county of Denbigh, North Wales. Machine for treating hides and skins	256,386	Apr. 11	736	201 / 202	21	1068
Jones, John T., Utica, N. Y. Sewing-machine	255,296	Mar. 21	1069	290	21	838
Jones, John T. and C. T., Utica, N. Y. Machine for making pills, lozenges, &c.	256,573	Apr. 18	1032	291	21	1145
Jones, Joseph M., Paris, Ky. Hand-cart	258,074	May 16	1130	319	21	1500
Jones, Milton C. (See Gardner, William, assignor.)						
Jones, Milton C., Green Island, N. Y. Steam-boiler furnace	252,046	Jan. 10	447	128	21	64
Jones, Milton C., Green Island, N. Y. Ventilating cars	252,673	Jan. 24	1127	335	21	262
Jones, Preston, Shelbyville, Ind., assignor to H. McKenzie, Cincinnati, Ohio. Nut-lock	254,773	Mar. 7	394	104	21	705
Jones, Richard, et al. (See Powers, William, assignor.)						
Jones, Richard W., Syracuse, N. Y. Hame	258,430	May 23	1564	449	21	1567
Jones, Robert, and T. C. Belding, Waynesburg, Ohio. Roofing-seamer	251,891	Jan. 3	257	70	21	46
Jones, Robert W., London, Ohio. Feed-water heater and purifier	257,336	May 8	233	66	21	1383
Jones, Russell F., assignor of one-half to W. E. Powers, Forestville, N. Y. Step-ladder	256,397	Apr. 11	739	202	21	1069
Jones, Salmon D., Raritan, N. J. Rotary engine	257,567	May 9	567	156 / 159	21	1366
Jones, T. B. (See Riggin, George W., assignor.)						
Jones, Thomas, and J. Kiefer, Highland, Wis. Clover-huller	252,223	Jan. 10	454	184	21	119
Jones, Thomas A., assignor to S. M. Barnes, Fairbury, Ill. Harvester	256,484	Apr. 18	939	262	21	1130
Jones, Thomas J., Sharon, Pa. Apparatus for removing scale, sediment, &c., from boilers	259,603	June 20	1032	275	21	1869
Jones, Walter H., and C. L. Middleton, Flatbush, N. Y. Device for holding letters, cards, photographs, &c	253,392	Feb. 7	243	69	21	357
Jones, William H., et al. (See Holt, Arthur J., assignor.)						
Jonson, Jeptha C. (See Peay, William A., assignor.)						
Jonson, Julius. (See Herman, Ludwig, assignor.)						
Jopson, George W., Meriden, Conn. Calipers	259,164	June 6	356	94	21	1757
Jordan, Henry, Jr., et al. (See Bennett, Ernest M., assignor.)						
Jordan, Jesse, and E. H. Gillon, assignors of one-half to J. E. Russell and T. Guernsey, Macon, Ga. Car-coupling	259,276	June 6	406	127	21	1776
Jordan, Louis, New York, N. Y. Fan	257,950	May 16	986	278	21	1474
Jordan, Matthew I., et al. (See Shelton, Samuel C., assignor.)						
Jordan, Scott D., Cape Elizabeth, Me. Attaching buttons	252,220	Jan. 31	1456	407	21	971
Jordan, William A., New Orleans, La. Brick and mortar elevator	259,165	June 6	357	94, 95	21	1757
Jory, Arthur B. (See Jory, John W. and A. B.)						
Jory, John W. and A. B., Salem, Oreg. Grain-header	252,776	Jan. 24	1311	367	21	941
Joslin, Charles L., et al. (See Wilson, Vincent W., assignor.)						
Joslin, Herbert A. (See Evans, Quimby N., assignor.)						
Josselyn, William H., Bridgeport, Conn. Clothes-line fastener	257,015	Apr. 25	1551	425	21	1944
Josselyn, William H., Bridgeport, Conn. Harness	259,494	June 20	1023	275	21	1869
Joubert, Israel, and S. W. Yateaw, Port Henry, N. Y. Buckboard-wagon	254,338	Feb. 28	1393	364	21	607
Joy, David, Barrow-in-Furness, county of Lancaster, England. Steam-engine valve-gear	252,224	Jan. 10	455	184 / 185	21	119
Joy, Theddeus C., Titusville, Pa. Generator for steam-heating apparatus	256,075	May 16	1140	320	21	1500
Joyce, Jacob O., Dayton, Ohio. Lifting-jack	256,092	Apr. 4	714	83	21	1068
Joyce, Joseph L., New Haven, Conn. Lacing-stud for shoes	253,717	Feb. 14	642	168	21	465
Joyce, Joseph L., New Haven, Conn. Overshoe-fastening	256,093	Apr. 4	715	83	21	1068
Joyce, Joseph L., New Haven, Conn. Shoe-upper	259,166	June 6	350	95	21	1757
Joyce, Joseph L., New Haven, Conn. Shoe-lacing stud	259,267	June 20	1044	283	21	1935
Judd, Charles A., Milwaukee, Wis. Soap holder and tightener	252,472	Jan. 17	972	271	21	177
Judd, Edwin Y., Hartford, Conn. Repeating mechanism for clocks	257,330	May 2	234	66	21	1383
Judd, Hubert L., Brooklyn, N. Y. Curtain-hook pin	254,969	Mar. 14	678	188	21	762
Judd, Lewis S. (See Finger, Louis, assignor.)						
Judson, George E., Williamsburg, Miss. Cotton-press	254,774	Mar. 7	395	104	21	705
Judson, John L., and W. A. Cogswell, assignors to J. Judson & Son, Rochester, N. Y. Governor	254,775	Mar. 7	396	105	21	705
Judson & Son, Justus. (See Judson and Cogswell, assignors.)						
Judson, William H., assignor of one-half to J. M. West, Brockville, Ontario, Canada. Brick-machine	260,101	June 27	1555	418 / 419	21	1981
Juel, Petter A. G., assignor to Schütz & Juel, Wurzen, Saxony, Germany. Treating textile fabrics	252,363	Jan. 17	859	.....	21	159
Juhn, Max. (See Stiefel and Juhn.)						
Junior, Louis, Belleville, Ill. Composition for improving lace-leather	253,210	Feb. 7	41	.....	21	354
Junkin, Lawrence M., Pittsburg, Pa. Seal-lock	253,570	Feb. 21	843	236	21	507
Kade, Charles, St. Louis, Mo. Sectional kitchen-safe	256,388	Apr. 11	730	202	21	1069
Kaeber, George, assignor to S. S. White Dental Manufactoring Company, Philadelphia, Pa. Dental tool-holder	257,235	May 2	95	27	21	1296
Kahl, John, Wallingford, Conn. Polishing apparatus	256,076	May 16	1142	320	21	1501
Kahley, P. B. (See Weddell, John W., assignor.)						
Kaiser, Nikolaus, assignor to Society for the Manufacture of Wood Pulp, Grellingen, Switzerland. Method of and apparatus for manufacturing paper and pasteboard. (Reissue)	10,074	Apr. 4	447	121	21	1085

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Kaiser, William, Wilkes-Barré, Pa. Valve for water-pipes	252,251	Jan. 31	1545	430	21	987
Kalbach, John G. (See Hammaugh, Thomas F., assignor.)						
Kamp, George, Utica, N. Y. Grate	254,625	Mar. 14	682	125	21	704
Kamprath, Heinrich, Celle, Prussia, Germany. Treadle	259,088	June 20	1045	334	21	1965
Kane, Frank H., River Side, Ohio. Machine for dressing flat cooperage-stuff						
Kane, Frederick L. (See Smith and Kane.)						
Kane, Patrick H. (See Innis and Kane.)						
Kane, Thomas. (See Mahlmaugh, Thomas, assignor.)						
Kane, William, Philadelphia, Pa. Steam-pipe hanger	254,333	Feb. 28	1383	364	21	607
Kanne, Frederick F., Waterville, Minn. Jointed harvester-reel	255,288	Mar. 21	1063	291	21	838
Kansas, Charles O., New York, N. Y. Collar and cuff	254,675	Mar. 14	689	141	21	705
Kantner, John L., South Easton, Pa. Spark-arrester	254,650	Mar. 7	561	87	21	698
Kantner, Washington C., Reading, Pa. Reed-organ step-action	252,674	Jan. 24	1126	335 / 336	21	262
Karns, Joseph S. (See Wescott and Karns.)						
Kassabaum, J. Bergen, New York, N. Y. Oil fount or reservoir	257,340	May 2	226	67	21	1383
Kasson, C. Valletta. (See Thomson, Judson L., assignor.)						
Kauffer, Hale P., Kalamazoo, Mich. Water-engine	258,283	May 23	1357	363	21	1546
Kay, James R. (See Cole, Charles L., assignor.)						
Kaye, Joseph, Kirkstall, near Leeds, county of York, England. Latch	258,431	May 23	1565	449	21	1567
Kayler, Reuben R. (See Miller, Jacob D., assignor.)						
Keagy, William, et al. (See Yokum, Wilford W., assignor.)						
Keam, Thomas V., Keam's Canyon, Ariz. Ter. Cane, umbrella-handle, &c	255,289	Mar. 21	1064	291 / 292	21	839
Kearns, Patrick, Shamokin, Pa. Refrigerating bottle-safe	256,765	May 30	1206	363	21	1606
Kearney, Michael, North Springfield, and M. C. Hawley, St. Louis, Mo. Fire-box for locomotives	255,089	Apr. 4	130	37	21	974
Kearns, Thomas, assignor to Adjustable Grate Manufacturing Company, San Francisco, Cal. Grate for stoves and ranges	256,706	May 30	1207	363	21	1606
Kearsing, John G., Newark, N. J., assignor of one-half to J. C. Dickinson, Brooklyn, N. Y. Die for buttons	257,719	May 9	789	233	21	1416
Keating, Michael. (See Greenwood, Herbert, assignor.)						
Keefe, William J., Boston, Mass. Paper-box machine	254,686	Mar. 14	463	125 / 126	21	704
Keeler, David L., Grand Rapids, Mich. Sewing-machine	255,633	Mar. 28	1490	402	21	917
Keeler, David L., Grand Rapids, Mich. Tension for sewing-machines	255,634	Mar. 28	1280	403	21	918
Keeler, Henry, Eureka, Ill. Combined ironing-table and clothes-bars	252,675	Jan. 24	1280	336	21	262
Keeler, Herbert E., La Crosse, Wis. Feeding-mill	254,140	Feb. 28	1175	320	21	570
Keeler, William H., assignor to himself and J. W. Foster, Norwalk, Ohio. Sewing-machine shuttle	253,871	Feb. 21	844	236	21	508
Keeley, Joseph, et al., administrators. (See Keeley, Oliver B.)						
Keeley, Mary E., et al., administrators. (See Keeley, Oliver B.)						
Keeley, Oliver B., deceased, (J. and M. E. Keeley, administrators,) Spring City, Pa. Heating-stove	254,660	Mar. 7	562	84	21	698
Keene, George A., assignor of one-half to C. W. Melcher and G. N. Spinney, Lynn, Mass. Window-washer	256,588	June 6	60	19	21	1745
	256,589	Apr. 11	740	202 / 203	21	1069
Keenan, Robert H. G., Chillicothe, Mo. Churn	251,986	Jan. 3	259	71	21	46
Keim, Peter H., Dixon, Ill. Belt-stretcher	257,730	May 9	790	233	21	1416
Keiser, Florens, assignor of one-half to G. J. Felker, Pottstown, Pa. Car-axle box						
Keith, Amos B., Boston, assignor to W. W. Keith, trustee, Newtonville, Mass. Illuminated sign or name-plate	259,304	May 23	1440	402	21	1568
Keith, David S., Toronto, Ontario, Canada. Valve mechanism	259,438	May 23	1566	450	21	1568
Keith, David S., Toronto, Ontario, Canada. Water-closet	259,439	May 23	1567	450	21	1568
Keith, Edwin H., assignor to Eagle Cotton Gin Company, Bridgewater, Mass. Cotton-gin feeder	256,927	June 6	70	18	21	1705
	259,345	June 13	549	144	21	1766
Keith, Henry M., Orange, Mass. Car-coupling						
Keith, Horace M., Commerce, assignor of one-half to J. P. Harger, Pontiac, Mich. Seed-drill and fertilizer	259,988	June 6	71	19	21	1707
Keith, John. (See Bennett, Charles M., assignor.)						
Keith, Nathaniel S., New York, N. Y. Electric lamp	255,784	Apr. 4	59	14	21	939
Keith, Nathaniel S., New York, N. Y. Electric-light regulator	257,388	May 9	503	150	21	1295
Keith, Nathaniel S., assignor to Fuller Electrical Company, New York, N. Y. Electric-light regulator	255,785	Apr. 4	59	15	21	939
Keith, Thomas, New York, assignor to C. B. Mesereole, New Rochelle, N. Y. Freight elevator and conveyor	254,661	Mar. 7	563	88	21	698
Keith, Thomas, New York, assignor to C. B. Mesereole, New Rochelle, N. Y. Platform-elevator	257,016	Apr. 25	1538	426	21	1944
Keith, William W., trustee. (See Keith, Amos B., assignor.)						
Keller, Frank, and C. Frey, New York, N. Y. Die for striking up bracelet-stock	252,676	Jan. 24	1281	336	21	262
Keller, John, New York, N. Y. Price-ticket	252,389	Jan. 17	781	216	21	146
Keller, John, New York, N. Y. Garment tag or ticket	257,017	Apr. 25	1553	426	21	1944
Keller, John F., Martinsburg, W. Va. Grain-drill	257,251	May 16	997	278	21	1474
Keller, Moses A., Littlestown, Pa. Separator attachment for thrashing-machines. (Reissue)	10,056	Mar. 7	417	111	21	709
Keller, Wilmer L. (See Eastman, John J., assignor.)						
Kellett, Thomas A., Lagerto City, Iowa. Oven	257,016	Apr. 25	1554	426	21	1944
Kelley, Constantine. (See Hale, Spencer A., assignor.)						
Kellner, Joseph, assignor to himself, H. Hedemtop, and P. Nicolay, Jersey City, N. J. Fire-escape	256,884	Apr. 4	716	83	21	1068
	254,334	Feb. 28	1394	364	21	607
Kellogg, Albert A., Chanute, Mo. Stalk-cutter						
Kellogg, Charles. (See Stone, Peter J., assignor.)						
Kellogg, Chester, et al. (See Webb, Horace S., assignor.)						
Kellogg, I. S. (See Crane, Thomas, assignor.)						
Kellogg, Milo G., Hyde Park, assignor to Western Electric Manufactoring Company, Chicago, Ill. Annunciator-board and circuit for telephone-exchanges	258,234	May 23	1358	364	21	1546
Kelland, Robert A., et al. (See Elliott, James, assignor.) (Reissue)						
Kelle, Abram. (See Kelle, Philip H., A., and J. M.)						
Kelle, Jacob M. (See Kelle, Philip H., A., and J. M.)	255,670	Apr. 4	141	27	21	974
Kelle, Philip H., A., and J. M., Adrian, Mich. Brick-machine	256,431	Mar. 28	1254	338	21	874
Kelly, Alphonso J., Ionia, Mich. Car-brake	257,124	Apr. 25	1695	474 / 475	21	1980
Kelly, Daniel, Philadelphia, Pa., and W. H. Hoffman, Passaic, N. J., assignors of one-third to W. K. Ludwig, Philadelphia, Pa. Steam-generator						
Kelly, George B. (See Mason and Kelly.)						
Kelly, George B., assignor to Mason & Hamlin Organ Company, Boston, Mass. Reed-organ	253,263	Feb. 7	243	70	21	360

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Kelly, George B., Boston, and E. H. Smith, Cambridge, assignors to Mason & Hamlin Organ Company, Boston, Mass. Apparatus for tuning organ-reeds	256,703	Apr. 18	1190	333	21	1173
Kelly, George B., Boston, and E. H. Smith, Cambridge, assignors to Mason & Hamlin Organ Company, Boston, Mass. Tuning organ-reeds	256,704	Apr. 18	1193	334	21	1173
Kelly, James, *et al.* (See Kelly, John, assignor.)						
Kelly, James R. F. (See Edwards and Kelly.)						
Kelly, James R. F., Brooklyn, assignor to United States Electric Lighting Company, New York, N. Y. Adjustable reflector for electric lamps	255,514	Mar. 28	1355	365	21	891
Kelly, John, assignor of two-thirds to T. and J. Kelly, Chicago, Ill. Stop and waste cock	256,238	Apr. 11	997	165	21	1050
Kelly, Oliver S., *et al.* (See Green, George F., assignor.)						
Kelly, Richard A., Manchester, Iowa. Life-guard for reapers and mowers	259,316	June 13	550	144	21	1796
Kelly, Thomas, *et al.* (See Kelly, John, assignor.)						
Kelly, Wallace C., Hastings, Mich. Nut-lock	256,574	Apr. 18	1031	291	21	1145
Kelly, Walter W., Hastings, Mich. Combined wheelbarrow and cultivator	258,305	May 23	1441	408	21	1568
Kelly, William, Saranac, Mich. Harrow	259,889	June 20	1947	334	21	1985
Kelly, William H., New York, N. Y. Rotary blotter	252,041	Jan. 10	448	128	21	84
Kelsey, Cornelius H., *et al.* (See McKimm, Edgar N., assignor.)						
Kelsey, Edwin, New Haven, Conn. Folding chair	257,341	May 2	837	67	21	1363
Kelsey, George R. West Haven, Conn. Suspender-buckle	253,394	Feb. 7	246	71	21	388
Kelsey, John E., Bristol, England. Hat-shaping machine	259,260	June 27	1795	486	21	2049
Kelsey, Joseph J., Detroit, Mich. Pillow-sham holder	253,926	Jan. 31	1546	371	21	527
Kelsey, Loren G., Marilla, N. Y. Potato-digger	256,260	Apr. 25	1419	399	21	1620
Kelsey, Rollin E., and C. H. Shattleworth, Cornunna, Mich. Cuff-fastener	255,515	Mar. 28	1357	365	21	891
Kemmer, Charles T., Cleveland, Ohio. Water-proof paper-hanging	256,705	Apr. 18	1196	.....	21	1173
Kemp, Clarence M., Baltimore, Md. Gas-machine	259,549	June 13	544	353	21	1649
Kempshall, Eleazer, New Britain, Conn. Snap-hook	257,721	May 9	730	289	21	1417
Kempshall, Eleazer, New Britain, Conn. Sash-fastener	257,722	May 9	731	304	21	1417
Kempster, Daniel E., Boston, Mass. Spring-balance shade-roller	251,880	Jan. 3	259	71	21	46
Kenady, John W., Garfield, La. Car-brake	256,434	May 23	1569	451	21	1568
Kenaga, Martin H., Momence, Ill. Horse hay-rake	259,556	June 13	544	353	21	1649
Kendall, Chauncey E., Buffalo, N. Y. Railway-car brake	256,495	Apr. 18	941	263	21	1130
Kendall, Edward, Cambridgeport, Mass. Feed-water heater	259,197	June 6	380	95, 96	21	1737
Kendall, Edward D., Brooklyn, N. Y. Treating certain derivatives of coal-tar colors	256,330	Apr. 11	741	.....	21	1068
Kendall, George W., and R. E. Roberts, assignors to Golden Butter Company, New Orleans, La. Treating butter	253,920	Feb. 14	775	.....	21	490
Kendall, Isaac P. (See Hempstead, Charles S., assignor.)						
Kendall, James A., London, England. Manufacture of dinitro-benzole from gas obtained by distillation of coal	258,473	Jan. 17	973	.....	21	177
Kendall, Oscar W., Olmsted, Ohio. Roof	259,499	June 13	654	173	21	1616
Kendrick Lemon Harpoon Company. (See Crowell, John H., assignor.)						
Kenfield, William W., Canandaigua, N. Y. Culinary utensil	254,141	Feb. 28	1176	339	21	576
Kenna, Joseph W., Chicago, Ill. Tilting chair	258,225	Jan. 10	456	185	21	119
Kenna, Joseph W., assignor of one-half to R. A. Hitchcock, Chicago, Ill. Child's chair and carriage	254,023	Feb. 21	1037	269	21	530
Kennard, John M., Waterloo, assignor of two-thirds to J. W. Warner, Oneida, N. Y. Method of and apparatus for exhibiting hosiery	256,767	May 30	1998	864	21	1067
Kennard, Robert G. J., Jr. (See Smalley and Kennard.)						
Kennedy, Archibald, and J. H. Berkshire, assignors of one-third to C. Page, Muscatine, Iowa. Feed-water heater. (Reissue)	10,138	June 13	968	262	21	1673
Kennedy, Jackson J., Cleveland, Tenn. Bedstead-hook	254,335	Feb. 28	1395	364	21	667
Kennedy, James L., Sioux City, Iowa. Combined mail-bag fastener and label-holder	259,188	June 6	392	96	21	1758
Kennedy, Reginald, *et al.* (See McAndrew, William J. G., assignor.)						
Kennedy, Ruliff V., Modena, Mo. Attachment for plows	253,395	Feb. 7	247	71	21	388
Kennedy, Samuel C., Worthington, Ind. Sawing-machine	259,809	June 27	1667	456	21	2002
Kennelly, Patrick, Bridgeport, Conn., assignor of one-third to H. H. Hayden, New York, N. Y. Store-service system	253,306	Feb. 7	247	71	21	388
Kenneth, John H. (See Coales and Kenneth.)						
Kenrish, William, Brooklyn, N. Y. Mechanical toy animal	257,902	May 16	997	278	21	1474
Kenrish, William, assignor to S. C. Thompson, New York, N. Y. Mucilage-receptacle	258,603	Jan. 24	1117	313	21	208
Kenson, John W., Sr., Hoboken, Ga. Washing-machine	258,788	May 30	1999	864	21	1067
Kent, Robert, Brooklyn, N. Y. Riveting-machine	257,569	May 9	571	169	21	1367
Kent, Robert, Brooklyn, N. Y. Cutting and punching machine	257,590	May 9	572	169	21	1367
Kent, Silas W., Meriden, assignor to Beecher Manufacturing Company, West Meriden, Conn. Bar of cast-iron blanks	252,049	Jan. 10	449	123	21	85
Kepler, Joseph W., Chicago, Ill. Refrigerating-building	259,401	June 13	655	173	21	1616
Kern, Jacob H. (See Bergstresser, Samuel, assignor.)						
Kern, Xavier, Jr., West Brookfield, Ohio. Mining-machine	260,021	June 27	1464	396	21	1993
Kerner, Marion H., New York, N. Y. Electric burglar-alarm	254,336	Feb. 28	1396	365	21	666
Kerr, Alexander M., Westminster, Ontario, Canada. Spark-arrester	256,005	Apr. 4	317	83	21	1069
Kerr, James, and J. Haworth, Church, county of Lancaster, England. Machinery or apparatus for printing fabrics	253,718	Feb. 14	642	183	21	496
Kerr, Michael B., New York, N. Y. Spring-heel for boots and shoes	255,671	Apr. 4	142	27	21	974
Kerr, Robert, Paisley, county of Renfrew, Scotland. Show-box for spools	254,004	Feb. 21	1040	269	21	539
Kershaw, Thomas, and H. E. Cunningham, Philadelphia, Pa. Tooth for cleaning rollers of carding-machines	253,965	Jan. 31	1697	467	21	310
Kersten, Ferdinand J. (See Schultz, Edward G., assignor.)						
Kerwin, James J., *et al.* (See Dolen, John M., assignor.)						
Kester, Conrad, Weston, W. Va. Head-block	259,551	June 13	845	294	21	1649
Kester, George E. (See Pettit, Edwin T., assignor.)						
Ketchum, Frederick A. (See Trumble and Ketchum.)						
Ketchum, Hiram E. (See Boyd, William A., assignor.)						
Ketteltj, James F., Worcester, Mass. Telephone-alarm	257,619	Apr. 25	1555	436	21	1944
Ketteltj, James F., Worcester, Mass. Electric call-bell signal	257,342	May 2	838	66	21	1384
Kettenring, Peter, assignor to Defiance Machine Works, Defiance, Ohio. Plow attachment	259,317	June 13	891	144	21	1797
Keidler, Lewis F., New Bremen, Ohio. Bend-sawing machine	253,943	Jan. 10	450	123	21	85
Keyes, Emerson W., *et al.*, administrators. (See Kidder, Jerome.)						
Keyes, William. (See Buckler and Keyes.)						
Keys, C. F., *et al.* (See Greer, Langhlin R., assignor.)						
Keys, John, assignor of one-half to G. W. Port, Beloit, Kans. Harvesting-machine	255,635	Mar. 28	1501	402	21	918
Keys, John, assignor of one-half to G. W. Port, Beloit, Kans. Harvester reel and rake	256,901	Apr. 25	1420	{399 / 400}	21	1221
Kidd, James. (See Livesay and Kidd.)						
Kidd, Walter J., Logansport, Ind. Signal and speed indicator for cars	259,870	June 20	1948	334	21	1985

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Kidder, Francis M., *et al.*, administrators. (See Kidder, Jerome.)						
Kidder, Jerome, deceased, F. M. Kidder, New York, and E. W. Keyes, Brooklyn, N. Y., administrators. Galvanic battery	258,857	May 30	2003	891	21	1694
Kidder, Moses W., Boston, assignor to P. Noyes, Lowell, Mass. Rotary pump and motor	258,535	May 23	1709	469	21	1629
Kidder, Wellington P., Boston, Mass. Numbering-machine	254,647	Mar. 14	471	127	21	785
Kiefer, Jacob. (See Jones and Kiefer.)						
Kiefer, Louis A., Indianapolis, Ind. Reel-lock	254,025	Feb. 21	1041	269	21	539
Kieffer, Joseph, Montreal, Quebec, Canada. Heel for boots and shoes	258,474	Jan. 17	974	271	21	177
Kieffer, Joseph, Montreal, Quebec, Canada. Heel for boots and shoes	258,475	Jan. 17	975	271	21	177
Kiekenapp, Frederick, Faribault, Minn. Combined buckle and snap-hook	255,626	Mar. 28	1504	404	21	918
Kiely, John D., Toronto, Ontario, Canada. Electric meter	256,706	Apr. 18	1197	334	21	1174
Kightlinger, William, Marysville, Ohio. Lifting-jack	253,924	Feb. 7	128	38	21	389
Kilmer, James M., Binghamton, N. Y. Horseshoe	254,227	Feb. 28	1399	365	21	668
Kilvey, Peter, and J. A. Flick, Boston, Mass. Smoke and gas consuming furnace	260,149	June 6	383	96	21	1752
Kile, Christopher C., Hannibal, Mo. Car-door fastening	252,304	Jan. 17	509	136	21	120
Kimball, Albert L., *et al.* (See Doggett, John C., assignee.)						
Kimball, Alonzo H. and C. H. Litchfield, Mass. Reed scraper and grader. (Reissue)	10,088	Apr. 18	1211	309	21	1195
Kimball, Charles H. (See Kimball, Alonzo H. and C. H.) (Reissue.)						
Kimball, Joseph R., Milford, assignor to H. S. Jenkins, trustee, Boston, Mass. Jack or boot-holder	254,221	Feb. 28	1399	351	21	666
Kimball, La Virgne J. (See Austin and Kimball.)						
Kimball, William H., Burlington, N. J. Hand-piece for dental engines	256,575	Apr. 18	1032	291	21	1145
Kimball, William W. (See Hamlet, Jacob, assignor.)						
Kimbark, Seneca D. (See Morley, Thomas, assignor.)						
Kimes, John C., Wadesville, W. Va. Wagon-brake	253,613	Feb. 14	513	147	21	444
Kimpton, Cornelius, assignor to himself and Northwestern Fertilizing Company, Chicago, Ill. Hydraulic press	255,872	Apr. 4	143	30, 39	21	974
Kincaid, Frank G., *et al.* (See Chaunier, Jean, assignor.)						
King, Charles L. and C. W., Kalamazoo, Mich. Sectional boat-frame	257,591	May 9	573	169	21	1367
King, Charles W. (See King, Charles L. and C. W.)						
King, Edwin L. L., Baltimore, Md. Artificial flower	260,071	June 20	1940	335	21	1986
King, George, Frederick, Md. Step-ladder	253,925	Feb. 21	915	255	21	516
King, George E., *et al.* (See Minot and Rhoades, assignees.)						
King, George W., Marion, Ohio. Hay-carrier	257,689	Apr. 25	1536	437	21	1945
King, Gideon, Eminence, Ky. Swinging gate	256,306	May 23	1441	409	21	1568
King, Henry B. (See Conlon and King.)						
King, Henry F., Buffalo, N. Y. Thill-coupling	253,666	Jan. 31	1697	466	21	310
King, Jacob, Indianapolis, Ind. Seed-cup for grain-drills	253,988	Feb. 21	916	255	21	519
King, James T., assignor of one-half to J. H. and G. S. Hartley and I. H. Pharea, Fowler, Ind. Ironing-board	260,210	June 27	1669	457	21	2002
King, John, Ansonia, Conn. Electric signal-transmitter	256,496	Apr. 18	942	263	21	1130
King, John, assignor to Vulcan Iron Works Company, Oswego, N. Y. Friction-clutch and loose pulley	256,435	May 23	1569	451	21	1568
King, John A. B., Cincinnati, Ohio. Device for cooling dwellings	253,535	Feb. 14	439	139	21	431
King, John B., assignor of one-half to A. Friedrick, Brooklyn, N. Y. Electric-light carbon	256,962	Apr. 18	1206	305	21	1193
King, John D., Elmira, N. Y. Adjustable chair	256,977	May 16	1143	389	21	1591
King, John H. (See Shoemaker, Isaiah W., assignor.)						
King, Leander, Georgetown, Ohio. Car-coupling	254,904	Mar. 14	479	169	21	788
King, Leander, Georgetown, Ohio. Car-coupling	256,635	Apr. 11	864	241	21	1104
King, Samuel U., Cottage City, Mass. Windmill	257,496	May 9	436	{121 / 122}	21	1365
King, Sidney A. (See Thomas, Fuller, and King.)						
King, Theodore E., Saugatuck, and W. H. Sexton, Westport, Conn. Ironing-board	256,695	Feb. 7	130	38	21	389
King, William H., assignor of one-half to T. W. Fitch, St. Louis, Mo. Bale-tie	252,933	Jan. 31	1546	431	21	527
Kingman, Barton E., New York, N. Y. Label-band for dry-goods packages	251,894	Jan. 3	261	71	21	46
Kingsland, George A., Brooklyn, N. Y. Foundation-curb for wells	256,976	May 16	1144	391	21	1591
Kingsley, Alba T., Millport, N. Y. Nut-lock	260,022	June 13	648	294	21	1649
Kingwill, John F., Chicago, Ill. Game-board	260,095	June 20	1935	275	21	1929
Kinney, Charles A., Meriden, Conn. Globe-holder	256,429	May 23	1569	451	21	1568
Kinney, Charles A., assignor to E. Miller & Co., Meriden, Conn. Wick-tube	257,621	Apr. 25	1539	437	21	1945
Kinney, Charles A., assignor to E. Miller & Co., Meriden, Conn. Lantern	260,176	June 6	385	97	21	1752
Kinney, Cyrus, Windsor, Ontario, Canada. Fence-post	254,022	Mar. 7	264	69	21	669
Kinney, Francis S., New Brighton, assignor to Kinney Tobacco Company, New York, N. Y. Smoke-filter for pipes and cigarettes	253,296	Feb. 7	153	39	21	389
Kinney, Francis S., New Brighton, assignor to Kinney Tobacco Company, New York, N. Y. Cigar	256,979	May 16	1145	391	21	1591
Kinney Tobacco Company. (See Cuppia, Henry A., assignor.)						
Kinney Tobacco Company. (See Kinney, Francis S., assignor.)						
Kinney, George, Wyoming, Ohio. Jail, prison, and grating bar	258,989	June 6	76	19	21	1707
Kinsman, Prescott B., and J. Merrill, Great Falls, N. H. Carriage-wrench	255,637	Mar. 28	1504	404	21	918
Kinyon, Myron T., *et al.* (See Bowden, Alfred R., assignor.)						
Kipling, Edward E. (See Greenleaf, Jules A., Jeane, assignor.)						
Kirby, Samuel, assignor to Bevin Brothers Manufacturing Company, East Hampton, Conn. Chime attachment for harness	257,135	Apr. 25	1696	475	21	1970
Kirchner, Emanuel. (See Rimel, John P., assignor.)						
Kirk, Alva H., assignor to Kirk & Fender, Minneapolis, Minn. Machine for collecting dust	256,872	June 20	1939	335	21	1985
Kirk, Alva H., assignor to Kirk & Fender, Minneapolis, Minn. Machine for collecting dust	260,273	June 20	1939	{335 / 336}	21	1985
Kirk & Fender. (See Kirk, Alva H., assignor.)						
Kirk, George E., Washington, D. C. Pulley-cover	256,993	Apr. 25	1423	409	21	1221
Kirk, Henry, Minneapolis, Minn. Hinge for boxes or crates	260,310	June 13	898	146	21	1797
Kirk, Samuel J., assignor to E. Horton & Son Company, Windsor Locks, Conn. Lathe-chuck	255,173	Mar. 21	904	347	21	811
Kirkham, C. H., *et al.* (See Dean, George S., assignor.)						
Kirkham, Henry P., Brooklyn, N. Y. Coffer-dam	253,647	Jan. 31	1696	462	21	310
Kirkland, William P., Hanford, Cal. Vehicle device for checking horses	259,705	June 20	1139	309	21	1985
Kirkman, David J. (See Graves and Kirkman.)						
Kirkpatrick, David M., Kansas City, Mo. Heater for cars	256,006	Apr. 4	317	83	21	1069
Kirkpatrick, David M., Kansas City, Mo. Nut-lock	256,009	June 6	76	20	21	1707
Kirkpatrick, Robert L., Lebanon, Tex. Feeder for cotton-presses	253,719	Feb. 14	645	184	21	496
Kirkpatrick, Wallace, Avon, Ill. Egg-tester	259,171	June 6	387	97	21	1752
Kirkwood, David, Boston, Mass. Hand cartridge-extractor	259,172	June 6	388	97	21	1752
Kirkwood, Robert G., Ellicott City, Md. Wind-wheel	254,005	Mar. 14	479	142	21	782
Kirst, Edward S., Black Earth, Wis. Pad-press	254,226	Feb. 28	1399	365	21	668

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Kish, William V., Buffalo, N. Y. Wagon-spring	258,437	May 23	1501	451	21	1568
Kissling, Richard, assignor to Fabrik Nicotin Freier Talsacke Patent, Dr. R. Kissling & Co., Bremen, Germany. Method of and apparatus for curing tobacco	259,553	June 13	846	224	21	1850
Kissner, Leonard, and J. P. Outcalt, Lancaster, Ohio; said Kissner assignor to said Outcalt. Corn-sheller	258,881	Jan. 31	1457	408	21	971
Kitchens, John W., Pocola, Ind. Ter. Portable baling-press	259,038	June 27	1465	{385 / 386}	21	1908
Kite, John D. (See Durrell, William F., assignor.)						
Kite, Michael, Prairie township, Jackson county, Mo. Coupling for sulky-plows	251,895	Jan. 3	261	72	21	46
Kitsee, Isidor, Cincinnati, Ohio. Automatic fire-alarm	256,677	Jan. 24	1208	357	21	283
Kitsee, Isidor, Cincinnati, Ohio. Fire-annihilator	256,678	Jan. 24	1204	357	21	283
Kitsee, Isidor, Cincinnati, Ohio. Stock-car	256,777	Jan. 24	1319	366	21	341
Kitsee, Isidor, Cincinnati, Ohio. Fire-alarm	253,397	Feb. 7	135	39	21	399
Kitsee, Isidor, Cincinnati, Ohio. Fire-extinguisher	253,398	Feb. 7	135	39	21	399
Kitsee, Isidor, Cincinnati, Ohio. Fire-extinguisher	253,720	Feb. 14	647	184	21	448
Kitsee, Isidor, Cincinnati, Ohio. Fire-annihilator	254,088	Feb. 21	1041	290	21	539
Kitsee, Isidor, Cincinnati, Ohio. Automatic fire-alarm	254,553	Mar. 7	198	38	21	650
Kitsee, Isidor, Cincinnati, Ohio. Fire-annihilator	257,502	May 9	575	160	21	1387
Kitsee, Isidor, Cincinnati, Ohio. Fire-annihilator	257,503	May 9	575	161	21	1388
Kitsee, Isidor, Cincinnati, Ohio. Fire-annihilator	257,504	May 9	576	161	21	1388
Kitsee, Isidor, Cincinnati, Ohio. Fire-annihilator	247,505	May 9	577	161	21	1388
Kitson, Richard, Lowell, Mass. Cotton-opener	252,543	Jan. 17	1063	305	21	198
Kittel, Joseph J., Brooklyn, N. Y. Salt-caster	255,873	Apr. 4	145	30	21	975
Kittell, Frank, and S. J. Boies, Chicago, Ill. Line-indicator	259,786	June 20	1132	300	21	1905
Kitton, Frank, *et al.* (See Lariah, Joseph W., assignor.)						
Kitz, Jacob, Neuschleussig, near Leipsic, Germany. Hanging circular saws	254,142	Feb. 28	1177	389	21	571
Kjellströn, Mary S., New York, N. Y. Combined step-ladder and window-scaffold	257,226	May 2	97	27	21	1298
Klausmann & Mayer. (See Schaefer, John C., assignor.)						
Klein, Benjamin H., Delaware, Ohio. Wind-wheel	255,432	Mar. 28	1255	338	21	674
Klein, Charles C., Philadelphia, Pa. Shaft-coupling	253,879	Feb. 21	845	230	21	506
Klein, George C., Akron, Ohio. Combined baby-jumper, swing, and bed	257,873	May 16	902	251	21	1459
Klein, William, New York, N. Y. Foot-protector	258,728	Jan. 24	1314	368	21	342
Kleinert, Isaac B., New York, N. Y. Dress-shield	257,497	May 9	437	122	21	1385
Klett, John G., Brooklyn, N. Y. Cattle-car	254,339	Feb. 28	1400	385	21	608
Klimsch, Joseph O., Vienna, Austria-Hungary, assignor to Society for the Manufacture of Wood Pulp, Grellingen. Treating fibrous materials for paper-stock, &c	256,436	Apr. 11	865	.....	21	1104
Klinck, Graham. (See Bowman and Klinck.)						
Kline, Charles F., and W. H. Woodard, Cleveland, Ohio. Vapor-stove	259,476	Jan. 17	976	271	21	177
Kline, Perry, *et al.* (See Harvey, Peter L., assignor.)						
Kline, William B. (See Long, Nathan H., assignor.)						
Klinefelter, Amos N., *et al.* (See Cox and Morrisey, assignors.)						
Klingenberg, Christian P., assignor to Osborne Cornice Company, Toledo, Ohio. Window-cornice	253,068	Jan. 31	1699	468	21	311
Klinkner, Charles A., San Francisco, Cal. Rubber-stamp cabinet	259,365	Jan. 17	800	238	21	159
Klotz, Daniel H., Philadelphia, Pa. Station-indicator	254,554	Mar. 7	126	32	21	660
Knapp, George S., Chicago, Ill. Drum	254,143	Feb. 28	1178	389	21	571
Knapp, George W., Baltimore, Md. Attaching bottoms and tops to sheet-metal vessels	251,896	Jan. 3	262	72	21	47
Knapp, George W., Baltimore, Md. Cherry-seeding machine	253,874	Apr. 4	146	30	21	975
Knapp, John G. (See Holly and Knapp.)						
Knapp, Milton H., Adrian, Mich. Crucible	251,719	Jan. 3	37	11	21	9
Knauss, Frank T., Scranton, Pa. Table	257,343	May 2	230	69	21	1394
Knauss, Thomas E., Nelsonville, Ohio. Car-wheel	256,841	Apr. 25	1350	381	21	1206
Kneberg, Charles E., assignor of two-thirds to Moline Plow Company, Moline, Ill. Sulky-plow	254,555	Mar. 7	198	38	21	660
Kneeland, Joseph C., assignor to M. H. Spaulding, trustee, Northampton, N. H. Paper-feeding machine	259,477	Jan. 17	977	272	21	177
Kneeland, Sylvanus R., Boston, Mass. Relief-valve	251,897	Jan. 3	263	72	21	47
Knell, James W., Boston, Mass. Apparatus for producing illusory dramatic effects	254,007	Apr. 4	319	83	21	1003
Knickerbocker, Charles R. (See Holt, Noah W., assignor.)						
Knickerbocker, Charles R., trustee. (See Taggart, Francis, assignor.)						
Knickmann, Henry, East New York, N. Y. Ornamental chain	259,173	June 6	369	97	21	1759
Knight, Charles S., Selma, Ala. Loom-gear	259,554	June 13	848	224	21	1850
Knight, Edgar, assignor of two-thirds to C. E. and O. C. Smith, Bridgeport, Conn. Chuck	253,480	Feb. 7	351	98	21	405
Knight, Edwin D. (See Williams and Knight.)						
Knight, George H. (See Parkhurst, Darius, assignor.)						
Knight, Hale, Newbury, Mass. Barrel	255,433	Mar. 28	1256	338	21	674
Knight, Harold E., *et al.* (See Tanger, David B., assignor.)						
Knight, Henry W. (See Byers and Knight.)						
Knight, John A., Auburn, Me. Pillow-sham frame	259,436	May 23	1502	451	21	1569
Knight, Joseph V., Lynn, Mass. Burglar-alarm	256,145	Apr. 11	497	135	21	1040
Knight, Luther, Bennington, Vt. Apparatus for balancing pulleys	255,434	Mar. 28	1257	339	21	674
Knisely, Abraham J. (See Brunson, John, assignor.)						
Knisley, Abraham, Chicago, Ill. Metallic lathing	258,679	Jan. 24	1205	357	21	283
Knoebe, John, Cincinnati, Ohio. Clothes-sprinkler	254,292	Feb. 28	1270	368	21	586
Knowles, Isaac W. (See Wright and Knowles.)						
Knowles, Lucius J., Worcester, Mass. Back roll and support therefor for looms	254,027	Feb. 21	1042	290	21	540
Knowlton, Alden, Boston, Mass. Nailing-machine	257,227	May 2	98	28	21	1298
Knowlton, C. Walter, *et al.* (See Cheney, Charles W., assignor.)						
Knowlton, William A., Rockford, Ill. Cultivator	254,556	Mar. 7	130	33	21	660
Knowlton, William A., Rockford, Ill. Cultivator	254,557	Mar. 7	132	33	21	660
Knox, Orrin A., Bradford, Pa. Temper-screw for drilling wells	254,676	Mar. 14	530	142	21	736
Knox, William H., assignor of one-half to J. R. Anderson, Cincinnati, Ohio. Print for transfer-letters	254,677	Mar. 14	530	142	21	736
Knudson, Jens, Dwight, Ill. Barrel-truck	255,787	Apr. 4	56	15	21	980
Knudson, Adolphus A., Brooklyn, N. Y. Printing-telegraph	259,439	May 23	1503	452	21	1569
Koch, John C., Berlin, Prussia, Germany. Album-clasp	258,286	Jan. 10	650	185	21	130
Koch, Paul, Neuffen, Würtemberg, Germany. Paper-board for dressing wounds	257,723	May 9	732	.....	21	1417
Koch, Sons & Co. (See Müller and Hilpert, assignors.) (Reissue.)						
Koechlin, Horace, Loerrach, Baden, Germany. Manufacture of colors or dye-stuffs	253,721	Feb. 14	648	.....	21	467
Koechlin, Horace, Loerrach, Baden, Germany. Manufacture of coloring-matter	257,498	May 9	438	.....	21	1386
Koerber, Paul, Harlem, La. Pruning-sheers	258,287	Jan. 10	650	186	21	130
Köhler, Eduard, Cammas, Prussia, Germany. Lamp	251,898	Jan. 3	264	72	21	47
Kohler, Elias, York, Pa. Cattle-car	256,707	Apr. 18	1198	{334 / 335}	21	1174

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Kohler, Elias, York, Pa. Cattle-car	259,289	June 27	1797	457	21	2089
Kohler, John C., assignor to W. L. McDowell, Philadelphia, Pa. Stove-knob	256,578	Apr. 18	1203	358	21	1176
Kohlrausch, Otto, Vienna, Austria-Hungary. Apparatus for extracting tannic acid	259,253	June 13	849	225	21	1850
Kolbe, Dietrich W., deceased, H. M. Kolbe, Philadelphia, Pa, executrix. Artificial arm	255,706	Apr. 4	54	15	21	980
Kolbe, Hedwig M., executrix. (See Kolbe, Dietrich W.)						
Kolbe, Hugo, Breslau, Prussia, Germany. Incrustation-preventive	256,235	May 23	1500	.....	21	1542
Koll, Benjamin B., Salem, Ohio. Stove-lid	251,899	Jan. 3	265	73	21	47
Kemp, Albert, New York, N. Y. Neckwear shield and fastener	258,709	May 30	1000	304	21	1667
Kemp, John F., Chicago, Ill. Lozenge-frame	252,694	Jan. 24	1117	313	21	283
Kemp, John F., Chicago, Ill. Machine for brazing band-saws	252,695	Jan. 24	1118	313	21	283
Kemp, John R., Shickshinny, Pa. Fire-escape	259,441	May 23	1500	452	21	1568
Kenbrook, Peter C., New Orleans, La. Cake-holder	252,989	Jan. 10	661	186	21	130
Kertzpeter, John F. (See Wilson and Kertzpeter.)						
Kesor, David T., Shamokin, Pa. Revolving book-stand	256,442	May 23	1499	452	21	1569
Kestal, Louis, *et al.* (See Levi, George W., assignor.)						
Kesinski, Wladyslaw T., Brooklyn, N. Y. Furniture-caster	252,954	Jan. 31	1540	431	21	997
Kesinski, Wladyslaw T., Brooklyn, N. Y. Device for converting reciprocating into rotary motion	257,874	May 16	902	252	21	1458
Kesinski, Wladyslaw T., Brooklyn, N. Y. Bed-bottom	257,953	May 16	900	276	21	1475
Kesinski, Wladyslaw T., assignor of two-tenths to H. West, Brooklyn, N. Y. Device for converting motion	257,344	May 2	240	69	21	1304
Kesler, Andrew, New Milford, Ohio. Clamp	252,779	Jan. 24	1315	368	21	342
Kesler, John A., assignor to W. F. Miller, Buffalo, N. Y. Grain-separator	255,435	Mar. 28	1258	339	21	675
Kesler, George, Evansville, Ind. Lubricating-journal	256,655	May 30	1002	305	21	1544
Kesler, George, Evansville, Ind. Reversing-gear for engines	259,468	June 13	857	{172 / 174}	21	1816
Kesner, Joseph, St. Louis, Mo. Grate	252,696	Jan. 24	1118	314	21	283
Kessee, F. H. (See Wheeler, Samuel R., assignor.)						
Kessler, Joseph, Johannisberg-on-the-Rhine, Germany. Lithographic-printing press	252,770	May 30	2000	585	21	1667
Kesselman, Charles G. (See Hardy, Dexter D., assignor.)						
Kesselstat, John, Lockport, N. Y. Inside blind	255,516	Mar. 28	1339	366	21	681
Kester, Aaron S. (See Meredith and Kester.)						
Kestner, John. (See Bodenstawahl, John, assignor.)						
Kessler, James W., New York, N. Y. Car-door lock	256,669	May 16	1146	301	21	1561
Kestl, Maurice, New York, assignor to himself and W. Lang, Brooklyn, N. Y. Stair-carpet fastener	252,699	Jan. 24	1207	338	21	284
Kesto, Henry C., Chicago, Ill. Balanced slide-valve	256,146	Apr. 11	498	136	21	1040
Keighaem, Stephen M., Golden, Colo. Harvester	252,478	Jan. 17	978	273	21	177
Keogher, Wasilius C., Allegheny, Pa. Die for manufacturing the tongues of car-couplings	256,147	Apr. 11	499	136	21	1040
Kern, Stephen R., Plainfield, N. J. Ore-crushing machine. (Reissue)	10,695	Apr. 11	502	{249 / 250}	21	1109
Kernwell, Henry. (See Flood and Kernwell.)						
Kesselmeyer, Louis, Cincinnati, Ohio. Apparatus for treating leaf-tobacco	257,724	May 9	730	204	21	1417
Kesser, August C., assignor to Chicago Rawhide Manufactoring Company, Chicago, Ill. Belt-trimming machine	256,639	Mar. 28	1305	{494 / 495}	21	910
Kesser, William G., St. Louis, Mo. Air-ship	252,955	Jan. 31	1549	432	21	998
Kuhn, Edmund, New York, N. Y., assignor to Jerome Clock Company, New Haven, Conn. Alarm-clock	259,174	June 6	369	96	21	1759
Kuhnen, Mathias. (See Von Krause and Kuhnen.)						
Kullrich, Franz P., Berlin, Germany. Pencil-sharpener	254,008	Mar. 14	660	183	21	782
Kulman, John C., Marshall, Ill. Combined tape-line and shears	259,356	June 13	859	225	21	1851
Kulp, Carl. (See Pickhardt, Gustav, assignor.)						
Kunkel, Cornelius, Oregon, Mo. Windmill	259,357	June 13	851	225	21	1851
Kuntze, Gustavus R. W., Providence, R. I. Manufacture of locket-rims	256,963	Apr. 25	1403	400	21	1221
Kunz, Frederick O., assignor to Iler & Co., Omaha, Nebr. Apparatus for preparing grain for fermentation	260,360	June 27	1797	457	21	2089
Kurtz, Charles W., assignor to Bradley, Kurtz & Co., New York, N. Y. Bag-fastener	254,449	Feb. 28	1514	414	21	632
Kurtz, I. Ellis. (See Mosher, John P., assignor.)						
Kurtz, William M., Columbus, Ohio. Strap-hinge	257,662	Apr. 25	1399	437	21	1945
Kusmaul, William H., and F. Reiger, Springfield, Ill. Corn-planter	256,467	Apr. 18	943	283	21	1130
Kustal, Guido. (See Rhetzhaly and Kustal.)						
Küstermann, Gustav, Green Bay, Wis. Lead and crayon holder	256,983	Apr. 11	600	145	21	1056
Kuttroff, Adolf. (See Pickhardt and Erdemann, assignors.)						
Kyle, Oscar N., assignor to Florence Machine Company, Florence, Mass. Extension-top for oil-stoves	259,319	June 13	838	145	21	1797
Kyser, Louis, and A. C. Rex, Chicago, Ill. Toy scales	258,666	Jan. 24	1191	314	21	280
Kyser, Louis, and A. C. Rex, Philadelphia, Pa. Toy money-box	252,697	Jan. 24	1189	314	21	280
Kyser, Louis, and A. C. Rex, Philadelphia, Pa. Toy musical wheel	256,771	May 30	2001	585	21	1667
Kyser, Louis, and A. C. Rex, Philadelphia, Pa. Toy chariot	256,772	May 30	2002	585	21	1667
Kyser, Louis, and A. C. Rex, Philadelphia, Pa. Toy money-box	259,468	June 13	856	174	21	1817
La Dew, Charles, *et al.* (See Stewart, Admiram J., assignor.) (Reissue.)						
La Dew, Charles, Albany, N. Y. Sulky-harrow	251,900	Jan. 3	266	73	21	47
La Dew, Charles, Albany, N. Y. Sulky-harrow	256,981	May 16	1147	{302 / 303}	21	1301
La Dew, Charles, assignor of one-half to Wheeler & Melick Company, Albany, N. Y. Sulky-harrow. (Reissue)	10,698	Apr. 25	1707	478	21	1271
La Dew, John, Albany, N. Y. Baling-press	252,982	Jan. 31	1456	{668 / 669}	21	971
La Grange, Robert J., Philadelphia, Pa. Finger and scarf ring	252,689	Jan. 31	1709	469	21	311
La Grange, Robert J., Philadelphia, Pa. Finger, scarf, and other jewelry rings	257,622	Apr. 25	1561	457	21	1945
Lane, Hall, Golden, N. Y. Gang-press	256,904	Apr. 25	1402	400	21	1221
Lacey, Griffin S., New York, N. Y. Gas-regulator	255,317	Mar. 28	1200	305	21	681
Lackey, Andrew M., Brownsburg, Va., assignor to J. A. Porter and J. H. Chambers, Macy, Ind. Cutter-bar for mowers and reapers	255,267	Mar. 21	1197	301	21	899
Ladd, Daniel R., Baltimore, assignor of one-half to R. J. B. Whittaker, Belair, Md. Handle for glass covers	256,268	Mar. 21	1196	301	21	899
Ladd, Herman W. (See Spencer, James L., assignor.)						
Ladergan, Alphonse, Kensington, county of Middlesex, England. Hydraulic hoisting machinery	259,175	June 6	370	98	21	1759
Lafaytte, Lawrence, Belcourt, N. H. Fish for mill and other stones	256,965	Apr. 25	1403	401	21	1221
Lafleur, Jean, New Orleans, La. Car-replacer	254,228	Mar. 14	672	187	21	736
Lagin, John M., New York, N. Y. Brushing apparatus	259,772	May 30	2000	585	21	1668
Lagin, Perley, Warren, assignor to G. Draper & Sons, Hopedale, Mass. Mechanism for operating doffer-combs of carding-engines	259,656	May 30	1999	585	21	1645

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Lahm, John, *et al.* (See Penta, Levi, assignor.)						
Leighton, William S., Norwich, Conn., assignor to E. & H. T. Anthony, New York, N. Y. Head and back rest for photographic purposes	256,443	May 23	1601	453	21	1590
Laing, James M., Bay City, Mich. Making salt	254,899	Mar. 14	475	127, 128	21	796
Lake, Stephen D., assignor of one-half to A. W. Dickinson, Jersey City, N. J. Burglar-alarm	253,070	Jan. 31	1701	409	21	311
Lakin, James A., Westfield, Mass. Acoustic telephone	255,174	Mar. 21	925	247	21	811
Lakin, James A., Westfield, Mass. Loop-fastening for whip-stocks	256,320	June 13	553	145	21	1797
Lalor, Thomas, assignor of one-half to W. Hamilton, Toronto, Ontario, Canada. Latch	257,725	May 9	733	204	21	1417
Lamb, Augustus D., *et al.* (See Duffy, James F., assignor.)						
Lamb, Benjamin F., Belvidere, N. C. Hand cotton-gatherer	256,657	May 30	1864	386	21	1645
Lamb, Charles E., Delphos, Ohio. Swinging gate	256,307	May 23	1443	409	21	1508
Lamb, Daniel M., New York, N. Y. Compound for treating goods, &c., to render them water and moth repellent	256,106	Apr. 4	432	.....	21	1023
Lamb, Daniel M., New York, N. Y. Compound for treating goods, &c., to render them water and moth repellent	256,107	Apr. 4	434	.....	21	1023
Lamb, Daniel M., New York, N. Y. Compound for treating goods to render them water repellent	256,108	Apr. 4	436	.....	21	1023
Lamb, William H., San Francisco, Cal. Watch-maker's combination-tool	257,796	May 9	734	204	21	1417
Lambert, Henry S. (See Pratt, Alfred W., assignor.) (Reissue.)						
Lambie, Edward L. (See Tower, George B. N., assignor.)						
Lamont, Alexander P., *et al.* (See Lamont, James, assignor.) (Reissue.)						
Lamont, James, deceased, assignor to J. and A. P. Lamont, Rochester, N. Y. Razor-strop. (Reissue)	10,089	Feb. 7	306	101	21	409
Lamont, John, *et al.* (See Lamont, James, assignor.) (Reissue.)						
Lamont, John, and H. White, Annawan, Ill. Windmill-regulator	256,334	Apr. 11	745	204	21	1063
Lamson Cash Carrier Company. (See Lamson, William S., assignor.)						
Lamson, Charles H., Portland, Me. Carrier attachment for bicycles	253,211	Feb. 7	42	13	21	354
Lamson, William S., Lowell, assignor to Lamson Cash Carrier Company, Boston, Mass. Automatic cash-carrier	256,584	May 30	1774	501	21	1648
Lamson, William S., Lowell, assignor to Lamson Cash Carrier Company, Boston, Mass. Automatic cash-carrier	256,585	May 30	1775	502	21	1648
Lamy, Pierre E. (See Hutinet and Lamy.)						
Lancaster, Charles B., *et al.* (See Mathison, Joseph, assignor.)						
Lancaster, Morris, assignor of two-thirds to W. N. Matthews and W. Mendenhall, Richmond, Ind. Apparatus for the separation or extraction of oil from vegetable substances	253,722	Feb. 14	648	184, 185	21	467
Land, Horatio N., and H. Campbell, assignors to Gaar, Scott & Co., Richmond, Ind. Traction-engine	254,223	Feb. 28	1270	358	21	586
Land, Horatio N., and H. Campbell, assignors to Gaar, Scott & Company, Richmond, Ind. Traction-engine	257,444	May 2	358	100	21	1345
Lande, Bernard. (See Sawyer, George W., assignor.)						
Lande, Bernard. (See Sawyer, William E., assignor.)						
Landenberger, Frederik. (See Maul and Landenberger.)						
Lander, Freedom H., Lynn, Mass. Edge-trimming tool	254,340	Feb. 28	1403	396	21	609
Landers, Frary & Clark. (See Webb, Rodolphus L., assignor.)						
Landers, Milton H., San Francisco, Cal. Railway-car	256,308	May 23	1443	400	21	1563
Landis, Ezra F., Lancaster, Pa. Machine for making springs and rings	256,586	May 30	1777	502	21	1699
Landis, Frank F., Waynesborough, Pa. Compensating-gear for road-engines	252,044	Jan. 10	451	133, 134	21	85
Landis, Israel L. (See Calvin, Robert J., assignor.)						
Landis, Israel L. (See Denney, Samuel L., assignor.)						
Landis, Israel L. (See Iske, Anthony and A., assignors.)						
Landis, Israel L., Lancaster, Pa. Fence	252,479	Jan. 17	979	279	21	178
Landis, Israel L., Lancaster, Pa. Fence	254,294	Feb. 28	1273	358	21	585
Landis, Israel L., Lancaster, Pa. Swinging gate	256,331	Apr. 11	743	203	21	1062
Landis, Israel L., Lancaster, Pa. Combined hay tedder and rake	256,332	Apr. 11	743	203	21	1062
Landis, Israel L., Lancaster, Pa. Gate-hinge	256,333	Apr. 11	744	204	21	1062
Landis, Israel L., Lancaster, Pa. Gate-hinge	258,176	June 6	373	98	21	1759
Landis, Israel L., Lancaster, Pa. Combined hay rake and tedder	260,301	June 27	1799	488	21	9080
Landis, Israel L., Lancaster, Pa. Gate-hinge	256,335	Apr. 11	746	204	21	1063
Landon, A. Jesse, Jamestown, N. Y. Spring bed-bottom	251,901	Jan. 3	260	73	21	47
Landsberg, Herrman, Offenbach-on-the-Main, Germany. Clasp for albums	257,684	Apr. 25	1562	436	21	1945
Landstreet, Edward, and J. F. Towner, Baltimore, Md. Water-proof coat	253,397	Feb. 7	946	78	21	368
Lane, Almeron M., West Winsted, Conn. Clock						
Lane & Bodley Company. (See Myers, Edward, assignor.)						
Lane, Charles B. (See Paine, Edwin L., assignor.)						
Lane, Frederic A., New Haven, Conn. Clock-movement	256,708	Apr. 18	1109	335	21	1174
Lane, Frederic A., New Haven, Conn. Clock-movement	257,025	Apr. 25	1562	436	21	1246
Lane, Frederic A., New Haven, Conn. Clock-escapement	257,727	May 9	736	205	21	1417
Lane, John, assignor of one-half to N. S. Bouton, Hyde Park, Ill. Machine for molding car-wheels and other castings in sand	257,345	May 2	940	68, 69	21	1304
Lane, Michael W., assignor of one-third to G. Rogers, Ladoga, Ind. Car-coupling	253,783	Feb. 14	653	186	21	467
Lane, Thomas W., assignor to C. Williams, Jr., Boston, Mass. Electric switch-board	259,558	June 13	853	225	21	1851
Lane, Thomas W., Boston, assignor to C. Williams, Jr., Somerville, Mass. Magneto-generator	259,644	June 13	902	256	21	1870
Lang, William. (See Krickl, Maurice, assignor.)						
Lang, William, Brooklyn, N. Y. Box-fastener	256,224	Apr. 11	699	165	21	1058
Langan, John T., Lyons, Kans. Pantaloons-protector	257,026	Apr. 25	1563	436	21	1946
Lange, Christian, Black Earth, Wis. Hame-staple	252,789	Jan. 24	1315	389	21	942
Lange, Eugen, Cologne, Germany. Apparatus for the manufacture of combustible gas	256,774	May 30	2085	506	21	1688
Langenbach, Otto F., Buffalo, N. Y. Sample-shoe exhibitor	260,102	June 27	1556	419	21	1908
Langhammer, Paul, Denver, Colo., assignor to himself and C. Siedler, Jersey City, N. J. Lead pipe	256,062	May 16	1149	302	21	1569
Langley, Thomas F., East Kingston, N. H. Shutter-fastener	259,539	June 13	854	226	21	1851
Langmaid, Charles B., assignor of one-half to H. Barrows, Middleborough, Mass. Button-hole-cutting machine	252,781	Jan. 24	1316	389	21	942
Langston, Joseph M., Waverly, Ill. Draft-equalizer	253,071	Jan. 31	1702	409	21	311
Lanier, Thomas W., Oliver, Ga. Sugar-boiler	259,381	June 13	554	145	21	1797
Lannan, Charles T., Brookline, Mass. Metal-planer	260,211	June 27	1699	457	21	9088
Lanney, Edouard, Lima, Ohio. Pump	257,854	May 16	999	270	21	1475
Lanpher, Charles W., Norwich, N. Y. Automatic car-brake	253,398	Feb. 7	950	78	21	368
Lapd, George T., Brooklyn, N. Y. Step-ladder	257,160	May 2	39	9, 10	21	1288
Lapyre, Leopold, Cincinnati, Ohio. Three-cylinder engine	253,299	Feb. 7	135	30	21	369
Laraway, Elbert D., and F. C. Rockwell; said Laraway assignor of one-half to J. C. Hills, Hartford, Conn. Combined box and tray molded from pulp. (Reissue)	10,128	June 6	500	129	21	1780

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Laraway, George W., and D. Slate, assignors to American Paper Barrel Company, Hartford, Conn. Pulp-molding machinery	258,236	May 23	1550	384, 385	21	1548
Larimere, William T., St. Louis, Mo. Spring-motor for cars	253,072	Jan. 31	1703	469, 470	21	311
Larivière, Pierre A., Ottawa, Ontario, Canada. Carriage-seat	259,177	June 6	373	98	21	1760
Larish, Joseph W., assignor of six-tenths to J. W. Tillinghast and F. Kitton, Buffalo, N. Y. Multiple-telegraphy	257,499	May 9	439	123	21	1306
Larson, Adolph. (See Hyden and Larson.)						
Lasher, Elias, Germantown, N. Y. Car-coupling	254,028	Feb. 21	1043	290, 291	21	540
Lascell, William B. (See Bland, Henry, assignor.)						
Lathrop, Anderson, Van Hornesville, N. Y. Combined weather-strip and door-spring	258,083	May 16	1151	322	21	1508
Lathrop, Philetus C. (See Hosmer and Lathrop.)						
Latimer, Lewis H. (See Tregoning and Latimer.)						
Latimer, Lewis H., assignor to United States Electric Lighting Company, New York, N. Y. Manufacturing carbons	252,386	Jan. 17	861	238	21	159
Latta, Adrian C., *et al.* (See Latta, Emmit G., assignor.)						
Latta, Emmit G., assignor of two-thirds to A. C. Latta and H. D. Blakeslee, Buffalo, N. Y. Hame	256,444	May 23	1602	453	21	1590
Lattner, Jacob V., Waxahachie, Tex. Combined hedge-trimmer and mower	253,794	Feb. 14	654	186	21	467
Laufferty, Joseph, New York, N. Y. Suspender-end	255,175	Mar. 21	926	247	21	811
Laufkotter, Charles H., Sacramento, Cal. Bottle-cooler	251,902	Jan. 3	270	73	21	46
Lauhoff, William, Detroit, Mich. Alarm for millstones	253,873	Feb. 21	847	230	21	536
Laureau, Louis G., New York, N. Y. Apparatus for stripping ingots cast in molds	254,341	Feb. 28	1404	396	21	609
Lawrence, Godfrey G., assignor to P. T. Blyth, London, England. Apparatus for raising, lowering, and detaching boats	258,460	Jan. 17	980	272, 273	21	178
Laurent, Jacques, Philadelphia, Pa. Machine for forming snaps on watch-covers	259,176	June 6	375	99	21	1760
Lauterty, Joseph, New York, N. Y. Suspender-end	254,029	Feb. 21	1045	291	21	540
Lautz, Charles, assignor to Wesp, Lautz Brothers & Co., Buffalo, N. Y. Starch-table						
Law, Archibald P., trustee. (See Gibbon, Thomas H., assignee.)						
Lawlor, John D., Montreal, Quebec, Canada. Treadle for sewing-machines	253,212	Feb. 7	43	13	21	354
Lawrason, Lawrence A. (See Tupper, William H., assignor.)						
Lawrence, Elijah C., Boston, Mass. Hanging lamp. (Reissue)	10,075	Apr. 4	448	121	21	1026
Lawrence, George A., New York, N. Y., and E. J. Frost, Philadelphia, Pa. Automatic hydraulic press	255,300	Mar. 21	1085	292, 293, 294	21	830
Lawrence, J. Franklin, assignor to J. Lawrence, Philadelphia, Pa. Coffee and spice mill	256,295	Apr. 11	699	165	21	1058
Lawrence, James D., assignor of one-half to J. E. Griffith, Carroll, Iowa. Car-mover	255,639	Mar. 28	1568	405	21	919
Lawrence, John. (See Lawrence, J. Franklin, assignor.)						
Lawrence, John R., assignor of one-third to C. R. Parker, Cincinnati, Ohio. Car-coupling	255,669	Mar. 14	897	216	21	785
Lawrence, L. L., *et al.* (See Hunt, Franklin B., assignor.)						
Lawrence Plow Company. (See Palm, Andrew, assignor.)						
Lawrence, Theodore F. (See Helder, John W., assignor.)						
Lawrence, William E., New York, N. Y. Step-cover	256,336	Apr. 11	747	204	21	1063
Lawrence, William E., New York, N. Y. Wood-boring machine	256,337	Apr. 11	748	205	21	1064
Lawson, Aaron, Gilroy, Cal. Tension-brace	253,927	Feb. 21	916	255	21	519
Lawson, George W., Brooklyn, N. Y. Electric bath	257,675	May 16	993	268	21	1439
Lawton, Alfred, Elizabeth, N. J. Device for handling coal, ores, &c	253,926	Feb. 21	917	255, 256	21	519
Laycock, Thomas, Northampton, England. Manufacture of boots and shoes	254,109	Feb. 21	1194	314	21	554
Laycock, Thomas B., Washington, Ind. Spring bed-bottom	254,663	Mar. 7	295	69	21	662
Layden, Patrick J., Providence, R. I. Horseshoe	257,500	May 9	441	123	21	1306
Layton, John S., Springfield, Ohio. Shaft-hitch for vehicles	257,346	May 2	946	69	21	1305
Le Roy, Charles J., Palestine, and J. W. Henson, assignors to themselves, S. J. Adams, J. Leonard, J. T. Odell, S. Smith, and N. W. Godbold, Dallas, Tex. Wagon-brake	258,445	May 23	1603	454	21	1590
Le Roy, Charles J., and J. W. Henson, assignors of four-fifths to S. J. Adams, J. Leonard, J. T. Odell, S. Smith, and N. W. Godbold, Dallas, Tex. Combined cotton-planter, cultivator, and double-shovel, single-shovel, and turning plow	260,308	June 27	1891	488, 489	21	9080
Le Roy, Joseph, assignor of one-half to C. S. Whipple, Belleville, Mich. Vehicle-reach	256,009	Apr. 4	321	84	21	1024
Le Roy, Tunis V., Utica, N. Y. Journal-bearing	260,103	June 27	1557	420	21	1902
Le Vin, George W., assignor of one-half to M. Beck; said Le Vin and Beck assignors of one-third to E. Hopkins, Chicago, Ill. Hay-loader	256,710	Apr. 18	1108	336	21	1174
Leach, Thomas, assignor to Reed & Barton, Taunton, Mass. Cover for jars of pickle-casters and other receptacles	253,785	Feb. 14	656	187	21	468
Leach, Thomas, assignor to Reed & Barton, Taunton, Mass. Cover for pickle-jars and other receptacles	253,786	Feb. 14	657	187	21	468
Leadley, Frederick H., St. Louis, Mo. Skylight	255,426	Mar. 28	1561	340	21	875
Leak, Elias, Trenton, N. J. Making porcelain and china paste-boxes	256,008	Apr. 4	319	84	21	1023
Leake, Charles F., Hale Street, Staines, county of Middlesex, England. Manufacture of floor-cloth	255,788	Apr. 4	57	15, 16	21	961
Lee Mould, James H., New York, N. Y. Stock-bath	257,596	May 9	578	161	21	1369
Lean, Thomas C., *et al.* (See Horne, John B., assignor.)						
Leary, Daniel, New York, N. Y. Shade or globe holder for candles	257,027	Apr. 25	1563	436	21	1946
Leas, J. Silas. (See Barnard, Cornwall, and Leas.)						
Leas, J. Silas. (See Barnard and Leas.)						
Leavenworth, Walter J. (See Hawkins, Westel E., assignor.)						
Leavitt, George A., Jr., Newberg, N. Y. Boat-plug	258,775	May 30	2007	506	21	1688
Leavitt, William D., assignor of one-half to G. B. Moore, Cincinnati, Ohio. Churn	260,659	May 30	1695	508	21	1645
Lebaudy, Gustave and J., Paris, France. Apparatus for the manufacture of lump-sugar	259,674	June 20	1253	336	21	1988
Lebaudy, Jules. (See Lebaudy, Gustave and J.)						
Leblanc, Hippolyte, and E. V. A. Loiseau, Paris, France. Electric signal for railways	258,367	Jan. 17	988	280	21	159
Lechner, Francis M., Columbus, Ohio. Sprocket-wheel	259,675	June 20	1255	337	21	1988
Lechner, Francis M., assignor to Lechner Mining Machine Company, Columbus, Ohio. Sprocket-wheel	257,445	May 2	359	101	21	1346
Lechner Mining Machine Company. (See Lechner, Francis M., assignor.)						
Leckelt, August. (See Winkler, Theodore, assignor.)						
Leclère, Francis, Philadelphia, Pa. Spindle step-rail for spinning-frames	255,516	Mar. 28	1361	306	21	802
Lecœur, Irenée, Darnetal, France. Mechanism for applying power to sewing-machines	254,285	Feb. 28	1272	353	21	567
Leder, George, Demopolis, Ala. Oil-mat	257,788	May 9	737	205	21	1416
Lederer, Benedict B., Providence, R. I. Ornamental chain	258,084	May 16	1151	322	21	1502
Lederer, S. & B. (See Briggs, Warren W., assignor.)						
Lee, Alfred, assignor of one-half to F. B. De Witt, Paulding, Ohio. Friction ratchet-motor	255,389	Mar. 21	1199	321	21	859
Lee, Archibald K., Galveston, Tex. Composition for roofing and paving	257,501	May 9	442	.....	21	1306
Lee, Charles B., Louisville, Ky., assignor to J. L. and H. M. Clark, Oshkosh, Wis. Sider vehicle	254,664	Mar. 7	265	70	21	663

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lee, David, Jr., Birmingham, assignor of one-half to C. A. Gunn, Fort Deposit, Ala. Automatic railway-crossing	256,437	Apr. 11	866	241	21	1104
Lee, Edward, Leeds, county of York, England. Decorating or producing designs on the surface of earthenware, tiles, &c.	259,676	June 20	1257	.....	21	1927
Lee, James, New Brighton, N. Y. Folding graphoscope	258,381	Jan. 17	783	218	21	146
Lee, John, Mansfield, Ohio. Post-hole digger	253,989	Feb. 21	923	258	21	530
Lee, John L. (See Hill and Lee.)						
Lee, Lewis H., Toronto, Ontario, Canada. Harvesting-machine	258,681	Jan. 24	1207	338	21	224
Lee, Robert E. (See Cowan and Lee.)						
Leech, William, Oroville, Cal. Horseshoe	253,930	Feb. 21	924	257	21	580
Leede, Julius, Washington, D. C. Water-meter with automatic governor	258,229	Jan. 10	661	{186 187}	21	190
Leede, Julius, Washington, D. C. Three-chambered float water-meter	257,098	Apr. 25	1564	459	21	1246
Leeming, Thomas, R. Ray, and F. G. Lynde, Manchester, county of Lancaster, England. Machine for browning or otherwise ornamenting paper, &c	258,309	May 23	1444	409	21	1563
Leepy, Theodore. (See Schott and Leepy.)						
Lefeuvrier, Joseph, Merdrignac, France. Combined bath and camera	256,148	Apr. 11	500	136	21	1040
Lefferts, John A., *et al.* (See Meyer, Frederick A., assignor.)						
Lefferts, Marshall, *et al.* (See Meyer, Frederick A., assignor.)						
Leggett, Mortimer D., Cleveland, Ohio. Smoke-consuming furnace	259,767	June 20	1133	{300 301}	21	1905
Leguay, Henry. (See Vallotton and Leguay.)						
Lehman, Frederick, Milwaukee, Oreg. Lifting-jack	253,309	Feb. 7	138	40	21	369
Lehmann, Carl, New York, N. Y. Police and military hat	257,955	May 16	1000	279	21	1475
Lehmann, Frans, Berlin, Germany. Driving-gear for sewing-machines	256,842	Apr. 25	1351	381	21	1208
Lehmann, Richard, Dresden, Saxony, Germany. Apparatus for superheating steam	253,931	Feb. 21	925	257	21	580
Leidholdt, Carl F., assignor of one-third to H. Schuster, Neillsville, Wis. Artificial stone	254,342	Feb. 28	1405	.....	21	610
Leimbach, Philip A., New York, N. Y. Catch for jewelry	258,776	May 30	2009	566	21	1669
Leinbrock, Oskar, Gottleuba, near Dresden, Saxony, Germany. Tread-motor	254,065	Mar. 7	366	70	21	683
Leisaner, Eduard, New York, N. Y. Paper-hanging or wall-paper	255,437	Mar. 28	1262	340	21	875
Leitch, Daniel A. (See Diffendafer, James M., assignor.)						
Leland, Harry W., South Framingham, assignor to himself and J. C. Clark, Framingham, Mass. Plug for electrical switch-boards	258,931	June 6	77	20	21	1708
Lemaire, Jean T., Hodimont-Verviers, Belgium. Feeding device for carding-engines	255,519	Mar. 28	1262	{366 367}	21	892
Lemen, John N., Jackson, Mich. Corset	253,727	Feb. 14	657	187	21	468
Lemmon, John. (See Cooper and Lemmon.)						
Lemoine, Alphonse, Paris, France. Striking device for electric and other clocks	256,709	Apr. 18	1900	335	21	1174
Lemon, Uriah E. (See Cutter, Charles W., assignor.)						
Lemon, William T., assignor to W. G. Avery, Detoit, Mich. Wire-splicing tool	254,144	Feb. 28	1180	330	21	571
Lenau, Gustavus. (See Goff and Lenau.)						
Lengefield, Julius I., assignor to W. A. Pollock, Greenville, Miss. Crank-paddle	254,630	Feb. 21	1046	291	21	540
Lenhart, William H., Defiance, Ohio. Lathe for turning eccentric or polygonal forms	258,481	Jan. 17	992	273	21	178
Lennig, Charles and J. B., Philadelphia, Pa. Recovering wool from mixed fabrics	259,025	June 6	192	.....	21	1727
Lennig, John B. (See Leanig, Charles and J. B.)						
Leonard, Abner, *et al.* (See Leonard, Sumner, assignor.)						
Leonard, Jack, *et al.* (See Le Roy and Henson, assignors.)						
Leonard, John B. H., assignor to Williams Brothers Manufacturing Company, Glastonbury, Conn. Guard for carving-forks	256,286	Apr. 11	610	166	21	1058
Leonard, Johnson, Harrisburg, Pa. Lubricator	259,389	June 13	555	146	21	1797
Leonard, Peter H., New York, N. Y. Shaving-mug	258,777	May 30	2009	567	21	1669
Leonard, Sumner, assignor to himself, A. Leonard, and W. P. Stoddard, Plymouth, Mass. Nail for wire fences	256,488	Apr. 18	945	263	21	1131
Lepper, William, Cleveland, Ohio. Top-prop for vehicles	255,520	Mar. 28	1363	367	21	892
Lequin, Edouard C., Kensico, N. Y. Lacing-hook	254,343	Feb. 28	1400	386	21	610
Lerow, Jacob H., assignor of one-half to C. W. Fairrington, Chicago, Ill. Elastic bed-bottom	254,344	Feb. 28	1407	387	21	610
Leslie, Andrew M. (See Chillingworth, Felix, assignor.) (Reissue.)						
Lester, George W., *et al.* (See Hoffman, Ross J., assignor.)						
Lester, Richard W., *et al.* (See Hoffman, Ross J., assignor.)						
Letchford, Silas, assignor of one-half to J. S. Da Costa, Camden, N. J. Attachment for domestic boilers	253,798	Feb. 14	658	187	21	468
Letchworth, George J., Buffalo, N. Y. Bridle-bit	254,967	Mar. 14	661	183	21	763
Levalley, Christopher W., St. Paul, Minn. Grain-binder	253,073	Jan. 31	1705	470	21	312
Levalley, Christopher W., St. Paul, Minn. Harvester	256,085	May 16	1152	323	21	1502
Levalley, Christopher W., St. Paul, Minn. Sash-weight	259,560	June 13	835	226	21	1859
Levan, Ambrose A. (See Eddy and Levan.)						
Leve, Gustave, *et al.* (See Alexander, Richard, assignor.)	255,521	Mar. 28	1364	368	21	892
Lever, Charles, Bowdon, county of Chester, England. Electric lamp						
Levering, Joshua, *et al.*, trustees. (See Jennings, Ralph S., assignor.) (Reissue.)						
Levering, Joshua, *et al.*, trustees. (See Martien, William, assignor.)						
Levett, Alexander. (See Müller, Hans J., assignor.)						
Levi, George W., assignor of one-half to M. J. Duffy and L. Kosial, Louisville, Ky. Fire-escape	259,839	Jan. 24	1408	392	21	256
Levin, George W., assignor of one-third to W. H. A. Brown, Chicago, Ill. Canceling and dating stamp	255,789	Apr. 4	60	16	21	961
Levings, Peter R., Rockford, Ill. Medical compound	257,089	Apr. 25	1567	.....	21	1946
Levy, Cerf M., and G. Alexandre, Paris, France. Composition for bleaching and washing linen, &c	254,487	Mar. 7	53	.....	21	647
Levy, Samuel, Denver, Colo. Preparation of yeast	255,176	Mar. 21	996	.....	21	812
Lewis, Albert C., Brooklyn, N. Y. Insulator for electrical conductors	255,809	Apr. 4	61	16	21	961
Lewis, Alden J., Bradford, Pa. Valve for oil and water wells	255,523	Mar. 28	1366	368	21	892
Lewis, Benjamin B., Bristol, Conn. Clock-movement	258,588	Jan. 17	1098	306	21	199
Lewis, Benjamin B., Bristol, Conn. Clock-movement	258,589	Jan. 17	1099	306	21	199
Lewis, Benjamin B., West Stratford, Conn. Bottle-stopper attachment	254,345	Feb. 28	1407	387	21	610
Lewis, Curtis H., Indianapolis, Ind. Core-box	254,630	Mar. 14	476	128	21	726
Lewis, Frank W. (See Seagrave and Lewis.)						
Lewis, George T. (See Menzies, William J., assignor.) (Reissue.)	259,026	June 6	193	.....	21	1727
Lewis, George T., Philadelphia, Pa. Manufacture of oxides of lead	251,903	Jan. 3	271	74	21	48
Lewis, George W., Frankford, Pa. Toy furniture						
Lewis, H. M., *et al.*, trustees. (See Radd, Charles H., assignor.)						
Lewis, James, Safe Harbour, Arbor Square, county of Middlesex, England. Combined air and gas burner	255,875	Apr. 4	147	40	21	975
Lewis, John D., Columbus, Kans. Car-coupling	257,347	May 2	946	69	21	1395

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lewis, John L., Pittsburgh, Pa. Mold for casting metals	254,346	Feb. 28	1408	387	21	610
Lewis, Mortimer G., Lowville, assignor of one-half to J. R. Mulford, New York, N. Y. Fence-post	251,904	Jan. 3	272	74	21	48
Lewis, Samuel, assignor of one-half to A. W. Hamaker, Louisville, Ky. Toy	256,010	Apr. 4	321	84	21	1094
Lewis, Tristram S. (See Ricker and Lewis.)						
Lewis, Whitsel. (See Bruner and Lewis.)						
Lewthwaite, Alexander, *et al.* (See Evans, George R., assignor.)						
Ley, Francis, Vulcan Iron Works, Derby, England. Sand molding machine	257,030	Apr. 25	1548	{430 440}	21	1946
Ley, Rudolph, Arnstadt, Germany. Adjustable table and driving mechanism for sewing-machines	256,338	Apr. 11	748	205	21	1084
Leyden, Austin, Atlanta, Ga. Car-coupling	253,309	Feb. 7	252	73	21	369
Leyden, Austin, Atlanta, Ga. Baling-press	259,561	June 13	856	236	21	1858
Lidford, Thomas H., Brooklyn, N. Y. Coal-chute	260,104	June 27	1557	420	21	1982
Lidrea, Christopher, assignor to himself and R. Jackson, Lafayette, Ind. Grain-binder	253,167	Jan. 31	1634	504	21	333
Liebenroth, Von Auw & Co., A. (See Rase, Edward, assignor.)						
Liebig, Gustav A. (See Gibbons and Liebig.)						
Liebmann, Adolf, Bonn, Prussia, Germany. Manufacture of the higher homologues of phenol, naphthol, and resorcin	259,788	Jan. 24	1317	.....	21	242
Life, Abraham, New Hampden, Va. Cockle-machine	260,212	June 27	1601	457	21	2002
Light, Barnet E. (See Burrows, Joseph H., assignor.)						
Lightburne, Stafford, Jr., assignor of one-half to J. R. McKenzie, San Francisco, Cal. Pipe-coupling	255,523	Mar. 28	1367	368	21	892
Lightcap, Leonard L., Hazel Green, Wis. Gate-latch	256,577	Apr. 18	1033	292	21	1145
Lightcapp, Caroline K., Philadelphia, Pa. Under-garment for infants	259,877	June 20	1256	357	21	1927
Ligowsky Clay Pigeon Company. (See Ligowsky, George, assignor.)						
Ligowsky Clay Pigeon Company. (See Ligowsky, George, assignor.) (Reissue.)						
Ligowsky, George, assignor to Ligowsky Clay Pigeon Company, Cincinnati, Ohio. Target-trap	258,230	Jan. 10	664	187	21	191
Ligowsky, George, assignor to Ligowsky Clay Pigeon Company, Cincinnati, Ohio. Flying target	256,227	Apr. 11	611	166	21	1050
Ligowsky, George, assignor, by mesne assignments, to Ligowsky Clay Pigeon Company, Cincinnati, Ohio. Flying target. (Reissue)	10,122	May 23	1719	486	21	1611
Lillie, S. Morris, Philadelphia, Pa. Sugar centrifugal machine	252,783	Jan. 24	1318	{369 370}	21	242
Linck, Emil J., Baltimore, Md. Chart for drafting garments	252,388	Jan. 17	864	{340 341}	21	180
Linck, George W., Kansas City, Mo. Tire-tightener and spoke-extractor	251,905	Jan. 3	273	74	21	48
Lincoln, Albert L., Bethel, Vt. Nut-lock	255,891	Apr. 4	62	17	21	961
Lincoln, Horatio B., *et al.* (See Stanwood, John B., assignor.)						
Lincoln, Perley, Coldwater, Mich. Vehicle-wheel	254,145	Feb. 28	1181	330	21	571
Lindan, J. W., *et al.* (See Stowell, William J., assignor.)						
Linden, William. (See Purves, William B., assignor.)						
Lindenmeier, William. (See Ryan, Thomas C., assignor.)						
Lindenthal, Max. (See Heinig and Lindenthal.)						
Lindgren, August, assignor of two-thirds to Moline Plow Company, Moline, Ill. Sulky-plow	254,558	Mar. 7	134	33	21	661
Lindler, Hezekiah N., Pine Ridge, S. C. Tire-tightener	256,330	Apr. 11	749	205	21	1084
Lindner, George, Canandaigua, N. Y., and J. Dorsch, Milwaukee, Wis. Feed-strainer	258,983	Jan. 31	1482	409	21	273
Lindsay & McCutcheon. (See Browning, Clinton, assignor.)						
Lindsay, William A., assignor of one-half to C. E. Furman, New York, N. Y. Illuminating tile-plate	259,768	June 20	1135	301	21	1905
Lindsey, Hosea, assignor of one-half to E. H. Merrimon, Asheville, N. C. Corn and cotton cultivator	251,784	Jan. 3	118	34	21	23
Lindsey, Samuel, Jr., Bristol, R. I. Rubber boot or shoe	257,140	May 2	30	10	21	1396
Lindsley, William D., Reno County, Kans. Attachment for plows	256,804	Apr. 18	1290	356	21	1189
Ling, Lewis E. (See Stone and Ling.)						
Link, Christian C., New York, N. Y. Child's blouse	258,446	May 23	1604	454	21	1580
Link, William, Newark, assignor to himself and A. Conkling, Elizabeth, N. J. Bracelet	256,438	Apr. 11	867	249	21	1104
Linn, Sylvester J., Mondamin, assignor of one-half to S. W. Holden, Magnolia, Iowa. Mechanical heating apparatus	257,729	May 9	736	205	21	1418
Linney, John H., San Francisco, Cal. Steam cooking apparatus	258,884	Jan. 31	1483	409	21	273
Linscott, Willard, West Auburn, Me. Shoe	255,438	Mar. 28	1363	340	21	875
Linton, Harvey, Allegheny, Pa. Electrical governor	256,238	Apr. 11	612	{166 167}	21	1050
Linton, P. & A. (See Johnson, Willet A., assignor.)						
Lippitt, Andrew C., New London, Conn. Apparatus for treating and reducing ores, &c	259,769	June 20	1136	301	21	1905
Lippa, John S., deceased, (A. S. Sullivan, administrator,) New York, N. Y. Racking-bung	253,932	Feb. 21	926	258	21	580
Liscomb, William S., Providence, R. I. Back for piano-stools	256,711	Apr. 18	1003	286	21	1175
Lisle, Jacob B., assignor to himself and W. J. Irwin, Springfield, Ohio. Cotton-chopper	259,770	June 20	1136	301	21	1906
Litchfield, Harvey T. (See Renshaw, David, assignor.)						
Litchfield, Harvey T., *et al.* (See Renshaw and Tower, assignors.)						
Litchfield, Harvey T., *et al.* (See Tower, George B. N., assignor.)						
Litchfield, Harvey T., Hull, and D. Renshaw, Cohasset, Mass. Burning hydrocarbons	251,785	Jan. 3	118	34	21	23
Litchfield, Harvey T., Hull, assignor of one-half to D. Renshaw, Cohasset, Mass. Utilizing exhaust-steam	259,323	June 13	556	146	21	1797
Litchfield, Harvey T., Hull, and D. Renshaw, Cohasset, Mass. Utilizing exhaust-steam	258,932	June 6	78	20	21	1708
Litchfield, Harvey T., Hull, and D. Renshaw, Cohasset, Mass. Utilizing waste steam	258,933	June 6	79	20	21	1708
Litchfield, Harvey T., Hull, and D. Renshaw, Cohasset, Mass. Utilizing exhaust	260,033	June 27	1467	396	21	1988
Litchfield, Harvey T., Hull, and D. Renshaw, Cohasset, Mass. Utilizing exhaust-steam	260,034	June 27	1469	396	21	1989
Little, Ellis, New York, N. Y. Bridle-bit	254,406	Mar. 7	367	71	21	684
Little, George, Passaic, N. J. Electro-magnetic motor	259,404	June 13	659	174	21	1817
Little, John. (See Smith, John, assignor.)						
Little, Samuel. (See Gurney, J. Theodore, assignor.)						
Little, William J., Stockton, Cal. Train-beat	254,878	Mar. 14	532	142	21	736
Littlejohn, William, New Orleans, La. Bagasse-furnace. (Reissue)	9,996	Jan. 3	395	{166 167}	21	68
Littleton Patent Button Company. (See Parker, Silas O., assignor.)						
Livermore, Charles F. (See Bartlett and Waite, assignors.)						
Livermore, Charles F. (See Waite, Henry E., assignor.)						
Livesey, James, Westminster, and J. Kidd, St. Bride's Street, Ludgate Circus, London, county of Middlesex, England. Manufacturing naphthaline into a form for carbureting	258,778	May 30	2010	567	21	1669
Livingston, Henry S., Cincinnati, Ohio. Cyclometer	259,582	June 13	857	227	21	1852

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Livingstone, William, assignor to himself and L. W. Maires, New York, N. Y. Box	252,389	Jan. 17	866	241	21	160
Livor, John, assignor, by mesne assignments, to M. A. Livor, New York, N. Y. Combined label, guide-slip, and wrapper for bottles	257,136	Apr. 25	1697	475	21	1270
Livor, Mabala A. (See Livor, John, assignor.)						
Lizars, John S. (See Shields, Charles H., assignor.)						
Lloyd, Alvin, Allerton, Iowa. Fly-fan	252,885	Jan. 31	1463	409	21	272
Lloyd, Edwin L., Philadelphia, Pa. Adjustable window-screen	257,348	May 2	247	70	21	1325
Lloyd, George E., Chicago, Ill. Stereotype-shaving machine	256,490	Apr. 18	946	265	21	1131
Lloyd, James, *et al.* (See Strong, Henry C., assignor.)						
Lloyd, Llewellyn H., *et al.* (See Strong, Henry C., assignor.)						
Loane, Henry E., Baltimore, Md. Laying subterranean conductors	252,956	Jan. 31	1551	432	21	288
Lochmann, Paul, Schkendita, Prussia, Germany. Atomizer	254,988	Mar. 14	682	183	21	763
Lochner, Casper F., Jefferson, assignor, by mesne assignments, to F. Sterne, Houston, Tex. Spark-arrester. (Reissue)	10,093	Apr. 25	1710	479	21	1272
Locke, Charles S. (See Holub, Frank, assignor.)						
Locke, Elias H., assignor of one-half to F. Baltzell, Troy, Ala. Dentist's flask	258,858	May 30	2094	591	21	1684
Locke, Nathaniel C., Salem, Mass. Steam globe-valve	256,109	Apr. 4	438	119	21	1024
Locke, Nathaniel C., Salem, Mass., assignor, by mesne assignments, to Locke Regulator Company, of Connecticut. Steam and water pressure regulator. (Reissue)	10,018	Jan. 31	1844	508	21	334
Locke Regulator Company. (See Locke, Nathaniel C., assignor.) (Reissue.)						
Locke, Sylvanus D., Hoosick Falls, N. Y. Harvester-binder	251,906	Jan. 3	274	74, 75	21	48
Locke, Sylvanus D., Hoosick Falls, N. Y. Grain-binder	252,482	Jan. 17	964	274	21	179
Locke, William C. (See Boynton and Locke.)						
Lockhart, George, Tarrytown, N. Y. Tobacco-pipe	260,105	June 27	1558	420	21	1992
Lockwood, Byron H., assignor to Yale Lock Manufacturing Company, Stamford, Conn. Knob attachment	252,682	Jan. 24	1208	338	21	224
Lockwood, Charles S. (See Hyatt and Lockwood.)						
Lockwood, Charles S., assignor to Bonsilate Company, (limited,) Albany, N. Y. Plastic composition for the cores of billiard-balls and for other purposes	259,878	June 20	1259	.....	21	1927
Lockwood, Frederic A., Boston, Mass. Machine for scouring, setting, or glassing leather	258,659	May 30	1865	526, 527, 528	21	1645
Lockwood, James F., Philadelphia, Pa. Tinman's furnace	258,779	May 30	2011	567, 568	21	1669
Lockwood, John S., *et al.* (See Gebhard, Julius, assignor.)						
Lockwood, Rhodes, Charlestown, Mass. Atomizer	251,720	Jan. 3	38	11	21	9
Lockwood, Robert M., assignor to Molecular Telephone Company, New York, N. Y. Receiver for telephones	256,906	Apr. 25	1426	401	21	1221
Lockwood, Robert M., assignor to Molecular Telephone Company, New York, N. Y. Receiver for telephones	256,907	Apr. 25	1427	401	21	1222
Lockwood, Thomas D., Malden, Mass. Electrical signaling-circuit	258,934	June 6	80	21	21	1708
Lockwood, William C., assignor, by mesne assignments, to Long Distance Electric Call Company, Brooklyn, N. Y. Electric call for telephones and other purposes	258,392	Jan. 17	784	218	21	146
Lodge, Iven, Russell, Iowa. Sulky-plow	257,502	May 9	443	123	21	1366
Loeffelholz, Adam, Milwaukee, Wis. Car-seat lock	254,226	Feb. 28	1273	353	21	587
Loewenstein, Casper, Columbus, Ohio. Sash holder and frame	260,213	June 27	1693	457	21	2003
Loewenthal, Marcus, New York, N. Y. Button	255,640	Mar. 28	1509	405	21	919
Loftus, Thomas J., Sacramento, Cal. Bushing for barrels	254,667	Mar.	969	71	21	684
Logan, Horace A., and F. R. Wright, Lathrop, Mo. Running gear for vehicles	252,886	Jan. 31	1464	410	21	273
Logan, Thomas H., assignor of one-half to F. Taylor, Lowell, Mass. Awl	253,729	Feb. 14	659	188	21	468
Lodges, John, Delphos, Kans., assignor, by mesne assignments, of one-half to K. S. Evans, Springfield, Ohio. Corn-planter	257,876	May 16	905	252	21	1459
Loiseau, Eugene V. A. (See Leblanc and Loiseau.)						
Lojda, Ignatz, New York, N. Y. Cloak	259,324	June 13	557	146	21	1798
Lomas, John R., West Haven, Conn. Clock-case	256,340	Apr. 11	750	205	21	1024
Lomas, John R., West Haven, Conn. Coupler for organs	258,780	May 30	2013	568	21	1669
Lomb, Carl F., and E. Bausch, Rochester, N. Y. Trichinoscope	251,721	Jan. 3	39	11	21	9
Lonergan, John E., Philadelphia, Pa. Oil-cup for steam-engines	256,229	Apr. 11	617	167	21	1060
Long, Alexander, Bairdstown, Ohio. Circular-saw jointer	256,011	Apr. 4	322	84	21	1004
Long, Alexander, Bairdstown, assignor of one-half to A. D. McClure, Gilboa, Ohio. Tool-holder	259,405	June 13	661	175	21	1817
Long Distance Electric Call Company. (See Lockwood, William C., assignor.)						
Long, George S., assignor, by mesne assignments, to P. J. Darcy, Hartford, Conn. Basket, &c.	255,177	Mar. 21	927	247	21	812
Long, James, Wyandotte, Kans. Steam-boiler	256,489	Apr. 18	945	264	21	1131
Long, John M., Hamilton, Ohio. Cultivator-spring	256,012	Apr. 4	322	85	21	1004
Long, John M., and C. E. McBeth, Hamilton, Ohio. Punching-machine	252,111	Jan. 10	527	146	21	98
Long, Leander, and E. M. Richardson, New Castle, Pa. Nut-lock	256,149	Apr. 11	501	137	21	1041
Long, Leslie, Sublette, Ill. Car-coupling	258,066	May 16	1153	323	21	1503
Long, Natham H., assignor of one-half to W. B. Kline, Muncie, Ind. Automatic gate	259,027	June 6	194	51, 52	21	1797
Long, Oliver, assignor to M. H. Hagerty, Brooklyn, N. Y. Filter	260,105	June 27	1560	420	21	1992
Long, Samuel B., Shellsburg, Pa. Brake-shoe	259,179	June 6	376	99	21	1760
Long, Samuel N., West Harwich, Mass. Fishing apparatus	257,597	May 9	589	162	21	1389
Long, Thomas, Boston, Mass. Centrifugal drying-machine	252,483	Jan. 17	966	274	21	179
Longman, George W., Paterson, N. J. Drilling-machine	254,081	Feb. 21	1047	292	21	541
Longman, George W., Paterson, N. J. Tapping and drilling machine	259,406	June 13	662	175	21	1817
Longmore, Alfred. (See Pretzman, Adams, and Longmore.)						
Longstreet, Christopher S., New York, N. Y. Automatic safety-brake for elevators	256,013	Apr. 4	323	85	21	1004
Longstreet, J. Holmes, Hoboken, N. J., and J. E. Wright, assignors of one-half to J. G. Moore, New York, N. Y. Printing-telegraph	257,877	May 16	906	253, 254	21	1459
Loomer, Andrew F., *et al.* (See Church, Dwight M., assignor.)						
Loomer, Lyman H., *et al.* (See Church, Dwight M., assignor.)						
Loomis, Charles A. (See Hathaway and Loomis.)						
Loomis, Edwin S., Washington, D. C. Bank-check	255,641	Mar. 28	1510	406	21	919
Loomis, George P., Utica, N. Y. Wood-turning machine	251,907	Jan. 3	277	76	21	48
Loomis, Kellogg H., assignor to J. Van Nest, New York, N. Y. Apparatus for preserving eggs	253,074	Jan. 31	1705	470, 471	21	312
Loper, Richard F. W., assignor to himself and C. McKeone, Philadelphia, Pa. Illuminating-candle	258,500	Jan. 17	1100	307	21	199
Lopez, Elmer & Co. (See Gorenflo, William, assignor.)						
Lorch, Ernest P., New York, N. Y. Cutter-head	257,349	May 2	248	70	21	1325
Lord, George W., Boston, Mass. Shuttle-driver for sewing-machines	252,045	Jan. 10	452	124	21	85
Lord, Henry S., and R. E. Day, assignors to Hartford Sanitary Plumbing Company, Hartford, Conn. Drip-tray for water-closets	254,666	Mar. 7	269	71	21	684

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lord, Horace, assignor to Colts Patent Fire-Arms Manufacturing Company, Hartford, Conn. Mechanical movement	252,231	Jan. 10	665	187, 188	21	121
Lord, Peter, assignor of two-thirds to E. Mignault and J. B. Vinet, Montreal, Quebec, Canada. Hay-press	253,536	Feb. 14	431	121	21	438
Lorensen, Immanuel, assignor to Peerless Wire Mattress Company, Hartford, Conn. Device for stretching bed-bottoms	257,598	May 9	561	169	21	1369
Lorillard & Co., P. (See Hearn, Edwin R., assignor.)						
Lorillard, Jacob, trustee. (See Massey, Gideon B., assignor.)						
Loring, Sanford R., Castleton, Vt., assignor to T. A. Johnston, Boston, Mass. Porous penetrable tile for plastering, &c. (Reissue)	10,039	Feb. 7	368	.....	21	402
Loth, Henry. (See Beisner, Joseph, assignor.)						
Loth, Henry, Philadelphia, Pa. Commode	256,067	May 16	1154	323	21	1503
Loth, Peter, and J. Sindic; said Sindic assignor to T. Miller, New York, N. Y. Illuminated mirror	259,592	Jan. 17	1092	304	21	197
Lothrop, Chauncey M., assignor to S. C. Davis, Norwood, and J. F. Freese, East Walpole, Mass. Blackboard-eraser	254,694	Feb. 21	1116	319	21	553
Lothrop, Henry O., assignor to W. H. Lothrop, Boston, Mass. Wire ferrule	254,559	Mar. 7	136	34	21	661
Lothrop, Horace A. (See Bullock, William F., assignor.)						
Lothrop, William H. (See Lothrop, Henry O., assignor.)						
Lottier, Lawrence, Richmond, Va. Machine for drying tobacco	257,631	Apr. 25	1589	440	21	1247
Lottridge, William, assignor of two-thirds to M. V. Nichols and C. H. Cotter, Osage, Iowa. Grain-binder	254,879	Mar. 14	533	142, 143, 144, 145	21	736
Lots, William F., *et al.* (See Marchant, Robert M., assignor.)						
Lots, William H., *et al.* (See Holmes, Ebenezer, assignor.)						
Lots, William H., *et al.* (See Roberts, Elias, assignor.)						
Lotz, William H., assignor of one-half to E. Baumann, Chicago, Ill. Grain-elevator	257,446	May 2	360	101	21	1346
Loud, Henry M., Oscoda, Mich. Log feeder and turner	257,032	Apr. 25	1570	440	21	1247
Louder, Joel H., Chicago, Ill. Egg-carrier	259,696	June 20	1035	276	21	1899
Lount, Samuel D., Phœnix, Aris. Ter. Manufacture of ice	259,697	June 20	1037	276	21	1899
Love, John C. (See Snediker, James F., assignor.)						
Lovell, Melvin N., Erie, Pa. Clothes-wringer	253,537	Feb. 14	433	122	21	438
Lovett, James A. B., Huntsville, Ala. Laundry-cushion	254,880	Mar. 14	543	145	21	736
Low, Alvin H. (See Thomas, Enos M., assignor.)						
Low, Charles H., assignor of one-half to J. P. Adams, Sandwich, Ill. Drive-chain	259,609	Jan. 24	1121	314	21	909
Low, Charles H., assignor of one-half to J. P. Adams, Sandwich, Ill. Drive-chain	256,014	Apr. 4	324	85	21	1004
Low, Frank S. (See Low, Jesse B., assignor.)						
Low, Jesse B., assignor of one-half to F. S. Low, Pulaski, N. Y. Electrical connection for railway-trains	258,859	May 30	2085	591	21	1685
Lowden, Thomas, Lowell, Mich. Drag-saw	259,879	June 20	1260	337	21	1927
Lowe, Caroline M. (See Lowe, John, assignor.)						
Lowe, John, assignor to C. M. Lowe, Clinton, Mass. Folding comb	257,033	Apr. 25	1571	440	21	1247
Lowe, Joseph A., assignor of one-fourth to A. R. Smith, Gainesville, Tex. Back-band buckle	256,805	Apr. 18	1309	368	21	1192
Lowe, Will J., Grand Rapids, Mich. Spring bed-bottom	254,631	Mar. 14	477	128	21	738
Lowe, William T. J., Buffalo, N. Y. Spoon-bait for fishing	256,843	Apr. 25	1358	361	21	1360
Lowell, John P., *et al.* (See Haynes, Edgar E., assignor.)						
Lowell, Seth W., Hume, N. Y., assignor to Steam Heat Evaporator Company, Charlotte, Mich. Steam-heat evaporator	254,669	Mar. 7	270	72	21	684
Lowell, Seth W., Hume, N. Y., and F. A. Hooker, assignors to Steam Heat Evaporator Company, Charlotte, Mich. Apparatus for bleaching fruit	256,341	Apr. 11	750	206	21	1064
Lowell, Seth W., Hume, N. Y., assignor of two-thirds to F. S. and J. B. Belcher, Charlotte, Mich. Steam vegetable and fruit evaporator	258,536	May 23	1710	483	21	1600
Lowen, John H., assignor of one-half to J. A. Newman, Chicago, Ill. Tuning attachment for piano-fortes	258,935	June 6	92	21	21	1708
Lowenherz, Ludwig, New York, N. Y. Bag or satchel	253,614	Feb. 14	514	147	21	444
Lowerre, Thomas R., New York, N. Y. Cork for bottles	251,998	Jan. 3	279	76	21	49
Lownes, Robert W., Denison, Iowa. Spring bed-bottom	257,170	May 2	31	10	21	1326
Lowrey, John M., La Grange, Ga. Velocipede	258,447	May 23	1605	454	21	1600
Lowry, George A., and M. Crawford, Indianapolis, Ind. Apparatus for catching and suspending hogs	259,119	Jan. 10	998	146	21	98
Lowry, R. J., *et al.* (See Bradley, George H., assignor.)						
Lowther, Lorenzo D., Seguin, Tex. Windmill	259,563	June 13	656	227	21	1858
Lowthorp, Francis C., Chambersburg, N. J. Turn-table	254,670	Mar. 7	271	72	21	684
Loy, Perry A. (See Pike and Loy.)						
Lubin, David, Sacramento City, Cal. Shoe	255,301	Mar. 21	1069	294	21	840
Lubin, David, Sacramento City, Cal. Bottle and bottle attachment	255,642	Mar. 28	1511	406	21	919
Lubin, David, Sacramento City, Cal. Cuff-button	256,015	Apr. 4	325	86	21	1004
Lubin, David, assignor of one-half to H. Weinstock, Sacramento City, Cal. Pocket	257,350	May 2	249	70	21	1326
Lubin, David, assignor of one-half to H. Weinstock, Sacramento City, Cal. Pin	257,351	May 2	251	71	21	1326
Lubin, David, assignor of one-half to H. Weinstock, Sacramento City, Cal. Envelope	257,352	May 2	251	71	21	1326
Lubin, David, assignor of one-half to H. Weinstock, Sacramento City, Cal. Reversible shirt	258,660	May 30	2087	592	21	1685
Lubin, David, assignor to H. Weinstock, Sacramento City, Cal. Envelope	258,661	May 30	2088	592	21	1685
Luby, Thomas S., Baltimore, Md. Cigar	258,761	May 30	2014	568	21	1669
Lucas, Andrew H., assignor of one-half to L. F. Prince, St. Louis, Mo. Iron fence-post	257,599	May 9	561	169	21	1369
Lucas, James R., Tybo, Nev. Guide for the stems of stamp-mills	257,353	May 2	252	71	21	1326
Luce, Eugene E., *et al.* (See France, David, assignor.)						
Lucia, Joel, Little Suamico, Wis. Log-roller for saw-mills	254,671	Mar. 7	273	72	21	685
Lück, John J., Ripon, Wis. Barrel	256,491	Apr. 18	948	265	21	1131
Luckey, Charles F., *et al.* (See Mayhew, Theophilus, assignor.)						
Ludlow, Abraham R. (See Thomas and Ludlow.)						
Ludlow, George M., Chicago, Ill. Adjusting device for leather-skiving machines	256,844	Apr. 25	1353	362	21	1200
Ludwig, John C., assignor to C. W. Banks, San Francisco, Cal. Basin-plug	251,788	Jan. 3	190	34	21	23
Ludwig, Walter K. (See Kelly and Hoffman, assignors.)						
Lueckel, August, Brooklyn, N. Y. Picture-exhibitor	253,730	Feb. 14	660	189	21	468
Luessen, Claus, Celle, near Hanover, Germany. Feed mechanism for sewing-machines	253,731	Feb. 14	660	188, 189	21	469
Lufkin, Edwin, Monroe, Me. Lantern-holder	260,303	June 27	1803	489	21	2021
Lugenbell, Peter, Greensburg, Ind. Side-bar vehicle	259,909	June 20	1261	337	21	1927
Lugmayr, Louis C., assignor of two-thirds to J. A. and I. G. Crowell, Water Valley, Miss. Valve-operating mechanism	256,683	Jan. 24	1209	338	21	224
Lugo, Orazio, New York, N. Y. Manufacturing illuminating-gas	257,447	May 2	361	.....	21	1346

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Lukens, John F., West Mansfield, Ohio. Automatic gate attachment	257,966	May 16	1001	279	21	1475
Lumpkin, George J. (See Adcock, Lumpkin, and White.)						
Lund, Henry O., Bridgeport, Conn. Lathe-tool	255,083	Mar. 14	808	216	21	765
Lundqvist, Alexius T., New York, N. Y. Pin-ticket	256,349	Apr. 11	751	206	21	1085
Längen, Adam, New York, N. Y. Electrical annunciator	258,547	May 23	1711	483	21	1669
Lunkenheimer, Frederick, Cincinnati, Ohio. Globe-valve. (Reissue)	10,010	Jan. 17	1105	308	21	900
Luppen, Luppe, Pekin, Ill. Harrow	255,876	Apr. 4	149	40	21	975
Luppen, Luppe, Pekin, Ill. Cultivator	255,877	Apr. 4	150	40	21	975
Luppert, George, Williamsport, Pa. Machine for making rail-pieces for bureaus, &c	259,180	June 6	377	99	21	1760
Lupton, Thomas N., Winchester, Va. Shutter-worker	252,784	Jan. 24	1398	371	21	243
Lusk, Albert, San Francisco, Cal. Soldering apparatus	251,900	Jan. 3	980	76	21	49
Luther, Benjamin G., Hebronville, Mass., assignor to F. W. Sawyer, Providence, R. I., and C. A. Sawyer, Malden, Mass. Bevel saw-table gage	255,308	Mar. 21	1089	294	21	840
Luther, Edward A. & William H. (See Sprague, James H., assignor.)						
Luther, Jonathan. (See Vermilyea and Norris, assignors.)						
Luther, Ormel R., Torrington, Conn. Roller-skate	252,484	Jan. 17	987	274	21	179
Luttgens, Henry A., Paterson, N. J. Whiffletree-coupling	257,171	May 2	31	11	21	1286
Luttgens, Henry A., Paterson, N. J. Thill-coupling	260,107	June 27	1561	421	21	1962
Luts, W. Clay, Bedford, assignor of one-half to J. Du Bois, Everett, Pa. Scoop or shovel	259,407	June 13	663	175	21	1817
Luyties, Gerhard and H. E. G., New York, N. Y. Device for securing corks in bottles	257,600	May 9	588	162	21	1369
Luyties, Henry E. G. (See Luyties, Gerhard and H. E. G.)						
Lyman, Arthur W., Brooklyn, N. Y. Can-opener	254,488	Mar. 7	54	13	21	647
Lyman, F. A., *et al.* (See Maxim, Hiram S., assignor.) (Reissue.)						
Lyman, Fordyce A. (See Whittingham and Lyman.)						
Lyman, Henry W., *et al.* (See Trapp, Charles, assignor.)						
Lyman, William H. (See Hussey and Lyman.)						
Lynch, Edward P., Davenport, Iowa. Cultivator	257,298	May 2	99	28	21	1298
Lynch, Edward P., Davenport, Iowa. Cultivator	257,299	May 2	101	28	21	1298
Lynch, Edward P., Davenport, Iowa. Wheel-cultivator	257,730	May 9	739	{205 206}	21	1418
Lynch, Edward P., Davenport, Iowa. Harrow	258,782	May 30	2015	508	21	1669
Lynch, John, Portland, Me. Process of and apparatus for drying lumber	259,986	June 20	1409	379	21	1952
Lynde, Francis G. (See Leeming, Ray, and Lynde.)						
Lynn, William H. H., and G. W. Eyler, Staunton, Va. Cornstalk cutter and crusher	257,731	May 9	741	206	21	1418
Lyon, Charles C., Altoona, Pa. Hat-holder	256,343	Apr. 11	752	406	21	1085
Lyon, Charles W., Philadelphia, Pa. Cap for cans	253,075	Jan. 31	1707	471	21	312
Lytle, Albert E., *et al.* (See Conant, George P., assignor.)						
Lytle, Andrew J., Hillsborough, Ohio. Sheers	260,035	June 27	1469	396	21	1969
Lytle, William F., *et al.* (See Finley, James R., assignor.)						
Maasch, William, and F. Bertram, Brooklyn, N. Y. Bureau-bedstead	256,712	Apr. 18	1205	{336 337}	21	1175
Macarthy, Charles E., Forsyth, Ga. Car-coupling	254,347	Feb. 28	1409	{387 388}	21	610
Macarthy, Charles E., Forsyth, Ga. Car-coupling	258,068	May 16	1155	324	21	1503
MacConnell, Charles C., U. S. Army. Car-ventilator and dust-arrester	252,390	Jan. 17	867	241	21	100
MacDonald, Alexander F., Winnipeg, Manitoba, Canada. Nut lock	255,439	Mar. 28	1263	341	21	876
MacDonald, Helen M., Boston, Mass. Boot or shoe	260,304	June 27	1804	469	21	2021
MacDonald, John L., Shakopee, Minn. Guard for doors and windows	253,738	Feb. 14	608	169	21	409
MacDonald, John L., and G. E. Sly, Shakopee, Minn. Thrashing-machine	253,874	Feb. 21	848	240	21	508
Macdonald, James, Woodside, N. Y. Hydrostatic leveling-instrument	259,408	June 13	663	176	21	1818
Mace, Alonzo M., Needham, Mass. Steam-cooker	256,230	Apr. 11	618	168	21	1060
Mack, Frank M. (See Rheubottom and Mack.)						
Mackay, Peter, assignor to himself, B. B. Burley, and R. Heys, Glasgow, county of Lanark, Scotland. Auger-making machine	253,076	Jan. 31	1708	{471 472}	21	312
Mackedon, John J., Omaha, Nebr. Safety plug and valve for boiler-fittings	256,344	Apr. 11	753	207	21	1085
Mackel, Thomas, Pawtucket, R. I. Faucet	252,046	Jan. 10	453	124	21	85
Mackenzie, Philip W., Blauvelt ville, N. Y., and H. W. Rappleye, Philadelphia, Pa. Apparatus for burning illuminating-gas	259,881	June 20	1261	338	21	1927
Mackey, John C., New York, N. Y. Coffee-percolator	256,231	Apr. 11	619	168	21	1060
Mackinney, Herbert G., Providence, R. I. Ear-ring	252,610	Jan. 24	1193	315	21	209
Mackintosh, James H., Paterson, N. J. Heater	256,345	Apr. 11	754	207	21	1085
Maclachlan, John, New Orleans, La. Railway-car	256,346	Apr. 11	755	{207 208}	21	1085
Macomber, Zebedee R., assignor of one-half to W. H. Barron, Providence, R. I. Winch	253,733	Feb. 14	663	{189 190}	21	469
Mactear, James, Glasgow, county of Lanark, Scotland. Furnace for chemical purposes	253,734	Feb. 14	664	{189 191}	21	469
Madlener, Philipp, Milwaukee, Wis. Combined bung and bushing for beer-barrels	256,446	May 23	1606	454	21	1591
Madlener, Philipp, Milwaukee, Wis. Bottle-stopper	260,305	June 27	1805	469	21	2021
Madnell, Carlos, New Orleans, La. Reversible chuck-jaw	256,783	May 30	2016	509	21	1670
Magarrell, Thomas Z., assignor to A. P. W. Skinner, Chicago, Ill. Lamp lighter and extinguisher	259,645	June 13	964	257	21	1876
Magee, Frank A. (See Magee, John and F. A.)						
Magee Furnace Company. (See Magee, John, assignor.)						
Magee Furnace Company. (See Magee, John and F. A., assignors.)						
Magee, John, assignor to Magee Furnace Company, Chelsea, Mass. Stove	256,936	June 6	89	21	21	1709
Magee, John and F. A., Chelsea, assignors to Magee Furnace Company, Boston, Mass. Magazine-stove	252,239	Jan. 10	688	188	21	121
Magin, Michael, Rochester, N. Y. Beer-faucet	259,698	June 20	1041	276	21	1690
Mahar, Michael W., Dayton, assignor of one-half to S. Crane, Hamilton, Ohio. Window frame and sash	257,503	May 9	443	123	21	1366
Maher, John P., Reading, Pa. Railway-car	251,787	Jan. 3	120	34, 35	21	23
Maher, John P., assignor of one-half to I. E. Kurtz, Reading, Pa. Lock-hinge for shutters	260,036	June 27	1470	397	21	1969
Maher, Martin, Buffalo, N. Y. Apparatus for unloading vessels	258,537	May 23	1302	365	21	1549
Mahon, Alexander, and W. J. Green, Washington, D. C. Electric gas-lighter	255,594	Mar. 28	1308	368	21	893
Mahony, James, New York, N. Y. Steam-boiler furnace	259,325	June 13	557	146	21	1798
Mahony, Michael, Troy, N. Y. Vapor-burner	252,584	Jan. 17	1094	305	21	198
Main, William H., Boscobel, Wis. Trace-carrier	259,967	June 20	1411	360	21	1952
Maine, Sebeus C., Boston, Mass. Crutch	254,348	Feb. 28	1411	388	21	610
Maires, Lewis W. (See Livingstone, William, assignor.)						
Maison, Léon, assignor to Heller & Bardel, New York, N. Y. Combined finger-ring, lace-pin, and bracelet	257,732	May 9	742	206	21	1419
Major, Eber, Macon County, Ill. Hog-nose ring	252,047	Jan. 10	454	124	21	85
Major, Eber, Macon County, Ill. Hog-ring pinchers	256,713	Apr. 18	1206	337	21	1175

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Major, George F., Brandy Station, Va. Steam-boiler	252,119	Jan. 10	530	146	21	99
Major, Slaughter G., Haymesville, Mo. Grain-drill	258,449	May 23	1697	455	21	1691
Malcre, Alexander. (See Sharpneck, William S., assignor.)						
Mallery, James G. (See Galbraith, William A., assignor.)						
Mallery, Jasper E., *et al.* (See Halladay, William H., assignor.)	253,469	Feb. 7	323	73	21	289
Mallett, Edward J., Jr., New York, N. Y. Apparatus for disinfecting water-closets, &c	258,459	May 23	1696	455	21	1691
Mallett, Edward J., Jr., New York, N. Y. Boiler or other furnace						
Mallett, Edward J., Jr., New York, N. Y. Apparatus for promoting the combustion of fuel in furnaces	258,461	May 23	1699	455	21	1691
Mallett, Edward J., Jr., New York, N. Y. Boiler or other furnace	258,462	May 23	1614	455	21	1692
Mallett, Francis W., Slatington, Pa. Slate-dressing machine	256,016	Apr. 4	395	98	21	1005
Mallinckrodt, John F., assignor of one fifty-second to P. H. Van Diest, Denver, Colo. Car-brake	256,017	Apr. 4	396	97	21	1005
Mallinckrodt, John F., assignor of one fifty-second to P. H. Van Diest, Denver, Colo. Car-brake	256,018	Apr. 4	330	97, 98	21	1005
Mallon, Francis T., Pawcatuck, Conn. Speed-regulator	258,784	May 30	2017	509	21	1670
Mallon, Francis T., Pawcatuck, Conn. Corn-sheller	259,668	June 20	1262	336	21	1927
Mallory, Charles A., Danbury, Conn. Machine for scalding and sticking fur-bats to felt hat-bodies	254,349	Feb. 28	1412	388	21	610
Mallory, D. D. (See Brooks, William D., assignor.) (Reissue.)						
Mallory, Richmond E., West Salem, Ohio. Eaves-trough hanger	258,453	May 23	1613	456	21	1692
Mallory, Stanton H. (See Barstow and Mallory.)						
Malloy, William F., Cleveland, Ohio. Cuspidor	256,492	Apr. 18	949	265	21	1121
Malm, Alexander, Brooklyn, assignor to T. W. & C. B. Sheridan, New York, N. Y. Paper-cutting machine	258,688	May 30	2006	502	21	1668
Malmros, August, Helsingborg, Sweden. Umbrella	257,354	May 2	253	71, 72	21	1288
Malone, Micajah C., Palmyra, Ill. Washing-machine	256,019	Apr. 4	331	88	21	1005
Maloney, Daniel. (See Van Ness and Maloney.)						
Maloney, James A., and F. Berger, assignors to American Electrophore Company, Washington, D. C. Automatic circuit-breaker for secondary batteries	252,004	Jan. 3	302	105	21	67
Maloy, James W., Somerville, Mass. Sole-edge-burnishing machine	259,469	June 13	605	176	21	1818
Maltbie, Paul L., Newark, N. J. Refrigerator	259,669	June 6	196	50	21	1788
Man, Albon. (See Sawyer and Man.) (Reissue.)						
Manchester, Francis L. (See Richardson, John D., assignor.)						
Mander, George, Philadelphia, Pa. Foot-rest	259,663	June 20	1264	336	21	1988
Manhattan Brass Company. (See Hipwell, Thomas, assignor.)						
Manhattan Brass Company. (See White, James H., assignor.)						
Manker, John W. (See Manker, Louis and J. W.)						
Manker, Louis and J. W., Villisca, Iowa. Dental articulator	252,785	Jan. 24	1397	371	21	243
Mann, Adelaide E., Lawrence, Mass. Corset-busk	256,810	May 23	1445	410	21	1563
Mann, Alexander S., *et al.* (See Grah, Emil, assignor.) (Reissue.)						
Mann, Alfred P., Kearney, Nebr. Shear-pad	256,669	May 16	1156	394	21	1503
Mann, Charles A., Buffalo, N. Y. Fence-post	254,350	Feb. 28	1413	388	21	610
Mann, Charles H. T., Methuen, Mass. Cattle-fastener	257,172	May 2	32	11	21	1286
Mann, Daniel, West Winfield, N. Y. Grain-scourer	258,048	Jan. 10	454	125	21	85
Mann, Ernest S., Brockton, Mass. Treadle mechanism	256,732	Mar. 28	1088	{439 440}	21	940
Mann, Henry F., Pittsburg, Pa. Breech-loading ordnance	257,830	May 2	188	89, 90	21	1290
Mann, Henry F., Pittsburg, Pa. Breech-loading ordnance	257,893	May 9	836	{323 324}	21	1437
Mann, John, *et al.* (See Allen, Alfred W., assignor.)						
Mann, William M., Helena, Mont. Ter. Girth attachment for saddle-trees	253,401	Feb. 7	254	73	21	389
Manning, George O., *et al.*, trustees. (See Jennings, Ralph S., assignor.) (Reissue.)						
Manning, George O., *et al.*, trustees. (See Martien, William, assignor.)						
Manning, Mark S., Jr., Brooklyn, N. Y. Air-compressor	256,232	Apr. 11	690	188	21	1060
Mansfield, Edward, Orono, Me. Cant-dog	259,564	June 13	659	288	21	1852
Mansfield, Luther E., and M. D. Moore, assignors of three-fourths to S. Bromberg and S. H. Mildenberg, Brooklyn, N. Y. Elevated railway	257,084	Apr. 25	1572	441	21	1947
Mansur, Charles F., Weston, Vt. Self-regulating feeder for saccharine liquids	256,454	May 23	1613	454	21	1708
Manta, Cyrus, Washington, D. C. Trunk	256,578	Apr. 18	1034	288	21	1145
Manville & Clark. (See Messer, Horace W., assignor.)						
Mappes, John, Cincinnati, Ohio. Beer-faucet	256,020	Apr. 4	332	88	21	1006
Marais, Fidèle F. N., New York, N. Y. Fruit-press	252,233	Jan. 10	689	189	21	122
Maranville, Egbert L., Rutland, Vt. Mechanical movement for churns	258,338	May 23	1388	385	21	1549
March Brothers, Pierce & Co. (See Barker, Joseph G., assignor.)						
March, George, *et al.*, executors. (See Thompson and Williamson.)						
Marchant, George W. (See Plumb and Marchant.)						
Marchant, Robert M., Clerkenwell, county of Middlesex, assignor of one-half to J. Suter, W. F. Lotz, London, and W. Downie, Southampton Buildings, Chancery Lane, county of Middlesex, England. Apparatus for condensing steam	259,669	June 6	196	52, 53	21	1788
Marchester, Henry, Wallaceburg, Ontario, Canada. Car-coupling	257,678	May 16	910	254	21	1489
Marcus, Morris, New York, N. Y. Garment-supporter	253,615	Feb. 14	515	148	21	444
Marcy, Frederick I. (See Phillips, Ansel P., assignor.)						
Marggraff, Fredrick, Waterbury, Conn. Feeding device for punching-machines	252,788	Jan. 24	1398	{371 372}	21	244
Maria, Marie J. L., St. Pierre, Martinique, West Indies. Bagasse-furnace	254,351	Feb. 28	1414	389	21	611
Maria, Jared, Wilkesville, Ohio. Wagon-spoke	253,677	Jan. 31	1711	473	21	313
Mark and Martinek Manufacturing Company. (See Mark and Martinek, assignors.) (Reissue.)						
Mark, Henry J., and W. F. Martinek, assignors to Mark and Martinek Manufacturing Company, St. Louis, Mo. Bottle-wrapper. (Reissue)	10,009	Apr. 4	440	119	21	1004
Marker, Stephen A., Hartford, assignor to Holmes, Booth & Haydens, Waterbury, Conn. Rivet for belts, &c	251,788	Jan. 3	122	35	21	23
Marker, Stephen A., assignor to J. W. Gray, Hartford, Conn. Driving-rein holder or button	256,714	Apr. 18	1205	337	21	1175
Markland, Charles F., Pittsburg, Pa. Cuspidor	257,137	Apr. 25	1698	475	21	1870
Markland, Charles F., Pittsburg, assignor to himself and S. S. Marvin, Killbuck township, Allegheny county, Pa. Combined cracker and grocer's can	256,806	Apr. 18	1200	306	21	1193
Markland, William H., Brooklyn, assignor to J. E. Chandler and A. G. Wheeler, New York, N. Y. Telegraphic receiving-instrument	260,206	June 27	1805	499	21	2021
Marks, Bernhard, Fresno, Cal., assignor to A. B. Smith, New York, N. Y. Nut and bolt lock	255,902	Apr. 4	68	17	21	961
Marks, James F., Crawfordsville, Ind. Exhaust-nozzle	254,146	Feb. 28	1182	330	21	571
Marks, Matthew R., Orlando, Fla. Foundation-block for buildings	254,469	Mar. 7	55	14	21	647
Marks, Walter, Chagrinville, N. Y. Fertiliser-distributer	259,326	June 13	559	147	21	1798

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Marland, Alfred, assignor to himself and T. Neely Pittsburg, Pa. Nut-machine	257,138	Apr. 25	1699	476	21	1270
Marley, James H. (See Harrison and Marley.)						
Marmaduke, William C., Potomac Mills, Va. Mail budget or pouch	259,410	June 13	666	176	21	1818
Marmon, Daniel W., Indianapolis, Ind., assignor to Nordyke & Marmon Company, of Indiana. Wheat-heater	257,139	Apr. 25	1701	476	21	1270
Marold, William E., Terre Haute, Ind. Hair-tonic	259,884	June 20	1964	.....	21	1928
Marsh, Eben J., *et al.* (See Moore, Daily S., assignor.)						
Marsh, George H., and H. E. Bedell, Paterson, N. J. Cigar-cutter	253,301	Feb. 7	139	40	21	370
Marsh, Harry A. (See Marsh, James S., assignor.) (Reissue.)						
Marsh, James and J. A., Ashton-under-Lyne, county of Lancaster, assignors of one-half to T. H. Rushton and B. A. Dobson, Bolton, England. Spindle and bearing therefor	253,078	Jan. 31	1711	473	21	313
Marsh, James A. (See Marsh, James and J. A.)						
Marsh, James A., Cleveland, Ohio. Domestic oven	252,867	Jan. 31	1465	410	21	273
Marsh, James S., assignor to H. A. Marsh, Lewisburg, Pa. Harvester-rake. (Reissue)	10,094	Apr. 25	1711	479 480	21	1272
Marsh, James S., assignor to H. A. Marsh, Lewisburg, Pa. Harvester-rake. (Reissue)	10,095	Apr. 25	1713	480 481	21	1273
Marsh, John W., Oxford, Mass. Package-covering	258,660	May 30	1872	.528	21	1646
Marsh, Riverius, New Brunswick, N. J. Lamp	255,440	Mar. 28	1264	341	21	876
Marshall & Briggs. (See Turner, Isaac P., assignor.)						
Marshall, Charles E., assignor to himself and G. N. Parker, Boston, Mass. Roller-skate	253,735	Feb. 14	667	191	21	470
Marshall, Elijah H., Cambria Mills, Mich. Churn	259,985	June 20	1964	338	21	1928
Marshall, George A. (See Robertson, James W., assignor.)						
Marshall, James C., Boston, Mass. Machine for scoring and cutting paper	252,114	Jan. 10	530	147	21	99
Marshall, John C., assignor of two-thirds to L. B. Jewell and W. B. Frederick, Oakland, Cal. Wood-preserving composition	259,030	June 6	200	.....	21	1798
Marshall, Major B., Vienna, Md. Fish-trap	254,989	Mar. 14	682	183	21	763
Marshall, Martin, and H. J. McDevitt, Philadelphia, Pa. Railway-switch	258,009	May 16	1157	324	21	1504
Marshall, Thomas T., Jarvis, Ontario, Canada. Machine for crimping seamless boots and shoes	255,178	Mar. 21	998	248	21	812
Marshall, William H., and C. H. Anderson, Bridgeport, Conn. Pool-ball holder	256,906	Apr. 25	1427	401	21	1292
Marshall, William M., Philadelphia, Pa. Shade and chimney for lamps	253,079	Jan. 31	1713	473	21	313
Marshman, Newman R., New York, N. Y. Toy theater or Punch-and-Judy show	256,989	Apr. 25	1428	402	21	1292
Marston, Frank W., Boston, Mass. Draft and buffing apparatus for railway-cars	252,115	Jan. 10	532	147	21	99
Martel, Adélard F., assignor of one-fourth to C. A. Martel, Montreal, Quebec, Canada. Car-brake	251,729	Jan. 3	41	12	21	9
Martel, Charles A. (See Martel, Adélard F., assignor.)						
Martens, Friederich, New York, N. Y. Machine for making trimmings	256,579	Apr. 18	1035	293	21	1146
Martien, William, assignor to G. O. Manning and J. Levering, trustees, Baltimore, Md. Adhesive cement for uniting veneers and other fabrics	259,181	June 6	378	.....	21	1760
Martin, Edgar W., *et al.* (See Gorman, Henry, assignor.)						
Martin, Edward A., Virginia City, Nev. Fire-brick compound	258,661	May 30	1873	.....	21	1646
Martin, Gabriel, Monroe township, Logan county, Ohio. Cultivator	254,776	Mar. 7	397	105	21	706
Martin, Herbert W., Bennington, Vt. Foot-protector	253,402	Feb. 7	255	73	21	389
Martin, James K., Chicago, Ill. Lard and tallow tank	256,715	Apr. 18	1207	337 338	21	1175
Martin, John N., Oil City, Pa. Process of and apparatus for distilling oil	254,990	Mar. 14	684	184	21	763
Martin, John P. (See Vandusen, Benjamin C., assignor.)						
Martin, Joseph C., Burlington, Vt., assignor of one-half to L. A. Martin, Florence, Mass. Automatic cash-box system	255,525	Mar. 28	1369	369	21	893
Martin, Luther A. (See Martin, Joseph C., assignor.)						
Martin, Mary A., Springfield, Mass. Seam for wire-cloth for paper-manufacture	258,937	June 6	83	21	21	1700
Martin, Pearl, Medford, assignor to Boston Petroleum Heating Company, Boston, Mass. Stove or furnace for burning hydrocarbon and other oils	258,091	May 16	1159	325	21	1504
Martin, Samuel W., Springfield, Ohio. Pump	254,227	Feb. 28	1274	353	21	567
Martin, Samuel W., Springfield, Ohio. Pump-strainer	254,358	Feb. 28	1416	389	21	611
Martin, Samuel W., Springfield, Ohio. Iron fence	254,353	Feb. 28	1417	389	21	611
Martin, Samuel W., Springfield, Ohio. Rosette for fences	255,526	Mar. 28	1371	370	21	893
Martin, Sylvester G., *et al.* (See German, Henry, assignor.)						
Martin, Thomas A., Evansville, Ind. Fly-fan	258,785	May 30	9019	570	21	1670
Martin, Thomas E., San José, Cal. Windmill	252,116	Jan. 10	533	148	21	99
Martin, William H., Brooklyn, N. Y. Machinery for sewing the mouths of bags	256,233	Apr. 11	621	168	21	1060
Martin, William W., Salem, Oreg. Watch-oiler	259,182	June 6	379	99	21	1760
Martinek, William F. (See Mark and Martinek.) (Reissue.)						
Martino, John, assignor to C. Williams' Sons, Philadelphia, Pa. Grate for ranges	259,183	June 6	379	100	21	1760
Marts, William H. (See Miller, Harrison S., assignor.)						
Marvin, Stephen and W. T., Burnettsville, Ind. Draft-equalizer	255,527	Mar. 28	1372	370	21	894
Marvin, Sylvester S. (See Markland, Charles F., assignor.)						
Marvin, William T. (See Marvin, Stephen and W. T.)						
Maschmeyer, Charles, Bridgeport, Conn., assignor to Craighead & Elwell Manufacturing Company, New York, N. Y. Shade-holder	258,567	May 30	1779	502	21	1629
Maskelyne, John N., Egyptian Hall, Piccadilly, county of Middlesex, England. Fare-register	259,565	June 13	860	228	21	1858
Mason, David, *et al.* (See Mason and Wooster, assignors.)						
Mason, George W., Washington, D. C. Portable swing	254,991	Mar. 14	685	184 185	21	764
Mason & Hamlin Organ Company. (See Kelly, George B., assignor.)						
Mason & Hamlin Organ Company. (See Kelly and Smith, assignors.)						
Mason & Hamlin Organ Company. (See Mason and Kelly, assignors.)						
Mason, Henry W., *et al.* (See Carroll, William T., assignor.)						
Mason, Henry W., South Coventry, Conn. Cartridge-machine	253,213	Feb. 7	44	14	21	354
Mason, James P., assignor of one-half to T. M. Moore, Philadelphia, Pa. Nut-machine	256,845	Apr. 25	1354	362 363	21	1209
Mason, Joshua, Paterson, N. J. Radiator	258,002	May 16	1161	325	21	1504
Mason, Joshua, Paterson, N. J. Boiler for heating purposes	259,566	June 13	862	228	21	1853
Mason, Lowell, Orange, N. J., and G. B. Kelly, assignors to Mason & Hamlin Organ Company, Boston, Mass. Swell-action for reed-organs	260,214	June 27	1694	458	21	2003
Mason, Robert M., and G. M. Wooster, assignors of one-half to D. Mason and B. F. Perkins, Bristol, N. H. Manufacture of board from wood pulp	253,403	Feb. 7	256	74	21	389
Mason, Samuel O. (See Pate, Mason, and Dail.)						
Mason, Sanford, Galveston, Tex. Suspended safe, &c	255,179	Mar. 21	999	248	21	812
Mason, Seth C., and J. L. Hanson, Somerville, Mass. Shield for railway-cars	257,231	May 2	104	30	21	1299
Mason, William, assignor to Colts Patent Fire-Arms Manufacturing Company, Hartford, Conn. Breech-loading fire-arm	253,736	Feb. 14	667	191	21	470

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Mason, William, assignor to Colts Patent Fire-Arms Manufacturing Company, Hartford, Conn. Drop-hammer	260,215	June 27	1695	458	21	2003
Massee, Dreury W., Marshallsville, Ga. Cotton-chopper	255,643	Mar. 28	1512	406	21	919
Massey, Gideon B., assignor to J. Lorillard, trustee, New York, N. Y. Compound engine	252,485	Jan. 17	968	275	21	179
Massey, Gideon B., assignor to J. Lorillard, trustee, New York, N. Y. Compound beam-engine	257,355	May 2	254	72	21	1336
Massey, John, Salem, Mo. Wagon-brake	257,733	May 9	744	206	21	1419
Masten, Philo W. (See Michael and Masten.)						
Master, David D. M., Flushing, N. Y. Elastic stocking	255,180	Mar. 21	999	248	21	813
Master, Josiah R., Johnsonville, N. Y. Bed-spring	257,879	May 16	910	254	21	1439
Mastera, Josiah R., Johnsonville, N. Y. Bed-spring	256,347	Apr. 11	759	.....	21	1088
Mastin, William G., Oswego, N. Y. Composition for use in smelting iron and other ores	256,348	Apr. 11	760	208	21	1026
Matheny, Daniel R., Blackville, S. C. Cotton-plow	254,560	Mar. 7	136	.....	21	681
Mathes, Michael, assignor to himself and G. Steup, Jersey City, N. J. Fire-extinguishing compound	252,868	Jan. 31	1466	410	21	273
Mathews, Samuel R. C., Philadelphia, Pa. Hydrant	252,234	Jan. 10	670	189	21	122
Mathewson, Jeremiah E. (See Tilghman and Mathewson.)						
Mathieson, Thomas, Almaden, Cal. Harrow	257,967	May 16	1001	279	21	1475
Mathis, Gerhard, New York, N. Y. Wood-carving machine	258,117	Jan. 10	534	148 149	21	99
Mathison, Joseph, Lynn, assignor to himself, C. B. Lancaster, Boston, and W. D. Allen, Lynn, Mass. Machine for and method of sewing buttons to cloth, &c	257,356	May 2	253	72	21	1337
Matney, William D., Harvel, Ill. Burglar-alarm	260,106	June 27	1562	421	21	1969
Matthews, Abram N., Norwood, Mass. Emery-holder						
Matthews, Abram N., Norwood, Mass., assignor to Matthews Steam Spring Packing Company, Nashua, N. H., and Boston, Mass. Packing valve-stems for steam and other engines	258,957	Jan. 31	1552	432	21	286
Matthews, Charles B., Newark, N. J. Harness	259,184	June 6	380	100	21	1740
Matthews, Hugh W., Baltimore, Md. Thrashing-machine	259,185	June 6	381	100 101	21	1761
Matthews, Jane, *et al.* (See Needham, Orwell H., assignor.)						
Matthews, John, New York, N. Y. Soda-water fountain	260,037	June 27	1471	397	21	1969
Matthews Steam Spring Packing Company. (See Matthews, Abram N., assignor.)						
Matthews, Thomas F., New York, N. Y. Syringe-box	256,716	Apr. 18	1208	338	21	1176
Matthews, William N., *et al.* (See Lancaster, Morris, assignor.)						
Matthey, Jean M. L., St. Louis, Mo. Universal tongs	259,886	June 20	1965	339	21	1928
Matthiessen, Frans O., *et al.* (See Humphrey, Henry C., assignor.)						
Matthiessen, Frans O., Irvington, N. Y. Destructible shutter-fastening	256,439	Apr. 11	868	242	21	1105
Matthiessen, Frans O., Irvington, N. Y. Shutter-fastener	257,294	May 9	839	234	21	1437
Matthiessen, Frans O., Irvington, N. Y., and E. E. Quimby, Orange, N. J., assignors to Chicago Sugar Refining Company, Chicago, Ill. Washing out starch-troughs	257,958	May 16	1002	280	21	1475
Matthiessen, Frans O., Irvington, N. Y., and A. Behr, Jersey City, N. J., assignors to Chicago Sugar Refining Company, Chicago, Ill. Method of and apparatus for emptying starch-tables	257,959	May 16	1003	280 281	21	1475
Mattingly, Bennett D. (See Bouchet, Michael, assignor.)						
Mattoon, Alfred B., assignor of one-half to D. Heald, Owasco, N. Y. Scoop for grain, sugar, &c	256,150	Apr. 11	501	137	21	1041
Matzner, Johann, Mount Pleasant, D. C. Grinding-mill	255,303	Mar. 21	1080	295	21	840
Maul, Hugo, and F. Landemberger, New York, N. Y. Parasol	256,560	Apr. 18	1037	293	21	1146
Maus, Clement A., Indianapolis, Ind. Apparatus for drawing beer	256,717	Apr. 18	1209	338	21	1176
Maus, Matthias A., Indianapolis, Ind. Apparatus for fermenting malt-liquors	253,214	Feb. 7	45	14	21	354
Mauser, Paul, Oberndorf-on-the-Neckar, Würtemberg, Germany. Machine for rifling gun and pistol barrels	259,631	June 6	200	53, 54	21	1728
Maxfield, John, London, England. Mechanical game or parlor race-course	259,387	June 13	569	147	21	1798
Maxfield, Lemuel, Moline, Ill. Lubricator	253,404	Feb. 7	257	74	21	390
Maxfield, Lemuel, Moline, Ill. Steam-cylinder cock	253,483	Feb. 7	257	74	21	390
Maxheimer, John, Brooklyn, N. Y. Feed-cup for bird-cages	252,611	Jan. 24	1193	315	21	209
Maxim, Hiram S., Brooklyn, N. Y. Electric lamp	252,391	Jan. 17	869	241	21	160
Maxim, Hiram S., Brooklyn, assignor to United States Electric Lighting Company, New York, N. Y. Electric lamp	252,392	Jan. 17	870	242	21	160
Maxim, Hiram S., Brooklyn, assignor, by mesne assignments, to United States Electric Lighting Company, New York, N. Y. Electric lamp	252,840	Jan. 24	1407	392	21	257
Maxim, Hiram S., Brooklyn, assignor to United States Electric Lighting Company, New York, N. Y. Electric lamp	254,032	Feb. 21	1048	292	21	541
Maxim, Hiram S., Brooklyn, assignor to United States Electric Lighting Company, New York, N. Y. Carbon for electric lamps	254,672	Mar. 7	974	73	21	685
Maxim, Hiram S., Brooklyn, assignor to United States Electric Lighting Company, New York, N. Y. Electric lamp	255,304	Mar. 21	1092	295	21	840
Maxim, Hiram S., Brooklyn, assignor to United States Electric Lighting Company, New York, N. Y. Electric lamp	255,305	Mar. 21	1092	295 296	21	841
Maxim, Hiram S., Brooklyn, assignor to United States Electric Lighting Company, New York, N. Y. Electrical meter	255,306	Mar. 21	1095	296	21	841
Maxim, Hiram S., Brooklyn, assignor to United States Electric Lighting Company, New York, N. Y. Electrical meter	255,307	Mar. 21	1097	296	21	842
Maxim, Hiram S., Brooklyn, assignor to United States Electric Lighting Company, New York, N. Y. Electrical meter	255,308	Mar. 21	1099	296	21	842
Maxim, Hiram S., Brooklyn, assignor to United States Electric Lighting Company, New York, N. Y. Manufacture of carbon conductors	255,309	Mar. 21	1100	297	21	842
Maxim, Hiram S., Brooklyn, assignor to United States Electric Lighting Company, New York, N. Y. Speed-regulator for dynamo-electric machines	255,310	Mar. 21	1101	297	21	843
Maxim, Hiram S., Brooklyn, assignor to United States Electric Lighting Company, New York, N. Y. Regulator for dynamo-electric machines	255,311	Mar. 21	1104	297 298	21	843
Maxim, Hiram S., Brooklyn, assignor to United States Electric Lighting Company, New York, N. Y. Electrical engineering	255,312	Mar. 21	1106	298	21	843
Maxim, Hiram S., Brooklyn, assignor to United States Electric Lighting Company, New York, N. Y. System of electrical generation and distribution	256,910	Apr. 25	1430	402	21	1292
Maxim, Hiram S., New York, N. Y., assignor, by mesne assignments, to F. A. Lyman and H. F. Taylor, Cleveland, Ohio. Apparatus for generating gas for head-lights. (Reissue)	10,101	May 2	372	104	21	1348
Maxon, Thomas, assignor of one-half to J. W. Carpenter, Dayton, Ohio. Windlass	260,307	June 27	1808	490	21	2021
Maxstadt, Francis W., assignor of one-half to B. Nusbaum, Albany, N. Y. Siphon	257,235	May 9	841	234	21	1437
Maxwell, Allan J., Boston, Mass., assignor to J. A. Yancey, Richmond, Va. Blank-book. (Reissue)	9,907	Jan. 3	398	107	21	66
Maxwell, David, Paris, Ontario, Canada. Harvesting-machine	256,151	Apr. 11	502	137	21	1041
Maxwell, Henry C. (See Barnard, Edward, assignor.)						
Maxwell, Henry C. (See Schoonmaker, Daniel, assignor.) (Reissue.)						
May, Edward S., Detroit, Mich. Cigar-case	256,003	May 16	1162	325	21	1505

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May, Ezra A. (See Sack, William M., assignor.)						
May, John P., Troy, Ala. Horse-detacher	259,567	June 13	963	229	21	1853
Mayall, Thomas J., Reading, Mass. Wringing-machine	254,846	Apr. 25	1357	363	21	1210
Mayer, Charles G., Nauvoo, Ill., assignor of one-half to L. Rassieur, St. Louis, Mo. Removable pipe-section for tanks	256,349	Apr. 11	761	209	21	1066
Mayer, Charles G., Nauvoo, Ill., assignor of one-half to L. Rassieur, St. Louis, Mo. Refrigerating apparatus	256,350	Apr. 11	761	209	21	1066
Mayer, John, Holly Springs, Miss. Salve	256,847	Apr. 25	1358	.....	21	1210
Mayer, Morris, Columbus, Ohio. Box-fastener	255,313	Mar. 21	1107	296	21	844
Mayer, Strouse & Co. (See Adler, Max, assignor.)						
Mayhew, Theophilus, assignor of two-thirds to R. Slee and C. P. Luckey, Poughkeepsie, N. Y. Steam churn-power	258,383	Jan. 17	786	218	21	146
Maynard, Alfred, Brooklyn, N. Y. Pneumatic propeller	253,915	Feb. 7	46	15	21	354
Maynard, George C., Washington, D. C. Electric push-button	250,188	June 6	393	100	21	1761
Mayo, Goodrich A., assignor to G. H. Noble, Erie, Pa. Sewing-machine	259,235	Jan. 10	670	189	21	122
Mayo, Goodrich A., assignor to G. H. Noble, Erie, Pa. Take-up regulator for sewing-machines	259,646	June 13	964	257	21	1870
Mayor, Thomas, Providence, R. I. Spindle for spinning and twisting machines	252,486	Jan. 17	989	275	21	169
Mayor, Thomas, Providence, R. I. Bearing for spindles of spinning and twisting machines	255,644	Mar. 28	1512	406	21	930
McAdams, George, Winchester, Ind. Stove-pipe shelf and stove-lid holder	255,441	Mar. 28	1365	341	21	876
McAdoo, Thomas, Baltimore, Md. Gas-engine	253,406	Feb. 7	256	75	21	390
McAndrew, William J. G., assignor of two-thirds to J. Eastwood and R. Kennedy, Hamilton, Ontario, Canada. Printer's galley	257,504	May 9	444	124	21	1367
McAnespey, John, Philadelphia, Pa. Coffee-pot	258,786	May 30	2020	570	21	1670
McArdell, John W., Brooklyn, N. Y. Guard for plumbers' shave-hooks	257,035	Apr. 25	1573	441	21	1247
McAvoy, Anthony, *et al.* (See Richards, Hezekiah H., assignor.)						
McBean, Alexander, and J. H. Watson, assignors of one-third to H. Clark, Tawas City, Mich. Evaporating salt brine	252,612	Jan. 24	1124	315	21	909
McBeth, Charles E. (See Long and McBeth.)						
McBrayer, Matt, *et al.* (See Bryson, Ryon P., assignor.)						
McBride, James C., *et al.* (See Huffer, Isaac, assignor.)						
McBride, John G., Sacramento, Cal. Oil-cup	257,173	May 2	33	11	21	1287
McBride, William H., *et al.* (See Wenrich, Enos S., assignor.)						
McCabe, Patrick, Ithaca, N. Y., assignor of one-half to H. H. Girard, Philadelphia, Pa. Horseshoe	252,393	Jan. 17	871	242	21	161
McCabe, Robert. (See McCabe, William and R.)						
McCabe, Thomas, St. Joseph, Mo. Car-coupling	254,354	Feb. 28	1417	390	21	611
McCabe, William, New Haven, Conn. Corset	254,992	Mar. 14	686	185	21	764
McCabe, William and R., Meadville, Pa. Base rocking-chair	256,339	May 23	1363	385	21	1549
McCabe, William O. (See Clayton, Henry, assignor.)						
McCaffrey, Thomas F., Philadelphia, Pa. Coffee and nut roaster	256,716	Apr. 18	1210	338	21	1176
McCahill, John K. (See McCahill, Margaret and J. K.)						
McCahill, Margaret and J. K., Detroit, Mich., assignors to said Margaret McCahill. Adjustable chandelier-hanger	255,449	Mar. 28	1366	341	21	876
McCall, Edwin R., Lockport, N. Y. Preparing gas for preserving food	252,787	Jan. 24	1331	379	21	244
McCall, Edwin R., Lockport, N. Y. Provision-preserving room	255,645	Mar. 28	1513	407	21	920
McCall, James R., Schoolcraft, Mich. Refrigerating butter-safe	259,090	June 20	1042	277	21	1890
McCall, William, San Francisco, Cal. Cable-railway	252,889	Jan. 31	1468	411	21	273
McCallum, William. (See Hall, Thaddeus M., assignor.)						
McCallum, William D., Truro, Nova Scotia, Canada. Flower-stand	255,314	Mar. 21	1106	299	21	844
McCammon, Edward, Albany, N. Y. Piano-forte	258,455	May 23	1615	456	21	1502
McCarroll, James, New York, N. Y. Self-acting elevator safety apparatus	255,646	Mar. 28	1514	407	21	920
McCarroll, James, New York, N. Y. Self-acting elevator safety apparatus. (Reissue)	10,127	May 30	2111	596	21	1688
McCarthy, John B., Philadelphia, Pa. Forming waved hair-fronts	258,662	May 30	1574	529	21	1646
McClain, Edward L., Greenfield, Ohio. Pad for horse-collars	259,700	June 20	1042	277	21	1890
McClave, William, and J. A. Price, Scranton; said McClave assignor to S. Price, Pittston, Pa. Furnace-grate	252,049	Jan. 10	456	125	21	86
McClelland, Thomas M. (See Grant, McClelland, and Drummond.)						
McClintock, Frank, assignor of one-half to W. McClintock, West Union, Iowa. Wind-engine	256,234	Apr. 11	622	169	21	1061
McClintock, Frank, assignor of one-half to W. McClintock, West Union, Iowa. Wind-engine	257,880	May 16	911	255	21	1460
McClintock, William. (See McClintock, Frank, assignor.)						
McClughen, Joseph L., Ozark, Mo. Rock-drill	258,094	May 16	1163	326	21	1505
McClure, Andrew D. (See Long, Alexander, assignor.)						
McClure, Ernest G., Kendall Creek, Pa. Measuring-line reel	254,881	Mar. 14	544	146	21	738
McClure, John W. K. (See Shackelford and McClure.)						
McClure, L. T., *et al.* (See Fitzwater, William M., assignor.)						
McClure, T. B., *et al.* (See Fitzwater, William M., assignor.)						
McCobb, Henry, New York, N. Y. Chocolate-package	259,667	June 20	1266	339	21	1928
McCollin, Thomas H. (See Richards, George H., assignor.)						
McComb, James. (See Snyder, Henry D., assignor.)						
McCombs, Paul, Beaumont, Tex. Velocipede	259,411	June 13	667	{176 / 177}	21	1818
McConnaughay, Thomas J., Warrensburg, Mo. Portable bathing-machine	258,568	June 13	864	229	21	1853
McConnell, Josiah N., Lawrence, Kans. Flour-bolt	255,315	Mar. 21	1109	299	21	844
McCord, Christopher C. P., Walnut Grove, Ark. Vessel for cooking	254,355	Feb. 28	1418	390	21	611
McCord, Christopher C. P., and C. D. Churchill, Walnut Grove, Ark. Toy gun	255,598	Mar. 28	1373	370	21	894
McCord, William R., East Portland, Oreg., assignor to himself, S. B. Story, C. W. Prindle, and J. M. McCoy. Fish-wheel	257,960	May 16	1005	281	21	1476
McCormack, Charles D., Batesville, Ark. Car-coupling	256,152	Apr. 11	593	137	21	1041
McCormack, William C., Stanford, Ky. Stave-dressing machine	255,647	Mar. 28	1515	407	21	930
McCormick, Edward W., assignor to C. Harrison, New York, N. Y. Waste compression-sock	257,238	May 2	105	30, 31	21	1299
McCormick, Francis J. (See Burns, Daniel R., assignor.)						
McCormick Harvesting Machine Company. (See Baker, William R., assignor.)						
McCormick Harvesting Machine Company. (See Baker, William R., assignor.) (Reissue.)						
McCormick Harvesting Machine Company. (See McPherson, Daniel, assignor.) (Reissue.)						
McCormick Harvesting Machine Company. (See Yandle, Frederick J., assignor.)						
McCormick, Hugh, San Francisco, Cal. Preparing talc and coating articles therewith	253,616	Feb. 14	515	.....	21	444
McCormick, L. Hamilton, Chicago, Ill. Wash-bowl	256,235	Apr. 11	624	{169 / 170}	21	1061
McCormick, Willis B., Weimar, Tex. Barrel	254,228	Feb. 28	1275	353	21	567
McCoy, Elijah, assignor to H. C. and C. C. Hodges, Detroit, Mich. Lubricator	256,443	Mar. 28	1366	342	21	876

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McCoy, George C., Denver, Colo. Boot	254,993	Mar. 14	687	185	21	764
McCoy, J. M., *et al.* (See McCord, William R., assignor.)						
McCray, Elmer, *et al.* (See McCray, Hiram, assignor.)						
McCray, O. P., *et al.* (See Waters, James H., assignor.)						
McCray, Hiram, assignor to himself, R. McCray, Kendallville, and J. Reynolds, Union City, Ind. Refrigerator-car	253,983	Feb. 21	927	258	21	590
McCreary, James F., New Brighton, Pa. Sliding and rolling gate	254,994	Mar. 14	687	185	21	764
McCreery, Charles H., Bradford, Ohio. Bed-spring	251,910	Jan. 3	208	77	21	49
McCue, J. Marshall. (See Dudley, George W., assignor.)						
McCulloh, Chauncey F., Baltimore, Md. District-telegraph system	253,089	Jan. 31	1714	473	21	313
McCullough, Joseph, Philadelphia, Pa. Paper-bag machine	255,316	Mar. 21	1110	299	21	844
McCullough, Lewis H., Richmond, Ind. Gas-regulator	260,038	June 27	1474	397	21	1969
McCullough, Lewis H., Richmond, Ind. Gas-regulator	260,039	June 27	1476	399	21	1970
McCutchen, James A., Pine Grove, assignor of one-third to W. M. Digbt, Mercer, Pa. Curtain-fixture	257,686	May 9	841	235	21	1437
McDaniel, James, Minneapolis, Minn. Dust-catching apparatus for middlings-purifiers	259,689	June 20	1266	{339 / 340}	21	1928
McDannold, George W., Kenton, Ky. Lifting-fork	256,719	Apr. 18	1211	339	21	1176
McDermott, Charles J., Sandy Hook, Conn. Pantaloons-protector	257,036	Apr. 25	1574	441	21	1248
McDevitt, Hugh J. (See Marshall and McDevitt.)						
McDevitt, William, Philadelphia, Pa. Guard for electric lights	256,561	Apr. 18	1637	293	21	1146
McDonald, Alexander, Boston, Mass. Life-preserver	252,384	Jan. 17	787	219	21	146
McDonald, Alexander H., New York, N. Y. Railway-switch	252,684	Jan. 24	1210	339	21	234
McDonald, Donald A., La Crosse, Wis. Steering tow-boats and tows	254,985	Mar. 14	688	186	21	764
McDonald, Hugh. (See Williams, John M., assignor.)						
McDonald, Hugh, Pittsburg, Pa. Furnace door and shield	256,695	May 16	1165	326	21	1505
McDonald, Hunter, Nashville, Tenn. Uniting and separating frog	254,673	Mar. 7	274	73	21	685
McDonald, John. (See Andersen and McDonald.)						
McDonald, Thomas, Austin, Tex. Pocket-hanger for hats and coats	253,737	Feb. 14	669	191	21	470
McDonald, Thomas A. (See Henderson and McDonald.)						
McDonald, William J., Gainesville, Ga. Paint compound	256,663	May 30	1875	.....	21	1646
McDonel, Daniel A., Detroit, Mich. Brush	256,592	Apr. 18	1636	294	21	1146
McDonnell, Allen, Rulo, Nebr. Roofing-paint	257,681	May 16	912	.....	21	1460
McDonnell, Patrick E., Lawndale, assignor of one-half to B. McManus, Chicago, Ill. Cyclometer	253,481	Feb. 7	353	98, 99	21	465
McDonnell, Patrick F., Clarksburg, W. Va. Attachment to steam-boilers	252,958	Jan. 31	1553	433	21	298
McDonough, Frank, Eau Claire, Wis. Log-turner	259,701	June 20	1043	{277 / 278}	21	1890
McDonough, Frank, Eau Claire, Wis. Machine for trimming and cutting lumber	259,702	June 20	1045	{278 / 279}	21	1891
McDonough, Frank, Eau Claire, Wis. Edger sawing-machine	259,703	June 20	1050	279	21	1891
McDonough, John, Philadelphia, Pa. Ventilator for buildings	255,091	Apr. 4	332	88	21	1006
McDonough, Thomas, Montclair, N. J. Steam-boiler	252,786	Jan. 24	1332	372	21	245
McDonough, Thomas, assignor of one-half to T. Kane, Chicago, Ill. Educational globe	254,239	Feb. 28	1275	354	21	567
McDougall, Alexander, Cleveland, Ohio. Tow-boat	259,689	June 20	1269	340	21	1929
McDougall, John, London, England. Manufacture of oil-cake	253,881	Feb. 14	776	.....	21	490
McDowell, John, assignor to Union Foundry and Pullman Car-Wheel Works, Chicago, Ill. Bending-machine	253,934	Feb. 21	926	258	21	590
McDowell, Michael B. (See Clabaugh and McDowell.)						
McDowell, William L. (See Kohler, John C., assignor.)						
McDuffie, Neill, Kentyre, S. C. Stalk-breaker	257,734	May 9	744	207	21	1419
McElfresh, Francis H., Terre Haute, Ind. Dust-collector	258,096	May 16	1166	326	21	1505
McEnaaney, John T., Atlanta, Ga., assignor to W. R. Christian, Milan, Tenn. Tire-tightener	253,935	Feb. 21	930	258	21	591
McFadden, Francis, assignor of one-half to R. Rynehart, Baltimore, Md. Piston	260,308	June 27	1899	490	21	2023
McFall, Wellington R., Vassar, Mich. Tongue-support	253,875	Feb. 21	851	240	21	589
McFarland, Allen. (See McLachlan and McFarland.)						
McFarland, Andrew, *et al.* (See Wohnlich and Scholes, assignors.)						
McFarland, Francis J. (See Brown, McFarland, and Brown.)						
McFarland, Henry C., assignor to M. A. McFarland, Indianapolis, Ind. Robe-lock for vehicles	257,882	May 16	913	255	21	1460
McFarland, Martha A. (See McFarland, Henry C., assignor.)						
McFarland, Thomas W., Chicago, and C. L. Ford, Palatine, Ill.; said Ford assignor to said McFarland. Dish-drainer	254,230	Feb. 28	1278	354	21	566
McFarland, William, *et al.* (See Wohnlich and Scholes, assignors.)						
McFarlin, Joseph T., Middleborough, Mass. Oven-waiter	260,316	June 27	1697	458	21	2006
McGaffey, Ives W., assignor, by mesne assignments, to E. B. Preston, Chicago, Ill. Fountain hose carriage. (Reissue)	10,047	Feb. 28	1525	417	21	631
McGannon, Pleasant C. (See Butler, Maulove, assignor.)						
McGee, Henry, assignor of one-half to T. E. Ryan, Norwich, Conn. Cartridge	255,878	Apr. 4	151	40	21	975
McGill, George W., New York, N. Y. Metallic fastener	251,911	Jan. 3	262	77	21	49
McGill, George W., New York, N. Y. Metallic fastening	251,912	Jan. 3	263	77	21	49
McGill, George W., New York, N. Y. Metallic fastener	252,685	Jan. 24	1211	339	21	234
McGill, George W., New York, N. Y. Machine for inserting and clinching staples	252,641	Jan. 24	1409	393	21	257
McGill, George W., New York, N. Y. Ring-staple for suspending papers, &c	253,676	Feb. 21	852	240	21	589
McGinty, Robert H., Moulton, Tex. Picket-fence. (Reissue)	10,002	Jan. 3	405	109	21	70
McGlashin, Eugene O., San José, Cal. Basin-bib	260,217	June 27	1696	459	21	2023
McGowan, Andrew J., *et al.* (See Bissell, Francis M., assignor.)						
McGowan, Thomson, Cleveland, Ohio. Process of and mechanism for distilling hydrocarbons	257,961	May 16	1006	281	21	1476
McGregor, Anna M. (See McGregor, Thomas, assignor.)						
McGregor, John C. (See McGregor, William F., assignor.)						
McGregor, Thomas, Detroit, Mich. Steam-generator	253,738	Feb. 14	669	192	21	470
McGregor, Thomas, assignor to A. M. McGregor, Dayton, Ohio. Velocipede	253,739	Feb. 14	670	192	21	470
McGregor, William F., assignor to J. C. McGregor, Chicago, Ill. Ratchet monkey-wrench	256,251	Apr. 11	702	209	21	1066
McGrew, Archie F., San Francisco, Cal. Underground conduit for electric wires	257,257	May 2	256	72	21	1287
McGrory, Thomas, assignor of one-half to H. Banes, Philadelphia, Pa. Cooling and ventilating houses	253,740	Feb. 14	671	192	21	471
McGuigan, James, East New York, N. Y. Apparatus for turning the edges of shoe-uppers	251,789	Jan. 3	122	35	21	23
McGuire, Patrick, Louisville, Ky. Pin and link carrying device for railway-cars	252,890	Jan. 31	1469	411	21	273
McIlroy, Hiram, Poplar Ridge, N. Y. Bob-sleigh	257,356	May 2	257	73	21	1287
McIlroy, Thomas, Brooklyn, N. Y. Griper attachment for printing-presses	255,181	Mar. 21	930	249	21	812
McIlvoy, Dennis D., Golden, Colo. Irrigating-ditch	254,674	Mar. 7	276	73	21	685

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
McIntire, Charles, Newark, N. J. Bracelet	259,187	June 6	383	100	21	1761
McIntire, George A., Stamford, Conn. False-cuff holder	252,789	Jan. 24	1333	373	21	245
McIntosh, Alfred A., Lincoln, Nebr. Check-row corn-planter	257,037	Apr. 25	1574	441	21	1248
McIntosh, Charles, Jersey City, N. J. Fire-armor	257,962	May 16	1009	281	21	1476
McIntyre, John H. (See Davis and McIntyre.)						
McKay, David, Holyoke, Mass. Dandy-roll for paper-machines	252,050	Jan. 10	457	125	21	86
McKay, Gordon, *et al.*, trustees. (See Van Wagenen, Albert, assignor.)						
McKay, Gordon, Newport, R. I. Nailing-machine	257,174	May 9	34	11	21	1267
McKay, Richard N., Carlton, N. Y. Car-coupling	254,033	Feb. 21	1049	292	21	541
McKee, Allen K. (See Rost, McKee, and Hamlin.)						
McKee, Arthur C. (See Washington, William W., assignor.)						
McKee, James F. (See Schlag, Graff, and McKee.)						
McKeefery, James. (See Reddy, Thomas E., assignor.)						
McKellar, Angus, Fort Douglass, Utah Ter. Amalgamator	254,675	Mar. 7	277	74	21	685
McKellar, Angus, Fort Douglass, Utah Ter. Hub	254,996	Mar. 14	961	186	21	765
McKenzie, Hugh M. (See Jones, Preston, assignor.)						
McKenzie, J. R. (See Lightburne, Stafford, Jr., assignor.)						
McKenzie, William H., Waverly, Ohio. Clothes-rack	253,061	Jan. 31	1717	474	21	313
McKeone, Charles. (See Loper, Richard F. W., assignor.)						
McKeown, Mathew C. (See Weeks, Joseph B., assignor.)						
McKernan, Dennis D., Chicago, Ill. Drive-chain	258,863	May 30	2099	592	21	1685
McKillop, William J. H. (See Spear, George R., assignor.)						
McKimm, Edgar N., Lathrop, Mo. Harness-oil	259,188	June 6	384	.....	21	1761
McKimm, Edgar N., assignor to himself, J. D. L. Parks, C. H. Kelsey, and J. T. Parshel, Lathrop, Mo. Wardrobe shower-bath	255,317	Mar. 21	1113	300	21	844
McKinnis, Lewis, assignor of one-half to J. S. and F. B. Tait, Decatur, Ill. Manufacture of plowshares	258,938	June 6	84	22	21	1709
McKinnon, Lachlan E., St. Catharines, Ontario, Canada. Dash-board for vehicles	258,456	May 23	1616	457	21	1592
McKnight, Wharton. (See Haskin, Uri, assignor.)						
McLachlan, John, New Orleans, La. Wind-motor	259,569	June 13	865	229	21	1853
McLachlan, William, and A. McFarland, Wilkinsburg, Pa. Motor for churns	252,118	Jan. 10	537	150	21	100
McLain, James. (See Campbell, Joseph H., assignor.)						
McLane, George A., Chicago, Ill. Map-rack	253,538	Feb. 14	434	122	21	432
McLaughlin, George T. (See Duggan, Patrick J., assignor.)						
McLaughlin, John C., *et al.* (See Smith, Peter, assignor.)						
McLaughlin, Terry, assignor of one-half to J. J. Myers, Chicago, Ill. Street letter-box	252,842	Jan. 24	1410	393	21	257
McLean, Christopher W., New Berne, N. C. Manufacture of glass coffins, bath-tubs, &c.	253,539	Feb. 14	436	192 193	21	432
McLean, Christopher W., New Berne, N. C. Manufacture of glass fittings and trimmings of buildings	253,540	Feb. 14	437	193 194	21	432
McLean, Christopher W., New Berne, N. C. Manufacture of annealed and toughened glass slabs	253,541	Feb. 14	438	194	21	433
McLean, Christopher W., New Berne, N. C. Glass mantel	253,542	Feb. 14	439	125	21	433
McLean, Christopher W., New Berne, N. C. Manufacture of casks, barrels, &c., of glass	253,543	Feb. 14	440	125	21	433
McLean, Christopher W., New Berne, N. C. Billiard-table	253,544	Feb. 14	441	125	21	433
McLean, Christopher W., New Berne, N. C. Glass coffin	253,545	Feb. 14	441	125	21	433
McLean, Neil, Watsonville, Cal. Grain-saving attachment for separators	253,936	Feb. 21	929	259	21	521
McLean, Roger A., West Bay City, Mich. Spring	252,686	Jan. 24	1212	339	21	224
McLewee, Frederick, New York, N. Y. Lantern	253,302	Feb. 7	140	40	21	370
McLoughlin Brothers. (See Barnes, Wesley W., assignor.)						
McLoughlin, Edmund. (See Downes and Turk, assignors.)						
McLoughlin, Edmund, Brooklyn, N. Y. Picture-exhibitor	259,771	June 20	1130	302	21	1906
McMahon, John H. (See Hathaway, James J., assignor.)						
McMahon, Michael F., Worcester, Mass. Tail-stock for lathes	257,863	May 16	914	255	21	1460
McMahon, William. (See Mills, Francis E., assignor.)						
McMann, James V., Waverly, Ohio. Dental impression-cup	257,038	Apr. 25	1576	442	21	1248
McManus, Alonzo, New Britain, Conn. Spur	255,879	Apr. 4	152	41	21	975
McManus, Bernard. (See McDonnell, Patrick E., assignor.)						
McMartin, John A., Montreal, Quebec, Canada. Pump	255,318	Mar. 21	1114	300	21	845
McMaster, Joseph M., Rochester, N. Y. Grain-binder	252,236	Jan. 10	671	189 190	21	122
McMaster, Joseph M., Rochester, N. Y. Grain-binder	252,237	Jan. 10	673	190 191	21	222
McMaster, Marion E., Shelbyville, Mo. Packing-fastener for furniture	252,119	Jan. 10	538	150	21	100
McMaster, Mary A., Antioch, Cal. Combined bedstead, table, &c.	259,189	June 6	385	101 102	21	1761
McMillan, Carrie M., *et al.* (See McMillan, Duncan, assignor.) (Reissue.)						
McMillan, Duncan, assignor, by mesne assignments, to C. M. McMillan, Webster City, Iowa, and E. D. Myers, Cleveland, Ohio. Harness-loop. (Reissue)	10,060	Mar. 7	490	112	21	710
McMillan, Francis M., and H. C. Johnson, Washington, D. C. Refrigerating buildings, cars, vessels, and other structures	257,505	May 9	445	124	21	1367
McMillan, Francis M., and H. C. Johnson, Washington, D. C. System of refrigeration for cooling cars, ships, buildings, &c.	257,506	May 9	448	124 125	21	1367
McMillan, Moses C. (See McMillan, Oliver M. and M. C.)						
McMillan, Neil, assignor to H. Denny & Sons, Chicago, Ill. Singeing apparatus	260,309	June 27	1810	491	21	2022
McMillan, Oliver M. and M. C., Clinton County, Ohio. Pitman-connection for harvesters	254,490	Mar. 7	56	14	21	647
McMullen, Alexander, Chicago, Ill. Ruffling attachment for sewing-machines	258,939	June 6	84	22	21	1709
McMullen, David K. (See Turner, Christiana V., assignor.)						
McMurray, Henry B., and L. Scott, Burgettstown, Pa. Car-coupling	252,238	Jan. 10	676	192	21	223
McMurray, Henry B., and L. Scott, Burgettstown, Pa. Car-coupling	258,570	June 13	866	230	21	1854
McMurtry, John, Lexington, Ky. Refrigerator	252,613	Jan. 24	1125	315 316	21	210
McNair, Milton H., Meadville, Pa. Wrench	255,182	Mar. 21	931	249	21	813
McNair, Thomas F., Dawson, Ga. Bale-tie	253,741	Feb. 14	672	193	21	471
McNally, Thomas, and W. H. Glasgow, St. Louis, Mo. Freight-car door	255,648	Mar. 28	1516	408	21	920
McNeal, Charles E., assignor to himself and A. H. Spaulding, Silver Creek, N. Y. Separator for grain	253,546	Feb. 14	442	126	21	433
McNeal, Charles E., assignor to himself and A. H. Spaulding, Silver Creek, N. Y. Separator for grain, &c.	253,547	Feb. 14	444	126	21	433
McNeal, John A., Montgomery County, Md. Clamp for plow-beams	253,407	Feb. 7	260	75	21	320
McNeil, Robert J. (See Case, Philip H., assignor.)						
McNeill, Hector. (See Webb, Samuel D., assignor.)						
McNeven, John, New York, N. Y. Indicator-lock	252,120	Jan. 10	538	150	21	100
McNicholas, Thomas, Memphis, Mo. Brick-mold	259,890	June 20	1271	341	21	1929

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
McNicol, Colin. (See Porter and McNicol.)						
McNicoll, Henry. (See Clarke, John N., assignor.)						
McNiece, William, Philadelphia, Pa. Saw-handle clamp	256,493	Apr. 18	950	236	21	1131
McNiven, Daniel, *et al.* (See Campbell, Duncan H., assignor.)						
McPherson, Allen S. (See Simmons, Myron E., assignor.)						
McPherson, Daniel, Caledonia, N. Y., assignor to McCormick Harvesting Machine Company, Chicago, Ill. Grain-binder. (Reissue)	10,003	Jan. 3	405	109 110	21	70
McPherson, John B., Baker Hill, Ill. Bridge	252,487	Jan. 17	990	275	21	180
McPherson, John P., Boston, Mass. Filter	254,491	Mar. 7	57	14	21	647
McPherson, John R., Seabright, N. J. Stock-car	256,153	Apr. 11	504	138	21	1041
McShane, Robert, Brooklyn, N. Y. Gong-bell	258,787	May 30	2090	570	21	1671
McTammany, Alexander. (See McTammany, John, Jr., assignor.)						
McTammany, John, Jr., Worcester, Mass. Automatic musical instrument	238,614	Jan. 24	1127	316	21	210
McTammany, John, Jr., Worcester, Mass. Automatic musical instrument	260,109	June 27	1563	421	21	1963
McTammany, John, Jr., Worcester, Mass., assignor to A. McTammany, Akron, Ohio. Mechanical musical instrument	259,412	June 13	908	177	21	1818
McTiernan, Bernard. (See Clancey, William, assignor.)						
McTighe, James J., Pittsburg, Pa. Electric lamp	258,940	May 23	1364	366	21	1749
McTighe, James J. and T. J., Pittsburg, Pa. Armature for dynamo-electric machines	260,110	June 27	1565	422	21	1963
McTighe, James J. and T. J., Pittsburg, Pa. Commutator for dynamo-electric machines	260,111	June 27	1566	422	21	1963
McTighe, Thomas J. (See McTighe, James J. and T. J.)						
McTighe, William J., assignor of one-fourth to G. T. Rafferty, Pittsburg, Pa. Car-coupling	257,350	May 2	258	73	21	1327
Meacham, James H., Petersburg, Va. Railway cross-tie	250,691	June 20	1272	341	21	1929
Mead, Edwin D., Shortsville, N. Y., assignor of one-half to Farmers Friend Manufacturing Company, Dayton, Ohio. Machine for sowing fertilizers. (Reissue)	10,001	Jan. 3	402	108 109	21	69
Mead, Silas, Newark, N. J. Window-screen	254,561	Mar. 7	136	34	21	661
Mead, William R., Fowlerville, Mich. Medical compound	254,356	Feb. 28	1419	.....	21	611
Meador, C. D., *et al.* (See Bradley, George H., assignor.)						
Meador, T. D., *et al.* (See Bradley, George H., assignor.)						
Meagher, Edmund D., South Bend, Ind. Plow	253,408	Feb. 7	261	76	21	391
Means, Charles J., Boston, Mass. Electric signal for railways	257,233	May 2	106	31	21	1290
Meatyard, Edward B., Geneva, Wis. Hoisting apparatus	259,190	June 6	386	102	21	1761
Medart, Philip, St. Louis, Mo. Machine for grinding pulleys	256,440	Apr. 11	869	242	21	1105
Medart, Philip, St. Louis, Mo. Machine for grinding pulley-spiders	256,441	Apr. 11	870	243	21	1105
Medart, Philip, assignor of one-half to W. Medart, St. Louis, Mo. Bending metal plates	257,963	May 16	1010	282	21	1477
Medart, Philip, assignor of one-half to W. Medart, St. Louis, Mo. Pulley-fitting table	257,964	May 16	1011	282	21	1477
Medart, William. (See Medart, Philip, assignor.)						
Meech, Harrison B., Chatham, N. Y. Apparatus for concentrating ores	251,913	Jan. 3	284	77, 78	21	49
Meech, Harrison B., New York, N. Y. Stone and ore crusher	253,742	Feb. 14	673	193	21	471
Mefford, David M., Toledo, Ohio. Gun and gun-carriage	252,488	Jan. 17	991	275 276	21	180
Mefford, David M., Toledo, Ohio. Projectile	252,489	Jan. 17	992	276	21	180
Mége, Hippolyte, deceased, assignor, by mesne assignments, to Commercial Manufacturing Company, Consolidated, New York, N. Y. Treating animal-fats. (Reissue)	10,137	June 13	961	.....	21	1873
Megee, Andrew J., assignor of one-half to F. H. Miller, Philadelphia, Pa. Book-binding	256,022	Apr. 4	333	89	21	1006
Megill, Sebring C., Chicago, Ill. Jack-screw	253,617	Feb. 14	516	148	21	445
Megill, Sebring C., Chicago, Ill. Elastic cushion for cutter-bars	260,040	June 27	1477	308	21	1970
Meierdircks, Joseph J., Cincinnati, Ohio. Potato-digger	252,687	Jan. 24	1213	339	21	225
Meigs, Montgomery C. (See Washington, D. C. Constant-level lamp	257,965	May 16	1012	282	21	1477
Meikle & Co., Thomas. (See Meikle, Thomas, assignor.)						
Meikle, Thomas, assignor to T. Meikle & Co., Louisville, Ky. Cultivator	257,039	Apr. 25	1576	442	21	1248
Meinecke, Ferdinand, Milwaukee, Wis. Carriage-top	257,175	May 2	36	12	21	1287
Meinecke, Ferdinand, Milwaukee, Wis. Carriage-top	256,720	Apr. 18	1211	339	21	1176
Meissner, John, assignor of one-half to H. Fleischman, New York, N. Y. Car-brake	253,069	Jan. 31	1717	474	21	314
Meissner, Julius H., Philadelphia, Pa. Steam-boiler	257,040	Apr. 25	1577	443	21	1248
Melburn, Lafayette A., Denver, Colo. Vehicle-spring	257,176	May 2	36	12	21	1287
Melcher, Charles W., *et al.* (See Keene, George A., assignor.)						
Melins, Walter, Albany, N. Y. Car-coupling	258,801	Jan. 31	1469	.....	21	274
Melone, James B., *et al.* (See Castell, James, assignor.)						
Melvin, David N., New Springville, N. Y. Manufacture and composition of floor oil-cloths	258,457	May 23	1617	457	21	1593
Melvin, Josiah W., Houston, Tex. Heating-frame for lamps	252,490	Jan. 17	995	276	21	180
Melvin, Nathan T., Lodi, Ohio. Bedstead	253,303	Feb. 7	141	40	21	370
Melvin, Nathen T., Lodi, Ohio. Bed-bottom						
Melvin, Nathan T., assignor to himself and A. B. Taylor, Lodi, Ohio. Machine for turning cylindrical or tapering handles	254,492	Mar. 7	58	14, 15	21	648
Melvin, Thomas H. (See Cogswell and Melvin.)						
Menard, Charles J. F. R. de J. (See Hennebutte and Menard.)						
Ménard, Felix, Montreal, Quebec, Canada. Lock-hinge	253,304	Feb. 7	142	41	21	370
Mendenhall, William, *et al.* (See Lancaster, Morris, assignor.)						
Mensdorf, John, Etna, Pa. Bath for treating metals	253,037	Feb. 21	930	.....	21	521
Mensing, John D. A., Rochester, N. Y. Apparatus for elevating poles for electric lights, &c	253,743	Feb. 14	674	193	21	471
Menzies, William J., Saint Helen's, county of Lancaster, England. Neutral potash soap	254,632	Mar. 14	476	.....	21	726
Menzies, William J., St. Helens, county of Lancaster, England, assignor of one-half to G. T. Lewis, Philadelphia, Pa. Grinding and sieving caustic alkali. (Reissue)	10,108	May 9	856	238	21	1441
Menzies, William J., St. Helens, county of Lancaster, England, assignor of one-half to G. T. Lewis, Philadelphia, Pa. Grinding and sieving caustic alkali. (Reissue)	10,109	May 9	856	239	21	1441
Mercer, Evan A. (See Broomall and Mercer.)						
Mercer, Frederick C., Winnipeg, Manitoba, Canada. Vehicle-wheel scraper	255,444	Mar. 28	1266	342	21	877
Mercer, William H. (See Davis and Mercer.)						
Merchant, John. (See White, William, assignor.)						
Meredith, John H., Sprattsville, Prince George's county, Md. Car-coupling	259,632	June 6	302	54	21	1728
Merrott, Julius E., Newark, N. J. Cigar-box catch	258,788	May 30	2021	570	21	1671
Meriden Silver Plate Company. (See Hiller, Louis C., assignor.)						
Merino Shoe Company. (See Hawley, Alfred A., assignor.)						
Meroney, Thomas J., Salisbury, N. C. Washing-machine	252,491	Jan. 17	996	276 277	21	181
Merrell, Jay C., Geneseo, N. Y. Photographic camera	254,997	Mar. 14	692	187	21	765
Merriam, Lincoln A., New York, N. Y. Amalgamator	252,051	Jan. 10	458	126	21	86
Merrill, Arthur H., Cromwell, Conn. Music-holder	255,649	Mar. 28	1517	408	21	921
Merrill, Bela G., Geneva, Wis. Combined shutter-worker and blind-slat operator	259,191	June 6	386	102	21	1762
Merrill & Co., E. H. (See Merrill, Henry E., assignor.)						
Merrill, Edward W., Brooklyn, N. Y. Coupling for ropes and round bands	258,241	May 23	1365	286	21	1549
Merrill, Henry E., assignor to E. H. Merrill & Co., Akron, Ohio. Pottery-mold	259,633	June 6	203	54	21	1729
Merrill, Hervey C., Wollaston, Mass. Dental bracket	256,563	Apr. 18	1039	264	21	1146

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Merrill, Hiram, *et al.* (See Huntress, John H., assignor.)						
Merrill, Josiah. (See Kinsman and Merrill.)	253,744	Feb. 14	675	193	21	472
Merrill, Rufus M., Englewood, Ill. Oil-stove						
Merrimon, Emo H. (See Lindsey, Hosea, assignor.)	255,650	Mar. 28	1518	408	21	921
Merrin, William L., Fredericktown, Ohio. Organ	252,492	Jan. 17	997	277	21	181
Merritt, Benjamin, Newton, Mass. Starting and stopping mechanism	253,548	Feb. 14	445	126	21	433
Merritt, Benjamin, Newton, Mass. Belt attachment	258,942	May 23	1366	386	21	1549
Merritt, Benjamin, Newton, Mass. Attachment for belt-idlers						
Merritt, Daniel H., Marquette, Mich. Friction clutch and brake for hoisting, &c	253,083	Jan. 31	1719	474 / 475	21	314
Merritt, Daniel H., Marquette, Mich. Expanding and contracting device for friction-clutches	256,236	Apr. 11	698	176	21	1061
Mershon, Aaron J., Warsaw, Ind. Rock-drill	251,723	Jan. 3	42	12	21	10
Mersick, Charles S. (See Beecher, Henry M., assignor.)						
Merwin, William R. (See Aikman, Peter A., assignor.)						
Meserole, Charles B. (See Keith, Thomas, assignor.)						
Messenger, Henry H., Harvey's, Pa. Combined road scraper and scoop	253,305	Feb. 7	142	41	21	370
Messer, Horace W., assignor of two-thirds to Manville & Clark, Troy, N. Y. Shirt	254,833	Mar. 14	479	129	21	726
Messersmith, Alfred, Munster, Ill. Wheel-cultivator	258,097	May 16	1167	327	21	1505
Messervey, Reuben A., Medford, assignor to J. M. Watson, trustee, Brookline, Mass. Hull for vessels	257,360	May 2	960	73	21	1398
Messervey, Reuben A., Medford, assignor to J. M. Watson, trustee, Brookline, Mass. Refrigerator	257,361	May 2	960	73	21	1328
Messervey, Reuben A., Medford, assignor of one-half to J. M. Watson, Brookline, and S. W. Johnson, Medford, Mass. Refrigerator cooled by ammonia and other volatile liquids	256,023	Apr. 4	334	89	21	1006
Measler, Basil H., Canton, Ill. Flower-stand	253,877	Feb. 21	853	241	21	509
Messmer, Ferdinand, St. Louis, Mo. Automatic vent	253,306	Feb. 7	143	41	21	370
Metcalf, George A., Malden, Mass. Ore-separator	255,651	Mar. 28	1520	408	21	921
Metcalf, Henry B., *et al.* (See Campbell, Duncan H., assignor.)						
Metcalf, William H., Brooklyn, N. Y. Treating hide in the manufacture of counter-stiffeners	252,688	Jan. 24	1214	340	21	225
Metcalf, William H., Brooklyn, N. Y. Combined slate-cleaner and pencil-holder	255,652	Mar. 28	1521	409	21	921
Metropolitan Electric Light and Power Company of the United States. (See Beers, Franklin H., assignor.)	259,892	June 20	1273	341	21	1929
Metten, George R., Helena, Mont. Ter. Chuck for watch-makers' lathes	258,789	May 30	9022	571	21	1671
Meyer, Bernhard C., Bethalto, Ill. Automatic scale	252,689	Jan. 24	1215	340	21	225
Meyer, Charles J. L., Fond du Lac, Wis. Circular-saw mill	252,121	Jan. 10	540	151	21	100
Meyer, Charles T. and V. E., Jersey City, N. J. Floor-covering	252,122	Jan. 10	541	151	21	100
Meyer, Charles T. and V. E., Jersey City, N. J. Floor-covering						
Meyer & Co., Henry C. (See Bunting, William, Jr., assignor.)	10,037	Feb. 14	786	223	21	492
Meyer, Francis E., New York, N. Y. Coating real and imitation precious stones. (Reissue)						
Meyer, Frederick A., assignor of two-thirds to M. and J. A. Lefforts, New York, N. Y. Liquid-fuel injector	253,216	Feb. 7	47	15	21	355
Meyer, Frederick A., assignor of two-thirds to M. and J. A. Lefforts, New York, N. Y. Furnace for burning liquid fuel	253,217	Feb. 7	48	15	21	355
Meyer, Frederick A., assignor of two-thirds to M. and J. A. Lefforts, New York, N. Y. Heater and feeder for steam-boilers	253,218	Feb. 7	49	15	21	355
Meyer, Friedrich, Wilmington, Del. Making brewer's yeast	256,664	May 30	1675	.....	21	1646
Meyer, Henry C., *et al.* (See Bostel, Daniel T., assignor.)						
Meyer, John F., Baltimore, Md. Evaporator for registers	254,493	Mar. 7	60	15	21	648
Meyer, Thomas, assignor of one-half to H. Tucker, Logansport, Ind. Trace-supporter	259,034	June 6	904	55	21	1729
Meyer, Victor E. (See Meyer, Charles T. and V. E.)						
Meyer, William, Afton, Minn. Washing-machine	252,493	Jan. 17	997	277	21	181
Meyer, William, St. Louis, Mo. Cork-extractor	256,721	Apr. 18	1213	339	21	1177
Meyers, John J., Buffalo, N. Y. Miter box or gage	257,041	Apr. 25	1377	443	21	1348
Meyers, Nicholas, assignor to J. M. Fair, Buffalo, N. Y. Sewing-machine	256,911	Apr. 25	1431	409	21	1222
Michael, Munson, and P. W. Masten, La Fayette, Ind. Grappling-iron	258,024	Apr. 4	335	88, 90	21	1006
Michaud, Alfred, Paris, France. Galvanic battery	254,676	Mar. 7	378	74	21	686
Michaud, Alfred, Paris, France. Process of and means for photo-engraving metallic plates	254,998	Mar. 14	603	167	21	765
Michaud, Alfred, Paris, France. Necktie-fastening	253,409	Feb. 7	264	76	21	391
Miebaux, Leon, Paris, France. Portable steam-boiler	255,193	Mar. 21	932	249	21	813
Michener, William R., Oswego, N. Y. Steam-boiler	258,843	Jan. 24	1411	393	21	357
Michener, William R., assignor to Ames Iron Works, Oswego, N. Y. Steam-boiler	256,237	Apr. 11	630	171	21	1062
Mickelborough, Matthew, Brooklyn, N. Y. Valve						
Micolino, Mathew. (See Bürk, Richard, assignor.)						
Middleton, Allen. (See Hewson, Henry, assignor.)						
Middleton, Clare L. (See Jones and Middleton.)						
Middleton, William R., Commonwealth, Wis., assignor, by mesne assignments, to W. W. Huntley, A. P. Holcombe, and A. Heine. Machine for separating middlings. (Reissue)	10,059	Mar. 7	418	111	21	709
Midwood, Henry, Providence, R. I. Kindling-wood-splitting machine	257,966	May 16	1012	282	21	1477
Mignault, Eusebe, *et al.* (See Lord, Peter, assignor.)						
Mignon, Jean B. J., Paris, France. Candle for electric lighting	253,828	Feb. 14	777	221	21	490
Mihan, Patrick, Chelsea, Mass. Ventilator for ships	257,507	May 9	450	125	21	1367
Mihan, Patrick, Chelsea, Mass. Air-injecting ventilator	259,035	June 6	904	55	21	1729
Mildenberg, Samuel H., *et al.* (See Mansfield and Moore, assignors.)						
Miles, Bradford S., Gray's Summit, Mo. Shaft for machinery	259,893	June 20	1274	341	21	1929
Miles, Frederick S., Philadelphia, Pa. Taper attachment for lathes	253,410	Feb. 7	264	76, 77	21	391
Miles, Isaac, Manistee, Mich. Lath-holder	253,219	Feb. 7	50	16	21	355
Miles, Oren E., assignor to D. H. Richards, Cedar Rapids, Iowa. Plow	259,894	June 20	1275	342	21	1929
Miles, Purches, Brooklyn, N. Y. Bottle-stopper	257,042	Apr. 25	1379	443	21	1349
Milford Door Knob Company. (See Phippe, Edward L., assignor.) (Reissue.)						
Miller, Binker E., Lafayette, Ind., assignor to himself and C. A. Reynolds. Stapling-machine	253,168	Jan. 31	1339	507	21	353
Miller, Charles, Boonville, Mo. Mustache-guard	258,243	May 23	1367	386	21	1550
Miller, Charles D., and G. L. Esson, assignors of one-third to A. D. Crain, Des Moines, Iowa. Teeth-cleaning attachment for garden-rakes	253,307	Feb. 7	144	42	21	371
Miller, Charles G., Bridgeport, Conn. Spring-balance for lamps	256,912	Apr. 25	1432	403	21	1223
Miller, Charles H. (See Johnson, William T., assignor.)	259,895	June 20	1276	342	21	1930
Miller, Charles H., assignor of one-half to E. S. Noyes, Erie, Pa. Pipe-tongs						
Miller, Christian C. (See Richardson, Albert C., assignor.)						
Miller & Co., Edward. (See Kinney, Charles A., assignor.)						
Miller, David R., assignor of one-half to G. Winters, Harrisburg, Pa. Portable distributing-reservoir	258,690	Jan. 24	1215	340	21	225
Miller, Francis H. (See Meggs, Andrew J., assignor.)	257,234	May 2	109	31	21	1300
Miller, Frank, Olema, Cal. Car-coupling						

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Miller, Fredrick C., and H. C. Peters, New York, N. Y. Cigar-mold	257,735	May 9	745	207	21	1419
Miller, Fredrick C., and H. C. Peters, New York, N. Y. Cigar-mold	258,040	June 6	85	22	21	1709
Miller, George C., Johnstown, Pa. Inkstand	257,736	May 9	746	207	21	1419
Miller, George L., Youngstown, Ohio. Baking-oven	259,886	June 20	1277	342	21	1930
Miller, George W., Waterloo, Iowa. Windmill	256,154	Apr. 11	506	136	21	1048
Miller, George W., Woonsocket, R. I. Machine for pressing and finishing textile fabrics	257,506	May 9	451	125	21	1368
Miller, George W., Woonsocket, R. I. Machine for stretching fabrics	258,036	June 6	906	55	21	1729
Miller, Godfrey, Anita, Iowa. Pump-piston	254,357	Feb. 28	1430	380	21	611
Miller, Guyon, Downingtown, Pa. Rag-beater	256,358	Apr. 11	763	209	21	1066
Miller, Harrison S., assignor of one-half to W. H. Marks, Indianapolis, Ind. Water-governor	257,509	May 9	453	126	21	1308
Miller, Henry, Providence, R. I. Grate-bar	253,290	Feb. 7	51	16	21	355
Miller, Herman. (See Graves, John, assignor.)						
Miller, Herman, assignor of one-half to M. Mullen, New Ulm, Minn. Sulky-plow	258,615	Jan. 24	1198	316 / 317	21	210
Miller, Jacob D., assignor of one-half to R. R. Kayler, York, Pa. Treating tobacco-leaf	254,900	Mar. 14	694	.....	21	765
Miller, James G., Liverpool, N. Y. Wicker basket	254,034	Feb. 21	1050	292	21	541
Miller, John A., St. Charles, Mo. Combined wrench and drill	253,549	Feb. 14	445	127	21	434
Miller, John F. (See Paull and Miller.)						
Miller, Joseph A., Jr. (See Jones, Elias, assignor.) (Reissue.)						
Miller, Julius V. (See Shepherd and Miller.)						
Miller, Lewis, Akron, Ohio. Grain-binder	259,388	June 13	561	147 / 148 / 149 / 150	21	1798
Miller, Lewis, Akron, Ohio. Harvester-binder	259,389	June 13	565		21	1799
Miller, Lewis, Akron, Ohio. Bundle compressor and ejector for grain-binders	259,697	June 20	1278	342	21	1930
Miller, Lewis, and F. Bishop, Akron, Ohio. Rolling metal bars	256,584	Apr. 18	1039	294	21	1146
Miller, Martin D., assignor of one-half to J. Heckart, Jr., Springfield, Mo. Lubricator	256,907	Apr. 18	1302	368	21	1193
Miller, Orlando J., Piqua, Ohio. Gate	259,330	June 13	569	150	21	1800
Miller, Sylvester J., and T. R. Ballard, Millersville, Ill. Vertical windlass	259,571	June 13	868	230	21	1854
Miller, Tedor T., Hico, Tex. Wind-engine	259,704	June 20	1053	279 / 280	21	1892
Miller, Thomas. (See Loth and Sindic, assignors.)						
Miller, Thomas A., Grenola, Kans. Churn-dasher	255,319	Mar. 21	1114	300	21	845
Miller, Thomas S., Cartinville, Ill. Pivot-gage	256,025	Apr. 4	336	90	21	1006
Miller, Warren P., Brooklyn, N. Y. Bedstead	252,123	Jan. 10	541	151	21	100
Miller, Watson J., Birmingham, and H. Berry, Huntington, Conn. Call-bell for tableware	256,722	Apr. 18	1214	339	21	1177
Miller, Watson J., and T. L. I. Bellues, Birmingham, and H. Berry, Huntington, assignors to Derby Silver Company, Birmingham, Conn. Butter-dish	259,988	June 20	1412	380	21	1952
Miller, William, Cincinnati, Ohio. Water-back for stoves	256,008	May 16	1168	327	21	1506
Miller, William F. (See Krake, John A., assignor.)						
Miller, William K., Canton, Ohio. Reaping-machine	252,494	Jan. 17	998	277 / 278	21	181
Miller, William K., Canton, Ohio. Adjusting the grain-wheel of harvesting-machines	252,495	Jan. 17	1000	278	21	182
Millholland, Henry, Cumberland, Md. Car-axle box	260,112	June 27	1567	422	21	1963
Millholland, James A., Cumberland, Md. Brake for coal-cars	255,653	Mar. 28	1523	409	21	921
Milliken, Allen C. (See Cleveland, Erastus L., assignor.)						
Milliken, George F. (See Cutting and Milliken.)						
Mills, Clark W., *et al.* (See Tyler, Charles D., assignor.)						
Mills, Francis E., assignor of one-half to W. McMahon, Pittsburg, Pa. Method of and device for exhibiting pictures	256,353	Apr. 11	764	210	21	1066
Mills, Frank A., and T. A. Monson, Philadelphia, Pa. Compensating pendulum	257,177	May 2	37	12	21	1287
Mills, James, Wilmington, Del. Dumping-wagon	258,790	May 30	9024	571	21	1671
Mills, Jonathan, Chicago, Ill. Dust-collector	258,099	May 16	1169	327	21	1506
Mills, Jonathan, assignor of three-fourths to S. S. and W. P. Chisholm, Chicago, Ill. Belt guide and tightener	256,913	Apr. 25	1433	403	21	1223
Mills, Joseph S., Union, Ill. Mop holder and wringer	259,696	June 20	1270	343	21	1930
Mills, Joseph T., Brooklyn, N. Y. Flexible ladder	257,368	May 2	961	74	21	1238
Mills, O. H. (See Roberts, Charles H., assignor.)						
Mills, Willard F., and T. Isbister, Cleveland, Ohio. Car-brake	258,194	Jan. 10	542	151 / 152	21	100
Mills, William H., Clear Creek, Ill. Gate-holder	257,737	May 9	746	207	21	1419
Mills, William M., Dayton, Ohio. Roller for gradual-reduction flour-mills	253,678	Feb. 21	853	241	21	509
Miltenberger, Thomas, Bellefontaine, Ohio. Revolving sulky hay-rake	255,445	Mar. 28	1360	342	21	577
Miltner, Andrew. (See Walker and Miltner.)						
Miner, Russell H., Elk City, Pa. Paper-hanging machine	254,494	Mar. 7	60	15	21	648
Minière, Jules, Paris, France. Umbrella	257,664	May 16	915	255	21	1460
Minneapolis Grain Binder Company. (See Travis, Charles L., assignor.)						
Minneapolis Harvester Works. (See Appleby, John F., assignor.)						
Minnich, Simon B., Landisville, Pa. Manure-hook	254,147	Feb. 28	1183	330	21	571
Minor, Charles A. (See Glick, George W., assignor.)						
Minot, Alonzo W., and M. Rhoades, assignors to H. H. Palmer and G. E. King, Rockford, Ill. Churn	253,679	Feb. 21	854	241	21	510
Mintle, Charles B., Glenwood, Iowa. Bridle-ring	254,358	Feb. 28	1430	380	21	612
Mitchell, Albion L. F., and W. F. Dame, assignors to themselves and M. B. Townsend, Lawrence, Mass. Rod-iron	255,733	Mar. 28	1089	440	21	940
Mitchell, Frank J. (See Wilson, Joseph D., assignor.)						
Mitchell, Henry, Boston, Mass. Car-coupling	259,331	June 13	570	150	21	1800
Mitchell, J. Henry, Philadelphia, Pa. Cake and confectionery machine	257,043	Apr. 25	1380	443 / 444	21	1349
Mitchell, James C., assignor to himself, J. A. Smith, and A. B. Tinkham, Lancaster, N. H. Car-coupling	259,647	June 13	965	257	21	1670
Mitchell, Joseph R., New Brighton, Pa. Safety-valve	256,568	May 30	1780	503	21	1669
Mitchell, Richard M., Chicago, Ill. Snow-plow	255,803	Apr. 4	63	17	21	961
Mitchell, Robert J., Girard, Ill. Thill-coupling	253,411	Feb. 7	266	77	21	391
Mitelstaedt, Emma, New York, N. Y. Hair-front	253,412	Feb. 7	266	77	21	391
Mix, Frank W., assignor to Eagle Lock Company, Terryville, Conn. Drawer-lock	256,723	Apr. 18	1214	340	21	1177
Mixer, William M., assignor to De La Vergne & Mixer Refrigerating Company, New York, N. Y. Heat-absorbing apparatus	253,413	Feb. 7	267	77	21	392
Mixer, William M., assignor to De La Vergne & Mixer Refrigerating Company, New York, N. Y. Flange-union for refrigerating or ice-making machinery	253,482	Feb. 7	355	99	21	486
Mock, George S., Lebanon, Ky. Mattress	257,178	May 2	39	12	21	1287
Mock, George S., Lebanon, Ky. Bed-spring	259,192	June 6	387	102	21	1762

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Moebius, Christian E. L., New York, N. Y. Reversible mechanism for counter-shafts	259,572	June 13	869	230	21	1854
Moffat, George A., Mineral Springs, Ark. Drag-saw	260,218	June 27	1699	459	21	2304
Moffatt, Joseph M., *et al.* (See Roberts, Thomas B., assignor.)						
Moffatt, Richard R., Brooklyn, N. Y. Electric-arc lamp	258,244	May 23	1367	387	21	1550
Moffatt, Richard R., and S. Chichester, Brooklyn, N. Y. Electric lamp	252,125	Jan. 10	543	152	21	101
Moffitt, Jacob E., Uniontown, Pa. Combined cement-case and mixing-tablet for dentists	257,179	May 2	39	13	21	1297
Moffitt, John R., Boston, Mass. Sole-edge-trimming machine	254,495	Mar. 7	61	16	21	648
Mohr, Bernard, St. Louis, Mo. Umbrella	258,945	May 23	1370	387	21	1550
Mohr, Martin C., Manchester, Iowa. Door-spring	258,791	May 30	3025	571	21	1671
Möldal, Ole A. A., Chicago, Ill. Street-car coupling	254,359	Feb. 28	1421	391	21	612
Molecular Telephone Company. (See Lockwood, Robert M., assignor.)						
Molesworth, George M. F., Bideford, county of Devon, England. Vehicle	253,025	Jan. 31	1723	475 / 476	21	315
Moline Plow Company. (See Kneberg, Charles E., assignor.)						
Moline Plow Company. (See Lindgren, August, assignor.)						
Molini, Felice, San Francisco, Cal. Machine for shelling pease	252,616	Jan. 24	1130	317	21	210
Moller, William, New York, N. Y. Amalgamator	251,914	Jan. 3	285	78	21	49
Moller, William, New York, N. Y. Amalgamator	253,084	Jan. 31	1721	475	21	314
Monson, Charles, New Haven, Conn. Air-compressor	257,885	May 16	916	256	21	1460
Montague, John B., Franklin, Ky. Sash fastener and holder	251,915	Jan. 3	286	78	21	50
Montague, John B., J. T. Booker, and E. C. Dinning, Franklin, Ky. Sash fastener and holder	251,916	Jan. 3	287	78	21	50
Montclar, J. M. Armand, Paris, France. Gas-locomotor for vehicles, &c.	259,413	June 13	670	178	21	1819
Montgomery, James. (See Dow, Gardner W., assignor.)						
Montgomery, John F. (See Ryder, Henry M., assignor.)						
Montgomery, John F., assignor of one-half to H. M. Ryder, Taunton, Mass. Grate	253,880	Feb. 21	855	242	21	510
Montgomery, Samuel, New York, N. Y. Glove-fastening	252,617	Jan. 24	1131	317	21	211
Montgomery, Samuel, New York, N. Y. Lacing-stud	256,585	Apr. 18	1042	294	21	1146
Montgomery, William B., assignor to E. J. B. Whittaker, Belair, Md. Can-opener	255,390	Mar. 21	1200	321	21	859
Monzel, John, assignor to Monzel & Price, Chicago, Ill. Bedstead	254,777	Mar. 7	398	105	21	706
Monzel, John, assignor to Monzel & Price, Chicago, Ill. Clothes-rack attachment for bedsteads	257,044	Apr. 25	1581	444	21	1249
Monzel & Price. (See Monzel, John, assignor.)						
Moody, Rufus, North Monmouth, Me. Millstone	255,880	Apr. 4	153	41	21	976
Moon, H. E., *et al.* (See Hunt, Franklin B., assignor.)						
Moon, Hiram E., Richmond, Ind. Index file-case	252,394	Jan. 17	871	242	21	161
Mooney, John B. (See Haven and Mooney.)						
Mooney, John B., assignor to E. F. Bradford and T. E. Mooney, Cincinnati, Ohio. Cylinder drain-cock	252,950	Jan. 31	1554	433	21	288
Mooney, Joseph E., Baltimore, Md. Self-closing valve for faucets	252,790	Jan. 24	1335	373	21	245
Mooney, Nicholas J., *et al.* (See Heffernan, William J., assignor.)						
Mooney, Thornhill E., *et al.* (See Mooney, John B., assignor.)						
Moore, Abel, Lawrence, Mass. Bread-cutter	252,325	Jan. 17	788	219	21	147
Moore, Andrew R., Charlotte, Mich. Field-roller	256,028	Apr. 4	328	91	21	1007
Moore, Caleb D., *et al.* (See Moore, Otis W., assignor.)						
Moore, Charles, assignor of one-half to J. Shorey, Lowell, Mass. Hammock or bed	254,677	Mar. 7	260	74	21	666
Moore, Daily S., assignor of two-thirds to F. T. Sherman and E. J. Marsh, Chicago, Ill. Machinery for laying railway-tracks	252,960	Jan. 31	1556	433 / 434	21	289
Moore, Daniel, Brooklyn, N. Y. Pistol-handle	253,221	Feb. 7	59	16	21	355
Moore, Daniel, Brooklyn, N. Y. Metallic case	259,899	June 20	1240	343	21	1930
Moore, David S., Omaha, Nebr. Trace-carrier	252,126	Jan. 10	544	153	21	101
Moore, George. (See Sherman, Ingersoll, and Moore.)						
Moore, George B. (See Leavitt, William D., assignor.)						
Moore, George W., and A. O. Frick, Waynesborough, Pa. Spark-arrester	252,239	Jan. 10	678	192	21	183
Moore, Gilpin, assignor to Deere and Company, Moline, Ill. Sulky-plow	255,391	Mar. 21	1201	322	21	859
Moore, Gilpin, assignor to Deere and Company, Moline, Ill. Cultivator	256,029	Apr. 4	339	91	21	1007
Moore, Harry F. (See Duncan, David B., assignor.)						
Moore, Henry E., assignor of two-thirds to G. Farnsworth, Chicago, Ill., and J. Thomas, Defiance, Ohio. Compressed veneer	251,834	Mar. 14	480	.....	21	796
Moore, J. Allen. (See Wiley, William H., assignor.)						
Moore, J. William, Pittsburg, Pa. Steam-boiler	257,045	Apr. 25	1582	444	21	1249
Moore, John G. (See Longstreet and Wright, assignors.)						
Moore, John R., assignor to J. Annin, Brooklyn, N. Y. Joint for pipes and fittings	255,734	Mar. 28	1630	440	21	940
Moore, John W., *et al.* (See Huffer, Isaac, assignor.)						
Moore, Marquis D. (See Mansfield and Moore.)						
Moore, Mary E. (See Cory and Moore.)						
Moore, Otis W., assignor of two-thirds to C. D. Moore and C. Wright, Monticello, Ill. End-gate for wagons	257,235	May 2	110	31	21	1300
Moore, Samuel, assignor to F. Buffington, Providence, R. I. Sleeve or other button	254,035	Feb. 21	1051	293	21	541
Moore, Samuel, Providence, R. I., assignor to Oakville Company, Waterbury, Conn. Safety-pin catch	258,792	May 30	2026	572	21	1671
Moore, Samuel H., Brimfield, Ill. Stock-watering trough	259,414	June 13	672	178	21	1819
Moore, Solon E., Swanton, Vt. Suspender-loop	257,738	May 9	747	208	21	1419
Moore, Thomas. (See Smith and Moore.)						
Moore, Thomas M. (See Mason, James P., assignor.)						
Moore, Willis E., Thorntown, Ind. Ventilator	254,360	Feb. 28	1423	391	21	612
Moran, Edward J. (See Croak and Moran.)						
Moran, Maggie A., assignor to herself and F. Rogers, Fort Wayne, Ind. Car-coupling	257,363	May 2	269	74	21	1298
Moran, Peter, Philadelphia, Pa. Burglar-alarm	259,458	May 23	1618	457	21	1583
Morava, Joseph, Castle Rock, Wis. Check-row corn-planter	259,193	June 6	398	103	21	1768
Mordan, William J., Chicago, Ill. Clamp for holding railway-rails	256,026	Apr. 4	337	90	21	1006
Moreau, Eugène, assignor to T. A. Sterling, San Francisco, Cal. Hand rock-drill	257,739	May 9	748	208	21	1419
Moreau, Eugène, assignor to T. W. Sterling, San Francisco, Cal. Machine hand rock-drill	258,100	May 16	1171	328	21	1506
Morehouse, Jephtha B., *et al.* (See Mosher and Crane, assignors.)						
Morey, Elizabeth, New York, N. Y. Combined electric lamp and generator	252,691	Jan. 24	1216	341	21	225
Morgan, Alfred W., assignor to L. G. Morgan, Indianapolis, Ind. Well-lining apparatus	257,046	Apr. 25	1583	444	21	1250
Morgan, Benjamin P., Greenville, S. C. Cotton-planter and guano-distributer combined	256,027	Apr. 4	338	90	21	1007
Morgan, Charles B., Oakland, Cal. Safety attachment for elevators	256,354	Apr. 11	768	210	21	1067
Morgan, Harriet, Washington, D. C. Diaper	255,111	Mar. 21	844	225	21	798
Morgan, Henry G., Eau Claire, Wis. Running-gear for vehicles	256,238	Apr. 11	632	171	21	1062
Morgan, James, *et al.* (See Needham, Orwell H., assignor.)						
Morgan, James H., Brunswick, Mo. Railway-spike	259,892	Jan. 31	1470	411	21	274
Morgan, John W., St. Louis, Mo. Autocastic cut-off-valve gear	253,938	Feb. 21	931	259	21	521
Morgan, Jonathan L., Decatur, Ill. Portable oven	257,364	May 2	263	74	21	1328

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Morgan, Jonathan L., Decatur, Ill. Portable oven for gas and vapor stoves	258,101	May 16	1173	328 / 329	21	1506
Morgan, Joseph S. (See Robbins, Isaiah B., assignor.)						
Morgan, Lewis B., assignor of one-half to J. E. Wayt, West Liberty, W. Va. Bread-raising oven	254,005	Feb. 21	1117	312	21	553
Morgan, Louisa G. (See Morgan, Alfred W., assignor.)						
Morgan, Lyman, Port Washington, Wis. Grain-separator	253,550	Feb. 14	446	127	21	434
Morgan, Walter F., Leavenworth, Kans. Bed-pan	257,740	May 9	749	208	21	1420
Morgan, William C., *et al.* (See Powers, Jesse, assignor.)						
Morhiser, William H., Dubuque, Iowa. Photographic background or accessory	259,573	June 13	870	230	21	1854
Morin, Joseph A., St. Hyacinthe, Quebec, Canada. Machinery for beveling watch-gear	256,355	Apr. 11	769	211	21	1067
Morley, James H., Holyoke, Mass., assignor to Morley Sewing Machine Company, of Maine. Machine for sewing flat buttons to fabrics	253,618	Feb. 14	517	148 / 149	21	445
Morley, James H., Holyoke, Mass., assignor to Morley Sewing Machine Company, of Maine. Stitching fabrics	257,047	Apr. 25	1584	445	21	1250
Morley Sewing Machine Company. (See Morley, James H., assignor.)						
Moroney, Patrick F., Rondout, N. Y. Butter and lard cutter	260,310	June 27	1811	491	21	2088
Morral, John. (See Morral, Samuel E. and J.)						
Morral, Samuel E. and J., Morral, Ohio. Ditching-machine	255,000	Mar. 14	695	187	21	765
Morrell, Daniel P., South Norwalk, Conn. Sash-fastener	257,048	Apr. 25	1585	445	21	1250
Morrill, Abner W., *et al.* (See Parker and Bennett, assignors.)						
Morrill, Edwin C., Norwalk, Ohio. Tongue-depressor	258,127	Jan. 10	545	153	21	101
Morrill, Fred S., *et al.* (See Parker and Bennett, assignors.)						
Morris, Charles N., Cincinnati, Ohio. Graining device	253,086	Jan. 31	1794	476	21	315
Morris, Edward L., Boston, Mass. Advertising device	253,087	Jan. 31	1795	477	21	315
Morris, Edward P., Glade Hill, Va. Seed-planter	258,794	Apr. 18	1315	340	21	1177
Morris, Frank, Brown's Station, Mo. Device for strengthening bedsteads	257,741	May 9	750	208	21	1420
Morris, George M., Cohoes, and J. P. Hallenbeck, New York, assignors, by mesne assignments, to National Machine Company, Troy, N. Y. Button-hole attachment for sewing-machines	259,859	Jan. 10	459	126	21	86
Morris, Henry, Manchester, county of Lancaster, England. Railway-signal	255,001	Mar. 14	695	188	21	765
Morris, Henry B., and L. A. Brott, assignors to Autophone Company, Ithaca, N. Y. Mechanical musical instrument	258,844	Jan. 24	1412	394	21	257
Morris, James. (See Wood and Morris.)						
Morris, Richard, Lewisham, county of Kent, England. Target	252,940	Jan. 10	679	192	21	123
Morris, Richard, Lewisham, county of Kent, England. Auxiliary rifle-barrel	252,941	Jan. 10	680	192	21	123
Morris, Robert C., Olney, Ill. Grain-drill	251,794	Jan. 3	44	12, 13	21	10
Morrisey, James F. (See Cox and Morrisey.)						
Morrison, Angus, assignor to W. J. Bride, Boston, Mass. Car-coupling	257,886	May 16	918	256	21	1461
Morrison, Charles M., New York, N. Y., assignor to himself and E. H. Norton, Chicago, Ill. Folding bed	254,678	Mar. 7	221	74	21	686
Morrison, David, New York, N. Y. Faucet	255,881	Apr. 4	153	41	21	976
Morrison, Elijah, Boston, Mass. Lamp-lighting implement	259,705	June 20	1054	280	21	1892
Morrison, Enoch R., assignor to S. F. and W. S. Estell, Chicago, Ill. Toy	257,742	May 9	750	209	21	1420
Morrison, John H. (See Allen and Morrison.)						
Morrison, Joseph F., Fort Atkinson, Wis. Fence-post	258,459	May 23	1619	457	21	1583
Morrison, William, Toronto, Ontario, Canada. Fire-extinguisher	259,037	June 6	207	55	21	1729
Morrow, Andrew T., Tonganoxie, Kans. Flexible wire gate	259,194	June 6	390	103	21	1768
Mors, William H., assignor to Waterford Manufacturing Company, Waterford, N. Y. Shirt-bosom	257,967	May 16	1013	283	21	1477
Morschhauser, Joseph, Poughkeepsie, N. Y. Bottle-stopper	254,835	Mar. 14	481	129	21	796
Morse, Charles H. (See Weaver, Andrus S., assignor.)						
Morse, David, Mount Pleasant, Mich. Harness	256,914	Apr. 25	1435	403	21	1233
Morse, Edmund L., St. Louis, Mo. Feed-water heater	259,706	June 20	1054	280	21	1892
Morse, Edmund L., St. Louis, Mo., assignor to S. B. Steers, New Orleans, La. Cotton-press	258,946	May 23	1371	388	21	1550
Morse, Enoch R., Somerville, and F. H. Charter, Boston, Mass. Safe	259,415	June 13	673	178	21	1819
Morse, Orville M., Springville, N. Y. Bolting apparatus	255,609	Mar. 14	697	188 / 189	21	766
Morse, Thomas G., Erie, Pa. Steam-generator	257,236	May 2	111	32	21	1299
Morse, William M., Cleveland, Ohio. Combined buckle and snap-hook	256,725	Apr. 18	1216	340	21	1177
Morse, William M., Cleveland, Ohio. Cultivator-tooth	256,356	Apr. 11	769	211	21	1067
Morter, John, Bloomingburg, Ohio. Cultivator-tooth	258,793	May 30	2027	572	21	1672
Mortimer, Walter E., Reggate Lodge, Reigate, county of Sussex, England. Carriage-brake	255,003	Mar. 14	700	189	21	766
Morton, Ephraim S., Brockton, Mass. Seal-fastener						
Morton, George B., Chicago, Ill., assignor of one-third to T. H. Arnold; said Morton and Arnold assignors of one-fourth S. C. De Pass, Memphis, Tenn. Grain-binder	256,357	Apr. 11	770	211 / 212	21	1067
Morton, John J., Albion, Mich. Cyclometer	255,004	Mar. 14	701	189	21	767
Morton, Silas A., Friendship, Me. Ice-elevator	256,155	Apr. 11	507	139	21	1042
Morton, Vega B., Louisville, Ky. Metallic counter-support for boots and shoes	256,030	Apr. 4	340	91	21	1007
Morton, Vega B., Louisville, Ky. Metallic counter-support for boots and shoes	252,129	Jan. 10	546	153	21	101
Morts, Marion C., Mohawk, N. Y. Vegetable-cutting machine						
Moscopulos, Basilios K. (See Arapian, Edward, assignor.)						
Moscrop, John B., Stretford, county of Lancaster, England. Continuous recorder	253,745	Feb. 14	676	194	21	472
Mosebey, William L., Wells' Tannery, and D. Cessna, Bedford, Pa. Car-coupling	256,356	Apr. 11	774	213	21	1068
Mosher, George A., assignor of one-half to N. Davenport, Troy, N. Y. Railway-velocipede	258,589	May 30	1780	503	21	1689
Mosher, Josiah H., and G. E. Crane, assignors to E. W. Blanchard and J. B. Morehouse, Portland, Mich. Table-leaf support	254,778	Mar. 7	399	106	21	706
Moss, Alfred C., Allentown, Pa. Cigar-lighter	255,380	Mar. 21	1115	309	21	845
Moss, George L., Carthage, Miss. Plow	259,999	June 20	1281	343	21	1931
Moss, John C., Rosston, Tex. Combined plow, harrow, and cultivator	257,385	May 2	264	74, 75	21	1298
Moss, John J., Chicago, Ill. Expansion-joint	258,794	May 30	2028	572	21	1672
Mossberger, Otto, Gattenberg, N. J. Spittoon	253,746	Feb. 14	679	195	21	472
Mossberger, Otto, Gattenberg, N. J. Wedge-driver	256,359	Apr. 11	775	213	21	1068
Mossman, James, Westerville, Ohio. Gate-latch	257,968	May 16	1014	283	21	1477
Mossman, James, Westerville, assignor of one-half to H. L. Bennett, Harlem, Ohio. Hame and collar coupler	251,917	Jan. 3	288	79	21	50
Mossop, Thomas A. (See Mills and Mossop.)						
Mote, John, Antwerp, Ohio. Saw-mill dog	252,496	Jan. 17	1001	278	21	188
Mott, Edward H., Chicago, Ill. Railway-car ventilation	254,148	Feb. 28	1183	331	21	572
Mott, Fannie C., Catskill, assignor to F. S. Gwyer, New York, N. Y. Shirt	253,483	Feb. 7	256	99	21	406
Mott, Garret S., Philadelphia, Pa. Electrical-signal transmitter	252,942	Jan. 10	681	193	21	123
Mott, Garret S., Philadelphia, Pa. Telegraphic sounder	252,497	Jan. 17	1002	278	21	188
Mott, Garret S., Philadelphia, Pa. Telegraphic sounder	252,498	Jan. 17	1003	279	21	188
Mott, Garret S., Philadelphia, Pa. Duplex telegraph	258,103	May 16	1175	329	21	1507
Mott Iron Works, J. L. (See Goldsmith, Lewis G., assignor.)						
Mott, Lorenzo D., Marshalltown, Iowa. Compound for preserving wood and metal	251,918	Jan. 3	289	.....	21	50

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Mott, Lorenzo D., Jr., Marshalltown, Iowa. Invalid-bed	254,149	Feb. 28	1126	231	21	578
Moulton, Eri S., assignor to himself and J. B. Tiernan, Chelsea, Mass. Boot or shoe heel	256,848	Apr. 25	1358	383	21	1210
Moulton, Franklin, and C. M. Adams, Ashland, Mass. Edge-trimming-machine knife	251,725	Jan. 3	47	13	21	10
Moulton, Franklin, and C. M. Adams, Ashland, Mass. Heel-trimmer	252,243	Jan. 10	682	193	21	124
Moulton, George M., and E. V. Johnson, Chicago, Ill. Fire-proof tile furring	257,366	May 2	965	75	21	1329
Moulton, Henry W., Jackson, Mich. Corset-clasp	257,969	May 16	1015	283	21	1478
Moulton, Luther V. (See Conley, John, assignor.)						
Mowrer, Martin L., Dayton, Ohio. Reducing and separating maize	251,919	Jan. 3	299	.....	21	50
Mowry, George G., *et al.* (See Sweney, Charles E., assignor.)						
Mowry, George W., Geneva, N. Y. Composition for preserving eggs	259,038	June 6	907	.....	21	1730
Muchall, Charles W., Wiesbaden, Germany, assignor to W. E. Bracklo, New York, N. Y. Gas-lamp	252,692	Jan. 24	1217	341	21	225
Mueller, Henry A., New Haven, Conn., assignor to M. Wiedersum, New York, N. Y. Carpet-sweeper	259,901	June 20	1282	344	21	1931
Mueller, Hieronymus, and J. Gross, Decatur, Ill. Water-pressure regulator	251,726	Jan. 3	47	13	21	11
Muenchinger, Gustave A. (See Muenchinger, Paul G. and G. A.)						
Muenchinger, Paul G. and G. A., Newport, R. I. Incubator	260,219	June 27	1700	459, 460	21	2004
Mühlhäuser, Paul, Baltimore, Md. Apparatus for observing the quality of liquids in kegging	257,049	Apr. 25	1586	445	21	1250
Mulford, John E. (See Lewis, Mortimer G., assignor.)						
Mulford, John E. (See Tatro, William B., assignor.)						
Mulholland, James, Jr., Philadelphia, Pa. Apparatus for galvanizing and coating sheet-iron and other plates	256,494	Apr. 18	950	266	21	1132
Mulholland, Richard, Dunkirk, N. Y. Spring for vehicles	254,231	Feb. 28	1279	355	21	588
Mullen, Francis M., assignor of one-half to D. C. and M. H. Aldridge, Milroy, Ind. Car-coupling	257,180	May 2	40	13	21	1298
Mulles, Henry, and J. Noble, Jr., Westfield, Mass. Whip-core	256,031	Apr. 4	341	91	21	1007
Mullen, M. (See Miller, Herman, assignor.)						
Muller, Edward, New York, N. Y., assignor, by mesne assignments, to New York Tartar Company. Manufacture of cream of tartar. (Reissue)	10,011	Jan. 17	1105	308	21	200
Müller, Friedrich D. F., New York, N. Y. Lemon-squeezer	259,902	June 20	1283	344	21	1931
Müller, Hans J., assignor of one-fourth to A. Levett, New York, N. Y. Dynamo-electric machine	258,864	May 30	2100	593	21	1686
Muller, John D., New York, N. Y. Glass globe for electric and other lights	258,795	May 30	2029	573	21	1672
Müller, Julius, and E. Hilpert, Berlin, Germany, assignors to Koch, Sons & Co., Brooklyn, N. Y. Clasp for books. (Reissue)	10,133	June 6	501	130	21	1781
Müller, Karl, Hornberg, Baden, Germany. Bait-hook	253,308	Feb. 7	145	42	21	371
Muller, William H., Sewickley, Pa. Door-mat frame	259,195	June 6	392	103	21	1702
Mullinix, Theodore C., Clinton, Ind. Sad-iron	257,367	May 2	966	75	21	1329
Muncaster, Thomas, Newark, Ohio, assignor of one-half to W. A. Whipple, Allegheny, Pa. Machine for filing saws	256,360	Apr. 11	777	213, 214	21	1088
Mundell, James, and W. J. Gordon, assignors of one-third to J. Mundell, Philadelphia, Pa. Tool for trimming the soles of boots and shoes	257,368	May 2	966	75, 76	21	1329
Mundell, John. (See Mundell and Gordon, assignors.)						
Munger, Alfred S., Brooklyn, N. Y. Liquid-hydrocarbon burner	252,618	Jan. 24	1132	317	21	211
Munn, J. Sidney, Rochester, N. Y. Spring for vehicles	259,648	June 13	966	257	21	1670
Munn, William B., Collingswood, N. J. Coupling for lightning-rods	258,590	May 30	1782	503	21	1629
Munroe Organ Reed Company. (See Munroe, William, assignor.)						
Munroe, William, assignor to Munroe Organ Reed Company, Worcester, Mass. Metallic reed for musical instruments	254,892	Mar. 14	546	146	21	739
Munson, Albert L., assignor to L. H. Todd, New York, N. Y. Cigarette-box	260,113	June 27	1568	423	21	1984
Munson, Andrew M. and B., Lee, Ill. Machine for making wire-barb fences	257,887	May 16	920	256, 257	21	1461
Munson, Bendix. (See Munson, Andrew M. and B.)						
Munson, Cyrus D. (See Pedrick, Knott H., assignor.)						
Munson, Edward B. and H. S., New Haven, Conn. Manufacture of boxes from paper, cardboard, &c	259,416	June 13	674	179	21	1819
Munson, Harvey S. (See Munson, Edward B. and H. S.)						
Munson, Ira, Wayne, Mich. Washing-machine	259,039	June 6	908	56	21	1730
Munson, Morton L., Charlotte, Mich. Lamp-bracket	257,650	Apr. 25	1587	445	21	1250
Murdoch, David B., Pittsburg, Pa. Fire-place	257,369	May 2	968	76	21	1329
Murdock, Charles D., Nashville, Tenn. Bed-comfort, blanket, rug, &c	253,484	Feb. 7	337	.....	21	406
Murdock, George J., Binghamton, N. Y. Comb	259,574	June 13	871	231	21	1855
Murdock, Horace B., assignor to J. Jenks, Detroit, Mich. Injector	259,649	June 13	967	258	21	1870
Murdock, James, Jr., Cincinnati, Ohio. Rubber stamp-cabinet	258,665	May 30	1877	529	21	1646
Murdock, James, Jr., Cincinnati, Ohio. Hand-stamp	258,666	May 30	1877	529	21	1647
Mure, Andrew, Glasgow, county of Lanark, Scotland. Device for presenting forgings to steam-hammers	253,088	Jan. 31	1726	477	21	315
Murgatroyd, Frank, Cleveland, Ohio. Drum for hoisting-machines	253,881	Feb. 21	856	242	21	510
Murgatroyd, Frank, Cleveland, Ohio. Hoisting-machine	254,496	Mar. 7	62	16	21	649
Murkland, Robert L. (See Noble, Oscar W., assignor.)						
Murley, Thomas, assignor of one-half to S. D. Kimbark, Chicago, Ill. Smoke-burner	259,277	June 6	486	127	21	1778
Murlless, Herbert B., Rockville, Conn. Picking-shoe for looms	253,619	Feb. 14	519	149	21	445
Murphin, Joseph, assignor of one-half to A. B. Richman, Malaga, N. J. Sealing fruit-jars	255,005	Mar. 14	702	189	21	767
Murphy, Albert L., Philadelphia, Pa. Manufacture of metal tubing	255,804	Apr. 4	64	17, 18	21	902
Murphy, Francis W. (See Neel, William S., assignor.)						
Murphy, James E., Port Jervis, N. Y. Car-coupling	259,417	June 13	676	179	21	1819
Murphy, Jesse, Kenduskeag, Me. Rein-holder	260,041	June 27	1478	396	21	1970
Murphy, John, Columbus, Ohio. Cobble-stone and grout pavement	258,460	May 23	1620	458	21	1503
Murphy, Nutter W., Cedar Junction, Kans. Washing-machine	255,446	Mar. 28	1270	343	21	877
Murphy, Tim. (See Smith and Murphy.)						
Murphy, William T., New York, N. Y. Lamp	255,805	Apr. 4	67	18	21	902
Murray, Albert, Rockport, Mass. Harness	259,707	June 20	1055	280	21	1892
Murray, Craig, Vicksburg, assignor to S. J. Wing, Schoolcraft, Mich. Wheel-barrow	255,006	Mar. 14	703	190	21	767
Murray, John, New York, N. Y. Toy bank	255,184	Mar. 21	833	249	21	813
Murray, Joseph S., Boston, Mass. Pedal for velocipedes	260,114	June 27	1569	423	21	1984
Murray, Michael, South Manchester, Conn. Buffer for looms	258,461	May 23	1690	458	21	1503
Murray, Peter, Jr., assignor of one-half to T. J. Denis, Newark, N. J. Differential pulley-block	260,220	June 27	1702	460	21	2004
Murray, S. Cady, Lockport, N. Y. Adhesive cement	257,601	May 9	583	.....	21	1300
Murray, Thomas, assignor of one-half to A. C. Bryden, St. Louis, Mo. Coal-mining machine	253,747	Feb. 14	620	195	21	473
Murray, Thomas W. B., and C. J. Baker, Chicago, Ill. Folding cot. (Reissue)	10,025	Jan. 31	1853	510	21	336

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Murray, William B., assignor of one-half to C. Detrick, Philadelphia, Pa. Vault for underground conduits	257,743	May 9	751	209	21	1429
Murray, William P. (See Earnest, Robert R., assignor.)						
Murray, William W., Baltimore, Md. Book-support	257,976	May 16	1016	283	21	1478
Musser, Peter, Muscatine, Iowa. Log-deck of saw-mills	252,499	Jan. 17	1003	279	21	188
Mustart, William, Jacksonville, Fla. Fruit-picker and tree-trimmer	252,129	Jan. 10	547	153	21	101
Myers, Charles H., Phelps, N. Y. Coloring and finishing pictures	257,051	Apr. 25	1588	.....	21	1250
Myers, Edward. (See Smith and Myers.)						
Myers, Edward, assignor to Lane & Bodley Company, Cincinnati, Ohio. Lathe for turning irregular forms	256,039	Apr. 4	341	92	21	1007
Myers, Edwin D., *et al.* (See McMillan, Duncan, assignor.) (Reissue.)						
Myers, Enos W., and C. D. Bradley, Macedonia, Iowa. Steam-engine	251,930	Jan. 3	290	79	21	50
Myers, F. E. (See Myers, Philip A., assignor.) (Reissue.)						
Myers, Frederick, New York, N. Y. Machine for filing saws	255,007	Mar. 14	705	190	21	768
Myers, Garson. (See Blake, William B., assignor.)						
Myers, Hiram, Springfield, Ohio. Horse hay-rake	255,321	Mar. 21	1116	301	21	845
Myers, John, Philadelphia, Pa. Wash-board	256,915	Apr. 25	1435	403	21	1223
Myers, John A., Monroe City, Lovely Dale, Ind. Axle-box gage	253,823	Feb. 14	778	221	21	490
Myers, Joseph, and T. B. Simonton, Superior, Nebr. Machine for welding plowshares and landsides	260,221	June 27	1703	461	21	2004
Myers, Josiah J. (See McLaughlin, Terry, assignor.)						
Myers, Martin J. (See Fowler, William E., assignor.)						
Myers, Philip A., assignor of one-half to F. E. Myers, Ashland, Ohio. Force-pump. (Reissue)	10,048	Feb. 28	1586	417	21	631
Myers, Richard W., New York, N. Y. Book-rack	252,053	Jan. 10	463	126	21	87
Myers, William A., assignor of one-half to S. N. Stetler, Scranton, Pa. Hydraulic brake	256,598	May 23	1714	464	21	1610
Myers, William H. (See Garvin, John, assignor.)						
Myers, William J., Hartford, Conn. Bedstead	255,389	Mar. 21	1117	301	21	845
Myrick, Israel E., assignor of two-thirds to J. W. Brett and E. B. Whiting, Cleveland, Ohio. Sewing-machine treadle	255,393	Mar. 21	1118	301	21	845
Naeyer & Co. (See De Naeyer, Louis, assignor.)						
Nagle, John S. B., *et al.* (See Huffnagle, Alfred, assignor.)						
Nash, Alonzo P., Weymouth, Mass. Folding packing-box	254,679	Mar. 7	989	75	21	686
Nason, Horace F., Natick, Mass. Wax-thread sewing-machine	256,156	Apr. 11	507	139, 140	21	1042
Nason, James H. (See Pond, Henry E., assignor.)						
Nathan, Joseph, assignor of one-third to A. Cohen, New York, N. Y. Lacing for wearing-apparel, bags, and other articles	255,806	Apr. 4	68	18	21	902
Nathanson, Martin M., San Francisco, Cal. Check for horses	255,882	Apr. 4	155	41, 42	21	976
National Gas Saving Company. (See Sleeman, Nathaniel, assignor.) (Reissue.)						
National Heeling Machine Company. (See Henderson, Henry A., assignor.)						
National Machine Company. (See Morris and Hallenbeck, assignors.)						
National Manufacturing Company. (See Cook, Samuel M., assignor.)						
National Manufacturing Company. (See Perot and Bettenman, assignors.) (Reissue.)						
National Manufacturing Company. (See Berry, John, assignor.)						
National Needle Company. (See Stanley, Edward, assignor.)						
National Paper Bag Company. (See Evarts, James M., assignor.)						
National Pipe Bending Company. (See Abbott, William W., assignor.)						
National Sewing Machine Company. (See Bean, Frank and E. E., assignors.)						
National Sewing Machine Company *et al.* (See Shorey, Samuel W., assignor.) (Reissue.)						
Nauerth, George V., Dayton, Ohio. File for postal and other cards	254,836	Mar. 14	493	129	21	727
Nauerth, George V., Dayton, Ohio. Letter-file	255,447	Mar. 28	1271	343	21	877
Nauerth, George V., Dayton, Ohio. Combined pipe-stem and cigar-holder	254,033	Apr. 4	343	93	21	1008
Naughten, James, Dayton, Ohio. Combined pipe-stem and cigar-holder	254,660	Mar. 7	283	75	21	686
Naumann, Gustav A., Newark, N. J. Faucet	258,796	May 30	2030	573	21	1678
Naylor, Thomas A., Wilmington, Del. Tumbling-reel for cleaning carpets	253,414	Feb. 7	268	78	21	368
Neal, Benjamin F., assignor to Steele & Johnson Manufacturing Company, Waterbury, Conn. Clasp	258,539	May 23	1715	464	21	1610
Needham, Charles A., assignor to himself and E. P. Needham, New York, N. Y. Theater-stage	258,667	May 30	1878	529, 530	21	1647
Needham, Elias P. (See Needham, Charles A., assignor.)						
Needham, Orwell H., assignor, by mesne assignments, to J. Nichol, New York, J. Morgan, Brooklyn, N. Y., and J. Matthews, Boston, Mass. Mechanical musical instrument	258,442	Apr. 11	871	243	21	1105
Needles, Simgeemer, Sedalia, Mo. Shoe or glove fastener	256,361	Apr. 11	778	214	21	1089
Needles, Simgeemer, assignor of one-half to D. H. Smith, Sedalia, Mo. Lock-hinge	257,140	Apr. 25	1702	477	21	1371
Neel, William S., assignor to F. W. Murphy, Philadelphia, Pa. Book-sewing slip	259,708	June 20	1056	281	21	1893
Neely, Thaddeus A., Muncie, Ind. Roller-skate						
Neely, Thomas. (See Marland, Alfred, assignor.)						
Neff, Cornelius, Elmore, Ohio. Machine for making wooden bowls	259,196	June 6	392	104	21	1763
Negrotto, Domingo, Jr., and W. B. Fleming, New Orleans, La. Car-starter	258,941	June 6	87	23	21	1709
Nehring, William, assignor to Queen City Malleable Iron Company, Cincinnati, Ohio. Furnace-lining and bricks therefor	253,748	Feb. 14	681	.....	21	473
Nehring, William, assignor to Queen City Malleable Iron Company, Cincinnati, Ohio. Vehicle-wheel	257,744	May 9	752	209	21	1429
Neider, Fred A., and G. Greenmann, Augusta, Ky. Detachable handle for utensils	258,591	May 30	1783	504	21	1630
Neil, Robert, Wilmington, Del., assignor of one-half to J. M. Clark, London, England. Flat-seam knife for use in soldering cans	252,845	Jan. 24	1414	384	21	256
Neill, Robert, Chicago, Ill. Press	252,961	Jan. 31	1557	434	21	389
Neilly, Daniel, Bradford, assignor to himself and J. Blain, Guilford, Ontario, Canada. Sewing-machine	257,032	Apr. 25	1589	446	21	1251
Nellson, John O., Medford, Mass. Stove attachment	258,311	May 23	1446	419	21	1563
Nellis, Aaren J., Pittsburg, Pa. Mounted harrow	255,599	Mar. 28	1374	370, 371	21	894
Nellis, Aaron J., Pittsburg, Pa. Harrow and cultivator tooth	257,237	May 2	113	32, 33	21	1301
Nellis, Jacob H. (See Gates, Philemon T., assignor.)						
Nellis, Jacob H., Canajoharie, N. Y. Wash-board	260,222	June 27	1704	461	21	2004
Nellis, James, assignor of one-half to G. W. Voorhees, Ypsilanti, Mich. Neck-yoke clip	254,497	Mar. 7	63	16	21	649
Nellis, Josephus, Palatine Bridge, N. Y. Vine-trellis	257,370	May 2	969	76	21	1329
Nelson, Charles. (See Andersen, Charles A., assignor.)						
Nelson, Edward, Frederick, Md. Apparatus for filling rubber-molds	254,498	Mar. 7	63	16	21	649
Nelson, James S., assignor to I. M. Hatcher, Springfield, Ohio. Trimming for halters and bridles	258,589	Jan. 17	1004	279	21	188
Nelson, John, Rockford, Ill. Mitten and the art of knitting the same	258,883	Jan. 31	1471	412	21	274
Nelson, John H., North East, Pa. Inhaler	256,495	Apr. 18	951	266	21	1132

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Nelson, John W., Hutchinson, Kans. Wheel-plow	257,371	May 2	209	76, 77	21	1329
Nelson, Joshua M., Oakdale, Cal. Treadle-power for grindstones	253,620	Feb. 14	520	149	21	445
Nelson, William. (See Westfall, Peter V., assignor.)						
Nemeta, Josef, Vienna, Austria-Hungary. Breech-loading fire-arm	254,681	Mar. 7	224	75	21	686
Nersinger, Lawrence, assignor of one-half to J. R. Stranchen, Rochester, N. Y. Device for repairing ruptures in water-hose	257,608	May 9	584	163	21	1390
Neseon, Jacob N., Ayr, Minn. Collar-pad	254,499	Mar. 7	64	17	21	649
Nettle, William B., Steward's Mills, Tex. Insecticide compound	255,863	Apr. 4	156	.....	21	976
Nettleton, Frank J. (See Richardson and Nettleton.)						
Netzner, Augusta, New York, N. Y. Suspender-strap	255,654	Mar. 28	1523	{409 410	21	922
Neu, Gustav, assignor to S. E. Carlisle and A. Portway, London, England. Umbrella	260,223	June 27	1705	461	21	2004
New Hampshire Chemical Pulp Company. (See Fletcher, Moore R., assignor.)						
New Orleans Cigar Factory. (See Haehnel, Frederic, assignor.)						
New York Iron Roofing and Paint Company. (See Sagendorph, L. Lewis, assignor.)						
New York Tartar Company. (See Muller, Edward, assignor.) (Reissue.)						
New York Telegraph Company. (See Stearns, J. Milton, Jr., assignor.)						
New, John G. (See Trueman and New.)						
New, Tobias, New York, N. Y. Manufacture of prepared roofing	251,921	Jan. 3	291	.....	21	50
Newburgh, Charles, Beloit, Wis. Button attachment	252,244	Jan. 10	663	193	21	124
Newbury, Jay H., and G. A. Chapman, Coxsackie, N. Y. Device for threading plugs	259,903	June 20	1283	344	21	1931
Newcomb, Nathan L., assignor to himself and J. Pollock, Cleveland, Ohio. Furnace	253,939	Feb. 21	933	259	21	521
Newell, Augustus, Chicago, Ill. Reed-organ	253,892	Feb. 21	858	{242 243	21	510
Newell, Augustus, Chicago, Ill. Device for clamping wheels or pulleys upon shafts	258,797	May 30	2030	573	21	1672
Newell, George F. (See Wendell, Washington, assignor.)						
Newell, George F., Greenfield, Mass. Sewing-machine	253,229	Feb. 7	53	16	21	356
Newell, John H., assignor to himself and A. M. Greer, Scottville, Ill. Windmill-regulator	258,462	May 23	1621	458	21	1593
Newell, Lorenzo D., Providence, R. I. Self-leveling berth	256,239	Apr. 11	633	171	21	1062
Newell, Nelson C., Springfield, Mass. Ornamental composite veneer	252,245	Jan. 10	684	193	21	124
Newhall, Cyrus, Hinsdale, N. H. Lawn-mower	259,904	June 20	1284	{344 345	21	1931
Newkirk, William, *et al.* (See Hull, John W., assignor.)						
Newland, Francis W., *et al.* (See Duffy, James F., assignor.)						
Newlin, William. (See Whitehall and Newlin.)						
Newman, John A. (See Lowen, John H., assignor.)						
Newman, Nelson, Springfield, Ill. Elevated way	256,034	Apr. 4	344	93	21	1008
Newman, Wenceslaus. (See Happe and Newman.) (Reissue.)						
Newmon, James, White Oak, Ala. Hub for vehicle-wheels	255,008	Mar. 14	707	191	21	768
Newmyer, Michael, *et al.* (See Webster, Louisiana P., assignor.)						
Newsham, Sydney J., assignor of one-half to F. T. Sargent, New York, N. Y. Staining or enameling glass, &c	256,916	Apr. 25	1436	.....	21	1294
Newsom, John Q. A., Columbus, Ohio. Machine for stacking hay and straw	258,463	May 23	1622	{458 459	21	1593
Newsom, Nathan, Columbus, Ind. Stacker for hay and straw	253,940	Feb. 21	934	260	21	522
Newton and Hibbard Machine Company. (See Newton, Arthur, assignor.)						
Newton, Arthur, Boston, Mass., assignor, by mesne assignments, to Newton and Hibbard Machine Company. Manufacture of boots and shoes	255,009	Mar. 14	707	191	21	768
Newton, John F., Jr., Boston, Mass. Fire-escape	252,130	Jan. 10	548	154	21	101
Newton, Joseph L., assignor to S. Graves, Weymouth, Mass. Bed-lounge	252,791	Jan. 24	1336	373	21	245
Newton, Stephen S., Binghamton, N. Y. Bottle-stopper	251,922	Jan. 3	292	79	21	50
Newton, Stephen S., Binghamton, N. Y. Bottle-stopper	251,923	Jan. 3	293	80	21	51
Newton, Stephen S., Binghamton, N. Y. Bottle stopper of celluloid or analogous material	255,655	Mar. 28	1523	410	21	922
Newton, Stephen S., Binghamton, N. Y. Oiler-nozzle	256,586	Apr. 18	1044	295	21	1147
Newton, Stephen S., Binghamton, N. Y. Chandelier	256,587	Apr. 18	1044	295	21	1147
Newton, Stephen S., Binghamton, N. Y. Bottle-stopper	257,053	Apr. 25	1500	446	21	1251
Newton, Stephen S., Binghamton, N. Y. Chandelier	257,054	Apr. 25	1500	446	21	1251
Newton, Stephen S., Binghamton, N. Y. Chandelier	258,104	May 16	1176	329	21	1507
Newton, Stephen S., Binghamton, N. Y. Chandelier	258,105	May 16	1178	330	21	1507
Newton, Stephen S., Binghamton, N. Y. Chandelier	258,106	May 16	1180	331	21	1508
Nicewood, Jacob, Warsaw, Ind. Sulky-plow	257,603	May 9	585	163	21	1390
Nichol, John, *et al.* (See Needham, Orwell H., assignor.)						
Nichols, Andrew, assignor of one-half to C. Grant, Jr., Boston, Mass. Manufacture of boots and shoes	254,361	Feb. 28	1423	391	21	612
Nichols, Fayette G., assignor of one-half to E. L. Freeman, Richmond, Vt. Valise	259,905	June 20	1286	345	21	1931
Nichols, George B., Galveston, Tex. Spark-arrester	253,863	Feb. 21	860	243	21	511
Nichols, Isaac, Chicago, Ill. Cell-case	256,786	Apr. 18	1016	340	21	1177
Nichols, Isaac W., Brooklyn, N. Y. Purifying and drying tea	255,185	Mar. 21	935	250	21	813
Nichols, Jacob J., Brooklyn, N. Y., assignor to Bradley & Hubbard Manufacturing Company, Meriden, Conn. Lamp-fount	257,055	Apr. 25	1502	447	21	1251
Nichols, Joseph V., Brooklyn, assignor to United States Electric Lighting Company, New York, N. Y. Carbon for incandescent lamps	258,942	June 6	88	23	21	1710
Nichols, Joseph V., Brooklyn, assignor to United States Electric Lighting Company, New York, N. Y. Incandescent lamp	258,943	June 6	89	23	21	1710
Nichols, Martin V., *et al.* (See Lottridge, William, assignor.)						
Nichols, Shepard & Company. (See Brown, Edmund D., assignor.)						
Nichols, Urias R., Newberry township, York county, Pa. Dumping-cart	256,362	Apr. 11	779	214	21	1089
Nichols, William, Phoenix, Mich. Slime-table for concentrating ores	257,636	Apr. 25	1503	447	21	1251
Nichols, William O., Lynn, Mass. Last	254,150	Feb. 28	1187	332	21	572
Nicholson, Andrew J. (See Darling and Nicholson.)						
Nicholson, Charles, assignor of one-half to R. M. Thompson, Washington, D. C. Sewing-machine motor	255,084	Mar. 14	809	217	21	785
Nicholson, Henry C., Kenton, Ky. Quadruplex telegraph	257,181	May 2	41	13	21	1288
Nicholson, Morenus A., assignor of one-fourth to F. M. Dicks, Richwood, Ohio. Cooking-stove	258,575	June 13	871	231	21	1855
Nicholson, Peter A., Philadelphia, Pa. Fire-escape	258,947	May 23	1373	388	21	1550
Nicholson, Susan C. (See Weber, Theodore A., assignor.)						
Nicholson, William H., Wilkes-Barré, Pa. Expanding mandrel	255,010	Mar. 14	709	191	21	768
Nickerson, Fred. A., assignor to Dickinson Hard Rubber Company, Springfield, Mass. Inlaying horn, &c., with pigment colors	251,924	Jan. 3	294	.....	21	51
Nickerson, Ruel E. (See Dudley, Myrick, assignor.)						
Nicol, Alexander, assignor to W. J. Watson, Ayton, Ontario, and J. Nicol, Owen Sound, Canada. Sliding gate	256,625	Apr. 4	345	93	21	1008

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Nicol, James, *et al.* (See Nicol, Alexander, assignor.)						
Nicolay, Peter, *et al.* (See Kellner, Joseph, assignor.)						
Nielsen, Lars C. (See Petersen and Nielsen.)						
Nietzcke, John D., Somerset, Ohio. Method of and apparatus for disinfecting dead bodies	251,925	Jan. 3	295	80	21	51
Niles Tool Works. (See Gordon and Reiss, assignors.)						
Nilson, Nils, Maple Plain, Minn. Vehicle-spring	256,249	Apr. 25	1359	383	21	1310
Nilsson, Olof, Chicago, Ill. Table	260,311	June 27	1811	491	21	2082
Nishwitz, Frederick, Millington, N. J. Harrow	258,464	May 23	1623	459	21	1594
Nisonger, James A., Goshen, Ind. Shifting-rail for vehicles	252,585	Jan. 17	1095	305	21	198
Nitschmann, Franz, assignor to F. P. Walters and C. A. Arnim, Flatonia, Tex. Plow	260,115	June 27	1570	{423 424	21	1984
Nix, John D., Mount Vernon, Ill. Grain-binder	254,662	Mar. 7	988	76	21	687
Nixon, Jacob, Winfield, Kans. Corn-husking implement	255,656	Mar. 28	1524	410	21	922
Nixon, Jacob, Winfield, Kans. Lifting-jack	257,971	May 16	1016	284	21	1478
Nixon, Jacob, Winfield, Kans. Sulky-plow	259,197	June 6	394	104	21	1783
Nixon, Jacob, Winfield, Kans. Corn-husker						
Noar, Isaac, *et al.* (See Goldberg, Jacob, assignor.)						
Noar, Isaac, New York, N. Y. Necktie-fastener	254,309	Feb. 28	1424	391	21	612
Noble, Alfred H., New Milford, Conn. Belt-fastener	255,324	Mar. 21	1119	301	21	845
Noble, Butler G., Brooklyn, N. Y. Apparatus for the extraction of precious metals from ores	259,709	June 20	1057	281	21	1692
Noble, George H. (See Mayo, Goodrich A., assignor.)						
Noble, H. C. (See Herrick, Frank J., assignor.)						
Noble, James, Jr. (See Mullan and Noble.)						
Noble, Oscar L., trustee. (See Warren, John, assignor.)						
Noble, Oscar W., assignor to himself and R. L. Markland, Lynn, Mass. Grate for stoves and furnaces	257,745	May 9	753	{209 210	21	1490
Noble, William H., Pittsfield, Mass. Loom-temple	257,657	Apr. 25	1504	447	21	1252
Nolan, Patrick, Rockwood, Tenn. Railway-switch	253,749	Feb. 14	662	165	21	473
Nolin, Ernest J., assignor to E. P. Donnell, Chicago, Ill. Book-sawing machine	254,883	Mar. 14	548	146	21	730
Nonantum Worsted Company. (See Austin, Joseph, assignor.)						
Norcross, Joseph W., Lockport, N. Y. Tackle-block	251,926	Jan. 3	296	80	21	51
Norcross, Joseph W., Lockport, N. Y. Shackle-block	259,576	June 13	872	231	21	1855
Nordenfelt, Thorsten, London, England. Submarine vessel	257,604	May 9	585	{163 164	21	1390
Nordyke & Marmon Company. (See Marmon, Daniel W., assignor.)						
Norman, Hannah B. S., St. Louis, Mo. Window-shade. (Reissue)	10,015	Jan. 24	1430	399	21	960
Norris, Albert N., Rushville, Ind. Grain-drill	260,042	June 27	1478	398	21	1970
Norris, Charles E. (See Vermilyea and Norris.)						
Norris, George E., Troy, assignor, by mesne assignments, to W. F. Bidwell; said Bidwell assignor of two-thirds to said Norris and J. K. P. Pine, Glens Falls, N. Y. Spring-board for vehicles. (Reissue)	9,998	Jan. 3	299	108	21	69
Norris, George S., Baltimore, Md. Bottle-stopping device	257,746	May 9	754	210	21	1421
Norris, John C., Crete, Nebr. Measuring-faucet	254,036	Feb. 21	1052	293	21	541
Norris, Mary R., administratrix. (See Norris, William W.)						
Norris, William, Cambridge, Ohio. Connecting and disconnecting cars from their traction-rope	251,927	Jan. 3	297	81	21	51
Norris, William R., Fort Ann, N. Y. Composition for paints	257,510	May 9	454	.....	21	1308
Norris, William W., (deceased,) Baltimore, Md., M. R. Norris, administratrix. Bottle-stopper	259,418	June 13	677	179	21	1690
Norrman, Gotfried L., Atlanta, Ga. Construction of flooring and ceiling	259,577	June 13	874	232	21	1855
North, John. (See Gardner and North.)						
North, John, Middletown, Conn. Fan	257,058	Apr. 25	1505	448	21	1252
North, John, Middletown, Conn. Hand type-distributer	259,578	June 13	874	{232 233	21	1855
North, Merrill J., Wilton, Me. Safety-tie for cattle	257,747	May 9	755	210	21	1421
Northrop, Elihu C., Forks township, Sullivan county, Pa. Straw-cutter	259,579	June 13	877	233	21	1855
Northup, Franklin H. (See Holbon, Robert, assignor.)						
Northwestern Fertilizing Company. (See Kimplen, Cornelius, assignor.)						
Norton, Alexander W., assignor to American Tool and Machine Company, Boston, Mass. Lathe	255,011	Mar. 14	710	191	21	768
Norton, Charles H. (See Norton, Wendell P. and C. H.)						
Norton, Daniel. (See Weaver and Norton.)						
Norton, Dennis, Chicago, Ill. Gasoline-furnace	260,224	June 27	1706	461	21	2005
Norton Door Check and Spring Company. (See Norton, Lewis C., assignor.)						
Norton, Eben H. (See Morrison, Charles M., assignor.)						
Norton, Edward S. (See Carson, Robert J., assignor.)						
Norton, Edward S., *et al.* (See France, David, assignor.)						
Norton, Edwin, Chicago, Ill. Sheet-metal can	255,018	Mar. 14	711	192	21	768
Norton, Henry L., Middletown, Conn. Mouse-trap	259,151	Jan. 10	550	154	21	108
Norton, John B., Madison, Wis. Bed-bottom	255,657	Mar. 28	1525	410	21	922
Norton, Joseph D. and L. M., Loudville, Mass. Attachment for ladders	251,928	Jan. 3	298	81	21	51
Norton, Leonard M. (See Norton, Joseph D. and L. M.)						
Norton, Lewis C., Boston, Mass., assignor to Norton Door Check and Spring Company, Portland, Me. Door-check	251,790	Jan. 3	123	35, 36	21	24
Norton, Rowland S., Troy, N. Y. Collar	253,750	Feb. 14	663	196	21	473
Norton, Wendell P. and C. H., Thomaston, Conn. Steam-engine	259,906	June 20	1287	345	21	1932
Norwood, John E., assignor of one-half to C. R. Favour, Sykesville, Md. Car-replacer	257,927	May 9	842	235	21	1426
Nott, Aaron B., assignor of two-thirds to J. Parr and B. F. Beetle, Fairhaven, Mass. Spittoon	255,085	Mar. 14	811	217	21	785
Nourse, Thorndike, Detroit, Mich. Delivery-table for printing-machines	256,363	Apr. 11	780	215	21	1089
Novak, Joseph, and J. Strobel, Chicago, Ill. Folding bed	254,363	Feb. 28	1425	392	21	612
Nowell, Thomas S., trustee. (See Holland, Benjamin, Jr., assignor.)						
Noxon, James and T. H., Ingersoll, Ontario, Canada. Spring-hoe for grain-drills	258,465	May 23	1624	459	21	1594
Noxon, Thomas H. (See Noxon, James and T. H.)						
Noyb, E. Hayward, *et al.* (See Holt, Noah W., assignor.)						
Noye Manufacturing Company, John T. (See Campbell, Charles B., assignor.)						
Noye, Richard K. (See Holt, Noah W., assignor.)						
Noye & Sons, John T. (See Wescott and Karns, assignors.)						
Noyes, Ashbel A., Steamboat Rock, Iowa. Horse hay-rake	255,658	Mar. 28	1526	411	21	922
Noyes, Baxter B., Greenfield, Mass., assignor to S. A. Smith, Guilford, Vt. Clamp for carriage-tops	258,798	May 30	2031	573	21	1672
Noyes, E. S. (See Miller, Charles H., assignor.)						
Noyes, Person. (See Kidder, Moses W., assignor.)						
Noyes, Walter B., assignor of one-half to W. R. Bender, Saginaw, Mich. Hoop-cutting machine	259,419	June 13	678	179	21	1690

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Noyes, William and W. H., Newburyport, Mass. Comb	258,248	May 23	1374	389	21	1551
Noyes, William H. (See Noyes, William and W. H.)						
Numan, Isaac W., Canton, Ohio. Hame-tug	254,683	Mar. 7	288	76	21	687
Nunan, Edward, San Francisco, Cal. Pipe-coupling	254,151	Feb. 28	1188	332	21	572
Nurse, William, Toronto, Ontario, Canada. Car-brake	260,116	June 27	1575	424	21	1965
Nusbaum, Bernhard. (See Maxstadt, Francis W., assignor.)						
Nutt, William A., Quincy, Ohio. Earth-excavator	253,751	Feb. 14	684	196	21	473
Nutting, William R., Revere, Mass. Testing and breaking circuits	260,043	June 27	1480	399	21	1970
Nye, George E., Bristol, Pa., assignor to himself and H. P. Ballou, Needham, Mass. Knitting-machine	253,752	Feb. 14	685	196	21	474
O'Bannon, Taylor. (See Ohaver and O'Bannon.)						
O'Blenus, Anthony W., assignor of one-half to R. Dunlap, New York, N. Y. Foot-mat	260,312	June 27	1813	491	21	2022
O'Brien, Joseph S., Springfield, Mass. Ratchet-and-pawl device	252,902	Jan. 31	1558	434	21	289
O'Brien, Simpson, New Cumberland, W. Va., assignor to Freeman Brothers, McCoy's, Ohio. Connecting smoke, hot-air, and other flues	253,416	Feb. 7	272	78	21	392
O'Bryan, James M., Paynesville, Ky. Barrel-truss	258,944	June 6	90	23	21	1710
O'Connell, William, Jr., Pittsfield, Mass. Wrench	253,089	Jan. 31	1728	478	21	316
O'Daniel, John W., and C. E. Walls, Cloverdale, Ind. Trace-carrier	259,772	June 20	1140	302	21	1906
O'Donnell, James, Central City, Dak. Ter. Valve-gear for steam-engines	253,417	Feb. 7	273	78	21	392
O'Donnell, John, and S. Jellinek, New York, N. Y.; said Jellinek assignor to said O'Donnell. Maritime mail-chest	254,152	Feb. 28	1189	332	21	573
O'Grady, James F., Chicago, Ill. Sewer-trap	254,364	Feb. 28	1426	392	21	612
O'Lally, Patrick K., Boston, Mass. Spring-hinge	257,373	May 2	271	77	21	1330
O'Meara, Jeremiah, New York, N. Y. Valve	258,592	May 30	1784	504	21	1630
O'Melveny, John C. (See Eccles and O'Melveny.)						
O'Neil, John, Pakenham, Ontario, Canada. Fire guard and escape	260,229	June 27	1711	463, 464	21	2005
O'Neill, Andrew, New Haven, Conn. Electroplated yellow-metal	257,605	May 9	587	.....	21	1390
O'Neill, James, assignor of one-half to G. H. Stewart, St. Louis, Mo. Creel or bobbin rack	254,441	Feb. 28	1515	415	21	629
O'Rear, James W. (See Hull and O'Rear.)						
O'Rielly, Philip. (See Hughes and O'Rielly.)						
O'Sullivan, Michael J., Baltimore, Md., assignor to American Electrophore Company, Washington, D. C. Electric-arc lamp	258,466	May 23	1625	460	21	1594
Oakman, Richard N., Jr., Turner's Falls, Mass. Cigar-tip cutter	260,117	June 27	1576	425	21	1965
Oakville Company. (See Moore, Samuel, assignor.)						
Oar, Sylvester, Kansas, Ill. Car-coupling	257,372	May 2	270	77	21	1330
Oastler, William C., New York, N. Y. Rotary screen for stone, &c.	255,325	Mar. 21	1119	302	21	845
Obenchain, John T., Logansport, Ind. Grinding-mill	253,415	Feb. 7	269	78	21	392
Ober, William A., and J. Yagerlenner, Nine Mile, Ind.; said Ober assignor to said Yagerlenner. Spring bed-bottom	258,949	May 23	1374	389	21	1551
Obermann, August W., Chicago, Ill. Cooking-vessel	254,500	Mar. 7	65	17	21	649
Obermeyer, Adolph T. F. (See Shannon, Richard E., assignor.)						
Odell, J. T., *et al.* (See Le Roy and Henson, assignors.)						
Odell, John B., Chicago, Ill. Electrical switch-board	252,395	Jan. 17	873	243	21	161
Odell, John B., Chicago, Ill. Automatic switch for telephones	253,941	Feb. 21	935	260	21	522
Odell, John B., Chicago, Ill. Dental mallet	256,850	Apr. 25	1359	384	21	1210
Odell, John K., Deckertown, N. J. Brush for cleaning milk-cans	253,984	Feb. 21	861	243	21	511
Odell, Udolpho H., Dayton, Ohio. Roller-mill. (Reissue)	10,139	June 20	1416	381	21	1953
Odell, Udolpho H., Dayton, Ohio. Roller-mill	260,225	June 27	1707	462	21	2005
Odell, Udolpho H., Dayton, Ohio. Crushing-roll	260,226	June 27	1708	462	21	2005
Odenbrett, Philip, Milwaukee, Wis. Pneumatic chest for pipe-organs	254,502	Mar. 7	137	34	21	661
Odiorne, David W., Elizabeth, N. J. Umbrella and parasol tie	260,227	June 27	1709	462	21	2005
Odiorne, David W., Elizabeth, N. J. Pole-changer	260,228	June 27	1710	463	21	2005
Oehri, George F., Belle Vernon, Pa. Stock-car	253,418	Feb. 7	274	79	21	393
Ogden, Isaac. (See Ogden, William L., assignor.)						
Ogden, William L., assignor of one-half to I. Ogden, Newark, N. J. Drain-pipe die	252,693	Jan. 24	1218	341	21	226
Ogier, John T. (See Casalli, William, assignor.)						
Ogilvie, William H., and W. L. Beunem, Brooklyn, N. Y. Apparatus for consuming sewer-gas	259,420	June 13	679	180	21	1820
Ohaver, Warren, and T. O'Bannon, assignors to American Reel Company, Indianapolis, Ind. Fishing-reel	253,090	Jan. 31	1729	478	21	316
Ohio Wooden Ware Manufacturing Company. (See Farnsworth, Marshall H., assignor.)						
Ohl, George A., Newark, N. J. Lifting-jack	257,753	Feb. 14	686	197	21	474
Ohm, Frits, Brooklyn, N. Y. Coffee-pot	259,580	June 13	878	233	21	1856
Ohmart, Ferdinand, Saginaw, Mich. Corn-husking machine	253,091	Jan. 31	1730	478	21	316
Oleson, Charles W., Lombard, Ill. Spoon-rest	255,013	Mar. 14	712	192	21	768
Oliver, Allen, Forest Hill, Cal. Quartz-crusher	252,792	Jan. 24	1337	373	21	245
Oliver, Allen, Forest Hill, Cal. Amalgamator and contractor	252,793	Jan. 24	1338	374	21	245
Oliver Bros. & Phillips. (See Bray, Thomas J., assignor.)						
Oliver, Herbert R., Baltimore, Md. Paper bag	259,198	June 6	395	104	21	1763
Oliver, Richard, Brooklyn, N. Y. Watch-regulator	257,511	May 9	455	126	21	1368
Olmsted, Joseph, New York, N. Y. Telephone-transmitter	252,132	Jan. 10	553	155	21	102
Olmsted, Joseph, assignor to United States Electric Lighting Company, New York, N. Y. Electric lamp	252,396	Jan. 17	874	243	21	161
Olmsted, Joseph, assignor to United States Electric Lighting Company, New York, N. Y. Electric lamp	252,397	Jan. 17	876	244	21	161
Olmsted, Joseph, assignor to United States Electric Lighting Company, New York, N. Y. Electric lamp	255,186	Mar. 21	936	250	21	814
Olmsted, Oscar B., Beloit, Wis. Device for punching metallic tubes	252,247	Jan. 10	685	194	21	124
Olson, Canute, assignor of one-half to Tobey Furniture Company, Chicago, Ill. Smoke-consumer	254,037	Feb. 21	1053	293	21	541
Olson, Christopher H., Decatur, Ill. Coffin	255,112	Mar. 21	845	226	21	798
Olson, Christopher H., Decatur, Ill. Coffin	256,496	Apr. 18	952	268	21	1132
Omler, François A. C. J., Bonnevole-les-Luxemburg, Luxemburg. Fastening for gloves, &c.	253,309	Feb. 7	147	42	21	371
Ome, Joseph H., Blissfield, Mich. Combined mop holder and wringer	255,448	Mar. 28	1272	343	21	877
Onderdonk, Robert, New York, N. Y. Pocket coat-hook	253,942	Feb. 21	937	260	21	522
Oney, Robert T., *et al.* (See Womelsdorff, James W., assignor.)						
Ordway, Aaron P., and A. F. Ryder, Lawrence, Mass. Oil-can educt	257,748	May 9	756	210	21	1421
Ordway, George F. (See Ordway, John M. and G. F.)						
Ordway, John M. and G. F., Boston, assignors of one-fourth to J. A. Ordway, Worcester, Mass. Treating hides or animal membranes and tissues	255,396	Mar. 21	1121	.....	21	846
Ordway, Joseph A. (See Ordway, John M. and G. F., assignors.)						
Oriolle, Paul, Nantes, France. Automatic fire-extinguisher	252,501	Jan. 17	1065	279	21	182
Orpen, Charles N., assignor to E. P. Gleason Manufacturing Company, New York, N. Y. Aquarium	256,240	Apr. 11	635	171	21	1062

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Orr, Gilbert J., New York, N. Y. Automatic relief device for pumps	259,133	Jan. 10	555	155	21	102
Orrell, George K., Oswego, N. Y. Pillow-block	252,312	May 23	1447	410	21	1563
Orrick, Nicholas C., Canton, Miss. Rope-clamp	259,502	Jan. 17	1005	280	21	182
Ortlepp, Ernest, New York, N. Y. Wardrobe-bedstead	256,427	Apr. 18	953	267	21	1132
Ortlieb, Anton, Allegheny, Pa. Wardrobe-bedstead	254,501	Mar. 7	66	17, 18	21	649
Ortmayer, Andrew, Chicago, Ill. Gig-saddle. (Reissue)	10,055	Mar. 7	412	110	21	708
Orton, Thomas, Chicago, Ill. Sash-fastener	254,332	Feb. 28	1260	355	21	589
Orvis, Charles F. (See Eggleston, Hiram, assignor.)						
Osborn, Alvah P., assignor to O. Osborn, Trumansburg, N. Y. Sulky-plow	257,749	May 9	757	211	21	1491
Osborn, Campbell H., Clarksburg, W. Va. Steam-pump	254,684	Mar. 7	289	76	21	688
Osborn, John H. (See Tripp and Osborn.)						
Osborn, John H., Cleveland, Ohio. Friction-clutch	259,199	June 6	396	105	21	1763
Osborn, Obadiah, *et al.* (See Spencer, George N., assignor.)						
Osborn, Orman. (See Osborn, Alvah P., assignor.)						
Osborn, Walter S., Toledo, Ohio. Cooling butter	259,907	June 20	1968	345	21	1938
Osborne Cornice Company. (See Klingenberg, Christian P., assignor.)						
Osborne, D. M. (See Young, Calvin, assignor.)						
Osborne, Eugene F., St. Paul, Minn. Measuring heat supplied from steam	255,884	Apr. 4	157	42	21	976
Osborne, George T., Atlanta, Ga. Car-coupling	253,885	Feb. 21	861	243	21	511
Osborne, Henry F., Newark, N. J. Trace-trimming machine	258,313	May 23	1448	410	21	1563
Osborne, John H., Philadelphia, Pa. Mechanical movement	258,503	May 30	1785	504	21	1630
Osborne, Thomas B., New Haven, Conn. Middlings-purifier	254,038	Feb. 21	1055	294	21	542
Osborne, Thomas B., New Haven, Conn. Middlings-purifier	254,039	Feb. 21	1056	294	21	542
Osborne, Thomas B., New Haven, Conn. Middlings-purifier	258,250	May 23	1375	389	21	1551
Osgood, Enoch, Brooklyn, N. Y. Pump	260,044	June 27	1481	399	21	1970
Osgood, James M., Somerville, Mass. Spring curtain-roller	260,045	June 27	1483	399	21	1971
Osgood, James M., Somerville, Mass. Spring curtain-roller						
Osgood & MacNaughton. (See Osgood, Ralph R., assignor.)						
Osgood, Ralph E. (See Blessing and Osgood.)						
Osgood, Ralph R., Troy, N. Y. Dredger and excavator	257,868	May 16	922	257	21	1461
Osgood, Ralph R., Troy, assignor to Osgood & MacNaughton, Albany, N. Y. Friction-clutch	254,233	Feb. 28	1281	355, 356	21	588
Osgood, Ralph R., Troy, assignor to Osgood & MacNaughton, Albany, N. Y. Dredge-dipper	254,563	Mar. 7	139	35	21	661
Osgood, Ralph R., Troy, assignor to Osgood & MacNaughton, Albany, N. Y. Spud-fixture	255,187	Mar. 21	939	251	21	814
Osgood, Ralph R., Troy, assignor to Osgood & MacNaughton, Albany, N. Y. Spud-fixture	259,200	June 6	397	105	21	1763
Ostberg, Erick, assignor of one-half to J. A. Regnell, Galva, Ill. Halter						
Ostheimer Brothers *et al.* (See Pallatt, George L., assignor.)						
Ostrander, Jonathan, assignor of two-thirds to J. W. Russell, West Middlesex, Pa., and P. M. Hass, Youngstown, Ohio. Rolling-mill	253,754	Feb. 14	687	197	21	474
Ostrander, William R., New York, N. Y. Speaking-tube annunciator	253,092	Jan. 31	1731	478	21	316
Ostrom, Freeland W. (See Carr, William H., assignor.)						
Otis Brothers & Company. (See Day, Horace H., assignor.) (Reissue.)						
Otis, Charles R., Yonkers, N. Y. Boring-machine	257,374	May 2	272	78	21	1330
Otten, Richard, Chicago, Ill. Bottling-machine	252,894	Jan. 31	1473	412	21	274
Otto, Edouard C. F., Peckham, county of Surrey, England. Tricycle	252,504	Jan. 17	1006	280, 281	21, 27	183
Otto, Nicolaus A., Mülheim-on-the-Rhine, Germany. Method of and apparatus for the manufacture of combustible gas	252,503	Jan. 17	1006	280	21	183
Outcalt, Jesse P. (See Kissner and Outcalt.)						
Ovens, Walter S. (See Rice and Ovens.)						
Ovens, Walter S., assignor to C. E. Benedict and G. B. Webster, Buffalo, N. Y. Pan-cleaning machine	255,113	Mar. 21	845	226	21	798
Over, Ewald, Indianapolis, Ind. Spring-washer	253,896	Feb. 21	862	244	21	511
Overall, George W., Memphis, Tenn. Automatic fan	255,650	Mar. 28	1326	411	21	932
Overbey, Hugh L. T., assignor to himself and J. C. Hix, Subligna, Ga. Bee-hive	252,134	Jan. 10	556	155	21	103
Overend, Andrew, Philadelphia, Pa. Stereotype-plate holder	252,694	Jan. 24	1219	341	21	226
Overhiser, Benjamin H., Orwell, Vt. Churn	256,851	Apr. 25	1301	364	21	1211
Overman, Albert H., assignor to Overman Wheel Company, Hartford, Conn. Tricycle	257,375	May 2	274	78, 79	21	1331
Overman, Albert H., assignor to Overman Wheel Company, Hartford, Conn. Velocipede	257,512	May 9	435	120	21	1368
Overman Wheel Company. (See Overman, Albert H., assignor.)						
Ovistt, Solomon E., Hudson, Ohio. Thrashing-machine	257,979	May 16	1018	284	21	1478
Ovistt, Solomon E., Willoughby, Ohio. Spring-seat for wagons	260,313	June 27	1813	491	21	2022
Owen, Asa K., Tennessee, Ill. Step for vehicles	255,327	Mar. 21	1122	302	21	846
Owen, Charles N. (See Dunkel and Tschop, assignors.)						
Owen, George B., Winsted, Conn. Gong-bell	256,787	Apr. 18	1217	341	21	1177
Owens, John L., Minneapolis, Minn. Combined ferrule and gudgeon for wooden rollers	255,188	Mar. 21	942	251	21	815
Owens, Samuel T. (See Hunter and Haskin, assignors.)						
Oxley & Giddings. (See Brown, John F., assignor.)						
Paar, Charles L., *et al.* (See Pentz, Levi, assignor.)						
Paddock, G. Adolphus, Trenton, Wis. Harrow	252,135	Jan. 10	556	155	21	103
Padgett, William E., and W. J. Brock, Batesville, Ark. Wagon-brake	252,505	Jan. 17	1009	281	21	183
Page, Charles. (See Kennedy and Berkshire, assignors.) (Reissue.)						
Page, Clark D., assignor of one-half to D. C. Ellis, Rochester, N. Y. Brick-kiln	255,189	Mar. 21	942	252, 253	21	815
Page, Daniel S. (See Templeton, Absalom, assignor.)						
Page, Martha W. (See Hinckley and Culver, assignors.)						
Page, William H., Norwich, Conn. Steam-heater	260,046	June 27	1483	399	21	1971
Pagett, Alexander W., Clarke County, Ohio. Seed-planter	254,153	Feb. 28	1190	332, 333	21	573
Paige, William H., Springfield, Mass. Nut-lock	254,685	Mar. 7	290	76	21	688
Paige, William H., Springfield, Mass. Sleeping-car	259,338	June 13	571	151	21	1809
Paine, Robert W., assignor to M. Harris, New York, N. Y. Mechanical musical instrument	251,737	Jan. 3	49	13	21	11
Paine, Robert W., assignor to M. Harris, New York, N. Y. Mechanical musical instrument	251,929	Jan. 3	299	81	21	58
Paine, Robert W., assignor to M. Harris, New York, N. Y. Automatic harmonica	251,930	Jan. 3	300	81	21	58
Paine, Edwin L., assignor to C. R. Lane, Newark, N. J. Safety-pin	254,857	Mar. 14	484	129	21	727
Paine, Henry M., assignor to F. S. Peshine, Newark, N. J. Safety-pin	254,917	Apr. 25	1436	404	21	1254
Paine, John W., Baltimore, Md. Mail-elevator	258,688	May 30	1662	530, 531	21	1647
Paine, Phebe S., Boston, Mass. Preparation for clearing coffee	257,513	May 9	456	126	21	1369
Pake, Davis & Co. (See Cauhapé, Pierre, assignor.)						
Pallatt, George L., assignor of three-fourths to Ostheimer Brothers and W. T. Pallatt, Philadelphia, Pa. Button-turning lathe	256,568	Apr. 18	1047	295, 296	21	1147
Pallatt, William T., *et al.* (See Pallatt, George L., assignor.)						
Palm, Andrew, assignor of one-half to Lawrence Plow Company, Lawrence, Kans. Grapple	258,903	May 16	1998	368	21	1530
Palm, Theodore A., White House, Pa. Wheel-cultivator	252,704	Jan. 24	1340	375	21	246

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Palmer, Charles, Springfield, Tenn. Show-case for shot	258,467	May 23	1697	460	21	1504
Palmer, E. Ellsworth, Baraboo, Wis. Dress-chart	252,507	Jan. 17	1011	282	21	184
Palmer, Fred. A., Montmorenci, S. C. Wash-basin	253,551	Feb. 14	448	128	21	434
Palmer, Fred. L., *et al.* (See Curtis, Andrew J., assignor.)						
Palmer, George E., Chicago, Ill., assignor to Babcock & Wilcox Company, New York, N. Y. Steam-boiler furnace	251,791	Jan. 3	125	36	21	24
Palmer, George E., A. Worthington, Chicago, Ill., and G. A. Rowell, Brooklyn, assignors to Babcock & Wilcox Company New York, N. Y. Grate for furnaces	251,792	Jan. 3	159	37	21	24
Palmer, Harlow C. (See Fitch, Charles T., assignor.)						
Palmer, Henry, Chester, Pa. Bearing and coupling for screw-conveyer shafts	256,728	Apr. 18	1218	341	21	1177
Palmer, Henry H., *et al.* (See Minot and Rhoades, assignors.)						
Palmer, Henry L., Brooklyn, N. Y. Tea-kettle	252,963	Jan. 31	1558	434	21	289
Palmer, Henry L., Brooklyn, N. Y. Cuspidor	256,569	Apr. 18	1049	296	21	1148
Palmer, Horace, Lebanon, Conn. Rotary clothes-drier	252,506	Jan. 17	1010	282	21	183
Palmer, Irenus J. (See Patterson and Palmer.)						
Palmer, Isaac H., Lodi, Wis. Device for raising and lowering well-tubes	259,581	June 13	879	234	21	1856
Palmer, James M., Cambridge, Mass. Pocket-knife	253,867	Feb. 21	863	244	21	511
Palmer, Percival B., *et al.* (See Tuttle, Joseph W., assignor.)						
Palmer, T. L., *et al.* (See Waters, James H., assignor.)						
Palmer, William A., Rome, Ga. Machine for shearing, punching, and riveting	257,059	Apr. 25	1596	448	21	1252
Paradise, Noah. (See Tourville, Louis H., assignor.)						
Paradise, Norman J., Aurora, Ill. Cock for air-brakes	259,710	June 20	1058	281	21	1893
Parcell, Peter B., Ashmore, Ill. Harrow	258,107	May 16	1181	331	21	1508
Parcelle, Albert L., Boston, Mass. Eyelet	257,750	May 9	758	211	21	1421
Park, Aaron, Ottumwa, Iowa. Dumping-car	251,931	Jan. 3	301	82	21	52
Park, Alton J., Jr., Virginia, Mo. Straw-conveyer belt	254,686	Mar. 7	221	77	21	688
Park, James A., assignor to E. W. Sparrow, Lansing, Mich. Buckle	259,650	June 13	967	258	21	1071
Park, Samuel M., Chicago, Ill. Assorting-machine	254,234	Feb. 28	1283	356	21	588
Parker, Caleb B., *et al.* (See Bowden, Alfred B., assignor.)						
Parker, Charles, Wenona, Ill. Rein-protector	251,932	Jan. 3	302	82	21	52
Parker, Charles R. (See Lawrence, John R., assignor.)						
Parker Company, Charles. (See Chapman, Frank H., assignor.)						
Parker, Edmund A., Meriden, Conn. Cigar-lighter	251,933	Jan. 3	303	82	21	53
Parker, Edmund A., Meriden, Conn. Covered dish	254,687	Mar. 7	222	77	21	688
Parker, Edmund A., Meriden, Conn. Covered dish	256,036	Apr. 4	346	94	21	1008
Parker, Edmund A., Meriden, Conn. Covered dish	256,037	Apr. 4	347	94	21	1009
Parker, Edmund A., Meriden, Conn. Covered dish	258,799	May 30	2032	574	21	1673
Parker, Edmund A., Meriden, Conn. Cigar-lighter	253,419	Feb. 7	276	79	21	393
Parker, Edward D., Salina, Kans. Electric coupling for train-telegraphs	256,157	Apr. 11	509	140	21	1042
Parker, Ezra and I. D., Plainfield, assignors to H. & F. J. L. Blandy, Zanesville, Ohio. Saw-mill head-block	260,230	June 27	1713	464	21	2006
Parker, George A., Marlborough, N. H. Hammock and tent frame	253,755	Feb. 14	600	197	21	475
Parker, George N. (See Marshall, Charles E., assignor.)						
Parker, George W., assignor to F. Buhl & Co., Detroit, Mich. Garment	253,756	Feb. 14	601	198	21	475
Parker, Isaac D. (See Parker, Ezra and I. D.)						
Parker, Jesse L., assignor to himself and B. F. Willcuts, Fountain City, Ind. Bench-vise	253,757	Feb. 14	602	198	21	475
Parker, L. Holden, *et al.* (See Cadman, Isaac P., assignor.)						
Parker, Le Roy W. (See Hinckley, Edward C., assignor.)						
Parker, Lewis, *et al.* (See Scott, James, assignor.)						
Parker, Orin, Washington, D. C. Method of and apparatus for making ice	255,660	Mar. 28	1527	411, 412	21	923
Parker, Orin, Washington, D. C. Cooling air for making ice and cooling in general	259,421	June 13	660	180	21	1820
Parker, Sidney, and J. D. Bennett, Chicago, Ill., assignors to G. H. Watson, Ackley, A. W. and F. S. Morrill, Waterloo, Iowa, and S. Parker, Chicago, Ill. Smoke-consuming apparatus	257,606	May 9	588	164	21	1390
Parker, Silas O., assignor to Littleton Patent Button Company, Littleton, N. H. Swivel-button	252,509	Jan. 17	1013	282	21	184
Parker, Thomas S., Schenectady, N. Y. Trimmer for sewing-machines	257,751	May 9	759	211, 212	21	1421
Parker, William E., assignor of one-half to English & Mersick, New Haven, Conn. Raisings for upholstery of felt	256,729	Apr. 18	1219	341	21	1178
Parker, William S., New York, N. Y. Dynamo-electric machine	258,600	May 30	2033	574	21	1673
Parkes, Alexander, Sutton Coldfield, Birmingham, county of Warwick, England. Treatment of cellulose and the manufacture of articles therefrom	257,607	May 9	589	.....	21	1390
Parkhurst, Darius, assignor of one-half to G. H. Knight, St. Louis, Mo. Head-block for saw-mills	257,060	Apr. 25	1508	448, 449	21	1252
Parkhurst, Edward G., assignor to Pratt & Whitney Company, Hartford, Conn. Ammunition-box	259,040	June 6	209	56	21	1730
Parkinson, Joseph L., Cambria, Wis. Sewing-machine work-basket	252,685	Jan. 24	1220	342	21	236
Parkinson, William, assignor to W. S. Whitney, Boston, Mass. Lubricant	252,686	Jan. 24	1220	.....	21	236
Parkison, Allen R., Monongahela City, Pa. Grate and grate-bar	254,686	Mar. 7	223	77	21	688
Parks, George A., Revere, Mass. Locking-bolt for ships' berths	253,190	Mar. 21	944	252	21	815
Parks, James D. L., *et al.* (See McKimm, Edgar N., assignor.)						
Parks, John A., and G. V. Sheffield, New York, N. Y.; said Sheffield assignor to said Parks. Drill-chuck	260,314	June 27	1814	492	21	2023
Parks, Theodore, Freedom, Pa. Seed-sower	252,398	Jan. 17	877	244	21	102
Parr, James, *et al.* (See Nott, Aaron B., assignor.)						
Parr, John, Humboldt, assignor of two-fifths to E. A. Tucker, Richardson County, Nebr. Metal cross-tie	260,231	June 27	1714	464	21	2006
Parrett, Richard J., Portland, Ind. Carriage-top	255,328	Mar. 21	1123	302	21	846
Parrish, William H., assignor of one-half to G. E. Aiken, Salem, Oreg. Combined header and thrasher	259,201	June 6	397	105, 106	21	1763
Parry, Charles T., Philadelphia, Pa. Manufacture of locomotive-frames	255,329	Mar. 21	1124	302, 303	21	846
Parry, Charles T., Philadelphia, Pa. Multiple-drilling machine	257,061	Apr. 25	1600	440	21	1253
Parry, David M., Rushville, Ind. Force-feed grain-drill	260,315	June 27	1815	492	21	2023
Parse, Carman, *et al.* (See Bacon, Frank M., assignor.)						
Parshel, James T., *et al.* (See McKimm, Edgar N., assignor.)						
Parsons, Charles C., and E. F. Crusé, New York, N. Y., assignors to H. Bower, Philadelphia, Pa. Obtaining cyanides	259,908	June 20	1289	.....	21	1932
Parsons, John J., New York, N. Y. Needle-case	256,918	Apr. 25	1438	404	21	1224
Parsons, Winslow R., Waterloo, Iowa. Sewing-machine shuttle	253,621	Feb. 14	521	150	21	446
Parsons, Winslow R., Waterloo, Iowa. Sewing-machine shuttle	254,040	Feb. 21	1057	294	21	542
Partz, August F. W., Philadelphia, Pa. Voltaic battery	252,619	Jan. 24	1133	318	21	211
Parvin, Robert C., Vineland, N. J. Running-gear for vehicles	260,047	June 27	1485	400	21	1971

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Pashley, George. (See Ward, Smith, and Pashley.)						
Patchel, James, Chicago, Ill. Meat-cutter	259,711	June 20	1059	281	21	1893
Pate, McDonald, S. O., Mason, and W. H. Dail, Snow Hill, N. C. Cultivator	252,508	Jan. 17	1012	282	21	184
Patee, Theodorus H., Greencastle, Ind. Lightning-rod coupling	257,889	May 16	993	257	21	1461
Patee, Theodorus H., Greencastle, Ind. Lightning-rod coupling	257,890	May 16	994	257	21	1461
Patee, Theodorus H., Greencastle, Ind. Lightning-rod coupling	257,891	May 16	995	258	21	1462
Patee, Theodorus H., Greencastle, Ind. Lightning-rod coupling	257,376	May 2	276	79	21	1331
Patee, Thomas, assignor to Hapgood Plow Company, Alton, Ill. Planting-plow	257,973	May 16	1019	284	21	1478
Pattberg, Henry, Jersey City, N. J. Toilet-case						
Patten, Enos, and T. Davey, Lynn, Mass.; said Davey assignor to said Patten. Sole buffing, cleaning, and edge setting machine	253,169	Jan. 31	1840	507	21	334
Patten, Thomas. (See Anderson and Patten.)						
Patterson, Andrew, Idlewood, Pa. Thermo-electric battery	255,885	Apr. 4	137	42	21	976
Patterson, Floyd E., Chicago, Ill., assignor to W. L. Carpenter, Des Moines, Iowa. Barb-wire-fence machine	256,314	May 23	1449	411	21	1563
Patterson, George F., Baltimore, Md., assignor of one-half to C. C. Fairlamb, Chicago, Ill. Stock-car	252,389	Jan. 17	877	244	21	102
Patterson, Jacob M., Woodbury, N. J. Chimney	256,919	Apr. 25	1439	404	21	1224
Patterson, James, Washington, D. C. Railway-car	258,584	May 30	1767	505	21	1631
Patterson, James D., Competition, Mo. Cotton chopper and cultivator	252,510	Jan. 17	1013	283	21	184
Patterson, John H., U. S. Army. Car-coupling	257,974	May 16	1020	285	21	1479
Patterson, Lemuel, and I. J. Palmer, Olean, N. Y. Gate	251,738	Jan. 3	50	14	21	11
Patterson, William, Salem, N. J. Reed-scraper	253,310	Feb. 7	147	43	21	371
Patterson, William H., Baltimore, Md. Elevator	257,162	May 2	42	13, 14	21	1288
Patterson, William R., assignor to Western Electric Manufacturing Company, Chicago, Ill. Telegraph-cable terminal	251,739	Jan. 3	51	14	21	11
Patterson, William R., assignor to Western Electric Manufacturing Company, Chicago, Ill. Anti-inductive cable	252,511	Jan. 17	1015	283	21	185
Patterson, William W., assignor of one-half to W. H. Hexie, Corning, Iowa. Artificial-stone composition	254,265	Feb. 28	1427	.....	21	613
Patton, John E., Chattanooga, Tenn. Dinner-bucket	259,589	June 13	860	234	21	1856
Patton, R. J. (See Hibbs, Enos, assignor.)						
Patton, William P., assignor of three-eighths to D. L. Jauss, Harrisburg, Pa. Self-generating vapor-burner	254,564	Mar. 7	141	35	21	602
Paul, Andrew G., Boston, Mass. Centering and attaching sockets to lamp-bowls	255,607	Apr. 4	68	18	21	902
Paul, Andrew G., Boston, and J. H. Rouse, Somerville, Mass. Decorating glass, &c.	258,106	May 16	1182	.....	21	1508
Paul, William, assignor to Wallace & Sons, Ansonia, Conn. Device for connecting wires in electrical apparatus	255,661	Mar. 28	1532	412	21	923
Paull, Archibald W., Wheeling, W. Va., and J. F. Miller, Martin's Ferry, Ohio. Manufacture of lamp or lantern globes, chimneys, &c	256,158	Apr. 11	511	140	21	1043
Paxson, Charles H. (See Cofield, Peter T., assignor.)						
Payn, Frank D., Albany, N. Y. Automatic weighing-scale	254,508	Mar. 7	67	18	21	650
Payne, Martin, Troy, N. Y. Sulky	251,924	Jan. 3	304	82	21	53
Payne, Morgan, W. P. Foust, and R. M. Thomas; said Payne assignor to M. Foust, Cardington, Ohio. Drain and irrigating tile	253,093	Jan. 31	1733	479	21	316
Payne, William H., assignor of one-half to A. Wilke, Camden, N. J. Chimney-cap	258,498	May 23	1698	460	21	1505
Payson, Joseph L., Jr., Chicago, Ill. Clock-dial	258,601	May 30	2034	574	21	1673
Peace, John G., Salem, Mo. Stump-extractor	252,512	Jan. 17	1015	283	21	185
Peacock, Hyla H., Philadelphia, Pa. Medicine chest and case	254,636	Mar. 14	484	130	21	727
Peake, George B. (See Gegerty, John, assignor.)						
Pear, Isaac S., Cambridge, Mass. Cot-bed	253,556	Feb. 14	449	128	21	434
Pearce, Frederick, New York, and J. Jones, Brooklyn, N. Y. Revolving show-stand	253,757	Feb. 14	602	198	21	475
Pearce, Henry F., Hyde Park, Pa. Cap for miners' lamps	258,602	May 30	2035	574	21	1673
Pearce, Jefferson, North Lansing, Mich. Vehicle-wheel	259,712	June 20	1061	282	21	1893
Pearce, William, Plainfield, assignor of two-thirds to M. N. Woodruff and N. A. Barnes, Southington, Conn. Ox-shoe	255,014	Mar. 14	713	192	21	768
Pearce, William H. (See De Caindry, William A., assignor.)						
Pearson, Felix L. D., Montreal, Quebec, Canada. Machine for cutting ice	253,223	Feb. 7	54	17	21	356
Pearson, John. (See Woodruff, Wheeler, and Pearson.)						
Pearson, Samuel F., *et al.* (See Pearson, William E., assignor.)						
Pearson, William E., Boston, Mass., assignor to S. F. Pearson, Portland, Me., and J. O. Cheever, Boston, Mass. Pop safety-valve	253,602	Feb. 14	522	150	21	446
Pearson, William H., and J. Bradley, Lowell, Mass. Thread-guide mechanism for knitting-machines	253,294	Feb. 7	55	17	21	356
Pease, Albert A., Springfield, Mass. Adjustable tool	258,346	Jan. 10	636	194	21	194
Pease, Frank, Lynn, Mass. Burnishing-tool	256,315	May 23	1451	412	21	1564
Pease, Frank, Lynn, Mass., assignor to Cocheco Heeler Company, Biddeford, Me. Heel-machine	253,758	Feb. 14	602	198	21	457
Pease, John F., Syracuse, N. Y. Heating apparatus	257,163	May 2	43	14	21	1288
Pease, John F., Syracuse, N. Y. Hot-air furnace. (Reissue)	10,113	May 16	1309	371	21	1831
Peats, Frank F. (See Hartley, D. Bert, assignor.)						
Peay, William A., assignor of one-half to J. C. Jonson, Calhoun, Ky. Cap or covering for boot or shoe heels	257,377	May 2	277	79	21	1331
Peberdy Latch Needle Company. (See Peberdy, Samuel, assignor.)						
Peberdy, Samuel, Philadelphia, Pa., assignor to Peberdy Latch Needle Company, of New Jersey. Manufacture of knitting-machine needles	255,608	Apr. 4	69	19	21	903
Peck, Aaron D., Jordan, N. Y. Wheelbarrow	255,692	Mar. 28	1532	413	21	923
Peck, Abel, Newburg, N. Y. Producing photographic negatives	252,964	Jan. 31	1560	.....	21	290
Peck, Cassius C. (See Fisher and Peck.)						
Peck, Cassius C., New York, N. Y. Lathe for turning polygonal forms	260,118	June 27	1578	425	21	1985
Peckham, William H., New York, N. Y. Spectacle-frame	255,330	Mar. 28	1375	371	21	894
Pedder, John, Pittsburg, Pa. Ingot-mold shield	256,638	Apr. 4	348	94	21	1009
Pedrick, Daniel W., Philadelphia, Pa. Metal-boring machine	255,449	Mar. 28	1372	344	21	877
Pedrick, Knott H., assignor of one-half to C. D. Munson, Hudson, Mass. Envelope	256,241	Apr. 11	535	179	21	1063
Peel, Lawson G., Haslehurst, Miss. Nut-lock	256,730	Apr. 18	1219	341	21	1178
Peeler, Abner, assignor to L. and C. Walkup, Fort Dodge, Iowa. Paint-distributer	256,652	Apr. 25	1362	364	21	1211
Peerless Wire Mattress Company. (See Lorenzen, Immanuel, assignor.)						
Peirce, Adams T., Dover, N. H. Driving-rein	253,558	Feb. 14	450	128	21	434
Peirce, Horatio L., assignor of one-fourth to W. W. Johnston, Providence, R. I. Spinning-ring and holder therefor	257,238	May 2	115	33	21	1301
Pelham, V. C. (See Pelham, William C., assignor.)						
Pelham, William C., Maysville, assignor to V. C. Pelham, Mason County, Ky. Machine for manufacturing honey-comb foundations	256,281	May 23	1377	389, 390	21	1551
Pelisse, Auguste, Newark, N. J., assignor to J. T. Waring, New York, N. Y. Machinery for felting hat-bodies	253,420	Feb. 7	377	79	21	393

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Pelisse, Auguste, Nowark, N. J., assignor to J. T. Waring, New York, N. Y. Felting-machine	254,041	Feb. 21	1058	294 295	21	542
Pelletier, Antonio, Washington, D. C. Paving and building material	254,366	Feb. 28	1427	.....	21	613
Pendergast, James, New Haven, Conn. Whiffletree-coupling	256,364	Apr. 11	780	215	21	1069
Pendleton, Douglas, *et al.* (See Webster, Louisiana P., assignor.)						
Pendleton, Frank P., *et al.* (See Stamour, John B., assignor.)						
Pendleton, Philip, Bath, W. Va., assignor of one-half to J. W. Denver, Wilmington, Ohio. Railway-tie	255,392	Mar. 21	1202	329	21	859
Pendleton, William S., Fort Worth, Tex. Car axle and wheel	256,109	May 16	1183	331 332 333	21	1508
Penland, N. Alexander, Asheville, N. C. Motive power	253,623	Feb. 14	523	150	21	446
Penland, Wren C., Asheville, assignor of one-half to J. M. Brookshier, Buncombe County, N. C. Pruning-knife	255,114	Mar. 21	846	226	21	798
Penn Hardware Company. (See Heizmann, C. Raymond, assignor.)						
Pennington, Albert R., Middletown, Del. Fertilizer-distributer	255,015	Mar. 14	713	192	21	769
Pennington, Henry, Philadelphia, Pa. Card-support	257,184	May 2	44	14	21	1289
Pennock, Samuel, Kennett Square, Pa. Road-scraper. (Reissue)	10,023	Jan. 31	1850	509	21	336
Pennock, William C., Cardington, Ohio. Valve-motion	259,999	June 20	1290	346	21	1932
Pennoyer, George, Chicago, Ill. Carriage-spring	252,396	Jan. 17	789	219	21	147
Pennoyer, George, Chicago, Ill. Side-spring buggy	254,839	Mar. 14	485	130	21	727
Pennsylvania Steel Company. (See Cummings, Albert G., assignor.)						
Pennyonick, James G., Boston, Mass. Ventilator	254,884	Mar. 14	549	147	21	739
Pents, Annie K., Clearfield, Pa. Stock-car	254,442	Feb. 28	1517	415	21	629
Pents, Levi, assignor to C. L. Paar, H. W. Werts, and J. Lahm, Canton, Ohio. Rein-holder	259,333	June 13	573	151	21	1800
People's Telephone and Telegraph Company. (See Hopkins, George M., assignor.)						
Pepper, Albert E., Philadelphia, Pa. Grain-car door	254,689	Mar. 7	294	77	21	688
Percy, Samuel R., and W. S. Wells, New York, N. Y. Brewing	254,565	Mar. 7	143	36	21	692
Perdue, James, assignor of three-fifths to B. D. M. Jones, Bellefont, Va., and G. W. Dyer, Washington, D. C. Rock-drill	259,276	June 6	487	127	21	1778
Perkins, Albert R., Newton, assignor to Simons, Hatch & Whitten, Boston, Mass. Shirt	256,443	Apr. 11	872	243	21	1105
Perkins, Albert R., Newton, assignor to Simons, Hatch & Whitten, Boston, Mass. Shirt	256,498	Apr. 18	955	267	21	1132
Perkins, Albert R., Newton, assignor to Simons, Hatch & Whitten, Boston, Mass. Shirt	257,892	May 16	926	258	21	1462
Perkins, Albert R., Newton, assignor to Simons, Hatch & Whitten, Boston, Mass. Shirt	258,110	May 16	1184	334	21	1508
Perkins, Albert R., Newton, assignor to Simons, Hatch & Whitten, Boston, Mass. Shirt	260,316	June 27	1816	492	21	2023
Perkins, Benjamin F., *et al.* (See Mason and Wooster, assignors.)						
Perkins, Elihu L., Geneva, Ohio. Padlock	256,159	Apr. 11	512	141	21	1043
Perkins, George H., Philadelphia, Pa. Closing the seams of sheet-metal cans	253,795	Jan. 24	1341	.....	21	246
Perkins, George H., Philadelphia, Pa. Nailing-machine	254,506	Mar. 7	145	36	21	663
Perkins, Joel W., East Hampton, Conn. Mechanical toy	255,866	Apr. 4	159	42	21	976
Perkins, Richard B. (See Freeborn and Perkins.)						
Perot, Edward S., and H. C. Beitenman, deceased, (E. O. Beitenman, administratrix,) Philadelphia, Pa., assignors to National Manufacturing Company, New Haven, Conn. Chuck. (Reissue)	10,102	May 2	374	105	21	1348
Perpetual Tension Propelling Belt Company. (See Gear, Alonzo S., assignor.)						
Perram, Henry T., Stamford, Ontario, Canada. Thill-coupling	251,935	Jan. 3	305	83	21	53
Perrett, Edward, Victoria Chambers, Westminster, assignor to J. E. Hodgkin, director, London, England. Filter	259,041	June 6	210	56	21	1730
Perrette, Justin, assignor of one-half to E. C. Tarr, A. A. Schiono, and H. Bernstein, Titusville, Pa. Tubing-clamp	254,567	Mar. 7	148	36	21	663
Perrine, Gilbert A., Fremont, Ohio. Fifth-wheel for vehicles	257,514	May 9	457	127	21	1369
Perry, Samuel M., Plainfield, N. J. Dust-pan	260,119	June 27	1579	425	21	1985
Perry, Samuel M., Plainfield, N. J. Detachable handle and leg for dust-pans	260,120	June 27	1580	426	21	1986
Perry, Solon A., Beloit, Kans. Car-coupling	252,965	Jan. 31	1561	435	21	290
Perry, Walter R., New London, Conn. Sample-fastener for packages	254,840	Mar. 14	486	130	21	727
Perry, William A., Bay Ridge, N. Y. Pumping-engine	251,730	Jan. 3	51	14	21	11
Perryman, Harry L., Lincoln, Nebr. Cork-screw	257,062	Apr. 25	1601	449	21	1253
Pervear, Henry N., Pawtucket, R. I. Bracelet	258,111	May 16	1184	334	21	1509
Peshine, F. S. (See Paine, Henry M., assignor.)						
Peters, Carl A. F., St. Louis, Mo. Earth-auger	256,039	Apr. 4	350	94	21	1009
Petera, Henry C. (See Miller and Peters.)						
Petera, James H., Nechesville, Tex. Cloth-measuring reel	251,936	Jan. 3	305	83	21	53
Petera, John L., New York, N. Y. Automatic hatchway-door operator	255,663	Mar. 28	1533	413	21	994
Petera, Stewart, and W. Donald, Glasgow, Scotland, assignors, by mesne assignments, to H. Huber, New York, N. Y. Water-closet	260,232	June 27	1715	465	21	2006
Petersen, Carl, and L. C. Nielsen, Roeskilde, assignors to Burmeister and Wain's Maskin and Skibsbyggeri, Copenhagen, Denmark. Centrifugal creamer	256,365	Apr. 11	781	215	21	1069
Petersen, Carl W., San Francisco, Cal. Air-ship	256,366	Apr. 11	783	216	21	1070
Petersen, Eduard A. C., assignor of one-half to H. Piper, Chicago, Ill. Baker's oven	252,654	Jan. 10	463	127	21	67
Petersen, Peter, Laporte City, Iowa. Plow	253,094	Jan. 31	1734	479	21	316
Petersen, Wilhelm, Buffalo, N. Y. Coal-oil stove	257,378	May 2	278	80	21	1331
Peterson, Adolphus, assignor of one-half to S. C. Croft, New York, N. Y. Carpet-exhibitor	259,713	June 20	1061	292	21	1693
Peterson, John E., North Amherst, Ohio. Blotting-pad	257,448	May 2	362	101	21	1346
Petitpierre, David L., Couvet, Neufchatel, Switzerland. Watch-maker's lathe	258,609	May 30	1884	531 532	21	1647
Petri, Friedrich, Berlin, Germany. Treating sewage	259,309	June 6	399	106	21	1763
Petrie, Charles S. (See Ashworth and Petrie.)						
Petrie, Nathan A. (See Wilbur and Sanford, assignors.)						
Petrie, Walter R., New Haven, Conn. Machine for making blind-hooks	253,311	Feb. 7	148	43	21	371
Pettebone, Robert T., Wyoming, Pa. Shovel, spade, or scoop	257,752	May 9	761	219	21	1422
Pettee, Simon E., Cleveland, Ohio. Journal-box	253,223	Feb. 7	56	17	21	356
Pettingell, Walter J., Lowell, Mass. Metallic chimney-cap	255,016	Mar. 14	715	193	21	769
Pettingill, George D., Asbury Park, N. J. Cement-pipe well	255,664	Mar. 28	1535	413	21	994
Pettit, Edwin T., assignor to himself and G. E. Kester, Marshalltown, Iowa. Perforating device	259,910	June 20	1202	346	21	1962
Pettit, James D., Burlington, Iowa. Coal-chute	252,655	Jan. 10	464	127	21	67
Petty, Thomas M., Oswego, N. Y. Signal-flag	255,685	Mar. 28	1536	412	21	994
Petzold, Oscar T., Sebnitz, Saxony, Germany. Funnel	256,040	Apr. 4	350	93	21	1009
Pfarre, Edward, Brooklyn, N. Y. Double catheter	256,500	Apr. 18	1050	286	21	1148
Pfau, Julius P., Lansingburg, N. Y. Valve	255,686	Mar. 28	1536	414	21	994
Pfaunts, Charles, and H. Franck, St. Louis, Mo. Hinge	255,889	Apr. 4	70	19	21	992
Pfingsten, Carl G., and E. Young, New York, N. Y., assignors to said Young. Handle for pocket-books, &c	258,112	May 16	1185	334	21	1509

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Pfitzinger, Wilhelm. (See Wernicke and Pfitzinger.)						
Pfleiderer, Paul, Norwood, county of Surrey, England. Kneading and mixing machine	254,042	Feb. 21	1060	295	21	543
Pfleiderer, Paul, Norwood, county of Surrey, England. Kneading and mixing machine	254,641	Mar. 14	487	130	21	727
Pfleuger, Ernest F., Akron, Ohio. Luminous attachment for harness	254,842	Mar. 14	487	131	21	727
Pflug, Emil, assignor to N. Fritzner, Berlin, Germany. Button and button-fastening						
Phares, Isaac H., *et al.* (See King, James T., assignor.)						
Phelps, Augustus H., East Saginaw, Mich. Pillow-sham holder	259,911	June 20	1293	346	21	1939
Phelps, George H., Newton, Mass. Artificial whalebone	251,731	Jan. 3	53	14	21	12
Phelps, George H., Newton, Mass. Belt-controlling mechanism	255,450	Mar. 28	1274	344	21	878
Phelps, George M., Brooklyn, N. Y. Signal-box for district and alarm telegraphs	253,750	Feb. 14	695	198	21	475
Phelps, Isaac K., Wahoo, and W. F. Siefers, Scribner, Nebr. Wagon-body	259,513	Jan. 17	1016	263	21	185
Phelps, William M., Marshall, Mich. Lantern-bracket	258,607	Jan. 24	1221	342	21	296
Phelps, William P. (See Plush and Phelps.)						
Phenix Machine Company. (See Entwistle, Thomas C., assignor.)						
Philbrook, Emmeline W., Boston, Mass. Underwaist	259,498	June 13	681	180	21	1820
Philipp, Gottlieb, Forst-in-the-Lausitz, Germany. Piano-action	253,421	Feb. 7	277	79	21	383
Philippi, Pompeius, Boardstown, Ill. Straw-carrier of thrashing-machines	258,080	Jan. 24	1134	318	21	311
Phillips, Charles S. (See Burdick, Edwin A., assignor.)						
Phillips, William J., Philadelphia, Pa. Electric cable	252,249	Jan. 10	667	194	21	194
Phillips, Alice B. (See Phillips, William L., assignor.)						
Phillips, Alvah T., Milford, Mich. Hand-rake	259,714	June 20	1062	292	21	1693
Phillips, Ansel P., assignor of one-half to F. I. Marcy, Providence, R. I. Engraving and chasing machine	259,912	June 20	1294	346	21	1933
Phillips, Charles E. (See Goulding, Lewis, assignor.)						
Phillips, Charles H., and E. C. Greene, East New York, N. Y. Blind-slat adjustor	254,235	Feb. 28	1265	356	21	569
Phillips & Co., G. H. (See Ham, Robert, assignor.)	255,810	Apr. 4	71	19	21	992
Phillips, E. P., Findlay, Ohio. Fence-post						
Phillips, Edward. (See Hards and Phillips.)						
Phillips, Eugene F. (See Hamilton, James E., assignor.)						
Phillips, Eugene F. (See Sawyer, William H., assignor.)						
Phillips, Eugene F. (See Scott, George B., assignor.)						
Phillips, Francis V., assignor to G. H. Dayton, Chicago, Ill. Door-check	251,738	Jan. 3	54	15	21	19
Phillips, George C., Silver City, Nev. Governor for pumping-engines	257,976	May 16	1021	265	21	1479
Phillips, George C., Silver City, Nev. Governor for direct-acting engines	257,978	May 16	1024	265	21	1479
Phillips, Jason L., Tecumseh, Nebr. Thrashing-machine	257,753	May 9	761	212	21	1422
Phillips, John. (See Hards and Phillips.)						
Phillips, John M., Gillsville, Ga. Sulky-plow	257,063	Apr. 25	1602	449 450	21	1253
Phillips, John V., New Buffalo, Mich. Wagon-jack	258,469	May 23	1038	460	21	1595
Phillips, Simeon G., Perth Amboy, N. J. Lawning and cleaning clay	258,796	Jan. 24	1342	375	21	246
Phillips, Thomas S., assignor of one-half to G. D. Briggs, Buffalo, N. Y. Car-axle box	255,451	Mar. 28	1275	344	21	878
Phillips, Thomas S., Buffalo, N. Y., assignor, by mesne assignments, to S. S. White Dental Manufacturing Company, Philadelphia, Pa. Hand-piece for dental engines. (Reissue)	10,116	May 16	1311	371	21	1531
Phillips, William L., assignor to A. B. Phillips, Brooklyn, N. Y. Spring bed-bottom	258,595	May 30	1788	505	21	1631
Philpott, James H., assignor of one-fourth to H. Reinheimer, Rising City, Nebr. Wear-clip for harness-trees	259,913	June 20	1295	347	21	1933
Phinney, Theodore W., Newport, R. I. Construction of vessels	256,683	May 30	2035	575	21	1673
Phippa, Edward L., assignor to Milford Door Knob Company, Milford, Mich. Knob attachment. (Reissue)	10,086	Mar. 28	1651	447	21	944
Phippa, William, Newark, N. J. Basket	254,226	Feb. 28	1295	357	21	589
Picard, Alexandre, Montaign, France. Breech-loading fire-arm	253,422	Feb. 7	278	80	21	383
Picard, Charles G., Paris, France. Apparatus for molding fancy articles in glass, crystal, &c	259,903	June 6	401	107	21	1764
Pickel, Alexander M., Carpentersville, Ind. Car-coupling	259,904	June 6	402	107	21	1764
Pickering, Jeremiah, assignor of one-half to J. A. Ray, Leon, Iowa. Door-check	254,237	Feb. 28	1268	357	21	569
Pickford, Henry, and H. T. Gregory, Chelsea, Mass. Electric signaling apparatus	258,797	Jan. 24	1343	376	21	247
Pickhardt, Gustav, Hagen, assignor to C. Külp, Darmstadt, Germany. Wire-netting	259,889	June 20	1412	389	21	1953
Pickhardt, Wilhelm, New York, and H. Endemann, Brooklyn, N. Y. Tartrate of oxychinoline	257,898	May 9	843	.....	21	1438
Pickhardt, Wilhelm, New York, and H. Endemann, Brooklyn, N. Y. Hydrochlorate of oxychinoline	257,899	May 9	843	.....	21	1438
Pickhardt, Wilhelm, New York, and H. Endemann, Brooklyn, N. Y. Manufacture of chinoline	254,098	Feb. 21	1119	.....	21	553
Pickhardt, Wilhelm, New York, and H. Endemann, Brooklyn, assignors to said Pickhardt and A. Kuttroff, New York, N. Y. Preparation of chinoline	252,846	Jan. 24	1415	.....	21	258
Pickhardt, Wilhelm, New York, and H. Endemann, Brooklyn, assignors to said Pickhardt and A. Kuttroff, New York, N. Y. Preparation of chinoline	252,847	Jan. 24	1416	.....	21	258
Pickhardt, Wilhelm, New York, and H. Endemann, Brooklyn, assignors to W. Pickhardt and A. Kuttroff, New York, N. Y. Medical compound	254,096	Feb. 21	1118	.....	21	553
Pickhardt, Wilhelm, New York, and H. Endemann, Brooklyn, assignors to W. Pickhardt and A. Kuttroff, New York, N. Y. Medical compound	254,097	Feb. 21	1119	.....	21	553
Pickhardt, Wilhelm, New York, and H. Endemann, Brooklyn, assignors to said Pickhardt and A. Kuttroff, New York, N. Y. Salicylate of chinoline	256,444	Apr. 11	873	.....	21	1106
Pickhardt, Wilhelm, New York, and H. Endemann, Brooklyn, assignors to said Pickhardt and A. Kuttroff, New York, N. Y. Benzoate of chinoline	256,445	Apr. 11	873	.....	21	1106
Pickhardt, Wilhelm, New York, and H. Endemann, Brooklyn, assignors to said Pickhardt and A. Kuttroff, New York, N. Y. Acid tannate of chinoline	260,317	June 27	1817	.....	21	2023
Pickhardt, Wilhelm, New York, and H. Endemann, Brooklyn, assignors to said Pickhardt and A. Kuttroff, New York, N. Y. Neutral tannate of chinoline	260,318	June 27	1817	.....	21	2023
Pickhardt, Wilhelm, New York, and H. Endemann, Brooklyn, assignors to said Pickhardt and A. Kuttroff, New York, N. Y. Basic tannate of chinoline	260,319	June 27	1818	.....	21	2023
Pictet, Raoul P., Geneva, Switzerland. Construction of ships	251,793	Jan. 3	139	37	21	94
Pidgeon, Francis, assignor to M. E. Pidgeon, Saugerties, N. Y. Ditching-machine	258,596	May 30	1789	505	21	1631
Pidgeon, M. E. (See Pidgeon, Francis, assignor.)						
Pieper, Carl, Berlin, Germany. Barbed-wire fence	259,905	June 6	403	107	21	1764
Pieper, Wilhelm. (See Creager, Jonathan, assignor.)						
Pierce, Byron R. (See Ellis, Hiram R., assignor.)						
Pierce, Charles F. (See Freeman, James P., assignor.)						
Pierce, Charles F., Providence, R. I. Combined match-box and cigar-cutter	252,656	Jan. 10	465	126	21	68
Pierce, Charles F., Chicago, Ill. Refrigerator-car	257,520	May 9	844	225	21	1438
Pierce, Charles F., Chicago, Ill. Refrigerator-car	256,531	Mar. 28	1276	371	21	894
Pierce, Charles W., Oak Hill, N. Y. Stove-pipe damper	258,597	May 30	1789	505	21	1631
Pierce, Charles W., Oak Hill, N. Y. Door hanger and pulley	255,811	Apr. 4	72	19, 20	21	993
Pierce, Denison C., Chicago, Ill. Railway-crossing	255,320	Mar. 21	1126	303	21	847
Pierce, Ebenezer, New Bedford, Mass. Breech-loading fire-arm	256,041	Apr. 4	351	95	21	1009
Pierce, Ebenezer, New Bedford, Mass. Breech-loading bomb-gun						

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Pierce, Ezekiel P., Cambridge, Mass. Awning-blind hinge	252,985	Jan. 31	1474	412	21	274
Pierce, Frank F., Brodhead, Wis. Pump	253,766	Feb. 14	696	199	21	476
Pierce, George L., Oakland, Cal. Hydraulic elevator	252,966	Jan. 31	1502	435	21	290
Pierce, George W. (See Temple and Pierce.)						
Pierce, James D., Milwaukee, Wis., assignor of one-half to H. C. Bradley. Covering for steam-pipes, &c.	252,400	Jan. 17	879	245	21	192
Pierpont, William, Salem, N. J. Thrasher and separator	254,238	Feb. 28	1288	357	21	580
Piers, Walter A. (See Durbon, Samuel S., assignor.)						
Pierson, James S., Plainfield, N. J., assignor to American Gas Fuel and Light Company, New York, N. Y. Apparatus for the manufacture of gas	252,967	Jan. 31	1563	435 436	21	290
Pigeon, Narcisse. (See Pavres, Julien, assignor.)						
Pike, Alonzo T., and P. A. Loy, Clarinda, Iowa. Weed and lawn mower	253,694	Feb. 14	524	150 151	21	446
Pike, Daniel, assignor of one-half to M. J. Deady, New Orleans, La. Pottery-press	258,865	May 30	2101	593	21	1686
Pike, John B., Pikeville, Ontario, Canada. Barrel-hoop-cutting machine	258,804	May 30	2036	575	21	1674
Pike, Thompson. (See Averill, Benjamin F., assignor.)						
Pindar, Henry, and G. W. Clark, New York, N. Y. Apparatus for feeding scaling compounds to steam-boilers	255,532	Mar. 28	1376	371	21	895
Pine, James K. P., *et al.* (See Norris, George E., assignor.) (Reissue.)						
Pinter, Francis T., Schulenburg, Tex. Insect-destroyer	253,625	Feb. 14	526	151	21	446
Pinter, Francis T., Schulenburg, Tex. Churn-dasher	256,367	Apr. 11	785	216	21	1090
Piper, Henry. (See Petersen, Eduard A. C., assignor.)						
Piper, Henry B. (See Hoag, Sidney W., Sr., assignor.)						
Pitkin, Alfred B., Hartford, Conn. Belt-hook	253,423	Feb. 7	280	80	21	393
Pitny, Owen S., Fulton, Mo. Horse-collar fastening	260,048	June 27	1466	400	21	1971
Pitt, Frederick, Ionia, Mich. Sounding-board for upright piano-fortes	258,670	May 30	1685	532	21	1648
Pitt, John R., Brooklyn, N. Y. Temporary binder	255,452	Mar. 28	1276	344	21	875
Pitt, William A., New York, N. Y. Filter	256,853	Apr. 25	1365	384	21	1211
Pitt, William H., Buffalo, N. Y. Friction-match	256,990	Apr. 25	1440	404	21	1294
Pitt, William R., and C. H. Dunks, New York, N. Y. Bedstead	254,600	Mar. 7	295	78	21	660
Pittet, Elie, East New York, N. Y. Wash-boiler fountain	256,731	Apr. 18	1220	342	21	1178
Pitts Agricultural Works (See Aitken and Farquhar, assignors.)						
Pitts, James L., Grand Rapids, Mich. Saw-swage	250,423	June 13	682	180	21	1821
Place, Willard A., Lincoln, Nebr. Stock alarm for locomotives	253,095	Jan. 31	1735	479	21	317
Planchamp, John D., Chicago, Ill. Ornamenting metal	256,732	Apr. 18	1221	342	21	1178
Plant, Stephen J., assignor of one-half to H. Warwood, Yorkville, Ontario, Canada. Brick-making machine	257,608	May 9	590	164	21	1301
Pletsky, Adolph, and E. Finisterer, New York, N. Y. Necktie and collar fastener	259,583	June 13	881	234	21	1856
Platt, Joseph B., Cleveland, Ohio. Carriage-bow iron	254,367	Feb. 28	1428	392	21	613
Platt, Joseph B., Cleveland, Ohio. Dash-board	259,651	June 13	908	258	21	1871
Platt, Robert S. (See Watts, Nelson, assignor.)						
Plice, Thomas V., Polk, Ohio. Sulky-plow	253,761	Feb. 14	697	199	21	476
Plimpton, Edward S., *et al.* (See Gary, Albert J., assignor.)						
Plimpton, James W., assignor to M. Geary, Oil City, Pa. Steam-engine	258,866	May 30	2102	593	21	1686
Plönzky, August, Lippehne, Prussia, Germany. Horse-detacher	252,968	Jan. 31	1566	436	21	290
Plumb, Arthur W., Chicago, Ill. Oil-can	256,654	Apr. 25	1366	385	21	1211
Plumb, Burdict & Barnard. (See Johnson, Henry J., assignor.)						
Plumb, Fawcett, Streator, Ill. Adding-machine	256,591	Apr. 18	1051	297	21	1148
Plumb, Lauren S., and G. W. Marchant; said Marchant assignor to R. L. Goddard, Palmer, Mass. Hat-flanging machine	256,042	Apr. 4	353	95, 96	21	1009
Plush, Samuel M., and W. P. Phelps, Philadelphia, Pa. Self-adjusting relay for printing-telegraphs	252,806	Jan. 31	1475	413	21	274
Plush, Samuel M., assignor of one-half to H. Bently, Philadelphia, Pa. Safety device for electric wires	254,099	Feb. 21	1130	313	21	553
Plymouth Foundry Company. (See Harlow, Ivory W., assignor.)						
Poalk, J. Lane, Philadelphia, Pa. Car-brake	259,773	June 20	1141	302	21	1006
Pohlman, Charles F., and H. Thompson, Fremont, Ohio. Toy catapult	257,379	May 2	279	80	21	1331
Poindexter, Robert E., Indianapolis, Ind. Device for dressing saw-teeth	257,831	May 9	845	236	21	1438
Poladura, Alexander P., New Orleans, La. Apparatus for darkening tobacco	252,927	Jan. 17	790	219	21	147
Poland, George E., Manasquan, N. J. Cravat-fastening	254,503	Mar. 7	69	18	21	650
Pollard, Eugene A., Newport, N. H. Trace-fastener	251,937	Jan. 3	307	83	21	53
Pollard, John K. (See Boyce, Caleb B., assignor.)						
Pollock, James E., Mansfield, Ohio. Sulky-plow	259,715	June 20	1063	282 283	21	1893
Pollock, John. (See Newcomb, Nathan L., assignor.)						
Pollock, William A. (See Longfield, Julius I., assignor.)						
Poladorfer, Henry B. (See Gould, Samuel A., assignor.)						
Pomeroy, Henry N., assignor of one-third to C. E. Ball, Madison, Wis. Roller-mill	254,043	Feb. 21	1061	295	21	543
Pomeroy, John, and J. Winslow, Jr., Bristol, Conn. Time-alarm	259,584	June 13	881	234	21	1856
Pommer, Fred. (See Altmann and Pommer.)						
Pond, Charles L., Buffalo, N. Y. Package for oysters, &c.	255,017	Mar. 14	716	193	21	769
Pond, Chester H., assignor to Pond Electric Signal Company, New York, N. Y. Electrical visual indicator	259,897	Jan. 31	1477	413 414	21	274
Pond Electric Signal Company. (See Pond, Chester H., assignor.)						
Pond, Goldsbury H., New York, N. Y. Hydraulic elevator	257,754	May 9	764	213	21	1422
Pond, Goldsbury H., New York, N. Y. Reducing wood, &c., to fiber	259,206	June 6	494	107	21	1764
Pond, Henry E., assignor to J. H. Nason, Franklin, Mass. Game apparatus	259,207	June 6	495	108	21	1765
Ponton, Charles, Omaha, Nebr. Amalgamator	256,733	Apr. 18	1221	342	21	1178
Pool, Frank V., Newark, N. J., assignor to Celluloid Manufacturing Company, New York, N. Y. Removing flocculent matter from spent acids	251,936	Jan. 3	308	.....	21	53
Poole, William H., Chicago, Ill. Hand-stamp	256,942	Apr. 11	636	172	21	1063
Poole, William H., Chicago, Ill. Hand-stamp	256,943	Apr. 11	638	172	21	1063
Pooley, William C., Louisville, Ky. Rotary engine	251,733	Jan. 3	56	15	21	12
Pope, Frank L., Elizabeth, N. J., assignor to Union Switch and Signal Company, Hartford, Conn. Railway-signaling apparatus	253,768	Feb. 14	698	199	21	476
Pope, Henry W., Elizabeth, N. J. Automatic time-recorder for telegraphic signal-boxes	252,798	Jan. 24	1345	376	21	247
Pope, John G., Bloomington, Ill. Expanding mandrel	256,598	May 30	1700	506	21	1631
Pope Manufacturing Company. (See Gray, Peter, assignor.)						
Pope Manufacturing Company. (See Hicks, Horace B., assignor.)						
Pope, Rufus, assignor of one-half to W. H. B. Stout, Nobesville, Nebr. Carpenter's square	257,515	May 9	458	127	21	1369
Poppenhusen, Conrad, Hamburg, Germany. Molding articles of india-rubber and other vulcanizable gums	256,043	Apr. 4	354	.....	21	1010
Poppenhusen, Conrad, Hamburg, Germany. Machine for cutting and finishing the teeth of combs	260,399	June 27	1818	493	21	2023

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Porsch, John, Jr., Erie, Pa. Butter-cutter	258,698	Jan. 24	1223	343	21	226
Port, George W. (See Keys, John, assignor.)						
Porter, D'Arcy, Cleveland, Ohio. Device for converting motion in sewing-machines	257,609	May. 9	592	165	21	1391
Porter, Harry T. (See Porter, Isaac and H. T.)						
Porter, Henry B., Chicago, Ill. Electric annunciator	255,453	Mar. 28	1278	345	21	878
Porter, Isaac and H. T., Philadelphia, Pa. Sheet-metal can	260,774	June 20	1142	308	21	1906
Porter, James A., *et al.* (See Lackey, Andrew M., assignor.)						
Porter, John A., St. Louis, Mo. Car-coupling	253,626	Feb. 14	526	151	21	446
Porter, Joseph, New Haven, Conn. Belt-tightener	252,989	Jan. 31	1567	436	21	291
Porter, Joseph E., Ottawa, Ill. Hay-carrier	254,691	Mar. 7	296	79	21	660
Porter, Joseph E., Ottawa, Ill. Single-tree sling	256,734	Apr. 18	1223	344	21	1178
Porter, Lemuel C., and C. McNicol, Winona, Minn. Grain drier and cleaner	257,064	Apr. 25	1003	259	21	1253
Porter, Luther E., assignor of one-half to Rosenberger Manufacturing Company, St. Cloud, Minn. Seed-planter	258,671	May 30	1686	532 533	21	1646
Porter, Sanford P., West Richfield, Ohio. Portable fence	257,755	May 9	765	213	21	1437
Porter, Thomas J., Fleetwood, county of Lancaster, England. Type-setting machine	255,667	Mar. 28	1537	414	21	994
Portway, Alfred, *et al.* (See Neu, Gustav, assignor.)						
Pöschel, Gustav H., Union Hill, N. J. Roofing composition	256,388	Apr. 11	786	.....	21	1090
Post, Carl J. D. W. (See Bechem, Julius A., assignor.)						
Post, Charles W., Springfield, Ill. Cultivator	256,044	Apr. 4	355	96	21	1010
Post & Co. (See Briggs, Arthur E., assignor.)						
Post, Judson S., Stamford, Conn. Game-board	259,842	June 6	211	56, 57	21	1730
Posten, John R., Pleasant Creek, assignor of one-half to E. L. and W. A. Rector, Grafton, W. Va. Vehicle-hub	251,794	Jan. 3	133	38	21	94
Potter, Bradford S. (See Farrington, George K. and H. C., assignors.)						
Potter, Charles, Jr., Plainfield, N. J. Rack motion for printing-presses	260,233	June 27	1717	465	21	2007
Potter, Charles E. (See Graves, George W., assignor.)						
Potter & Co., C., Jr. (See Brooks, John, assignor.)						
Potter, Henry W., Titusville, Pa. Rotary engine	254,044	Feb. 21	1062	296	21	543
Potter, Lorenzo R., *et al.* (See Trumbull, Frank H., assignor.)						
Pottier, Napoleon B., assignor of one-half to D. Du Bois, Charleston, W. Va. Attachment for steam-boilers	258,113	May 16	1186	334 335	21	1509
Potts, Anthony W. (See Gathright and Potts.)						
Pouget, Alexandre L., Montpellier, France. Recorder for locomotives	258,672	May 30	1688	533 534	21	1648
Poulson, Israel P., Greenfield, Ind. Door-check	256,045	Apr. 4	356	96	21	1010
Poulton, Silas W., Harrisburg, Pa. Picture-frame	252,808	Jan. 31	1481	414	21	276
Powell, Charles, Toronto, Ontario, Canada. Wooden pump	251,939	Jan. 3	309	83	21	53
Powell, Charles, Toronto, Ontario, Canada. Pump	260,121	June 27	1581	426	21	1966
Powell, Charles, Toronto, Ontario, Canada. Attachment for connecting hose to pump-spouts	260,122	June 27	1582	426	21	1966
Powell, Everitt H., Buckhorn, Va. Peanut picker and cleaner	252,136	Jan. 10	557	156	21	103
Powelson, Benjamin F., Buffalo, N. Y. Photographic silver-bath heater	256,592	Apr. 18	1052	297	21	1148
Power, Francis J., Buxton, assignor of one-half to R. H. Wadleigh, Newtonville, Mass. Dinner-pail	251,795	Jan. 3	134	38	21	95
Powers, Charles W., Jr., Bloomfield, N. J. Reversible ironing board or table	260,234	June 27	1718	465	21	2007
Powers, James K., Atlantic, Iowa. Side curtain for carriages	258,268	May 23	1378	390	21	1561
Powers, Jesse, Chicago, Ill. Hod-elevator. (Reissue)	10,858	Mar. 7	410	109	21	703
Powers, Jesse, Chicago, Ill., assignor to J. H. Edelmeyer and W. C. Morgan, New York, N. Y. Hod-elevator	253,943	Feb. 21	938	261	21	582
Powers, John, Murdock, Minn. Fire-pot for blacksmiths' forges	253,944	Feb. 21	939	261	21	582
Powers, John, San Francisco, Cal. Clearing slots of wire-rope railways	255,191	Mar. 21	945	258	21	815
Powers, William, assignor of one-half to R. Jones and J. Allen, Wyandotte, Mich. Car-coupling	259,914	June 20	1296	347	21	1933
Powers, William E. (See Jones, Russell F., assignor.)						
Poyneer, Perry, Kalamazoo, Mich. Fanning-mill	255,812	Apr. 4	73	20	21	983
Poynor, Ashley B. (See Allen and Poynor.)						
Puyser, Thomas, San Francisco, Cal. Self-acting blow-pipe lamp, soldering-iron heater, and paint-burner	257,380	May 2	280	80	21	1331
Poznanski, François X., Paris, France. Fountain-pen	257,756	May 9	766	213	21	1403
Prall, Walter P., Colusa, Cal. Sulky hay-rake	256,725	Apr. 18	1204	343	21	1179
Prall, William E., New York, N. Y. Cooking-range	259,657	Jan. 10	466	128 129	21	69
Prang, Louis. (See Helfrich, George P., assignor.)						
Pratt, Alfred W., Flushing, N. Y., assignor of one-half to H. S. Lambert, Orange, N. J. Composition for drying paints and oils. (Reissue)	10,039	Feb. 21	1196	.....	21	555
Pratt, Alfred W., Flushing, N. Y., assignor of one-half to H. S. Lambert, Orange, N. J. Liquid drier for oils. (Reissue)	10,040	Feb. 21	1197	.....	21	555
Pratt, Arthur L., Kalamazoo, Mich. Temporary binder	259,915	June 20	1296	347	21	1933
Pratt, Benona P., *et al.* (See Young, Charles, assignor.)						
Pratt, Charles, and J. A. Sullivan, Savannah, Ga. Car-coupling	251,940	Jan. 3	310	84	21	53
Pratt, George H. (See Whitmore and Pratt.)						
Pratt, George M., assignor to Victor Sewing Machine Company, Middletown, Conn. Sewing-machine	254,779	Mar. 7	299	106	21	706
Pratt, Henry C., Canandaigua, N. Y. Grain-drill attachment	255,698	Mar. 28	1536	414	21	995
Pratt & Letchworth. (See Cooper, Edward A., assignor.)						
Pratt, Robert J., Troy, N. Y. Electric-arc lamp	258,805	May 30	2037	575	21	1674
Pratt, Rufus N., assignor to Steam Boiler Appliance Company, Hartford, Conn. Steam-valve	257,449	May 2	363	102	21	1346
Pratt, Walter C. (See Wood and Pratt.)						
Pratt & Whitney Company. (See Parkhurst, Edward G., assignor.)						
Pratt & Whitney Company. (See Reynolds, John R., assignor.)						
Pratt, Wilson, *et al.* (See Fest, Charles P., assignor.)						
Praunegger, Ferdinand, Gratz, Austria. Bottle-stopper	256,470	May 23	1039	461	21	1595
Preib, Joseph. (See Schöndorf and Preib.)						
Prentice, George W. (See Smith, Franklin A., Jr., assignor.)						
Prentice, George W., Providence, R. I. Button-setting instrument	252,699	Jan. 24	1223	342	21	226
Prentice, George W., Providence, R. I. Button-fastening	253,096	Jan. 31	1735	479	21	317
Prentice, George W., assignor to Heaton Button Fastener Company, Providence, R. I. Button-fastening	253,627	Feb. 14	527	152	21	447
Presbrey, Oliver S., Fort Henry, N. Y. Mining apparatus	253,097	Jan. 31	1736	480	21	317
Prescott, Almon R., Newburyport, Mass. Lightning-arrester	256,046	Apr. 4	357	97	21	1010
Prescott, Daniel P., Vernon, Vt. Car-coupling	253,554	Feb. 14	451	128	21	434
Prescott, Daniel P., Vernon, Vt. Car-brake	256,169	Apr. 11	514	141	21	1043

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Prescott, Daniel P., Vernon, Vt., assignor of one-half to M. M. Beeman, Syracuse, N. Y. Nut-lock	252,295	Jan. 10	751	208	21	134
Prescott, De Witt C., Marinette, Wis. Frame for gang-saw mills	256,499	Apr. 18	955	287	21	1132
Prescott, De Witt C., Marinette, Wis. Setting mechanism for saw-mills	257,757	May 9	766	213, 214	21	1423
Prescott, Edwin, Arlington, Mass. Hanging door	250,716	June 20	1065	283	21	1894
Prescott, John C., deceased, assignor of one-half to J. O. Sloan, administrator, Cincinnati, Ohio. Grading and ditching machine	257,758	May 9	769	214	21	1423
Prescott, Joseph R., assignor of one-half to R. J. Andrews, Beaver Dam, Wis., and H. Foster, Sheldon, Ill. Grain-binding machine	258,114	May 16	1188	335	21	1500
Prescott, Joseph R., assignor of one-fourth to R. J. Andrews, Beaver Dam, Wis. Grain-binding machine	258,204	May 16	1198	368, 369	21	1530
Preston, E. B. (See McGaffey, Ives W., assignor.) (Reissue.)	253,555	Feb. 14	452	129	21	434
Preston, Edward, Winona, Minn. Device for jointing saws						
Preston, Edward F., Bismarck, Mich., and L. A. Whitney, Phelps, N. Y. Compound for removing stains	257,381	May 2	281	.....	21	1332
Preston, George H., Shortsville, N. Y. Wood-bending machine	254,568	Mar. 7	148	37	21	663
Preston, James, assignor of one-half to S. A. Burns and C. A. Cook, New York, N. Y. Pump-frame	256,855	Apr. 25	1367	385	21	1212
Preston, James, assignor of one-half to S. A. Burns and C. A. Cooke, New York, N. Y. Piston	258,599	May 30	1791	506	21	1631
Preston, John E., Brunswick, Me. Wrench	258,673	May 30	1801	534	21	1649
Preston, Joseph, Rochester, assignor of one-half to M. E. Preston, Buffalo, N. Y. Nut-lock	254,154	Feb. 28	1192	333	21	573
Preston, King H. C., Manlius, N. Y. Machine for grinding mower and harvester knives	257,893	May 16	927	258	21	1402
Preston, Margaret E. (See Preston, Joseph, assignor.)						
Prewitt, William P., assignor to himself and C. W. Bell, Elkton, Ky. Railway-car	252,855	Jan. 24	1425	397	21	259
Prewitt, William P., assignor to himself and C. W. Bell, Elkton, Ky. Portable combined bath-tub and heater	253,763	Feb. 14	700	200	21	476
Prewitt, William Q., Lexington, Ky. Portable combined bath-tub and heater	252,970	Jan. 31	1568	437	21	991
Price, George B., and G. W. Smith, Philadelphia, Pa. Roller-skate						
Price, H. Clay, Montclair, N. J., assignor to Scovill Manufacturing Company, Waterbury, Conn. Photographic camera	260,235	June 27	1719	465	21	2007
Price, I. Corwin, Springfield, Ohio. Baby-walker	257,185	May 2	45	14	21	1289
Price, John A. (See McClave and Price.)						
Price, Samuel. (See McClave and Price, assignors.)						
Price, Thomas D., Carrollton, Ill. Removable book-cover	255,331	Mar. 21	1127	304	21	847
Price, William H. (See Stockwell, Levi W., assignor.)						
Priest, Joram, Detroit, Mich., assignor to A. S. Bridges, St. Louis, Mo. Vehicle-spring	256,161	Apr. 11	515	141	21	1043
Priestley, Forrest M., assignor of one-half to W. R. Fox, Grand Rapids, Mich. Vehicle-hub	259,916	June 20	1299	348	21	1933
Prince, L. F. (See Lucas, Andrew H., assignor.)						
Prindle, C. W., *et al.* (See McCord, William R., assignor.)						
Prior, Matthew, Revere, Mass. Combination instrument for cleaning gas-cocks	259,717	June 20	1066	283	21	1894
Prior, Napoleon B. (See Andrus and Prior.)						
Pritchard, George, Seaforth, near Liverpool, assignor to R. S. Hudson, Liverpool, England. Packet-labeling machine	252,137	Jan. 10	558	156, 157, 158	21	103
Probert, Benjamin, and M. Davis, Allegheny, Pa. Puddling-furnace	251,941	Jan. 3	310	84	21	54
Proby, Walter, *et al.* (See Tuttle, Joseph W., assignor.)						
Proft, John A., Stringtown, Mo. Extension-table	255,454	Mar. 28	1280	345	21	878
Prosser, Henry B. (See Freeman and Prosser.)						
Prosser, Treat T. (See Freeman and Prosser.)						
Prosser, Treat T., Chicago, Ill. Traction-wheel	253,096	Jan. 31	1737	480	21	317
Prosser, Treat T., and J. P. Freeman, Chicago, Ill.; said Freeman assignor to Home Telephone Company, of Illinois. Electric telephone	257,610	May 9	503	165	21	1391
Protzman, Ferdinand, Allegheny, Pa., C. Adams, St. Louis, Mo., and A. Longmore, Allegheny, Pa. Calcining-furnace	256,162	Apr. 11	516	141, 142	21	1043
Prout, Albert P. (See Turner and Prout.)						
Pruner, Conrad, Wiener-Neustadt, Austria. Paper-box machine	255,018	Mar. 14	717	193, 194	21	769
Prüsker, Arthur, assignor of one-half to V. Schlesinger, Vienna, Austria-Hungary. Polygon-protractor	257,832	May 9	846	236	21	1438
Pryor, John D. (See Handayside, John W., assignor.)						
Puffer, Alvin D., Medford, Mass. Safety-valve	254,368	Feb. 28	1429	392	21	613
Puffer, Alvin D., Medford, Mass. Revolving water-gage for closed vessels	254,369	Feb. 28	1431	393	21	613
Puffer, Alvin D., Medford, Mass. Refrigerating apparatus	254,370	Feb. 28	1433	393	21	613
Puffer, Alvin D., Boston, Mass. Refrigerator	255,455	Mar. 28	1281	346	21	879
Puffer, Alvin D., Boston, Mass. Refrigerator	255,456	Mar. 28	1283	346	21	879
Puffer, Alvin D., Boston, Mass. Cooler for aerated waters	255,457	Mar. 28	1284	346	21	879
Puffer, Alvin D. and Alvin D., Jr., Medford, Mass. Generator	254,371	Feb. 28	1435	393	21	614
Puffer & Sons, Alvin D. (See Slocum, George S., assignor.)						
Pults & Walkley Company. (See Walkley, Lucius V., assignor.)						
Purdy, Truman H. (See Siegfried, Alexander H., assignor.)						
Purdy, Zachariah V., assignor of one-half to A. G. Glover, Louisville, Ky. Horseshoe-machine	257,450	May 2	364	102	21	1346
Purefoy, Addison F., Wake Forest, N. C. Gate	257,894	May 16	928	259	21	1402
Purefoy, Addison F., Wake Forest, N. C. Plow	258,115	May 16	1191	336	21	1510
Purefoy, Addison F., assignor of one-fourth to S. Abernathy, Wake Forest, N. C. Spring bed-bottom	254,378	Feb. 28	1439	394	21	614
Purket, Thomas A., Charleston, Kans. Cultivator	255,069	Mar. 28	1530	415	21	995
Purnell, John, New Haven, Conn. Adjustable chair	257,065	Apr. 25	1003	450	21	1253
Purnell, John, New Haven, Conn. Adjustable stool, table, &c	259,208	June 6	406	108	21	1765
Purnell, John, Sr., New Haven, Conn. Hammock-chair	257,750	May 9	771	214, 215	21	1424
Purves, William B., assignor to himself and W. Linden, Chicago, Ill. Door-bolt	257,141	Apr. 25	1708	477	21	1271
Purvis, William B., Philadelphia, Pa. Bag-fastener	256,856	Apr. 25	1367	385	21	1212
Putnam, Frank E., Lowell, Mass. Sheet-music holder	251,942	Jan. 3	312	84	21	54
Putnam, Henry W. (See Sedgwick, Charles, assignor.)						
Putnam, Henry W., Bennington, Vt. Fence-wire-barbing machine	253,824	Feb. 14	779	221, 222	21	490
Putnam, Henry W., Bennington, Vt. Stopper for jars, &c	256,857	Apr. 25	1368	385, 386	21	1212
Putnam, Henry W., L. Bradbury, and L. Williams, Bennington, Vt.; said Bradbury and Williams assignors to said Putnam; said Putnam assignor to Washburn & Moen Manufacturing Company, Worcester, Mass., and I. L. Ellwood, De Kalb, Ill. Machine for manufacturing barbed fence-wire	258,471	May 23	1630	461	21	1505

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Putnam, Henry W., L. Bradbury, and L. Williams, Bennington, Vt., assignors, by mesne assignments, to Washburn & Moen Manufacturing Company, Worcester, Mass., and I. L. Ellwood, De Kalb, Ill. Machine for twisting and spooling barbed fence-wire	250,917	June 20	1300	348	21	1933
Putnam, John H., Tioga, Pa. Car-coupling	254,373	Feb. 28	1441	394	21	615
Putnam, Theodore A. B., assignor, by mesne assignments, to Railway Cab Electric Signal Company, New York, N. Y. Electric railway-signal	258,600	May 30	1792	506	21	1632
Putnam, Theodore A. B., assignor, by mesne assignments, to Railway Cab Electric Signal Company, New York, N. Y. Electric safety appliance for railway-switches, &c	258,601	May 30	1793	507	21	1632
Putnam, Wendell P., Watertown, Mass. Curtain-fixture	256,736	Apr. 18	1284	343	21	1179
Puvrez, Julien, Lille, France, assignor to himself and N. Pigeon, New York, N. Y. Apparatus for malting cereals	254,374	Feb. 28	1442	394	21	615
Quackenbush, James H., Kalkaska, Mich. Barrel-mover	260,049	June 27	1486	400	21	1971
Quast, Carsten F., Greenfield, Ill. Wagon-brake	258,253	May 23	1379	390	21	1551
Queen City Malleable Iron Company. (See Nehring, William, assignor.)						
Quentin, Charles, *et al.* (See Scott, James, assignor.)						
Quesnel, Edward A. (See Vining and Quesnel.)						
Quick, George, Chipping Camden, England. Breech-loading ordnance	258,116	May 16	1194	336	21	1511
Quick, George, assignor of one-half to G. H. Hoyle, Auburn, N. Y. Wagon end-gate	256,593	Apr. 18	1053	297	21	1148
Quick, George C., Centralia, Ill., assignor of one-half to T. Quick, St. Louis, Mo. Churn-motor	253,434	Feb. 7	290	80	21	394
Quick, John A., Palestine, Tex. Sash-balance	251,943	Jan. 3	313	84	21	54
Quick, Thomas. (See Quick, George C., assignor.)						
Quimby, Alfred, Bow, N. H. Sash-fastener	252,138	Jan. 10	561	158	21	103
Quimby, Edward E. (See Matthiesson and Quimby.)						
Quin, John, Wakeman, Ohio. Plow mold-board	258,806	May 30	2038	575	21	1674
Quinan, William R., San Francisco, Cal. Blasting-powder	252,250	Jan. 10	688	.....	21	194
Quinby, Benjamin F., Boston, Mass. Circular brush	256,117	May 16	1197	336	21	1511
Quincy, Edmund W., Peoria, Ill. Corn-harvester	252,388	Jan. 17	791	230	21	147
Quincy, Edmund W., assignor to Chambers, Bering & Quinlan, Decatur, Ill. Check-row corn-planter	251,944	Jan. 3	313	85	21	54
Quinn, William A., Cambridge, Mass. Gaiter	257,066	Apr. 25	1605	451	21	1254
Quitman, Frederick W., South Norwalk, Conn. Sash-holder	257,382	May 2	281	81	21	1332
Qvarnström, Carl I. (See Sandberg, Joseph F., assignor.)						
Raasch, Gustavus A., Atchison, Kans. Grain-separator	257,186	May 2	46	15	21	1289
Radford, Benjamin F., Hyde Park, Mass. Metal-planer	255,115	Mar. 21	847	236	21	799
Radford, Benjamin F., Hyde Park, Mass. Clutch mechanism for counter-shafting	258,472	May 23	1633	469	21	1505
Rafferty, Gilbert T. (See McTighe, William J., assignor.)						
Rahn, Samuel K., West Elkton, Ohio. Portable fence	252,621	Jan. 24	1136	318	21	911
Raible, Constantin, Oskaloosa, Iowa. Vegetable-cutter	256,369	Apr. 11	786	216	21	1090
Railsback, Lafayette D., Indianapolis, Ind. Pump	257,383	May 2	282	81	21	1332
Railway Cab Electric Signal Company. (See Putnam, Theodore A. B., assignor.)						
Railway Register Manufacturing Company. (See Hornum, William H., assignor.)						
Rakes, John F., Greenup, Ky. Combined lathe and drilling-machine	251,945	Jan. 3	314	85	21	54
Rakes, John F., Greenup County, Ky. Apple parer, corer, and slicer	260,236	June 27	1720	466	21	2007
Ramey, Ambrose B., Cantril, Iowa. Spring-bed	251,946	Jan. 3	316	85	21	55
Ramming, John, St. Louis, Mo. Plug-tobacco machine	259,809	Jan. 31	1462	414	21	976
Ramsay, Albert C. (See Devoe, Benjamin G., assignor.)						
Ramsden, John W., Leeds, county of York, England. Boot and shoe sewing machine	259,918	June 20	1302	348, 349	21	1934
Ramsey, William W., assignor of one-half to A. Tegeler, Dayton, Ohio. Lubricating oil-cup	257,611	May 9	504	165, 166	21	1301
Rand, Addison C., New York, N. Y. Air-compressor	253,116	Mar. 21	848	227	21	799
Rand, Jacob, Boston, Mass. Traveler for sails	259,900	June 6	407	108	21	1765
Randall, Amelia A. (See Randall, Silas G., assignor.)						
Randall, Charles A., New York, N. Y. Electro-magnetic relay	254,045	Feb. 21	1004	296	21	543
Randall, Charles A., New York, N. Y. Automatic telegraph	255,332	Mar. 21	1138	304	21	847
Randall, Charles A., New York, N. Y. Telephone-relay	255,333	Mar. 21	1139	304	21	847
Randall, Charles E., and E. M. Byington, Boston, Mass. Fire-alarm-registering apparatus	257,667	Apr. 25	1006	451	21	1254
Randall, George S., Marshfield, assignor to H. C. Barnes, Boston, Mass. Box-fastener	256,737	Apr. 18	1286	343	21	1179
Randall, Henry E., assignor of one-half to C. G. Till, Brooklyn, N. Y. Apparatus for expressing malt extracts from the refuse of brewers' mash	253,495	Feb. 7	291	81	21	394
Randall, Isaac H., assignor of one-half to B. Higgins, Boston, Mass. Trace-coupling	256,594	Apr. 18	1054	298	21	1148
Randall, James, San Francisco, Cal. Process of and apparatus for drying lumber	253,556	Feb. 14	453	129	21	435
Randall, James, Norwich, Conn. Roll-suction box for paper-making machines	256,047	Apr. 4	357	97	21	1010
Randall, Silas G., Greene, N. Y. Disk harrow or cultivator	259,919	June 20	1303	349, 350	21	1934
Randall, Silas G., assignor to A. A. Randall, Greene, N. Y. Attachment to cooking-vessels	259,718	June 20	1067	284	21	1894
Randall, William H., Ypsilanti, Mich. Portable fence	254,594	Mar. 7	70	19	21	659
Randell, Andrew. (See Stone, Henry A., assignor.)						
Randolph, David S., assignor to American Brake Company, St. Louis, Mo. Tender and other brakes	253,319	Feb. 7	149	43	21	371
Rank, Amos, Salem, Ohio. Mowing and reaping machine	256,048	Apr. 4	359	97, 98	21	1011
Rankin, Abram G. W., assignor of one-half to W. H. Gilson, Jersey City, N. J. Apparatus for disinfecting waste-pipes	255,019	Mar. 14	780	195	21	770
Rankin, David, Boston, Pa. Straw-stacker	256,595	Apr. 18	1055	298	21	1149
Ransch, Emilie C. (See Graham and Ransch.)						
Ransom, Rastus S. (See Snelling, Walter C., assignor.)						
Ransome, Ernest L., San Francisco, Cal. Utilising spent lime for brick and tiles	257,939	May 2	116	.....	21	1301
Raoul, Ludovic R., Grivegnée, France. Root and vegetable washer	253,580	Feb. 14	449	130	21	449
Rappleye, Hannibal W. (See Mackenzie and Rappleye.)						
Rasmussen, Charles W., Chicago, Ill. Car-coupling	259,719	June 20	1068	284	21	1894
Rassbery, Leo. (See Mayer, Charles G., assignor.)						
Rath, John. (See Blake, Thomas J., assignor.)						
Rath, Joseph, Columbus, Ohio. Broom-hanger	254,092	Mar. 7	227	73	21	659
Rattey, Emil, New York, N. Y. Dash-board	256,370	Apr. 11	787	216	21	1090
Raup, William, Park City, Utah Ter. Guide for stems of stamp-mills	253,099	Jan. 31	1737	480, 481	21	317
Raupp, Heinrich, Heilbronn, Würtemberg, Germany. Lamp-support	258,674	May 30	1801	534	21	1649
Rawson, George W., Boston, Mass. Drying apparatus	251,734	Jan. 3	57	15, 16	21	12
Ray, Ebenezer R., Bodie, Cal. Pick	255,533	Mar. 28	1377	378	21	995
Ray, J. A. (See Pickering, Jeremiah, assignor.)						
Ray, Richard. (See Leeming, Ray, and Lysde.)						
Raymond, Albert. (See Raymond, George and A.)						
Raymond, F. F., 2d, trustee. (See Henderson, Henry A., assignor.)						
Raymond, George and A., assignors of one-half to O. H. Tobey, Chicago, Ill. Grinding-mill	258,867	May 30	2103	594	21	1686

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Raymond, William F., Sandusky, Ohio. Pad for horses' hoofs	252,251	Jan. 10	689	195	21	124
Reach, Robert, assignor of one-half to C. G. and J. Sweet, Washington, D. C. Water-closet	256,500	Apr. 18	956	267 268	21	1139
Read, Calvin D. (See Read, James A. and C. D.)						
Read, Jacob, Yonkers, N. Y., and S. C. Burdick, Orange, N. J. Granulating-machine	260,123	June 27	1583	426 427	21	1986
Read, James A. and C. D., Ayer, Mass. Paint, whitewash, and other brushes	251,947	Jan. 3	316	86	21	55
Readwin, Thomas A., Bloomsbury Square, county of Middlesex, England. Ore-grinding and amalgamating machine	259,434	June 13	683	181	21	1891
Reany, Thomas J., Rocky Mount, N. C. Feed mechanism for saw-mills	257,384	May 2	283	81	21	1532
Reckendorfer, Joseph. (See Boman, Claes W., assignor.)						
Reckendorfer, Joseph. (See Hoffman, Joseph, assignor.)						
Reckendorfer, Joseph, and C. W. Boman, New York, N. Y., assignors to said Reckendorfer. Combined pencil-point protector, twine-cutter, and whistle	256,738	Apr. 18	1226	343	21	1179
Reckenwalt, John, assignor of one-half to J. Kreitner, Buffalo, N. Y. Clamp for holding the tips of billiard-cues	256,501	Apr. 18	957	268	21	1133
Record, George J., Conneaut, Ohio. Sap-spout	252,514	Jan. 17	1017	284	21	185
Rector, Emory L., *et al.* (See Posten, John R., assignor.)						
Rector, William A., *et al.* (See Posten, John R., assignor.)						
Reddick, William A., Niles, Mich. Flesh-fork	260,277	June 27	1722	466	21	2007
Redding, Harvey. (See Redding, Jerome, assignor.)						
Redding, Jerome, Malden, assignor to himself and H. Redding, Everett, Mass. Electrical gas-burner	252,848	Jan. 24	1416	395	21	258
Redding, Jerome, Malden, assignor to himself and H. Redding, Everett, Mass. Electric gas-lighting	252,849	Jan. 24	1417	395	21	258
Reddy, Thomas E., assignor to himself and J. McKeefery, Pittsburg, Pa. Kettle for making drop-shot	253,764	Feb. 14	701	200	21	477
Redmond, John B., assignor of one-half to E. Wilson, Baltimore, Md. Apparatus for purifying the water from condensers	255,086	Mar. 14	812	217	21	785
Redmond, Owen, assignor of one-half to G. P. Goulding, Rochester, N. Y. Bottle-stopper	251,796	Jan. 3	135	38	21	95
Redshaw, Moses W., assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Metal-screw machine	252,515	Jan. 17	1018	284	21	185
Reed & Barton. (See Leach, Thomas, assignor.)						
Reed, Edwin E., assignor of one-half to L. M. Simons, Williamstown, Mich. Boot	258,316	May 23	1432	412	21	1564
Reed, Franklin M., Lawrenceburg, Ind., assignor of one-half to W. C. Smith, Washington Court-House, Ohio. Treatment of resin-oil for mixing paints	252,516	Jan. 17	1021	.....	21	186
Reed, Frederick E. (See Back, John R., assignor.)						
Reed, George P., Melrose, Mass. Alcohol-vessel for watch-makers' use	257,895	May 16	931	259	21	1463
Reed, Horatio G. H., Milwaukee, Wis. Car-coupling	258,807	May 30	1040	576	21	1674
Reed, J. Thornton, Boston, Mass. Refrigerating apparatus	252,622	Jan. 24	1137	319	21	211
Reed, Jacob R., *et al.* (See Gray and Hollenback, assignors.)						
Reed, James, Cochran, Ind. Frog or block for railway-crossings	254,693	Mar. 7	298	78	21	669
Reed, Samuel B. (See Winters, Joseph R., assignor.)						
Reed Toy Company, W. S. (See Reed, William S., assignor.) (Reissue)						
Reed, William S., assignor to W. S. Reed Toy Company, Leominster, Mass. Toy locomotive. (Reissue)	10,114	May 16	1310	371	21	1531
Rees, Jacob, assignor of one-fourth to S. Wagner, Cleveland, Ohio. Combined blacking-box holder and foot-rest	253,100	Jan. 31	1739	481	21	317
Rees, James, Pittsburg, Pa. Steering apparatus	253,296	Feb. 7	57	18	21	356
Reese, Abram L., Chase, Kans. Wheat-drill	256,049	Apr. 4	360	99	21	1011
Reese, Jacob, Pittsburg, Pa. Journal-bearing	258,317	May 23	1452	412	21	1564
Reeve, Addison A., Boston, Mass. Artificial or toy Easter egg	255,534	Mar. 28	1378	372	21	895
Reeves, Colona, Darien Centre, N. Y. Wood-stove	254,375	Feb. 28	1443	395	21	615
Reeves, Israel S., New Orleans, La. Derrick	256,371	Apr. 11	787	217	21	1090
Reeves, Marshal T., Columbus, Ind. Straw-stacking machine	252,623	Jan. 24	1138	319	21	212
Regan, John W., Boston, Mass. Hose coupling and support	256,163	Apr. 11	517	142	21	1044
Regan, John W., Boston, Mass. Snap-hook	256,164	Apr. 11	518	142	21	1044
Regnell, John A. (See Östberg, Erick, assignor.)						
Rehfuss, George, assignor to himself, J. G. and M. O. Rehfuss, Philadelphia, Pa. Dental hand-piece	255,090	Mar. 14	721	195	21	770
Rehfuss, George, assignor to himself, J. G. and M. O. Rehfuss, Philadelphia, Pa. Drill-chuck	256,739	Apr. 18	1227	344	21	1179
Rehfuss, George, assignor to American Buttonhole, Overseaming and Sewing Machine Company, Philadelphia, Pa. Shuttle for sewing-machines. (Reissue)	10,103	May 2	375	105	21	1248
Rehfuss, John G., *et al.* (See Rehfuss, George, assignor.)						
Rehfuss, Martin O., *et al.* (See Rehfuss, George, assignor.)						
Reichardt, Henry C., Pottsville, Pa. Core breaker and lifter	257,896	May 16	932	259	21	1463
Reichling, Oscar E. H. N., Marion, Ind. Portable fence	253,765	Feb. 14	703	200	21	477
Reid, John S., Muncie, Ind. Hub-block-boring machine	255,670	Mar. 28	1339	415	21	925
Reid, John W., Chicago, Ill. Mechanical movement	253,496	Feb. 7	282	81	21	394
Reid, Peter, Passaic, and J. Eastwood, Belleville, N. J., assignors to Celluloid Manufacturing Company, New York, N. Y. Ink for dyeing purposes	256,596	Apr. 18	1057	.....	21	1149
Reid, Peter, Passaic, and J. Eastwood, Belleville, N. J., assignors to Celluloid Manufacturing Company, New York, N. Y. Manufacture of pyroxyline for use in topical printing	256,597	Apr. 18	1057	.....	21	1149
Reid, William A., St. Louis, Mo. Chain-machine	255,402	Mar. 21	1215	325	21	802
Reidhard, Joseph, Celina, Ohio. Ditching-machine	254,376	Feb. 28	1444	395	21	615
Reift, William H., Philadelphia, Pa., assignor to Rogers, Peet & Co., New York, N. Y. Spelling toy and puzzle	259,920	June 20	1306	350	21	1935
Reiger, Frits. (See Kussmaul and Reiger.)						
Reiher, Frank A., Chicago, Ill. Transom and skylight lifter	259,425	June 13	685	181	21	1891
Reilly, James, Brooklyn, N. Y. Heating bath-tubs by steam	255,535	Mar. 28	1379	372	21	895
Reinhardt, Christian, New Haven, Conn. Clock-escapement	258,473	May 23	1435	402	21	1506
Reinhardt, Hermann O., Arlington, N. J. Stamping-mill	255,536	Mar. 28	1379	373	21	895
Reinhardt, Hermann O., Arlington, N. J. Apparatus for roasting ores	255,537	Mar. 28	1381	373	21	895
Reinheimer, Henry. (See Philpott, James H., assignor.)						
Reinke, Otto, *et al.* (See Garner, Samuel R., assignor.)						
Reiss, George T. (See Gordon and Reiss.)						
Reister, Lewis A., Chico, Cal. Side-saddle	255,334	Mar. 21	1133	304	21	847
Reiter Moritz, Berlin, and G. Sander, Breslau, assignors to O. and P. Dinse, Berlin, Germany. Pneumatic action for organs	254,046	Feb. 21	1065	296 297	21	544
Reits, Ferdinand, Birmingham, Ohio. Stopper for empty barrels	257,187	May 2	48	15	21	1289
Rembert, Samuel S., Woodstock, Tenn. Vehicle-wheel	258,474	May 23	1436	402	21	1506
Remington & Sons, E. (See Smoot, William S., assignor.)						
Remmers, Bernhard H., and J. Williamson, Glasgow, county of Lanark, Scotland. Refining and purifying sugar	255,021	Mar. 14	723	.....	21	771

Alphabetical list of patentees, January to June, inclusive—Continued.

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Remson, Isaac S. (See Johnstry, Jacob A., assignor.)						
Remy, Noah T., assignor to A. Hoover and W. Gamble, Miamisburg, Ohio. Grain-binder	256,886	Apr. 18	1363	367	21	1193
Renauld, H. L. Charles, Brooklin, and M. B. Stafford, New York, N. Y. Bottle-stopper fastening	253,497	Feb. 7	283	81	21	394
Reynolds, Lewis F. B., Claiborne Parish, La. Cotton-press	258,118	May 16	1199	337	21	1541
Renshaw, David. (See Litchfield, Harvey T., assignor.)						
Renshaw, David. (See Litchfield and Renshaw.)						
Renshaw, David, *et al.* (See Tower, George B. N., assignor.)						
Renshaw, David, Cohasset, Mass. Steam-boiler	256,446	Apr. 11	874	243	21	1106
Renshaw, David, Cohasset, Mass. Steam-generator	260,381	June 27	1680	493	21	2003
Renshaw, David, Cohasset, assignor of one-half to H. T. Litchfield, Hull, Mass. Mechanism for feeding air and steam to furnaces	251,797	Jan. 3	136	36	21	95
Renshaw, David, Cohasset, and G. B. N. Tower, Boston; said Tower assignor to said Renshaw; said Renshaw assignor of one-half to H. T. Litchfield, Hull, Mass. Injector	257,897	May 16	933	260	21	1463
Renshaw, David, Cohasset, assignor of one-half to H. T. Litchfield, Hull, Mass. Superheater	260,236	June 27	1722	466	21	2003
Renshaw, David, Cohasset, assignor of one-half to H. T. Litchfield, Hull, Mass. Fire-tube steam-boiler	256,675	May 30	1302	534	21	1649
Renshaw, Joseph, Hartford, Conn. Revivifying abrading-surfaces	257,612	May 9	595	166	21	1301
Renshaw, Lydia F., *et al.* (See Tower, George B. N., assignor.)						
Rensink, Peter, Milwaukee, Wis. Device for operating the valves of piston-meters	259,900	Jan. 31	1463	414	21	978
Renson, Jean, Duisburg, Prussia, Germany. Milk-boiling vessel	256,475	May 23	1437	403	21	1506
Rentchler, Henry, Belleville, Ill. Vehicle-top joint	253,313	Feb. 7	151	43	21	372
Reosley, Horace, Cumberland, Md. Snow-plow	259,238	Jan. 10	600	195	21	125
Reusch, Hermann. Dillingen-on-the-Saar, Prussia, Germany. Plating iron or steel	258,119	May 16	1199	.....	21	1511
Rew, Parker H., Rochester, N. Y. Meckttie-fastener	256,740	Apr. 18	1228	344	21	1179
Rex, Alfred C. (See Kyzer and Rex.)						
Rex, Alfred C., Philadelphia, Pa. Lemon-squeezer	258,372	Apr. 11	788	217	21	1090
Rex, David J., Pittsburg, Pa. Shoe-exhibitor	259,240	June 6	466	129	21	1765
Reynolds, Charles A. (See Miller, Hunker B., assignor.)						
Reynolds, Cyrus M., Mifflin, Wis. Cheek-rein hook	254,377	Feb. 28	1445	395	21	615
Reynolds, Edward B., New York, N. Y. Gas-generating apparatus	256,741	Apr. 18	1229	344	21	1179
Reynolds, Edwin, Milwaukee, Wis. Feed-water heater	254,047	Feb. 21	1068	297	21	544
Reynolds, Edwin, Milwaukee, Wis. Machine for cutting spiral grooves in grinding-rolls	259,043	June 6	213	57	21	1730
Reynolds, George H., and T. J. Rider, assignors of one-half to C. H. Delamater and G. H. Robinson, New York, N. Y. Duplex pumping-engine	258,517	Jan. 17	1081	284	21	186
Reynolds, John, *et al.* (See McCray, Hiram, assignor.)						
Reynolds, John H., Troy, N. Y. Dust-guard for railway-car windows	257,068	Apr. 25	1611	429	21	1255
Reynolds, John R., assignor to Pratt & Whitney Company, Hartford, Conn. Machine for cutting grooves in rolls	258,165	Apr. 11	518	142 143	21	1044
Reynolds, Matthew and T., Havre de Grace, Md. Gill-net	255,671	Mar. 28	1541	415	21	985
Reynolds, Orrin A., and J. A. Shepherdson, Covington, Ky. Switch for railways	256,858	Apr. 25	1370	366	21	1212
Reynolds, Thomas. (See Reynolds, Matthew and T.)						
Reynolds, William A. (See Starbuck, Henry F., assignor.)						
Reynolds, William W., assignor to Howe Scale Company, Rutland, Vt. Scale	256,508	Apr. 18	956	266	21	1133
Rezner, George, Mercer, Pa. Governor for steam-engines	257,069	Apr. 25	1613	429	21	1255
Rezner, George, Mercer, Pa. Air-carburetor	259,921	June 20	1306	350	21	1935
Rheubottom, James R., and F. M. Mack, Woodsport, N. Y. Fly-net for horses	257,760	May 9	772	215	21	1494
Rhind, Frank, Brooklyn, N. Y. Hydrogen lamp or cigar-lighter	259,518	Jan. 17	1022	284	21	186
Rhind, Frank, Brooklyn, N. Y. Ornamentation of glassware	256,908	May 30	1041	276	21	1674
Rhoades, Martin. (See Minot and Rhoades.)						
Rhodes, Thomas A. and W. H., Paynesville, Ky. Spring for bed-bottoms	259,701	Jan. 24	1294	343	21	257
Rhodes, Thomas H., *et al.* (See Thompson, Uldric, assignor.)						
Rhodes, Thomas H., Brooklyn, N. Y. Electrical gas-lighting apparatus	257,970	Apr. 25	1615	429	21	1255
Rhodes, Thomas H., Brooklyn, N. Y. Electrical gas-lighting apparatus	257,188	May 2	49	15	21	1289
Rhodes, William H. (See Rhodes, Thomas A. and W. H.)						
Rhodes, William K., Portland, Me. Lubricator	255,813	Apr. 4	74	20	21	983
Rice, Alvah, assignor of one-half to S. Wheeler, Rochester, N. Y. Car-coupling	258,650	Apr. 25	1372	326	21	1213
Rice, Alvah, assignor of one-half to S. Wheeler, Rochester, N. Y. Car-coupling	260,134	June 27	1566	427	21	1988
Rice, Bernard, Brooklyn, N. Y. Beer-chip	257,977	May 16	1026	265	21	1479
Rice, Charles B., Evanston, Ill. Gate-roller	259,253	Jan. 10	601	195	21	125
Rice, Charles E., Owensborough, assignor of one-half to J. C. Schrader, Daviess County, Ky. Hemmer for sewing-machines	253,706	Feb. 14	704	200	21	477
Rice, Clarence E., Sedgwick, Kans. Door-strip	254,694	Mar. 7	298	79	21	669
Rice, David H. and L. C., Lowell, Mass., assignors to Currier Telephone Bell Company, of Massachusetts. Signaling on electric circuits	255,814	Apr. 4	75	21	21	983
Rice, Edwin W. L., Aurora, Ill. Tile stove-platform	258,662	May 30	1706	507	21	1493
Rice, George K., Brookfield, Mo. Baling-press	258,656	Jan. 10	598	159	21	98
Rice, Henry C., Louisiana, Mo. Combined kettle and urn	257,516	May 9	459	127	21	1289
Rice, Henry C., Louisiana, Mo. Filter	258,565	June 13	683	235	21	1856
Rice, John N., New Castle, Pa. Dumping-car						
Rice, Lepine C. (See Rice, David H. and L. C.)						
Rice, Samuel A., and W. S. Ovens, assignors to C. E. Benedict and G. B. Webster, Buffalo, N. Y. Machine for cleaning fruit	256,598	Apr. 18	1058	266	21	1149
Rice, Tolliver, Enfield, Ill. Stump-puller	259,922	June 20	1307	350	21	1935
Rice, William E., Worcester, Mass. Manufacture of zinc-coated wire	253,257	Feb. 7	58	18	21	356
Rich, Abraham L., Water Cure, Pa. Magazine spring-gun	253,698	Feb. 14	532	158	21	447
Rich, Augustus E., Fall River, Mass. Bottle stopper and fastener	258,059	Jan. 10	600	130	21	98
Richard, Edmond O. and J. E., New York, N. Y. Velocipede	258,389	Jan. 17	798	220	21	147
Richard, Jean E. (See Richard, Edmond O. and J. E.)						
Richard, Jean E., New York, N. Y. Bicycle	252,694	Jan. 24	1139	319 320	21	212
Richard, Jean E., New York, N. Y. Overstitching-machine	252,799	Jan. 24	1347	376 377 378	21	347
Richards, Charles B., Philadelphia, Pa. Exhaust-valve for steam-engines	251,948	Jan. 3	318	86	21	55
Richards, Charles R. (See Hobbs, Boyden, and Richards.)						
Richards, Daniel H. (See Miles, Orrey E., assignor.)						
Richards, Dewain. (See Sendall, James, assignor.)						
Richards, Francis H., assignor to E. R. and C. L. Hyde, Springfield, Mass. Clamp for try-square blades	253,945	Feb. 21	930	261	21	592
Richards, George H., assignor to T. H. McCollin, Philadelphia, Pa. Background-frame for photographers	253,101	Jan. 31	1740	481	21	318

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Richards, Hezekiah H., assignor of one-half to H. W. Hurlbut and A. McAvoy, Racine, Wis. Vehicle-pole	253,170	Jan. 31	1841	507	21	334
Richards, James E., Cedar Keys, Fla. Electric time-detector	256,603	May 30	1797	506	21	1632
Richards, John, San Francisco, Cal. Metal-planing machine	258,199	May 16	1200	337 338	21	1511
Richards, John, San Francisco, Cal. Engine-lathe	256,121	May 16	1201	338	21	1512
Richards, Jonathan B., Wager, Ark. Work-bench attachment	259,211	June 6	409	109	21	1765
Richards, Joseph L. (See Slater, George L., assignor.)						
Richards, Thomas W., Jersey City, N. J. Chatelaine	258,945	June 6	91	94	21	1710
Richardson, Albert C., South Frankfort, assignor of one-half to C. C. Miller, Frankfort, Mich. Hame-fastener	255,022	Mar. 14	794	195	21	771
Richardson, Edwin C., assignor to M. D. Chapin, Poultney, Vt. Churn-cover	257,071	Apr. 25	1616	458	21	1255
Richardson, Eugene M. (See Long and Richardson.)						
Richardson, Francis B., Boston, Mass. Tea-pot and cover	259,049	June 6	294	60	21	1739
Richardson, Frederick, Providence, R. I. Securing metal wearing-surfaces to rubber boots and shoes	255,672	Mar. 28	1542	415	21	925
Richardson, Frederick, Providence, R. I. Machine for securing heels to boots and shoes	259,720	June 20	1069	324 365	21	1695
Richardson, Frederick, Providence, R. I. Securing rubber to metal	259,721	June 20	1072	365	21	1695
Richardson, Gamos, San José, Cal. Hay-stacking apparatus	255,667	Apr. 4	159	43	21	977
Richardson, George, Philadelphia, Pa. Underground electric conductor	259,044	June 6	216	58	21	1731
Richardson, George, Philadelphia, Pa. Underground conduit for electric conductors	259,045	June 6	217	58	21	1731
Richardson, George, Philadelphia, Pa. Underground electrical conductor	259,046	June 6	219	59	21	1731
Richardson, George, Philadelphia, Pa. Wire-stretching apparatus	259,047	June 6	221	59, 60	21	1732
Richardson, George, Philadelphia, Pa. Multiflue pipe and coupling-section	259,048	June 6	223	60	21	1732
Richardson, George F., Montague, Mass. Bureau, &c	258,604	May 30	1801	508	21	1633
Richardson, George W., Milton, Vt. Device for converting motion	259,566	June 13	824	235	21	1857
Richardson, Gus. W., Hill Grove, Ky. Agitator or egg-beater	252,800	Jan. 24	1352	378	21	749
Richardson, Ira, Lemond, (Meriden P. O.,) Minn. Harvester-dropper	254,378	Feb. 28	1445	396	21	615
Richardson, John, Lincoln, county of Lincoln, England. Speed-governor	253,102	Jan. 31	1741	481 482	21	318
Richardson, John C., assignor to J. R. Cooper, Union City, Pa. Car-axle box	252,591	Jan. 17	1100	307	21	190
Richardson, John D., assignor of one-half to F. L. Manchester, New York, N. Y. Elevator	259,923	June 20	1308	351	21	1935
Richardson, John M. (See Beamer and Richardson.)						
Richardson, Julius C., assignor to Greenwood Machine Company, Columbus, Ohio. Steam drop-hammer	255,303	Mar. 21	1203	322	21	860
Richardson, Levi, and F. J. Nettleton, San Gabriel, Cal. Pipe-mold	258,192	May 16	1202	338	21	1512
Richardson Manufacturing Company. (See Curtis, Edwin P., assignor.)						
Richardson, Nathan, Gloucester, Mass. Steering mechanism	258,809	May 30	2041	576	21	1674
Richardson, William D., Springfield, Ill. Pavement	257,613	May 9	505	106	21	1392
Richardson, William S., Nowton, Mass. Glove-fastener	253,228	Feb. 7	58	18	21	371
Richardson, William S., Nowton, assignor to C. J. Blake, trustee, Boston, Mass. Glove-fastening, &c	260,050	June 27	1487	400	21	1971
Richeimer, Michael, Massillon, Ohio. Ice-cream freezer	252,254	Jan. 10	692	195	21	195
Richey, James. (See Heyna, Henry, assignor.)						
Richey, William A., Indianola, Iowa. Coffin	255,815	Apr. 4	76	21	21	963
Richford, Edwin M. (See Worger and Richford.)						
Richman, Alfred B. (See Murphin, Joseph, assignor.)						
Richman, Gideon. (See Tice, R. Stockton, assignor.)						
Richmann, Henry, San Francisco, Cal. Lathe attachment	253,314	Feb. 7	152	44	21	372
Richmond, Cassius M., New York, N. Y. Dental drill	256,050	Apr. 4	302	99	21	1011
Richmond, Charles C., Boston, Mass. Lamp-burner	257,614	May 9	507	106	21	1392
Richmond, Francis R., Springfield, Mass. Signal-call for telephone-lines	254,155	Feb. 28	1192	333	21	573
Richmond, John T., and H. J. Cordesman, Jr., assignors to Cordesman, Egan & Co., Cincinnati, Ohio. Wheel-hub-boring machine	255,304	Mar. 21	1204	323	21	860
Richsteiner, Frank S., *et al.* See Willi, Theodore, assignor.)						
Richter, Charles, assignor to P. R. L. Hardenbergh, F. and G. Willins, and A. O. Bailey, St. Paul, Minn. Preparing a solution for tanning hides and skins	260,322	June 27	1821	.....	21	2023
Richter, Charles O. (See Sohn, Richter, and Carr.)						
Richter, Julius, Union Hill, N. J., assignor to G. F. Freedman, New York. Velocipede	259,212	June 6	410	109	21	1765
Ricker, John W., and T. S. Lewis, Chelsea, Mass. Corn-sheller	253,629	Feb. 14	520	152 153	21	447
Ricker, John W., and T. S. Lewis, Chelsea, Mass. Collar for dogs, &c	254,156	Feb. 28	1195	334	21	574
Ricker, Reuben H., Boston, Mass. Switch for street-railways	254,379	Feb. 28	1446	396	21	616
Ricketts, Gerard E., Proctorville, Ohio. Boiler-furnace	256,051	Apr. 4	363	99	21	1011
Riddel, John H. (See Scott and Riddel.)						
Riddle, George T., St. Louis, Mo. Egg-carrier	259,213	June 6	411	109	21	1765
Riddle, John H., assignor to C. G. Auble, Akron, Ohio. Shaft-coupling	252,700	Jan. 24	1223	343	21	227
Rider, Charles E., Rochester, N. Y. Uniting wood for floor-coverings, &c	255,023	Mar. 14	795	195	21	771
Rider, Thomas J. (See Reynolds and Rider.)						
Rider, Timothy B., Fitch Bay, Quebec, Canada. Warp-stop mechanism for looms	258,605	May 30	1802	509	21	1633
Ridgway, Charles L., Boston, Mass. Filter	253,103	Jan. 31	1742	482	21	318
Ridgway, Charles L., Boston, Mass. Filter	253,171	Jan. 31	1242	508	21	334
Ridgway, Job H., Philadelphia, Pa. Waterproofing paper	257,761	May 9	773	215	21	1464
Ridgway, Joseph T., Trenton, N. J. Machine for making rubber belting	253,428	Feb. 7	264	81	21	394
Riegel, Francis T., Philadelphia, Pa. Hub for vehicle-wheels	255,094	Mar. 14	796	196	21	771
Riess, E. William, Philadelphia, assignor of one-half to J. E. Jones, Germantown, Pa. Trimming attachment for sewing-machines	258,775	June 20	1143	303	21	1906
Riessner, Christoph, New York, N. Y. Petroleum cooking-stove	254,380	Feb. 28	1447	396	21	616
Riessner, Christopher, New York, N. Y. Petroleum cooking-stove	258,676	May 30	1893	535	21	1649
Rigby, James A., Allegan, Mich. Combined trunk, desk, table, &c	260,051	June 27	1489	401	21	1972
Riggin, George W., assignor to T. B. Jones, Madisonville, Ky. Tuyere	255,193	Mar. 21	947	253	21	816
Righter, Thomas M. (See Dodge and Righter.)						
Righter, Thomas M., Sandy Run, and T. R. Griffith, Wilkes-Barré, Pa. Oil-can	259,519	Jan. 17	1094	285	21	186
Riley, John M., Kearney, N. J. Punching-machine	257,940	May 2	116	33	21	1301
Riley, Robert I. (See Thames and Riley.)						
Rimel, John P., assignor of one-half to E. Kircher, Stribling Springs, Va. Clover-seed gatherer	254,100	Feb. 21	1121	313	21	554
Ringler & Co., F. A. (See Steinbach, Charles V., assignor.)						
Rinkleman, August, Milwaukee, Wis. Bicycle-saddle	258,971	Jan. 31	1569	437	21	291
Riotte, Eugene N., New York, N. Y. Refining amalgam of gold and silver containing base metals	253,988	Feb. 21	863	.....	21	511
Ripley, Daniel C., Pittsburg, Pa. Manufacture of glass lamp shades and globes	257,385	May 2	285	82	21	1332

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Risdon, James A., Geneva, Ill., assignor of one-half to S. A. Risdon, Waltham, Mass. Stove-leg	251,949	Jan. 3	319	87	21	85
Risdon, Sidney A. (See Risdon, James A., assignor.)						
Risk, James V., Point Pleasant, W. Va. Sash-holder	255,025	Mar. 14	797	196	21	771
Ritchel, Charles F., assignor to E. B. Ives, Bridgeport, Conn., C. Blakeslee, and E. G. Williams, Brooklyn, N. Y. Toy pistol	256,810	May 30	2042	577	21	1675
Ritter, John L. (See Ritter, Samuel, assignor.)						
Rittenhouse, Alvah. (See Beggs and Rittenhouse.)						
Ritter, Isaac R. (See Bernhart and Ritter.)						
Rittmeyer, Albert, St. Gallen, Switzerland. Brush-supporter	253,630	Feb. 14	531	153	21	447
Rix, Benjamin F., Kalamazoo, Mich. Harrow and cultivator	260,230	June 27	1723	466	21	2008
Rix, Edward A., San Francisco, Cal. Hose-coupling	255,335	Mar. 21	1134	305	21	846
Roat, Edwin, Buffalo, N. Y. Apparatus for crystallizing grape-sugar	256,660	Apr. 18	1207	289	21	1194
Roat, Edwin, assignor of one-half to H. Hamlin, Buffalo, N. Y. Apparatus for washing starch	254,157	Feb. 28	1196	334	21	574
Roat, Edwin, assignor of one-half to H. Hamlin, Buffalo, N. Y. Starch machinery	254,158	Feb. 28	1197	334	21	574
Roat, Edwin, assignor of one-half to H. Hamlin, Buffalo, N. Y. Apparatus for cooling syrups and other liquids	254,159	Feb. 28	1196	334	21	574
Roat, Edwin, assignor to H. Hamlin, Buffalo, N. Y. Manufacturing starch and apparatus therefor	254,239	Feb. 28	1239	357	21	589
Roat, Edwin, and H. Hamlin, Buffalo, N. Y.; said Roat assignor to said Hamlin. Process of and apparatus for treating the refuse of starch and other substances	254,240	Feb. 28	1291	358	21	589
Roat, Edwin, A. K. McKee, and H. Hamlin, Buffalo, N. Y., assignors to said Hamlin. Converter for converting starch into glucose	258,050	June 6	225	60, 61	21	1732
Roath, Giles S., Greenville, Conn. Show-stand	256,192	May 16	1203	338	21	1512
Robb, James A., San José, Cal. Edger	258,946	June 6	93	94	21	1710
Robbins, D. B. (See Hunt, Franklin B., assignor.)						
Robbins, Edwin A., Boston, Mass. Carriage-wrench	257,673	Apr. 25	1618	453	21	1256
Robbins, Elisha, Worcester, Mass. Anchor-support	254,160	Feb. 28	1199	335	21	575
Robbins, Elisha, Worcester, Mass. Anchor-supporter	254,161	Feb. 28	1199	335	21	575
Robbins, George W., Fall River, Mass. Apparatus for lifting and turning invalids	256,124	May 16	1204	339	21	1512
Robbins, Henry R., Baltimore, Md. Weighing and dumping wagon	256,373	Apr. 11	789	217	21	1091
Robbins, Isaiah B., Stockton, Cal., assignor of one-half to J. S. Morgan, Brooklyn, N. Y. Dumping-car	255,686	Apr. 4	160	43	21	977
Robbins, John A. (See Weathers, James, assignor.)						
Robbins, Mario B. (See Abbott, Jeremiah F., assignor.)						
Robbins, William O., New York, N. Y. Ejecter for oil-wells	254,381	Feb. 28	1446	397	21	616
Roberts, Benjamin C. (See Athey, Franklin P., assignor.)						
Roberts, Charles H., Lloyd, N. Y. Preserving forage by storage in silos	254,695	Mar. 7	899	.....	21	669
Roberts, Charles H., Lloyd, N. Y. Preserving ensilage in silos	257,762	May 9	773	215	21	1464
Roberts, Charles H., Evansville, Ind. Mechanical movement	256,125	May 16	1205	339	21	1512
Roberts, Charles H., Montour, Iowa, assignor of one-half to O. H. Mills. Grocer's scoop	258,476	May 23	1638	463	21	1566
Roberts, Edward J., Ashland, assignor of one-fourth to W. W. Culbertson, Boyd County, Ky. Car-coupling	252,530	Jan. 17	1094	285	21	189
Roberts, Elias, assignor of one-half to E. Baumann and W. H. Lots, Chicago, Ill. Grain-elevator	256,244	Apr. 11	639	173	21	1064
Roberts, George I., Fort Wayne, Ind. Flat-iron heater	259,723	June 20	1078	366	21	1895
Roberts, Henry, Hartford, Conn. Elevator	252,801	Jan. 24	1353	378	21	749
Roberts, Henry, Pittsburg, Pa. Holding and transporting wire	259,214	June 6	411	109	21	1766
Roberts, Henry A., Detroit, Mich., assignor to G. F. Swift, Chicago, Ill. Refrigerating-room	256,652	Apr. 4	364	99	21	1011
Roberts, Isaiah L., Jacksonville, Fla. Clutch	253,669	Feb. 21	864	244	21	511
Roberts, James D., Boston, Mass. Bottle stopper and fastener	260,323	June 27	1821	493	21	2023
Roberts, Joseph, assignor of one-third to W. F. Roberts, Baltimore, Md. Can-capping machine	253,104	Jan. 31	1743	482	21	318
Roberts, Peter E. (See Adams, James A., assignor.)						
Roberts, Robert R. (See Kendall and Roberts.)						
Roberts, Thomas B., assignor of two-thirds to D. Hutchison and J. M. Moffatt, Pittsburg, Pa. Sewing-machine	260,240	June 27	1793	467	21	2000
Roberts, W. A. (See Gornall, Richard, assignor.)						
Roberts, William, Baltimore, Md. Sewing-machine	254,696	Mar. 7	900	79, 80	21	669
Roberts, William F. (See Roberts, Joseph, assignor.)						
Roberts, Willis J., Eaton Rapids, Mich. Car-coupling	255,117	Mar. 21	849	227	21	799
Robertshaw, Frederick W., Pittsburg, Pa. Hose-nozzle	254,048	Feb. 21	1060	297	21	544
Robertson, Henry A., Haskins, Ohio. Cultivator	258,374	Apr. 11	790	217 218	21	1091
Robertson, Herbert L., Brookfield, assignor of one-half to J. B. Haskins, West Brookfield, Mass. Sash-fastener	255,194	Mar. 21	948	253	21	816
Robertson, James W., Hardin, assignor of one-half to G. A. Marshall, Sidney, Ohio. Seed-planter	258,808	Jan. 24	1354	378	21	948
Robertson, John, Brooklyn, N. Y., assignor to E. W. Blatchford & Co., Chicago, Ill. Machine for making lead traps	254,697	Mar. 7	904	80	21	669
Robertson, Thomas, Toronto, Ontario, Canada. Lozenge-machine	257,615	May 9	506	167	21	1388
Robertson, William D., *et al.* (See Heffernan, William J., assignor.)						
Robillard, George H. (See Belknapp and Robillard.)						
Robinson, Albert D., and H. W. Thompson, Cascade, Mich. Fence	255,673	Mar. 28	1543	416	21	926
Robinson, Alexander, Benicia, Cal. Combined truck and derrick	254,695	Mar. 14	550	147	21	739
Robinson, Alfred B., Lebanon, Mo. Horse-collar fastening	258,677	May 30	1894	535	21	1649
Robinson, Charles K., assignor of one-half to N. L. Hotchkiss, Lyons, N. Y. Vehicle-reach	257,673	Apr. 25	1616	453	21	1256
Robinson, Christopher W., Saxgertown, Pa. Saw-handle	257,978	May 16	1098	286	21	1460
Robinson, Edgar, Cincinnati, Ohio. Cooking apparatus	254,050	Feb. 21	1070	298	21	544
Robinson, Edgar, assignor, by mesne assignments, of one-half to G. Webber, Cincinnati, Ohio. Stove-pipe	254,049	Feb. 21	1070	297	21	544
Robinson, Edgar, Cincinnati, assignor of one-half to H. B. Beymer, Cambridge, Ohio. Jack for car-axle boxes	251,950	Jan. 3	320	87	21	85
Robinson, Edson C. (See Robinson, John S. and E. C.)						
Robinson, Edward B., Deering, Me. Music-leaf turner	254,569	Mar. 7	149	37	21	663
Robinson, Francis W., Richmond, Ind. Combined thresher and separator	251,951	Jan. 3	322	87	21	56
Robinson, George F., Chicago, Ill. Drier	256,503	Apr. 18	980	293 299	21	1133
Robinson, George H., *et al.* (See Reynolds and Rider, assignors.)						
Robinson, John, Pulaski township, Williams county, Ohio. Washing-machine	259,051	June 6	227	61	21	1732
Robinson, John S. and E. C., Canandaigua, N. Y. Plow	252,139	Jan. 10	543	156	21	163
Robinson, Joseph F., Verona, Pa. Hasp-lock	255,118	Mar. 21	850	227	21	799
Robinson, Miles, Wichita, Kans. Combined sulky-plow and drag	257,763	May 9	774	216	21	1465

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Robinson, Richard W., Boston, Mass., and J. Shaw, assignors to Dexter Woolen Mills, Dexter, Me. Manufacturing woolen roping or slivers	255,195	Mar. 21	948	253	21	816
Robinson, Samuel D., Foxborough, Mass. Hat	255,674	Mar. 28	1544	416	21	936
Robinson, Thomas C., assignor to himself and E. B. Welch, Cambridgeport, Mass. Trimming attachment for sewing-machines	255,336	Mar. 21	1134	305	21	848
Robison, Sylvanus R., assignor of one-half to A. M. White, Valparaiso, Nebr. Tire-tightener	259,598	June 13	865	236	21	1657
Rochow, Ferdinand, Brooklyn, N. Y. Nail-feed attachment for nailing-machines	254,570	Mar. 7	150	37, 38	21	663
Rockafellow, John W., Stockton, N. J. Sulky-cultivator	257,074	Apr. 25	1619	453	21	1256
Rockwell, Fred C. (See Laraway and Rockwell.) (Reissue.)						
Rockwell, Fred C., Hartford, Conn. Knockdown packing-box	255,458	Mar. 28	1286	346	21	879
Rockwell, Walter S., New York, N. Y. Hoisting apparatus	260,394	June 27	1892	494	21	2094
Rockwood, Levi R., assignor of one-half to F. L. Child, Worcester, Mass. Paletto and reservoir for stenciling-ink	257,366	May 2	286	82	21	1339
Rockwood, Thomas J., Leominster, Mass. Meat and lard press	254,362	Feb. 28	1449	397	21	616
Rodgers, Alexander, Muskegon, Mich. Presser-roller for gang-saw mills	257,979	May 16	1027	286	21	1460
Rodrigues, Gabriel, Matanzas, Cuba. Cigarette-holder	252,140	Jan. 10	565	159	21	104
Roe, David A., assignor to W. F. Hall, Columbus Junction, Iowa. Vehicle-spring	257,387	May 2	287	82	21	1333
Roehl, Carl, assignor of one-half to W. S. Camp, Lockport, N. Y. Straw-cutter	257,388	May 2	288	82, 83	21	1333
Roehr, Frank, Chicago, Ill. Guard-gate for swing-bridges	255,696	Mar. 14	728	196	21	771
Rogers, Arthur, Barneaville, Ohio. Boiler-cleaner	254,698	Mar. 7	305	80	21	690
Rogers, Arthur H., Springfield, Mass. Hand-stamp	256,196	May 16	1905	339	21	1513
Rogers, Charles D., assignor to American Screw Company, Providence, R. I. Machine for grinding or polishing the heads of screws	253,800	Feb. 21	865	244	21	512
Rogers, Charles D., assignor to American Screw Company, Providence, R. I. Screw	255,450	Mar. 28	1286	347	21	880
Rogers, Charles D., assignor to American Screw Company, Providence, R. I. Screw	255,816	Apr. 4	76	21	21	964
Rogers, Charles D., assignor to American Screw Company, Providence, R. I. Threading-die	255,817	Apr. 4	77	21	21	964
Rogers, Charles R. (See White, Frederick, assignor.)						
Rogers, Frederick. (See Moran, Maggie A., assignor.)						
Rogers, George. (See Lane, Michael W., assignor.)						
Rogers, James H., assignor of one-half to F. Hume and L. G. Hine, Washington, D. C. Telephone	252,255	Jan. 10	692	196	21	125
Rogers, James H., assignor of one-half to F. Hume and L. G. Hine, Washington, D. C. Telephone	252,256	Jan. 10	693	196	21	125
Rogers, James H., assignor of one-half to F. Hume and L. G. Hine, Washington, D. C. Telephonic apparatus and circuit	252,257	Jan. 10	695	196	21	125
Rogers, James H., assignor to F. Hume and L. G. Hine, Washington, D. C. Electric telephone	252,521	Jan. 17	1095	285	21	186
Rogers, James H., assignor of one-half to F. Hume and L. G. Hine, Washington, D. C. Magnetic receiver	257,075	Apr. 25	1621	454	21	1256
Rogers, James W., Washington, D. C. Gas-trap	252,258	Jan. 10	697	197	21	126
Rogers, John. (See Rogers, John T. and J.)						
Rogers, John T. and J., assignors to J. B. Clabrough, Birmingham, county of Warwick, England. Breech-loading fire-arm	257,764	May 9	775	216	21	1425
Rogers, John W., Denver, Colo. Crate for transporting vegetables, live poultry, &c	253,105	Jan. 31	1745	483	21	318
Rogers, Nelson, Elgin, Ill. Truck	255,818	Apr. 4	78	22	21	964
Rogers, Peet & Co. (See Reiff, William H., assignor.)						
Rogers, Samuel S., Dayton, Wash. Ter. Writing implement	250,742	Apr. 18	1230	344	21	1180
Rogers, William. (See Sponhauer, Widler S., assignor.)						
Rogers, William, assignor to himself and W. H. Rogers, Leechburg, Pa. Floor for rolling-mills, glass-houses, &c	256,053	Apr. 4	364	100	21	1012
Rogers, William H. (See Rogers, William, assignor.)						
Rogers, William H. H. (See Woolhiser, Charles P., assignor.)						
Rohr, Joseph, Swede Point, Iowa. Wire-stretcher	255,337	Mar. 21	1130	305	21	848
Rohrer, Jacob B., and A. Goodhart, Carlisle, Pa. Car-starter	259,215	June 6	413	110	21	1766
Rolfe, Frank S., and W. Cooley, Waterbury, Vt. Sand-band	259,924	June 20	1311	351	21	1935
Rollins, Samuel G., Boston, Mass. Ore-separator	254,505	Mar. 7	71	19	21	650
Rolph, George W., assignor to American Rail Road Ballast Unloader Company, Toledo, Ohio. Nose-casting for car-unloaders	256,606	May 30	1904	509	21	1633
Rominger, George S., assignor to American Buttonhole, Overseaming and Sewing Machine Company, Philadelphia, Pa. Sewing-machine	256,743	Apr. 18	1231	345	21	1180
Rood, Henry W. (See Weber, Adolph, assignor.)						
Rood, Netta G., Evanston, assignor of one-half to C. F. Ward, Chicago, Ill. Portable summer-house	256,860	Apr. 25	1373	386	21	1213
Rood, William C., Quincy, Ill. Show-card holder	259,216	June 6	414	110	21	1766
Roome, Henry C., Jersey City, N. J. Electric burglar-alarm	254,099	Mar. 7	305	81	21	690
Roosevelt, Cornelius. (See Schwerser, Jakob, assignor.)						
Root, John B., Port Chester, N. Y. Propulsion of ships	253,946	Feb. 21	940	261	21	523
Root, John B., Port Chester, N. Y. Double-cylinder steam-engine	256,054	Apr. 4	366	100	21	1012
Root, John B., Port Chester, N. Y. Compound engine	256,055	Apr. 4	368	101	21	1012
Roper, Sylvester H. (See Spencer and Roper.)						
Rorebeck, Henry, Parma, assignor of two-thirds to C. S. Upton and C. E. Coates, Spencerport, N. Y. Halter	255,305	Mar. 21	1206	323	21	860
Rose, Allen W., assignor, by mesne assignment, to C. A. Cheever, trustee, New York, N. Y. Electric telephony	252,141	Jan. 10	565	150	21	104
Rose, Allen W., and C. A. Cheever, New York, N. Y.; said Rose assignor to said Cheever, said Cheever assignor to himself as trustee. Electric speaking-telephone	252,142	Jan. 10	566	150	21	104
Rose, John H., Norwalk, Conn. Portable burglar-alarm	254,383	Feb. 28	1450	397	21	616
Rose, Max L., and E. W. South, Anderson, S. C.; said South assignor to said Rose. Fire-escape	250,279	June 6	408	108	21	1778
Rose, William B. (See Samson, Thomas, assignor.)						
Rosenberger Manufacturing Company. (See Porter, Luther E., assignor.)						
Rosenbeck, Andrew, assignor to himself and A. F. Roth, Quincy, Ill. Lamp	253,396	Mar. 21	1207	323	21	860
Rosenthal, John E., St. Louis, Mo. Door-check	258,127	May 16	1206	340	21	1513
Rosenwasser, Nathan, Cleveland, Ohio. Percolator	256,504	Apr. 18	961	269	21	1133
Ross, Charles W., Columbus, Ohio, assignor to Western Electric Manufacturing Company, Chicago, Ill. Telephone-exchange circuit	252,259	Jan. 10	699	197	21	126
Ross, Charles W., and G. H. Twiss, Columbus, Ohio, assignors to Western Electric Manufacturing Company, Chicago, Ill. Telephone-exchange switch-board	258,868	May 30	2105	594	21	1668
Ross, Crawford D. (See Ross, Thomas, and C. D.)						
Ross, David, Hot Springs, Ark. Rotary pump	256,505	Apr. 18	969	269	21	1134
Ross, Elmore W., Fulton, N. Y. Extensible universal joint for shafts	254,843	Mar. 14	488	131	21	738
Ross, Elmore W., Fulton, N. Y. Band or fly wheel	253,198	Mar. 21	949	254	21	816

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Ross, James K., Springfield, Ohio. Roller-skate	255,460	Mar. 28	1287	347	21	880
Ross, John K., Newark, N. J. Corset	251,735	Jan. 3	58	16	21	12
Ross, John W., Santa Clara, Cal. Device for handling cooking-pans	258,141	Jan. 10	568	160	21	104
Ross, John W., Santa Clara, Cal. Kitchen implement. (Reissue)	10,086	Apr. 11	894	250	21	1109
Ross, Lena R. (See Roth, Henry, assignor.)						
Ross, Milton, San José, Cal. Plow	257,941	May 2	117	33	21	1302
Ross, Oliver C., Penfield, N. Y. Felly-connection for vehicle-wheels	254,162	Feb. 28	1300	335	21	575
Ross, Robert, Santa Rosa, Cal. Two-wheeled vehicle	257,076	Apr. 25	1621	454	21	1256
Ross, Thomas, deceased, (R. Barrett and J. C. Dunn, administrators,) and C. D. Ross, Rutland, Vt.; said C. D. Ross assignor to said administrators. Grinding-mill	253,496	Feb. 14	389	107	21	494
Ross, William E. (See Borland, Joseph, assignor.)						
Rosse, James M., Tarrytown, N. Y. Chain-propeller	254,051	Feb. 21	1071	298	21	545
Rossman, Samuel J., Terre Haute, Ind. Car-coupling	260,052	June 27	1490	401	21	1972
Rotan, Samuel, assignor of one-half to J. L. Riter, Brownsville, Ind. Force-feed for seeding-machines	255,119	Mar. 21	851	228	21	799
Rote, Charles V., Lancaster, Pa. Stay-bolt cutter	254,163	Feb. 28	1301	335	21	575
Roth, Adolph F. (See Rosenbusch, Andrew, assignor.)						
Roth, Augustus D., Blackheath, county of Kent, England. Marine safe	260,325	June 27	1925	494	21	2094
Roth, Henry, New York, N. Y., assignor of one-half to L. R. Ross, New Orleans, La. Car-axle box	255,675	Mar. 28	1545	416	21	936
Roth, Henry, New York, N. Y., assignor to himself and J. G. Fountain, New Orleans, La. Car-axle box	255,676	Mar. 28	1546	416	21	936
Rothschild, James, Newark, N. J. Locket	255,677	Mar. 28	1546	417	21	936
Rothschild, Max, Cincinnati, Ohio. Device for preventing horses from running away	258,318	May 23	1453	412	21	1564
Rothwell, Charles. (See Rothwell, John and C.)						
Rothwell, John and C., Philadelphia, Pa. Loom for weaving pile fabrics	257,517	May 9	459	128	21	1360
Rouden, Lena, Louisville, Ky. Medicinal tonic	254,384	Feb. 28	1451	.....	21	616
Rouse, John H. (See Paul and Rouse.)						
Rowden, George. (See Dickinson and Rowden.)						
Rowe, Patrick, and J. J. Scanlin, Lowell, Mass. Trunk for cotton-openers	254,385	Feb. 28	1451	397	21	617
Rowe, Thomas, New York, N. Y. Clothes-drier	257,763	May 9	776	216	21	1425
Rowe, William, Biddeford, Me. Permutation-lock	255,087	Mar. 14	729	197	21	771
Rowell, George A. (See Palmer, Worthington, and Rowell.)						
Rowell, John S., Beaver Dam, Wis. Cultivator-tooth. (Reissue)	10,076	Apr. 4	450	122	21	1098
Rowell, John S., Beaver Dam, Wis. Seeder or cultivator tooth	256,922	Apr. 25	1442	405	21	1234
Rowland, Jared S., Jamaica, N. Y. Coal-oil heater	254,052	Feb. 21	1073	298	21	545
Rowland, John T., *et al.* (See Jones, Alfred E., assignor.)						
Rowland, Thaddeus H., *et al.* (See Bronson, James E., assignor.)						
Rowland, Thomas F. (See Duc, Henry A., Jr., assignor.)						
Rowland, William L. (See Bower and Rowland.)						
Rowlands, John R. (See Ellis and Rowlands.)						
Roy, Joseph H., Burlington, Vt. Automatic coal and ash sifter	256,506	Apr. 18	963	269	21	1134
Royal Baking Powder Company. (See Schnitzer, Guido, assignor.) (Reissue.)						
Royce, Danforth H. (See Eaton and Tufts, assignors.)						
Royce, Edward H., F. W. Allen, and M. H. Fuller, Providence, R. I. Button	256,056	Apr. 4	369	101	21	1012
Royer, Louis C. (See Bliss, Christopher, assignor.)						
Roylance, Joseph, San Francisco, Cal. Stop-valve	259,496	June 13	866	239	21	1681
Royle, Charles, New York, N. Y. Lamp	251,932	Jan. 3	393	88	21	56
Royster, William R. (See Upsher and Royster.)						
Ruane, Edward, Centre Rutland, Vt. Wire fence	259,708	Jan. 24	1225	343	21	287
Ruby, William, Louisville, Ky. Dash-board	260,941	June 27	1725	467	21	2008
Ruch, William. (See Hedley, Joseph, Sr., assignor.)						
Rudd, Charles H., Evanston, Ill., assignor to J. M. and J. C. White and H. M. Lewis, trustees, Philadelphia, Pa. Electric railway	259,569	June 13	866	236	21	1657
Rude, George W., J. R., and S. B., Liberty, Ind. Grain-drill	253,891	Feb. 21	867	245	21	512
Rude, John R. (See Rude, George W., J. R., and S. B.)						
Rude, Squire B. (See Rude, George W., J. R., and S. B.)						
Rudolph, Christian H., assignor to Farbwerke, vormals Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Production of coloring-matter	256,599	Apr. 18	1059	.....	21	1149
Rudolph, Elijah K., and J. A. L. Wolfe, McKinney, Tex. Printer's galley	254,700	Mar. 7	308	81	21	690
Rueche, Albert, New York, N. Y. Faucet	251,953	Jan. 3	394	88	21	56
Rufer, William T. (See Barca, Rufer, and Cockayne.)						
Rufer, William T., *et al.* (See Barca, Alfred L., assignor.)						
Ruggles, Thomas D., Kent, Ohio, assignor of one-half to C. C. Byers, Meadville, Pa. Oil-cup	259,925	June 20	1312	351	21	1936
	258,528	Jan. 17	1096	{ 285 / 286	21	187
Ruhl, John W., Millinburg, Pa. Hay-tedder						
Rähr, Franz, Teplitz, Austria. Inside blind	255,538	Mar. 28	1284	373	21	896
Rumpff, Carl, Aprath, near Elberfeld, Prussia, Germany. Dye-stuff or coloring-matter	256,375	Apr. 11	793	.....	21	1091
Rumpff, Carl, Aprath, near Elberfeld, Prussia, Germany. Manufacture of dye-stuff or coloring-matter	256,376	Apr. 11	793	.....	21	1091
Rumpff, Carl, Aprath, near Elberfeld, Prussia, Germany. Manufacture of dye-stuff or coloring-matter	256,377	Apr. 11	794	.....	21	1091
Rumpff, Carl, Aprath, near Elberfeld, Prussia, Germany. Manufacture of dye-stuff or coloring-matter	256,378	Apr. 11	794	.....	21	1091
Rumpff, Carl, Aprath, near Elberfeld, Prussia, Germany. Manufacture of dye-stuff or coloring-matter	256,379	Apr. 11	795	.....	21	1092
Rumpff, Carl, Aprath, near Elberfeld, Prussia, Germany. Manufacture of dye-stuff or coloring-matter	256,380	Apr. 11	795	.....	21	1092
Rumpff, Carl, Aprath, near Elberfeld, Prussia, Germany. Manufacture of a new color-producing acid	256,381	Apr. 11	796	.....	21	1092
Rumpff, Carl, Aprath, near Elberfeld, Prussia, Germany. Manufacture of brown dye-stuffs	257,942	May 2	118	.....	21	1302
Rumpff, Carl, Aprath, near Elberfeld, Prussia, Germany. Manufacture of brown dye-stuffs	257,943	May 2	119	.....	21	1302
Rumpff, Carl, Aprath, near Elberfeld, Prussia, Germany. Manufacture of coloring-matter from naphthylamine	260,942	June 27	1726	.....	21	2008
Rumsey, Lewis M., St. Louis, Mo. Drive-chain	258,005	Jan. 3	392	106	21	67
Rumsey, William D., Detroit, Mich. Vehicle-spring	255,461	Mar. 28	1291	347	21	880
Rundle, George, Palmyra, Wis. Grapple hay-fork	254,053	Feb. 21	1074	298	21	545
Rundle, Henry. (See Williams and Rundle.)						
Runstedler, Andrew, assignor to Farmers Friend Manufacturing Company, Dayton, Ohio. Corn-planter	254,054	Feb. 21	1075	299	21	545
Rupert, Charlotte, Fort Wayne, Ind. Gas-stove	253,767	Feb. 14	705	201	21	477
Rusch, Emanuel, Pottendorf, near Vienna, Austria. Bleaching cotton in the form of cops	254,398	Feb. 28	1458	398	21	617

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Rush, William B., assignor to Chambers, Bering & Quinlan, Decatur, Ill. Device for connecting check-rowers to planters	259,652	June 13	968	258 259	21	1671
Rushforth, William H., Camden, N. J. Combined roller and runner skate	255,819	Apr. 4	80	22	21	964
Rushforth, William H., Camden, N. J. Combined walking-stick and music-stand	257,960	May 16	1028	286	21	1480
Rushton, Thomas H., *et al.* (See Marsh, James and J. A., assignors.)						
Russ, Edward, Hoboken, N. J., assignor to A. Liebenroth, Von Auw & Co., New York, N. Y. Temporary binder	254,844	Mar. 14	489	131	21	728
Russell, Abbie J. (See Russell, True, assignor.) (Reissue.)						
Russell, Allen A., Indianapolis, Ind. Thrashing-machine	255,120	Mar. 21	853	238 239	21	799
Russell, Andrew H., Watertown, Mass. Sight for ordnance	257,077	Apr. 25	1628	454	21	1256
Russell, Asa S., Ellenville, N. Y. Sled	255,197	Mar. 21	951	254	21	816
Russell, Charles W. (See Goodenough, Rollin A., assignor.)						
Russell, Electa L., *et al.* (See Bement, Ernest M., assignor.)						
Russell & Erwin Manufacturing Company. (See Jones, Horace K., assignor.)						
Russell, James R., Boston, Mass. Apparatus for forming hat-nap bats	252,901	Jan. 31	1484	415	21	270
Russell, James R., Boston, Mass. Machine for beating-up napped hats	258,477	May 23	1638	463	21	1596
Russell, John, Berlin, Pa. Grain-cleaner	255,098	Mar. 14	730	197	21	772
Russell, John, Berlin, Pa. Grain-cleaner	255,099	Mar. 14	732	198	21	772
Russell, Joseph E., *et al.* (See Jordan and Gillon, assignors.)						
Russell, Joseph W., *et al.* (See Ostrander, Jonathan, assignor.)						
Russell, Samuel L., Chicago, Ill. Rocking-teeter	255,030	Mar. 14	733	196	21	772
Russell, Sterne, assignor to Scovill Manufacturing Company, Waterbury, Conn. Lighting apparatus for lamps, &c	254,701	Mar. 7	308	81	21	690
Russell, True, assignor to A. J. Russell, Boston, Mass. Commode-chair. (Reissue)	10,049	Feb. 28	1587	417	21	631
Russell, William S. (See Sykes, Robert R., assignor.)						
Russell, William S., Northfield, Minn. Dust-collector for middlings-purifiers, &c	259,144	Jan. 10	569	160	21	104
Rust, Arthur E., assignor of one-half to S. R. Rust, Pine Meadow, Conn. Mechanical movement	256,382	Apr. 11	797	218	21	1092
Rust, Oscar, St. Joseph, Mo. Well-drilling machine	257,766	May 9	777	216	21	1425
Rust, Oscar, St. Joseph, Mo. Well-drilling machine	257,767	May 9	777	217	21	1425
Rust, Solon R. (See Rust, Arthur E., assignor.)						
Rust, Solon R., Pine Meadow, Conn. Bench-plane	257,961	May 16	1030	286	21	1480
Rath, John B. (See Williams, Silas S., assignor.)						
Rutter, Liberty M. S., and R. Wysong, Williamsport, Pa. Cooking utensil	251,736	Jan. 3	59	16	21	13
Rutty, William H., New York, N. Y. Fastening for gloves, &c	259,936	June 20	1312	352	21	1936
Ryan, Patrick, assignor to J. M. Brunswick & Blake Company, New York, N. Y. Billiard-cue cutter	254,703	Mar. 7	310	82	21	691
Ryan, Thomas C., assignor to himself and W. Lindenmeier, Fort Collins, Colo. Car-coupling	254,702	Mar. 7	309	82	21	691
Ryan, Thomas E. (See McGee, Henry, assignor.)						
Ryder, Arthur F. (See Ordway and Ryder.)						
Ryder, Benjamin L., Chambersburg, Pa. Combined portable furnace and boiler	255,469	Mar. 28	1209	348	21	880
Ryder, Benjamin P., Somerville, assignor of three-fourths to C. F. Coffin, Boston, Mass. Hair-fastener	258,198	May 16	1207	340	21	1513
Ryder, Henry M. (See Montgomery, John F., assignor.)						
Ryder, Henry M., assignor of one-half to J. F. Montgomery, Taunton, Mass. Urn for stoves	259,330	Jan. 17	794	220	21	147
Rymer-Jones, Alexander M., London, England. Grade-recording instrument	254,982	Mar. 14	676	181 182	21	702
Rynehart, Robert. (See McFadden, Francis, assignor.)						
Ryther, William H., assignor to Clark & Co., Somonauk, Ill. Device for converting reciprocating into rotary motion	255,735	Mar. 28	1631	440 441	21	940
Ryther, William H., Northville, assignor of one-half to Clark & Co., Somonauk, Ill. Device for converting motion	258,199	May 16	1207	340	21	1513
Sabin, John I., San Francisco, Cal. Telephone-exchange circuit and apparatus	255,031	Mar. 14	734	198 199	21	772
Sack, William M., assignor of one-half to E. A. May, Oakland, Cal. Water-closet	253,106	Jan. 31	1746	483 484	21	319
Sack, William M., assignor of one-half to E. A. May, Oakland, Cal. Filtering-faucet	253,107	Jan. 31	1748	484	21	319
Sacket, Frederic G., Knox, Pa. Protecting oil-tanks from lightning	258,130	May 16	1210	340	21	1513
Sackett, Frank, *et al.* (See Sanford, Aaron C., assignor.)						
Sackett, Joseph S., Plattsburg, N. Y. Ruffling attachment for sewing-machines	257,518	May 9	462	128	21	1370
Sackett, Joseph S., Plattsburg, N. Y. Ruffling or plaiting attachment for sewing-machines	257,519	May 9	463	129	21	1370
Sagendorph, Frank E., Cincinnati, Ohio. Metallic joint for flexible roofing	257,616	May 9	600	108	21	1392
Sagendorph, L. Lewis, Cincinnati, Ohio. Roofing material	252,584	Jan. 17	1030	.....	21	187
Sagendorph, L. Lewis, Cincinnati, Ohio, assignor to New York Iron Roofing and Paint Company, New York, N. Y. Device for securing roofing material upon roofs	255,087	Mar. 14	813	217	21	786
Sagendorph, L. Lewis, Cincinnati, Ohio, assignor to New York Iron Roofing and Paint Company, New York, N. Y. Manufacturing roofing material	255,088	Mar. 14	815	.....	21	786
Sager, John, assignor to himself and E. Sanford, Thamesville, Ontario, Canada. Grape-shears	257,369	May 2	290	83	21	1333
Sahlqvist, A. Gustaf, Brooklyn, N. Y. Awning	258,319	May 23	1454	413	21	1564
Sailor, John Y., Tiffin, Ohio. Folding cradle	254,241	Feb. 28	1293	358	21	580
Salisbury, Charles H., De Kalb, Ill. Wire-stretcher	255,032	Mar. 14	730	196	21	773
Salisbury, Charles H., De Kalb, Ill. Wire and clothes-line tightener	255,033	Mar. 14	730	196	21	773
Salisbury, Dexter, Williams, Cal. Grain separator and cleaner	258,503	Jan. 24	1355	379	21	948
Salisbury, George P., assignor to Winchester Repeating Arms Company, New Haven, Conn. Closing blank cartridges	260,386	June 27	1826	494	21	2094
Salmon, William C., Portland, Oreg. Pulverising-mill	255,678	Mar. 28	1547	417	21	926
Salomon, Etienne, Montreal, Quebec, Canada. Pressure-regulator	255,336	Mar. 21	1137	265	21	848
Salomon, Wolf, assignor to S. Jacoby & Co., New York, N. Y. Cigarette	253,892	Feb. 21	808	245	21	512
Saltzman, George H. (See Swarton, William H., assignor.)						
Sammet, George A. and G. W., Boston, Mass. Apparatus for preparing feathers for bedding, &c	258,687	May 30	1805	509	21	1634
Sammet, George W. (See Sammet, George A. and G. W.)						
Samper, Antonio, Paris, France. System for transmitting motion	253,429	Feb. 7	266	68	21	385
Samper, Antonio, Paris, France. Apparatus for transmitting motion	259,927	June 20	1313	352	21	1936
Sample, Levi R., Marseilles, Ill. Combined hay raker and loader	259,497	June 13	688	182	21	1622
Sampsell, Homer A., Salem, Ohio. Car-coupling	256,380	May 23	1455	413	21	1564
Samson, Thomas, assignor of one-half to W. B. Rose, Egg Harbor township, Atlantic county, N. J. Rope-clamp	258,608	May 30	1806	510	21	1634
Samson, William H. (See Swett and Samson.)						
Samuels, Marks, New York, N. Y. Sofa-bedstead	256,478	May 23	1640	464	21	1597

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Sandage, Joshua, Carpenterville, Ill. Wagon-axle skein	256,744	Apr. 18	1234	346	21	1180
Sandberg, Joseph F., New York, N. Y., assignor of one-third to C. L. Qvarnström, Donovan, Ill. Rolling-mill	258,523	Jan. 17	1067	286 287	21	187
Sanborn, Albert A., Newark, N. J., assignor to Celluloid Manufacturing Company, New York, N. Y. Collar and cuff of celluloid or other pyroxyline material	258,460	May 23	1641	464	21	1597
Sander, Gustav. (See Reiter and Sander.)						
Sanders, John F., Ogden, Utah Ter. Concentrator for ore separating apparatus	253,229	Feb. 7	60	18	21	357
Sanders, John F., Ogden, Utah Ter. Ore-concentrator	256,131	May 16	1210	341	21	1513
Sanders, Newell, Chattanooga, Tenn. Plow	258,978	Jan. 31	1570	437	21	201
Sanders, Thomas H. B., St. Louis, Mo. Egg-tester	256,811	May 30	2043	577	21	1675
Sanderson, Frederick. (See Huffman, Orlando, assignor.)						
Sanderson, Frederick, Friendville, Nebr. Checkers or draughts	259,217	June 6	414	110	21	1766
Sandgren, Richard P. C., New York, N. Y. Coffer-dam	259,218	June 6	415	110 111	21	1766
Sandford, James A., Albany, N. Y. Soft-metal lining for dovetail sockets	253,430	Feb. 7	288	68	21	395
Sandford, John G., assignor to R. Strain, Matteawan, N. Y. Tension for sewing-machine spools	259,334	June 13	574	151	21	1669
Sandford, Timbrook, Brooklyn, assignor to Bradley, Kurtz & Co., New York, N. Y. Bag-fastener	258,694	Jan. 24	1357	379	21	949
Sanford, Jesse, assignor of one-half to C. T. Ward, New Haven, Conn. Window-awning	256,138	May 16	1211	341	21	1514
Sanda, Jesse, assignor of one-half to C. T. Ward, New Haven, Conn. Window-awning						
Sanford, Aaron C. (See Sanford, George W. and A. C.)						
Sanford, Aaron C., Winsted, assignor to F. S. Grant, Ansonia, and F. Sackett, Winsted, Conn. Ornamental attachment for clocks	253,947	Feb. 21	942	262	21	583
Sanford, Albert, Oshkosh, Wis. Ox-shoe	256,381	May 23	1456	413	21	1565
Sanford, Albert, Oshkosh, Wis. Sled	260,943	June 27	1788	467	21	2008
Sanford, David. (See Wilbur and Sanford.)						
Sanford, Ephraim. (See Sager, John, assignor.)						
Sanford, George D., Peekskill, assignor of one-half to W. Sanford, Brooklyn, N. Y. Fireplace heater	253,315	Feb. 7	188	44	21	372
Sanford, George E., Genoa, N. Y. Time-piece calendar	255,196	Mar. 21	951	254 255	21	816
Sanford, George W. and A. C., Winsted, Conn. Clock-bell	256,609	May 30	1807	510	21	1634
Sanford, Watson. (See Sanford, George D., assignor.)						
Sanecone, Antonio, Manchester, county of Lancaster, England, assignor of one-half to H. D. Dupee, Boston, Mass. Application of coloring-matter to fabrics	253,230	Feb. 7	60	19	21	357
Santa, Joseph. (See Geese and Santa.)						
Sarfert, Alexander T., and L. H. Vollert, Meerane, Saxony, Germany. Calender for cloth and other fabrics	252,695	Jan. 24	1141	320	21	219
Sargent, Allan C. (See Sargent, Frederick G. and A. C.)						
Sargent & Co. (See Brocksieper, Fredrick W., assignor.)						
Sargent & Co. (See Scranton, Worthington, assignor.)						
Sargent & Co. (See Tanner, Alfred B., assignor.)						
Sargent, Francis T. (See Newsham, Sydney J., assignor.)						
Sargent, Frederick G. and A. C., Graniteville, Mass. Wool-washer	256,057	Apr. 4	370	101	21	1012
Sargent, Frederick G. and A. C., Graniteville, Mass. Wool-washing machine	258,382	May 23	1456	413 414	21	1565
Sater, Hans H., Dubuque, Iowa. Device for attaching roller-colters to plows	259,909	Jan. 31	1466	415	21	276
Saunders, Andrew, Yonkers, N. Y. Reamer	259,908	Jan. 31	1467	415	21	277
Saunders, Andrew, assignor to D. Saunders' Sons, Yonkers, N. Y. Pipe-cutter. (Reissue)	10,021	Jan. 31	1848	509	21	335
Saunders, Frank, Aberdeen, Miss. Ball-trap for billiard-tables	258,805	Jan. 24	1358	380	21	949
Saunders, George A. (See Upham, Saunders, and Sheldon.)						
Saunders, Henry A. C. (See Brown and Saunders.)						
Saunders, John. (See Atcheson, Theophilus, assignor.)						
Saunders, Samuel L., Lynn, Mass. Chair	257,390	May 2	291	83	21	1333
Saunders' Sons, D. (See Saunders, Andrew, assignor.) (Reissue.)						
Savage, Albert L., Ashtabula, Ohio. Heating-stove	253,004	Jan. 31	1466	415	21	277
Savage, Alonzo H., Ashtabula, Ohio. Blacking-box	253,109	Jan. 31	1749	484	21	319
Savage, Jeremiah, Sunbury, Pa. Dredging-machine	257,617	May 9	600	108	21	1392
Sawyer, Allen J. (See Woodbury, Wood, and Sawyer.)						
Sawyer, Charles A., *et al.* (See Luther, Benjamin G., assignor.)						
Sawyer, Frank W., *et al.* (See Luther, Benjamin G., assignor.)						
Sawyer, George W., assignor to B. Lande, New York, N. Y. Electric lamp	254,655	Feb. 21	1076	280	21	545
Sawyer Spindle Company. (See Chapman, Charles H., assignor.)						
Sawyer, Sylvester, Gardner, Mass. Bicycle-suspender	260,053	June 27	1491	401 402	21	1972
Sawyer, William A., Deerfield, assignor of two-fifths to A. B. Claflin, Newtonville, Mass. Leather-measuring machine	256,058	Apr. 4	372	102	21	1013
Sawyer, Willard W. (See Denver and Sawyer.)						
Sawyer, William E., assignor to B. Lande, New York, N. Y. Dynamo-electric machine	254,656	Feb. 21	1077	280	21	546
Sawyer, William E., New York, and A. Man, Brooklyn, assignors to Electro Dynamic Light Company, New York, N. Y. Electric lighting system. (Reissue)	10,134	June 6	502	130 131	21	1781
Sawyer, William H., Providence, R. I. Cut-out for burglar-alarms	252,260	Jan. 10	700	198	21	126
Sawyer, William H., assignor to E. F. Phillips, Providence, R. I. Insulated electrical conductor	252,261	Jan. 10	702	198	21	126
Sawyer, William H., assignor to E. F. Phillips, Providence, R. I. Insulated electrical conductor	252,262	Jan. 10	703	198	21	127
Saxton, Townsend, Brooklyn, N. Y. Wardrobe-bedstead	253,788	Feb. 14	706	201	21	477
Saxton, William H. (See King and Saxton.)						
Scanlin, James J. (See Rowe and Scanlin.)						
Scarff, Tullie J., New Carlisle, Ohio. Track	253,948	Feb. 21	942	262	21	583
Scarr, Abraham C., Maryborough township, Ontario, Canada. Sulky-harrow and seed-sower combined	258,806	Jan. 24	1360	380	21	949
Schacht, Charles, Marine, Ill. Flour-bolt	251,954	Jan. 3	304	68	21	56
Schade, Reinhard, New York, N. Y. Alarm-lock	256,481	May 23	1641	465	21	1597
Schaefer, Conrad, *et al.* (See Wright, Parvin, assignor.)						
Schaefer, George. (See Heurich and Schaefer.)						
Schaefer, John C., assignor of two-thirds to Klausmann & Mayer, New York, N. Y. Apparatus for increasing the draft of chimneys	256,133	May 16	1212	341	21	1514
Schafer, Theodore, Marea, Ill. Stove-pipe shelf	255,320	Mar. 21	1136	266	21	848
Scharff, Anthony, Philadelphia, Pa. Whip	257,078	Apr. 25	1623	454	21	1256
Scharpe, Ernest, New Orleans, La. Passenger head-rest	251,798	Jan. 3	137	30	21	25
Scheffler, Franz S., Richmond, Quebec, Canada. Railway-switch	256,462	May 23	1643	465	21	1597
Scheibler, Carl, Berlin, Germany. Obtaining sugar from molasses and sirups	256,463	May 23	1644	.....	21	1598
Scheibler, Carl, Berlin, Germany. Separating sugar from molasses, &c	260,944	June 27	1787	.....	21	2008

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Scheibler, Carl, Berlin, Germany. Obtaining sugar from plant-juices	260,397	June 27	1697	.....	21	2094
Scheibler, Carl, Berlin, Germany. Obtaining sugar from the juices of plants	260,398	June 27	1699	.....	21	2094
Scheidell, John S., assignor of three-fourths to J. T. Stavely, Philadelphia, Pa. Railway time-indicator	258,484	May 23	1646	465	21	1598
Schell, Duncan M., Syracuse, N. Y. Revolving book-case	256,600	Apr. 18	1059	298	21	1149
Schenck, Marcus P., Fulton, N. Y. Cider and wine press	258,134	May 16	1213	342	21	1514
Schenck, Peter V., assignor to J. W. Allen, St. Louis, Mo. Apparatus for administering injections	256,745	Apr. 18	1035	346	21	1181
Schenck, William T., Marea, Ill. Combined insole and heel protector	259,698	Jan. 24	1143	269	21	913
Schenk, Adam, Milwaukee, Wis. Spring-mattress	259,973	Jan. 31	1570	437	21	991
Schenker, William, Denver, Colo. Spring-bolt	255,199	Mar. 21	954	255	21	817
Schenker, William, Denver, Colo. Lifting-jack	257,533	May 9	847	236	21	1439
Scherer, Andrew G. (See Hall, Lewis, assignor.)						
Scherer, Jacob F., New Bremen, Ill. Drag-saw	259,928	June 20	1315	352	21	1936
Scherer, Michael M., Batesville, Ark. Cotton-press	257,079	Apr. 25	1624	455	21	1257
Schermerhorn, Edward E., New York, N. Y. Milling attachment for vises	254,704	Mar. 7	311	82	21	691
Schermerhorn, William K., Schenectady, N. Y. Spark extinguishing and discharging device	255,679	Mar. 28	1548	417	21	927
Schening, Charles. (See Delanoy, Alfred G., assignor.)						
Schevenell, Leonard, Athens, Ga. Pen-holder	256,254	May 23	1380	300	21	1552
Schick, William H., Chicago, Ill. Curtain-holder	260,125	June 27	1585	427	21	1967
Schiefer, Andrew, Newport, Ky. Ash-sifter	255,869	Apr. 4	162	43	21	977
Schiene, A. A., *et al.* (See Perrette, Justin, assignor.)						
Schiller, John G., Youngstown, Ohio. Car-brake	255,530	Mar. 28	1384	{373 374	21	896
Schillinger, John J., New York, N. Y. Manufacture of building-blocks	258,983	Jan. 10	704	198	21	197
Schillinger, John J., New York, N. Y. Concrete pavement	256,383	Apr. 11	799	218	21	1092
Schipper, Frank, and L. Dobel, Aurora, Ind. Shoe-maker's jack	252,565	Jan. 17	1031	287	21	187
Schlacks, Henry. (See Hayes, Schlacks, and Starkweather.)						
Schlag, J. J. Henry, Millvale, T. J. Graff and J. F. McKee, Pittsburg, Pa. Elevated oven for ranges	253,631	Feb. 14	532	153	21	447
Schlapbach, Albert, Scandia, Kans. Lemon-squeezer	256,812	May 30	2044	577	21	1675
Schleber, Henry H., Rochester, N. Y. Cigarette	258,255	May 23	1381	391	21	1552
Schlesinger, Victor. (See Prüsker, Arthur, assignor.)						
Schlueter Henry F., Cincinnati, Ohio. Sewing-machine	257,391	May 2	292	83	21	1333
Schmals, François. (See Tournoux and Schmals.)						
Schmeiser, Henry J., assignor of one-third to O. V. Hoffmann, Burlington, Iowa. Barb for wire fences	253,632	Feb. 14	535	153	21	448
Schmidt, Balthaser, assignor of one-half to P. Heibler, Juneau, Wis. Bolt and rivet clipper	259,052	June 6	298	61	21	1732
Schmidt, Diedrich, New York, N. Y. Fire-escape	260,345	June 27	1730	468	21	2006
Schmidt, Friedrich E., Brooklyn, N. Y. Looper for button-hole sewing-machines	255,034	Mar. 14	740	200	21	773
Schmidt, J. Albert, New York, N. Y. Nippers for opening bottles	257,982	May 16	1031	287	21	1460
Schmidt, Johann, Nuremberg, Bavaria, Germany, assignor to Vergho, Ruhling & Co., Chicago, Ill. Apparatus for filling capsules	255,690	Mar. 28	1549	417	21	927
Schmidt, Julius E., St. Paul, Minn. Driving-mitt	254,164	Feb. 28	1202	336	21	575
Schmidt, Rudolf, Cincinnati, Ohio. Bosom-stretcher	256,384	Apr. 11	799	{218 219	21	1092
Schmierer, Gottlieb. (See Jansen, Diederich, assignor.)						
Schmit, Henry, *et al.* (See Earneat, William H., assignor.) (Reissue.)						
Schmitz, J. Adolph, Lake Forest, Ill. Combined parlor and sleeping car	251,737	Jan. 3	60	17	21	13
Schmucker, George P., assignor to W. J. Buck, Son & Co., Philadelphia, Pa. Drop-light pipe for chandeliers	258,135	May 16	1215	342	21	1514
Schneer, Isaac, New York, N. Y. Shirt	254,387	Feb. 28	1454	398	21	617
Schneer, Isaac, New York, N. Y. Men's drawers	254,566	Mar. 7	72	19	21	650
Schneer, Isaac, New York, N. Y. Shirt-bosom	254,705	Mar. 7	312	82	21	691
Schneer, Isaac, New York, N. Y. Shirt. (Reissue)	10,096	Apr. 25	1715	481	21	1273
Schneider, Alois, San Francisco, Cal. Magazine fire-arm	258,145	Jan. 10	571	{160 161	21	105
Schneider, B. B. (See Votti, Carl, assignor.) (Reissue.)						
Schneider, George P., Cleveland, Ohio. Wrench	254,567	Mar. 7	72	19	21	650
Schneider, Paul, and H. Trenkamp, Cleveland, Ohio. Vapor-burner	251,736	Jan. 3	61	17	21	13
Schneider, Peter, Brooklyn, N. Y. Combined globe and chimney for lamps	257,708	May 9	779	217	21	1426
Schnell, Charles W., assignor to C. W. Schnell & Co., Philadelphia, Pa. Remedy for catarrh	258,580	June 13	860	.....	21	1857
Schnell & Co., Charles W. (See Schnell, Charles W., assignor.)						
Schnitzer, Guido, Schwäbisch Hall, Würtemberg, Germany, assignor, by mesne assignments, to Royal Baking Powder Company, New York, N. Y. Manufacture of cream of tartar. (Reissue)	10,004	Jan. 3	410	111	21	71
Schoen, Charles T. (See Scott and Schoen.)						
Schoen, Charles T., assignor of one-half to C. Scott, Philadelphia, Pa. Car-spring	255,590	Mar. 21	955	255	21	817
Schoen, Charles T., assignor of one-half to C. Scott, Philadelphia, Pa. Die for making elliptic springs	257,080	Apr. 25	1625	455	21	1257
Schoenchen, Conrad, New York, N. Y. Taping furs	255,201	Mar. 21	957	256	21	817
Schoenhof, Jacob, New York, N. Y. Skirt and pannier	257,709	May 9	780	217	21	1426
Scholes, Henry B., and J. Haughian, Brooklyn, N. Y. Couching-chamber for malting	259,591	June 13	890	236	21	1857
Scholes, Richard J. (See Wolmlich and Scholes.)						
Scholfield, Henry, New York, N. Y. Apparatus for drying coffee, grain, &c	253,111	Jan. 31	1732	{485 486	21	399
Scholl, John, Elk Grove, Cal. Self-feeder for thrashing-machines	251,790	Jan. 3	137	39	21	25
Scholz, Charles, Dayton, Ohio. Horse hay-rake	255,681	Mar. 28	1550	418	21	927
Scholz, Charles, Dayton, Ohio. Grain-drill	257,580	May 2	464	129	21	1370
Schlindorf, Michel, and J. Prieb, Chicago, Ill. Grate-bar for crucible-furnaces	256,507	Apr. 18	963	270	21	1134
Schooley, Wilson D., Richmond, Ind. Electric gas-lighter	258,136	May 16	1215	342	21	1514
Schoonmaker, Daniel, Newark, N. J., assignor to H. C. Maxwell, Rome, N. Y. Check-rein spread and attachment. (Reissue)	10,110	May 9	857	230	21	1441
Schorr, Friedrich A., Elizabeth, N. J. Eyeglass-frame	256,861	Apr. 25	1374	367	21	1213
Schorse, Otto, Milwaukee, Wis. Combined measure and funnel	253,633	Feb. 14	535	154	21	448
Schott, Anton, and T. Leepy, Franklin Grove, Ill. Churn-motor	255,121	Mar. 21	955	229	21	800
Schrader, John C. (See Rice, Charles E., assignor.)						
Schrader, John C., Warwick, R. I. Exploder for blasting-cartridges	253,883	Feb. 21	669	245	21	512
Schrader, Paul, assignor to Schrader & Stahl, New York, N. Y. Pocket-book	255,069	Mar. 14	816	218	21	786
Schrader & Stahl. (See Schrader, Paul, assignor.)						
Schramm, Carl F. W., Brooklyn, assignor to himself and J. M. Taylor, New York, N. Y. Broom and scoop mechanism for evaporating-pans	255,035	Mar. 14	741	200	21	777

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Schrock, Emanuel M., Nebraska, assignor of one-half to T. Bickerman, Henry, Ill. Windmill	256,810	Apr. 18	1360	360	21	1194
Schroder, Anson A. (See De Long and Schroder.)						
Schroder, Nicholas, Brooklyn, and J. De Beauvais, New York; said De Beauvais assignor to said Schroder; said Schroder assignor to G. L. Jaeger, New York, N. Y. Egg-tray machine	258,264	Jan. 10	705	{189 190	21	127
Schroeder, William, San Francisco, Cal. Imitation of marquetry by painting	257,061	Apr. 25	1622	455	21	1257
Schubert, Friedrich, Zurich, Switzerland. Spring-back for books	256,245	Apr. 11	640	173	21	1044
Schulenburg, Adolph, San Francisco, Cal. Car-coupling	257,244	May 2	120	34	21	1362
Schuler, John A., Millville, Ohio. Vehicle-wheel	258,610	May 30	1897	510	21	1634
Schultz, Carl H., New York, N. Y. Collecting and utilizing carbonic-acid gas from acidulous springs	259,219	June 6	417	111	21	1767
Schultz, Edward G., assignor of one-half to F. J. Kersten, Buffalo, N. Y. Revolving ash-sifter	254,626	Mar. 14	551	147	21	740
Schultz, John F., New York, N. Y. Circular extension table	254,366	Feb. 28	1455	399	21	617
Schultz, Michael, Cincinnati, Ohio. Yoke for converting motion	258,985	Jan. 31	1469	416	21	977
Schultze, August, Galveston, Tex. Snath-fastener	256,365	Apr. 11	800	{219 220	21	1093
Schultze, William C., Marengo, Iowa. Car-brake	256,466	May 23	1647	{465 466	21	1599
Schumann, Francis, Trenton, N. J. Cut-off-valve gear	257,392	May 2	293	84	21	1333
Schuster, Herrman. (See Leidholdt, Carl F., assignor.)						
Schutte, Friedrich, Philadelphia, Pa. Bath-tub attachment	260,054	June 27	1468	408	21	1972
Schutte, Louis, Philadelphia, Pa. Frame for steam and other engines	259,053	June 6	299	62	21	1733
Schutte, Louis, Philadelphia, Pa. Connecting-rod	259,776	June 20	1144	263	21	1967
Schütz & Juel. (See Juel, Petter A. G., assignor.)						
Schuyler, Daniel A. (See Waterhouse, Addison G., assignor.)						
Schuyler, Isaac S., New York, N. Y. Machine for cutting screw-threads	256,166	Apr. 11	519	143	21	1044
Schuyler, James, Hadley, Ohio. Turn-table	254,165	Feb. 28	1203	336	21	575
Schwalbold, Charles, Brooklyn, N. Y. Curtain-cord tightener	252,607	Jan. 24	1361	360	21	249
Schwartzkopff, Richard, Berlin, Germany. Safety apparatus for steam-boilers	254,667	Mar. 14	553	148	21	740
Schwarz, Bruno. (See Huppertsberg and Schwarz.)						
Schwarzschild, August, New York, N. Y. Wrapper for confectionery	260,055	June 27	1493	402	21	1972
Schwegler, Isidor. (See Schwegler, Joseph, assignor.)						
Schwegler, Joseph, assignor of one-half to I. Schwegler, Buffalo, N. Y. Wrench	258,137	May 16	1217	343	21	1515
Schweer, Albert, Sandusky, Ohio. Machine for making hoes	257,982	Apr. 25	1627	456	21	1257
Schweiger, John, Beaver Dam, Wis. Horse-power	255,192	Mar. 21	956	256	21	817
Schweizer, Jakob, Seleure, Switzerland, assignor to C. Roosevelt, New York, N. Y. Electric clock	256,366	Apr. 11	801	220	21	1093
Schweneke, Auguste. (See Günther, Emil C. F., assignor.)						
Schwitzer, Charles, Brooklyn, N. Y. Making watch-cases	257,063	Apr. 25	1626	456	21	1257
Scofield, Levi, Cedar Rapids, Iowa. Corn-planter	252,985	Jan. 10	710	200	21	128
Scofield, Levi, Cedar Rapids, Iowa. Corn-planter	252,986	Jan. 17	1031	{287 288	21	187
Scofield, Levi, Cedar Rapids, Iowa. Corn-planter	252,988	Jan. 24	1361	361	21	250
Scofield, Levi, Grand Haven, Mich. Corn-planter	253,110	Jan. 31	1749	485	21	310
Scofield, Levi T., Cleveland, Ohio. Pipe-coupling	257,963	May 16	1031	287	21	1461
Scollay, John A. (See Coggin, Richard R., assignor.)						
Scott & Bowne. (See Bowne, Samuel W., assignor.)						
Scott, Charles. (See Schoen, Charles T., assignor.)						
Scott, Charles, and C. T. Schoen, Philadelphia, Pa. Car-spring	251,739	Jan. 3	63	17	21	13
Scott, George B., Brooklyn, N. Y., assignor to E. F. Phillips, Providence, R. I. Telephone-exchange system and apparatus	253,316	Feb. 7	153	45	21	378
Scott, George D., executor. (See Carr, William S.)						
Scott, Henry, assignor to J. P. Clabrough, Birmingham, England. Breech-loading fire-arm	258,703	Jan. 24	1226	343	21	287
Scott, Henry W. assignor to J. B. Crowell & Co., Greencastle, Pa. Seeding-machine	258,398	Jan. 17	1035	288	21	188
Scott, James, and J. H. Riddel, Glasgow, county of Lanark, Scotland, assignors to said Scott. Anchor-well for vessels	253,112	Jan. 31	1753	*486	21	399
Scott, James, assignor of five-eighths to L. Parker, C. Quentin, and J. H. Anderson, Denver, Colo. Apparatus for amalgamating and washing ores	257,618	May 9	868	169	21	1393
Scott, James O., Tyler, Tex. Car-axle box	258,613	May 30	2044	577	21	1675
Scott, John, Washington, D. C. Bond, check, or other security	257,945	May 9	121	34	21	1362
Scott, John, and F. G. Avers, assignors of one-third to H. M. Avers, Chicago, Ill. Caster	257,634	May 9	846	236	21	1439
Scott, Joseph C., Lincoln, Ill. Case for exhibiting samples	258,614	May 30	2045	578	21	1675
Scott, Lauren S., Bristol, Vt. Grate for stoves	256,943	Apr. 25	1444	405	21	1285
Scott, Levi. (See McMurray and Scott.)						
Scott, Merritt B., and W. F. Hill, Manchester, Conn. Hinged-shoe button	260,126	June 27	1586	427	21	1967
Scott, Orlando M., Marysville, Ohio. Device for exhibiting or holding whips	257,664	Apr. 25	1628	456	21	1257
Scott, Robert K. (See Van Allen, Charles A., assignor.)						
Scott, Robert P. (See Weeks, Daniel H., assignor.)						
Scott, Robert P., Newark, N. J. Apple-parer	256,039	Apr. 4	373	102	21	1013
Scott, Samuel E., Sandy Hill, N. Y. Combined tobacco and match box	256,246	Apr. 11	641	173	21	1044
Scott, Walter, Hoosick Falls, N. Y. Lamp	258,678	May 30	1896	525	21	1649
Scott, William, Malden, Mass. Car-coupling	252,609	Jan. 24	1363	361	21	250
Scott, William, Malden, Mass. Valve for water-closets	255,682	Mar. 28	1550	418	21	927
Scott, William J., Boston, Mass. Carriage-jack	255,630	Apr. 4	81	22	21	964
Scott, William W., Dakota, assignor of three-fourths to J. M. Burgit, J. Byrne, and A. B. Chauvet, Humboldt County, Iowa. Steam-generator and feed-cooker	256,868	Apr. 25	1375	367	21	1213
Scovill, Charles W. (See Upham and Scovill.)						
Scovill Manufacturing Company. (See Hull, Wesley, assignor.) (Reissue.)						
Scovill Manufacturing Company. (See Price, H. Clay, assignor.)						
Scovill Manufacturing Company. (See Russell, Sterne, assignor.)						
Scoville, Elijah U., Manlius, N. Y. Door-hanger	252,527	Jan. 17	1034	288	21	188
Scoville, Elijah U., Manlius, N. Y. Stay-roller for sliding doors	257,189	May 2	30	10	21	1299
Scoville, Hiram H., assignor to Fraser & Chalmers, Chicago, Ill. Ore-crusher	253,231	Feb. 7	61	19	21	357
Scoville, Horace B., Cortland, Ohio. Cream-can	254,706	Mar. 7	313	83	21	691
Scranton, A. Herbert, *et al.* (See Scranton, Alfred L., assignor.)						
Scranton, Alfred L., assignor of one-half to A. H. Scranton and A. S. Jones, Rochelle, Ill. Door-hanger	259,220	June 6	418	111	21	1767
Scranton, Worthington, assignor to Sargent & Co., New Haven, Conn. Tobacco-cutter	256,267	Apr. 11	804	221	21	1093
Screven, Sparkman R., Philadelphia, Pa. Dental engine	257,393	May 2	295	85	21	1334
Scribner, Charles E., assignor to Western Electric Manufacturing Company, Chicago, Ill. Battery telephone-transmitter	251,800	Jan. 3	138	39	21	25

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Scribner, Charles E., assignor to Western Electric Manufacturing Company, Chicago, Ill. Automatic signaling-circuit for telephone-exchanges	251,955	Jan. 3	395	88, 89	21	56
Scribner, Charles E., assignor to Western Electric Manufacturing Company, Chicago, Ill. Self-switching signal-bell	252,986	Jan. 10	711	901	21	198
Scribner, Charles E., assignor to Western Electric Manufacturing Company, Chicago, Ill. Electrical switch-board	254,369	Feb. 28	1456	396	21	617
Scribner, Charles E., and G. D. Clarke, assignors to Western Electric Manufacturing Company, Chicago, Ill. Carbon of telephone-transmitters	252,996	Jan. 10	752	899	21	134
Scribner, Edwin A., Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Electric incandescent lamp	254,780	Mar. 7	401	106	21	706
Scutt, Hiram B. (See Watkins and Scutt.) (Reissue.)						
Seabury, Alfred L., Norfolk, Va. Blacking-brush case	258,815	May 30	2046	576	21	1676
Seagrave, John D. (See Fuller and Seagrave.)						
Seagrave, John D., and F. W. Lewis, Worcester, Mass. Construction of wooden pipes	256,080	Apr. 4	375	102	21	1013
Seaman, Benjamin S., Corning, N. Y. Hame	253,949	Feb. 21	944	202	21	523
Seaman, John H., Brooklyn, N. Y. Gasalier. (Reissue)	10,070	Apr. 4	441	130	21	1024
Seaman, John H., Brooklyn, N. Y. Gasalier. (Reissue)	10,071	Apr. 4	443	130	21	1025
Seaton, William C., Quebec, Province of Quebec, Canada. Wick-trimmer	254,300	Feb. 28	1456	300	21	617
Seaton, William C., Quebec, Quebec, Canada. Signaling apparatus	255,683	Mar. 28	1555	419	21	928
Seaver, Chandler, Jr., Newton, Mass. Apparatus for vignetting purposes	254,845	Mar. 14	491	131	21	788
Sebastian, Jacob, New York, N. Y. Draft-equalizer	252,810	Jan. 24	1364	361	21	250
Sébillot, Amédée M. G., Denver, Colo. Galvanic battery	253,769	Feb. 14	707	201	21	478
Sébillot, Amédée M. G., Denver, Colo. Electric lamp	253,770	Feb. 14	708	201	21	478
Sébillot, Amédée M. G., Denver, Colo. Ore-concentrator	253,771	Feb. 14	709	202	21	478
Seck, Carl. (See Seck, Christian, assignor.)						
Seck, Christian, assignor of one-half to C. Seck, Dresden, Saxony, Germany. Roller-mill for grinding corn, &c.	253,113	Jan. 31	1754	486	21	390
Secor, Jerome B., Bridgeport, Conn. Sewing-machine	253,772	Feb. 14	710	202, 203	21	478
Secor, Jerome B., Bridgeport, Conn. Sewing-machine	253,773	Feb. 14	713	203	21	479
Secor, Jerome B., Bridgeport, Conn. Device for operating tool-holding turrets	253,774	Feb. 14	714	203, 204	21	479
Sedgwick, Charles, New York, N. Y., assignor to H. W. Putnam, Bennington, Vt. Bottle-stopper	255,891	Apr. 4	88	23	21	964
Sedlacek, Martin, Troy, Mo. Saddle-tree	253,114	Jan. 31	1755	487	21	390
See, Horace, assignor of one-half to W. Cramp & Sons Ship and Engine Building Company, Philadelphia, Pa. Steam-engine	252,967	Jan. 10	713	901	21	129
See, Horace, assignor of one-half to W. Cramp & Sons Ship and Engine Building Company, Philadelphia, Pa. Connecting-rod	254,707	Mar. 7	314	83	21	691
See, James W., Hamilton, Ohio, assignor to Yale Lock Manufacturing Company, Stamford, Conn. Telephone call-register	259,428	June 13	889	199	21	1882
Seebold, John G., Montreal, Quebec, Canada. Piano sounding-board attachment	252,146	Jan. 10	573	161	21	105
Seeger, Edward W., Springfield, Mass. Device for molding cast screws	257,246	May 2	121	34	21	1302
Seeger, Georg G., Hilldale, Iowa. Drag-saw machine	256,601	Apr. 18	1060	299	21	1149
Seel, Charles, Philadelphia, Pa. Tobacco-booking table	255,540	Mar. 28	1385	374	21	896
Seely, Henry W. (See Dyer and Seely.)						
Seely, Henry W., assignor of two-thirds to R. N. Dyer and S. Insull, New York, N. Y. Electric flat-iron	259,054	June 6	930	92	21	1733
Seeman, Ernst H. J., Berlin, Germany. Device for suspending persons in mid-air without visible support	256,388	Apr. 11	805	221	21	1093
Segar, Charles T., Utica, N. Y. Folding cot and bedstead	257,085	Apr. 25	1029	456	21	1257
Seiberling, John F. (See Gause and Seiberling.)						
Seits, George, deceased, (M. C. Seits, administratrix,) New York, N. Y. Method of and apparatus for mashing malt and malt substitutes	255,203	Mar. 21	958	256	21	817
Seits, Mary C., administratrix. (See Seits, George.)						
Seitzinger, B. Frank. (See Helton, Cassius, assignor.)						
Selden, Albert A., and W. G. Duckett, Baltimore, Md. Automatic fan	253,894	Feb. 21	871	246	21	512
Selden, Charles. (See Thompson and Selden.)						
Selden, John E., Matteawan, N. Y. Automatic toy	259,221	June 6	419	111	21	1767
Selleck, William E., Chicago, Ill. Scale-platform support	252,627	Jan. 24	1143	321	21	213
Sellon, John S., Hatton Garden, county of Middlesex, England. Secondary battery	259,657	June 13	975	261	21	1878
Seltzer, Louis C., Columbus, Ohio. Combined whip and cane	256,061	Apr. 4	375	103	21	1013
Selvage, Howard, Brooklyn, assignor to R. Waterhouse, New York, N. Y. Neckscarf	253,485	Feb. 7	358	100	21	406
Semper, Conrad. (See Fahlberg and Semper.)						
Semper, Conrad. (See Warfield, Charles A., assignor.)						
Semple, William F., Mount Vernon, Ohio. Inhaler	254,301	Feb. 28	1458	399	21	618
Sendall, James, assignor of one-half to D. Richards, Brockport, N. Y. Barley-bearding machine	254,646	Mar. 14	492	132	21	726
Senter, George F., New York, N. Y. Bearing for mill-spindles	255,541	Mar. 28	1386	374	21	896
Serdinko, John, New Braunfels, Tex. Portable dark room	254,302	Feb. 28	1459	399	21	618
Sessions, Henry H., Palestine, Tex. Hand-car	255,684	Mar. 28	1562	420	21	928
Sessions, J. H. (See Andrews, Benjamin, assignor.) (Reissue.)						
Sessions, John H., Jr., Bristol, Conn. Trunk-fastener	255,128	Mar. 21	856	229	21	800
Sewall, Henry. (See Chase, John F., assignor.)						
Seward, Albert B., Cincinnati, Ohio. Drainage apparatus for steam-pipes	256,816	May 30	2047	578	21	1676
Sewell, George, Newark, N. J. Steam-boiler	256,092	Apr. 18	1062	300	21	1150
Sexauer, Louis, Brooklyn, N. Y. Electric lamp	256,746	Apr. 18	1226	346	21	1181
Sexton, Isaac, Somerville, Mass. Jacketed can	259,592	June 13	891	237	21	1858
Sexton, William F., Sr., and William F., Jr., Toronto, Ontario, Canada. Hoist	254,242	Feb. 28	1294	356, 359	21	580
Seybold, Charles, Cincinnati, Ohio. Permutation-lock	255,463	Mar. 28	1393	348	21	860
Seybold, George. (See Sharp, Isaac, assignor.)						
Seyler, Andrew J., Cedarville, Ill. Middlings-purifier	253,636	Mar. 14	743	200, 201	21	774
Seymour, Charles, assignor to Defiance Machine Works, Defiance, Ohio. Proportional balance	260,127	June 27	1567	438	21	1967
Seymour, Francis, Paterson, N. J. Machine for spinning, doubling, and twisting fibrous materials	253,431	Feb. 7	269	82	21	395
Seymour, George, Boone, Iowa. Clothes-rack	260,399	June 27	1630	495	21	2025
Shackelford, Jack M., and J. W. K. McClure, Blue Mound, Ill. Grain-cleaner	254,571	Mar. 7	153	38	21	664
Shadbolt, Charles T., Alexander, N. Y. Washing-machine	255,340	Mar. 21	1139	306	21	849
Shaddle, Cornelius V. (See Williams, Fred S., assignor.)						
Shaddock, Madison T., Shunk, Pa. Tug-buckle	255,341	Mar. 21	1140	306	21	849

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Shafer, John, Logansport, Ind. Hay-rack	257,770	May 9	769	217, 218	21	1486
Shaffer, Walter C. B., Ayersville, N. C. Pump	251,956	Jan. 3	396	89	21	57
Shaffstall, Nathaniel, Flint, Ind. Plow	254,304	Feb. 28	1464	400, 401	21	619
Shafer, Ira W., Brooklyn, N. Y. Carburetor	257,247	May 2	123	33	21	1302
Shallis, John F., and T. C. J. Thomas, Minories, London, England. Lamp for lighting railway-carriages	254,708	Mar. 7	315	83	21	692
Shallus, William W., Lancaster, Pa. Padlock	257,008	Apr. 25	1030	457	21	1258
Shankland, Palmer K., and E. A. Brooks, Jamestown, N. Y. Bill and file holder	254,305	Feb. 28	1465	401	21	619
Shannon, Albert G., Santa Rosa, Cal. Stencil-printing machine	257,321	May 2	125	139	21	1370
Shannon, James S., Chicago, Ill. Paper-file	254,947	Mar. 14	493	132	21	730
Shannon, Richard E., assignor of one-half to A. T. F. Obermeyer, San Francisco, Cal. Rein-holder	258,679	May 30	1696	535, 536	21	1649
Sharp, Frank, Socorro, N. Mex. Ter. Can-opener	253,638	Feb. 7	391	83	21	395
Sharp, George W., Crawfordsville, Ind. Band-cutting and feeding attachment for thrashing-machines	255,464	Mar. 28	1395	346	21	881
Sharp, Isaac, assignor of one-half to G. Seybold, Waveland, Ind. Boring and cutting implement	253,115	Jan. 31	1756	487	21	390
Sharp, Isaac S., *et al.* (See Feister, Henry F., assignor.)						
Sharp, James L., New York, N. Y. Oil-stove	259,055	June 6	931	69	21	1733
Sharp, Thomas E., *et al.* (See Castell, James, assignor.)						
Sharpneck, William S., assignor of one-half to A. Majors, Blair, Nebr. Pulverizer	255,890	Apr. 4	143	43	21	976
Shattuck, Joseph W. M., Albany, N. Y. Packing can and box	254,166	Feb. 28	1294	336	21	575
Shattuck, Stephen D., Cohocton, N. Y. Marking-tag	254,657	Feb. 21	1079	200	21	546
Shaw, David E., Chatsworth, Ill. Chain-pump	256,167	Apr. 11	580	144	21	1044
Shaw, Frank. (See Childs and Shaw.)						
Shaw Glove Company. (See Shaw, Herbert C., assignor.)						
Shaw, Henry F., Boston, Mass. Locomotive-engine	258,331	Jan. 17	794	220, 221	21	148
Shaw, Herbert C., Needham, Mass., assignor to Shaw Glove Company, of Massachusetts. Knitting-machine	259,429	June 13	889	182, 183	21	1882
Shaw, Howard A., Galena, Ohio. Washing-machine	253,433	Feb. 7	291	83	21	395
Shaw, James, *et al.* (See Woodruff, Leslie B., assignor.)						
Shaw, John. (See Robinson and Shaw.)						
Shaw, Lorenzo D. B., Revere, Mass. Fire-escape ladder	256,447	Apr. 11	875	244	21	1106
Shaw, Noah. (See Burton and Shaw.)						
Shaw, Noah T., assignor of two-thirds to W. S. Carlile and J. C. Sherwood, Columbus, Ohio. Embalming and cooling board for corpses	260,330	June 27	1631	495	21	2025
Shaw, Sumner, Boston, Mass. Time-lock	253,317	Feb. 7	156	45	21	373
Shaw, Thomas, Philadelphia, Pa. Apparatus for purifying mine-water	256,974	Jan. 31	1571	426	21	991
Shaw, Thomas, Philadelphia, Pa. Cartridge	253,542	Mar. 28	1387	374	21	896
Shaw, Thomas, Philadelphia, Pa. Gas-governor for vulcanizers	256,806	Apr. 18	984	270	21	1134
Shea, Dennis, Portsmouth, and R. Trefethen, Dover, N. H. Funnel-block for partitions of buildings	257,771	May 9	781	218	21	1486
Shear, William H., Albany, N. Y. Device for opening stove-doors	257,087	Apr. 25	1031	457	21	1258
Shearer, Charles W., Mendon, N. Y. Potato-digger	257,264	May 16	1038	287	21	1461
Sheara, William, Bunkside, county of Surrey, England. Centrifugal machine	255,665	Mar. 28	1563	420	21	928
Shedaker, Charles E., Philadelphia, Pa. Hunting-shirt	256,747	Apr. 18	1227	347	21	1181
Shedlock, Alfred, New York, N. Y. Rock-drilling machine	254,393	Feb. 28	1459	399, 400	21	618
Sheffield, George V. (See Parks and Sheffield.)						
Shefler, Conseil B., *et al.* (See Gray and Hollenback, assignors.)						
Shelburne, Cephas, Johnson City, Tenn. Velocipede	259,222	June 6	421	112	21	1767
Sheldon, Benjamin A., New York, N. Y. Playing-card and domino combined	253,895	Feb. 21	878	246	21	513
Sheldon, Clarence C., Urbana, Ill. Fence	255,342	Mar. 21	1141	306	21	849
Sheldon, Henry A. (See Upham, Saunders, and Sheldon.)						
Sheldon, Henry H., Pawtucket, R. I. Broiler	254,709	Mar. 7	316	84	21	692
Sheldon, Henry H., Pawtucket, R. I. Hat-brim heater	254,710	Mar. 7	317	84	21	692
Sheldon, Henry H., Pawtucket, R. I. Vapor-reheat burner	254,711	Mar. 7	318	84	21	692
Sheldon, John R., Moosville, Conn. Quilling-machine	255,087	Mar. 14	745	201	21	774
Shellabarger, Flavius W., Miami County, assignor to Iron Monitor Wind Engine and Manufacturing Company, Troy, Ohio. Wind-engine	257,535	May 9	849	237	21	1439
Shellabarger, Jacob H., Topeka, Kans. Stock-car	256,269	Apr. 11	697	201	21	1063
Shelton, Dyas, Santa Rosa, Cal. Vehicle-bolster	255,726	Mar. 28	1698	441	21	940
Shelton, Samuel C., assignor of two-thirds to F. A. Werth and M. I. Jordan, Asheville, N. C. Plug-tobacco package	253,434	Feb. 7	292	83	21	395
Shepard, Charles G., and P. Adams, Jr.; said Adams assignor to W. J. Shepard, Buffalo, N. Y. Toy savings-bank	255,699	Mar. 14	616	218	21	788
Shepard, Charles S., Cherry Creek, N. Y. Milk-can	258,948	June 6	97	25	21	1711
Shepard, George, St. Louis, Mo., assignor of one-half to T. H. Bradley, Washington, D. C. Foot-valve	257,668	Apr. 25	1031	457	21	1260
Shepard, Walter J. (See Shepard and Adams, assignors.)						
Shepardson, Cornelius, Cazenovia, N. Y. Rocking-horse	256,390	Apr. 11	698	202	21	1094
Shepherd, John. (See Angus, James W., assignor.)						
Shepherd, John, *et al.* (See Castell, James, assignor.)						
Shepherd, John, Macon, Mo. Car ventilator	251,957	Jan. 3	397	89	21	57
Shepherd, John, and J. V. Miller, Macon City, Mo. Hose-clamp	255,465	Mar. 28	1397	349	21	881
Shepherdson, James A. (See Reynolds and Shepherdson.)						
Shepila, De Lana, Boston, Mass. Sewing-machine attachment for making fringe	253,775	Feb. 14	715	204	21	479
Sheppard, George W., Jr., *et al.* (See Agnew, Thomas J., assignor.)						
Sheppard, Thomas H. (See Elliot, John W., assignor.)						
Sheridan, Edward C. (See Christy and Sheridan.)						
Sheridan Electric Light Company. (See Sheridan, Henry B., assignor.)						
Sheridan, Henry B., Cleveland, Ohio. Electric lamp	253,116	Jan. 31	1757	487	21	390
Sheridan, Henry B., Cleveland, Ohio. Regulator for electric store-boxes and lights	253,435	Feb. 7	293	84	21	395
Sheridan, Henry B., Cleveland, Ohio. Electric lamp	253,776	Feb. 14	717	204, 205	21	480
Sheridan, Henry B., Cleveland, Ohio. Dynamo-electric machine	256,391	Apr. 11	698	203	21	1094
Sheridan, Henry B., Cleveland, Ohio. Dynamo-electric machine	256,392	Apr. 11	699	203	21	1094
Sheridan, Henry B., Cleveland, Ohio. Electric lamp	259,223	June 6	422	112	21	1767
Sheridan, Henry B., Cleveland, Ohio, assignor to Sheridan Electric Light Company, New York, N. Y. Electric lamp	259,224	June 6	422	112, 113	21	1768
Sheridan, Henry B., Cleveland, Ohio, and H. A. Gorn, New York, N. Y. Electric safety-elevator	259,593	June 13	893	237	21	1858

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Sheridan, T. W. & C. B. (See Malm, Alexander, assignor.)						
Sherman, Cyrus P., South Weymouth, Mass., assignor to Dion Last Company, Nashua, N. H. Last for boots and shoes	256,168	Apr. 11	521	144	21	1044
Sherman, Francis T., *et al.* (See Moore, Daily S., assignor.)						
Sherman, John. (See Toulmin, Morton, assignor.)						
Sherman, John, Cleveland, Ohio. Nut-lock	256,169	Apr. 11	522	144	21	1044
Sherman, John, assignor of one-half to L. H. Burt, Cleveland, Ohio. Screw-cutting die	258,060	Jan. 10	471	130	21	99
Sherman, Lewis P., and R. H. Ingersoll, Biddeford, and G. Moore, Berwick, Me. Machine for drawing in warp-threads	255,036	Mar. 14	746	201, 202, 203	21	775
Sherwin, Isaac S., Battle Creek, Mich. Latch for sliding gates	254,058	Feb. 21	1060	300	21	546
Sherwood, Allen, Auburn, N. Y. Plow and work harness	260,128	June 27	1566	428	21	1967
Sherwood, Daniel, Lowell, Mass. Handle for wire-rimmed articles	259,056	June 6	233	63	21	1733
Sherwood, Edwin B. (See Gerrard, Frank, assignor.)						
Sherwood, H. E. (See Sherwood, Harley L., assignor.)						
Sherwood, Harley L., Des Moines, assignor to H. E. Sherwood, Algona, Iowa. Spring bed-bottom	258,256	May 23	1382	391	21	1559
Sherwood, John C., *et al.* (See Shaw, Noah T., assignor.)						
Sherwood, Lyman. (See Brewster and Sherwood.)						
Sherwood, Sarah E. (See Brewster and Sherwood, assignors.)						
Sherwood, Stephen E. (See Jincks, Melvin, assignor.)						
Shetler, Jeremiah, Taylorville, Ill. Tenoning-machine	260,331	June 27	1833	495	21	2025
Shetter, Andrew M., *et al.* (See Shetter, Solomon, assignor.)						
Shetter, Egbert P., Bullion, Pa. Connection for polish and pump rods	257,304	May 2	297	85	21	1334
Shetter, Elmer J., *et al.* (See Shetter, Solomon, assignor.)						
Shetter, Solomon, assignor of one-half to T. J. Gorlick, E. J. and A. M. Shetter, New Cumberland, W. Va. Open link	251,958	Jan. 3	327	89	21	57
Shickle, Frederick, assignor of two-thirds to J. W. Harrison and T. Howard, St. Louis, Mo. Pipe molding and casting apparatus	255,891	Apr. 4	165	44	21	978
Shields, Charles H., Maywood, assignor of one-half to himself and J. S. Lizars, Chicago, Ill. Feed-water heater and purifier	258,147	Jan. 10	573	161	21	105
Shields, Hamilton L., Troy, N. Y. Combined hay tedder and loader	256,138	May 16	1218	343	21	1515
Shields, Hamilton L., Troy, N. Y. Hay-rake	260,056	June 27	1493	409, 403	21	1972
Shields, Henry C., Troy, N. Y. Process of and apparatus for producing illuminating and heating gas	259,723	June 20	1074	286	21	1696
Shimer, George J., Freemansburg, assignor of one-half to S. J. Shimer, Milton, Pa. Journal-bearing	253,117	Jan. 31	1758	487, 488	21	321
Shimer, Samuel J. (See Shimer, George J., assignor.)						
Shinn, Thornton A., Philadelphia, Pa. Carving-fork	253,634	Feb. 14	536	154	21	448
Shinn, Thornton A., Philadelphia, Pa. Attaching burners to lamps	257,069	Apr. 25	1639	457	21	1258
Shippee, Charles W., Milford, Mass. Boot or shoe	256,170	Apr. 11	523	144	21	1045
Shock, Henry R. (See Beckmire, George H., assignor.)						
Shoemaker, David L., Washington, D. C., assignor to J. Hughes, New Berne, N. C., H. M. Talbott, Baltimore, Md., and M. F. Sylvester, Boston, Mass. Machine for cleaning and scouring rice, &c	255,343	Mar. 21	1143	307	21	849
Shoemaker, Isaiah W., Roxton, assignor to himself and J. H. King, Saxonburg, Pa. Fire-place fender	259,989	June 20	1316	353	21	1936
Shoemaker, Thomas E., West Salem, Ohio. Hay rake and loader	259,335	June 13	575	151, 159	21	1801
Shoemingor, Adolph. (See Unsicker, Otto, assignor.)						
Sholder, Louis H., Cleveland, Ohio. Car-brake	259,930	June 20	1317	353	21	1936
Shone, Joseph A., Salem, Mass. Spectacle-holder	256,393	Apr. 11	811	223	21	1094
Shorey, John. (See Moore, Charles, assignor.)						
Shorey, Samuel W., Boston, Mass., assignor, by mesne assignments, to Willcox & Gibbs Sewing Machine Company, New York, N. Y., and National Sewing Machine Company, (limited,) Philadelphia, Pa. Cutting and trimming attachment for sewing-machines. (Reissue)	10,067	Mar. 28	1652	447	21	944
Shotwell, George W., assignor of one-half to G. W. Cronk, Brodhead, Wis. Spring bed-bottom	259,594	June 13	893	237	21	1856
Showalter, Abraham, assignor of one-third to W. D. Arnold, Pataskala, Ohio. Scroll and circular sawing machine	253,777	Feb. 14	719	205	21	460
Shreffler, Andrew H. (See Cook, Milo S., assignor.)						
Shreffler, Samuel, Jr., Joliet, Ill. Parlor-door hanger	256,247	Apr. 11	642	173	21	1064
Shuler, Andrew F., Arcanum, Ohio. Side-bar vehicle	259,505	June 13	893	238	21	1858
Shults, Daniel J., Spruce Creek, Pa. Grain-drill point	258,148	Jan. 10	574	162	21	105
Shults, John J. A. (See Borns, Adam, assignor.)						
Shumaker, George M., Pierceton, Ind. Wheelbarrow	256,323	May 23	1456	414	21	1565
Shuman, Charles, Rockford, Ill. Neck-yoke	258,332	Jan. 17	795	222	21	148
Shuster, Jacob, Washington, D. C., assignor of one-half to G. W. Housel, Junction, N. J. Belt-fastener	254,167	Feb. 28	1205	336	21	575
Shutte, William H., Emporia, Kans. Machine for filing saws	251,959	Jan. 3	398	90	21	57
Shuttleworth, Charles H. (See Kelsey and Shuttleworth.)						
Sichel, Albert, New York, N. Y. Manufacture of metallic capsules	257,060	Apr. 25	1633	456	21	1258
Sickels, Gerard, assignor to H. B. Wood, Boston, Mass. Self-leveling berth	255,397	Mar. 21	1206	332	21	880
Side, Edgar, Brooklyn, assignor to Cowman Manufacturing Company, New York, N. Y. Cigarette-machine	258,811	Jan. 24	1385	361, 362, 363	21	250
Siebel, John, Oskaloosa, Iowa. Floor-tile	254,396	Feb. 28	1466	401	21	619
Siedentop, Henry, *et al.* (See Kellner, Joseph, assignor.)						
Siedler, Charles. (See Langhammer, Paul, assignor.)						
Siefers, William F. (See Phelps and Siefers.)						
Siegfried, Alexander H., Selin's Grove, Pa. Compound for tempering steel	257,248	May 2	123	.....	21	1302
Siegfried, Alexander H., Selin's Grove, assignor of one-half to T. H. Purdy, Sunbury, Pa. Treating iron and steel	254,508	Mar. 7	73	.....	21	651
Siemens, Charles W. (See Siemens, Frederick, assignor.)						
Siemens, Charles W., Westminster, county of Middlesex, England. Melting, refining, and working oat glass	254,573	Mar. 7	154	38	21	664
Siemens, Charles W., Queen Anne's Gate, Westminster, England. Electric lamp	255,466	Mar. 28	1297	349	21	881
Siemens, Frederick, Dresden, Germany, assignor to C. W. Siemens, Westminster, England. Glass-melting furnace	256,748	Apr. 18	1238	347, 346	21	1161
Siffelt, George A. (See Tingry and Siffelt.)						
Siffken, William C., Victoria, British Columbia, Canada. Artificial fuel	257,965	May 16	1633	287	21	1481
Signor, Alfred J. (See Straw and Signor.)						
Signor, Alfred J., assignor of one-half to F. L. Callins, Elkhart, Ind. Die-stock	256,448	Apr. 11	877	245	21	1106

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Sigwalt, John, Jr., Arlington Heights, Ill. Shuttle for sewing-machines	254,580	Mar. 7	75	20	21	651
Sigwalt, John, Jr., Chicago, Ill. Treadle for sewing-machines	256,171	Apr. 11	523	145	21	1045
Sigwalt, John, Jr., Chicago, Ill. Sewing-machine shuttle	259,949	June 6	97	25	21	1711
Silcott, Oscar F., Felicity, Ohio. Rim-saw machine	253,260	Jan. 10	715	200	21	220
Silcott, Oscar F., Felicity, Ohio. Book protector	254,162	Feb. 28	1205	337	21	576
Sill, Cyrus B. Youngstown, Ohio. Rolling-mill	260,046	June 27	1731	468	21	2000
Sill, Joseph, Pictured Rocks, Pa. Circular-saw guard	253,260	Jan. 10	717	200	21	220
Sillman, Henry R., Brooklyn, N. Y. Machine for making spools, &c	253,776	Feb. 14	721	206	21	460
Silsby, William H., Orleans Bar, Cal. Rock-drill	256,749	Apr. 18	1239	349	21	1161
Silva Sertori, José da, Rio de Janeiro, Brazil. Apparatus for the transmission of power	252,389	Jan. 17	1036	289	21	168
Silver and Deming Manufacturing Company. (See Humphryes, John, Jr., assignor.)						
Silver, Marvin C., Monroe, Wis. Spring bed-bottom	257,619	May 9	603	169	21	1393
Silver, Samuel N., Auburn, Me. Meter	254,712	Mar. 7	218	64	21	693
Silver, William B., Cleveland, Ohio. Game-board	254,593	Apr. 4	167	44	21	976
Silvermans, Louis, *et al.* (See Goldberg, Jacob, assignor.)						
Simmons, Alonzo J., Indianapolis, Ind. Apparatus for injecting air and steam into furnaces	251,740	Jan. 3	64	18	21	13
Simmons, Alonzo J., Indianapolis, Ind. Steam-actuated valve	254,059	Feb. 21	1061	300	21	546
Simmons, Alonzo J., Indianapolis, Ind. Smoke-purifying furnace	257,091	Apr. 25	1634	456	21	1260
Simmons, Alonzo J., Indianapolis, Ind. Furnace for consuming smoke	257,092	Apr. 25	1634	456	21	1260
Simmons, Jacob, assignor of one-half to J. Goldstine, Baltimore, Md. Reversible coat	259,831	June 20	1319	354	21	1937
Simmons, Myron E., assignor of one-half to A. S. McPherson, Rocky Ridge, Ohio. Trace-carrier	258,139	May 16	1221	343	21	1515
Simms, A. M., *et al.* (See Womeldorff, James W., assignor.)						
Simms, George W. M., Madison Court-House, Va. Horseshoe	260,057	June 27	1494	403	21	1973
Simon, Gottlieb H., Kiel, Wis. Cheese-vat	253,118	Jan. 31	1759	488, 489	21	321
Simon, John, New York, N. Y. Door-knob alarm	256,224	Apr. 25	1446	405	21	1225
Simonds, Fremont, Grand Island, N. Y. Plow	256,769	Apr. 18	1240	348	21	1163
Simonds, Gustavus B., Albuquerque, N. Mex. Ter. Car-truck	252,561	Jan. 17	1039	289	21	169
Simonds, Gustavus B., Albuquerque, N. Mex. Ter. Car-roof	252,532	Jan. 17	1039	289	21	169
Simons, George W. and J. F., Philadelphia, Pa. Show-case	256,669	Mar. 28	1564	431	21	949
Simons, Hatch & Whitten. (See Faxon, George F., assignor.)						
Simons Hatch & Whitten. (See Perkins, Albert R., assignor.)						
Simons, John F. (See Simons, George W. and J. F.)						
Simons, Leonard M. (See Reed, Edwin E., assignor.)						
Simonson, Gibson. (See Campbell and Simonson.)						
Simonson, Sali, New York, assignor to himself, W. Finster, Brooklyn, and W. R. Willis, New York, N. Y. Band-cap	260,338	June 27	1834	495, 496	21	2025
Simonson, Sali, New York, assignor to himself, W. Finster, Brooklyn, and W. R. Willis, New York, N. Y. Reversible hat or cap	260,333	June 27	1835	496	21	2025
Simonton, Marcus. (See Horowitz, Adolph, assignor.)						
Simonton, Thomas B. (See Myers and Simonton.)						
Simpson, Benjamin G. (See Simpson, Henry and B. G.)						
Simpson, Charles B., *et al.* (See Harding, Thomas, assignor.)						
Simpson & Gault. (See Crawley, Edwin, assignor.)						
Simpson & Gault. (See Wais, Christian, assignor.)						
Simpson, George S. (See Hill and Simpson.)						
Simpson, Henry and B. G., Sheffield, county of York, assignor to R. Symington, Market Harborough, county of Leicester, England. Stay-busk	253,779	Feb. 14	724	206	21	461
Simpson, James H. (See Wilson and Simpson.)						
Simpson, John A., Saddler's Creek, assignor to W. D. Simpson, Anderson Court-House, S. C. Nut-lock	258,530	Jan. 17	1038	289	21	169
Simpson, Joseph, assignor of one-half to W. A. Gill, Columbus, Ohio. Can	253,318	Feb. 7	109	46	21	373
Simpson, Joseph B. (See Burgor and Simpson.)						
Simpson, Orin, Tamaroo, Ind. Harvester	256,751	Apr. 18	1241	349	21	1163
Simpson, Thomas, Philadelphia, Pa. Chroming fabrics	254,713	Mar. 7	220	65	21	693
Simpson, Thomas, Philadelphia, Pa. Process of and apparatus for aging fabrics	255,543	Mar. 28	1368	375	21	897
Simpson, William D. (See Simpson, John A., assignor.)						
Sims, Henry, Hamilton, Ohio. Decoration of clay-ware	259,794	June 20	1076	286	21	1696
Sims, Thomas W., and F. Fischer, Fairfield, Tex. Household utensil	259,938	June 20	1349	354	21	1937
Sims, William B., St. Joseph, Ill. Instrument for washing the vagina	258,140	May 16	1222	344	21	1515
Sindic, Jules. (See Loth and Sindic.)						
Sisey, John S. (See Allen, Morris S., assignor.)						
Singer, Joseph, Wayne, Ind. Combined weather-strip and door-sill	256,486	May 23	1649	466	21	1566
Singer, Peter J. (See Atwater, John B., assignor.)						
Singer, Peter J. (See Voorde, Frederick W., assignor.)						
Singhi, John F., Rockland, Me. Vignetting attachment for photographic-printing frames	256,369	Apr. 18	985	270	21	1124
Sires, Alexander, Merrillan, Wis. Heating-drum	254,089	Feb. 21	1062	300	21	546
Sisson, Henry D., Mill River, Mass. Individual signaling apparatus for telephone-lines	254,573	Mar. 7	154	39	21	664
Skerrett, Henry, Sparkbrook, near Birmingham, county of Warwick, assignor to W. and E. Tonks, Moseley Street, Birmingham, England. Door-check	257,966	May 16	1634	288	21	1481
Skilea, Robert M., Davenport, Iowa. Evaporator and heater	259,933	June 20	1339	354	21	1937
Skillen, John W., Sidney, Ohio. Earth-scraper	256,758	Apr. 18	1242	349	21	1163
Skinner, Andrew P. W. (See Magarrell, Thomas Z., assignor.)						
Skinner, Halcyon, Yonkers, N. Y. Tufted fabric	257,395	May 2	298	85	21	1334
Skinner, James N., New Britain, Conn. Lathe-chuck	253,639	Mar. 14	757	204	21	776
Skinner, Robert, San Francisco, Cal. Composition for the manufacture of artificial tiles	257,093	Apr. 25	1637	.....	21	1259
Skinner, Samuel W. (See Thomas, William M., assignor.)						
Skinner, Smith A., Hoosick Falls, N. Y. Cordage and twine designed to be used in binding sheaves of grain	253,949	Mar. 14	756	.....	21	776
Skinner, Smith A., Hoosick Falls, N. Y. Oil-hole cover for journals. (Reissue)	10,884	Mar. 21	1217	335	21	882
Slack, Charles M. (See Wheeler and Slack.)						
Slade, Jonathan. (See Soper and Slade.)						
Slade, L. Myron, Bridgeport, Conn. Eel-stop	256,204	Apr. 11	811	223	21	1094
Slafter, Coruden J., Grand Junction, Mich. Car-label holder	256,248	Apr. 11	643	174	21	1064
Slagle, Elmer H., Algona, Iowa. Device for supporting boots in boot-boxes	253,426	Feb. 7	296	84	21	396
Slate, Dwight. (See Laraway and Slate.)						
Slater, George L., assignee of one-half to J. L. Richards, Buchanan, Mich. Wagon-brake lever	254,761	Mar. 7	401	107	21	706
Slater, Jacob G., Wyandotte, Kans. Sash-holder	254,510	Mar. 7	76	20	21	651
Slater, Theodore J., Freehold, N. Y. Draft apparatus for horses	260,058	June 27	1495	403	21	1973
Slattery, Marmaduke M. M., New York, N. Y. Apparatus for manufacturing carbon filaments for incandescent lamps	260,247	June 27	1732	468	21	2000

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Slaughter, Alanson, Middletown, assignor to C. W. Thompson, Theresa, N. Y. Cheese-vat. (Reissue)	10,046	Feb. 28	1524	417	21	630
Slaughter, Alfred H. (See Trammell and Slaughter.)						
Slauson, Willis D. (See Barker and Slauson.)						
Slee, Robert, *et al.* (See Mayhew, Theophilus, assignor.)						
Sleeman, Nathaniel, Birmingham, Conn. Pressure-regulator	260,129	June 27	1589	426	21	1967
Sleeman, Nathaniel, Birmingham, assignor, by mesne assignments, to National Gas Saving Company, Ansonia, Conn. Gas-regulator. (Reissue)	10,116	May 16	1315	372	21	1532
Sleeper, M. D. (See Tyler and Atwood, assignors.)						
Sleeper, William, assignor of one-half to L. Wanner, Goshen, Ind. Water and fire proof roof-paint	255,041	Mar. 14	759	.....	21	776
Sloan, John O., administrator. (See Prescott, John C.)						
Sloane, George W., Green Point, N. Y. Feed-water heater	257,396	May 2	380	85, 86	21	1335
Sloane, George W., Green Point, N. Y. Feed-water heater	256,141	May 16	1222	344	21	1516
Slocum, George S., Newport, R. I., assignor to A. D. Puffer & Sons, Boston, Mass. Pressure-regulator for soda-water	255,467	Mar. 28	1300	349, 350	21	882
Sloper, Byron, New York, N. Y. Hydrocarbon-furnace	259,934	June 20	1321	354	21	1937
Sly, George E. (See MacDonald and Sly.)						
Small, Dexter M., East Providence, R. I. Device for carbureting gas or air	254,943	Feb. 28	1296	359	21	590
Small, Dexter M., East Providence, R. I. Device for carrying off steam and odors from cooking-vessels	258,950	June 6	99	85	21	1711
Small, Dexter M., Providence, R. I. Thill-lug	259,336	June 13	576	158	21	1801
Small, Edward, Baltimore, Md. Wire-solder coated with flux	255,344	Mar. 21	1144	.....	21	849
Small, Herbert M., Baldwinsville, assignor to himself and S. Small, Northborough, Mass. Hobby-horse or rocker motive	253,557	Feb. 14	454	129	21	435
Small, Sumner. (See Small, Herbert M., assignor.)						
Smalley, Frederick W., and R. G. J. Keonard, Jr., Brooklyn, N. Y. Apparatus for sweetening tobacco	252,270	Jan. 10	717	202	21	129
Smallwood, Scott, assignor of one-half to F. F. Cole, Chicago, Ill. Fence-wire barb	254,888	Mar. 14	555	148	21	740
Smart, Frederick R., *et al.* (See Bestel, Daniel T., assignor.)						
Smart, James S., Salem, Mass. Filter	259,725	June 20	1077	286	21	1896
Smedley, Edwin. (See Hudson and Smedley.)						
Smith, Abner R. (See Lowe, Joseph A., assignor.)						
Smith, Albert, Bradford, county of York, England. Combing-machine	254,714	Mar. 7	381	85	21	693
Smith, Albert P., Brooklyn, N. Y. Brush-making tool	252,140	Jan. 10	575	162	21	105
Smith, Alfred E., Bronxville, N. Y. Carriage-axle	256,660	May 30	1896	536	21	1650
Smith, Allen H. (See Jones and Smith.)						
Smith, Alonzo N. (See Hallock and Smith.)						
Smith, Alphonso B. (See Marks, Bernhard, assignor.)						
Smith, Andrew J. and J. N., Platteville, Wis. Drag-sawing machine	256,394	May 23	1458	414	21	1565
Smith, Andrew L., Geneva, N. Y. Foci-meter	255,468	Mar. 28	1301	350	21	882
Smith, Anna M. D., Gloucester Court-House, Va. Frame or support for mosquito-netting	259,337	June 13	576	158	21	1801
Smith, Brainerd T. (See Du Brul, Napoleon, assignor.)						
Smith, Brother & Co., P. (See Chambers, Robert W., assignor.)						
Smith, Charles, Belleville, N. J. Loom	251,801	Jan. 3	139	39, 40	21	85
Smith, Charles A. and F. D., New Carlisle, Ind.; said F. D. Smith assignor to C. A. Smith. Earth excavator and conveyer	253,896	Feb. 21	673	246	21	513
Smith, Charles E., *et al.* (See Knight, Edgar, assignor.)						
Smith, Charles N., and T. Murphy, Danville, Ky. Thill-coupling	260,248	June 27	1733	468	21	2000
Smith, Charles R., Providence, R. I. Mechanism for rolling finger-rings	253,950	Feb. 21	944	263	21	585
Smith, Charles S. (See Erdley and Smith.)						
Smith, Charles S., Leicester, county of Leicester, and T. Moore, Shipley, county of Derby, England. Method of and apparatus for breaking down or getting coal, &c	255,042	Mar. 14	759	204	21	776
Smith, Charles W., Hyde Park, Mass. Surface-gage	259,504	June 13	804	238	21	1856
Smith, Daniel, Mabel, Pa. Railway	259,720	June 20	1077	287	21	1896
Smith, Daniel S., Rockland, assignor of one-half to M. W. Thayer, Boston, Mass. Buttonhole cutter	259,430	June 13	691	183	21	1822
Smith, David H. (See Needles, Singsamer, assignor.)						
Smith, David W., Port Townsend, Wash. Ter. Safe	257,094	Apr. 25	1638	450	21	1259
Smith, Earle H., New York, N. Y. Machine for sewing heavy materials	260,130	June 27	1590	426	21	1969
Smith, Edward B., Richland, assignor, by mesne assignments, to Ionia Manufacturing Company, Ionia, Mich. Windmill	255,345	Mar. 21	1145	307	21	849
Smith, Edward C., Brooklyn, N. Y. Calipers	256,602	Apr. 4	376	103	21	1014
Smith & Egge Manufacturing Company. (See Brual, Richard, assignor.)						
Smith & Egge Manufacturing Company. (See Smith, Friend W., assignor.)						
Smith, Eldridge J., Washington, D. C. Opera-chair	258,533	Jan. 17	1040	269	21	189
Smith, Ellis F., Polo, Ill. Milk-cooler	258,534	Jan. 17	1041	290	21	189
Smith, Elwin H. (See Kelly and Smith.)						
Smith, Emmet L., Jackson, Mich. Device for transmitting motion	256,365	Apr. 11	812	223	21	1685
Smith, Ephraim, assignor to Hussey, Binns & Co., Pittsburg, Pa. Mold for casting shovel-blanks	251,960	Jan. 3	339	90	21	57
Smith, Frank W., Bethel, Conn., assignor to T. W. Bracher, New York, N. Y. Sweat-band for hats and caps	254,169	Feb. 28	1306	337	21	576
Smith, Franklin A., Jr., assignor to Heaton Button Fastener Company, Providence, R. I. Button-fastener	253,635	Feb. 14	537	154	21	448
Smith, Franklin A., Jr., assignor to Heaton Button Fastener Company, Providence, R. I. Button-fastening	253,636	Feb. 14	538	154	21	448
Smith, Franklin A., Jr., assignor to Heaton Button Fastener Company, Providence, R. I. Button-fastener	253,637	Feb. 14	538	155	21	448
Smith, Franklin A., Jr., assignor to G. W. Prentice, Providence, R. I. Button-fastening	257,690	May 9	604	169	21	1383
Smith, Franklin R., assignor of two-thirds to W. S. Barnum, Syracuse, and I. W. Daniels, Ilion, N. Y. Sewing-machine	255,544	Mar. 28	1369	375	21	897
Smith, Franklin R., assignor of one-half to W. S. Barnum, Syracuse, N. Y. Fisherman's reel	259,935	June 20	1322	355	21	1937
Smith, Fred. D. (See Smith, Charles A. and F. D.)						
Smith, Friend W., assignor to Smith & Egge Manufacturing Company, Bridgeport, Conn. Drawer-pull	253,437	Feb. 7	297	84	21	396
Smith, Furmen S., Woodville, Mich. Sew-swage	254,715	Mar. 7	382	85	21	693
Smith, George A., *et al.* (See Stevens, John L., assignor.)						
Smith, George G., Clear Creek, N. Y. Protecting oil-tanks from lightning	255,043	Mar. 14	760	204	21	776
Smith, George H., and J. H. Beale, Boston, Mass. Batting	256,603	Apr. 18	1063	300	21	1150
Smith, George K., Freeport, Ill. Grinding-mill	256,817	May 30	1949	579	21	1676

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Smith, George T., Jackson, Mich. Middlings-purifier	260,142	May 16	1323	344	21	1516
Smith, George W. (See Price and Smith.)						
Smith, George W., Darlington, Wis. Fifth-wheel for vehicles	260,143	May 16	1325	345	21	1516
Smith, Gerrit, Astoria, N. Y. Telegraphic receiving-instrument	254,061	Feb. 21	1063	300	21	577
Smith, Gerrit, Astoria, N. Y. Telegraphic receiving-instrument	259,697	June 6	823	63	21	1739
Smith, Gerrit, Astoria, N. Y. Telegraphic receiving-instrument	259,695	June 6	824	113	21	1768
Smith, Gerrit, Astoria, N. Y., assignor to American Rapid Telegraph Company, Boston, Mass. Automatic telegraph	259,696	June 6	826	113	21	1768
Smith, Gilbert, and J. J. Wells, San Francisco, Cal. Coin tester and indicator	259,368	June 13	577	133	21	1801
Smith, Gilbert T., Baltimore, Md. Combined cane and umbrella	252,697	Feb. 21	674	246	21	513
Smith, Granger, Chicago, Ill. Hasp-lock	254,397	Feb. 28	1467	401	21	649
Smith, Harrison B., New York, N. Y. Jewelry-setting	254,063	Apr. 4	377	103	21	1014
Smith, Henry, New Haven, Conn. Harness-tag	259,777	June 20	1145	303	21	1907
Smith, Henry C., Cleveland, Ohio. Tilting oil-can	252,550	Feb. 14	454	129	21	435
Smith, Henry F., Philadelphia, Pa. Halter or bridle	260,235	May 23	1460	415	21	1965
Smith, Hiram H. (See Goldsmith and Smith.)						
Smith, Homer, Kirksville, Mo. Fence	252,661	Jan. 10	573	139	21	99
Smith, Homer, Kirksville, Mo. Fence	257,397	May 2	381	86	21	1335
Smith, Horace W., *et al.* (See Edlebluta, Lucius S., assignor.)						
Smith, Howard M., St. Louis, Mo. Rotary fan	257,772	May 9	783	218	21	1466
Smith, Ira T., Mount Carmel, Conn. Machine for polishing the eyes of needles	255,044	Mar. 14	761	204, 205	21	777
Smith, James A., *et al.* (See Mitchell, James C., assignor.)						
Smith, James G., *et al.* (See Buell, Charles E., assignor.)						
Smith, James G., Cleveland, Ohio. Stove. (Reissue)	10,117	May 16	1316	372	21	1532
Smith, James G., Cleveland, Ohio. Hollow grate	254,398	Feb. 28	1469	402	21	649
Smith, James G., Cleveland, Ohio. Calendar-tablet	256,286	Apr. 11	813	223	21	1685
Smith, James G., Hackensack, N. J. Signaling apparatus for telephone-exchanges	258,681	May 30	1899	536	21	1650
Smith, James G., Hackensack, N. J., assignor of two-thirds to G. W. Coy, Milford, Conn., and C. E. Buell, Washington, D. C. Telephone-repeater	256,758	Apr. 18	1043	349	21	1182
Smith, James G., Hackensack, N. J., and C. E. Buell, New Haven, assignors of one-third to G. W. Coy, Milford, Conn. Signaling apparatus for telephone-lines	257,691	May 9	605	169	21	1383
Smith, James L., *et al.* (See Burns, Wilson C., assignor.)						
Smith, James M., Lonsdale, R. I. Trumpet for railway-heads	257,695	Apr. 25	1641	459	21	1260
Smith, James T., New York, N. Y. Parasol or umbrella	256,754	Apr. 18	1044	349	21	1182
Smith, James T., New York, N. Y. Folding display-rack	256,611	Apr. 18	1309	362	21	1195
Smith, Jasper N. (See Smith, Andrew J. and J. N.)						
Smith, John. (See Smyth, Absalom G., assignor.)						
Smith, John, Verona, Pa. Nut-locking plate	253,689	Feb. 14	539	155	21	448
Smith, John, assignor of one-half to J. Little, Horicon, Wis. Friction-clutch	256,975	Jan. 31	1578	438	21	898
Smith, John, and F. Steinke, Horicon, Wis. Cultivator	251,961	Jan. 3	331	90	21	57
Smith, John E., Charleston, Ark. Whiffletree-clevis	257,696	Apr. 25	1641	459	21	1260
Smith, John H. (See Hunter, John E., assignor.)						
Smith, John H., Buffalo, N. Y. Exit from theaters	254,717	Mar. 7	327	87	21	694
Smith, John J. C., College Point, N. Y. Manufacture of articles of india-rubber, &c	254,716	Mar. 7	383	86, 88	21	693
Smith, John O., assignor of one-half to D. R. Berbour, Bringhurst, Ind. Gate	259,287	June 6	689	114	21	1769
Smith, John Y., Pittsburg, Pa. Ensilage-cutter	258,257	May 23	1398	391	21	1582
Smith, John Y., Pittsburg, Pa. Ensilage-cutter	258,259	May 23	1397	390	21	1582
Smith, Joseph, assignor to J. E. Ingersoll, Portland, Conn. Patty-pan	255,045	Mar. 14	764	205	21	777
Smith, Joseph N., New York, N. Y. Car-axle box	258,438	Feb. 7	297	84, 85	21	396
Smith, Joseph N., New York, N. Y. Car-truck	253,439	Feb. 7	300	85	21	397
Smith, Joseph R., New York, N. Y. Tool for boring cylinders	259,727	June 20	1078	287	21	1896
Smith, Joseph N., New York, N. Y. Tool for dressing car wheels and axles	259,728	June 20	1084	289	21	1897
Smith, Joseph W., *et al.* (See Burns, Wilson C., assignor.)						
Smith, Joseph W., Boston, Mass. Suspender-end	256,467	May 23	1459	416	21	1566
Smith, Levi, Tidioute, Pa. Drive-pipe and coupling for oil and other wells	255,469	Mar. 28	1302	350	21	882
Smith, Lewis, *et al.* (See Trumbull, Frank H., assignor.)						
Smith, Lewis C., Berlin, Wis. Grain-sampler	258,488	May 23	1451	406	21	1566
Smith, Luther H., Pittsburg, Pa. Fire-place grate	254,062	Feb. 21	1065	301	21	547
Smith Manufacturing Company. (See Smith, Seth H., assignor.)						
Smith Middlings Purifier Company, George T. (See Harmon, Milford, assignor.)						
Smith, Myers & Schuler. (See Smith and Myers, assignors.)						
Smith, Myron A., Elmira, N. Y. Combined coupon and local ticket case	254,399	Feb. 28	1468	402	21	649
Smith, Oliver C., *et al.* (See Knight, Edgar, assignor.)						
Smith, Ozias A., Atlanta, Ga., and F. L. Kane, Brooklyn, N. Y. Ready-made roofing-felt or other material	259,282	June 6	690	114	21	1769
Smith, Peter, assignor to himself, T. A. Bissell, and J. C. McLaughlin, Detroit, Mich. Water heater and circulator	251,741	Jan. 3	65	18	21	13
Smith, Philip, Sidney, Ohio. Earth-scraper	257,773	May 9	783	218	21	1467
Smith, Rachel P., Chicago, Ill. Washing-machine	257,774	May 9	784	219	21	1467
Smith, Richard, assignor of one-half to M. R. Standish, Cuyahoga Falls, Ohio. Device for heating links	259,370	June 13	578	153	21	1801
Smith, Richards C., Baltimore, Md. Nut-lock	260,131	June 27	1591	429	21	1968
Smith, Richards C., Baltimore, Md. Nut-lock	260,249	June 27	1733	469	21	2000
Smith, Robert D. O., Washington, D. C. Water-closet	258,144	May 16	1226	345, 346	21	1516
Smith, Roderick A., and G. Chase, Okobo-ji, Iowa. Grain-separator	254,574	Mar. 7	157	39	21	694
Smith, Roswell T., Nashua, N. H. Perforating music-paper for automatic organs	259,340	June 13	579	153	21	1801
Smith, Samuel R. and E. Myers, assignors to Smith, Myers & Schuler, Cincinnati, Ohio. Device for operating saw-mill knees	259,926	June 20	1324	355	21	1938
Smith, Sanford A. (See Noyes, Baxter B., assignor.)						
Smith, Seth H., assignor to Smith Manufacturing Company, Delta, Ohio. Wrapper and package for butter, &c	256,064	Apr. 4	377	103, 104	21	1014
Smith, Seth H., assignor to Smith Manufacturing Company, Delta, Ohio. Box or bucket for berries, &c	257,582	May 9	467	129	21	1371
Smith, Sidney, *et al.* (See Le Roy and Henson, assignors.)						
Smith, Sidney A. (See Ward, Smith, and Pashley.)						
Smith, Stephen C., Poole's Mills, Ky. Sprout-pulling machine	256,145	May 16	1220	343	21	1517
Smith, Stephen N., Providence, R. I. Machine for making eyelet-stock	259,289	June 6	689	114	21	1769
Smith, Stephen N., Providence, R. I. Machine for making lacing-hooks for shoes	259,507	June 13	695	238, 239	21	1858
Smith, Stephen N., Providence, R. I. Machine for manufacturing lacing-hooks	260,250	June 27	1735	469	21	2000
Smith, Sylvester E., St. Louis, Mo. Combined sinker and fish-hook holder	253,692	Jan. 24	1145	301	21	813
Smith, Theodore L., Detroit, Mich. Wire clothes-form	257,396	May 2	381	86	21	1335

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Smith, Thomas, *et al.* (See Grimes, Franklin T., assignor.) (Reissue.)						
Smith, Thomas L., and W. S. Doig, Brooklyn, N. Y. Nail-box	253,559	Feb. 14	455	130	21	435
Smith, W. C. (See Reed, Franklin M., assignor.)						
Smith, Warren D., Boston, Mass. Underground-telegraph line	256,397	Apr. 11	814	294	21	1005
Smith, Wesley. (See Cornell and Smith.)						
Smith, William, Pittsburg, Pa. Manufacture of puddled iron	257,898	May 16	933	200	21	1463
Smith, William A. (See Tiffin, John E., assignor.)						
Smith, William A., Wilmington, Del. Gymnastic apparatus	256,148	May 16	1230	346	21	1517
Smith, William B., Anniston, Ala. Coke-oven	256,489	May 23	1651	467	21	1599
Smith, William E. (See Bromley, James M., assignor.)						
Smith, William E. (See Williams, George W., assignor.)						
Smith, William F., assignor of one-half to A. J. Gilliam, Overton, Tex. Baling-press	255,091	Mar. 14	618	218	21	767
Smith, William H. (See Fell, Ambrose G., assignor.)						
Smith, William H., Portland, Oreg. Crosscut-sawing machine	253,333	Jan. 17	796	222	21	149
Smith, William T., and C. R. Hall, Bloomfield, N. J. Hat-curling machine	256,398	Apr. 11	814	294	21	1005
Smithson, Joseph S., Chicago, Ill. Dressing hogs	256,147	May 16	1231	.....	21	1517
Smoot, William S., assignor of one-half to E. Remington & Sons, Ilion, N. Y. Primer for cartridges	255,822	Apr. 4	83	23	21	905
Smyth, Absolom G., Hamilton, Ontario, assignor of one-half to J. Smith, Brantford, Canada. Device for converting reciprocating into rotary motion	252,297	Jan. 10	753	209	21	134
Smyth, David M., assignor to Smyth Manufacturing Company, Hartford, Conn. Book-sewing	259,058	June 6	236	63	21	1734
Smyth, George A., Newport, R. I. Stopper for bottles, jars, &c.	254,718	Mar. 7	369	97	21	694
Smyth Manufacturing Company. (See Smyth, David M., assignor.)						
Snare, Isaac, Richwood, Ohio. Grain-cleaner	257,190	May 2	51	14	21	1290
Snediker, James F., assignor to J. C. Love, Philadelphia, Pa. Sewing-machine attachment	253,486	Feb. 7	359	100	21	406
Snediker, James F., assignor to J. C. Love, Philadelphia, Pa. Sewing-machine attachment	256,490	May 23	1652	467	21	1599
Sneider, Charles W., Baltimore, Md. Breech-loading fire-arm	257,097	Apr. 25	1442	400	21	1290
Snell, Fred A., Fiskdale, Mass. Machine for twisting augers	257,309	May 2	309	86, 87	21	1335
Snelling, Walter C., assignor to R. S. Ransom, New York, N. Y. Adding-machine	257,775	May 9	785	219	21	1457
Snider, Nicholas H., Pittsburg, Pa. Tool-holder	257,400	May 2	304	87	21	1335
Sniffen, Samuel F., *et al.* (See Bostel, Daniel T., assignor.)						
Snow, Lezor B., Cleveland, Ohio. Vapor-burning soldering-furnace	254,511	Mar. 7	77	20	21	651
Snyder, August. (See Wilson and Snyder.)						
Snyder, Charles A., New Orleans, La. Pavement	255,667	Mar. 28	1565	491	21	989
Snyder, Charles F. (See Allison, Joseph W., assignor.)						
Snyder, Frank, New York, N. Y. Belt-tightener	257,098	Apr. 25	1643	460	21	1290
Snyder, Frederic H. (See Hubbe and Hardy, assignors.)						
Snyder, Henry D., assignor of one-half to J. McComb, Philadelphia, Pa. Invalid-bedstead	254,170	Feb. 28	1207	337	21	576
Snyder, John F., and G. J. Blinzler, Blakeslee, Ohio. Wheel	257,523	May 9	468	130	21	1371
Société Anonyme de Câbles Electriques. (See Borel, François, assignor.)						
Société Anonyme des Produits Chimiques du Sud-Ouest. (See Hennebutte and Menard, assignors.)						
Société Anonyme la Force et la Lumière. (See Faure, Camille A., assignor.)						
Société Française D'Inoxydation et de Platinage. (See Dodé, Paul A., assignor.)						
Society for the Manufacture of Wood Pulp. (See Kaiser, Nikolaus, assignor.) (Reissue.)						
Society for the Manufacture of Wood Pulp. (See Klimsch, Joseph O., assignor.)						
Society of Carbonate of Potash. (See Engel, Charles R., assignor.)						
Soden, Thomas, New York, N. Y. Sofa-bedstead	256,925	Apr. 25	1447	408	21	1295
Sogge, Charles W., and A. Rittenhouse, Philadelphia, Pa. Churn	251,802	Jan. 3	140	40	21	96
Sohn, John W., C. O. Richter, and R. S. Carr, Hamilton, Ohio; said Richter and Carr assignors to said Sohn. Seeding-machine	257,622	May 9	607	170	21	1394
Solignac, Louis, Paris, France, assignor to Jablochkoff Electric Lighting Company, New York. Electric candle	257,776	May 9	787	220	21	1458
Solt, Nathan, Wetsport, Pa. Tracing-table	256,906	Jan. 31	1490	416	21	277
Solvay, Ernest, Brussels, Belgium. Manufacture of soda	251,963	Jan. 3	332	90	21	56
Somers, Isaac, Detroit, Mich. Sheave for sliding doors	257,401	May 2	305	87	21	1335
Somerville, William. (See Boilean, Etienne, assignor.)						
Soper, James, and J. Slade, Chicago, Ill. Car-axle box	254,171	Feb. 28	1208	337	21	576
Soper, Robert, assignor to Automatic Carpet Sweeper Company, Detroit, Mich. Carpet-sweeper	255,823	Apr. 4	84	23	21	905
Soper, William, Reading, England. Breech-loading fire-arm	252,271	Jan. 10	718	202, 203	21	130
Soule, George W., Meridian, Miss. Cane-mill and process of extracting saccharine substances	254,575	Mar. 7	157	39	21	665
Sours, John J., *et al.* (See Holt, Arthur J., assignor.)						
South, E. Whitfield. (See Rose and South.)						
South, Elias W., Anderson Court-House, S. C. Machine for filing gin-saws	254,400	Feb. 28	1470	402	21	630
Souther, George. (See Tarbell and Souther.)						
Souther, George, Boston, Mass. Excavating and dredging machine	256,951	June 6	100	26	21	1711
Southwick, William H., New Bedford, Mass. Combined drill and countersink	252,704	Jan. 24	1227	344	21	227
Sowles, George W., assignor of one-half to L. C. Hosler, Chittenango, N. Y. Motive power for sewing-machines	254,172	Feb. 28	1209	338	21	576
Spaethe, Otto, Gera, Germany. Harmonica	252,976	Jan. 31	1573	438	21	292
Spaethe, Otto, Gera, Germany. Mechanical musical instrument	252,977	Jan. 31	1574	439	21	292
Spangler, David F., Dayton, Wash Ter. Swivel-link	256,755	Apr. 18	1044	350	21	1182
Spangler, Jacob W., York, Pa. Fertilizer-distributer and seeder	256,949	Apr. 11	644	174, 175	21	1064
Sparks, William E., assignor to P. & F. Corbin, New Britain, Conn. Door-check	255,893	Apr. 4	167	44	21	978
Sparrow, Edward W. (See Park, James A., assignor.)						
Spaulding, Albert H. (See McNeal, Charles E., assignor.)						
Spaulding, Dolliver S., Mansfield, Mass. Neck or bracelet chain	254,512	Mar. 7	77	20	21	651
Spaulding, Mark H. (See Kneeland, Joseph C., assignor.)						
Speakman, Thomas S., Philadelphia, Pa. Apparatus for utilizing the waste products of combustion in furnaces	253,780	Feb. 14	794	206	21	481
Spear, George R., assignor to himself and W. J. H. McKillop, Brooklyn, N. Y. Gauge apparatus	256,756	Apr. 18	1046	350	21	1183
Spearing, John F., New Orleans, La. Apparatus for raising sunken ships	259,937	June 20	1385	356	21	1636
Spears, Emanuel, assignor to Harding, Barbee & Co., La Fayette, Ind. Double-tree	252,535	Jan. 17	1041	280	21	189
Spears, Henry H., Paris, Ky. Grass-seed harvester	255,347	Mar. 21	1146	307	21	650
Speckhart, Gustav, Nuremberg, Germany. Rubber watch-case	253,440	Feb. 7	393	86	21	397
Speer, Darius B., Blue Grass, Iowa. Machine for cutting green corn off the cob	257,284	May 9	469	130	21	1371
Speer, Garrett F., Philadelphia, Pa. Drying-kiln	252,272	Jan. 10	721	203	21	130
Speer, John M., Jr., Fort Branch, Ind. Millstone-dress	257,633	May 9	609	170	21	1394

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Speers, Solomon P., Baltimore, Md. Ore-washer	256,812	Jan. 24	1373	363	21	951
Spellier, Louis, H., Doylestown, Pa. Electric motor for clocks	256,618	May 30	2060	570	21	1677
Spelman, Irwin H., Cortland, Ohio. Sap-spout	257,985	May 9	471	121	21	1371
Spencer, Charles H. (See Gilbert, Benjamin F., assignor.)						
Spencer, Charles L., Pittsfield, Ill. Draft-equaliser	252,813	Jan. 24	1274	334	21	951
Spencer, Christopher M., Hartford, Conn., and S. H. Roper, Boston, Mass. Magazine fire-arm	255,694	Apr. 4	168	45	21	979
Spencer, Daniel, Albion, assignor of one-half to A. W. Austin, Marengo, Mich. Farm-gate	253,119	Jan. 31	1761	469	21	381
Spencer, Edward G., Iowa Hill, Cal. Brake-block	257,240	May 2	194	35	21	1288
Spencer, George N., New York, N. Y., assignor of one-half to D. C. Goldsborough and O. Osborn, Walla Walla, Wash. Ter. Magazine fire-arm	256,491	May 23	1653	467, 469	21	1599
Spencer, Henry H., Mound City, Ill. Seeding attachment for plows	255,248	Mar. 21	1147	308	21	650
Spencer, James L., assignor to H. W. Ladd, Chelsea, Mass. Folding cot-bed	254,944	Feb. 28	1297	350	21	590
Sperry, Elmer A., Cortland, N. Y. Dynamo-electric machine	260,138	June 27	1301	429, 430	21	1968
Spickerman, John, Jefferson, N. Y. Watch-maker's chuck	255,479	Mar. 28	1269	351	21	668
Spielman, George D., Lancaster, Ohio. Padlock	256,360	Apr. 11	816	294	21	1005
Spiller, Elisha, St. Helena Parish, La. Seed-planter	257,899	May 16	935	260, 261	21	1463
Spindler, Lewis, Cumberland, Md. Machine for coloring and flavoring cigars	256,985	Apr. 4	378	104	21	1014
Spink, Morris A., assignor of one-half to J. A. Weis, Crown Point, Ind. Plow-colter	256,250	Apr. 11	647	175	21	1065
Spinney, Gustavus M., *et al.* (See Keene, George A., assignor.)						
Spitler, Ephraim E., Amity, Ohio. Automatic gate	253,239	Feb. 7	63	19	21	357
Spitler, Seth J., Greenville, Mich. Carpet-fastener	257,694	May 9	609	170	21	1394
Sponhauer, Widler S., Fort Wayne, assignor of one-half to W. Rogers, Allen County, Ind. Buckle	256,226	May 23	1461	415	21	1595
Spooner, Frederick B., Brooklyn, N. Y. Suspender-buckle	257,777	May 9	788	220	21	1458
Spottswood, Edmund T., Perryville, Ind. Sickle-bar for mowing and reaping machines	255,668	Mar. 28	1566	491	21	989
Sprague, Edwin L., Boston, Mass. Boot or shoe	259,230	June 6	428	115	21	1769
Sprague, Edwin L., Boston, Mass. Boot or shoe	259,231	June 6	433	115	21	1769
Sprague, Jacob R., St. Louis, Mo. Grain-door for freight-cars	257,099	Apr. 25	1644	460	21	1290
Sprague, James H., assignor to E. A. & W. H. Luther, Providence, R. I. Finger-ring	253,233	Feb. 7	64	20	21	357
Sprague, Welcome, Farnham, N. Y. Machine for cutting green corn off the cob	256,986	Apr. 25	1448	406, 407	21	1295
Spring, Amasa. (See Tompkins, Rhinelander C., assignor.)						
Springer, Amos C., assignor of one-half to S. W. Holladay, San Francisco, Cal. Car-brake	256,604	Apr. 18	1064	300	21	1150
Springer, Theodore G., New York, N. Y. Apparatus for manufacturing gas	253,190	Jan. 31	1761	468	21	381
Springer, Theodore G., New York, N. Y. Process of and apparatus for the manufacture of gas. (Reissue)	10,038	Feb. 7	371	102	21	409
Springer, Theodore G., New York, N. Y. Process of and apparatus for manufacturing gas	257,100	Apr. 25	1646	461	21	1290
Sprong, J. White, *et al.* (See Blackall, Robert C., assignor.)						
Squier, George L. (See Stevens, Henry B., assignor.)						
Squier, Horace S., Newark, N. J. Bridle-bit	255,737	Mar. 28	1633	441	21	941
Squire, John J., Sedalia, Mo. Fence-post	257,900	May 16	937	261	21	1464
Squires, Thomas W., Seneca Falls, N. Y. Dust-cap for axles	252,492	May 23	1656	466	21	1599
Staats, William H., Chicago, Ill. Revolving prismatic shade	252,907	Jan. 31	1491	416	21	277
Staehlen, Wilhelm, Brooklyn, N. Y. Lamp	257,402	May 2	306	86	21	1336
Stafford & Holden Manufacturing Company. (See Banister, George, assignor.)						
Stafford, Marshall B. (See Renauld and Stafford.)						
Stahl, Edward, Prescott, Ariz. Ter. Ore-concentrator	254,173	Feb. 28	1209	338	21	576
Stahl, Ephraim, Kenner, La. Portable fence	257,101	Apr. 25	1649	461	21	1291
Stahl, Harlow C., Bellville township, Sandusky county, assignor to Fremont Cultivator Company, Fremont, Ohio. Cultivator-standard clamp	252,536	Jan. 17	1042	280	21	189
Stalcup, Benjamin, and G. W. Stewart, assignors of one-third to D. A. Barrackman, Worthington, Ind. Band-cutter and feeder for thrashing-machines	259,238	June 6	434	115	21	1769
Stalnaker, Randolph, Jr. (See Daly, Hugh P., assignor.)						
Stamoar, John B., assignor of one-half to T. Cunningham, H. B. Lincoln, F. P. Pendleton, G. and L. Brown, and H. E. Cunningham, Philadelphia, Pa. Roller for loom-temples	255,689	Mar. 28	1566	491	21	989
Standard Electric Light Company. (See Holcombe, Alfred G., assignor.)						
Standard Electric Light Company. (See Holcombe and Colborne, assignors.)						
Standish, Myra R. (See Smith, Richard, assignor.)						
Standish, Philander H., assignor of one-half to P. Wilson & Sons, Cincinnati, Ohio. Device for welding links	256,483	May 23	1657	468	21	1599
Stanford, Charles P., San Francisco, Cal. Quartz-crusher	253,121	Jan. 31	1763	490	21	382
Stanley, Edward, assignor to National Paper Bag Company, New York, N. Y. Machine for making paper bags	253,441	Feb. 7	393	86	21	397
Stanley, George, Boston, Mass. Making mosaics of glass, porcelain, or stone	257,596	May 9	471	.....	21	1371
Stanley, Ira N. (See Stedman and Stanley.)						
Stanley, James, Newark, N. J. Bracelet, &c.	258,150	Jan. 10	576	169	21	165
Stannard, George A. (See Jewell, Omar H., assignor.)						
Stansfield, Frederic, Bradford, county of York, England. Apparatus for brushing polygonal bolts	256,986	Apr. 4	380	104	21	1014
Staples, Asa C., West Branch, Iowa. Metallic pad for horse-collars	256,172	Apr. 11	625	145	21	1045
Staples, Henry W., Old Orchard, Me. Snow-shovel	258,269	May 23	1399	399	21	1599
Staples, Joshua, Indianapolis, Ind. Railway-frog	258,268	May 23	1399	399	21	1599
Starbuck, Henry F., assignor to W. A. Reynolds, Chicago, Ill. Cold-air machine	255,825	Apr. 4	171	45, 46	21	979
Starcke, Harald F. L., Paris, France. Manufacturing and decorating artistic articles	259,151	Jan. 10	577	169	21	165
Stark, Michael J., assignor to Weep, Lentz Brothers & Co., Buffalo, N. Y. Starch-table	254,063	Feb. 21	1066	301	21	647
Starkey, David G., New York, N. Y. Apparatus for pulverizing mineral and other substances	251,893	Jan. 3	141	40	21	96
Starkweather, G. Fillmore. (See Hayes, Schlenks, and Starkweather.)						
Starr, Alfred A., Westfield, N. J. Safety-car	256,757	Apr. 18	1047	350	21	1183
Starr, Eli T., Philadelphia, Pa. Apparatus for producing signals and lights on railway-trains	253,448	Feb. 7	397	86, 87	21	398
Starr, Eli T., Philadelphia, Pa. Car-seat	253,951	Feb. 21	945	263	21	583
Starr, Eli T., Philadelphia, Pa. Electric lighting apparatus	257,403	May 2	307	86	21	1336
Starr, Eli T., Philadelphia, Pa. Mechanism for driving dynamo-electric machines by the motion of a moving vehicle	257,404	May 2	310	89	21	1336
Starr, Eli T., assignor to S. S. White Dental Manufacturing Company, Philadelphia, Pa. Lathe-head	254,719	Mar. 7	329	87	21	694
Starr, George W., assignor to himself and J. B. Gotthelf, Vicksburg, Miss. Cotton-basket	254,404	Feb. 28	1471	402	21	630
Starrett, Larey S., Athol, Mass. Surface-gage	255,123	Mar. 21	856	220	21	630
Start, May A., Cherokee, Iowa. Chart for drafting ladies' and children's garments	251,983	Jan. 3	334	91	21	56
Stauffer, Henry S., Mount Joy, Pa. Porch-iron	258,491	Jan. 17	660	245	21	189

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Stavely, J. Thomas. (See Scheidell, John S., assignor.)						
Steam Boiler Appliance Company. (See Pratt, Rufus N., assignor.)						
Steam Heat Evaporator Company. (See Lowell and Hooker, assignors.)						
Steam Heat Evaporator Company. (See Lowell, Seth W., assignor.)						
Steam Heat Evaporator Company. (See Tesedale, James M., assignor.)						
Stearns, Albert, Brooklyn, N. Y. Paper-box machine	258,819	May 30	2052	579	21	1677
Stearns, Henry A., Lincoln, R. I. Carpet-lining	257,527	May 9	472	131	21	1372
Stearns, J. Milton, Jr., Brooklyn, assignor, by mesne assignments, to New York Telegraph Company, New York, N. Y. Conductor	257,778	May 9	789	220	21	1428
Stearns, John, *et al.* (See Bissell, Francis M., assignor.)						
Stearns, Joseph B., Boston, Mass., assignor to Western Union Telegraph Company, New York, N. Y. Duplex-telegraph apparatus. (Reissue)	10,033	Feb. 7	373	102	21	409
Stearns, Joseph B., Boston, Mass., assignor to Western Union Telegraph Company, New York, N. Y. Duplex-telegraph apparatus. (Reissue)	10,034	Feb. 7	375	103	21	409
Stearns, Joseph B., Boston, Mass., assignor to Western Union Telegraph Company, New York, N. Y. Duplex-telegraph apparatus. (Reissue)	10,035	Feb. 7	377	103	21	410
Stearns, Waldo A. (See Johnson, Jeremiah, assignor.)						
Stebbins, Emery, New York, N. Y. Brake-shoe	256,067	Apr. 4	381	104	21	1014
Stebbins, Frank P., Collins, Mich. Churn	253,122	Jan. 31	1764	490	21	392
Stebbins, James H., Jr., New York, N. Y. Purple dye-stuff or coloring-matter	252,273	Jan. 10	722	.....	21	130
Stebbins, James H., Jr., New York, N. Y. Manufacture of blue coloring-matter	252,274	Jan. 10	723	.....	21	130
Stebbins, James H., Jr., New York, N. Y. Coloring-matter or dye-stuff	253,443	Feb. 7	312	.....	21	398
Stebbins, James H., Jr., New York, N. Y. Coloring-matter or dye-stuff	253,444	Feb. 7	312	.....	21	398
Stebbins, James H., Jr., New York, N. Y. Coloring-matter or dye-stuff	253,445	Feb. 7	313	.....	21	398
Stebbins, James H., Jr., New York, N. Y. Dye-stuff or coloring-matter	254,064	Feb. 21	1067	.....	21	547
Stebbins, James H., Jr., New York, N. Y. Dye-stuff or coloring-matter	254,065	Feb. 21	1068	.....	21	547
Stebbins, James H., Jr., New York, N. Y. Dyeing blue colors upon textile fabrics	255,349	Mar. 21	1148	.....	21	850
Stebbins, James H., Jr., New York, N. Y. Manufacture of blue coloring-matter	255,350	Mar. 21	1149	.....	21	850
Stebbins, James H., Jr., New York, N. Y. Production of naphthyl-sulphate soda salt	256,400	Apr. 11	817	.....	21	1005
Stebbins, James H., Jr., New York, N. Y. Dye-stuff or coloring-matter	256,401	Apr. 11	817	.....	21	1006
Stebbins, Norman G., Rome, N. Y. Double-acting bellows for milk-aerators	253,193	Jan. 31	1765	490	21	392
Steedman, William A., Newport, R. I., and I. N. Stanley, Brooklyn, N. Y. Furnace for retorts	257,901	May 16	838	261	21	1464
Steedwell, Milan, Watertown, Dak. Ter. Clip for holding books open	255,545	Mar. 28	1390	375	21	697
Steel, Charles, New York, N. Y. Ash-sifter	254,790	Mar. 7	330	87	21	694
Steel, Robert, assignor to J. E. Vanmeter, Philadelphia, Pa. Wall-paper-trimming machine	254,443	Feb. 28	1518	415	21	629
Steele, Edward D., Waterbury, Conn. Lacing stud or button	257,398	May 9	473	131	21	1372
Steele & Johnson Manufacturing Company. (See Neal, Benjamin F., assignor.)						
Steere, Edward, West New Brighton, N. Y. Measuring, rigging, teutering, and finishing machine	260,059	June 27	1496	403	21	1973
Steere, Schuyler B. (See Morse, Edmund L., assignor.)						
Steger, Joseph E., New York, N. Y. Car-heater	255,600	Mar. 28	1567	422	21	929
Stell, William H., Battersea, county of Surrey, England. Belt-fastener	256,148	May 16	1232	346	21	1517
Stein, Meyer A. (See Altemiller, Charles, assignor.)						
Steinbach, Charles V., assignor to F. A. Ringler & Co., New York, N. Y. Machine for bending printers' rules	251,804	Jan. 3	143	40, 41	21	26
Steinbock, Morris, New York, N. Y. Machine for folding and pressing neckties	254,576	Mar. 7	160	39, 40	21	665
Steinbrenner, Frederick, assignor to W. Steinbrenner, Buffalo, N. Y. Folding cabinet-bedstead	256,449	Apr. 11	878	245	21	1106
Steinbrenner, Wilhelmina. (See Steinbrenner, Frederick, assignor.)						
Steiner, Robert, Gratz, Austria. Bobbin-winder	258,494	May 23	1657	468, 469	21	1600
Steinke, Ferdinand. (See Smith and Steinke.)						
Steinlinger, John, McVill P. O., Pa. Ground-roller	256,758	Apr. 18	1248	350	21	1183
Stephan, Joseph A., and J. Gieriet, Fargo, Dak. Ter. Apparatus for ventilating railway-cars	259,936	June 20	1397	356, 357	21	1938
Stephens, Conner L., Brooklyn, Pa. Fastening for butter-pail covers	254,848	Mar. 14	494	132	21	729
Stephens, George, Moline, Ill. Harrow	256,863	Apr. 25	1375	387	21	1213
Stephens, George, Moline, Ill. Harrow	259,233	June 6	435	115	21	1769
Stephens, George W., Milford, Mich. Barrel rolling and handling machine	255,546	Mar. 28	1391	376	21	697
Stephens, Wilmot, Binghamton, N. Y. Indicator	253,319	Feb. 7	161	46	21	373
Stephenson, Hiram M. (See Estep, Thomas B., assignor.)						
Stephenson, John, assignor of one-half to J. H. Fellows, Haverhill, Mass. Water-faucet	256,510	Apr. 18	966	270	21	1134
Stephenson, William O., Cincinnati, Ohio, assignor to M. M. Buck, St. Louis, Mo. Railway-lantern	256,402	Apr. 11	818	225	21	1006
Sterling, George C., New York, N. Y. Cuspidor	256,251	Apr. 11	648	175	21	1085
Sterling, Theodore A. (See Moreau, Eugène, assignor.)						
Sterling, Theodore W. (See Browne, William T., assignor.)						
Sterling, Theodore W. (See Moreau, Eugène, assignor.)						
Stern, Edward, Boston, Mass. Hemmer for sewing-machines	258,958	June 6	103	27	21	1712
Sterp, Julius, St. Petersburg, Russia. Sewing-machine	254,721	Mar. 7	331	88	21	694
Stern, William A. and H. M. Byllesby, New York, N. Y., assignors of one-half to T. A. Edison, Menlo Park, N. J. Lighting cars by electricity	256,149	May 16	1233	347	21	1517
Sternberg, Jay, Boulder, Colo. Grain and mineral separator	258,495	May 23	1658	469	21	1600
Sternberger, Samuel, Philadelphia, Pa. Shirt	259,431	June 13	892	183	21	1822
Sterne, Frank. (See Lochner, Casper F., assignor.)						
Sternheimer, Friedman, New York, N. Y. Waist-belt	253,958	Feb. 21	947	263	21	524
Stetler, S. N. (See Myers, William A., assignor.)						
Stetson, Mary V., and W. Bedell, New York, N. Y. Flesh-brushing apparatus	259,939	June 20	1389	357	21	1939
Steup, Gustav. (See Mathes, Michael, assignor.)						
Stevens, Asher B., Stapleton, New York, assignor to Thompson, Perley & Waite, Baldwinsville, Mass. Child's chair	253,380	Feb. 7	162	46	21	374
Stevens, Augustus P., Brooklyn, N. Y. Carpet-cleaning machine	251,806	Jan. 3	145	41	21	27
Stevens, Benjamin F. (See Beaneflu, François A., assignor.)						
Stevens, Charles Randolph, Vt. Tire-upsetter	251,964	Jan. 3	235	91	21	58
Stevens, Charles W., New York, N. Y. Shoulder-brace and suspenders	251,805	Jan. 3	144	41	21	27
Stevens, George W., San Francisco, Cal. Ice-machine	258,892	May 30	1901	537	21	1650
Stevens, Harry R., Los Angeles, Cal. Wind-engine	258,496	May 23	1660	469	21	1600
Stevens, Henry B., assignor to G. L. Squier, Buffalo, N. Y. Evaporating-pan	253,194	Jan. 31	1766	490, 491	21	392
Stevens, Henry B., assignor to G. L. Squier, Buffalo, N. Y. Machine for polishing rice, &c.	257,405	May 2	313	89	21	1337
Stevens, John, Neenah, Wis. Mill for grinding and reducing grain, &c.	252,705	Jan. 24	1228	344	21	227
Stevens, John C., New Haven, Conn. Lathe-chuck	255,046	Mar. 14	765	205	21	777

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Stevens, John C., New Haven, Conn. Jaw for lathe-chucks	257,259	May 2	195	36	21	1362
Stevens, John C., Pittsburg, Pa. Tile for steam-boilers	256,403	Apr. 11	819	225	21	1006
Stevens, John C., Natick, Mass. Apparatus for brazing metals	260,133	June 27	1504	430	21	1968
Stevens, John H., Lynn, assignor to F. Winslow, trustee, Salem, Mass. Leather-buffing machine	256,258	Apr. 11	649	175	21	1085
Stevens, John L., assignor to G. A. Smith and E. Hempstead, Chicago, Ill. Egg-case	255,736	Mar. 28	1633	441, 442	21	941
Stevens, John L., assignor of three-fourths to G. A. Smith and E. Hempstead, Chicago, Ill. Nut-lock	256,497	May 23	1660	469	21	1600
Stevens, Judd, Marengo, N. Y. Cider-press	255,696	Apr. 4	177	46, 47	21	979
Stevens, Mott T., Lake City, Minn. Cut-off-valve gear	254,066	Feb. 21	1066	301	21	547
Stevens, Nathan P., assignor to himself and L. D. Brown, Concord, N. H. Machinery for manufacturing barrel-hoops	260,334	June 27	1536	406	21	2005
Stevens, Oscar A., and E. L. Du Barry, Washington, D. C. Combined furnace and stack for destroying noxious or poisonous gases	258,498	May 23	1661	470	21	1600
Stevens, Sidney M., Elwood, Ill., assignor, by mesne assignments, to Washburn & Moen Manufacturing Company, Worcester, Mass., and I. L. Ellwood, De Kalb, Ill. Machine for making barbed-wire fencing	253,781	Feb. 14	728	206, 207, 208	21	481
Stevens, William J., New York, N. Y. Rail-joint for railways	259,234	June 6	437	116	21	1770
Steward, John F. (See Dixon and Steward.)						
Steward, Thomas C., Chattanooga, Tenn. Car-coupling attachment	255,547	Mar. 28	1391	376	21	697
Stewart, Adoniram J., Chillicothe, Mo., assignor to C. La Dow; said La Dow assignor of one-half to Wheeler & Melick Company, Albany, N. Y. Harrow. (Reissue)	10,041	Feb. 21	1127	314	21	555
Stewart, Alexander W., Chicago, Ill. Wardrobe or folding bed	255,548	Mar. 28	1392	376, 377	21	698
Stewart, Benjamin F., New Philadelphia, Ohio. Harvesting-machine	257,408	May 2	315	68, 90	21	1337
Stewart, Duncan, Glasgow, county of Lanark, Scotland. Sugar-cane mill	256,759	Apr. 18	1249	351	21	1183
Stewart, George H. (See O'Neill, James, assignor.)						
Stewart, George W. (See Stalcup and Stewart.)						
Stewart, James O., Alameda, Cal. Rotary pulverizer	258,953	June 6	103	27	21	1712
Stewart, James S. (See Hastings and Stewart.)						
Stewart, John, Newark, N. J. Speed-gearing	259,537	Jan. 17	1043	290	21	189
Stewart, Lyman, Titusville, Pa. Deep-well packing	259,375	Jan. 10	782	223	21	130
Stewart, William H., and E. J. Chapman, Denver, Colo. Drill-hole cleaner	257,779	May 9	790	220	21	1428
Stewart, William W., Brooklyn, N. Y. Fountain pen-holder	253,953	Feb. 21	947	263	21	524
Stewart, William W., Brooklyn, N. Y. Fountain-pen	254,174	Feb. 28	1211	336	21	576
Stewart, William W., Brooklyn, N. Y. Reservoir pen-holder	254,175	Feb. 28	1212	336	21	577
Stichter, Henry P., Pottsville, Pa. Commode	253,954	Feb. 21	949	264	21	524
Stickel, William E., and J. Stuckam, Dayton, Ohio. Bed-lounge frame	259,341	June 13	889	153	21	1808
Stickler, William O., Hilledale, Mich. Gate	258,699	Jan. 24	1146	321	21	813
Stiefel, Julius, and M. Juhn, Baltimore, Md. Drawers and other garments	254,788	Mar. 7	492	107	21	707
Stieringer, Lather, New York, N. Y. Lantern for electric and other lights	253,955	Feb. 21	950	264	21	524
Stieringer, Luther, assignor of two-thirds to C. F. Hasington, New York, N. Y., and R. N. Dyer, Menlo Park, N. J. Electrical fixture	259,235	June 6	438	116	21	1770
Stiles, Norman C., Middletown, Conn. Dampening-bath for press-copying	260,251	June 27	1736	469	21	2009
Stillman, George E. (See Tracy and Stillman.)						
Stillman, Oscar B. (See Webster, John H., assignor.)						
Stillson, Daniel C., Somerville, Mass. Automatic fire alarm and extinguisher	260,258	June 27	1737	470	21	2010
Stillwell, James W., Hannibal, Mo. Apparatus for drawing lumber from the crib	256,511	Apr. 18	967	271	21	1135
Stilwell, Charles B., Watertown, N. Y., assignor to Union Paper Bag Machine Company, Philadelphia, Pa. Paper-bag machine	255,204	Mar. 21	989	256, 257, 258	21	817
Stimpson, Edward S., assignor to G. Draper & Sons, Hopedale, Mass. Thread-guard for spinning-machines	252,814	Jan. 24	1375	384	21	251
Stine, Cyrus, McVeytown, Pa. Motor and thresher connection	254,793	Mar. 7	333	88	21	695
Stinson, William H., Scandia, Kans. Adjustable gage for planing	256,864	Apr. 25	1376	387	21	1214
Stirewalt, Valentine, Davidson College, N. C. Churn	257,908	May 16	839	261, 262	21	1464
Stirn & Lyon. (See Barnes, Wesley W., assignor.)						
Stith, Lord A., Plum Lick, Ky. Car-coupling	257,780	May 9	791	221	21	1428
Stitsel, John, Delaware township, Dedance county, Ohio. Wind-engine	259,236	June 6	441	117	21	1770
Stitsel, Frederick, Louisville, Ky. Process of and apparatus for improving spirits	253,125	Jan. 31	1768	491	21	393
Stix, Henry S., Cincinnati, Ohio. Express signal-call	258,890	May 30	2055	580	21	1677
St. John, Garland R., Cedar Rapids, Iowa. Plow-truck	254,793	Mar. 7	334	88	21	695
St. John, John C., New York, N. Y. Fan	255,549	Mar. 28	1394	377	21	698
St. John, Roswell H., assignor to Union Manufacturing Company, Toledo, Ohio. Device for the compensation of wear in needle-bars	256,068	Apr. 4	368	105	21	1014
St. John, William W., St. Louis, Mo. Valve and valve-gear	259,432	June 13	893	183, 184, 185	21	1822
Stock, Hosea T., Toledo, Ohio. Machine for removing snow from railway-tracks	258,150	May 16	1236	347, 348	21	1517
Stocking, Edgar B., Washington, D. C. Cartridge	259,237	June 6	442	117	21	1771
Stocking, Edgar B., Washington, D. C. Manufacture of envelopes	259,238	June 6	444	117, 118	21	1771
Stocking, Edgar B., Washington, D. C. Manufacture of satchel-bottomed paper bags	259,239	June 6	449	120	21	1772
Stocking, Edgar L., Buffalo, N. Y. Hoisting apparatus	255,251	Mar. 21	1149	309	21	850
Stockman, George W., Indianapolis, Ind. Apparatus for cooling air	260,060	June 27	1496	404	21	1973
Stockmann, Christopher, Brooklyn, N. Y. Lamp-burner	257,407	May 2	317	90	21	1337
Stockton, James K., Brooklyn, N. Y. Sofa-bed	251,742	Jan. 3	98	18	21	14
Stockton, John W., Washington, D. C. Changeable picture	256,261	May 23	1620	393	21	1558
Stockwell, Levi W., assignor to W. H. Price, Cleveland, Ohio. Screw-threading machine	259,433	June 13	895	184	21	1823
Stockwell, Levi W., assignor to W. H. Price, Cleveland, Ohio. Screw-cutting machine	259,434	June 13	895	184	21	1823
Stoddard, John D., Centreville, Ind. Boot or shoe sole	252,152	Jan. 10	777	163	21	106
Stoddard, Owen, Bath, N. Y. Combined hand seed-planter and fertiliser-distributer	256,089	Apr. 4	363	105	21	1015
Stoddard, Seneca R., Glens Falls, N. Y. Photographic apparatus	257,406	May 2	316	90	21	1336
Stoddard, Solomon P., New York, N. Y. Mortise-lock	254,402	Feb. 28	1478	403	21	680
Stoddard, William F., *et al.* (See Leonard, Sumner, assignor.)						
Stoddart, Albert F., Speyd Park, Bristol, county of Bristol, England. Manufacture of ink	255,358	Mar. 21	1150	.....	21	850
Stokes, Robert L., Jeffersonville, Ind. Table attachment for beds	258,906	Jan. 31	1403	416	21	277
Stokoe, John W., Manistee, Mich. Head-block for saw-mills	254,513	Mar. 7	76	21	21	681
Stolp, Myron G., assignor to Aurora Manufacturing Company, Aurora, Ill. Carpet-sweeper	258,488	Jan. 17	880	245	21	168
Stone, Charles D., Brooklyn, N. Y. Combined stair-carpet fastener and stair-rod securer	258,850	Jan. 24	1439	395	21	250
Stone, Charles D., Brooklyn, N. Y. Cornice hook or bracket	255,471	Mar. 28	1394	351	21	698
Stone, Charles D., Brooklyn, N. Y. Stair-carpet fastener	257,251	May 2	196	36	21	1362

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Stone, Frank W., Lynn, assignor of two-thirds to F. S. Andrews, Gloucester, and F. S. Andrews, Essex, Mass. Buffing-tool	257,903	May 16	940	262	21	1464
Stone, Harley and H. A., Worcester, Mass. Mechanism for operating doffer-combs of carding-machines	258,490	May 23	1663	470	21	1601
Stone, Harley A. (See Stone, Harley and H. A.)						
Stone, Henrie D. (See Tyler and Stone.)						
Stone, Henry A., assignor to A. Randell, Brooklyn, N. Y. Sash-holder	258,611	May 30	1908	511	21	1634
Stone, Henry C., Natick, Mass. Sewing-machine presser-foot	260,061	June 27	1498	404	21	1973
Stone, James Z., and L. E. Ling, Bloomington, Ill. Dark-lantern	257,191	May 2	51	16	21	1290
Stone, Leonard, San Luis Obispo, Cal. Fruit-gatherer	259,940	June 20	1330	357	21	1930
Stone, Marvin C., Falls Church, Va. Fountain pen-holder	255,205	Mar. 21	967	258	21	819
Stone, Marvin C., Falls Church, Va. Fountain pen-holder	260,134	June 27	1505	430	21	1988
Stone, Peter J., assignor of one-half to C. Kellogg, Athens, Pa. Apparatus for moving cars	259,598	June 13	898	239	21	1859
Stoneman, Orville A., Minneapolis, Minn. Sulky-plow	258,262	May 23	1591	393	21	1553
Stonemetz, John H., Erie, Pa. Paper-folding machine	259,778	June 20	1146	304	21	1907
Stonemetz, John H., Erie, Pa. Perfecting printing-machine	252,153	Jan. 10	578	163	21	106
Stoner, Thomas H., Marion, Pa. Rock-drill	259,779	June 20	1147	304	21	1907
Stoppard, William B. (See White, Frank A., assignor.)						
Storck, Joseph, Boston, Mass. Game-piece and method of exhibiting the same	258,821	May 30	2056	560	21	1676
Storer, George W., Philadelphia, Pa. Balanced valve and operating mechanism	258,500	May 23	1665	474	21	1601
Storer, Jacob J., New York, N. Y. Machine for pulverizing ores, &c	254,403	Feb. 28	1474	403	21	621
Storey, Julius W., *et al.* (See Carley, John W., assignor.) (Reissue.)						
Stork, John, Canton, Mo. Ice-cutting machine	259,941	June 20	1331	357 / 358	21	1939
Stormont, Andrew R., Princeton, Ind. Fence	253,196	Jan. 31	1709	491	21	323
Story, Alexander, Washington, Iowa. Car-coupling	259,435	June 13	697	185	21	1823
Story, Herbert, assignor to himself and J. E. Billings, Newark, N. J. Pocket-knife	254,404	Feb. 28	1476	403	21	621
Story, John, Castle Shannon, Pa. Device for protecting the eyes	251,743	Jan. 3	67	18	21	14
Story, S. B., *et al.* (See McCord, William R., assignor.)						
Stossmeister, Albert W., Newport, Ky. Slate-frame	253,234	Feb. 7	64	20	21	357
Stout, Joseph C. W., Farmingdale, N. J. Rein-holder	259,599	June 13	899	240	21	1859
Stout, W. H. B. (See Pope, Rufus, assignor.)						
Stover, Joseph W., Newton, Mass. Non-interfering fire-alarm box	253,639	Feb. 14	541	155	21	448
Stover, Joseph W., Newton, Mass. Apparatus for signaling by electricity	255,121	Mar. 21	857	230	21	800
Stover, Samuel F., Perkasie, Pa. Staff and jewel protector for watches	252,062	Jan. 10	473	130	21	89
Stowell, Oscar I. (See Gould, Thomas, assignor.)						
Stowell, William J., assignor to D. C. Heddinger of James, and J. W. Lindan, Baltimore, Md. Mail-bag	259,939	June 6	448	118	21	1771
Strain, Alexander. (See Strain, George M. and A.)						
Strain, George M. and A., Harrodsburg, Ind. Washing-machine	259,940	June 6	449	118	21	1772
Strain, Robert. (See Sandford, John G., assignor.)						
Strait, Hiram, Troy, N. Y. Potato-digger	252,538	Jan. 17	1044	291	21	189
Strait, Ransom E., Galesburg, Mich. Tubular well	255,092	Mar. 14	819	219	21	787
Strait, Ransom E., Galesburg, Mich. Wind-engine	259,941	June 6	450	119	21	1772
Stranchen, John R. (See Neninger, Lawrence, assignor.)						
Strauders, Walter, New York, assignor to E. I. Horsman, Brooklyn, N. Y. Pictorial story-blocks	257,109	Apr. 25	1650	461 / 468	21	1261
Strange, Edward M., Baltimore, Md. Combined steam and air engine	252,630	Jan. 24	1146	331	21	213
Strasser, David, Albany, N. Y. Rotary vegetable-cutter	257,252	May 2	126	36	21	1303
Strazer, George. (See Strasser, John, assignor.)						
Strasser, John, assignor of one-half to G. Strazer, Manchester, Mo. Heating-stove	254,783	Mar. 7	403	107	21	707
Stratford, James, assignor of one-half to E. S. Hawley, Buffalo, N. Y. Apparatus for ventilating and purifying sewers	259,729	June 20	1084	288	21	1897
Stratton, Charles G., Worcester, Mass. Automatic presser-foot lifter for sewing-machines	258,612	May 30	1809	511	21	1634
Straub, Ambrose W., Philadelphia, Pa. Grinding-mill	260,062	June 27	1499	401	21	1973
Straughn, Charles R., Centreville, Md. Combined fertilizer-distributer and seed-drill	256,404	Apr. 11	819	236	21	1096
Straus, Jacob, St. Louis, Mo. Horse-collar	255,206	Mar. 21	968	258	21	819
Strauss, Raphael. (See Dryfoos and Strauss.)						
Strauss, Samuel. (See Dryfoos and Strauss.)						
Strauss, William. (See Weir, Robert H., assignor.)						
Straw, Samuel D., and A. J. Signor; said Signor assignor to O. T. Chamberlain, Elkhart, Ind. Windmill	254,405	Feb. 28	1476	403 / 404	21	621
Street, George, New York, N. Y. Water-proof fabric	260,063	June 27	1502	.....	21	1973
Streeter, George D. (See Beck, Gebhard, assignor.)						
Streit, Charles, *et al.* (See Earnest, William H., assignor.) (Reissue.)						
Stribling, John V., Westminster, S. C. Traction-engine	259,600	June 13	900	240	21	1859
Strickler, William H., Mount Pleasant, Pa. Oven and furnace door	253,235	Feb. 7	66	20	21	358
Strickrodt, Charles, New York, N. Y. Fan	252,706	Jan. 24	1229	344	21	227
Stringer, Wesley, Port Dover, Ontario, Canada. Grain-register	259,042	June 20	1332	358	21	1939
Stringfellow, John W., New Haven, Ind. Nut-lock	256,760	Apr. 18	1249	351	21	1183
Strobel, Joseph. (See Novak and Strobel.)						
Strobridge, Turner, New Brighton, Pa. Coffee-mill	259,730	June 20	1085	289	21	1898
Strong, Henry C., assignor of one-half to J. and L. H. Lloyd, Chicago, Ill. Insulation of electrical conductors	253,446	Feb. 7	313	87	21	709
Strong, James F., Detroit, Mich. Wire fence	258,501	May 23	1666	471	21	1601
Strong, Samuel, Washington, D. C. Street letter-box	253,236	Feb. 7	66	20	21	358
Strong, Sutton, Harmony, Ind. Clothes-pin	257,987	May 16	1035	288	21	1481
Strong, William, Cincinnati, Ohio. Toy or toy box	256,761	Apr. 18	1250	351 / 359	21	1183
Stroud, William D., Oshkosh, Wis. Cultivator-tooth	258,963	May 23	1392	393	21	1554
Strouse, Isaac, New Haven, Conn. Corset	254,067	Feb. 21	1089	301	21	548
Strubbe, William G., Cincinnati, Ohio. Car-coupling	257,529	May 9	474	131	21	1372
Stuart, George B., Philadelphia, Pa. Bottle-stopper and fastening therefor	252,539	Jan. 17	1046	291	21	190
Stuart, John, Bellevue, Iowa. Check-row corn-planter	255,907	Mar. 21	960	259	21	819
Stuart, Peter, Edinburgh, county of Mid-Lothian, Scotland. Manufacture and laying of composite pavements	259,059	June 6	237	.....	21	1734
Stubbs, Joel, Minneapolis, Minn. Sugar-cane mill	253,782	Feb. 14	739	209	21	482
Stuckum, John. (See Stickel and Stuckum.)						
Sturdy, Brothers & Co. (See Blaney, William H., assignor.)						
Sturm, William, Galveston, Tex. Window-frame	254,068	Feb. 21	1090	302	21	548
Sturtevant, Benjamin F., Boston, Mass. Steam slide-valve	257,530	May 9	475	132	21	1372
Sturtevant, Thomas L., Framingham, Mass. Attrition-mill	255,550	Mar. 28	1395	377	21	898
Sassserott, Jacob L., Chambersburg, Pa. Veterinary table	259,242	June 6	451	119	21	1772
Suggs, Thomas J., Fort Gaines, Ga. Combined fire screen and fender	253,127	Jan. 31	1709	492	21	323

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Sullivan, Algernon S., administrator. (See Lippe, John S.)						
Sullivan, Algernon S., administrator. (See James, John.)						
Sullivan, John A. (See Pratt and Sullivan.)	257,781	May 9	792	221	21	1488
Sullivan, John E. O., Hopkinton, Mass. Fire-escape						
Sullivan Machine Company. (See Hall, Albert, assignor.)						
Sullivan Machine Company. (See Case, George F., assignor.)	259,900	June 20	1413	360	21	1953
Sullivan, Michael, Milwaukee, Wis. Thrashing-machine	255,697	Apr. 4	180	47	21	969
Sundbeck, Carl J., Salt Lake City, Utah Ter. Folding cot-bed						
Sunderland, John F. (See Andrews and Sunderland.)						
Sunderland, Leslie E. (See Case, George, assignor.)	257,769	May 9	793	221	21	1489
Sutch, John B., Pittsburg, Pa. Nut-lock						
Suter, James, *et al.* (See Marchant, Robert M., assignor.)	257,103	Apr. 25	1651	463	21	1299
Sutliff, John, Sr., Huntsville, Mo. Motor	251,965	Jan. 3	337	91	21	56
Sutphin, John W., Trenton, N. J. Shifting-rail for carriages	257,783	May 9	793	221	21	1489
Sutton, Franklin W., Angola, Ind. Clothes-pounder	256,978	Jan. 31	1575	439	21	892
Swain, Charles H., New York, N. Y. Apparatus for amalgamating ores	260,135	June 27	1507	431	21	1988
Swan, James, Seymour, Conn. Screw-driver						
Swan, Joseph W., Newcastle-upon-Tyne, county of Northumberland, England. Secondary voltaic cells	256,070	Apr. 4	384	.....	21	1915
Swan, Joseph W., Newcastle-upon-Tyne, county of Northumberland, England. Incandescent electric lamp	260,335	June 27	1637	496	21	2026
Swaney, David A., assignor to himself and N. West, Pittsburg, Pa. Putting up blanketa	252,540	Jan. 17	1047	291	21	190
Swanson, Swan E., Galesburg, Ill. Shutter-fastener	259,601	June 13	903	241	21	1859
Swanston, James A. (See Turnbull, Andrew, assignor.)						
Swartout, William H., assignor to G. H. Saltsman, Salineville, Ohio. Corn-planter	256,512	Apr. 18	968	271	21	1136
Swarts, Jacob R. (See Brammar and Swarts.)						
Swarts, Hiram B., Worcester, Ohio. Animal-trap	257,904	May 16	941	262	21	1464
Swarts, Mary, Greenville, Ohio. Hair-crimper	257,784	May 9	794	222	21	1489
Sweeney, William W., Middlebury, Vt. Faucet attachment	254,577	Mar. 7	102	40	21	696
Sweet, Charles G., *et al.* (See Reach, Robert, assignor.)						
Sweet, D. Fred, Hastings, Mich. Secondary electric clock	253,763	Feb. 14	731	209	21	492
Sweet, Henry M., Winchester, Conn. Clothes-horse	256,513	Apr. 18	968	271	21	1135
Sweet, John E., Syracuse, N. Y. Governor for steam-engines	252,276	Jan. 10	725	203	21	130
Sweet, Judith, *et al.* (See Reach, Robert, assignor.)	256,865	Apr. 25	1378	366	21	1914
Sweet, Oscar, Benson, N. Y. Blanket-fastener						
Sweet, Parker H., Jr., Washington, D. C., assignor to Heaton Button Fastener Company, Providence, R. I. Button-fastener	257,531	May 9	477	133	21	1372
Sweetland, Alvah, Syracuse, N. Y. Hinge	256,405	Apr. 11	821	226	21	1096
Sweetland, Jerome B., Pontiac, Mich. Domestic fruit-drier	252,815	Jan. 24	1276	324	21	251
Sweetland, Jerome B., Pontiac, Mich. Machine for crushing and pulverizing quarts	258,622	May 30	2057	560	21	1678
Sweetland, John, *et al.* (See Thibault, Magloire, assignor.)						
Sweney, Charles E., assignor to M. E. Sweney and G. G. Mowry, Genesco, Ill. Check-row attachment for corn-planters	254,514	Mar. 7	79	21	21	651
Sweney, Charles E., assignor to M. E. Sweney and G. G. Mowry, Genesco, Ill. Corn-planter check-rower	254,515	Mar. 7	81	21	21	652
Sweney, Mary E., *et al.* (See Sweney, Charles E., assignor.)	258,264	May 23	1393	393 / 394	21	1554
Swenson, Nils O., Terraville, Dak. Ter. Car brake and coupling	258,631	Jan. 24	1147	332	21	213
Swetman, Frederick W., Cleveland, Ohio. Vapor-burner	254,245	Feb. 28	1300	360	21	591
Sweit, Albert L., and W. H. Samson, Medina, N. Y. Door-hanger	255,353	Mar. 21	1151	309	21	850
Swift, Allen W., Elmira, N. Y. Lubricator						
Swift, Gustavus F. (See Roberts, Henry A., assignor.)						
Swift, Horace E., assignor to G. Draper & Sons, Hopedale, Mass. Thread-guard for spinning-machines	253,381	Feb. 7	163	46	21	374
Swindell, William, Allegheny, Pa. Regenerative furnace	258,900	Jan. 31	1494	417	21	978
Sykes, Robert R., assignor of one-half to W. S. Russell, Callisburg, Tex. Provision-safe	258,387	May 23	1468	415 / 416	21	1506
Sykes, Casper P., Pinckney, Mich. Spring-gear for vehicles	256,151	May 16	1236	349	21	1513
Sylvester, Marie F., *et al.* (See Shoemaker, David L., assignor.)						
Sylvester, Philip L., assignor of one-half to Woodruff Bros. Auburn, N. Y. Manufacture of buttons from plastic material	258,508	May 23	1666	.....	21	1661
Symington, Robert. (See Simpson, Henry and B. G., assignors.)	259,943	June 20	1333	358	21	1930
Taber, Bluford A., Hall's Hill, Tenn. Cultivator						
Tabor, Marvin. (See Travis, Charles L., assignor.)	257,538	May 9	477	133	21	1372
Taft, George C., Worcester, Mass. Drilling-machine	256,671	Apr. 4	385	105	21	1015
Taggart, Francis, Brooklyn, N. Y. Apparatus for pulverizing grain, ores, &c						
Taggart, Francis, Brooklyn, N. Y., assignor to C. E. Knickerbocker, trustee. Machine for disintegrating grain and other substances	256,672	Apr. 4	387	106	21	1015
Taggart, Francis, Brooklyn, N. Y., assignor to C. E. Knickerbocker, trustee. Manufacturing flour	256,673	Apr. 4	389	106	21	1016
Tagliabue, Charles J., Brooklyn, N. Y. Apparatus for distilling petroleum	254,176	Feb. 28	1614	330	21	577
Talt, Felix B., *et al.* (See McKinnies, Lewis, assignor.)						
Talt, Felix B., Decatur, Ill. Check-row attachment for corn-planters	255,478	Mar. 28	1395	351	21	892
Tait, James G., assignor to himself and A. B. Wyckoop, Stockton, Cal. Ticket-holder	251,966	Jan. 3	338	91	21	56
Tait, Joseph S., *et al.* (See McKinnies, Lewis, assignor.)	251,967	Jan. 3	338	92	21	56
Talard, Nicolas, Paris, France. Pump	258,158	May 16	1237	349	21	1513
Talbot, Charles N., New York, N. Y. Telegraph and messenger service box	253,589	Feb. 14	456	130	21	495
Talbot, Romuald J., North Attleborough, Mass. Sleigh						
Talbot, William R. (See Bailey and Talbot.)						
Talbott, H. Maurice, *et al.* (See Shoemaker, David L., assignor.)	253,198	Jan. 31	1771	498	21	323
Talcott, Charles W., Woonsocket, R. I. Fire-extinguisher	256,947	Mar. 14	769	205	21	777
Talcott, Charles W., Woonsocket, R. I. Fire-extinguisher	259,780	June 20	1148	305	21	1908
Talcott, Charles W., Woonsocket, R. I. Automatic sprinkler						
Talcott, William A., *et al.* (See Jones, J. Herva, assignor.)						
Taliaferro, Sinclair. (See Fowler, Joseph C., assignor.)						
Tallman Automatic Car Brake Company. (See Tallman, Stephen P., assignor.)						
Tallman, Charles M., and B. F. Day, Bellaire, Ohio. Top for syrup-pitchers	255,692	Mar. 28	1570	422	21	980
Tallman, George D., *et al.* (See Eddy, George W., assignor.)						
Tallman, Stephen P., Dunellen, N. J., assignor to Tallman Automatic Car Brake Company, New York, N. Y. Automatic car-brake	256,674	Apr. 4	391	106 / 107	21	1016
Tallman, Stephen R., *et al.* (See Eddy, George W., assignor.)						
Talmage, David. (See Flowers and Talmage.)						
Talmage, David, and M. L. Flowers, New Orleans, La. Machine for removing seed from grain	259,334	Jan. 17	797	222	21	142

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Taneyhill, Francis M., Barnesville, Ohio. Car-wheel	257,625	May 9	610	170	21	1394
Tanger, David B., Logan County, assignor of one-half to C. D. Campbell and H. E. Knight, Bellefontaine, Ohio. Plow-governor	254,406	Feb. 28	1478	404	21	621
Tanner, Alfred B., assignor to Sargent & Co., New Haven, Conn. Door-spring	252,541	Jan. 17	1048	291	21	190
Tanner, Theophilus, Osage, Nebr. Window-glass fastener	252,707	Jan. 24	1230	344	21	227
Tanner, Theophilus, and H. H. Fischer, Osage, Nebr. Post-hole digger	251,968	Jan. 3	339	92	21	50
Taplin, Albert J., Chicago, Ill. Wheel	253,237	Feb. 7	67	21	21	358
Taplin, John L., Akron, Ohio. Grinding and polishing machine	252,063	Jan. 10	473	131	21	89
Tappenden, Richard S. (See Tappenden, Stephen and R. S.)						
Tappenden, Stephen and R. S., North Amherst, Ohio. Car-coupling	256,762	Apr. 18	1251	352	21	1183
Tapper, Henry, Cleveland, Ohio. Roller-skate	253,784	Feb. 14	732	209	21	482
Tarbell, Stephen H., and G. Souther, Boston, Mass. Pile-driver	258,954	June 6	104	27	21	1712
Tarble, Fletcher. (See Chase, Lee L., assignor.)						
Tarr, E. C., *et al.* (See Perrotte, Justin, assignor.)						
Tarragon, Charles A., The Dalles, Oreg. Portable corral	256,661	Apr. 18	1135	319	21	1102
Tasker, Stephen P. M., Philadelphia, Pa. Stone-crusher	260,064	June 27	1503	405	21	1974
Tate, Thomas A. (See Hume and Tate.)						
Tatham, Roger, Rochdale, county of Lancaster, England. Coiler for railway-heads, carding-machines, &c	255,473	Mar. 28	1307	{351 352}	21	883
Tatman, William B., and W. C. Davis, Fairfield, Iowa. Swinging gate	254,407	Feb. 28	1479	404	21	622
Tatro, William B., Hartford, Conn. Pipe-gripe	252,632	Jan. 24	1148	322	21	214
Tatro, William B., Hartford, Conn. Friction-clutch	260,253	June 27	1739	470	21	2010
Tatro, William B. Hartford, Conn., assignor of one-half to J. E. Mulford, New York, N. Y. Belt for machinery	257,192	May 2	52	16	21	1290
Tauber, Johann C., Plain City, Ohio. Stair-truck	255,693	Mar. 28	1571	492	21	930
Taucke, Wilhelm C., New York, N. Y. Chemical telegraph	256,253	Apr. 11	649	176	21	1064
Tayler, Josias, New York, N. Y. Rock and ore crusher	251,969	Jan. 3	340	93	21	50
Taylor, Albert B. (See Melvin, Nathan T., assignor.)						
Taylor, Andrew J., and M. A. Hamilton, Frankfort, Kans. Churn-dasher	252,335	Jan. 17	798	223	21	148
Taylor, Andrew J., and M. A. Hamilton, Frankfort, Kans. Calf-weaner	257,253	May 2	127	36	21	1303
Taylor, Augustus C., San Francisco, Cal. Vineyard-plow	255,898	Apr. 4	181	47	21	980
Taylor, Austin D. (See Wilson, George E., assignor.)						
Taylor, B. C. (See Auchey, David G., assignor.)						
Taylor, Benjamin, assignor of one-half to G. A. Hartung, Terre Haute, Ind. Fire-escape	252,592	Jan. 17	1102	307	21	199
Taylor, Charles, New York, assignor to H. L. Van Syckel and C. G. Till, Brooklyn, N. Y. Apparatus for burning coal-slack	252,910	Jan. 31	1495	417	21	278
Taylor, Charles, assignor of two-thirds to W. H. Burland, Montreal, Quebec, and A. F. Foster, Cowansville, Canada. Apparatus for separating and amalgamating gold	253,785	Feb. 14	732	209	21	482
Taylor Company, J. K. (See Cosgrove, William F., assignor.) (Reissue.)						
Taylor, Edward J., Frankfort, W. Va. Traction-engine	258,633	May 30	1903	537	21	1650
Taylor, Elmore W., Detroit, Mich. Roller-skate	255,694	Mar. 28	1571	493	21	930
Taylor, Francis M., Macon City, Mo. Bracket and shelving support	255,695	Mar. 28	1572	493	21	930
Taylor, Frank C. (See Warren, Wallace, assignor.)						
Taylor, Frederick. (See Blabee, Wisner B., assignor.)						
Taylor, Frederick. (See Logan, Thomas H., assignor.)						
Taylor, Frederick, Lowell, Mass. Wardrobe-hook	257,533	May 9	478	133	21	1373
Taylor, H. F. *et al.* (See Maxim, Hiram S., assignor.) (Reissue.)						
Taylor, Henry S., New York, assignor of one-half to G. H. Chinnock, Brooklyn, N. Y. Mechanical musical instrument	258,955	June 6	105	28	21	1712
Taylor, J. Monroe. (See Schramm, Carl F. W., assignor.)						
Taylor, James, Birkenhead, county of Chester, England. Apparatus for taking in, stopping, and stowing wire and other rope cables	251,744	Jan. 3	68	19, 20	21	14
Taylor, James, assignor to Electrical Supply Company, Ansonia, Conn. Coating and insulating wire for electrical purposes	251,970	Jan. 3	343	.....	21	59
Taylor, James S., Danbury, Conn. Machine for felting hat-bodies. (Reissue)	10,144	June 27	1863	503	21	2030
Taylor, Job, East Hamburg, N. Y. Tray for holding fruit-cans	253,806	Feb. 21	875	247	21	513
Taylor, Job, East Hamburg, N. Y. Metallic tray	254,849	Mar. 14	495	132	21	729
Taylor, John F., Sharon Springs, N. Y. Combined hoisting-bucket and dump-car	252,542	Jan. 17	1049	292	21	190
Taylor, John H., New Haven, Conn. Grinding-machine	255,908	Mar. 21	970	259	21	819
Taylor, John M., Hartford, Conn. Rotary pump	254,069	Feb. 21	1091	302	21	548
Taylor, Newton W. (See Appel, Daniel, assignor.)						
Taylor, Samuel P., *et al.* (See Evans, George R., assignor.)						
Taylor, Theodore, La Grande, Oreg. Cutter-bar for reaping and mowing machines	259,602	June 13	904	241	21	1860
Taylor, Thomas, Washington, D. C. Freezing-microtome	256,173	Apr. 11	586	145	21	1045
Taylor, Warren H., assignor to Yale Lock Manufacturing Company, Stamford, Conn. Lock. (Reissue)	10,012	Jan. 17	1106	309	21	200
Taylor, Warren H., assignor to Yale Lock Manufacturing Company, Stamford, Conn. Post-office lock-box	252,708	Jan. 24	1230	345	21	228
Taylor, Warren H., assignor of one-half to Yale Lock Manufacturing Company, Stamford, Conn. Knob attachment	253,956	Feb. 21	951	264	21	524
Taylor, William E., Fulton, N. Y. Paper-pulp engine	253,447	Feb. 7	314	87	21	399
Taylor, William H. (See Warren, Dwight, assignor.)						
Taylor, William H., assignor to R. Barnes, New York, N. Y. Apparatus for making carburetted hydrogen-gas	256,406	Apr. 11	821	{226 227}	21	1096
Taylor, William R., *et al.* (See Ennis, William, assignor.)						
Tayman, Benjamin J., Philadelphia, Pa. Apparatus for fumigating, disinfecting, and ventilating vessels, buildings, &c	257,104	Apr. 25	1658	463	21	1902
Teal, Albert S. (See Filley, Teal, and Fields.)						
Teal, B. Frank, assignor of two-thirds to J. E. Gowan, Philadelphia, Pa. Device for underground electric communication	256,806	Apr. 25	1379	386	21	1914
Teas, Noble, Newark, N. J. Saddle-tree	254,514	Apr. 18	970	278	21	1135
Teasdale, James M., Howell, Mich. Fruit-drier	256,927	Apr. 25	1451	407	21	1286
Teasdale, James M., Howell, assignor to Steam Heat Evaporator Company, Charlotte, Mich. Fruit-drier	257,469	May 2	319	90	21	1336
Teeple, William, assignor to himself and H. C. Trout, Watertown, Dak. Ter. Hay and straw burning stove	258,328	May 23	1463	416	21	1566
Tees, Ambler, Philadelphia, Pa. Kiln for enamel-work	254,407	Apr. 11	823	227	21	1097
Teese, Robert W., Parker's Landing, Pa. Safe	253,139	Jan. 31	1773	498	21	383
Teeters, Elisha P., Alliance, Ohio. Mail-bag	256,408	Apr. 11	824	{227 228}	21	1097
Tegeler, August. (See Ramsey, William W., assignor.)						
Telfer, John C., Cleveland, Ohio. Pipe-coupling	254,650	Mar. 14	496	133	21	729
Temple, Percival R., Everett, and G. W. Pierce, Boston, Mass., assignors to Yale Lock Manufacturing Company, Stamford, Conn. Post-office box	252,154	Jan. 10	581	164	21	166

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Templeton, Absalom, Round Rock, assignor of one-half to D. S. Page, Williamson County, Tex. Collyrium	254,784	Mar. 7	334	.....	21	685
Templeton, Isaac N., Amador, Cal. Ore-feeder for stamp-mills	256,563	May 23	1667	471	21	1691
Ten Eyck, Junius, *et al.* (See Barnes, Amos, assignor.)						
Tenant, Hanson P., Richmond, Ind. Force-feed grain-drill	256,763	Apr. 18	1251	352	21	1164
Tenant, Hanson P., assignor to Gaar, Scott & Company, Richmond, Ind. Grain-drill	256,764	Apr. 18	1253	{352 353}	21	1164
Tennent, John C., Glyndon, Md. Transplanter	258,403	Jan. 17	881	245	21	102
Terrell, Diogenes B., Wytheville, Va. Pole and shaft for vehicles	256,988	Apr. 25	1458	407	21	1289
Terry, Edward C., Hartford, Conn. Rotary water-meter	256,489	Apr. 11	895	248	21	1087
Terry, Le Grand, Dundee, N. Y. Door-hanger	256,989	Apr. 25	1458	408	21	1289
Terry, Robert E., Bay Minette, Ala. Timber-raft	255,048	Mar. 14	767	208	21	777
Terry, Samuel H., Guthrie, Mo. Car-brake	258,958	June 6	107	28	21	1713
Terstegen, Fred, Elizabeth, N. J. Eyeglass-frame	254,670	Feb. 21	1082	298	21	549
Terwilliger, Lyell T., Mohrsee, Mass. Heating apparatus	252,084	Jan. 10	474	131	21	89
Testman, Johan C., Wisner, Nebr. Hay-stacker	256,944	June 6	453	130	21	1772
Teter, William L., Philadelphia, Pa. Toy hoop-stick	257,785	May 9	795	228	21	1409
Tetley, William, Penn, Ill., assignor, by mesne assignments, to E. F. Underhill, New York, N. Y. Folding seat and table. (Reissue)	10,065	Mar. 21	1218	335	21	982
Tewksbury, George C., Lynn, Mass. Elevator	255,049	Mar. 14	767	208	21	777
Tewksbury, George C., Lynn, Mass. Elevator-stop	255,050	Mar. 14	769	209	21	778
Tewksbury, George C., Lynn, Mass. Elevator	255,051	Mar. 14	770	207	21	778
Tewksbury, George C., East Orange, N. J. Elevator	260,254	June 27	1741	470	21	2010
Textile Manufacturing Company. (See Avery, Dexter, assignor.)						
Thames, Jesse W., and R. I. Riley, Greenville, Ala. Cotton-gin attachment	256,735	Mar. 7	335	69	21	685
Thayer, Ellis, Pawtucket, R. I. Polishing-wheel	260,324	June 27	1838	497	21	2026
Thayer, Hiram H., and G. W. Hayes, New York, N. Y. Necktie	257,105	Apr. 25	1653	463	21	1902
Thayer, Maria W. (See Smith, Daniel S., assignor.)						
Thayer, Mary B. (See Widstrand, Charles T., assignor.)						
Theakston, John C., Salem, Ohio. Shifting seat for vehicles	253,238	Feb. 7	68	21	21	358
Thibault, Magloire, assignor of one-half to M. Bélanger and J. Sweetland, Ottawa, Ontario, Canada. Rail-joint fastening	256,812	Apr. 18	1310	360	21	1195
Thierry, James, Detroit, Mich. Mold for casting car-wheels	256,410	Apr. 11	696	225	21	1097
Thillen, Anthony, Perry, N. Y. Check-loop	259,944	June 20	1334	350	21	1930
Thissell, Earl A., Lowell, Mass. Recording-gage	253,786	Feb. 14	734	210	21	482
Thomas, A. A., *et al.* (See Curtis, Thomas, assignor.)						
Thomas, Cal, Terre Haute, Ind. Screw-driver	258,403	May 23	1464	416	21	1566
Thomas, Carroll, Lincoln, Ill. Bevel and try square	256,065	Jan. 10	476	132	21	90
Thomas, Charles, W. J. Fuller, and S. A. King, Bristol, England. Recovery of glycerine from soap-lyes	252,155	Jan. 10	582	.....	21	167
Thomas, Charles E., and J. F. Worrall, Woonsocket, R. I. Yarn-separator for spinning-machines	256,174	Apr. 11	587	146	21	1045
Thomas, Charles L., Janesville, Wis. Vehicle-spring	256,823	May 30	2056	581	21	1678
Thomas, Eddy T., New York, N. Y. Numbering sewing-machine castings	251,745	Jan. 3	70	20	21	14
Thomas, Eddy T., New York, N. Y., assignor to Gold Medal Sewing Machine Company, Orange, Mass. Cenler for sewing-machines	255,125	Mar. 21	830	230	21	691
Thomas, Enos M., assignor of one-fifth to A. H. Low, Duke Centre, Pa. Steam-actuated valve	256,515	Apr. 18	971	272	21	1135
Thomas, Georg, Mayence, Germany. Railway rolling stock	258,504	May 23	1666	{472 473}	21	1691
Thomas, George G., Philadelphia, Pa. Parlor-heating stove	256,411	Apr. 11	697	226	21	1098
Thomas, George W., Pusellor Home Place, La. Portable railway	257,410	May 2	320	91	21	1338
Thomas, Hugh, New York, N. Y. Planer-chuck	259,945	June 20	1335	350	21	1940
Thomas, James, Laramie City, Wyo. Ter. Rolling-mill	258,911	Jan. 31	1486	417	21	978
Thomas, James, Newark, N. J. Paint-pail	255,696	Mar. 28	1573	493	21	931
Thomas, James, Newark, N. J. Compound teal for painters' use	259,945	June 6	454	130	21	1772
Thomas, John, *et al.* (See Moore, Henry E., assignor.)						
Thomas, John, Cedar Rapids, Iowa. Trace-buckle	256,075	Apr. 4	304	107	21	1016
Thomas, John F., Ilion, N. Y. Machine for trimming hems and seams of sewed fabrics, &c	255,899	Apr. 4	168	47	21	980
Thomas, John J., Zanesville, Ohio. Machinery for rolling rectangular bars from old rails	253,787	Feb. 14	735	210	21	483
Thomas, Joseph, Hoboken, N. J. Sewing-machine for quilting	257,786	May 9	795	{228 229}	21	1409
Thomas, Joseph W., and A. R. Ludlow, assignors to Thomas, Ludlow & Rodgers, Springfield, Ohio. Seeding-machine and cultivator	256,894	May 30	2059	581	21	1678
Thomas, Ludlow & Rodgers. (See Thomas and Ludlow, assignors.)						
Thomas, Massey, Jr., Gilroy, Cal. Feeder for thrashing-machines	254,177	Feb. 28	1216	330	21	877
Thomas, Merton, Hiaroda, N. Y. Coffee-pot	255,807	Mar. 28	1574	494	21	931
Thomas, Nicholas, assignor of one-half to A. Burton, Chicago, Ill. Stay-bolt cutter	253,788	Feb. 14	736	{210 211}	21	483
Thomas, Parliamer M. (See Dolson, John L., assignor.)						
Thomas, Robert M. (See Payne, Foust, and Thomas.)						
Thomas, Sidney G., 3 Queens Road Villas, county of Surrey, England. Basic process of treating iron in the manufacture of Bessemer steel	253,130	Jan. 31	1773	.....	21	384
Thomas, Thomas C. J. (See Shallis and Thomas.)						
Thomas, Thomas C. J., 54, 55, and 56 Minories, county of Middlesex, England. Lamp	256,830	Apr. 25	1453	408	21	1286
Thomas, William H. (See Johnson and Dé Souchet, assignors.)						
Thomas, William H., *et al.* (See Dolan, John M., assignor.)						
Thomas, William M., assignor of one-half to S. W. Skinner, Cincinnati, Ohio. Electric lamp	253,322	Feb. 7	164	47	21	374
Thomas, Winfield S., East Dixfield, Me. Ladder	257,411	May 2	321	91	21	1338
Thomason, William W. (See Goewey, George, assignor.)						
Thompson, Benjamin, and C. Selden, Toledo, Ohio. Telegraphic apparatus	253,257	Feb. 21	852	254	21	554
Thompson, Benjamin, and C. Selden, Toledo, Ohio. Multiple-telegraph	256,698	Mar. 28	1575	494	21	931
Thompson, Benjamin, and C. Selden, Toledo, Ohio. Duplex telegraph	256,257	June 6	109	29	21	1713
Thompson, Benjamin, and C. Selden, Toledo, Ohio. Duplex telegraph	256,153	May 16	1238	349	21	1518
Thompson, Charles H., Claremont, N. H. Seeding-machine and fertilizer-distributer						
Thompson, Charles O., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass. Drawing wire	258,816	Jan. 24	1377	.....	21	251
Thompson, Charles S., Philadelphia, Pa., assignor to Yale Lock Manufacturing Company, Stamford, Conn. Post-office box	252,201	Jan. 10	758	211	21	135
Thompson, Charles W. (See Slaughter, Alanson, assignor.) (Reissue.)						
Thompson, Edward, Hobah, Miss. Grain-drier	259,436	June 13	897	165	21	1823
Thompson, Eleazer, Danbury, Conn. Pedicycle	256,785	Apr. 18	1254	353	21	1184
Thompson, Francis M., McKinney, Tex. Cotton-stalk cutter	254,498	Feb. 28	1469	405	21	623
Thompson, Frederick, deceased, (G. March and S. Bruce, executors,) and W. H. Williamson, Wakefield, county of York, England; said March and Bruce, executors, assignors to said Williamson. Machinery for dressing and sifting flour, &c	252,526	Jan. 10	755	{209 210}	21	135

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Thompson, Harrison A., *et al.* (See Agnew, Thomas J., assignor.)						
Thompson, Harry. (See Pohlman and Thompson.)						
Thompson, Herbert W. (See Robinson and Thompson.)						
Thompson, Hugh M., St. Louis, Mo. Amalgamator	255,909	Mar. 21	971	260	21	819
Thompson, John, Bucyrus, Ohio. Car-brake	259,060	June 6	238	63	21	1734
Thompson, John, Bucyrus, Ohio. Collar for car-axles	259,437	June 13	698	185	21	1823
Thompson, John A., and E. Wells, Pittsburg, Pa. Bed-bottom frame	256,613	May 30	1810	511	21	1635
Thompson, John S., Brooklyn, N. Y. Blind-slat holder	255,699	Mar. 28	1579	494	21	938
Thompson, John S., Greenville, S. C., assignor to M. M. Johnston, New York, N. Y. Dentist's chair	253,640	Feb. 14	543	156	21	449
Thompson, Perley & Waite. (See Stevens, Asher B., assignor.)						
Thompson, Redden. (See Gardner, Jesse T., assignor.)						
Thompson, Robert, San Francisco, Cal. Boot	254,071	Feb. 21	1094	309	21	548
Thompson, Robert H., Brooklyn, N. Y. Machinery for manufacturing packing and lining fabrics	252,547	Jan. 17	1055	293	21	191
Thompson, Robert M. (See Nicholson, Charles, assignor.)						
Thompson, Salmon, and W. E. Farrell, Masonville, Iowa. Machine for making barbed-wire fencing	254,516	Mar. 7	83	21	21	672
Thompson, Samuel G., Santa Rosa, Cal. Two-wheeled vehicle	257,254	May 2	128	36	21	1303
Thompson, Sidney C. (See Kennish, William, assignor.)						
Thompson, Thomas C., Baldwin, Wis. Wagon-reach coupling	259,731	June 20	1087	289	21	1898
Thompson, Uldric, Cutchogue, assignor of one-half to A. S. Doane and T. H. Rhodes, Brooklyn, N. Y. Electric alarm for hydrants and water-mains	256,516	Apr. 18	972	{272 273}	21	1135
Thompson, Walter C., Williamsburg, N. Y. Show-box	259,438	June 13	699	185	21	1823
Thompson, William C. (See Wellman, Willard F., assignor.)						
Thompson, William R. (See Beasley, Maria E., assignor.)						
Thompson, Wilson, Belleville, Kans. Weather-strip	253,561	Feb. 14	456	130	21	435
Thomson, Alexander, Ames, Iowa. Wind-engine	252,012	Jan. 31	1497	417	21	278
Thomson, Alexander, Ames, Iowa. Direct-acting engine	252,913	Jan. 31	1498	418	21	279
Thomson, Elihu, assignor to American Electric Company, New Britain, Conn. Electric lamp	253,956	Feb. 21	954	265	21	525
Thomson, Elihu, assignor to American Electric Company, New Britain, Conn. System of electrical distribution	255,894	Apr. 4	85	23, 24	21	965
Thomson, Elihu, assignor to American Electric Company, New Britain, Conn. Electric lamp	256,605	Apr. 18	1065	301	21	1150
Thomson, Elihu, assignor to American Electric Company, New Britain, Conn. Electric-arc lamp	258,684	May 30	1905	538	21	1651
Thomson, John, Brooklyn, N. Y. Bench-vise	255,700	Mar. 28	1580	424	21	939
Thomson, John, Brooklyn, N. Y. Wrench	256,867	Apr. 25	1379	388	21	1214
Thomson, John, Brooklyn, N. Y. Bench-vise	259,603	June 13	905	241	21	1860
Thomson, Judson L. (See Grannis and Thomson.)						
Thomson, Judson L., Syracuse, N. Y. Riding-spur	256,606	Apr. 18	1069	301	21	1151
Thomson, Judson L., Syracuse, N. Y. Pantaloon-protector	258,154	May 16	1240	349	21	1518
Thomson, Judson L., Syracuse, N. Y. Toe-piece for the heels of rubber shoes	259,781	June 20	1150	305	21	1908
Thomson, Judson L., Syracuse, N. Y., assignor of one-half to S. S. Hartwell, Wantage, N. J. Revolving heel-plate	256,076	Apr. 4	395	107	21	1016
Thomson, Judson L., Syracuse, N. Y., assignor of one-half to S. S. Hartwell, Wantage, N. J. Manufacture of soles, tape, and heels for boots and shoes	256,077	Apr. 4	395	107	21	1017
Thomson, Judson L., Syracuse, N. Y., assignor of one-half to C. V. Kasson, Detroit, Mich. Pantaloon-protector	258,155	May 16	1240	349	21	1518
Thorn, Henry A. A., London, England. Gun-lock	250,946	June 20	1336	359	21	1940
Thornberry, Harry S., Winona, Minn. Telephone	255,354	Mar. 21	1152	308	21	851
Thornton, Alonzo L., Dover, Iowa. Hay binder, unloader, and stacker	257,534	May 9	479	133	21	1373
Thornton, Benjamin, *et al.* (See Hershey, Benjamin, assignor.)						
Thornton, Benjamin F., *et al.* (See Hershey, Benjamin, assignor.)						
Thornton, Stephen H., Baltimore, Md. Elevator	256,517	Apr. 18	974	273	21	1136
Thoron, Casimir, *et al.* (See Tyler, Charles D., assignor.)						
Thorpe, Elbert E., *et al.*, administrators. (See Wait, Oscar E., assignor.)						
Thorpe, James M., assignor of one-half to J. A. Belloli, San José, Cal. Cushion-protector for bottles	255,900	Apr. 4	183	48	21	981
Thorpe, James S., Waterbury, Conn. Piano-tuning-pin lock	259,604	June 13	907	241	21	1860
Thresher, Edward E., Reed City, Mich. Musical chart	253,562	Feb. 14	457	130	21	435
Throckmorton, William F., Adair, Ill. Hedge-trimmer	260,255	June 27	1742	470	21	2010
Throne, Franklin W. (See Bowman and Throne.)						
Throp, John A., Three Rivers, Mich. Pump-piston	252,066	Jan. 10	477	132	21	90
Thurber, Milton R., assignor of one-half to J. E. Carmolt, Scranton, Pa. Car-coupling	255,701	Mar. 28	1582	425	21	932
Thurman, Robert W., Lynchburg, Va. Removable permutation-lock	252,336	Jan. 17	796	223	21	148
Thurman, Robert W., Lynchburg, Va. Removable permutation-lock	257,696	May 9	611	171	21	1394
Thurston, Joseph M. (See Autenrieth and Thurston.)						
Thurston, Robert H., Hoboken, N. J. Centrifugal blower	257,412	May 2	322	91	21	1339
Thury, René, Geneva, Switzerland. Regulator for dynamo-electric machines	260,156	June 27	1508	431	21	1988
Tibbits, John B. (See Ball, Clinton M., assignor.)						
Tice, R. Stockton, assignor of one-half to G. Richman, Camden, N. J. Compressed air-motor	254,072	Feb. 21	1094	303	21	549
Tiernan, John B. (See Moulton, Eri S., assignor.)						
Tierney, Dennis H., Waterbury, Conn. Corset-clasp	257,106	Apr. 25	1654	463	21	1962
Tiffany, George S., London, Canada. Drain-tile machine	258,614	May 30	1811	511	21	1635
Tiffany, Henry B., Clyde, Ohio. Filter-stand	254,726	Mar. 7	336	89	21	695
Tiffany, Joel, Hinsdale, Ill. Apparatus for cooling and heating	258,505	May 23	1670	473	21	1602
Tiffany, Louis C., Morristown, N. J. Colored-glass window	254,409	Feb. 28	1480	405	21	622
Tiffany, Louis C., New York, N. Y. Illuminated tile	255,210	Mar. 21	973	260	21	819
Tiffin, John E., assignor of one-half to W. A. Smith, Redding, Cal. Combined mop-holder and scraper	253,131	Jan. 31	1774	492	21	304
Tilden, James A., Hyde Park, assignor of one-half to F. C. Hersey, South Boston, Mass. Piston water-meter	251,971	Jan. 3	344	93	21	59
Tilghman, Benjamin C., and J. E. Mathewson, Philadelphia, Pa.; said Mathewson assignor to said Tilghman. Sharpening files and other similarly-toothed tools	252,979	Jan. 31	1576	439	21	892
Tilghman, William S., Worcester County, Md. Fodder-holder	256,931	Apr. 25	1454	408	21	1226
Tilhet, Maurice, Paris, France. Reproducing drawings and designs	251,746	Jan. 3	71	.....	21	14
Till, Charles G. (See Randall, Henry R., assignor.)						
Till, Charles G., *et al.* (See Taylor, Charles, assignor.)						
Tillery, Herbert C., Fort Deposit, Ala. Cotton-planter	252,543	Jan. 17	1049	292	21	190
Tillinghast, James W., *et al.* (See Larish, Joseph W., assignor.)						
Timby, Theodore F., Alma, Mich. Wash-boiler	256,766	Apr. 18	1254	353	21	1184
Timby, Theodore F., Alma, Mich. Nut-lock	256,767	Apr. 18	1256	354	21	1185

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Timken, Henry, St. Louis, Mo. Vehicle-spring	255,211	Mar. 21	973	260	21	820
Timmerman, John A., Odessa, Ontario, Canada. Circuit-closer for telegraph-keys	258,825	May 30	2062	562	21	1670
Tingry, Célestin G., and G. A. Siffait, Portland, Oreg. Safety-lamp	255,052	Mar. 14	778	207	21	778
Tinkham, Alden R., *et al.* (See Mitchell, James C., assignor.)						
Tinkham, Francis M., Springfield, Mass. Window-shade exhibitor	256,412	Apr. 11	898	230	21	1008
Tinkham, Walter I., Taunton, Mass. Mechanism for supporting and lubricating the spindles of ring-spinning frames	253,230	Feb. 7	60	21	21	358
Tipton, Nelson F., Colony, Kans. Packing-box for fruit-jars, &c	252,544	Jan. 17	1050	293	21	190
Tipton, Nelson F., Colony, Kans. Egg-carrier	254,517	Mar. 7	85	23	21	653
Tischer, Gustav, Wilmington, Del. Skid	255,126	Mar. 21	850	{230 231}	21	801
Tisdale, Charles D., Boston, Mass., assignor to American Railway Signal Company, Portland, Me. Electric railway-signal	258,545	Jan. 17	1650	392	21	190
Titcomb, Benaiah, Baltimore, Md. Solar camera	253,950	Feb. 21	957	265	21	525
Titus, John C., Marion, Ohio. Drill-holding device	256,078	Apr. 4	396	108	21	1017
Tobey Furniture Company. (See Olson, Canute, assignor.)						
Tobey, Henry A., Dayton, Ohio. Air-flue register	257,107	Apr. 25	1656	464	21	1962
Tobey, Orville E. (See Raymond, George and A., assignors.)						
Tobin, Joseph F., *et al.* (See Anstin, Adrian H., assignor.)						
Todd, Jefferson D., Williams, Cal. Grater	259,605	June 13	908	242	21	1860
Todd, Louis H. (See Munson, Albert L., assignor.)						
Toepfer, Wenzel, Milwaukee, Wis. Grain-distributer for malt-kilns	253,960	Feb. 21	958	266	21	525
Toledo Mower and Reaper Company. (See Davis, John S., assignor.)						
Tolles, Elijah. (See Woodward, William C., assignor.)						
Tomlinson, Edwin R., Stratford, assignor to himself and E. G. Burnham, Bridgeport, Conn. Valve	259,991	June 20	1415	361	21	1953
Toulinson, Walter M., *et al.* (See Heffernan, William J., assignor.)						
Tompkins, Charles R., Rochester, N. Y. Turbine water-wheel	259,947	June 20	1338	360	21	1940
Tompkins, Rhinelander C., New York, assignor of one-half to A. Spring, White Plains, N. Y. Hog-scraping machine	255,398	Mar. 21	1209	324	21	881
Tondeur, Cleon, Ithaca, N. Y. Glass-annealing furnace	256,156	May 16	1241	350	21	1519
Tongue, Thomas S., Birmingham, county of Warwick, England. Driving mechanism for sewing and other machines	253,940	Feb. 7	70	22	21	358
Tonk, Max, and G. H. Howe, Chicago, Ill.; said Howe assignor to said Tonk. Chair-back	252,980	Jan. 31	1579	439	21	302
Tonkin, John J., assignor to Chicago Sugar Refining Company, Chicago, Ill. Stirrer for starch-settling tanks	258,985	May 23	1395	395	21	1554
Tonks, Edmund, *et al.* (See Skerrett, Henry, assignor.)						
Tonks, Joseph, Malden, Mass. Breech-loading fire-arm	254,727	Mar. 7	337	89	21	696
Tonks, Joseph, Malden, Mass. Breech-loading fire-arm	254,728	Mar. 7	338	89, 90	21	696
Tonks, William H., *et al.* (See Skerrett, Henry, assignor.)						
Toothaker, William F., San Francisco, Cal. Pneumatic counter-balance for pump-rods of deep-well pumps	258,858	June 6	110	29	21	1713
Toppel, Peter, Jersey City, assignor to R. Foulds, Passaic, N. J. Fog-horn	259,762	June 20	1151	305	21	1908
Topping, Charles E., Socorro, N. Mex. Ter. Amalgamator	260,256	June 27	1742	471	21	2010
Torras, Rosendo, Brunswick, Ga. Pendulum-scales	256,768	Apr. 18	1257	354	21	1185
Torre, Frank D., Baltimore, Md. Bee-hive	256,932	Apr. 25	1455	409	21	1227
Torrence, John D., Vermilionville, La. Hub	254,729	Mar. 7	341	90	21	696
Torrey Automatic Brake Company. (See Guernsey, William B., assignor.)						
Torrey Automatic Brake Company. (See Guernsey and Turner, assignors.)						
Torrey, Delphus, New York, N. Y. Automatic car-brake	258,615	May 30	1812	512	21	1635
Torrey, Joseph R., Worcester, Mass. Double razor-strop	258,959	June 6	111	29	21	1714
Toncey, Donald F. (See Canney and Toncey.)						
Toulmin, Morton, assignor of one-half to J. Sherman, Washington, D. C. Dividers	257,413	May 2	323	91	21	1339
Tournoux, Auguste, and F. Schmals, New York, N. Y.; said Schmals assignor of one-half to J. Dean, Trenton, N. J. Producing indelible photographs on porcelain	260,065	June 27	1506	.....	21	1974
Tourville, Louis H., assignor of one-third to N. Paquette, Chicago, Ill. Car-axle box	258,948	June 20	1340	360	21	1940
Tower, Abner J. (See Waterman, Edgar D., assignor.)						
Tower, Alfred O., Lincoln, Mass. Rotary study-table or book-case	255,127	Mar. 21	860	231	21	801
Tower, George B. N. (See Renshaw and Tower.)						
Tower, George B. N., Boston, assignor to D. Renshaw, Cohasset, and H. T. Litchfield, Hull, Mass. Marine boiler	251,747	Jan. 3	72	20	21	14
Tower, George B. N., New York, N. Y., assignor of one-half to E. L. Lamble, Washington, D. C. Steam-pump	256,157	May 16	1243	350	21	1519
Tower, George B. N., New York, N. Y., assignor of one-half to E. L. Lamble, Washington, D. C. Snap-hook	256,158	May 16	1244	350	21	1519
Tower, George B. N., Boston, assignor to D. and L. F. Renshaw, Cohasset; said D. Renshaw assignor to H. T. Litchfield, Hull, Mass. Feeding air to furnaces	257,905	May 16	944	263	21	1464
Tower, Hermon C. and J. N., Hudson, Mass. Rotary peg-cutter	252,317	Jan. 17	799	223	21	149
Tower, John N. (See Tower, Hermon C. and J. N.)						
Towne, Henry R., assignor to Yale Lock Manufacturing Company, Stamford, Conn. Knob attachment	253,132	Jan. 31	1774	493	21	324
Towne, Henry R., assignor to Yale Lock Manufacturing Company, Stamford, Conn. Knob attachment	253,769	Feb. 14	737	211	21	483
Towner, Jay F. (See Landstreet and Towner.)						
Townsend, Gilbert, 2d, Lodi, N. Y. Metallic joining for boxes, mica lamp-chimneys, &c	259,606	June 13	909	242	21	1860
Townsend, Harvey, Alameda, Cal. Cattle-car	254,346	Feb. 28	1301	360	21	501
Townsend, Henry C., *et al.* (See Aldrich, Harvey C., assignor.)						
Townsend, John D. (See Gore, Charles L., assignor.)						
Townsend, Milton B. (See Mitchell and Dame, assignors.)						
Townsend, Thomas C., New York, N. Y. Blotter	252,546	Jan. 17	1055	293	21	191
Trabue, William, Louisville, Ky. Magazine fire-arm	251,641	Feb. 14	544	156	21	449
Trabue, William, Louisville, Ky. Magazine fire-arm	256,175	Apr. 11	898	146	21	1045
Trabue, William, Louisville, Ky. Motor for sewing-machines	260,066	June 27	1507	405	21	1974
Trackwell, James M., Skookumchuck, Wash. Ter. Shackle	256,079	Apr. 4	397	108	21	1017
Tracy, Arza C., Lone Rock, Wis. Milking-pail	255,702	Mar. 28	1583	425	21	933
Tracy, Frank B. (See Flynt, Chester D., assignor.)						
Tracy, George S. (See Galt and Tracy.)						
Tracy, Harriet R., assignor to B. T. Babbitt, New York, N. Y. Automatic elevator-latch	253,393	Feb. 7	166	47	21	374
Tracy, Thomas, and C. E. Hart, New Britain, Conn. Skate	258,685	May 30	1907	538	21	1651
Tracy, William H. H., and G. E. Stillman, assignors of one-third to J. L. Young, Troy, N. Y. Machine for tarning and pressing woven fabrics	251,972	Jan. 3	346	93, 94	21	60
Trageser, John, New York, N. Y. Connecting spuds to boilers. (Reissue)	10,022	Jan. 31	1849	509	21	333
Train, Horatio C., Kansas City, Mo. Amalgamator	258,330	May 23	1465	{416 417}	21	1566

Alphabetical list of patentees, January to June, inclusive—Continued.

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Trainer, John W., Fort Wayne, Ind. Organ-bellows	252,338	Jan. 17	800	223	21	149
Trammell, John W., and A. H. Slaughter, Opelika, Ala. Spark-arrester	254,730	Mar. 7	342	90	21	696
Trapp, Charles, assignor to H. W. Lyman and J. W. Vail, Port Washington, Wis. Wrench for bung-bushes	257,414	May 2	325	92	21	1339
	252,339	Jan. 17	802	223	21	149
Trask, Charles H., Lynn, Mass. Mechanical movement	254,410	Feb. 28	1481	406	21	622
Travis, Charles L., Minneapolis, Minn., assignor of one-half to M. Tabor, Aurora, Ill. Carpet-sweeper	260,257	June 27	1743	471	21	2011
Travis, Charles L., assignor to Minneapolis Grain Binder Company, Minneapolis, Minn. Carpet-sweeper	257,108	Apr. 25	1657	.....	21	1263
Traylor, David, *et al.* (See Decker, William, assignor.)						
Trefethen, Romanzo. (See Shea and Trefethen.)	255,703	Mar. 28	1584	425	21	933
Trefry, David F., assignor to S. E. Trefry, Chicago, Ill. Lamp-stove						
Trefry, Sarah E. (See Trefry, David F., assignor.)	253,324	Feb. 7	468	47	21	375
Tregoning, John, assignor to United States Electric Lighting Company, New York, N. Y. Carbon-holder for electric lamps	255,212	Mar. 21	974	260 / 261	21	880
Tregoning, John, Philadelphia, Pa., and L. H. Latimer, assignors to United States Electric Lighting Company, New York, N. Y. Globe-supporter for electric lamps	256,413	Apr. 11	889	230	21	1008
Tregurtha, James, Boston, assignor to W. C. Demain, Jr., Medford, Mass. Plate-printing press	252,548	Jan. 17	1057	293	21	191
Trenkamp, Henry. (See Schneider and Trenkamp.)						
Trenton Iron Company. (See Hewitt, William, assignor.)						
Trested, Richard H., Greenville, N. J. Head-covering	253,448	Feb. 7	315	88	21	399
Trested, Richard H., Greenville, N. J. Head-covering	257,787	May 9	797	223	21	1499
Trewby, George C., and H. W. Fenner, Beckton, county of Essex, England. Distillation of coal-tar	252,961	Jan. 31	1580	440	21	292
	260,258	June 27	1745	471	21	2011
Trickel, Joseph, Reading, Pa. Lemon-squeezer						
Trickey, Charles W., Belmont, Mass. Composition for cleaning and protecting metal surfaces	257,535	May 9	480	.....	21	1373
Trier, Frank H. J. (See Brunton and Trier.)						
Trigge, Hester C. (See Trigge, John, assignor.)						
Trigge, John, assignor to H. C. Trigge, New York, N. Y. Drop-light chandelier	252,709	Jan. 24	1231	345	21	298
Triplett, Reuben T., New York, N. Y. Manufacturing celluloid clock-cases	255,355	Mar. 21	1152	309	21	851
Tripp, Henry A. and W., East Williamson, N. Y. Fruit and vegetable parer	259,342	June 13	580	154	21	1892
Tripp, James, and J. H. Osborn, Cleveland, Ohio. Sewing-machine shuttle	259,439	June 13	700	186	21	1894
Tripp, James, and J. H. Osborn, Cleveland, Ohio, assignors of one-third to S. E. Henderson, Kansas City, Mo. Sewing-machine	259,738	June 20	1068	289 / 290	21	1898
Tripp, Walter. (See Tripp, Henry A. and W.)						
Trollope, Albert, Detroit, Mich. Center for cooking-stoves	255,825	Apr. 4	88	24	21	965
Trombly, Edward C., Plattsburg, N. Y. Machine for bending wagon-tires	259,607	June 13	910	242	21	1861
Tronc, Stephen, Avoca, Ill. Manufacture of artificial stone	254,947	Feb. 28	1309	.....	21	591
Troup, William L., and J. A. C. Germer, Harrisburg, Pa. Car-axle box	257,109	Apr. 25	1658	464	21	1363
Trout, H. C. (See Treple, William, assignor.)						
Trout, Horace L., Troutsville, Va. Boiler-flue	254,731	Mar. 7	343	90	21	697
Truax, Sewall, Walla Walla, Wash. Ter. Grain-cleaner	256,769	Apr. 18	1258	354	21	1185
Truby, Michael, Elkhart, Ind. Alarm and door bell	255,356	Mar. 21	1155	309	21	851
Trudell, Harry. (See Welsh and Trudell.)						
Trueman, Henry P., and J. G. New, Birmingham, county of Warwick, England. Printing-press	255,704	Mar. 28	1585	426	21	933
Truesdale, William H. (See Harris, Milo, assignor.)						
Trumble, Henry E., Kalamazoo, and F. A. Ketchum, Three Rivers, assignors of one-third to F. Hotop, Kalamazoo, Mich. Extension-guard for reapers	256,933	Apr. 25	1456	409	21	1227
	256,886	May 30	2002	562	21	1679
Trumble, Walter N., Greenwood, Nebr. Windmill						
Trumbull, Frank H., assignor of eight-twelfths to L. R. Potter, L. Smith, and S. Trumbull, Marion, N. Y. Fruit-slicing machine	259,949	June 20	1341	360	21	1941
Trumbull, Stephen, *et al.* (See Trumbull, Frank H., assignor.)						
Trump, Charles N. (See Trump and Frederick.)						
Trump, Edward N., S. N., and C. N., and C. Frederick, Wilmington, Del. Sand-blast file-sharpening apparatus	258,506	May 23	1671	473	21	1602
Trump, Samuel N. (See Trump and Frederick.)						
Tschop, Albert. (See Dunkel and Tschop.)						
Tschiarber, Frank, Cincinnati, Ohio. Glass sign	259,733	June 20	1091	290	21	1899
Tucker, Alexander E., Rhymney Iron Works, South Wales. Composition for refractory furnace linings and bottoms	256,607	Apr. 18	1069	.....	21	1151
Tucker, Charles N., Great Falls, assignor to himself and F. Demars, Somersworth, N. H. Loom-shuttle	251,973	Jan. 3	349	94	21	60
Tucker, Eugene A. (See Parr, John, assignor.)						
Tucker, George W., assignor to C. S. Brown, Milwaukee, Wis. Insecticide	258,507	May 23	1672	.....	21	1602
Tucker, Henry. (See Meyer, Thomas, assignor.)						
Tucker, Rollin D., and J. H. Anthôine, Boston, assignors to S. C. Fay, Southborough, Mass. Welting boots and shoes	255,474	Mar. 28	1308	352	21	883
Tucker, Stephen D., New York, N. Y. Sheet-delivery apparatus for printing-machines	253,325	Feb. 7	169	48, 49	21	375
Tucker, Thomas B., Star, Ind. Former for plaster-molding	251,974	Jan. 3	350	94	21	60
Tucker, Thomas V., Henderson, Iowa. Car-coupling	259,946	June 6	455	120	21	1773
Tucker, William W (See Burbidge, Charles H., Jr., assignor.)						
Tuerkisch, Gustavus, East St. Louis, Ill. Car-coupling	255,813	Mar. 21	975	261	21	880
Tuers, Constantine T., Dauphine, Mo. Stave-jointing machine	258,549	Jan. 17	1056	294	21	192
Tufts, Cyrus. (See Eaton and Tufts.)						
Tufts, James W. (See Bate, Wallace H., assignor.)						
Tufts, William H., Washington, D. C. Carriage-button	259,156	Jan. 10	583	164	21	107
Tully, Richard W., *et al.* (See Brewer and Waterhouse, assignors.)						
Tumey, Charles H., Austin, Tex. Caster	260,259	June 27	1746	472	21	2011
Tunbridge, John, Newark, N. J. Apparatus for and process of oxidising lead bullion containing precious metals	252,817	Jan. 24	1377	384	21	251
Tuomichi, John C., Galesburg, Ill. Cutter-head for wood-working machines	254,732	Mar. 7	344	91	21	697
Tunstill, William, New York, N. Y. Cooling and refrigerating butter, &c.	259,783	June 20	1151	305 / 306	21	1908
Tupper, William H., St. Johns, assignor of one-half to L. A. Lawrason, Fowler, Mich. Gate	254,073	Feb. 21	1095	303	21	549
Türk, Carl M., assignor to P. M. Herfurth, Chemnitz, Saxony, Germany. Invalid-bed	256,176	Apr. 11	890	146 / 147	21	1046
Turk, Louis. (See Downes and Turk.)						
Turley, James M., Onion Creek, Tex. Cotton and corn planter	252,818	Jan. 24	1273	385	21	251

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Turnbull, Andrew, assignor of one-half to J. A. Swanston, New Britain, Conn. Toy cannon	259,157	Jan. 10	584	164	21	107
Turnbull, David B., Defiance, Ohio. Wagon-bolster	260,127	June 27	1599	431	21	1969
Turnbull, David B., Defiance, Ohio. Rub-iron for wagons	260,128	June 27	1600	431	21	1969
Turnbull, David B., Defiance, Ohio. Axle-skein	260,129	June 27	1601	432	21	1969
Turnbull, William F., Hampton, Va. Metallic skipping-hoop	250,440	June 13	701	186	21	1824
Turner, Alexander E. (See Green and Turner.)						
Turner, Christiana V., Nicola Valley, British Columbia, Canada, assignor of one-half to D. K. McMullen, San Francisco, Cal. Clasp for corset-stiffeners	253,642	Feb. 14	545	156	21	449
Turner, Cora L. (See Turner, Samuel, assignor.)						
Turner, George P., Meadville, Mo. Foot-scraper	259,734	June 20	1088	290	21	1899
Turner, H. Joslin, New York, N. Y. Remedy for coughs, &c	260,140	June 27	1601	.....	21	1969
Turner, Isaac P., assignor to A. C. Fellows, Troy, N. Y. Cuff	252,277	Jan. 10	736	204	21	131
Turner, Isaac P., assignor to Holmes & Ide, Troy, N. Y. Cuff-box	252,340	Jan. 17	802	224	21	149
Turner, Isaac P., assignor to Marshall & Briggs, Troy, N. Y. Cuff	252,341	Jan. 17	803	224	21	149
Turner, Isaac P., assignor to Coon & Co., Troy, N. Y. Cuff	255,214	Mar. 21	978	281 / 282	21	880
Turner, James, Culpeper, Va. Corn-planter	251,975	Jan. 3	350	94	21	60
Turner, James P. (See Hancock, Milton T., assignor.)						
Turner, John H., Fort Wayne, Ind. Feed-water heater	255,475	Mar. 28	1309	352	21	883
Turner, Robert. (See Eberhard and Turner.) (Reissue.)						
Turner, Samuel, assignor of one-half to C. L. Turner, Cincinnati, Ohio. Supporting telegraph-wires	253,643	Feb. 14	546	156	21	449
Turner Truck Company. (See Turner, William H., assignor.)						
Turner, William B. (See Guernsey and Turner.)						
Turner, William B., Long Island City, and A. P. Prout, Woodhaven, N. Y.; said Turner assignor to said Prout, Spike-extractor	254,411	Feb. 28	1462	406	21	622
Turner, William H., assignor to Turner Truck Company, Indianapolis, Ind. Truck for moving harvesters	258,616	May 30	1815	512	21	1635
Tuttle, Edward A., New York, N. Y. Waste-pipe trap	257,906	May 16	944	263	21	1465
Tuttle, Joseph W., assignor of three-fourths to P. B. Palmer and W. Proby, Chicago, Ill. Exhibiting-rack	255,215	Mar. 21	980	262	21	880
Tuttle, Richard T., Perry N. Y. Harvester-rake	255,476	Mar. 28	1309	353	21	883
Twambley, George E., Saco, Me. Toe-weight	257,907	May 16	945	263	21	1465
Twiss, George H. (See Ross and Twiss.)						
Twiss, Julius. (See Fritsche, Edward J., assignor.)						
Tyler, Charles D., Jr. (See Creagan and Tyler.)						
Tyler, Charles D., Newark, assignor to himself, C. W. Mills, Pompton, N. J., and C. Thorne, New York, N. Y. Nut-lock	257,788	May 9	798	223	21	1429
	253,449	Feb. 7	315	88	21	399
Tyler, George L., Lynn, Mass. Leather-splitting machine	255,053	Mar. 14	773	207	21	778
Tyler, George R., Palmyra, N. Y. Work-holder						
Tyler, Henry P., North Brookfield, and J. B. Atwood, Three Rivers, assignors of one-half to M. D. Sleeper, Springfield, Mass. Sash-fastener	253,363	Feb. 14	458	131	21	435
Tyler, John, Claremont, N. H. Rag-washing machine for rag and paper washing engines. (Reissue)	10,042	Feb. 21	1128	315	21	555
Tyler Manufacturing Company. (See Tyler and Stone, assignors.)						
Tyler, Merrill A., Rockland, and H. D. Stone, Boston, Mass., assignors to Tyler Manufacturing Company, Portland, Me. Heel-trimming machine	259,819	Jan. 24	1380	385	21	298
Tyler, Walker C., Stockton, Cal. Friction-brake for steering-wheels	253,644	Feb. 14	547	157	21	450
Udell, Calvin G., North Indianapolis, Ind. Step-ladder	254,518	Mar. 7	88	23	21	653
Uebele, Albert, Gmünd, Würtemberg, Germany. Attachment for watch-chains	259,947	June 6	456	120	21	1773
Ullman, Sigmund, New York, N. Y. Machine for perforating checks and drafts	252,560	Jan. 17	1060	294	21	192
Ullrich, Louis A., Chicago, Ill. Apparatus for cooling roasted coffee	255,477	Mar. 28	1310	353	21	883
Ulsmann, Hermann, Königshütte, Prussia, Germany, assignor to E. Cooper, New York, N. Y. Fire-brick and fire-proof lining for furnaces	252,278	Jan. 10	736	.....	21	131
Umstead, Isaac L., Iowa, Cal. Device for cooling tires	257,538	May 9	481	134	21	1373
Underhill, Charles B., Lancaster, N. Y. Car-starter	255,054	Mar. 14	774	207	21	779
Underhill, Edward F. (See Tetley, William, assignor.) (Reissue.)						
Underhill, Elizabeth, *et al.*, administrators. (See Underhill, Gilbert.)						
Underhill, Gilbert, deceased, J. D. Underhill, Hoboken, N. J., and E. Underhill, New Rochelle, N. Y., administrators. Spring-motor	256,159	May 16	1945	351	21	1519
Underhill, John D., *et al.*, administrators. (See Underhill, Gilbert.)						
Union Brass Manufacturing Company. (See Giese, James A., assignor.)						
Union Brass Manufacturing Company. (See Gleason, George R., assignor.)						
Union Electric Manufacturing Company. (See Haskins, Charles D., assignor.)						
Union Electric Manufacturing Company. (See Jones, Francis W., assignor.)						
Union Foundry and Pullman Car Wheel Works. (See McDowell, John, assignor.)						
Union Manufacturing Company. (See St. John, Roswell H., assignor.)						
Union Metallic Cartridge Company. (See Borchardt, Hugo, assignor.)						
Union Metallic Cartridge Company. (See Hobbs, Alfred C., assignor.)						
Union Metallic Cartridge Company. (See Hobbs, Alfred J., assignor.)						
Union Metallic Cartridge Company. (See Hobbs, Boyden, and Richards, assignors.)						
Union Nut Company. (See Graham, Charles H., assignor.)						
Union Paper Bag Machine Company. (See Deering, Mark L., assignor.) (Reissue.)						
Union Paper Bag Machine Company. (See Stilwell, Charles B., assignor.)						
Union Switch and Signal Company. (See Gassett, Oscar, assignor.)						
Union Switch and Signal Company. (See Pope, Frank L., assignor.)						
Union Water Meter Company. (See Fitts, Benaiah, assignor.)						
United States Automatic Gas Machine Company. (See Flower and Burgess, assignors.)						
United States Electric Lighting Company. (See Böhm, Ludwig K., assignor.)						
United States Electric Lighting Company. (See Curtis and Weston, assignors.)						
United States Electric Lighting Company. (See Farmer, Moses G., assignor.)						
United States Electric Lighting Company. (See Jackson, George, assignor.)						
United States Electric Lighting Company. (See Kelly, James E. F., assignor.)						
United States Electric Lighting Company. (See Latimer, Lewis H., assignor.)						
United States Electric Lighting Company. (See Maxim, Hiram S., assignor.)						
United States Electric Lighting Company. (See Nichols, Joseph V., assignor.)						
United States Electric Lighting Company. (See Olmsted, Joseph, assignor.)						
United States Electric Lighting Company. (See Scribner, Edwin A., assignor.)						
United States Electric Lighting Company. (See Tregoning, John, assignor.)						
United States Electric Lighting Company. (See Tregoning and Latimer, assignors.)						
United States Electric Lighting Company. (See Waterhouse, Addison G., assignor.)						
United States Electric Lighting Company. (See Weston, Edward, assignor.)						
United States Electric Lighting Company. (See Weston and Curtis, assignors.)						
United States Stamping Company. (See Vuillier, Aimé, assignor.)						

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
United States Telephone Manufacturing Company. (See Buell and Buel, assignors.)						
United States Telephone Manufacturing Company. (See Buell, Charles E., assignor.)						
United States Telephone Manufacturing Company. (See Coy, George W., assignor.)						
United States Telephone Manufacturing Company. (See Hale, William B., assignor.)						
Universal Beer Keg Company. (See Hayden, Joel B., assignor.) (Reissue.)						
Unzicker, Otto, assignor to A. Shoeninger, Chicago, Ill. Velocipede	257,415	May 2	326	92	21	1339
Updike, Rensselaer, Hector, N. Y. Plow attachment	252,020	Jan. 24	1582	385	21	252
Upham, Andrew J., Sterling, Ill., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass. Barbed fence	255,399	Mar. 21	1211	394	21	661
Upham, Artemas B., Peoria, Ill. Folding reclining-chair	253,899	Feb. 21	876	247	21	513
Upham, Frederick P., G. A. Saunders, and H. A. Sheldon, Pawtucket, assignors of one-half to J. E. Goldsworthy, Central Falls, R. I. Cloth-stretching machine	258,947	June 6	94	24, 25	21	1711
Upham, William H., and C. W. Scovill, Cohoes, N. Y. Belt-shipper	253,900	Feb. 21	877	247	21	513
Upington, James T. (See Upington, John V., assignor.)						
Upington, John V., assignor of one-half to J. T. Upington, Lexington, Ky. Sulky	255,055	Mar. 14	775	208	21	779
Upsher, John A. (See Upsher and Royster.)						
Upsher, Walter S. and J. A., and W. R. Royster, Richmond, Va. Shipping-tag	250,343	June 13	581	154	21	1802
Upton, Albert F. (See Jarvis, Kingsbury M., assignor.)						
Upton, Charles S., *et al.* (See Rorebeck, Henry, assignor.)						
Uren, Richard, Houghton, Mich. Screw-propeller	257,416	May 2	327	92	21	1340
Utley, James S., Pawtucket, R. I. Stop-motion for winding and twisting machines	255,739	Mar. 28	1634	442	21	941
Vail, James W., *et al.* (See Trapp, Charles, assignor.)						
Vail, Theodore N., Boston, Mass. Electrical switch-board	255,056	Mar. 14	776	208	21	779
Vail, Theodore N., Boston, Mass. Electrical switch-board	260,067	June 27	1508	405	21	1974
Valentine, Benjamin E. (See Brower and Wood, assignors.)						
Valentine, Benjamin E. (See Wood and Brower, assignors.)						
Valentine, George R., New Bedford, Mass. Mortising-chisel	254,733	Mar. 7	345	91	21	697
Valentine, Henry C., *et al.* (See Carter, William D., assignor.)						
Valentine, Lawson, *et al.* (See Carter, William D., assignor.)						
Valentine, Richard P., Boston, Mass., assignor of one-half to P. Collamore. Feed-water heater	256,080	Apr. 4	398	108	21	1017
Valloton, Albert F., and H. Leguay, St. Louis, Mo. Steam-engine	258,617	May 30	1816	512, 513	21	1635
Van Allen, Charles A., Chicago, Ill., assignor to R. K. Scott, Napoleon, Ohio. Spring for keeping pitmen off dead-centers	254,248	Feb. 28	1302	360	21	591
Van Brunt, Daniel C., Horicon, Wis. Cultivator	251,976	Jan. 3	351	95	21	60
Van Brunt, Willard A., Horicon, Wis. Cultivator-tooth	252,279	Jan. 10	728	204	21	131
Van Buren, Jafew S., Albany, N. Y. Oil-stove	257,110	Apr. 25	1658	464	21	1263
Van Denburgh, Van, Bacon Hill, N. Y. Washing-machine	255,216	Mar. 21	961	262	21	821
Van Depoele, Charles J., Chicago, Ill. Shunting device for electric lights	257,968	May 16	1035	288	21	1481
Van Depoele, Charles J., Chicago, Ill. Electric-arc lamp	257,969	May 16	1036	289	21	1481
Van Depoele, Charles J., Chicago, Ill. Combined electric motor and generator	257,990	May 16	1038	289	21	1482
Van Depoele, Charles J., Chicago, Ill. Dynamo-electric machine	259,061	June 6	239	64	21	1734
Van Depoele, Charles J., Chicago, Ill. Electric lamp	259,062	June 6	240	64	21	1735
Van Diest, P. H. (See Mallinckrodt, John F., assignor.)						
Van Dorn, William T., Lincoln, Nebr. Car-coupling	258,160	May 16	1246	351	21	1520
Van Duzen, Charles E., Oneonta, N. Y. Coffin	258,161	May 16	1248	351	21	1520
Van Duzen, George W., Brooklyn, N. Y. Mechanical musical instrument	258,508	May 23	1673	473	21	1602
Van Duzee, Charles A., Gouverneur, N. Y. Folding table	258,509	May 23	1674	474	21	1603
Van Duzer, Isaac T. (See Harmon, Daniel B., assignor.)						
Van Hagen, Isaac, assignor to Adams & Westlake Manufacturing Company, Chicago, Ill. Sheet-metal-shaping machine	253,396	Feb. 7	173	49	21	375
Van Hagen, Isaac, assignor to Adams & Westlake Manufacturing Company, Chicago, Ill. Sheet-metal-shaping machine	257,255	May 2	129	37	21	1303
Van Hoesen, Casper, New York, N. Y. Making paper bags	256,177	Apr. 11	531	147	21	1046
Van Hoesen, William S., Saugerties, N. Y. Corrugated scissors and shears	254,735	Mar. 7	346	92	21	697
Van Hoevenbergh, Henry, Elizabeth, N. J. Duplex telegraph	253,134	Jan. 31	1776	493	21	224
Van Hoevenbergh, Henry, Elizabeth, N. J. Optical toy	258,164	May 16	1249	352	21	1520
Van Hoevenbergh, Henry, Elizabeth, N. J. Transmitter for printing-telegraphs	259,610	June 13	912	943, 944	21	1861
Van Hoevenbergh, Henry, Elizabeth, N. J. Optical toy	259,950	June 20	1342	361	21	1941
Van Houten, John B., Newark, N. J. Bracelet	258,165	May 16	1250	352	21	1520
Van Houten, John B., Newark, N. J. Jewelry	253,450	Feb. 7	317	88	21	390
Van Houten, Sayre & Co. (See De Mnr, Piotr. K., assignor.)						
Van Keuren, Thomas F., assignor to himself and H. Finger, Saugerties, N. Y. Grate-bar	259,299	Jan. 10	756	210	21	135
Van Kirk, Agnes E., New York, N. Y. Combined artist's case and easel	259,441	June 13	703	186	21	1824
Van Kirk, Agnes E., New York, N. Y. Easel	260,068	June 27	1510	405	21	1974
Van Liew, Dennis F., Aurora, Ill. Car-door hanger	251,869	Mar. 14	555	148	21	740
Van Lith, Gerard M. P., New York, N. Y. Perspective delineator	254,178	Feb. 28	1217	339	21	577
Van Matteson, Marse, Chicago, Ill. Harvester	260,338	June 27	1843	497	21	2027
Van Ness, Thomas E., and D. Maloney, Newark, N. J. Forming cheek-pieces for bridle-bits	258,166	May 16	1251	353	21	1520
Van Nest, John. (See Loomis, Kellogg H., assignor.)						
Van Noorden, Ezekiel, Boston, Mass. Conductor-pipe	253,564	Feb. 14	450	131	21	436
Van Patten, Frederick, assignor to Driggs, Mosher & Co., Auburn, N. Y. Device for making button-making molds	257,537	May 9	482	134	21	1373
Van Smith, Charlie, South Bend, Ind. Car-coupling	255,057	Mar. 14	780	208	21	780
Van Syckel, Henry L., *et al.* (See Taylor, Charles, assignor.)						
Van Tine, Charles M., Matteawan, N. Y. Steam-packing	254,736	Mar. 7	347	92	21	697
Van Valkenburg, Randall T., Manchester, Mich. Mortar-mixing machine	257,627	May 9	612	171	21	1395
Van Vechten, Orville R., Brooklyn, N. Y. Machine for sewing up mouths of bags	256,518	Apr. 18	974	273, 274	21	1136
Van Wagenen, Albert. (See Godda, Louis, assignor.)						
Van Wagenen, Albert, Boston, Mass., assignor to G. McKay, Newport, R. I., and J. W. Brooks, Cambridge, Mass., trustees. Nailing-machine	260,141	June 27	1602	432	21	1969
Van Wagenen, Albert, Boston, Mass., assignor to G. McKay, Newport, R. I., and J. W. Brooks, Cambridge, Mass., trustees. Nailing-machine	260,142	June 27	1603	432	21	1969
Van Wagner, Isaac M., Nyack, N. Y. Screen and blind for car-windows	253,941	Feb. 7	71	22	21	359
Van Wagner, Isaac M., assignor of one-fourth to C. N. White, Nyack, N. Y. Car-seat attachment	258,167	May 16	1252	353	21	1521
Van Wagoner, Cornelius S., Brooklyn, assignor to Van Wagoner & Williams, New York, N. Y. Spring-hinge	258,510	May 23	1675	474	21	1603
Van Wagoner & Williams. (See Van Wagoner, Cornelius S., assignor.)						
Van Winkle, Edward, Atlanta, Ga. Brush-cylinder for cotton-gins	258,618	May 30	1817	513	21	1636
Vandegrift, James, Princeton, Ill. Plow	254,734	Mar. 7	346	91	21	697

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Vandenbergh, Jacob S., Canandaigua, N. Y. Compound for destroying carpet bugs and worms	256,414	Apr. 11	830	.....	21	1066
Vander Weydo, Peter H., Brooklyn, assignor to C. Coine, New York, N. Y. Automatic fire-alarm	253,133	Jan. 31	1775	493	21	224
Vandercook, Henry R. (See Barry, Patrick F., assignor.)						
Vanduzen, Benjamin C., Cincinnati, Ohio. Automatic gas apparatus	258,934	Apr. 25	1457	409	21	1227
Vanduzen, Benjamin C., Cincinnati, Ohio. Automatic gate for elevators	258,937	May 30	2063	582	21	1679
Vanduzen, Benjamin C., Cincinnati, Ohio. Steam pumping-engine	260,337	June 27	1839	497	21	2026
Vanduzen, Benjamin C., Cincinnati, Ohio, assignor to J. P. Martin, Newport, Ky. Pump	258,163	May 16	1248	353	21	1520
Vanduzen, Benjamin C., Cincinnati, Ohio. Lubricator for loose pulleys, &c	259,344	June 13	582	154	21	1802
Vanduzen, Ezra W., Newport, Ky. Lubricator	259,345	June 13	583	155	21	1802
Vanduzen, Ezra W., Newport, Ky. Smoke-consuming furnace	259,608	June 13	911	943	21	1861
Vanduzen, Ezra W., Newport, Ky. Smoke-consuming furnace	259,609	June 13	911	943	21	1861
Vanmeter, Joseph E. (See Steel, Robert, assignor.)						
Vannoy, James H., Farmington, Tex. Cotton-stalk and weed cutter	255,217	Mar. 21	961	263	21	841
Vanorman, Oliver, Racine, Wis. Seat for vehicles	254,412	Feb. 28	1482	404	21	622
Vanorman, Oliver, Racine, Wis. Whiffletree-iron	255,765	Mar. 28	1587	427	21	833
Vanstone, Samuel, Providence, R. I. Machine for bending bails	258,551	Jan. 17	1062	294, 295	21	192
Vanstone, Samuel, Providence, R. I. Machine for bending claw-thimbles	254,949	Feb. 28	1304	360, 361	21	591
Varian, Edward. (See Garver and Varian.)						
Varwig, Henry. (See Franzmann, Jacob, assignor.)						
Vary, Bennett H. (See Witherell and Vary.)						
Vedder, Elihu, New York, N. Y. Tile of glass, porcelain, &c., for decorating walls	256,415	Apr. 11	831	230	21	1066
Vedder, Elihu, New York, N. Y. Ornament of glass for windows, screens, &c	257,417	May 2	328	93	21	1340
Vedder, Elihu, New York, N. Y. Illuminated structure	259,346	June 13	584	155	21	1802
Vedder Pattern Works, Bascom, Galbraith & Co., N. S. (See Bascom, H. Clay, assignor.)						
Vedder Pattern Works, Bascom, Galbraith & Co., N. S. (See Galbraith, Robert, assignor.)						
Veeder, Curtis H., Plattsburg, N. Y. Seat for bicycles	259,220	Jan. 10	730	204	21	131
Vehlen, Peter J., Michigan City, Ind. Harness-saddle	255,218	Mar. 21	962	263	21	841
Velguth, Adolph, Milwaukee, Wis. Oil-stove	256,519	Apr. 18	976	274	21	1136
Velie, Orvell C., assignor of one-half to J. N. Hungerford, Corning, N. Y. Blind-adjuster	256,254	Apr. 11	651	176	21	1066
Venable, Gilbert M., Memphis, Tenn. Heating and cooking apparatus	257,789	May 9	799	283, 284	21	1499
Verghe, Rubling & Co. (See Schmidt, Johann, assignor.)						
Vermilyea, Eugene, and C. E. Norris, Millbury, assignors of one-half to J. Luther, Worcester, Mass. Stocking	259,559	Jan. 17	1063	296	21	193
Vermont Farm Machine Company. (See Butler, Francis G., assignor.)						
Veronee, Cornelious B., Athens, Ga. Clothes-boiler	252,667	Jan. 10	478	132	21	90
Very, Theodore S., Boston, Mass. Method of and apparatus for refrigerating	259,553	Jan. 17	1064	296	21	192
Vester, Adolph, Providence, R. I. Bracelet	253,942	Feb. 7	72	22	21	359
Vester, Adolph, Providence, R. I. Bracelet	253,943	Feb. 7	73	22	21	359
Vibbard, William H. (See Coats and Vibbard.)						
Vickrey, Henry. (See Goss, Lysander T., assignor.)						
Victor Sewing Machine Company. (See Andrus, Marshall D., assignor.)						
Victor Sewing Machine Company. (See Pratt, George M., assignor.)						
Viele, Platt B., Rochester, N. Y. Sand-distributor for locomotives	258,938	May 30	2065	582	21	1679
Vinet, Jean B., *et al.* (See Lord, Peter, assignor.)						
Vining, Edward P., Omaha, Nebr. Railway-car brake. (Reissue)	10,077	Apr. 4	451	122	21	1036
Vining, William N., Southwick, Mass., and E. A. Quesnel, St. Louis, Mo., assignors to American Stove Manufacturing Company, Belleville, Ill. Cook-stove	255,896	Apr. 4	88	24	21	965
Vinton, Thomas J., Holly, Mich. Fire-escape	254,413	Feb. 28	1484	406, 407	21	623
Voege, August, Brooklyn, N. Y. Drum-strap	256,590	Apr. 18	977	274, 275	21	1136
Voegtle, Frederick, Louisville, Ky. Car-coupling	256,770	Apr. 18	1259	354	21	1185
Voelker, George W., Woonsocket, R. I. Cloth-stretching machine	257,698	May 9	613	171	21	1395
Voelker, John P. (See Walter and Voelker.)						
Voelker, William L., Morton, Pa. Automatic regulator for electric-light systems	251,748	Jan. 3	72	20	21	15
Voelker, William L., Morton, Pa. Apparatus for manufacturing incandescent lamps and carbons	251,749	Jan. 3	74	21	21	15
Voelker, William L., Morton, Pa. Electric lamp	253,645	Feb. 14	548	157	21	450
Voelker, William L., Morton, Pa. Incandescent electric lamp	253,646	Feb. 14	549	157	21	450
Voelker, William L., Morton, Pa. Incandescent electric lamp	253,647	Feb. 14	550	157	21	450
Voelker, William L., assignor to J. H. Irwin, trustee, Morton, Pa. Incandescent electric lamp	255,219	Mar. 21	963	263	21	841
Voerde, Frederick W., assignor to P. J. Singer, Chicago, Ill. Safety attachment for elevators	259,951	June 20	1344	361	21	1941
Vogel, Charles W., and H. Beitzell; said Beitzell assignor to A. M. Beitzell, Centreville, Ind. Corn-planter	254,444	Feb. 28	1590	416	21	629
Vogel, Peter C. A. (See Boldt and Vogel.)						
Vollert, Ludwig H. (See Sarfert and Vollert.)						
Vollkommer, George, Brooklyn, N. Y. Cigar-mold press	253,135	Jan. 31	1778	493	21	394
Vom Hofe, Julius, Brooklyn, assignor to himself and C. F. Imbrie, New York, N. Y. Fishing-reel	259,554	Jan. 17	1065	296	21	193
Von Bernewitz, Frederic A. R., Sedamsville, Ohio. Car-coupling	256,168	May 16	1253	353, 354	21	1521
Von Falkenhausen, Konrad, Wallisfurth, near Glatz, Germany. Fire-proof curtain for theaters	259,063	June 6	241	64	21	1735
Von Hefner-Altenech, Friedrich, Berlin, Germany. Dynamo-electric machine	256,081	Apr. 4	398	108, 109	21	1017
Von Hofmann, Adalbert, Augsburg, Bavaria, Germany. Preparing tablets of coffee	256,082	Apr. 4	400	.....	21	1017
Von Krause, Arthur, and M. Kuhnes, Blauvelt ville, N. Y. Ice-house	253,790	Feb. 14	738	211	21	463
Von Petersen, Rasmus, Copenhagen, Denmark. Moisture-proof coating and covering for walls, floors, &c	258,939	May 30	2066	.....	21	1679
Von Schmidt, Alexey W., San Francisco, Cal. Rotary engine	256,178	Apr. 11	542	147, 148	21	1046
Vonderssar, Wendel, Indianapolis, Ind. Horseshoe	260,260	June 27	1746	472	21	2011
Vonwiller, Ulr. D. (See Hoffmann, Max, assignor.)						
Voorhees, George W. (See Nellis, James, assignor.)						
Voss & Southwick. (See Dolloff, Wellington, P., assignor.)						
Votti, Carl, Philadelphia, Pa. Calendar-clock	256,255	Apr. 11	652	176	21	1066
Votti, Carl, Philadelphia, Pa., assignor to B. B. Schneider, New York, N. Y. Shade-holder for lamps. (Reissue)	10,087	Apr. 11	895	250	21	1109

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Vuillier, Aimé, assignor to United States Stamping Company, Portland, Conn. Patty-pan	255,706	Mar. 28	1567	497	21	934
Vuillier, Aimé, assignor to J. E. Ingersoll, Portland, Conn. Patty-pan	256,511	May 23	1677	474	21	1603
Vulcan Iron Works Company. (See King, John, assignor.)						
Waddell, James O., Elizabeth, N. J. Faucet	253,136	Jan. 31	1780	494	21	325
Waddy, William L., Pertona, Ky. Insect-destroyer	254,771	Apr. 18	1260	355	21	1185
Wade, George W., and J. M. Wardell, Cadillac, Mich. Rotary steam-engine	254,737	Mar. 7	348	98	21	697
Wadham, Harry. (See Hellman and Wadham.)						
Wadleigh, Joseph, Harscher, Ill. Gate-hanger	257,111	Apr. 25	1660	465	21	1263
Wadleigh, Royal H. (See Power, Francis J., assignor.)						
Wadlow, Richard H., Atlanta, Ga. Fastening device	253,791	Feb. 14	730	211	21	483
Wagner, Daniel B., assignor of one-half to D. M. Driesbach, Mount Blanchard, Ohio. Portable fence	256,830	May 30	2067	563	21	1679
Wagner, Jacob A., Quincy, Ill. Baling-press	256,109	May 16	1254	354	21	1521
Wagner, John. (See Cornely and Wagner.)						
Wagner, Julius, Reading, Pa. Mechanism for working organ-bellows	254,738	Mar. 7	349	93	21	697
Wagner, Maximilian, Berlin, Germany. Music-chart	257,780	May 9	799	294	21	1430
Wagner, Samuel. (See Reca, Jacob, assignor.)						
Wais, Christian, Newport, Ky., assignor to Simpson & Gault, Cincinnati, Ohio. Automatic grain-weighing machine	257,418	May 2	329	93	21	1340
Wait, John H., East Minneapolis, Minn. Railway-switch	253,798	Feb. 14	740	212	21	483
Wait, Oscar E., Woonsocket, R. I., assignor of two-thirds to P. W. Gould, Pittsfield, Mass., and F. E. Darrow, deceased, A. W. Darrow and E. E. Thorpe, Bristol, Conn., administrators. Friction-clutch	256,686	May 30	1907	536	21	1651
Waite, Henry E. (See Bartlett and Waite.)						
Waite, Henry E., Bridgeport, Conn., assignor to C. F. Livermore, New York, N.Y. Telephone-relay	253,793	Feb. 14	741	212	21	484
Wakefield, Nathan S., Camden, N. Y. Peg-cutting machine	253,944	Feb. 7	74	23	21	359
Walbridge, John H., New York, N. Y. Pocket-comb	256,170	May 16	1256	354	21	1521
Walbridge, Samuel E., *et al.* (See Weller, James E., assignor.)						
Walden, John M., Fort Valley, Ga. Cotton-chopper	255,058	Mar. 14	781	209	21	780
Walden, John M., Fort Valley, Ga. Cotton-chopper	256,512	May 23	1678	474	21	1603
Waldstein, Henry, New York, N. Y. Combined ear-trumpet and cane-handle	256,171	May 16	1256	354	21	1522
Waldmur Electro Magnetic Brake Company. (See Goss and Walter, assignors.)						
Wale, George, Paterson, N. J. Power indicator and recorder	255,220	Mar. 21	984	263	21	891
Walenta, Wesley A., assignor of one-half to G. W. Devault, Ely, Iowa. Thill loop or lug	256,772	Apr. 18	1261	355	21	1186
Walker, Addison W., Erie, Pa. Animal-trap	255,059	Mar. 14	782	209	21	780
Walker, Benjamin L., assignor to Walker, Cady & Co., Sing Sing, N. Y. Die-stock	256,960	June 6	112	29	21	1714
Walker, Cady & Co. (See Walker, Benjamin L., assignor.)						
Walker, E. C., *et al.* (See Young, Charles, assignor.)						
Walker, Hiram, and A. Miltner, Tonawanda, N. Y. Tiller	254,179	Feb. 28	1218	339	21	577
Walker, James, New York, N. Y. Gong-bell	257,701	May 9	801	225	21	1430
Walker, James T., Falmouth, Mass. Horse-detacher	256,961	June 6	113	30	21	1714
Walker, Kate, Indianapolis, Ind. Dress cutting and fitting mold	254,674	Feb. 21	1096	303	21	549
Walker, Robert J., Philadelphia, Pa. Cloth-steaming box	257,792	May 9	808	285	21	1430
Walker, Thomas, Philadelphia, Pa. Stuffing-box for steam-engines	255,060	Mar. 14	783	209	21	780
Walker, Thomas, Birmingham, county of Warwick, England. Tab-connector for suspender-braces	253,945	Feb. 7	75	23	21	359
Walker, William H., Rochester, N. Y. Plate-holder for photographic cameras	254,180	Feb. 28	1218	340	21	576
Walker, William H., Rochester, N. Y. Photographic camera	256,064	June 6	242	64, 65	21	1735
Walkley, Lucius V., assignor of one-half to Pults & Walkley Company, Plantsville, Conn. Canvas bag for hams	255,221	Mar. 21	965	264	21	822
Walkup, Charles, *et al.* (See Peeler, Abner, assignor.)						
Walkup, Liberty, *et al.* (See Peeler, Abner, assignor.)						
Wall, David M. J., Buffalo, N. Y. Button	255,551	Mar. 28	1396	377	21	898
Wall, John, Amsterdam, N. Y. Carding-machine	252,821	Jan. 24	1383	386	21	252
Wallace, John F., Pittsburg, Pa. Car-coupling	253,946	Feb. 7	76	24	21	360
Wallace, Micager C., Salisbury, Tenn. Churn	253,961	Feb. 21	950	266	21	525
Wallace & Sons. (See Bryant, Edson L., assignor.)						
Wallace & Sons. (See Paul, William, assignor.)						
Wallace, Stephen G., Camden, N. J. Ankle-supporter for shoes	260,069	June 27	1512	406	21	1974
Wallach, Frank, assignor to H. Wallach's Sons, New York, N. Y. Garment	260,143	June 27	1605	432 / 433	21	1990
Wallach's Sons, H. (See Wallach, Frank, assignor.)						
Walling, Stephen P., South Edmeston, N. Y. Grinding-mill	252,156	Jan. 10	585	165	21	107
Wallis, Arthur H., Basingstoke, county of Hants, England. Pitch-chain	254,739	Mar. 7	349	93	21	698
Walls, Charles E. (See O'Daniel and Walls.)						
Walsh, Francis A., Chicago, Ill. Sheet-metal can	252,342	Jan. 17	804	224	21	149
Walsh, James R., Peoria, Ill. Feed-hopper	252,633	Jan. 24	1150	322	21	214
Walsh, Maurice J., New York, N. Y. Apparatus for stowing cargoes in vessels	254,740	Mar. 7	350	93	21	698
Walsh, Maurice J., New York, N. Y. Jack	254,741	Mar. 7	352	93	21	698
Walsh, Maurice J., New York, N. Y. Flexible hose or pipe	255,357	Mar. 21	1156	309	21	851
Walsh, Peter H., New York, N. Y. Elevator	260,241	June 27	1747	472	21	2011
Walter, Ernest B., and J. P. Voelker, New York, N. Y. Window-screen	253,137	Jan. 31	1781	494	21	325
Walter, Hugo. (See Goss and Walter.)						
Walter, John, assignor to himself and C. B. Cooper, Nashville, Tenn. Metal roofing-plate	256,063	Apr. 4	401	109	21	1017
Walter, Joseph. (See Hawkins, William H., assignor.)						
Walters, Franklin P., *et al.* (See Nitschmann, Franz, assignor.)						
Walther, Hermann, New York, N. Y. Pocket-book	255,061	Mar. 14	784	209	21	780
Walton, Joseph J. (See Cones, Samuel F., assignor.)						
Walworth, Caleb C., Boston, Mass. Machine for tapping and reaming	258,068	Jan. 10	479	132 / 133	21	90
Wang, William, Philadelphia, Pa. Air-compressor	255,222	Mar. 21	986	264	21	822
Wang, William, Philadelphia, Pa. Air-compressor	255,981	Apr. 4	184	48	21	961
Wangenheim, Solomon. (See Haller, Joseph P., assignor.)						
Wanless, John A., Toledo, Ohio. Pillow-sham holder	253,138	Jan. 31	1781	494	21	325
Wanner, Llewellyn. (See Sleeper, William, assignor.)						
Wapplington, William W., Halifax, Nova Scotia, Canada, assignor of one-half to A. C. McKee, Steubenville, Ohio. Metallurgical gas-furnace	259,653	June 13	970	259	21	1671
Warchmeister, August L., assignor to C. A. Wharton, Newark, N. J. Roller sizing-machine	253,565	Feb. 14	460	131	21	436
Ward, Charles F. (See Rood, Netta G., assignor.)						
Ward, Charles T. (See Sands, Jesse, assignor.)						
Ward, Frank T., New York, N. Y. Safety attachment for elevators	258,710	Jan. 24	1238	346	21	228
Ward, James, Handley, Tex. Sulky-plow	257,256	May 2	131	37	21	1304

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Ward, Leon, S. A. Smith, and G. Pashley, Bridgeport, Conn. Shaker for mixing drinks	253,451	Feb. 7	318	88	21	360
Ward, Stephen S., Greenfield, Mass. Carving-fork guard	258,173	May 16	1257	365	21	1522
Ward, Stephen S., Greenfield, Mass. Knife	258,173	May 16	1256	355	21	1522
Ward, William, Cleveland, Ohio. Die for making turn-buckles	254,256	Apr. 11	653	176	21	1064
Ward, William, Zanesville, Ohio. Car-coupling	259,611	June 13	917	244 / 245	21	1963
Ward, William E., Port Chester, N. Y. Machine for forming belt-blanks from cold rods of metal	258,914	Jan. 31	1499	418	21	979
Ward, William E., Port Chester, N. Y. Machine for tapping nuts	255,478	Mar. 28	1311	353	21	983
Ward, William H., Topeka, Kans. Pliers for attaching buttons	256,416	Apr. 11	831	231	21	1668
Ward, William H., Topeka, Kans. Button	256,417	Apr. 11	832	231	21	1669
Wardell, Joshua M. (See Wade and Wardell.)						
Warden, Joseph. (See Dickinson and Warden.)						
Ware, Joseph L., Pine Island, Minn. Grain-binder	256,179	Apr. 11	833	149	21	1046
Warfield, Charles A., assignor of one-half to C. Semper, Philadelphia, Pa. Bottle-stopper	253,566	Feb. 14	462	131	21	436
Warfield, Solomon D., Baltimore, Md. Green-corn cutter	256,174	May 16	1259	365	21	1522
Waring, John B., New York, N. Y., assignor of one-half to M. C. Bullock, Chicago, Ill. Air-compressor	254,851	Mar. 14	497	139	21	780
Waring, John B., New York, N. Y., assignor of one-half to M. C. Bullock, Chicago, Ill. Air-compressor	255,400	Mar. 21	1219	384	21	961
Waring, John T. (See Polissa, Augusta, assignor.)						
Waring, Richard S., Pittsburg, Pa. Electric cable	258,634	Jan. 24	1151	322	21	214
Warnant, Jean. (See Bled and Warnant.)						
Warne Concentrator and Separator Company. (See Warne, Elijah, assignor.)						
Warne, Elijah, Easton, Pa., assignor to Warne Concentrator and Separator Company. Separator and concentrator for ores, &c	258,331	May 23	1466	417	21	1567
Warne, Elijah, Easton, Pa., assignor to Warne Concentrator and Separator Company. Concentrator and separator for ores	258,332	May 23	1468	418	21	1567
Warner, Alexander, New York, N. Y. Preserving food	256,084	Apr. 4	402	.....	21	1018
Warner Brothers. (See House, James A., assignor.)						
Warner, I. De Ver, Bridgeport, Conn. Manufacture of corsets	256,180	Apr. 11	836	148	21	1046
Warner, J. W. (See Kennard, John M., assignor.)						
Warner, Jacob F., Elkhart, Ind. Adjustable reclining-chair	256,773	Apr. 18	1261	355 / 356	21	1186
Warner, Jasper P., Dowagiac, Mich. Chill for chilling metal	256,257	Apr. 11	655	177	21	1066
Warner, Leo S., *et al.* (See Feder, Simon, assignor.)						
Warner, Lucius C. (See Dickinson, Henry, assignor.)						
Warner, Ludwig A., *et al.* (See Feder, Simon, assignor.)						
Warner, Thomas V., Waukegan, Ill. Pump	253,947	Feb. 7	77	24	21	360
Warnick, John K. (See Denton, James, assignor.)						
Warwick, John, and W. C. Westaway, Beloit, Wis. Windmill	254,675	Feb. 21	1097	303	21	549
Warren, Alonzo, Boston, Mass. Sewing-machine trimmer	255,707	Mar. 28	1398	427	21	934
Warren, Daniel W., assignor to himself and J. H. Blaisdell, New York, N. Y. Gripping-pulley	255,227	Apr. 4	96	25	21	906
Warren, Dwight, assignor to himself and W. H. Taylor, Winsted, Conn. Disinfecting compound	252,555	Jan. 17	1096	.....	21	193
Warren, Dwight, assignor to himself and W. H. Taylor, Winsted, Conn. Water-closet disinfecting device	252,556	Jan. 17	1096	297	21	193
Warren, Eugene F. (See Gleason, Miner T., assignor.)						
Warren, John, assignor to O. L. Noble, trustee, Boston, Mass. Stone-cutting machine	254,519	Mar. 7	87	28	21	653
Warren, John, assignor to O. L. Noble, trustee, Boston, Mass. Stone-cutting tool	254,520	Mar. 7	89	28, 29	21	654
Warren, Wallace, assignor of one-half to F. C. Taylor, Chicago, Ill. Manufacturing wheat flour	254,742	Mar. 7	354	94	21	698
Warren, Wallace, assignor of one-half to F. C. Taylor, Chicago, Ill. Bran-flouring machine	254,784	Mar. 7	403	107 / 108	21	707
Warrener, James, Fall River, Mass. Bobbin-skewer	257,419	May 2	338	93	21	1340
Warth, Albin, Stapleton, N. Y. Cutting-machine	255,356	Mar. 21	1156	310	21	851
Warwood, Harriet. (See Plant, Stephen J., assignor.)						
Washburn, Charles G. (See Dodge and Washburn.)						
Washburn, George W., West New Brighton, N. Y. Safety-catch for pins	258,139	Jan. 10	587	165	21	107
Washburn, John M., *et al.* (See Davies, James, assignor.)						
Washburn, Lucius W., Boston, Mass. Mold for casting car-wheels	254,581	Mar. 7	91	23	21	654
Washburn & Moen Manufacturing Company. (See Ayres and Decker, assignors.)						
Washburn & Moen Manufacturing Company. (See Brock, William E., assignor.)						
Washburn & Moen Manufacturing Company, *et al.* (See Brotherton, Jacob, assignor.)						
Washburn & Moen Manufacturing Company *et al.* (See Cady, Frank P., assignor.)						
Washburn & Moen Manufacturing Company *et al.* (See Converse and Cady, assignors.)						
Washburn & Moen Manufacturing Company *et al.* (See Decker, Alexander C., assignor.)						
Washburn & Moen Manufacturing Company. (See Doolittle, Thomas B., assignor.)						
Washburn & Moen Manufacturing Company *et al.* (See Evans, Lemuel E., assignor.)						
Washburn & Moen Manufacturing Company. (See Hill, Edwin H., assignor.)						
Washburn & Moen Manufacturing Company *et al.* (See Putnam, Bradbury, and Williams, assignors.)						
Washburn & Moen Manufacturing Company *et al.* (See Stevens, Sidney M., assignor.)						
Washburn & Moen Manufacturing Company. (See Thompson, Charles O., assignor.)						
Washburn & Moen Manufacturing Company. (See Upham, Andrew J., assignor.)						
Washburn & Moen Manufacturing Company, *et al.* (See Watkins and Scott, assignors.) (Reissue.)						
Washburn, Nathan, Allston, Mass. Car-wheel	254,250	Feb. 28	1305	361	21	591
Washburn, Nathan, Allston, Mass. Car-wheel	258,205	May 23	1396	395	21	1554
Wason, Charles C., Black River Falls, Wis. Thill-coupling	257,193	May 2	54	17	21	1280
Wassmer, Ulrich, assignor to M. Bare, Cincinnati, Ohio. Hoe	255,708	Mar. 28	1569	427	21	934
Wasson, William T., assignor of one-half to J. A. Ball, Thorntown, Ind. Ditching-machine	259,248	June 6	457	121	21	1773
Waterbury Brass Company. (See Harrub, Charles H., assignor.)						
Waterbury Button Company. (See Goodwin, Charles H., assignor.)						
Waterbury, George N. (See Donahue and Waterbury.)						
Waterford Manufacturing Company. (See More, William H., assignor.)						
Waterhouse, Addison G. (See Brewer and Waterhouse.)						
Waterhouse, Addison G., assignor to United States Electric Lighting Company, New York, N. Y. Carbon-holder for electric lamps	252,404	Jan. 17	863	246	21	163
Waterhouse, Addison G., assignor to United States Electric Lighting Company, New York, N. Y. Commutator for dynamo-electric machines	252,405	Jan. 17	864	246	21	163
Waterhouse, Addison G., assignor to United States Electric Lighting Company, New York, N. Y. Electric lamp	253,327	Feb. 7	174	49	21	375

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Waterhouse, Addison G., assignor to United States Electric Lighting Company, New York, N. Y. Electric lamp	253,398	Feb. 7	175	50	21	376
Waterhouse, Addison G., assignor to United States Electric Lighting Company, New York, N. Y. Electro-magnet	254,743	Mar. 7	355	94	21	699
Waterhouse, Addison G., assignor to United States Electric Lighting Company, New York, N. Y. Electric lamp	255,223	Mar. 21	988	264 / 265	21	822
Waterhouse, Addison G., assignor to United States Electric Lighting Company, New York, N. Y. Device for suspending electric-arc lamps	259,612	June 13	918	245	21	1892
Waterhouse, Addison G., assignor of one-half to D. A. Schuyler, New York, N. Y. Automatic water-lifter	253,648	Feb. 14	551	158	21	450
Waterhouse, Addison G., New York, N. Y., assignor to C. R. Gallatt, Portage, Wis. Vacuum-creamer	260,070	June 27	1513	406	21	1975
Waterhouse, John, New York, N. Y. Opera-glass	256,521	Apr. 18	979	275	21	1137
Waterhouse, Rufus. (See Selvage, Howard, assignor.)						
Waterman, Edgar D., assignor to A. J. Tower, Boston, Mass. Machine for arranging and piling cloth	259,784	June 20	1153	306 / 307	21	1908
Waterman, John S., Ithaca, N. Y. Corn-sheller	258,175	May 16	1961	356	21	1522
Waters, Arthur, Cincinnati, Ohio. Automatic furnace-feeder	256,522	Apr. 18	979	275	21	1137
Waters, Edward P., Roseville, Ill. Harness-saddle tree and pad	260,262	June 27	1748	472	21	2011
Waters, James H., assignor of one-half to T. L. Palmer and O. P. McCray, Des Moines, Iowa. Iron fence	257,194	May 2	55	17	21	1291
Watkins, Charles S., Davenport, Iowa. Earthenware cover and handle	253,329	Feb. 7	177	50	21	376
Watkins, George, *et al.* (See Hidden, Oliver M., assignor.)						
Watkins, William, and H. B. Scutt, Joliet, Ill., assignors to Washburn & Moen Manufacturing Company, Worcester, Mass., and I. L. Ellwood, De Kalb, Ill. Barbed-wire fence. (Reissue)	10,053	Mar. 7	410	109	21	708
Watkins, William C., New Haven, Conn. Form for making india-rubber boots and shoes	258,313	May 23	1679	475	21	1603
Watkins, William W., Bellevue, Iowa. Car-coupling	254,852	Mar. 14	500	133	21	730
Watson, Alexander, San Francisco, Cal. Exploder for firing blasts	253,649	Feb. 14	554	158	21	451
Watson, David S., Stratford, N. Y. Dumping-wagon	257,908	May 16	946	263	21	1465
Watson, Edwin J., and H. W. Willson, Worcester, Mass. Preparing steel for watch-springs	258,635	Jan. 24	1152	.....	21	214
Watson, Ephraim, Norfolk, Va. Hod-elevator	259,613	June 13	919	245	21	1892
Watson, George H., *et al.* (See Parker and Bennett, assignors.)						
Watson, Isaac P., Clifford, Ind. Furrow attachment for seed-planters	255,062	Mar. 14	784	210	21	780
Watson, James H. (See McBean and Watson.)						
Watson, James H., Tawas City, Mich. Feed and gig works for saw-mills. (Reissue)	10,140	June 20	1417	382	21	1954
Watson, John M., *et al.* (See Messervey, Reuben A., assignor.)						
Watson, John M., trustee. (See Messervey, Reuben A., assignor.)						
Watson, John W., assignor to W. Grant, New York, N. Y. Umbrella	256,774	Apr. 18	1262	356	21	1186
Watson, Thomas A., Everett, assignor to American Bell Telephone Company, Boston, Mass. Signaling and circuit-connecting apparatus	251,807	Jan. 3	147	42	21	27
Watson, Thomas A., Everett, assignor to American Bell Telephone Company, Boston, Mass. Compound telephone	252,160	Jan. 10	588	165	21	107
Watson, Thomas A., Everett, assignor to American Bell Telephone Company, Boston, Mass. Telephone-exchange system	256,258	Apr. 11	656	177	21	1066
Watson, William C., Puyallup, Wash. Ter. Nut-lock	257,420	May 2	333	94	21	1340
Watson, William J., *et al.* (See Nicol, Alexander, assignor.)						
Watters, John, New York, N. Y. Metallic harness and bridle loop	255,709	Mar. 28	1590	428	21	934
Wattles, Joseph W., Canton, Mass. Mechanism for supporting and lubricating the spindles of ring-spinning frames	257,909	May 16	948	264	21	1465
Watts, Joseph E., Lawrence, Mass. Pressure-regulator	253,567	Feb. 14	463	132	21	436
Watts, Life C., San Francisco, Cal. Floating dry-dock	256,606	Apr. 18	1071	301 / 302	21	1151
Watts, Nelson, assignor of two-thirds to R. S. Platt, Denver, Colo. Parlor cook-stove	259,949	June 6	458	121	21	1773
Waugh, Andrew, Carthage, N. Y. Horse-collar cap	256,085	Apr. 4	403	109	21	1018
Way, Charles A., North Charlestown, N. H. Snow-shovel	252,822	Jan. 24	1384	386	21	252
Wayt, John E. (See Morgan, Lewis B., assignor.)						
Weaber, Lewis P., Jr., New Harmony, Ind. Millstone-driver	252,557	Jan. 17	1067	297	21	193
Weaber, Lewis P., Jr., New Harmony, Ind. Millstone-driver. (Reissue)	10,118	May 16	1318	372	21	1532
Weathers, James, assignor of one-half to J. A. Robbins, Indianapolis, Ind. Lifting-jack	254,076	Feb. 21	1096	304	21	549
Weaver, Andrus S., Joy, N. Y. assignor to C. H. Morse, Chicago, Ill. Grinding-mill	256,935	Apr. 25	1461	410	21	1227
Weaver, Benjamin. (See Forster and Weaver.)						
Weaver, Fredrick W., and D. Norton, Troy, N. Y. Fire-grate	255,479	Mar. 28	1314	354	21	884
Weaver, James H., assignor of one-half to M. Beem, Chicago, Ill. Drive-chain	256,267	May 23	1307	395	21	1555
Weaver, William, Phœnixville, Pa. Nut-lock	259,250	June 6	459	121	21	1773
Weaver, William H., Emmittsburg, Md. Carriage-curtain fastening	258,631	May 30	2067	583	21	1680
Webb, Charles B., Philadelphia, Pa. Machine for cutting shank-stiffeners for boots and shoes	252,981	Jan. 10	732	204	21	131
Webb, Nelson J., Denver, Mich. Saw-set	253,794	Feb. 14	742	212	21	484
Webb, Rodolphus L., assignor to Landers, Frary & Clark, New Britain, Conn. Coffee-mill	254,414	Feb. 28	1485	407	21	623
Webb, Samuel D., assignor of one-half to H. McNeill, Washington, D. C. Locking-up device for type-forms	259,251	June 6	460	122	21	1773
Webb, William K., North Bridgeton, Me. Device for connecting boots or shoes	255,489	Mar. 28	1317	355	21	884
Webber, Alanson P., Saratoga, Ill. Cultivator	257,257	May 2	132	37, 38	21	1304
Webber, Andrew, *et al.* (See Ratea, William A., assignor.)						
Webber, Guy. (See Robinson, Edgar, assignor.)						
Webber, J. Wesley, New York, N. Y. Drill	259,161	Jan. 10	590	166	21	108
Webber, Josiah, Jr., Brooklyn, assignor to Champion Corn Husker Company, New York, N. Y. Corn-husker	256,176	May 16	1963	356 / 357	21	1523
Webber, William. (See Westinghouse and Webber.)						
Webber, William A., Medford, Mass. Mechanical toy	257,112	Apr. 25	1660	465	21	1963
Webber, William M., Ravenswood, W. Va., and C. O. Campbell, Richmond, Va. Mowing-machine	257,113	Apr. 25	1662	465 / 466	21	1963
Weber, Adam, New York, N. Y. Gas-generating furnace for heating retorts	259,952	June 20	1345	361 / 362 / 363	21	1941
Weber, Adolph, assignor to himself and H. W. Rood, Detroit, Mich. Lubricator	256,609	Apr. 18	1073	302	21	1151
Weber, Frederick L., Hoboken, N. J. Saucer for mugs	252,406	Jan. 17	886	246	21	163
Weber, Friedrick, Brooklyn, N. Y. Measure for liquids	257,491	May 2	333	94	21	1340
Weber, Jean, Uster, Switzerland, assignor to J. Feichter & Sons, Minneapolis, Minn. Roller-mill	253,320	Feb. 7	177	50, 51	21	376
Weber, John, Uster, Zurich, Switzerland, assignor to J. Feichter & Sons, Minneapolis, Minn. Flour-dressing machine	253,452	Feb. 7	318	89	21	399
Weber, John J., assignor of one-half to J. B. Evans, St. Clair, Pa. Tobacco-pipe	255,401	Mar. 21	1215	334	21	802

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Weber, Theodore A., assignor to S. C. Mitholsen, New York, N. Y. Machine for making wire bale-bands	257,793	May 9	663	225 / 226	21	1430
Webster, Adelbert A., *et al.* (See Gough, George, assignor.)						
Webster, Elisur G., *et al.* (See Gough, George, assignor.)						
Webster, George B., *et al.* (See Owens, Walter S., assignor.)						
Webster, George E., *et al.* (See Rice and Owens, assignors.)						
Webster, George K., Attleborough, Mass. Button	256,775	Apr. 18	1264	356	21	1186
Webster, James, Solihull, county of Warwick, England. Manufacture of soluble alumina	252,962	Jan. 31	1561	.....	21	263
Webster, John A., Detroit, Mich. Foot-power	254,653	Mar. 14	500	133	21	730
Webster, John H., Boston, assignor to himself and O. B. Stillman, Brookline, Mass. Measuring and discharging apparatus for cooling tubes of shaft-furnaces	257,114	Apr. 25	1664	466	21	1264
Webster, Louisiana P., assignor of two-thirds to D. Pendleton and M. Newmyer, Washington, D. C. Lady's sleeve-gripe	255,559	Mar. 28	1397	378	21	699
Webster, Maria, Farmington, Mich. Hand-carriage	254,181	Feb. 28	1221	340	21	578
Weddel, John W., assignor of one-half to P. S. Kahley, Freeport, Ill. Door-spring	257,910	May 16	949	264	21	1466
Weed, Arthur W., Brooklyn, N. Y. Belt-fastener	256,250	Apr. 11	658	177	21	1067
Weed Sewing Machine Company. (See Gregory, George W., assignor.)						
Weeks, Daniel H., Milford, Del., assignor to R. P. Scott, Newark, N. J. Fruit-paring machine	256,776	Apr. 18	1265	357	21	1186
Weeks, Joseph B., assignor of one-half to M. C. McKeown, Barnesville, Ohio. Cleaning steam-boilers	253,453	Feb. 7	319	89	21	400
Weenink, George. (See Fox and Weenink.)						
Wegman, Henry, Ithaca, N. Y. Mechanical musical instrument	251,977	Jan. 3	359	95	21	61
Wegner, William, Chicago, Ill. Shoe-fastening	260,144	June 27	1606	433	21	1990
Wehlann, Augustus, Aldborough, Ontario, Canada. Brick and tile machine	259,636	Jan. 24	1153	308	21	214
Weidener, Andrew J. (See Conrad, August R., assignor.)						
Weidenmann, Jacob, New York, N. Y. Button-fastener	253,901	Feb. 21	678	247	21	514
Weil, Henry, *et al.* (See Horton, Jacob C., assignor.)						
Weiner, Michael, assignor to Bailey & Whitmore, Cleveland, Ohio. Ruffler for sewing-machines	251,806	Jan. 3	151	42	21	28
Weinmann, George W., Columbus, Ohio. Steam-actuated valve	256,593	Apr. 18	961	276	21	1137
Weinrich, Moris, Vienna, Austria. Method of and apparatus for the production of refined sugar in plates, sticks, and other like forms	255,359	Mar. 21	1158	310	21	858
Weinstock, Harris. (See Lubin, David, assignor.)						
Weir, Robert H., assignor to W. Strauss, Philadelphia, Pa. Leather dummy-form	258,347	June 13	586	155	21	1603
Weis, Jacob A., (See Spink, Morris A., assignor.)						
Weisell, David D., Fort Wayne, Ind. Compound rail way-rail	260,263	June 27	1749	473	21	2012
Weiss, Albert R., Brooklyn, N. Y. Bottling-machine	255,360	Mar. 21	1160	311	21	858
Weiss, Albert R., Brooklyn, N. Y. Paper-file	257,115	Apr. 25	1606	466	21	1264
Weiss, Albert R., Brooklyn, N. Y. Paper-file	258,962	June 6	114	30	21	1714
Welth, Albert J., Chicago, Ill. Oil-pump	253,960	Feb. 21	980	266	21	586
Welts, George G., Boston, Mass. Watchman's electric register	257,794	May 9	897	236	21	1431
Weitzel, Jacob F., Cincinnati, Ohio. Fruit-can-soldering tool	258,514	May 23	1589	475	21	1694
Welch, Bascom R., Wolf Creek, Pa. Vehicle-brake						
Welch, E. Baker. (See Jenks, Charles W., assignor.)						
Welch, E. Baker. (See Robinson, Thomas C., assignor.)						
Welch, James E., Petersburg, Ill., assignor of one-half to A. B. Bowman, St. Louis, Mo. Wheat-heater	254,077	Feb. 21	1099	304	21	550
Welch, Littleton F. (See Welch, William S. and L. F.)						
Welch, S. Frank. (See Cosgrove and Welch.) (Reissue.)	238,556	Jan. 17	1086	.....	21	193
Welch, William S. and L. F., Westfield, N. J. Distemper-paint						
Welker, Joseph, Jr., assignor of one-half to H. S. Cole, Pawtucket, R. I. Feeding mechanism for paper-cutting machines	259,735	June 20	1093	291	21	1899
Weller, James E., assignor of one-half to S. E. Walbridge and W. R. Beebe, Kalamazoo, Mich. Sulky-harrow	260,339	June 27	1944	498	21	2027
Weller, Michael L., Washington, D. C. Tobacco-pouch frame	256,177	May 16	1264	357	21	1523
Wellington, Charles A., Lexington, Mass. Machine for cracking or splitting marble or other stone	254,615	Feb. 28	1486	407	21	623
Wellington, Henry, Green Point, N. Y. Chandelier	260,145	June 27	1607	433	21	1990
Wellman, Willard F, assignor to himself and W. C. Thompson, Belfast, Me. Table-leaf supporter	257,116	Apr. 25	1666	466	21	1264
Wells, Æneas. (See Thompson and Wells.)						
Wells, Henry, Glenwood, Iowa. Car-coupling	251,978	Jan. 3	362	95	21	61
Wells, Henry, Glenwood, Iowa. Car-coupling	251,979	Jan. 3	353	95	21	61
Wells, Henry, Gleanwood, Iowa. Car-coupling	253,795	Feb. 14	743	212	21	484
Wells, James E., Auburn, N. Y. Alarm-lock	256,598	May 23	1398	396	21	1556
Wells, James E., Auburn, N. Y. Railway time and speed pre-indicator						
Wells, John J. (See Smith and Wells.)						
Wells, John N., *et al.* (See Duncan, Joseph S., assignor.)						
Wells, Joseph, Newark, N. J. Ash-sifter	256,086	Apr. 4	403	109	21	1018
Wells, Osborn, Newberry, S. C. Combined ballot receptacle and satchel	254,416	Feb. 28	1487	407 / 408	21	624
Wells, Parker, Lynn, Mass. Water-meter	254,744	Mar. 7	356	94, 95	21	699
Wells, Philip F., Milford, Mich. Wheel-cultivator	259,637	Jan. 24	1154	323	21	214
Wells, Stephen M., Wethersfield, Conn. Leading-staff for bells	259,638	Jan. 24	1155	323	21	215
Wells, Walter S. (See Percy and Wells.)						
Welsch, Jonathan C., Edgerton, Ohio. Roller for moving houses	258,988	Jan. 10	733	205	21	131
Welsh, Joseph B., and H. Trudell, Richmond, Va. Combined chair and crib	259,933	June 20	1347	363	21	1942
Welsh, Joseph B., and H. Trudell, Richmond, Va. Combined chair and couch	259,934	June 20	1348	363	21	1942
Welty, Isaac, Olney, Ill. Watering animals	258,619	May 30	1819	513	21	1536
Wenchel, Laurence, Baltimore, Md. Templet for molding and paneling machines	260,264	June 27	1751	473	21	2012
Wenchel, Laurence, Baltimore, Md. Wood-molding machine	260,265	June 27	1753	473 / 474	21	2012
Wendell, Washington, Orange, assignor of one-half to G. F. Newell, Greenfield, Mass. Sewing-machine	253,948	Feb. 7	72	24	21	399
Wengenroth, August, Troy, N. Y. Imitation Christmas-tree	255,902	Apr. 4	166	48	21	961
Wenger, Adolphe, Paris, France. Fluid-pressure railway-brake	253,130	Jan. 31	1782	494 / 495	21	385
Wenner, Carl, St. Gallen, Switzerland. Motor for embroidering-machines	255,710	Mar. 28	1501	428 / 429	21	934
Wenrich, Christopher E., *et al.* (See Wenrich, Enos S., assignor.)						
Wenrich, Enos S., assignor of two-thirds to C. E. Wenrich and W. H. McBride, Harrisburg, Pa. Drop metal-broiler	256,777	Apr. 18	1266	357	21	1187
Wensch, Eduard, assignor of one-half to J. J. Hanhart, Vienna, Austria-Hungary. Escapement for clocks and watches	256,418	Apr. 11	833	231	21	1090
Wenstrom, Wilhelm, Orebro, Sweden. Rolling-mill	254,745	Mar. 7	359	95	21	699

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Wenther, Paul M., Sioux City, Iowa. Bottle-cooler	253,796	Feb. 14	744	213	21	494
Wentworth, Chester L., Mount Vision, N. Y. Tool-carrier	256,178	May 16	1265	357	21	1523
Wentworth, Edwin P., Cape Elisabeth, Me. Writing-tablet	257,117	Apr. 25	1667	467	21	1264
Wenzel, Hermann J., San Francisco, Cal. Watchman's time-detector	253,963	Feb. 21	961	267	21	596
Wenzel, Hermann J., San Francisco, Cal. Station-indicator	254,078	Feb. 21	1099	304, 305, 306	21	550
Werner, Gustav, Taisnach, Bavaria, Germany. Manufacture of wood pulp	252,963	Jan. 31	1563	440	21	293
Werneth, Francis J., Baltimore, Md. Curtain-cord tightener	255,361	Mar. 21	1161	311	21	852
Wernicke, August, Halle-on-the-Saale, and W. Pfitzinger, Stanch, Prussia, Germany. Extracting crystallizable sugar from molasses, &c.	260,340	June 27	1845	.....	21	2027
Werts, Henry W., *et al.* (See Pents, Levi, assignor.)						
Wescott, Ira, Buffalo, N. Y., and J. S. Karns, Lima, Ohio, assignors to J. T. Noye & Sons, Buffalo, N. Y. Roller-mill	256,832	May 30	2068	583, 584	21	1680
Wesp, Lauts Brothers & Co. (See Lauts, Charles, assignor.)						
Wesp, Lauts Brothers & Co. (See Stark, Michael J., assignor.)						
Wessells, Eugene, Peekskill, N. Y. Time mechanism for feeding stock	259,252	June 6	461	122	21	1774
Wesson, Joseph H., Springfield, Mass. Revolving fire-arm	251,750	Jan. 3	75	21	21	15
West Haven Buckle Company. (See Hyde, James C., assignor.)						
West, Horatio D., Stafford Springs, Conn. Bevel-jaw for vises	258,407	Jan. 17	886	246	21	163
West, Hubert. (See Kosinski, Wladyslaw T., assignor.)						
West India Manufacturing Company. (See Wise, Morris, assignor.)						
West, Jonathan B., Rochester, N. Y. Air-compressing apparatus	259,348	June 13	586	155	21	1803
West, Joseph M. (See Judson, William H., assignor.)						
West, North. (See Swaney, David A., assignor.)						
West, William, Keene, Ontario, Canada. Can-filling apparatus	259,442	June 13	705	187	21	1825
West, William, Keene, Ontario, Canada. Apparatus for crimping the ends upon circular cans	259,443	June 13	707	187, 188	21	1825
Westaway, Walter C. (See Warwick and Westaway.)						
Westcott, John M., Richmond, Ind. Fertilizer-distributer	253,454	Feb. 7	390	89	21	400
Westcott, Nathaniel W., Providence, R. I. Circular weft-thread knitting-loom	254,079	Feb. 21	1101	306, 307	21	550
Western Electric Manufacturing Company. (See Firman, Leroy B., assignor.)						
Western Electric Manufacturing Company. (See Kellogg, Milo G., assignor.)						
Western Electric Manufacturing Company. (See Patterson, William R., assignor.)						
Western Electric Manufacturing Company. (See Ross, Charles W., assignor.)						
Western Electric Manufacturing Company. (See Ross and Twiss, assignors.)						
Western Electric Manufacturing Company. (See Scribner, Charles E., assignor.)						
Western Electric Manufacturing Company. (See Scribner and Clarke, assignors.)						
Western Union Telegraph Company. (See Buckingham, Charles L., assignor.)						
Western Union Telegraph Company. (See Stearns, Joseph B., assignor.) (Reissue.)						
Westfall, Peter V., assignor of one-half to W. Nelson, Kalamazoo, Mich. Cotton-gin	256,515	May 23	1681	475	21	1604
Westgate, Joseph D., Manchester, N. H. Bed-lounge	252,983	Jan. 10	734	205	21	132
Westinghouse & Co., G. (See Westinghouse and Webber, assignors.)						
Westinghouse, George, Jr., Pittsburg, Pa. Regulating-valve for railway-brakes	251,980	Jan. 3	355	96	21	61
Westinghouse, Jay, and W. Webber, assignors to G. Westinghouse & Co., Schenectady, N. Y. Thrashing-machine	259,955	June 20	1349	363, 364	21	1942
Westlake, William Brooklyn, N. Y. Cuspidor	253,455	Feb. 7	393	99	21	400
Westland, Charles S., assignor to A. H. White and H. L. Fairbrother, Providence, R. I. Extensible drop-light	255,294	Mar. 21	990	265	21	823
Westland, Charles S., deceased, L. A. Westland, Providence, R. I., administratrix. Safety-lamp	258,963	June 6	115	30	21	1714
Westland, Lavina A., administratrix. (See Westland, Charles S.)						
Weston, David M., Boston, Mass. Manufacture of strainer-plate	256,516	May 23	1668	475	21	1604
Weston, Edward. (See Curtis and Weston.)						
Weston, Edward, Newark, N. J. Dynamo-electric machine	256,778	Apr. 18	1297	357	21	1187
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Absorbent for electric lamps	255,362	Mar. 21	1161	311	21	853
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Electric lamp	255,363	Mar. 21	1162	312	21	853
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Dynamo-electric machine	255,364	Mar. 21	1164	312	21	853
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Electro-magnet	255,365	Mar. 21	1165	312	21	853
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Dynamo-electric machine	255,366	Mar. 21	1166	313	21	853
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Electric lamp	258,964	June 6	116	30	21	1714
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Electric-lamp bracket	258,965	June 6	118	31	21	1715
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Incandescent lamp	258,966	June 6	118	31	21	1715
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Safety device for electric circuits	259,614	June 13	920	246	21	1802
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Safety device for electric circuits	259,615	June 13	921	246	21	1802
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Safety device for electric circuits	259,616	June 13	922	246	21	1803
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Dynamo-electric machine	259,617	June 13	923	246	21	1803
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Dynamo-electric machine	259,618	June 13	924	247	21	1803
Weston, Edward, Newark, N. J., and L. E. Curtis, assignors to United States Electric Lighting Company, New York, N. Y. Electric lamp	255,295	Mar. 21	991	265	21	823
Westphal, Henry, Chicago, assignor to himself and A. Dillman, Joliet, Ill. Revolving show-case	256,161	Apr. 11	537	149	21	1047
Wetherbee, Albert C., administrator. (See Wetherbee, Henry S.)						
Wetherbee, Henry S., deceased, A. C. Wetherbee, Hammonton, N. J., administrator. Fruit-jar	259,065	June 6	243	65	21	1735
Wetherill, William H., Philadelphia, Pa. Corroding-house for the manufacture of white lead by the old Dutch process	252,823	Jan. 24	1385	366	21	253
Wetmore, Jerome W., Erie, Pa. Wagon bolster-spring	252,824	Jan. 24	1385	366	21	253
Wetmore, Jerome W., Erie, Pa. Vehicle-spring	252,825	Jan. 24	1386	367	21	253
Wetmore, Jerome W., Erie, Pa. Wagon-tongue support	253,502	Feb. 21	579	246	21	514

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Wetmore, Jerome W., Erie, Pa. Door-check	255,226	Mar. 21	902	265	21	823
Wetmore, Jerome W., Erie, Pa. Pen-holder	255,227	Mar. 21	903	266	21	823
Wetter Brothers. (See Wiget, John, assignor.)						
Wetton, Francis, Philadelphia, Pa. Cooler for bone-black-revivifying kilns	255,896	Apr. 4	92	25	21	995
Weyburn, Elbert D., Atlanta, Ga. Loose pulley	253,797	Feb. 14	745	213	21	494
Weymouth, Elisha T., Brooklyn, N. Y. Indirect radiator	258,967	June 6	119	31	21	1715
Weymouth, George F., Dresden, assignor to H. Holt, Farmington, Me. Hay-knife. (Reissue)	10,072	Apr. 4	444	120	21	1035
Whalen, Walter D., Howell, Mich. Electric spring-clock	259,066	June 6	945	65	21	1735
Whaley, Mary J., Lincoln, Nebr. Covering the slot of cable-roads	254,854	Mar. 14	501	134	21	730
Wham & Co., Walton. (See Beck, C. Elton, assignor.)						
Wharton, Charles A. (See Warckmeister, August L., assignor.)						
Wharton Railroad Switch Company. (See Johnston, Edward H., assignor.)						
Wheat, Franklin H., Lowell, Mass. Thread-separator for ring-spinning machines	253,140	Jan. 31	1785	495	21	385
Wheat, Franklin H., Lowell, Mass. Thread-separator for ring-spinning machines	260,071	June 27	1514	406	21	1973
Wheatley, Harry D., Centreville, Ohio. Music-leaf turner	254,746	Mar. 7	381	.....	21	699
Wheaton, Frank, Brooklyn, N. Y. Fiber disintegrated from cotton-stalks	254,747	Mar. 7	381	.....	21	699
Wheaton, Frank, Brooklyn, N. Y. Paper made from the fiber of the cotton-plant						
Wheaton, Frank, Brooklyn, N. Y. Weaving the fiber of the stalk of the cotton-plant into fabrics	254,748	Mar. 7	382	.....	21	699
Wheaton, Frank, Brooklyn, N. Y. Separation of fiber from the cotton-plant and the manufacture of articles therefrom	254,749	Mar. 7	383	.....	21	709
Wheaton, Frank, Brooklyn, N. Y. Feed-bag for horses	255,740	Mar. 28	1636	443	21	941
Wheeler, Albert G., *et al.* (See Markland, William H., assignor.)						
Wheeler, Benjamin F., Malden, Mass. Sole-trimming machine for boots and shoes	259,253	June 6	462	122	21	1774
Wheeler, Harry P. (See Woodruff, Wheeler, and Pearson.)						
Wheeler, John B. (See Wheeler and Slack.)						
Wheeler, John M. (See Carney, Martin J., assignor.)						
Wheeler, Madden & Clemson Manufacturing Company. (See Clemson, William, assignor.)						
Wheeler, Marshal, assignor to B. F. Enoch, Philadelphia, Pa. Wheel-fender for vehicles	259,619	June 13	925	247	21	1803
Wheeler & Melick Company. (See La Dow, Charles, assignor.) (Reissue.)						
Wheeler & Melick Company *et al.* (See Stewart, Admiram J., assignor.) (Reissue.)	253,141	Jan. 31	1786	496	21	386
Wheeler, Milo L. G., Oregon City, Oreg. Force-pump						
Wheeler Reflector Company. (See Wheeler, William, assignor.)						
Wheeler, Samuel R., assignor of one-half to F. H. Krause, Dexter, Mich. Dumping-car	254,188	Feb. 28	1282	340	21	578
Wheeler, Stephen. (See Rice, Alvah, assignor.)						
Wheeler, Thomas F. (See Wheeler and Slack.)						
Wheeler, Walter K., San Francisco, Cal. Temperament-adjuster for musical instruments	256,594	Apr. 18	988	276	21	1137
Wheeler, William, Concord, Mass. Dynamo-electric machine	256,188	Apr. 11	538	149	21	1047
Wheeler, William, Concord, assignor to Wheeler Reflector Company, Boston, Mass. Supporter for electric-light reflectors	254,522	Mar. 7	93	23	21	654
Wheeler, William, Concord, assignor to Wheeler Reflector Company, Boston, Mass. Electric-light reflector and its support	254,523	Mar. 7	93	23	21	654
Wheeler, William, Concord, assignor to Wheeler Reflector Company, Boston, Mass. Reflector	254,578	Mar. 7	164	40	21	666
Wheeler, William A., Indianapolis, Ind. Machine for forming circumferential crimps in sheet-metal pipes	254,890	Mar. 14	556	149	21	740
Wheeler, William A., Indianapolis, Ind. Machine for closing down the seams of sheet-metal pipes	254,891	Mar. 14	559	150	21	741
Wheeler, William H. and T. F., Cape Girardeau, J. B. Wheeler and C. M. Slack, Jackson, Mo. Sample-displaying lid	255,063	Mar. 14	765	210	21	789
Wheeler & Wilson Manufacturing Company. (See Durfee, William F., assignor.)						
Wheeler & Wilson Manufacturing Company. (See Redshaw, Moses W., assignor.)						
Wheelock, Jerome, Worcester, Mass. Metal-boring machine	257,628	May 2	234	94	21	1241
Wheelock, Jerome, Worcester, Mass. Injector-condenser	257,629	May 9	614	172	21	1295
Wheelock, Jerome, Worcester, Mass. Injector-condenser	254,892	Mar. 14	561	150, 151	21	741
Whelan, Frank, San Francisco, Cal. Well-boring apparatus						
Whelan, Robert, assignor of one-half to J. A. Atkinson, Chicago, Ill. Rendering apparatus	260,268	June 27	1755	474	21	2012
Wherrel, William H., *et al.* (See Hull, John W., assignor.)						
Whipple, C. S. (See La Bay, Joseph, assignor.)						
Whipple, William A. (See Manchester, Thomas, assignor.)						
Whitaker, Edwin V., and J. Hull, Gloversville, N. Y. Machine for extracting grease from skins	252,550	Jan. 17	1088	297	21	193
Whitaker, Elijah J. B. (See Ladd, Daniel R., assignor.)						
Whitaker, Elijah J. B. (See Montgomery, William B., assignor.)						
Whitaker, Elijah J. B., Belair, Md. Trundling toy horse	255,267	Mar. 21	1167	313	21	853
Whitaker, Elijah J. B., Belair, Md. Clothes-sprinkler	255,268	Mar. 21	1168	313	21	853
Whitaker, Elijah J. B., Belair, Md. Folding table	255,269	Mar. 21	1169	313	21	854
Whitaker, William W., Gloversville, N. Y. Glove	259,620	June 13	926	247	21	1803
Whitcomb, George D., Chicago, Ill. Coal-mining machine	259,956	June 20	1351	365	21	1942
Whitcomb, Henry H., Bridgeport, Conn. Toy pistol	252,580	Jan. 17	1070	297	21	193
Whitcomb, Kirk. (See White and Whitcomb.)						
Whitcomb, Marcians R., Holyoke, Mass. Fishing apparatus	253,456	Feb. 7	394	90	21	401
White, Addison H., *et al.* (See Westland, Charles S., assignor.)						
White, Arthur M. (See Robison, Sylvanus B., assignor.)						
White, Charles N. (See Van Wagner, Isaac M., assignor.)						
White Dental Manufacturing Company, S. S. (See Abbott, Frank, assignor.)						
White Dental Manufacturing Company, S. S. (See Kaeber, George, assignor.)						
White Dental Manufacturing Company, S. S. (See Phillips, Thomas S., assignor.) (Reissue.)						
White Dental Manufacturing Company, S. S. (See Starr, Eli T., assignor.)						
White, Frank A., assignor of one-half to W. B. Sheppard, Cortland Village, N. Y. Automatic fire-extinguisher for railway-cars	254,785	Mar. 7	405	108	21	707
White, Frederick, assignor of five-twelfths to C. R. Rogers, Westborough, Mass. Velocipede	259,444	June 13	708	188	21	1825
White, George A., Halifax, Nova Scotia, Canada, assignor of one-half to W. L. Alvord, Bridgeport, Conn. Knitting-machine	254,750	Mar. 7	383	98	21	709
White, Henry P., Paw Paw, Mich. Cylinder and concave teeth for thrashing-machines	251,961	Jan. 3	356	96	21	61
White, Hugh. (See Lamont and White.)						
White, J. Clarence, *et al.*, trustees. (See Rudd, Charles H., assignor.)						
White, James H., assignor to Manhattan Brass Company, New York, N. Y. Bracket and standard lamp	252,168	Jan. 10	391	166	21	199
White, James W., *et al.*, trustees. (See Rudd, Charles H., assignor.)						
White, Joseph, Coventry, county of Warwick, England. Seat-spring for bicycles	256,333	May 23	1471	419	21	1567
White, Lewis, and K. Whitcomb, Hoosick Falls, N. Y. Apparatus for determining the nutrition of cellular fiber	254,751	Mar. 7	386	96	21	709

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
White, Lewis B., Norfolk, Va. Plow	260,072	June 27	1515	407	21	1975
White, Lewis B., and L. Henderson, Middleburg, N. C. Car heating and ventilating apparatus	257,795	May 9	808	286 227	21	1431
White, Milton. (See Adcock, Lumpkin, and White.)						
White, Otis C., Hopkinton, Mass. Ball-and-socket joint	259,957	June 20	1359	365	21	1943
White, Rufus P., *et al.* (See Edelblute, Lucius S., assignor.)						
White Sewing Machine Company. (See Baker, George W., assignor.)						
White, William, assignor of one-half to J. Merchant, Chicago, Ill. Combined belt and key fastener	256,833	May 30	2070	584	21	1680
White, William M., Kihi, Wash. Ter. Hay-wagon	253,650	Feb. 14	534	158	21	451
White, William R., Neoga, Ill. Sliding and swinging gate	258,343	Jan. 17	895	294	21	150
White, William R., Neoga, Ill. Hanging gates	258,915	Jan. 31	1502	418	21	279
White, William R., Neoga, Ill. Sliding gate	258,517	May 23	1083	476	21	1694
Whitehall, Samuel, and W. Newlin, Attica, Ind. Vehicle-wheel	256,834	May 30	2071	584	21	1680
Whitehead & Atherton Machine Company. (See Whitehead, William E., assignor.)						
Whitehead, Henry and T. Dodd, London, England. Railway-point and manner of working the same	254,080	Feb. 21	1103	397 308	21	551
Whitehead, James. (See Candler and Whitehead.)						
Whitehead, William E., Tewksbury, assignor to Whitehead & Atherton Machine Company, Lowell, Mass. Machinery for opening or preparing cotton or other fibrous material	253,142	Jan. 31	1787	496	21	336
Whitehead, William E., assignor to Whitehead & Atherton Machine Company, Lowell, Mass. Top-flat of carding-machines	256,680	May 30	1890	514	21	1636
Whitehouse, Edward, Brooklyn, N. Y. Hat	259,254	June 6	464	123	21	1774
Whitelaw, Alexander L. (See Bush, Charles, assignor.)						
Whiteley, Edward, Antrim, N. H. Steam-jacket kettle	251,751	Jan. 3	76	21	21	16
Whiteley, Fassler & Kelly. (See Bayley, William, assignor.)						
Whiteley, Fassler & Kelly. (See Dean, J. Henry, assignor.)						
Whiteley, Fassler & Kelly. (See Whiteley, Bayley, and Hurd, assignors.)						
Whiteley, Fassler & Kelly. (See Whiteley and Bayley, assignors.)						
Whiteley, Fassler & Kelly. (See Whiteley, William N., assignor.)						
Whiteley, William N., *et al.* (See Green, George F., assignor.)						
Whiteley, William N. (See Hurd, Asa, assignor.)						
Whiteley, William N., Springfield, Ohio. Harvester	252,561	Jan. 17	1070	298	21	194
Whiteley, William N., Springfield, Ohio. Harvester	252,696	Jan. 24	1397	387	21	253
Whiteley, William N., W. Bayley, and A. Hurd, assignors to Whiteley, Fassler & Kelly, Springfield, Ohio. Cord-knotter for grain-binders	255,741	Mar. 28	1637	443	21	941
Whiteley, William N., assignor to Whiteley, Fassler & Kelly, Springfield, Ohio. Grain-gathering and binding machine	258,179	May 16	1965	357 358	21	1523
Whiteley, William N., assignor to Whiteley, Fassler & Kelly, Springfield, Ohio. Grain-packer for binding-machines	258,180	May 16	1967	358 359	21	1524
Whiteley, William N., and W. Bayley, assignors to Whiteley, Fassler & Kelly, Springfield, Ohio. Harvester and binder	258,181	May 16	1968	359 360	21	1524
Whiting, Arthur N., Boston, Mass, assignor to Hayden Company, of Massachusetts. Faucet	258,540	May 23	1716	484	21	1610
Whiting, Edmund R., *et al.* (See Myrick, Israel E., assignor.)						
Whiting, George B., Washington, D. C. Separating-diaphragm	258,835	May 30	2071	584 585	21	1680
Whiting Stronghold Belt Clasp Company. (See Whiting, William M., assignor.)						
Whiting, William H. H., Chelsea, Mass. Electric gas-lighter	257,195	May 2	55	17	21	1291
Whiting, William M., Elizabeth, N. J., assignor to Whiting Stronghold Belt Clasp Company, New York, N. Y. Method of and implement for uniting the ends of belting	256,585	Apr. 18	983	277	21	1137
Whitlow, Eliza J., Mexico, Mo. Washing-machine	255,742	Mar. 28	1638	444	21	942
Whitman, James E., and E. M. Brown, Spring Valley, Minn. Bag-holder	254,693	Mar. 14	563	151	21	742
Whitmore, Andrew E., East Boston, Mass. Lock for fire-arms	259,445	June 13	710	189	21	1826
Whitmore, Osceola A., *et al.* (See Chaunier, Jean, assignor.)						
Whitmore, Solomon S., Waverly, Md. Combined cooking-vessel and condenser	255,743	Mar. 28	1639	444	21	942
Whitmore, William H., and G. H. Pratt, Boston, Mass., assignors to said Whitmore. Apparatus for manufacturing sodium hyposulphite	253,143	Jan. 31	1788	496	21	336
Whitney, Adeline D. T., Milton, Mass. Alphabet-block	257,630	May 9	615	172	21	1395
Whitney, Baxter D., Winchendon, Mass. Bed and presser for planing-machines	259,956	June 20	1353	365 366	21	1943
Whitney, Edward H., Cambridge, assignor to Dover Stamping Company, Boston, Mass. Sheet-metal vessel	254,417	Feb. 28	1469	408	21	634
Whitney, Henry C. (See Baldwin, William H., assignor.)						
Whitney, James A. (See Hollingsworth, John, assignor.)						
Whitney, James A., Dobbs Ferry, N. Y. Process of and apparatus for making pills	256,419	Apr. 11	834	231 236	21	1099
Whitney, James A., Dobbs Ferry, N. Y. Machine for manufacturing pills, &c	256,420	Apr. 11	836	232 233	21	1099
Whitney, John R., Radnor township, Delaware county, Pa. Manufacture of chilled castings	256,182	May 16	1270	360	21	1534
Whitney, Lucy A. (See Preston and Whitney.)						
Whitney, Orleon C. Cleveland, Ohio. Cabinet-organ case	251,752	Jan. 3	77	21	21	16
Whitney, Ruel W., New York, N. Y., assignor of one-half to P. S. Baylor, Jersey City, N. J. Mechanical movement	253,798	Feb. 14	746	213	21	484
Whitney, William S. (See Parkinson, William, assignor.)						
Whitnum, Samuel, Brooklyn, N. Y. Air cooling and purifying apparatus	254,081	Feb. 21	1104	308	21	551
Whitson, George W., Asheville, N. C. Self-loading excavating-cart	256,380	May 23	1400	396	21	1555
Whittaker, Charles, Chicago, Ill. Faucet	257,538	May 9	483	134	21	1373
Whittemore, David. (See Eppler, Andrew, Jr., assignor.)						
Whittemore, David, and A. Eppler, Jr., Quincy, Mass.; said Eppler assignor to said Whittemore. Pegging-machine	255,064	Mar. 14	798	210	21	761
Whittemore, David E. (See Eppler, Andrew, Jr., assignor.)						
Whittemore, David H., Worcester, Mass. Apple parer, corer, slicer, and quarterer	251,992	Jan. 3	350	96	21	61
Whittingham, Joseph, and F. A. Lyman, Cleveland, Ohio. Vapor-burner	255,553	Mar. 28	1398	378	21	898
Whittlesey, William H., and J. C. Cook, Russell, Iowa. Hog-ringing tool	259,067	June 6	946	65	21	1736
Wiard, George, Batavia, N. Y. Velocipede	254,068	Feb. 21	1105	309	21	551
Wiard, George, assignor to Wiard Plow Company, Batavia, N. Y. Plow	255,370	Mar. 21	1170	314	21	854
Wiard Plow Company. (See Wiard, George, assignor.)						
Wickes, James H., New York, N. Y. Grain-car door	254,758	Mar. 7	367	96	21	700
Wicksteed, Charles, Kettering, county of Northampton, England. Stand for bicycles	256,936	Apr. 25	1463	416	21	1227
Widger, Frank A., Lyan, Mass. Heel forming apparatus	252,916	Jan. 31	1503	418	21	279
Widstrand, Charles T., Minneapolis, Minn., assignor to M. B. Thayer, New York, N. Y. Hydraulic elevator	253,799	Feb. 14	747	213	21	485
Wiechers, William A., *et al.* (See Humphrey, Henry C., assignor.)						
Wiederer, Peter, New York, N. Y. Mirror-handle	253,457	Feb. 7	385	90	21	401

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Wiedersum, Maria. (See Mueller, Henry A., assignor.)						
Wiedling, Hermann, Baltimore, Md. Gas-engine	259,736	June 20	1694	291 292	21	1889
Wiegand, S. Lloyd. (See Beasley and Wiegand.)						
Wier, Stephen, Chelsea, Mass. Machine for cleaning castings	254,855	Mar. 14	562	134	21	731
Wiesebrock, Frederick W., New York, N. Y. Apparatus for drying grain	255,371	Mar. 21	1171	314	21	854
Wiesenmeyer, Charles F., Springfield, Ill. Harness	256,067	Apr. 4	404	110	21	1078
Wiget, John, Arbon, assignor to Wetter Brothers, St. Gall, Switzerland. Embroidery	257,258	May 2	133	38	21	1304
Wiggers, Henry H., Cincinnati, Ohio. Cradle and crib for children	260,146	June 27	1699	434	21	1980
Wiggin, Charles P., *et al.* (See Babcock, J. Frederick, assignor.)						
Wightman, William R., administrator. (See Greene, Albert C.)						
Wilber, John D., Towanda, Pa. Mowing-machine	254,753	Mar. 7	362	97	21	700
Wilbur, George B., San Francisco, Cal. Sign-board	258,408	Jan. 17	897	247	21	163
Wilbur, Oscar F., and D. Sanford, assignors to themselves and N. A. Petrie, Ashton, Ill. Signal for railway and other purposes	258,897	Jan. 24	1267	267	21	253
Wilcox, Charles H., Detroit, Mich. Razor-strop	256,937	Apr. 25	1464	411	21	1228
Wilcox, Robert, 56 Gertrude Street, Fitzroy, near Melbourne, Victoria. Construction of ships	251,753	Jan. 3	78	22	21	16
Wilcox, William R., and N. E. Brown, St. Joseph, Mich. Butter-tray	258,193	May 16	1271	360	21	1535
Wilde, Daniel, Washington, Iowa. Cane-mill	255,239	Mar. 21	1204	322	21	985
Wilde, Henry, Newark, N. J. Machine for setting up barrels	257,259	May 2	134	38	21	1304
Wilde, Henry, Newark, N. J. Barrel-trussing machine	257,260	May 2	135	38	21	1305
Wilde, Henry, Newark, N. J. Machine for cutting hoop-locks	257,539	May 9	484	134 135	21	1373
Wilde, John, North Attleborough, Mass. Button and means for attachment	260,207	June 27	1756	474	21	2013
Wilde, William H., Bushnell, Ill. Wheel-plow	254,418	Feb. 28	1490	408	21	634
Wilder, Charles W., Fitchburg, Mass. Wood-turning lathe	254,419	Feb. 28	1491	408 409	21	634
Wilder, Erastus H. (See Blair and Wilder.)						
Wilder, Paten & Metcalf. (See Wilson, Vincent W., assignor.)						
Wiles, Robert H., Freeport, Ill. Wire-fence barb	257,156	May 2	57	17	21	1291
Wiles, Robert H., Freeport, Ill. Wire-fence barb	260,262	June 27	1757	475	21	2013
Wiles, Thomas S., Albany, N. Y. Machinery for holding and curling collars	258,334	May 23	1478	419	21	1568
Wiley, William H., Henderson, assignor of one-half to J. A. Moore, Greensborough, Md. Print-drier	259,621	June 13	927	247 248	21	1864
Wilgus, Daniel C., and G. H. Beebe, Marshalltown, Iowa, assignors to said Beebe. Cross-head for steam-engines	257,540	May 9	486	135	21	1374
Wilhelm, Adam B., Quincy, Ill. Trace-carrier	255,744	Mar. 28	1640	444	21	942
Wilhelm, John H., Denver, Colo. Ore-separator	256,183	Apr. 11	541	149 150 151	21	1047
Wilhelm, John H., Denver, Colo. Ore separator and concentrator	256,184	Apr. 11	547	151	21	1048
Wilhöft, Franz, New York, N. Y. Urethral syringe	254,579	Mar. 7	165	41	21	606
Wilke, Alvin. (See Payne, William H., assignor.)						
Wilke, August, Brunswick, Germany. Machine for bending and straightening metal	256,280	Apr. 11	659	178	21	1067
Wilkerson, Lafayette, Scipio, Ind. Car-coupling	259,562	Jan. 17	1071	208	21	194
Wilkin, Theodore S., East Saginaw, Mich. Machine for stretching saws	259,008	June 6	947	66	21	1736
Wilkins, Alexander G., Cooperstown, Pa. Implement for putting buttons on shoes	258,563	Jan. 17	1078	269	21	194
Wilkins, George W., Brattonville, Pa. Machine for sawing and outgaging material for barges	259,737	June 20	1697	292 293	21	1900
Wilkins, J. J., Virden, Ill., assignor, by mesne assignments, to Eberhard Manufacturing Company, Cleveland, Ohio. Harness-hook. (Reissue)	10,043	Feb. 21	1129	315	21	555
Wilkins, Turney M., Washington, D. C. Mechanical toy	258,335	May 23	1474	419	21	1568
Wilkinson, Edward, Paterson, N. J. Clutch	258,988	June 6	120	31, 32	21	1715
Willard, Benjamin J., Portland, Me. Life-preserver	254,580	Mar. 7	166	41	21	606
Willard, Daniel S., and H. D. Dunbar, North Hartland, Vt. Milk-pail	254,183	Feb. 28	1282	340	21	578
Willcox, Charles H. (See Borton and Willcox.)						
Willcox & Gibbs Sewing Machine Company. (See Borton and Willcox, assignors.)						
Willcox & Gibbs Sewing Machine Company *et al.* (See Shorey, Samuel W., assignor.) (Reissue.)						
Willcuts, R. F. (See Parker, Jesse L., assignor.)						
Williford, George W., Sheffield, county of York, England. Machine for making springs	256,068	Apr. 4	405	110	21	1018
Willi, Theodore, assignor of two-thirds to F. S. Richsteiner and C. L. Baumann, Dayton, Ohio. Stove	253,144	Jan. 31	1789	496 497 110 111	21	336
Williamcs, Napoleon W., Philadelphia, Pa. Heating apparatus	256,069	Apr. 4	406	111	21	1018
Williams, Albert W., *et al.* (See Wilson, Vincent W., assignor.)						
Williams, Alfred, assignor of one half to I. W. Heysinger, Philadelphia, Pa. Fire-escape	259,022	June 13	929	248	21	1864
Williams, Benezette, Chicago, Ill. Flushing-basin	258,344	Jan. 17	896	295	21	150
Williams Brothers Manufacturing Company. (See Leonard, John B. H., assignor.)						
Williams, Charles, Jr. (See Lane, Thomas W., assignor.)						
Williams, Charles C., Columbus, Ohio. Mechanism for operating railway-switches	251,993	Jan. 3	356	97	21	62
Williams, Charles H., Cleveland, Ohio. Wash-board	255,555	Mar. 28	1401	378	21	890
Williams, Charles H., Worcester, assignor to T. C. Bates, North Brookfield, Mass. Corset	254,798	Mar. 7	407	108	21	707
Williams, Chester, Capac, Mich. Life-preserving garment	258,898	Jan. 24	1398	387	21	253
Williams, Daniel W., New Orleans, La. Constructing channels through sand bars in harbors	258,917	Jan. 31	1504	419	21	279
Williams, David D., Wilkes-Barré, Pa. Miner's lamp	258,264	Jan. 10	735	205	21	128
Williams, Edward, New York, assignor to S. T. Williams, Brooklyn, N. Y. Safety-pin	254,445	Feb. 28	1521	416	21	630
Williams, Edward G., *et al.* (See Crandall, Jesse A., assignor.)						
Williams, Edward G., *et al.* (See Ritchel, Charles F., assignor.)						
Williams, Eliza K. (See Crowell, Pearl K., assignor.)						
Williams, Francis A., assignor of one-fourth to J. A. Burke, New York, N. Y. Metallic railway tie and fastening	255,554	Mar. 28	1399	378	21	890
Williams, Francis O., North Cohocton, N. Y. Cultivator	258,163	Jan. 10	591	166	21	106
Williams, Fred S., assignor to himself and C. V. Shaddle, New York, N. Y. Thread holder and cutter	255,745	Mar. 28	1641	444	21	942
Williams, Frederic A. (See Forbes, John A., assignor.)						
Williams, George L., Edwardsville, Ill. Mill-packer register	256,836	May 30	2073	585	21	1681
Williams, George L., and H. Rundle, assignors of one-third to J. T. Cooper, Edwardsville, Ill. Fire-escape	258,889	Jan. 24	1389	386	21	253
Williams, George W., assignor of one-fourth to W. E. Smith, Winona, Minn. Journal-bearing	259,955	June 6	465	122	21	1774
Williams, Jacob, Dublin, Ind. Cultivator	253,458	Feb. 7	386	90	21	401

Alphabetical list of patentees, January to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Williams, John I., Pittsburg, Pa. Three-high rolling-mill. (Reissue)	10,104	May 9	376	105, 106	21	1348
Williams, John M., *et al.* (See Brooks, Rhodom M. and J. M., assignors.)						
Williams, John M., Pittsburg, Pa. Lubricator	257,118	Apr. 25	1668	467	21	1264
Williams, John M., Pittsburg, assignor to himself and H. McDonald, Allegheny city, Pa. Nut-lock	258,564	Jan. 17	1073	299	21	194
Williams, John W., New York, N. Y. Mechanism for regulating clock-pendulums	256,936	Apr. 25	1464	411	21	1228
Williams, La Vega T., and E. D. Knight, Poseyville, Ind. Car-coupling	253,800	Feb. 14	748	214	21	485
Williams, Lewis. (See Putnam, Bradbury, and Williams.)						
Williams, Lewis, Bennington, Vt. Apparatus for drawing wire	256,779	Apr. 18	1269	358	21	1187
Williams, Morris D., Syracuse, N. Y. Heel-plate	256,939	Apr. 25	1465	411	21	1228
Williams, Richard D. (See Allderdice and Williams.)						
Williams, Richard D., Baltimore, Md. Oar-lock	260,341	June 27	1846	498	21	2027
Williams, Richard E., Grass Valley, Cal. Condenser for steam-engines	255,372	Mar. 21	1173	315	21	854
Williams, Robert. (See Bowker, William, assignor.)						
Williams, Silas S., assignor to J. B. Rath, Erie, Pa. Cock and faucet	260,073	June 27	1518	407	21	1975
Williams' Sons, Charles. (See Martino, John, assignor.)						
Williams, Susan T. (See Williams, Edward, assignor.)						
Williams, Sylvester M., San Francisco, Cal. Collar-button and cravat-fastener	258,336	May 23	1475	420	21	1368
Williams, Thaddeus W., Milwaukee, Wis. Electric belt	256,596	Apr. 18	924	277	21	1137
Williams, White & Co. (See Cross, Christopher G., assignor.)						
Williams, William H., Brooklyn, N. Y. Spring-hinge	252,164	Jan. 10	592	166	21	108
Williams, William H., Bristol, N. H. Oiler	258,184	May 16	1272	360	21	1525
Williams, Zachariah H. (See Andrews, William, assignor.)						
Williams, Zephaniah, Oakland, Cal. Dredging-machine	253,145	Jan. 31	1791	497	21	327
Williamson, Carper, Fincastle, Va. Revolving harrow	260,342	June 27	1847	498	21	2027
Williamson, Catharine A., St. Louis, Mo. Shoulder-brace and corset	257,261	May 2	137	39	21	1305
Williamson, George W., *et al.* (See Williamson and Fladvad, assignors.)						
Williamson, James R. and J. A., Brunswick, Ga. Fruit-picker	256,421	Apr. 11	844	233	21	1100
Williamson, John. (See Remmers and Williamson.)						
Williamson, John D., *et al.* (See Williamson and Fladvad, assignors.)						
Williamson, Joseph A. (See Williamson, James R. and J. A.)						
Williamson, Joseph T., Raleigh, N. C. Stencil-plate	257,423	May 2	337	94	21	1241
Williamson, William, Rio Vista, Cal. Grain-cleaner	251,984	Jan. 3	301	97	21	92
Williamson, William C., and H. O. Fladvad, assignors to said Williamson, G. W. and J. D. Williamson, Philadelphia, Pa. Steam steering mechanism	257,796	May 9	810	227	21	1432
Williamson, William H. (See Thompson and Williamson.)						
Willie, John, Wilmington, Del. Awning	253,568	Feb. 14	464	132	21	436
Willins, Ferdinand, *et al.* (See Richter, Charles, assignor.)						
Willins, Gustav, *et al.* (See Richter, Charles, assignor.)						
Willis, William R., *et al.* (See Simonson, Sall, assignor.)						
Willson, Charles H., Mount Vernon, N. Y. Adjustable base-board	258,837	May 30	2074	585	21	1681
Willson, Charles H., Mount Vernon, N. Y. Manger	258,838	May 30	2075	585, 586	21	1681
Willson, Charles H., Mount Vernon, N. Y. Frame for doors or windows	258,839	May 30	2076	586	21	1681
Willson, Charles P., Summit Point, W. Va. Car-coupling	254,754	Mar. 7	371	97	21	701
Willson, Charles P., Summit Point, W. Va. Car-coupling	257,119	Apr. 25	1669	467	21	1265
Willson, Horace W. (See Watson and Willson.)						
Wilson, Bennet C., Philadelphia, Pa. Running-gear for railway-cars	259,918	Jan. 31	1504	419	21	280
Wilson, Bryce A., Providence, R. I. Box-loop and blind for harness	260,074	June 27	1519	408	21	1976
Wilson, Charles B., Orange, Tex. Oil-can	253,146	Jan. 31	1793	497	21	327
Wilson, Charles C., Washington, D. C. Hand-stamp	255,229	Mar. 21	996	266	21	894
Wilson, Edward. (See Redmond, John B., assignor.)						
Wilson, F. Cortez, Chicago, Ill. Can-spout	259,446	June 13	712	189	21	1896
Wilson, F. Cortez, Chicago, Ill. Swinging can	259,738	June 20	1099	293	21	1900
Wilson, F. Cortez, and Z. H. Boole, Chicago, Ill.; said Boole assignor to said Wilson. Nozzle for shipping-cans	257,120	Apr. 25	1670	468	21	1265
Wilson, George E., Morristown, assignor of one-half to A. D. Taylor, Belmont County, Ohio. Thill-coupling	254,894	Mar. 14	563	151	21	742
Wilson, Harry M., Baltimore, Md. Whiffletree-hook	258,840	May 30	2077	586	21	1681
Wilson, Hiram J., Mason, Mich. Lifting-jack	253,964	Feb. 21	962	267	21	596
Wilson, Jefferson, Beaver Falls, Pa. Churn-power	257,797	May 9	811	227	21	1432
Wilson, John B., and J. F. Kortepeter, Southport, Ind. Device for holding animals	259,349	June 13	588	156	21	1803
Wilson, John T., assignor to Wilson, Walker & Co., (limited,) Pittsburg, Pa. Car-coupling link	259,959	June 20	1357	366	21	1943
Wilson, John T., Pittsburg, and J. H. Simpson, Millvale, assignors to Wilson, Walker & Co., (limited,) Pittsburg, Pa. Car-coupling	259,960	June 20	1358	366	21	1943
Wilson, Joseph D., assignor of one-half to F. J. Mitchell, Kansas City, Mo. Car-coupling	258,185	May 16	1273	361	21	1525
Wilson, Joseph H. (See Chamberlain, Blanchard, assignor.)						
Wilson, Noah R. Piedmont, S. C. Seed-planter and fertiliser-distributer	259,923	June 13	931	248	21	1864
Wilson, Robert J., Pittsburg, and A. Snyder, Allegheny, Pa. Car-brake	253,949	Feb. 7	79	25	21	360
Wilson & Sons, P. (See Standish, Philander H., assignor.)						
Wilson, Thomas L., Port Hope, Ontario, assignor of one-half to E. H. Davis, Toronto, Canada. Car	272,939	Jan. 24	1301	388	21	254
Wilson, Vincent W., assignor to Wilder, Paten & Metcalf, Leominster, Mass. Comb	252,856	Jan. 24	1496	397	21	259
Wilson, Vincent W., assignor to C. L. Joslin and A. W. Williams, Leominster, Mass. Game apparatus	254,490	Feb. 28	1493	400	21	695
Wilson, Walker & Co. (See Wilson, John T., assignor.)						
Wilson, Walker & Co. (See Wilson and Simpson, assignors.)						
Wilson, William, Earlville, Ill. Ditching and tile-laying machine	254,663	Feb. 21	1106	309	21	551
Wilson, William, Brooklyn, N. Y. Advertising-table	256,760	Apr. 18	1271	358	21	1187
Wilson, William V., Dayton, N. J. Railway time-signal	259,961	June 20	1359	366, 367	21	1943
Wiltse, Charles G., assignor to himself and A. L. Freeman, New York, N. Y. Animal-trap	257,798	May 9	812	227	21	1432
Wilverth, Henry, St. Charles, Ky. Coal-excavator	252,565	Jan. 17	1074	299	21	194
Winchell, James F., assignor to G. W. Boyd & Co., Springfield, Ohio. Burial-vault	256,889	May 30	2106	594	21	1667
Winchester Repeating Arms Company. (See Bennett, Thomas G., assignor.)						
Winchester Repeating Arms Company. (See Salisbury, George P., assignor.)						
Windbiel, Charles, and J. Firth, Amsterdam, N. Y. Pressure-regulator for hydrostatic presses	259,350	June 13	589	156	21	1803
Windsor, Edgar G. (See Chamberlain, William E., assignor.)						
Winegar, William W., Chambersburg, Ill. Grain-drill	257,434	May 2	338	95	21	1241
Wing, Ephraim N., Green Bay, Va. Construction-tender for railways	259,962	June 20	1361	367	21	1944

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Wing, Henry S., assignor to J. A. Wing, Ashtabula, Ohio. Curtain-fixture	259,851	Jan. 24	1400	395	21	258
Wing, Henry S., assignor to J. A. Wing, Ashtabula, Ohio. Carriage-bow	257,982	May 2	138	39	21	1305
Wing, Henry S., assignor to J. A. Wing, Ashtabula, Ohio. Carpet-sweeper	260,069	June 6	948	66	21	1736
Wing, Jennie A. (See Wing, Henry S., assignor.)						
Wing, Leander J., Lexington, Mass. Combined rotary, cut-off, and governor valve	259,963	June 20	1363	367, 368, 369	21	1944
Wing, Leander J., Boston, Mass. Rotary engine	259,964	June 20	1367	369, 370	21	1945
Wing, Leander J., Lexington, Mass. Rotary engine	259,965	June 20	1372	370, 371	21	1946
Wing, Leander J., Lexington, Mass. Rotary engine	259,966	June 20	1379	371	21	1947
Wing, Leander J., Boston, Mass. Rotary engine	259,967	June 20	1380	371	21	1947
Wing, Levi J., Brooklyn, N. Y. Cable railway	257,121	Apr. 25	1671	468	21	1265
Wing, Lewis T., Cambridge, Iowa. Animal-poke	259,624	June 13	932	249	21	1865
Wing, Spencer J. (See Murray, Craig, assignor.)						
Winger, Oswald E., Freeport, Ill. Feed-grinding mill	258,165	Jan. 10	894	187	21	108
Winkler, Theodore, assignor to A. Leckelt, Chicago, Ill. Rotary pump	256,761	Apr. 18	1272	358	21	1187
Winklaas, William, Newport, Ky. Fire-escape	253,450	Feb. 7	387	91	21	401
Winn, Philip J., Fork Union, Va. Gate-latch. (Reissue)	10,128	May 30	2112	596	21	1668
Winser, Sino E., Peru, Ill. Hay elevator and conveyer	258,522	Jan. 17	1075	299	21	194
Winslow, Frank, Hiawatha, Kans. Animal-trap	259,832	Jan. 24	1421	396	21	259
Winslow, Freeman, trustee. (See Stevens, John H., assignor.)						
Winslow, John, Jr. (See Pomeroy and Winslow.)						
Winslow, Lorenzo, Rochester, N. Y. Dumping-wagon	260,209	June 27	1737	475	21	2013
Winslow, Samuel, Worcester, Mass. Roller-skate	255,065	Mar. 14	788	211	21	781
Winslow, Sidney W., Salem, Mass. Device for beating out shoe-soles	258,621	May 30	1830	514	21	1636
Winsor, Harvey D. (See Haight, George E., assignor.)						
Winsor, William E. (See Haight, George E., assignor.)						
Winter, Albert, Plainfield, N. J. Cloth-measuring machine	258,567	Jan. 17	1076	300	21	195
Winter, Albert, Plainfield, N. J. Cloth-folding machine	260,270	June 27	1758	475	21	2013
Winter, David T., Peabody, Mass. Machine for measuring the area of hides, surfaces, &c.	256,969	June 6	121	32	21	1715
Winter, David T., Peabody, Mass. Machine for measuring the area of hides, &c.	256,976	June 6	194	33	21	1716
Winter, Mary E., Galesburg, and C. W. Crary, Chicago, Ill.; said Crary assignor to said Winter. Adding-machine	258,518	May 23	1663	476, 477	21	1604
Winter, Michael, Sr., Union City, Ind. Carpet-stretcher	253,460	Feb. 7	388	91	21	401
Winter, Michael, Sr., Union City, Ind. Car-coupling	253,601	Feb. 14	749	214	21	485
Winterbauer, Louis, New York, N. Y. Beer apparatus	259,625	June 13	933	249	21	1865
Winters, George. (See Miller, David R., assignor.)						
Winters, John C., Mount Morris, N. Y. Method of and apparatus for filling cans and preserving their contents	254,895	Mar. 14	564	151, 152	21	742
Winters, John C., Mount Morris, N. Y. Can-capping machine	256,690	Apr. 4	408	111	21	1019
Winters, Joseph R., Chambersburg, Pa., assignor of one-half to S. B. Reed, New York, N. Y. Fire-escape	256,186	May 16	1275	361	21	1525
Wire, George. (See Baker, George D., assignor.)						
Wires, Edwin O., Boston, Mass. Dish-holder	251,754	Jan. 3	78	22	21	16
Wise, Morris, assignor to West India Manufacturing Company, New York, N. Y. Apparatus for making extracts from vegetable substances	253,802	Feb. 14	751	214	21	485
Wise, Thomas P., Richmond, Va. Plow attachment	255,666	Mar. 14	790	211	21	781
Wiseheugh, Henry, Canton, Ohio. Medical compound for diphtheria	259,670	June 6	250	.....	21	1736
Wiseman, Edmund, Luton, county of Bedford, England. Straw-braid sewing-machine	257,495	May 2	339	95	21	1242
Wisill, William W., Sr., *et al.* (See Horton, Theodore, assignor.)						
Wiswell, Frederick A. (See Ewins and Wiswell.)						
Wiswell, Theodore L., Olathe, Kans. Hanger for clothes	255,746	Mar. 28	1042	445	21	942
Witham, Ephraim, Carritunk, Me. Calk	255,556	Mar. 28	1402	379	21	899
Witherbee, Thomas F., Port Henry, N. Y. Regulator for blowing-engines	257,799	May 9	813	228	21	1433
Witherell, Hermon O., assignor to Eagle Knitting Company, Elkhart, Ind. Mitten	256,337	May 23	1476	420	21	1368
Witherell, Loren R., Davenport, Iowa. Paper-bag file	256,387	Apr. 18	985	277	21	1138
Witherell, William F., Chicago Ill., and B. H. Vary, Ogdensburg, N. Y. Furnace for roasting, desulphurizing, and chlorodizing ores	254,755	Mar. 7	373	98	21	701
Witherington, Willis F., Kenton, Tenn. Device for raising and lowering wagon-bodies	256,187	May 16	1276	361	21	1526
Withey, John F., Lynn, Mass. Sink or hydraulic trap	259,256	June 6	665	123	21	1774
Witmer, Samuel H., Chicago, Ill. Folding cabinet-bed	253,963	Feb. 21	960	240	21	514
Witall, George L., Philadelphia, Pa., assignor to E. C. Edwards, Brooklyn, N. Y. Wool-washing machine	256,762	Apr. 18	1272	358	21	1187
Witall, George L., Philadelphia, Pa., assignor to E. C. Edwards, Brooklyn, N. Y. Roller-skate	257,496	May 2	342	95	21	1242
Witte, Lewis H., Cleveland, Ohio. Manufacture of milk-sugar	256,641	May 30	2077	.....	21	1681
Wittenberg, Charles, assignor to N. S. Byram and E. G. Cornelius, Indianapolis, Ind. Canopy-frame	255,063	Mar. 14	680	219	21	787
Wittenberg, Charles, assignor to N. S. Byram and E. G. Cornelius, Indianapolis, Ind. Child's carriage	258,870	May 23	1401	396	21	1555
Wittich, Frederic A., assignor of two-thirds to R. B. Bullock and W. Hubbard, Ashtabula, Ohio. Side pieces for carriage-bows	259,785	June 20	1154	307	21	1900
Wittmann, Rudolf, New York, N. Y. Automatic lead and crayon holder	253,603	Feb. 14	752	214	21	486
Wittmann, Rudolf, New York, N. Y. Dimension-measure	256,783	Apr. 18	1273	359	21	1188
Witte, Nelson, Alma City, Minn. Snow-plow	259,630	Jan. 24	1156	304	21	215
Wodiaka, Julius, New York, N. Y. Glove-fastening	256,842	May 30	2078	598	21	1682
Wohnlich, Louis J., Detroit, Mich. Speed-indicator for shafting	258,985	Jan. 10	736	205	21	132
Wohnlich, Louis J., and E. J. Scholes, assignors to said Scholes, W. and A. McFarland, Detroit, Mich. Machine for cutting off capsules	255,689	Apr. 4	93	25	21	966
Wolcoski, William, Atlanta, Ill. Spring for vehicles	255,903	Apr. 4	187	46	21	981
Wolcott, Henry J., Albion, Mich. Windmill	256,188	May 16	1277	362	21	1526
Wold, George B., Bridgeport, Conn. Dish-drainer	253,461	Feb. 7	389	91	21	401
Wolf, Abraham, New York, N. Y. Picture-frame. (Reissue)	10,097	Apr. 25	1716	481	21	1273
Wolf, Abraham N., assignor of one-half to J. Barber, Allentown, Pa. Flour-mill	255,747	Mar. 28	1043	445	21	943
Wolf, Augustus, Allentown, assignor of one-half to D. L. Hausaker, East Hempfield, Pa. Dust-collector for middlings-purifiers, &c	251,965	Jan. 3	302	98	21	93
Wolf, Augustus, Allentown, assignor of one-half to D. L. Hausaker, East Hempfield, Pa. Middlings-purifier	259,968	June 20	1364	372	21	1946
Wolfe, Horace S., assignor of two-thirds to F. W. Cornell and C. Kellogg, Kalamazoo, Mich. Stock-car	253,804	Feb. 14	753	215	21	486
Wolfe, Horace S., assignor of two-thirds to F. W. Cornell and C. Kellogg, Kalamazoo, Mich. Stock-car	256,185	Apr. 11	555	151, 152	21	1049

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Wolfe, Joseph A. L. (See Rudolph and Wolfe.)						
Wolfenden, Shore & Co. (See Goodyear, Robert B., assignor.)						
Womelsdorff, James W., assignor to himself, A. M. Simms, Guyandotte, and R. T. Oney, Huntington, W. Va. Ratchet-wrench	252,300	Jan. 10	757	210	21	135
Wood, Alfred, Detroit, Mich. Capsule-machine	258,519	May 23	1687	477	21	1605
Wood, Charles D., Lincoln, R. I. Piping for boots and shoes	255,067	Mar. 14	790	211	21	781
Wood, Charles H., Springfield, Mass. Feeding mechanism for sewing-machines	252,568	Jan. 17	1077	300	21	195
Wood, Edward E., Jr., Northampton, Mass. Carving-fork guard	257,427	May 2	343	96	21	1342
Wood, Foster. (See Woodbury, Wood, and Sawyer.)						
Wood, Frank. (See Wood, William A., assignor.)						
Wood, Frank B. (See Brower and Wood.)						
Wood, Frank B., New York, and H. J. Brower, assignors of one-fourth to B. E. Valentine, Brooklyn, N. Y. Automatic electric-signal-printing register	252,409	Jan. 17	867	247	21	163
Wood, Harry B. (See Siekels, Gerard, assignor.)						
Wood, James A., Rochester, N. Y. Cooking-boiler	253,805	Feb. 14	754	215	21	486
Wood, James J., Brooklyn, N. Y. Electric lamp	256,091	Apr. 4	410	112	21	1019
Wood, James J., Brooklyn, N. Y. Electric-light regulator	257,800	May 9	814	236	21	1432
Wood, James P., Philadelphia, Pa. Apparatus for heating air by steam	258,189	May 16	1278	362	21	1536
Wood, John B., assignor to M. M. Wood, Brooklyn, N. Y. Device for slackening and tightening stays, guys, &c.	257,263	May 2	130	39	21	1305
Wood, John R., New Brunswick, N. J. Buckle	257,122	Apr. 25	1672	468	21	1265
Wood, Joseph H., Akron, Ohio. Floor-cloth	259,257	June 6	466	.....	21	1775
Wood, Mary M. (See Wood, John B., assignor.)						
Wood, Mortimer F., San Francisco, Cal. Attachment for furnaces	253,462	Feb. 7	330	91	21	402
Wood Mowing and Reaping Machine Company, Walter A. (See Johnson, John A., assignor.)						
Wood, Myron G., Church's Corners, and W. C. Pratt, Hudson, Mich. Sulky-plow	256,422	Apr. 11	845	{223 234}	21	1100
Wood, Oliver F., Baldwyn, Miss. Car-coupling	255,748	Mar. 28	1644	445	21	943
Wood, Richard V. D., *et al.* (See Aldrich, Harvey C., assignor.)						
Wood, Thomas, and J. Morris, Birmingham, Conn. Auger-bit	254,184	Feb. 28	1223	341	21	578
Wood, W. Dewees, McKeesport, Pa. Manufacture of sheet-iron	252,166	Jan. 10	596	167	21	109
Wood, William A., Youngstown, Ohio, assignor to F. Wood, Albany, N. Y. Harvester	251,986	Jan. 3	392	98, 99	21	63
Wood, William H., Orange, N. J. Nut-lock	256,520	Apr. 18	986	278	21	1138
Wood, William R., and S. Barr, Butler, Iowa. Machine for boring axle-holes in hubs, &c.	252,447	June 13	713	{189 190}	21	1826
Wood, William S., assignor to Colorado Gold Saving Sluice Box Company, Denver, Colo. Ore-washer	252,569	Jan. 17	1078	{300 301}	21	195
Woodard, Stephen, Delano, Minn. Roofing-bracket	258,843	May 30	2079	587	21	1682
Woodard, William H. (See Kline and Woodard.)						
Woodard, William H., and L. D. Benedict, Cleveland, Ohio. Stove-rack	255,068	Mar. 14	791	212	21	781
Woodbridge, James E. (See Gardner, Frederick N., assignor.)						
Woodbury, Clark, F. Wood, and A. J. Sawyer, Old Town, Me. Tubular lantern	252,520	May 23	1688	477	21	1605
Woodbury, William E., *et al.* (See Burns, Wilson C., assignor.)						
Woodfill, Jared R., Aurora, assignor to J. I. Woodfill, Nichols, Mo. Telegraph-relay and repeating-instrument	255,373	Mar. 21	1174	315	21	855
Woodfill, John I. (See Woodfill, Jared R., assignor.)						
Woodford, Charles W., Essex, N. Y. Box-pressing clamp	255,069	Mar. 14	792	212	21	782
Woodhead, Samuel, West Troy, N. Y. Machine for seaming sheet-metal roofs	259,786	June 20	1155	307	21	1909
Woodhill, John. (See Calkins and Woodhill.)						
Woodhouse, Otway E., 90 Upper Phillimore Gardens, Kensington, county of Middlesex, England. Handle for rackets or lawn-tennis bats	259,448	June 13	714	190	21	1826
Woodhull, Morris, Dayton, Ohio. Vehicle-spring	255,904	Apr. 4	188	49	21	981
Woodman, Alvin, assignor to himself and C. I. Barker, Lewiston, Me. Cloth tentering, drying, and calendering machine	253,806	Feb. 14	755	215	21	486
Woodring, Gideon, Du Bois, Pa. Car-coupling	257,801	May 9	817	228	21	1433
Woodring, Henry, and N. C. Cents, Waverly, Iowa. Piston and valve rod packing	259,449	June 13	715	190	21	1826
Woodrough, James R., assignor to Woodrough & McParlin, Cincinnati, Ohio. Handsaw	252,570	Jan. 17	1080	301	21	195
Woodrough, James R., assignor to Woodrough & McParlin, Cincinnati, Ohio. Back-saw	252,571	Jan. 17	1080	301	21	196
Woodrough, James R., assignor to Woodrough & McParlin, Cincinnati, Ohio. Handsaw	257,802	May 9	817	228	21	1433
Woodrough & McParlin. (See Woodrough, James R., assignor.)						
Woodruff Bros. (See Sylvester, Philip L., assignor.)						
Woodruff, John I. D. and L. Y., St. Charles, Ky. Plaiting-machine	252,286	Jan. 10	737	206	21	132
Woodruff, Lemuley Y. (See Woodruff, John I. D. and L. Y.)						
Woodruff, Leslie B., Chicago, assignor to himself, J. Shaw, and A. J. Hopkins, Aurora, Ill. Calipers	252,410	Jan. 17	894	248	21	164
Woodruff, Leslie E., H. P. Wheeler, and J. Pearson, Howell, Mich. Fruit-drier	254,594	Mar. 7	94	24	21	654
Woodruff, M. N., *et al.* (See Pearce, William, assignor.)						
Woods, Alfred, Graniteville, Mass. Awning for windows	259,450	June 13	716	190	21	1827
Woods, Daniel W., St. Louis, Mo. Car-brake	257,803	May 9	818	229	21	1433
Woods, Frank E., Harrisburg, and T. J. Curley, Reading, Pa. Bed-bottom	253,463	Feb. 7	331	92	21	402
Woods, George. (See Jones, John, assignor.)						
Woodward, Abel B. (See Woodward, William and A. B.)						
Woodward, Charles L., Angola, N. Y. Potato planting and fertilizing machine	253,509	Feb. 14	465	132	21	486
Woodward, Erastus, Somerville, assignor to G. W. Copeland, Malden, Mass. Tacking-machine	251,735	Jan. 3	79	23, 24	21	16
Woodward, Erastus, Somerville, assignor to G. W. Copeland, Malden, Mass. Fastening-driving machine	251,736	Jan. 3	82	24	21	17
Woodward, Erastus, Somerville, Mass., assignor to Copeland Tacking and Lasting Company, Paterson, N. J. Preparing beaded tacks for use	253,250	Feb. 7	81	26	21	360
Woodward, Erastus, Somerville, Mass., assignor to Copeland Tacking and Lasting Company, Paterson, N. J. Tacking-machine	254,421	Feb. 28	1495	409	21	625
Woodward, Erastus, Somerville, Mass., assignor to Copeland Tacking and Lasting Company, Paterson, N. J. Tacking-machine	254,776	Mar. 7	375	98	21	702
Woodward, Frank R., Hill, N. H. Making latch-needles	259,989	June 20	1396	373	21	1948
Woodward, George W., New York, N. Y. Hanger for chandeliers	252,919	Jan. 31	1506	419	21	280
Woodward, Joseph, New York, N. Y. Match-box	253,570	Feb. 14	467	132	21	437
Woodward, T. Trask, assignor of one-half to J. F. Flood, Decatur, Ill. Vapor-burner	254,185	Feb. 28	1224	341	21	578
Woodward, William and A. B., Nashville, Tenn. Brick-machine	254,525	Mar. 7	93	24	21	655
Woodward, William C., Marseilles, Ill., assignor of one-half to E. Tolles, Union, Wis. Combined organ and upright piano	253,464	Feb. 7	332	92	21	402
Woodyatt, Augustus R., assignor to Guelph Carriage Goods Company, Guelph, Ontario, Canada. Machine for bending and shaping metal articles	252,853	Jan. 24	1422	396	21	259
Wooldridge, William H., Louisville, Ky. Head-rest	258,338	May 23	1477	420	21	1568
Woolhiser, Charles P., New York, assignor to W. H. H. Rogers, Brooklyn, N. Y. Paper box	255,374	Mar. 21	1177	316	21	855

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Woolley, Edward W. and S. C., Chicago, Ill. Car-coupling	256,186	Apr. 11	556	152	21	1030
Woolley, Leonidas G., Meadon, Mich. Electro-magnetic motor	256,784	Apr. 18	1274	359	21	1188
Woolley, Leonidas G., Meadon, Mich. Electric lamp	256,785	Apr. 18	1275	359	21	1188
Woolley, Leonidas G., Meadon, Mich. Dynamo-electric machine	256,786	Apr. 18	1277	360	21	1188
Woolley, Starr C. (See Woolley, Edward W. and S. C.)						
Woolnough, Cornelius, No. 8 Elizabeth Street, Eaton Square, county of Middlesex, England. Trace-fastening bolt	253,147	Jan. 31	1783	498	21	337
Woolsey, L. Jerome. (See Everson, Charles R., assignor.)						
Woolsey, Warren. (See Jones and Woolsey.)						
Woolson, Henry C. (See Woolson, Thomas D., assignor.)						
Woolson, Orozco C., Newark, N. J., assignor to C. A. Cheever, trustee, New York, N. Y. Armatures for electro-magnets	255,749	Mar. 28	1644	445	21	943
Woolson, Thomas D., assignor of one-half to H. C. Woolson, Buffalo, N. Y. Attachment for magazine-stoves	253,465	Feb. 7	333	93	21	402
Worcester, George H. (See Brinckerhoff, Alexander, assignor.)						
Worcester, George M. (See Mason and Worcester.)						
Worcester, Josh H., Strykersville, N. Y. Milkstone-driver	256,787	Apr. 18	1278	360	21	1189
Worden, John E., Philadelphia, Pa. Locomotive-boiler	254,561	Mar. 7	196	41	21	656
Worch, Emil, Washington, D. C., assignor, by mesne assignment, to L. A. Chichester, Phœnicia, N. Y. Combined stool and chair. (Reissue)	10,085	Jan. 3	412	111	21	71
Worden, Alva, Ypsilanti, Mich. Cartridge capping and uncapping implement	254,257	Mar. 7	376	98	21	703
Worger, William B., and E. M. Richford, London, England. Trunk, box, &c.	257,123	Apr. 25	1672	{468 469}	21	1265
Wornack, Alexander, Emmettville, Idaho Ter. Tire-upsetter	256,568	Apr. 18	985	277	21	1138
Worrall, John F. (See Thomas and Worrall.)						
Worrall, John F., Woonsocket, R. I. Ring-spinning machine	257,198	May 2	57	18	21	1291
Worrell, Stanley L., Hannibal, Mo. Machine for drying and cooling grain and other substances	256,940	Apr. 25	1466	411	21	1238
Worrest, Alfred H., Salisbury township, Lancaster county, Pa. Fertiliser-feeder for grain-drills	256,190	May 16	1279	362	21	1536
Worth, Frederick A., *et al.* (See Shelton, Samuel C., assignor.)						
Worthington, Amasa. (See Palmer, Worthington, and Rowell.)						
Worthington, James K., Kirkwood, Mo. Sulky-plow	253,807	Feb. 14	757	216	21	487
Worthington, Thomas M., New York, N. Y. Fence	259,654	June 13	972	266	21	1671
Wright, Carlton, *et al.* (See Moore, Otis W., assignor.)						
Wright, Edgar A., Moline, Ill. Combined plow and planter	257,804	May 9	819	229	21	1433
Wright, Edgar A., Moline, Ill. Cultivator	259,926	June 13	934	{249 250}	21	1865
Wright, Francis R. (See Logan and Wright.)						
Wright, Frank C., New York, N. Y. Snap-hook	253,904	Feb. 21	861	248	21	514
Wright, Frank M., Palmyra, N. Y. Broom-board	257,685	May 9	830	230	21	1434
Wright, Homer, Pittsburg, Pa. Ornamenting metals	253,905	Feb. 21	868	.....	21	514
Wright, Homer, Pittsburg, Pa., and I. W. Knowles, East Liverpool, Ohio. Device for attaching covers to vessels	259,655	June 13	973	266	21	1671
Wright, Isaac H. (See Henckens, John T., assignor.)						
Wright, Isaac H., Baltimore, Md. Caramel-cutter	253,466	Feb. 7	334	92, 93	21	402
Wright, John A., Keene, N. H. Compound for absorbing oils for burning and illuminating purposes	255,220	Mar. 21	997	.....	21	894
Wright, John E. (See Longstreet and Wright.)						
Wright, John H., Newark, N. J. Button or stud	253,467	Feb. 7	334	93	21	402
Wright, John J., assignor to G. S. Garrett, Philadelphia, Pa. Safety device for electric lamps	256,521	May 23	1689	478	21	1605
Wright, Joshua C., Keboka, Me. Seed-sower	256,788	Apr. 18	1279	360	21	1189
Wright, Milton, Fort Valley, Ga. Brick-machine	256,096	Apr. 4	413	113	21	1020
Wright, Parvin, Hayden's Station, Colo. Baling-press	253,468	Feb. 7	335	93, 94	21	402
Wright, Parvin, Granite, Colo. Hay-baling machine	255,750	Mar. 28	1644	446	21	943
Wright, Parvin, Granite, Colo., assignor to W. F. Disterichs and C. Schaefer. Traveling hay-press	254,756	Mar. 7	377	{99 100}	21	702
Wright, Thomas R., and T. B. Hill, Philadelphia, Pa. Trimming attachment for sewing-machines	257,124	Apr. 25	1673	469	21	1265
Wright, Walton W., Cairo, Ill. Weighing-scales	256,482	Apr. 11	846	234	21	1100
Wright, William, Droylsden, and T. Bintliff, Manchester, county of Lancaster, England; said Bintliff assignor to said Wright. Manufacture of soap-powder and apparatus therefor	255,070	Mar. 14	793	213	21	782
Wright, William A., Lowell, Mass. Thread-guard for spinning-machines	259,627	June 13	937	250	21	1695
Wria, Patrick. (See Herbert and Wria.)						
Wundram, George W., Hoboken, N. J. Apparatus for registering the size and number of barrels and packages	259,730	June 20	1160	293	21	1909
Wurtz, Henry, New York, N. Y. Treating mineral pyrites and sulphides for the manufacture of sulphurous and sulphuric acids	253,987	Jan. 10	737	.....	21	132
Wyman, Charles O., Howard, Me. Boiler feed-water regulator	259,787	June 20	1156	297	21	1949
Wyman, Daniel D., Lockport, N. Y. Bed-bottom	254,094	Feb. 21	1107	289	21	551
Wyman, Fred F., Brunswick, Ohio. Fence-post	257,199	May 2	59	18	21	1291
Wyman, Horace, Worcester, Mass. Mechanism for converting motion	260,349	June 27	1654	501	21	2049
Wynkoop, Archimedes B. (See Tait, James G., assignor.)						
Wysong, Rebecca. (See Ritter and Wysong.)						
Yager, Frank, Clarkston, Mich. Bob-sleigh	254,856	Mar. 14	563	134	21	731
Yagerlenner, John. (See Ober and Yagerlenner.)						
Yakel, Levi, Allegheny, Pa. Tire for wagon-wheels	254,492	Feb. 28	1496	410	21	625
Yakel, Levi, and S. E. Duff, Allegheny, Pa. Manufacture of draw-heads	260,343	June 27	1648	498	21	2032
Yale, Charles O., New York, N. Y. Automatic lubricator	260,344	June 27	1649	499	21	2032
Yale Lock Manufacturing Company. (See Lockwood, Byron H., assignor.)						
Yale Lock Manufacturing Company. (See See, James W., assignor.)						
Yale Lock Manufacturing Company. (See Taylor, Warren H., assignor.)						
Yale Lock Manufacturing Company. (See Taylor, Warren H., assignor.) (Reissue.)						
Yale Lock Manufacturing Company. (See Temple and Pierce, assignors.)						
Yale Lock Manufacturing Company. (See Thompson, Charles S., assignor.)						
Yale Lock Manufacturing Company. (See Towne, Henry R., assignor.)						
Yale Lock Manufacturing Company. (See Young, John W., assignor.)						
Yancey, Joseph A. (See Maxwell, Allan J., assignor.) (Reissue.)						
Yandle, Frederick J., Beloit, Wis., assignor to McCormick Harvesting Machine Company, Chicago, Ill. Grain-binder	257,806	May 9	821	230	21	1434
Yates, Alfred, Tissington, county of Derby, England. Machine for doubling yarn	258,589	May 23	1691	478	21	1606
Yates, Arthur P., Syracuse, N. Y. Combined pocket-case and cigar-clipper	254,693	Apr. 4	413	113	21	1020

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Yates, Charles U., Barton, near Manchester, county of Lancaster, England, and P. Degener, Brunswick, Germany; said Yates assignor to said Degener. Treatment of saccharine juices	255,830	Apr. 4	95	.....	21	967
Yattaw, Sidney W. (See Joubert and Yattaw.)						
Yeager, Frederick V., Philadelphia, Pa. Reed-plane	256,971	June 6	125	33	21	1716
Yeiser, Cyrus, assignor of one-half to M. A. Yingst, Newmanstown, Pa. Plowshare	257,807	May 9	893	230	21	1434
Yingst, M. A. (See Yeiser, Cyrus, assignor.)						
Yoch, Benhard, West Belleville, Ill. Mining-engine	251,987	Jan. 3	367	99	21	63
Yokom, Wilford W., Parkersburg, assignor to W. Keagy, Butler County, and G. H. Bush, Black Hawk County, Iowa. Boot and shoe exhibitor	254,423	Feb. 28	1406	410	21	625
York, Riley, North Platte, Nebr. Branding-chute	252,345	Jan. 17	808	225	21	150
Yost, Amer R., Somerset, Ohio. Combined sheep rack and trough	256,789	Apr. 18	1280	361	21	1188
Yost, George E., Theresa, N. Y. Car-axle box	254,857	Mar. 14	504	135	21	731
Yost, Theodore J., Mahwah, N. J. Apparatus for the continuous production of ozone	254,424	Feb. 28	1498	410	21	626
Young, Barker C., Boston, Mass. Sole-buffing machine	253,808	Feb. 14	759	216	21	487
Young, Calvin, Auburn, N. Y. Grain-binder	258,687	May 30	1909	538 539	21	1652
Young, Calvin, assignor to D. M. Osborne, Auburn, N. Y. Harvester	253,809	Feb. 14	760	216 217	21	487
Young, Charles, assignor, by mesne assignments, of one-half to B. P. Pratt and E. C. Walker, Chicago, Ill. Knitting-machine	258,593	May 23	1692	478 479	21	1606
Young, Charles M., Corry, Pa. Harvesting-machine	258,854	Jan. 24	1494	396 397	21	950
Young, Charles M., Lockport, N. Y. Hanger for inside blinds	253,469	Feb. 7	338	94	21	403
Young, Charles M., Lockport, N. Y. Support for inside window-blinds	257,125	Apr. 25	1674	469	21	1266
Young, David, Stockton, Cal. Grain-separator	254,856	Mar. 14	505	135	21	731
Young, E. F. C., receiver. (See Cleveland, Orestes, assignor.)						
Young, Edward R., New York, N. Y. Case for books	258,844	May 30	2060	567	21	1662
Young, Edward R., New York, N. Y. Support and handle for books	259,258	June 6	466	123	21	1775
Young, Edwin. (See Pfingsten and Young.)						
Young, G. E., *et al.* (See Bryson, Ryon P., assignor.)						
Young, Georg D., Shreve, Ohio. Axle-lubricator	256,187	Apr. 11	558	152	21	1050
Young, John M., Baldwinsville, N. Y. Handle for manure-forks and analogous tools	252,167	Jan. 10	597	168	21	109
Young, John N., Sacramento, Cal. Bed-mattress	254,750	Mar. 7	340	100	21	703
Young, John W., assignor to Yale Lock Manufacturing Company, Stamford, Conn. Knob attachment	251,998	Jan. 3	368	99	21	63
Young, John W., assignor of one-third to W. Brunt, Jr., East Liverpool, Ohio. Earthenware liquid-measure	258,845	May 30	2060	567	21	1662
Young, Josiah L. (See Tracy and Stillman, assignors.)						
Young, Peter, West Charleston, Vt. End-gate for wagons	259,259	June 6	467	124	21	1775
Young, Wesley, Dayton, Ohio. Plashed hedge	254,065	Feb. 21	1108	310	21	551
Young, Wesley, Columbus, Ohio. Staple	254,425	Feb. 28	1498	410	21	626
Young, William B., assignor to Hapgood Plow Company, Alton, Ill. Cultivator	252,572	Jan. 17	1081	301	21	196
Young, William B., assignor to Hapgood Plow Company, Alton, Ill. Sulky-plow	255,557	Mar. 28	1403	379	21	900
Young, William B., assignor to Hapgood Plow Company, Alton, Ill. Wheel-colter	256,941	Apr. 25	1467	412	21	1228
Youngberg, Charles F., Salt Lake City, Utah Ter. Folding bedstead	256,942	Apr. 25	1468	412	21	1228
Younger, Henry, Austin, Tex. Rat-trap	253,470	Feb. 7	339	94	21	403
Yule, George. (See Baglin, William A., assignor.)						
Yule, George, Newark, N. J. Method of and apparatus for shaking the cotton from napped hats	255,694	Mar. 14	821	219	21	787
Yvon, Louis, Brooklyn, N. Y. Brush	257,428	May 2	343	96	21	1342
Zanetti, Fortunato C., Bryan, Tex. Combined toy and bottle-stopper	251,757	Jan. 3	82	24	21	17
Zanetti, Fortunato C., Bryan, Tex. Combined faucet and automatic toy	256,868	Apr. 25	1360	368	21	1214
Zastrow, George W., Baltimore, Md. Bearing for propeller-shafts	260,345	June 27	1850	499	21	2028
Zeck, Michael, Pittsburg, Pa. Hydrocarbon-furnace	251,989	Jan. 3	369	100	21	63
Zeigler, George W., Tecumseh, Mich. Treadle	255,751	Mar. 28	1649	446	21	944
Zellin, J. Henry, Philadelphia, Pa. Dose-cup bottle-stopper	254,760	Mar. 7	381	100	21	703
Zell, Robert R., Baltimore, Md. Fertilizer-bag	258,524	May 23	1696	.....	21	1607
Zeller, Melancthon E., Bluffton, Ohio. Trace-buckle	256,205	May 16	1302	369	21	1531
Zeller, Melancthon E., Bluffton, Ohio. Trace-buckle	259,970	June 20	1386	373	21	1948
Zellers, Robert E., Denison, Tex. Wagon-brake	253,506	Feb. 21	883	249	21	514
Zellweger, John, Chicago, Ill. Boiler gas-furnace	258,525	May 23	1696	480	21	1607
Zentmyer, Jacob W., Hagerstown, Md. Swinging gate	253,810	Feb. 14	761	217	21	487
Zerbe, Hiram. (See Bachtel, William H., assignor.)						
Zimmer, William, Bellaire, Ohio. Glass or earthenware pitcher or jug	258,526	May 23	1696	480	21	1607
Zimmerman, John, Cincinnati, Ohio. Fruit and vegetable drier	257,209	May 2	60	19	21	1292
Zimmerman, William, Chicago, Ill. Railway-semaphore	254,496	Feb. 28	1499	411	21	626
Zimmerman, William, assignor of one-half to M. C. Burt, Chicago, Ill. Folding bed	260,346	June 27	1851	499 500	21	2028
Zimmermann, Charles F., Philadelphia, Pa. Harp	257,808	May 9	883	230	21	1434
Zinn, William H., and E. Edwards, Boston, Mass. Picture-frame	254,761	Mar. 7	381	100	21	703
Zürcher, Max A., Chicago, Ill. Draw-bridge	255,831	Apr. 4	96	26	21	967

ALPHABETICAL LIST OF PATENTEES OF DESIGNS.

Name, residence, and design.	No.	Date.	Official Gazette. Volume.	Official Gazette. Page.
Adams, Peter, Jr. (See Shepard and Adams.)				
Allen, Frank, assignor to M. J. Whittall, Worcester, Mass. Carpet	12,901	Apr. 25	21	1201
Allen, Frank, assignor to Worcester Carpet Company, Worcester, Mass. Carpet	12,909	May 2	21	1279
Athlaica, James M., assignor to F. P. Nicholson, Philadelphia, Pa. Plates of a heating-stove	12,834	May 16	21	1449
Babcock, Alfred P., assignor to J., J. A., and E. B. Oakley, New York, N. Y. Perfumery-bottle	12,902	Apr. 25	21	1201
Bailey, George G., Jr., and J. Gilbert, Boston, Mass. Printing-type	12,910	May 2	21	1279
Bailey, Wescott, and C. E. Dakin, Philadelphia, Pa., assignors to Sons of Veterans of Pennsylvania. Badge	13,003	June 27	21	1939
Baker, Pratt & Co. (See Old, Ansborn F., assignor.)				
Barkentin, George S., Oceanus, N. Y., assignor to P. & F. Corbin, New Britain, Conn. Bracket	12,834	Mar. 28	21	867
Barkentin, George S., assignor to P. & F. Corbin, New Britain, Conn. Ornamental panel on articles of builders' hardware	12,855	Apr. 11	21	1031
Barker, David, Steubenville, Ohio, assignor to C. G. Summers, Baltimore, Md. Pickle, preserve, or similar vessel	12,887	Apr. 18	21	1121
Barnhart, Alson E., *et al.* (See Heyer, Charles E., assignor.)				
Barnhart, Arthur M., *et al.* (See Heyer, Charles E., assignor.)				
Bates, Theodore C. (See Bray, Morris P., assignor.)				
Bawden, John, *et al.* (See Read, Joseph A., assignor.)				
Beeler, Charles H., Jr., Philadelphia, Pa., assignor to D. W. Bruce, New York, N. Y. Font of printing-type	12,694	Jan. 17	21	141
Bergstrom Brothers & Co. (See Bergstrom, George O., assignor.)				
Bergstrom, George O., assignor to Bergstrom Brothers & Co., Neenah, Wis. Stove	12,835 12,836	Mar. 28	21	867
Berry, Henry, assignor to Derby Silver Company, Birmingham, Conn. Card-receiver	12,792	Feb. 28	21	561
Bigelow Carpet Company. (See Halliday, Arthur L., assignor.)				
Bigelow Carpet Company. (See McCallum, William, assignor.)				
Blakeslee, Cornelius, *et al.* (See Ritchel, Charles F., assignor.)				
Bosworth, Frederick S., assignor to Weybosset Mills, Providence, R. I. Cassimeres	13,004	June 27	21	1939
Bound Brook Woolen Mills. (See Dobbin, Henry, assignor.)				
Bound Brook Woolen Mills. (See Rosenfeld, Louis, assignor.)				
Bradley & Hubbard Manufacturing Company. (See Seidensticker, F. Robert, assignor.)				
Bray, Morris P., Worcester, assignor to T. C. Bates, North Brookfield, Mass. Corset	12,837	Mar. 28	21	867
Briggs, Warren W., Providence, R. I. Ornamental chain	12,950	May 30	21	1617
Briggs, Warren W., assignor to S. & B. Lederer, Providence, R. I. Ornamental chain	12,951	May 30	21	1617
Bromley & Sons, John. (See Petzold, Adolph, assignor.)				
Bruce, David W. (See Beeler, Charles H., Jr., assignor.)				
Carpenter, Thomas E. (See Richmond and Carpenter.)				
Chetwynd, Elijah, assignor to J. Mason, Trenton, N. J. Dinner or tea set	13,005	June 27	21	1939
Chittenden, Horace H., assignor to Foy, Harmon & Co., New Haven, Conn. Corset	12,709	Feb. 14	21	421
Christie, Hugh, Boston, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	12,711 12,712	Jan. 31	21	265
Church, C. Fred. (See Theuerner, Christopher J., assignor.)				
Clark, Ida F., Albany, assignor to Warren, Fuller & Co., New York, N. Y. Wall-paper	12,673	Apr. 11	21	1032
Clark, Ida F., Albany, assignor to Warren, Fuller & Co., New York, N. Y. Wall-paper	12,733	Feb. 7	21	345
Coester, Charles, Jr., Bridgeport, Conn. Toy for exploding caps and fulminates				
Colby, John H. (See Turner, Isaac P., assignor.)				
Collins, John, Highlandville, Mass. Legging	12,656	Jan. 10	21	77
Comba, Gilbert, *et al.* (See Read, Joseph A., assignor.)				
Condé, Swits, Oswego, N. Y. Knit fabric	12,760 to 12,765	Feb. 14	21	421
Conger, Walter M., Newark, N. J. Tea-tray	12,701 to 12,705	Jan. 24	21	265
Corbin, P. & F. (See Barkentin, George S., assignor.)				
Crowe, Eugene A., Boston, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	12,657	Jan. 10	21	77
Crowe, Eugene A., Boston, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	12,978 12,979	June 20	21	1879
Daintrey, William M. (See Smith, Horatio, assignor.)				
Dakin, Charles E. (See Bailey and Dakin.)				
Dalzell, James, Pittsburg, Pa. Glassware	12,647	Jan. 3	21	1
Davids, John B., New York, N. Y. Inkstand	12,981	June 20	21	1879
Davidson, Calvin C. (See Davidson, James C. and C. C.)				
Davidson, James C. and C. C., Denver, Colo. Bottle	12,965	June 13	21	1787
Davidson, Salomon, New York, N. Y. Ornamental chain-link	12,656	Jan. 10	21	77
De Pew, William H., New York, N. Y. Razor	12,964	June 6	21	1693
Derby Silver Company. (See Berry, Henry, assignor.)				
Doane, William H., Cincinnati, Ohio. Tenoning-machine	12,949	May 23	21	1539
Dobbin, Henry, assignor to Bound Brook Woolen Mills, Bound Brook, N. J. Cloth	12,817 to 12,820	Mar. 21	21	793
Doherty, Henry, and J. Wadsworth, Paterson, N. J. Handkerchief	12,873	Apr. 11	21	1033
Doherty, Henry, and J. Wadsworth, Paterson, N. J. Handkerchief	12,936	May 23	21	1539
Dominick & Haff. (See Hebbard, Alonzo, assignor.)				
Dreyfus, Bernhard, New York, N. Y. Curtain-band	12,788	Feb. 21	21	497
Dreyfus, Bernhard, New York, N. Y. Fringe	13,006	June 27	21	1959
Drown, William A., Abington, Pa. Parasol	12,937	May 23	21	1539

Alphabetical list of patentees of designs, January to June, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Du Brul, Napoleon, Cincinnati, Ohio. Cigar-cutter	12,920 to 12,921	May 9	21	1353
Dwight, Alfred, Springfield, Mass. Blank bill-head	12,798	Mar. 7	21	637
Edge, William C. (See Marckstine, William, assignor.)				
Einstein, Emanuel, New York, N. Y. Nap-surface of cloth	12,853	May 30	21	1617
Erbs, Hermann, Philadelphia, Pa. Carpet	12,713	Jan. 31	21	965
Fair Hill Manufacturing Company. (See Kehrenberg, Henry A., assignor.)				
Fairchild, Le Roy W., New York, N. Y. Pencil-case	12,699	Jan. 17	21	142
Fairchild, Le Roy W., New York, N. Y. Charm and pencil-case	12,856	Apr. 11	21	1031
Fairchild, Le Roy W., New York, N. Y. Charm and pencil-case	12,874	Apr. 11	21	1032
Faller, Henry, Middle Village, assignor to J. Timmes, Brooklyn, N. Y. Gate	12,928	May 16	21	1449
Faller, Henry, Middle Village, assignor to J. Timmes, Brooklyn, N. Y. Gate	12,880	Apr. 11	21	1032
Ferguson, George, Meravia, N. Y. Casket or burial-case	12,659 to 12,670	Jan. 10	21	77
Fisher, Edwin, Boston, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	12,843	Apr. 4	21	949
Fisher, Edwin, Boston, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	12,963 to 12,989	June 20	21	1879
Fisher, John, New York, N. Y., assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	12,724	Feb. 7	21	345
Fleisch, Jacob H., New York, N. Y. Neckscarf	12,714	Jan. 31	21	965
Foy, Harmon & Co. (See Chittenden, Horace H., assignor.)				
Fritz, George J., St. Louis, Mo. Doctor-engine	12,954	June 6	21	1603
Gadsby, Walter J., assignor to Roxbury Carpet Company, Boston, Mass. Carpet	12,715	Jan. 31	21	965
Gadsby, Walter J., assignor to Roxbury Carpet Company, Boston, Mass. Carpet	12,753	Feb. 7	21	346
Gadsby, Walter J., assignor to Roxbury Carpet Company, Boston, Mass. Carpet	12,892	Mar. 14	21	715
Gadsby, Walter J., assignor to Roxbury Carpet Company; Boston, Mass. Carpet	12,911	May 2	21	1279
Gilbert, James. (See Bailey and Gilbert.)				
Gill, Owen A., assignor to E. Levering & Co., Baltimore, Md. Ornamenting paper for coffee-packages	13,007	June 27	21	1959
Gillespie, Charles H. (See Moodie, Elhanan L., assignor.)				
Gillespie & Moodie. (See Moodie, Elhanan L., assignor.)				
Glass, Samuel. (See Guinzburg and Glass.)				
Gleason, Marshall W., Brooklyn, N. Y. Lamp-shade	12,875	Apr. 11	21	1032
Godshalk, E. H. (See McLaughlin, Rebecca, assignor.)				
Gorham Manufacturing Company. (See Wilkinson, George, assignor.)				
Goucher, George E., assignor to J. C. Graham, Philadelphia, Pa. Fringe	12,648	Jan. 3	21	1
Graham, John C. (See Goucher, George E., assignor.)				
Graham, John C. (See Reuter, Frederick, assignor.)				
Graham, John C., Philadelphia, Pa. Fringe	12,649 to 12,650	Jan. 3	21	1
Graham, Levi P., Decatur, Ill. Monument	12,938	May 23	21	1539
Guinsburg, Victor, and S. Glass, New York, N. Y. Suspenders	12,955	June 6	21	1603
Hall, Elton & Co. (See Waterhouse, Frederick, assignor.)				
Halliday, Arthur L., New York, N. Y., assignor to Bigelow Carpet Company, Clinton, Mass. Carpet	12,821	Mar. 21	21	793
Halliday, Arthur L., New York, N. Y., assignor to Bigelow Carpet Company, Clinton, Mass. Carpet	12,846	Apr. 4	21	950
Halliday, Arthur L., New York, N. Y., assignor to Bigelow Carpet Company, Clinton, Mass. Carpet	12,857 to 12,858	Apr. 11	21	1031
Hamil and Booth. (See Simpson, James, assignor.)				
Handforth, Benjamin, Hoboken, N. J., and A. E. Wemple, Brooklyn, N. Y. Window-shade	12,956	June 6	21	1603
Harrison & Brother, William H. (See Hewitt, William D., assignor.)				
Harrison, Walter H. (See McNally and Harrison.)				
Hartford Carpet Company. (See Horan, Henry, assignor.)				
Hartford Carpet Company. (See Hunt, Henry, assignor.)				
Hartford Carpet Company. (See Jacobs, Winthrop L., assignor.)				
Hartford Carpet Company. (See Pegel, Julius, assignor.)				
Hawkes, Thomas G. (See MacDonald, Philip, assignor.)				
Hebbard, Alonzo, assignor to Dominick & Haff, New York, N. Y. Handle for a spoon or fork	12,888	Apr. 18	21	1121
Heck, August. (See Beshower and Heck.)				
Healey, James L., Attleborough Falls, Mass. Ornamental chain-link	12,939 to 12,940	May 23	21	1539
Heilner, Solomon, *et al.* (See Hertzog, Paul T., assignor.)				
Heins, Henry J., Pittsburg, Pa. Pickle-bottle	12,803	Mar. 14	21	715
Heins, Henry J., Pittsburg, Pa. Pickle-bottle	12,844	Apr. 4	21	950
Hemming, Richard P., New York, N. Y., assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	12,716 to 12,717	Jan. 31	21	965
Henrich, Heinrich, assignor to R. Henrich, New York, N. Y. Finger-ring	12,912	May 2	21	1279
Henrich, Heinrich, assignor to R. Henrich, New York, N. Y. Finger-ring	12,957	June 6	21	1603
Henrich, Rees. (See Henrich, Heinrich, assignor.)				
Hensel, George F., Philadelphia, Pa. Woven fringe	12,903	Apr. 25	21	1201
Hensel, George S., Philadelphia, Pa. Fringe	12,845	Apr. 4	21	950
Hertzog, Paul T., Newark, N. J., assignor to H. S. Strauss, S. Heilner, New York, N. Y., and S. Strauss, North Brookfield, Mass. Corset	12,773	Feb. 21	21	497
Hewitt, William D., Burlington, N. J., assignor to W. H. Harrison & Brother, Philadelphia, Pa. Fire-back and jamb	13,010	June 27	21	1959
Heyer, Charles E., assignor to A. M. and A. E. Barnhart and C. E. Spindler, Chicago, Ill. Font of printing-type	12,804 to 12,805	Mar. 14	21	716
Heyer, Charles E., assignor to A. M. and A. E. Barnhart and C. E. Spindler, Chicago, Ill. Font of printing-type	12,933	May 16	21	1449
Hoare, John, Corning, N. Y. Caster-bottle	12,651	Jan. 3	21	1
Hodgkins, Thomas J., assignor to Union Stove Works, Peekskill, N. Y. Heating-stove	12,799	Mar. 7	21	637
Hood, John J., Philadelphia, Pa. Music-type	12,952	May 30	21	1617
Horan, Henry, East Orange, N. J., assignor to Hartford Carpet Company, Hartford, Conn. Carpet	12,806 to 12,807	Mar. 14	21	716
Horan, Henry, East Orange, N. J., assignor to Hartford Carpet Company, Hartford, Conn. Carpet	12,822 to 12,823	Mar. 21	21	793
Horan, Henry, East Orange, N. J., assignor to Hartford Carpet Company, Hartford, Conn. Carpet	12,836	Mar. 28	21	867
Horner Brothers. (See Onslow, Thomas, assignor.)				
Horner Brothers. (See Perrin, Edward, assignor.)				
Horner Brothers. (See Pugh, George W., assignor.)				
Horner Brothers. (See Smith, Stephen, assignor.)				
Hotchkiss, Frank H., Birmingham, Conn. Clock	12,718	Jan. 31	21	965

Alphabetical list of patentees of designs, January to June, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Hunt, Henry, Greenville, N. J., assignor to Hartford Carpet Company, Hartford, Conn. Carpet	12,824 to 12,826	Mar. 21	21	793
Hunt, Henry, Greenville, N. J., assignor to Hartford Carpet Company, Hartford, Conn. Carpet	12,833	Mar. 21	21	793
Ihlenburg, Herman, assignor to MacKellar, Smiths & Jordan, Philadelphia, Pa. Font of printing-type	12,906 to 12,908	June 13	21	1767
Ives, Blakeslee & Co. (See Ives, Edward R., assignor.)				
Ives, Blakeslee & Co. (See Ritchel, Charles F., assignor.)				
Ives, Edward R., *et al.* (See Ritchel, Charles F., assignor.)				
Ives, Edward R., assignor to Ives, Blakeslee & Co., Bridgeport, Conn. Toy pistol	12,909	June 20	21	1879
Jacobs, Winthrop L., East Orange, N. J., assignor to Hartford Carpet Company, Hartford, Conn. Carpet	12,806 to 12,810	Mar. 14	21	716
Jacobs, Winthrop L., East Orange, N. J., assignor to Hartford Carpet Company, Hartford, Conn. Carpet	12,822 to 12,830	Mar. 21	21	793
Jones, Stephen W., South Union, Me. Door-hanger	12,897	Apr. 18	21	1123
Keeley, Oliver B., Spring City, Pa. Cooking-range	12,695 to 12,696	Jan. 17	21	141
Keeley, Oliver B., Spring City, Pa. Cooking-stove	12,709	Jan. 24	21	285
Keeley, Oliver B., Spring City, Pa. Heating-stove	12,719 to 12,720	Jan. 31	21	965
Kehrenberg, Henry A., assignor to Fair Hill Manufacturing Company, Philadelphia, Pa. Fringe	12,847	Apr. 4	21	950
Kelly, John J., Newark, N. J. Harness-trimming	12,859	Apr. 11	21	1031
Kemper, Eugene A., Philadelphia, Pa. Fringe	12,889	Apr. 18	21	1123
Kennedy, John W., Troy, assignor to Union Stove Works, New York, N. Y. Heating-stove	12,898	Apr. 16	21	1123
Kinney, Charles A., assignor to E. Miller & Co., Meriden, Conn. Lantern	13,008	June 27	21	1959
Klepper, Charles F., Covington, Ky. Aquarium and stand for same	12,772	Feb. 21	21	497
Klingner, Wilhelm, New York, N. Y. Wardrobe	12,697	Jan. 17	21	142
Knowles, Joseph B., Providence, R. I. Fork or spoon handle	12,793	Feb. 28	21	561
Krause, Jean E., New York, N. Y. Hair-ornament	12,913	May 2	21	1279
Kyser, Louis, and A. C. Rex, Philadelphia, Pa. Toy money-box	12,738	Feb. 7	21	346
Kyser, Louis, and A. C. Rex, Philadelphia, Pa. Toy money-box	12,846	Apr. 4	21	950
Kyser, Louis, and A. C. Rex, Philadelphia, Pa. Toy money-box	12,860	Apr. 11	21	1031
Landsberg, Moses G., Chicago, Ill. Bottle	12,861	Apr. 11	21	1031
Lederer, S. & B. (See Briggs, Warren W., assignor.)				
Lederer, Sigmund L., Providence, R. I. Ornamental chain	12,794	Feb. 28	21	561
Leissner, Eduard, New York, N. Y. Wall-paper	12,958	June 6	21	1603
Leissner, Eduard, New York, N. Y. Wall-paper	13,009	June 27	21	1959
Levering & Co., E. (See Gill, Owen A., assignor.)				
Lincoln, Thomas, and D. S. Wesson, New Haven, Conn. Clock-case	12,739	Feb. 7	21	346
Little, Andrew, New York, N. Y. Font of printing-type	12,890	Apr. 18	21	1123
Little, Andrew, New York, N. Y. Font of printing-type	12,941	May 23	21	1539
Lloyd, Thomas, New York, N. Y. Toy pistol	12,811	Mar. 14	21	716
Lockwood, Henry S., South Norwalk, Conn. Paper-cap or toy pistol	12,789	Feb. 21	21	497
Lowell Manufacturing Company. (See Christie, Hugh, assignor.)				
Lowell Manufacturing Company. (See Crowe, Eugene A., assignor.)				
Lowell Manufacturing Company. (See Fisher, Edwin, assignor.)				
Lowell Manufacturing Company. (See Fisher, John, assignor.)				
Lowell Manufacturing Company. (See Hemming, Richard P., assignor.)				
Lowell Manufacturing Company. (See Poole, Edward, assignor.)				
Lowell Manufacturing Company. (See Swapp, Charles W., assignor.)				
Lyman, Arthur W., Montague, Mass. Handle for spoons, forks, or knives	12,770	Feb. 14	21	421
Lyons, Thomas, Hartford, assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Padlock	12,891	Apr. 18	21	1123
MacDonald, Philip, assignor to T. G. Hawkes, Corning, N. Y. Ornamentation of glassware	12,962	June 20	21	1879
MacKellar, Smiths & Jordan. (See Ihlenburg, Herman, assignor.)				
Mackinney, Herbert G., Providence, R. I. Jewelry	12,735	Feb. 7	21	345
Marckstine, William, Irvington, assignor to W. C. Edge, Newark, N. J. Watch-chain	12,708	Feb. 14	21	421
Marder, Luse & Co. (See Müller, Carl, assignor.)				
Margot, Eugene F., Boston, Mass. Watch-case	12,774 to 12,775	Feb. 21	21	497
Matthews, John, New York, N. Y. Dispensing-column	12,911	June 27	21	1959
McCallum, William, Yonkers, N. Y., assignor to Bigelow Carpet Company, Clinton, Mass. Carpet	12,959	June 6	21	1603
McCallum, William, Yonkers, N. Y., assignor to Bigelow Carpet Company, Clinton, Mass. Carpet	12,960	June 20	21	1879
McLaughlin, Rebecca, assignor to E. H. Godshalk, Philadelphia, Pa. Fringe	12,680	Mar. 7	21	638
McLewee, William S. (See Nichols and McLewee.)				
McNair, David, assignor to Roxbury Carpet Company, Boston, Mass. Carpet	12,754	Feb. 7	21	346
McNair, David, assignor to Roxbury Carpet Company, Boston, Mass. Carpet	12,813	Mar. 14	21	716
McNally, James T., and W. H. Harrison, New York, N. Y. Scales	12,795	Feb. 28	21	561
Melville, David G., Medford, assignor to Roxbury Carpet Company, Boston, Mass. Carpet	12,819	Mar. 14	21	716
Melville, David G., Medford, assignor to Roxbury Carpet Company, Boston, Mass. Carpet	12,976	June 13	21	1767
Meyer, Charles F., Baltimore, Md. Wine-cooler	12,831	Mar. 21	21	793
Meyer, Charles T. and V. E., Bergen, N. J., assignors to E. C. Sampson, New York, N. Y. Oil-cloth	12,671 to 12,675	Jan. 10	21	77
Meyer, Charles T. and V. E., Bergen, N. J., assignors to E. C. Sampson, New York, N. Y. Oil-cloth	12,739 to 12,743	Feb. 7	21	345
Meyer, Charles T. and V. E., Bergen, N. J., assignors to E. C. Sampson, New York, N. Y. Oil-cloth	12,861 to 12,866	Apr. 11	21	1032
Meyer, Charles T. and V. E., Bergen, N. J., assignors to E. C. Sampson, New York, N. Y. Oil-cloth, &c.	12,915 to 12,917	May 2	21	1279
Meyer, Victor E. (See Meyer, Charles T. and V. E.)				
Miller & Co., Edw. (See Kinney, Charles A., assignor.)				
Millin, Charles E., Providence, R. I. Locket	12,964	Apr. 25	21	1201
Milne, Alexander F., Pittsburg, Pa. Bedstead	12,744	Feb. 7	21	345
Mix, Garry L., Yalesville, Conn. Handle for spoon or fork	12,914	May 2	21	1279
Moeller, Henry F., Davenport, Iowa. Bar	12,943	May 23	21	1539
Montross, Isaac T., Peekskill, N. Y. Stove	12,849	Apr. 4	21	950
Moodie, Elhanan L., assignor to Gillespie & Moodie, New York, N. Y. Easel	12,745	Feb. 7	21	345

Alphabetical list of patentees of designs, January to June, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Moodie, Ehanan L., assignor of one-half to C. H. Gillespie, New York, N. Y. Advertising or ornamental disk or plate	12,892 to 12,893	Apr. 18	21	1122
Moodie, Ehanan L., assignor of one-half to C. H. Gillespie, New York, N. Y. Ornamental or advertising easel	12,905	Apr. 25	21	1201
Moodie, Ehanan L., assignor of one-half to C. H. Gillespie, New York, N. Y. Advertising or ornamental blank or easel	12,922	May 9	21	1353
Moodie, Ehanan L., assignor of one-half to C. H. Gillespie, New York, N. Y. Advertising-disk	12,969	June 13	21	1767
Morris, Edward L., Boston, Mass. Table-bell	13,012	June 27	21	1959
Moses, John. (See Chetwynd, Elijah, assignor.)				
Mueller, Edward, Indianapolis, Ind. Imitation shell for flower-beds	12,900	June 6	21	1033
Müller, Carl, assignor to Marder, Luse & Co., Chicago, Ill. Font of printing-type	12,796	Feb. 28	21	561
Müller, Carl, assignor to Marder, Luse & Co., Chicago, Ill. Font of printing-type	12,801	Mar. 7	21	638
Müller, Carl, assignor to Marder, Luse & Co., Chicago, Ill. Font of printing-type	12,862	Apr. 11	21	1031
Murphy, William T., New York, N. Y. Vase	12,906	Apr. 25	21	1201
Nichols, Jacob J., Brooklyn, and W. S. McLewee, New York, N. Y.; said McLewee assignor to said Nichols. Lamp, &c	12,746	Feb. 7	21	345
Nicholson, Francis P. (See Atchison, James M., assignor.)				
Norse, H. Stansbury, New York, N. Y. Hat	12,894	Apr. 18	21	1122
Oakley, E. Benedict, *et al.* (See Babcock, Alfred P., assignor.)				
Oakley, Jesse, *et al.* (See Babcock, Alfred P., assignor.)				
Oakley, John A., *et al.* (See Babcock, Alfred P., assignor.)				
Old, Anaborn F., Philadelphia, Pa., assignor to Baker, Pratt & Co., New York, N. Y. Settee-frame	13,013 to 13,014	June 27	21	1959
Onslow, Thomas, assignor to Horner Brothers, Philadelphia, Pa. Carpet	12,776 to 12,782	Feb. 21	21	497
Onslow, Thomas, assignor to Horner Brothers, Philadelphia, Pa. Carpet	12,863	Apr. 11	21	1031
Ovington, Edward J., Brooklyn, N. Y. Lamp	12,771	Feb. 14	21	421
Page, Charles, Philadelphia, Pa. Desk-frame	13,015	June 27	21	1959
Parker, Harriet A., assignor to Roxbury Carpet Company, Boston, Mass. Carpet	12,918	May 2	21	1279
Parmelee, John H., Bridgeport, Conn. Toy money-bank	13,016	June 27	21	1959
Pattberg, Henry, Jersey City, N. J. Toilet-case	12,850	Apr. 4	21	950
Pegel, Julius, New York, N. Y., assignor to Hartford Carpet Company, Hartford, Conn. Carpet	12,864 to 12,865	Apr. 11	21	1031
Pegel, Julius, New York, N. Y., assignor to Hartford Carpet Company, Hartford, Conn. Carpet	12,877	Apr. 11	21	1032
Perrin, Edward, Kidderminster, county of Worcester, England, assignor to Horner Brothers, Philadelphia, Pa. Carpet	12,851 to 12,854	Apr. 4	21	950
Petsold, Adolph, assignor to J. Bromley & Sons, Philadelphia, Pa. Rug, carpet, &c	12,747	Feb. 7	21	345
Piccard, Charles M. (See Sweetman and Piccard.)				
Poole, Edward, Boston, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	12,721 to 12,726	Jan. 31	21	965
Poole, Edward, Boston, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	12,991 to 12,992	June 20	21	1879
Popcke, Emil, assignor to Warren, Fuller & Co., New York, N. Y. Wall-paper	12,907	Apr. 25	21	1201
Prentice, Vernon F., Worcester, Mass. Upright drilling machine	12,839	Mar. 28	21	867
Pugh, George W., assignor to Horner Brothers, Philadelphia, Pa. Carpet	12,783	Feb. 21	21	497
Racine Silver Plate Company. (See Waterhouse, Frederick, assignor.)				
Rappleyea, Nicholas, and L. Stein, Rochester, N. Y. Cotlin-pedestal	13,017	June 27	21	1960
Rappleyea, Nicholas, and L. Stein, Rochester, N. Y. Floral pedestal	13,018	June 27	21	1960
Read, Joseph A., Philadelphia, Pa., assignor to G. Combs and J. Bawden, Freehold, N. J. Fire-place-lining plate	12,871	Apr. 11	21	1032
Reahower, Joseph, and A. Heck, New York, N. Y. Fringe	12,748	Feb. 7	21	346
Reuter, Frederick, Brooklyn, N. Y., assignor to J. C. Graham, Philadelphia, Pa. Fringe	12,698	Jan. 17	21	142
Rex, Alfred C. (See Kyser and Rex.)				
Richmond, Henry P., and T. E. Carpenter, Providence, R. I. Finger-ring	12,652	Jan. 3	21	1
Ripley, Nathaniel L., Boston, Mass. Finger-ring	12,866 to 12,868	Apr. 11	21	1031
Ripley, Nathaniel L., Boston, Mass. Finger-ring	12,870	Apr. 11	21	1031
Ritchel, Charles F., assignor to E. R. Ives, Bridgeport, Conn., C. Blakeslee and E. G. Williams, Brooklyn, N. Y. Toy for exploding caps and fulminates	12,749	Feb. 7	21	346
Ritchel, Charles F., assignor to Ives, Blakeslee & Co., Bridgeport, Conn. Toy for exploding caps and fulminates	12,750	Feb. 7	21	346
Rogers, Arthur H., Springfield, Mass. Pencil-stamp	12,787	Feb. 21	21	497
Rogers, John K., Brookline, Mass. Printing-type	12,869	Apr. 11	21	1031
Rogers, John K., Brookline, Mass. Font of printing-type	12,899 to 12,900	Apr. 18	21	1122
Rosenberg, Isaac, New Haven, Conn. Corset	12,727	Jan. 31	21	965
Rosenfeld, Louis, New York, N. Y., assignor to Bound Brook Woolen Mills, Bound Brook, N. J. Cloth	12,832	Mar. 21	21	793
Roxbury Carpet Company. (See Gadsby, Walter J., assignor.)				
Roxbury Carpet Company. (See McNair, David, assignor.)				
Roxbury Carpet Company. (See Melville, David G., assignor.)				
Roxbury Carpet Company. (See Parker, Harriet A., assignor.)				
Roxbury Carpet Company. (See Stearns, Thomas J., assignor.)				
Russell & Erwin Manufacturing Company. (See Lyons, Thomas, assignor.)				
Sampson, Edward C. (See Meyer, Charles T. and V. E., assignors.)				
Samson, Felix, New York, N. Y. Nap-surface of cloth	12,929	May 16	21	1449
Sanborn, George O., Boston, Mass. Pickle-bottle	12,943	May 23	21	1539
Sayles, Sabin L., Killingly, Conn. Merchandise-tag	12,944	May 23	21	1539
Schaidler, Reinhard, Newark, Ohio. Combined bed-plate and heater for portable steam-engines	12,676	Jan. 10	21	77
Schloss, Nathan J., New York, N. Y. Blouse	12,767	Feb. 14	21	421
Scott, George A., New York, N. Y. Back of a brush	12,797	Feb. 28	21	561
Scott, John E., Baltimore, Md. Stair-rod	12,677	Jan. 10	21	77
Seery, Edward F., Providence, R. I. Ornamental chain-link	12,653 to 12,654	Jan. 3	21	1
Seidensticker, F. Robert, assignor to Bradley & Hubbard Manufacturing Company, Meriden, Conn. Hanging lamp	12,939	May 16	21	1449
Shenkel, Jacob, East Liverpool, Ohio. Earthenware tea-pot	12,961	June 6	21	1693
Shepard, Charles G., and P. Adams, Jr.; said Adams assignor to W. J. Shepard, Buffalo, N. Y. Toy savings-bank	12,814	Mar. 11	21	716

Alphabetical list of patentees of designs, January to June, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Shepard, Walter J. (See Shepard and Adams, assignors.)				
Sherrill, Horace D. (See Sinnock, William P., assignor.)				
Simpson, James, assignor to Hamil & Booth, Paterson, N. J. Woven fabric	12,902	June 6	21	1693
Sinnock, William P., Newark, N. J., assignor to himself and H. D. Sherrill, New York, N. Y. Finger-ring	12,709	Feb. 21	21	498
Sipes, Robert H., Union City, Ind. Grave-cover	12,923	May 9	21	1353
Smith, Horatio, Kidderminster, county of Worcester, England, assignor to W. M. Daintrey, New York. Carpet	12,895	Apr. 18	21	1122
Smith, Horatio, Kidderminster, England, assignor to W. M. Daintrey, New York. Carpet	12,924	May 9	21	1353
Smith, Horatio, Kidderminster, England, assignor to W. M. Daintrey, New York. Carpet	12,945 to 12,946	May 23	21	1539
Smith, Stephen, assignor to Horner Brothers, Philadelphia, Pa. Carpet	12,784	Feb. 21	21	497
Sons of Veterans of Pennsylvania. (See Bailey and Dakin, assignors.)				
Sperry, Alfred W., Hartford, Conn. Spoon-handle	12,977	June 13	21	1767
Spicer, William A., Providence, R. I. Cooking-range	12,925	May 9	21	1353
Spindler, Charles E., *et al.* (See Heyer, Charles E., assignor.)				
Stauffer, Henry O., Pont Martel, Switzerland. Watch-movement	12,926	May 9	21	1353
Stearns, Thomas J., assignor to Roxbury Carpet Company, Boston, Mass. Carpet	12,755 to 12,756	Feb. 7	21	346
Stearns, Thomas J., assignor to Roxbury Carpet Company, Boston, Mass. Carpet	12,785 to 12,786	Feb. 21	21	497
Stearns, Thomas J., assignor to Roxbury Carpet Company, Boston, Mass. Carpet	12,931 to 12,938	May 16	21	1449
Stein, Lee. (See Rappleyea and Stein.)				
Strauss, Oscar S., New York, N. Y. Plate	12,728	Jan. 31	21	965
Strauss, Henry S., *et al.* (See Hertzog, Paul T., assignor.)				
Strauss, Samuel, *et al.* (See Hertzog, Paul T., assignor.)				
Strauss, Isaac, New Haven, Conn. Corset	12,666 to 12,683	Jan. 10	21	77
Summers, Charles G. (See Barker, David, assignor.)				
Summers, Charles G., Baltimore, Md. Jelly-glass	12,729	Jan. 31	21	965
Sumner, Dwight C., New York, N. Y. Ornamenting cloth	12,707 to 12,710	Jan. 24	21	965
Sutter, Joseph, New York, N. Y. Chair	12,993	June 20	21	1879
Swapp, Charles W., Boston, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	12,678 to 12,685	Jan. 10	21	77
Swapp, Charles W., Boston, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	12,730 to 12,738	Jan. 31	21	965
Swapp, Charles W., Boston, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	12,994 to 13,009	June 20	21	1879
Sweetman, Christopher P., and C. M. Piccard, Dayton, Ohio. Emblem for the ancient order of Hibernians	12,927	May 9	21	1353
Theenemer, Christopher J., assignor to himself and C. F. Church, Newark, N. J. Ring	12,948	May 23	21	1539
Thomas, George G., Philadelphia, Pa. Heating-stove	12,768	Feb. 14	21	421
Thomas, Wilber, Quincy, Ill. Fence-picket	12,970 to 12,974	June 13	21	1767
Thompson, Charles E., New Haven, Conn. Coach-lamp	12,947	May 23	21	1539
Thorp, Henry H., assignor to H. H. Thorp Manufacturing Company, Cleveland, Ohio. Printing-type	12,815 to 12,816	Mar. 14	21	716
Thorp, Henry H., assignor to H. H. Thorp Manufacturing Company, Cleveland, Ohio. Font of printing-type	12,975	June 13	21	1767
Thorp Manufacturing Company, H. H. (See Thorp, Henry H., assignor.)				
Timmes, John. (See Fuller, Henry, assignor.)				
Townsend, Caroline, assignor to Warren, Fuller & Co., New York, N. Y. Wall-paper	12,842	Apr. 4	21	949
Turner, Isaac P., assignor of one-half to J. H. Colby, Troy N. Y. Interior form of cuff-box	12,655	Jan. 3	21	1
Uhlinger, William P., Philadelphia, Pa. Carriage-body	13,001	June 20	21	1879
Union Stove Works. (See Hodgkins, Thomas J., assignor.)				
Union Stove Works. (See Kennedy, John W., assignor.)				
Untermeyer, Henry, New York, N. Y. Watch-case	12,896	Apr. 18	21	1122
Wadsworth, Joseph. (See Doherty and Wadsworth.)				
Warren, Fuller & Co. (See Clark, Ida F., assignor.)				
Warren, Fuller & Co. (See Popcke, Emil, assignor.)				
Warren, Fuller & Co. (See Townsend, Caroline, assignor.)				
Warren, Fuller & Co. (See Wheeler, Candace, assignor.)				
Waterhouse, Frederick, Wallingford, Conn., assignor to Racine Silver Plate Company, Racine, Wis. Spoon or fork handle	12,840	Mar. 28	21	867
Waterhouse, Frederick, assignor to Hall, Elton & Co., Wallingford, Conn. Spoon or fork handle	12,841	Mar. 28	21	867
Watson, John M., Pittsburg, Pa. Caster-bottle	12,791	Feb. 21	21	498
Watson, John M., Pittsburg, Pa. Spice-bottle	12,908	Apr. 25	21	1201
Weiden, Robert, New York, N. Y. Gimp	12,919	May 2	21	1279
Wemple, Alonzo E. (See Handforth and Wemple.)				
Wesson, Daniel B. (See Lincoln and Wesson.)				
West, John, Brooklyn, N. Y. Font of type	12,935	May 16	21	1449
Westcott, Frank, Sandusky Falls, N. Y. Table-mat	13,008	June 20	21	1879
Weybosset Mills. (See Dodsworth, Frederick S., assignor.)				
Wheeler, Candace, assignor to Warren, Fuller & Co., New York, N. Y. Wall-paper	12,878	Apr. 11	21	1032
Whittall, Matthew J. (See Allen, Frank, assignor.)				
Whitworth, William, Cleveland, Ohio. Sewing-machine case	12,709	Jan. 17	21	142
Wilkinson, George, assignor to Gorham Manufacturing Company, Providence, R. I. Handle for articles of table-ware	12,757	Feb. 7	21	346
Williams, Edward G., *et al.* (See Ritchel, Charles F., assignor.)				
Williamson, John, Louisville, Ky. Panel for mantels	12,751	Feb. 7	21	346
Wilt, Erasmus D., Pittsburg, Pa. Badge	12,943	June 6	21	1693
Wood, John B., Montreal, Quebec, Canada. Jeweler's stand	12,736	Feb. 7	21	346
Worcester Carpet Company. (See Allen, Frank, assignor.)				

ALPHABETICAL LIST OF REGISTRANTS OF TRADE-MARKS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
Abbott, Edward A., Savannah, Ga. Remedy for corns, warts, bunions, and indurations of the skin.	9,330	May 9	21	1279
Adams, Taylor & Co., Boston, Mass. Whisky	9,043	Mar. 28	21	933
Adriance, Platt & Co., Poughkeepsie, N. Y. Reaping and mowing machines	9,084	Jan. 17	21	149
Aitken, John W., Carbondale, Pa. Liniment	8,973	Jan. 3	21	1
Alabastine Company, Grand Rapids, Mich., assignee to Alabastine Company, New York, N. Y. Composition for coating walls and ceilings	8,968	Jan. 3	21	2
Albany Aniline & Chemical Works, Albany, N. Y. Aniline chemical dyes	9,279	Apr. 11	21	1036
Albaugh & Co., N. H., Tedmar, Ohio, Carmi, Ill., and Burlington, Kans. Trees, shrubs, vines, and plants	9,007	Jan. 10	21	73
Alles & Fisher, Boston, Mass. Cigars	9,046	Jan. 31	21	385
Allonce, Ramon, New York, N. Y. Cigars	9,319	Apr. 25	21	1284
Allonce, Ramon, New York, N. Y. Cigars	9,320	Apr. 25	21	1285
Allonce, Ramon, New York, N. Y. Cigars	9,321	Apr. 25	21	1285
Allonce, Ramon, New York, N. Y. Cigars	9,322	Apr. 25	21	1285
Allonce, Ramon, New York, N. Y. Cigars	9,446	June 13	21	1788
Alvarez é Hijo, New York, N. Y. Cigars	9,169	Mar. 7	21	636
Alvarez é Hijo, New York, N. Y. Cigars	9,338	May 9	21	1280
Alvarez, Julian, New York, N. Y. Cigars	9,149	Mar. 7	21	636
Alvarez, Julian, New York, N. Y. Cigars	9,150	Mar. 7	21	636
Alvarez, Julian, New York, N. Y. Cigars	9,331	May 9	21	1280
Alvarez, Julian, New York, N. Y. Cigars	9,465	June 20	21	1880
Alvarez y Ca., Justo, New York, N. Y. Cigars	9,151	Mar. 7	21	636
American Starch Company, Columbus, Ind. Laundry-starch	9,134	Feb. 21	21	493
Anderson, David & John, Glasgow, Scotland. Cotton, worsted, and woolen dress-goods, shirtings, and other similar goods	9,030	Jan. 17	21	149
Anglo-Swiss Condensed Milk Company, Middletown and New York, N. Y. Condensed milk	9,417	May 30	21	1617
Anthony & Co., E. & H. T., New York, N. Y. Photographic prints	8,974	Jan. 3	21	1
Archbold, John D., New York, N. Y. Oil	9,284	Apr. 18	21	1138
Arthur, Benjamin F., Holyoke, Mass. Specifics for corns	9,216	Mar. 21	21	794
Ash & Co., Louis, New York, N. Y. Cigars and cigarettes	9,192	Mar. 14	21	716
Ash & Co., Louis, New York, N. Y. Cigars and cigarettes	9,193	Mar. 14	21	716
Ash & Co., Louis, New York, N. Y. Cigars and cigarettes	9,196	Mar. 14	21	716
Atlantic Milling Company, St. Louis, Mo. Flour	9,366	Apr. 25	21	1291
Atlantic Milling Company, St. Louis, Mo. Flour	9,367	Apr. 25	21	1291
Austen, William J., Oswego, N. Y. Cologne-water	9,049	Jan. 31	21	385
Austen, William J., Oswego, N. Y. Cologne-water	9,050	Jan. 31	21	385
Automatic Music Paper Company, Boston, Mass. Perforated music-sheets	9,431	June 6	21	1694
Bagley & Company, John J., Detroit, Mich. Manufactured chewing and smoking tobacco	9,425	June 27	21	1689
Baker, Charles, New York, N. Y. Cigars	9,180	Mar. 7	21	638
Baker, Isaiah, East Somerville, Mass. Electro-magnetic appliances for the cure of various diseases	9,285	Apr. 18	21	1139
Balch, Alonzo W., New York, N. Y. Whisky	9,047	Mar. 28	21	933
Banker, George W., Brooklyn, N. Y. Boxed cans	9,217	Mar. 21	21	794
Barrows, Francis A., Castleton, Vt. Plow	9,466	June 27	21	1689
Barrows & Sons, William, Tipton, county of Stafford, England. Sheets, plates, bars, and rods of iron and steel	9,368	Apr. 25	21	1292
Bazley & McAlvanah, New York, N. Y. Milk-chocolate	8,975	Jan. 3	21	2
Bass, Ratcliff & Gretton, (limited,) Burton-on-Trent, county of Stafford, England. Pale ale, strong ale, and stout or porter	9,289	Apr. 25	21	1293
Bates, Emery L. (See Tomes, Wilcox, Kimball, Bates, and Bond.)				
Bates, Theodore C., North Brookfield, Mass. Corsets	9,233	May 2	21	1280
Bates, Theodore C., North Brookfield, Mass. Corsets	9,234	May 2	21	1280
Bates, Theodore C., North Brookfield, Mass. Corsets	9,235	May 2	21	1280
Bates, Theodore C., North Brookfield, Mass. Corsets	9,236	May 2	21	1280
Bauer, Henry, Sedalia, Mo. Hair-tonic	9,443	June 20	21	1880
Baxter, James P., Portland, Me. Canned corn	9,048	Mar. 28	21	933
Beakey & Co., James, St. Louis, Mo. Cooking-stoves	9,310	Apr. 25	21	1293
Bedell, Edward W., New York, N. Y. Alpaca braid	9,224	Mar. 28	21	937
Benquchea y Fernandez, New York, N. Y. Cigars	9,155	Mar. 7	21	638
Benquchea y Fernandez, New York, N. Y. Cigars	9,156	Mar. 7	21	638
Benquchea y Fernandez, New York, N. Y. Cigars	9,157	Mar. 7	21	638
Bergengren, Frederick W., Lynn, Mass. Medicinal preparations	9,265	May 16	21	1440
Bernheim, Henry, New York, N. Y. Overalls	9,041	Jan. 24	21	333
Bethesda Mineral Spring Company, Waukesha, Wis. Natural mineral water	9,239	May 9	21	1283
Bock y Ca., New York, N. Y. Cigars	9,141	Feb. 28	21	351
Bond, E. E. (See Tomes, Wilcox, Kimball, Bates, and Bond.)				
Bonnike, Ulbrich & Co., [illegible], France. Tobacco-pipes of brier-root and meerschaum and cigar and cigarette holders	9,035	Jan. 17	21	149
Bowen, Smith, Philadelphia, Pa. Cement or putty	9,470	June 20	21	1690
Bowers, James, Newark, N. J. Suspenders or braces	9,267	May 16	21	1440
Bowers, James, Newark, N. J. Elastic goods, and women's suspenders and braces	9,447	June 13	21	1789
Bowring & Archbold, New York, N. Y. Illuminating oil	9,284	Mar. 21	21	794
Byrd & Son, George, Philadelphia, Pa. Table-syrup	9,473	June 27	21	1690
Boyden, William F., Providence, Rhode Island. Gold, silver, and plated ware	9,472	June 27	21	1690
Brantho's Literary Bureau, New York, N. Y. Writing-inks	9,235	Mar. 28	21	937
Bridge and Beach Manufacturing Company, St. Louis, Mo. Cooking-stoves	9,286	Apr. 18	21	1139
Bridge and Beach Manufacturing Company, St. Louis, Mo. Cooking-stoves	9,287	Apr. 18	21	1139
Bridge and Beach Manufacturing Company, St. Louis, Mo. Cooking-stoves	9,288	Apr. 18	21	1139
Briggs & Bro., C. M., Buffalo, N. Y. Hardware	9,461	June 27	21	1690

Alphabetical list of registrants of trade-marks, January to June, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Brook & Brothers, Jonas, Meltham Mills, near Huddersfield, county of York, England. Sewing cotton and thread	9,083	Jan. 31	21	966
Brook & Brothers, Jonas, Meltham Mills, near Huddersfield, county of York, England. Sewing cotton and thread	9,091	Feb. 7	21	346
Brooks, Charles C., Waverly, N. Y. Medical compound	9,353	Apr. 4	21	950
Brooks, Shoobridge & Co., London, England, and New York, N. Y. Portland cement	9,096	Jan. 10	21	78
Brown, Albert R., Guilford, N. Y. Milk-cooler	9,084	Jan. 31	21	966
Brown & Brother, Winston, N. C. Chewing-tobacco	9,138	Mar. 7	21	636
Brown & Brother, Winston, N. C. Plug and twist chewing-tobacco	9,288	Apr. 4	21	870
Brown & Brother, Winston, N. C. Plug chewing-tobacco	9,354	May 16	21	1449
Buermann, August, Newark, N. J. Spurs	9,356	May 16	21	1449
Cairns, Magdalen, Havana, N. Y. Wheaten flour, Graham flour, buckwheat flour, oatmeal, and various mixtures of flour and meal	9,385	May 23	21	1540
Carr, Joel E., and R. B. Dula, Wentzville, Mo. Plug and other chewing-tobacco	9,467	June 20	21	1880
Carroll, Robert L., Lynchburg, Va. Chewing-tobacco and smoking-tobacco, fine-cut tobacco, cigars and cigarettes, and snuff	9,092	Jan. 17	21	142
Carroll, Robert L., Lynchburg, Va. Chewing and smoking tobacco, snuff, cigars, and cigarettes	9,094	Jan. 17	21	142
Casade, Crooks & Reynaud, New York, N. Y. Brandy	9,093	Jan. 10	21	78
Casade, Crooks & Reynaud, New York, N. Y. Brandy	9,043	Jan. 24	21	206
Cereals Manufacturing Company, New York, N. Y. Infants' food	9,448	June 13	21	1788
Cereals Manufacturing Company, New York, N. Y. Crushed or prepared cereals	9,487	June 27	21	1960
Chandon & Co., Epernay, France. Champagne-wines	9,340	May 9	21	1253
Chandon & Co., Epernay, France. Champagne-wines	9,341	May 9	21	1354
Chandon & Co., Epernay, France. Champagne-wines	9,342	May 9	21	1354
Chandon & Co., Epernay, France. Wines	9,366	May 23	21	1540
Chandon & Co., Epernay, France. Wines	9,367	May 23	21	1540
Clark & Brother, George A., New York, N. Y. Needles and pins	8,976	Jan. 3	21	2
Clark Thread Company, Newark, N. J. Thread	8,989	Jan. 3	21	2
Clark Thread Company, Newark, N. J. Thread	8,990	Jan. 3	21	2
Clark Thread Company, Newark, N. J. Thread	8,991	Jan. 3	21	2
Clark Thread Company, Newark, N. J. Thread	9,097	Jan. 17	21	142
Clark Thread Company, Newark, N. J. Thread	9,036	Jan. 24	21	206
Cleveland Refining Company, Cleveland, Ohio. Refined carbon oils, lubricating-oils, and all other goods refined, distilled, made, or compounded from crude petroleum	9,085	Jan. 31	21	966
Clum, Ambrose L., Red Wing, Minn. Medicinal preparation	9,236	Mar. 28	21	868
Cohn, Morits, New York, N. Y. Corsets	9,051	Jan. 31	21	966
Conrad & Co., C., St. Louis, Mo. Whisky	9,225	Mar. 21	21	794
Conrad & Co., C., St. Louis, Mo. Whisky	9,226	Mar. 21	21	794
Consolidated Tank-Line Company, Cincinnati, Ohio, and Hannibal, Mo. Illuminating-oils	9,432	June 6	21	1694
Copeland, George W. (See Huggan, Hahn, Copeland, and Grainger.)				
Corning & Co., Peoria, Ill. Distilled spirits	9,462	June 27	21	1960
Cox & Co., Lewis, Philadelphia, Pa. Hosiery	9,474	June 27	21	1960
Crane & Brother, Z., Jr., Dalton, Mass. Writing-paper	9,008	Jan. 10	21	78
Crane & Brother, Z., Jr., Dalton, Mass. Writing-paper	9,009	Jan. 10	21	78
Crane & Brother, Z., Jr. Writing-paper of all kinds	9,163	Mar. 14	21	716
Crane Brothers, Westfield, Mass. Paper	9,153	Mar. 7	21	638
Crane Brothers, Westfield, Mass. Paper	9,179	Mar. 7	21	638
Crawford, E. C. and J. W., Houston, Tex. Baking-powder	9,398	May 23	21	1540
Crawford, J. W. (See Crawford, E. C. and J. W.)				
Crocker Manufacturing Company, Holyoke, Mass. Cover-paper	9,389	May 23	21	1540
Crotty & Lindauer, New York, N. Y. Corsets	9,237	Mar. 28	21	868
Cueto y Ca., Juan, New York, N. Y. Cigars	9,273	Apr. 11	21	1039
Cueto y Ca., Juan, New York, N. Y. Cigars	9,311	Apr. 25	21	1202
Cushing & Co., W., Foxcroft, Me. Dyeing materials	9,052	Jan. 31	21	966
D'Argy & Co., Gaston, Paris, France. Cigarette-paper	9,464	June 27	21	1960
Davidson, Calvin C. (See Davidson, James C. and C. C.)				
Davidson, James C. and C. C., Denver, Colo. Medicines	9,390	May 23	21	1540
Davis, William A., Boston, Mass. Mucilage and writing inks and fluids	9,463	June 27	21	1960
Day & Co., Leonard, Minneapolis, Minn. Flour	9,357	May 16	21	1450
Day & Co., Leonard, Minneapolis, Minn. Flour	9,358	May 16	21	1450
Day & Co., Leonard, Minneapolis, Minn. Flour	9,359	May 16	21	1450
Day, Rollins & Co., Minneapolis, Minn. Flour	9,360	May 16	21	1450
Day, Rollins & Co., Minneapolis, Minn. Flour	9,361	May 16	21	1450
Day, Rollins & Co., Minneapolis, Minn. Flour	9,362	May 16	21	1450
Day, Rollins & Co., Minneapolis, Minn. Flour	9,363	May 16	21	1450
Day, Rollins & Co., Minneapolis, Minn. Flour	9,364	May 16	21	1450
Day, Rollins & Co., Minneapolis, Minn. Flour	9,365	May 16	21	1450
De Pew, William H., New York, N. Y. Razors	9,238	Apr. 4	21	950
Del Rio y Ca., F. P., New York, N. Y. Cigars, cigarettes, and cut tobacco	9,274	Apr. 11	21	1039
Demuth, William, New York, N. Y. Cigarette-paper	9,418	May 30	21	1617
Deunler, August F., Interlaken, Switzerland. Bitters	9,053	Jan. 31	21	966
Denny & Sons, Henry, Chicago, Ill. Hog-products, including hams, bacon, pork, lard, and such other food substances as are usually put up by pork butchers and packers	9,079	Feb. 7	21	346
Denny & Sons, Henry, Chicago, Ill. Hams, bacon, and lard	9,419	May 30	21	1617
Denny & Sons, Henry, Chicago, Ill. Hams, bacon, and lard	9,420	May 30	21	1617
Denny & Sons, Henry, Chicago, Ill. Hams, bacon, and lard	9,433	June 6	21	1694
Distillerie de la Liqueur Bénédictine de l'Abbaye de Fécamp, Paris, France. Cordial	9,318	Mar. 21	21	794
Dubbé & Sons, T. M., New York, N. Y. Glue	9,227	Mar. 21	21	794
Dueber Watch Case Manufacturing Company, Newport, Ky., Cincinnati, Ohio, New York, N. Y., and Chicago, Ill. Coin-silver watch-cases	8,995	Jan. 10	21	77
Dula, R. B. (See Carr and Dula.)				
Dupree, E. Brantley, Cincinnati, Ohio. Toilet preparations	9,275	Apr. 11	21	1039
Du Vivier & Co., New York, N. Y. Vegetables and fruits, either raw, pickled, or otherwise preserved	9,181	Mar. 7	21	638
Du Vivier & Co., New York, N. Y. Vegetables and fruits, either raw, pickled, or otherwise preserved	9,164	Mar. 14	21	716
Dwyer, Joseph H., Lynn, Mass. Leather-dressing	9,243	Mar. 28	21	868
Eagle Pencil Company, New York, N. Y. Lead-pencils	9,102	Feb. 14	21	451
Eagle Pencil Company, New York, N. Y. Black-lead pencils	9,103	Feb. 21	21	498
Eagle Pencil Company, New York, N. Y. Lead-pencils	9,104	Feb. 21	21	498
Eagle Pencil Company, New York, N. Y. Lead-pencils	9,140	Feb. 21	21	498
Eagle Pencil Company, New York, N. Y. Lead-pencils	9,154	Mar. 7	21	638
Eagle Pencil Company, New York, N. Y. Lead-pencils	9,204	Mar. 21	21	793
Eagle Pencil Company, New York, N. Y. Lead-pencils	9,205	Mar. 21	21	794

Alphabetical list of registrants of trade-marks, January to June, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Eagle Pencil Company, New York, N. Y. Lead-pencils	9,206	Mar. 21	21	794
Eagle Pencil Company, New York, N. Y. Lead-pencils	9,207	Mar. 21	21	794
Eagle Pencil Company, New York, N. Y. Lead-pencils	9,208	Mar. 21	21	794
Eagle Pencil Company, New York, N. Y. Lead-pencils	9,339	Apr. 25	21	1202
Ecard, Christian F., Kastelmach, Germany. Wines	8,992	Jan. 3	21	2
Echard, John C., Staunton, Va. Remedy for the cure and extraction of corns	9,289	Apr. 18	21	1126
Edmands Manufacturing Company, Hamilton, Ohio. Grain machinery	9,461	May 30	21	1617
Elkins Manufacturing and Gas Company, Philadelphia, Pa. Metals in ingots, castings, and sheets	9,035	Jan. 17	21	142
English, Richard, New York, N. Y. Liniment	9,240	Mar. 28	21	868
Enge & Sons, P. W., New York, N. Y. Whisky	9,440	June 13	21	1788
Escheneuer & Co., Bordeaux, France. Claret-wine	9,077	Jan. 24	21	206
Escheneuer & Co., Bordeaux, France. Claret-wine	9,078	Jan. 24	21	206
Escheneuer & Co., Bordeaux, France. Claret-wine	9,039	Jan. 24	21	206
Escheneuer & Co., Bordeaux, France. Claret-wine	9,040	Jan. 24	21	206
Escheneuer & Co., Bordeaux, France. Claret-wine	9,166	Feb. 21	21	498
Estabrook & Eaton, Boston, Mass. Cigars, cigarettes, and smoking-tobacco	9,239	Mar. 21	21	794
Estanillo, Pedro A., New York, N. Y. Cigarettes	9,054	Jan. 31	21	966
Estanillo, Pedro A., New York, N. Y. Cigarettes	9,055	Jan. 31	21	966
Estanillo y Ca., New York, N. Y. Cigars	9,276	Apr. 11	21	1039
Estanillo y Ca., New York, N. Y. Cigars	9,312	Apr. 25	21	1202
Estep & Calkins, Chicago, Ill. Oil and polish for leather	9,313	Apr. 25	21	1202
Estey Organ Company, Brattleborough, Vt., and Atlanta, Ga. Violin-strings	9,146	Feb. 28	21	891
Eureka Springs Concentrating Company, Eureka Springs, Ark. Certain medicinal preparations	9,010	Jan. 10	21	78
Evans, David, Studley, county of Warwick, England. Needles for hand and machine sewing	9,434	June 27	21	1960
Evans, Henry S., Montreal, Quebec, Canada, and Rouse's Point, N. Y. Ginger-ale	9,165	Feb. 21	21	498
Evans, Henry S., Montreal, Quebec, Canada, and Rouse's Point, N. Y. Artificial waters	9,343	May 9	21	1354
Fahrney, Peter, Chicago, Ill. Certain proprietary medicines	9,344	May 9	21	1354
Falke, Bruno, Chemnitz, Saxony, Germany. Knit and woven gloves and underwear	9,345	May 9	21	1354
Ferguson & Co., J. C., Chicago, Ill. Meats, bacon, and lard	9,244	Mar. 28	21	868
Ford, William F., Newark, N. J. Harness-trimmings or harness-mountings, and other goods pertaining to saddlery-hardware	9,388	May 16	21	1450
Fountain Ink Company, New York, N. Y. Writing-inks	9,228	Mar. 28	21	868
Fox & Co., Samuel, (limited,) Stockbridge Works, Deepcar, near Sheffield, county of York, England. Steel umbrella-frames and parts thereof	9,158	Mar. 7	21	638
Franco-Californian Packing Company, San Francisco, Cal. Canned fruits, vegetables, and fish	9,391	May 23	21	1540
Freese, Noah L., Salem, Mass. Cement and adhesive liquid	9,135	Mar. 14	21	716
Freiberg & Workum, Cincinnati, Ohio. Whisky	9,096	Jan. 10	21	77
French, E. Milne, Brooklyn, N. Y. Cotton, linen, or other fabrics	9,107	Feb. 21	21	498
Frey, Louis C., Cincinnati, Ohio. Cigars and cigarettes, cheroots, smoking and chewing tobacco, and snuff	9,066	Jan. 31	21	966
Frey, Louis C., Cincinnati, Ohio. Cigars, cigarettes, cheroots, smoking and chewing tobacco, and snuff	9,067	Jan. 31	21	966
Fugnet & Sons, S., Philadelphia, Pa. Cigars	9,219	Mar. 21	21	794
Fuller Brothers, New York, N. Y. Cutlery, such as shears, scissors, knives, and razors	9,450	June 13	21	1788
Gear, Scott & Company, Richmond, Ind. Thrashing-machines	9,254	Apr. 4	21	950
Gehm, Joseph, Boston, Mass. Lager-beer	9,246	May 9	21	1354
Geisea & Co., W. A., Frankfort, Ky. Whisky	9,276	Apr. 11	21	1039
Geisea & Co., W. A., Frankfort, Ky. Whisky	9,219	Mar. 21	21	794
Garcia y Montero, New York, N. Y. Cigars	9,279	Apr. 11	21	1039
Garcia y Montero, New York, N. Y. Cigars				
Gardiner, James M., New York, N. Y. Fine-cut smoking and chewing tobacco, snuff, and plug-tobacco	9,211	Mar. 21	21	794
Gaskell, Deacon & Co., Widnes, county of Lancaster, England. Carbonate of soda	9,230	Mar. 28	21	868
Gebrueder, Peltzer, Crefeld, Prussia, Germany. Silks, satins, velvets, and plushes	9,139	Mar. 7	21	638
Gillett, Albert B., Hartford, Conn. Soap	8,977	Jan. 3	21	2
Gish & Garner, Hopkinsville, Ky. Liniments	9,106	Feb. 21	21	498
Glasier, George P., Chelsea, Mich. Hops and malt bitters	9,135	Feb. 21	21	498
Glen Cove Manufacturing Company, Glen Cove, N. Y. Corn-starch	9,011	Jan. 10	21	78
Globe Tobacco Company, Detroit, Mich. Smoking-tobacco	9,226	Mar. 21	21	794
Globe Yarn Mills, Fall River, Mass. Cotton yarns and cloth	8,993	Jan. 3	21	2
Goodwin & Co., New York, N. Y. Cigars, cigarettes, smoking-tobacco, and chewing-tobacco	9,194	Mar. 14	21	716
Grainger, William H. (See Huggan, Hahn, Copeland, and Grainger.)				
Gray & Hoffin, Minneapolis, Minn. Preparation for eradicating corns	8,978	Jan. 3	21	2
Green, George G., Woodbury, N. J. Certain medical preparation	9,126	Feb. 21	21	498
Green, Lewis M., Woodbury, N. J. Certain medical preparations	9,169	Feb. 21	21	498
Green, Lewis M., Woodbury, N. J. Certain medical preparations	9,110	Feb. 21	21	498
Greensfelder, Rosenthal & Co., Chicago, Ill. Boots	9,388	May 23	21	1540
Griggs & Co., Ottawa, Ill. Liquid proprietary medicine	9,314	Apr. 25	21	1202
Hahn, Ammi R. (See Huggan, Hahn, Copeland, and Grainger.)				
Hall & Co., Alvah, New York, N. Y. Umbrellas	9,012	Jan. 10	21	78
Hamilton, Robert, Covington, Ky. Chewing and smoking tobacco and cigars	9,143	Feb. 28	21	891
Harris, Sampson & Co., Reidsville, N. C. Chewing-tobacco	9,468	June 20	21	1880
Harrison Bros. & Co., Philadelphia, Pa. Paints	9,399	May 16	21	1450
Harrison Bros. & Co., Philadelphia, Pa. Paints	9,399	May 16	21	1450
Harrison Bros. & Co., Philadelphia, Pa. Paints	9,416	May 23	21	1540
Hartford Hammer Company, Hartford, Conn. Hammers	9,422	May 30	21	1617
Hecker & Co., George V., New York, N. Y. Baking-powder	9,004	Jan. 10	21	78
Hegeman, J. Niven, New York, N. Y. Lozenges for the cure of dyspepsia, indigestion, and kindred diseases	9,088	Feb. 7	21	346
Heissenbruch, Theophilus, Philadelphia, Pa. Builders', agricultural, and general hardware	9,127	Feb. 21	21	498
Hicks, Nathan P., Pawtucket, R. I. Ring-travelers	9,423	May 30	21	1618
Hill & Co., J. R., Concord, N. H. Harness	9,013	Jan. 10	21	78
Hills, William S., Boston, Mass. Flour	9,197	Mar. 14	21	716
Hinekley, James W., Minneapolis, Minn. Certain medicinal preparation for the skin	9,393	Apr. 25	21	1202
Hincks, Joseph A., New Orleans, La. Medical compound for the cure of ingrowing nails	9,393	May 23	21	1540
Hogle Rock Oil Company, Chicago, Ill. Horse-medicine	9,161	Mar. 7	21	638
Hogle Rock Oil Company, Chicago, Ill. Medicine	9,196	Mar. 14	21	716
Holbrook & Co., E. W., New York, N. Y. Cotton piece-goods	9,168	Mar. 7	21	638
Holt & Co., New York, N. Y. Flour	9,144	Feb. 28	21	891
Hore, Barnett & Co., New York, N. Y. Paints and pigments	8,979	Jan. 3	21	2
Huggan, Henry D., A. R. Hahn, G. W. Copeland, and W. H. Grainger, East Boston, Mass. Liniment	9,434	June 6	21	1694
Hurrell, Edgar B., Cincinnati, Ohio. Certain specific medicine	9,269	Apr. 18	21	1126
Iler & Co., Omaha, Nebr. Whisky	9,128	Feb. 21	21	498

Alphabetical list of registrants of trade-marks, January to June, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Imbs & Co., J. F., St. Louis, Mo. Flour	9,315	Apr. 25	21	1202
Imhauser, Elise, New York, N. Y. Watchmen's time-detectors	9,281	Apr. 11	21	1032
Incorporated Company of Salzbergwerk, Neu-Staasfurt, Löderburg, near Staasfurt, Germany. Kainit	9,014	Jan. 10	21	78
Inge & Mahone, Petersburg, Va. Plug and twist tobacco	9,255	Apr. 4	21	960
Inge & Mahone, Petersburg, Va. Plug and twist tobacco	9,256	Apr. 4	21	960
Irby & Bro., W. R., New Orleans, La. Cigars	9,301	Apr. 18	21	1128
Ireland, Alfred, Philadelphia, Pa. Books	9,186	Mar. 14	21	716
Irvine, E. G., Lynchburg, Va. Manufactured smoking-tobacco for pipes	9,145	Feb. 28	21	582
Irvine, E. G., Lynchburg, Va. Smoking-tobacco for pipes	9,143	Mar. 7	21	636
Jacoby & Co., S., New York, N. Y. Cigarettes	9,220	Apr. 11	21	1033
Jacoby & Co., S., New York, N. Y. Cigarettes	9,425	May 30	21	1618
Jané, Miguel, New York, N. Y. Cigars	9,055	Jan. 31	21	266
James & Kirtland, New York, N. Y. Cooking-ranges	9,111	Feb. 21	21	498
Jayne & Son, D., Philadelphia, Pa. Medicinal preparation	9,370	May 16	21	1450
Jayne & Son, D., Philadelphia, Pa. Medicinal preparation	9,394	May 23	21	1540
Jayne & Son, D., Philadelphia, Pa. Medicinal preparation	9,395	May 23	21	1540
Jayne & Son, D., Philadelphia, Pa. Medicinal preparation	9,396	May 23	21	1540
Jayne & Son, D., Philadelphia, Pa. Medicinal preparation	9,397	May 23	21	1540
Jayne & Son, D., Philadelphia, Pa. Medicinal preparation	9,398	May 23	21	1540
Jayne & Son, D., Philadelphia, Pa. Medicinal preparation	9,399	May 23	21	1540
Jayne & Son, D., Philadelphia, Pa. Medicinal preparation	9,400	May 23	21	1540
Jayne & Son, D., Philadelphia, Pa. Medicinal preparation	9,401	May 23	21	1540
Jenkins Bros., Boston, Mass., and New York, N. Y. Packing	9,435	June 6	21	1694
Jennings, Alfred E., New York, N. Y. Water-closet bowls, valves, and other appliances connected with the construction of water-closets	9,015	Jan. 10	21	78
Jennings, D. A., San Francisco, Cal. Whisky	9,057	Jan. 31	21	266
Johnson, Mary E., Newburyport, Mass. Composition or wash for dressing hair	9,119	Feb. 21	21	498
Kaufmann Bros. & Bendy, New York, N. Y. Cigars, cigarettes, and smoking and chewing tobacco	9,371	May 16	21	1450
Krator & Co., T. R., New York, N. Y. Cement	9,372	May 16	21	1450
Kendall & Co., B. J., Enosburg Falls, Vt. Liniment	9,347	May 9	21	1354
Kerr & Co., Paisley, county of Renfrew, Scotland, East Newark, N. J., and New York, N. Y. Spool-cotton	9,393	Apr. 18	21	1122
Kenffel & Esser, New York, N. Y. Measuring-tapes	9,402	May 23	21	1540
Kimball, John, Boston, Mass. Lasts	9,451	June 13	21	1788
King, Theodore E., Boston, Mass. Certain medicinal preparation	8,994	Jan. 3	21	2
Kingsford & Son, T., Oswego, N. Y. Corn-starch	9,084	Feb. 7	21	346
Kingsford, Thomson, Oswego, N. Y. Starch	9,080	Feb. 7	21	346
Kingsford, Thomson, Oswego, N. Y. Starch	9,081	Feb. 7	21	346
Kingsford, Thomson, Oswego, N. Y. Starch	9,082	Feb. 7	21	346
Kingsford, Thomson, Oswego, N. Y. Starch	9,083	Feb. 7	21	346
Kinney Tobacco Company, New York, N. Y. Cigarettes	9,068	Jan. 31	21	266
Kinney Tobacco Company, New York, N. Y. Cigars, cigarettes, cheroots, and plug, smoking, and chewing tobacco	9,069	Jan. 31	21	266
Kinney Tobacco Company, New York, N. Y. Cigars, cheroots, cigarettes, and smoking-tobacco	9,070	Jan. 31	21	266
Kinney Tobacco Company, New York, N. Y. Cigars, cheroots, and cigarettes	9,071	Jan. 31	21	266
Kinney Tobacco Company, New York, N. Y. Cigars, cigarettes, cheroots, and plug, smoking, and chewing tobacco	9,072	Jan. 31	21	266
Kinney Tobacco Company, New York, N. Y. Cigars, cheroots, cigarettes, and smoking-tobacco	9,073	Jan. 31	21	266
Kinney Tobacco Company, New York, N. Y. Cigars, cigarettes, cheroots, and smoking-tobacco	9,074	Jan. 31	21	266
Kinney Tobacco Company, New York, N. Y. Cigars, cigarettes, cheroots, and plug, smoking, and chewing tobacco	9,075	Jan. 31	21	266
Kinney Tobacco Company, New York, N. Y. Cigars, cheroots, cigarettes, and smoking-tobacco	9,076	Jan. 31	21	266
Kinney Tobacco Company, New York, N. Y. Cigars, cheroots, and cigarettes	9,113	Feb. 21	21	498
Kloczewski, Adrian M., Washington, D. C. Medicated tea	9,220	Mar. 21	21	794
Knight & Co., Williston, New York, N. Y. Buttons	8,999	Jan. 10	21	78
Knight & Co., Williston, New York, N. Y. Buttons	9,000	Jan. 10	21	78
Knight & Co., Williston, New York, N. Y. Buttons	9,001	Jan. 10	21	78
Knight & Co., Williston, New York, N. Y. Buttons	9,002	Jan. 10	21	78
Knight & Co., Williston, New York, N. Y. Buttons	9,090	Feb. 7	21	346
Knight, George W., Newton, Mass. Spool-silk	9,187	Mar. 14	21	716
Knight, H. Williston, New York, N. Y. Buttons	8,997	Jan. 10	21	77
Knight, H. Williston, New York, N. Y. Buttons	8,998	Jan. 10	21	78
Knoblaugh, John N., Geneseo, Ill. Antisporadic compound	9,031	Jan. 17	21	142
Krause, Jean E., New York, N. Y. Human-hair goods	9,114	Feb. 21	21	498
Kriete, Augustus W., Baltimore, Md. Canned fruits and vegetables, except canned corn	9,139	Feb. 21	21	498
Kumbel, L. K. (See Tennis, Wilson, Kumbel, Bates, and Bond.)				
Kuttroff, Adolf, New York, N. Y. Indelible ink	9,495	June 27	21	1960
Lamplough, Henry, London, England. Fire-bricks, fire-slabs, and clumps	8,324	Apr. 25	21	1202
Lang & Co., J., New York, N. Y. Cordials	9,221	Mar. 21	21	794
Lawrence, Benjamin, New York, N. Y. Steel pens	9,373	May 16	21	1450
Lederer, S. & B., Providence, R. I. Ornamental jewelry-chains	9,115	Feb. 21	21	498
Leffel & Co., James, Springfield, Ohio, and New York, N. Y. Periodical	9,496	May 30	21	1618
Leslie, George H. (See Merwin and Leslie.)				
Lies & Co., George P., New York, N. Y. Cigars	9,185	Mar. 14	21	716
Lippe, Christopher, Baltimore, Md. Soap	9,374	May 16	21	1450
Livingston, Morris, New York, N. Y. Buttons	9,436	June 6	21	1694
Livingston, Morris, New York, N. Y. Buttons	9,437	June 6	21	1694
Lopez, Fernandez y Co., New Orleans, La. Cigars	9,219	Mar. 21	21	794
Lopez, Fernandez y Co., New Orleans, La. Cigars	9,222	Mar. 21	21	794
Lopez, Fernandez y Co., New Orleans, La. Cigars	9,302	Apr. 11	21	1032
Lopez, Purfecto F., New York, N. Y. Cigars	9,305	Apr. 25	21	1202
Lowell, J. Warren, Cape Elizabeth, Me. Certain medicinal preparations	9,303	Apr. 18	21	1128
MacVeagh & Co., Franklin, Chicago, Ill. Roasted coffee	9,494	June 27	21	1960
Magi, Jayran, New Orleans, La. Cigars	9,402	May 23	21	1540
Mallory & Co., E. B., Baltimore, Md. Canned goods	9,436	June 6	21	1694
Marley Manufacturing Company, Newark, N. J. Shirts	9,457	May 30	21	1618
Marsh & Co., G. E., Lynn, Mass. Soap	9,404	May 23	21	1540
Martell & Co., Cognac, France. Brandy	9,058	Jan. 31	21	266
Martell & Co., Cognac, France. Brandy	9,059	Jan. 31	21	266
Martin & Brother, Thomas, Chelsea, Mass. Elastic webs	9,220	Mar. 21	21	794
Martin & Co., Augustus B., Boston and Lynn, Mass. Leather	9,375	May 16	21	1450
Martin, Dabney H., Greenville, Ky. Plug and twist chewing-tobacco	9,092	Feb. 7	21	346
Marx, Louis, New York, N. Y. Cigars	9,213	Mar. 21	21	794

Alphabetical list of registrants of trade-marks, January to June, inclusive—Continued.

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Marx, Louis, New York, N. Y. Cigars	9,284	Apr. 11	21	1032
Maverick Oil Company, Boston, Mass. Petroleum-oil	9,188	Mar. 14	21	716
May Brothers, New York, N. Y. Cigarette-paper	9,016	Jan. 10	21	78
May Brothers, New York, N. Y. Cigarette-paper of all kinds	9,283	Apr. 11	21	1032
May, George W., Norwich, Conn. Rheumatic liniment	9,439	June 6	21	1694
McAlpin & Co., D. H., New York, N. Y. Plug-tobacco	9,017	Jan. 10	21	78
McBain, William, Toronto, Ontario, Canada. Machine-oils	9,077	Jan. 31	21	266
Mechanische Weberei zu Linden, Linden, near Hanover, Prussia, Germany. Cotton, mixed woolen, and mixed silken fabrics	9,164	Mar. 7	21	636
Megler & Co., J. G., Brookfield, Wash. Ter. Canned meats and fish	9,348	May 9	21	1354
Megler & Co., J. G., Brookfield, Wash. Ter. Canned meats and fish	9,349	May 9	21	1354
Merwin, William E., and G. H. Leslie, Detroit, Mich. Certain medicine	9,394	Apr. 18	21	1128
Messinger, Charles R., Toledo, Ohio. Smoking-tobacco	9,429	June 13	21	1788
Messinger, Charles R., Toledo, Ohio. Smoking-tobacco	9,483	June 13	21	1788
Michalitschke Bros. & Co., San Francisco, Cal. Cigars and cigarettes	9,376	May 16	21	1450
Miehbach, Emil. (See Von Günther and Miehbach.)				
Milliken, Benjamin D., Boston, Mass. Stove-enamel	9,044	Jan. 24	21	266
Mitchell, William, Birmingham and London, England. Steel and metallic pens	9,095	Feb. 7	21	346
Morgan Crucible Company, Battersea, county of Surrey, England. Crucibles and other chemical ware	9,440	June 6	21	1694
Morgan Crucible Company, Battersea, county of Surrey, England. Crucibles	9,441	June 6	21	1694
Morgan Crucible Company, Battersea, county of Surrey, England. Crucibles	9,442	June 6	21	1694
Morningstar & Co., Chas., New York, N. Y. Starch	9,088	Jan. 17	21	142
Morse & Gilman, Chicago, Ill. Liquid dressing	9,116	Feb. 21	21	498
Mülhens & Kropff, New York, N. Y. Certain toilet articles	9,405	May 23	21	1540
Münch, Teodoro, Hamburg, Germany. Perfumery and Florida-water	9,078	Jan. 31	21	266
Newton & Co., Albany, N. Y. Fire-bricks	9,018	Jan. 10	21	78
North American Chemical Company, (limited) Montreal, Quebec, Canada. Dairy-salt	9,377	May 16	21	1450
North Carolina Mill Stone Company, Westminster, Md. Millstones	9,454	June 13	21	1788
O'Brien, John J., Kansas City, Mo. Baking-powder	9,094	Feb. 7	21	346
Ogle, George A., Baltimore, Md. Pen-holders and pens	9,397	May 2	21	1260
Oury, Louise H. L. R., Rheims, France. Champagne-wine	9,117	Feb. 21	21	498
Oury, Louise H. L. R., Rheims, France. Champagne-wine	9,118	Feb. 21	21	498
Oury, Louise H. L. R., Rheims, France. Champagne-wine	9,119	Feb. 21	21	498
Oury, Louise H. L. R., Rheims, France. Champagne-wine	9,120	Feb. 21	21	498
Oury, Louise H. L. R., Rheims, France. Champagne-wine	9,121	Feb. 21	21	498
Oury, Louise H. L. R., Rheims, France. Champagne-wine	9,122	Feb. 21	21	498
Oury, Louise H. L. R., Rheims, France. Champagne-wine	9,123	Feb. 21	21	498
Oury, Louise H. L. R., Rheims, France. Champagne-wine	9,165	Mar. 7	21	636
Oury, Louise H. L. R., Rheims, France. Champagne-wine	9,166	Mar. 7	21	636
Oury, Louise H. L. R., Rheims, France. Champagne-wine	9,167	Mar. 7	21	636
Oury, Louise H. L. R., Rheims, France. Champagne-wine	9,168	Mar. 7	21	636
Oury, Louise H. L. R., Rheims, France. Champagne-wine	9,240	Mar. 28	21	960
Ordway & Clark, Haverhill, Mass. Boots, shoes, and slippers	9,095	Feb. 7	21	346
Ordway & Clark, Haverhill, Mass. Leather	9,096	Feb. 7	21	346
Paine, Milton K., Windsor, Vt. Medicinal compound	9,455	June 13	21	1788
Parent & Co., James A., Detroit, Mich. Baking-powders	9,378	May 16	21	1450
Parker, Jones & Co., New York, N. Y. Rubber bands	9,250	Mar. 28	21	960
Patent Plumbago Crucible Company, Battersea, county of Surrey, England. Plumbago crucibles and other plumbago chemical ware	9,245	Mar. 28	21	960
Peabody & Co., Henry W., Boston, Mass. Refined petroleum	9,097	Feb. 7	21	346
Pears, A. & F., Bloomsbury and Isleworth, county of Middlesex, England. Toilet and other soaps	9,407	May 23	21	1540
Peck, M. E., Stamford, Conn. Ointment	9,406	May 23	21	1540
Penfield Block Company, Lockport, N. Y. Tackle-blocks	9,042	Jan. 24	21	266
Perasa, Nicanor B., Brooklyn, N. Y. Tocological medicine	9,124	Feb. 21	21	498
Pierce, Henry L., Boston, Mass. Double-vanilla chocolate	9,336	May 2	21	1260
Pierce, Henry L., Boston, Mass. Single-vanilla chocolate	9,404	May 23	21	1540
Pierce, Henry L., Boston, Mass. Vanilla-chocolate	9,432	May 30	21	1618
Pierce, Henry L., Boston, Mass. Broma	9,443	June 6	21	1694
Pierce, Henry L., Boston, Mass. Half-vanilla chocolate	9,444	June 6	21	1694
Pierce, Henry L., Boston, Mass. Homœopathic chocolate	9,469	June 20	21	1820
Pierce, Henry L., Boston, Mass. Baker's chocolate	9,475	June 27	21	1900
Pierce, Henry L., Boston, Mass. Eagle chocolate	9,476	June 27	21	1900
Pierce, Henry L., Boston, Mass. German sweet chocolate	9,477	June 27	21	1900
Pierce, Henry L., Boston, Mass. Baker's cocoa	9,478	June 27	21	1900
Pierce, Henry L., Boston, Mass. Cocoa paste	9,479	June 27	21	1900
Pierce, Henry L., Boston, Mass. French sweet chocolate	9,488	June 27	21	1900
Pierce, Henry L., Boston, Mass. Baker's broma	9,489	June 27	21	1900
Pinckney & Co., H. F. A., Philadelphia, Pa. Mustard and all kinds of spices	9,045	Jan. 24	21	266
Plume & Atwood Manufacturing Company, Waterbury, Conn. Metal ware	8,960	Jan. 3	21	2
Poole, Theodore W., Williamston, N. C. Medicinal oil	9,140	Feb. 28	21	582
Portland Packing Company, Portland, Me. Canned provisions	9,251	Mar. 28	21	960
Portway, Charles, Halstead, county of Essex, England. Stoves	9,085	Jan. 10	21	78
Post, Ezra L., New York, N. Y. Liquid soap	9,316	Apr. 25	21	1202
Powers & Co., J. J., St. Louis, Mo. Cooking-oil	9,238	Apr. 11	21	1032
Pribyl Bros., Chicago, Ill. Razors	9,038	Jan. 17	21	142
Protective and Detective Association of Texas, Dallas, Tex. Branding live stock	9,019	Jan. 10	21	78
Provost, Warren, Brooklyn, N. Y. Soap	9,286	Apr. 11	21	1032
Quicksilver Mining Company, New Almaden, Cal. Quicksilver-flasks	9,101	Feb. 7	21	346
Rejall & Becker, New York, N. Y. Tobacco-pipes	9,125	Feb. 21	21	498
Restorff & Bettmann, New York, N. Y. Leather-dressing	9,369	May 9	21	1354
Richardson, Horace C. (See Tryser, and Richardson.)				
Richardson, Joseph C., St. Louis, Mo. Medicine	9,109	Mar. 7	21	636
Riebel, Frederick, Indianapolis, Ind. Cigars	9,458	June 13	21	1788
Riesner, Christopher, New York, N. Y. Summer furnaces	8,981	Jan. 3	21	2
Robinson Bros. & Co., Boston, Mass. Soap	9,170	Mar. 7	21	636
Rogers & Lyon, New London, Conn. Dentifrice	9,457	June 13	21	1788
Rosenberg & Co., S., New York, N. Y. Silk and mohair braids	9,267	Apr. 11	21	1032
Rosenheim, Henry, Baltimore, Md. Cigars	9,220	Mar. 21	21	794
Rosenheim, Henry, Baltimore, Md. Table-sauce	9,221	Mar. 21	21	794
Rosenheim, Henry, Baltimore, Md. Whiskies	9,241	Mar. 28	21	960
Ross, Bernard M., Peoria, Ill. Liniment	9,099	Feb. 7	21	346
Ruth, Charles H., Reading, Pa. Infant-syrup for soothing and quieting children	9,409	May 23	21	1540
Sealmann, Charles, Egg Harbor City, N. J. Red wine	9,456	June 13	21	1788

Alphabetical list of registrants of trade-marks, January to June, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
San Jose Fruit Packing Company, San José, Cal. Canned fruits, vegetables, jellies, jams, preserves, and meats	9,351	May 9	21	1354
Seabora Pickle Co., Boston, Mass. Pickles	9,410	May 23	21	1540
Sartorius & Co., New York, N. Y. Leaf-tobacco	9,258	Mar. 28	21	868
Saunders' Sons, D., Yonkers, N. Y. Pipe cutting and threading machines	9,365	Apr. 18	21	1129
Scanlan, Thomas F., Boston, Mass. Piano-fortes	9,323	Mar. 21	21	794
Schleuter & Meades, G., Brooklyn, N. Y. Cigars, cigarettes, and smoking-tobacco	9,200	Apr. 11	21	1032
Schwob, Adolphe, New York, N. Y. Watches	9,126	Feb. 21	21	498
Schwob, Adolphe, New York, N. Y. Watches	9,127	Feb. 21	21	494
Scofield, Sharmer & Teagle, Cleveland, Ohio. Illuminating-oil	9,420	May 30	21	1618
Scott, George A., New York, N. Y. Ladies' and gentlemen's corsets	9,033	Jan. 17	21	142
Scott, George A., New York, N. Y. Medicinal plasters	9,459	June 13	21	1788
Seabury & Johnson, New York, N. Y. Medicinal plasters	9,099	Feb. 7	21	346
Seebach, Bertram G., Peru, Ill. Cleaning and polishing preparations				
Sherman, Weeks & Co., New York and Kingston, N. Y. Cement, lime, land-plaster, and calcined plaster	9,198	Apr. 11	21	1039
Sherman, Weeks & Co., New York and Kingston, N. Y. Cement, lime, land-plaster, and calcined plaster	9,199	Apr. 11	21	1039
Skilton, Foote & Co., Somerville, Mass. Pickles, preserves, and sauces	9,317	Apr. 25	21	1202
Smith, Brainerd T., Covington, Ky. Flour-sifters	9,326	Apr. 25	21	1202
Smyth & Co., Dublin and Balbriggan, Ireland. Stockings	9,147	Feb. 28	21	564
Spaetha, Wilhelm, Gera, Germany. Accordions	9,262	Jan. 3	21	2
Spalding & Merrick, Chicago, Ill. Cigars, snuff, and smoking, fine-cut, and plug chewing tobacco	9,379	May 16	21	1450
Spangler, Carl, Kansas City, Mo. Tonic bitters	9,096	Feb. 7	21	346
Sperry, Wade & Co., Nashville, Tenn. Whisky	9,490	June 27	21	1960
Spicers & Peckham, Providence, R. I. Grates for stoves and ranges	9,097	Feb. 7	21	346
Stadtgemeinde Karlsbad, Karlsbad, Austria. Medical salt	9,100	Feb. 7	21	346
Stein, Conrad, New York, N. Y. Lager-beer	9,214	Mar. 21	21	794
Steinfeld, Kerngood & Co., Baltimore, Md. Hats and caps	8,963	Jan. 3	21	2
Steinfeld, Kerngood & Co., Baltimore, Md. Furnishing-goods for men's wear	9,089	Jan. 10	21	78
Stephens, Henry C., Finchley, county of Middlesex, England. Writing-inks of all descriptions	9,460	June 13	21	1788
Stephens, Henry C., Finchley, county of Middlesex, England. Writing-inks of all descriptions	9,461	June 13	21	1788
Stephens, Henry C., Finchley, county of Middlesex, England. Writing-inks of all descriptions	9,462	June 13	21	1788
St. Louis Stamping Company, St. Louis, Mo. Galvanized sheet-iron	8,984	Jan. 3	21	2
Stone, Yelverton P., Baltimore, Md. Cigars	9,327	Apr. 25	21	1202
Stowell, Elizabeth D., Charlestown, Mass. Asthmatic pastilles	9,088	Feb. 7	21	346
Stuart & Co., Edinburgh, county of Mid-Lothian, Scotland. Cement	9,463	June 13	21	1788
Stamp & Sons, A. H., Baltimore, Md. Roasted coffee	9,328	Apr. 25	21	1202
Swain, Earle & Co., Boston, Mass. Cakes of chocolate	9,189	Mar. 14	21	716
Taylor, William, Jersey City, N. J. Cigars	9,411	May 23	21	1540
Taylor, William G., Bromsgrove, county of Worcester, England. Flax-lint	8,985	Jan. 3	21	2
Tennis, F. F., New York, W. K. Wilson, L. K. Kumbel, Brooklyn, N. Y., E. L. Bates, and R. E. Bond, Fiskdale, Mass. Augers and auger-bits	9,047	Jan. 24	21	206
Toucher & Gernsheimer, New York, N. Y. Cigarettes	9,250	Apr. 4	21	950
Thomas, Hugh, New York, N. Y. Magneto-therapeutic appliances	9,380	May 16	21	1450
Thompson, E. K., Titusville, Pa. Medical compound	9,178	Mar. 7	21	638
Thornton, John, Jr., Brooklyn, N. Y. Sewing-needles	9,260	Apr. 4	21	950
Thornton, John, Jr., Brooklyn, N. Y. Sewing-needles	9,261	Apr. 4	21	950
Thurber & Co., H. K. & F. H., New York, N. Y. Certain toilet preparation	9,046	Jan. 24	21	206
Tiffany, Walton C., New York, N. Y. Belts for tanners' use	9,128	Feb. 21	21	498
Titcomb, Susanna, Baltimore, Md. Certain medicinal preparations	9,129	Feb. 21	21	498
Tower, Abner J., Boston, Mass. Oiled clothing	9,430	May 30	21	1618
Traver, G. R., Perry, N. Y. Medicine for the cure of neuralgia	9,246	Mar. 28	21	868
Trudilian, Thomas, Gloucester, Mass. Hammocks	9,381	May 16	21	1450
Tryner, George A., and H. C. Richardson, Bloomington, Ill. Cigars, cigarettes, snuff, and chewing and smoking tobacco	9,382	May 16	21	1450
Turner & Harrison, Philadelphia, Pa. Pens	9,445	June 6	21	1664
Udell & Co., A. S., Ottumwa, Iowa. Bitters	9,171	Mar. 7	21	638
Upmann, Carl, New York, N. Y. Cigars	9,471	June 20	21	1880
Upmann & Co., H., Havana, Cuba, and New York, N. Y. Cigars	9,172	Mar. 7	21	638
Valdés, Joseña, (widow of José Morales,) New York, N. Y. Cigars	9,060	Jan. 31	21	266
Valdés, Joseña, (widow of José Morales,) New York, N. Y. Cigars	9,061	Jan. 31	21	266
Valle y Ca., M., New York, N. Y. Cigars	9,215	Mar. 21	21	794
Van Buskirk, Roswell, Newark, N. J. Medicines	9,499	June 27	21	1960
Van Slyke & Co., G. W., Albany, N. Y. Cigars, cigarettes, chewing and smoking tobacco, and granulated and plug tobacco and snuff	9,148	Feb. 28	21	562
Vasnat, Lasalle, Philadelphia, Pa. Shampoo	9,352	May 9	21	1354
Veit & Nelson, New York, N. Y. Jet-goods of all kinds and buttons and jewelry manufactured from jet	9,464	June 13	21	1788
Von Ginther, Andrew, and E. Michbach, Cincinnati, Ohio. Hair-restoring compound	9,173	Mar. 7	21	638
Wadsworth, Martinez & Longman, New York, N. Y. Illuminating-oils	9,174	Mar. 7	21	638
Walker & Co., John, London, England. Writing-paper and envelopes	9,175	Mar. 7	21	638
Walker & Co., John, London, England. Steel pens	9,176	Mar. 7	21	638
Walker & Co., John, London, England. Writing-paper and envelopes	9,201	Apr. 11	21	1032
Wallach, Willy, New York, N. Y. Artistic stationery	9,419	May 23	21	1540
Waterbury Bros., Newark, N. J. Cigars	9,238	Mar. 21	21	794
Webb, Jean F., Lebanon, Ill. Medicine	9,413	May 23	21	1540
Weeks & Potter, Boston, Mass. Medical preparation for external application	9,383	May 16	21	1450
Weis, John C., Peoria, Ill. Liniment	9,199	Mar. 14	21	716
Weis, Eller & Kaeppel, New York, N. Y. Leaf-tobacco	9,202	Apr. 11	21	1032
Werlé & Co., Rheims, France. Champagne-wine	9,480	June 27	21	1960
Werlé & Co., Rheims, France. Champagne-wine	9,481	June 27	21	1960
Werlé & Co., Rheims, France. Champagne-wine	9,482	June 27	21	1960
Werlé & Co., Rheims, France. Champagne-wine	9,483	June 27	21	1960
Werthheimer, Leopold, New York, N. Y. Cigars, cigarettes, cheroots, plug, twist, and fine-cut chewing-tobacco, smoking-tobacco, and snuff	9,083	Jan. 10	21	78
Werthheimer, L. & E., New York, N. Y., and San Francisco, Cal. Cigars, cigarettes, cheroots, smoking and chewing tobacco, and snuff	9,089	Jan. 17	21	142
Werthheimer, L. & E., New York, N. Y., and San Francisco, Cal. Plug and other kinds of chewing-tobacco, smoking-tobacco, cigars, and cigarettes	9,069	Feb. 7	21	346
Werthheimer, L. & E., New York, N. Y., and San Francisco, Cal. Plug and other kinds of chewing-tobacco, smoking-tobacco, cigars, and cigarettes	9,273	Mar. 21	21	794
White & Company, John, Bristol, England, and New York, N. Y. Bacon	9,293	Apr. 11	21	1032
White, George A., Boston, Mass. Soles, tops, and heels	8,966	Jan. 3	21	2
Whiting, Frederic A., Wellesley Hills, Mass. Indelible ink	9,497	June 27	21	1960

Alphabetical list of registrants of trade-marks, January to June, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Whitley, John R., New York, N. Y. Certain decorative fabrics	8,987	Jan. 3	21	2
Williams, B., Chagrin Falls, Ohio. Compound powder of drugs	9,318	Apr. 25	21	1202
Williams & Co., New York, N. Y. Printed publications	9,081	Jan. 10	21	78
Williams & Co., Jas. B., Glastenbury, Conn. Soap	9,068	Jan. 31	21	266
Williams & Co., James B., Glastenbury, Conn. Soap	9,130	Feb. 21	21	498
Williams & Co., James B., Glastenbury, Conn. Soap	9,131	Feb. 21	21	498
Williams & Co., James B., Glastenbury, Conn. Soap	9,132	Feb. 21	21	498
Williams & Co., James B., Glastenbury, Conn. Soap	9,133	Feb. 21	21	498
Williams & Co., James B., Glastenbury, Conn. Soap	9,190	Mar. 14	21	716
Williams & Co., Thomas C., Richmond, Va. Plug and twist tobacco, smoking-tobacco, cigars, and cigarettes	9,424	May 30	21	1618
Wilmerding & Co., San Francisco, Cal. Stomach-bitters	9,177	Mar. 7	21	638
Wilson, John, Sheffield, county of York, England. Cutlery	9,188	Mar. 7	21	638
Wilson, W. K. (See Tennis, Wilson, Kumbel, Bates, and Bond.)				
Wing & Co., D. L., Springfield, Mass. Flour	9,200	Mar. 14	21	716
Wing & Co., D. L., Springfield, Mass. Flour	9,201	Mar. 14	21	716
Wing & Co., D. L., Springfield, Mass. Flour	9,202	Mar. 14	21	716
Wing & Co., D. L., Springfield, Mass. Flour	9,203	Mar. 14	21	716
Winslow, Samuel, Worcester, Mass. Roller-skates	9,496	June 27	21	1960
Wise, A. Judson, Chicago, Ill. Axle-grease	9,237	Apr. 4	21	950
Wolfe, Joel B., New York, N. Y. Cordial designated "Schnappe"	9,353	May 9	21	1354
Worcester, James H., Detroit, Mich. Oil-paints	9,082	Jan. 10	21	78
Wright, John A., Keene, N. H. Tanks, cans, and packages	9,191	Mar. 14	21	716
Wrought Iron Range Company, St. Louis, Mo. Ranges and stoves	9,414	May 23	21	1540
Yates & Co., James, Atchison, Kans. Condition-powders	9,264	May 16	21	1450
Young, Ladd & Corlis, New York, N. Y. Perfumery	9,263	Apr. 4	21	950
Young, Ladd & Corlis, New York, N. Y. Essential oils for toilet articles	9,264	Apr. 4	21	950
Young, Ladd & Corlis, New York, N. Y. Perfumery	9,265	Apr. 4	21	950
Young, Ladd & Corlis, New York, N. Y. Perfumery	9,266	Apr. 4	21	950
Young, Ladd & Corlis, New York, N. Y. Atomizers	9,267	Apr. 4	21	950
Young, Ladd & Corlis, New York, N. Y. Perfumery	9,268	Apr. 4	21	950
Young, Ladd & Corlis, New York, N. Y. Perfumery	9,269	Apr. 4	21	950
Young, Ladd & Corlis, New York, N. Y. Perfumery	9,270	Apr. 4	21	950
Young, Ladd & Corlis, New York, N. Y. Perfumery	9,271	Apr. 4	21	950
Young, Ladd & Corlis, New York, N. Y. Perfumery	9,415	May 23	21	1540
Young, Richard, Brooklyn, N. Y. Shoe-leather				

ALPHABETICAL LIST OF REGISTRANTS OF LABELS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
Aitken, John W., Carbondale, Pa. "Pain Stop," (for a Medicine)	2,561	Jan. 3	21	2
Alexander, Daniel G., Woburn, Mass. "Alexander s Nutritious Elixir Wheat, Sarsaparilla and Rye Cordial"	2,684	May 23	21	1540
Anglo-Swiss Condensed Milk Company, Middletown and New York, N. Y. "Condensed Milk, Anglo-Swiss Condensed Milk Co. Cham, Switzerland. Prepared in America"	2,685	May 30	21	1618
Aronson & Co., O., Davenport, Iowa. "Dr. O. Aronson & Co., European Hog and Cattle Cure"	2,566	Jan. 10	21	78
Arthur, B. F., Holyoke, Mass. "German Corn Remover"	2,644	Mar. 21	21	794
Bailey, Ezra H., Plymouth, N. C. "Juniper Water Bottling Company."	2,709	June 13	21	1788
Barker, Moore & Mein, Philadelphia, Pa. "Barker's Nerve & Bone Liniment for Man or Beast"	2,567	Jan. 10	21	78
Bastello, William H., Rochester, N. Y. "Rochester Blood and Bone Guano"	2,661	Apr. 11	21	1032
Beebe, James A., Woodbury, N. J. "Beebe's Cough and Lung Healer"	2,596	Jan. 17	21	146
Bend, James C., Chicago, Ill. "Bond's New Corrosive Cylinder Oil"	2,691	Jan. 24	21	205
Bowers, James, Newark, N. J. "Bowers' Electric Suspenders"	2,610	Feb. 7	21	346
Bowers, Sylvester J., Canandaigua, N. Y. "Bowers' World Renowned Eye Remedy, Sight Preserver and Restorer"	2,639	Mar. 14	21	716
Brack, M. W., Hardin Springs, Ky. "Dr. Brack's Toilet and Laundry Soaps"	2,686	May 30	21	1616
Brower, Bloomfield, New York, N. Y. "Greetings" (for a Card Holder)	2,645	Mar. 21	21	794
Butts, Edward A., Alexandria, Va. "Champagne-Soda" (for a Beverage)	2,565	Jan. 10	21	78
Campbell, George G., Rochester, N. Y. "Birch Bitters for the Blood and General Debility, Indigestion etc"	2,693	June 6	21	1694
Carey & Co., New York, N. Y. "Carey's Compound Petroleum Pills"	2,673	May 2	21	1290
Chamberlain & Co., Des Moines, Iowa. "Dr. Cady's Condition Powders for Horses and Cattle"	2,670	Apr. 25	21	1202
Conner & Mitchell, Haverhill, Mass. "Henry's Compound Licorice Syrup"	2,631	Mar. 7	21	638
Crane & Brother, Z., Jr., Dalton, Mass. "Crane's Ladies Note Paper and Envelopes"	2,683	Jan. 31	21	266
Crane & Brother, Z., Jr., Dalton, Mass. "Crane's Ladies Note Paper and Envelopes, Grecian Antique"	2,684	Jan. 31	21	266
Crane & Brother, Z., Jr., Dalton, Mass. "Crane's Ladies Note Paper and Envelopes, Distaff"	2,611	Feb. 7	21	346
Crane & Bro., Z., Jr., Dalton, Mass. "Crane's Ladies Note Paper and Envelopes. Satin Finish"	2,640	Mar. 14	21	716
Crooks, Athe B., Newark, N. J. "Bancroft's Liniment"	2,653	Mar. 28	21	882
Crooks, Athe B., Newark, N. J. "Bancroft's Ointment"	2,654	Mar. 28	21	886
Cutler, E. Waldo, Boston, Mass. "Kidney Coffee"	2,562	Jan. 3	21	2
Dahl, Harold A. C., Brooklyn, N. Y. "Dyspepsia Cake Manufacturing Company"	2,704	June 27	21	1960
Davidson, Calvin C. [See Davidson, James C. and C. C.)				
Davidson, James C. and C. C., Denver, Colo. "The World's Catarrh Cure"	2,667	May 30	21	1612
Dickey, James A., Bristol, Tenn. "Dr. J. A. Dickey's Painless Eye Water"	2,630	Mar. 7	21	636
Dickinson, Samuel, Trenton, N. J. "Dickinson's Compound Balsam of Boneset Horehound, Wild Cherry and Tar"	2,646	Mar. 21	21	794
Donahue, T. J., Philadelphia, Pa. "Donahue's Dressing"	2,622	Feb. 28	21	562
Dow, Alonzo, College Corner, Ohio. "Luster Finish" (for a Cleansing Compound)	2,568	Jan. 10	21	78
Dows, Gustavus D., Boston, Mass. "Jamaica Ginger Cordial"	2,647	Mar. 21	21	794
Dows, Gustavus D., Boston, Mass. "Ginger Cordial"	2,648	Mar. 21	21	794
Dows, Gustavus D., Boston, Mass. "Jamaica Ginger Ale"	2,665	Apr. 18	21	1128
Earle & Pedley, Cañon, Colo. "Rye Balsam"	2,658	Apr. 4	21	950
Eastburn, Robert, New Brunswick, N. J. "Eastburn's Pine Tar Cordial"	2,671	Apr. 25	21	1200
Fonerden, Clarence A., New York, N. Y. "Hamotic Pepsin"	2,623	Feb. 28	21	566
Friedmann, Ignatius. (See Rice and Friedmann.)				
Gayetty & Co., Brooklyn, N. Y. "Medicated Paper"	2,649	Mar. 21	21	794
Goldschmidt & Co., New York, N. Y. "Chrome Lozenges"	2,701	June 20	21	1870
Goold, Henry T. (See Smith and Goold.)				
Griggs & Company, Ottawa, Ill. "Grigg's Glycerine Salve"	2,614	Feb. 21	21	482
Griggs & Company, Ottawa, Ill. "Dr. Bigelow's Positive Cure"	2,615	Feb. 21	21	486
Griggs, Oakley, Streator, Ill. "Dr. Wm. Sheppard's Colic Remedy for Horses"	2,624	Feb. 28	21	566
Griggs, Oakley, Streator, Ill. "Grigg's Specific for the Prevention and Cure of Hog Cholera"	2,625	Feb. 28	21	566
Griggs, Oakley, Streator, Ill. "Dr. Minor's Specific Liniment for Rheumatism"	2,626	Feb. 28	21	566
Guild, Henry M., Woodbury, N. J. "A Syrup of Tar, Wild Cherry, &c for the Speedy Cure of Throat and Lung Diseases and all Pulmonary Complaints"	2,595	Jan. 17	21	146
Heath, John A., Colebrook, N. H. "Heath's English Salve"	2,618	Feb. 21	21	486
Heublein & Bro., G. F., Hartford, Conn. "Aechter Aromatique Feinster Magen-Liqueur"	2,650	Mar. 21	21	794
Hicks, Nathan P., Pawtucket, R. I. "Ring Travellers"	2,705	June 27	21	1960
Hodge, Davis & Co., Portland, Oreg. "Doctor Henley's Oregon Kidney Tea"	2,695	Jan. 31	21	266
Hoffman, Eunice L., San Francisco, Cal. "E. Wright's Cough Balsam"	2,702	June 20	21	1890
Holbrook, David M., Watertown, N. Y. "Knight's Cure," (a Medicine)	2,616	Feb. 21	21	486
Holdstein, Gustav, Woodbury, N. J. "Holdstein's Great Dyspepsia Cure"	2,597	Jan. 17	21	146
Hubinger, John C., J. E., and N. W., New Haven, Conn. "Starch"	2,617	Feb. 21	21	486
Hubinger, Joseph E. (See Hubinger, John C., J. E., and N. W.)				
Hubinger, Nicholas W. (See Hubinger, John C., J. E., and N. W.)				
Humberg, Frederick, Detroit, Mich. "Dr. Niemeyer's Asthma Troches"	2,580	Jan. 10	21	78
Humberg, Frederick, Detroit, Mich. "Dr. Walther's Swiss Cough Troches"	2,581	Jan. 10	21	78
Kempshall, Eleanor, New Britain, Conn. "Kempshall's Patent Screw Socket Window Spring Bolts"	2,668	Apr. 18	21	1132
Kendall & Co., B. J., Enosburg Falls, Vt. "Kendall's Blister"	2,669	Apr. 11	21	1032
Kleszewski, Adrian M., Washington, D. C. "German-American Cologne"	2,657	Apr. 4	21	950
Le Beequet, P. S., Concord, N. H. "Dr. Lockerby's Liver Pills"	2,627	Feb. 28	21	566
Maulick, William F., Columbia, Pa. "Maulick's Dyes"	2,655	Mar. 28	21	882
May Brothers, New York, N. Y. "Ris Extra" (for Cigarette Papers)	2,559	Jan. 10	21	78
Meissonnet, Charles, Washington, D. C. "New York City Soap"	2,699	May 16	21	1450
Metcalf & Co., Theodore, Boston, Mass. "Mellin's Food for Infants and Invalids"	2,589	Jan. 17	21	146
Metcalf & Co., Theodore, Boston, Mass. "Mellin's Food for Infants and Invalids"	2,590	Jan. 17	21	146
Moore, Edward J., New York, N. Y. "North Carolina Tar Syrup"	2,651	Mar. 21	21	794
Mosher, A. E., Cattaraugus, N. Y. "Horse Tonic, The Great Blood Purifier and a Sure Cure for Epizootic, Coughs, Colds, Heaves, &c"	2,619	Feb. 21	21	486
Mullin, B. A., Philadelphia, Pa. "Mullin's Great Discovery. Sure and only Cure for Consumption"	2,628	Mar. 7	21	626
Musselman, De Lafayette, Quincy, Ill. "Musselman's Practical Book-Keeping"	2,633	Mar. 7	21	638
Myers & Co., C. Tiers, Philadelphia, Pa. "Improved Detergent"	2,659	Apr. 4	21	950
North American Chemical Company, (limited,) Montreal, Quebec, Canada. "Rice's Pine Salt"	2,697	Apr. 18	21	1128
Nye & Co., F. W. K., Milton, Mass. "Dr. Ware's English Heartburn Lozenges"	2,698	Jan. 31	21	266
Orcutt, William H., Woonsocket, R. I. "Orcutt's Sure Rheumatic Cure"	2,620	Feb. 21	21	486
Owen, Luther P., Marion, Iowa. "Dr. Owen's (O & C's) Camphorated Horsehoen Liniment"	2,631	May 16	21	1450
Owen, Luther P., Marion, Iowa. "Dr. Owen's (O & C's) Cough Remedy"	2,632	May 16	21	1450

Alphabetical list of registrants of labels, January to June, inclusive.—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Owen, Luther P., Marion, Iowa. "Dr. Owen's Colic, Cholera and Diarrhœa Remedy"	2,683	May 16	21	1450
Owens & Minor, Richmond, Va. "Phenol Mouth Wash"	2,688	May 30	21	1618
Palmer Plant & Vine Protector Company, Rockford, Ill. "Palmer's Plant and Vine Protector"	2,600	Jan. 17	21	142
Peraza, Nicanor B., Brooklyn, N. Y. "Dr. N. Bolet's Tocological Pills"	2,691	Feb. 21	21	498
Powell, John R., Plymouth, Pa. "Powell's Loose Match and Squib, for Miners use"	2,689	May 30	21	1618
Price, C. H. & J., Salem, Mass. "The Salem Manila Cigar"	2,663	Apr. 11	21	1039
Purcell, Joseph, Martin's Ferry, Ohio. "Old Dr. Hagan's Oil Liniment, the Greatest Remedy in the World for Rheumatism"	2,664	Apr. 11	21	1039
Ramsey & Co., J. S., Pittsburg, Pa. "Superior Screw Cutting Oil"	2,698	Feb. 28	21	502
Ramsey & Co., J. S., Pittsburg, Pa. "Superior Brilliant Light Signal Oil"	2,634	Mar. 7	21	638
Ramsey & Co., J. S., Pittsburg, Pa. "Superior Topaz Color Wool Oil"	2,635	Mar. 7	21	638
Randolph & Co., D. H., Laredo, Tex. "Laredo Baking Powder"	2,668	Apr. 18	21	1122
Rice, Joseph H., and I. Friedmann, Milwaukee, Wis. "The Famous Untearable Overall"	2,699	Feb. 28	21	502
Robinson, Andrew J., Boston, Mass. "Acid Emulsion Cod Liver Oil"	2,674	May 2	21	1260
Robinson & Hinrichs, Manitowoc, Wis. "Hinrichs' Universal Laundry Starch Polish"	2,569	Jan. 10	21	78
Robinson & Hinrichs, Manitowoc, Wis. "Hinrichs' American Corn Cure"	2,672	Apr. 25	21	1302
Robinson, James H., Cleveland, Ohio. "Robinson's Phosphorized Emulsion of Cod Liver Oil with Lacto-Phosphate of Lime"	2,706	June 27	21	1960
Russell & Erwin Manufacturing Co., New Britain, Conn. "Tire Bolts"	2,563	Jan. 10	21	78
Schandein & Co., H., Philadelphia, Pa. "Penn's White Liniment"	2,652	Mar. 21	21	794
Schroeder & Co., R. C., Raton, N. Mex. Ter. "The Great Mountain Sage Remedy for Fevers"	2,602	Jan. 24	21	290
Schroeder & Co., R. C., Raton, N. Mex. Ter. "The Great Mountain Sage Remedy, Cough Syrup"	2,603	Jan. 31	21	286
Schroeder & Co., R. C., Raton, N. Mex. Ter. "The Great Mountain Sage Remedy, Anti-Bilious Pills"	2,609	Jan. 31	21	286
Scott, Thomas, Brooklyn, N. Y. "Beef, Iron & Rye"	2,690	May 30	21	1618
Sears, George T., Boston, Mass. "Sears's Improved Insect Powder"	2,675	May 2	21	1260
Smith, Eliza, Newark, N. J. "Madam Smith's Healing Salve"	2,563	Jan. 3	21	2
Smith, Ferdinand, New York, N. Y. "Rose Blanchard's Cold Cream"	2,642	Mar. 14	21	716
Smith, Horatio, and H. T. Goold, Boston, Mass. "Dr. Gray's Lotion"	2,607	Jan. 31	21	286
Smith & Shakman, Baltimore, Md. "Smith & Shakman's Celebrated Horse and Cattle Powders"	2,694	June 6	21	1694
Stilea, Silas B., and F. M. Givens, Fond du Lac, Wis. "Dr. Warren's Syrup of Wild Cherry"	2,641	Mar. 14	21	716
Strong, C. H., Chicago, Ill. "Arnica Shaving Soap"	2,676	May 9	21	1354
Salsberger & Co., Philadelphia, Pa. "Sugar Valley Whiskey"	2,656	Mar. 28	21	868
Swain, Earle & Co., Boston, Mass. "The Boston Breakfast or Lunch Cocoa"	2,636	Mar. 7	21	638
Swain, Earle & Co., Boston, Mass. "The Boston Broma"	2,637	Mar. 7	21	638
Swain, Earle & Co., Boston, Mass. "The Boston Cracked Cocoa"	2,638	Mar. 7	21	638
Swedish Bitters Co., Woodbury, N. J. "Swedish Bitters"	2,612	Feb. 7	21	346
Thorning, Charles H., Chicago, Ill. "Dr. Bigelow's Positive Cure"	2,677	May 9	21	1354
Tolman & Co., John A., Chicago, Ill. "Baking Powder"	2,691	May 30	21	1618
Tolman, Henry, Wallingford, Pa. "Tolman's Belt Hooks"	2,613	Feb. 7	21	346
Traudt, Frank, St. Louis, Mo. "Dr. Hoffman's Red Drops"	2,678	May 9	21	1354
Udell & Co., A. S., Ottumwa, Iowa. "Dr. Nathan's Cough Elixir"	2,564	Jan. 3	21	2
Utsinger, Henri, New York, N. Y. "Heart and Fever-Drops"	2,707	June 27	21	1960
Van Kleeck, Perry, Seneca Falls, N. Y. "Burdock Liver Elixir"	2,660	Apr. 4	21	950
Ward, Benjamin, Mobile, Ala. "Original Texas Tolu Chewing Gum"	2,692	May 30	21	1618
Washburn & Moen Manufacturing Company, Worcester, Mass. "'Thick Set" Steel Barb Fencing"	2,695	June 6	21	1694
Washburn & Moen Manufacturing Company, Worcester, Mass. "Four Pointed Glidden" Steel Barb Fencing"	2,696	June 6	21	1694
Washburn & Moen Manufacturing Company, Worcester, Mass. "Glidden Four Pointed Steel Barb Fencing"	2,697	June 6	21	1694
Watson, Lucy J. H., Cincinnati, Ohio. "Innes Pneumonia Cure"	2,504	Jan. 10	21	78
Wheat Bitters Company, New York, N. Y. "Wheat Bitters"	2,643	Mar. 14	21	716
Whiting, Frederic A., Wellesley Hills, Mass. "Whiting's Decorative Indelible Outline Ink"	2,679	May 9	21	1354
Whittall, Matthew J., Worcester, Mass. "Whittall Brussels," (for Carpets)	2,698	June 6	21	1694
Williams, M. J., Oshkosh, Wis. "The Original Hop Bitters with Iron"	2,699	June 6	21	1694
Winter, Hugh A., Chicago, Ill. "Storage on Baggage"	2,703	June 20	21	1860
Worcester Barb Fence Company, Worcester, Mass. "Improved Glidden" (for Barbed Fences)	2,669	Apr. 18	21	1122

DISCLAIMERS.

Name, residence, and invention.	No.	Filed.	Official Gazette. Vol.	Page.
Goodman, William, Boston, Mass. Leather-dressing machine	240,997	Mar. 8, 1882	21	716
Harris, Theodore R., Green Bay, Wis., Matthew Graff and William M. Everson, assignees; disclaimer filed by said assignees. Machine for shearing and punching shingle-straps. (Reissue)	4,636	May 5, 1882	21	1450
Le Roy, Tennis V., Le Roy Journal Bearing Company, New York, N. Y., assignee; disclaimer filed by said assignee. Car-axle box. (Reissue)	9,042	Apr. 26, 1882	21	1354
Matthews, John, New York, N. Y. Soda-water apparatus. (Reissue)	9,098	May 2, 1882	21	1354
Nobel, Alfred, Hamburg, Germany, Atlantic Giant Powder Company, San Francisco, Cal., assignee; disclaimer filed by Giant Powder Company, assignee of part interest of Atlantic Giant Powder Company. Exploding nitro-glycerine. (Reissue)	5,798	Dec. 28, 1881	21	78
Reese, Jacob, Pittsburg, Pa., Matthew Graff and William M. Everson, assignees; disclaimer filed by said assignees. Method of making bands for shingle-bundles	92,469	May 5, 1882	21	1450
Sternberg, William, Cicero, Leman W. Tyler, Theresa, N. Y., assignee; disclaimer filed by assignee. Cheese-hoop. (Reissue)	6,632	Apr. 25, 1882	21	1260
Tillinghast, Clark P., Providence, R. I. Railway-car ventilator. (Reissue)	9,573	Mar. 23, 1882	21	868
Welling, William M., New York, N. Y., Welling Compressed Ivory Manufacturing Company, (limited,) assignee; disclaimer filed by assignee and by patentee. Composition resembling horn.	98,727	Mar. 14, 1882	21	794

ALPHABETICAL LIST OF INVENTIONS.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Abrading-surfaces. Revivifying	J. Renshaw	257,612	May 3	895	166	21	1301
Accordion	R. Bergner	253,010	Jan. 10	417	114	21	79
Acid from bones. Preparing phosphoric	W. H. Hughes and P. O'Rielly	256,423	May 23	1273	447	21	1565
Acids. Removing flocculent matter from spent	F. V. Pool	251,936	Jan. 3	308	.....	21	83
Acids. Treating mineral pyrites and sulphides for the manufacture of sulphurous and sulphuric	H. Wurtz	252,287	Jan. 10	737	.....	21	138
Adding-machine	M. Bouchet	251,883	Jan. 3	173	48, 49	21	32
Adding-machine	J. G. Fischer	255,270	Mar. 21	1044	260	21	833
Adding-machine	F. Plumb	256,501	Apr. 18	1051	267	21	1148
Adding-machine	W. C. Snelling	257,775	May 9	765	219	21	1487
Adding-machine	M. E. Winter and C. W. Crary	258,518	May 23	1663	476	21	1694
Addressing-machine	W. W. W. Belknapp and G. H. Robillard.	258,544	May 30	1726	488	21	1619
Adjustable chair	E. B. Cushing	258,504	June 13	786	203	21	1539
Adjustable chair	J. D. King	256,077	May 16	1143	320	21	1501
Adjustable chair	J. Purcell	257,065	Apr. 25	1663	450	21	1253
Adjustable clamp	C. H. Gere	257,530	May 16	983	275	21	1471
Adjustable wrench	W. R. Godfrey	254,210	Feb. 28	1255	340	21	503
Advertising apparatus	E. M. Fitzgerald	251,855	Jan. 3	213	60	21	30
Advertising apparatus	J. O. Fowler, Jr.	257,664	May 9	662	189	21	1400
Advertising-card	C. M. Finch	259,838	June 20	1212	325	21	1949
Advertising device	E. L. Morris	253,067	Jan. 31	1725	477	21	315
Advertising device for street-cars	H. F. Bridewell	256,494	Apr. 11	847	235	21	1101
Advertising-table	W. Wilson	256,780	Apr. 18	1271	358	21	1167
Adzes. Die for making	W. Evans	258,570	May 30	1754	496	21	1695
Aerial navigation. Vessel for	A. L. Blackman	259,464	June 13	730	194	21	1539
Aeriform fluids. Apparatus for mixing	J. F. Barker	258,089	Jan. 10	415	113	21	79
Aeriform fluids. Apparatus for mixing	J. F. Barker	254,589	Mar. 7	175	44	21	638
Aging and purifying whisky	G. Geewey	257,469	May 9	429	119	21	1354
Agitator or egg-beater	G. W. Richardson	252,800	Jan. 24	1352	378	21	248
Air and gas burner. Combined	J. Lewis	255,875	Apr. 4	147	40	21	975
Air-compressing apparatus	J. B. West	258,348	June 13	586	155	21	1803
Air-compressing apparatus. Hydraulic	J. M. Bois	259,799	June 20	1169	312	21	1911
Air-compressor	J. H. Baker	259,741	June 20	1103	294	21	1901
Air-compressor	M. S. Manning, Jr.	256,232	Apr. 11	889	168	21	1049
Air-compressor	C. Monson	257,895	May 16	916	256	21	1469
Air-compressor	A. C. Rand	255,116	Mar. 21	848	227	21	799
Air-compressor	W. Wang	255,232	Mar. 21	936	264	21	833
Air-compressor	W. Wang	255,901	Apr. 4	184	48	21	951
Air-compressor	J. B. Waring	254,851	Mar. 14	497	133	21	729
Air-compressor	J. B. Waring	255,400	Mar. 21	1219	304	21	861
Air-compressor. Hydraulic	W. A. Babcock	253,630	Feb. 21	791	225	21	499
Air-compressor. Hydraulic	J. Bradley	254,915	Mar. 14	587	156	21	746
Air cooling and purifying apparatus	S. Whitman	254,081	Feb. 21	1104	309	21	551
Air-cooling apparatus	R. S. Jennings	254,981	Mar. 14	674	181	21	761
Air-cooling apparatus	G. W. Stockman	260,089	June 27	1496	404	21	1973
Air-exhauster. Mercury	E. A. Edwards	257,670	May 9	672	187	21	1497
Air-injecting ventilator	P. Mihan	259,025	June 6	994	55	21	1729
Air machine. Cold	H. F. Starbuck	255,895	Apr. 4	171	45, 46	21	979
Air motor. Compressed	R. S. Tice	254,072	Feb. 21	1094	303	21	549
Air-ship	W. G. Krueger	252,955	Jan. 31	1540	433	21	298
Air-ship	C. W. Petersen	256,306	Apr. 11	783	216	21	1099
Alarm: *See* Burglar-alarm. Fire-alarm. Knob-alarm. Locomotive stock-alarm. Millstone-alarm. Telephone-alarm. Till-alarm. Time-alarm.							
Alarm and door-bell	M. Truby	255,356	Mar. 21	1155	300	21	851
Alarm-lock	I. N. Buck	257,545	May 16	988	243	21	1483
Alarm-lock	R. Schade	256,491	May 23	1641	465	21	1597
Alarm-lock	J. E. Wells	253,795	Feb. 14	743	213	21	484
Alarm-signal	H. A. Eaton	253,057	Feb. 14	668	170	21	458
Album-clasp	A. C. Hafely	253,981	Feb. 7	115	36	21	308
Album-clasp	P. Hufeland	257,913	Apr. 25	1549	435	21	1243
Album-clasp	J. C. Koch	259,286	Jan. 10	650	185	21	199
Album-clasp	H. Landsberg	251,901	Jan. 3	209	73	21	47
Album. Photograph and autograph	G. Bartlett	257,203	May 2	65	20	21	1213
Alcohol. Apparatus for the manufacture of	A. Deininger	258,629	May 16	1080	263	21	1491
Alcohol-vessel for watch-maker's use	G. P. Reed	257,695	May 16	931	229	21	1483
Alkali. Grinding and sieving caustic	W. J. Menzies. (Reissue)	10,188	May 9	656	176	21	1441
Alkali. Grinding and sieving caustic	W. J. Menzies. (Reissue)	10,189	May 9	656	220	21	1441
Alkali. Putting up caustic	B. T. Babbitt	256,095	Apr. 4	415	113	21	1089

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Alkali. Putting up caustic	B. T. Babbitt	260,272	June 27	1761	476	21	2014
Alkaline solutions obtained in the manufacture of soda. Purification of	E. Carey, H. Gaskell, Jr., and F. Hurter.	258,850	May 30	2088	.....	21	1683
Alkaline solutions. Purification of	E. Carey, H. Gaskell, Jr., and F. Hurter.	254,918	Mar. 14	591	.....	21	748
Alkaline solutions. Purification of	E. Carey, H. Gaskell, Jr., and F. Hurter.	254,919	Mar. 14	592	150	21	748
Almanac	G. G. Green	256,316	Apr. 11	795	197	21	1079
Alphabet-block	A. D. T. Whitney	257,630	May 9	615	172	21	1395
Alumina. Manufacture of soluble	J. Webster	252,992	Jan. 31	1581	.....	21	293
Aluminous cake. Manufacture of	T. S. Harrison	253,377	Feb. 7	223	.....	21	364
Amalgam of gold and silver containing base metals. Refining	E. N. Riotte	253,888	Feb. 21	863	.....	21	511
Amalgamating and washing ores. Apparatus for	J. Scott	257,618	May 9	602	168	21	1386
Amalgamating apparatus	A. D. Clarke	253,843	Feb. 21	809	220	21	508
Amalgamating apparatus. Ore	C. H. Swain	252,978	Jan. 31	1575	430	21	292
Amalgamating gold and silver ores. Apparatus for	W. Hamilton	258,578	May 30	1764	499	21	1686
Amalgamating ores. Process of and apparatus for	C. E. Ball	253,254	Feb. 7	85	27	21	301
Amalgamator	C. E. Ball	253,255	Feb. 7	86	27	21	301
Amalgamator	W. T. Browne	256,263	Apr. 11	682	185	21	1072
Amalgamator	H. M. Jones	258,429	May 23	1563	449	21	1587
Amalgamator	A. McKellar	254,675	Mar. 7	277	74	21	685
Amalgamator	L. A. Merriam	252,051	Jan. 10	458	126	21	86
Amalgamator	W. Moller	251,914	Jan. 3	285	78	21	49
Amalgamator	W. Moller	253,084	Jan. 31	1721	475	21	314
Amalgamator	C. Pontes	256,733	Apr. 18	1921	342	21	1178
Amalgamator	H. M. Thompson	255,209	Mar. 21	971	260	21	819
Amalgamator	C. E. Topping	260,256	June 27	1742	471	21	2010
Amalgamator	H. C. Train	258,330	May 23	1465	416 / 417	21	1566
Amalgamator and concentrator	A. Oliver	252,793	Jan. 24	1338	374	21	945
Ammoniacal liquors. Treating	H. J. E. Hennebutte and C. J. F. R. de J. Menaid.	259,145	June 6	331	88	21	1752
Ammoniacal salts. Treating	H. J. E. Hennebutte	253,045	Jan. 31	1602	.....	21	306
Ammunition-box	E. G. Parkhurst	259,040	June 6	209	56	21	1730
Anæsthetics. Administering	S. Cooper and E. Dennis	258,632	May 30	1833	517	21	1639
Anæsthetics. Process of and apparatus for administering	S. J. Hayes	257,866	May 16	894	249	21	1467
Anchor-support	E. Robbins	254,160	Feb. 28	1199	335	21	574
Anchor-supporter	E. Robbins	254,161	Feb. 28	1199	335	21	575
Animal-shears	P. Anderson	259,073	June 6	253	67	21	1737
Animal-trap	A. André	253,907	Feb. 21	864	240	21	515
Animal-trap	E. Emmert	254,943	Mar. 14	600	167	21	752
Animal-trap	C. S. Hensley	258,647	May 30	1850	523	21	1642
Animal-trap	H. B. Swartz	257,904	May 16	941	262	21	1464
Animal-trap	A. W. Walker	255,659	Mar. 14	782	209	21	780
Animal-trap	C. G. Wiltse	257,798	May 9	812	227	21	1432
Animal-trap	F. Winslow	252,852	Jan. 24	1421	396	21	250
Animals. Device for holding	J. B. Wilson and J. F. Kortepeter	259,349	June 13	588	156	21	1803
Annunciator	J. G. Arnold	256,190	Apr. 11	562	153	21	1050
Annunciator board and circuit for telephone exchanges.	M. G. Kellogg	258,234	May 23	1358	384	21	1548
Annunciator. Electric	H. B. Porter	255,453	Mar. 28	1278	345	21	878
Annunciator. Electrical	F. E. Fisher	258,735	May 30	1962	555	21	1661
Annunciator. Electrical	A. Lüngen	258,537	May 23	1711	483	21	1609
Annunciator. Speaking-tube	W. R. Ostrander	253,092	Jan. 31	1731	478	21	316
Anvil and vise. Combined	J. J. Glover	258,855	May 30	2092	590	21	1664
Anvil. Hand	W. H. Brown	254,195	Feb. 28	1234	343	21	580
Anvils. Cutter and punch attachment for	G. T. Childs	254,532	Mar. 7	103	26	21	656
Apparatus for administering injections	P. V. Schenck	256,745	Apr. 18	1235	346	21	1181
Aquarium	C. N. Orpen	256,240	Apr. 11	635	171	21	1062
Arch-bars. Machine for bending and punching	C. G. Cross	252,741	Jan. 24	1266	353 / 356	21	233
Arm. Artificial	D. W. Kolbe	255,796	Apr. 4	54	15	21	980
Artistic articles. Manufacturing and decorating	H. F. L. Starcke	242,151	Jan. 10	577	166	21	106
Artist's box	W. H. Brownell	257,285	May 2	164	47	21	1310
Artist's case and easel. Combined	A. E. Van Kirk	259,441	June 13	763	186	21	1894
Artists' use. Board or tablet for	S. J. Freshney	253,030	Jan. 31	1644	.....	21	303
Ash safe and sifter. Combined portable	M. J. Cook	254,110	Feb. 28	1148	320	21	565
Assorting-machine	S. M. Park	254,214	Feb. 28	1283	356	21	589
Atomizer	J. Beggs	256,621	Apr. 18	1090	307	21	1154
Atomizer	P. Lochmann	254,988	Mar. 14	662	183	21	763
Atomizer	R. Lockwood	251,720	Jan. 3	38	11	21	9
Attrition-mill	H. A. Duc, Jr.	252,361	Jan. 17	898	230 / 231	21	153
Attrition-mill	T. L. Sturtevant	255,550	Mar. 28	1395	377	21	898
Auger-bit	T. Wood and J. Morris	254,184	Feb. 28	1293	341	21	578
Auger. Earth	W. Brunner	256,457	Apr. 18	909	252	21	1194
Auger. Earth	C. A. F. Peters	256,039	Apr. 4	350	94	21	1009
Auger. Hollow	F. S. Dellenbaugh	254,980	Feb. 28	1341	370	21	598
Auger-making machine	P. Mackay	253,076	Jan. 31	1708	471 / 472	21	312
Auger-twisting machine	F. A. Snell	257,309	May 2	392	86, 87	21	1336
Augers. Countersink attachment for	C. W. Cutter	252,650	Jan. 24	1169	328	21	217
Automatic gate	R. F. Hageman	251,870	Jan. 3	230	64	21	41
Automatic gate	N. H. Long	259,027	June 6	194	51, 52	21	1727
Automatic gate	E. E. Spitler	253,238	Feb. 7	63	19	21	357
Automatic gate attachment	J. F. Lukens	257,956	May 16	1001	279	21	1478
Automatic lubricator	F. H. Barber	254,902	Mar. 14	573	154	21	744
Automatic lubricator	C. O. Yale	260,344	June 27	1840	499	21	2028
Automatic sprinkler	C. W. Talcott	259,789	June 20	1148	305	21	1906
Averaging-machine	W. S. Auchincloss	257,478	May 2	348	97	21	1343
Awl	T. H. Logan	253,729	Feb. 14	659	188	21	467
Awning	L. Fox and G. Weenink	252,663	Jan. 10	508	141	21	95

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Awning	A. G. Sahlqvist	258,319	May 23	1464	413	21	1564
Awning	J. Willie	253,568	Feb. 14	464	122	21	426
Awning. Window	J. Sands	258,132	May 16	1211	341	21	1514
Awning. Window	A. Weeds	259,450	June 13	716	180	21	1887
Ax	W. Andrews	255,711	Mar. 28	1502	429	21	994
Axes. Machine for making	H. Denton	259,684	June 20	1197	299	21	1917
Axle and wheel. Car	W. S. Pendleton	258,109	May 16	1183	331 / 332 / 333	21	1508
Axle bearing. Car	J. R. Baker	259,258	June 13	801	156	21	1894
Axle-box	O. R. Chaplin	252,017	Jan. 10	492	116	21	99
Axle box. Car	S. A. Bemis. (Reissue)	10,081	Apr. 11	698	246	21	1107
Axle box. Car	H. Bouchard	257,648	May 9	638	178	21	1400
Axle box. Car	C. E. Candee	253,592	Feb. 14	491	126	21	430
Axle box. Car	J. R. Cooper	258,257	Jan. 17	993	289	21	153
Axle box. Car	J. H. Elward	253,698	Feb. 14	803	171	21	459
Axle box. Car	G. F. Godley	251,889	Jan. 3	289	64	21	41
Axle box. Car	G. F. Godley	256,987	Apr. 25	1534	431	21	1240
Axle box. Car	G. F. Godley	260,018	June 27	1449	391	21	1986
Axle box. Car	M. Hayden	257,568	May 9	559	156	21	1384
Axle box. Car	T. F. Hemmich	254,971	Mar. 14	657	178	21	750
Axle box. Car	E. Huber	257,709	May 9	719	199	21	1415
Axle box. Car	F. Keiser	257,790	May 9	730	203	21	1416
Axle box. Car	H. Millholland	260,112	June 27	1567	428	21	1963
Axle box. Car	T. S. Phillips	255,451	Mar. 28	1275	344	21	878
Axle box. Car	J. C. Richardson	252,501	Jan. 17	1100	307	21	199
Axle box. Car	H. Roth	255,675	Mar. 28	1545	416	21	986
Axle box. Car	H. Roth	255,676	Mar. 28	1546	416	21	986
Axle box. Car	J. O. Scott	258,613	May 30	2044	577	21	1675
Axle box. Car	J. N. Smith	253,438	Feb. 7	207	84, 85	21	306
Axle box. Car	J. Soper and J. Slade	254,171	Feb. 28	1208	337	21	576
Axle box. Car	L. H. Tourville	259,948	June 20	1340	300	21	1940
Axle box. Car	W. L. Troup and J. A. C. Gerner	257,109	Apr. 25	1658	444	21	1263
Axle box. Car	G. E. Yost	254,857	Mar. 14	504	135	21	731
Axle box. Carriage	F. A. Carnes	252,733	Jan. 24	1257	353	21	238
Axle box gage	J. A. Myers	253,823	Feb. 14	778	221	21	490
Axle-box jack. Car	R. Robinson	251,850	Jan. 3	230	67	21	55
Axle-box. Vehicle-wheel	J. T. Gardner	255,077	Mar. 14	602	215	21	794
Axle. Carriage	A. E. Smith	256,680	May 30	1898	536	21	1650
Axle-cleaner and wrench. Combined	C. H. Hamilton	254,643	Mar. 7	228	60	21	679
Axle collar. Car	J. Thompson	259,437	June 13	698	185	21	1888
Axle-dust cap	T. W. Squires	256,492	May 23	1656	468	21	1560
Axle-lubricator	G. Brennan	260,277	June 27	1765	477	21	2014
Axle-lubricator	G. D. Young	256,167	Apr. 11	538	152	21	1050
Axle lubricator. Car	C. D. Flynt	256,045	May 16	1108	309	21	1494
Axle lubricator. Vehicle	E. Firth	256,664	Apr. 18	1141	320	21	1164
Axle-skein	J. and P. Herrmann	256,661	Apr. 18	1164	327	21	1166
Axle-skein	D. B. Turnbull	260,130	June 27	1601	438	21	1969
Axle skein. Wagon	J. Sandoe	256,744	Apr. 18	1234	346	21	1180
Axle spindle-protector. Carriage	C. Chamberlin	259,366	June 13	613	169	21	1808
Axle truss. Vehicle	W. A. Galbraith	259,637	June 13	854	254	21	1688
Axle. Vehicle	C. Cook	254,486	Mar. 7	98	6	21	642
Axle. Vehicle	A. Deisher and W. H. Adam	254,625	Mar. 7	217	56	21	675
Axle. Vehicle	J. Du Shane	259,114	June 6	362	89	21	1747
Axle. Vehicle	R. F. Ivey	257,335	May 2	329	85	21	1322
Axles. Device for forming shoulders upon vehicle	G. Brammer and J. R. Swarts	256,279	May 23	1410	389	21	1357
Axles, shafts, and spindles. Pedestal, box, and bearing for	T. F. Hemmich	254,970	Mar. 14	654	177 / 178	21	758
Baby jumper, swing, and bed. Combined	G. C. Klein	257,873	May 16	998	231	21	1493
Baby-walker	I. C. Price	257,185	May 2	45	14	21	1299
Bag: See Canvas bag. Fertilizer-bag. Mail-bag. Paper bag.							
Bag-fastener	C. W. Bradford	255,928	Apr. 4	213	65	21	986
Bag-fastener	C. W. Kurtz	254,449	Feb. 28	1514	414	21	602
Bag-fastener	W. B. Purvis	256,856	Apr. 25	1367	385	21	1218
Bag-fastener	T. Sandford	252,894	Jan. 24	1357	379	21	249
Bag-holder	P. Allen	252,640	Jan. 24	1157	324	21	215
Bag-holder	A. Cultum	257,214	May 2	74	28	21	1294
Bag-holder	J. E. Whitman and E. M. Brown	254,893	Mar. 14	563	151	21	748
Bag or sack for storing or transporting fertilizers	C. E. Buck	252,073	Jan. 10	485	.....	21	91
Bag or satchel	R. Harris	257,003	Apr. 25	1530	432	21	1241
Bag or satchel	L. Lowenbers	253,614	Feb. 14	514	147	21	444
Bagasse-furnace	W. Littlejohn. (Reissue)	9,996	Jan. 3	305	106 / 107	21	66
Bagasse-furnace	M. J. L. Marie	254,351	Feb. 28	1414	399	21	611
Bagasse, plants, &c. Extracting juices from	P. Collier	251,701	Jan. 3	19	5	21	9
Ball-bending machine	S. Vanstone	252,551	Jan. 17	1092	304 / 305	21	198
Ball-hook	K. Müller	253,398	Feb. 7	145	42	21	371
Baker and boiler. Combined	W. B. Billings	260,061	June 27	1586	448	21	1977
Baking plate. Pie	C. T. Hurd	254,770	Mar. 7	396	103	21	705
Baking-powder. Manufacture of	A. Giesecke	256,632	Apr. 25	1287	.....	21	1200
Balance. Proportional	C. Seymour	260,127	June 27	1697	469	21	1997
Bale and box hook	H. A. Dirkes	254,269	Feb. 28	1243	371	21	606
Bale-band cutter	T. C. Doolittle	256,301	Apr. 11	705	192	21	1075
Bale-bands. Machine for making wire	T. A. Weber	257,793	May 9	803	225 / 226	21	1429
Bale-tie	W. H. King	252,953	Jan. 31	1549	431	21	327
Bale-tie	T. F. McNair	253,741	Feb. 14	670	189	21	471
Baling band. Hay and cotton	W. S. Gordon	255,262	Apr. 4	974	71	21	995
Baling machine. Hay	P. Wright	255,759	Mar. 28	1648	446	21	943
Baling-press	G. W. Batchelder	251,990	Jan. 3	370	109 / 110	21	64
Baling-press	A. E. Bloomburg	258,899	June 6	13	4	21	1697

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Baling-press	P. K. Dederick	251,768	Jan. 3	100	28, 29	21	20
Baling-press	P. K. Dederick	257,152	May 2	9	3	21	1263
Baling-press	P. K. Dederick	257,153	May 2	11	4	21	1263
Baling-press	L. Ensinger	252,200	Jan. 10	628	178	21	115
Baling-press	I. V. Jones	255,297	Mar. 21	1062	291	21	839
Baling-press	J. La Dow	252,882	Jan. 31	1458	408 and 409	21	271
Baling-press	A. Leyden	250,561	June 13	856	236	21	1858
Baling-press	G. K. Rice	252,058	Jan. 10	468	129	21	88
Baling-press	W. F. Smith	255,091	Mar. 14	818	218	21	787
Baling-press	J. A. Wagner	256,169	May 16	1254	354	21	1581
Baling-press	P. Wright	253,468	Feb. 7	335	93, 94	21	402
Baling-press. Portable	J. W. Kitchens	260,032	June 27	1465	395 and 396	21	1968
Ball: See Toy ball. Whistling return-ball.							
Ball-and-socket joint	O. C. White	250,957	June 20	1352	365	21	1943
Ball-trap	M. E. Card	257,469	May 9	349	112	21	1358
Ball-trap for billiard-tables	F. Saunders	252,805	Jan. 24	1358	360	21	949
Balloon	C. P. Feat	255,063	Apr. 4	265	69	21	994
Ballot-box	T. F. Dodge	255,951	Apr. 4	250	64	21	991
Ballot-receptacle and satchel. Combined	O. Wells	254,416	Feb. 28	1487	407 and 408	21	624
Band or fly wheel	E. W. Ross	255,196	Mar. 21	949	254	21	816
Banjo	E. J. Cubley	253,849	Feb. 21	816	231	21	503
Bar: See Boring-bar. Harvester cutter-bar. Chain cross-bar. Jail, prison, and grating bar. Grate-bar.							
Barb-holding device	T. W. Eaton	254,292	Feb. 28	1347	371	21	599
Barber's chair	E. Berninghaus	259,660	June 20	987	283	21	1881
Barber's paper-clip	M. Cohen	252,430	Jan. 17	921	254	21	168
Barley-bearding machine	J. Sendall	254,846	Mar. 14	492	138	21	788
Barrel	H. Knight	255,433	Mar. 28	1256	338	21	874
Barrel	J. J. Lück	256,491	Apr. 18	948	265	21	1131
Barrel	W. B. McCormick	254,228	Feb. 28	1275	353	21	567
Barrel	T. J. Loftus	254,667	Mar. 7	269	71	21	684
Barrel. Folding	A. Barksdale	254,259	Feb. 28	1313	363	21	583
Barrel-mover	J. H. Quackenbush	260,049	June 27	1486	400	21	1971
Barrel rolling and handling machine	G. W. Stephens	255,546	Mar. 28	1391	376	21	897
Barrel stopper. Empty	F. Reits	257,187	May 2	48	15	21	1269
Barrel-swing	J. A. Baldwin	253,405	Feb. 14	389	107	21	494
Barrel-truss	J. M. O'Bryan	258,944	June 6	60	23	21	1710
Barrel-trussing machine	H. Wilde	257,260	May 2	136	36	21	1305
Barrels and packages. Apparatus for registering the size and number of	G. W. Wundram	259,739	June 20	1100	293	21	1900
Barrels. Machine for setting up	H. Wilde	257,259	May 2	134	36	21	1304
Base-board. Adjustable	C. H. Willson	256,837	May 30	2074	585	21	1661
Base-burning boiler	A. H. Fowler	259,590	June 13	807	213	21	1843
Basin and sink trap	C. H. Denison	253,852	Feb. 21	819	232	21	504
Basin-bib	E. O. McGlauflin	260,217	June 27	1698	459	21	2003
Basin. Flushing	B. Williams	252,344	Jan. 17	606	225	21	150
Basin-plug	J. C. Ludwig	251,786	Jan. 3	120	34	21	23
Basin. Wash	F. A. Palmer	253,551	Feb. 14	448	126	21	434
Basins. Discharge-pipe plug for wash	J. S. Gilbert	258,048	May 16	1112	310	21	1495
Basket	J. Hibbard	254,479	Mar. 7	40	10	21	645
Basket, &c	G. S. Long	255,177	Mar. 21	987	247	21	819
Basket	W. Phippe	254,326	Feb. 28	1288	357	21	589
Basket. Cotton	G. W. Starr	254,401	Feb. 28	1471	402	21	630
Basket-cover	W. R. Boerner	260,266	June 6	474	125	21	1776
Basket. Wicker	J. G. Miller	254,034	Feb. 21	1050	292	21	541
Bath: See Electric bath. Stock-bath. Shower-bath.							
Bath and camera. Combined	J. Lefeuvrier	256,148	Apr. 11	500	136	21	1040
Bath-tub	F. H. Fickett	254,946	Mar. 14	694	168	21	753
Bath-tub and heater. Portable combined	W. Q. Prewitt	253,783	Feb. 14	700	200	21	476
Bath-tub attachment	F. Schutte	260,654	June 27	1492	402	21	1972
Bath-tub. Cabinet	F. H. Fickett	259,300	June 13	589	130	21	1798
Bathing apparatus	J. B. Crocker	257,151	May 2	7	3	21	1268
Bathing-garment	D. W. J. Hutton	259,020	June 6	187	50	21	1726
Bathing-machine. Portable	T. J. McConnaughay	259,508	June 13	864	229	21	1853
Bathing-tub. Cabinet	E. F. Collins	256,886	Apr. 25	1401	395	21	1218
Battery: See Electric battery. Thermo-electric battery. Galvanic battery. Voltaic battery. Secondary battery.							
Battery-cell	H. J. Brewer	258,213	May 23	1338	377	21	1543
Batting	G. H. Smith and J. H. Beale	256,603	Apr. 18	1063	300	21	1150
Beam-engine. Compound	G. B. Massey	257,355	May 2	254	72	21	1288
Bearing. Anti-friction roller	H. Büssing	253,679	Feb. 14	594	167	21	457
Bearing. Anti-frictional	T. R. Ferrall	252,872	Jan. 31	1450	405	21	270
Bearing. Anti-frictional	T. R. Ferrall	255,498	Mar. 28	1249	336	21	873
Bearing. Anti-frictional	T. R. Ferrall	258,049	May 16	1104	307	21	1494
Bearing pin or stud for machinery	H. M. Hall	253,375	Feb. 7	221	63	21	353
Bed	H. Buckingham	256,969	Apr. 25	1503	402	21	1235
Bed	H. Buckingham	256,970	Apr. 25	1504	402	21	1925
Bed and closet. Folding	M. Hailheimer	256,050	May 16	1122	314	21	1497
Bed and foot warmer	E. F. Brigham	253,861	Jan. 31	1437	404	21	288
Bed and lounge. Sofa	A. S. I. Gabbe	253,596	Feb. 14	494	141	21	441
Bed and wardrobe. Combined folding	J. B. Horne	254,320	Feb. 28	1377	379	21	604
Bed-bottom	W. J. Boda	257,543	May 9	490	136	21	1374
Bed-bottom	A. S. Burnham	253,678	Feb. 14	593	167	21	457
Bed-bottom	C. H. Fitch	252,654	Jan. 24	1174	329	21	218
Bed-bottom	A. H. Frost	255,613	Mar. 28	1474	398	21	912

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Bed-bottom	E. B. Hull	256,694	Apr. 18	1178	331	21	1171
Bed-bottom	W. T. Kosinski	257,953	May 16	998	278	21	1476
Bed-bottom	N. T. Melvin	254,301	Feb. 7	141	40	21	310
Bed-bottom	J. B. Norton	255,657	Mar. 28	1565	410	21	942
Bed-bottom	F. E. Woods and T. J. Curley	254,463	Feb. 7	331	98	21	402
Bed-bottom	D. D. Wyman	254,094	Feb. 21	1167	309	21	551
Bed-bottom	J. H. Lerow	254,344	Feb. 28	1407	387	21	610
Bed-bottom. Elastic	J. A. Thompson and E. Wells	258,613	May 30	1810	511	21	1635
Bed-bottom frame	W. C. Bailey	256,268	Apr. 11	970	181	21	1049
Bed-bottom. Spring	W. Bulkeley	259,810	June 20	1168	316	21	1914
Bed-bottom. Spring	T. Burdick	255,837	Apr. 4	103	27	21	988
Bed-bottom. Spring	D. L. Campbell	258,425	Jan. 17	917	253	21	168
Bed-bottom. Spring	E. A. Cleaveland	252,807	Jan. 31	1444	404	21	249
Bed-bottom. Spring	O. S. and W. S. Foster	252,601	Jan. 24	1115	312	21	209
Bed-bottom. Spring	L. H. Hood and G. H. Fox	254,659	Mar. 7	253	65	21	661
Bed-bottom. Spring	T. Howe. (Reissue)	10,121	May 23	1718	485	21	1611
Bed-bottom. Spring	M. A. Hunt	252,772	Jan. 24	1305	365	21	940
Bed-bottom. Spring	A. J. Landon	256,335	Apr. 11	746	204	21	1081
Bed-bottom. Spring	T. B. Laycock	254,663	Mar. 7	265	69	21	663
Bed-bottom. Spring	W. J. Lowe	254,831	Mar. 14	477	128	21	726
Bed-bottom. Spring	R. W. Lownes	257,170	May 2	31	10	21	1266
Bed-bottom. Spring	W. A. Ober and J. Yagerienner	258,249	May 23	1374	389	21	1561
Bed-bottom. Spring	W. L. Phillips	258,585	May 30	1788	505	21	1631
Bed-bottom. Spring	A. F. Purefoy	254,372	Feb. 28	1439	394	21	614
Bed-bottom. Spring	H. L. Sherwood	258,256	May 23	1362	361	21	1552
Bed-bottom. Spring	G. W. Shotwell	259,594	June 13	883	237	21	1856
Bed-bottom. Spring	M. C. Silver	257,619	May 9	603	169	21	1383
Bed-bottom spring	J. V. Jarrett	258,469	Jan. 17	949	259	21	176
Bed-bottom spring	T. A. and W. H. Rhodes	252,701	Jan. 24	1284	343	21	227
Bed-bottoms. Device for stretching	I. Lorenzen	257,590	May 9	561	169	21	1389
Bed-comfort, blanket, rug, &c	C. D. Murdock	253,484	Feb. 7	357	.....	21	406
Bed. Cot	C. H. Hard	252,450	Jan. 17	954	264	21	174
Bed. Cot	I. S. Pear	253,558	Feb. 14	449	126	21	434
Bed. Cradle	M. Collinson	253,007	Jan. 31	1613	447 and 448	21	908
Bed. Double	J. A. Eldridge	259,518	June 13	799	210	21	1841
Bed. Elastic water	E. J. Bone	254,265	Feb. 28	1319	365	21	594
Bed-fastening	P. Forg	256,590	Apr. 18	1019	287	21	1143
Bed. Folding	E. M. Bement	258,847	May 30	2062	588	21	1962
Bed. Folding	C. M. Morrison	254,678	Mar. 7	261	74	21	686
Bed. Folding	J. Novak and J. Strobel	254,363	Feb. 28	1425	392	21	612
Bed. Folding	W. Zimmerman	260,346	June 27	1851	499 and 500	21	2009
Bed. Folding cabinet	J. Fournier, Jr	254,628	Mar. 7	226	59	21	677
Bed. Folding cabinet	S. H. Witmer	253,983	Feb. 21	860	248	21	514
Bed. Folding cot	J. L. Spencer	254,244	Feb. 28	1297	350	21	569
Bed. Folding cot	C. J. Sundbeck	255,897	Apr. 4	140	47	21	989
Bed-frames. Adjustable connection for woven-wire	C. L. Ames and A. H. Frost	255,405	Mar. 28	1222	327	21	889
Bed. Invalid	L. D. Mott, Jr	254,149	Feb. 28	1186	321	21	573
Bed. Invalid	C. M. Türk	256,176	Apr. 11	530	146 and 147	21	1046
Bed. Iron	A. Herbst	254,548	Mar. 7	123	31	21	650
Bed-lounge	M. Becker	257,640	May 9	667	175 and 176	21	1388
Bed-lounge	F. Fischbeck	257,856	May 16	861	247	21	1455
Bed-lounge	J. L. Newton	252,791	Jan. 24	1336	373	21	945
Bed-lounge	J. D. Westgate	252,983	Jan. 10	734	205	21	138
Bed-lounge frame	W. E. Stiekel and J. Stuckum	259,341	June 13	569	153	21	1668
Bed-pan	W. F. Morgan	257,740	May 9	749	208	21	1420
Bed. Sofa	J. K. Stockton	251,742	Jan. 3	98	18	21	14
Bed. Spring	C. S. Colgrove	254,277	Feb. 28	1231	308	21	506
Bed. Spring	J. T. Elwell	257,303	May 2	185	53	21	1314
Bed. Spring	A. B. Ramey	251,946	Jan. 3	316	85	21	55
Bed-spring	W. Childers and M. M. Eberly	258,018	May 16	1078	299	21	1489
Bed-spring	S. Crossman	257,851	May 16	874	245	21	1454
Bed-spring	H. Fosburgh	256,431	Apr. 11	856	239	21	1103
Bed-spring	W. A. Herfall	259,395	June 13	649	171	21	1815
Bed-spring	J. R. Masters	257,879	May 16	918	254	21	1459
Bed-spring	C. H. McCreery	251,918	Jan. 3	261	77	21	49
Bed-spring	G. S. Mock	259,192	June 6	367	102	21	1782
Bed. Wardrobe or folding	A. W. Stewart	255,548	Mar. 28	1382	376 and 377	21	898
Beds. Table attachment for	R. L. Stokes	258,008	Jan. 31	1483	416	21	977
Bedstead	A. P. Brown	259,354	Jan. 17	850	236	21	158
Bedstead	F. G. Ford	256,606	Apr. 18	1144	321	21	1164
Bedstead	N. T. Melvin	252,490	Jan. 17	985	276	21	180
Bedstead	W. P. Miller	252,123	Jan. 10	541	151	21	109
Bedstead	J. Monzel	254,777	Mar. 7	298	195	21	708
Bedstead	W. J. Myers	255,383	Mar. 21	1117	301	21	845
Bedstead	W. R. Pitt and C. H. Dunks	254,660	Mar. 7	295	78	21	669
Bedstead. Bureau	W. Maasch and F. Bertram	256,712	Apr. 18	1205	336 and 337	21	1175
Bedstead. Cabinet folding	J. H. Holly and J. G. Knapp	259,541	June 13	832	219	21	1847
Bedstead. Folding	C. F. Youngberg	256,942	Apr. 25	1466	412	21	1288
Bedstead. Folding cabinet	F. Steinbrenner	256,440	Apr. 11	678	245	21	1109
Bedstead-hook	J. J. Kennedy	254,335	Feb. 28	1395	384	21	607
Bedstead. Invalid	A. S. Evans	257,483	May 9	421	116 and 117	21	1382
Bedstead. Invalid	H. D. Snyder	254,170	Feb. 28	1207	337	21	576
Bedstead-lock	C. H. Clark	256,269	Apr. 11	693	189	21	1073
Bedstead. Sofa	M. Samuels	258,478	May 23	1540	464	21	1697
Bedstead. Sofa	T. Seden	254,995	Apr. 25	1447	406	21	1235
Bedstead, table, &c. Combined	M. A. McMaster	259,189	June 6	385	101 and 102	21	1761

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Bedstead. Wardrobe	H. O. Bicknell	253,576	Feb. 14	474	134	21	438
Bedstead. Wardrobe	M. Collinson	253,006	Jan. 31	1612	447	21	278
Bedstead. Wardrobe	E. Ortlepp	256,497	Apr. 18	933	267	21	1132
Bedstead. Wardrobe	A. Ortlieb	254,561	Mar. 7	66	17, 18	21	640
Bedstead. Wardrobe	T. Saxton	253,788	Feb. 14	708	201	21	477
Bedstead. Wardrobe	J. Monzel	257,044	Apr. 25	1581	444	21	1940
Bedsteads. Clothes-rack attachment for	F. Morris	257,741	May 9	750	208	21	1420
Bedsteads. Device for strengthening	C. Howard	251,716	Jan. 3	34	10	21	8
Bee-hive	H. L. T. Overbey	252,134	Jan. 10	556	155	21	103
Bee-hive	F. D. Terre	256,938	Apr. 25	1455	409	21	1937
Bee-hive	L. Winterbauer	250,085	June 13	933	249	21	1865
Beer apparatus	P. J. Catterall and E. Birch	253,803	Feb. 14	592	169	21	458
Beer, &c. Apparatus for raising	B. Rice	257,977	May 16	1096	285	21	1479
Beer-chip	L. J. Birgler	255,758	Apr. 4	8	3	21	958
Beer-cooler	C. J. Bopp	255,575	Mar. 28	1494	384	21	904
Beer-cooler	P. J. Darcy	254,180	Feb. 28	1159	291	21	586
Beer-cooler	D. W. Davis	256,550	Apr. 18	1008	264	21	1144
Beer. Cooling	C. A. Maus	256,717	Apr. 18	1209	338	21	1176
Beer-drawing apparatus	L. Becker	256,536	Apr. 18	993	.....	21	1130
Beer. Manufacture of root or tonic	G. W. Goff	254,009	Feb. 21	1004	261	21	833
Bell	J. J. Johnston	253,610	Feb. 14	511	146	21	444
Bell. Door	W. J. Miller and H. Berry	256,722	Apr. 18	1214	320	21	1177
Bell for table-ware. Call	F. W. Brocksieper	252,177	Jan. 10	606	170	21	110
Bell. Gong	R. McShane	256,787	May 30	2020	570	21	1671
Bell. Gong	G. B. Owen	256,737	Apr. 18	1217	341	21	1177
Bell. Gong	J. Walker	257,791	May 9	801	225	21	1430
Bell. Gong	C. E. Scribner	252,266	Jan. 10	711	201	21	198
Bell signal. Electric call	J. F. Kettell	257,342	May 2	238	68	21	1294
Bells. Striking mechanism for electric	G. E. Bowers	252,175	Jan. 10	605	170	21	110
Belt. Abrasive	G. H. P. Flagg and W. Gordon	253,104	Feb. 7	26	8	21	351
Belt attachment	B. Merritt	253,548	Feb. 14	445	126	21	453
Belt-controlling mechanism	G. H. Phelps	255,450	Mar. 28	1274	344	21	878
Belt. Driving	T. Jack	254,109	Jan. 10	594	145	21	97
Belt. Electric	T. W. Williams	256,595	Apr. 18	984	277	21	1137
Belt-fastener	B. Hogan	259,015	June 6	100	48	21	1725
Belt-fastener	A. H. Noble	255,344	Mar. 21	1119	301	21	845
Belt-fastener	J. Shuster	254,167	Feb. 28	1205	336	21	575
Belt-fastener	W. H. Steil	258,148	May 16	1232	346	21	1517
Belt-fastener	A. W. Weed	256,250	Apr. 11	658	177	21	1067
Belt-fastener	A. A. Baldwin	254,769	Mar. 14	493	113	21	717
Belt. Galvanic	J. Mills	256,913	Apr. 25	1433	403	21	1933
Belt guide and tightener	A. B. Pitkin	253,423	Feb. 7	280	80	21	393
Belt-hook	B. Merritt	258,342	May 23	1366	386	21	1549
Belt-idlers. Attachment for	A. Gairing	252,453	Jan. 17	947	262	21	173
Belt-lifter	W. B. Tairo	257,152	May 2	52	16	21	1290
Belt. Machinery	H. C. Hartley	257,323	May 2	212	59	21	1319
Belt-replacing device	E. C. Durand	255,607	Mar. 28	1468	385	21	911
Belt-shifter	W. H. Upham and C. W. Scovill	253,900	Feb. 21	877	247	21	513
Belt-shipper	A. J. Park, Jr	254,698	Mar. 7	201	77	21	698
Belt. Straw-conveyer	P. H. Keim	251,892	Jan. 3	250	71	21	46
Belt-stretcher	J. Porter	252,769	Jan. 31	1567	436	21	291
Belt-tightener	F. Snyder	257,098	Apr. 25	1643	440	21	1980
Belt-trimming machine	A. C. Krueger	255,638	Mar. 28	1505	404 / 405	21	918
Belt. Waist	F. Sternheimer	253,958	Feb. 21	947	263	21	594
Belting	W. N. Hall	250,137	June 6	325	86	21	1751
Belting. Machine for making rubber	J. T. Ridgway	253,428	Feb. 7	284	81	21	394
Belting. Machine for stretching	J. Brady	251,894	Jan. 3	175	49	21	28
Belting. Manufacturing rubber-coated	J. W. Gray	259,850	June 20	1927	398	21	1980
Belting. Method of and implement for uniting the ends of	W. M. Whiting	256,525	Apr. 18	963	277	21	1137
Bench: *See* Wire-rope-splicing bench.							
Bench-dog	W. M. and J. E. Howland	258,067	May 16	1131	317	21	1499
Bending-machine	J. McDowell	253,934	Feb. 21	928	258	21	590
Benzole from gas obtained by distillation of coal. Manufacture of dinitro-	J. A. Kendall	252,473	Jan. 17	973	.....	21	177
Berth. Self-leveling	A. M. Crosby	252,079	Jan. 10	491	136	21	92
Berth. Self-leveling	L. D. Newell	256,239	Apr. 11	633	171	21	1069
Berth. Self-leveling	G. Sickels	253,397	Mar. 21	1208	323	21	860
Berths. Locking-bolt for ships'	G. A. Parks	255,190	Mar. 21	944	258	21	815
Bevel and try square	C. Thomas	257,365	Jan. 10	476	132	21	90
Beveling cloth-boards. Machine for	J. W. Dunham	257,564	May 9	563	146	21	1379
Beverage. Tonic	J. W. Decastro	256,129	Apr. 11	479	.....	21	1037
Bicycle	M. G. Crane	258,559	May 30	1740	492	21	1692
Bicycle	A. F. Curtin	255,775	Apr. 4	28	8	21	955
Bicycle	T. T. Harrison	252,939	Jan. 31	1527	426 / 427	21	284
Bicycle	T. B. Jeffery	250,313	June 13	547	143	21	1706
Bicycle	J. E. Richard	252,694	Jan. 24	1139	319 / 320 / 285 / 286	21	212
Bicycle head-blanks. Die for forging	H. B. Hicks	252,461	Jan. 17	956		21	174
Bicycle-saddle	F. G. Burley	253,504	Feb. 14	397	110	21	425
Bicycle-saddle	A. Rintelman	252,971	Jan. 31	1589	437	21	291
Bicycle-saddle	C. H. Veeder	252,280	Jan. 10	730	204	21	131
Bicycle-seat	J. White	258,333	May 23	1471	419	21	1567
Bicycle seat-spring	C. Wicksteed	256,936	Apr. 25	1463	410	21	1227
Bicycle-stand	G. F. Harwood	259,535	June 13	894	217	21	1846
Bicycle-step	S. Sawyer	260,053	June 27	1491	401 / 402	21	1972
Bicycles. Carrier attachment for	C. H. Lamson	253,211	Feb. 7	42	13	21	354
Bier	C. J. Everhard	256,472	Apr. 18	920	257	21	1136
Bill and file holder	P. K. Shankland and E. A. Brooks	254,395	Feb. 28	1465	401	21	619

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Billiard and pool table pocket	H. Boschen	257,017	May 16	957	266	21	1497
Billiard-cue	H. A. Bowne	255,703	May 30	1869	545	21	1695
Billiard-cue cutter	P. Ryan	254,763	Mar. 7	310	89	21	691
Billiard-cue tip	J. B. Howe	252,573	June 6	492	128	21	1777
Billiard-cue tips. Clamp for holding	J. Recktenwalt	256,561	Apr. 18	957	266	21	1133
Billiard-table	C. W. Allen	256,454	June 13	780	201	21	1827
Billiard-table	M. Bendinger	256,114	Apr. 11	458	124	21	1063
Billiard-table	R. Herman	254,540	Mar. 7	193	51	21	689
Billiard-table	C. W. McLean	253,544	Feb. 14	441	125	21	433
Billiard-table	O. F. Hoover	252,376	Jan. 17	838	236	21	197
Billiard-table adjuster and leveler	P. H. Berry	253,664	Feb. 14	576	163	21	464
Billiard-table pocket	J. F. Babcock	257,541	May 9	487	136	21	1374
Bin: *See* Grain-bin.							
Binder. Temporary	J. A. Barstler	256,686	Apr. 18	1066	302	21	1185
Binder. Temporary	B. Brewer and J. F. Adams. (Reissue.)	10,073	Apr. 4	445	120 / 121	21	1025
Binder. Temporary	J. B. Pitt	255,458	Mar. 28	1276	344	21	878
Binder. Temporary	A. L. Pratt	259,915	June 20	1926	547	21	1933
Binder. Temporary	E. Enos	254,844	Mar. 14	469	131	21	733
Bird-cage feed-cup	J. Maxheimer	259,611	Jan. 24	1123	315	21	1999
Bird-cage perch	J. Baget	254,954	Feb. 28	1308	368	21	888
Bit: *See* Auger-bit. Bridle-bit.							
Bit and washer-cutter. Extension	J. W. Casper	256,979	Apr. 25	1514	425	21	1237
Bit-stock	W. A. Ives	258,764	May 30	1994	563	21	1695
Bitters. Alterative and tonic	D. W. Edwards	258,688	Jan. 24	1171	.....	21	217
Blackboard and map-case. Combined	A. C. Elliott	256,635	May 30	1426	818	21	1539
Blacking-box	A. H. Savage	253,109	Jan. 31	1749	494	21	319
Blacking-box holder and foot-rest. Combined	J. Ross	253,109	Jan. 31	1739	491	21	317
Blanket-fastener	Q. Sweet	256,985	Apr. 25	1378	388	21	1214
Blankets. Putting up	D. A. Swaney	252,549	Jan. 17	1047	291	21	199
Blasting-powder	W. R. Quinan	253,259	Jan. 10	606	.....	21	104
Bleaching and washing linen, &c. Composition for	C. M. Levy and G. Alexandre	254,497	Mar. 7	53	.....	21	647
Bleaching cotton in the form of cops	E. Rasch	254,368	Feb. 28	1452	396	21	617
Bleaching woven fabrics, &c. Apparatus for	W. Birch	256,907	Apr. 25	1402	416	21	1233
Bleaching yarns, &c. Apparatus for	C. E. Bennett	258,385	May 23	1405	425	21	1572
Blind-adjuster	O. C. Velie	256,254	Apr. 11	651	176	21	1066
Blind hanger. Inside	C. M. Young	253,469	Feb. 7	336	94	21	402
Blind-hooks. Machine for making	W. R. Petrie	253,311	Feb. 7	148	43	21	371
Blind. Inside	J. Krehbiel	255,516	Mar. 28	1369	366	21	891
Blind. Inside	F. Rähr	255,538	Mar. 28	1364	373	21	896
Blind. Inside window	E. W. Bowslaugh	258,833	Jan. 24	1195	309	21	254
Blind-slat adjuster	C. H. Phillips and E. C. Greene	254,235	Feb. 28	1225	356	21	589
Blind-slat holder	J. S. Thompson	255,469	Mar. 28	1579	404	21	922
Blind. Window	J. D. Freese	258,873	Jan. 31	1451	408	21	276
Blinds. Support for inside window	C. M. Young	257,125	Apr. 25	1674	469	21	1366
Block: *See* Alphabet-block. Pillow-block. Brake-block. Pulley-block. Building-block. Saw-mill head-block. Chain-block. Shackle-block. Head-block. Tackle-block. Pictorial story-block. Toy building-block.							
Blotter	T. C. Townsend	259,546	Jan. 17	1055	283	21	191
Blotter. Rotary	W. H. Kelly	258,041	Jan. 10	448	122	21	84
Blotting-pad	J. E. Peterson	257,448	May 2	362	101	21	1345
Blouse. Child's	C. C. Link	258,446	May 23	1604	454	21	1599
Blower. Air	O. C. Davis	254,536	Mar. 7	169	50	21	687
Blower. Centrifugal	R. H. Thurston	257,412	May 2	352	97	21	1339
Blowing-engine regulator	T. F. Witherbee	257,799	May 9	613	168	21	1432
Blue. Manufacture of anthracene	H. Brunck	256,530	May 23	1704	.....	21	1646
Bluing-package	E. W. Gillett	256,905	Apr. 25	1531	430	21	1240
Board: *See* Annunciator-board. Game-board. Base-board. Ironing-board. Bosom-board. Paper-board. Dash-board. Plow mold-board. Electric switch-board. Sign-board. Electrical switch-board. Telephone-exchange switch-board. Embalming and cooling board. Vehicle dash-board. Fisting and plaiting board. Vehicle spring-board. Wagon tail-board. Wash-board.							
Board from wood pulp. Manufacture of	R. M. Mason and G. M. Wooster	253,403	Feb. 7	256	74	21	389
Boat: *See* Canal-boat. Tow-boat. Center-board boat. Train-boat.							
Boat-detaching apparatus	M. Bourke	251,680	Jan. 3	7	2	21	4
Boat-frame. Sectional	C. L. and C. W. King	257,301	May 9	573	160	21	1367
Boat-plug	G. A. Leavitt, Jr	260,775	May 30	2007	566	21	1693
Boat raising and lowering apparatus	R. H. Earle	258,198	Jan. 10	686	177	21	114
Boat raising, lowering, and detaching apparatus	G. G. Laurence	258,480	Jan. 17	960	272 / 273	21	178
Bobbin	D. Hambleton	255,508	Mar. 28	1241	333	21	833
Bobbin-shower	J. Warrener	257,419	May 2	338	93	21	1340
Bobbin-winder	R. Steiner	258,494	May 23	1657	468 / 469	21	1600
Bobbin-winding machine	G. Campbell and J. Clute	256,197	Apr. 11	572	157	21	1039
Body-brace	J. W. Anderson	253,251	Feb. 7	83	23	21	360
Bog-cutter	S. W. Brewster and L. Sherwood	255,376	Mar. 21	1179	316	21	835

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Boiler:							
See Base-burning boiler. Range-boiler. Clothes-boiler. Steam-boiler. Cooking-boiler. Sugar-boiler. Locomotive-boiler. Tubular sectional boiler. Marine boiler. Wash-boiler.							
Boiler	A. P. Creque	255,493	Mar. 28	1330	350	21	806
Boiler attachment. Domestic	S. Letchford	253,728	Feb. 14	458	167	21	498
Boiler-cleaner	A. Rogers	254,898	Mar. 7	305	80	21	690
Boiler-cleaner and circulating apparatus	T. Craney	254,118	Feb. 28	1150	331	21	566
Boiler-fittings. Safety-plug and valve for	J. J. Mackedon	256,344	Apr. 11	753	207	21	1065
Boiler for heating purposes	J. Mason	259,586	June 13	862	238	21	1373
Boiler-former	F. Follinger	260,181	June 27	1651	448	21	1996
Boiler-furnace	G. Blackburn	258,597	May 23	1696	480	21	1607
Boiler-furnace	J. Elliott. (Reissue)	10,044	Feb. 28	1521	416	21	630
Boiler-furnace	W. Ennis	252,445	Jan. 17	938	260	21	171
Boiler-furnace	J. Gerber	254,656	Jan. 24	1176	330	21	218
Boiler-furnace	G. R. Ricketts	256,051	Apr. 4	363	99	21	1011
Boiler-furnace. Stationary	W. H. Harris and G. Farr	252,214	Jan. 10	643	181	21	117
Boiler furnace. Steam	C. I. Hall	257,009	Apr. 25	1537	431	21	1241
Boiler furnace. Steam	M. C. Jones	252,040	Jan. 10	447	122	21	84
Boiler furnace. Steam	J. Mahony	259,325	June 13	557	146	21	1788
Boiler furnace. Steam	G. E. Palmer	251,791	Jan. 3	125	36	21	24
Boiler gas-furnace	J. Zellweger	258,525	May 23	1606	480	21	1607
Boiler or other furnace	E. J. Mallett, Jr	258,450	May 23	1608	455	21	1591
Boiler or other furnace	E. J. Mallett, Jr	258,452	May 23	1612	455	21	1592
Boiler-tubes. Apparatus for drawing and replacing	L. N. Denney and A. C. Johnson	254,227	Feb. 28	1341	370	21	598
Boiler-tubes. Device for cutting	J. J. Franklin	256,474	Apr. 18	923	257	21	1127
Boiler-tubes. Metallic stopper for	J. W. Fowler	253,691	Feb. 14	608	172	21	459
Boilers. Apparatus for removing scale, sediment, &c., from	T. J. Jones	259,693	June 20	1032	275	21	1869
Boilers. Connecting sputs to	J. Trageser. (Reissue)	10,022	Jan. 31	1849	500	21	335
Boilers. Sediment-collector for	D. Hanna	254,307	Feb. 24	1366	376	21	662
Bolster-spring	C. A. Howard	252,036	Jan. 10	440	130	21	83
Bolt:							
See Chain-bolt. Plow-bolt. Door-bolt. Rotary bolt. Flour-bolt. Spring-bolt. Locking-bolt. Trace-fastening bolt.							
Bolt	C. H. Goebel	252,310	Jan. 17	773	215	21	144
Bolt and key fastener. Combined	W. White	258,833	May 30	2070	584	21	1680
Bolt and rivet clipper	B. Schmidt	259,052	June 6	228	61	21	1732
Bolt-blanks from cold rods of metal. Machine for forming	W. E. Ward	252,914	Jan. 31	1499	418	21	279
Bolt-cutter	A. Blowers	257,916	May 16	956	266	21	1467
Bolt cutter. Stay	C. V. Rote	254,163	Feb. 28	1201	335	21	575
Bolt cutter. Stay	N. Thomas	253,788	Feb. 14	736	210 / 211	21	483
Bolt-heading machine	J. B. Clark	260,281	June 27	1775	480	21	2016
Bolt-heading machine	J. C. Duckworth	252,440	Jan. 17	932	257 / 258	21	170
Bolt-heading machine	H. J. Johnson	254,484	Mar. 7	49	12	21	646
Bolt-threading machine	C. H. Graham	256,675	Apr. 18	1156	325	21	1166
Bolts. Apparatus for brushing polygonal	F. Stansfield	256,066	Apr. 4	380	104	21	1014
Bolts. Manufacture of	C. Hall	252,661	Jan. 24	1181	301	21	219
Bolting apparatus	O. M. Morse	255,002	Mar. 14	697	188 / 189	21	706
Bolting-cloth. Device for tightening	M. Harmon	259,639	June 13	956	255	21	1869
Bolting-reel	M. Ingraham	259,160	June 6	349	92	21	1756
Bond, check, or other security	J. Scott	257,245	May 2	121	34	21	1362
Bone-black kilns, &c. Automatic discharging apparatus for	A. A. Goubert	254,474	Mar. 7	32	9	21	643
Bone-black-revivifying kilns. Cooler for	F. Wetton	255,828	Apr. 4	92	25	21	966
Book-back. Spring	F. Schubert	256,245	Apr. 11	640	173	21	1064
Book-binders and others. Gage for	J. J. Geiger	253,598	Feb. 14	419	117	21	430
Book-binding	A. J. Magee	256,023	Apr. 4	333	89	21	1006
Book. Blank	A. J. Maxwell. (Reissue)	9,997	Jan. 3	398	107	21	68
Book-case	E. R. Young	258,844	May 30	2080	567	21	1682
Book-case. Revolving	D. M. Schell	256,600	Apr. 18	1050	298	21	1149
Book-clasp	J. Müller and E. Hilpert. (Reissue)	10,133	June 6	501	130	21	1781
Book-clasp. Adjustable	A. C. Hafely	252,100	Jan. 10	315	143	21	96
Book. Copying	C. D. Campbell	259,975	June 20	1392	374	21	1949
Book-cover. Removable	T. D. Price	255,331	Mar. 21	1127	304	21	847
Book. Manifold copying	J. R. Carter	252,646	Jan. 24	1165	327	21	217
Book. Portfolio scrap	A. L. Colton	251,998	Jan. 3	362	103	21	66
Book-protector	O. F. Silcott	254,168	Feb. 28	1205	337	21	576
Book-rack	R. W. Myers	252,053	Jan. 10	463	126	21	87
Book-sewing machine	E. J. Nolin	254,883	Mar. 14	548	146	21	739
Book-stand. Revolving	D. T. Kover	258,442	May 23	1600	453	21	1590
Book-support	M. W. Filley, A. S. Teal, and R. Fields.	259,837	June 20	1911	325	21	1919
Book-support	W. W. Murray	257,970	May 16	1016	283	21	1478
Book support and handle	E. R. Young	259,256	June 6	466	123	21	1775
Boot	G. C. McCoy	254,983	Mar. 14	667	185	21	764
Boot	E. E. Reed	258,316	May 23	1439	412	21	1554
Boot	R. Thompson	254,071	Feb. 21	1004	303	21	548
Boot and shoe crimping machine	J. W. D. Tifield	258,734	May 30	1961	554	21	1661
Boot and shoe exhibitor	W. W. Yokom	254,493	Feb. 28	1496	410	21	825
Boot and shoe heel	H. E. Clinton	253,844	Feb. 21	810	230	21	502
Boot and shoe heel	J. Kieffer	252,474	Jan. 17	974	271	21	177
Boot and shoe heel	J. Kieffer	252,475	Jan. 17	975	271	21	177
Boot and shoe heel plate	H. W. Arnold	255,234	Mar. 21	1000	267	21	824
Boot and shoe heel plate	E. C. Gardner	256,311	Apr. 11	720	195	21	1078

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Boot and shoe heel protector	S. Bergstresser	257,433	May 2	349	97	21	1343
Boot and shoe heels. Machine for securing	F. Richardson	259,799	June 20	1909	284 / 285	21	1895
Boot and shoe heeling machine	E. Fisher	258,905	June 6	45	11	21	1702
Boot and shoe heeling machine	W. J. Heffernan	252,105	Jan. 10	319	144	21	96
Boot and shoe last	C. P. Sherman	256,168	Apr. 11	591	144	21	1044
Boot and shoe lasting machine	G. W. Copeland and M. Brock	254,617	Mar. 7	285	78, 79	21	673
Boot and shoe nailing machine	W. G. Budlong	255,716	Mar. 28	1600	431 / 432	21	986
Boot and shoe piping	C. D. Wood	255,067	Mar. 14	700	211	21	781
Boot and shoe shank lasting apparatus	F. Beverle	259,089	June 6	228	60	21	1730
Boot and shoe shank stiffeners. Machine for cutting	C. B. Webb	252,261	Jan. 10	728	204	21	131
Boot and shoe sole edges. Machinery for burnishing	M. Dadley	255,158	Mar. 21	987	240	21	807
Boot and shoe sole trimming machine	B. F. Wheeler	259,253	June 6	402	122	21	1774
Boot and shoe soles. Air-cushion for	G. F. Butterfield	259,092	June 6	274	73	21	1742
Boot and shoe soles, tops, and heels. Manufacture of	J. L. Thomson	256,077	Apr. 4	385	107	21	1017
Boot and shoe soles. Tool for trimming	J. Mundell and W. J. Gordon	257,366	May 2	286	75, 76	21	1280
Boot-heel. Revolving	W. Craig	253,348	Feb. 7	196	56	21	370
Boot-jack	K. J. Greenawald	254,816	Mar. 14	451	121	21	723
Boot. Moccasin	J. L. Coombs	251,822	Jan. 3	194	54	21	35
Boot or shoe	W. Comey	253,586	Feb. 14	496	138	21	440
Boot or shoe	S. C. Diser	254,636	Mar. 7	217	56	21	675
Boot or shoe	H. C. Holbrook	260,094	June 27	1456	398	21	1986
Boot or shoe	A. Johnson	259,163	June 6	354	94	21	1756
Boot or shoe	H. M. MacDonald	260,304	June 27	1804	449	21	2021
Boot or shoe	C. W. Shippee	256,170	Apr. 11	593	144	21	1045
Boot or shoe	E. L. Sprague	259,230	June 6	432	115	21	1760
Boot or shoe	E. L. Sprague	259,231	June 6	432	113	21	1760
Boot or shoe heel	E. S. Moulton	256,848	Apr. 25	1358	363	21	1210
Boot or shoe heels. Cap or covering for	W. A. Peay	257,377	May 2	277	79	21	1331
Boot or shoe holding jack	E. Bertrand	258,696	May 30	1994	543	21	1654
Boot or shoe. Rubber	W. Cable	256,544	Apr. 18	1009	282	21	1141
Boot or shoe. Rubber	S. Lindsey, Jr	257,169	May 2	30	10	21	1288
Boot or shoe sole	J. D. Stoddard	252,159	Jan. 10	377	103	21	108
Boot or shoe sole-edge protector	W. Gordon	258,226	May 23	1359	362	21	1546
Boot. Seamless felt	M. R. Bissell	256,538	Apr. 18	995	280	21	1140
Boot-strap	J. B. Belcher	254,906	Mar. 14	576	155	21	744
Boot-strap	J. B. Belcher	256,112	Apr. 11	457	123	21	1033
Boot-treeing apparatus	J. H. Burbank	259,811	June 20	1183	310	21	1914
Boots and shoes. Form for making india-rubber	W. C. Watkins	256,513	May 23	1679	475	21	1683
Boots and shoes. Lasting	G. Hawkes	254,906	Mar. 14	649	176	21	758
Boots and shoes. Lasting and uniting the upper and soles of	E. Bertrand	254,501	Mar. 7	181	45	21	669
Boots and shoes. Machine for crimping seamless	T. T. Marshall	255,178	Mar. 21	998	248	21	812
Boots and shoes. Manufacture of	T. Laycock	254,102	Feb. 21	1124	314	21	574
Boots and shoes. Manufacture of	A. Newton	255,009	Mar. 14	707	191	21	768
Boots and shoes. Manufacture of	A. Nichols	254,361	Feb. 28	1423	391	21	612
Boots and shoes. Metallic counter-support for	V. B. Morton	256,030	Apr. 4	340	91	21	1007
Boots and shoes. Securing metal wearing-surfaces to rubber	F. Richardson	255,672	Mar. 28	1542	415	21	985
Boots and shoes. Spring-heel for	M. B. Kerr	255,871	Apr. 4	142	37	21	974
Boots and shoes. Welting	R. D. Tucker and J. H. Anthoine	255,474	Mar. 28	1308	352	21	883
Boots in boot-boxes. Device for supporting	E. H. Slagle	253,436	Feb. 7	206	54	21	364
Boots or shoes. Device for connecting	W. K. Webb	255,480	Mar. 28	1317	355	21	884
Boring and cutting implement	I. Sharp	253,115	Jan. 31	1756	467	21	320
Boring. Apparatus for subaqueous	T. English	256,658	Apr. 18	1131	316	21	1162
Boring axle-holes in hubs, &c. Machine for	W. R. Wood and S. Barr	259,447	June 13	713	189 / 190	21	1686
Boring-bar	L. R. Faught	253,592	Feb. 14	415	116	21	429
Boring-bar	L. R. Faught	256,846	Apr. 4	110	30	21	909
Boring cylinders. Tool for	J. N. Smith	259,727	June 20	1018	287	21	1894
Boring-gage	T. J. Bush	257,366	May 2	168	48	21	1311
Boring-machine	B. F. Allen	251,686	Jan. 3	2	1	21	3
Boring-machine	W. N. Brown	257,919	May 16	950	269	21	1467
Boring-machine	V. Cox	258,716	May 30	1941	548	21	1657
Boring-machine	E. D. Davis	253,913	Feb. 21	891	251	21	516
Boring-machine	C. R. Otis	257,374	May 2	278	78	21	1330
Boring machine. Metal	D. W. Pedrick	255,449	Mar. 28	1278	344	21	877
Boring machine, Metal	J. Wheelock	247,422	May 2	334	104	21	1341
Boring machine. Wood	W. E. Lawrence	256,337	Apr. 11	748	205	21	1084
Bosom-board	W. A. Hilton	257,705	May 9	713	197	21	1414
Bosom-board	F. M. Wright	257,885	May 9	820	229	21	1434
Bosom-stretcher	R. Schmidt	256,384	Apr. 11	799	218 / 219	21	1090
Bottle and bottle attachment	D. Lubin	255,642	Mar. 28	1511	406	21	919
Bottle-caps. Attaching	H. Brooke	255,467	Mar. 28	1324	357	21	885
Bottle-cooler	C. H. Laufkotter	251,988	Jan. 3	270	73	21	48
Bottle-cooler	P. M. Weather	253,798	Feb. 14	744	213	21	484
Bottle cover. Mustard	M. Ams	259,740	June 20	1101	304	21	1900
Bottle. Drop	C. Gebert	258,454	Jan. 17	948	262	21	173
Bottle. Nursing	E. O. Day	253,014	Jan. 31	1634	451	21	500
Bottle. Nursing	S. W. France	252,936	Jan. 31	1525	426	21	363
Bottle-stopper	E. Aldous	252,068	Jan. 10	413	113	21	79
Bottle-stopper	C. Beecher	254,280	Mar. 7	90	25	21	655
Bottle-stopper	J. B. Crawford	251,836	Jan. 3	195	55	21	35
Bottle-stopper	G. F. Heafer	251,779	Jan. 3	114	33	21	33
Bottle-stopper	J. Q. Houts and O. Ericsson	255,627	Mar. 28	1491	409	21	919
Bottle-stopper	P. Mattener	260,726	June 27	1905	469	21	2031
Bottle-stopper	P. Miles	257,049	Apr. 25	1579	443	21	1249
Bottle-stopper	J. Merschbaeser	254,535	Mar. 14	461	129	21	736
Bottle-stopper	S. S. Newton	251,992	Jan. 3	268	79	21	50
Bottle-stopper	S. S. Newton	251,993	Jan. 3	233	80	21	51
Bottle-stopper	S. S. Newton	257,053	Apr. 25	1360	446	21	1251

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page
Bottle-stopper	W. W. Norris	259,418	June 13	677	179	21	1880
Bottle-stopper	F. Praunegger	258,470	May 23	1089	461	21	1595
Bottle-stopper	O. Redmond	251,706	Jan. 3	135	38	21	25
Bottle-stopper	C. Sedgwick	255,821	Apr. 4	22	23	21	904
Bottle-stopper	C. A. Warfield	253,506	Feb. 14	462	131	21	426
Bottle-stopper	A. E. Rich	258,659	Jan. 10	469	130	21	88
Bottle stopper and fastener	J. D. Roberts	260,383	June 27	1921	493	21	2023
Bottle stopper and fastener	G. B. Stuart	252,530	Jan. 17	1046	291	21	190
Bottle-stopper and fastening therefor	B. B. Lewis	254,345	Feb. 28	1407	387	21	610
Bottle-stopper attachment	J. H. Zeilin	254,709	Mar. 7	391	100	21	703
Bottle-stopper. Dose-cup	G. F. Hoeffer	255,506	Mar. 28	1347	361	21	899
Bottle-stopper fastener	H. L. C. Renauld and M. B. Stafford	253,427	Feb. 7	283	81	21	394
Bottle-stopper fastening	J. J. Eastman	256,635	May 16	1096	305	21	1492
Bottle-stopper. Measuring	S. S. Newton	255,655	Mar. 28	1563	410	21	922
Bottle-stopper of celluloid or analogous material	D. Berry	251,819	Jan. 3	168	47	21	31
Bottle-stopper. Self-closing	P. J. Carmien	259,815	June 20	1167	318	21	1915
Bottle-stopping apparatus	G. S. Norris	257,746	May 9	754	210	21	1421
Bottle-stopping device	K. Hofmann	256,579	May 30	1705	469	21	1027
Bottle-washing machine	H. Bell	257,642	May 9	698	176	21	1398
Bottle-wrapper	H. J Mark and W. F. Martinek. (Reissue.)	10,069	Apr. 4	440	119	21	1024
Bottle-wrapper	W. Fox	255,384	Mar. 21	1189	310	21	837
Bottles. Chuck for holding	J. Livor	257,136	Apr. 25	1097	475	21	1270
Bottles. Combined label, guide-slip, and wrapper for	J. M. Thorpe	255,900	Apr. 4	183	48	21	861
Bottles. Cushion-protector for	G. and H. E. G. Luytics	257,600	May 9	582	162	21	1399
Bottles. Device for securing corks in	G. A. Smyth	254,718	Mar. 7	392	87	21	694
Bottles, jars, &c. Stopper for	C. Cheewright	258,890	June 6	30	7	21	1699
Bottles. Machine for capsuling	J. Betjemann	253,361	Feb. 7	90	29	21	363
Bottles, &c. Means or apparatus for securing or locking up the contents of	T. Cockcroft	258,379	May 23	1524	433	21	1577
Bottles, &c. Packing	R. Otten	259,894	Jan. 31	1473	412	21	974
Bottling-machine	A. R. Weiss	255,380	Mar. 21	1160	311	21	858
Bottling-machine	F. D. Hake	254,006	Feb. 21	1009	283	21	534
Bouquet support and former	J. Cooper	258,994	June 6	152	41	21	1721
Bow or scarf holder							
Box: *See* Ammunition-box. Artist's box. Axle-box. Ballot-box. Blacking-box. Bread-box. Camera-box. Cartridge-box. Cigarette-box. Cloth-steaming box. Core-box. Cuff-box. Dredge-box. Fare-box. Fire-alarm box. Jewel-box. Leather box. Letter-box. Locomotive fire-box. Mailing-box. Match-box. Miter-box. Nail-box. Packing-box. Paper box. Pill packing-box. Post-office box. Post-office lock-box. Show-box. Smoke-box. Spool show-box. Stuffing-box. Syringe-box. Telegraph and messenger service box. Telegraph-signal box. Tobacco and match box. Toy money-box. Work-box.							
Box	W. Livingstone	258,389	Jan. 17	866	241	21	160
Box-corner. Metallic	D. Freeborn and R. B. Perkins	254,436	Feb. 28	1510	413	21	628
Box-cover press	E. Austin	259,414	Jan. 17	900	249	21	165
Box-fastener	B. S. Atwood	254,900	Mar. 14	571	154	21	743
Box-fastener	G. E. Crane	256,823	Apr. 25	1227	375	21	1205
Box-fastener	W. M. Docker	255,958	Apr. 4	258	65	21	902
Box-fastener	W. Lang	256,294	Apr. 11	609	165	21	1058
Box-fastener	M. Mayer	255,313	Mar. 21	1167	298	21	844
Box-fastener	G. S. Randall	256,737	Apr. 18	1226	343	21	1179
Box-fastener	J. M. and S. H. Gardner	259,687	Jan. 10	433	118	21	88
Box or basket	S. H. Smith	257,569	May 9	467	122	21	1371
Box or basket for berries, &c	C. W. Woodford	254,069	Mar. 14	709	212	21	709
Box-pressing clamp	J. F. De Witt	256,368	May 23	1534	435	21	1578
Box-trimming cutter	L. Carpenter	253,639	Feb. 21	808	228	21	501
Boxes and dishes. Machinery for forming and fastening	J. Croak and E. J. Moran	255,841	Apr. 4	105	28	21	868
Boxes. Combined label-holder and handle for	G. Townsend, 2d	250,606	June 13	909	242	21	1469
Boxes, mica lamp-chimneys, &c. Metallic joining for	C. B. Bolton	258,981	June 6	136	36	21	1718
Boxes or packages. Device for handling filled							
Brace: *See* Body-brace. Chair-brace. Machine-brace. Pump-spout brace. Shoulder-brace. Tension-brace.							
Bracelet	W. H. Ball	254,954	Feb. 28	1310	366	21	598
Bracelet	J. V. Diefenthaler	253,017	Jan. 31	1037	459	21	390
Bracelet	C. A. Faas	255,610	Mar. 28	1472	395	21	912
Bracelet	I. L. Garside	255,614	Mar. 28	1475	397	21	913
Bracelet	G. B. Goff and G. Lenau	255,978	Mar. 21	1060	288	21	854
Bracelet	W. A. Johnson	253,612	Feb. 14	513	147	21	444
Bracelet	W. Link	256,434	Apr. 11	867	249	21	1105
Bracelet	C. McIntire	259,187	June 6	363	101	21	1761
Bracelet	H. N. Perveaz	258,111	May 16	1184	334	21	1569
Bracelet	J. Stanley	258,150	Jan. 10	576	168	21	105
Bracelet	J. B. Van Houten	256,165	May 16	1250	368	21	1580
Bracelet	A. Vester	253,942	Feb. 7	79	23	21	350
Bracelet	A. Vester	253,943	Feb. 7	73	22	21	350
Bracelet	W. C. Edge	258,441	Jan. 17	905	250	21	170
Bracelet and clasp	E. Atkins	257,696	May 9	694	174	21	1397
Bracelet and scarf-ring fastening	A. H. Engel	252,444	Jan. 17	937	259	21	171
Bracelet. Spring-hinged	F. Keller and C. Frey	258,676	Jan. 24	1201	336	21	963
Bracelet-stock. Die for striking up							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page
Bracket: *See* Curtain-bracket. Dental bracket. Lamp-bracket. Lantern-bracket. Roofing-bracket. Shelving-bracket.							
Bracket	G. W. Baer	257,202	May 2	64	19	21	1282
Bracket	A. Campbell	258,665	June 6	20	6	21	1696
Bracket and shelving support	F. M. Taylor	255,685	Mar. 28	1379	483	21	930
Braid-trimming. Device for and method of forming	D. Hemus	256,895	Apr. 25	1414	398	21	1220
Braiding-machine	N. Jenkins	254,822	Mar. 14	456	134	21	783
Brake: *See* Car-brake. Carriage-brake. Electro-magneto brake. Elevator safety-brake. Hydraulic brake. Locomotive-brake. Railway-brake. Sled-brake. Steering-wheel friction-brake. Vehicle-brake. Wagon-brake.							
Brake-block	E. G. Spencer	257,940	May 2	194	35	21	1300
Brake-lock	G. R. Clarke	257,321	May 2	171	48, 49	21	1312
Brake-shoe	J. Denver	256,985	May 23	1417	401	21	1586
Brake-shoe	S. B. Long	259,179	June 6	376	99	21	1760
Brake-shoe	E. Stebbins	256,067	Apr. 4	381	104	21	1014
Brass-flouring machine	W. Warren	254,784	Mar. 7	403	{107 / 108}	21	707
Branding-chute	R. York	258,345	Jan. 17	886	225	21	130
Brazing	M. Jacks	259,274	Jan. 17	402	.....	21	1777
Bread and meat cutter	S. L. Denney	260,267	June 6	1783	483	21	2017
Bread and meat slicer	S. L. Denney	252,300	June 27	887	230	21	153
Bread-box	J. Fournier, Jr.	255,611	Mar. 28	1473	396	21	912
Bread-cutter	A. Moore	258,325	Jan. 17	788	219	21	147
Bread-making machine	P. F. Bryce	255,411	Mar. 28	1231	330	21	870
Bread-making utensil	M. J. Cook	255,255	Mar. 21	1085	275	21	889
Breakwater. Yielding and buoyant pile	R. M. Franklin	260,016	June 27	1446	390	21	1965
Brewing	S. R. Percy and W. S. Wells	254,565	Mar. 7	143	36	21	682
Brick	J. A. Dupuis	257,155	May 2	13	4, 5	21	1263
Brick and fire-proof lining for furnaces. Fire-	H. Uhlmann	258,278	Jan. 10	798	.....	21	131
Brick and mold. Angle-	J. F. Edwards	252,747	Jan. 24	1273	358	21	235
Brick and mortar elevator	W. A. Jordan	259,165	June 6	357	94, 95	21	1767
Brick and other kilns	S. W. Bickley	252,011	Jan. 10	417	114	21	79
Brick and tile machine	A. Wehlaun	252,636	Jan. 24	1153	323	21	214
Brick-burning kiln	J. Johnson	258,583	May 30	1774	501	21	1628
Brick compound. Fire-	E. A. Martin	258,051	May 30	1673	.....	21	1646
Brick. Fire-	W. G. Beyerly	260,155	June 27	1618	437	21	1992
Brick-kiln	A. H. Forbes	258,519	June 13	606	212	21	1843
Brick-kiln	E. N. Hutchison	258,319	Jan. 17	780	217	21	146
Brick-kiln	C. D. Page	255,159	Mar. 21	948	{251 / 252 / 180}	21	615
Brick-machine	H. C. Barker	257,490	May 9	391	{109 / 110}	21	1367
Brick-machine	J. Creager	257,663	May 9	655	163	21	1404
Brick-machine	W. E. Gard	255,385	Mar. 21	1190	320	21	856
Brick-machine	W. H. Judson	260,101	June 27	1555	{418 / 419}	21	1991
Brick-machine	P. H. A. and J. M. Kells	255,670	Apr. 4	141	37	21	874
Brick-machine	W. and A. B. Woodward	254,585	Mar. 7	95	24	21	655
Brick-machine	M. Wright	256,092	Apr. 4	412	113	21	1089
Brick-machine. Hammer	E. F. Andrews	257,196	Apr. 25	1678	{469 / 470}	21	1326
Brick-making machine	S. J. Plant	257,666	May 9	680	164	21	1391
Brick-mold	T. McNicholas	259,680	June 20	1971	341	21	1989
Brick-press	J. Crabtree	255,146	Mar. 21	869	230	21	699
Brick, tile, &c. Compound for making	H. H. Hunt	260,203	June 27	1678	.....	21	2021
Bricks. Mold for making tubular	A. Hahn	255,072	Apr. 4	279	72	21	893
Bridge	J. B. McPherson	258,487	Jan. 17	890	223	21	169
Bridge appliance. Railway draw-	J. Chandler	254,863	Mar. 14	588	{130 / 137}	21	722
Bridge. Draw-	J. Edwards and J. R. F. Kelly	254,627	Mar. 7	219	56, 57	21	675
Bridge. Draw-	M. A. Zürcher	255,851	Apr. 4	96	28	21	907
Bridge lock and signal. Turn-	F. W. Coolidagh	251,836	Jan. 3	139	54	21	34
Bridge. Truss-	W. Ireton	254,978	Mar. 14	629	169	21	720
Bridges. Guard-gate for swing-	F. Beehr	255,626	Mar. 14	729	206	21	171
Bridle-bit	G. J. Letchworth	254,967	Mar. 14	661	183	21	763
Bridle-bit	R. Little	254,698	Mar. 7	367	71	21	694
Bridle-bit	H. S. Squier	255,737	Mar 28	16333	441	21	941
Bridle-bits	T. E. Van Ness and D. Maloney	256,168	May 16	1251	353	21	1580
Bridle-bits. Forming cheek-pieces for	C. B. Mintle	254,256	Feb. 28	1430	390	21	612
Bridle-ring	W. P. Dodson	255,309	Mar. 21	1165	316	21	856
Broiler	H. H. Sheldon	254,709	Mar. 7	316	84	21	699
Broiler	I. F. Betts	258,977	June 6	120	35	21	1717
Broiler for oil or gas stoves	R. E. Dietz	258,989	June 6	156	43	21	1721
Broiler for oil or gas stoves	J. W. Holder	259,201	May 16	1294	367	21	1989
Bronzing-machine	T. Leeming, R. Ray, and F. G. Lynde	260,309	May 23	1444	409	21	1568
Bronzing or otherwise ornamenting paper, &c. Machine for	J. Roth	254,898	Mar. 7	397	78	21	699
Broom-hanger	J. F. Bartlett	258,574	June 6	5	2	21	1686
Brush	D. A. McDaniel	254,568	Apr. 18	1038	294	21	1146
Brush	L. Yvon	257,498	May 2	343	96	21	1348
Brush case. Blacking-	A. L. Seabury	258,615	May 30	2046	578	21	1678
Brush. Circular-	B. F. Quinby	256,117	May 16	1197	338	21	1581
Brush. Dusting-	M. S. W. Brown	259,407	June 20	1179	315	21	1913
Brush. Flue-	J. N. Gibson	253,634	Jan. 31	1050	457	21	394
Brush for cleaning milk-cans	J. K. Odell	253,864	Feb. 21	861	243	21	511
Brush machine. Wire-	J. E. and C. E. Howard	254,655	Mar. 7	256	66	21	681
Brush-making tool	A. P. Smith	258,149	Jan. 10	575	168	21	105

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Brush. Rotary	C. Albert and J. G. Dinkelbihler	255,706	Apr. 4	189	49	21	992
Brush. Self-feeding	T. F. Gaynor and W. J. Fitzgerald	257,312	May 2	197	55	21	1316
Brush-supporter	A. Rittmeyer	253,630	Feb. 14	531	153	21	447
Brushes. Paint, whitewash, and other	J. A. and C. D. Read	251,947	Jan. 3	316	88	21	55
Bucket. Dinner	J. E. Patton	259,582	June 13	980	234	21	1856
Buckle	A. Cadwell	255,838	Apr. 4	103	27	21	988
Buckle	E. A. Cooper	258,715	May 30	1041	548	21	1657
Buckle	W. B. Hayden	257,700	May 9	708	196	21	1413
Buckle	J. H. Huntress	257,443	May 2	357	100	21	1245
Buckle	J. A. Park	259,650	June 13	907	278	21	1871
Buckle	W. S. Sponhauer	258,226	May 23	1461	415	21	1506
Buckle	J. H. Wood	257,122	Apr. 25	1672	468	21	1205
Buckle and snap-hook. Combined	F. Kiekenapp	255,636	Mar. 28	1504	404	21	918
Buckle and snap-hook. Combined	W. M. Moure	256,725	Apr. 18	1216	340	21	1177
Buckle attachment for straps	L. Hartson	254,311	Feb. 28	1368	377	21	662
Buckle. Back-band	J. A. Lowe	256,805	Apr. 18	1220	366	21	1192
Buckle. Suspender	G. R. Kelsey	253,394	Feb. 7	246	71	21	368
Buckle. Suspender	F. B. Spooner	257,777	May 9	788	220	21	1428
Buckle. Trace	M. Z. Johnson	257,336	May 2	231	65	21	1262
Buckle. Trace	J. Thomas	256,075	Apr. 4	394	107	21	1016
Buckle. Trace	M. E. Zeller	258,205	May 16	1302	369	21	1581
Buckle. Trace	M. E. Zeller	259,970	June 20	1386	373	21	1948
Buckle. Tug	M. T. Shadduck	255,341	Mar. 21	1140	306	21	849
Buckwheat hulling and separating machine	W. A. Cowley	259,670	June 20	996	266	21	1883
Buckwheat-hulling machine	G. S. Cranson. (Reissue)	10,001	Apr. 25	1706	478	21	1271
Buffing and polishing machines. Roll for	G. H. P. Flagg	257,308	May 2	189	54	21	1315
Buffing or polishing machine-roll	G. H. P. Flagg	254,811	Mar. 14	445	120	21	721
Buffing-tool	F. W. Stone	257,903	May 16	940	262	21	1464
Bug-catching machine. Potato	F. D. Casey	254,459	Mar. 7	15	4, 5	21	641
Bugs and worms. Compound for destroying carpet	J. S. Vandenbergh	256,414	Apr. 11	830	.....	21	1008
Buggies. Head-block for side-bar	A. D. Hickok	255,288	Mar. 21	1069	287	21	836
Buggy. Adjustable	W. T. Angus	252,411	Jan. 17	895	248	21	164
Buggy-body	J. L. Dolson	259,270	June 6	479	126	21	1177
Buggy. Side-spring	G. Pennoyer	254,839	Mar. 14	485	130	21	727
Building-block. Foundation	M. R. Marks	254,489	Mar. 7	55	14	21	647
Building-blocks. Manufacture of	J. J. Schillinger	252,283	Jan. 10	704	198	21	127
Building. Fire-proof	J. Arbuckle	253,658	Feb. 14	568	160	21	453
Building-ventilator	J. McDonough	256,021	Apr. 4	332	88	21	1006
Buildings. Construction of	A. J. Chase	255,595	Mar. 28	1457	391	21	959
Buildings. Funnel-block for partitions of	D. Shea and R. Trefethen	257,771	May 9	761	218	21	1496
Bullet-patching machine	H. Borchardt	258,528	May 23	1699	480, 481	21	1107
Bullet-patching machine	A. C. Hobbs	257,584	May 9	562	157	21	1385
Bullet-patching machine	A. C. Hobbs, T. V. Boyden, and C. R. Richards.	257,585	May 9	563	157, 158	21	1385
Bung	H. F. Gaines	252,037	Jan. 31	1596	426	21	983
Bung and bushing for beer-barrels. Combined	P. Madlener	258,448	May 23	1606	454	21	1291
Bung-bush wrench	C. Trapp	257,414	May 2	325	92	21	1239
Bung cutting and compressing machine	J. Franzmann	254,298	Feb. 28	1356	373, 374	21	600
Bung. Racking	J. S. Lippe	253,932	Feb. 21	926	258	21	520
Bureau, &c.	G. F. Richardson	258,604	May 30	1601	508	21	1633
Bureaus, &c. Machine for making rail-pieces for	G. Luppert	259,180	June 6	377	99	21	1760
Burglar-alarm	G. P. Conant	255,722	Mar. 28	1607	435	21	937
Burglar-alarm	J. Giles	252,095	Jan. 10	510	141	21	95
Burglar-alarm	W. B. Howell	256,321	Apr. 11	734	200	21	1081
Burglar-alarm	J. V. Knight	256,145	Apr. 11	497	135	21	1040
Burglar-alarm	S. D. Lake	253,070	Jan. 31	1701	469	21	311
Burglar-alarm	W. D. Maloney	257,356	May 2	285	72	21	1327
Burglar-alarm	P. Moran	258,458	May 23	1618	457	21	1503
Burglar-alarm. Car-door	J. D. Hollister	255,988	Apr. 4	397	78	21	999
Burglar-alarm. cut-out	W. H. Sawyer	252,200	Jan. 10	700	198	21	126
Burglar-alarm. Electric	M. H. Kerner	254,336	Feb. 28	1396	385	21	608
Burglar-alarm. Electric	H. C. Roome	254,699	Mar. 7	305	81	21	690
Burglar-alarm. Portable	J. H. Rose	254,383	Feb. 28	1450	397	21	616
Burglar-alarms. Electrical connection for	J. A. Davis	259,895	June 20	1199	321	21	1917
Burial-case	J. Askins	252,170	Jan. 10	600	169	21	109
Burial-case	J. H. Hedenberg	256,565	Apr. 18	1093	299	21	1144
Burial-cases. Shipping-box for	G. W. Dow	259,961	June 20	1401	377	21	1951
Burial-casket	H. Hutchinson	253,708	Feb. 14	689	178	21	463
Burner: *See* Air and gas burner. Gas-burner. Hydrocarbon-burner. Lamp-burner. Paint-burner. Smoke-burner. Vapor-burner. Vapor-retort burner.							
Burning air and hydrocarbon vapors. Device for	M. G. Fagan	252,307	Jan. 17	770	214	21	144
Burnishing-tool	F. Pease	258,315	May 23	1451	412	21	1564
Butchering apparatus	G. F. Dickinson	252,083	Jan. 10	497	138	21	93
Butter and lard cutter	P. F. Moroney	260,310	June 27	1811	491	21	2022
Butter-cask	J. K. Hamlin	255,974	Apr. 4	581	73	21	997
Butter. Cooling	W. S. Osborn	259,907	June 20	1228	345	21	1952
Butter, &c. Cooling and refrigerating	W. Tunstill	259,783	June 20	1151	305, 306	21	1908
Butter-cutter	J. Porsch, Jr.	252,698	Jan. 24	1222	342	21	296
Butter for cooking purposes. Compound to be used in the place of	S. H. Cochran	258,992	June 6	149	.....	21	1730
Butter-mold	J. De Carly	256,467	Apr. 18	913	255	21	1155
Butter-pail covers. Fastening for	C. L. Stephens	254,848	Mar. 14	494	132	21	729
Butter-pail ear and cover fastening	J. H. Gunn	254,959	Mar. 14	642	175	21	756
Butter-print press	L. Coates and J. T. Criswell. (Reissue.)	10,120	June 6	497	129	21	1780
Butter-tray	W. R. Wilcox and N. E. Brown	256,183	May 16	1271	360	21	1225
Butter. Treating	G. W. Kendall and R. R. Roberts	253,850	Feb. 14	775	.....	21	490

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Butter-worker	G. A. Blanchard	254,068	Feb. 21	1111	310	21	552
Butter, &c. Wrapper and package for	S. H. Smith	256,064	Apr. 4	377	103, 104	21	1014
Button	C. E. Bailey and W. R. Talbot	253,573	Feb. 14	471	133	21	437
Button	B. Block	254,913	Mar. 14	585	157	21	746
Button	W. P. Dolloff	255,787	Mar. 28	1622	436	21	939
Button	C. W. Ehman	259,958	June 13	527	138	21	1792
Button	B. Fischer	258,853	May 30	2001	540	21	1684
Button	F. H. Goldthwait	259,303	June 13	529	140	21	1703
Button	C. H. Goodwin	253,370	Feb. 7	217	62	21	363
Button	F. S. Harrington	259,855	June 20	1238	330	21	1893
Button	M. Loewenthal	255,640	Mar. 28	1509	405	21	919
Button	E. H. Royce, F. W. Allen, and M. H. Fuller.	256,056	Apr. 4	369	101	21	1012
Button	D. M. J. Wall	255,551	Mar. 28	1396	377	21	898
Button	W. H. Ward	256,417	Apr. 11	899	231	21	1099
Button	G. K. Webster	256,775	Apr. 18	1264	356	21	1166
Button	E. Pflug	254,849	Mar. 14	467	131	21	727
Button and button-fastening	S. M. Williams	258,336	May 23	1475	420	21	1508
Button and cravat-fastener. Collar	W. M. Hasel	259,656	June 13	974	260	21	1872
Button and fastening. Combined	J. Wilde	260,267	June 27	1756	474	21	2013
Button and means for attachment	C. Newburgh	252,944	Jan. 10	683	193	21	194
Button attachment	S. H. Benoist	257,644	May 9	630	177	21	1389
Button, &c. Cuff	D. Lubin	256,015	Apr. 4	385	96	21	1004
Button. Cuff	J. G. Kearsing	257,719	May 9	729	203	21	1416
Button-die	F. A. Smith, Jr	253,635	Feb. 14	537	154	21	448
Button-fastener	F. A. Smith, Jr	253,637	Feb. 14	538	155	21	448
Button-fastener	P. H. Sweet, Jr	257,531	May 9	477	133	21	1372
Button-fastener	J. Weidenmann	253,901	Feb. 21	878	247	21	514
Button-fastener	G. W. Prentice	253,096	Jan. 31	1735	479	21	317
Button-fastening	G. W. Prentice	253,627	Feb. 14	527	152	21	447
Button-fastening	F. A. Smith, Jr	253,636	Feb. 14	536	154	21	448
Button-fastening	F. A. Smith, Jr	257,690	May 9	604	169	21	1383
Button-fastening	M. B. Scott and W. F. Bill	260,126	June 27	1586	427	21	1997
Button. Hinged-shoe	C. C. B. Carlton and H. W. Clapp	257,369	May 2	170	48	21	1312
Button-hole cutter	D. S. Smith	259,430	June 13	691	183	21	1692
Button-hole cutter	C. E. Langmaid	252,781	Jan. 24	1316	360	21	242
Button-hole-cutting machine	A. R. Boynton and W. C. Locke	257,464	May 9	394	111	21	1358
Button-making molds. Device for making	F. Van Patten	257,537	May 9	482	134	21	1373
Button-making molds. Device for making	G. E. Adams	254,252	Feb. 28	1307	362	21	562
Button or stud	A. C. Greene	256,211	Apr. 11	583	162	21	1056
Button or stud	J. H. Wright	253,467	Feb. 7	334	93	21	402
Button. Separable	A. H. Alderman	259,972	June 20	1389	373	21	1949
Button. Separable	A. K. Hawley	257,696	May 9	707	195	21	1418
Button. Separable	D. Humphreys	259,159	June 6	348	92	21	1756
Button-setting instrument	G. W. Prentice	252,699	Jan. 24	1229	349	21	298
Button-setting machine	A. Eppler, Jr	256,650	Apr. 18	1152	318	21	1189
Button. Sleeve	F. F. Bloren	254,067	Feb. 21	1150	310	21	552
Button. Sleeve or other	S. Moore	254,035	Feb. 21	1051	293	21	541
Button. Spring	L. Goulding	252,311	Jan. 17	772	215	21	144
Button. Swivel	S. O. Parker	252,500	Jan. 17	1013	282	21	184
Buttons. Attaching	S. D. Jordan	258,880	Jan. 31	1456	407	21	371
Buttons, &c. Composition for	T. Guilford	253,900	Feb. 7	30	.....	21	358
Buttons from plastic material. Manufacture of	P. L. Sylvester	258,502	May 23	1666	.....	21	1691
Buttons. Instrument for attaching	J. W. Davis	256,327	Apr. 11	702	191	21	1075
Buttons. Instrument for setting	F. H. Farnsworth	256,307	Apr. 11	715	194	21	1077
Cab	F. Forder	256,473	Apr. 18	982	257	21	1137
Cable. Anti-induction	W. R. Patterson	259,511	Jan. 17	1015	283	21	185
Cable-roads. Covering the slot of	M. J. Whaley	254,254	Mar. 14	501	134	21	730
Cable-way. Underground	H. Casebolt	256,881	Apr. 25	1395	382, 383	21	1217
Cables. Apparatus for taking in, stopping, and stowing wire and other rope	J. Taylor	251,744	Jan. 3	68	19, 20	21	14
Caddy. Revolving	J. H. Burgess and J. R. Bancroft	257,646	May 16	870	244	21	1453
Cake and confectionery machine	J. H. Mitchell	257,043	Apr. 25	1580	443, 444	21	1240
Cake-pan	J. R. Connor	260,166	June 27	1699	440	21	1993
Cake-pan frame	W. J. Casbeer	258,498	Jan. 17	919	254	21	188
Cakes. Machine for jellying and decorating	D. M. Holmes	259,542	June 13	834	220, 221	21	1860
Calcimine	C. E. Hecht and W. S. Davis	254,647	Mar. 7	249	.....	21	629
Calcining-furnace	E. Protzman, C. Adams, and A. Longmore.	256,168	Apr. 11	516	141, 142	21	1043
Calendar	J. Cassons	258,597	June 6	38	9	21	1701
Calendar	G. F. Goodell	255,078	Mar. 14	603	215	21	784
Calendar	T. H. Hovenden	254,014	Feb. 21	1021	269	21	536
Calendar	T. H. Hovenden	254,015	Feb. 21	1024	276, 277, 278	21	537
Calendar	G. E. Sanford	255,198	Mar. 21	951	254, 255	21	616
Calendar. Time-piece	A. T. Serfert and L. H. Vollert	252,695	Jan. 24	1141	300	21	212
Calender for cloth and other fabrics	H. Feerster	258,285	May 23	1345	361	21	1545
Calipers	G. W. Jesson	259,164	June 6	356	94	21	1757
Calipers	E. C. Smith	256,962	Apr. 4	376	103	21	1014
Calipers	L. B. Woodruff	252,410	Jan. 17	894	248	21	164
Calipers	E. Witham	255,556	Mar. 28	1402	379	21	889
Calk	W. Clark	256,376	May 23	1590	431, 432	21	1278
Cambering-machine							
Camera: *See* Folding camera. Photographic camera. Solar camera.							
Camera attachment	W. L. Brown	256,966	Apr. 25	1500	421	21	1234

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Camera-box	E. B. Barker	253,567	Mar. 28	1415	381, 382	21	902
Can: *See* Cracker and grocer's can. Cream-can. Creaming-can. Fruit-can. Jacketed can. Milk-can. Oil-can. Packing-can. Refrigerating-can. Sheet-metal can. Swinging can.							
Can	J. Simpson	253,318	Feb. 7	188	46	21	373
Can-cap	C. W. Lyon	253,075	Jan. 31	1707	471	21	312
Can-capping machine	J. Roberts	253,104	Jan. 31	1743	482	21	318
Can-capping machine	J. C. Winters	256,090	Apr. 4	408	111	21	1019
Can-covers. Securing	E. Bottenberg	259,800	June 20	1172	313	21	1912
Can-filling apparatus	W. West	259,442	June 13	705	187	21	1895
Can for ivory-black, &c	W. D. Carter	252,076	Jan. 10	488	135	21	91
Can-labeling machine	J. F. Chase	254,864	Mar. 14	511	137	21	738
Can nozzle. Shipping	F. C. Wilson and Z. H. Bools	257,129	Apr. 25	1670	469	21	1265
Can-opener	A. W. Lyman	254,488	Mar. 7	54	13	21	647
Can-opener	W. B. Montgomery	255,300	Mar. 21	1200	321	21	920
Can-opener	F. Sharp	253,433	Feb. 7	291	63	21	395
Can-opener	F. C. Wilson	259,446	June 13	712	189	21	1808
Can-spout	J. C. Winter	254,895	Mar. 14	564	151, 158	21	742
Cans and preserving their contents. Method of and apparatus for filling							
Cans. Apparatus for crimping the ends upon circular	W. West	259,443	June 13	707	157, 188	21	1825
Cans. Sealing	F. B. Ginn	253,036	Jan. 31	1652	458	21	304
Canal-boat	J. Baker	253,965	Feb. 21	964	267	21	526
Candle. Electric	L. Soligneo	257,776	May 9	787	220	21	1498
Candle for electric lighting	J. B. J. Mignon	253,698	Feb. 14	777	221	21	490
Candle holder. Electric	C. A. Cheever	259,367	June 13	614	163	21	1808
Candle holder. Illuminating	R. F. W. Loper	259,500	Jan. 17	1100	307	21	190
Candles. Shade or globe holder for	D. Leary	257,097	Apr. 25	1763	438	21	1246
Candlestick. Miner's	J. C. Hume and T. A. Tate	255,995	Apr. 4	305	80	21	1001
Cane and umbrella. Combined	G. T. Smith	253,897	Feb. 21	874	246	21	513
Cane, cigar-case, pipe-bowl, &c. Combined	D. Crowley	253,011	Jan. 31	1690	450	21	289
Cane-cutting machine. Sugar	F. A. Bonnefin	254,914	Mar. 14	566	157, 158	21	746
Cane-juice, sirup, &c., with sulphuric acid, &c. Bleaching	A. G. Fell	254,471	Mar. 7	28	.....	21	643
Cane-mill	D. Wilde	255,228	Mar. 21	994	266	21	883
Cane-mill and process of extracting saccharine substances	G. W. Soule	254,575	Mar. 7	157	39	21	665
Cane mill. Sugar	D. Stewart	256,739	Apr. 18	1248	351	21	1163
Cane mill. Sugar	J. Stubbs	253,782	Feb. 14	729	209	21	482
Cane-stripper	W. P. Gard	256,047	May 16	1112	310	21	1495
Cane, umbrella-handle, &c	T. V. Keam	255,299	Mar. 21	1084	291, 292	21	839
Canister or store-can	D. F. Goodyear	252,759	Jan. 24	1987	303	21	237
Canopy, awning, and tent frame	W. B. Garver and E. Varian	258,911	June 6	51	13	21	1703
Canopy-frame	C. Wittenberg	255,063	Mar. 14	890	219	21	787
Cant-dog	E. Mansfield	259,564	June 13	859	228	21	1852
Canvas bag for hams	L. V. Walkley	255,221	Mar. 21	985	264	21	882
Cap. Band	S. Simonson	260,332	June 27	1834	495, 496	21	2025
Cap. Boy's	A. Frankenberg	259,521	June 13	809	213	21	1843
Cap or hat	D. Fox	260,185	June 27	1656	449	21	1997
Capstan. Combined steam and hand power	H. J. Johnson	252,039	Jan. 10	446	121, 122	21	84
Capsule-filling apparatus	J. Schmidt	255,660	Mar. 28	1549	417	21	927
Capsule-machine	A. Wood	256,519	May 23	1667	417	21	1605
Capsules. Machine for cutting off	L. J. Wohnlich and R. J. Scholes	255,889	Apr. 4	23	25	21	908
Capsules. Manufacture of metallic	A. Sichel	257,060	Apr. 25	1633	456	21	1258
Car	T. L. Wilson	252,830	Jan. 24	1301	368	21	254
Car air-buffer	W. Crouch	259,634	June 13	949	253	21	1857
Car. Ballast	D. B. Harmon	257,160	May 2	19	6	21	1294
Car-brake	A. Bailey	255,462	Mar. 28	1318	355	21	894
Car-brake	A. E. Beattie	256,353	May 23	1492	405	21	1571
Car-brake	J. B. Bray	256,635	Apr. 18	1104	310	21	1157
Car-brake	J. H. Burks	256,876	Apr. 25	1301	361	21	1216
Car-brake	G. O. S. Conway	257,660	May 9	649	169	21	1403
Car-brake	G. W. Friel	253,031	Jan. 31	1645	456	21	303
Car-brake	C. Higham	252,662	Jan. 24	1169	331	21	219
Car-brake	A. J. Kelly	255,431	Mar. 28	1254	336	21	874
Car-brake	J. W. Kenady	254,434	May 23	1569	451	21	1598
Car-brake	J. F. Mallinckrodt	256,017	Apr. 4	328	87	21	1005
Car-brake	J. F. Mallinckrodt	256,018	Apr. 4	330	87, 88	21	1005
Car-brake	A. F. Martel	251,723	Jan. 3	41	12	21	9
Car-brake	J. Meissner	256,790	Apr. 18	1211	339	21	1176
Car-brake	W. F. Mills and T. Isbister	259,194	Jan. 10	542	151, 158	21	100
Car-brake	W. Nurse	260,116	June 27	1575	494	21	1985
Car-brake	J. L. Poalk	259,773	June 20	1141	302	21	1906
Car-brake	D. P. Prescott	256,160	Apr. 11	514	141	21	1043
Car-brake	J. G. Schiller	255,530	Mar. 28	1384	373, 374	21	896
Car-brake	W. C. Schultze	256,485	May 23	1647	465, 466	21	1598
Car-brake	L. H. Sholder	259,920	June 20	1217	353	21	1836
Car-brake	A. C. Springer	256,484	Apr. 18	1064	300	21	1150
Car-brake	S. H. Terry	256,956	June 6	107	28	21	1713
Car-brake	J. Thompson	259,660	June 6	238	63	21	1794
Car-brake	R. J. Wilson and A. Snyder	253,949	Feb. 7	79	25	21	360

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Car-brake	D. W. Woods	257,803	May 9	818	229	21	1433
Car brake and coupling	N. O. Swenson	256,264	May 23	1493	383, 384	21	1584
Car brake and starter	H. Hinckley and E. Culver	259,013	June 6	177	47, 48	21	1725
Car-brake. Automatic	C. W. Lanpher	253,398	Feb. 7	250	72	21	366
Car-brake. Automatic	S. P. Tallman	256,074	Apr. 4	391	106, 107	21	1016
Car-brake. Automatic	D. Terrey	256,615	May 30	1812	512	21	1635
Car-brake. Automatic	J. A. Millholland	255,633	Mar. 28	1582	409	21	921
Car brake. Coal	C. E. Kendall	256,495	Apr. 18	941	263	21	1130
Car brake. Railway	E. P. Vining. (Reissue)	10,677	Apr. 4	451	128	21	1026
Car brake. Railway	J. G. Klett	254,330	Feb. 28	1400	365	21	699
Car. Cattle	E. Kohler	256,707	Apr. 18	1198	334, 335	21	1174
Car. Cattle	E. Kohler	260,289	June 27	1797	467	21	2030
Car. Cattle	H. Townsend	254,346	Feb. 28	1301	339	21	501
Car. Chair sleeping	M. B. Church	259,485	June 13	769	202, 203	21	1836
Car. Coal	J. B. Collin	253,585	Feb. 14	485	137, 138	21	449
Car. Combined parlor and sleeping	J. A. Schmitz	251,737	Jan. 3	60	17	21	13
Car-coupling	G. H. Adam	260,766	June 20	1157	302	21	1900
Car-coupling	P. A. Aikman	256,531	Apr. 18	1020	270	21	1132
Car-coupling	C. G. A. Alexander	256,943	Apr. 25	1402	419	21	1260
Car-coupling	J. W. Allen and A. B. Poynor	255,907	Apr. 4	191	49	21	984
Car-coupling	L. Anderson	259,972	June 20	1260	373	21	1949
Car-coupling	A. N. Armstrong	251,811	Jan. 3	157	43	21	20
Car-coupling	G. T. Arnold	260,149	June 27	1618	435	21	1991
Car-coupling	J. M. Bailey	256,541	May 30	1732	467	21	1619
Car-coupling	J. E. Barrett	254,290	Feb. 28	1313	364	21	503
Car-coupling	J. Barrett	259,792	June 20	1168	310	21	1910
Car-coupling	L. N. Bedford	259,691	June 6	261	69	21	1730
Car-coupling	M. Bergan	256,953	Apr. 25	1467	417	21	1260
Car-coupling	M. A. Bessette	253,575	Feb. 14	473	134	21	437
Car-coupling	D. Bevis	251,709	Jan. 3	98	25, 28	21	18
Car-coupling	J. and J. Dillon and H. L. Berger	255,940	Mar. 21	1007	269	21	886
Car-coupling	F. J. Blanke	256,277	Apr. 11	676	184	21	1071
Car-coupling	J. C. Bleeker	256,846	May 30	2064	568	21	1668
Car-coupling	G. F. Bond	255,942	Mar. 21	1009	270	21	878
Car-coupling	P. M. Bracelin	256,550	May 30	1731	469	21	1620
Car-coupling	J. Bradley	257,817	May 9	831	231	21	1435
Car-coupling	S. R. Brady	259,356	June 13	594	157	21	1804
Car-coupling	S. Bray	255,761	Apr. 4	11	4	21	953
Car-coupling	S. Bray	258,704	May 30	1930	545	21	1635
Car-coupling	T. Breen	259,999	June 27	1429	388, 389	21	1960
Car-coupling	J. E. Bronson	259,358	June 13	597	158	21	1805
Car-coupling	R. M. Brooks	257,148	May 2	5	2	21	1289
Car-coupling	R. M. Brooks	259,804	June 20	1175	314	21	1919
Car-coupling	R. M. and J. M. Brooks	255,972	Mar. 14	795	213	21	792
Car-coupling	C. Browning	254,106	Feb. 28	1137	317	21	864
Car-coupling	C. Browning	254,107	Feb. 28	1138	318	21	864
Car-coupling	M. W. Bruce	255,508	Mar. 28	1446	389	21	902
Car-coupling	E. J. Burns	257,208	May 2	69	21	21	1294
Car-coupling	G. Butler	253,638	Feb. 21	891	238	21	560
Car-coupling	G. Cade	254,009	Mar. 7	198	50	21	671
Car-coupling	L. L. Chase	254,111	Feb. 28	1143	319	21	865
Car-coupling	S. C. Collins	259,681	June 20	1194	319	21	1916
Car-coupling	E. A. Converse and N. T. Griffin	259,398	June 13	765	207	21	1838
Car-coupling	G. O. S. Conway	257,650	May 9	648	181	21	1403
Car-coupling	C. K. Cordrey	256,882	Apr. 25	1398	375	21	1208
Car-coupling	L. J. Cralle	255,601	Mar. 28	1483	398	21	910
Car-coupling	J. J. Currier	260,171	June 27	1674	441	21	1994
Car-coupling	C. L. Dahlberg	251,819	Jan. 3	198	55	21	35
Car-coupling	H. P. Daly	251,703	Jan. 3	21	6	21	6
Car-coupling	N. L. Davis and J. H. McIntyre	259,495	June 13	561	137	21	1791
Car-coupling	F. F. Dearing	256,128	Apr. 11	478	130	21	1037
Car-coupling	D. Dill	257,923	May 16	965	259	21	1440
Car-coupling	J. N. Doles	256,202	Apr. 11	577	156	21	1054
Car-coupling	W. C. Donaldson	259,549	June 13	793	209	21	1846
Car-coupling	R. H. Dowling	253,197	Jan. 10	625	177	21	114
Car-coupling	D. B. Duncan	257,675	May 9	654	188	21	1402
Car-coupling	W. L. Everit	258,039	May 16	1100	300	21	1493
Car-coupling	W. H. Farra, W. J. Clanahan, and J. Ellis	255,154	Mar. 21	901	241	21	808
Car-coupling	D. Fetters	254,472	Mar. 7	20	8	21	643
Car-coupling	L. H. Finney	260,153	June 27	1653	440	21	1997
Car-coupling	J. C. Fowler	253,399	Jan. 10	747	200	21	134
Car-coupling	D. France	259,841	June 20	1214	326	21	1926
Car-coupling	L. W. Gates	253,998	Feb. 21	1001	280	21	533
Car-coupling	D. M. Geese and J. Sants	254,253	Mar. 14	636	178	21	785
Car-coupling	J. B. Gleason	259,129	June 6	317	84	21	1749
Car-coupling	E. Glover	254,001	Feb. 21	1003	280	21	533
Car-coupling	N. J. Glover	256,996	Apr. 25	1533	430	21	1240
Car-coupling	B. P. Goodrich	253,668	Jan. 14	1116	313	21	208
Car-coupling	L. T. Goss	254,706	Mar. 7	186	168	21	704
Car-coupling	D. A. Grant	257,317	May 2	205	97	21	1318
Car-coupling	E. W. Grant	256,746	May 30	1976	557	21	1663
Car-coupling	J. L. Griffin	253,037	Jan. 31	1652	458	21	304
Car-coupling	W. Hallett	258,656	May 16	1121	314	21	1498
Car-coupling	G. M. Harbaugh	259,534	June 13	823	217	21	1845
Car-coupling	S. A. V. Hartwell	255,623	Mar. 28	1488	399	21	915
Car-coupling	S. A. V. Hartwell	260,195	June 27	1668	458	21	1999
Car-coupling	L. Hatfield	259,307	June 13	540	148	21	1794

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Car-coupling	M. Herrera	253,204	Feb. 7	33	11	21	352
Car-coupling	T. J. Hilliard	255,994	Apr. 4	292	76	21	999
Car-coupling	D. W. Hodges	259,014	June 6	179	48	21	1725
Car-coupling	G. F. Hoeffer	260,295	June 27	1791	485	21	2019
Car-coupling	G. H. Hollister	255,967	Apr. 4	295	77	21	999
Car-coupling	G. W. Holmes	259,153	June 6	340	99	21	1754
Car-coupling	C. L. Horack	252,767	Jan. 24	1239	364	21	239
Car-coupling	C. L. Horack	253,050	Jan. 31	1697	462	21	307
Car-coupling	D. T. Hubbell	257,011	Apr. 25	1547	434	21	1943
Car-coupling	E. H. Janney	254,093	Feb. 21	1115	319	21	353
Car-coupling	F. Johnson	252,775	Jan. 24	1300	367	21	241
Car-coupling	J. Jordan and E. H. Gillon	259,576	June 6	486	137	21	1778
Car-coupling	H. M. Keith	259,315	June 13	549	144	21	1796
Car-coupling	L. King	254,984	Mar. 14	678	193	21	769
Car-coupling	L. King	256,435	Apr. 11	864	241	21	1104
Car-coupling	M. W. Lane	253,783	Feb. 14	653	188	21	467
Car-coupling	E. Lasher	254,098	Feb. 21	1043	{290 291	21	540
Car-coupling	J. R. Lawrence	255,062	Mar. 14	807	216	21	785
Car-coupling	J. D. Lewis	257,347	May 2	246	69	21	1325
Car-coupling	A. Leyden	253,399	Feb. 7	252	73	21	389
Car-coupling	L. Long	256,086	May 16	1153	323	21	1503
Car-coupling	C. E. Macarthy	254,347	Feb. 28	1409	{387 388	21	610
Car-coupling	C. E. Macarthy	258,088	May 16	1155	324	21	1503
Car-coupling	H. Marcheter	257,878	May 16	910	254	21	1479
Car-coupling	T. McCabe	254,354	Feb. 28	1417	390	21	611
Car-coupling	C. D. McCormack	256,152	Apr. 11	503	137	21	1041
Car-coupling	R. N. McKay	254,033	Feb. 21	1049	292	21	541
Car-coupling	H. B. McMurray and L. Scott	252,238	Jan. 10	676	192	21	123
Car-coupling	H. B. McMurray and L. Scott	259,570	June 13	606	230	21	1854
Car-coupling	W. J. McTighe	257,359	May 2	258	73	21	1327
Car-coupling	W. Melius	257,176	May 2	36	12	21	1287
Car-coupling	J. H. Meredith	259,032	June 6	202	54	21	1728
Car-coupling	F. Miller	257,234	May 2	109	31	21	1300
Car-coupling	H. Mitchell	259,331	June 13	570	150	21	1800
Car-coupling	J. C. Mitchell	259,647	June 13	965	257	21	1870
Car-coupling	M. A. Moran	257,363	May 2	262	74	21	1328
Car-coupling	A. Morrison	257,886	May 16	918	256	21	1461
Car-coupling	W. L. Moseley and D. Cessna	256,358	Apr. 11	774	213	21	1088
Car-coupling	F. M. Mullen	257,180	May 2	40	13	21	1288
Car-coupling	J. E. Murphy	259,417	June 13	674	179	21	1819
Car-coupling	S. Oar	257,372	May 2	270	77	21	1330
Car-coupling	G. T. Osborne	253,885	Feb. 21	861	243	21	511
Car-coupling	J. H. Patterson	257,974	May 16	1030	285	21	1479
Car-coupling	S. A. Perry	252,985	Jan. 31	1561	435	21	290
Car-coupling	A. H. Pickel	259,204	June 6	402	107	21	1764
Car-coupling	J. A. Porter	253,697	Feb. 14	526	151	21	446
Car-coupling	W. Powers	259,914	June 20	1296	347	21	1933
Car-coupling	C. Pratt and J. A. Sullivan	251,940	Jan. 3	310	84	21	53
Car-coupling	D. P. Prescott	253,554	Feb. 14	451	128	21	434
Car-coupling	J. H. Putnam	254,373	Feb. 28	1441	394	21	615
Car-coupling	C. W. Rasmusen	259,719	June 20	1068	284	21	1894
Car-coupling	H. G. H. Reed	258,807	May 30	2040	576	21	1674
Car-coupling	A. Rice	256,959	Apr. 25	1572	396	21	1213
Car-coupling	A. Rice	260,124	June 27	1585	427	21	1968
Car-coupling	E. J. Roberts	252,520	Jan. 17	1024	265	21	168
Car-coupling	W. J. Roberts	255,117	Mar. 21	849	227	21	799
Car-coupling	S. J. Rossman	260,052	June 27	1490	401	21	1972
Car-coupling	T. C. Ryan	254,709	Mar. 7	309	88	21	891
Car-coupling	H. A. Sampsell	258,320	May 23	1455	413	21	1564
Car-coupling	A. Schulenburg	257,944	May 2	120	34	21	1302
Car-coupling	W. Scott	259,909	Jan. 24	1363	381	21	250
Car-coupling	L. A. Stith	257,760	May 9	791	221	21	1498
Car-coupling	A. Story	259,435	June 13	607	185	21	1823
Car-coupling	W. G. Strubbe	257,529	May 9	474	131	21	1379
Car-coupling	S. and R. S. Tappenden	256,762	Apr. 18	1251	352	21	1163
Car-coupling	M. R. Thurber	255,701	Mar. 28	1502	425	21	932
Car-coupling	T. V. Tucker	259,946	June 6	455	120	21	1773
Car-coupling	G. Tuerkisch	255,213	Mar. 21	975	261	21	820
Car-coupling	W. T. Van Dorn	258,160	May 16	1246	351	21	1520
Car-coupling	C. Van Smith	255,057	Mar. 14	780	208	21	780
Car-coupling	F. Voegtle	256,770	Apr. 18	1259	354	21	1125
Car-coupling	F. A. R. Von Bernewitz	258,168	May 16	1253	{353 354	21	1501
Car-coupling	J. F. Wallace	253,946	Feb. 7	76	24	21	360
Car-coupling	W. Ward	259,611	June 13	917	{244 245	21	1802
Car-coupling	W. W. Watkins	254,258	Mar. 14	500	133	21	730
Car-coupling	H. Wells	251,978	Jan. 3	358	95	21	61
Car-coupling	H. Wells	251,979	Jan. 3	353	95	21	61
Car-coupling	L. Wilkerson	252,562	Jan. 17	1071	286	21	194
Car-coupling	L. T. Williams and E. D. Knight	253,800	Feb. 14	748	214	21	425
Car-coupling	C. P. Willson	254,754	Mar. 7	371	97	21	701
Car-coupling	C. P. Willson	257,119	Apr. 25	1669	467	21	1965
Car-coupling	J. D. Wilson	258,185	May 16	1273	361	21	1525
Car-coupling	J. T. Wilson and J. H. Simpson	259,980	June 20	1358	366	21	1943
Car-coupling	M. Winter, Sr	253,201	Feb. 14	749	214	21	485
Car-coupling	O. F. Wood	255,748	Mar. 28	1644	445	21	943
Car-coupling	G. Woodring	257,891	May 9	817	229	21	1433
Car-coupling	E. W. and S. C. Woolley	256,198	Apr. 11	556	159	21	1050
Car-coupling	T. C. Steward	255,547	Mar. 28	1391	376	21	897
Car-coupling attachment	J. T. Wilson	259,959	June 20	1357	366	21	1943
Car-coupling link	J. H. Alker	253,653	Feb. 14	557	159	21	451
Car-coupling links. Machine for bending							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Car coupling. Street	O. A. A. Mödal	254,350	Feb. 28	1421	391	21	612
Car-coupling tongues. Die for manufacturing	W. C. Kreegher	256,147	Apr. 11	499	136	21	1040
Car-coupling tool	B. Askew	256,611	Apr. 18	1076	303	21	1179
Car-door	T. Eubank	257,660	May 9	674	187	21	1407
Car-door fastening	C. C. Kilts	252,384	Jan. 17	839	238	21	139
Car-door fastening. Freight	J. Jackson and J. W. Brockway	254,691	Mar. 14	457	124	21	723
Car door. Freight	T. McNally and W. H. Glasgow	255,648	Mar. 28	1516	406	21	940
Car-door lock	J. W. Kreppe	252,080	May 16	1146	321	21	1501
Car door. Grain	M. Graff	255,980	Mar. 21	1053	293	21	934
Car door. Grain	A. E. Pepper	214,669	Mar. 7	294	77	21	688
Car door. Grain	J. H. Wickes	254,758	Mar. 7	367	96	21	709
Car-door hanger	D. F. Van Liew	254,849	Mar. 14	555	148	21	740
Car. Dumping	T. M. Hall	259,973	June 6	481	126	21	1777
Car. Dumping	F. P. Johnson	254,138	Feb. 28	1172	328	21	570
Car. Dumping	A. Park	251,931	Jan. 3	301	83	21	58
Car. Dumping	J. N. Rice	259,585	June 13	883	235	21	1856
Car. Dumping	I. B. Robbins	255,868	Apr. 4	160	43	21	977
Car. Dumping	S. R. Wheeler	254,188	Feb. 28	1243	340	21	578
Car for railways. Wrecking and construction	L. K. Jewett	252,679	Jan. 24	1194	{334 335	21	221
Car-frame	T. A. Brant and C. D. Harris	258,763	May 30	1870	545	21	1655
Car. Freight	J Dalgneau	259,750	June 20	1112	296	21	1902
Car. Hand	H. H. Sessions	255,664	Mar. 28	1589	420	21	968
Car-heater	P. S. Ewins and F. A. Wiswell	258,394	May 23	1539	437	21	1579
Car-heater	F. S. Heath	257,385	May 2	215	60, 61	21	1319
Car-heater	J. Johnson	253,369	Feb. 7	230	67	21	367
Car-heater	D. M. Kirkpatrick	254,096	Apr. 4	317	83	21	1003
Car-heater	J. E. Steger	255,690	Mar. 28	1567	429	21	959
Car heater. Railway	W. C. Baker	253,253	Feb. 7	84	26	21	361
Car heating and ventilating apparatus	L. B. White and L. Henderson	257,795	May 9	808	{226 227 469 470	21	1431 311
Car-motor. Spring	W. T. Larimore	253,079	Jan. 31	1703			
Car-mover	G. P. Conant	254,801	Mar. 14	435	117	21	719
Car-mover	J. D. Lawrence	255,630	Mar. 28	1508	405	21	919
Car-moving apparatus	P. J. Stone	259,586	June 13	898	239	21	1859
Car-propeller	J. H. Cole	256,292	Apr. 11	697	{189 190	21	1074
Car-propeller	H. E. Depp	255,496	Mar. 28	1355	360	21	887
Car. Railway	I. Blumenthal	257,843	May 16	867	243	21	1458
Car. Railway	C. H. Bradley	256,631	Apr. 18	1100	309	21	1156
Car. Railway	A. Estrado	253,993	Feb. 21	994	{276 277 278	21	531
Car. Railway	M. H. Landers	256,308	May 23	1443	400	21	1563
Car. Railway	J. Maclachlan	256,346	Apr. 11	755	{207 208	21	1085
Car. Railway	J. P. Maher	251,787	Jan. 3	190	34, 35	21	23
Car. Railway	J. Patterson	258,594	May 30	1767	505	21	1631
Car. Railway	W. P. Prewitt	252,855	Jan. 24	1425	397	21	259
Car-replacer	J. Lafferas	254,898	Mar. 14	473	127	21	725
Car-replacer	J. E. Norwood	257,827	May 9	842	235	21	1436
Car-roof	H. Aldridge. (Reissue.)	10,006	Jan. 10	750	211	21	135
Car-roof	G. B. Simonds	252,532	Jan. 17	1039	289	21	166
Car running-gear. Railway	B. C. Wilson	258,918	Jan. 31	1504	419	21	940
Car. Safety	A. A. Starr	256,757	Apr. 18	1247	350	21	1183
Car-seat	E. L. Bushnell	260,168	June 27	1685	439	21	1993
Car-seat	E. T. Starr	253,851	Feb. 21	945	263	21	563
Car-seat attachment	I. M. Van Wagner	258,167	May 16	1253	353	21	1521
Car-seat lock	A. Loeffelbols	254,298	Feb. 28	1273	353	21	567
Car shield. Railway	S. C. Mason and J. L. Hanson	257,231	May 2	104	30	21	1299
Car-shunter	L. Cohina	256,545	Apr. 18	1004	282	21	1141
Car signal and speed-indicator	W. J. Kidd	259,870	June 20	1348	334	21	1925
Car. Sleeping	M. B. Church	259,496	June 13	778	{205 206	21	1837
Car. Sleeping	W. H. Paige	259,382	June 13	571	151	21	1800
Car-spring	J. B. N. Berry	255,835	Apr. 4	101	27	21	968
Car-spring	G. F. Godley	259,381	June 13	631	167	21	1811
Car-spring	C. T. Schoen	255,900	Mar. 21	955	255	24	817
Car-spring	C. Scott and C. T. Schoen	251,730	Jan. 3	63	17	24	13
Car-starter	J. L. Barker and W. D. Slauson	255,238	Mar. 21	1085	289	21	825
Car-starter	L. Helm	253,044	Jan. 31	1661	460	21	306
Car-starter	D. Negrotto, Jr., and W. B. Fleming.	256,941	June 6	87	23	21	1709
Car-starter	J. B. Rohrer and A. Goodhart	259,215	June 6	413	110	21	1765
Car-starter	C. B. Underhill	255,054	Mar. 14	774	207	21	779
Car-step. Safety	T. H. Doyle	258,901	June 6	41	10	21	1701
Car. Stock	W. T. Abbott	259,071	June 6	250	67	21	1738
Car. Stock	G. D. Burton	251,695	Jan. 3	13	3, 4	21	5
Car. Stock	J. S. Butterfield	252,863	Jan. 31	1439	402	21	306
Car. Stock	J. B. Calkins	256,877	Apr. 25	1302	391	21	1216
Car. Stock	G. J. Cline	252,259	Jan. 10	743	207	21	133
Car. Stock	J. Edmonds	260,009	June 27	1439	399	21	1964
Car. Stock	F. W. Franklin and W. F. Flaggs	254,949	Mar. 14	630	{168 170 198	21	774
Car. Stock	J. Heward	257,708	May 9	716	{199	21	1414
Car. Stock	I. Kitsee	252,777	Jan. 24	1312	366	21	241
Car. Stock	J. R. McPherson	256,153	Apr. 11	504	138	21	1041
Car. Stock	G. F. Oehrl	253,418	Feb. 7	274	79	21	493
Car. Stock	G. F. Patterson	259,399	Jan. 17	977	244	21	168
Car. Stock	A. K. Penta	254,448	Feb. 28	1517	415	21	629
Car. Stock	J. H. Shellabarger	256,189	Apr. 11	807	221	21	1051
Car. Stock	H. S. Wolfe	258,804	Feb. 14	753	215	21	466

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Car. Stock	H. S. Wolfe	256,185	Apr. 11	555	151, 158	21	1049
Car-switching system. Street	T. B. Estep	256,675	June 20	1001	266	21	1284
Car. Track-clearing	C. L. Heywood	256,140	Apr. 11	491	133, 134	21	1039
Car-unloaders. Nose-casting for	G. W. Rolph	258,606	May 30	1604	309	21	1633
Car ventilating apparatus. Railway	J. A. Stephan and J. Gieriet	259,938	June 20	1327	356, 357	21	1938
Car-ventilation	J. Shepherd	251,957	Jan. 3	327	89	21	57
Car ventilation. Railway	E. H. Mott	254,148	Feb. 28	1183	331	21	570
Car-ventilator	E. O. Connors	253,188	Feb. 7	17	6	21	340
Car-ventilator and dust-arrester	C. C. MacConnell	252,300	Jan. 17	867	241	21	160
Car-wheel	J. V. Dinsmore	252,745	Jan. 24	1271	357	21	234
Car-wheel	T. R. Knauss	256,841	Apr. 25	1250	361	21	1208
Car-wheel	F. M. Taneyhill	257,625	May 9	610	170	23	1304
Car-wheel	N. Washburn	254,250	Feb. 28	1205	361	21	591
Car-wheel	N. Washburn	258,206	May 23	1306	365	21	1554
Car-wheel	J. N. Smith	259,738	June 20	1081	288	21	1897
Car wheels and axles. Tool for dressing	I. M. Van Wagner	253,241	Feb. 7	71	22	21	359
Car-window screen and blind	J. H. Reynolds	257,068	Apr. 25	1011	458	21	1265
Car windows. Dust-guard for railway	L. Hetfield	255,109	Mar. 21	918	245	21	810
Cars. Apparatus for delivering coal from	W. E. Eastman	253,521	Feb. 14	412	115	21	498
Cars. Apparatus for heating freight	W. E. Chamberlain	254,091	Feb. 21	1114	311	21	558
Cars. Apparatus for lighting the platforms and steps of railway	J. Arkell	253,149	Jan. 31	1796	499	21	388
Cars, &c. Apparatus for ventilating	O. H. Jadwin	258,425	May 23	1576	448	21	1586
Cars. Cable-traction for street	F. W. Marston	252,115	Jan. 10	572	147	21	99
Cars. Draft and buffing apparatus for railway	W. Norris	251,927	Jan. 3	297	81	21	51
Cars from their traction-rope. Connecting and disconnecting	J. R. Sprague	257,099	Apr. 25	1644	460	21	1260
Cars. Grain-door for freight	R. F. Bridewell	253,673	Feb. 14	565	165	21	455
Cars. Gripe for propelling	M. D. Fitzgerald	252,752	Jan. 24	1281	360, 361	21	236
Cars. Heating and ventilating	E. J. Brooks	259,472	June 13	745	197	21	1833
Cars. Label-rack for freight	R. K. Evans	256,929	Apr. 25	1334	377	21	1206
Cars. Lever for starting and moving	G. W. Hunt	260,100	June 27	1554	418	21	1961
Cars or carriages. Device for lighting the steps of	P. McGuire	252,880	Jan. 31	1469	411	21	273
Cars. Pin and link carrying device for railway	M. C. Jones	252,673	Jan. 24	1197	335	21	222
Cars. Ventilating	I. H. Wright	253,466	Feb. 7	334	92, 93	21	402
Caramel-cutter	L. K. Böhm	252,351	Jan. 17	816	227	21	151
Carbon-conductors. Apparatus for the preparation of	H. S. Maxim	255,309	Mar. 21	1100	297	21	842
Carbon conductors. Manufacture of	L. H. Latimer	252,386	Jan. 17	861	238	21	150
Carbons. Manufacturing	E. L. C. D'Ivernois	255,948	Apr. 4	945	63	21	901
Carbureting air. Process of and apparatus for	D. M. Small	254,943	Feb. 28	1296	350	21	590
Carbureting gas or air. Device for	J. Haberstick	253,209	Feb. 7	31	10	21	352
Carburetor	I. W. Shuler	257,947	May 2	128	35	21	1302
Carburetor	G. Resnor	259,921	June 20	1306	350	21	1935
Carburetor. Air	W. M. Jackson	253,713	Feb. 14	638	181	21	465
Carburetors. Oil-distributing mechanism for	B. A. Sheldon	253,895	Feb. 21	872	246	21	513
Card and domino combined. Playing	W. W. Bainbridge	259,076	June 6	256	68	21	1728
Card-case	J. J. Hoey	256,687	Apr. 18	1172	329	21	1169
Card-grinding machine	W. C. Rood	259,216	June 6	414	116	21	1766
Card holder. Show	S. L. Cohen	253,910	Feb. 21	887	250	21	515
Card. Playing	H. Pennington	257,184	May 2	44	14	21	1289
Card-support	J. T. Lemaire	255,519	Mar. 28	1300	366, 367	21	892
Carding-engine feeding device	J. Greaves. (Reissue)	10,054	Mar. 7	411	100	21	708
Carding-engines. Condensing-cylinder for	P. Laflin	258,656	May 30	1863	526	21	1645
Carding-engines. Mechanism for operating doffer-combs of	G. Bernhart	253,260	Feb. 7	93	29	21	362
Carding-machine	J. Wall	252,891	Jan. 24	1363	365	21	252
Carding-machine creel-frame	M. A. Furbush	254,301	Feb. 28	1300	374, 375	21	601
Carding-machine feeding device	E. Geesner	257,313	May 2	198	56	21	1316
Carding-machine rollers. Tooth for cleaning	T. Kershaw and H. E. Cunningham	253,065	Jan. 31	1697	467	21	310
Carding-machine top-flat	W. E. Whitehead	258,620	May 30	1620	514	21	1636
Carding-machines. Mechanism for operating doffer-combs of	H. and H. A. Stone	258,499	May 23	1663	476	21	1601
Carriole	G. Bungars	254,196	Feb. 28	1234	344	21	580
Carpet-cleaning machine	A. P. Stevens	251,806	Jan. 3	145	41	21	97
Carpet-exhibitor	A. Peterson	259,713	June 20	1061	293	21	1893
Carpet-fastener	J. A. Cole	256,918	Apr. 25	1518	425	21	1227
Carpet-fastener	W. E. Henderson	257,163	May 2	94	6	21	1285
Carpet-fastener	S. J. Spitler	257,624	May 9	600	170	21	1394
Carpet fastener and stair-rod securer. Combined stair-	C. D. Stone	252,850	Jan. 24	1430	395	21	258
Carpet fastener. Stair	M. Krickl	258,660	Jan. 24	1287	336	21	224
Carpet fastener. Stair	C. D. Stone	257,251	May 2	126	36	21	1503
Carpet-lining	E. A. Galbraith	260,091	June 27	1536	414	21	1979
Carpet-lining	H. A. Stearns	257,587	May 9	472	131	21	1378
Carpet or oil-cloth fastener	E. E. Johnson	259,864	June 20	1240	333	21	1924
Carpet-stretcher	J. M. Hawley	256,417	May 23	1567	445	21	1584
Carpet-stretcher	W. E. Henderson	256,838	Apr. 25	1347	360	21	1208
Carpet-stretcher	W. E. Henderson	256,839	Apr. 25	1348	360	21	1208
Carpet-stretcher	M. Winter, Sr	253,409	Feb. 7	326	91	21	401
Carpet-sweeper	C. O. Allen	256,343	May 23	1491	422	21	1549
Carpet-sweeper	E. H. Eddy	259,374	June 13	621	165	21	1809
Carpet-sweeper	B. Figer	257,927	May 16	908	271	21	1469
Carpet-sweeper	J. Hinkley	259,856	June 20	1233	331	21	1923
Carpet-sweeper	H. A. Mueller	259,901	June 20	1262	344	21	1931
Carpet-sweeper	R. Soper	255,883	Apr. 4	84	23	21	905
Carpet-sweeper	M. G. Stelp	252,402	Jan. 17	860	245	21	162
Carpet-sweeper	C. L. Travis	254,410	Feb. 28	1481	406	21	6.2

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Carpet-sweeper	C. L. Travis	260,257	June 27	1743	471	21	2001
Carpet-sweeper	H. S. Wing	258,089	June 6	246	66	21	1736
Carpets. Tumbling-reel for cleaning	T. A. Naylor	258,706	May 30	2030	573	21	1672
Carriage-bodies, &c. Reticulated work for	P. Barry	259,461	June 13	726	193	21	1869
Carriage-bow	H. S. Wing	257,988	May 2	138	39	21	1285
Carriage-bow iron	J. B. Platt	254,367	Feb. 28	1498	402	21	614
Carriage-bows. Side piece for	F. A. Wittich	259,785	June 20	1154	307	21	1909
Carriage-brake	W. H. Tufts	258,783	May 30	2027	572	21	1672
Carriage-button	O. Close	258,219	May 23	1539	379	21	1544
Carriage. Child's	J. N. Haselip	253,601	Feb. 14	499	142	21	442
Carriage. Child's	A. Heim	255,855	Apr. 4	198	33	21	971
Carriage. Child's	C. Wittenberg	258,279	May 23	1401	366	21	1565
Carriage. Child's	W. H. Weaver	258,831	May 30	2067	583	21	1689
Carriage-curtain fastening	M. Webster	254,121	Feb. 28	1281	349	21	579
Carriage. Hand	G. C. Bovey	259,876	June 27	1764	477	21	2014
Carriage-jack	W. A. Foster	256,389	Apr. 11	717	195	21	1072
Carriage-jack	W. J. Scott	255,880	Apr. 4	61	22	21	904
Carriage-jack	H. W. Blood	259,985	June 6	474	125	21	1776
Carriage or buggy top mold	P. A. Larivière	259,177	June 6	372	99	21	1709
Carriage-seat	J. W. Sutphin	251,945	Jan. 3	337	91	21	58
Carriage shifting-rail	J. K. Powers	258,268	May 23	1378	360	21	1551
Carriage side-curtain	J. E. Bell	255,375	Mar. 21	1178	316	21	855
Carriage-spring	A. Conner	259,371	June 13	619	164	21	1889
Carriage-spring	G. Pennoyer	259,398	Jan. 17	769	219	21	147
Carriage-spring	R. Butterworth and R. S. Bolles	254,099	Mar. 7	195	49, 50	21	971
Carriage-top	P. Dansereau	251,794	Jan. 3	22	6	21	6
Carriage-top	C. and G. Gross	256,955	May 16	1118	312	21	1496
Carriage-top	F. Meinecke	257,175	May 2	36	12	21	1287
Carriage-top	R. J. Parrett	255,388	Mar. 21	1123	302	21	846
Carriage-top	B. B. Noyes	258,709	May 30	2031	573	21	1672
Carriage-top clamp	G. Asher	254,447	Mar. 7	2	1	21	630
Carriage-top joint	C. M. Fogelquist	253,364	Feb. 7	312	69	21	388
Carriage-tops. Folding bracket for	P. B. Kinsman and J. Merrill	255,637	Mar. 28	1505	404	21	918
Carriage-wrench	E. A. Robbins	257,072	Apr. 25	1618	453	21	1256
Carrier: *See* Cash-carrier. Egg-carrier. Grain-carrier. Hay-carrier. Hose-carrier. Lantern-carrier. Package-carrier. Rolling-mill rail-carrier. Slop and swill carrier. Store-service carrier. Thrashing-machine straw-carrier. Tool-carrier. Trace-carrier.	J. H. Crittenden	254,223	Feb. 28	1236	300	21	557
Cart. Dumping	U. R. Nichols	256,308	Apr. 11	779	214	21	1069
Cart. Dumping	J. M. Jones	258,674	May 16	1139	319	21	1599
Cart. Hand	G. W. Whitson	260,209	May 23	1400	396	21	1955
Cart. Self-loading excavating	H. McGee	255,678	Apr. 4	151	40	21	975
Cartridge	T. Shaw	255,542	Mar. 28	1367	374	21	898
Cartridge	B. B. Stocking	259,537	June 6	442	117	21	1771
Cartridge	F. Chillingworth. (Reissue)	10,190	May 23	1717	485	21	1611
Cartridge-box	J. H. Gill	257,680	May 16	888	246	21	1456
Cartridge capping and decapping implement	A. Werden	254,757	Mar. 7	378	98	21	702
Cartridge capping and uncapping implement	D. Kirkwood	259,172	June 6	368	97	21	1703
Cartridge-extractor. Hand	H. W. Mason	253,213	Feb. 7	44	14	21	354
Cartridge-machine	T. G. Bennett	260,153	June 27	1616	438	21	1991
Cartridge-package	A. J. Hobbs	256,684	Apr. 18	1108	289	21	1149
Cartridge-primer	W. S. Smoot	255,822	Apr. 4	53	23	21	965
Cartridge-primer	G. P. Salisbury	260,362	June 27	1689	494	21	2024
Cartridges. Closing blank	T. A. Shinn	253,634	Feb. 14	536	154	21	449
Carving-fork	J. B. H. Leonard	256,288	Apr. 11	610	169	21	1056
Carving-fork guard	S. S. Ward	258,172	May 16	1267	356	21	1528
Carving-fork guard	E. E. Wood, Jr	257,497	May 2	343	96	21	1342
Carving-fork guard	G. Mathis	257,957	May 16	1001	279	21	1475
Carving machine. Wood							
Case: *See* Artist's case. Book-case. Brush-case. Burial-case. Butter-case. Card-case. Cell-case. Chain show-case. Check-case. Clock-case. Dressing-case. Egg-case. Embroidery-case. File-case. Letter-case. Metallic case. Needle-case. Organ-case. Packing-case. Pencil-case. Piano-case. Pocket-case. Sample-exhibiting case. Seed-case. Shot-case. Shot show-case. Show-case. Spectacle-lens case. Stereoscope-view case. Ticket-case. Toilet-case. Watch-case.							
Case for displaying wares	J. R. Hunter	253,290	Feb. 7	126	37	21	388
Case for preserving food	J. J. Hoyt	257,010	Apr. 25	1546	434	21	1243
Cash-box system. Automatic	J. C. Martin	255,985	Mar. 28	1360	369	21	898
Cash-carrier. Automatic	W. S. Lamson	258,584	May 30	1774	501	21	1635
Cash-carrier. Automatic	W. S. Lamson	258,585	May 30	1775	502	21	1635
Cash-registering apparatus	M. Campbell	253,506	Feb. 14	396	110, 111	21	466
Casket trimming or ornament	D. Avery	257,455	May 9	367	100	21	1326
Caster	S. W. Babbitt	257,270	May 2	149	42	21	1277
Caster	E. L. Babcock	257,144	May 2	2	1	21	1251
Caster	J. Scott and F. G. Avers	257,634	May 9	648	178	21	1420
Caster	C. H. Tuxsy	260,259	June 27	1746	473	21	2011
Caster. Furniture	W. T. Kostalski	258,954	Jun. 21	1540	431	21	1957

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'gs.	Official Gazette. Vol.	Official Gazette. Page.
Castor. Salt	J. J. Kittel	253,873	Apr. 4	145	39	21	975
Caster. Trunk	J. J. Cowell	256,078	Jan. 10	490	135	21	98
Caster. Trunk	J. J. Cowell	256,643	Apr. 18	1114	313	21	1139
Casting car-wheels. Mold for	J. Thierry	256,410	Apr. 11	826	229	21	1007
Casting car-wheels. Mold for	L. W. Washburn	254,561	Mar. 7	01	23	21	654
Casting compound ingots. Mold for	P. J. Fitzsimons	257,307	May 2	188	54	21	1315
Casting-flask	J. K. Dimmick	253,854	Feb. 21	822	233	21	504
Casting metals. Device for	R. Cross and J. Gabriel	257,558	May 9	517	144	21	1378
Casting metals. Mold for	J. L. Lewis	254,346	Feb. 28	1408	387	21	610
Casting pipe-elbows. Apparatus for	J. H. Insande	250,161	June 6	350	93	21	1756
Casting printers' leads. Mold for	L. B. Benton	254,792	Mar. 14	426	114	21	718
Casting shovel-blanks. Mold for	E. Smith	251,980	Jan. 3	329	90	21	57
Casting steel ingots. Process of and machine for	G. W. Billings. (Reissue)	10,082	Apr. 11	867	240	21	1108
Casting steel ingots. Process of and machine for	G. W. Billings	253,176	Feb. 7	5	2	21	347
Castings. Apparatus for forming molds for	S. J. Adams	258,206	May 23	1231	373	21	1541
Castings. Forming molds for	S. J. Adams	257,992	May 16	1043	280	21	1462
Castings. Machine for cleaning	S. Wier	254,855	Mar. 14	702	134	21	731
Castings. Making cores for	L. G. Goldsmith	256,309	Apr. 11	591	161	21	1055
Castings. Manufacture of chilled	J. R. Whitney	258,189	May 16	1270	360	21	1524
Castings. Method of and apparatus for forming molds for	S. J. Adams	257,991	May 16	1040	290	21	1462
Catarrh remedy	C. W. Schnell	259,590	June 13	890	.....	21	1857
Catheter. Double	E. Pfarre	256,300	Apr. 18	1050	286	21	1148
Cattle-fastener	C. H. T. Mann	257,172	May 2	32	11	21	1286
Cattle-tie	A. Bynell	252,424	Jan. 17	916	253	21	167
Cattle-tie. Safety	M. J. North	257,747	May 9	755	210	21	1421
Cauterizing apparatus	E. T. Brenot	255,582	Mar. 28	1441	387	21	907
Cell-case	I. Nichols	256,726	Apr. 18	1216	340	21	1177
Celluloid, cellulose, &c. Molded boat and other articles from	M. F. Davis	259,826	June 20	1900	321	21	1917
Celluloid collars. Machine for creasing, bending, and shaping	E. Cary	253,001	Jan. 31	1606	446	21	997
Cellulose and the manufacture of articles therefrom. Treatment of	A. Parker	257,607	May 9	589	.....	21	1390
Cement. Adhesive	S. C. Murray	257,601	May 9	583	.....	21	1390
Cement for uniting veneers, &c. Adhesive	W. Martien	259,181	June 6	378	.....	21	1760
Center-board boat	T. Clapham	258,375	May 23	1519	431	21	1576
Center-board for boats	M. W. Atwood. (Reissue)	10,105	May 9	850	177	21	1440
Center-board for vessels	J. G. W. Havens	259,302	June 13	541	142	21	1795
Centrifugal machine	W. Shears	255,685	Mar. 28	1563	420	21	928
Centrifugal separator	A. D. Bellinger	257,241	May 16	864	242	21	1452
Chain	J. M. Dodge	255,970	Apr. 4	249	64	21	991
Chain attachment. Watch	A. Uebele	259,247	June 6	456	120	21	1773
Chain-block. Differential	J. D. Davies	253,189	Feb. 7	17	6	21	350
Chain-bolt	C. H. Goebel	252,309	Jan. 17	772	215	21	144
Chain cross-bar	S. Davidson	254,531	Mar. 14	606	164	21	770
Chain cross-bar	S. Davidson	256,049	Apr. 18	1120	315	21	1100
Chain. Drive	J. M. Dodge	255,049	Apr. 4	948	64	21	991
Chain. Drive	J. M. Dodge	256,558	Apr. 18	1010	285	21	1142
Chain. Drive	W. D. Ewart	255,059	Apr. 4	261	67	21	993
Chain. Drive	W. D. Ewart	255,060	Apr. 4	262	68	21	993
Chain. Drive	E. L. Howe	255,994	Apr. 4	304	80	21	1001
Chain. Drive	C. H. Low	252,600	Jan. 24	1121	314	21	209
Chain. Drive	C. H. Low	256,014	Apr. 4	394	85	21	1004
Chain. Drive	D. D. McKernan	258,863	May 30	2039	592	21	1665
Chain. Drive	L. M. Rumsey	252,005	Jan. 3	392	106	21	67
Chain. Drive	J. H. Weaver	258,267	May 23	1397	395	21	1556
Chain. Drive	H. Gorman	258,411	May 23	1500	442	21	1583
Chain-link Ornamental	S. Davidson	253,351	Feb. 7	198	57	21	360
Chain machine	W. A. Reid	255,402	Mar. 21	1215	325	21	862
Chain. Neck or bracelet	D. S. Spaulding	254,512	Mar. 7	77	20	21	651
Chain. Ornamental	R. Barker	253,966	Feb. 21	964	268	21	526
Chain. Ornamental	W. W. Briggs	257,466	May 9	396	111	21	1358
Chain. Ornamental	S. Davidson	253,013	Jan. 31	1082	451	21	309
Chain. Ornamental	A. J. Harris	253,903	Feb. 7	33	11	21	392
Chain. Ornamental	H. Knickmann	259,173	June 6	369	97	21	1729
Chain. Ornamental	B. B. Lederer	258,064	May 16	1151	322	21	1502
Chain. Pitch	A. H. Wallis	254,739	Mar. 7	349	93	21	698
Chain show-case. Watch	E. A. Bliss	259,742	June 20	1102	294	21	1901
Chain. Watch	G. W. Clampitt. (Reissue)	10,000	Jan. 3	401	108	21	60
Chain-wheel	W. D. Ewart	253,904	Feb. 21	995	278	21	532
Chain-wrench	W. H. Brock	254,862	Mar. 14	508	136	21	732
Chair: *See* Adjustable chair. Barber's chair. Child's chair. Commode-chair. Dentist's chair. Folding chair. Gynecological chair. Hammock-chair. Invalid-chair. Opera-chair. Photographer's chair. Railway-chair. Reclining-chair. Rocking-chair. Tilting chair. Wheel or nursery chair. Wicker or rattan chair.							
Chair	C. Gallup	251,708	Jan. 3	26	7, 8	21	7
Chair	L. D. Gerwig	257,837	May 16	981	274	21	1471
Chair	J. Green	253,921	Feb. 21	907	253	21	518
Chair	S. L. Saunders	257,390	May 2	291	83	21	1283
Chair and couch. Combined	J. B. Welsh and H. Trudell	259,954	June 20	1348	363	21	1942
Chair and crib. Combined	J. B. Welsh and H. Trudell	259,953	June 20	1347	363	21	1942
Chair attachment	C. S. Bell	256,354	May 23	1494	425	21	1571
Chair back	M. Tonk and G. H. Howe	252,900	Jan. 31	1579	439	21	292
Chair brace	J. A Gallagher	256,562	Apr. 18	1021	288	21	1143
Chandelier	W. A. Hull	256,066	May 16	1132	317	21	1490
Chandelier	C. F. Jacobsen. (Reissue)	10,008	Jan. 10	702	211	21	136
Chandelier	S. S. Newton	256,787	Apr. 18	1044	295	21	1147

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'gs.	Official Gazette. Vol.	Official Gazette. Page.
Chandelier	S. S. Newton	257,054	Apr. 25	1390	446	21	1951
Chandelier	S. S. Newton	258,104	May 16	1176	329	21	1507
Chandelier	S. S. Newton	258,105	May 16	1178	330	21	1507
Chandelier	S. S. Newton	258,106	May 16	1180	331	21	1508
Chandelier	H. Wellington	260,145	June 27	1997	433	21	1999
Chandelier. Drop-light	J. Trigge	258,709	Jan. 24	1211	345	21	288
Chandelier. Extension	J. E. Brown	257,547	May 9	693	137	21	1175
Chandelier. Extension	J. T. Bruen	253,676	Feb. 14	580	166	21	456
Chandelier. Extension	W. Pickhardt and H. Endemann	258,919	Jan. 31	1526	419	21	600
Chandelier-hanger	G. W. Woodward	255,442	Mar. 29	1288	341	21	876
Chandelier-hanger. Adjustable	M. and J. K. McCahill	256,680	Apr. 18	1134	318	21	1162
Chandelier. Lamp	J. A. Evarts	256,323	Apr. 11	735	200	21	1061
Chandeliers. Counter-balance for extension	W. A. Hull	256,454	Apr. 18	900	258	21	1113
Channel and feather cutter	P. F. Barry	259,917	Jan. 31	1504	419	21	870
Channels through sand bars in harbors. Constructing	D. W. Williams	258,507	Jan. 17	1611	262	21	184
Chart. Dress	E. E. Palmer	256,388	Jan. 17	864	240 / 241	21	100
Chart for drafting garments	E. J. Linck	251,863	Jan. 3	334	91	21	58
Chart for drafting ladies' and children's garments	M. A. Start	254,080	Feb. 21	1113	311	21	552
Chasing and engraving machine	L. T. Carr	258,945	June 6	91	24	21	1710
Chatelaine	T. W. Richards	255,641	Mar. 28	1510	406	21	919
Check. Bank	E. S. Loomis	258,717	May 30	1942	549	21	1657
Check-case	J. S. Crane	259,944	June 20	1334	358	21	1919
Check-loop	A. Thilles	256,534	Apr. 18	990	279	21	1139
Check-register	A. H. Austin	258,008	May 16	1008	286	21	1467
Check-register	J. Renner	256,547	Apr. 18	1005	283	21	1141
Check-row attachment	J. H. Cox and J. F. Morrisey	259,217	June 6	414	110	21	1746
Checkers or draughts	F. Sanderson	253,835	Feb. 21	798	227	21	509
Cheese draining-table and mold	J. W. Blair and E. H. Wilder	254,294	Feb. 28	1330	372	21	709
Cheese-turner	A. Engi	253,118	Jan. 31	1739	488 / 489	21	981
Cheese-vat	G. H. Simon	10,046	Feb. 28	1594	417	21	696
Cheese-vat	A. Slaughter. (Reissue)	255,874	Apr. 4	146	39	21	975
Cherry-seeding machine	G. W. Knapp						
Chest: *See* Mail-chest. Medicine-chest. Meat and vegetable preserving chest.							
Child's chair	A. B. Stevens	253,390	Feb. 7	162	46	21	374
Child's chair and carriage	J. W. Kenna	254,023	Feb. 21	1037	289	21	539
Child's chair. Convertible	L. A. Chichester	259,368	June 13	615	163	21	1898
Child's-chair tray	R. L. Best	256,272	Apr. 11	672	182	21	1070
Chimney	J. M. Patterson	256,919	Apr. 25	1430	404	21	1284
Chimney-cap	J. Borland	258,982	June 6	137	38	21	1718
Chimney-cap	W. H. Payne	258,468	May 23	1098	460	21	1595
Chimney-cap	W. J. Pettingell	255,016	Mar. 14	715	193	21	799
Chimney-cap. Metallic	J. C. Schaefer	258,133	May 16	1212	341	21	1214
Chimneys. Apparatus for increasing the draft of	W. Pickhardt and H. Endemann	256,445	Apr. 11	873	.....	21	1106
Chimoline. Benzoate	W. Pickhardt and H. Endemann	254,096	Feb. 21	1119	.....	21	333
Chimoline. Manufacture of	W. Pickhardt and H. Endemann	252,846	Jan. 24	1415	.....	21	258
Chimoline. Preparation of	W. Pickhardt and H. Endemann	253,847	Jan. 24	1416	.....	21	258
Chimoline. Preparation of	W. Pickhardt and H. Endemann	256,444	Apr. 11	873	.....	21	1106
Chimoline. Salicylate of	G. R. Valentine	254,733	Mar. 7	345	91	21	697
Chisel. Mortising	H. McCobb	259,887	June 20	1286	330	21	1908
Chocolate-package							
Chopper: *See* Cotton-chopper.							
Christmas-tree. Imitation	A. Wengenroth	255,902	Apr. 4	186	48	21	981
Chroming fabrics	T. Simpson	254,713	Mar. 7	330	85	21	693
Chuck	E. Knight	253,460	Feb. 7	851	98	21	405
Chuck	E. S. Perot and H. C. Beitenman. (Reissue.)	10,104	May 2	374	105	21	1346
Chuck. Drill	J. A. Parks and G. V. Sheffield	260,314	June 27	1814	492	21	2023
Chuck. Drill	G. Rehfuss	256,720	Apr. 18	1227	344	21	1170
Chuck for screw-machines	H. K. Jones	259,948	Jan. 31	1538	430	21	906
Chuck for turning polygonal bodies. Lathe	H. C. Humphrey	255,060	Mar. 14	804	215	21	784
Chuck for watch-makers' lathes	G. R. Metten	259,892	June 20	1273	341	21	1900
Chuck-jaw. Reversible	C. Maduell	256,783	May 30	2016	569	21	1670
Chuck. Lathe	T. H. Costello	259,991	June 13	518	135 / 136	21	1791
Chuck. Lathe	L. R. Davis	260,005	June 27	1435	387	21	1963
Chuck. Lathe	S. J. Kirk	253,173	Mar. 21	994	247	21	811
Chuck. Lathe	J. N. Skinner	255,039	Mar. 14	757	204	21	776
Chuck. Lathe	J. C. Stevens	255,046	Mar. 14	765	205	21	777
Chuck. Planer	G. B. Durkee	256,656	Apr. 18	1129	317	21	1161
Chuck. Planer	H. Thomas	259,945	June 20	1335	359	21	1940
Chuck. Watch-maker's	J. Spickerman	253,479	Mar. 28	1503	351	21	894
Chucks. Jaw for lathe	J. C. Stevens	257,350	May 2	195	36	21	1283
Churn	J. L. Blackstock	254,909	Mar. 14	579	156	21	745
Churn	M. Brown, F. J. McFarland, and J. Brown.	259,474	June 13	748	198	21	1832
Churn	O. L. Bruner and W. Lewis	256,987	Apr. 25	1502	421	21	1295
Churn	W. C. Barrows	255,770	Apr. 4	23	7	21	954
Churn	G. N. Cleveland	254,614	Mar. 7	202	52	21	678
Churn	J. Cochran, Jr	250,975	Apr. 25	1509	424	21	1278
Churn	J. F. Ferguson	222,601	Jan. 10	506	140	21	94
Churn	J. Gifford	257,570	May 9	580	147 / 148 / 202 / 203	21	1389
Churn	R. H. G. Keenan	256,329	Apr. 11	740	203	21	1068
Churn	W. D. Leavitt	258,658	May 30	1985	538	21	1645
Churn	E. H. Marshall	259,885	June 20	1264	338	21	1889
Churn	A. W. Minot and M. Rhoades	253,679	Feb. 21	854	241	21	510
Churn	B. H. Overhiser	256,851	Apr. 25	1261	364	21	1211
Churn	C. W. Scoggs and A. Rittenhouse	251,803	Jan. 3	140	40	21	26
Churn	F. P. Stebbins	253,123	Jan. 31	1764	490	21	992

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Churn	V. Stirewalt	257,908	May 16	939	{281 288	21	1464
Churn	M. C. Wallace	253,961	Feb. 21	959	266	21	895
Churn-cover	E. C. Richardson	257,071	Apr. 25	1616	453	21	1265
Churn-dasher	B. S. Bridgman	258,985	Jan. 31	1608	444	21	226
Churn-dasher	D. E. Davis	255,604	Mar. 28	1406	394	21	911
Churn-dasher	C. Friedeborn	256,667	Apr. 18	1146	321	21	1164
Churn-dasher	T. A. Miller	255,319	Mar. 21	1114	309	21	645
Churn-dasher	F. T. Pinter	256,367	Apr. 11	785	216	21	1000
Churn-dasher	A. J. Taylor and M. A. Hamilton	254,335	Jan. 17	708	203	21	146
Churn-dasher	T. J. Harris and C. F. Greer	256,990	May 23	1430	405	21	1580
Churn-motor	W. McLachlan and A. McFarland	258,118	Jan. 10	537	150	21	100
Churn-motor	G. C. Quick	253,421	Feb. 7	260	69	21	394
Churn-motor	A. Schott and T. Leepy	255,121	Mar. 21	855	239	21	690
Churn-power	J. Wilson	257,797	May 9	611	267	21	1432
Churn-power. Steam	T. Mayhew	258,383	Jan. 17	708	210	21	146
Churn. Reciprocating	H. T. Davis	254,121	Feb. 28	1153	328	21	568
Churn. Rotary	S. Fessler	259,900	June 6	49	13	21	1783
Chute. Coal	T. R. Lidford	259,164	June 27	1557	430	21	1999
Chute. Coal	J. D. Pettit	258,055	Jan. 10	464	127	21	97
Cider and wine press	M. P. Schenck	258,134	May 16	1913	542	21	1514
Cider-mill	W. W. Bard	258,349	May 23	1467	423	21	1570
Cider-press	J. Stevens	255,694	Apr. 4	177	44, 47	21	979
Cigar	F. S. Kinney	256,079	May 16	1145	321	21	1501
Cigar	T. S. Luby	256,781	May 30	2014	568	21	1689
Cigar	W. B. Carpenter	253,841	Feb. 21	806	.....	21	501
Cigar and cigarette wrapper	J. E. Mergott	258,788	May 30	2021	570	21	1671
Cigar-box catch	E. S. May	256,003	May 16	1108	325	21	1605
Cigar-case	C. Bowman and F. W. Throne	255,921	Apr. 4	212	55	21	985
Cigar coloring and flavoring machine	L. Spindler	256,065	Apr. 4	378	104	21	1014
Cigar coloring and flavoring machine	C. A. Faas	257,925	May 16	967	270	21	1469
Cigar-cutter	G. H. Marsh and H. E. Bedell	253,301	Feb. 7	139	40	21	370
Cigar-cutter	W. J. Fitzgerald	258,753	Jan. 24	1282	361	21	238
Cigar-holder	A. C. Moss	255,320	Mar. 21	1115	309	21	845
Cigar-lighter	E. A. Parker	251,933	Jan. 3	303	83	21	53
Cigar-lighter	E. A. Parker	258,799	May 30	2032	574	21	1673
Cigar-lighter	A. Gordon	257,316	May 2	903	57	21	1317
Cigar-machine	F. Haehnel	259,638	June 13	954	{254 255	21	1868
Cigar-mold	F. C. Miller and H. C. Peters	257,735	May 9	745	207	21	1419
Cigar-mold	F. C. Miller and H. C. Peters	258,940	June 6	85	23	21	1709
Cigar-mold	G. Vollkommer	253,135	Jan. 31	1778	493	21	394
Cigar-mold press	R. Hayden	258,919	June 6	61	16	21	1705
Cigar-reamer	R. N. Oakman, Jr	260,117	June 27	1576	425	21	1985
Cigar-tip cutter	H. A. Cuppia	258,358	Jan. 17	894	249	21	153
Cigarette	S. Jacoby	256,483	Apr. 18	938	262	21	1130
Cigarette	W. Salomon	253,892	Feb. 21	868	245	21	512
Cigarette	H. H. Schleber	256,255	May 23	1361	391	21	1552
Cigarette	G. Golisach	256,673	Apr. 18	1153	323	21	1166
Cigarette-box	A. L. Munson	260,113	June 27	1568	423	21	1984
Cigarette-box	G. Rodrigues	258,140	Jan. 10	565	159	21	104
Cigarette-holder	F. S. Bartram	255,568	Mar. 28	1416	392	21	902
Cigarette-machine	J. Burns and A. Buckman	259,000	June 6	271	73	21	1741
Cigarette-machine	E. Side	252,811	Jan. 24	1305	{381 382 383	21	250
Cigarette-paper	A. V. D'Costa	259,437	Jan. 17	929	256	21	169
Cigarette-wrapper	E. A. G. D'Argy	254,929	Mar. 14	606	163	21	750
Circuits. Testing and breaking	W. R. Notting	260,043	June 27	1420	399	21	1970
Clamp:							
See Adjustable clamp. Box-pressing clamp. Carriage-top clamp. Cultivator-standard clamp. Hose-clamp. Plow-beam clamp. Rope-clamp. Saw-handle clamp. Spindle-clamp. Tubing-clamp.							
Clamp	J. S. Adams	256,530	Apr. 18	987	278	21	1138
Clamp	A. Kruiss	258,779	Jan. 24	1315	368	21	242
Clasp:							
See Album-clasp. Book-clasp. Corset-clasp. Corset-stiffener clasp. Glove and shoe clasp. Hat-clasp. Ticket-clasp.							
Clasp	W. G. Browne	256,364	May 23	1507	428	21	1574
Clasp	D. F. Hale	255,620	Mar. 28	1408	396	21	914
Clasp	B. F. Neal	253,414	Feb. 7	266	76	21	392
Clasp-hook for shirt-collars. Detachable	S. S. Grannis	256,314	Apr. 11	723	197	21	1079
Clasp or dress-supporter	H. C. Frank	259,002	June 6	164	44	21	1723
Clasp-reel for ribbons, &c	S. A. Hale	251,871	Jan. 3	231	64	21	49
Clay-ware. Decoration of	H. Sims	259,794	June 20	1076	296	21	1856
Clay. Lawning and cleaning	S. G. Phillips	258,796	Jan. 24	1342	375	21	246
Cleaner:							
See Axle-cleaner. Beiler-cleaner. Cotton-cleaner. Drill hole cleaner. Flue-cleaner. Grain-cleaner. Slate-cleaner. Steam-boiler cleaner.							
Cleaning cloths and other fabrics	E. I. Couch	260,168	June 27	1631	.....	21	1994
Clevis. Whiffletree	J. R. Smith	257,696	Apr. 25	1641	459	21	1269
Claw-thimbles. Machine for bending	S. Vanstone	254,949	Feb. 28	1304	{360 361	21	891
Clip:							
See Barber's paper-clip. Hame-clip. Tramway-clip. Yoke-clip.							
Clip for braid, tape, &c., in rolls	L. B. Goff	253,278	Feb. 7	112	34	21	365
Clip for holding books open	M. Stedwell	255,545	Mar. 28	1390	375	21	897

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Cloak	I. Lejda	259,304	June 13	857	146	21	1799
Cloak. Reversible	H. F. Bindseil	258,697	May 30	1982	544	21	1654
Cloak	A. E. Hotchkiss	258,421	May 23	1579	446	21	1595
Cloak	A. E. Hotchkiss	259,859	June 20	1825	331	21	1989
Cloak	T. Hollander	259,608	June 20	1688	273	21	1857
Cloak	A. M. Lane	253,287	Feb. 7	249	73	21	388
Cloak	E. Kahn	259,174	June 6	309	88	21	1729
Cloak. Alarm	E. Wemoch	254,418	Apr. 11	633	211	21	1889
Clock and watch escapement	G. W. and A. C. Sanford	258,689	May 30	1997	510	21	1654
Clock-bell	C. Votti	254,255	Apr. 11	632	176	21	1666
Clock. Calendar	J. R. Lomas	256,340	Apr. 11	750	208	21	1664
Clock-case	R. T. Triplett	255,355	Mar. 21	1158	320	21	881
Clock-cases. Manufacturing celluloid	J. R. Payson, Jr	258,691	May 30	2034	574	21	1673
Clock-dial	J. Schweitzer	254,386	Apr. 11	601	220	21	1662
Clock. Electric	W. D. Whalen	259,696	June 6	245	65	21	1735
Clock. Electric spring	F. A. Lane	257,787	May 9	736	205	21	1417
Clock-escapement	C. Reinhardt	256,473	May 23	1635	462	21	1596
Clock-escapement	A. E. Hotchkiss. (Reissue)	10,098	Mar. 14	894	250	21	788
Clock-movement	A. E. Hotchkiss	258,465	Jan. 17	964	268	21	175
Clock-movement	A. E. Hotchkiss	258,686	Jan. 24	1191	338	21	231
Clock-movement	F. A. Lane	256,798	Apr. 18	1139	325	21	1174
Clock-movement	F. A. Lane	257,085	Apr. 25	1588	430	21	1246
Clock-movement	B. B. Lewis	256,586	Jan. 17	1098	306	21	189
Clock-movement	B. B. Lewis	254,589	Jan. 17	1099	306	21	189
Clock-movement	A. E. Hotchkiss	253,998	Feb. 7	194	50	21	387
Clock-pendulum	J. W. Williams	244,836	Apr. 25	1464	411	21	1662
Clock-pendulums. Mechanism for regulating	D. F. Sweet	253,783	Feb. 14	731	200	21	528
Clock. Secondary electric	W. Barnes	254,101	Feb. 21	1121	313	21	554
Clock-springs. Machine for rolling blanks for	W. D. Davies	259,505	June 13	799	220	21	1830
Clock striking mechanism	L. H. Spelsier	256,618	May 30	2050	570	21	1677
Clocks. Electric motor for	A. C. Sanford	253,947	Feb. 21	942	260	21	883
Clocks. Ornamental attachment for	E. Y. Judd	257,339	May 2	934	66	21	1288
Clocks. Repeating mechanism for	A. Lemoine	256,799	Apr. 18	1200	335	21	1174
Clocks. Striking device for electric and other	J. Cassidy	256,918	May 23	1238	379	21	1544
Clog							
Closet:							
See Earth-closet. Water-closet.							
Cloth-cutting machine	W. R. Fowler	259,640	June 20	1213	332	21	1919
Cloth-folding machine	A. Winter	260,279	June 27	1756	475	21	2013
Cloth. Machine for arranging and piling	E. D. Waterman	259,784	June 20	1153	{306 307	21	1898
Cloth-steaming box	R. J. Walker	257,792	May 9	802	225	21	1430
Cloth-stretching machine	F. P. Upham, G. A. Saunders, and H. A. Sheldon.	258,947	June 6	94	24, 25	21	1711
Cloth-stretching machine	G. W. Voelker	257,698	May 9	613	171	21	1398
Cloth tentering, drying, and calendering machine	A. Woodman	253,806	Feb. 14	755	215	21	626
Clothes-bars. Folding	J. S. Gourley	259,745	May 30	1975	557	21	1662
Clothes-boiler	C. B. Veronee	258,067	Jan. 10	478	130	21	99
Clothes-drier	A. L. Abbey	257,631	May 9	616	172	21	1399
Clothes-drier	A. Hippchen	253,363	Feb. 7	253	68	21	385
Clothes-drier	T. Rowe	257,765	May 9	776	216	21	1425
Clothes-drier	G. H. Briggs	253,502	Feb. 14	796	169	21	625
Clothes-drier. Portable folding	H. Palmer	258,598	Jan. 17	1010	282	21	163
Clothes-drier. Rotary	T. L. Wiswell	255,746	Mar. 28	1642	445	21	948
Clothes-hanger	H. M. Swert	256,513	Apr. 18	989	271	21	1135
Clothes-horse	W. H. Josselyn	257,015	Apr. 25	1551	435	21	1244
Clothes-line fastener	J. T. Haskins	256,644	May 30	1847	521	21	1642
Clothes-pin	S. D. Johnston	260,207	June 27	1794	486	21	2019
Clothes-pin	S. Strong	257,967	May 16	1035	289	21	1491
Clothes-pin	L. A. Faulkner	254,396	Feb. 28	1351	373	21	889
Clothes-pounder	C. and T. Hanshaw	258,643	May 30	1846	{360 361	21	1641
Clothes-pounder	F. W. Sutton	257,783	May 9	793	221	21	1429
Clothes-pounder	D. A. Epperson	254,470	Mar. 7	27	6	21	643
Clothes-rack	W. H. McKenzie	253,061	Jan. 31	1717	474	21	313
Clothes-rack	G. Seymour	260,269	June 27	1830	495	21	2025
Clothes-rack	G. W. Houdlette	260,286	June 27	1793	485	21	2019
Clothes-reel	J. Knoche	254,222	Feb. 28	1270	352	21	568
Clothes-sprinkler	E. J. B. Whitaker	255,368	Mar. 21	1108	313	21	853
Clothes-sprinkler	A. M. Dennison	253,969	Feb. 21	969	275	21	921
Clothes-strainer	M. N. Lovell	253,537	Feb. 14	453	122	21	629
Clothes-wringer	T. Jones and J. Kiefer	258,983	Jan. 10	654	184	21	119
Clover-huller	C. J. Gibson	259,597	June 13	814	215	21	1844
Clutch	W. P. Hale	259,858	June 20	1239	309	21	1883
Clutch	I. L. Roberts	253,869	Feb. 21	864	244	21	911
Clutch	E. Wilkinson	256,988	June 6	199	51, 52	21	1715
Clutch	D. H. Merritt	253,063	Jan. 31	1719	{474 475	21	314
Clutch and brake for hoisting, &c. Friction	J. King	258,425	May 23	1569	451	21	1586
Clutch and loose pulley. Friction	J. R. Back	253,175	Feb. 7	4	1	21	347
Clutch. Friction	J. H. Blessing and R. R. Osgood	255,406	Mar. 28	1384	368	21	889
Clutch. Friction	S. S. Cook	252,152	Jan. 10	619	{174 175	21	113
Clutch. Friction	L. D. Dane	254,923	Feb. 28	1336	360	21	897
Clutch. Friction	A. M. English	255,757	Apr. 4	959	67	21	992
Clutch. Friction	J. H. Osborn	259,189	June 6	396	105	21	1743
Clutch. Friction	R. R. Osgood	254,923	Feb. 28	1281	{355 356	21	599
Clutch. Friction	J. Smith	258,975	Jan. 31	1572	430	21	998
Clutch. Friction	W. B. Tairo	260,253	June 27	1730	470	21	2010
Clutch. Friction	O. E. Wait	256,666	May 30	1907	530	21	1651
Clutch. Friction	B. F. Redford	258,472	May 23	1633	466	21	1606
Clutch mechanism for counter-shafting	J. Gibbins	257,466	May 9	627	{118 119	21	1363
Clutch. Shafting							

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Clutches. Expanding and contracting device for friction-	D. H. Merritt	256,236	Apr. 11	698	170	21	1061
Coal and iron unloader	A. Beckert	257,128	Apr. 25	1660	470 471	21	1267
Coal. Apparatus for unloading	W. Ilett	258,038	Jan. 10	444	121	21	84
Coal, corn, &c. Machine for reducing	R. Cook	257,061	May 9	650	188	21	1402
Coal-hod	W. M. Boyd	259,743	June 20	1103	294	21	1991
Coal, &c. Method of and apparatus for breaking down or getting	C. S. Smith and T. Moore	255,049	Mar. 14	739	204	21	776
Coal, ores, &c. Device for handling	A. Lawton	253,998	Feb. 21	917	255 256	21	519
Coal-screen	W. F. Dodge and T. M. Righter	256,967	Apr. 25	1582	498	21	1230
Coal-slack. Apparatus for burning	C. Taylor	258,910	Jan. 31	1495	417	21	278
Coat-hanger	W. B. Bisbee	254,451	Mar. 7	5	2	21	639
Coat-hook. Pocket	R. Onderdonk	253,942	Feb. 21	937	260	21	522
Coat. Reversible	J. Simmons	259,931	June 20	1319	354	21	1937
Coat. Water-proof	E. Landstreet and J. F. Towner	257,094	Apr. 25	1592	436	21	1245
Coating and painting exterior surfaces	M. B. Church	259,486	June 13	769	.....	21	1637
Cock. Air-brake	N. J. Paradise	259,710	June 20	1056	291	21	1893
Cock and faucet	S. S. Williams	260,073	June 27	1518	407	21	1975
Cock. Cylinder drain	J. B. Mooney	258,959	Jan. 31	1554	433	21	288
Cock for fire-engines. Relief	J. T. Houchens	253,479	Feb. 7	350	98	21	405
Cock. Steam-cylinder	L. Maxfield	253,405	Feb. 7	257	74	21	390
Cock. Stop and waste	J. Kelly	254,282	Apr. 11	607	165	21	1056
Cock. Waste compression	E. W. McCormick	257,222	May 2	105	30, 31	21	1269
Cocks. Combination instrument for cleaning gas-	M. Prior	259,717	June 20	1096	283	21	1894
Cockle-machine	A. Life	260,212	June 27	1091	457	21	2002
Cockle-separating machine	W. E. Gorton	256,674	Apr. 18	1153	323 324	21	1166
Coffee and nut roaster	T. F. McCaffrey	256,718	Apr. 18	1210	338	21	1176
Coffee and peanut roaster	C. L. Cole	256,498	Apr. 11	851	237	21	1161
Coffee and spice mill	T. A. Andrews	255,559	Mar. 28	1405	379	21	900
Coffee and spice mill	J. F. Lawrence	256,385	Apr. 11	609	165	21	1056
Coffee. Apparatus for cooling roasted	L. A. Ullrich	255,477	Mar. 28	1310	353	21	863
Coffee-beans. Apparatus for drying	W. A. Diesseldorff	258,439	Jan. 17	931	257	21	170
Coffee. Compound for flavoring	F. Bros	258,793	Jan. 24	1048	.....	21	231
Coffee. Machine for treating and bagging	G. W. and G. S. Hungerford	259,545	June 13	838	232	21	1946
Coffee-mill	F. H. Chapman	253,264	Feb. 7	98	30	21	363
Coffee-mill	W. H. Fleming	259,518	June 13	806	212	21	1942
Coffee-mill	S. H. Fountain	251,860	Jan. 3	219	62	21	39
Coffee-mill	T. Strobridge	259,730	June 20	1085	289	21	1890
Coffee-mill	R. L. Webb	254,414	Feb. 28	1465	407	21	623
Coffee-percolator	H. Beebe	257,641	May 9	627	176	21	1398
Coffee-percolator	J. C. Mackey	256,231	Apr. 11	619	168	21	1060
Coffee-pot	E. B. Chamness	251,696	Jan. 3	14	4	21	5
Coffee-pot	H. C. Fish	259,121	June 6	310	82	21	1748
Coffee-pot	J. McAnespey	258,786	May 30	9090	570	21	1670
Coffee-pot	F. Ohm	259,580	June 13	878	233	21	1956
Coffee-pot	M. Thomas	255,697	Mar. 28	1574	494	21	931
Coffee-pot	P. S. Paine	257,513	May 2	456	126	21	1389
Coffee. Preparation for clearing	A. Von Hofmann	256,062	Apr. 4	400	.....	21	1017
Coffee. Process of and apparatus for roasting	F. G. Fleury and E. D. Barker	255,965	Apr. 4	270	69, 70	21	994
Coffee-roaster	C. Abele	254,582	Mar. 7	168	41	21	667
Coffee-roaster	N. Harris	256,130	Apr. 11	490	133	21	1039
Coffee-roaster	E. A. Hartsell	254,547	Mar. 7	121	30	21	650
Coffee-roasting apparatus	H. Faulder	252,933	Jan. 31	1593	424 425	21	283
Coffee-substitute	L. Chiozza	252,429	Jan. 17	920	.....	21	166
Coffer-dam	H. P. Kirkham	253,067	Jan. 31	1606	468	21	310
Coffer-dam	R. P. C. Sanderson	259,218	June 6	415	110 111	21	1766
Coffin	C. H. Olson	255,112	Mar. 21	845	228	21	798
Coffin	C. H. Olson	254,496	Apr. 18	952	266	21	1132
Coffin	W. A. Richey	255,815	Apr. 4	76	21	21	983
Coffin	C. E. Van Duzen	256,161	May 16	1948	351	21	1589
Coffins. Manufacture of cement	T. E. Daniels	259,373	June 13	690	164 165 351 352	21	1899
Collar for railway-heads, carding-machines, &c.	R. Tatham	255,473	Mar. 28	1307	351 352	21	883
Coin-holder	P. O. Kornbeck	258,298	Jan. 10	661	186	21	180
Coin holder and counter	J. W. Elliot	253,979	Feb. 7	107	32	21	365
Coin tester and indicator	G. Smith and J. J. Wells	259,338	June 13	577	153	21	1691
Coke-crusher	J. R. Davis	258,743	Jan. 24	1329	356	21	234
Coke-oven	W. B. Smith	256,469	May 23	1651	467	21	1559
Coke-ovens. Apparatus for extinguishing fires in	J. H. Campbell	253,188	Feb. 7	12	4	21	349
Colander and fruit-press. Combined	L. Brownlow	256,797	May 30	1824	546	21	1654
Collar	F. Beiermeister, Jr	259,353	June 13	598	157	21	1894
Collar	R. S. Norton	253,759	Feb. 14	623	196	21	473
Collar and cuff	C. O. Kanouse	254,675	Mar. 14	529	141	21	735
Collar cap. Horse-	A. Waugh	256,065	Apr. 4	403	109	21	1018
Collar fastening. Horse-	J. W. Albright	258,342	May 23	1469	421	21	1560
Collar fastening. Horse-	O. S. Pitzy	260,048	June 27	1486	409	21	1971
Collar fastening. Horse-	A. B. Robinson	258,677	May 30	1694	535	21	1649
Collar folding and carting machinery	T. S. Wiles	256,334	May 23	1472	419	21	1568
Collar for dogs, &c	J. W. Ricker and T. S. Lewis	254,156	Feb. 28	1195	334	21	574
Collar. Horse-	C. G. Cale. (Reissue)	10,009	May 2	368	103	21	1247
Collar. Horse-	G. P. Cole	256,977	Apr. 25	1512	424	21	1227
Collar. Horse-	M. R. Dewlin	254,290	Feb. 28	1345	371	21	598
Collar. Horse-	W. H. Hall	257,602	Apr. 25	1538	438	21	1241
Collar. Horse-	J. Strama	255,206	Mar. 21	868	236	21	819
Collar or cuff of celluloid, &c.	A. A. Sanborn	258,429	May 23	1641	464	21	1557
Collar-pad	J. N. Neeson	254,499	Mar. 7	64	17	21	649
Collar pad. Horse-	E. L. McClain	259,709	June 20	1042	277	21	1890

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Collars. Combined shoulder and neck pad for horse-	J. R. Hamilton	252,032	Jan. 10	437	119	21	93
Collars. Metallic pad for horse-	A. C. Staples	254,172	Apr. 11	995	145	21	1045
Collyrium	A. Templeton	254,794	Mar. 7	334	.....	21	695
Color-producing acid. Manufacture of a new	C. Rumpff	256,361	Apr. 11	706	.....	21	1060
Colors or dye-stuffs. Manufacture of	H. Keechlin	253,721	Feb. 14	648	.....	21	487
Colors. Treating certain derivatives of coal-tar	E. D. Kendall	256,339	Apr. 11	741	.....	21	1068
Colors upon textile fabrics. Production of blue	H. Brunck	258,531	May 23	1705	.....	21	1666
Colors upon vegetable fiber. Producing azo-	T. Holliday	258,317	Jan. 17	778	.....	21	145
Coloring-matter from naphthylamine. Manufacture of	C. Rumpff	259,942	June 27	1790	.....	21	2008
Coloring-matter. Manufacture of	H. Keechlin	257,498	May 9	638	.....	21	1268
Coloring-matter. Manufacture of blue	J. H. Stebbins, Jr	258,274	Jan. 10	783	.....	21	130
Coloring-matter. Manufacture of blue	J. H. Stebbins, Jr	255,350	Mar. 21	1149	.....	21	859
Coloring-matter. Manufacture of red	E. Jacobsen	257,717	May 9	788	.....	21	1416
Coloring-matter or dye-stuff	J. H. Stebbins, Jr	253,443	Feb. 7	313	.....	21	396
Coloring-matter or dye-stuff	J. H. Stebbins, Jr	253,444	Feb. 7	313	.....	21	396
Coloring-matter or dye-stuff	J. H. Stebbins, Jr	253,445	Feb. 7	313	.....	21	396
Coloring-matter. Preparation of rosaniline-blue	O. Fischer	252,903	Jan. 10	638	.....	21	115
Coloring-matter. Production of	C. H. Rudolph	256,589	Apr. 18	1089	.....	21	1140
Coloring-matter. Rosaniline-red	O. Fischer	252,902	Jan. 10	631	.....	21	115
Coloring-matter to fabrics. Application of	A. Sansone	253,230	Feb. 7	90	19	21	357
Colors-matters. Manufacture of yellow	F. Graessler	253,598	Feb. 14	496	.....	21	448
Colter. Plow-	M. A. Spink	256,250	Apr. 11	647	175	21	1035
Colter. Rolling	F. B. Hunt	255,061	Mar. 14	806	216	21	784
Coltér. Rotary	O. J. Cerneyer	257,092	May 9	651	188	21	1409
Colter. Wheel-	W. B. Young	256,941	Apr. 25	1467	412	21	1238
Column, shaft, girder, &c	H. J. Harrison	256,478	Apr. 18	939	250 260	21	1139
Comb: *See* Curry-comb. Pocket-comb. Folding comb.							
Comb	G. J. Murdock	259,574	June 13	671	231	21	1855
Comb	W. and W. H. Noyes	258,948	May 23	1574	3-9	21	1551
Comb	V. W. Wilson	252,856	Jan. 24	1426	387	21	259
Comb-teeth. Machine for cutting and finishing	C. Poppenhusen	260,320	June 27	1818	493	21	2023
Combing-machine	A. Smith	254,714	Mar. 7	328	85	21	693
Commode	J. Bennor	253,838	Feb. 21	796	236	21	500
Commode	H. Loth	256,067	May 16	1154	323	21	1503
Commode	H. P. Stichter	253,954	Feb. 21	949	264	21	594
Commode	S. A. Emery	254,948	Mar. 14	619	167	21	758
Commode and slop-jar. Combined	J. W. Drew	253,519	Feb. 14	410	114	21	428
Commode and slop-pail combined. Portable	T. Russell. (Reissue)	10,049	Feb. 28	1567	417	21	631
Commode-chair	A. W. Elkins	253,656	Feb. 21	825	234	21	504
Compass. Transit-	G. R. Massey	252,485	Jan. 17	988	275	21	179
Compound engine	J. B. Root	256,055	Apr. 4	368	101	21	1012
Compound engine	J. Burns	260,159	June 27	1683	438	21	1998
Concrete abutments, bridge-piers, &c. Method of and apparatus for the construction of	T. Elcoate	252,939	Jan. 31	1591	424	21	282
Condenser	W. D. Hooker	256,479	Apr. 18	931	261	21	1128
Condenser	J. Wheelock	257,629	May 9	614	179	21	1385
Condenser. Injector-	C. P. Deane	256,651	Apr. 18	1152	315	21	1160
Condenser. Steam-	R. M. Marchant	259,699	June 6	196	58, 53	21	1703
Condensing apparatus. Steam-	J. M. Stearns, Jr	257,778	May 9	789	220	21	1430
Conductor	R. Van Noorden	253,564	Feb. 14	459	131	21	436
Conductor-pipe	H. E. Loane	252,956	Jan. 31	1551	422	21	286
Conductors. Laying subterranean	A. Schwarzschild	260,055	June 27	1493	402	21	1972
Confectionery-wrapper	L. Schutte	259,776	June 20	1144	303	21	1907
Connecting-rod	H. See	254,707	Mar. 7	314	83	21	691
Connecting-rod	J. B. Moorop	253,745	Feb. 14	676	194	21	472
Continuous recorder	H. C. Barker	255,130	Mar. 21	863	238	21	801
Contour gage and tool	A. L. Holley	253,049	Jan. 31	1606	461	21	307
Converter plant. Bessemer-	J. M. Dodge	256,030	May 16	1091	303	21	1491
Conveyers. Attachment-link for	A. M. Amos	255,238	Mar. 21	998	267	21	884
Cooker. Steam-	A. M. Mace	256,230	Apr. 11	618	168	21	1059
Cooker. Steam-	E. Robinson	254,050	Feb. 21	1070	298	21	544
Cooking apparatus	J. H. Linsey	258,884	Jan. 31	1463	409	21	272
Cooking apparatus. Steam	J. A. Wood	253,805	Feb. 14	754	215	21	488
Cooking-boiler	W. E. Arnold	257,810	May 9	826	231	21	1436
Cooking boiler. Grain-	W. C. Baker	257,912	May 16	960	264 265	21	1498
Cooking, heating, and baking apparatus. Steam-	J. W. Ross	252,143	Jan. 10	508	160	21	104
Cooking-pans. Device for handling	W. Archdeacon	260,077	June 27	1583	469	21	1976
Cooking prepared meats, &c. Can for	L. M. S. Ritter and R. Wysong	251,736	Jan. 3	59	18	21	12
Cooking utensil	C. C. P. McCord	254,355	Feb. 28	1418	399	21	611
Cooking-vessel	A. W. Obermeyer	254,500	Mar. 7	65	17	21	649
Cooking-vessel	S. S. Whitmore	255,743	Mar. 28	1630	444	21	943
Cooking-vessel and condenser. Combined	S. G. Rendall	259,718	June 20	1067	284	21	1894
Cooking-vessel attachment	D. M. Small	256,950	June 6	90	25	21	1711
Cooking-vessels. Device for carrying off steam and odors from							
Cooler: *See* Beer-cooler. Milk-cooler. Bottle-cooler. Tire-cooler.							
Cooler for aerated waters	A. D. Puffer	255,457	Mar. 28	1284	346	21	879
Cooling and heating apparatus	J. Tilbury	256,665	May 23	1670	473	21	1669
Cooling and ventilating houses	T. McGrory	253,740	Feb. 14	671	193	21	471
Cooling dwellings. Device for	J. A. B. King	253,535	Feb. 14	430	120	21	431
Cooling. Process of and apparatus for dynamic	L. Allen	258,981	Jan. 31	1589	429	21	289
Cooling syrups, &c. Apparatus for	E. Read	254,159	Feb. 28	1198	334	21	574
Coop. Chicken-	D. E. Davis	256,718	May 30	1943	549	21	1667
Coop. Folding	W. S. Burroughs	255,488	Mar. 28	1365	357	21	886
Coop or crate	L. F. Froescher	259,582	June 13	816	213	21	1942
Cooperage-stuff. Machine for dressing flat	F. H. Kane	259,888	June 20	1045	334	21	1985
Cop or bobbin winding machine	J. H. Gomersall	260,190	June 27	1661	450 451	21	1998
Copper and silver from their ores. Extracting	J. Doby	258,563	Jan. 17	1168	.....	21	199

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Copying. Dampening-bath for press	N. C. Stiles	260,251	June 27	1736	469	21	2009
Copying-press	L. Bailey	256,815	Apr. 25	1318	371	21	1203
Copying-press	W. Bowker	260,083	June 27	1593	410	21	1977
Cordage and twine designed to be used in binding sheaves of grain	S. A. Skinner	255,040	Mar. 14	758	.....	21	770
Cordage. Oleaginous compound used in manufacturing	H. F. Evans	260,179	June 27	1647	.....	21	1996
Core-box	C. H. Lewis	254,850	Mar. 14	470	128	21	796
Core breaker and lifter	H. C. Reichardt	257,896	May 16	932	259	21	1463
Cork. Bottle	T. R. Lowerre	251,808	Jan. 3	279	76	21	40
Cork-extractor	W. Meyer	256,721	Apr. 18	1213	339	21	1177
Cork-protector	F. Hollender	251,780	Jan. 3	115	33	21	22
Cork-screw	R. Hessel	258,420	May 23	1560	446	21	1585
Cork-screw	H. L. Perryman	257,062	Apr. 25	1601	449	21	1253
Cork-shell-cutting machine	B. Gallagher	257,311	May 2	195	55	21	1316
Corn cutter. Green	S. D. Warfield	258,174	May 16	1259	355	21	1582
Corn-husker	J. Nixon	259,197	June 6	394	104	21	1763
Corn-husker	J. Webber, Jr	258,176	May 16	1263	356 357	21	1583
Corn-husker. Hand	A. W. Brinkerhoff	253,970	Feb. 21	971	270	21	598
Corn-husking implement	J. Nixon	254,682	Mar. 7	288	76	21	687
Corn-husking machine	F. Ohmart	253,091	Jan. 31	1730	478	21	316
Corn off the cob. Machine for cutting green	D. B. Speer	257,534	May 9	469	130	21	1371
Corn off the cob. Machine for cutting green	W. Sprague	256,096	Apr. 25	1448	406 407	21	1225
Corn-sheller	H. A. Adams	252,594	Jan. 24	1109	311	21	907
Corn-sheller	J. Q. Adams	256,261	Apr. 11	660	178 179	21	1067
Corn-sheller	M. S. Cook	255,100	Mar. 21	832	232	21	796
Corn-sheller	C. U. Crandall	254,281	Feb. 28	1336	368 369	21	597
Corn-sheller	H. A. Hawkins	252,373	Jan. 17	846	235	21	156
Corn-sheller	L. Kissner and J. P. Outcalt	252,861	Jan. 31	1457	408	21	271
Corn-sheller	F. T. Mallon	259,882	June 20	1283	338	21	1927
Corn-sheller	J. W. Ricker and T. S. Lewis	253,629	Feb. 14	589	152 153	21	447
Corn-sheller	J. S. Waterman	256,175	May 16	1261	356	21	1582
Corn-silking machine	J. M. Hopkins	254,134	Feb. 28	1169	327	21	569
Cornstalk cutter and crusher	W. H. H. Lynn and G. W. Eyler	257,731	May 9	741	206	21	1418
Cornets. Adjustable mouth-piece for	F. F. Ellis and J. R. Rowlands	259,513	June 13	800	211	21	1841
Cornice hook or bracket	C. D. Stone	255,471	Mar. 28	1304	351	21	682
Cornice. Window	C. P. Klingenberg	253,068	Jan. 31	1699	468	21	311
Corpal. Portable	C. A. Tarragon	256,661	Apr. 18	1135	319	21	1168
Corset	M. Adler	257,809	May 9	825	231	21	1434
Corset	C. F. Allen. (Reissue)	10,019	Jan. 31	1846	508	21	335
Corset	W. S. Allen	257,911	May 16	949	264	21	1466
Corset	W. S. Allen	258,622	May 30	1821	514	21	1636
Corset	B. Baldwin	257,810	May 9	830	231	21	1435
Corset	I. W. Birdseye	253,341	Feb. 7	129	54	21	378
Corset	L. S. Bortree	260,062	June 27	1527	410	21	1977
Corset	M. P. Bray	255,994	Apr. 4	215	54	21	986
Corset	C. N. Chadwick	255,594	Mar. 28	1456	391	21	900
Corset	M. E. Field	252,935	Jan. 31	1524	425	21	983
Corset	C. W. Foster	260,013	June 27	1443	390	21	1965
Corset	J. Hilborn	254,316	Feb. 28	1373	378	21	603
Corset	J. Hilborn	254,650	Mar. 7	258	64	21	661
Corset	J. N. Lemon	253,727	Feb. 14	657	187	21	468
Corset	W. McCabe	254,902	Mar. 14	686	185	21	764
Corset	J. K. Ross	251,725	Jan. 3	58	16	21	18
Corset	I. Strouse	254,657	Feb. 21	1020	301	21	580
Corset	C. H. Williams	254,798	Mar. 7	497	109	21	707
Corset and abdominal and skirt supporter. Combined	F. A. Dietrich	256,889	Apr. 25	1403	396	21	1218
Corset-busk	A. E. Mann	256,310	May 23	1445	410	21	1563
Corset-clasp	W. F. Gilbert	258,756	Jan. 24	1265	368	21	937
Corset-clasp	H. W. Moulton	257,909	May 16	1015	283	21	1478
Corset-clasp	D. H. Tierney	257,106	Apr. 25	1654	463	21	1262
Corset-stay	M. P. Bray	259,064	June 6	365	70	21	1740
Corset-stay	T. S. Gilbert	259,128	June 6	316	64	21	1749
Corset-steel	D. M. Church	254,113	Feb. 28	1145	320	21	585
Corset-stiffener clasp	C. V. Turner	253,642	Feb. 14	545	156	21	449
Corset-stiffeners. Machine for the manufacture of	J. A. House	259,158	June 6	348	92	21	1755
Corsets. Apparatus for forming and shaping	J. A. House	251,884	Jan. 3	247	68, 69	21	44
Corsets. Manufacture of	I. D. Warner	256,140	Apr. 11	536	148	21	1046
Cot and bedstead. Folding	C. T. Segar	257,085	Apr. 25	1629	456	21	1257
Cot. Folding	T. W. B. Murray and C. J. Baker. (Reissue.)	10,025	Jan. 31	1853	510	21	336
Cot. Folding spring	M. B. Church	259,486	June 13	765	203	21	1836
Cot. Folding spring	M. B. Church	259,487	June 13	767	204	21	1836
Cotton-chopper	J. H. Bethune	251,890	Jan. 3	160	47	21	31
Cotton-chopper	J. L. Hughes	252,221	Jan. 10	653	183	21	119
Cotton-chopper	J. B. Lisle	259,770	June 20	1138	301	21	1906
Cotton-chopper	D. W. Massee	255,643	Mar. 28	1512	408	21	919
Cotton-chopper	J. M. Walden	253,656	Mar. 14	781	209	21	780
Cotton-chopper	J. M. Walden	256,312	May 23	1678	474	21	1463
Cotton chopper and cultivator	J. D. Patterson	256,510	Jan. 17	1013	263	21	184
Cotton cleaner. Seed	G. H. Bradley	255,466	Mar. 28	1394	356 357	21	865
Cotton-gatherer. Hand	B. F. Lamb	256,657	May 30	1864	526	21	1645
Cotton-gin	T. Boatwright	256,195	Apr. 11	571	156	21	1052
Cotton-gin	R. M. Brooks	255,926	Apr. 4	217	56	21	986
Cotton-gin	W. L. Crowson	255,943	Apr. 4	238	61, 62	21	989
Cotton-gin	P. V. Westfall	258,515	May 23	1681	475	21	1604
Cotton gin and press. Combined	P. K. Crowell	256,429	Apr. 11	853	237 238	21	1102
Cotton-gin attachment	J. W. Thames and R. I. Riley	254,725	Mar. 7	335	69	21	695

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Cotton-gin brush-cylinder	E. Van Winkle	256,618	May 30	1817	513	21	1636
Cotton-gin condenser	W. B. Burdine and J. E. Brewer	258,849	May 30	2065	589	21	1863
Cotton-gin-driving machinery	W. H. Davis	257,057	May 9	657	184	21	1404
Cotton-gin feeder	E. H. Keith	258,927	June 6	79	19	21	1706
Cotton. Implement for siding and thinning	C. P. Dickert and E. M. Heller	255,258	Mar. 21	1027	276	21	830
Cotton, &c. Machine for hulling and ginning	W. L. Crowson	255,942	Apr. 4	236	60, 61	21	989
Cotton, &c. Machinery for opening or preparing	W. E. Whitehead	253,142	Jan. 31	1787	486	21	326
Cotton-opener	R. Kitson	252,563	Jan. 17	1003	305	21	188
Cotton opener or lapper	W. P. Faulkner	258,397	May 23	1543	438	21	1589
Cotton-openers. Trunk for	P. Rowe and J. J. Scanlin	254,385	Feb. 28	1451	397	21	617
Cotton-picker cleaning attachment	D. B. Hamilton	258,080	May 16	1194	314 315	21	1497
Cotton-press	G. E. Judson	254,774	Mar. 7	285	104	21	705
Cotton-press	E. L. Morse	258,946	May 23	1571	269	21	1560
Cotton-press	L. F. R. Reynolds	258,118	May 16	1199	337	21	1511
Cotton-press	M. M. Scherer	257,079	Apr. 25	1634	455	21	1257
Cotton-press	R. I. Kirkpatrick	253,719	Feb. 14	645	184	21	466
Cotton-press feeder	C. C. Davis and W. H. Mercer	257,686	May 9	656	183	21	1404
Cotton-scraper	J. L. Farnsworth	254,629	Mar. 7	232	58	21	676
Cotton-scraper	J. H. Veazey	255,217	Mar. 21	981	263	21	821
Cotton-stalk and weed cutter	F. M. Thompson	254,408	Feb. 28	1460	405	21	622
Cotton-stalk cutter	R. H. Goldsmith	255,279	Mar. 21	1053	282	21	834
Cotton-whipper	H. J. Turner	260,140	June 27	1601	.....	21	1969
Coughs, &c. Remedy for	A. J. Culbertson	253,349	Feb. 7	197	56	21	379
Counter seat. Store	W. H. Metcalf	252,686	Jan. 24	1214	340	21	885
Counter-stiffeners. Treating hide in the manufacture of	W. J. Conrad	253,961	Feb. 21	962	274	21	599
Counter. Store							
Coupling:							
See Car-coupling.	Plow-coupling.						
Cultivator-beam coupling.	Rope and round-band coupling.						
Drill-rod coupling.	Shaft-coupling.						
Harness and trace coupling.	Thill-coupling.						
Hose-coupling.	Trace-coupling.						
Lightning-rod coupling.	Tubing-coupling.						
Pipe-coupling.	Universal-joint coupling.						
	Wagon-reach coupling.						
	Whiffletree-coupling.						
Coupling	F. Brown	256,220	Apr. 11	679	184	21	1071
Coupling-pin for connecting rods, &c	W. E. Cooper	256,353	Apr. 11	698	190	21	1074
Covers to vessels. Device for attaching	H. Wright and I. W. Knowles	259,655	June 13	973	260	21	1871
Cow-tail holder	T. O. Andrus and N. B. Prior	255,233	Mar. 21	1000	267	21	824
Cowl	C. S. Hempstead	254,714	Feb. 28	1370	378	21	603
Cracker and grocer's can. Combined	C. F. Markland	256,886	Apr. 18	1260	346	21	1183
Crackers. Machine for packing	H. C. Chessman	251,697	Jan. 3	14	4	21	5
Cradle	F. W. Barker	257,439	May 9	380	109	21	1356
Cradle	W. H. Earnest. (Reissue)	10,036	Feb. 14	765	223	21	491
Cradle and crib. Child's	H. H. Wiggers	260,146	June 27	1609	434	21	1980
Cradle and crib. Combined	C. M. Bentwell	253,502	Feb. 14	395	109	21	425
Cradle. Folding	J. Y. Sailor	254,941	Feb. 28	1293	358	21	590
Cradle. Grain	H. W. Haralson	258,230	May 23	1354	363	21	1547
Cranberry reaper and detacher	C. W. Hetsley	258,754	May 30	1984	560	21	1644
Crane	M. Frisbie	258,403	May 23	1553	440	21	1581
Crank for machinery	A. E. Gatchell	257,691	May 9	602	162	21	1410
Crank-paddle	J. I. Longfield	254,930	Feb. 21	1046	301	21	540
Crank. Self-adjusting	W. H. Clark	253,965	Feb. 7	109	30, 31	21	363
Crate:							
See Fruit-crate.	Fruit or vegetable crate.						
Crate for transporting vegetables, live poultry, &c	J. W. Rogers	253,165	Jan. 31	1745	483	21	318
Cravat-fastening	G. E. Poland	254,503	Mar. 7	69	18	21	659
Cravats, neckties, &c. Fastening for	J. Hinks, T. Hooper, and F. R. Baker	253,478	Feb. 7	349	97, 98	21	405
Crayon	W. C. Herne	257,706	May 9	714	.....	21	1414
Cream-can	H. B. Scoville	254,706	Mar. 7	313	83	21	691
Cream from milk. Separating	F. G. Butler	253,155	Jan. 31	1610	501	21	330
Cream of tartar. Manufacture of	E. Muller. (Reissue)	10,011	Jan. 17	1105	308	21	300
Cream of tartar. Manufacture of	G. Schnitzer. (Reissue)	10,004	Jan. 3	410	111	21	71
Cream. Portable case for transporting	J. G. Cherry	251,831	Jan. 3	184	58	21	33
Creamer. Centrifugal	C. Petersen and L. C. Nielsen	256,385	Apr. 11	781	215	21	1069
Creamer. Vacuum	A. G. Waterhouse	260,070	June 27	1513	406	21	1975
Creaming-can	E. B. Clement	258,714	May 30	1940	548	21	1657
Creel or bobbin rack	J. O'Neill	254,441	Feb. 28	1315	415	21	639
Crib	W. M. Fitzwater	258,198	May 16	1269	326	21	1528
Crib and table. Interconvertible	S. S. Burr	252,730	Jan. 24	1254	338	21	938
Crib. Convertible	J. W. Barton	258,694	May 30	1918	541 542	21	1653
Crib. Folding	H. Greenwood	257,490	May 9	431	119	21	1364
Crimping-machine	J. W. D. Filfield	256,136	Apr. 11	486	138	21	1038
Crimping-machine	S. A. Gould	256,475	Apr. 18	984	256	21	1187
Crimping-machine. Rand and welt	M. C. Flint	252,366	Jan. 17	835	233	21	155
Croquet-stand	H. C. Chester	255,596	Mar. 28	1458	392	21	900
Cross-section rod	S. B. Fisher	255,778	Apr. 4	30	9	21	956
Cross-tie. Metal	J. Parr	260,231	June 27	1714	464	21	2006
Crucible	J. Bavier	259,292	June 13	507	133	21	1789
Crucible	M. H. Knapp	251,719	Jan. 3	37	11	21	9
Crusher:							
See Coke-crusher.	Rock and ore crusher.						
Ore-crusher.	Stone-crusher.						
Quartz-crusher.	Stone and ore crusher.						
Crushing and grinding limestone-rock, &c. Machine for	J. Hause	256,678	Apr. 18	1162	326	21	1168
Crushing and grinding machine	G. Duryee	251,848	Jan. 3	207	58	21	37
Crushing ores, &c. Machinery for	G. Dalton	259,060	Jan. 10	492	126 127	21	92
Crushing-roll	U. H. Odell	260,226	June 27	1768	462	21	2005

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Crushing sugar, salt, &c. Device for	E. P. Chesbro	252,738	Jan. 24	1202	354	21	233
Crutch	S. C. Maine	254,348	Feb. 28	1411	388	21	610
Cuff	I. P. Turner	252,277	Jan. 10	726	204	21	131
Cuff	I. P. Turner	252,341	Jan. 17	803	224	21	149
Cuff	I. P. Turner	255,214	Mar. 21	978	241, 269	21	890
Cuff adjuster and support	A. J. Halsey	252,108	Jan. 10	516	143	21	96
Cuff-box	I. P. Turner	252,340	Jan. 17	802	224	21	149
Cuff-fastener	R. E. Kelsey and C. H. Shuttleworth	255,515	Mar. 28	1357	365	21	691
Cuff-holder	J. F. Guignon	252,089	Jan. 10	514	142	21	95
Cuff holder. False	G. A. McIntire	252,769	Jan. 24	1333	373	21	245
Cuff holder and adjuster	H. E. Deacon	253,518	Feb. 14	410	114	21	498
Culinary apparatus	W. H. Daniell	254,119	Feb. 28	1151	321	21	586
Culinary utensil	W. W. Kenfield	254,141	Feb. 28	1176	329	21	570
Culinary vessel	W. H. Daniell	256,648	Apr. 18	1119	314	21	1160
Culinary vessel	J. W. Fisher	254,947	Mar. 14	695	168	21	753
Culinary vessel	R. H. Avery	256,612	Apr. 18	1076	303	21	1152
Cultivator	S. A. Batson	256,455	Apr. 18	991	258	21	1124
Cultivator	O. O. Booth	252,174	Jan. 10	603	170	21	110
Cultivator	E. E. Boetwick	256,542	Apr. 18	1009	282	21	1140
Cultivator	J. W. Bunch	254,606	Mar. 7	194	49	21	671
Cultivator	W. B. Cullum	255,256	Mar. 21	1026	276	21	829
Cultivator	W. J. Davidson	254,932	Mar. 14	608	164	21	750
Cultivator	T. C. Dodsworth	258,794	May 30	1949	550, 551	21	1658
Cultivator	A. Grump	252,837	Jan. 24	1403	391	21	256
Cultivator	M. T. Hancock	253,164	Jan. 31	1430	565	21	339
Cultivator	L. P. Hiatt	255,983	Apr. 4	291	76	21	998
Cultivator	J. H. Jones	253,869	Feb. 21	841	237, 238	21	507
Cultivator	W. A. Knowlton	254,556	Mar. 7	130	33	21	660
Cultivator	W. A. Knowlton	254,557	Mar. 7	132	33	21	660
Cultivator	L. Luppen	253,877	Apr. 4	150	40	21	975
Cultivator	E. P. Lynch	257,298	May 2	99	28	21	1298
Cultivator	E. P. Lynch	257,299	May 2	101	28	21	1298
Cultivator	G. Martin	254,776	Mar. 7	397	105	21	706
Cultivator	T. Meikle	257,039	Apr. 25	1576	442	21	1348
Cultivator	G. Moore	256,089	Apr. 4	330	91	21	1007
Cultivator	M. Pate, S. O. Mason, and W. H. Dail	252,508	Jan. 17	1012	282	21	184
Cultivator	C. W. Post	256,044	Apr. 4	355	96	21	1010
Cultivator	T. A. Purket	255,669	Mar. 28	1539	415	21	925
Cultivator	H. A. Robertson	256,374	Apr. 11	790	217, 218	21	1091
Cultivator	J. Smith and F. Steinke	251,961	Jan. 3	331	90	21	57
Cultivator	B. A. Taber	259,943	June 20	1333	356	21	1939
Cultivator	D. C. Van Brunt	251,976	Jan. 3	351	95	21	60
Cultivator	A. P. Webber	257,257	May 2	138	37, 38	21	1304
Cultivator	F. O. Williams	252,163	Jan. 10	591	166	21	108
Cultivator	J. Williams	253,458	Feb. 7	326	90	21	401
Cultivator	E. A. Wright	259,696	June 13	934	249, 250	21	1865
Cultivator	W. B. Young	252,572	Jan. 17	1061	301	21	196
Cultivator-beam coupling	J. T. Hamilton	252,763	Jan. 24	1293	363	21	238
Cultivator. Corn and cotton	H. Lindsey	251,784	Jan. 3	118	34	21	23
Cultivator. Cotton	J. R. Howard	257,009	Apr. 25	1545	434	21	1242
Cultivator-spring	J. M. Long	256,012	Apr. 4	323	85	21	1004
Cultivator-standard clamp	H. C. Stahl	252,536	Jan. 17	1042	290	21	189
Cultivator. Sulky	J. B. Christian	260,164	June 27	1687	440	21	1983
Cultivator. Sulky	J. W. Rockafellow	257,074	Apr. 25	1619	453	21	1256
Cultivator-tooth	J. Morter	256,356	Apr. 11	769	211	21	1087
Cultivator-tooth	J. S. Rowell. (Reissue)	10,076	Apr. 4	450	128	21	1098
Cultivator-tooth	W. D. Stroud	258,263	May 23	1392	393	21	1554
Cultivator-tooth	W. A. Van Brunt	252,279	Jan. 10	738	204	21	131
Cultivator. Wheel	E. P. Lynch	257,730	May 9	730	205, 206	21	1418
Cultivator. Wheel	A. Messersmith	258,097	May 16	1167	327	21	1505
Cultivator. Wheel	T. A. Palm	258,794	Jan. 24	1340	375	21	246
Cultivator. Wheel	P. F. Wells	252,537	Jan. 24	1154	323	21	214
Cup: *See* Bird-cage feed-cup. Dental impression cup. Grain-drill seed-cup. Mixing and straining cup. Oil-cup.							
Curb for wells. Foundation	G. A. Kingsland	258,078	May 16	1144	321	21	1501
Curbing. Constructing béton or artificial-stone	J. Burns	259,813	June 20	1184	316	21	1014
Currants. Machine for washing	W. M. Ducker	259,110	June 6	997	79	21	1746
Current-wheel	W. M. Coffman	259,606	June 6	980	75	21	1742
Curry-comb	C. C. Egerton	253,262	Feb. 14	415	115	21	499
Curtain-bracket	H. C. Clement	255,773	Apr. 4	98	7	21	955
Curtain-cord tightener	C. Schwalbold	258,097	Jan. 24	1361	380	21	249
Curtain-cord tightener	F. J. Werneth	255,361	Mar. 21	1161	311	21	852
Curtain-fixture	T. M. Burgess	251,709	Jan. 3	93	28	21	19
Curtain-fixture	J. Darling and A. J. Nicholson	259,259	Jan. 17	898	239	21	153
Curtain-fixture	J. Darling and B. H. Griswold	259,742	Jan. 24	1268	356	21	234
Curtain-fixture	H. Farley	256,557	Apr. 18	1017	287	21	1143
Curtain-fixture	T. P. Hopkins	259,136	June 6	345	91	21	1755
Curtain-fixture	J. A. McCutchen	257,988	May 9	841	235	21	1437
Curtain-fixture	W. P. Putnam	256,736	Apr. 18	1294	343	21	1179
Curtain-fixture	H. S. Wing	252,851	Jan. 24	1430	395	21	256
Curtain-fixture	W. H. Schick	260,125	June 27	1585	427	21	1967
Curtain-holder	H. L. Judd	254,963	Mar. 14	678	183	21	763
Curtain-hook pin	G. H. Grimm	259,531	June 13	819	216	21	1845
Curtain-pole	G. T. Bettencurt	255,571	Mar. 28	1420	363	21	903
Curtain-roller. Spring	C. De Quillfeldt. (Reissue)	10,036	Feb. 7	362	101	21	497

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Curtain-roller. Spring	J. M. Osgood	260,044	June 27	1481	309	21	1970
Curtain-roller. Spring	J. M. Osgood	260,045	June 27	1483	309	21	1971
Curtain-roller support	H. Farley	252,023	Jan. 10	499	117	21	81
Cushion: *See* Laundry-cushion. Vehicle-cushion.							
Cuspidor	W. F. Malloy	256,498	Apr. 18	949	265	21	1131
Cuspidor	C. F. Markland	257,137	Apr. 25	1608	415	21	1270
Cuspidor	H. L. Palmer	256,589	Apr. 18	1049	296	21	1148
Cuspidor	G. C. Sterling	256,251	Apr. 11	648	175	21	1085
Cuspidor	W. Westlake	253,455	Feb. 7	383	99	21	480
Cut-off and governor-valve. Combined rotary	L. J. Wing	259,943	June 20	1383	367, 368	21	1944
Cut-off valve	B. Brasselle	255,136	Mar. 21	870	233, 234	21	802
Cut-off valve. Adjustable steam	W. D. Hooker	260,098	June 27	1458	303	21	1967
Cut-off valve and gear	G. F. Burton and N. Shaw	259,747	June 20	1166	295, 296	21	1801
Cut-off-valve gear	F. Schumann	257,392	May 2	283	84	21	1333
Cut-off-valve gear	M. T. Stevens	254,066	Feb. 21	1068	301	21	547
Cut-off-valve gear. Automatic	J. W. Morgan	253,938	Feb. 21	931	259	21	381
Cut-off-valve gear for steam-engines	J. James	254,483	Mar. 7	47	12	21	646
Cutter: *See* Bale-band cutter. Billiard-cue cutter. Bog-cutter. Bolt-cutter. Box-trimming cutter. Bread-cutter. Bread and meat cutter. Butter-cutter. Butter and lard cutter. Button-hole cutter. Caramel-cutter. Cigar-cutter. Cigar-tip cutter. Corn-cutter. Cornstalk-cutter. Cotton-stalk cutter. Cotton-stalk and wood-cutter. Ensilage-cutter. Feed-cutter. Hog-tendon cutter. Meat-cutter. Paper-cutter. Peg-cutter. Pipe cutter. Sewing-machine thread-cutter. Stalk-cutter. Straw-cutter. Tobacco-cutter. Tobacco-scrap cutter. Vegetable-cutter. Wood-splitting-machine cutter.							
Cutter-bars. Elastic cushion for	S. C. Megill	260,040	June 27	1477	306	21	1970
Cutter-head	H. Reyna	259,013	June 6	176	47	21	1725
Cutter-head	E. P. Lorch	257,349	May 2	948	70	21	1295
Cutter-head for wood-working machines	T. Fitzsimmons	253,913	Feb. 7	108	33	21	365
Cutter-head for wood working machines	J. C. Tannielliff	254,738	Mar. 7	344	91	21	697
Cutting and punching machine	R. Kent	257,580	May 9	572	160	21	1367
Cutting-machine	A. Warth	255,256	Mar. 21	1156	310	21	851
Cutting mechanism	S. Daubrim	255,108	Mar. 21	824	223	21	796
Cutting, punching, and swaging. Machine for	W. F. Durfee	260,176	June 27	1641	444, 445	21	1985
Cyanides. Obtaining	C. C. Parsons and E. F. Cruse	259,908	June 20	1289	.....	21	1838
Cyclometer	H. S. Livingston	259,562	June 13	857	227	21	1823
Cyclometer	P. E. McDonnell	251,481	Feb. 7	353	98, 99	21	495
Cyclometer	J. J. Morton	255,004	Mar. 14	701	189	21	767
Cyclometer	W. Hanna	254,309	Feb. 28	1267	377	21	692
Cylinder and piston. Steam	L. Lapyre	253,299	Feb. 7	135	39	21	389
Cylinder engine. Three	D. H. Burrell	258,574	Jan. 17	1088	302	21	198
Dairy-vat	J. W. Funck	258,630	May 30	1840	519	21	1640
Damper-regulator. Automatic	C. W. Pierce	255,331	Mar. 28	1376	371	21	894
Damper. Stove-pipe	R. Hutton	255,967	Apr. 4	126	35	21	973
Dandy-roll stand. Adjustable	J. B. Platt	259,651	June 13	968	256	21	1871
Dash-board	E. Rattey	256,370	Apr. 11	767	210	21	1089
Dash-board	W. Ruby	260,941	June 27	1725	497	21	2008
Dash-board	E. Lee	259,876	June 20	1257	.....	21	1987
Decorating or producing designs on the surfaces of earthenware tiles, &c.	F. A. and D. Bahr	256,987	Apr. 11	889	181	21	1089
Demijohn-covering	L. and J. W. Manker	252,785	Jan. 24	1237	371	21	243
Dental articulator	H. C. Merrill	256,569	Apr. 18	1039	294	21	1146
Dental bracket	J. H. Doyle	257,315	May 2	74	23	21	1295
Dental check-holder	C. M. Richmond	256,650	Apr. 4	302	80	21	1011
Dental drill	S. R. Screven	257,398	May 2	295	85	21	1334
Dental engine	W. H. Kimball	256,575	Apr. 18	1038	291	21	1145
Dental-engine hand-piece	T. S. Phillips. (Reissue)	10,115	May 16	1311	371	21	1591
Dental-engine hand-piece	T. W. Browne	255,098	Mar. 21	830	221	21	785
Dental flask	M. H. Carpenter	256,579	Apr. 25	1393	391	21	1217
Dental flask	G. Rehfuss	255,020	Mar. 14	731	195	21	770
Dental hand-piece	J. V. McManus	257,048	Apr. 25	1576	442	21	1348
Dental impression-cup	J. R. Odell	256,850	Apr. 25	1259	354	21	1210
Dental mallet	F. Abbott	257,264	May 2	140	39	21	1305
Dental plugger	E. Ebi	255,953	Apr. 4	256	66	21	989
Dental plugger	A. Jackson	258,434	May 23	1574	447	21	1565
Dental plugger	A. Johnson and G. B. Hough	256,143	Apr. 11	695	135	21	1040
Dental-plugger	G. Kacher	257,295	May 2	95	27	21	1296
Dental tool-holder	J. S. Thompson	253,640	Feb. 14	543	156	21	449
Dentist's chair	J. E. Moffitt	257,179	May 2	20	13	21	1297
Dentists. Combined cement-case and mixing-tablet for	E. H. Locke	258,658	May 30	2094	591	21	1684
Dentist's flask	L. Duval	254,941	Mar. 14	618	180	21	758
Derrick	I. S. Reeves	256,371	Apr. 11	787	217	21	1090
Derrick	W. C. Brown	257,149	May 2	5	2	21	1293
Derrick-swinger	J. J. Igliehart	254,324	Feb. 28	1231	361	21	685
Desk-lids. Automatic locking-stay for	C. Bascall	251,829	Jan. 3	182	51	21	33
Desk. School	G. Dinsmoor	254,721	May 30	1946	550	21	1658
Desk. School	E. T. Gibson	253,368	Feb. 7	316	88	21	393
Desk. Tracing	J. Dutton	254,940	Mar. 14	617	166	21	758
Desks. Book-rest attachment for school and other							

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Desulphurizing-furnace	A. Blatchly	255,135	Mar. 21	867	233	21	802
Detachable handle for tea-cups, &c	J. W. Davis	256,083	Apr. 25	1580	497	21	1238
Detachable handle for utensils	F. A. Neider and G. Groesmann	258,591	May 30	1763	504	21	1630
Detector: *See* Time-detector.							
Detergent compound	E. Henderson	250,369	June 13	642	.....	21	1813
Device for suspending persons in mid-air without visible support.	E. H. J. Seeman	256,368	Apr. 11	695	221	21	1003
Dial. Sun	H. A. Behn, Jr	252,418	Jan. 17	910	251	21	166
Diamond-cutting machine	F. A. Harkins	254,617	Mar. 14	452	122	21	782
Diamond. Imitation	J. A. Grossiord, Jeune	254,505	Feb. 28	1364	.....	21	601
Diaper	H. Morgan	255,111	Mar. 21	844	225	21	798
Diaphragm. Separating	G. B. Whiting	258,835	May 30	2071	584 / 585	21	1660
Die: *See* Button-die. Pipe-die. Forging and swaging die. Screw-cutting die. Threading-die.							
Die and die-stock	J. Gassmann	256,669	Apr. 18	1147	328	21	1165
Die. Stock	A. J. Signor	256,448	Apr. 11	977	945	21	1106
Die-stock	B. L. Walker	258,060	June 6	112	29	21	1714
Digger: *See* Post-hole digger. Potato-digger.							
Direct-acting engine	G. E. Dow	252,084	Jan. 10	496	136	21	93
Direct-acting engine	A. Thomson	252,913	Jan. 31	1406	418	21	979
Dish. Butter	S. W. Babbitt	250,075	June 6	255	68	21	1737
Dish. Butter	R. Hill	250,148	June 6	336	89	21	1753
Dish. Butter	W. J. Miller, T. L. I. Bulluss, and H. Berry.	250,989	June 20	1412	360	21	1952
Dish. Covered	A. Conradt	256,321	May 23	1342	360	21	1544
Dish. Covered	E. A. Parker	254,687	Mar. 7	292	77	21	668
Dish. Covered	E. A. Parker	256,036	Apr. 4	346	94	21	1038
Dish. Covered	E. A. Parker	256,037	Apr. 4	347	94	21	1 039
Dish-drainer	T. W. McFarland and C. L. Ford	254,230	Feb. 28	1278	354	21	586
Dish-drainer	G. B. Wold	253,461	Feb. 7	329	91	21	401
Dish-holder	E. O. Wires	251,754	Jan. 3	78	28	21	16
Dish-washing machine	S. J. Anderson	254,698	Mar. 14	560	153	21	743
Disinfectant laundry bluing	D. Dunscomb	250,838	June 20	1905	.....	21	1918
Disinfecting apparatus for water-closets	H. Blackman	258,089	May 30	1927	544	21	1654
Disinfecting compound	D. Warren	252,555	Jan. 17	1066	.....	21	193
Disinfecting dead bodies. Method of and apparatus for	J. D. Nietacke	251,925	Jan. 3	295	80	21	51
Disinfecting device. Water-closet	D. Warren	252,556	Jan. 17	1066	297	21	193
Disinfecting waste-pipes. Apparatus for	A. G. W. Rankin	255,019	Mar. 14	790	195	21	770
Disinfecting water-closets, &c. Apparatus for	E. J. Mallett, Jr	253,460	Feb. 7	253	73	21	389
Disintegrating corn-husks, &c. Machine for	J. B. De Young	254,807	Mar. 14	441	119	21	790
Disintegrating grain, &c. Machine for	F. Taggart	256,079	Apr. 4	367	106	21	1015
Disintegrating vegetable substances. Apparatus for	G. O. Goessling	258,912	June 6	52	14	21	1704
Dispatch-tube. Electro-magnetic	C. A. Cheever	250,817	June 20	1186	318	21	1915
Display-rack. Folding	J. T. Smith	256,811	Apr. 18	1309	368	21	1195
Distilling ammonia. Apparatus for	H. J. E. Hennebutte and C. J. F. R. de J. Menard.	259,146	June 6	333	88	21	1753
Distilling hydrocarbons. Process of and mechanism for	T. McGowan	257,961	May 16	1006	281	21	1476
Distillation. Apparatus for fractional	E. F. Dietericha	253,990	Feb. 21	969	276	21	531
Distillation of coal-tar	G. C. Trewby and H. W. Fenner	252,981	Jan. 31	1520	440	21	992
Distilled spirits from grain. Method of and apparatus for manufacturing	T. A. and W. T. Jebb	254,389	Feb. 28	1387	382	21	606
Distilled spirits from grain. Method of and apparatus for manufacturing	W. T. Jebb	254,330	Feb. 28	1368	383	21	606
Distilling oil. Process of and apparatus for	J. N. Martin	254,900	Mar. 14	684	184	21	763
Distilling petroleum. Apparatus for	C. J. Tagliabue	254,176	Feb. 28	1214	339	21	577
Ditching and tile-laying machine	W. Wilson	254,063	Feb. 21	1106	309	21	551
Ditching-machine	J. A. Grant, T. M. McClelland, and J. T. Drummond.	259,304	June 13	533	140 / 141	21	1793
Ditching-machine	S. E. and J. Morral	255,000	Mar. 14	695	187	21	765
Ditching-machine	F. Pidgeon	258,596	May 30	1729	505	21	1631
Ditching-machine	J. Reidhard	254,376	Feb. 28	1444	395	21	615
Ditching-machine	W. T. Wasson	250,948	June 6	457	121	21	1773
Dividers	M. Toulmin	257,413	May 2	323	91	21	1330
Dock. Floating dry	L. C. Watts	256,608	Apr. 18	1071	301 / 302	21	1151
Doffer-rings for card-setting machines. Joining	J. J. Hoey	254,651	Mar. 7	253	64	21	661
Door	G. W. Howell	255,788	Apr. 4	44	12	21	956
Door. Adjustable ventilating	J. S. Du Bois	253,520	Feb. 14	411	115	21	493
Door and window guard	J. L. MacDonald	253,732	Feb. 14	602	169	21	489
Door-bolt	W. B. Purves	257,141	Apr. 25	1709	477	21	1271
Door-check	F. W. Boldt and P. C. A. Vogel	252,983	Jan. 31	1601	444	21	996
Door-check	L. C. Norton	251,700	Jan. 3	193	35, 36	21	24
Door-check	F. V. Phillips	251,732	Jan. 3	54	15	21	12
Door-check	J. Pickering	254,237	Feb. 28	1268	357	21	569
Door-check	I. P. Poulson	256,045	Apr. 4	356	96	21	1010
Door-check	J. E. Rosenthal	256,127	May 16	1266	340	21	1013
Door-check	H. Skerrett	257,966	May 16	1034	288	21	1461
Door-check	W. E. Sparks	255,693	Apr. 4	167	44	21	978
Door-check	J. W. Wetmore	255,286	Mar. 21	908	245	21	823
Door fastening. Pocket	A. Belding	256,007	May 16	1065	296	21	1486
Door-hanger	W. F. Berry	258,547	May 30	1728	449	21	1660
Door-hanger	C. W. Ballard	254,605	Mar. 7	193	49	21	671
Door-hanger	W. B. Cogger	253,471	Feb. 7	338	94	21	403
Door-hanger	R. U. Scoville	252,567	Jan. 17	1034	288	21	188
Door-hanger	A. L. Scranton	259,220	June 6	418	111	21	1767
Door-hanger	A. L. Swett and W. H. Samson	254,347	Feb. 28	1300	360	21	591
Door-hanger	E. Terry	256,958	Apr. 25	1452	402	21	1226
Door hanger and pulley	C. W. Pierce	256,587	May 30	1789	506	21	1631

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Door hanger. Parlor	S. Shreffler, Jr	255,947	Apr. 11	948	173	21	1004
Door. Hanging	E. Prescott	259,716	June 20	1665	363	21	1894
Door lock and latch	O. Flagstad	256,665	Apr. 18	1149	329 / 331	21	1154
Door-mat frame	W. H. Muller	259,195	June 6	299	189	21	1703
Door or window frame	C. H. Wilson	256,539	May 30	2076	595	21	1661
Door-securer. Portable	C. A. Crongeyer	254,604	May 16	1004	281	21	1490
Door-sheave. Sliding	L. Somers	257,401	May 2	385	97	21	1335
Door-spring	W. F. H. Anrwake	253,135	Feb. 7	2	1	21	347
Door-spring	C. R. Clark	252,189	Jan. 10	616	173	21	112
Door-spring	W. C. De Long and A. A. Schroder	253,691	Feb. 21	913	258	21	894
Door-spring	M. C. Mehr	256,791	May 30	2085	571	21	1671
Door-spring	A. B. Tanner	252,541	Jan. 17	1043	291	21	190
Door-spring	J. W. Weddel	257,210	May 16	949	264	21	1466
Door-spring	C. H. Rice	254,694	Mar. 7	696	79	21	669
Door-strip	E. U. Scoville	257,189	May 2	50	14	21	1290
Doors. Stay-roller for sliding	E. Spear	252,535	Jan. 17	1041	290	21	189
Double-tree	J. E. Atwood	254,946	Apr. 25	1476	414	21	1220
Doubling and winding silk, &c. Machine for	A. Yates	256,688	May 23	1491	476	21	1666
Doubling yarn. Machine for	E. Geger	253,997	Feb. 21	980	279	21	533
Dowel-pins. Machine for making	T. J. Slater	260,656	June 27	1495	403	21	1973
Draft apparatus for horses	D. D. Decker	257,296	May 2	177	50	21	1313
Draft attachment. Vehicle	D. Carr	256,372	May 23	1516	430	21	1575
Draft-equalizer	D. M. Harkrader	258,218	Jan. 10	649	180	21	116
Draft-equalizer	J. Herrigan	258,667	Jan. 24	1190	338	21	881
Draft-equalizer	F. B. Hunt	253,656	Jan. 31	1674	463	21	998
Draft-equalizer	J. P. Johnson	260,207	June 27	1663	456	21	1991
Draft-equalizer	J. M. Langston	253,071	Jan. 31	1708	469	21	811
Draft-equalizer	S. and W. T. Marvin	255,387	Mar. 28	1272	370	21	894
Draft-equalizer	J. Sebastian	258,610	Jan. 24	1264	351	21	930
Draft-equalizer	C. L. Spencer	252,613	Jan. 24	1374	394	21	951
Draft-regulator	H. Bisson	251,396	Mar. 7	109	43	21	699
Draft-regulator and ventilator. Automatic	M. B. Church	259,494	June 13	775	205	21	1837
Drafting and cutting clothing	H. A. Jackson	258,103	June 6	251	83	21	1736
Drain-pipe	B. C. Cress	255,398	May 23	1343	360	21	1545
Dramatic effects. Apparatus for producing illusory	J. W. Knoll	256,097	Apr. 4	219	63	21	1003
Draw-heads. Manufacture of	L. Yakel and S. K. Duff	260,242	June 27	1546	426	21	2000
Drawer-lock	F. W. Mix	256,733	Apr. 18	1214	349	21	1177
Drawer-pull	B. J. Blackham	256,660	May 16	1067	296	21	1487
Drawer-pull	E. Drexel	256,888	June 6	15	4	21	1697
Drawer-pull	F. W. Smith	253,437	Feb. 7	307	84	21	396
Drawers and other garments	J. Bitefel and M. Juha	254,788	Mar. 7	402	107	21	707
Drawers. Mechanism for automatically fastening or locking a series of	A. B. Brundrett	256,119	Apr. 11	464	120	21	1034
Drawers. Men's	I. Schnoor	254,566	Mar. 7	72	19	21	630
Drawers or tights	R. M. Appleton	256,532	Apr. 18	960	276	21	1139
Drawing, spinning, and twisting apparatus	F. W. Fox	255,612	Mar. 28	1473	396	21	912
Drawings and designs. Reproducing	M. Tilbet	251,748	Jan. 3	71	.....	21	14
Dredge-box for spices, &c	P. Diamond	254,686	Mar. 14	448	119	21	790
Dredge-dipper	R. Drexel	254,543	Mar. 7	128	35	21	661
Dredge-winder	S. W. Dana	253,613	Jan. 31	1493	459	21	980
Dredger and excavator	R. R. Osgood	257,668	May 16	988	287	21	1461
Dredging apparatus	A. E. and M. W. Hall	258,913	June 6	54	14, 15	21	1704
Dredging-machine	J. Savidge	257,617	May 9	600	169	21	1388
Dredging-machine	Z. Williams	253,145	Jan. 31	1791	497	21	987
Dress cutting and fitting mold	K. Walker	254,674	Feb. 21	1059	303	21	549
Dress-shield	I. B. Kleinert	257,497	May 9	437	122	21	1365
Dressing-case	G. F. Deemling	257,300	May 2	162	58	21	1314
Drier: *See* Clothes-drier. Fruit and vegetable drier. Fruit-drier. Grain-drier.							
Drier	G. F. Robinson	256,503	Apr. 18	960	268 / 269	21	1123
Drill: *See* Dental drill. Rock-drill. Electric drill. Seed-drill. Grain-drill. Wheat-drill.							
Drill	J. W. Webber	252,161	Jan. 10	580	166	21	108
Drill and countersink combined	W. H. Southwick	258,704	Jan. 24	1227	344	21	927
Drill and reamer. Combined	F. H. Baltmann	253,263	Feb. 7	97	30	21	383
Drill-hole cleaner	W. H. Stewart and E. J. Chapman	257,779	May 9	780	220	21	1426
Drill-holding device	J. C. Titus	256,078	Apr. 4	396	108	21	1017
Drill-rod coupling	E. E. Hardy	254,477	Mar. 7	36	10	21	644
Drill-teeth. Machine for making	S. Delano and G. Abel	257,297	May 2	178	51	21	1312
Drilling-machine	H. Hager	255,618	Mar. 28	1469	397	21	913
Drilling-machine	D. B. Hartley	255,079	Mar. 14	694	215	21	784
Drilling-machine	G. W. Longman	254,031	Feb. 21	1047	293	21	541
Drilling-machine	G. C. Taft	257,538	May 9	477	133	21	1378
Drilling-machine. Hand	F. L. Heughes	259,147	June 6	335	88	21	1753
Drilling machine. Multiple	C. T. Parry	257,061	Apr. 25	1099	449	21	1253
Drinks. Shaker for mixing	L. Ward, S. A. Smith, and C. Pashley.	253,451	Feb. 7	318	88	21	399
Drive-pipe and coupling for oil and other wells	L. Smith	255,449	Mar. 28	1298	350	21	898
Driving-wheel	J. A. Hafner	252,457	Jan. 17	961	263	21	172
Drop-light. Extensible	C. S. Westland	256,294	Mar. 21	999	245	21	822
Drop-light pipe for chandeliers	G. P. Schumacher	256,136	May 16	1215	342	21	1014
Dropper: *See* Harvester-dropper. Seed-dropper.							
Drum	G. S. Knapp	254,143	Feb. 28	1178	329	21	571
Drum. Heating	C. H. Chapman	256,963	Apr. 25	1297	383	21	1217
Drum. Heating	A. Skue	254,059	Feb. 21	1052	300	21	546
Drum. Snare	H. C. Delano	256,899	June 6	40	10	21	1701
Drum-strap	A. Voege	256,380	Apr. 18	977	274 / 275	21	1136
Drum. Winding	M. T. Chapman	258,899	June 6	27	7	21	1699

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Dry-kiln	E. M. Flaherty	260,184	June 27	1655	449	21	1997
Drying and heating apparatus	A. Dreyfus	256,655	Apr. 18	1198	316 317	21	1161
Drying and pulverizing offal, &c. Apparatus for	J. F. Gubbins	255,859	Apr. 4	117	31	21	870
Drying apparatus	J. F. Gubbins	257,159	May 2	18	6	21	1294
Drying apparatus	G. W. Rawson	251,734	Jan. 3	57	15, 16	21	12
Drying coffee, grain, &c. Apparatus for	H. Scholfield	253,111	Jan. 31	1752	465 466	21	300
Drying-kiln	G. F. Speer	252,272	Jan. 10	721	203	21	130
Drying-machine. Centrifugal	T. Long	252,483	Jan. 17	966	274	21	179
Drying starch refuse and other substances. Machine for	W. Duryea	251,845	Jan. 3	207	57	21	37
Dummy-form. Leather	R. H. Weir	259,347	June 13	586	155	21	1893
Dumping-platform	G. H. Cormack	257,554	May 9	507	149	21	1377
Dust-collecting machine	A. H. Kirk	259,872	June 20	1250	333	21	1996
Dust-collecting machine	A. H. Kirk	259,873	June 20	1252	335 336	21	1996
Dust-collector	M. Harmon	260,194	June 27	1666	452	21	1999
Dust-collector	N. W. Holt	259,154	June 6	341	90	21	1754
Dust-collector	F. H. McElfresh	258,690	May 16	1166	398	21	1505
Dust-collector	J. Mills	258,099	May 16	1169	367	21	1506
Dust-collector	W. N., J. B., and W. N. Clark, Jr	258,631	May 30	1638	517	21	1630
Dust-pan	S. M. Perry	260,119	June 27	1579	425	21	1995
Dust-pan	S. M. Perry	260,120	June 27	1580	426	21	1996
Dust-pans. Detachable handle and leg for	C. Rumpff	256,375	Apr. 11	793	.....	21	1091
Dye-stuff or coloring-matter	J. H. Stebbins, Jr	254,064	Feb. 21	1087	.....	21	547
Dye-stuff or coloring-matter	J. H. Stebbins, Jr	254,065	Feb. 21	1088	.....	21	547
Dye-stuff or coloring-matter	J. H. Stebbins, Jr	256,401	Apr. 11	817	.....	21	1096
Dye-stuff or coloring-matter. Manufacture of	C. Rumpff	256,370	Apr. 11	793	.....	21	1091
Dye-stuff or coloring-matter. Manufacture of	C. Rumpff	256,377	Apr. 11	794	.....	21	1091
Dye-stuff or coloring-matter. Manufacture of	C. Rumpff	256,378	Apr. 11	794	.....	21	1091
Dye-stuff or coloring-matter. Manufacture of	C. Rumpff	256,379	Apr. 11	795	.....	21	1092
Dye-stuff or coloring-matter. Manufacture of	C. Rumpff	256,380	Apr. 11	795	.....	21	1092
Dye-stuff or coloring-matter. Purple	J. H. Stebbins, Jr	252,273	Jan. 10	722	.....	21	130
Dye-stuffs. Manufacture of brown	C. Rumpff	257,242	May 2	118	.....	21	1302
Dye-stuffs. Manufacture of brown	C. Rumpff	257,243	May 2	119	.....	21	1302
Dyeing and washing hanks of yarn, &c. Apparatus for	E. Boden	250,465	June 13	737	194 195	21	1831
Dyeing blue colors upon textile fabrics	J. H. Stebbins, Jr	255,349	Mar. 21	1148	.....	21	650
Dyeing colors on textile fabrics	T. and R. Holliday	254,550	Mar. 7	124	.....	21	659
Dyeing purposes. Ink for	P. Reid and J. Eastwood	256,506	Apr. 18	1057	.....	21	1149
Ear-ring	H. G. Mackinney	252,610	Jan. 24	1122	315	21	809
Ear-ring	P. K. De Mur	253,472	Feb. 7	340	95	21	404
Ear-wire lock	J. W. Carley. (Reissue)	10,097	Feb. 7	363	101	21	407
Earth borer and excavator	H. J. Behrens	256,006	May 16	1063	395	21	1486
Earth-closet	C. S. Watkins	253,329	Feb. 7	177	50	21	376
Earthenware cover and handle	C. W. Heaton and T. Bolas	254,312	Feb. 28	1369	.....	21	602
Earthenware, glass, &c. Production of vitrified coverings on	W. H. Brownell	257,653	May 9	640	179 180	21	1401
Easel	A. E. Van Kirk	260,068	June 27	1510	405	21	1974
Easel	A. Chappel	258,090	June 6	146	40	21	1730
Easel. Combination	A. A. Reeve	255,534	Mar. 28	1378	372	21	895
Easter egg. Artificial or toy	C. Burdick	255,251	Mar. 21	1021	273	21	899
Eaves-trough hanger	W. Hatch	252,033	Jan. 10	438	120	21	88
Eaves-trough hanger	R. E. Mallory	258,453	May 23	1613	456	21	1592
Eaves-trough hanger	J. B. Barredy	258,693	May 30	1915	541	21	1653
Eccentric. Adjustable	R. Ashe	254,980	Mar. 14	506	136	21	731
Edge-burnishing machine	R. Ashe	254,859	Mar. 14	506	135	21	731
Edge setting and burnishing machine	F. Moulton and C. M. Adams	251,785	Jan. 3	47	13	21	10
Edge-trimming-machine knife	F. H. Lander	254,340	Feb. 28	1403	386	21	609
Edge-trimming tool	J. A. Robb	258,046	June 6	92	24	21	1710
Edger	L. M. Slade	256,304	Apr. 11	811	223	21	1094
Eel-stop	C. Dela	254,540	Mar. 7	119	28	21	657
Egg and sugar beater	G. B. Fowler	256,310	Apr. 11	718	195	21	1078
Egg beater and mixer	O. F. Clark	259,096	June 6	278	74	21	1742
Egg-carrier	J. H. Louder	259,696	June 20	1035	276	21	1969
Egg-carrier	G. T. Riddle	259,213	June 6	411	109	21	1765
Egg-carrier	N. F. Tipton	254,517	Mar. 7	85	22	21	653
Egg-case	J. L. Stevens	255,738	Mar. 28	1633	441 442	21	941
Egg-pail	A. L. Hill and G. S. Simpson	253,866	Feb. 21	837	226	21	506
Egg-preserving apparatus	K. H. Loomis	253,074	Jan. 31	1705	470 471	21	312
Egg-tester	W. Kirkpatrick	259,171	June 6	367	97	21	1758
Egg-tester	T. H. B. Sanders	258,811	May 30	2043	577	21	1675
Egg-tray machine	N. Schroder and J. De Beauvais	252,264	Jan. 10	705	199 200	21	127
Eggs. Apparatus for holding and carrying	J. Halley and A. Barr	253,697	Feb. 14	617	174	21	461
Eggs. Composition for preserving	G. W. Mowry	259,938	June 6	397	.....	21	1770
Ejector for oil-wells	W. O. Robbins	254,361	Feb. 28	1448	397	21	616
Ejector. Steam and air	S. E. Hewes. (Reissue)	10,089	Jan. 31	1247	500	21	335
Elastic material for seats, window-blinds, &c	H. B. Cobb	254,994	Mar. 14	509	161	21	748
Electric bath	G. W. Lawson	257,675	May 16	903	259	21	1459
Electric battery. Polarization or secondary	C. A. Faure	258,088	Jan. 3	208	105	21	67
Electric block signaling apparatus	O. Gassett	251,997	Jan. 3	225	63	21	41
Electric cable	W. J. Phillips	258,949	Jan. 16	667	194	21	194
Electric cable	R. S. Waring	258,634	Jan. 24	1151	288	21	1862
Electric circuits. Safety device for	E. Weston	259,614	June 13	920	246	21	1862
Electric circuits. Safety device for	E. Weston	259,615	June 13	921	246	21	1862
Electric circuits. Safety device for	E. Weston	259,616	June 13	922	246	21	1863
Electric circuits. Signaling on	D. H. and L. C. Rice	255,814	Apr. 4	75	21	21	963
Electric communication. Device for underground	B. F. Teal	256,886	Apr. 25	1379	368	21	1214
Electric conductor. Underground	G. Richardson	259,044	June 6	216	58	21	1741
Electric conductors. Underground conduit for	G. Richardson	259,045	June 6	217	58	21	1731

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Electric detecting apparatus for watchmen	C. W. Hubbard	259,689	June 20	1083	273	21	1997
Electric detecting apparatus for watchmen	C. W. Hubbard	259,690	June 20	1084	273	21	1998
Electric drill	C. E. Ball	255,326	Mar. 21	1008	266	21	885
Electric generator and motor	J. H. Bunnell	255,931	Apr. 4	221	57, 58	21	967
Electric individual signal apparatus	C. E. Buell	258,687	May 30	1637	516	21	1638
Electric individual signaling apparatus	C. E. Buell	258,685	May 30	1883	545	21	1657
Electric light	A. L. Arey	253,898	Feb. 14	781	208	21	491
Electric light	E. A. Edwards	257,678	May 9	660	167	21	1407
Electric light	C. P. Hosmack	256,686	Apr. 18	1170	326 329	21	1169
Electric light	P. O. Jenkins	260,689	June 27	1462	394	21	1967
Electric light carbon	J. B. King	256,683	Apr. 18	1296	365	21	1198
Electric-light circuits. Switch for	S. Bergmann	257,276	May 2	154	44	21	1300
Electric-light guard	W. McDevitt	256,561	Apr. 18	1037	288	21	1146
Electric-light regulator	J. H. Guest	254,546	Mar. 7	119	30	21	656
Electric-light regulator	N. S. Keith	255,795	Apr. 4	52	15	21	940
Electric-light regulator	N. S. Keith	257,566	May 9	586	159	21	1388
Electric-light regulator	J. J. Wood	257,800	May 9	614	200	21	1432
Electric-light systems. Automatic regulator for	W. L. Voelker	251,748	Jan. 3	74	20	21	15
Electric lights, &c. Apparatus for elevating poles for	J. D. A. Measing	253,743	Feb. 14	674	183	21	471
Electric lights. Circuit-regulating device for	C. M. Ball	252,347	Jan. 17	811	206	21	150
Electric lights. Shunting device for	C. J. Van Depoele	257,966	May 16	1035	298	21	1461
Electric lighting apparatus	M. G. Farmer	259,746	Jan. 24	1275	356 359	21	935
Electric lighting apparatus	M. G. Farmer	253,817	Feb. 14	771	220	21	489
Electric lighting apparatus	J. B. Fuller	253,038	Jan. 31	1640	457	21	383
Electric lighting apparatus	E. T. Starr	257,403	May 2	207	86	21	1336
Electric lighting for railway-trains. System of	C. E. Buell	259,302	June 13	908	160 161	21	1806
Electric lighting system	M. G. Farmer	259,836	Jan. 24	1269	291	21	935
Electric lighting system	W. E. Sawyer and A. Man. (Reissue.)	10,134	June 6	503	120 121	21	1781
Electric machine. Dynamo	C. E. Ball	259,677	June 6	257	66	21	1736
Electric machine. Dynamo	C. E. Ball	259,791	June 20	1161	309 310	21	1910
Electric machine. Dynamo	G. H. Bangs	256,618	Apr. 18	1063	305	21	1153
Electric machine. Dynamo	W. Hochhausen	257,097	Apr. 25	1248	433	21	1402
Electric machine. Dynamo	E. J. Houston	256,648	May 30	1656	523	21	1642
Electric machine. Dynamo	E. J. Houston	256,649	May 30	1655	523	21	1642
Electric machine. Dynamo	C. A. Hussey	252,280	Jan. 17	854	237	21	156
Electric machine. Dynamo	C. A. Hussey	253,367	Feb. 7	236	67	21	369
Electric machine. Dynamo	H. J. Müller	256,664	May 30	2160	593	21	1666
Electric machine. Dynamo	W. S. Parker	256,600	May 30	2033	574	21	1673
Electric machine. Dynamo	W. E. Sawyer	254,056	Feb. 21	1077	289	21	546
Electric machine. Dynamo	H. B. Sheridan	256,391	Apr. 11	806	220	21	1094
Electric machine. Dynamo	H. B. Sheridan	256,392	Apr. 11	810	220	21	1094
Electric machine. Dynamo	E. A. Sperry	260,132	June 27	1561	440 439	21	1966
Electric machine. Dynamo	C. J. Van Depoele	259,661	June 6	230	64	21	1734
Electric machine. Dynamo	F. Von Hefner-Alteneck	256,061	Apr. 4	398	106 109	21	1017
Electric machine. Dynamo	E. Weston	255,364	Mar. 21	1164	319	21	653
Electric machine. Dynamo	E. Weston	255,366	Mar. 21	1166	313	21	653
Electric machine. Dynamo	E. Weston	256,778	Apr. 18	1257	357	21	1187
Electric machine. Dynamo	E. Weston	259,617	June 13	923	246	21	1863
Electric machine. Dynamo	E. Weston	259,618	June 13	924	247	21	1863
Electric machine. Dynamo	W. Wheeler	256,188	Apr. 11	838	149	21	1047
Electric machine. Dynamo	L. G. Woolley	256,768	Apr. 18	1277	360	21	1188
Electric machine. Dynamo	R. Thury	260,126	June 27	1568	431	21	1968
Electric machine regulator. Dynamo	W. Hochhausen	252,063	Jan. 24	1163	331	21	919
Electric machine. Short-circuiting switch for dynamo	C. E. Ball	257,099	May 16	1054	323	21	1404
Electric machines. Armature for dynamo	G. H. Brown	255,137	Mar. 21	672	234	21	633
Electric machines. Armature for dynamo	J. J. and T. J. McTighe	260,110	June 27	1565	433	21	10 3
Electric machines. Armature for dynamo	E. T. Starr	257,404	May 2	210	88, 89	21	1336
Electric machines by the motion of a moving vehicle. Mechanism for driving dynamo	C. A. Cooley	258,022	May 16	1063	301	21	1470
Electric machines. Commutator for dynamo	J. J. and T. J. McTighe	260,111	June 27	1566	433	21	1963
Electric machines. Commutator for dynamo	A. G. Waterhouse	252,405	Jan. 17	944	246	21	163
Electric machines. Polarity-protector for dynamo	W. Hochhausen	252,065	Jan. 24	1186	332	21	920
Electric machines. Regulator for dynamo	H. S. Maxim	255,311	Mar. 21	1104	307 308	21	943
Electric machines. Speed-regulator for dynamo	H. S. Maxim	255,310	Mar. 21	1101	307	21	943
Electric meter	C. V. Boys	254,567	Mar. 7	124	46	21	660
Electric meter	C. V. Boys	256,965	Apr. 25	1409	409	21	1224
Electric meter	L. Daft	258,353	May 23	1567	494	21	1577
Electric meter	J. D. Kisky	256,706	Apr. 18	1197	334	21	1174
Electric motor	C. J. Van Depoele	257,999	May 16	1078	299	21	1468
Electric motor and generator. Combined	G. C. Maynard	259,126	June 6	262	101	21	1761
Electric push-button	H. R. Sheridan and H. A. Gorn	259,289	June 13	898	257	21	1858
Electric safety-elevator	R. M. Hunter	257,948	May 16	993	277	21	1472
Electric signal	F. R. Wood and H. J. Brewer	258,489	Jan. 17	987	247	21	163
Electric-signal-printing register. Automatic	J. King	256,488	Apr. 18	948	262	21	1130
Electric signal-transmitter	H. Pickford and H. T. Gregory	258,781	Jan. 24	1343	376	21	947
Electric signaling apparatus	H. J. Brewer and F. B. Wood	258,283	Jan. 17	81[illegible]	228	21	158
Electric-signaling apparatus. Automatic	H. B. Sheridan	253,435	Feb. 7	883	84	21	395
Electric store-house and lights. Regulator for	T. W. Lane	259,556	June 13	853	235	21	1851
Electric switch-board	D. Dewar	256,361	May 30	1742	493	21	1662
Electric switch board and plug	W. C. Allison. (Reissue)	9,989	Jan. 3	460	106	21	69
Electric wires and lamps in cities. Support for	P. J. Duggan	259,831	June 20	1905	383	21	1918
Electric wires. Pipe for underground	S. M. Plush	254,099	Feb. 21	1130	313	21	553
Electric wires. Safety device for	C. H. Goebel	259,130	June 6	215	64	21	1750
Electric wires. Underground conduit for	A. F. McGrew	257,257	May 2	256	72	21	1287
Electric wires. Underground conduit for	W. Paul	255,661	Mar. 28	1538	412	21	963
Electrical apparatus. Device for connecting wires in							

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Electrical carbons. Draw-plate for preparing fibrous filaments for	J. H. Guest	256,212	Apr. 11	504	102	21	1056
Electrical carbons. Forming and treating	J. H. Guest	256,213	Apr. 11	506	102	21	1056
Electrical conducting-wires with metallic armor. Machine for covering	W. Halkyard	253,589	Feb. 14	421	117	21	420
Electrical conductor. Underground	G. Richardson	259,046	June 6	219	59	21	1731
Electrical distribution. System of	E. Thomson	255,894	Apr. 4	85	23, 24	21	985
Electrical fixture	L. Stieringer	259,235	June 6	438	116	21	1770
Electrical generation and distribution. System of	H. S. Maxim	256,910	Apr. 25	1430	408	21	1298
Electrical illumination	C. E. Buell	258,178	Jan. 10	007	171	21	111
Electrical meter	H. S. Maxim	255,306	Mar. 21	1095	286	21	841
Electrical meter	H. S. Maxim	255,307	Mar. 21	1097	286	21	842
Electrical meter	H. S. Maxim	255,308	Mar. 21	1099	286	21	843
Electrical purposes. Coating and insulating wire for	J. Taylor	251,970	Jan. 3	343	.....	21	59
Electrical relay	C. Ader	256,268	Apr. 11	688	179	21	1088
Electrical-signal transmitter	G. S. Mott	258,243	Jan. 10	661	193	21	123
Electrical-signaling apparatus	C. E. Buell and J. F. Buel	258,268	Jan. 10	741	208	21	132
Electrical signaling-circuit	T. D. Lockwood	256,934	June 6	80	21	21	1706
Electrical switch-board	J. B. Odell	248,395	Jan. 17	873	243	21	161
Electrical switch-board	C. E. Scribner	254,369	Feb. 28	1456	398	21	617
Electrical switch-board	T. N. Vail	255,656	Mar. 14	776	220	21	779
Electrical switch-board	T. N. Vail	260,067	June 27	1508	405	21	1974
Electrical switch-boards. Plug for	H. W. Leland	256,931	June 6	77	20	21	1706
Electricity. Apparatus for signaling by	J. W. Stover	255,194	Mar. 21	857	230	21	800
Electricity. Distribution of energy by	S. L. Fox	254,948	Mar. 14	686	{168 169	21	753
Electricity. Lighting cars by	W. A. Stern and H. M. Bylleeby	258,140	May 16	1233	347	21	1617
Electro-magnetic brake	L. W. Goss and H. Walter	258,293	Jan. 10	748	208	21	134
Electro-magnetic escapement mechanism	J. M. Gardiner	256,994	Apr. 25	1389	430	21	1240
Electro-magnetic locomotives. Wheel for	E. N. Dickerson, Jr	257,398	May 2	179	51	21	1313
Electro-magnetic motor	G. Little	259,404	June 13	639	174	21	1817
Electro-magnetic motor	L. G. Woolley	250,784	Apr. 18	1274	359	21	1188
Electro-magnetic relay	C. A. Randall	254,045	Feb. 21	1064	296	21	543
Electroplating. Apparatus for	A. Brinckmann	258,314	May 23	1332	377	21	1643
Electroplating with platinum and silver	M. H. Campbell	253,159	Jan. 31	1824	.....	21	331
Elevated way	N. Newman	256,034	Apr. 4	344	93	21	1008
Elevating machinery. Device for stopping the revolutions of the drum in	G. Dryden	259,065	Jan. 10	499	{138 139	21	93
Elevator: *See* Brick and mortar elevator. Hydraulic and pneumatic elevator. Electric safety-elevator. Ice-elevator. Mail-elevator. Freight-elevator. Platform-elevator. Grain-elevator. Pneumatic elevator. Harvester-elevator. Safety-elevator. Hay-elevator. Suction-elevator. Hod-elevator. Water-elevator. Hydraulic elevator. Wood and coal elevator.							
Elevator	J. B. Atwater	256,111	Apr. 11	455	123	21	1033
Elevator	C. W. Baldwin. (Reissue)	10,017	Jan. 31	1843	508	21	334
Elevator	R. Dunbar	254,291	Feb. 28	1346	371	21	508
Elevator	P. Hinkle	257,943	May 16	988	276	21	1478
Elevator	W. H. Patterson	257,188	May 2	42	13, 14	21	1288
Elevator	J. D. Richardson	259,923	June 20	1308	351	21	1935
Elevator	H. Roberts	258,801	Jan. 24	1353	378	21	246
Elevator	G. C. Tewksbury	255,649	Mar. 14	767	208	21	777
Elevator	G. C. Tewksbury	255,651	Mar. 14	770	207	21	778
Elevator	G. C. Tewksbury	260,254	June 27	1741	470	21	2010
Elevator	S. H. Thornton	258,517	Apr. 18	974	273	21	1130
Elevator	P. H. Welsh	260,361	June 27	1747	472	21	2011
Elevator and dumb-waiter	J. Johnston	258,073	May 16	1136	319	21	1500
Elevator-bucket	G. W. Caltrins and J. Woodhill	256,100	Apr. 4	494	118	21	1032
Elevator-door. Self-closing	T. M. Clark	253,345	Feb. 7	193	55	21	379
Elevator-gate. Automatic	J. Cushing	256,981	Apr. 25	1516	{425 426	21	1237
Elevator-gate. Automatic	B. C. Vandusen	258,627	May 30	2063	589	21	1679
Elevator-guard. Automatic	J. F. Abbott	253,178	Feb. 7	1	1	21	347
Elevator-hoisting apparatus	E. Bond	258,011	May 16	1069	297	21	1467
Elevator safety apparatus	C. W. Baldwin	258,091	May 30	1913	540	21	1658
Elevator safety apparatus. Self-acting	J. McCarroll. (Reissue)	10,127	May 30	2111	598	21	1688
Elevator safety apparatus. Self-acting	J. McCarroll	255,646	Mar. 28	1514	407	21	920
Elevator safety attachment	P. D. Harton	255,110	Mar. 21	843	225	21	798
Elevator safety-attachment	C. B. Morgan	256,354	Apr. 11	768	211	21	1067
Elevator safety attachment	F. W. Voerde	250,951	June 20	1344	361	21	1941
Elevator safety attachment	F. T. Ward	259,710	Jan. 24	1238	346	21	226
Elevator safety-brake. Automatic	C. S. Longstreet	256,013	Apr. 4	332	45	21	1004
Elevator-shafts. Automatic floor for	E. L. Demorest	259,105	June 6	290	77	21	1745
Elevator-stop	G. C. Tewksbury	255,650	Mar. 14	769	208	21	778
Elevators. Automatic safety-stop for	J. P. Freeman	260,017	June 27	1448	390	21	1995
Elevators. Safety apparatus for passenger and other	M. N. Hutchinson	259,019	June 6	185	48	21	1726
Elevators. Safety apparatus for passenger and other	M. N. Hutchinson	259,769	June 20	1127	299	21	1904
Elliptograph	E. E. Clark	256,468	Apr. 18	907	254	21	1134
Elliptic spring	G. W. Bell	257,395	May 2	67	20	21	1283
Elliptic spring	H. Gardiner	257,589	May 9	587	147	21	1379
Elliptic springs. Die for making	C. T. Schoen	257,089	Apr. 25	1685	455	21	1257
Embalming and cooling board for corpses	N. T. Shaw	263,330	June 27	1831	495	21	2025
Embroidering	M. Hoffmann	252,377	Jan. 17	851	236	21	157
Embroidering-machine	C. A. v. Gonzenbach	252,659	Jan. 24	1179	330	21	219
Embroidering-machine	A. Hardegger	255,284	Mar. 21	1057	{283 284 285 286}	21	835
Embroidering-machine	A. Heaven	254,367	Mar. 14	651	176	21	756

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Embroidering-machine motor	C. Wenner	255,710	Mar. 28	1301	{429 430}	21	934
Embroidery	J. Wigut	257,220	May 2	123	22	21	1284
Embroidery-case	E. J. V. Earle	260,234	May 16	1695	395	21	1494
Emery grinding and polishing wheel. Elastic-center	M. Halsted	254,611	Feb. 21	1023	294	21	535
Emery-holder	A. N. Matthews	260,109	June 27	1502	401	21	1963
End-gate	J. W. Handayside	256,450	Jan. 17	889	239	21	174
End-gate and shoveling-board. Combined	G. W. Holly	257,339	May 2	220	60, 61	21	1289
End-gate. Wagon	D. B. Bender	258,415	Jan. 17	991	240	21	165
End-gate. Wagon	O. W. Moore	257,235	May 2	110	31	21	1280
End-gate. Wagon	G. Quick	256,563	Apr. 18	1053	297	21	1148
End-gate. Wagon	P. Young	258,259	June 6	497	194	21	1715
Engine: *See* Compound-engine. Reciprocating engine. Cylinder-engine. Road-engine. Dental engine. Rotary engine. Direct-acting engine. Rotary steam-engine. Fire-engine. Steam-engine. Gas-engine. Steam, air, or water engine. Gas-motor engine. Steam and air engine. Logging-engine. Steam and compressed-air engine. Locomotive-engine. Mining-engine. Steam and hot-air engine. Oscillating engine. Traction-engine. Paper-pulp engine. Water-engine. Pulp-engine. Wind-engine. Pumping-engine.							
Engine reversing-gear	G. Krats	258,408	June 13	657	{173 174}	21	1816
Engineering. Electrical	H. S. Maxim	255,312	Mar. 21	1106	290	21	849
Engraving and chasing machine	A. P. Phillips	259,912	June 20	1304	346	21	1932
Ensilage-cutter	J. Y. Smith	258,257	May 23	1353	371	21	1552
Ensilage-cutter	J. Y. Smith	258,256	May 23	1367	388	21	1553
Envelope	D. Lubin	247,358	May 2	251	71	21	1286
Envelope	D. Lubin	256,861	May 30	2090	592	21	1685
Envelope	K. H. Pedrick	254,941	Apr. 11	635	178	21	1063
Envelope fastening. Sample	C. W. Ballard	255,348	May 23	1468	423	21	1570
Envelope for ice-cream, &c. Non-conducting	M. T. Fussell	258,640	May 30	1842	519	21	1641
Envelope-opener	W. A. De Caudry	259,930	Jan. 31	1519	433	21	288
Envelopes. Manufacture of	E. B. Stocking	259,338	June 6	444	{117 118}	21	1771
Eraser. Blackboard	C. M. Lothrop	254,084	Feb. 21	1116	312	21	553
Etching vitreous surfaces. Compound for	P. Bitterlin, Jr	254,383	Feb. 28	1318	.....	21	504
Evaporating and cooling apparatus	A. Gontard	254,003	Feb. 21	1005	{301 302 157 158}	21	534
Evaporating-pan	A. Brear	259,257	June 13	595	156	21	1854
Evaporating-pan	A. B. Heathorn	256,008	May 16	1126	315	21	1497
Evaporating-pan	H. B. Stevens	253,194	Jan. 31	1766	{490 491}	21	322
Evaporating-pans. Broom and scoop mechanism for	C. F. W. Schramm	255,695	Mar. 14	741	200	21	773
Evaporating salt-brine	A. McBean and J. H. Watson	258,612	Jan. 24	1194	315	21	209
Evaporator: *See* Register-evaporator. Sugar-evaporator. Salt-evaporator. Vegetable and fruit evaporator. Steam-heat evaporator.							
Evaporator and heater	R. M. Skiles	259,933	June 20	1320	354	21	1937
Excavating and dredging machine	G. Souther	258,851	June 6	108	26	21	1711
Excavating earth in trenches. Machine for	C. A. Ferry	253,995	Feb. 21	996	{278 279}	21	538
Excavator	S. P. Hunter	259,396	June 13	649	172	21	1815
Excavator and conveyer. Earth	C. A. and F. D. Smith	253,696	Feb. 21	973	248	21	513
Excavator. Coal	H. Wilworth	252,565	Jan. 17	1074	280	21	194
Excavator. Earth	W. A. Nutt	253,751	Feb. 14	694	186	21	473
Exercising apparatus	W. J. O. Bryon, Jr	254,188	Feb. 28	1140	310	21	564
Exercising apparatus	J. M. Ladin	258,773	May 30	2083	585	21	1685
Exercising-club	G. P. Fisher, Jr	259,758	June 20	1114	297	21	1903
Exercising-club	E. M. Folk	257,922	May 16	970	271	21	1422
Exhaust-nozzle	J. F. Marks	254,146	Feb. 28	1122	300	21	571
Exhaust. Utilizing	H. T. Litchfield and D. Renshaw	260,033	June 27	1467	393	21	1992
Exhibiting-rack	J. W. Tuttle	255,215	Mar. 21	869	239	21	809
Expansion-joint	J. J. Moss	258,794	May 30	2069	573	21	1672
Exploder for blasting-cartridges	J. C. Schrader	253,893	Feb. 21	969	245	21	512
Exploder for firing blasts	A. Watson	253,649	Feb. 14	654	152	21	451
Explosive compound	C. Dittmar	256,909	Jan. 24	1114	.....	21	209
Explosives. Tester for	G. S. Dean	253,914	Feb. 21	982	251	21	516
Express signal-call	H. S. Stix	256,689	May 30	2055	580	21	1677
Extension-table	N. Bauer	257,274	May 2	153	43	21	1288
Extension-table	J. A. Proft	255,454	Mar. 28	1240	345	21	878
Extension-table. Circular	J. F. Schultz	254,368	Feb. 28	1455	398	21	617
Extractor: *See* Cartridge-extractor. Spike-extractor. Corn-extractor. Stump-extractor. Fish-hook extractor.							
Extracts from vegetable substances. Apparatus for making	M. Wise	253,892	Feb. 14	751	214	21	485
Eyeglass-frame	F. A. Schorr	256,861	Apr. 25	1374	387	21	1213
Eyeglass-frame	F. Terstegen	254,070	Feb. 21	1092	288	21	546
Eyelet	A. L. Parcelle	257,750	May 9	756	211	21	1421
Eyelet-holes. Device for opening	G. A. Dubreuil	257,391	May 2	182	88	21	1314
Eyelet-stock. Machine for making	S. N. Smith	258,229	June 6	430	114	21	1709
Eyeleting-machine	C. A. Corman	259,100	June 6	288	75, 76	21	1743

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Eyes. Device for protecting the	J. Story	251,743	Jan. 3	67	18	21	14
Fabric: *See* Fringed fabric. Tufted fabric. Fur-faced fabric. Water-proof fabric. Meshed or netted fabric.							
Fabrics. Frame for stretching	E. Conrad	260,086	June 27	1530	411	21	1978
Fabrics from unrolling. Securing rolls or packages of	W. S. Holland	258,309	May 23	1425	407	21	1561
Fabrics. Machine for stretching	G. W. Miller	259,036	June 6	206	55	21	1739
Fabrics. Process of and apparatus for aging	T. Simpson	255,543	Mar. 28	1388	375	21	897
Fan	G. Brueck	256,706	May 30	1935	546	21	1656
Fan	M. Cohen	259,880	June 20	1195	319	21	1916
Fan	L. Jordan	257,950	May 16	996	278	21	1474
Fan	J. North	257,058	Apr. 25	1595	446	21	1329
Fan	J. C. St. John	255,549	Mar. 28	1394	377	21	898
Fan	C. Strickrodt	259,706	Jan. 24	1239	344	21	297
Fan	T. Heaton	256,753	May 30	1963	569	21	1664
Fan. Automatic	G. W. Overall	255,659	Mar. 28	1598	411	21	922
Fan. Automatic	A. A. Selden and W. G. Duckett	253,894	Feb. 11	671	246	21	519
Fan. Automatic	A. Lloyd	252,885	Jan. 31	1463	409	21	272
Fan. Fly	T. A. Martin	256,785	May 30	2019	570	21	1670
Fan. Fly	H. M. Smith	257,779	May 9	783	218	21	1426
Fan. Rotary	M. L. Flowers and D. Talmage	252,367	Jan. 17	836	233	21	155
Fanning-machine	F. M. Bissell	253,908	Feb. 21	967	{269 270	21	527
Fanning-mill	J. D. Bush	256,972	Apr. 25	1505	423	21	1235
Fanning-mill	C. C. Eddy and A. A. Levan	254,409	Mar. 7	96	7, 8	21	643
Fanning-mill	H. E. Keeler	254,140	Feb. 28	1175	398	21	570
Fanning-mill	P. Poyneer	255,812	Apr. 4	73	20	21	963
Fanning-mill	W. H. Buckley, Jr	259,360	June 13	603	150	21	1806
Fare-box	E. W. Andrews	256,271	May 23	1402	397	21	1555
Fare-collector for street-cars	J. B. Benton	259,417	Jan. 17	909	{250 251	21	165
Fare-register	J. N. Maskelyne	259,565	June 13	860	228	21	1852
Fare-register	W. H. Hornum	256,390	Apr. 11	729	{198 199	21	1080
Fare register and recorder	G. W. Fouiger	253,487	Feb. 7	360	100	21	406
Farm and yard gate	H. Gillett. (Reissue)	10,016	Jan. 24	1431	399	21	260
Farm-engine boilers. Fire-box attachment for	G. I. Blynn	258,624	May 30	1923	515	21	1637
Farm-gate	J. J. Johnston	254,020	Feb. 21	1033	286	21	538
Farm-gate	D. Spencer	253,119	Jan. 31	1761	489	21	321
Farm-gate	R. H. Wadlow	253,791	Feb. 14	739	211	21	483
Fastening device	E. Woodward	251,756	Jan. 3	82	24	21	17
Fastening-driving machine	A. J. Huet	255,983	Apr. 4	139	.....	21	973
Fat from slaughter-house scraps, &c. Extraction of animal	H. Mége. (Reissue)	10,137	June 13	961	.....	21	1873
Fats. Treating animal	H. Heckel	255,504	Mar. 28	1343	362	21	889
Fats and oils. Apparatus for decomposing	L. Bergen	255,914	Apr. 4	196	51	21	963
Faucet	U. Bohren	256,873	Apr. 25	1388	390	21	1216
Faucet	J. B. Gathright	251,775	Jan. 3	110	31	21	21
Faucet	J. Giolow	255,168	Mar. 21	911	244	21	809
Faucet	J. Howes	256,490	Apr. 18	938	261	21	1198
Faucet	J. Howes	256,491	Apr. 18	934	261	21	1199
Faucet	J. H. Johnson	260,030	June 27	1463	394	21	1967
Faucet	T. Mackel	258,046	Jan. 10	453	124	21	85
Faucet	D. Morrison	255,681	Apr. 4	153	41	21	976
Faucet	G. A. Naumann	254,089	Mar. 7	983	75	21	686
Faucet	A. Roehe	251,953	Jan. 3	324	88	21	56
Faucet	J. O. Waddell	253,136	Jan. 31	1780	494	21	325
Faucet	A. N. Whiting	256,540	May 23	1716	464	21	1610
Faucet	C. Whittaker	257,538	May 9	483	134	21	1373
Faucet	F. C. Zanetti	256,988	Apr. 25	1380	368	21	1214
Faucet and automatic toy. Combined	W. W. Sweeney	254,577	Mar. 7	162	40	21	646
Faucet attachment	M. Magin	259,606	June 20	1041	276	21	1899
Faucet. Beer	J. Mappes	256,020	Apr. 4	332	88	21	1005
Faucet. Beer	W. M. Sack	253,107	Jan. 31	1748	484	21	319
Faucet. Filtering	F. A. Bishop	255,918	Apr. 4	206	54	21	964
Faucet for regulating the overflow from basins	J. H. Blum	252,644	Jan. 24	1163	{325 326 327	21	216
Faucet. Measuring	J. C. Norris	254,096	Feb. 21	1052	293	21	541
Faucet. Measuring	J. Stephenson	256,510	Apr. 18	966	270	21	1134
Faucet. Water	H. Berger	253,833	Feb. 21	797	226	21	500
Feather pillows, bolsters, &c. Manufacture of	J. W. Bingaman	258,979	June 6	133	35	21	1717
Feather-renovator	E. D. Cole	259,490	June 13	791	206	21	1838
Feather-renovator	J. Hawlowets	258,374	Jan. 17	847	235	21	157
Feather trimming. Ostrich	G. A. and G. W. Sammet	258,607	May 30	1805	509	21	1634
Feathers for bedding, &c. Apparatus for preparing	J. Hawlowets	259,388	June 13	641	170	21	1813
Feathers. Machine for drying	F. Wheaton	255,740	Mar. 28	1636	443	21	941
Feed-bag for horses	A. Brandt	258,013	May 16	1070	298	21	1467
Feed-cutter	W. H. Hallock and A. N. Smith	255,499	Mar. 28	1251	337	21	873
Feed-regulating device	H. F. Brown	258,193	May 16	1292	{363 364	21	1587
Feed-water heater	E. Kendall	258,167	June 6	300	85, 86	21	1757
Feed-water heater	A. Kennedy and J. H. Berkshire. (Reissue.)	10,138	June 13	962	262	21	1873
Feed-water heater	E. L. Morse	259,706	June 20	1054	290	21	1898
Feed-water heater	E. Reynolds	254,047	Feb. 21	1068	297	21	544
Feed-water heater	G. W. Sloane	257,396	May 2	300	85, 86	21	1335
Feed-water heater	G. W. Sloane	258,141	May 16	1282	344	21	1516
Feed-water heater	J. H. Turner	255,475	Mar. 28	1309	352	21	883
Feed-water heater	R. P. Valentine	256,060	Apr. 4	308	108	21	1017
Feed-water heater	R. W. Jones	257,336	May 2	223	66	21	1323
Feed-water heater and purifier	C. H. Shields	252,147	Jan. 10	573	161	21	165

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Feed-water regulator	N. Clute. (Reissue)	10,197	May 9	853	230	21	1440
Feed-water regulator. Boiler	C. O. Wyman	259,787	June 20	1156	307	21	1900
Feeding stock. Time mechanism for	E. Wescelle	259,926	June 6	461	122	21	1774
Felly-connection for vehicle-wheels	O. C. Ross	254,103	Feb. 28	1260	338	21	575
Felly-plate	J. B. Blatt	257,879	May 2	156	44	21	1289
Felt. Apparatus for lasting and treeing wool	A. A. Hawley	256,916	June 6	37	15, 16	21	1704
Felt. Mold for making articles of	S. G. Alexander	259,453	June 13	719	181	21	1837
Felt. Treating animal hair for manufacturing	G. J. Gregersen	254,811	Feb. 28	1255	.....	21	563
Felted articles. Former for supporting hollow	A. A. Hawley	256,917	June 6	39	16	21	1705
Felting-machine	A. Pellese	254,841	Feb. 21	1038	{294 295	21	542
Fence	I. Calvin	258,191	Jan. 10	618	174	21	113
Fence	H. P. Davies	254,286	Apr. 11	702	191	21	1075
Fence	M. French	257,898	May 9	668	191	21	1400
Fence	J. M. Garrison	259,585	June 13	813	215	21	1844
Fence	J. Hoffman	257,944	May 16	989	276	21	1472
Fence	G. A. Horn	254,433	Apr. 11	688	240	21	1103
Fence	H. E. Johnson	257,013	Apr. 25	1560	435	21	1343
Fence	I. L. Landis	258,479	Jan. 17	979	272	21	170
Fence	I. L. Landis	254,284	Feb. 28	1272	352	21	548
Fence	A. D. Robinson and H. W. Thompson.	255,673	Mar. 28	1543	416	21	906
Fence	C. C. Sheldon	255,342	Mar. 21	1141	306	21	849
Fence	H. Smith	258,051	Jan. 10	472	130	21	89
Fence	H. Smith	257,397	May 2	301	85	21	1335
Fence	A. R. Stevenson	253,193	Jan. 31	1769	491	21	333
Fence	T. M. Worthington	259,654	June 13	972	259	21	1671
Fence. Barb	W. M. Harris	258,914	June 6	55	15	21	1704
Fence barb. Wire	H. J. Schneider	253,638	Feb. 14	535	158	21	446
Fence barb. Wire	R. H. Wiles	257,196	May 2	57	17	21	1291
Fence barb. Wire	R. H. Wiles	260,268	June 27	1787	475	21	2013
Fence barbs. Machine for making	E. and A. G. Childress	255,413	Mar. 28	1233	{321 338	21	870
Fence-barbs. Machine for making metal	T. B. Doolittle	255,423	Mar. 28	1245	{334 335	21	872
Fence. Barbed	J. and W. M. Brinkerhoff	258,014	May 16	1071	298	21	1468
Fence. Barbed	J. and W. M. Brinkerhoff	256,706	May 30	1933	546	21	1656
Fence. Barbed	J. Carpenter	256,888	June 6	98	7	21	1699
Fence. Barbed	J. H. Connelly	254,278	Feb. 28	1239	369	21	566
Fence. Barbed	A. J. Upham	255,309	Mar. 21	1211	334	21	861
Fence. Barbed-wire	C. Pieper	259,205	June 6	403	107	21	1764
Fence. Barbed-wire	W. Watkins and H. B. Scutt. (Reissue.)	10,033	Mar. 7	410	109	21	703
Fence. Board and wire	N. and M. Cheney	257,847	May 16	871	244	21	1453
Fence. Electric-wire	J. H. Connelly	259,569	Jan. 24	1113	312	21	297
Fence. Iron	E. G. Dewes	254,086	Mar. 14	513	138	21	724
Fence. Iron	S. W. Martin	254,353	Feb. 28	1417	389	21	611
Fence. Iron	J. H. Waters	257,194	May 2	55	17	21	1291
Fence machine. Barb-wire	F. E. Patterson	258,314	May 23	1440	411	21	1563
Fence nail. Wire	C. W. Dean	256,486	Apr. 18	918	255	21	1195
Fence nail. Wire	S. Leonard	256,488	Apr. 18	945	263	21	1121
Fence. Picket	R. H. McGinty. (Reissue)	10,009	Jan. 3	405	109	21	70
Fence. Portable	W. H. Hay	254,214	Feb. 28	1256	349	21	564
Fence. Portable	S. P. Porter	257,755	May 9	765	213	21	1423
Fence. Portable	S. E. Rahn	258,021	Jan. 24	1138	316	21	211
Fence. Portable	W. H. Randall	254,504	Mar. 7	70	19	21	650
Fence. Portable	O. E. H. M. Reichling	253,765	Feb. 14	703	200	21	477
Fence. Portable	E. Stahl	257,101	Apr. 25	1640	461	21	1361
Fence. Portable	D. B. Wagner	258,830	May 30	2067	583	21	1670
Fence. Portable	H. M. Beecher	255,714	Mar. 28	1596	430	21	925
Fence-post	J. M. Brokaw	254,194	Feb. 28	1233	343	21	560
Fence-post	W. Cline	256,894	Apr. 25	1400	374	21	1218
Fence-post	M. T. Gleason	254,304	Feb. 28	1383	378	21	691
Fence-post	C. Kinney	254,088	Mar. 7	284	69	21	683
Fence-post	M. G. Lewis	251,904	Jan. 3	272	74	21	48
Fence-post	C. A. Mann	254,359	Feb. 28	1413	386	21	619
Fence-post	J. F. Morrison	258,459	May 23	1619	457	21	1593
Fence-post	E. P. Phillips	255,810	Apr. 4	71	19	21	962
Fence-post	J. J. Squire	257,900	May 16	937	261	21	1466
Fence-post	F. F. Wyman	257,109	May 2	89	19	21	1291
Fence-post	A. H. Lucas	257,580	May 9	561	148	21	1369
Fence-post. Iron	G. C. Baker	256,535	Apr. 18	902	260	21	1139
Fence-rail. Barbed metallic	S. W. Martin	255,586	Mar. 28	1271	370	21	893
Fence-rosette	J. Carpenter	258,987	June 6	95	6	21	1699
Fence-strap. Barbed	S. H. Gregg	256,413	May 23	1561	448	21	1583
Fence-strips. Manufacture of barbed	L. Brenizer	259,893	June 20	1174	313	21	1918
Fence. Wire	S. Calhoun	254,796	Mar. 14	430	115	21	716
Fence. Wire	E. Rusco	258,702	Jan. 24	1225	343	21	227
Fence. Wire	J. F. Strong	256,501	May 23	1668	471	21	1601
Fence-wire barb	S. Smallwood	254,846	Mar. 14	555	148	21	749
Fence-wire. Barbed	G. Case	256,899	Apr. 25	1395	392	21	1217
Fence-wire. Barbed	N. Clark	254,923	Mar. 14	596	160	21	748
Fence-wire. Barbed	L. E. Evans	255,738	Mar. 28	1613	436	21	929
Fence-wire-barbing machine	J. Brotherton	253,675	Feb. 14	586	166	21	498
Fence-wire-barbing machine	F. P. Cady	256,121	Apr. 11	466	{125 126 127	21	1035
Fence-wire-barbing machine	H. W. Putnam	253,894	Feb. 14	779	{334 335 336 337	21	490
Fence-wire. Machine for making barbed	M. Converse and F. P. Cady	256,784	Apr. 18	1287	{338 339	21	1190
Fence-wire. Machine for manufacturing barbed	H. W. Putnam, L. Bradbury, and L. Williams.	256,471	May 23	1630	461	21	1596
Fence-wire. Machine for twisting and spooling barbed	H. W. Putnam, L. Bradbury, and L. Williams.	259,917	June 20	1260	348	21	1983
Fence-wire strand. Barbed	A. Ellwood	253,662	Jan. 31	1638	453	21	301

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Fence-wire stretcher	G. Arrowsmith	254,587	Mar. 7	174	43	21	666
Fences. Machine for making wire-barb	A. M. and B. Munson	257,867	May 16	990	{266 267}	21	1461
Fences. Warning-strip for barbed	O. P. Briggs	259,071	Jan. 10	484	134	21	91
Fencing. Machine for making barbed-wire	S. M. Stevens	253,781	Feb. 14	726	{206 207 208}	21	461
Fencing. Machine for making barbed-wire	S. Thompson and W. E. Farrell	254,516	Mar. 7	83	21	21	656
Fencing material. Prodissing barbed	W. S. Bate	254,994	Mar. 14	574	155	21	744
Fencing. Spool for winding barbed	J. D. Curtis	255,147	Mar. 21	890	230	21	896
Fencing-strip. Barbed metal	W. E. Brock	255,762	Apr. 4	12	4	21	953
Fencing-strip. Barbed metal	W. E. Brock	255,763	Apr. 4	13	4	21	953
Fender: *See* Fire-place fender. Vessel-fender. Stove-heat fender. Wheel-fender.							
Fermentation. Apparatus for preparing grain for	F. O. Kuns	260,309	June 27	1797	467	21	2039
Fermenting and storage tanks. Cleaning attachment for	J. Bauer	257,431	May 2	347	97	21	1343
Fermenting malt liquors. Apparatus for	M. A. Maus	253,214	Feb. 7	45	14	21	354
Ferrocyanides from gas-liquor. Obtaining	H. Bower and W. L. Rowland	259,608	June 20	1173	.....	21	1912
Ferrule and gudgeon for wooden rollers. Combined	J. L. Owens	255,188	Mar. 21	942	251	21	815
Ferrule. Wire	H. O. Lothrop	254,350	Mar. 7	136	34	21	661
Fertilizer	I. Brown	253,971	Feb. 21	971	.....	21	548
Fertilizer	I. Eisasser	253,991	Feb. 21	991	.....	21	551
Fertilizer. Apparatus for reducing material to a pulverulent	H. S. Firman	255,269	Mar. 21	1041	279	21	832
Fertilizer-bag	R. R. Zell	256,594	May 23	1606	.....	21	1607
Fertilizer-distributer	J. L. Bergen	256,695	Apr. 18	1095	308	21	1155
Fertilizer-distributer	J. M. Heulings	256,799	Apr. 18	1295	364	21	1191
Fertilizer-distributer	W. Marks	259,396	June 13	559	147	21	1788
Fertilizer-distributer	A. R. Pennington	255,015	Mar. 14	713	192	21	769
Fertilizer-distributer	J. M. Westcott	253,454	Feb. 7	390	89	21	400
Fertilizer distributer and planter	A. B. Farquhar, J. A. Jones, and H. W. Eisenhart.	256,430	Apr. 11	856	{238 239}	21	1102
Fertilizer-distributer and seed-drill. Combined	C. R. Straughn	256,404	Apr. 11	819	226	21	1096
Fertilizer-distributer and seeder	J. W. Spangler	256,249	Apr. 11	644	{174 175}	21	1064
Fertilizers. Apparatus for desiccating animal matter for	H. Breer	255,925	Apr. 4	215	56	21	946
Fertilizers. Reducing and mixing machine for	G. B. Berrell	256,115	Apr. 11	459	194	21	1034
Fertilizers. Treating phosphates for	J. F. Gibbons and G. A. Liebig	252,029	Jan. 10	434	.....	21	82
Fertilizing material. Manufacture of	F. L. Harris	259,140	June 6	398	87	21	1751
Fertilizing substances. Treatment of excreta for the production of	H. Collet	260,165	June 27	1698	.....	21	1993
Fiber. Apparatus for determining the nitrition of cellular	L. White and K. Whitcomb	254,751	Mar. 7	366	96	21	700
Fiber disintegrated from cotton-stalks	F. Wheaton	254,746	Mar. 7	361	.....	21	699
Fiber from the cotton-plant and manufacture of articles therefrom. Separation of	F. Wheaton	254,749	Mar. 7	363	.....	21	700
Fibers of leaves. Machine for cleaning and separating the	E. Beovide	251,818	Jan. 3	165	46, 47	21	30
Field-roller	A. R. Moore	256,098	Apr. 4	338	91	21	1007
Fifth wheel	F. L. Ezell	254,995	Feb. 28	1351	378	21	599
Fifth-wheel. Vehicle	T. B. Ellis	259,117	June 6	306	81	21	1747
Fifth-wheel. Vehicle	G. A. Perrine	257,514	May 9	457	127	21	1309
Fifth-wheel. Vehicle	G. W. Smith	256,143	May 16	1225	345	21	1516
File	C. M. Fairbanks	253,856	Feb. 21	927	234	21	505
File. Bill	C. W. Hayes	253,041	Jan. 31	1650	450	21	305
File-case. Index	H. E. Moon	259,394	Jan. 17	811	242	21	161
File-cutting machine	F. Feehay	253,197	Feb. 7	96	8, 9	21	351
File for bills, &c	J. T. Chynoweth	252,356	Jan. 17	622	{228 229}	21	153
File for postal and other cards	G. V. Nauerth	254,836	Mar. 14	482	129	21	727
File-holder	C. H. Babbitt	259,994	June 27	1421	361	21	1961
File. Letter	G. V. Nauerth	255,447	Mar. 28	1271	343	21	877
File. Paper	J. S. Shannon	254,847	Mar. 14	493	132	21	750
File. Paper	A. R. Weiss	257,115	Apr. 25	1066	466	21	1264
File. Paper-bag	L. R. Witherell	256,527	Apr. 18	985	277	21	1138
File. Permanent letter	J. F. Adams. (Reissue)	10,078	Apr. 4	453	122	21	10.6
File-sharpening apparatus. Sand-blast	E. N., S. N., and C. N. Trump, and C. Frederick.	258,506	May 23	1671	473	21	1602
File-stripping machine	F. Feehay	253,198	Feb. 7	98	9, 10	21	351
Files. Manufacture of	M. A. Howell, Jr	258,301	May 23	1436	.....	21	1561
Files, &c. Sharpening	B. C. Tilghman and J. E. Mathewson	252,979	Jan. 31	1576	439	21	292
Filter	J. C. Adair	252,858	Jan. 31	1433	401	21	267
Filter	J. Grant	254,475	Mar. 7	38	9	21	644
Filter	O. Long	260,106	June 27	1560	429	21	1962
Filter	J. P. McPherson	254,491	Mar. 7	57	14	21	647
Filter	E. Perrett	259,041	June 6	310	56	21	1739
Filter	W. A. Pitt	256,853	Apr. 25	1365	364	21	1211
Filter	H. C. Rice	257,516	May 9	459	127	21	1309
Filter	C. L. Ridgway	253,169	Jan. 31	1742	462	21	318
Filter	C. L. Ridgway	253,171	Jan. 31	1642	508	21	334
Filter	J. S. Smart	259,795	June 20	1677	289	21	1886
Filter-stand	H. B. Tiffany	254,738	Mar. 7	356	89	21	685
Filter. Water	A. Bell	258,718	Jan. 24	1240	348	21	930
Filtering apparatus for water and sewage	E. R. Fuller and J. D. Seagrave	260,754	June 20	1117	297	21	1903
Finger and scarf ring	R. J. La Grange	253,669	Jan. 31	1700	469	21	311
Finger-ring	J. H. Sprague	253,333	Feb. 7	64	20	21	357
Finger-ring and bracelet. Combined	S. Brunswick and J. Engel	258,996	Jan. 31	1604	445	21	296
Finger-ring, lace-pin, and bracelet. Combined	L. Maison	257,738	May 9	742	206	21	1419
Finger, scarf, and other jewelry rings	R. J. La Grange	257,683	Apr. 25	1561	437	21	1245
Fire-alarm	E. Earley	258,368	Jan. 17	830	231	21	154
Fire-alarm	I. Kitsee	253,297	Feb. 7	135	36	21	369
Fire alarm and extinguisher. Automatic	D. C. Stillson	260,232	June 27	1737	479	21	2010

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Fire-alarm. Automatic	I. Kitsee	253,677	Jan. 24	1288	327	21	223
Fire-alarm. Automatic	I. Kitsee	254,533	Mar. 7	126	29	21	630
Fire-alarm. Automatic	P. H. Vander Weyde	253,133	Jan. 24	1715	488	21	224
Fire-alarm-box apparatus	J. J. Brophy	259,076	June 6	298	71	21	1749
Fire-alarm box. Non-interfering	J. W. Sterry	253,630	Feb. 14	541	136	21	448
Fire alarm-registering apparatus	C. E. Randall and E. M. Byington	257,067	Apr. 25	1066	451	21	1254
Fire-alarm system. Non-interfering	M. G. Crane	253,647	Feb. 21	812	221	21	388
Fire-alarms. Electric conductor for	P. A. Chevpentier	259,816	June 20	1148	310	21	1895
Fire-annihilator	I. Kitsee	253,678	Jan. 24	1294	327	21	223
Fire-annihilator	I. Kitsee	254,695	Feb. 21	1041	260	21	599
Fire-annihilator	I. Kitsee	257,392	May 9	575	140	21	1327
Fire-annihilator	I. Kitsee	257,393	May 9	575	141	21	1328
Fire-annihilator	I. Kitsee	257,394	May 9	576	141	21	1328
Fire-annihilator	I. Kitsee	257,395	May 9	577	141	21	1328
Fire apparatus. Extension-pipe for	J. Ashworth and C. S. Petrie	257,625	May 9	622	174	21	1327
Fire-arm. Breech-loading	W. E. Budd	259,361	June 13	695	169	21	1853
Fire-arm. Breech-loading	J. W. Goodall	256,651	May 16	1118	311	21	1062
Fire-arm. Breech-loading	F. A. Hollenbeck	258,923	June 6	84	17, 18	21	1762
Fire-arm. Breech-loading	F. Hummel, Sr	256,729	May 30	1260	351	21	1095
Fire-arm. Breech-loading	I. Johnson and M. Rye	253,288	Feb. 7	120	37	21	369
Fire-arm. Breech-loading	W. Mason	253,736	Feb. 14	627	164	21	470
Fire-arm. Breech-loading	J. Nemets	254,021	Mar. 7	294	73	21	693
Fire-arm. Breech-loading	A. Picard	253,488	Feb. 7	272	69	21	389
Fire-arm. Breech-loading	E. Pieper	255,220	Mar. 21	1128	302	21	847
Fire-arm. Breech-loading	J. T. and J. Rogers	257,704	May 2	775	210	21	1425
Fire-arm. Breech-loading	H. Scott	258,760	Jan. 24	1262	343	21	227
Fire-arm. Breech-loading	C. W. Smither	257,697	Apr. 25	1448	400	21	1260
Fire-arm. Breech-loading	W. Soper	253,271	Jan. 10	718	203	21	120
Fire-arm. Breech-loading	J. Tonks	254,787	Mar. 7	337	89	21	688
Fire-arm. Breech-loading	J. Tonks	254,788	Mar. 7	338	89, 90	21	688
Fire-arm lock	E. Bled	255,273	Mar. 28	1483	394	21	1005
Fire-arm lock	E. Bled and J. Warnant	255,941	Mar. 21	1060	270	21	946
Fire-arm lock	G. H. Fox	255,274	Mar. 21	1047	281	21	833
Fire-arm lock	A. E. Whitmore	259,445	June 13	710	189	21	1888
Fire-arm. Magazine	A. Burgess	251,694	Jan. 3	10	3	21	4
Fire-arm. Magazine	W. H. Elliot	255,153	Mar. 21	896	241	21	797
Fire-arm. Magazine	W. H. Elliot	258,731	May 30	1955	563	21	1060
Fire-arm. Magazine	A. Schneider	258,145	Jan. 10	571	{160 161 167}	21	105
Fire-arm. Magazine	G. M. Spencer	256,491	May 23	1433	{602 603}	21	1560
Fire-arm. Magazine	C. M. Spencer and S. H. Roper	255,894	Apr. 4	188	45	21	979
Fire-arm. Magazine	W. Trabue	253,641	Feb. 14	544	136	21	449
Fire-arm. Magazine	W. Trabue	256,175	Apr. 11	583	149	21	1045
Fire-arm. Revolving	G. W. Cilley	254,798	Mar. 14	436	110	21	719
Fire-arm. Revolving	J. H. Wesson	251,750	Jan. 3	72	21	21	15
Fire-arm sight	F. J. Gardner	259,644	June 20	1260	307	21	1901
Fire-armor	C. McIntosh	257,262	May 16	1089	264	21	1476
Fire-arms. Magazine for	H. Borchardt	254,453	Mar. 7	8	3	21	640
Fire-engine. Chemical	J. A. Duggan	257,479	May 9	415	116	21	1261
Fire-escape	N. H. Bergdoldt	256,974	Apr. 25	1249	309	21	1216
Fire-escape	W. H. and F. C. Burden	260,691	June 27	1431	368	21	1963
Fire-escape	P. H. Costello	257,663	May 9	688	188	21	1463
Fire-escape	T. Darby	255,370	Mar. 21	1163	317	21	838
Fire-escape	H. M. Decker	256,068	May 16	1089	263	21	1491
Fire-escape	F. P. Fish	256,980	Apr. 25	1264	439	21	1220
Fire-escape	H. F. Gaines	258,988	Jan. 31	1587	466	21	294
Fire-escape	G. W. Gibbs	256,207	Apr. 11	589	161	21	1055
Fire-escape	J. Harrison and M. Fellard	256,317	Apr. 11	726	198	21	1079
Fire-escape	J. C. Hendricks	257,687	May 16	976	269	21	1467
Fire-escape	J. Kellner	256,004	Apr. 4	216	63	21	1022
Fire-escape	J. R. Keone	256,441	May 23	1360	453	21	1560
Fire-escape	G. W. Levi	258,520	Jan. 24	1406	398	21	224
Fire-escape	J. F. Newton, Jr	252,120	Jan. 10	546	154	21	101
Fire-escape	P. A. Nicholson	258,947	May 23	1373	368	21	1580
Fire-escape	M. L. Rose and E. W. South	259,279	June 6	488	128	21	1778
Fire-escape	D. Schmidt	259,245	June 27	1730	488	21	2008
Fire-escape	J. E. O. Sullivan	257,781	May 9	792	221	21	1422
Fire-escape	B. Taylor	258,598	Jan. 17	1168	307	21	180
Fire-escape	T. J. Vinton	254,613	Feb. 28	1404	{496 497}	21	683
Fire-escape	A. Williams	259,622	June 13	920	248	21	1864
Fire-escape	G. L. Williams and H. Randle	252,689	Jan. 24	1269	332	21	253
Fire-escape	W. Winkless	253,459	Feb. 7	367	91	21	401
Fire-escape	J. R. Wintere	258,188	May 16	1276	361	21	1235
Fire-escape	R. F. Bridewell	255,564	Mar. 28	1444	388	21	977
Fire-escape ladder	W. H. Hawkins	259,537	June 13	627	218	21	1869
Fire-escape ladder	L. D. B. Shaw	258,447	Apr. 11	875	244	21	1109
Fire-extinguisher	A. M. Burritt	257,444	May 2	641	169	21	1401
Fire-extinguisher	A. M. and A. C. Burritt	254,271	Feb. 28	1268	288	21	585
Fire-extinguisher	C. T. Holloway	258,827	June 20	1284	331	21	1920
Fire-extinguisher	R. Jones. (Reissue)	10,054	Mar. 7	469	109	21	702
Fire-extinguisher	I. Kitsee	253,220	Feb. 7	135	38	21	369
Fire-extinguisher	I. Kitsee	253,789	Feb. 14	647	184	21	468
Fire-extinguisher	W. Morrison	259,622	June 20	997	55	21	1760
Fire-extinguisher	C. W. Tabeek	253,156	Jan. 31	1771	498	21	323
Fire-extinguisher	C. W. Tabeek	253,647	Mar. 14	766	205	21	777
Fire-extinguisher	E. H. Ashcraft	254,253	Feb. 28	1260	288	21	582
Fire-extinguisher. Automatic	J. R. Brown	257,540	May 9	494	137	21	1313
Fire-extinguisher. Automatic	J. R. Brown	257,540	May 9	495	137	21	1313
Fire-extinguisher. Automatic	P. Costello	256,501	Jan. 17	1025	278	21	168
Fire-extinguisher. Bottle-breaking	A. M. Granger	259,883	May 23	1425	406	21	1580
Fire-extinguisher for railways. Automatic	F. A. White	254,705	Mar. 7	466	128	21	777
Fire-extinguisher valve	A. M. Burritt	258,290	Mar. 28	1491	396	21	282

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Fire-extinguishing apparatus	A. M. Granger	210,192	June 27	1663	420	21	1998
Fire-extinguishing compound	M. Mathes	254,560	Mar. 7	126	.....	21	981
Fire-extinguishing nozzle	A. M. Burritt	259,091	June 6	974	72	21	1741
Fire guard and escape	J. O'Neil	260,289	June 27	1711	{463 464	21	2005
Fire-kindler	J. W. Blaisdell	232,490	Jan. 17	919	228	21	167
Fire-kindler	C. K. Bradford	252,014	Jan. 10	460	115	21	99
Fire-kindler	E. E. Glaskin	252,757	Jan. 24	1226	.....	21	227
Fire-kindler mold	J. W. Burns	256,389	May 23	1513	440	21	1575
Fire or alarm. Facilitating speedy exit from buildings in case of	E. H. Howard	250,544	June 13	857	221	21	1846
Fire-place	C. Holland	256,922	June 6	63	17	21	1705
Fire-place	J. W. Horn	254,216	Feb. 28	1259	349	21	904
Fire-place	D. B. Murdoch	257,389	May 9	988	76	21	1289
Fire-place fender	I. W. Shoemaker	259,929	June 20	1316	362	21	1932
Fire-place heater	G. D. Sanford	253,315	Feb. 7	153	44	21	772
Fire-place or stove	M. Ingram	257,710	May 9	787	202	21	1416
Fire-pot	V. Bude	256,016	May 16	1074	280	21	1492
Fire-proof composition for safes, &c	T. Gurney	250,538	June 13	880	.....	21	1845
Fire-protector	E. Hibbs	250,641	June 13	959	256	21	1930
Fire screen and fender. Combined	T. J. Sagga	253,127	Jan. 31	1709	466	21	923
Fires. Device for checking the draft in	J. H. Drake	255,434	Mar. 28	1948	335	21	573
Fires on railway-trains. Extinguishing	R. C. Blackall	250,463	June 13	730	193	21	1880
Fish-hook	W. E. Hemming	254,213	Feb. 28	1270	378	21	902
Fish-hook extractor	J. W. Foard	253,363	Feb. 7	211	60	21	822
Fish. Mechanical device for catching	T. Heaton	250,143	June 6	230	57	21	1732
Fish-plate joint	F. Holton	260,025	June 27	1457	393	21	1997
Fish-trap	A. N. Hoxie and E. Collins	252,466	Jan. 17	985	268	21	175
Fish-trap	M. B. Marshall	254,869	Mar. 14	622	163	21	763
Fish-wheel	W. R. McCord	257,900	May 16	1086	281	21	1476
Fisherman's reel	F. B. Smith	250,935	June 20	1323	355	21	1937
Fishing apparatus	S. N. Long	257,597	May 9	560	108	21	1389
Fishing apparatus	M. H. Whitcomb	253,456	Feb. 7	224	90	21	401
Fishing-reel	W. Ohaver and T. O'Bannon	253,090	Jan. 31	1729	478	21	916
Fishing-reel	J. Vom Hofe	238,554	Jan. 17	1085	296	21	192
Fishing-rod	G. P. Andrews	258,099	Jan. 10	415	113	21	79
Fishing-rod-reel seat	H. Eggleston	258,902	June 6	42	11	21	1708
Fishing. Spoon-bait for	W. T. J. Lowe	256,843	Apr. 25	1356	361	21	1900
Flag. Signal	T. M. Petty	255,665	Mar. 28	1536	413	21	994
Flag-staff holder	W. Hart	259,142	June 6	389	87	21	1752
Flags. Device for attaching stars to	J. Holt	257,222	May 2	87	25, 26	21	1206
Flanging-machine	S. Fox	260,186	June 27	1657	449	21	1997
Flask: *See* Casting-flask. Dentist's flask. Dental flask.							
Flat-iron. Electric	H. W. Scely	239,054	June 6	230	62	21	1733
Flat-iron heater	I. R. Angell	256,689	May 30	1911	530	21	1652
Flat-iron heater	G. I. Roberts	249,729	June 20	1072	286	21	1895
Flax-bolls. Machine for crushing	S. Brown	251,691	Jan. 3	8	2	21	4
Flesh-brushing apparatus	M. V. Stetson and W. Bedell	250,930	June 20	1320	357	21	1939
Flesh-fork	W. A. Reddick	260,237	June 27	1729	466	21	2007
Float-ball for steam-traps, &c	P. Barker	256,270	Apr. 11	671	182	21	1089
Float for steam apparatus and other purposes	F. C. Durant and D. Edward	249,833	June 20	1307	353	21	1918
Float-valve. Collapsible	A. Bosshard	258,891	June 6	14	4	21	1697
Flood-gate	D. M. Hemingway	254,669	Apr. 18	1163	297	21	1168
Floor	W. L. Delbeare	256,909	June 6	41	10	21	1701
Floor-cloth	J. H. Wood	250,257	June 6	466	.....	21	1775
Floor-cloth. Manufacture of	C. F. Leake	255,796	Apr. 4	57	15, 16	21	961
Floor-covering	C. T. and V. E. Meyer	252,121	Jan. 10	540	151	21	100
Floor-covering	C. T. and V. E. Meyer	252,122	Jan. 10	541	151	21	100
Floor for rolling-mills, glass-houses, &c	W. Rogers	254,033	Apr. 4	364	100	21	1012
Floor. Parquet	R. W. Eltzner	258,306	Apr. 11	714	194	21	1077
Flooring and ceiling. Construction of	G. L. Norrman	250,577	June 13	874	228	21	1855
Flour and middlings. Machine for bolting and purifying	J. Craik	255,419	Mar. 28	1239	{333 334	21	873
Flour and middlings. Process of and machinery for gradual reduction of grain to	N. W. Holt	254,612	Feb. 21	1016	{324 325	21	536
Flour-bolt	J. N. McConnell	255,315	Mar. 21	1100	290	21	844
Flour-bolt	C. Schacht	251,854	Jan. 3	394	98	21	56
Flour-dressing machine	J. Weber	253,452	Feb. 7	318	89	21	399
Flour-dust-collecting balloon	S. L. Bean	256,878	June 6	6	2	21	1696
Flour, &c. Machinery for dressing and sifting	F. Thompson and W. H. Williamson	250,396	Jan. 10	755	{309 310	21	135
Flour. Manufacture of	R. L. Downton	255,150	Mar. 21	884	240	21	807
Flour. Manufacture of	J. Hollingsworth	258,824	June 6	67	.....	21	1706
Flour. Manufacturing	F. Taggart	256,073	Apr. 4	389	106	21	1016
Flour. Manufacture of whole-wheat	W. Warren	254,742	Mar. 7	354	94	21	898
Flour-mill	A. N. Wolf	255,747	Mar. 28	1643	445	21	943
Flour-mill dust-collector	S. L. Bean	256,878	June 6	9	3	21	1696
Flour-mills. Roller for gradual-reduction	W. M. Mills	253,878	Feb. 21	853	241	21	569
Flour-packer	H. A. Barnard and J. S. Leas	256,666	Apr. 4	415	113	21	1089
Flower. Artificial	E. L. L. King	249,871	June 20	1949	335	21	1925
Flower-stand	W. D. McCallum	255,314	Mar. 21	1168	299	21	844
Flower-stand	B. H. Messler	253,877	Feb. 21	853	241	21	569
Flower-tray	J. Drew	260,269	May 23	1535	426	21	1979
Flue. Boiler	H. L. Trout	254,731	Mar. 7	343	90	21	897
Flue cap. Chimney	E. Blackman	256,194	Apr. 11	570	156	21	1058
Flue-cap for stove-pipes	F. E. Heisig	255,782	Apr. 4	36	11	21	930
Flue-cleaner	R. P. Gerlach	260,189	June 27	1669	450	21	1997
Flue-cleaner	J. M. Hartman	253,882	Feb. 21	831	235	21	566
Flue cleaner. Boiler	O. H. Jewell	256,426	May 23	1378	449	21	1568
Flue register. Air	H. A. Tobey	257,107	Apr. 25	1664	464	21	1582
Flue-stopper	F. G. Arter	255,735	Apr. 4	5	2	21	951
Flues. Connecting smoke, hot-air and other	S. O'Brien	253,416	Feb. 7	272	78	21	396

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Fluting and plaiting board	L. C. Chase	254,988	Mar. 14	626	169	21	978
Fluting and pad iron. Combined	H. R. Ellis	259,163	Jan. 31	1559	389	21	1933
Flux for alloying platinum	M. H. Campbell	253,159	Jan. 31	1559	.....	21	1933
Fly-hook	F. Endicott	260,268	May 23	1550	435	21	1979
Fly-trap	S. M. Cook	260,273	June 27	1770	480	21	2007
Foot-marker	A. L. Smith	255,469	Mar. 28	1951	337	21	1573
Fodder. Cornstalk	F. M. Bacon	260,272	May 23	1549	435	21	1979
Fodder-basher	W. S. Tilghman	256,533	Apr. 25	1464	378	21	1907
Fodder-press	F. M. Bacon	260,269	Jan. 31	1560	389	21	1933
Fog-horn	P. Tappel	260,788	June 20	1751	488	21	1951
Folding camera	A. Andrin	260,676	June 27	1736	482	21	2005
Folding chair	R. C. Flint	252,264	Jan. 10	533	178	21	107
Folding chair	E. Kelsey	257,361	May 2	987	254	21	1227
Folding comb	W. Totley. (Reissue)	257,683	Apr. 25	1571	440	21	1577
Folding-machine	L. C. Cresswell	259,978	June 20	1326	365	21	1935
Folding seat and table	W. Totley. (Reissue)	10,685	Mar. 21	1213	307	21	1171
Folding table	N. Jerolaman	253,570	Jan. 24	1402	387	21	1171
Folding table	C. A. Van Duzee	256,589	May 23	1574	444	21	1577
Folding table	E. J. B. Whitaker	255,249	Mar. 21	1149	293	21	1171
Foot-mat	A. W. O'Beame	260,213	June 27	1683	461	21	2005
Foot-power	J. A. Webster	254,663	Mar. 14	620	162	21	1171
Foot-protector	W. Klein	260,773	Jan. 24	1314	368	21	1171
Foot-protector	H. W. Martin	250,468	Feb. 7	255	73	21	1171
Foot-protector	F. C. Ayer	255,563	Mar. 28	1469	368	21	1171
Foot-rail and dash attachment. Combined	G. Meeder	259,283	June 20	1284	358	21	1171
Foot-rest	A. S. Clark	259,618	June 20	1191	319	21	1171
Foot wiper and scraper. Combined	C. H. Roberts	254,695	Mar. 7	350	89	21	1171
Forage by storage in silos. Preserving	C. Hammelmann	252,168	Jan. 10	517	{143 144	21	98
Forge. Portable	J. Powers	252,944	Feb. 21	839	221	21	1171
Forges. Fire-pot for blacksmith's	J. Berry	259,283	June 6	471	124	21	1171
Forging and swaging die	G. and J. T. Golcher	252,641	May 30	1943	509	21	1171
Forging carriage-bolts. Machine for	W. Evans	256,649	May 30	1732	452	21	1171
Forging hammers. Machine for	A. Muro	253,688	Jan. 31	1736	477	21	1171
Forgings to steam-hammers. Device for presenting							
Fork: *See* Carving-fork. Lifting-fork. Flesh-fork. Loom-weft fork. Hay-fork. Pitch fork.							
Fork	G. Banister	259,978	June 6	356	88	21	1732
Form. Wire clothes	T. L. Smith	257,396	May 2	961	88	21	1232
Fountain: *See* Ink-fountain. Wash-boiler fountain. Soda-water fountain.							
Frame: *See* Bed-bottom frame. Lamp-heating frame. Bed-lounge frame. Lounge-frame. Bent-frame. Mosquito-bar frame. Cake-pan frame. Piano-action frame. Canopy-frame. Picture-frame. Canopy, awning, and tent frame. Pump-frame. Car-frame. Quilting-frame. Carding-machine creel-frame. Saw-frame. Saw-mill frame. Door-mat frame. Slate-frame. Door or window frame. Spectacle-frame. Spinning-frame. Eyeglass-frame. Threshing and clover-hulling machine frame. Hammock and tent frame. Tobacco-pouch frame. Harvester-frame. Window-frame. Heddle-frame.							
Frame house	J. Boyd	259,366	Jan. 17	705	213	21	163
Freight elevator and conveyer	T. Keith	254,661	Mar. 7	366	98	21	903
Friction-roll	T. M. Chapman	253,183	Feb. 7	13	4	21	1733
Fringe. Chenille	J. C. Graham	253,501	Mar. 28	1240	328	21	1733
Fringed fabric	S. Garrett	259,675	Jan. 31	1453	406	21	1971
Frog. Uniting and separating	H. McDonald	254,672	Mar. 7	374	73	21	1733
Fruit and vegetable drier	J. Zimmerman	257,260	May 2	88	19	21	1733
Fruit-basket	C. E. Bartram	255,911	Apr. 4	194	50	21	1733
Fruit-bleaching apparatus	S. W. Lovell and F. A. Hooker	256,241	Apr. 11	799	208	21	1733
Fruit-can	S. A. Rice and W. S. Ovens	253,695	Jan. 31	1681	457	21	1733
Fruit-cleaning machine	E. W. Durand	256,260	Apr. 18	1060	282	21	1733
Fruit-drier	W. J. Bacon	257,488	May 9	413	116	21	1733
Fruit-drier	J. C. Beasley	256,615	Apr. 18	1060	284	21	1733
Fruit-drier	J. M. Berghardt	253,257	Feb. 7	99	26	21	1733
Fruit-drier	J. D. Burnett and L. C. Hill	255,709	Apr. 4	21	5	21	1733
Fruit-drier	C. A. Curren	256,439	Apr. 18	994	259	21	1733
Fruit-drier	W. C. Doherty	255,662	Mar. 28	1464	382	21	1733
Fruit-drier	J. J. Johnston	253,259	May 23	1417	381	21	1733
Fruit-drier	J. M. Tenebaum	253,258	Feb. 14	310	165	21	1733
Fruit-drier	J. M. Tenebaum	253,257	Apr. 25	1421	367	21	1733
Fruit-drier	W. H. Wiley	257,260	May 2	919	90	21	1733
Fruit-drier	L. E. Woodruff, H. P. Wheeler, and J. Pomeroy	259,691	June 13	937	{242 243	21	1964
Fruit-drier	J. B. Sweetland	254,994	Mar. 7	94	24	21	894
Fruit-drier. Domestic	W. S. Haley	253,815	Jan. 24	1378	354	21	1733
Fruit-drying scaffold	P. A. Fuller	254,252	Feb. 28	1264	316	21	1733
Fruit-gatherer	L. Stone	255,049	May 23	1543	396	21	1733
Fruit-gatherer	J. Irvin	253,249	June 20	1329	337	21	1733
Fruit-jar	H. S. Wetherbee	259,695	June 6	365	91	21	1733
Fruit-jar cover	G. H. Brown	253,731	Jan. 24	1393	358	21	1733
Fruit-jars. Sealing	J. Murphin	255,405	Mar. 14	702	180	21	1733

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's	Official Gazette. Vol.	Official Gazette. Page.
Fruit or vegetable crate or carrier	G. A. Cochrane	256,220	May 23	1340	379 388	21	1544
Fruit-package	A. B. Flak	256,905	June 6	46	13	21	1768
Fruit-picker	E. Case	256,616	Apr. 25	1382	373	21	1004
Fruit-picker	J. R. and J. A. Williamson	256,421	Apr. 11	844	223	21	1160
Fruit-picker and tree-trimmer	W. Mustart	252,139	Jan. 10	547	153	21	161
Fruit-picking implement	C. Allen	256,946	May 30	2081	596	21	1942
Fruit-press	F. F. N. Marais	252,233	Jan. 10	669	189	21	192
Fruit-slicing machine	F. H. Trumbull	256,949	June 20	1341	389	21	1941
Fruit-squeezer	W. B. Dean	253,353	Feb. 7	200	57	21	360
Fuel. Artificial	J. T. Jackson	256,573	Apr. 18	1089	.....	21	1145
Fuel. Artificial	W. C. Sifken	257,985	May 16	1033	287	21	1461
Fumigating, disinfecting, and ventilating vessels, buildings, &c. Apparatus for	B. J. Tayman	257,104	Apr. 25	1656	463	21	1988
Funnel	O. T. Petsold	256,040	Apr. 4	350	95	21	1020
Funnel-holder	C. A. Barnes	256,079	June 27	1285	360	21	1977
Fur hats. Making	W. E. Doubleday	253,162	Jan. 31	1088	304	21	334
Fur-faced articles. Machine for beating up the nap of	W. E. Doubleday	253,161	Jan. 31	1087	304	21	331
Fur-faced fabric	W. E. Doubleday	256,989	June 20	1400	377	21	1940
Fur-faced fabrics. Making	W. E. Doubleday	255,361	Mar. 21	1185	318	21	886
Fur-faced fabrics. Manufacture of	W. E. Doubleday	254,039	Mar. 14	615	.....	21	751
Fur-napped fabrics. Scalding	W. E. Doubleday	255,361	Mar. 21	1638	277	21	630
Fur rollers. Machine for cleaning	F. Hosch	257,797	May 9	714	189	21	1414
Fur to fibrous goods. Sticking	W. E. Doubleday	253,160	Jan. 31	1085	304	21	331
Furs. Taping	C. Schoenchen	255,201	Mar. 21	957	256	21	817
Furnace:							
See Bagasse-furnace. Boiler-furnace. Boiler gas-furnace. Boiler or other furnace. Calcining-furnace. Desulphurizing-furnace. Gas-furnace. Gas-generating furnace. Gasoline-furnace. Glass-furnace. Glass-annealing furnace. Glass-melting furnace. Heating-furnace. Hot-air furnace. Hydrocarbon-furnace. Locomotive-furnace. Metallurgical gas-furnace. Ore-furnace. Ore-roasting, desulphurizing, and chloridizing furnace. Portable furnace. Puddling-furnace. Regenerative furnace. Reheating-furnace. Retort-furnace. Smelting-furnace. Smoke and gas consuming furnace. Smoke-consuming furnace. Smoke-purifying furnace. Steam-generator furnace.							
Furnace	A. Clabaugh and M. B. McDowell	255,253	Mar. 21	1089	275	21	889
Furnace	A. C. Felton	253,191	Feb. 7	89	6	21	350
Furnace	A. C. Felton	253,192	Feb. 7	91	7	21	350
Furnace	A. C. Felton	253,193	Feb. 7	93	7	21	351
Furnace	J. Flannery	251,856	Jan. 3	215	60	21	59
Furnace	N. L. Newcomb	253,339	Feb. 21	823	250	21	581
Furnace and stack for destroying noxious or poisonous gases. Combined	O. A. Stevens and E. L. Du Barry	256,496	May 23	1661	470	21	1600
Furnace attachment	M. F. Wood	253,402	Feb. 7	330	91	21	402
Furnace door and shield	H. McDonald	256,095	May 16	1165	326	21	1505
Furnace-doors. Device for opening	J. A. Carr	252,153	Jan. 10	613	173	21	112
Furnace-feeder. Automatic	A. Waters	256,598	Apr. 18	979	275	21	1137
Furnace for burning liquid-fuel	F. A. Meyer	253,217	Feb. 7	48	15	21	355
Furnace for burning the enameling on porcelain, &c. Portable	S. Bevington	251,881	Jan. 3	160	47, 48	21	21
Furnace for chemical purposes	J. Mactear	253,734	Feb. 14	664	109 191	21	469
Furnace for treating the ores of mercury	E. G. Hall and M. D. Haskins	256,677	Apr. 18	1161	326	21	1147
Furnace front and door	T. Henderson	255,784	Apr. 4	37	11	21	957
Furnace-grate	K. M. Jarvis	260,028	June 27	1461	364	21	1957
Furnace-grate	W. McClave and J. A. Price	252,049	Jan. 10	456	125	21	68
Furnace-grate	G. E. Palmer, A. Worthington, and G. A. Rowell	251,792	Jan. 3	139	37	21	14
Furnace grate-bar. Crucible	M. Schödorf and J. Preib	256,507	Apr. 18	963	270	21	1134
Furnace-lining and bricks therefor	W. Nehring	253,748	Feb. 14	661	.....	21	472
Furnace linings and bottoms. Composition for refractory	A. E. Tucker	256,607	Apr. 18	1089	.....	21	1151
Furnace-sheet for steam-boilers	H. C. Darby	253,516	Feb. 14	407	113 114	21	427
Furnaces. Apparatus for injecting air and steam into	A. J. Simmons	251,740	Jan. 3	64	18	21	13
Furnaces. Apparatus for promoting the combustion of fuel in	R. J. Mallett, Jr	256,451	May 23	1609	455	21	1591
Furnaces. Apparatus for utilizing the waste products of combustion in	T. S. Speakman	253,720	Feb. 14	794	206	21	461
Furnaces. Feeding air to	G. B. N. Tower	257,895	May 16	944	263	21	1464
Furnaces. Mechanism for feeding air and steam to	D. Renshaw	251,797	Jan. 3	139	38	21	25
Furniture. Packing-fastener for	M. E. McMaster	252,110	Jan. 10	530	150	21	109
Furniture-caster	C. Haring	254,310	Feb. 28	1267	377	21	698
Furniture-caster and method of making the same	G. Doolittle	254,286	Mar. 14	613	165	21	751
Fure or fur trimmings. Ruler or guide for cutting	G. L. Blow	256,956	Apr. 25	1492	418	21	1823
Gag-runner	W. H. Chapman	258,492	June 13	760	208	21	1635
Gage:							
See Axle-box gage. Boring-gage. Centers-gage. Planing-gage. Pivot-gage. Pressure-gage. Saw-table gage. Shingling-gage. Surface-gage. Water-gage.							
Gaiter	W. A. Quinn	257,066	Apr. 25	1666	461	21	1854
Galvanic battery	W. A. Childs and F. Shaw	255,597	Mar. 28	1459	393	21	910

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's	Official Gazette. Vol.	Official Gazette. Page.
Galvanic battery	G. M. Hopkins	256,691	Apr. 18	1174	320	21	1170
Galvanic battery	J. Kidder	258,857	May 30	2078	591	21	1934
Galvanic battery	A. Misbrod	254,676	Mar. 7	978	74	21	625
Galvanic battery	A. M. G. Schillot	253,709	Feb. 14	797	226	21	473
Galvanic battery	A. J. Holt	252,165	Jan. 31	1631	500	21	335
Galvanic-battery plates. Apparatus for immersing	L. Hochhauser	252,705	Jan. 24	1292	354	21	228
Galvanic pad	H. R. Pond	256,597	June 6	422	120	21	1765
Game apparatus	G. R. Spear	258,736	Apr. 18	1240	340	21	1152
Game apparatus	V. W. Wilson	254,689	Feb. 28	1423	390	21	685
Game apparatus	J. F. Kingwill	259,053	June 20	1642	395	21	1939
Game-board	J. S. Post	256,653	June 6	911	258	21	1732
Game-board	W. B. Silver	255,859	Apr. 4	167	48	21	978
Game-board	J. Storch	256,287	June 13	1084	147	21	1732
Game or parlor race-course. Mechanical	J. Maxfield	258,078	May 30	2080	590	21	1870
Game-piece and method of exhibiting the same	J. Storch	253,084	Feb. 14	394	109	21	445
Game-ring. Sportsman's	E. Bourne	255,367	May 23	1594	435	21	1588
Game-wheel	W. Dunnings	256,264	Apr. 25	1483	409	21	1388
Gang-press	E. Lacey	259,048	June 20	1389	367	21	1938
Gangway for ships	J. P. Gorton	253,735	Feb. 14	680	197	21	470
Garment	G. W. Parker	260,143	June 27	2085	433 433	21	1959
Garment	F. Wallach	255,168	Mar. 21	940	264	21	797
Garment-supporter	A. C. Greene	253,615	Feb. 14	515	149	21	444
Garment-supporter	M. Marcus	256,791	Apr. 18	1186	333	21	1179
Gas and electric-lamp fixture. Combined	R. H. Johnson	260,259	June 27	1760	478 419 348	21	2015
Gas and promoting combustion. Apparatus for generating	W. F. Browne						
Gas apparatus	J. Hanlon	254,212	Feb. 28	1257	349	21	694
Gas apparatus. Automatic	B. C. Vandusen	256,534	Apr. 25	1457	409	21	1527
Gas. Apparatus for burning Illuminating	P. W. Mackenzie and H. W. Rapplaye.	259,981	June 20	1961	398	21	1967
Gas. Apparatus for making carbureted-hydrogen	W. H. Taylor	256,406	Apr. 11	821	235 227	21	1006
Gas. Apparatus for manufacturing	T. G. Springer	253,120	Jan. 31	1761	488	21	331
Gas. Apparatus for the manufacture of	J. S. Pierson	252,987	Jan. 31	1563	435 435	21	289
Gas. Apparatus for the manufacture of combustible	E. Langen	256,774	May 30	2085	592	21	1402
Gas-burner. Electrical	J. Redding	252,845	Jan. 24	1416	395	21	256
Gas-engine	R. Hutchinson	253,709	Feb. 14	659	179 179 180	21	464
Gas-engine	T. McAdoo	253,405	Feb. 7	358	98	21	399
Gas-engine	H. Wiedling	259,736	June 20	1694	491 492	21	1897
Gas-exhaust regulator	R. K. Hunton	257,494	May 9	695	193	21	1395
Gas-fixtures. Clamp for extension	J. F. Brown	256,455	Apr. 11	949	265	21	1161
Gas for hand-lights. Apparatus for generating	H. S. Maxim. (Reissue)	10,101	May 2	373	104	21	1349
Gas for heating and illuminating purposes. Process of and apparatus for manufacturing	H. Y. Asteill and W. Farmer. (Reissue.)	10,098	Mar. 7	413	116	21	709
Gas for preserving food. Preparing	R. R. McCall	256,787	Jan. 24	1381	378	21	944
Gas from acidulous springs. Collecting and utilizing carbonic-acid	C. H. Schultz	259,219	June 6	417	111	21	1767
Gas-furnace	F. Diecksmann	256,122	Apr. 11	828	231	21	1027
Gas-generating apparatus	E. B. Reynolds	256,741	Apr. 18	1269	344	21	1179
Gas-generating furnace for heating retorts	A. Weber	259,982	June 20	1945	391 388 383	21	1941
Gas generator. Hydrogen	A. Durand	254,189	Feb. 28	1267	348	21	709
Gas-governor	N. M. Garland	253,894	Jan. 3	288	80	21	49
Gas-governor for vulcanizers	T. Shaw	256,585	Apr. 18	964	270	21	1134
Gas-heating apparatus	S. Darling	253,650	Feb. 21	617	331 288	21	893
Gas-jets. Electric device for turning on, lighting, and extinguishing	A. L. Bogart	258,267	June 6	475	135	21	1776
Gas-light extinguisher. Automatic	W. Clancey	254,196	Feb. 28	1236	344	21	689
Gas-lighter. Electric	C. D. Haskins	251,777	Jan. 3	111	31	21	12
Gas-lighter. Electric	A. Mahon and W. J. Green	255,594	Mar. 28	1360	380	21	888
Gas-lighter. Electric	W. D. Sebesley	258,136	May 16	1218	340	21	1314
Gas-lighter. Electric	W. H. H. Whiting	257,195	May 2	16	17	21	1221
Gas-lighter. Electric	T. H. Rhodes	257,970	Apr. 25	1615	450	21	1525
Gas-lighting apparatus. Electrical	T. H. Rhodes	257,189	May 2	49	15	21	1220
Gas-lighting apparatus. Electrical	J. Redding	252,849	Jan. 24	1417	395	21	256
Gas-lighting. Electric	J. M. A. Montoiar	259,413	June 13	670	178	21	1619
Gas-lubricator for vehicles, &c	R. C. Burgess	254,572	Mar. 14	700	189	21	788
Gas-machine	R. W. Flower, Jr., and E. C. Burgess	253,088	Jan. 31	1042	295	21	333
Gas-machine	C. M. Kemp	259,249	June 13	644	339	21	1618
Gas-machine	J. P. Clifford	257,246	May 16	873	244	21	1462
Gas machine. Air	G. Lago	257,447	May 9	691	.....	21	1395
Gas. Manufacturing illuminating	W. H. Bradley	257,543	May 9	691	.....	21	1570
Gas. Manufacturing water	M. A. Otto	258,588	Jan. 17	1660	220	21	1169
Gas. Method of and apparatus for the manufacture of combustible	M. H. Burritt	258,894	June 6	17	4	21	1927
Gas-motor engine	T. B. Fogarty	254,294	Feb. 28	1263	346	21	698
Gas. Process of and apparatus for manufacturing	J. W. Hodges	255,788	Apr. 4	39	12	21	977
Gas. Process of and apparatus for manufacturing	T. G. Springer	257,189	Apr. 25	1646	441	21	1580
Gas. Process of and apparatus for producing illuminating and heating	H. C. Shields	259,723	June 20	1674	393	21	1888
Gas. Process of and apparatus for the manufacture of	T. G. Springer. (Reissue)	10,099	Feb. 7	371	103	21	399
Gas-purifying apparatus	S. and J. Chandler	259,277	June 20	1695	378	21	1943
Gas-regulator	L. P. Blair	251,888	Jan. 3	173	49	21	28
Gas-regulator	G. B. Leeny	256,517	Mar. 28	1368	383	21	891
Gas-regulator	L. H. McCullough	260,038	June 27	1474	367	21	1959
Gas-regulator	L. H. McCullough	260,039	June 27	1476	368	21	1570
Gas-regulator	M. Sherman. (Reissue)	10,116	May 16	1215	338	21	1322

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Gas-trap	J. W. Rogers	259,258	Jan. 10	697	197	21	198
Gases for motive power, heating, &c. Process of and apparatus for generating	W. F. Browne	257,560	May 9	496	137 138 139 140	21	1375
Gasolier	J. H. Seaman. (Reissue)	10,070	Apr. 4	441	120	21	1084
Gasolier	J. H. Seaman. (Reissue)	10,071	Apr. 4	443	120	21	1085
Gasoline-furnace	D. Norton	260,294	June 27	1706	461	21	2005
Gate: *See* Automatic gate. Self-opening gate. Elevator-gate. Sliding gate. Hod-gate. Sliding and swinging gate. Farm and yard gate. Swinging gate. Flood-gate. Wire gate.							
Gate	C. H. Allison	255,461	Mar. 28	1317	355	21	884
Gate	H. C. Baker	259,459	June 13	725	193	21	1080
Gate	R. J. Colvin	258,949	Apr. 4	533	80	21	969
Gate	N. C. Cooley	258,433	Jan. 17	994	255	21	189
Gate	J. F. Coppock	253,988	Feb. 21	963	274	21	530
Gate	T. Crane	254,301	Feb. 28	1230	345	21	561
Gate	S. S. Durben	255,482	Mar. 28	1337	361	21	888
Gate	J. Ferguson	255,267	Mar. 21	1040	279	21	832
Gate	W. C. Hooker	257,330	May 2	228	63	21	1281
Gate	O. J. Miller	259,330	June 13	569	159	21	1080
Gate	L. Patterson and I. J. Palmer	251,788	Jan. 3	50	14	21	11
Gate	A. F. Purefoy	257,894	May 16	998	269	21	1402
Gate	J. O. Smith	259,227	June 6	429	114	21	1766
Gate	W. O. Stickler	258,699	Jan. 24	1146	321	21	213
Gate	W. H. Tupper	254,073	Feb. 21	1095	303	21	549
Gate-closer	H. Gross	257,491	May 9	432	119	21	1364
Gate-hanger	W. G. Alexander	253,898	Feb. 21	789	225	21	499
Gate-hanger	J. Wadleigh	257,111	Apr. 25	1660	465	21	1263
Gate-holder	W. H. Mills	257,737	May 9	746	207	21	1419
Gate-post	E. J. Hart	257,388	May 2	212	59	21	1319
Gear. Platform	A. H. Beach	255,834	Apr. 4	100	28	21	967
Gate-roller	C. B. Rice	259,253	Jan. 10	691	195	21	195
Gates. Hanging	W. R. White	259,915	Jan. 31	1502	418	21	279
Gear-cutting machine	A. H. Brainard	255,409	Mar. 28	1227	338 339	21	870
Gear. Spiral bevel	U. Haskin	253,863	Feb. 21	839	236	21	506
Gearing. Adjusting	A. Gordon and G. T. Reiss	256,533	May 23	1707	482	21	1606
Gearing. Flexible	A. S. Gear	258,026	Jan. 10	434	119	21	82
Gelatine and glue from animal refuse or offal. Manufacture of	A. J. Huet	259,771	Jan. 24	1304	.....	21	240
Gem-settings. Manufacturing	J. R. Feeley	253,594	Feb. 14	417	116	21	439
Generator: *See* Electric generator. Ozone-generator. Gas-generator. Steam-generator. Magneto-generator. Telephone-signal generator. Magneto-electric generator.							
Generator	A. D. and A. D. Puffer, Jr.	254,371	Feb. 28	1435	393	21	614
Glass-annealing furnace	C. Tondeur	256,156	May 16	1241	350	21	1519
Glass casks, barrels, &c. Manufacture of	C. W. McLean	253,543	Feb. 14	440	125	21	433
Glass coffin	C. W. McLean	253,545	Feb. 14	441	125	21	433
Glass-coffins, bath-tubs, &c. Manufacture of	C. W. McLean	253,539	Feb. 14	438	122 123	21	432
Glass-cover handle	D. E. Ladd	255,398	Mar. 21	1198	331	21	859
Glass, crystal, &c. Apparatus for molding fancy articles in	C. G. Picard	259,203	June 6	401	107	21	1764
Glass, &c. Decorating	A. G. Paul and J. H. Rouse	258,108	May 16	1182	.....	21	1508
Glass fittings and trimmings of buildings. Manufacture of	C. W. McLean	253,540	Feb. 14	437	123 124	21	432
Glass for use in illuminated windows. Manufacturing	A. Friedrick	256,402	May 23	1553	.....	21	1501
Glass-furnace	J. W. and J. R. Heuchin	254,653	Mar. 7	254	65	21	661
Glass lamp shades and globes. Manufacture of	D. C. Ripley	257,395	May 2	225	62	21	1332
Glass. Machine for blowing window	H. Harris, J. and E. Phillips	255,503	Mar. 28	1342	362	21	866
Glass mantel	C. W. McLean	253,542	Feb. 14	439	125	21	433
Glass-melting furnace	F. Siemens	256,746	Apr. 18	1236	347 348	21	1181
Glass-melting furnace. Continuous	J. W. and J. R. Heuchin	254,654	Mar. 7	255	65, 66	21	661
Glass. Melting, refining, and working out	C. W. Siemens	254,579	Mar. 7	154	36	21	664
Glass. Method of and apparatus for annealing and tempering	J. H. Campbell	254,373	Feb. 28	1325	367	21	595
Glass mold for casting ornamental picture-frames, &c.	J. Haley	260,193	June 27	1668	.....	21	1998
Glass-molds. Frame and treadle for	N. Granger	254,637	Mar. 7	231	60	21	677
Glass ornament for windows, screens, &c	E. Vedder	257,417	May 9	388	93	21	1340
Glass strap-cam and mold for making the same	H. Fuerbake and C. N. Brady	256,063	Apr. 18	1139	320	21	1163
Glass slabs. Manufacture of annealed and toughened	C. W. McLean	253,541	Feb. 14	438	124	21	433
Glass, &c. Staining or enameling	S. J. Newaham	256,916	Apr. 25	1436	.....	21	1294
Glass to imitate wood. Ornamental	J. Budd	251,668	Jan. 3	9	.....	21	4
Glassware. Decorating	B. Benes and J. Flögel	257,643	May 9	668	176	21	1388
Glassware. Ornamentation of	F. Rhind	256,886	May 30	2041	576	21	1674
Gliders' pelots. Machine for setting	G. W. Hubbard	258,379	Jan. 17	853	237	21	156
Glosser and binder	M. G. Hubbard	256,231	May 23	1365	383	21	1547
Globe. Educational	T. McDonough	254,289	Feb. 28	1275	354	21	567
Globe for electric and other lights. Glass	J. D. Muller	256,795	May 30	2080	573	21	1673
Globe-holder	C. A. Kinney	256,436	May 23	1530	451	21	1526
Globes. Mounting for	F. Cheney	253,566	Feb. 14	401	111	21	466
Glove	E. D. Burr	252,972	Feb. 21	972	271	21	498
Glove	H. S. Flood	256,558	Apr. 18	1018	287	21	1143
Glove	W. W. Whitaker	259,660	June 13	996	247	21	1843
Glove-fastener	W. S. Richardson	253,280	Feb. 7	56	18	21	357

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Glove-fastening	W. Gifford	256,466	May 23	1557	441	21	1555
Glove-fastening	S. Montgomery	253,617	Jan. 24	1131	317	21	211
Glove-fastening	F. A. C. J. Quaker	253,889	Feb. 7	747	48	21	366
Glove, &c., fastening	W. S. Richardson	260,689	June 27	1697	488	21	1971
Glove-fastening, &c	J. Wadleigh	260,648	May 30	2076	588	21	1733
Glove-fastening	R. M. Magee	260,653	June 20	1613	479	21	1735
Glove. Hooking	E. W. Burr	260,613	June 20	1595	317	21	1614
Glove or mitten	F. J. Herrick	255,837	Apr. 4	196	59	21	971
Glove or shoe clasp	W. R. Carpenter	256,196	Apr. 11	973	257	21	1232
Glove or shoe fastener	W. H. Rusby	260,668	June 20	1520	388	21	1632
Gloves, &c. Fastening for	A. Hopkins	254,013	Feb. 21	1050	288	21	532
Gloves, gaiters, &c. Fastener for	E. Root, A. K. McKee, and H. Hamlin.	260,650	June 6	1265	30, 31	21	1732
Glucose. Converter for converting starch into	E. Fox	257,880	May 16	970	251	21	1460
Glucose or grape-sugar. Manufacture of	H. Hamlin	255,665	Apr. 25	1344	370	21	1297
Glucose. Process of and means for purifying	G. H. Hopper	255,621	Apr. 4	1120	24, 25	21	973
Gluing barrels. Method of and apparatus for	E. T. Babbitt	256,813	Apr. 18	1073	294	21	1139
Glycerine and apparatus therefor. Process of extracting	E. T. Babbitt	256,614	Apr. 18	1073	294	21	1138
Glycerine from salt soap-lye. Extracting	J. P. Battershall	251,988	Jan. 3	370	.....	21	66
Glycerine from soap-liquor. Manufacturing	C. Thomas, W. J. Fuller, and S. A. King.	258,155	Jan. 10	588	.....	21	167
Glycerine from soap-lyes. Recovery of	W. R. Harris	259,141	June 6	389	.....	21	1762
Gold from ores. Extracting	A. E. Jones	251,718	Jan. 3	36	10, 11	21	9
Gold from quartz and rock-tailings. Apparatus for separating	C. Taylor	253,785	Feb. 14	728	200	21	488
Gold separating and amalgamating apparatus	H. K. Heywood	254,315	Feb. 28	1271	378	21	623
Gold-separator	J. L. Jackson and W. A. Cogswell	254,775	Mar. 7	396	105	21	765
Governor	E. S. Batchelor	251,991	Jan. 3	373	161	21	94
Governor and indicator for fluid-pressure brakes. Electric	A. Hafner	253,695	Feb. 14	614	174	21	489
Governor attachment for elevators	H. Linton	258,289	Apr. 11	612	166 167	21	1030
Governor. Electrical	R. P. Bolton	255,789	Apr. 4	10	3	21	962
Governor. Engine	L. D. Forbes	251,650	Jan. 3	218	61	21	30
Governor for cotton-gins	M. G. Foote	257,408	May 2	295	118	21	1262
Governor for direct-acting engines	G. C. Phillips	257,976	May 16	1004	285	21	1479
Governor for direct-acting engines	G. C. Phillips	257,975	May 16	1003	285	21	1479
Governor for pumping-engines	J. J. Hahn	255,972	Apr. 4	200	72	21	1002
Governor. Steam	L. W. Andrews	256,948	Apr. 25	1475	413	21	1302
Governor. Steam-engine	F. D. Cammer	260,694	June 27	1434	367	21	1965
Governor. Steam-engine	G. Reznor	257,060	Apr. 25	1612	452	21	1265
Governor. Steam-engine	J. E. Sweet	258,276	Jan. 10	725	203	21	150
Governor. Speed	J. Richardson	253,168	Jan. 21	1741	481 488	21	318
Governor-valve	P. W. Green and A. E. Turner	254,604	Feb. 21	1007	282	21	534
Governor. Water	H. S. Miller	257,209	May 9	488	136	21	1360
Governors. Device for operating steam-engine	W. M. Perry	260,689	June 27	1536	413	21	1979
Grade-recording instrument	A. M. Rymer-Jones	254,928	Mar. 14	670	187 188	21	702
Grader for drains	G. F. W. Harris	251,873	Jan. 3	293	66	21	62
Grading and ditching machine	J. C. Prescott	257,756	May 9	709	214 485	21	1401
Grain and cockle separator	P. M. L. Herse	258,287	May 23	1491	486	21	1501
Grain and grass-seed distributer	A. F. Gibboney	256,497	May 23	1557	441	21	1552
Grain and mineral separator	J. Sternberg	256,495	May 23	1556	440	21	1552
Grain-bin	E. Annen	257,207	May 16	1000	282	21	1434
Grain-bin	E. Holmes	255,597	Mar. 28	1348	363	21	880
Grain-binder	J. F. Appleby	255,713	Mar. 28	1396	400	21	925
Grain-binder	J. F. Appleby	256,188	Apr. 11	956	132 133	21	1600
Grain-binder	J. F. Appleby	257,657	May 16	889	241	21	1451
Grain-binder	W. R. Baker	256,374	May 23	1494	397 398	21	1556
Grain-binder	H. J. Case	253,567	Feb. 14	409	111	21	466
Grain-binder	W. Gause and J. F. Selberling	257,934	May 16	975	272 273 274	21	1470
Grain-binder	P. F. Hedges	255,995	Apr. 4	293	77	21	980
Grain-binder	M. G. Hubbard	257,223	May 2	228	64	21	1333
Grain-binder	C. W. Levalley	253,972	Jan. 31	1765	470	21	328
Grain-binder	C. Lidren	253,187	Jan. 21	1734	486	21	323
Grain-binder	S. D. Locke	253,493	Jan. 17	664	274	21	179
Grain-binder	W. Lottridge	254,679	Mar. 14	533	142 143 144 145	21	736
Grain-binder	J. M. McMaster	258,236	Jan. 10	671	189 190	21	198
Grain-binder	J. M. McMaster	258,237	Jan. 10	672	190 191	21	198
Grain-binder	D. McPherson. (Reissue)	10,065	Jan. 9	405	109 110	21	76
Grain-binder	L. Miller	259,266	June 13	561	147 149	21	1790
Grain-binder	G. P. Morton	256,257	Apr. 11	770	211 212	21	1607
Grain-binder	J. D. Nix	260,115	June 27	1570	423 424	21	1964
Grain-binder	N. T. Remy	256,606	Apr. 18	1208	307	21	1169
Grain-binder	J. L. Ware	256,179	Apr. 11	953	146	21	1603
Grain-binder	F. J. Yandle	257,806	May 9	681	220	21	1452
Grain-binder	C. Young	258,687	May 30	1969	522 523	21	1622

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Grain-binder. Automatic	G. F. Green	260,668	June 27	1540	415	21	1979
Grain-binder. Automatic	P. F. Hodges	258,463	Jan. 17	960	416	21	175
Grain-binder cord-knotter	J. H. Dean	260,667	June 27	1531	412	21	1978
Grain-binder cord-knotter	W. N. Whiteley, W. Bayley, and A. Hurd.	255,741	Mar. 28	1637	443	21	941
Grain-binder cord-tyer	J. H. Dean	255,944	Apr. 4	240	68	21	989
Grain-binder knot-tyer	P. Hanson	257,573	May 9	538	148	21	1381
Grain-binder knot-tying device	R. Chamberlain and J. Austin	253,668	Jan. 31	1607	446	21	297
Grain-binder tension	C. Calahan	256,018	Jan. 10	462	116	21	88
Grain-binder tension device	J. F. Appleby	252,930	Jan. 31	1594	449	21	295
Grain-binders. Bundle compressor and ejector for	L. Miller	259,897	June 20	1278	342	21	1830
Grain-binders. Elevator-frame of	I. P. Cadman	254,456	Mar. 7	13	4	21	641
Grain-binding machine	J. R. Prescott	256,114	May 16	1188	335	21	1660
Grain-binding machine	J. R. Prescott	256,594	May 16	1200	362 363	21	1530
Grain-carrier	J. S. Davis	253,661	Jan. 16	494	137	21	92
Grain-cleaner	W. C. Holmes	251,863	Jan. 3	346	98	21	44
Grain-cleaner	J. Russell	255,089	Mar. 14	730	197	21	773
Grain-cleaner	J. Russell	255,090	Mar. 14	732	198	21	773
Grain-cleaner	J. M. Shackelford and J. W. K. McClure.	254,571	Mar. 7	153	39	21	664
Grain-cleaner	I. Snare	257,190	May 2	51	16	21	1290
Grain-cleaner	S. Truax	256,789	Apr. 18	1256	354	21	1185
Grain-cleaner	W. Williamson	251,964	Jan. 3	361	97	21	62
Grain cleaning, separating, and grading machine	J. M. Hawley	253,360	Feb. 7	226	64, 65	21	304
Grain-conveyer	R. Dunbar	257,855	May 16	859	246	21	1465
Grain-conveyer	H. Harrison	259,397	June 13	639	169 170	21	1819
Grain. Decorticating	W. Ager	259,452	June 13	718	191	21	1827
Grain-decorticating apparatus	W. Ager	258,339	May 23	1478	421	21	1560
Grain-decorticating apparatus	W. Ager	258,340	May 23	1479	421	21	1560
Grain-decorticating apparatus	W. Ager	258,341	May 23	1480	421	21	1560
Grain drier	J. H. Catron, R. Foster, and W. R. Graham.	255,009	Mar. 21	831	231	21	795
Grain-drier	H. R. Heffner	254,948	Mar. 14	652	177	21	756
Grain-drier	E. Thompson	259,436	June 13	697	185	21	1823
Grain drier and cleaner	L. C. Porter and C. McNicol	257,064	Apr. 25	1603	450	21	1253
Grain-drill	G. G. Blunt	254,452	Mar. 7	6	2	21	640
Grain-drill	J. F. Keller	257,951	May 16	897	278	21	1474
Grain-drill	S. G. Major	258,449	May 23	1667	455	21	1501
Grain-drill	R. C. Morris	251,794	Jan. 3	44	12, 13	21	10
Grain-drill	A. N. Norris	260,648	June 27	1476	380	21	1970
Grain-drill	G. W., J. R., and S. B Rude	253,891	Feb. 21	867	245	21	519
Grain-drill	C. Schols	257,580	May 9	464	139	21	1370
Grain-drill	H. P. Tenant	256,764	Apr. 18	1253	352 353	21	1184
Grain-drill	W. W. Winegar	257,494	May 2	338	95	21	1341
Grain-drill attachment	H. C. Pratt	255,668	Mar. 28	1538	414	21	925
Grain-drill fertilizer-distributer	G. D. Baker	253,339	Feb 7	186	53	21	378
Grain-drill fertilizer-feeder	A. H. Worrest	256,190	May 16	1279	360	21	1566
Grain-drill. Force-feed	D. M. Parry	260,315	June 27	1815	492	21	2023
Grain-drill. Force-feed	H. P. Tenant	256,763	Apr. 18	1251	353	21	1184
Grain-drill point	D. J. Shults	256,146	Jan. 10	574	162	21	105
Grain-drill seed-cup	J. King	253,986	Feb. 21	916	235	21	519
Grain-drills. Spring-hoe for	J. and T. H. Neron	256,465	May 23	1684	430	21	1494
Grain-drying apparatus	J. Barclay	255,564	Mar. 28	1410	381	21	991
Grain-drying apparatus	F. W. Wiesebrock	255,371	Mar. 21	1171	314	21	854
Grain-drying machine	J Barclay	254,903	Mar. 14	573	155	21	744
Grain-elevator	H. Armington	259,457	June 13	783	192	21	1838
Grain-elevator	F. J. Firth	256,043	May 16	1165	307 308	21	1494
Grain-elevator	F. J. Firth	256,044	May 16	1166	308	21	1494
Grain-elevator	E. C. Hinckley	252,376	Jan. 17	648	226	21	157
Grain-elevator	W. H. Lots	257,446	May 2	300	101	21	1346
Grain-elevator	E. Roberts	256,944	Apr. 11	630	173	21	1664
Grain gathering and binding machine	W. N. Whiteley	256,179	May 16	1265	357 366	21	1562
Grain-header	J. W. and A. B. Jory	252,776	Jan. 24	1311	367	21	941
Grain, &c. Machine for drying and cooling	S. E. Worrell	256,940	Apr. 25	1462	411	21	1236
Grain, &c. Machine for reducing	J. Hollingsworth	254,574	Mar. 14	660	179	21	739
Grain-mill	L. Hottmann	254,921	Mar. 7	134	31	21	639
Grain, ores, &c. Apparatus for pulverizing	L. S. Chichester	253,344	Feb. 7	198	55	21	379
Grain, ores, &c. Apparatus for pulverizing	F. Taggart	256,671	Apr. 4	385	103	21	1615
Grain-packer	W. Bayley	255,569	Mar. 28	1418	382 383	21	992
Grain-packer for binding-machines	W. N. Whiteley	256,180	May 16	1267	359 360	21	1564
Grain-reduction machine	J. M. Case	259,479	June 13	756	200	21	1835
Grain-reduction machine	J. M. Case	259,480	June 13	757	201	21	1835
Grain-reduction machine	J. M. Case	259,481	June 13	758	201	21	1835
Grain-register	W. Stringer	259,942	June 20	1332	356	21	1939
Grain-sampler	L. C. Smith	258,469	May 23	1651	448	21	1506
Grain-sampler. Automatic	W. Hawes	259,398	June 13	685	216	21	1840
Grain-sawing attachment for separators	N. McLean	253,926	Feb. 21	920	250	21	381
Grain-scourer	D. Mann	252,046	Jan. 10	454	125	21	85
Grain-separator	H. A. Barnard, J. B. Cornwall, and J. S. Lees.	256,097	Apr. 4	417	113 114	21	1039
Grain-separator	H. A. Barnard, J. B. Cornwall, and J. S. Lees.	260,150	June 27	1613	435 436	21	1981
Grain-separator	R. D. Brown	257,425	May 2	350	98	21	1344
Grain-separator	J. Brush	254,570	Feb. 28	1304	366	21	665
Grain-separator	J. Grube	252,314	Jan. 17	776	216	21	145
Grain-separator	J. F. Hatfield	255,765	Mar. 21	1064	298	21	838

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Grain-separator	J. F. Hatfield	257,766	May 2	323	89	21	1289
Grain-separator	P. P. Herberg and F. M. Claussen	258,088	Apr. 4	231	64	21	988
Grain-separator	H. J. Hoyle	254,688	Mar. 14	635	175	21	738
Grain-separator	J. A. Krake	253,638	Mar. 28	1535	439	21	938
Grain-separator	C. B. McNeal	253,543	Feb. 14	448	123	21	453
Grain-separator	L. Morgan	253,886	Feb. 14	445	122	21	451
Grain-separator	G. A. Mensch	257,156	May 2	45	15	21	1280
Grain-separator	R. A. Smith and G. Chase	254,974	Mar. 7	157	40	21	664
Grain-separator	D. Young	254,682	Mar. 14	628	173	21	731
Grain-separator	C. B. McNeal	253,547	Feb. 14	444	122	21	451
Grain, &c., separator	D. Salisbury	253,888	Jan. 24	1295	370	21	1013
Grain separator and cleaner	J. Fielding	255,698	Mar. 21	1029	278	21	1012
Grain separator or sieve	J. Gathman	254,812	Mar. 14	646	178	21	741
Grain-splitting machine	J. F. Mauny	258,319	Apr. 11	822	232	21	1012
Grain-transporting device	C. M. Morris	253,686	Jan. 31	1784	493	21	215
Graining device	J. Reed and S. C. Burdick	260,123	June 27	1503	387 388	21	1986
Granulating-machine	J. Sager	257,289	May 9	990	63	21	1393
Grape-shears	J. Lee	252,321	Jan. 17	733	210	21	146
Graphoscope. Folding	A. Palm	253,982	May 16	1262	333	21	1559
Grapple	F. G. Johnson	254,094	Mar. 14	661	185	21	760
Grappling-bucket. Automatic	F. G. Johnson	253,179	Mar. 21	982	246	21	821
Grappling-bucket. Automatic	M. Michael and P. W. Masten	258,024	Apr. 4	235	60, 59	21	1003
Grappling-iron	H. T. Hill	256,021	June 6	68	17	21	1705
Grate	G. Kemp	253,982	Feb. 7	130	39	21	288
Grate	J. Krupps	260,668	Jan. 24	1115	314	21	1980
Grate	J. P. Montgomery	253,889	Feb. 21	858	240	21	518
Grate	A. R. Parkhurst	254,689	Mar. 7	283	77	21	738
Grate and grate-bar	C. C. Hare	256,894	Apr. 25	1413	396	21	1233
Grate and shaker	H. Miller	253,980	Feb. 7	51	16	21	285
Grate-bar	T. F. Van Keuren	260,660	Jan. 10	756	210	21	1824
Grate-bar	F. W. Weaver and D. Herten	255,479	Mar. 28	1384	364	21	967
Grate. Fire-	L. E. Smith	254,082	Feb. 21	1005	281	21	567
Grate. Fire-place	J. G. Smith	254,380	Feb. 28	1468	402	21	630
Grate. Hollow	H. H. Jennes and J. C. Dunbar	256,686	Apr. 18	1169	331	21	1171
Grate. Sifting	J. D. Todd	259,665	June 13	966	248	21	1459
Grater	T. Hyatt	257,888	May 9	826	233	21	1433
Grating and building lighted thereby. Illuminating	T. Hyatt	254,636	Mar. 7	536	67	21	688
Grating. Illuminating	T. Hyatt	255,511	Mar. 28	1353	364	21	966
Grating. Illuminating	T. Hyatt	257,713	May 9	795	208	21	1414
Grating or vault-cover. Illuminating	A. Gent	275,629	May 16	685	248	21	1465
Grave-guard	J. L. Taplin	252,663	Jan. 10	473	131	21	89
Grinding and polishing machine	J. Stevens	259,765	Jan. 24	1288	344	21	1025
Grinding and reducing grain, &c. Mill for	C. Seck	253,113	Jan. 24	1754	466	21	1025
Grinding corn, &c. Roller-mill for	C. G. Burkhardt	251,883	Jan. 3	177	48, 50	21	32
Grinding grain. Roller-mill for	R. Cook	259,194	May 16	1263	334	21	1567
Grinding-machine	J. H. Taylor	255,963	Mar. 21	978	260	21	1567
Grinding-machine	M. B. Church	259,495	June 13	776	205	21	1837
Grinding-mill	J. J. and R. Clark	256,772	Apr. 4	38	7	21	1003
Grinding-mill	J. M. Collier	257,662	May 9	648	151	21	1406
Grinding-mill	L. Gathmann	254,813	Mar. 14	646	171	21	741
Grinding-mill	J. Mateer	255,369	Mar. 21	1022	272	21	1013
Grinding-mill	J. T. Oberschein	253,615	Feb. 7	202	54	21	380
Grinding-mill	G. and A. Raymond	259,267	May 30	2168	574	21	1838
Grinding-mill	T. and C. D. Rees	259,466	Feb. 14	388	103	21	453
Grinding-mill	G. K. Smith	256,617	May 30	2320	615	21	1575
Grinding-mill	A. W. Straub	260,682	June 27	1482	394	21	1979
Grinding-mill	S. P. Walling	252,156	Jan. 10	395	105	21	1575
Grinding-mill	A. S. Weaver	254,826	Apr. 25	1522	403	21	1237
Grinding-mill	J. Fitzgerald	255,954	Apr. 4	267	71	21	1013
Grinding-mill cooling mechanism	S. L. Yeager	258,975	June 6	5	2	21	1705
Grinding-mill dust-collector	C. R. Winger	252,155	Jan. 10	394	104	21	1575
Grinding-mill. Feed	M. B. Church	259,496	June 13	778	206	21	1837
Grinding-mill feed-regulator	G. S. Graves and J. Hoole	252,511	Jan. 10	539	143	21	116
Grinding-mill feed-regulator	R. Birkbeck	256,688	Apr. 18	1257	355	21	1185
Grinding-mill roll	S. L. Bean	254,677	June 6	8	3	21	1705
Grinding-mill. Roller	R. Birkbeck	255,715	Mar. 28	1397	373 374	21	976
Grinding-mill. Roller	C. T. Hanna	253,693	Feb. 14	617	373 374	21	491
Grinding or polishing wheel	C. V. Hunt	258,709	May 23	1650	452	21	1506
Grinding-roll and method of manufacturing the same	R. Birkbeck	257,647	May 9	634	178	21	1399
Grinding-rolls. Machine for cutting spiral grooves in	R. Reynolds	253,663	June 6	213	57	21	1720
Grinding-rolls. Preparing the surfaces of	W. M. Congreve	254,139	Feb. 28	1327	344	21	628
Grindstone trouble-shooter	J. M. Nelson	252,660	Feb. 14	390	149	21	453
Grits. Apparatus for cleaning	A. Bauer	253,934	Apr. 25	1469	417	21	1235
Ground-roller	J. Steinfinger	254,750	Apr. 18	1242	360	21	1163
Grounds. Ornamentation of	H. D. Cogswell	253,189	Feb. 7	15	5	21	289
Guard:							
Ax Carving-fork guard. Mustache-guard. Door and window guard. Pocket-guard. Reaper-guard. Electric-light guard. Safety-pin guard. Elevator-guard. Saw-guard. Fire-guard. Spinning-machine thread-guard. Grave-guard. Insect-guard.							
Gun and gun-carriage	D. M. Medford	259,469	Jan. 17	991	276 277	21	189
Gun and pistol barrels. Machine for rifling	P. Mauser	259,624	June 6	289	79, 81	21	1720
Gun. Breech	F. Cunningham	256,542	Apr. 18	1262	351	21	1241
Gun. Breech-loading	R. Pierce	256,041	Apr. 4	281	78	21	1005
Gun. Breech-loading breech	H. A. A. Thorn	259,245	June 20	1293	329	21	1825
Gun-lock	B. B. Hotchkiss	253,884	Feb. 21	911	264	21	515
Gun. Machine							

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Gun. Magazine spring	A. L. Rich	253,688	Feb. 14	529	128	21	447
Gun-register	J. Holcham	258,944	Jan. 31	1532	429	21	285
Gun. Spring	F. Caspar	255,141	Mar. 21	670	236	21	694
Guns. Shield for ship's	N. B. Clark	256,194	Apr. 11	473	128 129	21	1635
Gymnastic apparatus	W. Hecssler	254,215	Feb. 28	1219	340	21	594
Gymnastic apparatus	W. A. Smith	256,146	May 16	1930	346	21	1517
Gynecological chair	G. W. Archer	258,109	Jan. 10	509	168 169	21	169
Hair-crimper	J. M. Corwin and H. D. Butler	255,101	Mar. 21	634	283	21	736
Hair-crimper	M. Swartz	257,784	May 9	794	228	21	1469
Hair-fastener	B. P. Ryder	256,126	May 16	1907	340	21	1513
Hair-front	E. Mittelstaedt	253,412	Feb. 7	206	77	21	301
Hair-fronts. Forming waved	J. B. McCarthy	256,668	May 30	1674	589	21	1646
Hair. Machinery for untwisting and carding curled hores	T. Adcock	254,563	Mar. 7	169	42	21	667
Hair-pin	M. T. Foote	251,856	Jan. 3	217	61	21	30
Hair-pin	C. A. Hussey and W. H. Lyman	255,292	Mar. 21	1075	289	21	837
Hair-tonic	L. Forbes	253,504	Feb. 14	488	.....	21	441
Hair-tonic	W. E. Marold	259,664	June 20	1964	.....	21	1998
Halter	E. Barnard	256,543	May 30	1725	467	21	1619
Halter	E. Ostberg	259,209	June 6	397	105	21	1763
Halter	H. Rorebeck	255,295	Mar. 21	1206	323	21	800
Halter and bridle trimming	J. S. Nelson	260,580	Jan. 17	1004	279	21	182
Halter-hook	F. B. Brown	254,698	Mar. 7	190	47	21	670
Halter or bridle	H. F. Smith	256,325	May 23	1460	415	21	1566
Hame	W. B. Hayden	257,699	May 9	707	196	21	1412
Hame	J. W. Hudson	258,229	Jan. 10	656	183	21	118
Hame	R. W. Jones	256,430	May 23	1524	449	21	1567
Hame	E. G. Latta	256,444	May 23	1602	453	21	1580
Hame	B. S. Seaman	253,949	Feb. 21	944	262	21	583
Hame and collar coupler	J. Moseman	251,917	Jan. 3	226	79	21	50
Hame-clip	F. Fraser	254,290	Feb. 28	1259	374	21	609
Hame-fastener	W. W. Bell	259,253	June 13	506	133	21	1729
Hame-fastener	A. C. Richardson	255,022	Mar. 14	784	195	21	771
Hame-staple	C. Lange	259,780	Jan. 24	1315	360	21	943
Hammer	C. J. Grellner	253,579	Feb. 7	113	34	21	365
Hammer. Blacksmith's forging	M. M. Fish	253,689	Feb. 14	604	171	21	459
Hammer. Drop	A. B. Byrkett	259,267	June 13	519	134	21	1790
Hammer. Drop	C. A. Hague	255,618	Mar. 28	1461	396	21	914
Hammer. Drop	W. Mason	260,215	June 27	1695	456	21	2083
Hammer. Steam drop	J. C. Richardson	255,383	Mar. 21	1203	322	21	800
Hammock and tent frame	G. A. Parker	260,230	June 27	1713	464	21	2086
Hammock-chair	J. Pursell, Sr	257,759	May 9	771	214 215	21	1494
Hammock or bed	C. Moore	254,677	Mar. 7	220	74	21	686
Hammock-support. Adjustable	T. L. Jennison	259,314	June 13	548	144	21	1796
Hand-rake	A. T. Phillips	259,714	June 20	1062	288	21	1983
Hand-support. Writer's	G. W. Henaley	259,390	June 13	643	170	21	1813
Handle:							
See Adjustable handle.	Saucepan-handle.						
Detachable handle.	Saw-handle.						
Glass-cover handle.	Tool-handle.						
Mirror-handle.	Trunk-handle.						
Pistol-handle.	Wagon-handle.						
Plow-handle.							
Handle	E. J. Blackham	259,796	June 20	1189	312	21	1911
Handle-fastener	R. W. Hardie	255,186	Mar. 21	916	245	21	816
Handle for measure-forks, &c.	J. M. Young	258,167	Jan. 10	597	168	21	169
Handle for pocket-books, &c.	C. G. Pfingston and E. Young	256,112	May 16	1185	334	21	1509
Handle for pocket-knives and other implements	B. A. Fiske	255,847	Apr. 4	112	30	21	969
Handle for rackets or lawn-tennis bats	O. E. Woodhouse	259,448	June 13	714	190	21	1886
Handle for wire-rimmed articles	D. Sherwood	259,056	June 6	253	62	21	1736
Hanger:							
See Blind-hanger.	Eaves-trough hanger.						
Broom-hanger.	Gate-hanger.						
Car-door hanger.	Hat and coat hanger.						
Chandelier-hanger.	Plumber's pipe-hanger.						
Clothes-hanger.	Shaft-hanger.						
Coat-hanger.	Steam-pipe hanger.						
Door-hanger.							
Harbor defense	R. A. Cheesbrough	254,112	Feb. 28	1142	319	21	565
Harmonica	O. Spaethe	259,976	Jan. 31	1573	436	21	2000
Harmonica. Automatic	R. W. Pain	251,830	Jan. 3	200	81	21	38
Harness	W. H. Joscelyn	259,694	June 20	1633	975	21	1989
Harness	C. B. Matthews	259,184	June 6	360	100	21	1749
Harness	D. Morse	256,914	Apr. 25	1435	403	21	1883
Harness	A. Murray	259,707	June 20	1055	290	21	1998
Harness	C. F. Wiesenmeyer	254,057	Apr. 4	404	110	21	1018
Harness and bridle loop. Metallic	J. Watters	255,709	Mar. 28	1509	422	21	934
Harness and trace coupling	G. W. Hunter	258,106	Jan. 10	503	145	21	97
Harness attachment for vehicle-shafts	J. E. Diefenbacher	257,689	May 9	658	184	21	1404
Harness. Back-strap for plow	G. M. Bowen	259,891	June 20	1173	313	21	1912
Harness box-loop and blind	B. A. Wilson	260,674	June 27	1519	408	21	1976
Harness check-hook	H. C. Buell	258,673	Jan. 10	465	124	21	91
Harness-chime attachment	S. Kirby	257,135	Apr. 25	1496	415	21	1470
Harness. Draft-adjusting device for	J. Hugill	254,558	Mar. 7	125	32	21	659
Harness-fastener	M. Clase	255,416	Mar. 28	1237	333	21	871
Harness-hook	J. J. Wilkins. (Reissue)	10,043	Feb. 21	1149	315	21	555
Harness-trace. Wear-clip for	J. H. Philpott	259,913	June 20	1205	317	21	1933
Harness-loop	D. McMillan. (Reissue)	10,088	Mar. 7	490	113	21	710
Harness. Luminous attachment for	E. F. Pfinegar	254,841	Mar. 14	467	130	21	727
Harness-pad	P. H. Case	257,209	May 2	70	21	21	1294
Harness. Plow and work	A. Sherwood	260,126	June 27	1566	402	21	1967

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Harness shaft-loop	P. Casey	254,060	Mar. 14	884	230	21	748
Harp	C. F. Zimmermann	257,660	May 9	1453	370	21	1484
Harrow	D. R. Asher	257,662	May 16	1462	372	21	1484
Harrow	J. H. Barley	253,340	Feb. 7	180	54	21	370
Harrow	J. H. Barley	254,610	Apr. 18	1084	280	21	1154
Harrow	H. R. Burger and J. B. Simpson	255,004	Apr. 4	1225	88	21	960
Harrow	H. R. Burger and J. B. Simpson	259,660	June 6	370	71	21	1741
Harrow	G. Jenkins	254,017	Feb. 21	1060	257	21	657
Harrow	W. Kelly	260,083	June 20	1247	334	21	1955
Harrow	L. Leggett	255,576	Apr. 4	140	40	21	975
Harrow	E. P. Lynch	256,720	May 30	2015	508	21	1660
Harrow	T. Maddocks	260,254	Jan. 10	670	189	21	189
Harrow	F. Mahrwitz	260,321	June 27	1811	491	21	2082
Harrow	G. A. Paddock	253,135	Jan. 10	486	155	21	169
Harrow	P. B. Parcell	260,197	May 16	1161	331	21	1660
Harrow	G. Stephens	256,063	Apr. 25	1375	367	21	1913
Harrow	G. Stephens	259,588	June 6	426	115	21	1769
Harrow	A. J. Stewart. (Reissue)	10,041	Feb. 21	1127	314	21	555
Harrow	B. F. Rix	260,220	June 27	1783	486	21	2083
Harrow and cultivator	T. R. Gay	260,260	June 27	1706	474	21	2083
Harrow and cultivator. Combined	B. L. Hodgden	253,364	Feb. 7	234	66	21	369
Harrow and pulverizer	J. Messer	253,348	Feb. 7	190	54	21	370
Harrow and pulverizer. Combined	J. Harvey	255,976	Apr. 4	266	75	21	967
Harrow and roller. Combined	A. C. Geerr	259,666	Jan. 24	1360	380	21	949
Harrow and seed-sower combined. Sulky	M. Cahill	260,008	June 27	1438	397	21	1983
Harrow attachment	H. H. Fischer	258,751	Jan. 24	1270	360	21	686
Harrow-evener	A. J. Nellis	255,389	Mar. 28	1374	370 371 349 350	21	894
Harrow. Mounted	S. G. Randall	259,919	June 20	1383	349 350	21	1894
Harrow or cultivator. Disk	A. J. Nellis	257,687	May 9	112	28	21	1391
Harrow or cultivator tooth	J. G. Friedemann	257,441	May 2	255	100	21	1245
Harrow or drag	J. Bradford	258,018	May 16	1670	397	21	1497
Harrow. Revolving	C. Williamson	260,342	June 27	1847	496	21	2087
Harrow. Revolving	A. H. Doty	254,097	Mar. 14	514	106	21	751
Harrow. Rotary	C. La Dow. (Reissue)	10,023	Apr. 25	1707	478	21	1971
Harrow. Sulky	C. La Dow	251,960	Jan. 3	206	73	21	47
Harrow. Sulky	C. La Dow	256,051	May 16	1147	322 323	21	1504
Harrow. Sulky	J. E. Weller	260,239	June 27	1644	488	21	2087
Harrow-tooth fastening	J. H. and T. K. Barley. (Reissue)	10,129	June 6	425	120	21	1729
Harrow. Wheel	C. Murray	255,095	Mar. 14	762	190	21	767
Harvester	J. F. Appleby	257,228	May 2	145	40, 41	21	1296
Harvester	R. H. Dixon and J. F. Steward	257,562	May 2	321	146	21	1379
Harvester	T. A. Jones	256,464	Apr. 18	930	268	21	1130
Harvester	S. M. Knighton	258,478	Jan. 17	978	278	21	177
Harvester	C. W. Lovalley	256,695	May 16	1128	333	21	1662
Harvester	O. Simpson	256,751	Apr. 18	1341	340	21	1128
Harvester	M. Van Matteson	260,226	June 27	1643	497	21	2087
Harvester	W. N. Whiteley	258,561	Jan. 17	1070	298	21	194
Harvester	W. N. Whiteley	258,698	Jan. 24	1267	357	21	253
Harvester	W. A. Wood	251,909	Jan. 3	208	88, 89	21	63
Harvester	C. Young	253,909	Feb. 14	709	216 217	21	467
Harvester and binder	W. N. Whiteley and W. Bayley	256,151	May 16	1208	339 340 357 358	21	1504
Harvester-binder	W. R. Baker. (Reissue)	10,105	May 9	892	252	21	1440
Harvester-binder	W. P. Hale	259,306	June 13	627	169	21	1822
Harvester-binder	S. D. Locke	251,906	Jan. 3	274	74, 75	21	66
Harvester-binder	L. Miller	259,269	June 13	595	149 150	21	1730
Harvester. Corn	G. W. Irwin	255,730	Apr. 4	46	13	21	969
Harvester. Corn	R. W. Quincy	258,388	Jan. 17	791	209	21	147
Harvester. Cornstalk	W. I. Ely	253,326	Feb. 7	207	59	21	361
Harvester cutter-bar	N. Beers, Jr	256,279	Apr. 11	678	184	21	1571
Harvester cutting apparatus	E. P. Curtis	258,575	Jan. 17	1035	303	21	196
Harvester-dropper	S. Green	257,318	May 2	103	66	21	1318
Harvester-dropper	I. Richardson	254,370	Feb. 28	1145	320	21	615
Harvester-elevator	J. M. Curtis	256,698	Mar. 28	1495	394	21	911
Harvester-frame	P. Hansen	256,477	Apr. 18	937	259 260	21	1128
Harvester-frames. Adjusting mechanism for	H. A. Adams	256,913	Apr. 25	1315	371	21	1982
Harvester. Grass-seed	H. H. Spears	255,347	Mar. 21	1146	327	21	829
Harvester-aprons. Fabric for	J. B. Kelley and C. S. Smith	259,119	June 6	367	91	21	1742
Harvester pinion-connection	O. M. and M. C. McMillan	254,499	Mar. 7	58	14	21	647
Harvester-rake	J. H. Jones	257,324	May 2	89	26, 27	21	1299
Harvester-rake	J. S. Marsh. (Reissue)	10,094	Apr. 25	1711	479 480	21	1972
Harvester rake	J. S. Marsh. (Reissue)	10,095	Apr. 25	1712	480 481	21	1973
Harvester-rake	R. T. Tuttle	256,476	Mar. 28	1260	363	21	895
Harvester-raking mechanism	M. M. Heaton	255,510	Mar. 28	1262	364	21	895
Harvester reel and rake	J. Keys	260,261	Apr. 25	1490	288 289	21	1981
Harvester-reel. Jointed	F. F. Kause	256,292	Mar. 21	1023	291	21	822
Harvester safety attachment	W. F. Cornell and W. Smith	257,525	May 9	510	143	21	1377
Harvester-sickle	D. Guptill	259,757	June 20	1122	306	21	1962
Harvesters. Driving and supporting wheel of	J. A. Johnson	259,396	June 13	603	173	21	1813
Harvesters. Swathing attachment for	C. C. Dunkel and A. Tschop	251,845	Jan. 3	201	57	21	56
Harvesting-machine	D. W. Estrikin	260,666	Jan. 10	508	139	21	84
Harvesting-machine	J. W. Hull	253,705	Feb. 14	695	197	21	469
Harvesting-machine	A. Hurd	256,434	Apr. 11	893	241	21	1164
Harvesting-machine	J. Keys	255,635	Mar. 28	1394	388	21	910

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Harvesting-machine	L. H. Lee	252,681	Jan. 24	1207	338	21	294
Harvesting-machine	D. Maxwell	256,151	Apr. 11	508	137	21	1041
Harvesting-machine	B. F. Stewart	257,406	May 2	315	99, 99	21	1397
Harvesting-machine	C. M. Young	252,854	Jan. 24	1494	356 / 357	21	299
Harvesting-machines. Adjusting the grain-wheel of	W. K. Miller	256,495	Jan. 17	1009	278	21	182
Hasp-lock	T. Donahue and W. W. Cone	256,568	June 13	792	209	21	1840
Hasp-lock	J. F. Robinson	255,118	Mar. 21	650	227	21	709
Hasp-lock	G. Smith	254,397	Feb. 28	1467	401	21	619
Hat	S. D. Robinson	255,674	Mar. 28	1544	416	21	926
Hat	E. Whitehouse	259,254	June 6	464	123	21	1774
Hat and cap sweat-band	F. W. Smith	254,169	Feb. 28	1296	357	21	576
Hat and coat hanger. Pocket	T. McDonald	253,727	Feb. 14	609	191	21	479
Hat-bodies. Machine for felting	J. S. Taylor. (Reissue)	10,144	June 27	1883	503	21	2030
Hat-bodies. Machine for scalding and sticking furbats to felt	C. A. Mallory	254,349	Feb. 28	1419	388	21	610
Hat-bodies. Machinery for felting	A. Poliseo	253,480	Feb. 7	277	79	21	283
Hat-bodies. Making and uniting bats to	W. A. Baglin	251,750	Jan. 3	88	25	21	18
Hat-brim heater	H. H. Sheldon	254,710	Mar. 7	317	84	21	698
Hat-brims. Apparatus for shaping	L. H. Heyt	253,818	Feb. 14	774	220	21	489
Hat-clasp	W. Ewing	251,853	Jan. 3	212	59	21	36
Hat-curling machine	W. T. Smith and C. R. Hall	254,398	Apr. 11	614	204	21	1065
Hat. Fireman's	I. Cairns	256,285	Apr. 11	694	188	21	1073
Hat-flanging machine	L. S. Plumb and G. W. Marchant	256,648	Apr. 4	353	95, 96	21	1009
Hat-holder	S. E. Browning	253,985	Jan. 31	1513	421	21	351
Hat-holder	J. H. Burns	259,189	June 27	1084	426	21	1899
Hat-holder	C. C. Lyon	256,343	Apr. 11	738	206	21	1035
Hat-nap hats. Apparatus for forming	J. R. Russell	256,991	Jan. 31	1484	415	21	776
Hat or cap. Reversible	S. Simonson	259,333	June 27	1835	496	21	2025
Hat. Police and military	C. Lehmann	257,955	May 16	1000	279	21	1475
Hat-shaping machine	J. R. Kelsey	259,396	June 27	1785	486	21	2019
Hat-sizing machine	M. Chittenden	256,461	Apr. 18	906	254	21	1134
Hat-stretching machine	R. Eickemeyer	256,293	Apr. 11	578	159 / 160 / 193 / 194	21	1054
Hat-stretching machine	R. Eickemeyer	256,305	Apr. 11	709	159 / 160 / 193 / 194	21	1076
Hat-stretching machines. Ribbed former for	R. Eickemeyer	256,304	Apr. 11	563	160	21	1054
Hat-sweat and other corded-edged fabrics	J. S. Hosmer and P. C. Lathrop	255,993	Apr. 4	303	79	21	1000
Hats and other fur-faced fabrics. Manufacturing	W. E. Doubleday	255,289	Mar. 21	1030	277	21	830
Hats. Machine for beating up napped	J. R. Russell	256,477	May 23	1626	463	21	1396
Hats. Method of and apparatus for shaking the cotton from napped	G. Yule	255,694	Mar. 14	881	219	21	787
Hatch-elevator. Automatic	H. R. Tracy	253,383	Feb. 7	166	47	21	374
Hatchets. Die for making	W. Evans	256,566	May 30	1751	495 / 496	21	1694
Hatchway-door operator. Automatic	J. L. Peters	255,663	Mar. 28	1533	413	21	904
Hay and cotton press	D. P. Burkett	256,366	May 23	1619	469	21	1574
Hay and grain cap	J. W. Angus	256,108	Jan. 10	586	168	21	109
Hay and straw stacker	N. Newsom	253,940	Feb. 21	894	260	21	588
Hay and straw stacking machine	J. Q. A. Newsom	256,463	May 23	1622	458 / 459	21	1583
Hay binder, unloader, and stacker	A. L. Thornton	257,534	May 9	479	133	21	1373
Hay-carrier	G. W. King	257,090	Apr. 25	1556	437	21	1945
Hay-carrier	J. R. Porter	254,691	Mar. 7	296	78	21	669
Hay-elevator	P. F. Chambard	254,921	Mar. 14	595	160	21	748
Hay-elevator	J. R. and J. M. Howell	256,312	June 13	546	143	21	1706
Hay elevator and carrier	E. Harrington	257,161	May 2	21	6	21	1295
Hay elevator and conveyor	S. E. Winser	252,566	Jan. 17	1075	299	21	194
Hay elevator and stacker	J. Dain, Jr.	252,363	Jan. 17	766	213	21	143
Hay-fork	L. C. Chase	257,170	May 2	6	3	21	1288
Hay-fork	C. Friberg	252,308	Jan. 17	771	215	21	144
Hay-fork. Grapple	G. Rundle	254,653	Feb. 21	1074	296	21	545
Hay-fork. Horse	W. Andrews	253,657	Feb. 14	567	160	21	453
Hay-knife	G. F. Weymouth. (Reissue)	10,072	Apr. 4	444	120	21	1035
Hay-loader	G. W. Le Vin	254,710	Apr. 18	1288	358	21	1174
Hay-press	J. G. Boyland	256,192	May 16	1260	353	21	1557
Hay-press	P. Lord	253,536	Feb. 14	451	121	21	430
Hay-press. Traveling	P. Wright	254,756	Mar. 7	377	98 / 100	21	702
Hay-presses. Self-adjusting head-block for	J. W. Chambers	259,369	June 6	478	135	21	1776
Hay-rack	J. M. Diffendafer	258,196	Jan. 10	694	177	21	114
Hay-rack	J. Shafer	257,770	May 9	789	217 / 218	21	1486
Hay-rake	M. Butler	258,568	Jan. 17	1066	306	21	196
Hay-rake	P. F. Fleming	259,639	June 20	1219	335	21	1919
Hay-rake	H. L. Shields	260,056	June 27	1493	403 / 403	21	1973
Hay rake and loader	T. R. Shoemaker	259,235	June 13	875	151 / 158	21	1694
Hay rake and loader. Combined	G. F. Coon	259,632	June 13	947	253	21	1867
Hay rake and tedder	A. Eagle	254,134	Apr. 11	494	131	21	1038
Hay rake and tedder. Combined	R. A. Hills	254,139	Feb. 28	1166	308	21	589
Hay rake and tedder. Combined	I. L. Landis	260,301	June 27	1799	466	21	2020
Hay-rake. Horse	D. G. Audley	254,767	Mar. 14	681	113	21	717
Hay-rake. Horse	T. W. Greene	259,063	June 6	165	45	21	1732
Hay-rake. Horse	W. H. Hall	256,660	Apr. 25	1411	397	21	1219
Hay-rake. Horse	M. R. Kenage	259,559	June 13	844	223	21	1849
Hay-rake. Horse	H. Myers	255,321	Mar. 21	1116	301	21	845
Hay-rake. Horse	A. A. Noyes	255,699	Mar. 28	1562	411	21	922
Hay-rake. Horse	C. Schels	255,681	Mar. 28	1550	418	21	927
Hay-rake. Revolving	E. Huber	255,991	Mar. 21	1074	289	21	857
Hay-rake. Revolving sulky	T. Miltenberger	255,445	Mar. 21	1020	343	21	877
Hay-rake. Sulky	W. P. Prall	256,735	Apr. 18	1294	343	21	1179
Hay rake and loader. Combined	L. R. Sample	259,497	June 13	666	202	21	1822

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Hay-stack binder	J. A. Hogg and W. Hall	259,662	June 27	1438	388	21	1988
Hay-stacker	L. W. Cannon	258,457	Jan. 17	919	263	21	180
Hay-stacker	J. C. Teetman	259,244	June 6	453	120	21	1772
Hay-stacking apparatus	G. Richardson	255,867	Apr. 4	130	42	21	977
Hay-tedder	J. W. Rahl	259,289	Jan. 17	1020	285 / 286	21	187
Hay tedder and loader. Combined	H. L. Shields	259,138	May 16	1218	343	21	1515
Hay tedder and rake. Combined	W. R. Johns	255,994	Mar. 21	1078	288	21	858
Hay tedder and rake. Combined	I. L. Landis	256,238	Apr. 11	743	203	21	1033
Head-block	C. Keeler	259,551	June 13	946	264	21	1910
Head-covering	R. H. Trested	255,440	Feb. 7	215	62	21	359
Head-covering	R. H. Trested	257,727	May 9	797	223	21	1439
Head-light. Locomotive	G. Clet	259,619	June 20	1193	333	21	1910
Head-rest	W. H. Wooldridge	256,228	May 23	1477	450	21	1502
Head-rest. Passenger	E. Scharpe	251,706	Jan. 3	137	39	21	35
Header and thrasher. Combined	W. H. Parrish	259,291	June 6	397	105 / 106	21	1763
Heat-observing apparatus	W. M. Miner	253,413	Feb. 7	267	77	21	282
Heat. Apparatus for utilizing solar	G. W. Datesler	257,560	May 9	519	145	21	1376
Heater: See Car-heater. Feed-water heater. Flat-iron heater. Hat-brim heater. Laundry-heater. Oil-heater. Photographic silver-bath heater. Steam-heater. Steam-boiler heater. Water-heater. Wheat-heater.							
Heater	P. Brocker	253,989	Feb. 21	909	270	21	387
Heater	E. E. Gold	255,949	Apr. 4	114	31	21	970
Heater	J. H. Mackintosh	254,345	Apr. 11	754	227	21	1035
Heating air and water for buildings. Apparatus for	A. K. Brown	257,650	May 9	537	176	21	1402
Heating air by steam. Apparatus for	J. P. Wood	256,189	May 16	1276	368	21	1555
Heating and cooking apparatus	G. M. Venable	257,769	May 9	789	222 / 224	21	1489
Heating apparatus	J. F. Pease	257,183	May 2	43	14	21	1292
Heating apparatus	L. T. Terwilliger	258,864	Jan. 10	674	182	21	99
Heating apparatus	M. W. Williams	256,089	Apr. 4	498	111 / 116	21	1018
Heating apparatus. Generator for steam	T. C. Joy	258,675	May 16	1148	329	21	1569
Heating apparatus. Mechanical	S. J. Linn	257,720	May 9	630	205	21	1412
Heating apparatus. Steam	M. P. Hathaway	255,167	Mar. 21	916	245	21	810
Heating bath-tubs by steam	J. Reilly	255,535	Mar. 28	1370	372	21	895
Heating buildings. Apparatus for	J. A. Bochem	256,932	Apr. 25	1405	416 / 417	21	1258
Heating-furnace	T. Kaylies, Sr.	253,130	Jan. 31	1780	488	21	388
Heating-furnace	G. R. Brown	259,898	June 20	1177	314 / 315	21	1913
Heating furnace. Air	V. Bade	258,017	May 16	1075	289	21	1466
Heating railway-trains. Apparatus for	B. Chamberlain	259,976	June 20	1283	374 / 375	21	1949
Heating system	B. R. Hawley	258,918	June 6	49	10	21	1705
Heddle-frame	J. Ashworth	253,335	Feb. 7	183	62	21	377
Hedge	E. H. Fleming	253,262	Feb. 7	211	69	21	393
Hedge fastening. Pleached	W. Baldwin	254,167	Feb. 28	1298	341	21	579
Hedge. Pleached	W. Young	254,695	Feb. 21	1160	310	21	551
Hedge-trimmer	W. F. Throckmorton	260,255	June 27	1748	470	21	2019
Hedge-trimmer and mower. Combined	J. V. Latimer	253,794	Feb. 14	624	186	21	457
Heel-burnishing machine	J. W. Carver	253,622	Feb. 14	597	180	21	457
Heel-counters. Die for shaping	M. Hynes	260,295	June 27	1660	435	21	2001
Heel-forming apparatus	F. A. Widger	252,916	Jan. 31	1503	418	21	270
Heel-machine	F. Pease	253,758	Feb. 14	698	196	21	475
Heel-nailing machine	H. A. Henderson	252,215	Jan. 10	644	161 / 162	21	117
Heel-nailing machine	H. A. Henderson	259,657	June 20	1018	278	21	1896
Heel-plate	M. D. Williams	256,989	Apr. 25	1405	411	21	1256
Heel-plate. Revolving	J. L. Thomson	256,676	Apr. 4	395	107	21	1016
Heel-trimmer	F. Moulton and C. M. Adams	252,243	Jan. 10	632	183	21	134
Heel-trimming machine	M. A. Tyler and H. D. Stone	252,819	Jan. 24	1300	395	21	228
Heliotrope	E. W. Bogbie	254,790	Mar. 14	684	113	21	717
Hemp-beater	T. J. Ferguson	253,154	Feb. 7	25	8	21	351
Hemp-cleaning machine	T. J. Ferguson	253,195	Feb. 7	25	8	21	351
Hemp-washer	T. J. Ferguson	252,345	Jan. 17	634	228	21	154
Hides and skins. Machine for treating	J. W. Jansen	257,495	May 9	435	121	21	1388
Hides and skins. Machine for treating	J. M. Jones	256,386	Apr. 11	738	208 / 209	21	1033
Hides or animal membranes and tissues. Treating	J. M. and G. F. Ordway	255,226	Mar. 21	1121	.....	21	846
Hinge	J. G. Beck	256,016	Apr. 25	1316	378	21	1283
Hinge	C. Pfannts and H. Franck	255,969	Apr. 4	10	10	21	982
Hinge	A. Sweetland	254,695	Apr. 11	621	202	21	1032
Hinge. Awning-blind	E. P. Pierce	253,895	Jan. 31	1474	413	21	274
Hinge for boxes and crates	H. Kirk	259,310	June 13	838	148	21	1757
Hinge for shutters. Lock-	J. P. Maher	260,020	June 27	1470	397	21	1990
Hinge. Gate-	M. J. Barrow	258,060	May 16	1097	284	21	1494
Hinge. Gate-	I. Gaston	258,670	Apr. 18	1140	328	21	1165
Hinge. Gate-	M. B. Hudson	251,982	Jan. 3	240	60	21	44
Hinge. Gate-	I. L. Landis	256,263	Apr. 11	744	204	21	1033
Hinge. Gate-	I. L. Landis	259,176	June 6	373	98	21	1720
Hinge. Lock-	F. Minard	253,264	Feb. 7	148	41	21	270
Hinge. Lock-	S. Needles	256,261	Apr. 11	778	214	21	1030
Hinge. Spring-	E. Ale	257,365	May 2	148	40	21	1.30
Hinge. Spring-	T. Butler	254,160	Feb. 28	1148	319	21	581
Hinge. Spring-	C. B. Clark	255,838	Apr. 4	288	89	21	982
Hinge. Spring-	I. S. Davis	254,438	Feb. 28	1268	448	21	627
Hinge. Spring-	I. S. Davis	255,257	Mar. 21	1068	278	21	838
Hinge. Spring-	H. Howson	252,790	Jan. 24	1290	385	21	240

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Hinge. Spring	W. Hull. (Reissue)	10,694	Jan. 31	1851	516	21	226
Hinge. Spring	G. M. Jewett	258,470	Jan. 17	908	270	21	170
Hinge. Spring	P. K. O'Lally	257,373	May 2	271	77	21	1239
Hinge. Spring	C. S. Van Wagener	258,519	May 23	1675	474	21	1683
Hinge. Spring	W. H. Williams	258,164	Jan. 10	568	166	21	108
Hinge. Spring	W. M. Kurtz	257,622	Apr. 25	1580	457	21	1245
Hinge. Strap	F. Bonelli	256,974	Mar. 28	1468	394	21	968
Hitching-strap	H. M. Small	253,557	Feb. 14	454	130	21	435
Hobby horse or rocker motive	J. Powers. (Reissue)	10,636	Mar. 7	416	120	21	760
Hod-elevator	J. Powers	253,943	Feb. 21	936	261	21	588
Hod-elevator	E. W. Watson	258,613	June 13	919	245	21	1688
Hod-elevator	G. W. Brown	258,473	June 13	747	197	21	1633
Hod-elevator. Safety	J. L. Hudson	253,653	Jan. 21	1671	488	21	307
Hoe	U. Wassmer	255,708	Mar. 28	1569	457	21	804
Hoe	A. Schwehr	257,669	Apr. 25	1627	456	21	1257
Hoes. Machine for making	E. Major	258,647	Jan. 10	454	124	21	65
Hog-nose ring	H. C. Hill	257,698	May 16	897	239	21	1457
Hog-ring	J. P. Ewan	255,185	Mar. 21	530	204	21	797
Hog-ringing device	W. H. Whittlesey and J. C. Cook	258,687	June 6	946	65	21	1736
Hog-ringing tool	R. C. Tompkins	255,386	Mar. 21	1329	364	21	861
Hog-scraping machine	O. Ewing	253,359	Feb. 7	288	89	21	361
Hog-tendon cutter	G. A. Lowry and M. Crawford	258,119	Jan. 10	888	146	21	99
Hogs. Apparatus for catching and suspending	J. S. Smithson	256,147	May 16	1231		21	1517
Hogs. Dressing	W. F., Sr., and W. F. Sexton, Jr	254,942	Feb. 28	1394	356 / 359	21	590
Hoist	J. Cunningham	256,980	Apr. 11	576	158	21	1028
Hoist. Hog	F. A. Clarkson	258,740	Jan. 24	1263	355	21	233
Hoisting and conveying apparatus	F. A. Gardner	253,385	Feb. 14	418	116	21	439
Hoisting and winding drum	R. B. Mentyard	259,198	June 6	396	108	21	1761
Hoisting apparatus	W. S. Rockwell	260,304	June 27	1668	424	21	2024
Hoisting apparatus	E. L. Stocking	255,351	Mar. 21	1149	308	21	850
Hoisting apparatus	A. C. Ellithorpe	255,956	Apr. 4	257	68	21	992
Hoisting apparatus. Safety device for	J. F. Taylor	258,543	Jan. 17	1049	288	21	120
Hoisting-bucket and dump-car. Combined	A. Debilde	255,844	Apr. 4	199	39	21	949
Hoisting-machine	V. C. Jarboe	253,714	Feb. 14	630	161	21	485
Hoisting-machine	F. Murgatroyd	254,496	Mar. 7	62	16	21	640
Hoisting-machine drums	F. Murgatroyd	253,861	Feb. 21	856	242	21	516
Hoisting machinery. Hydraulic	A. Lafarguo	259,175	June 6	372	98	21	1730
Hoisting. Stand-frame for	W. S. Blunt	258,548	May 30	1730	469	21	1690
Holdback. Vehicle	A. J. Bacon	251,814	Jan. 3	161	44	21	99
Holder:							
See Bag-holder.	Lead and crayon holder.						
Bill and file holder.	Mop-holder.						
Blacking-box holder.	Music-holder.						
Blind-slat holder.	Paper-bag holder.						
Bow or scarf holder.	Pen-holder.						
Candle-holder.	Photographic-plate holder.						
Card-holder.	Pillow-sham holder.						
Cigar-holder.	Pin-jewel holder.						
Cigarette-holder.	Pistol and carbine holder.						
Coin-holder.	Pool-ball holder.						
Cow-tail holder.	Rein-holder.						
Cuff-holder.	Sash-holder.						
Curtain-holder.	Shade-holder.						
Dental check-holder.	Shoe-holder.						
Dental tool-holder.	Spectacle-holder.						
Dish-holder.	Spittoon-holder.						
Fancy-holder.	Spooling-machine-bobbin holder.						
File-holder.	Stereotype-plate holder.						
Flag-staff holder.	Strap-holder.						
Fodder-holder.	Surgical-needle holder.						
Funnel-holder.	Thread-holder.						
Gate-holder.	Ticket-holder.						
Globe-holder.	Tool-holder.						
Hat-holder.	Twine-holder.						
Label-holder.	Type and space holder.						
Lamp-shade holder.	Whip-holder.						
Lantern-holder.	Work-holder.						
Lath-holder.							
Lathe-cutter holder.							
Hominy-mill	T. Hudnut. (Reissue)	10,657	Mar. 7	416	110	21	760
Hominy-mills, &c. Automatic feeding and discharging mechanism for	J. Goodyear	258,289	May 16	1291	368	21	1289
Homologues of phenol, naphthol, and resorcin. Manufacture of the higher	A. Liebmann	258,788	Jan. 24	1317	.....	21	948
Honey-comb foundations. Machine for manufacturing	W. C. Pelham	258,261	May 23	1377	369 / 390	21	1551
Hoof-protector	J. M. Goodman	258,738	Jan. 24	1267	362	21	237
Hook:							
See Bait-hook.	Harness check-hook.						
Bale and box hook.	Lacing-hook.						
Bedstead-hook.	Manure-hook.						
Belt-hook.	Picture-hook.						
Clasp-hook.	Rein-hook.						
Coat-hook.	Sewing-machine hook.						
Cornice-hook.	Snap-hook.						
Fish-hook.	Wardrobe-hook.						
Halter-hook.	Whiffletree-hook.						
Harness-hook.							
Hoop:							
See Shipping-hoop.							
Hoop-cutting machine	L. Holt	258,698	Jan. 24	1198	338	21	221
Hoop-cutting machine	W. B. Noyes	259,419	June 13	678	179	21	1880
Hoop-cutting machine. Barrel	J. B. Pike	260,094	May 30	2036	575	21	1674

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Hoop-dressing machine	S. E. Garner	258,207	Jan. 10	695	178	21	115
Hoop-driving machine. Horizontal	M. L. Deering	257,139	Apr. 25	1695	473 / 478	21	1268
Hoop-locks. Machine for cutting	H. Wilde	257,589	May 9	404	124 / 125	21	1372
Hoop-making machine	J. B. Dougherty	258,468	Apr. 18	914	238	21	1196
Hoop-splints. Mechanism for and method of forming	H. F. Campbell	255,413	Mar. 28	1251	331	21	976
Hoops from poles. Machine for sawing barrel	W. Bowker	257,918	May 16	900	227 / 228	21	1497
Hoops. Machinery for manufacturing barrel	N. P. Stevens	260,234	June 13	1698	426	21	2035
Hoops upon casks. Machine for driving	M. R. Beasley	256,951	Apr. 25	1462	415 / 416	21	1288
Hopper. Feed	J. R. Walsh	258,633	Jan. 24	1130	288	21	214
Hopple	C. J. Gustavesen	253,272	Feb. 7	288	69	21	362
Horn and peg cutter	J. B. Bickford	253,134	Mar. 21	897	232	21	838
Horse-blanket fastener. Adjustable	M. E. Brown	260,315	May 23	1333	377	21	1542
Horse-detacher	H. Fleischhauer	253,690	Feb. 14	606	171	21	459
Horse-detacher	J. Gesemann	253,397	Feb. 7	315	84	21	345
Horse-detacher	J. P. May	259,567	June 13	888	229	21	1833
Horse-detacher	A. Pilenky	252,148	Jan. 31	1165	426	21	899
Horse-detacher	J. T. Walker	256,961	June 6	113	30	21	1714
Horse-hoof pad	W. F. Raymond	258,351	Jan. 10	689	185	21	126
Horse-power	G. F. Reis	260,154	June 27	1618	457	21	1991
Horse-power	T. A. Brewer	255,583	Mar. 28	1443	387	21	997
Horse-power	W. Deering	254,634	Mar. 7	215	55	21	675
Horse-power	J. Ellis	259,634	June 20	1397	364	21	1846
Horse-power	W. O. Frost	259,370	June 13	888	157	21	1811
Horse-power	J. T. Graves	259,649	June 20	1395	362	21	1852
Horse-power	J. Schweiger	255,992	Mar. 21	963	254	21	817
Horse-power whip attachment	J. L. Crawford	254,619	Mar. 7	208	54	21	673
Horses. Check for	M. M. Markussen	255,992	Apr. 4	135	41, 42	21	976
Horses from running away. Device for preventing	M. Rothschild	258,218	May 23	1433	413	21	1554
Horses. Vehicle device for checking	E. S. Bowen	259,354	June 13	888	157	21	1804
Horses. Vehicle device for checking	W. P. Kirkland	259,765	June 20	1130	300	21	1885
Horseshoe	H. Bland	255,919	Apr. 4	207	54	21	965
Horseshoe	G. R. Brown	259,640	June 13	941	250	21	1802
Horseshoe	J. R. Cossin	254,531	Mar. 7	198	38	21	656
Horseshoe	J. N. Clarke	254,594	Mar. 7	195	37	21	664
Horseshoe	J. R. Finch	258,750	Jan. 24	1270	338	21	226
Horseshoe	R. A. Goodenough	259,210	Jan. 10	637	169	21	114
Horseshoe	J. M. Kibner	254,327	Feb. 28	1393	365	21	592
Horseshoe	P. J. Layden	257,599	May 9	441	120	21	1366
Horseshoe	W. Leech	253,930	Feb. 21	994	257	21	589
Horseshoe	P. McCabe	258,382	Jan. 17	871	240	21	161
Horseshoe	G. W. M. Stones	260,057	June 27	1494	403	21	1973
Horseshoe	W. Vandervoar	260,260	June 27	1746	476	21	2011
Horseshoe-fastening device	G. Bryden	255,785	Apr. 4	15	5	21	953
Horseshoe-machine	Z. V. Purdy	257,450	May 2	264	102	21	1246
Horseshoe-nail blanks. Machine for cutting and forming	W. F. Durfee	260,177	June 27	1643	445 / 446 / 447	21	1995
Horseshoe-nails. Machine for forging	C. R. Ellicott	257,308	May 2	183	50	21	1214
Horseshoe toe-weight	C. H. Burbidge, Jr	259,746	June 20	1105	295	21	1891
Horseshoes. Die for making	G. Dunning	257,994	May 16	908	229 / 230	21	1466
Hose carriage. Fountain	I. W. McGaffey. (Reissue)	10,647	Feb. 28	1295	417	21	631
Hose-carrier	C. Calahan	251,996	Jan. 3	361	103	21	66
Hose-clamp	J. Shepherd and J. V. Miller	255,465	Mar. 28	1297	340	21	861
Hose-coupler	J. H. and C. Clay	258,269	June 13	616	163	21	1686
Hose-coupling	E. A. Rix	255,335	Mar. 21	1134	305	21	848
Hose coupling and support	J. W. Regan	256,163	Apr. 11	517	149	21	1044
Hose. Device for repairing ruptures in water	L. Nessinger	257,668	May 9	584	163	21	1390
Hose-nozzle	F. W. Robertshaw	254,648	Feb. 21	1089	297	21	544
Hose or pipe. Flexible	M. J. Walsh	255,357	Mar. 21	1156	309	21	851
Hose-pipe	B. Holland, Jr	255,720	Mar. 28	1625	436 / 438	21	939
Hose-pipe nozzle	T. Gould	259,131	June 6	319	85	21	1750
Hose-pipe. Stand	B. Holland, Jr	255,430	Mar. 28	1293	337 / 338	21	873
Hose to pump-spouts. Attachment for connecting	C. Powell	260,128	June 27	1569	428	21	1998
Hosiery. Manufacturing	S. Berton and C. H. Willcox	255,579	Mar. 28	1434	385	21	905
Hosiery. Method of and apparatus for exhibiting	J. M. Kennard	256,767	May 30	1966	544	21	1667
Hot-air furnace	W. P. Brewin	258,616	Jan. 10	488	115 / 116	21	89
Hot-air furnace	J. F. Peace. (Reissue)	10,113	May 16	1269	371	21	1881
Hot and cold air register	R. S. T. Cassel	258,689	May 30	1630	516	21	1689
Hot-water or steam main or pipe	R. H. Buel	256,543	Apr. 18	1081	289	21	1140
House:							
See Frame house.	Portable summer-house.						
Ice-house.	Starch-drying house.						
Malt-house.							
Houses for purpose of ventilation, &c. Construction of	P. G. Eaton	255,660	Mar. 28	1466	395	11	912
Household utensil	T. W. Sims and F. Fischer	259,838	June 20	1289	354	21	1837
Hub	A. McKellar	254,966	Mar. 14	691	186	21	765
Hub	J. D. Terrence	254,720	Mar. 7	241	59	21	686
Hub	J. S. Reid	255,670	Mar. 28	1539	415	21	935
Hub-block-boring machine	J. T. Richmond and H. J. Cordesman, Jr.	255,384	Mar. 21	1304	362	21	889
Hub-boring machine. Wheel	N. Clark	256,587	May 30	1727	498	21	1669
Hub-fastener	F. M. Hurtle	257,363	May 2	88	22	21	1236
Hub. Vehicle	J. R. Foster	251,794	Jan. 3	133	33	21	94
Hub. Vehicle	F. M. Priestley	259,916	June 20	1269	348	21	1823

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No	Date	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Hub. Vehicle-wheel	J. Newman	255,008	Mar. 14	707	191	21	709
Hub. Vehicle-wheel	F. T. Riegel	255,084	Mar. 14	726	196	21	771
Hub. Wagon	J. A. Hodgens	253,858	Jan. 31	1070	468	21	307
Hub. Wheel	R. W. and D. Davis	251,849	Jan. 3	197	55	21	35
Huller: *See* Clover-huller.							
Hydrant	S. R. C. Mathews	258,689	Jan. 31	1466	410	21	273
Hydrants and water-mains. Electric alarm for	U. Thompson	256,516	Apr. 18	972	272 273	21	1135
Hydraulic and pneumatic elevator	H. H. Day. (Reissue)	10,681	Feb. 7	309	108	21	406
Hydraulic and pneumatic elevator	G. Johnson and W. M. Bailey	256,788	Apr. 18	1187	333	21	1172
Hydraulic brake	W. A. Myers	256,536	May 23	1714	484	21	1616
Hydraulic elevator	C. A. Chandler	252,048	Feb. 21	967	289	21	502
Hydraulic elevator	A. Granville	259,048	June 20	1284	369	21	1021
Hydraulic elevator	W. E. Hale	253,049	Jan. 31	1056	459	21	305
Hydraulic elevator	G. L. Pierce	256,964	Jan. 31	1503	425	21	290
Hydraulic elevator	G. H. Pond	257,754	May 9	764	213	21	1468
Hydraulic elevator	C. T. Wildstrand	253,799	Feb. 14	747	213	21	465
Hydraulic press	C. Kimplan	255,872	Apr. 4	143	38, 39	21	974
Hydraulic press. Automatic	G. A. Lawrence and E. J. Frost	255,360	Mar. 21	1085	282 283 284	21	630
Hydrocarbon-burner	E. N. Dickerson, Jr.	256,551	Apr. 18	1009	265	21	1142
Hydrocarbon-burner	E. A. Edwards	251,849	Jan. 3	207	58	21	37
Hydrocarbon-burner	E. A. Edwards	256,294	Apr. 11	767	199	21	1078
Hydrocarbon burner. Liquid-	S. H. Douglas	256,133	Apr. 11	683	131	21	1036
Hydrocarbon burner. Liquid-	A. S. Munger	259,618	Jan. 24	1139	317	21	211
Hydrocarbon-furnace	G. Daryee	253,970	Feb. 7	186	33	21	364
Hydrocarbon-furnace	B. Sloper	259,234	June 20	1321	354	21	1037
Hydrocarbon-furnace	M. Zeck	251,959	Jan. 3	389	109	21	63
Hydrocarbon to burners. Apparatus for supplying	A. M. Brainard	255,944	Mar. 21	1011	271	21	987
Hydrocarbons. Burning	H. T. Litchfield and D. Renshaw	251,785	Jan. 3	118	34	21	23
Ice and cooling in general. Cooling air for making	O. Parker	259,621	June 13	660	169	21	1030
Ice. Apparatus for making clear	F. Gergens	256,286	May 23	1346	361	21	1545
Ice-cream freezer	C. L. Dexter. (Reissue)	10,089	Feb. 21	1125	314	21	554
Ice-cream freezer	M. Richelmer	253,254	Jan. 10	692	195	21	195
Ice-creeper, &c.	H. Bland	253,349	Jan. 17	814	227	21	151
Ice-creeper	J. P. Herbert and P. Wrin	256,419	May 23	1566	446	21	1595
Ice-creeper	A. Herewitz	259,311	June 13	545	143	21	1796
Ice-cutting machine	C. N. Cutter	254,431	Feb. 28	1563	413	21	687
Ice-cutting machine	F. L. D. Pearson	253,283	Feb. 7	54	17	21	356
Ice-cutting machine	J. Stork	259,941	June 20	1331	357 358	21	1039
Ice-elevator	S. A. Morton	256,155	Apr. 11	507	139	21	1042
Ice-floor for cold storage-houses	H. C. Cain	255,469	Mar. 28	1388	357	21	805
Ice-house	A. Von Krause and M. Kuhnen	253,790	Feb. 14	738	211	21	453
Ice-house, ice-box, and refrigerator	J. Brauer. (Reissue)	10,138	June 13	979	282	21	1673
Ice-machine	E. Fixary	254,263	Feb. 28	1541	346	21	521
Ice-machine	F. Gergens	256,287	May 23	1347	361	21	1545
Ice-machine	G. W. Stevens	256,038	May 30	1501	537	21	1650
Ice-machine and refrigerating apparatus	T. and C. E. Davis	256,081	Jan. 10	667	117	21	51
Ice-machine and refrigerating apparatus	T. and C. E. Davis	257,476	May 9	810	115	21	1361
Ice. Manufacture of	W. W. Dusenbury	256,586	May 30	1748	495	21	1694
Ice. Manufacture of	S. D. Lount	259,027	June 20	1327	374	21	1690
Ice marker and plow	J. B. Fischer	256,637	May 30	1636	518	21	1640
Ice. Method of and apparatus for making	O. Parker	255,060	Mar. 28	1527	411 419	21	983
Ice-scraper	T. W. Botts	259,397	June 27	1428	395	21	1988
Illuminated structure	E. Vedder	259,346	June 13	564	155	21	1802
Incrustation-preventive	C. B. Boyce	259,355	June 13	563	.....	21	1804
Incrustation-preventive	F. M. Collet	260,003	June 27	1453	.....	21	1963
Incrustation-preventive	H. Kolker	258,235	May 23	1389	.....	21	1548
Incubator	A. M. Halstead	258,395	May 23	1488	465	21	1660
Incubator	P. G. and G. A. Muenchinger	260,219	June 27	1700	459 460	21	2004
Indicator: *See* Line-indicator. Power-indicator. Railway time-indicator. Scale-indicator. Speed-indicator. Station-indicator. Valve-indicator. Visual indicator.							
Indicator	W. Stephens	253,319	Feb. 7	161	46	21	373
Indicator-lock	J. McNeven	252,189	Jan. 10	536	150	21	149
Indicator-pistons. Spring-connection for	G. W. Brown	256,281	Apr. 11	668	185	21	1071
Indigo. Artificial	A. Beeyer and V. B. Drewsen	257,615	May 9	830	.....	21	1435
Indigo-blue. Manufacture of	A. Beeyer	259,209	June 6	448	.....	21	1778
Indigo-blue. Manufacture of	A. Beeyer	259,261	June 6	449	.....	21	1775
Indigo. Manufacture of artificial	A. Beeyer	258,669	June 13	629	.....	21	1662
Indigo. Manufacture of artificial	A. Beeyer and V. B. Drewsen	257,614	May 9	829	.....	21	1435
Indigo. Preparation of material for the manufacture of artificial	A. Beeyer and V. B. Drewsen	257,613	May 9	828	.....	21	1435
Indigo. Preparation of material used in the manufacture of artificial	A. Beeyer and V. B. Drewsen	257,612	May 9	828	.....	21	1435
Ingot-mold shield	J. Pedder	256,638	Apr. 4	346	94	21	1009
Ingots cast in molds. Apparatus for stripping	L. G. Lauraun	254,341	Feb. 28	1494	388	21	689
Inhaler	J. H. Nelson	256,695	Apr. 18	951	288	21	1138
Inhaler	W. F. Semple	254,391	Feb. 28	1456	380	21	616
Injector	H. B. Murdock	259,649	June 13	567	288	21	1679
Injector	D. Renshaw and G. B. N. Tower	257,697	May 16	933	260	21	1463
Injector. Liquid-fuel	F. A. Meyer	253,216	Feb. 7	47	15	21	355
Injector. Steam-engine	S. Berlund	255,988	Apr. 4	288	54, 55	21	985
Ink-fountain	A. Gage	256,209	May 23	1431	408	21	1559
Ink-fountain and pen-holder. Combined	A. Desbleday	251,765	Jan. 3	23	7	21	7
Ink. Manufacture of	A. F. Stoddart	256,388	Mar. 21	1150	.....	21	659

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Invention.	Name.	No.	Date	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Inkstand	G. C. Miller	257,736	May 9	746	227	21	1419
Instand. Calendar	J. G. Smith	256,396	Apr. 11	813	222	21	1095
Inlaid jewelry, &c. Making	C. P. Fest	254,945	Mar. 14	663	167	21	833
Inlaying horn, &c., with pigment colors	F. A. Hickerson	251,824	Jan. 3	204	.....	21	51
Insect-destroyer	F. T. Pinter	253,685	Feb. 14	588	151	21	446
Insect-destroyer	W. L. Waddy	256,771	Apr. 18	1089	255	21	1165
Insect-guard	H. W. Flood and H. Kromwell	255,499	Mar. 28	1393	361	21	808
Insect poison and fertilizers. Distributer for	D. R. Darnell	254,894	Mar. 14	436	118	21	720
Insecticide	G. W. Tucker	258,567	May 23	1573	.....	21	1622
Insecticide compound	W. B. Nettle	253,823	Apr. 4	156	.....	21	976
Insecticide for poultry, pests, &c	R. D. Hill	254,317	Feb. 28	1574	.....	21	682
Insulated electrical conductor	W. H. Sawyer	253,261	Jan. 10	703	198	21	192
Insulated electrical conductor	W. H. Sawyer	253,262	Jan. 10	703	198	21	197
Insulating and protecting telegraph-wires, &c. Device for	W. E. Banta	259,273	June 27	1703	476	21	2014
Insulating conductors. Alarm for detecting defects in	L. Finger	257,663	May 9	679	189	21	1406
Insulating material for electrical conductors	F. Borel	256,549	May 30	1730	.....	21	1680
Insulating underground lines	E. A. Hill	257,165	May 2	25	9	21	1265
Insulation of electrical conductors	H. C. Strong	253,446	Feb. 7	313	87	21	389
Insulation. Preparation of materials for use in electric	J. A. Fleming	259,271	June 6	480	.....	21	1777
Insulator and protector for underground lines	W. A. French	253,669	Jan. 31	1043	456	21	303
Insulator for electrical conductors	A. C. Lewis	255,809	Apr. 4	61	16	21	961
Insulator for telegraph-wires	W. H. Capewell	254,610	Mar. 7	197	50	21	671
Insulator for telegraph-wires	C. L. Gere	259,857	Jan. 24	1487	398	21	209
Integrating apparatus	C. V. Boys	258,380	May 23	1501	406 407 408 409	21	1573
Interlocking eyes. Machine for forming	R. Furies	259,677	June 20	1004	268 269	21	1684
Interlocking switch and signal mechanism	E. H. Johnston	253,391	Feb. 7	248	69	21	367
Invalid-chair. Folding	W. Armstrong	253,233	Feb. 7	180	51	21	377
Invalids. Apparatus for lifting and turning	G. W. Robbins	256,194	May 16	1304	330	21	1512
Iron: *See* Carriage-bow iron. Flat-iron. Grappling-iron. Rod-iron. Wagon rub-iron. Wagon-seat corner-iron. Whiffletree-iron.							
Iron and other plates. Apparatus for galvanizing and coating sheet	J. Mulholland, Jr.	256,494	Apr. 18	950	266	21	1132
Iron and steel. Treating	A. H. Siegfried	254,599	Mar. 7	73	.....	21	651
Iron breaker. Pig	T. A. Blake	254,940	Apr. 25	1406	419	21	1234
Iron from ferruginous saline solutions. Removing	C. Dahlberg and C. Semper	257,567	May 9	595	.....	21	1370
Iron. Machine for straightening round bar	L. Brightman	260,278	June 27	1766	477	21	2015
Iron. Manufacture of puddled	W. Smith	257,698	May 16	933	260	21	1463
Iron. Manufacture of sheet	W. D. Wood	258,188	Jan. 10	686	167	21	189
Iron or steel. Plating	M. Bennah	256,119	May 16	1190	.....	21	1611
Ironing-board	J. R. Hilton	259,118	June 6	366	81	21	1746
Ironing-board	J. T. King	260,240	June 27	1669	457	21	2008
Ironing-board	T. R. King and W. H. Saxton	253,285	Feb. 7	138	36	21	369
Ironing board or table. Reversible	C. W. Powers, Jr.	260,234	June 27	1718	465	21	2007
Ironing-machine	W. L. Hall	256,260	May 23	1350	362	21	1546
Ironing-table and clothes-horn combined	M. Kesler	252,675	Jan. 24	1300	336	21	223
Irrigating-ditch	D. D. Mallvey	254,674	Mar. 7	276	73	21	665
Ivory. Manufacture of material to form artificial	F. W. Cottrell	254,399	Feb. 28	1334	.....	21	597
Jacks: *See* Axle-box jack. Carriage-jack. Boot-jack. Boot or shoe holding jack. Lasting-jack. Lifting-jack. Painter's jack. Shoemaker's jack. Wagon-jack. Wagon or lifting jack.							
Jack	M. J. Walsh	254,741	Mar. 7	329	93	21	696
Jack or last-holder	J. R. Kimball	254,221	Feb. 28	1569	351	21	566
Jack-screws	C. M. Crandall	254,430	Feb. 28	1568	412	21	627
Jacketed can	L. Sexton	259,502	June 13	691	227	21	1856
Jail, prison, and grating bar	G. Kinsey	258,980	June 6	76	19	21	1707
Jar: *See* Fruit-jar.							
Jars and bottles. Shipping-case for	B. S. Atwood	254,290	Mar. 14	570	153	21	742
Jars and other receptacles. Cover for pickle	T. Leach	253,736	Feb. 14	687	187	21	462
Jars of pickle-casters and other receptacles. Cover for	T. Leach	253,735	Feb. 14	686	187	21	462
Jewel-box	G. Gough	253,473	Feb. 7	241	95	21	404
Jeweler's braided metallic stock	A. S. Crane	253,567	Feb. 14	466	126	21	440
Jeweling-tool	W. B. Atkinson	256,490	May 30	1912	549	21	1652
Jewelry	J. B. Van Houten	253,450	Feb. 7	217	58	21	399
Jewelry-catch	P. A. Leimbach	256,776	May 30	2060	586	21	1660
Jewelry. Machine for combining the backs and fronts of articles of	D. S. Cooke and J. Hagerty	254,117	Feb. 28	1149	281	21	505
Jewelry-setting	H. B. Smith	258,663	Apr. 4	377	103	21	1014
Jewelry-stock	C. F. Heckmann	260,085	June 27	1544	416	21	1990
Joint: *See* Carriage-top joint. Expansion-joint. Fish-plate joint. Pipe-joint. Railway-rail joint. Universal joint. Vehicle-top joint.							
Joint for pipes and fittings	J. R. Moore	253,734	Mar. 28	1499	449	1	849
Journal-bearing	W. L. Clark	256,463	Apr. 18	949	264	21	1126
Journal-bearing	H. A. Griffith	256,413	May 23	1483	443	21	1599
Journal-bearing	T. V. Le Roy	260,163	June 27	1727	482	21	2009
Journal-bearing	J. Reese	256,317	May 30	1489	452	21	1664
Journal-bearing	G. J. Skinner	253,117	Jan. 31	1739	487 488	21	321
Journal-bearing	G. W. Williams	259,955	June 6	695	199	21	1774

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Journal-bearing for stone and ore crushers	P. W. Gates	220,681	June 20	1010	270	21	1865
Journal-box	S. E. Pettee	253,225	Feb. 7	56	17	21	356
Journal-lubricator	G. Jackson	254,771	Mar. 7	302	104	21	705
Journals. Oil-hole cover for	S. A. Skinner. (Reissue)	10,084	Mar. 21	1217	385	21	982
Jug	J. Cook	252,649	Jan. 24	1108	308	21	217
Keg. Lager-beer	J. B. Hayden. (Reissue)	10,081	Mar. 14	823	219	21	787
Kettle and urn. Combined	H. C. Rice	256,921	Apr. 25	1441	465	21	1234
Kettle. Steam-jacket	E. Whiteley	251,751	Jan. 3	76	21	21	16
Key: *See* Musical-instrument key. Telegraph-key. Pole-changing key.							
Key for bolts, &c	B. W. De Courcy	255,843	Apr. 4	107	29	21	969
Kiln: *See* Brick-kiln. Lime-kiln. Brick-burning kiln. Pottery-kiln. Dry-kiln. Tile-kiln. Drying-kiln.							
Kiln for burning articles manufactured from clay	J. Dawson	253,517	Feb. 14	408	114	21	428
Kiln for enamel work	A. Tees	256,407	Apr. 11	923	237	21	1097
Kitchen-cabinet	W. R. Craig	256,851	May 30	2067	589	21	1883
Kitchen implement	J. W. Koss. (Reissue)	10,086	Apr. 11	694	250	21	1109
Kitchen utensil	B. F. Adams	254,427	Feb. 28	1560	411	21	698
Kneading and mixing machine	P. Pfeiderer	254,042	Feb. 21	1060	285	21	543
Knife: *See* Edge-trimming-machine knife. Pocket-knife. Pruning-knife. Hay-knife. Skinning-knife. Paper-knife.							
Knife	S. S. Ward	256,173	May 16	1258	355	21	1562
Knife-scales. Apparatus for riveting	H. H. Francis	257,685	May 9	684	190	21	1409
Knitting-loom. Circular weft-thread	N. W. Westcott	254,079	Feb. 21	1101	{306 {307	21	559
Knitting-machine	W. H. Abel. (Reissue)	10,112	May 16	1303	{369 {370 {371	21	1531
Knitting-machine	W. Aiken	253,652	Feb. 14	556	150	21	451
Knitting-machine	J. Byfield	252,864	Jan. 31	1440	{402 {403	21	988
Knitting-machine	J. Denton	255,945	Apr. 4	941	62	21	980
Knitting-machine	H. J. Griswold	255,971	Apr. 4	977	79	21	985
Knitting-machine	H. Günther	253,988	Feb. 21	906	254	21	518
Knitting-machine	H. W. Harley	253,530	Feb. 14	422	118	21	430
Knitting-machine	W. D. Huse	255,996	Apr. 4	996	80, 81	21	1001
Knitting-machine	G. E. Nye	253,758	Feb. 14	685	196	21	474
Knitting-machine	H. C. Shaw	259,499	June 13	660	{182 {183	21	1822
Knitting-machine	G. A. White	254,750	Mar. 7	363	96	21	709
Knitting-machine	C. Young	256,583	May 23	1092	{478 {479	21	1606
Knitting machine. Circular	P. I. Harvey	253,531	Feb. 14	483	{118 {119	21	430
Knitting-machine needle	F. E. Gilford	253,880	Feb. 21	889	235	21	565
Knitting-machine needles. Manufacture of	S. Peberdy	255,808	Apr. 4	69	19	21	962
Knitting machines. Stop-motion for circular	R. M. Appleton	256,583	Apr. 18	989	270	21	1136
Knitting-machines. Thread-guide mechanism for	W. H. Pearson and J. Bradley	253,294	Feb. 7	55	17	21	356
Knob alarm. Door	W. F. Cook	253,006	Jan. 31	1614	446	21	986
Knob alarm. Door	J. Simon	254,924	Apr. 25	1446	465	21	1225
Knob attachment	J. A. Giese	254,000	Feb. 21	1002	260	21	553
Knob attachment	O. M. Hidden	255,858	Apr. 4	188	33	21	971
Knob attachment	B. H. Lockwood	256,668	Jan. 24	1280	338	21	894
Knob attachment	E. L. Phippe. (Reissue)	10,066	Mar. 28	1651	447	21	944
Knob attachment	W. H. Taylor	253,956	Feb. 21	951	264	21	594
Knob attachment	H. R. Towne	253,138	Jan. 31	1774	493	21	994
Knob attachment	H. R. Towne	253,789	Feb. 14	737	211	21	488
Knob attachment	J. W. Young	251,998	Jan. 3	308	99	21	63
Knob. Door	J. Bardsley	253,831	Feb. 21	795	226	21	500
Knob. Door	J. Collins	260,367	June 27	1853	500	21	2089
Label-band for dry-goods packages	B. E. Kingman	251,894	Jan. 3	261	71	21	46
Label for animals	P. P. Johnston	255,793	Apr. 4	49	14	21	939
Label-holder	J. F. Burgdorf	256,863	June 6	16	5	21	1697
Label-holder	H. E. Clinton	252,189	Jan. 10	617	173	21	113
Label holder. Car	C. J. Slafter	256,948	Apr. 11	643	174	21	1064
Labeling machine. Packet	G. Pritchard	252,137	Jan. 10	538	{156 {157 {158	21	103
Lace. Desk for making macramé	T. Barbour	254,256	Feb. 28	1311	363	21	583
Lace. Desk for making macramé	C. W. Dimmick	254,266	Feb. 28	1343	370	21	598
Lace-fastening	T. Green	256,989	Apr. 25	1538	431	21	1241
Lace fastening. Shoe	E. C. C. Henderson and T. A. McDonald.	260,196	June 27	1672	453	21	2090
Laces, &c. Machine for purling manufactured	O. L. Deschamps	253,915	Feb. 21	884	251	21	516
Lacing for wearing-apparel, bags, and other articles	J. Nathan	255,866	Apr. 4	68	18	21	948
Lacing-hook	E. C. Lequin	254,343	Feb. 28	1408	388	21	610
Lacing-hooks for shoes. Machine for making	S. N. Smith	259,397	June 13	595	{229 {230	21	1858
Lacing-hooks. Machine for feeding and setting	A. Eppler, Jr	255,676	Mar. 14	799	214	21	783
Lacing-hooks. Machine for manufacturing	S. N. Smith	260,250	June 27	1735	469	21	2089
Lacing-stud	S. Montgomery	254,565	Apr. 18	1049	294	21	1146
Lacing-stud blank	L. Goldu	253,533	May 23	1706	462	21	1606
Lacing-stud for shoes	J. L. Joyce	253,717	Feb. 14	642	182	21	46
Lacing stud or button	R. D. Steele	257,526	May 9	673	181	21	1374
Lacing stud. Shoe	J. L. Joyce	259,887	June 20	1944	353	21	1945
Lacing-studs. Making	M. Bray	256,116	Apr. 11	461	135	21	1034

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Ladder	W. A. Boyd	257,463	May 9	694	119	21	1397
Ladder	W. S. Thomas	257,411	May 9	321	91	21	1389
Ladder and wash-bench. Combined step	C. Reed	257,493	May 9	434	129	21	1395
Ladder and window-scaffold. Combined step	M. S. Kyllstrom	257,286	May 9	97	27	21	1350
Ladder attachment	J. D. and L. M. Norton	251,988	Jan. 3	236	61	21	30
Ladder. Extension	J. F. Flint	259,678	June 20	1999	289	21	1891
Ladder. Flexible	J. T. Mills	257,208	May 9	261	74	21	1360
Ladder. Step	D. W. Brooks	257,287	May 9	99	21	21	1355
Ladder. Step	R. F. Jones	256,237	Apr. 11	730	202	21	1060
Ladder. Step	G. King	253,985	Feb. 21	915	255	21	519
Ladder. Step	G. T. Lapé	257,108	May 2	99	9, 10	21	1356
Ladder. Step	C. G. Udall	254,518	Mar. 7	88	28	21	653
Ladder. Step	D. Bennett	256,094	Apr. 18	1063	300	21	1135
Lamp	M. Criner	251,702	Jan. 3	20	6	21	6
Lamp	J. M. Dexter	253,068	Jan. 10	607	157	21	92
Lamp	W. R. Fleming	259,128	June 6	511	88	21	1748
Lamp	F. T. Grimes. (Reissue)	10,050	Mar. 7	488	139	21	708
Lamp	W. A. Hull	255,689	Mar. 28	1493	401	21	976
Lamp	E. Köhler	251,896	Jan. 3	1264	79	21	47
Lamp	R. Marsh	255,449	Mar. 28	1264	341	21	976
Lamp	W. T. Murphy	256,905	Apr. 4	67	16	21	968
Lamp	A. Rosenbaum	253,206	Mar. 21	1207	329	21	880
Lamp	C. Royle	251,903	Jan. 3	223	68	21	30
Lamp	W. Scott	258,678	May 30	1825	295	21	1969
Lamp	W. Stachlen	257,402	May 2	295	68	21	1355
Lamp	T. C. J. Thomas	256,060	Apr. 25	1453	405	21	1239
Lamp	A. P. De Vezeracy	257,478	May 9	412	115	21	1391
Lamp	R. Mersy	252,671	Jan. 24	1216	341	21	985
Lamp and chandelier	J. M. Ewing and E. L. Bill	254,089	Mar. 14	443	119	21	729
Lamp and generator. Combined electric	P. H. Cottam	256,969	Apr. 25	1515	420	21	1257
Lamp and lantern shade	R. T. Bishop	251,909	Jan. 3	276	101	21	55
Lamp and reflector for same	A. G. Paul	255,987	Apr. 4	99	18	21	988
Lamp-bowls. Centering and attaching sockets to	M. L. Munson	257,259	Apr. 25	1567	445	21	1259
Lamp-bracket	J. H. White	252,168	Jan. 10	391	108	21	108
Lamp. Bracket and standard	R. Weston	256,985	June 6	116	31	21	1715
Lamp-bracket. Electric	A. L. Reese	257,272	May 2	128	43	21	1366
Lamp-burner	E. Bellows	256,010	May 16	1088	297	21	1407
Lamp-burner	E. L. Bryant	255,929	Apr. 4	219	57	21	967
Lamp-burner	E. L. Bryant	258,365	May 23	1588	426	21	1574
Lamp-burner	W. L. Horne	259,758	May 30	1908	501	21	2065
Lamp-burner	R. Huppertsberg and B. Schwarz	259,161	June 20	1128	299	21	1904
Lamp-burner	C. C. Richmond	257,614	May 9	507	166	21	1399
Lamp-burner	C. Steckmann	257,497	May 2	317	90	21	1327
Lamp-burner. Argand	A. R. Conrad	258,581	May 23	1413	409	21	1597
Lamp-burner. Argand	T. Hipwell	256,246	Apr. 11	991	163	21	1057
Lamp-burners. Attaching	T. A. Shinn	257,089	Apr. 25	1088	457	21	1256
Lamp-cap. Miner's	H. F. Pearce	258,088	May 30	2036	574	21	1673
Lamp. Car	L. F. Betts	257,848	May 16	886	{342 {343	21	1488
Lamp-chimney	J. B. Debelmann	256,796	Apr. 18	1201	363	21	1191
Lamp-chimney	H. L. Hawes	256,679	Apr. 18	1163	356	21	1166
Lamp-chimney protector	W. H. Dunn	258,028	May 16	1004	304	21	1402
Lamp. Coal-oil	J. M. Dexter	258,293	May 23	1343	359	21	1595
Lamp. Constant-level	M. C. Meigs	257,986	May 16	1018	308	21	1477
Lamp. Electric	A. L. Arey	253,811	Feb. 14	763	{317 {318	21	488
Lamp. Electric	F. H. Beare	254,261	Feb. 28	1315	364	21	583
Lamp. Electric	V. W. Blanchard	254,912	Mar. 14	561	157	21	745
Lamp. Electric	C. A. Chesver	258,991	June 6	146	40, 41	21	1720
Lamp. Electric	L. R. Curtis	255,146	Mar. 21	891	239	21	906
Lamp. Electric	J. Du Shane	260,268	June 27	1784	483	21	2017
Lamp. Electric	M. G. Farmer	258,364	Jan. 17	838	238	21	154
Lamp. Electric	S. L. Fox	251,774	Jan. 3	106	30, 31	21	21
Lamp. Electric	J. B. Fuller	253,633	Jan. 31	1648	457	21	964
Lamp. Electric	C. H. Gimingham	255,877	Mar. 21	1050	{351 {352	21	984
Lamp. Electric	J. H. Guest	254,641	Mar. 7	235	66	21	678
Lamp. Electric	C. P. Hecock	256,688	Apr. 18	1168	328	21	1169
Lamp. Electric	A. G. Holcombe	252,219	Jan. 10	649	183	21	119
Lamp. Electric	A. G. Holcombe	253,385	Feb. 7	34	11	21	362
Lamp. Electric	A. G. Holcombe	253,170	Mar. 21	919	246	21	831
Lamp. Electric	A. G. Holcombe and L. R. Colborne	255,171	Mar. 21	891	246	21	911
Lamp. Electric	C. T. Holloway	254,690	Apr. 18	1174	329	21	1170
Lamp. Electric	E. J. Houston	256,693	Apr. 18	1170	329	21	1170
Lamp. Electric	R. M. Hunter	252,697	Jan. 10	441	121	21	63
Lamp. Electric	C. D. Jeaney	255,999	Apr. 4	311	81, 82	21	1002
Lamp. Electric	H. S. Keith	255,794	Apr. 4	50	14	21	939
Lamp. Electric	C. Lever	253,324	Mar. 28	1264	339	21	988
Lamp. Electric	H. S. Maxim	252,291	Jan. 17	689	241	21	169
Lamp. Electric	H. S. Maxim	252,292	Jan. 17	670	242	21	169
Lamp. Electric	H. S. Maxim	252,849	Jan. 24	1497	388	21	257
Lamp. Electric	H. S. Maxim	254,088	Feb. 21	1048	288	21	541
Lamp. Electric	H. S. Maxim	256,204	Mar. 21	1090	295	21	940
Lamp. Electric	H. S. Maxim	255,205	Mar. 21	1088	{295 {296	21	841
Lamp. Electric	J. J. McTighe	259,940	May 23	1394	366	21	1540
Lamp. Electric	R. R. Moffatt and S. Chichester	252,125	Jan. 10	543	152	21	101
Lamp. Electric	J. Olmsted	252,206	Jan. 17	674	243	21	163
Lamp. Electric	J. Olmsted	252,207	Jan. 17	676	244	21	163
Lamp. Electric	J. Olmsted	255,186	Mar. 21	923	239	21	914
Lamp. Electric	G. W. Sawyer	254,655	Feb. 21	1078	279	21	545
Lamp. Electric	A. M. G. Sébillot	253,770	Feb. 14	703	201	21	476
Lamp. Electric	L. Sezanne	254,746	Apr. 18	1228	308	21	1151

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lamp. Electric	H. B. Sheridan	253,116	Jan. 31	1757	467	21	380
Lamp. Electric	H. B. Sheridan	253,776	Feb. 14	717	204 / 205	21	480
Lamp. Electric	H. B. Sheridan	250,223	June 6	423	112	21	1767
Lamp. Electric	H. B. Sheridan	250,224	June 6	423	112 / 113	21	1768
Lamp. Electric	C. W. Siemens	255,466	Mar. 28	1297	349	21	881
Lamp. Electric	W. M. Thomas	253,389	Feb. 7	164	47	21	374
Lamp. Electric	E. Thomson	253,956	Feb. 21	954	265	21	585
Lamp. Electric	E. Thomson	256,695	Apr. 18	1065	301	21	1150
Lamp. Electric	C. J. Van Depoele	250,069	June 6	240	64	21	1735
Lamp. Electric	W. L. Voelker	253,645	Feb. 14	548	157	21	450
Lamp. Electric	A. G. Waterhouse	253,387	Feb. 7	174	49	21	375
Lamp. Electric	A. G. Waterhouse	253,398	Feb. 7	175	50	21	376
Lamp. Electric	A. G. Waterhouse	255,233	Mar. 21	988	264 / 265	21	892
Lamp. Electric	E. Weston	255,363	Mar. 21	1169	312	21	853
Lamp. Electric	E. Weston	258,964	June 6	116	30	21	1714
Lamp. Electric	E. Weston and L. E. Curtis	255,225	Mar. 21	991	265	21	883
Lamp. Electric	J. J. Wood	256,091	Apr. 4	410	112	21	1019
Lamp. Electric	L. G. Woolley	256,765	Apr. 18	1275	350	21	1188
Lamp. Electric-arc	F. H. Burger	259,477	June 13	758	199	21	1834
Lamp. Electric-arc	J. H. Guest	259,067	June 6	169	46	21	1734
Lamp. Electric-arc	R. J. Gülcher	259,756	June 20	1121	298	21	1903
Lamp. Electric-arc	C. A. Hussey	258,561	May 30	1770	500 / 501	21	1687
Lamp. Electric-arc	C. A. Hussey	260,204	June 27	1678	455	21	2001
Lamp. Electric-arc	R. R. Moffatt	258,344	May 23	1367	367	21	1550
Lamp. Electric-arc	M. J. O'Sullivan	258,468	May 23	1625	440	21	1594
Lamp. Electric-arc	R. J. Pratt	258,985	May 30	2037	575	21	1674
Lamp. Electric-arc	E. Thomson	258,694	May 30	1905	538	21	1651
Lamp. Electric-arc	C. J. Van Depoele	257,999	May 16	1036	289	21	1481
Lamp. Electric incandescent	E. Berliner	258,546	May 30	1797	488	21	1680
Lamp. Electric incandescent	A. Bernstein	258,976	June 6	129	35	21	1717
Lamp. Electric incandescent	M. G. Farmer	258,903	June 6	43	11	21	1704
Lamp. Electric incandescent	J. H. Guest	258,747	May 30	1977	558	21	1663
Lamp. Electric incandescent	J. H. Guest	259,008	June 6	171	46	21	1734
Lamp. Electric incandescent	E. J. Houston	259,017	June 6	182	49	21	1736
Lamp. Electric incandescent	E. A. Scribner	254,780	Mar. 7	401	106	21	706
Lamp. Electrical	A. J. B. Cance	252,188	Jan. 10	611	173	21	111
Lamp-extinguisher	W. H. Baldwin	257,838	May 16	802	241	21	1451
Lamp-fixture	W. A. Hull	253,706	Feb. 14	698	177	21	463
Lamp-fixture	J. A. Hull	260,201	June 27	1675	454	21	2000
Lamp-fixture, &c	W. A. Hull	253,707	Feb. 14	698	178	21	463
Lamp-fixture. Extension	J. A. Evarts	258,038	May 16	1099	306	21	1493
Lamp-fixture. Extension	A. H. Jones	254,088	Feb. 21	1036	289	21	538
Lamp for lighting railway-carriages	J. F. Shallis and T. C. J. Thomas	254,708	Mar. 7	315	83	21	692
Lamp for miner's use. Safety	J. M. Dolen	257,670	May 9	650	184	21	1405
Lamp for railway-cars, &c	C. P. Howard	253,997	Feb. 7	37	19	21	353
Lamp-fount	J. J. Nichols	257,055	Apr. 25	1592	447	21	1251
Lamp. Gas	C. W. Muchall	252,698	Jan. 24	1217	341	21	925
Lamp globe and chimney. Combined	P. Schneider	257,768	May 9	779	217	21	1496
Lamp. Hanging	E. L. Bryant	259,067	June 6	289	71	21	1741
Lamp. Hanging	E. C. Lawrence. (Reissue)	10,075	Apr. 4	448	124	21	1096
Lamp hoisting-frame	J. W. Melvin	258,457	May 23	1617	457	21	1593
Lamp. Incandescent	J. V. Nichols	256,943	June 6	89	23	21	1710
Lamp. Incandescent	E. Weston	258,966	June 6	118	31	21	1715
Lamp. Incandescent electric	P. Diehl	255,497	Mar. 28	1337	361	21	887
Lamp. Incandescent electric	J. Jameson	259,763	June 20	1128	299	21	1904
Lamp. Incandescent electric	J. W. Swan	260,335	June 27	1837	496	21	2026
Lamp. Incandescent electric	W. L. Voelker	253,646	Feb. 14	549	157	21	450
Lamp. Incandescent electric	W. L. Voelker	253,647	Feb. 14	550	157	21	450
Lamp. Incandescent electric	W. L. Voelker	255,219	Mar. 21	983	263	21	891
Lamp. Inextinguishable self-igniting signal	T. Curtis	253,350	Feb. 7	197	57	21	380
Lamp lighter and extinguisher	T. Z. Magarrell	259,645	June 13	964	257	21	1870
Lamp-lighting implement	E. Morrison	259,765	June 20	1054	280	21	1892
Lamp. Mill	J. L. Forsaith and A. S. Kreiter	257,857	May 16	862	247	21	1455
Lamp. Miner's	D. D. Williams	252,284	Jan. 10	735	205	21	132
Lamp or cigar-lighter. Hydrogen	F. Rhind	252,518	Jan. 17	1022	284	21	186
Lamp or lantern globes, chimneys, &c. Manufacture of	A. W. Paall and J. F. Miller	256,158	Apr. 11	511	140	21	1043
Lamp-regulator. Electric	B. B. Brewer and A. G. Waterhouse	254,763	Mar. 7	362	101	21	703
Lamp. Safety	C. G. Tingry and G. A. Siffait	255,059	Mar. 14	772	207	21	778
Lamp. Safety	C. S. Westland	258,963	June 6	115	30	21	1714
Lamp. Safety car	C. E. Grannise	252,006	Jan. 10	513	142	21	95
Lamp safety device. Electric	J. J. Wright	258,921	May 23	1689	478	21	1605
Lamp. Self-extinguishing	J. Harris	260,021	June 27	1452	391	21	1996
Lamp-shade	A. C. Blayney	257,434	May 2	349	98	21	1343
Lamp-shade	W. Day	256,695	Apr. 25	1269	375	21	1205
Lamp shade and chimney	W. M. Marshall	253,679	Jan. 31	1713	473	21	313
Lamp-shade holder	E. H. Gothberg	254,536	Mar. 7	331	69	21	677
Lamp-shade holder	W. A. Hull	253,731	Mar. 28	1697	439	21	939
Lamp-shade holder	C. Votti. (Reissue)	10,067	Apr. 11	895	250	21	1109
Lamp-shade holder. Electric	S. Bergmann	257,146	May 2	3	1	21	1321
Lamp socket. Electric	S. Bergmann	257,377	May 2	156	44	21	1309
Lamp, soldering-iron heater, and paint-burner. Self-acting blow-pipe	T. Poyser	257,360	May 2	980	80	21	1331
Lamp-stand	T. Garceau	258,571	May 30	1755	497	21	1685
Lamp. Street	C. T. Ham	259,758	June 20	1123	298	21	1903
Lamp. Study	A. H. Jones	256,437	May 23	1579	448	21	1567
Lamp-support	H. Raapp	258,674	May 30	1891	534	21	1649
Lamps. Absorbent for electric	E. Weston	255,302	Mar. 21	1161	311	21	859
Lamps and carbons. Manufacture of incandescent	W. L. Voelker	251,749	Jan. 3	74	21	21	15

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lamps and dies therefor. Manufacture of coach-	F. C. Cannon	254,873	Feb. 28	1287	367	21	895
Lamps. Apparatus for manufacturing carbon filaments for incandescent	M. M. M. Slattery	260,247	June 27	1733	469	21	2000
Lamps. Apparatus for suspending electric	C. C. Jennings	260,206	June 27	1691	455 / 456	21	2001
Lamps. Carbon for electric	H. S. Maxim	254,872	Mar. 7	374	73	21	695
Lamps. Carbon-holder for electric	J. Tregoning	253,394	Feb. 7	168	47	21	375
Lamps. Carbon-holder for electric	A. G. Waterhouse	252,494	Jan. 17	953	246	21	163
Lamps. Carbon for incandescent	J. V. Nichols	256,942	June 6	88	23	21	1710
Lamps. Device for suspending electric-arc	A. G. Waterhouse	259,612	June 13	918	245	21	1888
Lamps. Globe-supporter for electric	J. Tregoning and L. H. Latimer	255,212	Mar. 21	974	259 / 261	21	880
Lamps, &c. Lighting apparatus for	S. Russell	254,701	Mar. 7	308	81	21	689
Lamps. Rheostat for electric	P. H. Fox	254,764	Mar. 7	364	101	21	704
Lamps. Spring-balance for	C. G. Miller	256,912	Apr. 25	1438	403	21	1223
Lamps. Weight for extension	E. L. Bryant	258,988	Apr. 25	1503	422	21	1225
Land and lawn roller	A. Barrows, &c	259,469	June 13	798	198	21	1839
Lands. Reclaiming low	G. Howell	254,362	Feb. 28	1279	360	21	694
Lantern	C. F. Anderson	259,455	June 13	781	192	21	1837
Lantern	A. L. Baron, W. T. Rafer, and B. F. Cookayne.	252,642	Jan. 24	1149	324 / 325	21	915
Lantern	C. A. Kinney	259,179	June 6	265	67	21	1758
Lantern	F. McLowee	253,362	Feb. 7	149	40	21	370
Lantern	W. M. Phelps	252,697	Jan. 24	1221	342	21	928
Lantern-carrier	A. J. Curtis	258,647	Apr. 18	1119	314	21	1139
Lantern. Dark	J. Z. Stone and L. E. Ling	257,191	May 2	51	16	21	1320
Lantern for bicycles	P. Gray	252,371	Jan. 17	949	524 / 525	21	126
Lantern for electric and other lights	L. Stieringer	253,955	Feb. 21	950	264	21	894
Lantern. Hand	L. Henkle	253,985	Feb. 21	954	266	21	895
Lantern-holder	E. Lafkin	252,393	June 27	1603	450	21	2021
Lantern. Railway	W. O. Seaquinson	256,498	Apr. 11	818	226	21	1096
Lantern. Signal	B. W. Begbie	254,791	Mar. 14	425	114	21	717
Lantern. Signal	L. G. Huntington	251,781	Jan. 3	116	33	21	28
Lantern. Tubular	E. J. Hale	252,315	Jan. 17	777	217	21	145
Lantern. Tubular	C. Woodbury, F. Wood, and A. J. Sawyer.	256,380	May 23	1668	477	21	1605
Lard and tallow tank	J. K. Martin	256,715	Apr. 18	1207	337 / 338	21	1175
Laryngoscope	C. Boecler	257,646	May 9	633	177	21	1389
Last	W. O. Nichols	254,159	Feb. 28	1187	332	21	573
Last. Darning	G. A. Cochrane	256,378	May 23	1643	433	21	1577
Lasting-jack	I. Hall	251,714	Jan. 3	31	9	21	8
Lasting-jack	G. W. Hutchins	254,437	Feb. 28	1510	414	21	698
Latch	J. Kaye	256,431	May 23	1595	449	21	1567
Latch	T. Laler	257,725	May 9	733	204	21	1417
Latch and lock	O. Ewers	252,670	Jan. 31	1447	405	21	229
Latch. Carriage-door	W. Gates	256,391	May 23	1628	453	21	1589
Latch. Gate	G. E. Chandler	253,976	Feb. 21	978	273	21	899
Latch. Gate	L. L. Lightcap	256,577	Apr. 18	1033	288	21	1145
Latch. Gate	J. Meesman	257,988	May 16	1014	283	21	1477
Latch. Gate	P. J. Winn. (Reissue)	10,138	May 30	9113	556	21	1668
Latch. Locking	R. Burk	255,898	June 6	141	38	21	1719
Latch-needles. Making	F. R. Woodward	259,869	June 20	1268	373	21	1948
Latch. Sliding-gate	I. S. Sherwin	254,658	Feb. 21	1060	298	21	546
Lath-holder	I. Miles	253,319	Feb. 7	50	16	21	355
Lathing. Metallic	A. Knisely	252,679	Jan. 24	1225	337	21	929
Lathe	A. W. Norton	255,911	Mar. 14	710	191	21	799
Lathe and drilling-machine. Combined	J. F. Rakes	251,945	Jan. 3	314	85	21	54
Lathe attachment	H. Richmann	253,314	Feb. 7	156	44	21	379
Lathe. Button-turning	G. L. Pallett	256,568	Apr. 18	1047	295 / 296	21	1147
Lathe cutter-holder	F. H. Gardner	256,668	Apr. 18	1147	322	21	1164
Lathe. Engine	G. A. Gray, Jr	252,780	Jan. 24	1208	353	21	937
Lathe. Engine	J. Richards	256,121	May 16	1001	336	21	1512
Lathe for turning eccentric or polygonal forms	W. H. Lambert	252,481	Jan. 17	968	272	21	170
Lathe for turning fluted and similar work	F. Hansen	257,451	May 2	306	103	21	1347
Lathe for turning irregular forms	W. S. Huntington	254,420	Mar. 7	41	11	21	645
Lathe for turning irregular forms	E. Myers	256,632	Apr. 4	341	93	21	1097
Lathe for turning polygonal bodies	J. H. Fisher and C. C. Peck	256,991	Apr. 25	1505	420	21	1230
Lathe for turning polygonal forms	C. C. Peck	260,118	June 27	1578	425	21	1995
Lathe-head	E. T. Starr	254,719	Mar. 7	389	97	21	694
Lathe. Metal-working	F. Eccabert	257,676	May 9	645	181	21	1402
Lathe-rest	E. S. Fuller	256,910	June 6	50	13	21	1703
Lathe. Railway-car-axle	A. Gordon	252,630	Jan. 10	435	119	21	82
Lathe sizing-tool	J. Flower	256,907	June 6	47	12	21	1702
Lathe sizing-tool	J. Flower	259,377	June 13	696	182	21	1810
Lathe tail-stock	M. F. McMahon	257,083	May 16	914	255	21	1469
Lathe tail-stock. Turning	A. Hyde	258,562	May 30	1773	501	21	1682
Lathe-tool	H. O. Lund	253,073	Mar. 14	698	216	21	765
Lathe. Turning	H. C. Balsbaugh	260,090	May 16	1055	293	21	1494
Lathe. Watch-maker's	F. Eccabert	256,067	Jan. 10	508	139	21	94
Lathe. Watch-maker's	D. L. Pettipierre	256,669	May 30	1684	524 / 525	21	1647
Lathe. Wood-turning	C. W. Wilder	254,419	Feb. 28	1491	409 / 410	21	694
Lathes. Taper attachment for	F. B. Miles	253,410	Feb. 7	264	76, 77	21	391
Laundry-cushion	J. A. B. Lovett	254,999	Mar. 14	542	145	21	720
Laundry-heater	D. C. Griffin	259,132	June 6	280	69	21	1730
Laying-out machine	J. A. Brownfield	256,015	May 16	1072	296	21	1498
Lead and crayon holder	C. W. Benson	256,951	Apr. 25	1497	419	21	1234
Lead and crayon holder	A. Goetz	257,215	May 2	288	87	21	1317
Lead and crayon holder	J. Hoffman	259,739	June 20	1124	296	21	1904
Lead and crayon holder	J. Ilfelder	256,688	Apr. 18	1297	345	21	1192

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Lead and crayon holder	G. Küstermann	256,223	Apr. 11	606	165	21	1058
Lead and crayon holder, Automatic	R. Wittmann	253,603	Feb. 14	758	214	21	488
Lead. Apparatus for the manufacture of red	N. B. Gregg	255,970	Apr. 4	276	72	21	906
Lead by the old Dutch process. Corroding-house for the manufacture of white	W. H. Wetherill	258,883	Jan. 24	1365	368	21	253
Lead. Manufacture of oxides of	G. T. Lewis	259,086	June 6	193	.....	21	1727
Lead pipe	P. Langhammer	256,068	May 16	1149	382	21	1502
Lead-traps. Machine for making	J. Robertson	254,697	Mar. 7	304	69	21	690
Leading-staff for bulls	S. M. Wells	252,638	Jan. 24	1155	293	21	215
Leaf and plant. Artificial	C. I. Hahn	252,702	Jan. 24	1291	363	21	238
Leather boarding and graining machine	J. H. Hovey	253,533	Feb. 14	426	119 / 120	21	431
Leather box	A. and H. Hoff	253,605	Feb. 14	505	144	21	443
Leather-buffing machine	J. H. Stevens	256,258	Apr. 11	648	175	21	1065
Leather. Composition for improving lace	L. Junior	253,210	Feb. 7	41	.....	21	354
Leather-dressing machine	L. J. Baker	259,995	June 27	1492	383 / 384	21	1961
Leather-dressing machine	W. Goodmin	253,369	Jan. 17	837	233 / 234	21	155
Leather. Edge-blacking powder for	J. H. Garrett	258,404	May 23	1554	.....	21	1562
Leather fastening	G. W. Freeman	257,818	May 9	838	238	21	1436
Leather scouring, setting, or glassing machine	F. A. Lockwood	258,659	May 30	1865	526 / 527 / 528	21	1645
Leather shaving and whitening machine	J. G. Bussell	253,998	Jan. 31	1517	423	21	289
Leather-skiving machines. Adjusting device for	G. M. Ludlow	256,844	Apr. 25	1353	369	21	1200
Leather-splitting machine	G. L. Tyler	253,449	Feb. 7	315	89	21	390
Leather substitute	E. C. F. Günther	255,957	May 16	1120	314	21	1496
Leather-whitening machines. Cutter for	J. E. Clement	259,497	June 13	760	206	21	1836
Legging	M. E. Cory	259,986	June 6	153	42	21	1721
Lemon-squeezer	J. Fanning	252,671	Jan. 31	1449	405	21	270
Lemon-squeezer	F. D. F. Müller	259,902	June 20	1983	344	21	1931
Lemon-squeezer	A. C. Rex	256,372	Apr. 11	788	217	21	1090
Lemon-squeezer	A. Schlapbach	256,812	May 30	2044	577	21	1675
Lemon-squeezer	J. Trickel	260,258	June 27	1745	471	21	2011
Letter-box. Street	T. McLaughlin	252,842	Jan. 24	1410	393	21	257
Letter-box. Street	S. Strong	253,236	Feb. 7	66	20	21	358
Letter-case. Revolving	A. S. Currier	256,296	Apr. 11	701	191	21	1075
Letters, cards, photographs, &c. Device for holding	W. H. Jones and C. L. Middleton	253,392	Feb. 7	243	69	21	367
Letters or designs in metal for signs. Making depressed	J. F. Cluley	259,097	June 6	279	74	21	1742
Levee	J. W. Crump	256,025	May 16	1095	302	21	1490
Level-rod. Surveyor's self-reading	T. M. Jackson	254,060	Mar. 14	673	181	21	761
Leveling-instrument. Hydrostatic	J. Macdonald	259,408	June 13	863	176	21	1818
Lever. Interlocking	H. F. Cox	255,774	Apr. 4	27	8	21	955
Lever. Steam	J. B. Collin	252,536	Jan. 24	1112	312	21	207
Life-preserver	F. W. Brewster	254,589	Mar. 7	187	46	21	670
Life-preserver	A. McDonald	252,394	Jan. 17	787	219	21	146
Life-preserver	B. J. Willard	254,560	Mar. 7	166	41	21	666
Life-preserving garment	C. Williams	252,898	Jan. 24	1388	387	21	253
Life-raft	M. E. Beasley	256,191	May 16	1279	368	21	1587
Lifter: *See* Belt-lifter. Pattern-lifter. Pot-lifter. Stove-lifter. Transom and skylight lifter. Water-lifter.							
Lifter	C. F. Fellows	252,025	Jan. 10	431	118	21	81
Lifting device	A. Borne	257,261	May 2	160	45	21	1310
Lifting-fork	G. W. McDannold	256,719	Apr. 18	1211	339	21	1176
Lifting-jack	S. M. Baird	254,255	Feb. 28	1300	382	21	502
Lifting-jack	J. Beihl	254,393	Feb. 28	1317	384	21	583
Lifting-jack	J. Church	258,556	May 30	1737	492	21	1622
Lifting-jack	L. H. Davis	259,506	June 13	789	208 / 209	21	1839
Lifting-jack	C. Gracey	254,615	Mar. 14	450	121	21	722
Lifting-jack	J. Hogeland	259,383	June 13	646	171	21	1814
Lifting-jack	T. J. Jenne and C. S. Harmon	254,033	Mar. 14	469	124	21	783
Lifting-jack	J. O. Joyce	256,002	Apr. 4	314	82	21	1002
Lifting-jack	W. Kightlinger	253,394	Feb. 7	132	36	21	369
Lifting-jack	F. Lehman	253,309	Feb. 7	136	40	21	369
Lifting-jack	J. Nixon	255,658	Mar. 28	1384	410	21	922
Lifting-jack	G. A. Ohl	253,753	Feb. 14	666	197	21	474
Lifting-jack	W. Schenker	257,833	May 9	847	236	21	1439
Lifting-jack	J. Weathers	254,076	Feb. 21	1098	304	21	549
Lifting-jack	H. J. Wilson	253,964	Feb. 21	962	267	21	536
Light: *See* Drop-light. Electric light. Head-light. Skylight.							
Light. Combined shade and concentrator for artificial	J. S. Goldsmith and H. H. Smith	251,711	Jan. 3	29	8	21	7
Light. Concentrator for artificial	J. S. Goldsmith and H. H. Smith	251,712	Jan. 3	29	9	21	8
Lightning-arrester	T. Ahearn	252,050	Jan. 31	1434	401	21	267
Lightning-arrester	A. R. Prescott	256,046	Apr. 4	357	97	21	1016
Lightning-arrester protector	C. T. Fitch	256,269	May 23	1402	403	21	1550
Lightning. Protecting oil-tanks from	F. G. Sacket	259,120	May 16	1210	340	21	1513
Lightning. Protecting oil-tanks from	G. G. Smith	255,943	Mar. 14	709	204	21	776
Lightning-rod coupling	W. B. Munn	258,590	May 30	1782	503	21	1630
Lightning-rod coupling	T. H. Patse	257,889	May 16	923	257	21	1461
Lightning-rod coupling	T. H. Patse	257,890	May 16	924	257	21	1461
Lightning-rod coupling	T. H. Patse	257,891	May 16	925	258	21	1462
Limb-rest for railway travelers	F. M. Gregg	257,032	May 16	898	248	21	1456
Lime for bricks and tiles. Utilizing spent	E. L. Ransome	257,220	May 2	116	.....	21	1301
Linchpin	J. Drucker	258,725	May 30	1959	531	21	1650
Line-fastener	F. Kittell and S. J. Boise	259,766	June 20	1132	300	21	1905

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Line, cord, rope, cables, and cahlum. Manufacture and treatment of	J. Coulson	255,660	Mar. 28	1403	.....	21	919
Link. Attachment	J. M. Dodge	260,720	May 30	1947	520	21	1950
Link-bending machine	L. Ashcom	254,696	Mar. 14	340	128 / 129	21	743
Link-bending machine	E. H. Johnston	253,289	Feb. 7	240	69	21	367
Link-bending machine. Metal	R. D. Evans and R. M. Green	256,194	Apr. 4	340	118	21	1063
Link-heating device	R. Smith	259,259	June 13	870	179	21	1801
Link. Open	S. Shotter	251,256	Jan. 3	287	69	21	57
Link. Swivel	D. F. Crowley	256,735	Apr. 18	1244	339	21	1183
Link-welding device	P. H. Sheahan	256,482	May 23	1657	466	21	1560
Links. Manufacture of open	D. Hults	255,987	Apr. 4	135	36	21	973
Liquids in kegging. Apparatus for observing the quality of	P. Mühlhäuser	257,049	Apr. 25	1065	445	21	1950
Load-binder	S. S. Conkling	255,941	Apr. 4	285	60	21	969
Lock: *See* Alarm-lock. Bedstead-lock. Brake-lock. Bridge-lock. Car-door lock. Casket lock. Door-lock. Drawer-lock. Ear-wire lock. Fire-arm lock. Gun-lock. Hasp-lock. Indicator-lock. Mortise-lock. Nut-lock. Nut and bolt lock. One-lock. Padlock. Permutation-lock. Piano-tuning-pin lock. Seal-lock. Robe-lock. Seal-lock. Time-lock. Trace-lock. Traveling-bag lock. Trunk-lock. Vehicle seat-lock. Wagon-seat lock.							
Lock	H. C. Aldrich	256,283	Apr. 11	664	189	21	1068
Lock	E. Anderson	257,326	May 16	1048	291	21	1468
Lock	W. H. Taylor. (Reissue)	10,012	Jan. 17	1106	289	21	209
Lock and dam	J. Du Bois	251,771	Jan. 3	105	29	21	29
Lock-escutcheon	J. E. Barnes	253,683	Feb. 14	578	163	21	454
Lock-nut	H. Howson	256,488	May 23	1673	447	21	1565
Locket	W. H. Blaney	253,688	Feb. 14	580	164	21	455
Locket	J. Reichefeld	255,977	Mar. 28	1546	417	21	926
Locket-rims. Manufacture of	G. R. W. Kantee	256,963	Apr. 25	1488	400	21	1221
Locking-belt	T. J. Bush	257,267	May 2	167	47	21	1311
Locking mechanism for the drawers of desks, &c. Automatic	A. Cutler	257,475	May 9	409	115	21	1360
Locomotive	B. F. Hudson	253,289	Feb. 7	195	37	21	367
Locomotive ballast-crushing machine	A. B. Austin	253,466	Feb. 14	394	105 / 106	21	433
Locomotive-boiler	J. E. Wootten	254,561	Mar. 7	166	41	21	666
Locomotive-brake	W. B. Guernsey	259,995	June 6	166	46	21	1733
Locomotive-brake	W. B. Guernsey and W. B. Turner	259,994	June 6	166	45	21	1733
Locomotive-brake	W. B. Guernsey and W. B. Turner	259,995	June 6	167	45	21	1733
Locomotive-engine	H. F. Shaw	252,231	Jan. 17	794	221	21	146
Locomotive fire-box	M. Kearney and M. C. Hawley	255,869	Apr. 4	130	37	21	974
Locomotive-frames. Manufacture of	C. T. Parry	255,389	Mar. 21	1194	308 / 309	21	848
Locomotive-furnace	T. A. Buckland	258,888	Jan. 31	1436	402	21	269
Locomotive-furnace	T. A. Buckland	253,179	Feb. 7	9	3	21	343
Locomotive-furnace	T. A. Buckland	256,709	May 30	1936	547	21	1656
Locomotive-furnace	A. J. Cromwell	259,394	June 13	581	139	21	1791
Locomotive-recorder	A. L. Pengot	256,672	May 30	1888	535 / 536	21	1648
Locomotive reversing-gear	W. P. Hennessy	259,536	June 13	828	218	21	1847
Locomotive. Road	E. P. Bryson	256,120	Apr. 11	495	126	21	1034
Locomotive sand-distributer	P. B. Viele	256,888	May 30	2005	568	21	1679
Locomotive stock-alarm	W. A. Place	253,095	Jan. 31	1725	479	21	317
Locomotives and chute therefor. Coaling	C. Gorham and W. Bartlett	259,389	June 13	816	216	21	1844
Locomotives. Attaching brooms to	W. S. Barrie and J. R. Groves	260,060	June 27	1525	410	21	1977
Locomotives. Cow-catcher for	O. P. Johnson	253,208	Feb. 7	30	12	21	353
Log-dressing machine	W. D. Hatch	257,492	May 9	433	120	21	1364
Log feeder and turner	H. M. Loud	257,638	Apr. 25	1570	440	21	1947
Log-turner	F. McDonough	259,701	June 20	1043	327 / 328	21	1886
Logging-engine	J. Dolbeer	256,553	Apr. 18	1011	285	21	1142
Loom	C. Cross	253,010	Jan. 31	1617	449 / 450	21	220
Loom	C. Gehrua	257,210	May 2	391	54, 55	21	1315
Loom	O. Smith	251,801	Jan. 3	139	39, 40	21	35
Loom	M. Murray	256,461	May 23	1660	460	21	1393
Loom-beater	J. and C. Rothwell	257,547	May 9	459	128	21	1390
Loom for weaving pile fabrics	C. B. Knight	259,254	June 13	846	224	21	1850
Loom-gear	J. O. Fryer	257,669	May 9	668	191	21	1419
Loom. Jacquard	J. O. Fryer	257,670	May 9	671	192	21	1419
Loom Jacquard mechanism	J. Denton	253,436	Jan. 17	930	256 / 257	21	189
Loom-shedding mechanism	R. R. Goodyear	255,650	Apr. 4	115	34	21	970
Loom-shedding mechanism	S. A. Dudley	255,998	Apr. 4	264	66	21	972
Loom-shuttle	C. N. Tucker	251,973	Jan. 3	340	94	21	69
Loom-shuttle	J. Barker. (Reissue)	10,119	May 23	1716	484 / 485	21	1619
Loom-shuttle-box motion	J. W. T. Davidson and D. Green	256,968	Apr. 25	1515	422 / 423	21	1538
Loom stop-motion	W. H. Noble	257,687	Apr. 25	1594	447	21	1552
Loom-temple	J. B. Stimpson	256,659	Mar. 28	1593	452	21	970
Loom-temple roller	T. B. Miller	256,885	May 30	1992	562	21	1673
Loom warp-stop mechanism	J. C. Burke	253,313	Feb. 14	707	214	21	460
Loom weft-fork							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Loom weft stop-motion	E. M. Cole	251,699	Jan. 3	17	5	21	5
Looms. Back roll and support therefor for	L. J. Knowles	254,027	Feb. 21	1049	290	21	540
Looms. Picking-shoe for	H. B. Murlless	253,619	Feb. 14	519	149	21	445
Lounge-frame	J. F. Komp	252,604	Jan. 24	1117	313	21	208
Lounges. Folding leg-fixture for extension	J. Graeser	255,781	Apr. 4	34	10	21	956
Lozenge-machine	T. Robertson	257,615	May 9	598	167	21	1399
Lubricant	W. J. L. Hollis	259,760	June 20	1125	.....	21	1904
Lubricant	W. Parkinson	252,686	Jan. 24	1230	.....	21	226
Lubricating bearing for axles. Self	P. Decauville	253,015	Jan. 31	1624	451	21	300
Lubricating-journal	G. Krats	258,635	May 30	1868	525	21	1644
Lubricating mechanism	W. M. Brinkerhoff	259,470	June 13	743	196	21	1839
Lubricating mechanism for journals, hangers, axles, &c.	J. Brinkerhoff	259,085	June 6	966	70	21	1740
Lubricator: *See* Automatic lubricator. Axle-lubricator. Journal-lubricator. Shuttle-race lubricator. Steam-engine lubricator.							
Lubricator	L. B. Bailey	256,660	Apr. 25	1361	389	21	1215
Lubricator	H. R. A. Boys	254,598	Mar. 7	185	46	21	470
Lubricator	C. H. Harrub	253,292	Feb. 7	115	35	21	266
Lubricator	R. J. Hoffman	257,326	May 2	316	61	21	1320
Lubricator	T. Holland. (Reissue)	10,143	June 27	1961	592	21	2000
Lubricator	O. H. Jewell	259,023	June 6	159	50, 51	21	1727
Lubricator	O. H. Jewell	259,024	June 6	191	51	21	1727
Lubricator	J. Leonard	259,389	June 13	555	146	21	1797
Lubricator	L. Maxfield	253,404	Feb. 7	257	74	21	300
Lubricator	E. McCoy	255,443	Mar. 28	1206	342	21	876
Lubricator	M. D. Miller	256,807	Apr. 18	1309	366	21	1193
Lubricator	W. K. Rhodes	255,813	Apr. 4	74	20	21	963
Lubricator	A. W. Swift	255,353	Mar. 21	1151	308	21	850
Lubricator	E. W. Vandusen	259,345	June 13	583	155	21	1802
Lubricator	A. Weber	256,609	Apr. 18	1073	302	21	1151
Lubricator	J. M. Williams	257,118	Apr. 25	1668	467	21	1924
Lubricator for loose pulleys, &c.	E. W. Vandusen	259,344	June 13	582	154	21	1802
Lumber from the crib. Apparatus for drawing	J. W. Stillwell	256,511	Apr. 18	967	271	21	1135
Lumber. Process of and apparatus for drying	J. Lynch	259,986	June 20	1409	379	21	1958
Lumber. Process of and apparatus for drying	J. Randall	253,556	Feb. 14	453	129	21	435
Lumber trimming and cutting machine	F. McDonough	259,709	June 20	1045	{ 278 / 279	21	1691
Lunch-receptacle and muff	S. A. Cuningham	255,490	Mar. 28	1240	334	21	872
Machine-brace	M. Beal	253,497	Feb. 14	301	107	21	424
Machinery. Apparatus for starting and stopping	W. F. Durfee	260,175	June 27	1639	{ 443 / 444	21	1995
Magnesium sulphate from crude mineral. Obtaining	F. Hohlweg	259,150	June 6	337	.....	21	1754
Magnet. Electro-	A. G. Waterhouse	254,743	Mar. 7	355	94	21	699
Magnet. Electro-	E. Weston	255,365	Mar. 21	1165	319	21	853
Magnets. Armature for electro-	O. C. Woolson	255,749	Mar. 28	1644	445	21	943
Magnetic receiver	J. H. Rogers	257,075	Apr. 25	1621	454	21	1256
Magneto-electric generator for signaling purposes	J. G. Arnold	256,189	Apr. 11	560	153	21	1000
Magneto-electric machine	J. B. Blair	253,577	Feb. 14	475	{ 134 / 135	21	438
Magneto-electric machine	M. A. Hardy	253,699	Feb. 14	619	175	21	461
Magneto-electric machine	L. Herman	253,362	Feb. 7	231	65	21	385
Magneto-electric machine	W. Hochhausen	258,664	Jan. 24	1164	339	21	219
Magneto-electric machines. Armature for	F. H. Beers	257,439	May 2	348	97	21	1343
Magneto-electric machines. Commutator for	A. H. Eddy	257,506	May 9	524	147	21	1379
Magneto-generator	T. W. Lane	259,644	June 13	962	256	21	1870
Mail-bag	W. Hawn	259,309	June 13	542	142	21	1795
Mail-bag	W. J. Stowell	259,239	June 6	448	118	21	1771
Mail-bag	E. P. Teeters	256,408	Apr. 11	894	{ 227 / 228	21	1097
Mail-bag fastener and label-holder. Combined	J. L. Kennedy	259,168	June 6	362	96	21	1758
Mail-bag fastening	E. A. Brandau	256,539	Apr. 18	996	{ 280 / 281	21	1140
Mail-bag fastening	A. Johnston	254,772	Mar. 7	393	104	21	705
Mailing-box	G. Johnston	256,899	Apr. 25	1418	399	21	1220
Mail budget or pouch	W. C. Marmaduke	259,410	June 13	666	176	21	1818
Mail-chest. Maritime	J. O'Donnell and S. Jellinek	254,158	Feb. 28	1189	339	21	573
Mail-elevator	J. W. Paine	256,666	May 30	1882	{ 530 / 531	21	1647
Mailing-package	A. Christey	255,415	Mar. 28	1226	338	21	871
Mailing-packet	A. Christey	255,414	Mar. 28	1225	338	21	871
Main for conveying fluids	J. Brady	253,908	Feb. 21	885	249	21	515
Maize or other grain in the manufacture of beer, spirits, glucose, grape-sugar, &c. Treating	H. C. Humphrey	251,867	Jan. 3	250	.....	21	45
Maize. Reducing and separating	M. L. Mowrer	251,919	Jan. 3	289	.....	21	50
Malt-drying apparatus	G. F. Burkhardt	255,769	Apr. 4	52	6	21	954
Malt extracts from the refuse of brewers' mash. Apparatus for expressing	H. R. Randall	253,425	Feb. 7	981	81	21	394
Malt-house	L. C. Huck	257,586	May 9	588	156	21	1396
Malt-kiln grain-distributer	W. Toepfer	253,960	Feb. 21	956	266	21	525
Malt liquors. Utilizing spent hops in the manufacture of	J. Gebhard	257,935	May 16	960	.....	21	1471
Malting apparatus	W. Andrew	259,993	June 27	1420	383	21	1961
Malting cereals. Apparatus for	J. Puvrez	254,374	Feb. 28	1442	394	21	615
Malting. Couching-chamber for	H. B. Scholes and J. Haughian	259,591	June 13	800	226	21	1857
Man-power	T. Hill	253,926	Feb. 7	121	36	21	357
Mandrel. Expanding	J. Harrison	257,239	May 2	85	25	21	1296
Mandrel. Expanding	W. H. Nicholson	255,010	Mar. 14	709	191	21	708
Mandrel. Expanding	J. G. Pope	258,398	May 30	1759	506	21	1631
Manger	O. C. Burdict	256,638	Apr. 18	1105	311	21	1157
Manger	C. H. Willson	258,636	May 30	2075	{ 585 / 586	21	1661
Mangle	J. F. Baldwin	253,661	Feb. 14	579	162	21	454

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Mangle	J. G. Crawford	254,987	Mar. 14	688	168	21	749
Mantel. Adjustable	R. H. Gudgeon	254,598	Mar. 14	518	139	21	733
Measure-hook	S. R. Minnich	254,147	Feb. 28	1163	330	21	571
Map and chart exhibiter	A. Dean	257,671	May 9	630	185	21	1405
Map and chart supporter. Adjustable	H. E. Hayes	259,197	June 27	1670	453	21	1819
Map-rack	G. A. McLane	253,538	Feb. 14	434	128	21	432
Maps, charts, &c. Device for displaying	A. Dean	256,627	Apr. 25	1330	376	21	1205
Marble or other stone. Machine for cracking or splitting	C. A. Wellington	254,415	Feb. 28	1488	407	21	689
Marine boiler	G. B. N. Tower	251,747	Jan. 3	72	20	21	14
Marking and cutting instrument. Combined	E. C. Helsely	256,689	Apr. 18	1173	329	21	1170
Marking cloth, &c. Device for	A. W. Allen	253,490	Feb. 14	398	105	21	423
Marquetry by painting. Imitation of	W. Schroeder	257,021	Apr. 25	1606	455	21	1267
Masher and strainer. Vegetable	L. Becker	255,570	Mar. 28	1419	393	21	983
Mashing malt and malt substitutes. Method of and apparatus for	G. Seitz	255,903	Mar. 21	958	256	21	617
Mat: *See* Foot-mat. Oil-mat.							
Match-box	J. Woodward	253,570	Feb. 14	467	132	21	437
Match-box and cigar-cutter. Combined	C. F. Pierce	252,036	Jan. 10	665	198	21	66
Match-card machine	G. Hargreaves	253,631	Mar. 28	1468	399	21	914
Match. Friction	W. H. Pitt	256,920	Apr. 25	1449	404	21	1264
Match-igniter	J. E. Donnelly	255,605	Mar. 28	1467	394	21	911
Match-safe	G. Franke	260,187	June 27	1656	459	21	1997
Match-splints. Machine for cutting	H. L. Hapgood	258,414	May 23	1563	{ 443 / 444	21	1563
Match-sticks. Machine for setting	C. F. Benbeck	254,198	Feb. 28	1231	343	21	579
Matches after drying. Machine for unloading friction-	C. F. Benbeck	254,191	Feb. 28	1230	343	21	579
Matches. Manufacture of friction-	H. H. Baker	255,895	Mar. 21	899	231	21	795
Mattress	G. S. Meek	257,178	May 2	30	12	21	1267
Mattress	J. F. Young	254,750	Mar. 7	340	100	21	703
Mattress. Bed-	A. Schenk	252,973	Jan. 31	1570	437	21	291
Mattress. Spring-	A. L. Burley	254,455	Mar. 7	11	3	21	640
Mattresses, bed-quilts, &c. Machine for filling	C. Scherer	253,633	Feb. 14	535	154	21	448
Measure and funnel. Combined	C. C. Becker and P. Jacob	255,139	Mar. 21	865	230	21	808
Measure and scales. Liquid	T. F. Dodge	254,834	Mar. 14	609	{ 164 / 165	21	770
Measure and tally. Grain	R. Wittmann	256,783	Apr. 18	1073	359	21	1188
Measure. Dimension-	J. W. Young	258,845	May 30	1840	567	21	1683
Measure. Earthenware liquid	F. Weber	257,421	May 2	333	94	21	1340
Measure. Liquid	E. P. Haff	258,161	Jan. 10	515	143	21	96
Measure. Pocket tape	J. H. Webster	257,114	Apr. 25	1664	468	21	1264
Measuring and discharging apparatus for cooling tubes of char-furnaces	O. Huffman	254,574	Mar. 14	598	141	21	735
Measuring apparatus. Rotary cloth-	E. F. Osborne	255,884	Apr. 4	157	42	21	970
Measuring heat supplied from steam	E. G. McClure	254,661	Mar. 14	544	146	21	726
Measuring-line reel	A. Winter	258,567	Jan. 17	1076	300	21	195
Measuring machine. Cloth-	W. A. Sawyer	256,656	Apr. 4	3:2	108	21	1013
Measuring machine. Leather-	J. H. Peters	251,836	Jan. 3	305	83	21	53
Measuring reel. Cloth-	E. Steere	260,050	June 27	1496	463	21	1973
Measuring, rigging, fastening, and finishing machine	W. Chesterman	260,163	June 27	1627	430	21	1973
Measuring-tape	D. T. Winter	258,970	June 6	194	33	21	1716
Measuring the area of hides, &c. Machine for	D. T. Winter	258,969	June 6	121	33	21	1715
Measuring the area of hides, surfaces, &c. Machine for	J. Coffin	258,993	June 6	150	41	21	1750
Measuring the average breadth of irregular planes. Averagometer or instrument for	T. J. Rockwood	254,392	Feb. 28	1440	397	21	616
Meat and lard press	J. Chapman	257,211	May 2	71	23	21	1274
Meat and vegetable preserving chest	S. W. Bowne	256,350	May 23	1499	428	21	1573
Meat. Apparatus for dissolving and digesting	J. Patchel	259,711	June 20	1059	261	21	1893
Meat-cutter	C. E. Deany	258,719	May 30	1944	549	21	1656
Meat for transportation. Packing	T. A. Gardner	258,577	Jan. 17	1087	303	21	197
Meat-roaster	A. and A. Ike	253,819	Feb. 14	775	220	21	489
Meat-slicer	J. Eckart	251,772	Jan. 3	107	.....	21	21
Meats and fish. Compound for preserving	N. Adams	260,075	June 27	1509	466	21	1976
Mechanical movement	O. G. Alderman	254,168	Feb. 28	1225	341	21	573
Mechanical movement	C. A. Benton	254,097	Mar. 14	577	156	21	744
Mechanical movement	J. B. Bray	256,833	Apr. 18	1109	310	21	1157
Mechanical movement	R. E. Breed	252,170	Jan. 10	666	170	21	110
Mechanical movement	P. T. Canfield	253,660	Feb. 14	565	168	21	457
Mechanical movement	C. Herrschaft	254,648	Mar. 7	350	64	21	650
Mechanical movement	W. H. and C. A. Holcomb	257,398	May 2	219	62	21	1320
Mechanical movement	J. A. Johnson	256,653	May 30	1861	525	21	1644
Mechanical movement	H. Lord	252,251	Jan. 10	665	{ 167 / 168	21	121
Mechanical movement	J. H. Osborne	256,583	May 30	1765	504	21	1630
Mechanical movement	J. W. Reid	253,688	Feb. 7	992	81	21	394
Mechanical movement	C. H. Roberts	256,125	May 16	1308	330	21	1513
Mechanical movement	A. E. Rush	256,362	Apr. 11	797	218	21	1062
Mechanical movement	C. H. Trask	258,339	Jan. 17	902	253	21	149
Mechanical movement	R. W. Whitney	253,788	Feb. 14	746	213	21	494
Mechanical movement for churns	E. L. Marsnville	256,859	May 23	1260	365	21	1540
Mechanical movement for ore-crushing machines	J. David	257,668	May 16	875	{ 245 / 246	21	1454
Medical compound	J. Averhoff	254,449	Mar. 7	2	.....	21	630
Medical compound	P. R. Levings	257,689	Apr. 25	1567	.....	21	1949
Medical compound	W. R. Mead	254,256	Feb. 28	1419	.....	21	611
Medical compound	W. Pickhardt and H. Endemann	254,696	Feb. 21	1110	.....	21	853
Medical compound	W. Pickhardt and H. Endemann	254,697	Feb. 21	1110	.....	21	853
Medical compound for diphtheria	H. Wiesbaugh	259,670	June 6	850	.....	21	1736
Medical purposes. Electrical apparatus for	W. Humann	259,691	June 20	1035	{ 273 / 274	21	1866
Medical use. Electrical apparatus for	J. Butler	252,120	Jan. 10	650	171	21	111

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Medicine chest and case	H. H. Peacock	254,838	Mar. 14	484	130	21	727
Medicinal tonic	L. Rouden	254,384	Feb. 28	1451	.....	21	616
Meshed or netted fabric	A. Beals	255,407	Mar. 28	1294	398	21	980
Metal articles. Machine for bending and shaping	A. R. Woodyatt	252,853	Jan. 24	1492	306	21	259
Metal bending and straightening machine	A. Wilke	258,260	Apr. 11	650	178	21	1067
Metal-breaker. Drop	E. S. Wenrich	256,777	Apr. 18	1966	357	21	1187
Metal. Chill for chilling	J. P. Warner	256,257	Apr. 11	655	177	21	1066
Metal-cutting machine	W. F. Durfee	260,173	June 27	1636	448	21	1994
Metal. Electroplated yellow	A. O'Neill	257,605	May 9	597	.....	21	1390
Metal plates. Bending	P. Medart	257,963	May 16	1010	269	21	1477
Metal rods. Machine for straightening and polishing iron, steel, and other	J. Illingworth	253,710	Feb. 14	634	180	21	464
Metal-shearing machine	U. Haskin	260,022	June 27	1454	398	21	1966
Metal-shearing machines. Device for clamping and holding plates in	W. F. Durfee	260,178	June 27	1646	447	21	1996
Metal strips or rods. Mechanism for reducing	W. F. Durfee	260,174	June 27	1637	442, 443	21	1995
Metal surfaces. Composition for cleaning and protecting	C. W. Trickey	257,535	May 9	480	.....	21	1373
Metal tubes and pipes. Machine for making	S. Fox	258,740	May 30	1967	556	21	1662
Metal while being tempered. Apparatus for shaping and holding	J. Jacobs	256,898	Apr. 25	1417	399	21	1290
Metals. Apparatus for brazing	J. C. Stevens	260,133	June 27	1594	430	21	1988
Metals. Bath for treating	J. Mensdorf	253,937	Feb. 21	930	.....	21	521
Metals. Gilding	P. A. Dodé	255,491	Mar. 28	1941	.....	21	872
Metals. Hardening	C. M. Daboll	255,725	Mar. 28	1690	.....	21	938
Metals. Ornamenting	J. D. Planchamp	256,732	Apr. 18	1221	342	21	1178
Metallic case	D. Moore	259,889	June 20	1260	343	21	1930
Metallic fastener	G. W. McGill	251,911	Jan. 3	282	77	21	49
Metallic fastening	G. W. McGill	251,912	Jan. 3	283	77	21	49
Metallic fastener	G. W. McGill	259,685	Jan. 24	1211	330	21	294
Metallurgical gas-furnace	W. W. Waplington	259,653	June 13	970	259	21	1671
Meter: *See* Electric meter. Electrical meter. Foci-meter. Water-meter.							
Microtome. Freezing	T. Taylor	256,173	Apr. 11	596	145	21	1045
Middlings-detacher	C. Brown	258,552	May 30	1732	490	21	1691
Middlings. Machine for separating	W. R. Middleton. (Reissue)	10,059	Mar. 7	418	111	21	709
Middlings-purifier	P. S. Brown	254,004	Mar. 7	199	48	21	671
Middlings-purifier	T. B. Osborne	254,038	Feb. 21	1055	294	21	542
Middlings-purifier	T. B. Osborne	254,039	Feb. 21	1056	294	21	542
Middlings-purifier	A. J. Seyler	255,036	Mar. 14	743	200, 201	21	774
Middlings-purifier	G. T. Smith	256,142	May 16	1293	344	21	1516
Middlings-purifier	A. Wolf	259,908	June 20	1384	372	21	1948
Middlings-purifiers. Dust-catching apparatus for	J. McDaniel	259,898	June 20	1266	339, 340	21	1928
Middlings-purifiers, &c. Dust-collector for	W. S. Russell	252,144	Jan. 10	569	160	21	104
Middlings-purifiers, &c. Dust-collector for	A. Wolf	251,965	Jan. 3	302	98	21	62
Milk-aerators. Double-acting bellows for	N. G. Stebbins	253,123	Jan. 31	1765	490	21	392
Milk-boiling vessel	J. Renson	258,475	May 23	1637	463	21	1586
Milk-can	C. S. Shepard	256,948	June 6	97	25	21	1711
Milk-cooler	A. H. Brill	253,178	Feb. 7	8	3	21	348
Milk-cooler	C. Colby and E. Brammall	256,976	Apr. 25	1510	424	21	1236
Milk-cooler	E. F. Smith	252,534	Jan. 17	1041	290	21	189
Milk-pan cover	C. C. Fairlamb	255,263	Mar. 21	1034	277	21	831
Mill: *See* Attrition-mill. Cape-mill. Cider-mill. Coffee-mill. Coffee and spice mill. Fanning-mill. Flour-mill. Grain-mill. Grinding-mill. Hominy-mill. Pulverizing-mill. Quartz-mill. Roller-mill. Rolling-mill. Saw-mill. Stamping-mill. Sugar-mill. Windmill.							
Mill-disk	L. Gathmann	254,814	Mar. 14	448	121	21	721
Mill-packer register	G. L. Williams	258,636	May 30	2073	585	21	1681
Mill-spindle bearing	G. F. Senter	255,541	Mar. 28	1386	374	21	896
Milling cutter-blank	M. G. Crane	258,560	May 30	1741	483	21	1622
Milling-machine	A. H. Campbell	253,974	Feb. 21	975	271, 272	21	528
Milling-tool	W. N. Buckley	255,589	Mar. 28	1450	390	21	908
Millstone	R. Moody	255,660	Apr. 4	153	41	21	976
Millstone-alarm	W. Lauboff	253,673	Feb. 21	847	230	21	508
Millstone-dress	E. Cyrus	259,143	June 6	287	77	21	1744
Millstone-dress	J. M. Speer, Jr.	257,693	May 9	609	170	21	1394
Millstone-dressing machine	W. W. Cleaveland	253,511	Feb. 14	403	112	21	457
Millstone-driver	A. Callahan	253,681	Feb. 14	586	168	21	457
Millstone-driver	L. P. Weaber, Jr. (Reissue)	10,118	May 16	1318	372	21	1532
Millstone-driver	L. P. Weaber, Jr	258,557	Jan. 17	1067	297	21	193
Millstone-driver	J. H. Wooster	256,787	Apr. 18	1278	360	21	1189
Mine-water. Apparatus for purifying	T. Shaw	252,974	Jan. 31	1571	436	21	291
Miners, &c. Prospecting-tool for	J. B. T. Chase	252,184	Jan. 10	613	173	21	112
Mines, &c. Electrical device for operating submerged	G. E. Haight	257,695	May 9	798	194, 195	21	1412
Mining apparatus	O. S. Presbrey	253,697	Jan. 31	1736	489	21	517
Mining-engine	B. Yoch	251,957	Jan. 3	287	99	21	63
Mining implement	T. M. Gallaher	252,266	Jan. 10	634	179	21	115
Mining-machine	X. Kern, Jr	260,021	June 27	1464	395	21	1966
Mining machine. Coal	J. Du Bois	259,168	June 6	285	79	21	1746
Mining machine. Coal	T. Murray	253,747	Feb. 14	660	185	21	473
Mining machine. Coal	G. D. Whitcomb	259,856	June 20	1351	365	21	1942
Mirror-handle	P. Wiederer	253,457	Feb. 7	385	99	21	401

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Mirror. Illuminated	P. Loth and J. Sladic	259,563	Jan. 17	1669	264	21	197
Miter-box	J. W. Angus	252,267	Jan. 31	1566	448	21	295
Miter box or gage	J. J. Meyers	257,041	Apr. 25	1577	403	21	1245
Mitts. Driving	J. E. Schmidt	254,164	Feb. 28	1262	336	21	575
Mitten	H. O. Witherell	256,257	May 23	1478	422	21	1162
Mitten and the art of knitting the same	J. Nelson	254,283	Jan. 31	1471	419	21	274
Mixing and straining cup	A. Eggers	251,773	Jan. 3	267	89	21	21
Mixing pulverized substances with liquids. Device for	C. F. Binder	256,274	Apr. 11	674	183	21	1070
Mold: *See* Brick-mold. Butter-mold. Carriage or buggy top mold. Cigar-mold. Dress cutting and fitting mold. Fire-kindler mold. Pipe-mold. Pottery-mold.							
Molding and paneling machines. Templet for	L. Wenchel	260,264	June 27	1751	473	21	2012
Molding car-wheels and other castings in sand. Machine for	J. Lane	257,345	May 2	249	68, 69	21	1294
Molding. Former for plaster	T. B. Tucker	251,774	Jan. 3	350	94	21	60
Molding-machine cutter-head	E. K. Jenkins	259,693	June 20	1630	375	21	1969
Molding machine. Sand	F. Ley	257,030	Apr. 25	1566	439, 440	21	1246
Molding machine. Wood	L. Wenchel	260,265	June 27	1753	473, 474	21	2012
Molding-machines. Guard for variety	G. Grill	252,313	Jan. 17	775	216	21	145
Mole-trap	J. Edge	260,348	June 27	1654	500	21	2029
Mole-trap	W. S. Harmon	254,963	Mar. 14	646	176	21	757
Monkey-wrench	J. S. Greenleaf	260,268	June 27	1766	454	21	2018
Monkey-wrench. Ratchet	W. F. McGregor	258,251	Apr. 11	709	200	21	1068
Mop-holder	H. Baughman	257,636	May 9	625	175	21	1393
Mop-holder	F. Davis	257,994	May 2	176	50	21	1313
Mop-holder and scraper. Combined	J. R. Tillis	253,131	Jan. 31	1774	492	21	394
Mop holder and wringer	J. S. Mills	259,889	June 20	1579	363	21	1930
Mop holder and wringer. Combined	J. H. Omo	255,449	Mar. 28	1273	363	21	877
Morter-mixing machine	R. T. Van Valkenburg	257,887	May 9	612	171	21	1395
Mortise-lock	S. P. Stoddard	254,402	Feb. 28	1472	483	21	680
Mortising-machine	W. H. Deane and G. W. Bugbee	259,698	June 6	127	43, 44	21	1721
Mosaics of glass, porcelain, or stone. Making	G. Stanley	257,886	May 9	471	.....	21	1371
Mosquito-bar frame and canopy. Combined	C. P. Howe	252,769	Jan. 24	1302	365	21	240
Mosquito-netting. Frame or support for	A. M. D. Smith	259,357	June 13	576	152	21	1691
Motion. Apparatus for transmitting	A. Semper	259,867	June 20	1313	358	21	1936
Motion. Device for converting	J. W. Anderson	252,531	Jan. 24	1393	389	21	254
Motion. Device for converting	W. T. Kosinski	257,344	May 2	240	66	21	1294
Motion. Device for converting	G. W. Richardson	259,526	June 13	664	235	21	1697
Motion. Device for converting	W. H. Ryther	256,159	May 16	1297	340	21	1513
Motion. Device for converting reciprocating into rotary	J. W. Chamberlain	256,712	May 30	1936	547	21	1656
Motion. Device for converting reciprocating into rotary	W. T. Kosinski	257,674	May 16	902	252	21	1458
Motion. Device for converting reciprocating into rotary	W. H. Ryther	255,735	Mar. 28	1631	449, 441	21	940
Motion. Device for converting reciprocating into rotary	A. G. Smyth	252,297	Jan. 10	753	209	21	124
Motion. Device for transmitting	W. H. Bi[illegible]a	256,627	Apr. 18	1097	308	21	1156
Motion. Device for transmitting	E. L. Smith	256,395	Apr. 11	819	233	21	1025
Motion. Mechanism for converting	H. Wyman	260,349	June 27	1654	501	21	2029
Motion. Mechanism for converting rotary into oscillating	J. Hornig	252,708	Jan. 24	1391	385	21	249
Motion. Mechanism for reversing	C. Dancel	260,265	June 27	1750	468	21	2016
Motion. Power-converter for converting reciprocating into rotary	H. Creft, Jr	253,515	Feb. 14	406	113	21	467
Motion. Reversible link	E. Huber	257,710	May 9	720	200	21	1415
Motion. System for transmitting	A. Semper	253,492	Feb. 7	326	88	21	395
Motion. Yoke for converting	M. Schultz	252,905	Jan. 31	1469	416	21	277
Motive mechanism or gearing	O. N. Eaton	256,788	May 30	1952	550	21	1659
Motive power	E. H. Drake	253,618	Jan. 31	1687	456	21	390
Motive power	N. A. Penland	253,623	Feb. 14	503	139	21	446
Motor: *See* Air-motor. Car-motor. Chain-motor. Electric motor. Electro-magnetic motor. Embroidering-machine motor. Ratchet-motor. Sewing-machine motor. Spring-motor. Steam-motor. Tide-wave motor. Tread-motor. Water-motor. Wind-motor. Windmill-motor.							
Motor	J. L. Dobbs	253,695	Feb. 14	630	169	21	456
Motor	W. J. Gurd	257,884	May 16	891	249	21	1468
Motor	A. Iske	253,587	Feb. 21	830	227	21	507
Motor	A. and A. Iske	253,588	Feb. 21	830	227	21	507
Motor	A. and A. Iske	254,468	Apr. 18	930	251, 252	21	1120
Motor	S. N. Silver	254,712	Mar. 7	318	86	21	668
Motor	J. Sutliff, Sr	257,103	Apr. 25	1051	283	21	1262
Motor	C. Stine	254,788	Mar. 7	333	88	21	685
Motor and thrasher connection	H. H. Hobart	258,561	Jan. 17	1091	304	21	197
Motor-escapement	H. L. Norton	258,131	Jan. 10	550	154	21	102
Mouse-trap	K. H. C. Preston	257,683	May 16	907	256	21	1462
Mower and harvester knives. Machine for grinding	C. W. Henshaw	255,980	Apr. 4	986	75	21	988
Mower and reaper knives. Machine for sharpening	E. Beckwith	255,913	Apr. 4	196	51	21	983
Mower. Grass-	H. C. Bender and H. C. Bruner	256,537	Apr. 18	994	269	21	1130
Mower. Lawn-	M. Bruns	258,398	Jan. 17	817	267	21	151

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Mower. Lawn	G. F. Johnson	251,890	Jan. 3	255	70	21	45
Mower. Lawn	C. Newhall	259,904	June 20	1284	{344 345	21	1931
Mower. Weed and lawn	A. T. Pike and P. A. Loy	253,694	Feb. 14	594	{150 151	21	446
Mowers and reapers. Cutter-bar for	A. M. Lackey	255,387	Mar. 21	1197	321	21	859
Mowing and reaping machine	A. Rank	256,048	Apr. 4	350	97, 98	21	1011
Mowing and reaping machines. Sickle-bar for	E. T. Spottswood	255,688	Mar. 28	1566	421	21	929
Mowing-machine	J. A. Carlès	255,718	Mar. 28	1604	{433 434	21	936
Mowing-machine	C. W. Cheney	258,555	May 30	1736	491	21	1621
Mowing-machine	W. F. Cochrane	255,939	Apr. 4	270	59, 60	21	989
Mowing-machine	W. Gause	257,856	May 16	983	947	21	1455
Mowing-machine	W. M. Webber and C. O. Campbell	257,113	Apr. 25	1662	{465 466	21	1263
Mowing-machine	J. D. Wilber	254,753	Mar. 7	388	97	21	700
Mowing-machine seat	J. Fulton	254,360	Feb. 28	1369	374	21	640
Mucilage-receptacle	W. Kenniah	258,603	Jan. 24	1117	313	21	206
Mug. Shaving	P. H. Leonard	258,777	May 30	2009	567	21	1669
Multiflue pipe and coupling-section	G. Richardson	259,048	June 6	223	60	21	1732
Music-chart	M. Wagner	257,790	May 9	799	224	21	1430
Music-holder	A. H. Merrill	255,649	Mar. 28	1517	408	21	921
Music holder. Sheet	F. E. Putnam	251,942	Jan. 3	312	84	21	54
Music-leaf turner	A. Heilprin	253,043	Jan. 31	1660	460	21	306
Music-leaf turner	E. B. Robinson	254,569	Mar. 7	149	37	21	663
Music-leaf turner	H. D. Wheatley	260,071	June 27	1514	406	21	1975
Music-paper for automatic organs. Perforating	R. T. Smith	259,340	June 13	579	153	21	1801
Music scale and chord indicator	C. H. Hauschel	255,979	Apr. 4	287	75	21	998
Music-sheet for orguinettes	L. Brauer	255,946	Mar. 21	1015	271	21	827
Music-sheet. Perforated	W. Johnson	258,072	May 16	1138	319	21	1500
Musical chart	E. E. Threaber	253,562	Feb. 14	457	130	21	435
Musical instrument. Automatic	J. McTammany, Jr	252,614	Jan. 24	1127	316	21	210
Musical instrument. Automatic	J. McTammany, Jr	260,109	June 27	1563	421	21	1983
Musical-instrument key	A. Caesar	256,973	Apr. 25	1507	423	21	1216
Musical instrument key-boards. Making	J. W. Hyatt	254,438	Feb. 28	1512	414	21	625
Musical instrument. Mechanical	J. H. Chase	256,101	Apr. 4	425	117	21	1022
Musical instrument. Mechanical	A. Durkee	251,846	Jan. 3	302	57	21	37
Musical instrument. Mechanical	A. Fowler	251,861	Jan. 3	320	62	21	40
Musical instrument. Mechanical	A. H. Hammond	254,644	Mar. 7	338	62, 63	21	679
Musical instrument. Mechanical	A. H. Hammond	254,645	Mar. 7	943	63	21	679
Musical instrument. Mechanical	G. W. Ingalls	256,219	Apr. 11	604	164	21	1057
Musical instrument. Mechanical	J. McTammany, Jr	259,412	June 13	668	177	21	1818
Musical instrument. Mechanical	H. B. Morris and L. A. Brott	252,644	Jan. 24	1412	394	21	257
Musical instrument. Mechanical	O. H. Needham	258,667	May 30	1878	{529 530	21	1647
Musical instrument. Mechanical	R. W. Pain	251,727	Jan. 3	49	13	21	11
Musical instrument. Mechanical	R. W. Pain	251,929	Jan. 3	299	81	21	52
Musical instrument. Mechanical	O. Spaethe	259,977	Jan. 31	1574	439	21	292
Musical instrument. Mechanical	H. S. Taylor	258,955	June 6	105	28	21	1712
Musical instrument. Mechanical	G. W. Van Dusen	258,508	May 23	1673	473	21	1602
Musical instrument. Mechanical	H. Wegman	251,977	Jan. 3	352	95	21	61
Musical-instrument reed	M. Bray	253,962	Feb. 7	97	30	21	363
Musical instruments. Electro-magnetic action for	C. N. Andrews	258,871	June 6	2	1	21	1695
Musical instruments. Key-board attachment for	G. R. Elliott	255,609	Mar. 28	1470	395	21	912
Musical instruments. Metallic reed for	W. Munroe	254,882	Mar. 14	546	146	21	739
Musical instruments. Music-rack for	W. H. Ivers	252,587	Jan. 17	1097	306	21	199
Musical instruments. Temperament-adjuster for	W. K. Wheeler	256,524	Apr. 18	962	276	21	1137
Musical instruments. Pneumatic lever for mechanical	A. Durkee	251,706	Jan. 3	94	7	21	7
Musical wind-instrument valve	G. C. Hugg	254,136	Feb. 28	1170	327	21	570
Mustache-guard	G. P. Hall	258,204	May 23	1427	404	21	1560
Mustache-guard	C. Miller	258,243	May 23	1367	386	21	1550
Muzzle	N. Gallinger	254,302	Feb. 28	1361	375	21	601
Nail: *See* Fence-nail.							
Nail-box	T. L. Smith and W. S. Doig	253,559	Feb. 14	455	130	21	435
Nail-driving machine	J. J. Burk	259,834	Jan. 24	1396	390	21	955
Nail-plates. Pile for	O. P. Cobb	251,834	Jan. 3	188	59	21	34
Nailing-machine	A. Knowlton	257,237	May 2	98	28	21	1298
Nailing-machine	G. McKay	257,174	May 2	34	11	21	1287
Nailing-machine	G. H. Perkins	254,566	Mar. 7	145	36	21	663
Nailing-machine	A. Van Wagenen	260,141	June 27	1602	439	21	1969
Nailing-machine	A. Van Wagenen	260,142	June 27	1603	432	21	1969
Nailing-machine nail-feed attachment	F. Rochow	254,570	Mar. 7	150	37, 38	21	663
Naphthaline into a form for carbureting. Manufacturing	J. Livesey and J. Kidd	258,778	May 30	2010	567	21	1669
Naphthyl-sulphate soda salt. Production of	J. H. Stebbins, Jr	256,400	Apr. 11	817	.....	21	1085
Neckwear shield and fastener	A. Komp	258,769	May 30	1999	564	21	1667
Necktie	H. H. Thayer and G. W. Hayes	257,105	Apr. 25	1653	463	21	1262
Necktie and collar fastener	A. Platky and E. Finsterer	259,563	June 13	881	234	21	1856
Necktie-fastener	J. Goldberg	252,456	Jan. 17	951	263	21	173
Necktie-fastener	I. Noar	254,368	Feb. 28	1424	391	21	612
Necktie-fastener	P. H. Rew	256,740	Apr. 18	1238	344	21	1179
Necktie-fastening	L. Michaux	253,409	Feb. 7	264	76	21	391
Neckties. Machine for folding and pressing	M. Steinbock	254,576	Mar. 7	160	39, 40	21	665
Needle-bars. Device for the compensation of wear in	R. H. St. John	256,698	Apr. 4	362	105	21	1014
Needle-blanks. Machine for swaging	J. Berry	257,645	May 9	630	177	21	1399
Needle-case	J. J. Parsons	256,918	Apr. 25	1438	404	21	1294
Needle-eyes. Machine for polishing	I. T. Smith	255,044	Mar. 14	761	{294 295	21	777
Needles. Machine for grooving	J. Berry	259,982	June 6	469	134	21	1775
Negatives. Apparatus for retouching	T. N. Herger	253,824	Feb. 21	797	227	21	500
Net for horses. Fly	J. R. Rhenbottom and F. M. Mack	257,709	May 9	772	215	21	1494
Net. Gill	M. and T. Reynolds	255,671	Mar. 28	1541	415	21	985

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Net. Sponge-fishing	R. Arapian	255,561	Mar. 28	1467	389	21	989
Nets. Machine for making fish	J. Chesnier	254,367	Apr. 11	695	{165 167 169	21	1072
Nippers. Cutting	T. G. Hall. (Reissue)	10,088	Feb. 7	365	101	21	407
Nippers for opening bottles	J. A. Schmidt	257,988	May 16	1631	397	21	1480
Nozzle	T. C. Chamberlain	259,697	June 20	983	265	21	1868
Numbering-machine	W. P. Kidder	254,887	Mar. 14	471	127	21	725
Nut and bolt lock	B. Marks	255,998	Apr. 4	62	17	21	981
Nut-lock	S. A. Bailey	258,873	June 6	4	2	21	1695
Nut-lock	J. C. Beamer and J. M. Richardson	258,716	Jan. 24	1236	347	21	239
Nut-lock	A. Berryhill	258,719	Jan. 24	1241	348	21	239
Nut-lock	L. D. Best	258,994	Jan. 31	1512	420	21	291
Nut-lock	J. Breen and E. Baker	259,469	June 13	742	196	21	1838
Nut-lock	J. H. Burrows	256,971	Apr. 25	1504	422	21	1235
Nut-lock	S. E. S. Chapleau	257,226	May 2	170	48	21	1319
Nut-lock	S. M. Churchill	255,839	Apr. 4	104	30	21	968
Nut-lock	B. F. Click	258,647	Jan. 24	1103	307	21	217
Nut-lock	W. Courtenay	256,642	Apr. 18	1113	313	21	1150
Nut-lock	C. H. Denison	259,898	Jan. 31	1446	404	21	289
Nut-lock	W. S. F. Dillon	257,854	May 16	979	946	21	1454
Nut-lock	J. Frederick	258,655	Jan. 24	1175	329	21	218
Nut-lock	S. Gheisinger	255,790	Apr. 4	33	10	21	956
Nut-lock	J. Graham	255,498	Mar. 28	1250	337	21	873
Nut-lock	G. B. Hill	259,462	Jan. 17	950	267	21	175
Nut-lock	W. Hogue and J. R. Davis	259,003	Jan. 3	301	105	21	67
Nut-lock	J. M. Holland	256,666	Apr. 18	1172	329	21	1170
Nut-lock	W. B. Johnson	257,014	Apr. 25	1550	435	21	1243
Nut-lock	P. Jones	254,773	Mar. 7	394	104	21	705
Nut-lock	W. C. Kelly	256,574	Apr. 18	1031	291	21	1145
Nut-lock	A. T. Kingsley	259,562	June 13	846	224	21	1850
Nut-lock	D. M. Kirkpatrick	258,930	June 6	76	20	21	1707
Nut-lock	A. L. Lincoln	255,801	Apr. 4	68	17	21	961
Nut-lock	L. Long and E. M. Richardson	256,149	Apr. 11	501	137	21	1041
Nut-lock	A. F. MacDonald	255,439	Mar. 28	1263	341	21	876
Nut-lock	W. H. Paige	254,685	Mar. 7	290	76	21	688
Nut-lock	L. G. Pool	256,730	Apr. 18	1219	341	21	1178
Nut-lock	D. P. Prescott	259,295	Jan. 10	751	208	21	134
Nut-lock	J. Preston	254,154	Feb. 28	1192	333	21	573
Nut-lock	J. Sherman	256,169	Apr. 11	522	144	21	1044
Nut-lock	J. A. Simpson	258,530	Jan. 17	1036	289	21	188
Nut-lock	R. C. Smith	260,131	June 27	1581	429	21	1988
Nut-lock	R. C. Smith	260,949	June 27	1733	489	21	1600
Nut-lock	J. L. Stevens	258,497	May 23	1640	469	21	1163
Nut-lock	J. W. Stringfellow	256,760	Apr. 18	1249	351	21	1179
Nut-lock	J. B. Sutch	257,128	May 9	793	221	21	1435
Nut-lock	T. F. Timby	256,767	Apr. 18	1256	354	21	1185
Nut-lock	C. D. Tyler	257,788	May 9	796	223	21	1439
Nut-lock	W. C. Watson	257,499	May 2	333	94	21	1340
Nut-lock	W. Weaver	259,250	June 6	459	121	21	1773
Nut-lock	J. M. Williams	252,564	Jan. 17	1073	299	21	194
Nut-lock	W. H. Wood	256,599	Apr. 18	988	278	21	1138
Nut-lock	J. Smith	253,638	Feb. 14	539	155	21	448
Nut-locking plate	A. Marland	257,126	Apr. 25	1669	476	21	1270
Nut-machine	J. P. Mason	256,845	Apr. 25	1354	{382 383	21	1009
Nut-machine	S. Darling	253,986	Feb. 7	109	31	21	364
Nut. Screw	H. A. Harvey	251,875	Jan. 3	237	65, 66	21	43
Nut-tapping machine	W. R. Ward	255,478	Mar. 28	1311	353	21	883
Nut-tapping machine	A. R. Clark	258,186	Jan. 10	615	173	21	113
Nuts upon bolts. Locking	S. Irwin	256,394	Apr. 11	736	201	21	1061
Oar-lock	R. D. Williams	260,341	June 27	1846	498	21	2027
Oar-lock	W. Eberhard and R. Turner. (Reissue.)	10,084	Apr. 11	891	249	21	1108
Oatmeal-machine	A. Heins	255,987	Mar. 21	1067	287	21	836
Oatmeal-machine	J. McDougall	253,881	Feb. 14	776	.....	21	490
Oil-cake. Manufacture of	F. L. Clark	251,838	Jan. 3	185	58	21	34
Oil-can	W. G. Durham	260,008	June 27	1439	398	21	1964
Oil-can	L. A. Harker	255,109	Mar. 21	841	225	21	799
Oil-can	A. W. Plumb	256,654	Apr. 25	1366	385	21	1211
Oil-can	T. M. Righter and T. R. Griffith	258,519	Jan. 17	1094	295	21	198
Oil-can	C. B. Wilson	253,146	Jan. 31	1703	497	21	327
Oil-can	A. P. Ordway and A. F. Ryder	257,748	May 9	756	210	21	1421
Oil-can educt	H. C. Smith	253,558	Feb. 14	454	129	21	435
Oil-can. Tilting	T. Ferguson	256,294	May 23	1344	361	21	1545
Oil-can vent	D. N. Melvin	258,891	Jan. 31	1469	.....	21	274
Oil-cloths. Manufacture of composition of floor	J. E. Gilligan	256,049	May 16	1113	310	21	1496
Oil-cup	J. G. McBride	257,173	May 2	33	11	21	1287
Oil-cup	T. D. Ruggles	259,925	June 20	1312	351	21	1936
Oil-cup	W. W. Ramsey	257,611	May 9	594	{165 166	21	1301
Oil-cup. Lubricating	J. R. Lonergan	256,239	Apr. 11	617	167	21	1060
Oil-cup. Steam-engine	F. M. Reed	258,516	Jan. 17	1091	.....	21	186
Oil for mixing paints. Treatment of resin	J. Kaschau	257,340	May 9	826	67	21	1223
Oil fount or reservoir	M. Lancaster	253,723	Feb. 14	648	{184 185	21	467
Oil from vegetable substances. Apparatus for the separation or extraction of	R. N. McKlum	259,186	June 6	364	.....	21	1761
Oil. Harness	J. S. Rowland	254,052	Feb. 21	1073	298	21	545
Oil heater. Coal	G. W. Banker	255,098	Mar. 21	889	.....	21	793
Oil. Manufacture of	G. Leder	257,738	May 9	737	206	21	1418
Oil-mat	T. B. Bowers	259,467	June 13	739	195	21	1831
Oil. Process of and apparatus for obtaining	J. D. Arnold	253,334	Feb. 7	181	52	21	377
Oil-tank	W. J. Hall	256,749	May 30	1980	558	21	1064
Oil-tank protector							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Oils for burning and illuminating purposes. Compound for absorbing	J. A. Wright	255,230	Mar. 21	997	.....	21	694
Oils. Liquid drier for	A. W. Pratt. (Reissue)	10,040	Feb. 21	1127	.....	21	555
Oils, &c. Treating mineral	R. Irvine	256,220	Apr. 11	605	.....	21	1056
Oiler	D. L. Columbia	259,290	June 13	516	135	21	1790
Oiler	W. H. Williams	258,184	May 16	1278	369	21	1395
Oiler. Locomotive	A. O. Brooks and P. A. Bowen	253,579	Feb. 14	479	135	21	438
Oiler-nozzle	S. S. Newton	254,564	Apr. 18	1044	285	21	1147
Oiler. Watch	W. W. Martin	259,189	June 6	379	99	21	1780
Oiling-box for rolls and pinions	J. Hunter and U. Haskin	257,047	May 16	998	277	21	1473
Oleaginous seeds and meal for extracting the oil therefrom. Moistening	J. B. Field	260,189	June 27	1658	448	21	1996
Opera-chair	S. N. Johnson and A. M. Dé Souchet	255,668	Apr. 4	136	36, 37	21	973
Opera-chair	E. J. Smith	259,533	Jan. 17	1040	284	21	189
Opera-chair	A. W. Adams	258,668	May 30	1910	539	21	1628
Opera-chair. Folding	J. Jackson	254,325	Feb. 28	1363	361	21	605
Opera-chair. Folding	J. Waterhouse	256,721	Apr. 18	979	275	21	1137
Opera-glass	G. D. Edmondson	253,645	Apr. 4	100	30	21	969
Optometer	G. Johnston	254,129	Feb. 28	1174	298	21	570
Optometer	S. B. Dean	258,326	May 23	1531	435	21	1578
Ordnance. Breech-loading	H. F. Mann	257,230	May 2	109	29, 30	21	1289
Ordnance. Breech-loading	H. F. Mann	257,893	May 9	838	{233 234	21	1437
Ordnance. Breech-loading	G. Quick	258,116	May 16	1194	336	21	1511
Ordnance. Sight for	A. H. Russell	257,077	Apr. 25	1022	454	21	1366
Ore concentrating and separating apparatus	M. J. Butzel	258,731	Jan. 24	1355	{352 353	21	232
Ore-concentrating apparatus	H. B. Meech	251,913	Jan. 3	984	77, 78	21	49
Ore-concentrator	A. Blatchly and G. Kustel	258,679	June 6	11	3, 4	21	1697
Ore-concentrator	G. S. Burr	251,828	Jan. 3	181	51	21	53
Ore-concentrator	J. S. Duncan	254,123	Feb. 28	1154	289	21	567
Ore-concentrator	B. Hershey	259,083	June 20	1403	378	21	1951
Ore-concentrator	J. F. Sanders	252,121	May 16	1210	341	21	1513
Ore-concentrator	A. M. G. Sébillot	253,771	Feb. 14	709	202	21	478
Ore-concentrator	E. Stahl	254,173	Feb. 28	1209	338	21	576
Ore concentrator and separator	J. Garvin	255,160	Mar. 21	907	243	21	809
Ore concentrator and separator	E. Warne	258,332	May 23	1468	418	21	1567
Ore concentrator. Dry	W. B. Farwell	257,661	May 9	675	188	21	1408
Ore-crusher	A. N. Cameron	255,935	Apr. 4	296	59	21	988
Ore-crusher	J. M. Courtenay	253,009	Jan. 31	1616	448	21	999
Ore-crusher	H. H. Scoville	253,231	Feb. 7	61	19	21	357
Ore-crushing machine	S. R. Krom. (Reissue)	10,085	Apr. 11	802	{249 250	21	1109
Ore-furnace. Desulphurizing and oxidising	W. T. Browne	259,475	June 13	749	198	21	1833
Ore grinding and amalgamating machine	W. E. Harris	259,011	June 6	175	47	21	1794
Ore grinding and amalgamating machine	T. A. Readwin	259,424	June 13	683	181	21	1891
Ore-grinding mill	W. E. Harris	253,476	Feb. 7	346	96, 97	21	404
Ore, &c. Machinery for crushing	F. J. and W. H. Hoyt	255,892	Apr. 4	131	35	21	973
Ore, &c. Machinery for pulverising	F. J. and W. H. Hoyt	256,332	Apr. 11	734	200	21	1061
Ore, &c. Machinery for reducing	F. J. and W. H. Hoyt	256,570	Apr. 18	1027	290	21	1144
Ore pulverizer and amalgamator. Combined	F. J. and W. H. Hoyt	253,051	Jan. 31	1670	462	21	307
Ore-reducing machine	B. Hershey	257,139	Apr. 25	1091	{473 474	21	1369
Ore-roasting apparatus	C. Hornbostel	256,569	Apr. 18	1026	290	21	1144
Ore-roasting apparatus	H. O. Reinhardt	255,537	Mar. 28	1361	373	21	895
Ore roasting, desulphurising, and chloridising furnace	W. F. Witherell and B. H. Vary	254,735	Mar. 7	372	98	21	701
Ore-separating apparatus. Concentrator for	J. F. Sanders	253,229	Feb. 7	60	18	21	357
Ore-separating machine. Centrifugal	G. Glass	255,967	Apr. 4	273	71	21	985
Ore-separator	D. Car-Skaden	257,470	May 9	400	112	21	1359
Ore-separator	D. Car-Skaden	257,471	May 9	402	112	21	1359
Ore-separator	H. E. Henwood	259,962	June 20	1402	377	21	1951
Ore-separator	G. A. Metcalf	253,651	Mar. 28	1520	408	21	981
Ore-separator	S. G. Rollins	254,505	Mar. 7	71	19	21	650
Ore-separator	J. H. Wilhelm	256,183	Apr. 11	541	{149 150	21	1047
Ore-separator. Amalgamating	D. O. Crane	259,633	June 13	948	253	21	1867
Ore separator and concentrator	J. H. Wilhelm	256,184	Apr. 11	547	{150 151	21	1048
Ore-separator. Magnetic	S. E. St. O. Chapleau	256,639	Apr. 18	1107	{311 312	21	1158
Ore-washer	S. P. Speers	252,812	Jan. 24	1373	383	21	251
Ore-washer	W. S. Wood	258,569	Jan. 17	1078	{300 301	21	195
Ores. Apparatus for the extraction of precious metals from	B. G. Noble	259,709	June 20	1057	281	21	1898
Ores, &c. Apparatus for treating and reducing	A. C. Lippitt	259,769	June 20	1136	301	21	1905
Ores, &c. Machine for pulverising	A. L. Fish	259,373	June 13	693	165	21	1809
Ores, &c. Machine for pulverising	J. J. Storer	254,403	Feb. 28	1474	403	21	681
Ores, &c. Separator and concentrator for	E. Warne	256,331	May 23	1466	417	21	1567
Ores. Slime-table for concentrating	W. Nichols	257,056	Apr. 25	1503	447	21	1251
Ores. Treatment of	A. De Figaniére	259,104	June 6	266	77	21	1744
Organ	C. Fogelberg and G. W. Graves	256,708	June 6	48	12, 13	21	1703
Organ	W. L. Merrin	255,650	Mar. 28	1518	408	21	981
Organ-action. Pneumatic	M. Reiter and G. Sander	254,046	Feb. 21	1085	{296 297	21	544
Organ and upright piano. Combined	W. C. Woodward	253,464	Feb. 7	332	92	21	402
Organ-bell attachment	R. W. Blake	254,910	Mar. 14	579	156	21	745
Organ-bellows	J. W. Trainer	258,338	Jan. 17	800	223	21	149
Organ-bellows. Mechanism for working	J. Wagner	254,736	Mar. 7	349	92	21	697
Organ-case	W. H. Brearley	258,963	June 6	138	36, 37	21	1716
Organ case and pedal	S. B. J. Bryant	255,416	Mar. 28	1229	330	21	870
Organ case. Cabinet	O. C. Whitney	251,752	Jan. 3	77	21	21	16

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Organ-coupler	J. B. Lomas	258,760	May 30	2013	589	21	1969
Organ Hd. Cabinet	J. Hessler	253,693	Feb. 14	502	143	21	442
Organ. Reed	C. Austin	253,486	Feb. 7	361	100	21	407
Organ. Reed	J. Jones	253,381	Feb. 7	128	37	21	382
Organ. Reed	G. B. Kelly	253,383	Feb. 7	243	70	21	388
Organ. Reed	A. Novell	253,669	Feb. 21	856	{242 243	21	510
Organ-reeds. Apparatus for tuning	G. B. Kelly and E. H. Smith	254,703	Apr. 18	1180	333	21	1173
Organ-reeds. Tuning	G. B. Kelly and E. H. Smith	254,704	Apr. 18	1183	334	21	1173
Organ stop-action. Reed	B. French	254,959	Mar. 14	681	179	21	754
Organ stop-action. Reed	W. C. Kantner	252,674	Jan. 24	1198	{325 326	21	222
Organs. Pneumatic sheet for pipe	P. Odenbrett	254,569	Mar. 7	137	34	21	661
Organs. Swell-action for reed	L. Mason and G. B. Kelly	260,214	June 27	1684	458	21	2003
Organette. Mechanical	P. J. Duggan	253,825	Feb. 21	934	233	21	504
Ornamenting metals	H. Wright	253,965	Feb. 21	988	.....	21	514
Oscillating engine	L. Grieeon	253,694	Jan. 31	1653	458	21	204
Oven	Z. Davis	259,364	May 23	1589	434	21	1570
Oven	M. L. Hull	255,865	Apr. 4	134	35, 36	21	973
Oven	T. A. Kellett	257,018	Apr. 25	1554	426	21	1244
Oven	W. H. Strickler	253,235	Feb. 7	66	20	21	358
Oven and furnace door	H. R. Gordon	256,313	Apr. 11	723	196	21	1078
Oven attachment. Baker's	J. Bender	259,795	June 20	1165	{310 311	21	1911
Oven. Baker's	J. Carnely and J. Wagner	256,995	June 6	132	41	21	1721
Oven. Baker's	H. Falke	255,964	Mar. 21	1036	278	21	831
Oven. Baker's	T. Harrington	256,416	May 23	1506	444	21	1564
Oven. Baker's	E. A. C. Petersen	253,654	Jan. 10	463	137	21	67
Oven. Baker's	G. L. Miller	259,698	June 20	1977	542	21	1830
Oven. Baking	L. B. Morgan	254,095	Feb. 21	1117	312	21	553
Oven. Bread-raising	J. A. Marsh	259,887	Jan. 31	1465	410	21	973
Oven. Domestic	S. Hall	257,001	Apr. 25	1536	426	21	1241
Oven. Inside	J. L. Morgan	257,364	May 2	263	74	21	1289
Oven. Portable	J. T. McFarlin	260,216	June 27	1697	459	21	2003
Oven-waiter	C. Adler	258,965	Jan. 31	1567	441	21	993
Overalls	G. Frank and J. Galligan	254,092	Feb. 21	1115	312	21	553
Overalls	S. Feder	254,544	Mar. 7	117	30	21	659
Overalls, pantaloons, &c	J. L. Joyce	256,003	Apr. 4	315	99	21	1008
Overshoe-fastening	J. E. Richard	258,799	Jan. 24	1347	{376 377 378	21	947
Overstitching-machine	W. Pearce	255,014	Mar. 14	713	192	21	768
Ox-shoe	A. Sanford	258,221	May 23	1458	413	21	1565
Ox-shoe	J. Deeble	258,998	June 6	154	42, 43	21	1731
Ox-shoes. Manufacture of	J. Tunbridge	258,817	Jan. 24	1377	364	21	251
Oxidising lead bullion containing precious metals. Apparatus for and process of	W. Pickhardt and H. Endemann	257,899	May 9	843	.....	21	1438
Oxychinoline. Hydrochlorate of	W. Pickhardt and H. Endemann	257,898	May 9	843	.....	21	1438
Oxychinoline. Tartrate of	W. Pickhardt and H. Endemann	254,424	Feb. 28	1466	410	21	606
Ozone. Apparatus for the continuous production of	T. J. Yost	254,930	Mar. 14	667	163	21	750
Ozone-generator	J. M. Davidson	252,931	Jan. 31	1580	{493 494	21	223
Package carrier or elevator. Endless	O. N. Eaton	258,660	May 30	1872	526	21	1646
Package-covering	J. W. Marsh	255,017	Mar. 14	716	193	21	769
Package for oysters, &c	C. L. Pond	258,565	May 30	1746	495	21	1623
Packer. Oil-well	S. E. Dresser	258,547	Jan. 17	1055	283	21	191
Packing and lining fabrics. Machinery for manufacturing	R. H. Thompson						
Packing-band	J. Z. Gifford	254,635	Mar. 7	339	89	21	677
Packing-box	M. B. Church	259,402	June 13	772	204	21	1857
Packing-box	A. P. Nash	254,670	Mar. 7	362	75	21	666
Packing-box. Folding	N. F. Tipton	252,544	Jan. 17	1050	282	21	190
Packing-box for fruit-jars, &c	F. C. Rockwell	255,458	Mar. 28	1326	346	21	879
Packing-box. Knockdown	J. W. M. Shattuck	254,166	Feb. 28	1204	326	21	575
Packing can and box	R. S. Jennings. (Reissue)	10,100	May 9	371	104	21	1347
Packing-case	R. S. Jennings. (Reissue)	10,198	May 30	2110	586	21	1687
Packing-case	L. Stewart	252,875	Jan. 10	783	223	21	130
Packing. Deep-well	B. Holland, Jr	255,739	Mar. 28	1694	438	21	939
Packing for pump-pistons, &c	J. G. Hill and J. L. Lee	256,065	May 16	1128	317	21	1496
Packing for underground steam-mains	J. A. Heydrick	254,649	Mar. 7	351	64	21	689
Packing. Oil-well	H. Woodring and N. C. Coats	259,449	June 13	715	190	21	1836
Packing. Piston and valve rod	H. W. Johns	257,187	May 2	27	9	21	1288
Packing. Steam	C. M. Van Tine	254,736	Mar. 7	347	92	21	697
Packing. Steam	A. N. Matthews	252,957	Jan. 31	1538	438	21	988
Packing valve-stems for steam and other engines							
Pad: *See* Blotting-pad. Collar-pad. Galvanic pad. Harness-pad. Horse-hoof pad. Saddle-pad. Shoar-pad.							
Pad-press	E. S. Kirst	254,336	Feb. 28	1399	365	21	609
Paddle-wheel. Feathering	G. F. Freedman	253,277	Feb. 7	111	34	21	365
Padlock	E. L. Perkins	256,150	Apr. 11	519	141	21	1043
Padlock	W. W. Shallus	257,026	Apr. 25	1630	437	21	1256
Padlock	G. D. Spielman	256,399	Apr. 11	616	294	21	1095
Padlock	G. E. Kirk	256,902	Apr. 25	1422	400	21	1221
Padlock-cover	J. E. Dean	254,364	Feb. 28	1339	360	21	597
Padlock. Permutation	C. P. Grout	255,104	Mar. 21	913	244	21	810
Padlock. Permutation	F. J. Power	251,795	Jan. 3	134	38	21	25
Pail. Dinner	D. S. Willard and H. D. Dunbar	254,153	Feb. 28	1292	340	21	578
Pail. Milk	A. C. Tracy	255,709	Mar. 28	1563	425	21	933
Pail. Milking	E. Bennett	256,978	June 6	128	.....	21	1716
Paint	F. E. Grout	253,228	Feb. 7	114	34	21	366
Paint and other cans and tubes	J. Irving	255,789	Apr. 4	45	12	21	938
Paint-burner	W. E. Norris	257,510	May 9	454	.....	21	1360
Paint composition	W. J. McDonald	256,663	May 30	1875	.....	21	1646
Paint compound							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Paint. Distemper	W. S. and L. F. Welch	252,558	Jan. 17	1068	.....	21	191
Paint-distributer	A. Peeler	256,868	Apr. 25	1359	384	21	1211
Paint for roofing, &c	G. J. Cline	253,978	Feb. 21	980	.....	21	589
Paint for roofs	J. B. Barnard	252,171	Jan. 10	601	.....	21	109
Paint-pail	J. Thomas	255,696	Mar. 28	1573	453	21	931
Paint. Roofing	A. McDonnell	257,881	May 16	912	.....	21	1460
Paint. Water and fire proof roof	W. Sleeper	255,041	Mar. 14	750	.....	21	776
Paints and oils. Composition for drying	A. W. Pratt. (Reissue)	10,039	Feb. 21	1196	.....	21	555
Painter's jack. Carriage	E. Cook	258,558	May 30	1736	492	21	1662
Painters' use. Compound tool for	J. Thomas	250,945	June 6	454	120	21	1772
Palette and reservoir for stencilling-ink	L. R. Rockwood	257,386	May 2	986	82	21	1332
Pan: *See* Bed-pan. Cake-pan. Dust-pan. Evaporating-pad. Patty-pan. Refrigerator drip-pan.							
Pan-cleaning machine	W. S. Ovens	255,113	Mar. 21	845	226	21	796
Panels with artistic designs. Producing metallic	H. R. Cassel	256,286	Apr. 11	685	.....	21	1072
Pantaloons	W. Hyams	255,631	Mar. 28	1496	401	21	917
Pantaloon-protector	J. L. Thomson	256,154	May 16	1240	349	21	1518
Pantaloon-protector	J. L. Thomson	258,155	May 16	1240	349	21	1518
Pantaloons-protector	J. T. Langan	257,036	Apr. 25	1563	438	21	1946
Pantaloons-protector	C. J. McDermott	257,036	Apr. 25	1574	441	21	1948
Pantry, dresser, and sideboard. Combined portable	L. O. Hudson	252,318	Jan. 17	779	217	21	145
Paper and other bags	J. H. Holmes	258,925	June 6	68	18	21	1706
Paper and other boxes	C. Beiser	254,592	Mar. 7	179	44	21	668
Paper and pasteboard. Method of and apparatus for manufacturing	N. Kaiser. (Reissue)	10,074	Apr. 4	447	121	21	1025
Paper. Apparatus for reducing wood, &c., to pulp for	S. M. Allen	253,654	Feb. 14	562	159	21	452
Paper bag	H. R. Oliver	250,198	June 6	395	104	21	1763
Paper-bag holder	T. J. Graham	256,138	Apr. 11	489	133	21	1039
Paper-bag machine	C. A. Chandler	251,997	Jan. 3	381	{102 103	21	66
Paper-bag machine	C. A. Chandler	256,123	Apr. 11	469	{127 128	21	1035
Paper-bag machine	W. C. Cross	254,928	Mar. 14	604	{162 163	21	749
Paper-bag machine	J. McCullough	255,316	Mar. 21	1110	299	21	844
Paper-bag machine	C. B. Stilwell	255,204	Mar. 21	960	{256 257 258	21	817
Paper-bag machines. Folding mechanism for	D. Appel	252,412	Jan. 17	896	{246 249	21	164
Paper bags. Machine for making	E. Stanley	253,441	Feb. 7	383	96	21	397
Paper bags. Making	C. Van Hoesen	256,177	Apr. 11	531	147	21	1046
Paper bags. Manufacture of	M. L. Deering. (Reissue)	10,063	Apr. 11	660	949	21	1108
Paper bags. Manufacture of satchel-bottomed	E. B. Stocking	259,290	June 6	489	128	21	1779
Paper bags. Manufacturing	D. Appel	258,579	May 23	1403	397	21	1556
Paper blankets. Manufacture of	M. B. Church	259,489	June 13	770	.....	21	1837
Paper-board for dressing wounds	P. Koch	257,793	May 9	732	.....	21	1417
Paper box	C. P. Woolhiser	255,374	Mar. 21	1177	316	21	855
Paper-box covering and trimming machine	H. Inman	253,711	Feb. 14	635	{180 181	21	464
Paper-box machine	W. J. Keefe	254,826	Mar. 14	463	{125 126	21	734
Paper-box machine	C. Pruner	255,018	Mar. 14	717	{193 194	21	769
Paper-box machine	A. Stearns	258,819	May 30	2052	579	21	1677
Paper cap	F. R. Buck	251,995	Jan. 3	380	102	21	65
Paper, card-board, &c. Manufacture of boxes from	E. B. and H. S. Munson	259,416	June 13	674	179	21	1819
Paper collars. Machine for folding and pasting the ends of	E. Cary	258,711	May 30	1937	547	21	1656
Paper-cutter	H. Johnson	257,949	May 16	995	277	21	1474
Paper-cutting machine	R. Binns	253,987	Feb. 21	965	{938 939	21	587
Paper-cutting machine	H. P. Feister	257,699	May 9	677	188	21	1408
Paper-cutting machine	A. Malm	258,882	May 30	2099	592	21	1645
Paper-cutting machines. Feeding mechanism for	J. Walker, Jr.	259,735	June 20	1043	291	21	1899
Paper-feeding machine	J. C. Kneeland	252,477	Jan. 17	977	273	21	177
Paper-folding machine	J. H. Stonecmets	258,778	June 20	1146	304	21	1907
Paper for making gelatine-bromide of silver prints. Preparation of photographic	J. J. D. Hutinet and P. E. Lamy	253,887	Feb. 14	784	.....	21	491
Paper-hanging machine	R. H. Miner	254,494	Mar. 7	60	15	21	648
Paper-hanging or wall-paper	E. Leissner	255,437	Mar. 28	1262	340	21	875
Paper-hanging. Water-proof	C. T. Kemmer	256,765	Apr. 18	1196	.....	21	1173
Paper-knife	B. Brower	260,157	June 27	1621	438	21	1902
Paper-machine dandy-roll	D. McKay	258,050	Jan. 10	457	125	21	86
Paper, &c. Machine for cleaning	F. J. Emmerich	253,998	Feb. 21	991	276	21	531
Paper-machine. Fourdrinier	F. Curtis	260,172	June 27	1635	442	21	1904
Paper made from the fiber of the cotton-plant	F. Wheaton	254,747	Mar. 7	261	.....	21	699
Paper-making machine	B. A. Hickox	259,391	June 13	644	170	21	1814
Paper-making machines. Roll suction-box for	J. Randall	256,047	Apr. 4	357	97	21	1010
Paper-making. Treating wood in order to obtain fiber suitable for	C. D. Ekman. (Reissue)	10,131	June 6	498	.....	21	1780
Paper-making, &c. Treating wood in order to obtain fiber suitable for	C. D. Ekman	253,357	Feb. 7	305	.....	21	381
Paper. Manufacture of	C. M. Burnett	258,710	May 30	1937	547	21	1656
Paper. Manufacture of	D. R. Burns	253,814	Feb. 14	768	210	21	488
Paper-manufacture. Seam for wire-cloth for	M. A. Martin	259,837	June 6	83	21	21	1709
Paper matrix for stereotyping	B. B. Huntoon	258,877	Jan. 31	1454	.....	21	878
Paper. Mode of and machine for waxing	J. T. Bedford	254,193	Feb. 28	1134	317	21	563
Paper pails. Manufacture of	A. J. Grinnell	254,127	Feb. 28	1100	304	21	566
Paper. Photographic	G. Eastman	253,354	Feb. 7	201	58	21	389
Paper plaques. Manufacture of	G. P. Helfrich	255,108	Mar. 21	917	245	21	810

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Paper, &c. Process of and machine for reducing fibers in the manufacture of	D. R. Burns	259,974	June 20	1391	374	21	1949
Paper-pulp-digester sliding valve	T. Atcheson	259,658	June 20	985	263	21	1881
Paper-pulp engine	J. R. Abbe	254,251	Feb. 28	1286	361	21	591
Paper-pulp engine	M. R. Fletcher	256,399	May 23	1545	439	21	1599
Paper-pulp engine	W. E. Taylor	253,447	Feb. 7	314	87	21	399
Paper-pulp engine	G. L. Jaeger	254,387	Feb. 28	1265	368	21	605
Paper-pulp from straw, stalks, and other fibrous material. Making	S. M. Allen	253,655	Feb. 14	564	160	21	452
Paper-pulp. Manufacture of	S. M. Allen	253,656	Feb. 14	565	.....	21	453
Paper-pulp, &c. Manufacture of	S. M. Allen	258,654	May 30	1921	565	21	1644
Paper-pulp pails. Form for making	D. C. Jones	258,854	May 23	1398	374	21	1541
Paper-pulp, &c. Washer for	C. Anderson and T. Patten	256,209	May 23	1419	383	21	1961
Paper-pulp. Wood-grinder for making	S. M. Allen	259,992	June 27	539	147	21	99
Paper scoring and cutting machine	J. C. Marshall	252,114	Jan. 10	1364	368	21	606
Paper-stock, &c. Machine for crushing and compacting	G. L. Jaeger	254,388	Feb. 28	1364	368	21	605
Paper-stock and other vegetable fibers for transportation. Compacting	G. L. Jaeger	254,386	Feb. 28	1364	368	21	605
Paper stock, &c. Treating fibrous materials for	J. O. Klimach	256,436	Apr. 11	865	.....	21	1104
Paper. Tension device for unwinding rolls of	E. Anthony	259,789	June 20	1158	308	21	1909
Paper. Treating tan-bark, &c., to render the same suitable for use in manufacturing	W. Guest and C. Court	254,958	Mar. 14	641	{174 175 318 319	21	726 1499
Paper vessels. Apparatus for making	H. A. Johnson	256,971	May 16	1126	299	21	1501
Paper. Water-proof	W. B. Carpenter	253,840	Feb. 21	985	.....	21	1104
Paper. Waterproofing	J. H. Bidgway	257,761	May 9	773	215	21	1404
Paper-waxing machine	G. W. Bancroft	255,129	Mar. 21	888	231	21	801
Parasol	H. Maul and F. Landenberger	256,589	Apr. 18	1057	282	21	1146
Parasol or umbrella	J. T. Smith	256,754	Apr. 18	1244	349	21	1169
Parer. Apple	J. W. Hudson	252,670	Jan. 24	1152	323	21	321
Parer. Apple	R. P. Scott	254,059	Apr. 4	373	102	21	1013
Parer. Apple	C. R. Heinsman	256,214	Apr. 11	566	163	21	1056
Parer, corer, and slicer. Apple	C. Holton	256,690	Apr. 18	1296	365	21	1192
Parer, corer, and slicer. Apple	J. F. Rakes	260,226	June 27	1720	466	21	1907
Parer, corer, slicer, and quarterer. Apple	C. R. Heinsman	255,256	Apr. 4	122	33	21	971
Parer, corer, slicer, and quarterer. Apple	D. H. Whittemore	251,989	Jan. 3	376	96	21	61
Parer. Fruit and vegetable	M. A. and W. Tripp	259,342	June 13	589	154	21	1809
Paring machine. Fruit	D. H. Weeks	256,776	Apr. 18	1265	357	21	1189
Pasteboard, &c. Machine for cutting and scoring	D. H. Weeks	255,632	Mar. 28	1496	402	21	917
Pattern-lifter	G. L. Jaeger	258,382	Jan. 17	852	236	21	158
Patty-pan	W. J. Innis and P. H. Kane	255,045	Mar. 14	764	205	21	777
Patty-pan	J. Smith	255,706	Mar. 28	1567	457	21	934
Patty-pan	A. Vuillier	256,511	May 23	1677	474	21	1693
Pavement	A. Vuillier	257,613	May 2	985	266	21	1299
Pavement	W. D. Richardson	255,687	Mar. 28	1565	421	21	930
Pavement. Cobble-stone and grout	C. A. Snyder	256,460	May 23	1660	456	21	1593
Pavement. Concrete	J. Murphy	256,393	Apr. 11	799	218	21	1092
Pavement-plate or vault-cover	J. J. Schillinger	257,715	May 9	726	208	21	1416
Pavements. Manufacture and laying of composite	T. Hyatt	259,650	June 6	237	.....	21	1734
Pavements or floors. Slab or block for	P. Stuart	254,980	Feb. 28	1262	386	21	595
Paving and building material	C. Brown	254,386	Feb. 28	1497	.....	21	613
Pea-shelling machine	A. Pelletier	258,616	Jan. 24	1139	317	21	210
Peanut picker and cleaner	F. Maifai	258,136	Jan. 10	537	156	21	103
Pearls on finger-rings, &c. Setting	E. H. Powell	253,667	Feb. 14	579	164	21	455
Pedicycle	J. Bergfels	256,765	Apr. 18	1254	353	21	1184
Peg-cutter. Rotary	E. Thompson	258,337	Jan. 17	799	223	21	149
Peg-cutting machine	H. C. and J. N. Tower	253,944	Feb. 7	74	23	21	359
Pegging-machine	N. S. Wakefield	255,064	Mar. 14	788	210	21	781
Pelts. Machine for cutting up	D. Whittemore and A. Eppler, Jr	257,314	May 2	980	56	21	1317
Pen. Fountain	T. Gibson and E. Armstrong	251,993	Jan. 3	10	3	21	4
Pen. Fountain	H. Burckas, I	256,208	Apr. 11	867	161	21	1055
Pen. Fountain	P. P. Flournoy	253,283	Feb. 7	117	35	21	346
Pen. Fountain	G. F. Hawkes	257,756	May 9	768	213	21	1402
Pen. Fountain	F. X. Pomeranski	254,174	Feb. 28	1211	330	21	570
Pen-holder	W. W. Stewart	255,961	Apr. 4	962	68	21	983
Pen-holder	E. Faber	255,779	Mar. 21	1046	280	21	833
Pen-holder	B. A. Fiske	256,254	May 23	1309	309	21	1538
Pen-holder	L. Schevenell	255,227	Mar. 21	893	238	21	823
Pen-holder	J. W. Wetmore	253,953	Feb. 21	947	263	21	994
Pen-holder. Fountain	W. W. Stewart	255,205	Mar. 21	987	256	21	879
Pen-holder. Fountain	M. C. Stone	260,134	June 27	1585	430	21	1909
Pen-holder. Fountain	M. C. Stone	258,634	Jan. 10	438	120	21	63
Pen-holder. Reservoir	T. A. Hampson	254,175	Feb. 28	1212	330	21	577
Pen-holder. Reservoir	W. W. Stewart	254,958	Apr. 25	1494	419	21	1233
Pen. Writing	E. D. Blackwell	256,899	May 23	1434	407	21	1561
Pens. Writing-point for stylegraphic	J. Holland	256,898	May 23	1433	406	21	1561
Pencil-case	J. Holland	254,699	Apr. 18	1099	300	21	1156
Pencil-point protector and twine-cutter. Combined	C. W. Beman	254,738	Apr. 18	1286	343	21	1179
Pencil-point protector, twine-cutter, and whistle. Combined	J. Reckzeederfer and C. W. Boman	254,986	Mar. 14	620	168	21	703
Pencil-sharpener	F. F. Kullrich	255,909	Apr. 4	192	50	21	988
Pendulum. Compensating	J. Asher	257,177	May 2	37	12	21	1287
Pendulum. Compensating	F. A. Mills and T. A. Mossop	256,564	Apr. 18	961	260	21	1133
Percolator	N. Rosenwasser	253,289	Feb. 7	300	89	21	381
Percolator and still. Combined	B. Fraser	258,559	Jan. 17	1000	264	21	192
Perforating checks and drafts. Machine for	S. Ullman	259,910	June 20	1292	346	21	1932
Perforating device	E. T. Pettit	254,450	Mar. 7	4	1	21	639
Permutation-lock	F. S. Baldwin	259,376	June 13	694	186	21	1810
Permutation-lock	B. F. Flint	251,676	Jan. 3	320	86	21	43
Permutation-lock	G. M. Hathaway	251,677	Jan. 3	320	86	21	43
Permutation lock	G. M. Hathaway	255,067	Mar. 14	769	197	21	771
Permutation-lock	W. Rowe	255,462	Mar. 28	1393	348	21	889
Permutation-lock. Removable	C. Seybold	259,398	Jan. 17	798	223	21	148
Permutation-lock. Removable	M. W. Thurman	257,696	May 9	611	171	21	1394
Perspective delineator	R. W. Thurman	254,178	Feb. 28	1217	330	21	577
	G. M. P. Van Lith						

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Petroleum. Apparatus for rectifying	L. Daul	256,284	May 23	1416	600	21	1559
Photo-engraving metallic plates	A. Michaud	254,908	Mar. 14	693	167	21	765
Photograph-coloring	H. Austin and L. J. Kimball	257,811	May 9	627	.....	21	1435
Photographers. Background-frame for	G. H. Richards	253,101	Jan. 31	1740	461	21	318
Photographer's chair	J. A. Anderson	253,829	Feb. 21	790	225	21	489
Photographic apparatus	S. R. Stoddard	257,408	May 2	318	90	21	1338
Photographic background or accessory	W. H. Morhiser	256,573	June 13	870	230	21	1854
Photographic camera	T. H. Blair	257,206	May 2	68	26	21	1293
Photographic camera	A. Huffnagle	257,946	May 16	891	277	21	1473
Photographic camera	J. C. Merrell	254,997	Mar. 14	693	167	21	765
Photographic camera	H. C. Price	260,235	June 27	1719	465	21	2007
Photographic camera	W. H. Walker	259,064	June 6	243	64, 65	21	1735
Photographic-camera shutter	M. Flammang	256,199	May 16	1200	366	21	1599
Photographic cameras. Focusing attachment for	E. B. Barker	258,350	May 23	1468	424	21	1571
Photographic cameras. Plate-holder for	W. H. Walker	254,109	Feb. 28	1218	340	21	578
Photographic copies or fac-similes of drawings, &c. Making	S. Chadwick	259,094	June 6	277	74	21	1742
Photographic lantern	J. Carbutt	256,974	Apr. 25	1508	{493 / 494}	21	1236
Photographic negatives. Producing	A. Peck	252,964	Jan. 31	1560	.....	21	390
Photographic-plate holder	E. B. Barker	255,506	Mar. 28	1414	361	21	992
Photographic-printing frames. Vignetting attachment for	J. F. Singhi	256,509	Apr. 18	965	270	21	1134
Photographic purposes. Head and back rest for	W. S. Laighton	258,443	May 23	1601	453	21	1590
Photographic silver-bath heater	B. F. Powelson	256,592	Apr. 18	1052	297	21	1148
Photographs. Apparatus for vignetting	C. Seaver, Jr	254,845	Mar. 14	491	131	21	723
Photographs. Exhibiting	J. Dewe	254,806	Mar. 14	440	118	21	720
Photographs on porcelain. Producing indelible	A. Tournoux and F. Schmalz	260,065	June 27	1506	.....	21	1974
Photographs. Producing colored	J. B. Germeuil-Bonnaud	253,669	Feb. 14	581	.....	21	455
Piano-action	G. Philipp	253,491	Feb. 7	277	79	21	393
Piano action-frame. Upright	P. Gmehlin	252,370	Jan. 17	841	234	21	156
Piano-case	J. and J. P. Becker	252,717	Jan. 24	1239	348	21	239
Piano-forte	E. McCammon	258,455	May 23	1615	456	21	1592
Piano-forte players. Legato-monitor for	S. A. Emery	253,857	Feb. 21	826	234	21	505
Piano-forte tuning attachment	J. H. Lowen	258,935	June 6	62	21	21	1708
Piano-fortes. Sounding-board for upright	F. Pitt	256,670	May 30	1085	539	21	1648
Piano sounding-board attachment	J. G. Seebold	253,146	Jan. 10	573	161	21	165
Piano-tuning-pin lock	J. S. Thorpe	259,604	June 13	807	241	21	1880
Pianos. Repetition-action for	J. Hardman	256,751	May 30	1092	559	21	1664
Pianos. Wrest-block bridge for	P. Gmehlin	254,300	Feb. 28	1254	347	21	583
Pick	W. L. Blythe	256,276	May 23	1406	398	21	1556
Pick	E. R. Ray	255,533	Mar. 28	1377	378	21	895
Pick for mill and other stones	L. Lafayette	256,905	Apr. 25	1495	401	21	1231
Picker: *See* Fruit-picker. Peanut-picker.							
Pictorial story-blocks	W. Stranders	257,102	Apr. 25	1650	{461 / 462}	21	1261
Picture and card supporter	C. Beck	257,542	May 9	469	136	21	1374
Picture. Changeable	J. W. Stockton	258,261	May 23	1390	393	21	1563
Picture-exhibitor	A. Lueckel	253,730	Feb. 14	660	188	21	468
Picture-exhibitor	E. McLoughlin	259,771	June 20	1139	302	21	1906
Picture-frame	J. H. Downes and L. Turk	259,751	June 20	1113	297	21	1902
Picture-frame	S. W. Poulton	252,898	Jan. 31	1481	414	21	976
Picture-frame	A. Wolf. (Reissue)	10,097	Apr. 25	1716	481	21	1273
Picture-frame	W. H. Zinn and E. Edwards	254,761	Mar. 7	381	100	21	703
Picture-hanging device	A. Campbell	256,460	Apr. 18	905	253	21	1124
Picture-hook	F. P. Baker	257,457	May 9	389	109	21	1356
Pictures. Coloring and finishing	C. H. Myers	257,051	Apr. 25	1588	.....	21	1250
Pictures. Method of and device for exhibiting	F. E. Mills	256,353	Apr. 11	764	210	21	1086
Pigeon-hole for desks, &c. Adjustable	F. H. Cutler	256,884	Apr. 25	1338	375	21	1205
Pile-driver	A. L. Gilbert	254,955	Mar. 14	638	{172 / 173}	21	756
Pile-driver	S. H. Tarbell and G. Souther	258,854	June 6	104	27	21	1719
Pile for use in construction of wharves, &c	R. M. Franklin	260,015	June 27	1444	390	21	1985
Piles. Heating	J. Haldeman	253,589	Feb. 14	497	.....	21	442
Piles. Machine for sawing off and tenoning	A. L. Gilbert	254,954	Mar. 14	637	172	21	755
Pill-boxes. Process of and die for making	P. Cauhapé	259,365	June 13	612	168	21	1807
Pill packing-box	P. Cauhapé	259,364	June 13	611	168	21	1807
Pills, lozenges, &c. Machine for making	J. T. and C. T. Jones	256,573	Apr. 18	1089	291	21	1145
Pills, &c. Machine for manufacturing	J. A. Whitney	256,490	Apr. 11	838	{232 / 233}	21	1009
Pills. Process of and apparatus for making	J. A. Whitney	256,419	Apr. 11	834	{231 / 232}	21	1009
Pillow-block	G. K. Orrell	258,312	May 23	1447	410	21	1563
Pillow-sham frame	J. A. Knight	258,436	May 23	1592	452	21	1569
Pillow-sham holder	J. J. Kelsey	252,952	Jan. 31	1546	431	21	987
Pillow-sham holder	A. H. Phelps	259,911	June 20	1293	346	21	1932
Pillow-sham holder	J. A. Wanless	253,136	Jan. 31	1781	494	21	385
Pin: *See* Bearing-pin. Curtain-hook pin. Clothes-pin. Hair-pin. Coupling-pin. Safety-pin.							
Pin	D. Lubin	257,351	May 2	251	71	21	1306
Pin-jewel holder	F. Gundorph	259,660	Jan. 24	1180	331	21	219
Pin-package	W. C. Howard	259,018	June 6	185	49	21	1726
Pins. Safety-catch for	G. W. Washburn	252,159	Jan. 10	567	165	21	107
Pinchers. Hand	M. V. B. Ethridge	259,674	June 20	1001	267	21	1884
Pinchers. Hog-ring	E. Major	256,713	Apr. 18	1206	337	21	1175
Pipe: *See* Conductor-pipe. Multiflue-pipe. Drain-pipe. Sheet-metal pipe. Drive-pipe. Smoking-pipe. Drop-light pipe. Stove-pipe. Hose-pipe. Tobacco-pipe.							
Pipe-bending machine	J. M. Evarts	256,690	Apr. 25	1404	396	21	1218

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Pipe-coupling	L. De Nacyer	253,986	Feb. 21	826	275	21	530
Pipe-coupling	J. C. Githens	256,657	Jan. 24	1177	320	21	218
Pipe-coupling	T. J. Goldschmid	255,163	Mar. 21	913	244	21	810
Pipe-coupling	S. Lightburne, Jr	255,363	Mar. 28	1367	366	21	982
Pipe-coupling	E. Nunan	254,151	Feb. 28	1189	338	21	573
Pipe-coupling	L. T. Scofield	257,985	May 16	1651	397	21	1421
Pipe-coupling	J. C. Telfer	254,850	Mar. 14	636	153	21	720
Pipe-coupling	C. Fenton	252,749	Jan. 24	1273	360	21	235
Pipe-cutter	A. Saunders. (Reissue)	10,081	Jan. 31	1548	390	21	335
Pipe-cutter	F. Armstrong	256,973	June 6	1265	33, 34	21	1716
Pipe-cutting machine	W. L. Ogden	253,683	Jan. 24	1218	341	21	888
Pipe die. Drain	W. B. Tuttle	253,630	Jan. 24	1146	322	21	814
Pipe-gripe	J. K. Dimmick	258,031	Jan. 3	397	105	21	67
Pipe-joint	W. Furman	255,497	Mar. 28	1250	336	21	672
Pipe-joint	C. Japtok	258,764	June 20	1130	280	21	1894
Pipe-joints. Drain and other	L. Richardson and F. J. Nettleton	258,132	May 16	1266	330	21	1512
Pipe-mold	F. Shickle	255,891	Apr. 4	165	44	21	978
Pipe molding and casting apparatus	C. G. Mayer	256,340	Apr. 11	761	209	21	1066
Pipe-section for tanks. Removable	J. Naughton	256,633	Apr. 4	343	93	21	1090
Pipe-stem and cigar-holder. Combined	M. T. Chapman	254,460	Mar. 7	18	5	21	641
Pipe-wrench	A. Campbell	253,181	Feb. 7	11	4	21	349
Pipes and wires. Protecting and inground	C. W. Durham	256,391	May 23	1537	426	21	1579
Pipes. Elbow-fitting for drainage	L. S. Flatten	258,448	Jan. 17	948	260	21	172
Pistol and carbine holder	D. Meore	253,221	Feb. 7	38	16	21	355
Pistol-handle	J. Dykeman and J. G. Corbin	255,289	Mar. 21	1653	277	21	831
Piston	J. C. Hale	254,960	Mar. 14	643	175	21	757
Piston	F. McFadden	260,308	June 27	1869	490	21	2028
Piston	J. Preston	258,569	May 30	1791	503	21	1631
Piston	A. P. Emery	256,554	Apr. 18	1013	283	21	1143
Piston for water-meters, &c	H. D. Garrett	254,951	Mar. 14	633	{170 / 171 / 172}	21	755
Piston-head	H. D. Garrett	256,319	Apr. 11	781	{184 / 185}	21	1078
Pitchfork	F. L. Brandon	256,638	Apr. 18	1101	310	21	1156
Pitcher	L. C. Hiller	253,783	Feb. 14	662	178	21	469
Pitcher or jug. Glass or earthenware	W. Zimmer	258,696	May 23	1696	469	21	1607
Pitcher top. Sirup	C. H. Tallman and B. F. Day	255,696	Mar. 28	1570	422	21	950
Pitcher. Water	T. L. L. Ballous	259,698	June 6	970	71	21	1741
Pitman. Adjustable	W. E. Hawkins	257,004	Apr. 25	1539	428	21	1241
Pivot-gage	T. S. Miller	256,025	Apr. 4	338	90	21	1066
Plaiting-machine	S. I. Echols	256,308	Apr. 11	706	193	21	1076
Plaiting-machine	J. I. D. and L. Y. Woodruff	259,986	Jan. 10	737	205	21	139
Plane. Bench	W. S. Case	256,988	June 6	144	39	21	1730
Plane. Bench	S. R. Rust	257,981	May 16	1630	396	21	1469
Plane. Bench	F. A. Humphrey	257,870	May 16	998	250	21	1407
Plane. Cavity	L. D. Bussell	256,628	May 30	1829	516	21	1638
Plane. Edge	F. V. Yeager	258,971	June 6	125	33	21	1716
Plane. Reed	A. Fales	254,542	Mar. 7	114	28	21	639
Plane. Variable bench	C. T. Lamman	260,211	June 27	1890	457	21	2003
Planer. Metal	B. F. Radford	255,115	Mar. 21	847	236	21	799
Planer. Metal	W. H. Stinson	256,864	Apr. 25	1376	367	21	1214
Planing-gage. Adjustable	W. S. Holland	255,787	Apr. 4	49	19	21	958
Planing-machine for planing thin pieces of wood	J. Richards	258,199	May 16	1209	{337 / 338 / 365}	21	1511
Planing machine. Metal	B. D. Whitney	259,958	June 20	1353	366	21	1943
Planing-machines. Bed and presser for	S. W. Byers and H. W. Knight	256,554	May 30	1735	491	21	1621
Planter	H. P. Hall	254,198	Feb. 21	1161	304	21	508
Planter and check-rower. Corn	B. F. Barnes	254,188	Feb. 28	1226	342	21	579
Planter and fertilizer-distributer. Combined	J. Franta	254,207	Feb. 28	1251	347	21	583
Planter and fertilizer-distributer. Combined corn	O. Stoddard	256,069	Apr. 4	383	105	21,	1015
Planter and fertilizer-distributer. Combined hand seed	W. Cassill	258,736	Jan. 24	1259	354	21	238
Planter and fertilizer-distributer. Corn	B. S. Evans	259,299	June 13	528	139	21	1792
Planter and fertilizer-distributer. Cotton-seed	N. R. Wilson	259,693	June 13	931	248	21	1864
Planter and fertilizer-distributer. Seed	B. P. Morgan	256,087	Apr. 4	336	90	21	1007
Planter and guano-distributer combined. Cotton	C. A. Anderson	257,499	May 2	344	96	21	1349
Planter and marker. Corn	O. L. Hall	254,961	Mar. 14	644	175	21	757
Planter. Check-row	L. J. Bosworth	254,287	Feb. 28	1281	365	21	594
Planter. Check-row corn	A. A. McIntosh	257,037	Apr. 25	1574	441	21	1248
Planter. Check-row corn	J. Mecava	259,193	June 6	366	103	21	1782
Planter. Check-row corn	E. W. Quincy	251,944	Jan. 3	313	85	21	54
Planter. Check-row corn	J. Stuart	255,207	Mar. 21	989	259	21	819
Planter check-rower. Corn	R. W. Alexander	256,610	Apr. 18	1074	{302 / 303}	21	1151
Planter check-rower. Corn	G. W. Brown	258,216	May 23	1334	378	21	1543
Planter check-rower. Corn	G. W. Brown	258,217	May 23	1337	378	21	1544
Planter check-rower. Corn	W. R. Campbell and W. J. Chambers.	251,830	Jan. 3	188	51	21	33
Planter check-rower. Corn	C. E. Sweney	254,515	Mar. 7	81	21	21	650
Planter. Corn	G. W. Brown	253,589	Feb. 14	478	{125 / 126}	21	436
Planter. Corn	C. U. Crandall	258,194	Jan. 10	690	{175 / 176}	21	113
Planter. Corn	A. C. Evans	257,156	May 2	14	5	21	1283
Planter. Corn	A. C. Evans	258,037	May 16	1008	305	21	1493
Planter. Corn	J. Feldmier	255,982	Apr. 4	264	66	21	983
Planter. Corn	T. A. Galt and G. S. Tracy	259,679	June 20	1006	268	21	1885
Planter. Corn	M. Harris	255,782	Apr. 4	35	10	21	956
Planter. Corn	W. A. Haselrigg	251,879	Jan. 3	242	67	21	43
Planter. Corn	W. L. Hutson	255,630	Mar. 28	1495	401	21	917
Planter. Corn	W. H. Kunsmaul and F. Heiger	256,467	Apr. 18	943	263	21	1110
Planter. Corn	J. Lehges	257,876	May 16	905	258	21	1459
Planter. Corn	A. Ramstetler	254,054	Feb. 21	1075	299	21	545

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Planter. Corn	L. Scofield	252,265	Jan. 10	710	200	21	126
Planter. Corn	L. Scofield	252,596	Jan. 17	1031	267 / 268	21	127
Planter. Corn	L. Scofield	252,808	Jan. 24	1361	351	21	250
Planter. Corn	L. Scofield	253,110	Jan. 31	1749	485	21	319
Planter. Corn	W. H. Swartout	254,512	Apr. 18	966	271	21	1135
Planter. Corn	J. Turner	251,975	Jan. 3	350	94	21	60
Planter. Corn	C. W. Vogel and H. Beltzell	254,444	Feb. 28	1580	416	21	689
Planter. Cotton	A. W. Byers and J. C. Dorser	252,738	Jan. 24	1354	353	21	238
Planter. Cotton	H. C. Tillery	252,543	Jan. 17	1049	282	21	190
Planter. Cotton and corn	J. M. Turley	252,618	Jan. 24	1378	365	21	251
Planter. Cotton-seed	R. M. and J. M. Brooks	255,566	Mar. 28	1445	369	21	909
Planter, coverer, and fertilizer-distributer. Seed	L. S. Hefner	255,286	Mar. 21	1066	267	21	636
Planter, cultivator, and double-shovel, single-shovel, and turning plow. Combined cotton	C. J. Le Roy and J. W. Henson	200,302	June 27	1801	468 / 469	21	2080
Planter. Hand corn	T. Horton	257,880	May 9	834	233	21	1436
Planter. Hand corn	T. Horton	257,881	May 9	835	238	21	1436
Planter. Seed	J. W. Bunch	254,607	Mar. 7	194	49	21	671
Planter. Seed	R. Hoffheins	254,818	Mar. 14	453	123	21	722
Planter. Seed	E. P. Morris	256,794	Apr. 18	1215	340	21	1177
Planter. Seed	A. W. Pagett	254,153	Feb. 28	1190	332 / 333 / 530 / 533	21	573
Planter. Seed	L. E. Porter	258,671	May 30	1898	530 / 533	21	1648
Planter. Seed	J. W. Robertson	252,808	Jan. 24	1354	378	21	948
Planter. Seed	E. Spiller	257,899	May 16	935	260 / 261	21	1463
Planters. Check-line guide for corn	G. D. Haworth	253,538	Feb. 14	425	119	21	431
Planters. Check-row attachment for corn	C. E. Sweney	254,514	Mar. 7	70	21	21	651
Planters. Check-row attachment for corn	F. B. Tait	255,472	Mar. 28	1305	351	21	883
Planters. Device for connecting check-rowers to	J. E. Bering	250,796	June 20	1166	311	21	1911
Planters. Device for connecting check-rowers to	W. B. Rush	250,652	June 13	968	258 / 259	21	1871
Planters. Furrow attachment for seed	I. P. Watson	255,069	Mar. 14	784	210	21	780
Planting and fertilizing machine. Potato	C. L. Woodward	253,560	Feb. 14	465	132	21	496
Planting machine. Corn	J. H. Jones	254,321	Feb. 28	1300	383	21	667
Plastic composition and vulcanite	G. S. Evans	256,470	Apr. 18	919	.....	21	1196
Plastic composition for the cores of billiard-balls and for other purposes	C. S. Lockwood	250,878	June 20	1259	.....	21	1907
Plastic compound	B. Harrass	254,964	Mar. 14	646	.....	21	757
Plastic compound and vulcanite	G. S. Evans	256,471	Apr. 18	919	.....	21	1196
Plastic compounds. Apparatus for applying solutions of chloride of sulphur in bisulphide of carbon to sheets of	J. D. Cheever	254,464	Mar. 7	90	5	21	642
Plastic material	M. B. Church	255,937	Apr. 4	228	.....	21	988
Plastic material. Drying sheets of	J. W. Hyatt	254,439	Feb. 28	1513	414	21	698
Plastic material. Process of and apparatus for molding	J. W. Hyatt and C. S. Lockwood	259,964	June 20	1407	379	21	1958
Plastic materials. Manufacture of articles from	T. Guilford	256,476	Apr. 18	926	256	21	1197
Plate. Dinner	J. David	255,796	Mar. 28	1621	437	21	936
Platform: *See* Dumping-platform. Stove-platform.							
Platform-elevator	T. Keith	257,016	Apr. 25	1552	436	21	1944
Pliers for attaching buttons	W. H. Ward	256,416	Apr. 11	831	231	21	1098
Plow	J. J. Adcock, G. J. Lumpkin, and M. White	253,489	Feb. 14	381	105	21	423
Plow	A. Ball	259,659	June 20	986	263	21	1881
Plow	M. M. Beard	257,630	May 9	626	175	21	1398
Plow	B. S. Benson	259,991	Jan. 31	1507	443	21	295
Plow	D. P. Bigelow	258,419	Jan. 17	911	251	21	167
Plow	A. G. Christman	254,553	Mar. 7	103	26, 27	21	656
Plow	F. R. Cooper and J. Lemmon	253,347	Feb. 7	195	56	21	379
Plow	M. Cooper. (Reissue)	10,007	Jan. 10	761	211	21	136
Plow	A. G. Cox and R. A. Johnson	259,292	June 13	519	136	21	1791
Plow	C. Domschke	258,092	Jan. 10	429	117	21	81
Plow	W. A. Estes	258,201	Jan. 10	745	207	21	123
Plow	F. Fenske	253,155	Mar. 21	988	248	21	808
Plow	F. Gautier	254,952	Mar. 14	654	171	21	755
Plow	J. George	254,634	Mar. 7	229	59	21	677
Plow	L. Gibbs	259,198	June 6	315	83	21	1749
Plow	T. E. Golden	257,661	May 16	897	249	21	1456
Plow	M. T. Hancock	255,983	Mar. 21	1056	283	21	935
Plow	F. B. Hunt	253,055	Jan. 31	1673	463	21	308
Plow	E. D. Meagher	253,408	Feb. 7	281	76	21	391
Plow	O. E. Miles	259,894	June 20	1275	342	21	1930
Plow	C. L. Moss	259,900	June 20	1281	343	21	1931
Plow	F. Nitschmann	258,585	Jan. 17	1095	305	21	196
Plow	P. Petersen	253,094	Jan. 31	1734	479	21	316
Plow	A. F. Purefoy	256,115	May 16	1191	336	21	1510
Plow	J. S. and E. C. Robinson	253,139	Jan. 10	563	156	21	103
Plow	M. Ross	257,941	May 9	117	33	21	1308
Plow	N. Sanders	252,979	Jan. 31	1570	437	21	291
Plow	N. Shaffstall	254,394	Feb. 28	1464	400 / 401	21	610
Plow	F. Simonds	256,750	Apr. 18	1240	348	21	1188
Plow	J. Vandegrift	254,734	Mar. 7	345	91	21	697
Plow	L. B. White	260,078	June 27	1515	407	21	1975
Plow	G. Wiard	255,370	Mar. 21	1170	314	21	854
Plow and cotton-scraper. Sulky	S. C. Bancum	257,914	May 16	954	265 / 266	21	1466
Plow and cultivator. Combined	F. Cremer	254,680	Mar. 7	289	54	21	674
Plow and drag. Combined sulky	M. Robinson	257,763	May 9	774	216	21	1425
Plow and planter. Combined	E. A. Wright	257,194	May 2	619	229	21	1433
Plow attachment	P. P. Herberg and P. H. Claussen	255,891	Apr. 4	290	75	21	998
Plow attachment	R. V. Kennedy	253,395	Feb. 7	247	71	21	388

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Plow attachment	P. Kettenring	259,317	June 13	851	144	21	1797
Plow attachment	W. D. Lindsley	256,804	Apr. 18	1260	369	21	1198
Plow attachment	R. Updike	259,880	Jan. 24	1362	365	21	228
Plow attachment	T. P. Wise	255,086	Mar. 14	799	211	21	788
Plow attachment	J. A. McNeal	253,497	Feb. 7	269	75	21	389
Plow-beam clamp	T. M. Bissell	256,275	Apr. 11	675	183	21	1070
Plow-bolt. Chilled	D. R. Matheny	256,348	Apr. 11	709	209	21	1082
Plow. Cotton	M. Kite	251,895	Jan. 3	261	78	21	46
Plow coupling. Sulky	F. A. Hill and M. J. Church	258,004	May 16	1127	316	21	1462
Plow. Ditching and grading	B. S. Benson	251,817	Jan. 3	164	45, 46	21	29
Plow. Gang	D. B. Tanger	254,406	Feb. 28	1478	404	21	681
Plow-governor	W. P. Brown	258,728	Jan. 24	1347	349	21	240
Plow-handle	F. Hacke	259,133	June 6	321	95	21	1729
Plow-handle	G. C. Avery	258,718	Jan. 24	1334	346	21	239
Plow-handles. Bedding	J. C. Moss	257,385	May 2	264	74, 75	21	1388
Plow, harrow, and cultivator. Combined	J. G. Anderson	254,585	Mar. 7	171	42	21	661
Plow. Hillside	J. H. Feldmann	259,836	June 20	1210	324	21	1919
Plow. Hillside	H. Hunteman	259,851	June 20	1227	332	21	1924
Plow-jointer	J. Quin	256,026	May 30	9636	575	21	1674
Plow mold-board	T. Pates	257,376	May 2	276	79	21	1331
Plow. Planting	H. H. Spencer	255,349	Mar. 21	1147	308	21	857
Plow-seeding attachment	G. S. Agee	253,331	Feb. 7	179	51	21	376
Plow. Shovel	J. H. Feldmann	259,515	June 13	808	211	21	1842
Plow. Shovel	W. H. Durfee	256,288	May 23	1419	401 / 402 / 309 / 310	21	1558
Plow. Side-hill	J. H. Fogarty	258,046	May 16	1109	309 / 310	21	1464
Plow. Steam	W. L. Casaday	258,987	June 6	142	38, 39	21	1719
Plow. Sulky	T. A. Coulee and J. H. Kenneth	251,786	Jan. 3	97	27, 28	21	19
Plow. Sulky	T. T. Harrison	255,977	Apr. 4	265	74	21	997
Plow. Sulky	J. I. Hoke	257,387	May 2	217	61, 62	21	1389
Plow. Sulky	J. I. Hoke	258,998	May 16	1396	388	21	1520
Plow. Sulky	F. R. Hunt	254,481	Mar. 7	42	11, 12	21	645
Plow. Sulky	F. B. Hunt	256,695	Apr. 18	1179	331	21	1171
Plow. Sulky	C. E. Kneberg	254,555	Mar. 7	128	36	21	669
Plow. Sulky	A. Lindgren	254,558	Mar. 7	134	33	21	661
Plow. Sulky	I. Lodge	257,508	May 9	443	122	21	1386
Plow. Sulky	H. Miller	258,615	Jan. 24	1129	316 / 317	21	210
Plow. Sulky	G. Moore	255,391	Mar. 21	1201	333	21	859
Plow. Sulky	J. Nicewood	257,603	May 9	585	163	21	1399
Plow. Sulky	J. Nixon	257,971	May 16	1016	284	21	1478
Plow. Sulky	A. P. Osborn	257,749	May 9	757	211	21	1441
Plow. Sulky	J. M. Phillips	257,063	Apr. 25	1008	449 / 450	21	1883
Plow. Sulky	T. V. Plies	253,761	Feb. 14	607	169	21	476
Plow. Sulky	J. R. Pollock	259,715	June 20	1063	293 / 295	21	1893
Plow. Sulky	O. A. Stoneman	256,362	May 23	1391	393	21	1583
Plow. Sulky	J. Ward	257,256	May 2	131	37	21	1304
Plow. Sulky	M. G. Wood and W. C. Pratt	256,493	Apr. 11	845	233 / 234	21	1140
Plow. Sulky	J. K. Worthington	253,607	Feb. 14	737	216	21	467
Plow. Sulky	W. B. Young	255,557	Mar. 28	1403	379	21	900
Plow. Sulky	A. C. Taylor	255,896	Apr. 4	181	47	21	909
Plow. Vineyard	F. S. Davenport	260,266	June 27	1781	482 / 483	21	2017
Plow. Wheel	J. W. Nelson	257,371	May 2	269	76, 77	21	1399
Plow. Wheel	W. H. Wilde	254,418	Feb. 28	1490	408	21	684
Plow. Wheel	T. M. Bissell	256,686	May 30	1998	544	21	1654
Plow wheel. Sulky	T. M. Bissell	260,274	June 27	1768	476	21	2014
Plow wheel. Sulky	H. H. Sater	253,963	Jan. 31	1486	415	21	276
Plows. Device for attaching roller-colters to	F. B. Brutschke	255,567	Mar. 28	1447	369	21	908
Plowing. Steam	C. Vaicer	257,697	May 9	683	230	21	1434
Plowshare	J. Myers and T. B. Simonton	260,221	June 27	1763	461	21	2004
Plowshares and landsides. Machine for welding	L. McKinnies	256,938	June 6	84	22	21	1709
Plowshares. Manufacture of	J. H. Newbury and G. A. Chapman	259,963	June 20	1263	344	21	1931
Plugs. Device for shredding	E. C. Ford	256,638	May 30	1639	519	21	1640
Plumber's pipe-hanger	J. W. McArdell	257,035	Apr. 25	1573	441	21	1947
Plumbers' shave-hooks. Guard for	P. Connolly	253,845	Feb. 21	810	230	21	598
Plumber's trap	C. Fahlberg and C. Semper	257,508	May 9	567	.....	21	1379
Plumbic dioxide from ferruginous solutions. Recovery of	C. E. Buell	256,009	Apr. 4	402	116	21	1021
Pneumatic elevator	D. Lubin	257,350	May 2	249	70	21	1388
Pocket	P. Schrader	255,009	Mar. 14	616	218	21	786
Pocket-book	H. Walther	255,041	Mar. 14	784	209	21	789
Pocket-book	A. Y. Andrews and H. Burk	256,094	Apr. 4	414	113	21	1020
Pocket-book blank	T. B. Dunston	259,507	June 13	791	200	21	1849
Pocket-book securer	A. P. Yates	256,083	Apr. 4	413	119	21	1020
Pocket-case and cigar-clipper. Combined	J. H. Walbridge	256,170	May 16	1256	354	21	1521
Pocket-comb	F. W. Brooks	258,997	Jan. 31	1694	445	21	296
Pocket-guard	J. M. Palmer	253,667	Feb. 21	883	244	21	511
Pocket-knife	H. Story	254,404	Feb. 28	1476	403	21	681
Pocket-knife	S. R. Beckwell	256,196	Apr. 11	572	156	21	1058
Pocket. Safety	D. Bristmal and W. Harrison	257,147	May 2	4	2	21	1281
Poke. Animal	L. T. Wing	259,624	June 13	878	240	21	1885
Poke. Animal	F. P. Athey	253,326	Feb. 7	188	52	21	377
Poke. Horse	D. B. Terrell	256,988	Apr. 25	1452	407	21	1226
Pole and shaft for vehicles	D. W. Odlorne	260,236	June 27	1710	463	21	2015
Pole-changer	W. E. Athearn	253,346	Jan. 17	899	235	21	150
Pole-changing key	W. Boughton	260,275	June 27	1763	477	21	2014
Pole. Vehicle	H. H. Richards	253,179	Jan. 31	1841	507	21	234
Pole. Vehicle	E. P. Shetter	257,384	May 2	297	85	21	1334
Polish and pump rods. Connection for	J. Kahl	256,076	May 16	1142	360	21	1501
Polishing apparatus							

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Polishing-head	H. Blundell	251,689	Jan. 3	6	2	21	4
Polishing-machine laps. Machine for grinding	A. Hessels	258,943	Jan. 31	1531	428	21	285
Polishing-wheel	E. Thayer	260,336	June 27	1838	497	21	2096
Pool-ball holder	W. H. Marshall and C. H. Anderson	256,998	Apr. 25	1427	401	21	1222
Pool-rack	A. S. Hean and G. H. Jennings	255,695	Mar. 28	1489	400	21	915
Porcelain and china paste-boxes. Making	E. Leak	256,008	Apr. 4	319	84	21	1003
Porch-iron	H. S. Stauffer	252,401	Jan. 17	880	245	21	169
Portable furnace and boiler. Combined	B. L. Ryder	255,462	Mar. 28	1292	348	21	860
Portable summer-house	N. G. Rood	256,860	Apr. 25	1373	386	21	1213
Post:							
See Fence-post. Gate-post.							
Post-hole digger	J. Lee	253,929	Feb. 21	923	256	21	590
Post-hole digger	T. Tanner and H. H. Fischer	251,968	Jan. 3	339	92	21	59
Post-office box	P. R. Temple and G. W. Pierce	252,154	Jan. 10	561	164	21	106
Post-office box	C. S. Thompson	252,301	Jan. 10	758	211	21	135
Post-office lock-box	W. H. Taylor	252,706	Jan. 24	1230	345	21	298
Pot:							
See Coffee-pot. Tea-pot. Fire-pot. Tea and coffee pot. Soldering-pot. Tempering-pot.							
Pot for cooking purposes	J. Dowling	253,268	Feb. 7	105	31	21	364
Pot-lifter	J. Dowling	253,269	Feb. 7	105	32	21	364
Potassium. Manufacture of carbonate of	C. R. Engel	252,653	Jan. 24	1173	.....	21	217
Potato-digger	C. W. Dutcher	259,510	June 13	794	210	21	1840
Potato-digger	L. G. Kelsey	256,900	Apr. 25	1419	399	21	1220
Potato-digger	J. J. Meierdircks	252,687	Jan. 24	1213	339	21	225
Potato-digger	C. W. Shearer	257,964	May 16	1042	287	21	1481
Potato-digger	H. Strait	252,538	Jan. 17	1044	291	21	189
Potato-digging machine	H. D. Herrington	253,602	Feb. 14	509	142 / 143	21	442
Potatoes. Apparatus for separating the skins from the pulp of	G. H. Edwards	258,730	May 30	1955	552 / 553	21	1659
Pottery-kiln	J. Hardwick	259,854	June 20	1231	330	21	1923
Pottery-mold	H. E. Merrill	250,013	June 6	203	54	21	1789
Pottery-press	D. Pike	258,865	May 30	2101	593	21	1666
Powder:							
See Blasting-powder.							
Power:							
See Churn-power. Man-power. Foot-power. Motive power. Grindstone treadle-power. Sewing-machine motive power. Horse-power.							
Power. Apparatus for the transmission of	J. da Silva Sertori	252,529	Jan. 17	1036	298	21	188
Power-converter	F. M. Bookwalter	257,461	May 9	398	110	21	1357
Power-converter	F. M. Bookwalter	257,462	May 9	393	110	21	1357
Power indicator and recorder	G. Wale	253,220	Mar. 21	984	243	21	821
Power mechanism	T. R. Gibson	250,127	June 6	316	84	21	1749
Power wheel. Cable	E. D. Haven	258,645	May 30	1848	581	21	1642
Precious stones. Coating real and imitation	F. E. Meyer. (Reissue)	10,037	Feb. 14	786	223	21	492
Preserving-can lining	W. Gorenflo	259,384	June 13	634	168	21	1811
Preserving compound	F. S. Barff	256,001	May 16	1056	.....	21	1484
Preserving food	A. Warner	256,084	Apr. 4	402	.....	21	1018
Preserving food. Compound for	T. L. Corwin	253,983	Feb. 21	983	.....	21	530
Preserving room. Provision	E. R. McCall	255,645	Mar. 28	1513	407	21	920
Press:							
See Baling-press. Gang-press. Box-cover press. Hay-press. Brick-press. Hay and cotton press. Butter-print press. Hydraulic press. Cider-press. Meat and lard press. Cider and wine press. Pad-press. Cigar-mold press. Pottery-press. Copying-press. Printing-press. Cotton-press. Screw-press. Fodder-press. Sealing-press. Fruit-press. Tobacco-press.							
Press	R. Neill	252,961	Jan. 31	1557	434	21	289
Pressure-gage. Mercury	E. H. Ashcroft	256,814	Apr. 25	1316	371	21	1203
Pressure-regulator	R. Solomon	253,336	Mar. 21	1137	305	21	949
Pressure-regulator	N. Sleeman	260,139	June 27	1589	428	21	1987
Pressure-regulator	J. E. Watts	256,567	Feb. 14	462	123	21	436
Pressure-regulator for hydrostatic presses	C. Windbiel and J. Firth	259,350	June 13	569	156	21	1803
Pressure-regulator for soda-water	G. S. Slocum	255,467	Mar. 28	1300	349 / 350	21	882
Pressure-regulator for water-supply mains	D. C. Cregier	257,557	May 9	514	144	21	1378
Pressure regulator. Pneumatic	H. F. Fitzpatrick	259,754	Jan. 24	1283	361	21	226
Pressure regulator. Steam and water	N. C. Locke. (Reissue)	10,018	Jan. 31	1244	508	21	334
Pressure regulator. Water	P. Harvey	257,697	May 9	705	195	21	1412
Pressure regulator. Water	H. Mueller and J. Gross	251,736	Jan. 3	47	13	21	11
Print for transfer-letters	W. H. Knox	254,677	Mar. 14	530	148	21	736
Printers' chases. Machine for dressing	C. B. Cottrell	252,280	Jan. 10	743	207	21	133
Printer's composing-rule	L. K. Johnson	254,018	Feb. 21	1030	288	21	538
Printer's galley	W. J. G. McAndrew	257,504	May 9	444	124	21	1367
Printer's galley	E. K. Rudolph and J. A. L. Wolfe	254,709	Mar. 7	306	81	21	690
Printer's rule	J. B. Boyd	260,064	June 27	1598	411	21	1978
Printers' rules. Machine for bending	C. V. Steinbach	251,894	Jan. 3	143	40, 41	21	26
Printing, binding, and trimming machine	H. P. Feister	256,892	Apr. 18	1136	319	21	1162
Printing fabrics. Machinery or apparatus for	J. Kerr and J. Haworth	253,718	Feb. 14	642	183	21	406
Printing-machine delivery apparatus. Web	L. C. Crowell	259,979	June 20	1398	376 / 377	21	1960
Printing-machine delivery-table	T. Nourse	256,363	Apr. 11	789	215	21	1069
Printing-machine. Perfecting	J. H. Stonemets	252,153	Jan. 10	578	162	21	108
Printing-machine sheet-delivery apparatus	S. D. Tucker	253,325	Feb. 7	109	42, 40	21	375

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Printing machine. Stencil	A. G. Shannon	257,521	May 9	465	129	21	1370
Printing. Manufacture of pyroxyline for use in topical	P. Reid and J. Eastwood	256,597	Apr. 18	1057	.....	21	1140
Printing mechanism. Web	L. C. Crowell	255,723	Mar. 28	1000	635 / 636 / 637	21	687
Printing-press	G. L. Adams	260,147	June 27	1610	434	21	1990
Printing-press	W. H. Golding	256,691	Apr. 25	1406	396 / 397 / 398	21	1219
Printing-press	J. Henry	252,538	Jan. 24	1403	382	21	256
Printing-press	J. Humphry	251,868	Jan. 3	251	69, 70	21	45
Printing-press	J. M. Jones	252,950	Jan. 31	1543	430	21	287
Printing-press	H. P. Trueman and J. G. New	255,704	Mar. 28	1505	426	21	933
Printing-press and stereotypo casting-box. Combined	M. J. Hughes	253,396	Feb. 7	235	66	21	366
Printing press. Chromatic	C. W. Dickinson and G. Rowden	252,600	Jan. 3	384	103 / 104	21	66
Printing-press cushioning device	J. Brooks	258,363	May 23	1506	426	21	1673
Printing-press. Cylinder	A., A. C., and C. H. Campbell	259,478	June 13	754	199	21	1834
Printing-press. Cylinder	J. T. Hawkins	257,576	May 9	538	150	21	1362
Printing-press. Cylinder	J. T. Hawkins	257,578	May 9	543	151 / 152	21	1363
Printing-press. Cylinder	J. T. Hawkins	257,579	May 9	547	152 / 153	21	1363
Printing-press delivery apparatus	C. B. Cottrell	256,641	Apr. 18	1110	312 / 313	21	1158
Printing-press. Double-cylinder	J. T. Hawkins	257,580	May 9	549	153 / 154	21	1363
Printing-press gripper mechanism	A. C. Campbell	257,199	Apr. 25	1683	471	21	1367
Printing press. Lithographic	J. Kravet	258,770	May 30	2000	565	21	1087
Printing-press paper-cutting device	S. A. Grant	255,616	Mar. 28	1477	397	21	913
Printing-press. Perfecting	J. T. Hawkins	257,581	May 9	553	154 / 155	21	1364
Printing-press perforating attachment	J. M. Bowman	255,943	Mar. 21	1010	271	21	697
Printing press. Plate	T. S. Bates. (Reissue)	10,020	Apr. 11	664	247	21	1107
Printing press. Plate	J. Tregurtha	256,413	Apr. 11	829	230	21	1098
Printing-press rack-motion	C. Potter, Jr	260,233	June 27	1717	465	21	2007
Printing-press sheet-delivery apparatus	J. T. Hawkins	257,575	May 9	535	149	21	1361
Printing-press sheet-delivery apparatus	J. T. Hawkins	257,577	May 9	541	150 / 151	21	1362
Printing-presses. Griper attachment for	T. McIlroy	255,181	Mar. 21	930	249	21	612
Printing window-shades. Machine for	W. Bailey	260,078	June 27	1524	409	21	1976
Projectile	D. M. Medford	258,469	Jan. 17	992	276	21	160
Propeller. Chain	J. T. Drummond	254,468	Mar. 7	94	6, 7	21	643
Propeller. Chain	J. M. Rosse	254,051	Feb. 21	1071	298	21	545
Propeller. Pneumatic	A. Maynard	253,215	Feb. 7	46	15	21	354
Propeller. Screw	J. Belduke	253,256	Feb. 7	91	30	21	362
Propeller. Screw	R. Urea	257,416	May 2	327	92	21	1340
Propeller-shafts. Bearing for	G. W. Zastrow	260,345	June 27	1650	439	21	2022
Propelling vessels	A. Bracht	259,990	June 27	1629	385	21	1988
Propulsion of ships	W. Coppin	259,023	May 16	1044	301	21	1490
Propulsion of ships	J. B. Root	253,946	Feb. 21	940	261	21	583
Protector:							
See Ale spindle-protector. Lightning-arrester protector. Book-protector. Oil-tank protector. Boot and shoe heel protector. Pantaloon-protector. Pencil-point protector. Boot or shoe sole-edge protector. Rein-protector. Sole and heel protector. Cork-protector. Telegraphic-instrument protector. Fire-protector. Tree-protector. Foot-protector. Watch staff and jewel protector. Hoof-protector. Lamp-shade protector.							
Protractor. Polygon	A. Prinker	257,538	May 9	846	236	21	1426
Pruning-knife	W. C. Penland	255,114	Mar. 21	846	226	21	790
Pruning-shears	P. Koerber	252,227	Jan. 10	660	188	21	139
Puddling-furnace	B. Probert and M. Davis	251,941	Jan. 3	310	84	21	54
Puller:							
See Stump-puller. Tack-puller.							
Pulley	E. J. F. Coleman	259,370	June 13	617	163	21	1820
Pulley-head. Elastic	A. R. Briggs	254,069	Feb. 21	1112	311	21	558
Pulley-block	G. A. Ford	253,229	Feb. 21	998	284	21	505
Pulley-block. Differential	P. Murray, Jr	260,229	June 27	1703	460	21	2004
Pulley-fitting table	P. Medart	257,964	May 16	1011	288	21	1477
Pulley-grinding machine	P. Medart	256,449	Apr. 11	809	242	21	1165
Pulley. Gripping	D. W. Warren	255,227	Apr. 4	90	25	21	986
Pulley. Loose	R. D. Weyburn	253,797	Feb. 14	745	212	21	484
Pulley. Sash-cord	T. Brown	253,678	Feb. 14	564	165	21	455
Pulley. Sash-cord	J. E. Clark	253,695	Jan. 31	1619	447	21	988
Pulley. Sash-cord	C. Holton	259,186	June 6	344	91	21	1755
Pulley. Self-oiling	C. H. Cowdrey	255,418	Mar. 28	1230	338	21	971
Pulley-sheave	C. M. Dabell	255,734	Mar. 28	1619	437	21	988
Pulley-spiders. Machine for grinding	P. Medart	256,441	Apr. 11	870	243	21	1165
Pulley tight or loose upon a shaft. Device for rendering a	G. Dryden	252,696	Jan. 10	591	139	21	93
Pulleys. Apparatus for balancing	L. Knight	255,434	Mar. 28	1257	330	21	874
Pulp and the resultant material. Treating	F. Bedlow	256,872	Apr. 25	1387	.....	21	1215
Pulp. Combined box and tray molded from	E. D. Larraway and F. C. Rockwell. (Reissue.)	10,132	June 6	300	129	21	1780
Pulp-engine	W. W. D. Jeffers	256,696	Apr. 18	1184	328	21	1172

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Pulp-engines. Roll-bar for	J. H. Horne	253,606	Feb. 14	506	145	21	443
Pulp machine. Wood	R. Gartmell	257,436	May 2	351	98	21	1344
Pulp-molding machinery	G. W. Larsway and D. Slate	258,236	May 23	1360	384 / 385	21	1548
Pulping wood. Apparatus for and process of	H. A. Frambach	258,400	May 23	1548	430	21	1581
Pulverizer	W. S. Sharpneck	255,890	Apr. 4	163	43	21	978
Pulverizer. Rotary	J. O. Stewart	258,253	June 6	103	27	21	1712
Pulverizer. Soil	I. Huffer	256,801	Apr. 18	1296	365	21	1192
Pulverisers. Grinding-surface of ore and other	F. J. and W. H. Hoyt	257,889	May 16	897	250	21	1457
Pulverizing-machine	R. D. Gates	260,092	June 27	1537	414 / 415	21	1979
Pulverizing-mill	W. C. Salmon	255,678	Mar. 28	1547	417	21	936
Pulverizing mineral and other substances. Apparatus for	D. G. Starkey	251,803	Jan. 3	141	40	21	95
Pump	W. Allderdice and R. D. Williams	254,584	Mar. 7	169	42	21	667
Pump	G. S. Bartlett	258,643	Jan. 24	1162	325	21	916
Pump	J. and R. Bean	256,950	Apr. 25	1480	414 / 415	21	1230
Pump	G. F. Beebe	258,275	May 23	1405	398	21	1556
Pump	C. Blasendorff	252,350	Jan. 17	815	227	21	151
Pump	W. H. Cloud	256,128	Apr. 11	476	120	21	1036
Pump	J. Dickens	259,673	June 20	1000	267	21	1863
Pump	A. J. Edwards	256,880	Apr. 25	1403	396	21	1218
Pump	A. Enbom and J. A. Anderson	250,514	June 13	801	211	21	1841
Pump	M. Gayman	255,946	Apr. 4	272	70	21	995
Pump	F. B. Hanson	254,120	Feb. 28	1162	325	21	568
Pump	J. A. Heydrick	254 010	Feb. 21	1014	284	21	535
Pump	W. D. Hooker	255,990	Apr. 4	209	78	21	1000
Pump	J. Humphryes, Jr	257,671	May 16	899	251	21	1458
Pump	G. R. Hunter	259,468	Jan. 17	968	269	21	176
Pump	T. M. Johns and R. Gage	259,946	Jan. 31	1534	428	21	985
Pump	D. Johnson, J. P. and F. Cowan	255,798	Apr. 4	48	13, 14	21	959
Pump	H. Jones	259,548	June 13	843	223	21	1849
Pump	E. Lannay	257,954	May 16	900	279	21	1475
Pump	S. W. Martin	254,287	Feb. 28	1274	353	21	587
Pump	J. A. McMartin	255,318	Mar. 21	1114	300	21	845
Pump	E. Osgood	258,250	May 23	1375	389	21	1551
Pump	F. F. Pierce	253,760	Feb. 14	606	199	21	476
Pump	C. Powell	260,121	June 27	1561	426	21	1966
Pump	L. D. Railsback	257,383	May 2	989	81	21	1332
Pump	W. C. B. Shaffer	251,956	Jan. 3	396	89	21	57
Pump	N. Talard	251,967	Jan. 3	336	92	21	58
Pump	B. C. Vanduzen	258,163	May 16	1248	352	21	1540
Pump	T. V. Warner	253,947	Feb. 7	77	24	21	360
Pump	S. R. Dresser	255,151	Mar. 21	896	240	21	807
Pump	A. H. Armor	258,347	May 23	1485	423	21	1570
Pump. Air	N. B. Blackmer	256,276	Apr. 11	675	189	21	1070
Pump. Air	H. Humphreville	251,886	Jan. 3	249	69	21	45
Pump. Air	M. W. Kidder	258,535	May 23	1709	483	21	1609
Pump and motor. Rotary	H. Clayton	256,125	Apr. 11	475	139	21	1036
Pump attachment	R. M. Adam	257,633	May 9	990	173	21	1396
Pump attachment. Dredging	J. D. Cowan and R. E. Lee	255,402	Mar. 28	1399	359	21	898
Pump. Barge	J. J. Harris	257,321	May 2	811	59	21	1319
Pump bucket. Chain	D. E. Shaw	256,167	Apr. 11	590	144	21	1044
Pump. Chain	W. D. Hooker	259,304	June 13	647	171	21	1814
Pump. Deep-well	J. Houpt	254,321	Feb. 28	1378	360	21	604
Pump for steam-boilers. Feed	P. A. Myers. (Reissue)	10,048	Feb. 28	1596	417	21	631
Pump. Force	M. L. G. Wheeler	253,141	Jan. 31	1786	496	21	396
Pump. Force	J. Preston	256,855	Apr. 25	1367	365	21	1212
Pump-frame	W. H. Cloud	257,473	May 9	405	113	21	1360
Pump. Lifting and force	J. Bowie and W. C. Brown	254,596	Mar. 7	183	45	21	669
Pump. Lubricating	D. W. Brunton	255,928	Apr. 4	218	57	21	987
Pump. Mining	A. J. Weith	258,988	June 6	114	30	21	1714
Pump. Oil	G. Miller	254,357	Feb. 28	1490	390	21	611
Pump-piston	J. A. Throp	258,066	Jan. 10	477	132	21	96
Pump-piston	S. Bonser	254,266	Feb. 28	1320	365	21	594
Pump. Portable force	W. F. Toothaker	258,958	June 6	110	29	21	1713
Pump-rods of deep-well pumps. Pneumatic counterbalance for	D. Ross	256,585	Apr. 18	963	269	21	1134
Pump. Rotary	J. M. Taylor	254,069	Feb. 21	1001	282	21	548
Pump. Rotary	T. Winkler	256,781	Apr. 18	1272	356	21	1187
Pump-spout	S. J. Adams	259,451	June 13	717	191	21	1897
Pump-spout brace	S. J. Adams	259,698	June 13	938	250	21	1896
Pump. Steam	E. R. Eaton and C. Tufts	253,686	Feb. 14	601	169 / 170	21	458
Pump. Steam	M. R. Hall	259,136	June 6	394	86	21	1751
Pump. Steam	C. H. Hudson and E. Smedley	260,069	June 27	1553	418	21	1981
Pump. Steam	C. H. Osborn	254,804	Mar. 7	899	76	21	688
Pump. Steam	G. B. N. Tower	256,157	May 16	1943	360	21	1519
Pump. Steam	S. W. Martin	254,358	Feb. 28	1416	389	21	611
Pump-strainer	H. Goebel	256,658	Jan. 24	1178	330	21	916
Pump. Vacuum	P. C. Du Bois	259,830	June 20	1204	242	21	1910
Pump-valve gear	J. Giles	255,976	Mar. 21	1049	281	21	833
Pump-valve. Waste	C. Powell	251,939	Jan. 3	389	63	21	53
Pumps. Wooden	G. J. Orr	252,133	Jan. 10	355	155	21	169
Pumps. Automatic relief device for	W. D. Hooker	251,715	Jan. 3	32	9	21	9
Pumps. Hand-lever attachment for steam	E. W. Grant	259,847	June 20	1223	328	21	1961
Pumps. Rubber bucket for chain	H. A. Jamieson	252,110	Jan. 10	504	146	21	97
Pumping-engine	W. A. Perry	251,730	Jan. 3	51	14	21	11
Pumping-engine. Duplex	D. S. Hines	253,604	Feb. 14	592	143 / 144	21	442
Pumping-engine. Duplex	G. H. Reynolds and T. J. Rider	252,517	Jan. 17	1021	284	21	188
Pumping-engine. Steam	R. C. Vanduzen	260,337	June 27	1630	437	21	2000
Punching-machine	W. C. Barr	252,969	Jan. 31	1596	442	21	395

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Punching-machine	J. M. Long and C. E. McBeth	252,111	Jan. 10	357	146	21	93
Punching-machine	J. M. Riley	257,940	May 2	116	33	21	1301
Punching-machine feeding device	F. Marggraff	258,786	Jan. 24	1389	371 / 372	21	944
Punching machine. Metal	A. J. Johnson	253,608	Feb. 14	598	145	21	443
Punching metallic tubes. Device for	O. B. Olmsted	252,947	Jan. 10	685	194	21	194
Quartz-crusher	A. Oliver	259,799	Jan. 24	1337	373	21	945
Quartz-crusher	C. P. Stamford	253,121	Jan. 31	1783	499	21	389
Quartz crushing and pulverizing machine	J. R. Sweetland	256,688	May 30	2057	589	21	1678
Quartz-mill	J. Day	254,805	Mar. 14	430	118	21	720
Quilting-frame	C. C. Bramow	257,263	May 2	163	46	21	1319
Quilting-frame	H. T. Davis	253,358	Feb. 7	190	57	21	369
Quilting-frame	P. S. Hickman	257,948	May 16	968	276	21	1473
Quilting-frame	J. Happe and W. Newman. (Reissue.)	10,069	Jan. 17	1163	306	21	199
Quilting-machine	J. R. Sheldon	255,037	Mar. 14	745	201	21	774
Rack: *See* Book-rack. Clothes-rack. Display-rack. Exhibiting-rack. Hay-rack. Map-rack. Pool-rack. Sheep-rack. Stove-rack. Towel-rack. Track-rack.							
Radiator	J. Mason	258,092	May 16	1161	305	21	1594
Radiator. Indirect	E. T. Weymouth	258,947	June 6	119	31	21	1715
Radiator. Steam	J. C. Andrews and J. F. Sunderland	255,071	Mar. 14	794	213	21	782
Radiator. Steam	J. Chapman and R. Brass	256,374	May 23	1518	131	21	1376
Radiator. Steam	T. P. Hardy	259,589	Jan. 17	1091	304	21	197
Radiators. Automatic air-valve for steam	G. L. Allen	260,148	June 27	1611	434	21	1990
Raft. Timber	R. E. Terry	255,040	Mar. 14	787	206	21	777
Rag-beater	G. Miller	256,330	Apr. 11	783	208	21	1068
Rag-washing machine for rag and paper washing engines	J. Tyler. (Reissue)	10,042	Feb. 21	1126	315	21	555
Rail-joint fastening	M. Thibaul	256,812	Apr. 18	1319	360	21	1195
Railway	D. Smith	259,795	June 20	1077	287	21	1896
Railway alarm-signal	T. H. Gibbon	258,578	Jan. 17	1068	303	21	197
Railway and canal. Combination of elevated	B. T. Babbitt	255,935	Mar. 21	1091	288	21	825
Railway-brake. Fluid-pressure	A. Wenger	253,130	Jan. 31	1788	494 / 495	21	395
Railway-brakes. Electric apparatus for working	F. A. Achard	253,148	Jan. 31	1792	496	21	398
Railway-brakes. Regulating-valve for	G. Westinghouse, Jr	251,980	Jan. 3	355	98	21	61
Railway. Cable	T. Duffy	257,674	May 9	983	185	21	1405
Railway. Cable	W. McCall	258,809	Jan. 31	1466	411	21	573
Railway. Cable	L. J. Wing	257,121	Apr. 25	1071	466	21	1295
Railway-chair	W. W. Dawley	256,964	Apr. 25	1260	427	21	1230
Railway-chair	L. Haas	253,374	Feb. 7	220	63	21	353
Railway chair and tie	L. Haas	257,572	May 9	538	146	21	1360
Railway clutches. Guide-rail for rope	C. S. Drake	258,582	May 30	1744	493	21	1623
Railway construction-tender	E. N. Wing	259,908	June 20	1261	357	21	1944
Railway cross-tie	A. L. Cubberlery	259,683	June 20	1196	339	21	1918
Railway cross-tie	J. H. Meacham	259,691	June 20	1273	341	21	1920
Railway-crossing	D. C. Pierce	255,811	Apr. 4	73	19, 20	21	963
Railway-crossing. Automatic	D. Lee, Jr	256,437	Apr. 11	686	241	21	1104
Railway-crossings. Frog or block for	J. Reed	254,693	Mar. 7	298	78	21	669
Railway-crossings. Signaling apparatus for	J. H. Hayes	257,563	May 9	540	156	21	1384
Railway-curves. Rail for	L. Brigham	254,793	Mar. 14	427	115	21	718
Railway danger-signal apparatus	G. A. Asturias	251,812	Jan. 3	156	43	21	29
Railway. Electric	C. H. Rudd	259,569	June 13	886	236	21	1857
Railway. Electrical	E. H. Cowles	252,193	Jan. 10	619	175	21	113
Railway. Elevated	A. P. Ingerson	258,302	May 23	1437	407	21	1561
Railway. Elevated	L. E. Mansfield and M. D. Moore	257,034	Apr. 25	1578	441	21	1947
Railway-frog	T. Breen	253,177	Feb. 7	7	2, 3	21	347
Railway-frog	W. M. Eccles and J. C. O'Melveney	258,789	May 30	1954	558	21	1689
Railway-frog	J. Staples	258,250	May 23	1389	392	21	1563
Railway-frog safety attachment	E. S. Eveleigh	256,135	Apr. 11	485	122	21	1038
Railway-joint and manner of working the same	H. Whitehead and T. Dodd	254,699	Feb. 21	1163	307 / 308	21	551
Railway. Portable	G. W. Thomas	257,410	May 2	320	91	21	1336
Railway-rail	W. W. Dawley	256,085	Apr. 25	1581	437	21	1210
Railway-rail. Compound	D. D. Weisell	260,263	June 27	1749	473	21	2019
Railway-rail joint	J. M. Adams	255,905	Apr. 4	189	49	21	982
Railway-rail joint	W. J. Stevens	259,234	June 6	437	116	21	1770
Railway-rails. Clamp for holding	W. J. Morden	256,088	Apr. 4	227	60	21	1006
Railway-rails. Roll for longitudinally slitting	J. Holub	260,096	June 27	1553	417	21	1981
Railway rolling stock	G. Thomas	258,504	May 23	1668	472 / 473	21	1601
Railway safety device	J. Gogarty	252,308	Jan. 17	836	233	21	155
Railway safety-signal	P. C. Houck	253,343	Feb. 7	199	55	21	378
Railway-semaphore	W. Zimmerman	254,486	Feb. 28	1499	411	21	623
Railway-signal	W. W. Gary	257,619	May 9	833	232	21	1426
Railway-signal	H. Morris	255,901	Mar. 14	695	188	21	765
Railway-signal. Automatic	W. W. Gary	257,933	May 16	974	272	21	1470
Railway-signal. Electric	H. Lebiane and E. V. A. Loiseau	258,367	Jan. 17	968	239	21	159
Railway-signal. Electric	C. J. Means	257,233	May 2	106	31	21	1329
Railway-signal. Electric	T. A. B. Putnam	258,660	May 30	1762	506	21	1633
Railway-signal. Electric	C. D. Tisdale	258,845	Jan. 17	1058	298	21	189
Railway-signal. Magneto-electric	J. B. and O. B. Johnson	259,547	June 13	841	228 / 229	21	2040
Railway-signals. Apparatus for operating	H. Johnson	259,985	June 20	1241	333	21	1924
Railway-signals. Magneto-generator for	W. W. Gary	258,742	May 30	1971	556	21	1682
Railway-signaling apparatus	W. H. Bechtel	256,986	Apr. 11	668	180 / 181	21	1059
Railway signaling apparatus	E. Gscnde	259,385	June 13	835	168	21	1819
Railway-signaling apparatus	F. L. Pope	253,702	Feb. 14	698	199	21	476
Railway-spike	H. Greer	258,053	May 16	1116	311	21	1496

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Railway-spike	J. H. Morgan	252,892	Jan. 31	1470	411	21	274
Railway-switch	J. B. Carey	254,707	Mar. 14	431	116	21	719
Railway-switch	W. P. Dodson	257,299	May 2	180	51, 52	21	1313
Railway-switch	W. P. Dodson	259,001	June 6	161	44	21	1792
Railway-switch	N. Eaton	253,271	Feb. 7	106	32	21	364
Railway-switch	T. H. Fennell	252,234	Jan. 31	1323	425	21	263
Railway-switch	J. Gray and W. Hollenback	256,796	Apr. 18	1293	364	21	1191
Railway-switch	A. Harley	254,008	Feb. 21	1011	283	21	534
Railway-switch	J. H. Hortman	257,606	Apr. 25	1544	433	21	1942
Railway-switch	M. Marshall and H. J. McDevitt	258,090	May 16	1157	324	21	1504
Railway-switch	A. E. McDonald	252,684	Jan. 24	1210	339	21	294
Railway-switch	P. Nolan	253,749	Feb. 14	662	195	21	473
Railway-switch	O. A. Reynolds and J. A. Shepherdson.	256,856	Apr. 25	1370	386	21	1912
Railway-switch	F. S. Scheffler	256,482	May 23	1643	465	21	1507
Railway-switch	J. H. Walt	253,792	Feb. 14	740	212	21	483
Railway switch and signal locking apparatus	C. H. Jackson	255,908	Apr. 4	308	81	21	1001
Railway-switch. Safety	P. G. Hanson	254,870	Mar. 14	521	139	21	734
Railway switch-stand	J. H. Greenwood and W. H. Cowell	253,861	Feb. 21	830	235	21	505
Railway switch. Street	R. H. Ricker	254,379	Feb. 28	1446	396	21	616
Railway-switches, &c. Electric safety appliance for	T. A. B. Putnam	258,601	May 30	1793	507	21	1632
Railway-switches. Mechaniam for operating	C. C. Williams	251,963	Jan. 3	358	97	21	68
Railway-tie	J. Clark	256,199	Apr. 11	575	157	21	1053
Railway-tie	J. Conley	254,902	Mar. 14	436	117	21	719
Railway-tie	C. F. Herbst	252,361	Feb. 7	229	65	21	365
Railway-tie	P. Pendleton	255,302	Mar. 21	1202	328	21	859
Railway-tie and fastening. Metallic	H. De Zavala	257,437	May 2	352	99	21	1344
Railway-tie and fastening. Metallic	F. A. Williams	255,554	Mar. 28	1399	378	21	899
Railway-tie. Metallic	J. Clark	259,095	June 6	278	74	21	1742
Railway time and speed pre-indicator	J. E. Wells	258,968	May 23	1398	396	21	1555
Railway time-indicator	J. S. Scheidell	258,484	May 23	1646	465	21	1508
Railway time-signal	W. V. Wilson	259,961	June 20	1359	{366 367}	21	1943
Railway time-table	R. Alexander	257,836	May 16	851	241	21	1451
Railway-tracks. Machinery for laying	D. S. Moore	252,960	Jan. 31	1556	{433 434}	21	289
Railway-trains. Apparatus for producing signals and lights upon	E. T. Starr	253,442	Feb. 7	307	86, 87	21	366
Railway-trains. Electrical connection for	J. B. Low	258,659	May 30	2095	591	21	1685
Railway-vehicle	A. Estrade	253,592	Feb. 14	490	{139 140}	21	441
Railways. Apparatus for covering slots in cable	C. S. Drake	258,564	May 30	1746	494	21	1623
Railways. Attachment for wire-rope	C. S. Drake	258,563	May 30	1745	494	21	1623
Railways. Clearing slots of wire-rope	J. Powers	255,191	Mar. 21	945	252	21	815
Rake: *See* Hand-rake. Hay-rake. Harvester-rake.							
Rake	O. Bergstrom	254,583	Mar. 7	180	45	21	669
Rake and tedder. Combined	R. J. Colvin	251,835	Jan. 3	189	53, 54	21	34
Rakes. Teeth-cleaning attachment for garden	C. D. Miller and G. L. Eason	253,307	Feb. 7	144	42	21	377
Range	J. H. Codding	256,885	Apr. 25	1400	394	21	1218
Range boiler. Kitchen	T. Hepe	254,973	Mar. 14	650	179	21	759
Range. Cooking	W. E. Prall	252,057	Jan. 10	466	{128 129}	21	88
Range-grate	J. Martino	250,183	June 6	379	100	21	1760
Ranges. Elevated oven for	J. J. H. Schlag, T. J. Graff, and J. F. McKee.	253,631	Feb. 14	532	153	21	447
Rat-trap	H. Younger	253,470	Feb. 7	330	94	21	403
Ratchet-and-pawl device	J. S. O'Brien	252,993	Jan. 31	1558	434	21	289
Ratchet-motor. Friction	A. Lee	255,309	Mar. 21	1199	321	21	859
Ratchet-pawl for power-converters	H. Croft, Jr.	256,465	Apr. 18	911	255	21	1195
Ratchet-wrench	J. W. Womelsdorff	252,300	Jan. 10	757	210	21	135
Razor-strop	H. B. Emerson	252,199	Jan. 10	627	177	21	114
Razor-strop	J. Lamont. (Reissue)	10,029	Feb. 7	366	101	21	408
Razor-strop	C. H. Wilcox	256,937	Apr. 25	1464	411	21	1228
Razor-strop	J. R. Torrey	258,959	June 6	111	29	21	1714
Razor-strop. Double	G. W. Dudley	258,390	May 23	1537	436	21	1579
Reamer	A. Saunders	252,903	Jan. 31	1487	415	21	277
Reamer	F. J. Hazard	253,477	Feb. 7	348	97	21	405
Reaper and mower	H. E. Trumble and F. A. Ketchum	256,933	Apr. 25	1456	409	21	1227
Reaper guard. Extension	R. A. Kelly	259,316	June 13	550	144	21	1796
Reapers and mowers. Life-guard for	T. Taylor	259,602	June 13	904	241	21	1800
Reaping and mowing machine cutter-bar	J. Harris	252,764	Jan. 24	1294	364	21	238
Reaping-machine	W. K. Miller	252,494	Jan. 17	998	{277 278}	21	161
Reaping-machine	L. B. Greer	252,579	Jan. 17	1089	{303 304}	21	197
Reciprocating engine	M. S. Allen	255,908	Apr. 4	191	50	21	968
Reclining-chair	G. Chelini	256,793	Apr. 18	1296	362	21	1190
Reclining-chair	G. F. Holt	254,133	Feb. 28	1168	327	21	569
Reclining-chair. Ajustable	J. F. Warner	256,773	Apr. 18	1261	{355 356}	21	1186
Reclining-chair. Folding	A. B. Upham	253,899	Feb. 21	876	247	21	513
Recorder: *See* Continuous recorder. Steam-engine recorder.							
Recording-gage	E. A. Thissell	253,786	Feb. 14	734	210	21	482
Reel: *See* Bolting-reel. Clasp-reel. Clothes-reel. Fishing-reel. Fisherman's reel. Harvester-reel. Measuring-reel. Measuring-line reel.							
Reel-lock	L. A. Kiefer	254,025	Feb. 21	1041	289	21	530
Reflector	C. W. Jenks	258,659	May 30	1859	{594 595}	21	1644

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Reflector	W. Wheeler	254,578	Mar. 7	184	46	21	668
Reflector and its support. Electric-light	W. Wheeler	254,583	Mar. 7	93	23	21	654
Reflector for electric lamps. Adjustable	J. R. F. Kelly	255,514	Mar. 28	1355	365	21	891
Reflectors. Supporter for electric-light	W. Wheeler	254,582	Mar. 7	92	23	21	654
Refrigerating and preserving meat, &c	E. N. Dickerson, Jr	256,260	Apr. 11	703	.....	21	1075
Refrigerating apparatus	C. G. Mayer	256,370	Apr. 11	761	.....	21	1096
Refrigerating apparatus	A. D. Puffer	254,370	Feb. 28	1433	382	21	613
Refrigerating apparatus	J. T. Reed	252,682	Jan. 24	1137	319	21	211
Refrigerating apparatus	T. and C. E. Davis	256,650	Apr. 18	1191	315	21	1140
Refrigerating apparatus. Apparatus for utilizing waste heat in ammonia	E. Hill	252,786	Jan. 24	1297	364	21	239
Refrigerating apparatus. Dynamic dry-air	C. P. Jackson	251,659	Jan. 31	1478	444	21	308
Refrigerating-bedstead	P. Kearins	256,795	May 30	1986	563	21	1668
Refrigerating bottle-safe	J. W. Kepler	259,401	June 13	655	173	21	1816
Refrigerating-building	F. M. McMillan and H. C. Johnson.	257,505	May 9	445	124	21	1367
Refrigerating buildings, cars, vessels, &c	J. R. McCall	259,689	June 20	1042	277	21	1890
Refrigerating butter-safe	J. Hedley, Sr	256,566	Apr. 18	1084	289	21	1144
Refrigerating-can	T. S. Very	252,553	Jan. 17	1064	286	21	198
Refrigerating. Method of and apparatus for	W. M. Mixer	253,488	Feb. 7	355	99	21	406
Refrigerating or ice-making machinery. Flange-union for	H. A. Roberts	256,659	Apr. 4	364	99	21	1041
Refrigerating-room	F. M. McMillan and H. C. Johnson	257,506	May 9	446	{124 125}	21	1367
Refrigeration for cooling cars, ships, buildings, &c. System of	C. Boss	253,836	Feb. 21	799	227	21	509
Refrigerator	J. Castell	255,142	Mar. 21	880	236	21	804
Refrigerator	H. C. Goodell	252,097	Jan. 10	511	148	21	95
Refrigerator	G. J. Harrer	258,758	May 30	1983	{529 530}	21	1664
Refrigerator	G. C. Hodgdon	251,861	Jan. 3	344	96	21	44
Refrigerator	G. H. Hurd	254,976	Mar. 14	685	180	21	760
Refrigerator	P. L. Maibie	259,028	June 6	196	52	21	1736
Refrigerator	J. McMurtry	252,613	Jan. 24	1195	{315 316}	21	210
Refrigerator	R. A. Masservey	257,361	May 2	289	73	21	1302
Refrigerator	A. D. Puffer	255,455	Mar. 28	1361	346	21	879
Refrigerator	A. D. Puffer	255,456	Mar. 28	1363	346	21	879
Refrigerator	F. S. Eastman	257,216	May 2	75	23, 24	21	1295
Refrigerator-car	H. McCray	253,333	Feb. 21	867	228	21	530
Refrigerator-car	C. F. Pierce	257,630	May 9	944	235	21	1438
Refrigerator-car	R. A. Masservey	256,623	Apr. 4	334	89	21	1036
Refrigerator cooled by ammonia, &c	G. F. Holmes	255,299	Mar. 21	1073	266	21	837
Refrigerator drip-pan	S. F. Cosco	254,498	Feb. 28	1501	411	21	695
Refrigerator. Sick-room	W. Swindell	259,909	Jan. 31	1404	417	21	278
Regenerative furnace							
Register: *See* Check-register. Fare-register. Flue-register. Grain-register. Gun-register. Hot and cold air register. Mill-packer register. Telephone call-register. Watchman's electric register.							
Register and ottoman. Combined	J. A. and A. L. Graham and E. C. Ransch.	254,867	Mar. 14	517	138	21	733
Register-evaporator	J. F. Meyer	254,493	Mar. 7	60	15	21	648
Regulator: *See* Blowing-engine regulator. Damper-regulator. Draft-regulator. Electric-light regulator. Feed-water regulator. Gas-regulator. Gas-exhaust regulator. Grinding-mill feed-regulator. Lamp-regulator. Pressure-regulator. Sewing-machine take-up regulator. Tank and reservoir regulator. Watch-regulator. Windmill-regulator.							
Reheating-furnace	J. F. Duffy	253,916	Feb. 21	895	251	21	516
Rein. Driving	A. T. Peirce	253,553	Feb. 14	459	128	21	434
Rein-holder	C. M. Grannis and J. L. Thomson	254,545	Mar. 7	116	30	21	656
Rein-holder	J. Murphy	260,041	June 27	1476	398	21	1970
Rein-holder	L. Pentz	259,333	June 13	573	151	21	1809
Rein-holder	R. E. Shannon	258,679	May 30	1896	{535 536}	21	1649
Rein-holder	J. C. W. Stout	259,589	June 13	899	240	21	1859
Rein holder or buttons. Driving	S. A. Marker	256,714	Apr. 18	1268	337	21	1175
Rein hook. Check	C. M. Reynolds	254,377	Feb. 28	1445	395	21	615
Rein-protector	C. Parker	251,926	Jan. 3	339	88	21	58
Rein-spread and attachment. Check	D. Schoonmaker. (Reissue)	10,110	May 9	657	230	21	1441
Relay and sounder	C. G. Burke	252,927	Jan. 31	1515	{431 432}	21	981
Relay and sounder	C. G. Burke	256,627	Apr. 11	850	236	21	1101
Rendering and bleaching animal-fats. Method of and apparatus for	G. Cosine	254,279	Feb. 28	1233	366	21	596
Rendering apparatus	G. Bayha	254,168	Feb. 28	1131	317	21	563
Rendering apparatus	R. Whelan	260,366	June 27	1755	474	21	2012
Reservoir. Automatic storage pressure	R. R. Coggin	256,291	Apr. 11	696	189	21	1074
Reservoir. Portable distributing	D. R. Miller	252,690	Jan. 24	1215	340	21	225
Retort-furnace	W. A. Stedman and I. N. Stanley	257,501	May 16	936	261	21	1494
Retort-furnace. Spelter	D. W. Jaseon	256,105	Apr. 4	430	118	21	1023
Reversible seat	R. B. Bridgman	253,437	Feb. 21	860	227	21	501
Rice-hulling machine	S. B. Denney	256,653	Apr. 18	1125	316	21	1160
Rice, &c. Machine for cleaning and scouring	D. L. Shoemaker	255,343	Mar. 21	1142	307	21	849
Rice, &c. Machine for polishing	H. B. Stevens	257,495	May 9	313	89	21	1337
Rifle. Amalgamating and concentrating	G. R. Evans	256,555	Apr. 18	1014	286	21	1142
Rifle-barrel. Auxiliary	R. Morris	258,941	Jan. 10	669	193	21	193

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Ring: *See* Bridle-ring. Ear-ring. Finger-ring. Finger and scarf ring. Game-ring. Hog-nose ring. Hog-ring. Spinning-ring.							
Rivet	E. L. Babcock	253,494	Feb. 14	366	106	21	434
Rivet for belts, &c	S. A. Marker	251,786	Jan. 3	123	35	21	93
Rivets. Manufacture of tubular	M. N. Bray	256,117	Apr. 11	462	125	21	1034
Riveting-machine	R. Kent	257,589	May 9	571	160	21	1367
Roach-trap	M. Cohen	254,860	Mar. 14	434	116	21	719
Road-engine	H. H. Bridenthal	252,720	Jan. 24	1942	{348 {349	21	330
Road-engines. Compensating-gear for	F. F. Landis	252,044	Jan. 10	451	{123 {124	21	85
Roaster: *See* Coffee-roaster. Coffee and nut roaster. Coffee and peanut roaster. Meat-roaster.							
Roasting or renovating furnace	J. Campbell	255,592	Mar. 28	1453	{390 {391	21	909
Robe-lock for vehicles	H. C. McFarland	257,892	May 16	913	256	21	1460
Rock and ore crusher	J. Tayler	251,909	Jan. 3	340	92	21	59
Rock-boring machine. Rotary diamond	J. B. Johnson	259,281	June 6	493	129	21	1779
Rock-drill	J. F. Allen	252,920	Jan. 31	1507	419	21	980
Rock-drill	E. A. Armstrong	256,623	May 30	1821	{514 {515	21	1636
Rock-drill	W. J. Barber	255,937	Mar. 21	1004	268	21	825
Rock-drill	J. L. McClughen	258,094	May 16	1163	326	21	1505
Rock-drill	A. J. Mershon	251,723	Jan. 3	42	12	21	19
Rock-drill	J. Perdue	259,278	June 6	487	127	21	1779
Rock-drill	W. H. Silsby	256,749	Apr. 18	1239	348	21	1161
Rock-drill	T. H. Stoner	259,779	June 20	1147	304	21	1907
Rock-drill. Hand	E. Moreau	257,739	May 9	748	208	21	1419
Rock-drill. Machine hand	E. Moreau	258,100	May 16	1171	328	21	1506
Rock-drill rest. Adjustable	W. T. Browne	256,540	Apr. 18	997	281	21	1140
Rock-drill. Steam	W. T. Bell	256,974	June 6	127	34	21	1716
Rock-drill. Steam	G. M. Githens	257,938	May 16	982	274	21	1471
Rock-drills. Core lifter and guide for annular	S. W. Douglass	254,939	Mar. 14	616	166	21	751
Rock-drills. Core-lifter for annular	G. F. Case	255,719	Mar. 28	1605	434	21	936
Rock-drills. Device for clearing cylindrical	A. Ball	256,790	Apr. 18	1261	361	21	1181
Rock-drills. Hoisting apparatus for steam	M. C. Bullock	258,985	June 6	139	37, 38	21	1718
Rock-drilling machine	A. Shedlock	254,393	Feb. 28	1459	{399 {400	21	618
Rocking-chair	H. Dryfoos, S. and R. Strauss	255,104	Mar. 21	837	223	21	797
Rocking-chair	W. H. Haman	252,031	Jan. 10	436	119	21	82
Rocking-chair. Base	L. Heywood	257,221	May 2	86	25	21	1206
Rocking-chair. Base	W. and R. McCabe	258,239	May 23	1363	385	21	1549
Rocking-chair. Folding and reclining	W. W. and J. Y. Johnson	251,783	Jan. 3	117	33	21	22
Rocking-horse	C. Shepardson	256,390	Apr. 11	808	222	21	1004
Rod: *See* Connecting-rod. Cross-section rod. Fishing-rod. Stair-rod.							
Roller: *See* Curtain-roller. Field-roller. Gate-roller. Ground-roller. Land and lawn roller. Loom-temple roller. Saw-mill log-roller. Shade-roller.							
Roller for moving houses	J. C. Welsch	252,922	Jan. 10	733	205	21	131
Roller, harrow, and cultivator. Combined	G. M. Heim	258,418	May 23	1567	445	21	1584
Roller-mill	J. R. Davis, Jr.	258,027	May 16	1067	302	21	1491
Roller-mill	C. Gates	252,755	Jan. 24	1284	{361 {362	21	836
Roller-mill	N. W. Holt	252,945	Jan. 31	1533	426	21	925
Roller-mill	N. W. Holt	255,859	Apr. 4	126	34	21	972
Roller-mill	N. W. Holt	255,860	Apr. 4	126	34	21	972
Roller-mill	N. W. Holt	255,969	Apr. 4	286	78	21	1000
Roller-mill	N. W. Holt	259,858	June 20	1235	331	21	1923
Roller-mill	U. H. Odell. (Reissue)	10,139	June 20	1416	381	21	1953
Roller-mill	U. H. Odell	260,283	June 27	1707	468	21	2005
Roller-mill	H. N. Pomeroy	254,043	Feb. 21	1061	295	21	543
Roller-mill	J. Weber	253,339	Feb. 7	177	50, 51	21	376
Roller-mill	I. Wescott and J. S. Karns	258,838	May 30	2086	{583 {584	21	1660
Roller-mill feed mechanism	C. B. Campbell	256,678	Apr. 25	1302	391	21	1216
Rolling finger-rings. Mechanism for	C. R. Smith	253,950	Feb. 21	944	263	21	583
Rolling machine. Sheet-metal	A. J. Demmler	256,658	Apr. 18	1123	{315 {316	21	1160
Rolling metal bars	L. Miller and F. Bishop	256,564	Apr. 18	1039	294	21	1146
Rolling metals. Roll for	F. Holub	252,464	Jan. 17	964	267	21	175
Rolling-mill	W. E. Harris	252,460	Jan. 17	955	{264 {265	21	174
Rolling-mill	J. T. Hastings	260,196	June 27	1669	453	21	1909
Rolling-mill	J. Ostrander	253,734	Feb. 14	667	197	21	474
Rolling-mill	J. F. Sandberg	252,323	Jan. 17	1087	{305 {307	21	187
Rolling-mill	C. B. Sill	260,246	June 27	1731	466	21	2009
Rolling-mill	J. Thomas	252,911	Jan. 31	1496	417	21	978
Rolling-mill	W. Wenstrom	254,745	Mar. 7	359	95	21	630
Rolling-mill for rolling wire and rods	A. Hughes	252,467	Jan. 17	966	{266 {269	21	176
Rolling-mill for tapering spring-points	W. Evans	255,958	Apr. 4	260	67	21	963
Rolling-mill. Iron	C. Forster and B. Weaver	253,395	Feb. 14	493	{140 {141	21	441

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Rolling mill. Metal	T. Critchlow	258,195	May 16	1285	{364 {365	21	1507
Rolling-mill rail-carrier	W. Clark	256,377	May 23	1521	432	21	1576
Rolling-mill. Three-high	J. I. Williams. (Reissue)	10,104	May 2	376	{165 {166	21	1349
Rolling rectangular bars from old rails. Machinery for	J. J. Thomas	253,787	Feb. 14	735	216	21	462
Rolls. Machine for cutting grooves in	J. R. Reynolds	256,165	Apr. 11	816	{142 {143	21	1044
Roof	O. W. Kendall	259,400	June 13	654	173	21	1816
Roofs, &c. Constructing and repairing illuminating	T. Hyatt	257,712	May 9	723	201	21	1415
Roofing and paving. Composition for	A. K. Lee	257,501	May 9	442	.....	21	1398
Roofing-bracket	S. Woodard	256,843	May 30	2079	567	21	1668
Roofing compound	J. Bowman and G. Klinck	257,544	May 9	491	.....	21	1375
Roofing composition	G. H. Pöschel	256,368	Apr. 11	788	.....	21	1009
Roofing-felt or other material. Ready-made	O. A. Smith and F. L. Kane	259,280	June 6	439	114	21	1769
Roofing. Manufacture of prepared	T. New	251,921	Jan. 3	291	.....	21	59
Roofing material	L. L. Sagendorph	258,584	Jan. 17	1030	.....	21	187
Roofing material	L. L. Sagendorph	255,068	Mar. 14	815	.....	21	748
Roofing material. Manufacturing	L. L. Sagendorph	255,067	Mar. 14	813	217	21	748
Roofing material upon roofs. Device for securing	F. E. Sagendorph	257,616	May 9	600	159	21	1392
Roofing. Metallic joint for flexible	J. Walter	256,063	Apr. 4	401	109	21	1017
Roofing-plate. Metal	R. Jones and T. C. Balding	251,891	Jan. 3	257	70	21	46
Roofing-scraper	T. B. Atterbury	253,174	Feb. 7	3	1	21	347
Roofing-tile	J. Serdinko	254,398	Feb. 28	1450	399	21	616
Room. Portable dark	L. R. Read	253,590	Feb. 14	629	139	21	440
Root and vegetable washer	E. W. Merrill	258,941	May 23	1365	365	21	1548
Rope and round-band coupling	J. Gates	254,473	Mar. 7	31	8	21	643
Rope-clamp	N. C. Orrick	258,508	Jan. 17	1005	280	21	188
Rope-clamp	T. Samson	256,686	May 30	1804	510	21	1634
Rope-clamp	W. C. Burns	254,795	Mar. 14	499	115	21	718
Rope-clamp. Adjustable	J. Harris	255,976	Apr. 4	284	74	21	997
Rope-machine	R. W. Robinson and J. Shaw	255,195	Mar. 21	946	253	21	816
Roping or slivers. Manufacturing woolen	W. H. Gage	259,593	June 13	811	214	21	1843
Rotary bolt	T. N. Denison	256,131	Apr. 11	481	136	21	1037
Rotary engine	G. W. Dudley	259,111	June 6	259	79	21	1746
Rotary engine	G. W. Dudley	259,112	June 6	260	80	21	1746
Rotary engine	D. D. Hardy	252,378	Jan. 17	844	235	21	156
Rotary engine	S. D. Jones	257,587	May 9	567	{158 {159	21	1386
Rotary engine	W. C. Pooley	251,733	Jan. 3	56	15	21	12
Rotary engine	H. W. Potter	254,044	Feb. 21	1062	296	21	543
Rotary engine	A. W. Von Schmidt	256,178	Apr. 11	539	{147 {148	21	1046
Rotary engine	L. J. Wing	259,984	June 20	1367	{368 {369	21	1945
Rotary engine	L. J. Wing	259,985	June 20	1372	{369 {370 {371	21	1946
Rotary engine	L. J. Wing	259,986	June 20	1379	371	21	1947
Rotary engine	L. J. Wing	259,987	June 20	1380	371	21	1947
Rotary engine. Orbital	D. D. Hardy	256,534	May 23	1707	492	21	1609
Rotary screen for stone, &c	W. C. Oastler	255,295	Mar. 21	1119	308	21	845
Rotary steam-engine	E. W. Ellsworth	256,738	May 30	1878	554	21	1689
Rotary steam-engine	P. T. Hydne and A. Larson	252,773	Jan. 24	1306	366	21	240
Rotary steam-engine	G. W. Wade and J. M. Wardell	254,737	Mar. 7	348	98	21	627
Rotary steam-engine	A. O. Tower	255,127	Mar. 21	890	231	21	801
Rotary study-table or book-case	T. Fearon	255,985	Mar. 21	1037	278	21	831
Row-boats. Sliding seat for	L. A. Cook	259,420	Jan. 17	983	255	21	160
Rowing-gear	C. Poppenhusen	256,043	Apr. 4	354	.....	21	1010
Rubber and other vulcanizable gums. Molding articles of india-	H. W. Burr	255,130	Mar. 21	877	235	21	804
Rubber-coated fabrics. Curing	W. Garrity and N. Avery	251,866	Jan. 3	294	.....	21	40
Rubber. Coating metallic articles with vulcanized	C. Conner	256,081	May 16	1069	.....	21	1490
Rubber compound	C. Adams	257,638	May 9	617	173	21	1396
Rubber-cutting machine	H. T. Cushman	254,982	Mar. 7	213	55	21	674
Rubber for erasive purposes. Preparing vulcanized	J. J. C. Smith	254,716	Mar. 7	383	82, 88	21	695
Rubber, &c. Manufacture of articles of india-	E. Nelson	254,498	Mar. 7	63	16	21	640
Rubber-molds. Apparatus for filling	F. Richardson	259,721	June 20	1073	265	21	1895
Rubber to metal. Securing	S. Grescen	260,088	June 27	1451	.....	21	1988
Rubber to metals. Attaching	W. Beukler	255,916	Apr. 4	260	58, 53	21	984
Rulling-machine	E. W. Blackhall	255,578	Mar. 28	1423	383	21	909
Ruling-machine	S. A. Grant	258,642	May 30	1844	520	21	1641
Ruling-machine	D. Buckler and W. Keyes	252,989	Jan. 31	1685	445	21	997
Running-gear	C. U. Yates and P. Dugener	255,830	Apr. 4	95	.....	21	967
Saccharine juices. Treatment of	C. F. Mansur	256,484	May 23	1613	456	21	1593
Saccharine liquids. Self-regulating feeder for	J. M. Edmunds	256,657	Apr. 18	1130	317	21	1161
Sad iron	A. L. F. Mitchell and W. F. Dame	255,733	Mar. 28	1629	449	21	940
Sad-iron	T. C. Mullaix	257,267	May 9	592	78	21	1359
Sad-iron	W. Hilton	259,149	June 6	537	99	21	1733
Sad-iron	I. I. Bush	253,973	Feb. 21	974	271	21	588
Sad-iron and fluter. Combined	G. H. Carpenter	253,975	Feb. 21	977	272	21	589
Saddle-bags. Medical	W. H. Coolidge	258,982	June 6	34	8	21	1709
Saddle. Gig	A. Ortmayer. (Reissue)	10,095	Mar. 7	412	110	21	708
Saddle. Gig	G. E. and C. C. Bender	259,783	June 20	1163	310	21	1910
Saddle. Harness	P. J. Vehlen	255,918	Mar. 21	982	263	21	881
Saddle. Harness	L. Dare	253,694	Feb. 14	509	169	21	458
Saddle loop. Harness	F. A. Hake	258,748	May 30	1979	558	21	1664
Saddle-pad	J. Bassler	257,273	May 2	153	43	21	1308
Saddle. Riding	L. A. Reister	255,334	Mar. 21	1133	304	21	847
Saddle. Side	M. Sedlacek	253,114	Jan. 31	1755	467	21	1009
Saddle-tree	N. Tena	256,514	Apr. 18	970	272	21	1125
Saddle-tree	E. P. Waters	260,262	June 27	1748	472	21	2011
Saddle-tree and pad. Harness	W. M. Mann	253,401	Feb. 7	254	73	21	389
Saddle-trees. Girth attachment for							

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Safe	E. R. Morse and F. H. Charter	259,415	June 13	673	178	21	1819
Safe	D. W. Smith	257,094	Apr. 25	1638	459	21	1259
Safe	R. W. Tees	253,129	Jan. 31	1772	492	21	393
Safe. Burglar-proof	G. L. Damon	252,435	Jan. 17	926	255 256	21	169
Safe. Fire and burglar proof	H. Gross	258,577	May 30	1762	498 499	21	1626
Safe for preserving fruit and vegetables	G. A. Cochrane	258,020	May 16	1079	300	21	1489
Safe. Kitchen	R. B. Ayres	254,449	Mar. 7	3	1	21	639
Safe. Marine	A. D. Roth	260,395	June 27	1885	494	21	2024
Safe. Provision	R. R. Sykes	258,397	May 23	1468	415 416	21	1506
Safe. Sectional kitchen	C. Kade	256,328	Apr. 11	739	202	21	1069
Safe, &c. Suspended	S. Mason	255,179	Mar. 21	929	248	21	812
Safety-elevator for hatchways	J. B. Atwater	258,211	May 23	1398	375 376	21	1542
Safety-pin	W. F. Hyatt	255,393	Mar. 21	1075	289	21	837
Safety-pin	J. Jenkins	254,657	Mar. 7	259	67	21	662
Safety-pin	E. L. Paine	254,837	Mar. 14	484	129	21	727
Safety-pin	H. M. Paine	256,917	Apr. 25	1438	404	21	1234
Safety-pin	E. Williams	254,445	Feb. 28	1521	416	21	630
Safety-pin catch	S. Moore	256,799	May 30	9098	573	21	1671
Safety-pin guard	J. Jenkins	254,656	Mar. 7	960	67	21	662
Sail-hank	T. Haggerty	253,598	Feb. 14	421	117	21	430
Sail-traveler	J. Rand	259,309	June 6	407	108	21	1789
Sails. Reefing	W. N. Griswold	253,371	Feb. 7	218	62	21	383
Salt-evaporator	S. Dobbs	255,075	Mar. 14	798	214	21	783
Salt-grainer	H. N. Hewlett	259,539	June 13	830	219	21	1847
Salt. Making	J. M. Laing	254,839	Mar. 14	475	127 128	21	736
Salt. Process of and apparatus for manufacturing	O. L. F. Browne	254,916	Mar. 14	569	158	21	747
Salve	J. Mayer	256,847	Apr. 25	1358	.....	21	1210
Sample-displaying lid	W. H., T. F., and J. B. Wheelor, and C. M. Slack.	255,063	Mar. 14	785	210	21	780
Sample-exhibiting case	J. C. Scott	258,814	May 30	2045	578	21	1675
Sample-fastener for packages	W. R. Perry	254,840	Mar. 14	486	130	21	727
Sand-band	F. S. Rolfe and W. Cooley	259,924	June 20	1311	351	21	1935
Sand-bars in rivers, cutting channels in harbors, &c. Apparatus for removing	J. H. Huffer	260,200	June 27	1673	454	21	2000
Sandpapering wheel rims or fellies and other articles. Machine for	G. A. Brown and B. Holt	258,553	May 30	1733	490 491	21	1621
Sap-feeding apparatus. Automatic	M. C. Barden	255,565	Mar. 28	1412	381	21	901
Sash-balance	T. H. Bonham	257,142	Apr. 25	1703	477	21	1271
Sash-balance	F. B. Cochran	255,721	Mar. 28	1607	434	21	937
Sash-balance	J. A. Quick	251,943	Jan. 3	313	84	21	54
Sash-cord fastener	C. Bush	260,161	June 27	1694	439	21	1992
Sash-fastener	E. B. Attwell	260,271	June 27	1759	476	21	2013
Sash-fastener	F. E. Bailey	257,145	May 2	2	2	21	1281
Sash-fastener	J. A. Curtin	258,026	May 16	1066	302	21	1490
Sash-fastener	J. E. Howard	253,534	Feb. 14	429	120	21	431
Sash-fastener	A. Johnson	256,144	Apr. 11	496	135	21	1040
Sash-fastener	E. Kempshall	257,722	May 9	731	204	21	1417
Sash-fastener	D. P. Morrell	257,048	Apr. 25	1565	445	21	1250
Sash-fastener	E. S. Morton	255,003	Mar. 14	700	189	21	768
Sash-fastener	T. Orton	254,239	Feb. 28	1220	355	21	598
Sash-fastener	A. Quimby	252,138	Jan. 10	561	158	21	103
Sash-fastener	H. L. Robertson	255,194	Mar. 21	948	253	21	816
Sash-fastener	H. P. Tyler and J. B. Atwood	253,563	Feb. 14	458	131	21	435
Sash-fastener	H. Greenfield	255,282	Mar. 21	1055	283	21	834
Sash fastener and holder	J. B. Montague	251,915	Jan. 3	286	78	21	50
Sash fastener and holder	J. B. Montague, J. T. Booker, and E. C. Dinning	251,916	Jan. 3	287	78	21	50
Sash-holder	J. Campbell and G Simonson	256,637	Apr. 18	1106	311	21	1157
Sash-holder	F. W. Quitman	257,382	May 2	281	81	21	1338
Sash-holder	J. V. Risk	255,025	Mar. 14	727	196	21	771
Sash-holder	J. G. Slater	254,510	Mar. 7	76	20	21	651
Sash-holder	H. A. Stone	258,611	May 30	1808	511	21	1634
Sash holder and fastener. Combined	A. J. Davis	258,866	June 6	38	10	21	1701
Sash-holder and frame	C. Loewenstein	260,213	June 27	1693	457	21	2003
Sash holder and tightener	C. A. Judd	252,472	Jan. 17	972	271	21	177
Sash-weight	C. W. Levalley	259,560	June 13	835	226	21	1852
Sash-weights. Core for	P. H. Griffin	254,126	Feb. 28	1150	324	21	566
Sash. Window	J. F. Cox	256,644	Apr. 18	1115	313	21	1159
Saucepan-handle	C. Ezard	258,733	May 30	1900	554	21	1661
Saucer for mugs	F. L. Weber	252,406	Jan. 17	888	246	21	163
Saw. Back	J. R. Woodrough	252,371	Jan. 17	1068	301	21	198
Saw. Compass	C. Bush	252,179	Jan. 10	609	171	21	111
Saw. Crosscut	E. M. Boynton	253,671	Feb. 14	563	165	21	455
Saw. Drag	R. R. Earnest	256,499	Apr. 18	917	257	21	1128
Saw. Drag	T. Lowden	259,879	June 20	1900	337	21	1927
Saw. Drag	G. A. Moffat	260,218	June 27	1699	459	21	2004
Saw. Drag	J. F. Scherer	258,928	June 20	1315	352	21	1936
Saw-filing machine	T. Muncaster	258,380	Apr. 11	777	213 214	21	1068
Saw-filing machine	F. Myers	255,007	Mar. 14	705	190	21	768
Saw-filing machine	W. H. Shutte	251,950	Jan. 3	328	90	21	57
Saw-filing machine. Gin	E. W. South	254,400	Feb. 28	1470	402	21	620
Saw frame. Buck	F. L. Hemmer	257,701	May 9	716	196	21	1413
Saw guard. Circular	J. Sill	252,369	Jan. 10	717	202	21	129
Saw-guide	J. P. Hall	254,212	Feb. 28	1256	348	21	583
Saw-guide	W. E. Hill	257,704	May 9	712	197	21	1413
Saw guide. Band	W. Bowker	259,661	June 20	967	263	21	1861
Saw. Hand	J. R. Woodrough	252,370	Jan. 17	1060	301	21	195
Saw. Hand	J. R. Woodrough	257,802	May 9	817	228	21	1433

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Saw-handle	E. Andrews. (Reissue)	10,135	June 13	978	261	21	1872
Saw-handle	W. Clemson	257,657	May 9	645	181	21	1408
Saw-handle	W. Clemson	257,926	May 16	980	268	21	1480
Saw-handle	C. W. Robinson	257,978	May 16	1036	286	21	1480
Saw-handle	W. McNiece	256,483	Apr. 18	950	265	21	1131
Saw-handle clamp	M. Covel	257,312	May 2	72	21	21	1294
Saw jointer and gage	A. Long	256,011	Apr. 4	282	84	21	1004
Saw jointer. Circular	M. Covel	259,373	June 13	819	164	21	1880
Saw-jointing and swaging device	H. Ferguson	252,089	Jan. 10	536	146	21	94
Saw-jointing device	E. Preston	253,555	Feb. 14	452	129	21	434
Saw-jointing device	E. Holderman	256,755	May 30	1985	560	21	1665
Saw-jointing machine	G. G. Seeger	256,601	Apr. 18	1060	289	21	1149
Saw machine. Drag	C. J. L. Meyer	252,988	Jan. 10	715	203	21	139
Saw machine. Rim	J. Campbell	254,110	Feb. 28	1142	319	21	565
Saw mill. Circular	T. L. Carley	258,689	Jan. 24	1215	340	21	225
Saw mill. Circular	J. B. Finch	254,458	Mar. 7	14	4	21	641
Saw-mill dog	F. E. Frey	259,516	June 13	803	211	21	1849
Saw-mill dog	D. Hallman and H. Wadham	258,451	Jan. 17	945	261	21	172
Saw-mill dog	J. Mote	259,144	June 6	331	86	21	1758
Saw-mill dog	T. J. Reasny	258,496	Jan. 17	1001	278	21	188
Saw-mill feed mechanism	D. C. Prescott	257,384	May 2	283	81	21	1338
Saw-mill frame. Gang	J. T. Crush	256,499	Apr. 18	955	267	21	1132
Saw-mill head-block	E. and I. D. Parker	259,102	June 6	286	76	21	1744
Saw-mill head-block	D. Parkhurst	256,157	Apr. 11	509	140	21	1042
Saw-mill head-block	J. W. Stokoe	257,080	Apr. 25	1508	448 449	21	1269
Saw-mill head-block	S. R. Smith and E. Myers	254,513	Mar. 7	78	21	21	651
Saw-mill knees. Device for operating	P. Musser	259,936	June 20	1394	385	21	1936
Saw-mill log-deck	J. Lucia	252,499	Jan. 17	1003	279	21	189
Saw-mill log-roller	D. C. Prescott	254,671	Mar. 7	273	73	21	685
Saw-mill-setting mechanism	J. H. Watson. (Reissue)	257,757	May 9	706	213 214	21	1423
Saw-mills. Feed and gig works for	A. Rodgers	10,140	June 20	1417	382	21	1954
Saw mills. Presser-roller for gang	J. M. Draper	257,979	May 16	1037	286	21	1480
Saw-set	H. H. Hitchcock	254,467	Mar. 7	23	6	21	649
Saw-set	N. J. Webb	256,217	Apr. 11	601	163	21	1057
Saw-set	G. W. Amesbury	253,794	Feb. 14	762	212	21	484
Saw-setting machine	A. W. Broughton	257,901	May 2	61	19	21	1292
Saw sharpening and clamping device	M. Covel. (Reissue)	259,805	June 20	1175	314	21	1912
Saw-sharpening machine	W. H. Halladay	10,099	May 2	369	103 104	21	1347
Saw-sharpening machine	A. P. Gathright and A. W. Potts	254,889	Mar. 14	519	130	21	734
Saw-sharpening machine. Gin	T. S. Wilkin	259,125	June 6	314	83	21	1749
Saw-stretching machine	J. L. Pitts	259,068	June 6	247	66	21	1736
Saw-swage	F. S. Smith	254,715	Mar. 7	322	85	21	693
Saw-swage	J. Connell and V. Dengler	253,513	Feb. 14	405	113	21	427
Saw. Swing	B. G. Luther	255,302	Mar. 21	1069	274	21	240
Saw-table gage. Bevel	R. E. Poindexter	257,631	May 9	645	236	21	1436
Saw teeth. Device for dressing	W. E. Brooke	259,471	June 13	744	196 197	21	1838
Saw-tooth	W. E. Brooke	256,363	May 23	1505	438	21	1573
Saw-tooth. Detachable	J. Kitz	254,142	Feb. 28	1177	330	21	571
Saws. Hanging circular	J. F. Kemp	259,605	Jan. 24	1118	313	21	206
Saws. Machine for brazing band	J. B. Gemin	257,936	May 16	981	274	21	1471
Saws. Planer-tooth for	F. M. Covell	256,464	Apr. 18	919	254 255 262	21	1125
Sawing and grooving shakes. Machine for	G. W. Wilkins	259,737	June 20	1097	305	21	1900
Sawing and outgaging material for barges. Machine for	W. H. Gordon and P. J. Boost	260,019	June 27	1450	391	21	1998
Sawing ellipses. Gage for	S. C. Kennedy	260,209	June 27	1667	456	21	2009
Sawing-machine	L. F. Kettler	252,043	Jan. 10	456	123	21	85
Sawing machine. Band	A. Euston	254,302	Feb. 28	1240	345	21	581
Sawing machine. Circular	W. H. Smith	252,353	Jan. 17	796	222	21	148
Sawing machine. Crosscut	A. J. and J. N. Smith	256,394	May 23	1456	414	21	1565
Sawing machine. Drag	F. McDonough	259,703	June 20	1050	279	21	1691
Sawing-machine. Edger	C. B. Halstead and J. A. Carpenter	251,878	Jan. 3	338	64	21	42
Sawing machine. Log	W. Ford	257,309	May 2	190	54	21	1315
Sawing machine. Scroll	A. Showalter	253,777	Feb. 14	719	205	21	480
Sawing-machine. Scroll and circular	J. Gorman	259,530	June 13	818	216	21	1845
Scaffold-support	J. Gorman	256,998	Apr. 25	1535	431	21	1241
Scaffold-supports. Extension-leg for	W. W. Reynolds	256,502	Apr. 18	958	268	21	1133
Scale	B. C. Mayer	258,789	May 30	2022	571	21	1671
Scale. Automatic	F. D. Payn	254,502	Mar. 7	67	18	21	650
Scale. Automatic weighing	V. M. Fulcher	258,458	Jan. 17	946	261	21	173
Scale-indicator	W. E. Selleck	258,627	Jan. 24	1143	321	21	213
Scale-platform support	J. B. Atwater	253,650	Feb. 14	589	161	21	453
Scale. Weighing	J. Dolph	256,267	May 23	1418	401	21	1558
Scales. Barrel	R. Torres	256,708	Apr. 18	1257	354	21	1185
Scales. Pendulum	W. W. Hopkins	256,692	Apr. 18	1175	330	21	1170
Scales. Platform	F. Casse	259,093	June 6	275	73	21	1743
Scales. Railway weighing	J. P. Haggett	256,892	Apr. 25	1410	397	21	1219
Scales. Weighing	W. W. Wright	256,423	Apr. 11	946	264	21	1100
Scales. Weighing	C. H. Crossette	257,850	May 16	873	245	21	1454
Scarf. Neck	H. Selvage	253,485	Feb. 7	356	100	21	406
Scarf. Neck	F. W. Collins	258,190	Jan. 10	617	174	21	118
Scarfs. Stand for displaying	W. S. Van Hoesen	254,735	Mar. 7	346	98	21	697
Scissors and shears. Corrugated	N. Finck	255,158	Mar. 21	903	249	21	808
Scissors. Manufacture of	G. Cladin	255,254	Mar. 21	1024	275	21	829
Scoop and fork	A. B. Matteon	256,150	Apr. 11	501	137	21	1041
Scoop for grain, sugar, &c	T. J. Blake	255,483	Mar. 28	1319	356	21	884
Scoop. Grain	J. J. Bradner	255,923	Apr. 4	214	55	21	966
Scoop. Grocer's	C. H. Roberts	258,476	May 23	1636	463	21	1586
Scoop. Grocer's	W. C. Luts	259,407	June 13	663	175	21	1817
Scoop or shovel							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Scourer: *See* Grain-scourer.							
Scouring coffee, &c. Machine for	G. W. and G. S. Hungerford	253,054	Jan. 31	1672	463	21	307
Scraper and grader. Road	A. H. Kimball and C. H. Littleton. (Reissue.)	10,068	Apr. 18	1311	369	21	1195
Scraper and grader. Triangular road	A. L. Griffith	256,054	May 16	1117	313	21	1486
Scraper and scoop. Combined road	H. H. Messenger	253,205	Feb. 7	142	41	21	370
Scraper. Dirt	J. Johnson	254,485	Mar. 7	49	13	21	647
Scraper. Drag	J. Cosgrove and S. F. Welch. (Reissue.)	10,090	Apr. 25	1705	478	21	1971
Scraper. Earth	R. W. Chambers	258,373	May 23	1517	431	21	1575
Scraper. Earth	W. Haslup. (Reissue)	10,045	Feb. 28	1562	416	21	630
Scraper. Earth	J. W. Skillen	256,752	Apr. 18	1249	340	21	1169
Scraper. Earth	P. Smith	257,773	May 9	783	216	21	1487
Scraper. Foot	R. B. Hough	259,089	Jan. 24	1198	333	21	201
Scraper. Foot	G. P. Turner	259,734	June 20	1092	290	21	1869
Scraper. Road	W. E. and H. L. Jacobs	254,137	Feb. 28	1171	308	21	570
Scraper. Road	W. Patterson	253,310	Feb. 7	147	43	21	371
Scraper. Road	S. Pennock. (Reissue)	10,083	Jan. 31	1650	509	21	336
Screen: *See* Car-window screen. Rotary screen. Coal-screen. Window-screen.							
Screw	C. D. Rogers	255,459	Mar. 28	1226	347	21	880
Screw	C. D. Rogers	255,816	Apr. 4	76	21	21	964
Screw-cutting die	W. D. Forbes	253,906	Feb. 21	908	279	21	539
Screw-cutting die	J. Sherman	252,080	Jan. 10	471	130	21	89
Screw-cutting die-stocks. Pipe-cutting attachment for	A. H. Jarecki	252,671	Jan. 24	1194	334	21	221
Screw-cutting machine	J. Delker	253,987	Feb. 21	967	275	21	530
Screw-cutting machine	L. W. Stockwell	259,435	June 13	605	164	21	1823
Screw-driver	J. Swan	260,135	June 27	1597	431	21	1968
Screw-driver	C. Thomas	258,339	May 23	1464	416	21	1566
Screw-heads. Machine for grinding or polishing	C. D. Rogers	253,890	Feb. 21	865	244	21	512
Screw. Jack	W. R. Coats and W. H. Vibbard	251,698	Jan. 3	10	5	21	5
Screw. Jack	S. C. Megill	253,617	Feb. 14	516	148	21	445
Screw machine. Metal	H. K. Jones	259,949	Jan. 31	1540	420	21	958
Screw machine. Metal	M. W. Redshaw	259,515	Jan. 17	1018	284	21	165
Screw machine. Wood	A. S. Cook	256,157	Apr. 11	477	130	21	1037
Screw machine. Wood	A. S. Cook	256,546	Apr. 18	1084	283	21	1141
Screw-press	W. D. Carter	252,075	Jan. 10	467	134	21	91
Screw-threading machine	L. W. Stockwell	259,433	June 13	605	184	21	1823
Screw-threads. Machine for cutting	I. S. Schuyler	256,166	Apr. 11	519	143	21	1044
Screw wrench	J. H. and F. L. Coes	252,597	Jan. 24	1112	311	21	207
Screws. Device for molding cast	E. W. Seeger	257,246	May 2	121	34	21	1362
Screws or bolts. Machine for rolling threads of	H. A. Harvey	251,874	Jan. 3	234	65	21	48
Sculpture, statuary, &c. Machine for copying	A. B. Holstein	255,508	Mar. 28	1349	363	21	890
Sea-wall	D. H. Budlong	254,454	Mar. 7	10	3	21	640
Seal and tag	E. J. Brooks	258,278	May 23	1408	388 / 389	21	1557
Seal-lock	E. J. Brooks	256,791	Apr. 18	1282	361 / 362	21	1119
Seal-lock	F. P. Iannarone	253,398	Feb. 7	237	67	21	366
Seal-lock	L. M. Junkin	253,870	Feb. 21	843	238	21	567
Seal. Metallic	E. J. Brooks	253,674	Feb. 14	567	166	21	456
Seal. Metallic	E. J. Brooks	260,279	June 27	1767	478	21	2015
Seal set, cutter, and extractor. Car	H. M. Foote	254,435	Feb. 28	1509	413	21	628
Sealing-press	E. J. Brooks	254,601	Mar. 7	189	47	21	670
Seaming-cylinders for cans. Endless track for	J. P. Haller	257,219	May 2	84	25	21	1336
Seaming sheet-metal roofs. Machine for	S. Woodhead	258,786	June 20	1155	307	21	1909
Seams of garments, &c. Machine for trimming	N. H. Bruce	257,226	May 2	105	47	21	1511
Seams of sheet-metal cans. Closing the	G. H. Perkins	252,795	Jan. 24	1341	.....	21	946
Seams of sheet-metal pipes. Machine for closing down	W. A. Wheeler	254,801	Mar. 14	559	150	21	741
Seat: *See* Bicycle-seat. Reversible seat. Car-seat. Vehicle-seat. Counter-seat. Vehicle shifting seat. Folding seat. Wagon-seat. Mowing-machine seat. Wagon spring-seat.							
Seat	H. S. Hale	256,676	Apr. 18	1158	395 / 396	21	1167
Seat	H. S. Hale	259,533	June 13	661	217	21	1845
Secondary batteries. Automatic circuit-breaker for	J. A. Maloney and F. Burger	252,004	Jan. 3	392	105	21	67
Secondary batteries. Charging	C. E. Buell	255,949	Mar. 21	1017	272	21	888
Secondary batteries. Charging and discharging	C. E. Buell	255,949	Mar. 21	1018	272 / 273	21	888
Secondary batteries. Device for charging and discharging	C. E. Buell	256,450	Apr. 11	870	345 / 346	21	1106
Secondary battery	J. S. Sellon	259,657	June 13	975	261	21	1872
Secondary voltaic cells	J. W. Swan	256,070	Apr. 4	394	.....	21	1015
Seed-case	R. P. Carpenter	255,771	Apr. 4	24	7	21	954
Seed-cleaner. Flax	G. Beal	254,590	Mar. 7	177	44	21	689
Seed-drill and fertiliser	H. M. Keith	258,998	June 6	71	19	21	1767
Seed dropper. Cotton	R. Cantelou	255,520	Mar. 28	1455	391	21	909
Seed from grain. Machine for removing	D. Talmage and M. L. Flowers	259,334	Jan. 17	797	222	21	149
Seed gatherer. Clover	J. P. Rimel	254,109	Feb. 21	1121	319	21	554
Seeder and cultivator	J. E. Henrie	253,995	Feb. 7	190	56	21	367
Seeder or cultivator tooth	J. S. Rowell	256,982	Apr. 25	1442	405	21	1224
Seeding-machine	H. W. Scott	258,588	Jan. 17	1035	288	21	188
Seeding-machine	J. W. Sohn, C. O. Richter, and R. S. Carr.	257,622	May 9	907	179	21	1394
Seeding-machine and cultivator	J. W. Thomas and A. R. Ludlow	256,854	May 30	2059	581	21	1678
Seeding-machine and fertiliser-distributer	C. H. Thompson	256,153	May 16	1238	349	21	1518

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Seeding-machine force-feed	S. Rotan	255,119	Mar. 21	851	238	21	770
Seesaw	L. J. Adams	253,571	Feb. 14	488	133	21	437
Self-massage or flesh-kneading. Apparatus for	C. A. Angstrom	259,456	June 13	783	192	21	1820
Self-opening gate	W. R. Hambleton	258,750	May 30	1861	520	21	1654
Separator: *See* Centrifugal separator. Ore-separator. Gold-separator. Spinning-machine yarn-separator. Grain-separator. Starch-separator. Grain and cockle separator. Water and steam separator. Grain and mineral separator.							
Server	R. J. Carson	256,636	Apr. 18	1167	311	21	1157
Settee. Folding	C. B. Dunscomb	253,925	Feb. 14	709	200	21	491
Setting-tank	A. R. Jones	251,717	Jan. 3	35	10	21	6
Sewage. Apparatus for the disposal of	A. S. Glover	256,744	May 30	1974	557	21	1683
Sewage. Treating	F. Field	259,282	June 6	299	100	21	1783
Sewer, drain, and water pipes, &c. Composition for	J. D. Gorman	255,921	Mar. 21	1054	.....	21	834
Sewer-gas. Apparatus for consuming	W. H. Ogilvie and W. L. Beaucn	259,499	June 13	679	189	21	1859
Sewer-trap	A. J. Erwin	252,889	Jan. 31	1447	404	21	289
Sewer-trap	J. F. O'Grady	254,264	Feb. 28	1466	386	21	613
Sewed fabrics, &c. Machine for trimming hems and seams of	J. F. Thomas	256,890	Apr. 4	198	47	21	990
Sewing and other machines. Driving mechanism for	T. S. Tongue	253,940	Feb. 7	70	22	21	328
Sewing. Book	D. M. Smyth	259,656	June 6	236	63	21	1734
Sewing buttons to cloth, &c. Machine for and method of	J. Mathieon	258,117	Jan. 10	534	148 / 149	21	90
Sewing buttons to fabrics. Machine for	A. Borchardt	256,878	Apr. 11	877	194	21	1071
Sewing flat buttons to fabrics. Machine for	J. H. Morley	253,615	Feb. 14	517	148 / 149	21	445
Sewing harness. Guide for	W. C. Duffey	256,003	Apr. 25	1283	400	21	1220
Sewing heavy materials. Machine for	E. H. Smith	260,130	June 27	1590	466	21	1957
Sewing-machine	C. A. Dearborn	259,396	June 13	583	137 / 138	21	1792
Sewing-machine	J. L. Eck	256,628	Apr. 25	1322	377	21	1226
Sewing-machine	C. H. Gifford	255,509	Mar. 28	1389	381	21	898
Sewing-machine	G. Grisel	257,940	May 16	994	276	21	1471
Sewing-machine	L. E. Higby	256,141	Apr. 11	493	134	21	1039
Sewing-machine	C. E. L. Holmes	254,975	Mar. 14	693	180	21	730
Sewing-machine	J. S. Hosmer	260,027	June 27	1439	362 / 364	21	1957
Sewing-machine	A. J. Hurtu	256,761	May 30	1991	568	21	1696
Sewing-machine	A. J. Hurtu and V. J. Hautin. (Reissue.)	10,195	May 30	2108	595	21	1827
Sewing-machine	W. Johnson	254,466	Mar. 7	80	13	21	647
Sewing-machine	J. T. Jones	256,296	Mar. 21	1060	296	21	893
Sewing-machine	D. L. Kaeler	255,533	Mar. 28	1490	402	21	917
Sewing-machine	G. A. Mayo	258,235	Jan. 10	670	188	21	122
Sewing-machine	N. Meyers	256,911	Apr. 25	1431	402	21	1233
Sewing-machine	D. Melly	257,026	Apr. 25	1389	440	21	1351
Sewing-machine	G. F. Newell	253,228	Feb. 7	93	16	21	356
Sewing-machine	G. M. Pratt	254,779	Mar. 7	209	106	21	706
Sewing-machine	T. B. Roberts	260,240	June 27	1783	487	21	2008
Sewing-machine	W. Roberts	254,696	Mar. 7	209	78, 80	21	689
Sewing-machine	G. S. Ressinger	256,743	Apr. 18	1281	349	21	1130
Sewing-machine	H. F. Schlueter	257,301	May 2	988	88	21	1333
Sewing-machine	J. B. Secor	253,772	Feb. 14	710	200 / 201	21	478
Sewing-machine	J. B. Secor	253,773	Feb. 14	713	200	21	479
Sewing-machine	F. R. Smith	255,544	Mar. 28	1390	378	21	897
Sewing-machine	J. Stern	254,721	Mar. 7	231	62	21	694
Sewing-machine	J. Tripp and J. H. Osborn	259,736	June 20	1066	279 / 280	21	1886
Sewing-machine	W. Wendell	253,946	Feb. 7	79	24	21	329
Sewing-machine attachment	G. Doolittle	254,825	Mar. 14	611	165	21	729
Sewing-machine attachment	A. A. Fisher and A. Hart	256,693	Apr. 25	1527	422	21	1229
Sewing-machine attachment	J. F. Smeltzer	253,400	Feb. 7	259	100	21	368
Sewing-machine attachment	J. F. Smeltzer	254,499	May 23	1562	427	21	1289
Sewing-machine attachment for making fringe	D. Shaplin	253,775	Feb. 14	715	204	21	479
Sewing-machine bobbin-winder	J. C. Goodwin	259,263	June 13	633	168	21	1811
Sewing-machine bobbin winding attachment	G. A. Brady	257,844	May 16	980	243	21	1483
Sewing machine. Boot and shoe	J. W. Reniedon	259,918	June 20	1288	346 / 347	21	1934
Sewing-machine. Button-hole	W. W. Abbott	258,984	Jan. 31	1384	440 / 441	21	293
Sewing-machine. Button-hole	H. Charmbury	255,143	Mar. 21	861	227	21	804
Sewing-machine button-hole attachment	W. H. Carr	256,617	Apr. 25	1319	370 / 373	21	1203
Sewing-machine button-hole attachment	J. K. Harris	255,688	Mar. 28	1404	380	21	814
Sewing-machine button-hole attachment	G. M. Morris and J. P. Hollenbeck	258,668	Jan. 10	489	126	21	96
Sewing-machine coatings. Numbering	E. T. Thomas	251,745	Jan. 3	70	20	21	14
Sewing-machine cutter	E. T. Thomas	255,125	Mar. 21	859	226	21	801
Sewing-machine cutting and trimming attachment	S. W. Storey. (Reissue)	10,097	Mar. 28	1458	417	21	944
Sewing-machine driving-gear	F. Lahmann	256,008	Apr. 25	1281	361	21	1220
Sewing-machine feed mechanism	S. Bertschmid C. H. Willcox	255,577	Mar. 28	1400	383	21	894
Sewing-machine feed mechanism	C. Lucesen	253,731	Feb. 14	686	189 / 190	21	469
Sewing-machine feeding mechanism	C. H. Wood	258,568	Jan. 17	1077	290	21	198
Sewing-machine for quilting, &c	F. N. Cottle	254,988	Mar. 14	661	182 / 183	21	749
Sewing-machine for quilting	J. Thomas	257,786	May 9	786	209 / 210	21	1489
Sewing-machine fringing attachment	W. A. Estever	251,858	Jan. 3	211	59	21	26

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Sewing-machine gage attachment	H. Fisher	256,726	May 30	1963	555	21	1661
Sewing-machine guide	J. F. J. Gunning	253,372	Feb. 7	219	68	21	388
Sewing-machine guide	J. F. J. Gunning	255,617	Mar. 28	1479	387	21	913
Sewing-machine guides. Gage for setting	J. F. J. Gunning	256,056	May 16	1119	313	21	1496
Sewing-machine guiding attachment	E. J. Fritsche	257,932	May 16	973	273	21	1470
Sewing-machine hemmer	C. E. Rice	253,786	Feb. 14	704	200	21	477
Sewing-machine hemmer	E. Stern	256,908	June 6	108	27	21	1712
Sewing-machine hemmer and tacker. Combined	J. H. Bean	254,501	Mar. 7	178	44	21	668
Sewing-machine hook	C. M. Hine	256,915	Apr. 11	699	163	21	1697
Sewing-machine lamp attachment	F. E. Frey	251,853	Jan. 3	228	62	21	49
Sewing-machine motive power	G. W. Sowles	254,172	Feb. 28	1289	336	21	876
Sewing-machine motor	C. Nicholson	255,694	Mar. 14	899	217	21	725
Sewing-machine motor	W. Trabue	260,066	June 27	1507	405	21	1974
Sewing-machine motors. Treadle for	G. A. Heath	257,066	Apr. 25	1541	413	21	1942
Sewing-machine needle	H. A. Blanchard	252,998	Jan. 31	1680	443	21	206
Sewing-machine needle blanks. Mechanism for grooving	P. M. Beers	258,695	May 30	1919	{542 / 543}	21	1653
Sewing-machine needle-threader	F. G. Altmann and F. Pommer	258,007	Jan. 10	414	113	21	79
Sewing-machine needle-threading attachment	F. G. Altmann and F. Pommer	258,345	May 23	1463	421	21	1660
Sewing-machine needle-threading attachment	F. G. Altmann and F. Pommer	258,670	June 6	1	1	21	1696
Sewing-machine plaiting attachment	J. L. Coles	254,538	Mar. 7	167	37	21	657
Sewing-machine power-transmitter	C. W. Foster	255,393	Mar. 21	1157	310	21	897
Sewing-machine presser-foot	H. C. Stone	260,061	June 27	1496	404	21	1973
Sewing-machine ruffler	F. P. Chesney	252,355	Jan. 17	891	226	21	152
Sewing-machine ruffler	E. F. Edgecomb	259,511	June 13	797	210	21	1841
Sewing-machine ruffler	T. B. Garretson	259,134	June 6	313	83	21	1749
Sewing-machine ruffler	M. Weiner	251,808	Jan. 3	151	40	21	98
Sewing-machine ruffling and shirring attachment	F. O. Farwell	254,543	Mar. 7	116	30	21	659
Sewing-machine ruffling attachment	H. C. Goodrich and R. S. Barnum	256,834	Apr. 25	1241	370	21	1927
Sewing-machine ruffling attachment	A. Johnston	259,975	June 6	463	126	21	1777
Sewing-machine ruffling attachment	A. Johnston	259,643	June 13	969	256	21	1860
Sewing-machine ruffling attachment	A. McMullen	256,939	June 6	84	23	21	1709
Sewing-machine ruffling attachment	J. S. Sackett	257,518	May 9	462	123	21	1370
Sewing-machine ruffling or plaiting attachment	E. D. Fellows	252,446	Jan. 17	939	239	21	171
Sewing-machine ruffling or plaiting attachment	E. D. Fellows	252,447	Jan. 17	940	240	21	171
Sewing-machine ruffling or plaiting attachment	J. S. Sackett	257,519	May 9	463	123	21	1370
Sewing-machine shuttle	M. D. Audrus	256,346	May 23	1484	423	21	1570
Sewing-machine shuttle	F. Becker	257,294	May 2	65	20	21	1293
Sewing-machine shuttle	C. Fate	257,926	May 16	967	270	21	1469
Sewing-machine shuttle	F. N. Hathaway and C. A. Loomis	256,318	Apr. 11	797	198	21	1679
Sewing-machine shuttle	J. Hoefler	256,896	Apr. 25	1415	398	21	1939
Sewing-machine shuttle	W. H. Keeler	253,871	Feb. 21	844	236	21	509
Sewing-machine shuttle	W. R. Parsons	253,621	Feb. 14	521	150	21	446
Sewing-machine shuttle	W. R. Parsons	254,040	Feb. 21	1057	294	21	543
Sewing-machine shuttle	G. Rehfuss. (Reissue)	10,103	May 2	375	105	21	1346
Sewing-machine shuttle	J. Sigwalt, Jr	254,509	Mar. 7	75	20	21	651
Sewing-machine shuttle	J. Sigwalt, Jr	256,949	June 6	97	25	21	1711
Sewing-machine shuttle	J. Tripp and J. H. Osborn	259,459	June 13	700	186	21	1894
Sewing-machine shuttle-driver	G. W. Lord	252,045	Jan. 10	452	124	21	85
Sewing-machine shuttle. Revolving	E. H. Hull	254,217	Feb. 28	1260	350	21	584
Sewing-machine-spool tension	J. G. Sandford	259,334	June 13	574	151	21	1800
Sewing-machine. Straw-braid	E. Wiseman	257,425	May 2	339	95	21	1342
Sewing-machine take-up	G. W. Baker	254,788	Mar. 14	422	113	21	717
Sewing machine take-up	J. V. D. Eldredge	255,425	Mar. 28	1248	336	21	873
Sewing-machine take-up regulator	G. A. Mayo	259,646	June 13	964	257	21	1870
Sewing-machine tension	D. L. Keeler	255,634	Mar. 28	1501	403	21	918
Sewing-machine tension device	D. W. Brown	254,603	Mar. 7	191	47	21	670
Sewing-machine tension device	G. W. Burgess	254,794	Mar. 14	428	115	21	716
Sewing-machine tension device	W. Duchemin	257,583	May 9	581	146	21	1379
Sewing-machine thread-controlling apparatus	S. Borton and C. H. Willcox	255,581	Mar. 28	1436	387	21	900
Sewing-machine thread-cutter	C. H. Green	253,474	Feb. 7	349	95	21	404
Sewing-machine thread-cutter	A. Johnston	257,718	May 9	738	203	21	1416
Sewing-machine thread cutter	J. D. Lawlor	253,212	Feb. 7	48	13	21	354
Sewing-machine treadle	I. E. Myrick	255,383	Mar. 21	1118	301	21	845
Sewing-machine treadle	J. Sigwalt, Jr	256,171	Apr. 11	593	145	21	1045
Sewing-machine treadle-support	G. W. Gregory	258,563	Apr. 18	1081	288	21	1144
Sewing-machine trimmer	S. Borton and C. H. Willcox	255,578	Mar. 28	1429	{385 / 386}	21	904
Sewing-machine trimmer	T. J. Holton	254,319	Feb. 28	1376	379	21	604
Sewing-machine trimmer	T. S. Parker	257,751	May 9	759	{211 / 212}	21	1421
Sewing-machine trimmer	A. Warren	255,767	Mar. 28	1568	427	21	934
Sewing-machine trimming attachment	B. F. Gilbert	260,291	June 27	1787	484	21	2018
Sewing-machine trimming attachment	G. H. Inman	258,669	May 16	1133	318	21	1490
Sewing-machine trimming attachment	R. W. Riese	259,715	June 20	1143	303	21	1908
Sewing-machine trimming attachment	T. C. Robinson	255,336	Mar. 21	1134	305	21	846
Sewing-machine trimming attachment	T. R. Wright and T. B. Hill	257,124	Apr. 25	1673	460	21	1906
Sewing-machine tuck-marker	H. C. Goodrich	256,833	Apr. 25	1398	379	21	1927
Sewing-machine upper-feed and button-hole attachment	J. W. Blodgett	256,871	Apr. 25	1383	{369 / 390}	21	1215
Sewing-machine. Wax-thread	F. and E. E. Bean	255,713	Mar. 28	1506	4 0	21	935
Sewing-machine. Wax-thread	C. F. Bosworth	259,063	June 6	953	70	21	1740
Sewing-machine. Wax-thread	D. H. Campbell	253,156	Jan. 31	1611	{502 / 503}	21	330
Sewing-machine. Wax-thread	D. H. Campbell	253,157	Jan. 31	1680	503	21	331
Sewing-machine. Wax-thread	H. F. Nason	256,156	Apr. 11	507	{139 / 140}	21	1042
Sewing-machine work-basket	J. L. Parkinson	258,695	Jan. 24	1239	369	21	228
Sewing-machines. Adjustable table and driving mechanism for	R. Ley	256,336	Apr. 11	748	205	21	1064
Sewing-machines. Automatic presser-foot lifter for	C. G. Stratton	256,612	May 30	1889	511	21	1634
Sewing-machines. Device for converting motion in	D. Porter	257,009	May 9	592	165	21	1391
Sewing-machines. Feeding mechanism for button-	W. E. Bennett	259,986	June 27	1437	385	21	1966
Sewing-machines. Looper for button-hole	F. E. Schmidt	255,634	Mar. 14	746	200	21	773

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Sewing-machines. Mechanism for applying power to	I. Lecoeur	254,925	Feb. 28	1276	353	21	597
Sewing-machines. Reverse-seaming guide for	J. W. Chambers	257,656	May 9	643	151	21	1403
Sewing slip. Book	W. S. Neal	257,149	Apr. 25	1722	477	21	1371
Sewing the mouths of bags. Machinery for	W. H. Martin	256,833	Apr. 11	691	164	21	1699
Sewing up mouths of bags. Machine for	O. R. Van Vechten	256,518	Apr. 18	974	{273 / 274}	21	1136
Sewing welts or hems on fabrics. Machine for	S. Borton and C. H. Willcox	255,578	Mar. 28	1428	386	21	904
Sewing welts or hems on fabrics. Machine for	S. Borton and C. H. Willcox	255,580	Mar. 28	1428	386	21	905
Sewing wire into hats. Attachment for use in	J. M. Curry	259,749	June 20	1111	299	21	1902
Shackle	J. M. Trackwell	256,979	Apr. 4	397	103	21	1677
Shackle-block	J. W. Norcross	259,576	June 13	972	261	21	1835
Shade-holder	E. L. Bryant	255,568	Mar. 28	1449	389	21	903
Shade-holder	C. Maschmeyer	252,567	May 30	1779	488	21	1680
Shade. Revolving pneumatic	W. H. Staats	252,907	Jan. 31	1691	446	21	277
Shade-roller. Spring-balance	D. E. Kempster	251,893	Jan. 3	239	71	21	56
Shaft-coupling	F. O. Deschamps	255,103	Mar. 21	1038	283	21	797
Shaft-coupling	C. Q. Hayes	251,876	Jan. 3	241	67	21	53
Shaft-coupling	C. C. Klein	253,670	Feb. 21	745	199	21	503
Shaft-coupling	Jos. H. Riddle	260,709	Jan. 24	1263	343	21	227
Shaft-coupling	J. H. Riddle	254,116	Apr. 11	635	173	21	1633
Shaft for grindstones, &c. Adjustable	W. J. Arndt	259,573	May 30	1735	497	21	1925
Shaft-hanger	R. G. Gibson	257,346	May 2	466	69	21	2289
Shaft hitch. Vehicle	J. S. Layton	259,883	June 20	1274	341	21	1909
Shaft. Machinery	B. H. Miles	10,079	Apr. 11	698	287	21	1197
Shaft-prop. Buggy	J. T. Baker. (Reissue)	256,738	Apr. 18	1218	341	21	1177
Shafts. Bearing and coupling for screw-conveyer	H. Palmer	256,797	May 30	2030	573	21	1973
Shafts. Device for clamping wheels or pulleys upon	A. Newell	259,573	June 13	809	230	21	1854
Shafts. Reversible mechanism for counter	C. E. L. Mosbius	256,069	May 16	1155	324	21	1502
Shear-pad	A. P. Mann						
Shears:							
See Animal-shears. Pruning-shears. Grape-shears. Tinner's shears.							
Shears	A. J. Lytle	260,035	June 27	1469	393	21	1949
Shears and scissors. Manufacture of	R. A. Goodchild	258,696	Jan. 10	511	141	21	95
Shears for cutting flowers, plants, &c	J. S. Badia	253,258	Feb. 7	83	26	21	361
Shears for cutting sheet metal. Separator for squaring	W. R. Dennals	253,896	Feb. 21	986	275	21	530
Shearing attachment for beading-machines	T. J. Bray	258,705	May 30	1939	546	21	1625
Shearing, punching, and riveting machine	W. A. Palmer	257,059	Apr. 25	1596	448	21	1359
Sheep rack and trough. Combined	A. R. Yost	256,789	Apr. 18	1240	351	21	1189
Sheet-metal can	E. Norton	255,012	Mar. 14	711	193	21	703
Sheet-metal can	I. and H. T. Porter	259,774	June 20	1142	302	21	1904
Sheet-metal can	F. A. Walsh	256,348	Jan. 17	894	224	21	149
Sheet-metal pipe	W. Austin	253,483	Feb. 7	367	100	21	434
Sheet-metal pipe	L. F. Betts	256,955	Apr. 25	1499	418	21	1233
Sheet-metal pipes. Machine for forming circumferential crimps in	W. A. Wheeler	254,890	Mar. 14	536	140	21	740
Sheet-metal shaping-machine	I. Van Hagen	253,398	Feb. 7	173	49	21	375
Sheet-metal shaping-machine	I. Van Hagen	257,255	May 2	180	37	21	1303
Sheet-metal vessel	J. Hale	255,165	Mar. 21	915	244	21	810
Sheet-metal vessel	E. H. Whitney	254,417	Feb. 28	1459	408	21	694
Sheet-metal vessels. Attaching bottoms and tops to	G. W. Knapp	251,896	Jan. 3	262	73	21	47
Sheller:							
See Corn-sheller.							
Shelf or stand. Revolving	J. Danner	258,283	May 23	1414	400	21	1557
Shelving-bracket	D. Gerow	258,672	Apr. 18	1152	323	21	1185
Shingle-jointer. Gang	R. Holbon	259,151	June 6	326	89	21	1754
Shingling-gage	G. B. Clark	253,616	Feb. 14	771	219	21	489
Ship. Armor-clad	N. B. Clark	255,144	Mar. 21	885	{237 / 238}	21	665
Ship-railway and dry-dock	J. B. Eads	258,797	May 30	1951	551	21	1659
Ship-ventilator	P. Mihan	257,507	May 9	636	125	21	1397
Ships. Apparatus for raising sunken	J. F. Spearing	259,937	June 20	1295	358	21	1920
Ships. Auxiliary power-wheel for	K. Anunsen	255,160	Mar. 28	1408	389	21	900
Ships. Construction of	R. P. Pictet	251,793	Jan. 3	132	37	21	94
Ships. Construction of	R. Wilcox	251,753	Jan. 3	78	23	21	16
Ship's log	W. S. Hogg	253,267	Feb. 7	123	36	21	367
Shirt	J. G. Barker	253,256	Feb. 7	88	27, 28	21	368
Shirt	A. Baxter	253,574	Feb. 14	472	{133 / 134}	21	437
Shirt	F. A. Diedrich	254,887	Apr. 25	1402	395	21	1918
Shirt	G. E. Fenno	256,041	May 16	1103	307	21	1484
Shirt	J. M. Harrison and J. H. Marley	259,640	June 13	957	255	21	1869
Shirt	G. D. Hull	255,864	Apr. 4	134	35	21	973
Shirt	H. W. Messer	254,623	Mar. 14	479	129	21	738
Shirt	F. C. Mott	253,483	Feb. 7	366	99	21	433
Shirt	A. R. Perkins	254,443	Apr. 11	678	243	21	1165
Shirt	A. R. Perkins	256,498	Apr. 18	955	267	21	1138
Shirt	A. R. Perkins	257,892	May 16	930	256	21	1462
Shirt	A. R. Perkins	258,110	May 16	1184	334	21	1509
Shirt	A. R. Perkins	260,316	June 27	1816	492	21	2029
Shirt	I. Schneer	254,267	Feb. 28	1454	396	21	617
Shirt	I. Schneer. (Reissue)	10,096	Apr. 25	1715	461	21	1973
Shirt	S. Sternberger	259,431	June 13	692	183	21	1853
Shirt-bosom	I. Schneer	254,705	Mar. 7	319	82	21	691
Shirt-bosom	W. H. Mora	257,267	May 16	1013	283	21	1477
Shirt. Hunting	C. E. Shedaker	258,747	Apr. 18	1227	347	21	1191
Shirt. Reversible	D. Lubin	258,880	May 30	2027	572	21	1925
Shoe	G. H. Bass	258,715	Jan. 24	1235	377	21	229
Shoe	J. C. Bennett	255,133	Mar. 21	902	256	21	1000
Shoe	W. Causey	257,849	May 16	975	264	21	1462
Shoe	C. B. Daniels	255,495	Mar. 28	1233	340	21	887
Shoe	W. Linscott	255,429	Mar. 28	1232	339	21	875
Shoe	D. Lubin	255,201	Mar. 21	1029	287	21	949
Shoe-buttons. Implement for putting on	A. G. Wilkins	258,563	Jan. 17	1072	299	21	194

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Shoe-exhibitor	D. J. Rex	259,210	June 6	498	108	21	1765
Shoe exhibitor. Sample	O. F. Langenbach	260,102	June 27	1356	419	21	1962
Shoe-fastener	I. and R. B. Banister	256,453	Apr. 18	699	251	21	1123
Shoe-fastening	R. P. Bryant	260,745	June 20	1105	295	21	1901
Shoe-fastening	W. Wegner	260,144	June 27	1066	433	21	1900
Shoe-heel rands. Machine for making	G. Farnham and J. T. Farwell	256,830	Apr. 25	1335	{377 / 378}	21	1206
Shoe-holder	W. P. Holliday	255,980	Apr. 4	294	77	21	990
Shoe-nails. Making	J. Hyslop, Jr	255,997	Apr. 4	308	81	21	1001
Shoe or glove fastener	S. Needles	256,442	Apr. 11	671	243	21	1105
Shoe. Plow	J. W. D. Fifield	255,989	Mar. 21	1041	279	21	832
Shoe-polish	M. Hackett	259,009	June 6	174	.....	21	1794
Shoe. Rubber	A. Hutchinson	251,782	Jan. 3	110	33	21	22
Shoe. Skating	W. J. Barber	254,257	Feb. 28	1311	362	21	902
Shoe-sole-channeling machine	C. Chabot	254,619	Mar. 7	300	51	21	972
Shoe-sole-channeling tool	W. Crain	260,109	June 27	1631	441	21	1994
Shoe-soles. Device for beating out	S. W. Winslow	256,981	May 30	1698	514	21	1636
Shoe. Turned	W. Comey	253,167	Feb. 7	16	5	21	349
Shoe-upper	J. L. Joyce	259,106	June 6	359	95	21	1757
Shoe-uppers. Apparatus for turning the edges of	J. McGuigan	251,789	Jan. 3	129	35	21	23
Shoe-uppers. Machine for pasting	M. E. Beasley and S. L. Wiegand	258,004	May 16	1059	{394 / 395}	21	1405
Shoes. Ankle-supporter for	S. G. Wallace	260,069	June 27	1512	406	21	1974
Shoes. Toe-piece for the heels of rubber	J. L. Thomson	254,781	June 20	1150	305	21	1908
Shoemaker's jack	G. W. Hutchins	254,468	Mar. 7	45	12	21	646
Shoe-maker's jack	F. Schipper and L. Dobel	252,535	Jan. 17	1031	267	21	187
Shooting-gallery. Portable	J. Holahan	254,819	Mar. 14	455	123	21	722
Shot-case	C. C. Henderson	251,860	Jan. 3	243	67	21	44
Shot-case. Revolving	H. F. Hoesman	259,540	June 13	831	219	21	1847
Shot. Kettle for making drop	J. Farrell	259,120	June 6	366	83	21	1748
Shot. Kettle for making drop	J. E. Reddy	253,764	Feb. 14	701	200	21	477
Shot-polishing machine. Lead	J. Farrell	259,835	June 20	1300	324	21	1919
Shot show-case	C. Palmer	258,467	May 23	1027	460	21	1594
Shoulder-brace and suspenders	C. W. Stevens	251,805	Jan. 3	144	41	21	26
Shoulder-brace and corset	C. A. Williamson	257,261	May 2	137	39	21	1305
Shoulder-brace and suspenders. Combined	J. D. Hanbury and C. H. Clifton	257,686	May 9	704	195	21	1412
Shovel: *See* Snow-shovel.							
Shovel	J. A. Johntry	256,325	Apr. 11	737	201	21	1081
Shovel for lifting and sifting ashes	W. Enticott	255,777	Apr. 4	30	9	21	956
Shovel, spade, or scoop	R. T. Pettebone	257,752	May 9	761	212	21	1422
Show-box	I. Birgé	257,015	May 16	956	266	21	1467
Show-box	W. C. Thompson	259,438	June 13	899	185	21	1833
Show-case	G. W. and J. F. Simons	255,986	Mar. 28	1564	421	21	920
Show-case. Revolving	H. Westphal	256,181	Apr. 11	537	149	21	1047
Show-stand	G. S. Roath	258,123	May 16	1203	336	21	1512
Show-stand. Revolving	F. Pearce and J. Jones	253,757	Feb. 14	692	198	21	475
Shower-bath. Wardrobe	E. N. McKimm	255,317	Mar. 21	1113	300	21	844
Shutter-fastener	C. Altemüller	256,344	May 23	1498	428	21	1589
Shutter-fastener	H. J. Fisher, Jr.	251,854	Jan. 3	213	59	21	36
Shutter-fastener	T. F. Langley	259,539	June 13	854	226	21	1851
Shutter-fastener	F. O. Matthiessen	257,694	May 9	839	234	21	1457
Shutter-fastener	S. E. Swanson	259,601	June 13	903	241	21	1859
Shutter-fastener	F. O. Matthiessen	256,430	Apr. 11	868	242	21	1105
Shutter-fastening. Destructible	C. E. Garey	255,848	Apr. 4	113	30	21	989
Shutter. Window	L. Huntoon	257,711	May 9	721	{200 / 201}	21	1415
Shutter-worker	T. N. Lupton	252,784	Jan. 24	1356	371	21	943
Shutter-worker and blind-slat operator. Combined	B. G. Merrill	259,191	June 6	306	102	21	1762
Shutters. Unlocking and opening	J. C. Horton	258,006	May 16	1130	317	21	1498
Shuttle-race lubricator	J. Bolton	252,013	Jan. 10	419	115	21	79
Sieve-cleaning attachment	J. Harvey	254,009	Feb. 21	1013	284	21	535
Sieve. Rotary	W. L. Heuser	258,217	Jan. 10	648	188	21	118
Sifter	G. T. Finley	257,928	May 16	989	271	21	1469
Sifter	A. J. Frank	255,875	Mar. 21	1048	281	21	833
Sifter and receptacle. Ash	J. Henrich and G. Schaefer	256,840	Apr. 25	1349	361	21	1208
Sifter. Ash	J. F. Condon	254,616	Mar. 7	204	58	21	673
Sifter. Ash	J. Graves	254,638	Mar. 7	232	60	21	678
Sifter. Ash	A. Schiefer	255,989	Apr. 4	108	43	21	977
Sifter. Ash	C. Steel	254,720	Mar. 7	330	87	21	694
Sifter. Ash	J. Wells	256,068	Apr. 4	403	109	21	1018
Sifter. Automatic coal and ash	J. H. Roy	256,506	Apr. 18	983	269	21	1134
Sifter. Combined flour and meal	N. Du Brul	254,434	Feb. 28	1508	413	21	627
Sifter. Flour	M. R. Chavere	259,484	June 13	748	200	21	1836
Sifter. Revolving ash	E. G. Schultz	254,688	Mar. 14	551	147	21	740
Sign	M. B. Church	259,491	June 13	771	204	21	1837
Sign	H. S. Crooke	256,876	June 6	37	9	21	1701
Sign	E. Grah. (Reissue)	10,014	Jan. 24	1429	396	21	389
Sign-board	G. B. Wilbur	252,408	Jan. 17	987	247	21	163
Sign. Glass	F. Tuchfarber	259,733	June 20	1091	299	21	1809
Sign or name-plate. Illuminated	A. B. Keith	256,304	May 23	1440	406	21	1562
Signal: *See* Alarm-signal; Car-signal; Electric signal; Railway-signal; Railway alarm-signal; Railway safety-signal; Railway time-signal; Telephone-signal.							
Signal	T. J. Costello	251,700	Jan. 3	18	5	21	6
Signal for railway and other purposes	O. F. Wilbur and D. Sanford	256,827	Jan. 24	1367	367	21	253
Signaling and circuit-connecting apparatus	T. A. Watson	251,897	Jan. 3	147	42	21	27
Signaling apparatus	W. C. Seaton	255,683	Mar. 28	1555	419	21	922
Signaling-cable. Marine	W. B. Barker	257,913	May 16	966	265	21	1466
Silex. Preserving smeltage in	C. H. Roberts	257,782	May 9	773	215	21	1424
Sleeping apparatus	N. McMillan	260,309	June 27	1810	491	21	2022
Sleigh-breaking	J. E. Porter	254,794	Apr. 18	1223	342	21	1178

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Sink or hydraulic trap	J. F. Withey	259,256	June 6	485	123	21	1774
Sinker and fish-hook holder. Combined	S. R. Smith	258,038	Jan. 24	1145	321	21	213
Siphon	F. W. Marshall	257,685	May 9	841	234	21	1437
Sirup. Composite corn	A. Giesecke and H. Hamlin	253,909	Feb. 21	905	253	21	517
Sirup from cane-juice. Manufacture of	A. H. Isaacson	253,712	Feb. 14	677	.....	21	464
Sirup. Manufacturing corn	A. Giesecke and H. Hamlin	253,910	Feb. 21	903	253	21	517
Skating-machine. Roller	A. L. Warshauer	253,565	Feb. 14	489	131	21	438
Skate	J. Barthelt	256,603	May 16	1008	284	21	1495
Skate	S. C. Gault	256,161	Mar. 21	910	243	21	805
Skate	A. S. Hunter. (Reissue)	10,008	Apr. 4	420	119	21	1004
Skate	T. Tracy and C. E. Hart	256,695	May 16	1007	282	21	1521
Skate	W. H. Rushforth	255,819	Apr. 4	80	22	21	964
Skate. Combined roller and runner	C. Herder	257,941	May 16	987	275	21	1473
Skate. Roller	O. E. Luther	258,484	Jan. 17	987	274	21	179
Skate. Roller	C. E. Marshall	253,735	Feb. 14	687	194	21	479
Skate. Roller	T. A. Neely	260,708	June 20	1656	421	21	1962
Skate. Roller	G. B. Price and G. W. Smith	258,070	Jan. 31	1249	347	21	321
Skate. Roller	J. K. Rees	255,469	Mar. 28	1497	409	21	889
Skate. Roller	H. Tapper	253,704	Feb. 14	723	200	21	488
Skate. Roller	E. W. Tayler	255,694	Mar. 28	1571	423	21	889
Skate. Roller	S. Winslow	255,985	Mar. 14	720	211	21	781
Skate. Roller	G. L. Witall	257,426	May 2	349	95	21	1349
Skate. Roller	G. Tischer	255,196	Mar. 21	859	{320 / 321}	{21	891
Skid	M. Jiseks	256,709	Apr. 18	1188	338	21	1173
Skinning-knife	E. V. Whitaker and J. Hull	258,459	Jan. 17	1066	297	21	193
Skins. Machine for extracting grease from	W. F. Turnbull	259,440	June 13	781	196	21	1694
Skipping-hoop. Metallic	J. Schoenhof	257,789	May 9	789	217	21	1486
Skirt and pannier	C. Hotels	260,294	June 27	1790	485	21	2012
Skylight	F. H. Leadley	255,626	Mar. 28	1561	340	21	875
Skylight	G. Hayes	258,275	Jan. 17	946	236	21	157
Skylight. Photographic	S. W. Kent	258,040	Jan. 10	449	123	21	65
Slat-iron blanks. Bar of	C. B. and J. M. Hays	253,864	Feb. 21	853	236	21	506
Slate	D. S. Cooke	253,814	Feb. 14	406	113	21	427
Slate attachment. Drawing	P. S. Cory and M. E. Moore	257,988	May 2	175	50	21	1312
Slate-cleaner	W. H. Metcalf	255,659	Mar. 28	1581	429	21	921
Slate-cleaner and pencil-holder. Combined	F. W. Mallett	256,916	Apr. 4	386	88	21	1005
Slate-dressing machine	A. W. Stoesmeister	253,234	Feb. 7	64	20	21	357
Slate-frame	W. R. Gross and J. S. George	255,851	Apr. 4	116	31	21	970
Slate-washer	C. M. Amsden	253,388	Feb. 7	179	51	21	376
Sled	C. M. Hinman	258,107	Jan. 10	583	145	21	97
Sled	A. S. Russell	255,197	Mar. 21	961	254	21	816
Sled	A. Sanford	260,943	June 27	1736	467	21	2000
Sled	M. Hoffman	254,318	Feb. 28	1325	379	21	603
Sled-brake	J. A. Conwell	259,288	June 20	1195	320	21	1916
Sled. Folding	J. Ernster and W. Gardt	260,010	June 27	1441	389	21	1954
Sled-knee	V. T. Briggs	252,482	Jan. 17	214	238	21	167
Sled. Stone	S. S. Applegate	256,285	Apr. 11	686	179	21	1078
Sleep. Device for waking persons from	L. P. Webster	255,558	Mar. 28	1397	378	21	880
Sleeve-gripe. Lady's	J. T. Gurney	253,604	Feb. 14	613	173	21	469
Sleigh	J. Jackson	255,791	Apr. 4	47	13	21	959
Sleigh	R. J. Talbot	253,560	Feb. 14	456	129	21	455
Sleigh	H. Mollroy	257,258	May 2	267	73	21	1267
Sleigh. Bob	F. Yager	254,656	Mar. 14	563	154	21	721
Sleigh. Bob	B. F. Brown	257,651	May 9	626	170	21	1401
Sleigh-knee	F. Jones and W. Woolsey	256,001	Apr. 4	316	88	21	1003
Sleigh-shaft attachment	J. F. McCreary	254,994	Mar. 14	667	185	21	784
Sliding and rolling gate	W. R. White	258,343	Jan. 17	995	264	21	150
Sliding and swinging gate	A. Nicol	254,625	Apr. 4	245	68	21	1008
Sliding gate	W. R. White	256,517	May 23	1623	478	21	1604
Sliding gate	O. O. Adams	259,078	June 6	329	87	21	1727
Slop and swill carrier. Automatic	J. Bell	253,529	Feb. 7	92	29	21	362
Smelting-furnace	C. W. Bliss	255,758	Apr. 4	9	3	21	958
Smelting-furnace	W. Q. Mastin	254,347	Apr. 11	750	.....	21	1066
Smelting iron and other ores. Composition for use in	P. Kilroy and J. A. Flick	260,189	June 6	363	96	21	1758
Smoke and gas consuming furnace	R. Huber	253,365	Feb. 7	235	68	21	366
Smoke-box. Water-jacket	T. Murley	259,277	June 6	486	127	21	1778
Smoke-burner	C. Olson	254,037	Feb. 21	1053	283	21	541
Smoke-consumer	S. Parker and J. D. Bennett	257,606	May 9	586	164	21	1390
Smoke-consuming apparatus	J. C. Calbertson and W. A. Eudaly	260,170	June 27	1632	441	21	1994
Smoke-consuming furnace	J. J. Hall	254,987	Feb. 21	1010	283	21	534
Smoke-consuming furnace	M. D. Leggett	259,767	June 20	1133	{300 / 301}	{21	1905
Smoke-consuming furnace	A. J. Simmons	257,692	Apr. 25	1636	455	21	1459
Smoke-consuming furnace	E. W. Vaudusen	258,696	June 13	911	243	21	1851
Smoke-consuming furnace	E. W. Vaudusen	259,699	June 13	911	243	21	1851
Smoke-filter for pipes and cigarettes	F. S. Kinney	253,296	Feb. 7	153	39	21	389
Smoke-purifying furnace	A. J. Simmons	257,691	Apr. 25	1634	455	21	1458
Smoke-stack and spark-arrester	W. F. Cengreve. (Reissue)	10,013	Jan. 24	1429	396	21	389
Smoking-pipe	J. Cole	253,512	Feb. 14	404	112	21	427
Smoking-pipe	J. Cole	254,114	Feb. 28	1146	308	21	595
Snap and buckle. Combined	J. Anderson	257,143	May 2	1	1	21	1251
Snap-hook	A. Bernd	258,528	Jan. 24	1294	359	21	254
Snap-hook	A. N. Bragg	260,015	Jan. 10	461	115	21	59
Snap-hook	L. A. Clark	259,668	June 20	994	275	21	1822
Snap-hook	F. Fraser	251,822	Jan. 3	231	63	21	40
Snap-hook	A. S. Hess	257,666	Apr. 25	1540	428	21	1240
Snap-hook	R. Kempshall	257,731	May 9	720	200	21	1417
Snap-hook	J. W. Regan	256,164	Apr. 11	540	149	21	1044
Snap-hook	G. B. N. Tower	256,195	May 16	1044	289	21	1519
Snap-hook	F. C. Wright	253,904	Feb. 21	891	249	21	514
Snath-fastener	A. Schultze	256,365	Apr. 11	800	{219 / 220}	{21	1092
Snow from railway-tracks. Machine for removing	H. T. Stock	258,150	May 16	1236	{342 / 343}	{21	1517

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Snow loader and dumper	J. Davies	257,550	May 9	517	144, 145	21	1378
Snow-plow	S. Adams	256,451	Apr. 18	897	251	21	1123
Snow-plow	R. M. Mitchell	255,903	Apr. 4	63	17	21	961
Snow-plow	H. Reasley	252,258	Jan. 10	690	195	21	125
Snow-plow	N. Witts	252,639	Jan. 24	1156	394	21	215
Snow-shovel	C. Ames	255,408	Mar. 28	1223	397	21	809
Snow-shovel	H. W. Staples	258,980	May 23	1300	392	21	1553
Snow-shovel	C. A. Way	252,622	Jan. 24	1384	366	21	276
Snuff. Packing	M. T. Forsyth, Sr	252,205	Jan. 10	633	179	21	115
Soap from fats. Making	H. Heckel	255,505	Mar. 28	1345	363	21	889
Soap-making machinery	R. Freeland	259,642	June 20	1216	326	21	1920
Soap. Manufacture or treatment of	W. Green	259,755	June 20	1119	.....	21	1903
Soap. Neutral potash	W. J. Menzies	254,832	Mar. 14	478	.....	21	736
Soap-powder and apparatus therefor. Manufacture of	W. Wright and T. Bintliff	255,070	Mar. 14	793	212	21	782
Soap-sheet for general use and for disinfecting purposes.	H. Bucskowski	259,986	June 6	477	.....	21	1776
Soap-slotting machine	J. Atkins	252,711	Jan. 24	1233	346	21	998
Socket-wrench. Adjustable	F. Chantrell	254,875	Feb. 28	1330	367	21	996
Sockets. Soft metal-lining for dovetail	J. A. Sandford	253,430	Feb. 7	298	88	21	393
Soda. Manufacture of	E. Solvay	251,902	Jan. 3	338	90	21	58
Soda-water, &c. Draft-tube for	W. P. Clark	257,472	May 9	483	113	21	1339
Soda-water fountain	J. Matthews	260,037	June 27	1471	397	21	1980
Sodium hyposulphite. Apparatus for manufacturing	W. H. Whitmore and G. H. Pratt	253,143	Jan. 31	1788	496	21	336
Sofa or lounge	T. Hofstatter, Jr	259,642	June 13	959	256	21	1869
Soil to obtain useful products therefrom. Treatment of prairie	C. L. Fleischmann	256,737	May 30	1965	.....	21	1661
Solar camera	B. Titcomb	230,950	Feb. 21	957	265	21	525
Solder coated with flux. Wire	E. Small	255,344	Mar. 21	1144	.....	21	849
Soldering apparatus	A. Lusk	251,909	Jan. 3	280	76	21	49
Soldering cans. Flat-seam knife for use in	R. Neil	252,845	Jan. 24	1414	394	21	258
Soldering-furnace. Vapor-burning	L. B. Snow	254,511	Mar. 7	77	20	21	651
Soldering-machine	G. R. Gleason	254,908	Feb. 28	1258	347	21	563
Soldering-machine. Automatic	J. A. Forbes	254,194	Feb. 28	1156	320, 321	21	567
Soldering machine. Can	W. D. Brooks. (Reissue)	10,141	June 27	1856	502, 501	21	2039
Soldering machine. Can	W. D. Brooks	256,098	Apr. 4	420	113, 114	21	1021
Soldering-pot	J. W. Farrell	259,635	June 13	958	254	21	1898
Soldering-tool. Fruit-can	J. F. Weitzel	257,794	May 9	807	226	21	1431
Sole and heel protector. Combined in-	W. T. Schenck	252,698	Jan. 24	1143	320	21	213
Sole buffing, cleaning, and edge setting machine	E. Patten and T. Davey	253,109	Jan. 31	1840	507	21	334
Sole-buffing machine	B. C. Young	253,106	Feb. 14	750	216	21	457
Sole-edge-burnishing machine	G. A. Fullerton	252,874	Jan. 31	1451	406	21	270
Sole-edge-burnishing machine	J. W. Maloy	259,409	June 13	965	176	21	1818
Sole-edge plane	W. F. Bullock	253,180	Feb. 7	10	3	21	348
Sole-edge trimmer and trimming-tool grinder. Combined	S. N. Corthell	253,911	Feb. 21	866	250	21	515
Sole-edge-trimming machine	J. R. Moffitt	254,495	Mar. 7	61	16	21	648
Sole pricking and trimming machine	H. L. Drew	259,929	June 20	1903	392, 393	21	1918
Soluble matter from substances containing it, and apparatus therefor. Extracting by volatile solvents	E. B. Hart	253,379	Feb. 7	225	64	21	364
Solvents which have been used in extracting soluble matter. Recovering volatile	E. B. Hart	253,378	Feb. 7	223	64	21	364
Sounding apparatus. Deep-sea	A. G. Delanoy	257,154	May 2	12	4	21	1293
Sower. Seed	T. Parks	252,398	Jan. 17	577	244	21	168
Sower. Seed	J. C. Wright	256,788	Apr. 18	1279	360	21	1189
Sowing fertilizers. Machine for	E. D. Mead. (Reissue)	10,001	Jan. 3	408	100, 101	21	69
Spark-arrester	J. D. Akley	255,556	Mar. 28	1404	379	21	900
Spark-arrester	G. S. Cook	253,346	Feb. 7	194	56	21	379
Spark-arrester	J. L. Kautner	254,659	Mar. 7	261	67	21	622
Spark-arrester	A. M. Kerr	256,065	Apr. 4	317	63	21	1003
Spark-arrester	C. F. Lochner. (Reissue)	10,003	Apr. 25	1710	479	21	1973
Spark-arrester	G. W. Moore and A. O. Frick	252,239	Jan. 10	678	193	21	153
Spark-arrester	G. B. Nichols	253,883	Feb. 21	880	245	21	511
Spark-arrester	J. W. Trammell and A. H. Slaughter	254,730	Mar. 7	342	90	21	696
Spark-extinguisher	I. Devell	254,128	Feb. 28	1153	303	21	566
Spark extinguishing and discharging device	W. K. Schermerhorn	255,679	Mar. 28	1548	417	21	927
Spectacle-frame	W. H. Peckham	255,530	Mar. 28	1375	371	21	894
Spectacle-holder	J. A. Shone	256,383	Apr. 11	611	233	21	1094
Spectacle-lens case	G. D. Edmondson	253,356	Feb. 7	204	56	21	361
Speculum	W. Autenrieth and J. M. Thurston	255,756	Apr. 4	6	2	21	958
Speculum	J. R. Caps	254,457	Mar. 7	14	4	21	641
Speech. Apparatus for transmitting and reproducing	C. A. Hussey	259,397	June 13	650	173	21	1815
Speed-changing machine	J. J. Bergmann and C. E. Hüttemeier.	256,973	Apr. 11	673	168	21	1070
Speed-gearing	J. Stewart	252,537	Jan. 17	1043	290	21	189
Speed-indicator	N. P. Bowsher	260,156	June 27	1619	437	21	1999
Speed indicator and recorder	W. O. Dunbar	257,480	May 9	416	116	21	1392
Speed-indicator for shafting	L. J. Wohnlich	252,283	Jan. 10	726	205	21	130
Speed-regulator	F. T. Mallon	252,704	May 30	2017	560	21	1670
Spike	W. Goldie	252,362	June 13	633	168	21	1811
Spike-extractor	W. B. Turner and A. P. Prout	254,411	Feb. 28	1482	408	21	622
Spindle: *See* Spinning and twisting machine spindle. Spinning-frame spindle. Spinning machine spindle. Spinning-machine spindle.							
Spindle	W. T. Carroll	255,074	Mar. 14	797	213	21	783
Spindle and bearing therefor	W. T. Carroll	256,129	Apr. 11	468	127	21	1035
Spindle and bearing therefor	A. S. Hopkins	259,016	June 6	181	49	21	1726

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Spindle and bearing therefor	J. and J. A. Marsh	253,078	Jan. 31	1711	473	21	313
Spindle and device for lubricating the same	C. H. Chapman	256,208	Apr. 11	692	189	21	1073
Spindle-bearing	G. Draper	253,080	Jan. 31	1630	452	21	301
Spindle-bearings. Packing for	W. F. Draper	253,079	Jan. 31	1630	452	21	301
Spindle-bolster	G. Draper	251,949	Jan. 3	199	56	21	36
Spindle-clamp. Stationary	L. R. Faught	257,187	May 2	15	5	21	1284
Spindles, &c. Step and bush for	T. F. Hemmich	254,972	Mar. 14	636	178, 179	21	759
Spinning and doubling yarn or thread. Machinery or apparatus for	T. Briggs	257,284	May 2	163	46	21	1310
Spinning and twisting machine spindle	T. Mayor	258,486	Jan. 17	989	275	21	169
Spinning and twisting machine spindles. Bearing for	T. Mayor	255,644	Mar. 28	1512	406	21	980
Spinning and twisting machines. Ring-holder for	T. Coulthard	254,616	Mar. 7	207	54	21	673
Spinning, doubling, and twisting fibrous materials. Machine for	F. Seymour	253,421	Feb. 7	289	88	21	395
Spinning, doubling, and twisting machine	W. J. Conlon and H. B. King	255,417	Mar. 28	1237	333	21	871
Spinning frame. Ring	E. Harris	257,290	May 2	209	58, 59	21	1318
Spinning-frame spindle	R. C. Fay	253,025	Jan. 31	1637	454	21	389
Spinning-frame spindles. Mechanism for supporting and lubricating rings	W. L. Tinkham	253,239	Feb. 7	60	24	21	358
Spinning-frame spindles. Mechanism for supporting and lubricating rings	J. W. Wattles	257,969	May 16	948	264	21	1685
Spinning-frames. Spindle-step rail for	F. Leclère	255,518	Mar. 28	1361	369	21	892
Spinning-machine. Domestic	J. P. Gaines	259,369	June 13	930	167	21	1811
Spinning machine. Ring	G. P. Hazard	257,169	May 2	28	7, 8	21	1295
Spinning machine. Ring	J. F. Worrall	257,189	May 2	57	18	21	1297
Spinning-machine spindle and bolster	W. F. Draper	253,081	Jan. 31	1631	453	21	302
Spinning-machine spindle and support therefor	W. T. Carroll	256,799	Apr. 18	1264	362	21	1189
Spinning-machine spindles. Support for	J. K. Atwood	253,578	Feb. 14	469	133	21	427
Spinning-machine thread-guard	E. S. Stimpson	252,814	Jan. 24	1375	384	21	251
Spinning-machine thread-guard	H. E. Swift	253,321	Feb. 7	183	46	21	374
Spinning-machine thread-guard	W. A. Wright	259,687	June 13	937	250	21	1865
Spinning-machine thread-guard	C. E. Thomas and J. F. Worrall	256,174	Apr. 11	567	146	21	1045
Spinning-machine yarn-separator	F. H. Wheat	253,140	Jan. 31	1785	495	21	325
Spinning machines. Thread-separator for ring	H. L. Pairce	257,226	May 2	115	32	21	1301
Spinning-ring and holder therefor	G. H. Allen	254,586	Mar. 7	96	25	21	655
Spinning-spindles. Bearing for	R. C. Fay	253,026	Jan. 31	1637	454, 455	21	389
Spinning-spindles in and assisting in removing them from their sockets. Device for retaining	F. Stittael	253,125	Jan. 31	1788	491	21	333
Spirits. Process of and apparatus for improving	E. T. Gesselin	256,210	Apr. 11	592	162	21	1069
Spittoon	O. Messenger	253,746	Feb. 14	679	195	21	473
Spittoon	A. B. Nett	255,065	Mar. 14	811	217	21	765
Spittoon	J. Camper	256,370	May 23	1514	430	21	1576
Spittoon-holder	W. H. Doane and G. W. Bugbee	256,632	May 30	2008	569, 570	21	1923
Spoke tenoning and chamfering machine	C. B. Holmes	256,897	Apr. 25	1417	398	21	1280
Spoke-tenoning machine	W. H. Doane and G. W. Bugbee	256,631	May 16	1692	480, 481	21	1498
Spoke-throating machine	R. Allen and J. H. Morrison	256,945	Apr. 25	1471	413	21	1289
Spool-turning machine	J. Maris	253,077	Jan. 31	1711	473	21	313
Spoke. Wagon	R. Kerr	254,694	Feb. 21	1040	290	21	530
Spool shew-box	H. R. Silliman	253,770	Feb. 14	721	206	21	469
Spools, &c. Machine for making	T. C. Entwistle	256,967	May 30	1780	495	21	1694
Spooling-machine bobbin-holder	A. C. Falsberg	256,969	Apr. 25	1284	469	21	1230
Spoon	C. W. Oleson	255,013	Mar. 14	772	198	21	788
Spoon-rest	G. J. Record	258,514	Jan. 17	1017	284	21	185
Spout. Sap	I. H. Spolman	257,585	May 9	471	131	21	1371
Spout. Sap							
Spring: *See* Bed-spring. Bed-bottom spring. Bicycle seat-spring. Bolster-spring. Car-spring. Carriage-spring. Cultivator-spring. Door-spring. Elliptic spring. Umbrella retention-spring. Vehicle-spring. Wagon-spring. Wagon-bolster spring. Wagon platform-spring. Watch-click spring.							
Spring	R. A. McLean	258,668	Jan. 24	1212	339	21	994
Spring-bolt	W. Schenker	255,198	Mar. 21	954	264	21	877
Spring-bolt. Adjustable	P. Ferg	256,239	Apr. 18	1018	267	21	1142
Spring for keeping pitmen off dead-centers	C. A. Van Allen	254,948	Feb. 28	1302	360	21	994
Spring-motor	G. Underhill	256,189	May 16	1945	551	21	1819
Spring-setter	J. Creagan and C. D. Tyler, Jr.	258,268	May 23	1508	433, 434	21	1577
Spring-washer	T. W. Broomall	259,665	June 20	991	264	21	1892
Spring-washer	E. Over	258,208	Feb. 21	889	244	21	511
Springs and rings. Machine for making	E. F. Landis	256,328	May 30	1777	502	21	1689
Springs. Machine for making	G. W. Williford	256,068	Apr. 4	405	110	21	1018
Sprinkler: *See* Automatic sprinkler. Clothes-sprinkler.							
Sprocket-wheel	F. M. Lochner	257,445	May 2	259	101	21	1346
Sprocket-wheel	F. M. Lochner	259,675	June 20	1265	327	21	1926
Sprocket-wheel	S. C. Smith	256,145	May 16	1620	446	21	1517
Sprout-pulling machine	R. E. Osgood	255,187	Mar. 21	939	261	21	814
Spud-fixture	A. McManus	255,679	Apr. 4	158	41	21	975
Spur	J. L. Thomson	256,666	Apr. 18	1089	301	21	1151
Spur. Riding	F. H. Richards	252,945	Feb. 21	939	261	21	532
Square blades. Clamp for try	R. Pope	257,515	May 9	498	127	21	1369
Square. Carpenter's	S. Darling	258,436	Jan. 17	985	266	21	169
Square. Metallic try	S. N. Clevenger	254,276	Feb. 28	1230	337	21	788
Stacks. Device for inclosing and protecting	E. F. Preston and L. A. Whitney	257,361	May 2	261	.....	21	1323
Stains. Compound for removing	F. E. Heinig and M. Lindenthal	258,942	Jan. 31	1880	497	21	334
Stair-rod	N. McDuffie	257,734	May 9	744	207	21	1419
Stalk-breaker							

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Stalk-cutter	J. Q. Adams	257,993	May 16	1045	200 201	21	1463
Stalk-cutter	H. G. Cady	252,181	Jan. 10	610	171	21	111
Stalk-cutter	A. A. Kellogg	254,334	Feb. 28	1394	364	21	607
Stamp cabinet. Rubber	C. A. Klinkner	253,365	Jan. 17	660	238	21	159
Stamp-cabinet. Rubber	J. Murdock, Jr	256,685	May 30	1677	599	21	1646
Stamp-canceler	C. C. Egerton	254,541	Mar. 7	112	29	21	657
Stamp. Canceling and dating	G. W. Levin	255,799	Apr. 4	69	16	21	981
Stamp. Hand	J. Murdock, Jr	256,686	May 30	1677	599	21	1647
Stamp. Hand	W. H. Poole	256,242	Apr. 11	636	178	21	1063
Stamp. Hand	W. H. Poole	256,243	Apr. 11	636	178	21	1063
Stamp. Hand	A. H. Rogers	256,196	May 16	1395	339	21	1513
Stamp. Hand	C. C. Wilson	255,289	Mar. 21	906	286	21	894
Stamp-mill ore-feeder	I. N. Templeton	256,503	May 23	1067	471	21	1691
Stamp-mills. Guide for stems of	W. Raup	253,009	Jan. 31	1737	480 481	21	317
Stamp-mills. Guide for the stems of	J. B. Lucas	257,353	May 2	259	71	21	1336
Stamp-moistener	F. V. Davis	257,395	May 2	176	50	21	1513
Stamping-mill	H. O. Reinhardt	255,536	Mar. 28	1379	373	21	895
Stanchion	S. J. Adams	255,231	Mar. 21	998	267	21	894
Stand: *See* Bicycle-stand. Flower-stand. Book-stand. Lamp-stand. Croquet-stand. Railway switch-stand. Dandy-roll stand. Show-stand. Filter-stand.							
Staple	W. Young	254,425	Feb. 28	1408	416	21	606
Staple for suspending papers, &c. Ring	G. W. McGill	253,676	Feb. 21	852	240	21	520
Staple. Wire	P. Dunn and T. Harris	257,565	May 9	584	147	21	1370
Staples. Blank for wagon-box	J. C. Herman	257,104	May 2	25	8	21	1325
Staples. Machine for inserting and clinching	G. W. McGill	258,241	Jan. 24	1409	393	21	257
Stapling-machine	B. E. Miller	253,168	Jan. 31	1630	507	21	353
Starch and apparatus therefor. Manufacturing	E. Roat	254,239	Feb. 28	1389	357	21	569
Starch. Apparatus for the manufacture of	A. Atkinson	253,337	Feb. 7	183	53	21	377
Starch-drying house	G. E. Full	258,188	June 27	1650	450	21	1907
Starch for laundry and other purposes	R. W. Traylor	257,108	Apr. 25	1657	.....	21	1363
Starch from grain. Method of and apparatus for obtaining	G. Burkhardt	251,897	Jan. 3	160	50	21	33
Starch from grain, &c. Method of and apparatus for obtaining	T. A. and W. T. Jebb	258,070	May 16	1134	318	21	1499
Starch machinery	E. Roat	254,158	Feb. 28	1197	334	21	574
Starch-mangle	J. and J. M. Crawshaw	256,895	June 6	35	9	21	1701
Starch. Manufacturing	H. Hamlin	253,983	Feb. 21	989	.....	21	518
Starch, &c. Process of and apparatus for treating the refuse of	E. Roat and H. Hamlin	254,240	Feb. 28	1201	358	21	569
Starch-separator	W. T. Booth and A. H. Bell	256,630	Apr. 18	1099	309	21	1156
Starch-separator	C. S. Graves and J. Heede	256,315	Apr. 11	734	197	21	1079
Starch-settling tanks. Stirrer for	J. J. Toukin	258,265	May 23	1395	395	21	1654
Starch-table	T. A. and W. T. Jebb	256,221	Apr. 11	606	164	21	1058
Starch-table	C. Lauts	254,089	Feb. 21	1045	291	21	540
Starch-table	M. J. Stark	254,063	Feb. 21	1066	301	21	547
Starch-tables. Method of and apparatus for emptying	F. O. Matthiessen and A. Behr	257,959	May 16	1003	280 281	21	1475
Starch-troughs. Washing out	F. O. Matthiessen and E. E. Quimby	257,958	May 16	1002	280	21	1475
Starch-washing apparatus	E. Roat	254,157	Feb. 28	1196	334	21	574
Starting and stopping mechanism	B. Merritt	259,492	Jan. 17	997	277	21	161
Station-indicator	E. S. Boynton	257,282	May 2	161	45, 46	21	1310
Station-indicator	J. S. Brown	256,262	Apr. 11	681	185	21	1071
Station-indicator	J. B. and C. H. Drake	259,107	June 6	283	78	21	1745
Station-indicator	J. P. Edwards	251,707	Jan. 3	25	7	21	7
Station-indicator	M. Farley	257,306	May 2	187	53	21	1315
Station-indicator	S. R. Graves and D. J. Kirkman	255,949	Apr. 4	275	71	21	906
Station-indicator	D. H. Klots	254,354	Mar. 7	195	39	21	600
Station-indicator	H. J. Wenzel	254,078	Feb. 21	1090	304 305 306	21	550
Stave-bending machine	H. De Bus	256,966	Apr. 25	1502	398	21	1238
Stave-dressing machine	W. C. McCormack	255,647	Mar. 28	1515	407	21	920
Stave-jointing machine	W. Brown	257,659	May 9	630	179	21	1401
Stave-jointing machine	C. T. Tuero	258,549	Jan. 17	1058	294	21	193
Staves, &c. Closing the pores of knots in	B. Holmes	256,568	Apr. 18	1085	296	21	1144
Stay-busk	H. and B. G. Simpson	253,779	Feb. 14	794	206	21	481
Stays, guys, &c. Device for slackening and tightening	J. B. Wood	257,283	May 2	130	30	21	1305
Steam, air, or water engine	J. A. Adams	257,458	May 9	370	107	21	1355
Steam and air engine. Combined	E. M. Strange	252,630	Jan. 24	1146	321	21	213
Steam and compressed-air engine. Combined	H. E. Depp	256,896	Apr. 25	1389	376	21	1205
Steam and hot-air engine	E. G. Frykberg	255,779	Apr. 4	32	9, 10	21	956
Steam and other power engines. Frame for	L. Schuttle	259,053	June 6	229	62	21	1733
Steam. Apparatus for superheating	A. Estrade	254,698	Mar. 7	221	57, 58	21	676
Steam. Apparatus for superheating	R. Lehmann	253,931	Feb. 21	985	257	21	530
Steam, &c. Apparatus for supplying cities with	C. E. Emery	253,917	Feb. 21	806	232	21	516
Steam-boiler	J. L. Begert	255,464	Mar. 28	1329	356	21	885
Steam-boiler	J. F. Cauney and D. F. Toucey	259,288	June 13	515	135	21	1780
Steam-boiler	W. B. Dunning	255,954	Apr. 4	255	65, 66	21	902
Steam-boiler	C. J. Galloway	253,365	Feb. 7	213	61	21	352
Steam-boiler	J. Long	256,469	Apr. 18	945	264	21	1131
Steam-boiler	G. F. Major	252,113	Jan. 10	530	146	21	98
Steam-boiler	T. McDonough	258,786	Jan. 24	1332	378	21	945
Steam-boiler	J. H. Meisenzer	253,668	Jan. 21	1717	474	21	314
Steam-boiler	W. R. Michener	258,843	Jan. 24	1411	394	21	257
Steam-boiler	J. W. Moore	257,045	Apr. 25	1382	444	21	1349
Steam-boiler	D. Renshaw	256,446	Apr. 11	874	243	21	1166
Steam-boiler	G. Sewell	256,688	Apr. 18	1062	300	21	1150

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Steam-boiler attachment	P. F. McDonnell	252,956	Jan. 31	1553	433	21	266
Steam-boiler attachment	N. B. Pottier	256,113	May 16	1116	324 325	21	1089
Steam-boiler cleaner	E. H. Ashcroft	254,446	Mar. 7	1	1	21	630
Steam-boiler cleaner	D. Renshaw	256,675	May 30	1393	534	21	1640
Steam-boiler. Fire-tube	F. A. Meyer	253,218	Feb. 7	49	15	21	353
Steam-boiler heater and feeder	W. H. Harris and G. Farr	258,213	Jan. 10	641	181	21	116
Steam-boiler. Locomotive	W. R. Michener	255,183	Mar. 21	838	249	21	813
Steam-boiler. Portable	R. Schwartzkopff	254,067	Mar. 14	328	103	21	740
Steam-boiler safety apparatus	H. Pinder and G. W. Clark	255,538	Mar. 28	1378	371	21	895
Steam-boilers. Apparatus for feeding scaling compounds to	J. B. Weeks	253,453	Feb. 7	319	89	21	399
Steam-boilers. Cleaning	J. Anderson and J. McDonald	257,396	May 16	1049	288	21	1483
Steam-engine	T. F. Flinn	256,231	Apr. 25	1336	378	21	1206
Steam-engine	E. G. Frykberg	254,125	Feb. 28	1158	323	21	567
Steam-engine	M. W. Hall	253,686	Feb. 14	615	174	21	489
Steam-engine	M. W. Hall	255,854	Apr. 4	120	32	21	971
Steam-engine	R. W. Myers and C. D. Bradley	251,989	Jan. 3	280	79	21	50
Steam-engine	W. P. and C. H. Norton	259,906	June 20	1287	345	21	1938
Steam-engine	J. W. Pilmpton	258,686	May 30	2162	603	21	1668
Steam-engine	H. See	256,207	Jan. 10	713	201	21	129
Steam-engine	A. F. Vallotton and H. Legnay	256,617	May 30	1816	512 513	21	1635
Steam-engine	J. O. Baird	259,456	June 13	794	198	21	1886
Steam-engine. Balanced	R. E. Williams	258,378	Mar. 21	1173	315	21	854
Steam-engine condenser	D. C. Wilgus and G. H. Beebe	257,540	May 9	488	135	21	1374
Steam-engine cross-head	W. J. Allen	251,809	Jan. 3	152	40	21	30
Steam-engine cylinder	J. B. Root	254,054	Apr. 4	369	100	21	1013
Steam-engine. Double-cylinder	F. Jarecki	259,662	June 6	188	49	21	1737
Steam-engine lubricator	G. H. Crosby	254,324	Apr. 11	690	190	21	1074
Steam-engine recorder	G. H. Crosby	254,325	Apr. 11	702	193	21	1074
Steam-engine recorder	W. E. Good	253,199	Feb. 7	39	10	21	352
Steam-engine reversing apparatus	A. E. Francis	257,251	May 16	923	273	21	1469
Steam-generating tube	O. F. Burton	253,020	Jan. 31	1686	465	21	297
Steam-generator	G. W. Comstock	258,982	June 6	33	9	21	1700
Steam-generator	W. F. Cox	259,263	June 13	519	136	21	1791
Steam-generator	C. Gerton	255,107	Mar. 21	838	224	21	797
Steam-generator	C. Gerton	257,217	May 2	61	24	21	1295
Steam-generator	D. Hess	256,268	Apr. 18	1165	327	21	1169
Steam-generator	W. D. Hooker	255,300	Mar. 28	1351	364	21	880
Steam-generator	D. Kelly and W. H. Hoffman	257,134	Apr. 25	1698	474 475	21	1289
Steam-generator	T. McGregor	253,736	Feb. 14	989	198	21	470
Steam-generator	T. G. Morse	257,338	May 2	111	32	21	1300
Steam-generator	D. Renshaw	260,321	June 27	1859	693	21	2083
Steam-generator and agricultural boiler	J. and H. J. Fleming and J. Broadbent	256,080	Jan. 10	632	118	21	68
Steam-generator and feed-cooker	W. W. Scott	256,802	Apr. 25	1375	367	21	1215
Steam-generator furnace	C. H. Candler and J. Whitehead	256,271	May 23	1515	430	21	1575
Steam-heat evaporator	S. W. Lowell	254,080	Mar. 7	370	72	21	624
Steam-heater	E. E. Gold	253,683	Feb. 14	610	173	21	480
Steam-heater	W. H. Page	260,046	June 27	1463	369	21	1971
Steam-heater	B. Helly	260,007	June 27	1546	417	21	1969
Steam in cities. Apparatus for supplying	S. W. Hudson	256,360	May 30	1708	600	21	1647
Steam-motor	W. Kane	254,333	Feb. 28	1393	364	21	607
Steam-pipe hanger	J. D. Pierce	256,409	Jan. 17	870	245	21	183
Steam-pipes, &c. Covering for	A. R. Seward	256,616	May 30	2047	578	21	1676
Steam-pipes. Drainage apparatus for	H. C. Bradley	259,744	June 20	1184	295	21	1901
Steam-pipes, &c. Non-conducting covering for	J. W. Hyatt	258,768	May 30	1983	562	21	1622
Steam-table	G. B. Bonner	253,670	Feb. 14	988	164	21	455
Steam-trap	M. Curtis	253,984	Feb. 21	984	274	21	539
Steam-trap	N. Curtis	253,985	Feb. 21	985	274	21	539
Steam-trap	J. L. Hastings and J. S. Stewart	256,915	June 6	58	15	21	1704
Steam-trap	H. T. Litchfield	259,389	June 13	556	146	21	1797
Steam. Utilizing exhaust	H. T. Litchfield and D. Renshaw	258,832	June 6	78	20	21	1706
Steam. Utilizing exhaust	H. T. Litchfield and D. Renshaw	260,634	June 27	1469	366	21	1969
Steam. Utilizing exhaust	H. T. Litchfield and D. Renshaw	258,833	June 6	79	20	21	1706
Steam. Utilizing waste	J. L. Haven and J. B. Mooney	259,625	June 20	1015	271	21	1886
Steamboat-staging	J. Fesco	255,157	Mar. 21	804	242	21	806
Steamer	C. T. Hanna	254,362	Feb. 28	1395	377	21	622
Steamer and heater. Wheat	O. M. Causey	257,538	May 9	508	141	21	1276
Steamer. Domestic	S. G. Thomas	253,139	Jan. 31	1773	.....	21	394
Steel. Basic process of treating iron in the manufacture of	A. H. Siegfried	257,962	May 2	183	.....	21	1309
Steel. Compound for tempering	E. J. Watson and H. W. Willson	258,625	Jan. 24	1156	.....	21	814
Steel for watch-springs. Preparing	W. M. Henderson	253,046	Jan. 31	1663	460 461	21	306
Steel plant. Bessemer	W. T. Block	258,268	May 23	1460	488	21	1578
Steel. Welding Bessemer	J. Enos	253,228	Feb. 7	57	18	21	356
Steering apparatus	H. Richardson	256,689	May 30	2041	576	21	1674
Steering mechanism	W. C. Williamson and H. O. Fladvad	257,726	May 9	810	227	21	1436
Steering mechanism. Steam	D. A. McDonald	254,695	Mar. 14	688	188	21	764
Steering tow-boats and tows	W. C. Tyler	253,644	Feb. 14	547	157	21	490
Steering-wheel friction-brake	J. T. Williamson	257,433	May 2	327	94	21	1341
Stencil-plate	M. M. Bartholomew	255,910	Apr. 4	193	50	21	988
Stenographic machine	W. E. Lawrence	254,336	Apr. 11	747	206	21	1093
Step-cover	C. H. Gould	251,713	Jan. 3	20	5	21	9
Step or stair	A. J. Clare	253,510	Feb. 14	488	137	21	427
Stereoscope-view case	A. Overend	258,694	Jan. 24	1319	341	21	288
Stereotype-plate holder	G. E. Lloyd	256,490	Apr. 18	948	265	21	1131
Stereotype-shaving machine	W. F. Ford	257,467	May 9	488	118	21	1363
Stethoscope	J. E. Dubler	251,770	Jan. 3	104	28	21	30
Still and attachment. Oil	L. Bellingrath	251,816	Jan. 3	163	45	21	30
Still. Turpentine	G. P. Bunce	260,158	June 27	1883	638	21	1902
Stirrup							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Stirrup. Safety	J. L. Cox	259,101	June 6	285	76	21	1743
Stitching fabrics	J. H. Morley	257,047	Apr. 25	1584	445	21	1250
Stock-bath	J. H. Lea Mond	257,386	May 9	578	161	21	1398
Stocking	B. Vermilyea and C. E. Norris	258,538	Jan. 17	1063	296	21	199
Stocking and method of manufacturing the same	J. Adams	251,665	Jan. 3	1	1	21	3
Stocking and method of manufacturing the same	W. Aiken	255,753	Apr. 4	2	1	21	951
Stocking. Elastic	D. D. M. Master	255,180	Mar. 21	988	246	21	813
Stocking-supporter	C. G. Foote	257,485	May 9	494	118	21	1363
Stone and marble. Manufacture of artificial	D. H. Budlong	254,530	Mar. 7	101	.....	21	656
Stone and marble. Manufacture of artificial	T. Jewell	256,000	Apr. 4	311	.....	21	1009
Stone and marble. Manufacture of artificial	H. C. Jewell	259,863	June 20	1230	332	21	1994
Stone and ore crusher	H. B. Meech	253,742	Feb. 14	673	193	21	471
Stone. Apparatus or means for turning or shaping	J. D. Brunton and F. H. J. Trier	259,728	Jan. 24	1253	358	21	231
Stone. Artificial	G. W. Chamberlin and A. S. Comerer	255,936	Apr. 4	227	.....	21	988
Stone. Artificial	C. F. Leidboldt	254,342	Feb. 28	1405	.....	21	616
Stone composition. Artificial	W. W. Patterson	254,365	Feb. 28	1497	.....	21	613
Stone-crusher	T. A Blake	256,959	Apr. 25	1495	419	21	1234
Stone-crusher	S. P. M. Tasker	260,064	June 27	1503	405	21	1974
Stone-cutting machine	W. Birss	252,172	Jan. 10	601	169	21	109
Stone-cutting machine	J. Warren	254,519	Mar. 7	87	22	21	653
Stone-cutting tool	J. Warren	254,520	Mar. 7	89	23	21	654
Stone-dressing machinery	J. D. Brunton and F. H. J. Trier	259,734	Jan. 24	1248	350	21	231
Stone-dressing machinery	J. D. Brunton and F. H. J. Trier	259,735	Jan. 24	1250	350 351	21	231
Stone dressing or polishing machine	C. J. Hall	259,134	June 6	322	85	21	1751
Stone. Manufacture of artificial	V. Einsigl	256,103	Apr. 4	429	.....	21	1023
Stone. Manufacture of artificial	W. H. Hoopes	255,991	Apr. 4	302	79	21	1000
Stone. Manufacture of artificial	W. H. Hoopes	255,992	Apr. 4	302	79	21	1000
Stone. Manufacture of artificial	S. Tronc	254,947	Feb. 28	1302	.....	21	591
Stone. Turning or shaping	J. D. Brunton and F. H. J. Trier	259,736	Jan. 24	1250	351	21	231
Stone. Turning or shaping	J. D. Brunton and F. H. J. Trier	259,737	Jan. 24	1250	351	21	231
Stool and chair. Combined	E. Worch. (Reissue)	10,005	Jan. 3	412	111	21	71
Stool back. Piano	W. S. Liscomb	256,711	Apr. 18	1903	336	21	1175
Stool. Piano	J. Emerson	257,304	May 2	186	53	21	1314
Stool, table, &c. Adjustable	J. Pursell	259,308	June 6	406	108	21	1765
Stopper: *See* Barrel-stopper. Flue-stopper. Bottle-stopper.							
Stopper for jars, &c	H. W. Putnam	256,857	Apr. 25	1368	385 386	21	1212
Store-service appliance	H. H. Hayden	255,694	Mar. 28	1487	399	21	915
Store-service carrier	H. H. Hayden	253,700	Feb. 14	691	175	21	461
Store-service system	P. Kennelly	253,396	Feb. 7	247	71	21	398
Stove	G. M. Bull	255,930	Apr. 4	230	57	21	987
Stove	J. L. Gobeille	256,908	Apr. 11	500	161	21	1055
Stove	I. W. Harlow	259,306	June 13	530	141	21	1794
Stove	J. Magee	258,936	June 6	82	21	21	1709
Stove	J. G. Smith. (Reissue)	10,117	May 16	1316	372	21	1539
Stove	T. Willi	253,144	Jan. 31	1789	496 497	21	396
Stove and fire-grate. Franklin	A. Greenaway	258,575	May 30	1760	498	21	1036
Stove and furnace grate	O. W. Noble	257,745	May 9	753	209 210	21	1490
Stove and range grate	T. Kearns	258,766	May 30	1997	563	21	1666
Stove attachment	J. O. Neilson	256,311	May 23	1446	410	21	1563
Stove attachment. Magazine	T. D. Woolson	253,465	Feb. 7	333	92	21	409
Stove. Car	W. H. Baldwin	258,542	May 30	1794	487	21	1619
Stove center. Cooking	A. Trollope	255,895	Apr. 4	86	24	21	965
Stove. Coal-oil	G. W. Billings	254,539	Mar. 7	100	26	21	656
Stove. Coal-oil	W. Hailes	253,030	Jan. 31	1654	458 459	21	395
Stove. Coal-oil	W. Petersen	257,378	May 2	278	80	21	1331
Stove. Cook	W. N. Vining and E. A. Quesnel	255,896	Apr. 4	88	24	21	965
Stove. Cooking	J. A. Horton	253,926	Feb. 7	37	12	21	353
Stove. Cooking	M. A. Nicholson	259,575	June 13	671	231	21	1855
Stove-doors. Device for opening	W. H. Shear	257,087	Apr. 25	1631	467	21	1256
Stove for heating air. Regenerative	J. M. Hartman	257,574	May 9	534	149	21	1381
Stove. Gas	J. H. Baumgardner	255,912	Apr. 4	195	51	21	982
Stove. Gas	C. Rupert	253,767	Feb. 14	705	201	21	477
Stove. Gas cook	J. H. Bean	253,499	Feb. 14	393	108	21	485
Stove-grate	R. Galbraith	254,765	Mar. 7	395	101	21	704
Stove-grate	L. S. Scott	256,923	Apr. 25	1444	405	21	1225
Stove-grate. Adjustable	F. H. De Guerre and W. W. De Lano	256,130	Apr. 11	480	130	21	1037
Stove. Hay and straw burning	W. Teeple	256,398	May 23	1463	416	21	1596
Stove heat-feeder	J. A. Cowles	254,803	Mar. 14	437	117	21	719
Stove. Heating	O. B. Keeley	254,660	Mar. 7	262	68	21	662
Stove. Heating	A. L. Savage	258,904	Jan. 31	1498	415	21	377
Stove. Heating	J. Strazzer	254,783	Mar. 7	403	107	21	707
Stove-hood	W. J. Hankins	260,004	June 27	1543	416	21	1980
Stove. Hot-blast	J. M. Hartman	254,131	Feb. 28	1165	325 326	21	569
Stove. Hydrocarbon-gas	A. M. Brainard	255,945	Mar. 21	1013	271	21	827
Stove-knob	J. Chester	253,509	Feb. 14	402	119	21	427
Stove-knob	J. C. Kohler	256,576	Apr. 18	1632	202	21	1145
Stove. Lamp	D. F. Trefry	255,703	Mar. 28	1584	425	21	933
Stove. Lamp or gas	J. H. Irwin	254,979	Mar. 14	671	181	21	761
Stove-leg	J. A. Risdon	251,949	Jan. 3	319	87	21	55
Stove-lid	B. S. Koll	251,899	Jan. 3	266	73	21	47
Stove-lifter	G. Dee	254,833	Mar. 14	609	164	21	750
Stove. Magazine	J. and F. A. Magee	258,238	Jan. 10	668	188	21	121
Stove. Oil	O. E. Clark	258,630	May 30	1831	516 517	21	1639
Stove. Oil	A. S. Dinsmore	260,006	June 27	1436	387	21	1963
Stove. Oil	J. Iredale	259,546	June 13	840	222	21	1849

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Stove. Oil	J. H. Irwin	253,607	Feb. 14	597	145	21	443
Stove. Oil	R. M. Merrill	253,744	Feb. 14	675	193	21	472
Stove. Oil	J. L. Sharp	259,035	June 6	231	62	21	1723
Stove. Oil	J. S. Van Buren	257,116	Apr. 25	1608	464	21	1263
Stove. Oil	A. Velguth	256,519	Apr. 18	976	274	21	1138
Stove. Oil	T. E. Dudley	256,788	May 2	1951	551	21	1620
Stove. Oil-gas	P. Martin	258,091	May 16	1159	305	21	1594
Stove or furnace for burning hydrocarbon and other oils	D. K. Alden	258,239	May 23	1395	373	21	1541
Stove or oven door	N. Watts	259,949	June 6	459	121	21	1775
Stove. Parlor cook	G. W. Graves	258,512	Jan. 17	774	216	21	144
Stove. Parlor heating	G. G. Thomas	256,411	Apr. 11	687	229	21	1080
Stove. Petroleum cooking	C. Riessner	254,209	Feb. 28	1447	396	21	616
Stove. Petroleum cooking	C. Riessner	258,676	May 30	1823	535	21	1649
Stove-pipe	A. Flohr	251,857	Jan. 3	217	61	21	39
Stove-pipe	E. Robinson	254,949	Feb. 21	1070	287	21	544
Stove-pipe	A. O. Briggs	255,826	Apr. 4	102	27	21	983
Stove-pipe retainer	H. Clayton	256,389	Apr. 11	604	169	21	1073
Stove-pipe shelf	T. Schafer	255,339	Mar. 21	1138	306	21	846
Stove-pipe shelf	G. McAdams	255,441	Mar. 28	1265	341	21	876
Stove-pipe shelf and stove-lid holder	E. W. L. Rice	256,682	May 30	1786	507	21	1638
Stove-platform. Tile	R. Hess	253,660	Feb. 14	689	188	21	448
Stove plates or tablets. Device for attaching	W. Ayling	257,456	May 9	368	.....	21	1356
Stove-polish. Liquid water-proof	W. H. Woodard and L. D. Benedict	255,068	Mar. 14	781	212	21	781
Stove-rack	H. C. Bascom	256,361	May 23	1469	404	21	1571
Stove-support	J. R. Burchfield	255,767	Apr. 4	19	5	21	954
Stove. Tailor's	H. M. Ryder	258,330	Jan. 17	784	220	21	147
Stove-urn	W. B. Blake	253,576	Feb. 14	676	136	21	438
Stove. Vapor	C. F. Kline and W. H. Woodard	258,476	Jan. 17	976	271	21	177
Stove. Vapor	W. Miller	256,606	May 16	1166	287	21	1505
Stove water-back	C. Reeves	254,375	Feb. 28	1443	395	21	615
Stove. Wood	R. A. Gardner	254,653	Mar. 7	288	80	21	677
Stoves. Automatic draft-regulator for oil and gas	O. N. Kyle	259,319	June 13	532	145	21	1797
Stoves. Extension-top for oil	J. L. Morgan	256,101	May 16	1173	322 323	21	1506
Stoves. Portable oven for gas and vapor	A. B. Bowden	254,193	Feb. 28	1298	343	21	589
Stoves. Steam-discharging apparatus for cooking	G. Lindner and J. Dorsch	258,883	Jan. 31	1482	409	21	372
Strainer. Food	D. M. Weston	256,516	May 23	1662	475	21	1604
Strainer-plate. Manufacture of							
Strap: *See* Boot-strap. Hitching-strap. Drum-strap. Suspender-strap. Fence-strap.							
Strap-fastener	J. B. Gathright	251,776	Jan. 3	111	31	21	21
Strap-holder	P. Flack	258,092	Jan. 10	567	149	21	85
Strap splice or clasp	W. L. Hoover	257,915	May 16	999	276	21	1478
Straw-cutter	J. W. Baughman	254,985	Mar. 14	575	155	21	744
Straw-cutter	D. M. Cummings and N. E. Frary	259,563	June 13	705	197	21	1639
Straw-cutter	E. C. Northrop	259,579	June 13	677	223	21	1655
Straw-cutter	C. Roehl	257,368	May 2	266	68, 69	21	1333
Straw-stacker	H. Cortelyow	257,556	May 9	512	143 144	21	1377
Straw-stacker	D. Rankin	256,595	Apr. 18	1055	266	21	1140
Straw-stacking machine	M. T. Reeves	258,023	Jan. 24	1130	319	21	219
Stud and button fastening	P. P. Flournoy	255,273	Mar. 21	1047	269	21	833
Stuffing-box. Steam-engine	T. Walker	253,060	Mar. 14	783	200	21	760
Stump-extractor	J. D. Chesneweth	254,613	Mar. 7	201	51	21	672
Stump-extractor	J. G. Pence	258,512	Jan. 17	1015	268	21	185
Stump-puller	T. Rice	259,928	June 20	1397	350	21	1985
Suction-elevator	H. R. Dulaney	251,844	Jan. 3	200	56	21	36
Sugar. Apparatus for crystallizing grape	E. Rost	256,809	Apr. 18	1307	328	21	1194
Sugar. Apparatus for the manufacture of lump	G. and J. Lebaudy	259,874	June 20	1253	326	21	1926
Sugar-boiler	T. W. Lanier	259,381	June 13	554	145	21	1797
Sugar centrifugal machine	S. M. Lillie	258,783	Jan. 24	1318	329 330	21	943
Sugar. Crystallized anhydrous grape	A. Behr	259,794	June 20	1164	.....	21	1911
Sugar-evaporator	G. H. Grimm and H. M. Clark	254,476	Mar. 7	34	9	21	644
Sugar from molasses and strups. Obtaining	C. Scheibler	256,463	May 16	1044	.....	21	1500
Sugar from molasses, &c. Extracting crystallizable	A. Wernicke and W. Pfitzinger	260,340	June 27	1845	.....	21	2027
Sugar from molasses, &c. Separating	C. Scheibler	260,344	June 27	1727	.....	21	2026
Sugar from plant-juices. Obtaining	C. Scheibler	260,327	June 27	1527	.....	21	2024
Sugar from plant-juices. Obtaining	C. Scheibler	260,326	June 27	1529	.....	21	2024
Sugar from a watery solution of grape-sugar. Manufacturing crystallized anhydride of grape	A. Behr	256,682	Apr. 18	1091	.....	21	1155
Sugar-granulating machine	E. Fox	259,753	June 20	1115	297	21	1908
Sugar in plates, sticks, &c. Method of and apparatus for the production of refined	M. Weinrich	253,359	Mar. 21	1156	310	21	858
Sugar. Manufacture of milk	L. H. Witte	258,841	May 30	1977	.....	21	1661
Sugar. Manufacturing crushed anhydrous grape	A. Behr	256,683	Apr. 18	1093	.....	21	1155
Sugar-mill	C. G. Johnson	258,774	Jan. 24	1308	366 367	21	941
Sugar-mixing apparatus	A. C. Harrison	259,694	June 20	1013	271	21	1868
Sugar. Refining	G. A. Drummond	257,673	May 9	662	.....	21	1405
Sugar. Refining and purifying	B. H. Rasmers and J. Williamson	255,921	Mar. 14	783	.....	21	771
Sulky	F. Doherty and J. Collins	259,698	June 20	1392	382	21	1917
Sulky	W. S. Frazier	253,575	Feb. 7	110	33	21	385
Sulky	W. S. Frazier	253,576	Feb. 7	111	33	21	386
Sulky	M. Payne	251,934	Jan. 3	304	82	21	53
Sulky	J. V. Upington	255,955	Mar. 14	775	208	21	779
Superheater	J. Fish	255,871	Mar. 21	1045	269	21	833
Superheater	D. Renshaw	260,238	June 27	1722	408	21	2000
Superheating steam or heating air. Apparatus for	S. N. Carvalho. (Reissue)	10,194	May 30	2107	606	21	1657
Supporter: *See* Anchor-supporter. Garment-supporter. Brush-supporter. Map and chart supporter.							
Surcingle	E. Barnard	255,757	Apr. 4	7	2	21	956

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Sarcingle	M. R. Dowlin	257,672	May 9	661	185	21	1405
Surface-gage	L. S. Starrett	255,123	Mar. 21	856	230	21	890
Surface-gage	C. W. Smith	259,586	June 13	894	236	21	1856
Surgical-needle holder	G. E. Jones	253,209	Feb. 7	40	13	21	363
Surveying-instrument	G. W. Hill	256,142	Apr. 11	494	135	21	1040
Suspender-braces. Tab-connector for	T. Walker	253,245	Feb. 7	75	23	21	364
Suspender-end	J. C. Hyde	256,783	May 30	1004	263	21	1606
Suspender-end	J. Lauferty	255,175	Mar. 21	926	247	21	911
Suspender-end	J. W. Smith	256,467	May 23	1650	406	21	1508
Suspender-loop	S. E. Moore	257,738	May 9	747	200	21	1419
Suspender-strap	A. Netzner	255,654	Mar. 28	1583	{409 / 410}	21	923
Suspender-trimming	M. Altmann	255,404	Mar. 26	1231	307	21	889
Suspenders	J. W. Holtring	259,543	June 13	836	221	21	1849
Suspenders. Button-hole device for	B. J. Greely	254,956	Mar. 14	639	173	21	756
Suspensory-bandage	J. Cadman	254,799	Mar. 14	433	116	21	719
Swages. Manufacture of blacksmiths'	J. F. Duffy	259,113	June 6	301	80	21	1747
Swing. Portable	G. W. Mason	254,991	Mar. 14	665	{184 / 185}	21	764
Swinging and sliding gate	M. F. Caltrider	252,386	Jan. 24	1111	311	21	397
Swinging can	F. C. Wilson	259,738	June 20	1090	283	21	1940
Swinging gate	L. M. Evans	253,588	Feb. 14	491	140	21	441
Swinging gate	G. King	256,306	May 23	1441	409	21	1502
Swinging gate	C. E. Lamb	256,307	May 23	1442	409	21	1502
Swinging gate	I. L. Landis	256,331	Apr. 11	749	203	21	1062
Swinging gate	W. B. Tatman and W. C. Davis	254,407	Feb. 28	1479	404	21	822
Swinging gate	J. W. Zentmyer	253,810	Feb. 14	761	217	21	497
Switch: *See* Interlocking switch. Railway-switch. Telephone-switch. Telephone-exchange switch.							
Switch and signal locking apparatus	O. Gassett	256,797	Apr. 18	1202	363	21	1191
Switch-operating device	A. G. Cummings	256,102	Apr. 4	427	{117 / 118}	21	1039
Syringe-box	T. F. Matthews	256,716	Apr. 18	1203	338	21	1176
Syringe. Urethral	F. Wilhöft	254,579	Mar. 7	165	41	21	686
Table: *See* Advertising-table. Billiard-table. Cheese-draining table. Extension-table. Folding table. Ironing-table. Printing-machine delivery-table. Pulley-fitting table. Railway time-table. Starch-table. Steam-table. Telegraph-table. Tobacco-booking table. Tracing-table. Turn-table. Veterinary-table.							
Table	F. T. Knauss	257,343	May 2	239	66	21	1324
Table	O. Nilsson	256,649	Apr. 25	1359	363	21	1210
Table-leaf support	J. W. Allison	257,206	May 2	143	40	21	1306
Table-leaf support	J. H. Mosher and G. E. Crane	254,778	Mar. 7	399	106	21	706
Table-leaf supporter	W. F. Weltman	257,116	Apr. 25	1066	406	21	1264
Table or stand for machines, &c	A. F. Gerald	256,671	Apr. 18	1150	323	21	1165
Tablet. Information	E. S. Boynton	258,589	May 23	1702	{481 / 482}	21	1606
Tablet. Writing	M. W. Brown	258,984	June 6	138	37	21	1716
Tablet. Writing	F. S. Hasbrouck	256,636	Apr. 25	1346	360	21	1207
Tablet. Writing	E. P. Wentworth	257,117	Apr. 25	1067	467	21	1264
Tack	A. J. Culbertson	257,313	May 2	73	22	21	1324
Tack-puller	R. Hayden	258,920	June 6	61	17	21	1705
Tacking-machine	J. E. Crisp	254,021	Mar. 7	219	55	21	674
Tacking-machine	E. Woodward	251,755	Jan. 3	79	23, 24	21	16
Tacking-machine	E. Woodward	254,421	Feb. 28	1485	409	21	685
Tacking-machine	E. Woodward	254,756	Mar. 7	375	98	21	702
Tacks for use. Preparing beaded	E. Woodward	253,250	Feb. 7	61	22	21	340
Tackle-block	J. W. Norcross	251,986	Jan. 3	226	69	21	51
Tag	S. B. Fleisher	253,274	Feb. 7	109	33	21	335
Tag. Marking	S. D. Shattuck	254,857	Feb. 21	1079	290	21	746
Tag or ticket. Garment	J. Keller	257,617	Apr. 25	1353	436	21	1344
Tag. Shipping	W. S. and J. A. Upshur and W. R. Royster.	259,343	June 13	861	154	21	1888
Talc and coating articles therewith. Preparing	H. McCormick	253,616	Feb. 14	515	.....	21	444
Tally. Grain	J. Griffith	254,005	Feb. 21	1007	269	21	534
Tally-machine	J. W. Elliot	251,850	Jan. 3	209	58	21	36
Tank: *See* Lard and tallow tank. Oil-tank. Settling-tank.							
Tank and reservoir regulator. Automatic	O. N. Evans	254,594	Mar. 14	621	167	21	738
Tannate of chinoline. Acid	W. Pickhardt and H. Endemann	260,317	June 27	1817	.....	21	2063
Tannate of chinoline. Basic	W. Pickhardt and H. Endemann	260,319	June 27	1818	.....	21	2063
Tannate of chinoline. Neutral	W. Pickhardt and H. Endemann	260,318	June 27	1817	.....	21	2063
Tannic acid. Apparatus for extracting	O. Kohlrausch	259,555	June 13	849	225	21	1850
Tannin extracts. Manufacturing	P. Gondolo	258,573	May 30	1757	.....	21	1625
Tannin extracts. Process of and apparatus for the manufacture of	P. Gondolo	258,574	May 30	1757	497	21	1625
Tanning	J. W. Hammond	254,982	Mar. 14	645	.....	21	757
Tanning hides	J. Head	257,442	May 2	358	.....	21	1345
Tanning hides and skins. Preparing a solution for	C. Richter	260,323	June 27	1821	.....	21	2063
Tape-line and sheave. Combined	J. C. Kuisen	259,566	June 13	850	225	21	1851
Tapping and drilling machine	G. W. Longman	259,406	June 13	668	175	21	1817
Tapping and reaming machine	C. C. Walworth	258,068	Jan. 10	479	{132 / 133}	21	90
Target	J. A. Crandall	254,909	Feb. 28	1526	345	21	801
Target	R. Morris	258,849	Jan. 10	670	169	21	153
Target. Flying	G. Ligowsky. (Reissue)	10,122	May 23	1719	406	21	1611
Target. Flying	G. Ligowsky	256,227	Apr. 11	611	166	21	1050

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Target-trap	G. Ligowsky	252,220	Jan. 10	234	187	21	121
Tea and coffee pot	J. B. Daniel	255,776	Apr. 4	29	9	21	933
Tea-kettle	H. L. Palmer	252,243	Jan. 31	1538	434	21	439
Tea-kettle	J. B. Clarke	255,840	Apr. 4	195	52	21	933
Tea or coffee pot lid	F. B. Richardson	259,049	June 6	234	60	21	1733
Tea-pot and cover	I. W. Nichols	255,125	Mar. 21	825	220	21	913
Tea. Purifying and drying	S. L. Russell	255,620	Mar. 14	723	190	21	772
Tender. Rocking	G. A. Fowler	254,925	Feb. 28	1250	.....	21	1228
Tenth. Temporary stopping for	C. N. Talbot	256,159	May 16	1527	349	21	1212
Telegraph and messenger service box	J. B. Stearns. (Reissue)	10,033	Feb. 7	373	102	21	429
Telegraph apparatus. Duplex	J. B. Stearns. (Reissue)	10,034	Feb. 7	375	103	21	429
Telegraph apparatus. Duplex	J. B. Stearns. (Reissue)	10,035	Feb. 7	377	103	21	430
Telegraph apparatus. Duplex	J. B. Stearns. (Reissue)	10,036	Feb. 7	377	103	21	430
Telegraph. Automatic	C. A. Randall	255,330	Mar. 21	1288	294	21	947
Telegraph. Automatic	G. Smith	259,986	June 6	485	113	21	1760
Telegraph. Automatic	W. R. Patterson	251,780	Jan. 3	51	14	21	11
Telegraph-cable terminal	W. C. Temske	256,253	Apr. 11	649	176	21	1066
Telegraph. Chemical	R. Carter	254,611	Mar. 7	197	50	21	672
Telegraph-circuit. Fire-alarm	C. L. Buckingham	253,154	Jan. 31	1686	501	21	389
Telegraph. Duplex	H. Van Hoevenbergh	253,134	Jan. 31	1776	488	21	384
Telegraph. Duplex	C. L. Buckingham	256,306	May 23	1506	469	21	1574
Telegraph. Duplex	C. L. Buckingham	256,307	May 23	1510	469	21	1574
Telegraph. Duplex	B. F. Dillon and J. W. Brown	259,106	June 6	291	76	21	1745
Telegraph. Duplex	J. E. Funn	258,636	May 30	1837	518	21	1640
Telegraph. Duplex	F. W. Jones	258,498	May 23	1560	448	21	1587
Telegraph. Duplex	F. W. Jones	260,208	June 27	1884	450	21	2001
Telegraph. Duplex	G. S. Mott	256,163	May 16	1175	309	21	1207
Telegraph. Duplex	B. Thompson and C. Selden	256,967	June 6	109	29	21	1713
Telegraph. Duplex	E. Berliner	256,304	May 23	1496	425	21	1572
Telegraph. Harmonic	G. Cumming	256,645	Apr. 18	1110	314	21	1139
Telegraph-key	J. A. Timmerman	258,580	May 30	2000	522	21	1679
Telegraph-keys. Circuit-closer for	D. Brooks. (Reissue)	10,123	May 30	2106	565	21	1697
Telegraph line. Underground	D. Brooks	254,989	Feb. 28	1523	395	21	894
Telegraph line. Underground	W. D. Smith	256,397	Apr. 11	814	224	21	1095
Telegraph lines. Support for underground	T. B. Atterbury	258,210	May 23	1287	{374 / 375}	21	1542
Telegraph-messages. Instrument for preparing and transmitting secret	A. F. and F. B. Johnson	253,664	Jan. 31	1688	467	21	510
Telegraph. Multiple	B. Thompson and C. Selden	255,696	Mar. 28	1575	424	21	931
Telegraph. Printing	A. A. Knudson	258,439	May 23	1563	458	21	1589
Telegraph. Printing	J. H. Longstreet and J. B. Wright	257,577	May 16	906	{253 / 254}	21	1459
Telegraph. Quadruplex	S. D. Field	253,687	Jan. 31	1638	455	21	502
Telegraph. Quadruplex	S. D. Field	254,397	Feb. 28	1292	373	21	589
Telegraph. Quadruplex	F. W. Jones	255,395	Mar. 21	1077	300	21	938
Telegraph. Quadruplex	H. C. Nicholson	257,181	May 2	41	13	21	1268
Telegraph. Quadruplex	J. R. Woodfill	255,373	Mar. 21	1174	315	21	955
Telegraph relay and repeating-instrument	A. F. and F. B. Johnson	253,668	Jan. 31	1668	{465 / 466}	21	509
Telegraph. Secret-printing	A. F. and F. B. Johnson	253,669	Jan. 31	1669	{466 / 467}	21	509
Telegraph. Secret-printing	A. F. and F. B. Johnson	253,670	Jan. 31	1670	{466 / 467}	21	509
Telegraph. Secret-message	F. W. Jones	254,980	Feb. 28	1528	{350 / 351}	21	905
Telegraph. Sextuplex	G. M. Phelps	253,730	Feb. 14	495	128	21	475
Telegraph signal-box. District and alarm	J. H. Bunnell	255,838	Apr. 4	223	58	21	987
Telegraph-sounder. Mechanical	C. F. McCullah	253,689	Jan. 31	1714	473	21	513
Telegraph system. District	J. L. Garber	253,326	Feb. 7	214	61	21	382
Telegraph-table. Revolving	T. J. Agnew	259,971	June 20	1387	373	21	1949
Telegraph, telephone, and other wires. Underground conduit for	H. Van Hoevenbergh	258,610	June 13	912	{943 / 944}	21	1881
Telegraph transmitter. Printing	H. A. Chase	256,816	Apr. 25	1383	374	21	1204
Telegraph-wires. Apparatus for sustaining	W. Reason	260,005	May 16	1668	395	21	1468
Telegraph-wires, &c. Balloon-support for	A. J. Haviland	258,651	May 16	1195	315	21	1467
Telegraph-wires. Screw for fastening	S. Turner	253,643	Feb. 14	546	156	21	449
Telegraph-wires. Supporting	E. D. Parker	253,419	Feb. 7	276	79	21	393
Telegraphs. Electric coupling for trains	S. M. Plank and W. P. Phelps	256,896	Jan. 31	1475	412	21	874
Telegraphs. Self-adjusting relay for printing	B. Thompson and C. Selden	253,957	Feb. 21	958	264	21	534
Telegraphic apparatus	H. A. Clark	258,720	Jan. 24	1268	355	21	333
Telegraphic cables. Vulcanizing india-rubber and gutta-percha coverings and coatings of	G. Cumming and C. M. Brinkerhoff	256,646	Apr. 18	1117	314	21	1139
Telegraphic electrode	M. D. Connally	255,378	Mar. 21	1181	317	21	856
Telegraphic instrument protector	A. F. and F. B. Johnson	253,061	Jan. 31	1685	465	21	389
Telegraphic messages. Apparatus for preparing and transmitting secret	W. H. Markland	260,308	June 27	1895	490	21	2021
Telegraphic receiving-instrument	G. Smith	254,661	Feb. 21	1063	300	21	547
Telegraphic receiving-instrument	G. Smith	259,057	June 6	233	62	21	1723
Telegraphic receiving-instrument	G. Smith	259,585	June 6	404	113	21	1768
Telegraphic receiving-instrument	M. W. Pope	258,796	Jan. 24	1245	376	21	347
Telegraphic signal-boxes. Automatic time-recorder for	G. S. Mott	258,497	Jan. 17	1020	278	21	188
Telegraphic sounder	G. S. Mott	258,496	Jan. 17	1023	279	21	188
Telegraphic sounder	E. L. Hutchinson	254,977	Mar. 14	660	169	21	803
Telegraphic transmitter. Automatic	J. W. Lavish	257,469	May 9	420	153	21	1292
Telegraphy. Multiple	M. Buell	256,456	Apr. 18	903	233	21	1134
Telegraphy. Rheostat for multiple	E. H. Amet and W. S. D. Hunt	255,734	Apr. 4	3	2, 3	21	931
Telephone	J. W. Clark	258,591	June 6	20	7, 8	21	1760
Telephone	T. A. Edison	258,448	Jan. 17	998	269	21	171
Telephone	T. A. Edison	257,677	May 9	389	104	21	1407
Telephone	E. T. Greenfield	258,294	Jan. 10	749	202	21	134
Telephone	A. H. Hinctmann	257,133	Apr. 25	1064	474	21	1060
Telephone	J. H. Rogers	258,255	Jan. 10	692	186	21	125
Telephone	J. H. Rogers	258,256	Jan. 10	693	186	21	125
Telephone							

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Telephone	H. S. Thornberry	255,354	Mar. 21	1158	308	21	851
Telephone. Acoustic	J. A. Lakin	255,174	Mar. 21	985	247	21	811
Telephone. Alarm	J. F. Kettell	257,019	Apr. 25	1555	438	21	1944
Telephone attachment	J. C. Chambers	256,989	June 6	145	39, 40	21	1739
Telephone call-register	W. J. Denver and W. W. Sawyer	253,653	Feb. 21	891	233	21	504
Telephone call-register	J. W. See	259,429	June 13	669	188	21	1938
Telephone central-office switch	M. J. Carney	256,886	June 6	21	6	21	1696
Telephone central-office system	G. M. Hopkins	257,351	May 9	283	63	21	1301
Telephone-circuit	G. H. Bliss	259,326	June 13	511	134	21	1789
Telephone-circuits. Utilising secondary batteries on	C. E. Buell	255,377	Mar. 21	1180	316	21	856
Telephone-circuits. Utilising secondary batteries on	C. E. Buell	259,809	June 20	1161	315	21	1913
Telephone. Compound	G. L. Anders	252,641	Jan. 24	1157	304	21	215
Telephone. Compound	T. A. Watson	252,109	Jan. 10	588	165	21	107
Telephone. Electric	J. P. Freeman	257,606	May 9	685	190	21	1409
Telephone. Electric	T. T. Prosser and J. P. Freeman	257,610	May 9	383	165	21	1301
Telephone. Electric	J. H. Rogers	252,381	Jan. 17	1025	265	21	185
Telephone. Electric speaking	A. W. Rose and C. A. Cheever	252,142	Jan. 10	588	159	21	104
Telephone-exchange apparatus	G. L. Anders	252,986	Jan. 31	1588	441	21	394
Telephone-exchange apparatus	C. E. Buell	255,706	Apr. 4	16	5	21	953
Telephone-exchange circuit	C. W. Rose	252,259	Jan. 10	699	197	21	126
Telephone-exchange circuit and apparatus	J. I. Sabin	255,031	Mar. 14	734	{198 / 199}	21	778
Telephone-exchange switch	H. W. Breckenridge	258,421	Jan. 17	918	258	21	167
Telephone-exchange switch-board	C. W. Rose and G. H. Twiss	256,888	May 30	2105	594	21	1698
Telephone-exchange system	G. W. Coy	257,664	May 9	653	183	21	1403
Telephone-exchange system	E. T. Greenfield	256,432	Apr. 11	859	{239 / 240}	21	1103
Telephone-exchange system	T. A. Watson	256,258	Apr. 11	656	177	21	1096
Telephone-exchange system and apparatus	G. B. Scott	253,316	Feb. 7	153	45	21	373
Telephone-exchanges. Automatic signaling-circuit for	C. E. Scribner	251,955	Jan. 3	385	88, 89	21	56
Telephone-exchanges. Multiple switch-board for	L. B. Firman	252,576	Jan. 17	1066	302	21	196
Telephone-exchanges. Signaling apparatus for	J. G. Smith	256,661	May 30	1699	536	21	1650
Telephone-line signal-call	F. R. Richmond	254,155	Feb. 28	1198	333	21	573
Telephone-lines. Individual signaling apparatus for	H. D. Sisson	254,573	Mar. 7	154	36	21	684
Telephone-lines. Signaling apparatus for	J. G. Smith and C. E. Buell	257,621	May 9	695	189	21	1303
Telephone. Mechanical	G. K. and H. C. Farrington	252,694	Jan. 10	430	118	21	81
Telephone-receiver	G. L. Anders	253,491	Feb. 14	362	105	21	483
Telephone-receiver	S. H. Bartlett and H. E. Waite	253,612	Feb. 14	766	218	21	488
Telephone-receiver	R. M. Lockwood	256,906	Apr. 25	1436	401	21	1221
Telephone-receiver	R. M. Lockwood	256,907	Apr. 25	1437	401	21	1222
Telephone-relay	C. A. Randall	255,333	Mar. 21	1130	304	21	847
Telephone-relay	H. E. Waite	253,783	Feb. 14	741	218	21	484
Telephone-repeater	J. G. Smith	256,753	Apr. 18	1943	548	21	1168
Telephone-signal	G. L. Anders	251,810	Jan. 3	153	43	21	26
Telephone-signal generator	J. F. Gilliland	253,597	Feb. 14	495	141	21	441
Telephone signaling and receiving apparatus	C. Ewing	260,180	June 27	1648	{447 / 448}	21	1906
Telephone signaling-circuit	G. H. Bliss	259,325	June 13	510	133	21	1789
Telephone-signaling. Magneto-electric machine for	G. L. Anders	251,758	Jan. 3	83	25	21	17
Telephone-station apparatus	G. W. Coy	253,912	Feb. 21	849	250	21	515
Telephone-switch. Automatic	J. B. Odell	253,941	Feb. 21	935	269	21	522
Telephone system	E. Berliner	255,239	Mar. 21	1006	289	21	826
Telephone systems. Individual signaling apparatus for	C. E. Buell	258,686	May 30	1895	516	21	1636
Telephone-transmitter	S. H. Bartlett and H. E. Waite	252,714	Jan. 24	1236	347	21	229
Telephone-transmitter	S. H. Bartlett and H. E. Waite	253,665	Feb. 14	577	163	21	454
Telephone-transmitter	E. Berliner	254,190	Feb. 28	1269	342	21	579
Telephone-transmitter	C. Ewing	256,040	May 16	1101	306	21	1403
Telephone-transmitter	J. P. Freeman, T. T. and H. B. Prosser.	257,607	May 9	686	190	21	1409
Telephone-transmitter	G. M. Hopkins	257,338	May 2	225	63, 64	21	1323
Telephone-transmitter	G. M. Hopkins	258,757	May 30	1967	561	21	1665
Telephone-transmitter	J. Olmsted	252,122	Jan. 10	553	155	21	109
Telephone-transmitter. Battery	C. E. Scribner	251,800	Jan. 3	136	39	21	25
Telephone-transmitter. Carbon	G. D. Clarke	253,977	Feb. 21	979	273	21	529
Telephone-transmitters. Carbon of	C. E. Scribner and G. D. Clarke	252,296	Jan. 10	752	209	21	134
Telephones and other purposes. Electric call for	W. C. Lockwood	258,322	Jan. 17	784	218	21	146
Telephonic and telegraphic signaling apparatus	A. C. Brown and H. A. C. Saunders	259,359	June 13	598	{158 / 159}	21	1805
Telephonic apparatus and circuit	J. H. Rogers	252,257	Jan. 10	685	196	21	125
Telephonic receiver	C. Cuttriss and G. F. Milliken	256,795	Apr. 18	1989	363	21	1191
Telephonic receiving-instrument	W. B. Hale	254,642	Mar. 7	236	62	21	678
Telephonic switch apparatus	H. W. Cozzens	258,494	June 6	36	8	21	1709
Telephonic transmission of sound from theaters	C. Ader	257,453	May 9	383	{107 / 108}	21	1355
Telephony. Electric	A. W. Rose	252,141	Jan. 10	565	159	21	104
Tellurian	T. H. Costello	255,491	Mar. 28	1388	358	21	868
Tempering pot. Edge-tool	C. E. Dixon	256,291	Apr. 11	577	158	21	1053
Tender and other brakes	D. S. Randolph	253,319	Feb. 7	149	43	21	371
Tendon-cutting implement	O. Ewing	252,306	Jan. 17	769	214	21	144
Tenoning-machine	J. Shetler	260,331	June 27	1633	485	21	2025
Tension-brace	A. Lawson	253,987	Feb. 21	916	255	21	510
Tent	E. S. Farrow	255,108	Mar. 21	838	234	21	797
Textile fabrics. Machine for pressing and finishing	G. W. Miller	257,508	May 9	451	125	21	1289
Textile fabrics. Ornamenting	P. A. Dailey	257,921	May 16	961	266	21	1408
Textile fabrics. Treating	P. A. G. Juel	252,363	Jan. 17	630		21	159
Theater-stage	C. A. Needham	258,530	May 23	1715	484	21	1610
Theaters. Exit from	J. H. Smith	254,717	Mar. 7	327	87	21	694
Theaters. Fire-proof curtain for	K. Von Falkenhausen	256,083	June 6	941	64	21	1735
Theatrical scenery	G. F. Fuller	259,301	June 13	530	140	21	1783
Thermo-electric battery	A. Patterson	253,865	Apr. 4	157	42	21	976
Thermometer. Volute-tube	M. Immisch	251,869	Jan. 3	254	70	21	45
Thermostatic coil	H. W. Axford	252,069	Jan. 10	482	133	21	90

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Thill-coupling	I. G. Beaver	258,700	May 30	1908	544	21	1656
Thill-coupling	A. Brown	255,927	Apr. 4	217	56	21	980
Thill-coupling	A. Gipe	259,308	June 13	508	140	21	1782
Thill-coupling	W. A. Hendryx	258,316	Jan. 17	773	217	21	145
Thill-coupling	E. Hexis	254,016	Feb. 21	1000	267	21	537
Thill-coupling	H. F. King	253,088	Jan. 31	1097	295	21	310
Thill-coupling	H. A. Lattgnau	260,107	June 27	1851	498	21	1898
Thill-coupling	R. J. Mitchell	253,411	Feb. 7	298	77	21	397
Thill-coupling	H. T. Perrun	251,835	Jan. 3	305	83	21	33
Thill-coupling	C. N. Smith and T. Murphy	260,048	June 27	1733	466	21	2020
Thill-coupling	C. C. Wason	257,186	May 2	54	17	21	1290
Thill-coupling	G. E. Wilson	254,894	Mar. 14	563	151	21	762
Thill-coupling	W. A. Walentz	256,772	Apr. 18	1991	535	21	1160
Thill loop or tag	N. T. Folsom	254,763	Mar. 7	304	102	21	983
Thill-tug	D. M. Small	259,336	June 13	578	152	21	1921
Thill-tug	C. H. Horton	259,157	June 6	340	81	21	1735
Thrasher and clover-seed huller. Grain-	W. Pierpont	254,238	Feb. 28	1260	307	21	599
Thrasher and separator	F. W. Robinson	251,951	Jan. 3	360	87	21	54
Thrasher and separator. Combined	C. Bliss	259,264	June 6	473	104	21	1775
Thrasher and separator. Grain	S. Caldwell and J. Burgess	253,615	Feb. 14	770	215	21	489
Thrasher band-cutting and feeding attachment	J. C. Dupee	253,591	Feb. 14	460	130	21	440
Thrasher band-cutting attachment	C. G. Case	258,077	Jan. 10	460	135	21	98
Thrashing and clover-hulling machine frame	J. R. Birdsell	255,087	Mar. 21	690	221	21	795
Thrashing and hulling machine. Combined clover	R. H. Oeon	259,749	June 20	1160	296	21	1902
Thrashing-machine	H. M. Dalton	257,998	May 16	994	289	21	1462
Thrashing-machine	J. L. MacDonald and G. E. Sly	253,674	Feb. 21	848	240	21	506
Thrashing-machine	H. W. Matthews	259,185	June 6	361	{109 / 110}	21	1761
Thrashing-machine	S. E. Oviatt	257,978	May 16	1018	264	21	1476
Thrashing-machine	J. L. Phillips	257,753	May 9	781	212	21	1422
Thrashing-machine	A. A. Russell	255,199	Mar. 21	853	{230 / 231}	21	790
Thrashing-machine	M. Sullivan	259,999	June 20	1412	369	21	1933
Thrashing-machine	J. Westinghouse and W. Webber	259,955	June 20	1349	{362 / 364}	21	1942
Thrashing-machine band-cutter and feeder	R. Stalcup and G. W. Stewart	259,238	June 6	434	115	21	1720
Thrashing-machine band-cutting and feeding attachment	G. W. Sharp	255,464	Mar. 28	1395	349	21	881
Thrashing-machine feeder	M. Thomas, Jr.	254,177	Feb. 28	1216	330	21	577
Thrashing-machine grain-feeder and band-cutter	T. J. Barlow	256,690	Apr. 18	1969	{362 / 367}	21	1154
Thrashing-machine separator attachment	M. A. Keller. (Reissue)	10,658	Mar. 7	417	111	21	709
Thrashing-machine straw-carrier	P. Philippi	258,689	Jan. 24	1134	318	21	611
Thrashing-machine. Straw carrier and shaker	J. Fahrney	254,810	Mar. 14	444	{119 / 120}	21	721
Thrashing-machine tooth	L. Carrier	258,486	Jan. 17	918	253	21	169
Thrashing-machines. Cylinder and concave tooth for	H. P. White	251,981	Jan. 3	359	96	21	61
Thrashing-machines. Self-feeder for	J. Scholl	251,799	Jan. 3	137	39	21	25
Thread holder and cutter	F. S. Williams	255,745	Mar. 28	1641	444	21	942
Threading-die	C. D. Rogers	255,617	Apr. 4	77	21	21	964
Ticket-case	S. S. Cross	256,198	May 16	1807	505	21	1558
Ticket case. Combined coupon and local	M. A. Smith	254,399	Feb. 28	1408	400	21	620
Ticket-clasp	L. J. Blades	259,324	June 13	509	139	21	1789
Ticket-holder	J. G. Tait	251,946	Jan. 3	338	91	21	58
Ticket. Pin-	A. T. Lundqvist	256,349	Apr. 11	754	206	21	1025
Ticket. Price-	J. Keller	259,399	Jan. 17	761	218	21	146
Tide-wave motor	R. Humphreys	259,160	June 20	1237	338	21	1904
Tie:							
See Bale-tie. Cattle-tie. Cross-tie. Railway-tie. Railway cross-tie. Umbrella and parasol tie.							
Tile. Drain and irrigating	M. Payne, W. P. Foust, and R. M. Thomas.	253,093	Jan. 31	1753	479	21	316
Tile. Floor-	J. Siebel	254,396	Feb. 28	1406	401	21	619
Tile for plastering, &c. Porous penetrable	S. E. Loring. (Reissue)	10,630	Feb. 7	369	.....	21	488
Tile for steam-boilers	J. C. Stevens	256,462	Apr. 11	810	225	21	1096
Tile furring. Fire-proof	G. M. Moulton and E. V. Johnson	257,396	May 2	285	75	21	1289
Tile. Illuminated	L. C. Tiffany	255,210	Mar. 21	973	260	21	819
Tile. Illuminating	J. K. Ingalls	258,228	May 23	1756	363	21	1547
Tile-kiln	E. A. and J. F. Brown	255,247	Mar. 21	1016	278	21	822
Tile machine. Drain-	G. S. Tiffany	256,614	May 30	1811	511	21	1635
Tile of glass, porcelain, &c., for decorating walls	E. Vedder	256,415	Apr. 11	631	200	21	1060
Tile-plate. Illuminating	W. A. Lindsay	259,708	June 20	1135	301	21	1905
Tiles. Composition for the manufacture of artificial	R. Skinner	257,082	Apr. 25	1657	.....	21	1229
Till. Alarm-	G. A. Colton	255,145	Mar. 21	867	236	21	805
Tiller	H. Walker and A. Miltner	254,179	Feb. 28	1218	330	21	577
Tilting chair	J. W. Kenna	258,325	Jan. 10	656	185	21	119
Timber for preserving it. Apparatus for the treatment of	H. Find	253,361	Feb. 7	210	60	21	362
Time-alarm	J. Pomeroy and J. Winslow, Jr.	259,564	June 13	661	224	21	1886
Time-detector. Electric	J. E. Richards	256,609	May 30	1797	{507 / 508}	21	1630
Time-detector. Watchman's	O. Hansburg	256,837	Apr. 25	1346	380	21	1208
Time-detector. Watchman's	H. J. Wenzel	253,983	Feb. 21	961	267	21	535
Time-lock	S. Shaw	253,317	Feb. 7	156	45	21	373
Tin and galvanized coating. Apparatus for removing	T. H. Campbell	255,238	Mar. 21	1021	{272 / 274}	21	810
Tinman's furnace	J. F. Lockwood	256,779	May 30	2011	{507 / 508}	21	1629
Tinner's shears	J. F. Brayer	257,465	May 9	396	111	21	1240
Tip for flexible cords	J. K. Hamilton	257,865	May 16	898	240	21	1497
Tire-bending machine. Wagon-	E. C. Trombly	259,607	June 13	910	262	21	1901

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Tire-cooler	D. Ammerman, T. Baird, and E. M. Foreman.	254,897	Mar. 14	568	159	21	743
Tire-cooling device	I. L. Umstead	257,536	May 9	481	134	21	1373
Tire-tightener	A. P. Gathright and A. W. Potts	256,137	Apr. 11	488	133	21	1036
Tire-tightener	H. N. Lindler	256,339	Apr. 11	749	205	21	1084
Tire-tightener	J. T. McEnaney	253,935	Feb. 21	920	258	21	561
Tire-tightener	S. B. Robison	259,568	June 13	885	230	21	1857
Tire-tightener and spoke-extractor	G. W. Linck	251,985	Jan. 3	273	74	21	48
Tire-upsetter	C. Stevens	251,984	Jan. 3	335	91	21	58
Tire-upsetter	A. Womack	256,589	Apr. 18	985	277	21	1138
Tire-upsetting and stretching machine	R. E. Alexander	256,944	Apr. 25	1470	412	21	1289
Tire-upsetting machine	F. S. Carr	252,868	Jan. 31	1449	403	21	939
Tire. Vehicle-wheel	A. Dickinson and J. Warden	252,304	Jan. 17	767	214	21	143
Tire. Wagon-wheel	L. Yakel	254,422	Feb. 28	1496	410	21	885
Tobacco and match box. Combined	S. E. Scott	256,946	Apr. 11	641	173	21	1084
Tobacco. Apparatus for darkening	A. P. Poladura	252,397	Jan. 17	790	219	21	147
Tobacco. Apparatus for treating leaf	L. Kruckemeyer	257,794	May 9	733	204	21	1417
Tobacco-booking table	C. Seel	255,540	Mar. 28	1365	374	21	896
Tobacco-curing apparatus	E. A. Bardick	252,946	Jan. 31	1514	421	21	981
Tobacco-cutter	W. Seranton	254,367	Apr. 11	804	221	21	1069
Tobacco-drying machine	L. Lottier	257,651	Apr. 25	1569	440	21	1947
Tobacco. Labeling plug	D. W. De Forest	254,985	Feb. 28	1340	370	21	997
Tobacco-leaves. Device for sizing	J. D. Brubaker	255,764	Apr. 4	13	4	21	953
Tobacco-leaves. Treating	J. D. Miller	254,989	Mar. 14	894	.....	21	765
Tobacco. Machine for attaching tags and labels to plug.	E. R. Hearn	253,994	Feb. 7	118	35	21	306
Tobacco. Machine for opening and feeding	C. L. Curtis and B. Adriance	255,494	Mar. 28	1338	{359 / 360}	21	897
Tobacco machine. Plug	J. Ramming	252,889	Jan. 31	1492	414	21	976
Tobacco. Method of and apparatus for curing	R. Kisseling	259,553	June 13	846	224	21	1850
Tobacco. Method of and apparatus for treating	G. Clark	253,584	Feb. 14	482	137	21	439
Tobacco package. Plug	S. C. Shelton	253,434	Feb. 7	292	83	21	305
Tobacco-pipe	I. W. Giles	259,870	Jan. 31	1453	407	21	971
Tobacco-pipe	G. Lockhart	260,105	June 27	1558	430	21	1908
Tobacco-pipe	J. J. Weber	255,401	Mar. 21	1215	334	21	892
Tobacco-pouch frame	M. I. Weller	256,177	May 16	1264	357	21	1283
Tobacco-press	R. L. Alexander	257,454	May 9	366	106	21	1256
Tobacco-scrap cutter	A. Ingram	255,519	Mar. 28	1354	364	21	890
Tobacco-stem-crushing machine	C. Hemje	254,989	Mar. 14	653	177	21	756
Tobacco-sweating apparatus	W. Foss	256,739	May 30	1906	555	21	1661
Tobacco-sweating apparatus	F. W. Smalley and R. G. J. Kennard, Jr.	252,270	Jan. 10	717	202	21	120
Toe-weight	L. C. Chase	259,463	June 13	760	208	21	1836
Toe-weight	G. E. Twambley	257,907	May 16	945	263	21	1446
Toilet-case	H. Pattberg	257,973	May 16	1019	284	21	1476
Tonga. Carpenter's flooring	W. R. Forester	256,726	May 30	1906	555	21	1661
Tonga. Cattle	C. Brühl	251,985	Jan. 3	177	49	21	39
Tonga. Pipe	C. H. Miller	259,895	June 20	1876	542	21	1890
Tonga. Tinman's	C. R. Everson	256,538	Apr. 18	1015	146	21	1143
Tonga. Universal	J. M. L. Matthey	259,898	June 20	1905	550	21	1892
Tongue-depressor	E. C. Merrill	253,197	Jan. 10	545	153	21	101
Tongue for agricultural implements	J. I. Hoke	253,794	Feb. 14	694	176	21	442
Tongue. Jointed plow	W. L. Cassday	253,986	Jan. 31	1443	403	21	969
Tongue-support	W. B. McFall	253,875	Feb. 21	851	240	21	560
Tongue-support. Vehicle	J. N. Holem	259,156	June 6	339	69	21	1754
Tongue support. Wagon	J. W. Wetmore	253,902	Feb. 21	879	248	21	514
Tool. Adjustable	A. A. Pease	252,948	Jan. 10	686	194	21	194
Tool-carrier	C. L. Wentworth	256,178	May 16	1265	357	21	1283
Tool. Combination	F. Emmenegger, Jr.	251,851	Jan. 3	210	56	21	36
Tool. Combination	H. Fisher	254,631	Mar. 7	225	59	21	676
Tool. Combined	T. D. Isbell	255,513	Mar. 28	1355	365	21	891
Tool-handle	T. Bates	259,979	June 6	259	69	21	1739
Tool-handle	T. Bolton	254,861	Mar. 14	507	136	21	733
Tool-holder	A. Long	259,405	June 13	661	175	21	1817
Tool-holder	N. H. Snider	257,490	May 2	304	87	21	1335
Top. Spinning	J. Hill	253,788	Feb. 14	622	176	21	440
Torpedo and detonating signal. Railway	F. Gerrard	251,988	Jan. 3	226	63	21	41
Torpedo-boats. Current-controlling device for	G. E. Haight	257,693	May 9	695	{183 / 194}	21	1411
Torpedo-boats. Device for controlling	G. E. Haight	257,694	May 9	701	194	21	1411
Torpedo. Submarine	M. Hubbe and M. A. Hardy	255,366	Mar. 21	1185	330	21	858
Torpedoes. Apparatus for propelling	W. F. Johnston	254,021	Feb. 21	1033	286	21	530
Tow-boat	A. McDougall	259,889	June 20	1899	340	21	1889
Towel-rack	T. C. Clapp	253,563	Feb. 14	463	130	21	439
Toy	L. P. Converse	256,361	May 23	1565	433	21	1577
Toy	S. Lewis	256,010	Apr. 4	301	84	21	1094
Toy	E. R. Morrison	257,743	May 9	750	209	21	1420
Toy	J. M. Holmes	255,698	Mar. 28	1491	409	21	916
Toy. Acrobatic	F. C. Zanetti	251,737	Jan. 3	88	24	21	17
Toy and bottle-stopper. Combined	W. H. Reiff	259,980	June 20	1386	259	21	1935
Toy and puzzle. Spelling	W. Kenniah	257,958	May 16	997	276	21	1474
Toy animal. Mechanical	J. E. Selden	259,981	June 6	419	111	21	1767
Toy. Automatic	E. E. Haynes	254,708	Mar. 7	380	103	21	705
Toy ball	J. Murray	255,184	Mar. 21	933	249	21	813
Toy bank	F. W. Carpenter	251,763	Jan. 3	94	26	21	19
Toy building-block	J. A. Crandall	260,264	June 27	1779	{431 / 432}	21	2016
Toy cannon	A. Turnbull	256,157	Jan. 10	564	164	21	107
Toy-cap exploder	E. Aldom	256,973	June 6	126	33	21	1716
Toy catapult	C. F. Pohlman and H. Thompson	257,379	May 2	279	80	21	1331
Toy chariot	L. Kyser and A. C. Rex	256,772	May 30	2002	565	21	1667
Toy. Child's	S. L. Heckert	254,769	Mar. 7	391	103	21	705
Toy circus or arena	W. W. Barnes	256,193	Apr. 11	565	156	21	1061

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Toy. Electric	R. N. Dyer and H. W. Seely	259,415	June 6	393	89	21	1747
Toy elevated railway	J. A. Crandall	254,537	Mar. 7	198	38	21	657
Toy fire-arm	G. W. Eddy	260,269	June 27	1765	484	21	2017
Toy furniture	G. W. Lewis	251,993	Jan. 3	271	74	21	48
Toy gun	C. C. P. McCord and C. D. Churchill	255,588	Mar. 28	1372	370	21	894
Toy hoop-stick	W. L. Teter	257,785	May 9	795	220	21	1429
Toy horse. Trundling	E. J. B. Whitaker	255,367	Mar. 21	1167	313	21	853
Toy house or structure. Combination	W. W. Barnes	256,212	May 23	1230	376	21	1549
Toy locomotive	W. S. Reed. (Reissue)	10,114	May 16	1310	371	21	1531
Toy. Mechanical	J. L. Given	256,743	May 30	1973	557	21	1663
Toy. Mechanical	J. W. Perkins	255,866	Apr. 4	139	43	21	976
Toy. Mechanical	W. A. Webber	257,118	Apr. 25	1520	465	21	1263
Toy. Mechanical	T. M. Wilkins	256,355	May 23	1474	419	21	1588
Toy merry-go-round	C. F. Cornelius	260,167	June 27	1630	440	21	1898
Toy money-box	L. Kyser and A. C. Rex	252,067	Jan. 24	1120	314	21	999
Toy money-box	L. Kyser and A. C. Rex	259,403	June 13	650	174	21	1817
Toy musical wheel	L. Kyser and A. C. Rex	256,771	May 30	2001	565	21	1667
Toy. Optical	H. Van Hoevenbergh	258,164	May 16	1240	338	21	1289
Toy. Optical	H. Van Hoevenbergh	259,950	June 20	1363	361	21	1941
Toy or child's carriage in combination with a musical box.	C. M. Crandall	254,439	Feb. 28	1502	411	21	886
Toy or doll house	W. W. Barnes	256,191	Apr. 11	563	154	21	1051
Toy or puzzle	A. D. Campbell	257,455	May 9	642	180	21	1401
Toy or toy box	W. Strong	256,761	Apr. 18	1250	{351 / 352}	21	1163
Toy picture. Dissected	G. H. Ireland	258,651	May 30	1856	504	21	1644
Toy pistol	C. F. Ritchel	256,510	May 30	2042	577	21	1675
Toy pistol	H. H. Whitcomb	259,560	Jan. 17	1070	297	21	198
Toy railway-train	F. W. Carpenter. (Reissue)	10,063	Mar. 14	687	230	21	786
Toy savings-bank	C. G. Shepard and P. Adams, Jr	255,690	Mar. 14	816	218	21	786
Toy scales	L. Kyser and A. C. Rex	252,608	Jan. 24	1121	314	21	999
Toy theater or Punch-and-Judy show	N. E. Marshman	256,909	Apr. 25	1498	402	21	1282
Toy watch	R. J. Clay	256,998	May 23	1411	389	21	1537
Toy wheelbarrow	J. A. Crandall	253,646	Feb. 21	612	230	21	508
Toy. Whistling	T. E. Bulger	255,250	Mar. 21	1080	973	21	886
Trace-carrier	G. F. Eberhard	255,388	Mar. 21	1187	319	21	857
Trace-carrier	W. H. Main	259,967	June 20	1411	369	21	1932
Trace-carrier	D. S. Moore	252,126	Jan. 10	544	153	21	101
Trace-carrier	J. W. O'Daniel and C. E. Walls	259,772	June 20	1140	302	21	1906
Trace-carrier	M. E. Simmons	258,130	May 16	1221	343	21	1515
Trace-carrier	A. R. Wilhelm	255,744	Mar. 28	1640	444	21	942
Trace-coupling	I. H. Randall	256,584	Apr. 18	1054	293	21	1140
Trace-fastener	E. A. Pollard	251,987	Jan. 3	307	83	21	53
Trace-fastening bolt	C. Woolnough	253,147	Jan. 31	1793	498	21	987
Trace-fastening for single-trees	L. S. Ellebbute	254,363	Feb. 28	1349	372	21	889
Trace-lock	J. A. Bassett	254,271	Apr. 11	971	182	21	1070
Trace-lock	J. R. Connell	259,919	Jan. 10	425	116	21	80
Trace-supporter	J. Brunson	259,908	June 20	1180	315	21	1913
Trace-supporter	T. Meyer	259,634	June 6	204	55	21	1729
Trace-trimming machine	H. F. Osborne	258,313	May 23	1448	410	21	1563
Tracing-table	N. Solt	258,906	Jan. 31	1490	416	21	977
Traction-engine	M. W. Bushnell	259,614	June 20	1186	{317 / 318}	21	1914
Traction-engine	J. H. Elward	253,023	Jan. 31	1634	{453 / 454}	21	301
Traction-engine	A. O. Frick	256,993	Apr. 25	1298	430	21	1230
Traction-engine	A. O. Frick	258,401	May 23	1549	{439 / 440}	21	1561
Traction-engine	H. N. Land and H. Campbell	254,223	Feb. 28	1270	358	21	866
Traction-engine	H. N. Land and H. Campbell	257,444	May 2	368	100	21	1345
Traction-engine	J. V. Stribling	259,600	June 13	909	240	21	1859
Traction-engine	E. J. Taylor	256,983	May 30	1903	537	21	1650
Traction-engines. Steam-separator for	G. H. Helvey	259,686	June 20	1017	{271 / 272}	21	1886
Traction-wheel	B. S. Benson	252,348	Jan. 17	812	226	21	151
Traction-wheel	C. D. Bussong	257,467	May 9	367	111	21	1256
Traction-wheel	L. Hall	259,135	June 6	323	86	21	1751
Traction-wheel	T. T. Prosser	253,009	Jan. 31	1737	490	21	1317
Train-boat	W. J. Little	254,878	Mar. 14	538	142	21	736
Tramway clip. Rope	C. H. Abbott and A. W. Harrington.	255,738	Apr. 4	1	1	21	954
Transom-adjuster	G. J. Dickson	259,287	June 13	286	136	21	1792
Transom and skylight lifter	F. A. Reiher	259,495	June 13	685	181	21	1861
Transplanter	J. C. Tennent	252,403	Jan. 17	861	245	21	183
Trap: *See* Animal-trap. Ball-trap. Basin and sink trap. Fish-trap. Fly-trap. Gas-trap. Mole-trap. Mouse-trap. Plumber's trap. Rat-trap. Roach-trap. Sewer-trap. Steam-trap. Target-trap. Waste-pipe trap.							
Traveling-bag lock	V. Huppe	257,334	May 2	239	65	21	1288
Tray for holding fruit-cans	J. Taylor	253,896	Feb. 21	875	247	21	513
Tray. Metallic	J. Taylor	254,649	Mar. 14	495	138	21	729
Tread-motor	O. Leimbrock	254,685	Mar. 7	206	70	21	683
Treadle	H. Kamgrath	254,685	Mar. 14	462	125	21	794
Treadle	G. W. Zeigler	255,751	Mar. 28	1640	446	21	944
Treadle mechanism	E. S. Mann	255,738	Mar. 28	1636	{439 / 440}	21	940
Tree: *See* Double-tree. Saddle-tree.							
Tree-protector	T. Bower	256,701	May 30	1989	545	21	1655

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Tree-protector	A. Hornung and A. H. Fuos	254,135	Feb. 26	1169	327	21	569
Tree-protector or insect-barrier	O. M. Fuller	256,561	Apr. 18	1020	288	21	1143
Trees. Implement for bleeding	M. Christmiller	253,185	Feb. 7	15	5	21	249
Trees. Treating fruit	J. H. Askin	256,947	Apr. 25	1476	.....	21	1220
Trellis. Vine	J. Nellis	257,370	May 2	269	76	21	1329
Trichinoscope	C. F. Lomb and E. Bausch	251,721	Jan. 3	30	11	21	9
Tricycle	P. E. Collins	259,099	June 6	251	73	21	1743
Tricycle	E. C. F. Otto	252,504	Jan. 17	1008	{290 / 291}	21	183
Tricycle	A. H. Overman	257,375	May 2	274	78, 79	21	1331
Trimmer: *See* Hedge-trimmer. Heel-trimmer. Sewing-machine-trimmer. Sole-edge trimmer. Wick-trimmer.							
Trimmings. Machine for making	F. Martens	256,579	Apr. 18	1035	293	21	1146
Trough: *See* Watering-trough.							
Truck	J. Esch	252,363	Jan. 17	831	231	21	154
Truck	N. Rogers	255,818	Apr. 4	78	28	21	964
Truck	T. J. Scarff	253,948	Feb. 21	942	262	21	523
Truck	A. Robinson	254,865	Mar. 14	550	147	21	739
Truck and derrick. Combined	J. Knudsen	255,797	Apr. 4	56	15	21	960
Truck. Barrel	A. A. E. and H. Blackman	254,908	Mar. 14	578	156	21	745
Truck. Car	E. L. Cleveland	259,498	June 13	781	206	21	1838
Truck. Car	C. W. Hunt	256,571	Apr. 18	1028	290	21	1145
Truck. Car	G. B. Simonds	252,531	Jan. 17	1038	289	21	188
Truck. Car	J. N. Smith	253,439	Feb. 7	300	85	21	397
Truck. Car	W. H. Turner	258,616	May 30	1815	512	21	1635
Truck for moving harvesters	G. P. Clark	253,004	Jan. 31	1609	446	21	397
Truck. Hand	G. B. St. John	254,723	Mar. 7	334	98	21	695
Truck. Plow	J. C. Tauber	255,693	Mar. 28	1571	429	21	930
Truck. Stair	A. C. Hinson	252,218	Jan. 10	649	182	21	118
Trucks. Stock for plow	T. W. Boyle	252,070	Jan. 10	492	133	21	99
Trucks. Weighing attachment for hand	H. Waldstein	258,171	May 16	1256	354	21	1562
Trumpet and cane-handle. Combined ear	J. M. Smith	257,095	Apr. 25	1641	459	21	1260
Trumpet for railway heads	C. Mantz	256,578	Apr. 18	1034	292	21	1145
Trunk	W. B. Worger and E. M. Richford	257,123	Apr. 25	1672	{468 / 469}	21	1265
Trunk, box, &c	J. A. Rigby	260,051	June 27	1489	401	21	1972
Trunk, desk, table, &c. Combined	B. Andrews. (Reissue)	10,069	Apr. 25	1703	478	21	1271
Trunk-fastener	J. H. Sessions, Jr	253,123	Mar. 21	855	239	21	800
Trunk-fastener	C. Jenkins	256,609	Apr. 18	1185	332	21	1170
Trunk-handle	T. Donahue and G. N. Waterbury	256,300	Apr. 11	704	191	21	1075
Trunk-lock	W. H. Ertell	253,094	Jan. 31	1636	454	21	398
Trunk-rack. Portable	C. Clutire	254,865	Mar. 14	512	137	21	732
Truss	J. Edson	259,116	June 6	305	81	21	1747
Truss	J. Fry	258,854	May 30	2001	590	21	1684
Truss	T. W. Carter	252,999	Jan. 31	1518	423	21	982
Truss. Beam	W. H. Garson	252,909	Jan. 10	637	180	21	116
Truss. Hernial	H. W. Hendricks	252,216	Jan. 10	647	.....	21	118
Truss-pads. Elastic compound for							
Tub: *See* Bath-tub. Bathing-tub.							
Tube: *See* Wick-tube.							
Tube-expander	J. T. and W. H. H. Griscom	257,319	May 2	908	58	21	1318
Tubes. Device for drawing metal	E. B. Buckingham	252,423	Jan. 17	914	252	21	167
Tubing-clamp	J. Perrette	254,567	Mar. 7	148	36	21	663
Tubing-coupling	E. C. Converse	252,020	Jan. 10	486	117	21	81
Tubing-coupling	E. C. Converse	259,501	June 13	783	207	21	1836
Tubing-coupling	A. L. Murphy	255,804	Apr. 4	64	17, 18	21	962
Tubing. Manufacture of metal	R. and F. Garrett	259,845	June 20	1921	507	21	1981
Tubular boiler and furnace	T. Harding	258,415	May 23	1565	444	21	1564
Tubular sectional boiler	H. Skinner	257,395	May 2	298	85	21	1334
Tufted fabric	I. W. Numan	254,683	Mar. 7	998	78	21	667
Tug. Hame	H. Smith	259,777	June 20	1145	303	21	1907
Tug. Harness	W. B. Brooks	257,546	May 9	492	136	21	1375
Tug. Shaft	W. H. Bate	252,573	Jan. 17	1081	302	21	196
Tumbler-washer	W. H. Bate	256,193	Apr. 11	567	{155 / 156}	21	1039
Tumbler-washer	W. Ward	256,256	Apr. 11	653	176	21	1060
Turn-buckles. Die for making	C. A. Greenleaf	259,305	June 13	536	141	21	1794
Turn-table	F. C. Lowthorp	254,670	Mar. 7	271	73	21	664
Turn-table	J. Schuyler	254,165	Feb. 28	1203	336	21	575
Turn-table	J. H. and J. G. Gould	260,191	June 27	1662	451	21	1966
Turn-table and jack for street-cars. Combined	J. B. Collig	257,553	May 9	507	141	21	1376
Turn-table. Railway	N. T. Melvin	254,492	Mar. 7	58	14, 15	21	648
Turning cylindrical or tapering handles. Machine for	A. Garner	251,965	Jan. 3	223	63	21	40
Turpentine and rosin. Apparatus for the manufacture of	A. and G. Bickelhoupt	258,978	June 6	131	35	21	1717
Turret. Skylight	J. B. Secor	253,774	Feb. 14	714	{293 / 294}	21	479
Turrets. Device for operating tool-holding	F. Bowen	256,964	Apr. 25	1499	420	21	1234
Tuyere	T. H. Bullock	251,761	Jan. 3	93	26	21	18
Tuyere	J. E. Day	255,843	Apr. 4	106	28	21	968
Tuyere	N. Didier	252,305	Jan. 17	768	214	21	144
Tuyere	N. A. Didier	254,433	Feb. 28	1307	413	21	627
Tuyere	F. W. Gordon	257,571	May 9	531	148	21	1389
Tuyere	A. D. Griffin	257,863	May 16	969	249	21	1456
Tuyere	G. W. Riggin	255,193	Mar. 21	947	253	21	816
Tuyere	F. W. Gordon	253,567	Feb. 14	490	117	21	430
Tuyere for furnaces	C. W. Jones	259,896	June 20	1943	333	21	1994
Type-holder	J. B. Bancroft	251,815	Jan. 3	162	44	21	39
Type-lever spindle							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Type and space holder	L. K. Johnson	254,019	Feb. 21	1631	288	21	538
Type-cases from paper-pulp or other plastic material. Mechanism for forming	J. T. Edson	260,089	June 27	1535	413	21	1979
Type-distributer. Hand	J. North	259,578	June 13	874	{292 / 293}	21	1855
Type-forms. Locking-up device for	S. D. Webb	259,251	June 6	489	128	21	1773
Type-forms. Preparing	J. P. Hunt	253,657	Jan. 31	1675	469	21	398
Type setting and distributing apparatus	E. W. Brackelsberg	253,153	Jan. 31	1594	500	21	399
Type-setting machine	T. J. Porter	255,867	Mar. 28	1527	414	21	694
Type-writer	J. B. Hammond	253,475	Feb. 7	342	95, 96	21	404
Umbrella	A. Malmros	257,334	May 2	259	71, 72	21	1329
Umbrella	J. Minière	257,694	May 16	915	256	21	1459
Umbrella	B. Mohr	256,945	May 23	1370	387	21	1559
Umbrella	G. Neu	260,223	June 27	1795	491	21	2004
Umbrella	J. W. Watson	256,774	Apr. 18	1022	286	21	1136
Umbrella and parasol tie	D. W. Osborne	260,227	June 27	1799	492	21	2005
Umbrella-dripper	C. L. L. Emery	257,395	May 2	187	53	21	1314
Umbrella. Folding	C. L. Hurd	254,218	Feb. 28	1241	350	21	585
Umbrella or parasol	A. Iehl	257,572	May 16	900	251	21	1452
Umbrella or parasol runner	S. W. Evans, Jr	259,678	June 20	1903	268	21	1984
Umbrella or parasol support	J. Forster	256,366	Apr. 11	715	194	21	1077
Umbrella retention-spring	W. H. Belknap	258,990	Jan. 31	1580	449	21	295
Under-garment	T. B. Farrington	259,201	Jan. 10	630	178	21	115
Under-garment for infants	C. K. Lightcapp	259,877	June 20	1956	337	21	1997
Underskirt	F. W. Heese	257,702	May 9	710	196	21	1413
Underwaist	E. W. Philbrook	259,422	June 13	681	169	21	1820
Universal joint	E. Garrigues	258,208	Jan. 10	636	179	21	116
Universal joint	J. J. Greenough	258,576	May 30	1701	498	21	1636
Universal-joint coupling	W. Johnston	259,389	June 13	653	173	21	1816
Universal joint for shafts. Extensible	E. W. Rees	254,843	Mar. 14	488	131	21	726
Upholstery of felt. Fastenings for	W. K. Parker	256,729	Apr. 18	1219	341	21	1178
Upright drill	E. A. Hare	259,138	June 6	326	86	21	1751
Vaccinator	J. N. Dickson	257,668	May 9	657	184	21	1404
Vagina. Instrument for washing the	W. B. Sims	258,140	May 16	1223	344	21	1515
Valise	F. G. Nichols	259,905	June 20	1938	345	21	1931
Valise. Metallic	A. M. Gardner and J. North	259,594	June 13	812	214	21	1843
Valve: *See* Fire-extinguisher valve. Float-valve. Governor-valve. Musical wind-instrument valve. Pump-valve. Water-closet valve. Water-closet-cistern valve. Water-pipe valve.							
Valve	W. Decker	258,195	Jan. 10	623	176	21	114
Valve	W. Gardner	258,094	Jan. 10	509	141	21	95
Valve	T. R. Harrison	254,130	Feb. 28	1164	325	21	568
Valve	M. Mickelborough	256,237	Apr. 11	630	171	21	1062
Valve	J. O'Meara	258,582	May 30	1764	504	21	1630
Valve	J. P. Pfau	253,066	Mar. 28	1536	414	21	924
Valve	E. R. Tomlinson	259,981	June 20	1415	361	21	1953
Valve and operating mechanism. Balanced	G. W. Stever	258,500	May 23	1665	471	21	1601
Valve and valve-gear	W. W. St. John	259,432	June 13	693	{183 / 184}	21	1888
Valve apparatus for steam-boilers. Safety	J. D. Churchill	256,863	Apr. 25	1386	394	21	1218
Valve. Automatic steam	J. H. Blessing	257,280	May 2	159	45	21	1309
Valve. Balanced	D. Hogan	259,398	June 13	645	171	21	1814
Valve. Balanced	W. D. Hooker	253,106	Jan. 31	1633	505	21	338
Valve. Balanced slide	W. S. Brewer	259,688	June 20	998	264	21	1661
Valve. Balanced slide	E. A. Burnap	259,686	June 20	992	265	21	1888
Valve. Balanced slide	J. J. De Lancey. (Reissue)	10,142	June 27	1860	398	21	2030
Valve. Balanced slide	H. C. Kriete	256,146	Apr. 11	498	126	21	1040
Valve. Cheek	A. M. Brainard	256,875	Apr. 25	1380	390	21	1216
Valve. Foot	G. Shepard	257,068	Apr. 25	1431	457	21	1268
Valve for faucets. Self-closing	J. E. Mooney	252,790	Jan. 24	1235	373	21	945
Valve for injectors. Steam	H. F. Colvin	254,615	Mar. 7	203	52	21	672
Valve for oil and water wells	A. J. Lewis	255,528	Mar. 28	1368	398	21	898
Valve for steam-engines. Exhaust	C. B. Richards	251,948	Jan. 3	318	88	21	55
Valve-gear	H. L. Berger	255,915	Apr. 4	197	51, 52	21	963
Valve-gear. Locomotive	L. Anderson	254,508	Mar. 7	172	42, 43	21	640
Valve-gear. Steam-engine	R. W. Aitken and D. Farquhar	257,994	May 16	1047	291	21	1462
Valve-gear. Steam-engine	E. Dugar	258,851	Jan. 24	1170	322	21	217
Valve-gear. Steam-engine	D. Joy	258,294	Jan. 10	655	{184 / 185}	21	119
Valve-gear. Steam-engine	J. O'Donnell	253,417	Feb. 7	373	79	21	382
Valve. Globe	A. P. Broomell	260,080	June 27	1439	389	21	1969
Valve. Globe	J. Christ	259,019	May 16	1078	300	21	1469
Valve. Globe	F. Lunkenheimer. (Reissue)	10,010	Jan. 17	1165	326	21	200
Valve indicator. Check	E. G. Felthousen	258,396	May 23	1544	429	21	1580
Valve. Locomotive throttle	S. J. Hayes, H. Schlacks, and G. F. Starkweather	254,873	Mar. 14	304	140	21	725
Valve mechanism	D. S. Keith	258,438	May 23	1566	450	21	1588
Valve-motion	W. C. Pennock	259,909	June 20	1899	346	21	1938
Valve-operating mechanism	L. C. Lagomyr	258,683	Jan. 24	1309	336	21	994
Valve. Piston	W. Foley	258,449	Jan. 17	943	261	21	173
Valve. Piston	W. Foley	258,450	Jan. 17	944	261	21	173
Valve. Pop safety	W. E. Pearson	253,668	Feb. 14	502	130	21	446
Valve. Relief	S. E. Kneeland	251,897	Jan. 3	283	78	21	47
Valve rod and stem for steam-engines	W. Dawson	257,477	May 9	512	145	21	1381
Valve. Safety	W. Duchemin	259,169	June 6	308	79	21	1748
Valve. Safety	J. R. Mitchell	258,598	May 30	1780	542	21	1689
Valve. Safety	A. D. Puffer	254,398	Feb. 28	1469	382	21	613
Valve-seat. Steam-engine	A. Blood	258,612	Jan. 10	618	154	21	79
Valve. Slide	W. S. Hughes	254,233	Feb. 28	1261	326	21	605
Valve. Steam	C. S. Detre	259,897	June 20	1891	{287 / 288}	21	1976

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Valve. Steam	R. N. Pratt	257,449	May 2	363	102	21	1346
Valve. Steam-actuated	A. J. Simmons	254,059	Feb. 21	1081	360	21	546
Valve. Steam-actuated	E. M. Thomas	256,515	Apr. 18	971	272	21	1135
Valve. Steam-actuated	G. W. Weinman	256,362	Apr. 18	981	276	21	1137
Valve. Steam-globe	N. C. Locke	256,109	Apr. 4	438	119	21	1024
Valve. Steam slide	B. F. Sturtevant	257,530	May 9	475	132	21	1372
Valve. Stop	R. Beaumont	257,975	May 2	154	43	21	1308
Valve. Stop	J. Roylance	259,498	June 13	686	189	21	1821
Valve. Straight-way	J. Arthur	257,634	May 9	821	173	21	1367
Valve. Straight-way	D. R. Burns	255,717	Mar. 28	1602	433	21	936
Valves. Balancing slide	J. James	255,691	Mar. 28	1568	422	21	929
Valves of piston-meters. Device for operating the	P. Rensink	259,900	Jan. 31	1453	414	21	276
Vapor-burner	J. H. Bean	253,486	Feb. 14	289	108	21	494
Vapor-burner	W. B. Bloke	254,911	Mar. 14	580	157	21	745
Vapor-burner	J. F. Church	253,003	Jan. 31	1608	446	21	997
Vapor-burner	J. F. Daniels	256,633	May 30	1635	517	21	1639
Vapor-burner	Z. Davis	254,023	Mar. 7	214	55	21	675
Vapor-burner	Z. Davis	258,365	May 23	1530	434	21	1578
Vapor-burner	E. O. Garland	251,709	Jan. 3	27	8	21	7
Vapor-burner	M. Mahony	252,584	Jan. 17	1094	305	21	198
Vapor-burner	P. Schneider and H. Trenkamp	251,738	Jan. 3	61	17	21	13
Vapor-burner	F. W. Swetman	252,631	Jan. 24	1147	322	21	213
Vapor-burner	J. Whittingham and F. A. Lyman	255,553	Mar. 28	1398	378	21	898
Vapor-burner	T. T. Woodward	254,185	Feb. 28	1234	341	21	578
Vapor-burner. Self-generating	W. P. Patton	254,564	Mar. 7	141	35	21	662
Vapor from liquid hydrocarbons. Apparatus for generating	H. F. Hayden	254,871	Mar. 14	523	140	21	735
Vapor-retort burner	H. H. Sheldon	254,711	Mar. 7	318	84	21	692
Vase for cultivating strawberry and other plants	J. J. Johnston	253,715	Feb. 14	640	182	21	465
Vase for flowers. Monumental	J. J. Johnston	253,611	Feb. 14	512	{146 147}	21	444
Vase for window-gardening. Flower-	J. J. Johnston	253,716	Feb. 14	641	182	21	465
Vat: *See* Cheese-vat. Dairy-vat.							
Vault. Burial	J. F. Winchell	258,889	May 30	2106	504	21	1687
Vault-cover or grating. Illuminating	T. Hyatt	257,714	May 9	725	209	21	1418
Vault for coffins. Safety	B. G. Devoe	255,149	Mar. 21	853	239	21	896
Vault for underground conduits	W. B. Murray	257,743	May 9	751	209	21	1420
Vegetable and fruit evaporator. Steam	S. W. Lowell	258,526	May 23	1710	483	21	1609
Vegetable-cutter	G. H. Beckmire	259,713	Jan. 24	1235	346	21	229
Vegetable-cutter	C. Raible	256,389	Apr. 11	788	216	21	1090
Vegetable-cutter. Rotary	D. Strasser	257,259	May 2	198	36	21	1303
Vegetable-cutting machine	M. C. Morts	252,128	Jan. 10	546	153	21	101
Vegetable-slicing machine	J. W. Anderson	252,595	Jan. 24	1110	311	21	207
Vehicle	J. E. Heller	254,873	Mar. 14	527	141	21	735
Vehicle	G. M. F. Molesworth	253,065	Jan. 31	1723	{475 476}	21	315
Vehicle-body support	C. Comstock	256,880	Apr. 25	1395	374	21	1204
Vehicle-bolster	D. Shelton	255,736	Mar. 28	1639	441	21	940
Vehicle-brake	W. Claypool	258,713	May 30	1939	548	21	1657
Vehicle-brake	W. T. Johnson	257,337	May 2	239	65	21	1322
Vehicle-brake	B. R. Welch	258,514	May 23	1680	475	21	1604
Vehicle-buffer. Hydraulic	J. B. G. A. Canet	254,917	Mar. 14	591	159	21	747
Vehicle-cushion	K. W. Holmes	258,756	May 30	1966	561	21	1665
Vehicle-dash attachment	M. P. Ford	259,378	June 13	627	166	21	1810
Vehicle dash-board	L. E. McKinnon	258,456	May 23	1616	457	21	1592
Vehicle-dash frames. Clamp for holding	F. C. Ayer	259,351	June 13	590	156	21	1803
Vehicle. Passenger	J. T. Gurney	260,293	June 27	1789	485	21	2018
Vehicle-reach	C. K. Robinson	257,073	Apr. 25	1618	453	21	1256
Vehicle-reach	J. Le Roy	256,009	Apr. 4	391	84	21	1004
Vehicle running-gear	M. Barry	260,151	June 27	1615	436	21	1991
Vehicle running-gear	A. J. Beach	254,104	Feb. 28	1132	317	21	563
Vehicle running-gear	H. A. Logan and F. R. Wright	252,886	Jan. 31	1464	410	21	273
Vehicle running-gear	H. G. Morgan	254,238	Apr. 11	639	171	21	1002
Vehicle running-gear	K. C. Parvin	260,047	June 27	1485	400	21	1971
Vehicle-seat	F. A. Comstock	254,115	Feb. 28	1147	320	21	565
Vehicle-seat	O. Vanorman	254,412	Feb. 28	1483	408	21	622
Vehicle-seat lock	G. L. Crandal	258,997	June 6	154	42	21	1781
Vehicle shifting-rail	J. A. Nisonger	258,464	May 23	1603	459	21	1594
Vehicle shifting seat	J. W. Hewitt	256,683	Apr. 18	1166	{397 398}	21	1168
Vehicle shifting-seat	J. C. Theakston	253,238	Feb. 7	68	21	21	358
Vehicle. Side-bar	C. E. Lee	254,664	Mar. 7	265	70	21	683
Vehicle. Side-bar	P. Lugenbell	259,899	June 20	1961	537	21	1927
Vehicle. Side-bar	A. F. Shuler	259,595	June 13	893	238	21	1858
Vehicle-spring	A. A. Abbott	255,403	Mar. 28	1291	367	21	889
Vehicle-spring	J. H. and C. S. Baldwin	256,969	Apr. 11	670	181	21	1069
Vehicle-spring	C. C. and J. A. Bishop	252,173	Jan. 10	603	160	21	110
Vehicle-spring	C. C. and J. A. Bishop	259,797	June 20	1167	{311 312}	21	1911
Vehicle-spring	J. M. Bromley	259,663	June 20	990	264	21	1892
Vehicle-spring	J. M. Bromley	259,664	June 20	990	264	21	1892
Vehicle-spring	G. G. Buckland	256,984	Apr. 11	683	186	21	1072
Vehicle-spring	J. K. Chew	251,764	Jan. 3	95	27	21	19
Vehicle-spring	A. Gummer	253,901	Feb. 7	31	10	21	358
Vehicle-spring	L. A. Melburn	257,040	Apr. 25	1577	443	21	1248
Vehicle-spring	R. Mulholland	254,231	Feb. 28	1279	355	21	588
Vehicle-spring	J. S. Munn	259,648	June 13	966	257	21	1870
Vehicle-spring	N. Nilson	252,946	Jan. 10	604	194	21	194
Vehicle-spring	J. Priest	256,161	Apr. 11	515	141	21	1043
Vehicle-spring	D. A. Roe	257,267	May 2	267	68	21	1333
Vehicle-spring	W. D. Rumsey	255,461	Mar. 28	1391	347	21	860
Vehicle-spring	C. L. Thomas	258,923	May 30	2058	531	21	1678
Vehicle-spring	H. Timken	255,211	Mar. 21	973	260	21	839
Vehicle-spring	J. W. Wetmore	252,895	Jan. 24	1366	367	21	253

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Vehicle-spring	W. Weiceski	255,903	Apr. 4	187	68	21	991
Vehicle-spring	M. Woodhull	255,904	Apr. 4	188	69	21	991
Vehicle-spring-board	G. E. Norris. (Reissue)	9,906	Jan. 3	389	106	21	69
Vehicle-spring gear	C. P. Sykes	256,151	May 16	1236	348	21	1518
Vehicle-step	A. K. Ovrum	255,327	Mar. 21	1122	308	21	846
Vehicle-top joint	H. Reutchler	253,313	Feb. 7	151	43	21	378
Vehicle-top prop	W. Lepper	255,590	Mar. 28	1363	367	21	888
Vehicle. Two-wheeled	O. Hebert	253,042	Jan. 31	1659	459	21	306
Vehicle. Two-wheeled	P. Herdic	259,310	June 13	543	{142 143}	21	1795
Vehicle. Two-wheeled	R. Ross	257,076	Apr. 25	1691	484	21	1226
Vehicle. Two-wheeled	S. G. Thompson	257,254	May 2	198	36	21	1303
Vehicle. Two-wheeled	P. B. Cunningham	256,434	Jan. 17	995	255	21	169
Vehicle turning-gear	C. W. Ball and T. Davis. (Reissue)	9,904	Jan. 3	383	105	21	68
Vehicle-wheel	C. W. Ball and T. Davis. (Reissue)	9,905	Jan. 3	384	106	21	68
Vehicle-wheel	P. Lincoln	254,145	Feb. 28	1161	330	21	571
Vehicle-wheel	W. Nehring	257,744	May 9	756	220	21	1429
Vehicle-wheel	J. Pearce	259,718	June 20	1951	522	21	1922
Vehicle-wheel	S. S. Rembert	256,474	May 23	1626	466	21	1596
Vehicle-wheel	J. A. Schuler	256,618	May 30	1997	510	21	1634
Vehicle-wheel	S. Whitehall and W. Newlin	256,634	May 30	2071	564	21	1689
Vehicle-wheel	J. Ahlert	256,207	May 23	1594	372	21	1541
Velocipede	W. C. Beckwith	254,670	Apr. 25	1269	369	21	1215
Velocipede	J. O. Brown	256,118	Apr. 11	463	125	21	1034
Velocipede	E. Edwards	256,903	Apr. 11	706	198	21	1076
Velocipede	W. W. Giles	259,465	Jan. 17	946	{362 363 369}	21	173
Velocipede	W. H. Hull and J. W. O'Rear	259,853	June 20	1930	{330 331}	21	1902
Velocipede	J. M. Lowrey	258,447	May 23	1605	454	21	1590
Velocipede	P. McCombs	259,411	June 13	667	{176 177}	21	1618
Velocipede	T. McGregor	253,739	Feb. 14	670	192	21	470
Velocipede	A. H. Overman	257,512	May 9	455	128	21	1366
Velocipede	E. O. and J. E. Richard	258,389	Jan. 17	792	220	21	147
Velocipede	J. Richter	259,212	June 6	410	109	21	1765
Velocipede	C. Shelburne	259,288	June 6	461	112	21	1767
Velocipede	O. Umsicker	257,415	May 2	328	82	21	1329
Velocipede	F. White	259,444	June 13	708	188	21	1826
Velocipede	G. Wiard	254,668	Feb. 21	1105	309	21	551
Velocipede-pedal	J. S. Murray	260,114	June 27	1569	433	21	1964
Velocipede. Railway	G. A. Mosher	256,569	May 30	1782	503	21	1632
Velocipede-sleigh	J. B. Bray	256,634	Apr. 18	1103	310	21	1137
Velocipedes. Differential gear for	W. H. J. Grout	254,630	Mar. 7	233	61	21	672
Veneer. Compressed	H. E. Moore	254,834	Mar. 14	499		21	726
Veneer. Ornamental composite	N. C. Newell	252,945	Jan. 10	604	193	21	194
Vent. Automatic	F. Messmer	253,306	Feb. 7	143	41	21	370
Vent for beer-kegs. Air	J. P. Gruber	259,692	June 20	1911	970	21	1885
Vent for casks	R. Gornall	257,078	May 9	692	183	21	1411
Vent for vessels containing liquids. Air	G. Janeway	256,697	Apr. 18	1183	328	21	1179
Ventilating and purifying sewers. Apparatus for	J. Stratford	259,729	June 20	1984	559	21	1907
Ventilating apparatus	S. W. Hudson	255,698	Mar. 28	1492	{400 401}	21	916
Ventilating attachment to hearths	J. E. Howard	260,199	June 27	1678	454	21	2000
Ventilating grain in bulk	J. M. Fennerty	260,011	June 27	1441	389	21	1964
Ventilating sewers and traps	J. G. Trenear	256,548	Jan. 17	1057	283	21	191
Ventilation	J. Comstock and T. E. Jefferson	259,631	June 13	941	{251 252 253}	21	1886
Ventilator: *See* Air-injecting ventilator. Building-ventilator. Car-ventilator. Ship-ventilator. Window-ventilator.							
Ventilator	G. Fenn	257,484	May 9	423	117	21	1363
Ventilator	J. M. Fennerty	260,012	June 27	1442	389	21	1965
Ventilator	W. E. Moore	254,389	Feb. 28	1423	391	21	619
Ventilator	J. G. Pennycuick	254,894	Mar. 14	549	147	21	730
Ventilator	L. T. Bew	256,943	Apr. 25	1498	420	21	1234
Ventilator for grain, fruit, &c	J. Rose	259,466	June 13	736	196	21	1831
Vessel-fender	R. A. Messervey	257,389	May 2	289	72	21	1288
Vessel-hull	T. Nordenfelt	257,694	May 9	565	{163 164}	21	1389
Vessel. Submarine	J. Scott and J. H. Riddel	253,112	Jan. 31	1733	466	21	320
Vessels. Anchor-well for	M. J. Walsh	254,740	Mar. 7	350	93	21	698
Vessels. Apparatus for stowing cargoes in	M. Maher	256,227	May 23	1382	365	21	1549
Vessels. Apparatus for unloading	W. Cappin	255,589	Mar. 28	1461	393	21	910
Vessels. Construction of	T. W. Phinney	258,893	May 30	2025	575	21	1672
Vessels. Construction of	E. H. Farrar	254,630	Mar. 7	223	58	21	676
Vessels. Device for securing grain, guano, coal, &c., from shifting in							
Vessels with coal shot from. Machinery for loading	W. Dunn and A. Beckert	260,007	June 27	1437	388	21	1963
Veterinary-table	J. L. Sneesevelt	258,942	June 6	451	119	21	1773
Violin	N. B. Dennys	252,744	Jan. 24	1370	357	21	224
Violin shoulder-rest	F. L. Becker	253,923	Jan. 31	1511	420	21	320
Vise	J. A. Blake	258,909	June 6	134	38	21	1710
Vise	C. L. Butler	253,561	Feb. 14	489	136	21	439
Vise. Bench	J. L. Parker	253,736	Feb. 14	691	198	21	475
Vise. Bench	J. Thomson	255,709	Mar. 28	1589	464	21	898
Vise. Bench	J. Thomson	259,603	June 13	905	241	21	1860
Vises. Bevel-jaw for	H. D. West	256,407	Jan. 17	886	468	21	163
Vises. Milling attachment for	E. E. Schermerhorn	254,704	Mar. 7	211	60	21	691
Visual indicator. Electrical	C. H. Pond	258,897	Jan. 31	1477	{413 414}	21	274
Voltaic battery	A. F. W. Parts	258,619	Jan. 24	1133	318	21	211

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Invention.	Name.	No.	Date.	Monthly volume		Official Gazette.	
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Vulcanizing heaters, &c. Fluid-pressure regulating and indicating apparatus for	J. H. Gartrell	253,699	Feb. 14	606	178 / 173	21	459
Wagon-bodies. Device for raising and lowering	W. F. Witherington	258,187	May 16	1276	361	21	1598
Wagon-body	C. Comstock	260,268	June 27	1777	481	21	2016
Wagon-body	I. E. Phelps and W. F. Siefers	259,513	Jan. 17	1016	283	21	185
Wagon-body corner-iron	C. Comstock. (Reissue)	10,111	May 9	858	239	21	1441
Wagon-bolster	D. B. Turnbull	260,127	June 27	1509	431	21	1969
Wagon-bolster spring	J. W. Wetmore	252,894	Jan. 24	1385	386	21	253
Wagon-brake	J. D. Bratton and H. H. Good	259,408	June 13	741	196	21	1832
Wagon-brake	J. C. Kimes	253,613	Feb. 14	513	147	21	444
Wagon-brake	C. J. Le Roy and J. W. Henson	258,445	May 23	1663	454	21	1590
Wagon-brake	J. Massey	257,733	May 9	744	206	21	1419
Wagon-brake	W. B. Padgett and W. J. Brock	258,505	Jan. 17	1009	281	21	183
Wagon-brake	C. F. Quast	258,253	May 23	1379	380	21	1551
Wagon-brake	R. E. Zellers	253,906	Feb. 21	863	249	21	514
Wagon-brake. Automatic	E. I. Burton	255,140	Mar. 21	678	236	21	804
Wagon-brake lever	J. L. Barker and W. D. Slauson	253,668	Feb. 14	575	162	21	454
Wagon-brake lever	G. L. Slater	254,781	Mar. 7	401	107	21	706
Wagon. Buckboard	F. A. Hill	258,063	May 16	1137	316	21	1497
Wagon. Buckboard	I. Joubert and S. W. Yattaw	254,339	Feb. 28	1363	384	21	997
Wagon. Cotton-picker's	C. P. Collins	253,960	Feb. 21	961	273	21	529
Wagon. Dumping	H. S. Bernhart and I. R. Ritter	258,357	May 23	1497	426	21	1572
Wagon. Dumping	J. Mills	259,790	May 30	2094	571	21	1671
Wagon. Dumping	D. S. Watson	257,906	May 16	946	263	21	1465
Wagon. Dumping	L. Winslow	260,269	June 27	1757	475	21	2013
Wagon. Dumping	J. D. Dennis	259,673	June 20	999	267	21	1883
Wagon handle and seat support	W. M. White	253,650	Feb. 14	554	158	21	451
Wagon. Hay	W. G. Harper	259,139	June 6	327	87	21	1751
Wagon-hound	J. Clark	255,490	Mar. 28	1397	358	21	886
Wagon-jack	J. V. Phillips	258,469	May 23	1638	460	21	1595
Wagon-jack	L. B. Hoit	251,882	Jan. 3	245	68	21	44
Wagon or lifting jack	E. Clark	259,187	Jan. 10	615	173	21	119
Wagon-platform gear	J. P. Johnson	254,919	Feb. 28	1262	350	21	565
Wagon platform-spring	T. C. Thompson	259,731	June 20	1067	289	21	1890
Wagon-reach coupling	D. B. Turnbull	260,126	June 27	1600	431	21	1969
Wagon rub-iron	A. Barnes	251,687	Jan. 3	4	1	21	3
Wagon running-gear	I. E. Bennett	258,545	May 30	1727	488	21	1690
Wagon running-gear	S. Bowers	252,994	Jan. 31	1602	444	21	296
Wagon-seat	D. H. Harris	253,376	Feb. 7	223	64	21	363
Wagon-seat corner-iron	E. H. Booth	256,962	Apr. 25	1497	420	21	1234
Wagon-seat lock	H. M. Jacobs	258,303	May 23	1438	408	21	1562
Wagon-seat support	N. Botsford	251,994	Jan. 3	379	102	21	65
Wagon-spring	G. A. Elliott	252,443	Jan. 17	936	250	21	171
Wagon. Spring	J. W. Harrison	256,564	Apr. 18	1023	288	21	1144
Wagon-spring	S. G. Hill	252,025	Jan. 10	440	120	21	83
Wagon-spring	W. V. Kish	258,437	May 23	1501	451	21	1589
Wagon-spring	S. E. Oviatt	260,313	June 27	1813	492	21	2032
Wagon spring-seat	L. A. Bringier	252,996	Jan. 31	1603	444	21	296
Wagon tail-board	H. R. Robbins	256,773	Apr. 11	789	217	21	1091
Wagons. Corn-husking platform for	W. Hyre	252,381	Jan. 17	857	237	21	158
Walking-stick	J. Draper	251,843	Jan. 3	200	56	21	36
Walking-stick and music-stand. Combined	W. H. Rushforth	257,960	May 16	1098	306	21	1480
Wall-covering	M. B. Church	259,493	June 13	774	.....	21	1837
Wall-paper. Apparatus for drying	H. Hilbers	257,703	May 9	711	197	21	1413
Wall-paper-hanging device	W. Geist	258,406	May 23	1555	441	21	1582
Wall-paper-trimming machine	R. Steel	254,443	Feb. 28	1518	415	21	629
Wall. Plastered	A. H. Becker	256,456	Apr. 18	902	252	21	1124
Wall. Plastered	A. H. Becker	257,840	May 16	864	242	21	1452
Walls and ceilings of buildings. Material for the decoration of the interior	F. Beck	260,152	June 27	1616	.....	21	1991
Walls and ceilings of houses. Material for the decoration of the interior	F. Beck	259,462	June 13	798	.....	21	1829
Walls, floors, &c. Moisture-proof coating and covering for	R. Von Petersen	258,890	May 30	2066	.....	21	1679
Wardrobe-hook	W. G. Foster	253,918	Feb. 21	902	253	21	517
Wardrobe-hook	R. Hayden	252,940	Jan. 31	1529	427	21	284
Wardrobe-hook	F. Taylor	257,533	May 9	678	133	21	1373
Warp-threads. Machine for drawing in	L. P. Sherman, R. H. Ingersoll, and G. Moore.	255,038	Mar. 14	746	201 / 202 / 203	21	775
Warper	T. C. Entwistle	256,305	Apr. 11	585	160	21	1055
Warping and beaming machines. Drop-wire for	T. C. Entwistle	257,131	Apr. 25	1690	473	21	1968
Warping or beaming machines, &c. Expansion comb or reed for	T. C. Entwistle	252,089	Jan. 10	504	140	21	94
Wash-board	P. T. Gates	251,710	Jan. 3	28	8	21	7
Wash-board	A. W. Geisel	256,405	May 23	1554	441	21	1588
Wash-board	J. Myers	256,915	Apr. 25	1435	403	21	1223
Wash-board	J. H. Nellis	260,222	June 27	1764	461	21	2004
Wash-board	C. H. Williams	255,555	Mar. 28	1401	378	21	840
Wash-board plate. Metallic	M. H. Farnsworth	258,396	May 23	1542	438	21	1580
Wash-board protector	M. H. Farnsworth	258,904	June 6	44	11	21	1702
Wash-boiler	T. F. Timby	256,766	Apr. 18	1254	353	21	1144
Wash-boiler fountain	E. Pittet	256,731	Apr. 18	1220	342	21	1178
Wash-bowl	L. H. McCormick	256,235	Apr. 11	694	169 / 170	21	1061
Wash bowl and stand	J. B. Atwater	259,074	June 6	254	67	21	1737
Washer: See Hemp-washer. Ore-washer. Root and vegetable washer. Slate-washer. Spring-washer. Tumbler-washer. Window-washer. Wool-washer.							
Washing-machine	K. Anunsen	257,987	May 9	144	40	21	1306
Washing-machine	J. H. Atwater	255,562	Mar. 28	1408	380	21	901

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr's.	Vol.	Page.
Washing-machine	R. G. Baldwin	254,568	Mar. 7	174	43	21	663
Washing-machine	E. R. Barnes	257,830	May 16	883	242	21	1451
Washing-machine	A. H. Bell and W. L. Hess	256,113	Apr. 11	657	194	21	1033
Washing-machine	A. W. Burke	257,551	May 9	805	140 / 141	21	1276
Washing-machine	B. F. Cekely	255,598	Mar. 28	1400	382	21	910
Washing-machine	M. C. Cummings	253,568	Feb. 14	427	128	21	449
Washing-machine	J. G. Dinkelbaker	255,947	Apr. 4	944	253	21	909
Washing-machine	W. F. Durall	256,633	May 16	1094	294	21	1498
Washing-machine	W. G. Flanders	260,636	June 13	1833	514	21	1988
Washing-machine	J. Fox	254,926	Feb. 28	1459	398	21	988
Washing-machine	B. F. Fuchs	258,741	May 30	1999	538	21	1688
Washing-machine	G. W. Glick	256,469	May 23	1559	449	21	1568
Washing-machine	J. W. Kennon, Sr	258,786	May 30	1999	564	21	1697
Washing-machine	M. C. Malone	256,019	Apr. 4	331	98	21	1085
Washing-machine	T. J. Meroney	258,491	Jan. 17	998	276 / 277	21	181
Washing-machine	W. Meyer	258,493	Jan. 17	997	277	21	181
Washing-machine	I. Munson	260,630	June 6	206	58	21	1730
Washing-machine	N. W. Murphy	255,446	Mar. 28	1270	343	21	877
Washing-machine	J. Robinson	260,851	June 6	227	61	21	1732
Washing-machine	C. T. Stadbelt	255,340	Mar. 21	1139	306	21	849
Washing-machine	H. A. Shaw	253,433	Feb. 7	221	63	21	305
Washing-machine	R. P. Smith	257,774	May 9	784	210	21	1427
Washing-machine	G. M. and A. Strain	259,240	June 6	449	118	21	1773
Washing-machine	V. Van Denburgh	255,216	Mar. 21	961	260	21	821
Washing-machine	E. J. Whitlow	255,743	Mar. 28	1636	444	21	942
Washing-machine	O. W. Barnard	252,416	Jan. 17	901	239	21	165
Washing-machine gear	A. M. Dolph	255,498	Mar. 28	1342	334	21	872
Washing-machine reversing mechanism	P. N. Burke	252,974	Jan. 10	488	134	21	91
Wash-stand and fixtures. Stationary	E. A. Tuttle	257,906	May 16	944	263	21	1465
Waste-pipe trap	A. Heberle	252,941	Jan. 31	1529	427	21	284
Watch	J. Bachner	254,901	Mar. 14	572	154	21	744
Watch. Alarm	A. Cerdin	256,521	Apr. 25	1325	374	21	1204
Watch canopa-pinion	C. W. Harman	254,646	Mar. 7	347	93	21	659
Watch-case	F. Reinhert	253,355	Feb. 7	203	58	21	309
Watch-case centers. Device for making	G. Speckhart	253,440	Feb. 7	203	58	21	307
Watch-case. Rubber	C. Schwitter	257,083	Apr. 25	1038	456	21	1257
Watch-cases. Making	W. P. Dolleff	260,088	June 27	1734	472	21	1978
Watch-chain charm	W. W. Dodge	258,783	May 30	1048	550	21	1656
Watch-charm	A. L. G. Buys	252,645	Jan. 24	1165	307	21	216
Watch-click spring	J. Laurent	259,178	June 6	275	99	21	1709
Watch-covers. Machine for forming swage on	N. Clark	254,640	Apr. 18	1109	312	21	1158
Watch-crystals. Case or cabinet for the display of	A. Ilieberle	256,644	May 30	1049	221	21	1642
Watch-escapement	J. A. Marin	254,355	Apr. 11	769	211	21	1067
Watch-gear. Machinery for beveling	W. H. Lamb	257,736	May 9	734	204	21	1417
Watch-maker's combination-tool	G. W. Johnson	252,322	Jan. 10	454	124	21	119
Watch-maker's tool	E. C. Fitch	259,517	June 13	804	213	21	1842
Watch pendant	R. Oliver	257,511	May 9	455	126	21	1396
Watch-regulator	S. F. Stover	252,008	Jan. 10	473	130	21	89
Watch staff and jewel protector	C. W. Groscbe	258,761	Jan. 24	1280	363	21	237
Watch. Stem-winding	C. H. Audemars	253,336	Feb. 7	184	53	21	277
Watch. Stop	J. H. Gerry	253,989	Feb. 21	1001	289	21	533
Watch-train plate	W. E. Huguenin	256,218	Apr. 11	603	164	21	1057
Watches. Repeating movement for	G. G. Wefts	253,962	Feb. 21	960	266	21	556
Watchman's electric register	D. B. James	257,166	May 2	27	9	21	1285
Water and air wheel	D. M. Lamb	256,106	Apr. 4	432	.....	21	1083
Water and moth repellent. Compound for treating goods, &c., to render them	D. M. Lamb	256,107	Apr. 4	434	.....	21	1083
Water and moth repellent. Compound for treating goods, &c., to render them	E. H. Ashcroft	258,872	June 6	3	1	21	1695
Water and steam separator	A. G. Alexander	254,068	Feb. 21	1110	310	21	552
Water-closet	H. W. Atwater	251,813	Jan. 3	182	44	21	39
Water-closet	A. F. Bleech	256,541	Apr. 18	998	281	21	1140
Water-closet	D. T. Bostel	253,151	Jan. 31	1801	499	21	588
Water-closet	D. T. Bostel	258,152	Jan. 31	1803	499	21	588
Water-closet	J. E. Doyle	255,465	Mar. 28	1321	356	21	885
Water-closet	J. Budde	253,677	Feb. 14	590	167	21	459
Water-closet	W. Bunting, Jr	255,933	Apr. 4	924	59	21	908
Water-closet	J. C. Daggett	251,909	Jan. 3	363	103	21	66
Water-closet	W. H. Daniell	251,767	Jan. 3	99	28	21	19
Water-closet	T. Hansen	255,975	Apr. 4	953	73	21	907
Water-closet	D. S. Keith	256,433	May 23	1567	450	21	1708
Water-closet	S. Peters and W. Denald	260,238	June 27	1715	465	21	2004
Water-closet	R. Resch	254,560	Apr. 18	956	267 / 268 / 463 / 464 / 345 / 346	21	1139
Water-closet	W. M. Sack	253,109	Jan. 31	1746		21	319
Water-closet	R. D. O. Smith	258,144	May 16	1295		21	1516
Water-closet	W. H. Daniell	256,549	Apr. 18	1007	284	21	1141
Water-closet and garbage-sink	W. S. Carr	252,734	Jan. 24	1257	343	21	238
Water-closet-cistern valve	W. S. Carr	252,735	Jan. 24	1258	354	21	238
Water-closet-cistern valve	H. S. Lord and R. E. Day	254,668	Mar. 7	389	71	21	664
Water-closet drip-tray	W. Scott	255,668	Mar. 28	1532	418	21	977
Water-closet valve	J. P. Hyde	259,905	June 20	1468	370	21	1939
Water-closets and urinals. Apparatus for flushing	H. Dickinson	255,946	Apr. 4	943	63	21	909
Water-elevator	F. A. Grunow	259,851	June 20	1826	369	21	1922
Water-elevator	H. P. Kauffer	258,233	May 23	1357	363	21	1546
Water-engine	J. B. Redmond	255,096	Mar. 14	812	217	21	785
Water from condensers. Apparatus for purifying the	J. Cook	252,648	Jan. 24	1197	308	21	217
Water-gage	T. Amphlett	256,264	Apr. 11	685	189	21	1068
Water gage and alarm	A. D. Fuller	254,309	Feb. 28	1431	393	21	613
Water-gage for closed vessels. Revolving							

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Water heater and circulator	P. Smith	251,741	Jan. 3	65	18	21	13
Water-lifter. Automatic	A. G. Waterhouse	253,648	Feb. 14	551	158	21	450
Water-meter	P. Wells	254,744	Mar. 7	356	94, 95	21	699
Water meter and register. Piston	S. W. Hoag, Sr	255,389	Mar. 21	1069	267 268	21	837
Water-meter. Piston	J. A. Tilden	251,971	Jan. 3	344	93	21	59
Water-meter. Rotary	B. Fitts	256,197	May 16	1267	366	21	1598
Water-meter. Rotary	E. C. Terry	256,469	Apr. 11	825	238	21	1097
Water-meter. Three-chambered float	J. Leede	257,028	Apr. 25	1564	439	21	1246
Water-meter with automatic governor	J. Leede	252,230	Jan. 10	661	186 187	21	199
Water-motor	G. A. Henderson	252,106	Jan. 10	521	144 145	21	97
Water-pipe valve	W. Kaiser	252,951	Jan. 31	1545	430	21	997
Water-pipes. Air-valve for	J. L. Dibble	257,853	May 16	877	246	21	1454
Water-proof and plastic composition	J. D. Cheever	254,462	Mar. 7	18	.....	21	649
Water-proof and plastic compound	J. D. Cheever	254,463	Mar. 7	19	.....	21	642
Water-proof and plastic compound	J. D. Cheever	254,465	Mar. 7	21	5	21	642
Water-proof cloth	E. B. Collins and L. P. Converse	256,360	May 23	1595	.....	21	1577
Water-proof composition	J. D. Cheever	254,461	Mar. 7	17	.....	21	641
Water-proof fabric	G. Streat	260,063	June 27	1502	.....	21	1973
Water-proof gum from flax. Producing	J. Boyd	256,277	May 23	1407	.....	21	1556
Waterproofing and preservative compound	J. E. Gillespie	253,369	Feb. 7	216	.....	21	383
Waterproofing compound	J. E. Gillespie	255,615	Mar. 28	1477	.....	21	913
Waterproofing material. Process of and apparatus for applying	R. M. Caffall	253,505	Feb. 14	398	110	21	426
Water repellent. Compound for treating goods to render them	D. M. Lamb	256,108	Apr. 4	436	.....	21	1023
Water-tower. Portable	W. H. Cogswell and T. H. Melvin	259,669	June 20	994	265 266	21	1869
Water-wheel	W. T. Christy and E. C. Sheridan	255,720	Mar. 28	1606	434	21	937
Water-wheel	R. N. Davidson	253,367	Feb. 7	104	31	21	364
Water-wheel	D. Donnelly	255,359	Mar. 21	1069	276	21	830
Water-wheel. Turbine	J. Humphrey	260,302	June 27	1676	454	21	2000
Water-wheel. Turbine	C. R. Tompkins	259,947	June 20	1536	360	21	1940
Watering animals	I. Welty	256,619	May 30	1619	513	21	1636
Watering stock. Apparatus for	D. Brigham	254,600	Mar. 7	198	47	21	670
Watering stock. Apparatus for	J. M. Eirich	256,036	May 16	1097	305	21	1492
Watering stock. Device for	F. Funk	259,843	June 20	1218	326	21	1920
Watering trough. Stock	S. H. Moore	259,414	June 13	679	178	21	1819
Weaner. Calf	J. C. Dupee	257,481	May 9	417	116	21	1302
Weaner. Calf	A. J. Taylor and M. A. Hamilton	257,253	May 2	127	36	21	1303
Weather-strip	W. Thompson	253,561	Feb. 14	456	130	21	435
Weather-strip and door-sill. Combined	J. Singer	258,486	May 23	1649	466	21	1598
Weather-strip and door-spring. Combined	A. Lathrop	258,063	May 16	1151	322	21	1502
Weaver's harness. Machine for making	J. H. Crowell	253,848	Feb. 21	814	231	21	503
Weaving the fiber of the stalk of the cotton-plant into fabrics	F. Wheaton	254,748	Mar. 7	362	.....	21	699
Wedge-driver	O. Moosberger	256,359	Apr. 11	775	213	21	1008
Weeds and beans. Implement for cutting	W. H. Clark	251,765	Jan. 3	96	27	21	19
Weighing and registering machine. Grain	W. H. Allen	255,832	Apr. 4	97	26	21	967
Weighing machine. Automatic grain	C. Wais	257,418	May 2	329	93	21	1340
Weighing-machine. Automatic liquid	E. Crawley	257,474	May 9	406	114	21	1360
Welding compound	E. S. Fraley	260,014	June 27	1444	.....	21	1965
Well baller. Oil	W. H. Birge	255,917	Apr. 4	204	54	21	984
Well-boring apparatus	F. Whelan	254,892	Mar. 14	561	150 151	21	741
Well. Cement-pipe	G. D. Pettingill	255,664	Mar. 28	1535	413	21	924
Well-curb and water-drawer	L. M. Doudna	255,606	Mar. 28	1467	394	21	911
Well-drilling machine	O. Rust	257,766	May 9	777	216	21	1425
Well-drilling machine	O. Rust	257,767	May 9	777	217	21	1425
Well-lining apparatus	A. W. Morgan	257,046	Apr. 25	1563	444	21	1250
Well-tubes. Device for raising and lowering	I. H. Palmer	259,581	June 13	879	234	21	1856
Well tubes. Implement for driving drive	M. Itin	259,878	Jan. 31	1455	407	21	971
Well. Tubular	R. E. Strait	255,092	Mar. 14	819	219	21	787
Wells. Device for treating the walls and tubing of oil	B. F. Averill	257,127	Apr. 25	1678	470	21	1906
Wells, &c. Portable drilling-machine for oil	R. M. Downie	251,841	Jan. 3	198	56	21	36
Wells. Temper-screw box for oil	J. D. Cameron	255,591	Mar. 28	1458	390	21	909
Wells. Temper-screw for drilling	O. A. Knox	254,876	Mar. 14	530	142	21	736
Welting or hemming fabrics	J. Bigelow	257,278	May 2	157	44	21	1309
Whalebone. Artificial	G. H. Phelps	251,731	Jan. 3	53	14	21	12
Wheat-drill	A. L. Reese	256,049	Apr. 4	360	99	21	1011
Wheat-feeder	F. J. Grow	254,957	Mar. 14	640	174	21	756
Wheat-heater	D. W. Marmon	257,139	Apr. 25	1701	476	21	1270
Wheat-heater	J. E. Welch	254,077	Feb. 21	1098	304	21	550
Wheel.							
See Band or fly wheel.	Plow-wheel.						
Car-wheel.	Polishing-wheel.						
Chain-wheel.	Power-wheel.						
Current-wheel.	Sprocket-wheel.						
Driving-wheel.	Toy musical wheel.						
Fifth-wheel.	Traction-wheel.						
Fish-wheel.	Vehicle-wheel.						
Game-wheel.	Water-wheel.						
Grinding or polishing wheel.	Water and air wheel.						
Paddle-wheel.	Wind-wheel.						
Wheel	J. F. Snyder and G. J. Blinzler	257,583	May 9	468	130	21	1371
Wheel	A. J. Taplin	253,337	Feb. 7	67	21	21	358
Wheel fender. Vehicle	M. Wheeler	259,619	June 13	925	247	21	1863
Wheel or nursery chair	C. O. Collignon	259,431	Jan. 17	922	254	21	168
Wheel scraper. Vehicle	F. C. Mercer	255,444	Mar. 28	1286	342	21	877
Wheelbarrow	A. D. Peck	255,602	Mar. 28	1532	413	21	923

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Wheelbarrow	G. M. Strumaker	256,303	May 23	1459	414	21	1565
Wheelbarrow and cultivator. Combined	W. W. Kelly	256,305	May 23	1441	409	21	1563
Whiffletree-coupling	H. A. Luttgens	257,171	May 2	21	11	21	1295
Whiffletree-coupling	J. Pendergast	256,354	Apr. 11	780	225	21	1009
Whiffletree-hook	T. W. De Tray	251,799	Jan. 3	169	39	21	39
Whiffletree-hook	F. Eggers	256,392	May 23	1336	406	21	1579
Whiffletree-hook	N. Hill	253,040	Jan. 31	1026	451	21	266
Whiffletree-hook	J. H. Hunt reas	256,856	May 30	2000	591	21	1884
Whiffletree-hook	H. M. Wilcox	256,849	May 30	1977	586	21	1881
Whiffletree-hook	O. Vesterman	255,705	Mar. 28	1597	457	21	933
Whiffletree-iron	J. H. Combs	259,509	June 13	783	227	21	1839
Whiffletree-plate	A. Scharff	257,078	Apr. 25	1682	454	21	1256
Whip	L. C. Seltner	256,061	Apr. 4	375	108	21	1013
Whip and cane. Combined	H. Bunch	258,789	Jan. 24	1264	338	21	231
Whip and rein holder. Combined	V. B. Barstow and S. H. Mallory	255,131	Mar. 21	884	252	21	808
Whip-cord	H. Mullen and J. Noble, Jr.	256,631	Apr. 4	341	91	21	1007
Whip-cord	F. Hopf	259,681	June 6	187	39	21	1727
Whip-holder	G. W. Eddy	253,190	Feb. 7	19	6	21	339
Whip-socket	J. A. Lakin	259,239	June 13	853	145	21	1787
Whip-stock loop-fastening	O. M. Scott	257,694	Apr. 25	1666	466	21	1257
Whips. Device for exhibiting or holding	C. M. Johnson	258,471	Jan. 17	972	270	21	176
Whisky. Rack for storing and aging	W. F. Heath	253,701	Feb. 14	602	175 176	21	402
Whistle blank. Steam	C. E. Baldwin	257,456	May 9	399	109	21	1256
Whistling return-ball	G. Beck	253,006	Feb. 14	376	104	21	454
Wick. Lamp	W. C. Seaton	254,390	Feb. 28	1456	399	21	617
Wick-trimmer	C. A. Kinney	257,021	Apr. 25	1559	437	21	1245
Wick-tube	G. A. Ellis	257,439	May 2	354	99	21	1344
Wicker or rattan chair	G. J. Dudley	257,436	May 2	353	99	21	1344
Willow-peeler	Z. B. Macomber	253,733	Feb. 14	603	189 190	21	480
Winch	J. W. Arthurs and J. C. Fick	258,980	Jan. 31	1436	401	21	997
Wind-engine	W. Casterline	257,210	May 2	70	21	21	1294
Wind-engine	G. Garside	259,680	June 20	1009	270	21	1895
Wind-engine	P. Goring	254,363	Feb. 28	1388	375	21	601
Wind-engine	H. N. Hill	260,086	June 27	1545	417	21	1990
Wind-engine	E. Howland	258,650	May 30	1667	523	21	1643
Wind-engine	F. McClintock	256,234	Apr. 11	698	189	21	1061
Wind-engine	F. McClintock	257,880	May 16	911	256	21	1460
Wind-engine	T. T. Miller	259,704	June 20	1033	278 280	21	1892
Wind-engine	F. W. Shellabarger	257,835	May 9	840	227	21	1439
Wind-engine	H. R. Stevens	259,466	May 23	1669	469	21	1660
Wind-engine	J. Stitcel	259,838	June 6	441	117	21	1770
Wind-engine	R. E. Strait	259,941	June 6	450	115	21	1778
Wind-engine	A. Thomson	258,912	Jan. 31	1467	417	21	976
Wind-motor	J. McLachlan	259,569	June 13	685	200	21	1853
Wind-power machine	M. Colomey	259,065	June 27	1589	411	21	1976
Wind-wheel	E. Buckley	255,126	Mar. 21	874	225	21	808
Wind-wheel	R. G. Kirkwood	254,865	Mar. 14	679	169	21	782
Wind-wheel	B. H. Klein	255,636	Mar. 28	1255	339	21	874
Wind-wheel machinery	A. G. Carman	259,899	June 13	516	135	21	1799
Winding and twisting machines. Stop-motion for	J. S. Utley	255,720	Mar. 28	1634	449	21	941
Winding silk. Machine for	J. E. Atwood	256,949	Apr. 25	1479	414	21	1230
Winding silk, &c. Machine for	J. E. and E. Atwood	257,269	May 2	167	41, 42	21	1307
Windlass	T. Mason	260,307	June 27	1806	490	21	2021
Windlass. Vertical	S. J. Miller and T. R. Ballard	259,571	June 13	898	229	21	1854
Windmill	J. N. Adams	253,651	Feb. 14	555	158	21	451
Windmill	G. H. Andrew	254,527	Mar. 7	98	25	21	655
Windmill	W. S. Baugh	251,698	Jan. 3	4	1, 2	21	4
Windmill	G. M. Beard	258,358	May 23	1491	424	21	1571
Windmill	C. C. Bomberger	254,264	Feb. 28	1318	364	21	594
Windmill	B. J. Bragdon	257,640	May 9	636	178	21	1400
Windmill	W. N. Bryan	259,476	June 13	750	188 189	21	1832
Windmill	B. Chamberlain	252,835	Jan. 24	1308	300	21	235
Windmill	S. P. Coan	257,392	May 2	173	49	21	1312
Windmill	J. E. and J. M. Galloway	259,123	June 6	312	82, 83	21	1748
Windmill	A. W. Jones and A. H. Smith	252,947	Jan. 31	1525	429	21	985
Windmill	S. U. King	257,496	May 9	636	121 122	21	1365
Windmill	C. Kunkel	259,557	June 13	851	225	21	1854
Windmill	L. D. Lowther	259,563	June 13	868	227	21	1866
Windmill	T. E. Martin	252,116	Jan. 10	529	149	21	99
Windmill	G. W. Miller	256,154	Apr. 11	705	199	21	1042
Windmill	E. M. Schrock	256,810	Apr. 18	1703	209	21	1194
Windmill	E. B. Smith	255,345	Mar. 21	1145	307	21	849
Windmill	S. D. Straw and A. J. Signor	254,485	Feb. 28	1476	403 404	21	621
Windmill	W. N. Trumble	258,886	May 30	2008	588	21	1879
Windmill	J. Warwick and W. C. Westaway	254,675	Feb. 21	1097	304	21	549
Windmill	H. J. Wolcott	256,189	May 16	1277	368	21	1585
Windmill attachment	A. J. Gary	259,538	June 13	614	215	21	1844
Windmill for pumping	L. B. Denton	253,016	Jan. 31	1026	454	21	269
Windmill. Horizontal	W. H. Ash	255,189	Mar. 21	891	231	21	801
Windmill-motor	B. Chamberlain	258,737	Jan. 24	1261	254	21	223
Windmill-regulator	J. Lamont and H. White	256,374	Apr. 11	745	204	21	1063
Windmill-regulator	J. H. Newell	256,468	May 23	1661	456	21	1909
Windmill-shafts. Mechanism for transmitting power from	A. S. Baker	256,616	Apr. 18	1699	304 305	21	1153
Window-cleaning chair and fire-escape. Combined	A. Dernitzer	256,654	Apr. 18	1188	316	21	1161
Window. Colored-glass	L. C. Tiffany	254,409	Feb. 28	1469	403	21	621
Window-frame	W. Sturm	254,666	Feb. 21	1099	302	21	548

Alphabetical list of inventions, January to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Window frame and sash	F. W. Hettinger	251,778	Jan. 3	112	32	21	21
Window frame and sash	M. W. Mahar	257,503	May 9	443	123	21	1366
Window-frame pocket	A. S. Bangs	257,637	May 9	625	175	21	1367
Window-glass fastener	T. Tanner	252,707	Jan. 24	1230	344	21	227
Window. Reversible	H. Becker	259,080	June 6	260	69	21	1730
Window-screen	H. C. Hart	254,965	Mar. 14	648	170	21	757
Window-screen	D. W. Hersey	253,047	Jan. 31	1665	461	21	306
Window-screen	S. Mead	254,561	Mar. 7	136	34	21	661
Window-screen	E. B. Walter and J. P. Voelker	253,137	Jan. 31	1781	494	21	365
Window-screen	E. L. Lloyd	257,348	May 2	947	70	21	1725
Window-screen. Adjustable	J. H. Bradford	258,551	May 30	1732	490	21	1691
Window-screen. Permanent	B. L. Goldsmith	258,410	May 23	1559	442	21	1583
Window-shade	H. B. S. Norman. (Reissue)	10,015	Jan. 24	1430	399	21	910
Window-shade	F. M. Tinkham	256,419	Apr. 11	298	230	21	1698
Window-shade exhibitor	H. H. Craig	258,289	May 23	1414	400	21	1557
Window-ventilator	G. A. Keene	258,996	June 6	69	18	21	1706
Window-washer	C. H. Salisbury	255,033	Mar. 14	739	199	21	773
Wire and clothes-line tightener	W. Hewitt	254,478	Mar. 7	39	10	21	645
Wire and collecting the waste hydrogen-gas. Apparatus for cleaning iron	A. C. Decker	254,539	Mar. 7	111	28	21	657
Wire. Barbed	J. Ayres and A. C. Decker	253,660	Feb. 14	570	161	21	453
Wire-barbing machine	J. J. Hathaway	254,767	Mar. 7	387	{102 / 103}	21	704
Wire-barbing machine	J. F. Gilpin and E. V. Clemens	250,528	June 13	815	215	21	1844
Wire-dasher	C. O. Thompson	252,816	Jan. 24	1377	.....	21	251
Wire. Drawing	L. Williams	256,779	Apr. 18	1269	358	21	1187
Wire-drawing apparatus	G. and E. Ashworth	252,413	Jan. 17	898	249	21	165
Wire for cards. Apparatus for hardening and tempering	E. H. Hill	255,785	Apr. 4	38	11	21	957
Wire-galvanizing apparatus	A. T. Morrow	259,194	June 6	390	103	21	1762
Wire gate. Flexible	H. Roberts	259,214	June 6	411	109	21	1766
Wire. Holding and transporting	J. A. Charnley	254,197	Feb. 28	1235	344	21	580
Wire. Machine for ornamenting	W. T. Glover and G. F. James	258,292	May 23	1423	{403 / 404}	21	1559
Wire, &c. Machinery for twisting	W. E. Rice	253,227	Feb. 7	58	18	21	356
Wire. Manufacture of zinc-coated	T. H. Dodge and C. G. Washburn	252,746	Jan. 24	1272	357	21	235
Wire. Manufacturing barbed	G. Pickhardt	259,969	June 20	1412	380	21	1953
Wire-netting	J. A. Charnley	253,194	Feb. 7	14	4	21	349
Wire. Ornamental	H. Channon	253,909	Feb. 21	886	250	21	515
Wire-rope-splicing bench	A. Collins	253,979	Feb. 21	989	273	21	529
Wire screen-work	W. T. Lemon	254,144	Feb. 28	1180	330	21	571
Wire-splicing tool	C. T. Christmas	252,185	Jan. 10	614	172	21	112
Wire-stretcher	G. S. Dean	259,671	June 20	998	267	21	1883
Wire-stretcher	S. P. Harbaugh	252,104	Jan. 10	518	144	21	96
Wire-stretcher	H. H. Hutchins	253,058	Jan. 31	1676	464	21	308
Wire-stretcher	J. Rohr	255,337	Mar. 21	1136	305	21	848
Wire-stretcher	C. H. Salisbury	255,032	Mar. 14	739	199	21	773
Wire-stretchers. Windlass for	R. Eastabrooks	258,634	May 30	1835	518	21	1739
Wire-stretching apparatus	G. Richardson	259,047	June 6	221	59, 60	21	1723
Wood and coal elevator	G. B. Allis	256,459	Apr. 18	998	251	21	1123
Wood and metal. Compound for preserving	L. D. Mott	251,918	Jan. 3	289	.....	21	50
Wood-bending machine	G. H. Preston	254,568	Mar. 7	148	37	21	663
Wood composition for staining	A. F., Jr., and J. P. Gloger	258,050	May 16	1114	.....	21	1495
Wood for floor-coverings, &c. Uniting	C. E. Rider	255,023	Mar. 14	725	195	21	771
Wood. Incasing knots or other defects in	B. Holmes	256,567	Apr. 18	1024	269	21	1144
Wood. Method of and machine for ornamenting rods of	O. Cleveland	254,535	Mar. 7	106	27	21	656
Wood. Preserving	J. P. Card	254,274	Feb. 28	1329	.....	21	596
Wood-preserving composition	J. C. Marshall	259,030	June 6	200	.....	21	1728
Wood pulp. Manufacture of	G. Werner	252,983	Jan. 31	1583	440	21	283
Wood-splitting machine	R. G. Brock	256,425	Apr. 11	849	235	21	1101
Wood-splitting-machine cutter	W. M. Hall	259,010	June 6	174	47	21	1724
Wood-splitting machine. Kindling	H. Midwood	257,986	May 16	1012	282	21	1477
Wood, &c., to fiber. Reducing	G. H. Pond	259,206	June 6	404	107	21	1764
Wood-turning machine	G. P. Loomis	251,907	Jan. 3	277	76	21	49
Wood-working factories. Dust-arrester for	A. Backus, Jr	257,271	May 2	150	42	21	1308
Wooden bowls. Machine for making	C. Neff	259,196	June 6	392	104	21	1763
Wooden pipes. Construction of	J. D. Seegrove and F. W. Lewis	256,060	Apr. 4	375	102	21	1013
Wool-combing machine	J. Austin	259,790	June 20	1139	309	21	1910
Wool from mixed fabrics. Recovering	C. and J. B. Lennig	259,025	June 6	192	.....	21	1787
Wool-washer	F. G. and A. C. Sargent	256,057	Apr. 4	370	101	21	1012
Wool-washing machine	J. Clough	251,833	Jan. 3	187	52	21	24
Wool-washing machine	F. G. and A. C. Sargent	258,399	May 23	1456	{413 / 414}	21	1565
Wool-washing machine	G. L. Witall	256,788	Apr. 18	1279	356	21	1187
Work-bench attachment	J. B. Richards	259,211	June 6	409	109	21	1765
Work-box	H. S. Dickson	258,790	May 30	1945	549	21	1658
Work-holder	G. R. Tyler	253,053	Mar. 14	773	207	21	778
Woven fabrics. Machine for turning and pressing	W. H. H. Tracy and G. E. Stillman	251,972	Jan. 3	346	93, 94	21	60
Wrench: *See* Adjustable wrench. Bung-bush wrench. Carriage-wrench. Chain-wrench. Monkey-wrench. Pipe-wrench. Ratchet-wrench. Screw-wrench. Socket-wrench.							
Wrench	W. H. Bielefeld and D. C. Hinkle	253,500	Feb. 14	394	108	21	425
Wrench	W. Bushey	259,363	June 13	611	{161 / 162}	21	1807
Wrench	M. E. Campfield	257,468	May 9	308	112	21	1328
Wrench	J. C. Gunn	255,853	Apr. 4	119	32	21	970
Wrench	M. H. McNair	255,182	Mar. 21	931	249	21	813
Wrench	W. O'Connell, Jr	253,069	Jan. 31	1728	478	21	316
Wrench	J. E. Preston	258,673	May 30	1891	534	21	1649

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Wrench	C. P. Schneider	254,567	Mar. 7	78	19	21	650
Wrench	J. Schwegler	256,137	May 16	1217	343	21	1515
Wrench	J. Thomson	256,887	Apr. 25	1379	389	21	1814
Wrench	J. A. Miller	253,540	Feb. 14	445	127	21	434
Wrench and drill. Combined							
Wringer: *See* Clothes-wringer.							
Wringing-machine	T. J. Mayall	256,846	Apr. 25	1367	383	21	1810
Wrist-pin turner	L. B. Greer	258,053	May 16	1116	{311 / 312}	21	1496
Writing implement	S. S. Rogers	256,742	Apr. 18	1230	344	21	1160
Yarns after dyeing. Softening	J. Balster	255,833	Apr. 4	99	26	21	967
Yeast. Making brewer's	F. Meyer	258,884	May 30	1875	.....	21	1646
Yeast. Preparation of	S. Levy	255,176	Mar. 21	926	.....	21	812
Yoke adjuster. Neck	J. A. Barnes	258,692	May 30	1914	541	21	1653
Yoke clip. Neck	J. Nellis	254,497	Mar. 7	63	16	21	649
Yoke. Neck	W. L. Colton	254,925	Mar. 14	890	161	21	749
Yoke. Neck	G. Fentosi	257,156	May 2	17	5	21	1284
Yoke. Neck	J. R. Finley	257,449	May 2	354	89	21	1344
Yoke. Neck	C. Shuman	258,338	Jan. 17	795	220	21	146
Yoke. Neck	W. A. Baker	256,617	Apr. 18	1068	305	21	1153
Yoke Wagon	H. J. Brewer	258,361	May 23	1304	497	21	1573
Zinc for batteries							

ALPHABETICAL LIST OF DESIGNS.

Design.	Name.	No.	Date.	Official Gazette. Volume.	Page.
Advertising disk	E. L. Moodie	12,909	June 13	21	1787
Advertising or ornamental blank or easel	E. L. Moodie	12,823	May 2	21	1283
Advertising or ornamental disk or plate	E. L. Moodie	12,698 to 12,983	Apr. 18	21	1132
Aquarium and stand for same	C. F. Klepper	12,779	Feb. 21	21	497
Badge	W. Bailey and C. E. Dakin	13,003	June 27	21	1959
Badge	E. D. Wilt	12,963	June 6	21	1063
Bedstead	A. F. Milne	12,744	Feb. 7	21	345
Bell. Table	E. L. Morris	13,012	June 27	21	1959
Blank bill-head	A. Dwight	12,798	Mar. 7	21	637
Blouse	N. J. Schloss	12,767	Feb. 14	21	491
Bottle	J. C. and C. C. Davidson	12,985	June 13	21	1787
Bottle	M. G. Landsberg	12,861	Apr. 11	21	1031
Bottle. Caster	J. Hoare	12,651	Jan. 3	21	1
Bottle. Caster	J. M. Watson	12,791	Feb. 21	21	499
Bottle. Perfumery	A. P. Babcock	12,902	Apr. 25	21	1281
Bottle. Pickle	H. J. Heinz	12,803	Mar. 14	21	715
Bottle. Pickle	H. J. Heinz	12,844	Apr. 4	21	950
Bottle. Pickle	G. O. Sanborn	12,943	May 23	21	1539
Bottle. Spice	J. M. Watson	12,906	Apr. 25	21	1281
Box	H. F. Moeller	12,942	May 23	21	1539
Bracket	G. S. Barkentin	12,874	Mar. 28	21	907
Brush-back	G. A. Scott	12,797	Feb. 28	21	561
Card-receiver	H. Berry	12,792	Feb. 28	21	561
Carpet	F. Allen	12,901	Apr. 25	21	1281
Carpet	F. Allen	12,969	May 2	21	1279
Carpet	H. Christie	12,711 to 12,712	Jan. 31	21	985
Carpet	E. A. Crowe	12,657	Jan. 10	21	77
Carpet	E. A. Crowe	12,978 to 12,979	June 20	21	1679
Carpet	H. Erbs	12,713	Jan. 31	21	985
Carpet	E. Fisher	12,659 to 12,670	Jan. 10	21	77
Carpet	E. Fisher	12,843	Apr. 4	21	949
Carpet	E. Fisher	12,963 to 12,969	June 20	21	1679
Carpet	J. Fisher	12,794	Feb. 7	21	345
Carpet	W. J. Gadsby	12,715	Jan. 31	21	985
Carpet	W. J. Gadsby	12,753	Feb. 7	21	346
Carpet	W. J. Gadsby	12,802	Mar. 14	21	715
Carpet	W. J. Gadsby	12,911	May 2	21	1279
Carpet	A. L. Halliday	12,681	Mar. 21	21	783
Carpet	A. L. Halliday	12,949	Apr. 4	21	950
Carpet	A. L. Halliday	12,857 to 12,858	Apr. 11	21	1031
Carpet	R. P. Hemming	12,716 to 12,717	Jan. 31	21	985
Carpet	H. Heran	12,806 to 12,807	Mar. 14	21	716
Carpet	H. Heran	12,682 to 12,683	Mar. 21	21	783
Carpet	H. Heran	12,686	Mar. 28	21	907
Carpet	H. Hunt	12,684 to 12,685	Mar. 21	21	783
Carpet	H. Hunt	12,833	Mar. 21	21	783
Carpet	W. L. Jacobs	12,808 to 12,810	Mar. 14	21	716
Carpet	W. L. Jacobs	12,689 to 12,690	Mar. 21	21	783
Carpet	W. McCallum	12,959	June 6	21	1063
Carpet	W. McCallum	12,980	June 20	21	1679
Carpet	D. McNair	12,754	Feb. 7	21	346
Carpet	D. McNair	12,813	Mar. 14	21	716
Carpet	D. G. Melville	12,812	Mar. 14	21	716
Carpet	D. G. Melville	12,976	June 13	21	1787
Carpet	T. Onslow	12,776 to 12,788	Feb. 21	21	497
Carpet	T. Onslow	12,883	Apr. 11	21	1031
Carpet	H. A. Parker	12,916	May 9	21	1279

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Design.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Carpet	J. Pegel	12,864 to 12,865	Apr. 11	21	1631
Carpet	J. Pegel	12,877	Apr. 11	21	1632
Carpet	E. Perrin	12,851 to 12,854	Apr. 4	21	950
Carpet	E. Poole	12,721 to 12,726	Jan. 31	21	265
Carpet	E. Poole	12,901 to 12,902	June 20	21	1679
Carpet	G. W. Pugh	12,783	Feb. 21	21	497
Carpet	H. Smith	12,885	Apr. 18	21	1122
Carpet	H. Smith	12,934	May 9	21	1353
Carpet	H. Smith	12,945 to 12,946	May 23	21	1539
Carpet	S. Smith	12,784	Feb. 21	21	497
Carpet	T. J. Stearns	12,755 to 12,756	Feb. 7	21	346
Carpet	T. J. Stearns	12,785 to 12,786	Feb. 21	21	497
Carpet	T. J. Stearns	12,931 to 12,932	May 16	21	1449
Carpet	C. W. Swapp	12,678 to 13,685	Jan. 10	21	77
Carpet	C. W. Swapp	13,730 to 13,732	Jan. 31	21	265
Carpet	C. W. Swapp	12,994 to 13,000	June 20	21	1679
Carriage-body	W. P. Uhlinger	13,001	June 20	21	1679
Cassimeres	F. S. Bosworth	13,004	June 27	21	1939
Casket or burial-case	G. Ferguson	12,880	Apr. 11	21	1032
Chain-link. Ornamental	S. Davidson	12,658	Jan. 10	21	77
Chain-link. Ornamental	J. L. Heeley	12,939 to 12,940	May 23	21	1539
Chain-link. Ornamental	E. F. Seery	12,653 to 12,654	Jan. 3	21	1
Chain. Ornamental	W. W. Briggs	12,950 to 12,951	May 30	21	1617
Chain. Ornamental	S. L. Lederer	12,794	Feb. 28	21	561
Chain. Watch	W. Marckstine	12,708	Feb. 14	21	421
Chair	J. Sutter	12,903	June 20	21	1679
Charm and pencil-case	L. W. Fairchild	12,856	Apr. 11	21	1031
Cigar cutter	N. Du Brul	12,929 to 12,931	May 9	21	1353
Clock	F. H. Hotchkiss	12,718	Jan. 31	21	265
Clock-case	T. Lincoln and D. S. Wesson	12,759	Feb. 7	21	346
Cloth	H. Dobbin	12,817 to 12,820	Mar. 21	21	793
Cloth	L. Rosenfeld	12,832	Mar. 21	21	793
Cloth. Nap-surface of	E. Einstein	12,953	May 30	21	1617
Cloth. Nap-surface of	F. Samson	12,930	May 16	21	1449
Cloth. Ornamenting	D. C. Sumner	12,707 to 12,710	Jan. 24	21	205
Coffee-packages. Ornamenting paper for	O. A. Gill	13,007	June 27	21	1939
Coffin-pedestal	N. Rappleyea and L. Stein	13,017	June 27	21	1940
Corset	M. P. Bray	12,837	Mar. 28	21	867
Corset	H. H. Chittenden	12,769	Feb. 14	21	421
Corset	P. T. Herzog	12,773	Feb. 21	21	497
Corset	I. Rosenberg	12,727	Jan. 31	21	265
Corset	I. Strouse	12,666 to 12,669	Jan. 10	21	77
Cuff-box. Interior form of	I. P. Turner	12,655	Jan. 3	21	1
Curtain-band	B. Dreyfus	12,788	Feb. 21	21	497
Desk-frame	C. Page	13,015	June 27	21	1939
Dinner or tea set	E. Chetwynd	13,005	June 27	21	1939
Dispensing-column	J. Matthews	13,011	June 27	21	1939
Doctor-engine	G. J. Frits	12,954	June 6	21	1683
Door-hanger	S. W. Jones	12,887	Apr. 18	21	1122
Drilling machine. Upright	V. F. Prentice	12,839	Mar. 28	21	867
Easel	E. L. Moodie	12,745	Feb. 7	21	345
Easel. Ornamental or advertising	E. L. Moodie	12,905	Apr. 25	21	1291
Emblem for the ancient order of Hibernians	C. P. Sweetman and C. M. Piccard	12,927	May 9	21	1353
Fence-picket	W. Thomas	12,970 to 12,974	June 13	21	1787
Finger-ring	H. Henrich	12,957	June 6	21	1683
Finger-ring	H. P. Richmond and T. E. Carpenter	12,638	Jan. 3	21	1
Finger-ring	N. L. Ripley	12,866 to 12,868	Apr. 11	21	1031
Finger-ring	N. L. Ripley	12,870	Apr. 11	21	1031
Finger-ring	W. P. Simmons	12,789	Feb. 21	21	498
Fire-hook and jamb	W. D. Hewitt	13,010	June 27	21	1939
Fire-stove-lining plate	J. A. Read	12,871	Apr. 11	21	1032
Flower-pedestal	N. Rappleyea and L. Stein	13,018	June 27	21	1940
Fork or spoon handle	J. B. Knowles	12,793	Feb. 28	21	561
Finger-ring	H. Henrich	12,912	May 2	21	1279

Alphabetical list of designs, January to June, inclusive—Continued.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Fringe	B. Dreyfus	13,006	June 27	21	1939
Fringe	G. E. Goucher	12,648	Jan. 3	21	1
Fringe	J. C. Graham	12,649 to 12,650	Jan. 3	21	1
Fringe	G. S. Hensel	12,845	Apr. 4	21	950
Fringe	H. A. Kehrenberg	12,847	Apr. 4	21	950
Fringe	E. A. Kemper	12,889	Apr. 18	21	1122
Fringe	R. McLaughlin	12,800	Mar. 7	21	618
Fringe	J. Rochower and A. Heck	12,766	Feb. 7	21	346
Fringe	F. Reuter	12,699	Jan. 17	21	142
Fringe	G. F. Hensel	12,903	Apr. 25	21	1291
Fringe. Woven	H. Faller	12,874	Apr. 11	21	1084
Gate	H. Faller	12,926	May 16	21	1449
Gate	B. Weiden	12,919	May 2	21	1279
Gimp	J. Dalsell	12,647	Jan. 3	21	1
Glassware	P. MacDonald	12,908	June 20	21	1679
Glassware. Ornamentation of	R. H. Sipes	12,982	May 9	21	1353
Grave-cover	J. R. Krause	12,913	May 2	21	1279
Hair-ornament	H. Doherty and J. Wadsworth	12,873	Apr. 11	21	1032
Handkerchief	H. Doherty and J. Wadsworth	12,936	May 23	21	1539
Handkerchief	G. Wilkinson	12,737	Feb. 7	21	346
Handle for articles of table-ware	J. J. Kelly	12,859	Apr. 11	21	1031
Harness-trimming	H. S. Norse	12,894	Apr. 18	21	1122
Hat	J. B. Davids	12,961	June 20	21	1679
Inkstand	C. G. Summers	12,720	Jan. 31	21	265
Jelly-glass	J. B. Wood	12,758	Feb. 7	21	346
Jeweler's stand	H. G. Mackinney	12,735	Feb. 7	21	345
Jewelry	S. Comdé	12,760 to 12,763	Feb. 14	21	421
Knit fabric	J. J. Nichols and W. S. McLewee	12,744	Feb. 7	21	345
Lamp, &c	E. J. Ovington	12,771	Feb. 14	21	421
Lamp	C. E. Thompson	12,947	May 23	21	1539
Lamp. Coach	F. E. Seidensticker	12,930	May 16	21	1449
Lamp. Hanging	M. W. Gleason	12,675	Apr. 11	21	1032
Lamp-shade	C. A. Kinney	13,008	June 27	21	1939
Lantern	J. Collins	12,656	Jan. 10	21	77
Legging	C. E. Millin	12,904	Apr. 25	21	1291
Locket	L. P. Graham	12,938	May 23	21	1539
Monuments	C. T. and V. E. Meyer	12,671 to 12,675	Jan. 10	21	77
Oil-cloth, &c	C. T. and V. E. Meyer	12,726 to 12,743	Feb. 7	21	345
Oil-cloth	C. T. and V. E. Meyer	12,861 to 12,866	Apr. 11	21	1032
Oil-cloth	C. T. and V. E. Meyer	12,915 to 12,917	May 2	21	1279
Ornamental panel on articles of builders' hardware	G. S. Barkentin	12,855	Apr. 11	21	1031
Padlock	T. Lyons	12,891	Apr. 18	21	1122
Panel for mantels	J. Williamson	12,751	Feb. 7	21	346
Paper-cap or toy pistol	H. S. Lockwood	12,789	Feb. 21	21	497
Parasol	W. A. Drown	12,937	May 23	21	1539
Pencil-case	L. W. Fairchild	12,699	Jan. 17	21	142
Pencil-stamp	A. H. Rogers	12,787	Feb. 21	21	497
Pickle, preserve, or similar vessel	D. Barker	12,887	Apr. 18	21	1122
Plate	O. S. Strauss	12,722	Jan. 31	21	265
Range. Cooking	O. B. Keeley	12,695 to 12,696	Jan. 17	21	141
Range. Cooking	W. A. Spicer	12,925	May 9	21	1353
Razor	W. H. De Pew	12,964	June 6	21	1683
Ring	C. J. Theuerner	12,948	May 23	21	1539
Rug, carpet, &c	A. Potzold	12,747	Feb. 7	21	345
Scales	J. T. McNally and W. H. Harrison	12,795	Feb. 28	21	561
Scarf. Neck	J. H. Fleisch	12,714	Jan. 31	21	265
Settee-frame	A. F. Old	13,013 to 13,014	June 27	21	1939
Sewing-machine case	W. Whitworth	12,700	Jan. 17	21	142
Shell for flower-beds. Imitation	E. Mueller	12,960	June 6	21	1683
Spoon, fork, or knife handle	A. W. Lyman	12,770	Feb. 14	21	421
Spoon-handle	A. W. Sperry	12,977	June 13	21	1787
Spoon or fork handle	A. Hobbard	12,888	Apr. 18	21	1122
Spoon or fork handle	G. I. Mix	12,914	May 2	21	1279
Spoon or fork handle	F. Waterhouse	12,840 to 12,841	Mar. 28	21	867
Stair-rod	J. E. Scott	12,677	Jan. 10	21	77
Steam-engines. Combined bed-plate and heater for portable	R. Scheidler	12,676	Jan. 10	21	77
Stove	G. O. Bergstrom	12,835 to 12,838	Mar. 28	21	867
Stove	I. T. Montross	12,849	Apr. 4	21	950
Stove. Cooking	O. B. Keeley	12,702	Jan. 24	21	205
Stove. Heating	T. J. Hodgkins	12,799	Mar. 7	21	637
Stove. Heating	O. B. Keeley	12,719 to 12,720	Jan. 31	21	265
Stove. Heating	J. W. Kennedy	12,886	Apr. 18	21	1122
Stove. Heating	G. G. Thomas	12,709	Feb. 14	21	421
Stove. Plates of a heating	J. M. Atchison	12,934	May 16	21	1449
Suspenders	V. Guinsburg and S. Glass	12,955	June 6	21	1683
Table-mat	F. Westcott	13,002	June 20	21	1679
Tag. Merchandise	S. L. Sayles	12,944	May 23	21	1539
Tea-pot. Earthenware	J. Shenkel	12,961	June 6	21	1683

Alphabetical list of designs, January to June, inclusive—Continued.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Tea-tray	W. M. Conger	12,701 to 12,705	Jan. 24	21	285
Tenoning-machine	W. H. Doane	12,949	May 23	21	1539
Toilet-case	H. Pattberg	12,850	Apr. 4	21	950
Toy for exploding caps and fulminates	C. Coester, Jr	12,733	Feb. 7	21	345
Toy for exploding caps and fulminates	C. F. Ritchel	12,749 12,750	Feb. 7	21	346
Toy money-box	L. Kyser and A. C. Rex	12,758	Feb. 7	21	346
Toy money-box	L. Kyser and A. C. Rex	12,848	Apr. 4	21	950
Toy money-box	L. Kyser and A. C. Rex	12,880	Apr. 11	21	1031
Toy money-bank	J. H. Parmelee	13,016	June 27	21	1950
Toy pistol	E. R. Ives	12,900	June 20	21	1679
Toy pistol	T. Lloyd	12,811	Mar. 14	21	716
Toy savings-bank	C. G. Shepard and P. Adams, Jr	12,814	Mar. 14	21	716
Type. Font of	J. West	12,935	May 16	21	1449
Type. Font of printing	C. H. Beeler, Jr	12,804	Jan. 17	21	141
Type. Font of printing	C. E. Heyer	12,804 12,805	Mar. 14	21	716
Type. Font of printing	C. E. Heyer	12,933	May 16	21	1449
Type. Font of printing	H. Ihlenburg	12,906 to 12,908	June 13	21	1787
Type. Font of printing	A. Little	12,890	Apr. 18	21	1122
Type. Font of printing	A. Little	12,941	May 23	21	1539
Type. Font of printing	C. Müller	12,796	Feb. 28	21	561
Type. Font of printing	C. Müller	12,801	Mar. 7	21	638
Type. Font of printing	C. Müller	12,862	Apr. 11	21	1031
Type. Font of printing	J. K. Rogers	12,899 12,900	Apr. 18	21	1122
Type. Font of printing	H. H. Thorp	12,975	June 13	21	1787
Type. Music	J. J. Hood	12,952	May 30	21	1617
Type. Printing	G. G. Bailey, Jr., and J. Gilbert	12,910	May 2	21	1279
Type. Printing	J. K. Rogers	12,889	Apr. 11	21	1031
Type. Printing	H. H. Thorp	12,815 12,816	Mar. 14	21	716
Vase	W. T. Murphy	12,906	Apr. 25	21	1901
Wall-paper	I. F. Clark	12,872	Apr. 11	21	1033
Wall-paper	E. Leissner	12,958	June 6	21	1803
Wall-paper	E. Leissner	13,009	June 27	21	1950
Wall-paper	E. Popcke	12,907	Apr. 25	21	1901
Wall-paper	C. Townsend	12,849	Apr. 4	21	949
Wall-paper	C. Wheeler	12,876	Apr. 11	21	1032
Wardrobe	W. Klingner	12,697	Jan. 17	21	140
Watch-case	E. F. Margot	12,774 12,775	Feb. 21	21	497
Watch-case	H. Untermeyer	12,896	Apr. 18	21	1122
Watch-movement	H. O. Stauffer	12,926	May 9	21	1353
Window-shade	B. Hanforth	12,956	June 6	21	1803
Wine-cooler	C. F. Meyer	12,831	Mar. 21	21	783
Woven fabric	J. Simpson	12,902	June 6	21	1803

ALPHABETICAL LIST OF TRADE-MARKS.

Title.	Name.	No.	Date.	Official Gazette. Volume.	Page.
Accordions	W. Spaeth	8,962	Jan. 3	21	2
Ale, and stout or porter. Pale and strong	Bass, Ratcliff & Gretton	9,209	Apr. 25	21	1283
Ale. Ginger	H. S. Evans	9,165	Feb. 21	21	496
Antiperiodic compound	J. M. Kochlough	9,021	Jan. 17	21	140
Atomizers	Young, Ladd & Coffin	9,206	Apr. 4	21	903
Augers and auger-bits	F. F. Tanzie, W. K. Wilson, L. K. Kimbel, E. L. Bates, and R. E. Bond	9,047	Jan. 24	21	286
Axle-grease	A. J. Wise	9,257	Apr. 4	21	899
Bacon	J. White & Company	9,269	Apr. 11	21	1033
Baking-powder	E. C. and J. W. Crawford	9,266	May 23	21	1540
Baking-powder	G. V. Hacker & Co	9,004	Jan. 10	21	78
Baking-powder	J. J. O'Brien	9,004	Feb. 7	21	346
Baking-powder	J. A. Parent & Co	9,270	May 16	21	1450
Baking-powders	W. C. Tiffany	9,198	Feb. 21	21	499
Bate for tanners' use	J. Gahan	9,246	May 9	21	1354
Beer. Lager	C. Stein	9,214	Mar. 21	21	784
Beer. Lager	A. F. Dennler	9,053	Jan. 31	21	393
Bitters	A. S. Udell & Co	9,171	Mar. 7	21	638
Bitters	G. P. Glazier	9,135	Feb. 21	21	498
Bitters. Hops and malt	Wilmerding & Co	9,177	Mar. 7	21	638
Bitters. Stomach	C. Spengler	9,056	Feb. 7	21	346
Bitters. Tonic	A. Ireland	9,198	Mar. 14	21	716
Books	Greenfelder, Rosenthal & Co	9,266	May 23	21	1540
Boots	Ordway & Clark	9,095	Feb. 7	21	346
Boots, shoes, and slippers	E. W. Bedell	9,234	Mar. 28	21	957
Braid. Alpaca	S. Rosenberg & Co	9,257	Apr. 11	21	1033
Braids. Silk and mohair	Protective and Detective Association of Texas	9,019	Jan. 10	21	78
Branding live stock	Cassin, Crooks & Reynaud	9,003	Jan. 10	21	78
Brandy	Cassin, Crooks & Reynaud	9,043	Jan. 24	21	286
Brandy	Martell & Co	9,056	Jan. 31	21	393
Brandy	Martell & Co	9,020	Jan. 31	21	393
Brandy	Newton & Co	9,018	Jan. 10	21	78
Bricks. Fire	H. Lamplough	9,204	Apr. 25	21	1283
Bricks, fire-slabs, and clumps. Fire	H. L. Pierce	9,443	June 6	21	1694
Bromo	H. L. Pierce	9,469	June 27	21	1950
Brush. Baker's	H. W. Knight	8,997	Jan. 10	21	77
Buttons	H. W. Knight	8,998	Jan. 10	21	78
Buttons	W. Knight & Co	8,999	Jan. 10	21	78
Buttons	W. Knight & Co	9,000	Jan. 10	21	78
Buttons	W. Knight & Co	9,001	Jan. 10	21	78
Buttons	W. Knight & Co	9,002	Jan. 10	21	78
Buttons	W. Knight & Co	9,050	Feb. 7	21	346
Buttons	M. Livingston	9,436	June 6	21	1694
Buttons	M. Livingston	9,437	June 6	21	1694
Buttons	J. P. Baxter	9,049	Mar. 28	21	949
Canned corn	A. W. Prieto	9,139	Feb. 21	21	499
Canned fruits and vegetables, except canned corn	Franco-Californian Packing Company	9,391	May 23	21	1540
Canned fruits, vegetables, and fish	San Jose Fruit Packing Company	9,351	May 9	21	1354
Canned fruits, vegetables, jellies, jams, &c	E. B. Mallory & Co	9,438	June 6	21	1694
Canned goods	J. G. Magler & Co	9,349	May 9	21	1354
Canned meats and fish	J. G. Magler & Co	9,349	May 9	21	1354
Canned meats and fish	Portland Packing Company	9,251	Mar. 28	21	949
Canned provisions	G. W. Bunker	9,217	Mar. 21	21	784
Cans. Boxed	T. R. Keator & Co	9,373	May 16	21	1450
Cement	Stuart & Co	9,463	June 13	21	1788
Cement	N. L. Freese	9,185	Mar. 14	21	716
Cement and adhesive liquid	Sherman, Weeks & Co	9,268	Apr. 11	21	1033
Cement, lime, land-plaster, and calcined plaster	Sherman, Weeks & Co	9,269	Apr. 11	21	1033
Cement, lime, land-plaster, and calcined plaster	S. Bowen	9,470	June 20	21	1950
Cement or putty	Brooks, Shoebridge & Co	9,006	Jan. 10	21	78
Cement. Portland	Cerealo Manufacturing Company	9,467	June 27	21	1950
Cereals. Crushed or prepared	S. & B. Lederer	9,115	Feb. 21	21	498
Chains. Ornamental jewelry	H. L. Pierce	9,475	June 27	21	1950
Chocolate. Baker's	Swain, Earle & Co	9,189	Mar. 14	21	716
Chocolate cakes	H. L. Pierce	9,338	May 9	21	1353
Chocolate. Double-vanilla	H. L. Pierce	9,476	June 27	21	1950
Chocolate. Eagle	H. L. Pierce	9,478	June 27	21	1950
Chocolate. French sweet	H. L. Pierce	9,477	June 27	21	1950
Chocolate. German sweet	H. L. Pierce	9,444	June 6	21	1694
Chocolate. Half-vanilla	H. L. Pierce	9,480	June 20	21	1950
Chocolate. Homœopathic	Beasley & McAlvanah	8,975	Jan. 3	21	2
Chocolate. Milk	H. L. Pierce	9,482	May 23	21	1540
Chocolate. Single-vanilla	H. L. Pierce	9,483	May 30	21	1615
Chocolate. Vanilla	G. D'Argy & Co	9,464	June 27	21	1950
Cigarette-paper	W. Dunnah	9,418	May 30	21	1617
Cigarette-paper	May Brothers	9,016	Jan. 10	21	78
Cigarette-paper	May Brothers	9,288	Apr. 11	21	1033
Cigarette-paper of all kinds	P. A. Betancilo	9,054	Jan. 31	21	393
Cigarettes	P. A. Betancilo	9,055	Jan. 31	21	393
Cigarettes	S. Jeanby & Co	9,270	Apr. 11	21	1033
Cigarettes	S. Jeanby & Co	9,485	May 30	21	1615
Cigarettes	Kinney Tobacco Company	9,020	Jan. 31	21	393
Cigarettes	Teuscher & Gernsheimer	9,238	Apr. 4	21	903
Cigars	Allen & Fisher	9,046	Jan. 31	21	393
Cigars	R. Allenson	9,319	Apr. 25	21	1283
Cigars	R. Allenson	9,320	Apr. 25	21	1283
Cigars	R. Allenson	9,321	Apr. 25	21	1283
Cigars	R. Allenson	9,322	Apr. 25	21	1283

Alphabetical list of trade-marks, January to June, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Pag.
Cigars	R. Allones	9,446	June 13	21	1788
Cigars	Alvares é Hijo	9,109	Mar. 7	21	636
Cigars	Alvares é Hijo	9,338	May 9	21	1290
Cigars	J. Alvares	9,149	Mar. 7	21	636
Cigars	J. Alvares	9,150	Mar. 7	21	636
Cigars	J. Alvares	9,331	May 9	21	1289
Cigars	J. Alvares	9,465	June 20	21	1869
Cigars	J. Alvares y Ca	9,151	Mar. 7	21	636
Cigars	C. Baker	9,189	Mar. 7	21	636
Cigars	Bengoechea y Fernandes	9,155	Mar. 7	21	636
Cigars	Bengoechea y Fernandes	9,156	Mar. 7	21	636
Cigars	Bengoechea y Fernandes	9,157	Mar. 7	21	636
Cigars	Bock y Ca	9,141	Feb. 28	21	501
Cigars	J. Cueto y Ca	9,273	Apr. 11	21	1033
Cigars	J. Cueto y Ca	9,311	Apr. 25	21	1292
Cigars	Estanillo y Ca	9,278	Apr. 11	21	1033
Cigars	Estanillo y Ca	9,310	Apr. 25	21	1290
Cigars	S. Faguet & Sons	9,210	Mar. 21	21	794
Cigars	Garcia y Montero	9,219	Mar. 21	21	794
Cigars	Garcia y Montero	9,279	Apr. 11	21	1033
Cigars	W. R. Irby & Bro	9,304	Apr. 18	21	1132
Cigars	M. Jané	9,055	Jan. 31	21	298
Cigars	G. P. Lies & Co	9,195	Mar. 14	21	716
Cigars	Lopes, Fernandes y Ca	9,212	Mar. 21	21	794
Cigars	Lopes, Fernandes y Ca	9,280	Mar. 21	21	794
Cigars	Lopes, Fernandes y Ca	9,299	Apr. 11	21	1033
Cigars	P. F. Lopes	9,305	Apr. 25	21	1293
Cigars	J. Magi	9,403	May 23	21	1540
Cigars	L. Marx	9,213	Mar. 21	21	794
Cigars	L. Marx	9,284	Apr. 11	21	1033
Cigars	F. Riebel	9,456	June 13	21	1788
Cigars	H. Rosenheim	9,209	Mar. 21	21	794
Cigars	Y. P. Stone	9,307	Apr. 25	21	1293
Cigars	W. Taylor	9,411	May 23	21	1540
Cigars	C. Upmann	9,471	June 20	21	1869
Cigars	H. Upmann & Co	9,178	Mar. 7	21	636
Cigars	J. Valdés	9,060	Jan. 31	21	298
Cigars	J. Valdés	9,061	Jan. 31	21	298
Cigars	M. Valle y Ca	9,215	Mar. 21	21	794
Cigars	Waterbury Bros	9,208	Mar. 21	21	794
Cigars and cigarettes	L. Ash & Co	9,193	Mar. 14	21	716
Cigars and cigarettes	L. Ash & Co	9,193	Mar. 14	21	716
Cigars and cigarettes	L. Ash & Co	9,196	Mar. 14	21	716
Cigars and cigarettes	Michalitschke Bros. & Co	9,376	May 16	21	1450
Cigars, cheroots, and cigarettes	Kinney Tobacco Company	9,071	Jan. 31	21	298
Cigars, cheroots, and cigarettes	Kinney Tobacco Company	9,113	Feb. 21	21	498
Cigars, cheroots, cigarettes, and smoking-tobacco	Kinney Tobacco Company	9,070	Jan. 31	21	298
Cigars, cheroots, cigarettes, and smoking-tobacco	Kinney Tobacco Company	9,073	Jan. 31	21	298
Cigars, cheroots, cigarettes, and smoking-tobacco	Kinney Tobacco Company	9,076	Jan. 31	21	298
Cigars, cigarettes, and cut tobacco	P. Del Rio y Ca	9,274	Apr. 11	21	1033
Cigars, cigarettes, and smoking and chewing tobacco	Kaufmann Bros. & Bondy	9,371	May 16	21	1450
Cigars, cigarettes, and smoking-tobacco	Estabrook & Eaton	9,209	Mar. 21	21	794
Cigars, cigarettes, and smoking-tobacco	G. Schlueter and Mendes	9,290	Apr. 11	21	1033
Cigars, cigarettes, cheroots, and plug, smoking, and chewing tobacco.	Kinney Tobacco Company	9,069	Jan. 31	21	298
Cigars, cigarettes, cheroots, and plug, smoking, and chewing tobacco.	Kinney Tobacco Company	9,072	Jan. 31	21	298
Cigars, cigarettes, cheroots, and plug, smoking, and chewing tobacco.	Kinney Tobacco Company	9,075	Jan. 31	21	298
Cigars, cigarettes, cheroots, and smoking-tobacco	Kinney Tobacco Company	9,074	Jan. 31	21	298
Cigars, cigarettes, cheroots, plug, twist, and fine-cut chewing-tobacco, smoking-tobacco, and snuff.	L. Wertheimer	9,063	Jan. 10	21	78
Cigars and cigarettes, cheroots, smoking and chewing tobacco, and snuff.	L. C. Frey	9,066	Jan. 31	21	298
Cigars, cigarettes, cheroots, smoking and chewing tobacco, and snuff.	L. C. Frey	9,067	Jan. 31	21	298
Cigars, cigarettes, cheroots, smoking and chewing tobacco, and snuff.	L. & E. Wertheimer	9,089	Jan. 17	21	148
Cigars, cigarettes, chewing, smoking, granulated, and plug tobacco, and snuff.	G. W. Van Slyke & Co	9,148	Feb. 28	21	502
Cigars, cigarettes, smoking and chewing tobacco	Goodwin & Co	9,194	Mar. 14	21	716
Cigars, cigarettes, snuff, and chewing and smoking tobacco	G. A. Tryner and H. C. Richardson	9,362	May 16	21	1449
Cigars, snuff, and smoking, fine-cut, and plug chewing tobacco	Spaulding & Merrick	9,379	May 16	21	1450
Cleaning and polishing preparations	B. G. Seebach	9,089	Feb. 7	21	346
Cocoa. Baker's	H. L. Pierce	9,476	June 27	21	1930
Cocoa paste	H. L. Pierce	9,479	June 27	21	1930
Coffee. Roasted	F. Mac Veagh & Co	9,496	June 27	21	1930
Coffee. Roasted	A. H. Stamp & Sons	9,388	Apr. 25	21	1292
Corset-waists	W. J. Austen	9,049	Jan. 31	21	295
Corset-waists	W. J. Austen	9,050	Jan. 31	21	295
Cloth coatings for coating walls and ceilings	Alabastine Company	8,989	Jan. 3	21	2
Cloth-cleaning powders	J. Yates & Co	9,324	May 16	21	1450
Clothing designated "Schnappe"	J. B. Wolfe	9,333	May 9	21	1294
Cordials	Distillerie de la Liqueur Bénédictine de l'Abbaye de Fécamp.	9,218	Mar. 21	21	794
Cordials	J. Lang & Co	9,221	Mar. 21	21	794
Corn-starch	Glen Cove Manufacturing Company	9,011	Jan. 10	21	78
Corn-starch	T. Kingsford & Son	9,064	Feb. 7	21	346
Corsets	T. C. Bates	9,333	May 9	21	1289
Corsets	T. C. Bates	9,334	May 9	21	1289
Corsets	T. C. Bates	9,335	May 9	21	1289
Corsets	T. C. Bates	9,336	May 9	21	1289
Corsets	M. Cohn	9,051	Jan. 31	21	295
Corsets	Crotty & Lindauer	9,237	Mar. 28	21	869

Alphabetical list of trade-marks, January to June, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Pag.
Corsets. Ladies' and gentlemen's	G. A. Scott	9,053	Jan. 17	21	148
Cotton, linen, or other fabrics	E. M. French	9,167	Feb. 21	21	498
Cotton, mixed woollen, and mixed silken fabrics	Mechanische Weberei zu Linden	9,164	Mar. 7	21	636
Cotton piece-goods	E. W. Holbrook & Co	9,152	Mar. 7	21	636
Cotton, worsted, and woollen dress-goods, shirtings, and other similar goods	D. & J. Anderson	9,030	Jan. 17	21	148
Cotton yarns and cloth	Globe Yarn Mills	8,993	Jan. 3	21	3
Crucibles	Morgan Crucible Company	9,441	June 6	21	1694
Crucibles	Morgan Crucible Company	9,442	June 6	21	1694
Crucibles and other chemical ware	Morgan Crucible Company	9,440	June 6	21	1694
Cutlery	J. Wilson	9,163	Mar. 7	21	636
Cutlery, such as shears, scissors, knives, and razors	Fuller Brothers	9,459	June 13	21	1788
Decorative fabrics. Certain	J. R. Whitley	8,987	Jan. 3	21	3
Dentifrice	Rogers & Lyon	9,457	June 13	21	1788
Distilled spirits	Corning & Co	9,469	June 27	21	1929
Drugs. Compound powder of	B. Williams	9,319	Apr. 25	21	1293
Dyeing materials	W. Cushing & Co	9,020	Jan. 24	21	205
Dyes. Aniline chemical	Albany Aniline & Chemical Works	9,273	Apr. 11	21	1033
Elastic webs	T. Martin & Brother	9,220	Mar. 21	21	794
Electro-magnetic appliances for the cure of various diseases	L. Baker	9,395	Apr. 18	21	1133
Flax-lint	W. G. Taylor	8,995	Jan. 3	21	3
Flour	Atlantic Milling Company	9,264	Apr. 25	21	1291
Flour	Atlantic Milling Company	9,267	Apr. 25	21	1291
Flour	Day, Rollins & Co	9,260	May 14	21	1449
Flour	Day, Rollins & Co	9,261	May 16	21	1449
Flour	Day, Rollins & Co	9,262	May 16	21	1449
Flour	Day, Rollins & Co	9,263	May 16	21	1449
Flour	Day, Rollins & Co	9,264	May 16	21	1449
Flour	Day, Rollins & Co	9,265	May 16	21	1449
Flour	L. Day & Co	9,267	May 16	21	1449
Flour	L. Day & Co	9,268	May 16	21	1449
Flour	L. Day & Co	9,269	May 16	21	1450
Flour	J. F. Imbs & Co	9,315	Apr. 25	21	1292
Flour	W. S. Hills	9,197	Mar. 14	21	716
Flour	Holt & Co	9,144	Feb. 28	21	502
Flour	D. L. Wing & Co	9,200	Mar. 14	21	716
Flour	D. L. Wing & Co	9,201	Mar. 14	21	716
Flour	D. L. Wing & Co	9,202	Mar. 14	21	716
Flour	D. L. Wing & Co	9,203	Mar. 14	21	716
Flour	M. Cairnes	9,365	May 23	21	1540
Flour, oatmeal, and various mixtures of flour and meal. Wheaten, Graham, and buckwheat	Cereals Manufacturing Company	9,446	June 13	21	1788
Food. Infants'	C. Riesmer	8,981	Jan. 3	21	2
Furnace. Summer	Steinfeld, Kernwood & Co	9,080	Jan. 10	21	78
Furnishing-goods for men's wear	St. Louis Stamping Company	8,994	Jan. 3	21	2
Galvanized sheet-iron	B. Falke	9,245	May 9	21	1294
Gloves and underwear. Knit and woven	T. M. Duché & Sons	9,207	Mar. 21	21	794
Glue	W. N. Boynton	9,429	June 27	21	1929
Gold, silver, and plated ware	Edmonds Manufacturing Company	8,991	May 30	21	1617
Grain machinery	M. E. Johnson	9,118	Feb. 21	21	498
Hair. Composition or wash for dressing	J. R. Krance	9,114	Feb. 21	21	498
Hair goods. Human	A. von Günther and E. Michbach	9,172	Mar. 7	21	636
Hair-restoring compound	H. Bauer	9,468	June 20	21	1869
Hair-tonic	Hartford Hammer Company	9,469	May 30	21	1617
Hammers	T. Trenilton	9,361	May 16	21	1449
Hammocks	H. Denny & Sons	9,419	May 30	21	1617
Hams, bacon, and lard	H. Denny & Sons	9,420	May 30	21	1617
Hams, bacon, and lard	H. Denny & Sons	9,433	June 6	21	1694
Hams, bacon, and lard	J. R. Hill & Co	9,012	Jan. 10	21	78
Harness	W. F. Ford	9,366	May 16	21	1450
Harness-trimmings or harness-mountings, and other goods pertaining to saddlery-hardware	T. Hassenbruch	9,157	Feb. 21	21	498
Hardware. Builders', agricultural, and general	Steinfeld, Kernwood & Co	8,982	Jan. 3	21	2
Hat and cap	H. Denny & Sons	9,070	Feb. 7	21	346
Hog-products, including hams, bacon, pork, lard, and such other food substances as are usually put up by pork butchers and packers	L. S. Cox & Co	9,474	June 27	21	1930
Hosiery	A. Kuttroff	9,495	June 27	21	1930
Ink. Indelible	F. A. Whiting	9,497	June 27	21	1930
Ink. Indelible	H. C. Stephens	9,460	June 13	21	1788
Inks of all descriptions. Writing	H. C. Stephens	9,461	June 13	21	1788
Inks of all descriptions. Writing	H. C. Stephens	9,462	June 13	21	1788
Inks of all descriptions. Writing	Brentano's Literary Emporium	9,225	Mar. 28	21	867
Inks. Writing	Fountain Ink Company	9,226	Mar. 28	21	868
Inks. Writing	Veit & Nelson	9,464	June 13	21	1788
Jet-goods of all kinds and buttons and jewelry manufactured from jet	Incorporated Company of Salsbergwerk, Neu-Stassfurt	9,014	Jan. 10	21	78
Knit	J. Kimball	9,451	June 13	21	1788
Lasts	A. R. Marvin & Co	9,376	May 16	21	1449
Leather	Godway & Clark	9,066	Feb. 7	21	346
Leather	J. H. Dwyer	9,243	Mar. 28	21	868
Leather-dressing	Bontoff and Bottmann	9,330	May 9	21	1294
Leather-dressing	R. Young	9,415	May 23	21	1540
Leather. Shoe	J. W. Aitken	8,973	Jan. 3	21	1
Liniment	R. English	9,240	Mar. 28	21	868
Liniment	H. D. Haggas, A. R. Hahn, G. W. Copeland, and W. H. Grainger	9,434	June 6	21	1694
Liniment	R. J. Kendall & Co	9,247	May 9	21	1294
Liniment	R. M. Rose	9,066	Feb. 7	21	346
Liniment	J. C. Wyle	9,199	Mar. 14	21	716
Liniment	G. W. May	9,430	June 6	21	1694
Liniment. Rheumatic	Gish & Garner	9,108	Feb. 21	21	499
Liniments	Mason & Gilman	9,116	Feb. 21	21	499
Liquid dressing	J. M. Hagaman	9,068	Feb. 7	21	346
Lozenges for the cure of dyspepsia, indigestion, and kindred diseases					

Alphabetical list of trade-marks, January to June, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Magneto-therapeutic appliances	H. Thomas	9,369	May 16	21	1469
Measuring-tapes	Kenffel & Esser	9,402	May 23	21	1540
Meats, bacon, and lard	J. C. Ferguson & Co	9,244	Mar. 26	21	932
Medical compound	C. C. Brooks	9,253	Apr. 4	21	805
Medical compound	R. K. Thompson	9,178	Mar. 7	21	688
Medical compound for the cure of ingrowing nails	J. A. Hincks	9,393	May 28	21	1540
Medical preparation. Certain	G. G. Green	9,136	Feb. 21	21	488
Medical preparation for external application	Weeks & Potter	9,383	May 16	21	1469
Medical preparations. Certain	L. M. Green	9,109	Feb. 21	21	482
Medical preparations. Certain	L. M. Green	9,110	Feb. 21	21	483
Medical salt	Stadtgemeinde Karlsbad	9,169	Feb. 7	21	548
Medicated tea	A. M. Kleszewski	9,249	Mar. 21	21	794
Medicinal compound	M. K. Paine	9,455	June 13	21	1782
Medicinal oil	T. W. Poole	9,148	Feb. 21	21	522
Medicinal plasters	Seabury & Johnson	9,459	June 13	21	1783
Medicinal preparation	A. L. Clum	9,228	Mar. 26	21	932
Medicinal preparation	D. Jayne & Son	9,304	May 23	21	1540
Medicinal preparation	D. Jayne & Son	9,305	May 23	21	1540
Medicinal preparation	D. Jayne & Son	9,306	May 23	21	1540
Medicinal preparation	D. Jayne & Son	9,307	May 23	21	1540
Medicinal preparation	D. Jayne & Son	9,308	May 23	21	1540
Medicinal preparation	D. Jayne & Son	9,309	May 23	21	1540
Medicinal preparation	D. Jayne & Son	9,400	May 23	21	1540
Medicinal preparation	D. Jayne & Son	9,401	May 23	21	1540
Medicinal preparations	F. W. A. Bergengren	9,355	May 16	21	1469
Medicinal preparations	D. Jayne & Son	9,370	May 16	21	1470
Medicinal preparations. Certain	Eureka Springs Concentrating Company.	9,010	Jan. 10	21	78
Medicinal preparation. Certain	T. E. King	9,004	Jan. 3	21	2
Medicinal preparation for the skin. Certain	J. W. Hinckley	9,262	Apr. 25	21	1064
Medicinal preparations. Certain	J. W. Lowell	9,302	Apr. 16	21	1782
Medicinal preparations. Certain	S. Titcomb	9,139	Feb. 21	21	482
Medicine	C. M. Briggs & Bro	9,401	June 27	21	1969
Medicine	Hogle Rock Oil Company	9,198	Mar. 14	21	716
Medicine	J. C. Richardson	9,169	Mar. 7	21	636
Medicine	J. F. Webb	9,413	May 23	21	1540
Medicine. Certain	W. R. Merwin and G. H. Leslie	9,304	Apr. 16	21	1132
Medicine. Certain specific	E. B. Hurrell	9,302	Apr. 16	21	1132
Medicine for the cure of neuralgia	G. R. Thayer	9,240	Mar. 26	21	930
Medicine. Horse	Hogle Rock Oil Company	9,161	Mar. 7	21	636
Medicine. Liquid proprietary	Griggs & Co	9,114	Apr. 26	21	1260
Medicine. Tocological	N. B. Perazo	9,194	Feb. 21	21	522
Medicines	J. C. and C. C. Davidson	9,389	May 23	21	1540
Medicines	R. Van Buskirk	9,469	June 27	21	1969
Medicines. Certain proprietary	P. Fahrney	9,344	May 9	21	1254
Metal ware	Pisano & Atwood Manufacturing Company.	8,989	Jan. 3	21	2
Metals in ingots, castings, and sheets	Elkins Manufacturing and Gas Company.	9,085	Jan. 17	21	148
Milk. Condensed	Anglo-Swiss Condensed Milk Company.	9,417	May 30	21	1617
Milk-coolers	A. R. Brown	9,064	Jan. 31	21	398
Millstones	North Carolina Mill Stone Company	9,454	June 13	21	1782
Mineral water. Natural	Bethesda Mineral Spring Company	9,330	May 9	21	1253
Mucilage and writing inks and fluids	W. A. Davis	9,493	June 27	21	1969
Music-sheets. Perforated	Automatic Music Paper Company	9,431	June 6	21	1694
Mustard and all kinds of spices	H. F. A. Pinckney & Co	9,045	Jan. 24	21	396
Needles and pins	G. A. Clark & Brother	8,976	Jan. 3	21	2
Needles for hand and machine sewing	D. Evans	9,494	June 27	21	1969
Needles. Sewing	J. Thornton, Jr	9,260	Apr. 4	21	959
Needles. Sewing	J. Thornton, Jr	9,261	Apr. 4	21	959
Oil	J. D. Archbold	9,294	Apr. 16	21	1132
Oil and polish for leather	Estep & Calkins	9,313	Apr. 25	21	1262
Oil. Cooking	J. J. Powers & Co	9,265	Apr. 11	21	1058
Oils. Machine	W. McBain	9,077	Jan. 31	21	396
Oil. Petroleum	Maverick Oil Company	9,186	Mar. 14	21	716
Oils for toilet articles. Essential	Young, Ladd & Coffin	9,264	Apr. 4	21	930
Oils. Illuminating	Bowring & Archibald	9,284	Mar. 21	21	794
Oils. Illuminating	Consolidated Tank Line Company	9,432	June 6	21	1694
Oils. Illuminating	Scofield, Shurmer & Teagle	9,439	May 30	21	1618
Oils. Illuminating	Wadsworth, Martinez & Longman	9,174	Mar. 7	21	688
Oiled clothing	A. J. Tower	9,430	May 30	21	1618
Ointment	M. R. Peck	9,466	May 23	21	1540
Overalls	H. Bernheim	9,041	Jan. 24	21	398
Packing	Jenkins Bros	9,435	June 6	21	1694
Paints	Harrison Bros. & Co	9,302	May 16	21	1469
Paints	Harrison Bros. & Co	9,303	May 16	21	1469
Paints	Harrison Bros. & Co	9,416	May 23	21	1540
Paints and pigments	Hoyt, Barnett & Co	8,949	Jan. 3	21	2
Paints. Oil	J. H. Worcester	9,022	Jan. 10	21	78
Paper	Crane Brothers	9,153	Mar. 7	21	636
Paper	Crane Brothers	9,179	Mar. 7	21	636
Paper and envelopes. Writing	J. Walker & Co	9,175	Mar. 7	21	636
Paper and envelopes. Writing	J. Walker & Co	9,391	Apr. 11	21	1062
Paper. Cover	Crocker Manufacturing Company	9,389	May 23	21	1540
Paper of all kinds. Writing	Z. Crane, Jr., & Brother	9,163	Mar. 14	21	716
Paper. Writing	Z. Crane, Jr., & Brother	9,008	Jan. 10	21	78
Paper. Writing	Z. Crane, Jr., & Brother	9,009	Jan. 10	21	78
Pavilions. Asthmatic	R. D. Stowell	9,068	Feb. 7	21	548
Pen-holders and pens	G. A. Ogle	9,337	May 9	21	1270
Pens	Turner & Harrison	9,445	June 6	21	1694
Pens. Steel	B. Lawrence	9,373	May 16	21	1469
Pens. Steel	J. Walker & Co	9,176	Mar. 7	21	636
Pens. Steel and metallic	W. Mitchell	9,065	Feb. 7	21	548
Pencils. Black-lead	Eagle Pencil Company	9,103	Feb. 21	21	486

Alphabetical list of trade-marks, January to June, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Pencils. Lead	Eagle Pencil Company	9,102	Feb. 14	21	486
Pencils. Lead	Eagle Pencil Company	9,104	Feb. 21	21	486
Pencils. Lead	Eagle Pencil Company	9,149	Feb. 21	21	486
Pencils. Lead	Eagle Pencil Company	9,152	Mar. 7	21	636
Pencils. Lead	Eagle Pencil Company	9,201	Mar. 21	21	794
Pencils. Lead	Eagle Pencil Company	9,202	Mar. 21	21	794
Pencils. Lead	Eagle Pencil Company	9,203	Mar. 21	21	794
Pencils. Lead	Eagle Pencil Company	9,204	Mar. 21	21	794
Pencils. Lead	Eagle Pencil Company	9,205	Mar. 21	21	794
Pencils. Lead	Eagle Pencil Company	9,206	Mar. 21	21	794
Perfumery	Young, Ladd & Coffin	9,255	Apr. 4	21	930
Perfumery	Young, Ladd & Coffin	9,256	Apr. 4	21	930
Perfumery	Young, Ladd & Coffin	9,257	Apr. 4	21	930
Perfumery	Young, Ladd & Coffin	9,258	Apr. 4	21	930
Perfumery	Young, Ladd & Coffin	9,259	Apr. 4	21	930
Perfumery	Young, Ladd & Coffin	9,271	Apr. 4	21	930
Perfumery and Florida-water	T. Mitsch	9,073	Jan. 31	21	398
Petrolina	J. Ladd & Co	9,488	May 30	21	1618
Petroleum. Refined	H. W. Peabody & Co	9,095	Feb. 7	21	548
Petroleum. Refined carbon oils, lubricating oils, and all other goods refined, distilled, made, or compounded from crude	Cleveland Refining Company	9,105	Jan. 28	21	398
Photographic prints	E. & H. T. Anthony & Co	8,974	Jan. 3	21	1
Piano-fortes	T. F. Scanlan	9,292	Mar. 21	21	794
Pickles	Southern Pickle Co	9,410	May 23	21	1540
Pickles, preserves, and sauces	Stilson, Foote & Co	9,317	Apr. 25	21	1262
Pipe cutting and threading machines	D. Saunders' Sons	9,236	Apr. 11	21	1062
Plows	F. A. Barrows	9,462	June 27	21	1969
Plumbago crucibles and other plumbago chemical ware	Patent Plumbago Crucible Company	9,265	Mar. 26	21	932
Preparation for counteracting corns	Gray & Hoffin	8,979	Jan. 3	21	2
Printed publications	W. Gilman & Co	9,021	Jan. 10	21	78
Quicksilver-flasks	Quicksilver Mining Company	9,101	Feb. 7	21	548
Ranges and stoves	Wrought Iron Range Company	9,414	May 23	21	1540
Ranges. Cooking	Jones & Kirtland	9,111	Feb. 21	21	486
Razors	W. H. De Pew	9,268	Apr. 4	21	930
Razors	Pribyl Bros	9,038	Jan. 17	21	148
Reaping and mowing machines	Adriance, Platt & Co	9,084	Jan. 17	21	148
Remedy for corns, warts, bunions, and indurations of the skin	B. A. Abbott	9,300	May 9	21	1270
Remedy for the cure and extraction of corns	J. C. Eshard	9,260	Apr. 16	21	1132
Ring-travelers	N. P. Hicks	9,462	May 30	21	1618
Rubber bands	Parker, Jones & Co	9,269	Mar. 26	21	932
Salt. Dairy	North American Chemical Company	9,377	May 16	21	1469
Sewing cotton and thread	J. Brook & Brothers	9,063	Jan. 24	21	398
Sewing cotton and thread	J. Brook & Brothers	9,091	Feb. 7	21	548
Shampoo	L. Vezzat	9,282	May 9	21	1254
Sheets, plates, bars, and rods of iron and steel	W. Barrows & Sons	9,366	Apr. 25	21	1262
Shirts	Marley Manufacturing Company	9,427	May 30	21	1618
Sifters. Flour	B. T. Smith	9,266	Apr. 25	21	1262
Silks, satins, velvets, and plushes	P. Gobreacht	9,150	Mar. 7	21	636
Syrup for soothing and quieting children. Infants	C. H. Bath	9,468	May 23	21	1540
Syrup. Table	G. Boyd & Son	9,472	June 27	21	1969
Skates. Roller	S. Winslow	9,496	June 27	21	1969
Soap	A. B. Gillett	8,977	Jan. 3	21	2
Soap	C. Lippe	9,374	May 16	21	1469
Soap	G. E. Marsh & Co	9,464	May 23	21	1540
Soap	W. Provost	9,266	Apr. 11	21	1062
Soap	Robinson Bros. & Co	9,170	Mar. 7	21	636
Soap	J. R. Williams & Co	9,092	Jan. 31	21	398
Soap	J. R. Williams & Co	9,130	Feb. 21	21	482
Soap	J. R. Williams & Co	9,131	Feb. 21	21	482
Soap	J. R. Williams & Co	9,132	Feb. 21	21	482
Soap	J. R. Williams & Co	9,133	Feb. 21	21	482
Soap	J. R. Williams & Co	9,193	Mar. 14	21	716
Soap. Liquid	E. L. Post	9,340	Apr. 25	21	1262
Soaps. Toilet and other	A. & F. Pears	9,467	May 30	21	1618
Soda. Carbonate of	Gaskell, Deacon & Co	9,220	Mar. 26	21	932
Soles, caps, and heels	G. A. White	8,988	Jan. 3	21	2
Specifics for corns	B. F. Arthur	9,316	Mar. 21	21	794
Spool-cotton	Kerr & Co	9,262	Apr. 16	21	1132
Spool-silk	G. W. Knight	9,187	Mar. 14	21	716
Spurs	A. Bergmann	9,268	May 16	21	1469
Starch	T. Kingsford	9,089	Feb. 7	21	548
Starch	T. Kingsford	9,091	Feb. 7	21	548
Starch	T. Kingsford	9,092	Feb. 7	21	548
Starch	T. Kingsford	9,093	Feb. 7	21	548
Starch	C. Mandlebaker & Co	9,063	Jan. 17	21	148
Starch. Laundry	American Starch Company	9,134	Feb. 21	21	482
Stationery. Artistic	W. Walbash	9,412	May 23	21	1540
Stockings	Smyth & Co	9,167	Feb. 28	21	636
Stove and range grates	Spicer & Peckham	9,057	Feb. 7	21	548
Stove-enamel	M. D. Milliken	9,044	Jan. 24	21	398
Stoves	C. Fortney	9,035	Jan. 10	21	78
Stoves. Cooking	J. Rumsey & Co	9,210	Apr. 25	21	1262
Stoves. Cooking	Bridge and Beach Manufacturing Company.	9,180	Apr. 16	21	1132
Stoves. Cooking	Bridge and Beach Manufacturing Company.	9,207	Apr. 16	21	1132
Stoves. Cooking	Bridge and Beach Manufacturing Company.	9,208	Apr. 16	21	1132
Suspenders and braces. Men's, youths', and women's	J. Bowers	9,447	June 13	21	1782
Suspenders or braces	J. Bowers	9,267	May 16	21	1469
Table-blocks	Pantall Block Company	9,042	Jan. 24	21	398
Table-sauce	H. Bernheim	9,231	Mar. 21	21	794
Tanks, cans, and packages	J. A. Wright	9,191	Mar. 14	21	716
Threshing-machines	Gaar, Scott & Company	9,254	Apr. 4	21	930

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Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Thread	Clark Thread Company	8,869	Jan. 3	21	2
Thread	Clark Thread Company	8,880	Jan. 3	21	2
Thread	Clark Thread Company	8,871	Jan. 3	21	2
Thread	Clark Thread Company	9,027	Jan. 17	21	142
Thread	Clark Thread Company	9,028	Jan. 24	21	282
Time-detectors. Watchmen's	E. Imbrasser	9,221	Apr. 11	21	1022
Tobacco and cigars. Chewing and smoking	R. Hamilton	9,143	Feb. 28	21	580
Tobacco, and snuff. Fine-cut smoking, chewing, and plug	J. M. Gardiner	9,211	Mar. 21	21	794
Tobacco. Chewing	Brown & Brother	9,158	Mar. 7	21	636
Tobacco. Chewing	Harris, Sampson & Co	9,468	June 20	21	1620
Tobacco, cigars, and cigarettes. Plug and other kinds of chewing and smoking.	L. & E. Wertheimer	9,089	Feb. 7	21	346
Tobacco, cigars, and cigarettes. Plug and other kinds of chewing and smoking	L. & E. Wertheimer	9,223	Mar. 21	21	794
Tobacco, cigars, and cigarettes. Plug, twist, and smoking	T. C. Williams & Co	9,494	May 30	21	1918
Tobacco, cigars and cigarettes, and snuff. Chewing, smoking, and fine-cut	R. L. Carroll	9,026	Jan. 17	21	142
Tobacco for pipes. Manufactured smoking	E. G. Irvine	9,145	Feb. 28	21	582
Tobacco for pipes. Smoking	E. G. Irvine	9,163	Mar. 7	21	636
Tobacco. Leaf	Sartorius & Co	9,256	Mar. 28	21	886
Tobacco. Leaf	Weiss, Eller & Knoppel	9,398	Apr. 11	21	1022
Tobacco. Manufactured chewing and smoking	J. J. Bagley & Company	9,495	June 27	21	1920
Tobacco-pipes	Rejall & Becker	9,125	Feb. 21	21	488
Tobacco-pipes of briar-root and meerschaum and cigar and cigarette holders.	Boudier, Ulbrich & Co	9,025	Jan. 17	21	142
Tobacco. Plug	D. H. McAlpin & Co	9,017	Jan. 10	21	78
Tobacco. Plug and other chewing	J. E. Carr and R. B. Dale	9,467	June 20	21	1620
Tobacco. Plug and twist	Inge & Mahone	9,235	Apr. 4	21	950
Tobacco. Plug and twist	Inge & Mahone	9,236	Apr. 4	21	950
Tobacco. Plug and twist chewing	Brown & Brother	9,238	Apr. 4	21	950
Tobacco. Plug and twist chewing	D. A. Martin	9,082	Feb. 7	21	346
Tobacco. Plug chewing	Brown & Brother	9,354	May 16	21	1460
Tobacco. Smoking	Globe Tobacco Company	9,220	Mar. 21	21	794
Tobacco. Smoking	C. R. Messinger	9,430	June 13	21	1760
Tobacco. Smoking	C. R. Messinger	9,433	June 13	21	1760
Tobacco, snuff, cigars, and cigarettes. Chewing and smoking	R. L. Carroll	9,024	Jan. 17	21	142
Toilet articles. Certain	Mülhens & Kropff	9,466	May 23	21	1540
Toilet preparations. Certain	H. K. & F. B. Thurber & Co	9,046	Jan. 24	21	282
Toilet preparations	E. B. Dupree	9,275	Apr. 11	21	1022
Trees, shrubs, vines, and plants	N. H. Albaugh & Co	9,007	Jan. 10	21	78
Umbrella-frames and parts thereof. Steel	S. Fox & Co	9,156	Mar. 7	21	636
Umbrellas	A. Hall & Co	9,012	Jan. 10	21	78
Vegetables and fruits, either raw, pickled, or otherwise preserved.	Du Vivier & Co	9,181	Mar. 7	21	638
Vegetables and fruits, either raw, pickled, or otherwise preserved.	Du Vivier & Co	9,184	Mar. 14	21	716
Violin-strings	Estey Organ Company	9,142	Feb. 28	21	581
Watch-cases. Coin-silver	Dueber Watch Case Manufacturing Company.	8,985	Jan. 10	21	77
Watches	A. Schwob	9,186	Feb. 21	21	496
Watches	A. Schwob	9,187	Feb. 21	21	496
Water-closet bowls, valves, and other appliances connected with the construction of water-closets.	A. E. Jennings	9,015	Jan. 10	21	78
Waters. Artificial	H. S. Evans	9,343	May 9	21	1354
Whiskies	H. Rosenheim	9,241	Mar. 28	21	888
Whisky	Adams, Taylor & Co	9,242	Mar. 28	21	888
Whisky	A. W. Balch	9,247	Mar. 28	21	888
Whisky	C. Conrad & Co	9,225	Mar. 21	21	794
Whisky	C. Conrad & Co	9,226	Mar. 21	21	794
Whisky	P. W. Engs & Sons	9,449	June 13	21	1760
Whisky	Freiberg & Workum	8,996	Jan. 10	21	77
Whisky	W. A. Gaines & Co	9,277	Apr. 11	21	1038
Whisky	W. A. Gaines & Co	9,278	Apr. 11	21	1038
Whisky	Iler & Co	9,126	Feb. 21	21	488
Whisky	D. A. Jennings	9,057	Jan. 31	21	386
Whisky	Sperry, Wade & Co	9,490	June 27	21	1920
Wine. Champagne	L. H. L. R. Olry	9,117	Feb. 21	21	488
Wine. Champagne	L. H. L. R. Olry	9,118	Feb. 21	21	488
Wine. Champagne	L. H. L. R. Olry	9,119	Feb. 21	21	488
Wine. Champagne	L. H. L. R. Olry	9,120	Feb. 21	21	488
Wine. Champagne	L. H. L. R. Olry	9,121	Feb. 21	21	488
Wine. Champagne	L. H. L. R. Olry	9,122	Feb. 21	21	488
Wine. Champagne	L. H. L. R. Olry	9,123	Feb. 21	21	488
Wine. Champagne	L. H. L. R. Olry	9,165	Mar. 7	21	638
Wine. Champagne	L. H. L. R. Olry	9,166	Mar. 7	21	638
Wine. Champagne	L. H. L. R. Olry	9,167	Mar. 7	21	638
Wine. Champagne	L. H. L. R. Olry	9,168	Mar. 7	21	638
Wine. Champagne	L. H. L. R. Olry	9,240	Mar. 28	21	888
Wine. Champagne	Werlé & Co	9,489	June 27	21	1920
Wine. Champagne	Werlé & Co	9,491	June 27	21	1920
Wine. Champagne	Werlé & Co	9,492	June 27	21	1920
Wine. Champagne	Werlé & Co	9,493	June 27	21	1920
Wine. Claret	Eschemaner & Co	9,037	Jan. 24	21	282
Wine. Claret	Eschemaner & Co	9,038	Jan. 24	21	282
Wine. Claret	Eschemaner & Co	9,039	Jan. 24	21	282
Wine. Claret	Eschemaner & Co	9,040	Jan. 24	21	282
Wine. Claret	Eschemaner & Co	9,188	Feb. 21	21	496
Wine. Red	C. Seelmann	9,488	June 13	21	1788
Wines	Chandon & Co	9,338	May 23	21	1540
Wines	Chandon & Co	9,339	May 23	21	1540
Wines	C. F. Ecarnit	8,998	Jan. 3	21	2
Wines. Champagne	Chandon & Co	9,340	May 9	21	1353
Wines. Champagne	Chandon & Co	9,341	May 9	21	1354
Wines. Champagne	Chandon & Co	9,342	May 9	21	1354

ALPHABETICAL LIST OF LABELS.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"A Syrup of Tar, Wild Cherry, &c for the Speedy Cure of Throat and Lung Diseases and all Pulmonary Complaints."	H. M. Guild	2,395	Jan. 17	21	142
"Acid Emulsion Cod Liver Oil"	A. J. Robinson	2,674	May 2	21	1220
"Acidter Arematique Bitter or Magen-Liqueur"	G. F. Heublein & Bro	2,668	Mar. 28	21	944
"Alexander's Nutritious Elixir Wheat, Sarsaparilla and Rye Cordial."	D. G. Alexander	2,624	May 23	21	1540
"Arabia Shaving Soap"	C. H. Streng	2,676	May 2	21	1354
"Baking Powder"	J. A. Tolman & Co	2,621	May 2	21	1355
"Bancroft's Liniment"	A. B. Crooks	2,633	Mar. 28	21	888
"Bancroft's Ointment"	A. B. Crooks	2,634	Mar. 28	21	888
"Barker's Nerve & Bone Liniment for Man or Beast"	Barker, Moore & Mein	2,527	Jan. 17	21	78
"Beebe's Cough and Lung Healer"	J. A. Beebe	2,538	Jan. 17	21	142
"Beef, Iron & Rye"	T. Scott	2,660	May 23	21	1618
"Birch Bitters for the Blood and General Debility, Indigestion etc."	G. C. Campbell	2,663	June 6	21	1804
"Bond's Non Corrosive Cylinder Oil"	J. C. Bond	2,601	Jan. 24	21	286
"Bowers' Electric Suspenders"	J. Bowers	2,610	Feb. 7	21	346
"Bowers' World Renowned Eye Remedy, Sight Preserver and Restorer."	S. J. Bowers	2,669	Mar. 14	21	716
"Burdock Liver Elixir"	P. Van Kleeck	2,669	Apr. 4	21	950
"Carey's Compound Petroleum Pills"	Carey & Co	2,672	May 2	21	1352
"Champagne Soda" (for a Beverage)	E. A. Bates	2,595	Jan. 10	21	78
"Chocolat Lacragas"	Goldschmidt & Co	2,701	June 20	21	1618
"Condensed Milk, Anglo-Swiss Condensed Milk Co. Cham, Switzerland. Prepared in America."	Anglo-Swiss Condensed Milk Company.	2,605	May 30		
"Crane's Ladies Note Paper and Envelopes"	S. Crane, Jr., & Brother	2,608	Jan. 31	21	386
"Crane's Ladies Note Paper and Envelopes. Dietaff"	Z. Crane, Jr., & Brother	2,611	Feb. 7	21	346
"Crane's Ladies Note Paper and Envelopes, Grecian Antique."	E. Crane, Jr., & Brother	2,604	Jan. 31	21	386
"Crane's Ladies Note Paper and Envelopes. Satin Finish"	Z. Crane, Jr., & Bro	2,649	Mar. 14	21	716
"Dickinson's Compound Balsam of Boneset Horehound, Wild Cherry and Tar."	S. Dickinson	2,645	Mar. 21	21	794
"Doctor Hensley's Oregon Kidney Tea"	Hodge, Davis & Co	2,695	Jan. 31	21	386
"Donahue's Dressing"	T. J. Donahue	2,688	Feb. 28	21	580
"Dr. Bigelow's Positive Cure"	Griggs & Company	2,615	Feb. 21	21	488
"Dr. Brack's Toilet and Laundry Soaps"	C. H. Thorning	2,677	May 9	21	1354
"Dr. Cady's Condition Powders for Horses and Cattle"	M. W. Brack	2,686	May 30	21	1918
"Dr. Gray's Lotion"	Chamberlain & Co	2,670	Apr. 25	21	1288
"Dr. Hoffman's Red Drops"	H. Smith and H. T. Goold	2,607	Jan. 31	21	386
"Dr. J. A. Dickey's Painless Eye Water"	F. Trendt	2,673	May 9	21	1354
"Dr. Lockerby's Liver Pills"	J. A. Dickey	2,628	Mar. 7	21	638
"Dr. Minor's Specific Liniment for Rheumatism"	F. S. Le Busquet	2,627	Feb. 28	21	580
"Dr. N. Belet's Toxological Pills"	O. Griggs	2,662	Feb. 21	21	488
"Dr. Nathan's Cough Elixir"	N. B. Perass	2,681	Feb. 21	21	488
"Dr. Niemeyer's Asthma Troches"	A. S. Udell & Co	2,504	Jan. 3	21	2
"Dr. O. Arneson & Co., European Hog and Cattle Cure"	F. Hamburg	2,589	Jan. 10	21	78
"Dr. Owen's Colic, Cholera and Diarrhoea Remedy"	O. Arneson & Co.	2,588	Jan. 10	21	78
"Dr. Owen's (O & C's) Compounded Hartshorn Liniment"	L. P. Owen	2,683	May 16	21	1460
"Dr. Owen's (O & C's) Cough Remedy"	L. P. Owen	2,681	May 16	21	1459
"Dr. Walther's Swiss Cough Troches"	L. P. Owen	2,591	Jan. 10	21	78
"Dr. Ware's English Heartburn Lozengers"	F. Hamburg	2,606	Jan. 31	21	386
"Dr. Warren's Syrup of Wild Cherry"	F. W. K. Nye & Co	2,641	Mar. 14	21	716
"Dr. Wm. Sheppard's Colic Remedy for Horses"	S. B. Stiles and F. M. Givens	2,624	Feb. 28	21	582
"Dyspepsia Cake Manufacturing Company"	O. Griggs	2,704	June 27	21	1920
"E. Wright's Cough Balsam"	H. A. C. Dahl	2,702	June 20	21	1620
"Eastburn's Pine Tar Cordial"	E. L. Hoffman	2,671	Apr. 25	21	1288
"Four Pointed Glidden" Steel Barb Fencing"	E. Eastburn	2,696	June 6	21	1804
"German-American Cologne"	Washburn & Moen Manufacturing Company.	2,637	Apr. 4	21	938
"German Corn Remover"	A. M. Kleczewski	2,644	Mar. 21	21	794
"Ginger Cordial"	B. F. Arthur	2,648	Mar. 21	21	794
"Glidden Four Pointed Steel Barb Fencing"	G. D. Dewe	2,697	June 6	21	1804
"Greetings" (for a Card holder)	Washburn & Moen Manufacturing Company.	2,645	Mar. 21	21	794
"Grigg's Glycerine Salve"	B. Brewer	2,614	Feb. 21	21	488
"Grigg's Specific for the Prevention and Cure of Hog Cholera"	Griggs & Company	2,625	Feb. 28	21	582
"Heart and Fever-Drops"	O. Griggs	2,707	June 27	21	1920
"Heath's English Salve"	H. Uttinger	2,618	Feb. 28	21	582
"Henry's Compound Licorice Syrup"	J. A. Heath	2,631	Mar. 7	21	638
"Hinrichs' American Corn Cure"	Conner & Mitchell	2,672	Apr. 25	21	1288
"Hinrichs' Universal Laundry Starch Polish"	Robinson & Hinrichs	2,593	Jan. 10	21	78
"Holdstein's Great Dyspepsia Cure"	Robinson & Hinrichs	2,597	Jan. 17	21	142
"Horse Tonic, The Great Blood Purifier and a Sure Cure for Epizootic, Coughs, Colds, Heaves, &c."	G. Holdstein	2,619	Feb. 21	21	488
"Huntootia Pepsin"	A. E. Mosher	2,625	Feb. 28	21	582
"Improved Detergent"	C. A. Fenerdan	2,659	Apr.		
"Improved Glidden" (for Barbed Fences)	C. T. Myers & Co	2,659	Apr.		
"Inman Pneumonia Cure"	Worcester Bark Fence Company	2,594			
"Jamaica Ginger Ale"	L. J. H. Watson	2,695			
"Jy nalca Ginger Cordial"	G. D. Dewe	2,647			
"Juniper Wafer Bedding Company"	G. D. Dewe	2,[illegible]			
"Kempshall's Patent Screw Socket Window Spring Bolts"	E. H. Bailey				
	E. Kempshall				

Alphabetical list of labels, January to June, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"Kendall's Blister"	B. J. Kendall & Co	2,662	Apr. 11	21	1638
"Kidney Coffee"	E. W. Cutler	2,582	Jan. 3	21	2
"Knight's Cure," (a Medicine)	D. M. Holbrook	2,616	Feb. 21	21	426
"Laredo Baking Powder"	D. H. Randolph & Co	2,668	Apr. 18	21	1138
"Luster Finish" (for a Cleansing Compound)	A. Dow	2,588	Jan. 10	21	70
"Madam Smith's Healing Salve"	E. Smith	2,583	Jan. 3	21	2
"Maulick's Dyes"	W. F. Maulick	2,635	Mar. 28	21	858
"Medicated Paper"	Gayetty & Co	2,642	Mar. 21	21	794
"Mellin's Food for Infants and Invalids"	T. Metcalf & Co	2,586	Jan. 17	21	146
"Mellin's Food for Infants and Invalids"	T. Metcalf & Co	2,589	Jan. 17	21	146
"Mullin's Great Discovery. Sure and only Cure for Consumption."	B. A. Mullin	2,632	Mar. 7	21	630
"Musselman's Practical Book-Keeping"	D. Musselman	2,633	Mar. 7	21	630
"New York City Soap"	C. Memmert	2,669	May 16	21	1450
"North Car[illegible] Tar Syrup"	E. J. Moore	2,651	Mar. 21	21	794
"Old Dr. Ha[illegible] Oil Liniment, the Greatest Remedy in the World for [illegible]matism."	J. Purcell	2,664	Apr. 11	21	1638
"Orcutt's Sure Rheumatic Cure"	W. N. Orcutt	2,620	Feb. 21	21	426
"Original Texas Tolu Chewing Gum"	B. Ward	2,692	May 30	21	1618
"Pain Stop," (for a Medicine)	J. W. Aitken	2,581	Jan. 3	21	2
"Palmer's Plant and Vine Protector"	Palmer Plant & Vine Protector Company.	2,600	Jan. 17	21	146
"Penn's White Liniment"	H. Schandein & Co	2,638	Mar. 21	21	794
"Phenol Mouth Wash"	Owens & Minor	2,688	May 30	21	1618
"Powell's Loose Match and Squib, for Miners use"	J. R. Powell	2,689	May 30	21	1618
"Rice's Pine Salt"	North American Chemical Company.	2,667	Apr. 18	21	1132
"Ring Travellers"	N. P. Hicks	2,705	June 27	21	1960
"Riz Extra" (for Cigarette Papers)	May Brothers	2,582	Jan. 10	21	78
"Robinson's Phosphorized Emulsion of Cod Liver Oil with Lacto-Phosphate of Lime."	J. H. Robinson	2,706	June 27	21	1960
"Rochester Blood and Bone Guano"	W. H. Battelle	2,661	Apr. 11	21	1638
"Rose Blanchard's Cold Cream"	F. Smith	2,643	Mar. 14	21	716
"Rye Balsam"	Earle & Pedley	2,658	Apr. 4	21	950
"Sears's Improved Insect Powder"	G. T. Sears	2,675	May 2	21	1290
"Smith & Shakman's Celebrated Horse and Cattle Powders"	Smith & Shakman	2,694	June 6	21	1694
"Starch"	J. C., J. E., and N. W. Hubinger	2,617	Feb. 21	21	426
"Storage on Baggage"	H. A. Winter	2,703	June 20	21	1850
"Sugar Valley Whiskey"	Sulzberger & Co	2,656	Mar. 28	21	858
"Superior Brilliant Light Signal Oil"	J. S. Ramsey & Co	2,634	Mar. 7	21	630
"Superior Screw Cutting Oil"	J. S. Ramsey & Co	2,628	Feb. 28	21	502
"Superior Topaz Color Wool Oil"	J. S. Ramsey & Co	2,635	Mar. 7	21	630
"Swedish Bitters"	Swedish Bitters Co	2,612	Feb. 7	21	346
"Tolman's Belt Hooks"	H. Tolman	2,613	Feb. 7	21	346
"The Boston Breakfast or Lunch Cocoa"	Swain, Earle & Co	2,636	Mar. 7	21	630
"The Boston Broma"	Swain, Earle & Co	2,637	Mar. 7	21	630
"The Boston Cracked Cocoa"	Swain, Earle & Co	2,638	Mar. 7	21	630
"The Famous Untearable Overall"	J. H. Rice and I. Friedmann	2,699	Feb. 28	21	502
"The Great Mountain Sage Remedy, Anti-Bilious Pills"	R. C. Schroeder & Co	2,609	Jan. 31	21	266
"The Great Mountain Sage Remedy, Cough Syrup"	R. C. Schroeder & Co	2,606	Jan. 31	21	266
"The Great Mountain Sage Remedy for Fevers"	R. C. Schroeder & Co	2,602	Jan. 24	21	202
"The Original Hop Bitters with Iron"	M. J. Williams	2,699	June 6	21	1694
"The Salem Manila Cigar"	C. H. & J. Price	2,663	Apr. 11	21	1038
"The World's Catarrh Cure"	J. C. and C. C. Davidson	2,667	May 30	21	1618
"Thick Set" Steel Barb Fencing"	Washburn & Moen Manufacturing Company.	2,695	June 6	21	1694
"Tire Bolts"	Russell & Erwin Manufacturing Co.	2,593	Jan. 10	21	78
"Wheat Bitters"	Wheat Bitters Company	2,643	Mar. 14	21	716
"Whiting's Decorative Indelible Outline Ink"	F. A. Whiting	2,679	May 9	21	1354
"Whittall Brussels," (for Carpets)	M. J. Whittall	2,696	June 6	21	1694

DISCLAIMERS.

Invention.	Patentee.	No. of patent.	Date of patent.	Disclaimer filed.	Official Gazette. Vol.	Page.
Axle box. Car-	Tennis V. Le Roy. (Reissue)	9,842	Aug. 6, 1861	Apr. 28, 1882	21	1354
Cheese-hoop	William Sternberg. (Reissue)	8,832	Aug. 5, 1879	Apr. 22, 1882	21	1290
Cuspidor	William Westlake	242,426	June 7, 1881	May 27, 1882	21	1694
[illegible]orn. Composition resembling	William M. Welling	98,727	Jan. 11, 1870	Mar. 14, 1882	21	794
[illegible]her-dressing machine	William Goodman	249,997	May 2, 1881	Mar. 8, 1882	21	716
[illegible]el. Buffing	George B. Dunham. (Reissue)	8,555	Jan. 28, 1879	June 13, 1882	21	1850
[illegible]erine. Exploding	Alfred Nobel. (Reissue)	5,796	Mar. 17, 1874	Dec. 28, 1881	21	78
[illegible]dles. Making bands for	Jacob Reese	92,469	July 13, 1869	May 5, 1882	21	1450
[illegible]. Machine for shearing and	Theodore E. Harris. (Reissue)	4,636	Nov. 14, 1871	May 5, 1882	21	1450
[illegible]	John Matthews. (Reissue)	9,888	Jan. 6, 1880	May 2, 1882	21	1354

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